PROJECT SPECIFICATIONS

FOR

VENTURA UNIFIED SCHOOL DISTRICT
E1-25 PLAYGROUND REPLACEMENT PROJECT

AT

PORTOLA ELEMENTARY SCHOOL
6700 Eagle St., Ventura, CA 93003

Prepared By
RNT Architects
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Ventura, CA 93001

Prepared For
Ventura Unified School District
Ventura, CA

Architect Project No. 241012

October 10, 2025

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ARCHITECT



LANDSCAPE ARCHITECT

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Project information.
2. Work covered by Contract Documents.
3. Work under Owner's separate contracts.
4. Owner-furnished/Contractor-installed (OFCI) products.
5. Contractor's use of site and premises.
6. Work restrictions.
7. Coordination with occupants.
8. Specification and Drawing conventions.

B. B. Related Requirements:
1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification: Playground Replacement Project

1. Project Number: E1-25
a. Project Location: Portola Elementary School, 6700 Eagle St, Ventura, CA 93003.

B. Owner: Ventura Unified School District, 395 South Victoria Avenue, Ventura, CA 93003.

C. Architect: Roesling Nakamura Terada Architects, Inc., 285 North Ventura Avenue, #102, Ventura, CA 93001.

D. Landscape Architect: Pacific Coast Land Design, 461 E Main St.,Ventura, CA 93001

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project consists of:

1. E1-24 PORTOLA
- Existing tree protection.
- Removal and disposal of existing play equipment, surfaces and concrete curbs.
- Grading, drainage and subsurface soil preparation for finish surfaces.
- Concrete seat walls and retaining seat walls.
- Trench drain.
- Installation of owner-furnished play equipment and signage.

- Play surfaces and landscaping.
- Modifications of existing irrigation and installation of new irrigation.
- Installation of new drinking fountain.
- Installation of misc. Site access improvements as indicated.
- New asphalt at existing decommissioned play area.
- Patch and slurry seal existing asphalt.
- Stripe games.
- Turf repair for existing turf areas disturbed by construction operations and where play equipment removed.

B. Preceding Work: Owner will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before Work under this Contract begins.
   1. Shut off existing irrigation for turf areas providing access for construction vehicles to the site.
   2. Remove existing building and foundation from 1-5th grade play area. Utilities disconnected and removed within play equipment project area of work.
   3. Remove shipping containers used for storage from project area of work.

1.4 WORK UNDER OWNER'S SEPARATE CONTRACTS

A. Work with Separate Contractors: Cooperate fully with Owner's separate contractors, so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under Owner's separate contracts.

B. Concurrent Work: Owner has awarded separate contract(s) for the following construction operations at Project site. Those operations will be conducted to coordinate with Work under this Contract.
   1. Restroom modular building and associated site work.
      a. Includes sealing and striping of parking lots.

1.5 OWNER-FURNISHED/CONTRACTOR-INSTALLED (OFCI) PRODUCTS

A. Owner's Responsibilities: Owner will furnish products indicated and perform the following, as applicable:
   1. Provide to Contractor Owner-reviewed Product Data, Shop Drawings, and Samples.
   2. Provide for delivery of Owner-furnished products to Project site.
   3. Upon delivery, inspect, with Contractor present, delivered items.
      a. If Owner-furnished products are damaged, defective, or missing, arrange for replacement.
   4. Obtain manufacturer's inspections, service, and warranties.
   5. Inform Contractor of earliest available delivery date for Owner-furnished products.

B. Contractor's Responsibilities: The Work includes the following, as applicable:
   1. Designate delivery dates of Owner-furnished products in Contractor's construction schedule, utilizing Owner-furnished earliest available delivery dates.
   2. Review Owner-reviewed Product Data, Shop Drawings, and Samples, noting discrepancies and other issues in providing for Owner-furnished products in the Work.

3. Receive, unload, handle, store, protect, and install Owner-furnished products.
4. Make building services connections for Owner-furnished products.
5. Protect Owner-furnished products from damage during storage, handling, and installation and prior to Substantial Completion.
6. Repair or replace Owner-furnished products damaged following receipt.

C. Owner-Furnished/Contractor-Installed (OFCI) Products:

1. E1-25 PORTOLA
   a. play equipment
   b. play equipment signage
   c. amenities

1.6 WORK RESTRICTIONS

A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Limits on Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
2. Schedule deliveries to minimize use of driveways and entrances by construction operations.
3. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
4. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.7 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with

completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

C. On-Site Work Hours: Limit work in the existing building to normal business working hours Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.

D. Existing Utility Interruptions: Coordinate interruption of utilities serving facilities occupied by Owner or others with 48 hours advance notice:

E. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

F. Nonsmoking Building: Smoking is not permitted on campus or within 25 feet of entrances, operable windows, or outdoor-air intakes.

G. Employee Screening: Comply with Owner's requirements for background screening of Contractor personnel working on Project site.
1. Maintain list of approved screened personnel with Owner's representative.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Contingency allowances.

1.3 DEFINITIONS

A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

1.5 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.7 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Contingency Allowance: The Contractor shall include of $75,000 in the bid an allowance for miscellaneous unforeseen conditions, including but not limited to the replacement of existing unsatisfactory soils, rerouting of existing utilities or other subsurface conditions.

END OF SECTION 012100

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SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.2 ACTION SUBMITTALS

A. Substitution Requests: Submit request in digital format for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A or approved equal.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

    a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    e. Samples, where applicable or requested.
    f. Certificates and qualification data, where applicable or requested.
    g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    i. Cost information, including a proposal of change, if any, in the Contract Sum.
    j. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
    k. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

    a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
    b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue Architect's Supplemental Instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.

B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use form provided by Owner.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, Owner will issue a Change Order for signatures of Owner and Contractor.

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Owner may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:
   1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

   1. Submit the schedule of values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values.

   1. Arrange schedule of values consistent with format of AIA Document G703.
   2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents.
   3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
   4. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   5. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

1.3 APPLICATIONS FOR PAYMENT

A. Application for Payment Forms: Use forms acceptable to the Owner and Architect as form for Applications for Payment.

B. Transmittal: Submit three signed and notarized original copies or digital documents with secure digital signatures of each Application for Payment to Architect according to the schedule established in the Owner/Contractor agreement. One copy shall include waivers of lien and similar attachments if required.

C. Project Record Documents: Provide to the Owner and Architect for review the progress set of Project Record Documents including up-to-date markups of existing utilities or any

modifications to the contract documents. Refer to Section 017839 “Project Record Documents” for full requirements.

D. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

E. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Include "Contractor's Affidavit of Payment of Debts and Claims."
5. Include "Contractor's Affidavit of Release of Liens."
6. Include “Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.2 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use form provided by Owner. Sample copy is included in Project Manual.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. List email addresses and telephone numbers.

1.3 GENERAL COORDINATION PROCEDURES

A. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Preconstruction meeting.
6. Progress meetings.
7. Preinstallation conferences.
8. Project closeout conference.
9. Project closeout activities.
10. Startup and adjustment of systems.

1.4 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and digitally submit an RFI.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
   1. Project name.
   2. Owner name.
   3. Owner's Project number.
   4. Name of Architect (and Construction Manager if applicable).
   5. Architect's Project number.
   6. Date.
   7. Name of Contractor.
   8. RFI number, numbered sequentially.
   9. RFI subject.
   10. Specification Section number and title and related paragraphs, as appropriate.
   11. Drawing number and detail references, as appropriate.
   12. Field dimensions and conditions, as appropriate.
   13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   14. Contractor's signature.
   15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
      a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow three days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
   1. The following Contractor-generated RFIs will be returned without action:
      a. Requests for approval of submittals.
      b. Requests for approval of substitutions.
      c. Requests for approval of Contractor's means and methods.
      d. Requests for coordination information already indicated in the Contract Documents.
      e. Requests for adjustments in the Contract Time or the Contract Sum.
      f. Requests for interpretation of Architect's actions on submittals.
      g. Incomplete RFIs or inaccurately prepared RFIs.
   2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
   3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 days of receipt of the RFI response.

D. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Update RFI Log and provide copies to Owner and Architect at coordination meetings.

1.5 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
    a. Responsibilities and personnel assignments.
    b. Tentative construction schedule.
    c. Phasing.
    d. Critical work sequencing and long lead items.
    e. Designation of key personnel and their duties.
    f. Lines of communications.
    g. Use of web-based Project software (optional).
    h. Procedures for processing field decisions and Change Orders.
    i. Procedures for RFIs and logs.
    j. Procedures for testing and inspecting.
    k. Procedures for processing Applications for Payment.
    l. Distribution of the Contract Documents.
    m. Submittal procedures.
    n. Preparation of Record Documents.
    o. Use of the premises.
    p. Work restrictions.
    q. Working hours.
    r. Owner's occupancy requirements.
    s. Responsibility for temporary facilities and controls.
    t. Procedures for moisture and mold control.
    u. Procedures for disruptions and shutdowns.
    v. Construction waste management and recycling.
    w. Parking availability.
    x. Office, work, and storage areas.
    y. Equipment deliveries and priorities.
    z. First aid.
    aa. Security.
    bb. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

D. Progress Meetings: Conduct progress meetings at weekly intervals.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    a. Preparation of Record Documents.
    b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    c. Procedures for completing and archiving web-based Project software site data files.
    d. Submittal of written warranties.
    e. Requirements for completing sustainable design documentation.
    f. Requirements for preparing operations and maintenance data.
    g. Requirements for delivery of material samples, attic stock, and spare parts.

h. Requirements for demonstration and training.
i. Preparation of Contractor's punch list.
j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
k. Submittal procedures.
l. Coordination of separate contracts.
m. Owner's partial occupancy requirements.
n. Installation of Owner's furniture, fixtures, and equipment.
o. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Contractor's Construction Schedule.

B. Related Requirements:
   1. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.
   2. Section 014000 "Quality Requirements" and DSA Form 103 for schedule of tests and inspections.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

   1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the network.
   3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

   1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
   2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
   3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of labor and equipment necessary for completing an activity as scheduled.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:
   1. PDF file.

B. Startup construction schedule.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

D. Site Condition Reports: Submit at time of discovery of differing conditions.

E. Unusual Event Reports: Submit at time of unusual event.

1.4 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

   1. Secure time commitments for performing critical elements of the Work from entities involved.
   2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Time Frame: Extend schedule from date established for the Notice of Award to date of Substantial Completion.

   1. Contract completion date to not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities:

   1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
   2. Temporary Facilities: Indicate start and completion dates for the following as applicable:
      a. Temporary facilities.
      b. Construction of mock-ups, prototypes and samples.
      c. Owner interfaces and furnishing of items.
      d. Interfaces with Separate Contracts.
      e. Regulatory agency approvals.
      f. Punch list.

3. Procurement Activities: Include procurement process activities for the following long lead-time items and major items as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

4. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's and Construction Manager's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include expected duration for completion of punch list items and Final Completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Work under More Than One Contract: Include a separate activity for each contract.
2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
3. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
4. Work Restrictions: Show the effect of the following items on the schedule:

a. Coordination with existing construction.
b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Use-of-premises restrictions.
e. Seasonal variations.

5. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Subcontract awards.
b. Submittals.
c. Purchases.
d. Mockups.
e. Fabrication.
f. Sample testing.
g. Deliveries.
h. Installation.
i. Tests and inspections.
j. Adjusting.
k. Curing.
l. Startup and placement into final use and operation.
m. Commissioning.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion and the following interim milestones:
1. Modular building delivery date.

2. School critical schedule dates from Owner.

E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.

F. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. As the Work progresses, indicate Final Completion percentage for each activity.

G. Recovery Schedule: When periodic update indicates the Work is behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

H. Distribution: Distribute copies of approved schedule to Architect, Construction Manager, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:
1. Division 01 Section "Project Record Documents" for submitting record Drawings and record Specifications.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and Construction Manager and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.

B. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
1. Architect will discard submittals received from sources other than the Contractor.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with unique identifier including project identifier and Specification Section number followed by a revision identifier when necessary.
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.

E. Options: Identify options requiring selection by Architect.

F. Deviations: Identify deviations from the Contract Documents on submittals.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as PDF electronic files.

a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Action Submittals: Submit digitally. Architect will return with review stamp and comments.
3. Informational Submittals: Submit digitally. Architect will not return review.
4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.

b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Include the following information, as applicable:

a. Manufacturer's written recommendations, product specifications and installation instructions.
b. Standard color charts.
c. Statement of compliance with specified referenced standards.
d. Testing by recognized testing agency.
e. Application of testing agency labels and seals.
f. Notation of coordination requirements.
g. Availability and delivery time information.

2. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

3. Submit Product Data before or concurrent with Samples.
4. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches .

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.
   1. Special Tests and Inspections
   2. Acceptance Testing Requirements.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

   1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Division of the State Architect, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Requirements:

   1. Divisions 02 through 33 Sections for specific test and inspection requirements.
   2. DSA Form 103 Special Tests and Inspections.

1.2 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

C. If any conflicts or inconsistencies exist between the specifications and the drawings (including the general notes), the more stringent requirements shall take precedence.

1.4 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing

engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and DSA certified Inspector of Record, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will employ a Project Inspector approved by the Division of the State Architect who shall provide continuous inspection of the work. The duties of the inspector are

defined in section 4-324, part 1, title 24, CCR. The project inspector shall be certified by DSA to inspect class 3 construction.

2. Owner will employ a Testing Agency approved by the Division of the State Architect who shall provide testing services. The duties of the Testing Agency are defined in section 4-213, part 1, title 24, CCR.
3. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
4. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
6. Title 24, Parts 1-5 must be kept on site during construction.
7. Verify compliance with Title 24 for parts 1-6 and 9 as applicable.

C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect, DSA certified Project Inspector and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect, DSA certified Inspector of Record and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor’s construction schedule. Update as the Work progresses.

1. Distribute schedule to Owner, Architect, DSA certified Inspector of Record testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction and in DSA Testing and Inspection form DSA-103 as the responsibility of the Owner as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, DSA certified Inspector of Record and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and DSA certified Inspector of Record and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

1.9 ACCEPTANCE TESTING REQUIREMENTS

A. The California Energy Code section 10-103 requires acceptance testing on all newly installed lighting controls, mechanical systems, envelopes, and process equipment after installation and before project completion. An acceptance test is a functional performance test to help ensure that newly installed equipment is operating and in compliance with the energy code.

B. Lighting controls acceptance tests must be performed by a certified lighting controls Acceptance Test Technician (ATT)

C. Mechanical system acceptance tests must be performed by a certified mechanical ATT for projects submitted on or after October, 2021.

D. Envelope and process equipment acceptance tests shall be performed by the installing contractor, engineer/architect of record or the owner's agent.

E. A listing of certified ATT can be found at https://www.energy.ca.gov/programs-and-topics/programs/acceptance-test-technician-certification-provider-program/acceptance.

F. The acceptance testing procedures must be repeated, and deficiencies must be corrected by the builder or installing contractor until the construction/installation of the specified systems conform and pass the required acceptance criteria.

G. Project inspectors will collect the forms to confirm that the required acceptance tests have been completed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and Construction Manager's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. AABC - Associated Air Balance Council; www.aabc.com.
2. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
7. ABMA - American Boiler Manufacturers Association; www.abma.com.
8. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org
9. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
10. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
11. AF&PA - American Forest & Paper Association; www.afandpa.org.
12. AGA - American Gas Association; www.aga.org.
13. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
15. AI - Asphalt Institute; www.asphaltinstitute.org.
16. AIA - American Institute of Architects (The); www.aia.org.
17. AISC - American Institute of Steel Construction; www.aisc.org.
18. AISI - American Iron and Steel Institute; www.steel.org.
19. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
20. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
21. ANSI - American National Standards Institute; www.ansi.org.
22. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
23. APA - APA - The Engineered Wood Association; www.apawood.org.
24. APA - Architectural Precast Association; www.archprecast.org.
25. API - American Petroleum Institute; www.api.org.
26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).

27. ARI - American Refrigeration Institute; (See AHRI).
28. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
29. ASCE - American Society of Civil Engineers; www.asce.org.
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
32. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
33. ASSE - American Society of Safety Engineers (The); www.asse.org.
34. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
35. ASTM - ASTM International; www.astm.org.
36. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
37. AWEA - American Wind Energy Association; www.awea.org.
38. AWI - Architectural Woodwork Institute; www.awinet.org.
39. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
40. AWPA - American Wood Protection Association; www.awpa.com.
41. AWS - American Welding Society; www.aws.org.
42. AWWA - American Water Works Association; www.awwa.org.
43. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
44. BIA - Brick Industry Association (The); www.gobrick.com.
45. BICSI - BICSI, Inc.; www.bicsi.org.
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.org.
47. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bissc.org.
49. CDA - Copper Development Association; www.copper.org.
50. CE - Conformite Europeenne; http://ec.europa.eu/growth/single-market/ce-marking/
51. CEA - Canadian Electricity Association; www.electricity.ca.
52. CEA - Consumer Electronics Association; www.ce.org.
53. CFFA - Chemical Fabrics and Film Association, Inc.; www.chemicalfabricsandfilm.com.
54. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
55. CGA - Compressed Gas Association; www.cganet.com.
56. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
57. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
58. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
59. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
60. CPA - Composite Panel Association; www.pbmdf.com.
61. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
62. CRRC - Cool Roof Rating Council; www.coolroofs.org.
63. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
64. CSA - CSA Group; www.csa.ca.
65. CSA - CSA International; (Formerly: IAS - International Approval Services); www.csa-international.org.
66. CSI - Construction Specifications Institute (The); www.csinet.org.
67. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.
69. CWC - Composite Wood Council; (See CPA).

70. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
71. DHI - Door and Hardware Institute; www.dhi.org.
72. ECA - Electronic Components Association; (See ECIA).
73. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
74. ECIA - Electronic Components Industry Association; www.eciaonline.org.
75. EIA - Electronic Industries Alliance; (See TIA).
76. EIMA - EIFS Industry Members Association; www.eima.com.
77. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
78. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org .
79. ESTA - Entertainment Services and Technology Association; (See PLASA).
80. ETL - Intertek (See Intertek); www.intertek.com.
81. EVO - Efficiency Valuation Organization; www.evo-world.org.
82. FCI - Fluid Controls Institute; www.fluidcontrolsinstitute.org.
83. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
84. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
85. FM Approvals - FM Approvals LLC; www.fmglobal.com.
86. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
87. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridaroof.com.
88. FSA - Fluid Sealing Association; www.fluidsealing.com.
89. FSC - Forest Stewardship Council U.S.; www.fscus.org.
90. GA - Gypsum Association; www.gypsum.org.
91. GANA - Glass Association of North America; www.glasswebsite.com.
92. GS - Green Seal; www.greenseal.org.
93. HI - Hydraulic Institute; www.pumps.org.
94. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
95. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
96. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
97. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
98. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
99. IAS - International Accreditation Service; www.iasonline.org.
100. IAS - International Approval Services; (See CSA).
101. ICBO - International Conference of Building Officials; (See ICC).
102. ICC - International Code Council; www.iccsafe.org.
103. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
104. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
105. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
106. IEC - International Electrotechnical Commission; www.iec.ch.
107. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
108. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
109. IESNA - Illuminating Engineering Society of North America; (See IES).
110. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
111. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
112. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
113. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.

114. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
115. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
116. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
117. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
118. ISO - International Organization for Standardization; www.iso.org.
119. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
120. ITU - International Telecommunication Union; www.itu.int/home.
121. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
122. LMA - Laminating Materials Association; (See CPA).
123. LPI - Lightning Protection Institute; www.lightning.org.
124. MBMA - Metal Building Manufacturers Association; www.mbma.com.
125. MCA - Metal Construction Association; www.metalconstruction.org.
126. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
127. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
128. MHIA - Material Handling Industry of America; www.mhia.org.
129. MIA - Marble Institute of America; www.marble-institute.com.
130. MMPA - Moulding & Millwork Producers Association; www.wmmpa.com.
131. MPI - Master Painters Institute; www.paintinfo.com.
132. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
133. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
134. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
135. NADCA - National Air Duct Cleaners Association; www.nadca.com.
136. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
137. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
138. NBI - New Buildings Institute; www.newbuildings.org.
139. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
140. NCMA - National Concrete Masonry Association; www.ncma.org.
141. NEBB - National Environmental Balancing Bureau; www.nebb.org.
142. NECA - National Electrical Contractors Association; www.necanet.org.
143. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
144. NEMA - National Electrical Manufacturers Association; www.nema.org.
145. NETA - InterNational Electrical Testing Association; www.netaworld.org.
146. NFHS - National Federation of State High School Associations; www.nfhs.org.
147. NFPA - National Fire Protection Association; www.nfpa.org.
148. NFPA - NFPA International; (See NFPA).
149. NFRC - National Fenestration Rating Council; www.nfrc.org.
150. NHLA - National Hardwood Lumber Association; www.nhla.com.
151. NLGA - National Lumber Grades Authority; www.nlga.org.
152. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
153. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
154. NRCA - National Roofing Contractors Association; www.nrca.net.
155. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
156. NSF - NSF International; www.nsf.org.
157. NSPE - National Society of Professional Engineers; www.nspe.org.

158. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
159. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
160. NWFA - National Wood Flooring Association; www.nwfa.org.
161. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
162. PDI - Plumbing & Drainage Institute; www.pdionline.org.
163. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); http://www.plasa.org.
164. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
165. RFCI - Resilient Floor Covering Institute; www.rfci.com.
166. RIS - Redwood Inspection Service; www.redwoodinspection.com.
167. SAE - SAE International; www.sae.org.
168. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
169. SDI - Steel Deck Institute; www.sdi.org.
170. SDI - Steel Door Institute; www.steeldoor.org.
171. SEFA - Scientific Equipment and Furniture Association (The); www.sefalabs.com.
172. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
173. SIA - Security Industry Association; www.siaonline.org.
174. SJI - Steel Joist Institute; www.steeljoist.org.
175. SMA - Screen Manufacturers Association; www.smainfo.org.
176. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
177. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
178. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
179. SPIB - Southern Pine Inspection Bureau; www.spib.org.
180. SPRI - Single Ply Roofing Industry; www.spri.org.
181. SRCC - Solar Rating & Certification Corporation; www.solar-rating.org.
182. SSINA - Specialty Steel Industry of North America; www.ssina.com.
183. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
184. STI - Steel Tank Institute; www.steeltank.com.
185. SWI - Steel Window Institute; www.steelwindows.com.
186. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
187. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
188. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
189. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
190. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
191. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
192. TMS - The Masonry Society; www.masonrysociety.org.
193. TPI - Truss Plate Institute; www.tpinst.org.
194. TPI - Turfgrass Producers International; www.turfgrasssod.org.
195. TRI - Tile Roofing Institute; www.tileroofing.org.
196. UL - Underwriters Laboratories Inc.; http://www.ul.com.
197. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
198. USAV - USA Volleyball; www.usavolleyball.org.
199. USGBC - U.S. Green Building Council; www.usgbc.org.
200. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
201. WA - Wallcoverings Association; www.wallcoverings.org

202. WASTEC - Waste Equipment Technology Association; www.wastec.org.
203. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
204. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
205. WDMA - Window & Door Manufacturers Association; www.wdma.com.
206. WI - Woodwork Institute; www.wicnet.org.
207. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
208. WWPA - Western Wood Products Association; www.wwpa.org.

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut fur Normung e.V.; www.din.de.
2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
3. ICC - International Code Council; www.iccsafe.org.
4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; www.usace.army.mil.
2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
4. DOD - Department of Defense; www.quicksearch.dla.mil.
5. DOE - Department of Energy; www.energy.gov.
6. EPA - Environmental Protection Agency; www.epa.gov.
7. FAA - Federal Aviation Administration; www.faa.gov.
8. FG - Federal Government Publications; www.gpo.gov/fdsys.
9. GSA - General Services Administration; www.gsa.gov.
10. HUD - Department of Housing and Urban Development; www.hud.gov.
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
13. SD - Department of State; www.state.gov.
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
18. USP - U.S. Pharmacopeial Convention; www.usp.org.
19. USPS - United States Postal Service; www.usps.com.

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and

regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).
5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.

    a. Available from Defense Standardization Program; www.dsp.dla.mil.
    b. Available from General Services Administration; www.gsa.gov.
    c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.

6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; www.access-board.gov.
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
3. CDHS; California Department of Health Services; (See CDPH).
4. CDPH; California Department of Public Health; Indoor Air Quality Program; www.cal-iaq.org.
5. CPUC; California Public Utilities Commission; www.cpuc.ca.gov.
6. DSA; Division of the State Architect, California, www.dgs.ca.gov/dsa/.
7. SCAQMD; South Coast Air Quality Management District; www.aqmd.gov.
8. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservice.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to Architect,, Project Inspector, testing agencies, and authorities having jurisdiction.

B. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

2.2 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain-link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

C. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

3.4 SUPPORT FACILITIES INSTALLATION

A. Comply with the following:

1. Provide construction for shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
2. Utilize designated area within existing building for temporary field offices.
3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of Owner's existing site for construction personnel.

D. Storage and Staging: Use designated areas of Project site for storage and staging needs.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to authorities having jurisdiction.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
   1. Refer to Specification Section 320191 “Tree Protection & Root Pruning” for additional requirements.

F. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

   1. Extent of Fence: As required to enclose Project sites or portion determined sufficient to accommodate construction operations.

G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

   1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
   2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
   3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

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SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Installation of the Work.
3. Cutting and patching.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the site.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.4 PREINSTALLATION MEETINGS

A. Cutting and Patching Conference: Conduct conference at Project site.

1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting

and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:

a. Contractor's superintendent.
b. Trade supervisor responsible for cutting operations.
c. Trade supervisor(s) responsible for patching of each type of substrate.
d. Mechanical, electrical, and utilities subcontractors' supervisors, to the extent each trade is affecting by cutting and patching operations.

2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.6 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities,**mechanical and electrical systems,** and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control

of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect and Construction Manager when deviations from required lines and levels exceed allowable tolerances.
6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Play Equipment Lines and Levels: Locate and lay out control lines and levels for structures, foundations. Transfer survey markings and elevations for use with control lines and levels. Level foundations from two or more locations.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

H. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.5 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Proceed with patching after construction operations requiring cutting are complete.

F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as

practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. List of incomplete items (Punch List).
4. Warranties.
5. Final cleaning.
6. Repair of the Work.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number.
5. Submit testing, adjusting, and balancing records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of **10** days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial

Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.
5. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect and Owner.
    d. Name of Contractor.

e. Page number.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within **15** days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit **by** email to Architect and Owner.

E. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Sweep concrete floors broom clean in unoccupied spaces.
h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
j. Remove labels that are not permanent.
k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.

o. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
p. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
1. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal:
1) Submit PDF electronic files of scanned record prints.
2) Submit Record Digital Data Files.
3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:
1) Submit PDF electronic files of scanned Record Prints with markups.
2) Print each drawing, whether or not changes and additional information were recorded.

1.3 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued, or a digital version of plans readily viewable on site.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
    1) Including shop drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
    a. Markings can be maintained by marking up a PDF of the construction documents. Do not flatten markups to allow for ease of searching.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Contractor.

1.4 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible

condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

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SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:
1. Removal of existing concrete pavement and base
2. Removal of existing play sand
3. Removal of existing play equipment, surfacing, footings and edge restraints
4. Removal of existing asphalt pavement base
5. Removal of objectional material and site elements to the limits indicated in the project plans

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.
3. Section 31 10 00 "Site Clearing" for site clearing and removal of above- and below-grade improvements not part of selective demolition.
4. Section 320191 "Tree Protection & Root Pruning" for protection of existing trees that are affected by selective demolition.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner as indicated.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage; prepare for reuse; and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed.

E. Protect in Place: Existing items of construction that are to be protected from damage in place.

F. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.
1. Owner has first right to all demolished materials.

1.4 INFORMATIONAL SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
   2. Interruption of utility services. Indicate how long utility services will be interrupted.
   3. Coordination for shutoff, capping, and continuation of utility services.

B. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations.

1.5 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1.6 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials:

   1. It is not expected that hazardous materials will be encountered in the Work.
      a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

D. On-site sale of removed items or materials is not permitted.

E. Utility Service: Maintain existing utilities not indicated for removal in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
   1. Mark up Project Record Documents to document discrepancies relevant to project scope.

C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.

3.2 PREPARATION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.3 UTILITY SERVICES AND BUILDING SYSTEMS

A. Existing Services/Systems to Remain: Maintain utilities and campus systems and equipment to remain and protect against damage during selective demolition operations.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

   1. Proceed with selective demolition systematically.
   2. Neatly cut openings and holes plumb, square, and true to dimensions required.
   3. Comply with all applicable local and state regulations.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

   1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide

alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.

2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

B. Play Sand: Remove full depth of play sand, including all edge restraints. Remove any underlayment materials, such as filter fabric or plastic sheeting.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts. Removal shall include foundations and footings connected.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

E. Play Equipment & Surfacing: Remove play equipment, footings, play surfacing and base materials.

F. Asphalt: Sawcutting operations shall be performed to neat, straight lines to the limits shown on the plans. Existing base materials shall be removed and disposed of per 3.6 below.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site recycle or dispose of them in accordance with Ventura County waste disposal and recycling requirements.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Form-facing material for cast-in-place concrete.
2. Shoring, bracing, and anchoring.

B. Related Requirements:

1. Section 03 30 00 "Cast-in-place Concrete” for formwork related to all site concrete not referenced in other sections.
2. Section 32 32 13 "Concrete Walls" for formwork related to concrete walls.

1.3 DEFINITIONS

A. Form-Facing Material: Temporary structure or mold for the support of concrete while the concrete is setting and gaining sufficient strength to be self-supporting.

B. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction, movement, contraction, and isolation joints
c. Forms and form-removal limitations.
d. Shoring and reshoring procedures.
e. Anchor rod and anchorage device installation tolerances.

1.5 ACTION SUBMITTALS

A. Product Data: For each of the following:

1. Exposed surface form-facing material.
2. Form ties.
3. Form-release agent.

B. Shop Drawings: Prepared by, and signed and sealed by, a qualified professional engineer responsible for their preparation, detailing fabrication, assembly, and support of forms.

1. For exposed vertical concrete walls, indicate dimensions and form tie locations.
2. Indicate dimension and locations of construction and movement joints required to construct the structure in accordance with ACI 301.
3. Location of construction joints is subject to approval of the Construction Manager.
4. Indicate location of waterstops.
5. Indicate form liner layout and form line termination details.
6. Indicate proposed schedule and sequence of stripping of forms, shoring removal, and reshoring installation and removal.
7. Indicate layout of insulating concrete forms, dimensions, course heights, form types, and details.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing and inspection agency.

B. Field quality-control reports.

C. Minutes of preinstallation conference.

1.7 QUALITY ASSURANCE

A. Testing and Inspection Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Form Liners: Store form liners under cover to protect from sunlight.

B. Insulating Concrete Forms: Store forms off ground and under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

C. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.

B. Design, engineer, erect, shore, brace, and maintain insulating concrete forms in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design cross ties to transfer the effects of the following loads to the cast-in-place concrete core:

a. Wind Loads: As indicated on Drawings.

1) Horizontal Deflection Limit: Not more than 1/240 of the wall height.

2.2 FORM-FACING MATERIALS

A. As-Cast Surface Form-Facing Material:

1. Provide continuous, true, and smooth concrete surfaces.
2. Furnish in largest practicable sizes to minimize number of joints.
3. Acceptable Materials: As required to comply with Surface Finish designations specified in the project plans, Section 03 30 00 "Cast-In-Place Concrete, and as follows:

a. Plywood, metal, or other approved panel materials.
b. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

1) APA HDO (high-density overlay).
2) APA MDO (medium-density overlay); mill-release agent treated and edge sealed.
3) APA Structural 1 Plyform, B-B or better; mill oiled and edge sealed.
4) APA Plyform Class I, B-B or better; mill oiled and edge sealed.

2.3 RELATED MATERIALS

A. Reglets: Fabricate reglets of not less than 0.022-inch- thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

B. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or

debris.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

E. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
2. Form release agent for form liners shall be acceptable to form liner manufacturer.

F. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

PART 3 - EXECUTION

3.1 INSTALLATION OF FORMWORK

A. Comply with ACI 301.

B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 and to comply with the Surface Finish designations specified in Section 03 30 00 "Cast-In-Place Concrete" for as-cast finishes.

C. Limit concrete surface irregularities as follows:

1. Surface Finish-1.0: ACI 117 Class D, 1 inch.
2. Surface Finish-2.0: ACI 117 Class B, 1/4 inch.
3. Surface Finish-3.0: ACI 117 Class A, 1/8 inch.

D. Construct forms tight enough to prevent loss of concrete mortar.

1. Minimize joints.
2. Exposed Concrete: Symmetrically align joints in forms.

E. Construct removable forms for easy removal without hammering or prying against concrete surfaces.

1. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
2. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
3. Install keyways, reglets, recesses, and other accessories, for easy removal.

F. Do not use rust-stained, steel, form-facing material.

G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces.

1. Provide and secure units to support screed strips
2. Use strike-off templates or compacting-type screeds.

H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible.

1. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar.
2. Locate temporary openings in forms at inconspicuous locations.

I. Chamfer exterior corners and edges of permanently exposed concrete.

J. At construction joints, overlap forms onto previously placed concrete not less than 12 inches.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work.

1. Determine sizes and locations from trades providing such items.
2. Obtain written approval of Construction Manager prior to forming openings not indicated on Drawings.

L. Construction and Movement Joints:

1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Construction Manager.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.

    a. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.

5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings.

    a. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

M. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.

1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight-fitting panels, flush with inside face of form, and neatly fitted, so joints will not be apparent in exposed concrete surfaces.

N. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

O. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

P. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
4. Install dovetail anchor slots in concrete structures, as indicated on Drawings.
5. Clean embedded items immediately prior to concrete placement.

3.3 REMOVING AND REUSING FORMS

A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work.

1. Split, frayed, delaminated, or otherwise damaged form-facing material are unacceptable for exposed surfaces.
2. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints.

1. Align and secure joints to avoid offsets.
2. Do not use patched forms for exposed concrete surfaces unless approved by Construction Manager.

3.4 SHORING AND RESHORING INSTALLATION

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: District will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Inspect formwork for shape, location, and dimensions of the concrete member being formed.
2. Inspect insulating concrete forms for shape, location, and dimensions of the concrete member being formed.

END OF SECTION 03 10 00

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel reinforcement bars.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction contraction and isolation joints.
c. Steel-reinforcement installation.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Each type of steel reinforcement.

B. Shop Drawings: Comply with ACI SP-066:

1. Include placing drawings that detail fabrication, bending, and placement.
2. Include bar sizes, lengths, materials, grades, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports for concrete reinforcement.
3. For structural thermal break insulated connection system, indicate general configuration, insulation dimensions, tension bars, compression pads, shear bars, and dimensions.

C. Construction Joint Layout: Indicate proposed construction joints required to build the structure.

1. Location of construction joints is subject to approval of Architect.

1.4 INFORMATIONAL SUBMITTALS

A. Material Test Reports: For the following, from a qualified testing agency:

1. Steel Reinforcement:

a. For reinforcement to be welded, mill test analysis for chemical composition and carbon equivalent of the steel in accordance with ASTM A706/A706M.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage and to avoid damaging coatings on steel reinforcement.

1. Store reinforcement to avoid contact with earth.
2. Do not allow stainless steel reinforcement to come into contact with uncoated reinforcement.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.2 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A615/A615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

2.3 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection of In-Place Conditions:

1. Do not cut or puncture vapor retarder.
2. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.2 INSTALLATION OF STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for placing and supporting reinforcement.

B. Accurately position, support, and secure reinforcement against displacement.

1. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
2. Do not tack weld crossing reinforcing bars.

C. Preserve clearance between bars of not less than 1 inch, not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.

D. Provide concrete coverage in accordance with ACI 318.

E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

F. Splices: Lap splices as indicated on Drawings.

1. Bars indicated to be continuous, and all vertical bars to be lapped not less than 36 bar diameters at splices, or 24 inches, whichever is greater.
2. Stagger splices in accordance with ACI 318.
3. Weld reinforcing bars in accordance with AWS D1.4/D 1.4M, where indicated on Drawings.

3.3 JOINTS

A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement.
2. Continue reinforcement across construction joints unless otherwise indicated.
3. Do not continue reinforcement through sides of strip placements of floors and slabs.

B. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length, to prevent concrete bonding to one side of joint.

3.4 INSTALLATION TOLERANCES

A. Comply with ACI 117.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare test reports.

B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

C. Inspections:

1. Steel-reinforcement placement.

D. Manufacturer's Inspections: Engage manufacturer of structural thermal break insulated connection system to inspect completed installations prior to placement of concrete, and to provide written report that installation complies with manufacturer's written instructions.

END OF SECTION 03 20 00

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

    a. General Cast-in-Place Concrete
    b. Concrete Headers
    c. Concrete Trike Track

B. Related Requirements:

1. Section 03 10 00 "Concrete Forming and Accessories" for form-facing materials, form liners, insulating concrete forms, and waterstops.
2. Section 03 20 00 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.
3. Section 32 16 00 “Curbs and Sidewalks” for concrete curbs and sidewalks.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
2. Contractor's superintendent.
3. Independent testing agency responsible for concrete design mixtures.
4. Ready-mix concrete manufacturer.
5. Concrete Subcontractor.
6. Special concrete finish Subcontractor.

B. Review the following:

1. Special inspection and testing and inspecting agency procedures for field quality control.
2. Construction joints, control joints, isolation joints, and joint-filler strips.
3. Semirigid joint fillers.

4. Vapor-retarder installation.
5. Anchor rod and anchorage device installation tolerances.
6. Cold and hot weather concreting procedures.
7. Concrete finishes and finishing.
8. Curing procedures.
9. Forms and form-removal limitations.
10. Shoring and reshoring procedures.
11. Methods for achieving specified floor and slab flatness and levelness.
12. Floor and slab flatness and levelness measurements.
13. Concrete repair procedures.
14. Concrete protection.
15. Initial curing and field curing of field test cylinders (ASTM C31/C31M.)
16. Protection of field cured field test cylinders.

1.4 ACTION SUBMITTALS

A. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Aggregates.
5. Admixtures:

    a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.

6. Joint fillers.
7. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.
6. Slump limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Steel-fiber reinforcement content.
10. Synthetic micro-fiber content.
11. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
12. Include manufacturer's certification that permeability-reducing admixture is compatible with mix design.
13. Include certification that dosage rate for permeability-reducing admixture matches dosage rate used in performance compliance test.
14. Intended placement method.
15. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

a. Location of construction joints is subject to approval of the District Representative.

D. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.
5. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Bonding agents.
4. Adhesives.
5. Vapor retarders.
6. Semirigid joint filler.
7. Joint-filler strips.
8. Repair materials.

B. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Aggregates.
5. Admixtures:

a. Permeability-Reducing Admixture: Include independent test reports, indicating compliance with specified requirements, including dosage rate used in test.

C. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as an ACI-certified Flatwork Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an ACI Concrete Flatwork Technician with experience installing and finishing concrete, incorporating permeability-reducing admixtures.

1. Post-Installed Concrete Anchors Installers: ACI-certified Adhesive Anchor Installer.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.

1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor to be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

D. Field Quality-Control Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests to be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301.

1.8 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

1.9 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement sheet vapor

retarder/termite barrier material and accessories for sheet vapor retarder/ termite barrier and accessories that do not comply with requirements or that fail to resist penetration by termites within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, Type II/V , .
2. Fly Ash: ASTM C618, Class C or F.
3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.
4. Silica Fume: ASTM C1240 amorphous silica.

B. Normal-Weight Aggregates: ASTM C33/C33M, coarse aggregate or better, graded. Provide aggregates from a single source.

1. Alkali-Silica Reaction: Comply with one of the following:

a. Expansion Result of Aggregate: Not more than 0.04 percent at one-year when tested in accordance with ASTM C1293.
b. Expansion Results of Aggregate and Cementitious Materials in Combination: Not more than 0.10 percent at an age of 16 days when tested in accordance with ASTM C1567.
c. Alkali Content in Concrete: Not more than 4 lb./cu. yd. for moderately reactive aggregate or 3 lb./cu. yd. for highly reactive aggregate, when tested in accordance with ASTM C1293 and categorized in accordance with ASTM C1778, based on alkali content being calculated in accordance with ACI 301.

2. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
3. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Air-Entraining Admixture: ASTM C260/C260M.

D. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride in steel-reinforced concrete.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.

E. Water and Water Used to Make Ice: ASTM C94/C94M, potable

F. Color Pigment (if noted on plans): ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant

to lime and other alkalis.

2.3 REPAIR MATERIALS

A. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109/C109M.

2.4 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
4. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing admixture in pumped concrete, and concrete with a w/cm below 0.50.

2.5 CONCRETE MIXTURES

A. Class A : Normal-weight concrete used for footings, slab on grade, and walls.

1. Exposure Class: ACI 318 F0 S0 C1 .
2. Minimum Compressive Strength: 3000 psi at 28 days.
3. Maximum w/cm: 0.45 .
4. Slump Limit: 4 inches , plus or minus 1 inch .
5. Slump Flow Limit: 22 inches , plus or minus 1.5 inches .

6. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

B. Class B : Normal-weight concrete used for sidewalks, and headers.

1. Class 520-C-2500. Portland cement concrete per Standard Specifications for Public Works Construction Section 201-1.
2. Compressive Strength (28 Days): 2500 psi.
3. Maximum W/C Ratio at Point of Placement: 0.50.
4. Slump Limit: 5 inches, plus or minus 1 inch.
5. Solar Reflectance Index: Not less than 29.
6. Color Pigment (if noted on plans): Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved submittal.

2.6 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with

items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.4 JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Construction Manager.
2. Place joints perpendicular to main reinforcement.

    a. Continue reinforcement across construction joints unless otherwise indicated.
    b. Do not continue reinforcement through sides of strip placements of floors and slabs.

3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
4. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
7. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
8. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Dowel Plates: Install dowel plates at joints where indicated on Drawings.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify District Representative and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by District Representative in writing, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Level concrete, cut high areas, and fill low areas.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
6. Do not further disturb slab surfaces before starting finishing operations.

3.6 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:

1. ACI 301 Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.

    a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
    b. Remove projections larger than 1/4 inch.
    c. Patch tie holes.
    d. Surface Tolerance: ACI 117 Class B.
    e. Locations: Apply to concrete surfaces exposed to public view.

B. Related Unformed Surfaces:

1. At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a color and texture matching adjacent formed surfaces.
2. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.8 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.9 TOLERANCES

A. Conform to ACI 117.

3.10 JOINT FILLING

A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one month(s).
2. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.

D. Overfill joint, and trim joint filler flush with top of joint after hardening.

3.11 CONCRETE SURFACE REPAIRS

A. Defective Concrete:

1. Repair and patch defective areas when approved by District Representative.
2. Remove and replace concrete that cannot be repaired and patched to District Representative's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.

a. Limit cut depth to 3/4 inch.
b. Make edges of cuts perpendicular to concrete surface.
c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
d. Fill and compact with patching mortar before bonding agent has dried.
e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.

a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
b. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by District Representative.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.

a. Correct low and high areas.
b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.

a. Finish repaired areas to blend into adjacent concrete.

5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.

a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.

a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
d. Place, compact, and finish to blend with adjacent finished concrete.
e. Cure in same manner as adjacent concrete.

8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
b. Dampen cleaned concrete surfaces and apply bonding agent.
c. Place patching mortar before bonding agent has dried.
d. Compact patching mortar and finish to match adjacent concrete.
e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to District Representative's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to District Representative's approval.

3.12 FIELD QUALITY CONTROL

A. Special Inspections: District will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

B. Testing Agency: District will engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

1. Testing agency to be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
2. Testing agency to immediately report to District Representative, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
3. Testing agency to report results of tests and inspections, in writing, to District, District Representative, Contractor, and concrete manufacturer within 48 hours of inspections and tests.

    a. Test reports to include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:

        1) Project name.
        2) Name of testing agency.
        3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
        4) Name of concrete manufacturer.
        5) Date and time of inspection, sampling, and field testing.
        6) Date and time of concrete placement.
        7) Location in Work of concrete represented by samples.
        8) Date and time sample was obtained.
        9) Truck and batch ticket numbers.
        10) Design compressive strength at 28 days.
        11) Concrete mixture designation, proportions, and materials.
        12) Field test results.
        13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
        14) Type of fracture and compressive break strengths at seven days and 28 days.

C. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.

D. Inspections:

1. Headed bolts and studs.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing.
4. Curing procedures and maintenance of curing temperature.
5. Verification of concrete strength before removal of shores and forms from beams and slabs.
6. Batch Plant Inspections: On a random basis, as determined by District Representative.

E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M to be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

    a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing to be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M:

    a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests when concrete consistency appears to change.

3. Slump Flow: ASTM C1611/C1611M:

    a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests when concrete consistency appears to change.

4. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete; .

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

5. Concrete Temperature: ASTM C1064/C1064M:

    a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

6. Unit Weight: ASTM C567/C567M fresh unit weight of structural lightweight concrete.

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

7. Compression Test Specimens: ASTM C31/C31M:

    a. Cast and laboratory cure two sets of three 6-inch by 12-inch or 4-inch by 8-inch cylinder specimens for each composite sample.
    b. Cast, initial cure, and field cure two sets of three standard cylinder specimens for each composite sample.

8. Compressive-Strength Tests: ASTM C39/C39M.

    a. Test one set of three laboratory-cured specimens at seven days and one set of two specimens at 28 days.
    b. Test one set of three field-cured specimens at seven days and one set of two specimens at 28 days.
    c. A compressive-strength test to be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-

cured cylinders, Contractor to evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
11. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by District Representative but will not be used as sole basis for approval or rejection of concrete.
12. Additional Tests:

    a. Testing and inspecting agency to make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by District Representative.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by District Representative.

        1) Acceptance criteria for concrete strength to be in accordance with ACI 301, Section 1.6.6.3.

13. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
14. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

F. Measure floor and slab flatness and levelness in accordance with ASTM E1155 within 24 hours of completion of floor finishing and promptly report test results to District Representative.

3.13 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION 03 30 00

SECTION 05 52 13

EXTERIOR PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Exterior stainless steel railings.

1.3 COORDINATION

A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, removable sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Manufacturer's product lines of mechanically connected railings.
2. Fasteners.
3. Anchoring cement.
4. Metal finishes.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1.5 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect mechanical finishes on exposed surfaces of railings from damage by applying a strippable, temporary protective covering before shipping.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:
   a. Uniform load of 50 lbf/ ft. applied in any direction.
   b. Concentrated load of 200 lbf applied in any direction.
   c. Uniform and concentrated loads need not be assumed to act concurrently.
2. Infill of Guards:
   a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
   b. Infill load and other loads need not be assumed to act concurrently.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

1. Provide type of bracket with flange tapped for concealed anchorage to threaded hanger bolt and that provides 1-1/2-inch clearance from inside face of handrail to finished wall surface.

2.3 STAINLESS STEEL RAILINGS

A. Source Limitations: Obtain each type of railing from single source from single manufacturer.

B. Tubing: ASTM A554, Grade MT 304.

1.1 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select in accordance with AWS specifications for metal alloy welded.

1. For stainless steel railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout, complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.4 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations.

1. Clearly mark units for reassembly and coordinated installation.
2. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately.

1. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated.
2. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that are exposed to weather in a manner that excludes water.

1. Provide weep holes where water may accumulate.
2. Locate weep holes in inconspicuous locations.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Connections: Fabricate railings with welded or non-welded connections unless otherwise indicated.

H. Welded Connections: Cope components at connections to provide close fit or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove flux immediately.
4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #2 welds; good appearance, completely sanded joint.

I. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

1. Fabricate splice joints for field connection, using an epoxy structural adhesive, if this is manufacturer's standard splicing method.

J. Form changes in direction as follows:

1. By bending.

2. By bending to smallest radius that will not result in distortion of railing member.

K. Bend members in jigs to produce uniform curvature for each configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

L. For railing posts set in concrete, provide removable high density polyethylene (HDPE) sleeves or stainless steel sleeves not less than 8 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with integral bottom closure of matching material.

a. HDPE basis of design: CreteSleeve

1) Or. Equal.

M. Wheel Guide Edge Protection: Where indicated, provide wheel guide edge protection at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

N. STAINLESS STEEL FINISHES

1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

2. Stainless Steel Pipe and Tubing Finishes:

a. 180-Grit Polished Finish: Uniform, directionally textured finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine concrete pavement, to receive anchors, to verify that locations of concealed reinforcements are clearly marked for Installer. Coordinate installation of handrail with concrete stair installation.

3.2 INSTALLATION, GENERAL

A. Perform cutting, drilling, and fitting required for installing railings.

1. Fit exposed connections together to form tight, hairline joints.
2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
4. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

3.3 RAILING CONNECTIONS

A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article, whether welding is performed in the shop or in the field.

3.4 ANCHORING POSTS

1. Use removable high density polyethylene sleeves for installing posts. After posts are inserted into void, fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.

2. Leave anchorage joint exposed with buildup, sloped away from post.

3.5 CLEANING

A. Clean by washing thoroughly with clean water and soap and rinsing with clean water.

3.6 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period, so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 52 13

SECTION 11 68 13
PLAYGROUND EQUIPMENT AND STRUCTURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes installation of owner-furnished, contractor installed (OFCI) playground equipment and amenities, including:
   1. Playground equipment
   2. Playground benches

B. Related Requirements:
   1. Section 033000 "Cast-in-Place Concrete"
   2. Section 321816.13 “Playground Protective Surfacing”

1.03 DEFINITIONS

A. Definitions in ASTM F1487 apply to Work of this Section.
B. IPEMA: International Play Equipment Manufacturers Association.

1.04 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer manufacturer and testing agency.
B. Product Certificates: For each type of playground equipment.
C. Sample Warranty: For manufacturer's special warranties.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by the manufacturer.
   1. Installers must have a current manufacturer’s Factory Certification and at least 1 staff member CPSI certified. Installers must have completed projects of this size from the manufacturer in the past 2 years.

1.08 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of playground equipment that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures.
      b. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
   2. Warranty Period: Per specific manufacturer.

PART 2 - PRODUCTS

2.01 OWNER-FURNISHED, CONTRACTOR INSTALLED PLAY EQUIPMENT

1. Manufacturer:

a. Park & Play Structures. Contact Kathy Wiggins at 661.964.7626. kathy.wiggins@playandpark.com
   1) Park & Play Structures Color: TK/K Playground 'Unity Color Palette'; 1st-5th Playground 'Secret Cove Color Palette.'
b. TK/K Double WaterWay, Item PE-1 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #MEC049
c. TK/K Pretend Playhouse (Bungalow Playhouse), Item PE-2 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #55297
d. TK/K Presto, Item PE-4 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #68129
e. TK/K Music Butterfly (Freenotes), Item PE-5 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #BFLY-0-IG
f. TK/K Music Flower (Freenotes), Item PE-6 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #FWR-T-IG
g. TK/K Pretend Market (Market Playhouse), Item PE-7 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #65303
h. TK/K Climb & Discover Cave, Item PE-8 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #67994
i. TK/K Sensory Totem, Item PE-9 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #YP446
j. TK/K Large Wheelchair Accessible Play Structure, Item PE-10 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #821-176089A.
k. TK/K Group Swing (Flying Saucer Swing), Item PE-11 on Sheet LC-0.01 of the Contract Plans.
   1) Model: 65283
l. TK/K Activity Meters, One (1) meter with two-sided twist bearing and One (1) meter with two sided bells, Item PE-12 on Sheet LC-0.01 of the Contract Plans.
   1) Models: #68115, #7361, #7315.
m. TK/K Pretend Car (Mini Car), Item PE-13 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #M59012
n. 1st-5th Wheelchair Accessible Play Structure, Item PE-15 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #821-176092A
o. 1st-5th Lilypad Cymbals (Freenotes), Item PE-16 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #LPAD-IG-STL
p. 1st-5th Curved Chimes, Item PE-17 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #68131.
q. 1st-5th Sensory Totem, Item PE-18 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #YP446.
r. 1st-5th Activity Meters, One (1) meter with two-sided hourglass and One (1) meter with two-sided piano with adaptive switch port, Item PE-19 on Sheet LC-0.01 of the Contract Plans.
   1) Model: #68115, #7352 and #7344.

s. 1st-5th Music Combo, Harmony, Deep Kettle Drum and Cadenza Al, Item PE-20 on Sheet LC-0.01 of the Contract Plans.
1) Model: #71995, #71424 and #71997.
t. 1st-5th Triple Bay 8 ft. Arch Swing with TweenMates Swings, Tween Swing and Made-for-Me Swings, Item PE-21 on Sheet LC-0.01 of the Contract Plans.
1) Model: #67558/68035/65215, #65179, #65169 and #67915.
u. 1st-5th Groupe See-Saw (Four 4 All Rocker), Item PE-22 on Sheet LC-0.01 of the Contract Plans.
1) Model: #65285.
v. 1st-5th Climber (Pinnacle Dome), Item PE-23 on Sheet LC-0.01 of the Contract Plans.
1) Model: #65166.

2. Manufacturer:
a. Kompan. Contact Cass Robertson at 747.373.1205. casrob@kompan.com
1) Kompan Structures Color: Robinia Turquoise Roof, Wood Base.
b. TK/K Elevated Sand Box (Splash Table), Item PE-3 on Sheet LC-0.01 of the Contract Plans.
1) Model: #NRO506
c. TK/K Gas Station with 2 Pumps, Item PE-14 on Sheet LC-0.01 of the Contract Plans.
1) Model: #NRO513

2.02 OWNER-FURNISHED, CONTRACTOR INSTALLED AMENITIES / SIGNAGE

1. Manufacturer:
a. Park & Play Structures. Contact Kathy Wiggins at 661.964.7626. kathy.wiggins@playandpark.com
1) Park & Play Structures Color: TK/K Playground ‘Unity Color Palette’; 1st-5th Playground ‘Secret Cove Color Palette.’
b. Music Bench, Item A-1 on Sheet LC-0.01 of the Contract Plans.
1) Model: # SF-326

2.03 FABRICATION

A. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.04 CAST-IN-PLACE CONCRETE

1. Concrete Materials and Properties: Class A per Section 033000 "Cast-in-Place Concrete"

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for earthwork, subgrade elevations, surface and subgrade drainage, and other conditions affecting performance of the Work.
1. Do not begin installation before final grading required for placing playground equipment and protective surfacing is completed.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's written installation instructions for each equipment type unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.
   1. Maximum Equipment Height: Coordinate installed fall heights of equipment with finished elevations and critical-height values of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade soil.

C. Post Set with Concrete Footing: Comply with Section 033000 "Cast-in-Place Concrete" for measuring, batching, mixing, transporting, forming, and placing concrete.
   1. Set equipment posts in concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.
      a. Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
   2. Embedded Items: Follow equipment manufacturer's written instructions and drawings to ensure correct installation of anchorages for equipment.
   3. Finishing Footings: Smooth top, and shape to shed water.

3.03 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Playground equipment items will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports.

D. Notify Architect and Owner 48 hours in advance of date(s) and time(s) of testing and inspection.

END OF SECTION 11 68 13

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Stripping and stockpiling rock.
6. Removing above- and below-grade site improvements.
7. Disconnecting, capping or sealing, irrigation appurtenances
8. Surface or underground utilities shall be Protected in place unless otherwise noted and shall be adjusted to Match new finish grade where necessary.
9. Temporary erosion and sedimentation control.

B. Related Requirements:

1. Section 02 41 19 "Selective Demolition" for demolition of existing site improvements not defined herein.
2. Section 32 01 91 “Tree Protection and Root Pruning for existing tree protection not defined herein.

1.2 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated according to requirements in Section 32 01 91 "Tree Protection & Root Pruning".

F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.3 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings and note on a site plan the location(s) of any damaged tree(s).

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.5 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

E. Tree- and Plant-Protection Zones: Protect according to requirements in Section 32 01 91 "Tree Protection & Root Pruning."

PART 2 - PRODUCTS
PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 32 01 91 "Tree Protection & Root Pruning."

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to the project Erosion Control Plans and Details. All activities will conform to California state water resources control board NPDES permit no. CAS000002 and California storm water best management practices handbook.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

E. Erosion Control Protocol

1. Where possible, erosion control measures shall be installed prior to work beginning. Erosion and sediment control features shall be utilized during and immediately after grading to minimize impacts associated with erosion and offsite siltation.
2. Construct straw bale/filter fabric barriers, backed by wire fencing for strength, around spoil piles to contain sediment from runoff. Install these barriers prior to any stockpiling during the rainy season and immediately after stockpiling during the dry season and shall be regularly maintained, including during major rainfall events, until the stockpiles are completely removed.
3. After construction, place erosion control matting on disturbed slopes greater than 5:1 (20%), over seeding and mulching.
4. Construct straw bale or filter fabric barriers at the base of disturbed slopes, for a minimum of two months following slope completion (or until the end of the rainy season, whichever is longer), to reduce short-term erosion impacts prior to plant growth.
5. Construct water bars, filter fabric fencing, or rice wattles at 50-foot intervals on slopes greater than 5:1 (20%)
6. Stockpile sandbags in parkway areas for rapid placement in the event of a storm.
7. Except as otherwise directed by the Engineer, all drainage devices shown shall be in place at the end of each working day when the forecast of rain probability is 40% or greater and maintained during the rainy season (October 1 to April 15)
8. Approved erosion control devices must be in place during the above stated period.
9. Clean out mud and silt after each rain or as directed by the Engineer.

3.3 TREE AND PLANT PROTECTION

A. Protect trees and plants remaining on-site according to requirements in Section 01 56 39 "Temporary Tree and Plant Protection."

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 01 56 39 "Temporary Tree and Plant Protection."

3.4 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
3. Use only hand methods or air spade for grubbing within protection zones.
4. Chip removed tree branches and dispose of off-site.

B. Perennial Weed Abatement.

1. At the beginning of work, a non-selective herbicide shall be sprayed per manufacturer’s recommendations. Contractor shall mix dye with the herbicide to ensure adequate coverage. The sprayed weeds and plants shall be left intact for a minimum of 15 days. The plants to be removed shall then be mechanically removed and grubbed to a depth of at least 4” below the finished surface. Herbicide must be approved by the District Representative.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to a depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 48 inches.
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.6 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials.

Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 31 10 00

SECTION 31 20 00

EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Preparing and grading sub grades for slabs-on-grade, walks, pavements, structures, and landscaping.
2. Excavating and backfilling for structures.
3. Base course for walks and pavements.
4. Subsurface drainage backfill for walls and trenches.
5. Excavating and backfilling for underground utilities and appurtenances.
6. Excavating of play surfacing and compaction of soil.

B. Related Sections: The following Sections contain requirements that relate to this Section.

1. Section 03 30 00 "Cast-In-Place Concrete" for concrete encasings, cradles, and appurtenances for utility systems.
2. Section 31 10 00 “Site Clearing” for site stripping, grubbing, topsoil removal.
3. Section 32 01 91 “Tree Protection and Root Pruning for existing tree protection not defined herein.
4. Section 32 91 13 “Soil Preparation” for finish grading, including placing and preparing topsoil for planting.

1.3 REFERENCES

A. Perform all work in accordance with applicable provisions of "Standard Specifications for Public Works Construction", Latest Edition. Unless otherwise noted, mention herein of section numbers refers to sections of the Reference Specification. Where Reference Specification is in conflict with these Specifications, these Specifications shall govern.

1.4 DEFINITIONS

A. Excavation consists of the removal of material encountered to subgrade elevations and the re-use or disposal of materials removed.

B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below aggregate base, drainage fill, or topsoil materials.

C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available

from excavations.

D. Base Course: The layer placed between the subgrade and surface pavement in a paving system.

E. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.

F. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Landscape Architect or Engineer. Unauthorized excavation, as well as remedial work directed by the Landscape Architect or Engineer, shall be at the Contractor's expense.

G. Structures: Buildings, footings, play structures, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

H. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

I. Compaction: Any method of mechanically stabilizing a material by increasing its density at a controlled moisture condition. "Degree of Compaction" is expressed as a percentage of the maximum dry density obtained by the test procedure described in ASTM D 1557 for general soil types abbreviated in this Specification as "90 percent of maximum dry density".

J. Hard Material: Weathered rock, dense consolidated deposits or conglomerate materials which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

K. Lift: A layer or course of soil placed on top of previously prepared or placed soil in a fill or embankment.

L. Unsatisfactory Material: Soil or other material identified as having insufficient strength or stability to carry intended loads without excessive consolidation or loss of stability.

1.5 SUBMITTALS

A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.

1. Location of borrow materials.

B. Photographs or video tape of existing adjacent structures and site improvements.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork in compliance with applicable requirements of governing authorities having jurisdiction.

1. Standard Specifications for Public Works Construction (SSPWC), latest edition.
2. CAL/OSHA Construction Safety Order Requirements.

B. Pre-installation Conference: Conduct conference at Project site to comply with requirements of

Division 1.

1. Before commencing earthwork, meet with representatives of the governing authorities, Owner, Landscape Architect, consultants, independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

1.7 PROJECT CONDITIONS

A. The Contractor shall visit the site and familiarize himself with existing site conditions.

B. Additional test borings and other exploratory operations may be made by the Contractor at no cost or liability to the Owner.

C. Existing Utilities: Do not interrupt existing utilities except when permitted in writing by the utility owner and then only after acceptable temporary utility services have been provided.

1. Provide a minimum 48-hours' notice to the utility owner and receive written notice to proceed before interrupting any utility.
2. Where uncharted or incorrectly charted piping or other utilities are encountered during excavation, consult the Owner and Engineer immediately for direction. Cooperate with the Owner and the Engineer in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of the Owner at no cost to the Owner.
3. Contractor to coordinate with the District 's Representative to obtain all required permits and schedule inspections.

D. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.

E. Groundwater elevations that may be indicated are those existing at the time that subsurface investigations were made and do not necessarily represent groundwater elevations at the time of construction.

F. Protection of Subgrade: Do not allow equipment to pump, rut, or disturb subgrade, stripped areas, or other areas prepared for Project. If pumping soils are encountered, the Contractor shall be responsible for properly stabilizing the subgrade at the direction of the Inspector.

G. Contractor shall implement measures to prevent soil erosion, and where possible, sediment shall be retained onsite.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.

B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

D. Backfill and Fill Materials: Satisfactory soil materials.

E. Base Material: Shall conform to crushed aggregate base or crushed miscellaneous base in accordance with section 200-2.2 or 200-2.4, respectively, of SSPWC, and compacted to at least 95% of the maximum dry density as determined by ASTM Test Method D 1557.

F. Engineered Fill: Well graded granular soil with an expansion index less than 20 and free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

G. Bedding Material: Shall be base materials with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve; or clean sand classified in accordance with ASTM D 2487.

H. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2-inch sieve and not more than 5 percent passing a No. 8 sieve.

I. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 50 sieve.

J. Play Sand: The sand shall conform to ASTM C33 “fine aggregate concrete sand” requirements. A sieve analysis shall be performed in accordance with ASTM C 136, ASTM D 422, or approved equivalent method to demonstrate compliance with the gradation limits listed below. The sand shall be thoroughly washed to remove fines, dust, and deleterious materials prior to delivery. Fines passing the No. 200 sieve shall be non-plastic.

1. Sand Gradation Limits - Sieve Size (ASTM D422) Percent Passing (by weight)

Sieve Size	Min.	Max.
3/8 inch	100	100
#4	95	100
#8	80	100
#16	50	85
#30	25	60
#50	5	30
#100	0	10
#200	0	5

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick minimum, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 2'-6" deep.

1. Tape Colors: Provide tape colors to utilities as follows:

a. Red: Electric.
b. Yellow: Gas, oil, steam, and dangerous materials.
c. Orange: Telephone and other communications.
d. Blue: Water systems.
e. Green: Sewer systems.
f. White: Steam systems.

PART 3 - EXECUTION

3.1 GENERAL

A. In order to protect from sediment transfer or contamination from urban run-off during construction, at a minimum, the following grading and erosion control practices shall be followed:

1. If grading occurs during the rainy season (November through April), sediment traps, barriers, covers or other methods shall be used to reduce erosion and sedimentation.
2. Excavated materials shall not be deposited or stored where the material can be washed away by high water or storm run-off.
3. Grading operations on site shall be conducted so as to prevent damaging effects of sediment production and dust on the site and on adjoining properties.
4. When vegetation has to be removed on site, the methods shall be one that minimizes the erosive effects from the removal.
5. Exposure of soil to erosion by removing vegetation shall be limited to the area required for construction operations. The construction area shall be fenced to define the project.
6. Temporary mulching, seeding, or other suitable stabilization shall be used to protect areas during construction or other land disturbance activities on site.
7. Topsoil, removed from the surface in preparation for grading and construction activities on site is to be stored on or near the site and protected from erosion while grading operations are underway, provided that such storage may not be located where it would cause suffocation of root systems of trees to be preserved. After completion of such grading, topsoil is to be restored to exposed cut and fill embankments of building pads so as to provide a suitable base of seeding and planting.
8. Sediment basins, sediment traps, or similar control measures shall be installed before extensive clearing and grading operations begin for site development.
9. Water or dust palliatives shall be applied to exposed earth services as necessary to control dust emissions.
10. Re-vegetation or stabilization of exposed earth surfaces shall take place as soon as possible.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Tree protection is specified in the Section 32 01 91 Tree Protection & Root Pruning.

1. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where

such roots and branches obstruct new construction. Paint cuts over one inch in size with tree pruning compound. Care shall be taken so as not to scar any area of the tree's bark.

D. Prepare subgrade and place base materials in accordance with sections 301-1.2 and 301-2, respectively, of the Greenbook Reference Specification.

3.3 REMOVALS

A. Clear the site of trees, shrubs, and other vegetation, which is indicated to be removed. Refer to Sections 02 41 19 Selective Demolition and 31 10 00 Site Clearing.

B. Completely remove stumps, roots, and other debris to avoid problems with future utilities.

C. Use only hand methods for grubbing inside the drip line of trees indicated to be left standing.

D. Existing fills, soil containing debris, organics, pavement, or other unsuitable materials shall be excavated and removed prior to commencing grading operations. Demolition areas shall be cleared of old foundations, slabs, abandoned utilities, landscaping, and soils disturbed during the demolition process. Depressions or disturbed areas left from the removal of such material shall be replaced with compacted fill.

E. The limits and depths for removal of existing fill materials shall be evaluated by project soils engineer during grading.

F. Revegetation or stabilization of exposed earth surface shall take place as soon as possible.

G. Remove above-grade and below-grade improvements necessary to permit construction and other work as indicated.

H. Remove from site and legally dispose of off-site, existing fill materials, soil debris, or other unsuitable materials prior to commencing grading operations.

3.4 DEWATERING

A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

3.5 EXCAVATION

A. General: Shall be to the contours and dimensions indicated. Keep excavations free from water and debris while construction is in progress. Notify the Owner immediately in writing where it becomes necessary to remove hard, soft, weak, or wet material to a depth greater than indicated. Unless otherwise indicated, concrete placed below grade will be formed and excavations shall allow for placement and removal of forms. Side cuts shall be cribbed and shored as required.

B. Explosives: Do not use explosives.

C. Unclassified Excavation: Excavation is unclassified and includes excavation to required

subgrade elevations regardless of the character of materials and obstructions encountered.

3.6 STABILITY OF EXCAVATIONS

A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

B. Unshored Temporary Excavations: Unshored temporary excavations may be sloped back at 1 to 1 (horizontal to vertical) or flatter. Where sloped embankments are used, the tops of the slopes should be barricaded to prevent vehicles and storage loads within seven feet of the tops of the slopes. If the temporary construction slopes will be maintained during the rainy season, construct berms along the tops of the slopes where necessary to prevent run-off water from entering the excavation and eroding the slope faces.

3.7 EXCAVATION FOR STRUCTURES

A. A. Excavation Limits: Shall be to a tolerance of plus-or-minus 0.04 foot and shall extend laterally at a distance as defined in the project contract documents beyond the structure limits at the excavation level. Over-excavation side slopes may be vertical as long as they are no higher than allowed by the State of California Construction Safety Orders. If cut below depths indicated, excavations shall be filled with concrete when the foundations or footings are placed.

1. Excavations for Footings and Foundations:

a. Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.8 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements consistent with the project contract documents.

B. Cut surface under pavements to comply with cross-sections, elevations and grades as shown, within a tolerance of plus or minus 0.04 foot.

3.9 EXCAVATION FOR PLANTING AREAS

A. Conform to cross-sections, elevations and dimensions shown, within a tolerance of plus or minus 0.10 foot.

3.10 EXCAVATION FOR UTILITY TRENCHES

A. Excavation made with power-driven equipment is not permitted within two feet of any known utility or subsurface construction. For work immediately adjacent to or for excavations exposing a utility or other buried obstruction, use hand or light equipment excavation. Start hand or light equipment excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Support uncovered lines and other existing work affected by the excavation work of this Section until approval for backfill is granted by the Inspector. Immediately report damage to utility lines or subsurface construction to the Owner.

B. Where unidentified existing utilities are encountered, determine whether these are active or abandoned. Remove interfering portions of abandoned utilities and cap or plug open ends of pipe to remain. The cap or plug must seal the opening in such a manner that would permit remaining portions of the utility to be reactivated. Notify Owner for instructions on utilities which are determined to be active. Do not proceed without instructions, except to correct an immediate hazard or emergency condition. Relocation work performed on an active utility without obtaining prior approval from Owner shall be done at the Contractor's expense and liability.

C. In areas where compacted backfill has been placed, additional consolidation may occur after completion due to changes in moisture content and surcharge. Utility connections crossing this backfill, and improvements adjoining the building at the backfill line shall be installed taking into account this additional consolidation, or sufficient time shall be scheduled between backfilling operations and such improvements to allow this consolidation to take place. Damage to utilities or other improvements due to Contractor's negligence in regard to this paragraph shall be repaired at the Contractor's expense.

D. Protect newly backfilled areas and adjacent structures, slopes, or grades from traffic, erosion settlement, and any other damage. Repair and re-establish damaged or eroded grades and slopes and restore surface construction prior to acceptance.

E. Cutting Pavement, Curbs, and Gutters: Saw cut with neat, parallel, straight lines one foot wider than trench width on each side of trenches and one foot beyond each edge of pits. If an existing pavement joint or cracked area is within two feet outside of a designated sawcut line shown on the Drawings, removal and resurfacing shall be to that joint, and/or shall include the crack or cracked area, unless otherwise approved by Architect or Engineer.

F. Contractor shall pothole at all identifiable crossings of existing utilities prior to any trenching operations and provide the District Representative with a survey of the top elevations (and bottom elevations, if applicable), of possible interferences so that an evaluation of necessary adjustments to the current profile or alignment may be made. Additionally, the Engineer shall be given the opportunity to view possible conflicts in the field prior to providing revised designs.

G. Keep excavations free from water while construction is in progress.

H. Notify the Owner immediately in writing if it becomes necessary to remove rock or hard, unstable, or otherwise unsatisfactory material to a depth greater than indicated. Excavate large rock, boulders, and other unyielding material to an overdepth at least 6 inches below the bottom of the pipe, conduit, duct and appurtenances, unless otherwise indicated or specified. Over-excavate soft, weak, or wet excavations to an overdepth at least 12 inches below the bottom of the pipe, conduit, duct or appurtenances unless otherwise indicated or specified.

I. Excavate trenches to indicated slopes, lines, depths, and invert elevations.

J. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, except where sloping of sides is allowed. Sides of trenches shall not be sloped from the bottom of the trench up to the elevation of the top of the pipe. See plans for detail.

K. At the option of the Contractor, the excavations may be cut to an overdepth of not less than 4 inches and refilled to required grade as specified.

L. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid

point loading.

1. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
2. Dig bell holes and depressions for joints after trench has been graded. Dimension of bell holes shall be as required for properly making the particular type of joint to ensure that the bell does not bear on the bottom of the excavation.

3.11 STORAGE OF SOIL MATERIALS

A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.

1. Stockpile soil materials away from edge of excavations a minimum distance of 7 feet or depth of excavation, whichever is greater. Do not store within drip line of remaining trees.

3.12 BACKFILL

A. Backfill excavations promptly, but not before completing the following:

1. Acceptance of construction below finish grade.
2. Surveying locations of underground utilities for record documents.
3. Examination, testing, inspecting, and approval of underground utilities.
4. Concrete formwork removal.
5. Removal of trash and debris from excavation.
6. Removal of temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
8. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.
9. Protect excavations by methods required to prevent movements and/or loosening of soils providing lateral or vertical support to existing improvements.

3.13 FILL

A. In all excavations, use satisfactory excavated or borrow material sampled and tested by the District's Testing Laboratory.

B. Preparation: Remove vegetation, topsoil, debris, wet and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.

1. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.

C. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and re-compact to required density.

D. Place fill material in layers to required elevations for each location listed below.

1. Under grass, use satisfactory excavated or borrow soil material.

2. Under walks and pavements, use base material or satisfactory excavated or borrow soil material.
3. Under steps and ramps, use base material.
4. Under building slabs, use drainage fill material.
5. Under footings and foundations, use engineered fill.

E. Continual dust control, as required by the District, and in accordance with County Air Pollution Control District's Standards shall be required for the project construction.

F. Fill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance by District's Representative of construction below finish grade including, where applicable, waterproofing, and drainage pipe.
2. Examination, testing, approval and recording locations of underground utilities.
3. Removal of concrete formwork.
4. Removal of shoring and bracing and backfilling of voids with satisfactory materials.
5. Removal of trash and debris.
6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
7. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

3.14 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to minimum 3 percent above optimum moisture content for cohesive soils and to near optimum for cohesionless soils.

1. Do not place backfill or fill material on surfaces that are muddy, frozen or contain frost or ice.
2. When moisture content of exposed scarified soil and/or full material is below that sufficient to achieve recommended compaction, water shall be added to the soil and/or fill. While water is being added, soil shall be bladed and mixed to provide relatively uniform moisture content throughout material.
3. When moisture content of satisfactory soil material is too wet to compact to specified density remove and replace, or scarify and air-dry.

    a. Stockpile or spread and dry removed wet satisfactory soil material.

4. Jetting is not permitted for compaction.

3.15 COMPACTION

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area.

B. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

C. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly and thoroughly blade-mix during spreading along the full length of each structure. Blocky or chunky earth materials shall be broken down to pea-size or finer during processing and prior to application of compactive effort. Where imported soils are placed

adjacent to onsite fill material, the soil should be mixed to provide relative uniformity of material within the layer being placed. Keep rollers and other heavy equipment at least 18 inches from footings, foundations, piers and walls of buildings and accessory construction. Use mechanical and hand tampers weighing at least 90 pounds with a maximum face area of 48 inches square to compact backfill within 18 inches of construction and where access is restricted.

D. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D 1557.

1. For general site fills, compact each layer of backfill or fill material at 90 percent maximum dry density.
2. Under structures, steps, and pavements, scarify and compact the top 12 inches below subgrade at 95 percent maximum dry density.
3. Under walkways, scarify and compact the top 6 inches below subgrade at 90 percent maximum dry density.
4. Under unpaved areas, compact the top 6 inches below subgrade at 85 percent maximum dry density.
5. Topsoil, place in lifts no greater than 12” and loosely compact to 85 percent relative density.

3.16 IMPORT

A. Initial sample and testing shall be performed before importing material to the project site. Identify the location of the source site in addition to the address, name of the person and entity responsible for the source site.

B. Soil samples shall be tested by an independent approved testing laboratory that shall perform the required tests. Test results shall be provided noting if the tested materials passed or failed such tests and shall be furnished to the district and others as required. Report shall state material was tested in accordance with applicable provisions of the contract Documents, California Building Code. Upon the completion of the Work, the independent testing laboratory shall submit a verified report as required.

C. Upon completion of the import operations, provide the District a certification statement attesting that the imported material has been obtained from the identified and approved source site.

3.17 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between existing adjacent grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
3. If necessary, the Contractor's selected equipment and construction procedure shall be altered, changed or modified in order to meet the specified compaction requirements. Flooding and water jetting is prohibited.
4. Grading operations shall only be performed under the observation of the District’s Representative.
5. Grading operation shall be conducted so as to prevent damaging effects of sediment product and dust on the site and adjoining properties.
6. The exterior grades around building areas shall be sloped to drain away from the

buildings to prevent ponding of water adjacent to foundations.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 0.10 foot, unless otherwise indicated.
2. Concrete Walks: Plus or minus 0.05 foot.
3. Pavements:

a. Concrete: 0.02 foot minus, with no high spots.
b. Asphalt: 0.05 foot minus, with no high spots.

3.18 FIELD QUALITY CONTROL

A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.

1. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable.

a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as directed by the Inspector.

2. Footing Subgrade: At footing subgrades, perform at least one test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Inspector.
3. Paved Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2,000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
4. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 150 feet or less of trench, but no fewer than two tests. Not to exceed 18 inches in depth.

B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, re-compact and retest until required density is obtained at no additional cost to the District.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and re-establish grades to specified tolerances where completed or partially completed

surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace material to depth directed by the Inspector; reshape and re-compact at optimum moisture content to the required density.

C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

D. Earth materials and improvements constructed thereon shall be supported laterally and vertically, as needed, to prevent movements and deflections of same. Remediation and repair of loosened materials or movements of improvements shall be at the Contractor’s expense.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION 32 32 13

SECTION 32 01 91

TREE PROTECTION AND ROOT PRUNING

PART 1 - GENERAL

1.01 DESCRIPTION

This item shall consist of furnishing all labor, materials, tools, and equipment required to protect those trees and shrubs designated to remain on the site. Protection of designated trees shall include directing heavy construction work activity away from the protected trees Section includes the protection, trimming, and pruning of trees that interfere with, or are affected by, execution of the Work, whether temporary or new construction. Work under this Section consists of, but is not limited to, furnishing, and installing the following:

A. Protecting and maintaining existing trees and vegetation not specifically designated for removal, to remain.
B. Protection shall be extended to trees and/or vegetation located within or directly adjacent to the Project Site, whether the tree trunk and/or vegetation are located within the designated Limits of Work.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 31 10 00 Site Clearing
B. Section 32 84 00 Planting Irrigation
C. Section 32 90 00 Planting

1.03 SUBMITTALS

A. Product Data: For each type of product indicated, submit complete and legible materials list of items to be provided for Work described herein this Section.
B. Qualification Data: For tree service firm and arborist, ISA certification required.
C. Contractor shall provide site photographs or video, sufficiently detailed and described, of existing conditions of trees and vegetation, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing, tree pruning, or tree protection. Submit photographs or video recordings to the Owner's representative prior to commencement of Work.
D. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly pruned and repaired when damaged.
E. Schedule: The contractor shall submit complete detailed schedule and description of Work to be done within dripline of any existing trees designated to remain (including, but not limited to oak trees), including list of equipment to be used.
F. Submit schedule and description of proposed pruning and/or other remedial work to existing plant materials. Submit qualifications describing years of experience and list of similar projects completed for the following:
    a. A State of California licensed Pest Control Advisor shall propose application of all herbicides or pesticides.
    b. A Certified Arborist shall propose pruning of trees or other vegetation. The Certified Arborist shall have a minimum of five (5) year's post-certification experience performing pruning and observation work for projects of comparable size with trees of similar size and nature.
    c. Tree Pruning Company, and List of Certified Tree Workers, who will perform Work relating to requirements herein this Section. Tree Pruning Company shall have a minimum of five (5) years' experience specializing in performing the work of this Section for projects of comparable size with trees of similar size and nature.
G. Maintenance Recommendations: From certified arborist, for care and protection of trees affected by construction during and after completion of the Work.

H. Provide final log of work performed including any damage that occurred during construction and subsequent repairs.

1.04 QUALITY ASSURANCE

A. Tree Service Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to project site on a full-time basis during execution of the work.
B. Arborist qualifications: An arborist certified by the International Society of Arboriculture.
C. Tree Pruning Standards: Comply with ANSI A300 (Part 1), “Trees, Shrubs, and other Woody Plant Maintenance—Standard Practices (Pruning).”
D. Pre-installation Conference: Before starting tree protection and trimming, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.
E. Pruning and remedial work shall be done under the direct supervision of an ISA certified Arborist, in compliance with ISA and ANSI standards. Arborist shall be on Site continuously while existing trees or roots are being pruned or remedial work is being performed.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Materials for tree/vegetation protection barriers shall conform to the following requirements and AOBE:
   1. Mesh Construction Fencing by Conwed or Approved Equal (orange color)
   2. Cedar Posts (minimum length 6.0 feet)
   3. #14-gauge steel wire
   4. Nylon locking ties
B. Temporary Signs: White or yellow weatherproof material, 8 inch by 40-inch minimum, with 3- inch black letter: text – “Tree Protection Area – Do Not Enter” in English and Spanish.

PART 3 – EXECUTION

3.01 PREPARATION

A. Locate and clearly flag trees and vegetation to remain.
B. Protect existing site improvements to remain from damage during construction.
C. Temporary Fencing: Install temporary fencing around the tree protection zones designated on the plans or where directed by the engineer to protect remaining vegetation from construction damage. Maintain temporary fence and remove when construction is complete.
D. Temporary Signs: Install temporary signs 60 feet apart, or two per protected tree, whichever is greater, on posts of temporary fencing. Maintain temporary signs and remove when construction is complete.
E. The Contractor shall repair or replace any and all damaged plant material determined by the Certified Arborist to any existing or newly installed plant material at its own expense. Unnecessary damage to ground cover or turf shall be repaired or replaced as specified for restoration of similar areas within the plans, or as directed by the Certified Arborist, and shall be at the Contractor's expense.
F. Root Zone Protection: During the entire construction period all reasonable efforts shall be made to protect from damage those trees and their root system designated to remain. Around the trees to be protected, the Contractor shall avoid excessive excavation or compaction and damage during the removal of trees and shrubs designated to be removed. All plant material designated to be saved, or outside of the limits of construction, shall be protected during subsequent construction work. Work under these items will include construction and maintenance of temporary fencing to protect the root zones of existing trees and other plantings, construction, and maintenance of tree trunk protection.

A protection barrier or temporary fence of at least 4 feet in height shall be installed around each tree to be protected and preserved. The tree protection shall be installed prior to the actual construction start and maintained for the duration of the project.
Within this protection zone, construction materials shall not be stored, equipment operated and/or temporary storage buildings or work trailers placed.
The protection barrier shall be constructed of orange snow fencing securely fastened to fence posts spaced a maximum of 5 feet on center. Posts are 6 feet in length with 2 feet set into the ground and 4 feet extending above ground. The fencing shall be attached to the post with a minimum of four (4) nylon-locking ties evenly placed at each post. The protection barrier shall be installed plumb, taut, and sturdy to prevent unauthorized access around dripline of trees and protected vegetation. Repair sagging or damaged barriers immediately.
Immediately after barrier fencing is installed, cover entire soil area inside of the fence area with a four-inch (4") layer of mulch. Keep mulch eighteen inches (18") away from root crown. Irrigate protected trees and vegetation to a moist soil depth of eighteen inches (18") deep.
During the course of construction, relocation of the barrier fencing may be required to facilitate construction. Contractor shall relocate barrier fencing as directed by the District or his/her designated representative at no additional expense to the District.

E. Dimensions of the protection barrier are as follows:
   1. Small Trees (Less than 9" caliper at 4.5 ft) – Minimum 5 feet from face of tree.
   2. Medium Trees (10" to 15" caliper at 4.5 ft) – Minimum 10 feet from face of tree.
   3. Large Trees (Greater than 15" caliper at 4.5 ft) – Minimum 15 feet from face of tree.

   The Contractor shall be responsible to protect all trees from damage at the construction site. Any trees damaged as a result of construction activity as determined by the Certified Arborist shall be repaired, removed and/or replaced at the Contractor's expense. The Contractor shall pay liquidated damages in the amount of the appraised value of the tree(s). At a minimum, any tree greater than 4" D.B.H. that is permanently damaged due to the construction project and not originally marked for removal shall be replaced with a new tree as identified by the Owner and shall have a minimum of 4" caliper B&B. Any damaged tree smaller than 4" caliper measured 6" above the ground shall be replaced in kind, inch for inch.
F. Materials shall be disposed of in accordance with specifications.
G. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
H. Do not store construction materials, debris, or excavated material inside tree protection zones.
I. Do not permit vehicles or foot traffic within tree protection zones; prevent soil compaction over root systems.
J. Do not allow fires under or adjacent to remaining trees or other plants.
K. Irrigation: Contractor shall supply fresh, potable water in adequate amounts and rates of application as required to maintain the health of protected plant material throughout the duration of the construction operations. Contractor shall maintain a watering schedule and document dates and duration of irrigation applications.

3.02 EXCAVATION

A. All damage to existing trees by Contractor shall be repaired by a licensed tree surgeon or other approved personnel by the Owner at the expense of the Contractor.
B. Damage to a tree which results in death or permanent disfigurement shall result in the Contractor's complete removal of said tree, including roots, from the Site. The contractor shall, at the expense of the Contractor, replace the tree with one of equal value.
C. The Contractor shall ensure that no foreign material and/or liquid, such as paint, concrete, cement, oil, turpentine, acid or the like, be allowed to contaminate any soil within the dripline of any tree or shrub. If such contamination should occur, the Contractor shall remove the soil and replace it with acceptable soil at the expense of the Contractor.
D. Install shoring or other protective support systems to minimize shoring or benching of excavations.
E. Do not excavate within tree protection zones, unless otherwise indicated.
F. Where excavation for new construction is required within drip line of trees, hand clear and excavate

to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots. If the tree is an oak or sycamore tree, hand tools must be used if the work is within the protected zone and 5' beyond the dripline.

1. Relocate roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and relocate them without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical; cut roots approximately 3 inches back from new construction.
2. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect. Backfill with soil as soon as possible.
3. Do not allow heavy equipment in tree protection areas. All excavation work is to be performed by hand.

G. Root Pruning: Do not cut main lateral roots; cut only smaller roots that interfere with installation of utilities or construction. Cut roots with sharp pruning instruments; do not break or chop.
H. When excavating, place excavated soil on opposite side of trench from tree.

3.03 ROOT PRUNING

A. Root pruning shall take place only where the roots of existing trees have been damaged by the Contractor during construction of the Project, as directed by the Certified Arborist.
B. If construction is to occur within the root zone of existing plant material, root pruning and special plant care including fertilizing and watering will be required, as directed by the Certified Arborist, and hereinafter specified. Prior to root pruning, remove all weeds growing in existing tree mulch rings. Root pruning using an approved mechanical root pruning saw shall be performed prior to digging where noted on the plans or directed by the Certified Arborist. Air Spading excavation consisting of hand and/or pneumatic excavation may be required if indicated on plans or as directed by Certified Arborist. Whenever roots of plant material to remain are exposed during construction, the damaged root ends are to be removed by cutting them off cleanly.
C. Initial watering shall be performed on all trees, which are designated for root pruning. Water trees immediately by thoroughly saturating root balls and provide a horticultural watering bag, such as a Gator Bag or equivalent, filled with water to keep root balls thoroughly saturated during first three weeks following root pruning. Thereafter refill bags as required, according to weather conditions, to keep root balls in a moist condition during growing seasons, through the duration of the Project. Test root balls for optimal moisture once a week using a soil auger.
D. Contractor shall be responsible for location of all utilities prior to installation of trees. Notification of the local Utilities Alert Network is required for all planting sites.
E. All pruning shall be overseen by a professional arborist (someone whose principal occupation is the care and maintenance of trees). All pruning shall be done according to the National Arborist Association's Pruning Standards for Shade Trees Class 11 - Standard Pruning Specifications.
F. Any damage to the root zone, as determined by the Certified Arborist, will be compensated by pruning an equivalent amount of the top vegetative growth of the material within 1 week following root damage, fertilization, and supplemental watering.
G. Fertilize damaged trees with fertilizer that promotes root growth. Fertilizer nutrients shall be applied within 48 hours after root damage occurs. Fertilizer nutrients shall be applied within 48 hours after root damage occurs. A fertilizer with a 1: 1: 1 ratio shall be applied at the rate of .5 pounds of nutrients per 1000 square feet.
H. Application shall be accomplished by placing dry fertilizer in holes in the soil. The holes shall be 8 inches to 12 inches deep and spaced 24 inches apart in an area beginning 30 inches from the base of the plant. Holes can be punched with a punch bar, dug with a spade, drilled with an auger or any other method approved by the Certified Arborist.
I. Approximately 0.02 pounds of fertilizer nutrients shall be placed in each hole, 250 holes per 1000 square feet. Fertilizer Nutrients shall not be measured for payment but considered incidental to root pruning. If the Certified Arborist determines that the whole method of fertilizer placement is not practical or desirable, an approved method of uniform surface application will be allowed. Neither separate measurement nor payment will be made for fertilization but will be considered incidental to the cost of tree protection.

J. Supplemental water shall be applied within 48 hours of any root damage. The water shall be applied at the rate of 7 quarts per square yard of surface area within the root zone of plant material having sustained damage to the root zone. Root zone shall be calculated as the areas which extend three meters beyond the limits of the crown's branches. Subsequent weekly watering shall be applied if deemed necessary by the Certified Arborist. Neither separate measurement nor payment will be made for supplemental watering but will be considered incidental to the cost of tree protection.
K. The Contractor shall repair or replace any and all damage determined by the Certified Arborist to any existing or newly installed plant material at its own expense. Unnecessary damage to ground cover or turf shall be repaired or replaced as specified for restoration of similar areas within the plans, or as directed by the Certified Arborist, and shall be at the Contractor's expense.
L. Materials shall be disposed of in accordance with specifications.

3.04 REGRADING

A. Do not fill within tree protection zones, unless otherwise indicated.
B. Where filling for new construction is required within drip line of trees, perform work by hand to minimize damage to root systems.
   1. Where existing grade is below elevation of finish grade, fill with topsoil. Place topsoil by hand in a single uncompacted layer and hand grade to required finish elevations.

3.05 TREE PRUNING

A. Prune trees to remain that are affected by temporary and permanent construction.
B. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
C. Cut branches with sharp pruning instruments; do not break or chop.
   1. Clean all pruning instruments with antimicrobial solution between performing work on separate trees to avoid the potential spread of pathogens.
D. Chip removed tree branches and uses as organic mulch or dispose of off-site.
E. Provide pruning, cabling, and bracing, irrigation, pest and disease control and other remedial treatments as recommended by the certified Arborist, required to assure the long-term health of the trees and existing vegetation, and the safety of persons and property.

3.06 TREE REPAIR AND REPLACEMENT

A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
B. Remove and replace dead and damaged trees that arborist determines to be incapable of restoring to a normal growth pattern.
   1. Provide new trees of a 6-inch caliber size and of a species selected by Architect when damaged trees more than 6-inch caliber size, measured at breast height, are required to be replaced.
   2. Warranty and Maintenance Period: Ninety days (90).

3.07 DISPOSAL OF WASTE MATERIALS

A. Burning is not permitted.
B. Disposal: Remove excess excavated material, displaced trees, and excess chips from Owner's property. Disposal shall be in a legal manner.

END OF SECTION 32 01 91

SECTION 32 11 23

AGGREGATE BASE COURSES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:
   1. Aggregate base course for, but not limited to concrete flatwork, seatwalls, poured in place rubberized surfacing, and drainage as shown in the Contract Drawings.

B. Related Sections include the following:

1. Section 01 45 00 - Quality Control
2. Section 31 20 00 – Earth Moving
3. Section 31 23 17 - Trenching
4. Section 31 23 23 - Backfilling
5. Section 32 12 16 - Asphalt Paving
6. Section 32 16 00 - Concrete Paving

1.02 REFERENCE STANDARDS

A. *Standard Specification for Public Works Construction (SSPWC)*, Latest Edition
B. ASTM Standards.
C. State Standard Specifications (SSS), Caltrans, latest edition.

1.03 SUBMITTALS

A. Submit product data, samples, and manufacturing sources for materials. All product data shall also include source or manufacturer's name, address, and telephone numbers. Product submittals shall state the amount of recycled materials.
B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the requirements indicated, based on comprehensive testing of current materials.
C. Material Certificates in lieu of material laboratory test reports when permitted by the District. Material certificates shall be signed by the manufacturer and Contractor certifying that each material item complies with or exceeds requirements.
D. Submit samples in sufficient quantities for material testing.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Aggregate Base Material shall be Class 2 Aggregate Base conforming to SSS Section 26-1.02A. Aggregate Base shall have a minimum sand equivalence of 22 and a minimum R-value of 78 and shall be free of organic materials and other deleterious substances.
B. Aggregate Base materials used within building areas shall be free of asphaltic materials.

PART 3 - EXECUTION

3.01 GENERAL

A. Attention is directed to Section 301-2, “Untreated Base,” of the Greenbook.

3.2 EXAMINATION

A. Verify that subgrade is firm and unyielding, gradients and elevations are correct, area is at suitable moisture content with no standing water, and the Geotechnical Engineer has approved subgrade preparation prior to installation of aggregate base.

3.03 PREPARATION

A. Attention is directed to Section 301-1, “Subgrade Preparation,” of the Greenbook.
B. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
C. Do not place fill on soft, yielding, or muddy surfaces.

3.04 AGGREGATE PLACEMENT

A. Aggregate base placement shall conform to the provisions of the SSPWC, Section 301-2.
B. Place aggregate in maximum six-inch loose layers and roller compact to specified density.
C. Level and contour surfaces to elevations and gradients indicated. Attention is directed to Section 301-2, "Untreated Base" of the Greenbook.
D. Crushed aggregate base shall be compacted to a minimum of 95% relative compaction in accordance with the California Test Method 216 or ASTM D1557 at the Geotechnical Engineers direction.
E. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
F. Where the required aggregate base thickness is 6 inches or less, the watered base may be spread and compacted in one layer. Where the required thickness is more than 6 inches, the aggregate base material shall be spread and compacted in 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.
G. Maintain optimum moisture content of fill materials to attain required compaction density.
H. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
I. Aggregate base course shall be dense and unyielding upon proof-rolling with full water truck.

3.05 COMPACTION & TOLERANCES

A. Flatness: Maximum variation of ¼ inch.
B. Scheduled Compacted Thickness shall conform to the provisions of the SSPWC Section 301-2.2 and Section 301-2.3.

3.06 FIELD QUALITY CONTROL

A. Tests.
1. Inspection and testing shall be performed by the Owner’s Testing Laboratory.
2. Compaction testing will be performed in accordance with California Test Method 216 or ASTM D1557 at the Geotechnical Engineers direction.

3. When tests indicate Work does not meet specified requirements, remove, replace and retest work at no additional cost to the Owner.
4. Frequency of Tests: Compaction tests will be taken at the rate of one test for each 500 square yards per lift placed, or as directed by the Geotechnical Engineer, in accordance with the requirements of ASTM D2922 and ATM D3017. Areas represented by noncompliant tests shall be reworked and retested for compliance at the Contractor's expense.

END OF SECTION 32 11 23

SECTION 32 12 16

ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Asphaltic concrete paving for campus recreation.
B. Related Sections include the following:
1. Section 31 20 00 - Earthwork
2. Section 32 17 23 - Pavement Markings
3. Section 32 11 23 - Aggregate Base Courses

1.03 REFERENCES

A. Standard Specifications for Public Works Construction (SSPWC), Latest Edition.
B. ASTM Standards.

1.04 SUBMITTALS

A. Submit asphalt concrete mix design(s) for approval of the District.

1.05 TESTING AND INSPECTION

A. Testing and inspection of asphalt pavement mix(es) and testing of placed stabilizing base course and asphalt pavement will be performed by a laboratory chosen by the District. Testing and inspection will be performed so as to minimize disruption of work.
B. Allow the Testing Laboratory access to the mixing plant for verification of weights or proportions, character of materials used and determination of temperatures used in the preparation of asphaltic concrete mix.

1.06 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if substrate is wet or excessively damp or if the following conditions are not met:
1. Prime and Tack Coats: Minimum surface temperature of 60 deg F (15.5 deg C).
2. Slurry Coat: Comply with weather limitations of ASTM D 3910.
3. Asphalt Base Course: Minimum surface temperature of 40 deg F (4 deg C) and rising at time of placement.
4. Asphalt Surface Course: Minimum surface temperature of 60 deg F (15.5 deg C) at time of placement.

PART 2 - PRODUCTS

2.01 GENERAL

A. Provide the aggregate base, and bituminous surface conforming to the requirements of the standard specifications for public works construction (SSPWC).

2.02 PAVING MATERIALS

A. Asphalt Concrete: Asphalt concrete material shall be C2-PG 64-10 per SSPWC Section 203-6. The grading and proportioning of aggregates shall be such that the combined mineral aggregate conforms to the specified requirements.
B. Asphalt Emulsion: SSPWC Section 203-3, Grade SS-1h.
C. Prime Coat: Grade SC-70 per SSPWC Section 203-2.
D. Aggregates for base course shall conform to requirements of Specification Section 32 11 23, Aggregate Base Course.

2.03 ASPHALT PAVEMENT MIX

A. Combine mineral constituents in proportions to produce a mixture conforming to requirements of the SSPWC Section 203-6.
B. Percentage by weight of asphalt cement in mixture shall be in accordance with SSPWC Section 203-6.
C. Maintain thorough and uniform mixture.
D. Bring asphalt and mineral constituents to required temperatures before mixing. Ensure aggregates are sufficiently dry so as not to cause foaming in mixture.

PART 3 - EXECUTION

3.01 GENERAL

A. Execute work in accordance with SSPWC section 302.

3.02 PREPARATION

A. Ensure grading of subgrade to required elevation. Subgrade preparation shall be per SSPWC Section 301.
B. Before final rolling, shape entire section, add additional sub-soil if necessary, and compact subgrade to provide grades, elevation and cross-section indicated. Points of finished subgrade surface shall be within 0.04 foot of elevations indicated on the Drawings.

3.03 BASE COURSE

A. Place aggregate base in accordance with requirements of SSPWC section 301 and to the thickness shown on the drawings. Grade and compact in 6-inch layers to at least 95 percent of compaction (ASTM D1557).

B. Existing: Where existing asphalt is demolished and removed and existing base course is approved to be reused, grade and compact existing aggregate base course with additional base course aggregate as required to meet the requirements of SSPWC section 301 to at least 95 percent of compaction (ASTM D1557).

3.04 MAINTENANCE

A. Maintain the base course until the asphaltic pavement is in place. Maintenance shall include drainage, rolling, shaping and water as necessary to maintain the course in proper condition. Maintain sufficient moisture at the surface to prevent a dusty condition. Areas

of completed base course that are damaged shall be conditioned, reshaped and re-compacted in accordance with the requirements of the Specifications without additional cost to the District.

3.05 TACK COAT

A. Prior to the application of the asphalt concrete, a paint binder (tack coat) shall be applied to all surfaces of walkway, curbs, gutters, manholes and drainage structures which will be in contact with asphalt pavement per SSPWC Section 302-5.4.
B. Coat surfaces of catch basins which are to remain free of asphalt with oil, or provide equivalent protection, to prevent asphalt adhesion.

3.06 PRIME COAT

A. Prior to the application of the asphalt concrete, a prime coat shall be applied at a rate of 0.20 to 0.40 gallons per square yard.

3.07 ASPHALT CONCRETE

A. Requirements: The bituminous concrete shall consist of mineral aggregate, uniformly mixed with bituminous material in a central plant in accordance with SSPWC Section 203-6. The percentage of asphalt binder shall be in accordance with SSPWC Section 203-6. The mixing plant and construction equipment shall conform to the requirements of SSPWC Sections 203-6 and 302-5.
B. Placing: Deliver bituminous mixtures to the work site temperatures specified in SSPWC Section 302-5.5. Spread and place in accordance with SSPC Section 302-5.5. Asphalt surface shall be fog-sealed.
C. Compaction: Initial or breakdown rolling and the final rolling of the uppermost layer of the asphalt concrete shall be in accordance with SSPWC Section 302-5.6. Compaction by vehicular traffic shall not be permitted.

3.08 JOINING PAVEMENT

A. Carefully make joints between old and new pavements or between successive days work in such manner as to insure a continuous bond between old and new sections of the course in accordance with SSPWC Section 302.
B. Expose and clean edges of existing pavement. Cut edge to straight, vertical surfaces. Paint all joints with a uniform coat of tack coat before the fresh mixture is placed. Prepare joints in the new pavement in accordance with SSPWC Section 302-5.7.

3.09 JOINING NON-PAVED AREAS

A. Where paving will join landscape or other non-hardscape area a redwood header shall be installed.

3.10 TOLERANCES

A. Flatness: Maximum variation of 1/8 inch when measured with a 10-foot straight edge
B. Variation from True Elevation: Within 1/4 inch.

3.11 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by the District’s chosen Testing Laboratory.

B. Field inspection and testing will be performed by the Testing Laboratory. The Contractor shall cooperate with such testing and shall give the District advance notice of paving scheduling. Sufficient “Advance Notice” shall be determined by the District.
C. If tests indicate materials do not meet specified requirement, replace material and retest at no additional cost to the District.
D. Frequency of Test: As determined by the Testing Laboratory.

3.12 PROTECTION:

A. Immediately after placement, protect pavement from mechanical injury or damage. Should damage occur, Contractor shall remove and replace or repair at the expense of the Contractor.

3.13 QUALITY CONTROL

A. Perform the following contract conformance testing:

Material	**Test**	**Frequency**
Asphalt Concrete	Submit Load Tickets	Daily*
Asphalt Concrete	Field Temperature in Window	Record Hourly
Asphalt Concrete	California Test 375 (Relative Compaction)	Daily*

*Test Samples shall not represent more than 500 tons or 1 day’s production, whichever is less.

END OF SECTION 32 12 16

SECTION 32 16 00
CURBS AND SIDEWALKS

PART 1- GENERAL

1.01 SUMMARY

A. Concrete for sidewalks and concrete edge curbs.

1.02 RELATED SECTIONS

A. Section 03 30 00 – Cast-in-Place Concrete for concrete elements not covered herein.
B. Section 31 20 00 – Earthwork

1.03 REFERENCES

A. Standard Specifications for Public Works Construction (SSPWC), latest edition.
B. ASTM Standards.

1.04 SUBMITTALS

A. Submit the following:
   1. Product Data: Provide data on admixtures and curing compounds.
   2. Concrete mix design(s).
   3. Certificates from the batch plant.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with the SSPWC, latest edition; and ASTM Standards, latest edition.
B. Obtain cementitious materials from same source throughout.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete when base surface temperature is less than 40 degrees F or surface is wet.

PART 2- PRODUCTS

2.01 FORM MATERIALS

A. Form Materials: Section 303-5 of the SSPWC.

2.02 CONCRETE MATERIALS

A. Concrete Material for Curbs and Walks (Path of Travel):
   1. Class 520-C-2500. Portland cement concrete per Standard Specifications for Public Works Construction Section 201-1.
   2. Concrete reinforcements shall be constructed per the Project Plans and Specifications.
B. Concrete Material for Traffic Loaded Concrete:
   1. Class 650-CW-4000. Portland cement concrete per Standard Specifications for Public Works Construction Section 201-1.
   2. Concrete reinforcements shall be constructed per the Project Plans and Specifications.

2.03 ACCESSORIES

A. Curing Compound shall conform to SSPWC Section 201-4. Pigmented compound shall not demonstrate any residual coloring of the concrete after one week.

2.04 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94.
B. Use accelerating admixtures in cold weather only when approved by the District's Representative. Use of admixtures will not relax cold weather placement requirements.
C. Use calcium chloride only when approved by the District's Representative.

D. Use set retarding admixtures during hot weather only when approved by the District's Representative.

2.05 CONCRETE REINFORCEMENT

A. Concrete reinforcement shall conform to SSPWC Section 201-2.

2.06 SOURCE QUALITY CONTROL

A. Provide certificates of compliance from the batch plant.

PART 3- EXECUTION

3.01 EXAMINATION

A. Verify compacted subgrade is acceptable and ready to support imposed loads.
B. Verify gradients and elevations of subgrade are correct.

3.02 PREPARATION

A. Moisten subgrade to minimize absorption of water from fresh concrete.
B. Coat surfaces of catch basin frames with oil to prevent bond with concrete pavement.
C. Notify District's Representative a minimum of 24 hours prior to commencement of concrete placement operations.

3.03 FORMING

A. Place and secure forms to correct location, dimension, and profile.
B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with SSPWC Section 303-5.
B. Install ½" thick fiberboard expansion joint and snap cap. Seal with Sikaflex self-leveling sealant after removal of snap cap (typical).
C. Construct weakened plane joints conforming to SSPWC Section 303-5.4.3, 1 ¼" inch deep, at intervals not exceeding 12 feet.
D. The top edges of curbs shall have 0.5" radius.

3.05 FINISHING

A. Concrete finishes shall be per SSPWC Section 303-5.5.
B. Portland cement concrete paving in all accessible routes of travel shall have slip resistant finish.
C. Walkway grades in excess of 5% shall conform to requirements of Section 11B-401 of the latest edition of the California Building Code.
D. Place curing compound in accordance with SSPWC Section 303-5.6 on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.06 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by the District's Testing Laboratory.
B. District 's Testing Laboratory will perform slump and compressive strength tests.
C. Contractor shall maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.07 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, vandalism and mechanical injury.
B. It is the Contractor's responsibility to replace all concrete work subject to vandalism and graffiti at no extra cost to the District.

END OF SECTION 32 16 00

SECTION 32 17 23

PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes surface preparation and field application of pavement marking on hot-mix asphalt paving and Portland cement concrete paving.

1.3 SUBMITTALS

A. Product Data:
   1. Material List: Provide an inclusive list of required coating materials, including primers and other surface preparation materials. Indicate each material and cross-reference specific coating and application. Identify each material by manufacturer's catalog number and general classification.
   2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
   3. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

B. Results of preconstruction field testing.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of pavement marking material from one source and by a single manufacturer.

B. Installer Qualifications: Engage an experienced installer who has completed pavement marking similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance of at least 5 years.

C. Pre-Application Field Testing: Prepare a sample marking of each different paint formulation on PCC paving substrates for the purpose of establishing quality of application, adherence of paint to the substrate, compatibility of the paint with the PCC paving, and to determine whether a primer will be necessary if not otherwise required by the manufacturer.
   1. Minimum length of test stripe: 3 feet.
   2. Perform a minimum of 3 test stripes, located to provide a representative sample of entire area indicated to receive pavement marking paint.
   3. Apply test markings using methods and equipment recommended by the manufacturer of the marking paint and as specified in this Section.
   4. Arrange for a technical representative of the marking paint manufacturer to observe cured test samples and provide written recommendations for changes, if any, to materials or methods necessary to achieve optimum paint performance on specific substrates.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

B. Store pavement-marking materials in a clean, dry, protected location and within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.6 PROJECT CONDITIONS

A. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 50 deg F, and not exceeding 90 deg F.

PART 2 - PRODUCTS

2.1 PAVEMENT MARKING MATERIALS

A. Pavement-Marking Paint: 100% acrylic enamel, skid-resistant, textured coating with UV-resistance, ready-mixed, and suitable for use Portland cement concrete paving. Provide material having a volatile organic compound (VOC) content of 250 g/L, or less.
   1. Colors:
      a. Color: As Indicated on Contract Drawings.
   2. Gloss: Flat or eggshell with gloss at 30 percent or less when measured at a 60-degree meter.

B. Primer: Type recommended by the marking paint manufacturer.

C. Surface Cleaning Material: Cleaning agent or agents suitable for removing grease, oil, and other contaminants that will not damage asphalt or Portland cement concrete paving and are acceptable to pavement marking paint manufacturer.

PART 3 - EXECUTION

3.1 PAVEMENT MARKING

A. Allow paving to cure for a minimum of 30 days before starting pavement marking. Comply with recommendations of the pavement marking paint manufacturer for longer cure periods.

B. Sweep and clean surface to eliminate loose material and dust. Ensure all surfaces indicated to receive pavement marking are clean and free from grease, oil, concrete sealers and curing agents, and other contaminants that might interfere with paint adhesion.
   1. Comply with manufacturer's instructions for use of special cleaning agents.
   2. For removal of substances that would interfere with paint adhesion use methods recommended by the paint manufacturer if applicable, or methods that will completely remove the substance without damaging or discoloring the underlying pavement substrate.

C. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates based on substrate type and cure conditions to provide a minimum wet film thickness of 15 mils and dry film thickness of 8 mils, unless otherwise recommended by the manufacturer.

D. Comply with paint manufacturer's maximum recommended drying time before allowing traffic in order to prevent undue softening of bitumen and pick-up, displacement, or discoloration of pavement marking by vehicular traffic.

E. Paint pavement as shown on the Drawings. Painting shall be straight, uniform, exact, and sharp without blobs at the start and finish. Edges shall be even, accurate, symmetrical, and free of fuzziness.
   1. Edge Tolerance: 1/2 inch in 20 feet, maximum.

3.2 ADJUSTING

A. Touch up pavement markings not complying with requirements of this Section by painting out the errors with permanently opaque paint of the same color as the substrate pavement.
   1. Block out and eliminate all traces of splashed, tracked, and spilled pavement marking paint from the background surfaces.
   2. Paint over deviations in marking edges exceeding allowable tolerance and apply new marking meeting specified requirements.

B. The District reserves the right to require sandblast removal of extensive defective pavement marking and application of new marking meeting specified requirements at no additional cost.

3.3 PROTECTION

A. Provide traffic cones, barricades, and other devices needed to protect the pavement marking until it is sufficiently dry to withstand traffic without damage.

END OF SECTION 32 17 23

SECTION 32 18 16.13

PLAYGROUND PROTECTIVE SURFACING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:
   1. Poured-in-Place Playground Surfacing System.
   2. Play Sand.

1.03 DEFINITIONS

A. Definitions in ASTM F 2223 apply to Work of this Section.
B. Critical Height: Standard measure of shock attenuation according to ASTM F 2223; same as "critical fall height" in ASTM F 1292. According to ASTM F 1292, this approximates "the maximum fall height from which a life-threatening head injury would not be expected to occur."
C. SBR: Styrene-butadiene rubber.
D. Unitary Surfacing: A protective surfacing of one or more material components bound together to form a continuous surface; same as "unitary system" in ASTM F 2223.

1.04 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
   2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
   3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
   4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
   5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
   6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
   7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

1.05 SYSTEM DESCRIPTION – POUR-IN-PLACE PLAYGROUND SURFACING SYSTEM

A. Performance Requirements: Provide a 2-layer rubber-urethane playground surfacing system which has been designed, manufactured and installed to meet the following criteria:
   1. 1. Shock Attenuation (ASTM F1292):
      a. Gmax: Less than 200.
      b. Head Injury Criteria: Less than 1000.
   2. Flammability (ASTM D2859): Pass.
   3. Tensile Strength (ASTM D412): 60 psi (413 kPa).

4. Tear Resistance (ASTM D624): 140%.
5. Water Permeability: 0.4 gal/yd2/second.
6. Accessibility: Comply with requirements of ASTM F1951.

1.06 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions.
B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
C. Shop Drawings: For each type of protective surfacing.
   1. Include plans, sections, placement and penetration details, and attachment to substrates.
   2. Include accessories and edge terminations.
   3. Include patterns made by varying colors of surfacing and details of graphics.
   4. Include fall heights and use zones for equipment and structures specified in Section 116813 "Playground Equipment and Structures," coordinated with the critical heights for protective surfacing.
D. Samples for Initial Selection: For each type of exposed finish.
   1. Include Samples of accessories involving color selection.
E. Samples for Verification: For each type of protective surfacing and exposed finish.
   1. Include Samples of accessories to verify color and finish selection.
   2. Unitary, Seamless Surfacing: Minimum 6 by 6 inches.
   3. Edging: 6 inches long by full width and cross section.
   4. Drainage/Separation Geotextile: Minimum 12 by 12 inches.
   5. Drainage Panel: Minimum 6 by 6 inches.
   6. Loose-Fill Surfacing: Minimum 1 quart.
F. Product Schedule: For protective surfacing. Use same designations indicated on Drawings.

1.07 INFORMATIONAL SUBMITTALS

A. Quality Assurance/Control Submittals: Submit the following:
   1. Certificate of qualifications of the playground surfacing installer. Product Data: For each type of unitary surfacing product.

1.08 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground protective surfacing to include in maintenance manuals.
B. Warranty documents specified herein.

1.09 QUALITY ASSURANCE

A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system or a direct employee of the manufacturer's installation division, having experience with other projects of the scope and scale of the work described in this section.
B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.
C. International Play Equipment Manufacturers Association (IPEMA) certified.
D. Mockups: Build mockups to verify selections made under Sample submittals and to set quality standards for materials and execution.
   1. Build mockups for protective surfacing including accessories.
      a. Size: 48 inches by 48 inches.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.
B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

1.11 PROJECT/SITE CONDITIONS

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 95 degrees F (32 degrees C). Exception to the temperature requirements can be made by the manufacturer of the surfacing system. Do not install in steady or heavy rain.

1.12 WARRANTY

A. Special Warranty: Manufacturer and Installer agree to repair or replace components of protective surfacing that fail in materials or workmanship within specified warranty period.
B. Proper drainage is critical to the longevity of the Poured-in-Place surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.
   1. Failures include, but are not limited to, the following:
      a. Reduction in impact attenuation as measured by reduction of critical fall height.
      b. Deterioration of protective surfacing and other materials beyond normal weathering.
   2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2- PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations: Obtain protective surfacing materials from single source from single manufacturer.
   1. Provide geosynthetic accessories of each type from source recommended by manufacturer of protective surfacing materials.

2.02 PERFORMANCE REQUIREMENTS

A. Impact Attenuation: Critical fall height tested according to ASTM F 1292.
B. Accessibility Standard: Minimum surfacing performance according to ASTM F 1951.

2.03 POUR IN PLACE PLAYGROUND SURFACING SYSTEM (RUBBERIZED PLAY SURFACE)

A. Description: Manufacturer's standard, site-mixed and applied, two-layer material with wearing layer over cushioning layer, with combined, overall thickness as required, tested for impact attenuation according to ASTM F 1292 and for accessibility according to ASTM F 1951.

1. Manufacturers Basis-of-Design: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. SurfaceMax. Contact: 544 Chestnut St., Chattanooga, TN 37402; Telephone: (800) 727-1907; E-mail: Kathy.Wiggins@playandpark.com website: http://www.surfacemax.com
   b. SpectraTurf, Inc.
   c. Surface America Incorporated.
   d. GT Impax from GameTime; a PlayCore, Inc. company.
2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 85 percent.
3. Wearing Layer/Top Surface: Formulation of polyurethane granules, EPDM (ethylene propylene diene monomer) rubber, aliphatic urethane binder, and other organic and inorganic components.
   a. Thickness: Nominal 1/2″ (12.7 mm), minimum 3/8″ (9.5 mm), maximum 5/8” (15.9 mm).
   b. Wearing Layer Color(s): As indicated per plan.
4. Design: Where colored pattern is required, provide as indicated on Drawings.
   a. Dry Static Coefficient of Friction (ASTM D2047): 1.0.
   b. Wet Static Coefficient of Friction (ASTM D2047): 0.9.
   c. Dry Skid Resistance (ASTM E303): 89.
   d. Wet Skid Resistance (ASTM E303): 57.
5. Cushioning Layer/Basemat: Formulation of recycled SBR particles and binder.
   a. Basemat Thickness per the following table of critical fall heights per ASTM F1292.

CRITICAL FALL HEIGHT	BASEMAT THICKNESS
Up to 4 feet	1-1/2 inches
Up to 5 feet	2 inches
Up to 6 feet	2-1/2 inches
Up to 8 feet	3-1/4 inches
Up to 10 feet	4 inches
Up to 12 feet	4-1/2 inches

6. Aliphatic Resin Binder: Weather-resistant, UV-stabilized, flexible, nonhardening, 100 percent solids polyurethane.
7. Lacquer Topcoat: Manufacturer's standard polyurethane-based formulation.
8. Overall Thickness: Not less than [as required for critical height indicated.
9. Primer/Adhesive: Manufacturer's standard primer and weather-resistant, moisture-cured polyurethane adhesive suitable for unit, substrate, and location.
10. Wearing Layer Color(s): As indicated per plan.
    a. Design: Where colored pattern is required, provide as indicated on Drawings.

B. Leveling and Patching Material: Portland cement-based grout or epoxy- or polyurethane-based formulation suitable for exterior use and approved by protective surfacing manufacturer.

2.04 GEOSYNTHETIC ACCESSORIES

A. Drainage/Separation Geotextile: Nonwoven, needle-punched geotextile, manufactured for drainage applications and made from polyolefins or polyesters; with the following minimum properties:
   1. Weight: ; ASTM D 5261.
   2. Water Flow Rate: according to ASTM D 4491.

2.05 MIXES

A. A. Required mix proportions by weight:
1. Basemat: 16+% urethane (as ratio: 14% urethane divided by 86% rubber). 14% urethane, 86% rubber (based on entire rubber & urethane mix).
2. Top Surface: 25% urethane (ratio: 20% urethane divided by 80% TPV). 20% urethane, 80% TPV (based on entire rubber & urethane mix).

2.06 PLAY SAND

A. Play sand shall be sourced from a single location to ensure consistency and quality.

B. Play sand shall be very low in silt and clay reducing dust generated during play.

C. Contractor shall submit sieve test results. Sand must be uniformly graded, washed, free of dust, clay, dirt, hazardous substances, or foreign objects. Sand particles must be rounded naturally or by mechanical means and sieved in accordance with ASTM C136/C136M to be in the following range:

Table 1 Play Sand- Particle Size Distribution

Sand Fraction	% Retained on Sieve
No. 10 Gravel (>2.0mm)	0
No. 18 Very Coarse Sand (2.0-1.0mm)	0
No. 35 Coarse Sand (1.0-0.5mm)	1
No. 60 Medium Sand (0.5-0.25mm)	83
No. 100 Fine Sand (0.25-0.15mm)	13
No. 270 Very Fine Sand (0.15-0.05mm)	3
Silt (0.05-0.002mm)	0.1
Clay (<0.002mm)	0.1
D15	0.24mm
D85	0.45mm
Uniformity Coefficient	1.8

Table 2 Play Sand- Physical Properties

Particle Angularity:	Sub-angular/angular
Particle Sphericity:	Medium
Bulk Density:	93 lbs/ft^3
Mineral:	Feldspathic Sand

PART 3- EXECUTION

5.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for subgrade elevations, slope, and drainage and for other conditions affecting performance of the Work.
   1. Verify that substrates are sound and without high spots, ridges, holes, and depressions.

B. Hard-Surface Substrates: Verify that substrates are satisfactory for unitary, protective surfacing installation and that substrate surfaces are dry, cured, and uniformly sloped to drain within recommended tolerances according to protective surfacing manufacturer's written requirements for cross-section profile.
   1. Concrete Substrates: Verify that substrates are dry and free from surface defects, laitance, glaze, efflorescence, curing compounds, form-release agents, hardeners, dust, dirt, loose particles, grease, oil, and other contaminants incompatible with protective surfacing or that may interfere with adhesive bond. Determine adhesion, dryness, and acidity characteristics by performing procedures recommended in writing by protective surfacing manufacturer.
      a. New concrete must be fully cured – up to 7 days.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

5.02 PREPARATION

A. Prepare substrates to receive surfacing products according to protective surfacing manufacturer's written instructions.

B. Edge Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft2/gal.

C. Hard-Surface Substrates: Clean surface free of laitance, efflorescence, curing compounds, and other contaminants incompatible with protective surfacing.
   1. Repair: Fill holes and depressions in unsatisfactory surfaces with leveling and patching material.
   2. Treatment: Mechanically abrade or otherwise prepare concrete substrates according to protective surfacing manufacturer's written instructions to achieve adequate roughness.
   3. Terminal Edges: Saw cut concrete for terminal edges of protective surfacing.
   4. Treat control joints and other nonmoving substrate cracks to prevent telegraphing through protective surfacing.

5.03 INSTALLATION OF GEOSYNTHETIC ACCESSORIES

A. Install geosynthetic accessories before edging and according to playground surface system manufacturer's and geosynthetic manufacturer's written instructions and in a manner that cannot become a tripping hazard.
   1. Drainage/Separation Geotextile: Completely cover area beneath protective surfacing, overlapping geotextile sides and edges a minimum of 4 inches with manufacturer's standard treatment for seams.
   2. Drainage Panels: Completely cover area beneath protective surfacing, abutting the drainage cores and overlapping seams with geotextile fabric facing with manufacturer's standard treatment seams.
   3. Weed-Control Barrier: Completely cover area beneath loose-fill installation, overlapping barrier edges a minimum of with seams.

5.04 INSTALLATION OF POUR IN PLACE PLAYGROUND SURFACING SYSTEM (RUBBERIZED PLAY SURFACE)

A. Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

B. Basemat Installation:
   1. Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds, 1 ounce per cubic foot to the specified thickness.
   2. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.
   3. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.

C. Primer Application: Using a brush or short nap roller, apply primer to the basemat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft2/gal (7.5 m2/L).

D. Top Surface Installation:
   1. Using a hand trowel, install top surface at a consistent density of 58 pounds, 9 ounces per cubic foot to a nominal thickness of 1/2".
   2. Allow top surface to cure for a minimum of 72 hours.
   3. At the end of the minimum curing period, verify that the top surface is sufficiently dry and firm to allow foot traffic and use without damage to the surface.
   4. Do not allow foot traffic or use of the surface until it is sufficiently cured.

E. Mix and apply components of seamless surfacing according to manufacturer's written instructions to produce uniform, monolithic, and impact-attenuating protective surfacing of required overall thickness.
   1. Substrate Primer: Apply over prepared substrate at manufacturer's standard spreading rate for type of substrate.
   2. Poured Cushioning Layer: Spread evenly over primed substrate to form a uniform layer applied at manufacturer's standard spreading rate in one continuous operation, with a minimum of cold joints.
   3. Intercoat Primer: Over cured cushioning layer, apply primer at manufacturer's standard spreading rate.
   4. Wearing Layer: Spread over primed base course to form a uniform layer applied at manufacturer's standard spreading rate in one continuous operation and, except where color changes, with no cold joints. Finish surface to produce manufacturer's standard wearing-surface texture.
      a. Design: Where colored pattern is required, place colored, design material as soon as previously placed material is sufficiently cured, using primer or adhesive if required by manufacturer's written instructions.
   5. Lacquer Topcoat: Spray or roller applied at manufacturer's standard coating rate in one continuous operation.
   6. Edge Treatment: Flush. Fully adhere edges to substrate with full coverage of substrate. Maintain fully cushioned thickness required to comply with performance requirements.

5.05 INSTALLATION OF PLAY SAND

A. Play sand must be installed over a compacted subgrade at minimum depth, per contract documents. Install play sand over geotextile fabric between sand and compacted subgrade.

5.06 FIELD QUALITY CONTROL

A. Testing Agency: Owner to engage a qualified testing agency to perform tests.

B. Perform the following tests:

1. Perform "Installed Surface Performance Test" according to ASTM F 1292 for each protective surfacing type and thickness in each playground area.
2. Perform installed-surface-performance tests at no less than one series of tests for each 1000 sq. ft. of each type and thickness of in-place protective surfacing or part thereof.

C. Playground protective surfacing will be considered defective if it does not pass tests.

D. Prepare test reports.

5.07 PROTECTION

A. Prevent traffic over seamless surfacing for not less than 48 hours after installation.

END OF SECTION 32 18 16.13

SECTION 32 32 13

CONCRETE WALLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-Place Concrete Seat Wall

B. Related Requirements:

1. Section 032000 "Concrete Reinforcement"
2. Section 033000 "Cast-in-Place Concrete"

1.2 ACTION SUBMITTALS

A. Product Data: For each of the following:

1. Forming accessories
2. Form-release agent.
3. Insulating concrete forms.
4. Form ties.
5. Admixtures
6. Chemical Surface Retarders
7. In-form Chemical Surface Retarders
8. Patching Compounds
9. Sealants
10. Qualification Data: For Installer, manufacturer and testing agency.
11. Field quality-control test and inspection reports.

B. INFORMATIONAL SUBMITTALS

C. Product Data: For surface retarder

1.3 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

C. ASTM International Standards

1. ASTM E408-71 (1996), Standard Test Methods for Total Normal Emittance of Surfaces using Inspection-Meter Techniques.
2. ASTM C1371-04a Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometer
3. ASTM E903-96, Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
4. ASTM E1918-97, Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surface in the Field.
5. ASTM C1549-04 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.

D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Insulating Concrete Forms: Store forms off ground and under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.

B. Design, engineer, erect, shore, brace, and maintain insulating concrete forms in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

2.2 STEEL REINFORCEMENT

A. See Section 03 20 00 “Concrete Reinforcement”

2.3 RELATED MATERIALS

A. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
2. Form release agent for form liners shall be acceptable to form liner manufacturer.

B. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

C. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, aromatic polyurea with a Type A shore durometer hardness range of 90 to 95 per ASTM D 2240.

D. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

E. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

F. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 2 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 2 inch in diameter in concrete surface.

3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.4 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
5. Limit lime content in concrete to prevent efflorescence and all other visual defects.

2.5 CONCRETE SURFACE RETARDERS/FINISHING AIDS

A. In-Form chemical surface retarder, calibrated for specific sized aggregates and finish requirements

B. Spray Applied, film forming top surface retarder, calibrated for specific sized aggregates and finish requirements without the use of a plastic covering. Color-coded to allow for ease of application and verification of grade being used as well as even and complete coverage.

1. Acceptable Materials: TOP-CAST water-based Top-Surface Retarders

a. TOP-CAST grade to be ‘Medium Exposure’ 25 Beige color-coded surface retarder.

2. Spray Applied, film forming protective coating for adjacent masonry and concrete surfaces.

a. Acceptable Materials: TOP-CAST SS 100 Site Saver

3. All products distributed by:

a. Manufacturer: GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, 1-877-423-6491, https://gcpat.com/en/products/top-cast-decorative-system

PART 3 - EXECUTION

3.1 FORMWORK

A. Preparations: All concrete form materials should be free of all oils, chemical residues, greases and other materials that may interfere with the adherence of the painted retarder film to the form surface.

1. Clean all previously used formwork using mineral spirits, acetone or denatured alcohol prior to the application of the form retarder.
2. All timber, plywood and other wood surfaces to be used in the treated areas exposed to view and coated with chemical retarder should be properly sealed prior to any application of the form retarder. This will aide in form clean-up and reduce possible etch differences caused by absorption of the retarders active ingredients as well as cement paste and surface moisture during both the placement and curing processes.

B. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical,

lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

D. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces that are exposed to view.

E. Construct forms tight enough to prevent loss of concrete mortar.

F. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.

G. Do not use rust-stained steel form-facing material.

H. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

I. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

J. Chamfer exterior corners and edges of permanently exposed concrete.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.2 RELEASE AGENT

A. Preparations: Form surfaces shall be clean and dry. Remove traces of concrete build-up from form surfaces before applying release agent.

B. Spray apply continuous uniform film free from runs.

C. Avoid overspray on reinforcing materials. Remove overspray on reinforcing materials within 24 hours using degreasing solvent recommended by release agent manufacturer.

D. Do not apply more than 14 days before placing concrete. [Do not apply water-based release agents when ambient or material temperatures are below freezing.]

E. Touch up forms, if necessary, using clean, soft flannel cloth moistened (not wet) with release agent.

F. Protect treated forms from dust, debris and precipitation. Before placing concrete, inspect in-place, erected and treated forms; remove contamination and touch-up forms as required.

3.3 STEEL REINFORCEMENT

A. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

B. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

C. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.4 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

C. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

C. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

D. Maintain reinforcement in position on chairs during concrete placement.

E. Screed slab surfaces with a straightedge and strike off to correct elevations.

F. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.6 CONCRETE SURFACE FINISHING

A. Concrete Surface Retarders:

1. Spray-applied, film forming top surface retarder, calibrated for specific sized aggregates and specific finish requirements without the use of a plastic covering. Color-coded to allow for ease of application and verification of grade being used as well as even and complete coverage.
2. Allow the bleed water to evaporate the surface. It can then be floated using a wooden hand float or a bull-float preferably wooden to close the surface and surround the coarse aggregate with cement paste. DO NOT OVERWORK THE SURFACE, AS THIS TENDS TO DRIVE THE AGGREGATE DOWN AWAY FROM THE SURFACE TO BE EXPOSED. Float to a uniform appearance.
3. Apply TOP-CAST surface retarder uniformly to the wet concrete after the initial bleed water rises to the surface. Spray with a low-pressure sprayer (plastic preferred) until the

surface has a complete hiding coat. Do not apply too sparingly. Use water for clean up.

3.7 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.8 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

1. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

3.9 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. The treated retarder matrix should be removed the same day per manufacturer recommendations. (Any delay in the removal of the chemically retarded cement matrix after the formwork has been removed will lead to potential inconsistencies due to the changing ambient conditions such as temperatures, humidity along with wind and rain.)

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new in-form retarder

3.10 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least six month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

3.11 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by ~~City~~ **the District** representative. Remove and replace concrete that cannot be repaired and patched to ~~City~~ **the District** representative's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

D. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

END OF SECTION 32 32 13

SECTION 32 84 00

PLANTING IRRIGATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Pipes, tubes, and fittings
2. Piping joining materials.
3. Manual valves
4. ~~Pressure-reducing valves~~
5. ~~Backflow preventers~~
6. ~~Ultrasonic Flow Meter Valve Assembly~~
7. Automatic control valves
8. ~~Transition fittings~~
9. ~~Dielectric fittings~~
10. Miscellaneous piping specialties
11. Sprinklers
12. Quick couplers
13. ~~Drip irrigation specialties~~
14. ~~Central control system~~
15. ~~Controller~~
16. Boxes for automatic control valves and other underground equipment

1.03 DEFINITIONS

A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.

B. Drain Piping: Downstream from circuit-piping drain valves. Piping is not under pressure.

C. ET Controllers: EvapoTranspiration Controllers. Irrigation controllers which use some method of weather-based adjustment of irrigation. These adjusting methods include use of historical monthly averages of ET; broadcasting of ET measurements; or use of on-site sensors to track ET.

D. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

E. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

1.04 PERFORMANCE REQUIREMENTS

A. Irrigation zone control shall be automatic operation with controller and automatic control valves.

B. Location of Sprinklers and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.

C. Delegated Design: Design 100 percent coverage irrigation system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

D. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:

1. Irrigation Main Piping: 200 psig.
2. Circuit Piping: 150 psig.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories.

B. Substitutions: Products by other manufacturers that comply with specifications will be considered in accordance with Section 012500 – Substitution Procedures.

1.06 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Irrigation systems, drawn to scale, on which components are shown and coordinated with each other, using input from Installers of the items involved. Also include adjustments necessary to avoid plantings and obstructions such as signs and light standards.

B. Qualification Data: For qualified Installer.

C. Zoning Chart: Show each irrigation zone and its control valve.

D. ~~Controller Timing Schedule: Indicate timing settings for each automatic controller zone.~~

E. ~~Field quality-control reports.~~

1.07 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For sprinklers ~~controllers~~ and automatic control valves to include in operation and maintenance manuals.

1.08 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Rotor Sprinklers: Equal to 5 percent of amount installed for each type and size indicated, but no fewer than 5 units.
2. Spray Sprinklers: Equal to 5 percent of amount installed for each type and size indicated, but no fewer than 10 units.
3. Bubblers: Equal to 5 percent of amount installed for each type indicated, but no fewer than 20 units.
4. Emitters: Equal to 5 percent of amount installed for each type indicated, but no fewer than 20 units.
5. Drip-Tube System Tubing: Equal to 10 percent of total length installed for each type and size indicated, but not less than 500 feet.
6. Soaker Tubes: Equal to 10 percent of total length installed for each type and size indicated, but not less than 100 feet.

1.09 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.

B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.11 PROJECT CONDITIONS

A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:

1. Notify Construction Manager no fewer than two days in advance of proposed interruption of water service.
2. Do not proceed with interruption of water service without Construction Manager's written permission.

PART 2 - PRODUCTS

2.01 PIPES, TUBES, AND FITTINGS

A. Comply with requirements in the piping schedule for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.

B. Galvanized-Steel Pipe: ASTM A 53/A 53M, Standard Weight, Type E, Grade B.

1. Galvanized-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106/A 106M, Standard Weight, seamless-steel pipe with threaded ends.
2. Galvanized, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.

3. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface, and female threaded ends.
4. Cast-Iron Flanges: ASME B16.1, Class 125.

C. PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedule 40.
1. PVC Socket Fittings: ASTM D 2466, Schedules 40 and 80.
2. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
3. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket ends.

2.02 PIPING JOINING MATERIALS

A. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8 inch thick unless otherwise indicated; full-face or ring type unless otherwise indicated.

B. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.

C. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

2.03 MANUAL VALVES

A. Bronze Ball Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by the following:
a. NIBCO INC.
b. Watts; a Watts Water Technologies company.
c. Apollo Valves; Conbraco Industries, Inc.
2. Description:
a. Standard: MSS SP-110.
b. SWP Rating: 150 psig.
c. CWP Rating: 600 psig.
d. Body Design: Two piece.
e. Body Material: Bronze.
f. Ends: Threaded or solder joint if indicated.
g. Seats: PTFE or TFE.
h. Stem: Bronze.
i. Ball: Chrome-plated brass.
j. Port: Full or regular, but not reduced.

B. Plastic Ball Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. NIBCO INC.
b. Spears Manufacturing Company.
c. Hayward Flow Control.
2. Description:
a. Standard: MSS SP-122.
b. Pressure Rating: 125 psig minimum.
c. Body Material: PVC.
d. Type: Union.
e. End Connections: Socket or threaded.
f. Port: Full.

C. Bronze Gate Valves:
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
a. NIBCO INC.
b. Watts; a Watts Water Technologies company.
2. Description:
a. Standard: MSS SP-80, Type 2.
b. Class: 125.
c. CWP Rating: 200 psig.

d. Body Material: ASTM B 62 bronze with integral seat and screw-in bonnet.
e. Ends: Threaded or solder joint.
f. Stem: Bronze, nonrising.
g. Disc: Solid wedge; bronze.
h. Packing: Asbestos free.
i. ~~Handwheel: Malleable iron, bronze, or aluminum.~~

2.04 ~~PRESSURE-REDUCING VALVES~~

A. ~~Water Regulators:~~

1. ~~Manufacturers: Subject to compliance with requirements, provide products by the following:~~
   a. ~~Apollo Valves; Conbraco Industries, Inc.~~
   b. ~~Watts; a Watts Water Technologies company.~~
   c. ~~Zurn Industries, LLC.~~
2. ~~Description:~~
   a. ~~Standard: ASSE 1003.~~
   b. ~~Body Material: Bronze for NPS 2 and smaller; cast iron with interior lining complying with AWWA C550 or that is FDA approved for NPS 2-1/2 and NPS 3.~~
   c. ~~Pressure Rating: Initial pressure of 150 psig.~~
   d. ~~End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and NPS 3.~~

2.05 ~~BACKFLOW PREVENTERS~~

A. ~~Water Regulators:~~

1. ~~Manufacturers: Subject to compliance with requirements, provide products by the following:~~
   a. ~~Apollo Valves; Conbraco Industries, Inc.~~
   b. ~~Watts; a Watts Water Technologies company.~~
   c. ~~Zurn Industries, LLC.~~
2. ~~Description:~~
   a. ~~The Reduced Pressure Principle Backflow Preventer shall be shall be ASSE® Listed 1013, rated to 180°F, and supplied with full port ball valves.~~
   b. ~~The main body and access covers shall be bronze (ASTM B 584), the seat ring and all internal polymers shall be NSF® Listed Noryl™ and the seat disc elastomers shall be silicone.~~
   c. ~~The first and second checks shall be accessible for maintenance without removing the relief valve or the entire device from the line. If Project has more than one type or configuration of water regulator, delete subparagraph below and schedule water regulators on Drawings.~~
   d. ~~The product should be listed as lead free.~~

2.06 ~~ULTRASONIC FLOW METER VALVE ASSEMBLY~~

A. ~~Bronze, Master Control Valves:~~

1. ~~Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:~~
   a. ~~Tucor; UFMV-A-1.5-C1-BN/O-NMF~~
2. ~~Description: Cast-bronze body, normally closed, diaphragm type valve with manual-flow adjustment, and operated by 24-V ac solenoid assembled with an ultrasonic flow meter.~~

2.07 AUTOMATIC CONTROL VALVES

A. Plastic, Automatic Control Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
   a. Rain Bird Corporation.
   b. Hunter Industries Incorporated.
2. Description: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac solenoid. Must be compatible with 2-wire decoder operation.

a. Potable water: Standard configuration
b. Greywater/Non-potable water: Purple color reclaimed water option.

B. Plastic, Drip Control Zone Kits:
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
a. Rain Bird Corporation.
b. Hunter Industries Incorporated.
c. Netafim USA
2. Description: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac solenoid. Pressure-regulating basket filter, regulating to 40 psi maximum. Must be compatible with 2-wire decoder operation.
a. Potable water: Standard configuration
b. Greywater/Non-potable water: Purple color reclaimed water option.
c. Low Flow Control Zone Kit for dripline zones with flows from 0.2 to 3.0 GPM, including low flow valve (LFV) and pressure regulating filter (PRF).
1) Low Flow Valve (LFV) component specifications include:
a) Valve body and bonnet constructed of high impact, weather-resistant plastic, stainless steel and other chemical/UV resistant materials
b) Diaphragm with a double-knife seal, constructed of durable Buna-N rubber with a clog-resistant metering orifice
c) Energy-efficient, low-power encapsulated solenoid with captured plunger and 90 mesh (200 micron) solenoid filter
d) External bleed for manual system flushing during start-up, internal bleed for manual zone activation during maintenance operations
e) Inlet pressure rating: 20 to 120 PSI (1,4 to 8,3 bar)
f) Female threaded inlet and outlet connections
g) Anti-siphon valve configuration includes listed features and incorporates atmospheric vacuum breaker with I.A.P.M.O and A.S.S.E. listing approval
2) Pressure Regulating Filter (PRF) combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. PRF component specifications include:
a) Compact “Y” filter body and cap configuration constructed of glass-filled, UV-resistant polypropylene, with 120 PSI (8,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 4 1/2" (11,4 cm), Length: 5 1/2" (14 cm), Width: 2" (5,1 cm)
b) Standard 200 mesh (75 micron) filter screen constructed of durable stainless steel attached to a polypropylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element.
c) Normally-open pressure regulating device with preset outlet pressure of approximately 40 PSI (2,1 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure.
d) Male threaded 3/4” (19 mm) inlet and

d. Control Zone Kits for dripline zones with flows from 3.0 to 20.0 GPM (11.4 to 75.7 lpm), including, valve with PVC ball valve and pressure regulating quick-check basket filter.
   1) Valve assembly component specifications must include:
      a) 1” (25 mm) PVC full-port ball valve with female threaded inlet and outlet connections
      b) Valve body and bonnet constructed of durable glass-filled nylon, stainless steel and other chemical/UV resistant materials
      c) Diaphragm constructed of a durable Buna-N rubber material reinforced with nylon
      d) One-piece solenoid with captured plunger and 90 mesh (200 micron) solenoid filter
      e) External bleed for manual system flushing during start-up, internal bleed for manual zone activation during maintenance operations
      f) Inlet pressure rating: 20 to 200 PSI (1,4 to 13,8 bar)
      g) Female threaded inlet and outlet connections
   2) Pressure Regulating Quick Check Basket Filter combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. Pressure regulating basket filter component specifications must include:
      a) Basket style body and jar-top cap constructed of heavy-duty glass-filled, UV-resistant polypropylene, with 150 PSI (10,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 6 1/2" (16,5 cm), Length: 6 1/2" (16,5 cm), Width: 3 1/2" (8,9 cm)
      b) Indicator incorporated into filter cap that changes color from green to red during operation when the filter element requires cleaning.
      c) Standard 200 mesh (75 micron) filter screen constructed of stainless steel attached to propylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element.
      d) Normally-open in-line pressure regulating device, constructed of durable, UV resistant non-corrosive material able to accommodate an inlet pressure rating of not less than 150 PSI (10,3 bar), with preset outlet pressure of approximately 40 PSI (2,8 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure.
      e) Male threaded 1” (25 mm) inlet and outlet connections.

2.08 ~~TRANSITION FITTINGS~~

A. ~~General Requirements: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.~~

B. ~~Plastic-to-Metal Transition Fittings:~~
   1. ~~Manufacturers: Subject to compliance with requirements, provide products by the following:~~
      a. ~~Spears Manufacturing Company.~~
   2. ~~Description: PVC one-piece fitting with manufacturer's Schedule 80 equivalent dimensions; one end with threaded brass insert, and one solvent-cement-socket end.~~

C. ~~Plastic-to-Metal Transition Unions:~~

1. ~~Manufacturers: Subject to compliance with requirements, provide products by one of the following:~~
   a. ~~NIBCO INC.~~
   b. ~~Spears Manufacturing Company.~~
2. ~~Description: MSS SP-107, PVC four-part union. Include one brass threaded end, one solvent-cement-joint plastic end, rubber O-ring, and union nut.~~

2.09 ~~DIELECTRIC FITTINGS~~

A. ~~General Requirements: Assembly of copper alloy and ferrous materials or ferrous material body with separating nonconductive insulating material suitable for system fluid, pressure, and temperature.~~

B. ~~Dielectric Unions:~~
   1. ~~Description: Factory-fabricated union, NPS 2 and smaller.~~
      a. ~~Pressure Rating: 150 psig minimum at 180 deg F.~~
      b. ~~End Connections: Solder-joint copper alloy and threaded ferrous; threaded ferrous.~~

C. ~~Dielectric Flanges:~~
   1. ~~Description: Factory-fabricated, bolted, companion-flange assembly, NPS 2-1/2 to NPS 4 and larger.~~
      a. ~~Pressure Rating: 175 psig minimum.~~
      b. ~~End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.~~

D. ~~Dielectric-Flange Kits:~~
   1. ~~Description: Nonconducting materials for field assembly of companion flanges, NPS 2-1/2 and larger.~~
      a. ~~Pressure Rating: 150 psig minimum.~~
      b. ~~Gasket: Neoprene or phenolic.~~
      c. ~~Bolt Sleeves: Phenolic or polyethylene.~~
      d. ~~Washers: Phenolic with steel backing washers.~~

E. ~~Dielectric Couplings:~~
   1. ~~Description: Galvanized-steel coupling.~~
      a. ~~Pressure Rating: 300 psig at 225 deg F.~~
      b. ~~End Connections: Female threaded.~~
      c. ~~Lining: Inert and noncorrosive, thermoplastic lining.~~

F. ~~Dielectric Nipples:~~
   1. ~~Description: Electroplated steel nipple complying with ASTM F 1545.~~
      a. ~~Pressure Rating: 300 psig at 225 deg F.~~
      b. ~~End Connections: Male threaded or grooved.~~
      c. ~~Lining: Inert and noncorrosive, propylene.~~

2.10 MISCELLANEOUS PIPING SPECIALTIES

A. Water Hammer Arresters: ASSE 1010 or PDI WH 201, with bellows or piston-type pressurized cushioning chamber and in sizes complying with PDI WH 201, Sizes A to F.

B. Pressure Gauges: ASME B40.1. Include 4-1/2-inch-diameter dial, dial range of two times system operating pressure, and bottom outlet.

2.11 SPRINKLERS

A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.

B. Plastic, Pop-up, Gear-Drive Rotary Sprinklers:
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
      a. Hunter Industries Incorporated.
      b. Rain Bird Corporation.
   2. Description:
      a. Body Material: ABS.
      b. Nozzle: ABS.
      c. Retraction Spring: Stainless steel.
      d. Internal Parts: Corrosion resistant.

3. Capacities and Characteristics:
   a. Flow: 0.36 to 14.8 GPM.
   b. Pop-up Height: 6 inches aboveground to nozzle.5
   c. Arc: 50 to 360 circle.
   d. Radius: 17 to 46 feet.
   e. Inlet: NPS 3/4.

C. Plastic, Pop-up Spray Sprinklers:
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
   a. Hunter Industries Incorporated.
   b. Rain Bird Corporation.
2. Description:
   a. Body Material: ABS.
   b. Nozzle: ABS.
   c. Retraction Spring: Stainless steel.
   d. Internal Parts: Corrosion resistant.
   e. Pattern: Fixed, with flow adjustment.
3. Capacities and Characteristics:
   a. Nozzle: ABS.
   b. Pop-up Height: 6 inches aboveground to nozzle.
   c. The sprinkler body shall have a standard pressure-regulating device as an integral part of the pop-up riser. This regulator will provide optimal distribution uniformity of the rotator nozzle by maintaining a constant outlet pressure of 40 PSI with inlet pressures of up to 100 PSI, regardless of the rotator installed.
   d. The body of the sprinkler shall be constructed of corrosion and UV-resistant, heavy-duty A.B.S. The riser of the sprinkler shall be constructed of abrasion and UV-resistant A.B.S. and shall be adjustable for pattern alignment. The riser shall be compatible with female threaded nozzles and shall have a stainless steel spring for positive retraction when irrigation is complete.
   e. The sprinkler shall have a pressure-activated, multi-function, UV stable wiper seal that will clean debris from the pop-up stem while it retracts. The seal shall be molded around a rigid plastic ring to prevent seal deformation. This seal shall prevent the sprinkler from sticking in the up position and be capable of sealing the sprinkler riser stem to the sprinkler cap under normal operating pressures. The seal shall be removable from the cap for easy service and shall be replaceable.
   f. The sprinkler shall have a factory-installed, removable flush cap with a pull-up tab that shall prevent debris from entering the sprinkler during installation and allow the system to be flushed before installing the nozzle. The flush cap shall have a directional flushing action that allows the water to escape only in one direction. The flush cap shall open as the stem extends and completely close when the stem is in the retracted position.
   g. The sprinkler shall have an exposed surface diameter after installation of 2-1/4 inches (6 cm). The sprinkler shall have a 1/2-inch Female National Pipe Thread (FNPT) bottom inlet. In addition, the 6-inch (15 cm) and 12-inch (30 cm) sprinklers shall be available with a 1/2-inch FNPT side inlet. When specified with a factory-installed check valve, the 6-inch (15 cm) and 12-inch (30 cm) sprinklers will be supplied without the side inlet.
   h. The sprinkler body shall carry a five-year, exchange warranty (not prorated).
   i. The sprinkler nozzle shall be of the viscous fluid brake rotary type and be a multi-stream, multi-trajectory rotating stream sprinkler.

j. In full or part circle mode the sprinkler nozzle shall be capable of covering a 30 foot radius at 40 psi pressure with an equivalent full circle discharge rate of 3-4 gpm.

k. Sprinkler Nozzle Assembly models shall produce and maintain a matched precipitation rate no greater than 0.6" per hour throughout the arc adjustment range and radius adjustment range, (up to 25% of radius reduction), when spaced at 50% of wetted diameter.

l. The part circle sprinkler shall have an infinitely adjustable arc from 45° to 105°, 90° to 210° or between 210° to 270° depending on the model selected. The full circle sprinkler shall irrigate a full 360°. The 45° to 105° model shall not require coverage from adjacent sprinklers closer than 3' from the head.

m. Full or part circle sprinklers shall be capable of up to 25% radius reduction using a radius adjustment screw. The radius reduction screw shall have a slip clutch mechanism to prevent internal damage if turned past the minimum or maximum radius settings. The radius reduction screw shall reduce the pressure and flow upstream of the adjustable orifice thereby maintaining stream integrity.

n. Part circle sprinklers shall have arc adjustment capabilities using a stainless steel ring. The adjustment ring shall be effective only while the sprinkler is popped up and shall be ineffective while the sprinkler is popped down. When turned past the minimum or maximum arc limits the adjustment mechanism shall have a ratcheting action to prevent internal damage.

o. This same ratcheting action shall allow the orientation of the left edge of the variable arc when installed on a fixed riser or in a popup body. This is independent of and in addition to any ratchet that may exist in a popup body.

p. The sprinkler itself shall pop-up at approximately 15 psi of water pressure. Upon cessation of water pressure, the sprinkler itself shall retract. When installed in a pop-up body the sprinkler itself shall pop-up after the body stem is almost fully extended. Upon decreasing pressure the sprinkler itself shall pop-down before the pop-down of the body stem is complete.

q. The sprinkler nozzles adjustable orifice shall be manufactured from polyurethane and acetyl plastic materials for durability.

r. The sprinkler nozzle shall be fitted with a detachable filter.

s. Sprinkler Nozzle Assembly models shall be able to be installed in popup bodies having a 5/8-27 UNS male threaded stem, at all common popup heights. Sprinkler Assembly shall also be able to be attached to a 1/2 FIPT x 5/8-27 UNS male threaded adapter for use on fixed pipe risers. Sprinkler Assembly shall also be able to be attached to a 1/2 FIPT x 5/8-28 UNS female threaded adapter for use on fixed pipe risers.

2.12 QUICK COUPLERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
   1. Rain Bird Corporation.
   2. Buckner; a Storm Manufacturing Group, Inc. brand.
   3. Hunter Industries Incorporated.

B. Description: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.
   1. Locking-Top Option: Vandal-resistant locking feature. Include two matching key(s).

2.13 ~~DRIP IRRIGATION SPECIALTIES~~

A. ~~Sub-surface Products: Subject to compliance with requirements, provide the following:~~

1. Hunter Industries Incorporated; ECO-MAT 17MM Subsurface Irrigation System.

B. Sub-surface Drip Tubes with Direct-Attached Emitters:
   1. Tubing: Flexible PE or PVC with plugged end.
   2. Emitters: Devices to deliver water at approximately 20 psig.
      a. Body Material: PE or vinyl, with flow control.
      b. Mounting: Inserted into tubing at set intervals.
   3. Capacities and Characteristics:
      a. Tubing Size: 17mm.
      b. The Hunter Eco-Wrap shall be pre-assembled and constructed of a sheet of special polypropylene fleece matting with two rows of fleece-wrapped, pressure-compensating, non-draining inline emitter tubing.
      c. The wrapped emitter tubing shall be joined to the top of the fleece mat in regular intervals so as to provide uniform spacing in the lines at 14 in (35 cm) distance and to facilitate uniform installation.
      d. The wrapped emitter tubing shall have a nominal outside diameter of 17mm and shall have 0.6 GPH (2.3 l/h) emitters uniformly spaced at 12 in (30 cm) intervals.
      e. This tubing shall be made of landscape grade tubing with a nominal wall thickness not less than 1.1 mm.
      f. Each roll of Eco Mat 17 shall be 32 in (0,80 m) in width and 295 ft (76 m) in length, providing 785 sq ft (60 sq m) of coverage.
      g. Each roll of Eco-Mat 17 shall be able to hold 0.5 gallons (1,89 liters) of water at maximum saturation.
      h. The rolls shall be delivered with solid caps inserted to protect the tubing from debris during installation.

C. On-Surface Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
   1. Agrifim; NDS Inc.
   2. Hunter Industries Incorporated.
   3. NDS/Raindrip.
   4. Netafim USA.
   5. Rain Bird Corporation.

D. On-surface Drip Tubes with Direct-Attached Emitters:
   1. Tubing: Flexible PE or PVC with plugged end.
      a. Potable water: Standard model
      b. Greywater/Non-potable water: Purple color reclaimed water option.
   2. Emitters: Devices to deliver water at approximately 20 psig.
      a. Body Material: PE or vinyl, with flow control.
      b. Mounting: Inserted into tubing at set intervals.
   3. Capacities and Characteristics:
      a. Tubing Size: 17mm.
      b. Emitter Spacing: 18 inches.
      c. Emitter Flow: 0.6 gallons per hour.

E. Application Pressure Regulators: Brass or plastic housing, NPS 3/4, with corrosion-resistant internal parts; capable of controlling outlet pressure to approximately 20 psig.

F. Filter Units: Brass or plastic housing, with corrosion-resistant internal parts; of size and capacity required for devices downstream from unit.

G. Air Relief Valves: Brass or plastic housing, with corrosion-resistant internal parts.

H. Vacuum Relief Valves: Brass or plastic housing, with corrosion-resistant internal parts.

2.14 CENTRAL CONTROL

A. Products: Subject to compliance with requirements, provide the following:
   1. Hunter Industries Incorporated; Centrallus

B. Expansion module: AC2-D75 decoder expansion module.

C. General
   1. The Central Control System shall consist of internet hosted control software capable of monitoring and managing an unlimited number of dial-based

commercial irrigation controllers via Wi-Fi or Local Area Network (LAN) connections.

2. The Central Control System shall display in an internet browser the status of all controllers in list and/or map overviews, including controller dial position, adjustment status, and any timed weather shutdowns.
3. All controllers shall be visible in a live, online map and located automatically based on the user-supplied controller address.
4. The map shall be selectable between “street” and “satellite” or terrain views.
5. The map shall automatically size to the extents of the controller locations to show all controllers, and users may then zoom, pan, and navigate freely throughout the map for controller selection purposes.
6. The Central Control System shall permit selection of any controller, and then offer full remote programming of all controller features in the browser, including irrigation scheduling, controller settings, and weather-based watering adjustments.
7. The Central Control System shall allow the user full remote control capabilities, including starting and stopping individual stations and programs, or setting the controller to Off for a user-defined number of days. The System shall also allow quick adjustment of irrigation amounts by a percentage value.
8. The Central Control System shall be compatible with locally-installed smart weather adjustment sensors, which may adjust each controller’s irrigation amounts automatically based on local climate conditions, and shall report such adjustments in the browser to the user. The software shall also report controller shutdowns due to active rain, freeze, or other sensors.
9. The Central Control System shall display the forecast weather for each controller several days in advance, and shall enable automatic shutdowns of irrigation when forecasted temperature or chance of rainfall exceeds a user-specified amount.
10. The Central Control System shall have multi-user permissions for maintenance organizations, where each controller shall have a designated owner, who may then grant control access for specified controllers to other authorized personnel by email address.
11. Both crewmembers and controllers may be organized into named groups.
12. Access may be granted or cancelled at any time (by individual or group) by the designated owner.
13. The Central Control Software shall automatically alert owners and/or designated crewmembers via SMS text messages when selected alarms occur at a controller location, indicating the controller and the type of alarm for rapid response or repair.

D. Security
1. The Central Control Software shall use transport layer security to ensure secure IoT (Internet of Things) communication.
2. The Central Control Software users shall also be protected by a well-designed application layer security model that protects the settings and communication of each of user.
3. The Central Control Software shall be protected by Network Layer Security designed to minimize potential attack surface.

E. Communications
1. Controllers in the System shall be connected to the internet via either Wi-Fi, or Ethernet/LAN, through local routers. ACC2 controllers may also be connected via internal module with a data plan.
2. Wi-Fi connections shall conform to 802.11 b/g/n standards, with all necessary approvals and compliance for 2.4 GHz wireless devices and shall include an approved antenna.
3. Ethernet connections shall be by standard RJ-45 hardwired jack to the network via approved cable (CAT5, CAT5e, CAT6, or equal).
4. Cellular connections shall be made through a compatible cellular data carrier as appropriate in the host country and shall include an approved antenna.
5. In North America, connections shall be via 4G/LTE with a compatible data plan.

6. International locations will be via 3G with a compatible GSM carrier.
7. Communications modules shall be installed internally to the host controllers.
8. Communication modules shall be of robust construction designed for outdoor use, when installed properly within the controller cabinet.
9. All communication modules shall indicate status of communications with the local router, network, and central control software.

F. Compatible Controllers
1. The irrigation controllers shall be supplied by the same manufacturer of the Central Control System and warrantied for use together as a complete system.
2. The controllers shall be commercial grade irrigation products suitable for outdoor or indoor use, with all necessary approvals.
3. The controller manufacturer shall offer a range of models that are suitable for different applications, including economical controllers with up to 54 station capacity, and heavy-duty controllers with up to 225 station capacity.
4. The controllers shall include water-saving features such as cycle and soak, delay between stations, rain sensor inputs with automatic shutdown, and manual or automated Seasonal Adjustment.
5. Heavy-duty controllers shall also include built-in flow monitoring ability with multiple master valves to monitor up to 6 flow zones.
6. The controllers must also be compatible with a local, license-free remote control that is independent of internet connectivity.
7. The Central Control Software shall detect any settings or scheduling conflict between the software and the hardware and shall alert the user if a conflict is detected. The software shall have the ability to identify and display any conflicts and allow the user to decide which settings shall be used.

G. Part 5 - Models
1. The software shall be Hunter Centralus, as offered by Hunter Industries.
2. The cellular communications module for the heavy-duty A2C controllers as listed below shall be Hunter Industries model A2CLTE (North America) or A2CCELLE (International)

2.15 CONTROLLER

A. Products: Subject to compliance with requirements, provide the following:
1. Hunter Industries Incorporated; AC2-75D-SS 2-wire controller with stainless steel pedestal
a. Expansion module: AC2-D75 decoder expansion module.

B. General
1. The controller shall be a full-featured commercial-industrial product for the purpose of irrigation management and monitoring of control valves, flow, and sensors, via two-wire decoder connections. The controller shall be a 75-station base model expandable with 75-station input modules up to 225 stations.

C. Programming and Operational Software
1. General
a. Display shall be selectable in 12 languages.
b. The display shall include selectable settings for date, time, units of measurement, and regional preferences.
2. Programming
a. The controller shall have 32 independent programs with unique day schedules, start times, and station run times.
b. Each program shall allow Day of Week, Interval, or Odd/Even schedule types.
c. Each program shall offer up to 10 start times.
d. Each program may be allowed to overlap, stack, or SmartStack™ to a user-specified maximum number of simultaneous programs.
e. Each program may have programmable Non-Water Windows, during which automatic irrigation will not be allowed.

1) Missed irrigation as a result of water window violations is logged and announced as an alarm.
2) Manual irrigation for maintenance purposes shall not be inhibited by Non-Water Windows.

f. Programs may be configured as Automatic, Start to End, or Manual only.
1) Start to End programs shall cycle continuously from a start time to an end time.
2) Manual programs are only initiated by the user from a command, remote control, or Conditional Response statement.

g. Each station shall be programmable in hours, minutes, and seconds of run time, from 1 second to 12 hours.

h. The controller shall allow the creation of up to 64 “blocks” of up to 8 stations each, used to facilitate programming and operation of larger systems.
1) The blocks may be assigned a single run time within a program, and all stations will run together as a group.

i. Each program may be assigned a programmable delay between stations, to allow for slow-closing valves or pressure recharging.

j. Each station or block may be assigned Cycle and Soak settings to prevent runoff and waste by dividing run times into absorbable increments.

3. Operating System

a. The controller display shall offer copy and paste functions for data entry tasks (e.g., Cycle and Soak, run times, program day schedules, flow zone and P/MV assignments, etc.).

b. A graphical display shall graph the start times and durations of each program over time to allow the user to see the relationship between overlapping programs.

c. The controller shall have Seasonal Adjust settings in 1% to 300% increments. Seasonal Adjust may be set by program in any of the following ways:
1) Controller level (adjusts all programs for ease of use)
2) Program level (adjustment by individual program)
3) Monthly (pre-programmed adjustment for each month of the year)
4) Solar Sync™ (automatic daily adjustment from an external sensor)

d. The controller shall have true Calendar Date Off programming allowing specific dates to be skipped at any time of year by program. Off dates may be recurring or one-time occurrences.

e. The controller shall provide a User Management function to limit access to programming and other operations with unique passwords for multiple users, permitting either full or partial access to controller functions.
1) User logins and activities shall be tracked by user ID, if password security is enabled.
2) The controller shall automatically log users out after a period of inactivity.

f. The controller shall allow Easy Retrieve™ backup of all programming and configuration to preserve the original configuration, which may be restored anytime.
1) The backup file shall also be stored to an SD card if desired.
2) Multiple backups may be stored with unique file names on the SD card for different scenarios.

g. The controller shall log all incidents and activity, organized into the following:
1) Alarm Logs shall include the last 250 alarm events with date/time stamp to the second.
2) Controller Logs shall include the last 250 controller events.

3) Station Logs shall include the last 1,500 recorded irrigation events of all types.
4) All logs shall appear in the selected language of the controller.

h. Flow Operations
1) Controller shall feature independent flow management and flow monitoring in each of up to 6 flow zones.
2) Controller shall allow flow budgeting at flow zone and mainline levels to monitor total monthly water usage, and provide an alarm when the budgeted amount is exceeded.

i. Flow management shall allow the controller to schedule simultaneous stations on within each flow zone, based on their flow characteristics, to reach a user-programmable rate of flow for the duration of the water window.
1) Station flows may be “learned” via flow sensor or entered manually by the user.
2) Individual stations may be prioritized to ensure they water earliest in flow management scenarios.
3) Flow zone assignments shall be by individual station, so that multiple programs may operate their stations in a flow-managed state within a given flow zone.

j. Flow monitoring uses a flow sensor to monitor actual flow and intervene when high- or low-flow conditions are detected.
1) Controller shall allow the station flows to be learned and entered automatically.
2) The station flow values shall be adjustable for high and low flow alarm limits.
3) The station flow alarm settings shall have an adjustable delay factor to allow flow to stabilize.
4) Each flow zone shall have an absolute high-flow limit, independent of the station-level flow monitoring.
5) Each flow zone shall allow unscheduled flow allowances to permit manual watering within user-programmable limits.
6) Each flow zone shall include adjustable recovery settings for high-level flow alarms, allowing irrigation to be automatically allowed after an elapsed period of time, or manually only, requiring a user to visit and clear the alarm.

k. Flow operations shall also include the ability to assign a separate flow sensor and master valve to the mainline level, above the independent flow zones, to monitor and protect long runs of mainline pipe
1) Flow monitoring at the mainline level shall allow faster reaction to high or unexpected flow conditions, without the delay of station-level diagnostics.
2) Mainline protection may have its own monthly water budget, high-flow, and unscheduled flow limits separately from lower-level flow zone assignments.

l. The controller shall permit the creation of Conditional Response statements, permitting sensor inputs or other conditions to trigger pre-programmed actions on the part of the controller.
1) A Conditional Response may allow a sensor input to start a station, block, or program.
2) The response shall be configured to either pause all other irrigation and execute the response immediately, or to execute the response together with other flow-managed activities.
3) A Conditional Response may be configured to activate an external Status Output Station to provide a visual notification that the controller is in an alarmed state.

~~4) A Conditional Response may be configured to switch from one water source (P/MV) to another based on the status of an external sensor switch.~~

~~m. The controller shall feature a separate decoder diagnostic menu with functions to:~~

~~1) Program decoders~~

~~2) View status or configuration of individual decoders~~

~~3) Assign stations from one decoder output module to another.~~

~~4) Create a decoder inventory.~~

~~5) Perform diagnostic tests and display current draw for all components of the two-wire system~~

~~n. The controller shall include a built-in wire tracking function that generates a traceable sine wave on the two-wire path for use with standard current clamp meters to locate line faults.~~

~~o. The controller shall include a solenoid finder feature, to chatter solenoids for up to 30 minutes to facilitate finding lost valve boxes in the landscape.~~

2.16 BOXES FOR AUTOMATIC CONTROL VALVES AND OTHER UNDERGROUND EQUIPMENT

A. Plastic Boxes:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. NDS.
   b. Oldcastle Enclosure Solutions.
   c. Oldcastle, Inc.
   d. Rainbird.
2. Description: Box and cover, with open bottom and openings for piping; designed for installing flush with grade.
   a. Size: As required for valves and service.
   b. Shape: Round Square Rectangular.
   c. Sidewall Material: PE.
   d. Cover Material: PE.
   e. Cover and Sidewall Color: Black
      1) Master Control Valve Lettering: " IRR-MV."
      2) Control Valve Lettering: " IRR-CV."
      3) Quick Coupler Valve Lettering: " IRR-QC."
      4) Flush Valve Lettering: " IRR-FV."
      5) Other Irrigation Box Lettering: " IRR."

B. Polymer-Concrete Boxes:

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
   a. Oldcastle Enclosure Solutions.
2. Description: Box and cover, with open bottom and openings for piping; designed for installing flush with grade.
   a. Size: As required for valves or other equipment and service.
   b. Shape: Rectangular.
   c. Sidewall Material: Polymer concrete with lateral and vertical sidewall design loading of 10,000 lb minimum over 10 by 10 inches square.
   d. Cover Material: Reinforced polymer concrete with cover design loading of 10,000 lb minimum over 10 by 10 inches square.
      1) Master Control Valve Lettering: " IRR-MV."
      2) Control Valve Lettering: " IRR-CV."
      3) Quick Coupler Valve Lettering: " IRR-QC."
      4) Flush Valve Lettering: " IRR-FV."
      5) Other Irrigation Box Lettering: " IRR."

C. Drainage Backfill: Cleaned gravel or crushed stone, graded from 3/4 inch minimum to 3 inches maximum.

PART 3 - **EXECUTION**

3.01 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."
B. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone, graded from 3/4 to 3 inches to 12 inches below grade. Cover gravel or crushed stone with sheet of asphalt-saturated felt and backfill remainder with excavated material.
C. Provide minimum cover over top of underground piping according to the following:
    1. Irrigation Main Piping: Minimum depth of 18 inches below finished grade.
    2. Circuit Piping: 12 inches.
    3. Drain Piping: 12 inches.
    4. Sleeves: 24 inches.

3.02 PREPARATION

A. Set stakes to identify locations of proposed irrigation system. Obtain Architect's approval before excavation.

3.03 PIPING INSTALLATION

A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.
B. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.
C. Install piping free of sags and bends.
D. Install groups of pipes parallel to each other, spaced to permit valve servicing.
E. Install fittings for changes in direction and branch connections.
F. Install unions adjacent to valves and to final connections to other components with NPS 2 or smaller pipe connection.
G. Install flanges adjacent to valves and to final connections to other components with NPS 2-1/2 or larger pipe connection.
H. Install expansion loops in control-valve boxes for plastic piping.
I. Lay piping on solid subbase, uniformly sloped without humps or depressions.
J. Install ductile-iron piping according to AWWA C600.
K. Install PVC piping in dry weather when temperature is above 40 deg F. Allow joints to cure at least 24 hours at temperatures above 40 deg F before testing.
L. Install piping in sleeves under parking lots, roadways, buildings and sidewalks.
M. Install sleeves made of Schedule 40 PVC pipe and socket fittings, and solvent-cemented joints.
N. Install transition fittings for plastic-to-metal pipe connections according to the following:
    1. Underground Piping:
        a. NPS 1-1/2 and Smaller: Plastic-to-metal transition fittings.
        b. NPS 2 and Larger: AWWA transition couplings.
    2. Aboveground Piping:
        a. NPS 2 and Smaller: Plastic-to-metal transition fittings.
        b. NPS 2 and Larger: Use dielectric flange kits with one plastic flange.
O. Install dielectric fittings for dissimilar-metal pipe connections according to the following:
    1. Underground Piping:
        a. NPS 2 and Smaller: Dielectric coupling or dielectric nipple.
        b. NPS 2-1/2 and Larger: Prohibited except in control-valve box.
    2. Aboveground Piping:
        a. NPS 2 and Smaller: Dielectric union.
        b. NPS 2-1/2 to NPS 4: Dielectric flange.
        c. NPS 5 and Larger: Dielectric flange kit.
    3. Piping in Control-Valve Boxes:
        a. NPS 2 and Smaller: Dielectric union.
        b. NPS 2-1/2 to NPS 4: Dielectric flange.
        c. NPS 5 and Larger: Dielectric flange kit.

3.04 JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

D. Flanged Joints: Select rubber gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

E. Ductile-Iron Piping Gasketed Joints: Comply with AWWA C600 and AWWA M41.

F. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. PVC Pressure Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
3. PVC Nonpressure Piping: Join according to ASTM D 2855.

3.05 VALVE INSTALLATION

A. Underground Curb Valves: Install in curb-valve casings with tops flush with grade.

B. Underground Iron Gate Valves, Resilient Seat: Comply with AWWA C600 and AWWA M44. Install in valve casing with top flush with grade.

1. Install valves and PVC pipe with restrained, gasketed joints.

C. Aboveground Valves: Install as components of connected piping system.

D. Pressure-Reducing Valves: Install in boxes for automatic control valves or aboveground between shutoff valves.

E. Throttling Valves: Install in underground piping in boxes for automatic control valves.

F. Drain Valves: Install in underground piping in boxes for automatic control valves.

3.06 SPRINKLER INSTALLATION

A. Install sprinklers after hydrostatic test is completed.

B. Install sprinklers at manufacturer's recommended heights.

C. Locate part-circle sprinklers to maintain a minimum distance of 4 inches from walls and 2 inches from other boundaries unless otherwise indicated.

3.07 ~~DRIP IRRIGATION SPECIALTY INSTALLATION~~

A. ~~On-surface dripline.~~

1. ~~Install on-surface drip tubes with direct-attached emitters on ground. Scratch lines 1 inch to 2 inch into finish grade.~~
2. ~~Install application pressure regulators and filter units with drip control zone kits, and in control-valve boxes.~~
3. ~~Install air relief valves and vacuum relief valves in piping, and in control-valve boxes.~~

B. ~~Sub-surface dripline.~~

1. ~~Install sub-surface drip tubes 4-6” below proposed finished grade and per manufacturer’s recommendations.~~
2. ~~Install application pressure regulators and filter units with drip control zone kits, and in control-valve boxes.~~
3. ~~Install air relief valves and vacuum relief valves in piping, and in control-valve boxes.~~

3.08 AUTOMATIC IRRIGATION-CONTROL SYSTEM INSTALLATION

A. Equipment Mounting: Install interior controllers on wall.

1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

2. Install anchor bolts to elevations required for proper attachment to supported equipment.

B. Equipment Mounting: Install exterior freestanding controllers on precast concrete bases.
1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.

C. Install control cable in same trench as irrigation piping and at least 2 inches below or beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas.

3.09 CONNECTIONS

A. Comply with requirements for piping specified in Section 221113 "Facility Water Distribution Piping" for water supply from exterior water service piping, water meters, protective enclosures, and backflow preventers. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment, valves, and devices to allow service and maintenance.

C. Connect wiring between controllers and automatic control valves.

3.10 IDENTIFICATION

A. Identify system components. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment."

B. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on each automatic controller.
1. Text: In addition to identifying unit, distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.

C. Warning Tapes: Arrange for installation of continuous, underground, detectable warning tapes over underground piping during backfilling of trenches. See Section 312000 "Earth Moving" for warning tapes.

3.11 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.
1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Tests and Inspections:
1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Any irrigation product will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

3.12 STARTUP SERVICE

A. Perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.
2. Verify that controllers are installed and connected according to the Contract Documents.
3. Verify that electrical wiring installation complies with manufacturer's submittal.

3.13 ADJUSTING

A. Adjust settings of controllers.

B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.

C. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with, or not more than 1/2 inch above, finish grade.

3.14 CLEANING

A. Flush dirt and debris from piping before installing sprinklers and other devices.

3.15 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain automatic control valves and controllers.

3.16 PIPING SCHEDULE

A. Install components having pressure rating equal to or greater than system operating pressure.

B. Piping in control-valve boxes and aboveground may be joined with flanges or unions instead of joints indicated.

C. Underground irrigation main piping, shall be the following:
   1. For Potable Water Supply – Standard Schedule 40, PVC pipe and socket fittings, and solvent-cemented joints.
   2. For Greywater/Non-potable Water Supply – Purple Colored Schedule 40, PVC pipe and socket fittings, and solvent-cemented joints.

D. Circuit piping, shall be the following:
   1. For Potable Water Supply – Standard Schedule 40, PVC pipe and socket fittings, and solvent-cemented joints.
   2. For Greywater/Non-potable Water Supply – Purple Colored Schedule 40, PVC pipe and socket fittings, and solvent-cemented joints.

E. Underground Branches and Offsets at Sprinklers and Devices: Schedule 80, PVC pipe; threaded PVC fittings; and threaded joints.
   1. Option: Plastic swing-joint assemblies, with offsets for flexible joints, manufactured for this application.

F. Risers to Aboveground Sprinklers and Specialties: Schedule 80, PVC pipe and socket fittings; and solvent-cemented joints.

G. Drain piping shall be the following:
   1. Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.

3.17 VALVE SCHEDULE

A. Underground, Shutoff-Duty Valves: Use the following:
   1. NPS 2 and Smaller: Curb valve, curb-valve casing, and shutoff rod.
   2. NPS 3 and Larger: Iron gate valve, resilient seated; iron gate valve casing; and operating wrench(es).

B. Aboveground, Shutoff-Duty Valves:
   1. NPS 2 and Smaller: Bronze gate valve.

C. Drain Valves:
   1. NPS 1/2 and NPS 3/4: Plastic ball valve.
   2. NPS 1 to NPS 2: Plastic ball valve.

END OF SECTION 32 84 00

SECTION 32 91 13

SOIL PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes planting soils specified according to performance requirements of the mixes.

B. Related Requirements:
1. Section 32 93 00 "Plants" for placing planting soil for plantings.
2. Section 31 10 00 “Site Clearing” for stockpiling of existing soil and clearing and grubbing.

1.3 DEFINITIONS

A. AAPFCO: Association of American Plant Food Control Officials.

B. Backfill: The earth used to replace or the act of replacing earth in an excavation. This can be amended or unamended soil as indicated.

C. CEC: Cation exchange capacity.

D. Compost: The product resulting from the controlled biological decomposition of organic material that has been sanitized through the generation of heat and stabilized to the point that it is beneficial to plant growth.

E. Duff Layer: A surface layer of soil, typical of forested areas, that is composed of mostly decayed leaves, twigs, and detritus.

F. Imported Soil: Soil that is transported to Project site for use.

G. Layered Soil Assembly: A designed series of planting soils, layered on each other, that together produce an environment for plant growth.

H. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.

I. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."

J. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

K. RCRA Metals: Hazardous metals identified by the EPA under the Resource Conservation and Recovery Act.

L. SSSA: Soil Science Society of America.

M. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

N. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

O. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.

P. USCC: U.S. Composting Council.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for application and use.
2. Include test data substantiating that products comply with requirements.
3. Include sieve analyses for aggregate materials.
4. Material Certificates: For each type of imported soil and soil amendment and fertilizer Five (5) working days before delivery to the site, according to the following:

a. Manufacturer's qualified testing agency's certified analysis of standard products.
b. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.
c. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.

B. Samples: For each bulk-supplied material, 1-gal. volume of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Do not move or handle materials when they are wet or frozen.
4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

1.6 QUALITY ASSURANCE

1.7 Testing Agency Qualifications: An independent laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed

1.8 Laboratories: Subject to compliance with requirements, provide testing by the following:

A. Wallace Laboratories, 365 Coral Circle, El Segundo, CA 90245. (310) 615-0116.

B. Fruit Growers Lab, Santa Paula, CA. (805) 392-2000

1.9 Multiple Laboratories: At Contractor's option, work may be divided among qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

PART 2 - PRODUCTS

2.1 PLANTING SOILS SPECIFIED ACCORDING TO PERFORMANCE REQUIREMENTS

A. Planting-Soil: Existing, on-site surface soil, with the duff layer, if any, retained; and stockpiled on-site; modified to produce viable planting soil. Using preconstruction soil analyses and materials specified in other articles of this Section, amend existing, on-site surface soil to become planting soil complying with the following requirements:

1. Particle Size Distribution by USDA Textures: Classified as sandy loam soil according to USDA textures.
2. Percentage of Organic Matter: Minimum 6 percent by volume.
3. Soil Reaction: pH of 6 to 7.

B. Planting-Soil: Imported, naturally formed soil from off-site sources and consisting of sandy loam loam soil according to USDA textures; and modified to produce viable planting soil. Amend imported soil with materials specified in other articles of this Section to become planting soil complying with the following requirements:

1. Sources: Take imported, unamended soil from sources that are naturally well-drained sites where topsoil occurs at least 4 inches deep, not from agricultural land, or marshes; and that do not contain undesirable organisms; disease-causing plant pathogens; or obnoxious weeds and invasive plants.
2. Additional Properties of Imported Soil before Amending: Minimum of 6 percent organic-matter content, friable, and with sufficient structure to give good tilth and aeration. Clean soil to be of the following:

a. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
b. Unsuitable Materials: Stones, roots, plants, sod, clay lumps, and pockets of coarse sand that exceed a combined maximum of 8 percent by dry weight of the imported soil.
c. Large Materials: Stones, clods, roots, clay lumps, and pockets of coarse sand exceeding 1 1/2 inches in any dimension.

2.2 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Class: T, with a minimum of 99 percent passing through a No. 8 sieve and a minimum of 75 percent passing through a No. 60 sieve.
2. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through a No. 60 sieve.
3. Form: Provide lime in form of ground dolomitic limestone.

B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent elemental sulfur, with a minimum of 99 percent passing through a No. 6 sieve and a maximum of 10 percent passing through a No. 40 sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through a No. 50 sieve.

E. Sand: Clean, washed, natural or manufactured, free of toxic materials, and according to ASTM C 33/C 33M.

2.3 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:

1. Feedstock: Limited to leaves.
2. Reaction: pH of 5.5 to 8.
3. Soluble-Salt Concentration: Less than 4 dS/m.
4. Moisture Content: 35 to 55 percent by weight.
5. Organic-Matter Content: 30 to 40 percent of dry weight.
6. Particle Size: Minimum of 98 percent passing through a 2-inch sieve.

B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture with 100 percent passing through a 1/2-inch sieve, a pH of 3.4 to 4.8, and a soluble-salt content measured by electrical conductivity of maximum 5 dS/m.

C. Wood Derivatives: Shredded and composted, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.

1. Partially Decomposed Wood Derivatives: In lieu of shredded and composted wood derivatives, mix shredded and partially decomposed wood derivatives with ammonium nitrate at a minimum rate of 0.15 lb/cu. ft. of loose sawdust or ground bark, or with ammonium sulfate at a minimum rate of 0.25 lb/cu. ft. of loose sawdust or ground bark.

2.4 FERTILIZERS

A. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.

B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified testing agency.

C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified testing agency.

D. Chelated Iron: Commercial-grade FeEDDHA for dicots and woody plants, and commercial-grade FeDTPA for ornamental grasses and monocots.

PART 3 - EXECUTION

3.1 GENERAL

A. Place planting soil and fertilizers according to requirements in other Specification Sections.

B. Planting soil is expected to be incorporated in the planting areas to bring the site to finish grade where required.

C. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.

D. Proceed with placement only after unsatisfactory conditions have been corrected.

E. Weed Abatement: Upon completion of soil preparation begin the weed abatement program. Spray a non-selective, trans locative herbicide to eradicate any germinated weeds or newly sprouted roots from trees that have been removed. Translocation shall be 7-10 days or an approved alternate time period. If weeds or grasses exist, re-water daily for fourteen consecutive days, until new growth appears. Reapply herbicide. Remove weeds after herbicide has had sufficient time to kill the weeds. Repeat as necessary to eradicate weeds. Maintain the site weed free until final acceptance by the District utilizing mechanical, manual, and/or chemical treatment. Herbicide must be approved by the District Representative.

3.2 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

A. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.

B. Unsuitable Materials: Clean soil to contain a combined maximum of 8 percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.

C. Screening: Pass unamended soil through a 3-inch sieve to remove large materials.

3.3 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.

B. Subgrade Preparation: Till subgrade to a minimum depth of 8 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply, add soil amendments, and mix approximately half the thickness of unamended soil over prepared, loosened subgrade according to "Mixing" Paragraph below. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.

C. Mixing: Spread unamended soil to total depth of 8 inches, but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.

1. Amendments: Apply soil amendments and fertilizer, if required per Agronomic Soils Report , evenly on surface, and thoroughly blend them with unamended soil to produce planting soil.

a. Mix lime with dry soil before mixing fertilizer.
b. Mix fertilizer with planting soil no more than seven days before planting.

2. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 8 inches in loose depth for material compacted by compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

D. Compaction: Compact each blended lift of planting soil to 80-85 percent of maximum Standard Proctor density according to ASTM D 698 except where a different compaction value is indicated on Drawings.

E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.4 BLENDING PLANTING SOIL IN PLACE

A. General: Mix amendments with in-place, unamended soil to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.

B. Preparation: Till unamended, existing soil in planting areas to a minimum depth of 8 inches. Remove stones larger than 3 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

C. Mixing: Apply soil amendments and fertilizer, if required per Agronomic Soils Report, evenly on surface, and thoroughly blend them into full depth of unamended, in-place soil to produce planting soil.

1. Mix lime with dry soil before mixing fertilizer.
2. Mix fertilizer with planting soil no more than seven days before planting.

D. Compaction: Compact blended planting soil to 80-85 percent of maximum Standard Proctor density according to ASTM D 698 except where a different compaction value is indicated on Drawings.

E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.5 APPLYING COMPOST TO SURFACE OF PLANTING SOIL

A. Application: Apply compost component of planting-soil mix to surface of in-place planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.

B. Finish Grading: Grade surface to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. The following tests will be performed:

1. Compaction: Test planting-soil compaction after placing each lift and at completion using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D 698. Space tests at no less than one for each 1000 sq. ft. of in-place soil or part thereof.
2. Performance Testing: For each amended planting-soil type, demonstrating compliance with specified performance requirements. Perform testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.

C. Soil will be considered defective if it does not pass tests.

D. Prepare test reports.

E. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.

3.7 PROTECTION

A. Protection Zone: Identify protection zones according to Section 01 56 39 "Temporary Tree and Plant Protection."

B. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

C. If planting soil or subgrade is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Landscape Architect and replace contaminated planting soil with new planting soil.

3.8 CLEANING

A. Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.

B. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.

1. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

END OF SECTION 32 91 13

SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. New Turf Sodding.
2. Replacement of turf damaged during construction operations with sod.

B. Related Requirements:

1. Section 329300 "Plants" for trees, shrubs, ground covers, and other plants as well as border edgings and mow strips.

1.03 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329115 "Soil Preparation (Performance Specification)" and drawing designations for planting soils.

E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.04 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Construction Manager, Superintendent, Landscape Contractor Foreman, Landscape Architect.

1.05 INFORMATIONAL SUBMITTALS

A. Certification of Grass Sod: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and

variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of suppliers.

B. Product Certificates: For fertilizers, from manufacturer.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf and meadows during a calendar year. Submit before expiration of required maintenance periods.

1.07 QUALITY ASSURANCE

1.08 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Accompany each delivery of bulk materials with appropriate certificates.

1.09 FIELD CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.

1. Fall Planting: October 15 through December 31.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.01 TURFGRASS SOD

A. Turfgrass Sod: Certified, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

B. Turfgrass Species, Cool-Season Grass: Sod of grass species as follows, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:

1. Products: Subject to compliance with requirements, provide the following available products that may be incorporated into the Work include, but are not limited to, the following:

a. Marathon II Sod.

2.02 FERTILIZERS

A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition:

a. 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

b. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable, or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.02 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.

2. Protect grade stakes set by others until directed to remove them.

3.03 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329115 "Soil Preparation (Performance Specification)."

B. Placing Planting Soil: Blend planting soil in place.

1. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.04 SODDING

A. Lay sod within 24 hours of harvesting unless a suitable preservation method is accepted by Architect prior to delivery time. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across slopes exceeding 1:3.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.05 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth’s Ally or approved equal. Toxic chemical based pesticides are prohibited.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow Marathon II Sod to a height of 1-1/2 to 2 inches.

D. Turf Postfertilization: Apply slow-release fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

2. Continue weed and feed application for one year or a total of 4 applications to new and established areas.

3.06 REPAIR AND REPLACEMENT

A. General: Repair or replace existing or new turf that is damaged by construction operations, in a manner approved by Landscape Architect and District Representative.

1. Areas of existing turf, damaged by construction operations, shall be replaced with sod to the limits determined by the District Representative.

3.07 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.08 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

END OF SECTION 32 92 00

SECTION 32 93 00

PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plants and Trees.

B. Related Requirements:

1. Section 01 56 39 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Section 32 91 15 "Soil Preparation"
3. Section 32 94 00 “Landscape Planting Accessories”
4. Section 32 98 13 “Landscape Maintenance/Establishment Period”

1.2 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

C. Finish Grade: Elevation of finished surface of planting soil.

D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth’s Ally or approved equal. Toxic chemical based pesticides are prohibited.

E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

F. Planting Area: Areas to be planted.

G. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 32 91 13 "Soil Preparation for drawing designations for planting soils.

H. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

I. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the

stem or trunk broadens to form roots, the area of transition between the root system and the stem or trunk.

J. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

K. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 50 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

B. Samples for Verification: For each of the following:

1. Organic Mulch: 1-quart volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
2. Weed Control Barrier: 12 by 12 inches.
3. Root Barrier: Width of panel by 12 inches.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

C. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

D. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before expiration of required maintenance periods.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

D. Plants & Trees. The Contractor shall notify the District Representative seven (7) days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery. Maintain and protect plant material in a healthy condition prior to planting. Plant material which has been rejected or damaged after acceptance shall be removed from the site and replaced with acceptable materials.

1. Trees and shrubs provided shall be of equal or better quality to those available at Norman’s Nursery, Devil Mountain Wholesale Nursery or Boething Treeland Farms.
2. All plants and trees shall be No. 1 grade healthy, disease, and pest free, without visible damage, abrasions, or disfigurement.

E. Plants specified shall be delivered in the containers specified and true to industry standard size for the container specified. Plants shall have been growing with the specified container a minimum of six months and no longer than one (1) year and shall be properly rooted without being root bound. Plants with cracked or broken root balls shall be rejected.”

F. All trees shall be true to type or name as ordered or shown on the plans and shall be individually tagged or tagged in groups by species and cultivar (variety).

G. All trees shall be healthy, have a form typical for the species or cultivar, be well-rooted, strong in branching pattern and properly trained. Trees which are deemed by the District Representative not to have these qualities will be rejected and replaced without additional charge to the District.

H. All trees shall comply with Federal and State laws requiring inspection for plant diseases and pest infestations. Inspection certificates required by law shall accompany each shipment of plants.

I. Plant Material Observation: Landscape Architect and District Representative may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Landscape Architect and District Representative may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1. Notify Landscape Architect of sources and estimated time of delivery of planting materials seven days in advance of delivery to site.
2. Rejected plant material must be removed from the Project Site and replaced at the Contractor's time and expense.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

D. Handle planting stock by root ball.

E. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.

1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

F. Deliver plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1. Do not remove container-grown stock from containers before time of planting.
2. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.8 FIELD CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.9 WARRANTY

A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
b. Structural failures including plantings falling or blowing over.
c. Faulty performance of tree stabilization.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Periods: From date of planting completion.

a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
c. Annuals: 6 months.

3. Include the following remedial actions as a minimum:

a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Landscape Architect, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Annuals and Biennials: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery.

2.2 FERTILIZERS

A. Planting Tablets: Tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.

1. Size: 7-gram tablets.
2. Nutrient Composition: 12 percent nitrogen, 8 percent phosphorous, and 8 percent potassium, by weight plus micronutrients (12-8-8 NPK).che

2.3 MULCHES

A. Refer to Section 32 94 00 Landscape Planting Accessories.

2.4 PESTICIDES

A. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical-based pesticides are prohibited.

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.5 TREE-STABILIZATION MATERIALS

A. Refer to Section 32 94 00 Landscape Planting Accessories.

2.6 MISCELLANEOUS PRODUCTS

A. Wood Pressure-Preservative Treatment: AWPA U1, Use Category UC4a; acceptable to authorities having jurisdiction, and containing no arsenic or chromium.

B. Root Barrier: Black, molded, modular panels 24" high (deep), 85 mils thick, and with vertical root deflecting ribs protruding 3/4 inch out from panel surface; manufactured with minimum 50 percent recycled polyethylene plastic with UV inhibitors.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. Century Products Root Barrier.
b. Villa Root Barrier.
c. Substitutions: Products by other manufacturers that comply with specifications will be considered in accordance with Section 012500 – Substitution Procedures.

C. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

D. Planter Drainage Gravel: Washed, sound crushed stone or gravel complying with ASTM D 448 for Size No. 8.

E. Planter Filter Fabric: Nonwoven geotextile manufactured for separation applications and made of polypropylene, polyolefin, or polyester fibers or combination of them.

F. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb of vesicular-arbuscular mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, 33 percent hydrogel, and a maximum of 5.5 percent inert material.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
3. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's and District Landscape Inspector’s acceptance of layout before excavating or planting. Make minor adjustments as required.

1. Notify District Landscape Inspector seven days in advance of delivery to site and schedule an inspection of tree placement.

3.3 PLANTING AREA ESTABLISHMENT

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329115 "Soil Preparation (Performance Specification)."

B. Placing Planting Soil: Blend planting soil in place.

C. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

D. Planting Pits and Trenches: Excavate circular planting pits.

1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as ball diameter for container-grown stock.
3. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
5. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
6. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
7. Maintain supervision of excavations during working hours.
8. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
9. If drain tile is indicated on Drawings or required under planting areas, excavate to top of porous backfill over tile.

E. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated. Amend backfill soil as directed by required soil testing per Section 329115 "Soil Preparation (Performance Specification)”

F. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

G. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

H. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.4 TREE, SHRUB, AND VINE PLANTING

A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

1. Backfill: Planting soil amended per required soils tests. For trees, use excavated soil for backfill.
2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air

pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.

4. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.

    a. Quantity: As indicated on Drawings.

5. Continue backfilling process. Water again after placing and tamping final layer of soil.

C. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 2 inches above adjacent finish grades.

1. Carefully remove root ball from container without damaging root ball or plant.
2. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
3. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.

    a. Quantity: As indicated on Drawings

4. Continue backfilling process. Water again after placing and tamping final layer of soil.
5. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.5 TREE, SHRUB, AND VINE PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees, shrubs, and vines as directed by Landscape Architect.

C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

D. Do not apply pruning paint to wounds.

3.6 TREE STABILIZATION

A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:

1. Upright Staking and Tying: Stake trees of 2- through 5-inch caliper. Stake trees of less than 2-inch caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend to the dimension indicated on Drawings above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
2. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.

3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

B. Trunk Stabilization by Staking and Guying: Install trunk stabilization as follows unless otherwise indicated on Drawings. Stake and guy trees more than 14 feet in height and more than 3 inches in caliper unless otherwise indicated.

1. Site-Fabricated, Staking-and-Guying Method: Install no fewer than three guys spaced equally around tree.

a. Securely attach guys to stakes 30 inches long, driven to grade. Adjust spacing to avoid penetrating root balls or root masses. Provide turnbuckle for each guy wire and tighten securely.
b. For trees more than 6 inches in caliper, anchor guys to wood deadmen buried at least 36 inches below grade. Provide turnbuckle for each guy wire and tighten securely.
c. Support trees with bands of flexible ties at contact points with tree trunk and reaching to turnbuckle. Allow enough slack to avoid rigid restraint of tree.
d. Attach flags to each guy wire, 30 inches above finish grade.

2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

3.7 ROOT-BARRIER INSTALLATION

A. Install root barrier where trees are planted within 60 inches of paving or other hardscape elements, such as walls, curbs, and walkways, unless otherwise indicated on Drawings.

B. Align root barrier vertically and run it linearly along and adjacent to the paving or other hardscape elements to be protected from invasive roots.

C. Install root barrier continuously for a distance of 60 inches in each direction from the tree trunk, for a total distance of 10 feet per tree. If trees are spaced closer, use a single continuous piece of root barrier.

1. Position top of root barrier flush with finish grade.
2. Overlap root barrier a minimum of 12 inches at joints.
3. Do not distort or bend root barrier during construction activities.
4. Do not install root barrier surrounding the root ball of tree.

3.8 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated on Drawings in even rows with triangular spacing.

B. Use planting soil for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 PLANTING AREA MULCHING

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.10 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to eliminate use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.11 PESTICIDE APPLICATION

A. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth’s Ally or approved equal. Toxic chemical based pesticides are prohibited.

B. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations. Do not apply to seeded areas.

C. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.12 REPAIR AND REPLACEMENT

A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Landscape Architect.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Landscape Architect.

B. Remove and replace trees that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that

Landscape Architect determines are incapable of restoring to normal growth pattern.

1. Provide new trees of same size as those being replaced for each tree of 6 inches or smaller in caliper size.
2. Species of Replacement Trees: Same species being replaced.

3.13 CLEANING AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

D. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

E. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

3.14 MAINTENANCE

A. See Section 32 98 13 - Landscape Maintenance / Establishment Period.

END OF SECTION 32 93 00

SECTION 32 94 00

LANDSCAPE PLANTING ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete exterior Landscape Planting Accessories installation, as shown in the Contract Drawings, and as specified herein this Section.

B. Work under this Section consists of, but is not necessarily limited to, furnishing, and installing the following:

1. Mulches (wood products) for newly planted trees.
2. Stakes.
3. Miscellaneous Materials (Herbicides, Vitamin Stimulant/Root Hormone, etc.).
4. Tree Watering Bags

C. Related Sections: The following Sections contain requirements that relate to Work in this Section:

1. Section 31 10 00 – Site Clearing
2. Section 32 01 91 – Tree Protection and Root Pruning.
3. Section 32 93 00 – Plants
4. Section 32 98 13 – Landscape Maintenance / Establishment Period.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

A. References:

1. ASTM – American Society for Testing and Materials.
2. ANSI – American National Standards Institute.

B. Measurements:

1. PSI: Measurement, in pounds per square inch.
2. CU/FT: Measurement, in cubic foot.
3. PPM: Measurement, in parts per million.

1.3 SUBMITTALS

A. General:

1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF

(Portable Document Format) file.

B. Digital Submittal Information:

1. Product/Material Data. Submit available product/material literature supplied by manufacturer's, indicating that their products comply with specified requirements. Provide manufacturing source (name, address, and telephone number), and distributor source (name, address, and telephone number) for each type of product/material.
2. Qualification Data: Submit names for firms and persons specified in the "Quality Assurance and Control" Article to demonstrate their capabilities and experience on similar Landscape Planting Accessories installations.

C. Material Samples: Submit four (2) sets of physical Material Samples for review of kind, color, pattern, size, and texture for a check of these characteristics with other elements, and for a comparison of these characteristics between Submittal and actual component as delivered and installed. Provide Material Samples bound and individually wrapped in re-sealable labeled 1-gallon plastic bags (as applicable):

1. 0.50 cubic foot of Landscape Mulch Material (Shredded Wood Mulch).

D. Scaled Shop Drawings: Not Required.

E. Field-Constructed Mock-ups: Not Required.

F. Submittals under this Article will be rejected and returned without the benefit of review if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.

G. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly.

1.4 QUALITY ASSURANCE AND CONTROL

A. Installer Qualifications:

1. Engage an experienced Installer who has completed Landscape Planting Accessories work similar in material, design, and extent to that indicated for this Project and with a record of successful installation.
2. Installer's Field Supervision: Installer shall maintain an experienced full-time supervisor on the Project site during times that installations under this Section are in progress.

B. Observation: District Representative or his/her designated representative may observe installation of Landscape Planting Accessories at Project Site for compliance with requirements for type, size, and quality. District Representative or his/her designated representative retains right to observe Landscape Planting Accessories for defects and to reject unsatisfactory or defective material at any time during progress of Work. Contractor shall remove rejected Accessories immediately from Project site.

C. Manufacturer's Directions: Follow Manufacturer's directions and drawings in cases where the Manufacturers of articles used in this Section furnish directions covering points not shown in the Contract Drawings and Contract Specifications.

D. Permits, Fees, Bonds, and Inspections: Contractor shall arrange and pay for permits, fees, bonds, testing services, and inspections necessary to perform and complete Work under this

Section.

E. Single-Source Responsibility: Obtain each color, type, and variety of products/materials from a single source with resources to provide products/materials of consistent quality in appearance and physical properties without delaying Work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Provide new, unused materials indicated under this Section. Store and secure properly to prevent theft or damage. Deliver and store perishable material in original, unopened packaging. It is the responsibility of the Contractor to install “factory condition” Units.

B. Damaged Materials: Be responsible for all damage or disfiguration of Work until Final Acceptance. Remove off site and replace at no additional cost to District all damaged or rejected materials.

C. Deliver materials so as to not delay Work and install only after preparations for installation have been completed.

1.6 COORDINATION, SCHEDULING, AND OBSERVATIONS

A. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.

B. Excavation: When conditions detrimental to installing Landscape Planting Accessories are encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease installation operations and notify District Representative or his/her designated representative for further direction.

C. Field Measurements: Contractor shall take field measurements as required. Report major discrepancies between the Contract Drawings and field dimensions to the District Representative or his/her designated representative prior to commencing Work.

D. Installation: Perform installation of Landscape Planting Accessories only when weather and soil conditions are suitable in accordance with locally accepted practices.

E. Construction Site Observations: Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the District Representative or his/her designated representative are required.

1.7 SUBSTITUITIONS

A. Consideration: Materials to be considered equal to the Materials indicated herein this Section shall be reviewed by the District Representative or his/her designated representative. Materials with equal performance characteristics produced by other Manufacturer’s and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the District Representative or his/her designated representative. The burden of proof on product equality is on the Contractor.

B. Specific reference to Manufacturer’s names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the District Representative or his/her designated representative for Work under this Section.

C. Materials substituted and installed by the Contractor, without prior written approval by the District Representative or his/her designated representative, may be rejected. Contractor shall not be entitled to be compensated by the District where the Contractor has installed rejected substitutions without receiving prior written approval.

D. Contract Price: Substituted Materials under this Section shall not increase the Contract price.

1.8 LANDSCAPE MAINTENANCE/ ESTABLISHMENT PERIOD

A. Refer to Section 32 98 13 – Landscape Maintenance Establishment Period, for requirements under this Article.

1. During the duration of the Landscape Maintenance / Establishment Period, continuously maintain Landscape Planting Accessories by tightening, holding plumb, and/or repairing Staking supports, providing adequate depths and coverage requirements of Landscape Mulching Materials, watering, and other requirements, as required, to establish healthy, viable landscape planting materials until Final Acceptance of Work is granted.

PART 2 - PRODUCTS

2.1 LANDSCAPE MULCH MATERIALS

A. Shredded Wood Mulch: Shredded Wood Mulch, free from deleterious materials, debris, and weed seed. Suitable as a top dressing of trees, shrubs, and groundcovers, consisting of following:

1. Type: Shredded cedar, redwood, fir, or hardwood commercial wood bark products, composted with humus and leaf materials. Shredded Wood Mulch shall be graded and to average dimensions of one-inch (1”) to three-inches (3”) in length, and flat in cross-section.

a. Minimum organic matter content at 80%.
b. pH between 5.0 and 8.0.
c. Salt content shall be less than 4 millimho/cm @ 25 ˚ C. on a saturated paste extract.
d. Boron content of the saturated extract shall be less than 1.0 parts per million.
e. Calcium carbonate shall not be present.
f. Carbon: Nitrogen ratio is less than 100:1.
g. Compost shall be aerobic without malodorous presence of decomposition products.
h. Maximum particle size shall be 2 inches. A maximum of 5% shall pass a No. 2 screen.

Maximum Total Permissible Pollutant Concentrations (in parts per million (PPM)) on a dry weight basis:	
Arsenic	20 ppm
Molybdenum	30 ppm
Cadmium	15 ppm
Nickel	50 ppm
Chromium	150 ppm
Selenium	25 ppm
Cobalt	50 ppm

Silver	10 ppm
Copper	150 ppm
Vanadium	50 ppm
Lead	150 ppm
Zinc	150 ppm
Mercury	10 pm

2. Products & Manufacturer's: Subject to compliance with requirements, mulch shall be *Cover Mulch (formerly ES-2 Mulch)*, by Agromin Horticultural Products, or equal, as approved by the District.

2.2 STAKES

A. Tree Staking Assembly:

B. Wooden Stake Tree Staking Assembly: Complete tree staking Unit, consisting of Lodge Pole Pine Tree Stakes with Tree Straps

1. Tree Stakes: Lodge Pole Pine Wooden Tree Stake, straight shaft, shaved and cut, cleaned and bare of branches and stubs, free of loose knots, bends, splits, or bows, of uniform thickness, with a minimum diameter of either two-inches (2") or two-one-half (2-1/2") to three-inches (3"). Lengths shall be eight-feet (8'), ten-feet (10') or twelve-feet (12'), as required, to adequately and firmly penetrate the sub grade and support the tree. Stake shall have a minimum ten-inch (10") long tapered/conical driving point, and chamfered top to minimize splitting when driven. Stake shall be pressure treated (per Federal Specification TT-W-00571-J-Table 2) with an EPA- registered pesticide containing inorganic arsenic (copper chromium arsenate, meeting Federal Specification TT-W-550-Type 1) to protect it from insect attack and decay.

   a. Quantity, Size, and Length per tree:
   b. #15 container stock: One (1), two-inch (2") diameter, 10'-0 long or 12'-0" long (as required) Wooden Tree Stake per tree.
   c. 24" box container stock: Two (2) Two-inch (2") diameter, ten- foot (10') long or twelve-foot (12') long (as required) Wooden Tree Stakes per tree.
   d. >24" box container stock: Minimum two (2) two-one-half- inches (2-1/2") or three-inches (3") diameter, ten-foot (10') or twelve-foot (12') long (as required) Wooden Tree Stakes per tree.

2. Special Circumstances: Should lengths of Wooden Tree Stakes be inadequate to satisfactorily support the tree being staked in an upright, plumb condition.
3. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

   a. Villa Root Barrier, Site One Landscape Supply
   b. Sullivan & Mann Lumber Company, Tustin, CA.
   c. BVC Tree Stakes.
   d. TruStakes, 4Seasons Wood Products.
   e. Or equal, as approved by the District Representative or his/her designated representative.

C. Tree Straps: Non-stretch, biodegradable cotton, dyed dark-green color, one-inch (1") wide x eighteen-inches (18") long, with one-inch (1") brass grommets at each end. Break strength at 260 lbs. nominal.

1. Quantity, Size, and Length per tree:

    a. #5 container stock: Provide two (2) Tree Straps minimum for each Tree Stake provided.
    b. #15 container stock: Provide two (2) Tree Straps minimum for each Tree Stake provided.
    c. 24" box container stock and larger: Provide two (2) Tree Straps minimum for each set of Tree Stakes provided.

2. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

    a. #3718 Biodegradable Original Treestrap®, GCS.
    b. Or equal (no known equal).

3. Tree Strap Wire: Smooth, galvanized annealed Steel Wire, 12 gauge. Provide Wire in adequate lengths to anchor the grommet ends of the Tree Straps to the Tree Stakes.

D. Tree Watering Bags: Slow-release, 15-gallon min. watering bag. Bag shall be made of UV stabilized, green polyethylene with scrim reinforcement, and nylon zippers.

1. Products & Manufacturer's: Subject to compliance with requirements, Tree Watering Bags shall be Treegator Original by Spectrum Products, Inc., or equal, as approved by the District.

    a. Provide one (1) tree bag per tree.

2.3 MISCELLANEOUS MATERIALS

A. Water: Per ASTM C94, from potable domestic source, and free from deleterious materials such as oils, acids, and organic matter. Transport as required.

B. Stress Reducing Agent: 100% natural organic root and plant stimulator solution, used to eliminate transplant shock and provide better establishment of plants. Solution shall contain a natural wetting agent, designed to improve nutrient release, water-holding capaDistrict, cation exchange capaDistrict in soil, and stimulate fertilizer and micronutrient uptake.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

    a. Roots NoBurn®, Novozymes Biologicals, Inc., Salem, VA.
    b. Essential® Plus 1-0-1, Growth Products, White Plains, NY.

2. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations.

C. Wetting Agent and Soil Penetrant (Surfactant): Highly concentrated liquid solution. Provide in a diluted liquid solution, mixed with water, at the time of watering-in recently planted plant species.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

    a. Roots NoBurn®, Novozymes Biologicals, Inc., Salem, VA.
    b. LESCO-Wet™ Plus, Lesco, Inc., Cleveland, OH.

c. Naiad Liquid Wetting Agent, Naiad Company, Inc., Stockton, CA.
d. Aqua-Gro L, Scotts Company, Marysville, OH.
e. Sixteen-90, Aquatrols, Cherry Hills, NJ.
f. Or equal, as approved by the District Representative or his/her designated representative.

2. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one hundred (100) gallons of water.

D. Plant Vitamin/Hormone Stimulant: Highly concentrated liquid vitamin solution. Provide in a diluted liquid solution, mixed with water, at the time of watering-in recently planted plant species.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

a. SUPERthrive, Vitamin Institute.
b. Roots Concentrate Rooting Stimulant, Novozymes Biologicals, Inc.
c. Root-Maxx Plus, Bio-Plex.
d. Or equal, as approved by the District Representative or his/her designated representative.

2. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

E. Herbicides: EPA registered and approved, from the following:

1. Non-Selective Post-Emergent Herbicide: Spray-applied solution containing a minimum of 41% of the active ingredient "glyphosate" (full strength), with a surfactant, mixed with water accordingly per the Manufacturer's directions.

a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

1) Roundup® PRO, (41% glyphosate), Monsanto Company.
2) Roundup® PROmax (concentrate, 50% glyphosate), Monsanto Company.
3) Honcho® Plus, (41% glyphosate), Monsanto Company.
4) Prosecutor (41% glyphosate), LESCO, Inc.
5) High Yield® Kill-Zall Weed & Grass Killer, (41% glyphosate), Voluntary Purchasing Groups.
6) Or equal, as approved by the District Representative or his/her designated representative.

b. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

2. Selective Pre-Emergent Herbicide (Packaged dry material application): Pre- emergent control of annual grasses and broadleaf weeds in turf grass areas, and woody ornamental trees, shrubs, vines, and groundcover areas.

a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

1) Ronstar® 2G, (granular), Aventis Environmental Science USA.
2) Snapshot® 2.5 GT (granular), (2% trifluralin), Dow AgroSciences LLC.

3) XL*2G, SETRE Chemical Company.
4) Casoron 4G, Chemtura.
5) Treflan® HFP (43% trifluralin), Dow AgroSciences LLC.
6) Treflan® TR-10, (10% Granular trifluralin), Dow AgroSciences LLC.
7) Surflan®, Dow AgroSciences, LLC.
8) Or equal, as approved by the District Representative or his/her designated representative.

b. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

3. Selective Post-Emergent Herbicide: Pre-mixed, flow-able formulation designed for product stability, uniformity in the spray solution and ease of handling. Post- emergent control of annual grasses, nutsedge, and broadleaf weeds in turf, generally with one (1) application.

a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

1) Trimec® Plus, PBI/Gordon Corporation.
2) Three-Way, LESCO, Inc.
3) Or equal, as approved by the District Representative or his/her designated representative.

b. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one hundred (100) gallons of water.

PART 3 - EXECUTION

3.1 GENERAL

A. Installation practices of the Landscape Planting Accessories shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted horticultural practice, as approved by the District Representative or his/her designated representative. Contractor shall notify the District Representative or his/her designated representative, in writing, on the anticipated commencement date and length of duration of the landscape installation.

B. Examination: Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of Work of this Section. NO WORK UNDER THIS SECTION SHALL COMMENCE UNTIL ALL SUBMITTALS UNDER THIS SECTION HAVE BEEN REVIEWED AND APPROVED, IN WRITING. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

C. Prior to Work in this Section, Contractor shall examine previously installed Work from other trades and verify that such Work is complete and as required, to the point where the installation of the Landscape Planting Accessories may commence properly.

3.2 PROTECTION OF SITE

A. Contractor shall protect existing and new improvements and systems installed prior to installation of Landscape Planting Accessories. Maintain protection in place until completion of Work and Landscape Maintenance / Establishment Period.

3.3 STAKING

A. General: Tree Staking shall be per the direction of the District Representative or his/her designated representative. Staking of trees shall be completed immediately following tree planting operations.

1. Contactor shall provide new Tree Stake assemblies; reconditioned or previously- used Tree Stake or Tree Guy assemblies shall not be permitted. Provide one (1) set of Tree Staking materials per tree, as required. Trees shall remain plumb and straight from installation through the Contractor Warranty period. Staking assemblies shall remain the property of the District.

B. Staking Methodology: Unless otherwise directed on the Contract Drawings or as directed by the District Representative or his/her designated representative based on field conditions, provide the following Staking Assemblies, as measured by the size of the tree being supported:

1. 15-gallon size Container Stock to 36”-Box Tree, or for trees up to 3” caliper: Provide Staking Method. Number of stakes per tree shall be as directed herein this Section.
2. For trees larger than 36”-Box size or over 3” caliper: Provide Staking as directed by the District Representative or his/her designated representative.

C. Tree Staking Method:

1. Single Tree Stake:

a. Locate Stake at the closest point to the main trunk as possible, yet outside of the root ball and tree branch canopy.
b. Firmly drive the tapered end of the Stake plumb into the undisturbed native sub-grade, perpendicular to the side of the prevailing wind, at the minimum depth indicated in the Contract Drawings, or deeper, as required, to firmly support the Stake and minimize any movement of the Stake. Do not damage the tree trunk nor branch canopy, nor penetrate the root ball with the Stake. Do not damage or splinter the Stake. Stake shall not touch the trunk nor branch canopy of the tree.

2. Double Tree Stakes:

a. Locate Stakes at the closest point to the main trunk as possible, yet outside of the root ball and tree branch canopy.
b. Firmly drive the tapered end of one (1) of the Stakes plumb into the undisturbed native sub-grade, perpendicular to the side of the prevailing wind, at the minimum depth indicated in the Contract Drawings, or deeper, as required, to firmly support the Stake and minimize any movement of the Stake. Do not damage the tree trunk or branch canopy, nor penetrate the root ball with the Stake. Do not damage or splinter the Stake.
c. Install the other Stake in similar fashion, directly opposite from the first Stake (180 degrees), and equidistant from the tree trunk.
d. Installed Stakes shall not touch the trunk nor branch canopy of the tree.

3. Tying to Tree Stakes:

a. Tree Straps: Wrap and twist the Tree Strap around the tree trunk, at the lowest point where the tree gains the highest support, per the direction of the District Representative or his/her designated representative. Secure the Strap with wire; thread the wire through the grommet ends of the Strap and twist wire to secure. Wrap other end of wire around the Stake, twist, and secure it to the Stake. Repeat

for other Stake(s), as required. For trees requiring multiple tree straps, locate additional straps as required along the tree trunk to provide additional vertical support. Cut off and bend back excessive wire beyond the twists to the Stake(s) to provide a safe condition. The tree shall be supported accordingly to assure a straight, firm position of the tree canopy, yet to allow enough slack to avoid rigid restraint of the tree.

b. Once the tree is thoroughly staked, carefully remove the nursery stake(s). Backfill and tamp the nursery stake void(s) with planting soil.

3.4 MULCHING

A. General: Mulch backfilled surfaces of pits, trenches, planted areas, and other areas, that are not receiving hydroseeding, as indicated.

B. Shredded Wood Mulch:

1. General: Verify locations to receive Shredded Wood Mulch.
2. Apply the following average thickness of Shredded Wood Mulch, and finish level with adjacent finished surfaces. Do not place Shredded Wood Mulch directly against trunks or stems of Plant Materials. Remove Shredded Wood Mulch that is placed against the growing bases or within the basal nodes of plants.
3. Thickness/Depth: Refer to contract Drawings.
4. While settlement and/or decomposition of the Shredded Wood may occur during the duration of the Contract, the Shredded Wood Mulch thickness as indicated shall be consistent throughout the duration of the Contract. The Contractor shall provide additional Shredded Wood Mulch, as needed, and as directed by the District Representative or his/her designated representative, to maintain the specified constant thickness of the Shredded Wood Mulch, until Acceptance of Work is granted.

3.5 TREE WATERING BAGS:

A. Place around tree trunk, with the zippers on uphill side of tree. Wrap both sides around trunk until zippers meet and zip together from bottom to top.

B. Insert hose into fill opening and begin filling with water. Fill bag to 1/4 capacity.

C. Lift up on straps at top of bag to expand bottom. Fill all tree watering bags in a manner and volume consistent with the manufacturer’s intent.

D. See section 32 98 13 for monitoring and maintenance requirements of tree bags through the establishment and maintenance periods.

3.6 CLEAN UP AND PROTECTION

A. For Work under this Section, keep Work area in a clean, orderly, and safe condition. Contractor shall remove trash caused from his Work on a weekly basis throughout the duration of the Work.

B. Protect landscaping from damage due to landscape operations, operations by other Contractors and trades, and trespassers. Maintain protection during installation and landscape maintenance / establishment periods. Treat, repair, or replace damaged Landscape Planting Accessories as directed.

C. Upon completion of his Work under this Section, the Contractor shall remove rubbish, waste, debris, excess construction materials, and other items resulting from construction operations

offsite as described herein this Section and directed by the District Representative or his/her designated representative.

3.7 FINAL REVIEW

A. Final Review under this Section shall be performed upon completion of the Landscape Maintenance / Establishment Period. (Refer to Section 32 98 13 – Landscape Maintenance / Establishment Period for requirements).

END OF SECTION 32 94 00

SECTION 32 98 13

LANDSCAPE MAINTENANCE / ESTABLISHMENT PERIOD

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete Landscape Maintenance / Establishment Period ("Service"), as specified during progress of Work, after installation, for a designated period after Preliminary Acceptance, as shown in the Contract Drawings, and as specified herein this Section.

B. Contractor acknowledges that the Services specified under this Section are not intended to express every detail of the Services to be provided by Contractor, and Contractor hereby represents that it is experienced and competent in providing Services that meets or exceeds generally accepted practices commensurate with those provided by other companies that provide such Service.

C. Work under this Section shall consist of, but not be limited to, furnishing, and installing the following:

1. Establishment of Landscape Installation, for a given frequency and duration as specified herein this Section. Work includes the following:

a. Litter Control.
b. Weed Control.
c. Pest Control.
d. Plant Care.
e. Fertilization of Plant Materials.
f. Plant Replacement.
g. Plant Pruning.
h. Plant Staking and Adjustments.
i. Temporary Plant Protection.
j. Watering of sod, filling and monitoring of Tree Watering Bags.
k. Cleaning of Paving Surfaces.
l. Reapplication of Mulching Materials.
m. Erosion Control and Drainage.
n. Removal of Green Waste.

D. Related Sections: The following Sections contain requirements that relate to Work in this Section:

1. Section 01 77 00 – Closeout Procedures
2. Section 32 93 10 - Plants.
3. Section 32 94 00 - Landscape Planting Accessories.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

A. References:

1. USDA- United States Department of Agriculture.

2. ASTM – American Society for Testing and Materials.
3. ANSI – American National Standards Institute.
4. ISA- International Society of Arboriculture.

B. Standards:

1. American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300), American National Standards Institute, Latest Edition.
2. American National Standard for Tree Care Operations (ANSI Z133), American National Standards Institute, Latest Edition.
3. Tree Pruning Guidelines, International Society of Arboriculture, 1995 Edition.
4. Pruning Standards for Shade Trees, National Arborists Association, Latest Edition.

1.3 SUBMITTALS

A. Digital Submittal Information:

1. Quality Control Submittal:

a. Qualification Data: Submit names for firms and persons specified in the “Quality Assurance and Control” Article to demonstrate their capabilities and experience on similar Landscape Planting Accessories installations.
b. Schedule of maintenance operations and monthly status report, including list of equipment, materials proposed for the job, and watering schedule(s).
c. Licenses, permits and insurance required by the local jurisdiction, the State, or Federal government, pertaining to Work under this Section.
d. Written application recommendation by a licensed agricultural pest control advisor for weed, pest and disease controls restricted by the Director of Agriculture proposed for this Work.

B. Closeout Procedures Submittal:

1. Include in a single 3-ring binder a Landscape Maintenance Manual for use by the District, containing an indexed collection of all schedules, records and permits listed above, including documentation of accepted condition of planting and irrigation at Final Acceptance.

C. Submittals under this Article will be rejected and returned without the benefit of review by the District or his/her designated representative if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.

D. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Construction Manager.

1.4 QUALITY ASSURANCE AND CONTROL

A. Installer Qualifications:

1. Experience: Contractor or sub-contractor performing Work under this Section shall have a full-time employee assigned to the Project as foreman for the duration of the Contract. Employee shall have a minimum of four (4) year experience in landscape maintenance supervision, with experience or training in entomology, pest control, soils, fertilizers, and plant identification.
2. Labor Force: Landscape maintenance labor force shall be thoroughly familiar with, and

trained in, the Work to be accomplished, and shall perform the task in a competent, efficient manner acceptable to the District.

B. Requirements:

1. Supervision: Landscape Maintenance Foreman shall directly supervise the Work force during duration indicated herein this Section. Notify the District of changes in supervision.
2. Identification: Provide proper identification during duration for landscape maintenance firm's vehicles and labor force. Be uniformly dressed in a manner satisfactory to the District.

1.5 PROJECT/SITE CONDITIONS

A. In addition to Section 01 77 00 Closeout Procedures, the Contractor shall do the following:

1. Site Visit: At beginning of the designated Landscape Maintenance / Establishment Period, visit and tour the site with the District's Representative, Construction Manager, and other interested parties, to clarify the scope of Work, and understand existing project/site conditions.
2. Documentation of Conditions: Document the general condition of installed plant materials and seeding, recording those which are healthy and thriving, and unacceptable materials which are damaged, dead, and/or dying and in need of replacement.

1.6 SEQUENCING AND SCHEDULING

A. The Contractor shall do the following:

1. Perform Work under Landscape Establishment Period during hours mutually agreed upon between the District and Contractor.
2. Work force shall be present at the Project Site at a minimum duration indicated in this Section, and at other times as necessary, to perform specified Work, in accordance with the approved schedule under the Landscape Maintenance / Establishment Period.

1.7 WARRANTY

A. Specific Requirements: Refer to the following Sections:

1. Section 32 93 00- Landscape Planting.
2. Section 32 94 00- Landscape Planting Accessories.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Materials and equipment as required to perform Work under this Section shall be provided by Contractor.

B. Water: Clean, potable and fresh, as available from the District.

C. Fertilizers:

1. Fertilizer Tablets: Tightly compressed, slow-release and long-lasting complete fertilizer tablets, bearing manufacturer's label of guaranteed analysis of chemicals present. Refer to Contract Documents, for requirements.
2. Balanced, once-a-season application, controlled-release Fertilizer(s), with a blend of

coated prills which supply controlled-release nitrogen, phosphorus, and potassium, and uncoated, rapidly soluble prills containing nitrogen and phosphorus.

D. Herbicides, Insecticides, and Fungicides:

1. Provide materials with original manufacturers' containers, properly labeled with guaranteed analysis. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited. Use non-staining materials.

E. Replacement Tree Guys, Stakes, Ties and Wire: Match originally accepted existing materials installed on the Project.

2.2 EQUIPMENT

A. General: Use only the proper tool(s) required for each task under this Section.

1. Maintain tools in sharp, properly functioning condition.
2. Clean and sterilize all pruning tools prior to usage.

B. Insect/Disease Prevention: Provide measure to prevent introduction of insect or disease-laden materials onto the Site. Section 329010- Landscape Planting.

PART 3 - EXECUTION

3.1 FREQUENCY AND DURATION OF LANDSCAPE ESTABLISHMENT PERIOD

A. Following satisfactory completion of work, the Landscape Maintenance / Establishment Period shall commence and progress.

B. Frequency and Duration: Work performed under this Section shall be executed by Contractor at a minimum of once per week, for a duration of a minimum of 90 calendar days period, following acceptance of the Construction Manager.

C. Contractor shall be fully responsible for maintenance of new landscaping at the Project Site for the contract period that includes 90 calendar day maintenance/establishment period.

3.2 COMMENCING THE LANDSCAPE MAINTENANCE/ ESTABLISHMENT PERIOD

A. Preliminary Review: As soon as landscape installation is substantially completed per the Contract Documents for the Project Site, Contractor shall arrange to hold a preliminary review on-site with the Construction Manager, the District, and other interested parties to evaluate the condition and executions of the completed Work. Evaluation of the Work shall be executed by the Construction Manager through a "Landscape Punch List."

B. Date of Review: Notify Construction Manager at least five (5) working days prior to anticipated Date of Review.

C. For the Project Site, it is the Contractor's responsibility to maintain all new landscaping.

D. Commencing the 90-Day Landscape Maintenance / Establishment Period: Following the date on which the Construction Manager determines that the project work is complete for the Project Site, the 90-calendar day shall commence.

3.3 PREPARATION

A. Protection:

1. Protect new landscape planting areas from damage during duration of Landscape Maintenance / Establishment Period, until Final Acceptance.
2. Provide temporary protection fences, barriers, and signs, as required, for protection.

B. Replacements:

1. Immediately treat or replace plant materials as directed, which become damaged or injured as a result of Contractor's operations or negligence, per the Construction Manager or his/her designated representative, at no additional cost to the District.
2. Replacement plant materials shall match size and variety of plant material being replaced.

3.4 PLANTING MAINTENANCE/ ESTABLISHMENT

A. Tree Watering Bags:

1. Maintain watering basins around the perimeter of the installed plant materials so that enough water can be applied to establish and maintain adequate soil moisture through the root zone of the plant materials. Re-dish and tamp basins accordingly which have become damaged or have failed since installation.
2. Reposition empty tree watering bags as necessary to allow tree watering bags to sufficiently irrigate the tree.
3. Fill all tree watering bags in a manner and volume consistent with the manufacturer's intent.
4. Observe proper outflow and fix any drainage issues prior to moving on to next watering or concluding the day's watering operations.

B. Watering Basins:

1. Maintain watering basins around the perimeter of the installed plant materials so that enough water can be applied to establish and maintain adequate soil moisture through the root zone of the plant materials. Re-dish and tamp basins accordingly which have become damaged or have failed since installation.
2. For supplemental hand watering of watering basins, use a watering wand to break the water force. Do not permit use of "jet" type watering equipment. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
3. Mulch: Maintain originally specified thickness of mulch material to reduce evaporation and frequency of watering, around newly planted trees.
4. During rainy season, open basins to allow surface drainage away from the root crown where excess water may accumulate. Restore watering basins at the end of rainy season.
5. At the end of rainy season, re-dish and tamp watering basin at trees and shrubs.

C. Settlement of Plant Materials: Rest/replant sunken or settled plant materials to proper grades and in upright position.

D. Weed Control:

1. Planting areas throughout site shall be weed-free at all times, including areas between plants and along watering basins.
2. VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD

requirements.

3. Avoid frequent soil cultivation that destroys shallow roots and breaks the seal of pre-emergent herbicides.

E. Pruning:

1. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, and which have vertical spacing of eighteen-inches (18”) to forty-eight-inches (48”) and radial orientation so as not to overlay each other.
2. Prune trees to eliminate diseased or damaged growth, and narrow “V-shaped” branch forks that lack strength. Reduce toppling and wind damage by thinning-out crowns.
3. Prune trees to maintain growth within space limitations, maintaining a natural appearance and balancing crown with roots.
4. No stripping of lower branches of young trees shall be permitted.
5. Retain lower branches in a “tipped back” or pinched condition to promote caliper trunk growth. Do not cut back to fewer than six (6) buds or leaves on such branches. Only cut lower branches flush with the trunk after the tree is able to stand erect without staking or other support.
6. Thin out and shape evergreen trees when necessary to prevent wind and storm damage. Do primary pruning of deciduous trees during the dormant season. Do not permit any pruning of trees prone to excessive “bleeding” during growth season.
7. Prune damaged trees or those that constitute health or safety hazards at any time of year as required.
8. Make pruning cuts clean and close to the trunk, without cutting into the branch collar. “Stubbing” will not be permitted. Cut smaller branches flush with trunk or lateral branch. Make larger cuts one inch (1”) diameter or larger parallel to shoulder rings, with the top edge of the cut at the trunk or lateral branch.
9. Branches too heavy to handle shall be precut in three (3) stages to prevent splitting or peeling of bark. Make the first two (2) cuts eighteen inches (18”) or more from the trunk to remove the branch. Make the third cut at the trunk to remove the resulting stub.
10. Do not prune or clip shrubs into balled or boxed forms unless specifically called for by design.
11. Clip shrubs to be hedged when branches project two-inches (2”) beyond limit of clipped hedge shown on the Contract Drawings.
12. Take extreme care to avoid transmitting disease from one infected plant to another. Properly sterilize pruning tools before going from one infected plant to other plant materials.

F. Staking and Guying of Trees:

1. Adjustments: Inspect stakes and guys periodically (minimum once per month) throughout duration of Landscape Maintenance / Establishment Period to check for rubbing of staking materials on trunks or branches causing bark wounds.
2. Repair and replace faulty staking and guying materials as shown and as specified.

3.5 INSECTS, PESTS, AND DISEASE CONTROL

A. Inspection: Inspect plant materials for signs of stress, damage and potential trouble from the following:

1. Presence of insects, moles, gophers, rabbits, ground squirrels, snails and slugs in planting areas.
2. Discolored or blotching leaves or needles.
3. Unusually light green or yellowish green color inconsistent with normal green color of leaves.

B. Personnel: Only licensed, qualified, trained personnel shall perform spraying for insect, pest and disease control.

C. Application: Spray with extreme care to avoid all hazards to any person or pet in the area or adjacent areas.

D. Lawn or vegetation-damaging pests shall be controlled in a timely manner to minimize damage.

3.6 GRADING AND DRAINAGE

A. During the Landscape Maintenance / Establishment Period, all flow lines shall be maintained to allow for free flow of surface water. Displaced material which interferes with drainage shall be removed and placed as directed. Low spots and pockets shall be graded to drain properly. Jute netting or other erosion control measure as directed shall be installed at flow lines and other locations where surface erosion is evident.

B. Damage to planting areas shall be repaired immediately and throughout the Landscape Maintenance / Establishment Period. Depressions caused by vehicles, bicycles, or foot traffic shall be filled and leveled. Replant damaged areas.

C. All paved areas shall be washed and maintained in a neat and clean condition at all times.

D. All subsurface drains and inlets shall be periodically cleared of debris, leaves, trash, etc., and flushed with clear water to avoid buildup of silt and debris.

3.7 CLEANING

A. General: Dispose of pruned plant materials, vacuum clippings and leaves, sweep walkways and rake smooth mulched areas. Remove from the site containers and other evidence of maintenance activities.

B. Litter Control:

1. Site areas under the Contract shall be cleared on a weekly basis of visible litter or debris, and clippings.
2. Debris caused by normal seasonal winds shall be removed from site.
3. Contractor shall be responsible for disposal of debris in accordance with local rules and regulations.

C. Blowing:

1. Landscape debris generated shall blown-off or swept on a weekly basis. Do not blow grass clippings, edgings, or debris into planting areas or onto paved areas unless after such blowing, the resultant accumulation of material shall be gathered and removed from the site.

3.8 TERMINATION OF THE LANDSCAPE MAINTENANCE/ESTABLISHMENT PERIOD

A. In addition to Section 01 77 00 Closeout Procedures, the Contractor shall perform the following:

1. Final Acceptance Procedure:

a. Work requires acceptance by the Construction Manager upon satisfactory completion, including Landscape Maintenance / Establishment Period, but exclusive of replacement of materials under the Warranty Period.

b. Submit a written request to Construction Manager for review of Final Acceptance at least five (5) working days prior to anticipated Final Review date, which is at the end of the Landscape Maintenance / Establishment Period.

2. Corrective Work:

a. Work requiring corrective action or replacement shall be performed within ten (10) calendar days after the Final Review.
b. Perform corrective Work and materials replacement in accordance with the Contract Documents, Work shall be made by the Contractor at no cost to the District.
c. After corrective Work is completed, the Contractor shall again request a Final Review for Final Acceptance as outlined above.

1) Continue maintenance of all landscaped areas until such time as all corrective measures have been completed and accepted.

3. Conditions for Acceptance of Work at End of Landscape Maintenance / Establishment Period:

a. All new landscaping shall be alive and thriving, showing signs of growth and no signs of stress, disease, or any other weaknesses.
b. Replace plant materials not meeting these conditions. An additional Warranty Period equal in length to the original shall be commenced for all such plants and planted areas.

4. Final Acceptance Date shall be the date on which the Construction Manager issues a Letter of Final Acceptance. Upon Final Acceptance, the District will assume responsibility for maintenance of the Work beyond the Landscape Maintenance / Establishment Period.

3.9 CLOSE OUT

A. In addition to Section 01 77 00 Closeout Procedures, the Contractor shall perform the following:

1. Landscape Maintenance Record:

a. Submit binder to the District with documentation and records required and utilized during the Landscape Maintenance / Establishment Period.

2. Keys and Identification: Return keys and identification materials supplied by the District for the purpose of site access.

END OF SECTION 32 98 13

SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Storm drainage piping, fittings, accessories, and bedding.
B. Catch basins.
C. Atrium Drains.
D. Pop-up Emitters
E. Inlet and outlet structures.
F. Channel/Trench Drains.

1.2 RELATED SECTIONS

A. Section 31 20 00 Earthwork.

1.3 REFERENCES

A. Standard Specifications for Public Works Construction (SSPWC), latest edition.
B. ASTM Standards.

1.4 SUBMITTALS

A. Submit the following in accordance with provisions in Division 1:

B. Product Data: Provide data indicating pipe, pipe accessories and catch basin grates.

1. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
2. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
3. Layout diagram for storm drain components per plan.

1.5 PROJECT RECORD DOCUMENTS

A. Submit record drawings. Accurately record locations of pipe runs, connections, catch basins, structures, manholes and invert elevations.

B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 FIELD MEASUREMENTS

A. Verify that field measurements and elevations are as indicated on drawings.

B. Complete pothole work per plans and notify the District of any discrepancy prior to commencing construction.

1.7 COORDINATION

A. Coordinate the work with connection to existing storm drain mains, and trenching.

PART 2 - PRODUCTS

2.1 PIPE MATERIALS

A. 12” Dia and Under: Polyvinyl Chloride (PVC) Pipe with water tight joints, per SSPWC Section

207-17.

B. 18” Dia and Larger: High Density Polyethylene (HDPE) Pipe (N-12 WT) with water tight joints, per SSPWC Section 207-18.

2.2 PIPE ACCESSORIES

A. PVC: Elastomeric Gasket water tight joints per SSPWC Section 207-17.3.2.

B. HDPE: Water-Tight Joints per SSPWC Section 207-18.4.1.

2.3 CATCH BASINS/CHANNEL DRAINS

A. Precast catch basins shall include grate, as manufactured by Old Castle, NDS or approved equal.

B. PVC drain basins shall be NDS or approved equal.

C. Channel drains, HDPE with UV inhibitors, pre-sloped, shall be NDS or approved equal.

D. Channel grates, galvanized steel, ADA compliant, shall be NDS or approved equal.

2.4 METAL

A. All exposed metal parts are to be galvanized in accordance with SSPWC, Section 210-3.

2.5 CONCRETE

A. All concrete shall be Class 560-C-3250, per SSPWC Section 201.

2.6 FILTER FABRIC

A. Filter fabric shall be non-woven geotextile filter fabric Mirafi 140N or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that trench cut is ready to receive Work and excavations, dimensions, and elevations are as indicated on Drawings.

B. Notify District representative of conditions that would adversely affect installation or subsequent use.

C. Do not begin installation until unacceptable conditions are corrected.

3.2 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with compacted bedding material.

B. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.

3.3 BEDDING

A. Excavate pipe trench in accordance with Specification Section 31 23 33. Hand trim excavation for accurate placement of pipe to elevations indicated on Drawings.

B. Place bedding material in trench bottom, level materials in continuous layer. Bedding shall be 4" thickness for pipe diameters less than or equal to 24” and 6” thickness for pipe diameters greater than 24” and shall be per SSPWC Section 217-1.2.

3.4 INSTALLATION OF PIPE

A. Install pipe, fittings, and accessories in accordance with manufacturer's instructions and per SSPWC Section 207.

B. Lay pipe to slope gradients noted on drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

C. Install backfill along sides and over top of pipe. Provide backfill over top of pipe to minimum compacted thickness of 12 inches, compacted to a minimum of 95 percent of maximum dry density.

D. Refer to Specification Section 31 23 33 for Trenching Requirements. Do not displace or damage pipe when compacting.

E. The compaction of the backfill material along the sides and one foot above the pipe shall be done with hand tampers or equal to protect the pipe.

3.5 INSTALLATION OF CATCH BASINS

A. Form bottom of excavation clean and smooth to correct elevation.

B. Form and place cast in place concrete base with provisions for storm drainage pipe end sections.

C. Level top surface of concrete base to receive shaft sections.

D. Establish elevations and pipe inverts for inlets and outlets as indicated on drawings.

E. Compact top 12" of native materials below the bottom of catch basins and manholes to minimum 95 percent of maximum dry density.

F. Apply silicon sealant to make joints watertight.

G. Install temporary blank grate inserts to keep concrete, sediment, and debris out of channel drains during installation of trench drain system.

3.6 INSTALLATION OF CHANNEL DRAINS AND GRATES

A. Install trench drain system in accordance with manufacturer’s instructions at locations indicated on the Drawings.

B. Excavate trenches to ensure proper thickness of concrete beneath and on both sides of channels are maintained and are in accordance with specified load rating.

C. Install trench drain system to elevations and slopes indicated on the Drawings.

D. Ensure directional flow arrows located on channels are pointing in direction of flow, toward catch basins and evacuation outlets.

E. Apply silicon sealant to make joints watertight.

F. Install temporary blank grate inserts to keep concrete, sediment, and debris out of channel drains during installation of trench drain system.

G. Concrete:

1. Place concrete beneath and on both sides of trench drain system in accordance with specified load rating and as indicated on the Drawings.
2. Concrete minimum compressive strength: 3000 psi at 28 days.
3. Concrete shall be as specified in Section 03 30 00

H. Recess Top of Trench Drain System:

1. Pedestrian Applications: 1/8 inch below concrete finish grade.

play&park structures®

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OWNERS MANUAL



Visit www.playcore.com/shipment or use the QR code to give feedback about the condition of the shipment, quality of the product, and installation feedback.
Please include pictures.

This document includes;

- Warranty Information
- Ground Plan
- Hardware Listing
- Assembly and Installation Instructions

IPEMA MEMBER | ASTM INTERNATIONAL | ISO 9001

playandpark.com | 800.727.1907

Owner's Manual 5540604

play&park structures®

A PLAYCORE Company

Dear Play & Park Customer,

Thank you for choosing to purchase and install a Play & Park Structures play system. We appreciate the confidence and trust you have placed in our company.

Your Play & Park Structures Installation Guide is enclosed. We designed this manual specifically for the products you have purchased. Included in this manual you will find the following documents:

- Product Installation Instructions
- 2-D Top View Drawing specific to your structure
- Ground Plan

If you have any questions concerning your new equipment, you can reach your recreation consultant by calling 1-800-727-1907. To contact a Play & Park Structures customer service representative, you may call 1-888-404-5737 or reach them online by sending an email to: customerservice@playandpark.com

For more information on Play & Park Structures products, please do not hesitate to call us, or visit us online at www.playandpark.com.

Thank you for your business; we look forward to working with you on future playground equipment projects!

Sincerely,

Play & Park Structures

Safety Guidelines

Maintaining your playground equipment as well as its surrounding area is essential to minimizing the risk of injury to users as well as maximizing its useful lifespan. Play & Park Structures STRONGLY recommends that you follow these Safety Guidelines in conjunction with conducting periodic maintenance inspections using the accompanying Playground Maintenance Checklist.
When installing, always consider local conditions and codes. Good common sense works hand-in-hand with the instructions.

LOCATING YOUR PLAY STRUCTURE

Comply with the following when choosing the location for your new equipment:

- Equipment should be placed to eliminate conflicting traffic patterns. As a general rule, allow at least 6' of free space around the entire structure, EXCEPT for slide exits, which require a distance X equal to highest point of sliding surface with a minimum of 72" and maximum of 96" from the edge of the slide. Example: a Slide from a 6' high deck requires 6' of clear space with resilient surfacing in front of and behind them for safe circulation. Example: a Swing with a 8' high beam requires 16' of free space in front, and another 16' behind it, for a total of 32'. These minimum areas should be filled with the appropriate resilient surface material. See below for resilient surfacing recommendations.
- If your equipment includes any metal slides, they should be positioned in a shaded area, or at least positioned to avoid the sun's direct rays.
- Never overlap the safety zones of adjacent equipment. All separate play equipment must have its own safety zone, and these cannot overlap. So, if you have an existing structure with a slide exit oriented toward your new one, add your minimum safety zone to that of the existing slide to determine how far away you need to be.
- Never install playground equipment near, around, or in conjunction with swimming pools, ponds, lakes or any other bodies of water.

CHOOSING RESILIENT SURFACING MATERIAL

Playground equipment must be installed on a soft, resilient, energy-absorbing ground surface.
NEVER INSTALL PLAY EQUIPMENT ON CONCRETE, ASPHALT, OR GRASS. A fall on a hard surface from even a low platform of 3' high can result in serious injury to the user. Refer to CPSC and ASTM F1292 for recommended surfacing depths and requirements.

Tip: If your surfacing material is of the loose variety, checking for proper depth over time can be made easy by applying a non-removable florescent tape or paint in a bright color at the proper level on each post. Thereafter, as the resilient surfacing material compacts or washes away, the person responsible for regular maintenance inspections can easily see it must be replenished as the marks become visible.

AFTER THE EQUIPMENT IS IN USE

- Never add components not intended for use with this product.
- Never install other play equipment, fencing, landscaping, etc., which encroach upon the safety zones of this equipment.
- Check to make sure that there are no overhead obstructions within the use zone of the playground equipment that are not part of the play structures (example: tree limbs). Any overhead obstructions should be at least 84" above each platform or designated play surface or 84" above the pivot point of swings. All overhead utility line clearances above the use zone area should comply with all local, state and national codes.
- Regularly inspect and maintain your playground equipment and its surrounding area. Proper maintenance of Play & Park Structures equipment includes using the accompanying Playground Maintenance Checklist to identify areas requiring repairs or replacement, and barricading the equipment to prevent use while corrections are being made.
- If your playground equipment includes any wood components, bolts may need to be re-tightened after initial use due to wood shrinkage. Check and re-tighten all fasteners after the first few days of use, and again after the first 3 weeks of use. Thereafter, exercise normal maintenance procedures. Using a thread-locking compound on the threads of bolts can help prevent persistent loosening.
- 'S' hooks must be completely closed. Replace all worn 'S' hooks, and never re-use 'S' hooks.
- Pipes should never be allowed to turn. In the case of wood playground equipment, make sure all collars are snugly flush against the inside of posts with set screws tightened and wood screws flush against the outside of the collar, and all flat head bolts and set screws are tight. In the case of steel playground equipment, check set screws for tightness.

For specific information regarding playground safety and your responsibilities as the owner of this equipment, please contact the Consumer Product Safety Commission (CPSC), Washington, DC. for the latest guidelines for your play area and this equipment.

If any conditions or damages are discovered in violation of these Safety Guidelines or the accompanying Playground Maintenance Checklist, the play equipment should be barricaded immediately and children should not be allowed to use it until the conditions are corrected.

Introduction to Installation Instructions

Revised 03.29.16

IMPORTANT! Please read the entire Installation Instructions packet before beginning the installation.

Play & Park Structures has designed the SuperMax, DuraMax, totmax, Skyline, Boulderscapes and Horizons Play Systems to take advantage of all Consumer Product Safety Commission (CPSC) Guidelines and ASTM standards in force at the time of purchase in an effort to help reduce the chance of playground accidents. However, because studies have shown most playground injuries result from accidental falls, you, as the new owner of this equipment, are responsible for providing and adequately maintaining ***resilient play surfacing*** under and around all playground equipment. Please refer to the accompanying Safety Guidelines as well as CPSC guidelines and this document for examples of such surfacing.

We would like to provide the following suggested guidelines for your play environment:

- Refer to the Footing Diagram and note the Minimum Area Required shown for this structure. This area must be filled with adequate resilient play surface material, and must be clear of all obstacles, including but not limited to trees, curbing, sidewalk, fence, other play equipment, rocks and landscaping, etc.

- Acceptable play surfaces include sand, wood mulch, fine gravel or ground belt-less tires, if installed at the appropriate depths per CPSC guidelines for play surfacing.

- When using sand, wood mulch, or ground belt-less tires, a minimum of 6" depth is recommended by the CPSC. Play & Park Structures recommends an additional 4", for a total of 10", to combat the fast compacting characteristics of these materials. Surfaces must be checked at least weekly for compacting, which reduces resiliency significantly.

- Paved surfaces such as asphalt, concrete, gravel or sod are not acceptable for use under playground equipment, or anywhere within the stated Minimum Area Required.

- Close supervision of children playing on or around the structure is strongly recommended, along with classroom and/or home instructions on acceptable behavior on the playground equipment. The full supervision of playgrounds is the responsibility of the owner once the play structure has been properly installed.

TOOLS REQUIRED:

Play & Park Structures supplies the special bits required to fasten the "tamper-resistant" bolts. You will need common tools such as wrenches, Allen key set, drill, string line, level, mallet, shovels, post hole digger, pry bar, washable felt tip marker and a tape measure.

INSTALLATION GUIDELINES:

1. Compare all parts received to the packaging list. Notify Play & Park Structures immediately of any missing parts. We are not responsible for parts discovered missing over 10 days after receipt of the shipment.

2. Refer to your Footing Diagram to ensure this structure will fit into your actual site area. Note the Minimum Area Required measurements to determine clear space required. A minimum of 6' clearance is required between any obstacles and your structure. EXCEPT for slide exits, which require a distance X equal to the highest point of sliding surface with a minimum of 6' and a maximum of 8' from the edge of the slide (example: A slide from a 6' high deck requires 6' of clear space with resilient surfacing in front of its exit).

3. Site selection should include considerations of what is a safe and appropriate play area:
   a. A level and clear site is ideal, free of power lines or electrical equipment.
   b. Do not install play equipment near any bodies of water.
   c. If adjacent to a street with traffic, ensure adequate fencing acts as a barrier to children running into danger.

4. Site layout should include accurate measurement and marking of all footings prior to any installation. Use the dimensions shown between footings on the Footing Diagram to plot out the actual footprint of the play structure before doing any digging. Also, locate any free-standing play equipment in the same way, providing the necessary clearance between the equipment as well as any fences, trees, etc. Ensure at this time that you have enough total space for the equipment to be installed.

5. Excavate holes as shown in the Footing Diagram using a string line. An optional string line level is very helpful. If a level and clear site is not possible, adjust the depth of the footings to maintain a minimum depth of 18 in. for support posts at the lowest grade. NOTE: if soil conditions are very loose or otherwise unstable, a larger diameter footing may be required. Consult with local contractors for appropriate recommendations.

6. Begin your SuperMax, DuraMax, totMax , Skyline, Horizons, and BoulderScapes Play Systems installation by erecting the decks as shown within the following instructions.
   IMPORTANT: Do not concrete product until installation is complete!
   Once all decks are installed, components such as slides, climbers, etc., can be connected per their respective assembly instructions. Note that connecting components between decks such as Horizontal Ladders, Crawl Tunnels, Trapeze Beams, etc., should be installed concurrently with the decks to ensure they meet accurately.

7. CPSC guidelines mandate that there should be no gaps present in the playground equipment which fall between 3 ½" and 9". The positioning of certain components by the installer can affect this criteria, so you should always measure distances created when attaching components by the installer, which can cause entrapment of a child using the equipment. Also, ASTM requires that no more than 2 threads of bolt can protrude from the nut. Any excess threads should be filed down and made smooth to the touch.

8. When concrete is poured, be sure to keep the top 4" below the grade, and sloped away from the post to promote good water drainage. Wash off any concrete, which may have splashed onto the post before it dries. Allow all concrete to harden a minimum of 48 hours before using equipment.

SAFETY DURING INSTALLATION:

1. Before doing any excavation, inquire about any existing underground utilities.

2. Do not leave the job site unattended without making sure that all fastening hardware on all equipment are tightened and all Drive Rivets are in place to prevent clamps from moving, in case of unauthorized use. **PLAY & PARK STRUCTURES CLAMPS ARE NOT DESIGNED TO SUPPORT HUMAN WEIGHT WITHOUT THE DRIVE RIVETS INSTALLED, AND SUCH USE COULD CAUSE INJURY TO THE USER AND/OR DAMAGE TO THE EQUIPMENT.** It is also strongly recommended that all installation areas be roped off with clearly marked warning signs posted. Any open footings should be covered with plywood or other suitable material. Even during installation, it has been found that children will use the unattended equipment, thereby risking accidents.

3. The installation area should remain roped off for at least 48 hours after the last concrete footer is poured. Children should not be allowed to use the equipment during this period so that concrete has a chance to fully set.

4. Do not attach swing chains, trapeze rings or similar moving components until after all construction is complete and resilient surfacing material has been installed. Remember that any equipment, which appears to be complete and functional will invite unauthorized use regardless of its actual state of readiness.

Finally, if you should have any questions regarding the proper installation of this equipment, please contact Play & Park Structures at:

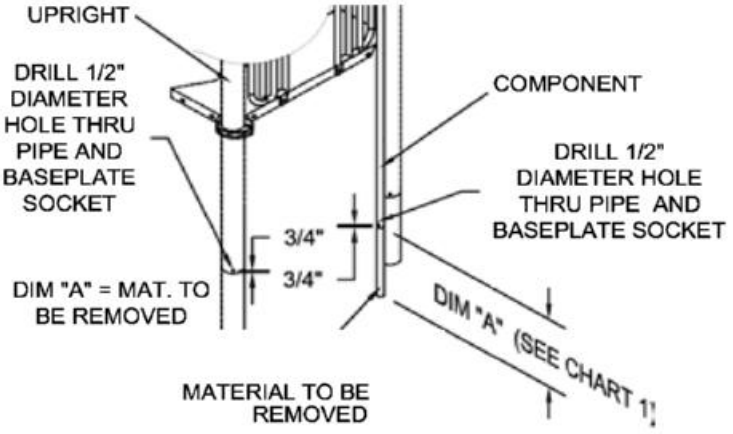
544 Chestnut Street, Chattanooga, TN 37402
TOLL Free: 800.727.1907 FAX: 423.425.3172
EMAIL: customerservice@playandpark.com
Visit our website: www.playandpark.com

play&park structures

60855 SURFACE MOUNT INSTALLATION INSTRUCTIONS FOR PARK STRUCTURES

ISSUED/REVISED: 08/07/14

NOTE: 2", 8", 10" LENGTH INDICATES THE SURFACING DEPTH. ALL COMPONENTS ARE SHIPPED AS STANDARD 30" INGROUND LENGTH. (20" DEEP HOLES & 10" SURFACING)



IMPORTANT: CHECK ALL GROUND MEMBER LOCATIONS TO COMPENSATE FOR SLOPE ***BEFORE*** CUTTING!

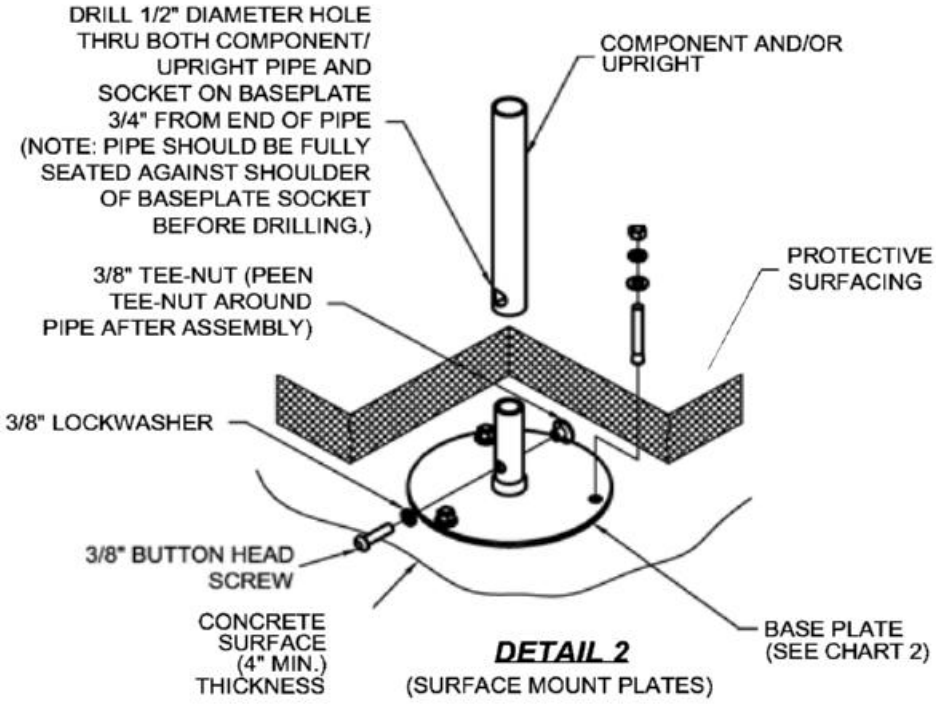
CHART 1

SURFACING DEPTH	MATERIAL TO BE REMOVED	
	W/OUT EXT.	W/6" EXT.
2"	28 11/16"	22 11/16"
8"	22 11/16"	16 11/16"
10"	20 11/16"	14 11/16"

NOTES:
1. DIM "A" = MATERIAL TO BE REMOVED.
2. SOME INGROUND COMPONENTS REQUIRE EXTENSIONS. REVIEW YOUR STANDARD INSTALLATION SHEET IF EXTENSIONS ARE REQUIRED. ADJUST MATERIAL TO BE REMOVED ACCORDINGLY.
i.e. A COMPONENT REQUIRING 6" EXTENSIONS, AND IF SURFACING DEPTH IS TO BE 2", MATERIAL TO BE REMOVED WILL BE 22 11/16"

DETAIL 1

(FOR SURFACE MOUNT INSTALLATIONS)

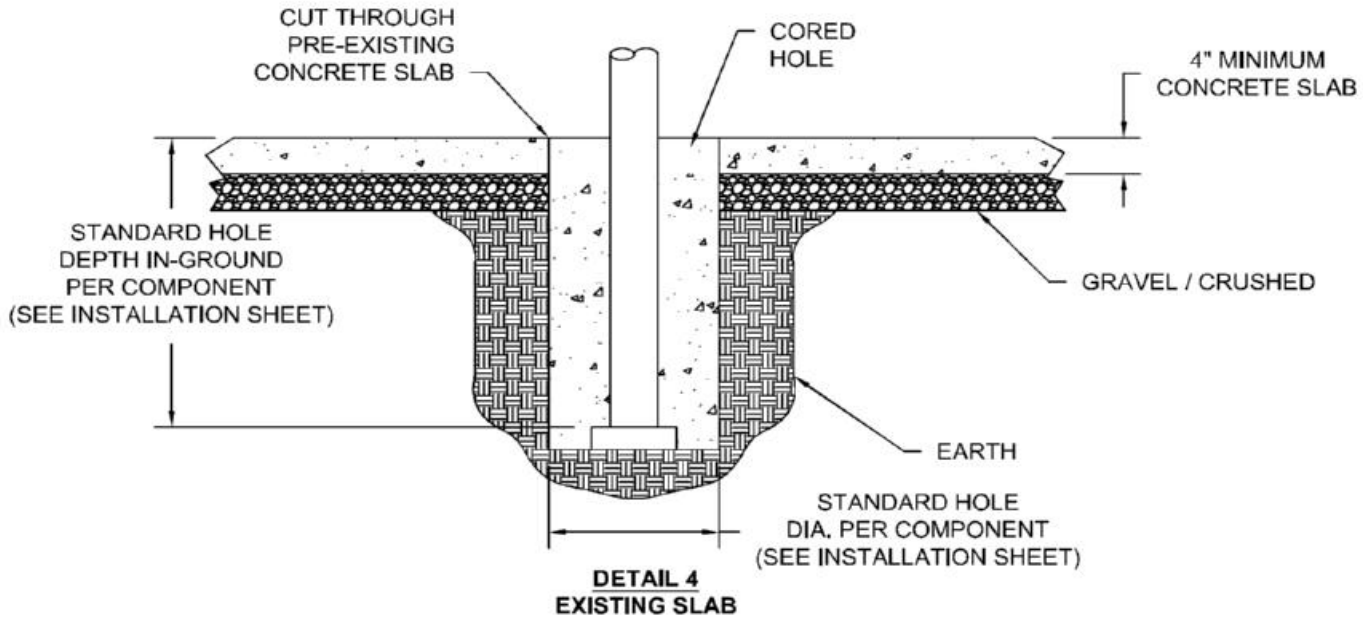


DETAIL 2

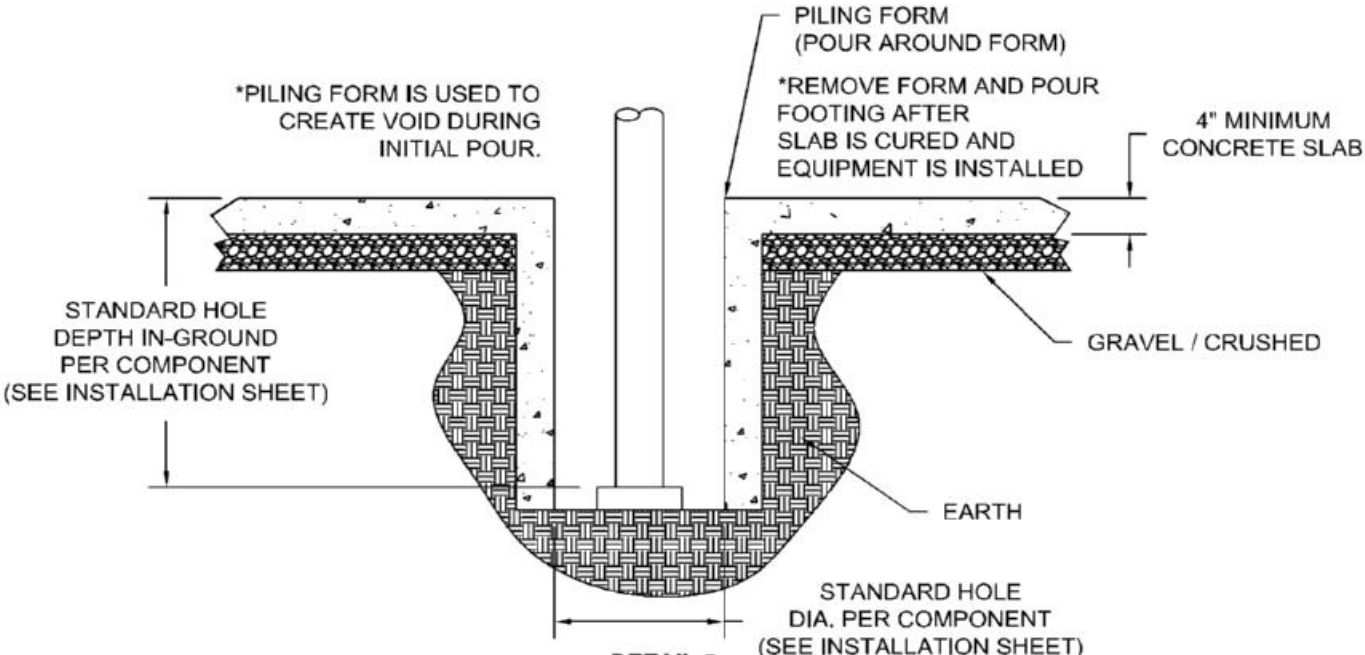
(SURFACE MOUNT PLATES)

CHART 2

NUMBER	O.D.	BASE PLATE
404765	1.029"	404764
60855	1 5/16"	152850
60856	1 5/8"	152851
60857	1 7/8"	152852
60858	2 3/8"	152853
60859	2 7/8"	152854
60860	3 1/2"	152856
60861	5"	152855



DETAIL 4
EXISTING SLAB



DETAIL 5
NEW SLAB

SURFACE MOUNT INSTALLATION INSTRUCTIONS

1. Before assembling this equipment, read the enclosed INSTALLATION INSTRUCTIONS in the installation booklet; follow all the instructions during installation.
2. Concrete requirements for Suface Mount shall be 4" minimum thickness w/ 3000 psi.
3. For Surface Mount, remove required length of component and/or upright as indicated in **DETAIL 1**. See ***CHART 1*** for the material length to be removed. (Required for 2", 8" or 10" surface mount only.) ***Note:*** Debur and remove any sharp edges on part after cut is made.
4. Drill 1/2" diameter hole thru component/uprights and baseplate socket 3/4" from end of pipe. The pipe should be fully seated against neck of socket before drilling holes.
5. Attach Component to base plate as shown in **DETAIL 2.** See ***CHART 2*** for the specific base plate required for the diameter pipe being used. (Required for 2", 8" or 12" Surface mount only.)

IMPORTANT: Some components such as slides, chinning bars, nets, climbers, etc. may require "cored" holes to help eliminate movement when installed. Refer to Ground Plan configuration to determine if "cored" holes are required.

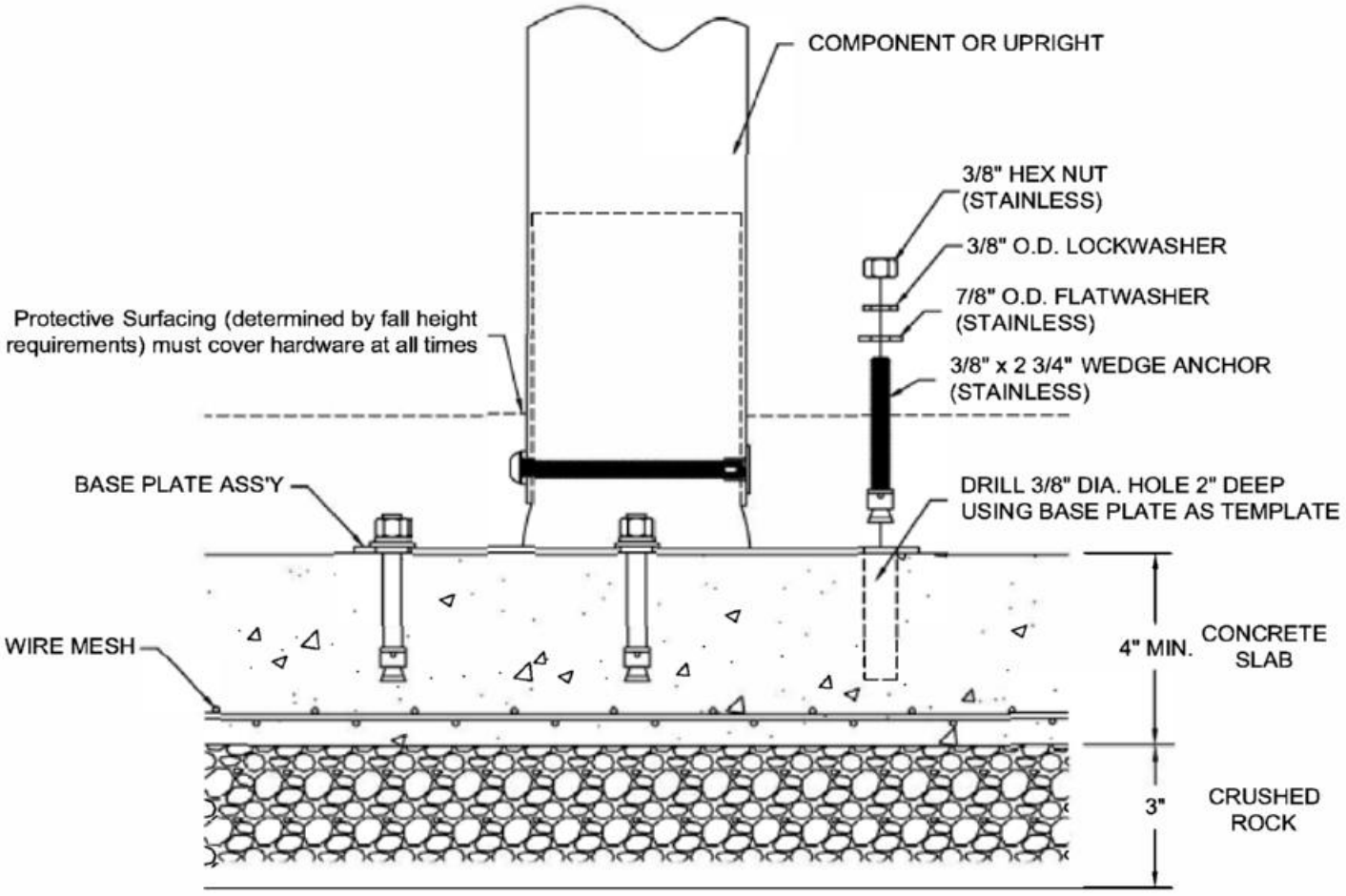
NOTE: If concrete slab is pre-existing and a cored hole is required it must be drilled through exisitng concrete to allow for concrete footing. Review your standard installation sheet for correct size and location of cored hole. See Detail 3.

NOTE: Cored holes can be created prior to concrete pour by using piling forms to create a void when pouring. See Detail 4.

NOTE: If a base plate interferes with an insert required for a below deck component that base plate will require a notch to be applied in the field.

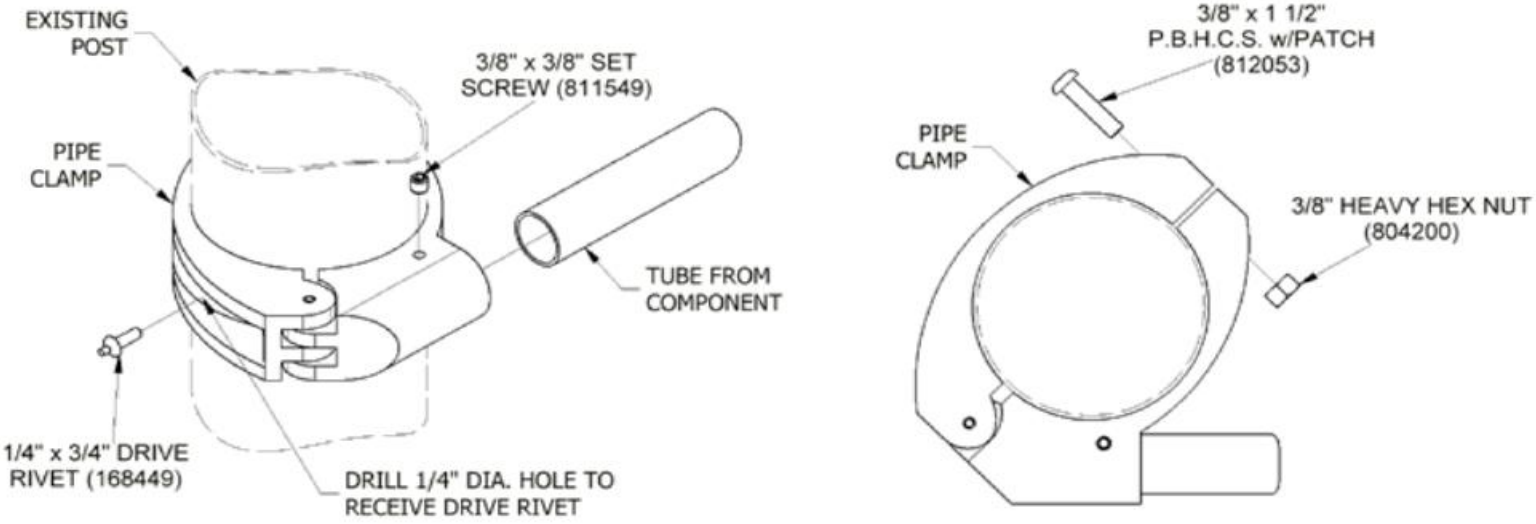
CONCRETE SPECIFICATIONS

1. Depth of concrete must be 4" minimum with wire mesh reinforcement.
2. Base shall be 3" crushed rock over compacted subgrade.
3. Minimum 7 days cure-full cure after 28 days.
4. Concrete rating shall be 3,000 PSI (minimum), 28 days 3,500 PSI.



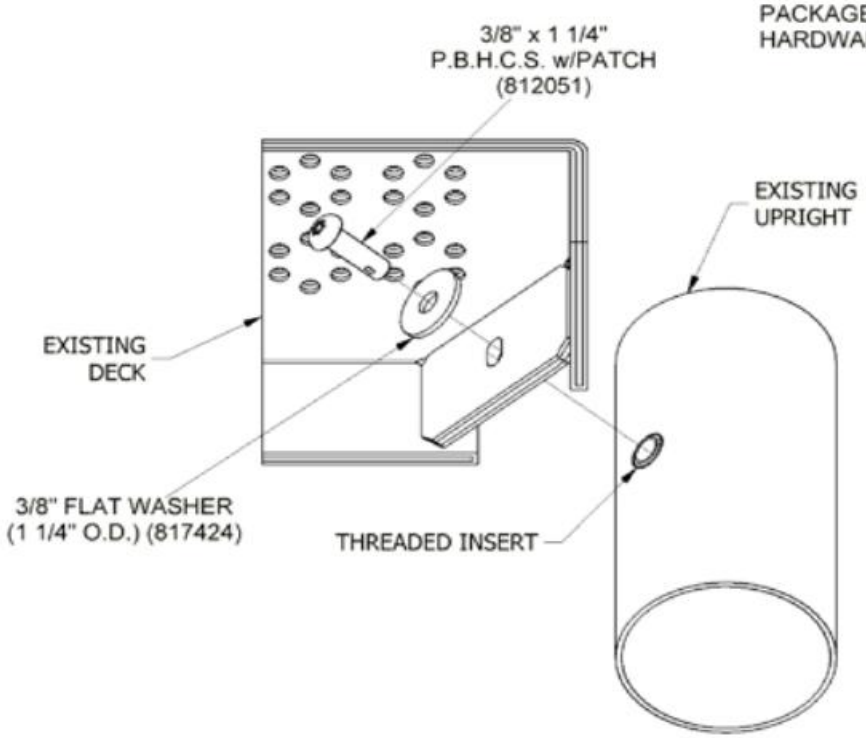
DETAIL 3
SIDE VIEW OF SURFACE MOUNT

Clamp Assembly Details



TYPICAL DURAMAX PIPE CLAMP ASSEMBLY

NOTE: CLAMPS AND HARDWARE SHOWN ARE PACKAGED WITH INDIVIDUAL COMPONENT HARDWARE COMPLETE PACKAGES.

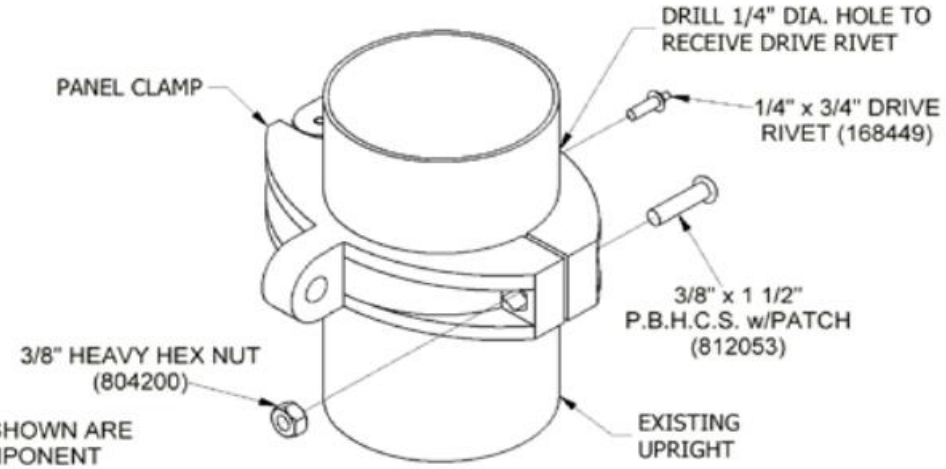


TYPICAL DURAMAX DECK CONNECTION

Issued/Revised: 4/4/2016

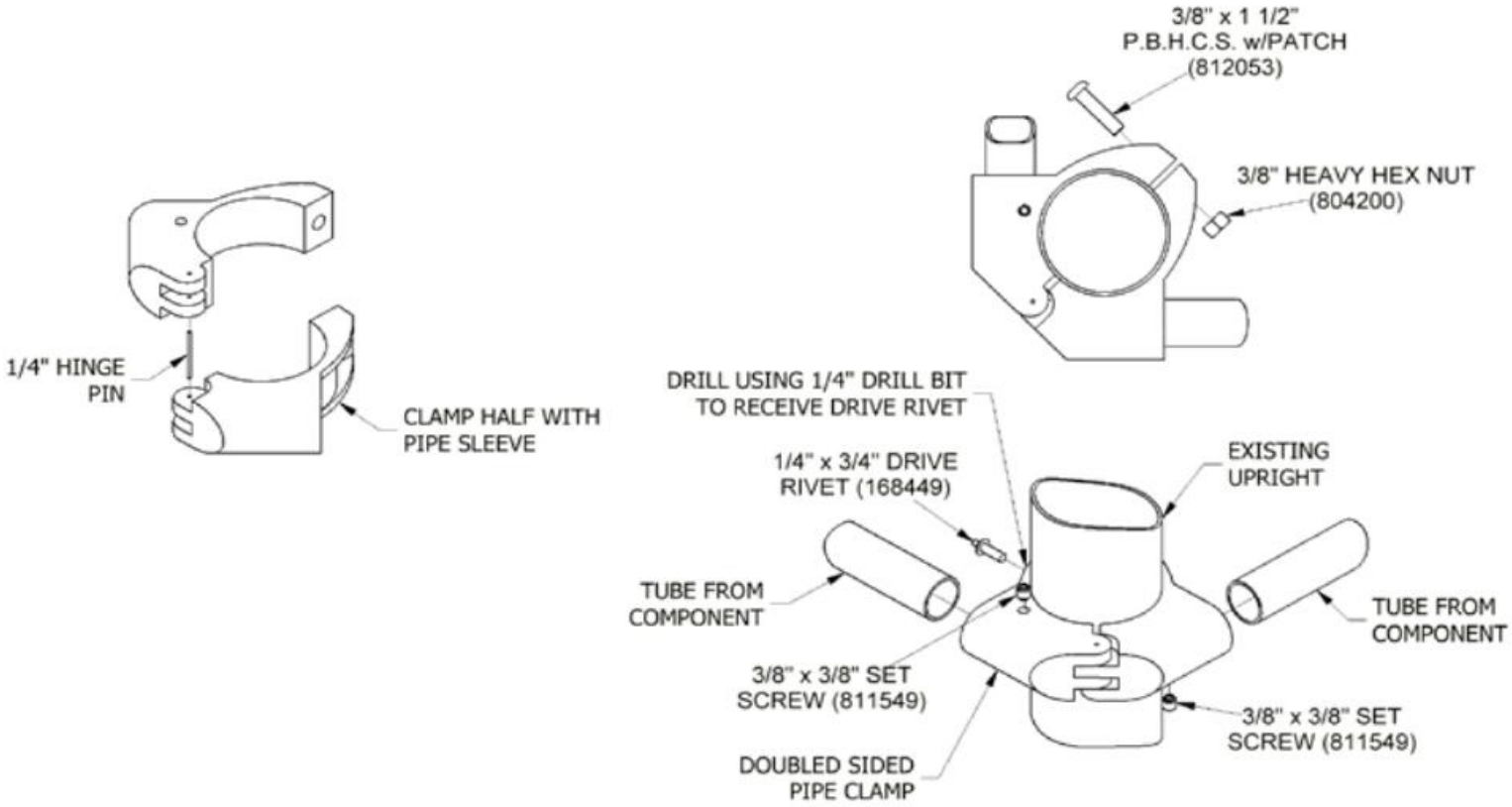
SHEET 1 OF 2

Clamp Assembly Details



NOTE: CLAMPS AND HARDWARE SHOWN ARE PACKAGED WITH INDIVIDUAL COMPONENT HARDWARE COMPLETE PACKAGES.

TYPICAL DURAMAX PANEL CLAMP ASSEMBLY



DURAMAX APPLICATION: To attach two components at 90 degrees to each other on the same square deck. Use when clamp conflicts do not allow you to use seperate clamps for each component.

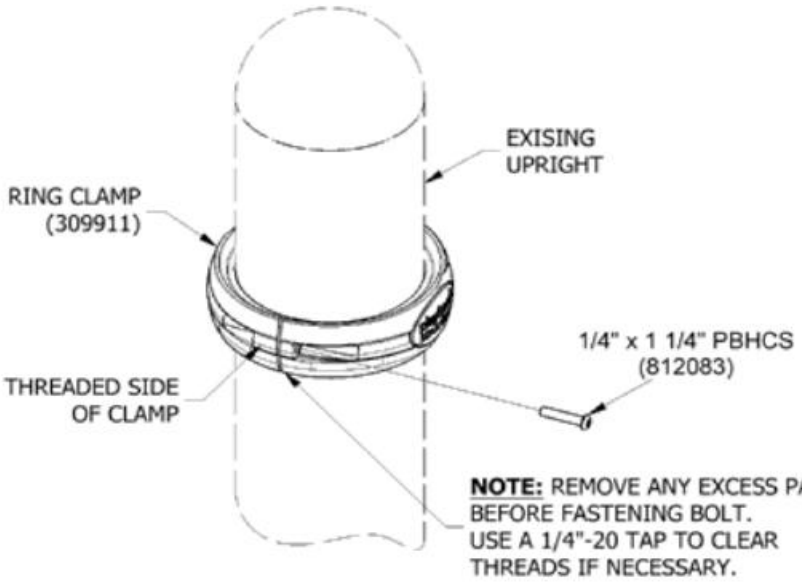
ASSEMBLY INSTRUCTIONS: Use two regular Pipe Clamps and remove hinge pins. Select clamps with pipe sleeves to create the Double Sided Pipe Clamp. Insert hinge pin back into clamps as shown above.

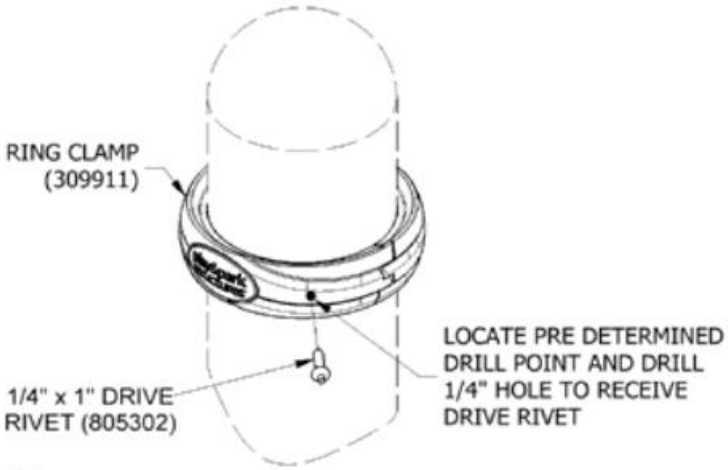
TYPICAL DURAMAX DOUBLE SIDED PIPE CLAMP ASSEMBLY

Issued/Revised: 4/4/2016

SHEET 2 OF 2

Clamp Assembly Details





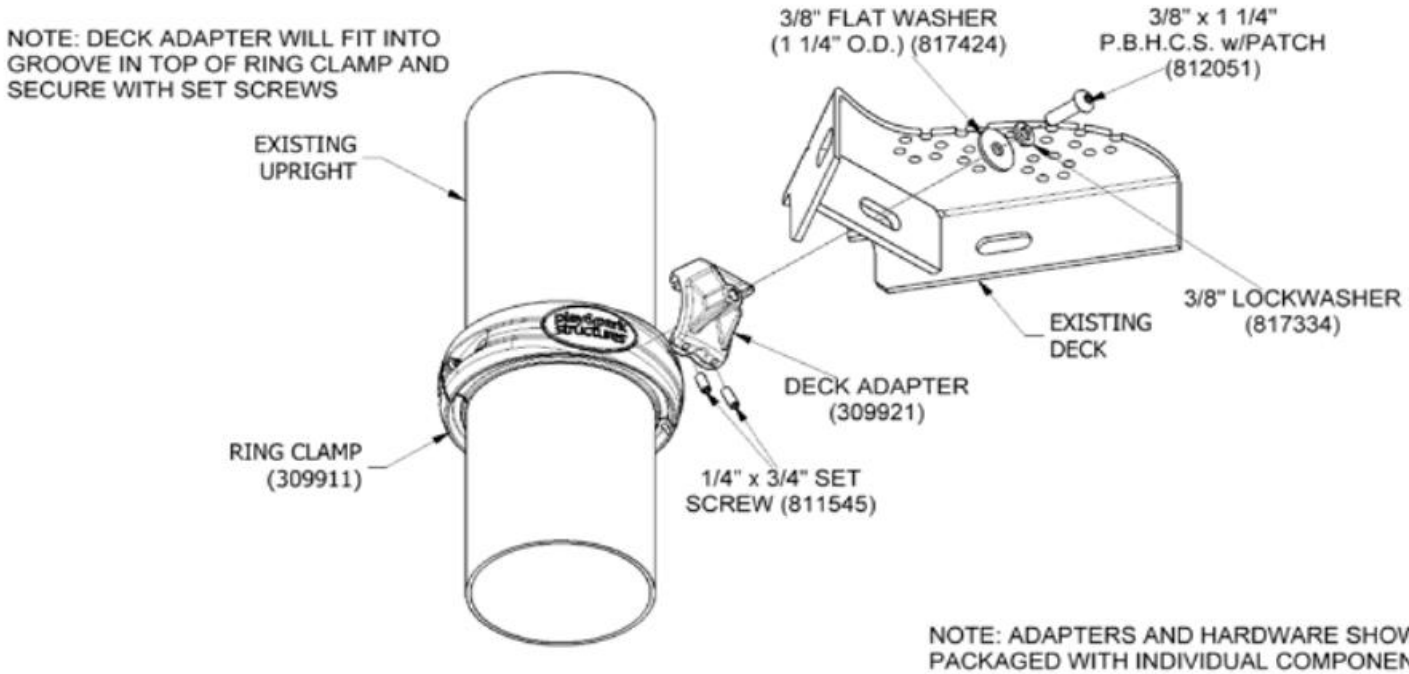
NOTE: THE USE OF LOCTITE IS IMPORTANT.

IMPORTANT: ORIENTATION OF BOLT IS CRITICAL.

NOTE: THE RING CLAMP WILL HAVE A SMALL GAP AT THE CONNECTION POINT AFTER ATTACHED. THE GAP IS DESIGNED FOR DRAINAGE AND TO ENSURE A PROPER FIT.

NOTE: MAKE SURE THE PLAY & PARK STRUCTURES LOGO IS ORIENTED CORRECTLY AND VISIBLE FROM GROUND LEVEL.

TYPICAL SUPERMAX RING CLAMP ASSEMBLY



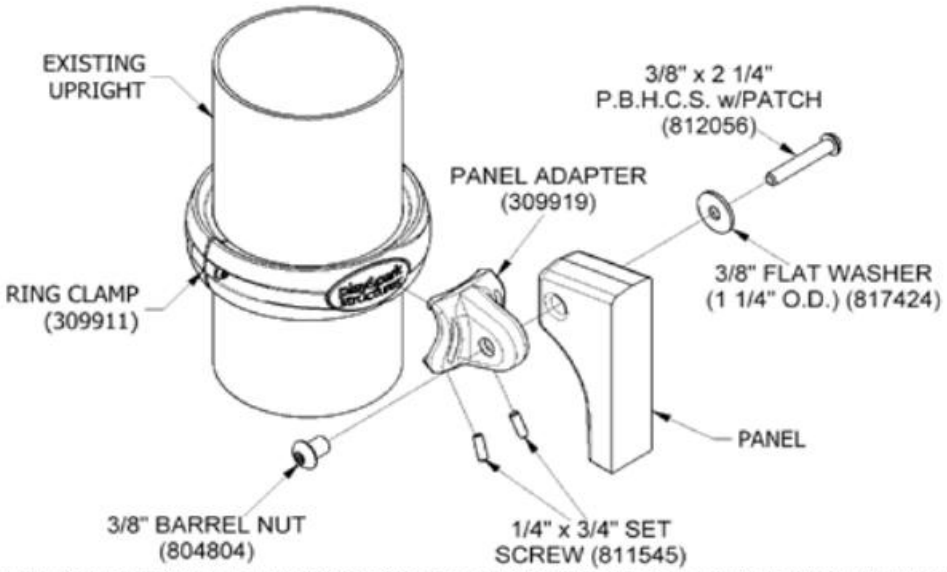
NOTE: ADAPTERS AND HARDWARE SHOWN ARE PACKAGED WITH INDIVIDUAL COMPONENT HARDWARE COMPLETE PACKAGES

Issued/Revised: 4/11/2016

TYPICAL SUPERMAX DECK CONNECTION

SHEET 1 OF 2

Clamp Assembly Details

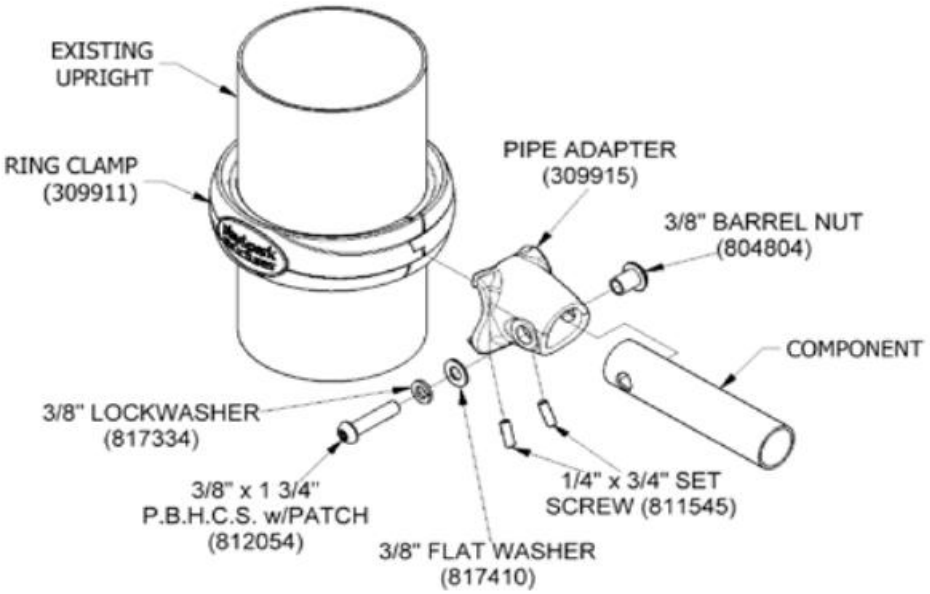


NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.

TYPICAL SUPERMAX PANEL ADAPTER ASSEMBLY

NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.



TYPICAL SUPERMAX PIPE ADAPTER ASSEMBLY

Issued/Revised: 4/11/2016

SHEET 2 OF 2

DETAILED MAINTENANCE RECORD

play&park structures
A PLAYCORE Company

Play Area Site Name _____

Play Area Location or Description _____

Date _____ Inspector _____

Item Number	OK	Problem	Solution	Date Repaired	Initials

PLAYGROUND MAINTENANCE CHECKLIST

play&park structures
A PLAYCORE Company

Maintaining your playground equipment as well as its surrounding area is essential to minimizing the risk of injury to users as well as maximizing its useful lifespan. Play & Park Structures recommends the following maintenance procedures be followed:

On a daily basis: A responsible individual should conduct a brief visual check for structural defects, signs of vandalism and litter of foreign matter that needs to be removed.

On a weekly basis: A responsible individual should complete this checklist. Any required repairs should be detailed on the separate **Detailed Maintenance Record**, and once they are completed, both should be filed for future reference. A separate file and form should be kept for each play structure at each location.

IMPORTANT: Always refer to - and comply with - the separate *Safety Guidelines* and ASTM and CPSC Guidelines. The play structure(s) should be barricaded so that it cannot be used while repairs are being completed.

	Item to be Checked (use the following page to record a brief description of the necessary repairs)	**OK**	**Repairs Required**	**Date Repaired**
A.	**Play Structures in General**			
	Post and component footings are not exposed, cracked or loose			
	1. Clamps show no signs of slippage, cracking, or failure			
	2. Clamp drive rivets and hardware are secure			
	3. Welds are intact and free of cracks			
	a. Slide and Deck Enclosures			
	b. Overhead Activities			
	c. Climbers			
	4. No rust or corrosion			
	5. No splintered, cracked, gouged or otherwise deteriorated plastics; check for integrity of the plastic, keep plastic clean of any extraneous substances, verify that any deformation does not create an entrapment as specified on ASTM-F-1487 section 6.			
	6. No scratched, chipped, or peeling paint			
	7. Metal parts show no visible cracks, bending, warping or breakage			
	8. No missing bolts, nuts, etc.			
	9. All bolts, nuts, and fasteners are tight			
	10. All joints are secure (pay special attention to sectional slides, flush mounted decks, and pipe connections)			
	11. All swivels, bearings, grease fittings, and moving parts are well lubricated and not excessively worn (pay special attention to tire swings, tot swings, strap swings, track rides, and trapeze rings)			
	12. No broken or missing parts			
	13. No sharp edges or unsafe protrusions (check metal corners, bolts, etc.)			
	14. No exposed mechanisms, junctions of moving parts or components that will pose possible pinch or crush points			
B.	**Play Events**			
	1. Plastic is not cut or cracked			
	2. All slide supports/anchors are intact and secure			
	3. All 'S' hooks are closed and not excessively worn			
	4. Clatter bridge chain and connections are not excessively worn, especially at connection points			
	5. Connectors and Chain have free movement			
C.	**Surrounding Area**			
	1. Resilient surfacing material is not scattered or excessively worn			
	2. Resilient surfacing material is adequately deep and retains its fall absorbing abilities as specified at the time of installation			
	3. Border around playground is in good condition and has not come loose			
	4. No roots, rocks, or other objects that may cause a tripping or injury hazard			
	5. Area is clean of litter (no broken glass or bottles, etc .)			

This equipment is designed for children 2-5 or 5-12 years old

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY

PARTS LIST								
DESCRIPTION	7200	7201	7202	7205	7206	7207	7208	PART NUMBER
ANSWER WHEEL ASS'Y	1	0	0	0	0	0	0	316045
MAZE ASS'Y	0	1	0	0	0	0	0	316049
ECHO CHAMBER ASS'Y	0	0	1	0	0	0	0	316047
STAINED GLASS-YELLOW	0	0	0	1	0	0	0	316051
HYPNO WHEEL ASS'Y	0	0	0	0	1	0	0	316048
STAINED GLASS-GREEN	0	0	0	0	0	1	0	316050
BUBBLE MIRROR	0	0	0	0	0	0	1	316046
TRIANGLE HOUSING	2	2	2	2	2	2	2	**
SCREW CAP	6	6	6	6	6	6	6	**
SCREW, FLAT WASHER, RETAINER	3	3	3	3	3	3	3	**

Unless Otherwise Specified, All Units of Measure are Each
***Included in Assembly*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

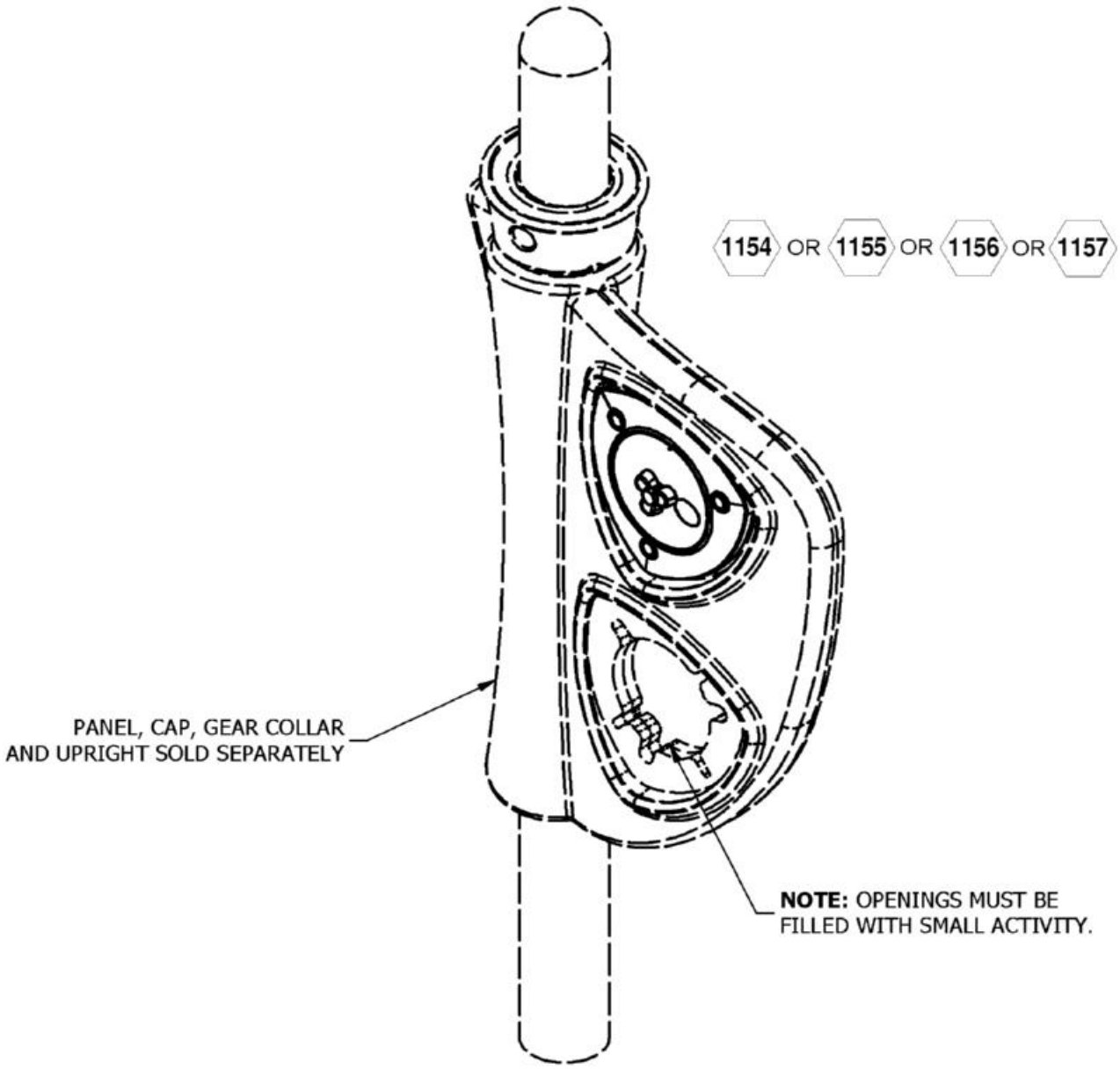
IMPORTANT- ALL OPENINGS MUST BE FILLED WITH A SMALL ACTIVITY.

1. Locate Panel to receive small activity.
2. Place Triangle Housing into small opening in panel. Housing is keyed so that bosses and fins fit into opening. Rotate Housing if needed until it fits into the opening.
3. Take the remaining Housing and place activity so that notches in activity align with ribs on Housing. Refer to Details 1154, 1155, 1156, and 1157 for specific activity. **NOTE:** Remove any protective film that may be on Activity Panel before assembly.
4. Align Housing with openings in Panel and attach the two housings together. Cover with Screw Cap as shown in Details Details 1154, 1155, 1156, and 1157.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY

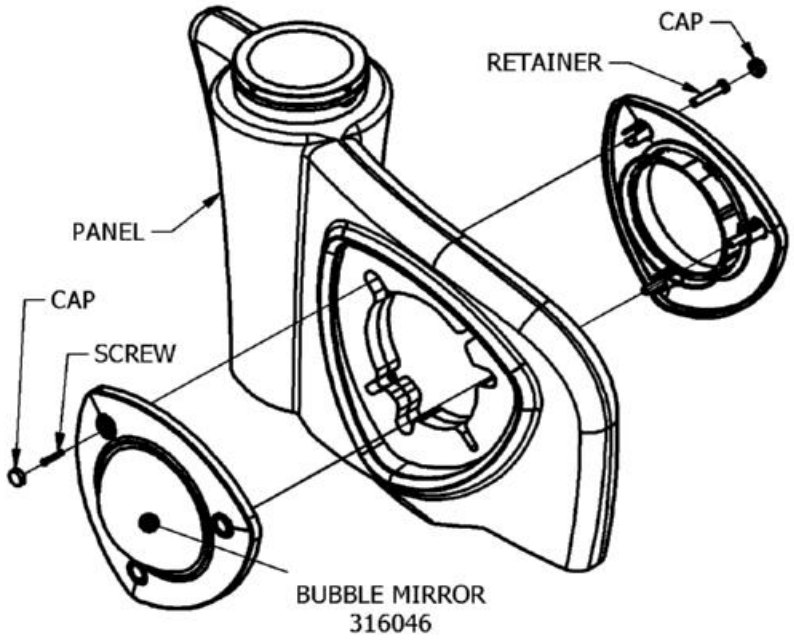


FINISHED ASSEMBLY
7200 VERSION SHOWN

⬡ = INSTALLATION DETAIL

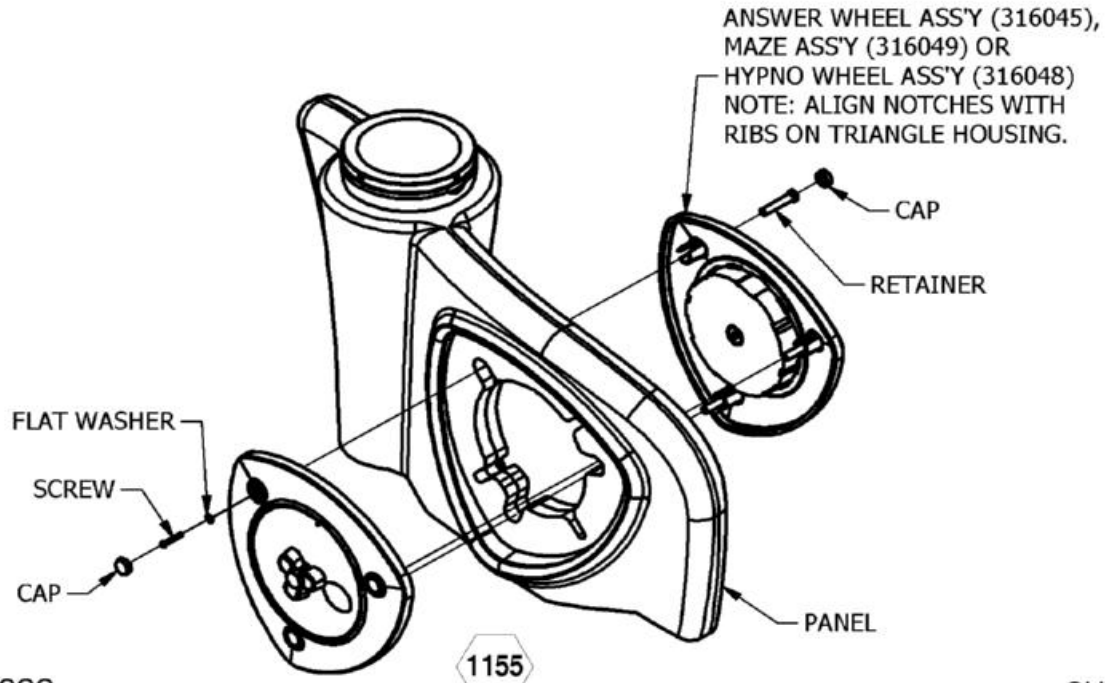
Issued/Revised: 6/21/2022

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY



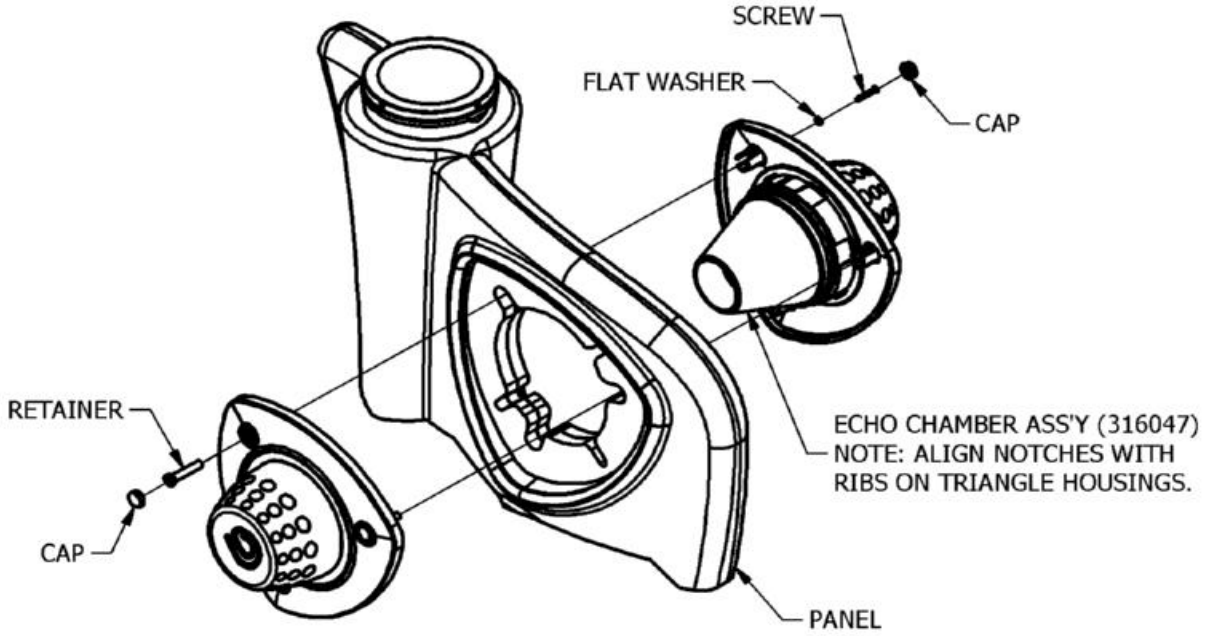
1154

NOTE: IF PRESENT, REMOVE ANY PROTECTIVE FILM THAT MAY BE ON THE ACTIVITY BEFORE ASSEMBLING.



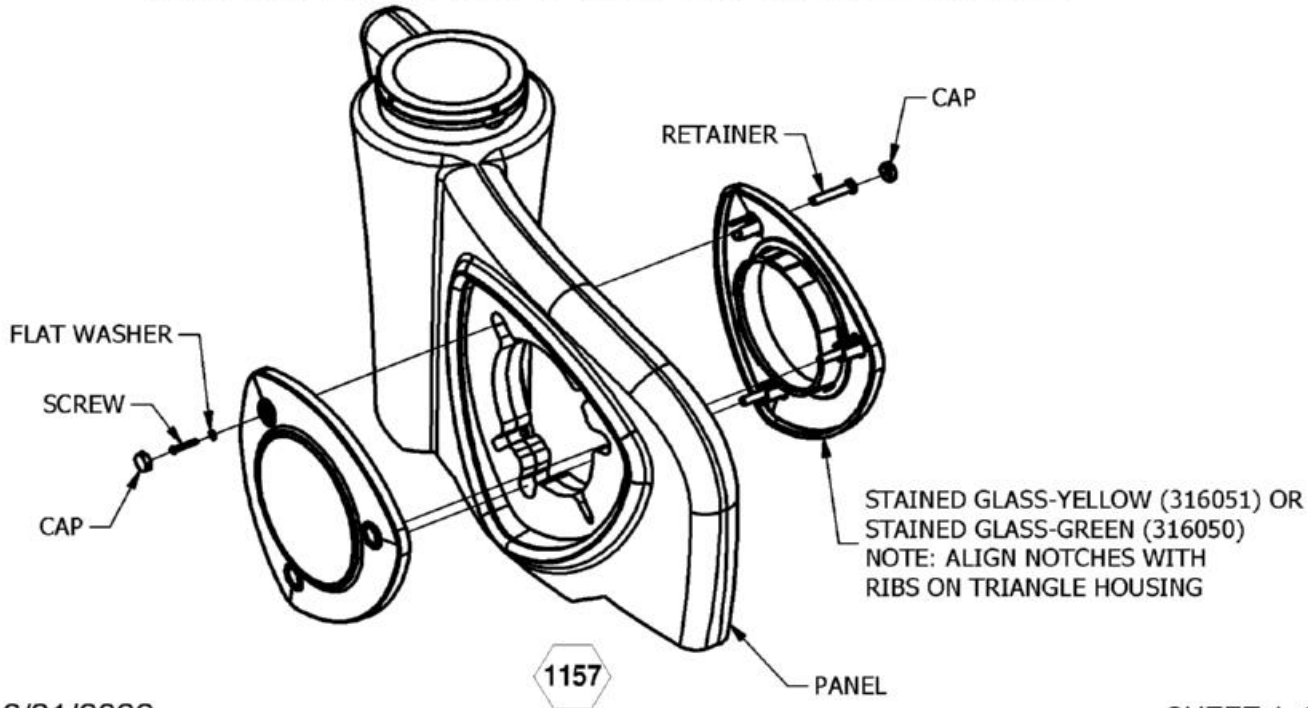
1155

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY



1156

NOTE: IF PRESENT, REMOVE ANY PROTECTIVE FILM THAT MAY BE ON THE ACTIVITY BEFORE ASSEMBLING.



1157

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL

Parts List					
DESCRIPTION	7313	7314	7315	7316	PART NUMBER
20" BELL ASS'Y ONE SIDED	1	0	0	0	212168
12" BELL ASS'Y ONE SIDED	0	1	0	0	212186
20" BELL ASS'Y TWO SIDED	0	0	1	0	212183
12" BELL ASS'Y TWO SIDED	0	0	0	1	212188
HARDWARE COMPLETE	1	0	0	0	212190
HARDWARE COMPLETE	0	1	0	1	212191
HARDWARE COMPLETE	0	0	1	0	212890
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	8	5	0	5	812051
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	0	0	8	0	812053
3/8" LOCKWASHER	8	5	8	5	817334
3/8" FLAT WASHER	8	5	8	5	817410
3/8" BARREL NUT	8	5	8	5	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Bell:
Bells shall be all weld assemblies fabricated from formed 11 Ga. Steel, 1-5/16" O.D. x .083" (14 gauge) wall galvanized steel tubing, and purchases machined stainless steel insert. The Bell weld assemblies shall be coated in TGIC polyester powder coating as specified herein.

Bell Panel:
The bell panel shall be fabricated from 3/4" high density polyethylene.

Hardware:
All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing.

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794- 69), Wedge Bend (ASTM D-522-68).

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL

7315 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach 20" Bell Ass'y Two Sided to Rotomold using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 878.

4. Plumb and level the entire assembly and tighten all fasteners.

5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

7313, 7314, & 7316 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach 20" Bell Ass'y One Sided, 12" Bell Ass'y One Sided, or 12" Bell Ass'y Two Sided to Rotomold using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 863.

4. Plumb and level the entire assembly and tighten all fasteners.

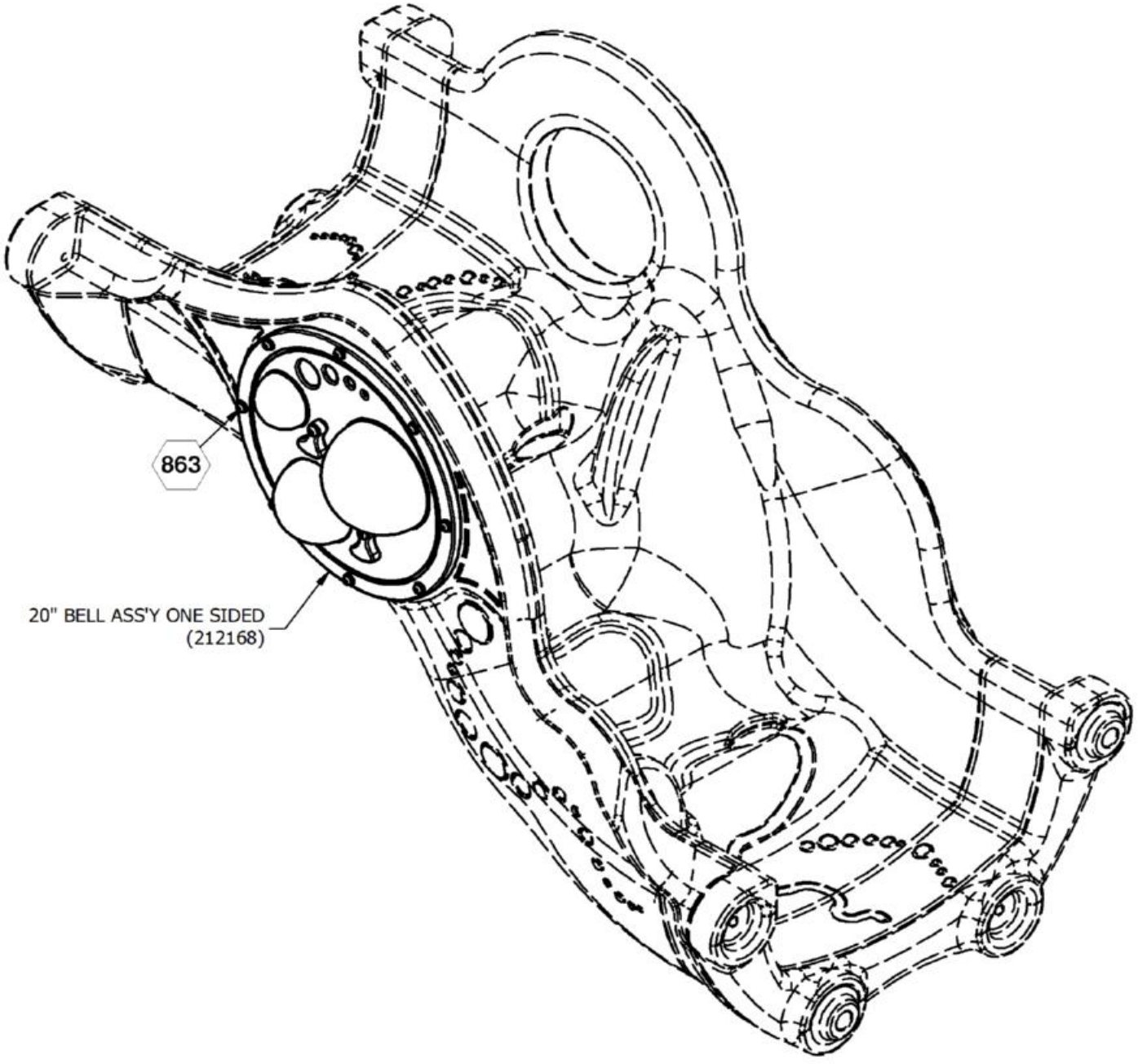
5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL



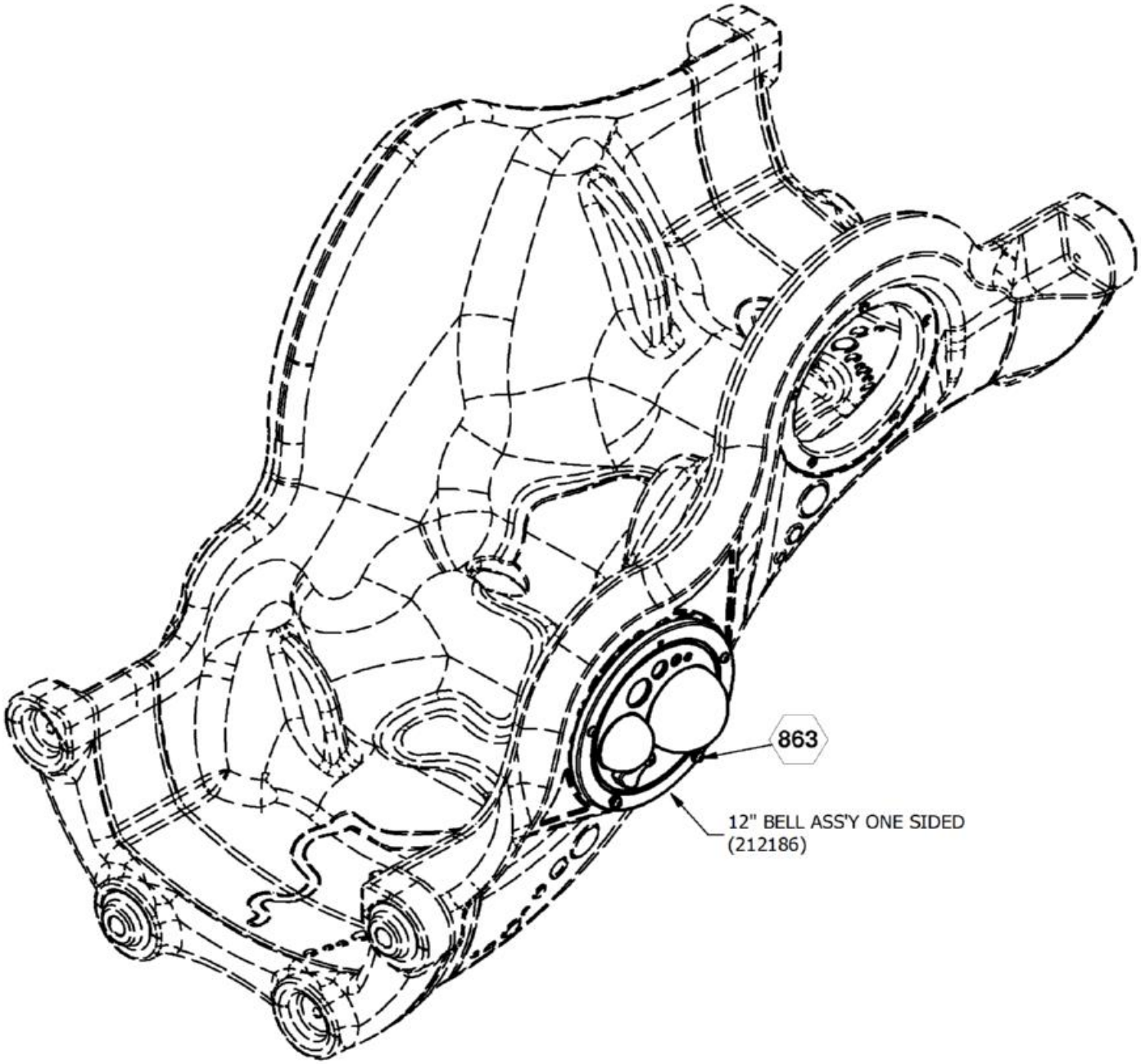
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
7313 SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 2/6/2017

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL



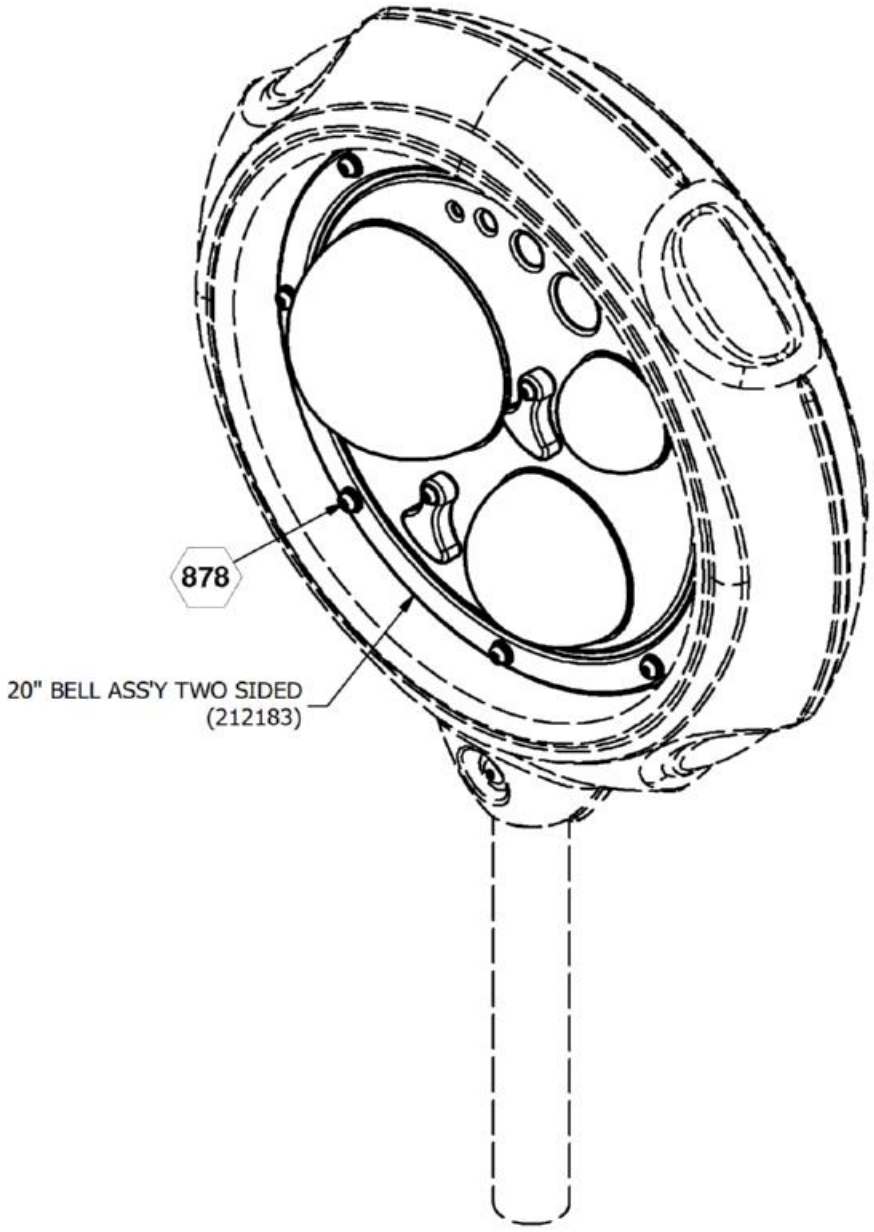
FINISHED ASSEMBLY
7314 SHOWN

⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 2/6/2017

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL



FINISHED ASSEMBLY
7315 SHOWN

= INSTALLATION DETAIL

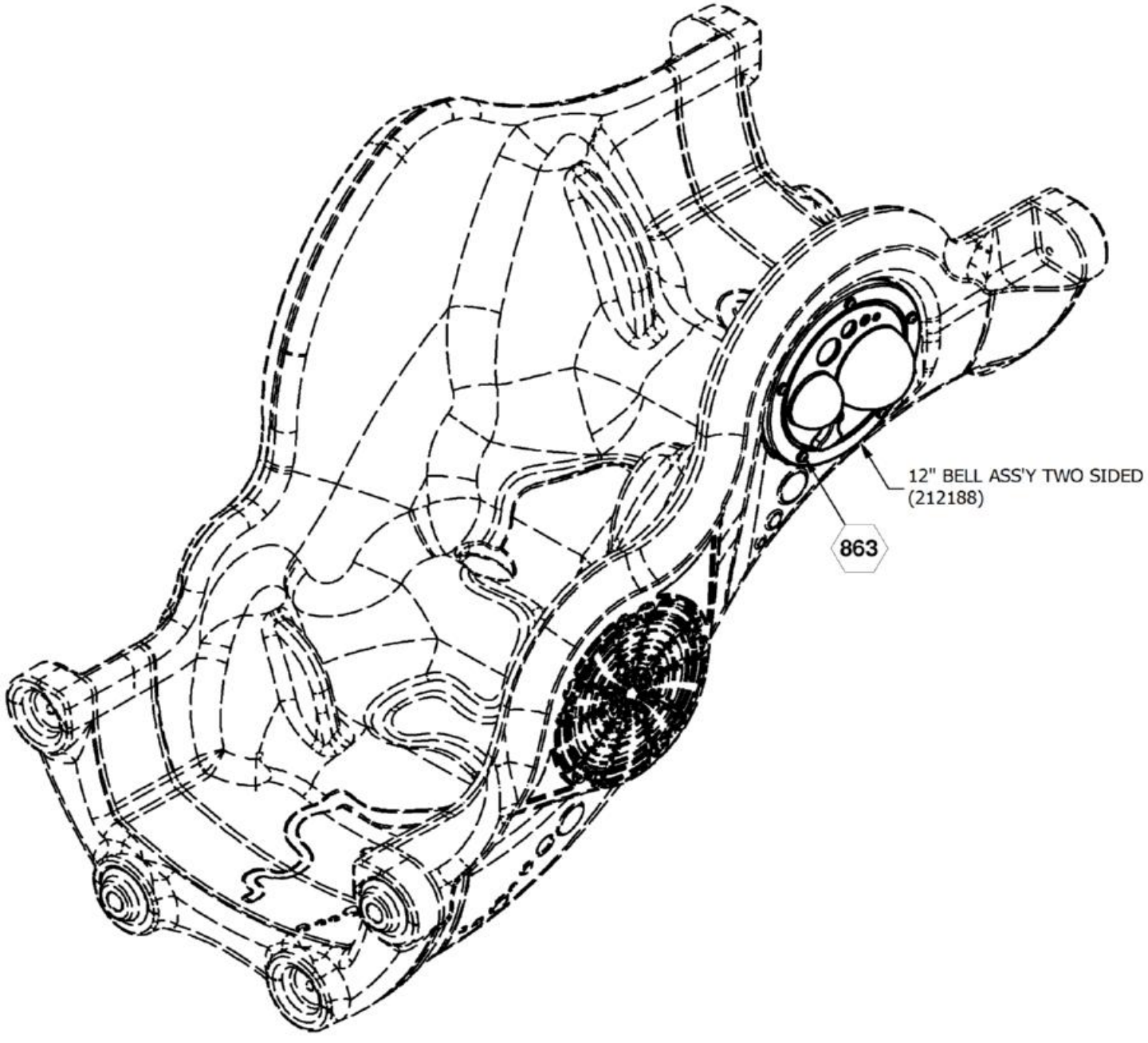
COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 2/6/2017

ParkPlay

Sensors

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL



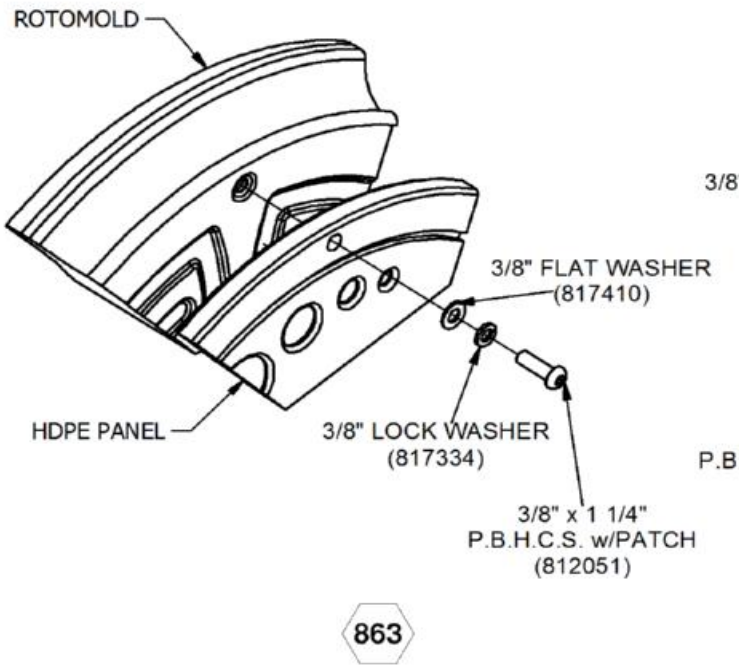
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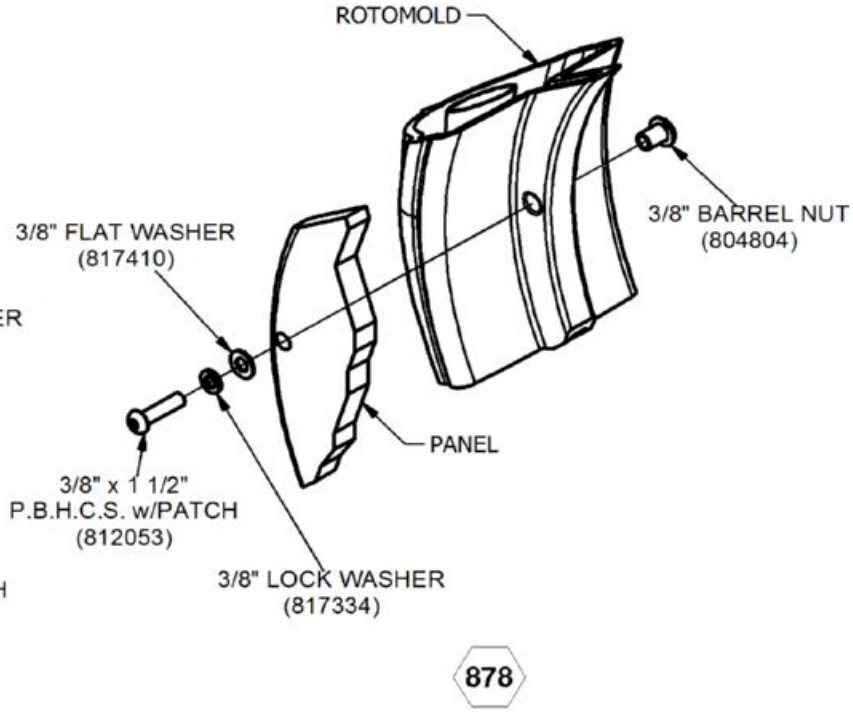
FINISHED ASSEMBLY
7316 SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 2/6/2017

7313 20" ONE SIDED BELL
7314 12" ONE SIDED BELL
7315 20" TWO SIDED BELL
7316 12" TWO SIDED BELL





7341 20" ONE SIDED JAMBOX ROTOGEN
7342 20" TWO SIDED JAMBOX ROTOGEN

Parts List			
DESCRIPTION	7341	7342	PART NUMBER
JAMBOX SENSOR 20" ROTOGEN	1	0	218235
JAMBOX SENSOR w/BACK 20" ROTOGEN	0	1	218236
SPACER	6	0	212416
HARDWARE COMPLETE	1	0	212436
HARDWARE COMPLETE	0	1	312646
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	0	4	812056
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	0	4	812058
3/8" x 3" P.B.H.C.S. w/PATCH	4	0	812059
3/8" x 3 3/4" P.B.H.C.S. w/PATCH	4	0	812076
3/8" FLAT WASHER	8	8	817410
3/8" LOCK WASHER	8	0	817334
3/8" BARREL NUT	0	8	804804
3/8" T-NUT	4	0	804556

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

7341 20" ONE SIDED JAMBOX ROTOGEN
7342 20" TWO SIDED JAMBOX ROTOGEN

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** ***Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.***
2. Attach Jam Box One Sided to Spacers using 3/8" x 3" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" T-Nut. See Detail 542.
3. Attach Jam Box One Sided and Spacers to Rotomold using 3/8" x 3 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 543.
4. Plumb and level the entire assembly and tighten all fasteners.
5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

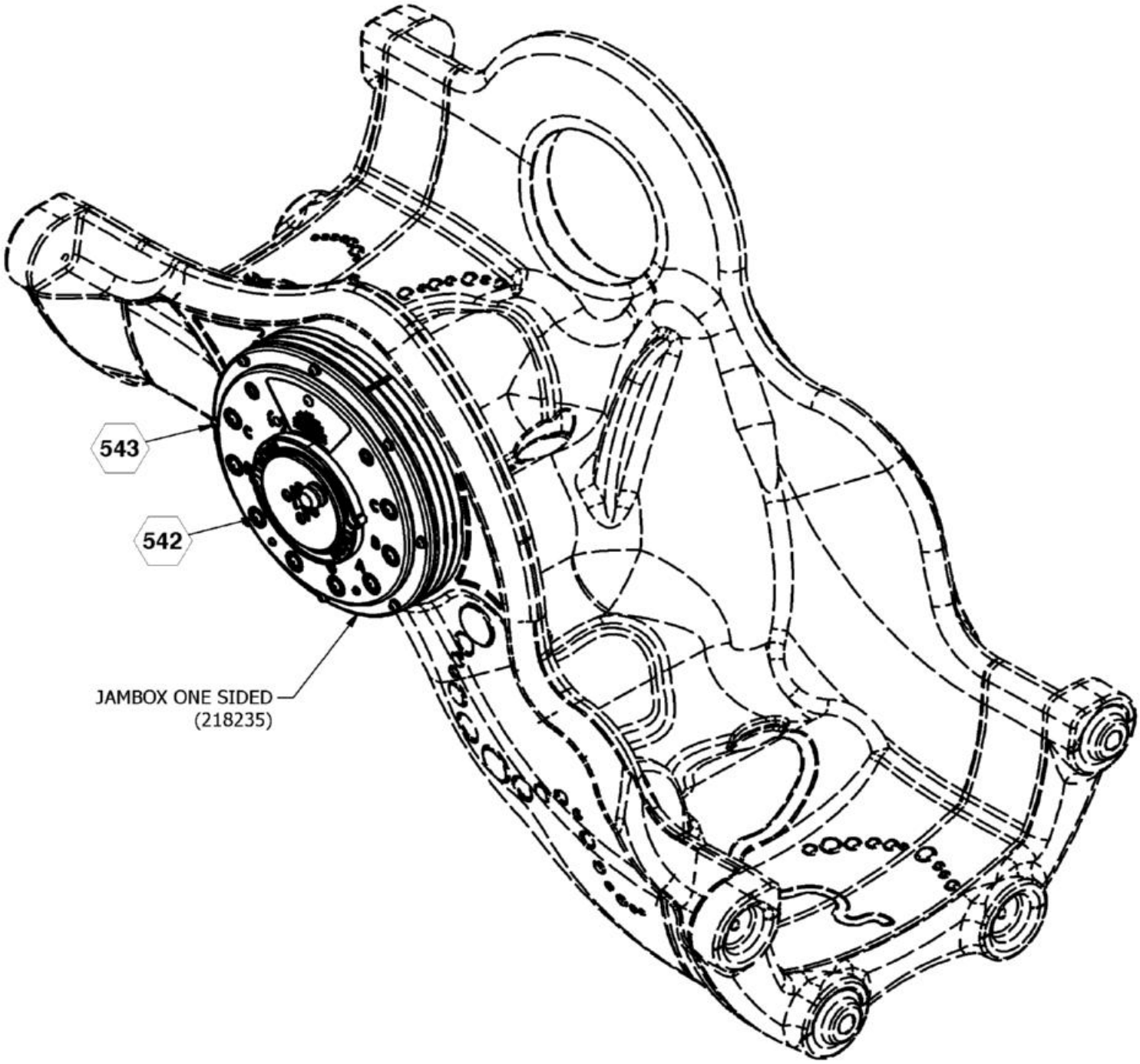
INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** ***Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.***
2. Attach Jam Box Two Sided and Rings to Rotomold using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 816.
3. Attach Back Cover to Rotomold using 3/8" x 2 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 817.
4. Plumb and level the entire assembly and tighten all fasteners.
5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

7341 20" ONE SIDED JAMBOX ROTOGEN
7342 20" TWO SIDED JAMBOX ROTOGEN



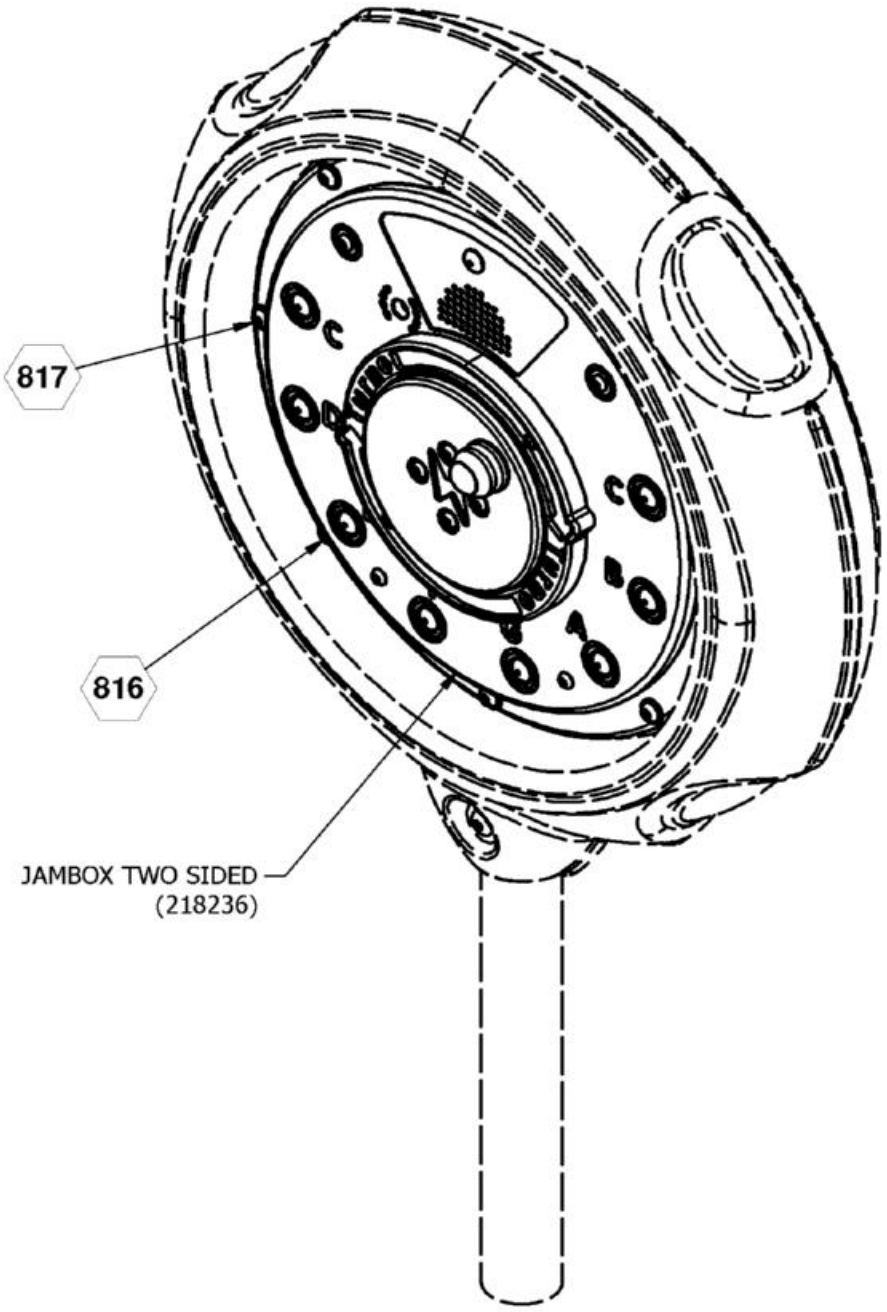
FINISHED ASSEMBLY
7341 SHOWN

⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/6/2022

7341 20" ONE SIDED JAMBOX ROTOGEN
7342 20" TWO SIDED JAMBOX ROTOGEN

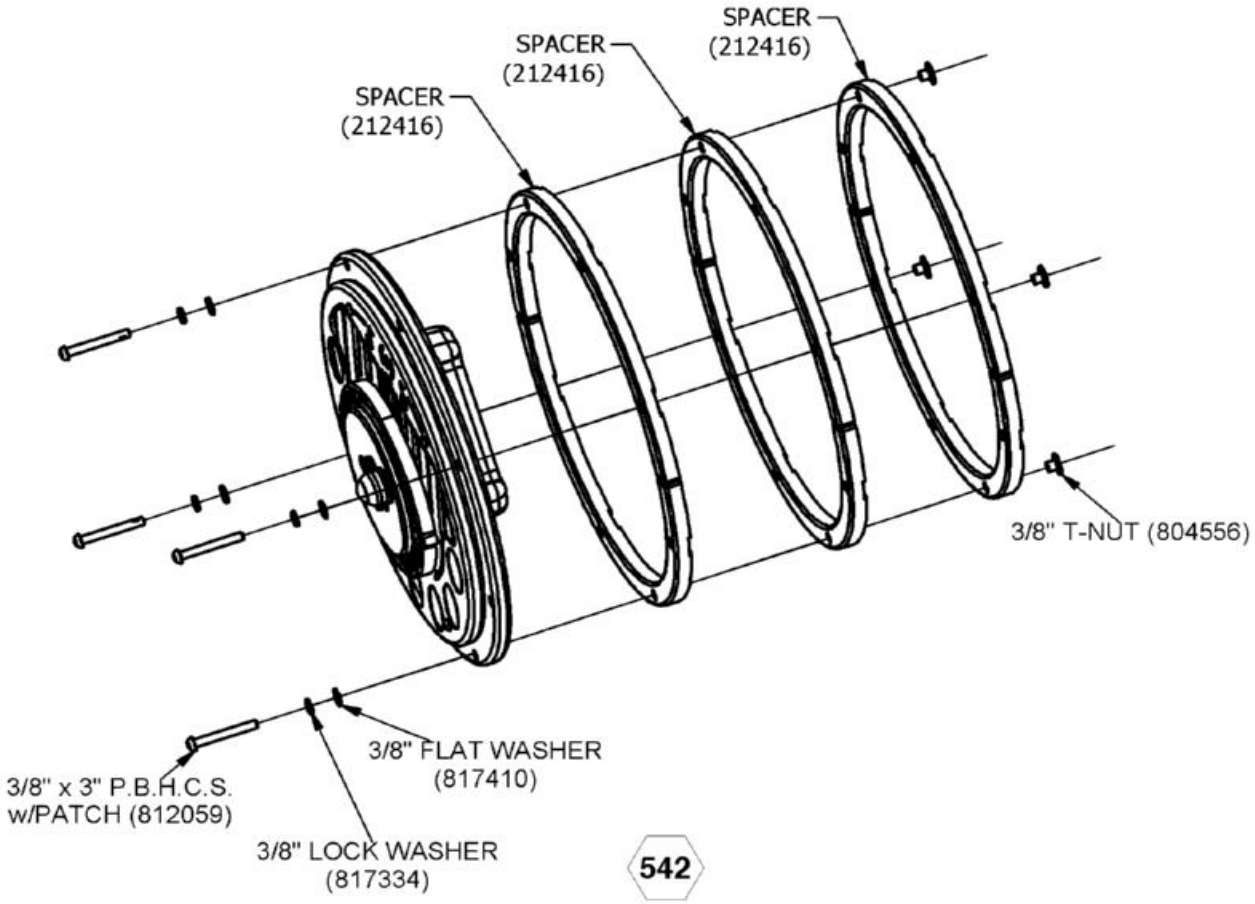


FINISHED ASSEMBLY
7342 SHOWN

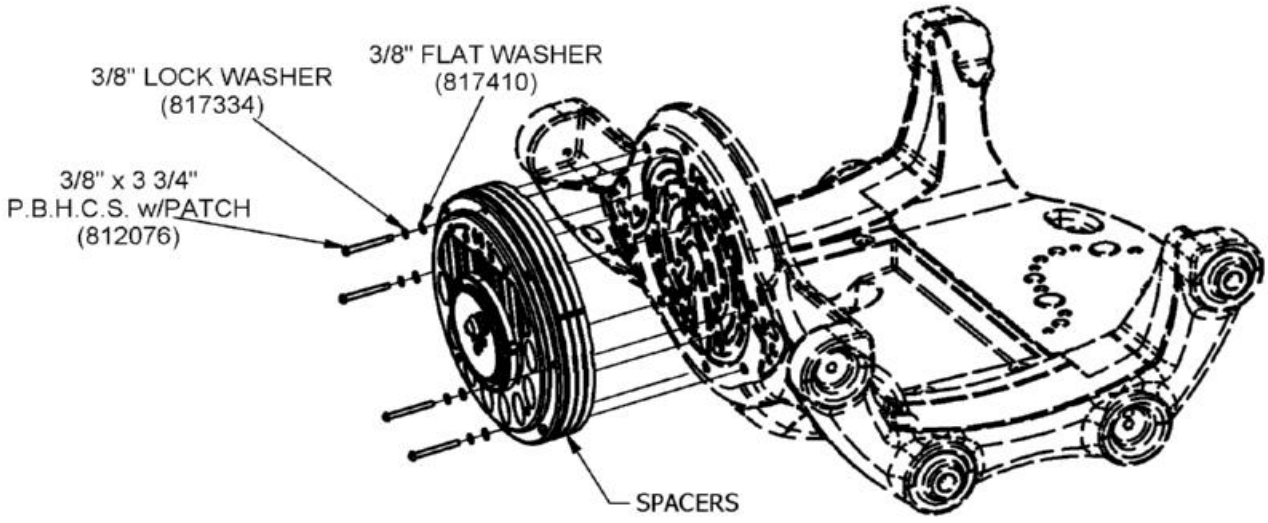
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

7341 20" ONE SIDED JAMBOX ROTOGEN
7342 20" TWO SIDED JAMBOX ROTOGEN

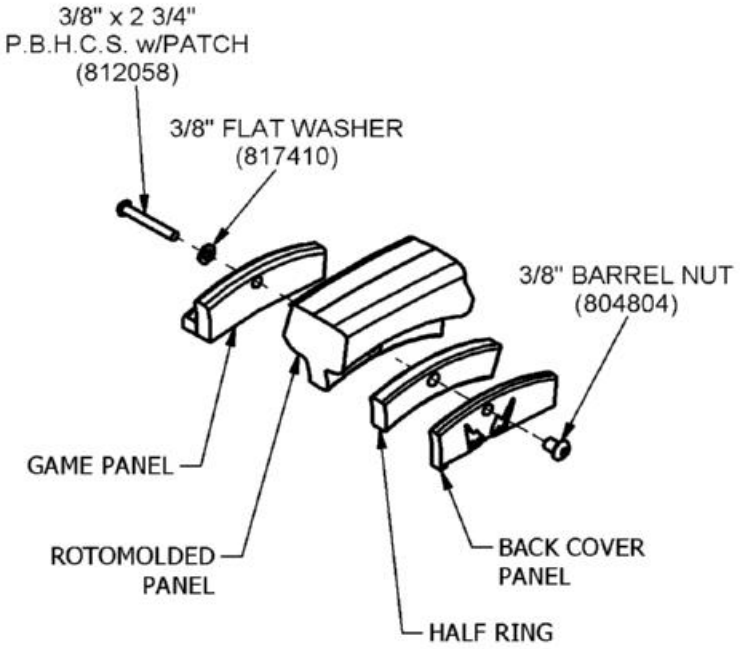


542

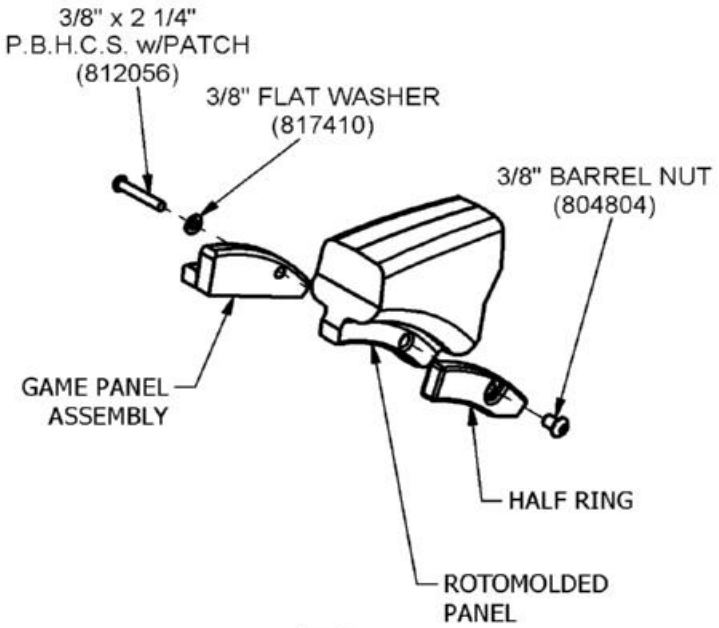


543

7341 20" ONE SIDED JAMBOX ROTOGEN
7342 20" TWO SIDED JAMBOX ROTOGEN



817



816

7361 20" TWO SIDED TWIST BEARING

Parts List		
DESCRIPTION	QTY	PART NUMBER
20" TWIST BEARING PANEL	1	212484
HARDWARE COMPLETE	1	212890
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	8	812053
3/8" LOCK WASHER	8	817334
3/8" FLAT WASHER	8	817410
3/8" BARREL NUT	8	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Twist Bearing:
The Twist Bearing shall be fabricated from 1/2" high density polyethylene and 3/16" thick UV inhibitive acrylic with 4.5mm stainless steel balls.

Hardware:
All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing.

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach 20" Twist Bearing Panel to Rotomold using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Lock Washer, and 3/8" Barrel Nut. See Detail 878.

3. Plumb and level the entire assembly and tighten all fasteners.

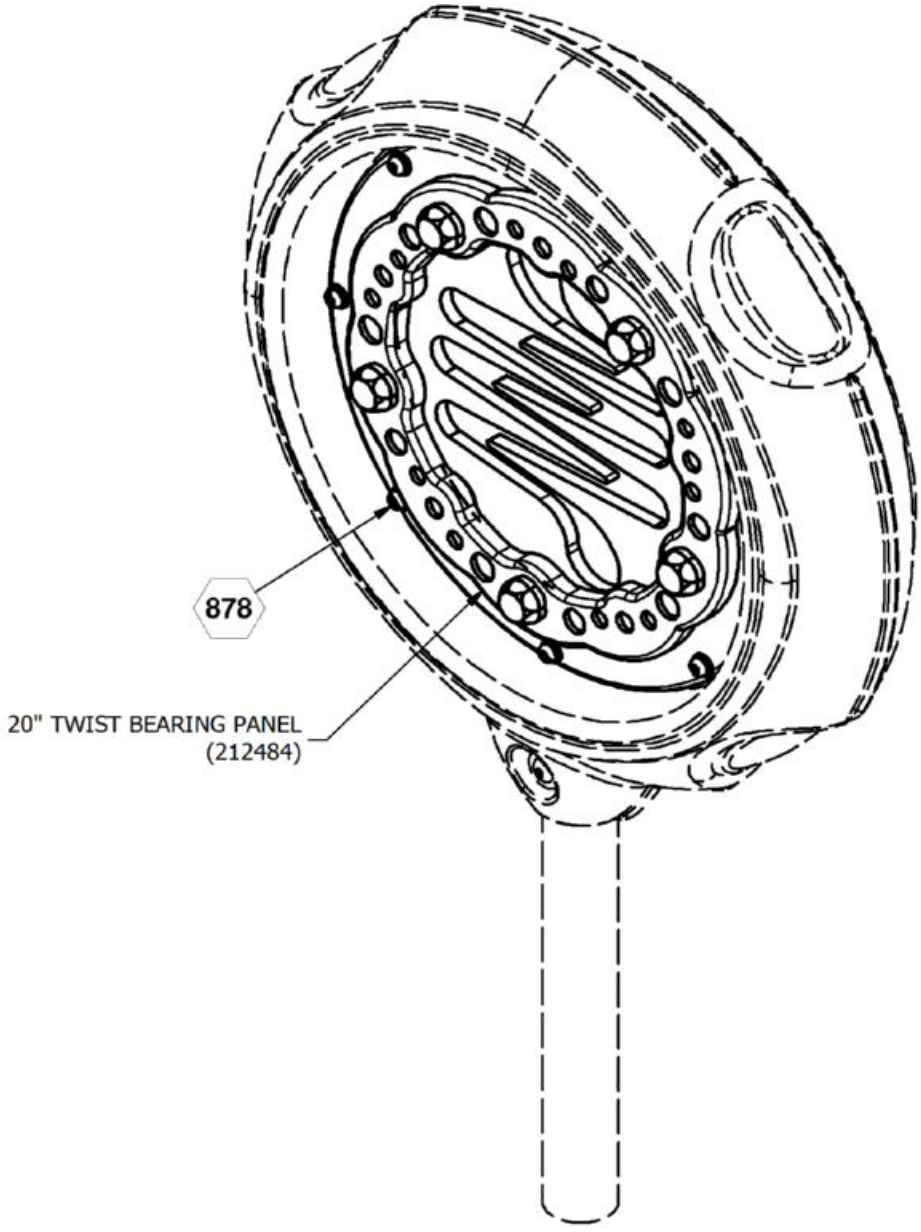
4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

5. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

7361 20" TWO SIDED TWIST BEARING

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

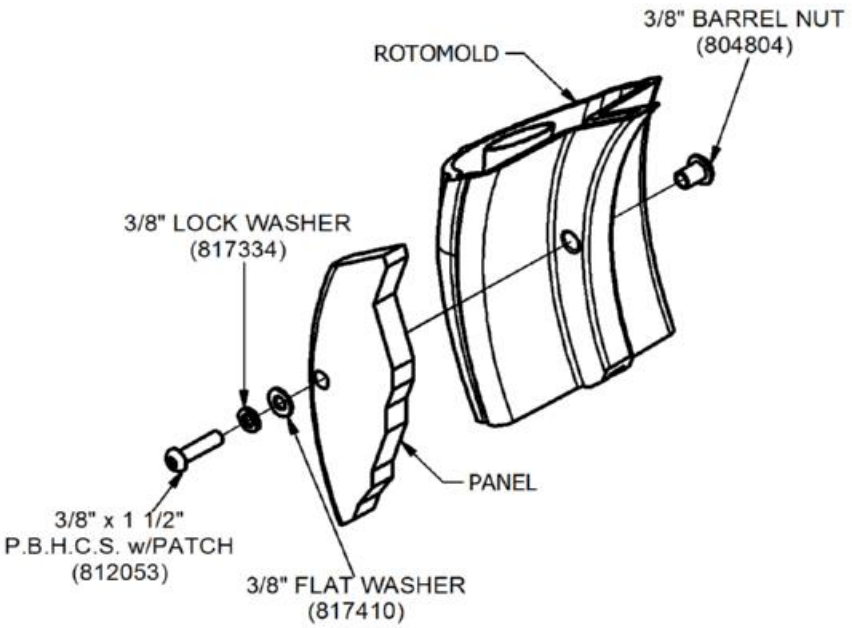


= INSTALLATION DETAIL

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

7361 20" TWO SIDED TWIST BEARING



SuperMax Play Systems

60059 (10'), 60060 (12'), 60088 (14'), 60102 (6'), 60178 (8'), 60946 (15'), 60947 (13'), 60948 (11'), 60949 (7'), 60956 (9'), 61538 (4'), 61539 (5') SUPERMAX POST w/ CAP

(ADD G PREFIX FOR GALV. POST)

Parts List									
DESCRIPTION	60059	G60059	60060	G60060	60088	G60088	60102	G60102	PART NUMBER
5" O.D. POST WITH CAP (ALUMINUM) 10'	1	0	0	0	0	0	0	0	300130
5" O.D. POST WITH CAP (GALVANIZED) 10'	0	1	0	0	0	0	0	0	G00130
5" O.D. POST WITH CAP (ALUMINUM) 12'	0	0	1	0	0	0	0	0	300059
5" O.D. POST WITH CAP (GALVANIZED) 12'	0	0	0	1	0	0	0	0	G00059
5" O.D. POST WITH CAP (ALUMINUM) 14'	0	0	0	0	1	0	0	0	300060
5" O.D. POST WITH CAP (GALVANIZED) 14'	0	0	0	0	0	1	0	0	G00060
5" O.D. POST WITH CAP (ALUMINUM) 6'	0	0	0	0	0	0	1	0	300057
5" O.D. POST WITH CAP (GALVANIZED) 6'	0	0	0	0	0	0	0	1	G00057

Parts List									
DESCRIPTION	60178	G60178	60946	G60946	60947	G60947	60948	G60948	PART NUMBER
5" O.D. POST WITH CAP (ALUMINUM) 8'	1	0	0	0	0	0	0	0	300521
5" O.D. POST WITH CAP (GALVANIZED) 8'	0	1	0	0	0	0	0	0	G00521
5" O.D. POST WITH CAP (ALUMINUM) 15'	0	0	1	0	0	0	0	0	305801
5" O.D. POST WITH CAP (GALVANIZED) 15'	0	0	0	1	0	0	0	0	G05801
5" O.D. POST WITH CAP (ALUMINUM) 13'	0	0	0	0	1	0	0	0	305803
5" O.D. POST WITH CAP (GALVANIZED) 13'	0	0	0	0	0	1	0	0	G05803
5" O.D. POST WITH CAP (ALUMINUM) 11'	0	0	0	0	0	0	1	0	305805
5" O.D. POST WITH CAP (GALVANIZED) 11'	0	0	0	0	0	0	0	1	G05805

Parts List									
DESCRIPTION	60949	G60949	60956	G60956	61538	G61538	61539	G61539	PART NUMBER
5" O.D. POST WITH CAP (ALUMINUM) 7'	1	0	0	0	0	0	0	0	305807
5" O.D. POST WITH CAP (GALVANIZED) 7'	0	1	0	0	0	0	0	0	G05807
5" O.D. POST WITH CAP (ALUMINUM) 9'	0	0	1	0	0	0	0	0	305810
5" O.D. POST WITH CAP (GALVANIZED) 9'	0	0	0	1	0	0	0	0	G05810
5" O.D. POST WITH CAP (ALUMINUM) 4'	0	0	0	0	1	0	0	0	304957
5" O.D. POST WITH CAP (GALVANIZED) 4'	0	0	0	0	0	1	0	0	G04957
5" O.D. POST WITH CAP (ALUMINUM) 5'	0	0	0	0	0	0	1	0	305615
5" O.D. POST WITH CAP (GALVANIZED) 5'	0	0	0	0	0	0	0	1	G05615

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

60059 (10'), 60060 (12'), 60088 (14'), 60102 (6'), 60178 (8'), 60946 (15'), 60947 (13'), 60948 (11'), 60949 (7'), 60956 (9'), 61538 (4'), 61539 (5') SUPERMAX POST w/ CAP

(ADD G PREFIX FOR GALV. POST)

INSTALLATION INSTRUCTIONS:

1. Component numbers are for one (1) Upright Post only. Please refer to your Plan Drawing and Footing Diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure up from the lower end of each Upright Post and mark using a felt-tip marker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof naker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be instaling. Using your footing diagram and elevation view as a reference, move and dig holes accordingly.

3. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

4. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete has a downward slope of 45° at the top away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like nuts, bolts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

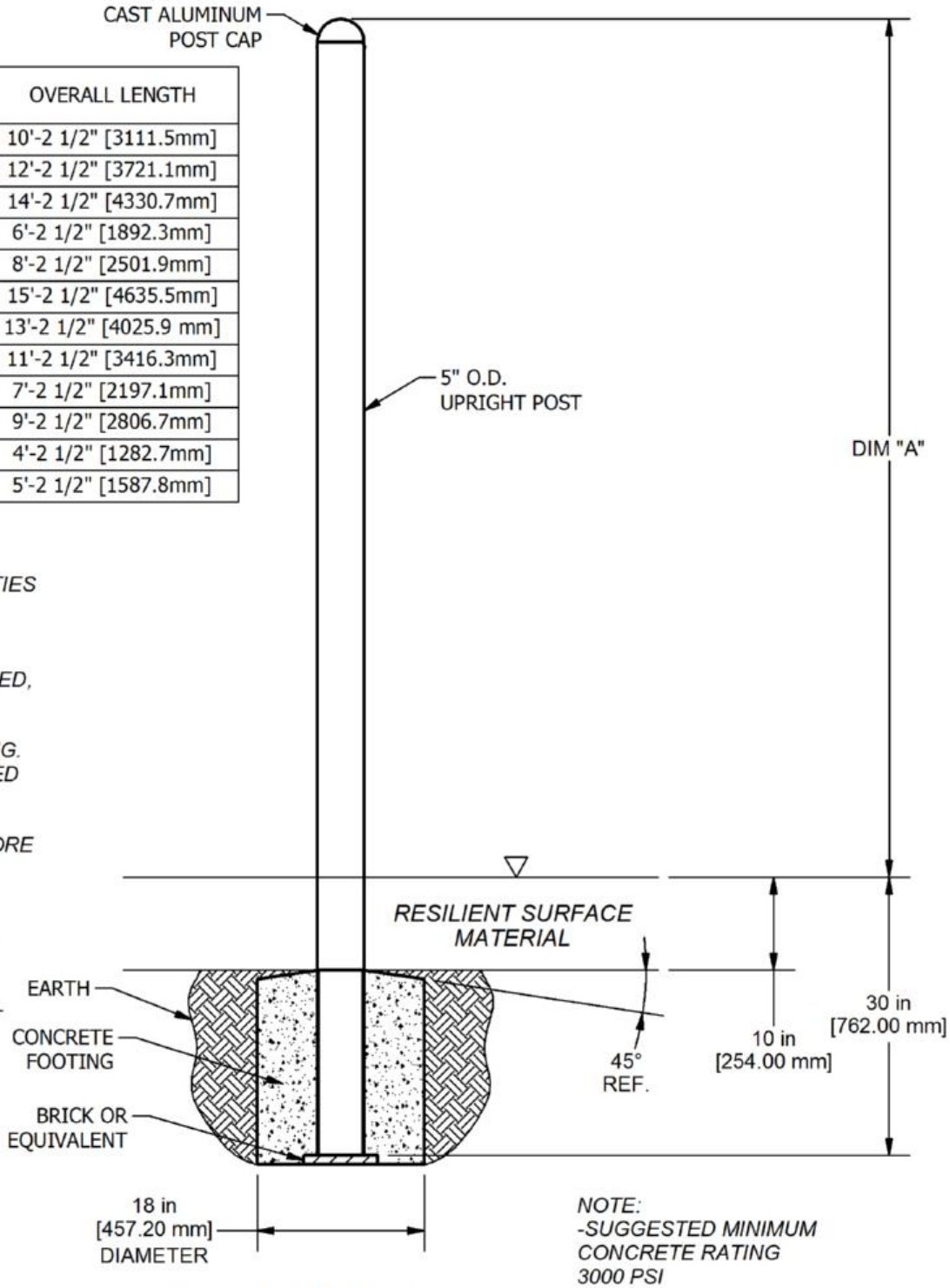
60059 (10'), 60060 (12'), 60088 (14'), 60102 (6'), 60178 (8'), 60946 (15'), 60947 (13'), 60948 (11'), 60949 (7'), 60956 (9'), 61538 (4'), 61539 (5') SUPERMAX POST w/ CAP

(ADD G PREFIX FOR GALV. POST)

NO.	DIM "A"	OVERALL LENGTH
60059	7'-8 1/2" [2349.5mm]	10'-2 1/2" [3111.5mm]
60060	9'-8 1/2" [2959.1mm]	12'-2 1/2" [3721.1mm]
60088	11'-8 1/2" [3568.7mm]	14'-2 1/2" [4330.7mm]
60102	3'-8 1/2" [1130.3mm]	6'-2 1/2" [1892.3mm]
60178	5'-8 1/2" [1739.9mm]	8'-2 1/2" [2501.9mm]
60946	12'-8 1/2" [3873.5 mm]	15'-2 1/2" [4635.5mm]
60947	10'-8 1/2" [3263.9mm]	13'-2 1/2" [4025.9 mm]
60948	8'-8 1/2" [2654.3mm]	11'-2 1/2" [3416.3mm]
60949	4'-8 1/2" [1435.1mm]	7'-2 1/2" [2197.1mm]
60956	6'-8 1/2" [2044.7mm]	9'-2 1/2" [2806.7mm]
61538	1'-8 1/2" [520.7mm]	4'-2 1/2" [1282.7mm]
61539	2'-8 1/2" [1282.7mm]	5'-2 1/2" [1587.8mm]

SHOCK ABSORBING PROPERTIES OF RESILIENT SURFACING MATERIALS VARY. IF YOU DETREMINE THAT LESS THAN 10" OF SURFACING IS REQUIRED, MAKE UP THE DIFFERENCE IN ELEVATION WITH EARTH BEFORE APPLYING SURFACING. IF MORE THAN 10" IS REQUIRED MAKE UP THE DIFFERENCE BY REDUCING THE DEPTH OF THE GROUND HOLE BY NO MORE THAN 2".

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF RESILIENT SURFACE MATERIAL AND CONCRETE



NOTE:
-SUGGESTED MINIMUM CONCRETE RATING 3000 PSI

ELEVATION VIEW

Issued/Revised: 7/11/2019

SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 60061 Small Kickplate (For Deck Spaced 8" Apart)

PARTS LIST

DESCRIPTION	No. REQ'D	PART NUMBER
Small Kickplate	1	305742
Hardware Complete	1	302411
3/8" x 3/4" P.B.H.C.S. w/Patch	8	812052*
3/8" Lock Nut	8	804353*
3/8" Flat Washer (1 1/4" O.D.)	16	817424*

Unless Otherwise Specified, All Units of Measure are Each
***Included in Hardware**

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Kickplate measures 9-1/2" x 38" and is cut from galvanneal sheet metal with eight (8) 7/16" x 1" slotted holes punched to coincide with deck flange holes and receives a baked-on polyester powder-coat finish after fabrication.

Primary hardware is stainless steel.

INSTALLATION INSTRUCTIONS:

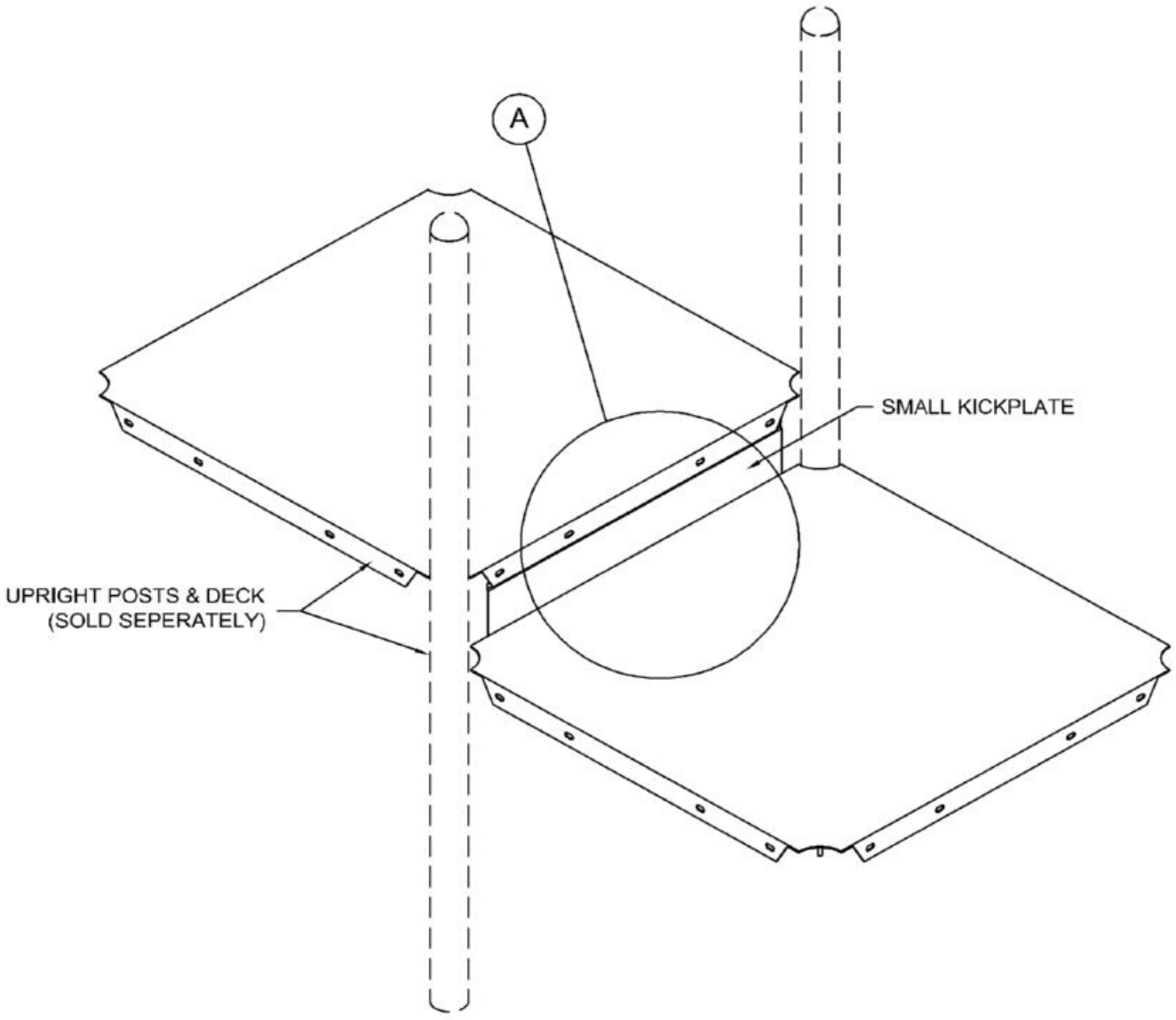
1. Refer to the main drawing to locate decks, which are spaced 8" apart. These will require Kickplate(s). Attach Kickplates after decks have been installed, but before deck clamps have been pinned, in case adjustment in deck heights is required to match up holes in deck flanges with holes in Kickplate.

2. Fasten the Kickplate between decks as shown in the drawing. No portion of the Kickplate should be protruding in a manner that could cause a user to receive a cut, scrape or trip over an edge. Any rough edges should be filed smooth, and any protruding corners should be flattened. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

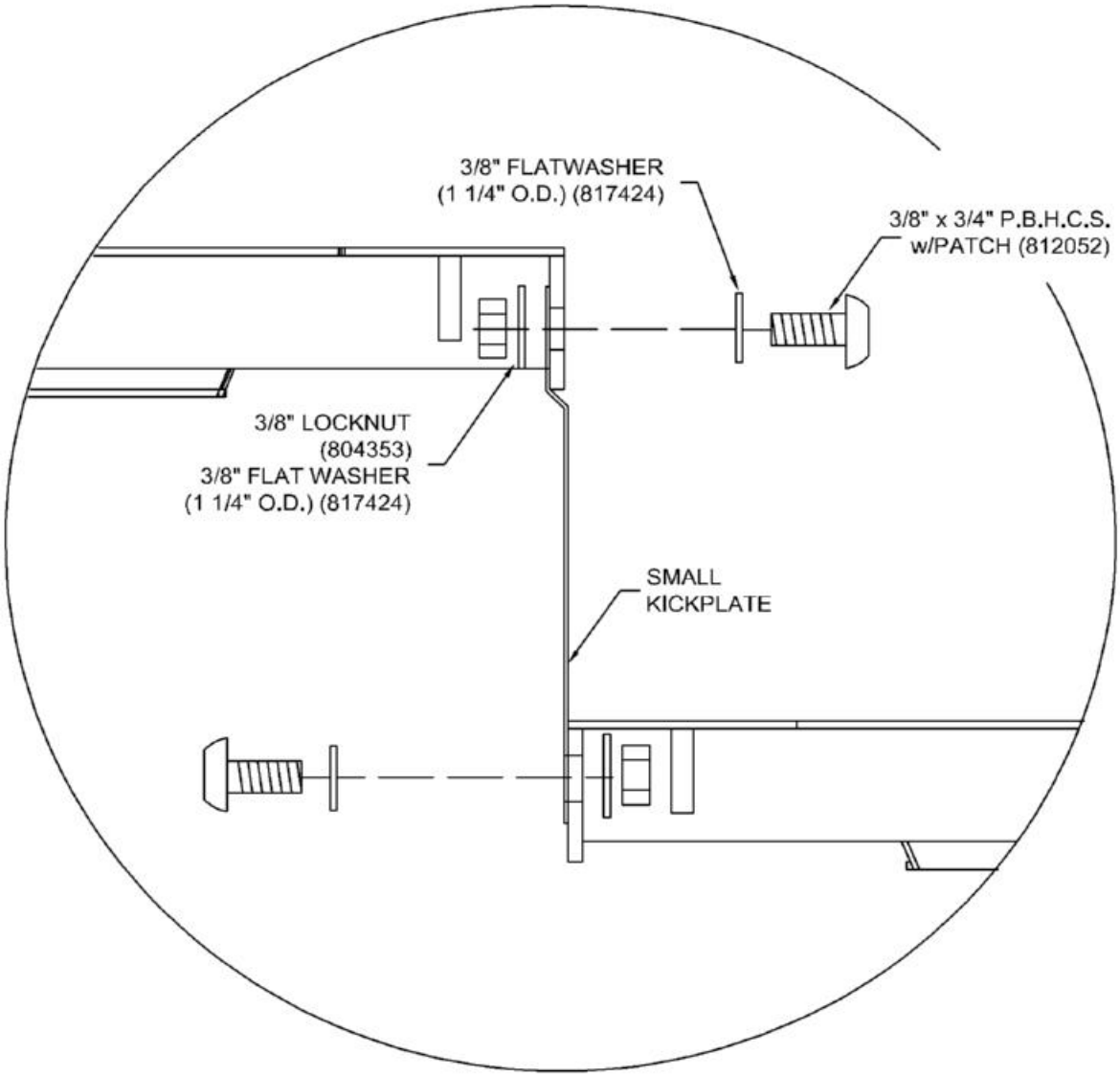
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60061 Small Kickplate (For Deck Spaced 8" Apart)



FINISHED ASSEMBLY

MODEL NO. 60061 Small Kickplate (For Deck Spaced 8" Apart)



DETAIL "A"

SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 60062 Small Kickplate 9 1/2" x 58" (Decks 8" Apart)

PARTS LIST

DESCRIPTION	No. REQ'D	PART NUMBER
Small Kickplate	1	305740
Hardware Complete	1	302412
3/8" x 3/4" P.B.H.C.S. w/Patch	10	812052*
3/8" Lock Nut	10	804353*
3/8" Flat Washer (1 1/4" O.D.)	20	817424*

Unless Otherwise Specified, All Units of Measure are Each
****Included in Hardware***

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Kickplate measures 9-1/2" x 58", and is cut from galvanneal sheet metal with (10) 7/16" x 1" slotted holes punched to coincide with deck flange holes. Edges are ground smooth and receives a baked-on polyester powder-coated finish after fabrication.

Primary hardware is stainless steel.

INSTALLATION INSTRUCTIONS:

1. Refer to the main drawing to locate decks, which are spaced 8" apart. These will require Kickplate(s). Attach Kickplates after decks have been installed, but before deck clamps have been pinned, in case adjustment in deck heights is required to match up holes in deck flanges with holes in Kickplate.

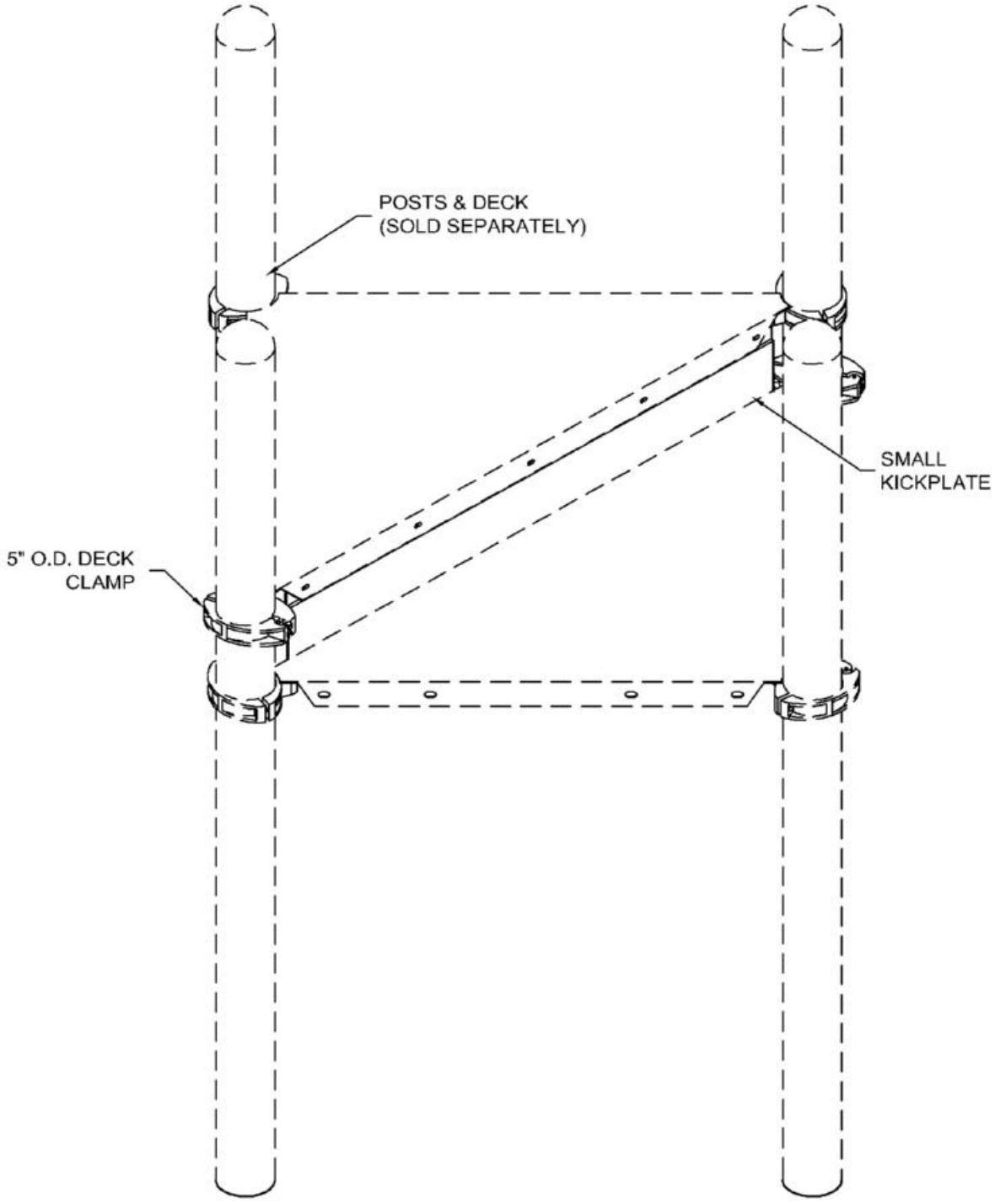
2. Attach Kickplate to decks using 3/8" x 3/4" P.B.H.C.S. with 3/8" (1 1/4" O.D.) Flat Washers and 3/8" Lock Nuts. No portion of the Kickplate should be protruding in a manner which could cause a user to receive a cut, scrape or trip over any edge. Any rough edges should be filed smooth, and any protruding corners should be flattened.

3. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60062 Small Kickplate 9 1/2" x 58" (Decks 8" Apart)



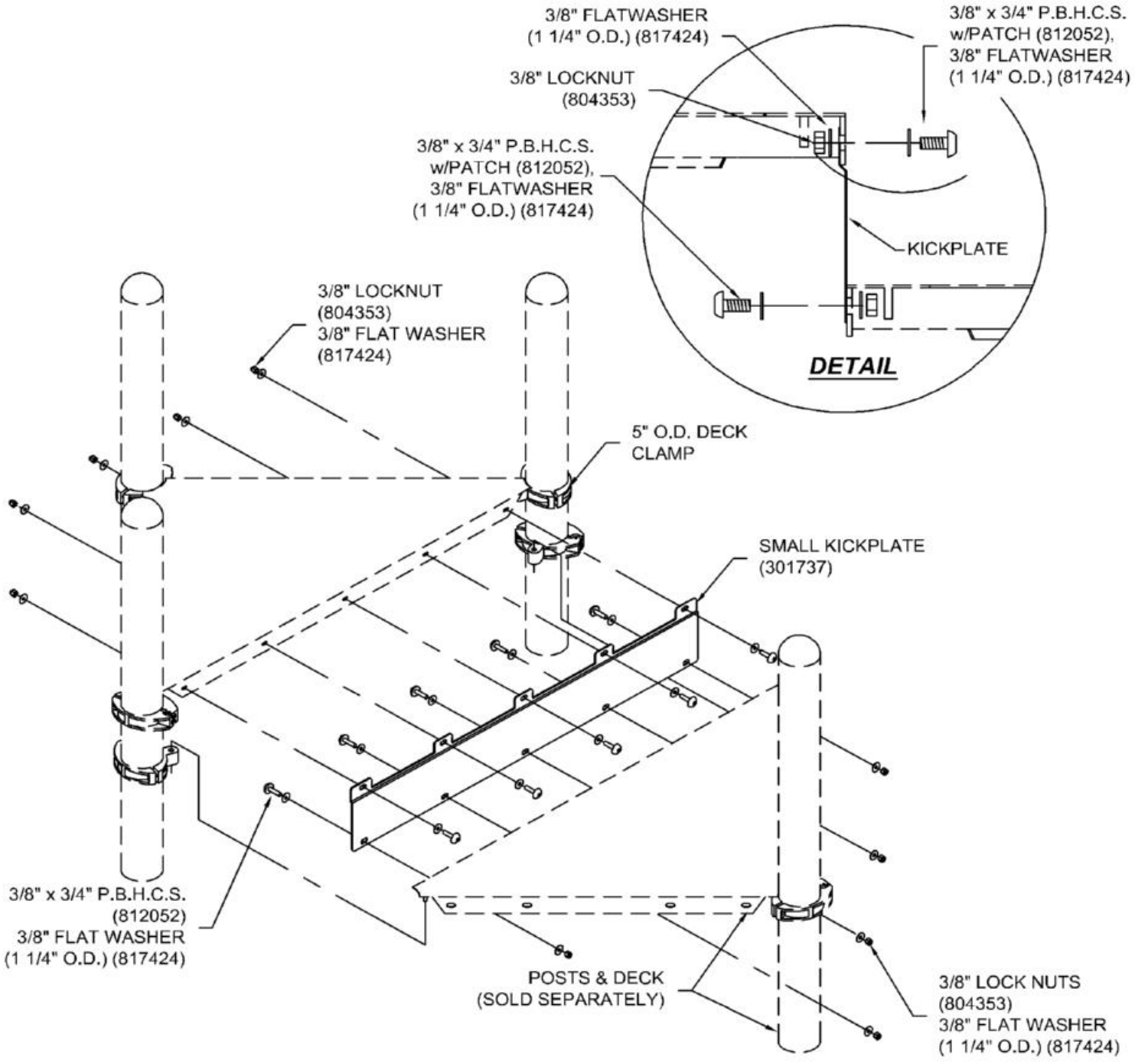
FINISHED ASSEMBLY

SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 60062 Small Kickplate 9 1/2" x 58" (Decks 8" Apart)



SMALL KICKPLATE ASSEMBLY

MODEL NO. 60040, 60041, 60042, 60089, 60246, 60944, & 60945
SuperMax Post w/o Cap
(ADD G PREFIX FOR GALV. POST)

PARTS LIST

DESCRIPTION	60040	G60040	60041	G60041	60042	G60042	60089	G60089	PART NUMBER
5" O.D. Post with Cap (Aluminum)	1	0	0	0	0	0	0	0	302277
5" O.D. Post with Cap (Galvanized)	0	1	0	0	0	0	0	0	G02277
5" O.D. Post with Cap (Aluminum)	0	0	1	0	0	0	0	0	302278
5" O.D. Post with Cap (Galvanized)	0	0	0	1	0	0	0	0	G02278
5" O.D. Post with Cap (Aluminum)	0	0	0	0	1	0	0	0	302279
5" O.D. Post with Cap (Galvanized)	0	0	0	0	0	1	0	0	G02279
5" O.D. Post with Cap (Aluminum)	0	0	0	0	0	0	1	0	301921
5" O.D. Post with Cap (Galvanized)	0	0	0	0	0	0	0	1	301920

DESCRIPTION	60246	G60246	60944	G60944	60945	G60945	PART NUMBER
5" O.D. Post with Cap (Aluminum)	1	0	0	0	0	0	301923
5" O.D. Post with Cap (Galvanized)	0	1	0	0	0	0	301922
5" O.D. Post with Cap (Aluminum)	0	0	1	0	0	0	305797
5" O.D. Post with Cap (Galvanized)	0	0	0	1	0	0	G05797
5" O.D. Post with Cap (Aluminum)	0	0	0	0	1	0	305799
5" O.D. Post with Cap (Galvanized)	0	0	0	0	0	1	G05799

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

INSTALLATION INSTRUCTIONS:

1. Component numbers listed are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure up from the lower end of each Upright Post and mark using a felt-tip marker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing. Using your footing diagram and elevation view as a reference, move and dig holes accordingly.

3. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

MODEL NO. 60040, 60041, 60042, 60089, 60246, 60944, & 60945
SuperMax Post w/o Cap
(ADD G PREFIX FOR GALV. POST)

4. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete has a downward slopeof 45° at the top away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

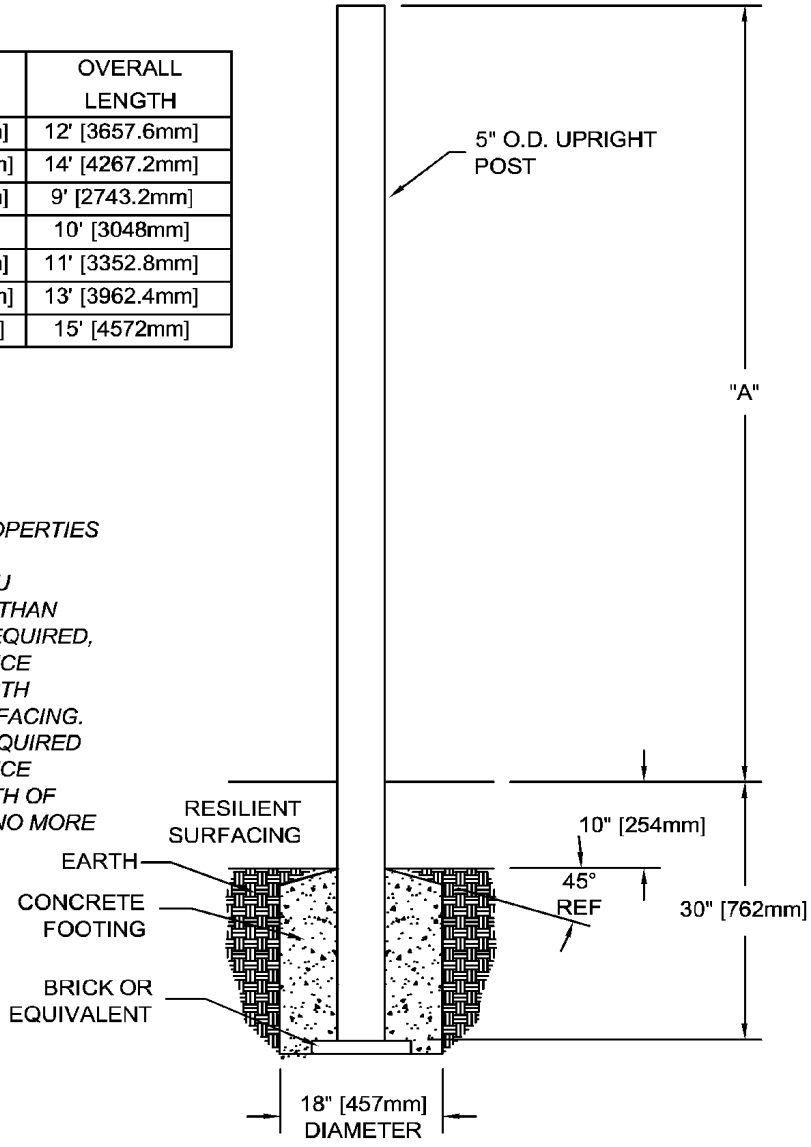
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for PVC-coating peeling and touch-up with PVC if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60040, 60041, 60042, 60089, 60246, 60944, & 60945
SuperMax Post w/o Cap
(ADD G PREFIX FOR GALV. POST)

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF RESILIENT SURFACE MATERIAL AND CONCRETE.

NO.	DIM "A"	OVERALL LENGTH
62009	9'-6" [2895.6mm]	12' [3657.6mm]
62012	11'-6" [3505.2mm]	14' [4267.2mm]
62018	6'-6" [1981.2mm]	9' [2743.2mm]
62019	7'-6" [2286mm]	10' [3048mm]
62301	8'-6" [2590.8mm]	11' [3352.8mm]
62302	10'-6" [3200.4mm]	13' [3962.4mm]
62303	12'-6" [3810mm]	15' [4572mm]

SHOCK ABSORBING PROPERTIES OF RESILENT SUFACING MATERIALS VARY. IF YOU DETERMINE THAT LESS THAN 10" OF SURFACING IS REQUIRED, MAKE UP THE DIFFERENCE IN ELEVATION WITH EARTH BEFORE APPLYING SURFACING. IF MORE THAN 10" IS REQUIRED MAKE UP THE DIFFERENCE BY REDUCING THE DEPTH OF THE GROUND HOLE BY NO MORE THAN 2".



NOTE:
-SUGGESTED MINIMUM CONCRETE RATING 3000 PSI

ELEVATION VIEW

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE

Parts List						
DESCRIPTION	65191	65192	65193	65194	65195	PART NUMBER
NDS FITNESS SIGN	1	0	0	0	0	216564
NDS PLAY ON SIGN	0	1	0	0	0	216566
NDS INCLUSIVE PLAY SIGN	0	0	1	0	0	216568
NDS PATHWAYS FOR PLAY SIGN	0	0	0	1	0	216570
NDS NATURE GROUNDS SIGN	0	0	0	0	1	216572
SIGN POST WELD ASS'Y	1	1	1	1	1	216574
HARDWARE COMPLETE	1	1	1	1	1	216580
1/4" x 3/4" B.H.C.S.	4	4	4	4	4	811010
1/4" LOCK WASHER	4	4	4	4	4	817327
1/4" FLAT WASHER (5/8" O.D.)	4	4	4	4	4	817408
1/2" ANCHOR ROD	1	1	1	1	1	135038

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

SIGN POST WELD ASSEMBLY: Shall be fabricated from 3 1/2" O.D. x .095" (13 gauge) wall galvanized steel tubing and 1/4" thick hot rolled steel mounting plate. The Sign Post Weld Assembly shall be an all weld assembly and shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specification outlined herein.

NDS SIGNS: The NDS Signs shall be 1/2" thick exterior DHPL with a 12 color high definition printed graphic with four 1/4"-20 UNC threaded inserts for mounting.

POWDER COAT FINISH: Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a four stage solvent / zirconium based bath system (free of iron phosphate), as a rust inhibitor, and a zirconium conversion coating to prevent flash rusting before coating. In addition, all welds shall be protectively coated with ZRP, a zinc rich primer that forms a rust-resistant barrier layer over each weld prior to application of the powder coating. The powder coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: Two coat process to achieve 3.0 - 5.0 mil thickness and oven cured between 350 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794- 69), Wedge Bend (ASTM D-522-68), Adhesion (Cross Hatch ASTM D-3359 & Knife Scratch ASTM D-2197), Environmental (Stain Resistance ASTM D-1308, Humidity ASTM D-2247 - 87, Salt Spray ASTM B-117 & Fadometer 300 hrs with no loss of gloss), Over-bake Stability 100% at 350 degrees Fahrenheit for 10 minutes.

HARDWARE: All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. NOTE: All weights are based on average comparisons of each part.

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE

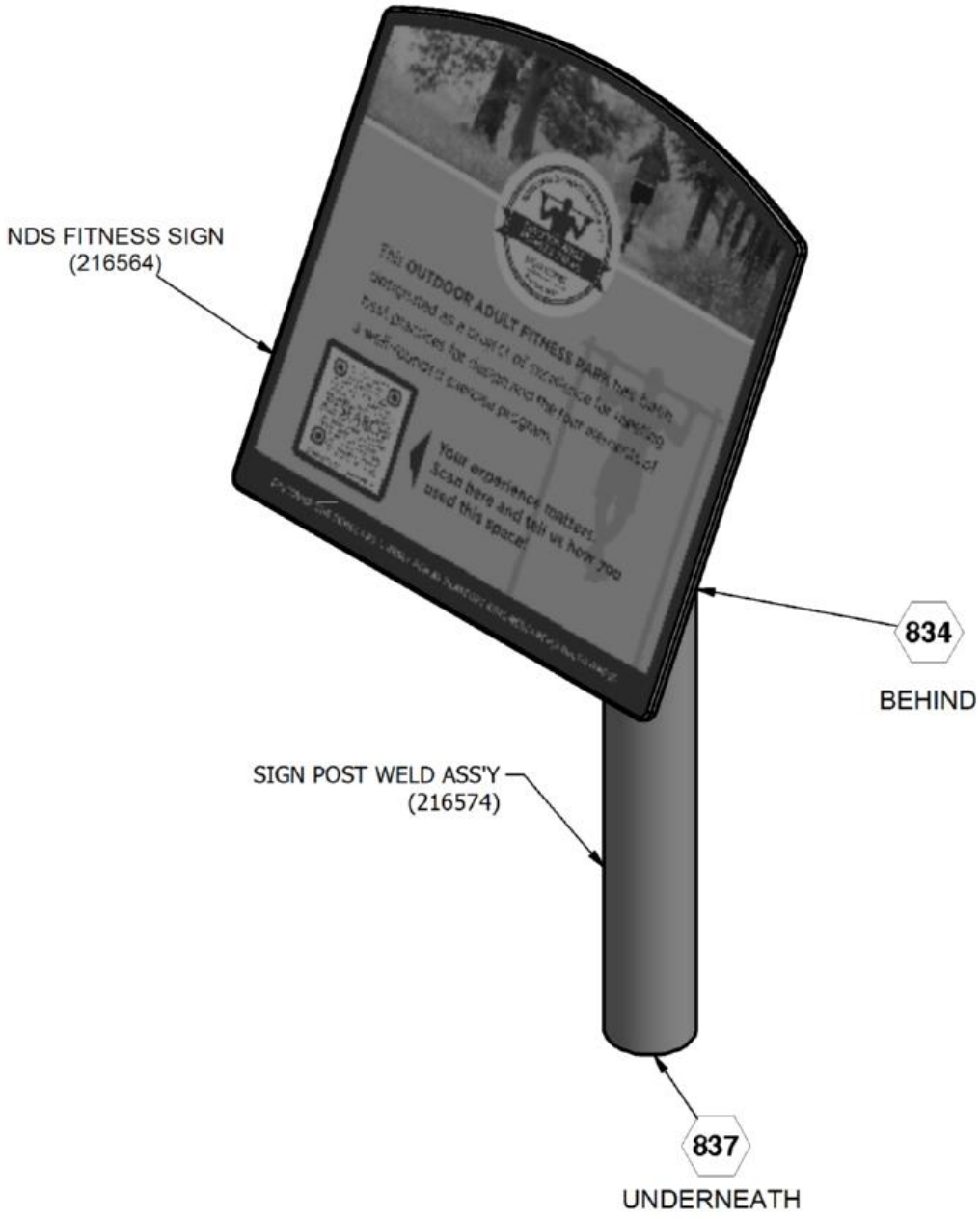
INSTALLATION INSTRUCTIONS:

1. Determine location for sign and dig footing. Refer to the Elevation View for footing depth.
2. Bolt NDS Sign into Sign Post Weld Ass'y using 1/4" x 3/4" B.H.C.S., 1/4" Lock Washer, and 1/4" Flat Washer (5/8" O.D.). See Detail 834.
3. Insert 1/2" Anchor Rod into Sign Post Weld Ass'y. See Detail 837.
4. Place Assembly into ground hole.
5. Plumb and level the entire assembly and tighten all fasteners.
6. Pour concrete footings within 4" to the top and taper away from posts for good water drainage. Allow curing at least 48 hours before proceeding.
7. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE

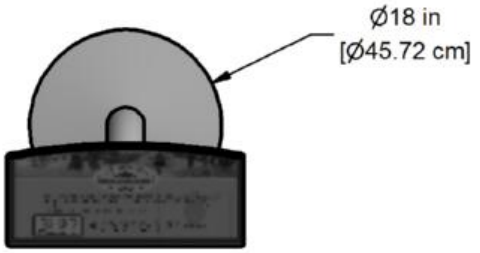


= INSTALLATION DETAIL

Issued/Revised: 2/21/2019

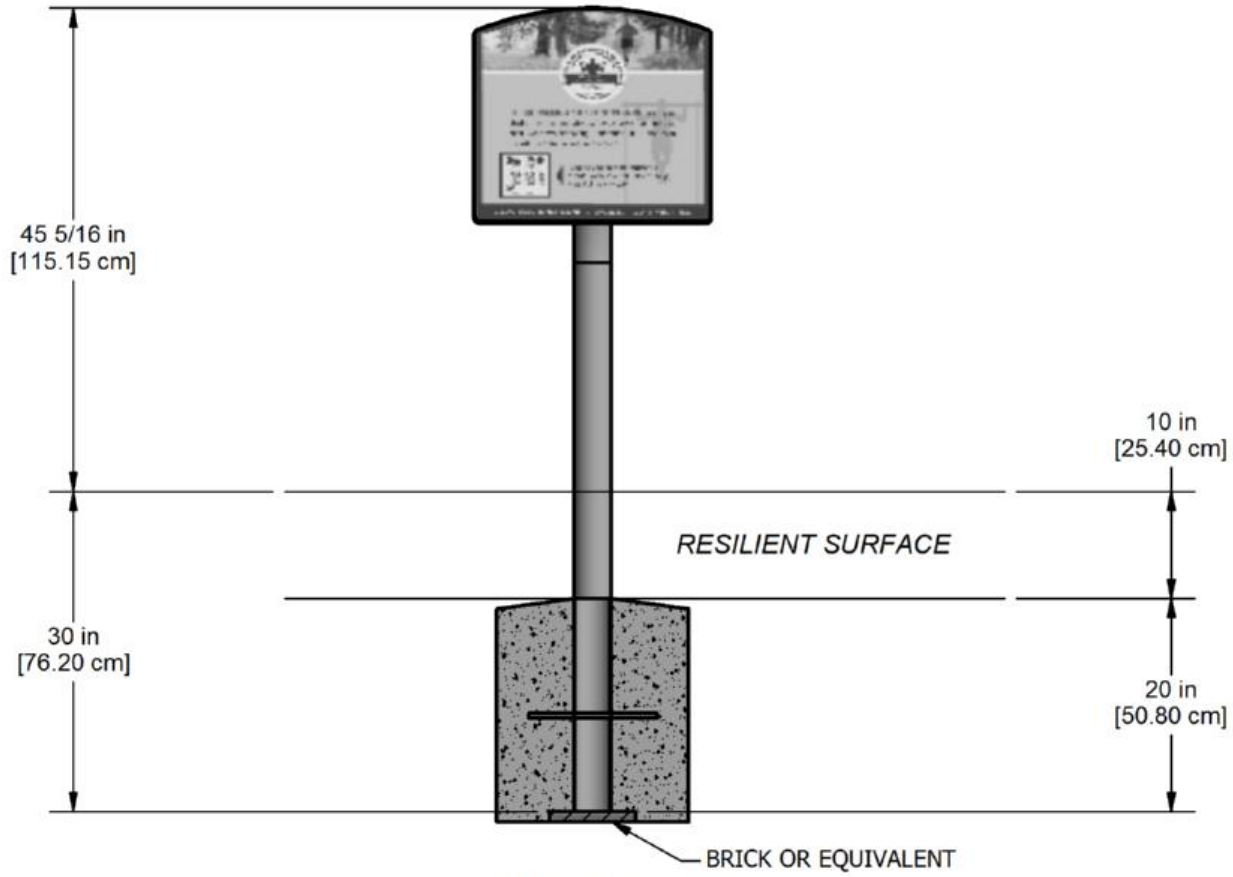
FINISHED ASSEMBLY
65191 SHOWN

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS NATURE GROUNDS SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE



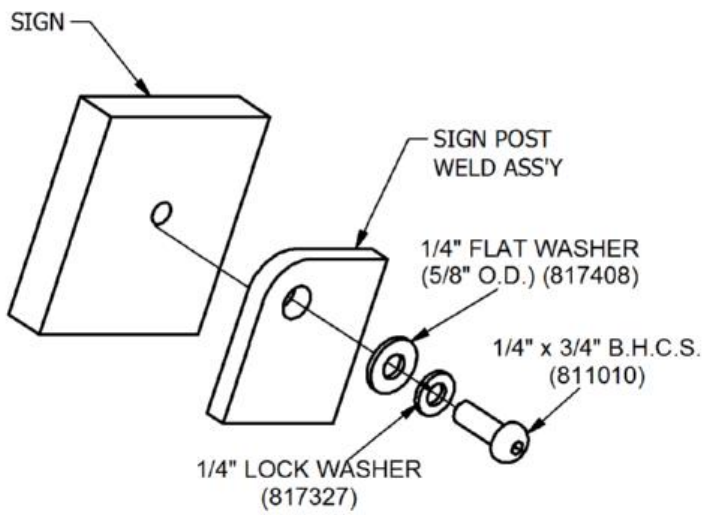
PLAN VIEW

CONCRETE REQUIRED
0.109 CUBIC YARDS
0.083 [CUBIC METERS]

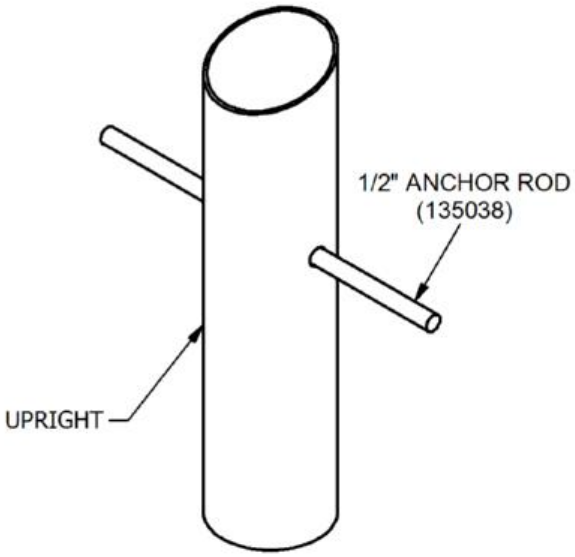


ELEVATION VIEW
65191 SHOWN

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE



834



837

This equipment is designed for children 2-5 or 5-12 years old

65283 FLYING SAUCER

Parts List			
DESCRIPTION	65283	SS5283	PART NUMBER
TOPRAIL ASSEMBLY	1	1	205385
LEG	4	4	205387
MOUNTING PLATE WELD ASSEMBLY	2	2	218837
SAUCER SWING ASSEMBLY	1	1	221570
GALVANIZED CHAIN CONNECTION ASSEMBLY	2	0	221702
STAINLESS CHAIN CONNECTION ASSEMBLY	0	2	221726
HARDWARE COMPLETE	1	1	221577
3/8" x 3 1/4" B.H.C.S.	8	8	811060
3/8" LOCK WASHER	8	8	817334
3/8" FLAT WASHER (1" O.D.)	8	8	817401
3/8" BARREL NUT	8	8	804804
1/2" x 2 1/2" B.H.C.S.	4	4	811065
1/2" x 2 1/2" HEX HEAD BOLT	2	2	801200
1/2" LOCKWASHER	6	6	817342
1/2" FLAT WASHER	6	6	817412
1/2" LOCKNUT	6	6	804355
22" ANCHOR ROD	4	4	156063
ARCH SWING CONNECTOR	2	2	218835

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

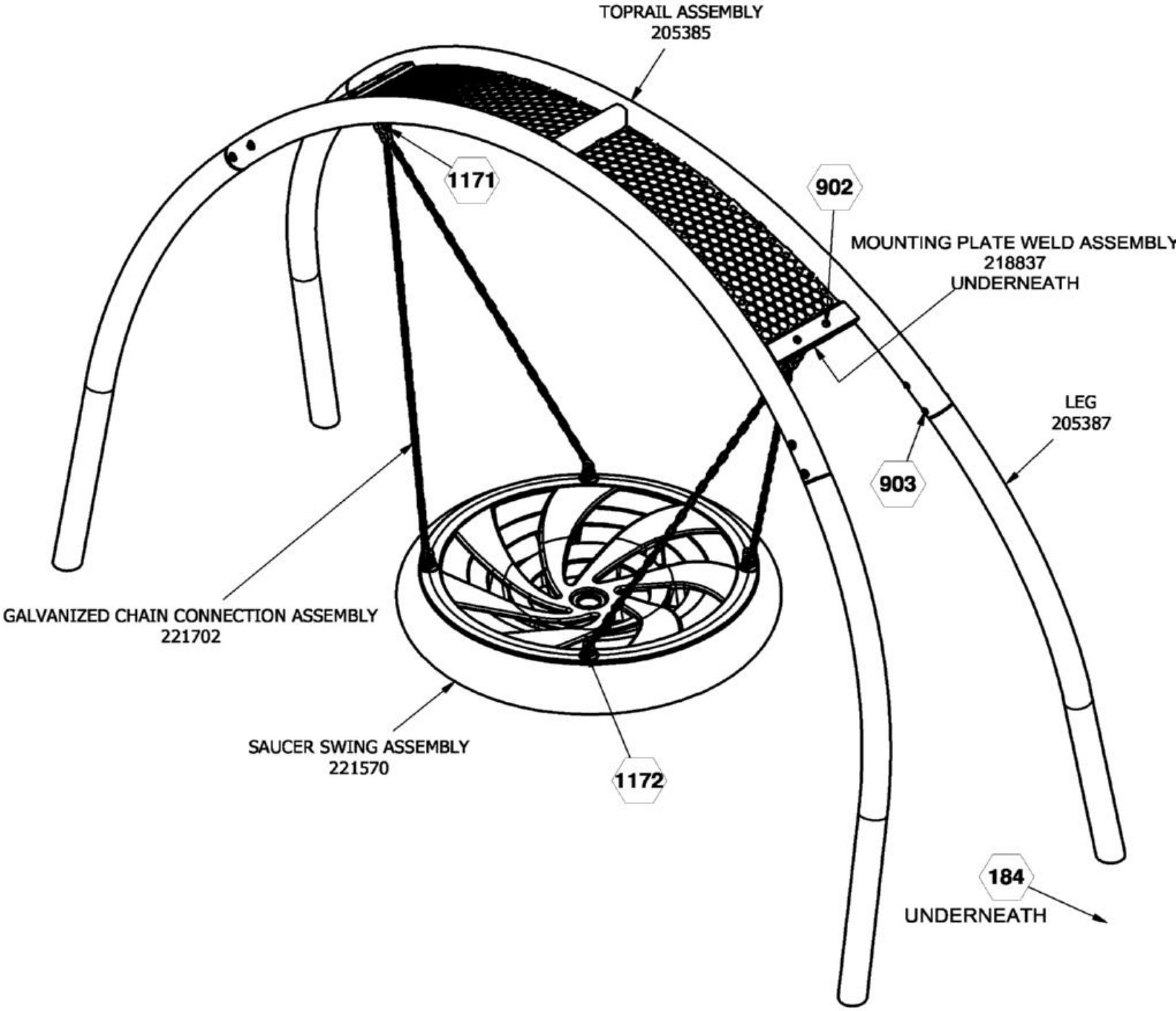
INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.
2. Attach the Legs to Toprail Assembly. See Detail 903.
3. Place the Leg and Toprail assembly in footing holes. See Detail 184.
4. Attach Arch Swing Connector, Flying Saucer Cable, and Flying Saucer. See Details 902, 1171, and 1172. ***NOTE:*** Add Loctite (supplied by others) and tighten shackle to 54 ft-lbs. ***NOTE:*** Clevis Pin on Shackle to be on seat side.
5. Plumb and level the entire assembly and tighten all fasteners.
6. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. ***NOTE:*** Temporary bracing may be required until concrete cures.
7. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

65283 FLYING SAUCER

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

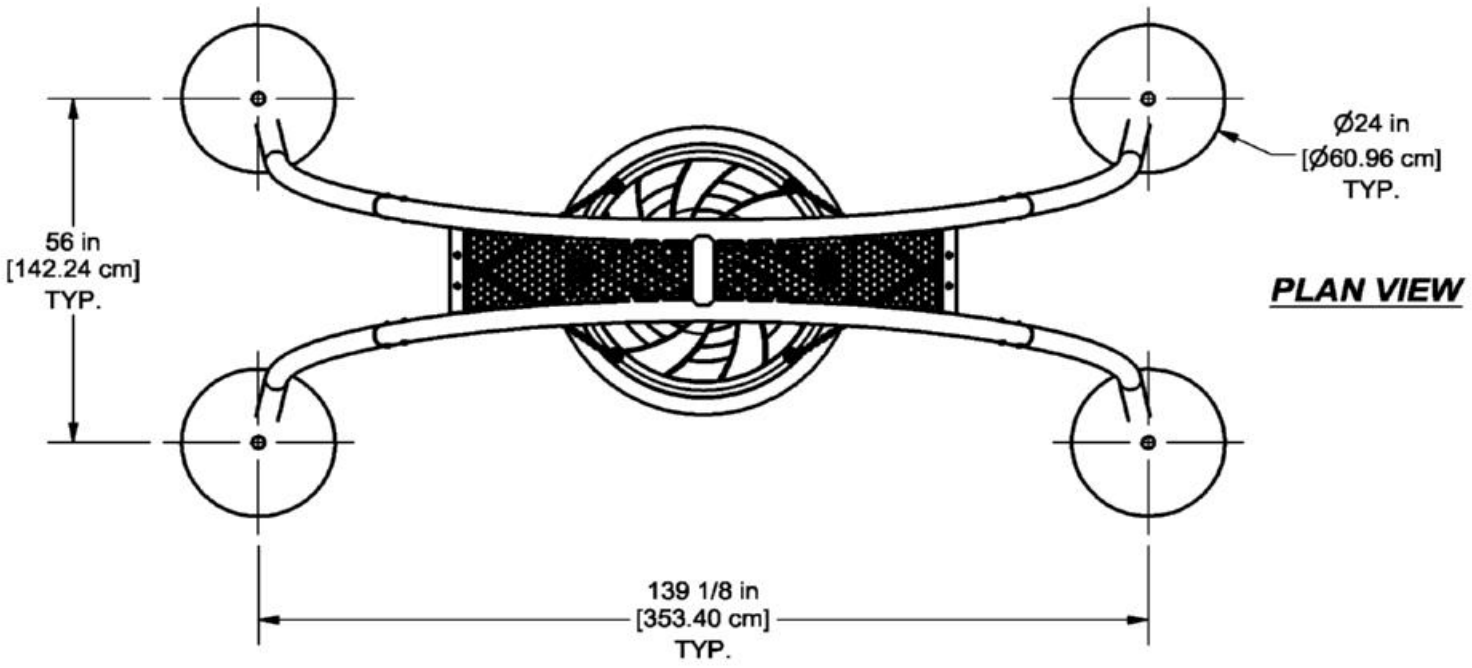


= INSTALLATION DETAIL

Issued/Revised: 9/29/2022

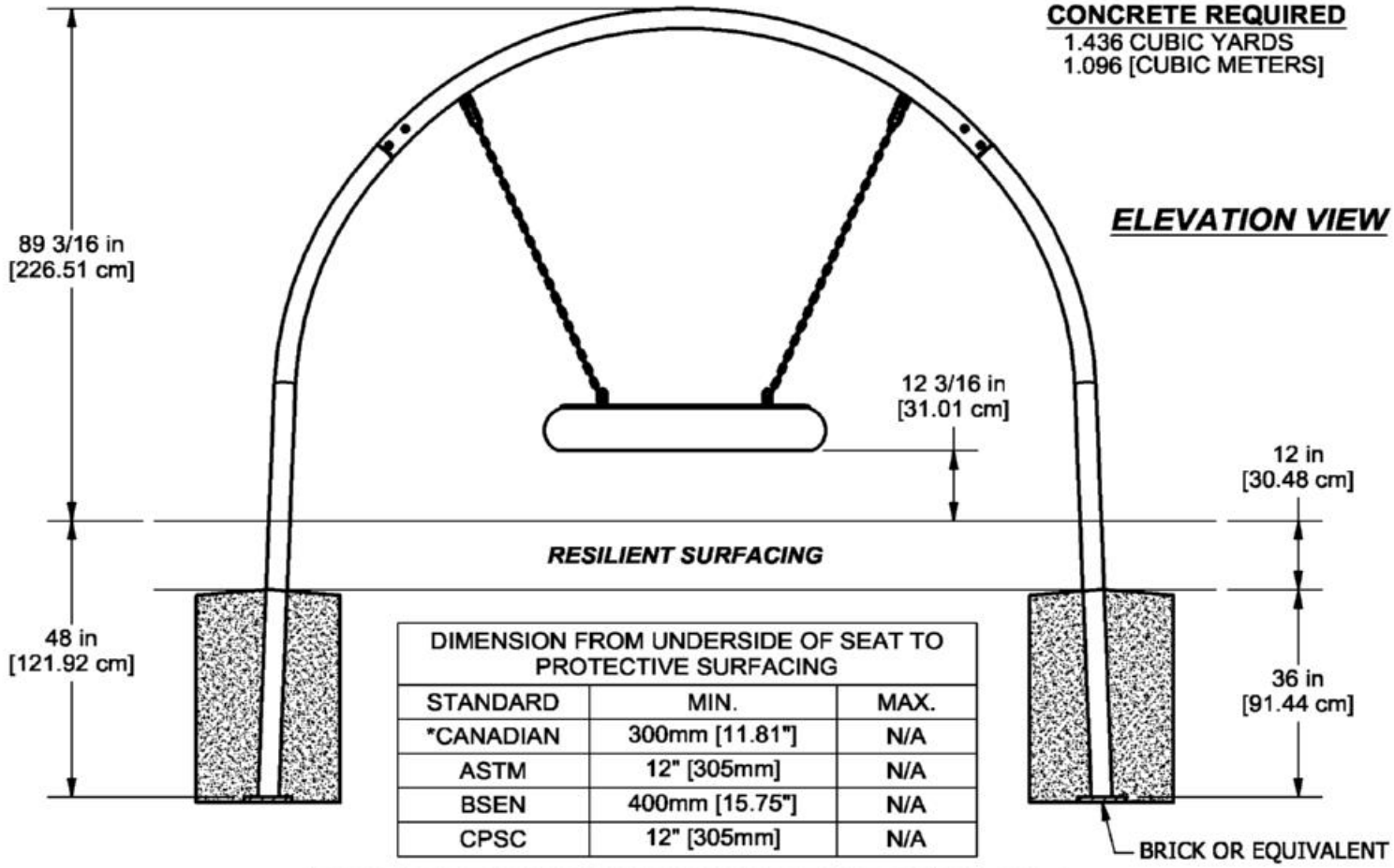
FINISHED ASSEMBLY

65283 FLYING SAUCER



PLAN VIEW

CONCRETE REQUIRED
1.436 CUBIC YARDS
1.096 [CUBIC METERS]



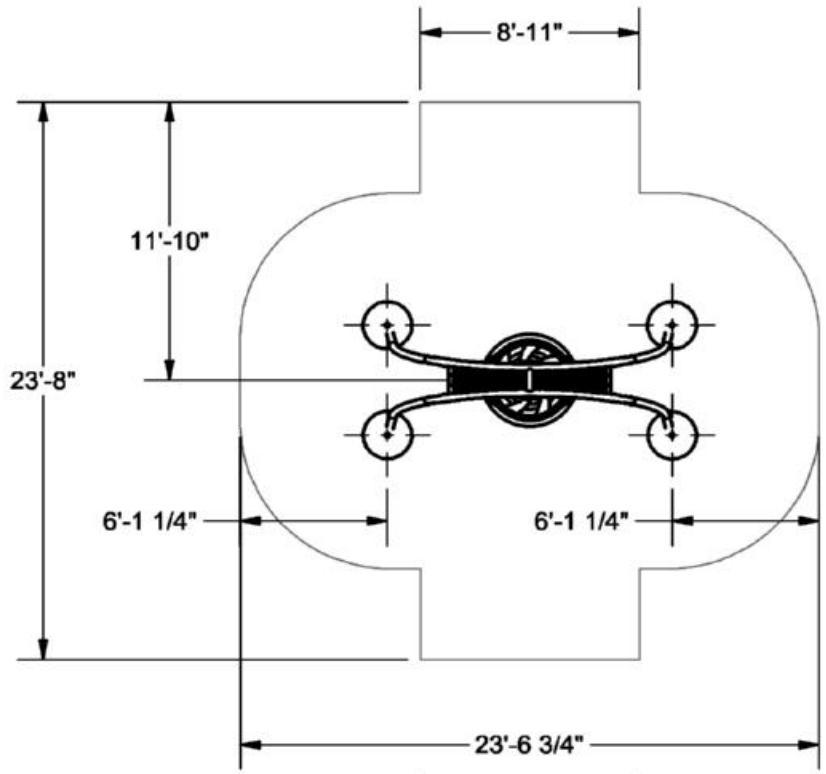
ELEVATION VIEW

DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	300mm [11.81"]	N/A
ASTM	12" [305mm]	N/A
BSEN	400mm [15.75"]	N/A
CPSC	12" [305mm]	N/A

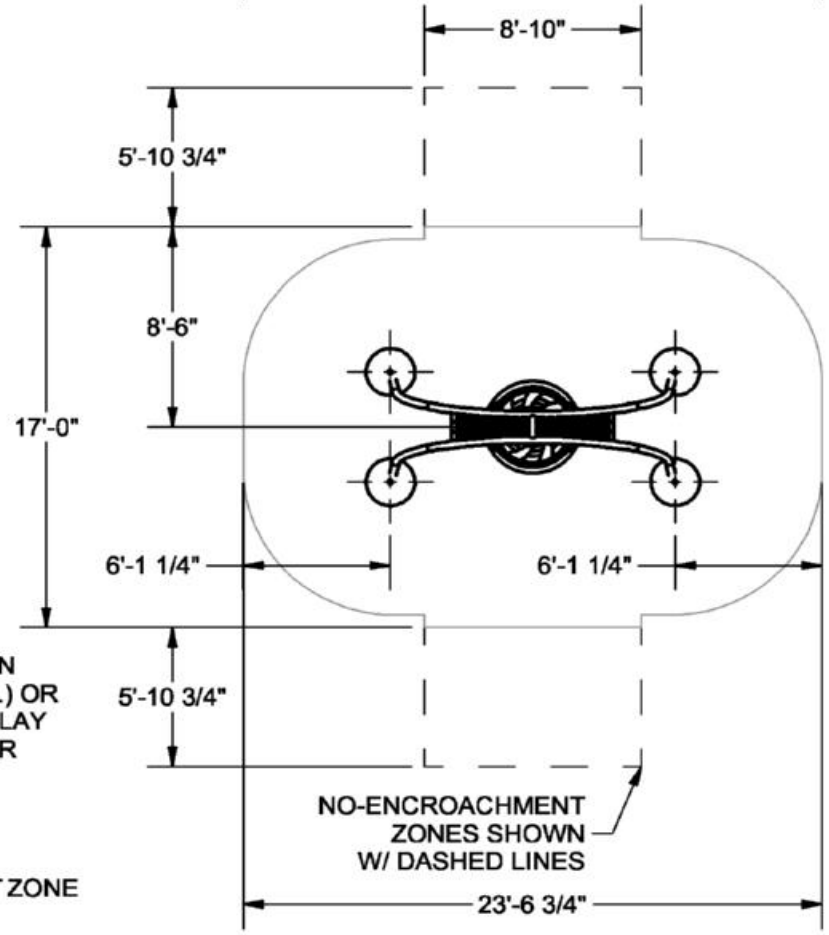
*UNDER LOADED CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65283 FLYING SAUCER

ASTM USE ZONE

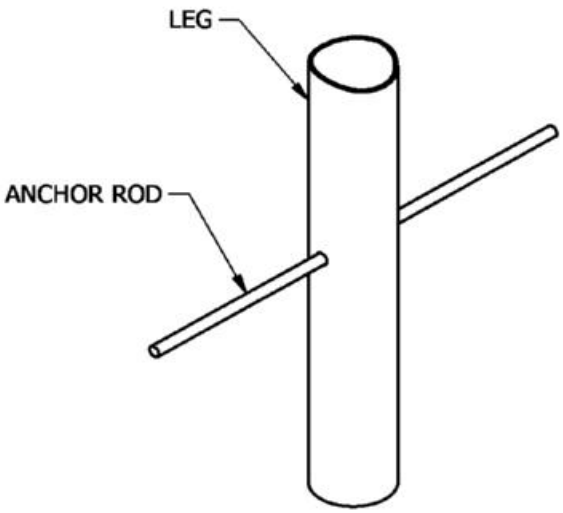


CSA USE ZONE

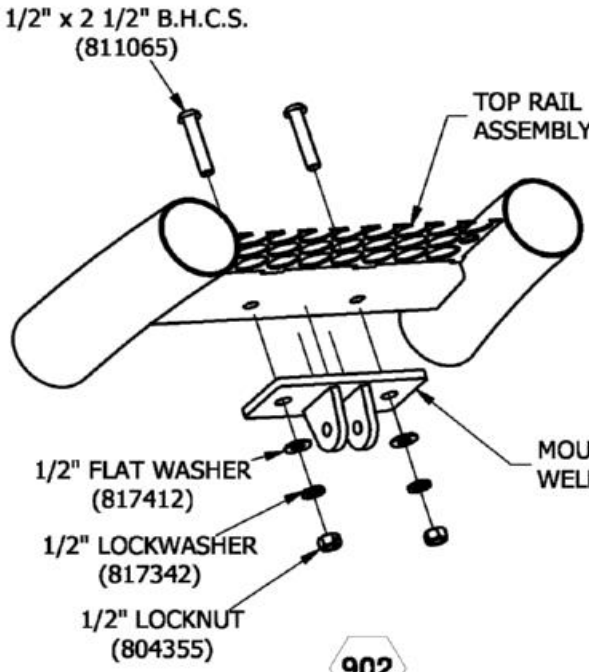


NOTE:
1. OWNER/OPERATOR SHALL INSTALL AND MAINTAIN PROTECTIVE SURFACING WITH THE USE ZONE (U.S.) OR PROTECTIVE SURFACING ZONE (CANADA) OF ALL PLAY EQUIPMENT TO COMPLY WITH ASTM F-1487 (U.S.) OR CAN/CSA-Z-614 (CANADA).
2. SOLID OUTSIDE BORDER REPRESENTS MINIMUM REQUIRED ASTM USE ZONE AND CSA PROTECTIVE SURFACING ZONE FOR SWING FRAME SHOWN.
3. DASHED LINES REPRESENT *NO ENCROACHMENT* ZONE (CANADA ONLY).

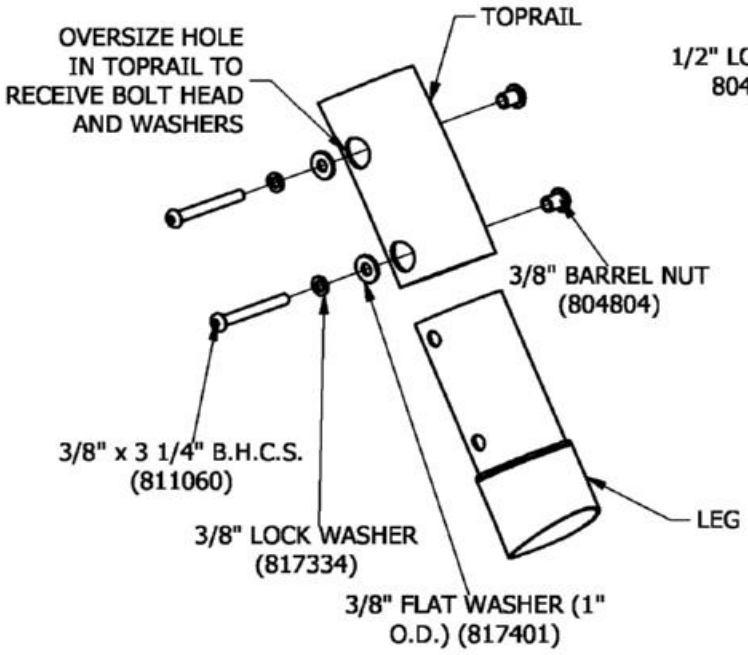
65283 FLYING SAUCER



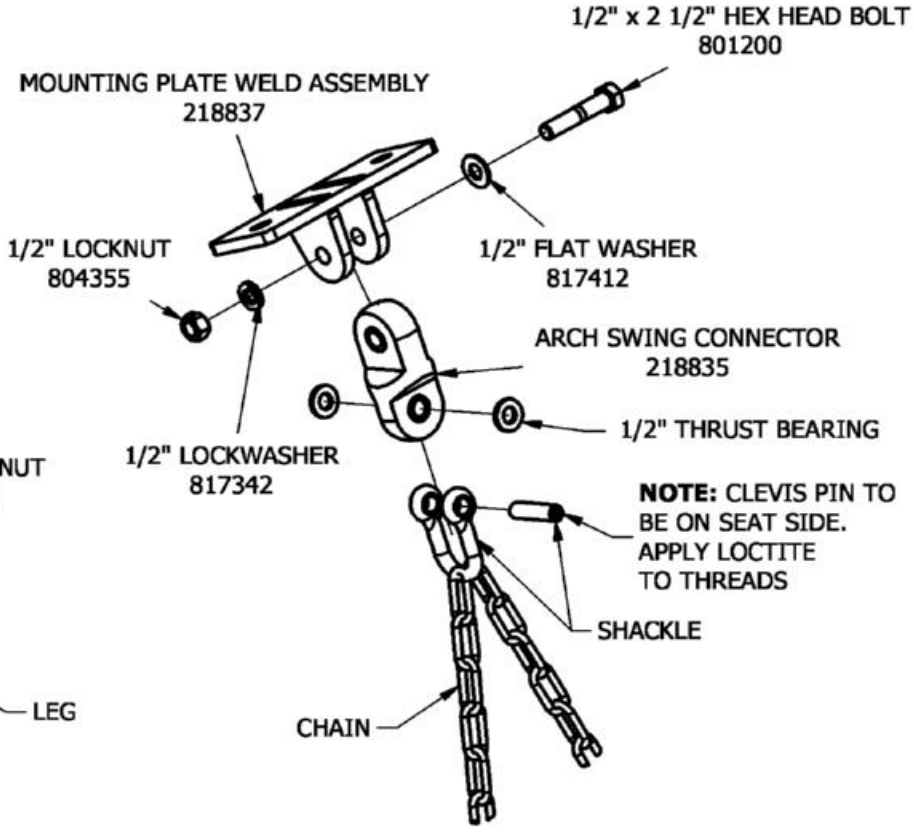
184



902

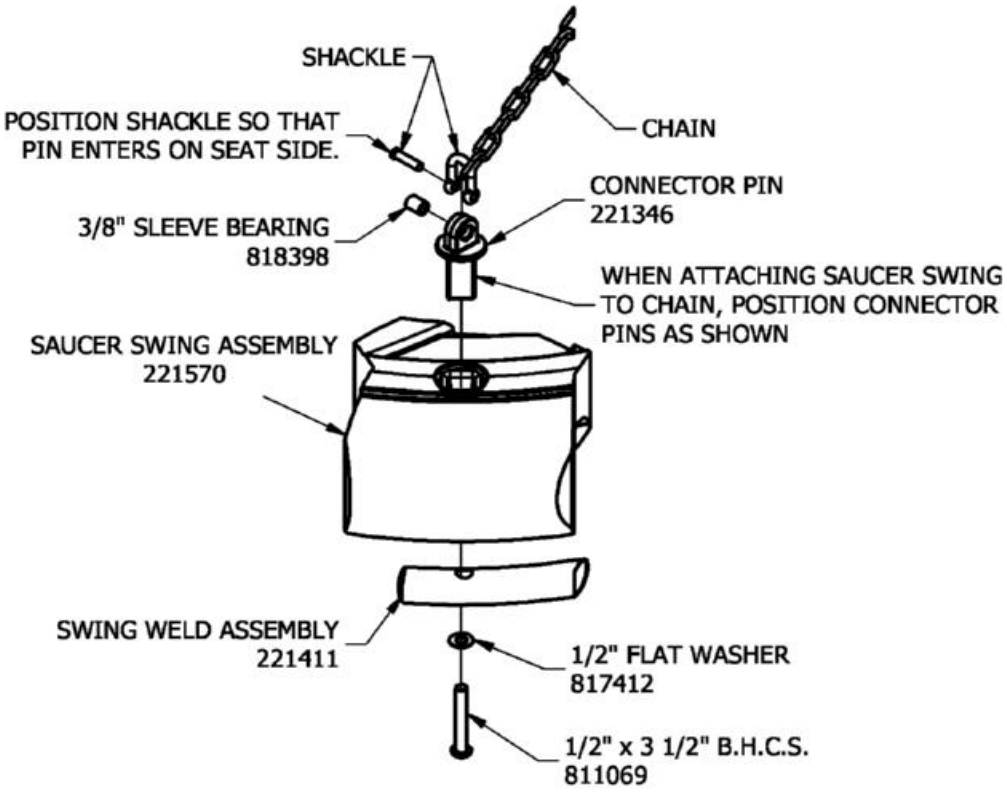


903



1171

65283 FLYING SAUCER



67994-Climb & Discover Cave ABCD-1234 Handholds, (Playful)
67997-Climb & Discover Cave Standard Handholds, (Natural)

Parts List			
DESCRIPTION	67994	67997	PART NUMBER
FOOTBUCK	4	4	208100
CLIMB & DISCOVER CAVE	2	2	311341
CONNECTOR PLATE	1	1	311523
HARDWARE COMPLETE	1	0	311520
HARDWARE COMPLETE	0	1	311521
HANDHOLD PACKAGE (ABCD, 1234)	1	0	311352*
HANDHOLD PACKAGE (STANDARD)	0	1	311355*
5/16" x 1 1/2" P.B.H.C.S. w/PATCH	36	36	812045*
3/8" x 3/4" P.B.H.C.S. w/PATCH	8	8	812052*
3/8" x 1" P.B.H.C.S. w/PATCH	10	10	812050*
3/8" x 2" THREADED ROD	2	2	803560*
3/8" LOCK WASHER	10	10	817334*
3/8" FLAT WASHER	44	44	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	2	2	817424*
3/8" HEX NUT	2	2	804053*
3/8" FLAT WASHER (1" O.D.)	10	10	817401*

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

Climb and Discover Cave:

Shall be 1/4" wall thickness double wall construction, color impregnated linear low density polyethylene and shall conform to the rotationally molded specifications outlined herein. All polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotationally molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Density (ASTM D- 1505); Brittleness Temperature (ASTM D-746); Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790);Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD).

Connector Plate:

Shall be fabricated from 1/4" x 4" hot rolled flat steel with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Footbuck:

Shall be an all welded construction fabricated from 2 3/8" O.D. (13ga.) galvanized steel tubing and 12ga steel sheet. The footbuck shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

67994-Climb & Discover Cave ABCD-1234 Handholds, (Playful)
67997-Climb & Discover Cave Standard Handholds, (Natural)

Handholds:

Shall be fabricated from a hybrid resin mixture with custom formulated UV inhibiter.

Hardware:

All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

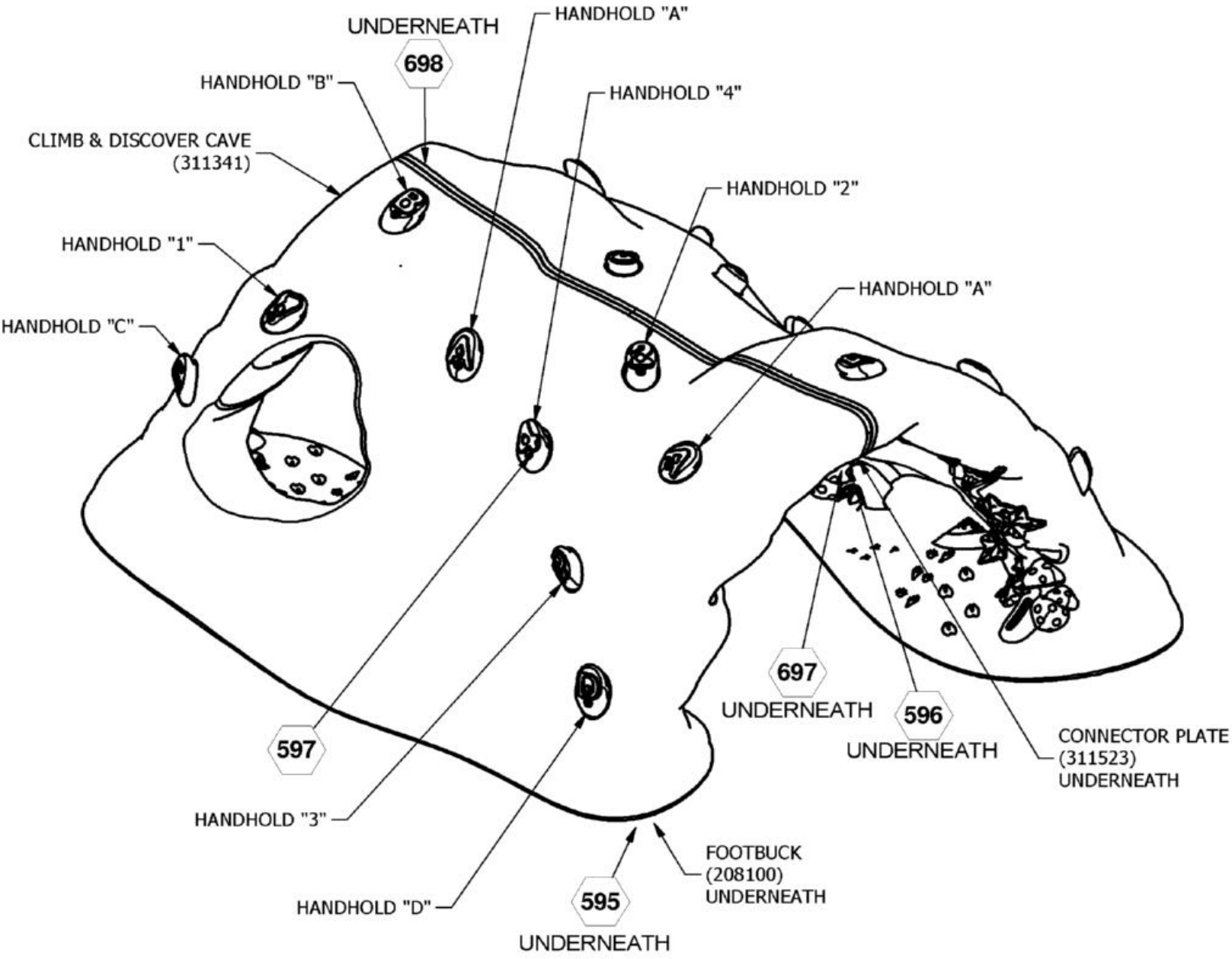
INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views. Place brick or equivalent in the bottom of hole to provide a solid foundation.
2. Attach Footbucks to bottom of Climb & Discover Cave using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 595.
3. Insert 3/8" Threaded Rod into one end of each Climb & Discover Cave. ***IMPORTANT: BE SURE TO INSTALL 3/8" THREAED ROD IN THE APPROPRIATE THREADED INSERT.*** See Detail 697.
4. Slide the Climb & Discover Caves together, Attach 3/8" Flat Washer (1 1/4" O.D.), 3/8" Lock Washer, and 3/8" Hex Nut to Threaded Rod. ***IMPORTANT: ALIGN CLIMB & DISCOVER CAVES TOP AND EDGES TOGETHER BEFORE TIGHTENING TO ELIMINATE GAPS ON THE ENDS.*** See Detail 698.
5. After Climb & Discover Caves ends are tightened attach Connector Plate to Climb & Discover Cave using 3/8" x 1" P.B.H.C.S w/Patch and 3/8" Flat Washer. See Detail 596.
6. Attach Handholds to Climb & Discover Cave using 5/16" x 1 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 597. ***IMPORTANT: DO NOT OVERTIGHTEN HANDHOLDS,***
7. Plumb and level the entire assembly and tighten all fasteners.
8. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from posts for water drainage. Allow to cure at least 48 hours before use. ***Note:*** *Temporary bracing may be required until concrete cures.*
9. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines.*

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

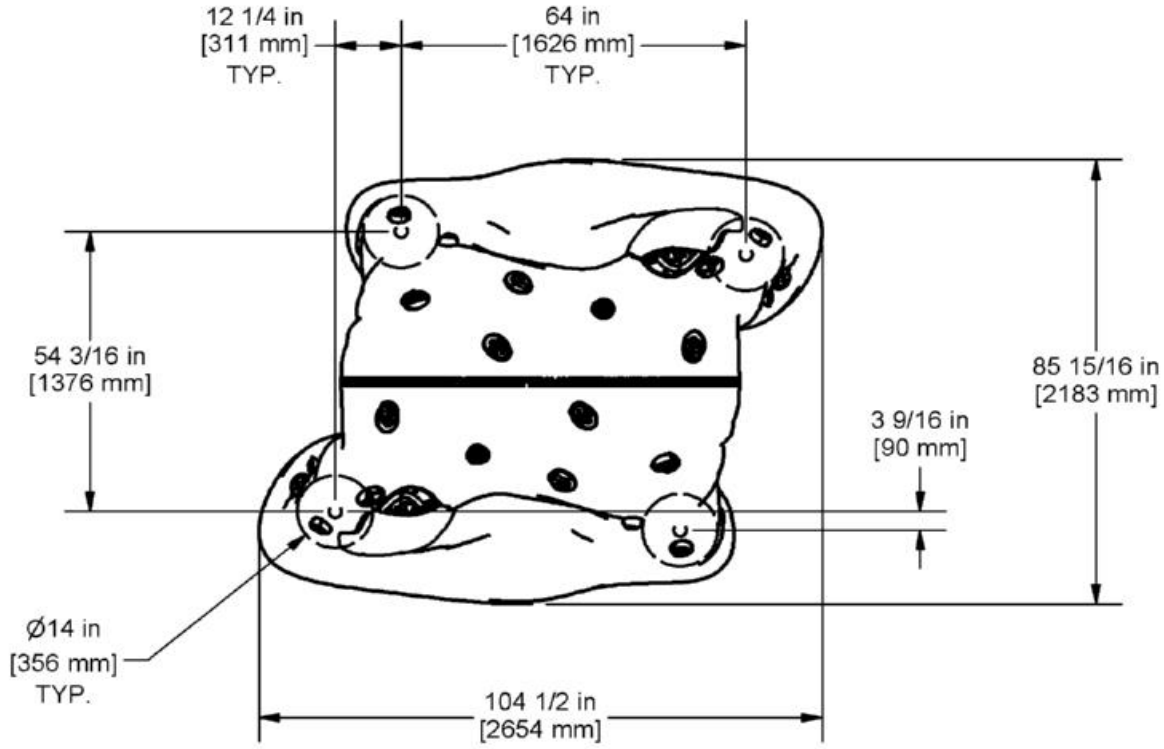
67994-Climb & Discover Cave ABCD-1234 Handholds, (Playful)
67997-Climb & Discover Cave Standard Handholds, (Natural)



FINISHED ASSEMBLY
67994 SHOWN

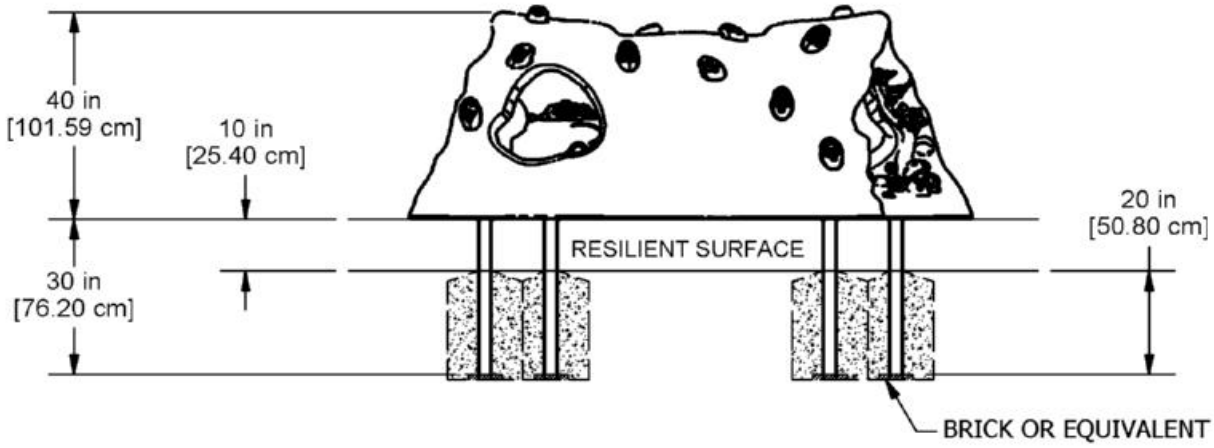
⬡ = INSTALLATION DETAIL

67994-Climb & Discover Cave ABCD-1234 Handholds, (Playful)
67997-Climb & Discover Cave Standard Handholds, (Natural)



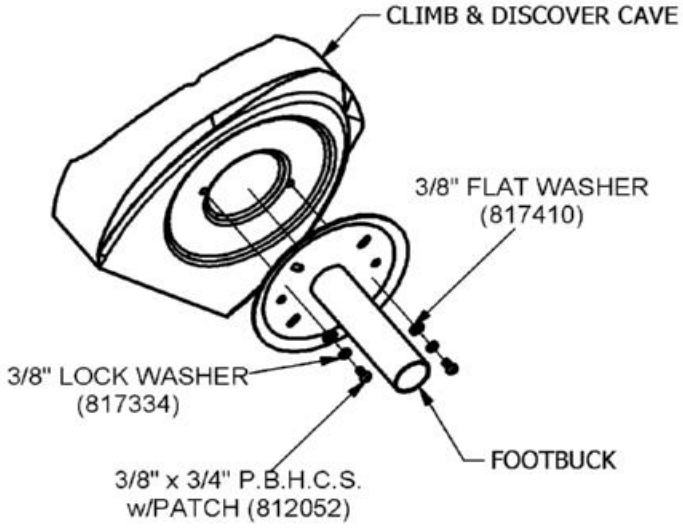
PLAN VIEW

CONCRETE REQUIRED:
.26 cubic yards
[7.12 cubic meters]

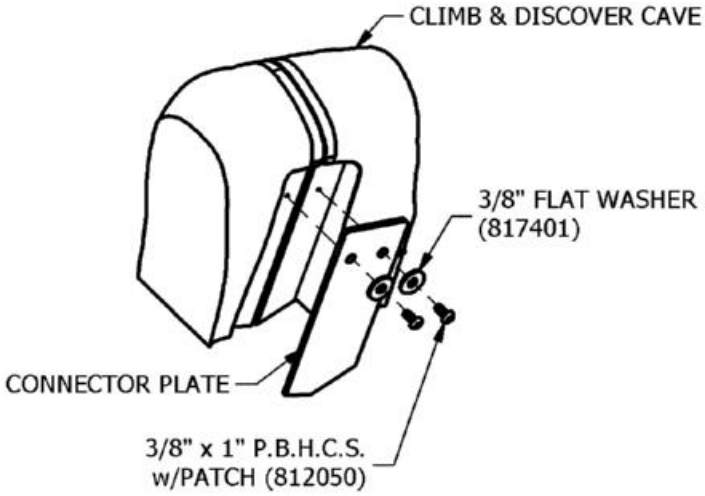


ELEVATION VIEW

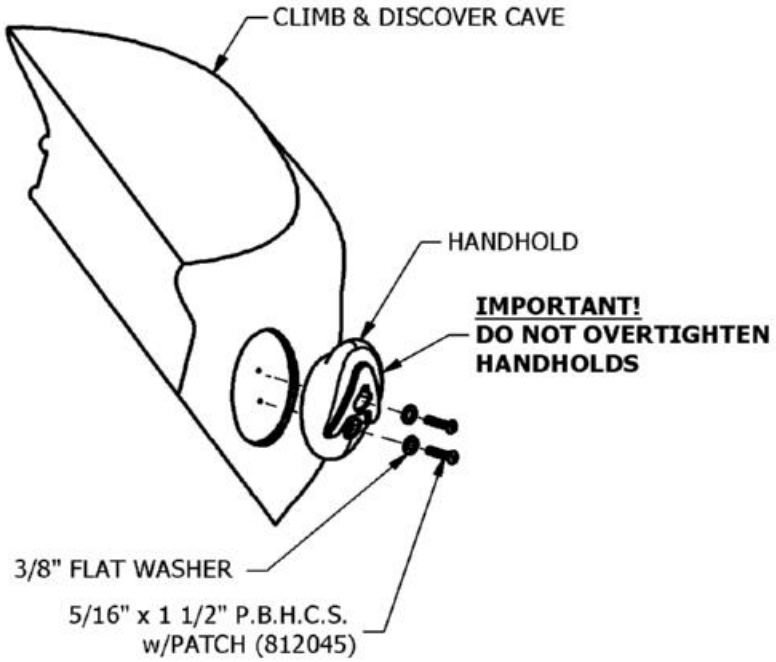
67994-Climb & Discover Cave ABCD-1234 Handholds, (Playful)
67997-Climb & Discover Cave Standard Handholds, (Natural)



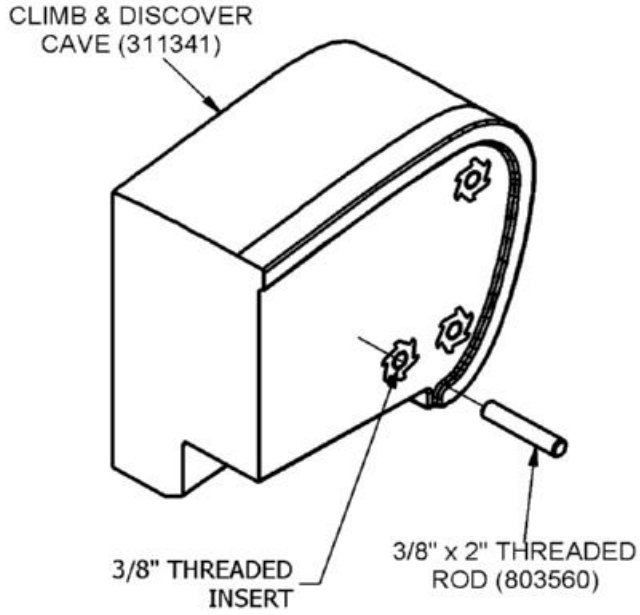
595



596

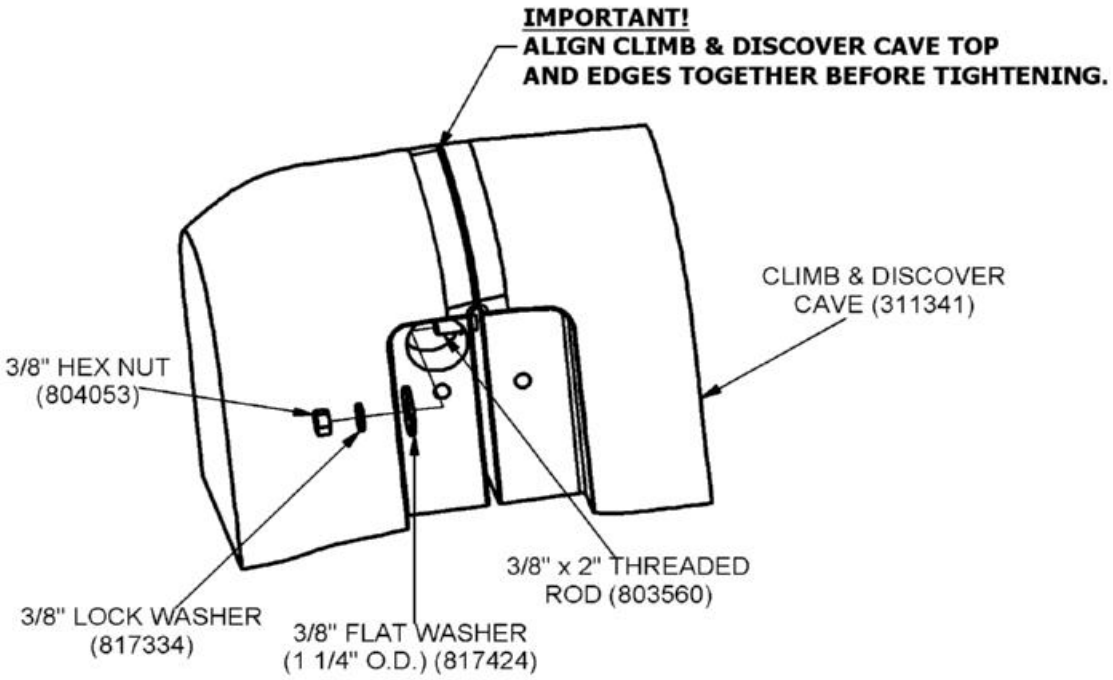


597



697

67994-Climb & Discover Cave ABCD-1234 Handholds, (Playful)
67997-Climb & Discover Cave Standard Handholds, (Natural)



698

68115 ACTIVITY METER

Parts List		
DESCRIPTION	QTY	PART NUMBER
FREESTANDING METER PANEL	1	313741
SUPPORT PIPE	1	313832
HARDWARE COMPLETE	1	313833
3/8" x 3" P.B.H.C.S. w/PATCH	1	812059*
3/8" FLAT WASHER (1 1/4" O.D.)	1	817424*
3/8" BARREL NUT	1	804804*
1/2" FLAT WASHER (1 3/8" O.D.)	1	817425*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Freestanding Meter Panel:
Shall be rotational molded from polyethylene. The polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotational molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Denisty (ASTM D-155); Brittleness Temperature (ASTM D-745; Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD). The frame shall be reinforced with all welded construction fabricated from 1.688" O.D. x .083" (14 gauge) wall galvanized steel tubing, 2.375" x .095" (13 gauge) wall galvanized steel tubing, and 1/4" stainless steel plate.

Support Pipe:
Shall be fabricated from 2.375" x .095" (13 gauge) wall galvanized steel tubing. The Support Pipe shall be coated with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68).

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. NOTE: All weights are based on average comparisons of each part.

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing hole according to Plan View. See Plan View for dimensions and notes regarding surfacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

68115 ACTIVITY METER

2. Attach Support Pipe to Freestanding Meter Panel using 3/8" x 3" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), 1/2" Flat Washer (1 3/8" O.D.), and 3/8" Barrel Nut. See Detail 839.

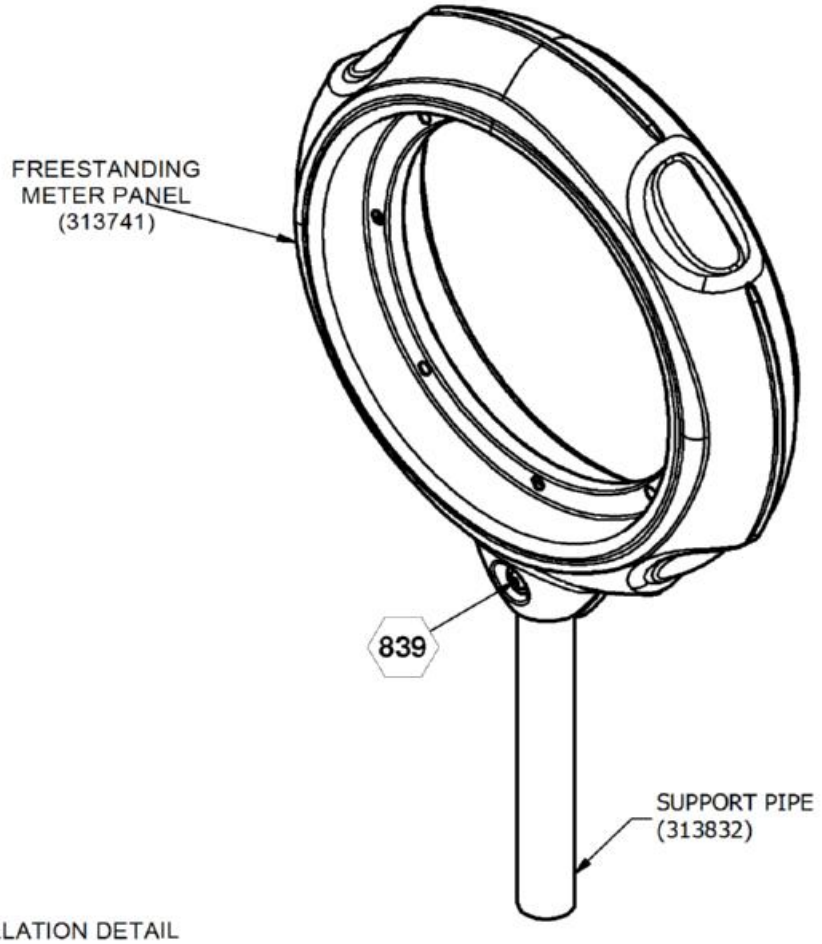
3. Plumb and level the entire assembly and tighten all fasteners.

4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

5. When the structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

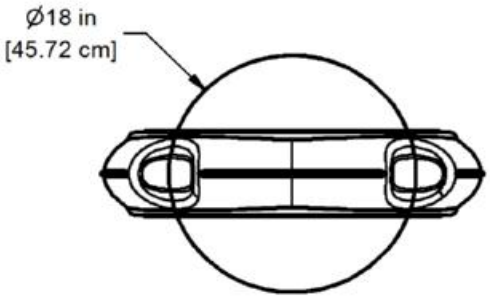
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



⬡ = INSTALLATION DETAIL

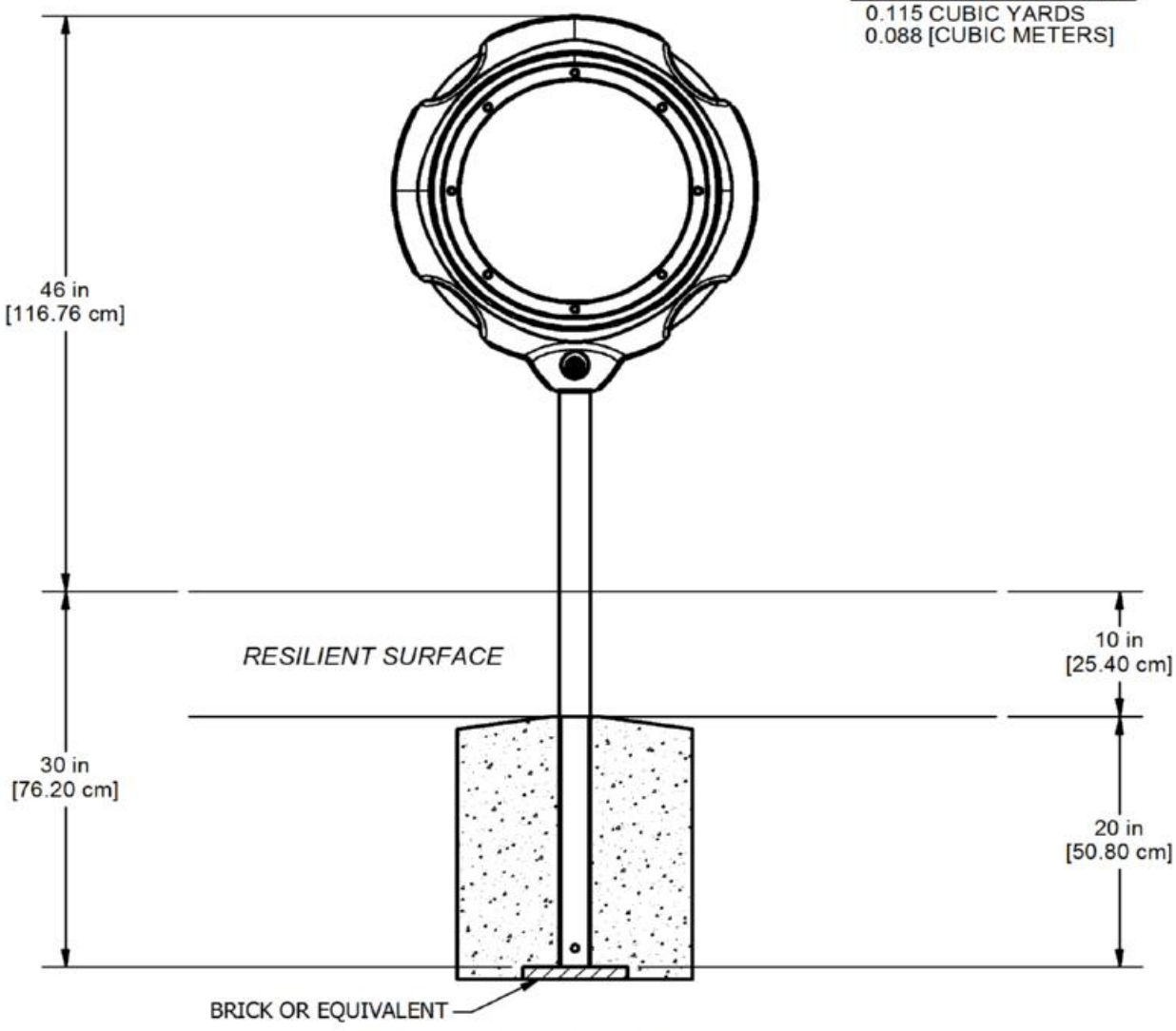
FINISHED ASSEMBLY

68115 ACTIVITY METER



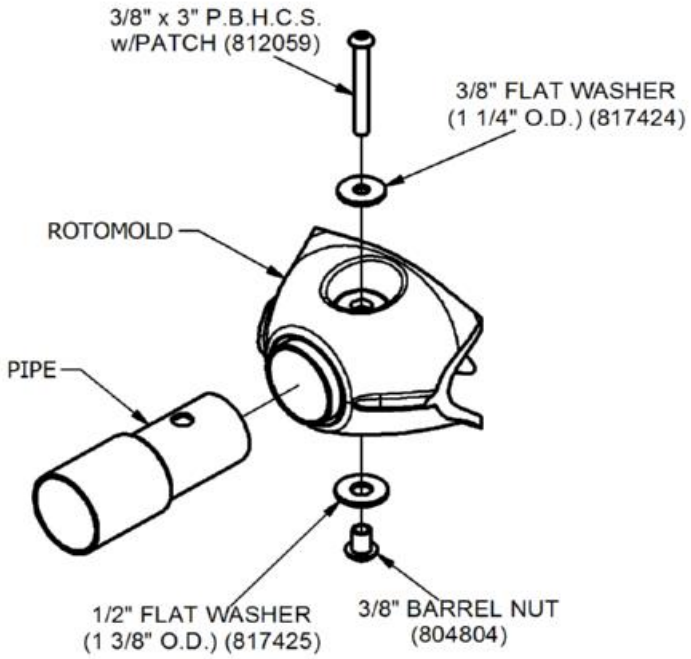
PLAN VIEW

CONCRETE REQUIRED
0.115 CUBIC YARDS
0.088 [CUBIC METERS]



ELEVATION VIEW

68115 ACTIVITY METER



839

68129 PRESTO

Parts List		
DESCRIPTION	QTY	PART NUMBER
PRESTO INSTRUMENT PACKAGE	1	313912
PRESTO FRONT HDPE PANEL	1	313914
PRESTO BACK HDPE PANEL	1	313915
PRESTO SPACER	10	313917
PRESTO SUPPORT ASSEMBLY	1	313919
3 1/2" DOME CAP	2	212995
HARDWARE COMPLETE	1	313972
#10 x 1 1/4" SHEET METAL SCREW	15	810069
#10 x 1 1/2" SHEET METAL SCREW	16	810064
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	20	812053
3/8" FLAT WASHER	20	817410
3/16" x 13/32" DRIVE RIVET	4	805366
#10 x 1" SCREW	4	815506

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Presto Instrument Package:
Shall be constructed of anodized aluminum chimes, plastic slats, and 3/8" thick pvc sheet. Mallet shall be an all plastic construction with stainless steel hardware.

Presto Front HDPE Panel and Presto Back HDPE Panel:
Shall be precision cut from a single solid sheet of .750" thick UV-stabilized extruded high-desnity polyethylene with colors molded in. The material will have a denisty of 60lbs/ft³ and a tensile strength of 4400 PSI (30 Mpa) as determined per procedure C of ASTM D1928. All edges shall have radiuses and all corners rounded for safe play.

Presto Spacer:
Shall be fabricated from 1.315" O.D. x .083 (14 gauage) wall galvanized steel tubing and .375" zinc plated .5 mil coating with chromate finish threaded insert. The Presto Spacer shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Presto Support Assembly:
Shall be an all welded construction fabricated from 2.375" O.D. x .095" (13 gauge) wall galvanized steel tubing, 3.5" O.D. x .095" (13 gauge) wall galvanized steel tubing, and 1/4" thick laser cut plate. The Presto Support Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Powder Coat Finish:
Shall be an electrostatically applied custom formula fo TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68).

68129 PRESTO

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plate steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. NOTE: All weights are based on average comparisons of each part.

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding surfacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach Presto Back HDPE Panel to Presto Support Assemby using #10 x 1 1/2" Sheet Metal Screw. See Detail 852. Attach Caps to Suppo Assembly using 3/16" x 13/32" Drive Rivets as shown in Detail 597.

3. Attach Presto Instrument Insert to Presto Back HDPE Panel using #10 x 1 1/4" Sheet Metal Screw. See Detail 855.
   IMPORTANT: Orientation of instrument insert is critical. Open end of chimes must be facing down to allow drainage.

4. Attach Presto Spacer to Presto Back HDPE Panel and Presto Front HDPE Panel using 3/8" x 1 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 854.

5. Attach Mallets to the bottom edge of Presto Back HDPE Panel using #10 x 1" Screw (Included in Hardware Complete). See Detail 856. **NOTE:** *Drill 1/8" pilot holes using bracket as a template and place Mallets so that each one reaches all the chimes.*
   NOTE: *Make sure to install mallets no higher than 26 1/2" from the top of connection point. Refer to Finished Assembly View and Elevation View.*

6. Plumb and level the entire assembly and tighten all fasteners.

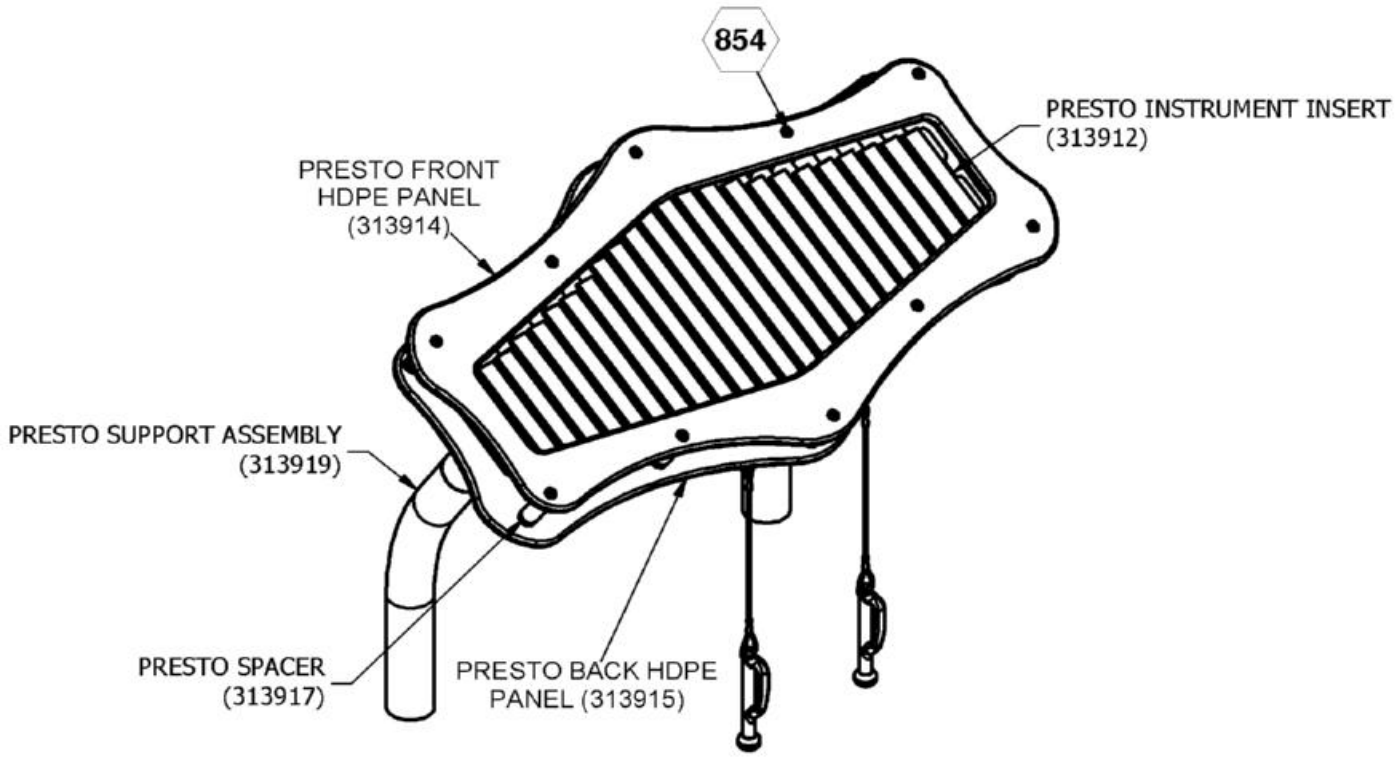
7. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

8. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

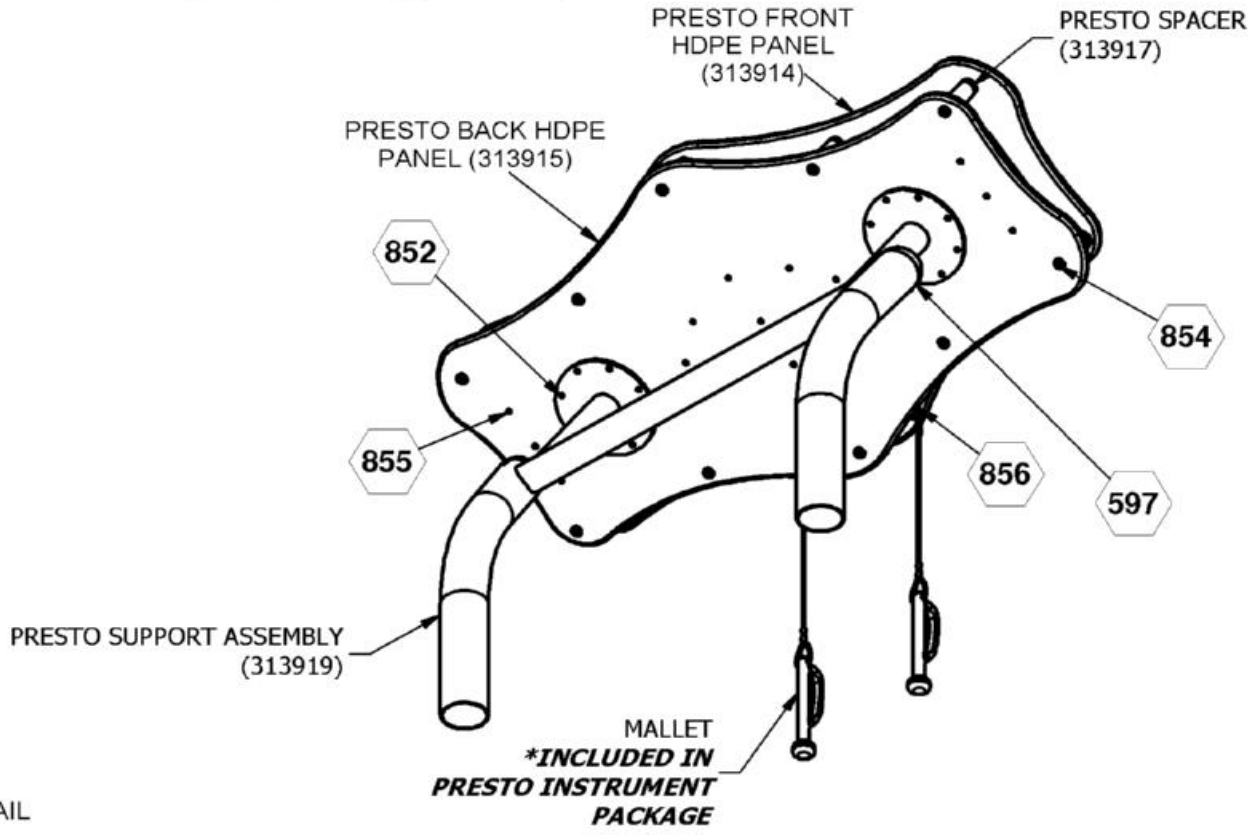
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

68129 PRESTO



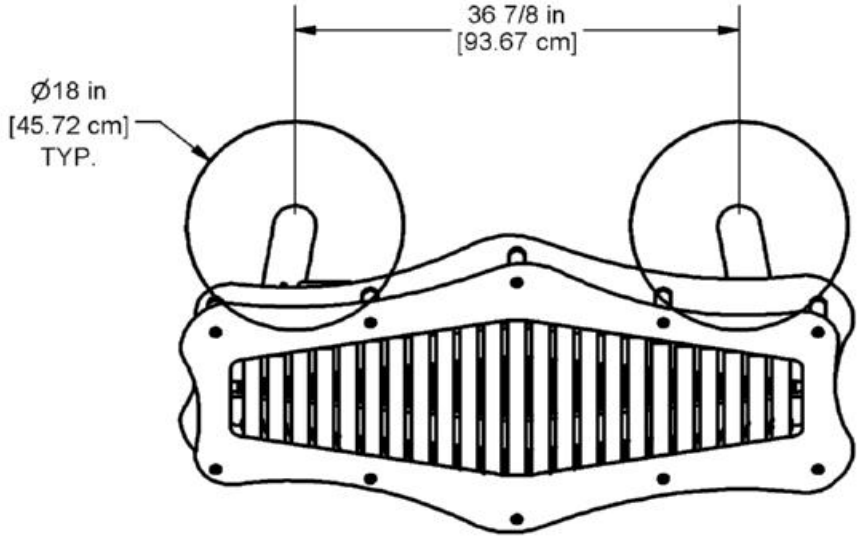
FINISHED ASSEMBLY



= INSTALLATION DETAIL

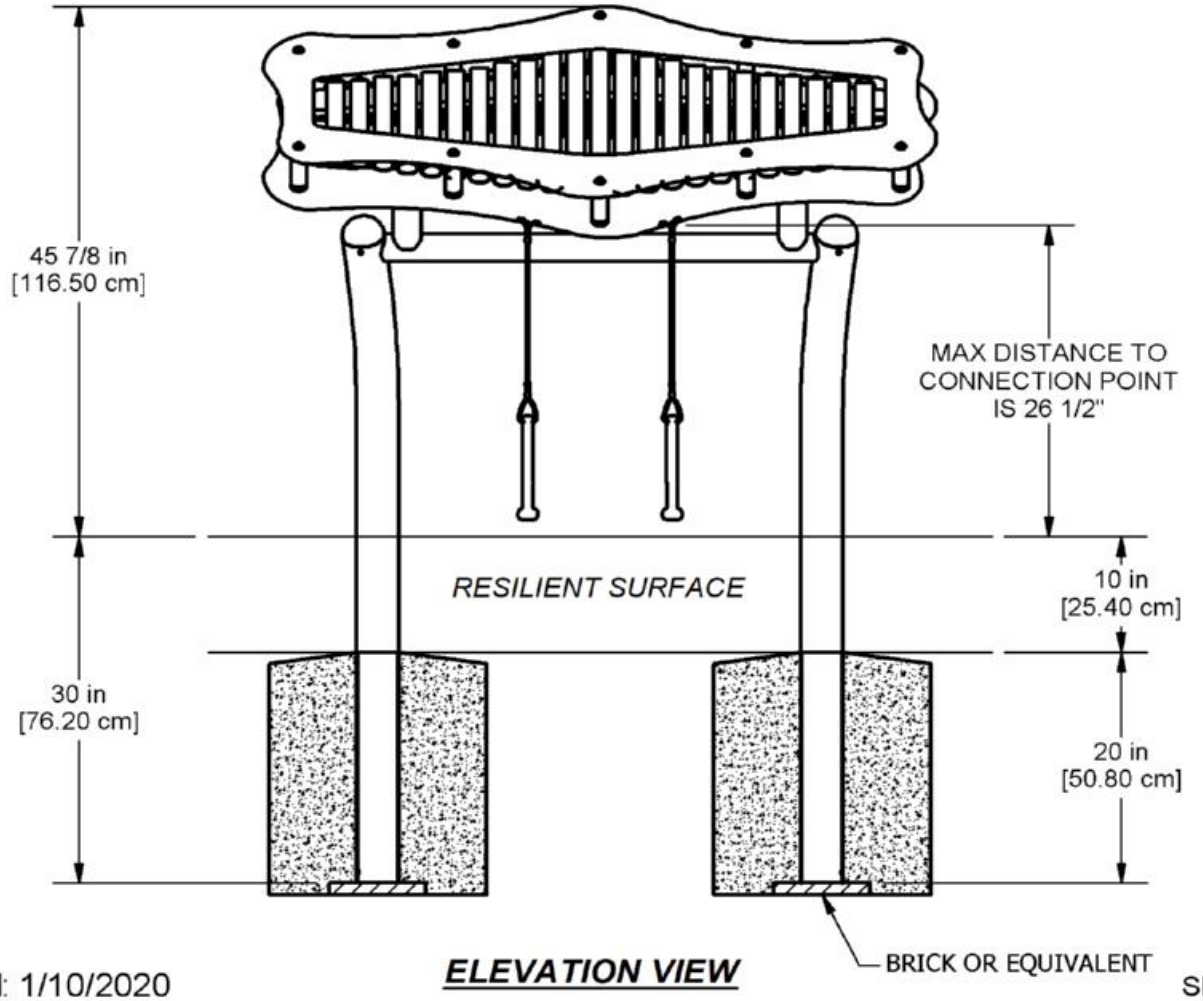
UNDERNEATH VIEW

68129 PRESTO



CONCRETE REQUIRED
0.229 CUBIC YARDS
0.175 [CUBIC METERS]

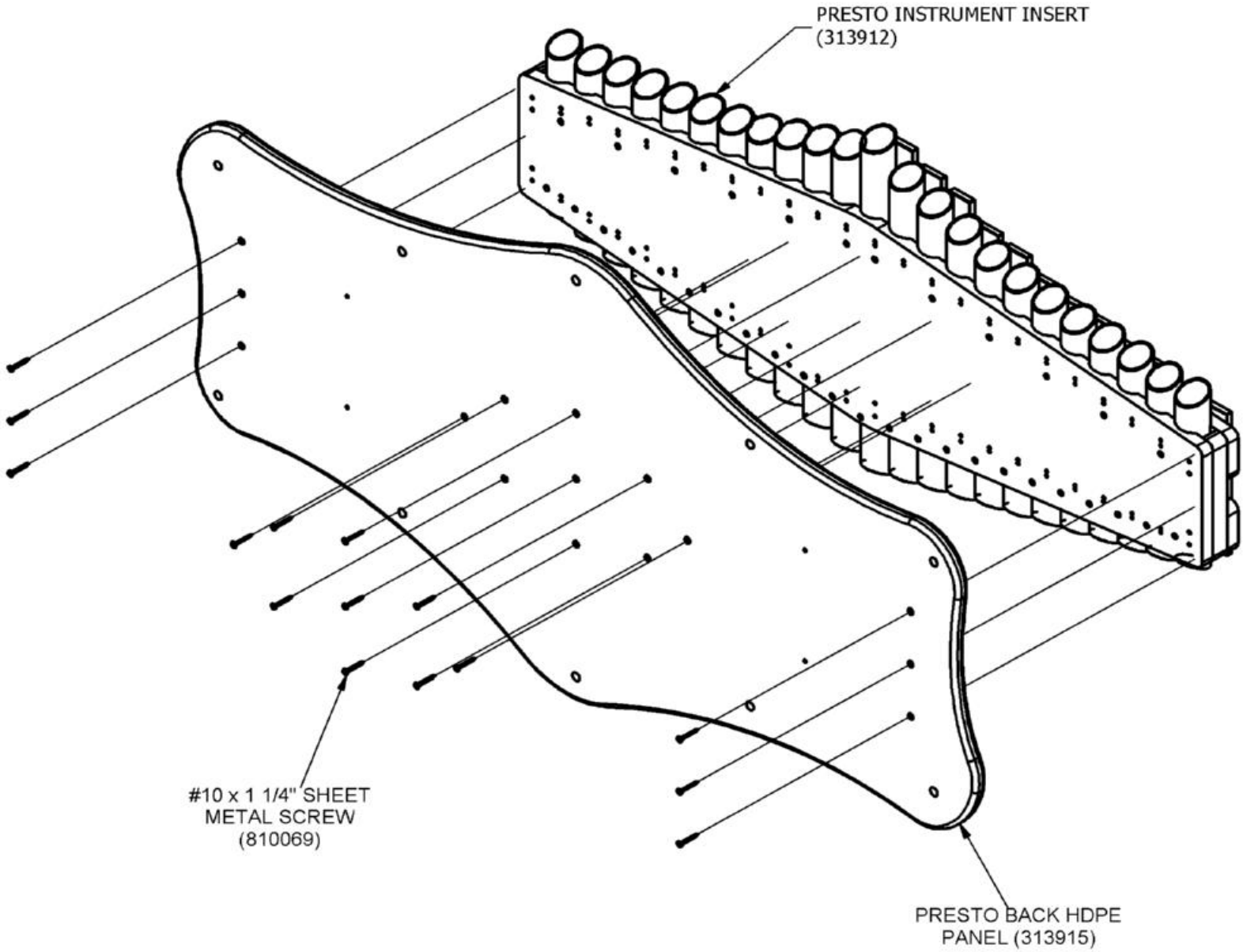
PLAN VIEW



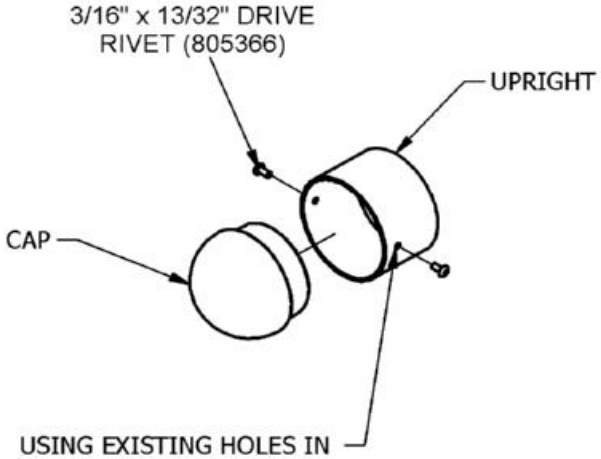
ELEVATION VIEW

68129 PRESTO

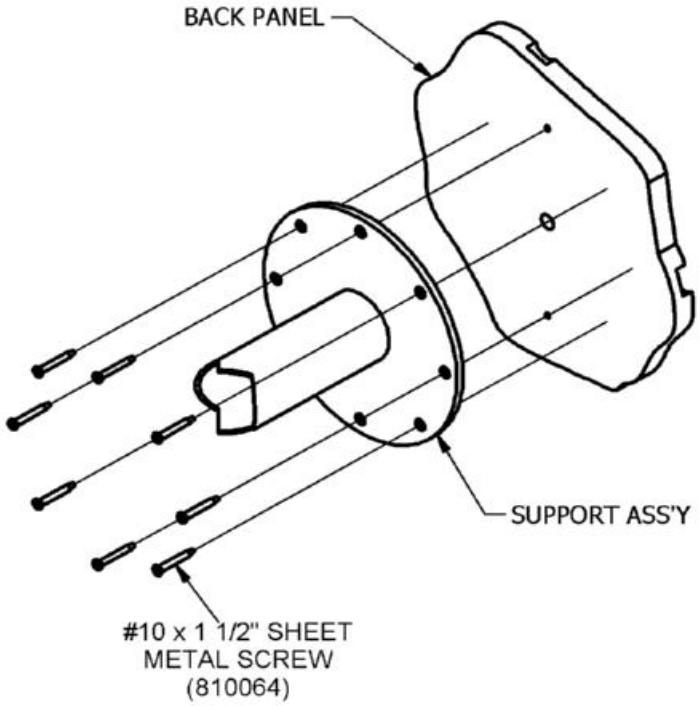
IMPORTANT: ORIENTATION OF INSTRUMENT INSERT IS CRITICAL.
OPEN END OF CHIMES MUST BE FACING DOWN TO ALLOW DRAINAGE.



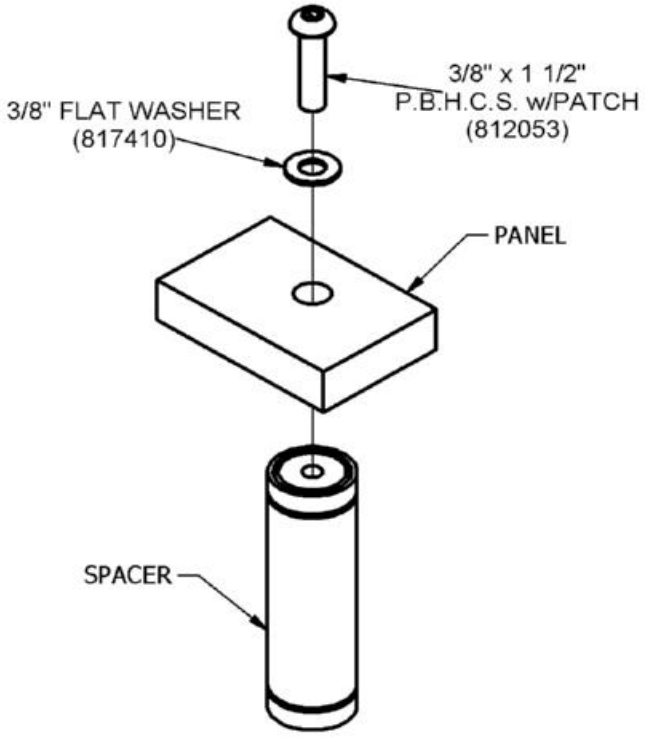
68129 PRESTO



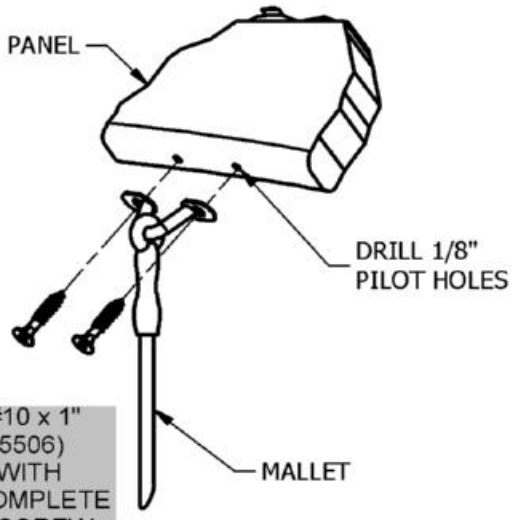
597



852



854



NOTE: USE #10 x 1" SCREW (815506) SUPPLIED WITH HARDWARE COMPLETE IN PLACE OF SCREW SUPPLIED WITH MALLET.
PILOT HOLE MUST BE DRILLED BEFORE ATTACHING.

856

SuperMax Play Systems

71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck

Parts List				
DESCRIPTION	71000	71001	71002	PART NUMBER
DECK ADAPTER	4	3	3	309921
SQUARE DECK PLATFORM	1	0	0	309922
TRIANGLE DECK PLATFORM	0	1	0	309928
ISOSCELES TRIANGLE DECK PLATFORM	0	0	1	309932
HARDWARE COMPLETE	1	0	0	309927
HARDWARE COMPLETE	0	1	1	309931
1/4" x 3/4" SET SCREW	8	6	6	811545
3/8" x 3/4" P.B.H.C.S. w/PATCH	2	2	2	812052
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	3	3	812051
3/8" LOCK WASHER	6	5	5	817334
3/8" FLAT WASHER (1 1/4" O.D.)	6	5	5	817424
3/8" T-NUT	2	2	2	804556

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Place Uprights in dug holes at appropriate height per Upright installation instructions. Get the height required for the deck from the Plan View Diagram. Use a felt-tip marker to mark the top of the Ring Clamp on all uprights.

2. Loosely attach all Ring Clamps to the uprights. Refer to the seperate Ring Clamp Installation sheet.

3. Attach Deck Adapters to the Ring Clamps using 1/4" x 3/4" set screw. Do not overly tighten set screws. Attach decks to the Deck Adapter using 3/8" x 1 1/4" P.B.H.C.S., 3/8" Flat Washer, and 3/8" Lock Washer as shown in Detail 447. Plumb and level uprights and brace in position.

4. Using a level, and holding one Ring Clamp as a constant, adjust the other clamps so that the deck is completely level. At this point, if you have more decks to attach, lay each succeeding deck on the ground against the previous deck's two posts, and mark the missing footings to be dug. Continue attaching decks in this manner. Tighten set screws after all decks are attached.

5. Attach side-by-side decks to one another using 3/8" x 3/4" P.B.H.C.S., 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" T-Nut as shown in Detail 061.

6. When all decks are completed and correct, pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow curing at least 48 hours before use.

7. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

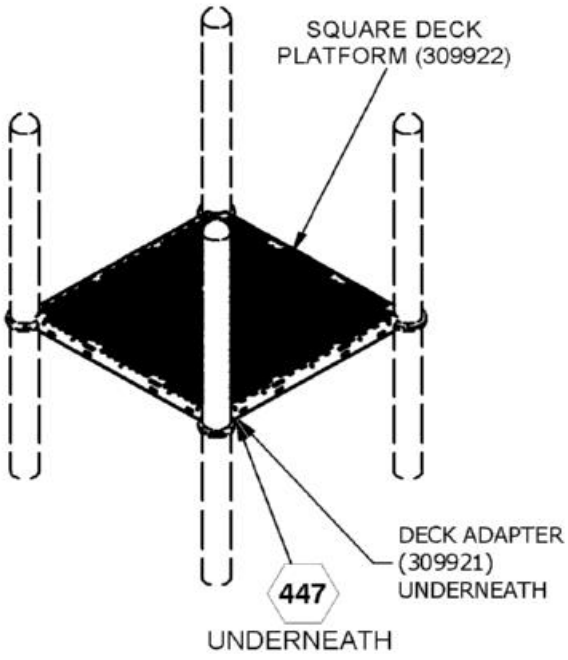
SuperMax Play Systems

71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck

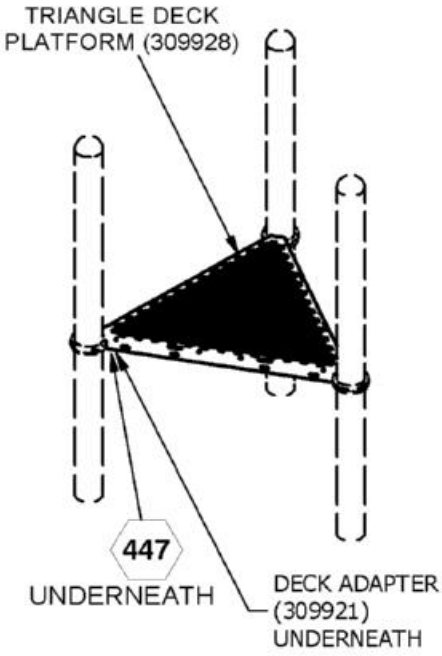
Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

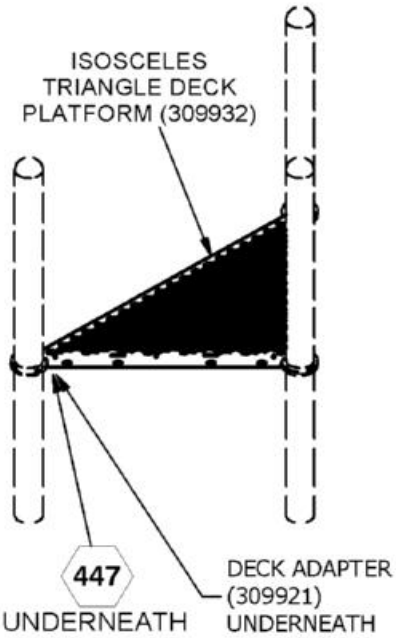
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SQUARE DECK



TRIANGLE DECK



ISOSCELES TRIANGLE DECK

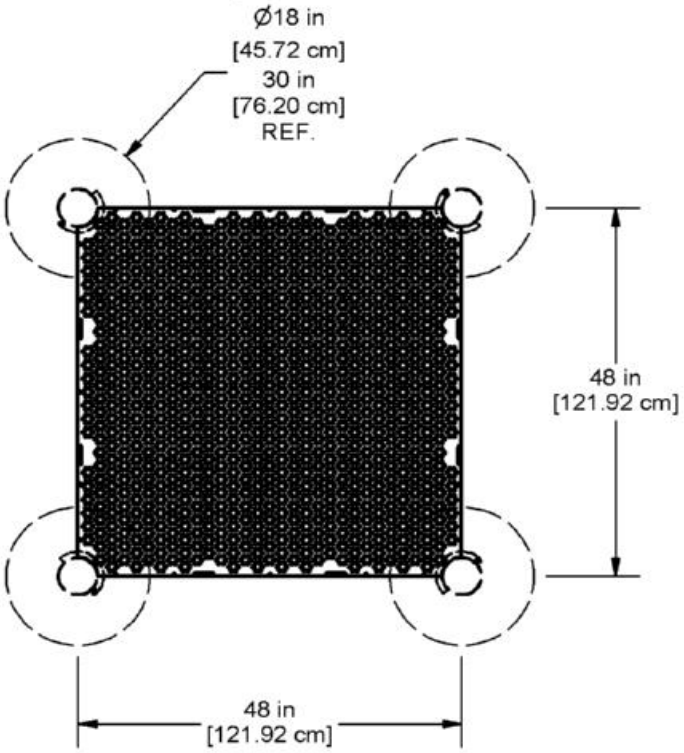
FINISHED ASSEMBLY

= INSTALLATION DETAIL

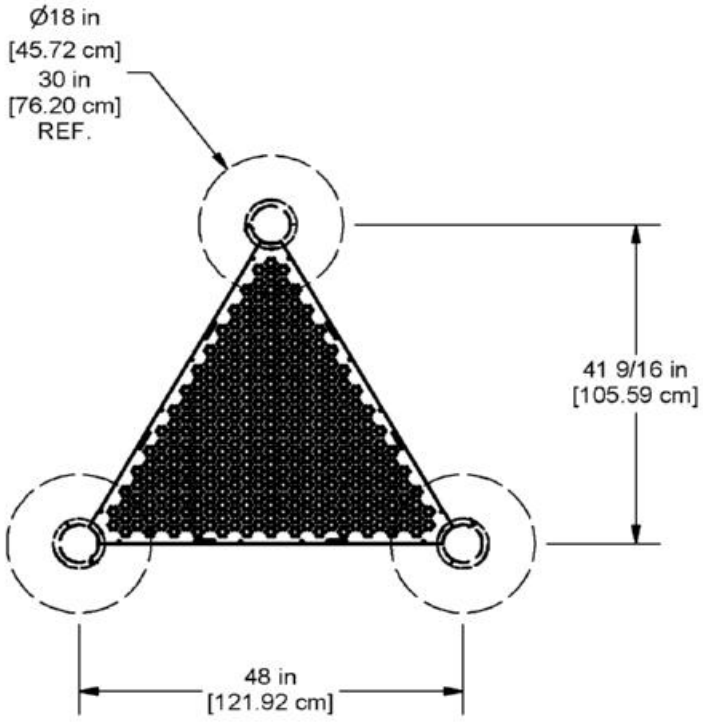
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 7/13/2012

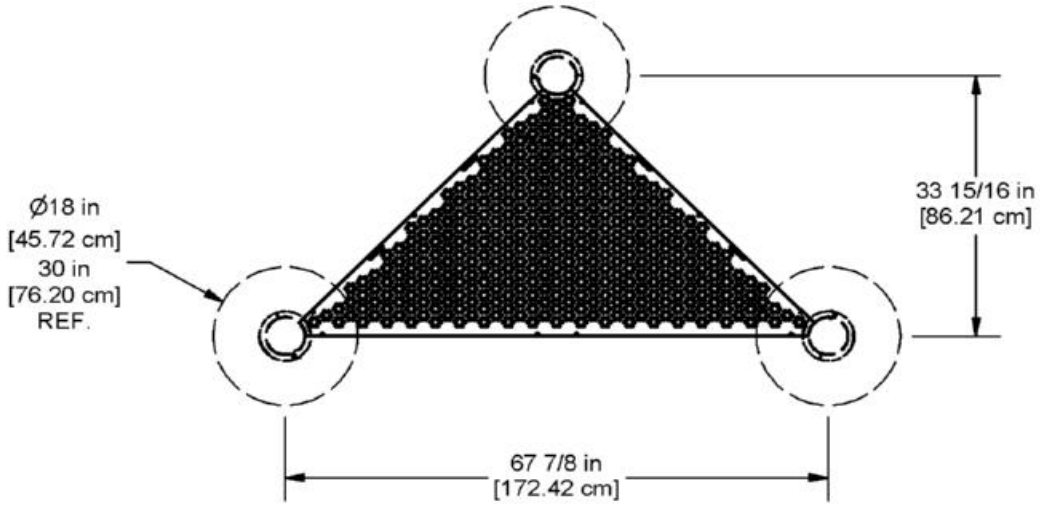
71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck



SQUARE DECK



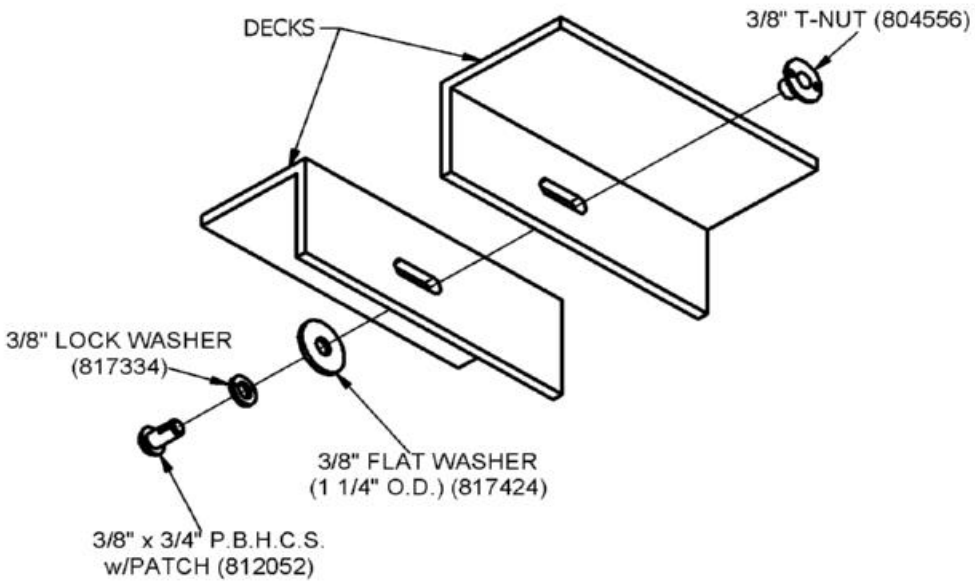
TRIANGLE DECK



ISOSCELES TRIANGLE DECK

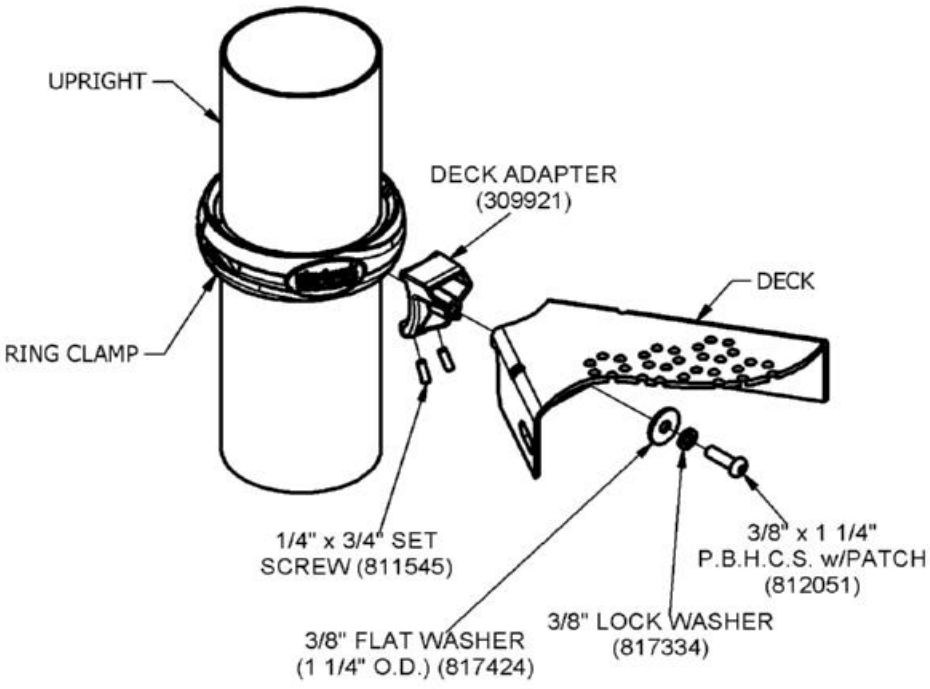
PLAN VIEW

71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck



061

NOTE: DECK ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



447

SuperMax Play Systems

71031 RING CLAMP ASSEMBLY

Parts List		
DESCRIPTION	QTY	PART NUMBER
RING CLAMP	1	309911
HARDWARE COMPLETE	1	309998
1/4" x 1" DRIVE RIVET	1	805302*
1/4" x 1 1/4" P.B.H.C.S.	1	812083*

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

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Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Locate uprights to receive Ring Clamp Assemblies (Refer to individual component installation sheets for clamp heights).

2. Attach Ring Clamp to upright using 1/4" x 1 1/4" PBHCS. Tighten screw only enough to hold the clamps position on the upright. Adjustment may be neccasary. See Detail 452.
IMPORTANT: Orientation of bolt is critical.

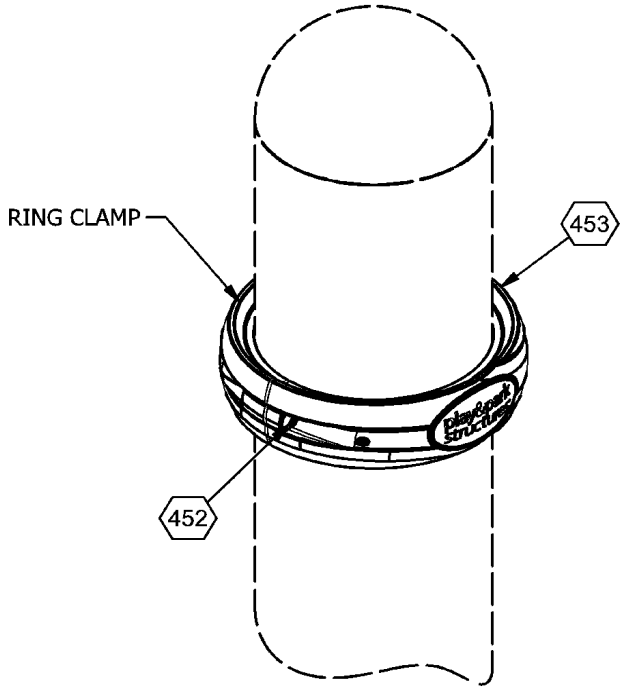
3. Install required components to the attaching to the Ring Clamp. See Top View and Seperate component installation sheets.

4. When structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. A 1/4" diameter hole must be drilled into the clamp and upright to receive drive rivet. Use Pre-determined drill points on ring clamp. See Detail 453. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment

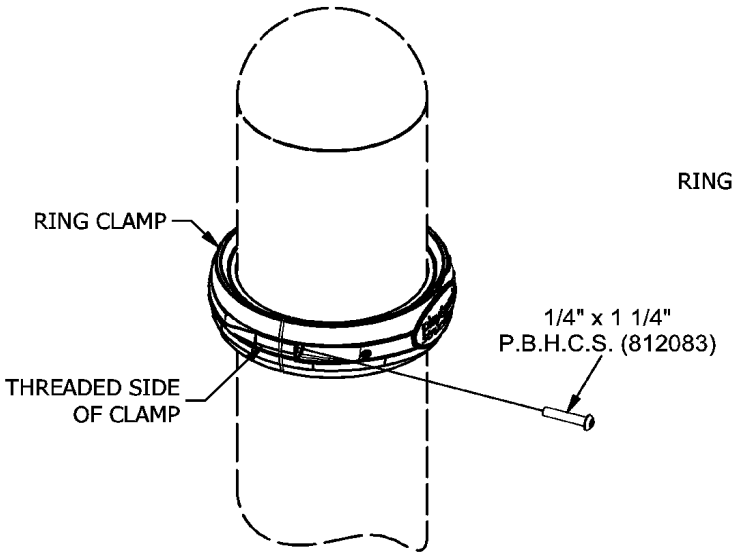
UPRIGHT AND CAP
SOLD SEPERATELY



FINISHED ASSEMBLY

⬡ = INSTALLATION DETAIL

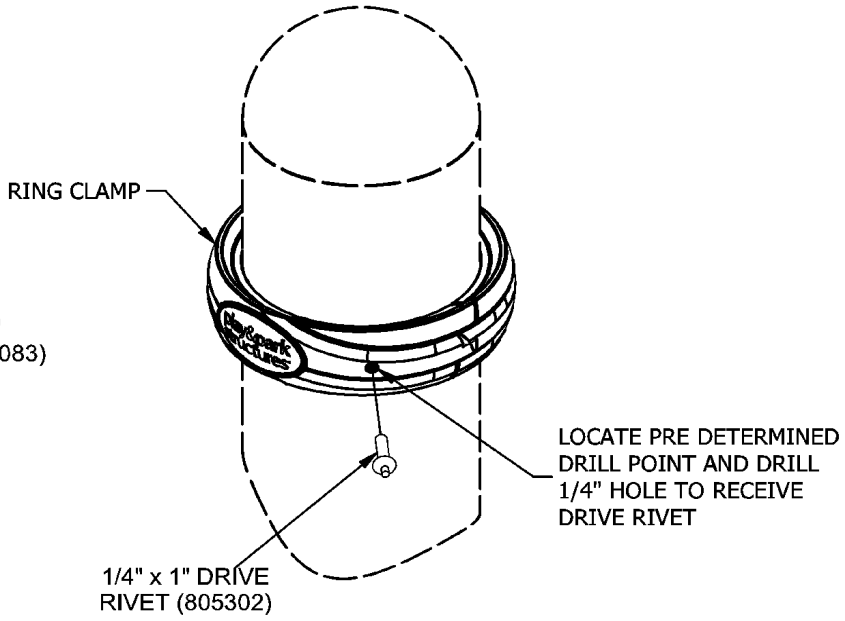
71031 RING CLAMP ASSEMBLY



NOTE: THE USE OF LOCTITE IS IMPORTANT.

IMPORTANT: ORIENTATION OF BOLT IS CRITICAL.

452



453

SuperMax Play Systems

Inclined Wall Climber 71101 (2'-0"); 71102 (2'-8"); 71103 (3'-4"); 71104 (4'-0"); 71105 (4'-8"); 71106 (5'-4"); 71107 (6'-0")

Parts List									
ITEM	DESCRIPTION	71101	71102	71103	71104	71105	71106	71107	PART NUMBER
1	ENTRY ARCHWAY	1	1	1	1	1	1	1	309984
2	INCLINED WALL PANEL	1	0	0	0	0	0	0	308475
2	INCLINED WALL PANEL	0	1	0	0	0	0	0	308308
2	INCLINED WALL PANEL	0	0	1	0	0	0	0	308480
2	INCLINED WALL PANEL	0	0	0	1	0	0	0	308313
2	INCLINED WALL PANEL	0	0	0	0	1	0	0	308485
2	INCLINED WALL PANEL	0	0	0	0	0	1	0	308318
2	INCLINED WALL PANEL	0	0	0	0	0	0	1	308323
3	INCLINED WALL FRAME	1	0	0	0	0	0	0	308471
3	INCLINED WALL FRAME	0	1	0	0	0	0	0	308513
3	INCLINED WALL FRAME	0	0	1	0	0	0	0	308477
3	INCLINED WALL FRAME	0	0	0	1	0	0	0	308516
3	INCLINED WALL FRAME	0	0	0	0	1	0	0	308482
3	INCLINED WALL FRAME	0	0	0	0	0	1	0	308519
3	INCLINED WALL FRAME	0	0	0	0	0	0	1	308522
4	PIPE ADAPTER	2	2	2	2	2	2	2	309915
	-----HARDWARE COMPLETE-----	1	0	0	0	0	0	0	315150
	-----HARDWARE COMPLETE-----	0	1	1	0	0	0	0	315151
	-----HARDWARE COMPLETE-----	0	0	0	1	0	0	0	315152
	-----HARDWARE COMPLETE-----	0	0	0	0	1	0	0	315153
	-----HARDWARE COMPLETE-----	0	0	0	0	0	1	0	315154
	-----HARDWARE COMPLETE-----	0	0	0	0	0	0	1	315155
	1/4" x 3/4" SET SCREW	4	4	4	4	4	4	4	811545
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	4	4	812054
	3/8" x 2" P.B.H.C.S. w/PATCH	6	8	8	10	12	14	16	812055
	3/8" FLAT WASHER	2	2	2	2	2	2	2	817410
	3/8" LOCK WASHER	10	12	12	14	16	18	20	817334
	3/8" BARREL NUT	8	10	10	12	14	16	18	804804
	3/8" T-NUT	2	2	2	2	2	2	2	804556

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

Inclined Wall Climber 71101 (2'-0"); 71102 (2'-8"); 71103 (3'-4"); 71104 (4'-0"); 71105 (4'-8"); 71106 (5'-4"); 71107 (6'-0")

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Inclined Wall Climber, refer to your overhead drawing for location. Dig footings at location and depth shown.

2. Using a 7/16" drill bit, ream out any excess "Plastisol" coating from any holes to be used on deck. Be careful not to expose the steel.

3. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.

4. Place the tabs at the bottom of the Entry Archway into the slots on the deck. Slip the Pipe Adapters onto the Entry Archway attachment pipes, then move the Entry Archway into position. Hook the Pipe Adapters onto the Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448. Connect Entry Archway to Pipe Adapter using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washers and 3/8" Barrel Nuts as shown in Detail 448.

5. Place Inclined Wall Frame into dug hole and secure Frame and tabs to deck using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" T-Nut as shown in Detail 295. Make sure the Entry Archway is plumb.

6. Attach the Inclined Wall Panel to the Inclined Wall Frame using 3/8" x 2" P.B.H.C.S. with Patch, 3/8" Lock Washer, and 3/8" Barrel Nut as shown in Detail 983.

7. When the Inclined Wall Climber is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

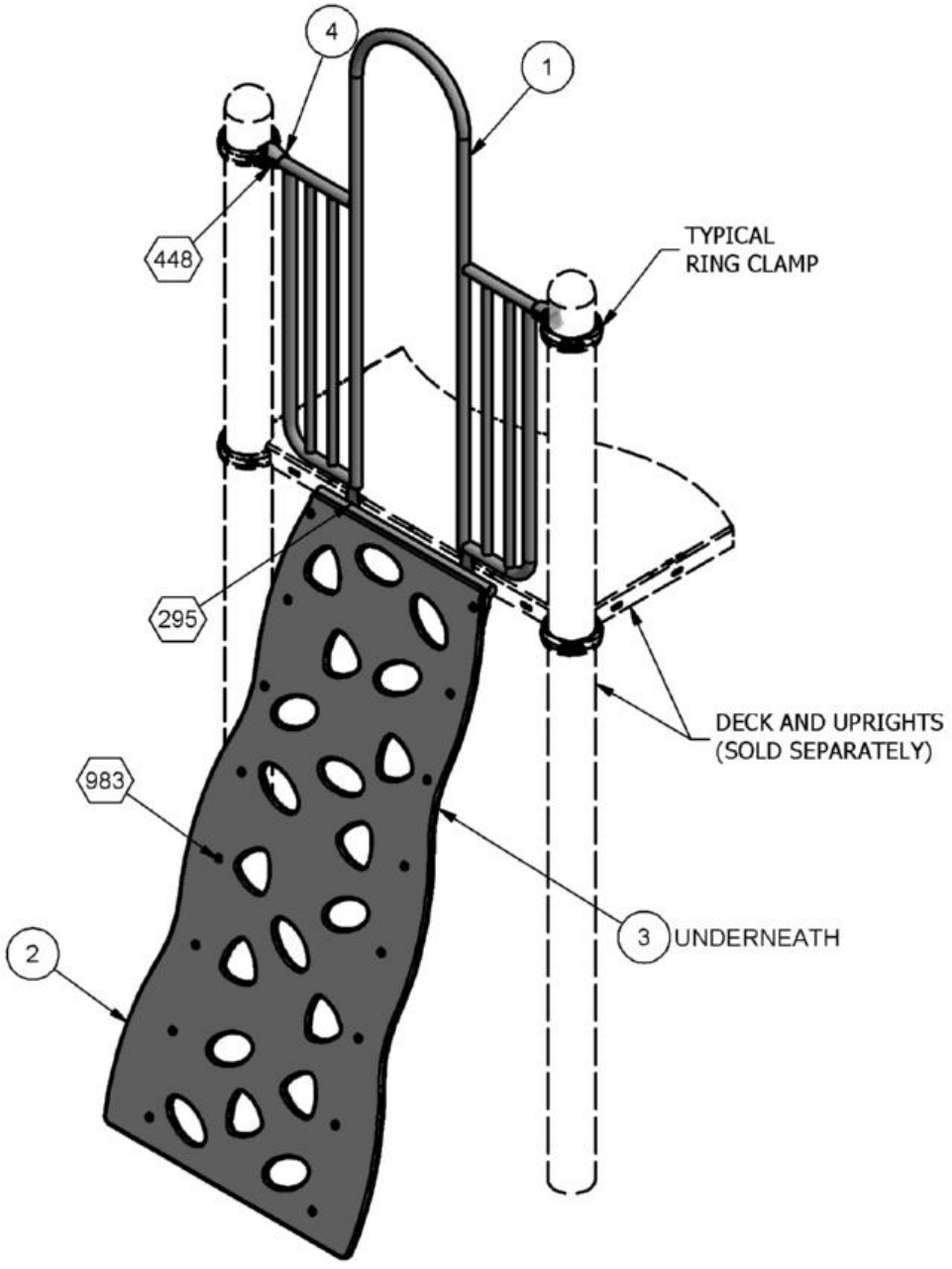
8. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

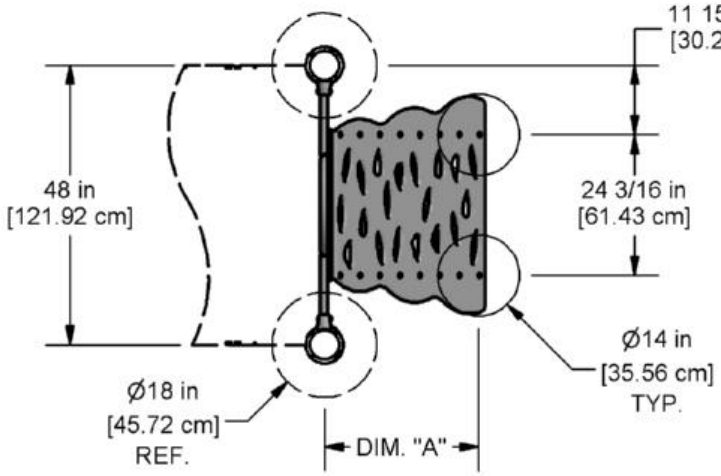
Inclined Wall Climber 71101 (2'-0"); 71102 (2'-8"); 71103 (3'-4"); 71104 (4'-0"); 71105 (4'-8"); 71106 (5'-4"); 71107 (6'-0")



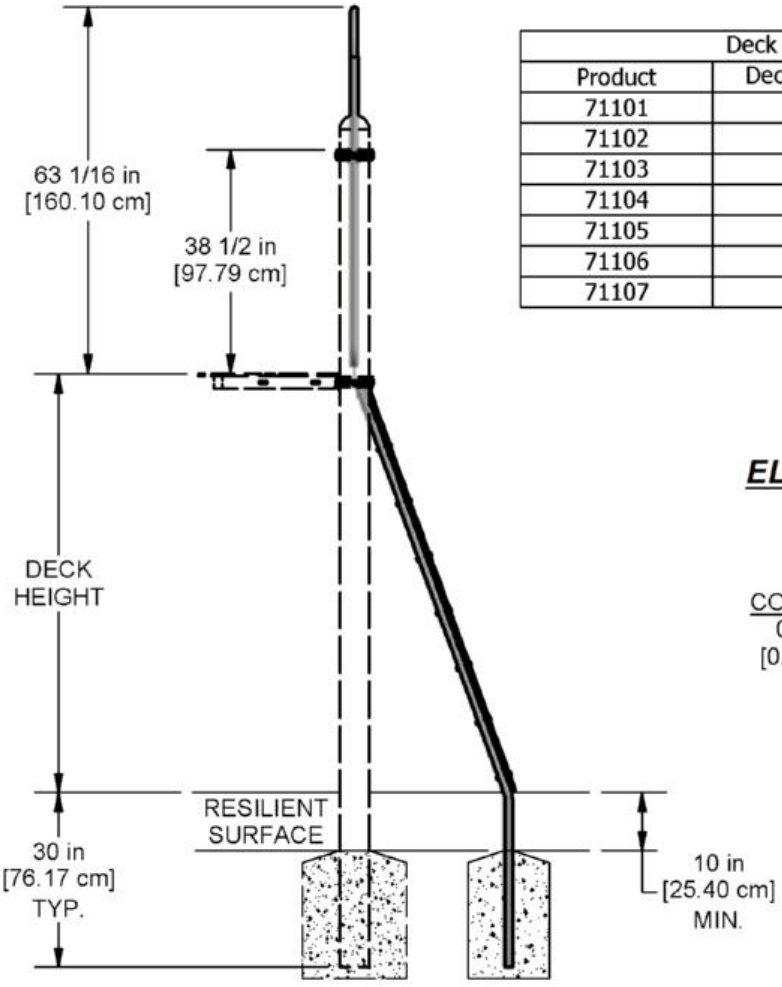
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
71107 - 6'-0" SHOWN

Inclined Wall Climber 71101 (2'-0"); 71102 (2'-8"); 71103 (3'-4"); 71104 (4'-0"); 71105 (4'-8"); 71106 (5'-4"); 71107 (6'-0")



PLAN VIEW

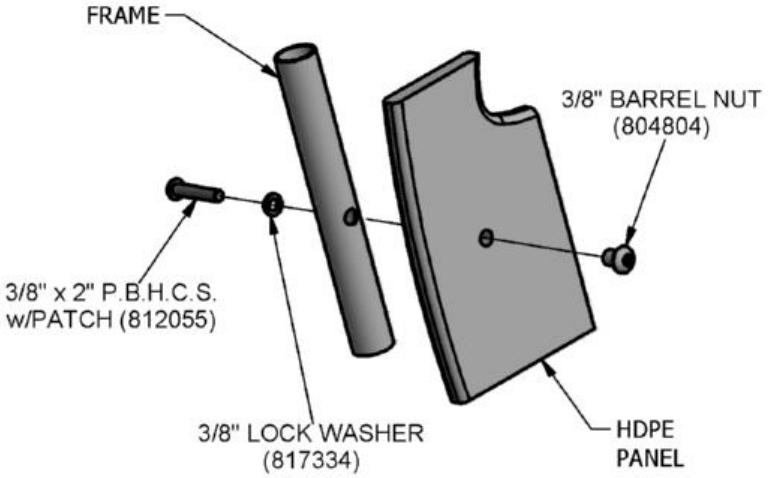


Deck Height Table		
Product	Deck Height	Dim. "A"
71101	2'-0"	9" [22.91cm]
71102	2'-8"	12" [30.30cm]
71103	3'-4"	15" [37.71cm]
71104	4'-0"	18" [45.11cm]
71105	4'-8"	20 1/2" [52.51cm]
71106	5'-4"	23 1/2" [59.91cm]
71107	6'-0"	26 1/2" [67.33cm]

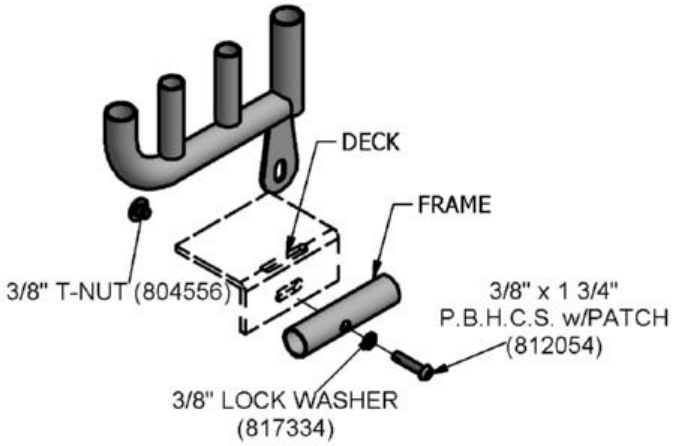
ELEVATION VIEW

CONCRETE REQUIRED
0.14 CUBIC YARDS
[0.10 CUBIC METERS]

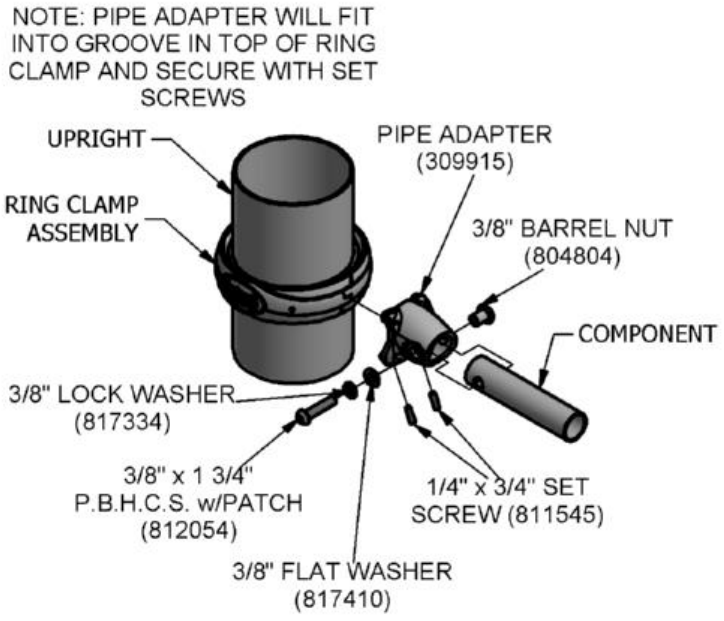
Inclined Wall Climber 71101 (2'-0"); 71102 (2'-8"); 71103 (3'-4"); 71104 (4'-0"); 71105 (4'-8"); 71106 (5'-4"); 71107 (6'-0")



983



295



448

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

71153 Racing Game Panel

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	RACING GAME PANEL	1	310182
2	COVER PLATE	4	300495
3	ROUND PANEL (RED)	2	301576
4	ROUND PANEL (BLUE)	2	301962
5	GAMEPIECE	1	301942
6	PIPE	1	300468
7	PANEL ADAPTER	4	309919
	——HARDWARE COMPLETE——	1	310181
	3/8" x 2 3/4" P.B.H.C.S. w/PATCH	2	812058
	3/8" x 2" P.B.H.C.S. w/PATCH	4	812055
	3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	812053
	3/8" FLAT WASHER	14	817410
	3/8" BARREL NUT	10	804804
	1/2" I.D. BRONZE BUSHING	2	102820
	1/4" x 3/4" SET SCREW	8	811545

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Insert Rung into Math Block making sure braille is at the bottom and place into slot in panel as shown in Detail 474.
2. Attaching Bracing Panels to secure rung in panel as shown in Detail 474.
3. Attach Round Panels as shown in Detail 473.
4. Attach Ring Clamps at locations shown in Elevation Views. See Ring Clamp Installation Sheet.
5. Attach Panel to Ring Clamps using Panel Adapter as shown in Detail 467.

Note: Panels should be positioned so that the top of each panel is at least 38" above the deck surface. If a conflict exists between a panel clamp and an adjacent component's clamp, adjust the panel upward (Never lower than 38" above deck) without exceeding a maximum gap of 3-1/2" between the lower end of the panel and the top edge of the deck.

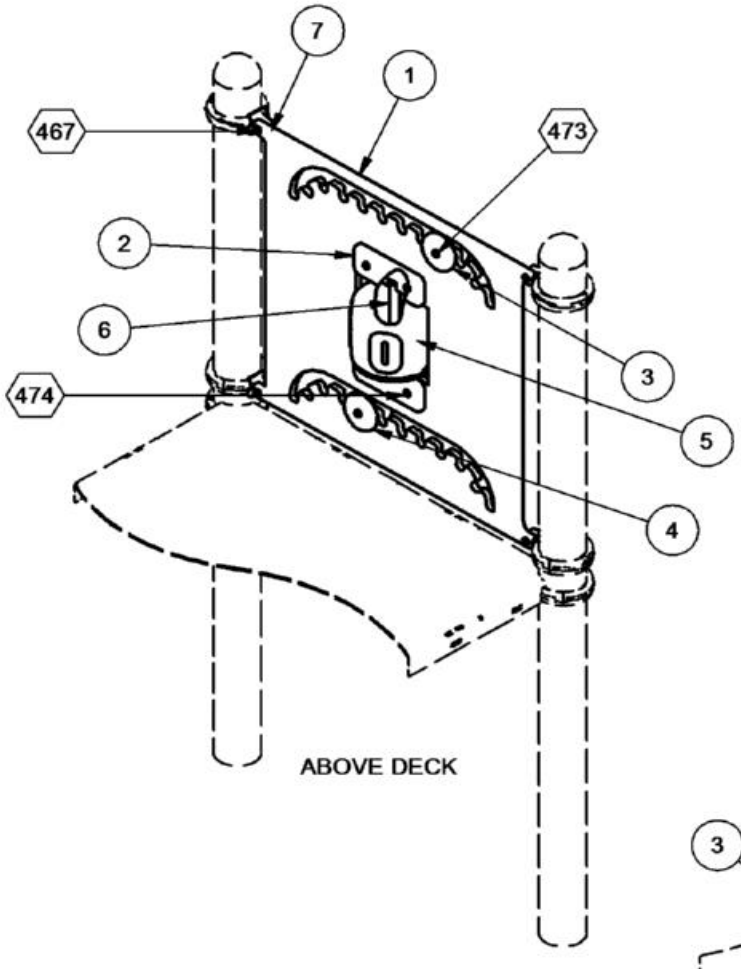
IMPORTANT! Avoid creating any Gaps between the components, which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points, which can trap a child and cause injury.

When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Panel Clamps sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

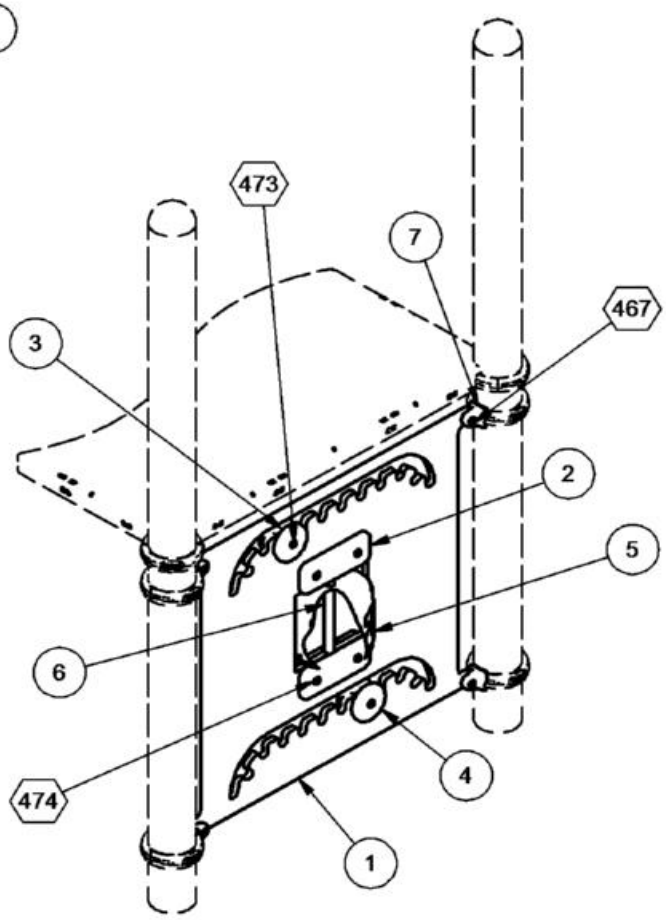
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint peeling and touch-up if necessary with paint. Check for welded areas and verify integrity. Check for cracks, gouges or breakage on plastic, check for integrity of the plastic, keep plastic clean of any extraneous substances, verify that any deformation does not create entrapment as specified on ASTM F1487-98 section 6. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71153 Racing Game Panel



ABOVE DECK

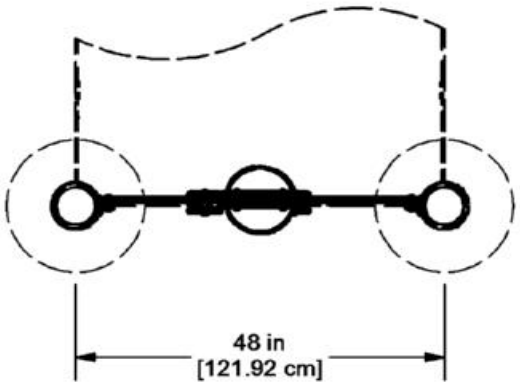


FINISHED ASSEMBLY

⬡ = INSTALLATION DETAIL

BELOW DECK

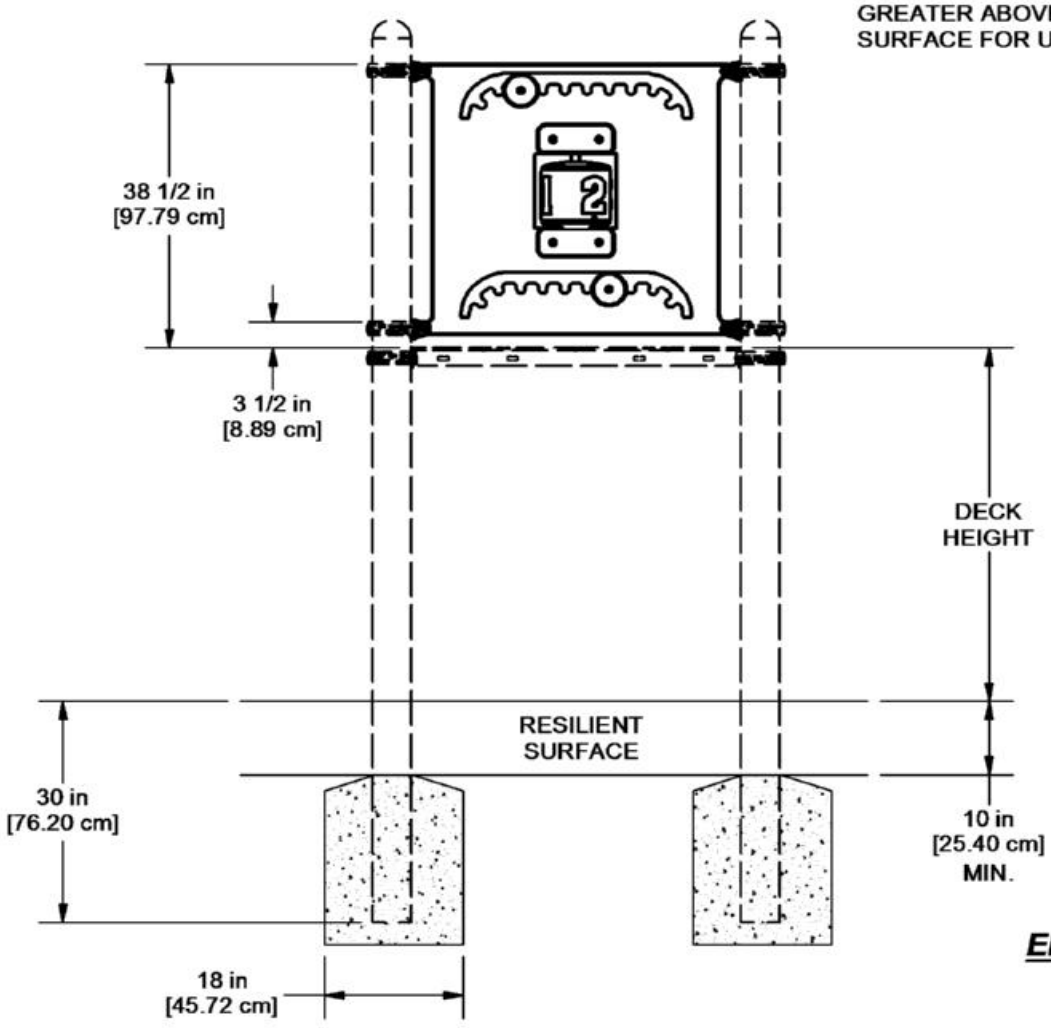
71153 Racing Game Panel



PLAN VIEW

NOTE:
TOP EDGE OF PANEL MUST BE 38" [965mm] OR GREATER ABOVE ELEVATED PATFORM SURFACE FOR USE BY 5-12 YEAR OLDS.

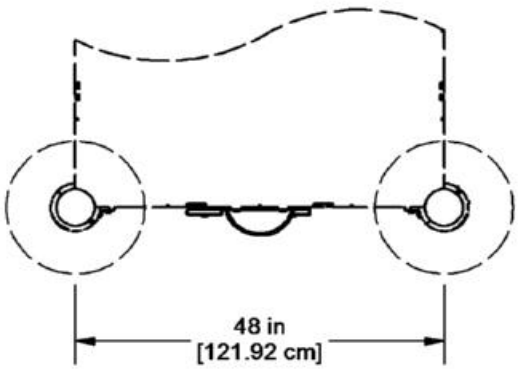
TOP EDGE OF PANEL MUST BE 29"[736mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 2-5 YEAR OLDS.



ELEVATION VIEW

ABOVE DECK
SHOWN

71153 Racing Game Panel

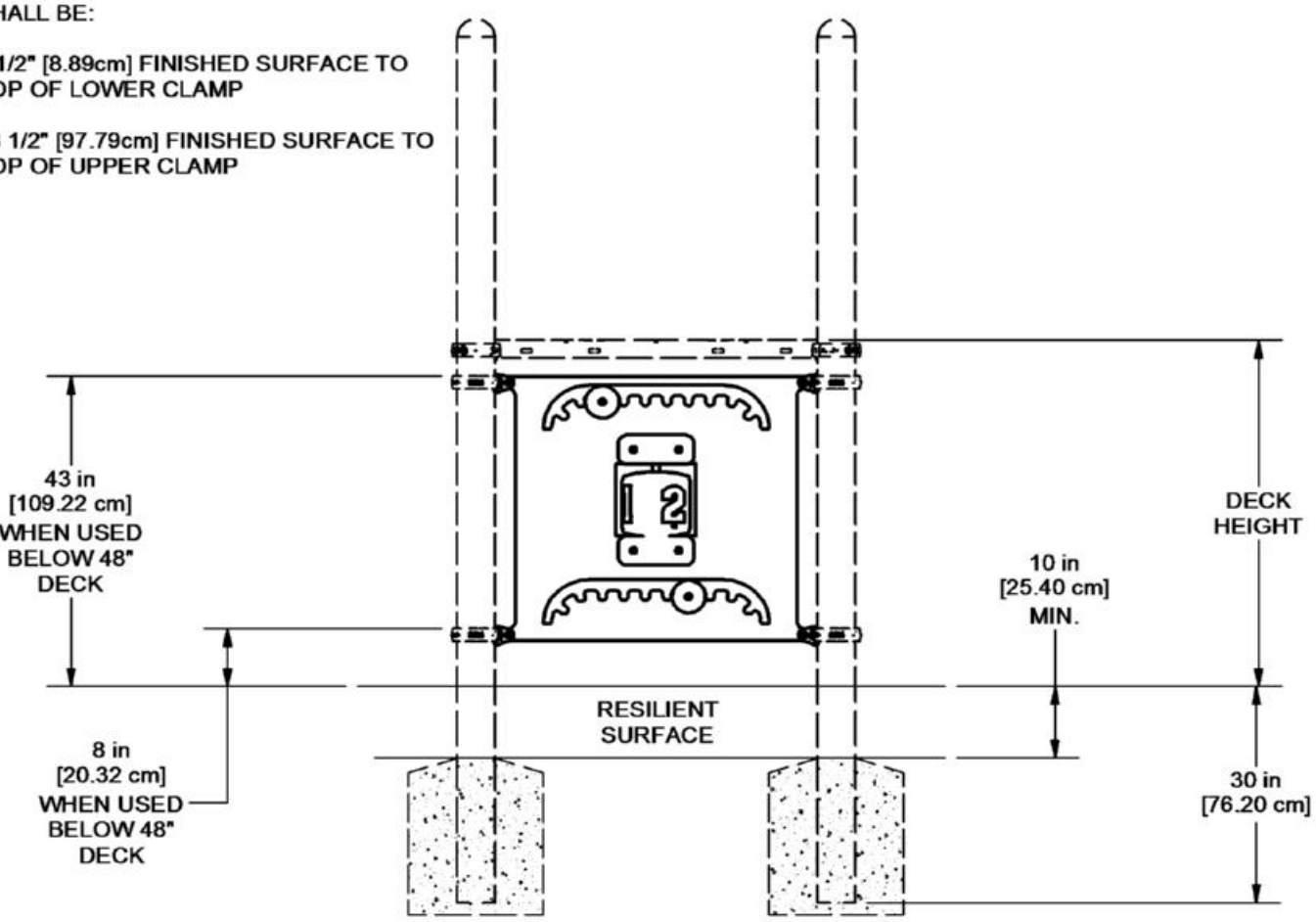


PLAN VIEW

CLAMP HEIGHT LOCATIONS WHEN USED UNDER ANY DECK HEIGHT EXCEPT 48" SHALL BE:

3 1/2" [8.89cm] FINISHED SURFACE TO TOP OF LOWER CLAMP

38 1/2" [97.79cm] FINISHED SURFACE TO TOP OF UPPER CLAMP



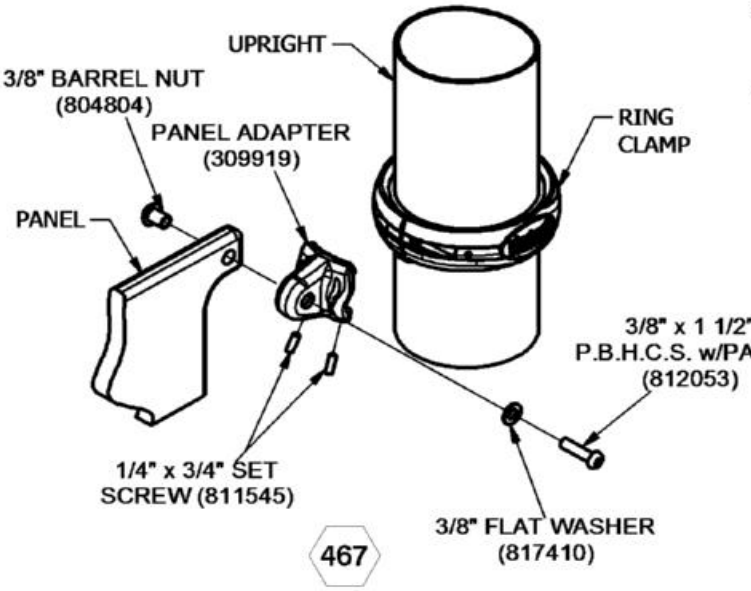
ELEVATION VIEW

BELOW DECK
SHOWN

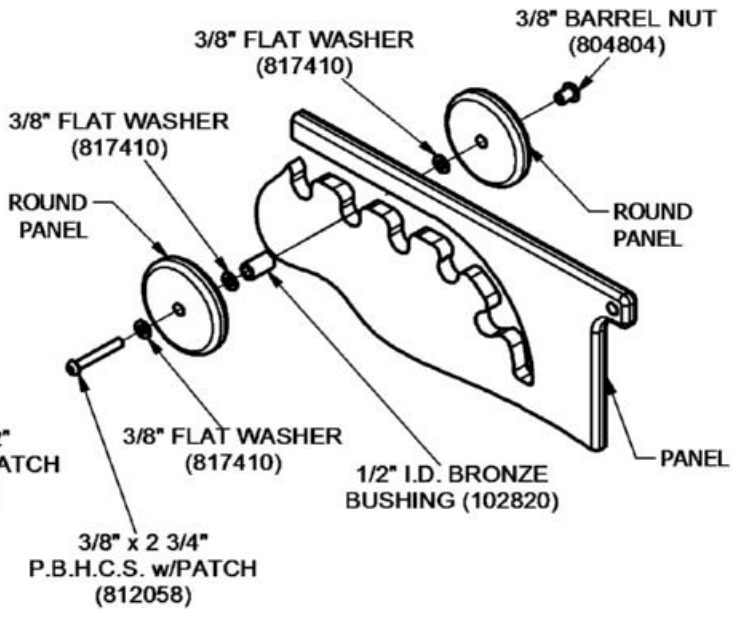
71153 Racing Game Panel

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

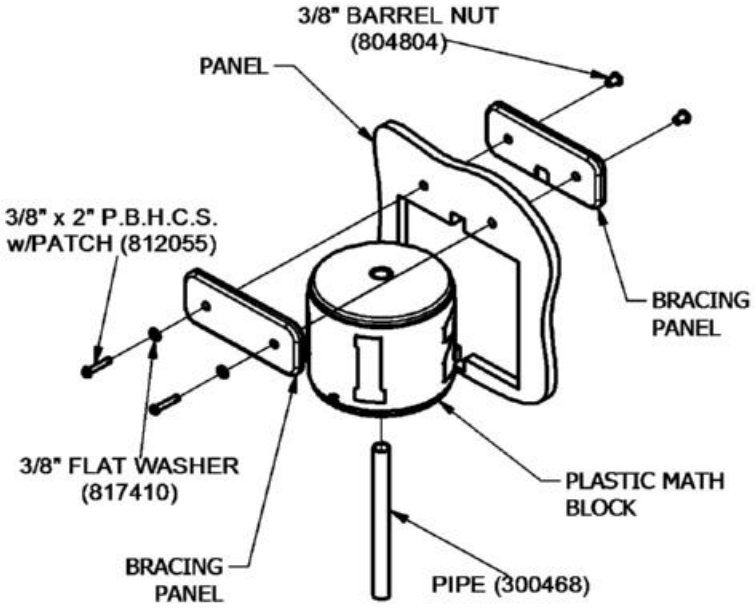
PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



467



473



474

SuperMax Play Systems

6' Horizontal Ladder - Attachment
71188 (0'-8", 1'-0" & 1'-4"); 71189 (2'-0"); 71190 (2'-8")

Parts List					
ITEM	DESCRIPTION	71188	71189	71190	PART NUMBER
1	6' HORIZONTAL LADDER	1	1	1	306416
2	VERTICAL LADDER	1	0	0	310117
2	VERTICAL LADDER	0	1	0	310120
2	VERTICAL LADDER	0	0	1	310123
3	PIPE ADAPTER	2	2	2	309915
4	RING HALF CLAMP	8	8	8	309913
	------HARDWARE COMPLETE------	1	1	1	310185
	1/4" x 1" DRIVE RIVET	8	8	8	805302
	1/4" x 3/4" SET SCREW	4	4	4	811545
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	16	16	16	812051
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	2	2	812054
	3/8" FLAT WASHER	18	18	18	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	32	32	32	817424
	3/8" LOCK WASHER	2	2	2	817334
	3/8" BARREL NUT	2	2	2	804804
	3/8" HEAVY HEX NUT	16	16	16	804200

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which four uprights are to receive the 6' Horizontal Ladder. Refer to your Top View drawing for location. Dig footings at location and depth as shown.

2. Mark positions of Ring Clamps and Ring Half Clamps on the Upright Posts at desired height. Maximum clamp height over the deck should be 45 1/2". HORIZONTAL LADDER SHOULD NOT BE ATTACHED TO ANY DECK WHICH IS HIGHER THAN 32" FOR 5-12 YEARS-OLD OR 16" FOR 2-5 YEARS-OLD.

3. Loosely attach all Ring Clamps to the uprights. Refer to the seperate Ring Clamp Installation sheet.

4. To attach the Vertical Ladder: Slip Pipe Adapters over Vertical Ladder attachment pipes, then, placing Vertical Ladder legs into dug holes, hook Pipe Adapters onto Ring Clamps. Attach using 1/4" x 3/4" Set Screws as shown in Detail 448. Attach Pipe Adapter to Vertical Ladder using 3/8" x 1-3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut as shown in Detail 448. Note: For 0'-8" & 1'-0" deck heights use 1'-4" Vertical Ladder, cut 8" off of legs for 0'-8" deck height and cut 4" off legs for 1'-0" deck height.

5. To attach the Horizontal Ladder: With sufficient manpower, lift the Horizontal Ladder into position and attach to Upright Posts using Ring Half Clamps, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Heavy Hex Nut as shown in Detail 475. Provide vertical support to prevent the Ring Clamps from sliding down the upright posts.

6' Horizontal Ladder - Attachment
71188 (0'-8", 1'-0" & 1'-4"); 71189 (2'-0"); 71190 (2'-8")

6. When the entire assembly is plumb and level, tighten all fasteners. Pour concrete footings within 4" of the top and taper away from posts for water drainage. Allow to cure at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

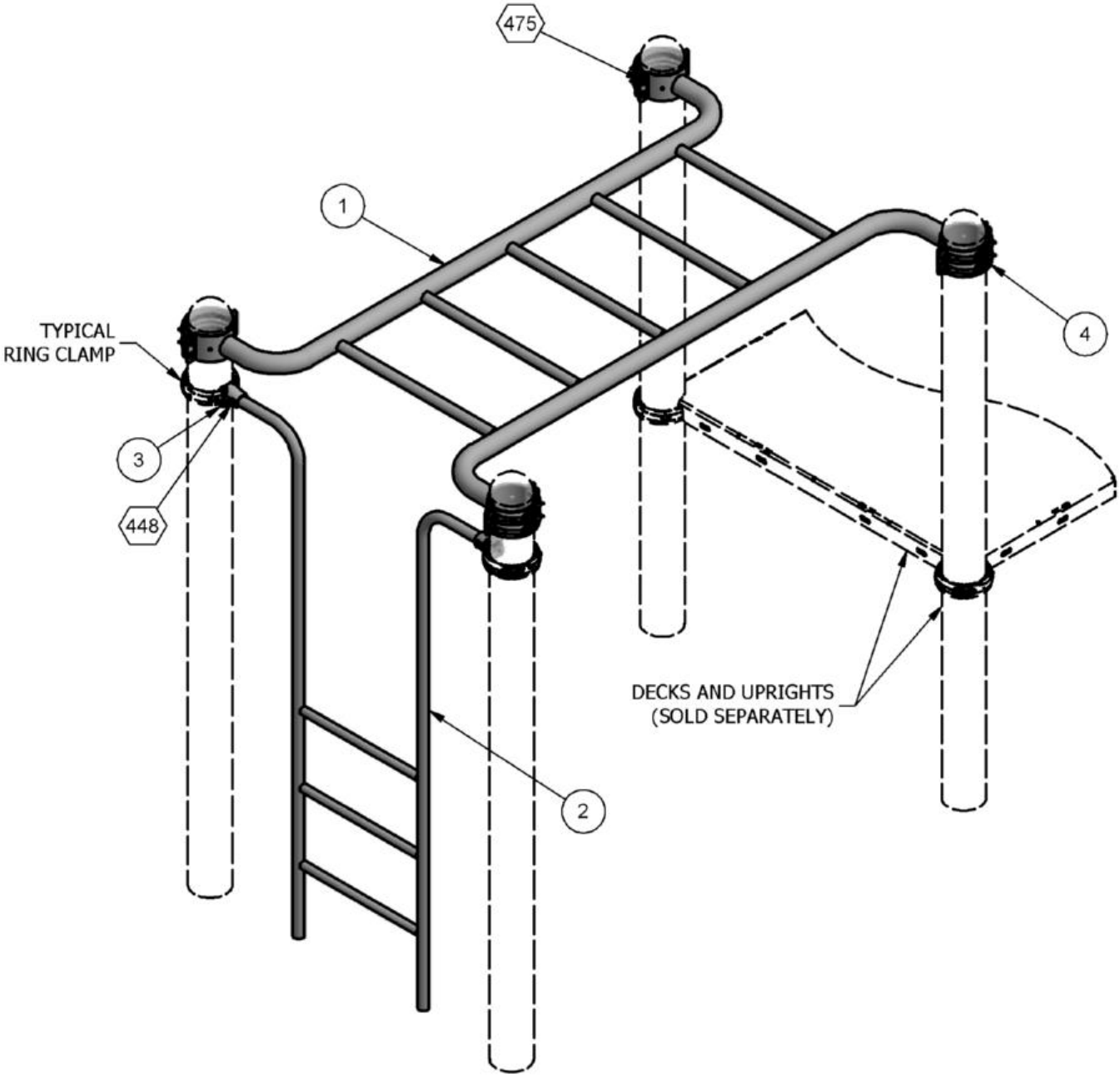
7. When structure is finished and satisfactory, tighten all fastener and install Drive Rivets in all clamps to ensure clamps cannot slide down the posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety Guidelines.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

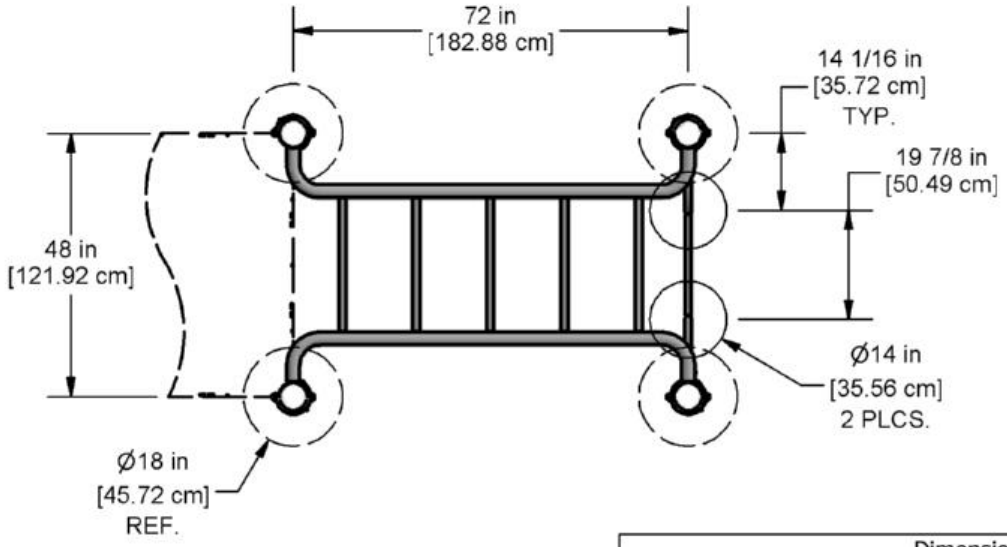
6' Horizontal Ladder - Attachment
71188 (0'-8", 1'-0" & 1'-4"); 71189 (2'-0"); 71190 (2'-8")



FINISHED ASSEMBLY
71190 SHOWN

⬡ = INSTALLATION DETAIL

6' Horizontal Ladder - Attachment
71188 (0'-8", 1'-0" & 1'-4"); 71189 (2'-0"); 71190 (2'-8")

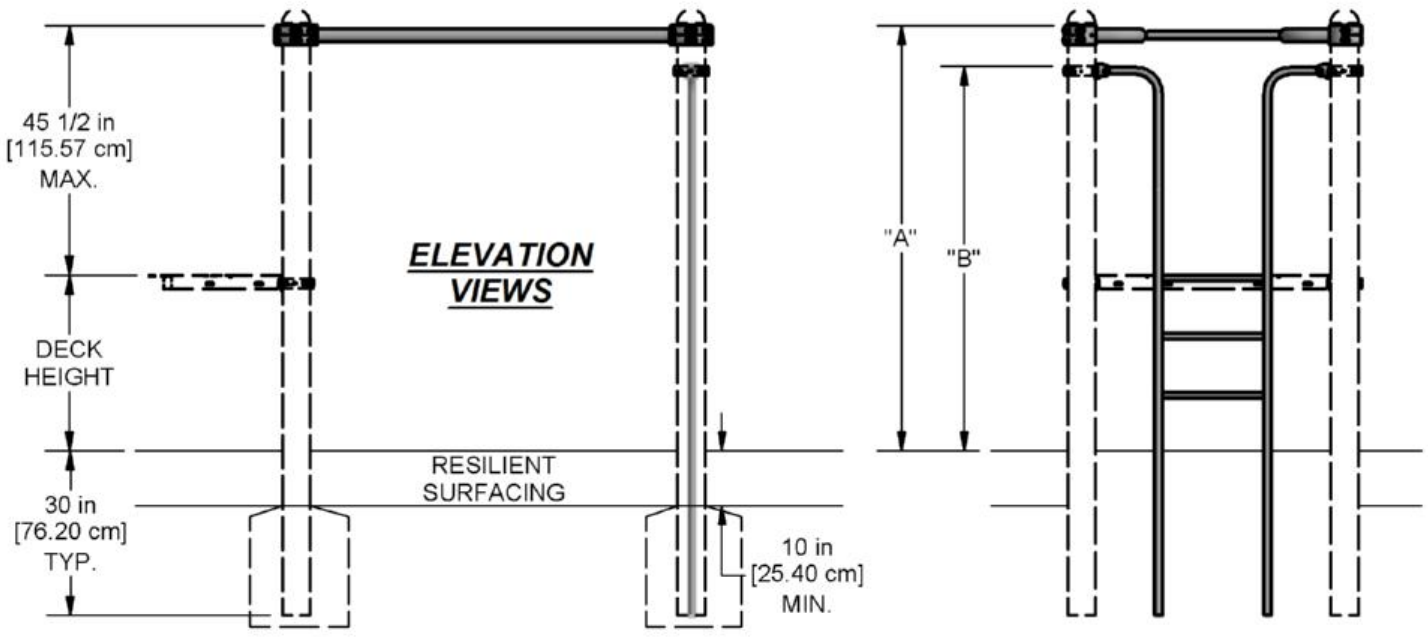


PLAN VIEW

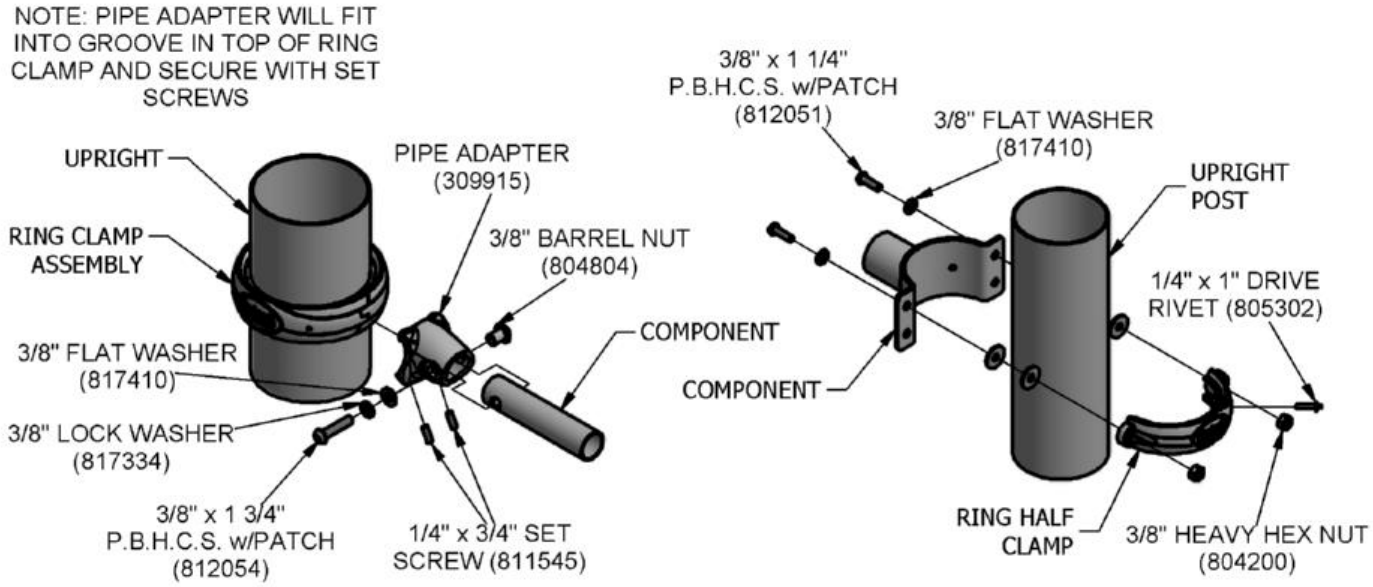
CONCRETE REQUIRED
0.14 CUBIC YARDS
[0.10 CUBIC METERS]

NOTE: If overhead component is to be installed at an 0'-8" or 1'-0" deck height, use 1'-4" Vertical Ladder and cut 8" off legs for 0'-8" deck or cut 4" off legs for 1'-0" deck.

Dimension Table			
Product	Deck Height	Dim "A"	Dim "B"
71188	0'-8"	53 1/2" [135.89cm]	46 1/16" [117.04cm]
71188	1'-0"	57 1/2" [146.05cm]	50 1/16" [127.20cm]
71188	1'-4"	61 1/2" [156.21cm]	54 1/16" [137.36cm]
71189	2'-0"	69 1/2" [176.53cm]	62 1/16" [157.68cm]
71190	2'-8"	77 1/2" [196.85cm]	70 1/16" [178.03cm]



6' Horizontal Ladder - Attachment
71188 (0'-8", 1'-0" & 1'-4"); 71189 (2'-0"); 71190 (2'-8")



448

475

SuperMax Play Systems

71317 Single U-Handle

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	U-HANDLE ASSEMBLY	1	310446
2	RING HALF CLAMP	2	309913
	-----HARDWARE COMPLETE-----	1	312231
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
	3/8" FLAT WASHER	4	817410
	3/8" HEAVY HEX NUT	4	804200
	3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
	1/4" x 1" DRIVE RIVET	2	805302

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck to receive the U-Handle Assembly. Refer to your Top View drawing for location.

2. Mark position of Clamp on the Upright Post. See Elevation View.

3. Attach U-Handle Assembly to Upright Post using Ring Half Clamp, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Heavy Hex Nut as shown in Detail 475.

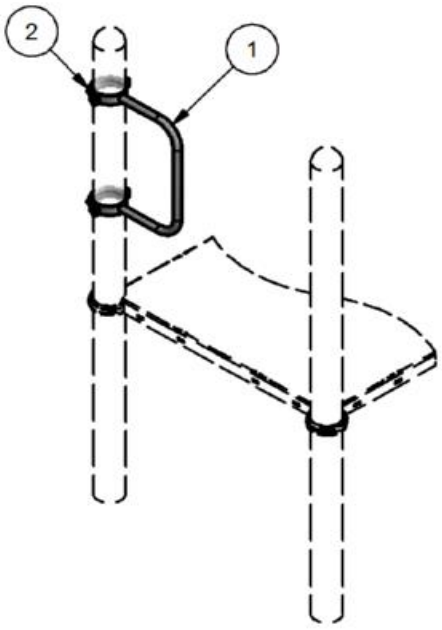
4. Plumb and level the U-Handle, then tighten all fasteners.

5. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

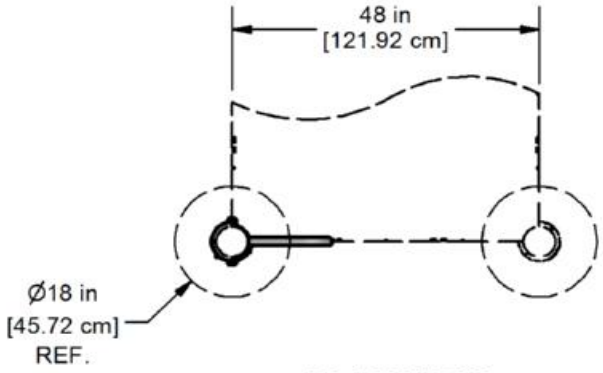
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

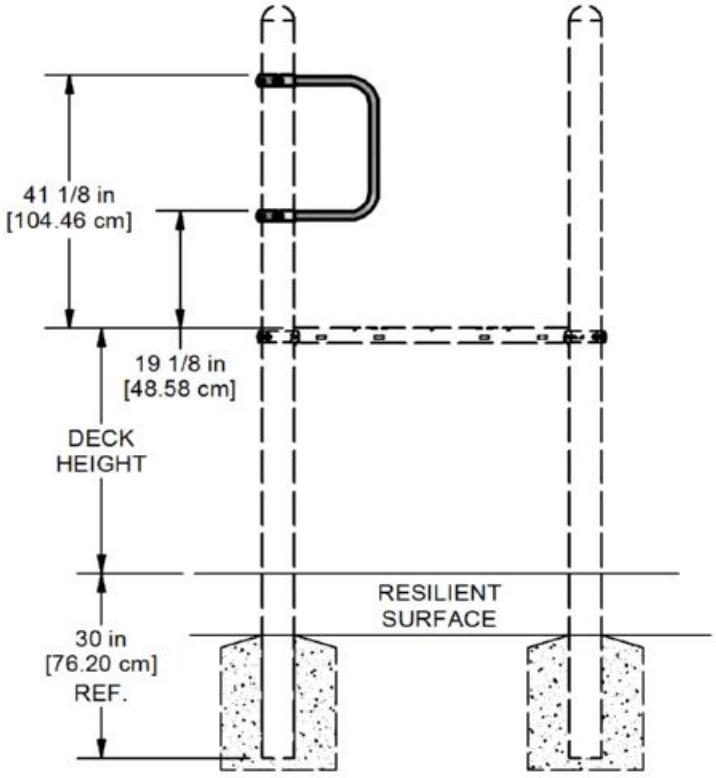
71317 Single U-Handle



DECKS AND UPRIGHTS
(SOLD SEPERATELY)



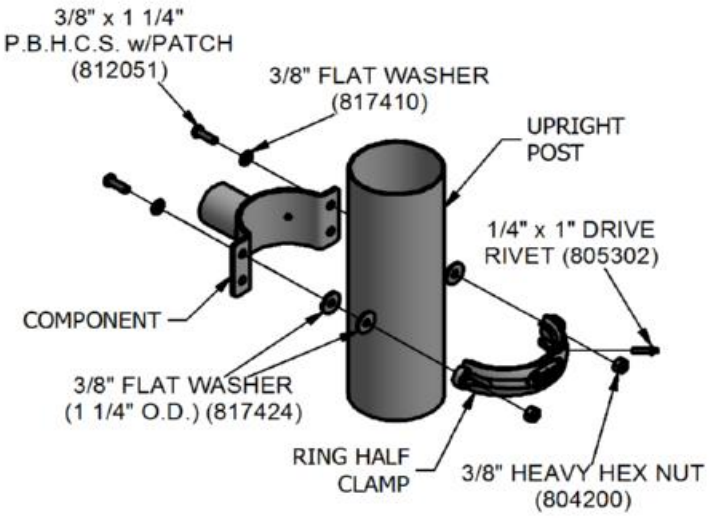
PLAN VIEW



ELEVATION VIEW

⬡ = INSTALLATION DETAIL

71317 Single U-Handle



475

71338 Hand Pedaler

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	HAND PEDALER ASSEMBLY	1	308375
2	RING HALF CLAMP	2	309913
	-----HARDWARE COMPLETE-----	1	310570
	1/4" x 1" DRIVE RIVET	2	805302
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
	3/8" FLAT WASHER	4	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
	3/8" HEAVY HEX NUT	4	804200

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Select the appropriate Upright Post to receive the Hand Pedaler. Refer to your overhead drawing for location.

2. Mark position of Clamps on the Upright Post. See Elevation Views.

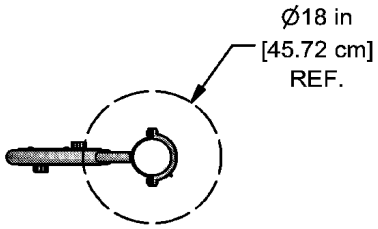
3. Attach Hand Pedaler to Upright Post using Ring Half Clamp, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Heavy Hex Nut as shown in Detail 475.

4. When structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

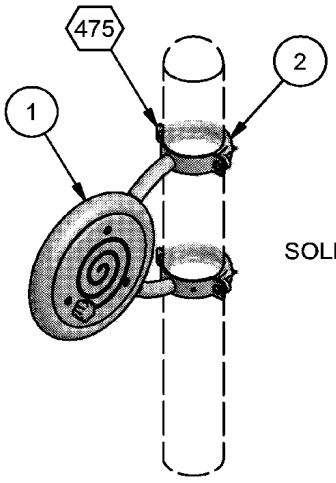
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

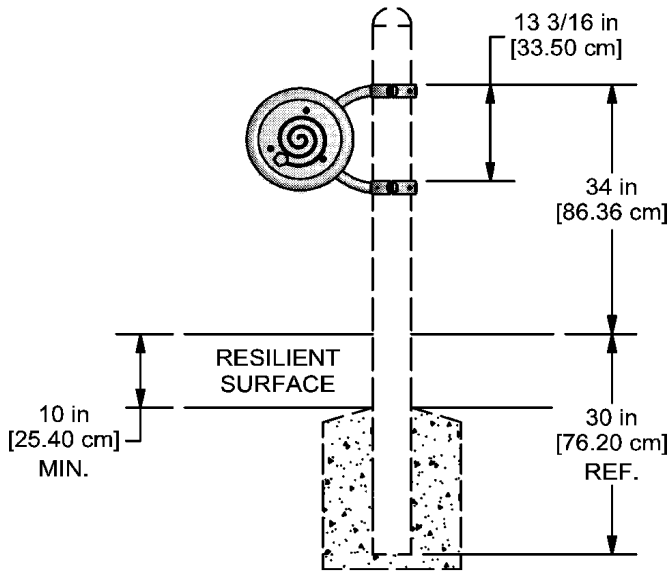
71338 Hand Pedaler



PLAN VIEW

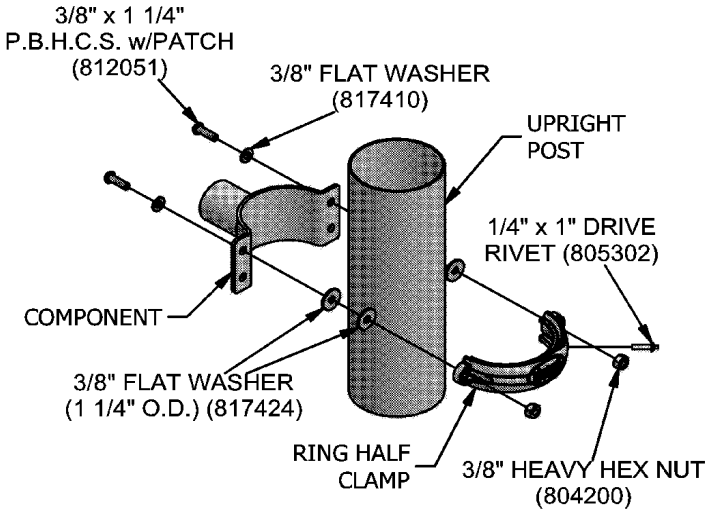


FINISHED ASSEMBLY



ELEVATION VIEW

71338 Hand Pedaler



475

SuperMax Play Systems

71346 Single Seat

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	SEAT SUPPORT	1	312847
2	SEAT	1	207778
3	RING HALF CLAMP	1	309913
	-----HARDWARE COMPLETE-----	1	312850
	1/4" x 1" DRIVE RIVET	1	805302
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	2	812051
	3/8" FLAT WASHER	2	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
	3/8" HEAVY HEX NUT	2	804200
	3/8" LOCKWASHER	1	817334
	3/8" T-NUT	1	804556
	3/8" x 2 1/4" P.B.H.C.S. w/PATCH	1	812056

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Select the appropriate Upright Post to receive the Single Seat. Refer to your overhead drawing for location.

2. Mark position of Clamp on the Upright Post. See Elevation Views.

3. Attach Seat Support to Upright Post using Ring Half Clamp, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Heavy Hex Nut as shown in Detail 475.

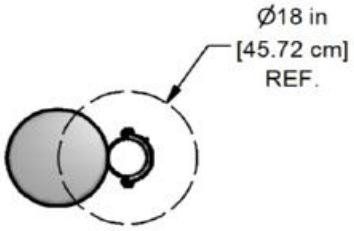
4. Attach Seat to Seat Support using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher and 3/8" T-Nut as shown in Detail 714.

5. When structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

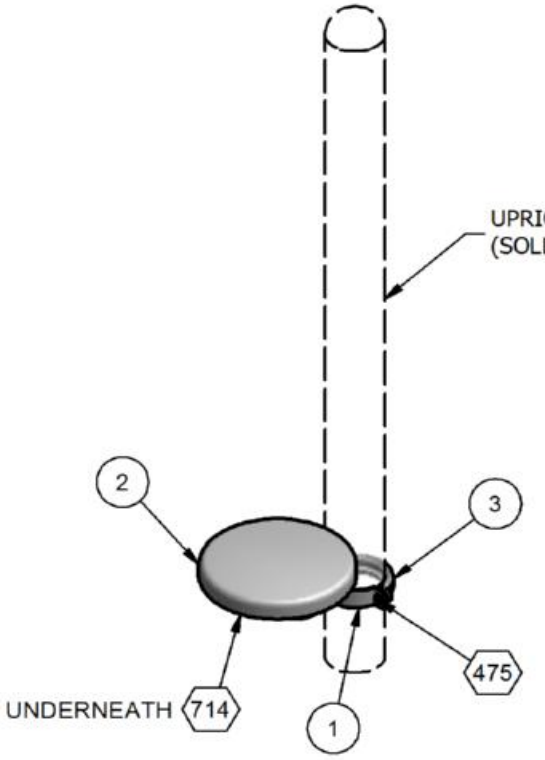
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

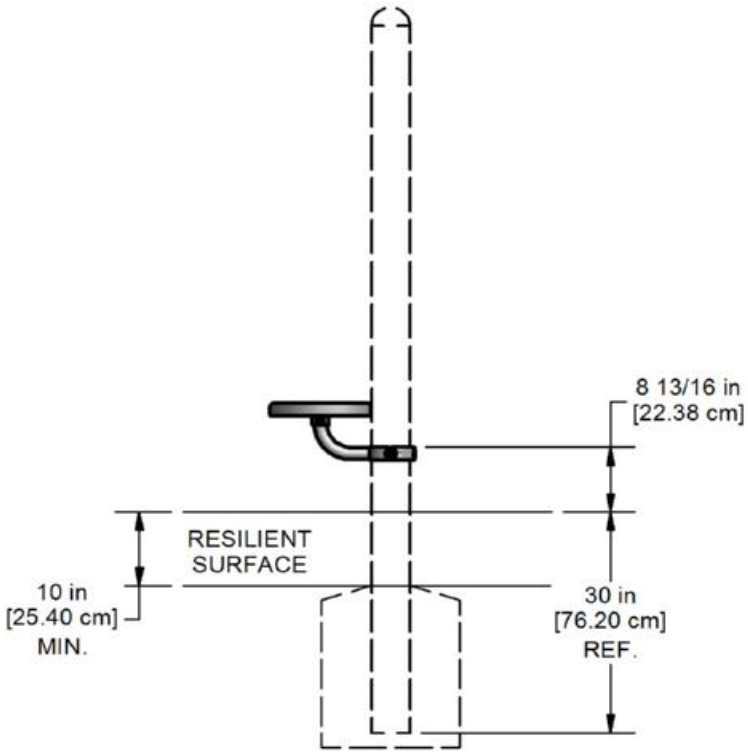
71346 Single Seat



PLAN VIEW



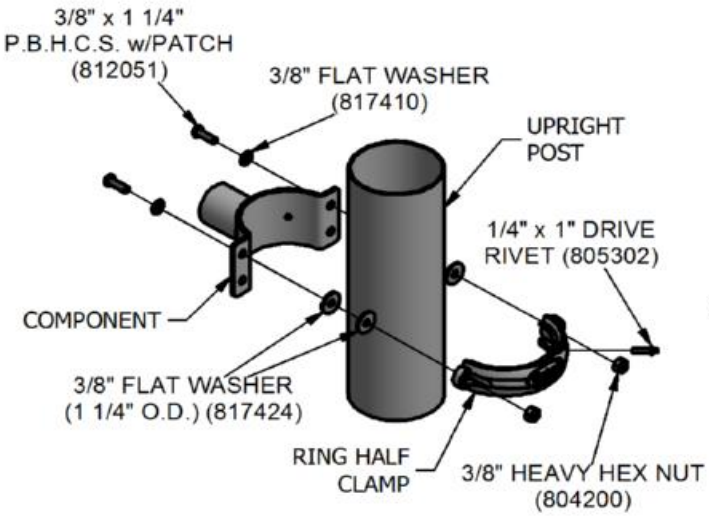
FINISHED ASSEMBLY



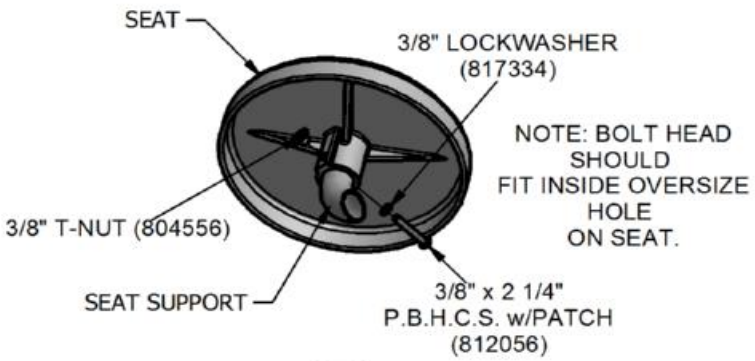
ELEVATION VIEW

⬡ = INSTALLATION DETAIL

71346 Single Seat



475



714

SuperMax Play Systems

Vertical Ladder 71381 (1'-4" Rise); 71382 (2'-0" Rise); 71383 (2'-8" Rise); 71384 (3'-4" Rise); 71639 (4'-0" Rise)

Parts List							
ITEM	DESCRIPTION	71381	71382	71383	71384	71639	PART NUMBER
1	ENTRANCE BARRIER WALL	1	1	1	1	1	309967
2	STEP PANEL	1	0	0	0	0	302573
2	STEP PANEL	0	1	0	0	0	301257
2	STEP PANEL	0	0	1	0	0	307377
2	STEP PANEL	0	0	0	1	0	307379
2	STEP PANEL	0	0	0	0	1	307381
3	PIPE ADAPTER	2	2	2	2	2	309915
	FLAT BRACKET	2	2	2	2	2	300980
	-----HARDWARE COMPLETE-----	1	1	1	1	1	310656
	1/4" x 3/4" SET SCREW	4	4	4	4	4	811545
	3/8" x 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	812052
	3/8" x 1" P.B.H.C.S. w/PATCH	8	8	8	8	8	812050
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	2	2	2	2	812054
	3/8" FLAT WASHER	10	10	10	10	10	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	8	8	8	8	8	817424
	3/8" LOCKWASHER	2	2	2	2	2	817334
	3/8" BARREL NUT	10	10	10	10	10	804804
	3/8" LOCK NUT	4	4	4	4	4	804353

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which decks are to receive the Vertical Ladder, refer to your overhead drawing for location.

2. Loosely attach Ring Clamps to Uprights at noted heights using information provided in Ring Clamp Installation Sheet.

3. Attach the Flat Brackets to the Step Panel using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers and 3/8" Barrel Nuts as shown in Detail 148. Then, attach the Flat Brackets to the lower deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washers and 3/8" Lock Nuts as shown in Detail 148.

4. Slip the Pipe Adapters onto the Entrance Barrier Wall attachment pipes, then connect using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washers and 3/8" Barrel Nuts as shown in Detail 448. Hook the Pipe Adapters onto the Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448.

5. Attach Entrance Barrier Wall and Step Panel to holes on side of upper deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washers (1 1/4" O.D.), and 3/8" Barrel Nuts as shown in Detail 149.

Vertical Ladder 71381 (1'-4" Rise); 71382 (2'-0" Rise); 71383 (2'-8" Rise); 71384 (3'-4" Rise); 71639 (4'-0" Rise)

6. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

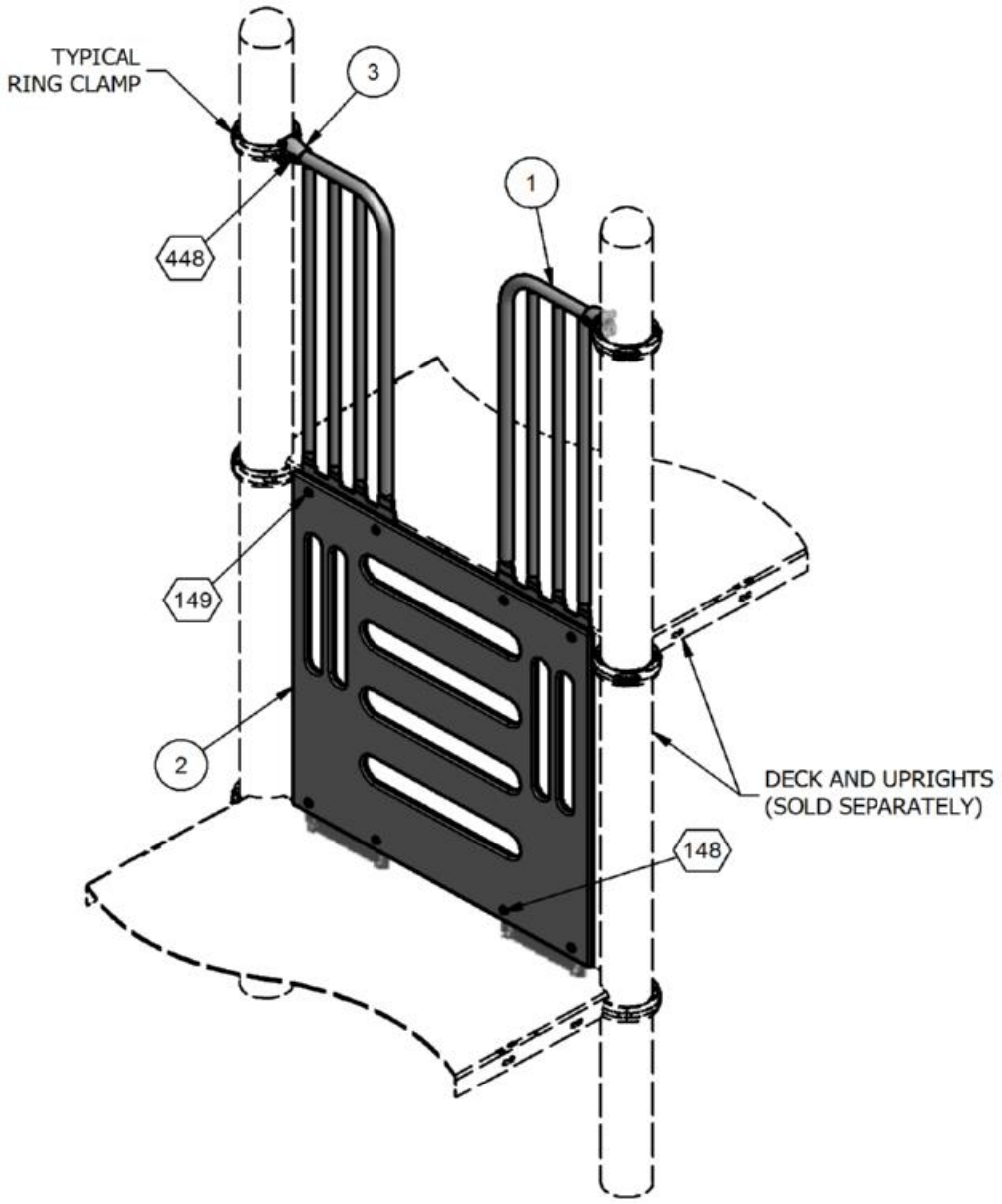
7. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

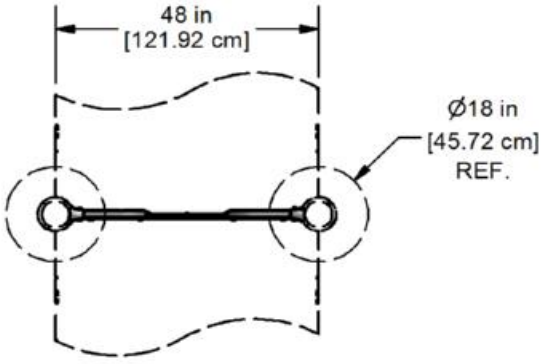
Vertical Ladder 71381 (1'-4" Rise); 71382 (2'-0" Rise); 71383 (2'-8" Rise); 71384 (3'-4" Rise); 71639 (4'-0" Rise)



⬡ = INSTALLATION DETAIL

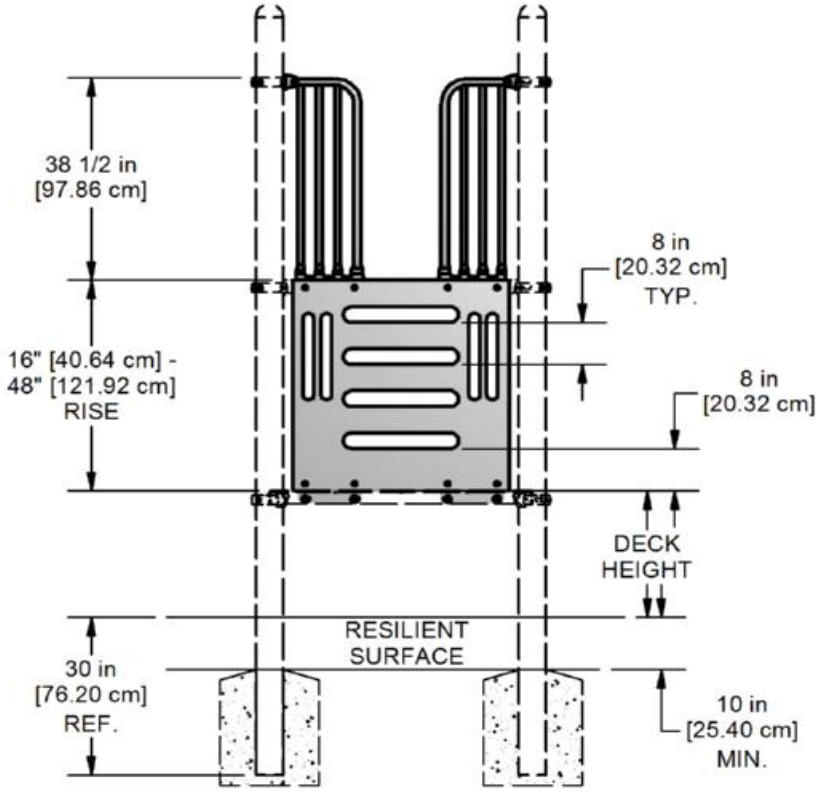
FINISHED ASSEMBLY
71384 SHOWN

Vertical Ladder 71381 (1'-4" Rise); 71382 (2'-0" Rise); 71383 (2'-8" Rise); 71384 (3'-4" Rise); 71639 (4'-0" Rise)



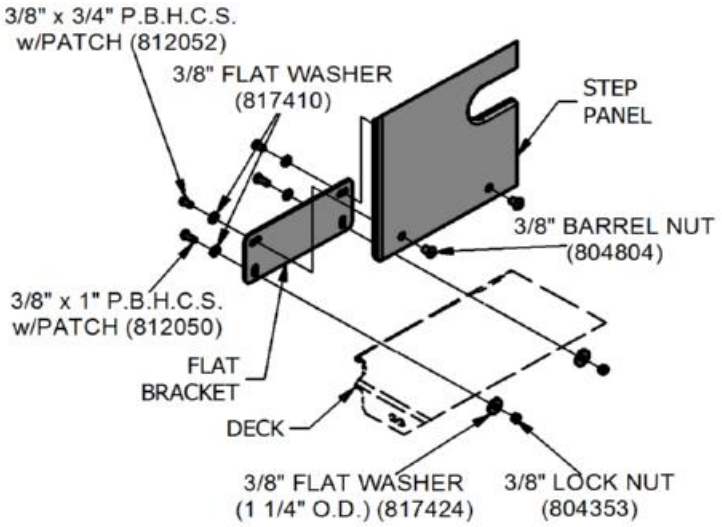
NOTE: STEP PANEL SHOULD BE ORIENTATED SO THAT THE DISTANCE FROM THE LOWER DECK TO THE FIRST STEP IS 8"

PLAN VIEW

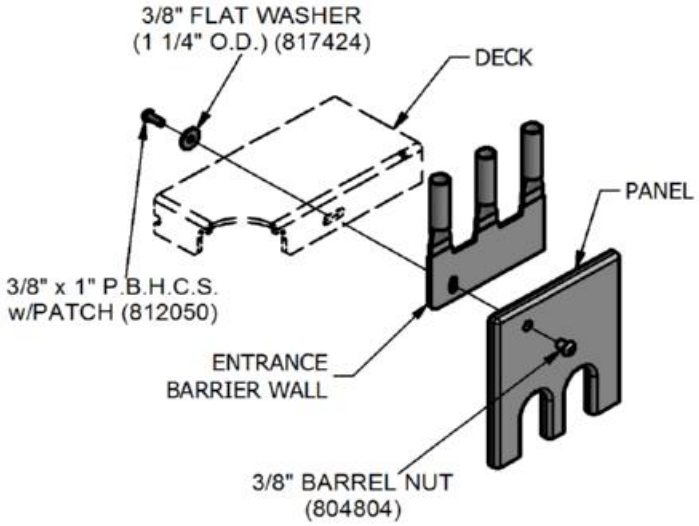


ELEVATION VIEW

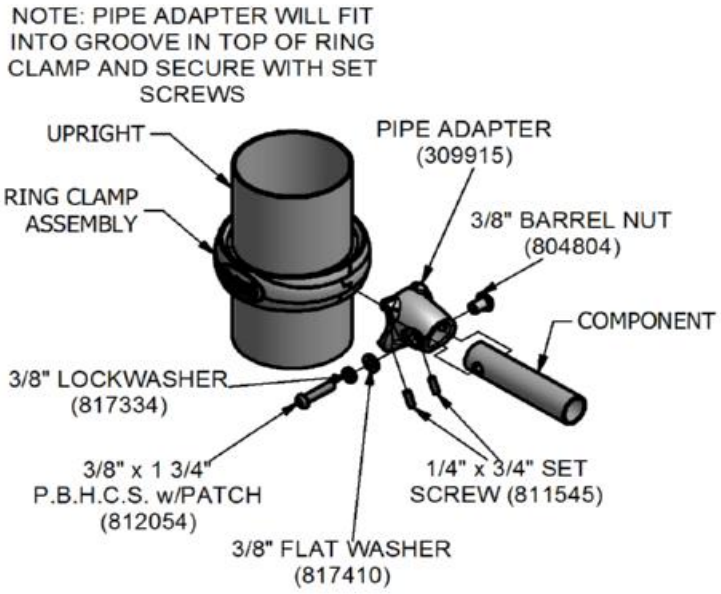
Vertical Ladder 71381 (1'-4" Rise); 71382 (2'-0" Rise); 71383 (2'-8" Rise); 71384 (3'-4" Rise); 71639 (4'-0" Rise)



148



149



448

SuperMax Play Systems

71385 BALCONY DECK
71386 BALCONY DECK w/PLAYWHEEL

Parts List -for- 71385			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	BALCONY DECK	1	312403
2	BALCONY WALL	1	312408
3	PIPE ADAPTER	2	309915
	-----HARDWARE COMPLETE-----	1	310657
	3/8" x 3/4" P.B.H.C.S. w/PATCH	3	812052
	3/8" x 1" P.B.H.C.S. w/PATCH	4	812050
	3/8" FLAT WASHER (1 1/4" O.D.)	14	817424
	3/8" FLAT WASHER	2	817410
	3/8" BARREL NUT	2	804804
	3/8" LOCK NUT	7	804353
	1/4" x 3/4" SET SCREW	4	811545
	3/8" LOCK WASHER	2	817334
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054

Parts List -for- 71386			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	BALCONY DECK	1	312403
2	BALCONY WALL	1	312410
3	PIPE ADAPTER	2	309915
4	STEERING WHEEL ASSEMBLY	1	163235
	-----HARDWARE COMPLETE-----	1	310658
	1/4" x 3/4" SET SCREW	4	811545
	3/8" BARREL NUT	2	804804
	3/8" FLAT WASHER	4	817410
	3/8" x 1" P.B.H.C.S. w/PATCH	4	812050
	3/8" FLAT WASHER (1 1/4" O.D.)	14	817424
	3/8" LOCK NUT	7	804353
	3/8" x 3/4" P.B.H.C.S. w/PATCH	5	812052
	3/8" LOCK WASHER	4	817334
	3/8" ACORN NUT	2	804002
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Place Balcony Deck on a flat surface. If necessary, using a 7/16" drill bit, ream out excess plastisol coating from the (4) holes located on the flange, as well as the (4) holes located on the flange of the existing deck for attachment. Be careful not to expose steel frame.

2.Position the Balcony Deck against the flange of the existing deck and fasten the flanges together using 3/8" x 1" P.B.H.C.S. with 3/8" Flat Washers and 3/8" Lock Nuts as shown in Detail 090.

3 .Attach Ring Clamps on uprights at height shown in elevation view (See seperate Ring Clamp Installation Sheet). Attach Balcony Wall to Ring clamps using Pipe Adapter as shown in Detail 448. Fasten bottom tabs of Balcony Wall to the Balcony Deck as shown in Detail 026.

4. For 71386 only: Attach Steering Wheel Assembly to the Balcony Wall using two each 3/8" x 3/4" P.B.H.C.S., 3/8" Flatwasher, 3/8" Lockwasher and 3/8" Acorn Nut as shown in Detail 091.

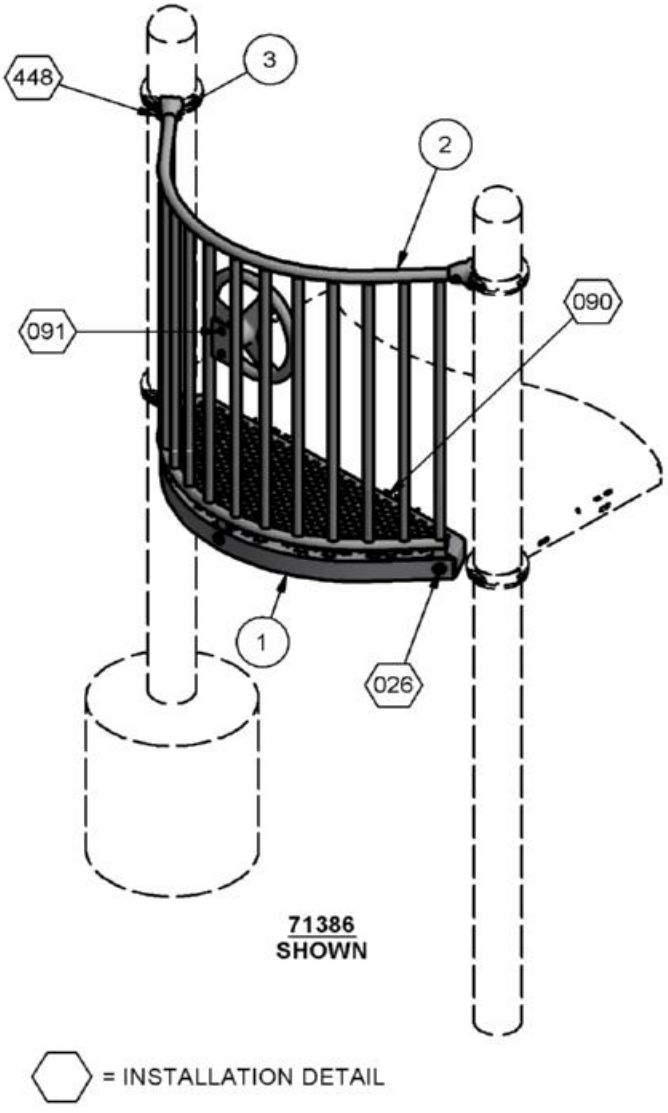
5.When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See a Deck Clamp subassembly sheet. It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Install resilient surfacing material within the use zone of play structure, in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

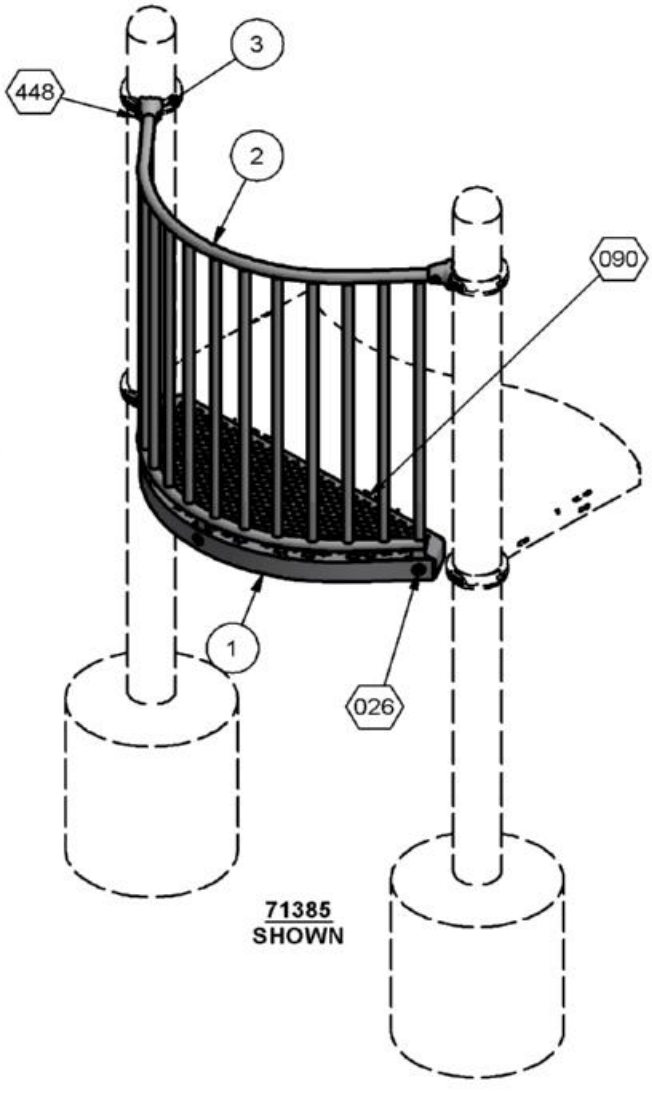
71385 BALCONY DECK
71386 BALCONY DECK w/PLAYWHEEL

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



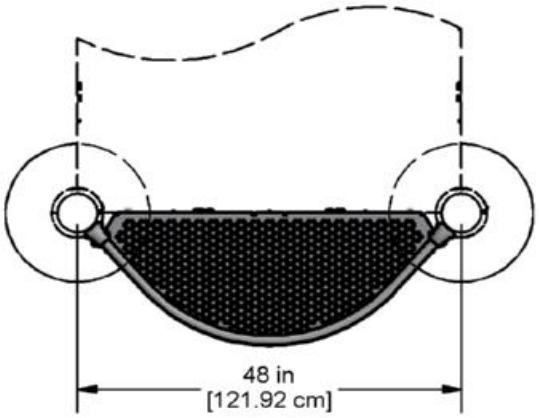
71386
SHOWN



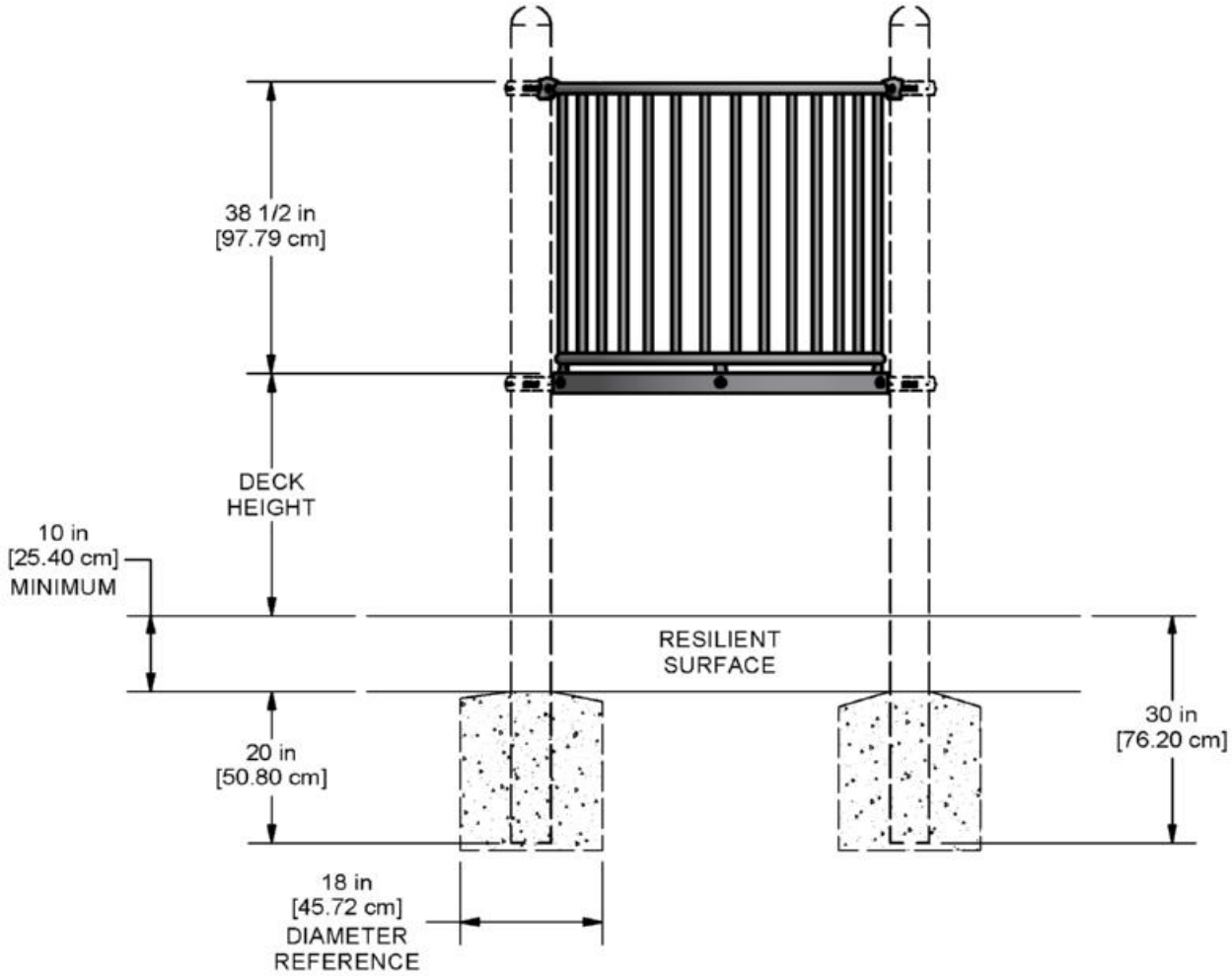
71385
SHOWN

⬡ = INSTALLATION DETAIL

71385 BALCONY DECK
71386 BALCONY DECK w/PLAYWHEEL

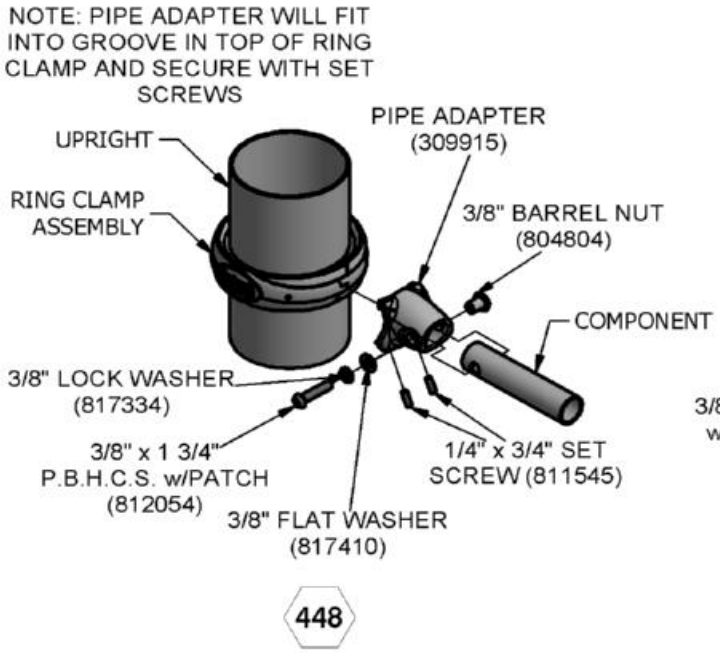


PLAN VIEW

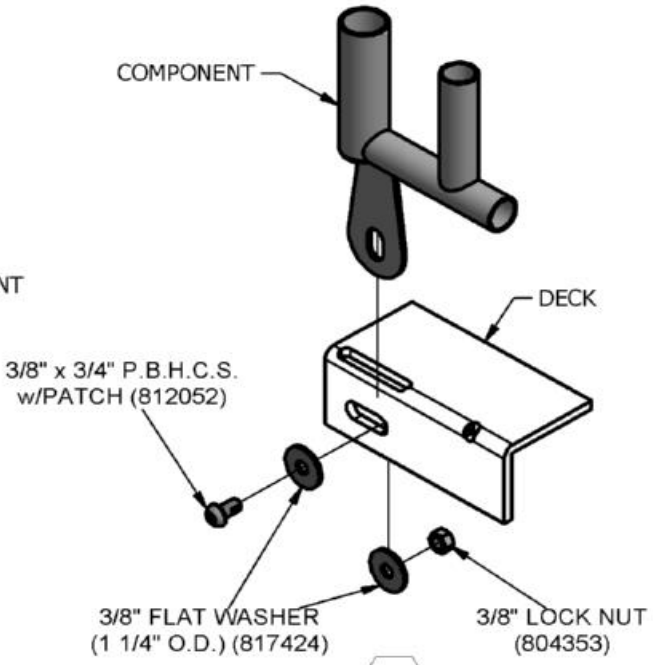


ELEVATION VIEW

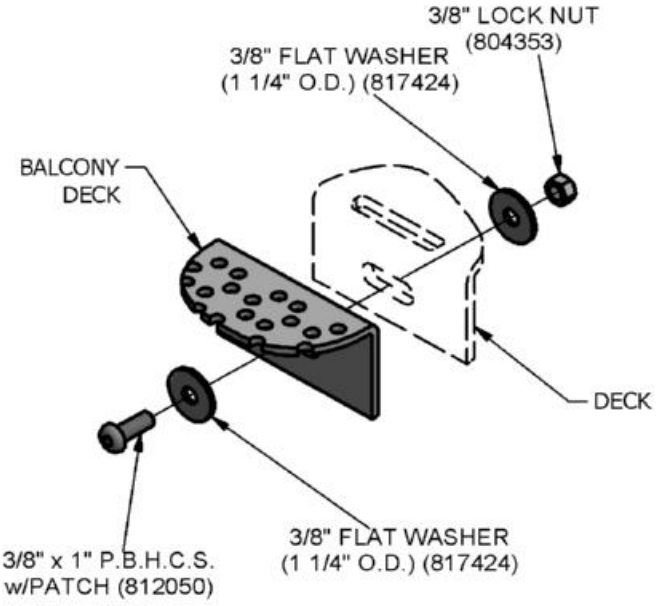
71385 BALCONY DECK
71386 BALCONY DECK w/PLAYWHEEL



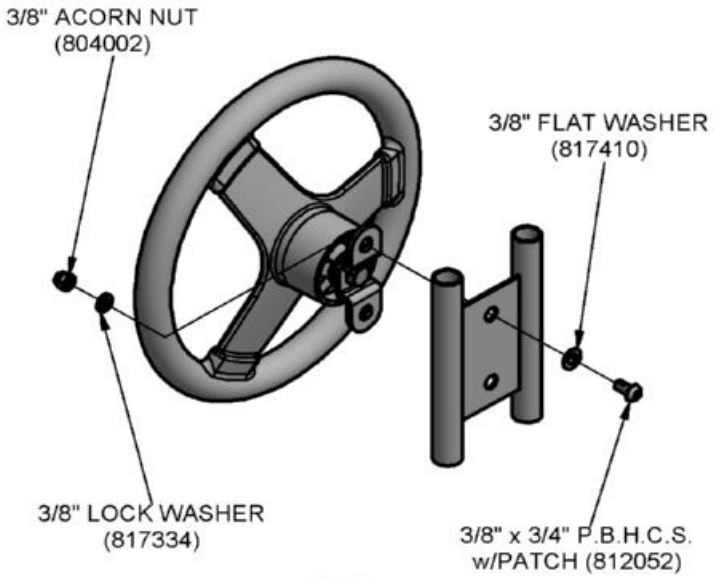
448



026



090



091

SuperMax Play Systems

71395 Mini Panel
For Small Activities, See Installation Sheet 7200

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	MINI AMAZE PANEL	1	307676
2	MOUNTING BRACKET	2	404388
3	RING HALF CLAMP	2	309913
	-----HARDWARE COMPLETE-----	1	310746
	1/4" x 1" DRIVE RIVET	2	805302
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
	3/8" FLAT WASHER	6	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
	3/8" BARREL NUT	2	804804
	3/8" HEAVY HEX NUT	4	804200

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Select the appropriate Upright Post to receive the Mini Panel. Refer to your overhead drawing for location.

2. Mark position of Clamps on the Upright Post. See Elevation Views.

3. Attach Mounting Bracket to Upright using Ring Half Clamp, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers, 3/8" Flat Washers (1 1/4" O.D.) and 3/8" Heavy Hex Nuts as shown in Detail 475.

4. Attach Mini Panel to Bracket using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers, and 3/8" Barrel Nuts as shown in Detail 539.

5. Plumb and level the Mini Panel, then tighten all fasteners.

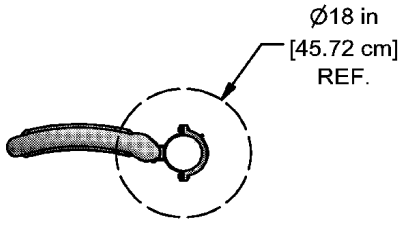
When structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

MAINTENANCE PROCEDURE:

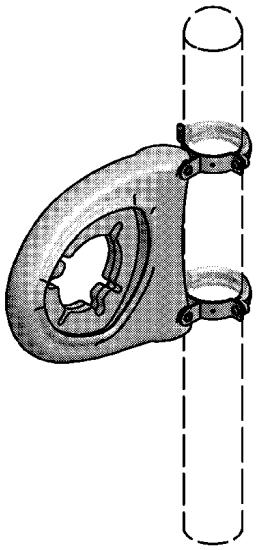
Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71395 Mini Panel
For Small Activities, See Installation Sheet 7200

NOTE:
OPENING ON PANEL MUST BE FILLED WITH A SMALL ACTIVITY BEFORE PLAYGROUND IS OPERATIONAL.

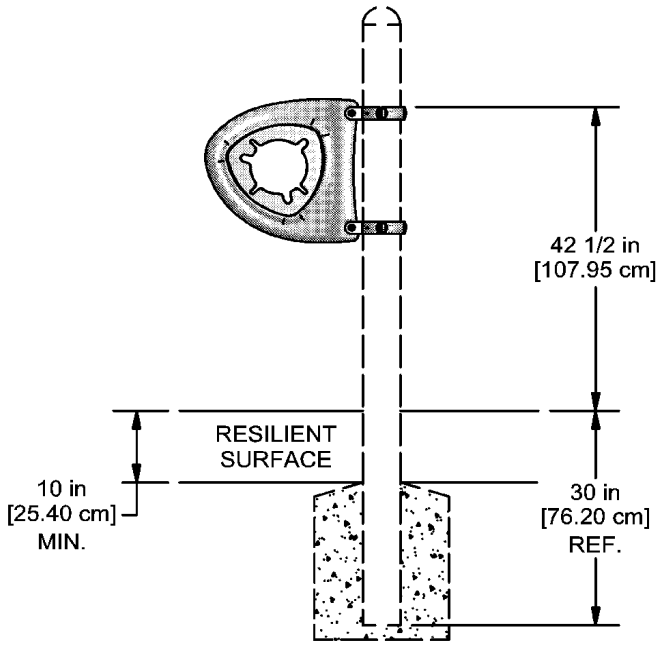


PLAN VIEW



UPRIGHT
SOLD SEPERATELY

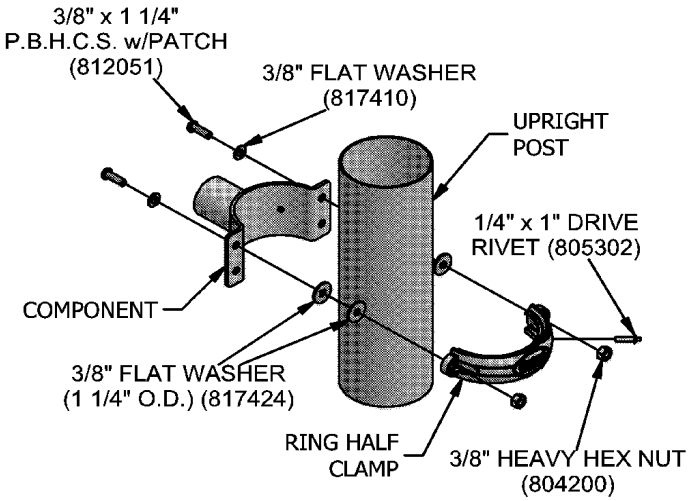
FINISHED ASSEMBLY



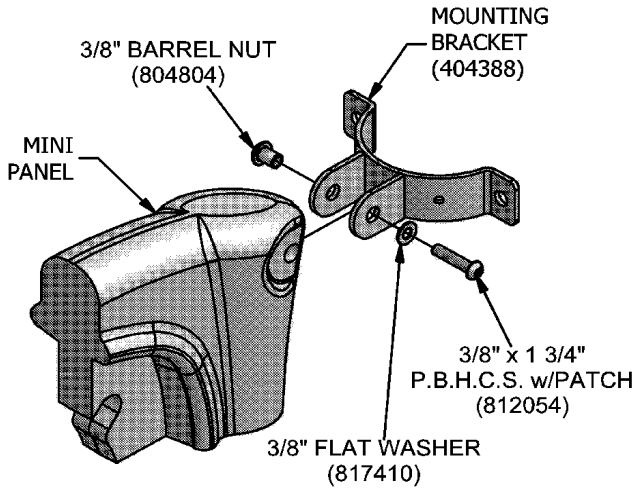
ELEVATION VIEW

⬡ = INSTALLATION DETAIL

71395 Mini Panel
For Small Activities, See Installation Sheet 7200



475



539

SuperMax Play Systems

71464 Slide Transfer

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	TRANSFER PLATFORM	1	311035
2	UPRIGHT ASSEMBLY	2	309704
3	BARRIER	2	311045
4	DECK ADAPTER	4	309921
5	PIPE ADAPTER	4	309915
6	ALUMINUM END CAP	4	212993
	-----HARDWARE COMPLETE-----	1	311052
	1/4" x 3/4" SET SCREW	16	811545
	3/8" x 3/4" P.B.H.C.S. w/PATCH	2	812052
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	812054
	3/8" FLAT WASHER	4	817410
	3/8" LOCK WASHER	8	817334
	3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
	3/8" BARREL NUT	4	804804
	3/8" LOCK NUT	2	804353
	3/16" x 13/32" DRIVE RIVET	8	805366

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Slide Transfer, refer to your overhead drawing for location.

2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.

3. Hook Deck Adapters onto lower Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 447.

4. Attach Transfer Platform to Deck Adapters using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers (1 1/4" O.D.) and 3/8" Lock Washers as shown in Detail 447. Keep Slide Transfer supported.

5. Attach Pipe Adapters to Barrier using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washers, and 3/8" Barrel Nut as shown in Detail 448. Be aware of orientation as it is critical. Hook Pipe Adapters onto Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448. Attach Barrier to side of Slide Transfer using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers (1 1/4" O.D.) and 3/8" Lock Nuts as shown in Detail 026.

6. Attach Upright Assemblies by Hooking Pipe Adapters onto Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448 and attaching Deck Adapters to Slide Transfer using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers (1 1/4" O.D.) and 3/8" Lock Washers as shown in Detail 447. Attach Caps to uprights using Detail 597.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

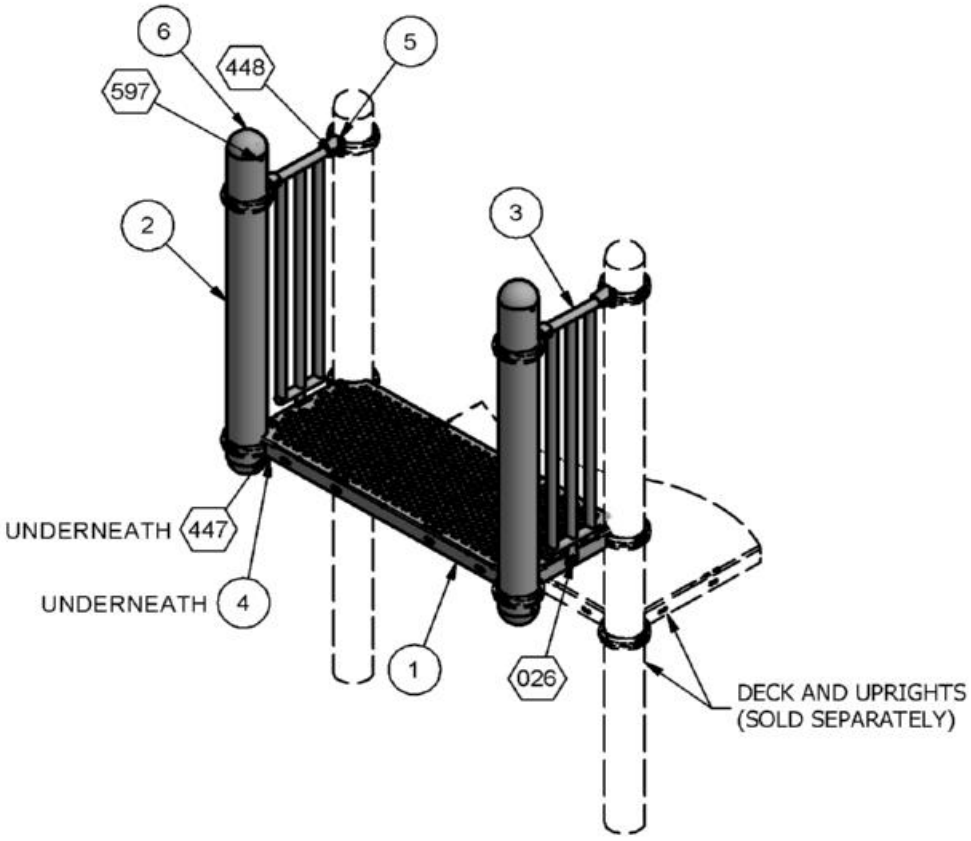
71464 Slide Transfer

When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the ***Safety Guidelines.*** Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

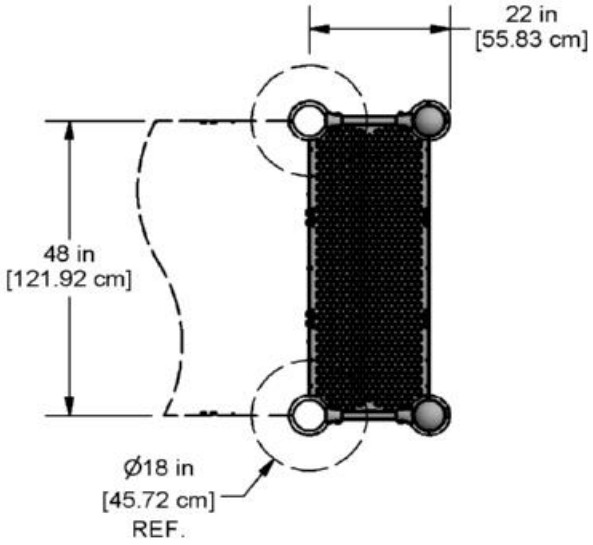
Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



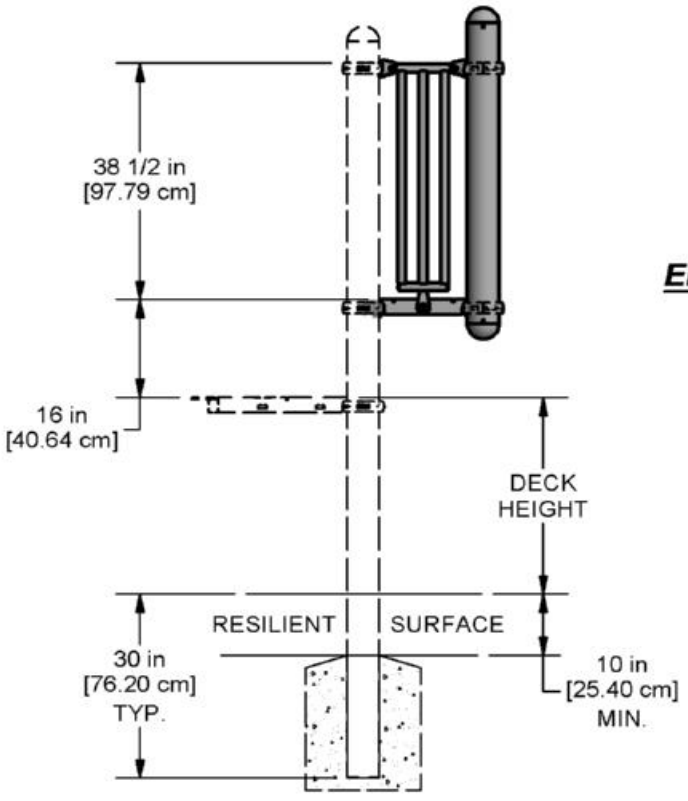
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

71464 Slide Transfer

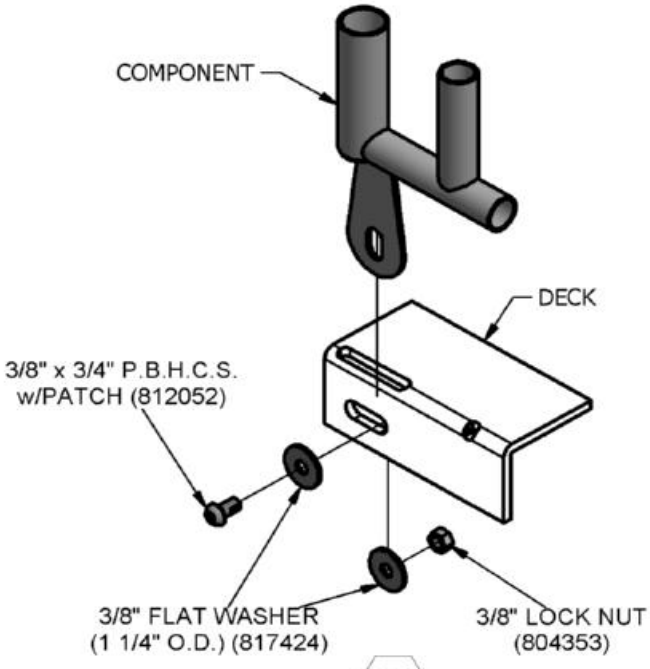


PLAN VIEW

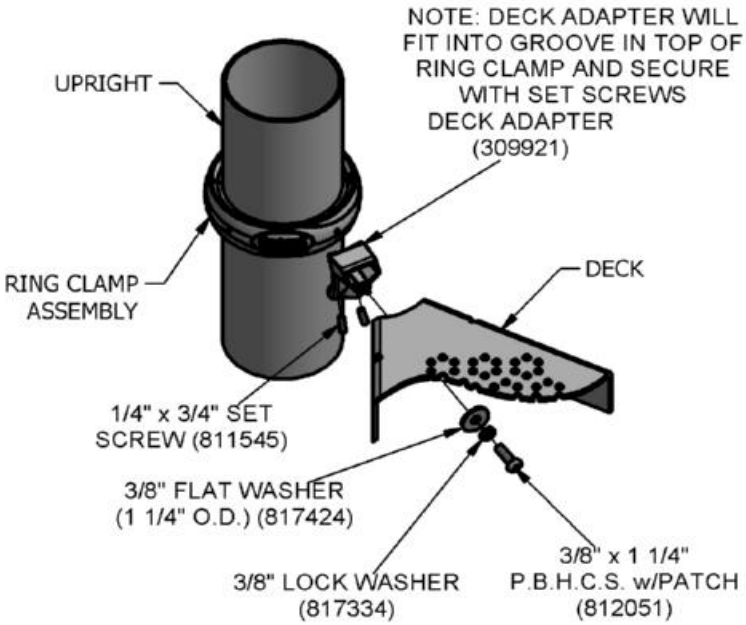


ELEVATION VIEW

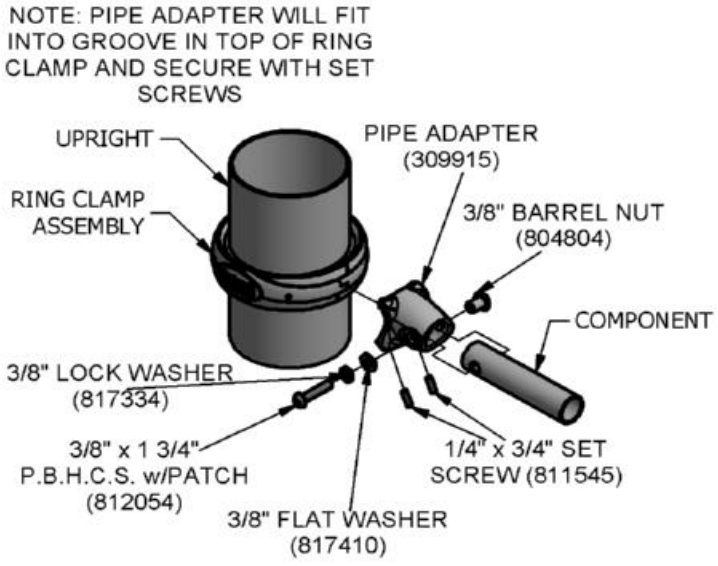
71464 Slide Transfer



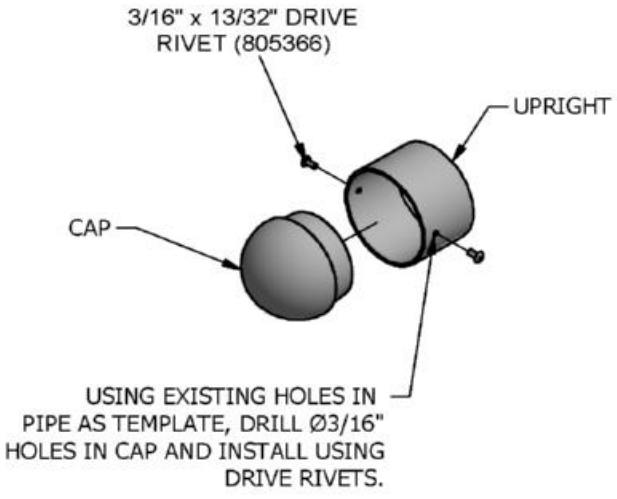
026



447



448



597

71503 Flat Cap Package

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	COATED FLAT CAP	1	139454
2	1/4" x 3/4" DRIVE RIVET	2	168449

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Assemble using Drive Rivets as shown in Detail 622.

2. Drive Rivets must not interfer with Ring Clamp.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

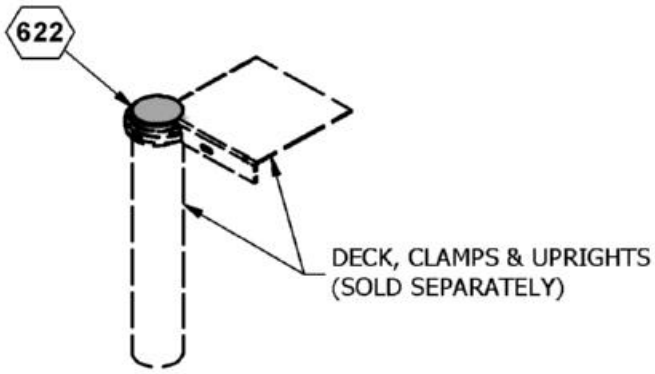
When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

71503 Flat Cap Package

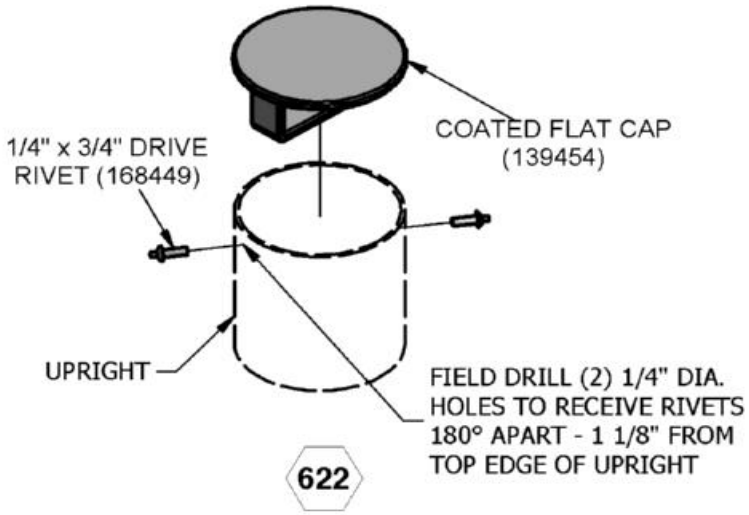
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



GENERIC LENGTH POST SENT WITH ORDER. IF REQUIRED, CUT POSTS TO CORRECT LENGTH. TOP OF CAP MUST BE FLUSH WITH TOP SURFACE OF DECK.

FINISHED ASSEMBLY



⬡ = INSTALLATION DETAIL

SuperMax Play Systems

71659 SINGLE VELOCITY WAVE SLIDE (2'-8")

Parts List		
DESCRIPTION	QTY	PART NUMBER
SLIDE HOOD	1	312484
2'-8" SINGLE VELOCITY WAVE SLIDE	1	176399
FOOTBUCK	1	176384
PANEL ADAPTER	2	309919
HARDWARE COMPLETE	1	312600*
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054*
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	812053*
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	2	812051*
3/8" x 3/4" P.B.H.C.S. w/PATCH	4	812052*
3/8" FLAT WASHER	6	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	4	817424*
3/8" LOCK WASHER	4	817334*
1/4" x 3/4" SET SCREW	4	811545*
3/8" BARREL NUT	2	804804*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Single Velocity Wave Slide and dig footing at location shown in Top View. Refer to the Elevation View for footing depth.

2. Attach Ring Clamps to the Uprights. See Ring Clamp Installation sheet.

3. Attach Panel Adapters to the Ring Clamps using 1/4" x 3/4" Set Screws. See Detail 672.

4. Attach Foot Buck to Slide using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Lock washer and 3/8" Flat Washer. See Detail 024.

5. Attach Slide to Deck using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, and 3/8" Flat Washer (1 1/4" O.D.). See detail 136.

6. Attach Slide Hood to Panel Adapters using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer and 3/8" Barrel Nut. See detail 672.

7. Attack Slide to Slide Hood using 3/8" x 1 3/4" P.B.H.C.S. w/Patch and 3/8" Flat Washer (1 1/4" O.D.). See detail 673.

8. Plumb and level the entire assembly and tighten all fasteners.

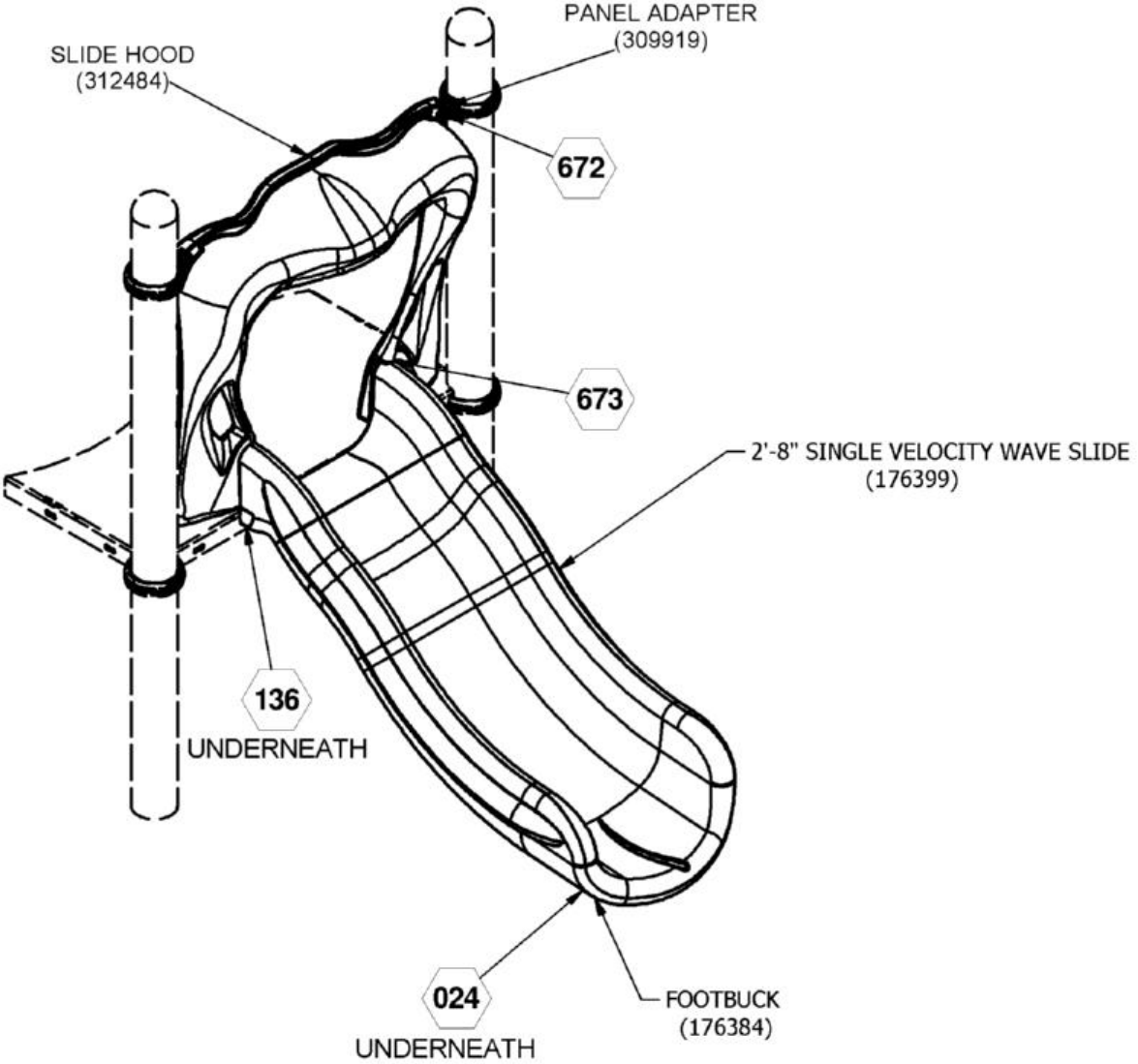
9. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

71659 SINGLE VELOCITY WAVE SLIDE (2'-8")

10. When structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



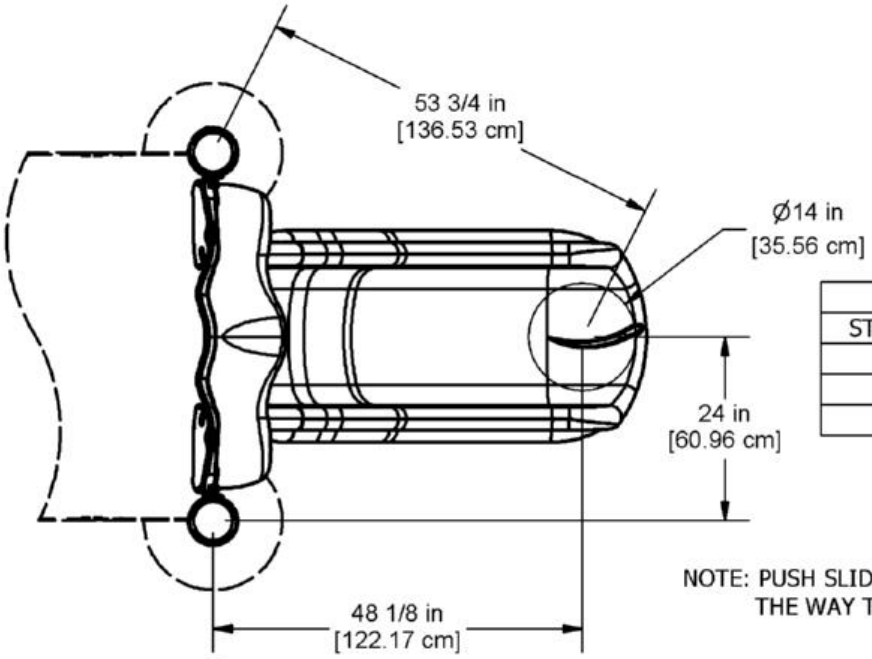
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

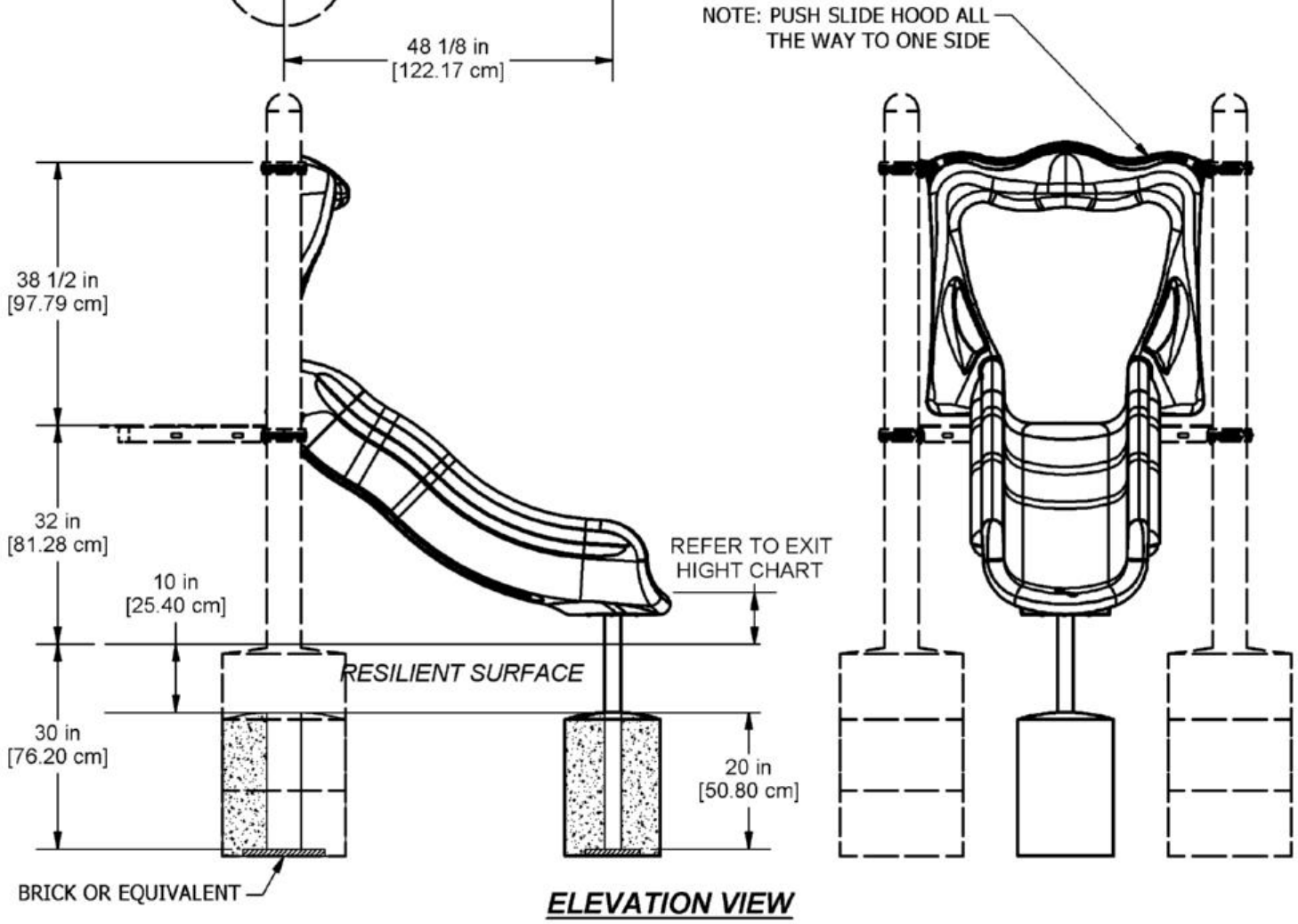
SuperMax Play Systems

71659 SINGLE VELOCITY WAVE SLIDE (2'-8")



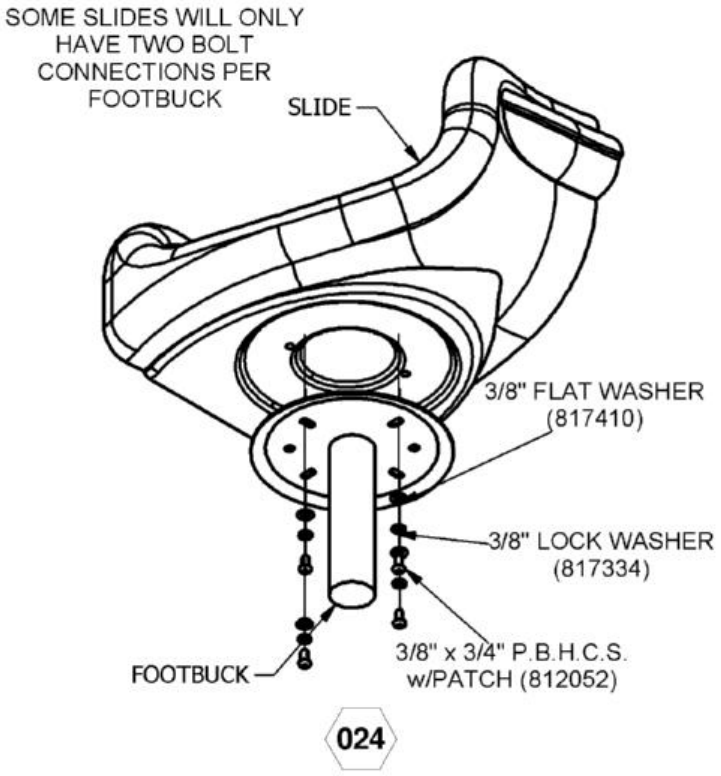
EXIT HEIGHT CHART	
STANDARD	EXIT HEIGHT from SURFACING
ASTM	7" TO 15"
CSA	175mm TO 380mm
EN	350mm OR LESS

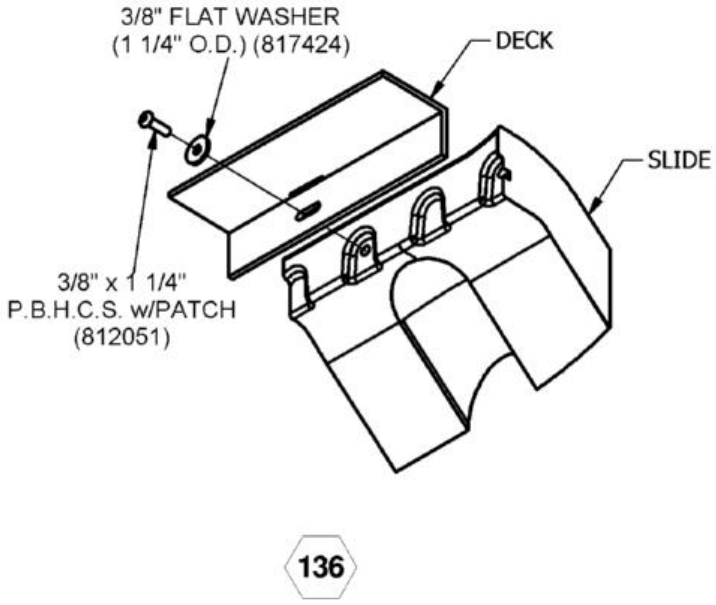
CONCRETE REQUIRED
.07 CUBIC YARDS
.05 [CUBIC METERS]

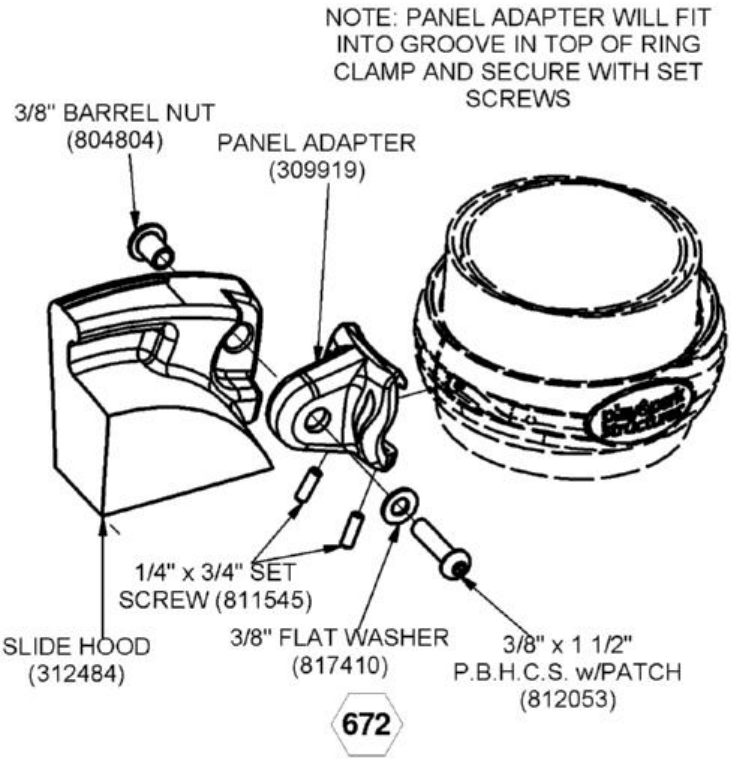


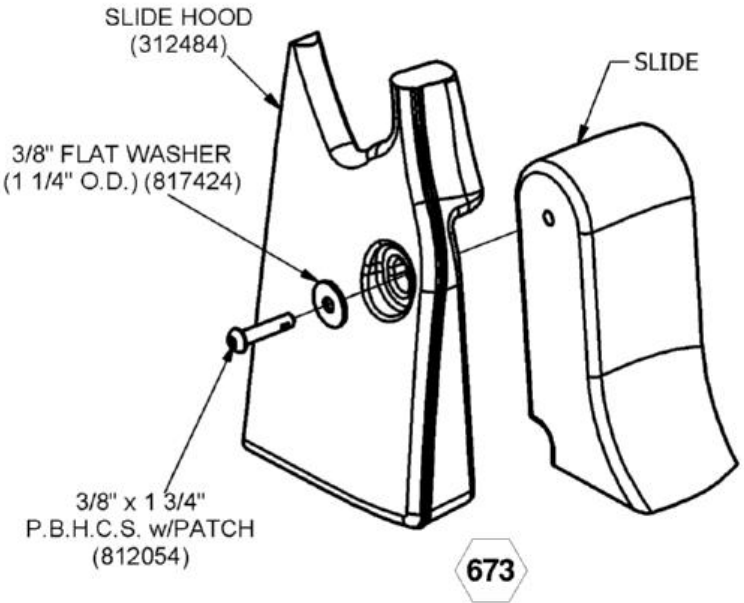
ELEVATION VIEW

71659 SINGLE VELOCITY WAVE SLIDE (2'-8")









SuperMax Play Systems

71680 (2'-8"); 71681 (4'); 71682 (5'-4"); 71683 (6'); 71684 (7'-4") DOUBLE VELOCITY SLIDE

Parts List						
DESCRIPTION	71680	71681	71682	71683	71684	PART NUMBER
3' DOUBLE VELOCITY SLIDE	1	0	0	0	0	176401
4' DOUBLE VELOCITY SLIDE	0	1	0	0	0	176188
5' DOUBLE VELOCITY SLIDE	0	0	1	0	0	176189
6' DOUBLE VELOCITY SLIDE	0	0	0	1	0	176158
7'-4" DOUBLE VELOCITY SLIDE	0	0	0	0	1	176259
FOOTBUCK PLATE	2	2	2	2	2	223226
LASER CUT FOOT BUCK PIPE, 34 1/4"	2	0	0	2	0	223452
FOOTBUCK PIPE, 32"	0	2	0	0	0	223228
FOOTBUCK PIPE 30.595"	0	0	2	0	2	224589
PANEL ADAPTER	2	2	2	2	2	309919
DOUBLE ENTRANCE SLIDEHOOD	1	1	1	1	1	312730
HARDWARE COMPLETE	1	1	0	1	0	317246
HARDWARE COMPLETE	0	0	1	0	1	317247
EXTENSION LEG	0	0	2	0	2	152110*
1/4" x 3/4" SET SCREW	4	4	4	4	4	811545*
3/8" x 3/4" P.B.H.C.S. w/PATCH	8	8	8	8	8	812052*
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	812051*
3/8" x 1 1/4" SELF TAPPING TORX w/PATCH	2	2	2	2	2	HWS0081*
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	2	2	2	2	812054*
3/8" x 2" P.B.H.C.S. w/PATCH	2	2	2	2	2	812055*
3/8" x 2 1/2" HEX HEAD BOLT	0	0	2	0	2	801009*
3/8" LOCK WASHER	8	8	10	8	10	817334*
3/8" FLAT WASHER	10	10	10	10	10	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	6	6	6	6	6	817424*
3/8" BARREL NUT	2	2	2	2	2	804804*
3/8" HEX NUT	0	0	2	0	2	804053*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

71680 (2'-8"); 71681 (4'); 71682 (5'-4"); 71683 (6'); 71684 (7'-4") DOUBLE VELOCITY SLIDE

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Double Curved Slide and dig footing at location shown in Top View. Refer to the Elevation View for footing depth.

2. Attach Ring Clamps to the Uprights. See Ring Clamp Installation sheet.

3. Attach Panel Adapters to the Ring Clamps using 1/4" x 3/4" Set Screws. See Detail 715.

4. Using Detail 1253, attach Footbuck plate to Double Velocity Slide using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. Attach Footbuck pipe to Footbuck Plate using 3/8" x 1 1/4" Self Tapper Screw.

5. Place Foot Buck into footing holes and attach Double Velocity Slide to Deck as referred in Detail 136, using 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Flat Washer (1 1/4" O.D.).

6. Attach Extension to Foot buck pipe using 3/8" HEX NUT, 3/8" Lock washer and Bolt Chart using Detail 064.

7. Attach Double Entrance Slide Hood to Panel Adapters using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 715.

8. Attach Double Velocity Slide to Double Entrance Slide Hood using 3/8" x 2" P.B.H.C.S. w/Patch and 3/8" Flat Washer (1 1/4" O.D.) See Detail 716.

9. Plumb and level the entire assembly and tighten all fasteners.

10. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

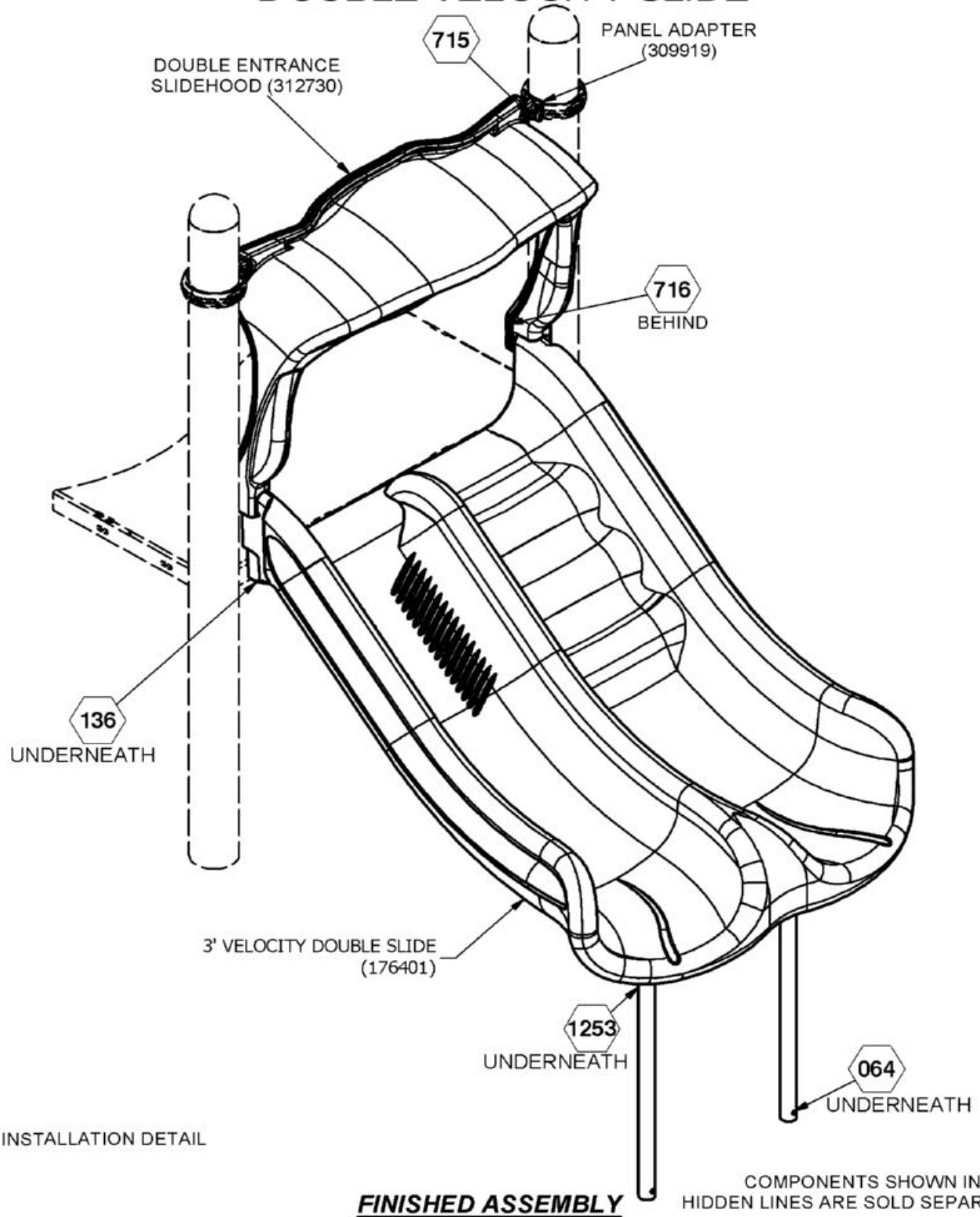
IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

11. When the structure is finished and satisfactory, Install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structures in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71680 (2'-8"); 71681 (4'); 71682 (5'-4"); 71683 (6'); 71684 (7'-4")
DOUBLE VELOCITY SLIDE

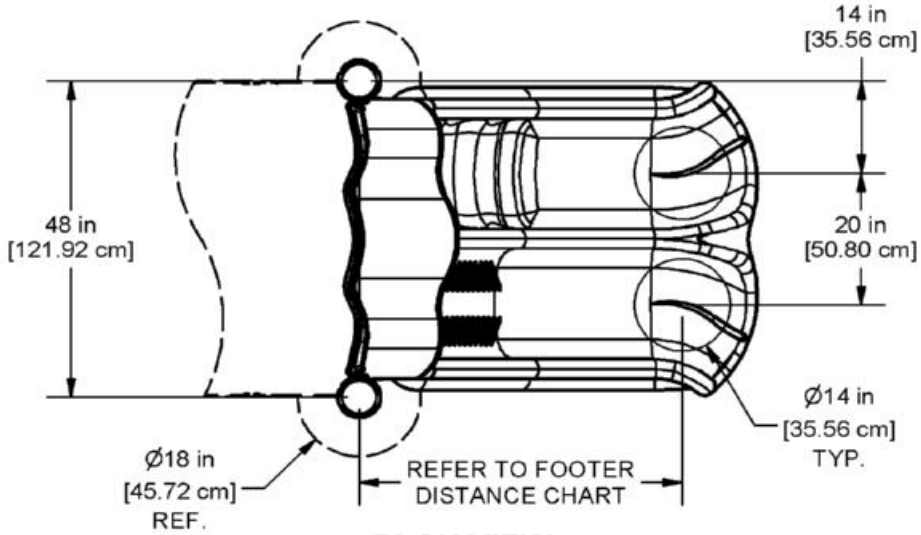


⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
71680 SHOWN
OTHERS SIMILAR

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

71680 (2'-8"); 71681 (4'); 71682 (5'-4"); 71683 (6'); 71684 (7'-4")
DOUBLE VELOCITY SLIDE



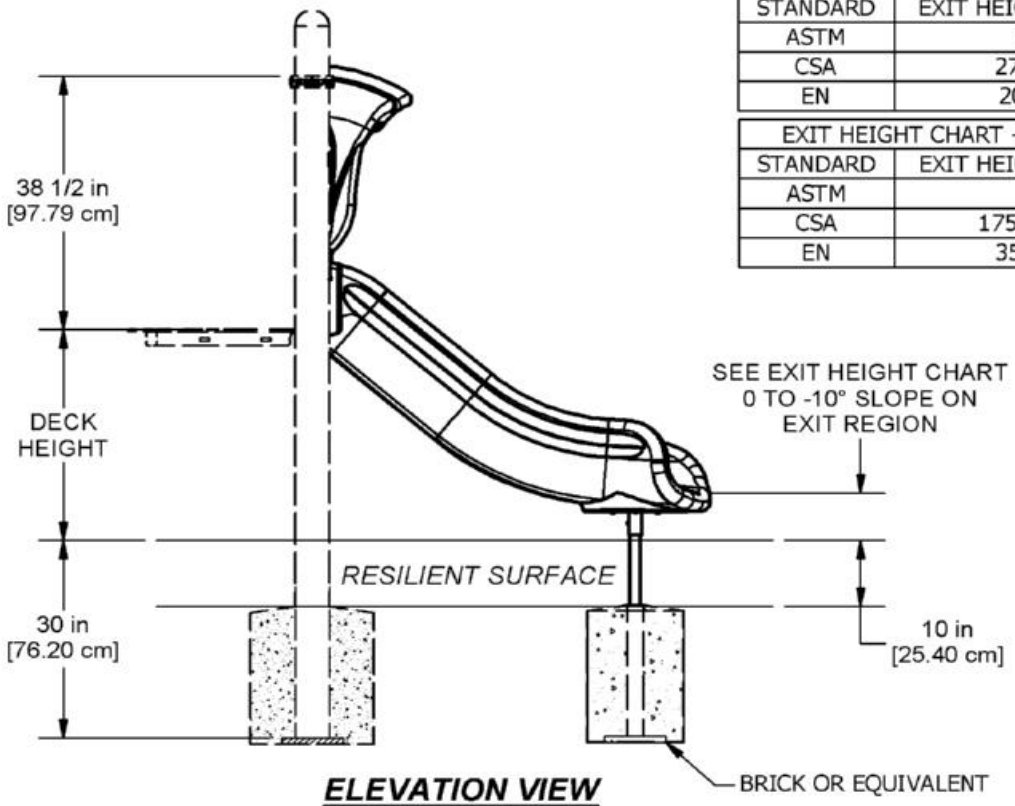
PLAN VIEW

FOOTER DISTANCE	
SLIDE	DISTANCE
71680 (2'-8")	47 1/8 in
71681 (4')	64 1/8 in
71682 (5'-4")	81 1/8 in
71683 (6')	99 3/8 in
71684 (7'-4")	118 3/4 in

CONCRETE REQUIRED
0.132 CUBIC YARDS
0.100 [CUBIC METERS]

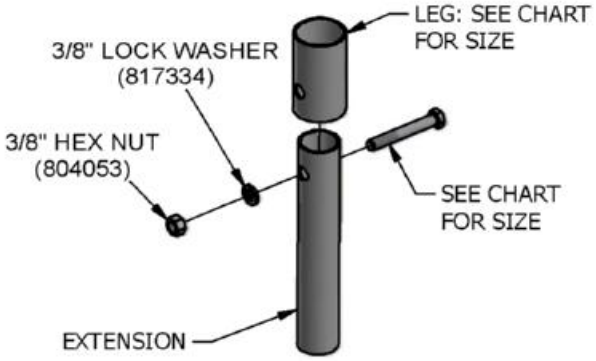
EXIT HEIGHT CHART -for- 71680 and 71681	
STANDARD	EXIT HEIGHT from SURFACING
ASTM	11" OR LESS
CSA	275mm OR LESS
EN	200mm OR LESS

EXIT HEIGHT CHART -for- 71682 to 71684	
STANDARD	EXIT HEIGHT from SURFACING
ASTM	7" TO 15"
CSA	175mm TO 380mm
EN	350mm OR LESS



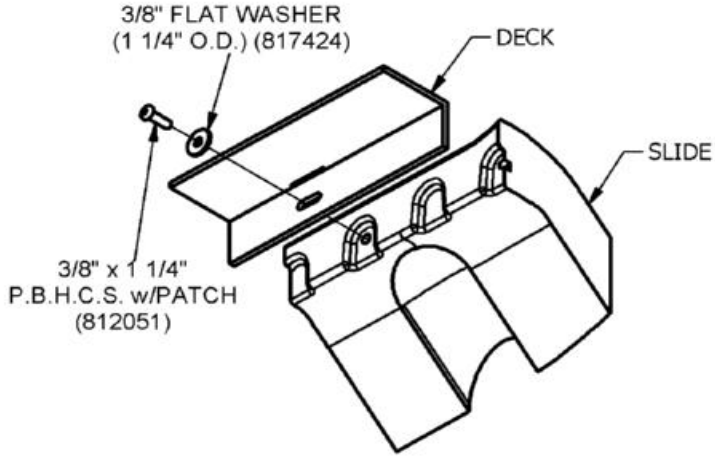
ELEVATION VIEW
71680 SHOWN

71680 (2'-8"); 71681 (4'); 71682 (5'-4"); 71683 (6'); 71684 (7'-4") DOUBLE VELOCITY SLIDE

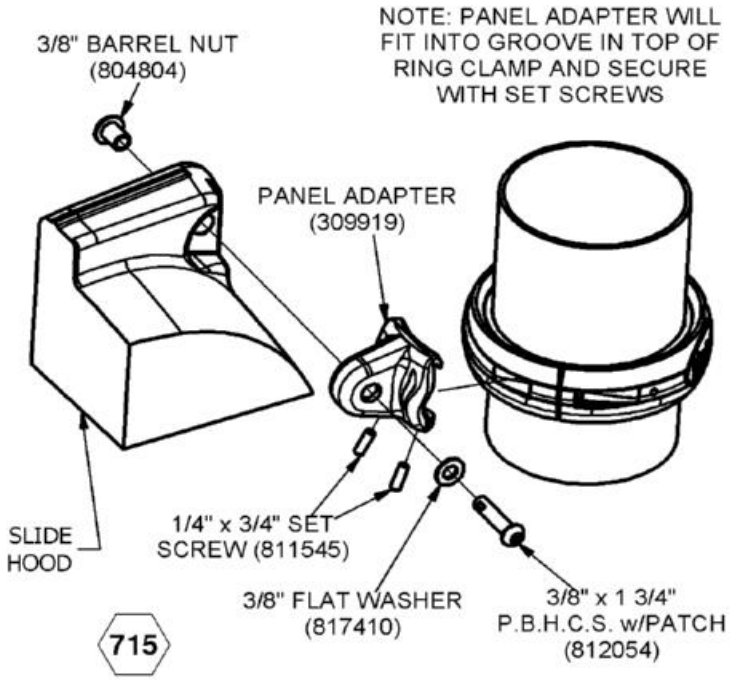


LEG (PIPE DIA.)	BOLT REQUIRED
1 5/16" [3.3 cm]	3/8" x 2" HEX HEAD (801007)
1 5/8" [4.1 cm]	3/8" x 2 1/2" HEX HEAD (801009)
1 7/8" [6.0 cm]	3/8" x 3" HEX HEAD (801011)
2 3/8" [6.0 cm]	3/8" x 3 1/2" HEX HEAD (801013)

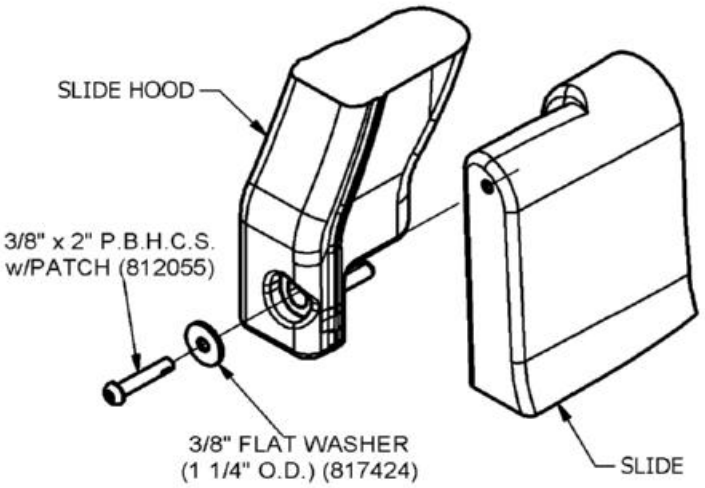
064



136

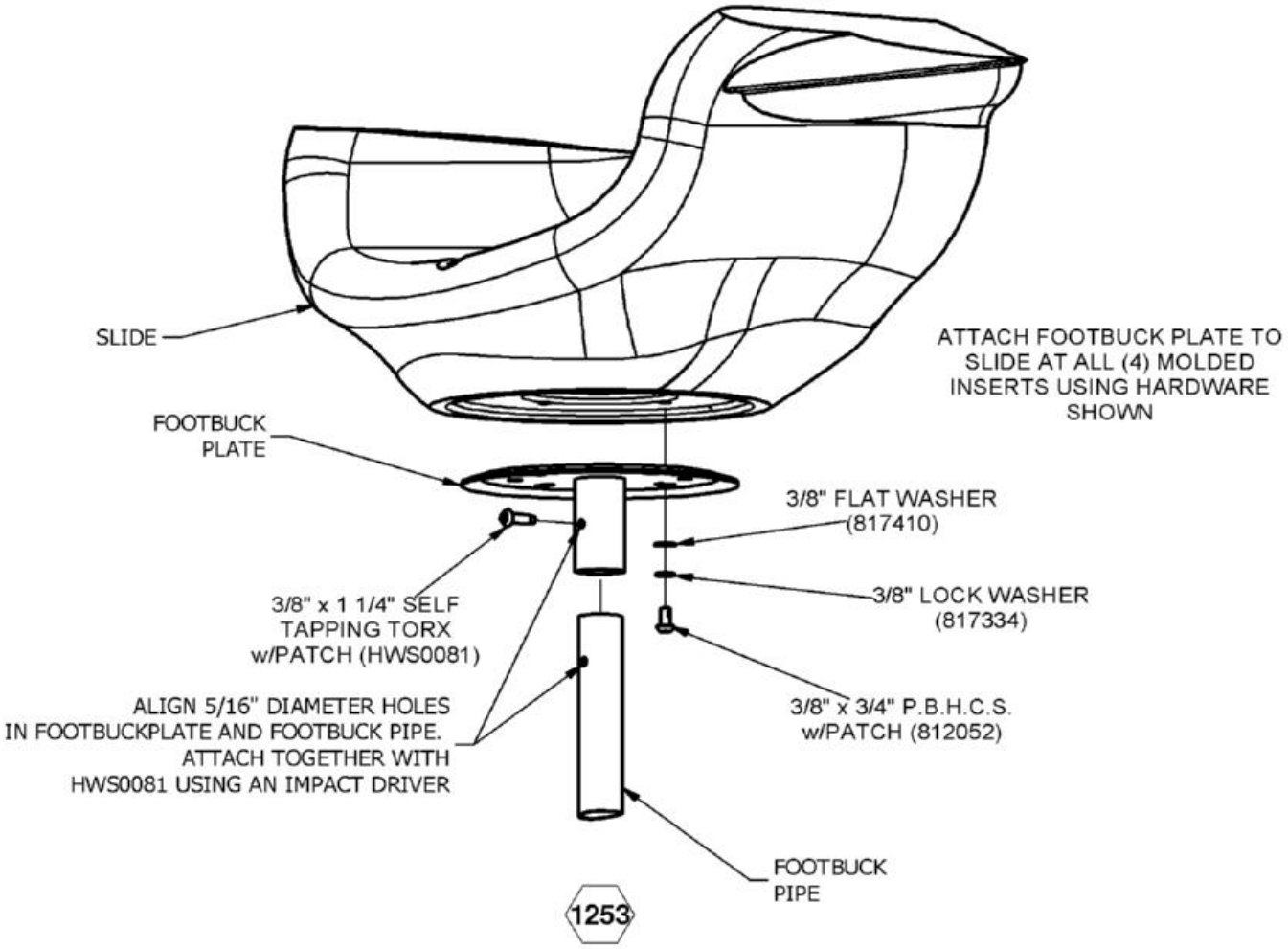


715



716

71680 (2'-8"); 71681 (4'); 71682 (5'-4"); 71683 (6'); 71684 (7'-4")
DOUBLE VELOCITY SLIDE



SuperMax Play Systems

71750 MAZE PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
SUPPORT PIPE	2	307586
PANEL ADAPTER	2	309919
MAZE PANEL ASS'Y	1	313569
SM ACTIVITY PANEL	1	313586
HARDWARE COMPLETE	1	313464
1/4" x 3/4" SET SCREW	4	811545*
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050*
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	8	812053*
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056*
3/8" FLAT WASHER	8	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	6	817424*
3/8" LOCK NUT	2	804353*
3/8" BARREL NUT	10	804804*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Attach Maze Panel Ass'y to Activity Panel using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 795.

2. Attach Panel Adapter to Activity Panel using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), 1/4" x 3/4" Set Screw, and 3/8" Barrel Nut. See Detail 450.

3. Place Support Pipes in slots of deck and attach using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washers (1 1/4" O.D.) and 3/8" Lock Nut. See Detail 188. Slide Activity Panel onto the Support Pipes. **Note:** Pipes are smashed to one side. Refer to Detail for orientation.

4. Plumb and level the entire assembly and tighten all fasteners.

5. After entire unit is assembled pour concrete footings within 4' to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use.

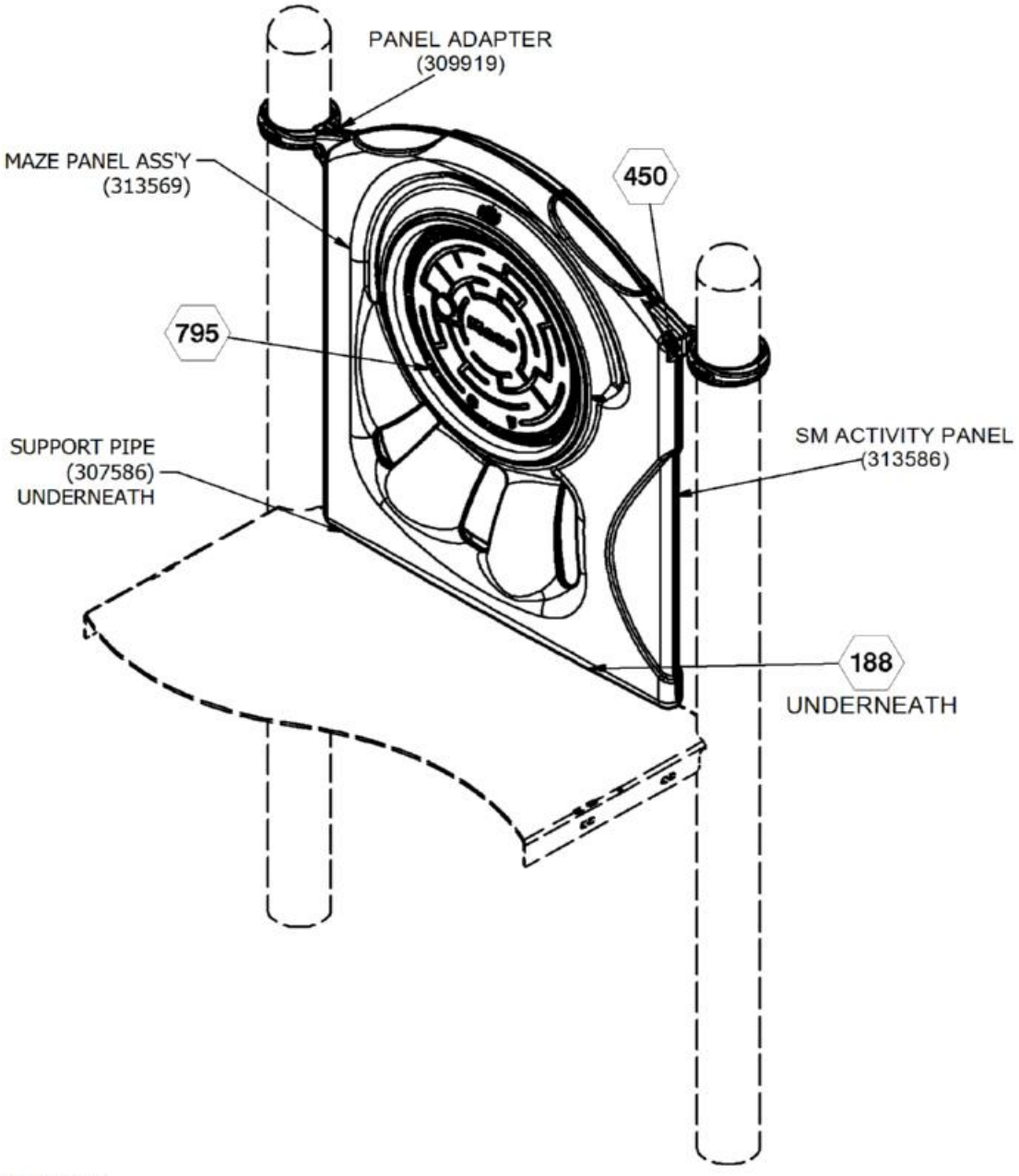
6. When structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

SuperMax Play Systems

71750 MAZE PANEL

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

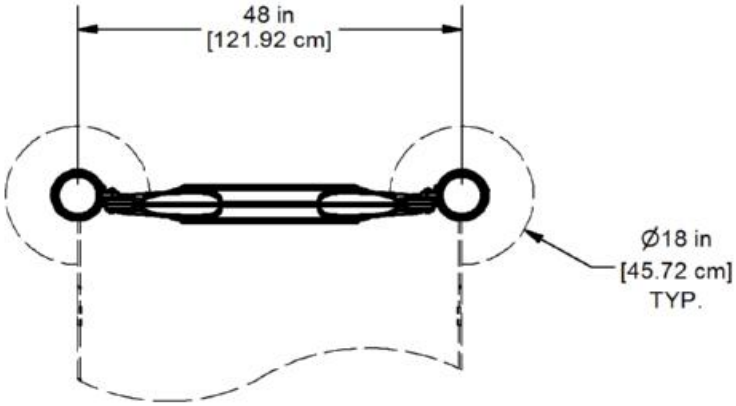


⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

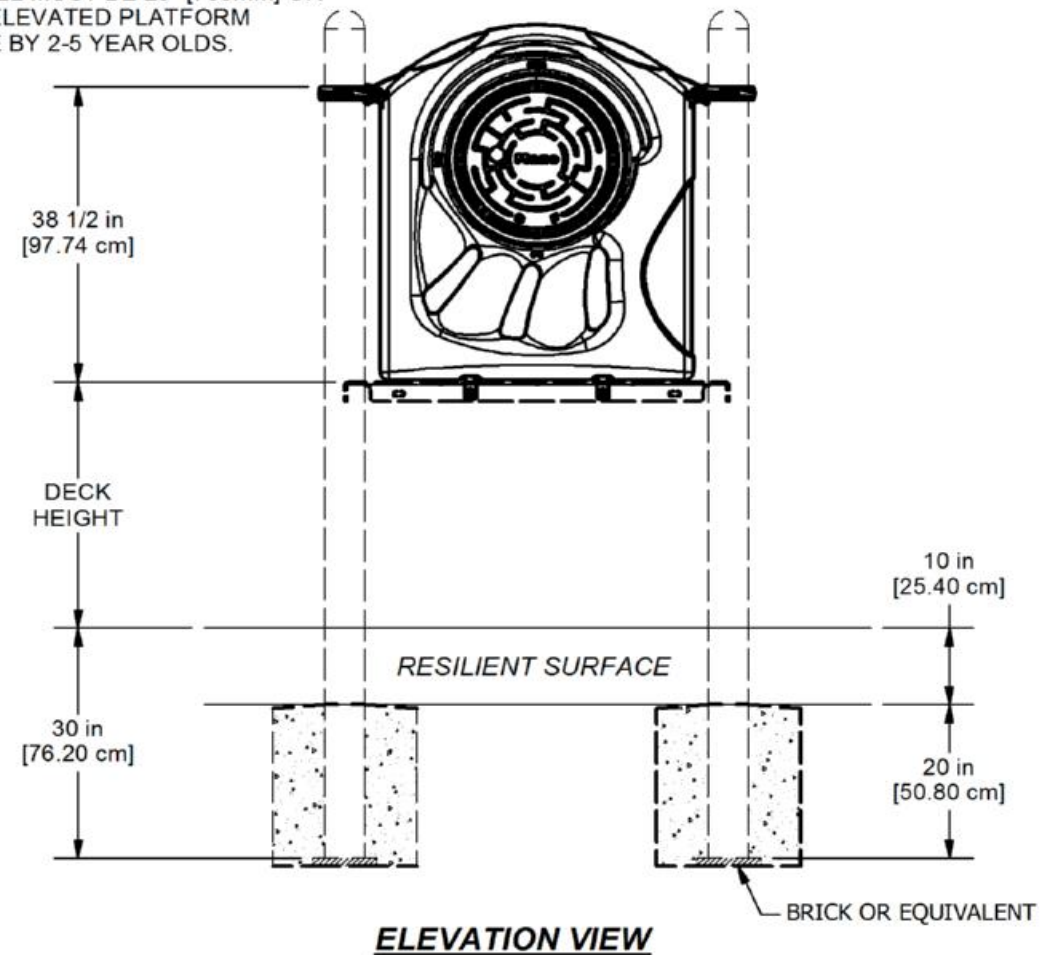
71750 MAZE PANEL



NOTE:
TOP EDGE OF PANEL MUST BE 38" [965mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 5-12 YEAR OLDS.

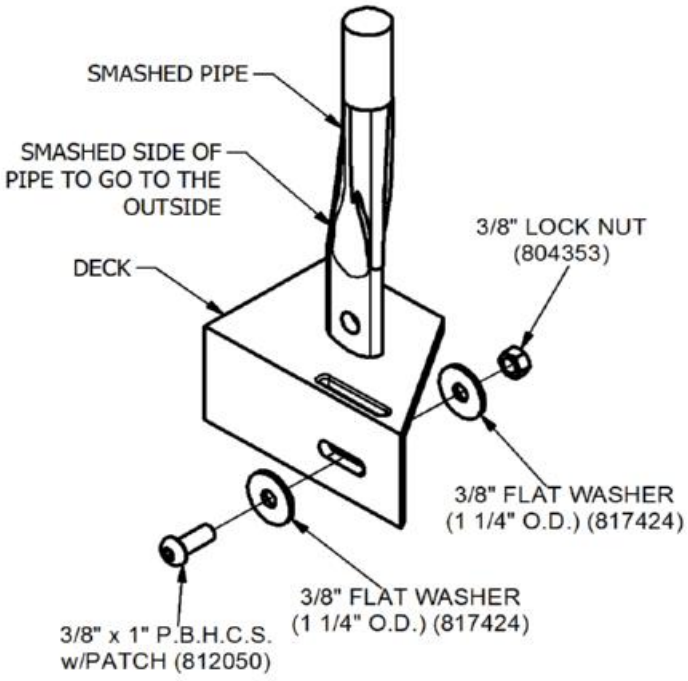
TOP EDGE OF PANEL MUST BE 29" [736mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 2-5 YEAR OLDS.

PLAN VIEW



ELEVATION VIEW

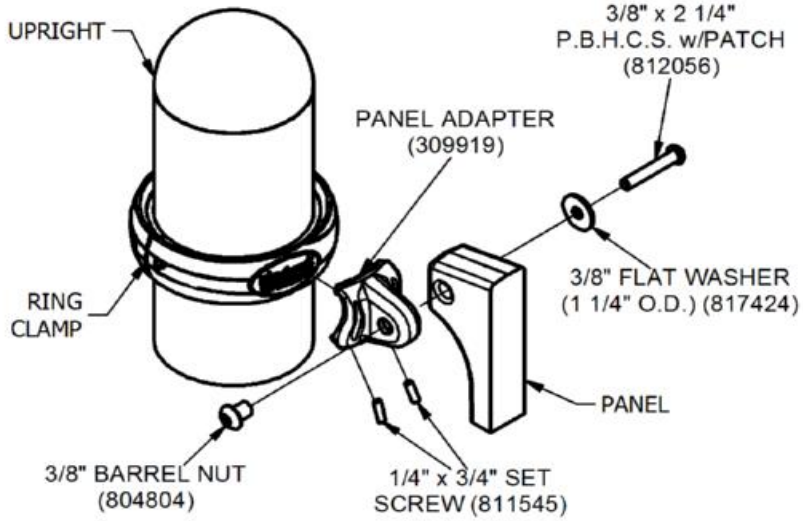
71750 MAZE PANEL



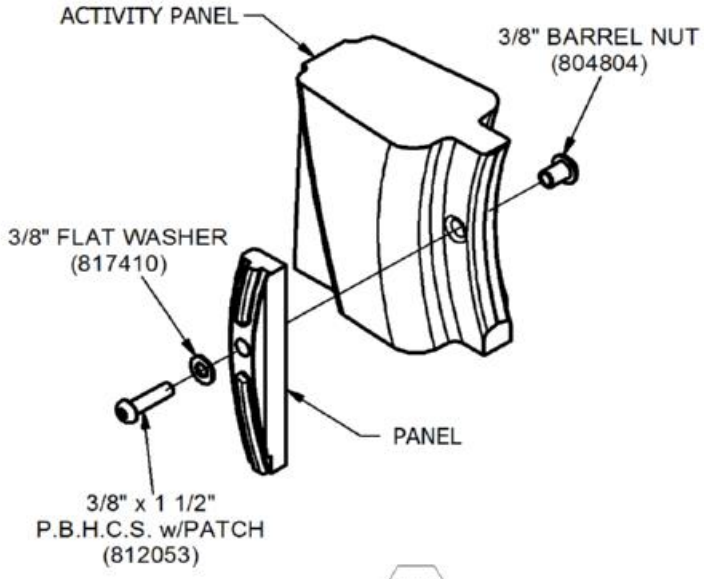
188

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



450



795

71964 GROUND LEVEL IN & OUT PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	2	309919
SMASHED FOOTBUCK	2	314295
IN & OUT PANEL	1	315512
HARDWARE COMPLETE	1	315513
1/4" x 3/4" SET SCREW	4	811545
3/8" x 3/4" P.B.H.C.S. w/PATCH	2	812052
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	812053
3/8" FLAT WASHER	4	817410
3/8" BARREL NUT	4	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the In and Out Panel, refer to your overhead drawing for location.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. Hook the Panel Adapters onto the Ring Clamps and attach. See Detail 467.
4. Attach Smashed Footbuck to In & Out Panel. Flat side of Smashed Footbuck should face the inside of the In & Out Panel. See Detail 631.
5. Connect In and Out Panel to Panel Adapter. See Detail 467.
6. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure at least 48 hours before use.

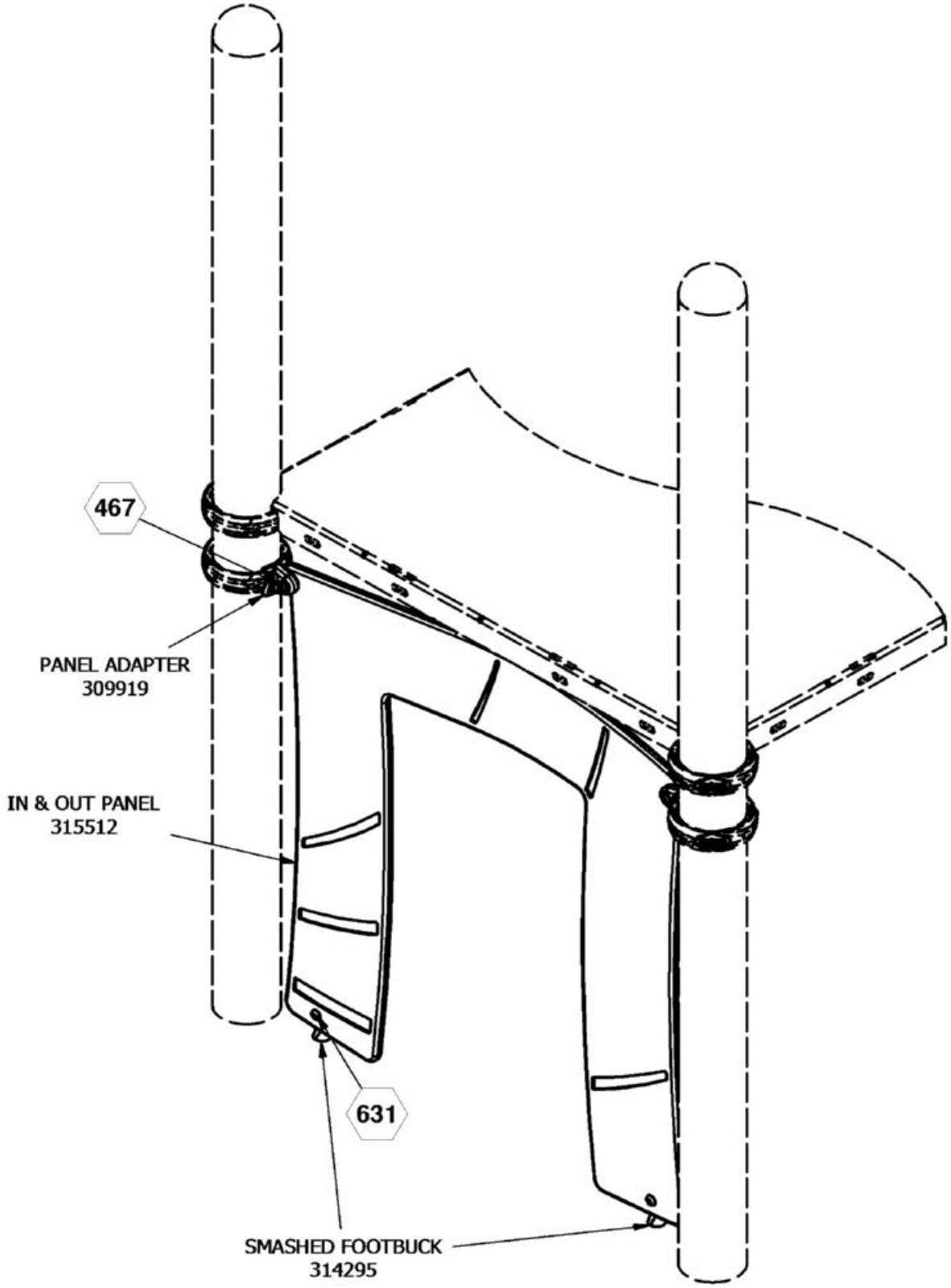
IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

7. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone 1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71964 GROUND LEVEL IN & OUT PANEL



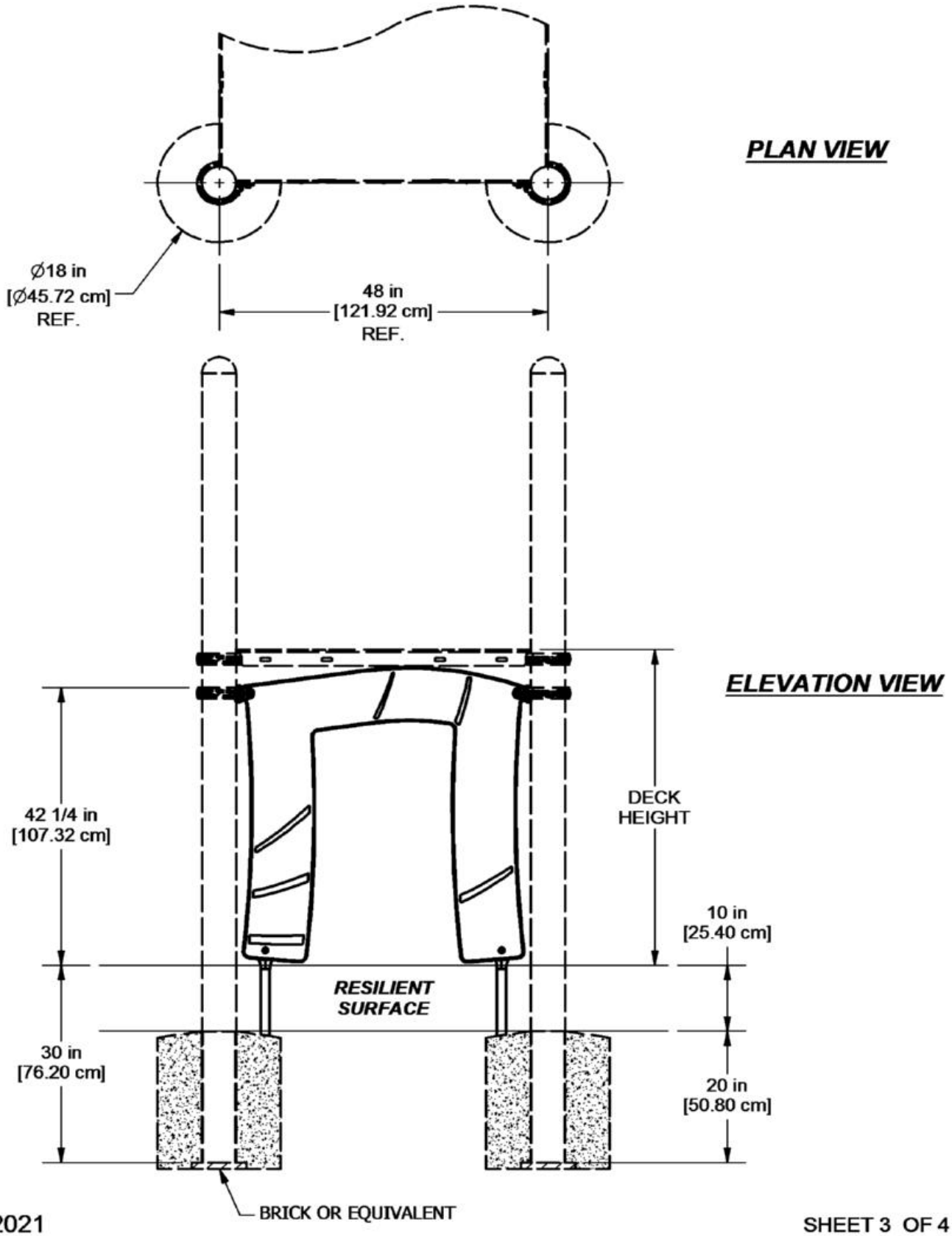
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/3/2021

FINISHED ASSEMBLY

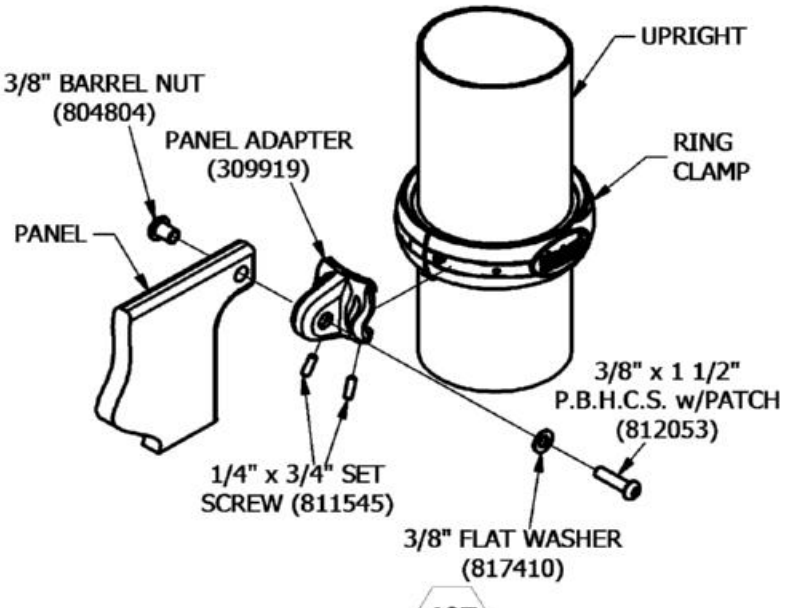
71964 GROUND LEVEL IN & OUT PANEL



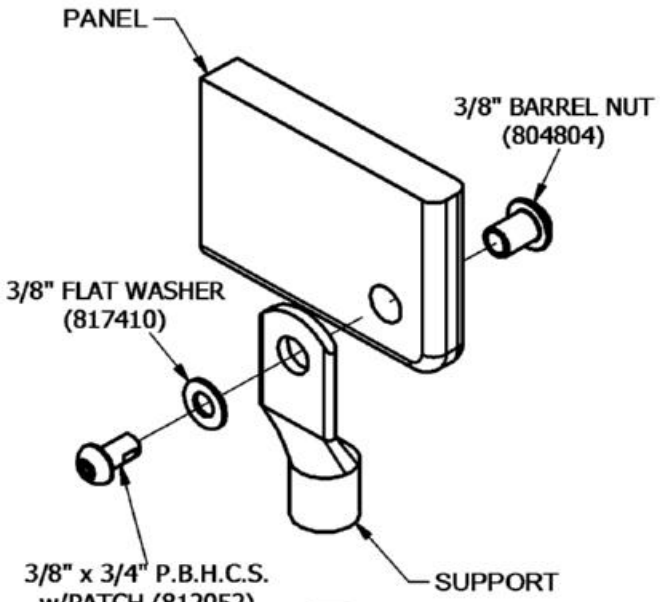
71964 GROUND LEVEL IN & OUT PANEL

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



467



631

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

71990 WATER CYCLE PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	2	309919
WATER CYCLE PANEL	1	315599
ARROW WHEEL	1	315636
HARDWARE COMPLETE	1	315660
1/4" x 3/4" SET SCREW	4	811545
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	812053
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	1	812056
3/8" FLAT WASHER	3	817410
3/8" FLAT WASHER (1 1/4" O.D.)	2	817424
3/8" BARREL NUT	5	804804
PROPELLER BUSHING	1	301152

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Water Cycle Panel. Refer to your overhead drawing for location.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. Hook the Panel Adapters onto the Ring Clamps and attach. See Detail 467.
4. Attach the Arrow Wheel to the Water Cycle Panel. See Detail 468.
5. Attach Water Cycle Panel to Panel Adapters. See Detail 467.
6. Attach Water Cycle Panel to Deck. See Detail 031.
7. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

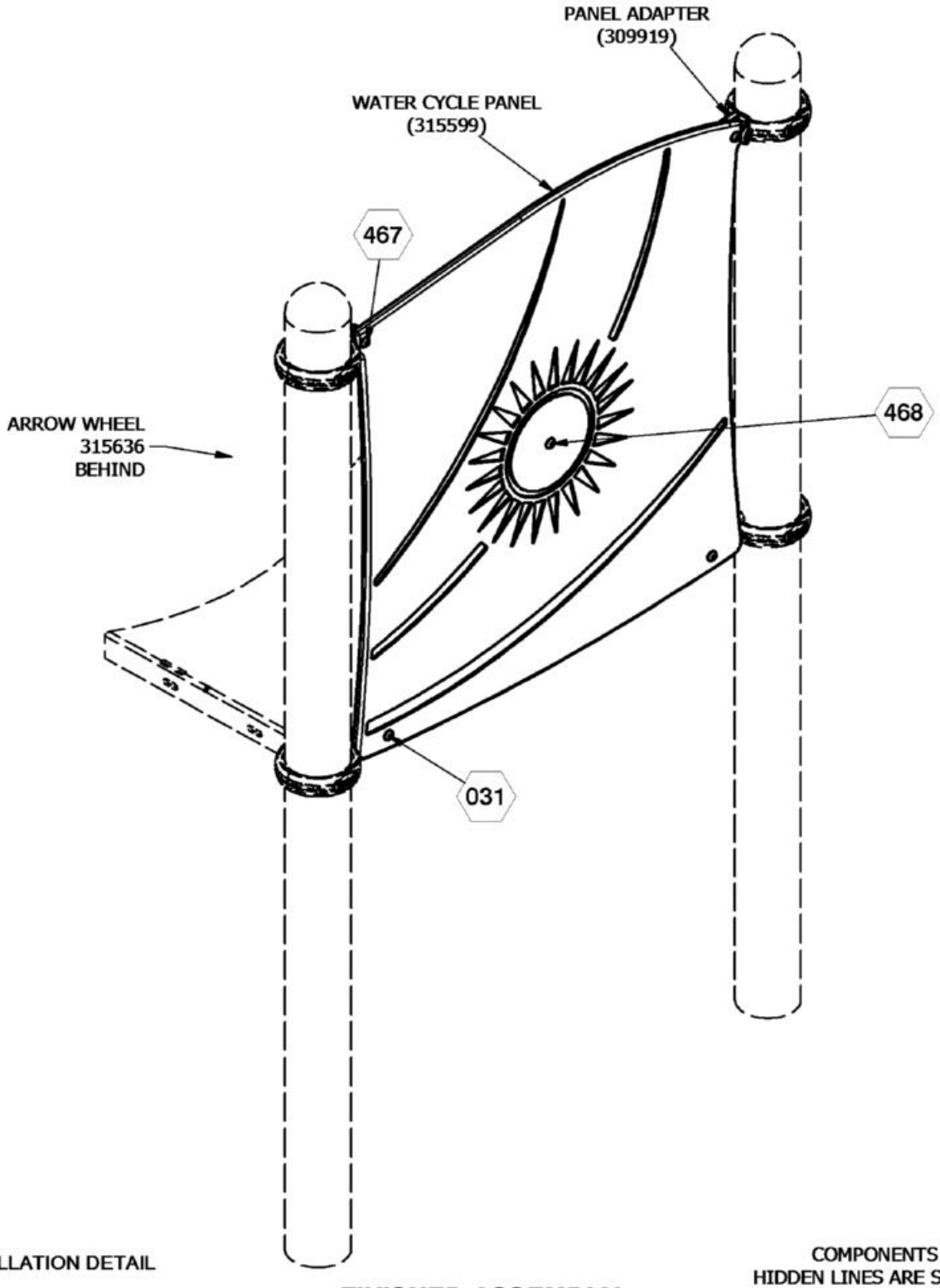
8. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71990 WATER CYCLE PANEL



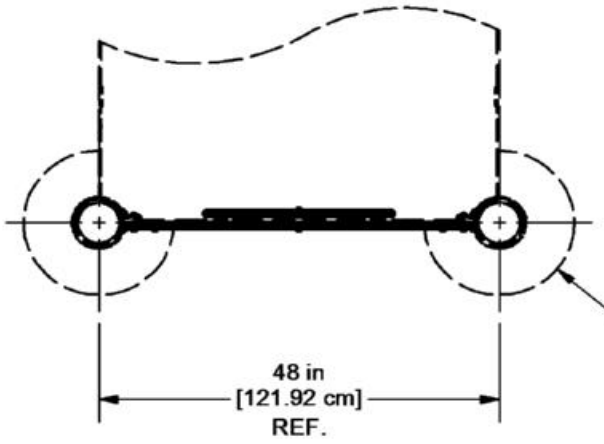
⬡ = INSTALLATION DETAIL

Issued/Revised: 5/13/2021

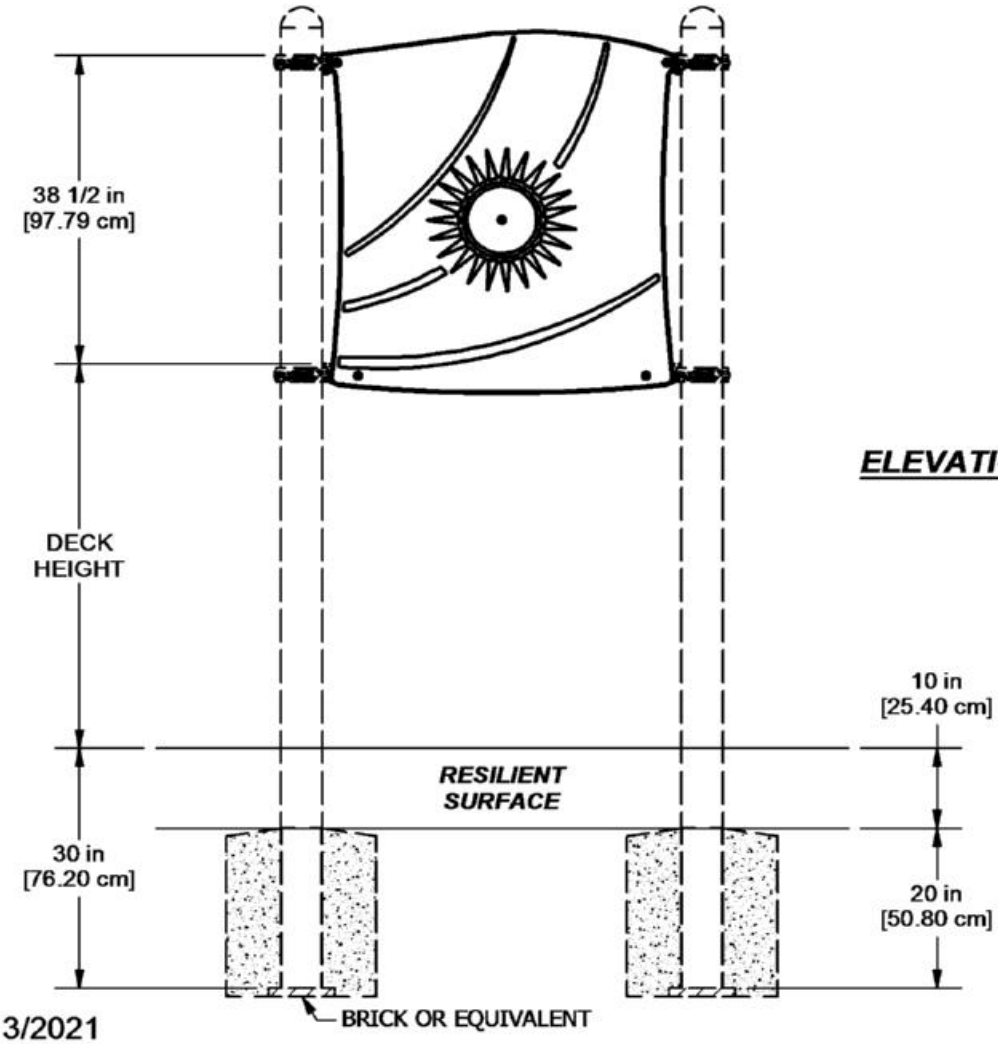
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

71990 WATER CYCLE PANEL

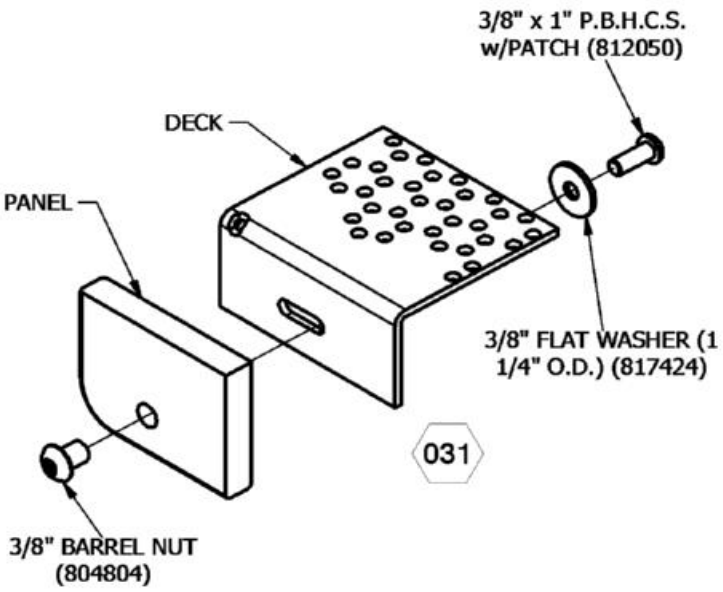


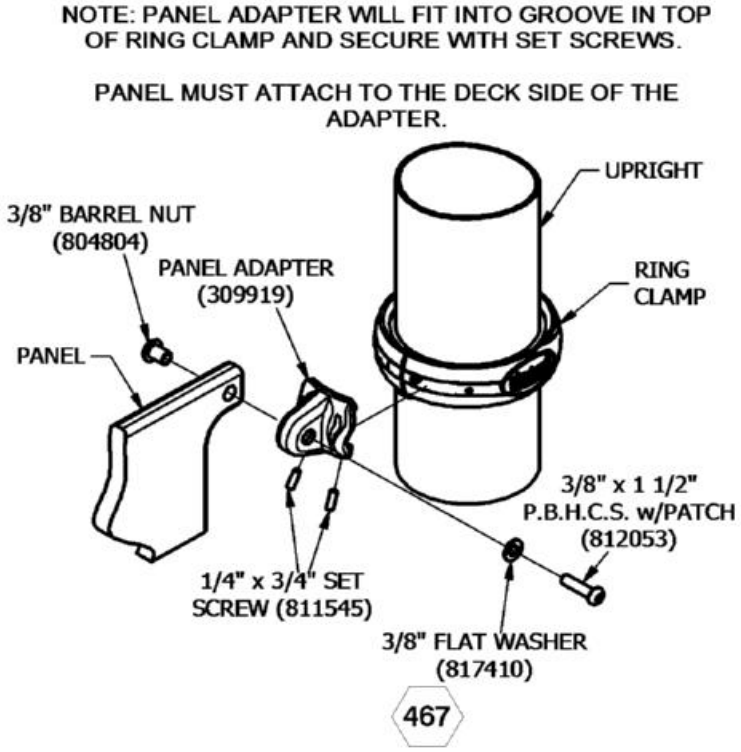
PLAN VIEW

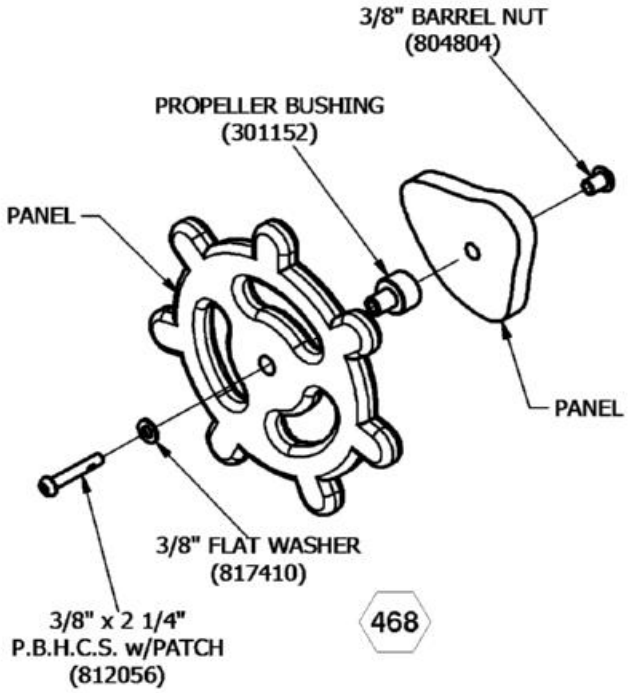


ELEVATION VIEW

71990 WATER CYCLE PANEL







Issued/Revised: 5/13/2021

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

72066 INTERACTIVE SENSOR PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
SUPPORT PIPE	2	307586
PANEL ADAPTER	2	309919
SM ACTIVITY PANEL	1	313586
HARDWARE COMPLETE	1	313459
1/4" x 3/4" SET SCREW	4	811545
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056
3/8" FLAT WASHER (1 1/4" O.D.)	6	817424
3/8" BARREL NUT	2	804804
3/8" LOCK NUT	2	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*
Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

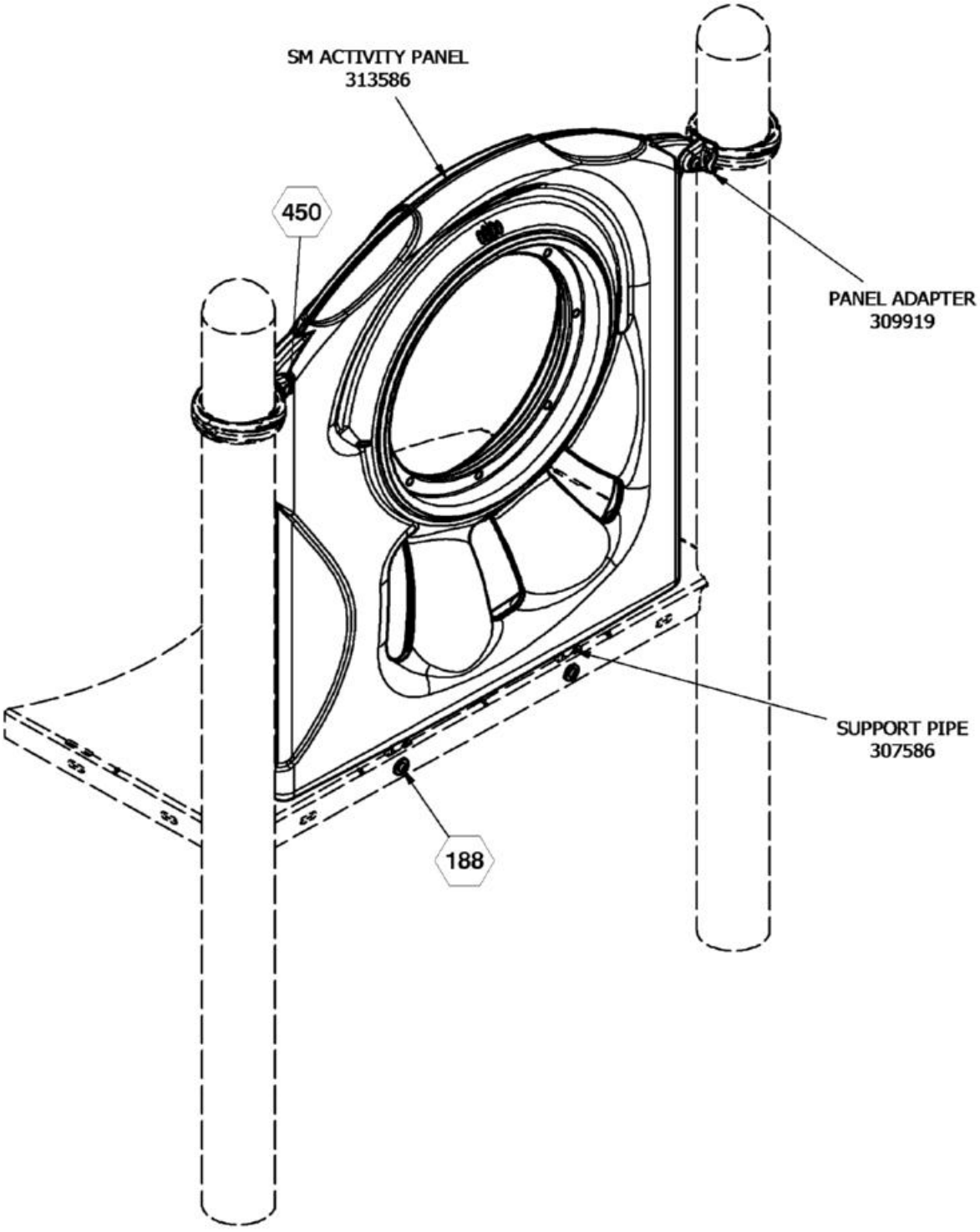
1. Determine which deck is to receive the Interactive Sensor Panel. Refer to Order Top View.
2. Attach the Support Pipes to the deck. See Detail 188.
3. Attach the Panel Adapters to the Ring Clamps. See Detail 450.
4. Slide the Activity Panel onto the Support Pipes and connect it to the Panel Clamps. See Detail 450.
5. Plumb and level the entire assembly and tighten all fasteners.
6. When the structure is finished and satisfactory, install Drive Rivets to all clamps to ensure clamps cannot slide down posts. See Pipe Clamps sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72066 INTERACTIVE SENSOR PANEL



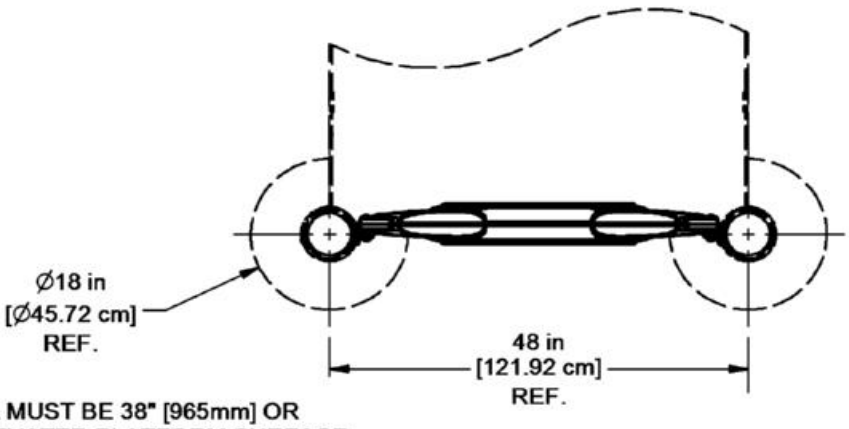
= INSTALLATION DETAIL

Issued/Revised: 12/14/2022

FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

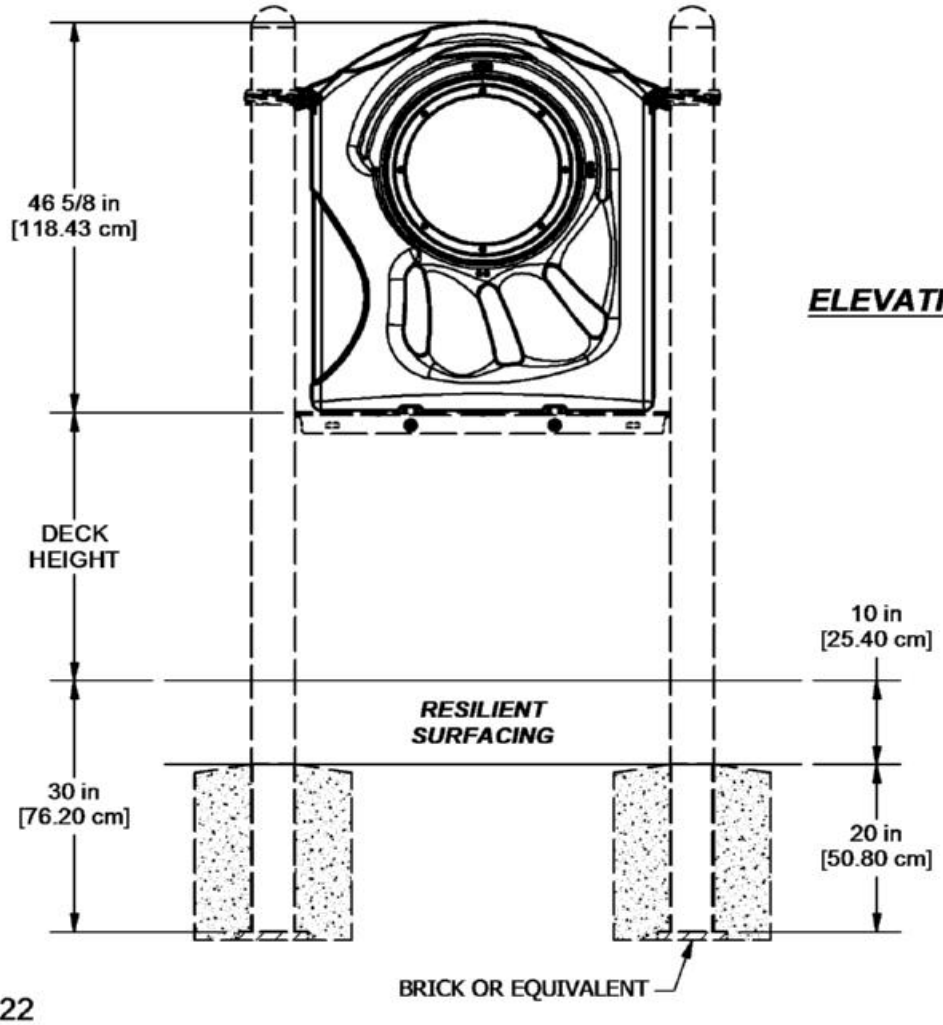
72066 INTERACTIVE SENSOR PANEL



PLAN VIEW

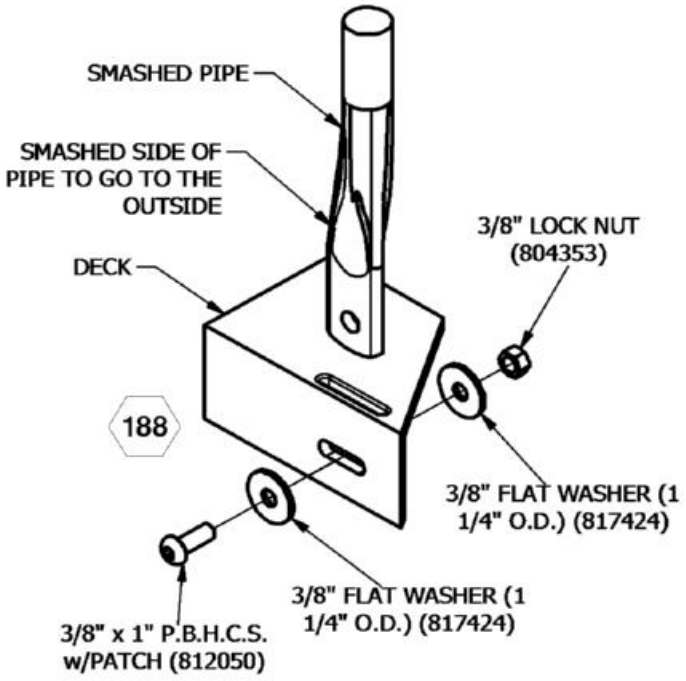
NOTE:
TOP EDGE OF PANEL MUST BE 38" [965mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 5-12 YEAR OLDS.

TOP EDGE OF PANEL MUST BE 29" [736mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 2-5 YEAR OLDS.



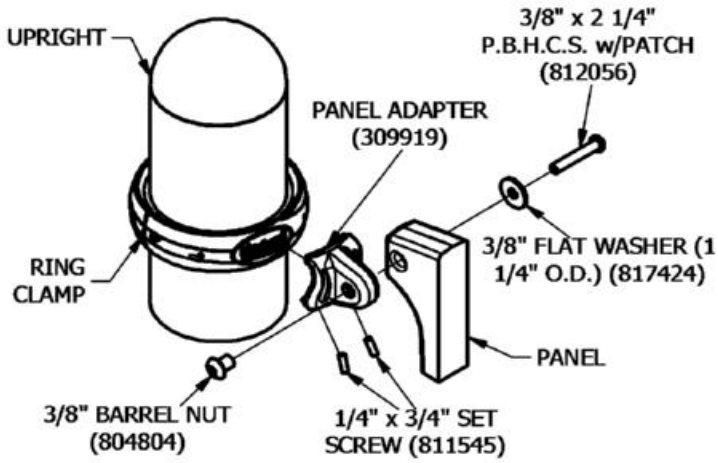
ELEVATION VIEW

72066 INTERACTIVE SENSOR PANEL



NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



450

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

72078 CLOUDS ACTIVITY PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	2	309919
CRAWL TUNNEL PANEL	1	309997
MOUNTING BRACKET	1	310919
SUPERMAX CLOUDS ACTIVITY PANEL	1	316406
HARDWARE COMPLETE	1	316393
1/4" x 3/4" SET SCREW	4	811545
5/16" x 1 1/2" P.B.H.C.S. w/PATCH	12	812045
5/16" LOCK WASHER	12	817330
5/16" FLAT WASHER (5/8" O.D.)	12	817406
5/16" T-NUT	12	804555
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056
3/8" LOCK WASHER	2	817334
3/8" FLAT WASHER	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
3/8" BARREL NUT	2	804804
3/8" LOCK NUT	2	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

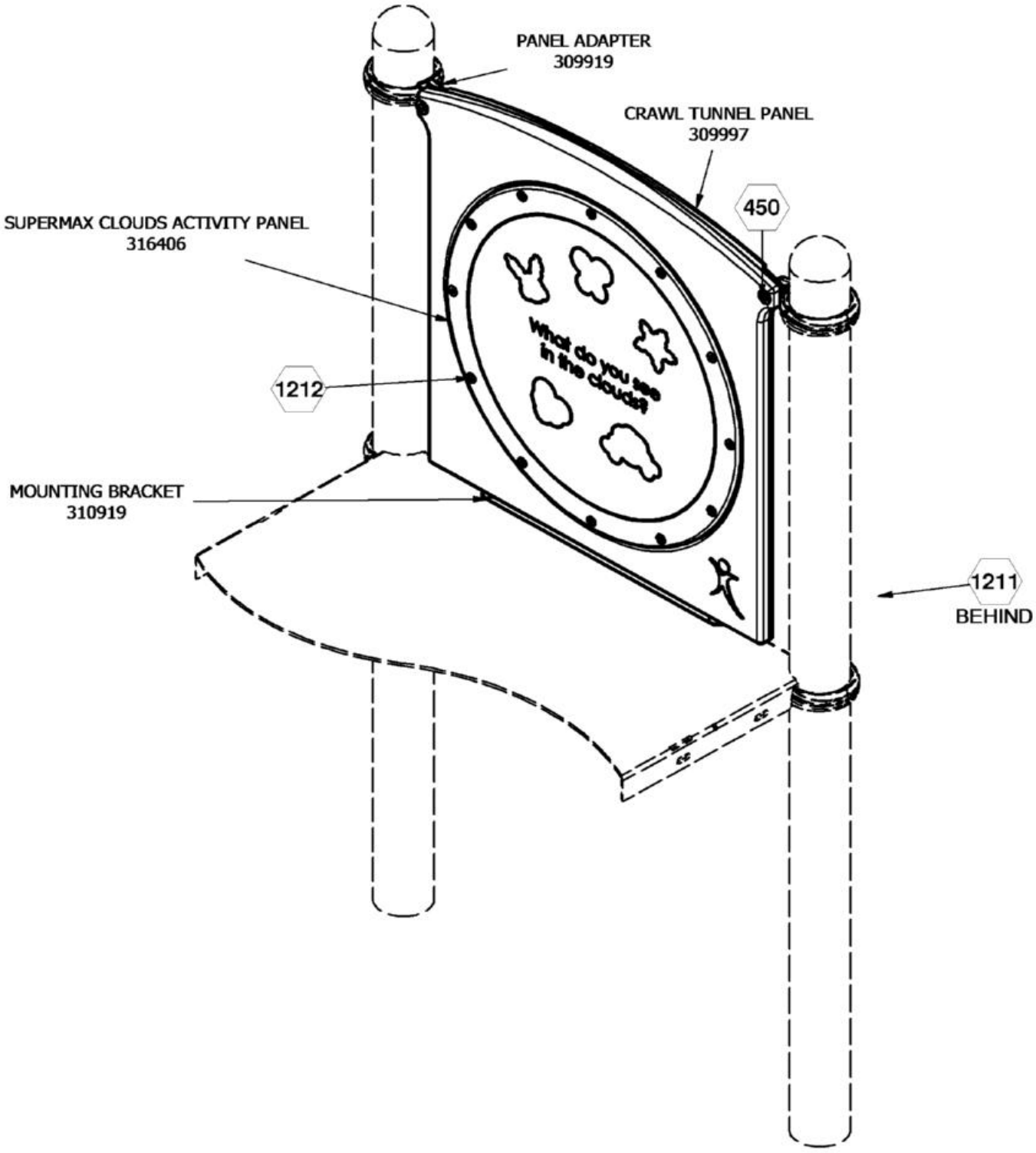
1. Determine which deck is to receive the Clouds Activity Panel. Refer to Order Top View.
2. Attach the Panel Mounting Bracket to the deck. See Detail 1211.
3. Attach Clouds Activity Panel to Crawl Tube Panel. See Detail 1212.
4. Loosely attach Ring Clamps. Refer to seperate Ring Clamp installation sheet.
5. Attach Panel Adapters to Ring Clamps. See Detail 450.
6. Slide the Clouds Activity Panel assembly onto the Panel Mounting Bracket and attach it to the Panel Adapters. See Detail 450. Refer to Finished Assembly view for correct orientation.
7. Plumb and level the entire assembly and tighten all fasteners.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72078 CLOUDS ACTIVITY PANEL



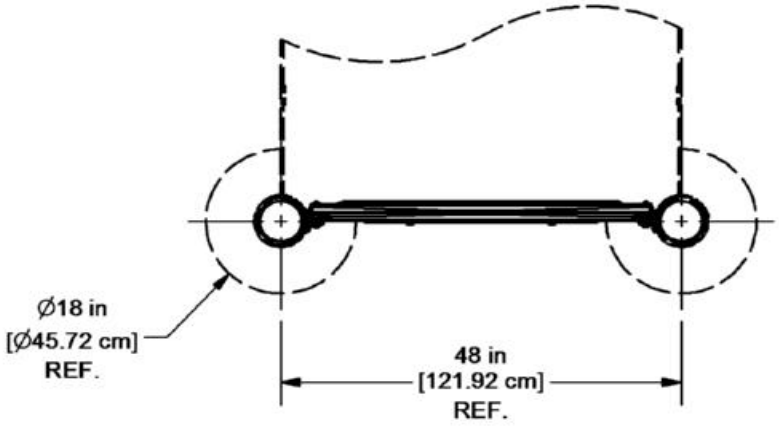
⬡ = INSTALLATION DETAIL

Issued/Revised: 3/15/2023

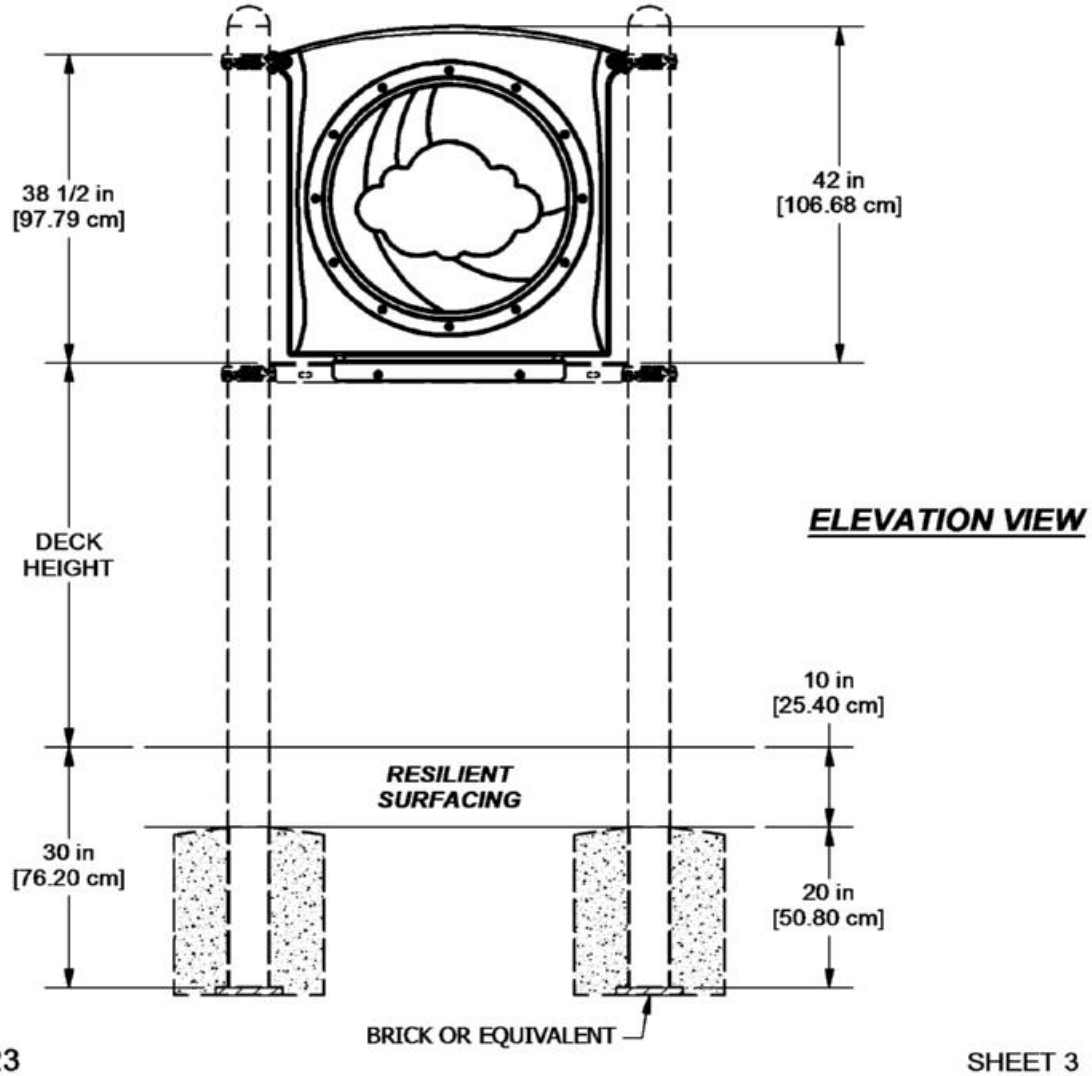
FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

72078 CLOUDS ACTIVITY PANEL



PLAN VIEW

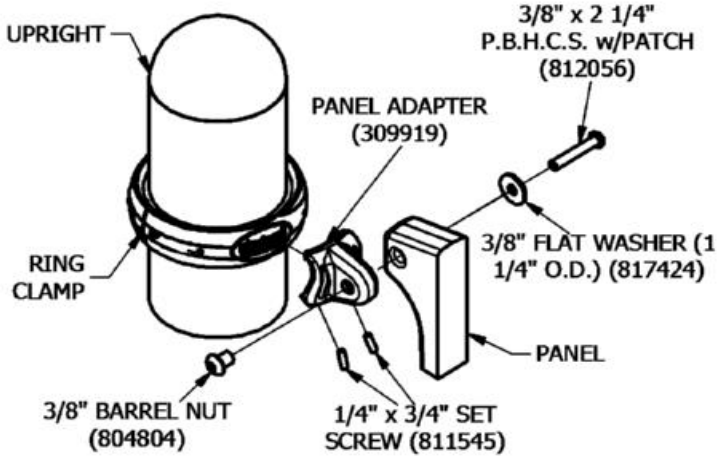


ELEVATION VIEW

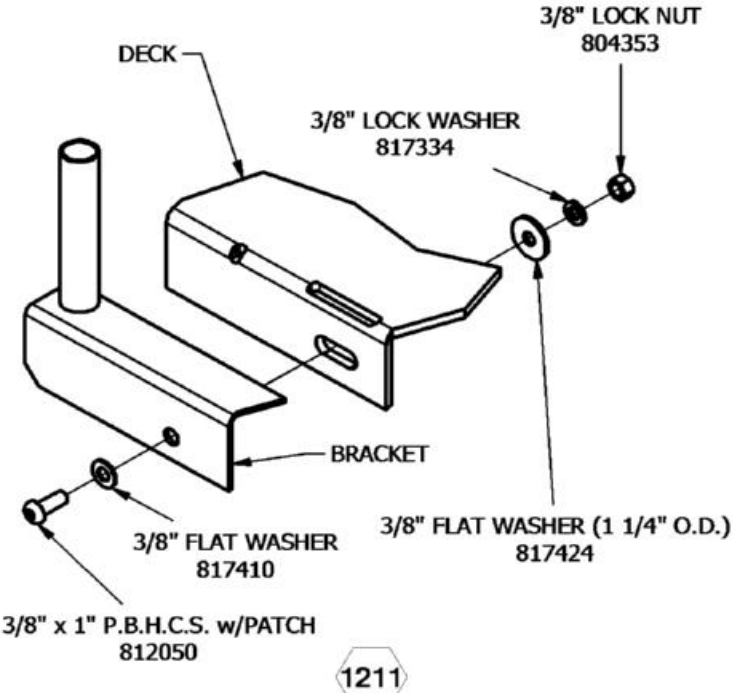
72078 CLOUDS ACTIVITY PANEL

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

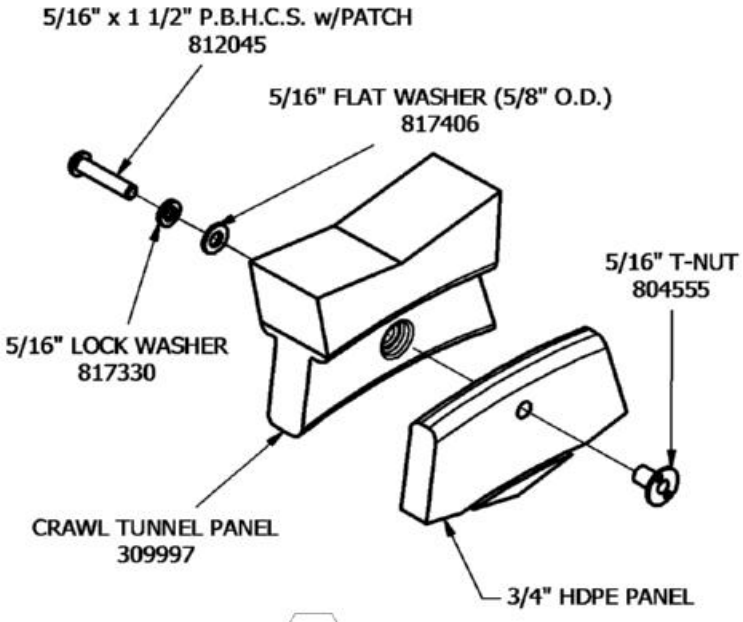
PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



450



1211



1212

This equipment is designed for children 2-5 or 5-12 years old

72096 LOOKOUT SPLIT ENTRY

Parts List		
DESCRIPTION	QTY	PART NUMBER
PIPE ADAPTER	2	309915
LOOKOUT SPLIT ENTRY WELDMENT	1	316685
SPLIT ENTRY SHEET METAL LEFT	1	316691
SPLIT ENTRY SHEET METAL RIGHT	1	316694
HARDWARE COMPLETE	1	316695
1/4" x 3/4" SET SCREW	4	811545
1/4" x 1/2" B.H.C.S. w/PATCH	20	812011
1/4" NYLON INSERT LOCK NUT	20	804350
5/16" FLAT WASHER (5/8" O.D.)	40	817406
3/8" x 3/4" P.B.H.C.S. w/PATCH	4	812052
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
3/8" LOCK WASHER	2	817334
3/8" FLAT WASHER	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
3/8" BARREL NUT	2	804804
3/8" LOCK NUT	4	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Lookout Split Entry. Refer to order Top View.
2. Attach the Split Entry Sheet Metal Left and Right to the Lookout Split Entry Weldment. See Detail 1248.
3. Loosely attach Ring Clamps to Uprights. Refer to seperate Ring Clamp Installation Sheet.
4. Attach the assembled Lookout Split Entry to the Ring Clamps. See Detail 026.
5. Attach the assembled Lookout Split Entry to the deck. See Detail 318.
6. Plumb and level the entire assembly and tighten all fasteners.

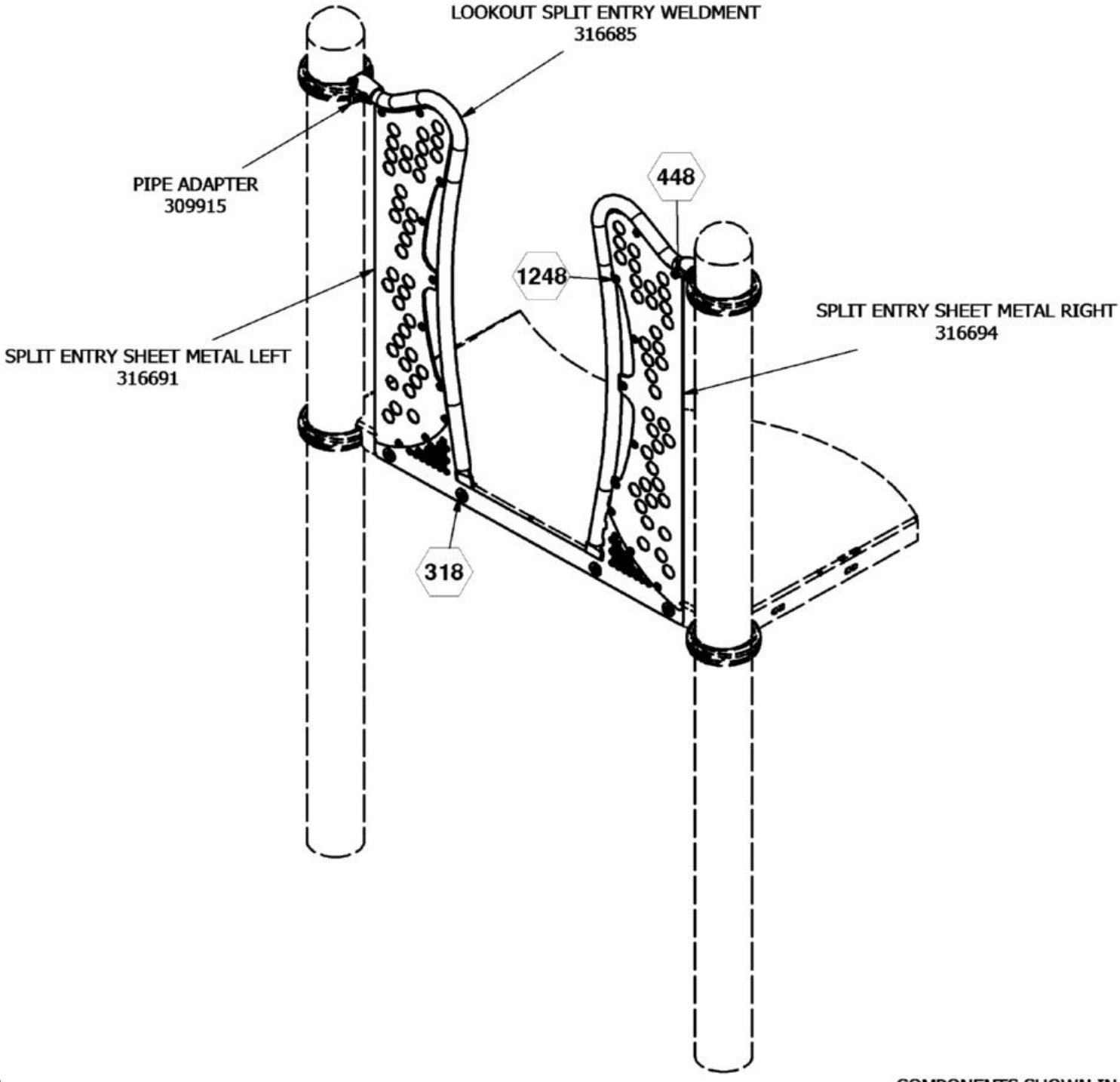
IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

7. When the stucture is finished and satisfactory, tighten all fasteners and install Drive Rivets in all the clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of the play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidlines.

72096 LOOKOUT SPLIT ENTRY

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



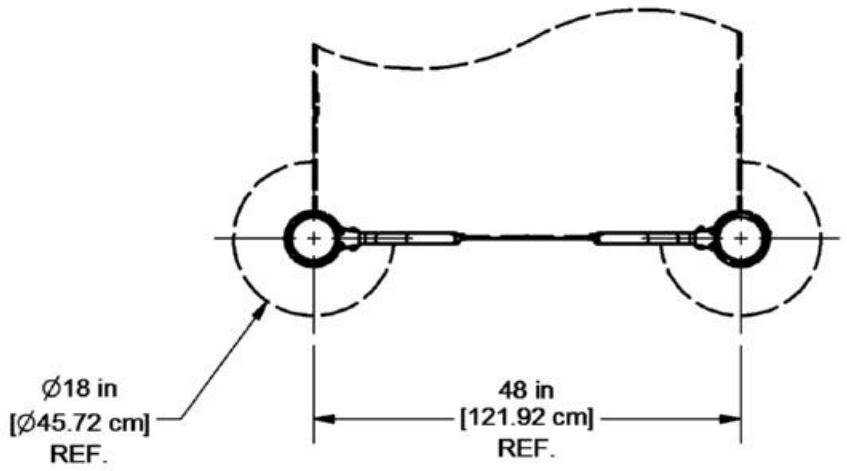
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

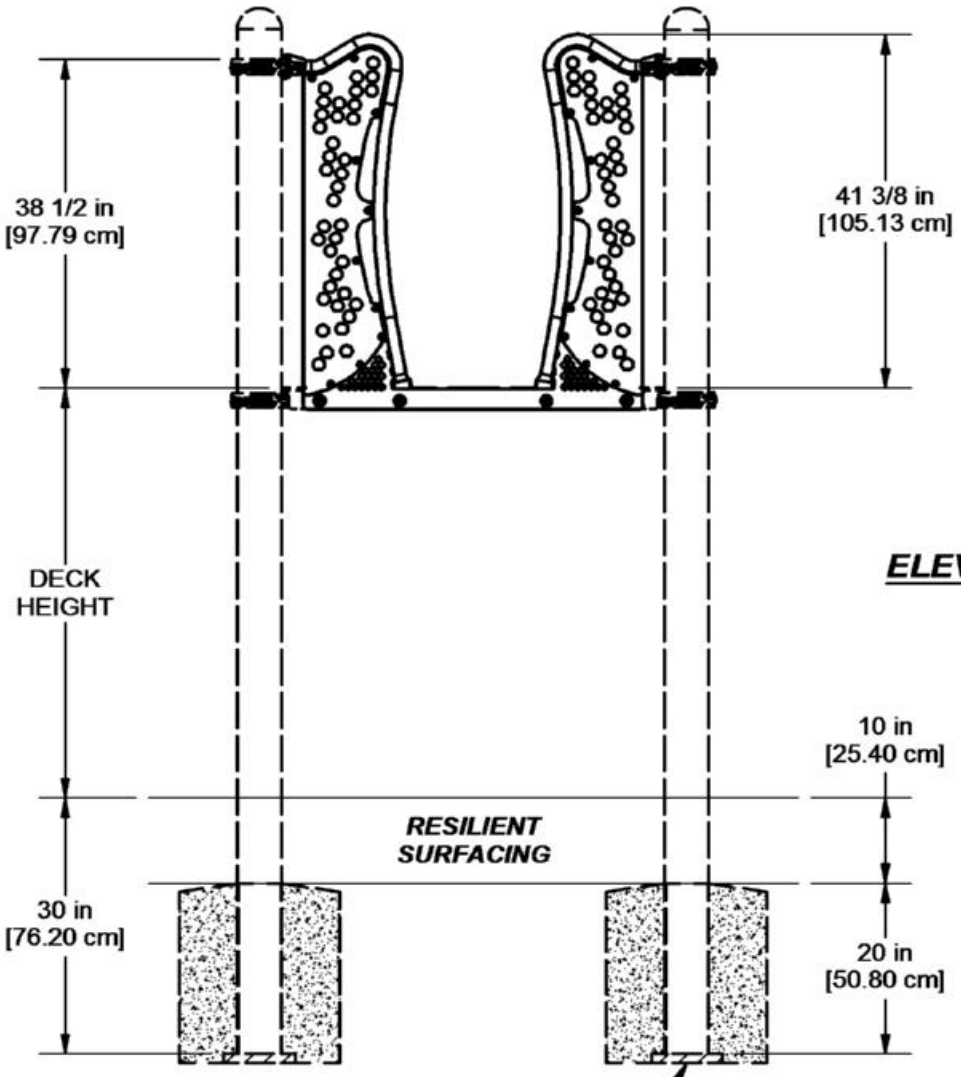
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 6/16/2023

72096 LOOKOUT SPLIT ENTRY

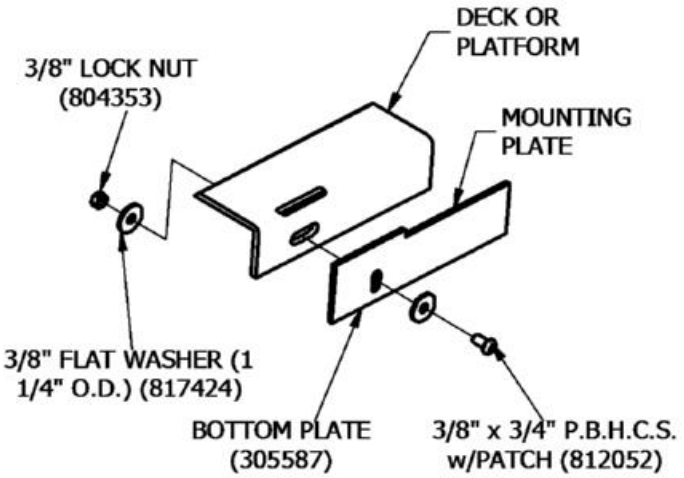


PLAN VIEW



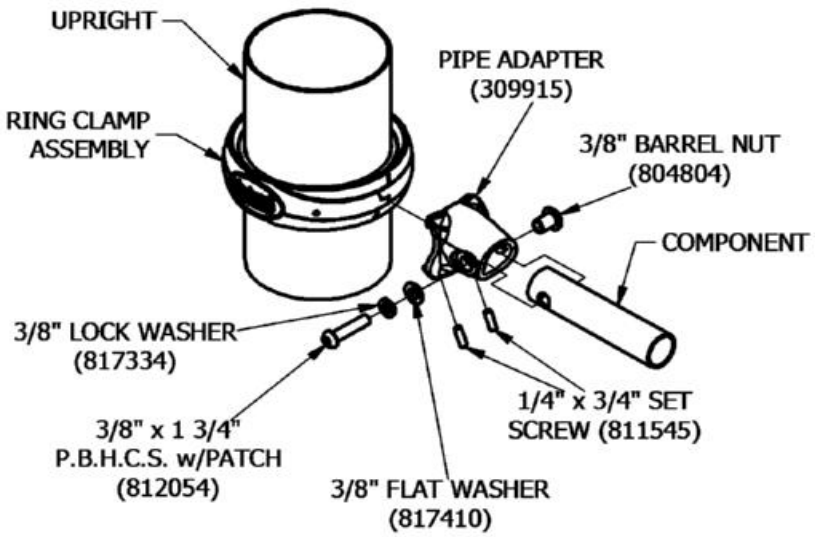
ELEVATION VIEW

72096 LOOKOUT SPLIT ENTRY

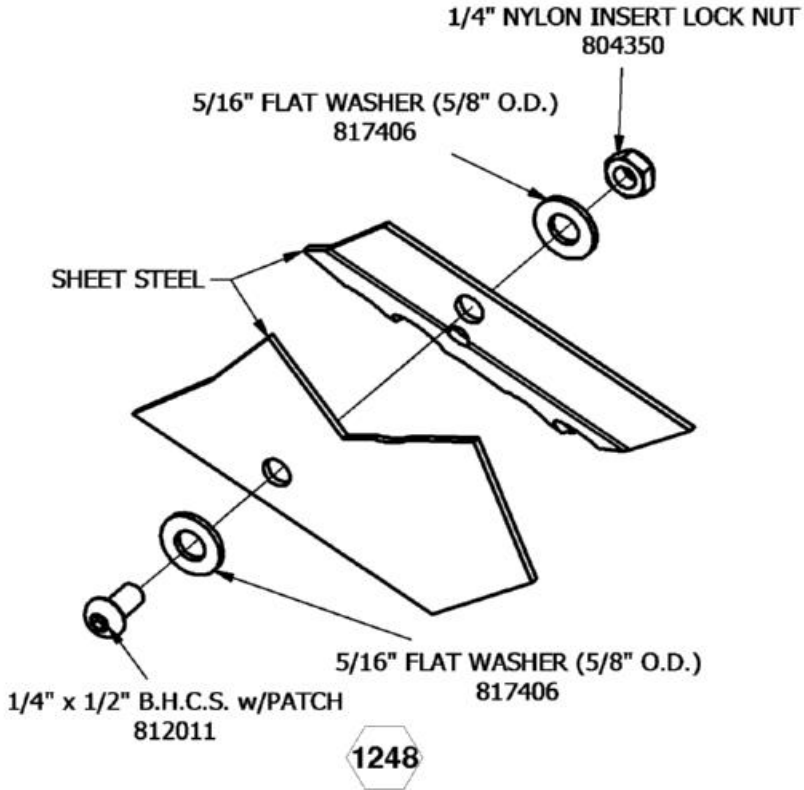


318

NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



448



1248

SuperMax Play Systems

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'

Parts List			
DESCRIPTION	72159	72160	PART NUMBER
10' SQUARE FABRIC PACKAGE	1	1	223002
CABLE CLAMPS	4	4	**
10' SQUARE SHADE FABRIC	1	1	**
3/16" CABLE, 50'-0" LG	1	1	**
10' RAFTER	4	4	223018
SHADE CROWN WELD ASSEMBLY	1	0	223039
SHADE CROWN WELD ASSEMBLY	0	1	223046
IN-GROUND EXTENSION	1	1	223118
GLIDE ELBOW	4	4	316306
HARDWARE COMPLETE	1	1	316969
1/4" x 1" SELF TAPPING TORX w/PATCH	8	8	HWS0021
3/8" x 1 1/4" SELF TAPPING TORX w/PATCH	8	8	HWS0081
1/2" x 4" HEX HEAD BOLT	4	4	801215
1/2" LOCKNUT	4	4	804355
1/2" ANCHOR ROD	2	2	135038

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'

INSTALLATION INSTRUCTIONS:

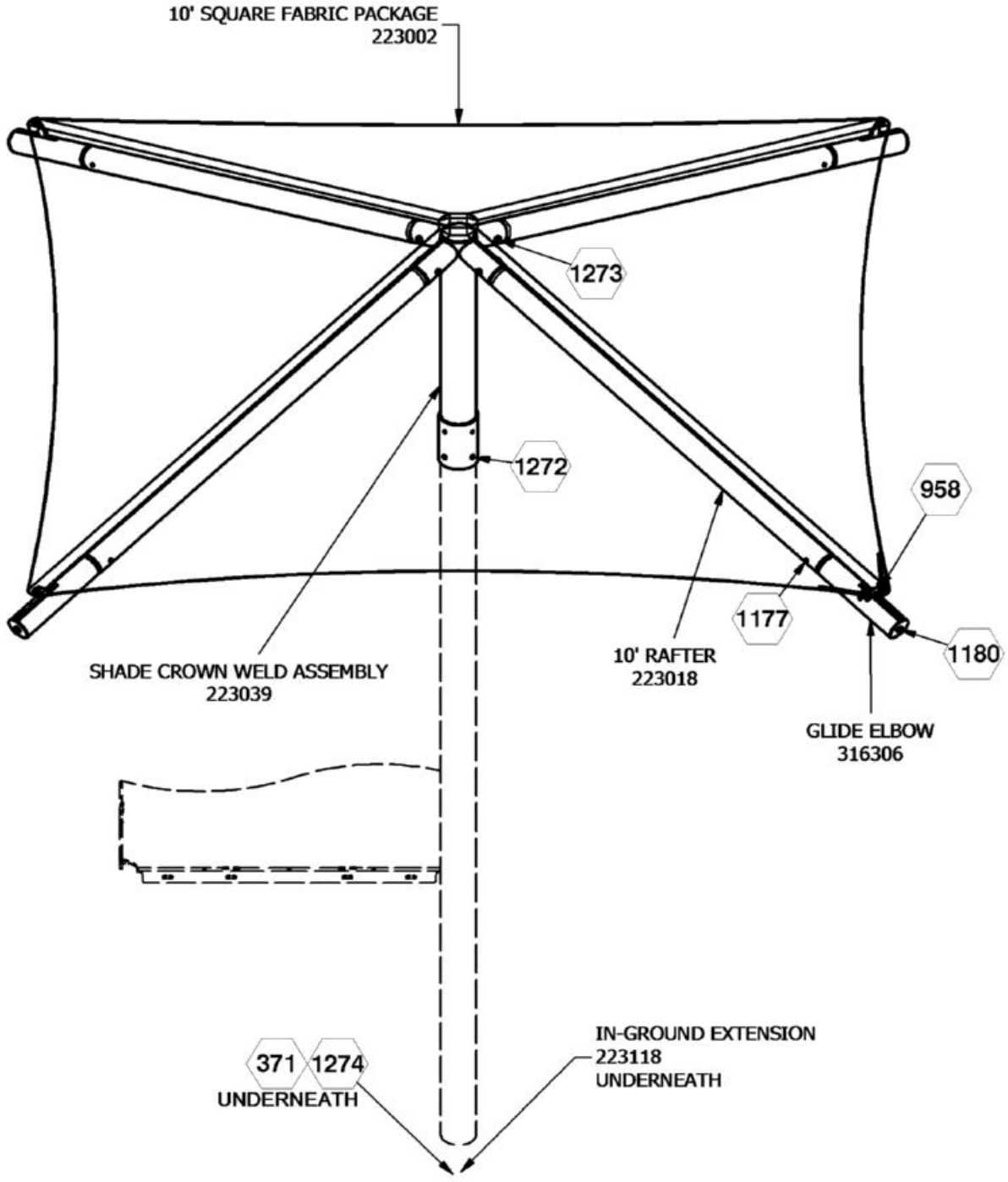
1. Determine which upright is to receive the 10' x 10' Shade. Refer to order Top View.
2. Put Anchor Rods into In-Ground Extensions. See Detail 371.
3. Attach the In-Ground Extension to the existing upright. See Detail 1274.
4. Attach the Shade Crown Weld Assembly to the existing upright. See Detail 1272.
5. Attach the Glide Elbows to the 10' Rafters. See Detail 956.
6. Attach the assembled rafters to Shade Crown Weld Assembly. See Detail 1273. **NOTE:** Orientation of hook on Glide Extension is critical.
7. Starting at any corner thread the steel cable through the jump-out hole under loop at the edge of the shade fabric until it comes out the end of the sleeve at the next corner. Continue threading cable through sleeve all the way around the shade fabric until the entire shade fabric has been encircled. Cable will exit through jump-out hole on the same corner it was started. Leave a loop of approximately 9 inches at each non-tensioning corner. Spread the shade fabric over the frame and secure corners to the Glide Hooks. It may be necessary to flap the loose corners up and down to stretch the shade fabric so that it fits over the Glide Hooks. **NOTE:** The Steel Cable must always pass under the Glide Hooks. See Detail 958.
8. Pull tight by hand then using the clamps provided, fasten the steel cables together. All clamps must be used. After clamps are tightened, thread the excess steel cable back into the jump-out holes in the shade fabric. **NOTE:** If any portion of the steel cable was bent/kinked during the tensioning process, it must be straightened by bending the steel cable back in the opposite direction of the bend. **NOTE:** Cable clamp must be installed with nuts facing down. Clamps must be touching each other. **NOTE:** Any bolt end protruding more than two full threads beyond face of the nut promptly cut-off flush, file smooth, and treat to prevent corrosion. See Detail 958.
9. Remove Cover Plate from Glide Insert to access tensioning nut. Take turns tensioning each Glide Insert in small increments. Make sure that the steel cables cross each other at the corner where the steel cable ends. DO NOT OVER TENSION! You can test the tightness of the shade fabric by hitting the perimeter steel cable with the palm of your hand to see how much it moves. If the shade fabric does not move more than 6" up or down then you have the correct tension. If the shade fabric bounces and has a ripple affect then you may need to apply more tension. Attach Cover Plate to Glide Insert. See Detail 957.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'



⬡ = INSTALLATION DETAIL

Issued/Revised: 11/2/2023

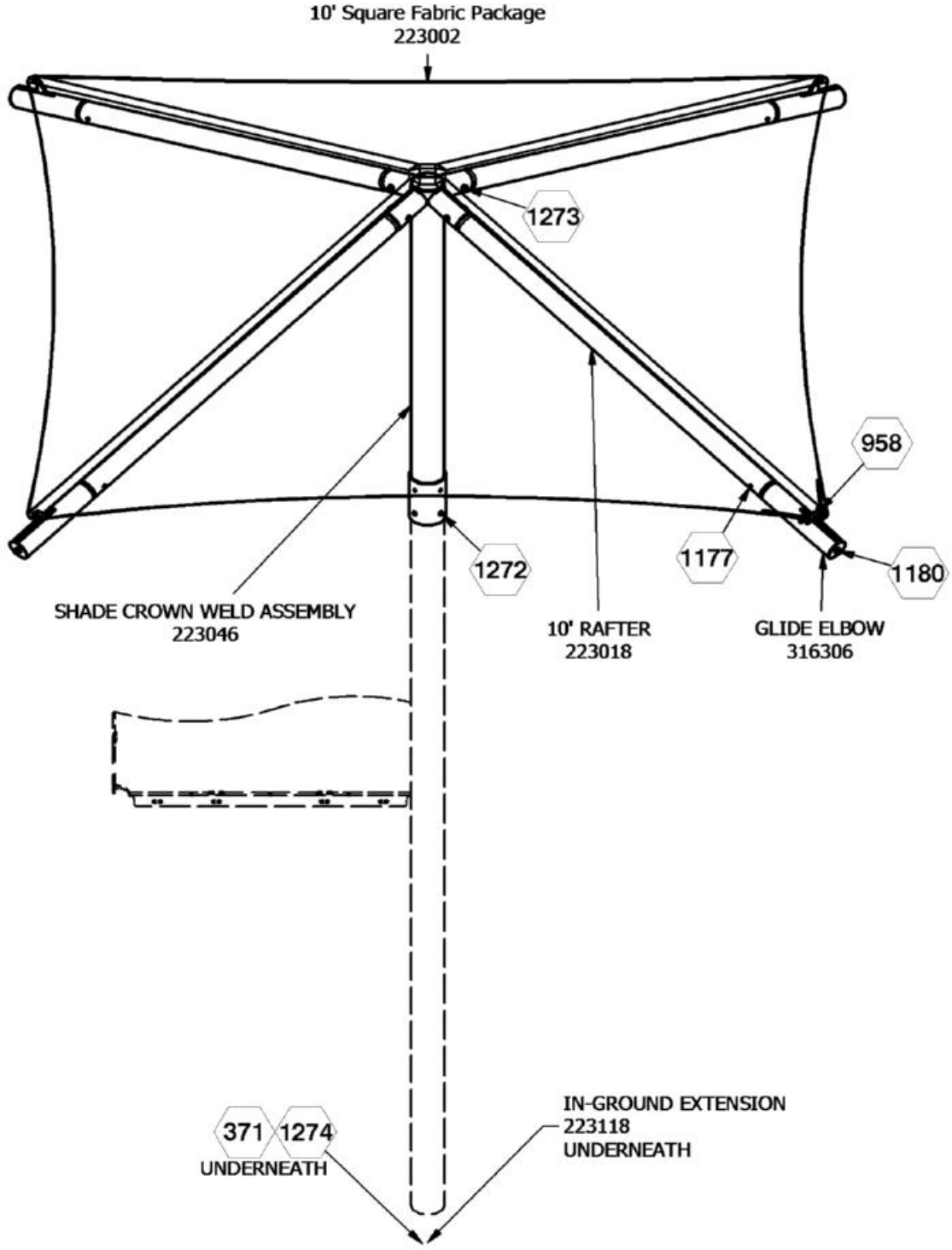
FINISHED ASSEMBLY

4'-0" SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'



⬡ = INSTALLATION DETAIL

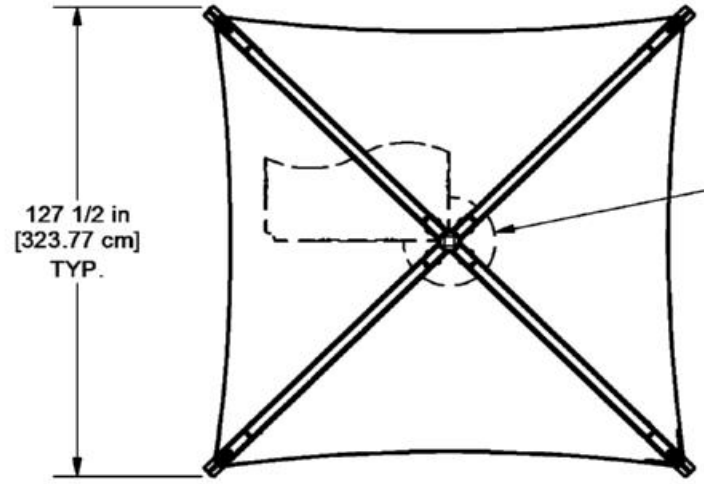
Issued/Revised: 11/2/2023

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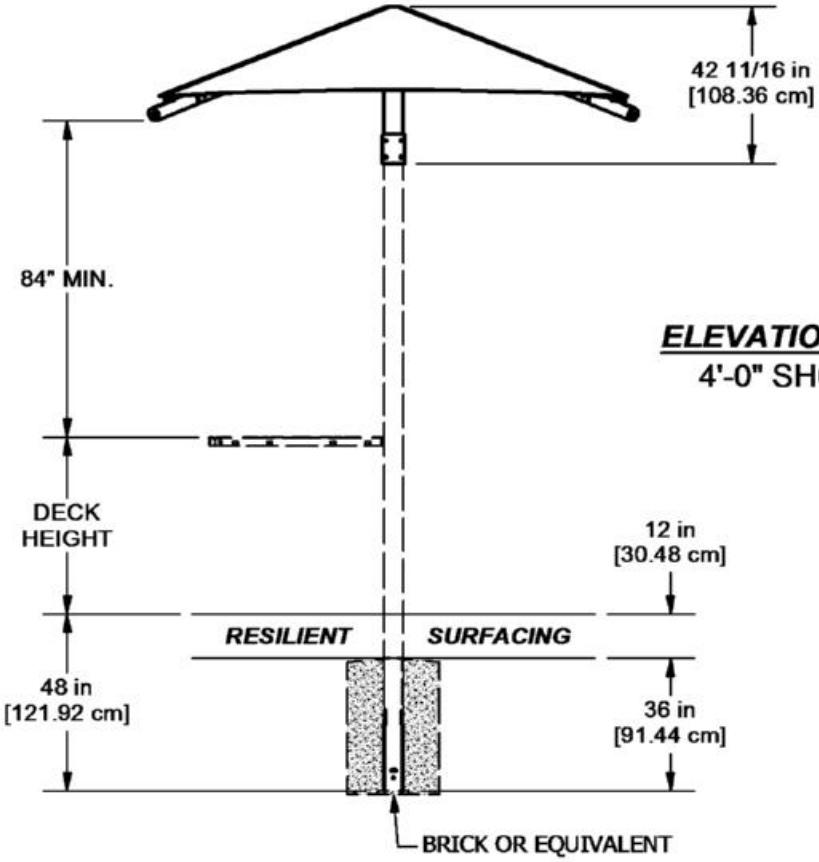
6'-8" SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'



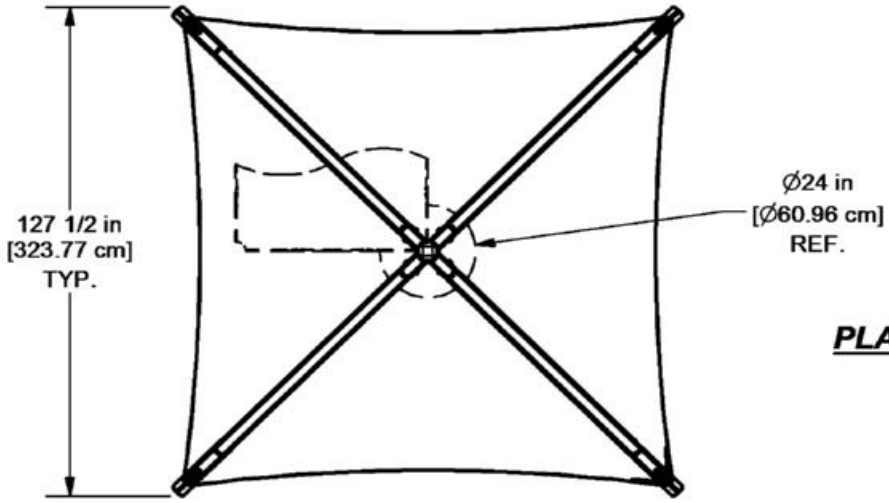
PLAN VIEW



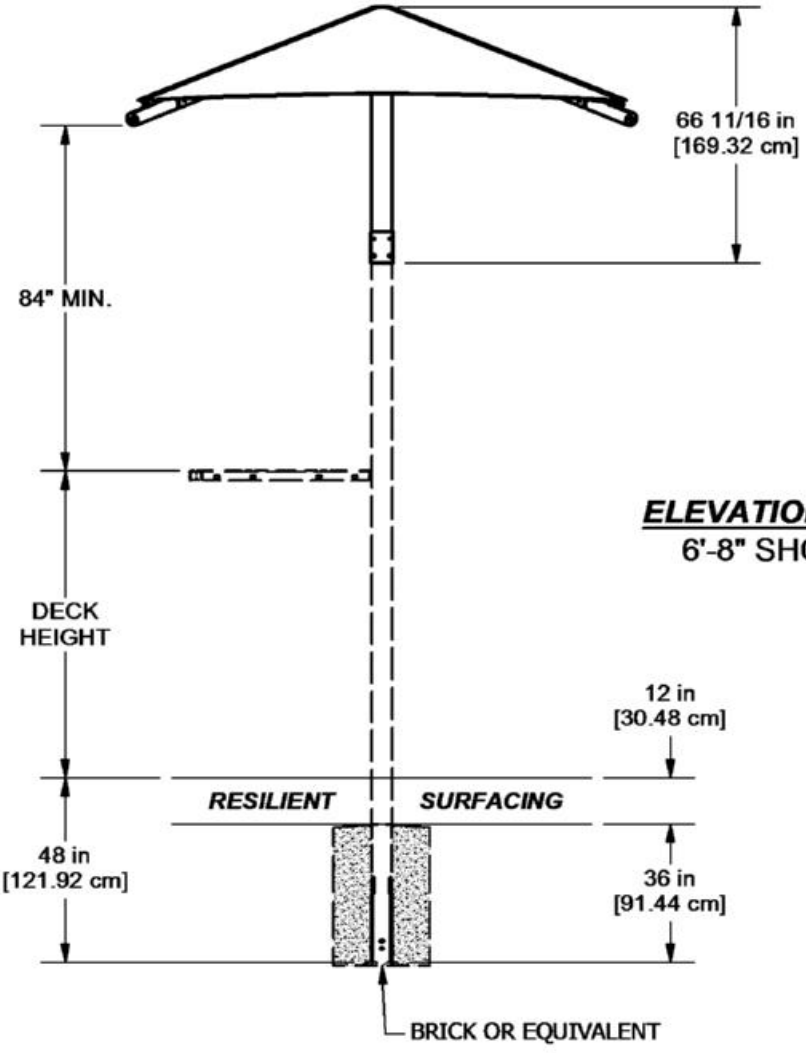
ELEVATION VIEW
4'-0" SHOWN

SuperMax Play Systems

72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'

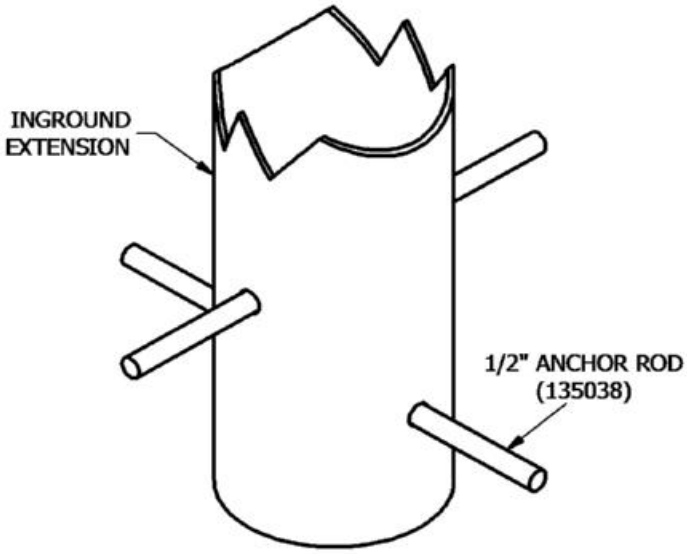


PLAN VIEW



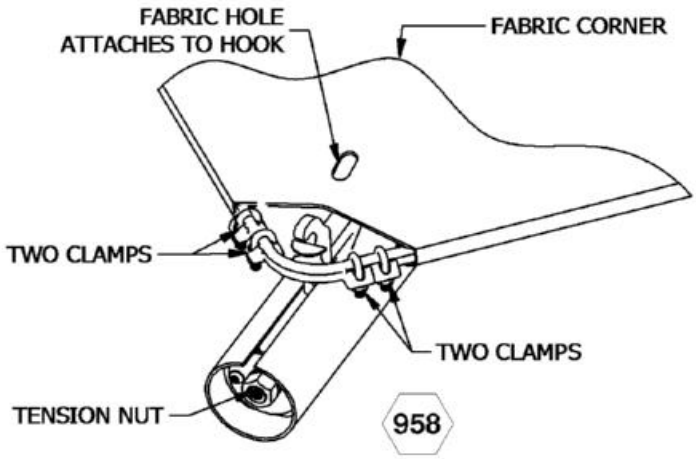
ELEVATION VIEW
6'-8" SHOWN

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'



371

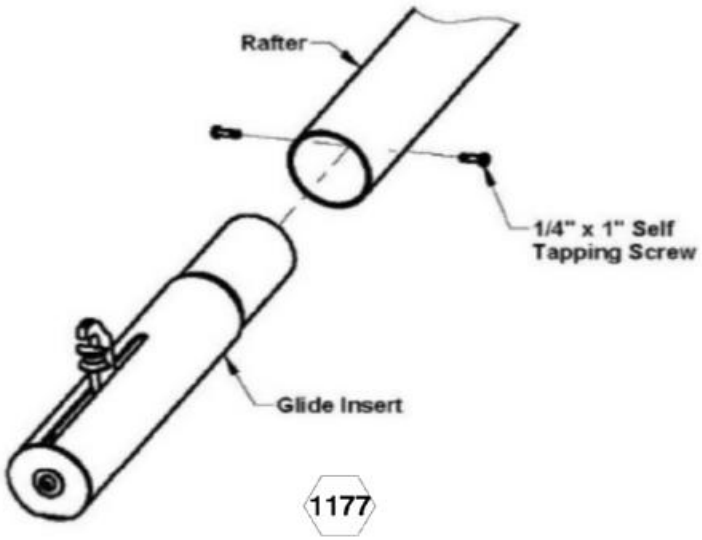
SMALLER GLIDE INSERTS WILL NOT HAVE A CABLE GUIDE ON THE GLIDE HOOK. THE CABLE FOLLOWED BY THE FABRIC HOLE ARE BOTH PLACED OVER THE HOOK.



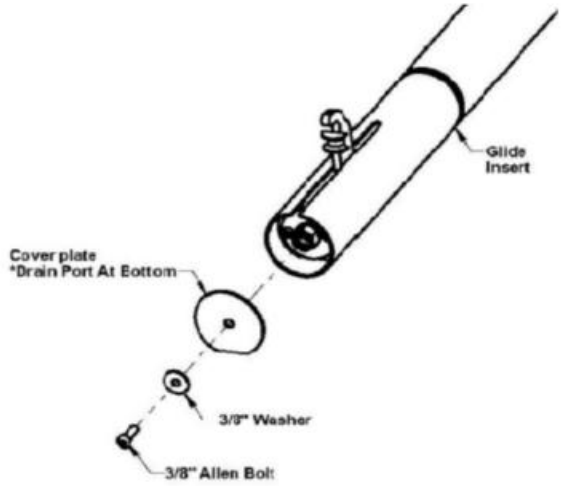
958

NOTE: ON THREE OF THE FOUR CORNERS THE CABLE WILL LOOP AROUND THE HOOK OR CABLE GUIDE.

ON THE FOURTH CORNER THE CABLE ENDS WILL OVERLAP AROUND THE HOOK OR CABLE GUIDE AND BE SECURED WITH TWO CABLE CLAMPS ON EITHER SIDE. THE FABRIC HOLE IS THEN PULLED OVER HOOK. LOOSE CABLE END ARE TO BE TUCKED BACK INTO FABRIC HEMS.

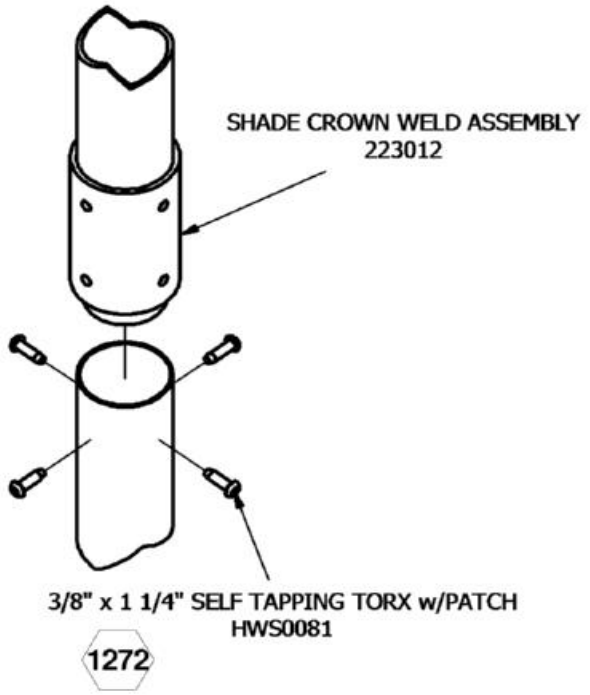


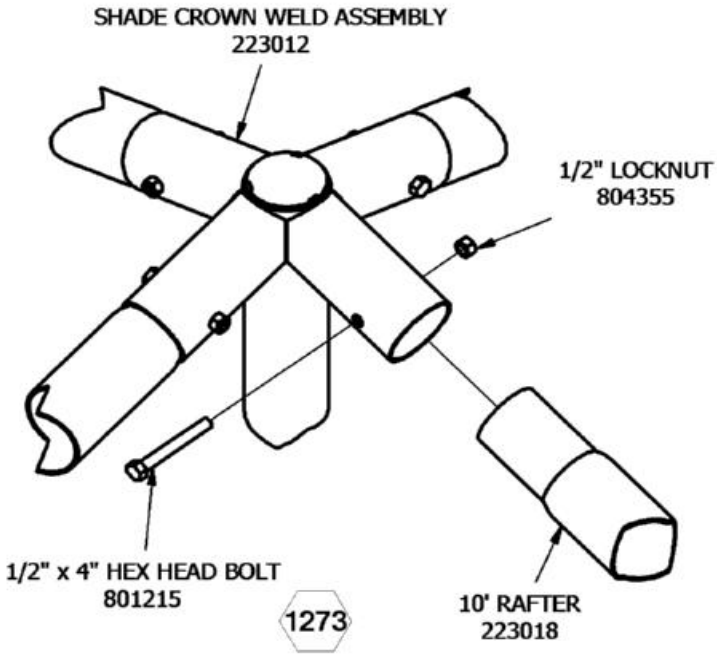
1177

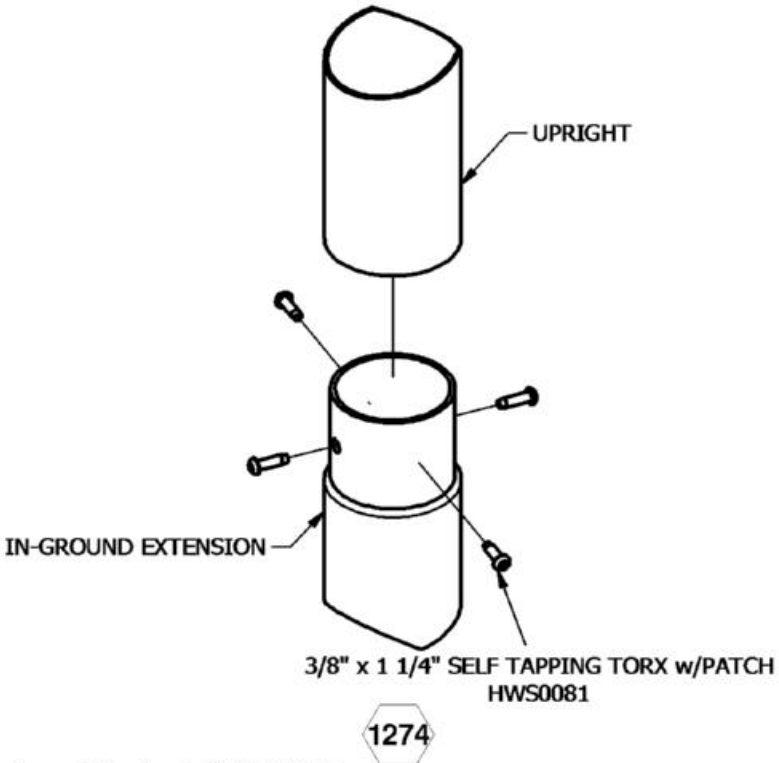


1180

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'







Issued/Revised: 11/2/2023

SuperMax Play Systems

72162 TRIANGLE STALK TOPPER

Parts List		
DESCRIPTION	QTY	PART NUMBER
ROLLED CROSS BRACE	3	315753
TRIANGLE EXTENSION WELDMENT	3	316966
HARDWARE COMPLETE	1	316968
3/8" x 1 1/4" SELF TAPPING TORX w/PATCH	12	HWS0081
1/2" x 5 1/2" B.H.C.S.	6	811071
1/2" LOCKWASHER	6	817342
1/2" HEX NUT	6	804055
O-RING	9	169362

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Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Refer to the overhead drawing to locate the three posts which will recieve the Triangle Stalk Topper. As posts are not included in this package, they must be installed per seperate instructions prior to installing this roof.

2. Attach Triange Extension Weldments to Uprights. See Finished Assembly view and Detail 1271.

3. Attach Rolled Cross Braces to Square Extension Weldments. See Detail 1170.

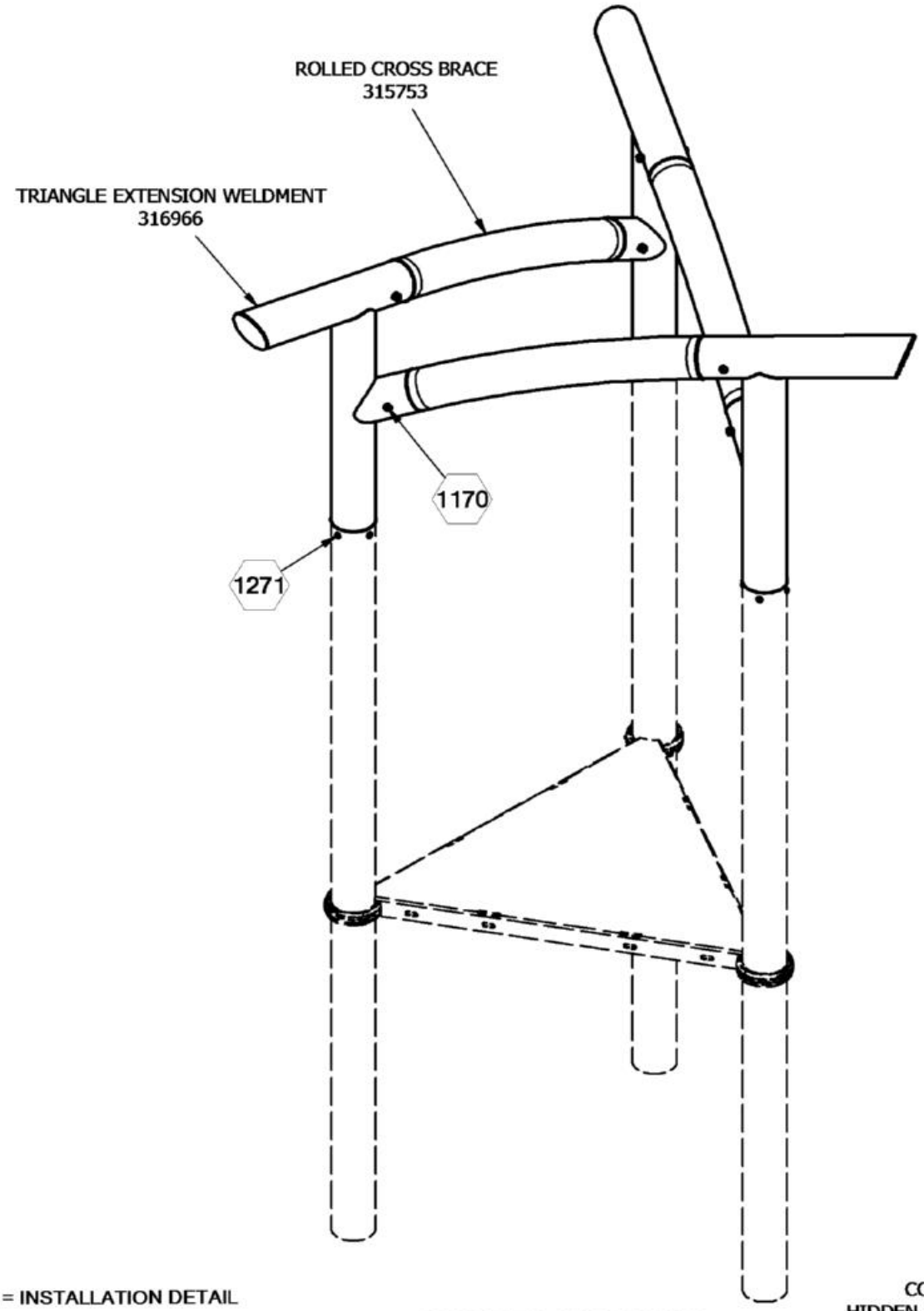
4. Plumb and level the entire assembly and tighten all fasteners.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72162 TRIANGLE STALK TOPPER



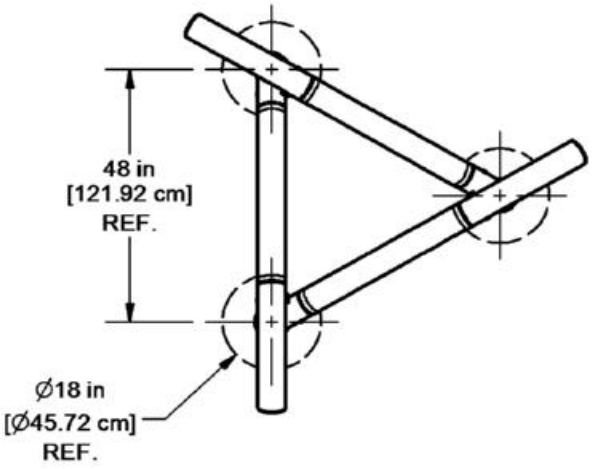
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

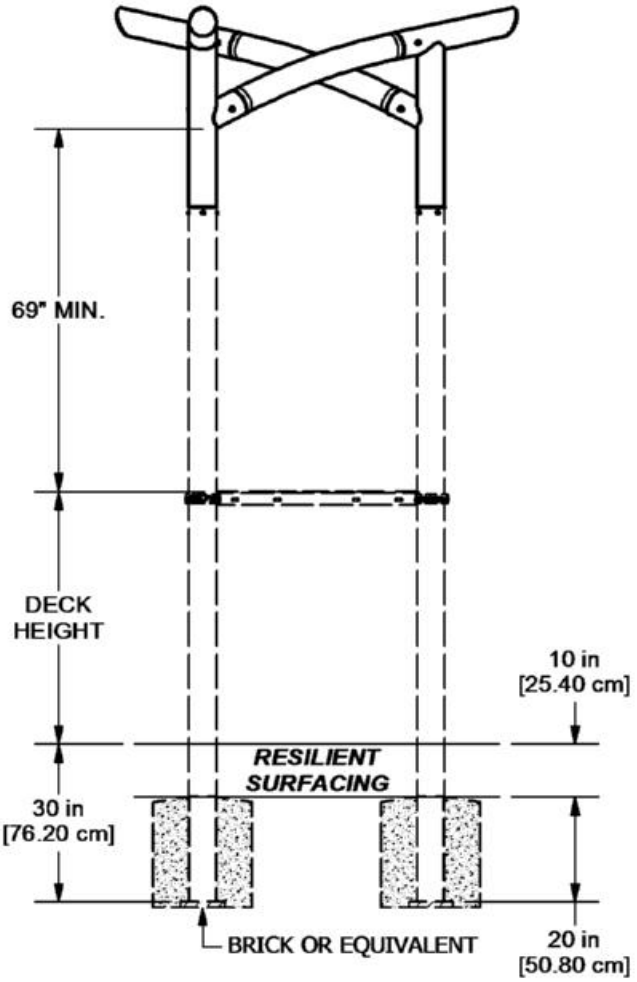
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 11/1/2023

72162 TRIANGLE STALK TOPPER

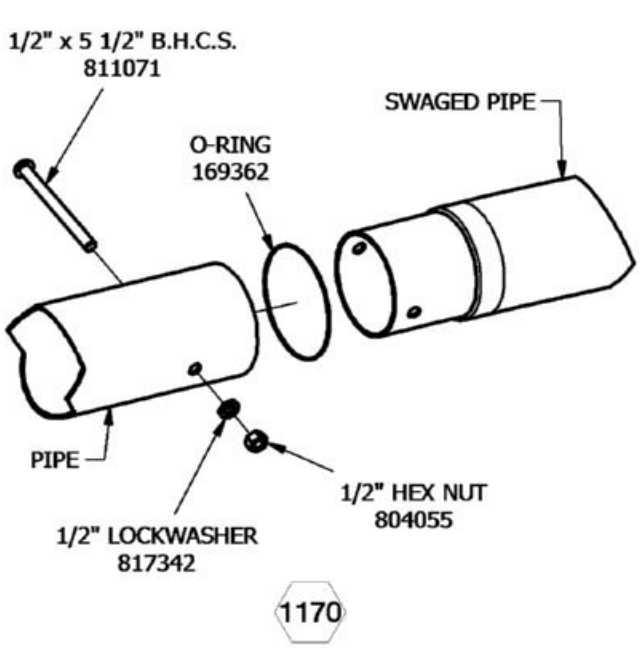


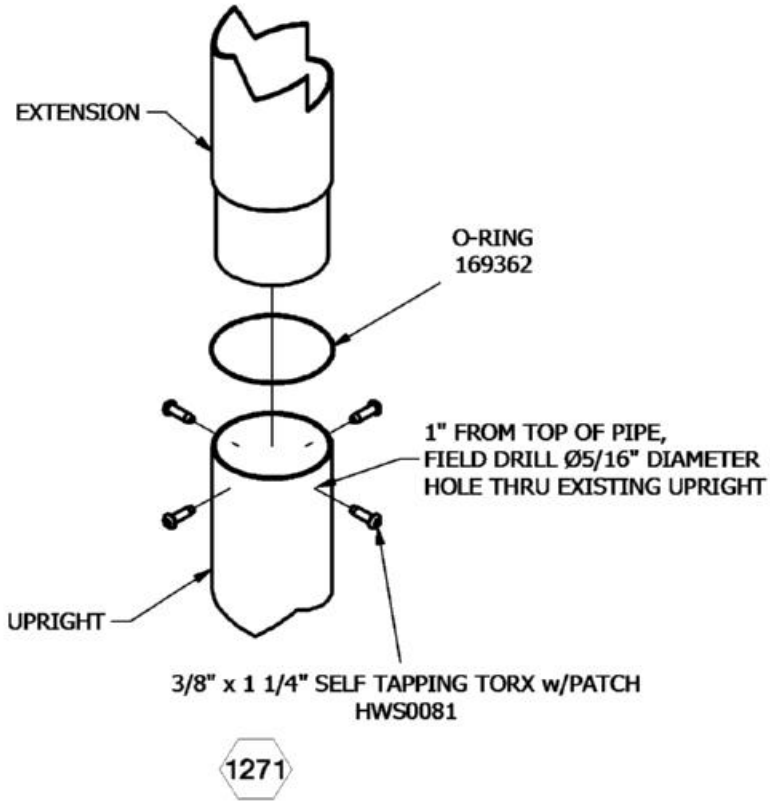
PLAN VIEW



ELEVATION VIEW

72162 TRIANGLE STALK TOPPER





72167 POLICE ROTOGEN PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	4	309919
POLICE CAR PANEL	1	317036
POLICE CAR TACK ON	1	317037
SIREN ROTOGEN WHEEL	1	317045
HARDWARE COMPLETE	1	317038
#10 x 1" SELF-TAPPING SCREW	3	809608
1/4" x 3/4" SET SCREW	8	811545
1/4" x 1 1/4" P.B.H.C.S. w/Patch	1	812013
1/4" LOCK WASHER	1	817326
5/16" NYLON INSERT LOCKNUT	1	804352
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	812053
3/8" FLAT WASHER	8	817410
3/8" BARREL NUT	8	804804

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Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Police Rotogen Panel. Refer to order Top View.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. Hook the Panel Adapters onto the Ring Clamps and attach. See Detail 467.
4. Remove the back of Siren Rotogen Wheel, and drill pilot holes for Police Tack On. Attach Police Tack On to backing and reassemble. See Detail 1283.
5. Attach assembled Siren Rotogen Wheel to Police Panel. See Detail 1287.
6. Attach assembled Police Rotogen Panel to Panel Adapters. See Detail 467.
7. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

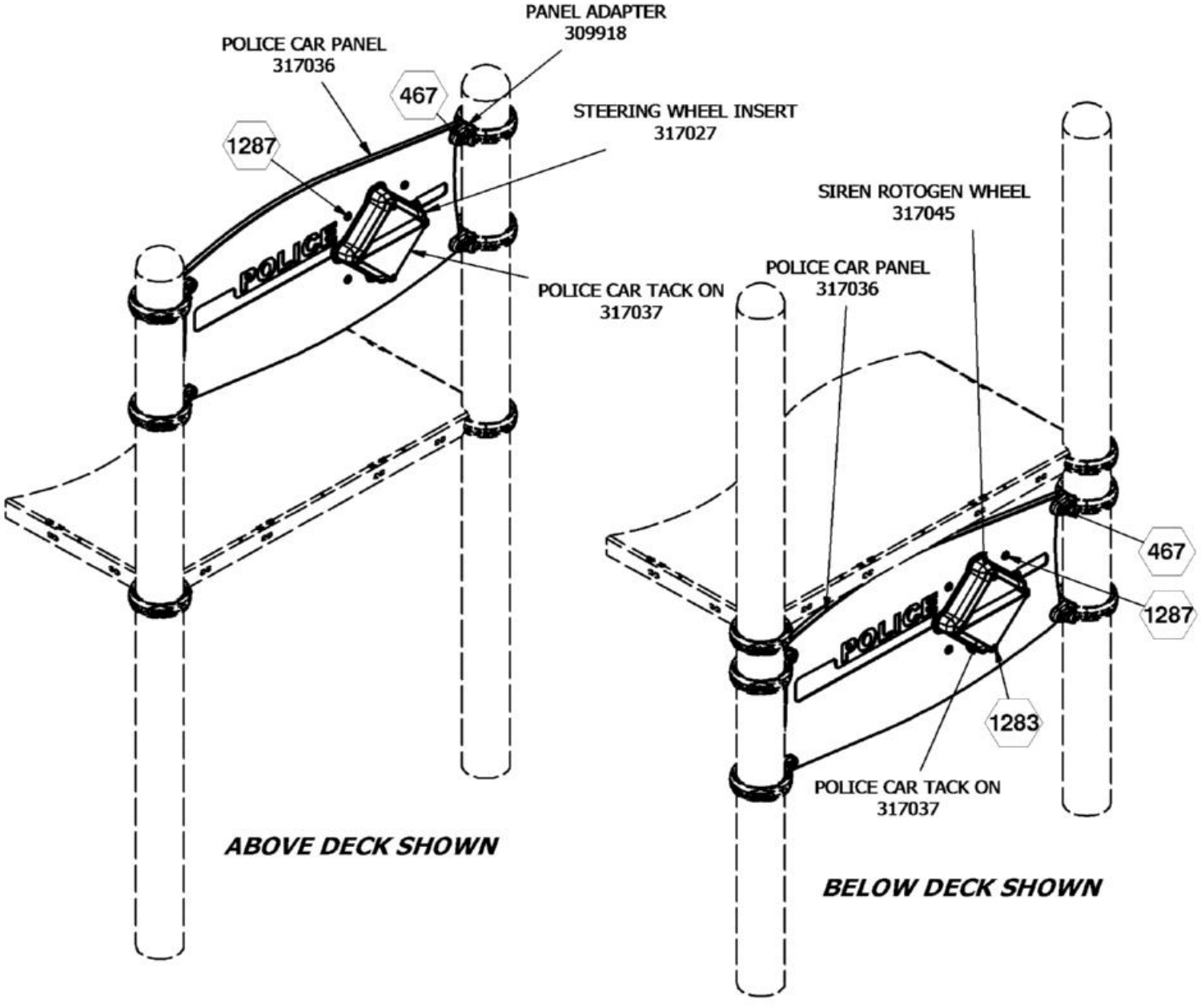
8. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

SuperMax Play Systems

72167 POLICE ROTOGEN PANEL

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

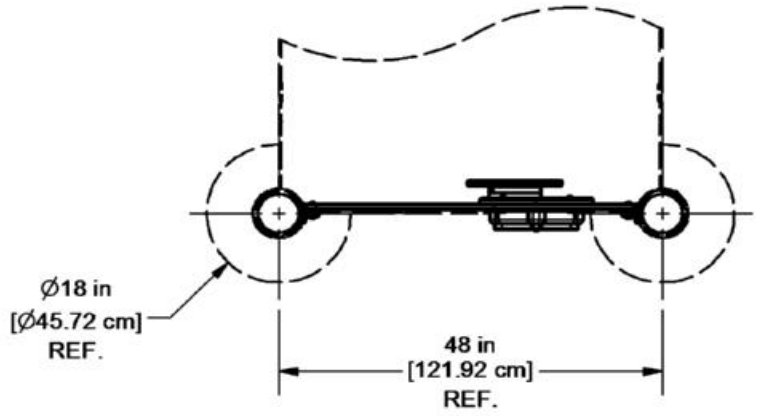


⬡ = INSTALLATION DETAIL

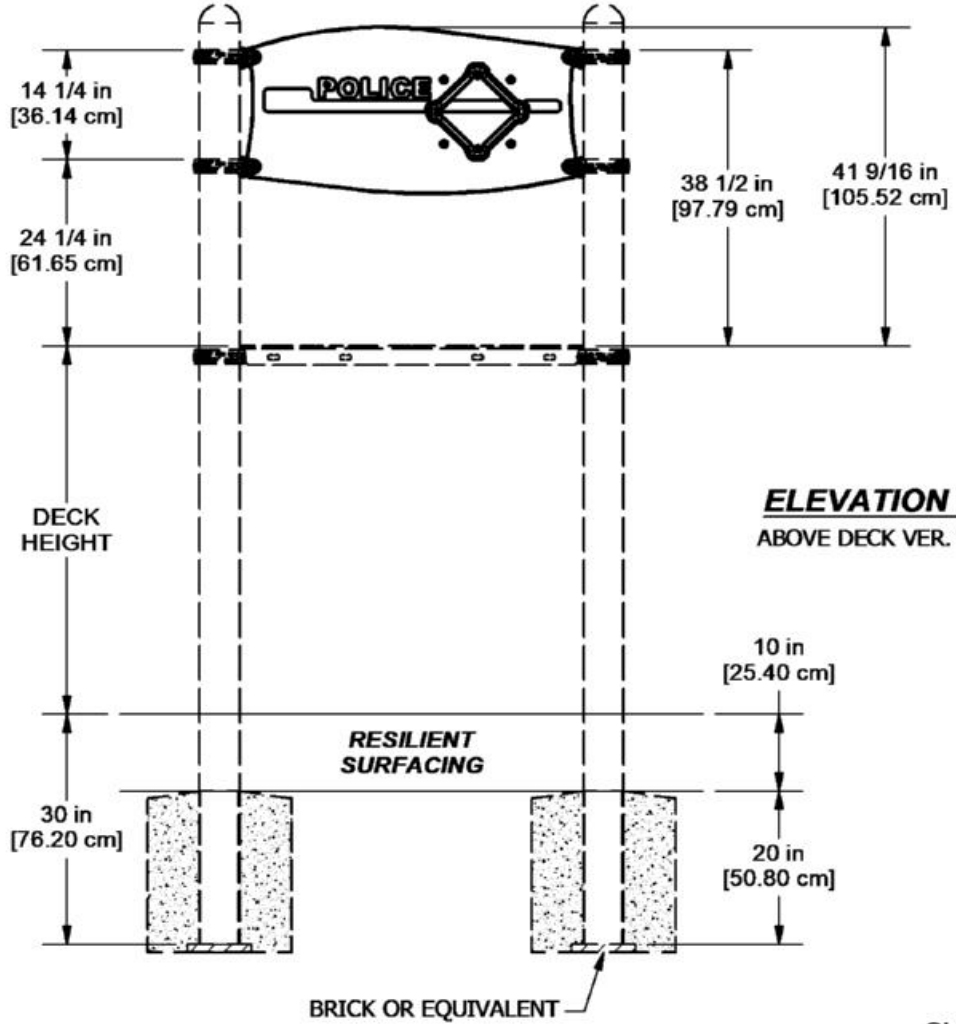
FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

72167 POLICE ROTOGEN PANEL (ABOVE DECK VER.)



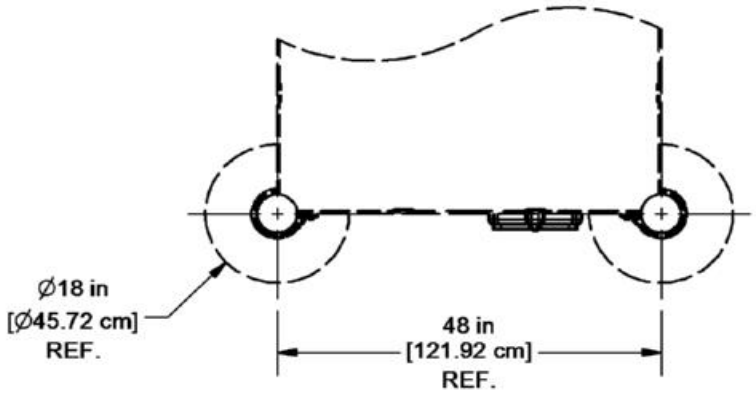
PLAN VIEW



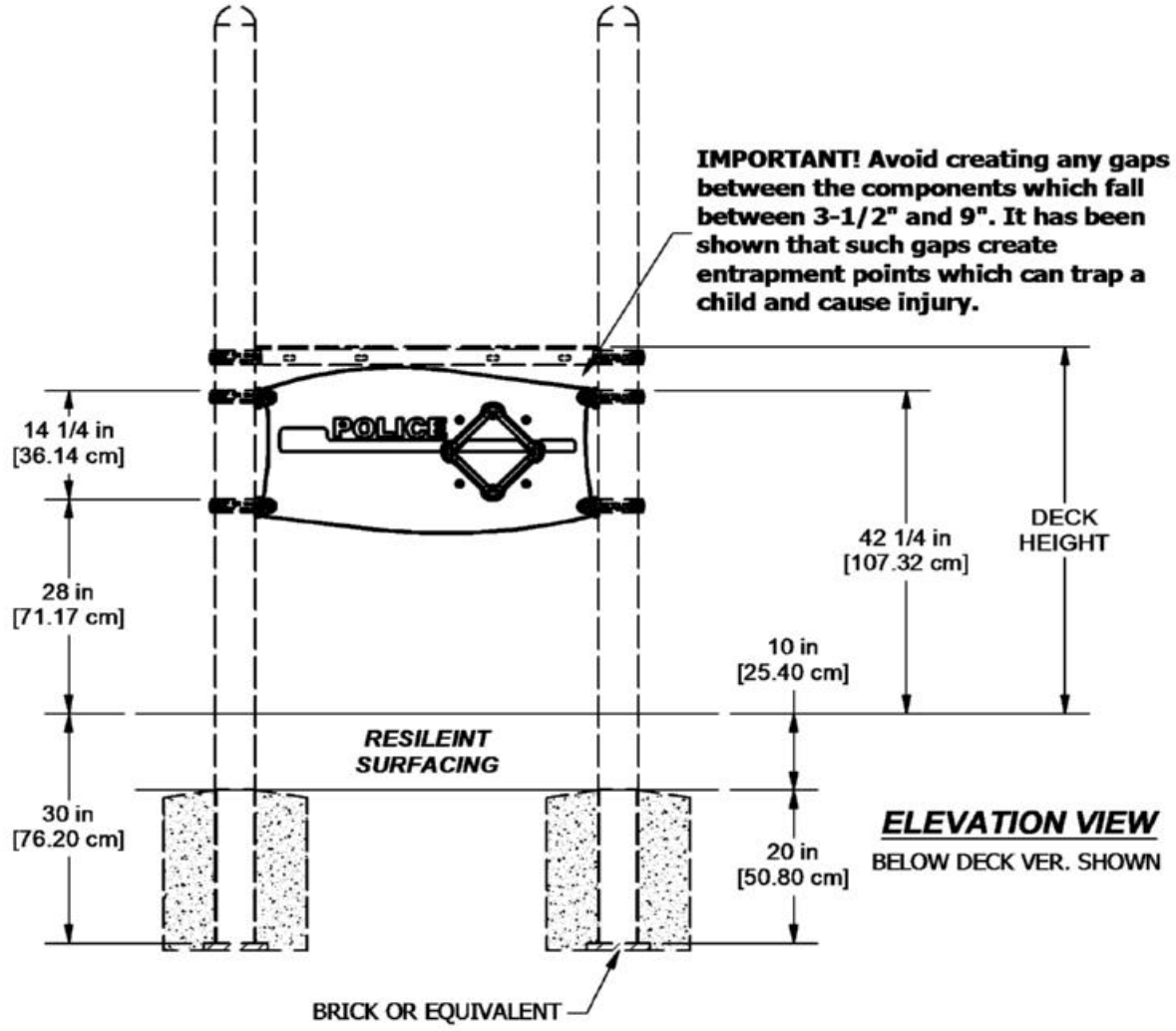
ELEVATION VIEW

ABOVE DECK VER. SHOWN

72167 POLICE ROTOGEN PANEL (BELOW DECK VER.)



PLAN VIEW

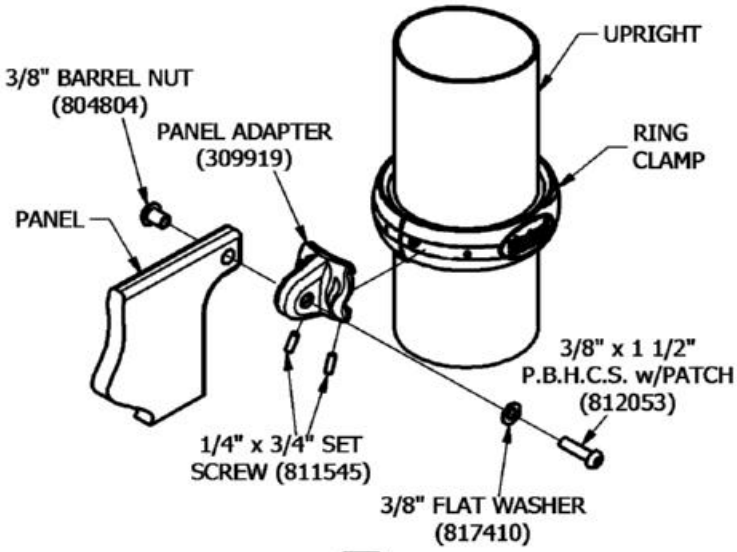


ELEVATION VIEW
BELOW DECK VER. SHOWN

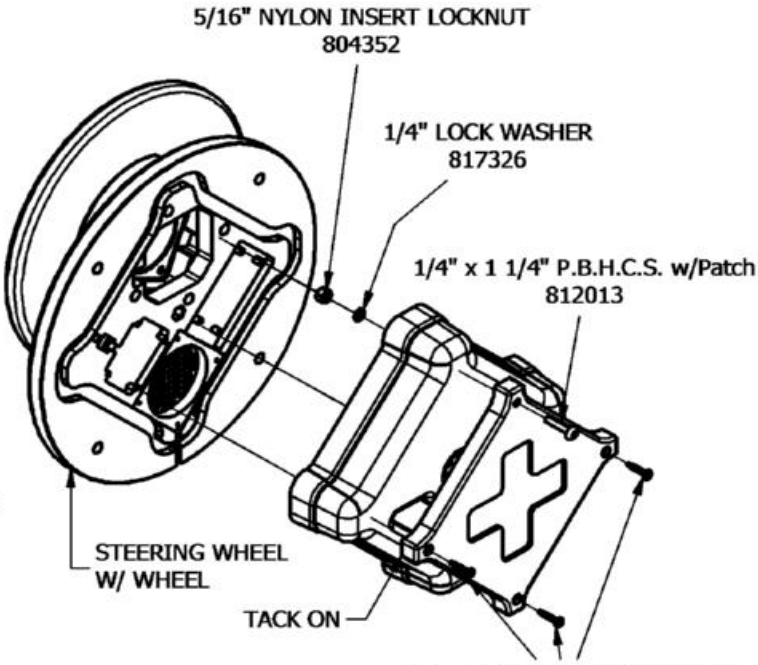
72167 POLICE ROTOGEN PANEL

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

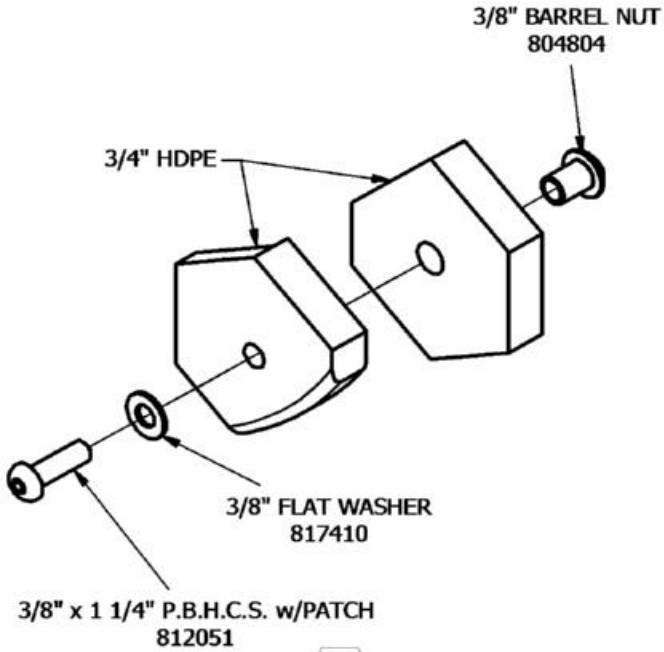
PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



467



1283



1287

72184 COWABUNGA CLIMBER SMALL

Parts List		
DESCRIPTION	QTY	PART NUMBER
COATED COWABUNGA PANEL A	1	317100
COWABUNGA FRAME A WELDMENT	1	317102
SMASHED FOOTBUCK A	2	317114
COWABUNGA SM MOUNTING BRACKET	1	317486
HARDWARE COMPLETE	1	317136
3/8" x 3/4" P.B.H.C.S. w/PATCH	2	812052
3/8" x 1" P.B.H.C.S. w/PATCH	10	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	12	812053
3/8" LOCK WASHER	16	817334
3/8" FLAT WASHER	14	817410
3/8" FLAT WASHER (1 1/4" O.D.)	26	817424
3/8" T-NUT	14	804556
3/8" HEX NUT	12	804053
CLIMBER HANDHOLD	2	317108
CLIMBER HANDHOLD	2	317109
CLIMBER HANDHOLD	2	317110

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

72184 COWABUNGA CLIMBER SMALL

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Cowabunga Climber. Refer to order Top View.
2. Attach Mounting Bracket and entrance and deck. See Details 1331 & 1361.
3. Attach the Funformz to the Coated Cowabunga Panel A. See Detail 1289. Refer to Funformz Placement View on Page 4.
4. Attach assembled Cowabunga Panel to Cowbunga Frame A Weldment. See Detail 1290.
5. Attach Smashed Footbuck A's to assembled Cowabunga Climber frame, and place footbucks into footing holes. See Detail 1291.
6. Attach Cowabunga Climber frame to Mounting Bracket. See Detail 799.
7. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

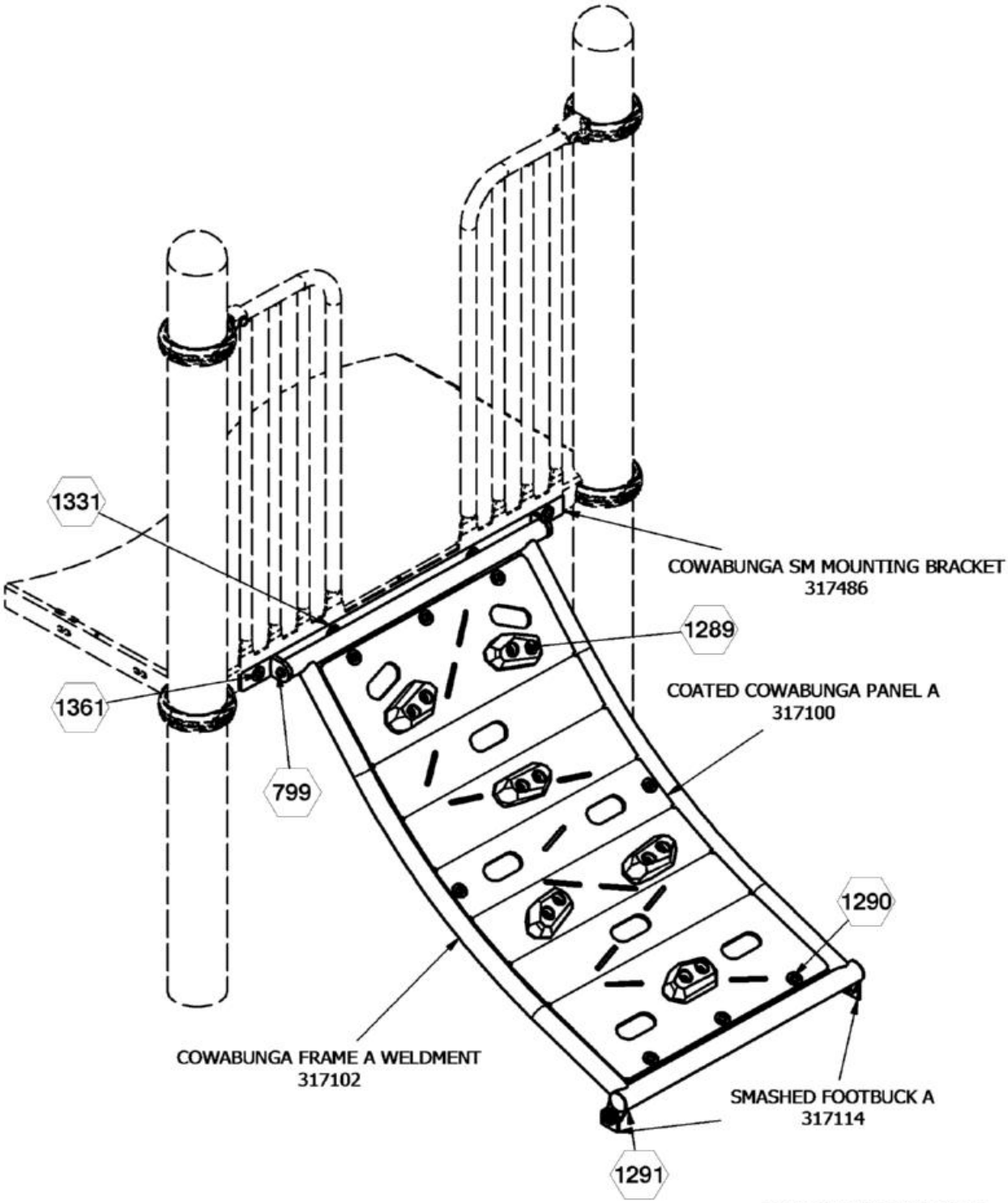
8. After the entire unit is assembled, pour concrete footing with 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
9. When the stucture is finished and satisfactory, tighten all fasteners and install Drive Rivets in all the clamps to ensure clamps cannot slide down posts. ***See Pipe Clamp sub-assembly sheet. It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of the play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidlines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72184 COWABUNGA CLIMBER SMALL



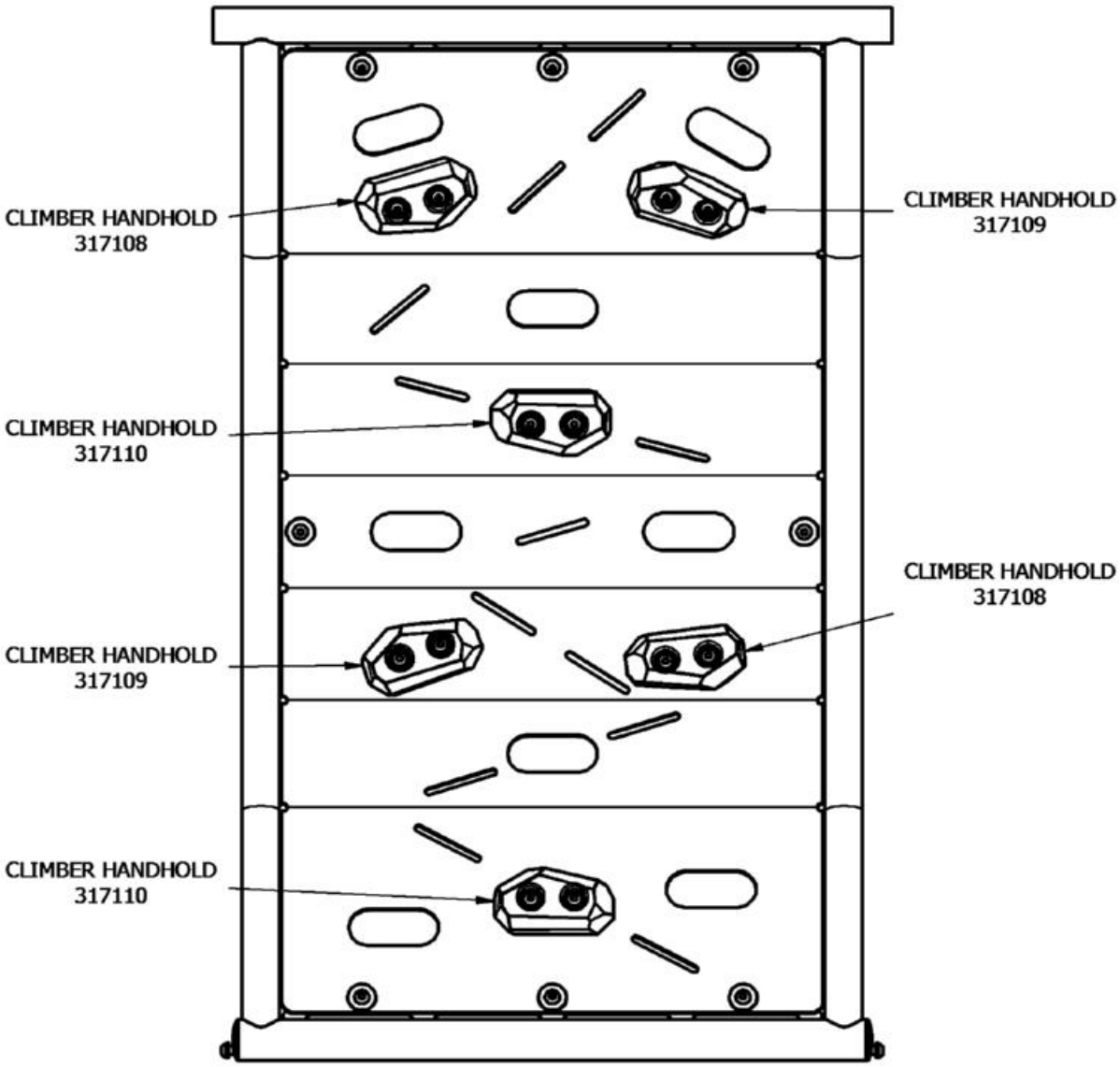
= INSTALLATION DETAIL

Issued/Revised: 11/18/2024

FINISHED ASSEMBLY
2'-8" SHOWN

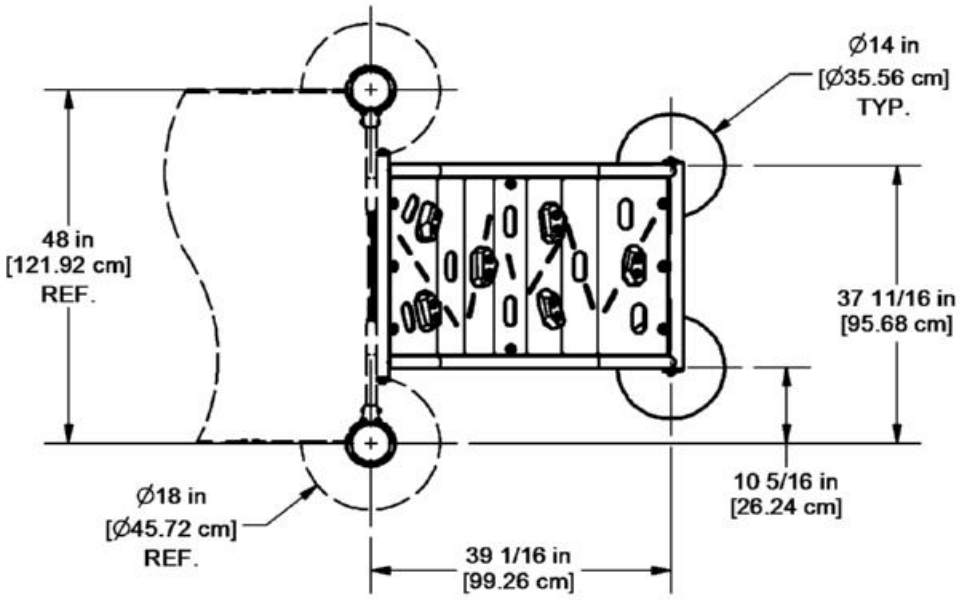
COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

72184 COWABUNGA CLIMBER SMALL



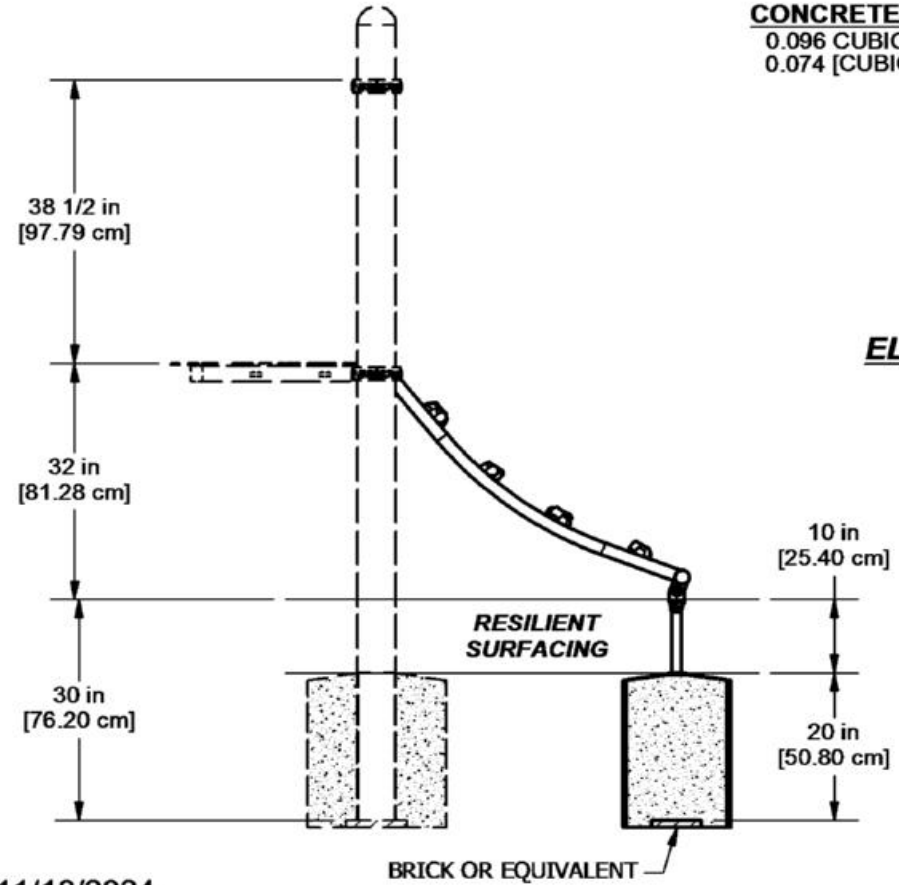
FUNFORMZ PLACEMENT VIEW

72184 COWABUNGA CLIMBER SMALL (2'-8")



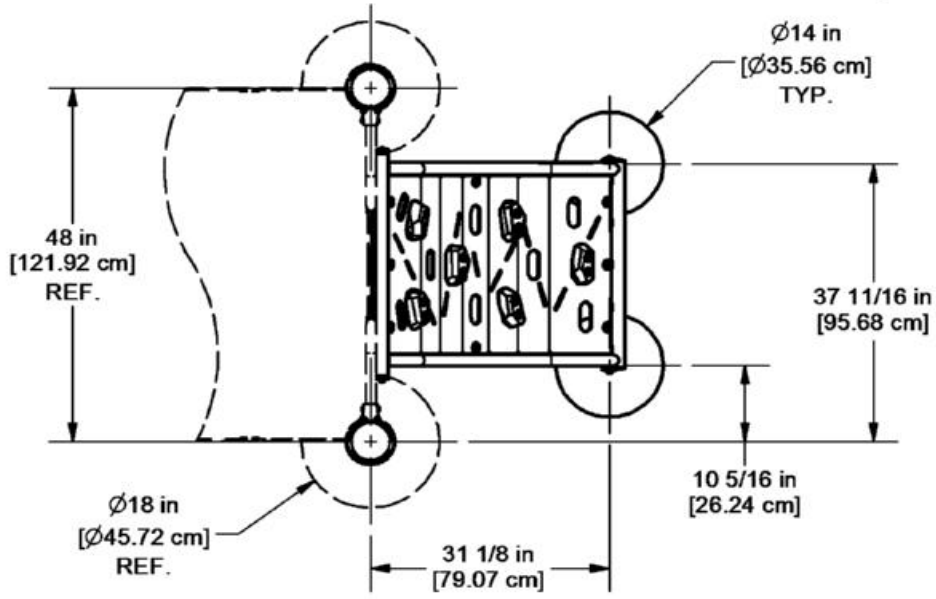
PLAN VIEW

CONCRETE REQUIRED
0.096 CUBIC YARDS
0.074 [CUBIC METERS]



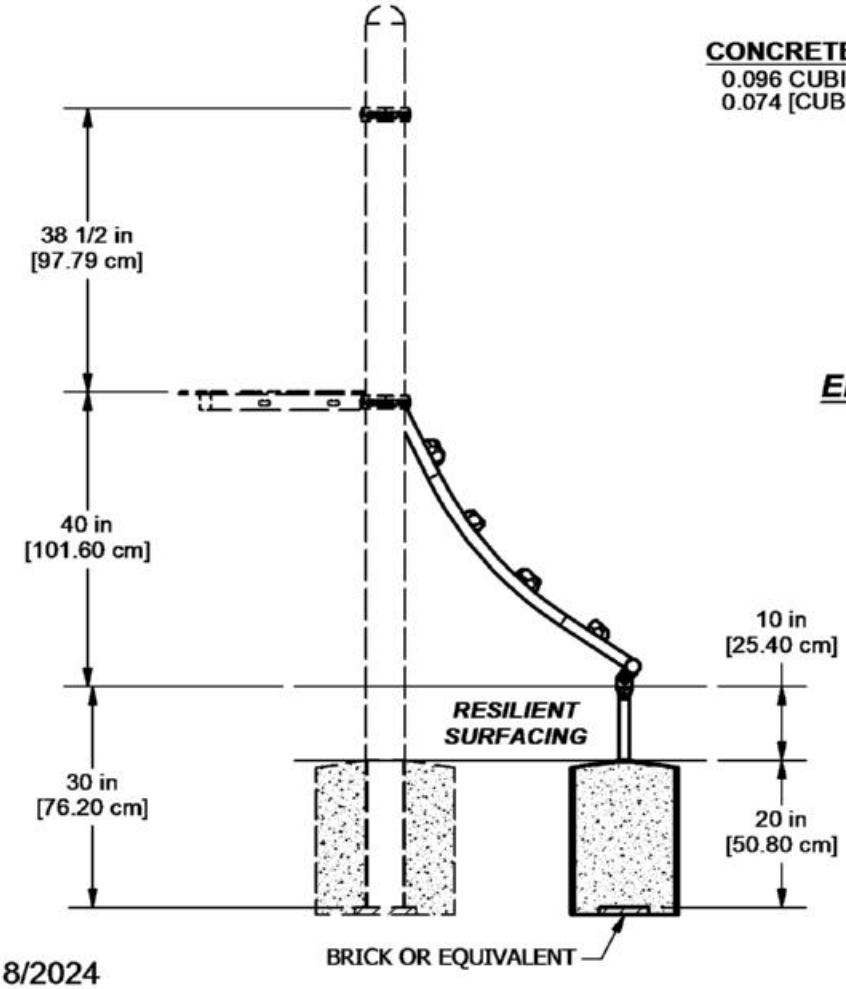
ELEVATION VIEW

72184 COWABUNGA CLIMBER SMALL (3'-4")



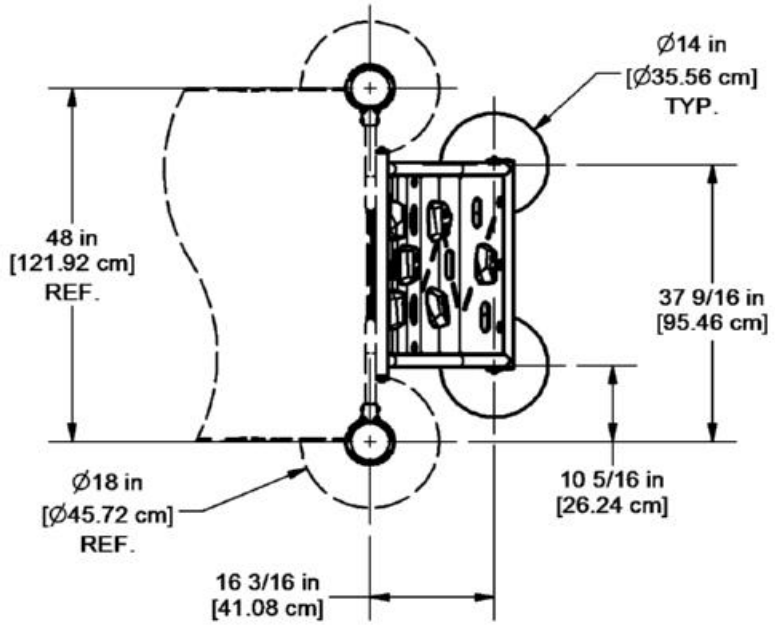
PLAN VIEW

CONCRETE REQUIRED
0.096 CUBIC YARDS
0.074 [CUBIC METERS]



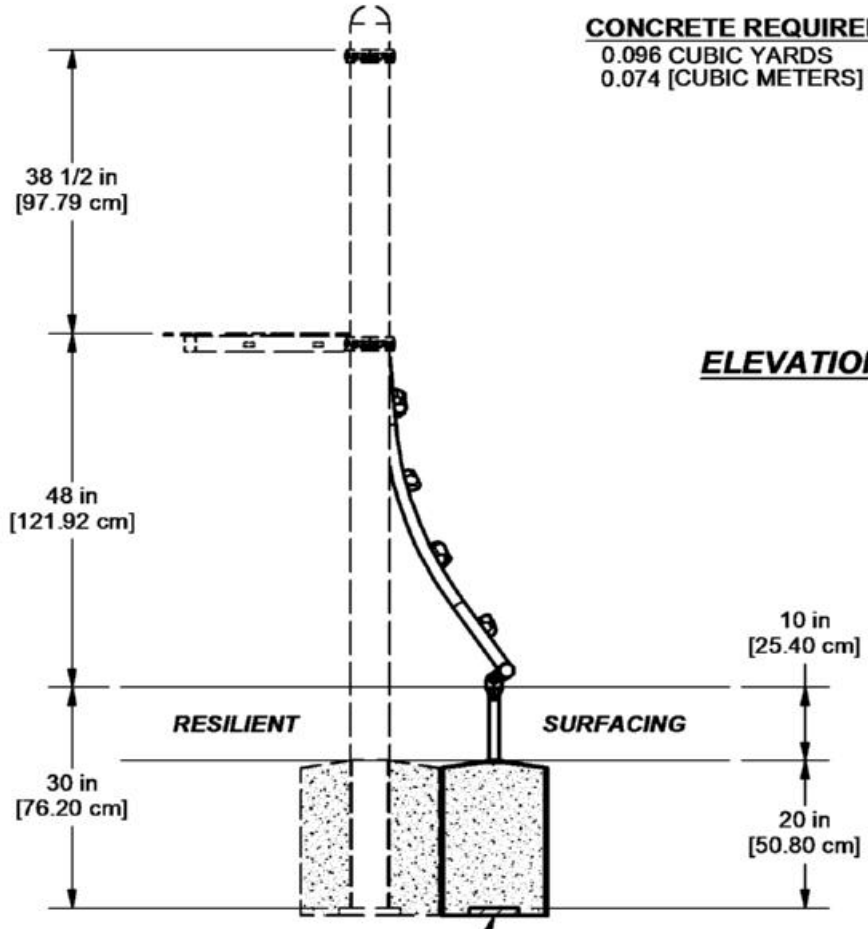
ELEVATION VIEW

72184 COWABUNGA CLIMBER SMALL (4'-0")



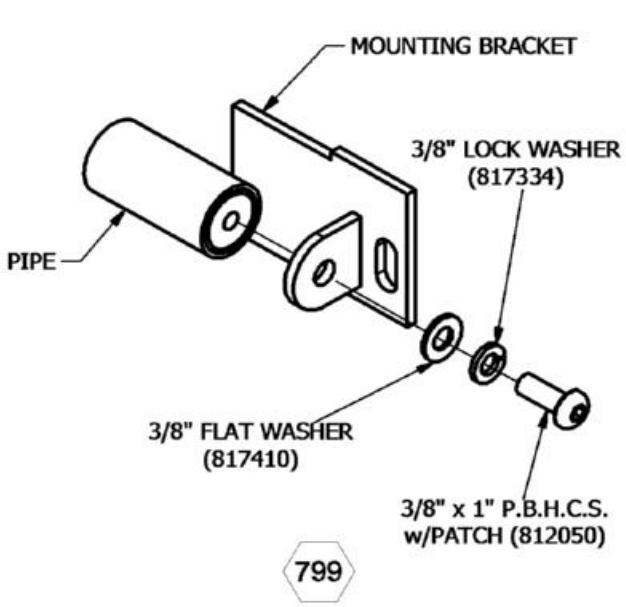
PLAN VIEW

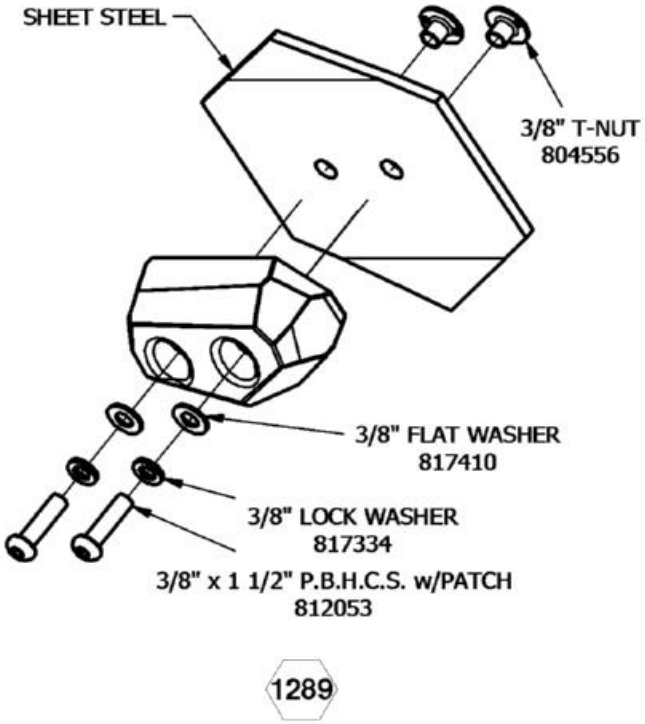
CONCRETE REQUIRED
0.096 CUBIC YARDS
0.074 [CUBIC METERS]

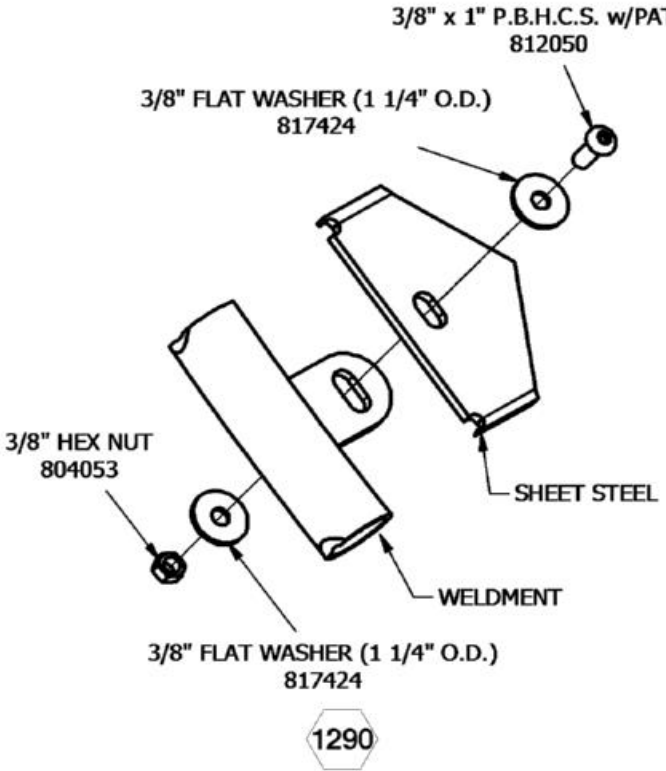


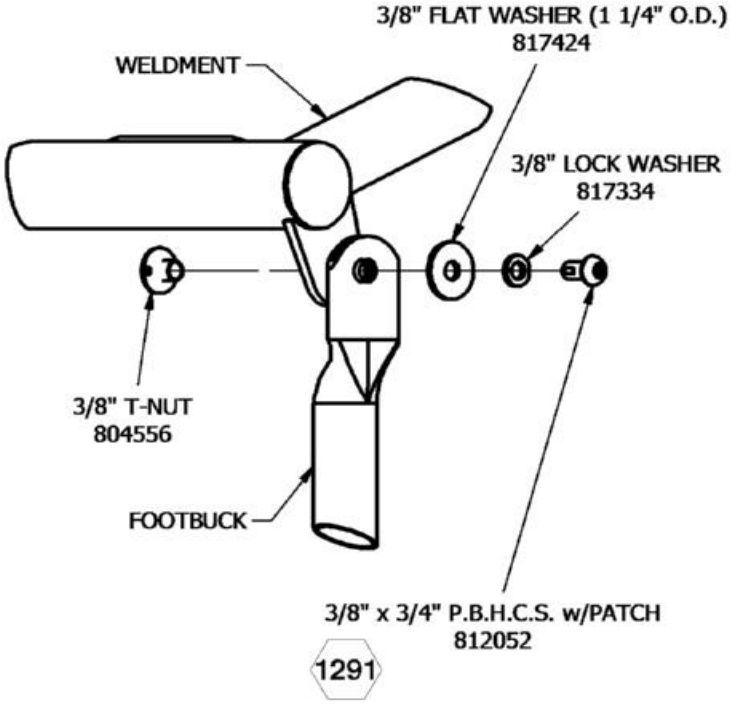
ELEVATION VIEW

72184 COWABUNGA CLIMBER SMALL

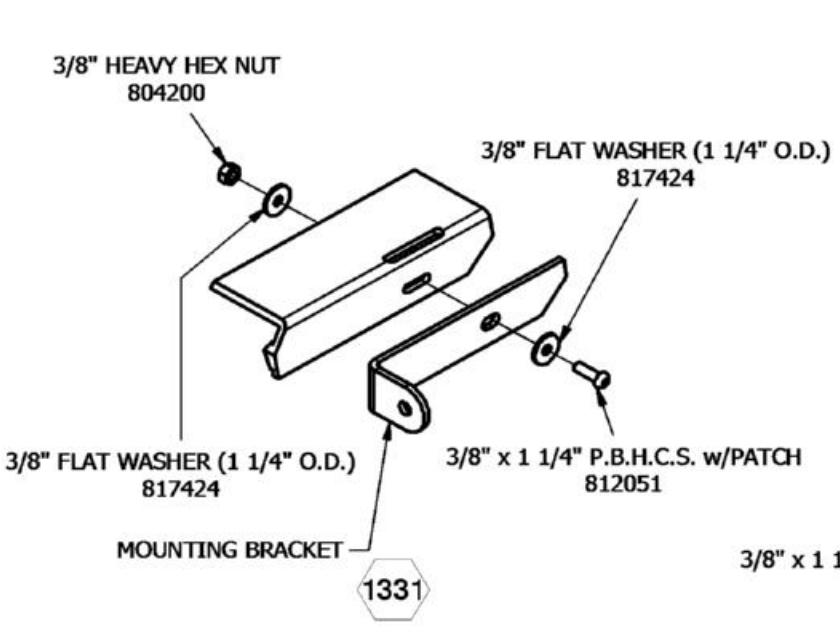


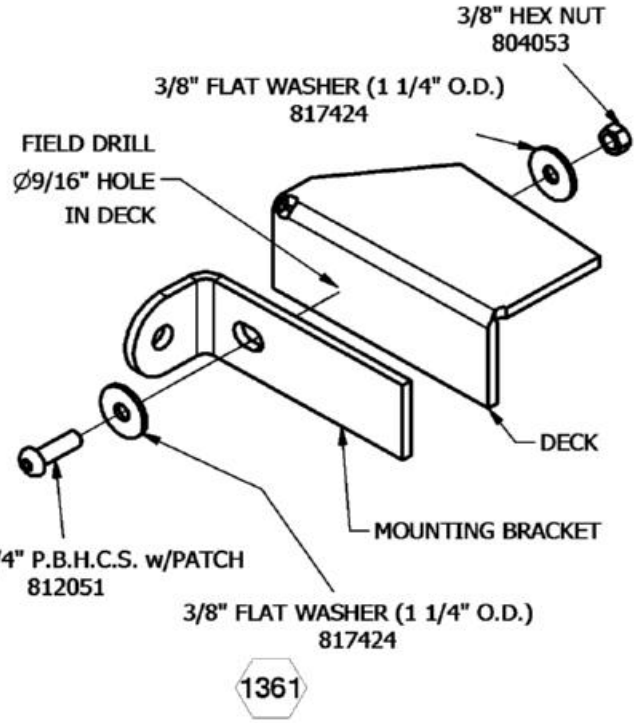






72184 COWABUNGA CLIMBER SMALL





72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)

Parts List					
DESCRIPTION	72244	72245	72246	72247	PART NUMBER
8" EXTENSION	0	0	0	2	151080
GROUND SUPPORT 1'	0	0	2	0	205412
GROUND SUPPORT 2'	0	0	0	2	205414
ALUMINUM COLLAR	2	0	2	0	301605
TRANSITION PLATE	1	0	1	0	303867
PANEL ADAPTER	2	0	2	0	309919
CROSS BAR	1	0	1	0	310032
RAMP	1	1	0	0	311019
RAMP	0	0	2	2	311030
HARDWARE COMPLETE	1	0	0	0	317323
HARDWARE COMPLETE	0	1	0	0	317324
HARDWARE COMPLETE	0	0	1	0	317325
HARDWARE COMPLETE	0	0	0	1	317326
1/4" x 3/4" SET SCREW	4	0	4	0	811545
3/8" x 3/8" SET SCREW	2	0	2	0	811549
3/8" x 1" P.B.H.C.S. w/PATCH	8	8	12	12	812050
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	0	2	0	812053
3/8" x 3 1/2" HEX HEAD BOLT	0	0	0	2	801013
3/8" LOCK WASHER	2	0	2	2	817334
3/8" FLAT WASHER (1 1/4" O.D.)	16	16	24	24	817424
3/8" HEX NUT	0	0	0	2	804053
3/8" LOCK NUT	8	8	12	12	804353

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)

INSTALLATION INSTRUCTIONS:

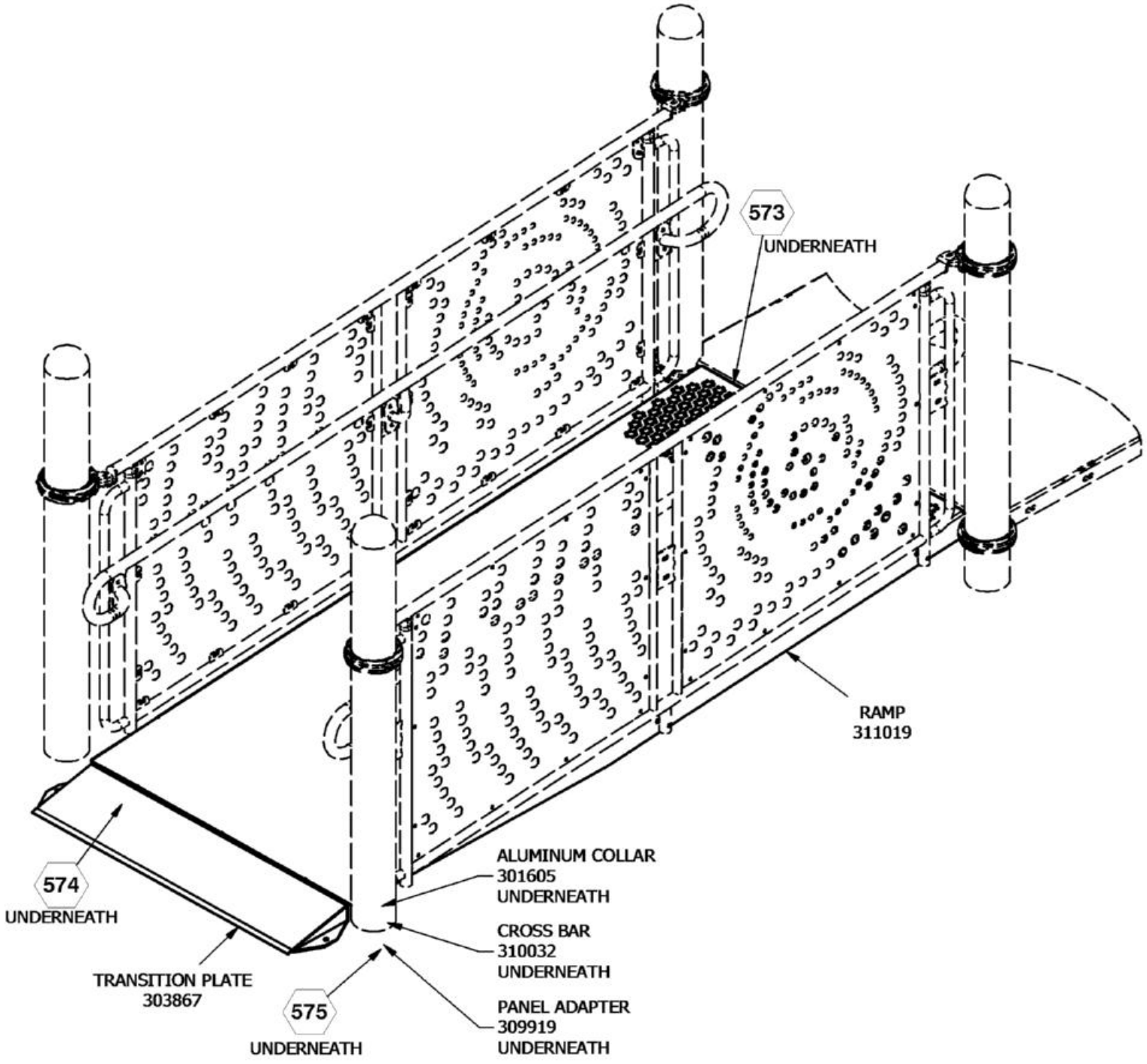
1. Determine which deck(s) are to receive the Ramp, and dig footing holes in locations and depths shown as needed.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. For 72246 and 72247, attach ramps together. See Detail 573.
4. For 72246 and 72247, dig footing holes as shown in Plan Views.
5. For 72247, attach 8" Extensions to Ground Support 2'. See Detail 171.
6. For 72246 and 72247, attach Ground Supports to ramps. See Detail 1332.
7. Attach Ramp(s) to existing deck(s). See Detail 573.
8. For 72244 and 72246, attach lower end of Ramp to the existing Uprights using Crossbar, Aluminum Collar and Panel Adapters. See Detail 575. Ramp should be centered between uprights and secured by tightening set screws in collar.
9. For 72244 and 72246, attach Transition Plate to the lower end of Ramp. See Detail 574.
10. When the assembly is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed before allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72244 8FT RAMP GROUND TO DECK (RAMP ONLY)



= INSTALLATION DETAIL

Issued/Revised: 9/19/2024

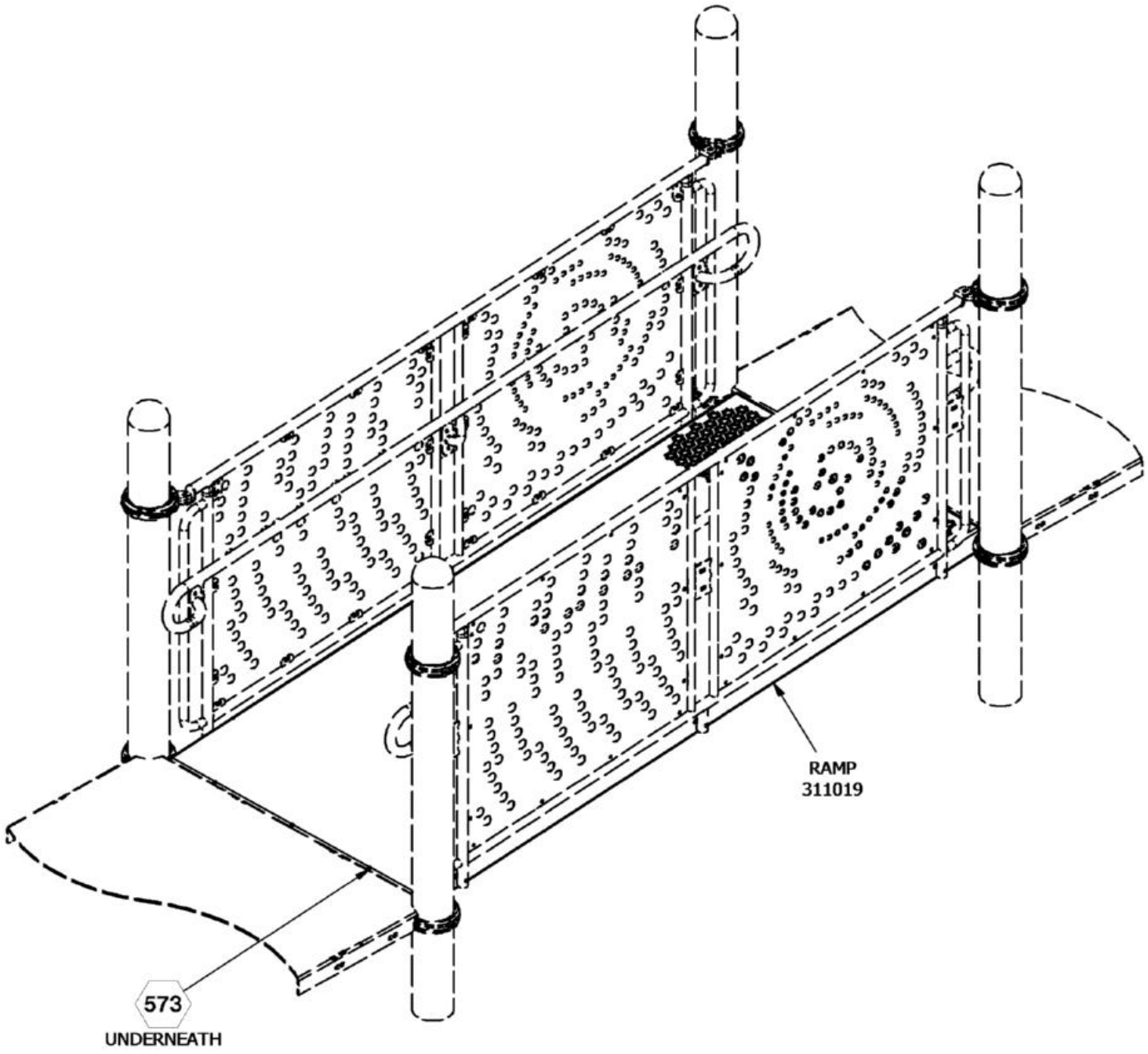
FINISHED ASSEMBLY

72244 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72245 8FT RAMP DECK TO DECK (RAMP ONLY)



⬡ = INSTALLATION DETAIL

Issued/Revised: 9/19/2024

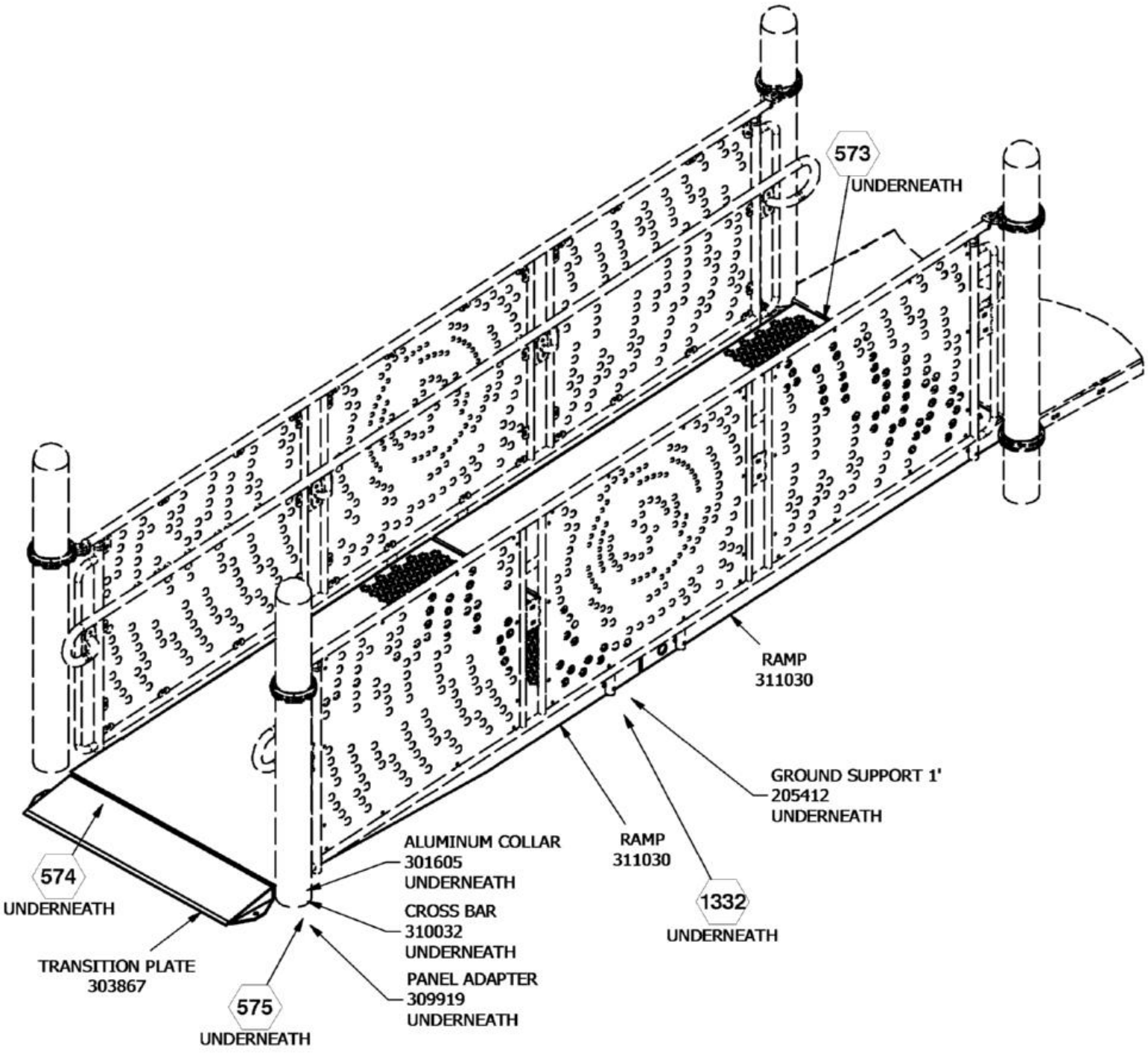
FINISHED ASSEMBLY

72245 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72246 12FT RAMP GROUND TO DECK (RAMP ONLY)



⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

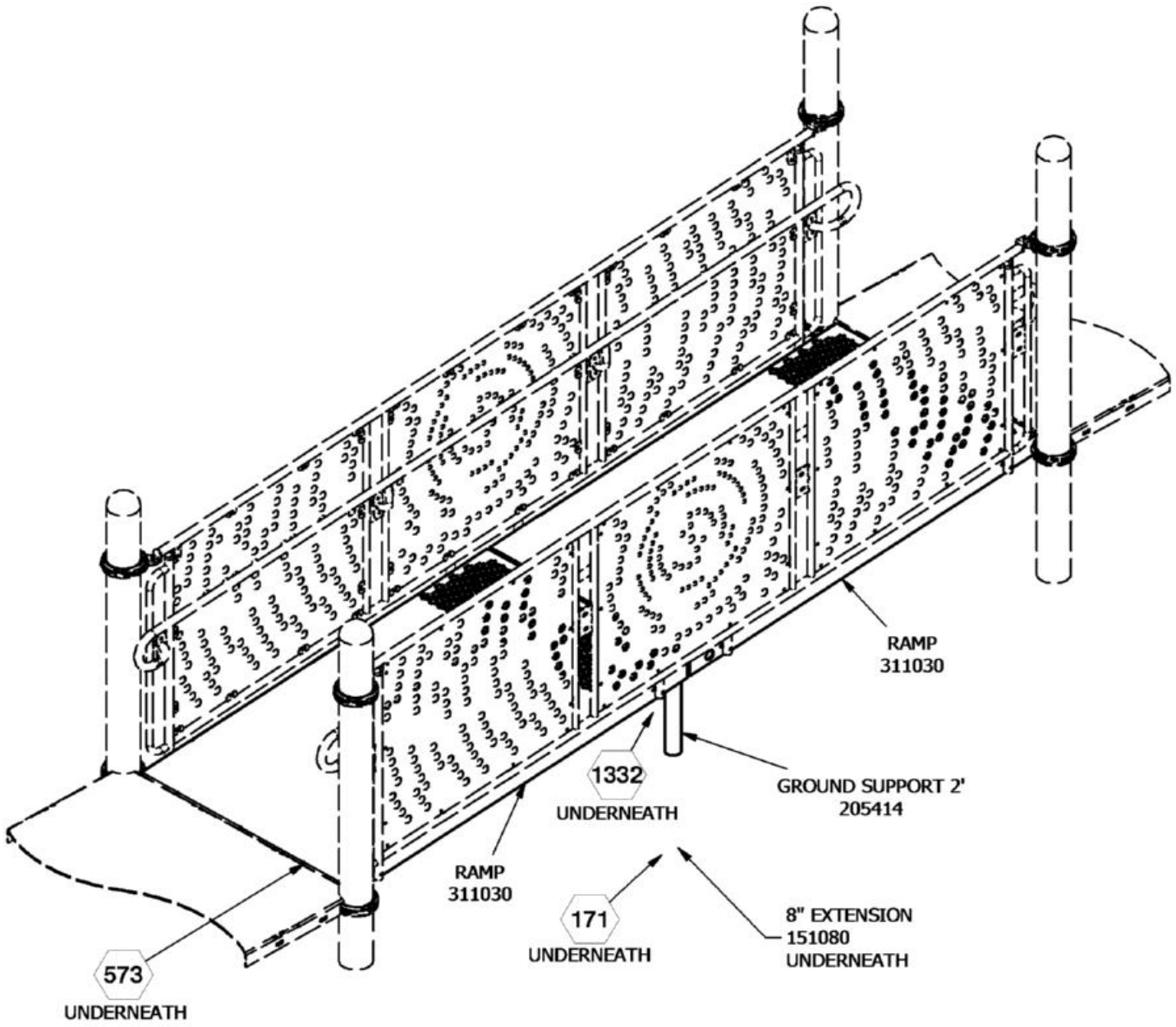
Issued/Revised: 9/19/2024

FINISHED ASSEMBLY

72246 SHOWN

SuperMax Play Systems

72247 12FT RAMP DECK TO DECK (RAMP ONLY)



⬡ = INSTALLATION DETAIL

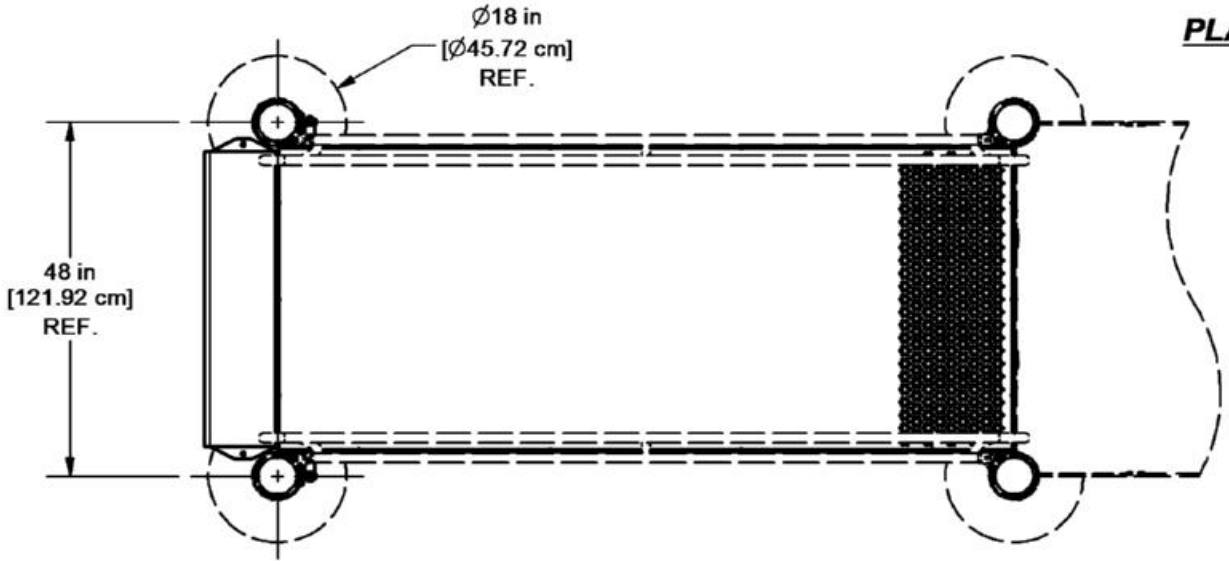
Issued/Revised: 9/19/2024

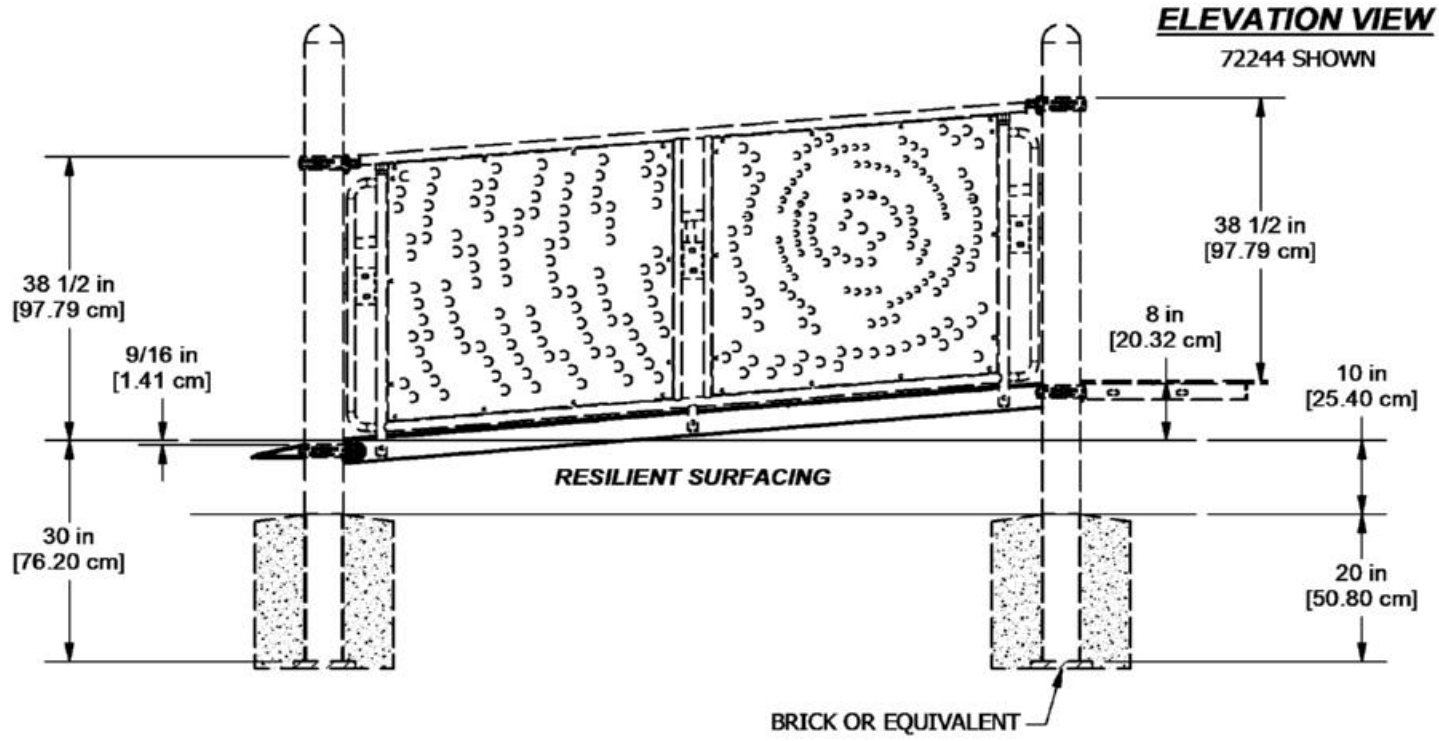
FINISHED ASSEMBLY

72247 SHOWN

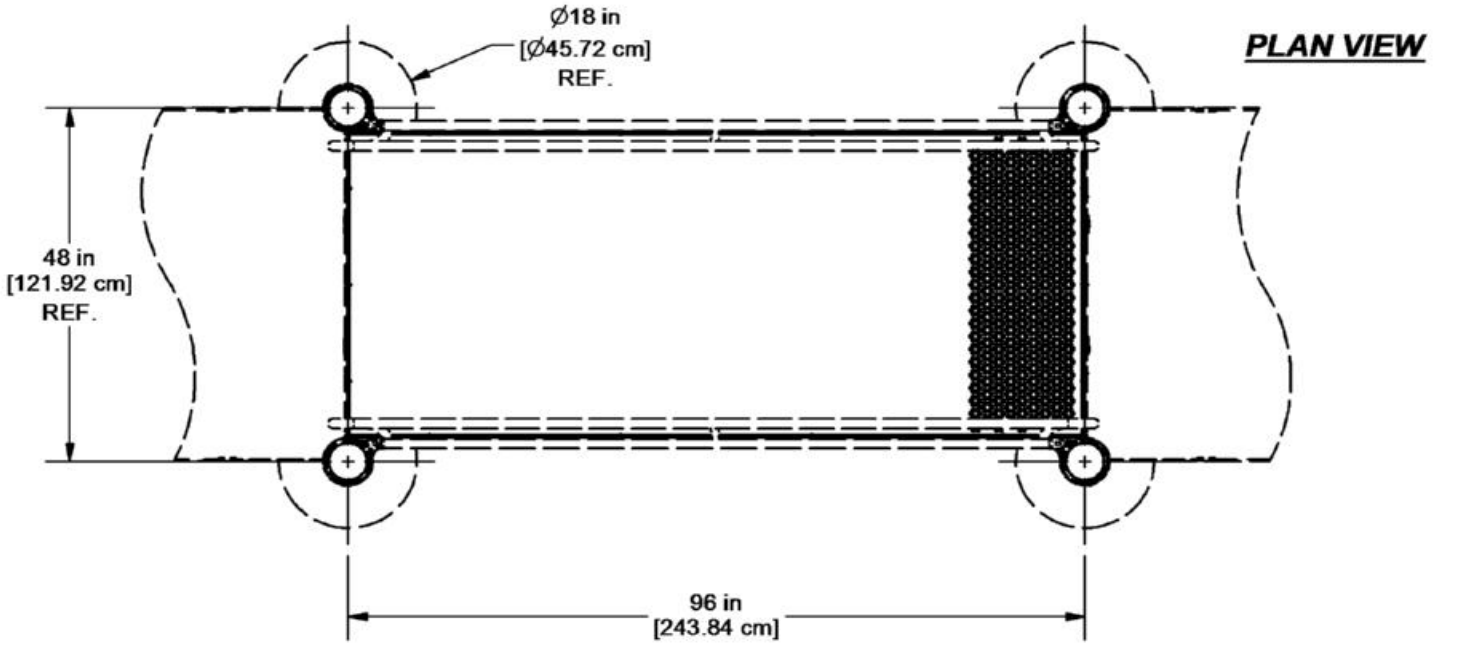
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

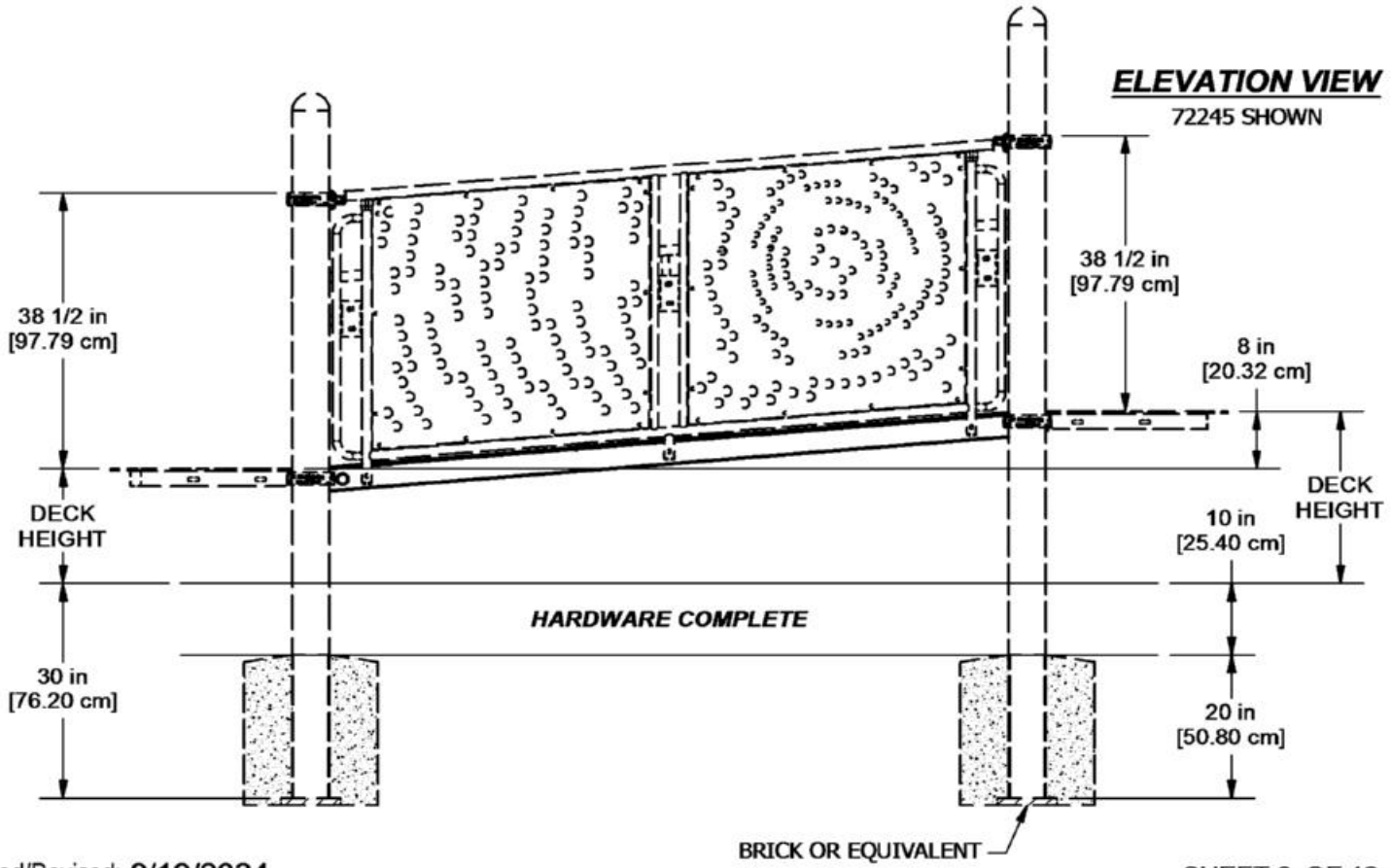
72244 8FT RAMP GROUND TO DECK (RAMP ONLY)





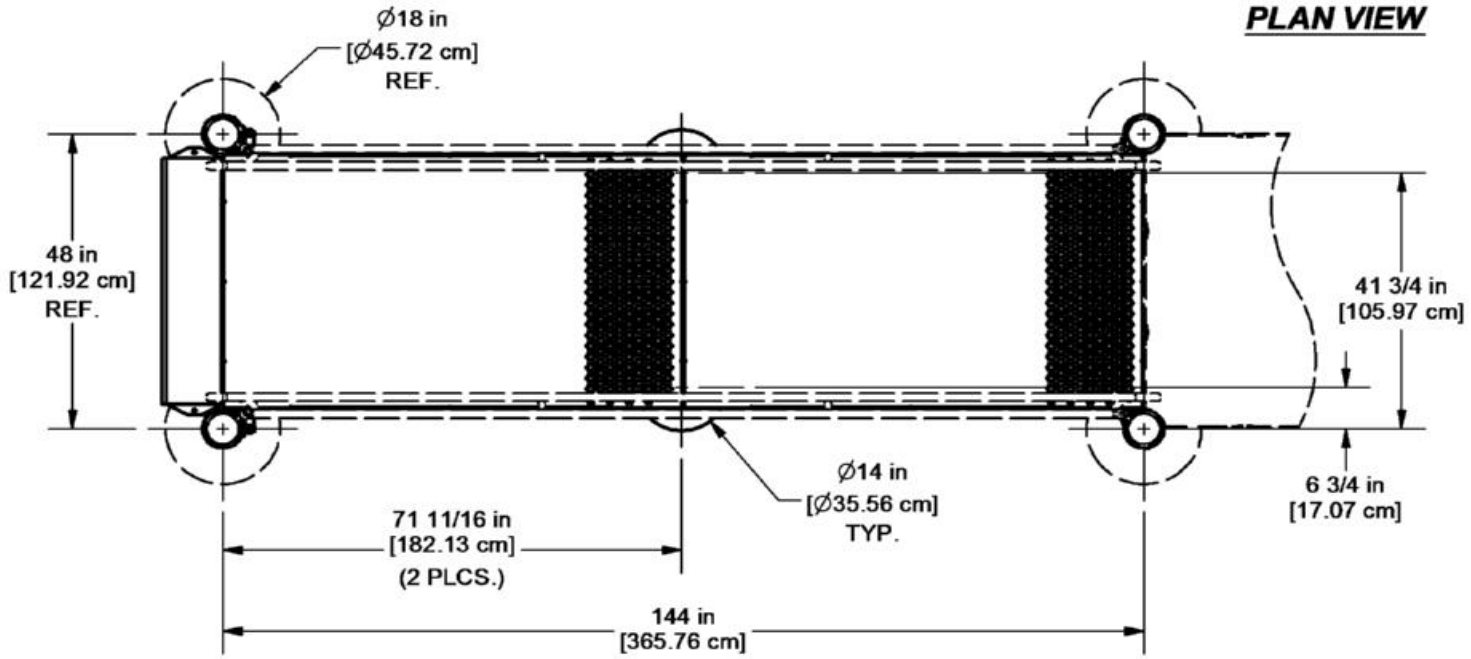
72245 8FT RAMP DECK TO DECK (RAMP ONLY)





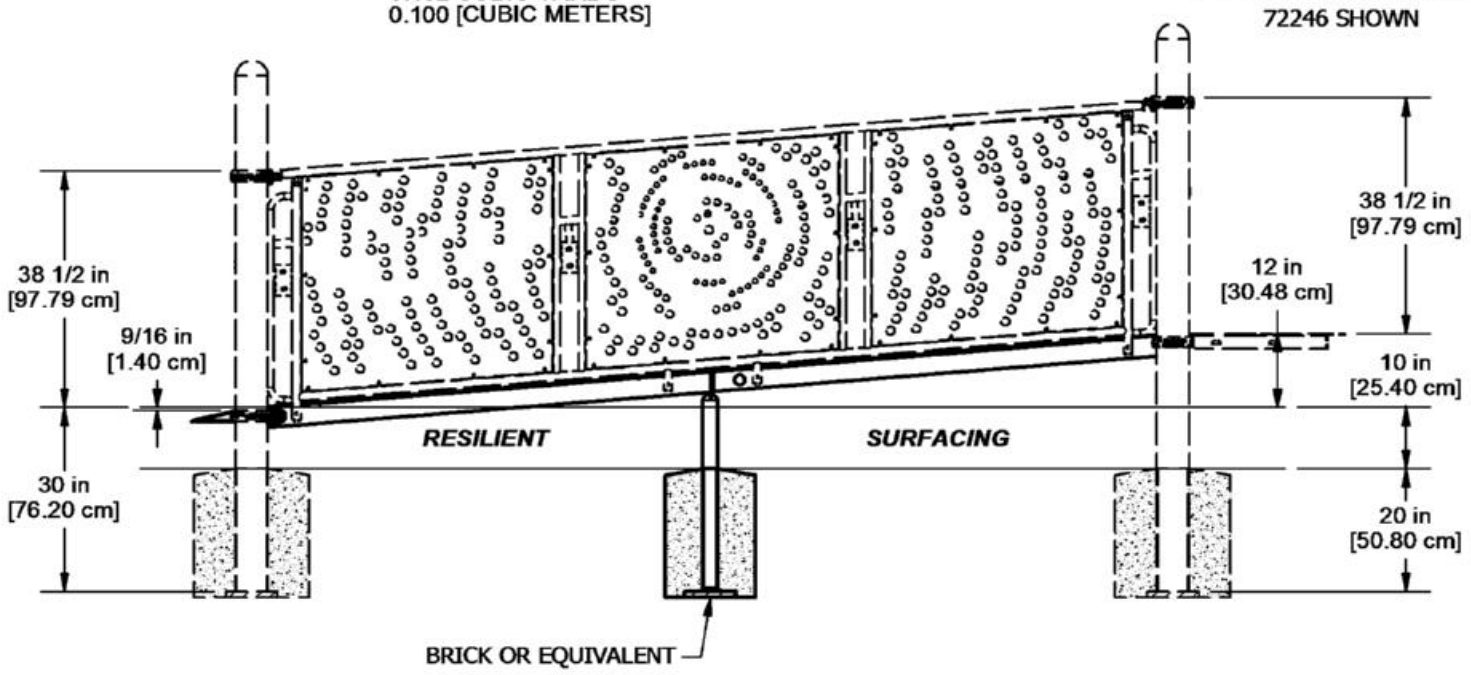
72246 12FT RAMP GROUND TO DECK (RAMP ONLY)

PLAN VIEW



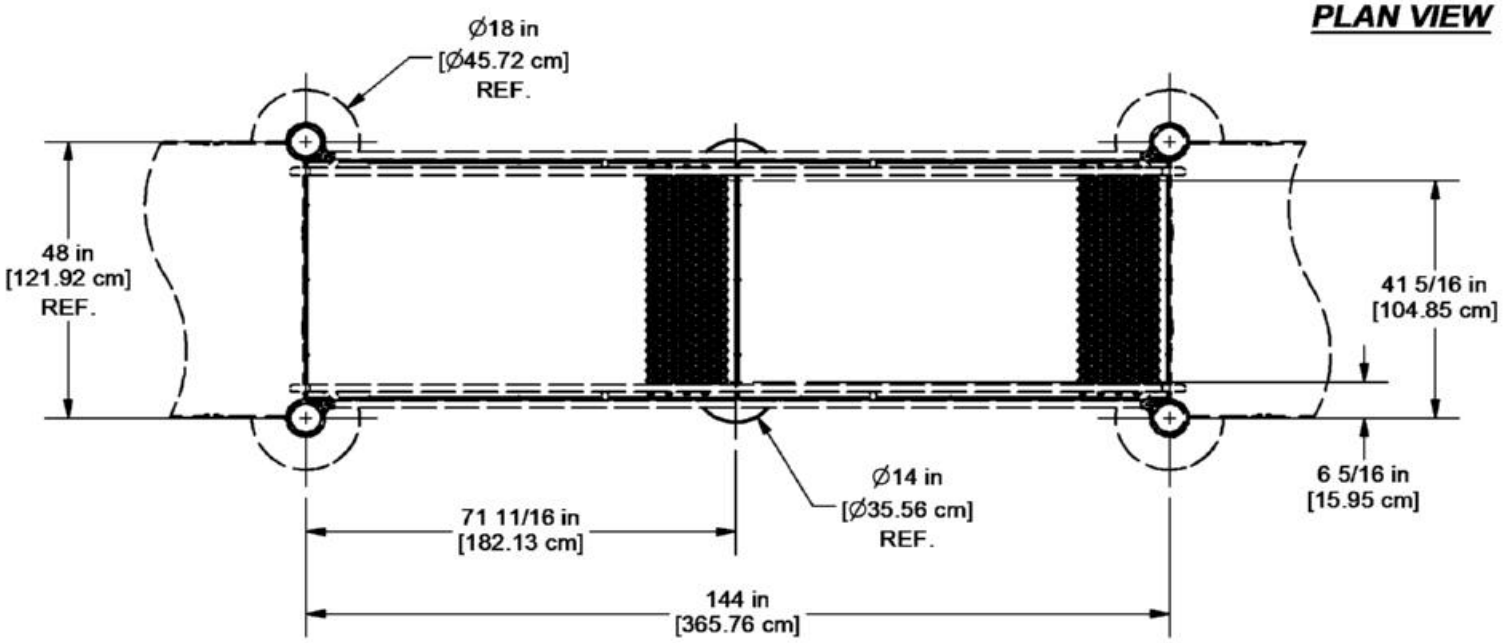
CONCRETE REQUIRED
0.132 CUBIC YARDS
0.100 [CUBIC METERS]

ELEVATION VIEW
72246 SHOWN



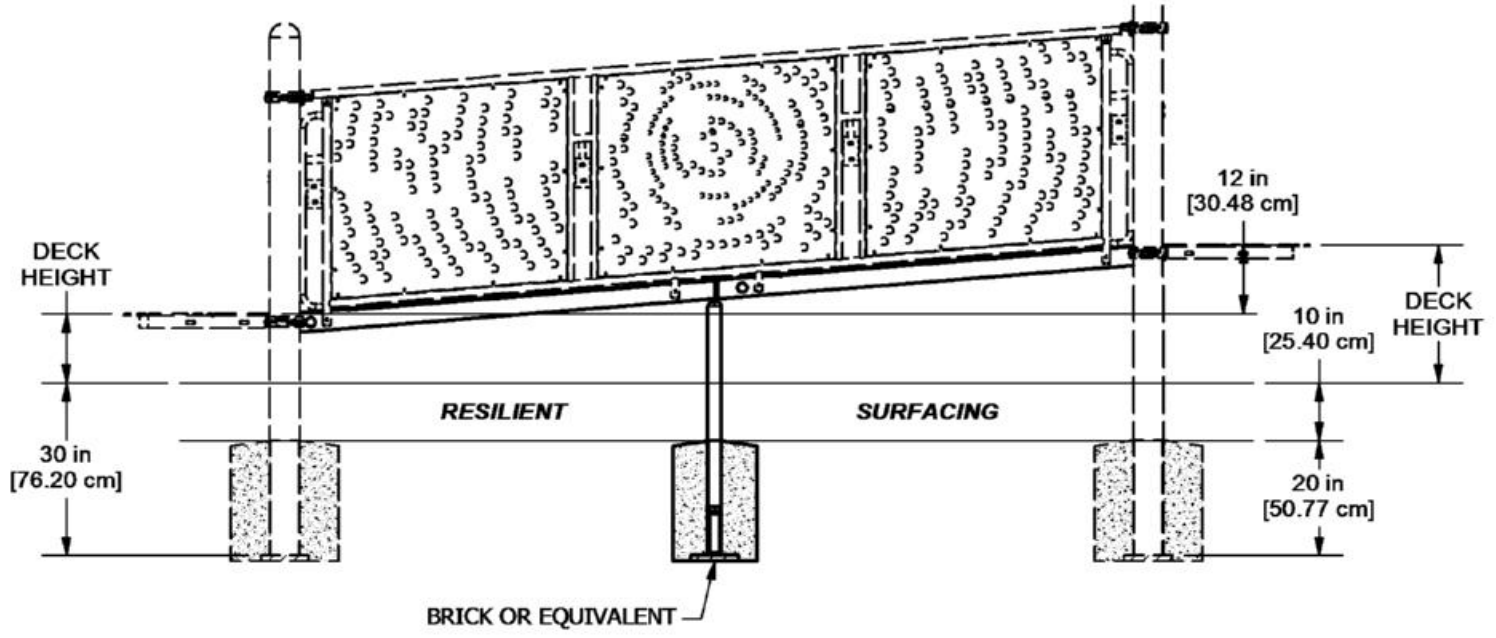
72247 12FT RAMP DECK TO DECK (RAMP ONLY)

PLAN VIEW

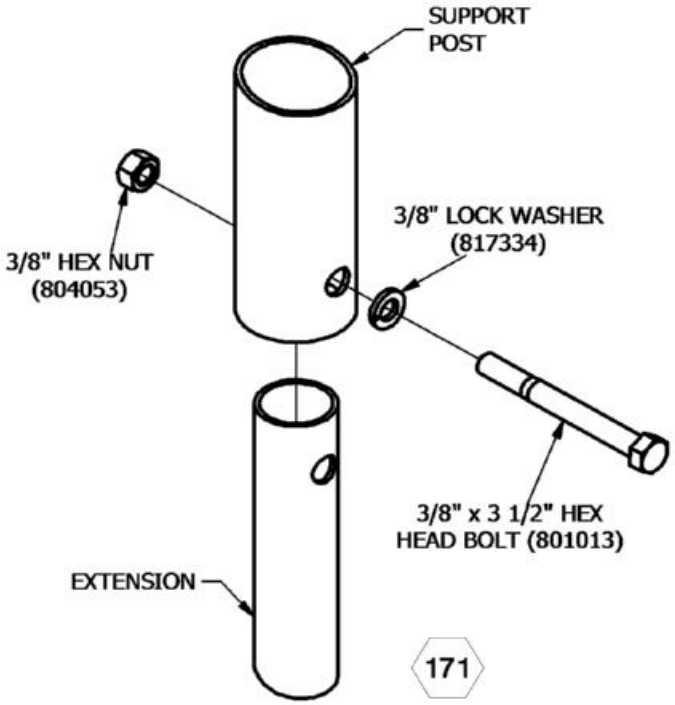


CONCRETE REQUIRED
0.132 CUBIC YARDS
0.100 [CUBIC METERS]

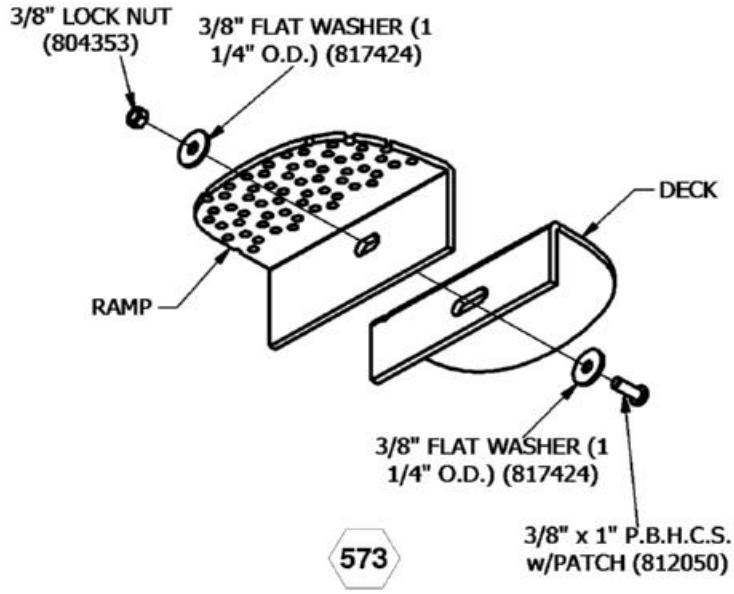
ELEVATION VIEW
72247 SHOWN



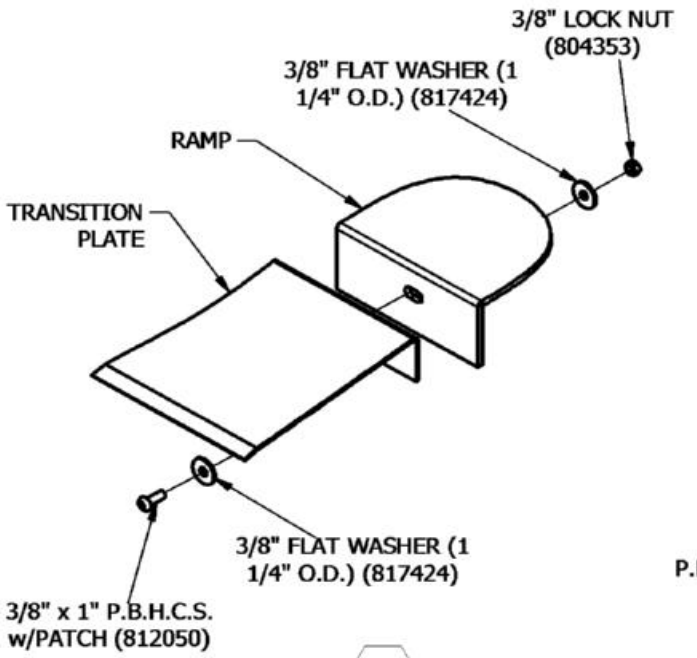
72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)



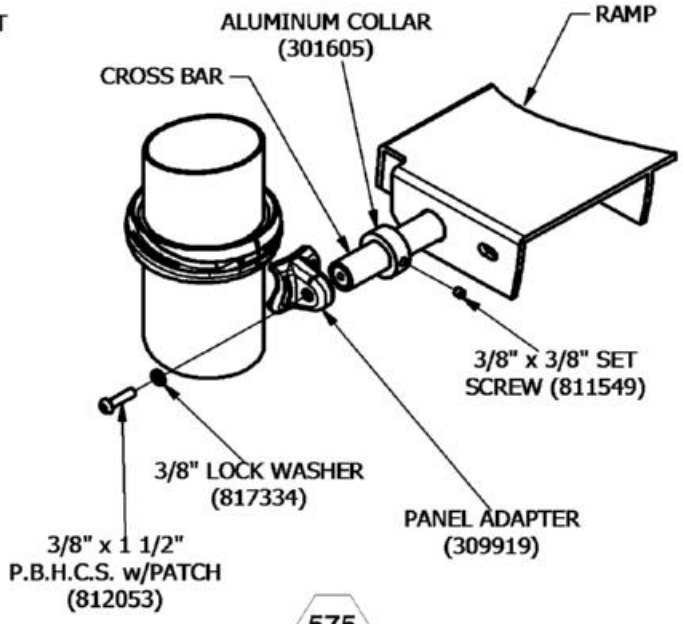
171



573



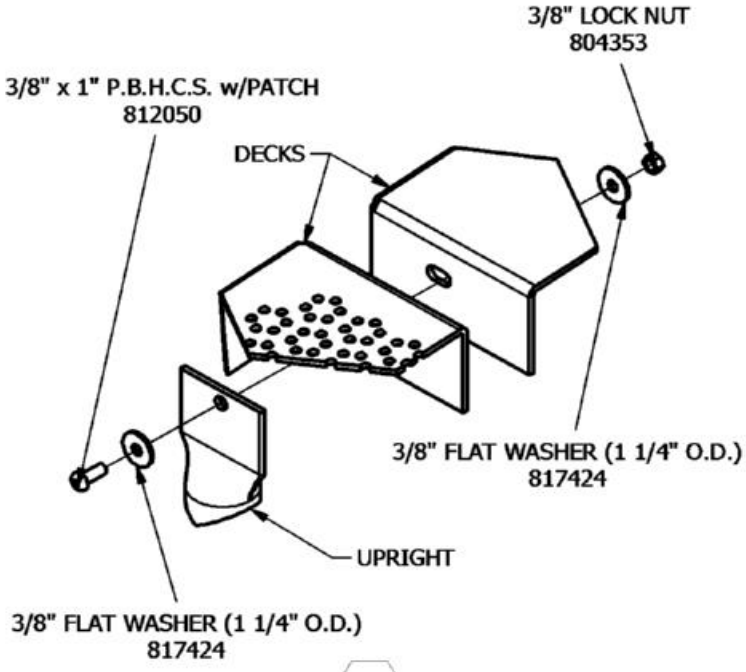
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575

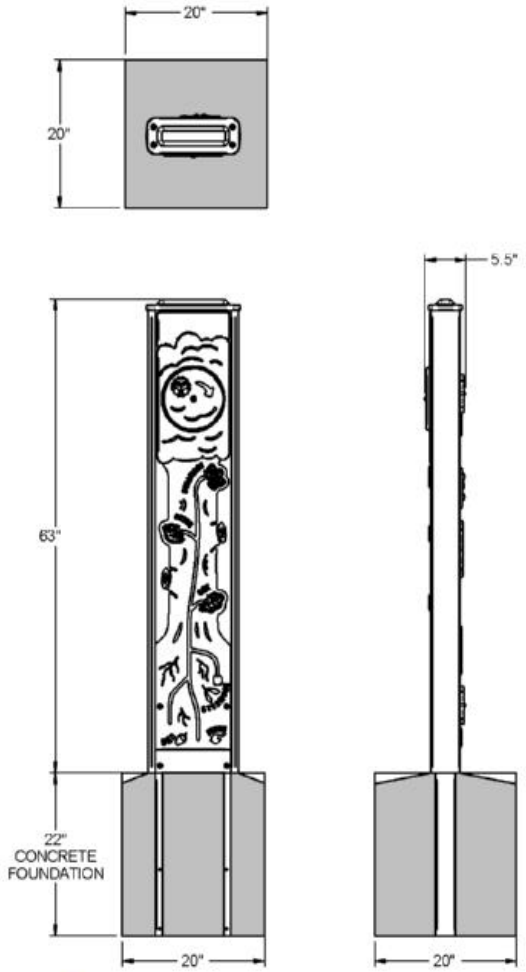
NOTE:VERTICAL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)



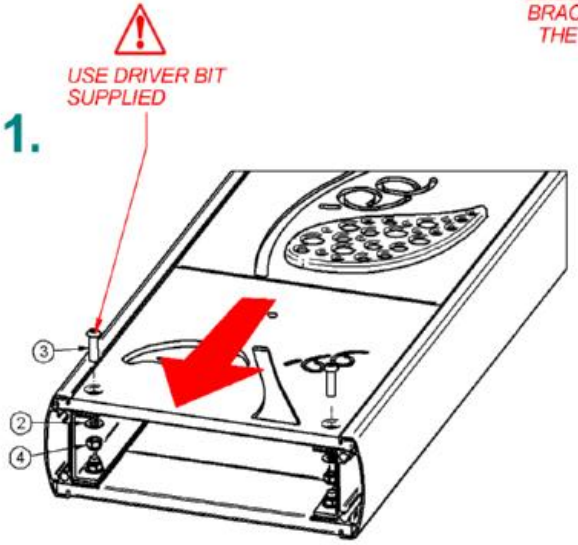
YP446 - Sensory Totem

FITMSEN - Sensory Totem Installation Instructions



Prepare foundation detail as specified above.

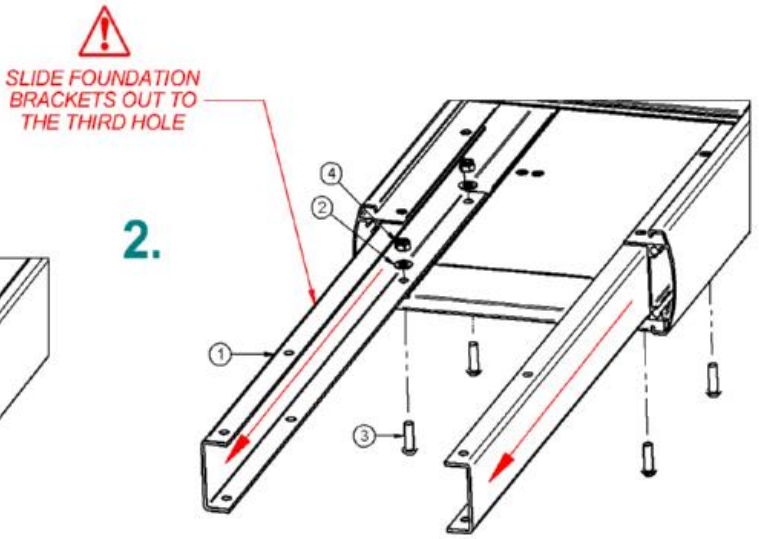
1.



i) Remove the Totem Assembly from the packaging and place the unit horizontally on the floor - use the packaging to lay the Totem on in order to avoid any damage to either face of the unit.

ii) Slide the Larger Lower Panel out of the totem by removing the fixing shown above with the supplied driver bit.

2.



i) Remove the Fixings on the remaining Lower Panel and the fixings located on at the bottom of the Front Panel, using the Driver Bit supplied.

ii) Slide each of the Foundation Brackets out of the Aluminium profile on either side of the Totem, ensuring the third set of fixing holes in the Foundation Brackets line up with the holes in the lower panels (see illustration).

iii) Secure by replacing the fixings previously removed from the Lower Panel and the fixings located slightly higher on the Front Panel

Parts List

Item	Code	Description	Qty
1	FME0684-C	Totem Foundation Anchor	2
2	FSU0039-A	M8 Washer - SS (Form B)	7
3	FSU0071-A	M8 x 25mm Button Head Bolt - Security Pin - SS	7
4	FSU0087-A	M8 Nylock Nut - ZP	6
5	FXS0001-A	H5 Hex Security Driver Bit	1
6	FXS0002-A	T40 Torx Security Driver Bit	1

Modification	Date	Approved
New Drawing	05/10/21	LG
Updated to include new fixings	04/01/22	JC
Updated Lower Panel	24/01/22	JC
Updated to 15mm	06/02/24	JW
Totem foundation anchor updated	15/03/24	JB

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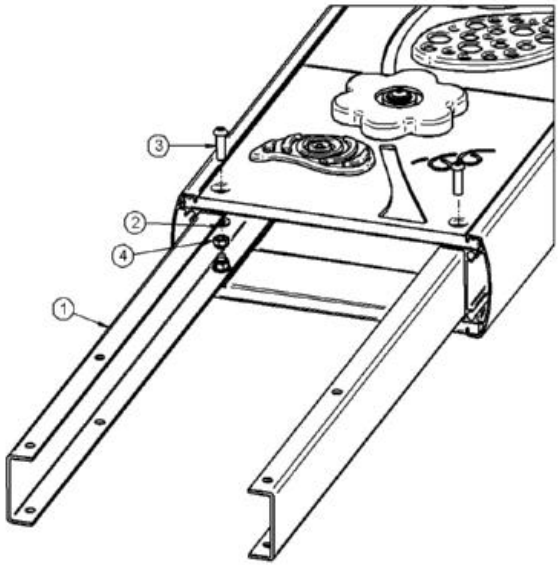
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All Dimensions in mm | 1 of 2 | Not To Scale

YP446 - Sensory Totem

FITMSEN - Sensory Totem Installation Instructions

3.



i) Slide the Rear Panel back to its previous position and secure by replacing the previously removed fixings.

ii) Once assembled, place totem into prepared footing and concrete into position



Maintenance Inspection

FREQUENCY	WHAT TO DO
VISUAL INSPECTION (EVERY MONTH)	Identify any risks stemming from vandalism, intensive use or unusual weather
	Check for missing or broken parts
	Make sure that all protective covers are in place
	Inspect surfacing below and around equipment
FUNCTIONALITY INSPECTION (EVERY MONTH)	Check that the equipment, or the part concerned is operating correctly
	Check all fixings, joints and stability of the equipment and tighten or replace if necessary
	Check all parts for wear and tear and replace if necessary
	Thorough cleaning of equipment and any stainless steel parts with water and detergent
COMPREHENSIVE INSPECTION (EVERY 6 MONTHS)	All of the above plus:
	Inspect the anchoring system
	Inspect any moving, mechanical and electrical parts are operating correctly
	Check overall condition of any paintwork or galvanizing – repaint / touch up if necessary

Caution
Heavy

Total Weight:
49kg total

Parts List

Item	Code	Description	Qty
1	FME0684-C	Totem Foundation Anchor	2
2	FSU0039-A	M8 Washer - SS (Form B)	7
3	FSU0071-A	M8 x 25mm Button Head Bolt - Security Pin - SS	7
4	FSU0087-A	M8 Nylock Nut - ZP	6
5	FXS0001-A	H5 Hex Security Driver Bit	1
6	FXS0002-A	T40 Torx Security Driver Bit	1

Modification	Date	Approved
New Drawing	05/10/21	LG
Updated to include new fixings	04/01/22	JC
Updated Lower Panel	24/01/22	JC
Updated to 15mm	06/02/24	JW
Totem foundation anchor updated	15/03/24	JB

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All Dimensions in mm | 2 of 2 | Not To Scale

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

YP479 SUPERMAX PPS TABLE

Parts List		
DESCRIPTION	QTY	PART NUMBER
RING HALF CLAMP	1	309913
SUPERMAX PPS TABLE TOP	1	317518
SUPERMAX TABLE BOTTOM PLATE	1	317520
PPS TABLE CLAMP	1	317522
PPS TABLE SEAT HDPE	4	317524
PPS TABLE SEAT SUPPORT	4	317526
PPS TABLE SUPPORT	1	317530
HARDWARE COMPLETE	1	317533
1/4" x 3/4" DRIVE RIVET	1	168449
5/16" x 3/4" P.B.H.C.S. w/PATCH	35	812040
5/16" LOCK WASHER	35	817330
5/16" FLAT WASHER (11/16" O.D.)	35	817406
3/8" ZINC ALLOY TAPPING INSERT	35	804822
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	2	812051
3/8" FLAT WASHER	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
3/8" HEAVY HEX NUT	2	804200

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

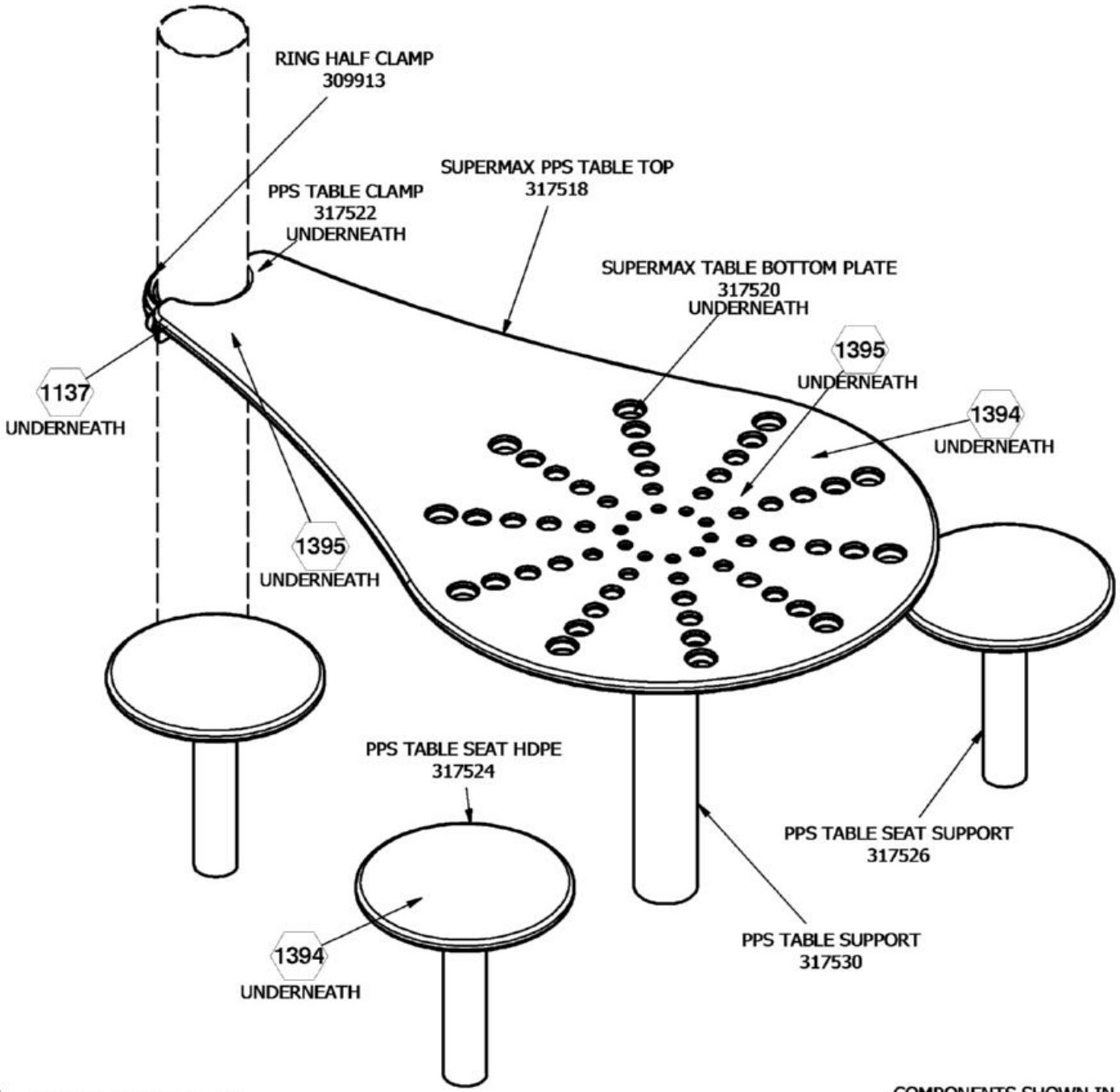
1. Determine which upright is to receive the Supermax PPS Table. Refer to order Top View.
2. Loosely attach Ring Half Clamp and PPS Table Clamp to upright. See Detail 1137. Refer to Elevation View.
3. Attach Supermax Table Bottom Plate to Supermax PPS Table Top. See Detail 1394.
4. Attach PPS Table Support to assembled table top. See Detail 1395.
5. Place table assembly into appropriate footing hole and attach to PPS Table Clamp. See Detail 1395. Refer to Plan View.
6. Attach PPS Table Seat HDPEs to PPS Table Seat Supports and place into appropriate footing holes. See Detail 1394. Refer to Plan View.
7. Plumb and level the entire assembly and tighten all fasteners.
8. After the entire unit is assembled, pour concrete footing with 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
9. When the stucture is finished and satisfactory, tighten all fasteners and install Drive Rivets in all the clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them. Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of the play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidlines.

SuperMax Play Systems

YP479 SUPERMAX PPS TABLE

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



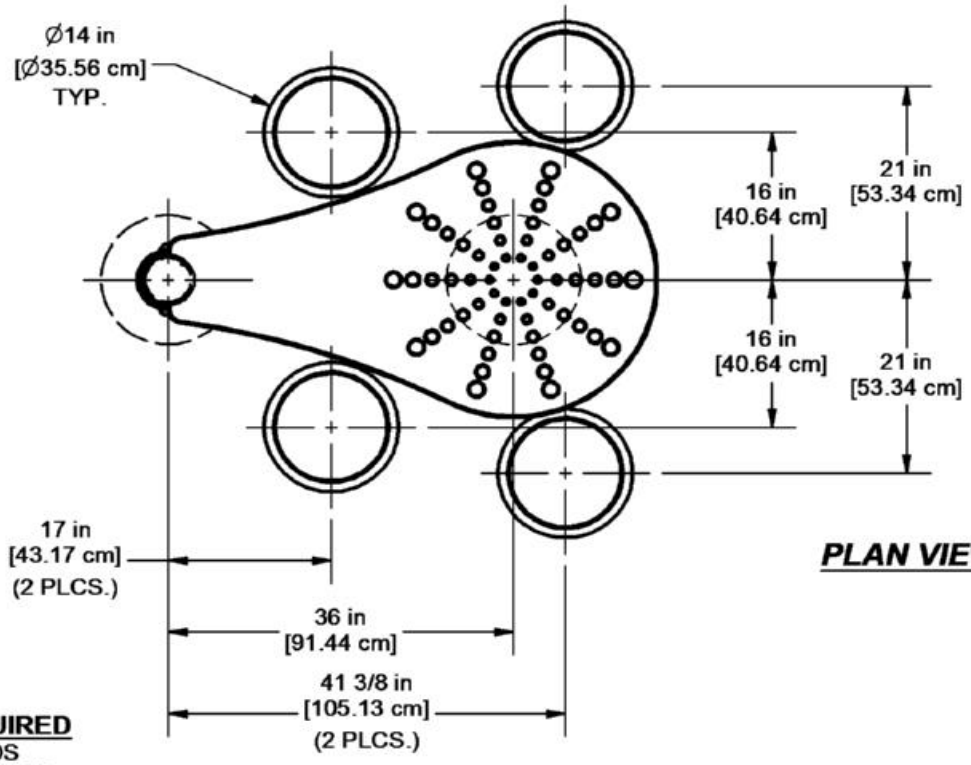
= INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 11/11/2024

FINISHED ASSEMBLY

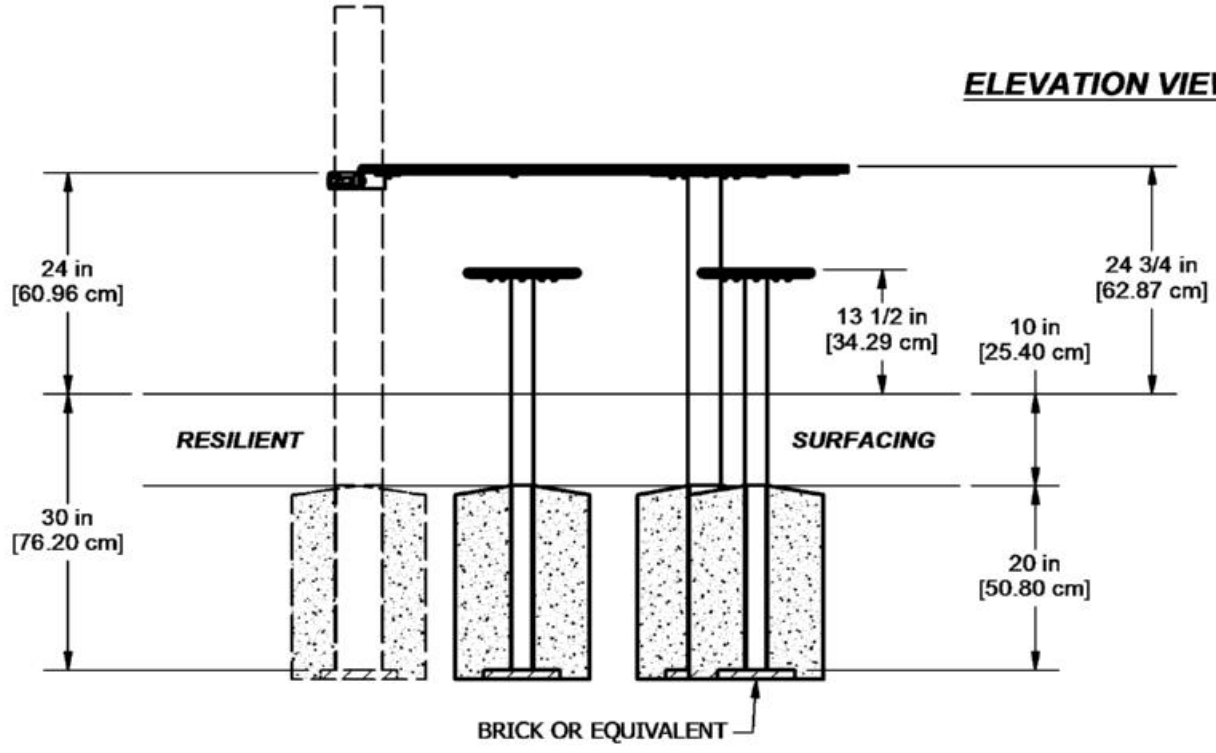
YP479 SUPERMAX PPS TABLE



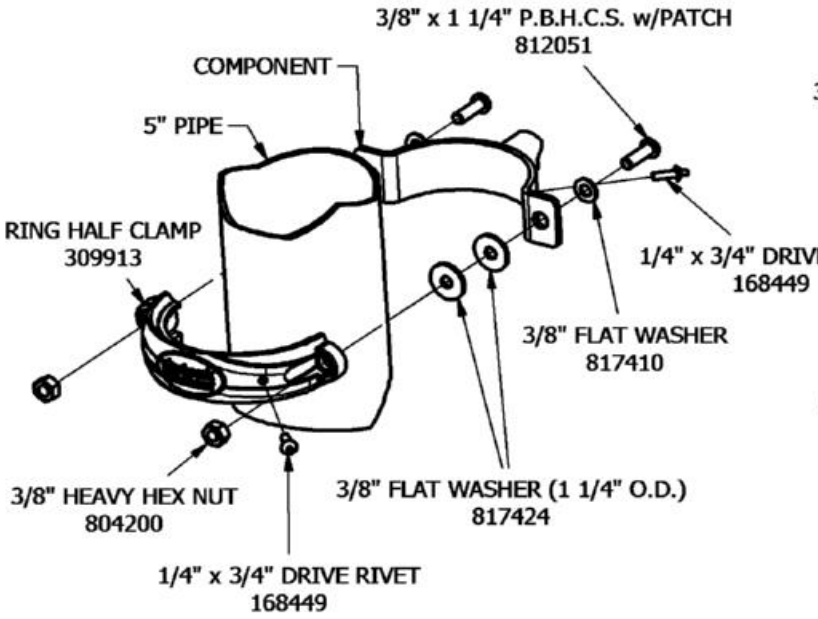
PLAN VIEW

CONCRETE REQUIRED
0.330 CUBIC YARDS
0.250 [CUBIC METERS]

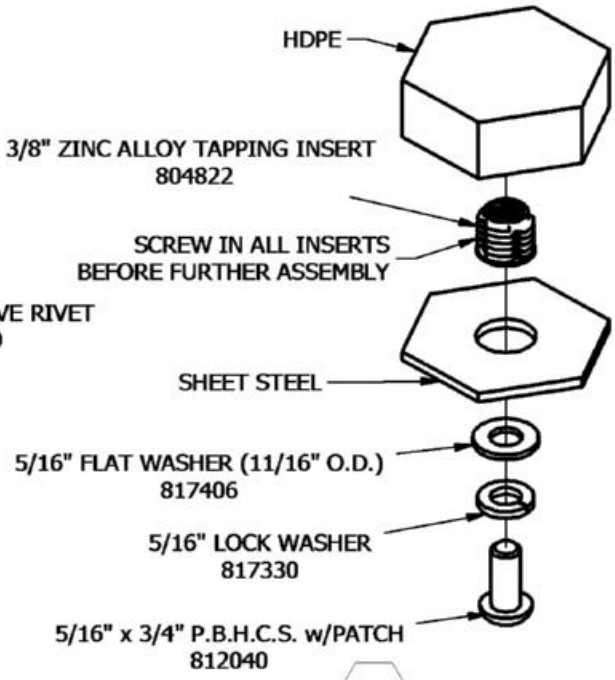
ELEVATION VIEW



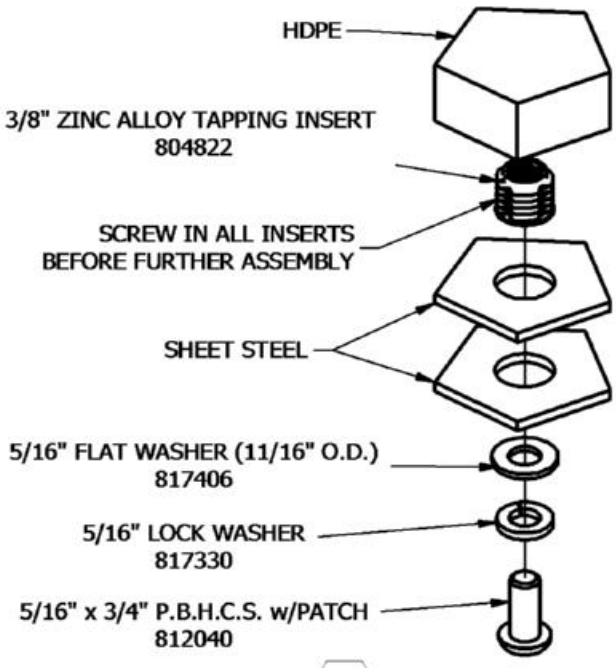
YP479 SUPERMAX PPS TABLE



1137



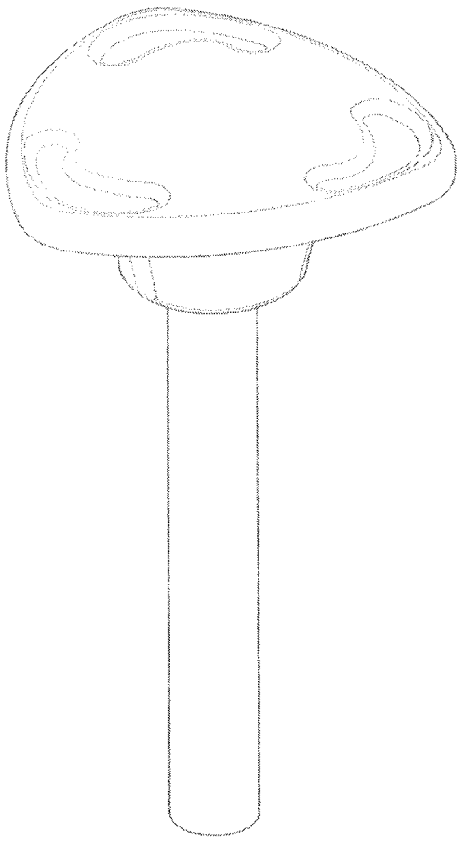
1394



1395

PlayPod Pedestal

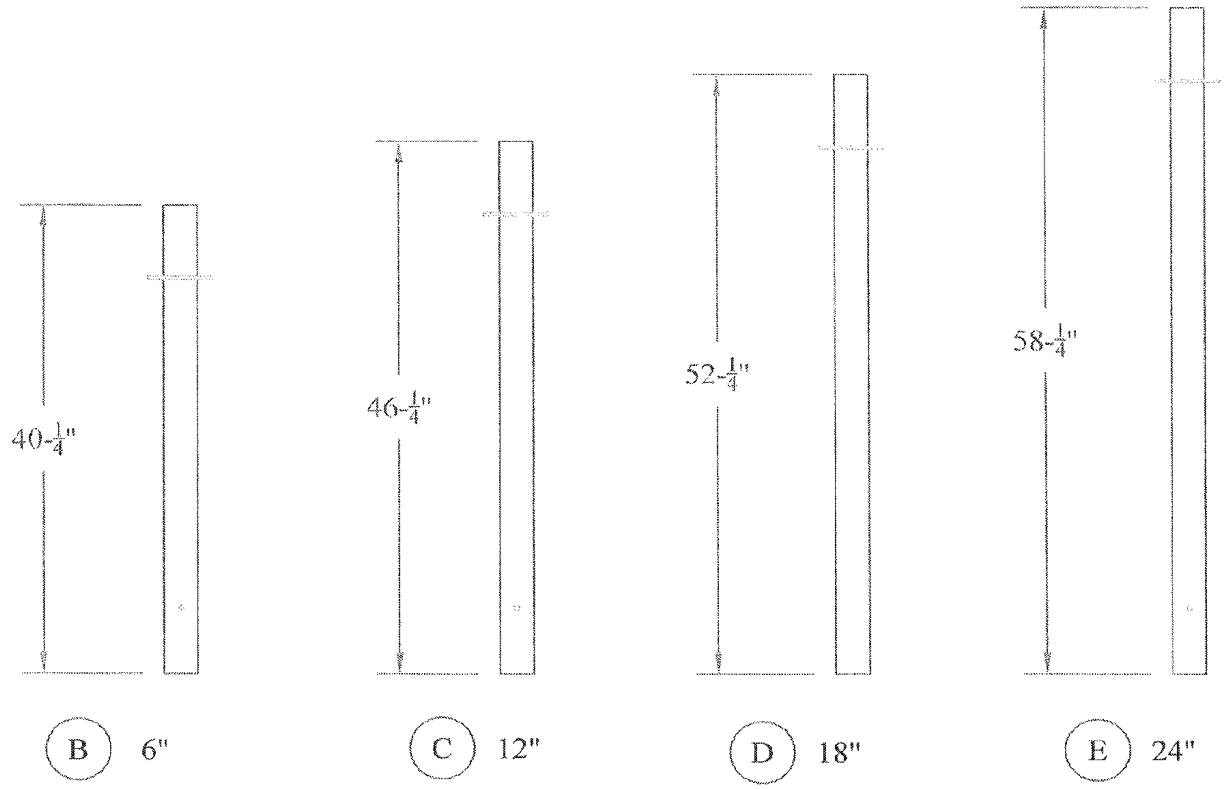
11009B
Installation Instructions
11010B
11011B
11012B



DET.	QTY.	PART#	DESCRIPTION	ICON (NOT TO SCALE)
A	Var	G440_	PlayPod	
B	Var	401448	PlayPod Support Leg 6" BT/12" EW	
C	Var	401449	PlayPod Support Leg 12" BT/18" EW	
D	Var	401450	PlayPod Support Leg 18" BT	
E	Var	401451	PlayPod Support Leg 24" BT	
	Var	D520	Connector PlayPod Pedestal	
F	3	811050	Cap Screw 3/8-16 x 1" Btn Hd P-lock SS	
G	3	817403	Flat Washer 5/16" W/1-1/8" OD SS	
H	1	402121	Anchor Rod 3/8" x 6" Round Bar Plain	

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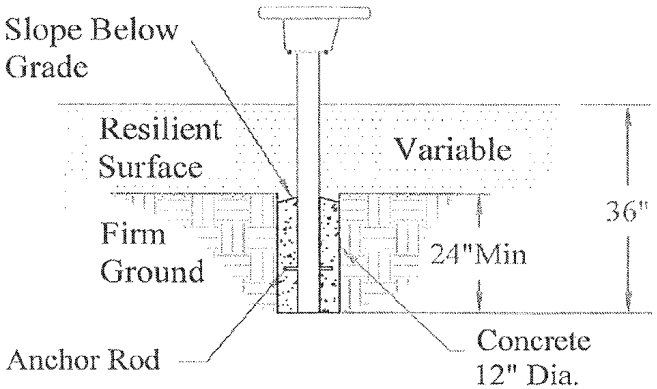
GENERAL INFORMATION



PLAYPOD SUPPORT LEGS

PlayPod Pedestal Pipe Footing

(1.6 to 2.2 cubic feet of concrete)**



Use this simple formula to find the footing depths for your PlayPod Pedestal:

Total Depth of footing minus Resilient Surface Thickness equals Footing Depth.
TD - RST = FD

Example: to find the footing depth for a PlayPod Pedestal with 12 inches of resilient surface, the formula would look like this:

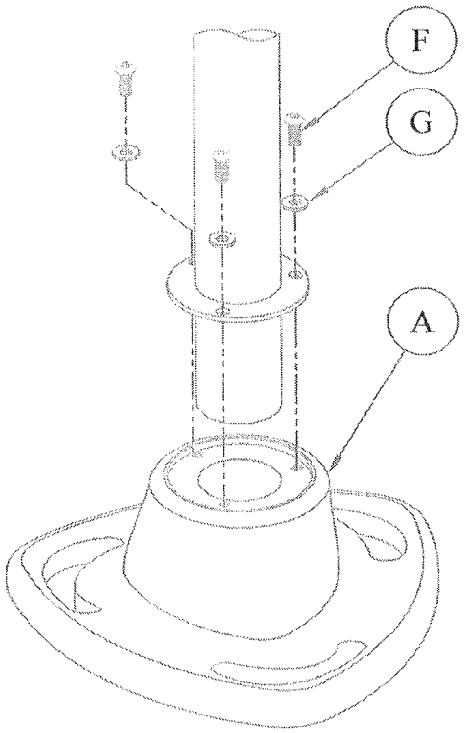
36" - 12" = 24"
Your footing depth is 24".

** Concrete volume varies depending on the thickness of your resilient surfacing.

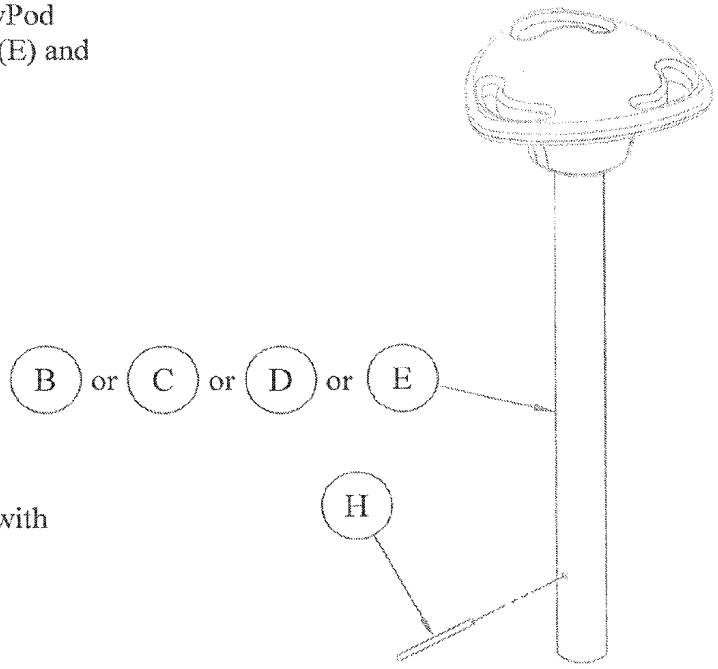
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1. **Refer to your Structure design** for the location, orientation, color, and height of PlayPod Pedestal.

2. **Attach PlayPod** (A) to PlayPod Support leg (B) or (C) or (D) or (E) using hardware (F)(G) as shown.



3. **Insert Anchor Rod** (H) into PlayPod Support Leg (B) or (C) or (D) or (E) and place into footing hole.



Make sure PlayPod Pedestal is plumb and level before filling footing holes with concrete.

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M59012 COZY COUPE

Parts List		
DESCRIPTION	QTY	PART NUMBER
STEERING WHEEL ASSEMBLY	2	163235
90° ANGLE BRACKET	10	302334
LEG	4	402066
PLATFORM	1	405181
COUPE FRONT	1	405289
LEFT COUPE SIDE	1	405290
RIGHT COUPE SIDE	1	405291
LEFT COUPE BACK	1	405292
RIGHT COUPE BACK	1	405293
FRONT COUPE BENCH	1	405294
COUPE BACK SEAT	2	405295
---HARDWARE COMPLETE---	1	405296
3/8" x 3/4" P.B.H.C.S. w/PATCH	32	812052
3/8" x 2" LAG SCREW	24	800726
3/8" FLAT WASHER	32	817410
3/8" BARREL NUT	32	804804

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

STEERING WHEEL ASSEMBLY:
Shall be made from durable proprietary plastic which shall withstand an impact of over 250 foot-pounds. A grease impregnated bronze bushing is pressed into the shaft to provide smooth turning. Wheel is mounted using an all welded powder coated bracket ass'y consisting of an 11 ga. steel mounting disc and a 1 3/4" coupling nut.

90° ANGLE BRACKET:
Shall be fabricated from 3/16" x 2" hot rolled steel plate. The 90° Angle Bracket shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

LEG:
Shall be an all welded construction fabricated from a 11 ga. laser cut tab and 1 1/4" O.D. (12 ga.) galvanized pipe. The Leg shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

PLATFORM:
Shall be constructed from nominal 2" x 4" frame and 3/4" thick densetic anti-skid hdpe. Platform is constructed using #10 stainless steel screws. All 2" x 4" parts are fiberglass reinforced for rigidity.

COUPE FRONT, LEFT COUPE SIDE, RIGHT COUPE SIDE, LEFT COUPE BACK, RIGHT COUPE BACK, FRONT COUPE BENCH, COUPE BACK SEAT:
Shall be precision cut from a single solid sheet of .750" thick UV-stabilized extruded high-density polyethylene with colors molded in. The material will have a density of 60 lbs/ft^3 and a tensile strength of 4400 PSI (30Mpa) as determined per procedure C of ASTM D1928. All edges shall have radiuses and all corners rounded for safe play.

M59012 COZY COUPE

HARDWARE:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coated plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 allow stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

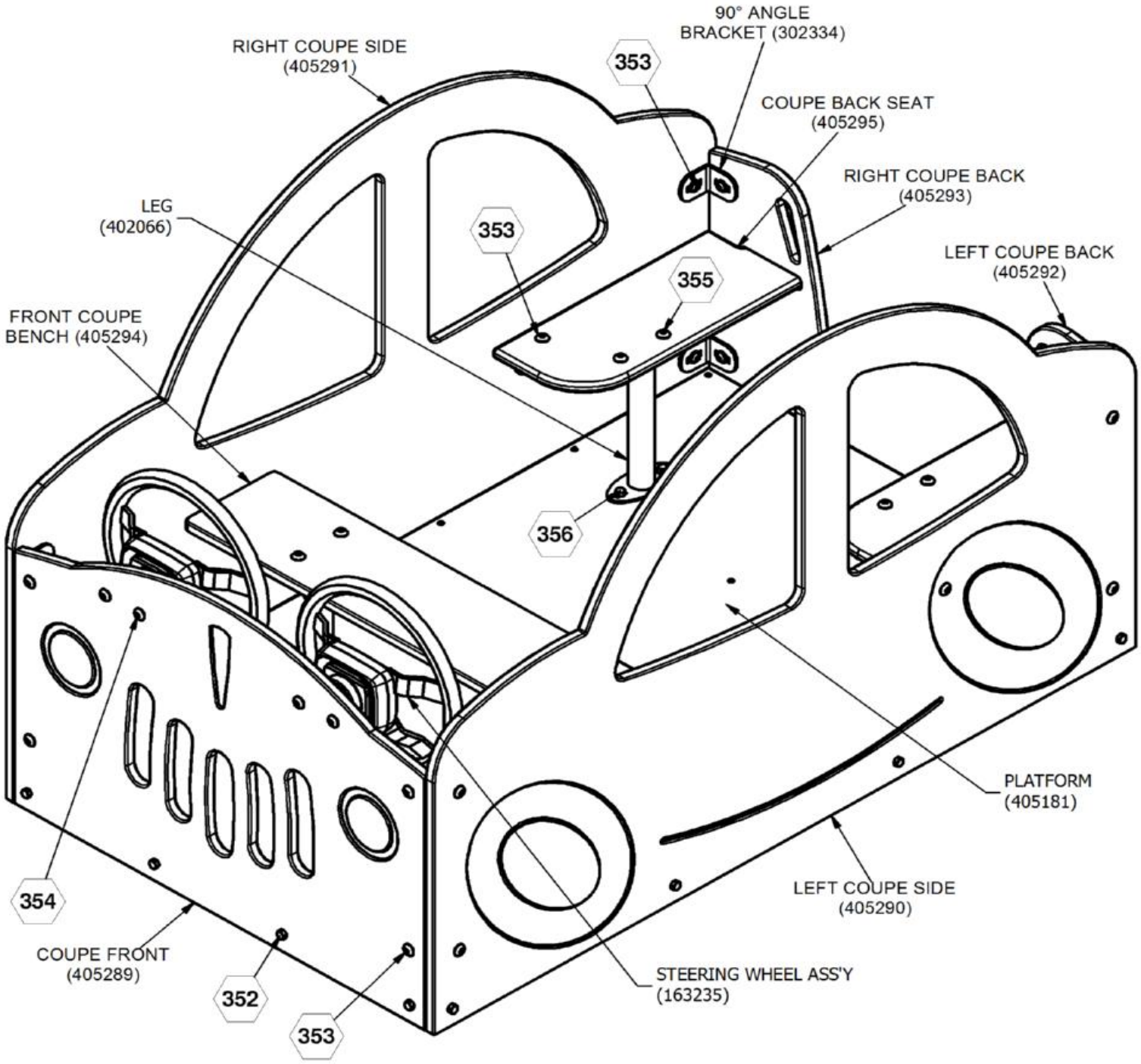
1. Attach Coupe Front, Left Coupe Side, Right Coupe Side, Left Coupe Back, and Right Coupe Back to Platform using 3/8" x 2" Lag Screw. See Detail 352.
2. Attach each panel at the corners using 90° Angle Bracket, 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 353.
3. Attach the Steering Wheel Assembly to the Cope Front using 3/8" x 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 354.
4. Attach Leg to the Front Coupe Bench using 3/8" x 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 355. Refer to the Plan View for exact location.
5. Attach the Leg of the Front Coupe Bench to the Platform using 3/8" x 2" Lag Screw. See Detail 356.
6. Attach Leg to the Coupe Back Seat using 3/8" x 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 355.
7. Slide Coupe Back Seat into slot of Coupe Back and attach using 90° Angle Bracket 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 353.
8. Attach Lef of the Coupe Back Seat to the Platform using 3/8" x 2" Lag Screw. See Detail 356.
9. Plumb and level the entire assembly and tighten all fasteners.
10. Check that all hardware connections are securely tightened. Smooth away sharp edges that may have been created during handling and assembly. Install resilient surfacing within the use zone of play structure in accordance with ASTM specifications F1292, and appropriate for the fall height of each structure. Refer to all applicable safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

earlyworks environments

M59012 COZY COUPE



= INSTALLATION DETAIL

FINISHED ASSEMBLY

Issued/Revised: 07/28/15

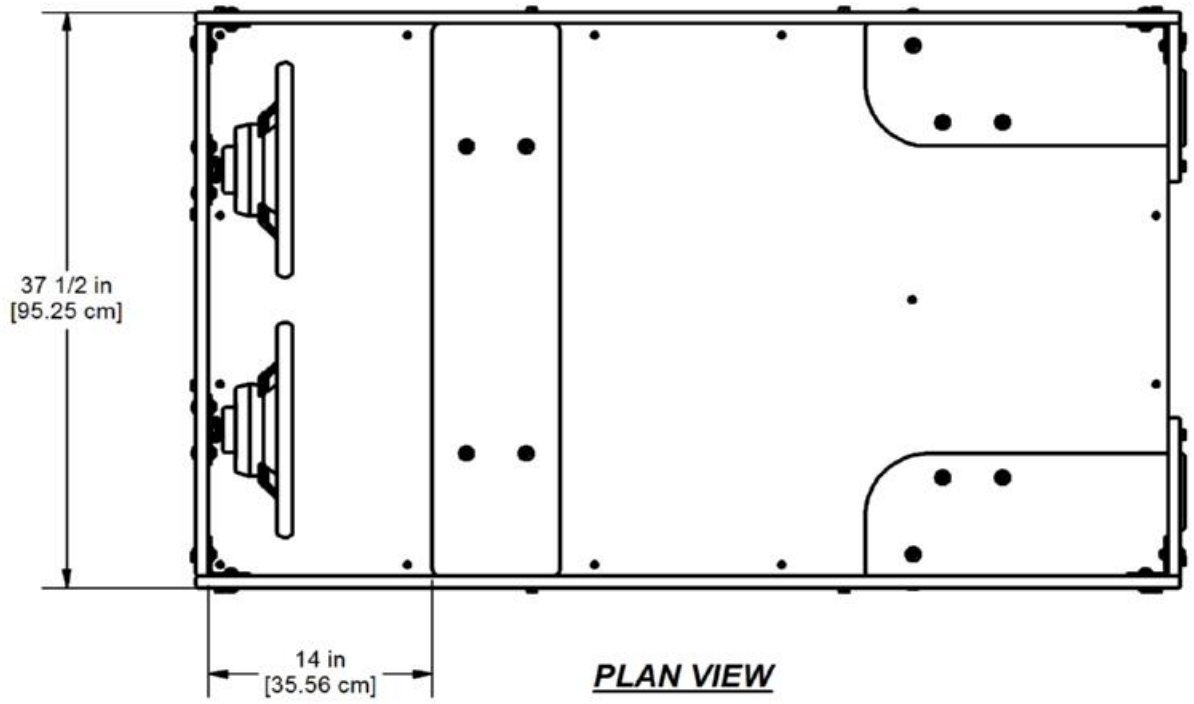
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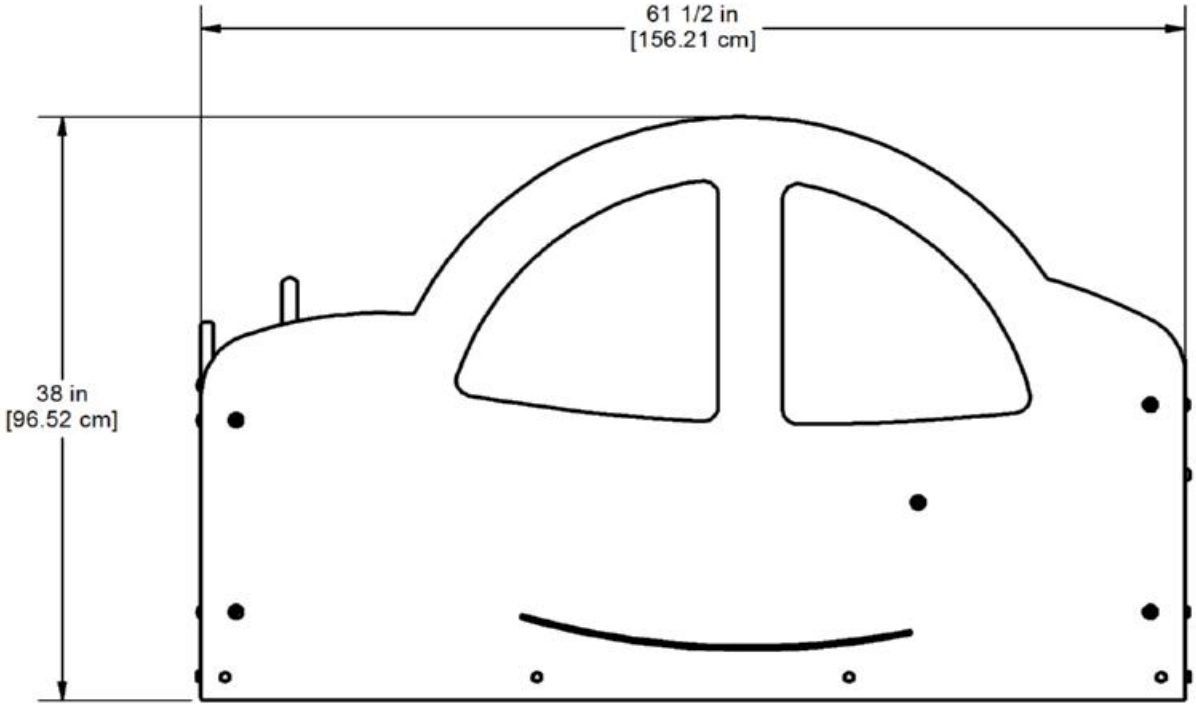
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M59012 COZY COUPE



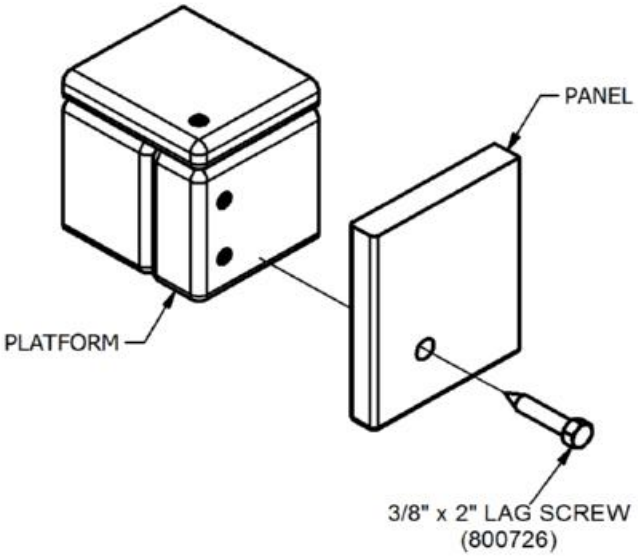
PLAN VIEW



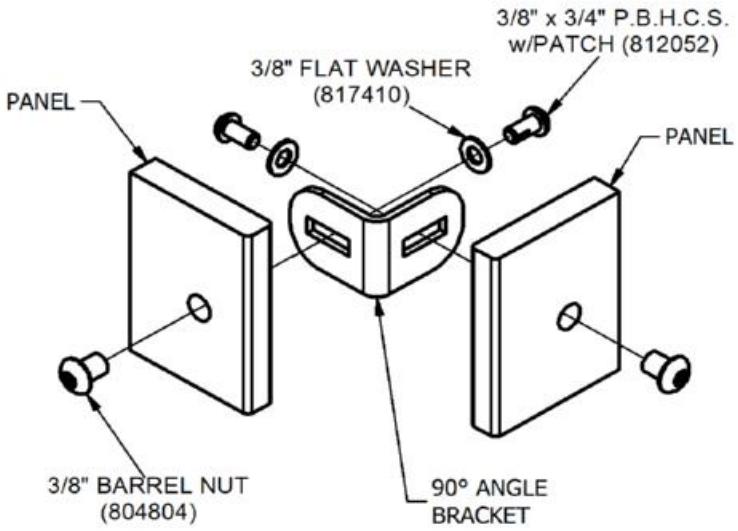
ELEVATION VIEW

M59012 COZY COUPE

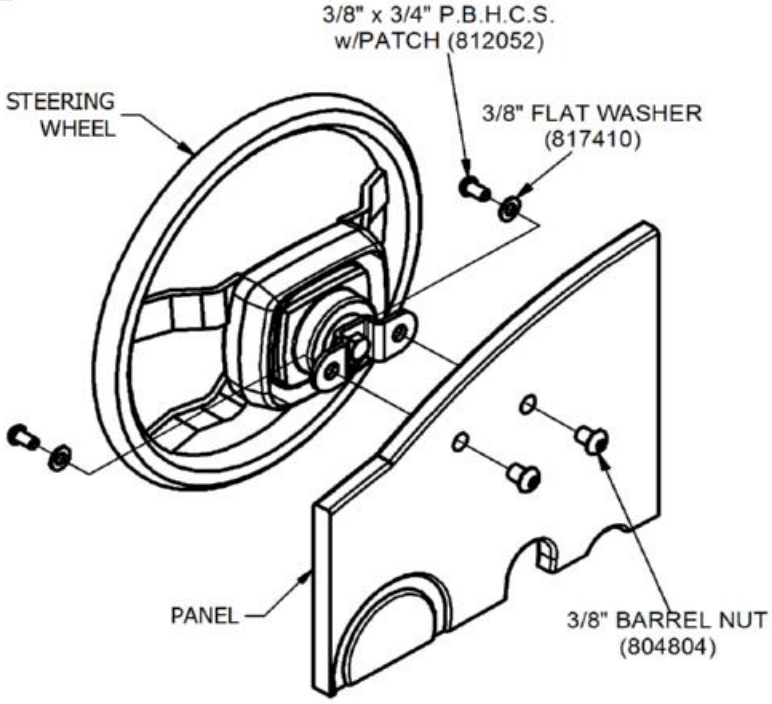
352



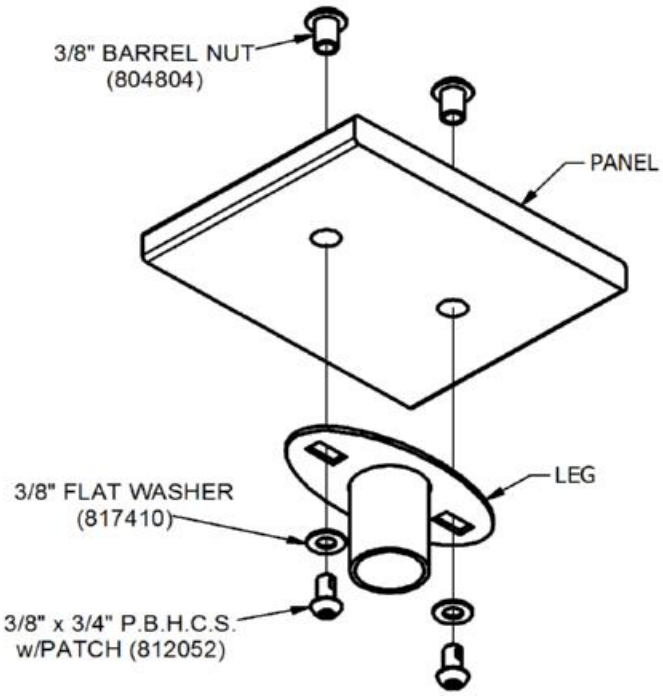
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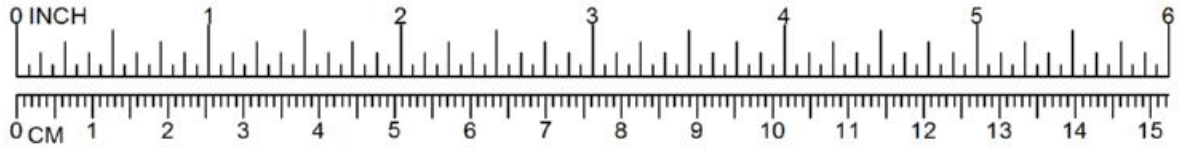


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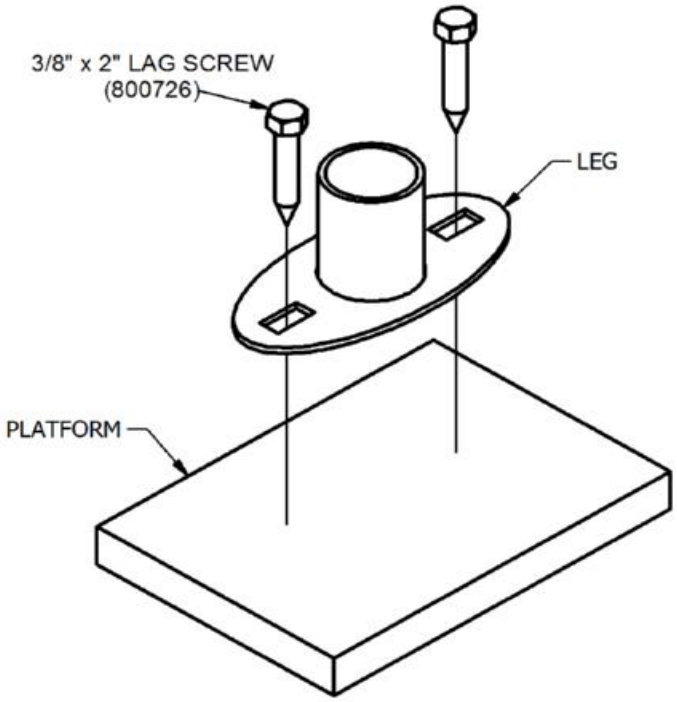
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M59012 COZY COUPE

356



1-866-814-8697

BigToys
A PLAYCORE Company

bigtoys.com

MEC-049 Waterway - Double

Parts List		
DESCRIPTION	QTY	PART NUMBER
WATERWAY MODULE	2	402718
4x 4 POST 3	2	402702
4x 4 POST 4	2	402703
4x4 POST 5	2	402777
GEYSER ROOF PANEL A	1	402708
GEYSER ROOF PANEL B	1	402709
SPACER	1	402719
--- HARDWARE COMPLETE ---	1	402755
WASHER 1/2" STAINLESS	8	817465
3/8" FLAT WASHER	8	817410
3/8" BARREL NUT	8	804804
3/8" x 5" P.B.H.C.S. w/PATCH	6	812078
3/8" x 4" P.B.H.C.S. w/PATCH	2	812082
#10 x 3" WOOD SCREW	8	815511

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

Installation Instructions:

1. Dig 12" deep x 12" diameter footing holes as shown in Plan and Elevation Views. Refer to Plan view for correct post layout (Note: the Layout may be arranged in any of three arrangements. Right-hand arrangement ("Layout A") shown See pages 3 of 5 and 4 of 5 to review all options).

2. Position (2) 4x4 Post 1 and (2) 4x4 Post 2 in four of the prepared footing holes as shown. Refer to Finished Assembly view for locations of posts.

3. Locate & drill two 1/2" diameter through-holes in the sides of one of the Waterway Modules. See Detail 069. This will be the lowest Waterway Module in the Series

4. Attach the drilled Waterway Module to (2) 4x4 Post 4 and (2) 4x4 Post 3 using 3/8" x 5" P.B.H.C.S. w/Patch, 3/8" Flat Washers, 3/8" Barrel Nuts, and 1/2" Washers. See Finished Assembly view and Detail 069.

5. Plumb all 4x4 Posts, and shore up the structure securely to support it during the subsequent assembly steps.

NOTE: The Waterway Modules are sloped to allow water to flow. The typical height difference between the upper end and lower end of the Waterway Module is 2". The Waterway Module is to remain level across the Narrow Axis. See Detail 071.

6. With the first Waterway Module securely supported, place two ea. 4x4 Post 5 into their footing holes, and position the Spout end of another Waterway Module so that it is resting on the side of the partially completed Waterway structure, as shown, and has a Spacer postioned between the side of the Waterway Module and the Spout panel. See Details 070 & 071.

7. Attach the second Waterway Module to the 4x4 Post 5 using 3/8" x 5" P.B.H.C.S. w/Patch, 3/8" Flat Washers, 3/8" Barrel Nuts, and 1/2" Washers. See Detail 069.

(Cont'd.)

MEC-049 Waterway - Double

8. Make certain to align the holes in the Spacer with the holes in the Spout panel, and hold them together firmly against the side of the first Waterway Module. Level the Waterway Module across the narrow axis, then mark and drill two 1/2" holes through the side of Waterway Module, using the holes in the Spout Panel and Spacer as a guide. See Detail 071.

9. Attach the second Waterway Module and Spacer to the partially completed structure using 3/8" x 4" P.B.H.C.S. w/Patch, 3/8" Flat Washers, 3/8" Barrel Nuts, and 1/2" Washers. See Detail 072.

10. Position the Geyser Roof Panel A on the top of the 4x4 Post 5 as shown, leaving a 1" projection at the end of the panel. Attach using (4) #10 x 2-1/2" screws. See Detail 073.

11. Position the Geyser Roof Panel B on the top of the 4x4 Post 5, aligning the end of Geyser Roof Panel B with the end Geyser Roof Panel A. Attach using (4) #10 x 2-1/2" screws. See Detail 073.

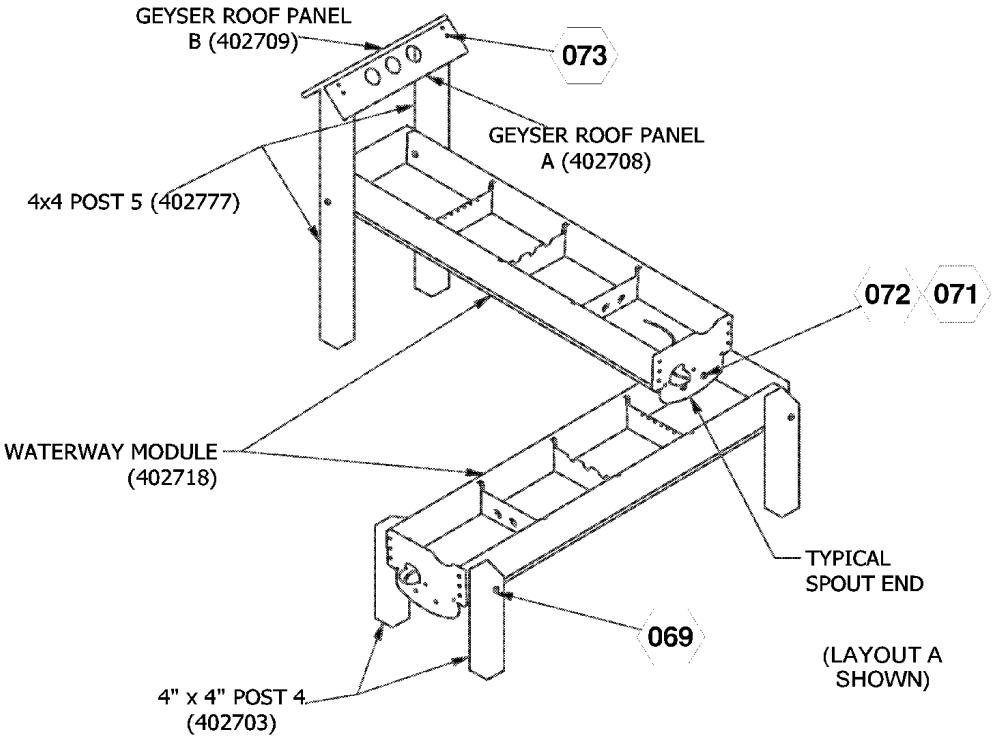
12. Plumb and level the entire assembly and tighten all fasteners.

13. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

14. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

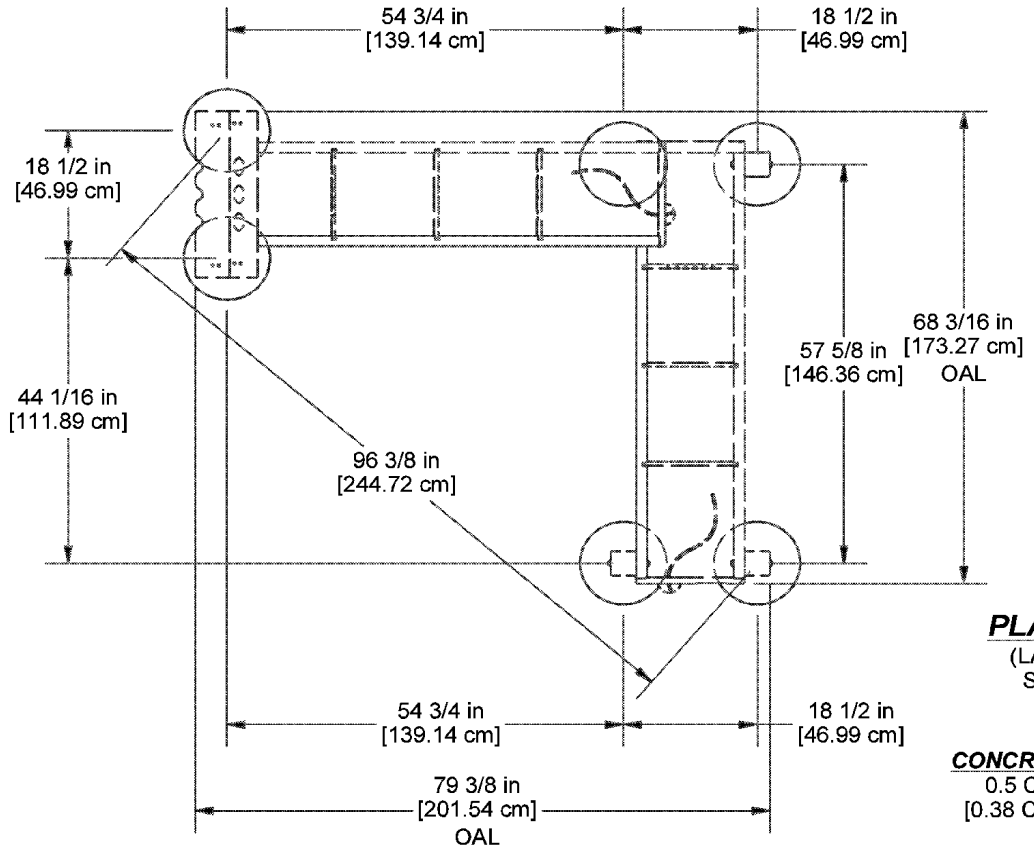
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



earlyworks environments

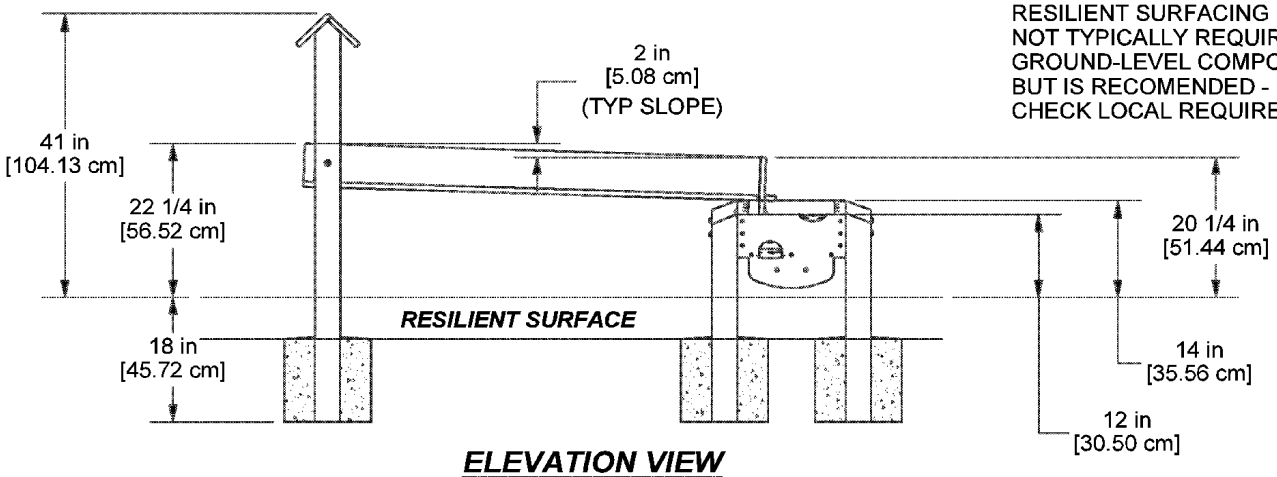
MEC-049 Waterway - Double



PLAN VIEW
(LAYOUT A SHOWN)

CONCRETE REQUIRED:
0.5 CUBIC YARDS
[0.38 CUBIC METERS]

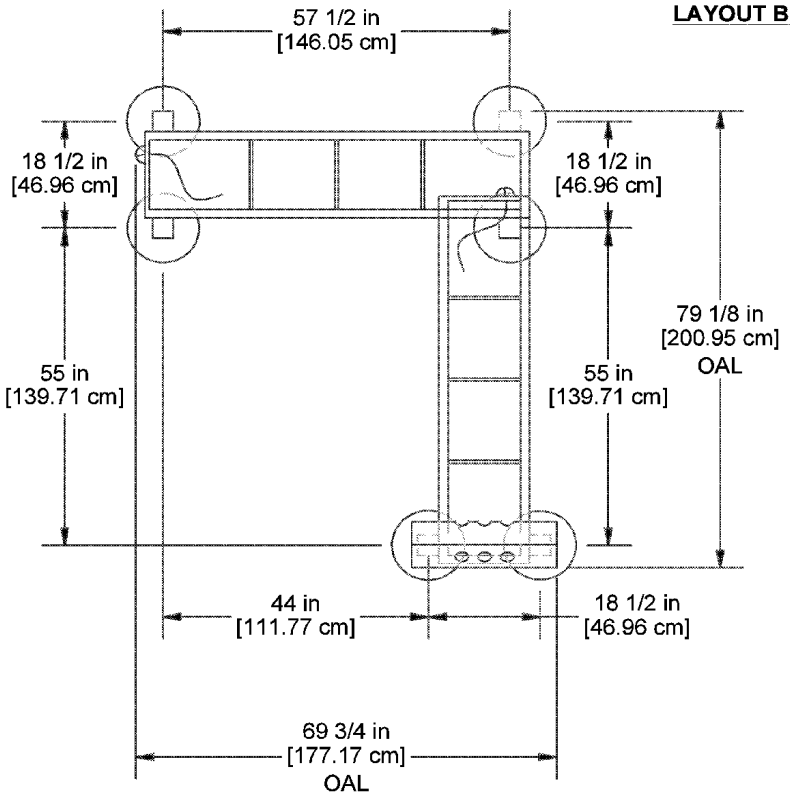
NOTE:
RESILIENT SURFACING IS NOT TYPICALLY REQUIRED FOR GROUND-LEVEL COMPONENTS, BUT IS RECOMENDED - CHECK LOCAL REQUIREMENTS



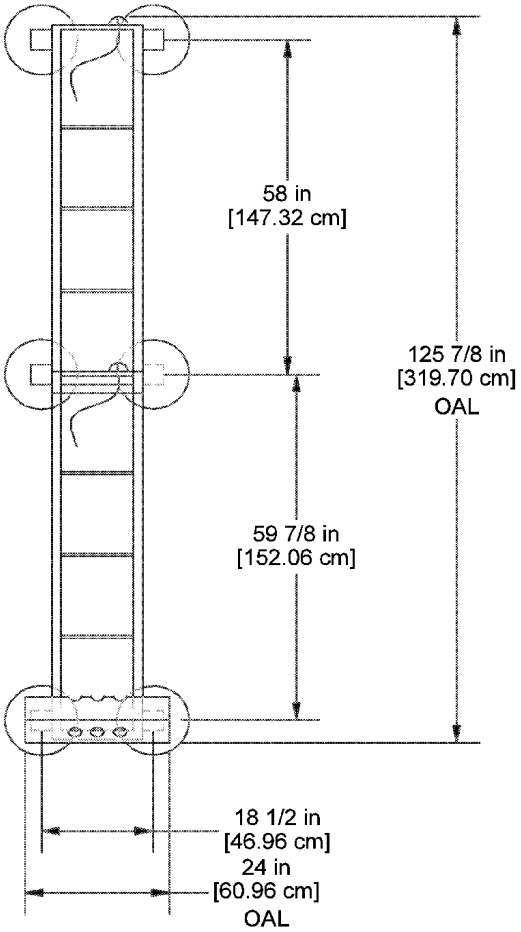
ELEVATION VIEW

MEC-049 Waterway - Double

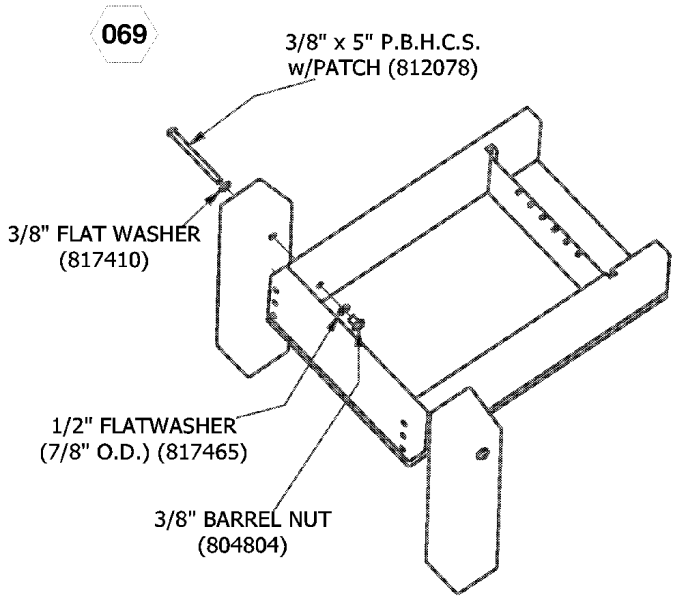
LAYOUT B

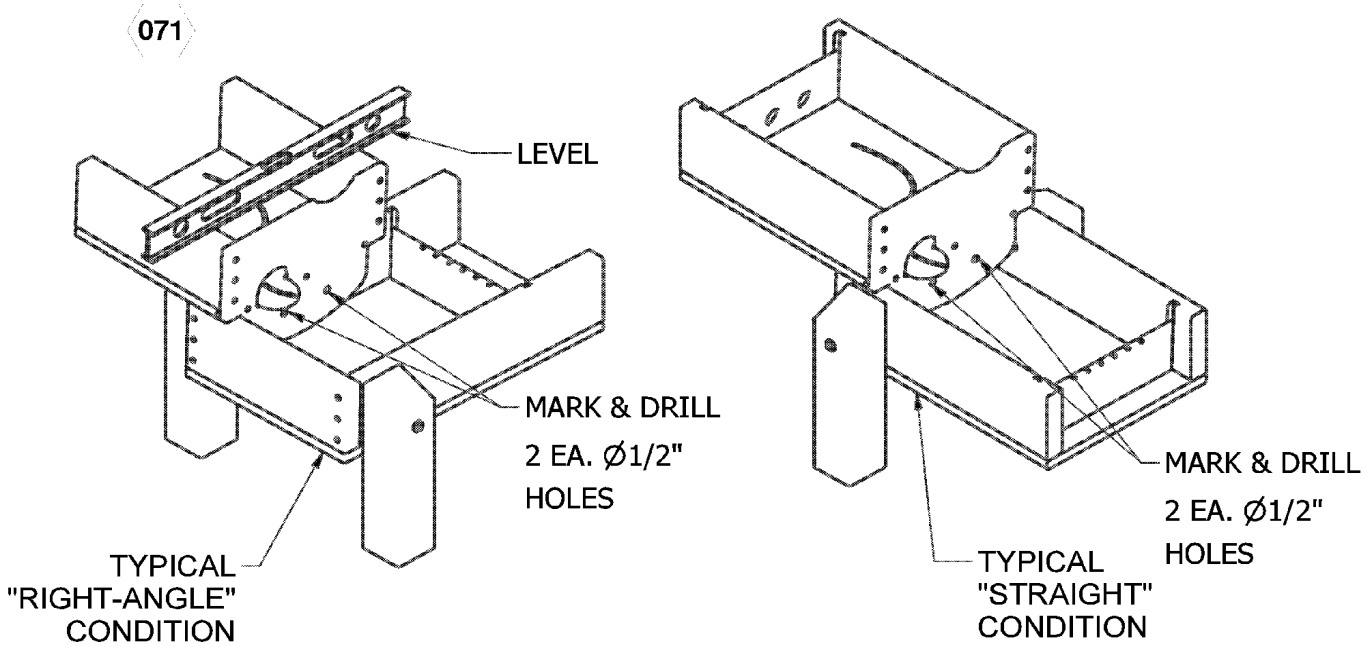


LAYOUT C

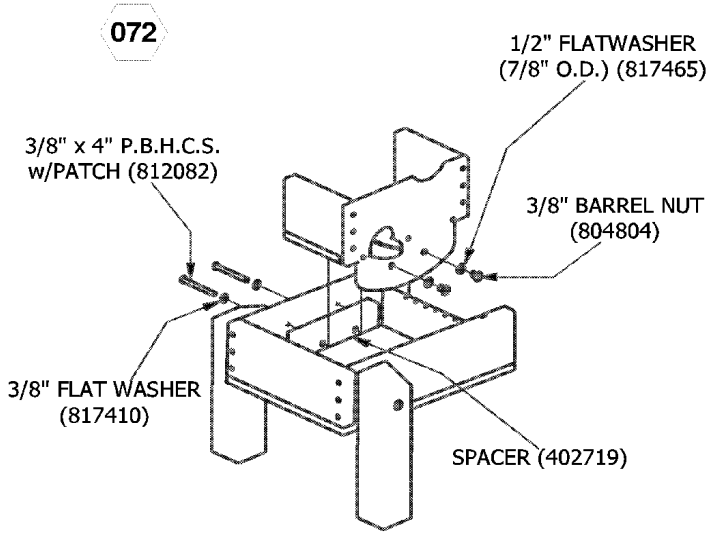


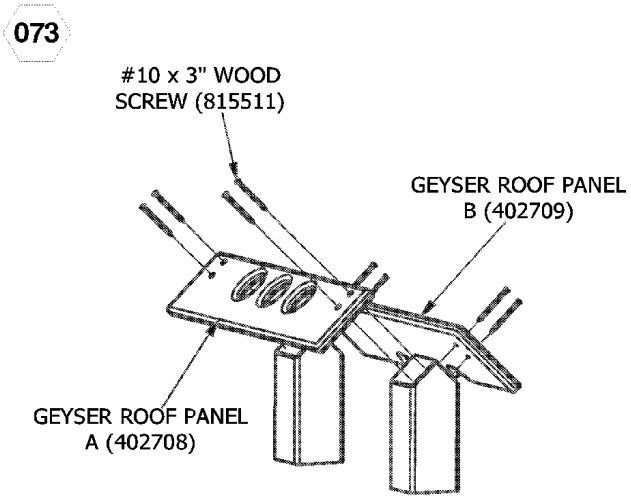
MEC-049 Waterway - Double





MEC-049 Waterway - Double





MODEL NO. SF-326 (IN-GROUND0, SF-327 (PORTABLE0, & SF-328 9SURFACE MOUNT0 MUSIC BENCH 6'

Parts List					
ITEM	DESCRIPTION	SF-326	SF-327	SF-328	PART NO.
1	Leg Ass'y, In-Ground	2	0	0	152099
2	Leg Ass'y, Portable	0	2	0	157851
3	Leg Weld Ass'y, Surface Mount	0	0	2	157704
4	Horizontal Support w/Inserts	0	1	1	157796
5	Coated Musical Bench Back	1	1	1	178433
6	Coated Musical Bench Seat	1	1	1	178430
	Hardware Complete	1	0	0	157867
	Hardware Complete	0	1	0	157868
	Hardware Complete	0	0	1	157869
	1/2" x 2 3/4" Wedge Anchor	0	0	4	800074*
	3/8" x 1 1/4" Hex Head Bolt	8	8	8	801004*
	3/8" x 2 3/4" Hex Head Bolt	0	2	2	801010*
	3/8" Flatwasher	16	16	16	817410*
	3/8" Lockwasher	8	10	10	817334*
	1/2" Lockwasher	0	0	4	817342*
	3/8" Hex Head Nut	8	8	8	804053*

SPECIFICATIONS:

FRAME: The frames shall be fabricated of 2-3/8" O.D. galvanized pipe.

SEAT AND BACK: The seat shall be punched steel with a plastisol coating.

HARDWARE: All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing.

MODEL NO. SF-326 (IN-GROUND0, SF-327 (PORTABLE0, & SF-328 9SURFACE MOUNT0 MUSIC BENCH 6'

NOTE: THIS SPECIFICATION BOOKLET SHOULD BE KEPT IN CUSTOMERS FILE FOR FUTURE REFERENCE.

NOTE: Do not over tighten bolts. To over tighten may cause buckling or dimpling of some parts.

NOTE: Read installation instructions thoroughly before starting assembly. Pour concrete only after final assembly is complete. Bracing material may be required during assembly.

NOTE: Do not tighten any nuts, bolts, rods, etc. until the unit is completely assembled.

NOTE: Place a brick or equivalent at the bottom of ground holes (where shown), to provide a solid foundation. Allow for this in hole depth.

STEP 1: Position the leg assemblies the correct distance apart.

STEP 2: Bolt the plastisol seat to leg assemblies, using Detail C.

STEP 3: Bolt Horizontal Leg Brace to Leg Assembly using Detail B. NOTE: Not required on in-ground model.

STEP 4: Make sure the frames are square. Tighten all nuts. Loctite (supplied by others) should be used on all threaded hardware.

IN-GROUND

STEP 5: Locate position of holes for legs using the assembled bench as a template.

STEP 6: Dig holes and place a brick or equivalent in the bottom of each to provide a solid foundation for the bench legs. See In-Ground Footing Detail.

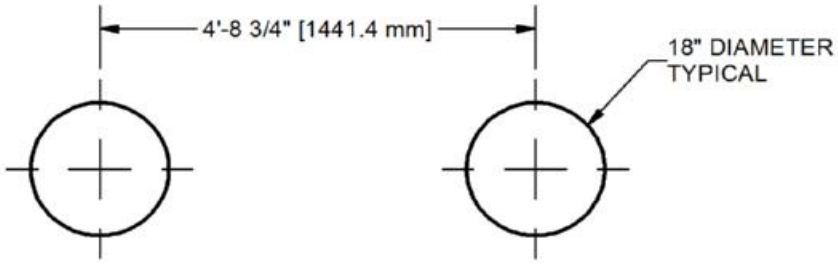
NOTE: Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.

STEP 7: Pour concrete to within 0'-4" [10.16 cm] of finished surface and fill the remainder with surfacing, and/or backfill. Allow concrete 48 hours minimum, to harden before using the park bench.

SURFACE MOUNT

STEP 8: Place assembled bench in desired location on a concrete slab or flooring. Mark the location of the holes using the mounting plates as templates. Move bench and drill 1/2" diameter holes 2" deep into concrete or flooring as marked. Reposition bench over holes and mount to the concrete as shown in Detail A.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipm



MODEL NO. SF-326 (IN-GROUND0, SF-327 (PORTABLE0, & SF-328 9SURFACE MOUNT0 MUSIC BENCH 6'



SF-326

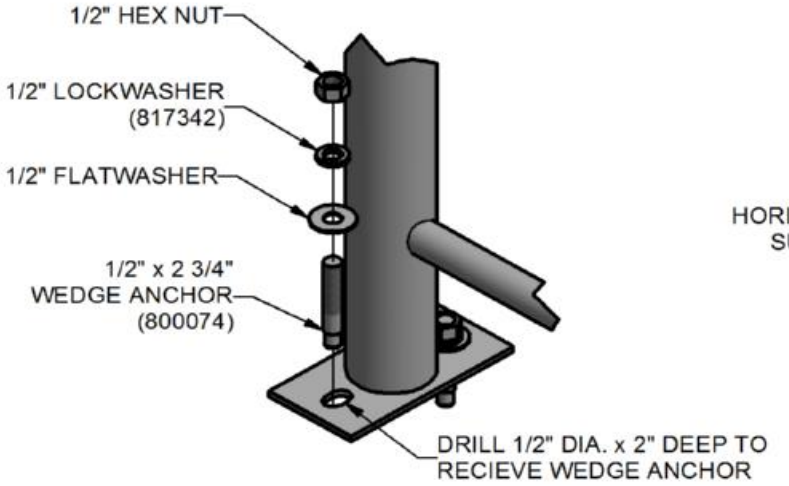


SF-327

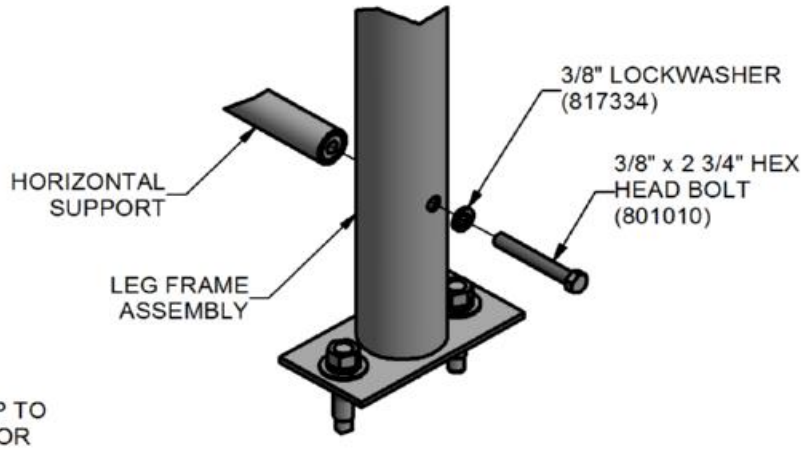


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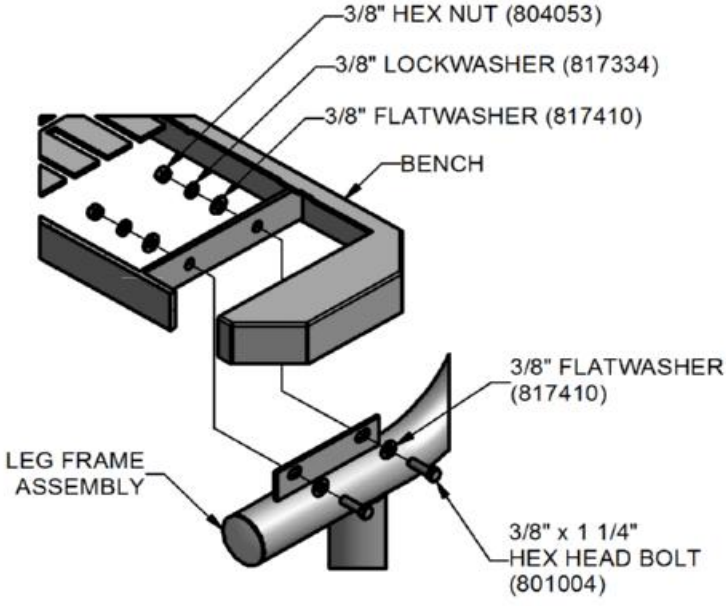
MODEL NO. SF-326 (IN-GROUND0, SF-327 (PORTABLE0, & SF-328 9SURFACE MOUNT0 MUSIC BENCH 6'



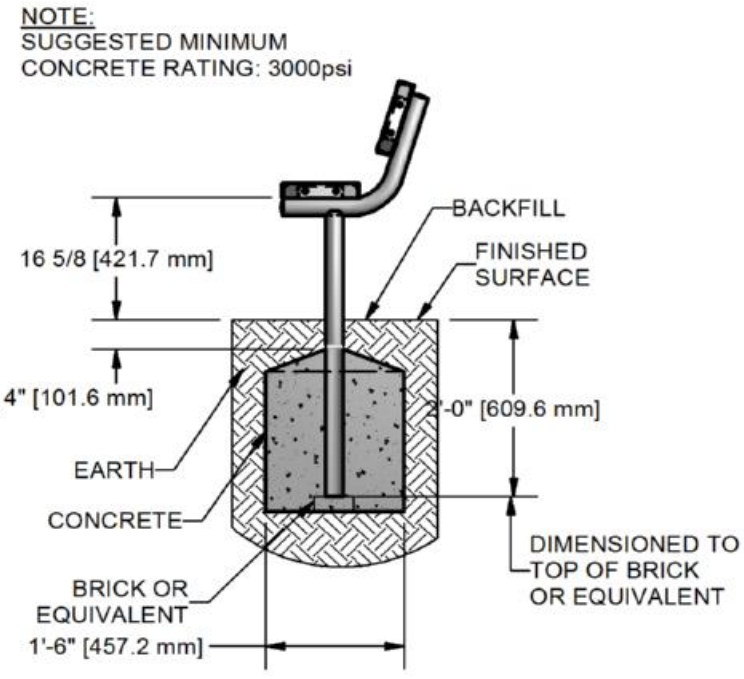
DETAIL A



DETAIL B



DETAIL C



IN-GROUND FOOTING DETAIL

65190 TRIPLE TOSS

Parts List		
DESCRIPTION	QTY	PART NUMBER
TRIPLE TOSS	1	TRT-03XX
TRIPLE TOSS POST	1	315012
HARDWARE COMPLETE	1	315013
1/2" ANCHOR ROD	2	135038
1/4" x 2" SELF-TAPPING SECURITY TORX	3	HWS0306
5/16" FLATWASHER (3/4" O.D.)	3	817404

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

TRIPLE TOSS:
Shall be rotational molded from polyethylene. The polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotational molded products shall meet or exceed the following specifications: ASTM D-1298, type 2, class A and Federal specification LP-390c, type 1, class M, grade 2, category 3; Density (ASTM D-155); Brittleness Temperature (ASTM D-746), Tensile Values (ASTM-638); Flexural Modulus (ASTM-D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD)

TRIPLE TOSS POST:
Shall be fabricated from 3.5" O.D. 13 gauge (0.095") galvanized round tubing, manufactured to ASTM A-500 Section 2 tolerances from cold-formed steel conforming to ASTM A-569 Sheet Spec for Steel Coil. Minimum yield strength shall be 50,000 psi and minimum tensile strength shall be 55,000 psi. The exterior surface is hot dip galvanized, chromate conversion coated, and a clear high perfomance organic polymer is applied. The inside diameter has 81% minimum zinc rich primer capable of providing excellent rust protection and fabrication characteristics. All coatings are applied inside and out after welding for superior corrosion protection throughout. Exterior surface galvanizing zinc purity is 99% as per ASTM B-6 high grade and special high grade. Galvanizing coverage shall demonstrate the ability to exceed 1000 hours salt spray corrosion exposure in accordance with ASTM B-117. Internal surface zinc rich 81% minimum zinc dust content in organic resin, as per ASTM F-1234, Section 5.2.4, Type D. All upright post shall have a finished grade line marking to indicate the correct playground safety surface level. All upright post shall be coated with a custom formula TGIC polyester powder coating in conformance with the specifications outlined herein.

POWDER COAT FINISH:
Powder-coat shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage Alkaline bath system (free of iron phosphate), as a rust inhibitor, and a zirconium conversion coating to prevent flash rusting before coating. In addition, all welds shall be protectively coated with ZRP, a rich primer that forms a rust-resistant barrier layer over each weld prior to application of the color powder coating. The powder coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68), Adhesion (Cross Hatch ASTM D-3359 & Knife Scratch ASTM D-2197), Environmental (Stain Resistance ASTM D-1308, Humidity ASTM D 2247 - 87, Salt Spray ASTM B-117 & Fadometer 300 hrs with no loss of gloss), Oven-bake Stability 100% at 400 degrees Fahrenheit.

HARDWARE:
All nuts, bolts, and washers, with exceptions noted, shall be 3/8" diameter 18-8 stainless steel in varying lengths, with a vandalresistant hex-pinned head configuration and factory-applied locking patch. When allowed a 72-hour cure time, the locking patch will prevent the bolt from loosening without at least 4 times the installation torque. Play & Park Structures will supply the special tool required to turn vandal-resistant hardware with each shipment.

65190 TRIPLE TOSS

INSTALLATION INSTRUCTIONS:

1. Determine location for Triple Toss and dig footing hole. Refer to Elevation View for footing depth.

2. Insert Triple Toss Post into Triple Toss and attach using 1/4" x 2" Self-Tapping Security Torx and 5/16" x 3/4" Flat Washer. See Detail 989.

3. Place 1/2" Anchor Rods in bottom of Triple Toss Post. See Detail 371.

4. Place Assembly into ground hole.

5. Plumb and level the entire assembly and tighten all fasteners.

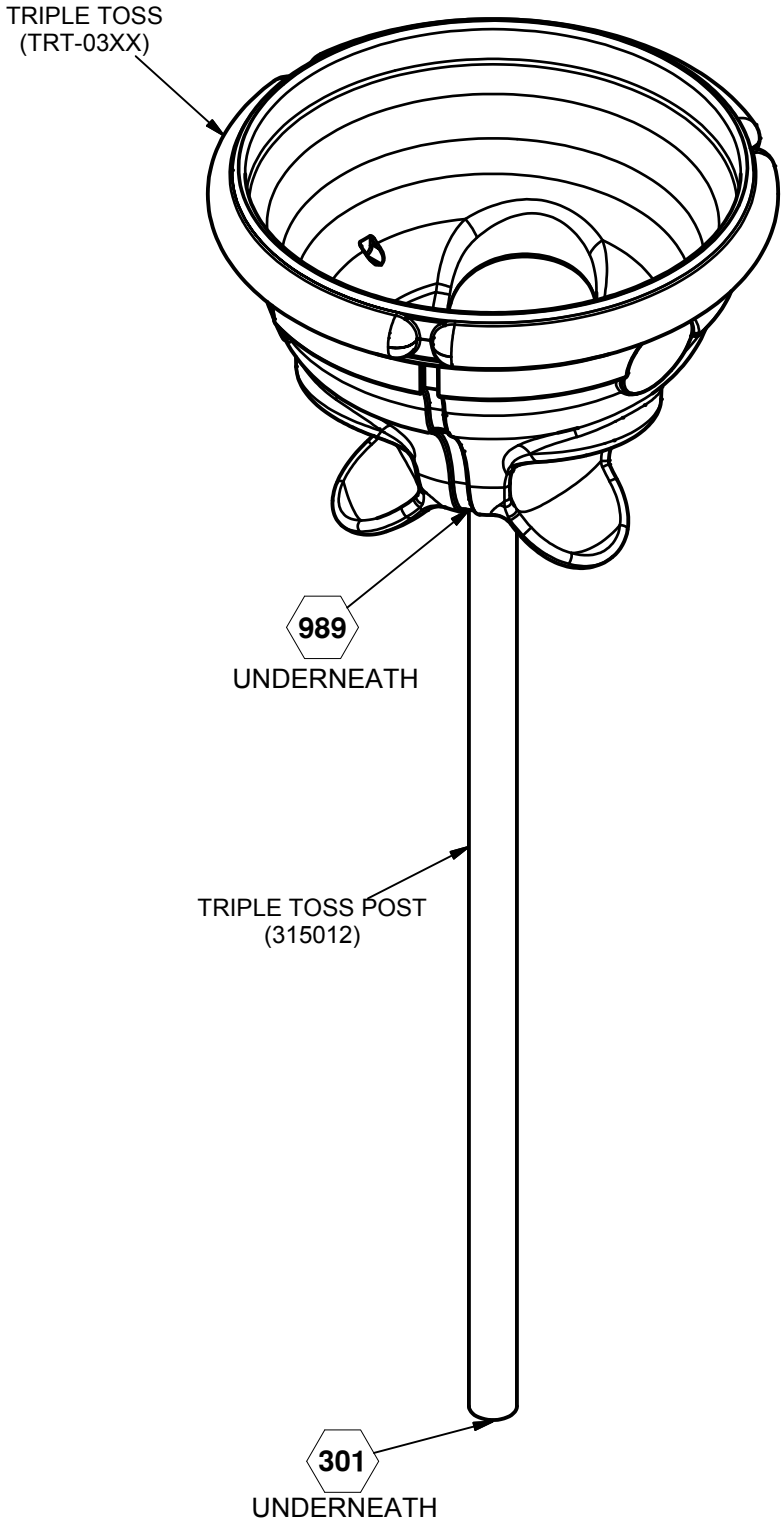
6. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use.

7. When structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

65190 TRIPLE TOSS

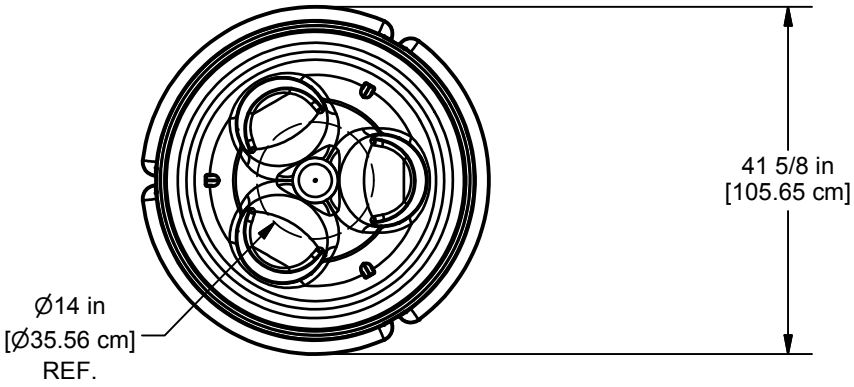


= INSTALLATION DETAIL

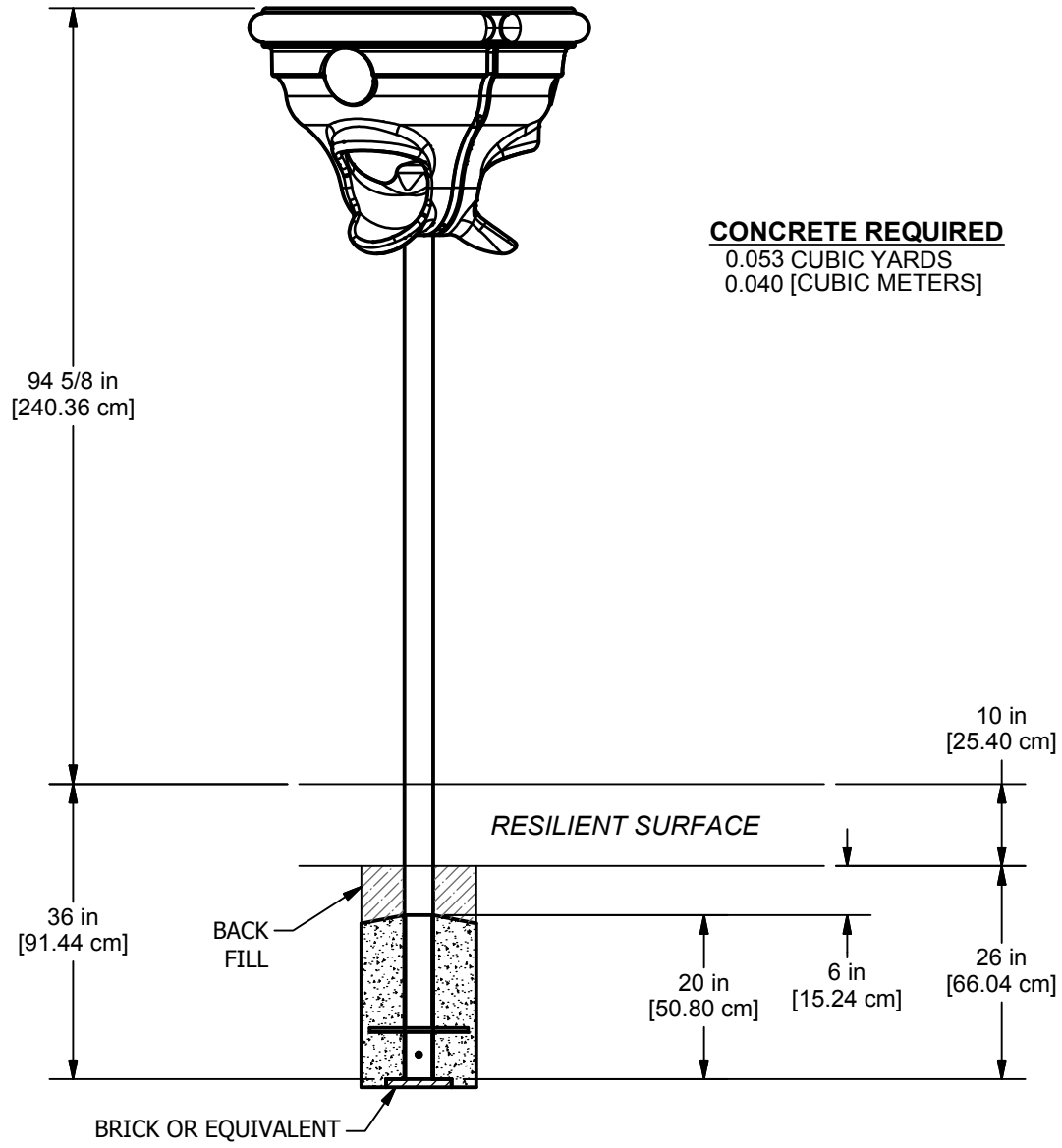
FINISHED ASSEMBLY

Issued/Revised: 4/3/2019

65190 TRIPLE TOSS

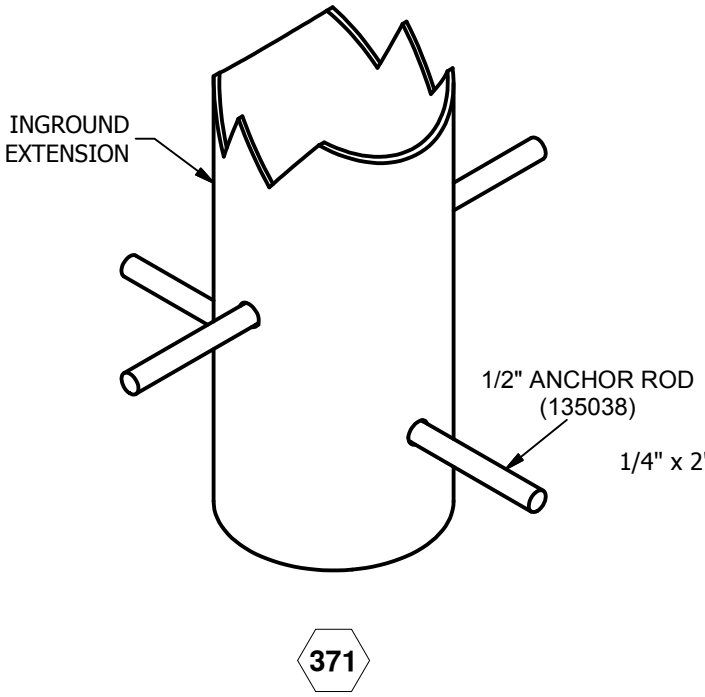


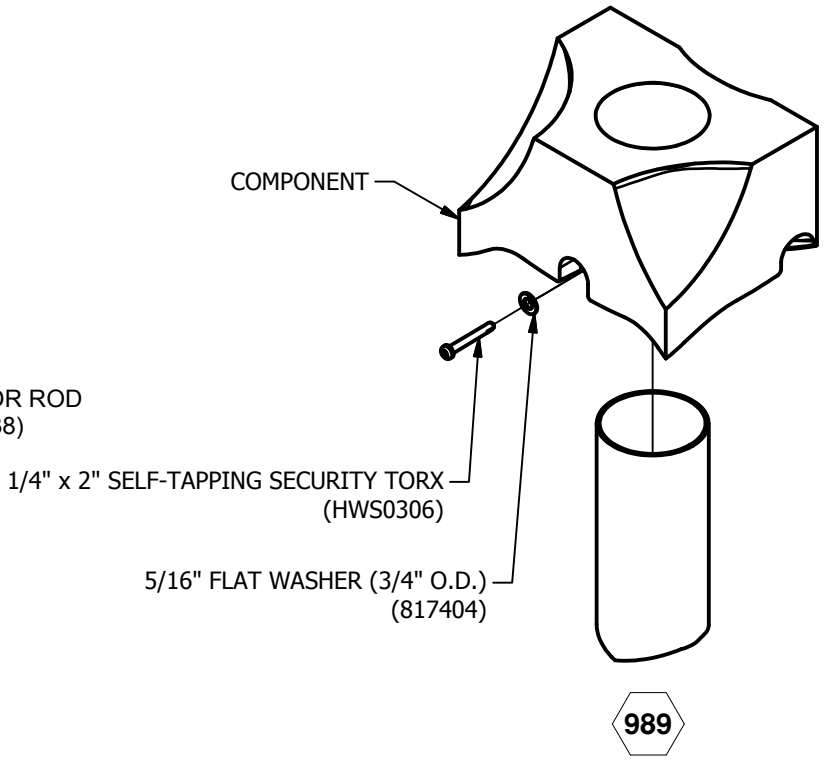
PLAN VIEW



ELEVATION VIEW

65190 TRIPLE TOSS





Portola Elementary School
Ventura, CA
TK-K Area , Option 1

Play & Park Structures

This play equipment is recommended for children ages:
2-5 or 5-12

Minimum Area Required:
Per Drawing

Scale: 1/4" = 1'-0"
This drawing can be scaled only when in an 24" x 36" format

Drawn By:
Cassie Pruitt
Date:
10/1/25
Quote Number:
821-176089B

play&park structures
A PLAYCORE Company
544 Chestnut Street
Chattanooga, TN 37402
800-727-1907 / www.playandpark.com

Total Play Components	34			User Capacity
Elevated Play Components	10			90-95
Elevated Play Components Accessible by Ramp	5	Req.	0	Critical Fall Height
Elevated Components Accessible by Transfer	10	Req.	5	8'-0"
Accessible Ground Level Components Shown	24	Req.	3	
Different Types of Ground Level Components	4	Req.	3	

SUPERmax PLAY SYSTEMS BigToys®

ISO 9001 CERTIFIED



FOOTINGS ORDINATE TABLE			
HOLE	X	Y	DIAG
1	-62'-8"	12'-9"	63'-11 1/2"
2	-60'-7"	15'	62'-5"
3	-58'-3 1/2"	16'-4"	60'-6 1/2"
4	-57'-4 1/2"	-8'-7"	58'
5	-55'-10"	17'-5"	58'-6"
6	-47'-6"	3'-11"	47'-8"
7	-44'-0 1/2"	6'-11"	44'-7"
8	-43'-5"	5"	43'-5"
9	-39'-11 1/2"	3'-5"	40'-1"
10	-32'-5 1/2"	19'-6"	37'-10 1/2"
11	-32'-5 1/2"	23'-6"	40'-1"
12	-31'-3"	12'-8"	33'-8 1/2"
13	-29'-1"	19'-5"	35'
14	-29'-0 1/2"	23'-5"	37'-4"
15	-24'-9 1/2"	3'-1"	25'
16	-24'-9 1/2"	4'-9"	25'-3"
17	-23'-3"	-5'-3"	23'-10"
18	-19'-5 1/2"	1'-11"	19'-7"
19	-19'-5 1/2"	5'-11"	20'-4"
20	-18'-7"	7'-4"	20'
21	-16'-4"	7'-4"	17'-11"
22	-15'-5 1/2"	1'-11"	15'-7"
23	-15'-5 1/2"	5'-11"	16'-7"
24	-14'-5 1/2"	8"	14'-6"
25	-12'-5 1/2"	8"	12'-5 1/2"
26	-11'-5 1/2"	1'-11"	11'-7 1/2"
27	-11'-5 1/2"	5'-11"	12'-11"
28	-8'	-1"	8'
29	-8'	3'-11"	8'-11"
30	-8'	7'-11"	11'-3"
31	-4'	9'-7"	10'-5"
32	-4'	-1"	4'
33	-4'	3'-11"	5'-7 1/2"
34	-4'	7'-11"	8'-10 1/2"
35	-2'	13'-6"	13'-8"
36	0"	9'-6"	9'-6"
37	0"	-1"	1"
38	0"	3'-11"	3'-11"
39	0"	7'-11"	7'-11"
40	6'-3"	6"	6'-3 1/2"
41	6'-8"	2'-6"	7'-1 1/2"
42	6'-10 1/2"	15'-1"	16'-7"
43	7'-9 1/2"	28'-1"	29'-2"
44	7'-11"	39'-8"	40'-5 1/2"
45	8'	11"	8'-0 1/2"
46	8'	3'-11"	8'-11"
47	8'	7'-11"	11'-3"
48	8'-10 1/2"	13'-11"	16'-6"
49	9'-4"	2'-6"	9'-8"
50	9'-9"	6"	9'-9"
51	10'-9"	12'-10"	16'-9"
52	10'-9 1/2"	14'-9"	18'-3 1/2"
53	10'-10"	10'-9"	15'-3"
54	12'-5 1/2"	28'-1"	30'-9"
55	12'-7"	39'-8"	41'-7 1/2"
56	16'-9 1/2"	14'-10"	22'-5"
57	16'-10"	13'-8"	21'-8"
58	16'-10"	10'-10"	20'-0 1/2"
59	16'-10"	12'	20'-8"
60	22'-6 1/2"	22'	31'-6 1/2"
61	23'-0 1/2"	-11'-6"	25'-9"
62	23'-0 1/2"	-9'-9"	25'
63	25'-9 1/2"	-9'-9"	27'-7"
64	29'-3"	25'-6"	38'-10"
65	29'-4"	30'-3"	42'-2"
66	41'-2 1/2"	-13'-9"	43'-5 1/2"
67	41'-3 1/2"	-8'-11"	42'-3"
68	42'-9"	-13'-9"	44'-11"
69	42'-10"	-9'	43'-9"
70	47'-4"	-14'-3"	49'-5"
71	47'-4"	-12'-8"	49'

IF FOOTING CONTAINS A COMPONENT NUMBER, REFERENCE THE INSTALLATION MANUAL FOR COMPONENT FOOTING SPECS.

FOOTINGS TABLE			
TYPE	DIAMETER/SIDE	DEPTH	QTY.
A	1'-6" [45.72cm]	2'-6" [76.20cm]	34
B	1'-2" [35.56cm]	2'-6" [76.20cm]	16
C	2'-0" [60.96cm]	4'-0" [121.92cm]	3
D	2'-0" [60.96cm]	2'-6" [76.20cm]	4
J	1'-0" [30.48cm]	2'-0" [60.96cm]	2
EE	1'-4" [40.64cm]	2'-4" [71.12cm]	3
II	1'-4" [40.64cm]	2'-4" [71.12cm]	6

It is the manufacturer's opinion that the structure shown herein complies with current ada standards concerning accessibility if used with proper accessible surfacing and together with other necessary ground level play equipment.
Top View drawings and measurements are for overall site and structure appearance purposes. Top view should not be conceived as a construction detail; therefore, all measurements and slope requirements should be field verified prior to construction.
IMPORTANT: Never install play equipment over hard, unresilient surfaces such as asphalt, concrete, or compacted earth. It is the owner's responsibility to ensure the "minimum area required" contains an appropriate amount of resilient material to cushion accidental falls.

Portola Elementary School
Ventura, CA
TK-K Area , Option 1

Play & Park Structures

This play equipment is recommended for children ages:
2-5 or 5-12

Minimum Area Required:
Per Drawing

Scale: 1/4" = 1'-0"
This drawing can be scaled only when in an 24" x 36" format

Drawn By:
Cassie Pruitt
Date:
10/1/25
Quote Number:
821-176089B

play&park structures
A PLAYCORE Company
544 Chestnut Street
Chattanooga, TN 37402
800-727-1907 / www.playandpark.com

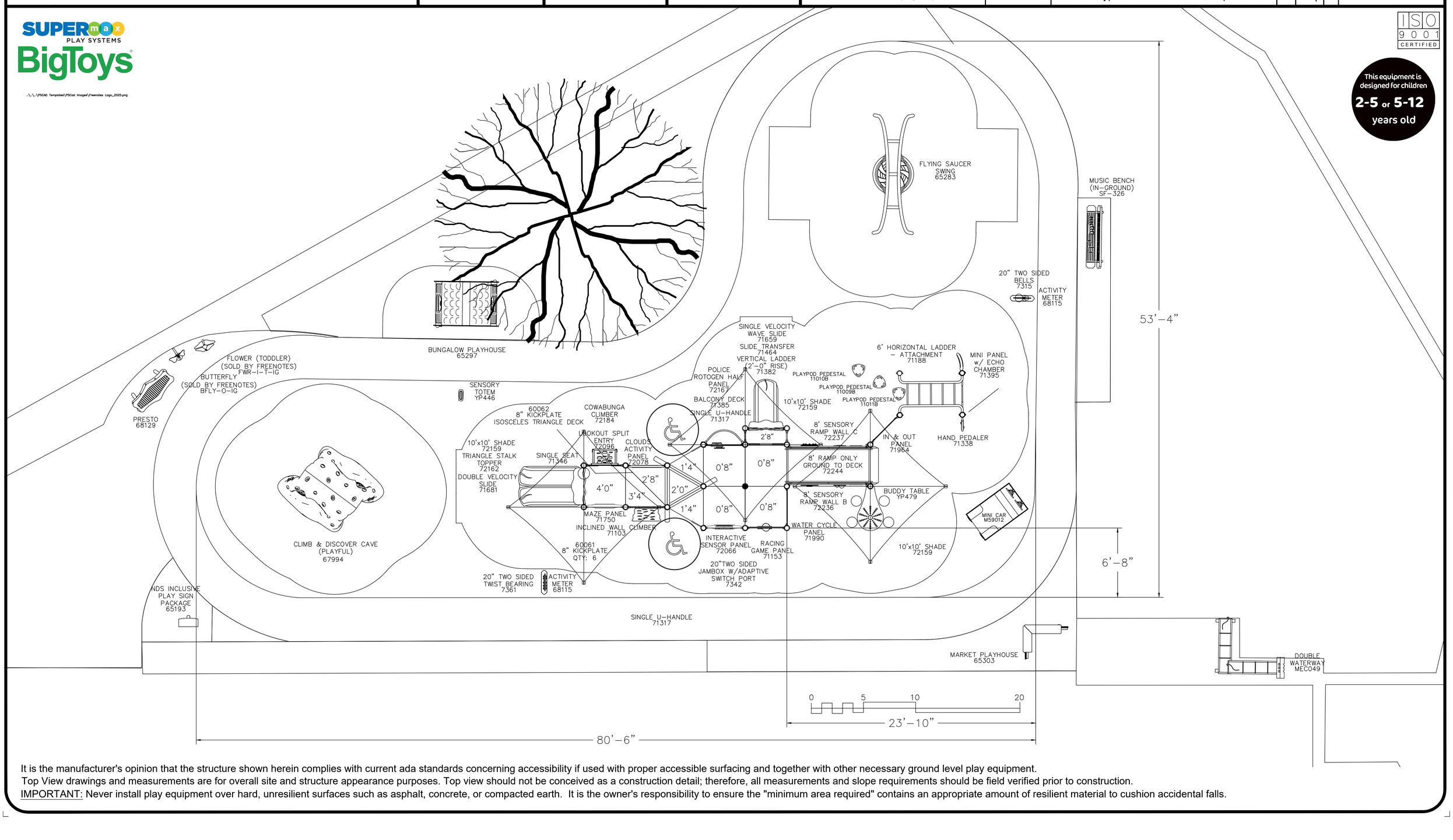
Total Play Components	34			User Capacity
Elevated Play Components	10			90-95
Elevated Play Components Accessible by Ramp	5	Req.	0	Critical Fall Height
Elevated Components Accessible by Transfer	10	Req.	5	8'-0"
Accessible Ground Level Components Shown	24	Req.	3	
Different Types of Ground Level Components	4	Req.	3	

SUPERmax PLAY SYSTEMS BigToys

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ISO 9001 CERTIFIED

This equipment is designed for children 2-5 or 5-12 years old



It is the manufacturer's opinion that the structure shown herein complies with current ada standards concerning accessibility if used with proper accessible surfacing and together with other necessary ground level play equipment.
Top View drawings and measurements are for overall site and structure appearance purposes. Top view should not be conceived as a construction detail; therefore, all measurements and slope requirements should be field verified prior to construction.
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Portola Elementary School
Ventura, CA
TK-K Area , Option 1

Play & Park Structures

This play equipment is recommended for children ages:
2-5 or 5-12

Minimum Area Required:
Per Drawing

Scale: 1/4" = 1'-0"
This drawing can be scaled only when in an 24" x 36" format

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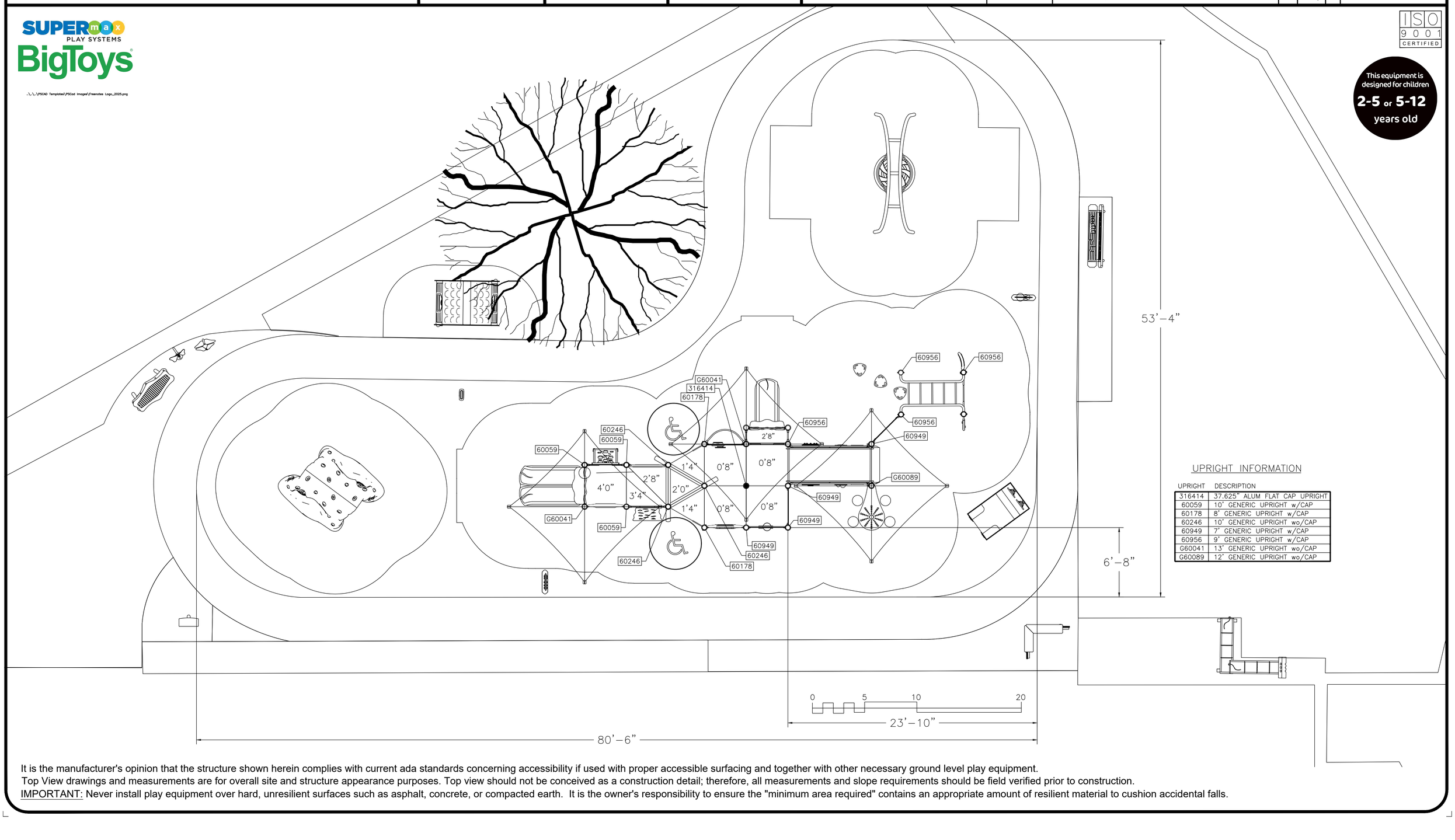
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Different Types of Ground Level Components	4	Req.	3	

SUPERmax PLAY SYSTEMS BigToys®

..\..\..\PSCAD Templates\PSCad Images\Freenotes Logo_2025.png

ISO 9001 CERTIFIED

This equipment is designed for children
2-5 or 5-12
years old



UPRIGHT INFORMATION

UPRIGHT	DESCRIPTION
316414	37.625" ALUM FLAT CAP UPRIGHT
60059	10' GENERIC UPRIGHT w/CAP
60178	8' GENERIC UPRIGHT w/CAP
60246	10' GENERIC UPRIGHT wo/CAP
60949	7' GENERIC UPRIGHT w/CAP
60956	9' GENERIC UPRIGHT w/CAP
G60041	13' GENERIC UPRIGHT wo/CAP
G60089	12' GENERIC UPRIGHT wo/CAP

It is the manufacturer's opinion that the structure shown herein complies with current ada standards concerning accessibility if used with proper accessible surfacing and together with other necessary ground level play equipment.
Top View drawings and measurements are for overall site and structure appearance purposes. Top view should not be conceived as a construction detail; therefore, all measurements and slope requirements should be field verified prior to construction.
IMPORTANT: Never install play equipment over hard, unresilient surfaces such as asphalt, concrete, or compacted earth. It is the owner's responsibility to ensure the "minimum area required" contains an appropriate amount of resilient material to cushion accidental falls.

play&park structures®

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OWNERS MANUAL



Visit www.playcore.com/shipment or use the QR code to give feedback about the condition of the shipment, quality of the product, and installation feedback.
Please include pictures.

This document includes;

- Warranty Information
- Ground Plan
- Hardware Listing
- Assembly and Installation Instructions

IPEMA MEMBER | ASTM INTERNATIONAL | ISO 9001

playandpark.com | 800.727.1907

Owner's Manual 5540601

play&park structures®

A PLAYCORE Company

Dear Play & Park Customer,

Thank you for choosing to purchase and install a Play & Park Structures play system. We appreciate the confidence and trust you have placed in our company.

Your Play & Park Structures Installation Guide is enclosed. We designed this manual specifically for the products you have purchased. Included in this manual you will find the following documents:

- Product Installation Instructions
- 2-D Top View Drawing specific to your structure
- Ground Plan

If you have any questions concerning your new equipment, you can reach your recreation consultant by calling 1-800-727-1907. To contact a Play & Park Structures customer service representative, you may call 1-888-404-5737 or reach them online by sending an email to: customerservice@playandpark.com

For more information on Play & Park Structures products, please do not hesitate to call us, or visit us online at www.playandpark.com.

Thank you for your business; we look forward to working with you on future playground equipment projects!

Sincerely,

Play & Park Structures

Safety Guidelines

Maintaining your playground equipment as well as its surrounding area is essential to minimizing the risk of injury to users as well as maximizing its useful lifespan. Play & Park Structures STRONGLY recommends that you follow these Safety Guidelines in conjunction with conducting periodic maintenance inspections using the accompanying Playground Maintenance Checklist.
When installing, always consider local conditions and codes. Good common sense works hand-in-hand with the instructions.

LOCATING YOUR PLAY STRUCTURE

Comply with the following when choosing the location for your new equipment:

- Equipment should be placed to eliminate conflicting traffic patterns. As a general rule, allow at least 6' of free space around the entire structure, EXCEPT for slide exits, which require a distance X equal to highest point of sliding surface with a minimum of 72" and maximum of 96" from the edge of the slide. Example: a Slide from a 6' high deck requires 6' of clear space with resilient surfacing in front of and behind them for safe circulation. Example: a Swing with a 8' high beam requires 16' of free space in front, and another 16' behind it, for a total of 32'. These minimum areas should be filled with the appropriate resilient surface material. See below for resilient surfacing recommendations.
- If your equipment includes any metal slides, they should be positioned in a shaded area, or at least positioned to avoid the sun's direct rays.
- Never overlap the safety zones of adjacent equipment. All separate play equipment must have its own safety zone, and these cannot overlap. So, if you have an existing structure with a slide exit oriented toward your new one, add your minimum safety zone to that of the existing slide to determine how far away you need to be.
- Never install playground equipment near, around, or in conjunction with swimming pools, ponds, lakes or any other bodies of water.

CHOOSING RESILIENT SURFACING MATERIAL

Playground equipment must be installed on a soft, resilient, energy-absorbing ground surface.
NEVER INSTALL PLAY EQUIPMENT ON CONCRETE, ASPHALT, OR GRASS. A fall on a hard surface from even a low platform of 3' high can result in serious injury to the user. Refer to CPSC and ASTM F1292 for recommended surfacing depths and requirements.

Tip: If your surfacing material is of the loose variety, checking for proper depth over time can be made easy by applying a non-removable florescent tape or paint in a bright color at the proper level on each post. Thereafter, as the resilient surfacing material compacts or washes away, the person responsible for regular maintenance inspections can easily see it must be replenished as the marks become visible.

AFTER THE EQUIPMENT IS IN USE

- Never add components not intended for use with this product.
- Never install other play equipment, fencing, landscaping, etc., which encroach upon the safety zones of this equipment.
- Check to make sure that there are no overhead obstructions within the use zone of the playground equipment that are not part of the play structures (example: tree limbs). Any overhead obstructions should be at least 84" above each platform or designated play surface or 84" above the pivot point of swings. All overhead utility line clearances above the use zone area should comply with all local, state and national codes.
- Regularly inspect and maintain your playground equipment and its surrounding area. Proper maintenance of Play & Park Structures equipment includes using the accompanying Playground Maintenance Checklist to identify areas requiring repairs or replacement, and barricading the equipment to prevent use while corrections are being made.
- If your playground equipment includes any wood components, bolts may need to be re-tightened after initial use due to wood shrinkage. Check and re-tighten all fasteners after the first few days of use, and again after the first 3 weeks of use. Thereafter, exercise normal maintenance procedures. Using a thread-locking compound on the threads of bolts can help prevent persistent loosening.
- 'S' hooks must be completely closed. Replace all worn 'S' hooks, and never re-use 'S' hooks.
- Pipes should never be allowed to turn. In the case of wood playground equipment, make sure all collars are snugly flush against the inside of posts with set screws tightened and wood screws flush against the outside of the collar, and all flat head bolts and set screws are tight. In the case of steel playground equipment, check set screws for tightness.

For specific information regarding playground safety and your responsibilities as the owner of this equipment, please contact the Consumer Product Safety Commission (CPSC), Washington, DC. for the latest guidelines for your play area and this equipment.

If any conditions or damages are discovered in violation of these Safety Guidelines or the accompanying Playground Maintenance Checklist, the play equipment should be barricaded immediately and children should not be allowed to use it until the conditions are corrected.

Introduction to Installation Instructions

Revised 03.29.16

IMPORTANT! Please read the entire Installation Instructions packet before beginning the installation.

Play & Park Structures has designed the SuperMax, DuraMax, totmax, Skyline, Boulderscapes and Horizons Play Systems to take advantage of all Consumer Product Safety Commission (CPSC) Guidelines and ASTM standards in force at the time of purchase in an effort to help reduce the chance of playground accidents. However, because studies have shown most playground injuries result from accidental falls, you, as the new owner of this equipment, are responsible for providing and adequately maintaining ***resilient play surfacing*** under and around all playground equipment. Please refer to the accompanying Safety Guidelines as well as CPSC guidelines and this document for examples of such surfacing.

We would like to provide the following suggested guidelines for your play environment:

- Refer to the Footing Diagram and note the Minimum Area Required shown for this structure. This area must be filled with adequate resilient play surface material, and must be clear of all obstacles, including but not limited to trees, curbing, sidewalk, fence, other play equipment, rocks and landscaping, etc.

- Acceptable play surfaces include sand, wood mulch, fine gravel or ground belt-less tires, if installed at the appropriate depths per CPSC guidelines for play surfacing.

- When using sand, wood mulch, or ground belt-less tires, a minimum of 6" depth is recommended by the CPSC. Play & Park Structures recommends an additional 4", for a total of 10", to combat the fast compacting characteristics of these materials. Surfaces must be checked at least weekly for compacting, which reduces resiliency significantly.

- Paved surfaces such as asphalt, concrete, gravel or sod are not acceptable for use under playground equipment, or anywhere within the stated Minimum Area Required.

- Close supervision of children playing on or around the structure is strongly recommended, along with classroom and/or home instructions on acceptable behavior on the playground equipment. The full supervision of playgrounds is the responsibility of the owner once the play structure has been properly installed.

TOOLS REQUIRED:

Play & Park Structures supplies the special bits required to fasten the "tamper-resistant" bolts. You will need common tools such as wrenches, Allen key set, drill, string line, level, mallet, shovels, post hole digger, pry bar, washable felt tip marker and a tape measure.

INSTALLATION GUIDELINES:

1. Compare all parts received to the packaging list. Notify Play & Park Structures immediately of any missing parts. We are not responsible for parts discovered missing over 10 days after receipt of the shipment.

2. Refer to your Footing Diagram to ensure this structure will fit into your actual site area. Note the Minimum Area Required measurements to determine clear space required. A minimum of 6' clearance is required between any obstacles and your structure. EXCEPT for slide exits, which require a distance X equal to the highest point of sliding surface with a minimum of 6' and a maximum of 8' from the edge of the slide (example: A slide from a 6' high deck requires 6' of clear space with resilient surfacing in front of its exit).

3. Site selection should include considerations of what is a safe and appropriate play area:
   a. A level and clear site is ideal, free of power lines or electrical equipment.
   b. Do not install play equipment near any bodies of water.
   c. If adjacent to a street with traffic, ensure adequate fencing acts as a barrier to children running into danger.

4. Site layout should include accurate measurement and marking of all footings prior to any installation. Use the dimensions shown between footings on the Footing Diagram to plot out the actual footprint of the play structure before doing any digging. Also, locate any free-standing play equipment in the same way, providing the necessary clearance between the equipment as well as any fences, trees, etc. Ensure at this time that you have enough total space for the equipment to be installed.

5. Excavate holes as shown in the Footing Diagram using a string line. An optional string line level is very helpful. If a level and clear site is not possible, adjust the depth of the footings to maintain a minimum depth of 18 in. for support posts at the lowest grade. NOTE: if soil conditions are very loose or otherwise unstable, a larger diameter footing may be required. Consult with local contractors for appropriate recommendations.

6. Begin your SuperMax, DuraMax, totMax , Skyline, Horizons, and BoulderScapes Play Systems installation by erecting the decks as shown within the following instructions.
   IMPORTANT: Do not concrete product until installation is complete!
   Once all decks are installed, components such as slides, climbers, etc., can be connected per their respective assembly instructions. Note that connecting components between decks such as Horizontal Ladders, Crawl Tunnels, Trapeze Beams, etc., should be installed concurrently with the decks to ensure they meet accurately.

7. CPSC guidelines mandate that there should be no gaps present in the playground equipment which fall between 3 ½" and 9". The positioning of certain components by the installer can affect this criteria, so you should always measure distances created when attaching components by the installer, which can cause entrapment of a child using the equipment. Also, ASTM requires that no more than 2 threads of bolt can protrude from the nut. Any excess threads should be filed down and made smooth to the touch.

8. When concrete is poured, be sure to keep the top 4" below the grade, and sloped away from the post to promote good water drainage. Wash off any concrete, which may have splashed onto the post before it dries. Allow all concrete to harden a minimum of 48 hours before using equipment.

SAFETY DURING INSTALLATION:

1. Before doing any excavation, inquire about any existing underground utilities.

2. Do not leave the job site unattended without making sure that all fastening hardware on all equipment are tightened and all Drive Rivets are in place to prevent clamps from moving, in case of unauthorized use. **PLAY & PARK STRUCTURES CLAMPS ARE NOT DESIGNED TO SUPPORT HUMAN WEIGHT WITHOUT THE DRIVE RIVETS INSTALLED, AND SUCH USE COULD CAUSE INJURY TO THE USER AND/OR DAMAGE TO THE EQUIPMENT.** It is also strongly recommended that all installation areas be roped off with clearly marked warning signs posted. Any open footings should be covered with plywood or other suitable material. Even during installation, it has been found that children will use the unattended equipment, thereby risking accidents.

3. The installation area should remain roped off for at least 48 hours after the last concrete footer is poured. Children should not be allowed to use the equipment during this period so that concrete has a chance to fully set.

4. Do not attach swing chains, trapeze rings or similar moving components until after all construction is complete and resilient surfacing material has been installed. Remember that any equipment, which appears to be complete and functional will invite unauthorized use regardless of its actual state of readiness.

Finally, if you should have any questions regarding the proper installation of this equipment, please contact Play & Park Structures at:

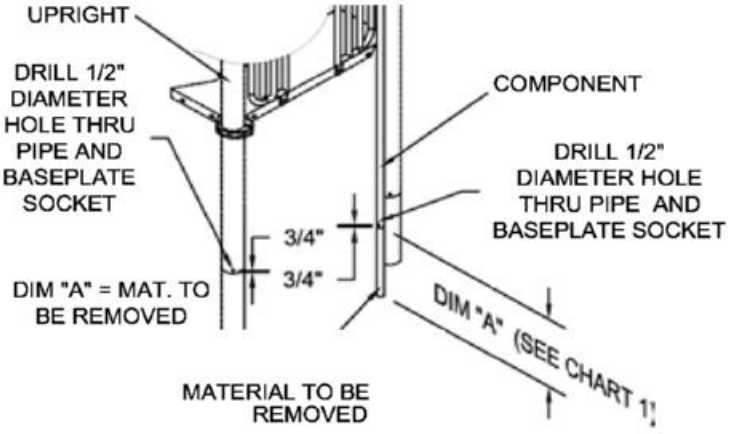
544 Chestnut Street, Chattanooga, TN 37402
TOLL Free: 800.727.1907 FAX: 423.425.3172
EMAIL: customerservice@playandpark.com
Visit our website: www.playandpark.com

play&park structures

60855 SURFACE MOUNT INSTALLATION INSTRUCTIONS FOR PARK STRUCTURES

ISSUED/REVISED: 08/07/14

NOTE: 2", 8", 10" LENGTH INDICATES THE SURFACING DEPTH. ALL COMPONENTS ARE SHIPPED AS STANDARD 30" INGROUND LENGTH. (20" DEEP HOLES & 10" SURFACING)



IMPORTANT: CHECK ALL GROUND MEMBER LOCATIONS TO COMPENSATE FOR SLOPE ***BEFORE*** CUTTING!

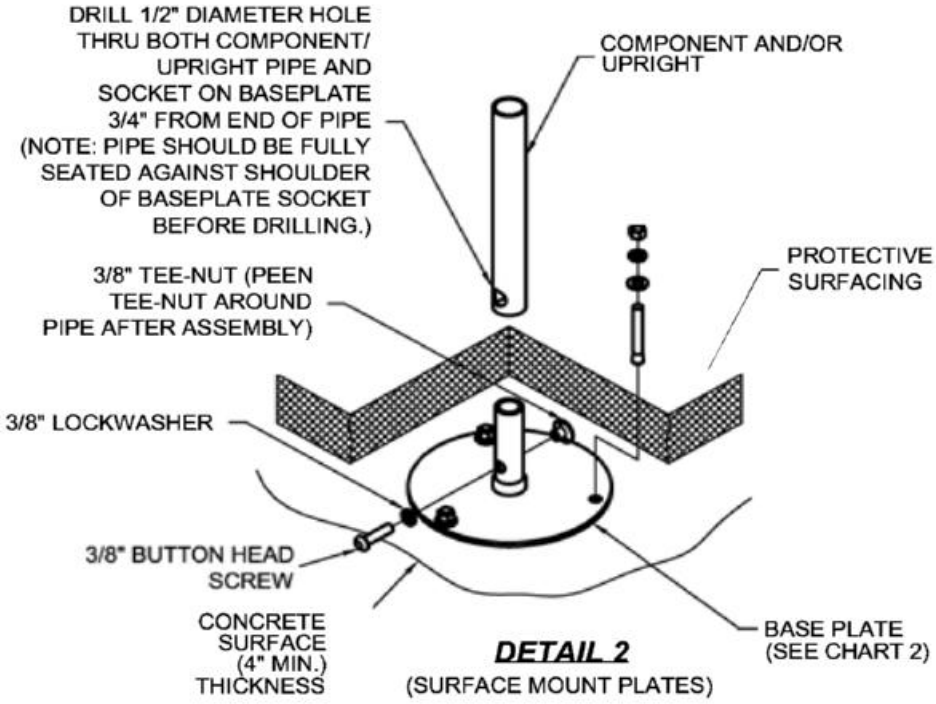
CHART 1

SURFACING DEPTH	MATERIAL TO BE REMOVED	
	W/OUT EXT.	W/6" EXT.
2"	28 11/16"	22 11/16"
8"	22 11/16"	16 11/16"
10"	20 11/16"	14 11/16"

NOTES:
1. DIM "A" = MATERIAL TO BE REMOVED.
2. SOME INGROUND COMPONENTS REQUIRE EXTENSIONS. REVIEW YOUR STANDARD INSTALLATION SHEET IF EXTENSIONS ARE REQUIRED. ADJUST MATERIAL TO BE REMOVED ACCORDINGLY.
i.e. A COMPONENT REQUIRING 6" EXTENSIONS, AND IF SURFACING DEPTH IS TO BE 2", MATERIAL TO BE REMOVED WILL BE 22 11/16"

DETAIL 1

(FOR SURFACE MOUNT INSTALLATIONS)

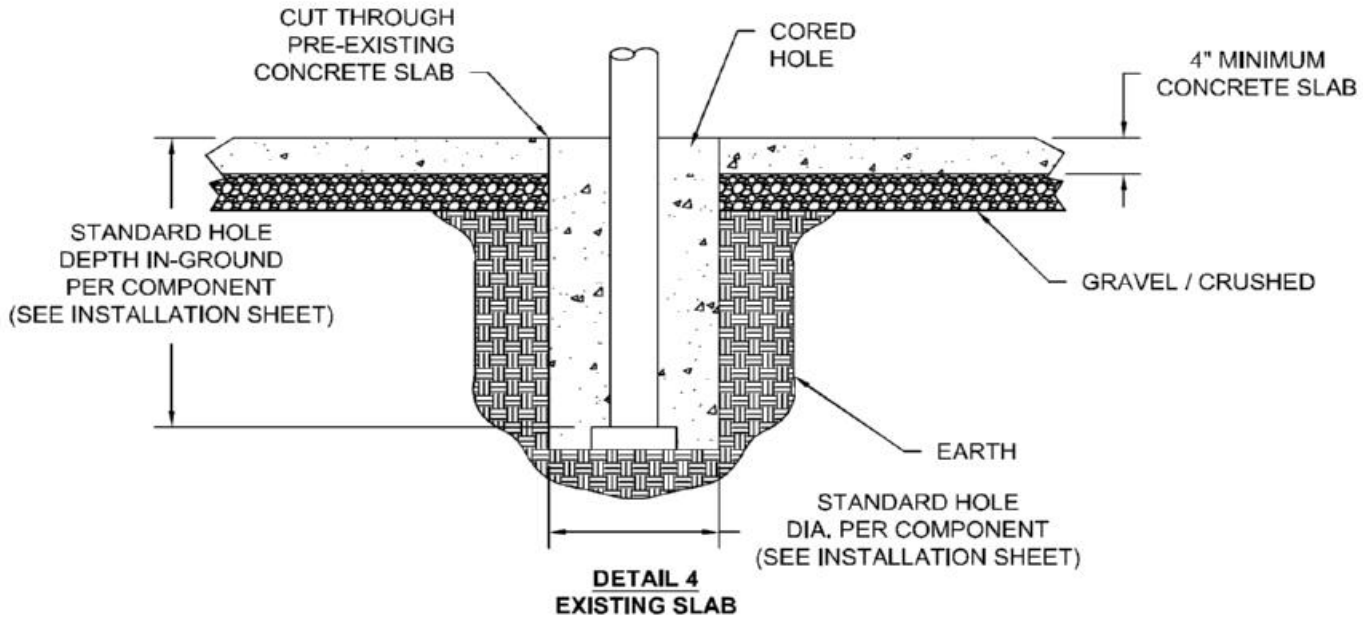


DETAIL 2

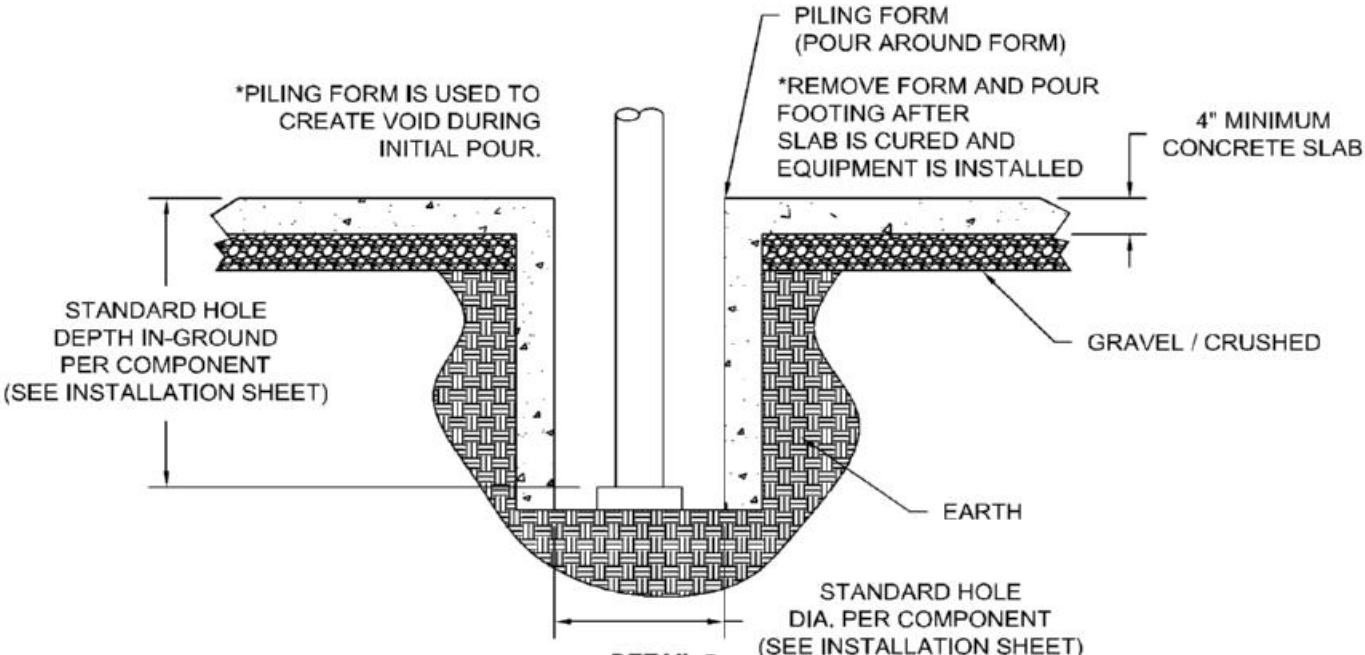
(SURFACE MOUNT PLATES)

CHART 2

NUMBER	O.D.	BASE PLATE
404765	1.029"	404764
60855	1 5/16"	152850
60856	1 5/8"	152851
60857	1 7/8"	152852
60858	2 3/8"	152853
60859	2 7/8"	152854
60860	3 1/2"	152856
60861	5"	152855



DETAIL 4
EXISTING SLAB



DETAIL 5
NEW SLAB

SURFACE MOUNT INSTALLATION INSTRUCTIONS

1. Before assembling this equipment, read the enclosed INSTALLATION INSTRUCTIONS in the installation booklet; follow all the instructions during installation.
2. Concrete requirements for Suface Mount shall be 4" minimum thickness w/ 3000 psi.
3. For Surface Mount, remove required length of component and/or upright as indicated in **DETAIL 1**. See ***CHART 1*** for the material length to be removed. (Required for 2", 8" or 10" surface mount only.) ***Note:*** Debur and remove any sharp edges on part after cut is made.
4. Drill 1/2" diameter hole thru component/uprights and baseplate socket 3/4" from end of pipe. The pipe should be fully seated against neck of socket before drilling holes.
5. Attach Component to base plate as shown in **DETAIL 2.** See ***CHART 2*** for the specific base plate required for the diameter pipe being used. (Required for 2", 8" or 12" Surface mount only.)

IMPORTANT: Some components such as slides, chinning bars, nets, climbers, etc. may require "cored" holes to help eliminate movement when installed. Refer to Ground Plan configuration to determine if "cored" holes are required.

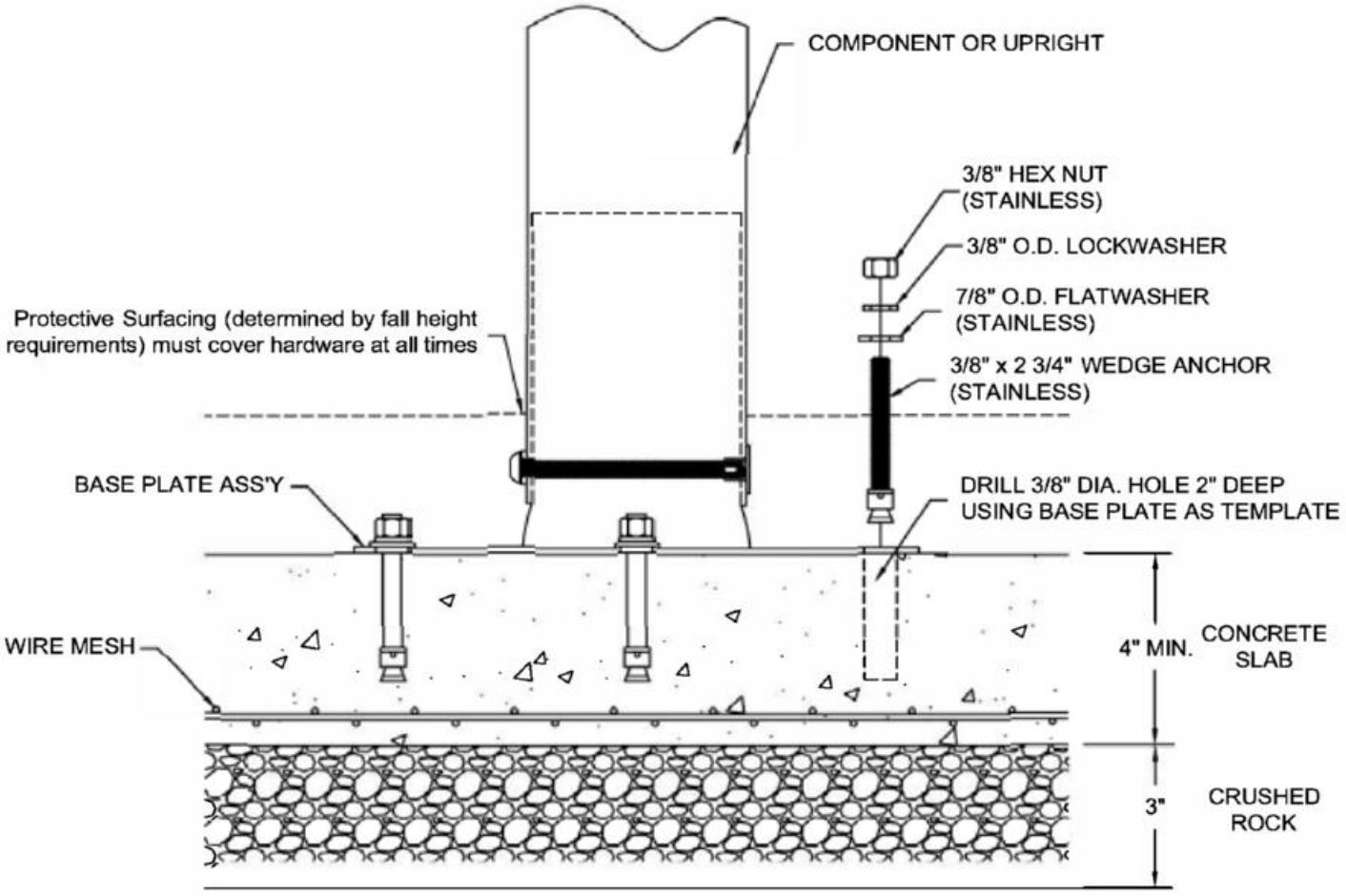
NOTE: If concrete slab is pre-existing and a cored hole is required it must be drilled through exisitng concrete to allow for concrete footing. Review your standard installation sheet for correct size and location of cored hole. See Detail 3.

NOTE: Cored holes can be created prior to concrete pour by using piling forms to create a void when pouring. See Detail 4.

NOTE: If a base plate interferes with an insert required for a below deck component that base plate will require a notch to be applied in the field.

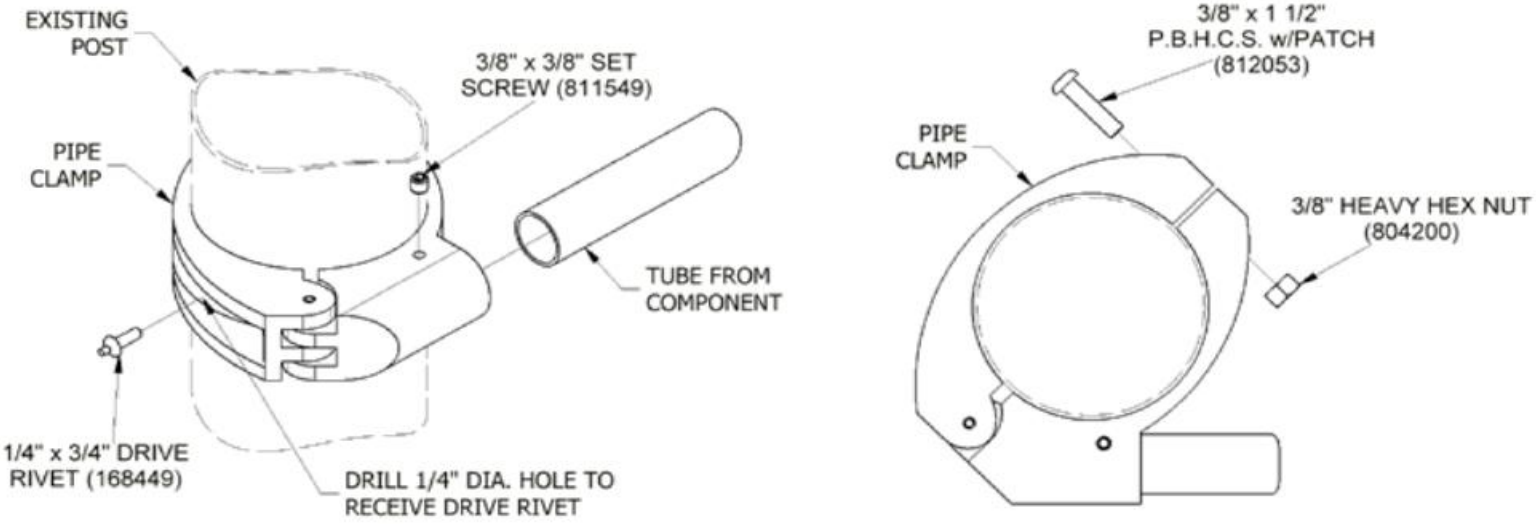
CONCRETE SPECIFICATIONS

1. Depth of concrete must be 4" minimum with wire mesh reinforcement.
2. Base shall be 3" crushed rock over compacted subgrade.
3. Minimum 7 days cure-full cure after 28 days.
4. Concrete rating shall be 3,000 PSI (minimum), 28 days 3,500 PSI.



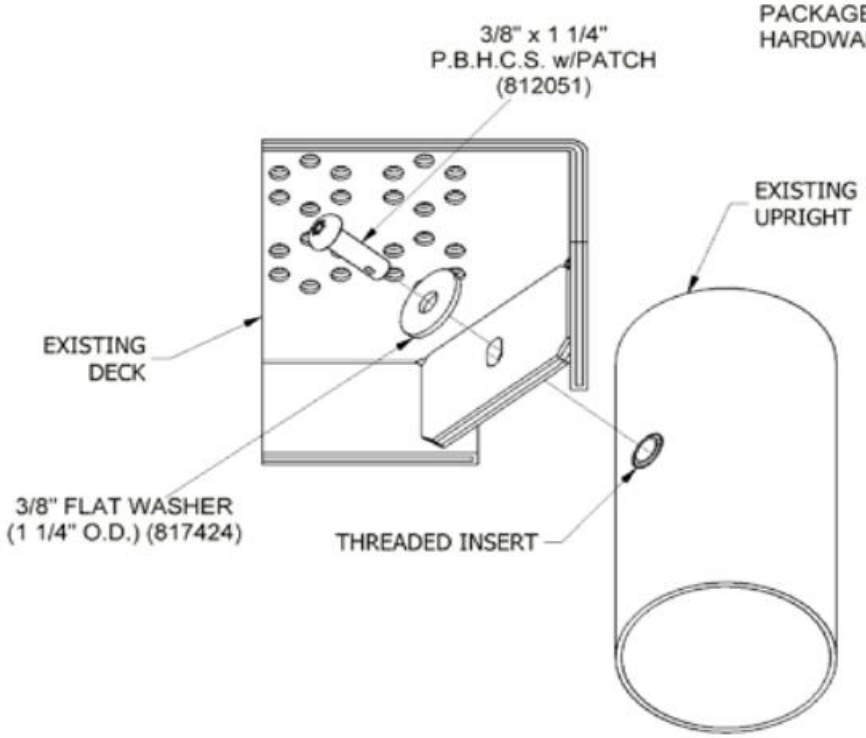
DETAIL 3
SIDE VIEW OF SURFACE MOUNT

Clamp Assembly Details



TYPICAL DURAMAX PIPE CLAMP ASSEMBLY

NOTE: CLAMPS AND HARDWARE SHOWN ARE PACKAGED WITH INDIVIDUAL COMPONENT HARDWARE COMPLETE PACKAGES.

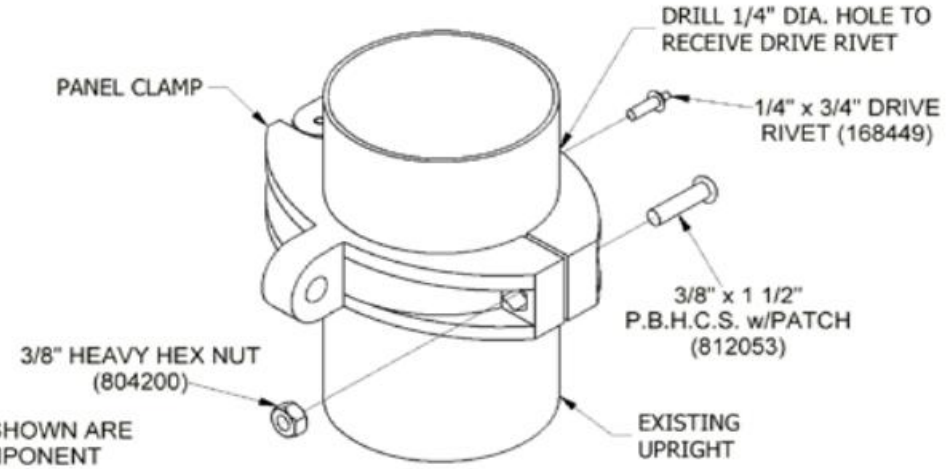


TYPICAL DURAMAX DECK CONNECTION

Issued/Revised: 4/4/2016

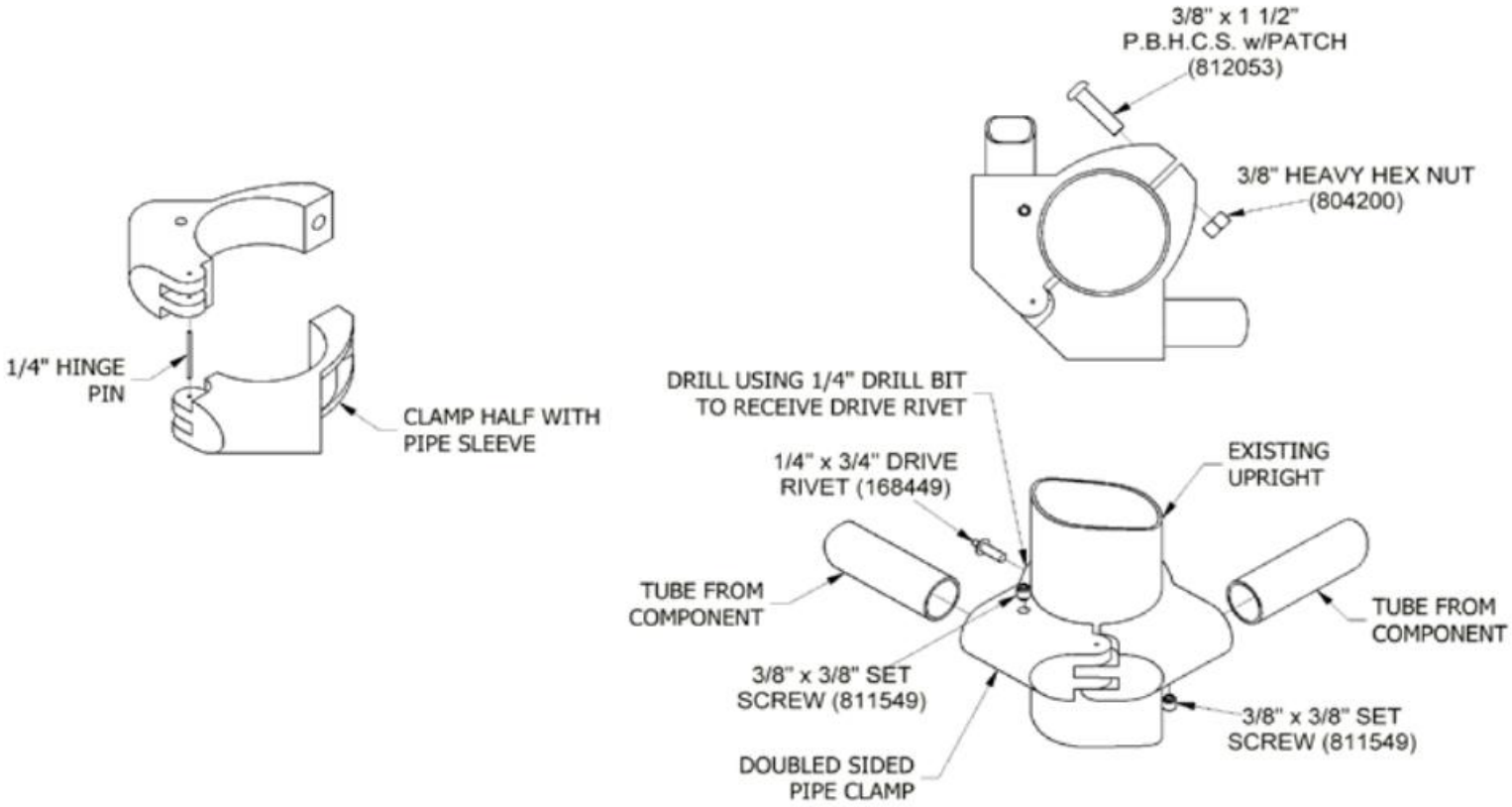
SHEET 1 OF 2

Clamp Assembly Details



NOTE: CLAMPS AND HARDWARE SHOWN ARE PACKAGED WITH INDIVIDUAL COMPONENT HARDWARE COMPLETE PACKAGES.

TYPICAL DURAMAX PANEL CLAMP ASSEMBLY



DURAMAX APPLICATION: To attach two components at 90 degrees to each other on the same square deck. Use when clamp conflicts do not allow you to use seperate clamps for each component.

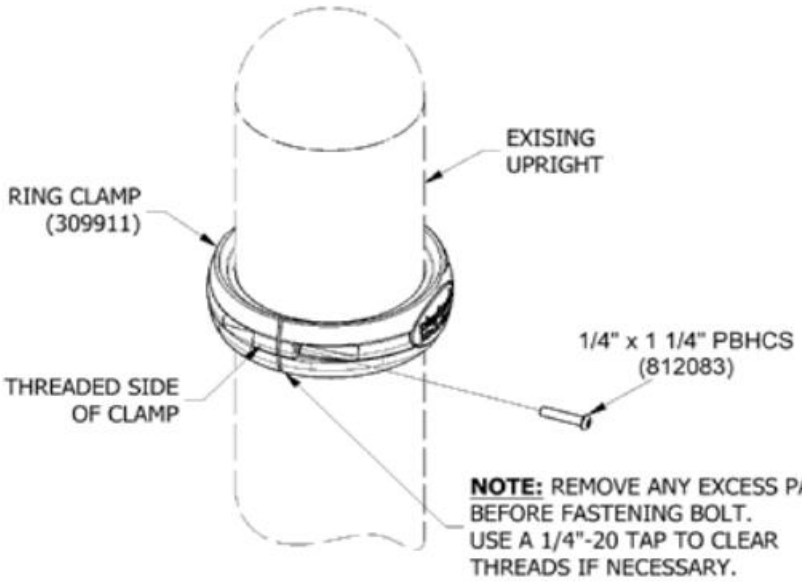
ASSEMBLY INSTRUCTIONS: Use two regular Pipe Clamps and remove hinge pins. Select clamps with pipe sleeves to create the Double Sided Pipe Clamp. Insert hinge pin back into clamps as shown above.

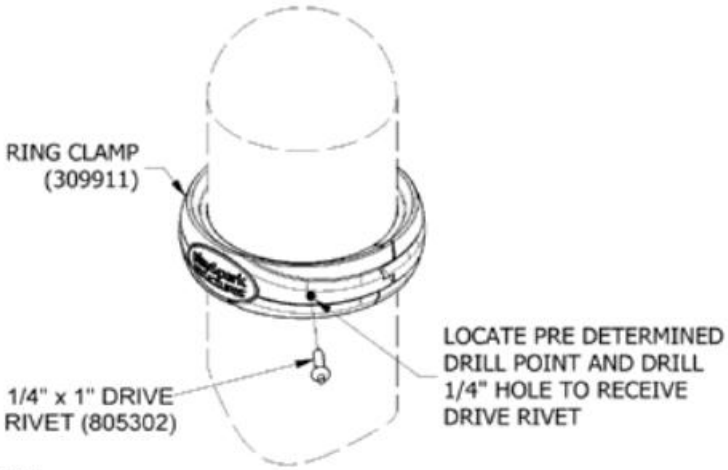
TYPICAL DURAMAX DOUBLE SIDED PIPE CLAMP ASSEMBLY

Issued/Revised: 4/4/2016

SHEET 2 OF 2

Clamp Assembly Details





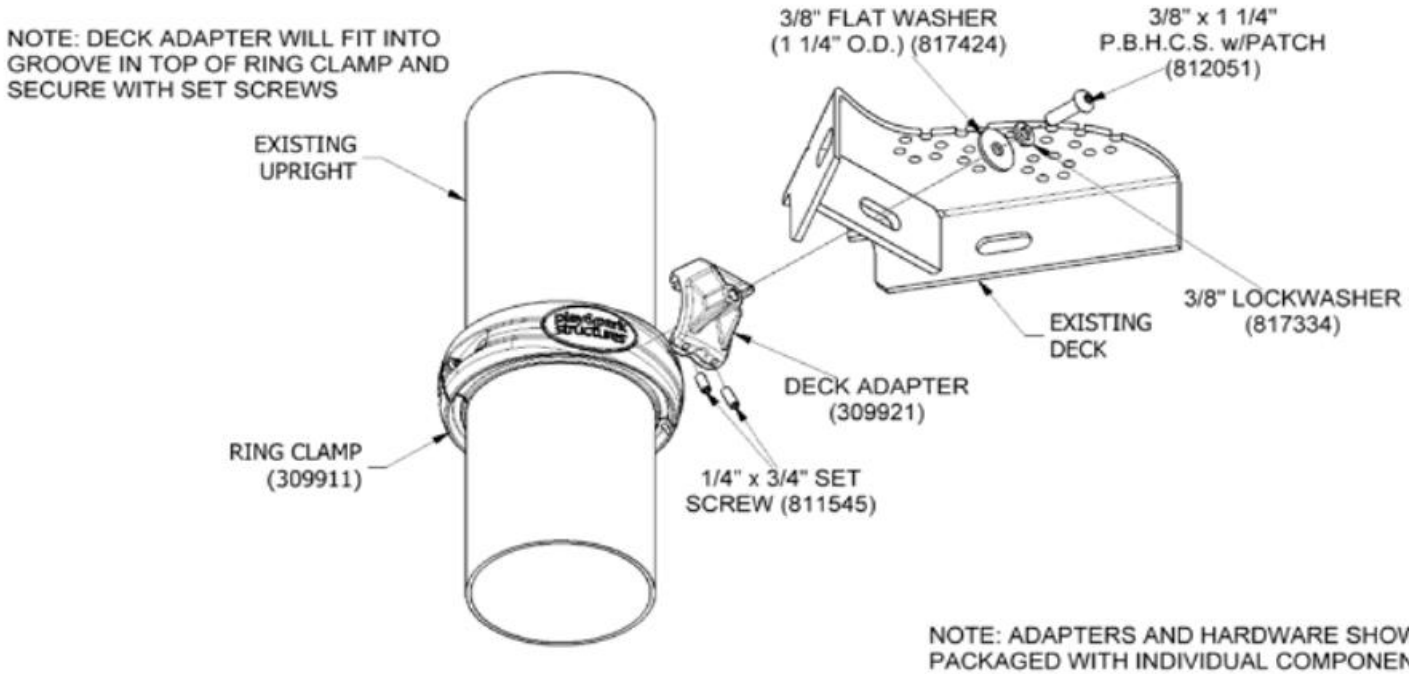
NOTE: THE USE OF LOCTITE IS IMPORTANT.

IMPORTANT: ORIENTATION OF BOLT IS CRITICAL.

NOTE: THE RING CLAMP WILL HAVE A SMALL GAP AT THE CONNECTION POINT AFTER ATTACHED. THE GAP IS DESIGNED FOR DRAINAGE AND TO ENSURE A PROPER FIT.

NOTE: MAKE SURE THE PLAY & PARK STRUCTURES LOGO IS ORIENTED CORRECTLY AND VISIBLE FROM GROUND LEVEL.

TYPICAL SUPERMAX RING CLAMP ASSEMBLY



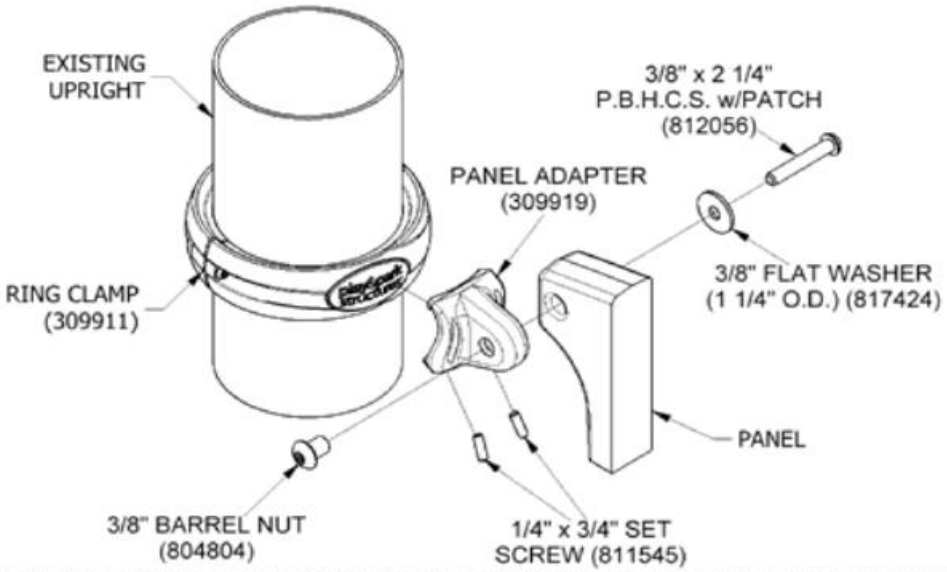
NOTE: ADAPTERS AND HARDWARE SHOWN ARE PACKAGED WITH INDIVIDUAL COMPONENT HARDWARE COMPLETE PACKAGES

Issued/Revised: 4/11/2016

TYPICAL SUPERMAX DECK CONNECTION

SHEET 1 OF 2

Clamp Assembly Details

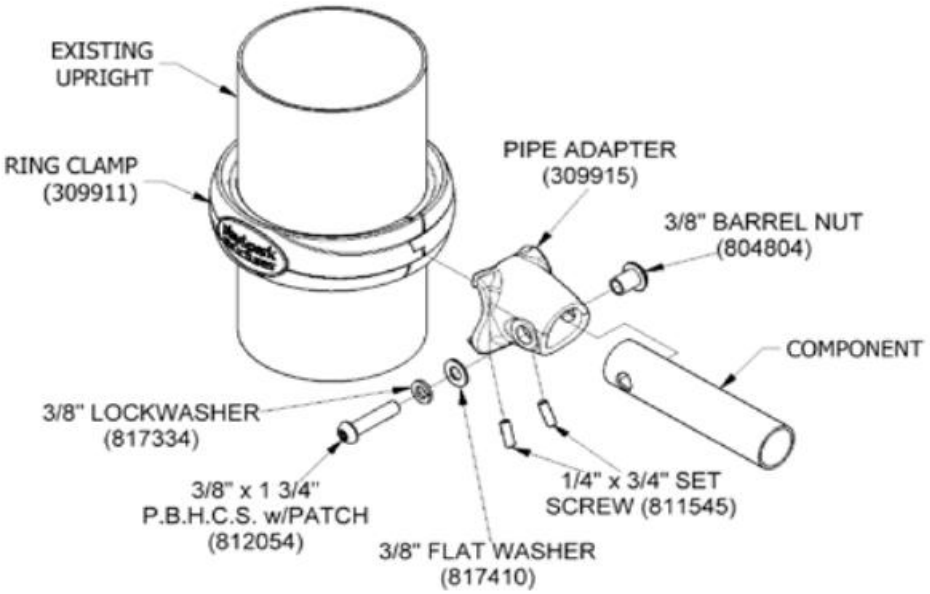


NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.

TYPICAL SUPERMAX PANEL ADAPTER ASSEMBLY

NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.



TYPICAL SUPERMAX PIPE ADAPTER ASSEMBLY

Issued/Revised: 4/11/2016

SHEET 2 OF 2

DETAILED MAINTENANCE RECORD

play&park structures
A PLAYCORE Company

Play Area Site Name _____

Play Area Location or Description _____

Date _____ Inspector _____

Item Number	OK	Problem	Solution	Date Repaired	Initials

PLAYGROUND MAINTENANCE CHECKLIST

play&park structures
A PLAYCORE Company

Maintaining your playground equipment as well as its surrounding area is essential to minimizing the risk of injury to users as well as maximizing its useful lifespan. Play & Park Structures recommends the following maintenance procedures be followed:

On a daily basis: A responsible individual should conduct a brief visual check for structural defects, signs of vandalism and litter of foreign matter that needs to be removed.

On a weekly basis: A responsible individual should complete this checklist. Any required repairs should be detailed on the separate **Detailed Maintenance Record**, and once they are completed, both should be filed for future reference. A separate file and form should be kept for each play structure at each location.

IMPORTANT: Always refer to - and comply with - the separate *Safety Guidelines* and ASTM and CPSC Guidelines. The play structure(s) should be barricaded so that it cannot be used while repairs are being completed.

	Item to be Checked (use the following page to record a brief description of the necessary repairs)	**OK**	**Repairs Required**	**Date Repaired**
A.	**Play Structures in General**			
	Post and component footings are not exposed, cracked or loose			
	1. Clamps show no signs of slippage, cracking, or failure			
	2. Clamp drive rivets and hardware are secure			
	3. Welds are intact and free of cracks			
	a. Slide and Deck Enclosures			
	b. Overhead Activities			
	c. Climbers			
	4. No rust or corrosion			
	5. No splintered, cracked, gouged or otherwise deteriorated plastics; check for integrity of the plastic, keep plastic clean of any extraneous substances, verify that any deformation does not create an entrapment as specified on ASTM-F-1487 section 6.			
	6. No scratched, chipped, or peeling paint			
	7. Metal parts show no visible cracks, bending, warping or breakage			
	8. No missing bolts, nuts, etc.			
	9. All bolts, nuts, and fasteners are tight			
	10. All joints are secure (pay special attention to sectional slides, flush mounted decks, and pipe connections)			
	11. All swivels, bearings, grease fittings, and moving parts are well lubricated and not excessively worn (pay special attention to tire swings, tot swings, strap swings, track rides, and trapeze rings)			
	12. No broken or missing parts			
	13. No sharp edges or unsafe protrusions (check metal corners, bolts, etc.)			
	14. No exposed mechanisms, junctions of moving parts or components that will pose possible pinch or crush points			
B.	**Play Events**			
	1. Plastic is not cut or cracked			
	2. All slide supports/anchors are intact and secure			
	3. All 'S' hooks are closed and not excessively worn			
	4. Clatter bridge chain and connections are not excessively worn, especially at connection points			
	5. Connectors and Chain have free movement			
C.	**Surrounding Area**			
	1. Resilient surfacing material is not scattered or excessively worn			
	2. Resilient surfacing material is adequately deep and retains its fall absorbing abilities as specified at the time of installation			
	3. Border around playground is in good condition and has not come loose			
	4. No roots, rocks, or other objects that may cause a tripping or injury hazard			
	5. Area is clean of litter (no broken glass or bottles, etc .)			

This equipment is designed for children 2-5 or 5-12 years old

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY

PARTS LIST								
DESCRIPTION	7200	7201	7202	7205	7206	7207	7208	PART NUMBER
ANSWER WHEEL ASS'Y	1	0	0	0	0	0	0	316045
MAZE ASS'Y	0	1	0	0	0	0	0	316049
ECHO CHAMBER ASS'Y	0	0	1	0	0	0	0	316047
STAINED GLASS-YELLOW	0	0	0	1	0	0	0	316051
HYPNO WHEEL ASS'Y	0	0	0	0	1	0	0	316048
STAINED GLASS-GREEN	0	0	0	0	0	1	0	316050
BUBBLE MIRROR	0	0	0	0	0	0	1	316046
TRIANGLE HOUSING	2	2	2	2	2	2	2	**
SCREW CAP	6	6	6	6	6	6	6	**
SCREW, FLAT WASHER, RETAINER	3	3	3	3	3	3	3	**

Unless Otherwise Specified, All Units of Measure are Each
***Included in Assembly*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

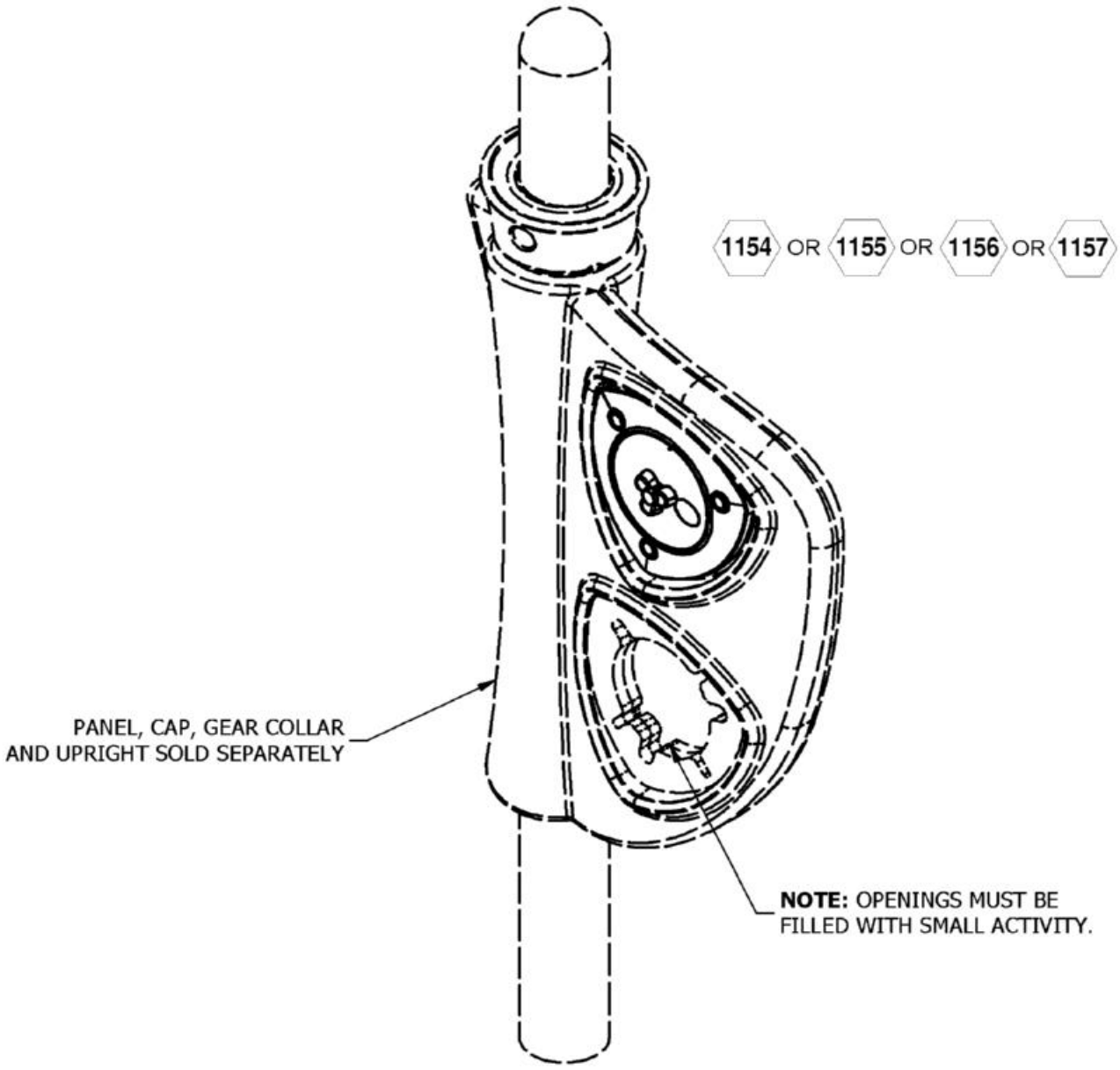
IMPORTANT- ALL OPENINGS MUST BE FILLED WITH A SMALL ACTIVITY.

1. Locate Panel to receive small activity.
2. Place Triangle Housing into small opening in panel. Housing is keyed so that bosses and fins fit into opening. Rotate Housing if needed until it fits into the opening.
3. Take the remaining Housing and place activity so that notches in activity align with ribs on Housing. Refer to Details 1154, 1155, 1156, and 1157 for specific activity. **NOTE:** Remove any protective film that may be on Activity Panel before assembly.
4. Align Housing with openings in Panel and attach the two housings together. Cover with Screw Cap as shown in Details Details 1154, 1155, 1156, and 1157.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY

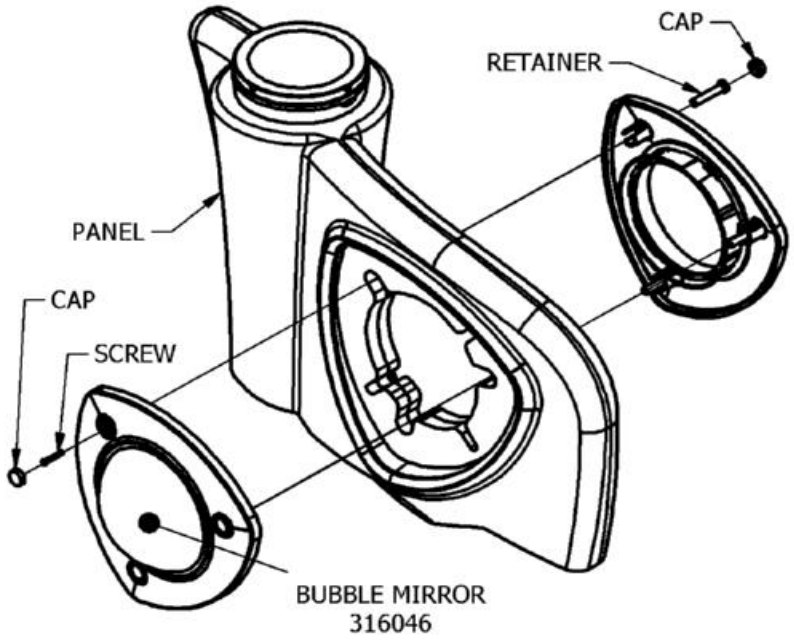


FINISHED ASSEMBLY
7200 VERSION SHOWN

⬡ = INSTALLATION DETAIL

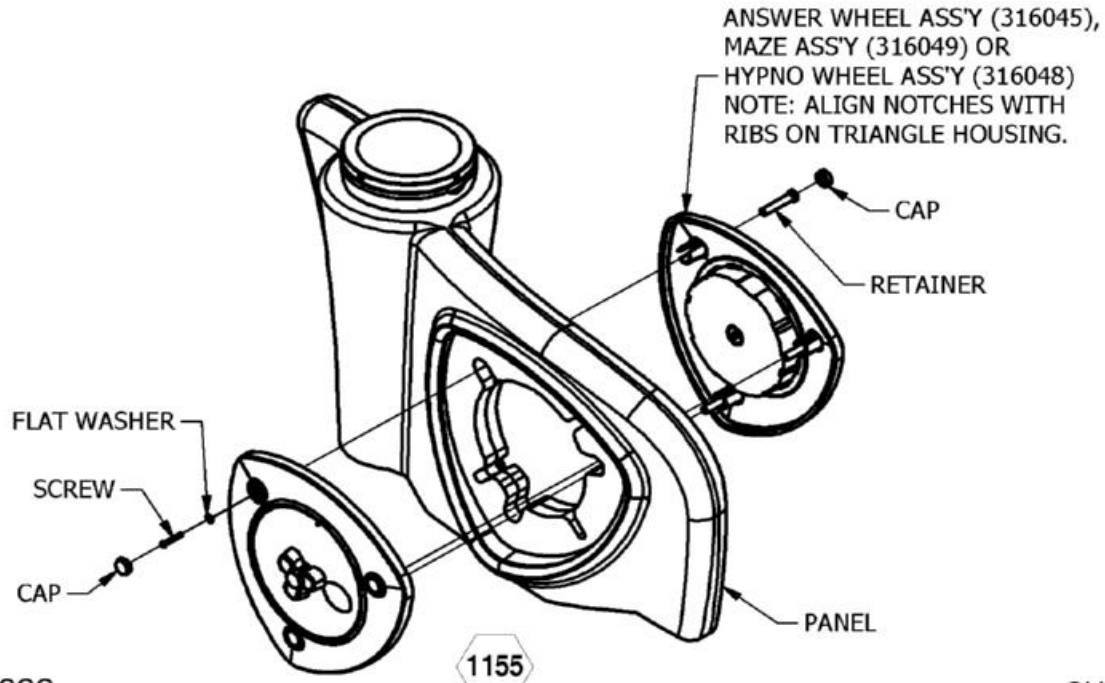
Issued/Revised: 6/21/2022

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY



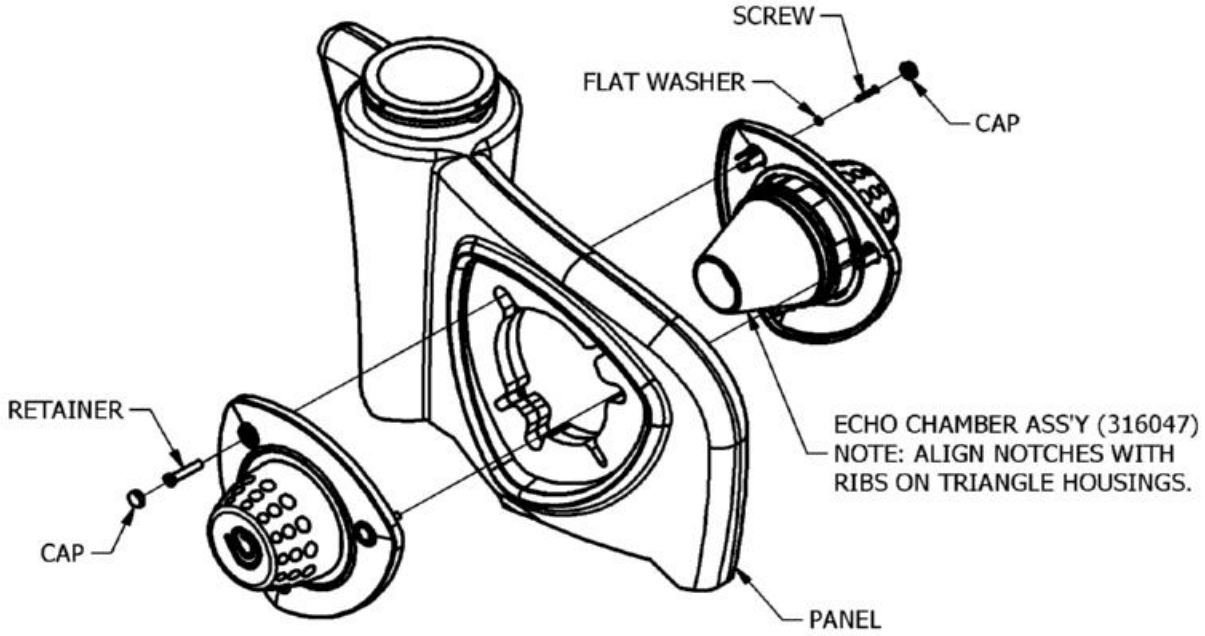
1154

NOTE: IF PRESENT, REMOVE ANY PROTECTIVE FILM THAT MAY BE ON THE ACTIVITY BEFORE ASSEMBLING.



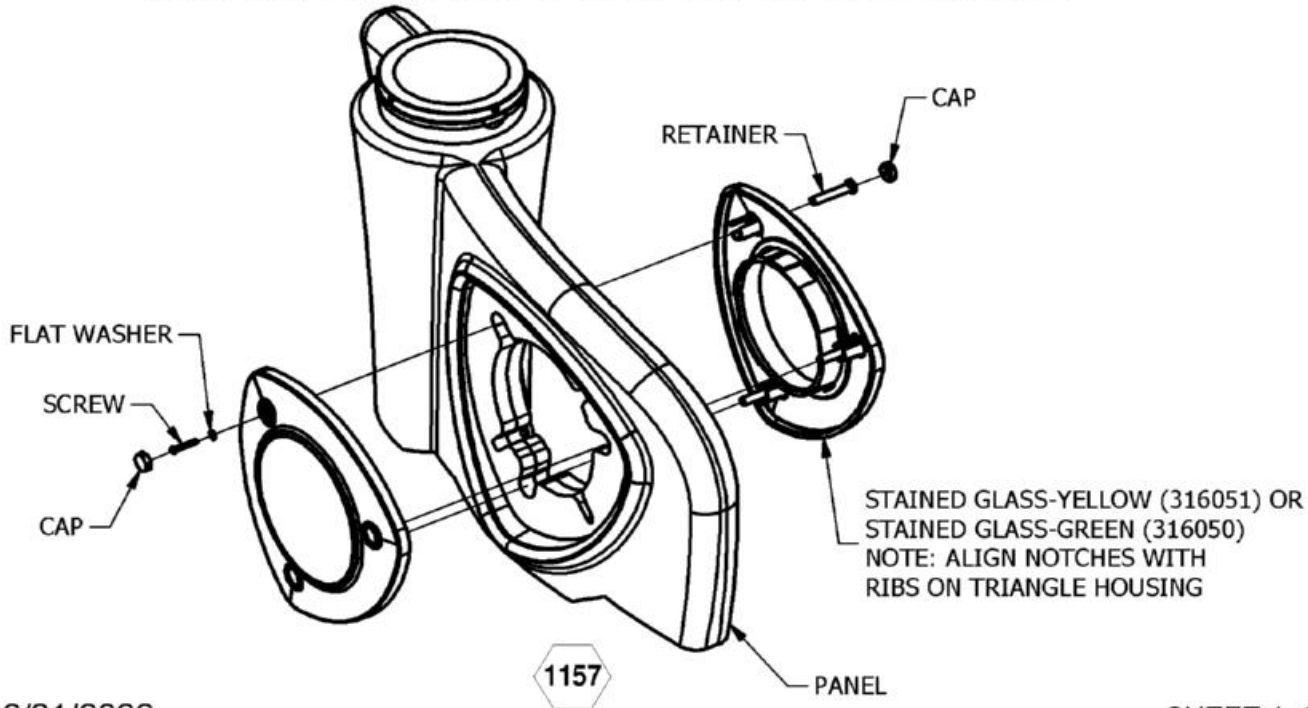
1155

7200 ANSWER WHEEL ASSEMBLY, 7201 MAZE ASSEMBLY, 7202 ECHO CHAMBER ASSEMBLY, 7205 STAINED GLASS-YELLOW, 7206 HYPNO WHEEL ASSEMBLY, 7207 STAINED GLASS-GREEN, 7208 BUBBLE MIRROR ASSEMBLY



1156

NOTE: IF PRESENT, REMOVE ANY PROTECTIVE FILM THAT MAY BE ON THE ACTIVITY BEFORE ASSEMBLING.



1157

Duramax

7300 Magnet Panel, 7301 Mirror Panel, 7302 Lacing Panel, 7304 Window Panel, 7305 Paint Panel, 7306 Theatre Panel

PARTS LIST

DESCRIPTION	***NUMBER REQUIRED***						***PART NUMBER***
	7300	***7301***	***7302***	***7304***	***7305***	***7306***	
Magnet Panel	1	0	0	0	0	0	307703
Mirror Panel	0	2	0	0	0	0	307729
Lacing Panel	0	0	1	0	0	0	307702
Window Panel	0	0	0	1	1	0	313575
Theatre Panel	0	0	0	0	0	1	307902
Paint Tray	0	0	0	0	1	0	307785
Frame for Single A-Maze Panel	1	1	1	1	1	0	307699
Angle Bracket	0	0	0	0	2	0	302334
Hardware Complete	1	1	1	0	0	1	307987
Hardware Complete	0	0	0	1	0	0	307988
Hardware Complete	0	0	0	0	1	0	307989
3/8" x 1" P.B.H.C.S. w/Patch	0	0	0	0	2	0	812050*
3/8" x 1 1/2" P.B.H.C.S. w/Patch	4	4	4	4	2	4	812053*
3/8" x 1 3/4" P.B.H.C.S. w/Patch	0	0	0	0	2	0	812054*
3/8" Flat Washer	4	4	4	4	6	4	817410*
3/8" Lock Nut	0	0	0	0	2	0	804353*
3/8" Barrel Nut	4	4	4	4	6	4	804804*

Unless Otherwise Specified, All Units of Measure are Each
**** Included in Hardware***
Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on all threaded hardware.

INSTALLATION INSTRUCTIONS:

1. Locate Panel to receive Activity.

2. Place Activity and Frame into opening and fasten in four places using 3/8" PBHCS w/Patch (length varies according to activity), 3/8" Flat Washer (817410), and 3/8" Barrel Nut (804804). Refer to Details -206 and -207. NOTE: Remove any protective film that may be on Activity Panels before assembly.

3. For Paint Panel, attach Window Panel and Frame to top two holes using 3/8" x 1-3/4" PBHCS w/Patch, 3/8" Flat Washer (817410), and 3/8" Barrel Nut (804804) as shown in Detail -208.

4. For Theatre Panel, attach Theatre Panel to Rotomolded Panel using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flatwasher and 3/8" Barrel Nut. See Detail 241.

5. Loosely assemble two Angle Brackets to the bottom of Paint Tray using 3/8" x 1" PBHCS w/Patch, 3/8" Flat Washers (817410), and 3/8" Lock Nut (804353) as shown in Detail -208.

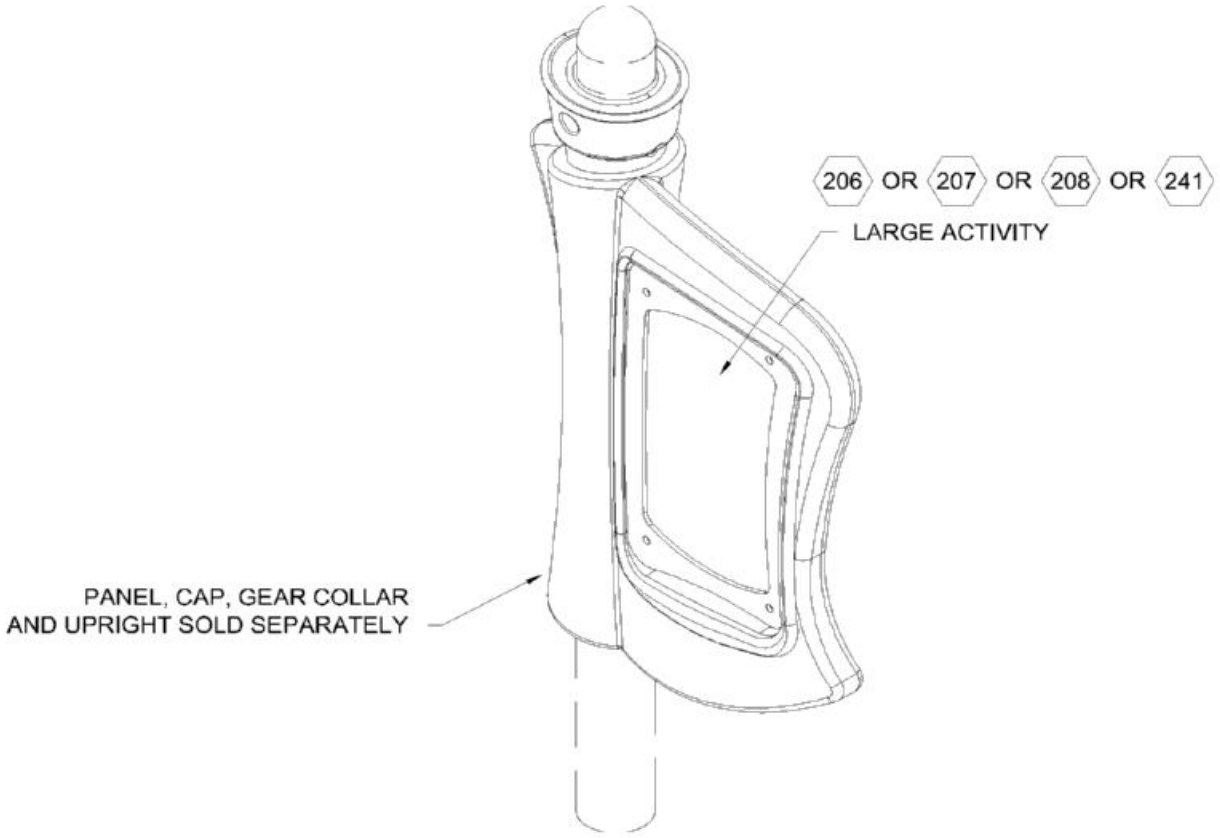
6. Attach Angle Brackets on Paint Tray to bottom two holes using 3/8" x 1-3/4" PBHCS w/Patch, 3/8" Flat Washer (817410), and 3/8" Barrel Nut (804804) as shown in Detail -208. Ensure that Angle Bracket is level and is not obstructing cup opening.

Duramax

7300 Magnet Panel, 7301 Mirror Panel, 7302 Lacing Panel, 7304 Window Panel, 7305 Paint Panel, 7306 Theatre Panel

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol coating peeling and touch up wit Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

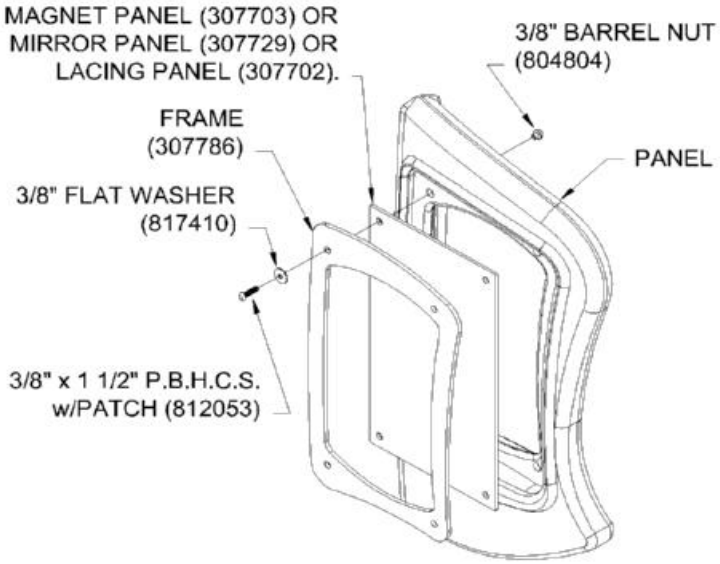


FINISHED ASSEMBLY

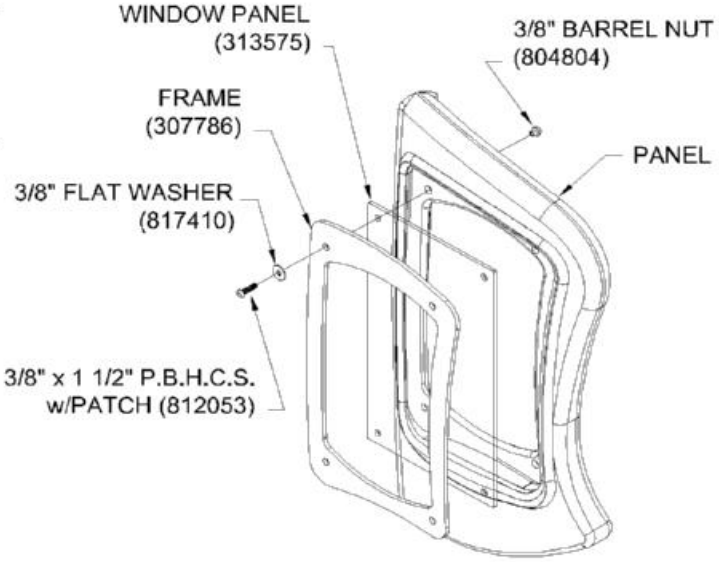
(7300 VERSION SHOWN)

⬡ ***= INSTALLATION DETAIL***

7300 Magnet Panel, 7301 Mirror Panel, 7302 Lacing Panel, 7304 Window Panel, 7305 Paint Panel, 7306 Theatre Panel

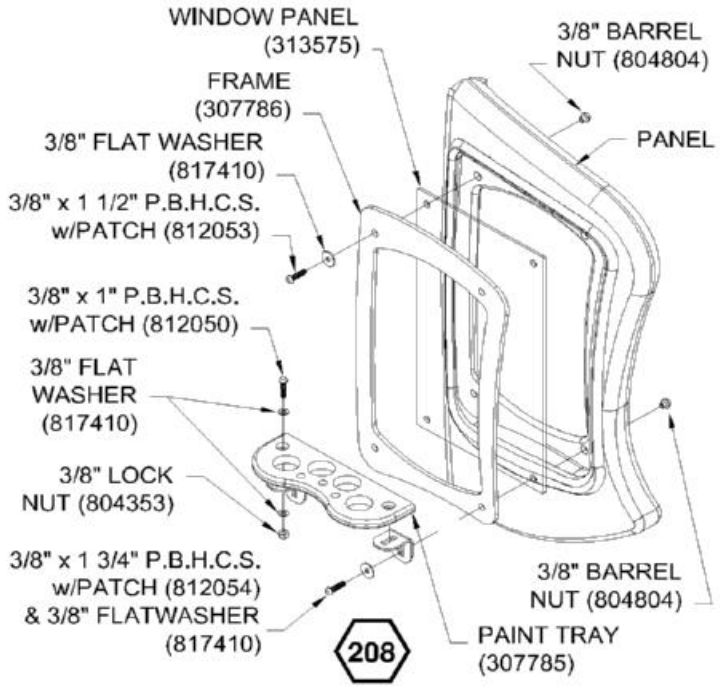


206

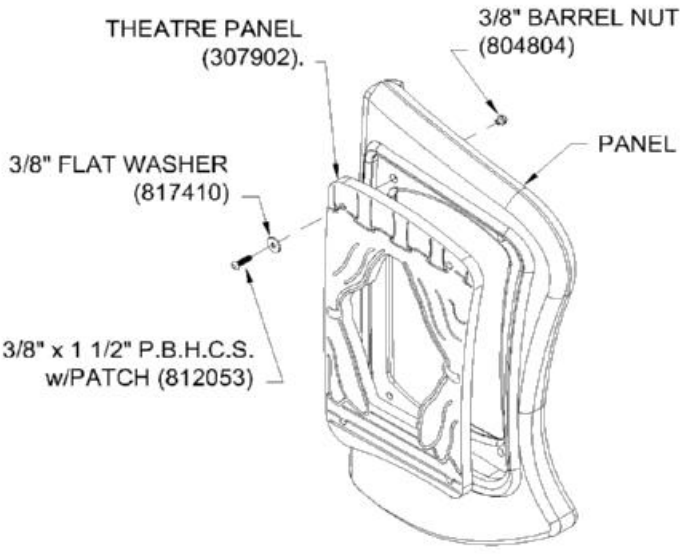


207

NOTE: IF PRESENT, REMOVE ANY PROTECTIVE FILM THAT MAY BE ON THE ACTIVITY BEFORE ASSEMBLING.



208



241

7310 20" TWO SIDED HYPNETIC WHEEL
7311 20" ONE SIDED HYPNETIC WHEEL
7312 12" TWO SIDED HYPNETIC WHEEL

Parts List				
DESCRIPTION	7310	7311	7312	PART NUMBER
20" HYPNETIC SPINNER TWO SIDED	1	0	0	212750
20" HYPNETIC SPINNER SINGLE SIDED	0	1	0	212751
12" HYPNETIC SPINNER TWO SIDED	0	0	1	212752
HARDWARE COMPLETE	1	0	0	314122
HARDWARE COMPLETE	0	1	0	212251
HARDWARE COMPLETE	0	0	1	212252
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	0	8	5	812053
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	8	0	0	812054
3/8" LOCKWASHER	8	8	5	817334
3/8" FLAT WASHER	8	8	5	817410
3/8" BARREL NUT	8	0	5	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Hypnetic Spinner:
The Hypnetic Spinner shall be fabricated from 3/4" high density polyethylene and 1/4" thick polycarbonate.

Hardware:
All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing.

7310 20" TWO SIDED HYPNETIC WHEEL
7311 20" ONE SIDED HYPNETIC WHEEL
7312 12" TWO SIDED HYPNETIC WHEEL

7310 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach 20" Hypnetic Spinner Two Sided to Rotomold using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 879.

4. Plumb and level the entire assembly and tighten all fasteners.

5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

7311 & 7312 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach 20" Hypnetic Spinner Single Sided or 12" Hypnetic Spinner Two Sided to Rotomold using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 879.

4. Plumb and level the entire assembly and tighten all fasteners.

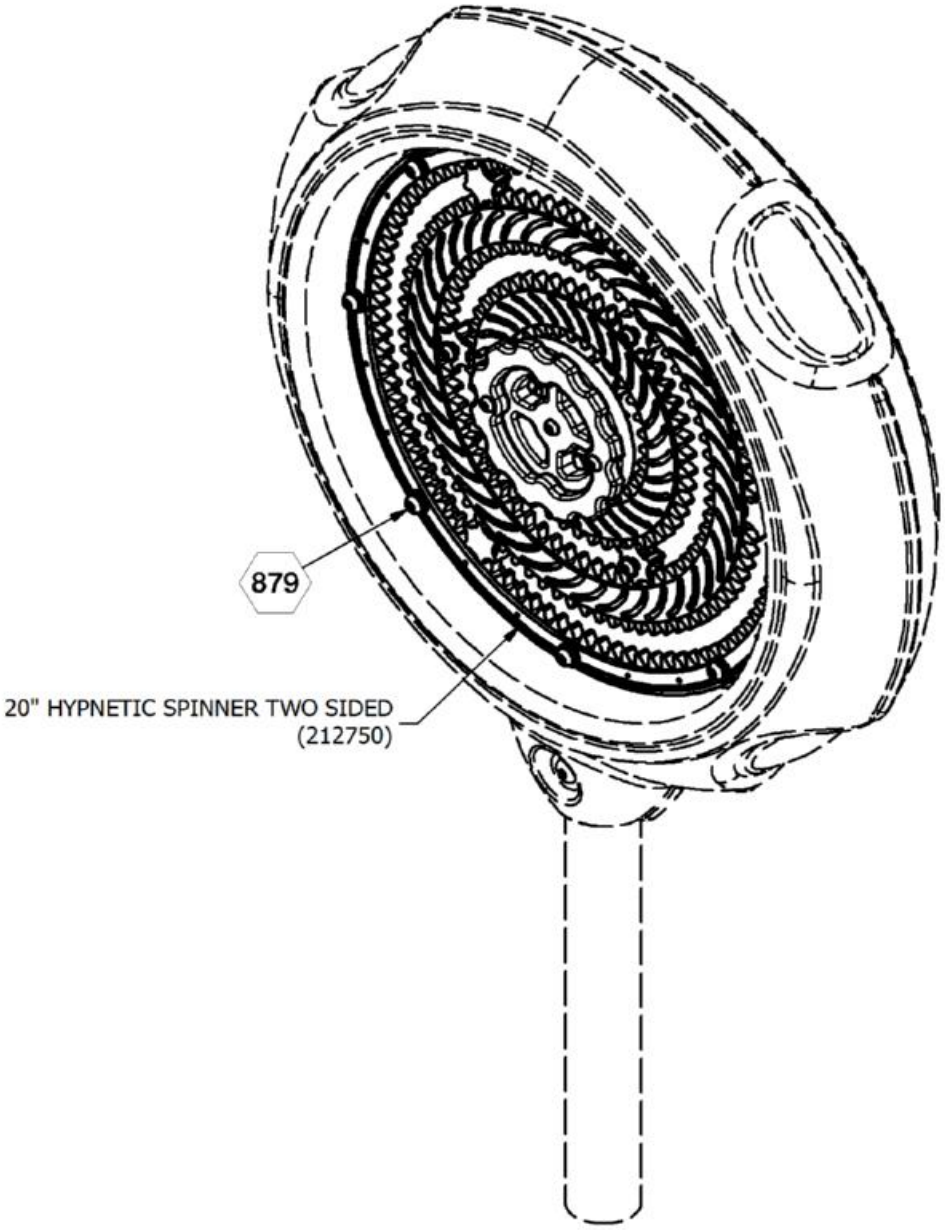
5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

7310 20" TWO SIDED HYPNETIC WHEEL
7311 20" ONE SIDED HYPNETIC WHEEL
7312 12" TWO SIDED HYPNETIC WHEEL

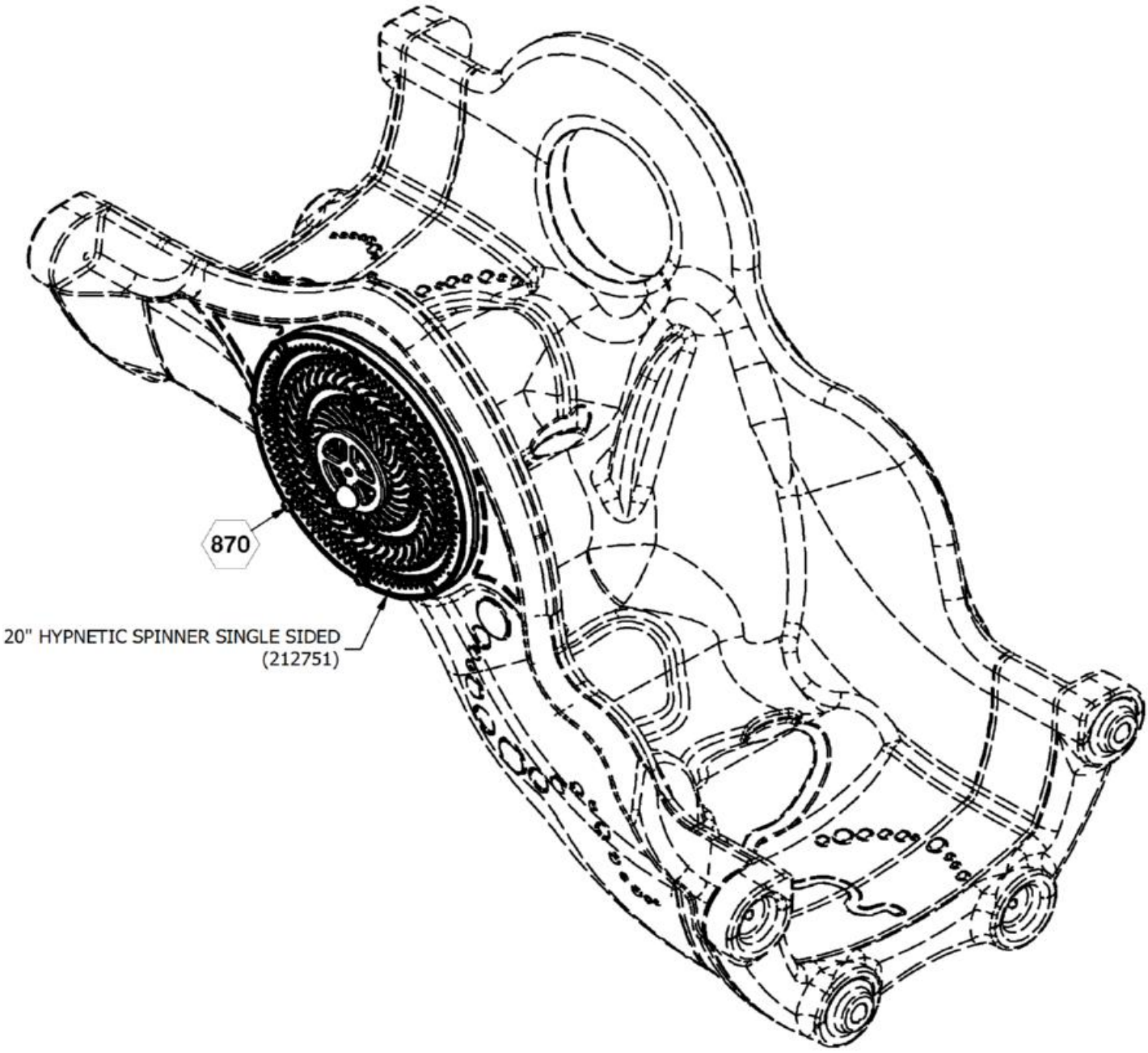


FINISHED ASSEMBLY
7310 SHOWN

⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

7310 20" TWO SIDED HYPNETIC WHEEL
7311 20" ONE SIDED HYPNETIC WHEEL
7312 12" TWO SIDED HYPNETIC WHEEL



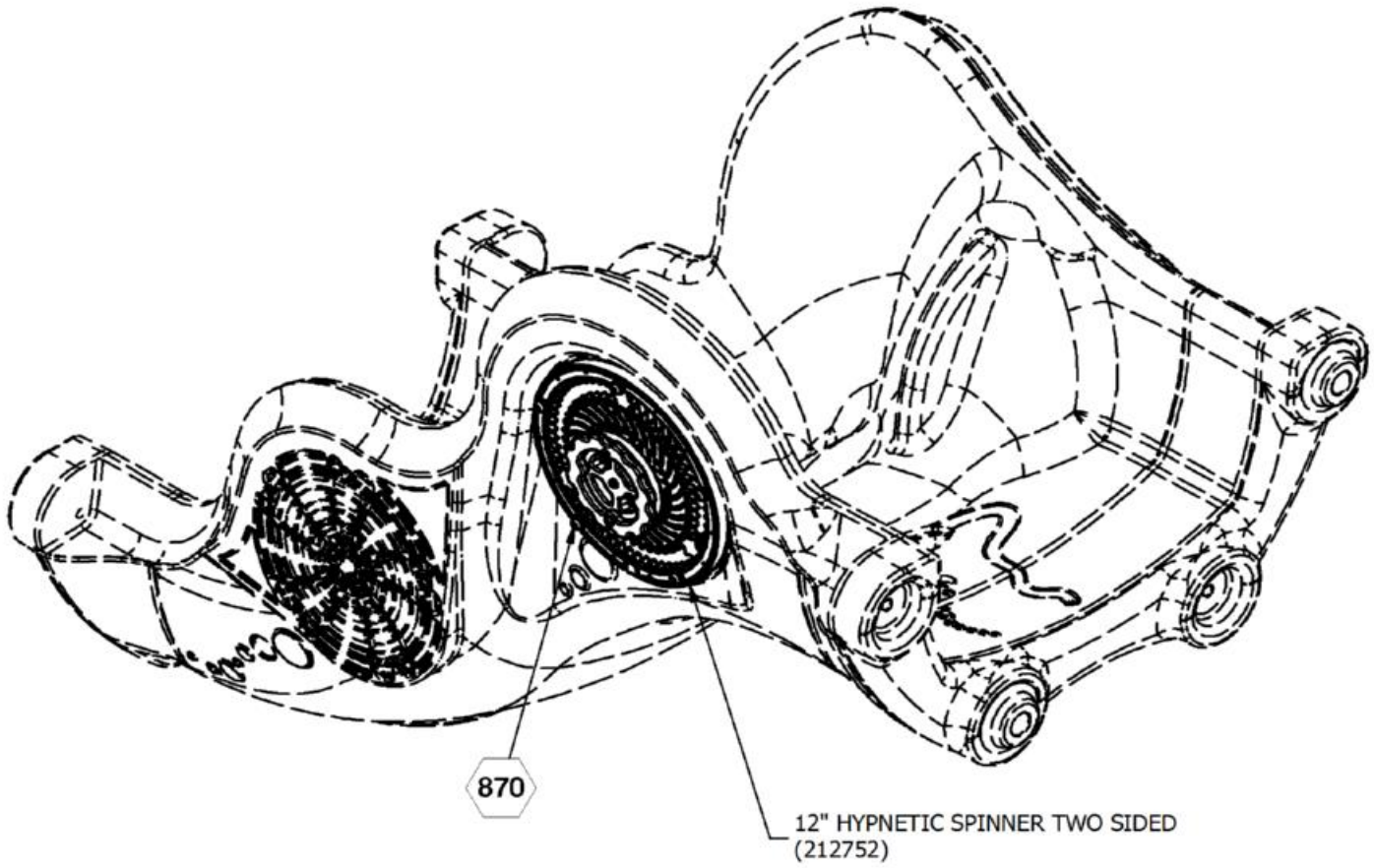
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
7311 SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/8/2017

7310 20" TWO SIDED HYPNETIC WHEEL
7311 20" ONE SIDED HYPNETIC WHEEL
7312 12" TWO SIDED HYPNETIC WHEEL



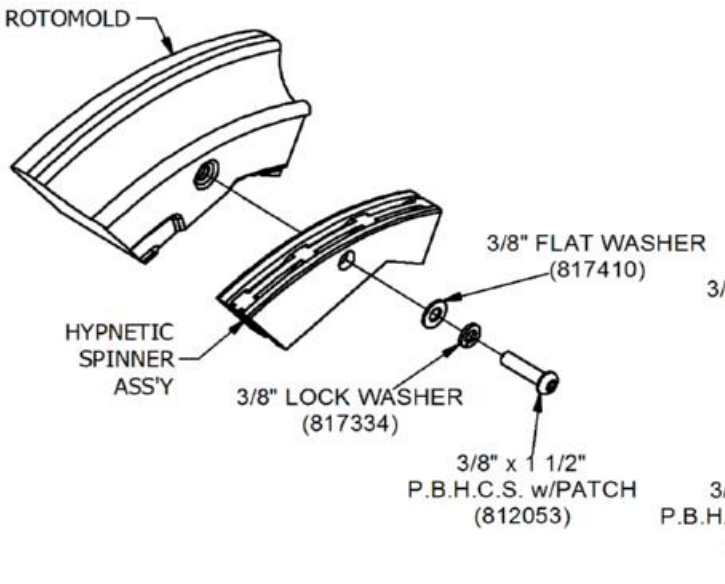
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⬡ = INSTALLATION DETAIL

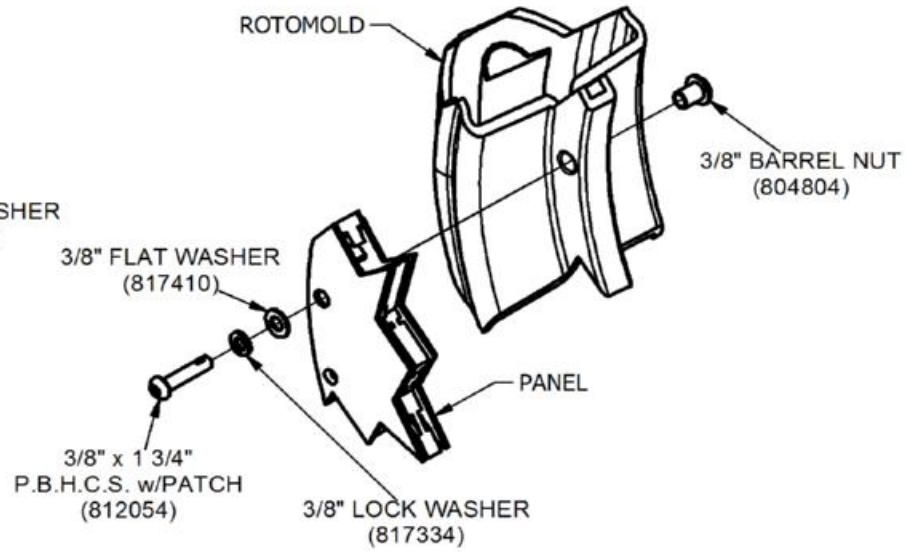
Issued/Revised: 5/8/2017

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

7310 20" TWO SIDED HYPNETIC WHEEL
7311 20" ONE SIDED HYPNETIC WHEEL
7312 12" TWO SIDED HYPNETIC WHEEL



870



879

7343 20" ONE SIDED PIANO ROTOGEN
7344 20" TWO SIDED PIANO ROTOGEN

Parts List			
DESCRIPTION	7343	7344	PART NUMBER
SPACER	6	0	212416
PIANO SENSOR 20" ROTOGEN	1	0	218237
PIANO SENSOR w/BACK 20" ROTOGEN	0	1	218238
HARDWARE COMPLETE	1	0	212436
HARDWARE COMPLETE	0	1	312646
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	0	4	812056
3/8" x 2 3/4" P.B.H.C.S.	0	4	812058
3/8" x 3" P.B.H.C.S. w/PATCH	4	0	812059
3/8" x 3 3/4" P.B.H.C.S. w/PATCH	4	0	812076
3/8" LOCK WASHER	8	0	817334
3/8" FLAT WASHER	8	8	817410
3/8" T-NUT	4	0	804556
3/8" BARREL NUT	1	8	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

7343 20" ONE SIDED PIANO ROTOGEN
7344 20" TWO SIDED PIANO ROTOGEN

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** ***Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.***
2. Attach Piano One Sided to Spacers using 3/8" x 3" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" T-Nut. See Detail 542.
3. Attach Piano One Sided and Spacers to Rotomold using 3/8" x 3 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 543.
4. Plumb and level the entire assembly and tighten all fasteners.
5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

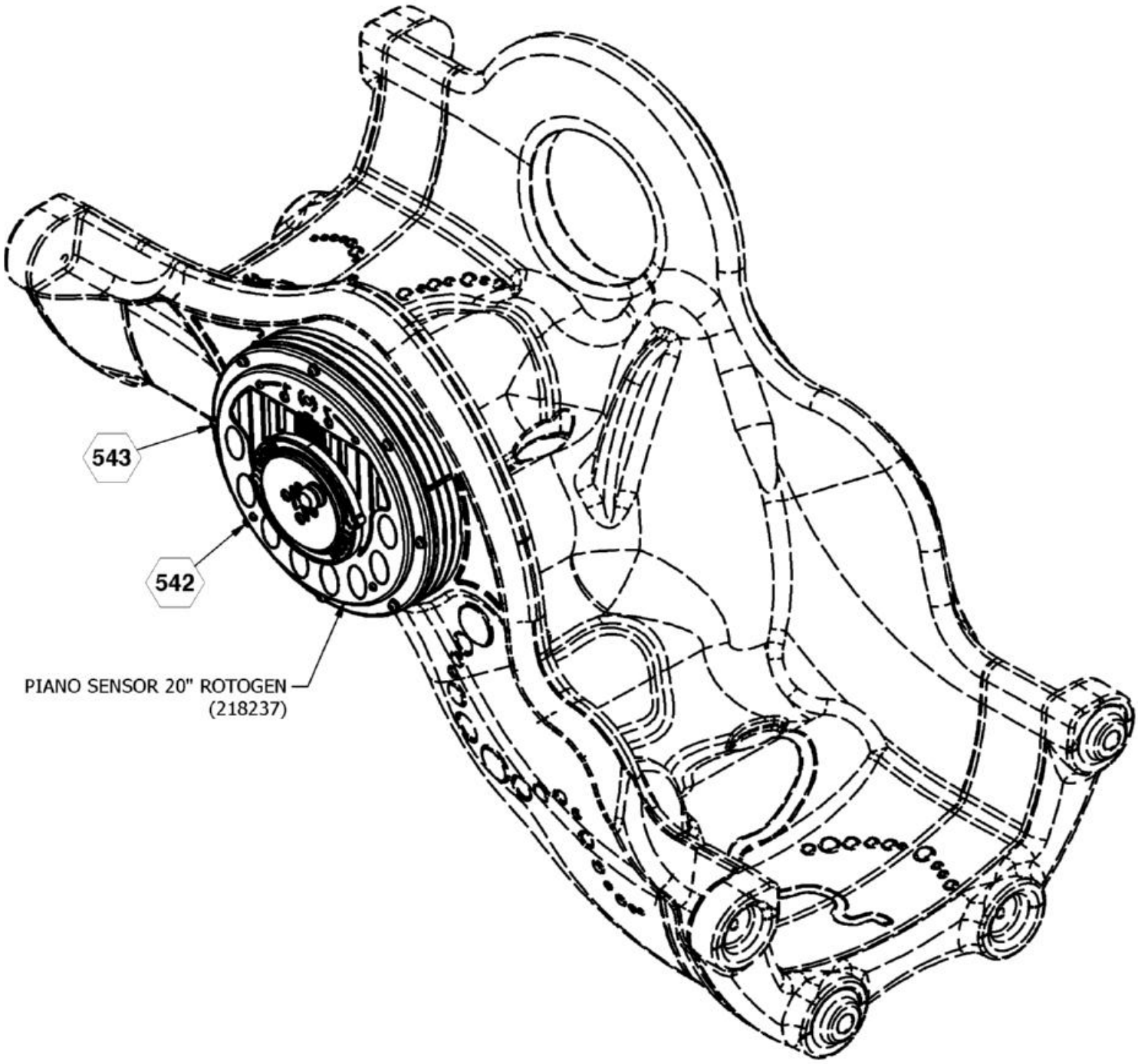
INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** ***Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.***
2. Attach Piano Two Sided and Rings to Rotomold using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 816.
3. Attach Back Cover to Rotomold using 3/8" x 2 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 817.
4. Plumb and level the entire assembly and tighten all fasteners.
5. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
6. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

7343 20" ONE SIDED PIANO ROTOGEN
7344 20" TWO SIDED PIANO ROTOGEN



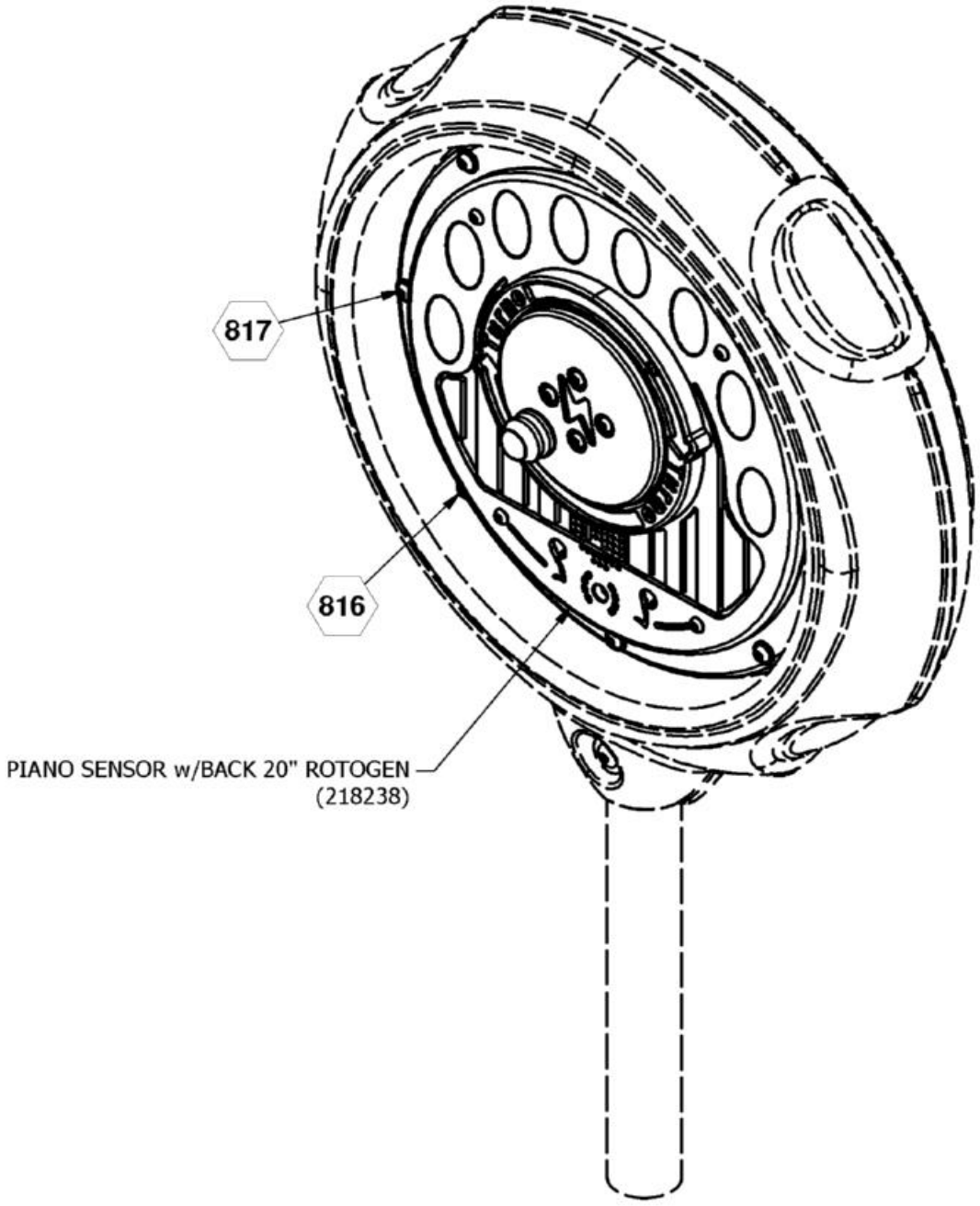
FINISHED ASSEMBLY
7343 SHOWN

⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/6/2022

7343 20" ONE SIDED PIANO ROTOGEN
7344 20" TWO SIDED PIANO ROTOGEN



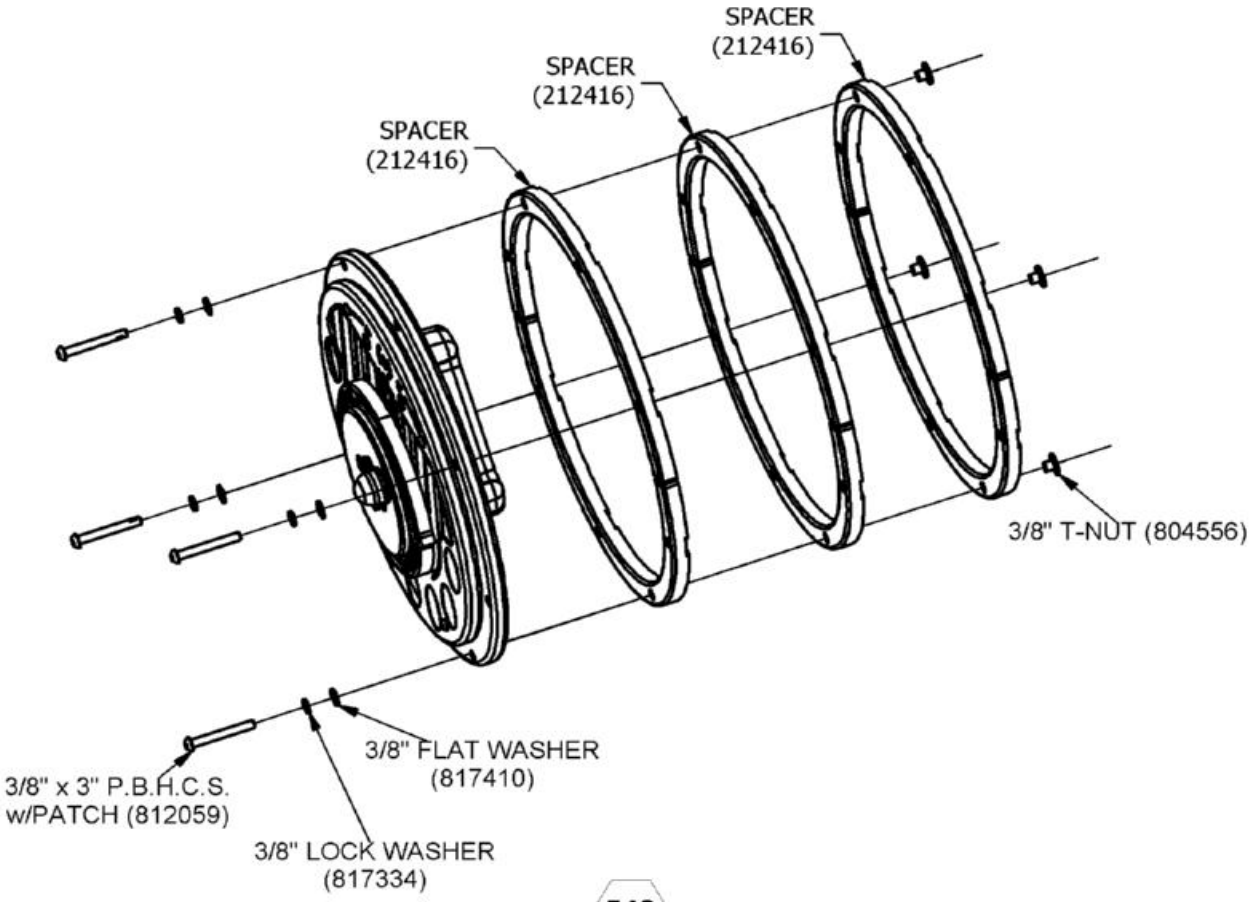
FINISHED ASSEMBLY
7344 SHOWN

= INSTALLATION DETAIL

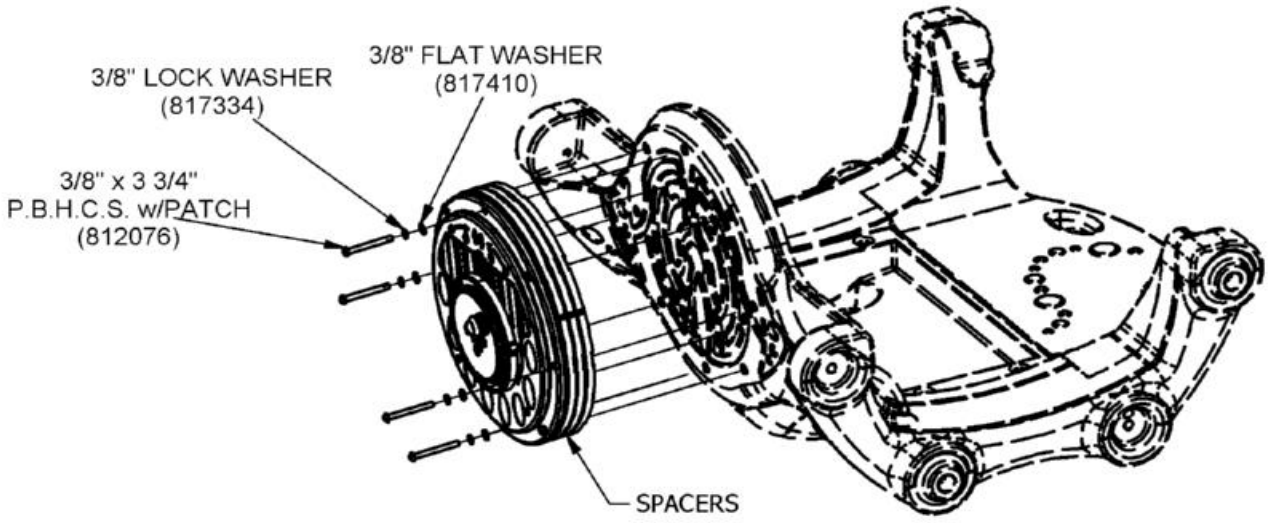
COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/6/2022

7343 20" ONE SIDED PIANO ROTOGEN
7344 20" TWO SIDED PIANO ROTOGEN

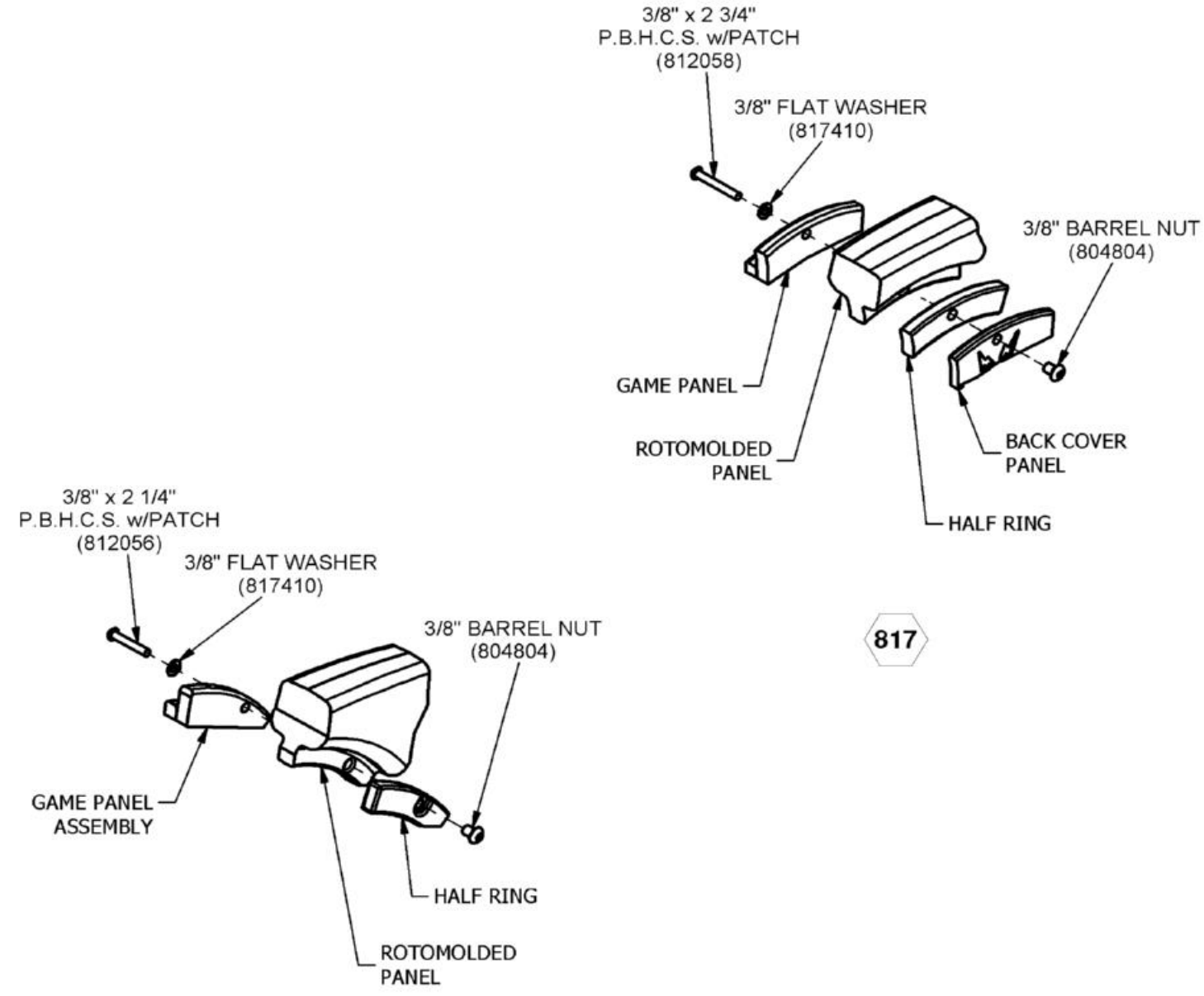


542



543

7343 20" ONE SIDED PIANO ROTOGEN
7344 20" TWO SIDED PIANO ROTOGEN



7351 12" TWO SIDED HOURGLASS
7352 20" TWO SIDED HOURGLASS
7353 20" ONE SIDED HOURGLASS

Parts List				
DESCRIPTION	7351	7352	7353	PART NUMBER
12" HOUR GLASS	1	0	0	212469
20" HOUR GLASS	0	1	0	212470
20" HOUR GLASS ONE SIDED	0	0	1	212471
HARDWARE COMPLETE	1	0	0	212465
HARDWARE COMPLETE	0	0	1	212472
HARDWARE COMPLETE	0	1	0	212890
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	5	0	0	812051
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	0	8	0	812053
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	0	0	8	812054
3/8" LOCK WASHER	5	8	8	817334
3/8" FLAT WASHER	5	8	8	817410
3/8" BARREL NUT	5	8	8	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Hour Glass:
The Hour Glass shall be fabricated from 1/2" high density polyethylene and 3/16" thick UV inhibitive acrylic with 4.5mm stainless steel balls.

Hardware:
All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing.

7351 12" TWO SIDED HOURGLASS
7352 20" TWO SIDED HOURGLASS
7353 20" ONE SIDED HOURGLASS

7351 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*
2. Attach 12" Hour Glass to Rotomold using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 546.
3. Plumb and level the entire assembly and tighten all fasteners.
4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
5. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

7352 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*
2. Attach 20" Hour Glass to Rotomold using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 878.
3. Plumb and level the entire assembly and tighten all fasteners.
4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
5. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

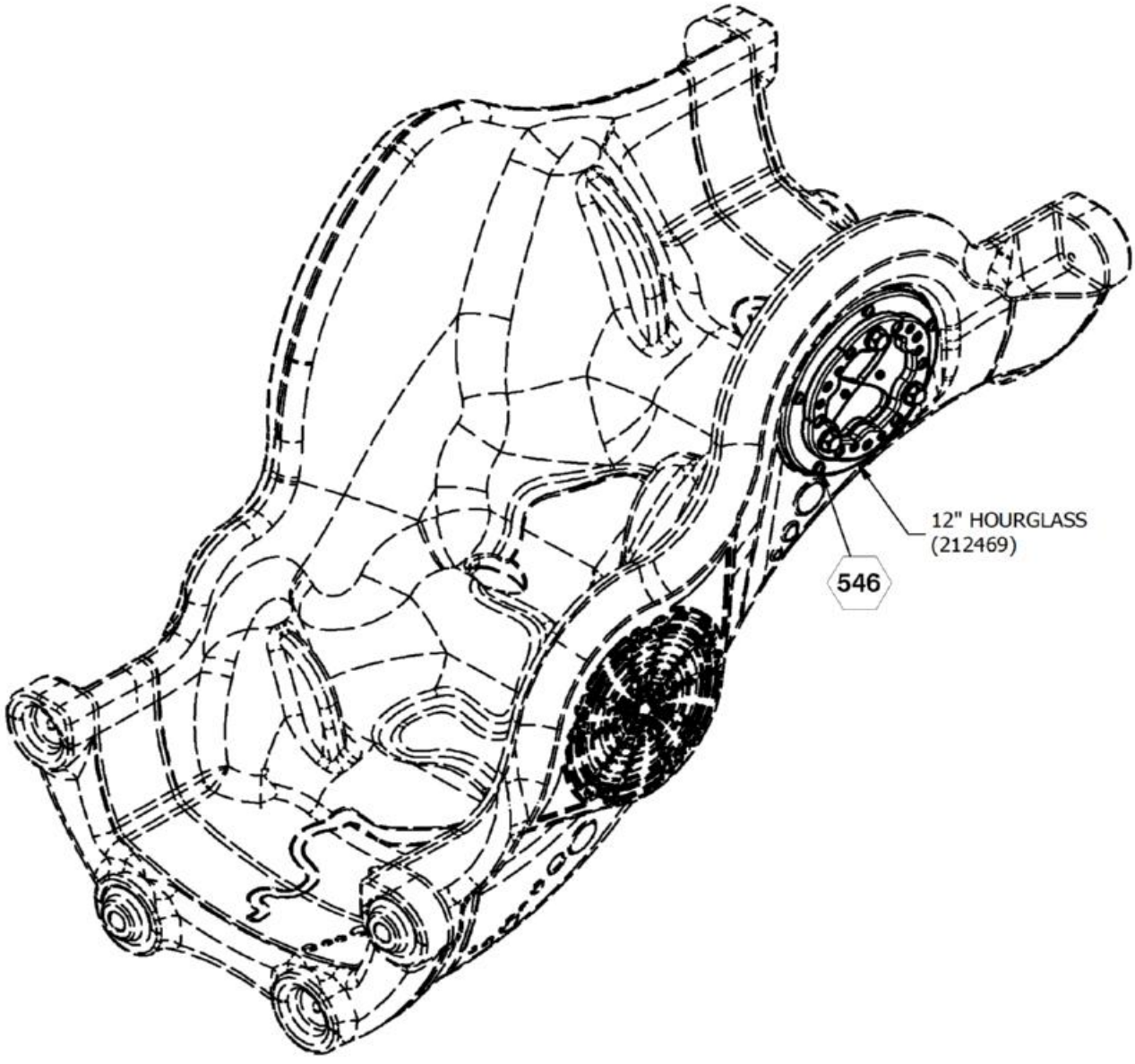
7353 INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding sufacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*
2. Attach 20" Hour Glass One Sided to Rotomold using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 548.
3. Plumb and level the entire assembly and tighten all fasteners.
4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
5. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

7351 12" TWO SIDED HOURGLASS
7352 20" TWO SIDED HOURGLASS
7353 20" ONE SIDED HOURGLASS

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



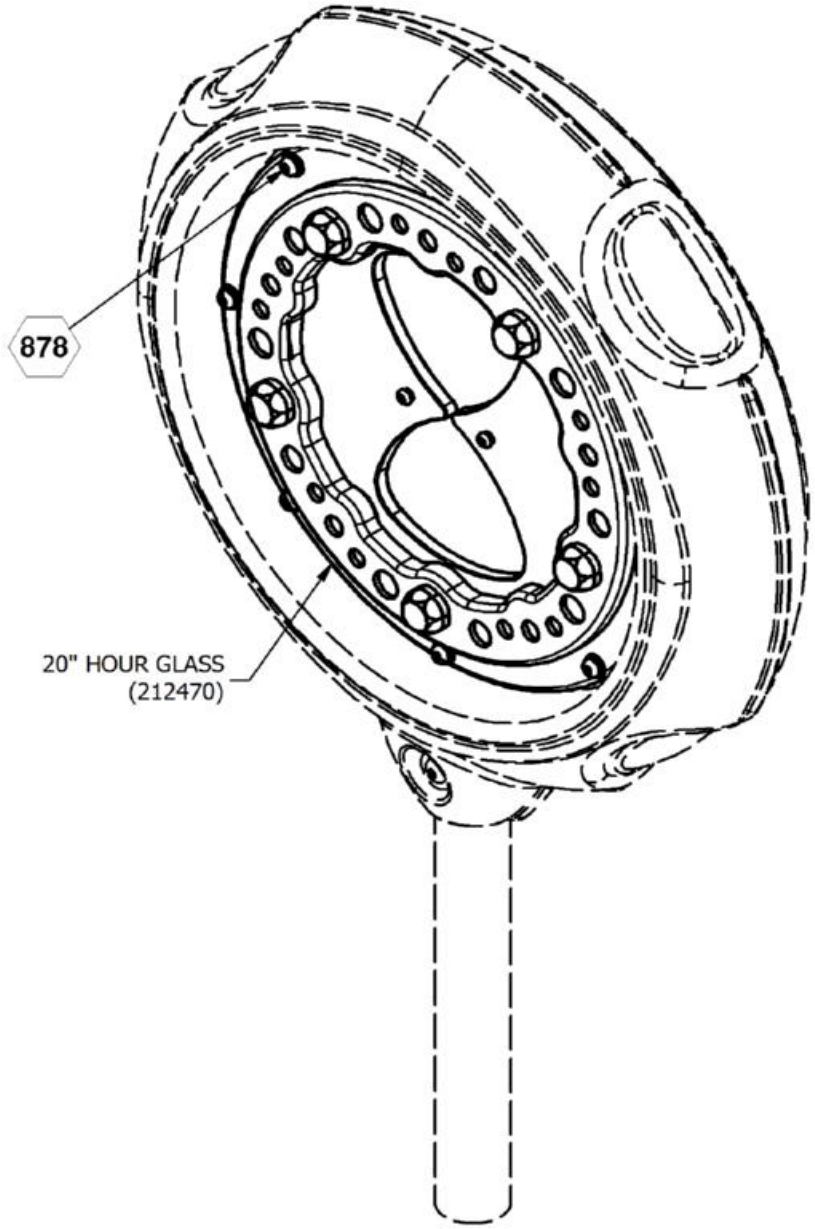
⬡ = INSTALLATION DETAIL

Issued/Revised: 5/5/2017

FINISHED ASSEMBLY
7351 SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

7351 12" TWO SIDED HOURGLASS
7352 20" TWO SIDED HOURGLASS
7353 20" ONE SIDED HOURGLASS

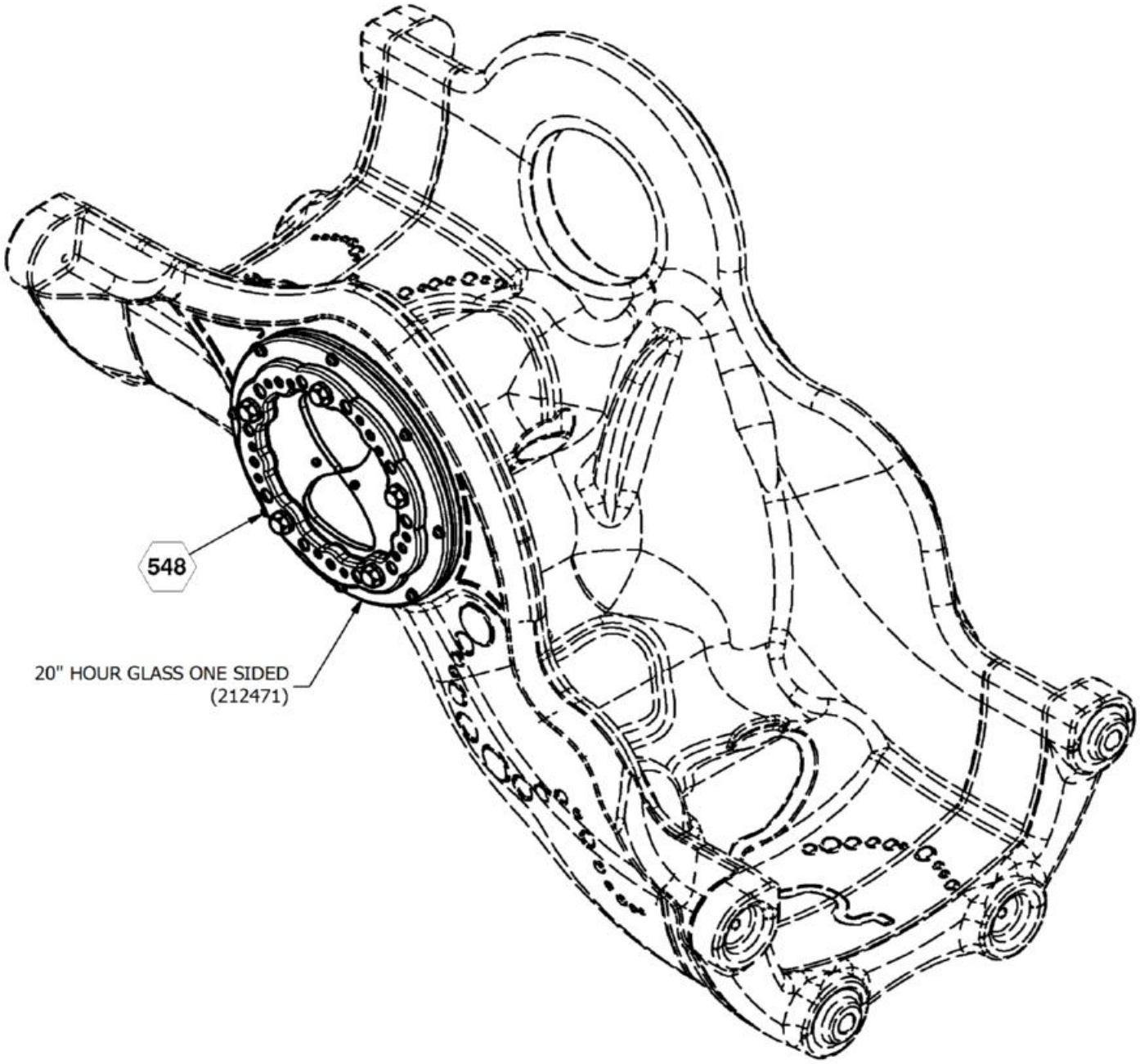


FINISHED ASSEMBLY
7352 SHOWN

= INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

7351 12" TWO SIDED HOURGLASS
7352 20" TWO SIDED HOURGLASS
7353 20" ONE SIDED HOURGLASS



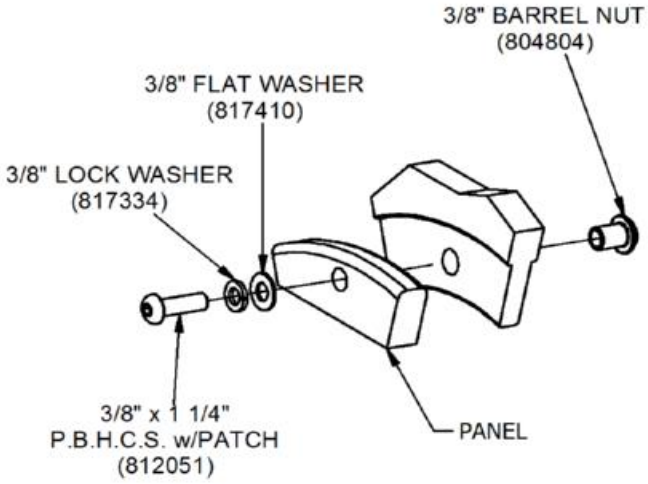
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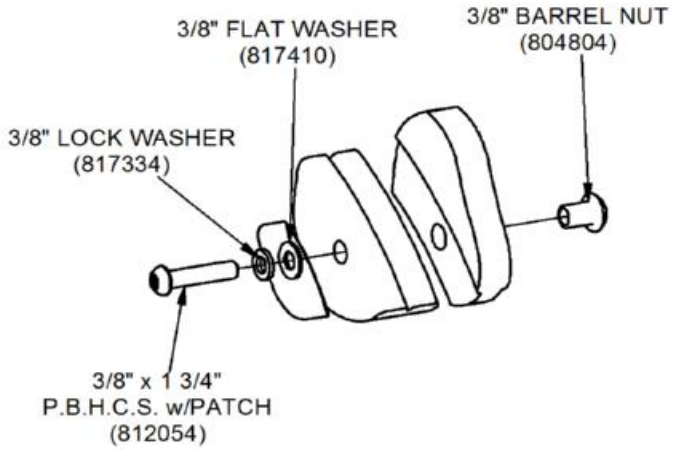
COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/5/2017

7351 12" TWO SIDED HOURGLASS
7352 20" TWO SIDED HOURGLASS
7353 20" ONE SIDED HOURGLASS

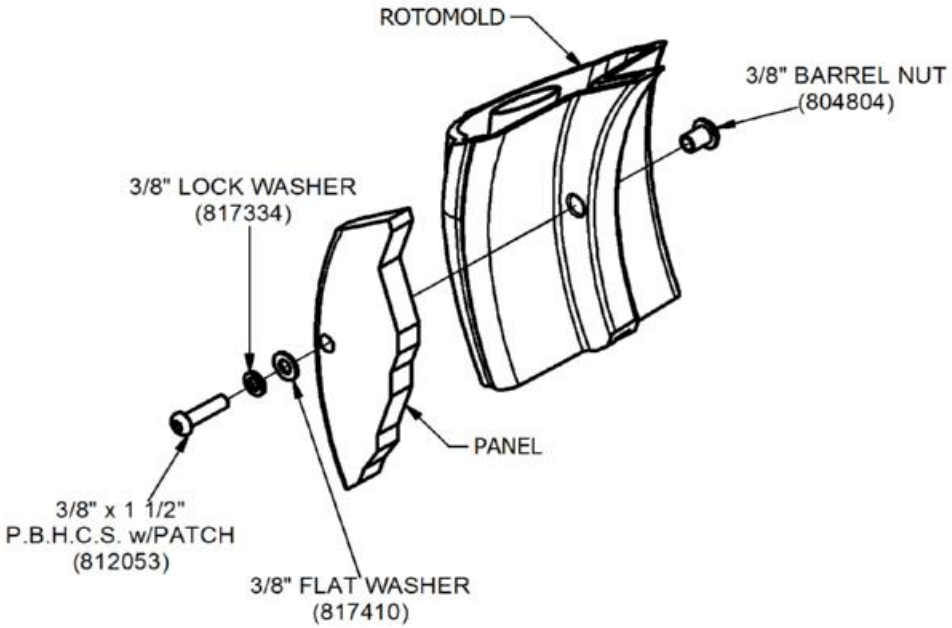


546



548

NOTE: DISCARD BARREL NUT FOR ROTOMOLD APPLICATION



878

SuperMax Play Systems

60059 (10'), 60060 (12'), 60088 (14'), 60102 (6'), 60178 (8'), 60946 (15'), 60947 (13'), 60948 (11'), 60949 (7'), 60956 (9'), 61538 (4'), 61539 (5') SUPERMAX POST w/ CAP

(ADD G PREFIX FOR GALV. POST)

Parts List									
DESCRIPTION	60059	G60059	60060	G60060	60088	G60088	60102	G60102	PART NUMBER
5" O.D. POST WITH CAP (ALUMINUM) 10'	1	0	0	0	0	0	0	0	300130
5" O.D. POST WITH CAP (GALVANIZED) 10'	0	1	0	0	0	0	0	0	G00130
5" O.D. POST WITH CAP (ALUMINUM) 12'	0	0	1	0	0	0	0	0	300059
5" O.D. POST WITH CAP (GALVANIZED) 12'	0	0	0	1	0	0	0	0	G00059
5" O.D. POST WITH CAP (ALUMINUM) 14'	0	0	0	0	1	0	0	0	300060
5" O.D. POST WITH CAP (GALVANIZED) 14'	0	0	0	0	0	1	0	0	G00060
5" O.D. POST WITH CAP (ALUMINUM) 6'	0	0	0	0	0	0	1	0	300057
5" O.D. POST WITH CAP (GALVANIZED) 6'	0	0	0	0	0	0	0	1	G00057

Parts List									
DESCRIPTION	60178	G60178	60946	G60946	60947	G60947	60948	G60948	PART NUMBER
5" O.D. POST WITH CAP (ALUMINUM) 8'	1	0	0	0	0	0	0	0	300521
5" O.D. POST WITH CAP (GALVANIZED) 8'	0	1	0	0	0	0	0	0	G00521
5" O.D. POST WITH CAP (ALUMINUM) 15'	0	0	1	0	0	0	0	0	305801
5" O.D. POST WITH CAP (GALVANIZED) 15'	0	0	0	1	0	0	0	0	G05801
5" O.D. POST WITH CAP (ALUMINUM) 13'	0	0	0	0	1	0	0	0	305803
5" O.D. POST WITH CAP (GALVANIZED) 13'	0	0	0	0	0	1	0	0	G05803
5" O.D. POST WITH CAP (ALUMINUM) 11'	0	0	0	0	0	0	1	0	305805
5" O.D. POST WITH CAP (GALVANIZED) 11'	0	0	0	0	0	0	0	1	G05805

Parts List									
DESCRIPTION	60949	G60949	60956	G60956	61538	G61538	61539	G61539	PART NUMBER
5" O.D. POST WITH CAP (ALUMINUM) 7'	1	0	0	0	0	0	0	0	305807
5" O.D. POST WITH CAP (GALVANIZED) 7'	0	1	0	0	0	0	0	0	G05807
5" O.D. POST WITH CAP (ALUMINUM) 9'	0	0	1	0	0	0	0	0	305810
5" O.D. POST WITH CAP (GALVANIZED) 9'	0	0	0	1	0	0	0	0	G05810
5" O.D. POST WITH CAP (ALUMINUM) 4'	0	0	0	0	1	0	0	0	304957
5" O.D. POST WITH CAP (GALVANIZED) 4'	0	0	0	0	0	1	0	0	G04957
5" O.D. POST WITH CAP (ALUMINUM) 5'	0	0	0	0	0	0	1	0	305615
5" O.D. POST WITH CAP (GALVANIZED) 5'	0	0	0	0	0	0	0	1	G05615

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

60059 (10'), 60060 (12'), 60088 (14'), 60102 (6'), 60178 (8'), 60946 (15'), 60947 (13'), 60948 (11'), 60949 (7'), 60956 (9'), 61538 (4'), 61539 (5') SUPERMAX POST w/ CAP

(ADD G PREFIX FOR GALV. POST)

INSTALLATION INSTRUCTIONS:

1. Component numbers are for one (1) Upright Post only. Please refer to your Plan Drawing and Footing Diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure up from the lower end of each Upright Post and mark using a felt-tip marker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof naker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be instaling. Using your footing diagram and elevation view as a reference, move and dig holes accordingly.

3. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

4. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete has a downward slope of 45° at the top away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like nuts, bolts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

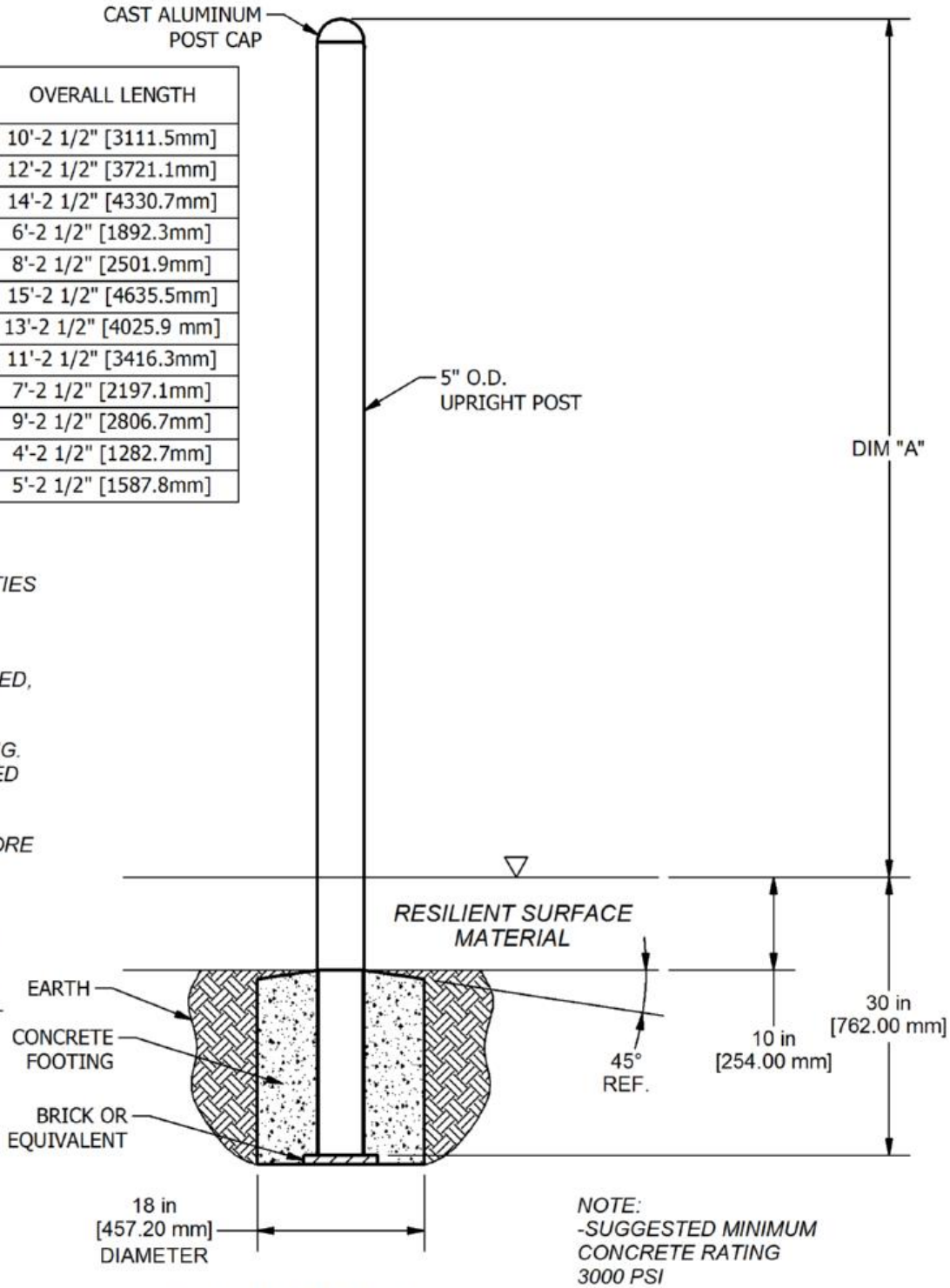
60059 (10'), 60060 (12'), 60088 (14'), 60102 (6'), 60178 (8'), 60946 (15'), 60947 (13'), 60948 (11'), 60949 (7'), 60956 (9'), 61538 (4'), 61539 (5') SUPERMAX POST w/ CAP

(ADD G PREFIX FOR GALV. POST)

NO.	DIM "A"	OVERALL LENGTH
60059	7'-8 1/2" [2349.5mm]	10'-2 1/2" [3111.5mm]
60060	9'-8 1/2" [2959.1mm]	12'-2 1/2" [3721.1mm]
60088	11'-8 1/2" [3568.7mm]	14'-2 1/2" [4330.7mm]
60102	3'-8 1/2" [1130.3mm]	6'-2 1/2" [1892.3mm]
60178	5'-8 1/2" [1739.9mm]	8'-2 1/2" [2501.9mm]
60946	12'-8 1/2" [3873.5 mm]	15'-2 1/2" [4635.5mm]
60947	10'-8 1/2" [3263.9mm]	13'-2 1/2" [4025.9 mm]
60948	8'-8 1/2" [2654.3mm]	11'-2 1/2" [3416.3mm]
60949	4'-8 1/2" [1435.1mm]	7'-2 1/2" [2197.1mm]
60956	6'-8 1/2" [2044.7mm]	9'-2 1/2" [2806.7mm]
61538	1'-8 1/2" [520.7mm]	4'-2 1/2" [1282.7mm]
61539	2'-8 1/2" [1282.7mm]	5'-2 1/2" [1587.8mm]

SHOCK ABSORBING PROPERTIES OF RESILIENT SURFACING MATERIALS VARY. IF YOU DETREMINE THAT LESS THAN 10" OF SURFACING IS REQUIRED, MAKE UP THE DIFFERENCE IN ELEVATION WITH EARTH BEFORE APPLYING SURFACING. IF MORE THAN 10" IS REQUIRED MAKE UP THE DIFFERENCE BY REDUCING THE DEPTH OF THE GROUND HOLE BY NO MORE THAN 2".

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF RESILIENT SURFACE MATERIAL AND CONCRETE



NOTE:
-SUGGESTED MINIMUM CONCRETE RATING 3000 PSI

ELEVATION VIEW

Issued/Revised: 7/11/2019

SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 60061 Small Kickplate (For Deck Spaced 8" Apart)

PARTS LIST

DESCRIPTION	No. REQ'D	PART NUMBER
Small Kickplate	1	305742
Hardware Complete	1	302411
3/8" x 3/4" P.B.H.C.S. w/Patch	8	812052*
3/8" Lock Nut	8	804353*
3/8" Flat Washer (1 1/4" O.D.)	16	817424*

Unless Otherwise Specified, All Units of Measure are Each
***Included in Hardware**

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Kickplate measures 9-1/2" x 38" and is cut from galvanneal sheet metal with eight (8) 7/16" x 1" slotted holes punched to coincide with deck flange holes and receives a baked-on polyester powder-coat finish after fabrication.

Primary hardware is stainless steel.

INSTALLATION INSTRUCTIONS:

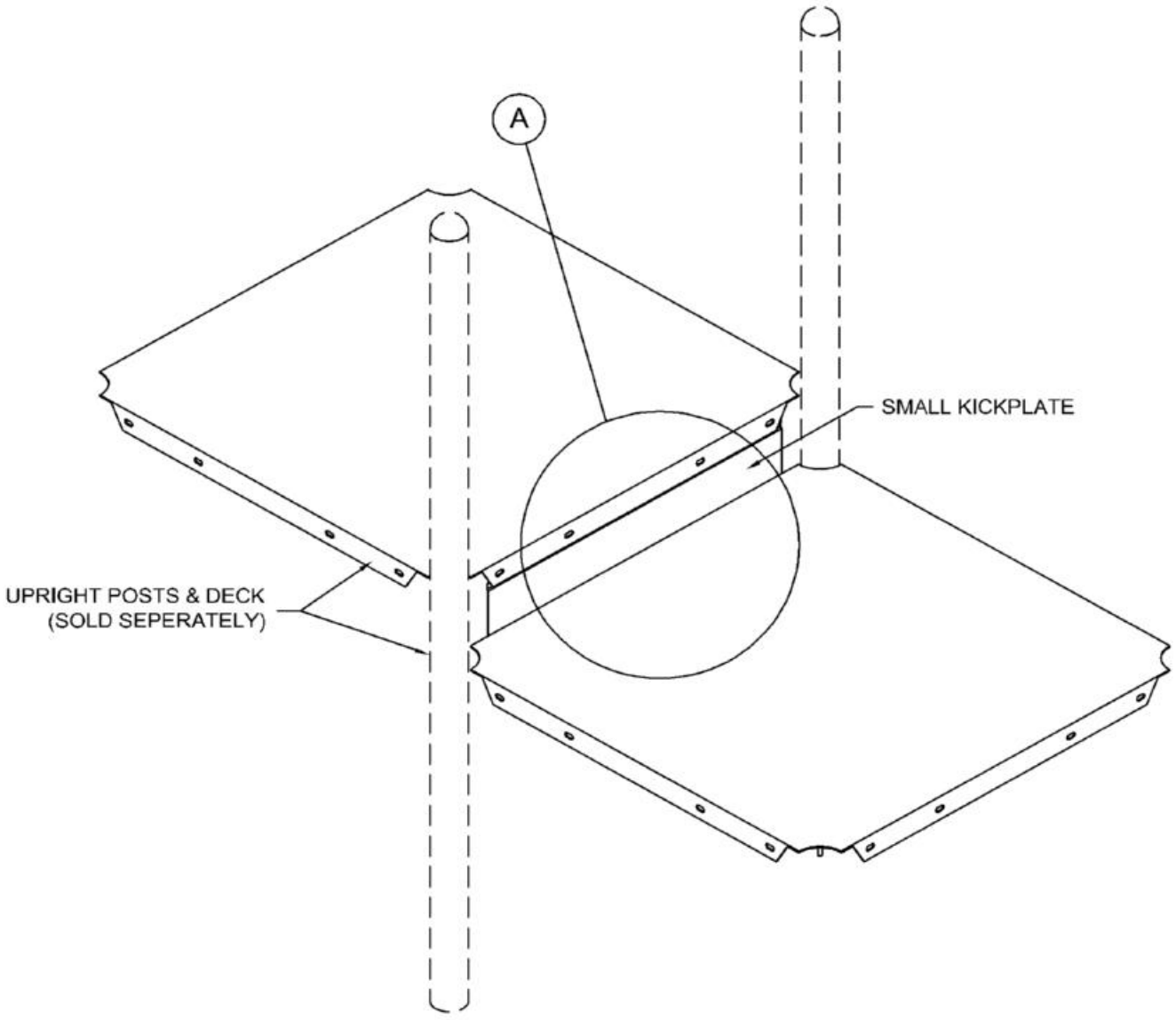
1. Refer to the main drawing to locate decks, which are spaced 8" apart. These will require Kickplate(s). Attach Kickplates after decks have been installed, but before deck clamps have been pinned, in case adjustment in deck heights is required to match up holes in deck flanges with holes in Kickplate.

2. Fasten the Kickplate between decks as shown in the drawing. No portion of the Kickplate should be protruding in a manner that could cause a user to receive a cut, scrape or trip over an edge. Any rough edges should be filed smooth, and any protruding corners should be flattened. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

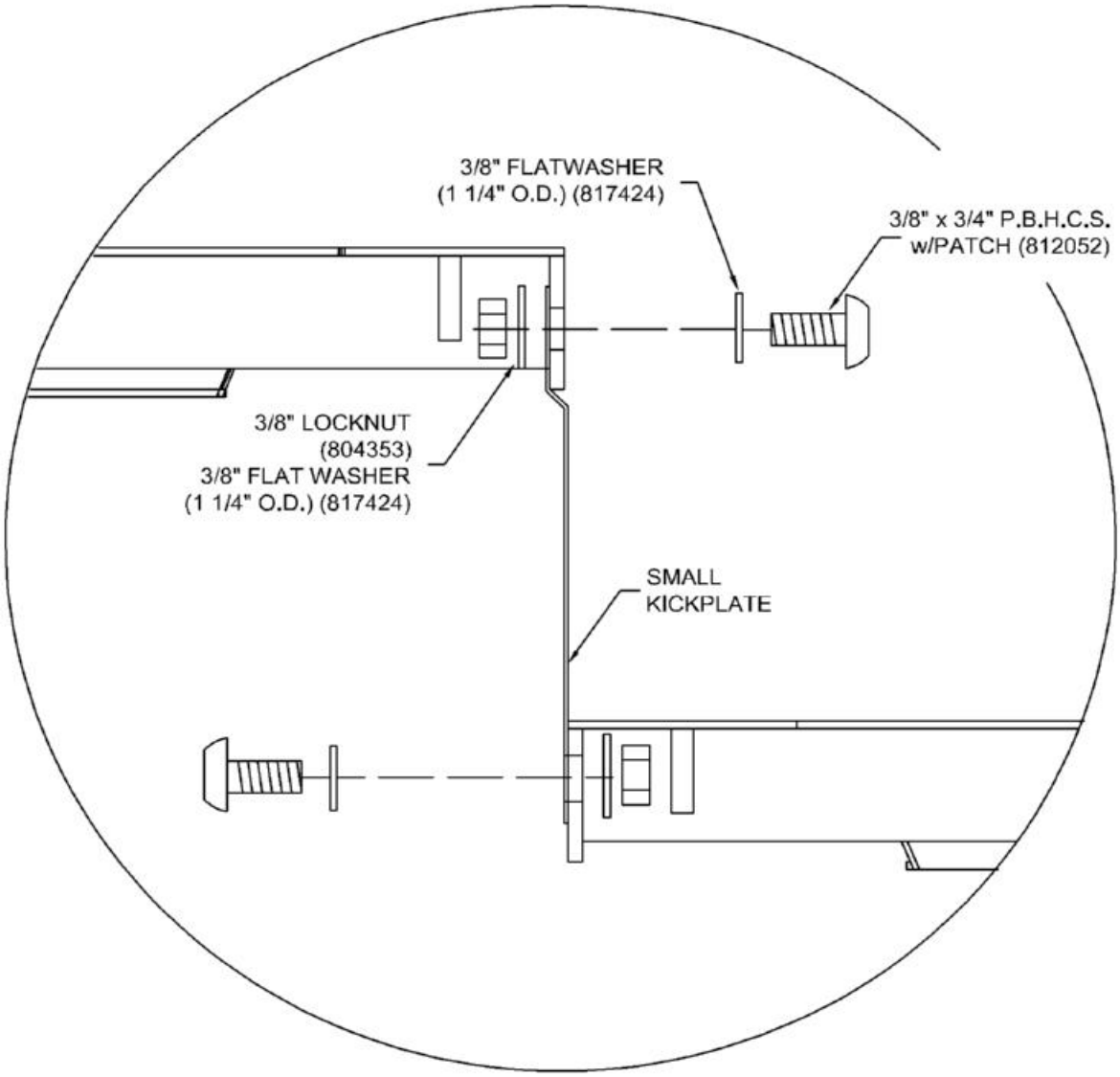
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60061 Small Kickplate (For Deck Spaced 8" Apart)



FINISHED ASSEMBLY

MODEL NO. 60061 Small Kickplate (For Deck Spaced 8" Apart)



DETAIL "A"

SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 60062 Small Kickplate 9 1/2" x 58" (Decks 8" Apart)

PARTS LIST

DESCRIPTION	No. REQ'D	PART NUMBER
Small Kickplate	1	305740
Hardware Complete	1	302412
3/8" x 3/4" P.B.H.C.S. w/Patch	10	812052*
3/8" Lock Nut	10	804353*
3/8" Flat Washer (1 1/4" O.D.)	20	817424*

Unless Otherwise Specified, All Units of Measure are Each
****Included in Hardware***

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Kickplate measures 9-1/2" x 58", and is cut from galvanneal sheet metal with (10) 7/16" x 1" slotted holes punched to coincide with deck flange holes. Edges are ground smooth and receives a baked-on polyester powder-coated finish after fabrication.

Primary hardware is stainless steel.

INSTALLATION INSTRUCTIONS:

1. Refer to the main drawing to locate decks, which are spaced 8" apart. These will require Kickplate(s). Attach Kickplates after decks have been installed, but before deck clamps have been pinned, in case adjustment in deck heights is required to match up holes in deck flanges with holes in Kickplate.

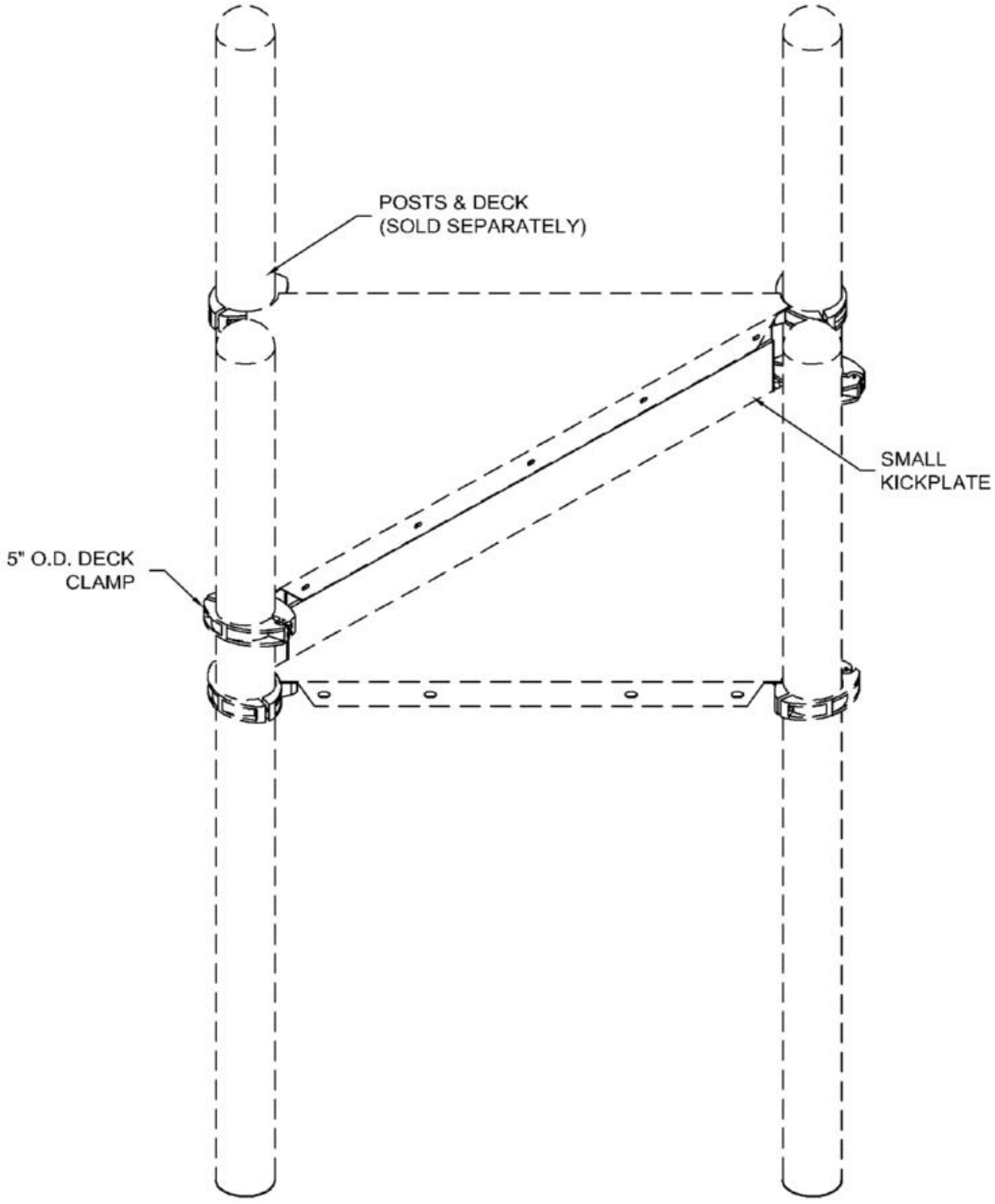
2. Attach Kickplate to decks using 3/8" x 3/4" P.B.H.C.S. with 3/8" (1 1/4" O.D.) Flat Washers and 3/8" Lock Nuts. No portion of the Kickplate should be protruding in a manner which could cause a user to receive a cut, scrape or trip over any edge. Any rough edges should be filed smooth, and any protruding corners should be flattened.

3. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60062 Small Kickplate 9 1/2" x 58" (Decks 8" Apart)



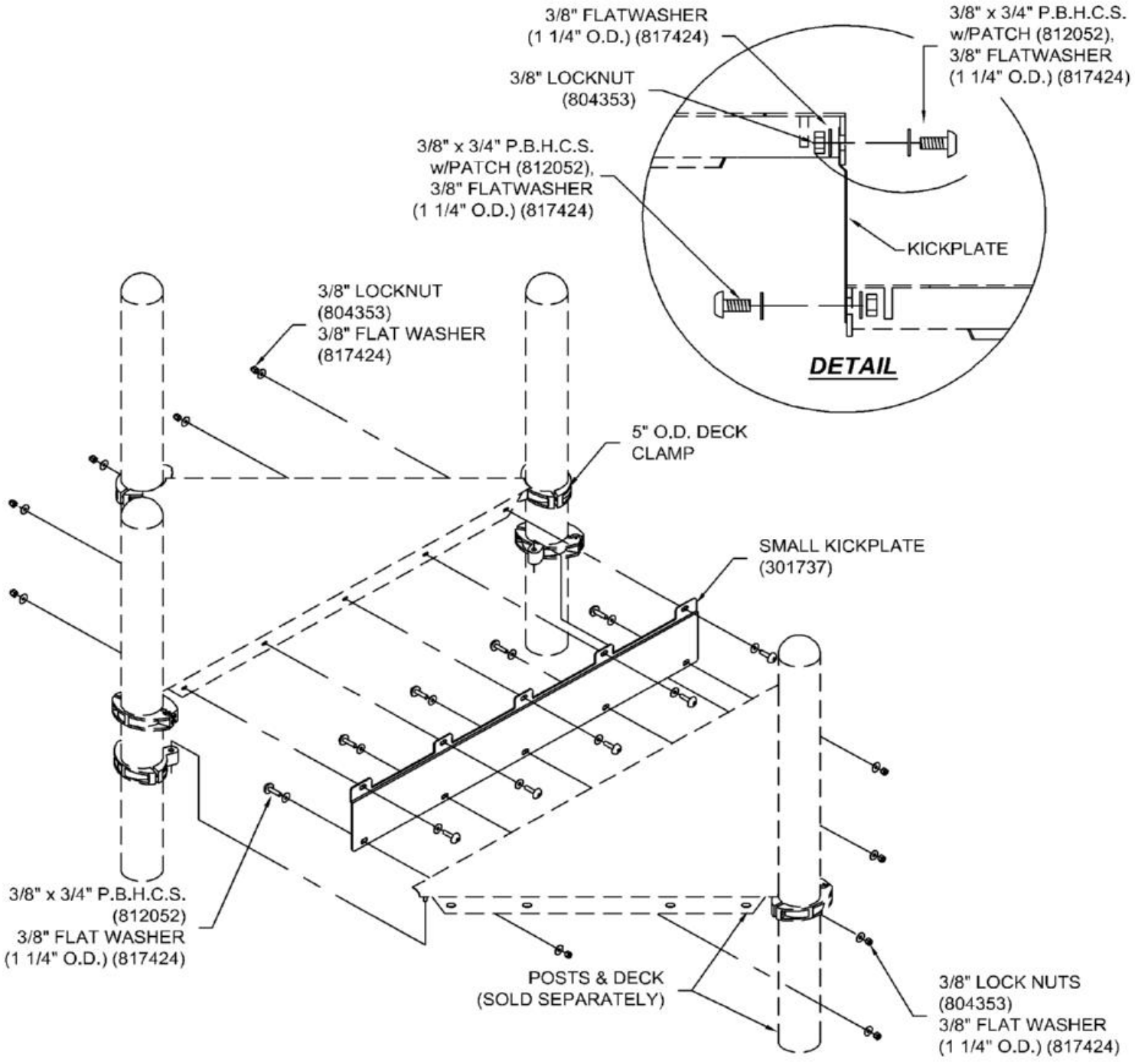
FINISHED ASSEMBLY

SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 60062 Small Kickplate 9 1/2" x 58" (Decks 8" Apart)



SMALL KICKPLATE ASSEMBLY

MODEL NO. 60088 SuperMax 168" Aluminum Post w/ Cap
MODEL NO. G60088 SuperMax 168" Galvanized Post w/ Cap

PARTS LIST

DESCRIPTION	60088	G60088	PART NUMBER
5" O.D. Post w/ Cap (Aluminum)	1	0	300060
5" O.D. Post w/ Cap (Galvanized)	0	1	G00060

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:

Post is 5" O.D. x 168", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication. A cast aluminum cap of matching color is factory riveted into the top end using two (2) aluminum rivets.

Weight: 24 lb. / 10.8 kg.

GALVANIZED SPECIFICATIONS:

Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap powder-coated to match the post color is factory-riveted to the top end using two (2) aluminum rivets.

□e□□□□98 lb. / 44.5 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60088 and G60088 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60088 SuperMax 168" Aluminum Post w/ Cap
MODEL NO. G60088 SuperMax 168" Galvanized Post w/ Cap

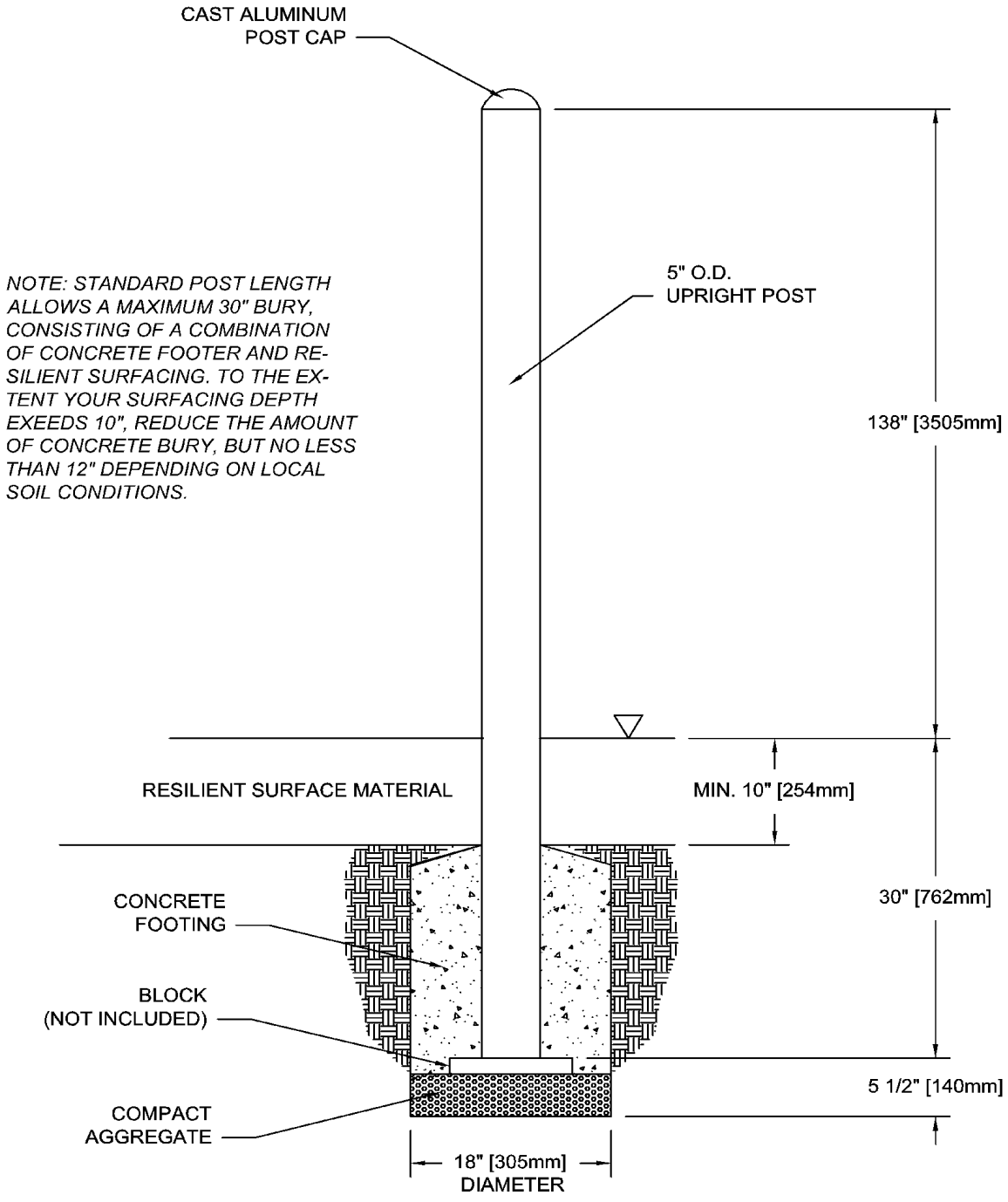
IMPORTANT:

To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60088 SuperMax 168" Aluminum Post w/ Cap
MODEL NO. G60088 SuperMax 168" Galvanized Post w/ Cap



NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.

MODEL NO. 60102 SuperMax 72" Aluminum Post w/ Cap
MODEL NO. G60102 SuperMax 72" Galvanized Post w/ Cap

PARTS LIST

DESCRIPTION	60102	G60102	PART NUMBER
5" O.D. Post w/ Cap (Aluminum)	1	0	300057
5" O.D. Post w/ Cap (Galvanized)	0	1	G00057

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:

Post is 5" O.D. x 72", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication. A cast aluminum cap of matching color is factory riveted into the top end using two (2) aluminum rivets.

Weight: 14 lb. / 6.4 kg.

GALVANIZED SPECIFICATIONS:

Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap powder-coated to match the post color is factory-riveted to the top end using two (2) aluminum rivets.

Weight: 38 lb. / 17.2 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60102 and G60102 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60102 SuperMax 72" Aluminum Post w/ Cap
MODEL NO. G60102 SuperMax 72" Galvanized Post w/ Cap

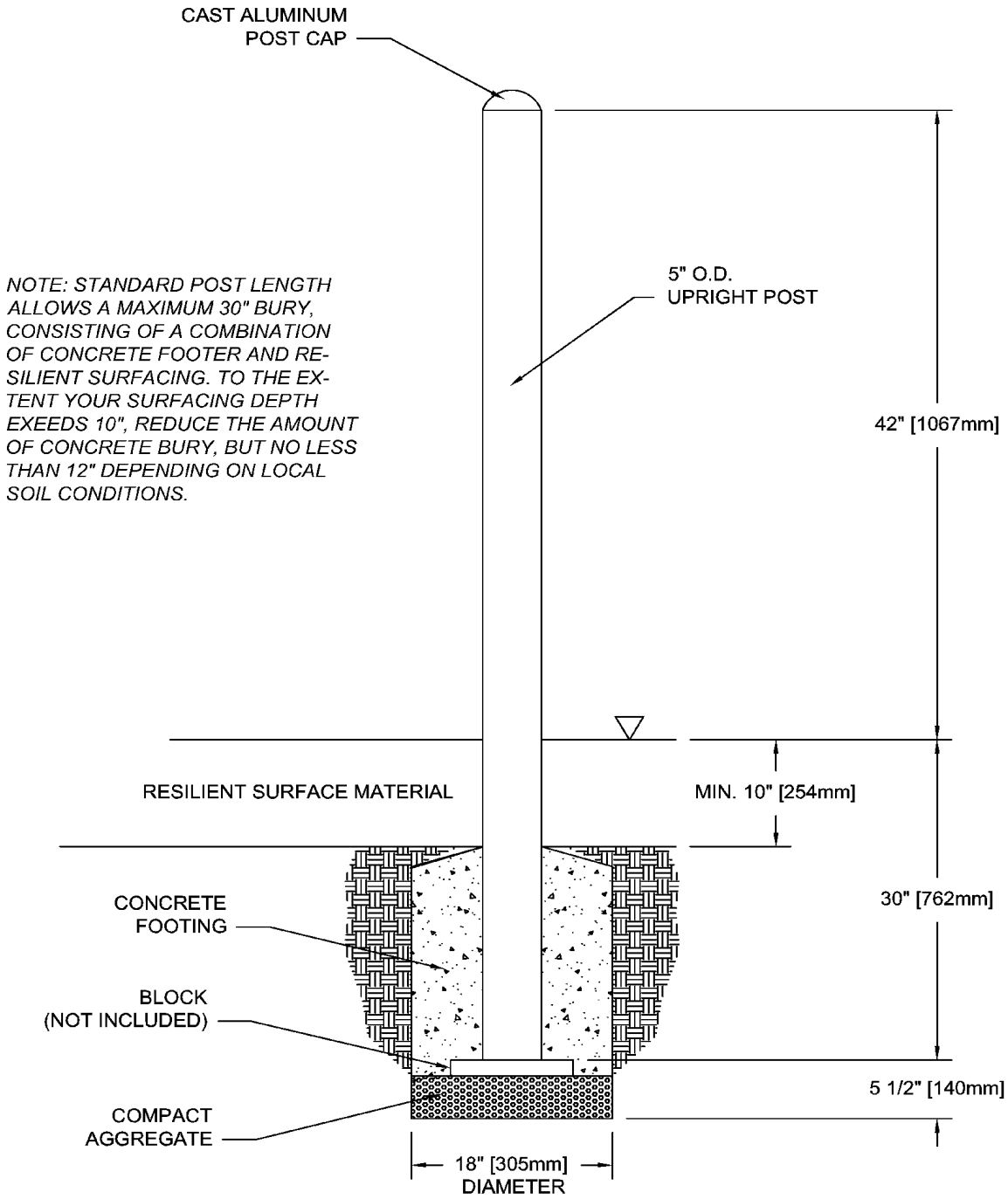
IMPORTANT:

To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 60102 SuperMax 72" Aluminum Post w/ Cap
MODEL NO. G60102 SuperMax 72" Galvanized Post w/ Cap



NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.

MODEL NO. 60178 Aluminum 96" Post w/Cap
MODEL NO. G60178 Galvanized 96" Post w/Cap

PARTS LIST

DESCRIPTION	*60178*	*G0178*	*PART NUMBER*
Post w/ cap (Aluminum)	1	0	300521
Post w/ cap (Galvanized)	0	1	G00521

Unless Otherwise Specified, All Units of Measure are Each
** Included in Hardware*

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 144", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication. A cast aluminum cap of matching color is factory riveted into the top end using two (2) aluminum rivets.

Weight: 19 lb. / 8.6 kg

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap powder-coated to match the post color is factory-riveted to the top end using two (2) aluminum rivets.

Weight: 51 lb. / 23.1 kg

INSTALLATION INSTRUCTIONS:

1. The models 60178 and G60178 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.
2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the *Safety Guidelines* to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram). Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.
3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.
4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.
5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

IMPORTANT:

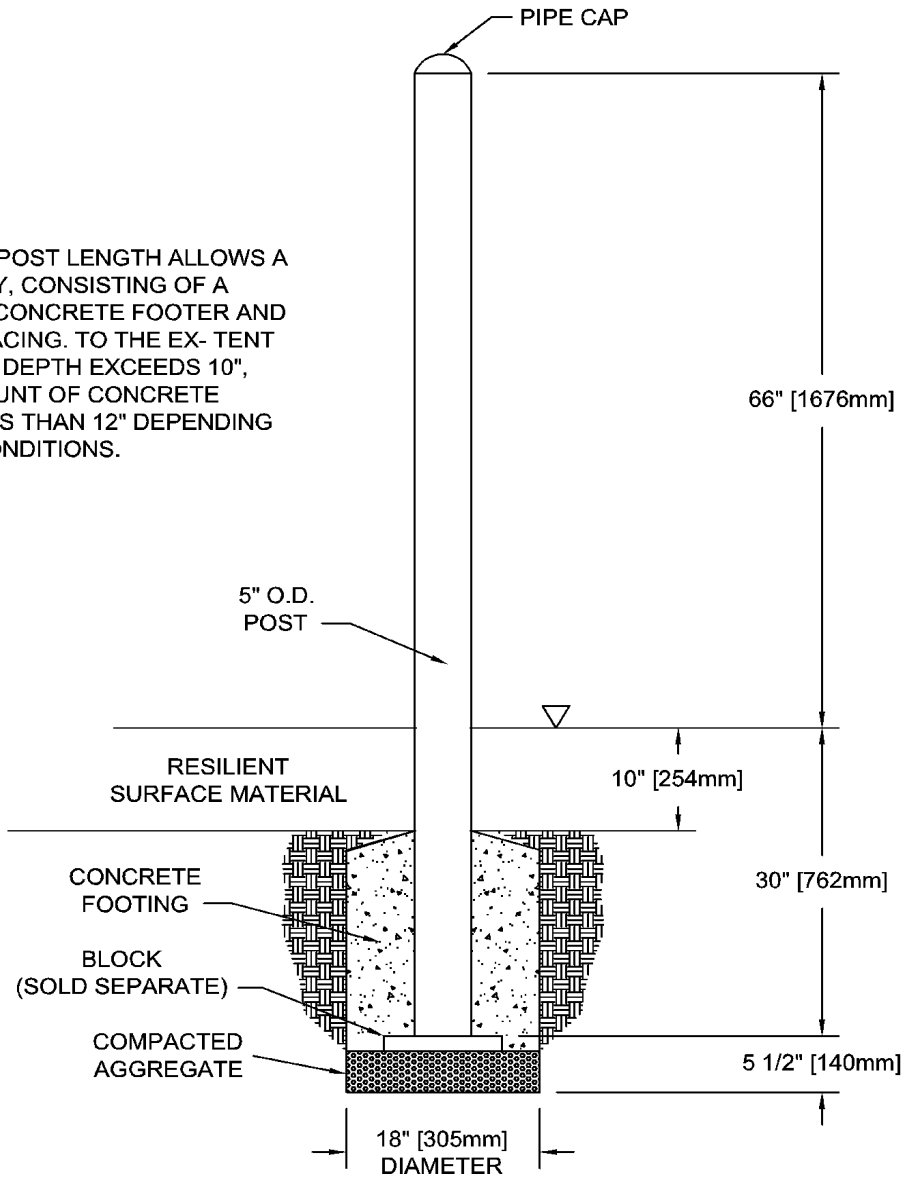
To cushion accidental falls, Park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines* provided within the assembly Instructions packet.

MODEL NO. 60178 Aluminum 96" Post w/Cap
MODEL NO. G60178 Galvanized 96" Post w/Cap

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint peeling and touch-up if necessary with paint. Check for welded areas and verify integrity. Check for cracks, gouges or breakage on plastic, check for integrity of the plastic, keep plastic clean of any extraneous substances, verify that any deformation does not create entrapment as specified on ASTM F1487-98 section 6. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RE- SILIENT SURFACING. TO THE EX- TENT YOUR SURFACING DEPTH EXCEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.



SuperMax Play Systems

MODEL NO. 60645 DECK CURB

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	DECK CURB	1	308766
	HARDWARE COMPLETE	1	178177
	3/8" T-NUT	4	804556
	3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
	3/8" LOCK WASHER	4	817334
	3/8" x 3/4" P.B.H.C.S. w/PATCH	4	812052
	1/2" FLAT WASHER	4	817412

Unless Otherwise Specified, All Units of Measure are Each
** Included in Hardware*

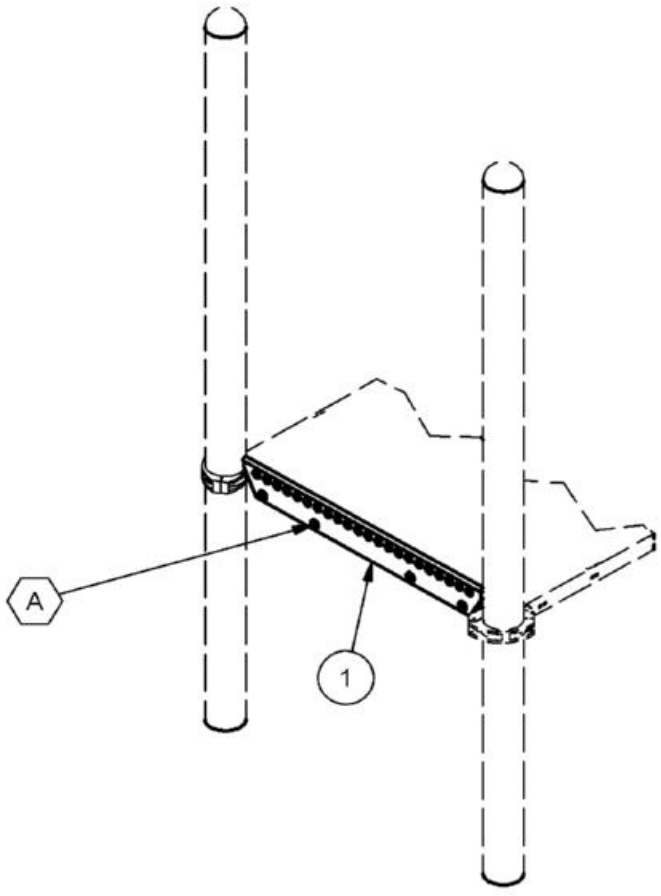
Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-threaded hardware.

INSTALLATION INSTRUCTIONS:

1. Select the appropriate Deck opening to receive the Deck Curb. Refer to your overhead drawing for location.

2. Attach Deck Curb to side of deck using hardware shown in Detail A.



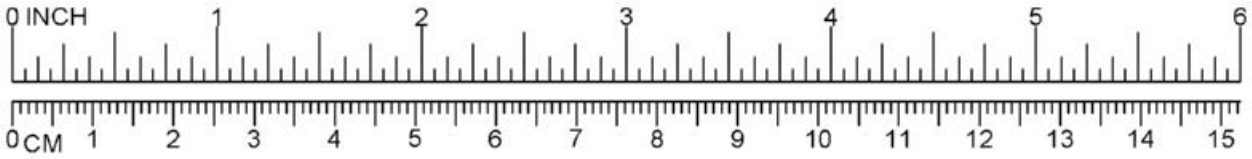
DETAILS -for-
60645

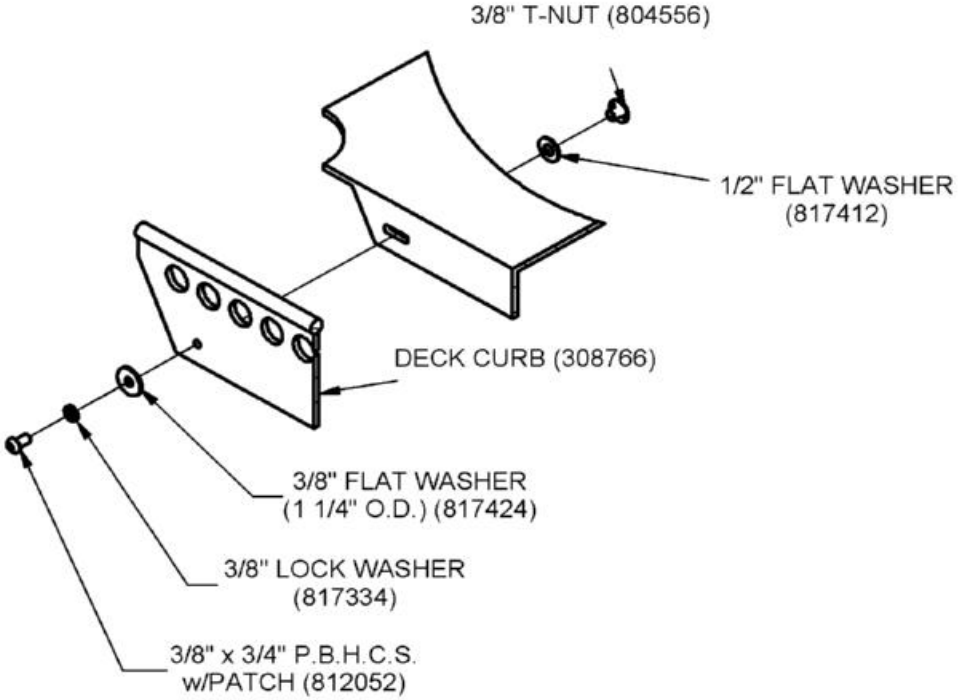
IMPORTANT

TO REDUCE THE RISK OF CLOTHING ENTANGLEMENT IN COMPLIANCE WITH ASTM F1487, ANY BOLT END PROTRUDING MORE THAN TWO FULL THREADS BEYOND THE FACE OF THE NUT SHALL BE CUT-OFF FLUSH, FILED SMOOTH AND TREATED TO PREVENT CORROSION.

NOTE: LOCTITE (SUPPLIED BY OTHERS) SHOULD BE USED ON ALL THREADED HARDWARE.

NOTE: AFTER ASSEMBLY IS COMPLETE, PEEN TEE-NUTS AND FLATWASHERS TO MATCH RADIUS OF PIPE.





DETAIL "A"

MODEL NO. 60944 Aluminum 180" Post w/o Cap
MODEL NO. G60944 Galvanized 180" Post w/o Cap

PARTS LIST

DESCRIPTION	60944	G60944	PART NUMBER
5" O.D. Post w/o Cap (Aluminum)	1	0	305797
5" O.D. Post w/o Cap (Galvanized)	0	1	G05797

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 180", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication.

Weight: 33.75 lb. / 15.30 kg.

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish.

Weight: 93.81 lb. / 42.55 kg.

INSTALLATION INSTRUCTIONS:

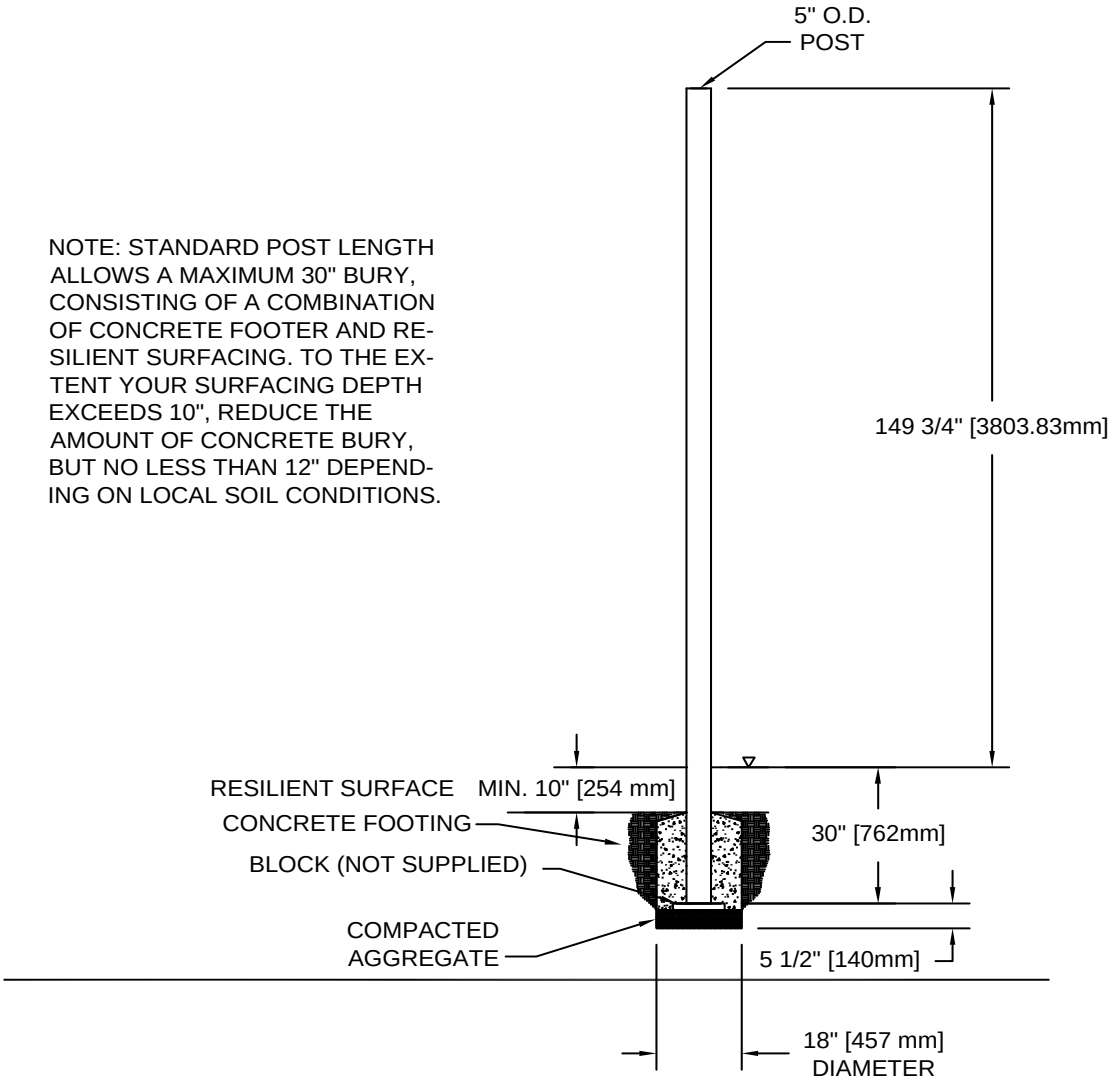
1. The models 60944 and G60944 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.
2. Measure from the lower end of each Upright Post and mark us ing a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.
3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.
4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.
5. Once the entire play structure is assembled, and all po sts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60944 Aluminum 180" Post w/o Cap
MODEL NO. G60944 Galvanized 180" Post w/o Cap

IMPORTANT:
To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for hdes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXCEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.



MODEL NO. 60946 Aluminum 180" Post with Cap
MODEL NO. G60946 Galvanized 180" Post with Cap

PARTS LIST

DESCRIPTION	60946	G60946	PART NUMBER
5" O.D. Post with Cap (Aluminum)	1	0	305801
5" O.D. Post with Cap (Galvanized)	0	1	G05801

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:

Post is 5" O.D. x 180", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 34.75 lb. / 15.76 kg.

GALVANIZED SPECIFICATIONS:

Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 94.81 lb. / 43 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60946 and G60946 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60946 Aluminum 180" Post with Cap
MODEL NO. G60946 Galvanized 180" Post with Cap

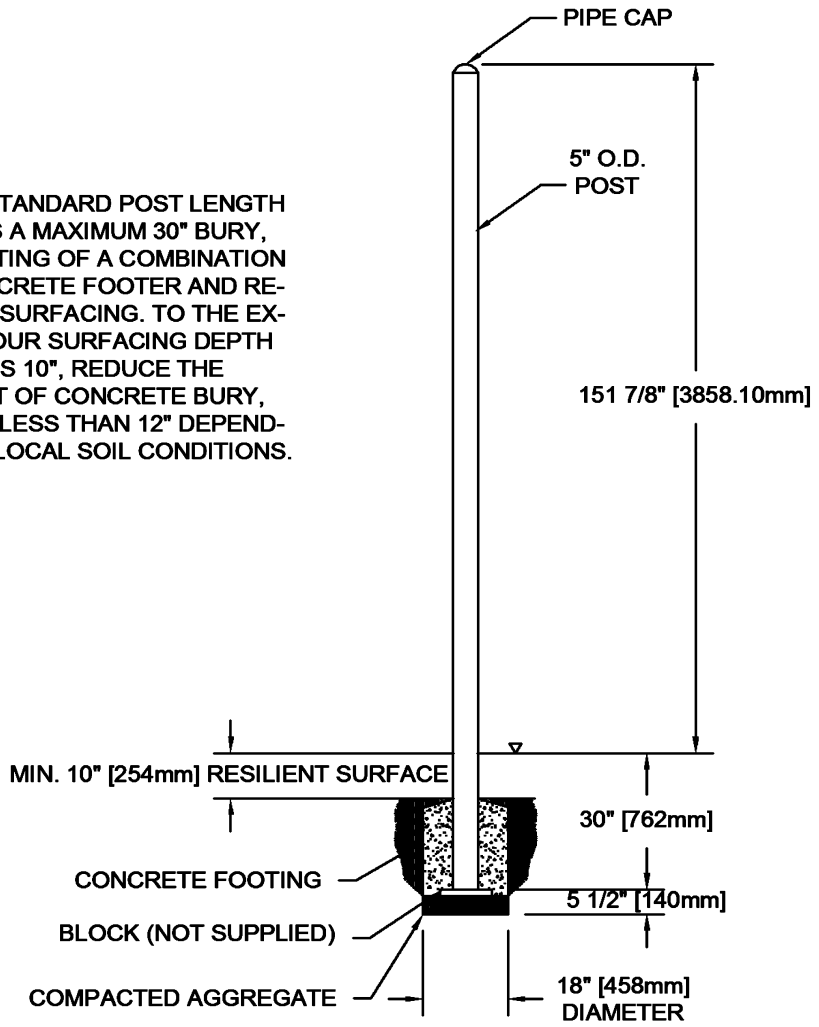
IMPORTANT:

To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXCEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.



MODEL NO. 60947 Aluminum 156" Post with Cap
MODEL NO. G60947 Galvanized 156" Post with Cap

PARTS LIST

DESCRIPTION	60947	G60947	PART NUMBER
5" O.D. Post with Cap (Aluminum)	1	0	305803
5" O.D. Post with Cap (Galvanized)	0	1	G05803

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 156", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyesterpowder-coated after fabrication. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 30.25 lb. / 13.72 kg.

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 82.30 lb. / 36.42 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60947 and G60947 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that itis time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will beinstalling. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

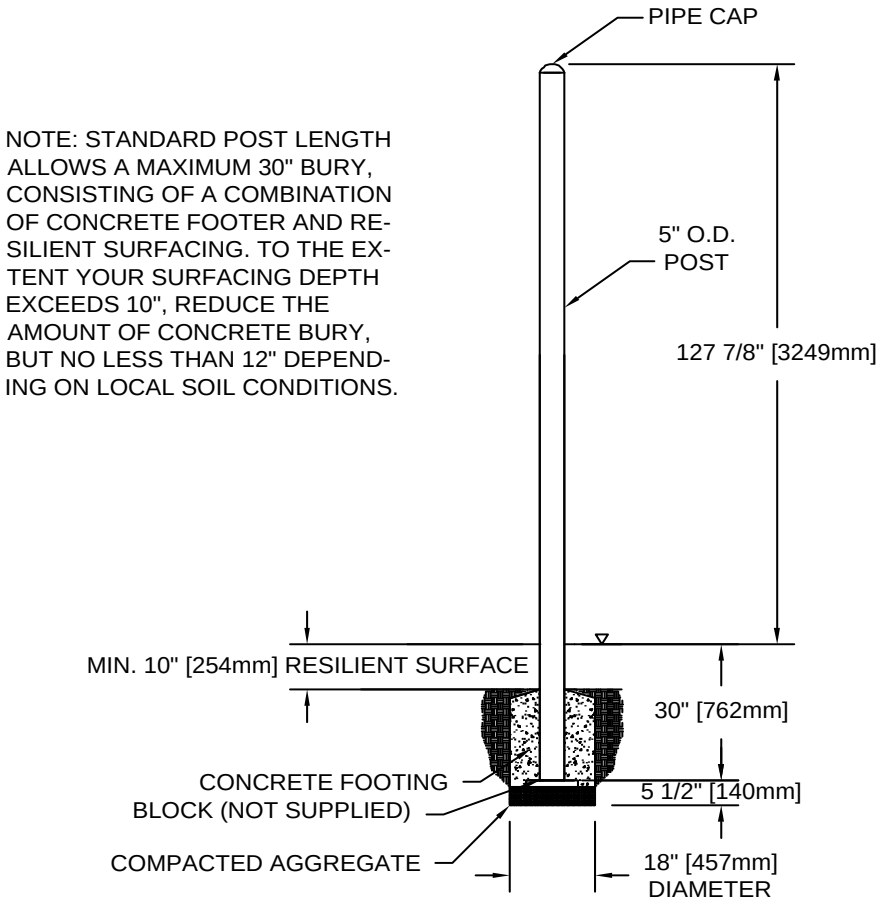
4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only whenall positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60947 Aluminum 156" Post with Cap
MODEL NO. G60947 Galvanized 156" Post with Cap

IMPORTANT:
To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.



MODEL NO. 60948 Aluminum 132" Post with Cap
MODEL NO. G60948 Galvanized 132" Post with Cap

PARTS LIST

DESCRIPTION	60948	G60948	PART NUMBER
5" O.D. Post with Cap (Aluminum)	1	0	305805
5" O.D. Post with Cap (Galvanized)	0	1	G05805

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 132", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyesterpowder-coated after fabrication. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 25.75 lb. / 11.68 kg.

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 69.79 lb. / 31.65 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60948 and G60948 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that itis time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will beinstalling. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

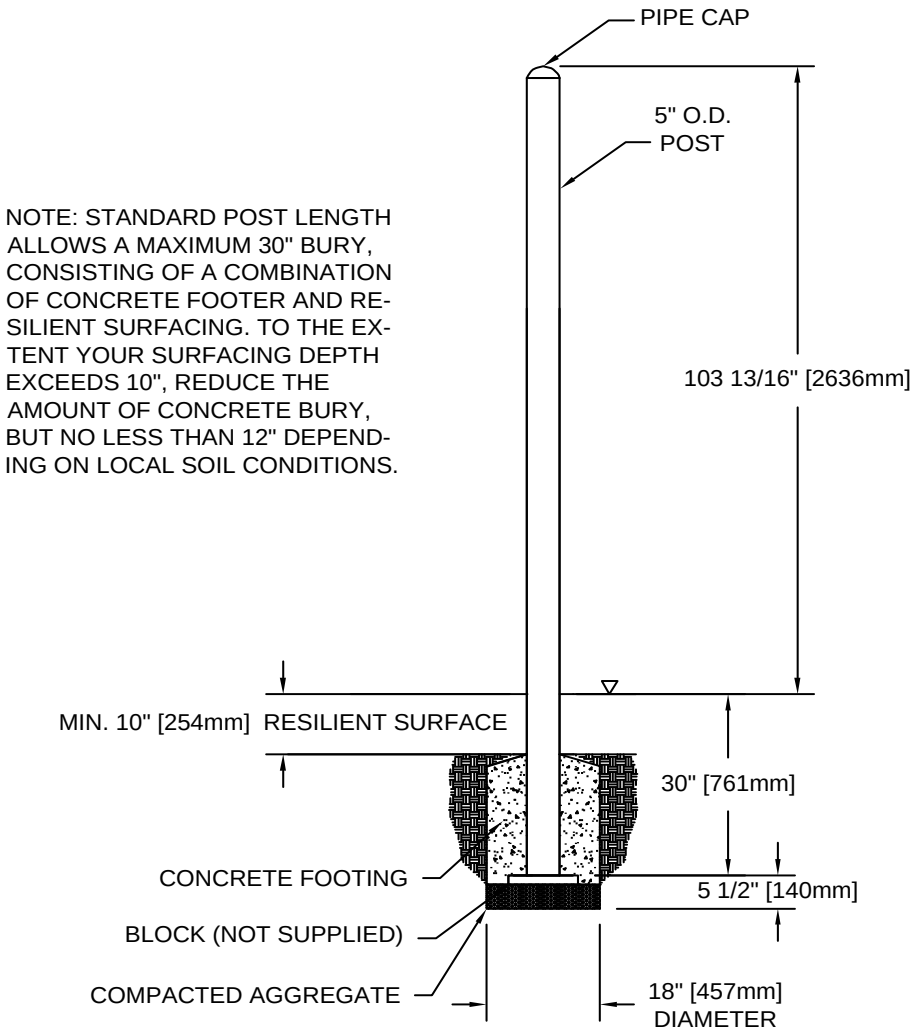
4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only whenall positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60948 Aluminum 132" Post with Cap
MODEL NO. G60948 Galvanized 132" Post with Cap

IMPORTANT:
To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.



MODEL NO. 60949 Aluminum 84" Post with Cap
MODEL NO. G60949 Galvanized 84" Post with Cap

PARTS LIST

DESCRIPTION	60949	G60949	PART NUMBER
5" O.D. Post with Cap (Aluminum)	1	0	305807
5" O.D. Post with Cap (Galvanized)	0	1	G05807

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 84", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyesterpowder-coated after fabrication. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 16.75 lb. / 7.60 kg.

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 44.78 lb. / 20.31 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60949 and G60949 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that itis time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will beinstalling. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

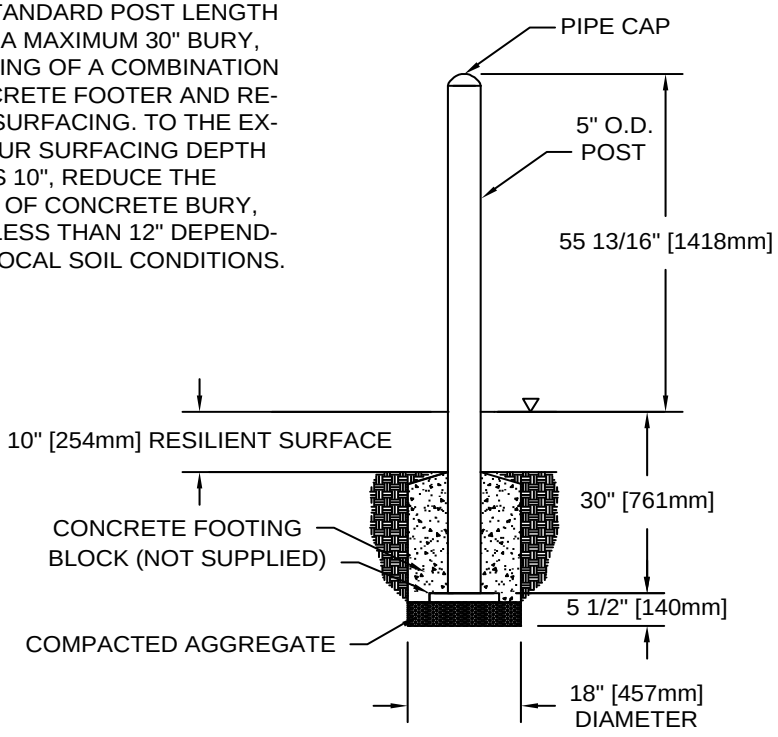
5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only whenall positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60949 Aluminum 84" Post with Cap
MODEL NO. G60949 Galvanized 84" Post with Cap

IMPORTANT:
To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXCEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.



MODEL NO. 60956 Aluminum 108" Post with Cap
MODEL NO. G60956 Galvanized 108" Post with Cap

PARTS LIST

DESCRIPTION	60956	G60956	PART NUMBER
5" O.D. Post w/o Cap (Aluminum)	1	0	305810
5" O.D. Post w/o Cap (Galvanized)	0	1	G05810

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 108", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 21.25 lb. / 9.63 kg.

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish. A cast aluminum cap of matching color is factory rivited into the top end using two (2) aluminum rivets.

Weight: 57.29 lb. / 25.98 kg.

INSTALLATION INSTRUCTIONS:

1. The models 60945 and G60945 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure from the lower end of each Upright Post and mark using a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.

3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.

4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

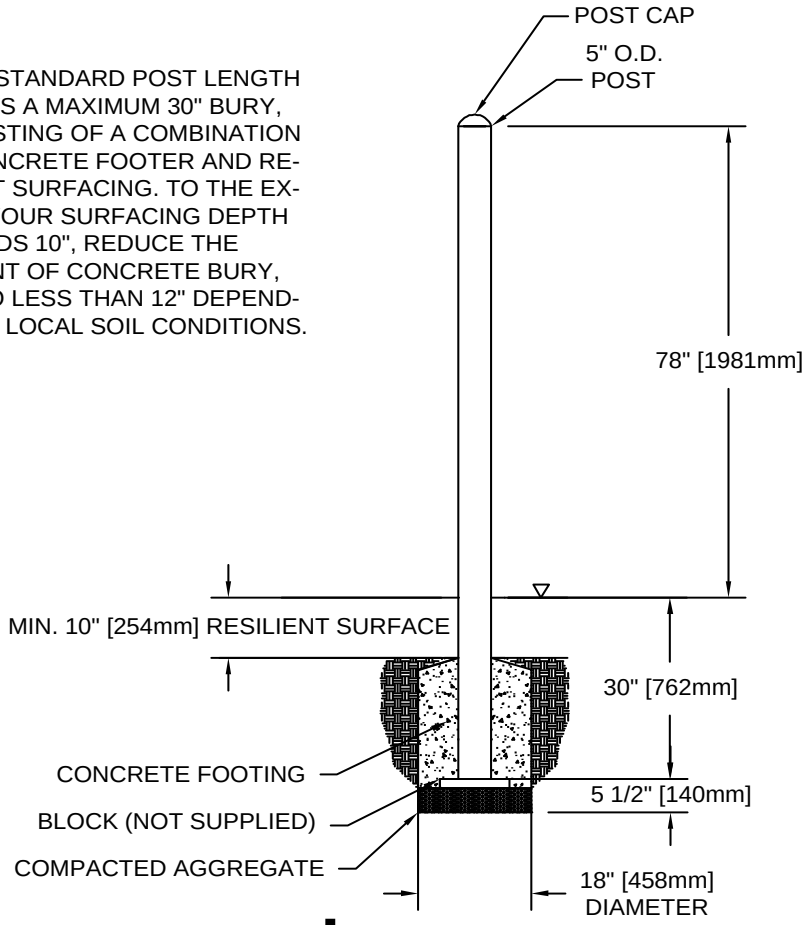
5. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60956 Aluminum 108" Post with Cap
MODEL NO. G60956 Galvanized 108" Post with Cap

IMPORTANT:
To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for holes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXCEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.



SuperMax Play Systems

Model No: _____

Desc: _____

MODEL NO. 61137 Upright Extension w/Cap 48" LG.
MODEL NO. 61141 Upright Extension w/Cap 24" LG.

PARTS LIST

DESCRIPTION	No. REQ'D 61137	No. REQ'D 61141	PART NUMBER
Upright Extension Ass'y	1	0	307500
Upright Extension Ass'y	0	1	307567
5" Dome Cap	1	1	212993
Hardware Complete	1	1	307587
#12 x 3/4" SS Self Drilling Screw	4	4	810072*
O-Ring	1	1	169362*
3/16" x 13/32" Drive Rivet	2	2	805366*

Unless Otherwise Specified, All Units of Measure are Each
****Included in Hardware***

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on all threaded hardware.

INSTALLATION INSTRUCTIONS:

1. Locate the upright where the upright extension is to be attached.

2. Stretch O-Ring and roll onto pipe above swage. Do not overstretch O-Ring.

3. Screw pipe to upright. See Detail 1038.

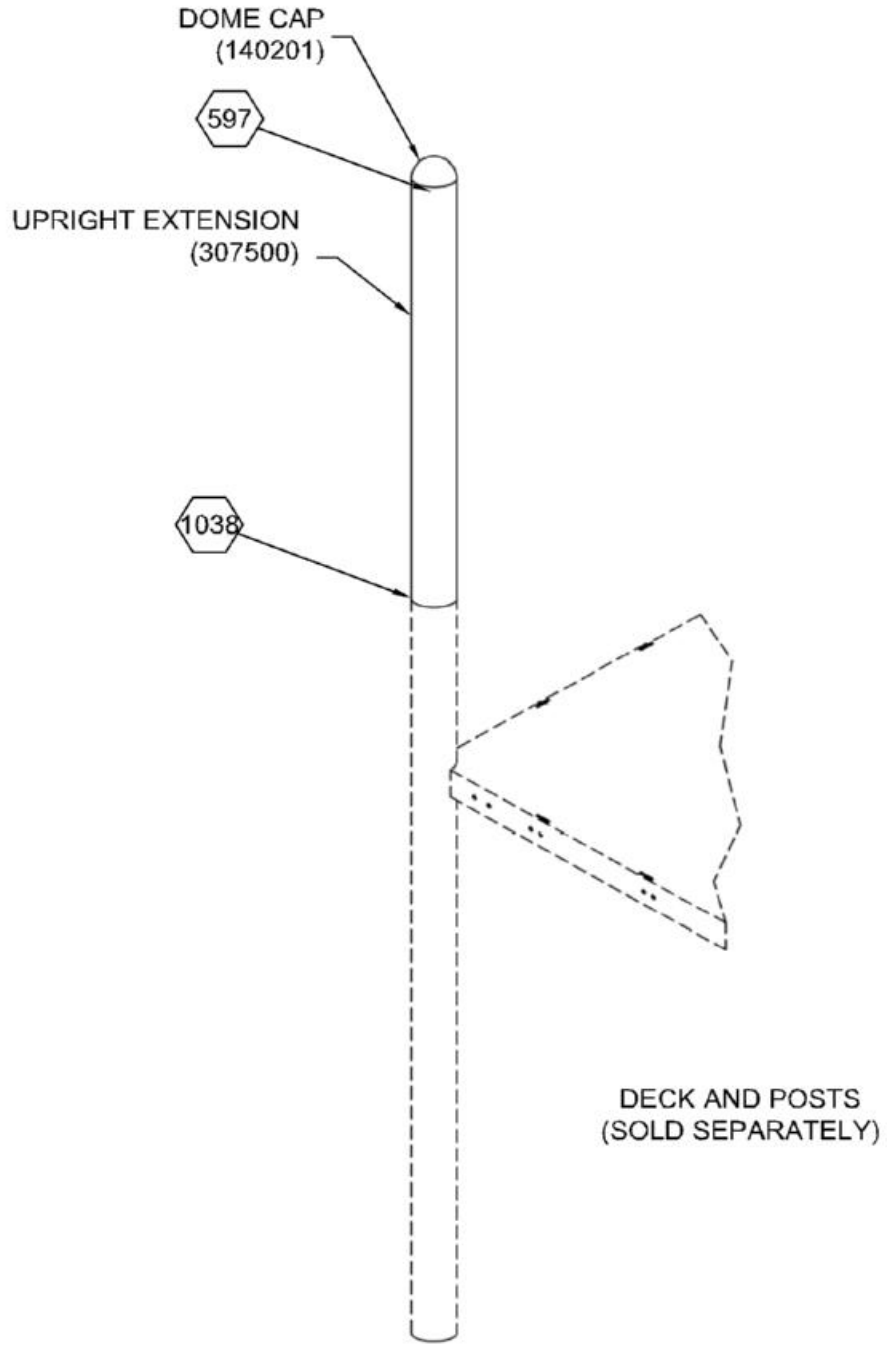
4. Roll O-Ring back down the pipe until it fits into groove against top of upright.

5. Attach Cap to Extension using 3/16" x 13/32" Drive Rivets. See Detail 597.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check fo cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 61137 Upright Extension w/Cap 48" LG.
MODEL NO. 61141 Upright Extension w/Cap 24" LG.

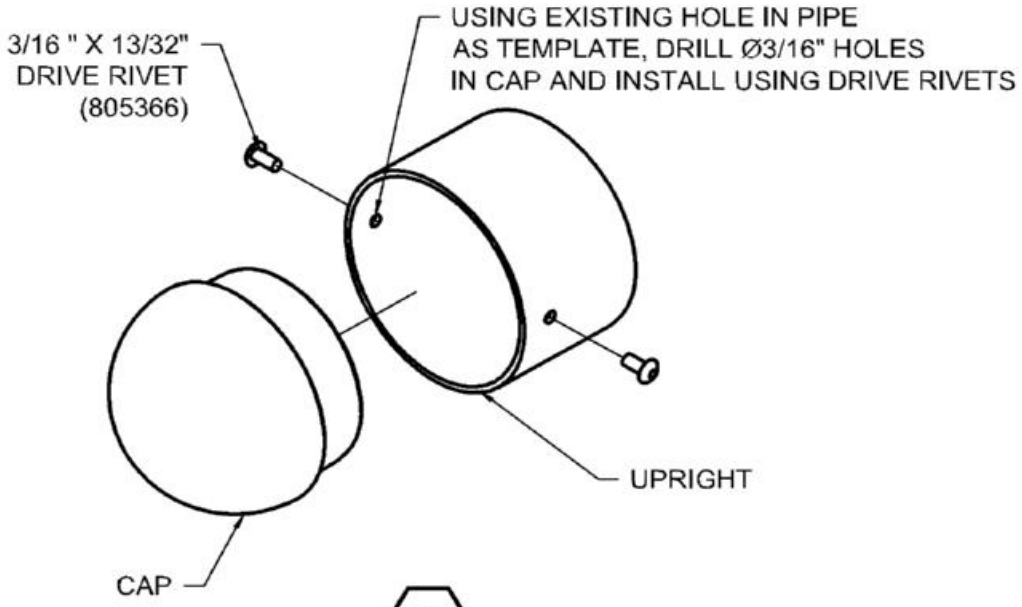


FINISHED ASSEMBLY

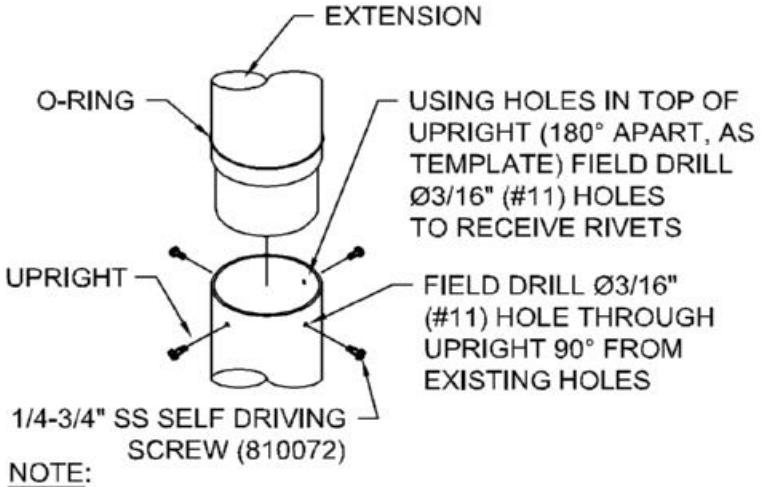
(61137 SHOWN)

⬡ = INSTALLATION DETAIL

MODEL NO. 61137 Upright Extension w/Cap 48" LG.
MODEL NO. 61141 Upright Extension w/Cap 24" LG.



597



NOTE:

1.) STRETCH O-RING & ROLL ONTO PIPE ABOVE SWAGE. *DO NOT OVERSTRETCH O-RING!*

2.) SCREW PIPE TO UPRIGHT.

3.) ROLL O-RING BACK DOWN PIPE UNTIL IT FITS INTO GROOVE AGAINST TOP OF UPRIGHT.

1038

This equipment is designed for children 5-12 years old

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.

Parts List				
DESCRIPTION	65169	65175	65176	PART NUMBER
SWING HANGER (2-3/8" O.D.)	0	0	2	1461
SWING HANGER (3-1/2" O.D.)	2	0	0	1462
SWING HANGER (5" O.D.)	0	2	0	1487
SWING CASTING	4	4	4	214350
TWEEN SEAT	1	1	1	316322
TWEEN SWING FRAME	1	1	1	316374
HARDWARE COMPLETE	1	1	1	314695
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	4	4	812053
3/8" x 2" P.B.H.C.S. w/PATCH	4	4	4	812055
3/8" LOCK WASHER	8	8	8	817334
3/8" FLAT WASHER	4	4	4	817410
3/8" BARREL NUT	4	4	4	804804
D SHACKLE w/NO-SNAG PIN	2	2	2	161853
APPROPRIATE AGE LABEL	1	1	1	305551
WARNING LABEL	1	1	1	309483
BUDDY SWING CHAIN	2	2	2	314683
SLEEVE BUSHING	2	2	2	818382

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Attach Swing Hanger to Top Rail. See Detail 218, 739, or 969. **NOTE:** *DO NOT tighten Swing Hangers until properly spaced according to Elevation View with specific swing arrangement.*

2. Attach Tween Seat to Tween Swing Frame. See Detail 1225.

3. Attach Swing Casting, Shackles, and Buddy Swing Chain to Tween Seat Frame Section. See Detail 982. **NOTE:** *Add Loctite to pin before attaching to casting.*

4. Attach Chain to Swing Hanger. See Detail 218, 739, and 969.

5. Plumb and level entire assembly and tighten all fasteners.

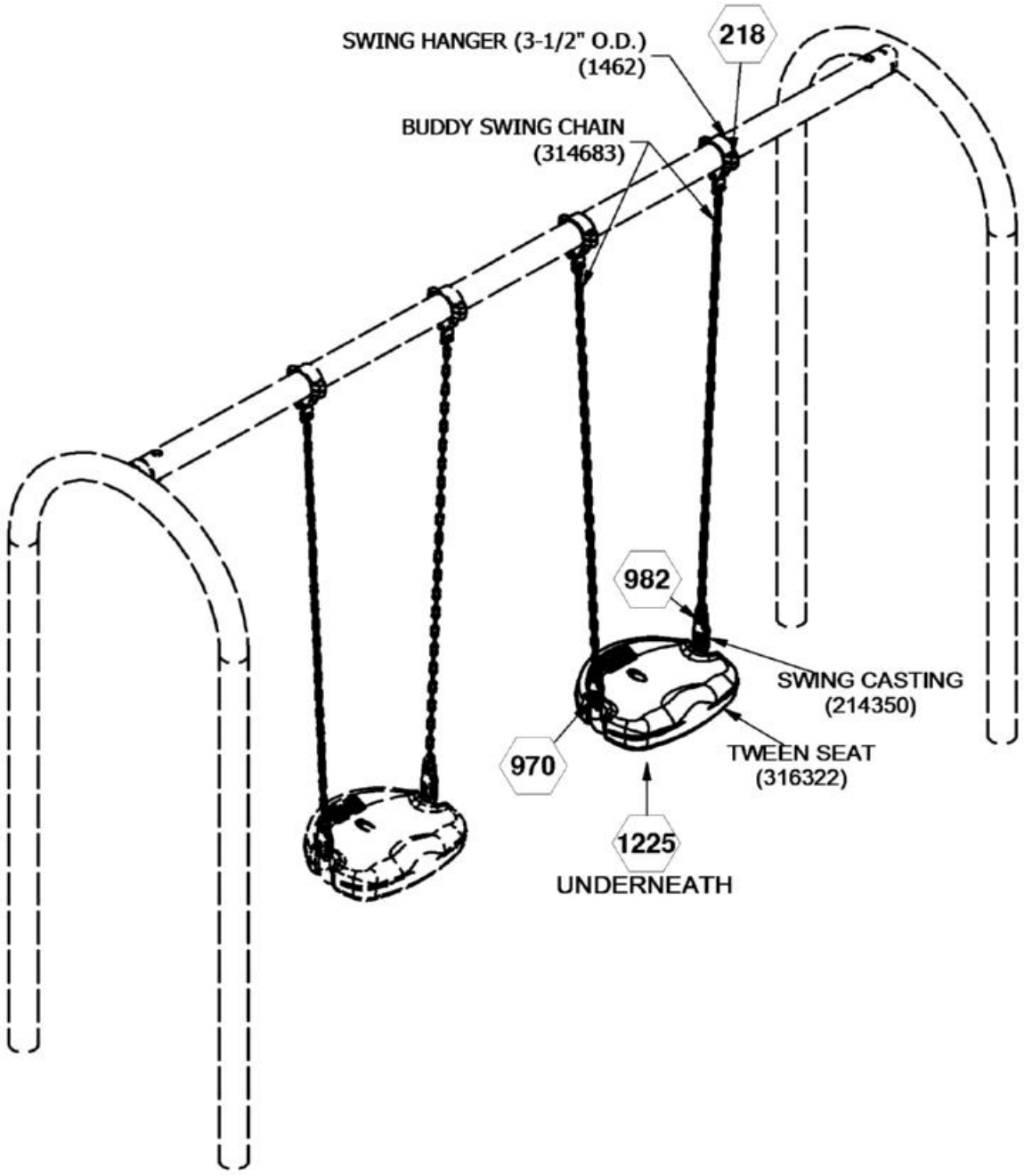
6. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post water drainage. Allow to cure at least 48 hours before use.

7. When structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



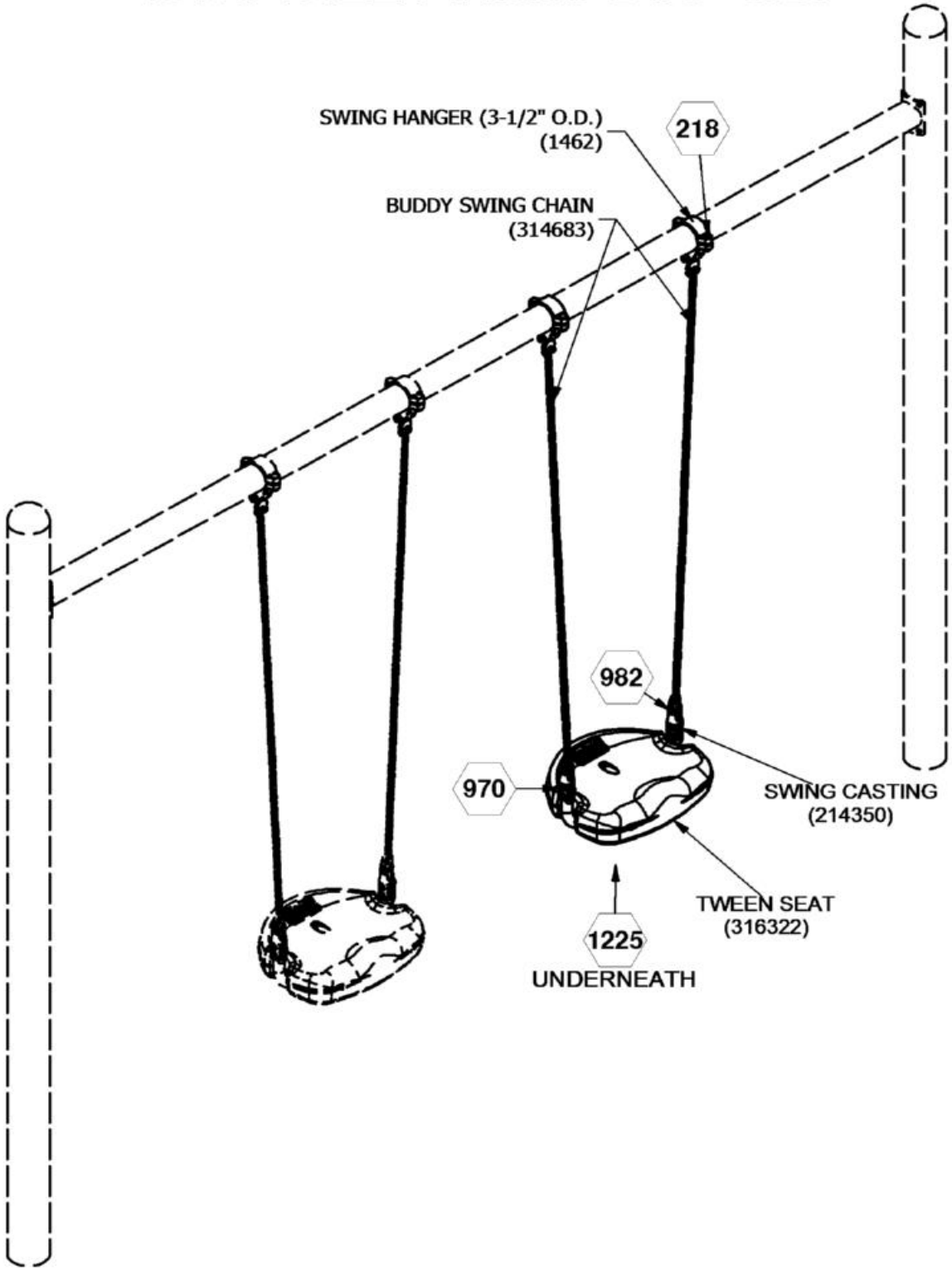
⬡ = INSTALLATION DETAIL

Issued/Revised: 6/20/2023

FINISHED ASSEMBLY
65169 ARCH
SWING SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



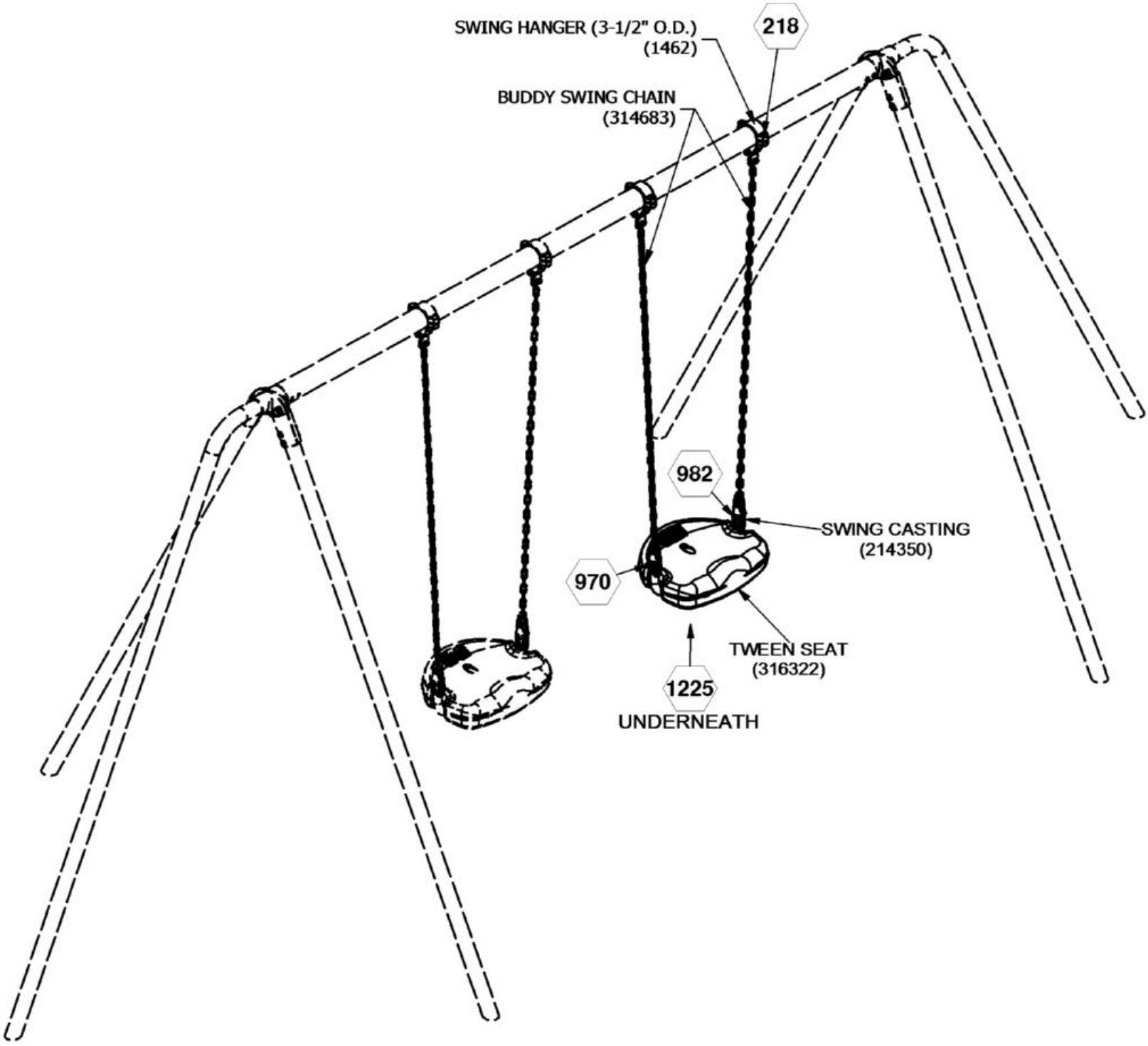
⬡ = INSTALLATION DETAIL

Issued/Revised: 6/20/2023

FINISHED ASSEMBLY
65169 SINGLE
POST SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



⬡ = INSTALLATION DETAIL

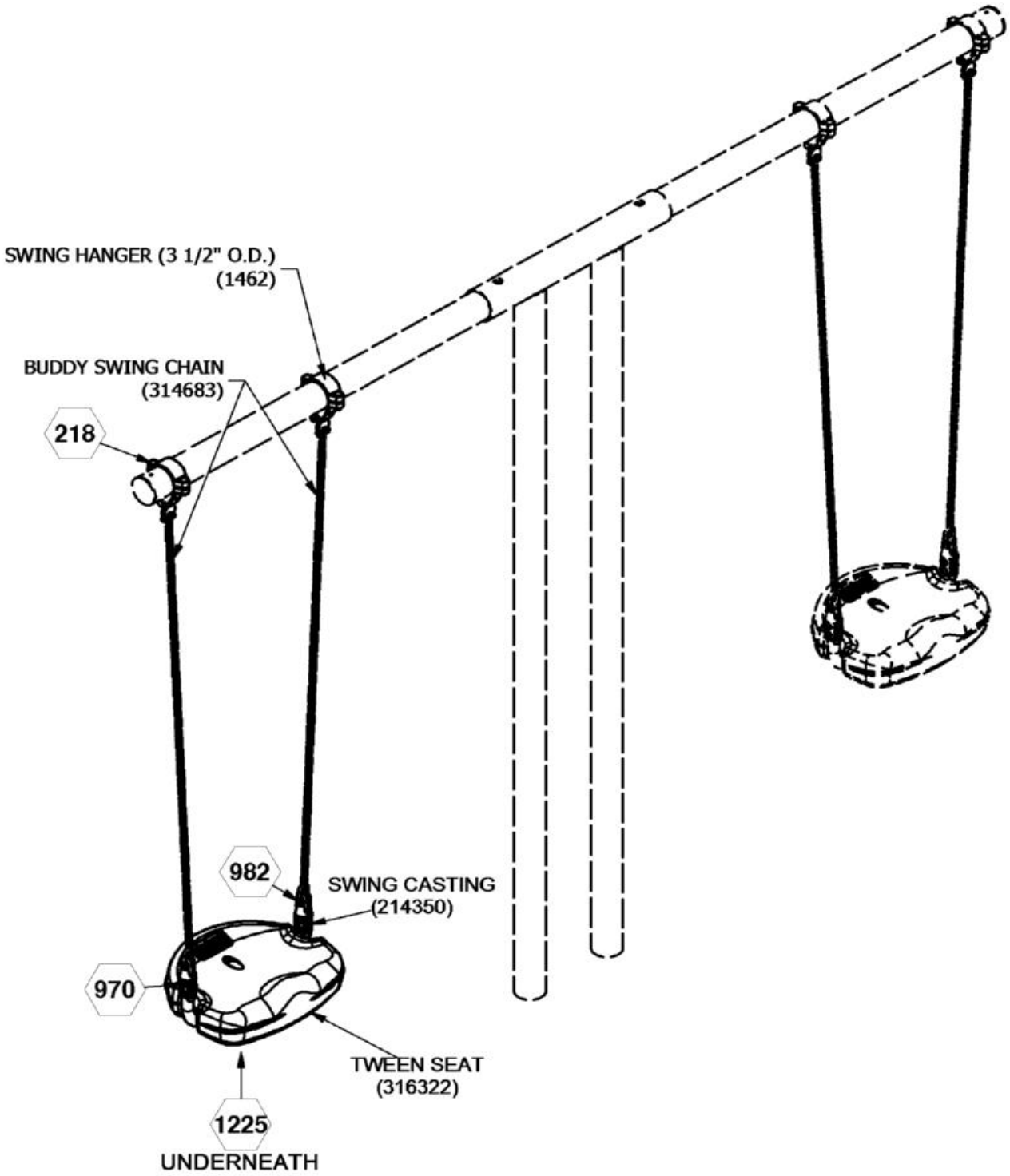
Issued/Revised: 6/20/2023

FINISHED ASSEMBLY

65169 TRIPOD
SWING SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



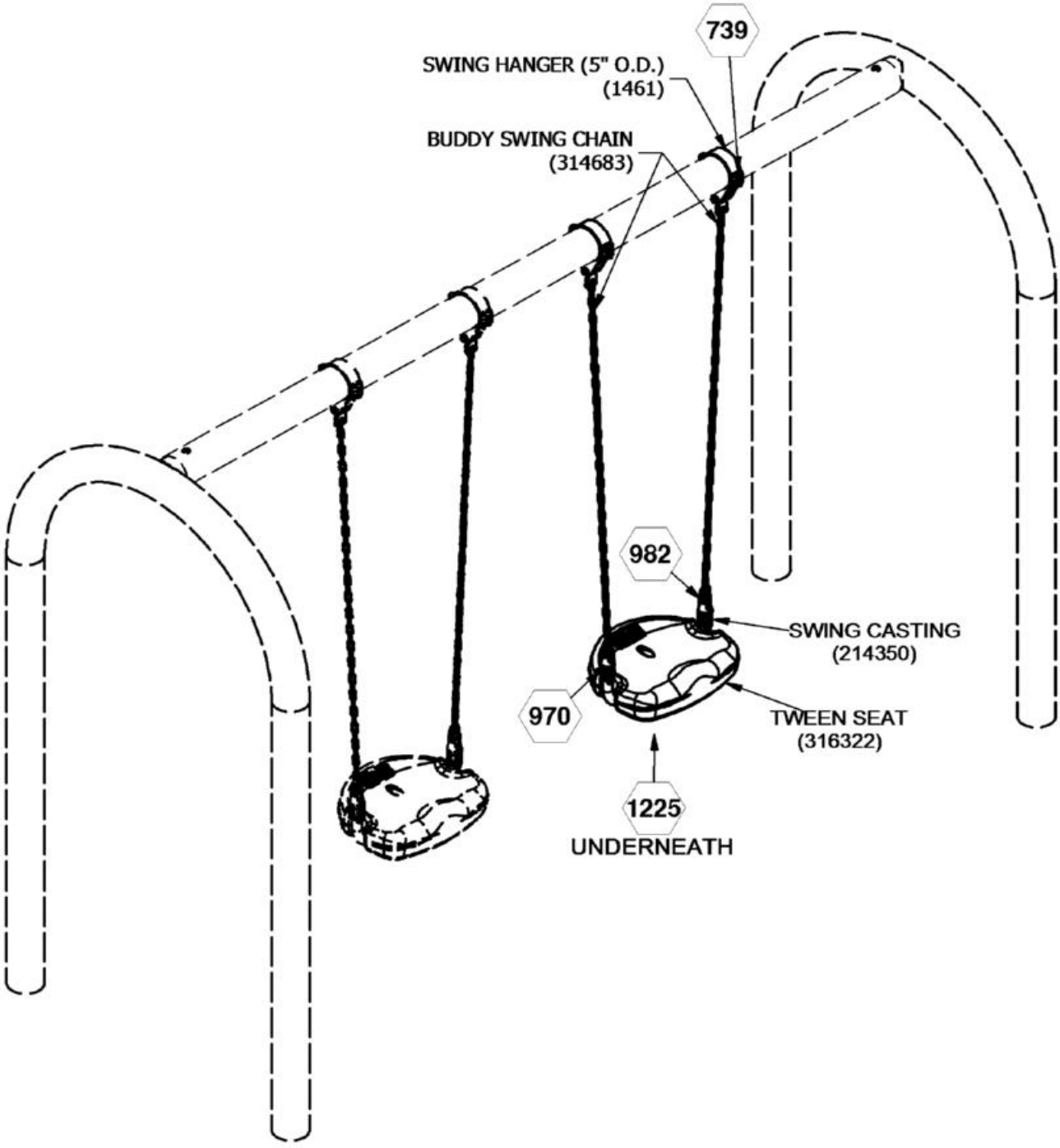
⬡ = INSTALLATION DETAIL

Issued/Revised: 6/20/2023

FINISHED ASSEMBLY
65169
T-SWING SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



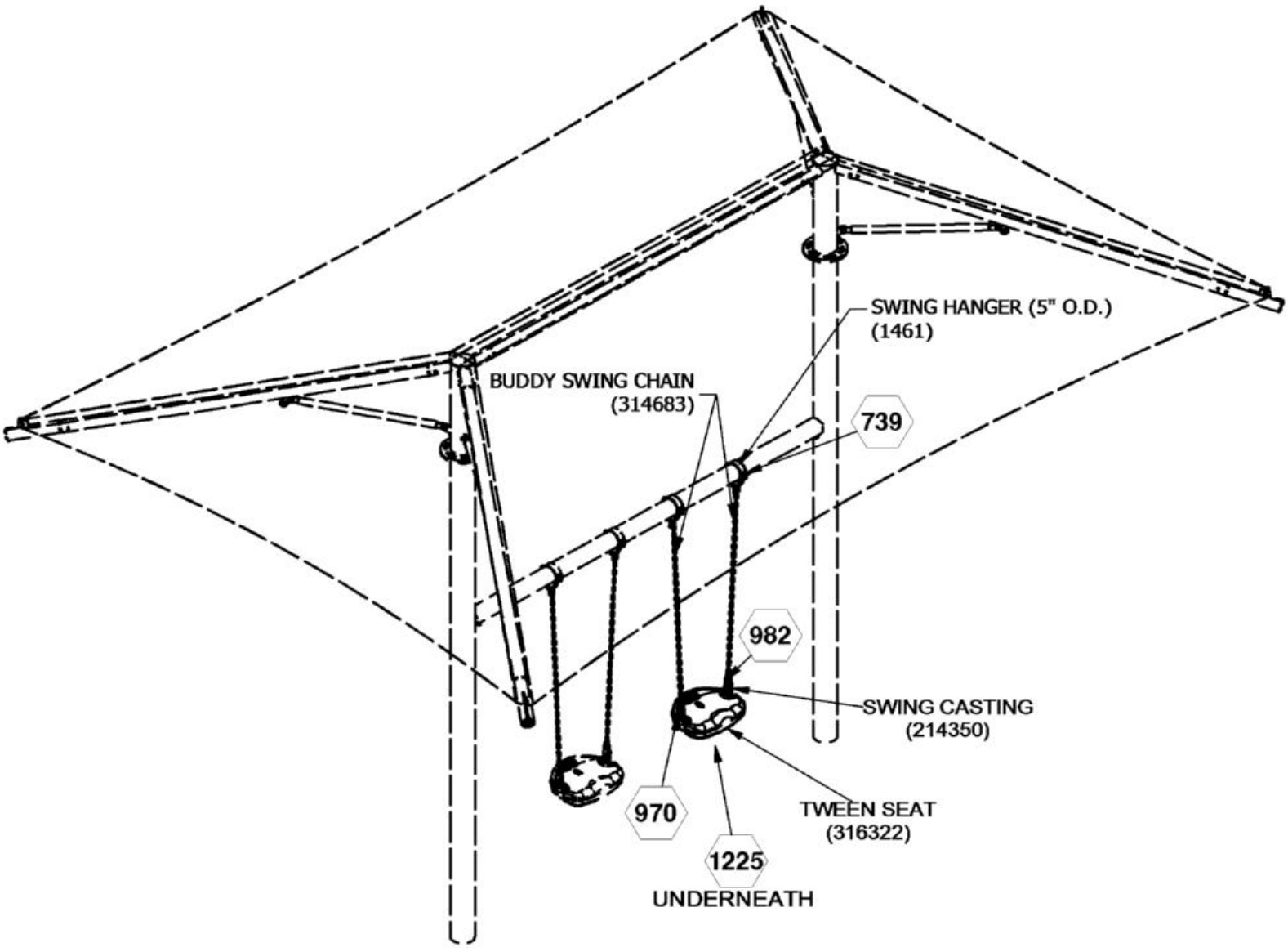
⬡ = INSTALLATION DETAIL

Issued/Revised: 6/20/2023

FINISHED ASSEMBLY
65175 ARCH
SWING SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



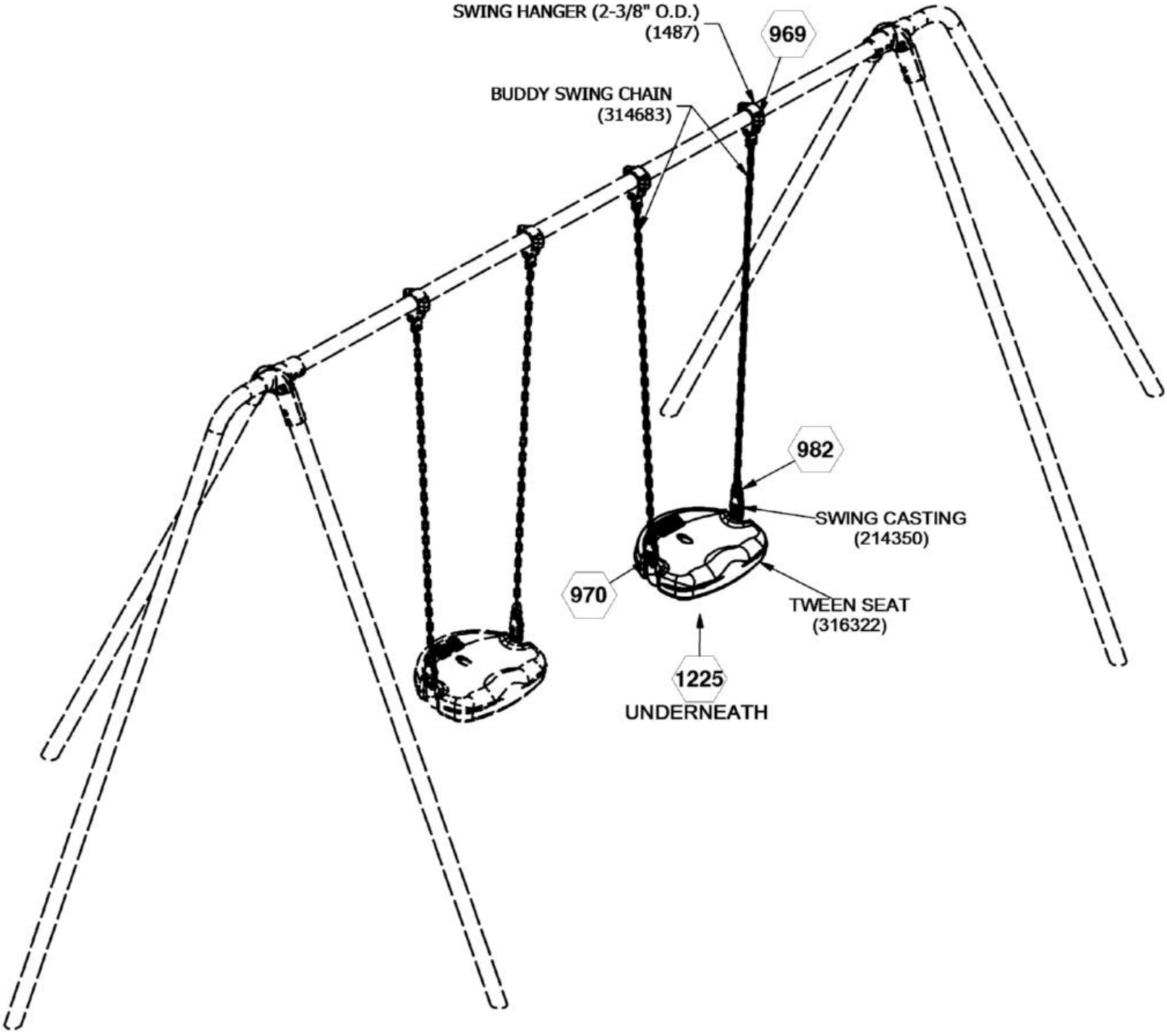
⬡ = INSTALLATION DETAIL

Issued/Revised: 6/20/2023

FINISHED ASSEMBLY
65175 SHADE
SWING SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



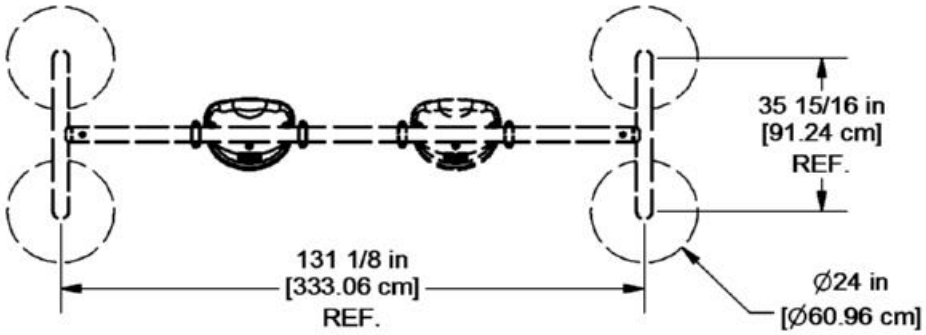
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
65176 SHOWN

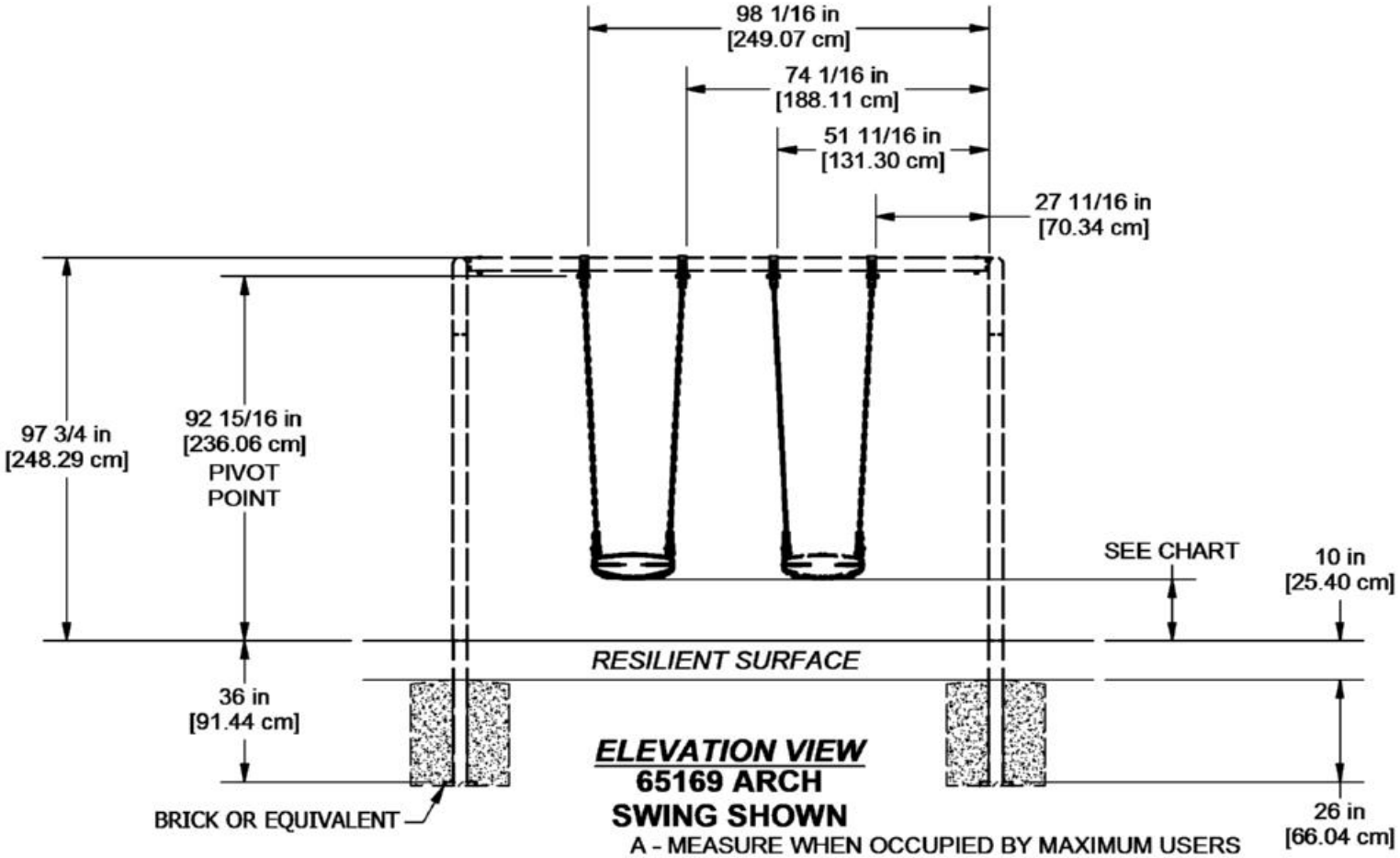
COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 6/20/2023

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



PLAN VIEW



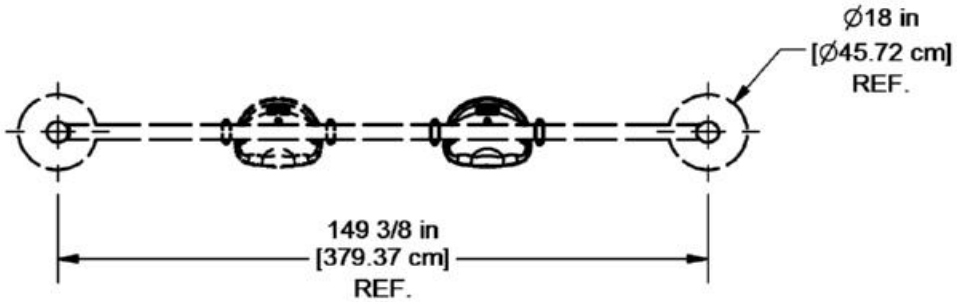
ELEVATION VIEW
65169 ARCH
SWING SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

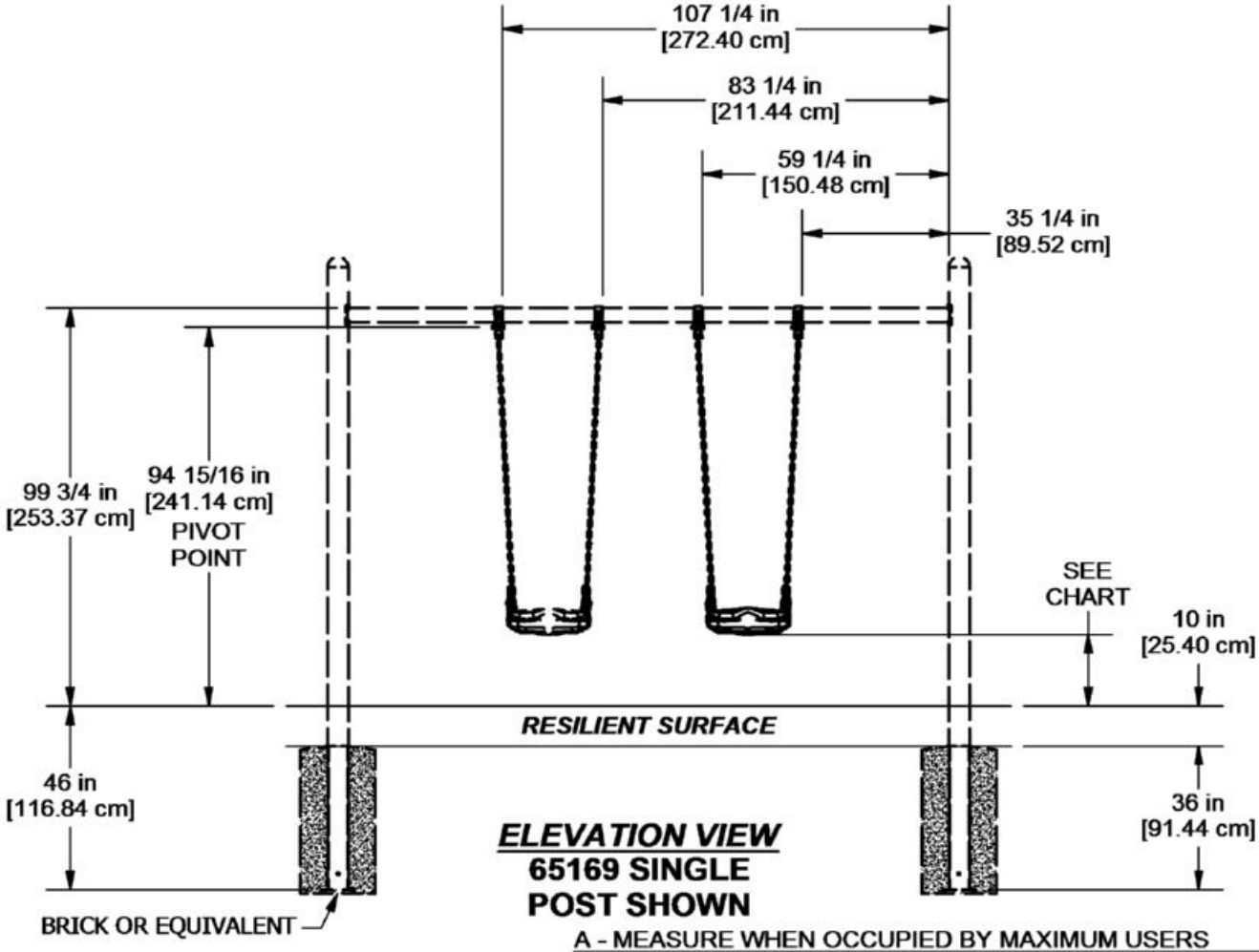
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



PLAN VIEW



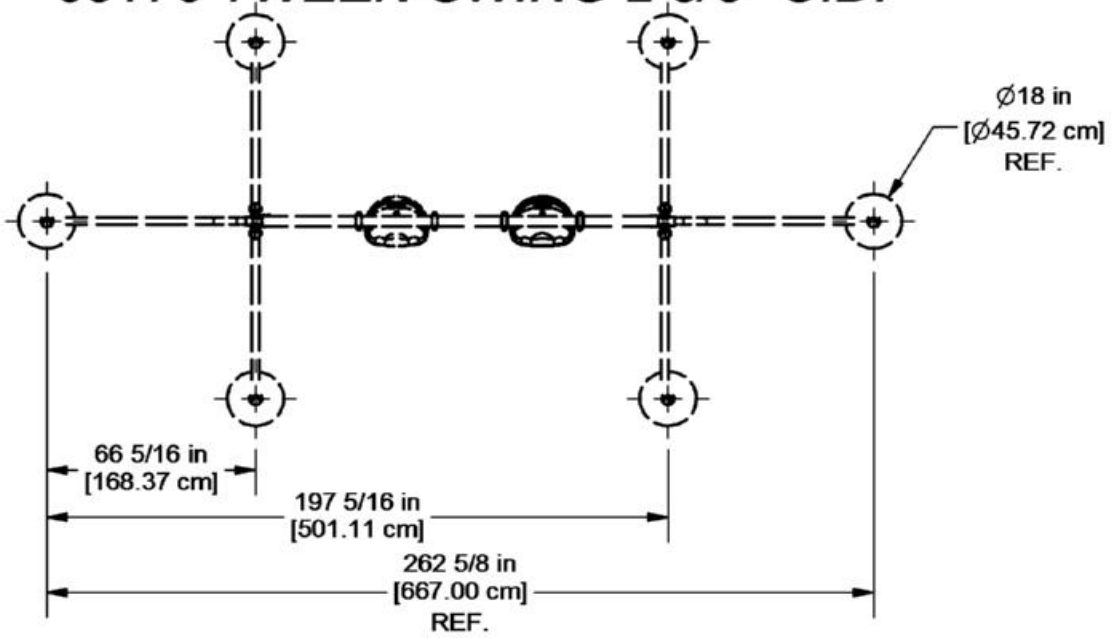
ELEVATION VIEW
65169 SINGLE POST SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

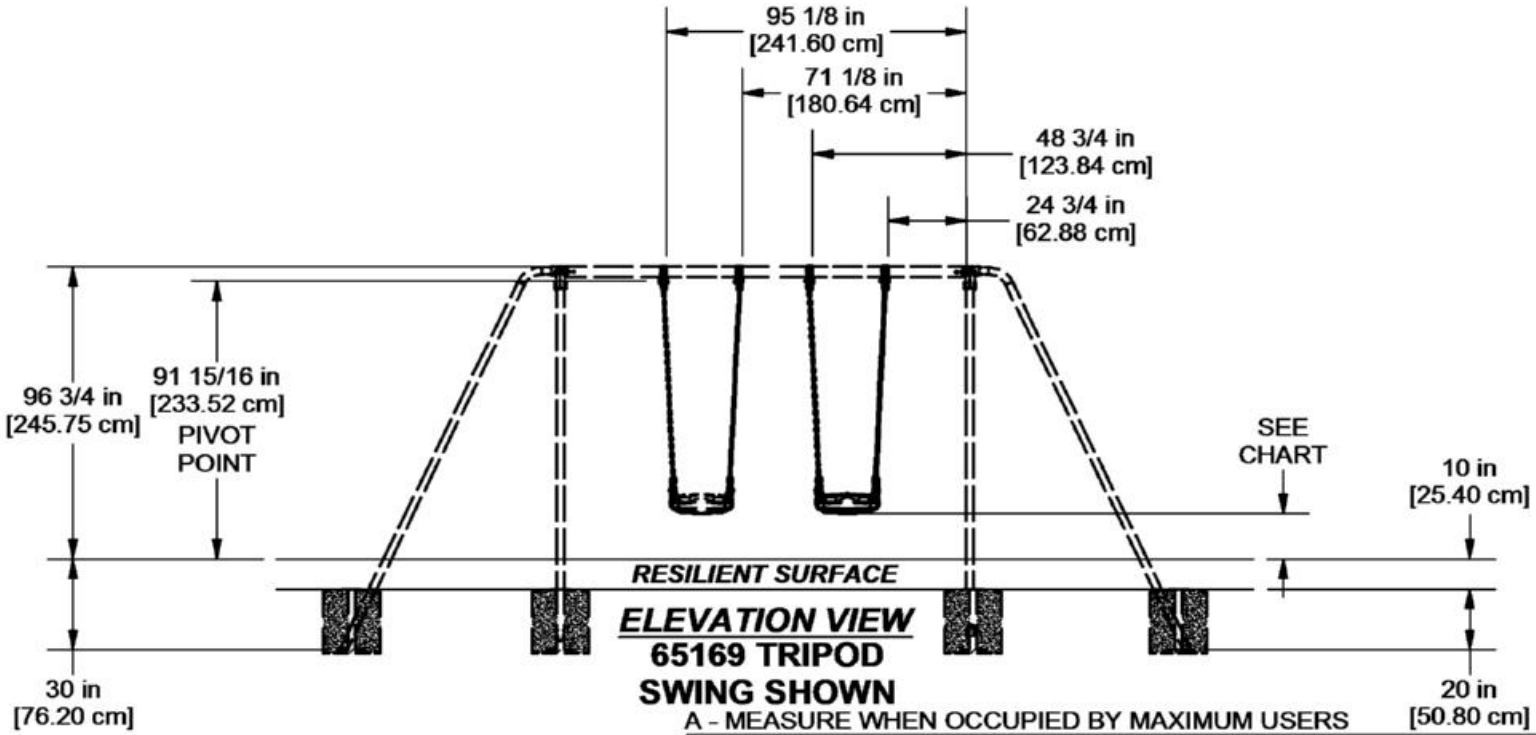
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
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ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



PLAN VIEW



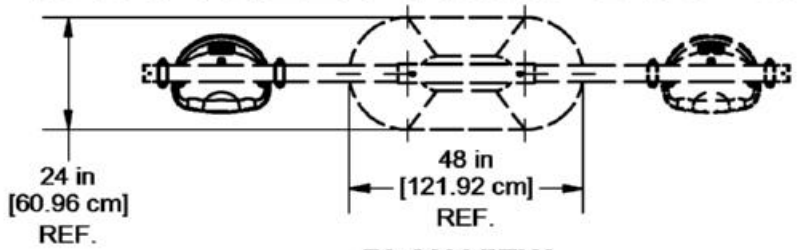
ELEVATION VIEW
65169 TRIPOD
SWING SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

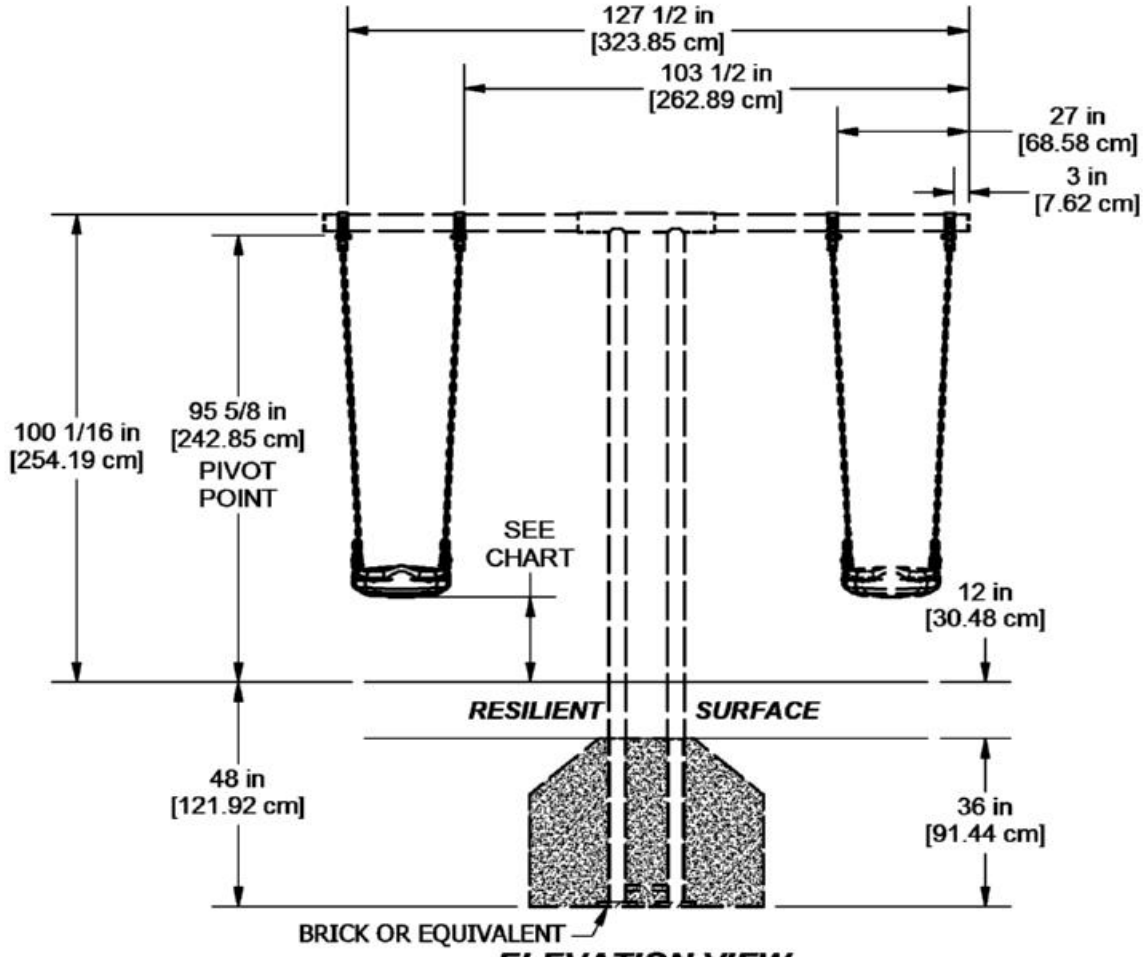
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DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



PLAN VIEW



ELEVATION VIEW

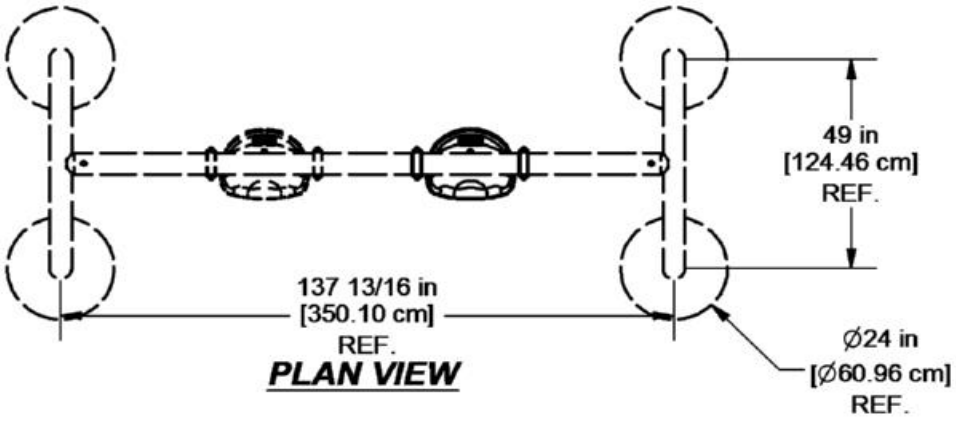
65169 T-SWING SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

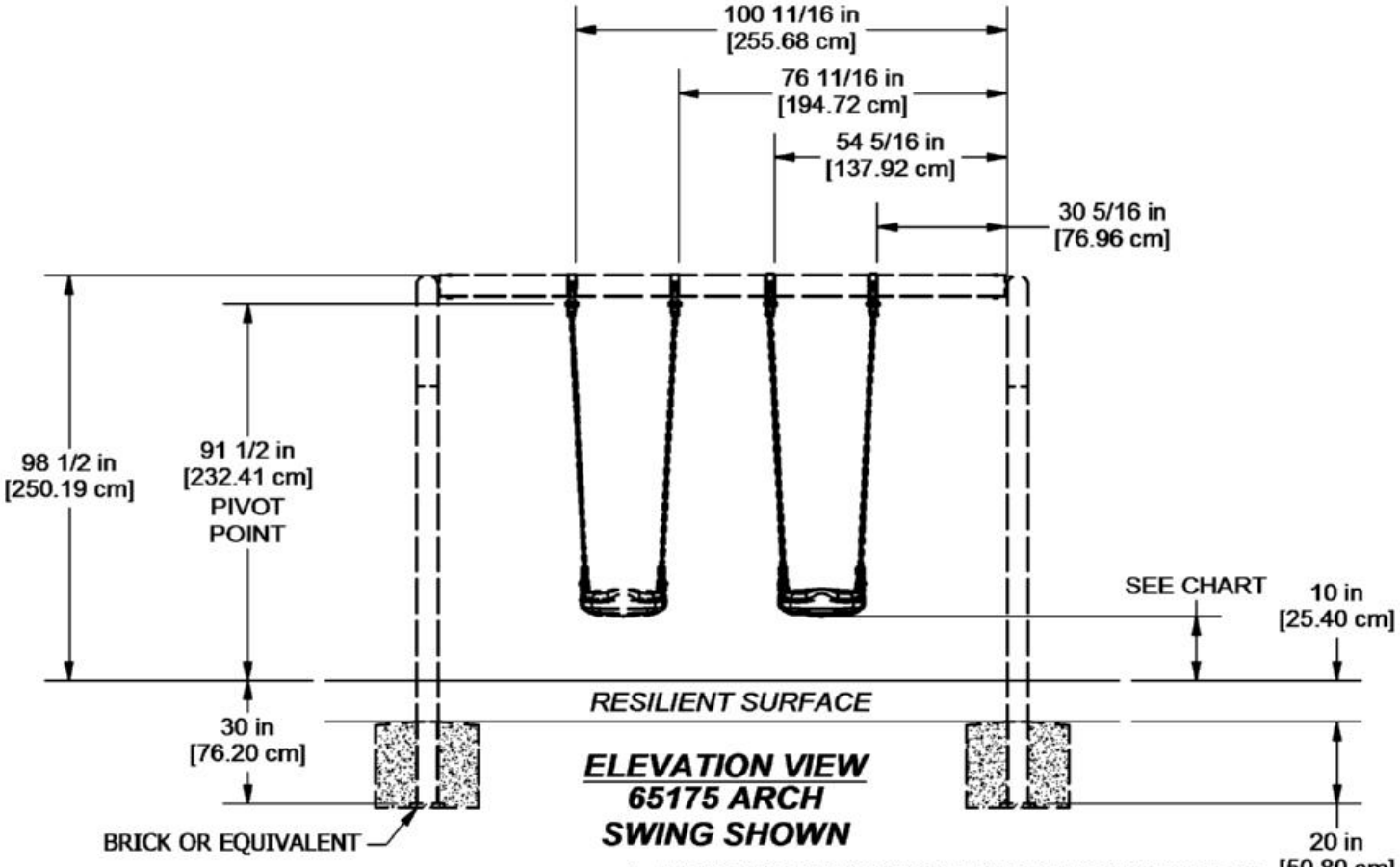
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
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DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



PLAN VIEW



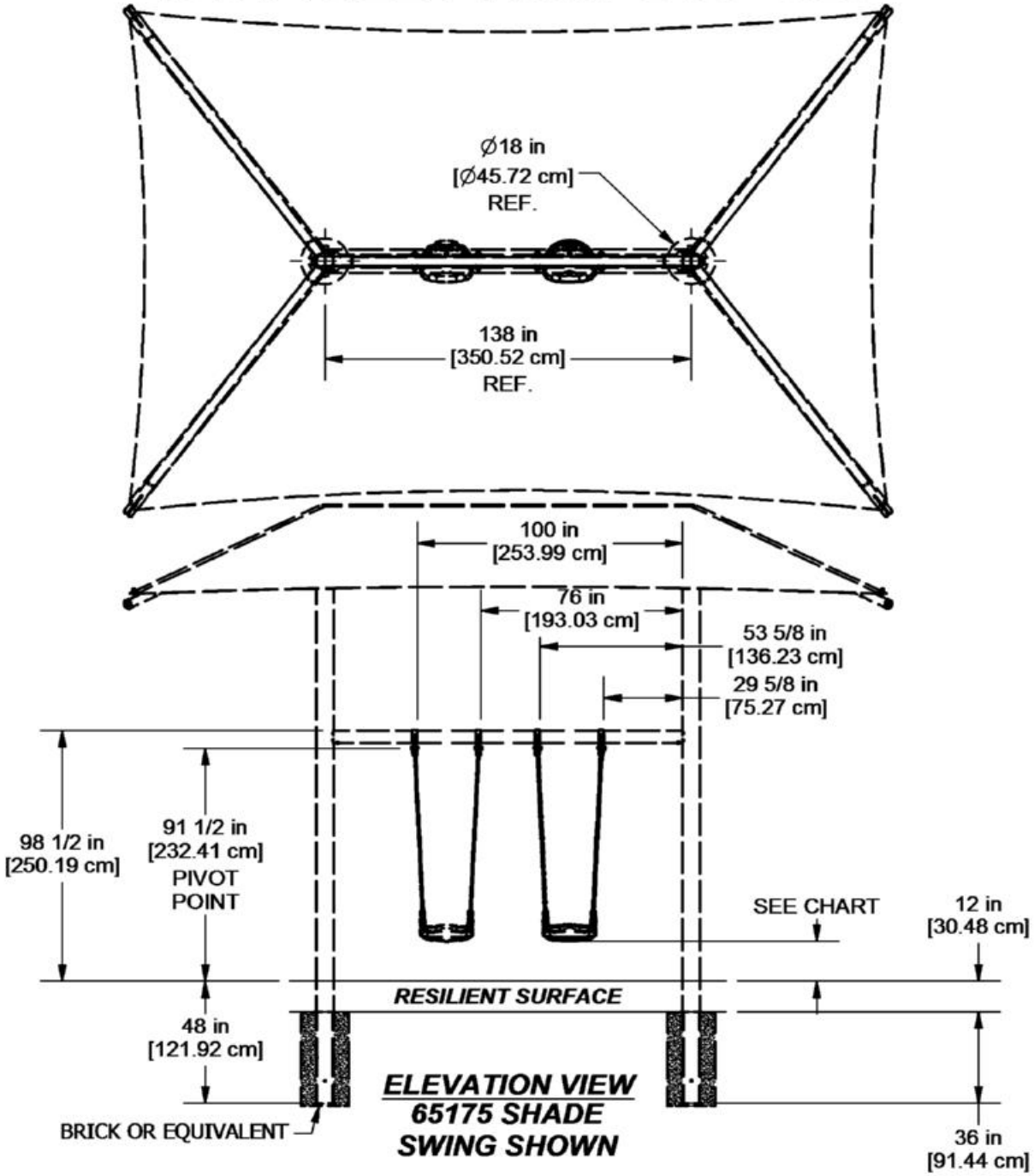
ELEVATION VIEW
65175 ARCH
SWING SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
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* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



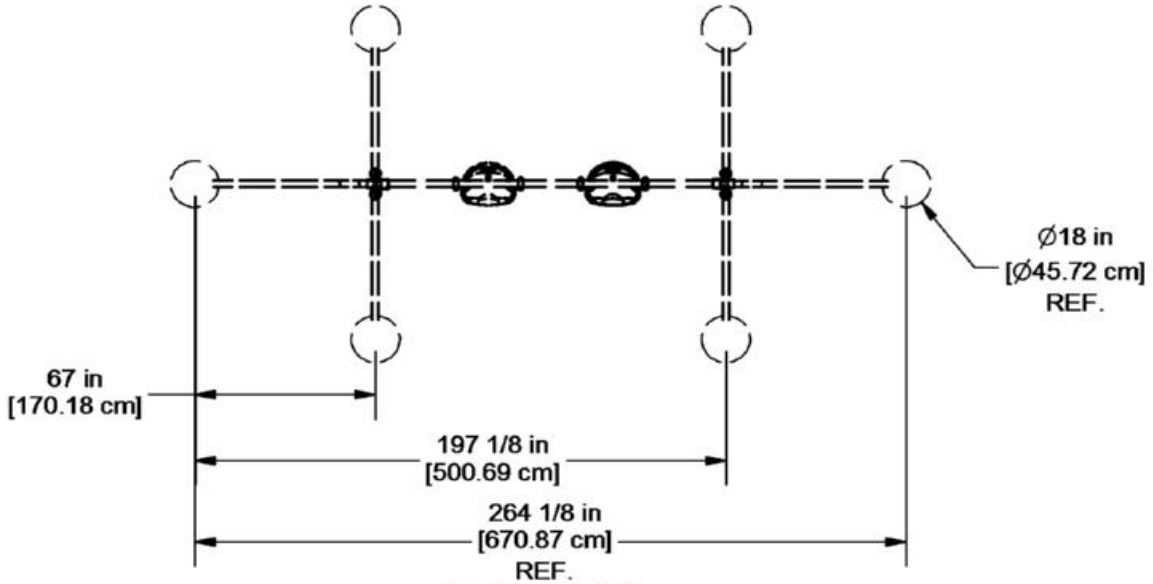
ELEVATION VIEW
65175 SHADE
SWING SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

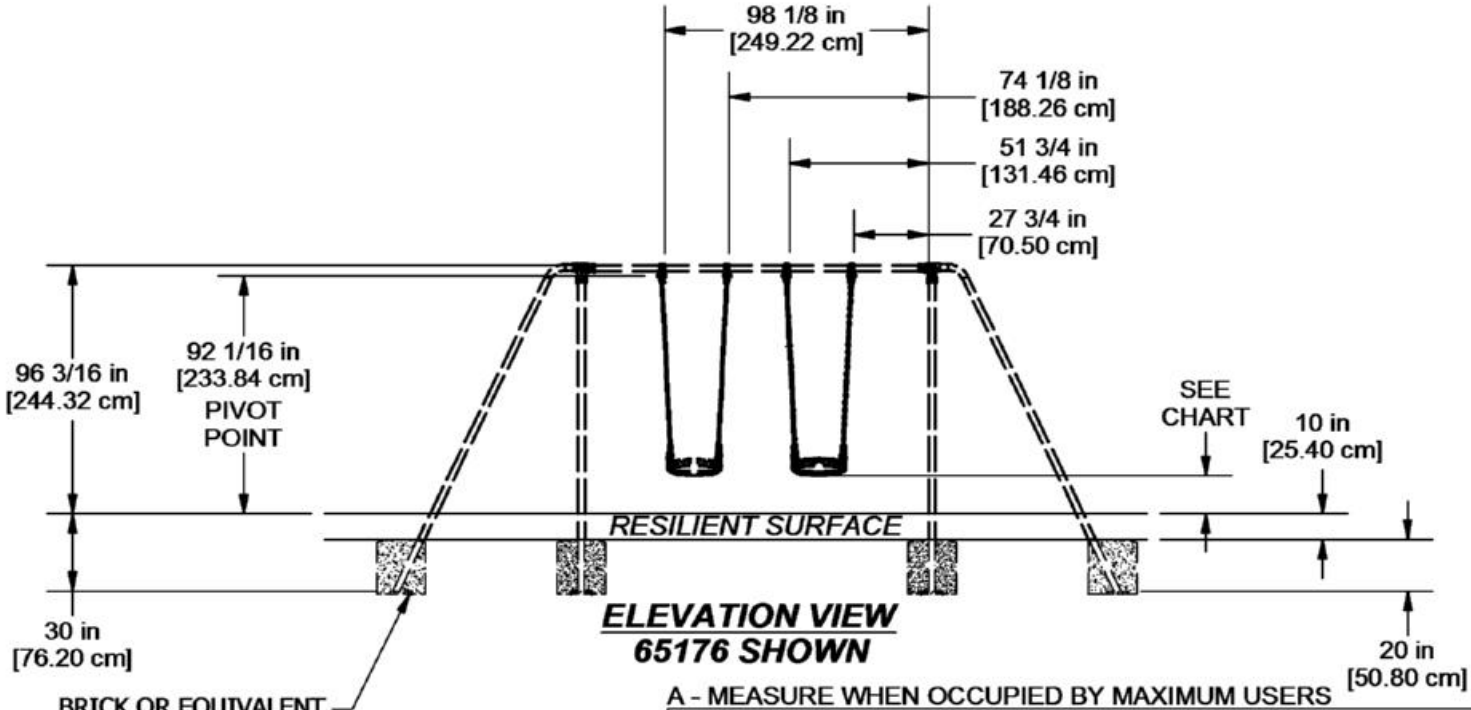
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
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ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



PLAN VIEW



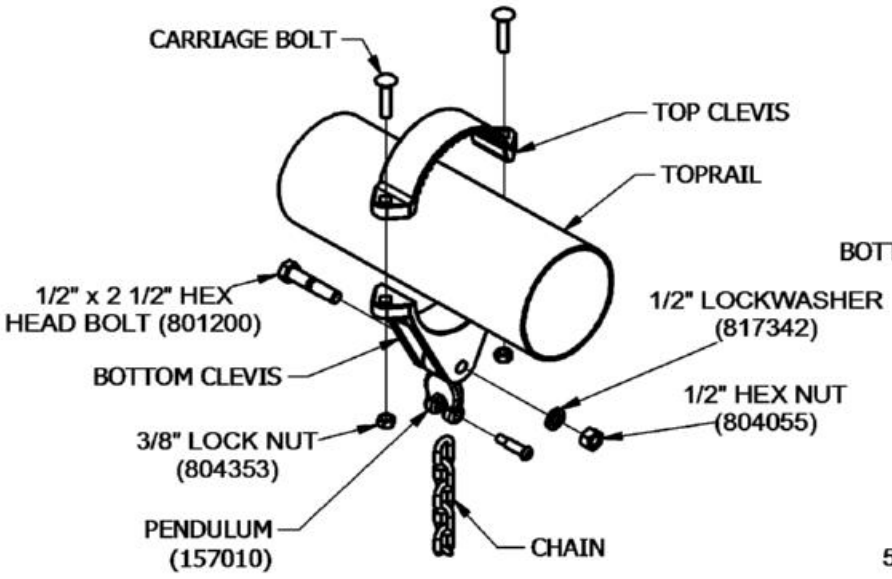
ELEVATION VIEW
65176 SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

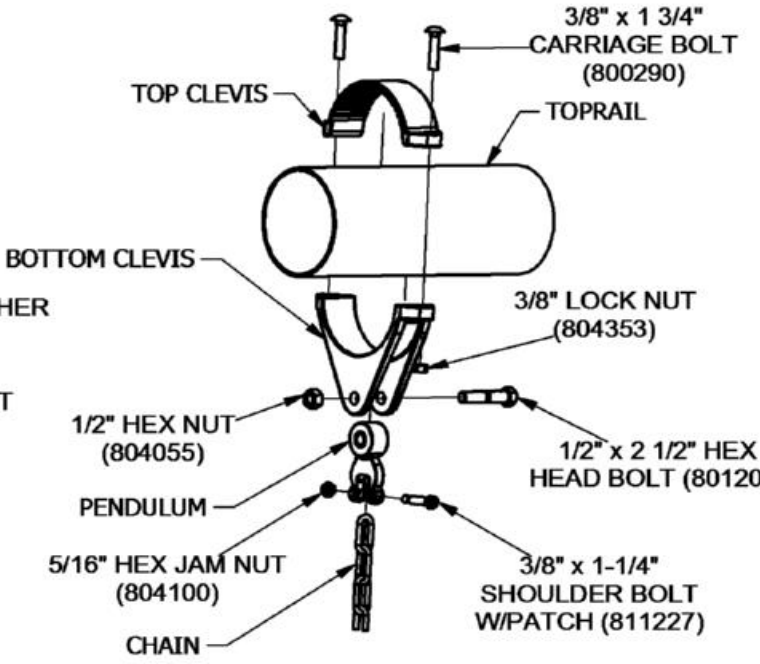
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

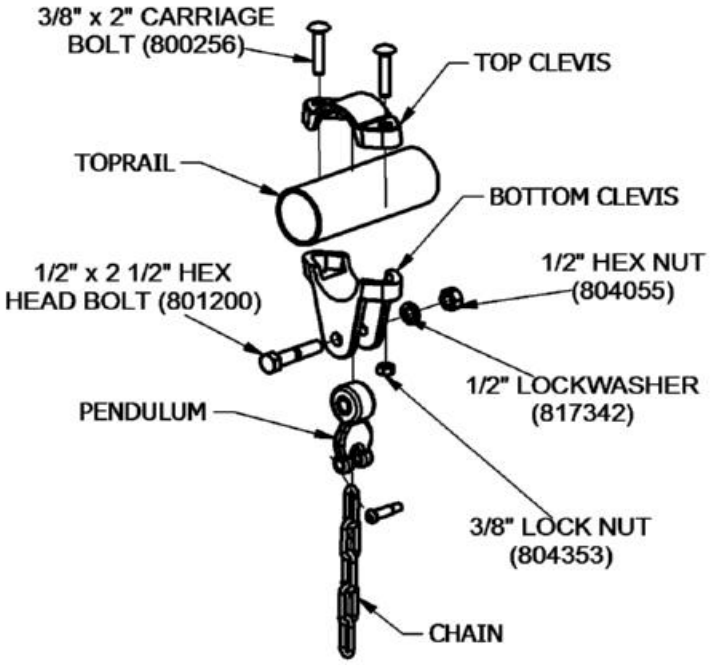
65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.



218

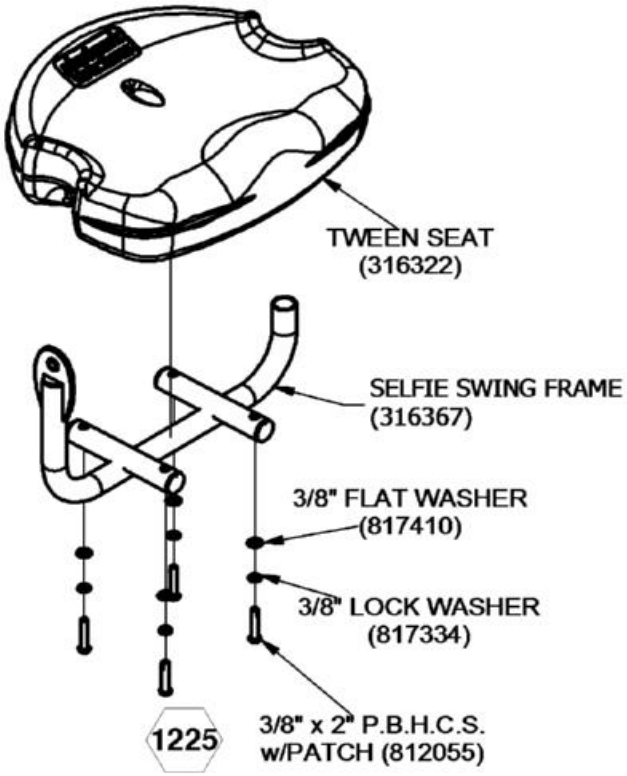


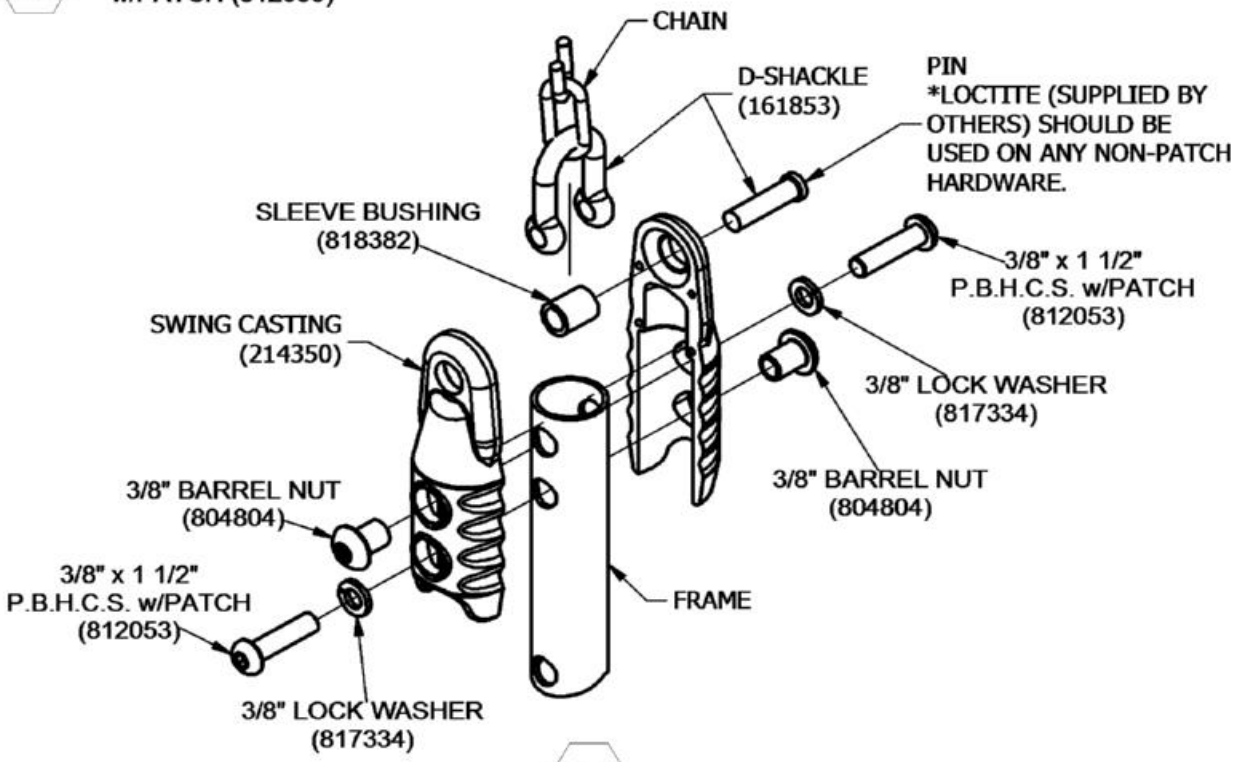
739



969

65169 TWEEN SWING 3 1/2" O.D.
65175 TWEEN SWING 5" O.D.
65176 TWEEN SWING 2 3/8" O.D.





This equipment is designed for children 5-12 years old

65179 TWEEN MATES SWING 3 1/2" O.D.
65180 TWEEN MATES SWING 5" O.D.

Parts List			
DESCRIPTION	65179	65180	PART NUMBER
SWING HANGER (3-1/2" O.D.)	2	0	1462
SWING HANGER (5" O.D.)	0	2	1487
TWEEN SEAT	2	2	316322
DOUBLE TOT CHAIN	4	4	314928
TWEENMATES FRAME	1	1	316371
HARDWARE COMPLETE	1	1	314910
3/8" x 2" P.B.H.C.S. w/PATCH	8	8	812055
3/8" LOCK WASHER	8	8	817334
3/8" FLAT WASHER	8	8	817410
3/8" PLASTIC SPACER	8	8	817613
D SHACKLE w/NO-SNAG PIN	4	4	161853
APPROPRIATE AGE LABEL	1	1	305551
WARNING LABEL	1	1	309483

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Attach Swing Hanger (3-1/2" O.D.) to Top Rail. See Detail 218. **NOTE:** *DO NOT tighten Swing Hangers until properly spaced according to Elevation View with specific swing arrangement.*

2. Attach Tween Seat to Tweenmates Frame. See Detail 1225.

3. Attach appropriate chain to Tweenmates Frame. See Detail 421. **NOTE:** *Add Loctite to pin before attacing to tabs.*

NOTE: *If using two Tween Mates Swings in a single bay, ensure that horizontal arms of swing frames are adjacent to each other in order to prevent entering and exiting in path of adjacent swing.*

4. Attach appropriate chain to appropriate Swing Hanger. See Detail 218 or 739.

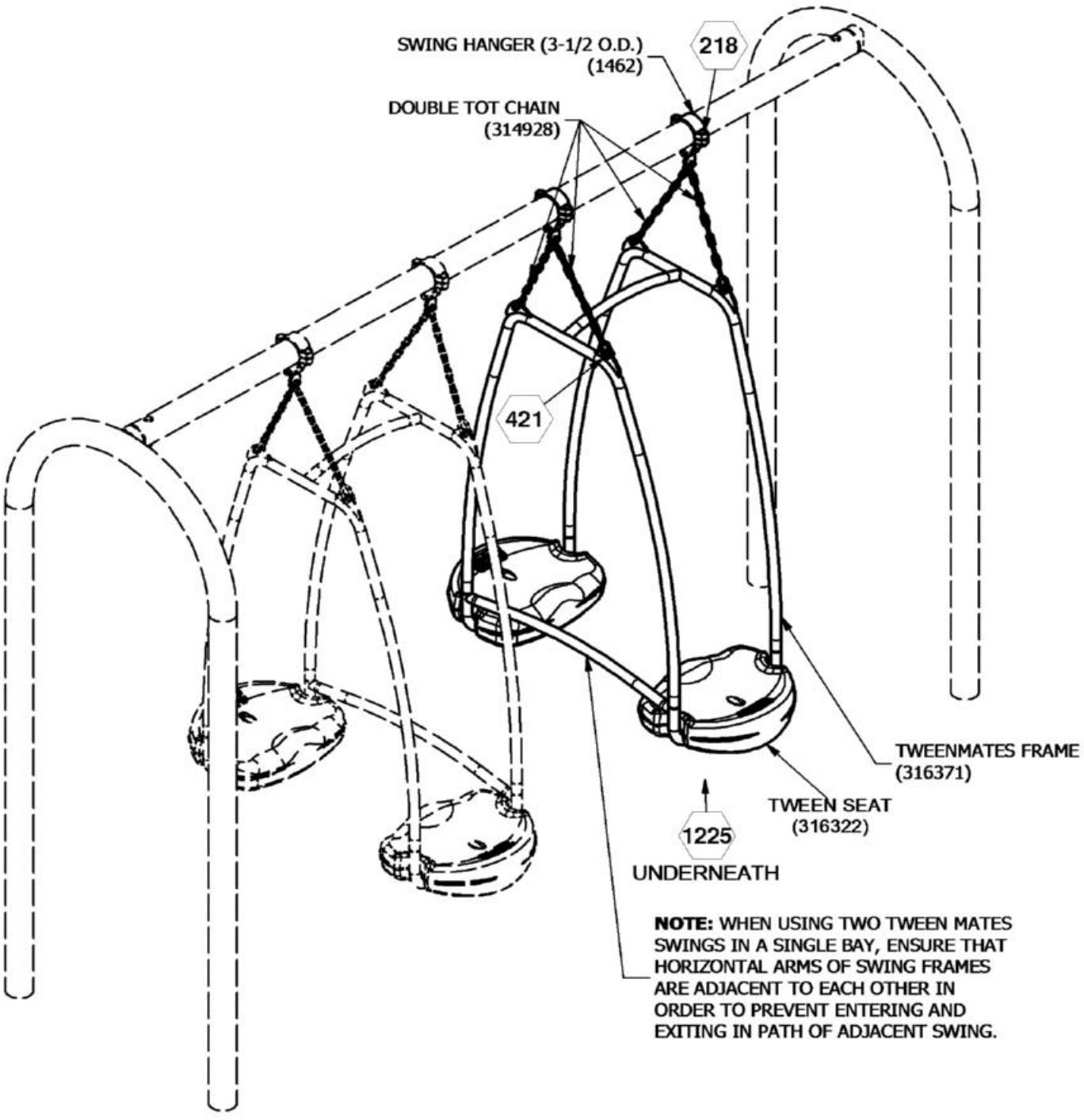
5. Plumb and level entire assembly and tighten all fasteners.

6. When structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

65179 TWEEN MATES SWING 3 1/2" O.D.
65180 TWEEN MATES SWING 5" O.D.

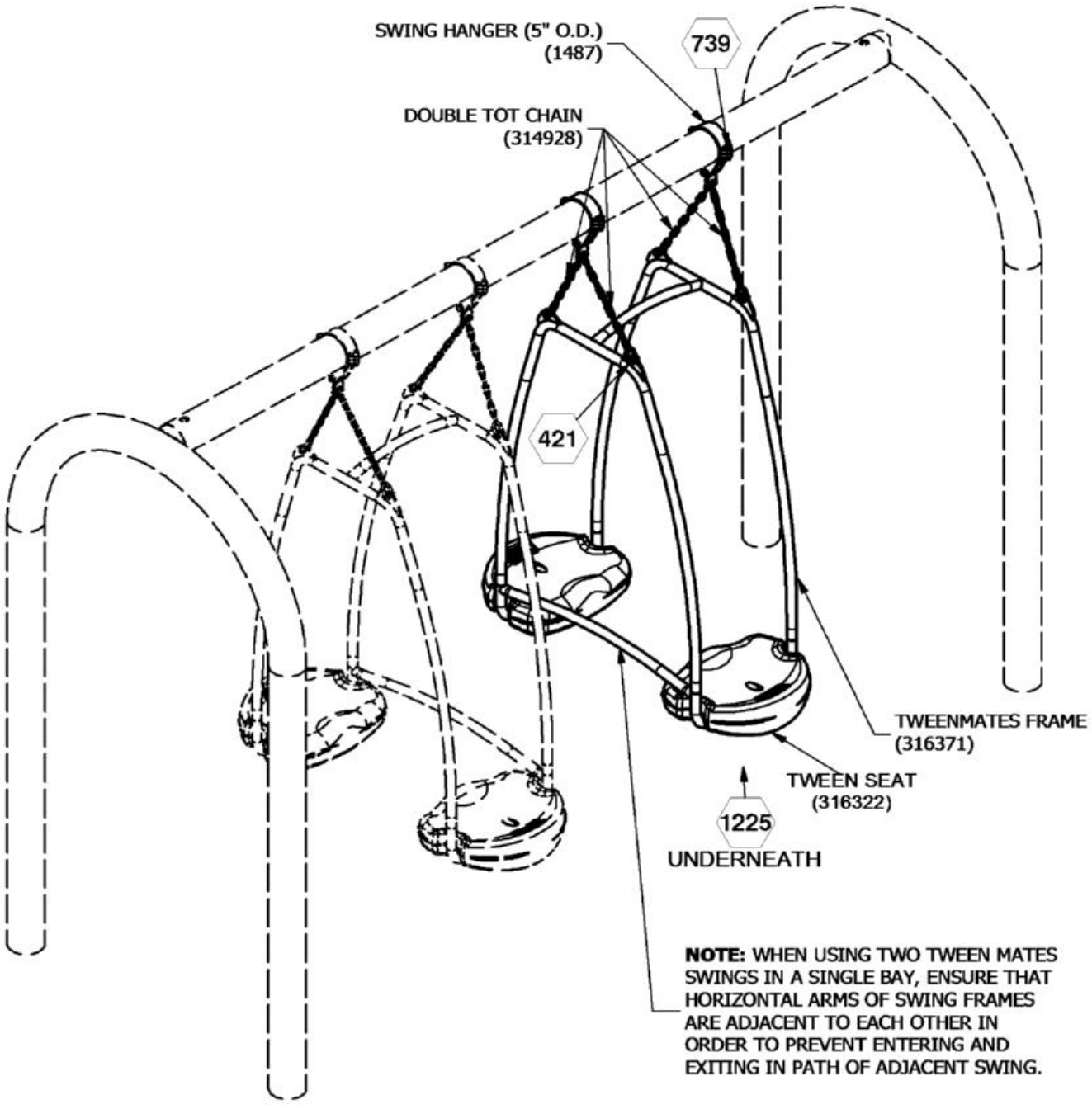


FINISHED ASSEMBLY
65179 SHOWN

⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

65179 TWEEN MATES SWING 3 1/2" O.D.
65180 TWEEN MATES SWING 5" O.D.



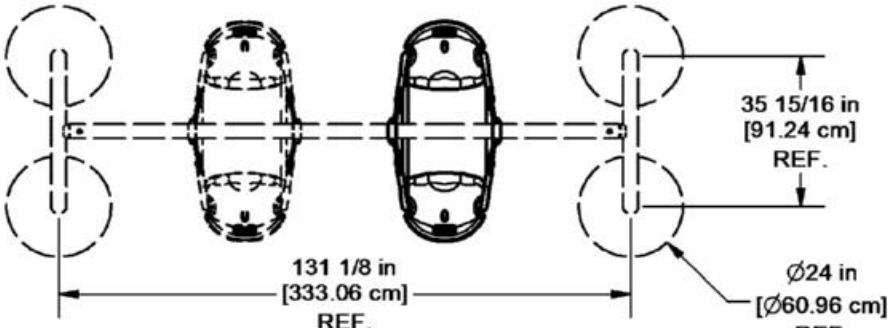
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
65180 SHOWN

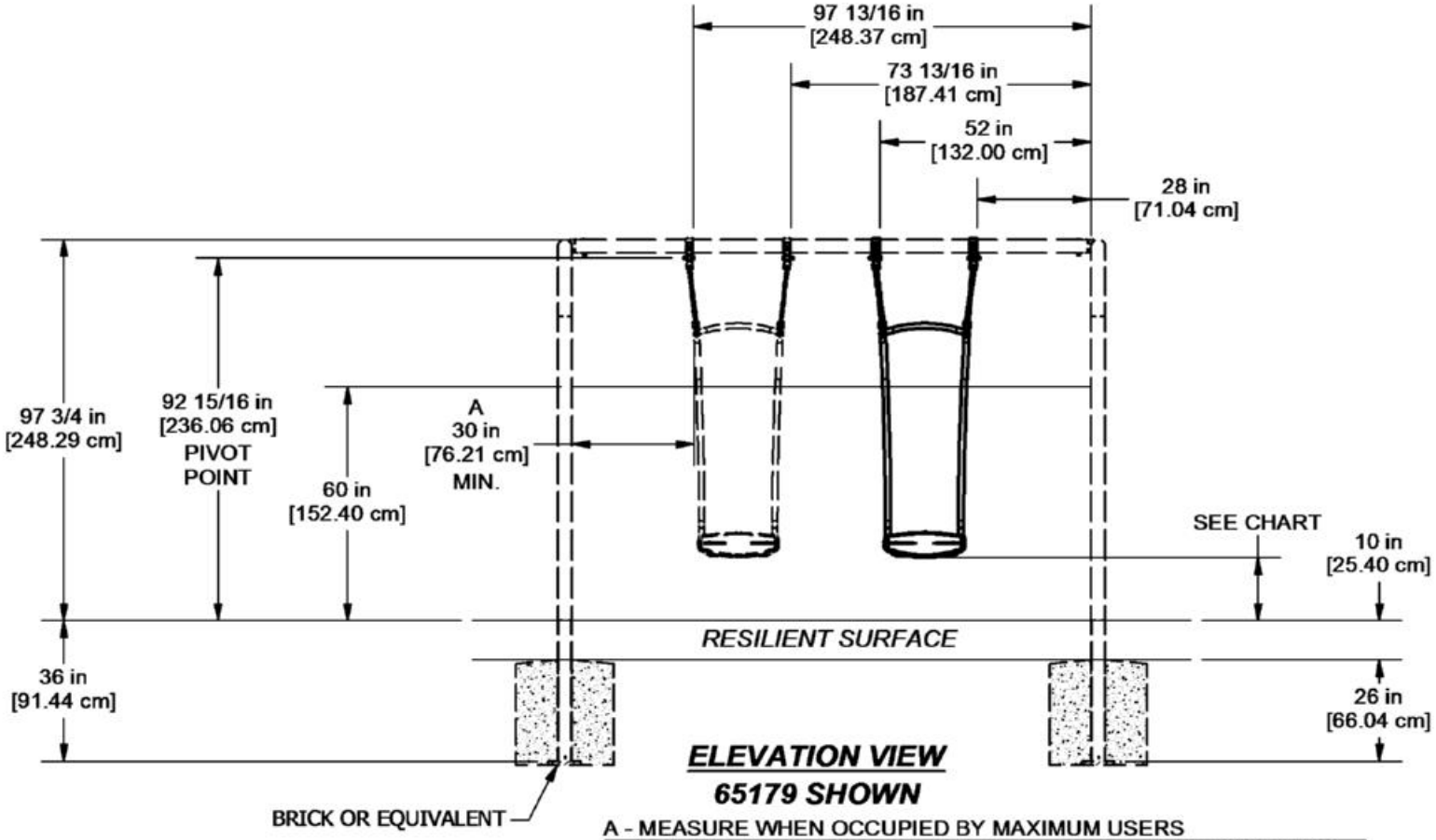
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 6/20/2023

65179 TWEEN MATES SWING 3 1/2" O.D.
65180 TWEEN MATES SWING 5" O.D.



PLAN VIEW



ELEVATION VIEW

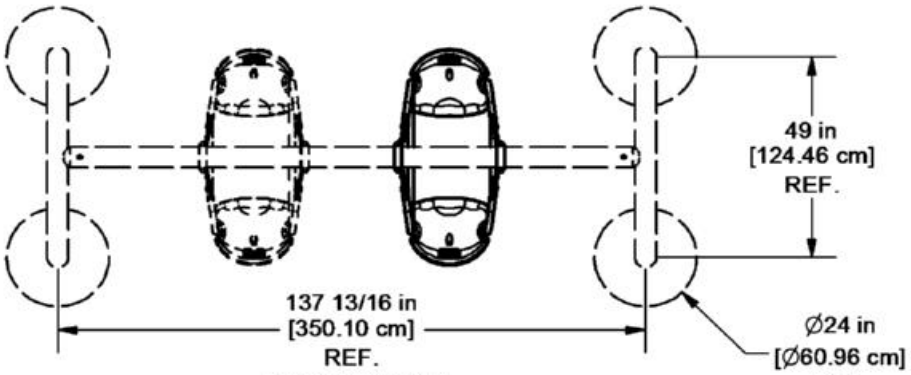
65179 SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

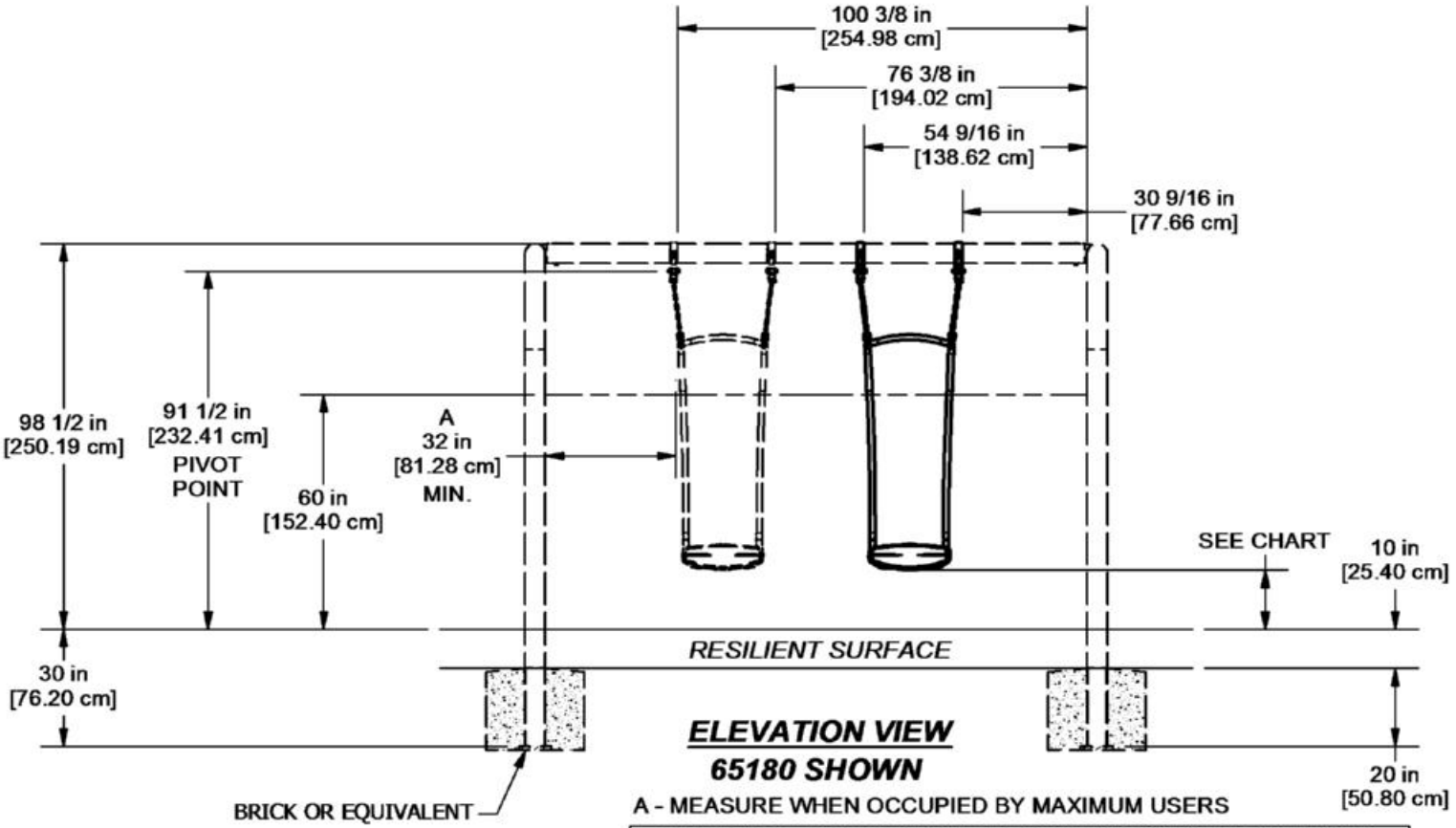
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65179 TWEEN MATES SWING 3 1/2" O.D.
65180 TWEEN MATES SWING 5" O.D.



PLAN VIEW



ELEVATION VIEW

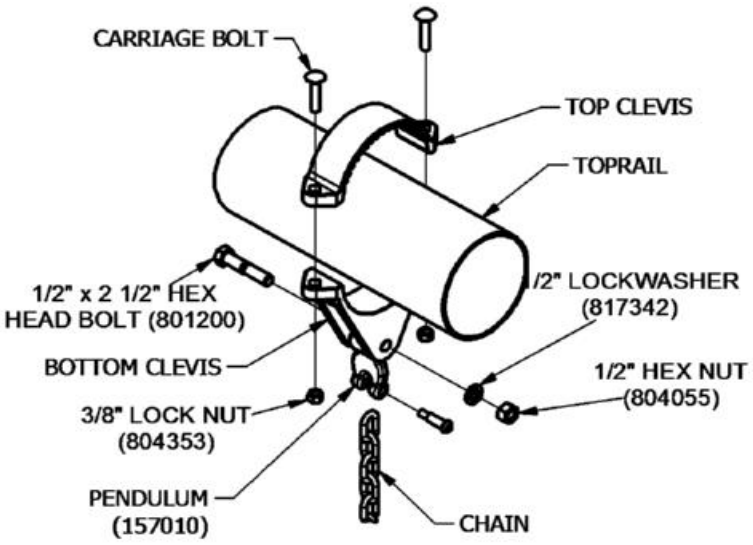
65180 SHOWN

A - MEASURE WHEN OCCUPIED BY MAXIMUM USERS

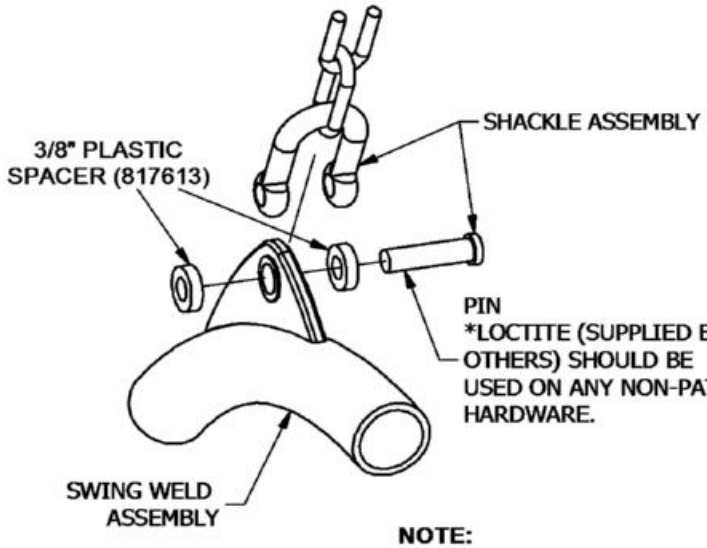
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65179 TWEEN MATES SWING 3 1/2" O.D.
65180 TWEEN MATES SWING 5" O.D.

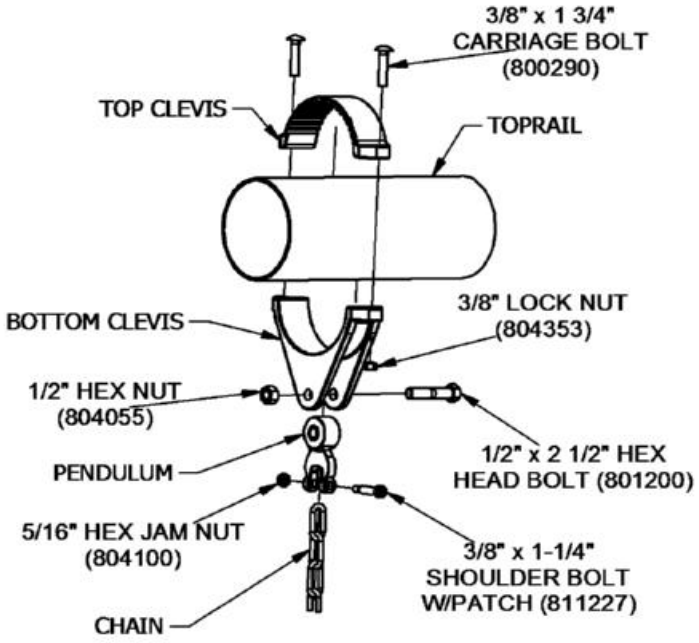


218

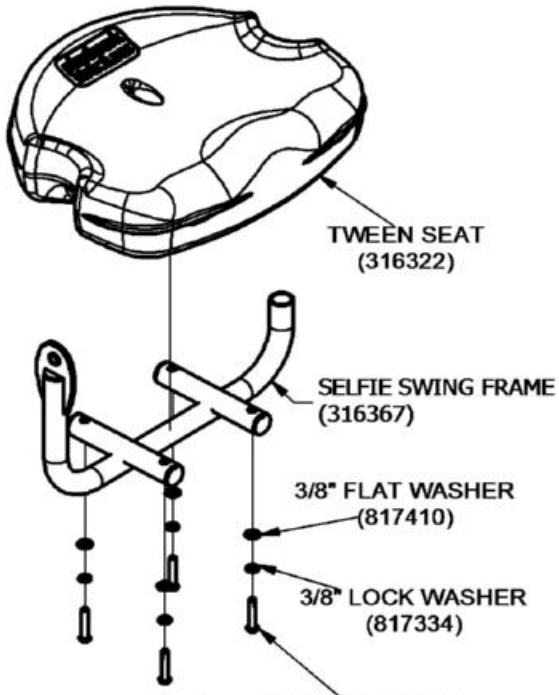


NOTE:
SPACERS LOCATED BETWEEN TAB AND INTERIOR OF SHACKLE.

421



739



1225

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE

Parts List						
DESCRIPTION	65191	65192	65193	65194	65195	PART NUMBER
NDS FITNESS SIGN	1	0	0	0	0	216564
NDS PLAY ON SIGN	0	1	0	0	0	216566
NDS INCLUSIVE PLAY SIGN	0	0	1	0	0	216568
NDS PATHWAYS FOR PLAY SIGN	0	0	0	1	0	216570
NDS NATURE GROUNDS SIGN	0	0	0	0	1	216572
SIGN POST WELD ASS'Y	1	1	1	1	1	216574
HARDWARE COMPLETE	1	1	1	1	1	216580
1/4" x 3/4" B.H.C.S.	4	4	4	4	4	811010
1/4" LOCK WASHER	4	4	4	4	4	817327
1/4" FLAT WASHER (5/8" O.D.)	4	4	4	4	4	817408
1/2" ANCHOR ROD	1	1	1	1	1	135038

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

SIGN POST WELD ASSEMBLY: Shall be fabricated from 3 1/2" O.D. x .095" (13 gauge) wall galvanized steel tubing and 1/4" thick hot rolled steel mounting plate. The Sign Post Weld Assembly shall be an all weld assembly and shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specification outlined herein.

NDS SIGNS: The NDS Signs shall be 1/2" thick exterior DHPL with a 12 color high definition printed graphic with four 1/4"-20 UNC threaded inserts for mounting.

POWDER COAT FINISH: Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a four stage solvent / zirconium based bath system (free of iron phosphate), as a rust inhibitor, and a zirconium conversion coating to prevent flash rusting before coating. In addition, all welds shall be protectively coated with ZRP, a zinc rich primer that forms a rust-resistant barrier layer over each weld prior to application of the powder coating. The powder coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: Two coat process to achieve 3.0 - 5.0 mil thickness and oven cured between 350 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794- 69), Wedge Bend (ASTM D-522-68), Adhesion (Cross Hatch ASTM D-3359 & Knife Scratch ASTM D-2197), Environmental (Stain Resistance ASTM D-1308, Humidity ASTM D-2247 - 87, Salt Spray ASTM B-117 & Fadometer 300 hrs with no loss of gloss), Over-bake Stability 100% at 350 degrees Fahrenheit for 10 minutes.

HARDWARE: All nuts, bolts, screws, inserts, and lockwashers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. NOTE: All weights are based on average comparisons of each part.

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE

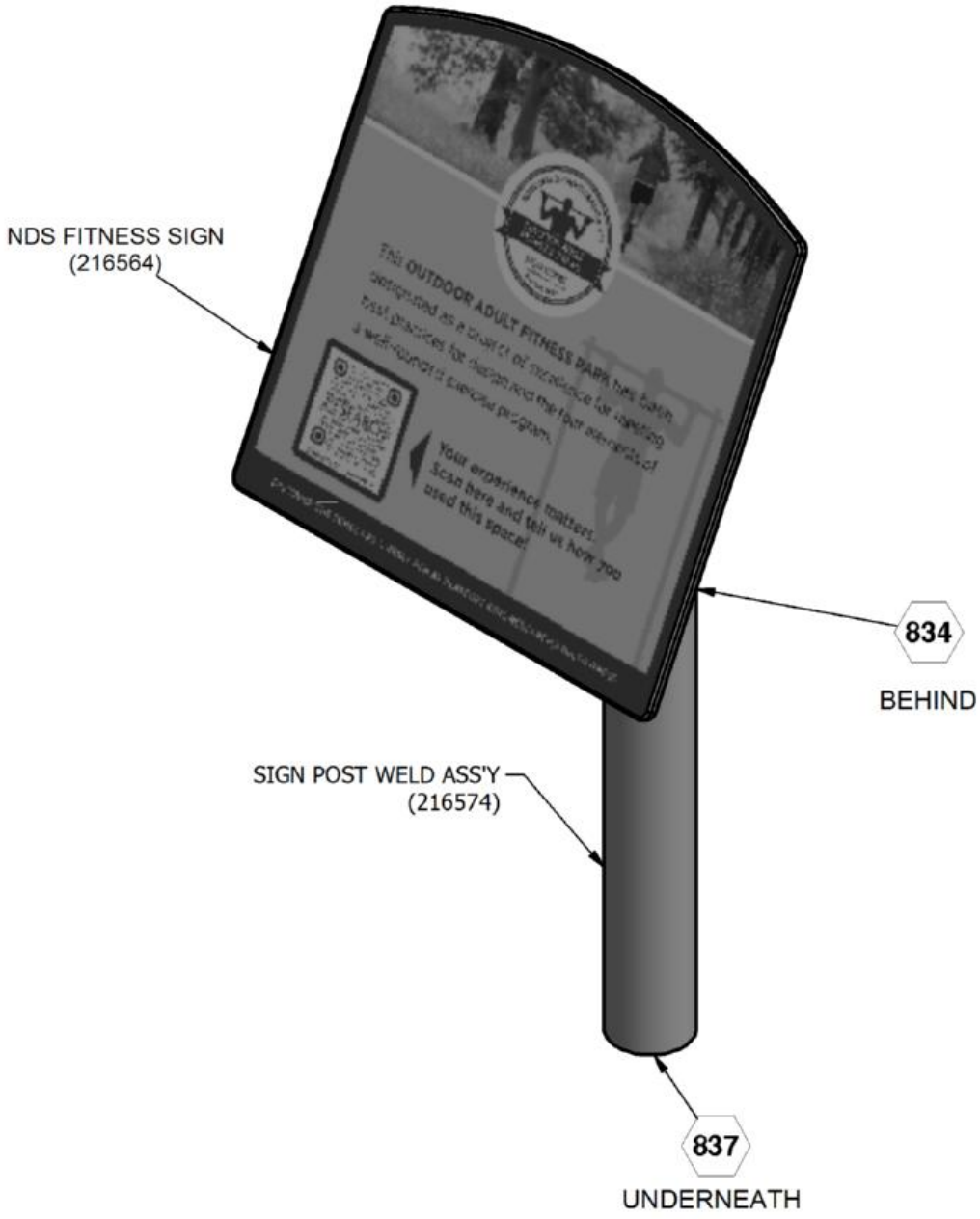
INSTALLATION INSTRUCTIONS:

1. Determine location for sign and dig footing. Refer to the Elevation View for footing depth.
2. Bolt NDS Sign into Sign Post Weld Ass'y using 1/4" x 3/4" B.H.C.S., 1/4" Lock Washer, and 1/4" Flat Washer (5/8" O.D.). See Detail 834.
3. Insert 1/2" Anchor Rod into Sign Post Weld Ass'y. See Detail 837.
4. Place Assembly into ground hole.
5. Plumb and level the entire assembly and tighten all fasteners.
6. Pour concrete footings within 4" to the top and taper away from posts for good water drainage. Allow curing at least 48 hours before proceeding.
7. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE

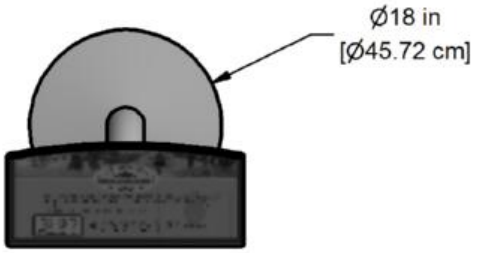


= INSTALLATION DETAIL

Issued/Revised: 2/21/2019

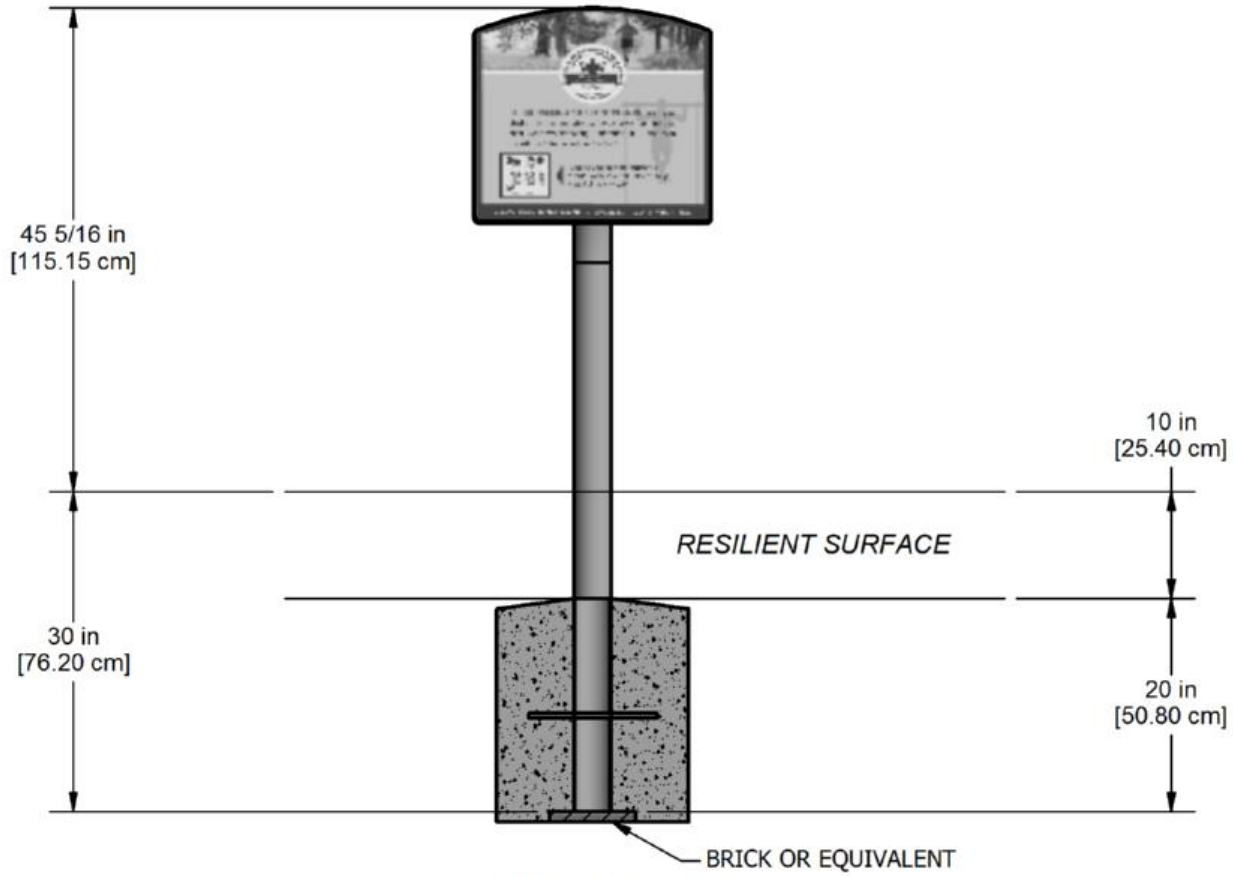
FINISHED ASSEMBLY
65191 SHOWN

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS NATURE GROUNDS SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE



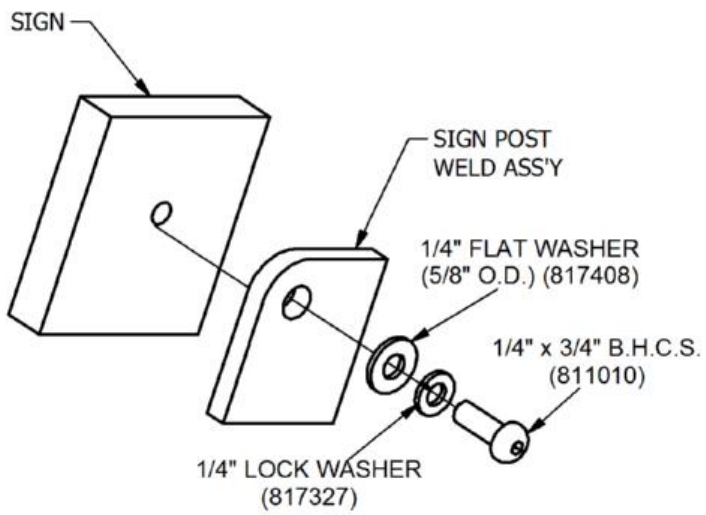
PLAN VIEW

CONCRETE REQUIRED
0.109 CUBIC YARDS
0.083 [CUBIC METERS]

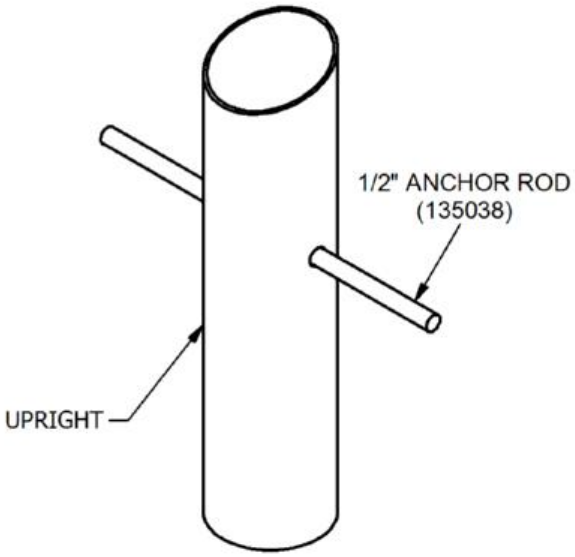


ELEVATION VIEW
65191 SHOWN

65191 NDS FITNESS SIGN PACKAGE
65192 NDS PLAY ON SIGN PACKAGE
65193 NDS INCLUSIVE PLAY SIGN PACKAGE
65194 NDS PATHWAYS FOR PLAY SIGN PACKAGE
65195 NDS NATURE GROUNDS SIGN PACKAGE



834



837

65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY

Parts List			
DESCRIPTION	65214	65215	PART NUMBER
ARCH END UPRIGHT ASS'Y	2	0	152803
MULTI-BAY ARCH UPRIGHT ASS'Y	0	1	152805
TOP RAIL	1	1	209804
HARDWARE COMPLETE	1	1	305014
WARNING LABEL	1	1	309483
1/2" x 4" HEX HEAD BOLT	2	2	801215
1/2" LOCKWASHER	2	2	817342
1/2" FLAT WASHER	2	2	817412
1/2" HEX NUT	2	2	804055

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Arch End Upright and Multi-bay Arch Upright Ass'y:
Shall be fabricated from 3-1/2" O.D. (13 gauge) galvanized steel tubing arch and socket. The Arch End Upright and Multi-Bay Arch Upright Assembly shall be an all-welded assembly and shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Top Rail:
Shall be fabricated from 3-1/2" O.D. (13 gauge) galvanized steel tubing. The Top Rail shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a four stage solvent/zirconium based bath system (free of iron phosphate), as a rust inhibitor, and a zirconium converison coating to prevent flash rusting before coating. In addition, all welds shall be protectivel coated with ZRP, a zinc rich primer that forms a rust-resistant barrier layer over each weld prior to application of the powder coating. The powder coating shall have a super tough finish with a maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: Two coat process to achieve 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68), Adhesion (Cross Hatch ASTM D-3359 & Knife Scratch ASTM D-2197), Environmental (Stain Resistance ASTM D-2247-87, Salt Spray ASTM B-117 & Fadometer 300 hrs with no loss of gloss), Over-bake Stability 200% at 350 degrees Fahrenheit for 10 minutes.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plate steel blue-coated plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with two-part epoxy locking patch added to the threads. The two-part locking patch shall consisit of one part resisn and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

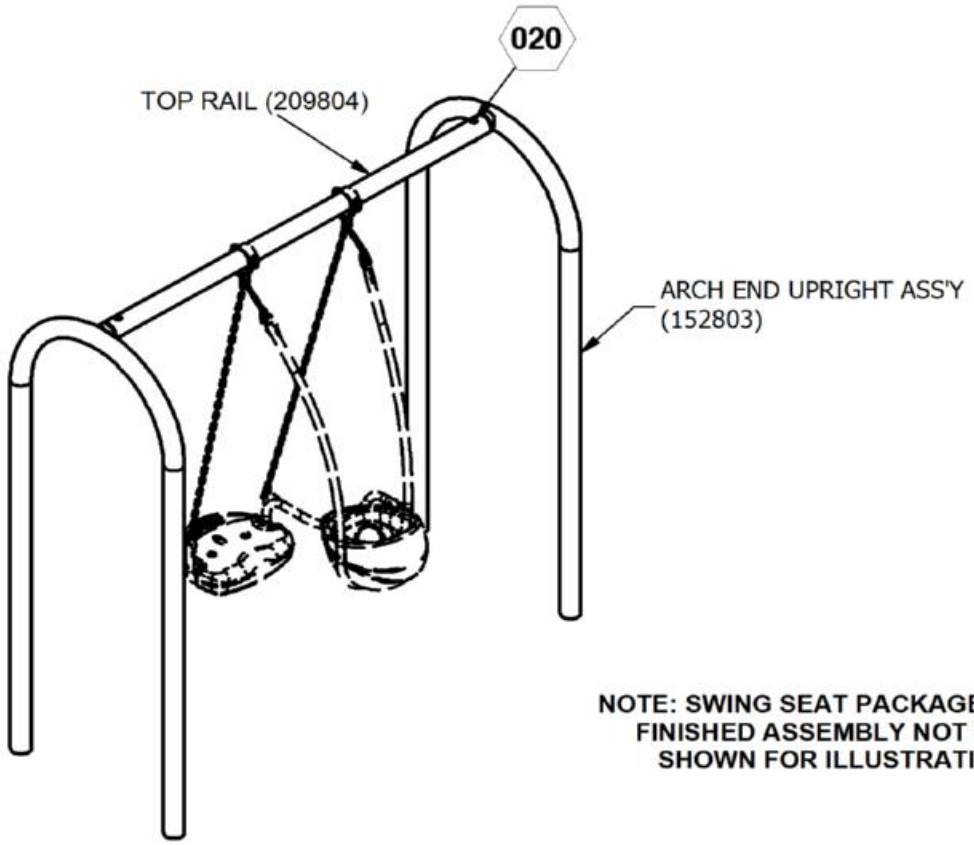
65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to the Plan View. See Plan View for dimensions and notes regarding surfacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*
2. Attach Top Rail to Arch Upright Ass'y. See Detail 020.
3. Plumb and level the entire assembly and tighten all fasteners.
4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use.
5. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safey guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



NOTE: SWING SEAT PACKAGES SHOWN ON FINISHED ASSEMBLY NOT INCLUDED. SHOWN FOR ILLUSTRATION ONLY

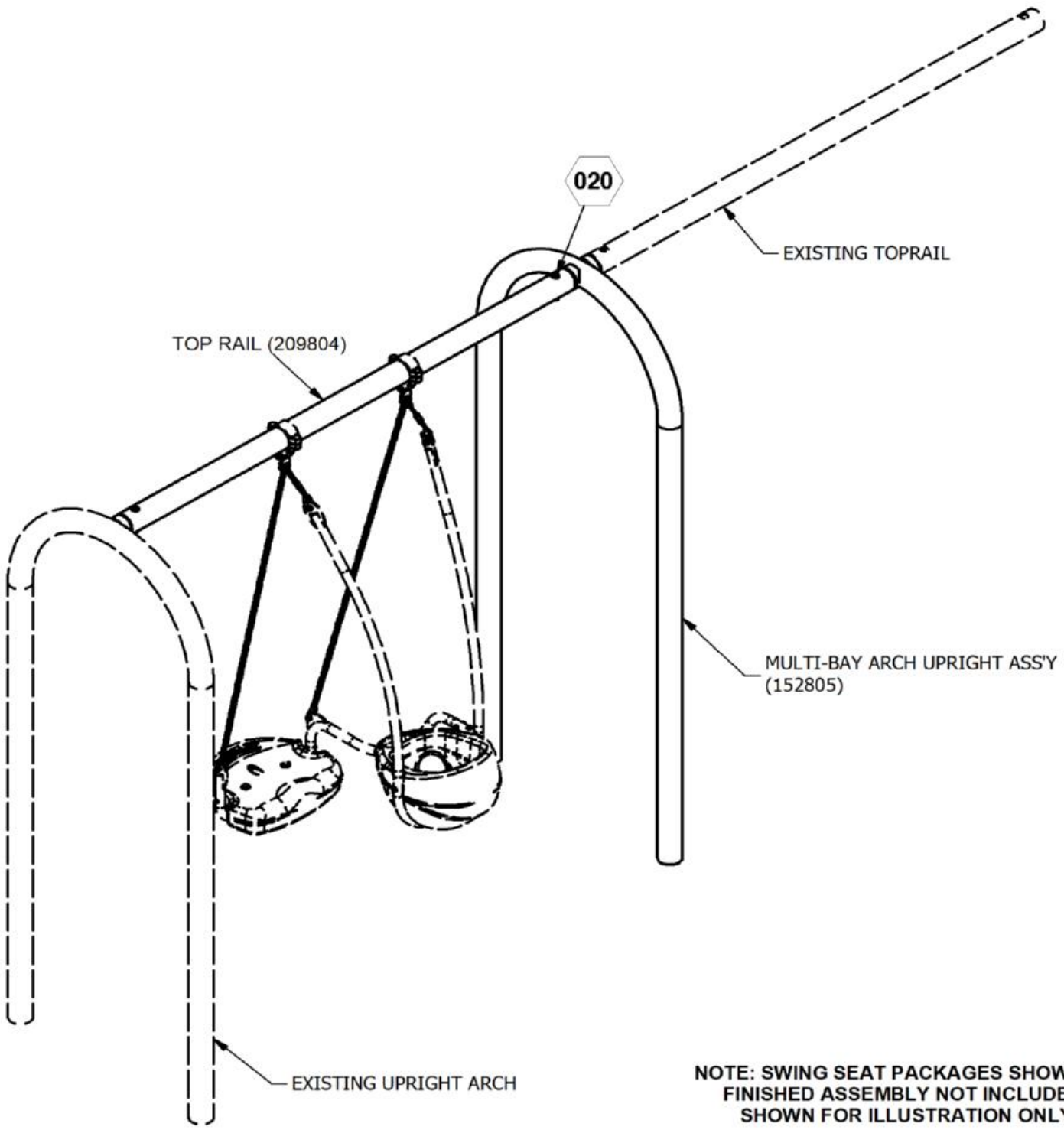
⬡ = INSTALLATION DETAIL

Issued/Revised: 9/17/2019

FINISHED ASSEMBLY
65214 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY



NOTE: SWING SEAT PACKAGES SHOWN ON FINISHED ASSEMBLY NOT INCLUDED. SHOWN FOR ILLUSTRATION ONLY

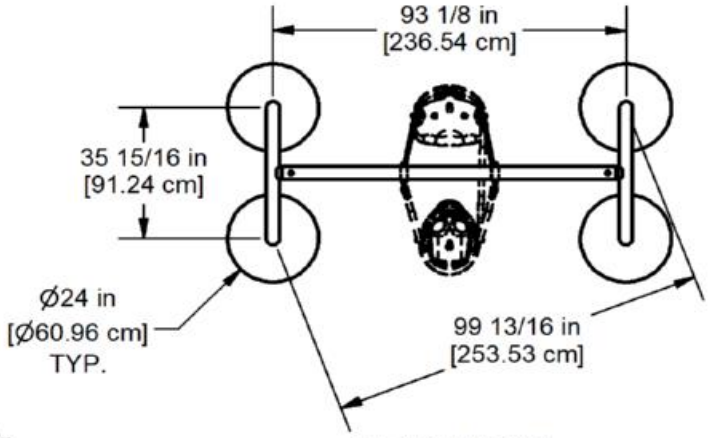
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY
65215 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 9/17/2019

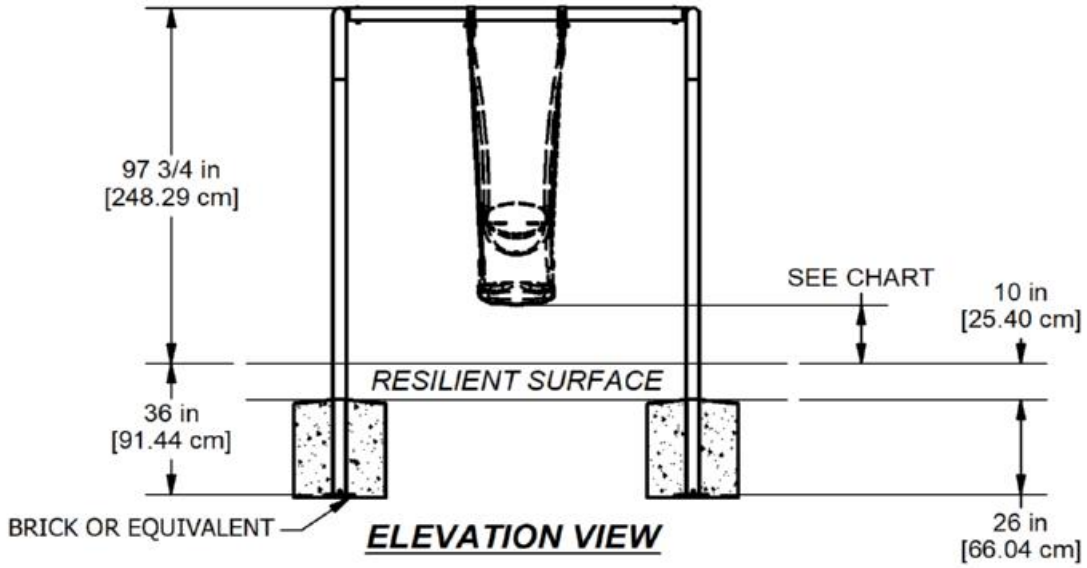
65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY



PLAN VIEW

44 in
[111.76 cm]
DISTANCE FROM END OF TOP RAIL TO CENTER. CENTER SWING HANGERS ON TOP RAIL. SEE CHART FOR CORRECT SPACING.

CONCRETE REQUIRED
0.93 CUBIC YARDS
0.71 [CUBIC METERS]



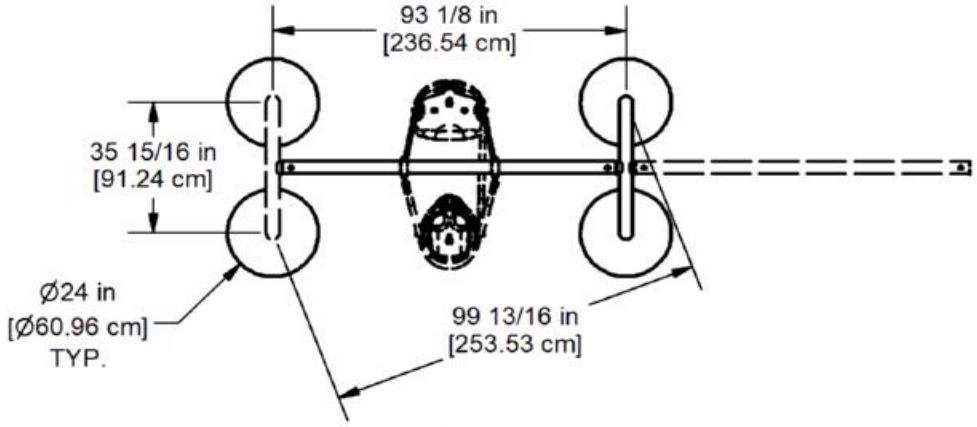
ELEVATION VIEW

SWING HANGER SPACING CENTER TO CENTER		
#	DESCRIPTION	DISTANCE
67597 SS7597	BELT SEAT	23 1/2"
67591 SS7591	FULLY ENCLOSED TOT SEAT	23 1/2"
67860 S67860 67855 S67855	MADE-FOR-ME SEAT (2-5) MADE-FOR-ME SEAT (5-12)	31 1/2"
67734 SS7734	ONE-FOR-ALL SWING SEAT	31 1/2"
65167	REFLECTIONS SELFIESWING	24"
65169	TWEENSWING	24"
65170	TOTMATES SELFIESWING	24"

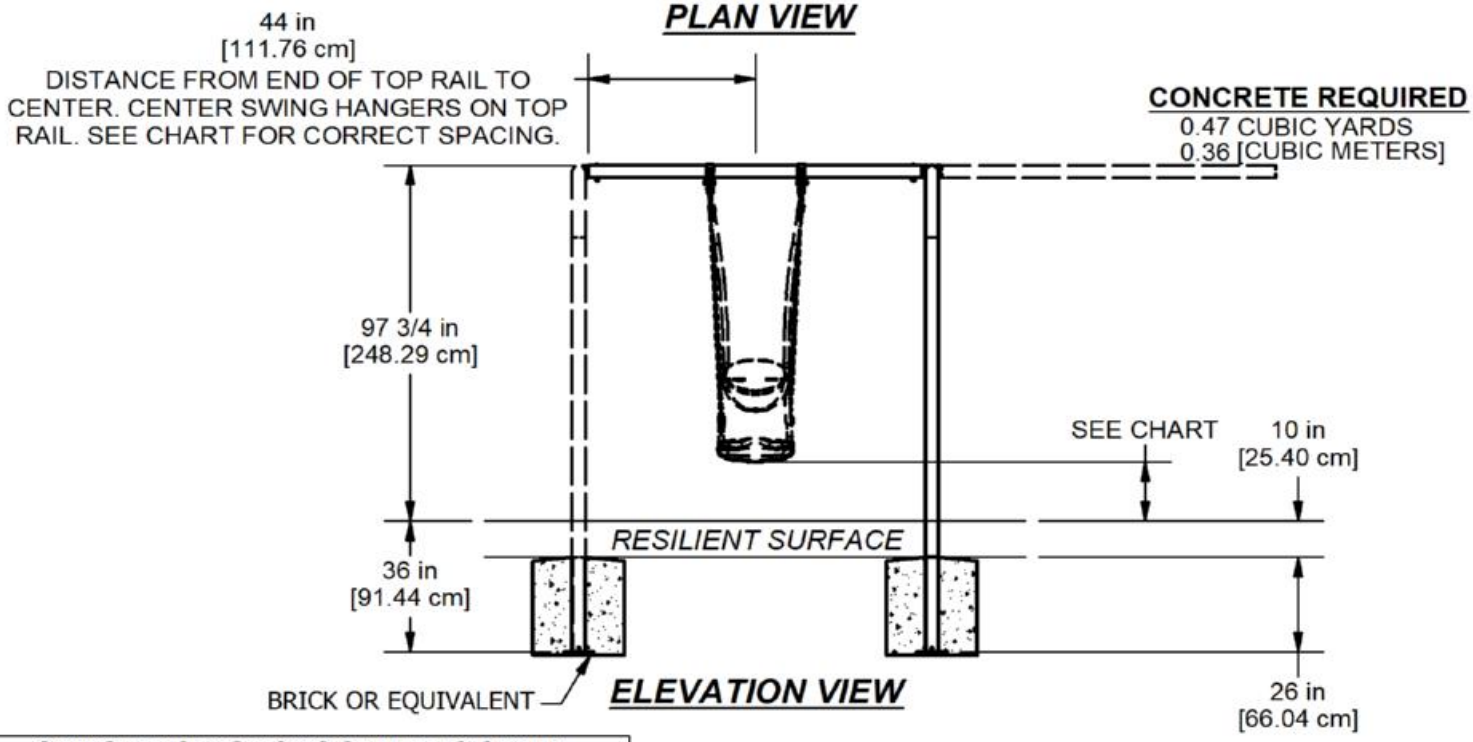
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY



PLAN VIEW



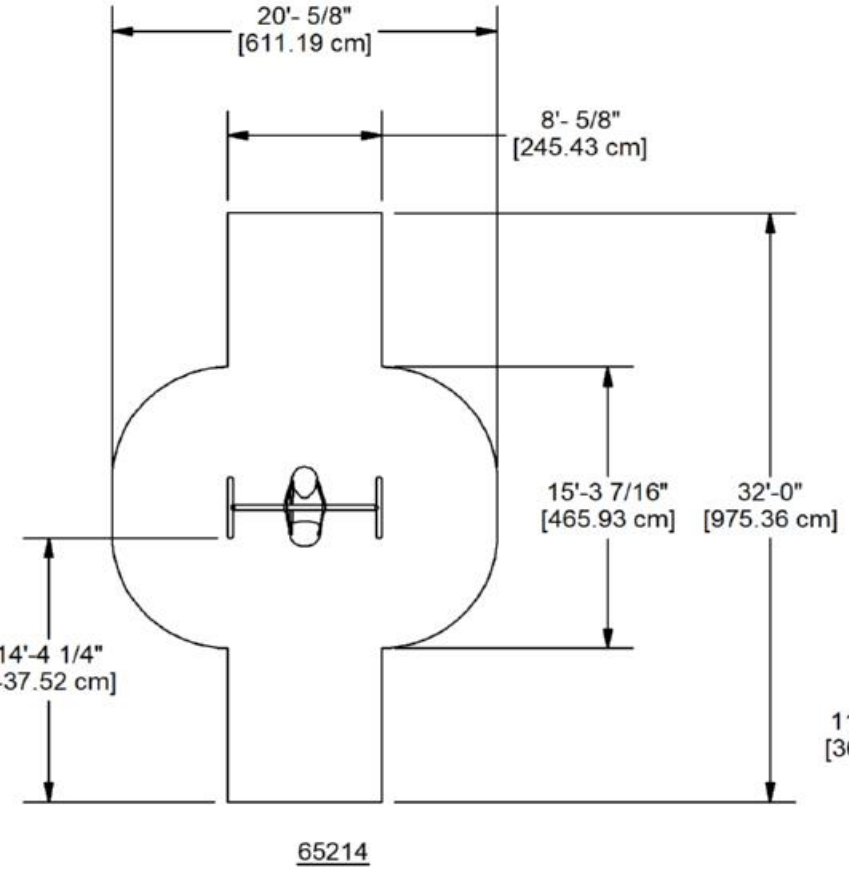
ELEVATION VIEW

SWING HANGER SPACING CENTER TO CENTER		
#	DESCRIPTION	DISTANCE
67597 SS7597	BELT SEAT	23 1/2"
67591 SS7591	FULLY ENCLOSED TOT SEAT	23 1/2"
67860 S67860 67855 S67855	MADE-FOR-ME SEAT (2-5) MADE-FOR-ME SEAT (5-12)	31 1/2"
67734 SS7734	ONE-FOR-ALL SWING SEAT	31 1/2"
65167	REFLECTIONS SELFIESWING	24"
65169	TWEENSWING	24"
65170	TOTMATES SELFIESWING	24"

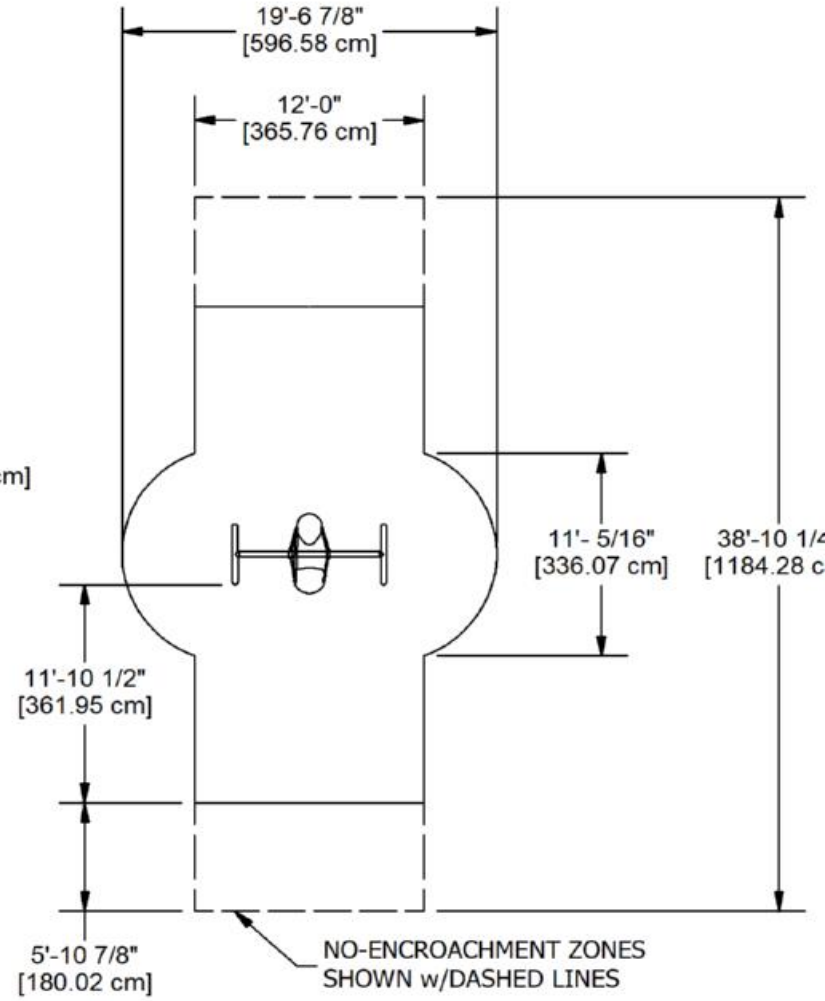
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	0'-11 13/16" [300mm]	N/A
ASTM	1'-0" [304mm]	N/A
DIN	1'-1 3/4" [350mm]	N/A
CPSC	1'-0" [304mm]	N/A

* UNDER LOAD CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

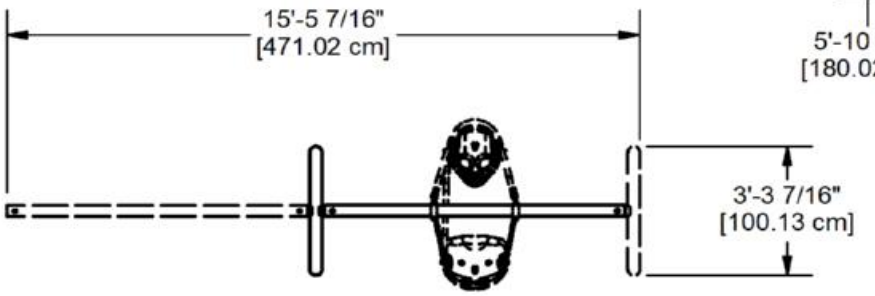
65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY



65214



65214 (CSA ONLY)



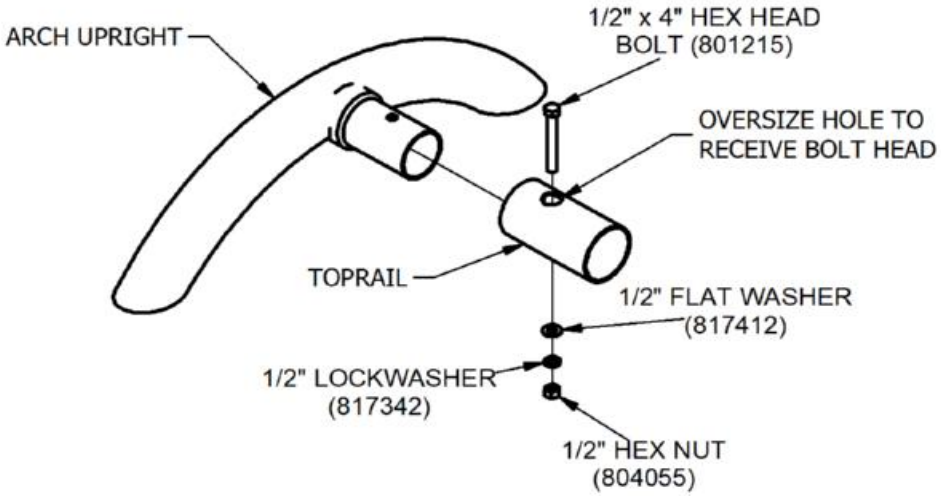
65215

TOP VIEWS

NOTE:
1. OWNER/OPERATOR SHALL INSTALL AND MAINTAIN PROTECTIVE SURFACING WITIN THE USE ZONE (U.S.) OR PROTECTIVE SURFACING ZONE (CANADA) OF ALL PLAY EQUIPMENT TO COMPLY WITH ASTM F-1292 AND ASTM F-1487 (U.S.) OR CAN/CSA -Z-614 (CANADA)
2. SOLID OUTSIDE BORDER REPRESENTS MINIMUM REQUIRED ASTM USE ZONE AND CSA PROTECTIVE SURFACING ZONE FOR SWING FRAME SHOWN.
3. DASHED LINES REPRESENT CSA *NO ENCROACHMENT* ZONE (CANADA ONLY).
4. *EACH ADDITIONAL CONNECTED SWING FRAME BAY INCREASES THE USE ZONE SURFACING, AND *NO ENCROACHMENT* ZONE DIMENSIONS BY 12'-0 9/16" [3.67 M]

65214 3 1/2" SOLOBAY SWING FRAME
65215 3 1/2" SOLOBAY ADD A BAY

NOTE: PEEN FLATWASHERS AFTER
INSTALLATION TO MATCH RADIUS OF TOPRAIL.



020

65285 FOUR4ALL ROCKER

Parts List		
DESCRIPTION	QTY	PART NUMBER
SEAT WELD ASSEMBLY	2	221415
CROSSBAR WELD ASSEMBLY	4	221426
HDPE SEAT BACK PANEL	4	221431
HDPE SEAT PANEL	4	221432
HDPE BODY INNER PANEL	4	221435
SEE SAW BASE	1	221549
INCLUSIVE SEE SAW FOOTBUCK WELD ASSEMBLY	1	221711
INCLUSIVE SEESAW BENCH	1	316356
INCLUSIVE SEESAW END CAP	8	316357
INCLUSIVE SEESAW SIDE PANEL 1	2	316358
INCLUSIVE SEESAW SIDE PANEL 2	2	316359
HARDWARE COMPLETE	1	317189
5/16" x 1/2" P.B.H.C.S. w/PATCH	40	812039
5/16" x 1" P.B.H.C.S. w/PATCH	60	812042
5/16" LOCK WASHER	100	817330
5/16" FLAT WASHER (11/16" O.D.)	100	817406
5/16" STAINLESS STEEL BARREL NUT	100	804813
3/8" x 1" P.B.H.C.S. w/PATCH	16	812050
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	8	812053
3/8" FLAT WASHER	140	817410
3/8" HEX NUT	16	804053
1/2" x 1 1/2" B.H.C.S.	6	811073
1/2" LOCKWASHER	6	817342
1/2" FLAT WASHER (1 3/8" O.D.)	6	817425
1/2" HEX NUT	6	804055

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

65285 FOUR4ALL ROCKER

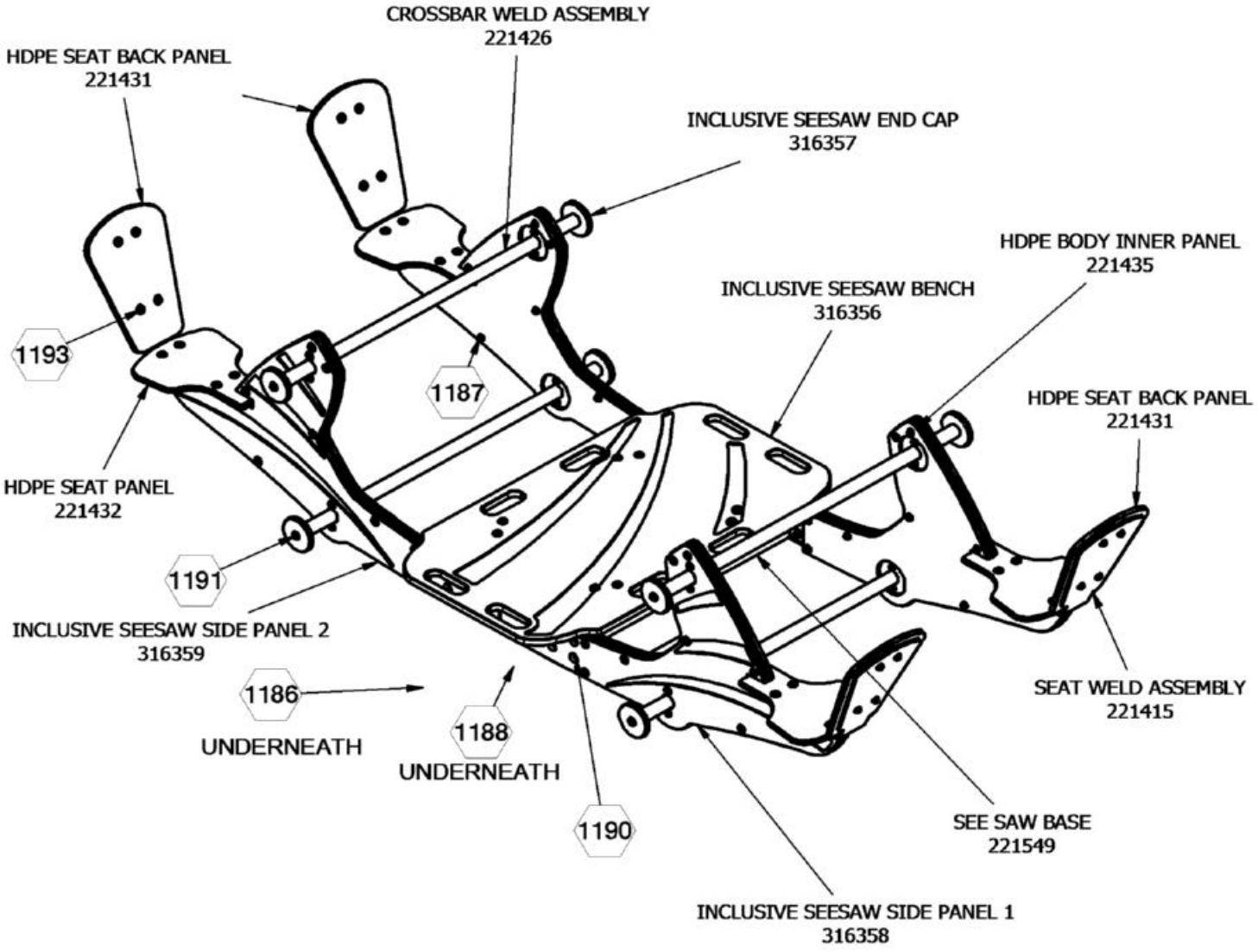
INSTALLATION INSTRUCTIONS:

1. Determine where the Four4All Rocker is going to be installed. Refer to order top view.
2. Attach Inclusive Seesaw Base Assembly to Inclusive Seesaw Footbuck Weld Assembly. Refer to Detail 1186.
3. Attach Inclusive Seesaw Side Panels 1 and 2, and HDPE Body Inner Panels to Seat Weld Assemblies. Refer to Detail 1187.
4. Attach Inclusive Seesaw Side Panels 1 and 2 to Seat Weld Assemblies. Refer to Detail 1188.
5. Attach Crossbar Weld Assemblies to one set of Seat Weld Assembly and HDPE Body Panels. Refer to Detail 1189.
6. Attach Inclusive Seesaw Base Assembly to one set of Seat Weld Assembly and HDPE Body Panels. Refer to Detail 1190.
7. Attach Crossbar Weld Assemblies to the remaining Seat Weld Assembly and HDPE Body Panels. Refer to Detail 1189.
8. Attach Inclusive Seesaw Base Assembly to the remaining Seat Weld Assembly and HDPE Body Panels. Refer to Detail 1190.
9. Attach Inclusive Seeaw End Cap to Crossbar Weld Assemblies. Refer to Detail 1191.
10. Attach Inclusive Seesaw Bench to Inclusive Seesaw Base Assembly. Refer to Detail 1192.
11. Attach HDPE Seat Panels and HDPE Seat Back Panels to Seat Weld Assemblies. Refer to Detail 1193.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

65285 FOUR4ALL ROCKER

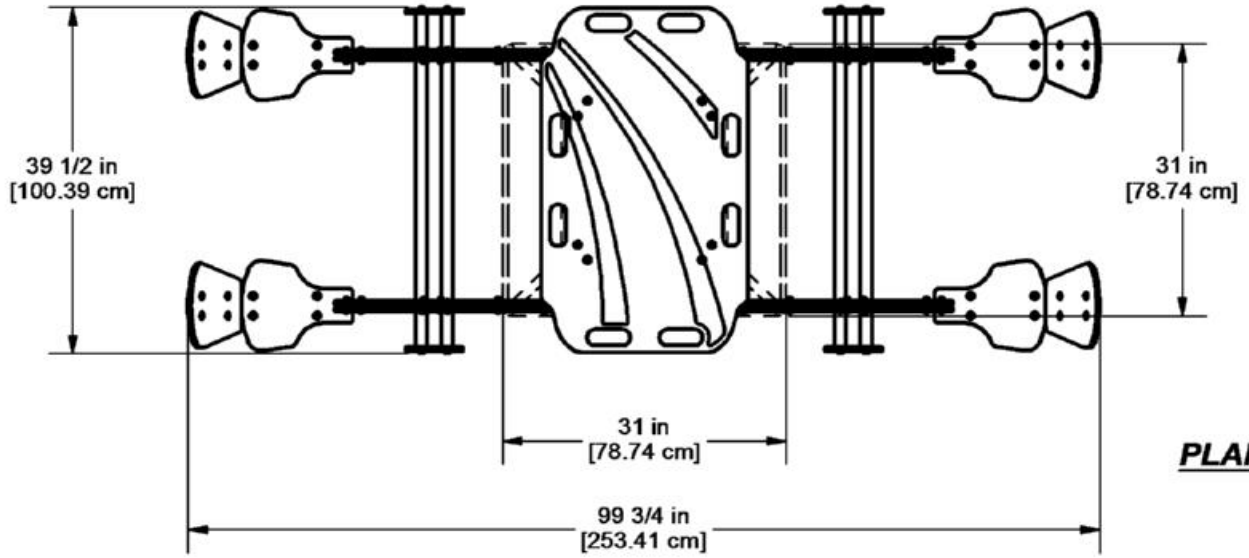


⬡ = INSTALLATION DETAIL

Issued/Revised: 6/4/2024

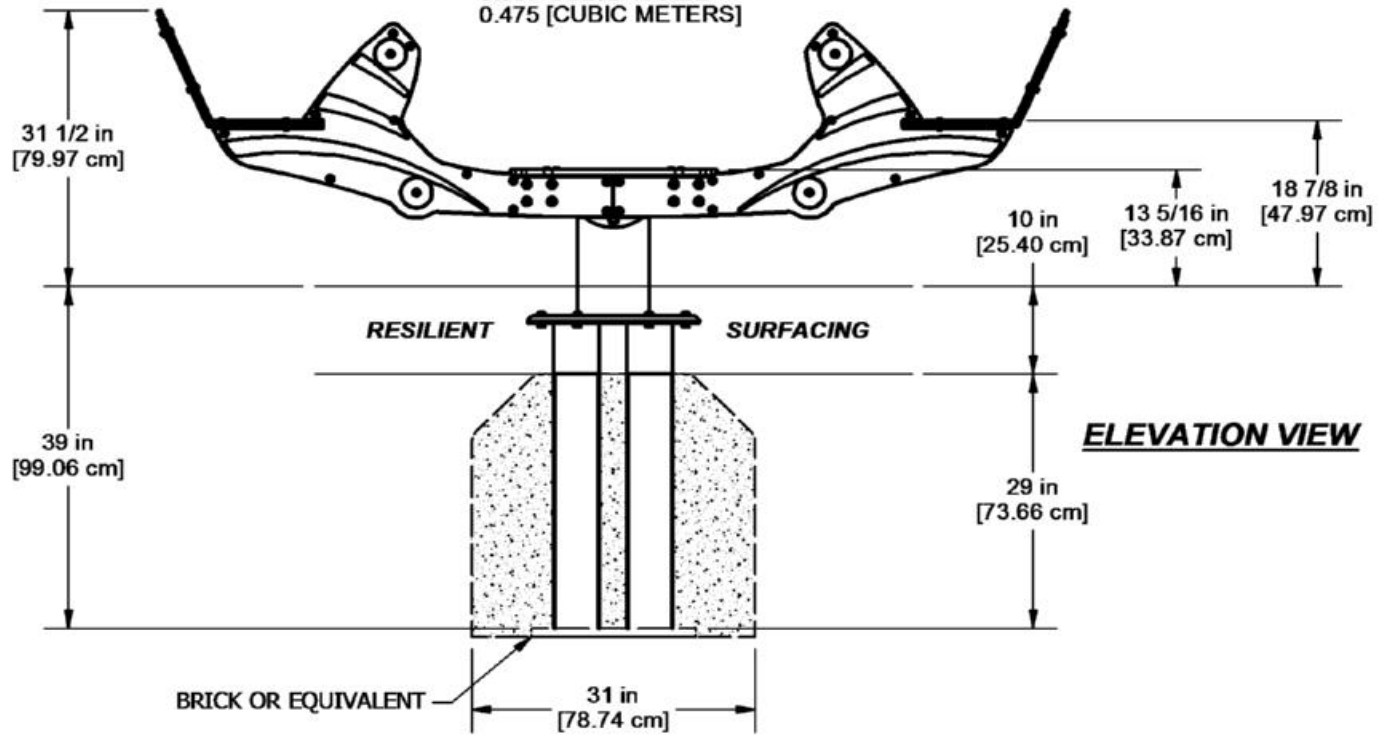
FINISHED ASSEMBLY

65285 FOUR4ALL ROCKER



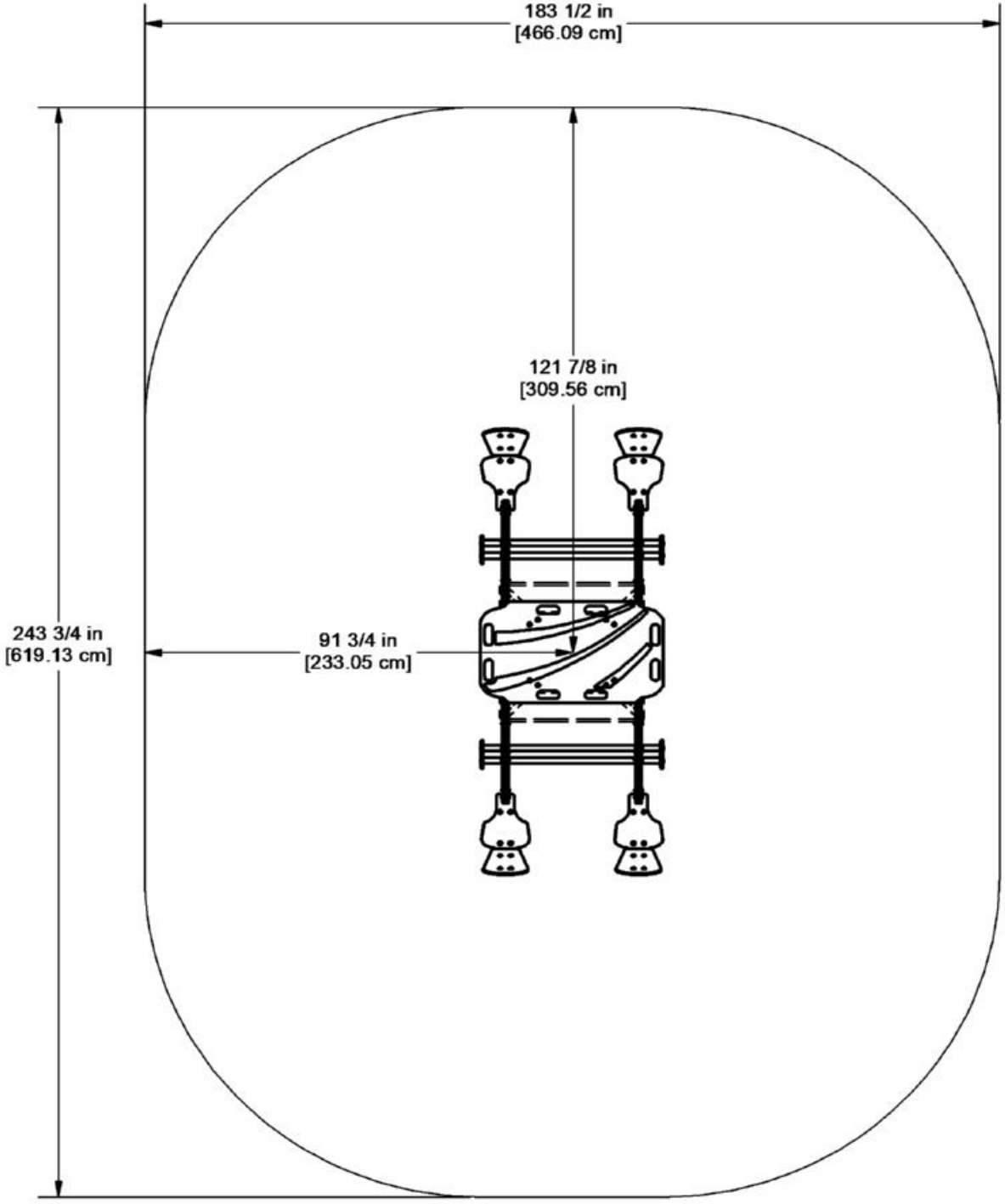
PLAN VIEW

CONCRETE REQUIRED
0.597 CUBIC YARDS
0.475 [CUBIC METERS]



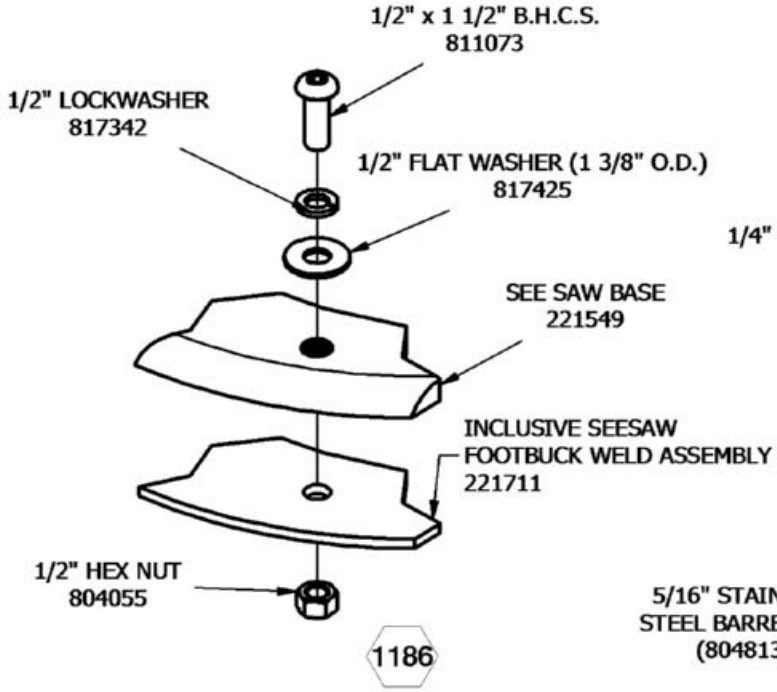
ELEVATION VIEW

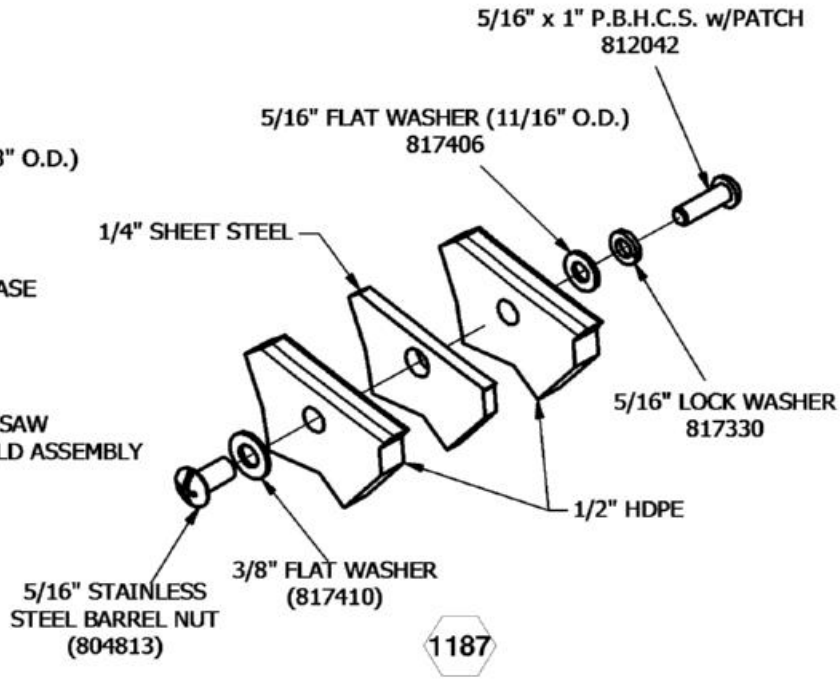
65285 FOUR4ALL ROCKER

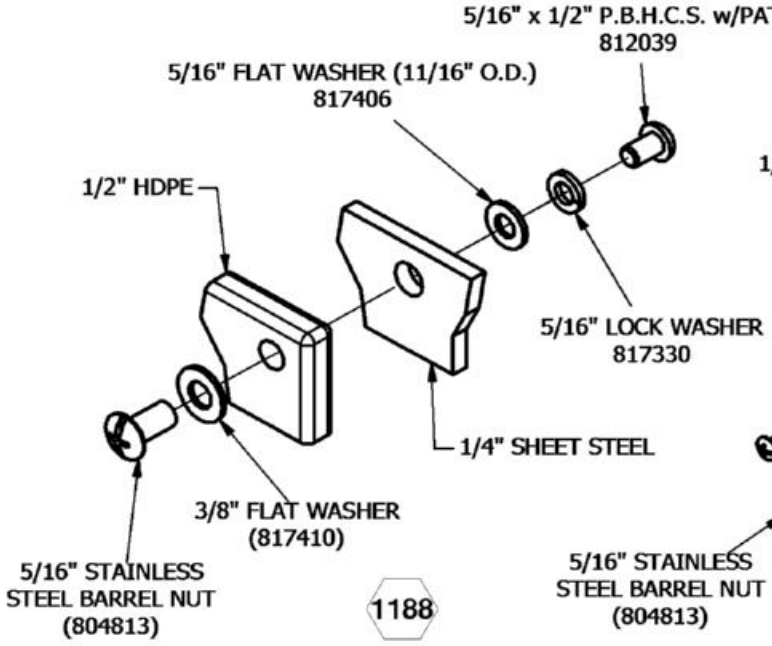


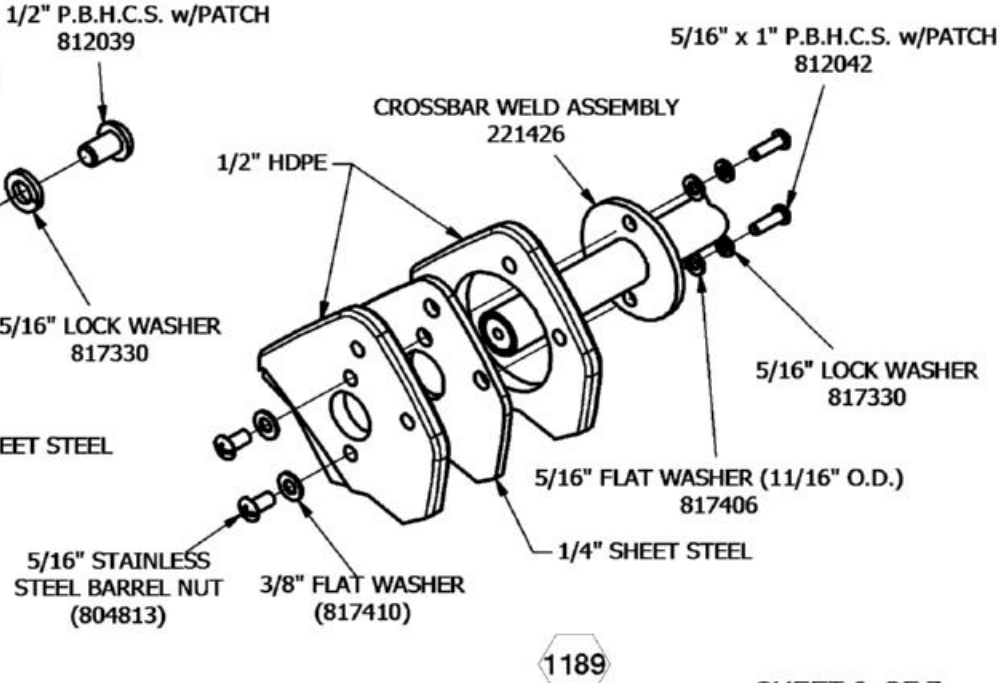
NOTE:
OWNER/OPERATOR SHALL INSTALL AND MAINTAIN PROTECTIVE SURFACING WITH THE USE ZONE (U.S.) OR PROTECTIVE SURFACING ZONE (CANADA) OF ALL PLAY EQUIPMENT TO COMPLY WITH ASTM F-1487 (U.S.) OR CAN/CSA-Z-614 (CANADA).

65285 FOUR4ALL ROCKER



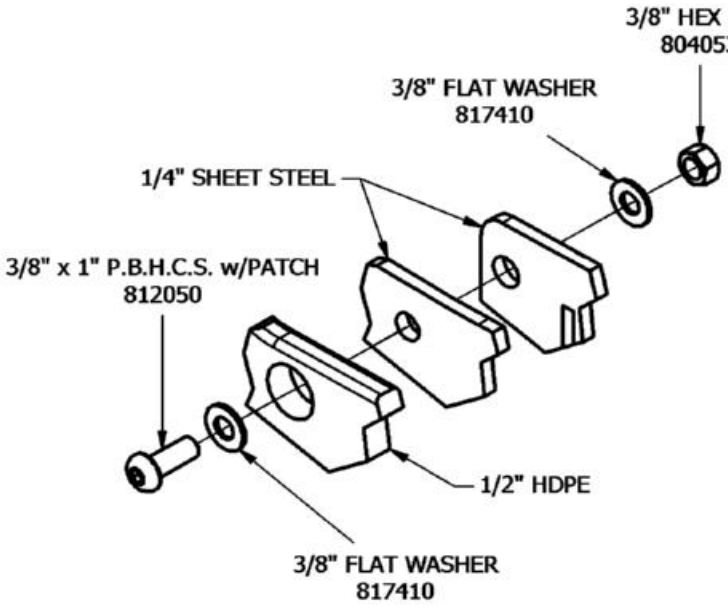




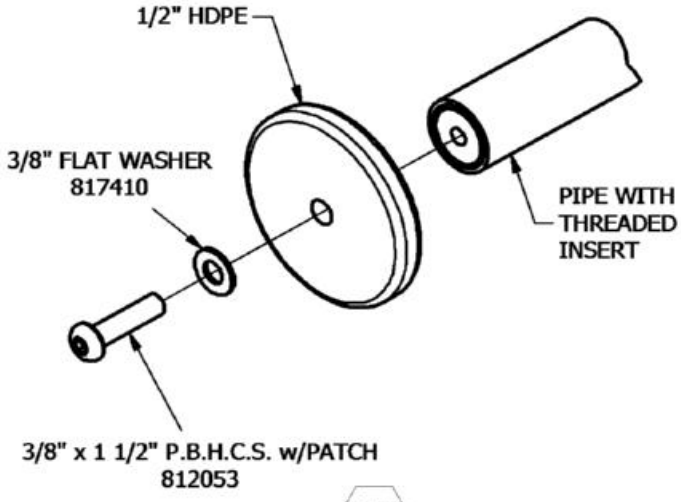


Issued/Revised: 6/4/2024

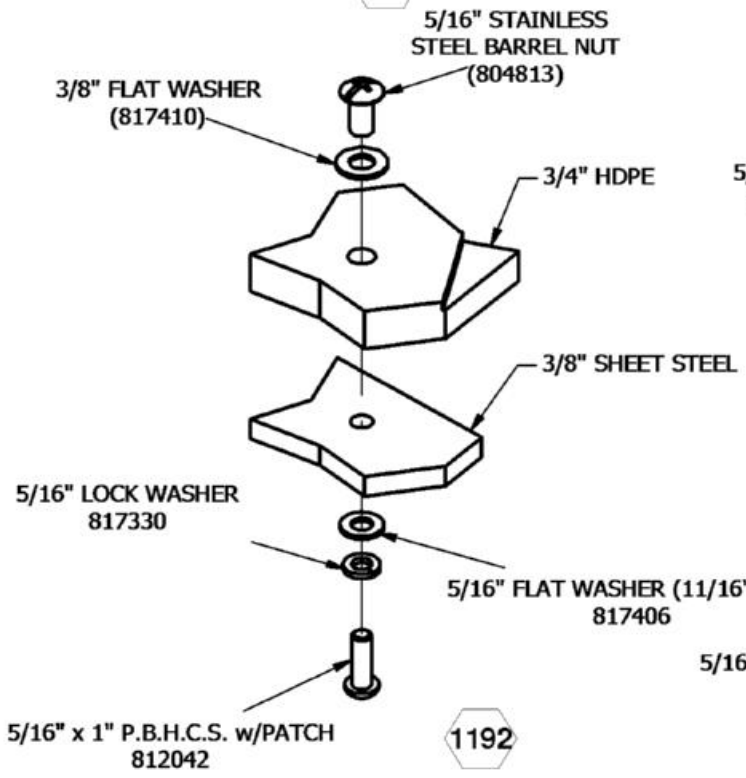
65285 FOUR4ALL ROCKER



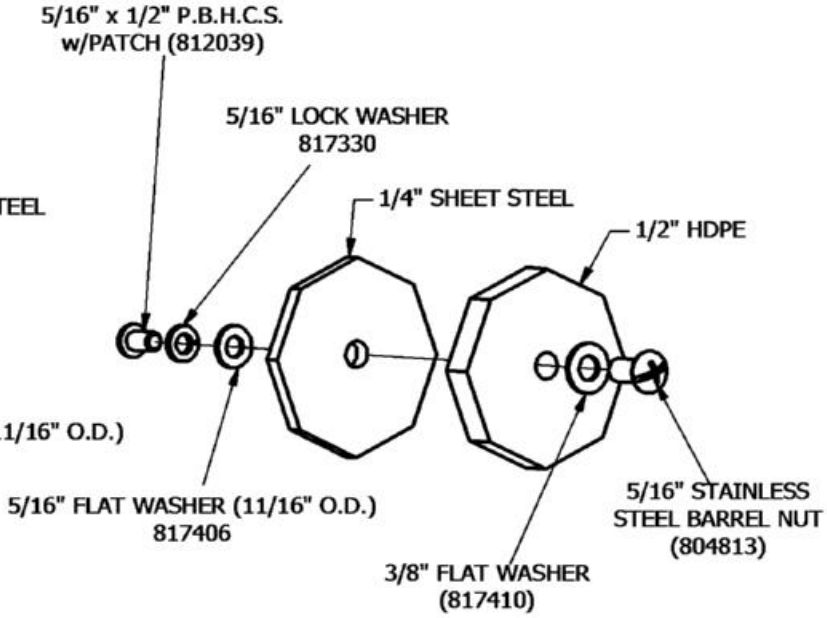
1190



1191



1192



1193

Issued/Revised: 6/4/2024

Free Standing

67021 HELIX CLIMBER FOR TWO NETS

Parts List		
DESCRIPTION	QTY	PART NUMBER
HELIX CLIMBER ASS'Y #2	1	313187
3 1/2" DOME CAP	3	212995
HARDWARE COMPLETE	1	314171
3/16" x 13/32" DRIVE RIVET	6	805366

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Helix Climber Ass'y #2:
Shall be an all welded construction fabricated from 3 1/2" O.D. (13ga.) galvanized steel tubing, and 1.315 O.D. (14ga.) galvanized steel tubing. The Helix Climber Assembly #2 shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with thespecifications outlined herein.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.

2. Attach Caps to Helix Assembly using 3/16" x 13/32" Drive Rivets as shown in Detail 597. Attach appropriate nets to the Helix Climber Assembly
   using 3/8" x 4" P.B.H.C.S. w/Patch and 3/8" Flat Washer as shown in Detail 759.

3. Plumb and level the entire assembly and tighten all fasteners.

4. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

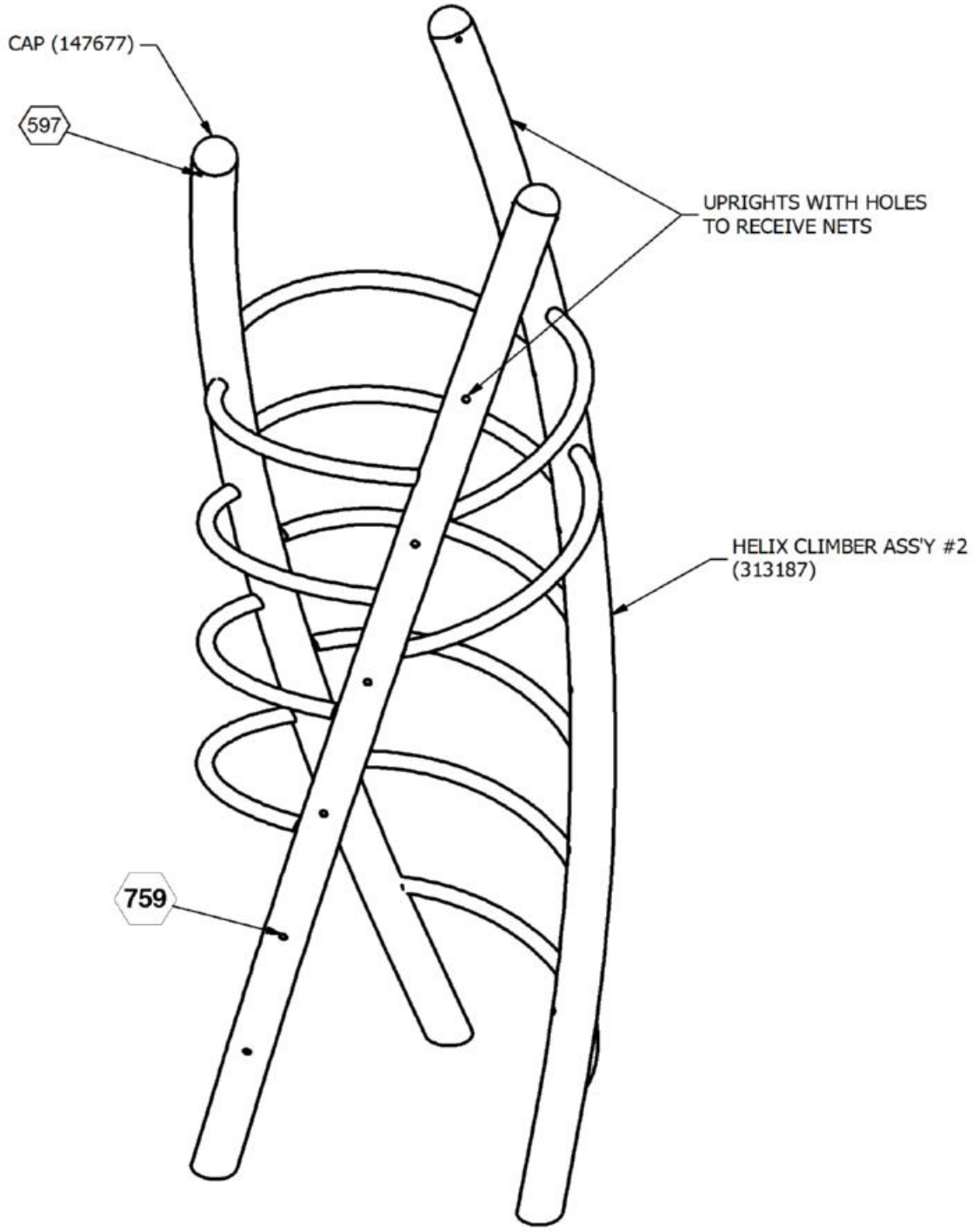
5. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

Free Standing

67021 HELIX CLIMBER FOR TWO NETS



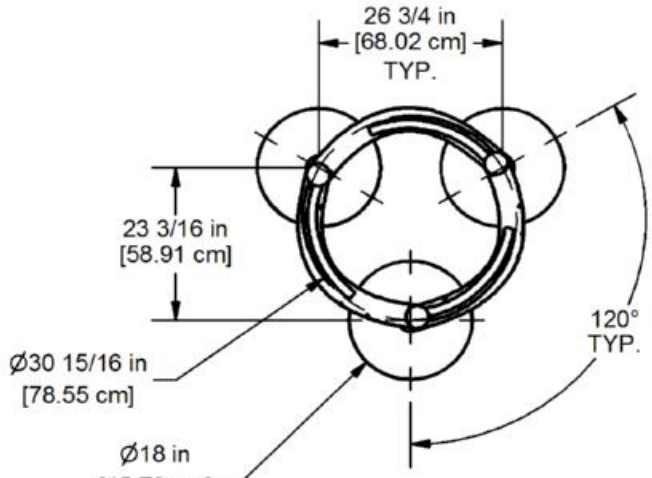
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

Issued/Revised: 3/17/2017

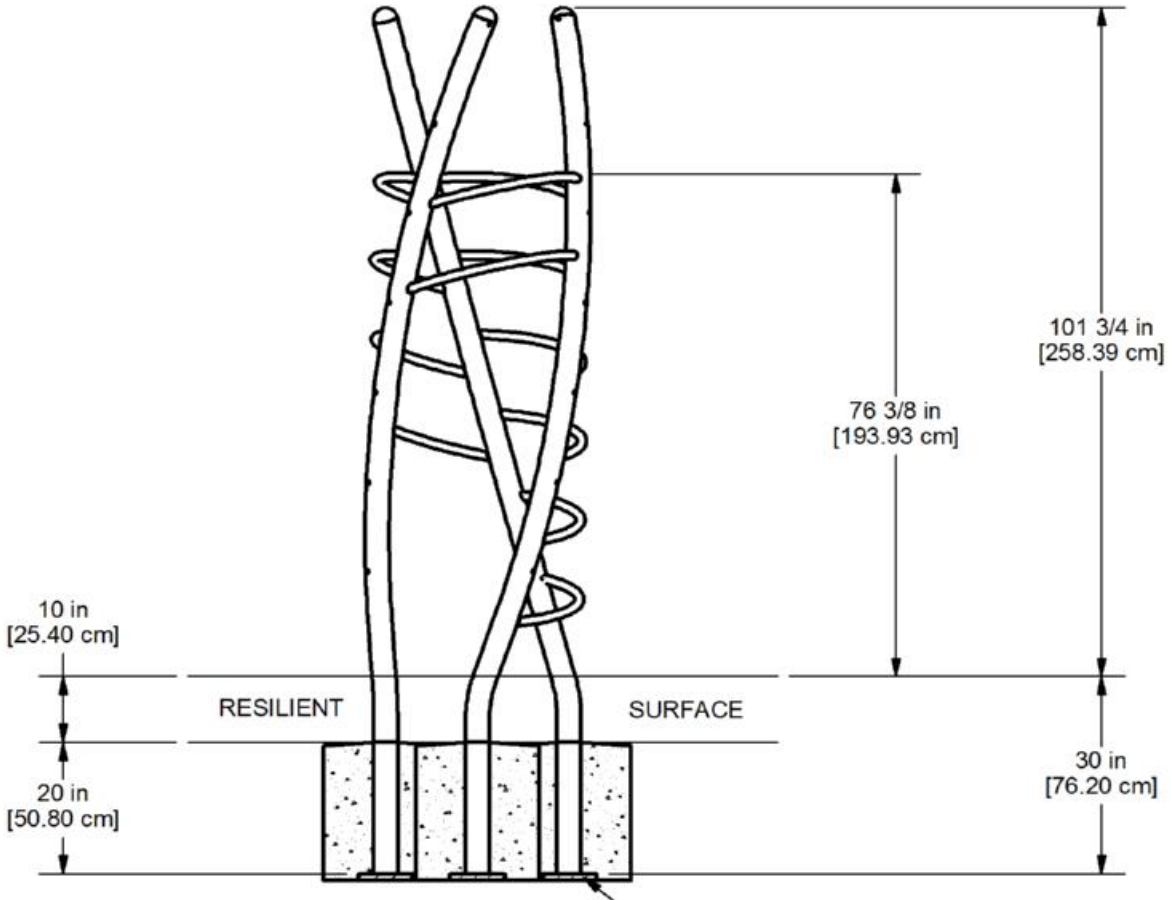
Free Standing

67021 HELIX CLIMBER FOR TWO NETS



PLAN VIEW

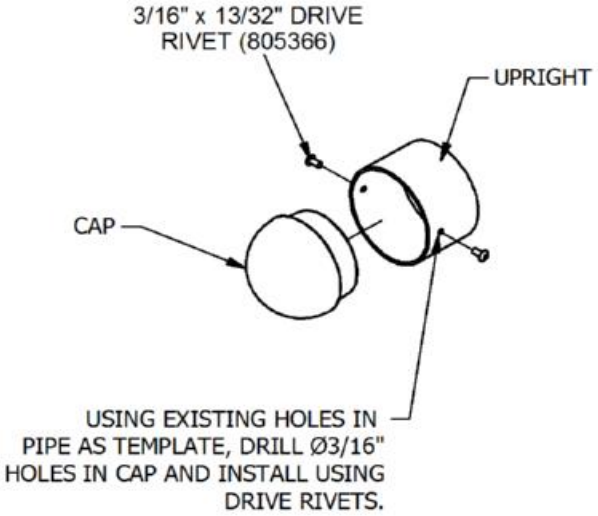
CONCRETE REQUIRED
.33 CUBIC YARDS
.25 [CUBIC METERS]



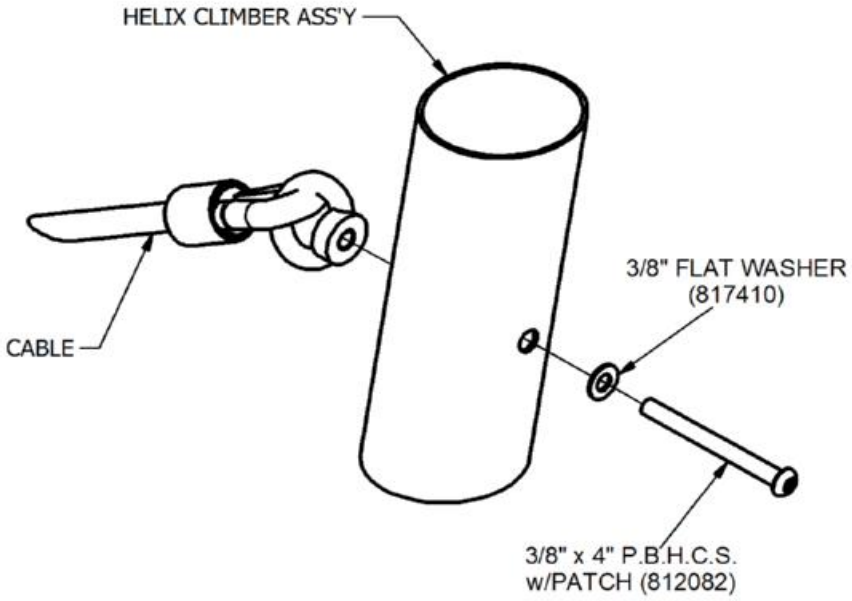
ELEVATION VIEW

Issued/Revised: 3/17/2017

67021 HELIX CLIMBER FOR TWO NETS



597



759

REFERENCE

67023 BUTTON WALK

Parts List		
DESCRIPTION	QTY	PART NUMBER
BUTTON STEP	4	308072
SPACE WALK FRAME ASS'Y	1	313201
BUTTON WALK NET	1	313271
BUTTON SUPPORT ASS'Y	4	314524
HARDWARE COMPLETE	1	314578
CLEVIS w/SPECIAL HEAD	4	166683
CHAIN 54"	1	202635
CHAIN 60"	1	202639
CHAIN 64"	1	202640
CHAIN 51 7/16"	1	202656
BW CABLE #1	2	314529
BW CABLE #2	1	314530
BW CABLE #3	1	314531
3/8" x 1" P.B.H.C.S. w/PATCH	16	812050
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	2	812058
3/8" x 3 1/2" P.B.H.C.S. w/PATCH	6	812075
3/8" x 4" P.B.H.C.S. w/PATCH	6	812082
3/8" LOCK WASHER	16	817334
3/8" FLAT WASHER	37	817410
3/8" FLAT WASHER (1 1/4" O.D.)	9	817424
3/8" BARREL NUT	3	804804
3/8" PLASTIC WASHER	8	817612

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

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Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Space Walk Frame Assembly:
Shall be an all welded construction fabricated from 2.875" O.D. (10ga.) galvanized steel tubing, 2.375 O.D. (13ga.) galvanized steel tubing socket and 1/4" thick steel tabs. The Space Walk Frame Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

ButtonStep:
The Button Step shall be rotational molded from polyethylene. The polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotational molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Density (ASTM D-155); Brittleness Temperature (ASTM D-746); Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD).

67023 BUTTON WALK

Button Walk Net and Cables:
The Cables shall be 18mm diameter UV protected polyimide (nylon) rope cable with a calculated breaking load greater than or equal to 79.82kN: 6 strands each containing 19 steel reinforcing (0.6mm) strands within a polyamide sleeve wrapped around a reinforcing steel core containing 6 strands each containing 19 steel reinforcing (0.4mm) steel strands; each end of the cable having a junction loop attached onto the cable with a finished aluminum sleeve and lined with a stainless steel wear bar.

Button Support Assembly:
Shall be an all welded construction fabricated from 2.375 O.D. (13ga.); 1.315 (14 ga.) galvanized steel pipes and 3/16" thick x 10 1/2" dia. round steel Plate. The Button Support Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevations Views.

2. Attach Space Walk Frame Assembly to appropriate Rock Column Supports. See top view for correct placement. Attach Space Walk Frame Assemblies using 3/8" x 2 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 772.

3. Attach the Button Walk side of the Button Walk Net to Space Walk Frame Assembly using 3/8" x 3 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washer as shown in Detail 740. See Button Walk Net Flat Layout for side orientation.

4. Attach the Upright side of Button Walk Net to the appriapriate Helix Climber Upright. See top view for correct placement. For the connections with Eye Nuts, attach Button Walk Net using 3/8" x 4" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 759. For the top connection w/out Eye Nut, attach using 3/8" x 4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D) and 3/8" Barrel Nut as shown in Detail 792. See Button Walk Net Flat Layout for side orientation.

5. Attach Button Support Assemblies to Button Steps using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer and 3/8" Flat Washer as shown in Detail 775.

6. Attach Button Walk Cables to Button Support - Button Step Assemblies (Refer to step 5) as shown in Detail 776.

7. Attach Button Walk Cable - Step and Support Assemblies to Space Walk Frame Ass'y tabs using 3/8" Flatwashers. See Detail 927. See Finished Assembly View for Locations.

8. Attach Chain to Clevis w/Special Head, and then attach to tab on Button Support Assembly as shown in Detail 928.

9. Plumb and level the entire assembly and tighten all fasteners.

10. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

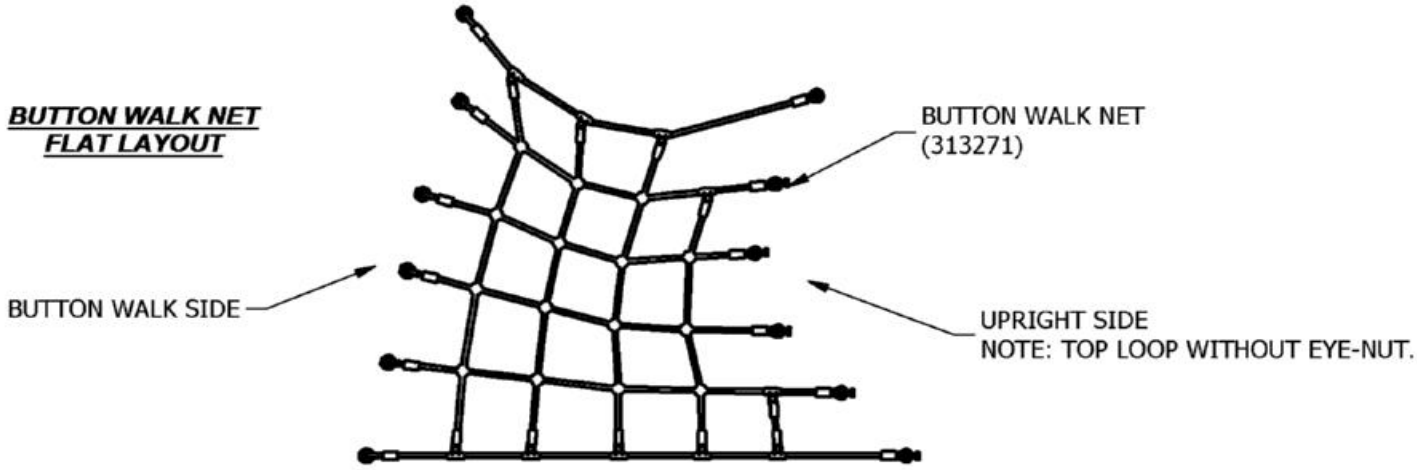
11. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

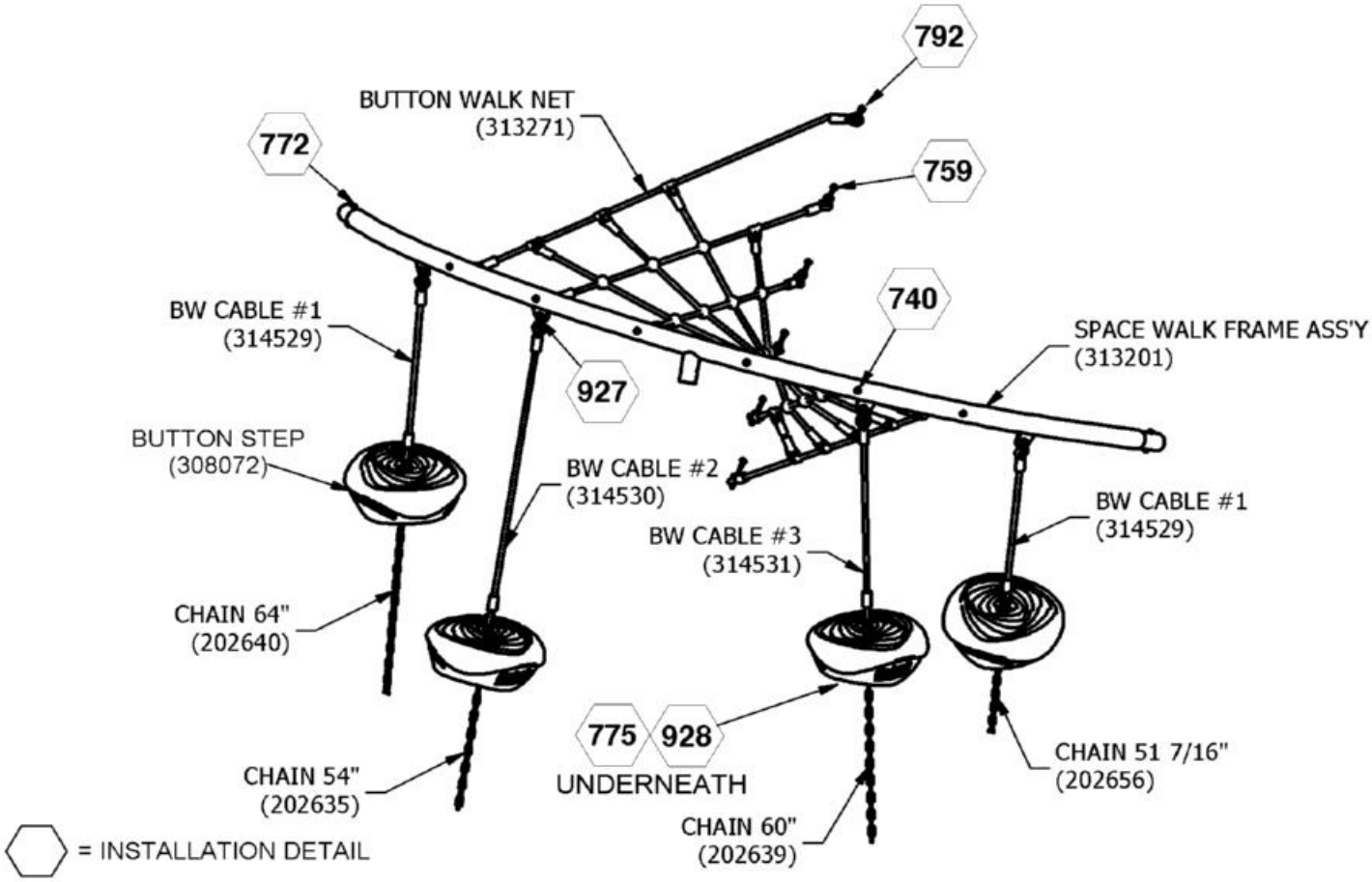
67023 BUTTON WALK

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

BUTTON WALK NET FLAT LAYOUT

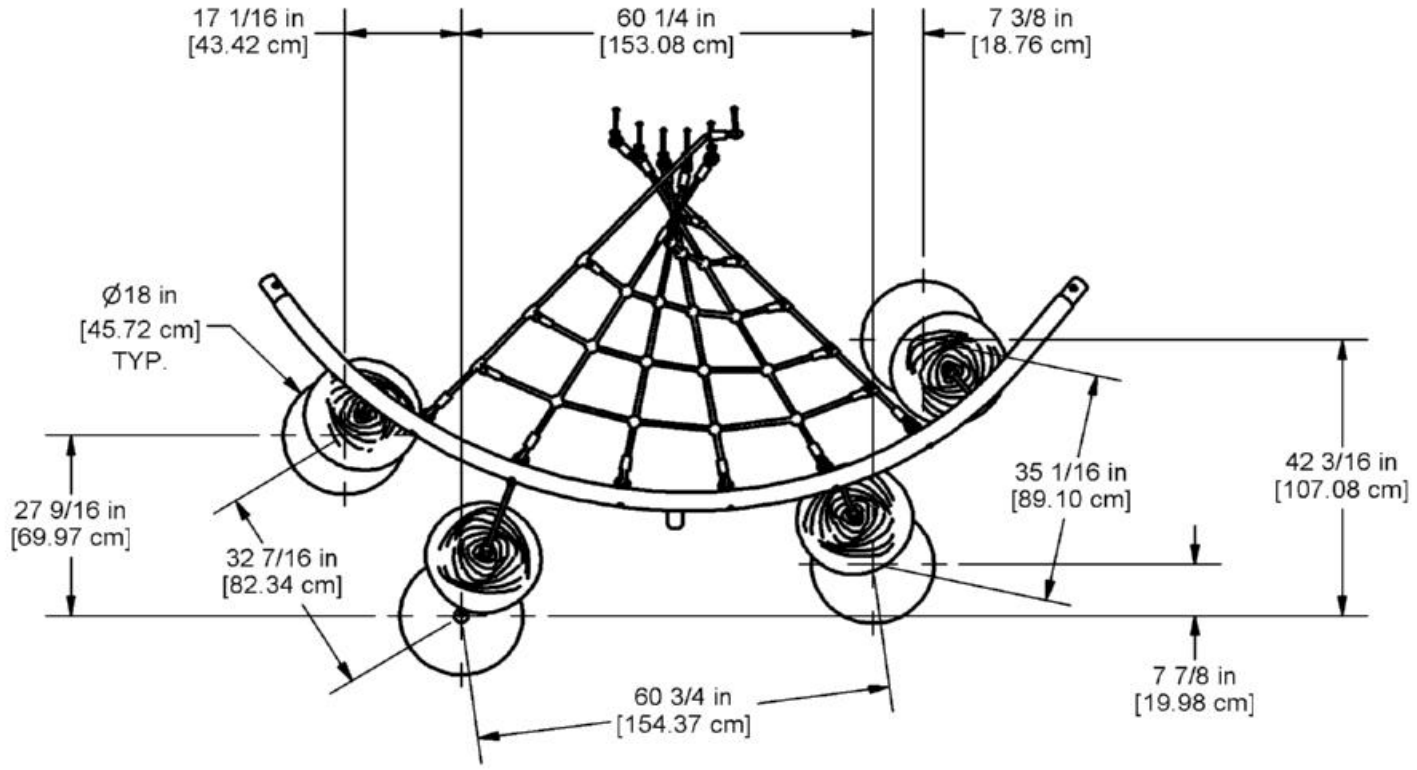




FINISHED ASSEMBLY

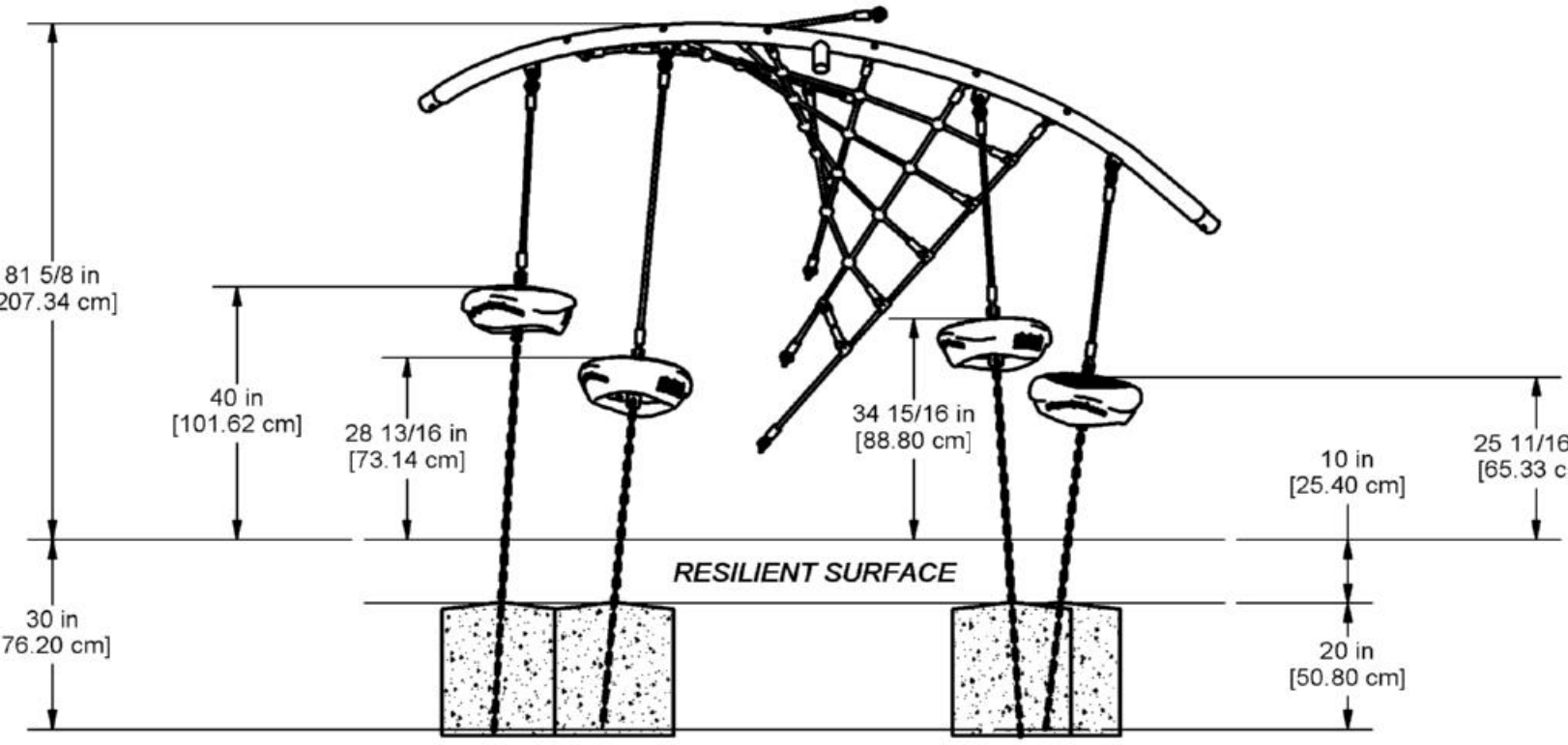
Free Standing

67023 BUTTON WALK



PLAN VIEW

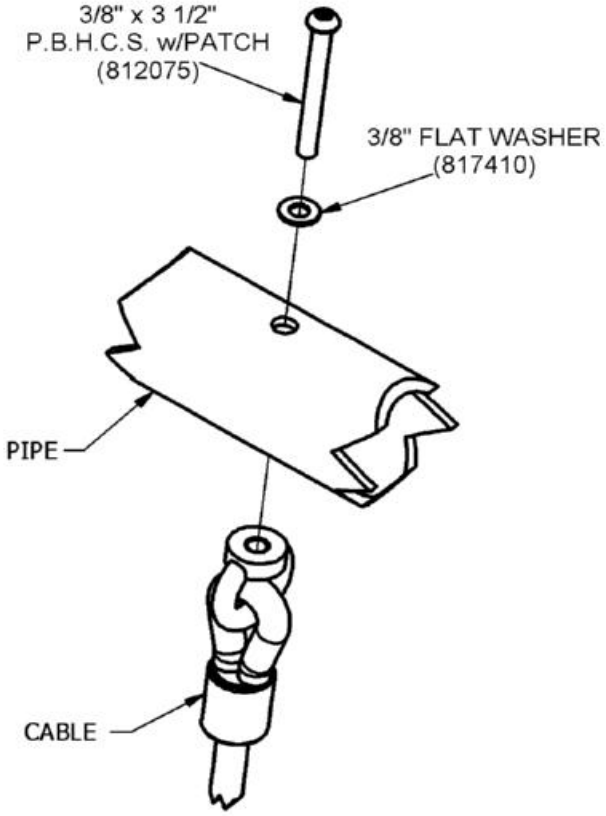
CONCRETE REQUIRED
0.44 CUBIC YARDS
0.33 [CUBIC METERS]



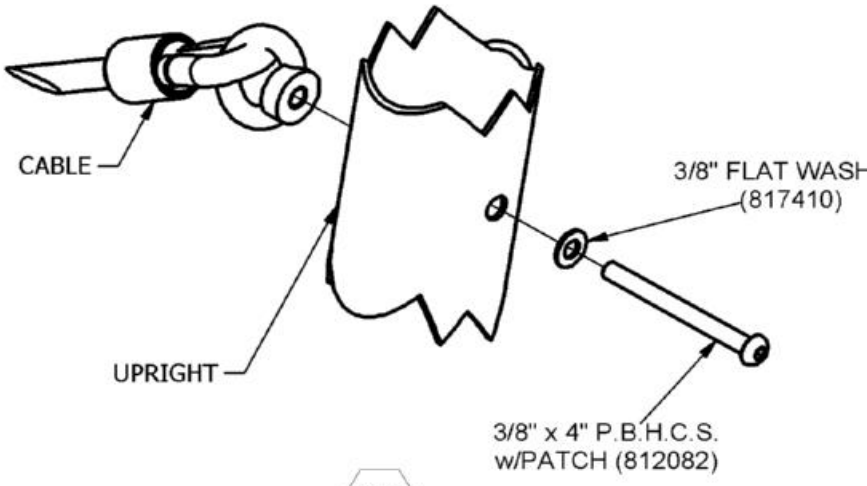
ELEVATION VIEW

Issued/Revised: 5/6/2021

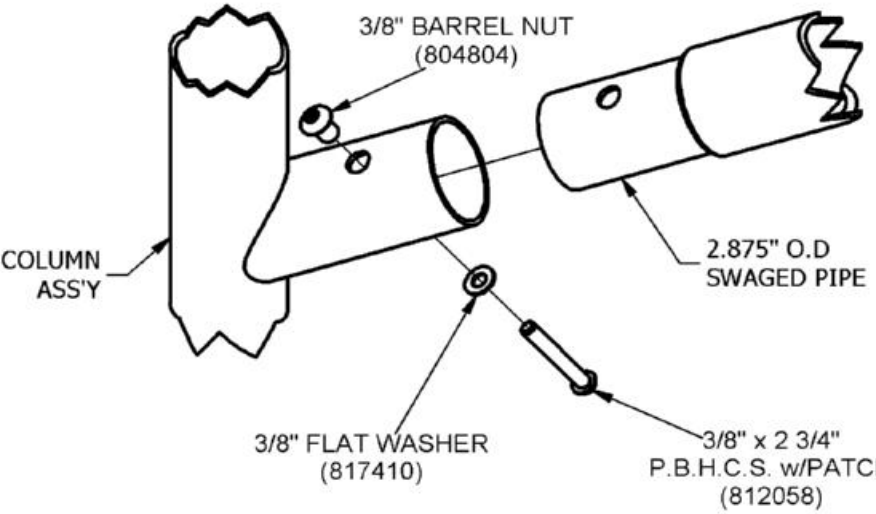
67023 BUTTON WALK



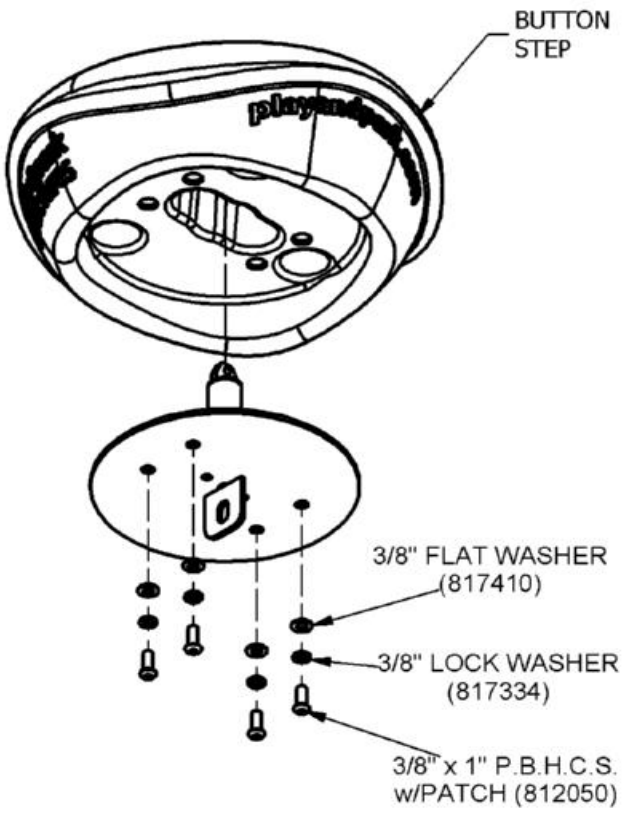
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759

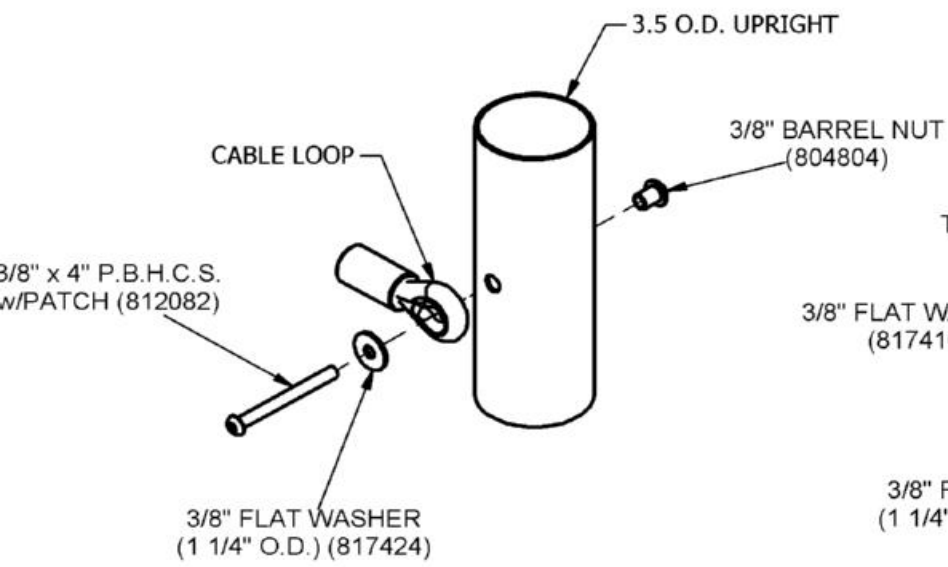


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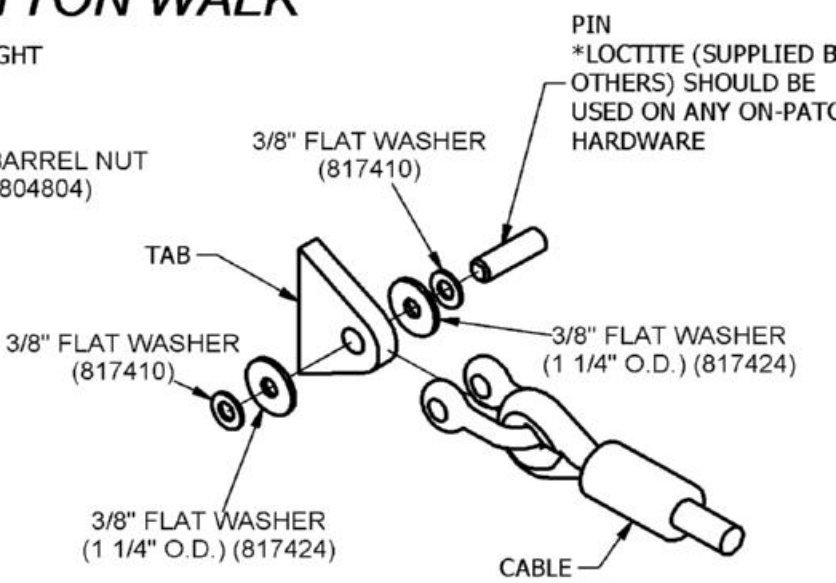


775

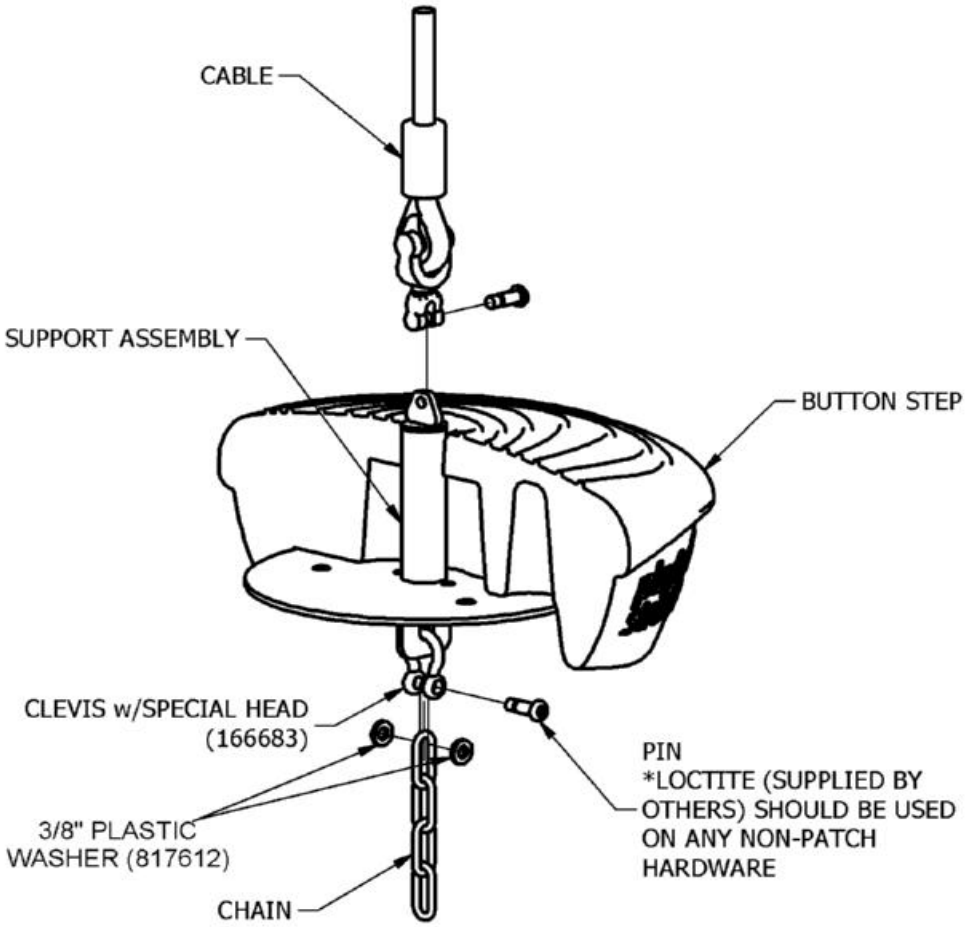
67023 BUTTON WALK



792



927



928

Free Standing

67025 TRI-NET CLIMBER

Parts List		
DESCRIPTION	QTY	PART NUMBER
TRIANGLE NET FRAME ASS'Y	1	313205
SIDE SPINE CLIMBER	1	313219
TRIANGLE NET	1	313273
HARDWARE COMPLETE	1	313287
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	6	812056*
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	2	812058*
3/8" x 3 1/2" P.B.H.C.S. w/PATCH	5	812075*
3/8" FLAT WASHER	13	817410*
3/8" BARREL NUT	3	804804*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Triangle Net Frame Assembly:
Shall be an all welded construction fabricated from 2.875" O.D. (10ga.), galvanized steel tubing; 2.375 O.D. (13ga.) and 1.66 (14 ga.) galvanized steel tubing sockets. The Triangle Net Frame Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Side Spine Climber:
Shall be an all welded construction fabricated from 2.375" O.D. (13ga.) and 1.315 O.D. (14ga.) galvanized steel tubing. The Side Spine Climber Assembly shall be coated after fabrication with a custom formula of TGIC polyester powdercoating in conformance with the specifications outlined herein.

Triangle Net:
Cable shall be 18mm diameter UV protected polyimide (nylon) rope cable with a calculated breaking load greater than or equal to 79.82kN: 6 strands each containing 19 steel reinforcing (0.6mm) strands within a polyamide sleeve wrapped around a reinforcing steel core containing 6 strands each containing 19 steel reinforcing (0.4mm) steel strands; each end of the cable having a junction loop attached onto the cable with a finished aluminum sleeve and lined with a stainless steel wear bar.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

Free Standing

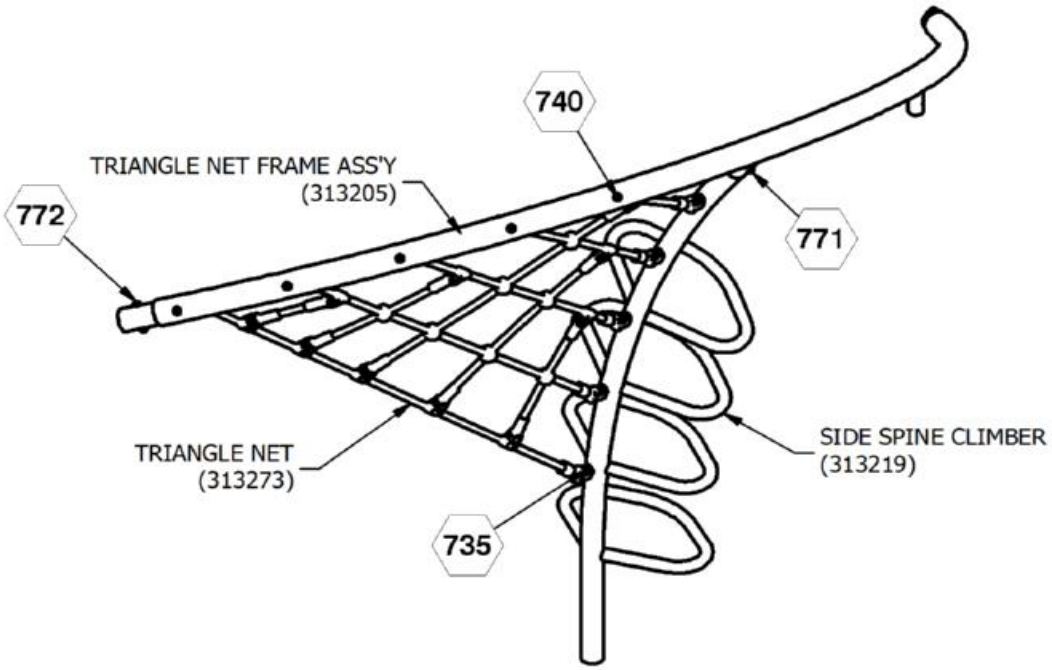
67025 TRI-NET CLIMBER

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.
2. Attach Triangle Net Frame Ass'y to appropriate Rock Column Support using 3/8" x 2 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut as shown in Detail 772. See Top View for correct placement.
3. Attach Side Spine Climber to Triangle Net Frame Ass'y using 3/8" x 2 1/4" P.B.H.C.S w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 771.
4. Attach Triangle Net to Triangle Net Frame Ass'y using 3/8" x 3 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 740.
5. Attach Triangle Net to Side Spine Climber using 3/8" x 2 1/4" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 735.
6. Plumb and level the entire assembly and tighten all fasteners.
7. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
8. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

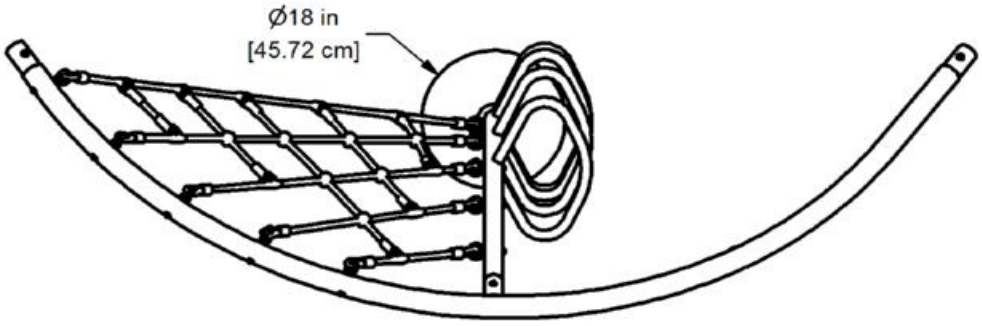


= INSTALLATION DETAIL

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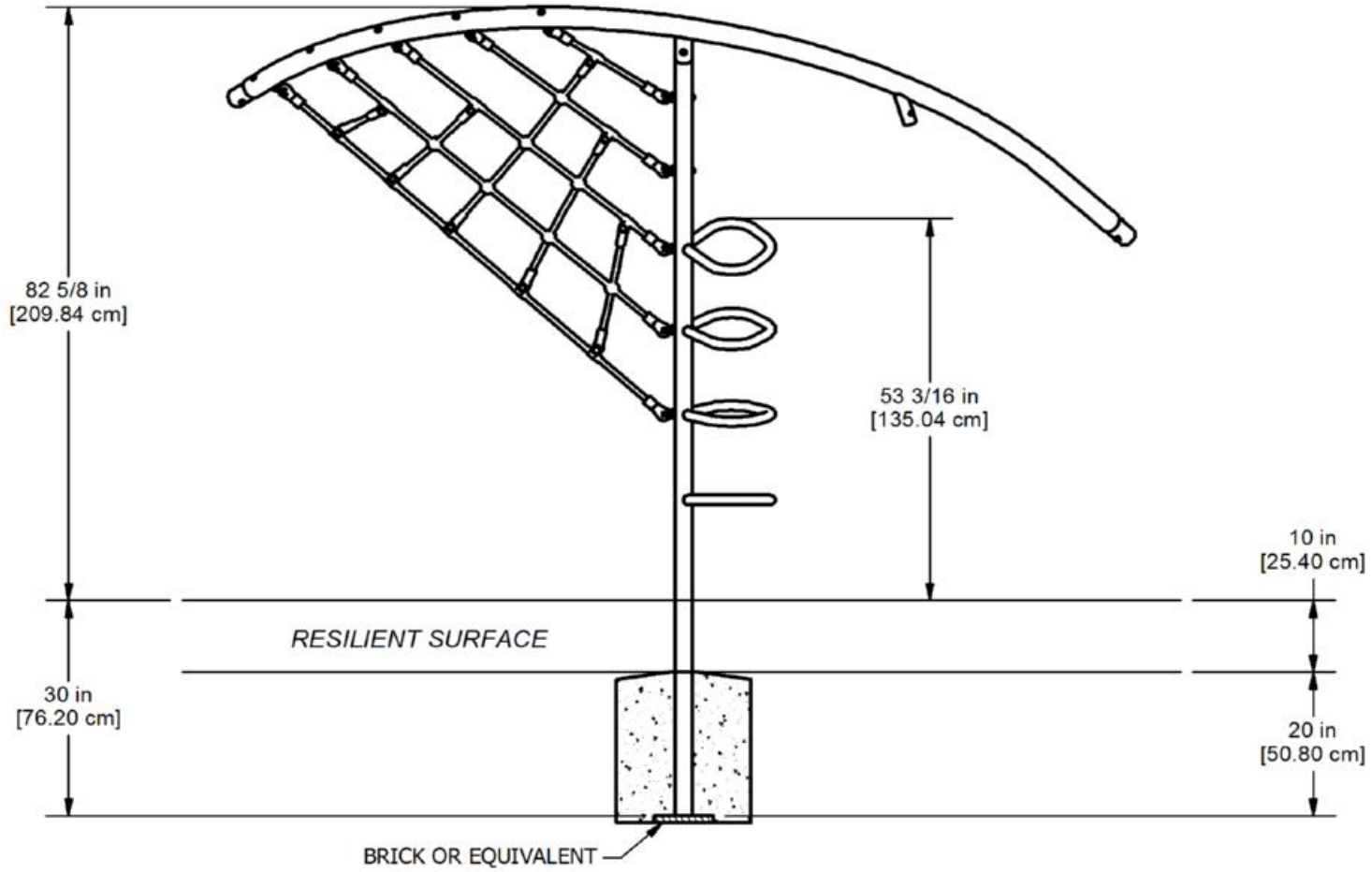
Free Standing

67025 TRI-NET CLIMBER



PLAN VIEW

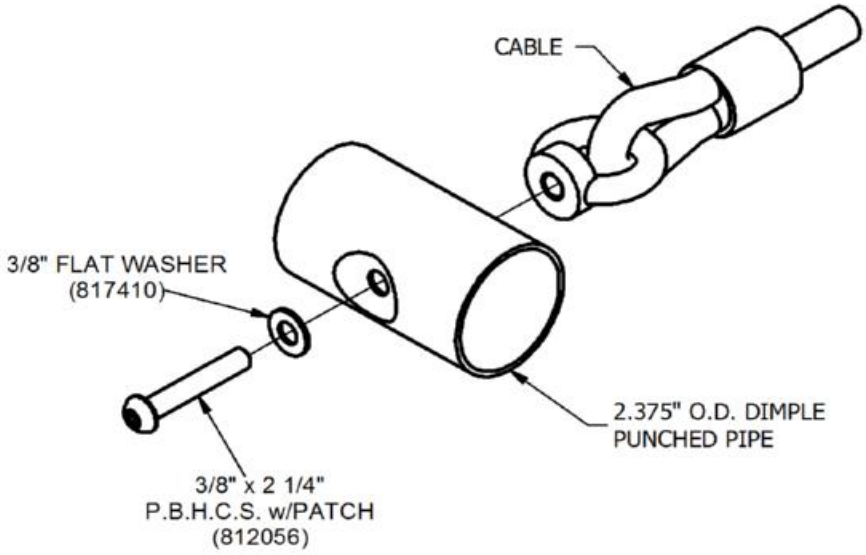
CONCRETE REQUIRED
0.11 CUBIC YARDS
0.08 [CUBIC METERS]



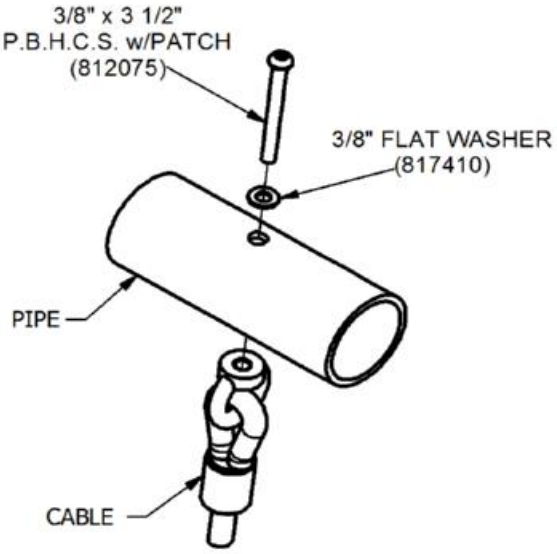
ELEVATION VIEW

Issued/Revised: 9/2/2015

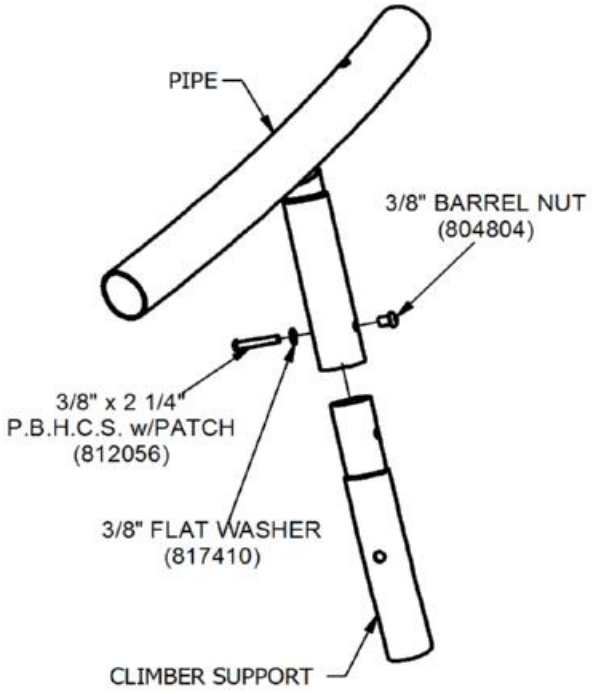
67025 TRI-NET CLIMBER



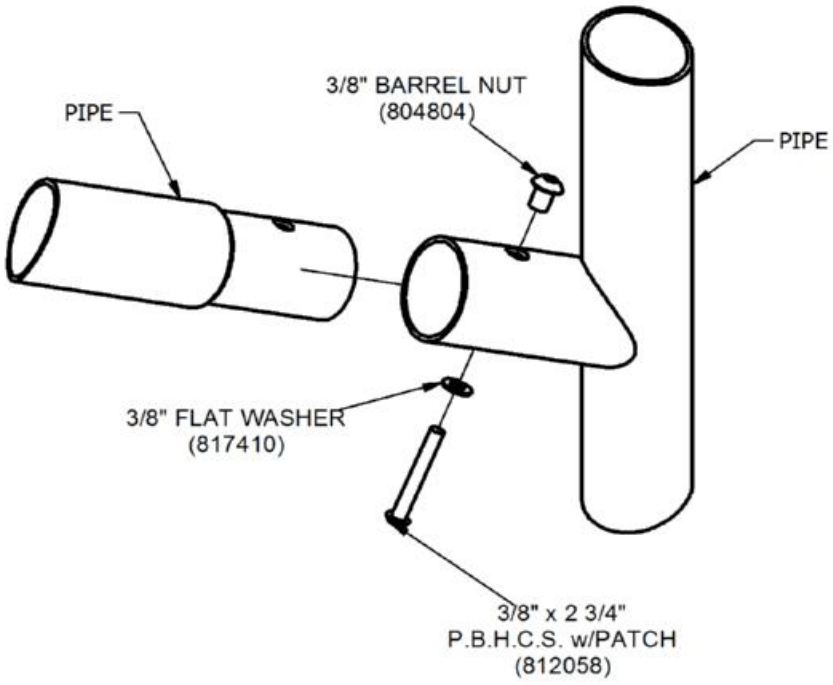
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771



772

Free Standing

67029 ANGLED ROCK w/COLUMN-NET SUPPORT

Parts List		
DESCRIPTION	QTY	PART NUMBER
BOTTOM SUPPORT	2	309623
ROCK COLUMN SUPPORT w/HOLES	1	313250
ANGLED ROCK	1	314610
HARDWARE COMPLETE	1	314632
BLUE HANDHOLD	2	314591
YELLOW HANDHOLD	4	314592
GREEN HANDHOLD	4	314593
3/8" x 1" P.B.H.C.S. w/PATCH	16	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	10	812051
3/8" LOCK WASHER	26	817334
3/8" FLAT WASHER	4	817410
3/8" FLAT WASHER (1" O.D.)	4	817401
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Bottom Support:
Shall be an all welded construction fabricated from 2" x 2" x 1/4" hot rolled angle and 1/4" x 2" hot rolled flat steel tab. The Bottom Support shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Rock Column Support w/Holes:
Shall be an all welded construction fabricated from 2.875" O.D. (10ga.), 1.315 O.D. (14ga.) galvanized steel tubing, and 1/4" x 4" hot rolled steel plate. The Rock Column Support w/Holes shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Angled Rock:
Shall be 3/8" wall thickness double wall construction, color impregnated linear low density polyethylene and shall conform to the rotationally molded specifications outlined herein. All polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotationally molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Density (ASTM D- 1505); Brittleness Temperature (ASTM D-746); Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD).

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68).

67029 ANGLED ROCK w/COLUMN-NET SUPPORT

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.

2. Attach Blue, Yellow, and Green Handholds to the Angled Rock using 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Lock Washer. See Detail 938.

3. Attach the Bottom Support to bottom of Angled Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 937.

4. Attach top part of the Rock Column Support w/Holes to the Angled Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1" O.D.). See Detail 941.

5. Attach the other tabs of the Rock Column Support w/Holes to the side of the Angled Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1 1/4" O.D.). See Detail 936.

6. Plumb and level the entire assembly and tighten all fasteners.

7. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

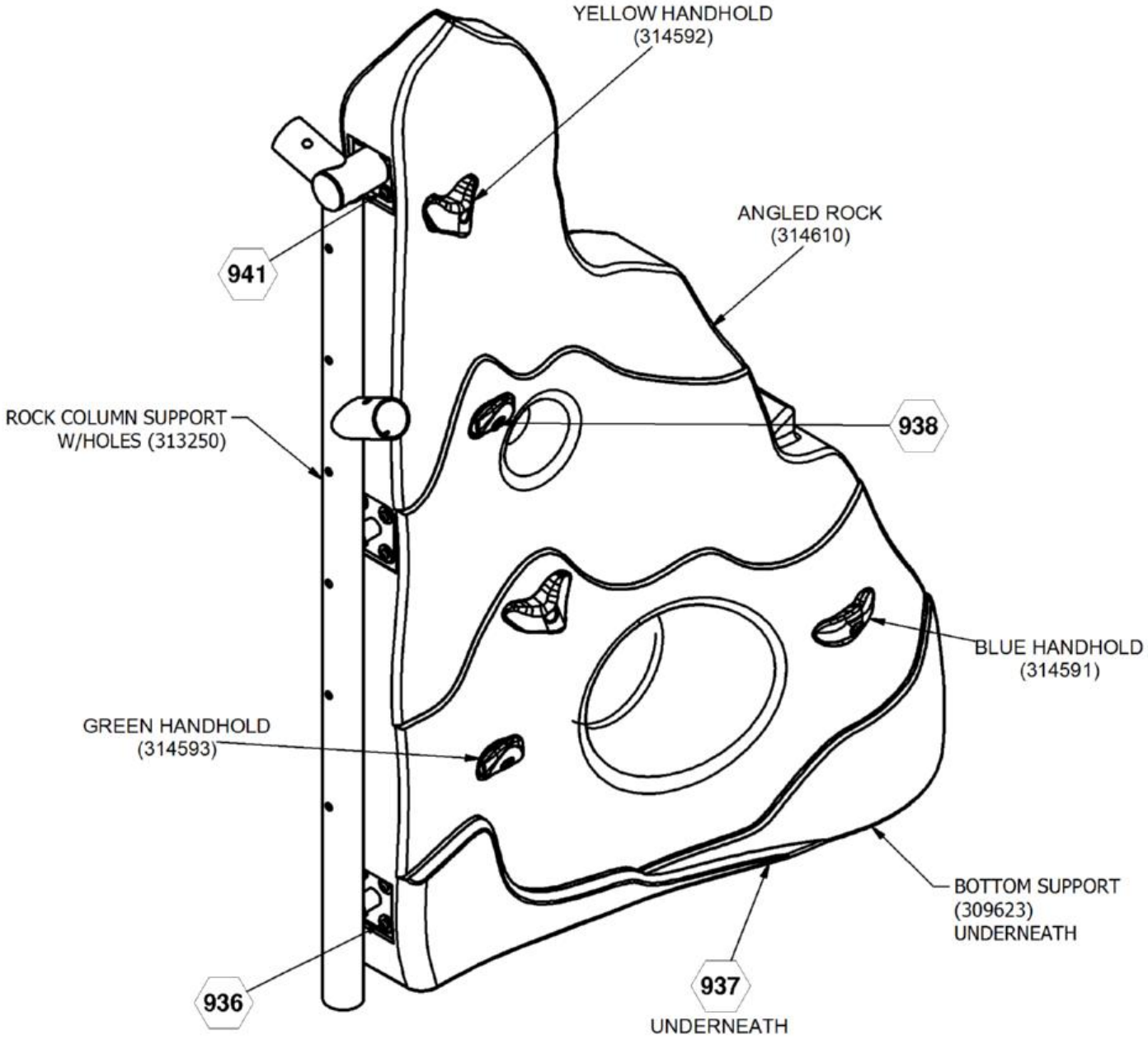
8. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

Free Standing

67029 ANGLED ROCK w/COLUMN-NET SUPPORT



= INSTALLATION DETAIL

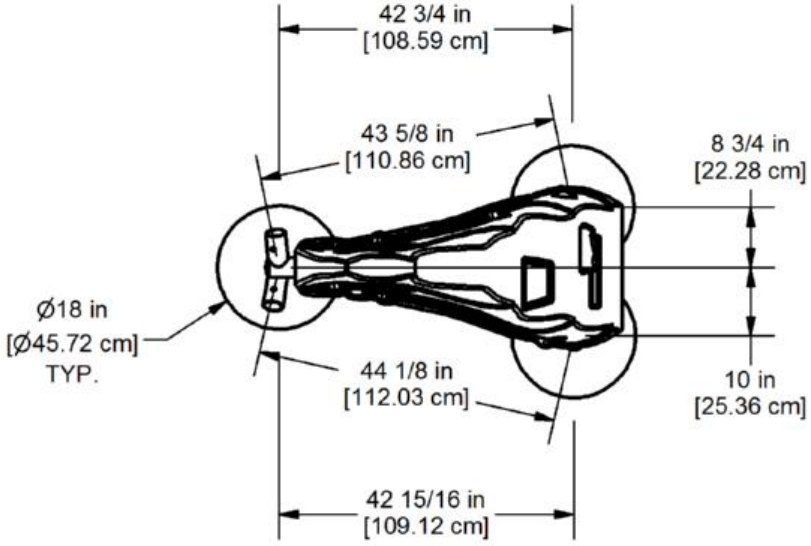
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 4/10/2018

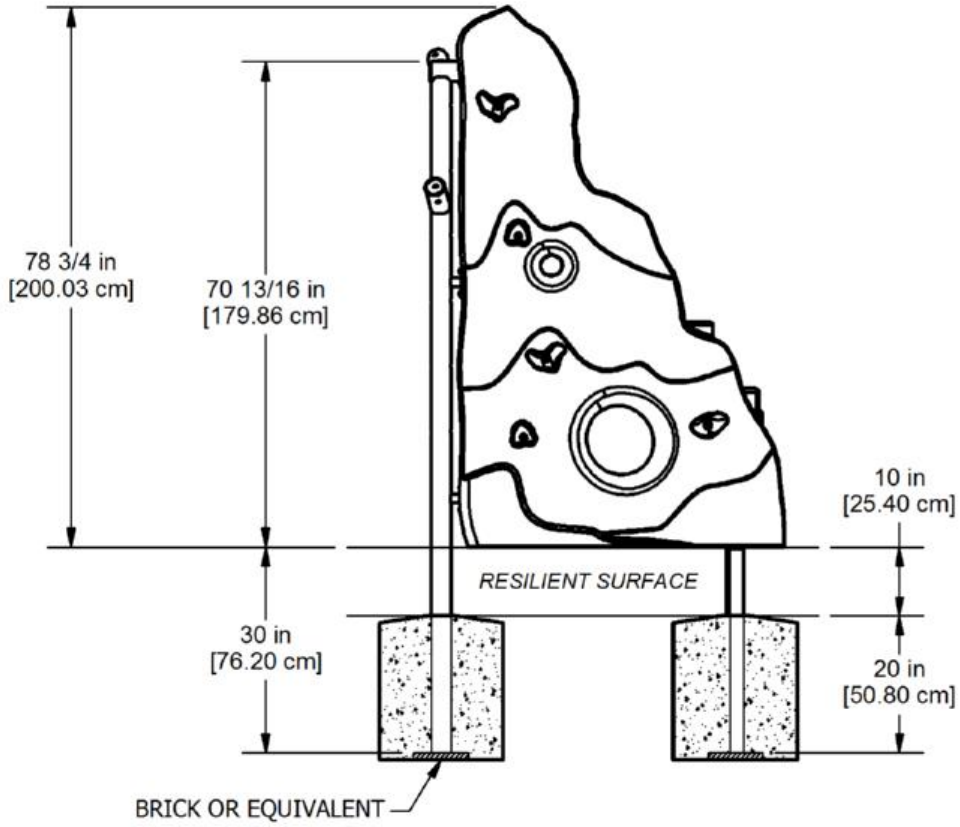
Free Standing

67029 ANGLED ROCK w/COLUMN-NET SUPPORT



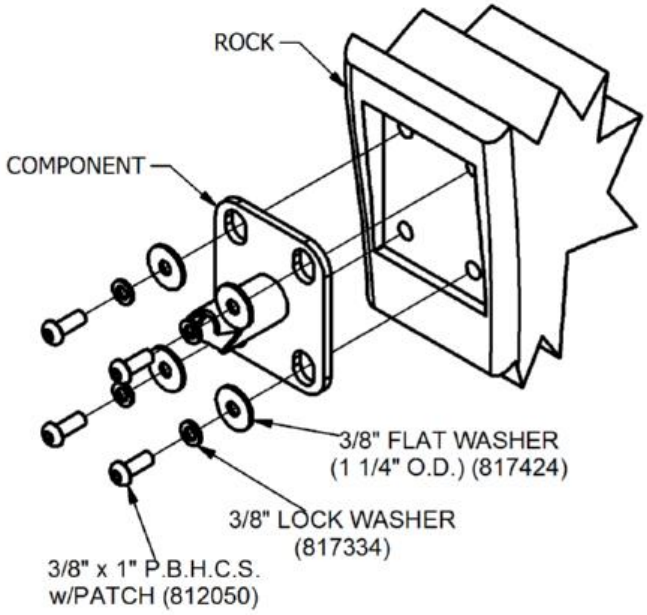
PLAN VIEW

CONCRETE REQUIRED
0.33 CUBIC YARDS
0.25 [CUBIC METERS]

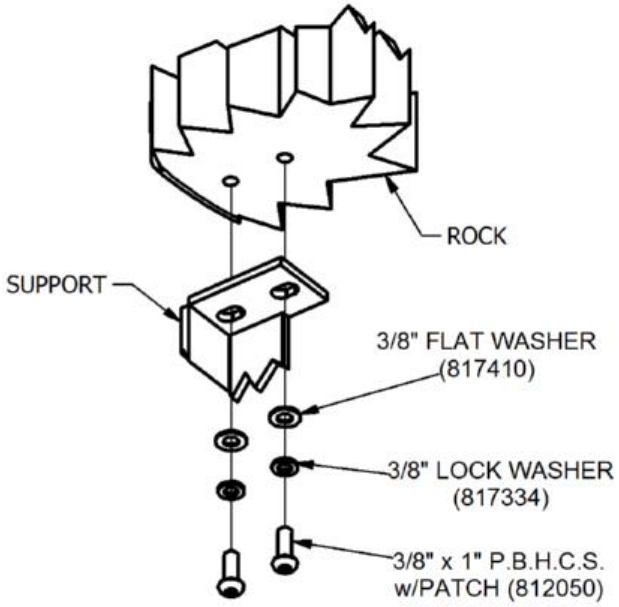


ELEVATION VIEW

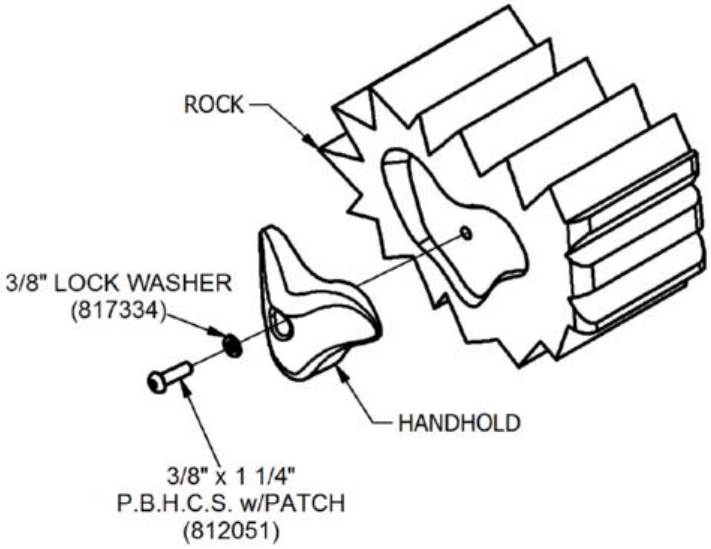
67029 ANGLED ROCK w/COLUMN-NET SUPPORT



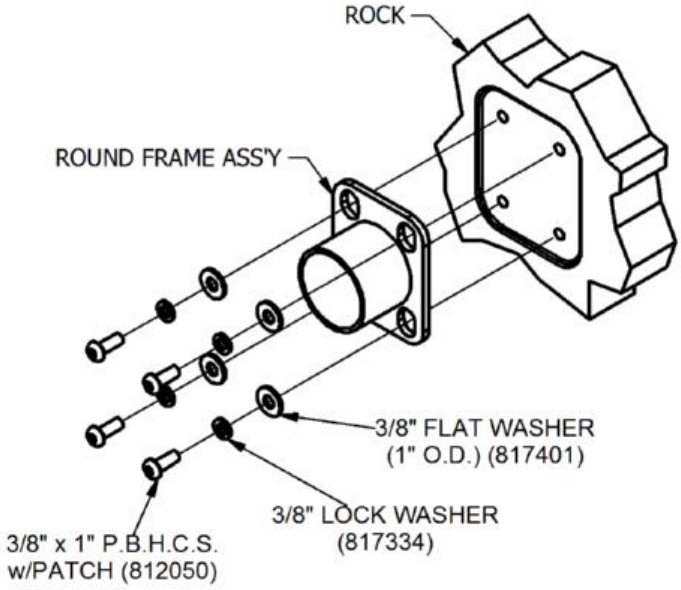
936



937



938



941

67030 DISC STEP

Parts List		
DESCRIPTION	QTY	PART NUMBER
DISC OUTRIGGER CLIMBER ASS'Y	1	313212
HDPE HALF DISC	2	313216
HARDWARE COMPLETE	1	313285
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	1	812056
3/8" FLAT WASHER	7	817410
3/8" LOCK NUT	6	804353
3/8" BARREL NUT	1	804804
3/8" x 1 1/4" P.B.H.C.S.w/PATCH	6	812051

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Disc Outrigger Climber Assembly:
Shall be an all welded construction fabricated from 2.375 O.D. (13ga.); 1.315 (14 ga.) galvanized steel pipes and 1/4" thick x 12" dia. round steel Plate. The Disc Outrigger Climber Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

HDPE Half Disc:
Panels shall be precision cut from a single solid sheet of .750" thick UV-stabilized extruded high-density polyethylene with colors molded in. The material will have a density of 60 lbs/ft³ and a tensile strength of 4400 PSI (30 Mpa) as determined per procedure C of ASTM D1928. All edges shall have radiuses and all corners rounded for safe play.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.
2. Attach HDPE Half Disc to Disc Outrigger Climber Ass'y using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer and 3/8" Lock Nut. See Detail 774.
3. Attach Disc Step Ass'y to appriopriate Round Frame using 3/8" x 2 1/4" P.B.H.C.S w/Patch, 3/8" Barrel Nut and 3/8" Flat Washer as shown in Detail 771. See Top View for correct placement.

67030 DISC STEP

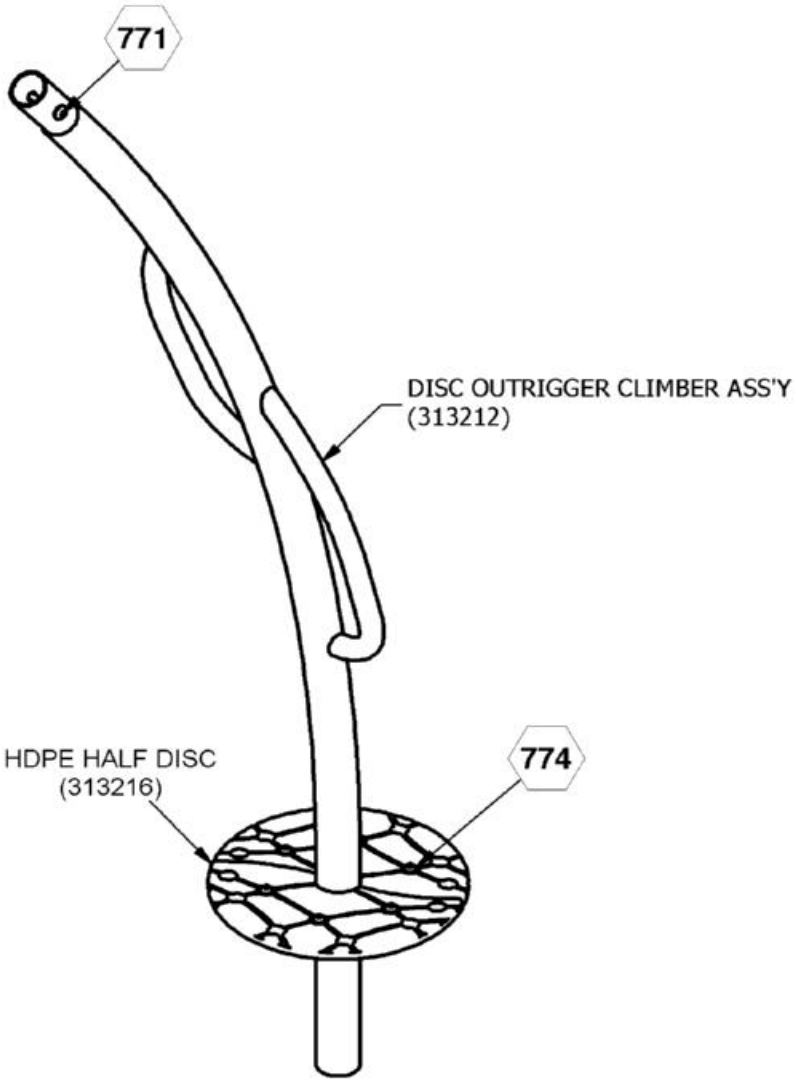
4. Plumb and level the entire assembly and tighten all fasteners.

5. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

6. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

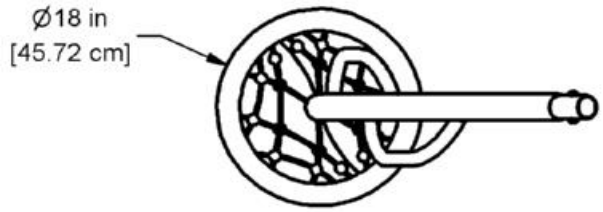
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



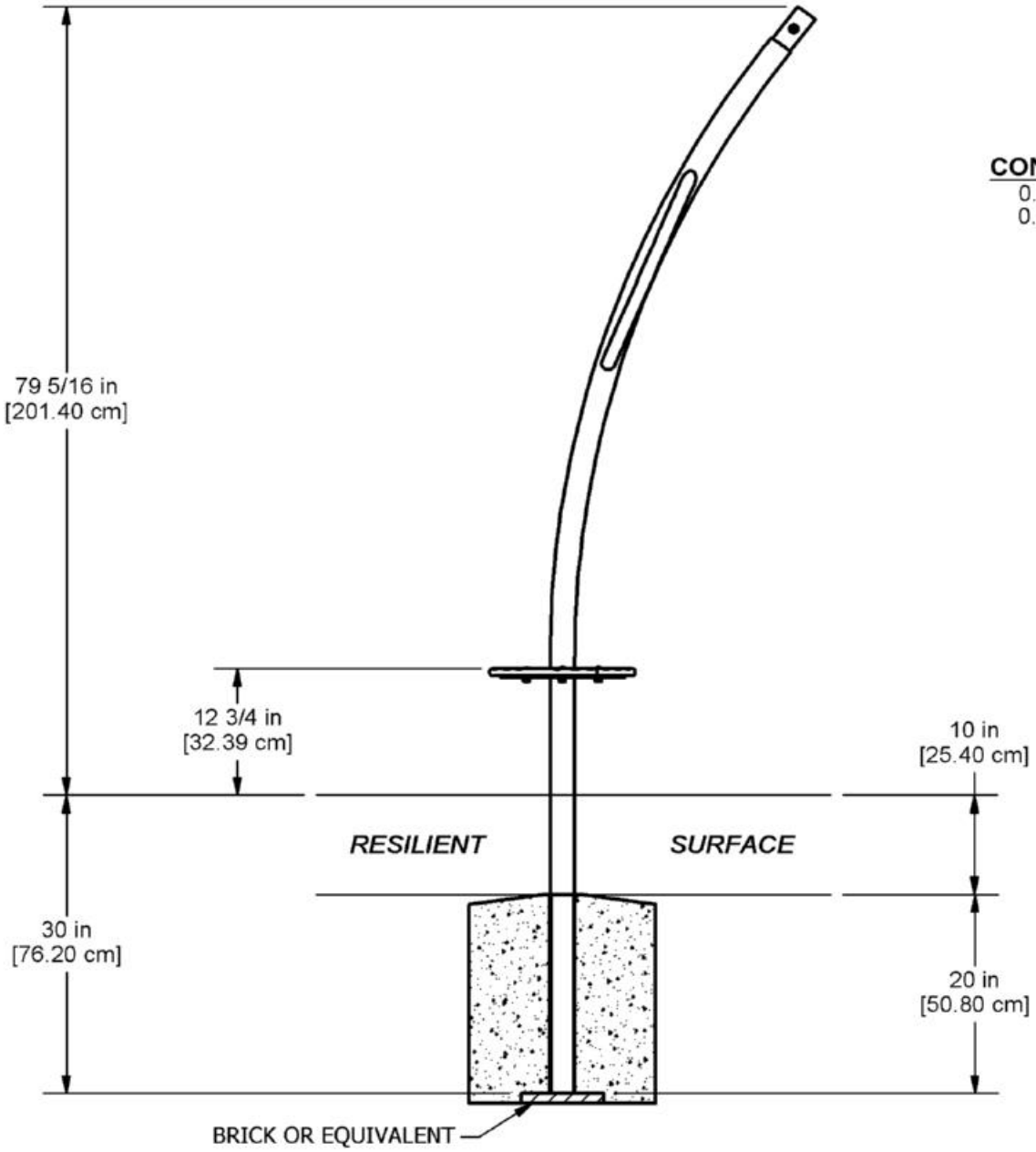
⬡ = INSTALLATION DETAIL

Free Standing

67030 DISC STEP



PLAN VIEW

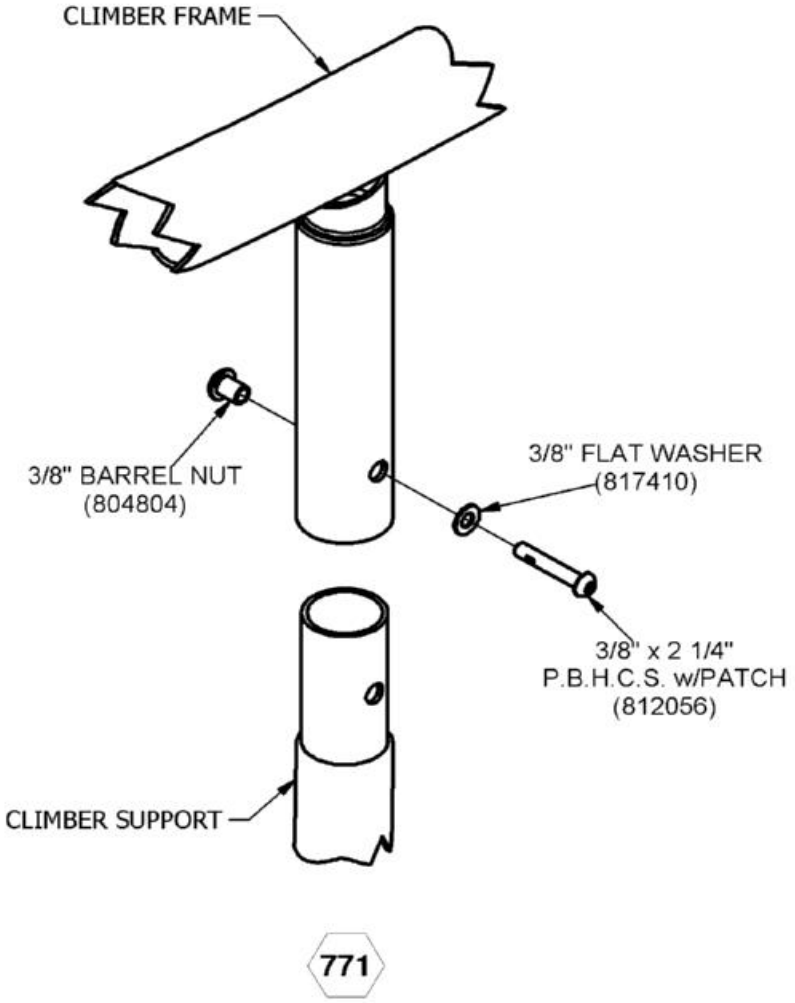


CONCRETE REQUIRED
0.11 CUBIC YARDS
0.08 [CUBIC METERS]

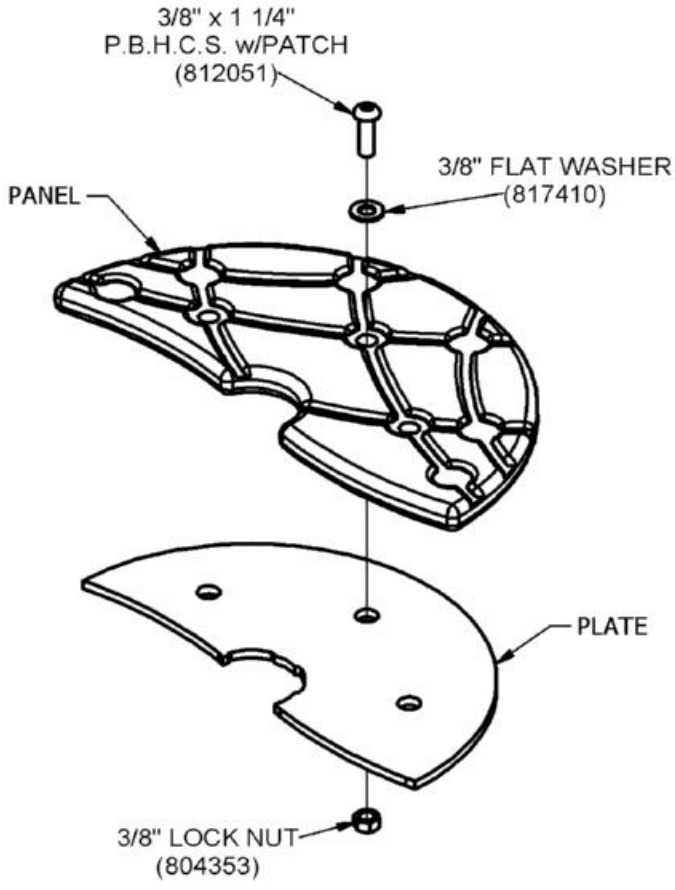
Issued/Revised: 5/4/2021

ELEVATION VIEW

67030 DISC STEP



771



774

Free Standing

67032 STRETCHY CLIMBER

Parts List		
DESCRIPTION	QTY	PART NUMBER
STRETCHY CLIMBER FRAME	1	313238
STRETCHY TOP PANEL	1	313243
STRETCHY BOTTOM PANEL	1	313244
HARDWARE COMPLETE	1	313309
3/8" x 3/4" P.B.H.C.S. w/PATCH	12	812052*
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	1	812053*
3/8" x 4 1/2" P.B.H.C.S. w/PATCH	3	812077*
3/8" FLAT WASHER	4	817410*
3/8" BARREL NUT	16	804804*
3/8" FLAT WASHER (1 1/4" O.D.)	12	817424*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Stretchy Top and Bottom Panels:
Panels shall be precision cut from a single solid sheet of .750" thick UV-stabilized extruded high-density polyethylene with colors molded in. The material will have a density of 60 lbs/ft³ and a tensile strength of 4400 PSI (30 Mpa) as determined per procedure C of ASTM D1928. All edges shall have radiuses and all corners rounded for safe play

Stretchy Climber Frame:
Shall be an all welded construction fabricated from 1.66" O.D. (14ga.) galvanized steel tubing. The Stretchy Climber Frame shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.

2. Attach top part of the Bottom Stretchy Climber to appriopriate Round Frame using 3/8" x 1 1/2" P.B.H.C.S w/Patch, 3/8" Flat Washer and 3/8" Barrel Nut as shown in Detail 066. See top view for correct placement.

3. Attach side of the Bottom Stretchy Climber to appropriate Rock Column Support using 3/8" x 4 1/2" P.B.H.C.S w/Patch, 3/8" Flat Washer and 3/8" Barrel Nut. See Detail 770. See top view for correct placement.

67032 STRETCHY CLIMBER

4. Attach Top and Bottom Stretchy Panels to tabs of Strectchy Climber Frame using 3/8" Barrel Nut, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" x 3/4" P.B.H.C.S. w/Patch. See Detail 791.

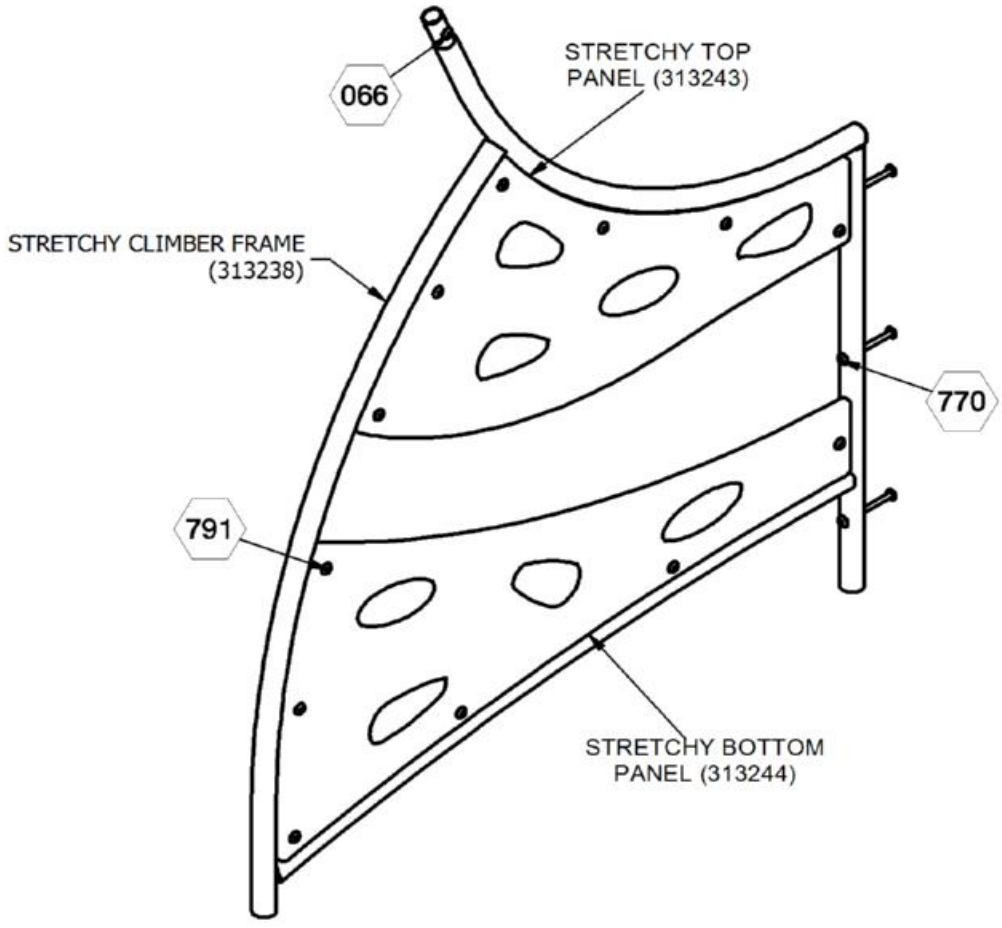
5. Plumb and level the entire assembly and tighten all fasteners.

6. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

7. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

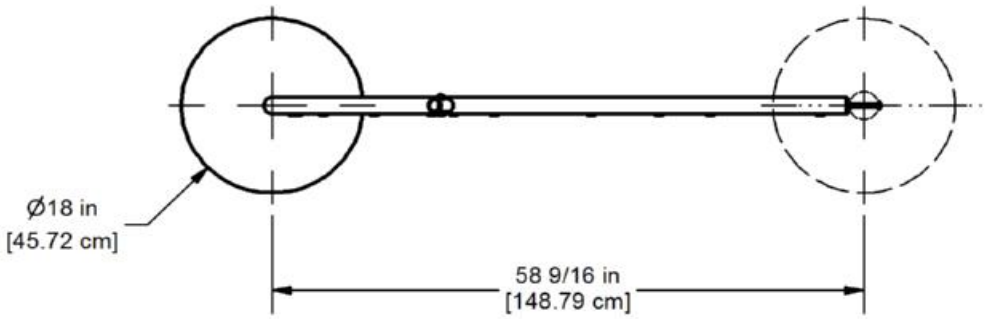


= INSTALLATION DETAIL

FINISHED ASSEMBLY

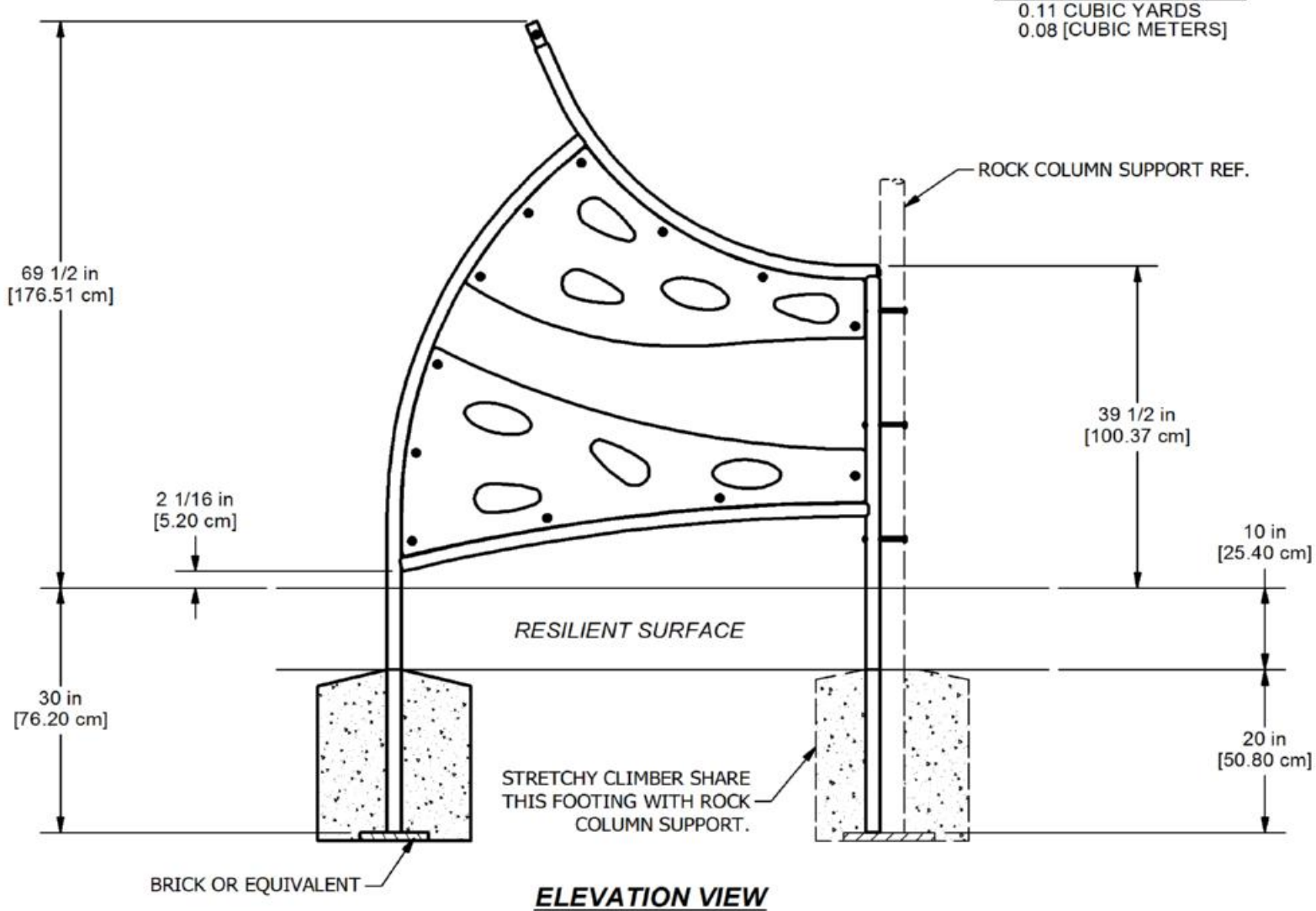
Free Standing

67032 STRETCHY CLIMBER



PLAN VIEW

CONCRETE REQUIRED
0.11 CUBIC YARDS
0.08 [CUBIC METERS]

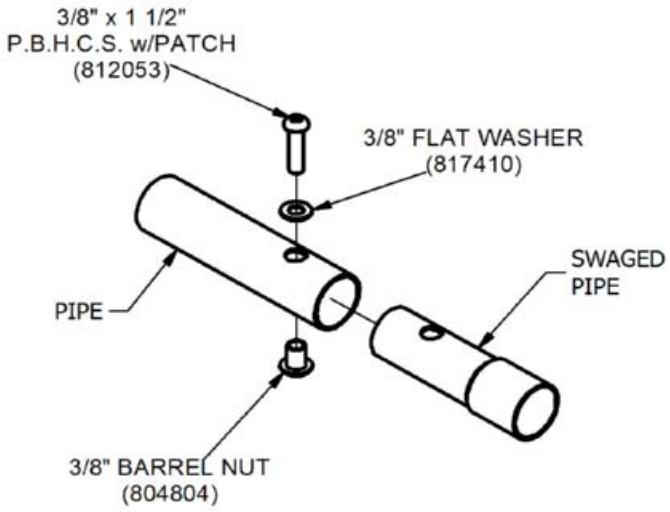


ELEVATION VIEW

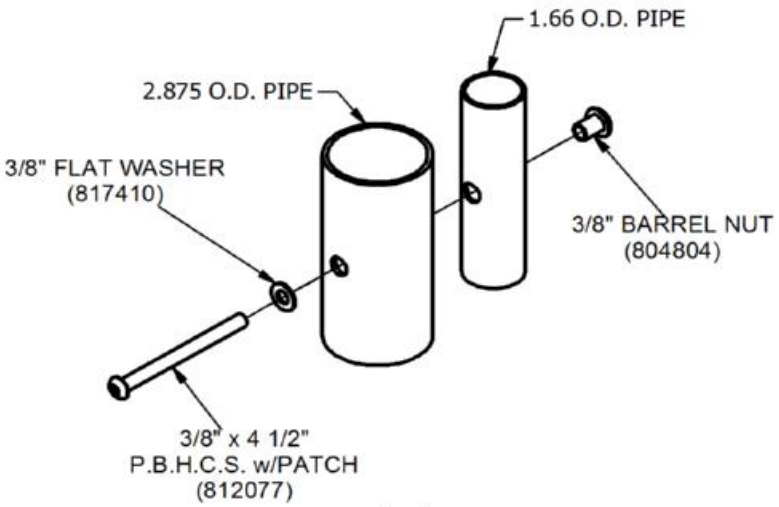
Issued/Revised: 5/1/2015

67032 STRETCHY CLIMBER

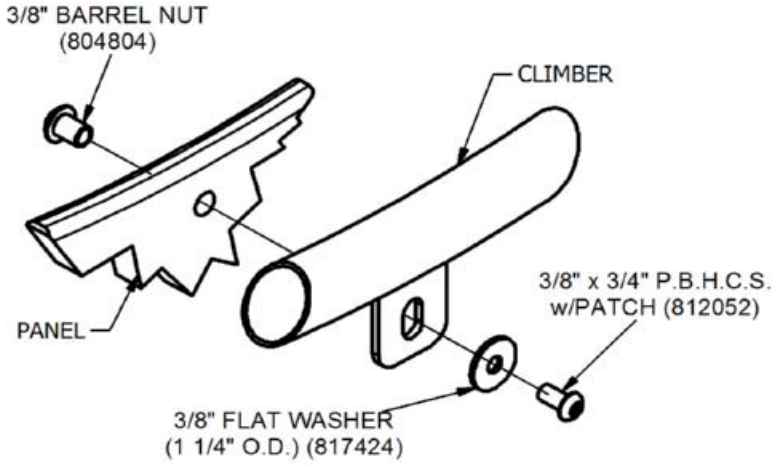
NOTE: BEND THE WASHER TO MATCH THE
CURVATURE OF THE OVERHEAD EXTENSION PIPE



066



770



791

67033 RAPPELLING ROCK w/COLUMN-CLIMBER SUPPORT

Parts List		
DESCRIPTION	QTY	PART NUMBER
BOTTOM SUPPORT	3	309623
ROCK COLUMN SUPPORT ASS'Y	1	313247
RAPPELLING ROCK CABLE ASS'Y	1	314597
RAPPELING ROCK CABLE BRACKET	2	314601
RAPPELLING ROCK	1	314611
HARDWARE COMPLETE	1	303590
BLUE HANDHOLD	4	314591
YELLOW HANDHOLD	7	314592
GREEN HANDHOLD	8	314593
1/4" BARREL NUT	2	804809
5/16" x 1/2" S.S. SHOULDER BOLT	2	802740
3/8" x 3/4" P.B.H.C.S. w/PATCH	6	812052
3/8" x 1" P.B.H.C.S. w/PATCH	18	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	19	812051
3/8" LOCK WASHER	43	817334
3/8" FLAT WASHER	6	817410
3/8" FLAT WASHER (1" O.D.)	4	817401
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Bottom Support:
Shall be an all welded construction fabricated from 2" x 2" x 1/4" hot rolled angle and 1/4" x 2" hot rolled flat steel tab. The Bottom Support shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Rock Column Support Ass'y:
Shall be an all welded construction fabricated from 2.875" O.D. (10ga.), 1.315 O.D. (14ga.) galvanized steel tubing, and 1/4" x 4" hot rolled steel plate. The Rock Column Support w/Holes shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Rappelling Rock Cable Ass'y:
Cable shall be 19mm diameter UV protected polyimide (nylon) rope cable with a calculated breaking load greater than or equal to 79.82kN: 6 strands each containing 19 steel reinforcing (0.4mm) steel strands each end of the cable having an almag 35 aluminum machined tab casting.

Rappelling Rock Cable Bracket:
Shall be an all welded construction fabricated from 3/8" Laser Cut Plate and 3/8" Laser Cut Tab. The Rappelling Rock Cable Bracket shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

67033 RAPPELLING ROCK w/COLUMN-CLIMBER SUPPORT

Rappelling Rock:
Shall be 3/8" wall thickness double wall construction, color impregnated linear low density polyethylene and shall conform to the rotationally molded specifications outlined herein. All polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotationally molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Density (ASTM D- 1505); Brittleness Temperature (ASTM D-746); Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD).

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68).

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

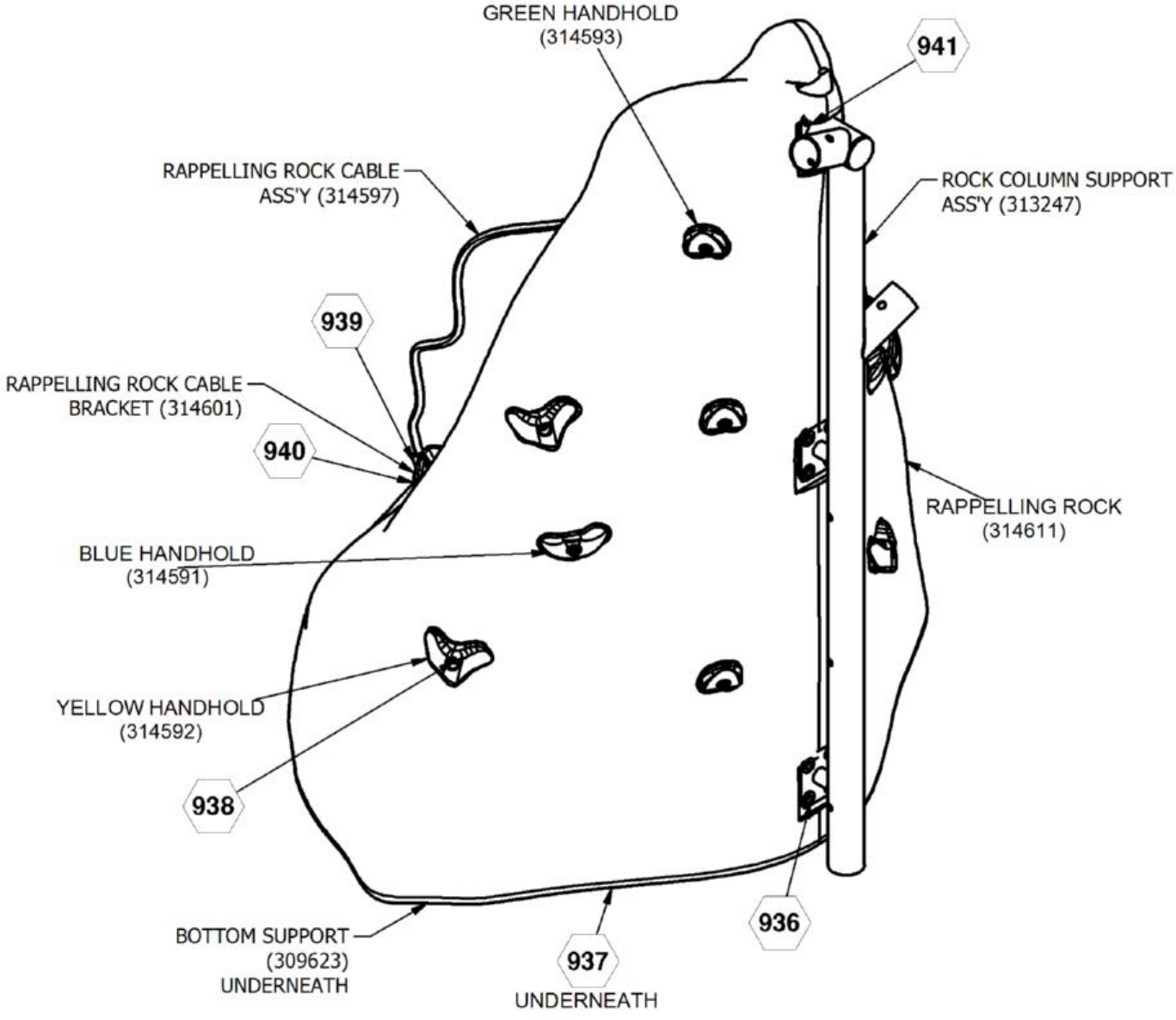
1. Dig footing holes as shown in Plan and Elevation Views.
2. Attach Blue, Yellow, and Green Handholds to the Rappelling Rock using 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Lock Washer. See Detail 938.
3. Attach the Bottom Support to bottom of Rappelling Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 937.
4. Attach top part of the Rock Column Support Ass'y to the Rappelling Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Wahser (1" O.D.). See Detail 941.
5. Attach the Rock Column Support Ass'y to the side of the Rappelling Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1 1/4" O.D.). See Detail 936.
6. Attach Rappelling Rock Cable Ass'y to Rappelling Rock Cable Bracket using 5/16" x 1/2" S.S. Shoulder Bolt and 1/4" Barrel Nut. See Detail 939.
7. Attach Rappelling Rock Cable Bracket to Rappelling Rock using 3/8" x 3/4" P.B.H.C.S. w/Patch and 3/8" Lock Washer. See Detail 940.
8. Plumb and level the entire assembly and tighten all fasteners.
9. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
10. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTm specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines

Free Standing

67033 RAPPELLING ROCK w/COLUMN-CLIMBER SUPPORT

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



= INSTALLATION DETAIL

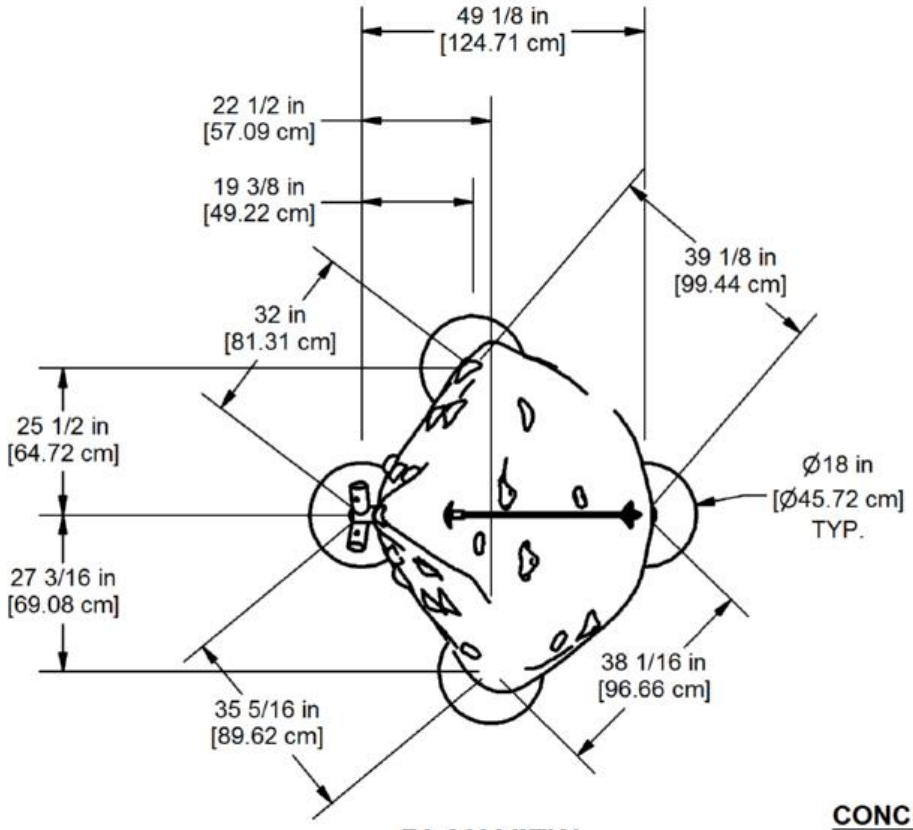
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 4/12/2018

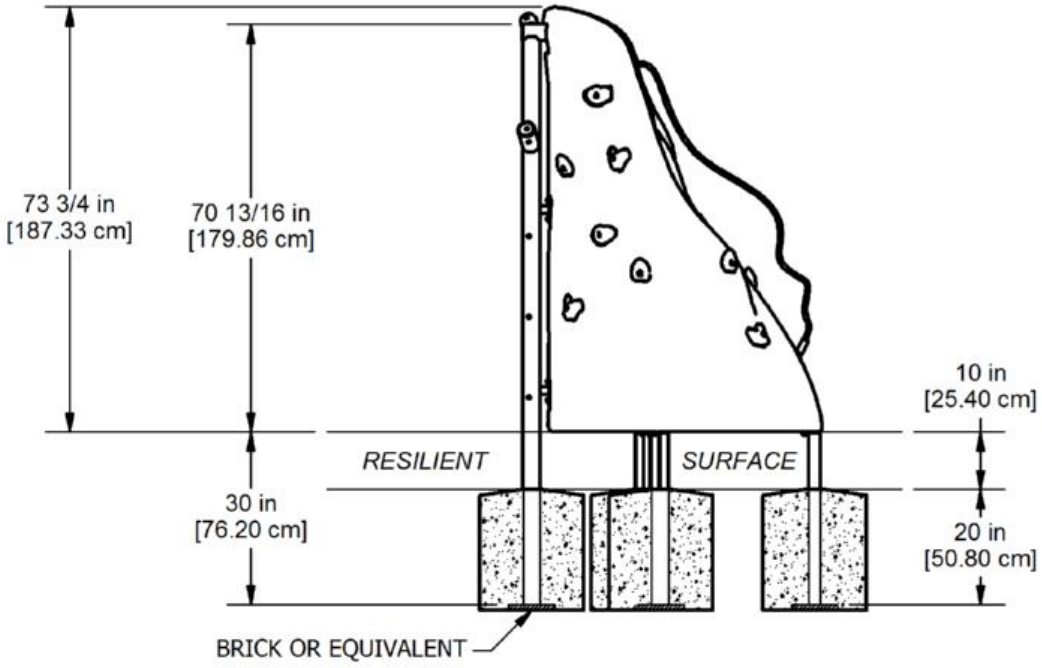
Free Standing

67033 RAPPELLING ROCK w/COLUMN-CLIMBER SUPPORT



PLAN VIEW

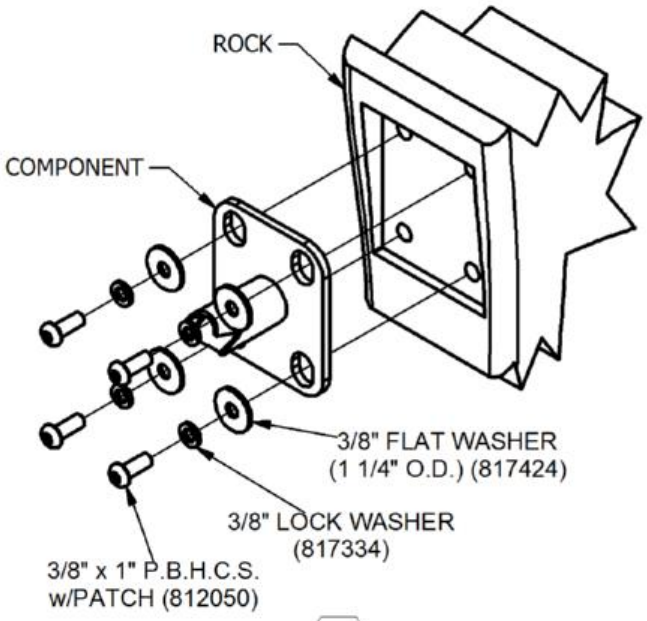
CONCRETE REQUIRED
0.44 CUBIC YARDS
0.33 [CUBIC METERS]



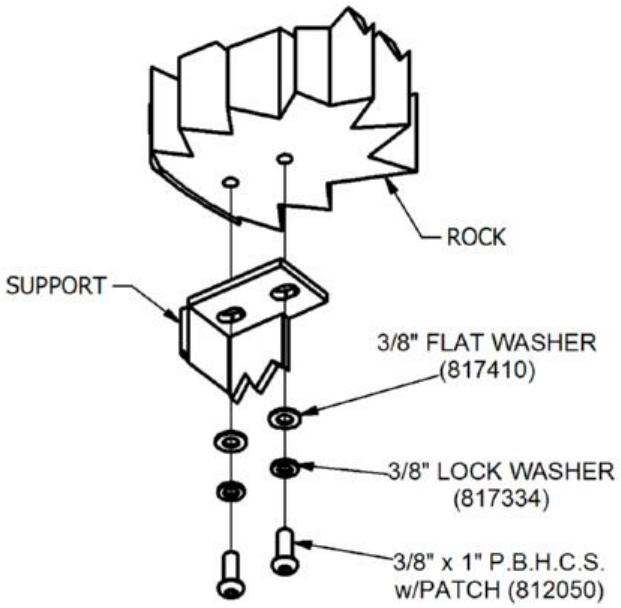
ELEVATION VIEW

Issued/Revised: 4/12/2018

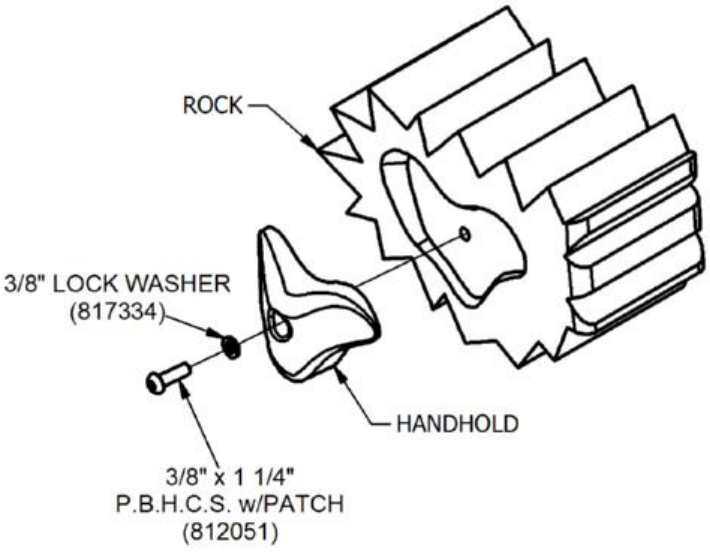
67033 RAPPELLING ROCK w/COLUMN-CLIMBER SUPPORT



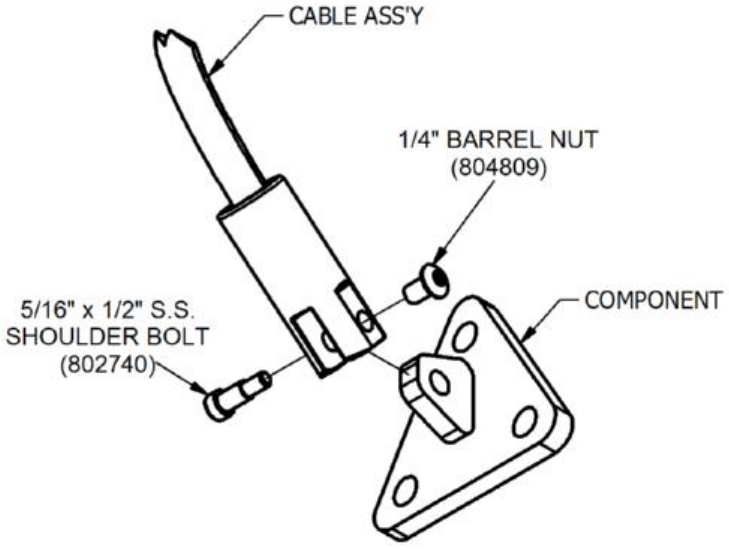
936



937

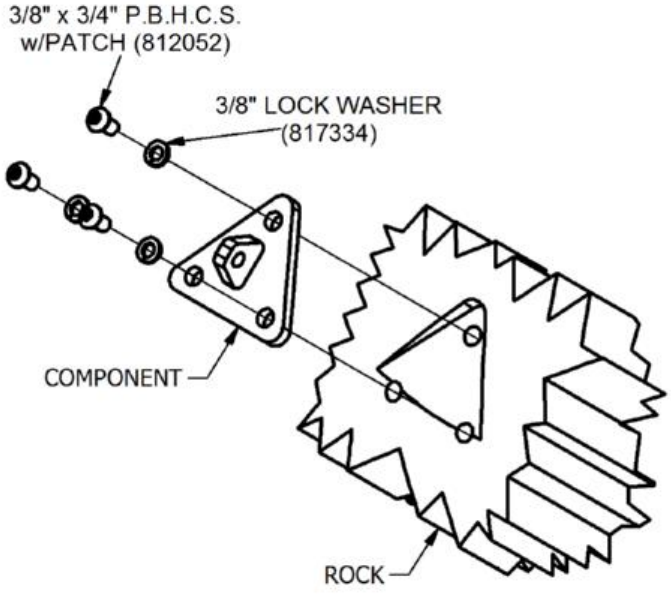


938

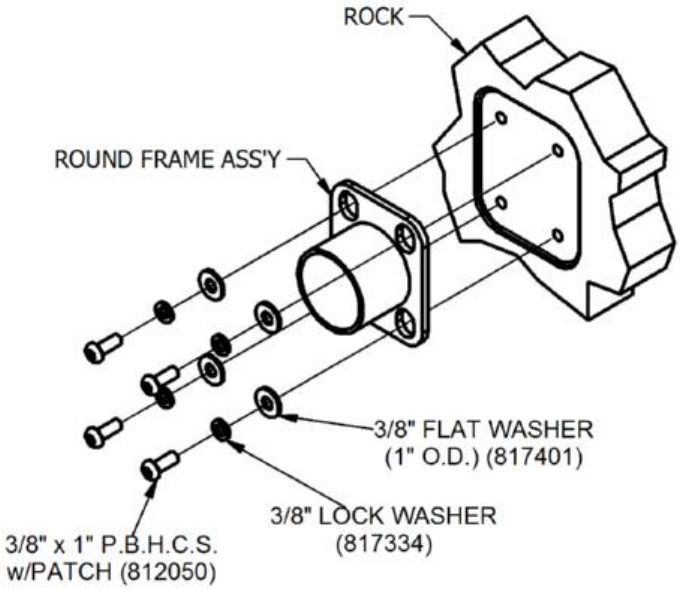


939

67033 RAPPELLING ROCK w/COLUMN-CLIMBER SUPPORT



940



941

Free Standing

67036 VERTICAL TWIST NET CLIMBER

Parts List		
DESCRIPTION	QTY	PART NUMBER
VERTICAL TWIST NET	1	313275
HARDWARE COMPLETE	1	313310
3/8" x 3 1/2" P.B.H.C.S. w/PATCH	6	812075*
3/8" x 4" P.B.H.C.S. w/PATCH	6	812082*
3/8" FLAT WASHER	6	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	6	817424*
3/8" BARREL NUT	6	804804*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Vertical Twist Net:
Cable shall be 18mm diameter UV protected polyimide (nylon) rope cable with a calculated breaking load greater than or equal to 79.82kN: 6 strands each containing 19 steel reinforcing (0.6mm) strands within a polyamide sleeve wrapped around a reinforcing steel core containing 6 strands each containing 19 steel reinforcing (0.4mm) steel strands; each end of the cable having a junction loop attached onto the cable with a finished aluminum sleeve and lined with a stainless steel wear bar.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Attach Vertical Twist Net to appriopriate Helix Climber using 3/8" x 4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Barrel Nut. See Detail 792. ***NOTE:*** This side of the Net does not have Eye-Nut.

2. Attach Vertical Twist Net to appriopriate Rock Column Support Ass'y using 3/8" x 3 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 740.

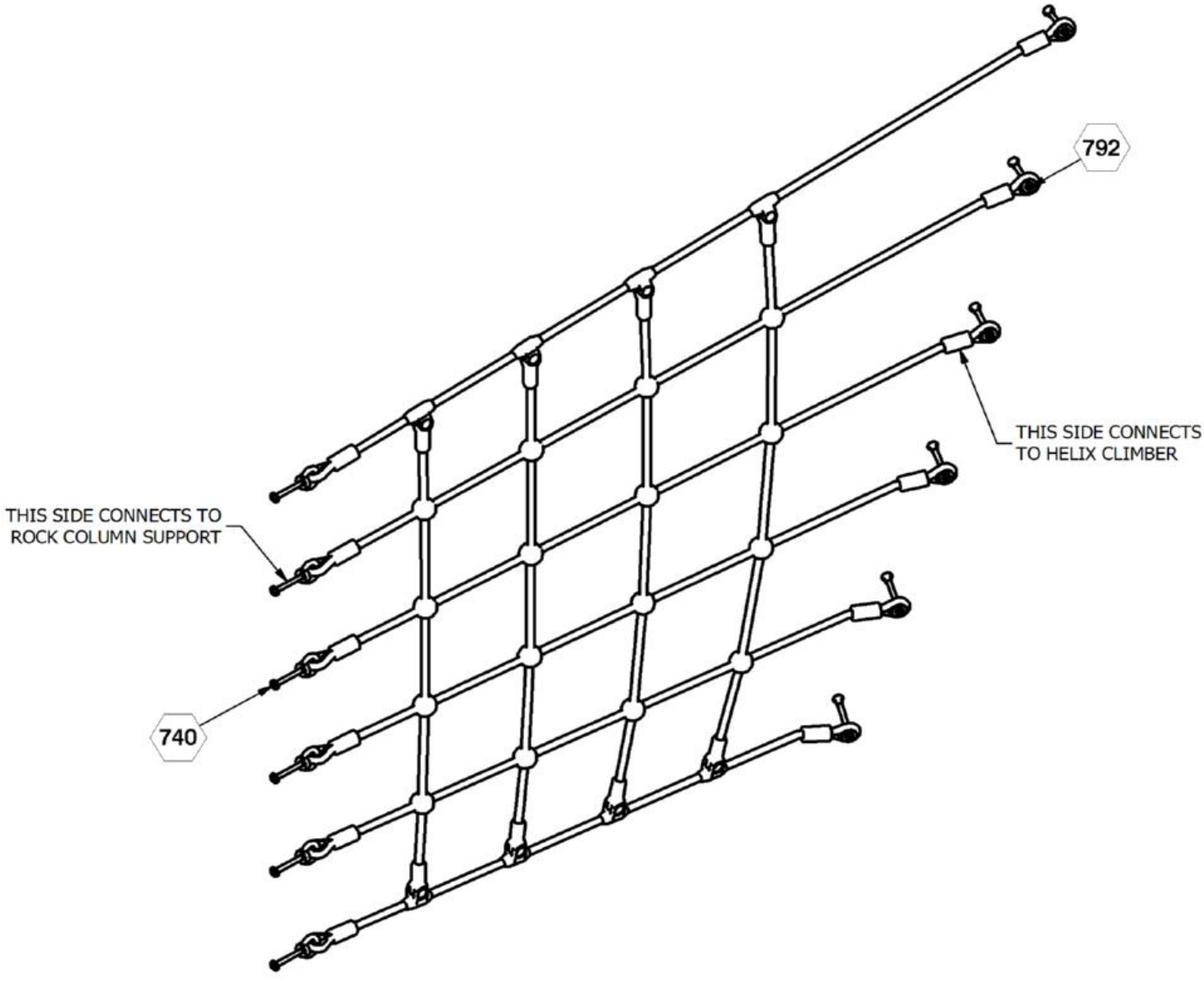
3. Plumb and level the entire assembly and tighten all fasteners.

4. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

67036 VERTICAL TWIST NET CLIMBER

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

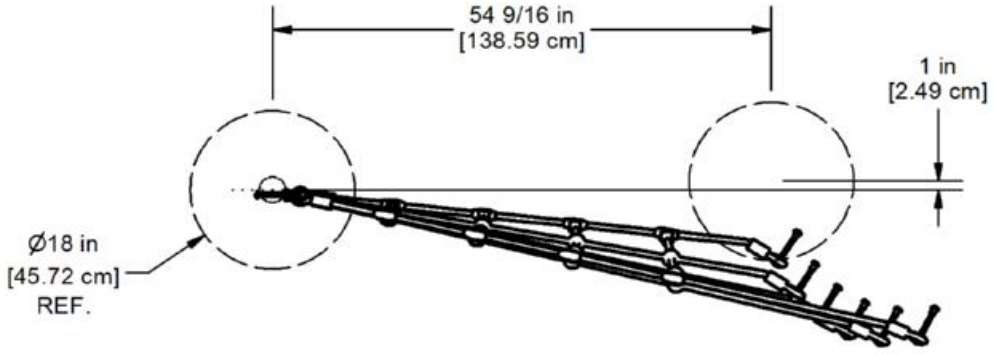


⬡ = INSTALLATION DETAIL

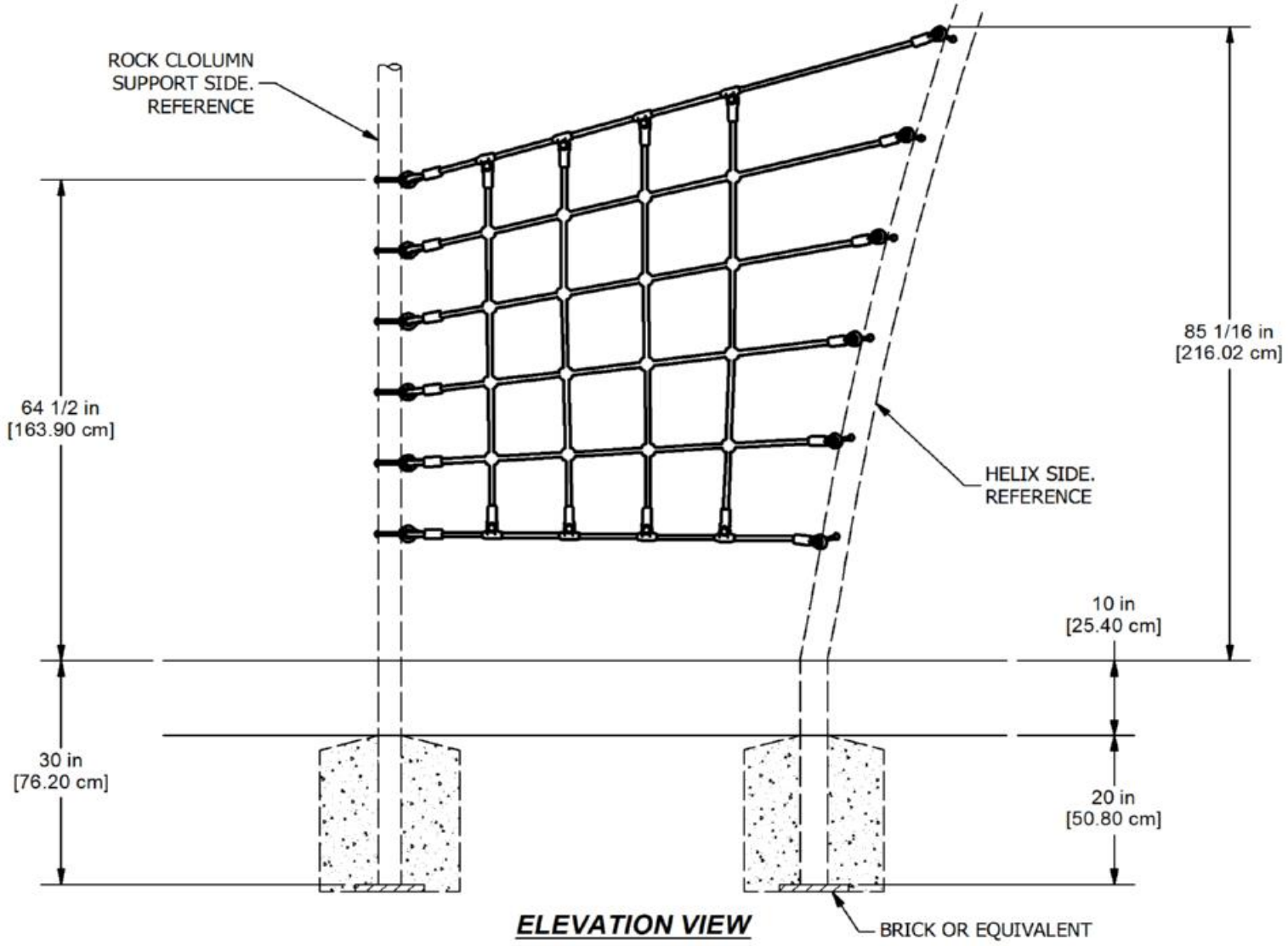
FINISHED ASSEMBLY

Free Standing

67036 VERTICAL TWIST NET CLIMBER



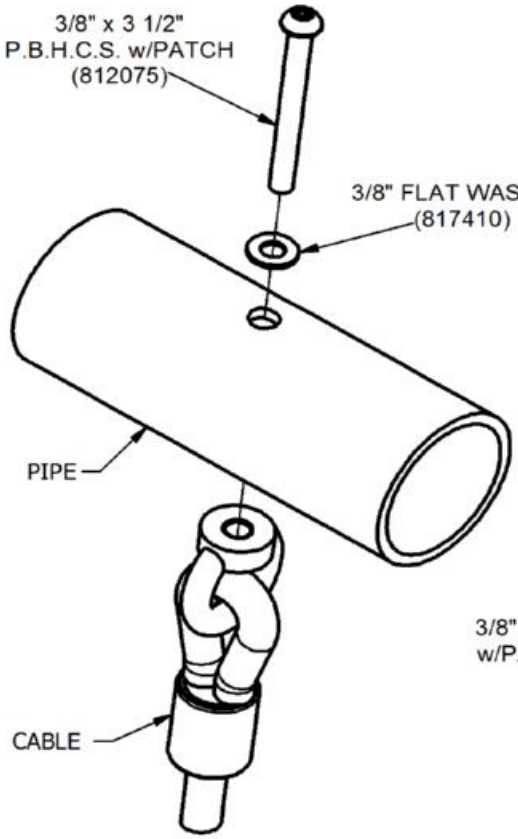
PLAN VIEW



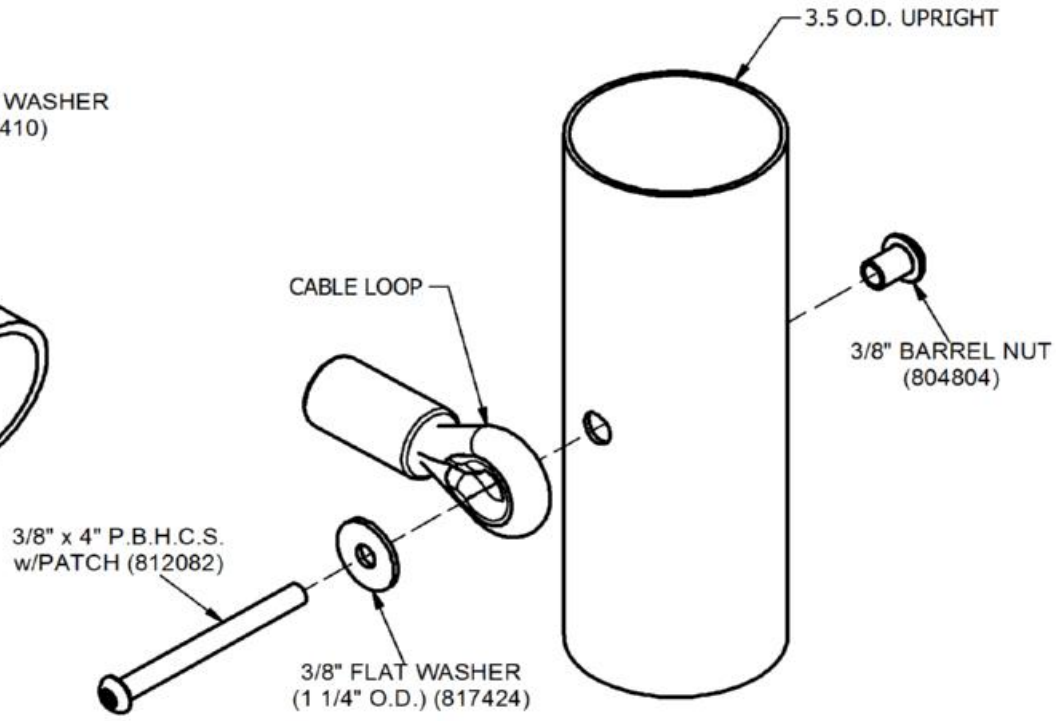
ELEVATION VIEW

Issued/Revised: 5/20/2015

67036 VERTICAL TWIST NET CLIMBER



740



792

67038 ANGLED ROCK SUPPORT w/3 HOLES

Parts List		
DESCRIPTION	QTY	PART NUMBER
BOTTOM SUPPORT	2	309623
ROCK COLUMN SUPPORT ASS'Y	1	313247
ANGLED ROCK	1	314610
HARDWARE COMPLETE	1	314632
BLUE HANDHOLD	2	314591
YELLOW HANDHOLD	4	314592
GREEN HANDHOLD	4	314593
3/8" x 1" P.B.H.C.S. w/PATCH	16	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	10	812051
3/8" LOCK WASHER	26	817334
3/8" FLAT WASHER	4	817410
3/8" FLAT WASHER (1" O.D.)	4	817401
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Bottom Support:
Shall be an all welded construction fabricated from 2" x 2" x 1/4" hot rolled angle and 1/4" x 2" hot rolled flat steel tab. The Bottom Support shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Rock Column Support Ass'y:
Shall be an all welded construction fabricated from 2.875" O.D. (10ga.), 1.315 O.D. (14ga.) galvanized steel tubing, and 1/4" x 4" hot rolled steel plate. The Rock Column Support Ass'y shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Angled Rock:
Shall be 3/8" wall thickness double wall construction, color impregnated linear low density polyethylene and shall conform to the rotationally molded specifications outlined herein. All polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotationally molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Density (ASTM D- 1505); Brittleness Temperature (ASTM D-746); Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD).

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68).

67038 ANGLED ROCK SUPPORT w/3 HOLES

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Dig footing holes as shown in Plan and Elevation Views.

2. Attach Blue, Yellow, and Green Handholds to the Angled Rock using 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Lock Washer. See Detail 938.

3. Attach the Bottom Support to bottom of Angled Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 937.

4. Attach top part of the Rock Column Support Ass'y to the Angled Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1" O.D.). See Detail 941.

5. Attach the other tabs of the Rock Column Support Ass'y to the side of the Angled Rock using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1 1/4" O.D.). See Detail 936.

6. Plumb and level the entire assembly and tighten all fasteners.

7. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

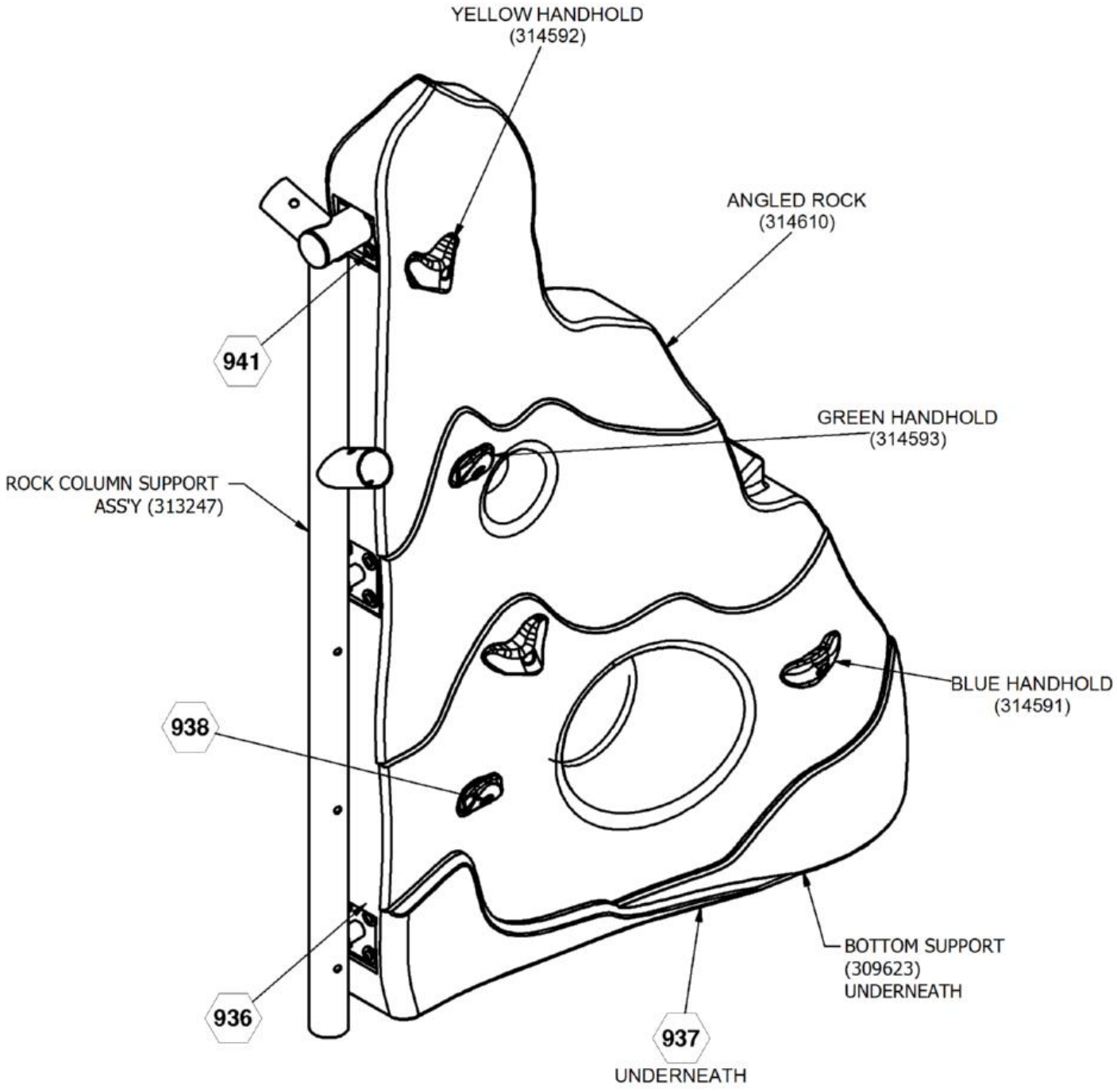
8. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

Free Standing

67038 ANGLED ROCK SUPPORT w/3 HOLES



= INSTALLATION DETAIL

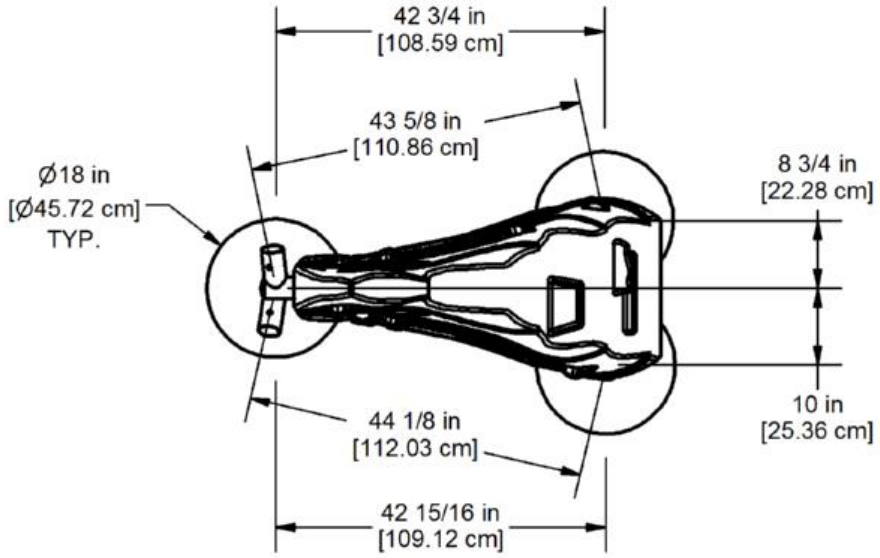
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 4/10/2018

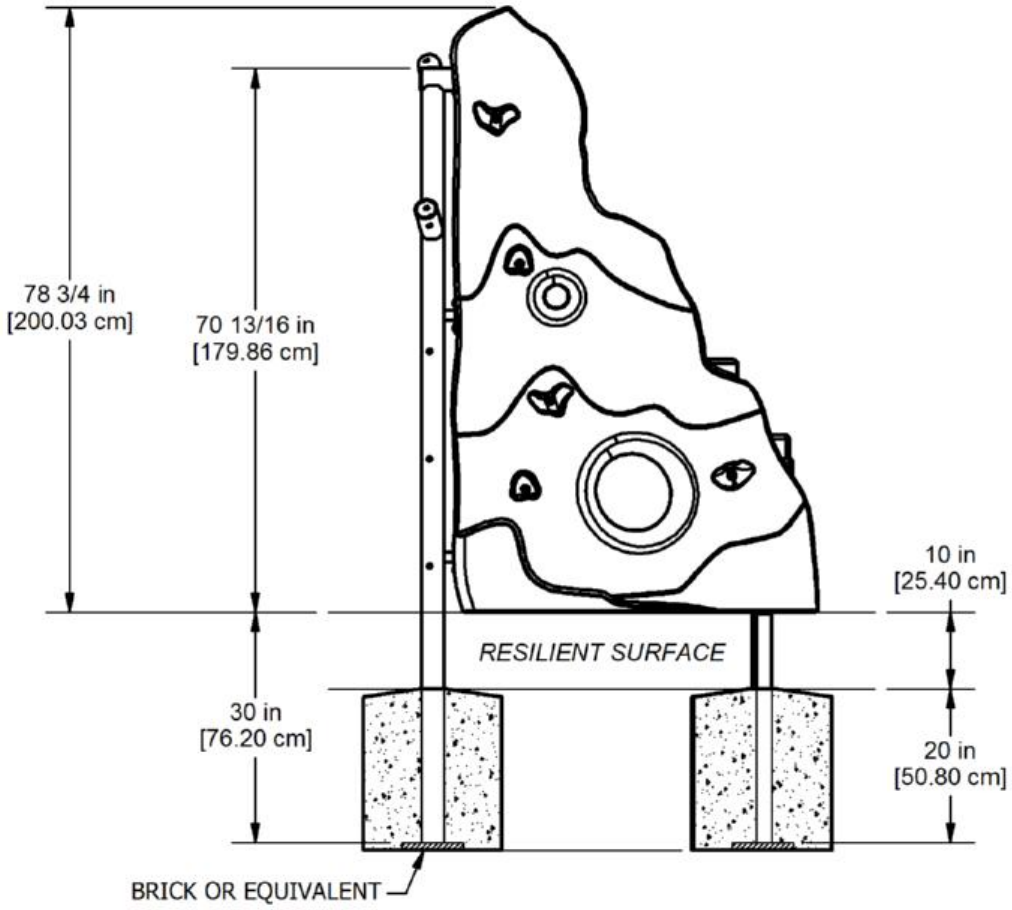
Free Standing

67038 ANGLED ROCK SUPPORT w/3 HOLES



PLAN VIEW

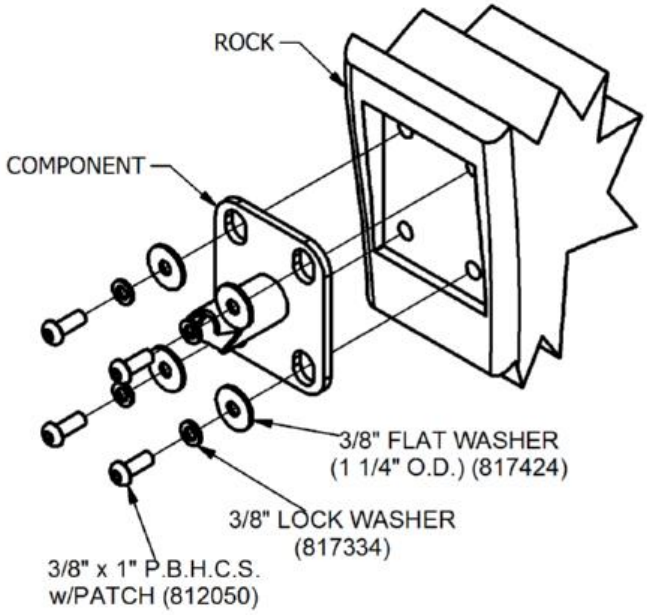
CONCRETE REQUIRED
0.33 CUBIC YARDS
0.25 [CUBIC METERS]



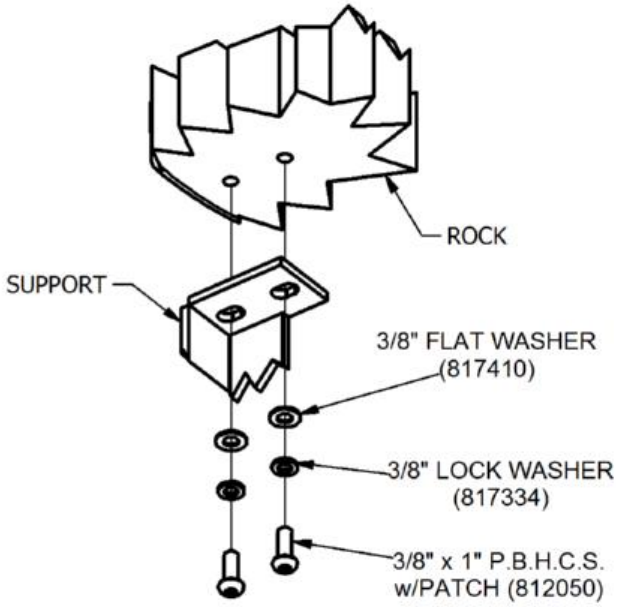
ELEVATION VIEW

Issued/Revised: 4/10/2018

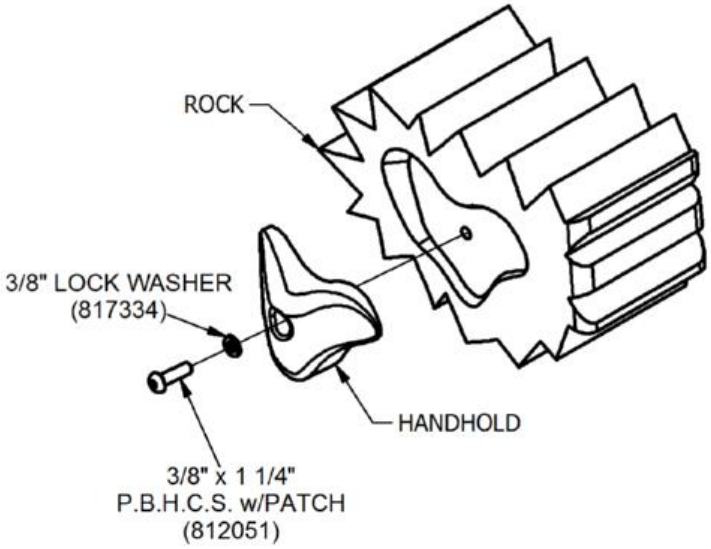
67038 ANGLED ROCK SUPPORT w/3 HOLES



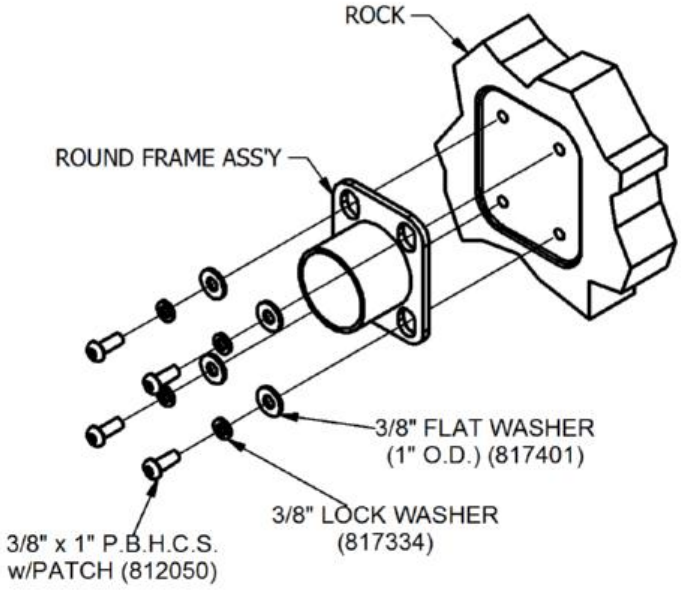
936



937



938



941

67058 FUNNEL CLIMBING LINK - SM

Parts List		
DESCRIPTION	QTY	PART NUMBER
TRAPEZE RING	2	109
PIPE ADAPTER	2	309915
ENTRY ARCHWAY	1	309984
RING ASSEMBLY	1	313289
LEFT FUNNEL SUPPORT ASS'Y	1	313293
RIGHT FUNNEL SUPPORT ASS'Y	1	313297
CONNECTOR BRACKET	1	313301
SIDE RAIL	2	313305
FN CABLE #1	1	313313
FN CABLE #2	2	313314
HDPE HANDHOLD	2	313315
HANDHOLD CLEAT	4	313316
FUNNEL NET ASSEMBLY	1	313318
HARDWARE COMPLETE	1	313371
3/8" CHAIN (2 LINKS)	2	H443*
D SHACKLE w/NO-SNAG PIN	4	161853*
#10 x 1" WOOD SCREW	4	815515*
1/4" x 3/4" SET SCREW	4	811545*
3/8" x 3/4" P.B.H.C.S. w/PATCH	8	812052*
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	2	812051*
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	6	812053*
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054*
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	17	812056*
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	2	812058*
3/8" x 3 1/2" P.B.H.C.S. w/PATCH	5	812075*
3/8" LOCKWASHER	2	817334*
3/8" FLAT WASHER	44	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	6	817424*
3/8" LOCK NUT	2	804353*
3/8" BARREL NUT	18	804804*
3/4" ID BRONZE BEARING	2	817451*

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

67058 FUNNEL CLIMBING LINK - SM

SPECIFICATIONS:

Trapeze Ring:
Shall be cast from strong, light, heat and rust-resistant aluminum alloy with a baked on polyester powder-coat finish.

Pipe Adapter:
Pipe Adapter are cast from a 356 high-strength aluminum alloy with a baked on polyester powder-coat finish.

Entry Archway:
Shall be an all welded construction fabricated from 1.029 O.D. galvanized steel pipe, 1.315 O.D. (14ga.) galvanized steel pipes, 11ga. laser cut steel tab, and 14 ga. x 1.5" galvanized steel pipe cap. The Split Entrance shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Ring Assembly:
Shall be an all welded construction fabricated from 2.875 O.D. (13ga.) galvanized steel pipes, 1.66 O.D. (14ga.) galvanized steel tubing sockets, and 1/2" thick Laser Cut Steel Tabs.The Ring Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Left and Right Funnel Support Assembly:
Shall be an all welded construction fabricated from 1.66 O.D. (12ga.) galvanized steel pipes and 1.66 (14ga.) galvanized steel tubing sockets. The Left and Right Funnel Support Assembly shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Connector Bracket:
Shall be an all welded construction fabricated from 1.66 O.D. (14ga.) galvanized steel tubing sockets, 1/4" thick x 2" H.R. Steel Plate, and 1/2" thick Laser Cut Steel Tab.The Connector Bracket shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Side Rail:
Shall be an 1.66 O.D. (12ga.) galvanized steel pipes.The Side Rail shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with the specifications outlined herein.

Funnel Net Assembly and FN Cables:
Cables shall be 18mm diameter UV protected polyimide (nylon) rope cables with a calculated breaking load greater than or equal to 79.82kN: 6 strands each containing 19 steel reinforcing (0.6mm) strands within a polyamide sleeve wrapped around a reinforcing steel core containing 6 strands each containing 19 steel reinforcing (0.4mm) steel strands; each end of the cable having a junction loop attached onto the cable with a finished aluminum sleeve and lined with a stainless steel wear bar.

HDPE Handhold and Handhold Cleat:
Panels shall be precision cut from a single solid sheet of .750" thick UV-stabilized extruded high-density polyethylene with colors molded in. The material will have a density of 60 lbs/ft^3 and a tensile strength of 4400 PSI (30 Mpa) as determined per procedure C of ASTM D1928. All edges shall have radiuses and all corners rounded for safe play.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with a two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

67058 FUNNEL CLIMBING LINK - SM

INSTALLATION INSTRUCTIONS:

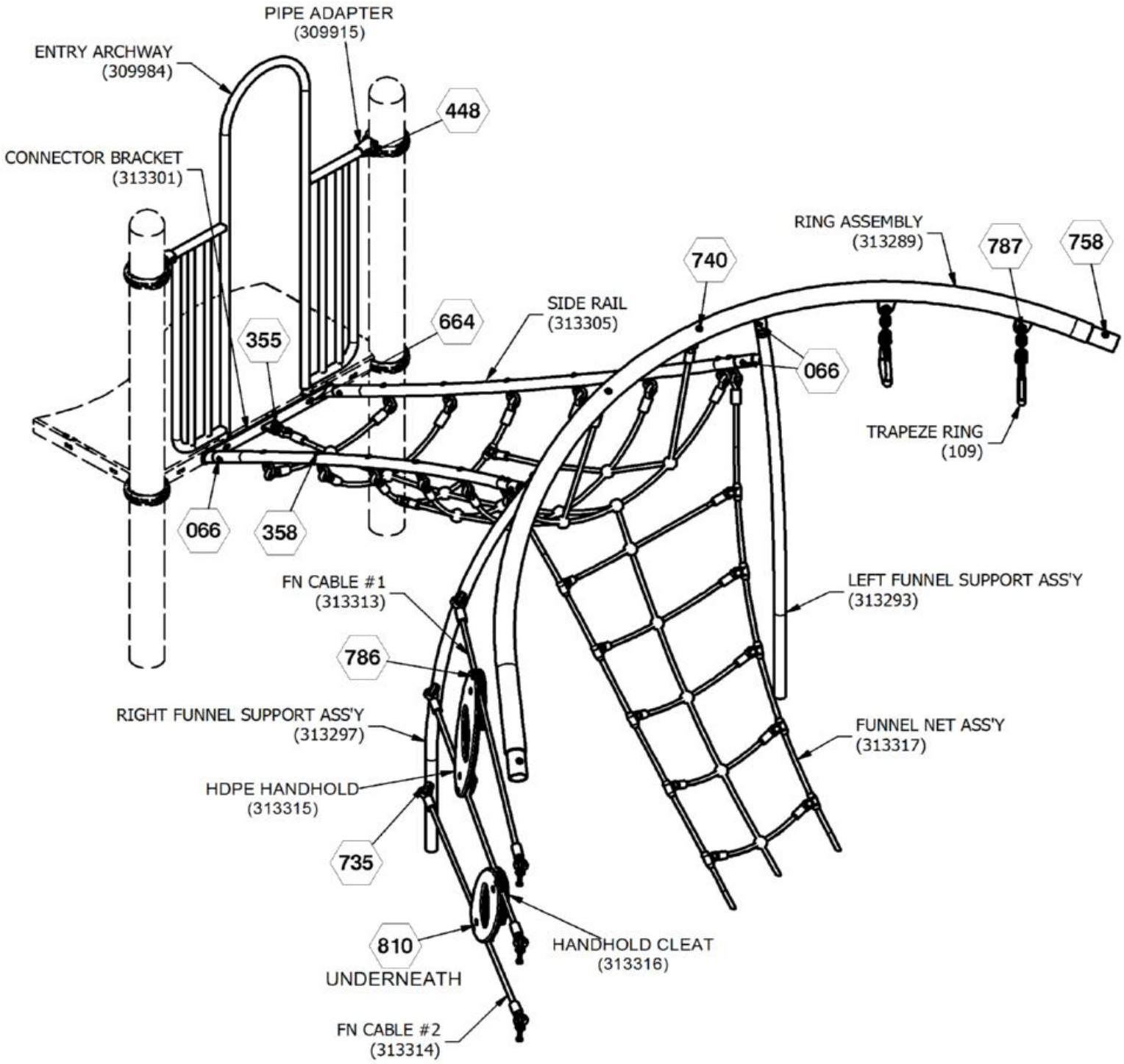
1. Determine which deck is to receive the Funnel Climbing Link.
2. Attach Ring Clamps at required locations shown in Elevation View. See RIng Clamp installation sheet.
3. Attach Pipe Adapters to Entry Archway using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 448.
4. Hook the Pipe Adapters onto the RIng Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448.
5. Attach Connector Bracket to Deck and tab of Entry Archway using 3/8" x 1 1/4" P.B.H.C.S. w/ Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Lock Nut. See Detail 664.
6. Attach Left and Right Funnel Support Assemblies to Ring Assembly using 3/8" x 2 1/4" P.B.H.C.S w/Patch and 3/8" Flat Washer. See Detail 066.
7. Attach Ring Assembly to appropriate Rock Column Support using 3/8" x 2 3/4" P.B.H.C.S w/Patch, 3/8" Flat Washer and 3/8" Barrel Nut as shown in Detail 758. See Top View for correct placement.
8. Attach Side Rails to Left and Right Funnel Support Assemblies and to the Connector Bracket using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 066.
9. Attach Funnel Net Assembly to Side Rails using 3/8" x 2 1/4" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 358.
10. Attach Funnel Net Assembly to tab on Connector Bracket using 3/4" Bronze Bearing. See Detail 355.
11. Attach Funnel Net Assembly to Ring Assembly using 3/8" x 3 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 740.
12. Attach FN Cables to the Right Funnel Support Assembly using 3/8" x 2 1/4" P.B.H.C.S. w/Patch and 3/8" Flat Washer. See Detail 358.
13. Attach FN Cables to appropriate Rock Column Support using 3/8" x 3 1/2" P.B.H.C.S. and 3/8" Flat Washer as shown in Detail 740. See Top View for location.
14. Attach FN Cables to HDPE Handholds using #10 x 1" Wood Screw. See Detail 810.
15. Attach HDPE Handholds and Handhold Cleats to FN Cables using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 786.
16. Attach Trapeze Rings to the Ring Assembly using the 3/8" Flat Washer (1 1/4" O.D.), 3/8" Flat Washer, 3/8" Chain (2 links), and D-Shackle w/No Snag Pin. See Detail 787.
17. Plumb and level the entire assembly and tighten all fasteners.
18. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.
19. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

Free Standing

67058 FUNNEL CLIMBING LINK - SM



= INSTALLATION DETAIL

FINISHED ASSEMBLY

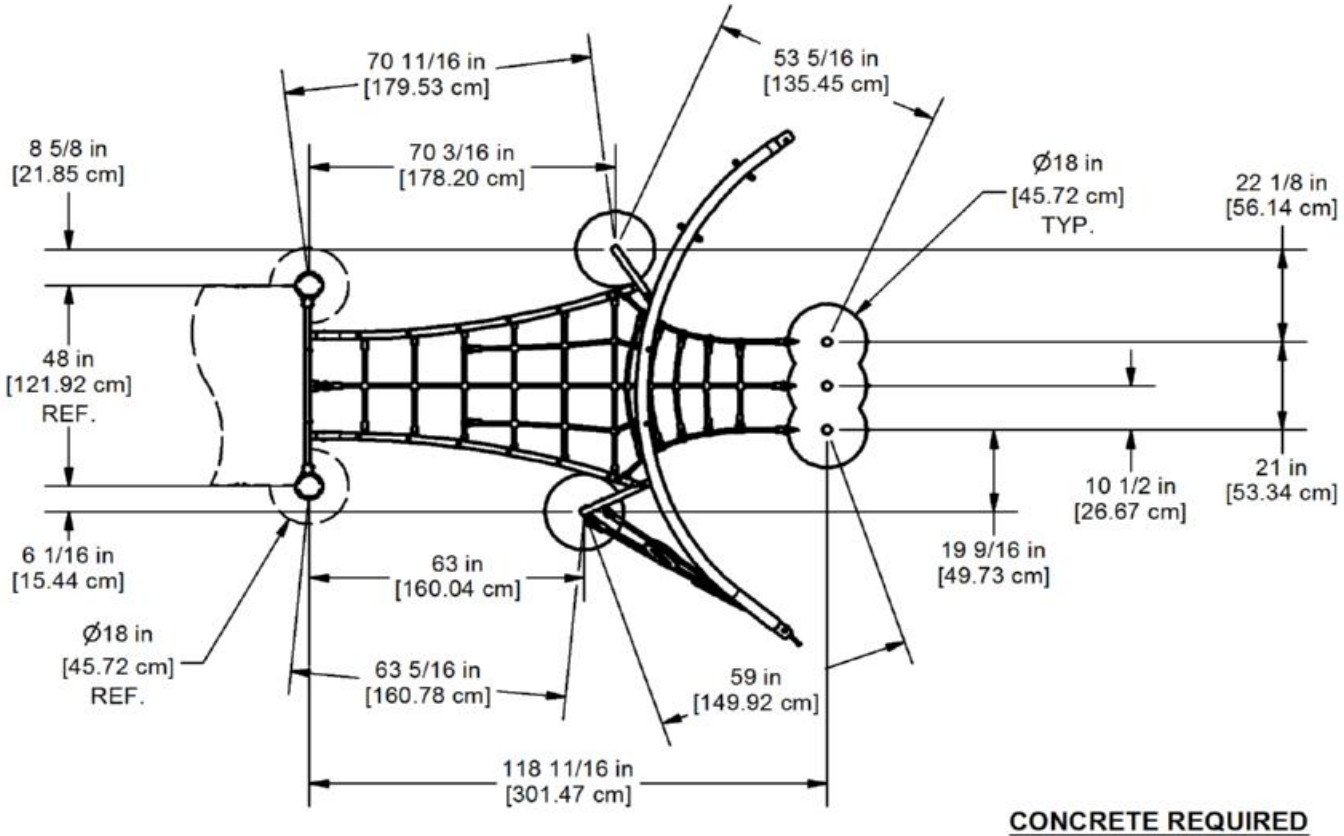
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 10/13/2015

play&park structures
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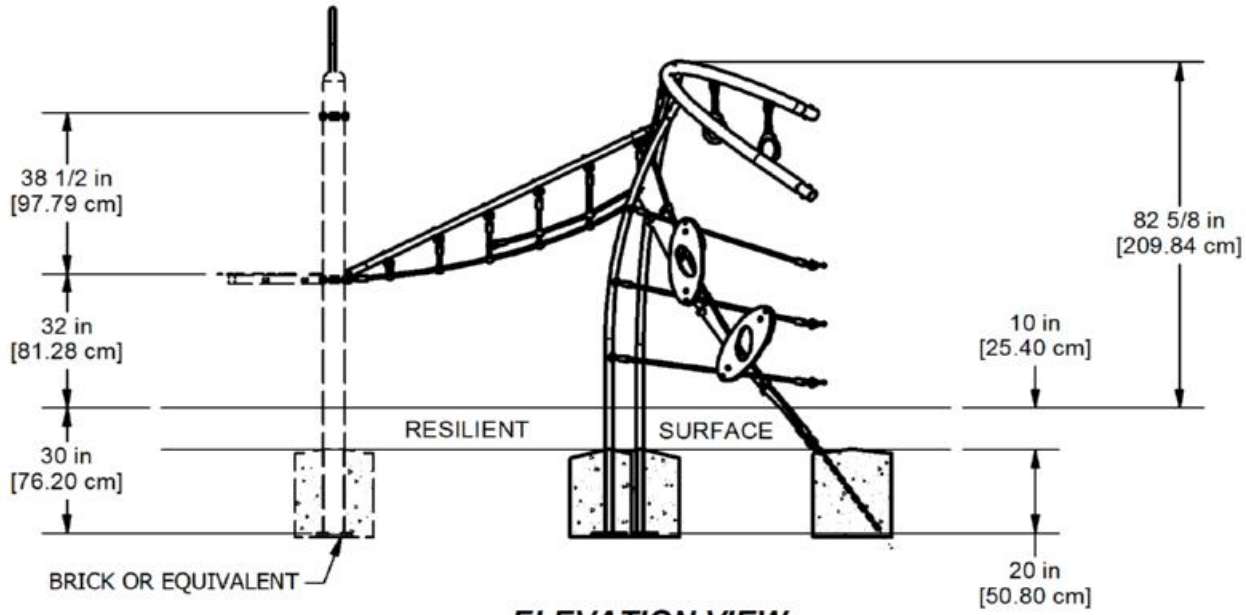
Free Standing

67058 FUNNEL CLIMBING LINK - SM



PLAN VIEW

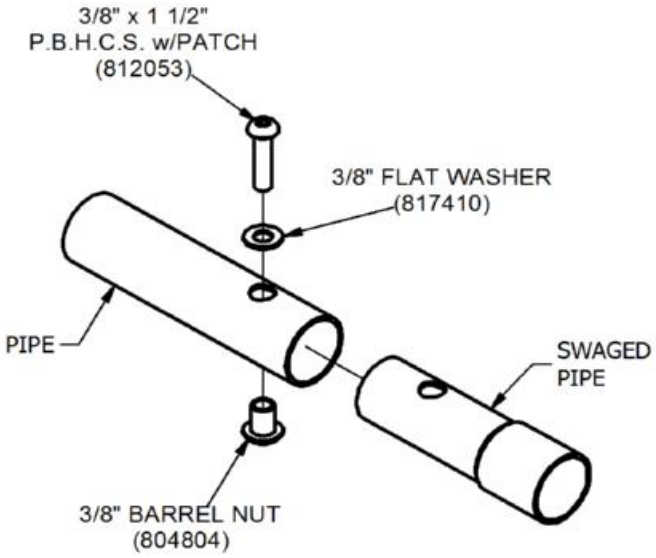
CONCRETE REQUIRED
0.763 CUBIC YARDS
0.581 [CUBIC METERS]



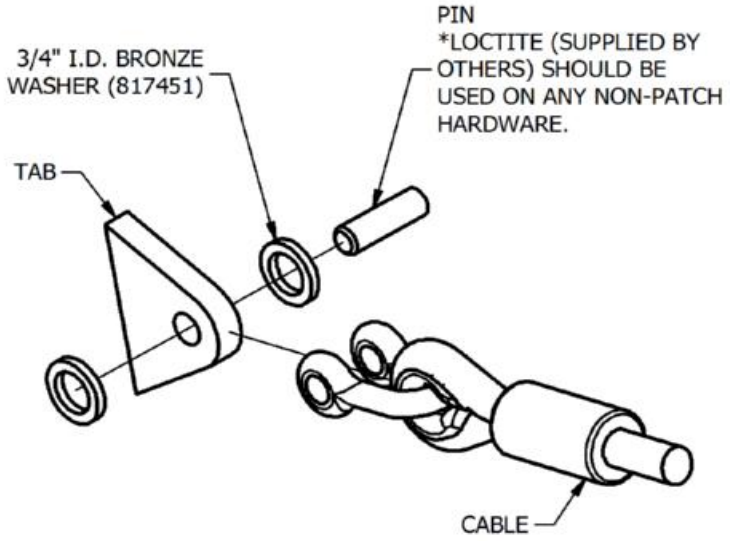
ELEVATION VIEW

67058 FUNNEL CLIMBING LINK - SM

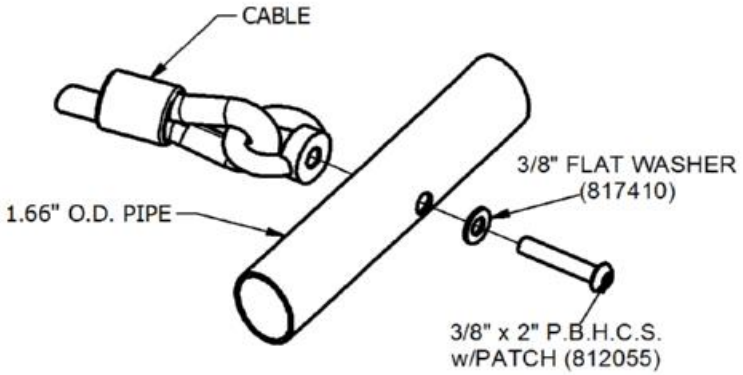
NOTE: BEND THE WASHER TO MATCH THE CURVATURE OF THE OVERHEAD EXTENSION PIPE



066

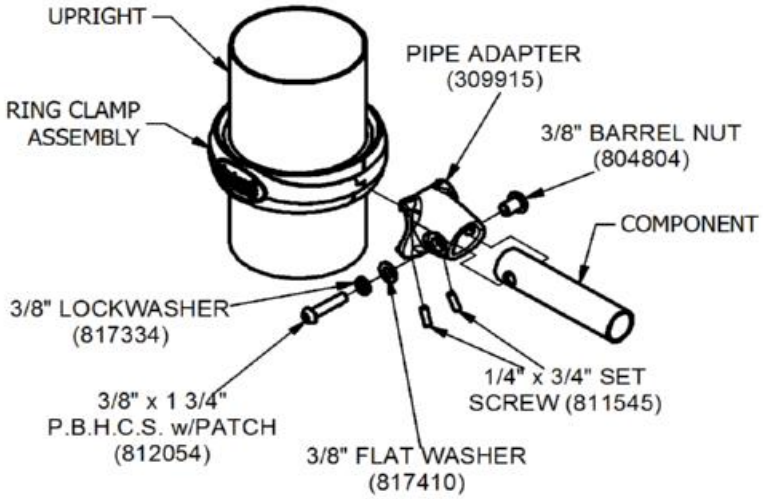


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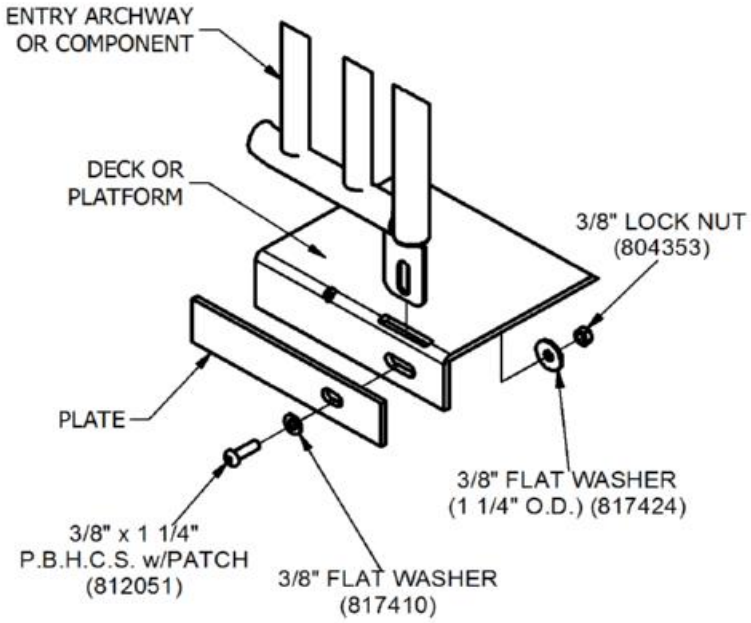
358

NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS

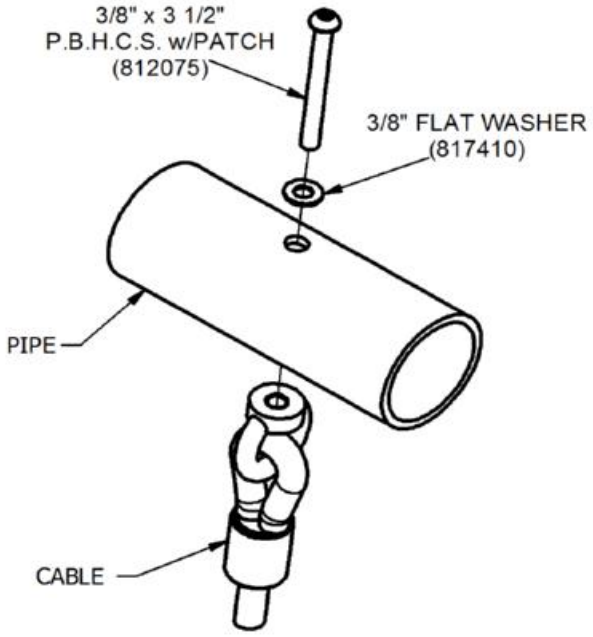


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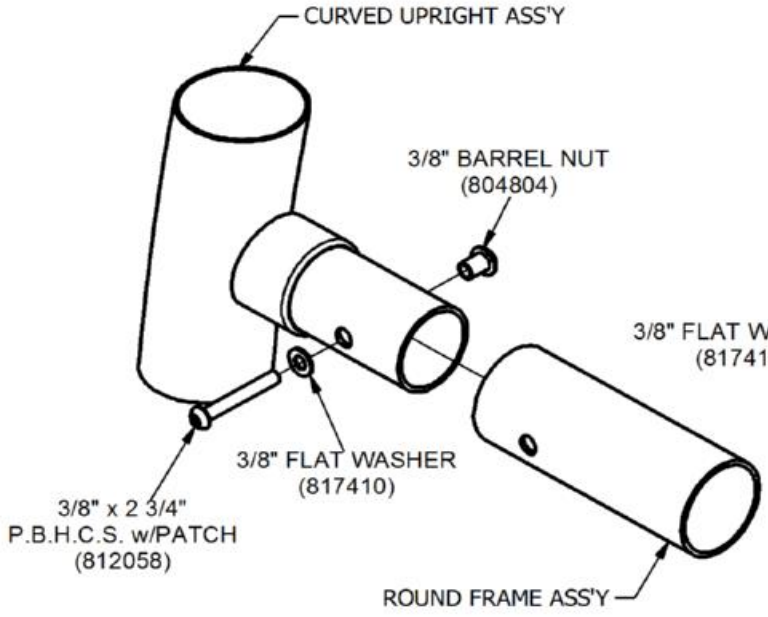
67058 FUNNEL CLIMBING LINK - SM



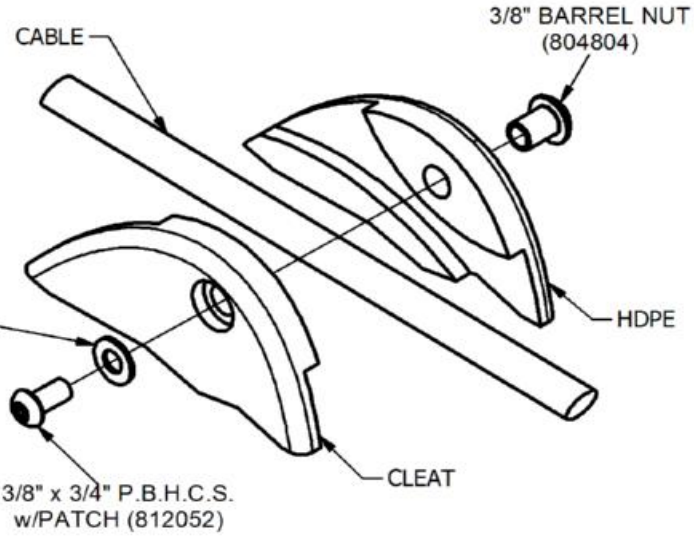
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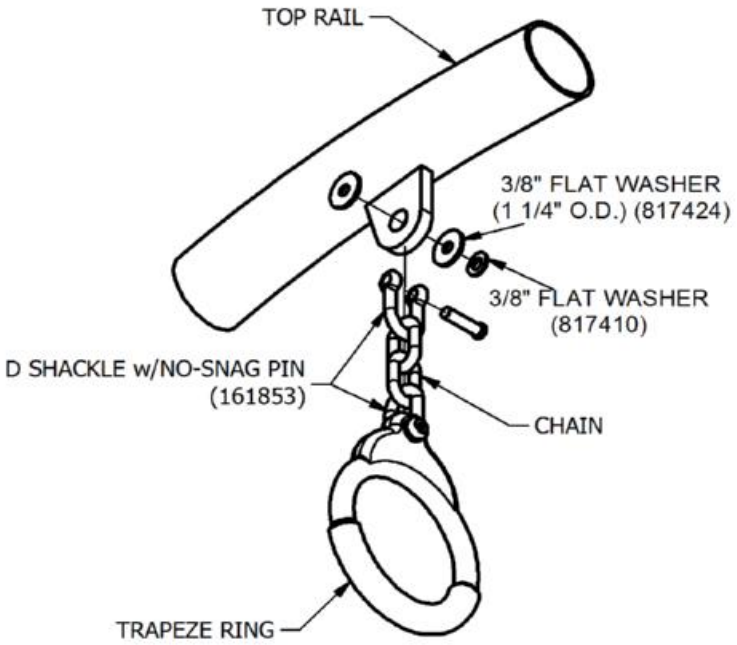


758

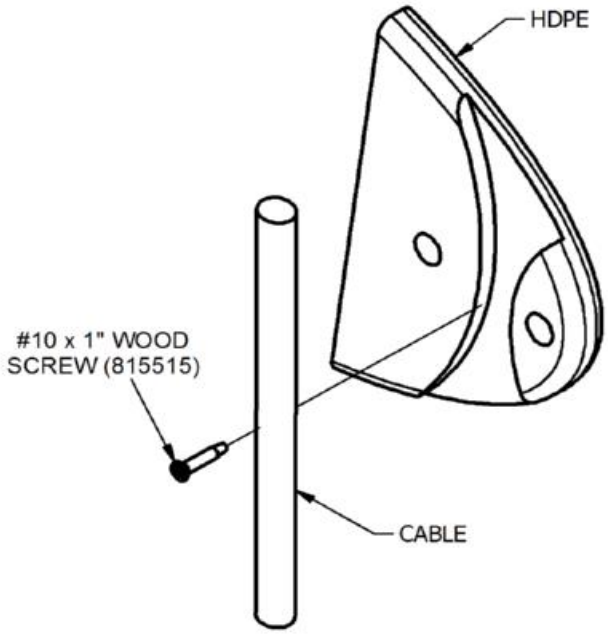


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67058 FUNNEL CLIMBING LINK - SM



787



810

67558 3 1/2" O.D. ADA ARCH SWING - 2 SEATS
67620 3 1/2" O.D. ADA ARCH SWING ADD-A-BAY

PARTS LIST

DESCRIPTION	NO. REQ'D 67558	NO. REQ'D 67620	PART NUMBER
3-1/2" O.D. Toprail	1	1	168622
Arch End Upright Ass'y	2	0	152803
Multi-Bay Arch Upright Ass'y	0	1	152805
Hardware Complete	1	1	303587
1/2" x 4" Hex Bolt	2	2	801215*
1/2" Lockwasher	2	2	817342*
1/2" Hex Nut	2	2	804055*
1/2" Flatwasher	2	2	817412*

Unless Otherwise Specified, All Units of Measure are Each
****Included in Hardware***

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Toprail is 3-1/2" O.D. 11-gauge galvanized steel tubing with a baked on polyester powder-coated finish. Arch posts are bent from 3-1/2" O.D. steel tubing with welded socket. All metal parts have a baked on polyester powder-coated paint finish.

Primary hardware is stainless steel.

INSTALLATION INSTRUCTIONS:

1. Refer to your site plan; select the area where the Arch Swing will be installed. Note that although the actual area of the Toprail are 3'-4" X 12'-9" a minimum of 16' is required in front of and behind swing, and 6' is required to each side, for a total of 32' X 24'-5". This area should be clear of all obstacles and contain an appropriate resilient surface material. Please refer to your *Safety Guidelines* for more information.

2. Dig footings spaced as shown on the diagram. Footing diameters should be 24". Calculate depth depending on the amount of resilient surfacing which will be installed. A depth of 10" resilient surfacing is shown on the elevation view. If you determine that less than 10" of surfacing is required, make up the difference with earth before applying surfacing.

3. Set the Post Arches in to their footing and block in position with sleeves facing each other.

4. Attach Swing Beams to the post arches as shown in detail 'A' and temporarily secure with a 1/2" x 4" Hex Head Bolts each sleeve. Adjust post arches heights so that the top beam is 8'-1 3/4" above the finished ground level.

5. Square and level entire Swing Beam assembly. When satisfactory, fully tighten all bolts and follow support post instructions for concrete. DO NOT ATTACH SEAT SWING ASSEMBLIES UNTIL RESILIENT SURFACING HAS BEEN INSTALLED.

67558 3 1/2" O.D. ADA ARCH SWING - 2 SEATS
67620 3 1/2" O.D. ADA ARCH SWING ADD-A-BAY

6. ONLY AFTER ALL RESILIENT SURFACE MATERIAL HAS BEEN INSTALLED, attach the Swing Seat Packages to the top beams as instructed on Installation Sheet for Swing Seats. FULLY CRIMP SHUT ALL 'S' HOOKS as per specification by ASTM F 1487 for Entanglement.

7. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

MAINTENANCE PROCEDURE:

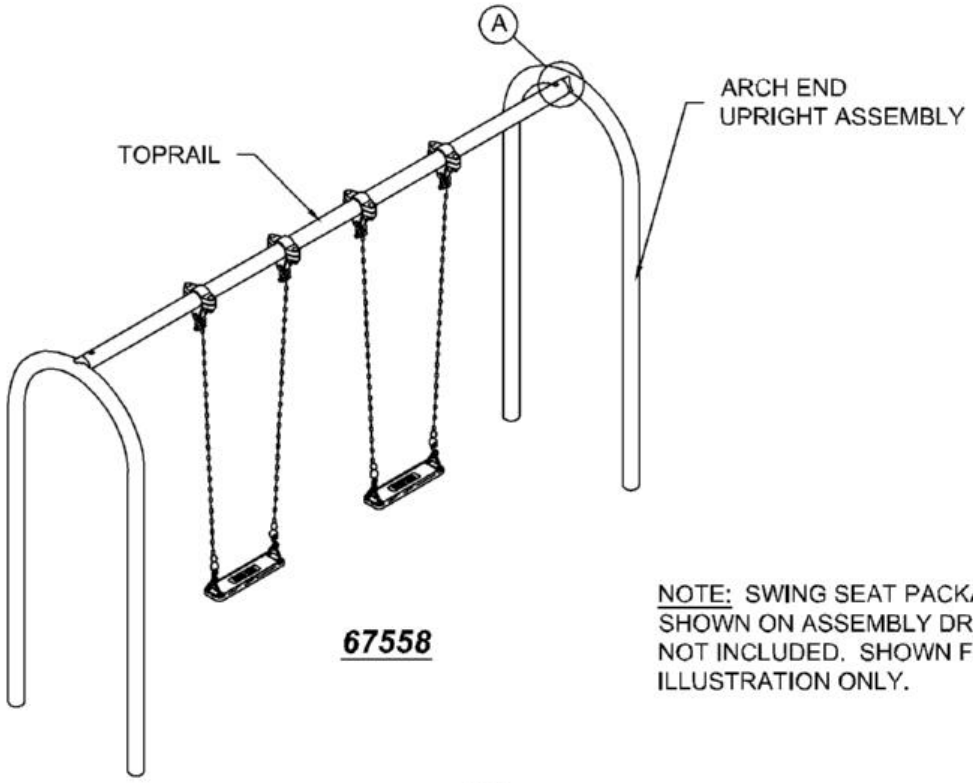
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check 'S' Hooks at both ends and all connection points for wear. Check all moving parts such as bushings, hangers and chain for wear. Check opening on 'S' Hooks for entanglement as specified by ASTM F-1487 Section 6.3. Check Strap seats for cracks, breakage or wear, and verify proper height. Check Chains for integrity and corrosion. Check connections for excessive wear and replace immediately if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

Model No: _____

Desc: _____

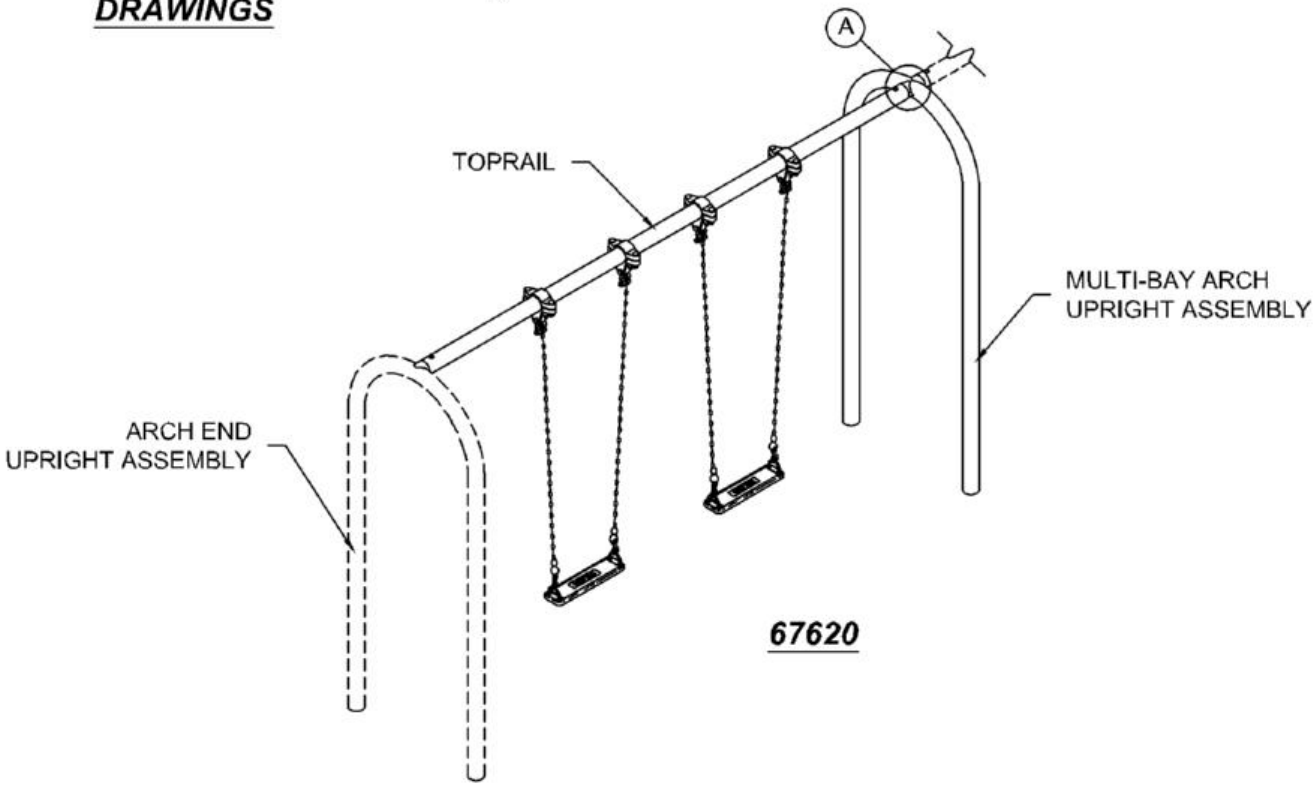
67558 3 1/2" O.D. ARCH SWING - 2 SEATS
67620 3 1/2" O.D. ARCH SWING ADD-A-BAY

ASSEMBLY DRAWINGS



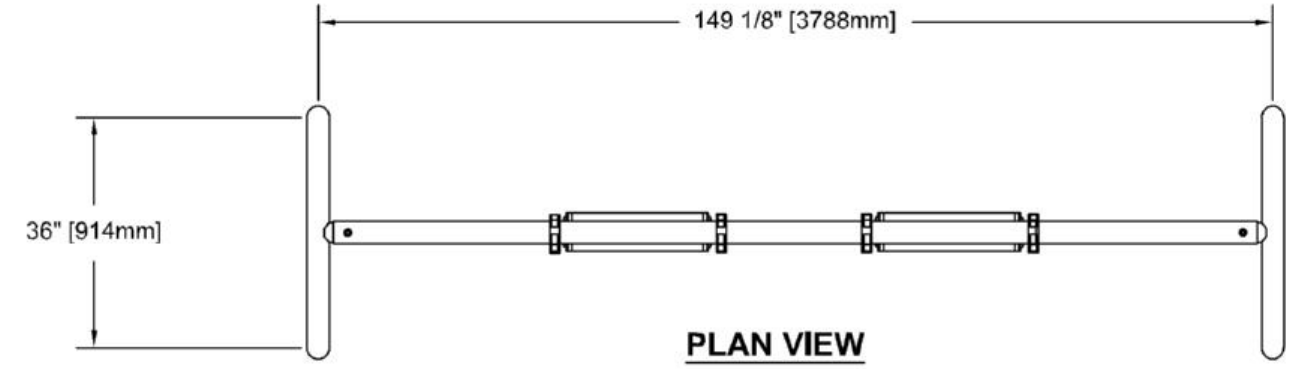
67558

NOTE: SWING SEAT PACKAGES SHOWN ON ASSEMBLY DRAWINGS NOT INCLUDED. SHOWN FOR ILLUSTRATION ONLY.

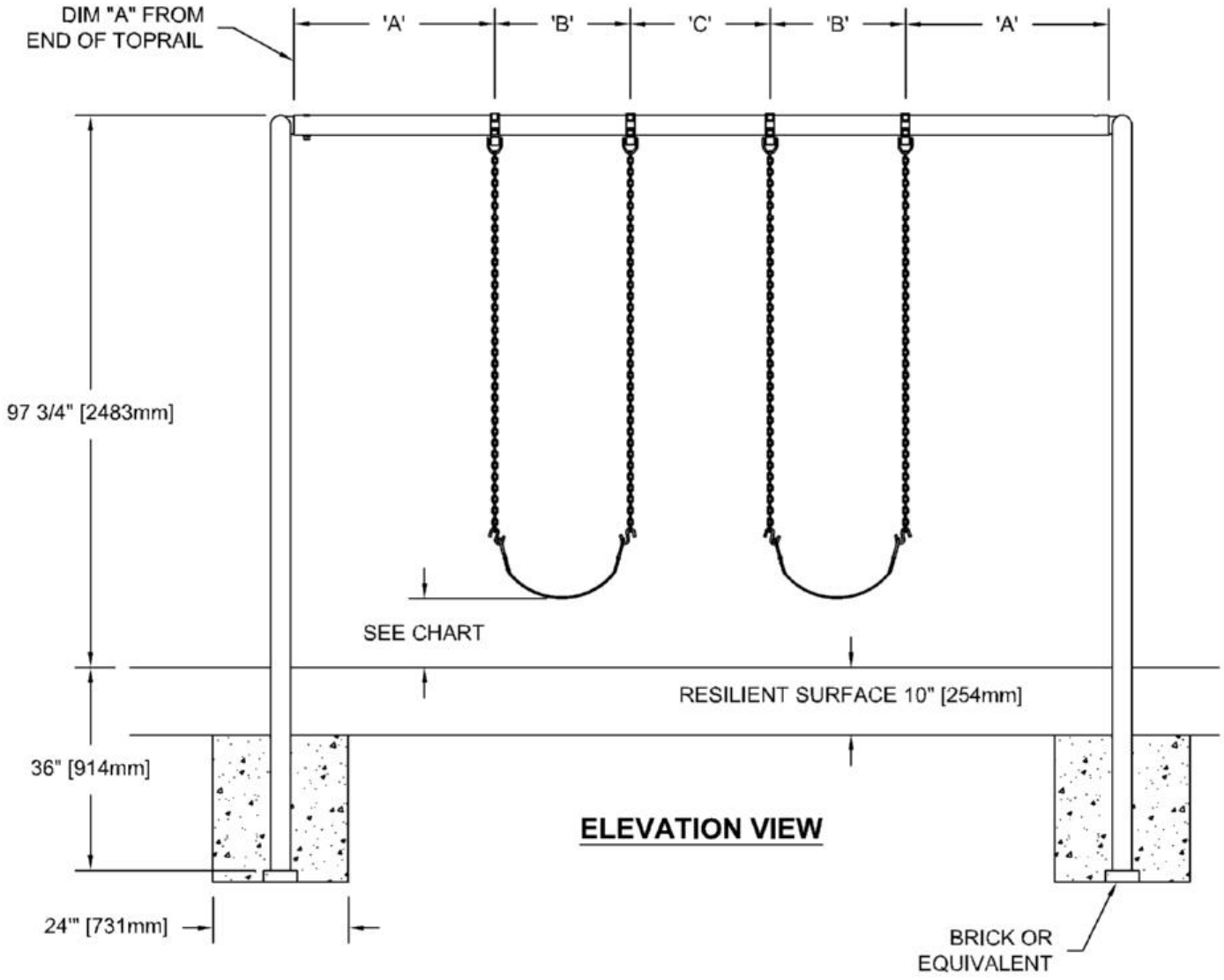


67620

67558 3 1/2" O.D. ADA ARCH SWING - 2 SEATS
67620 3 1/2" O.D. ADA ARCH SWING ADD-A-BAY



PLAN VIEW



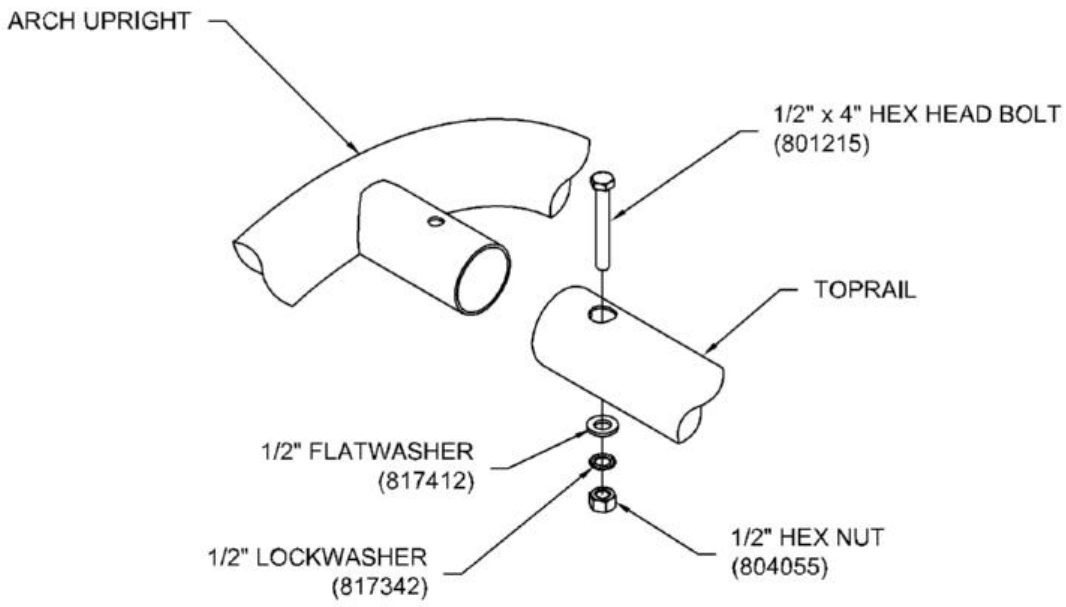
ELEVATION VIEW

67558 3 1/2" O.D. ADA ARCH SWING - 2 SEATS
67620 3 1/2" O.D. ADA ARCH SWING ADD-A-BAY

TOPRAIL DIMENSIONS	
DIM. A	32" [813mm]
DIM. B	26" [660mm]
DIM. C	28" [711mm]

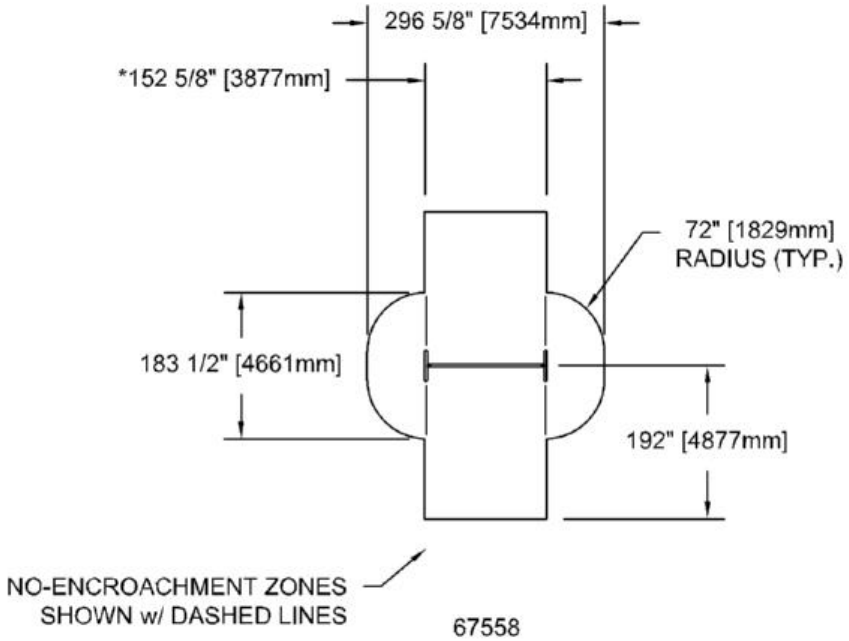
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	**MIN.**	**MAX.**
CANADIAN	STRAP - 300mm [11.81"] ENCLOSED TOT SEAT - 600mm [23.62"]	N/A
ASTM	STRAP - 12" [305mm] ENCLOSED TOT SEAT - 24" [610mm]	N/A
BS EN	350 mm [13.77"]	N/A
CPSC	STRAP - 12" [305mm] ENCLOSED TOT SEAT- 24" [610mm]	N/A

MEASURED WHEN OCCUPIED BY MAXIMUM USERS

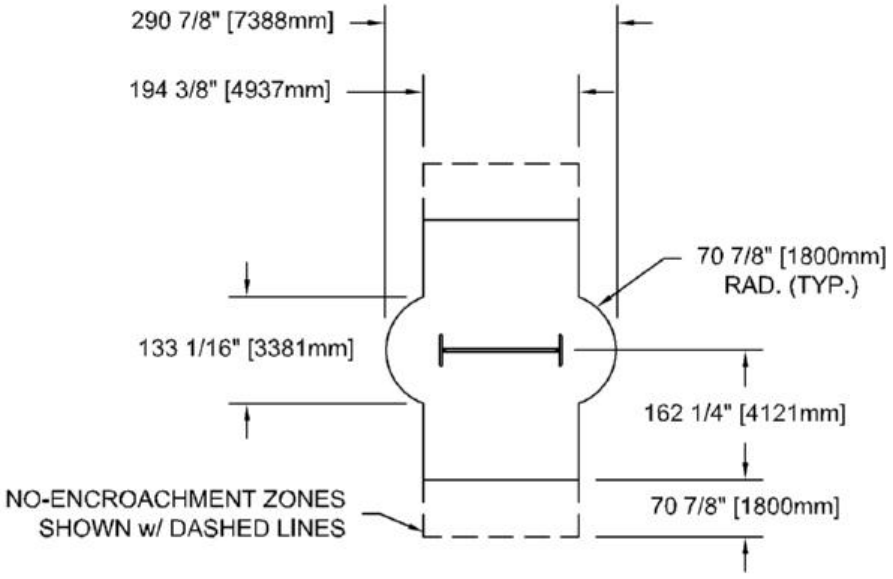


DETAIL 'A': TOPRAIL TO ARCH CONNECTION

67558 3 1/2" O.D. ADA ARCH SWING - 2 SEATS
67620 3 1/2" O.D. ADA ARCH SWING ADD-A-BAY



67558



67558 (CSA ONLY)

NOTE:

1. OWNER/OPERATOR SHALL INSTALL AND MAINTAIN PROTECTIVE SURFACING WITHIN THE USE ZONE (U.S.) OR PROTECTIVE SURFACING ZONE (CANADA) OF ALL PLAY EQUIPMENT TO COMPLY WITH ASTM F-1292 AND ASTM F-1487 (U.S.) or CAN/CSA-Z-614 (CANADA).
2. SOLID OUTSIDE BORDER REPRESENTS MINIMUM REQUIRED ASTM USE ZONE AND CSA PROTECTIVE SURFACING ZONE FOR SWING FRAME SHOWN.
3. DASHED LINES REPRESENT CSA *NO ENCROACHMENT* ZONE (CANADA ONLY).
4. *EACH ADDITIONAL CONNECTED SWING FRAME BAY INCREASES THE USE ZONE SURFACING, AND *NO ENCROACHMENT* ZONE DIMENSIONS BY 149 1/8" [3788mm].

MODEL NO. 67915 Made-for-Me Swing Seat
MODEL NO. S67915 Made-for-Me Swing Seat w/S.S. Chain
MODEL NO. 67916 Made-for-Me Swing Seat
MODEL NO. S67916 Made -for- Me Swing Seat w/S.S. Chain

PARTS LIST

DESCRIPTION	Number Required				PART NUMBER
	67915	S67915	67916	S67916	
Made-for-Me Swing Seat Assembly (5 - 12)	1	1	1	1	178486
Seat Brace (Beige)	1	1	1	1	214733**
Seat Latch (Beige)	1	1	1	1	178484**
Hardware Complete	1	0	0	0	178860
Hardware Complete	0	1	0	0	178861
Hardware Complete	0	0	1	0	178858
Hardware Complete	0	0	0	1	178859
Galvanized Chain, 122 3/4" Lg.	2	0	0	0	178807*
Stainless Steel Chain, 122 3/4" Lg.	0	2	0	0	178808*
Galvanized Chain, 170" Lg.	0	0	2	0	178809*
Stainless Steel Chain, 170" Lg.	0	0	0	2	178810*
3/8" x 1 1/4" P.B.H.C.S. w/ Patch	2	2	2	2	812051*
3/8" x 1 3/4" P.B.H.C.S. w/ Patch	2	2	2	2	812054*
3/8" Lockwasher	4	4	4	4	817334*
3/8" Flatwasher	2	2	2	2	817410*
3/8" Flatwasher (1-1/4" O.D.)	2	2	2	2	817424*
3/8" Barrel Nut	2	2	2	2	804804*
Swing Hanger	2	2	2	2	1462*
Spacer	2	2	2	2	179390*

Unless Otherwise Specified, All Units of Measure are Each
***Included in Hardware** ***Included in Seat Assembly**

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on all threaded hardware.

SPECIFICATIONS:

All polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotationally molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Density (ASTM D-1505); Brittleness Temperature (ASTM D-746); Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD). The swing hanger shall consist of a top clevis, bottom clevis, and swing pendulum. The top clevis shall have a non-slip-serrated surface. The pendulum shall incorporate a factory installed bronze bushing. The pendulum shall be attached to the bottom clevis with 1/2" x 2 1/2" hex bolt, 1/2" lockwasher, and 1/2" hex nut.

INSTALLATION INSTRUCTIONS:

1. Remove 3/8" x 3/4" Hex Head Bolts from seat and discard.

2. Attach appropriate chain to top of seat using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher and 3/8" Flatwasher (1 ¼" O.D.), and spacer. See Detail 297.

3. Connect chain to bottom of seat using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher, 3/8" Flatwasher and 3/8" Barrel Nut. See Detail 296.

4. Connect assembled Swing Seat to swing hanger using 3/8" x 1" Shoulder Bolt. Refer to Detail 298.

MODEL NO. 67915 Made-for-Me Swing Seat
MODEL NO. S67915 Made-for-Me Swing Seat w/S.S. Chain
MODEL NO. 67916 Made-for-Me Swing Seat
MODEL NO. S67916 Made-for-Me Swing Seat w/S.S. Chain

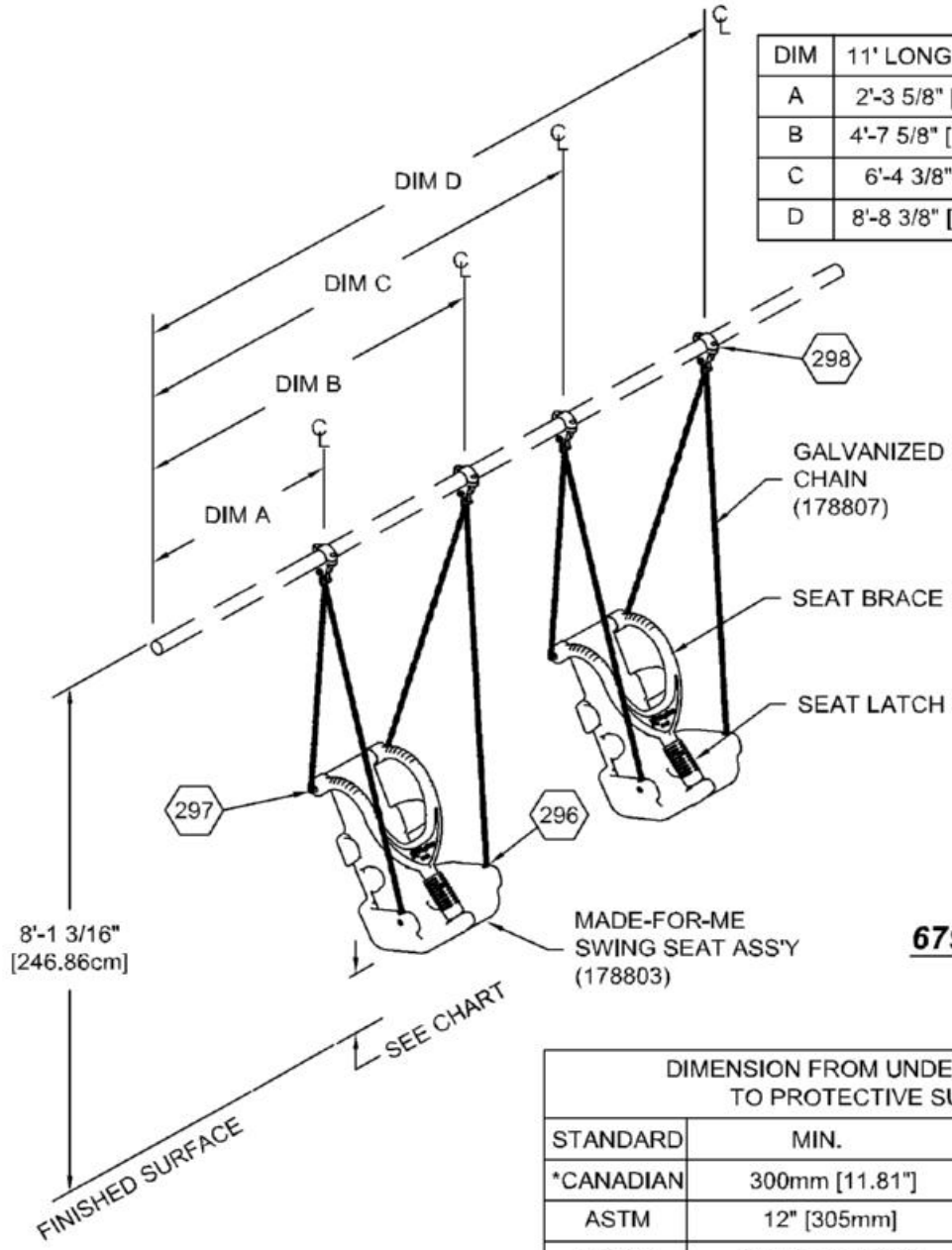
5. Attach Swing Seat Assembly to top rail using 3/8" x 2" Carriage Bolt and 3/8" Lock Nut. See Detail 298 . Refer to Finished Assembly drawing for swing seat spacing.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check 'S' Hooks at both ends and all connection points for wear. Check all moving part such as hangers for wear. Check 'S' Hooks as specified by ASTM F 1487 SECTION 6.3 for Entanglement. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

MODEL NO. 67915 Made-for-Me Swing Seat
MODEL NO. S67915 Made-for-Me Swing Seat w/S.S. Chain
MODEL NO. 67916 Made-for-Me Swing Seat
MODEL NO. S67916 Made-for-Me Swing Seat w/S.S. Chain

DIM	11' LONG TOP RAIL	12' LONG TOP RAIL
A	2'-3 5/8" [70.17cm]	2'-9 5/8" [85.41cm]
B	4'-7 5/8" [141.29cm]	5'-1 5/8" [156.53cm]
C	6'-4 3/8" [194cm]	6'-10 3/8" [209.24cm]
D	8'-8 3/8" [265.12cm]	9'-2 3/8" [28.36cm]



67915 VERSION
(SHOWN)

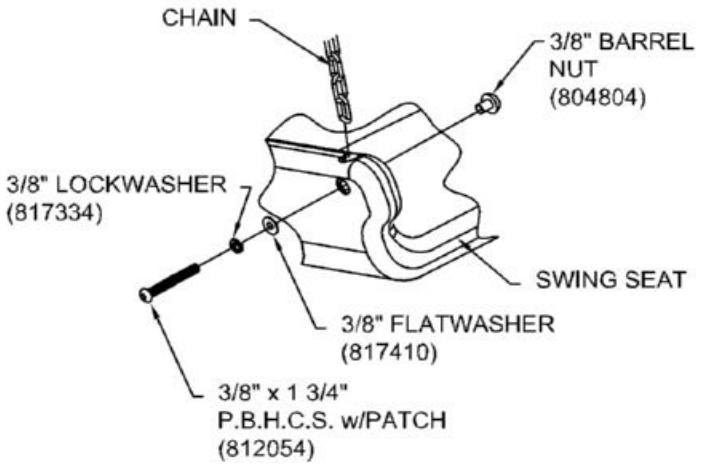
DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
*CANADIAN	300mm [11.81"]	N/A
ASTM	12" [305mm]	N/A
BS EN	350 mm [13.77"]	N/A
CPSC	12" [305mm]	N/A

* UNDER LOADED CONDITION BASED ON WEIGHT OF 165lb. [75kg.]

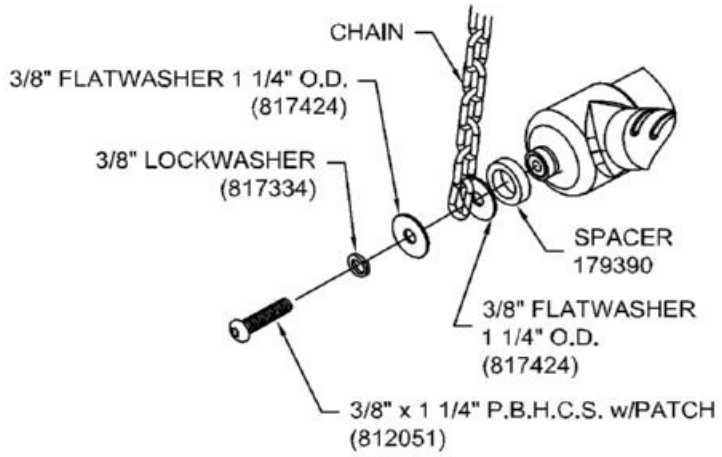
⬡ = ***INSTALLATION DETAIL***

FINISHED ASSEMBLY

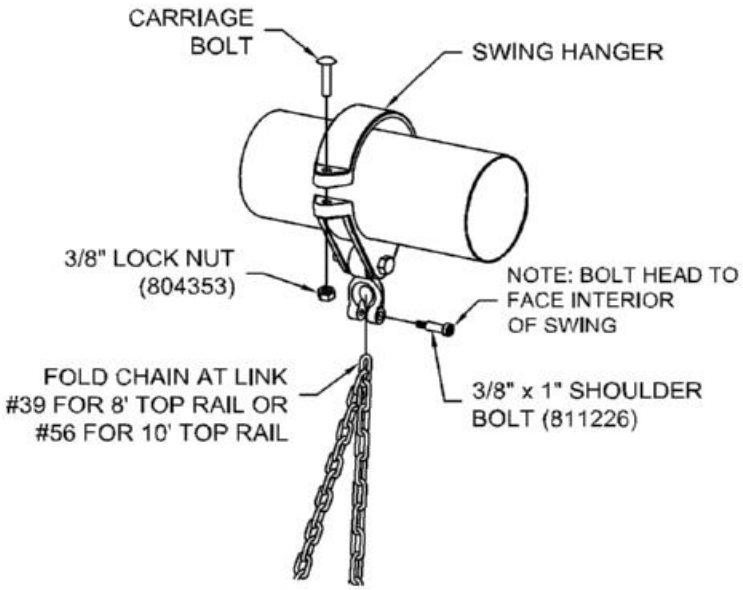
MODEL NO. 67915 Made-for-Me Swing Seat
MODEL NO. S67915 Made-for-Me Swing Seat w/S.S. Chain
MODEL NO. 67916 Made-for-Me Swing Seat
MODEL NO. S67916 Made-for-Me Swing Seat w/S.S. Chain



296



297



298

68034 3 1/2" O.D. STANDARD ARCH SWING - 2 SEATS
68035 3 1/2" O.D. STANDARD ARCH SWING ADD-A-BAY

Parts List				
ITEM	DESCRIPTION	68034	68035	PART NUMBER
1	3 1/2" O.D. TOPRAIL	1	1	208806
2	ARCH END UPRIGHT ASS'Y	2	0	152803
3	MULTI-BAY ARCH UPRIGHT ASS'Y	0	1	152805
	HARDWARE COMPLETE	1	1	303587
	1/2" x 4" HEX HEAD BOLT	2	2	801215*
	1/2" FLAT WASHER	2	2	817412*
	1/2" LOCKWASHER	2	2	817342*
	1/2" HEX NUT	2	2	804055*

Unless Otherwise Specified, All Units of Measure are Each
** Included in Hardware*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

NOTE: THIS INSTALLATION BOOKLET SHOULD BE KEPT IN CUSTOMER'S FILE FOR FUTURE REFERENCE.

NOTE: Do not overtighten bolts. To overtighten may cause buckling or dimpling of some parts.

NOTE: Read installation instructions thoroughly before starting assembly. Pour concrete only after final assembly is complete. Bracing material may be required during assembly.

NOTE: Do not tighten any nuts, bolts, rods, etc. until the unit is completely assembled.

NOTE: Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.

NOTE: It is important to check the hole location in the upright and on the drawings while assembling this unit.

1. Dig holes according to the Ground Plan. See Detail 005. Place a brick or equivalent at the bottom of the hole to provide a solid foundation. Allow for this in hole depth. See Detail 005.

2. Insert toprail onto socket on the arch and secure. See Detail 020.

3. Set frame in holes, making sure that legs rest on foundation bricks. Check to ensure swing is level.

4. Fill holes with concrete per Detail 005. Plumb and brace assembly. Allow a minimum of 48 hours for concrete to harden before continuing.

NOTE: Loctite (supplied by others) should be used on all threaded hardware.

5. Place swing hangers on toprail using Assembly Drawing for spacing. Hang seats per Installation Sheet for swing seats.

6. After assembly is complete, place manufacturer's I.D. label in a visible location.

68034 3 1/2" O.D. STANDARD ARCH SWING - 2 SEATS
68035 3 1/2" O.D. STANDARD ARCH SWING ADD-A-BAY

STOP IMPORTANT PRODUCT INFORMATION AND SAFETY WARNINGS STOP

☐ All equipment should be installed on a soft, resilient, energy-absorbing ground surface. NEVER INSTALL PLAY EQUIPMENT ON CONCRETE OR ASPHALT. A fall on a hard surface can result in serious injury to the equipment user.

☐ ALWAYS FOLLOW INSTALLATION INSTRUCTIONS WHEN ERECTING EQUIPMENT.

☐ Worn surfaces around equipment should be restored. Concrete footings should never be exposed. Surface depth should comply with installation instructions.

☐ Equipment should be placed to eliminate conflicting traffic patterns.

☐ To reduce risk of clothing entanglement in compliance with ASTM F1487, any bolt end protuding more than two full threads beyond the face of the nut shall be cut-off, filed smooth and treated to prevent corrosion. Sharp edges on pipes should be capped or removed. Check for bent, broken or severely worn pipe and replace.

☐ Test overall stability and rigidity of all play equipment. Check for proper assembly, installation and ground anchoring.

☐ Check for and repair damage caused by wear or vandalism, a major factor in injury-causing situations.

☐ PLAY & PARK STRUCTURES® PROVIDES ITS CUSTOMERS WITH COMPLETE SPECIFICATION SHEETS AND INSTALLATION INSTRUCTIONS. THE SPECIFICATION SHEET CONTAINS THE LISTING OF EVERY PART USED IN A PIECE OF EQUIPMENT AND SHOULD BE KEPT IN THE CUSTOMER'S FILES FOR ACCURATE REFERENCE WHEN REPLACEMENT PARTS ARE NEEDED.

☐ Never add components not intended for use with this product.

☐ Regular maintenance is necessary on this and all park and recreational equipment to ensure the safety of the user.

☐ Proper maintenance of PLAY & PARK STRUCTURES® equipment requires regular tightening of all bolts, nuts, and set screws.

☐ All equipment should be free of rust and repainted whenever necessary to deter rusting.

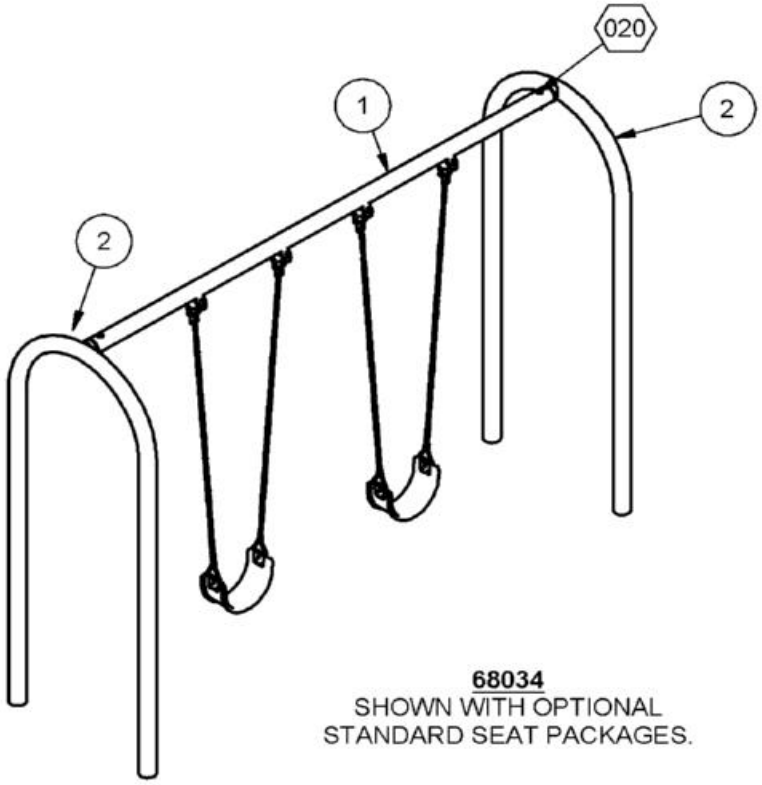
☐ Regular checking of all parts, castings, etc. should be made. If a part is broken or worn it should be replaced immediately.

☐ Never use PLAY & PARK STRUCTURES playground equipment around or in conjunction with swimming pools, ponds, lakes or any other bodies of water.

☐ Check to be sure all fittings are tight and that the bars and pipes do not move.

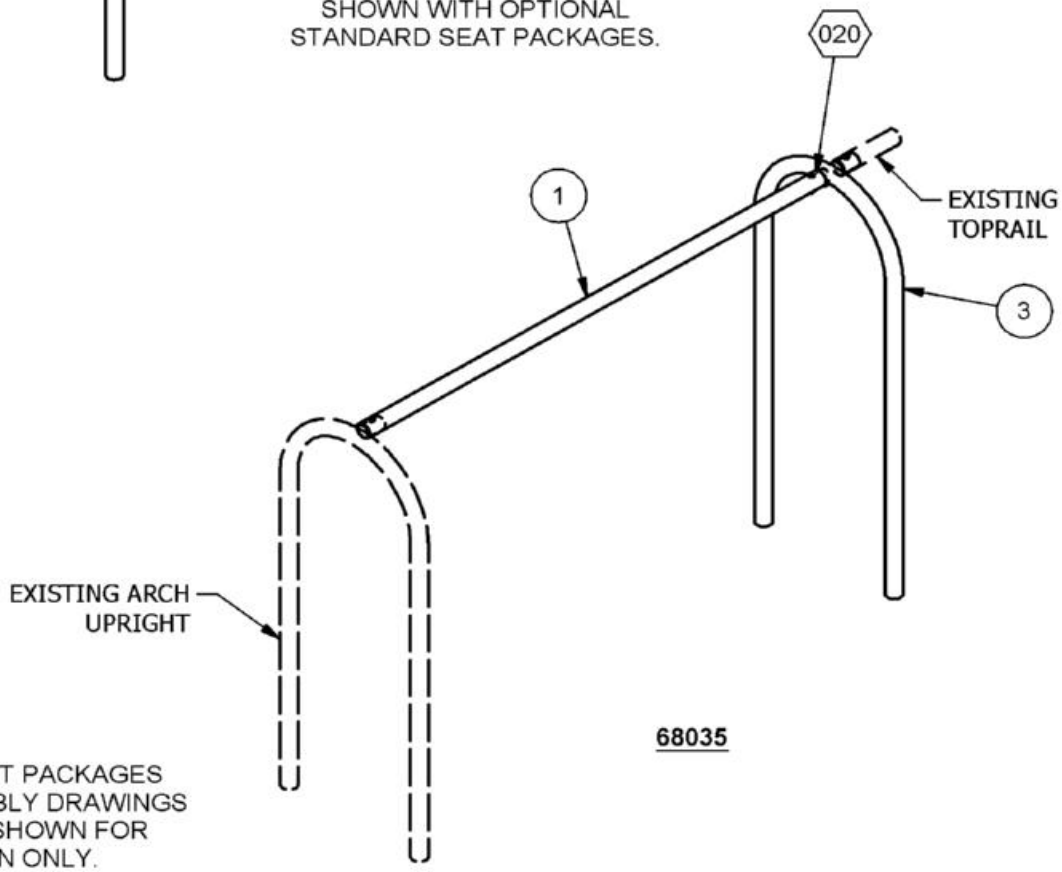
☐ A soft resilient surface should be placed under all swings, extending at least six feet beyond the farthest arc of the swing seat both fron and back. NEVER INSTALL PLAY EQUIPMENT ON CONCRETE OR ASPHALT.

68034 3 1/2" O.D. STANDARD ARCH SWING - 2 SEATS
68035 3 1/2" O.D. STANDARD ARCH SWING ADD-A-BAY



ASSEMBLY DRAWINGS

68034
SHOWN WITH OPTIONAL
STANDARD SEAT PACKAGES.

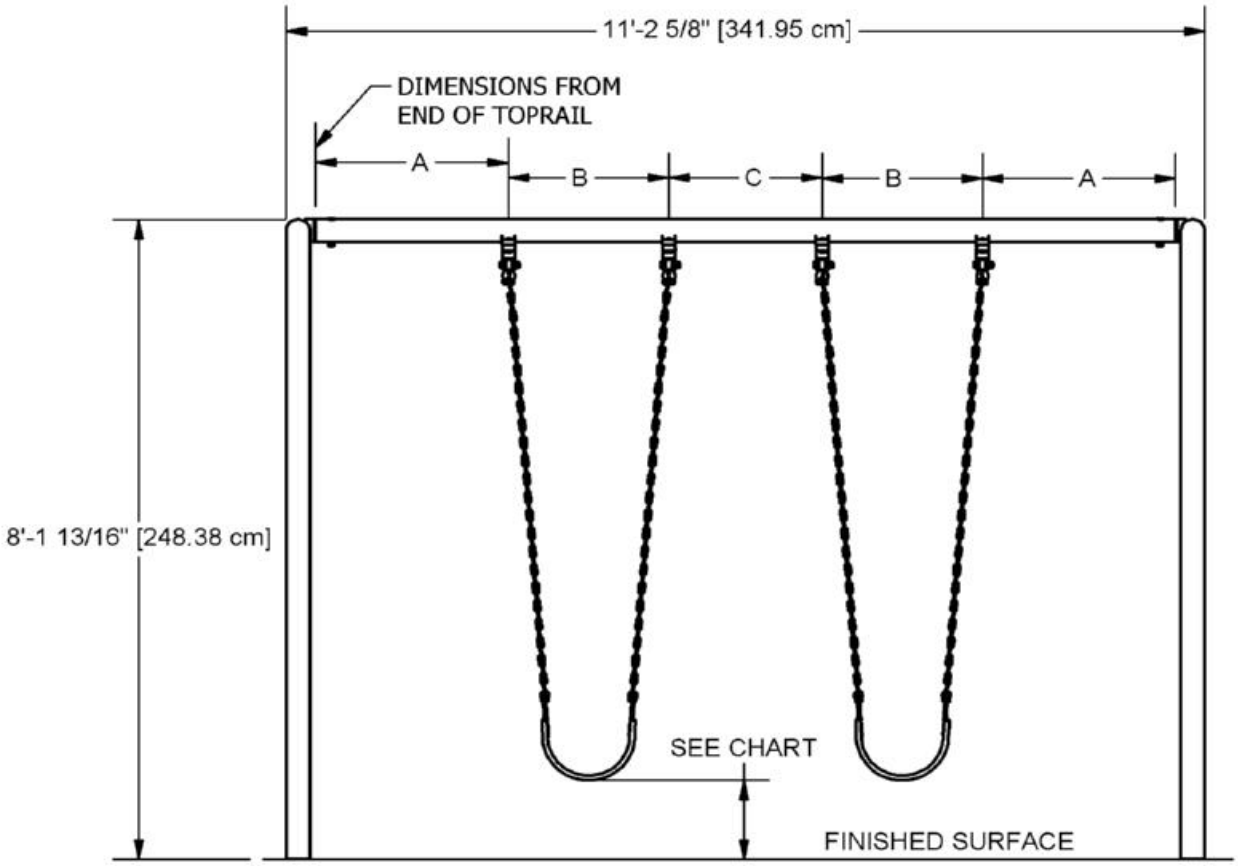


68035

NOTE: SWING SEAT PACKAGES SHOWN ON ASSEMBLY DRAWINGS NOT INCLUDED. SHOWN FOR ILLUSTRATION ONLY.

68034 3 1/2" O.D. STANDARD ARCH SWING - 2 SEATS
68035 3 1/2" O.D. STANDARD ARCH SWING ADD-A-BAY

TOPRAIL DIMENSIONS	
DIM A	2'-4 1/4" [71.80 cm]
DIM B	1'-11 1/2" [59.69 cm]
DIM C	1'-10 7/16" [57.07 cm]

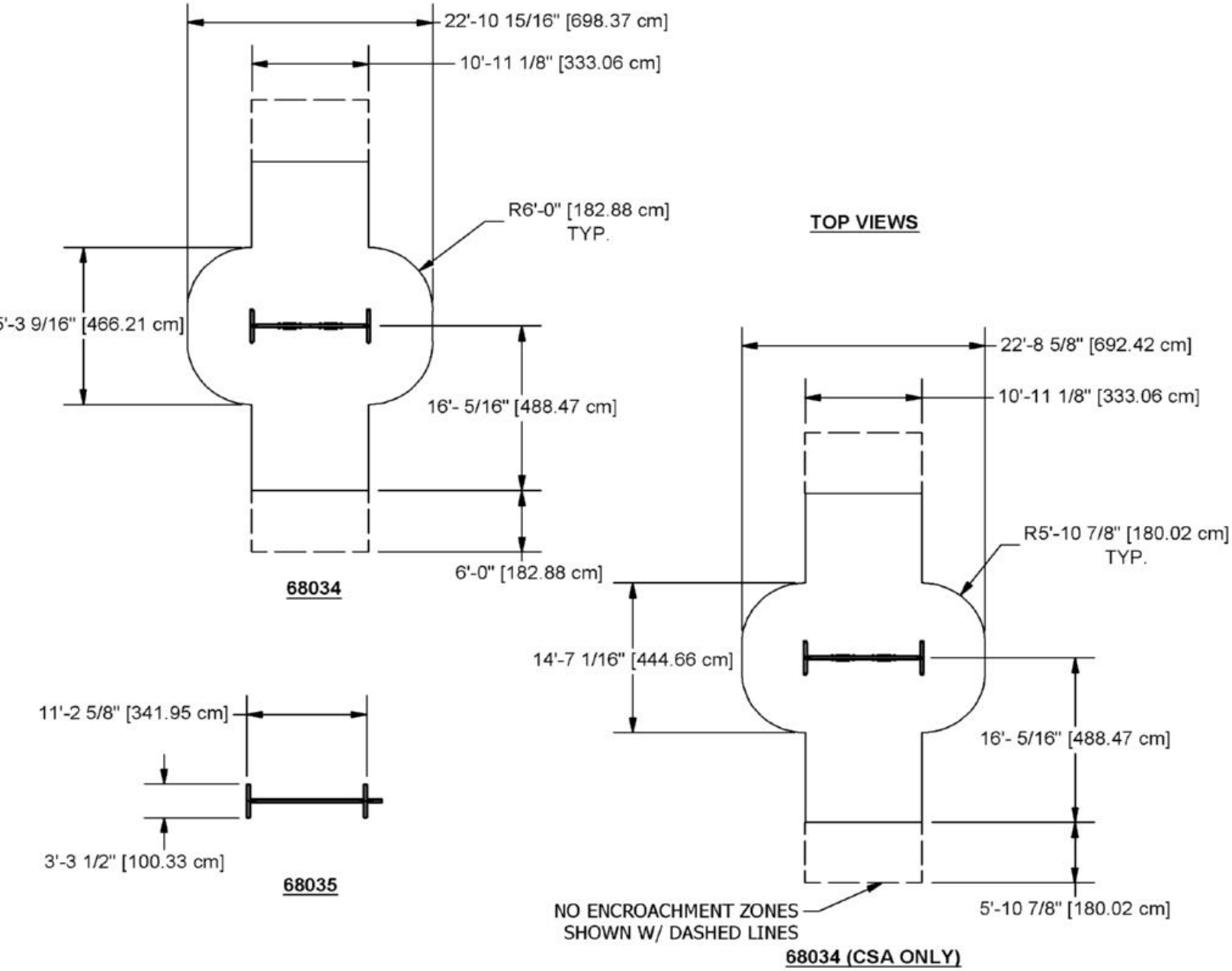


68034 SHOWN (68035 SIMILAR)
WITH OPTIONAL STANDARD
SEAT PACKAGES (NOT INCLUDED)

DIMENSION FROM UNDERSIDE OF SEAT TO PROTECTIVE SURFACING		
STANDARD	MIN.	MAX.
CANADIAN	STRAP - 300mm [11.81"] ENCLOSED TOT SEAT - 600mm [23.62"]	N/A
ASTM	STRAP - 12" [305mm] ENCLOSED TOT SEAT - 24" [610mm]	N/A
BS EN	350 mm [13.77"]	N/A
CPSC	STRAP - 12" [305mm] ENCLOSED TOT SEAT - 24" [610mm]	N/A

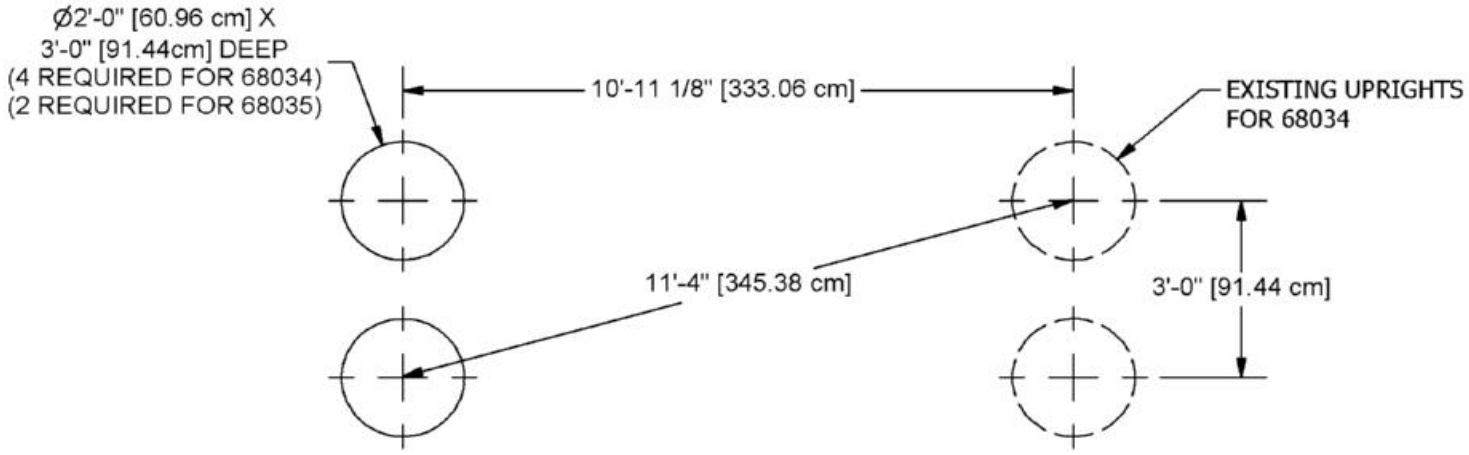
MEASURED WHEN OCCUPIED BY MAXIMUM USERS

68034 3 1/2" O.D. STANDARD ARCH SWING - 2 SEATS
68035 3 1/2" O.D. STANDARD ARCH SWING ADD-A-BAY



NOTE:
1. OWNER/OPERATOR SHALL INSTALL AND MAINTAIN PROTECTIVE SURFACING WITHIN THE USE ZONE (U.S.) OR PROTECTIVE SURFACING ZONE (CANADA) OF ALL PLAY EQUIPMENT TO COMPLY WITH ASTM F-1292 AND ASTM F-1487 (U.S.) or CAN/CSA-Z-614 (CANADA).
2. SOLID OUTSIDE BORDER REPRESENTS MINIMUM REQUIRED ASTM USE ZONE AND CSA PROTECTIVE SURFACING ZONE FOR SWING FRAME SHOWN.
3. DASHED LINES REPRESENT CSA ***NO ENCROACHMENT*** ZONE (CANADA ONLY).
4. *EACH ADDITIONAL CONNECTED SWING FRAME BAY INCREASES THE USE ZONE SURFACING, AND ***NO ENCROACHMENT*** ZONE DIMENSIONS BY 10'-11 1/8" [3.33M].

68034 3 1/2" O.D. STANDARD ARCH SWING - 2 SEATS
68035 3 1/2" O.D. STANDARD ARCH SWING ADD-A-BAY



GROUND PLAN

NOTE: HOLE DEPTHS INDICATED ON ALL GROUND PLANS ARE MEASURED FROM THE FINISHED SURFACE. SEE DETAIL 005. ALL FOOTING DIMENSIONS ARE BASED ON LEVEL FINISHED SURFACE.

CONCRETE REQUIRED:
.23 CUBIC YARDS
.18 CUBIC METERS
(PER HOLE)

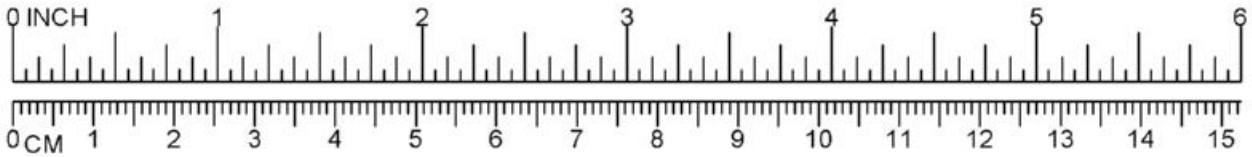
DETAILS -for-
68034 & 68035

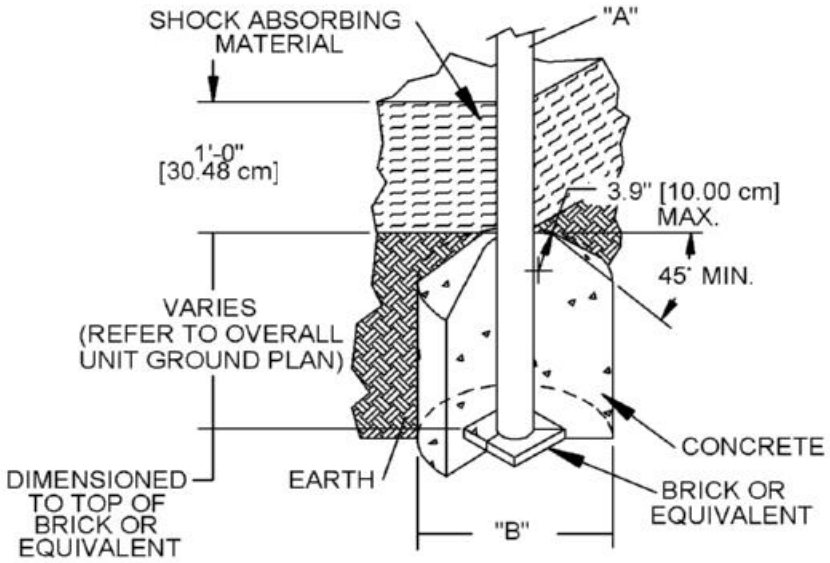
IMPORTANT

TO REDUCE THE RISK OF CLOTHING ENTANGLEMENT IN COMPLIANCE WITH ASTM F1487, ANY BOLT END PROTRUDING MORE THAN TWO FULL THREADS BEYOND THE FACE OF THE NUT SHALL BE CUT-OFF FLUSH, FILED SMOOTH AND TREATED TO PREVENT CORROSION.

NOTE: LOCTITE (SUPPLIED BY OTHERS) SHOULD BE USED ON ALL THREADED HARDWARE.

NOTE: AFTER ASSEMBLY IS COMPLETE, PEEN TEE-NUTS AND FLATWASHERS TO MATCH RADIUS OF PIPE.



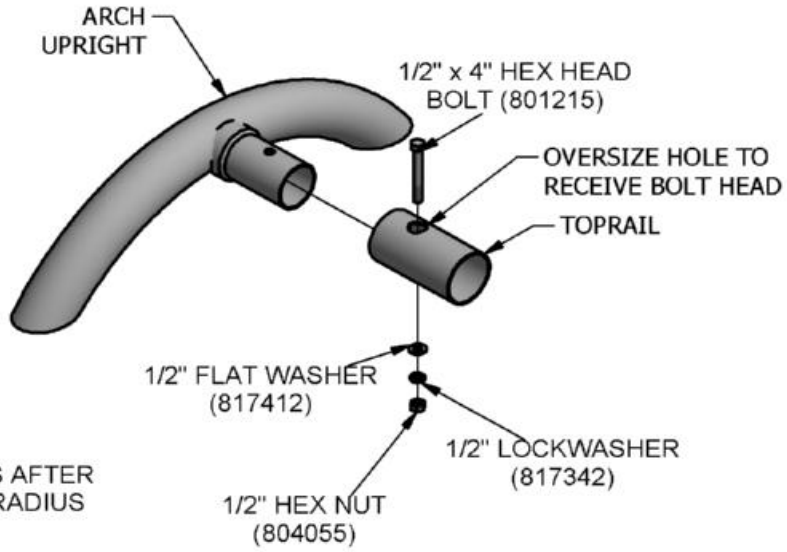


DIA. "A" (PIPE SIZE)	DIA. "B" (FOOTING SIZE)
1 1/16" [2.70 cm]	1'-2" [35.56 cm]
1 5/16" [3.33 cm]	1'-2" [35.56 cm]
1 5/8" [4.13 cm]	1'-2" [35.56 cm]
1 7/8" [4.83 cm]	1'-2" [35.56 cm]
2 3/8" [6.03 cm]	1'-2" [35.56 cm]
3 1/2" [8.89 cm]	1'-6" [45.72 cm]
ARCH SWING	
3 1/2" [8.89 cm]	2'-0" [60.96 cm]

NOTES:
-SLOPED FOOTING IS A REQUIREMENT OF EUROPEAN STANDARD EN1176-1 ONLY
-SUGGESTED MINIMUM CONCRETE RATING: 3000 PSI

005

SHOCK ABSORBING PROPERTIES OF SURFACING MATERIALS VARY. IF YOU DETERMINE THAT LESS THAN 1'-0" [30.48cm] OF SURFACING IS REQUIRED, MAKE UP THE DIFFERENCE IN ELEVATION WITH EARTH, BEFORE APPLYING SURFACING.



NOTE: PEEN FLATWASHERS AFTER INSTALLATION TO MATCH RADIUS OF TOPRAIL.

020

68115 ACTIVITY METER

Parts List		
DESCRIPTION	QTY	PART NUMBER
FREESTANDING METER PANEL	1	313741
SUPPORT PIPE	1	313832
HARDWARE COMPLETE	1	313833
3/8" x 3" P.B.H.C.S. w/PATCH	1	812059*
3/8" FLAT WASHER (1 1/4" O.D.)	1	817424*
3/8" BARREL NUT	1	804804*
1/2" FLAT WASHER (1 3/8" O.D.)	1	817425*

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Freestanding Meter Panel:
Shall be rotational molded from polyethylene. The polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotational molded products shall meet or exceed the following specifications: ASTM D-1248, type 2, class A and Federal specification LP-390C, type 1, class M, grade 2, category 3; Denisty (ASTM D-155); Brittleness Temperature (ASTM D-745; Tensile Values (ASTM D-638); Flexural Modulus (ASTM D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD). The frame shall be reinforced with all welded construction fabricated from 1.688" O.D. x .083" (14 gauge) wall galvanized steel tubing, 2.375" x .095" (13 gauge) wall galvanized steel tubing, and 1/4" stainless steel plate.

Support Pipe:
Shall be fabricated from 2.375" x .095" (13 gauge) wall galvanized steel tubing. The Support Pipe shall be coated with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a six stage bath system with an iron phosphate wash, as a rust inhibitor, and a sealer to prevent flash rusting before coating. The coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68).

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment, shall be stainless steel, yellow dichromate plated steel, blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 300 series stainless steel. Fasteners with yellow dichromate treatment have an electro deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with a yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. NOTE: All weights are based on average comparisons of each part.

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing hole according to Plan View. See Plan View for dimensions and notes regarding surfacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

68115 ACTIVITY METER

2. Attach Support Pipe to Freestanding Meter Panel using 3/8" x 3" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), 1/2" Flat Washer (1 3/8" O.D.), and 3/8" Barrel Nut. See Detail 839.

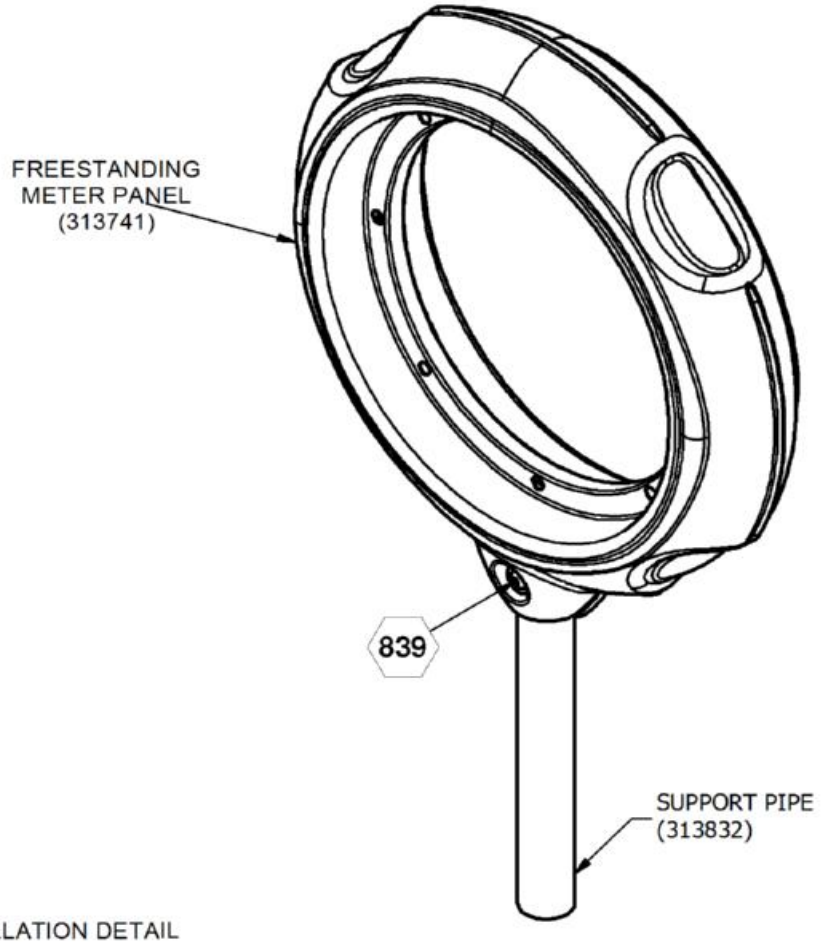
3. Plumb and level the entire assembly and tighten all fasteners.

4. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

5. When the structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

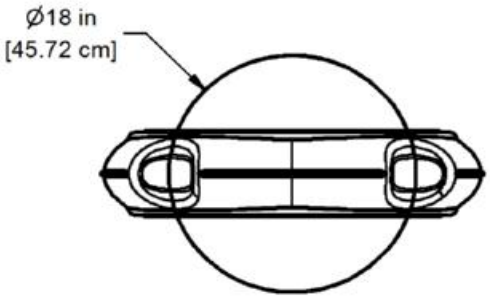
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



⬡ = INSTALLATION DETAIL

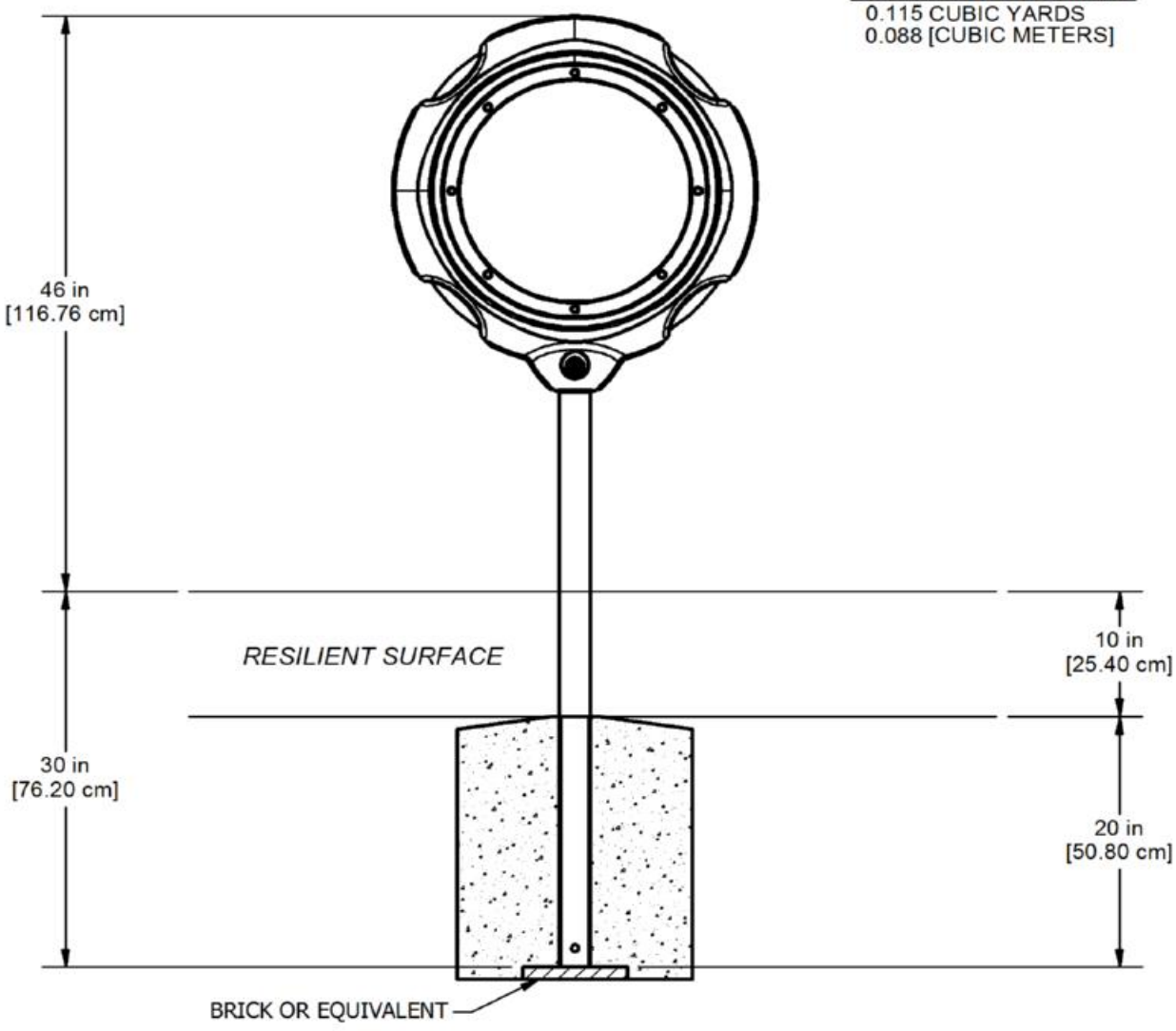
FINISHED ASSEMBLY

68115 ACTIVITY METER



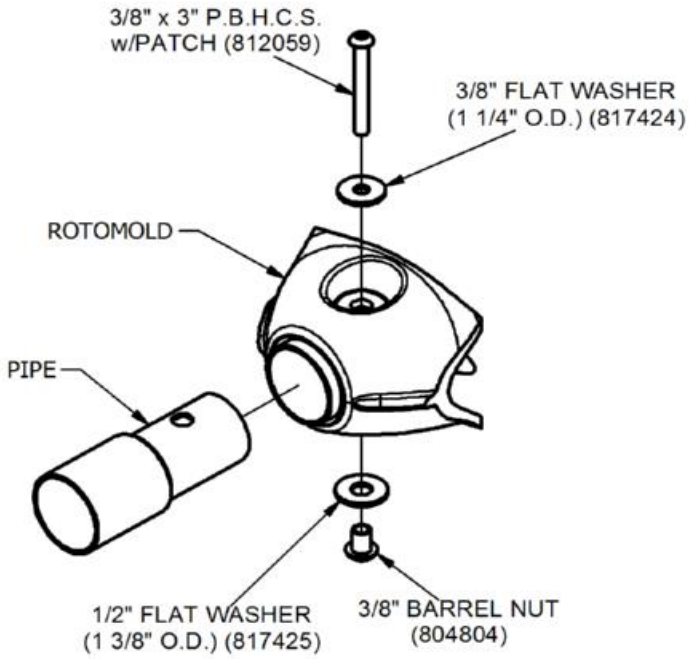
PLAN VIEW

CONCRETE REQUIRED
0.115 CUBIC YARDS
0.088 [CUBIC METERS]



ELEVATION VIEW

68115 ACTIVITY METER



839

68131 CURVED CHIMES

Parts List		
DESCRIPTION	QTY	PART NUMBER
FORMED C MAJOR PLATE	1	313961
FORMED A MINOR PLATE	1	313962
CURVED CHIME FRONT HDPE PANEL	4	313965
CURVED CHIME BACK HDPE PANEL	4	313966
CURVED UPRIGHT ASSEMBLY	2	313973
SMALL UPRIGHT ASSEMBLY	1	313977
A MINOR CHIME PACKAGE	1	314074
C MAJOR CHIME PACKAGE	1	314075
3 1/2" DOME CAP	3	212995
HARDWARE COMPLETE	1	316298
#10 x 1" SCREW	8	815506
3/16" x 13/32" DRIVE RIVET	6	805366
3/8" x 3/4" P.B.H.C.S. w/PATCH	10	812052
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	64	812051
3/8" FLAT WASHER	74	817410
3/8" ACORN NUT	10	804002
3/8" x 3" ALUMINUM COUPLING NUT	32	804815
1/4" FLAT WASHER (5/8" O.D.)	198	817408
3/8" PLASTIC SPACER	132	817613
5/16" FLAT WASHER (5/8" O.D.)	66	817406
5/16" LOCK WASHER	66	817330
1/4" BARREL NUT	66	804809

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*
Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding surfacing, etc. **NOTE:** ***Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.***

2. Attach Curved Chime Back HDPE Panel to Formed C Major Plate and Formed A Minor Plate. See Detail 858. **NOTE:** *See Finished Assembly View for orientation.*

3. Attach each Chime to Formed C Major Plate and Formed A Minor Plate. See Detail 588. **NOTE:** *This is the top connection for each chime. The reference letter for each Formed Plate (C or A) shall be orientated so that the reference letter appears at the top.*

4. Attach Foam Damper to Formed C Major Plate and Formed A Minor Plate using supplied adhesive included in each Chime. Attach U-Bolt to each Formed Plate so that it surrounds each Chime. See Detail 589. **NOTE:** *Place Foam Damper between each set of (2) holes that receive U-Bolt Connection.*

68131 CURVED CHIMES

5. Attach Curved Chime Front HDPE Panel to 3/8" x 3" Aluminum Coupling Nut. See Detail 858. **NOTE:** *Form Curved Chime Front HDPE Panel to fit curvature and start with middle connection.*

6. Attach Formed C Major Plate and Formed A Minor Plate to Curved Upright Assembly and Small Upright Assembly. **NOTE:** *See Finished Assembly View for orientation.*

7. Attach Mallets to the bottom edge of Curved Chime Back HDPE Panel and Curved Chime Front HDPE Panel. See Detail 856. **NOTE:** *Drill 1/8" pilot holes using bracket as a template and place Mallets so that each one reaches all the chimes.* **NOTE:** *Make sure to install mallets no higher than 26 1/2" from top of connection point. Refer to Finished Assembly View and Elevation View.* Attach Caps to Upright as shown in Detail 597.

8. Plumb and level the entire assembly and tighten all fasteners.

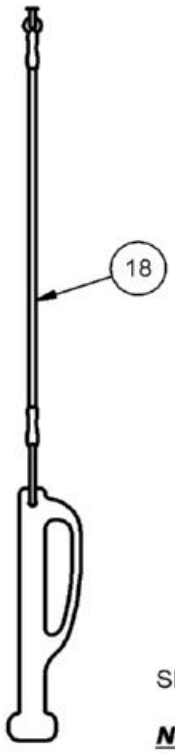
9. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

10. When structure is finished and satisfactory, eliminate sharp points and edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

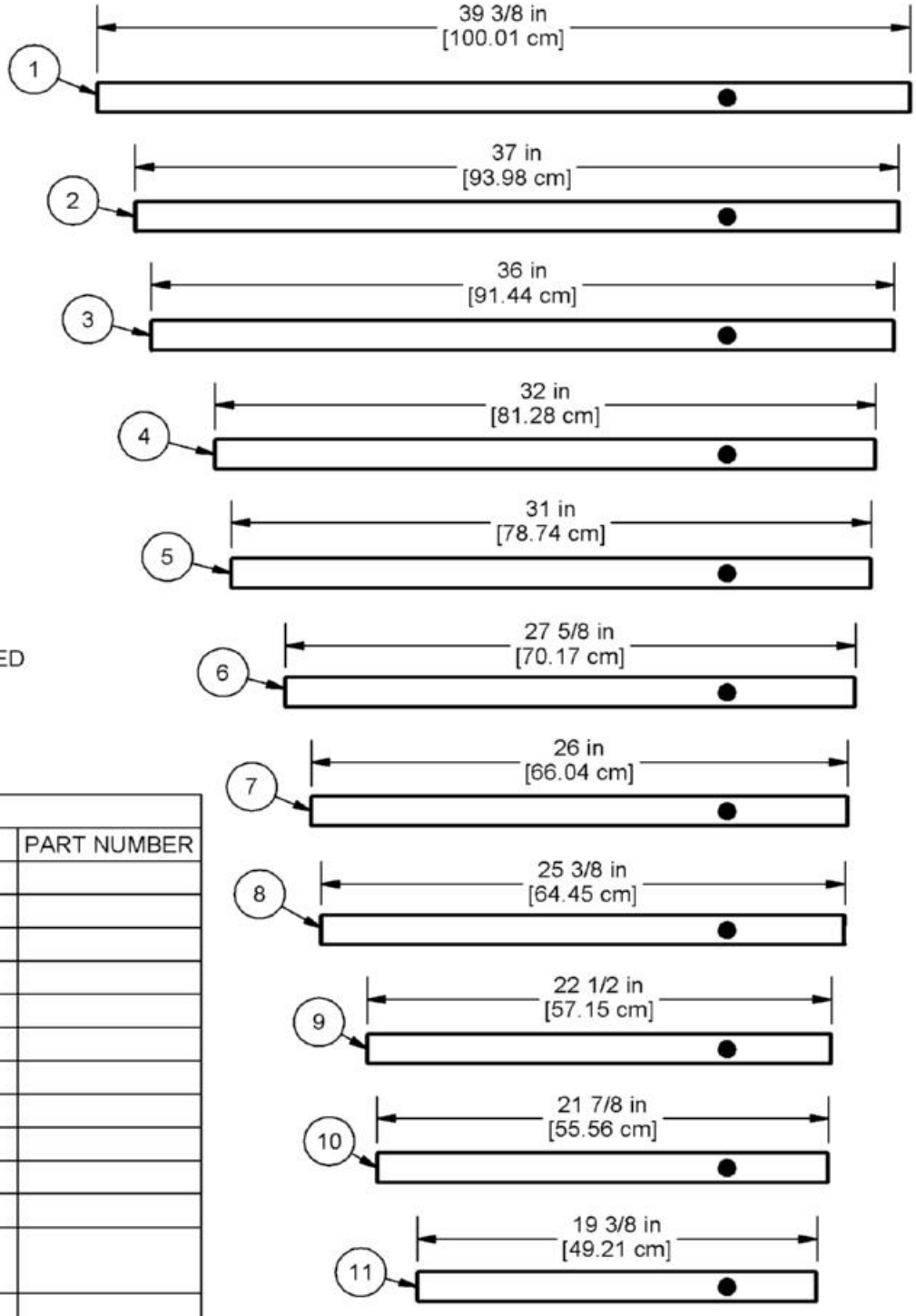
68131 CURVED CHIMES



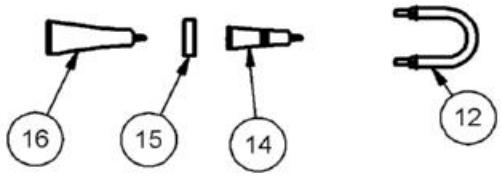
SET OF TWO

NOTE:
HARDWARE INCLUDED

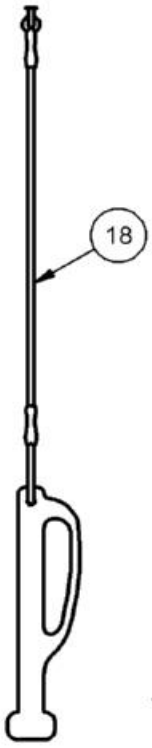
A MINOR CHIMES
CURVED CHIMES PACKAGE (314074)



Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	CHIME SILVER A 39.375	1	
2	CHIME SILVER B 37	1	
3	CHIME SILVER C 36	1	
4	CHIME SILVER E 32	1	
5	CHIME SILVER F 31	1	
6	CHIME SILVER A 27.625	1	
7	CHIME SILVER B 26	1	
8	CHIME SILVER C 25.375	1	
9	CHIME SILVER E 22.5	1	
10	CHIME SILVER F 21.875	1	
11	CHIME SILVER A 19.375	1	
12	1/4" -20 X 2" I.D. SS U-BOLT w/TYGON RUBBER	11	
14	LOCK-TITE	1	
15	FOAM DAMPER	11	
16	ADHESIVE	1	
18	MALLET PACKAGE (SET OF 2) w/HARDWARE	1	314076

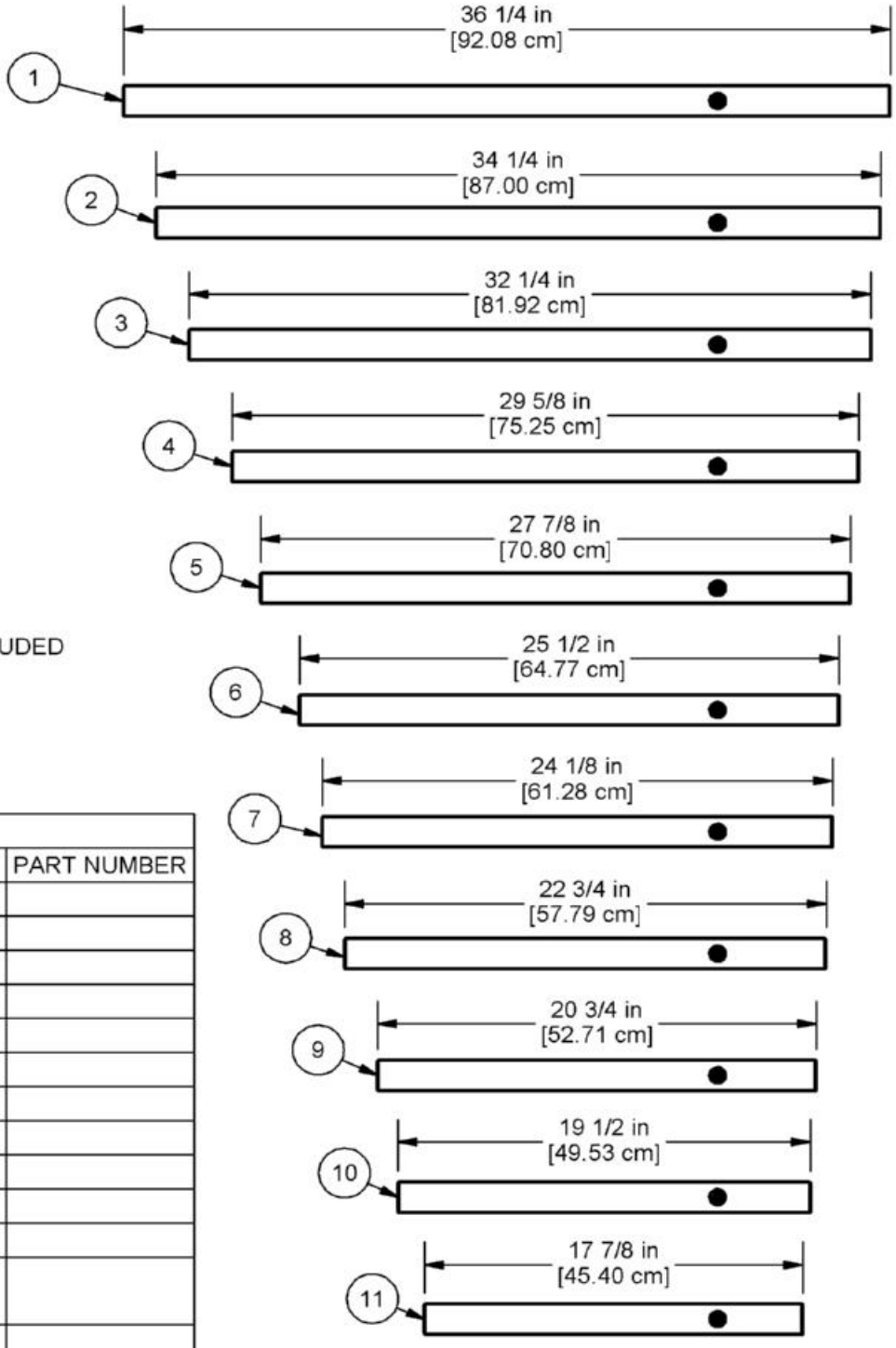


68131 CURVED CHIMES



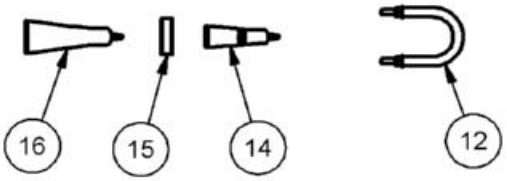
SET OF TWO

NOTE:
HARDWARE INCLUDED

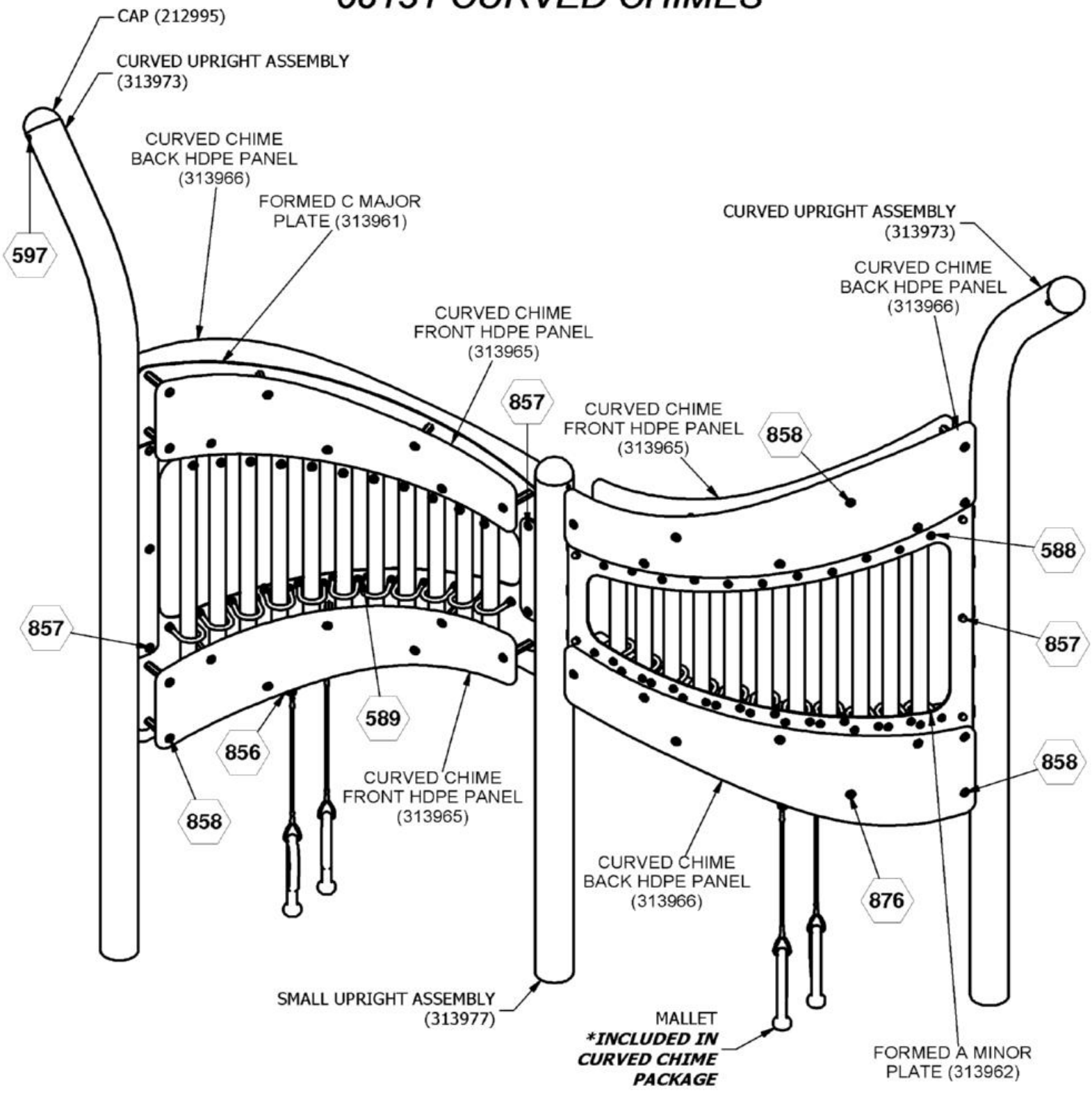


C MAJOR CHIMES
CURVED CHIMES PACKAGE (314075)

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	CHIME GOLD C 36.25	1	
2	CHIME GOLD D 34.25	1	
3	CHIME GOLD E 32.25	1	
4	CHIME GOLD G 29.625	1	
5	CHIME GOLD A 27.875	1	
6	CHIME GOLD C 25.5	1	
7	CHIME GOLD D 24.125	1	
8	CHIME GOLD E 22.75	1	
9	CHIME GOLD G 20.75	1	
10	CHIME GOLD A 19.5	1	
11	CHIME GOLD C 17.875	1	
12	1/4" -20 X 2" I.D. SS U-BOLT w/TYGON RUBBER	11	
14	LOCK-TITE	1	
15	FOAM DAMPER	11	
16	ADHESIVE	1	
18	MALLET PACKAGE (SET OF 2) w/HARDWARE	1	314076



68131 CURVED CHIMES

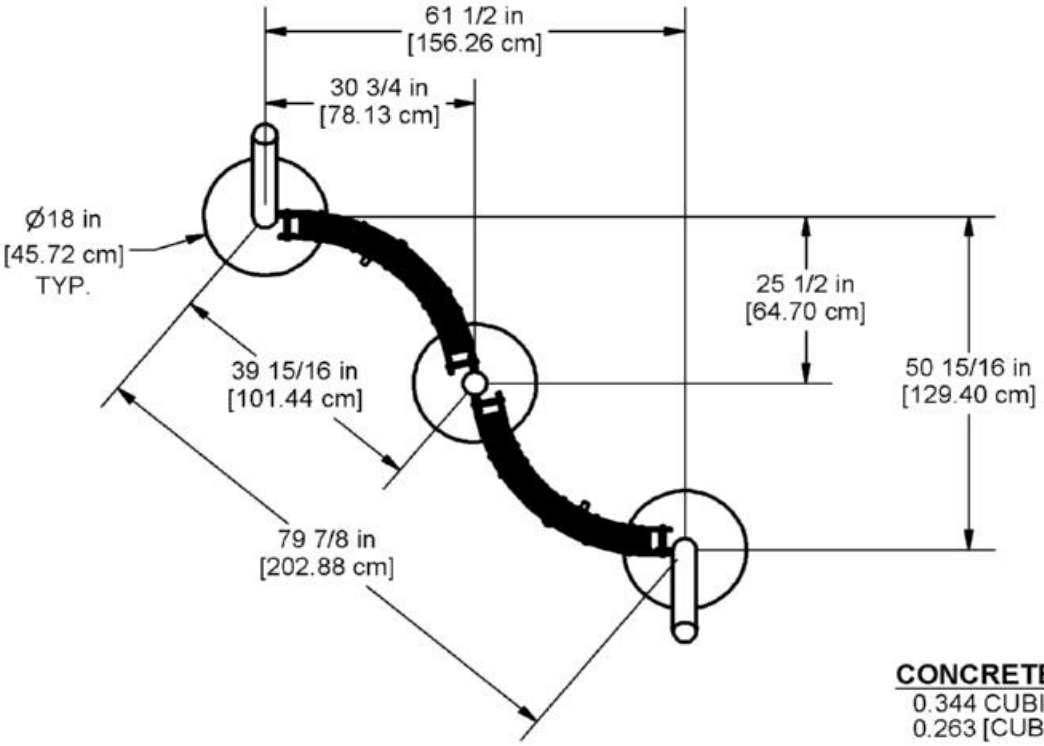


FINISHED ASSEMBLY

⬡ = INSTALLATION DETAIL

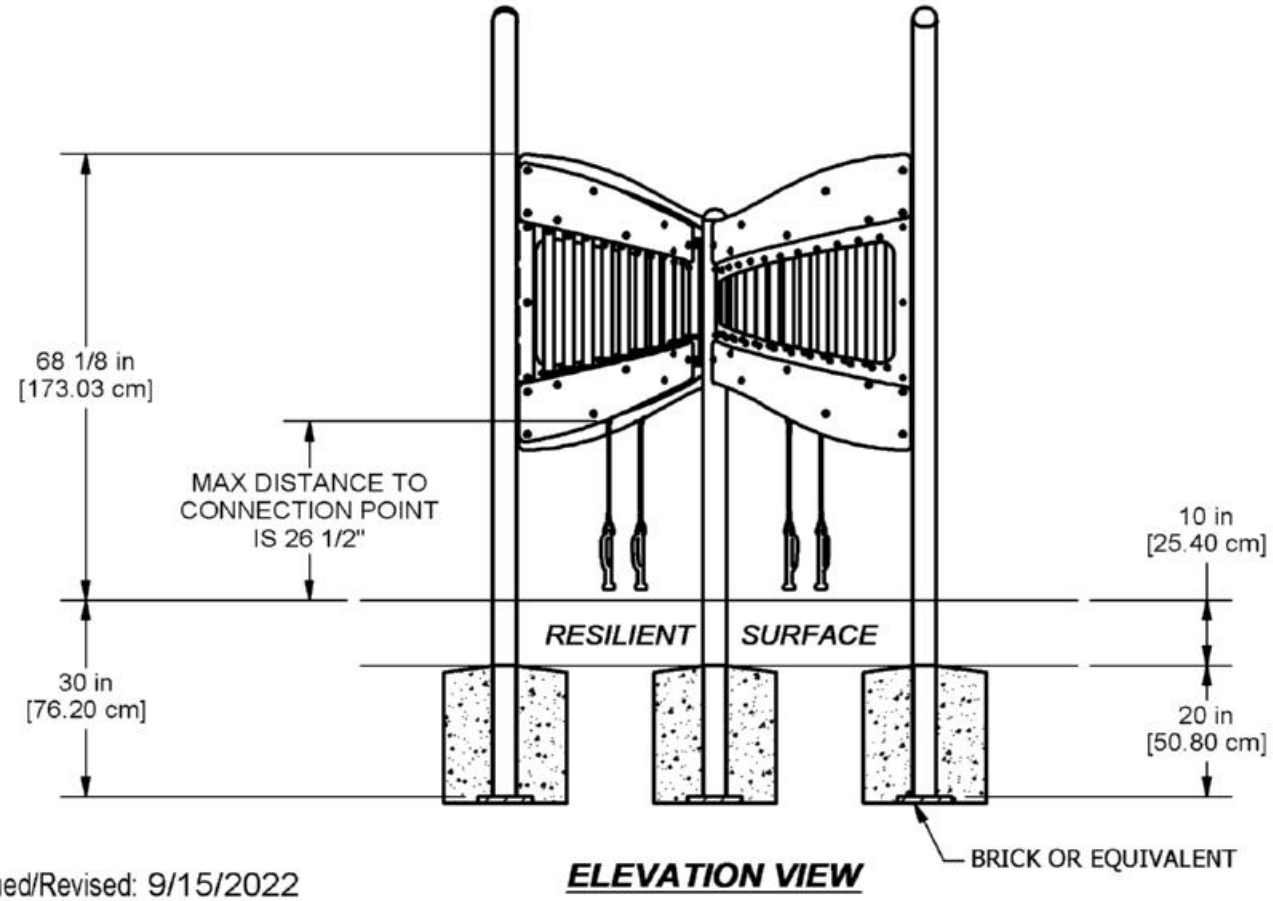
Issued/Revised: 9/15/2022

68131 CURVED CHIMES



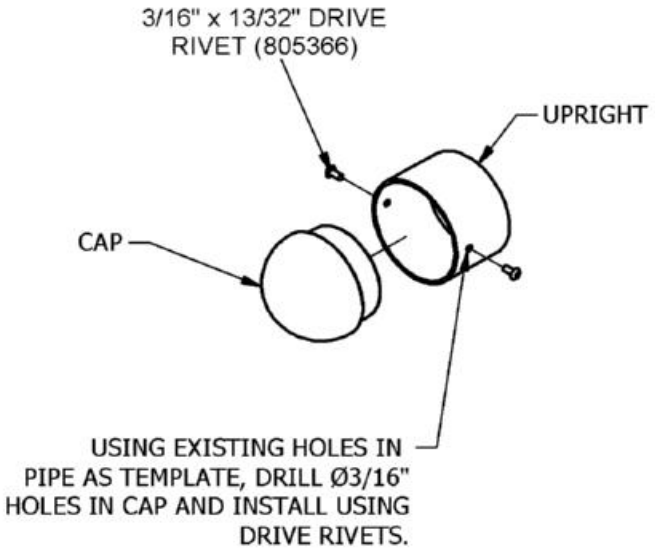
CONCRETE REQUIRED
0.344 CUBIC YARDS
0.263 [CUBIC METERS]

PLAN VIEW

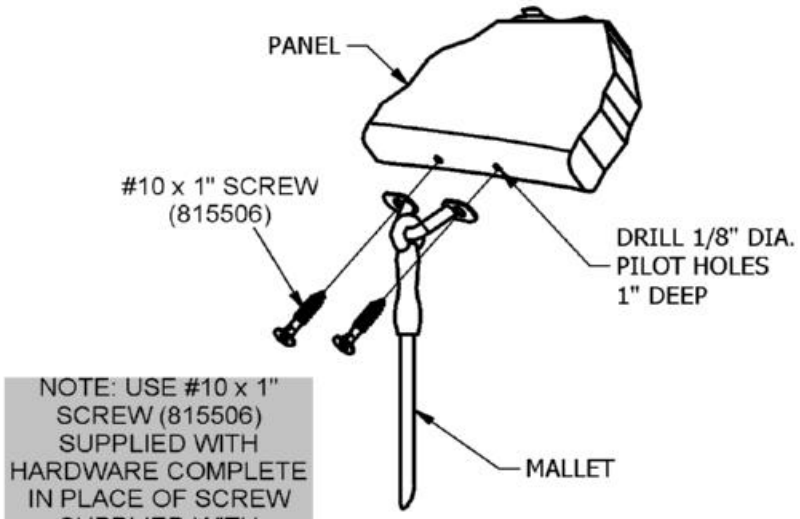


ELEVATION VIEW

68131 CURVED CHIMES

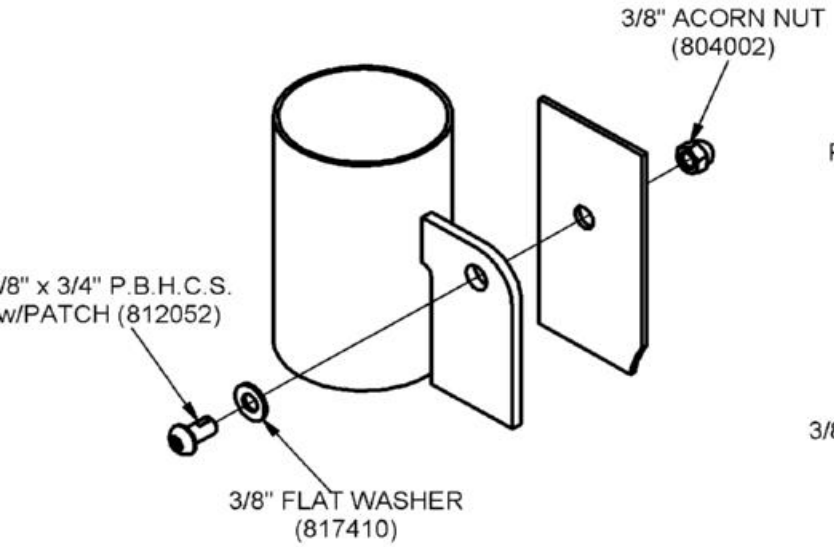


597

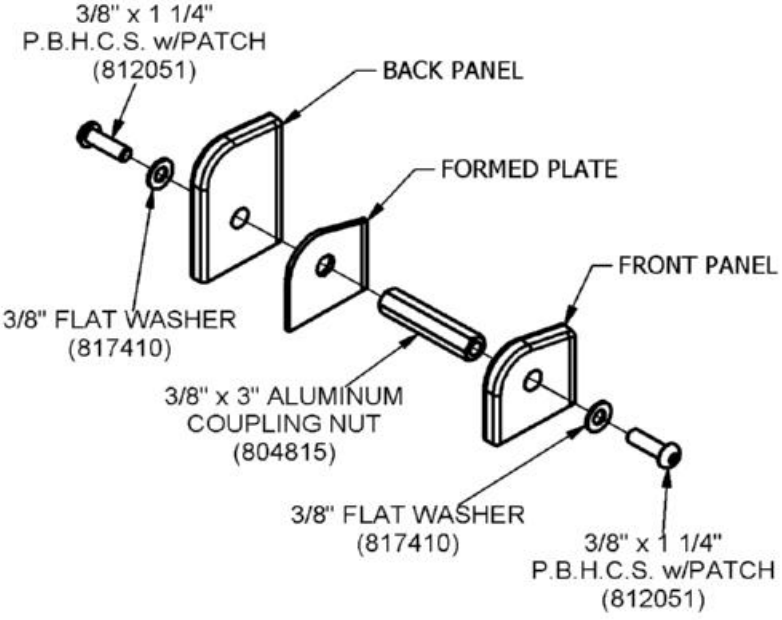


NOTE: USE #10 x 1" SCREW (815506) SUPPLIED WITH HARDWARE COMPLETE IN PLACE OF SCREW SUPPLIED WITH MALLET.
PILOT HOLE MUST BE DRILLED BEFORE ATTACHING.

856

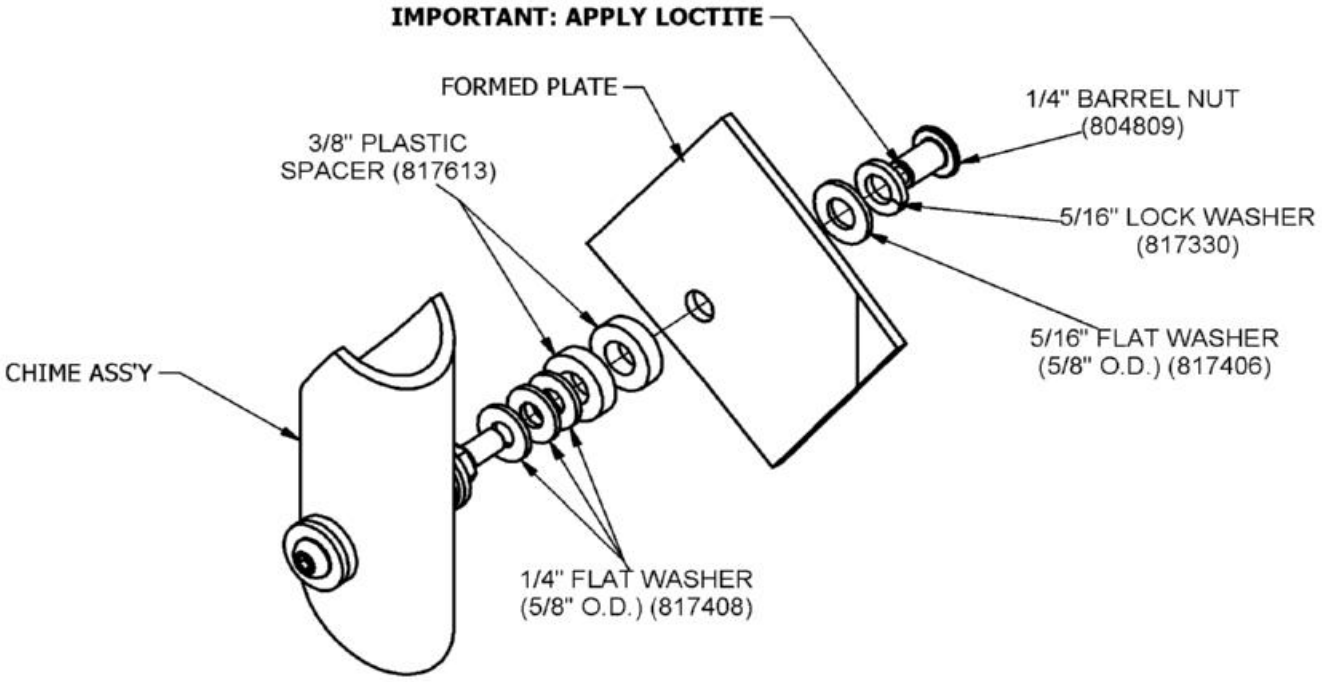


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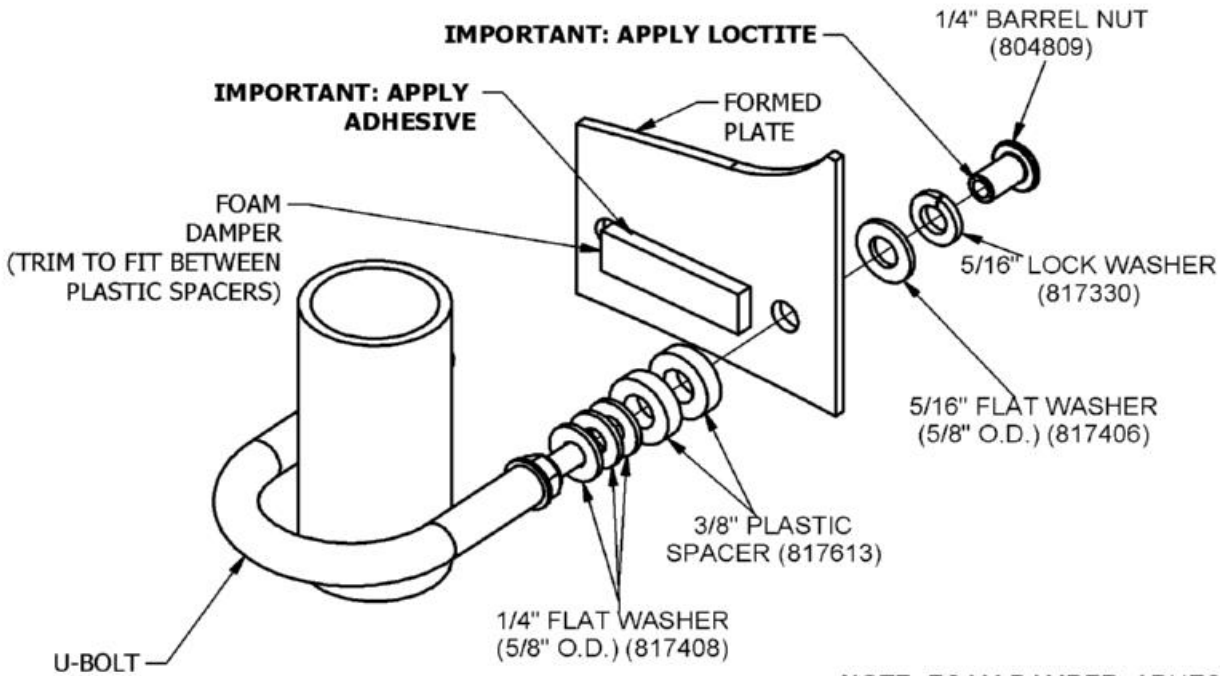


858

68131 CURVED CHIMES



588



NOTE: FOAM DAMPER, ADHESIVE AND U-BOLT ARE SUPPLIED IN CHIME ASS'Y PACKAGE.

589

SuperMax Play Systems

71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck

Parts List				
DESCRIPTION	71000	71001	71002	PART NUMBER
DECK ADAPTER	4	3	3	309921
SQUARE DECK PLATFORM	1	0	0	309922
TRIANGLE DECK PLATFORM	0	1	0	309928
ISOSCELES TRIANGLE DECK PLATFORM	0	0	1	309932
HARDWARE COMPLETE	1	0	0	309927
HARDWARE COMPLETE	0	1	1	309931
1/4" x 3/4" SET SCREW	8	6	6	811545
3/8" x 3/4" P.B.H.C.S. w/PATCH	2	2	2	812052
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	3	3	812051
3/8" LOCK WASHER	6	5	5	817334
3/8" FLAT WASHER (1 1/4" O.D.)	6	5	5	817424
3/8" T-NUT	2	2	2	804556

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Place Uprights in dug holes at appropriate height per Upright installation instructions. Get the height required for the deck from the Plan View Diagram. Use a felt-tip marker to mark the top of the Ring Clamp on all uprights.

2. Loosely attach all Ring Clamps to the uprights. Refer to the seperate Ring Clamp Installation sheet.

3. Attach Deck Adapters to the Ring Clamps using 1/4" x 3/4" set screw. Do not overly tighten set screws. Attach decks to the Deck Adapter using 3/8" x 1 1/4" P.B.H.C.S., 3/8" Flat Washer, and 3/8" Lock Washer as shown in Detail 447. Plumb and level uprights and brace in position.

4. Using a level, and holding one Ring Clamp as a constant, adjust the other clamps so that the deck is completely level. At this point, if you have more decks to attach, lay each succeeding deck on the ground against the previous deck's two posts, and mark the missing footings to be dug. Continue attaching decks in this manner. Tighten set screws after all decks are attached.

5. Attach side-by-side decks to one another using 3/8" x 3/4" P.B.H.C.S., 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" T-Nut as shown in Detail 061.

6. When all decks are completed and correct, pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow curing at least 48 hours before use.

7. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

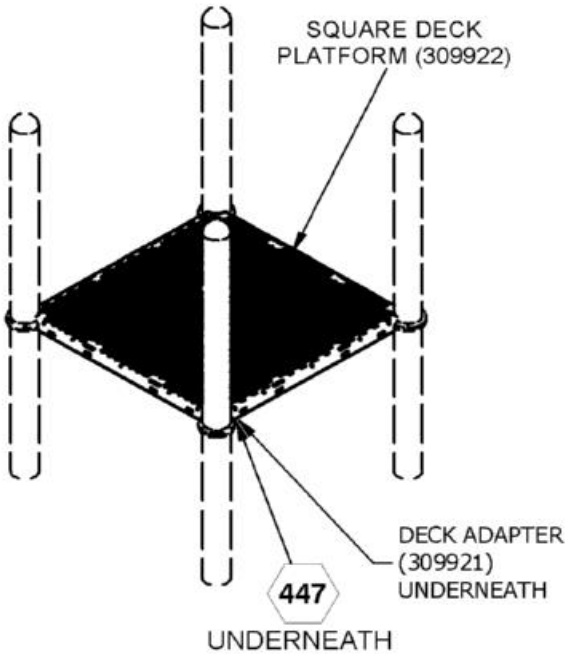
SuperMax Play Systems

71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck

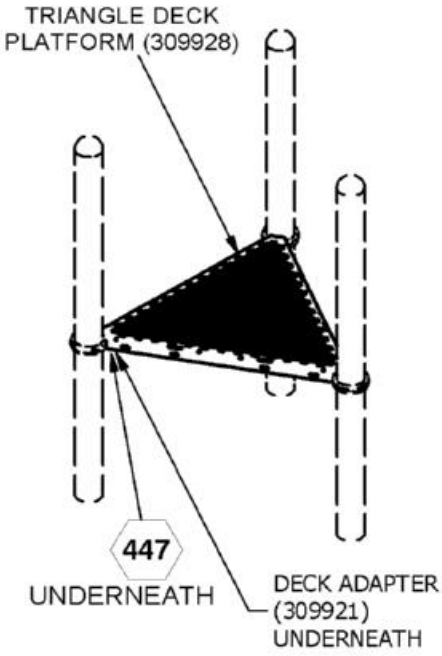
Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

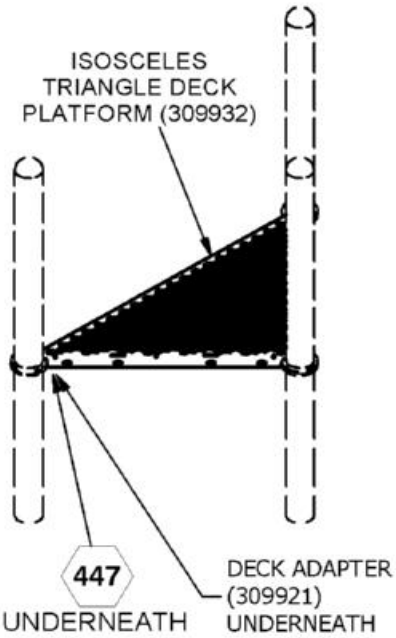
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



SQUARE DECK



TRIANGLE DECK



ISOSCELES TRIANGLE DECK

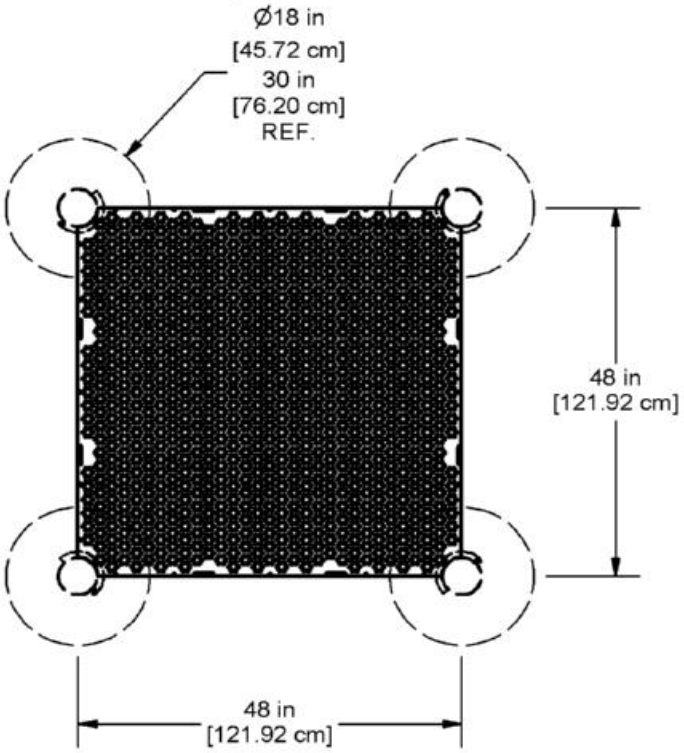
FINISHED ASSEMBLY

= INSTALLATION DETAIL

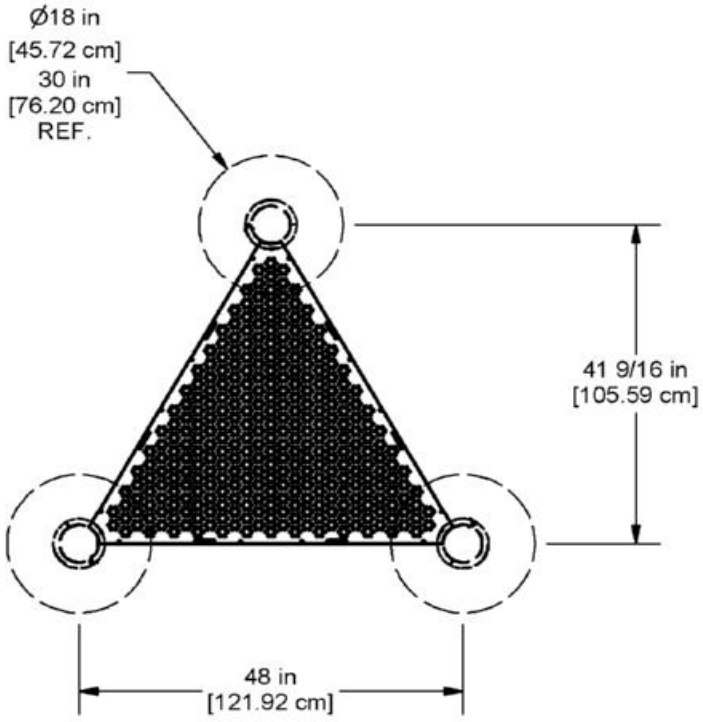
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 7/13/2012

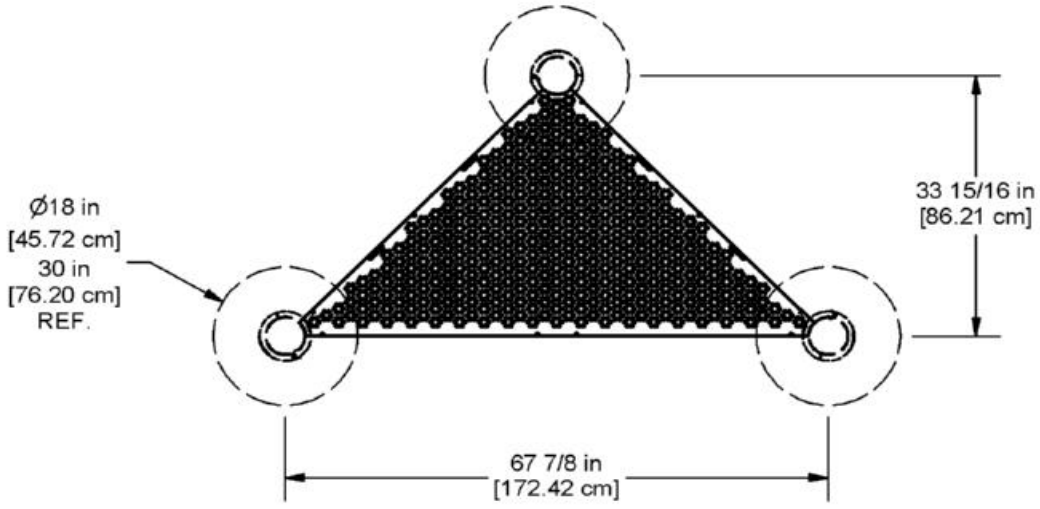
71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck



SQUARE DECK



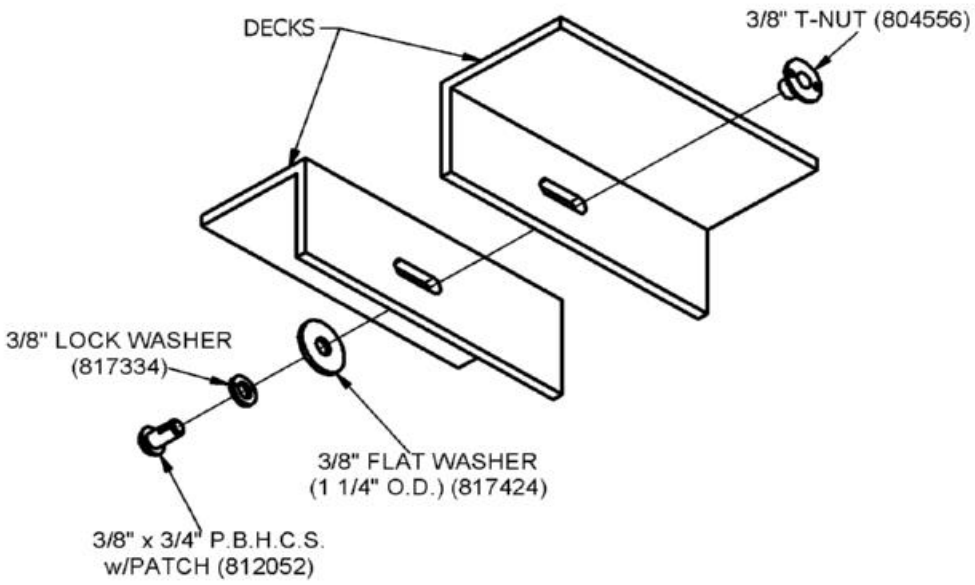
TRIANGLE DECK



ISOSCELES TRIANGLE DECK

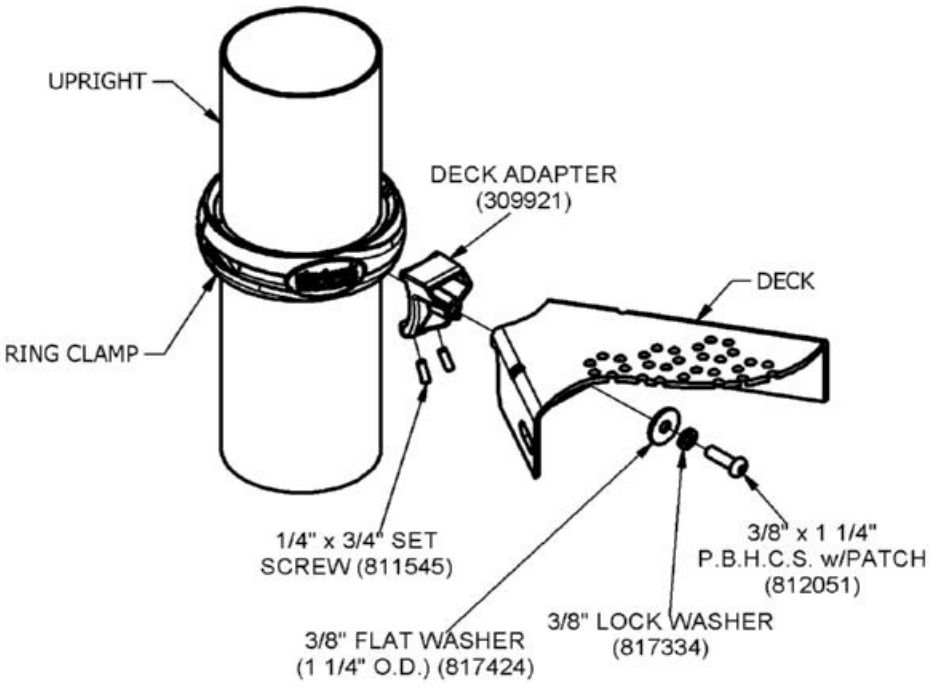
PLAN VIEW

71000 Square Deck; 71001 Triangle Deck; 71002 Isosceles Deck



061

NOTE: DECK ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



447

SuperMax Play Systems

71003 Semi-Hex Deck

Parts List		
DESCRIPTION	QTY	PART NUMBER
SEMI-HEX DECK	1	309938
DECK ADAPTER	5	309921
-----HARDWARE COMPLETE-----	1	309942
3/8" FLAT WASHER (1 1/4" O.D.)	9	817424
3/8" LOCKWASHER	9	817334
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	5	812051
1/4" x 3/4" SET SCREW	10	811545
3/8" T-Nut	4	804556
3/8" x 3/4" P.B.H.C.S. w/Patch	4	812052

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Place Uprights in dug holes at appropriate height per Upright installation instructions. Get the height required for the deck from the Plan View Diagram. Use a felt-tip marker to mark the top of the Ring Clamp on all uprights.

HINT: If this is the first deck of the structure, locate and concrete one upright only (preferably the most shared post, if this deck is part of a multi deck group), ensuring it is plumb and at the right height. After it has had a chance to set, place one corner of the deck against the post and mark the location of the adjacent post. Concrete the second post. Continue this procedure for all five posts while leaving the deck on the ground. The deck has been used as its own template, and the deck is now easily attached as its uprights are already in place.

2. Loosely attach all Ring Clamps to the uprights. Refer to the seperate Ring Clamp Installation sheet.

3. Attach Deck Adapters to the Ring Clamps using 1/4" x 3/4" set screw. Do not overly tighten set screws. Deck Adapters should still rotate on Ring Clamp. Attach Decks to the Deck Adapter using 3/8" x 1 1/4" P.B.H.C.S., 3/8" flatwasher and 3/8" lockwasher. Plumb and level uprights and brace in position.

4. Using a level, and holding one Ring Clamp as a constant, adjust the other four clamps so that the deck is completely level. At this point, if you have more decks to attach, lay each succeeding deck on the ground against the previous deck's two posts, and mark the missing footings to be dug. Continue attaching decks in this manner. Tighten set screws after all decks are attached.

5. Attach side-by-side decks to one another using 3/8" x 3/4" P.B.H.C.S., 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" T-Nut as shown in Detail 061.

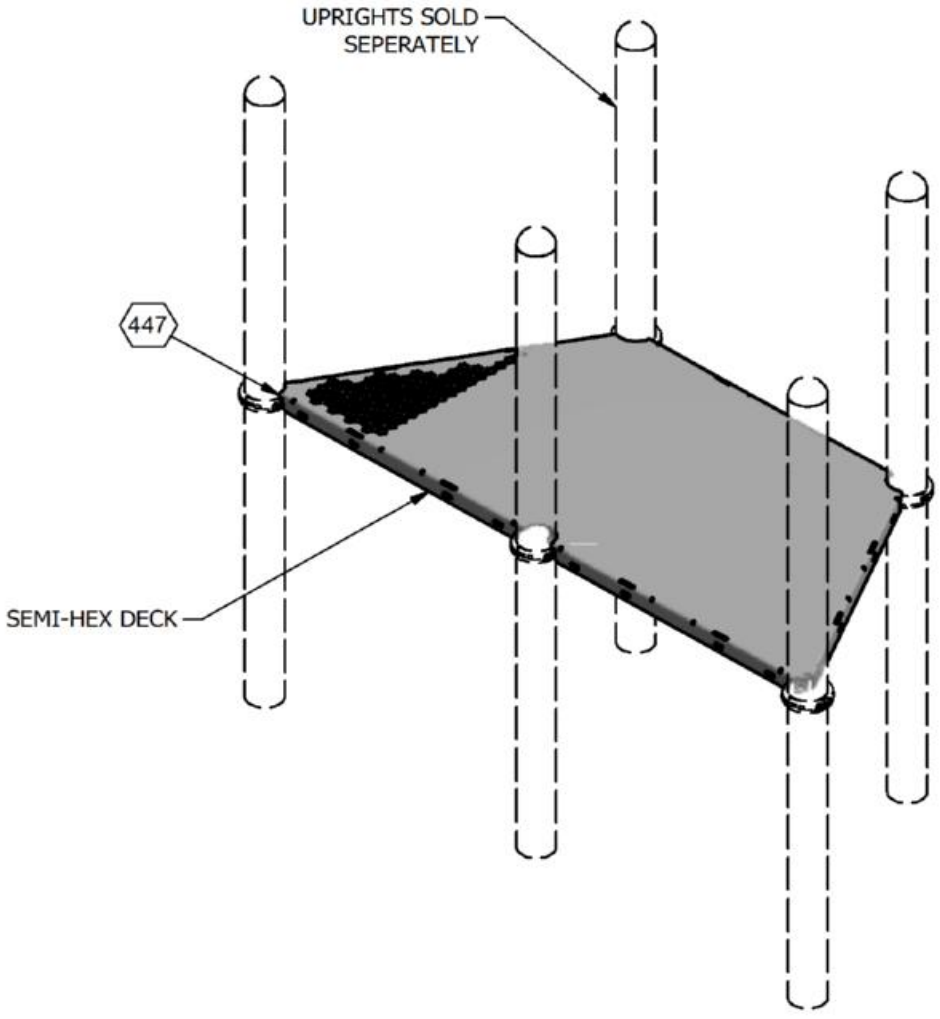
6. When all decks are completed and correct, pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow curing at least 48 hours before use.

When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Deck Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***.

71003 Semi-Hex Deck

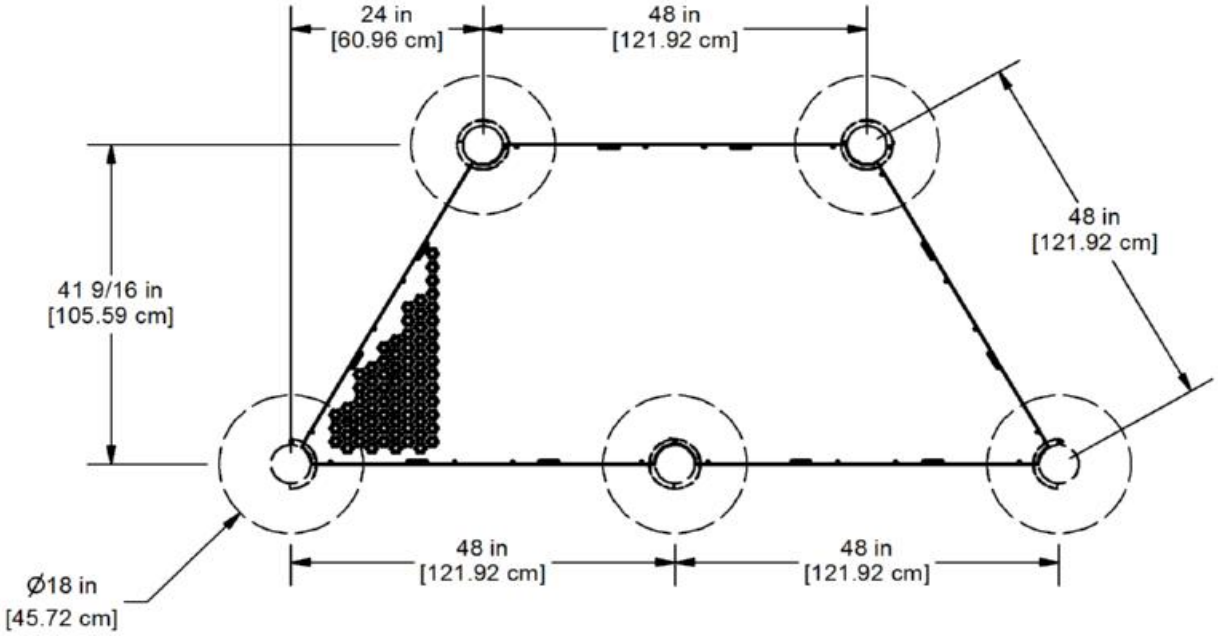
Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

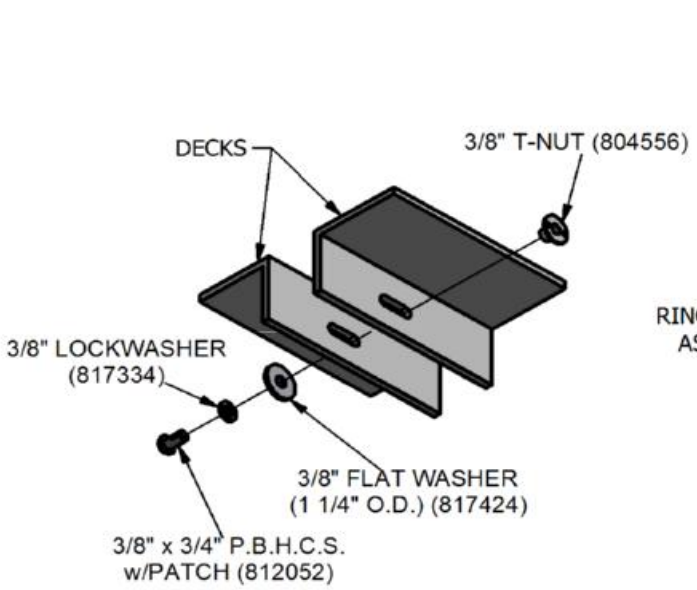


FINISHED ASSEMBLY

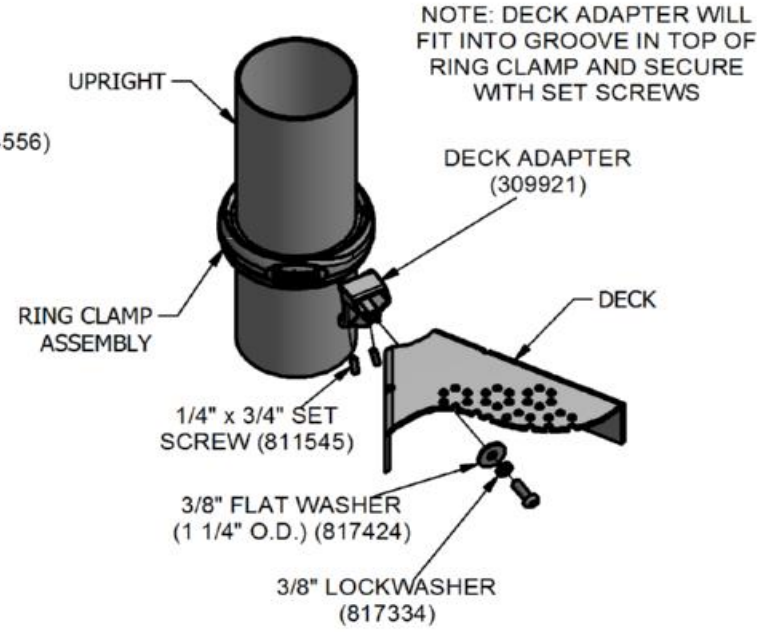
71003 Semi-Hex Deck



71003 Semi-Hex Deck



061



447

SuperMax Play Systems

71031 RING CLAMP ASSEMBLY

Parts List		
DESCRIPTION	QTY	PART NUMBER
RING CLAMP	1	309911
HARDWARE COMPLETE	1	309998
1/4" x 1" DRIVE RIVET	1	805302*
1/4" x 1 1/4" P.B.H.C.S.	1	812083*

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Locate uprights to receive Ring Clamp Assemblies (Refer to individual component installation sheets for clamp heights).

2. Attach Ring Clamp to upright using 1/4" x 1 1/4" PBHCS. Tighten screw only enough to hold the clamps position on the upright. Adjustment may be neccasary. See Detail 452.
IMPORTANT: Orientation of bolt is critical.

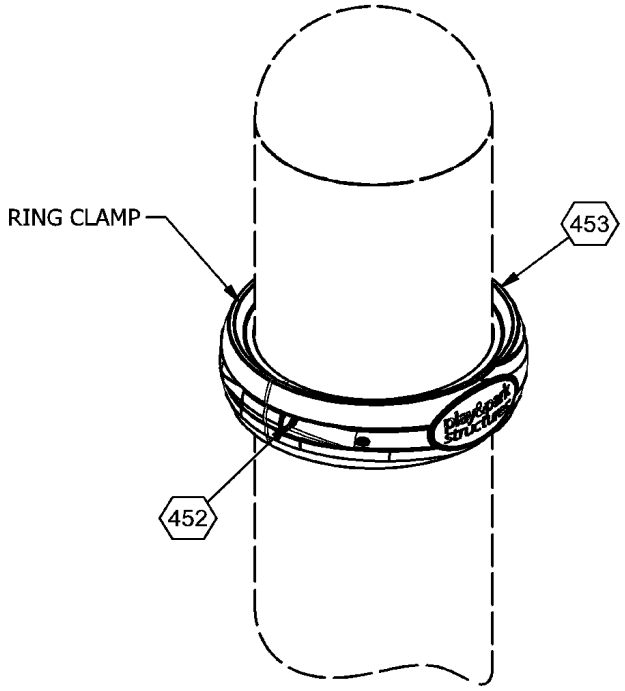
3. Install required components to the attaching to the Ring Clamp. See Top View and Seperate component installation sheets.

4. When structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. A 1/4" diameter hole must be drilled into the clamp and upright to receive drive rivet. Use Pre-determined drill points on ring clamp. See Detail 453. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment

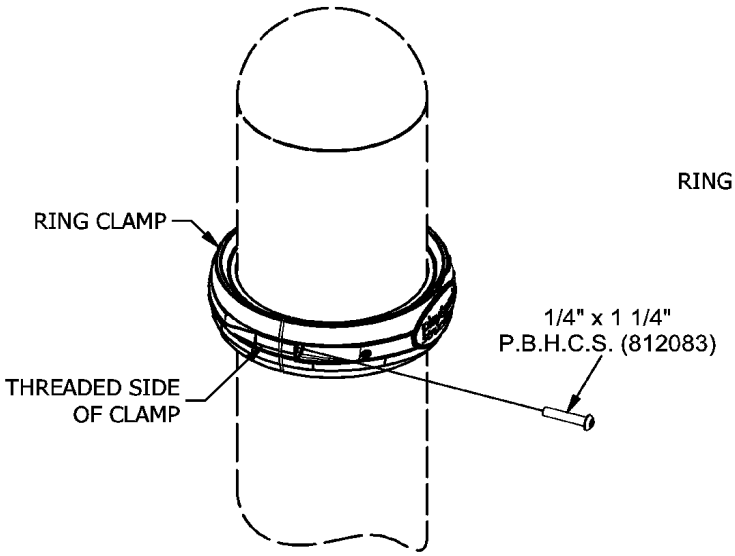
UPRIGHT AND CAP
SOLD SEPERATELY



FINISHED ASSEMBLY

⬡ = INSTALLATION DETAIL

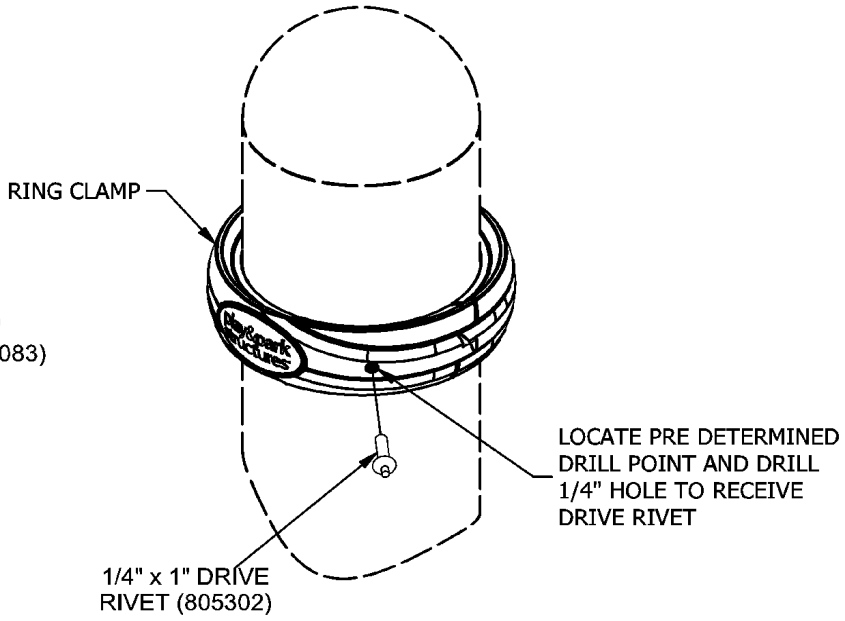
71031 RING CLAMP ASSEMBLY



NOTE: THE USE OF LOCTITE IS IMPORTANT.

IMPORTANT: ORIENTATION OF BOLT IS CRITICAL.

452



453

SuperMax Play Systems

71038 TRIPLE ACTIVITY PANEL
71039 TRIPLE ACTIVITY PANEL (BELOW DECK)

Parts List -for- 71038			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	ACTIVITY PANEL	1	310005
2	PANEL ADAPTER	2	309919
3	SUPPORT PIPE	2	307586
	-----HARDWARE COMPLETE-----	1	310006
	3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056
	3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
	3/8" FLAT WASHER (1 1/4" O.D.)	6	817424
	3/8" BARREL NUT	2	804804
	3/8" LOCK NUT	2	804353
	1/4" x 3/4" SET SCREW	4	811545

Parts List -for- 71039			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	ACTIVITY PANEL	1	310005
2	PANEL ADAPTER	2	309919
4	VERTICAL ADAPTER	2	309917
5	TAB	2	310004
	-----HARDWARE COMPLETE-----	1	310007
	3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056
	3/8" x 1" P.B.H.C.S. w/PATCH	4	812050
	3/8" FLAT WASHER (1 1/4" O.D.)	2	817424
	3/8" LOCKWASHER	4	817334
	3/8" BARREL NUT	4	804804
	1/4" x 3/4" SET SCREW	8	811545

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

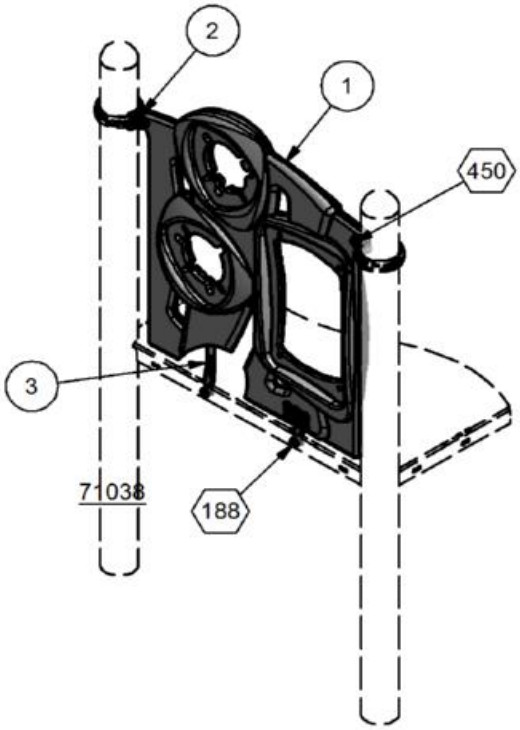
Warning: During Installation, Hardware And Small Parts Are Choking Hazards
For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed.
Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment
And Dispose/Save Them In A Secure Location.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

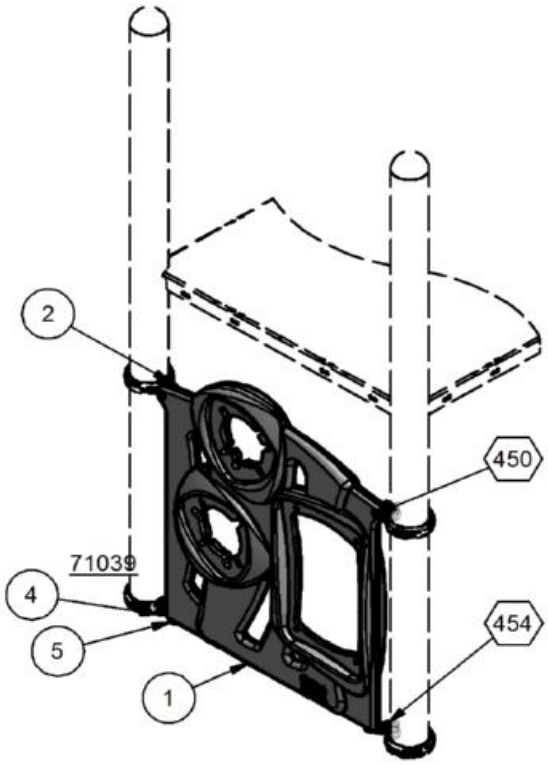
1. Locate the deck openings where the Activity Panel is going to be installed. Refer to Top View.
2. **For 71038:**
   Insert the (2) Smashed Pipes through the deck slots and attach using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 ¼" O.D.) and 3/8" Lock Nut as shown in Detail 188. ***Note***: Pipes are smashed to one side. Refer to Detail for orientation. Attach two Ring Clamps to the Uprights. (See Ring Clamp Installation sheet). Attach the two Panel Adapters to Ring Clamps with 1/4" set screws. See Detail 450. Slide the Barrier Panel over the smashed pipes and attach to the Panel Adapters using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1-1/4" O.D.) and 3/8" Barrel Nut. Refer to Detail 450.
   NOTE: To eliminate possible clamp conflict, the smashed pipe is designed to allow the Panel to move up one clamp height. Opening between Panel and Deck must not be greater than 3".
3. **For 71039:**
   Attach Ring Clamps to uprights. See Ring Clamp Installation sheet.Refer to Elevation Views for locations. Attach Panel and Vertical Adapters to Ring Clamps. See Detail 450 and 454. Attach Tabs to the bottom of the Barrier Panel using 3/8" x 1" P.B.H.C.S. w/Patch and 3/8" Lockwasher a shown in Detail 454.
   Important! Avoid creating any gaps between the components, which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.
   Attach Tabs to Vertical Adapters using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lockwasher and 3/8" Barrel Nut as shown in Detail 454. Attach top of Barrier Panel to Panel Adapter using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers (1-1/4" O.D.), and 3/8" Barrel Nuts as shown in Detail 450.
4. Plumb and level the entire assembly.
5. When structure is finished and satisfactory, tighten all fastener and install Drive Rivets in all clamps to ensure clamps cannot slide down the posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.***
   Also, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety Guidelines.

71038 TRIPLE ACTIVITY PANEL
71039 TRIPLE ACTIVITY PANEL (BELOW DECK)

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



DECKS AND POSTS
SOLD SEPERATELY



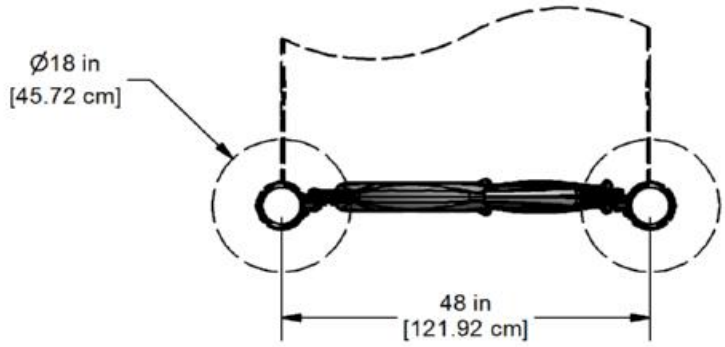
IMPORTANT: ALL OPENINGS ON PANEL MUST BE FILLED WITH AN ACTIVITY BEFORE PLAYGROUND IS OPERATIONAL.

NOTE:
-FOR SMALL ACTIVITIES SEE INSTALLATION SHEET 7200.
-FOR LARGE ACTIVITIES SEE INSTALLATION SHEET 7300.

⬡ = INSTALLATION DETAIL

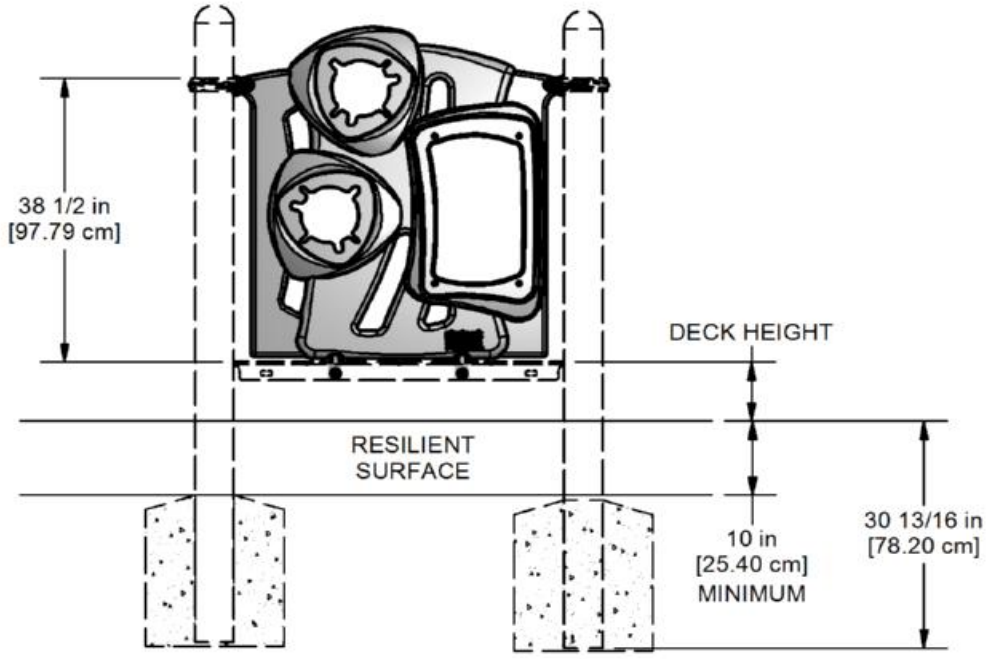
FINISHED ASSEMBLIES

71038 TRIPLE ACTIVITY PANEL
71039 TRIPLE ACTIVITY PANEL (BELOW DECK)



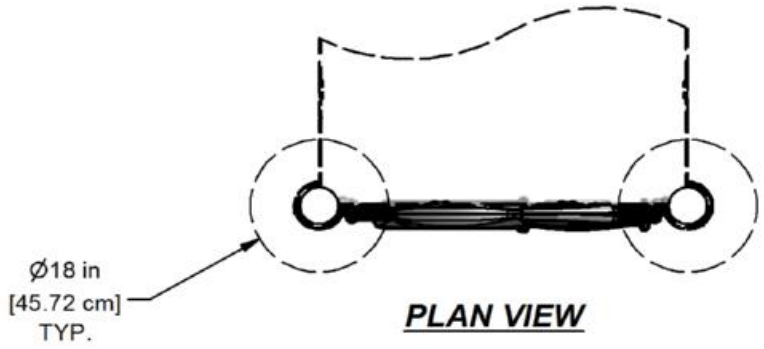
PLAN VIEW

71038 SHOWN

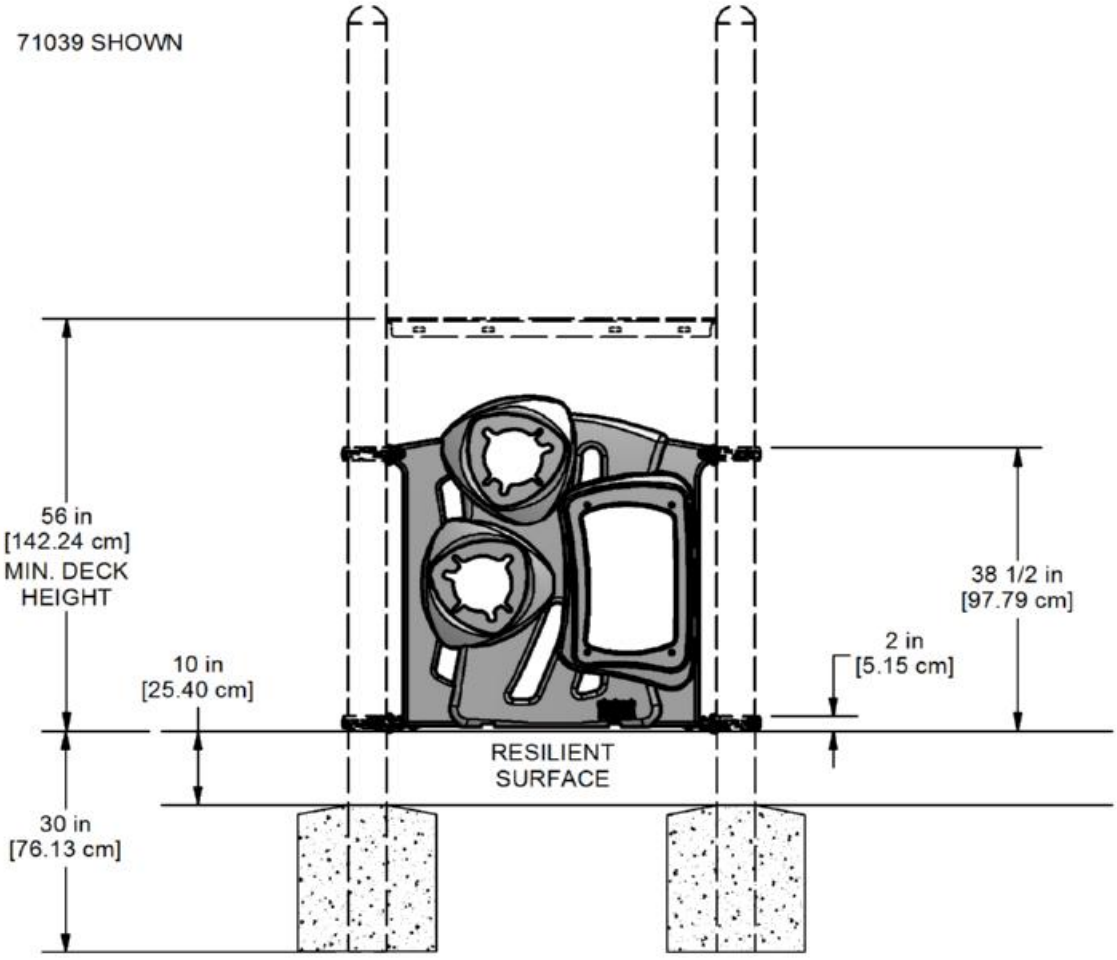


ELEVATION VIEW

71038 TRIPLE ACTIVITY PANEL
71039 TRIPLE ACTIVITY PANEL (BELOW DECK)

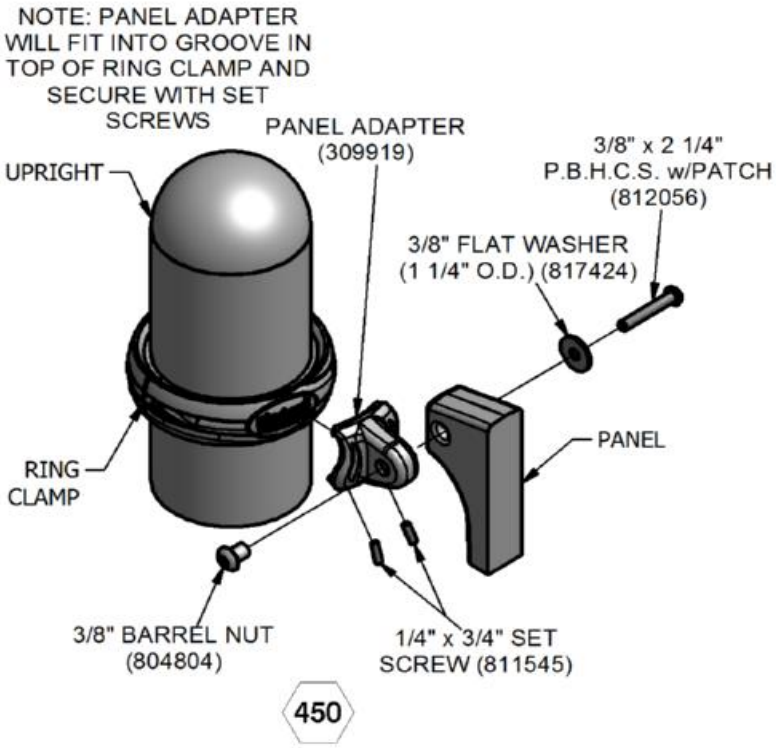


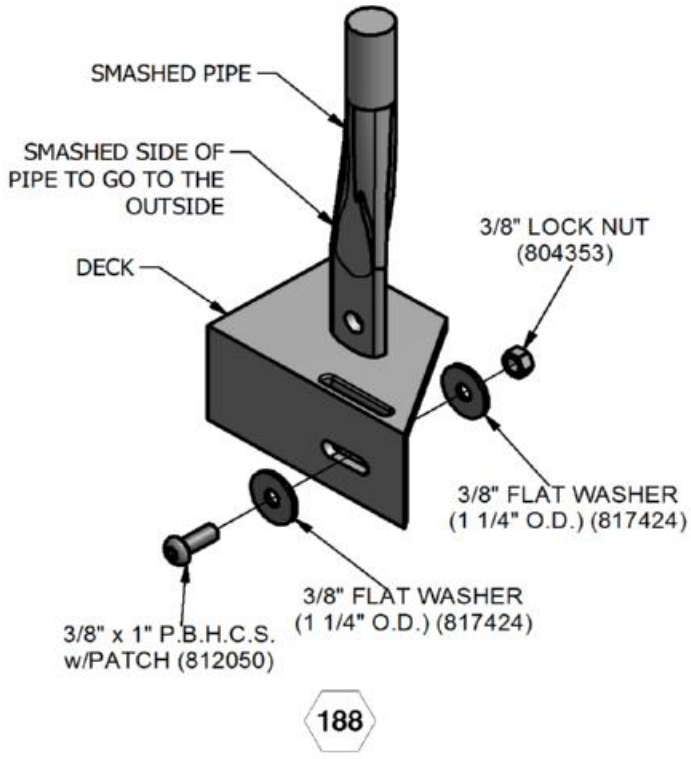
PLAN VIEW

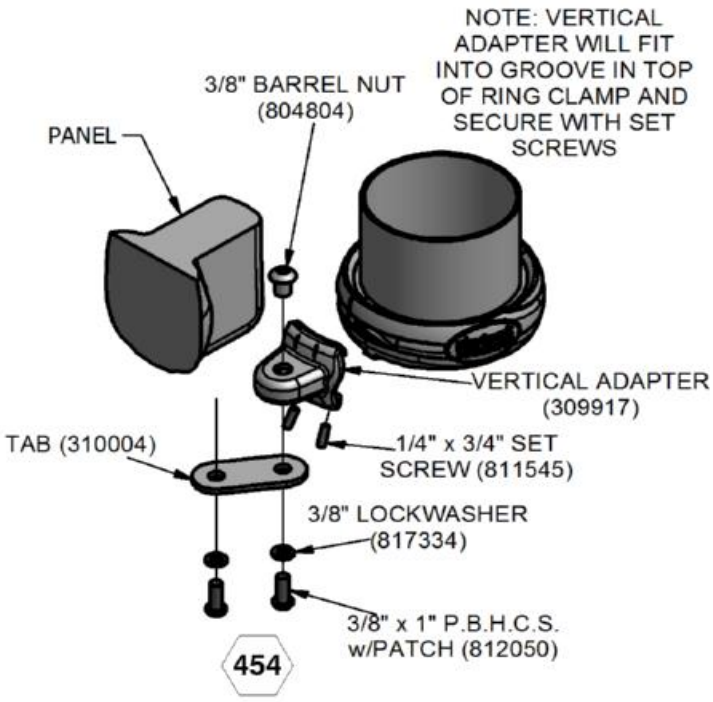


ELEVATION VIEW

71038 TRIPLE ACTIVITY PANEL
71039 TRIPLE ACTIVITY PANEL (BELOW DECK)







Issued/Revised: 5/20/2010

SuperMax Play Systems

Cliff Climber 71091 (4'-0" & 4'-8"); 71092 (5'-4" & 6'-0"); 71093 (6'-8" & 7'-4"); 71094 (8'-0")

Parts List						
ITEM	DESCRIPTION	71091	71092	71093	71094	PART NUMBER
1	WALL PANEL	1	0	0	0	312398
1	WALL PANEL	0	1	0	0	312399
1	WALL PANEL	0	0	1	0	312400
1	WALL PANEL	0	0	0	1	312401
2	ENTRY ARCHWAY	1	1	1	1	309984
3	ROCK KIT	2	2	3	3	302288
4	LARGE ROCK PANEL	2	3	4	5	307691
5	SMALL ROCK PANEL	1	1	1	1	307692
6	PANEL ADAPTER	0	2	2	2	309919
7	PIPE ADAPTER	2	2	2	2	309915
8	FORMED FOOTBUCK	1	1	1	1	310270
	-----HARDWARE COMPLETE----	1	0	0	0	310060
	-----HARDWARE COMPLETE----	0	1	0	0	310061
	-----HARDWARE COMPLETE----	0	0	1	0	310062
	-----HARDWARE COMPLETE----	0	0	0	1	310063
	EXTENSION	2	2	2	0	314976
	1/4" x 3/4" SET SCREW	4	8	8	8	811545
	3/8" x 1" P.B.H.C.S. w/PATCH	20	20	24	28	812050
	3/8" x 1 1/2" P.B.H.C.S. w/PATCH	6	10	12	14	812053
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	5	5	5	5	812054
	1/2" FLAT WASHER	16	18	22	26	817412
	3/8" FLAT WASHER	5	7	7	7	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	10	12	14	16	817424
	3/8" LOCKWASHER	7	9	9	7	817334
	3/8" BARREL NUT	28	32	38	44	804804
	3/8" T-NUT	3	3	3	3	804556
	3/8" x 2" HEX HEAD BOLT	2	2	2	0	801007
	3/8" HEX NUT	2	2	2	0	804053

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

Cliff Climber 71091 (4'-0" & 4'-8"); 71092 (5'-4" & 6'-0"); 71093 (6'-8" & 7'-4"); 71094 (8'-0")

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Cliff Climber. Refer to your overhead drawings for location.

2. Attach Ring Clamps to uprights above the deck. See Ring Clamp Installation sheet and Elevation View for Clamp location.

3. Attach Large and Small Rock Panels and Rock Kit pieces to Wall Panel using 3/8" x 3/4" P.B.H.C.S., 3/8" x 1 1/2" P.B.H.C.S., 3/8" Barrel Nut, 1/2" Flat Washer and 3/8" Flat Washer as shown in Details 174 and 194.

4. Attach top of Entry Archway to Ring Clamps using Detail 448.

5. Attach assembled wall panel, Entry Archway, and the top of the to deck using 3/8" x 1" P.B.H.C.S., 3/8" Flat Washer (1 1/4" O.D.), and 3/8" Barrel Nut as shown in Detail 173.

6. Attach Ring Clamps below the deck at the Wall Panel tab locations. Attach Wall Panel to the Ring Clamp using Detail 457.

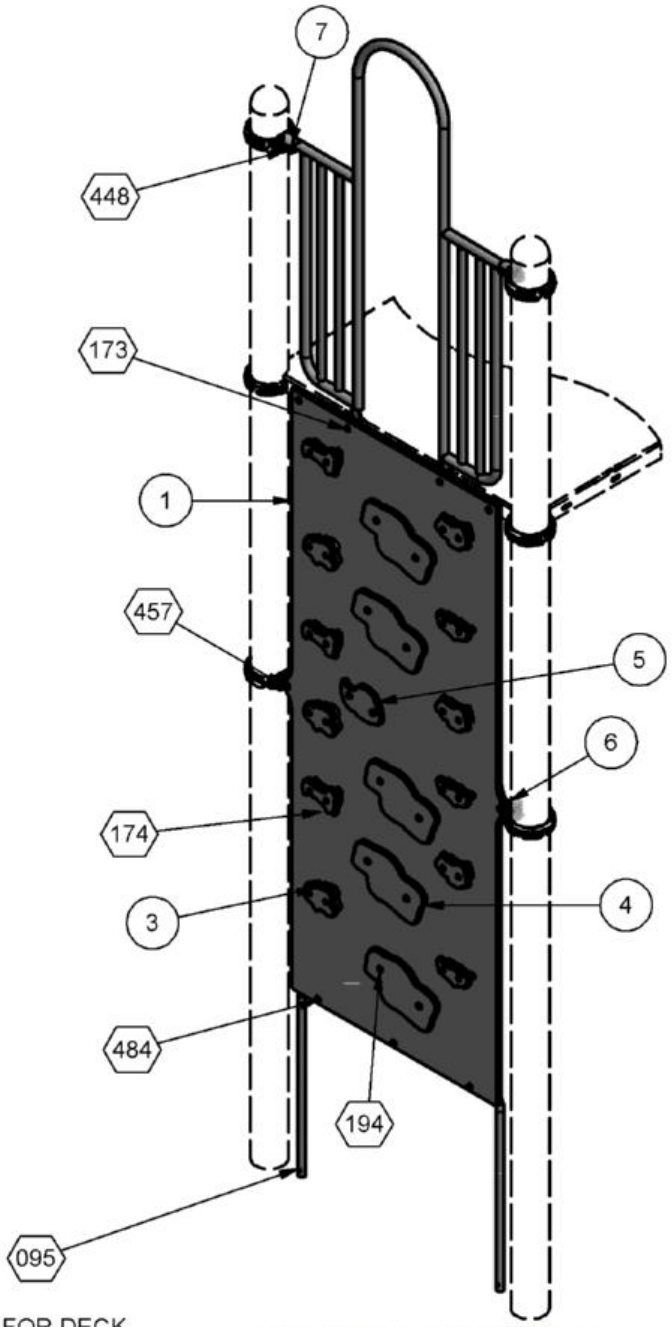
7. Attach Footbuck to bottom of wall using Detail 484. Use extnesion and Detail 095 for deck heights 4'-8", 6'-0" and 7'-4".

When the structure is finished and satisfactory, install 1/4" x 3/4" Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp installation sheet. Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. ***It is important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure refer to the *Safety Guidelines*.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check for cracks, gouges or breakage on plastic, check for integrity of the plastic, keep plastic clean of any extraneous substances, verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

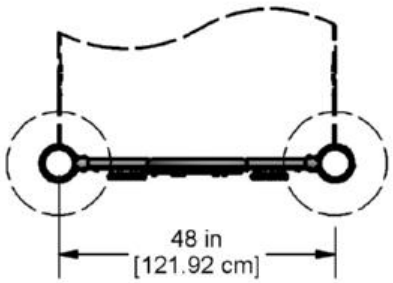
Cliff Climber 71091 (4'-0" & 4'-8"); 71092 (5'-4" & 6'-0"); 71093 (6'-8" & 7'-4"); 71094 (8'-0")



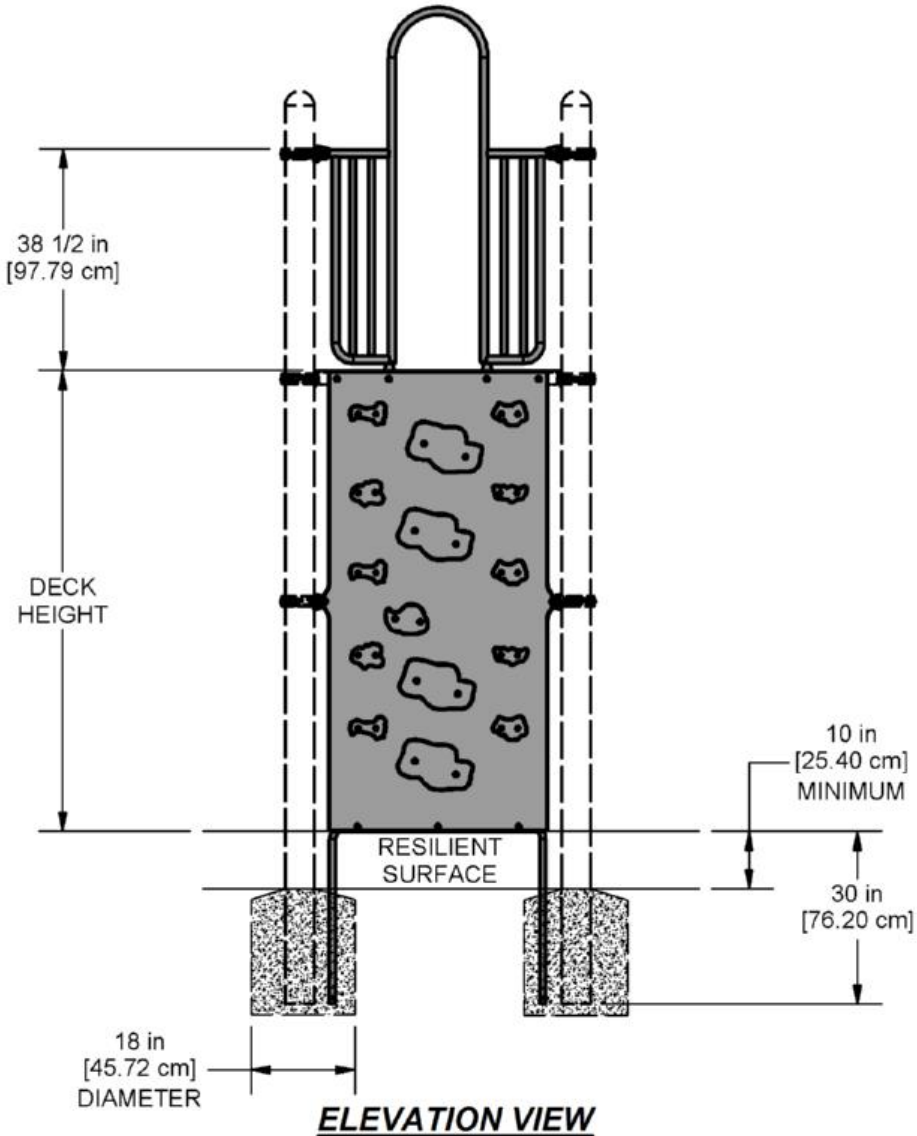
ONLY FOR DECK HEIGHTS 4'-8", 6'-0" AND 7'-4"

FINISHED ASSEMBLY

Cliff Climber 71091 (4'-0" & 4'-8"); 71092 (5'-4" & 6'-0"); 71093 (6'-8" & 7'-4"); 71094 (8'-0")



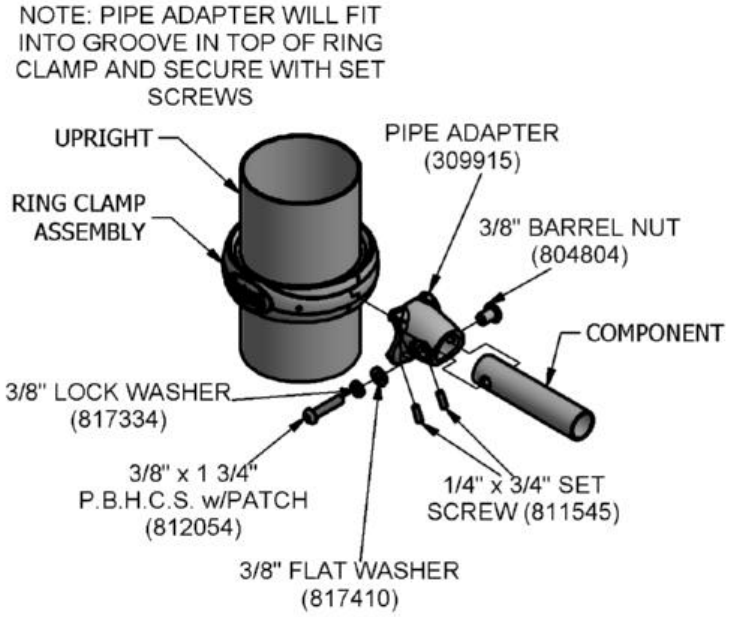
PLAN VIEW



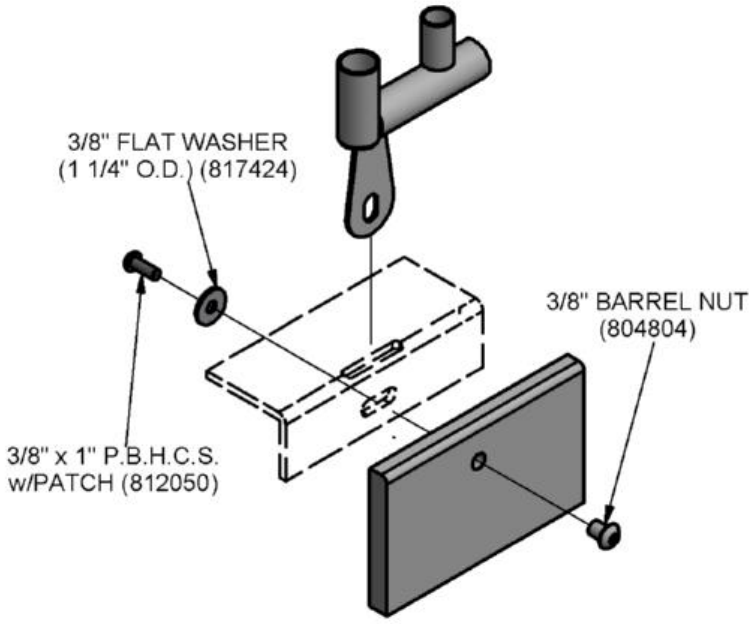
ELEVATION VIEW

71093 SHOWN

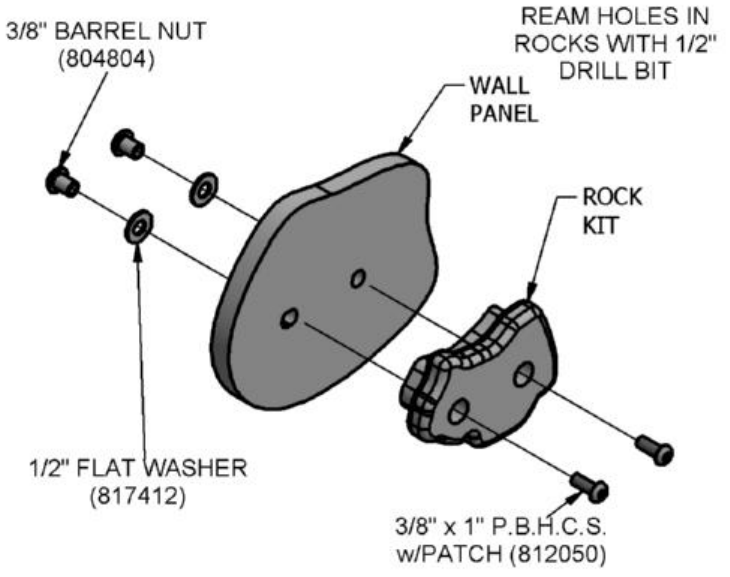
Cliff Climber 71091 (4'-0" & 4'-8"); 71092 (5'-4" & 6'-0"); 71093 (6'-8" & 7'-4"); 71094 (8'-0")



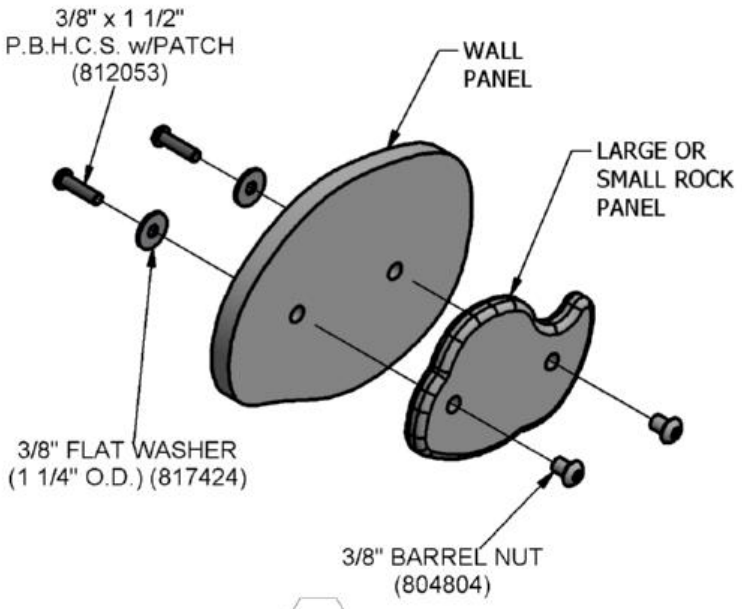
448



173



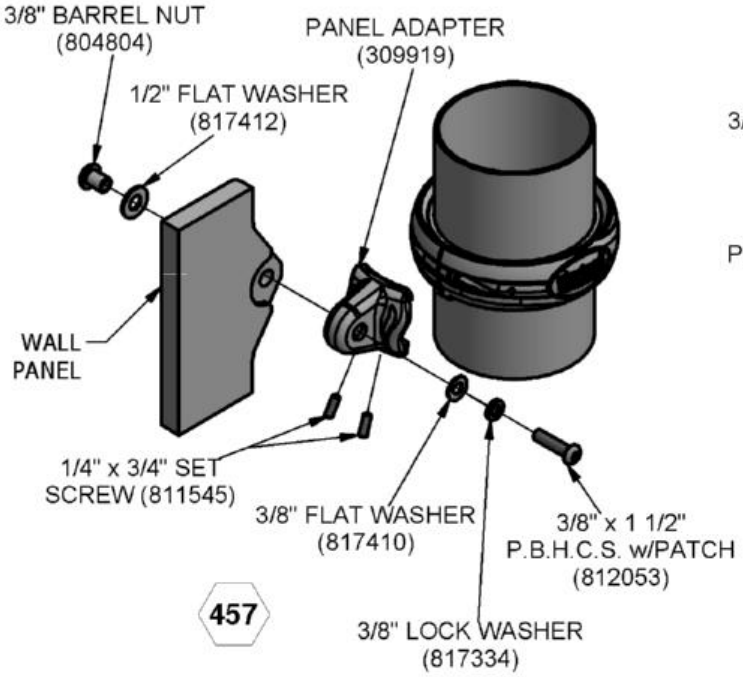
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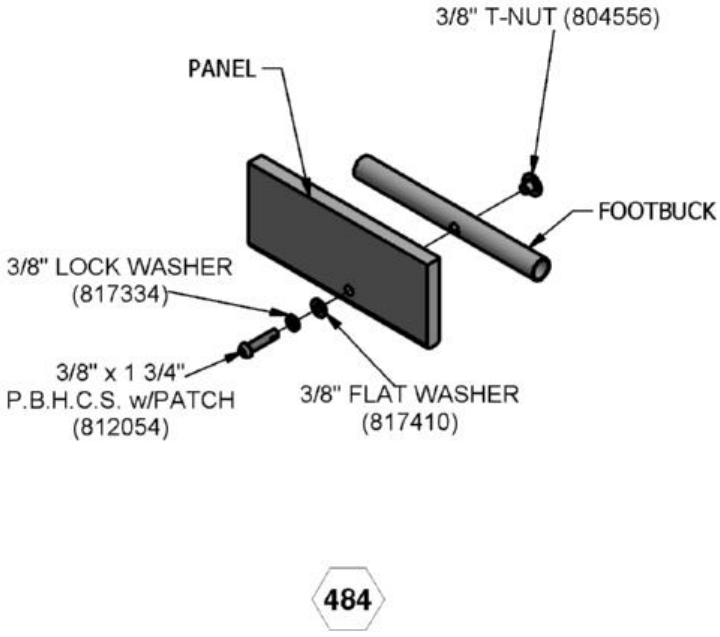


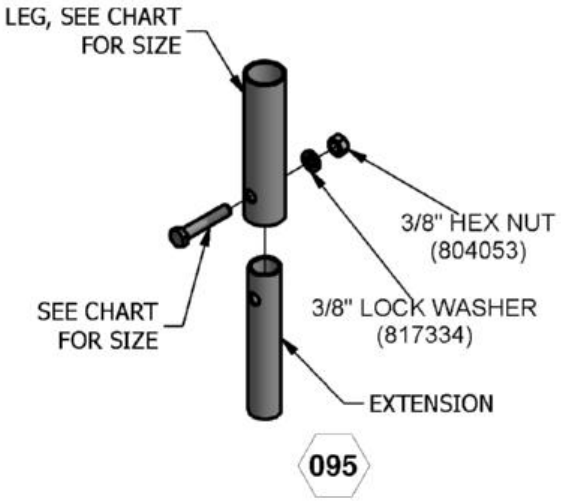
194

Cliff Climber 71091 (4'-0" & 4'-8"); 71092 (5'-4" & 6'-0"); 71093 (6'-8" & 7'-4"); 71094 (8'-0")

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS. RECESSED AREA OF WALL PANEL WILL RECEIVE PANEL ADAPTER.







LEG (PIPE DIA.)	BOLT REQUIRED
1 5/16" [3.3 cm]	3/8" x 2" HEX HEAD (801007)
1 5/8" [4.1 cm]	3/8" x 2 1/2" HEX HEAD (801009)
1 7/8" [4.7 cm]	3/8" x 3" HEX HEAD (801011)
2 3/8" [6.0 cm]	3/8" x 3 1/2" HEX HEAD (801013)
2 7/8" [7.3 cm]	3/8" x 4" HEX HEAD (801015)

SuperMax Play Systems

71114 Offset Entry Archway

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	OFFSET ENTRY ARCHWAY	1	310071
2	PIPE ADAPTER	2	309915
	-----HARDWARE COMPLETE-----	1	310072
	1/4" x 3/4" SET SCREW	4	811545
	3/8" x 3/4" P.B.H.C.S. w/PATCH	1	812052
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
	3/8" FLAT WASHER	2	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	2	817424
	3/8" LOCK WASHER	2	817334
	3/8" BARREL NUT	2	804804
	3/8" LOCK NUT	1	804353

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Entry Archway, refer to your overhead drawing for location.

2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.

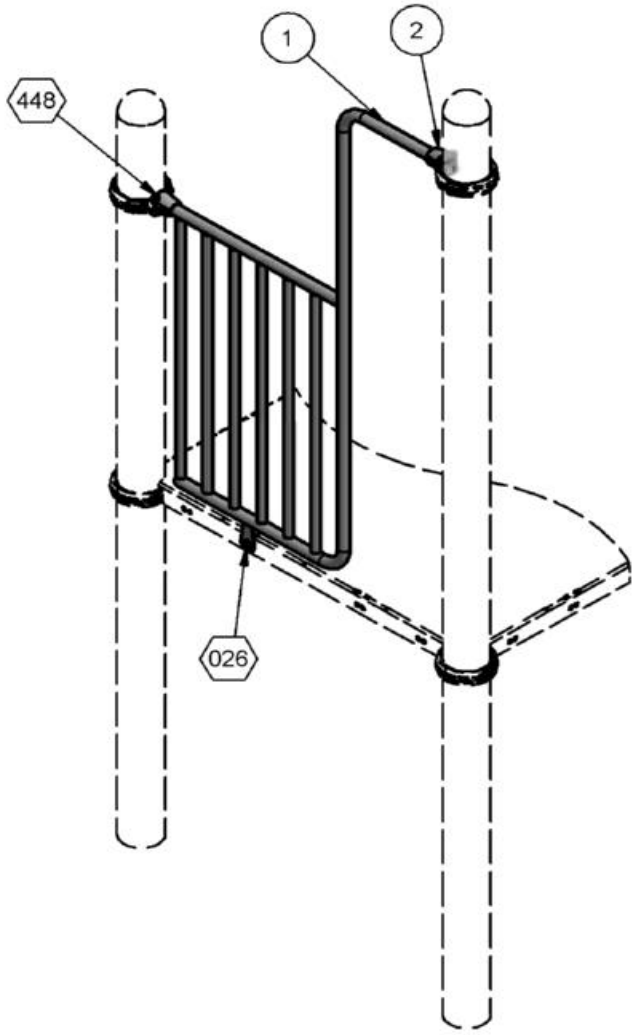
3. Place the tabs at the bottom of the Entry Archway into the slots on the deck. Slip the Pipe Adapters onto the Entry Archway attachment pipes, then move Entry Archway into position. Hook the Pipe Adapters onto the Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448. Connect Entry Archway to Pipe Adapter using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher, 3/8" Flat Washers and 3/8" Barrel Nuts as shown in Detail 448.

4. Attach the tabs at the bottom of Entry Archway to the holes on the side of the deck using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Nuts, and 3/8" (1 1/4" O.D.) Flat Washers as shown in Detail 026. Make sure Entry Archway is plumb. When the Entry Archway is plumb and level, tighten all fasteners.

5. When the assembly is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed before allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

71114 Offset Entry Archway

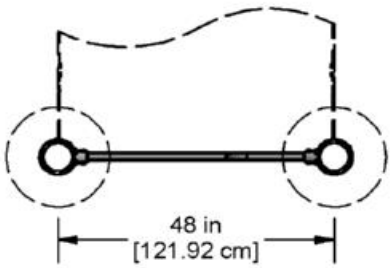
MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



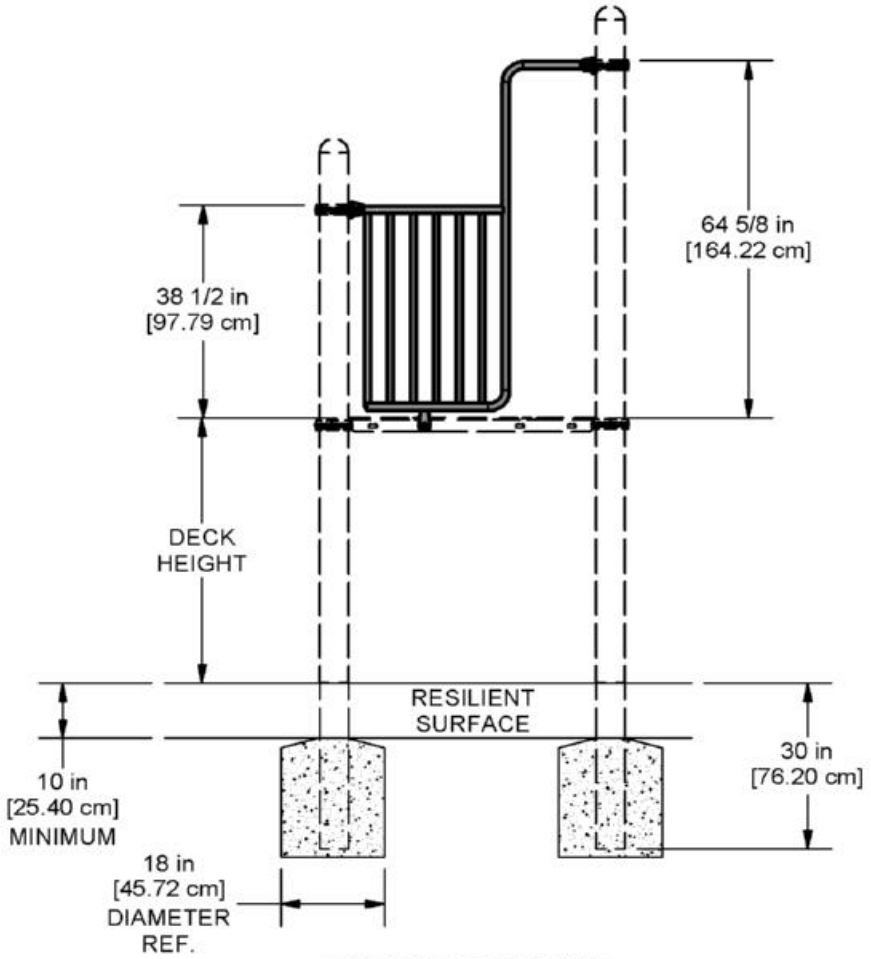
FINISHED ASSEMBLY

⬡ = INSTALLATION DETAIL

71114 Offset Entry Archway

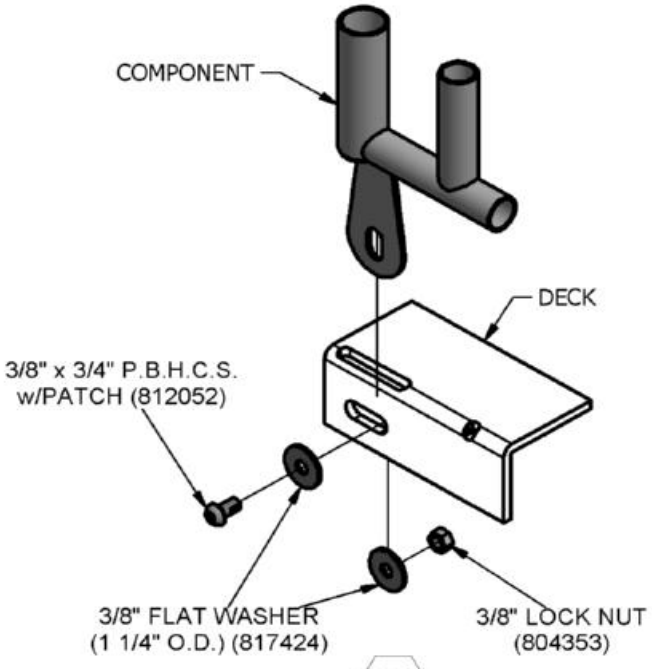


PLAN VIEW

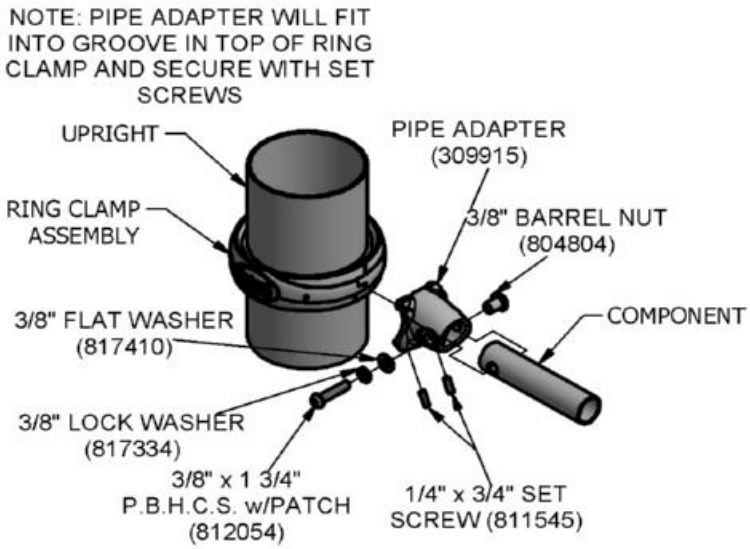


ELEVATION VIEW

71114 Offset Entry Archway



026



448

SuperMax Play Systems

71203 'L' Horizontal Ladder - Link

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	'L' HORIZONTAL LADDER END	1	310206
2	'L' HORIZONTAL LADDER SECTION	1	310203
3	32" SUPPORT PIPE	2	306458
4	PIPE ADAPTER	4	309915
	-----HARDWARE COMPLETE-----	1	310238
	1/4" x 3/4" SET SCREW	8	811545
	3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	812053
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	812054
	3/8" FLAT WASHER	8	817410
	3/8" LOCKWASHER	4	817334
	3/8" BARREL NUT	8	804804

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Select the four Upright Posts to receive the 'L' Horizontal Loop Ladder. Refer to your overhead drawing.

2. Mark positions of Ring Clamps on the Upright Posts at desired height. Maximum clamp height over the deck should be 44 1/2". HORIZONTAL LADDER SHOULD NOT BE ATTACHED TO ANY DECK WHICH IS HIGHER THAN 32" FOR 5-12 YEARS-OLD OR 16" FOR 2-5 YEARS-OLD.

3. Loosely attach all Ring Clamps to the uprights. Refer to the seperate Ring Clamp Installation sheet.

4. Slip Pipe Adapters over the 'L' Horizontal Loop Ladder attachment pipes and attach using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher, 3/8" Flat Washer, and 3/8" Barrel Nut as shown in Detail 448.

5. Put swaged ends of 'L' Horizontal Ladder Section into 'L' Horizontal Ladder End and attach using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut as shown in Detail 066.

6. Attach Support Pipes to 'L' Horizontal Ladder Section and 'L' Horizontal Ladder End using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut as shown in Detail 066. Note: Shipped Support Pipe is for 2'-8" deck height, if the intended deck height is 2'-0" cut 8" off Support Pipe. For 1'-4" deck height cut 16" off Support Pipe. For 1'-0" deck height cut 20" off Support Pipe. For 0'-8" deck height cut 24" off Support Pipe.

7. Then, with sufficient manpower, lift the entire assembly into position, placing the Support Pipes into dug holes, hook Pipe Adapters onto Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448. Provide vertical support to prevent the Ring Clamps from sliding down the upright posts.

8. After ensuring 'L' Horizontal Loop Ladder is square and level, tighten all fasteners. Pour concrete footings within 4" of the top and taper away from posts for water drainage. Allow to cure at least 48 hours before use.

71203 'L' Horizontal Ladder - Link

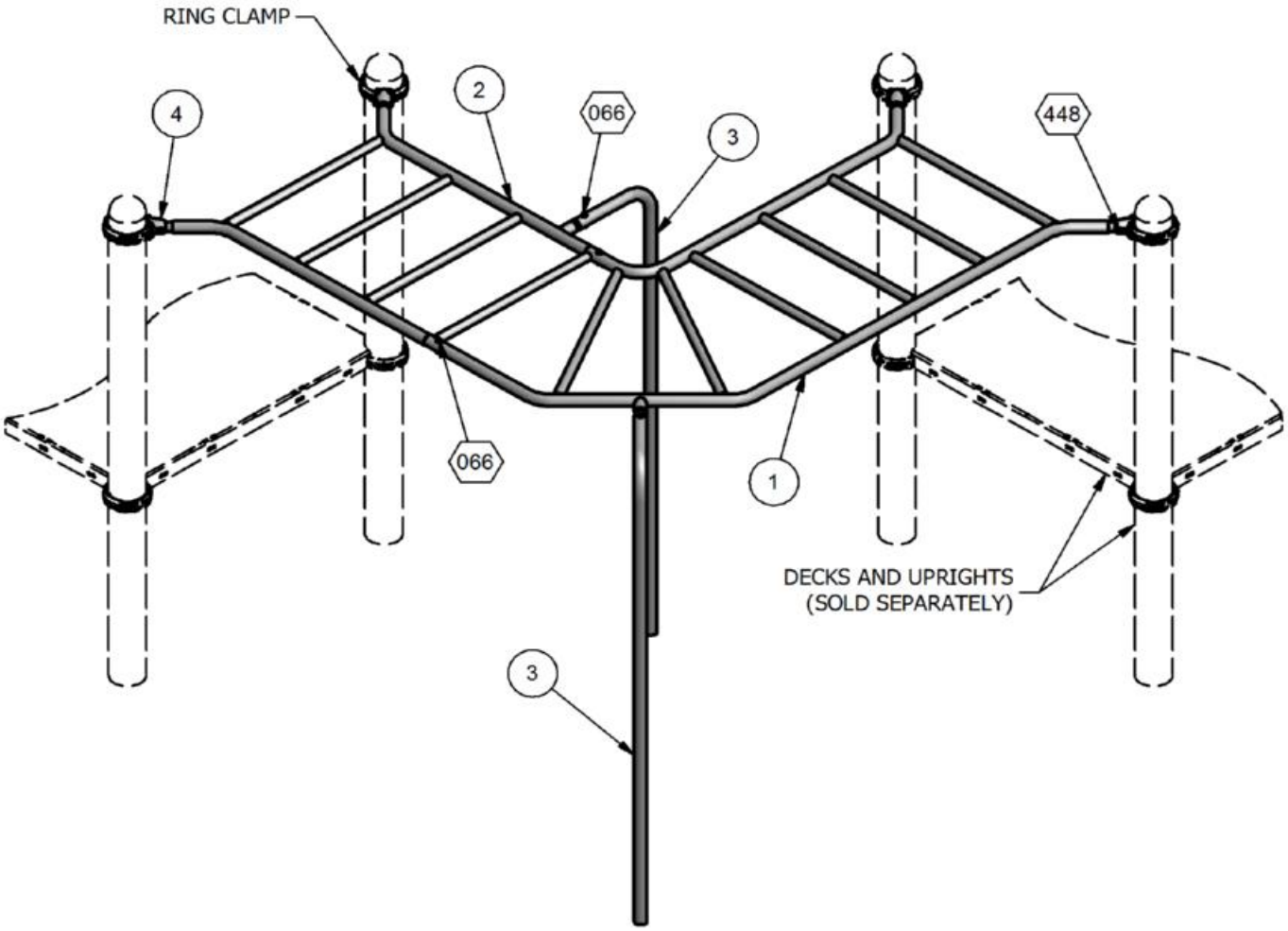
IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

9. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

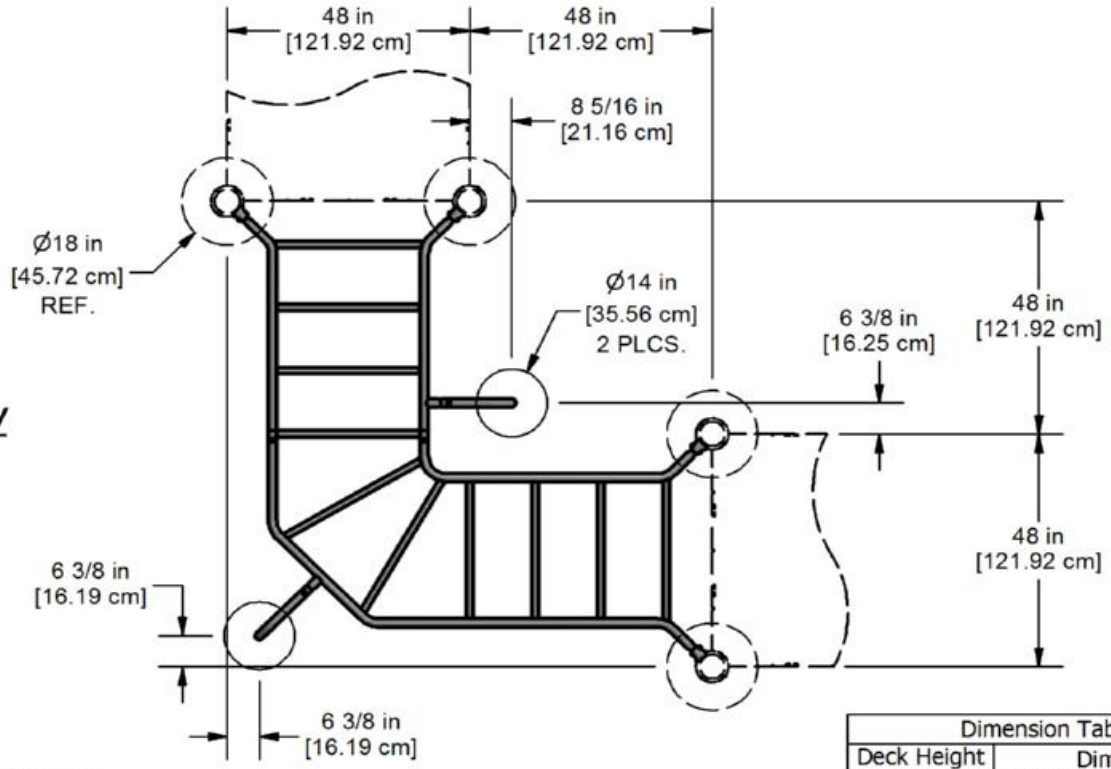
71203 'L' Horizontal Ladder - Link



= INSTALLATION DETAIL

FINISHED ASSEMBLY
2'-8" VERSION SHOWN

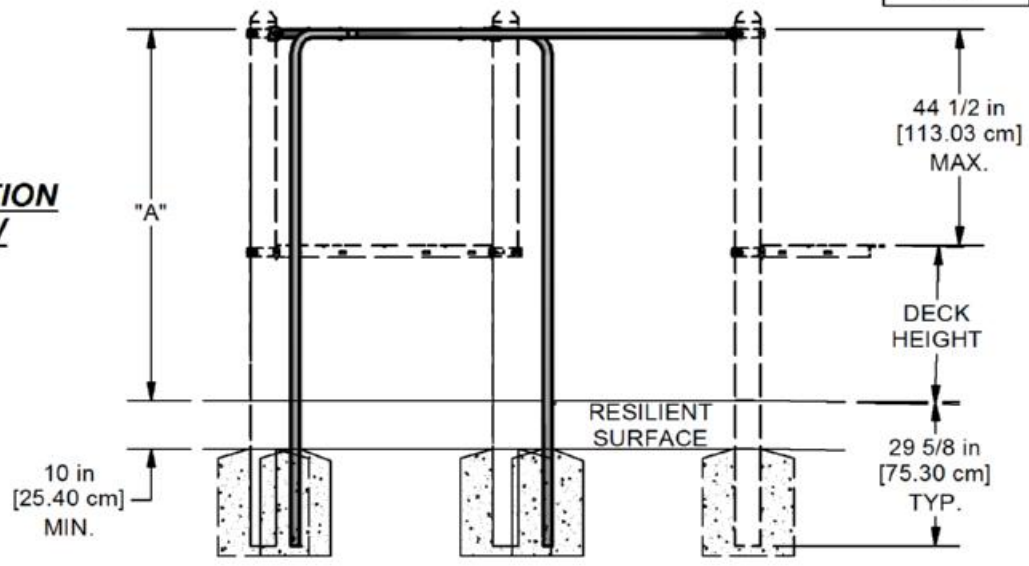
71203 'L' Horizontal Ladder - Link



PLAN VIEW

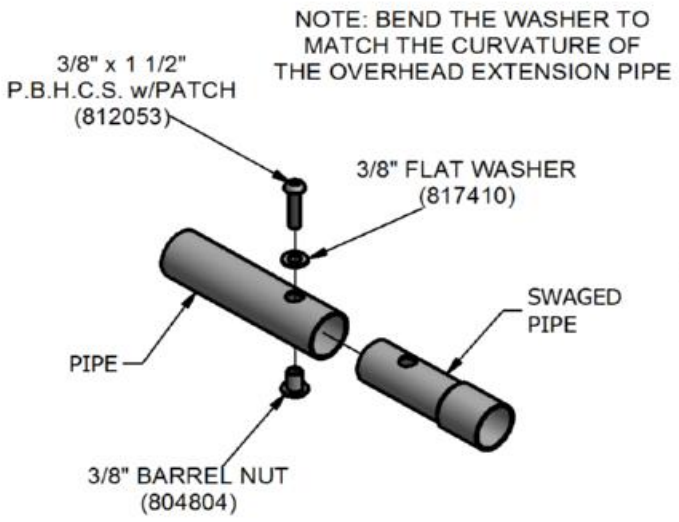
CONCRETE REQUIRED
0.14 CUBIC YARDS
[0.10 CUBIC METERS]

Dimension Table	
Deck Height	Dim. "A"
0'-8"	52 1/2" [135.89cm]
1'-0"	56 1/2" [146.05cm]
1'-4"	60 1/2" [156.21cm]
2'-0"	68 1/2" [176.53cm]
2'-8"	76 1/2" [196.85cm]

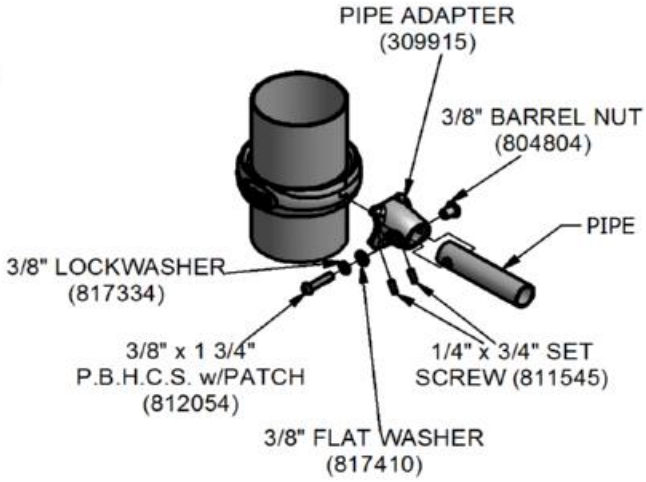


ELEVATION VIEW

71203 'L' Horizontal Ladder - Link



066



448

SuperMax Play Systems

71212 Bug Panel
71213 Earth Panel

Parts List -for- 71212			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	BUG PANEL	1	310245
2	PIPE ADAPTER	2	309915
	-----HARDWARE COMPLETE-----	1	309974
	1/4" x 3/4" SET SCREW	4	811545
	3/8" x 3/4" P.B.H.C.S. w/PATCH	2	812052
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
	3/8" FLAT WASHER	2	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
	3/8" LOCK WASHER	2	817334
	3/8" BARREL NUT	2	804804
	3/8" LOCK NUT	2	804353

Parts List -for- 71213			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	EARTH PANEL	1	310248
2	PIPE ADAPTER	2	309915
	-----HARDWARE COMPLETE-----	1	309974
	1/4" x 3/4" SET SCREW	4	811545
	3/8" x 3/4" P.B.H.C.S. w/PATCH	2	812052
	3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
	3/8" FLAT WASHER	2	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
	3/8" LOCK WASHER	2	817334
	3/8" BARREL NUT	2	804804
	3/8" LOCK NUT	2	804353

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Panel, refer to your overhead drawing for location.

2. Using a 7/16" drill bit, ream out any excess "Plastisol" coating from all holes used on the deck. Be careful not to expose the steel.

3. Loosely attach all Ring Clamps to the uprights. Refer to the seperate Ring Clamp Installation sheet.

4. Put Panel tabs into slots on deck. Slip Pipe Adapters over Panel attachment pipes, then hook Pipe Adapters onto Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 448. Attach Pipe Adapter to Pipe Wall using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher, 3/8" Flat Washer, and 3/8" Barrel Nut as shown in Detail 448.

5. Attach tabs to deck using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flatwasher, and 3/8" Lock Nut as shown in Detail 026. After ensuring Pipe Wall is square and level, tighten all fasteners.

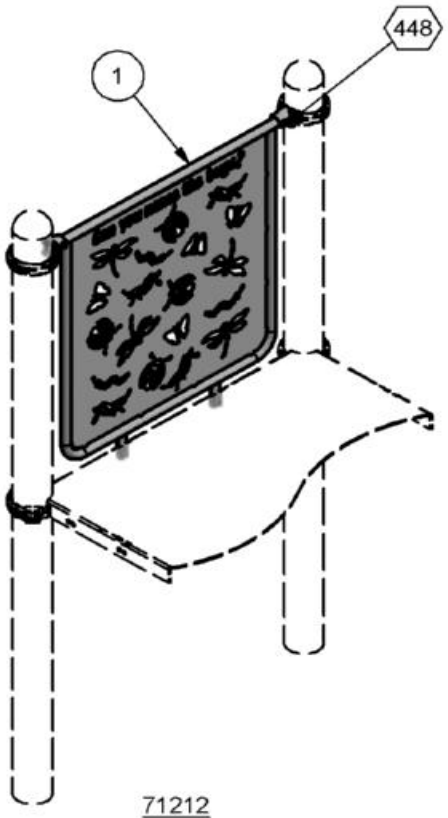
IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the ***Safety Guidelines***. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

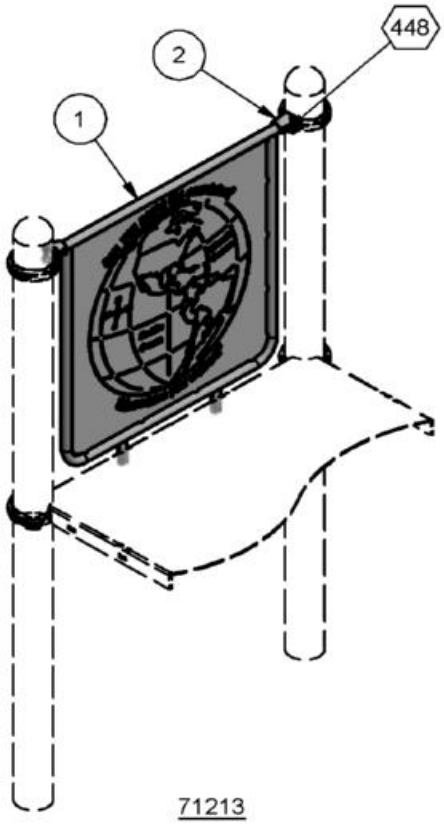
71212 Bug Panel
71213 Earth Panel

Note: To cushion accidental falls by children, Park Structures strongly recommends that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



71212

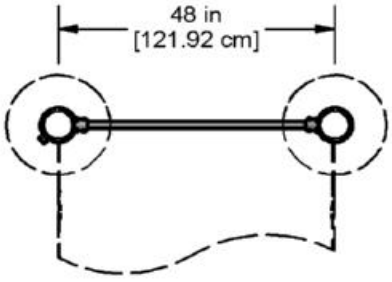


71213

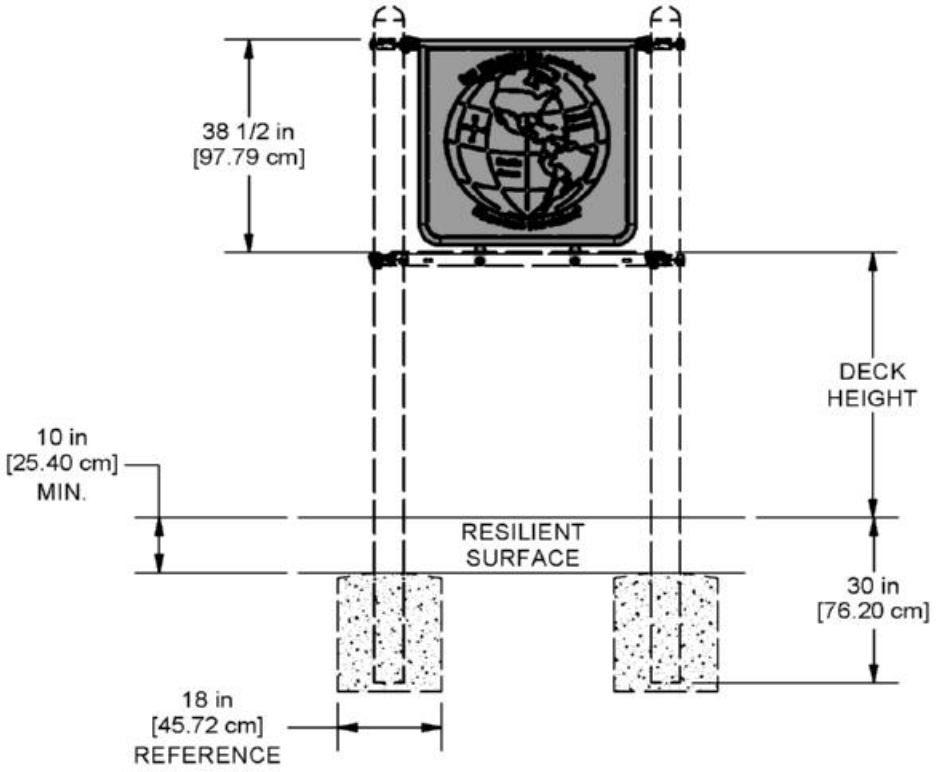
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

71212 Bug Panel
71213 Earth Panel

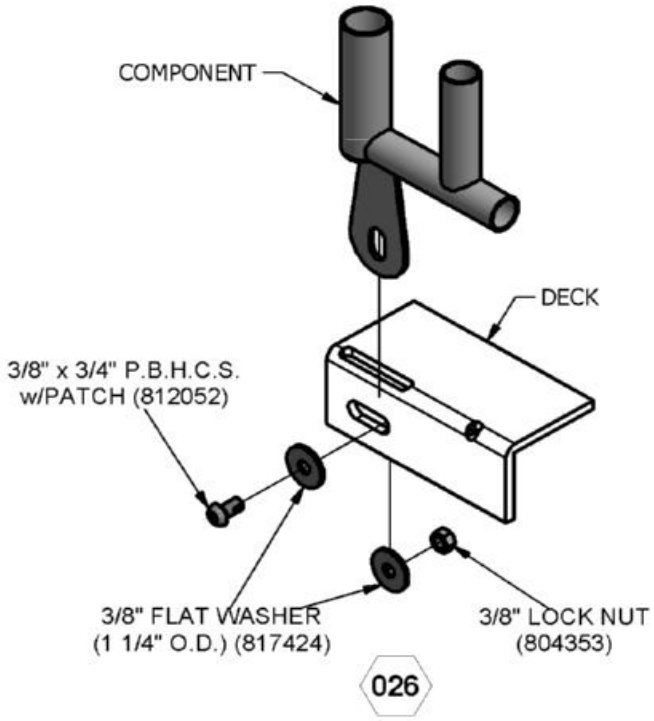


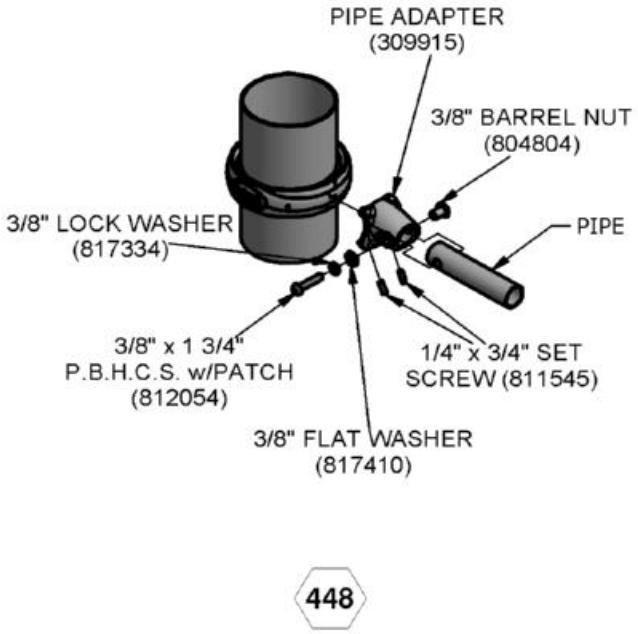
PLAN VIEW



ELEVATION VIEW

71212 Bug Panel
71213 Earth Panel





71338 Hand Pedaler

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	HAND PEDALER ASSEMBLY	1	308375
2	RING HALF CLAMP	2	309913
	-----HARDWARE COMPLETE-----	1	310570
	1/4" x 1" DRIVE RIVET	2	805302
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
	3/8" FLAT WASHER	4	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
	3/8" HEAVY HEX NUT	4	804200

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Select the appropriate Upright Post to receive the Hand Pedaler. Refer to your overhead drawing for location.

2. Mark position of Clamps on the Upright Post. See Elevation Views.

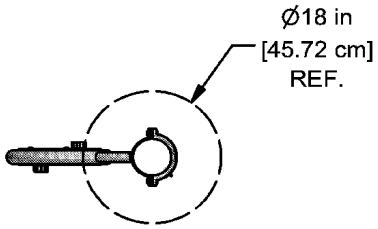
3. Attach Hand Pedaler to Upright Post using Ring Half Clamp, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Heavy Hex Nut as shown in Detail 475.

4. When structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

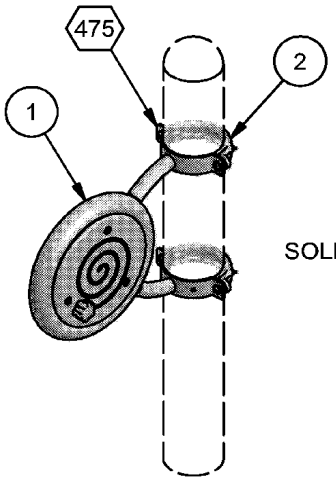
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

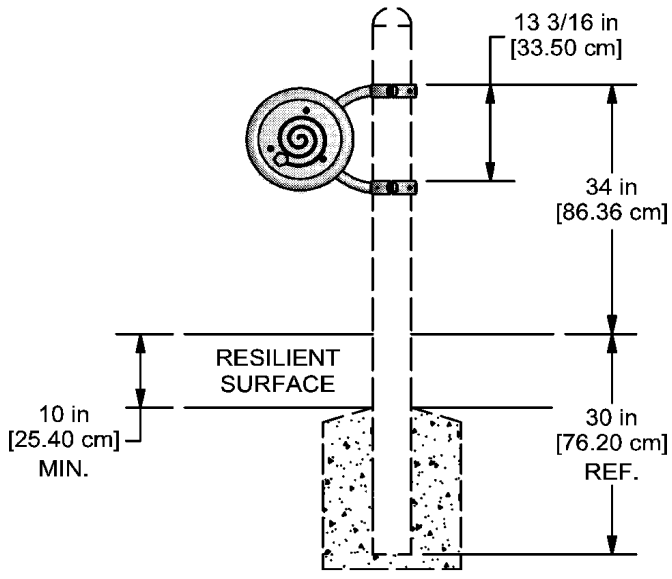
71338 Hand Pedaler



PLAN VIEW

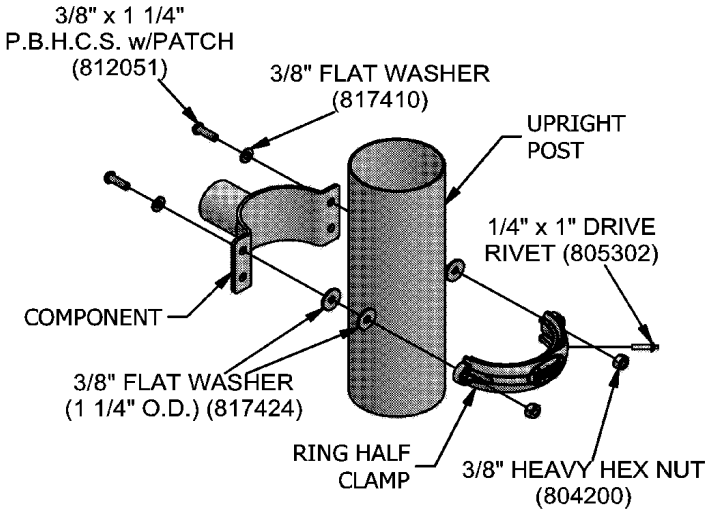


FINISHED ASSEMBLY



ELEVATION VIEW

71338 Hand Pedaler



475

SuperMax Play Systems

71346 Single Seat

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	SEAT SUPPORT	1	312847
2	SEAT	1	207778
3	RING HALF CLAMP	1	309913
	-----HARDWARE COMPLETE-----	1	312850
	1/4" x 1" DRIVE RIVET	1	805302
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	2	812051
	3/8" FLAT WASHER	2	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
	3/8" HEAVY HEX NUT	2	804200
	3/8" LOCKWASHER	1	817334
	3/8" T-NUT	1	804556
	3/8" x 2 1/4" P.B.H.C.S. w/PATCH	1	812056

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Select the appropriate Upright Post to receive the Single Seat. Refer to your overhead drawing for location.

2. Mark position of Clamp on the Upright Post. See Elevation Views.

3. Attach Seat Support to Upright Post using Ring Half Clamp, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.) and 3/8" Heavy Hex Nut as shown in Detail 475.

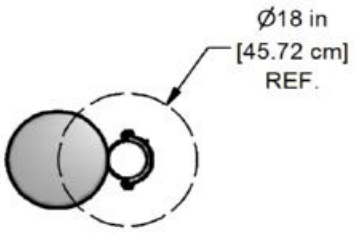
4. Attach Seat to Seat Support using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher and 3/8" T-Nut as shown in Detail 714.

5. When structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring on installed hardware like bolts, nuts etc. Install resilient surfacing material within the *use zone* of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*.

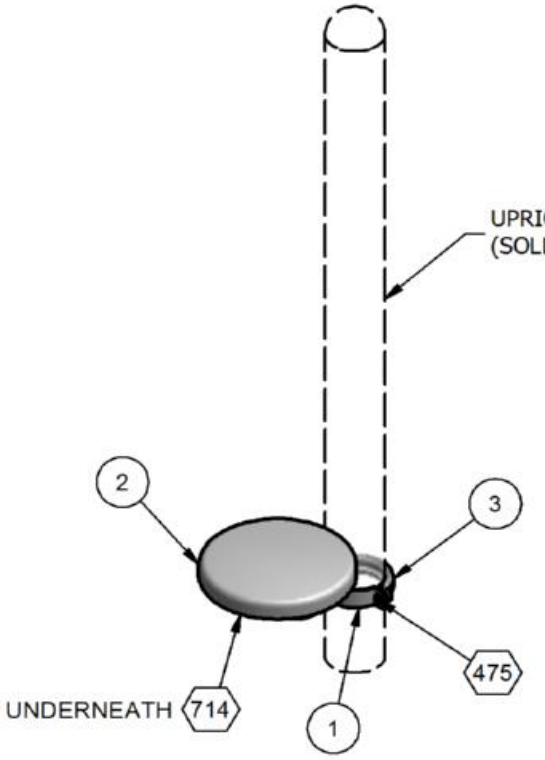
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

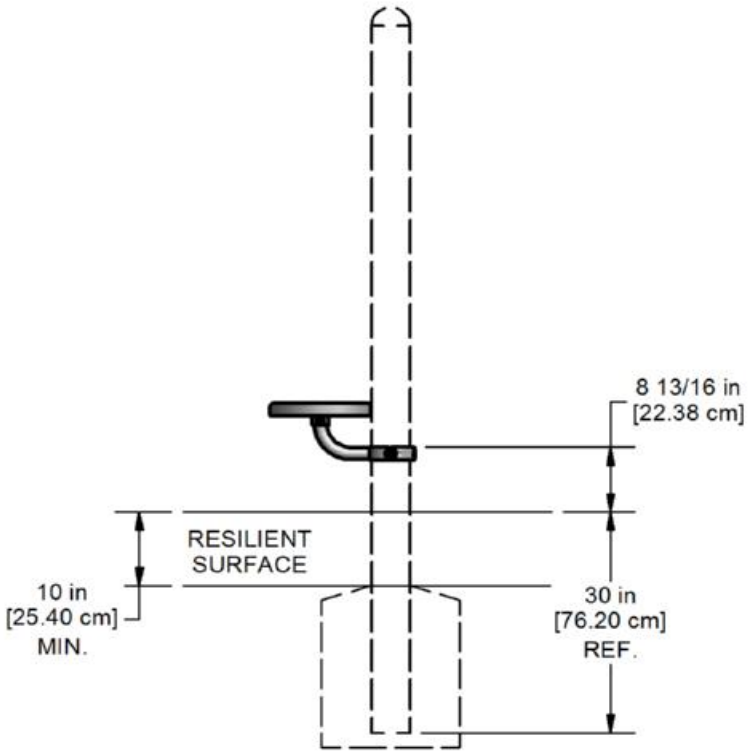
71346 Single Seat



PLAN VIEW



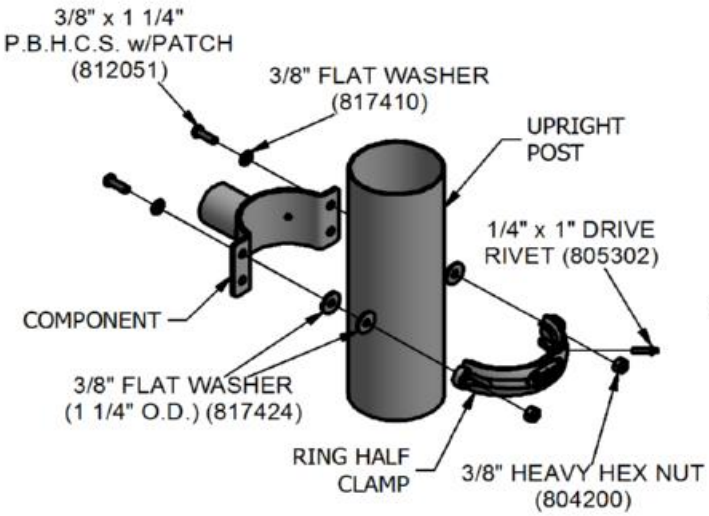
FINISHED ASSEMBLY



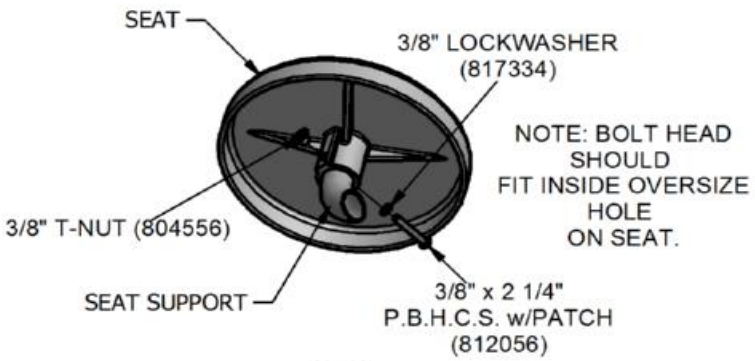
ELEVATION VIEW

⬡ = INSTALLATION DETAIL

71346 Single Seat



475



714

SuperMax Play Systems

71348 Seat for Two and Table

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	SEAT SUPPORT BEAM	1	302373
2	TABLE SUPPORT POST	1	302378
3	SEAT PANEL	1	302366
4	22" ROUND TABLE PANEL	1	302361
5	RING HALF CLAMP	2	309913
	-----HARDWARE COMPLETE-----	1	310580
	1/4" x 1" DRIVE RIVET	2	805302
	3/8" x 3/4" P.B.H.C.S. w/PATCH	8	812052
	3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
	3/8" FLAT WASHER	12	817410
	3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
	3/8" BARREL NUT	8	804804
	3/8" HEAVY HEX NUT	4	804200

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which uprights are to receive the Seat for Two and Table, refer to your overhead drawing for location. Dig footings at location and depth as shown.

2. Attach Seat Support Beam to Seat Panel using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers, and 3/8" Barrel Nuts as shown in Detail 517. Note: Counterbore holes are to be turned upwards to receive Barrel Nuts.

3. Fasten Seat Assembly to Upright Posts using Ring Half Clamps, 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers, 3/8" Flat Washers (1 1/4" O.D.) and 3/8" Heavy Hex Nuts as shown in Detail 475.

4. Attach Table Support Post to Table Panel using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washers, and 3/8" Barrel Nuts as shown in Detail 517. Note: Counterbore holes are to be turned upwards to receive Barrel Nuts.

5. Place Table Support Post in dug hole, bracing it in the vertical position.

6. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

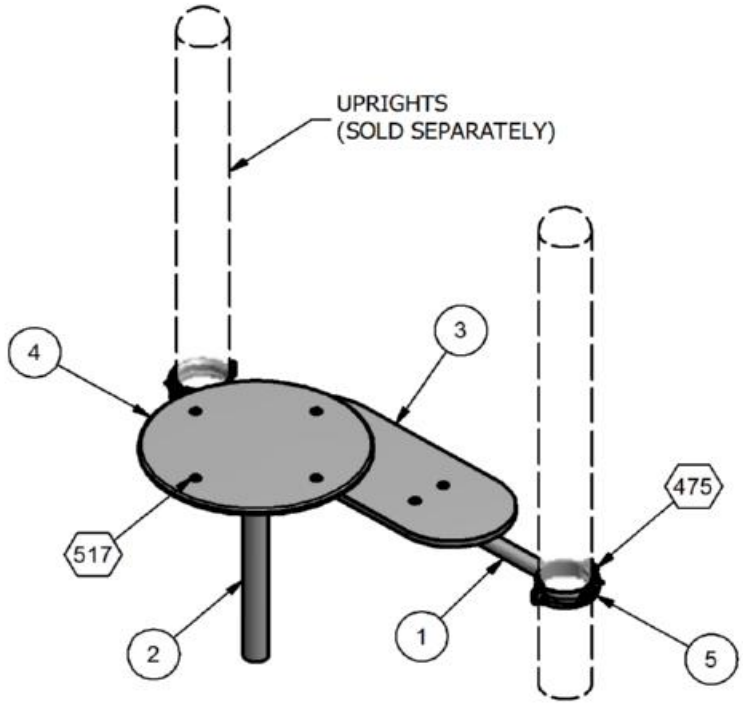
71348 Seat for Two and Table

7. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

MAINTENANCE PROCEDURE:

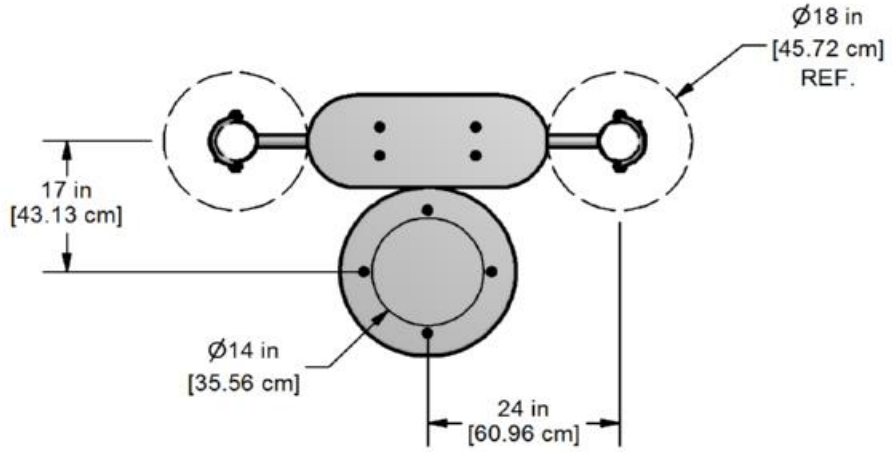
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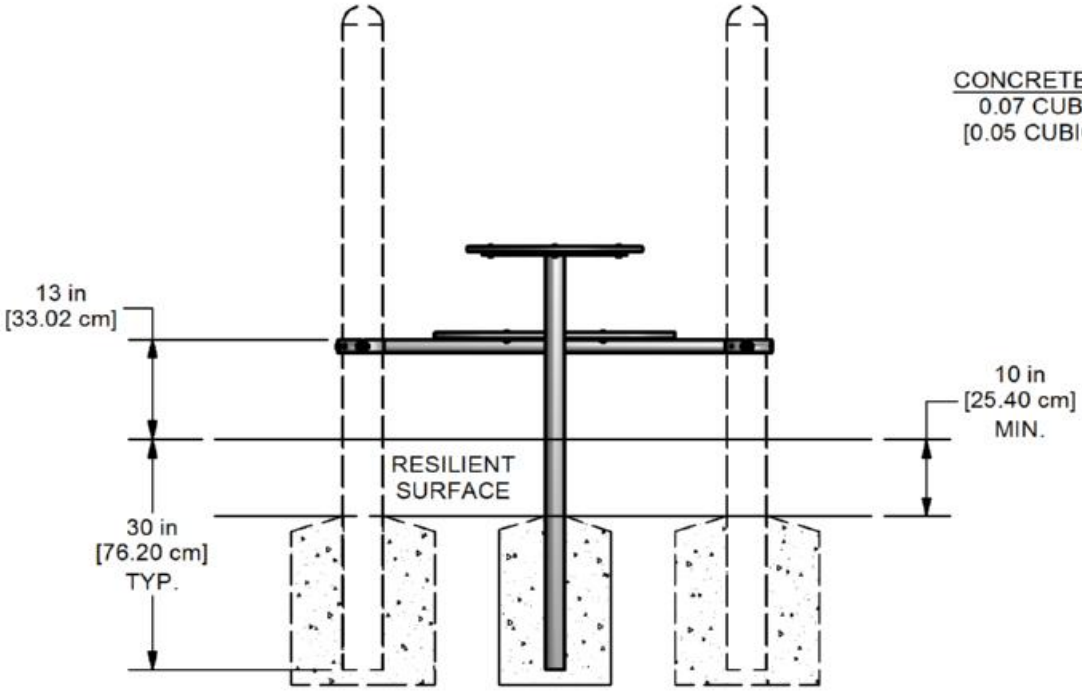
= INSTALLATION DETAIL

FINISHED ASSEMBLY

71348 Seat for Two and Table

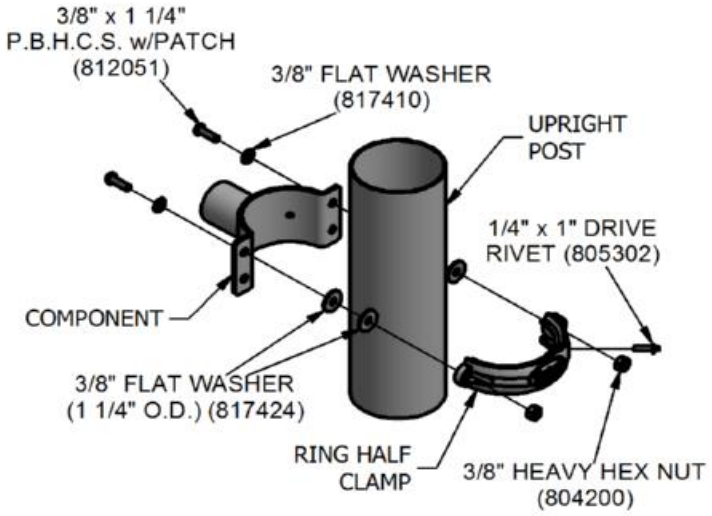


PLAN VIEW

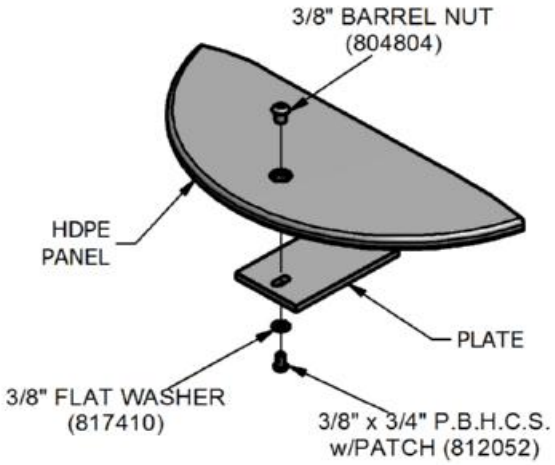


ELEVATION VIEW

71348 Seat for Two and Table



475



517

SuperMax Play Systems

71424 Deep Kettle Drum

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	DEEP KETTLE DRUM	1	308046
2	HORIZONTAL PIPE w/INSERT	2	310784
3	SIDE BAR	4	308168
4	PANEL ADAPTER	4	309919
	-----HARDWARE COMPLETE-----	1	310788
	1/4" x 3/4" SET SCREW	8	811545
	#14 X 1 1/2" S.S. SELF DRILL SCREW	2	809694
	3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	812053
	3/8" LOCKWASHER	12	817334
	1/4" FLAT WASHER (5/8" O.D.)	2	817408
	3/8" BARREL NUT	8	804804
	3/8" x 2 1/2" P.B.H.C.S. w/PATCH	8	812057

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Deep Kettle Drum, refer to your overhead drawing for location.

2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.

3. Insert Horizontal Pipes through the holes in the sides of the Deep Kettle Drum. Center Deep Kettle Drum on Horizontal Pipes, drill into pipe using 1/8" bit, and attach using 1 1/2" S.S. Self Drill Screw and 1/4" Flat Washer as shown in Detail 264.

4. Attach Side Bars to Horizontal Pipes using 3/8" x 2 1/2" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Barrel Nut as shown in Detail 263. Side Bars should be oriented as shown on page 3 of this Installation Sheet.

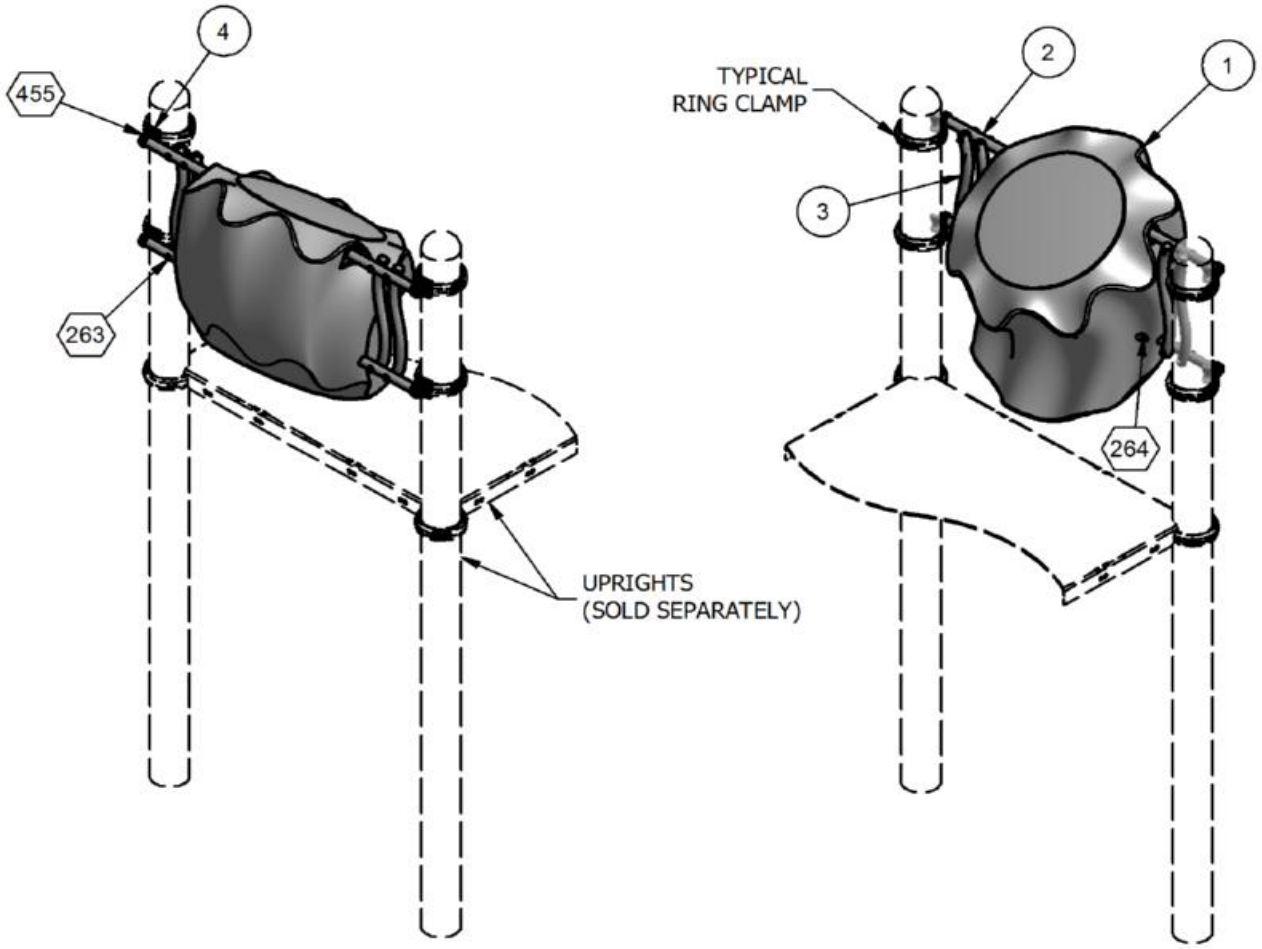
5. Hook the Panel Adapters onto the Ring Clamps and attach using 1/4" x 3/4" Set Screws as shown in Detail 455. Connect ends of Horizontal Pipes to Panel Adapter using 3/8" x 1 1/2" P.B.H.C.S. w/Patch and 3/8" Flat Washers as shown in Detail 455.

When the assembly is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed before allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

71424 Deep Kettle Drum

MAINTENANCE PROCEDURE:

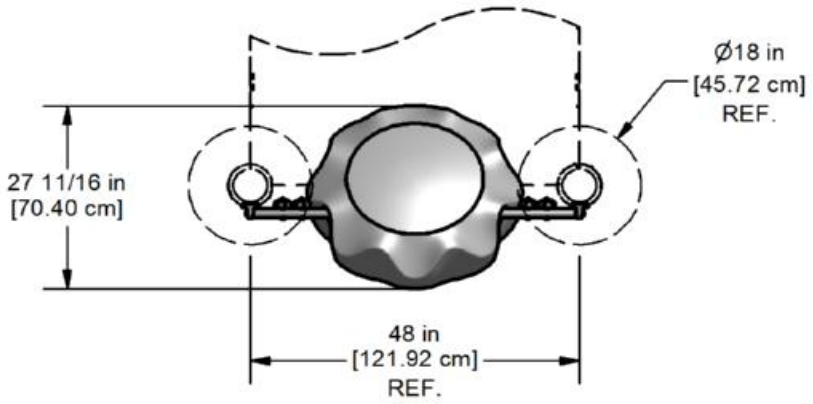
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Check for rust or paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check Plastisol-coating for bare spots and touch-up with Plastisol if necessary. Clear any trapped debris from deck perforations. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



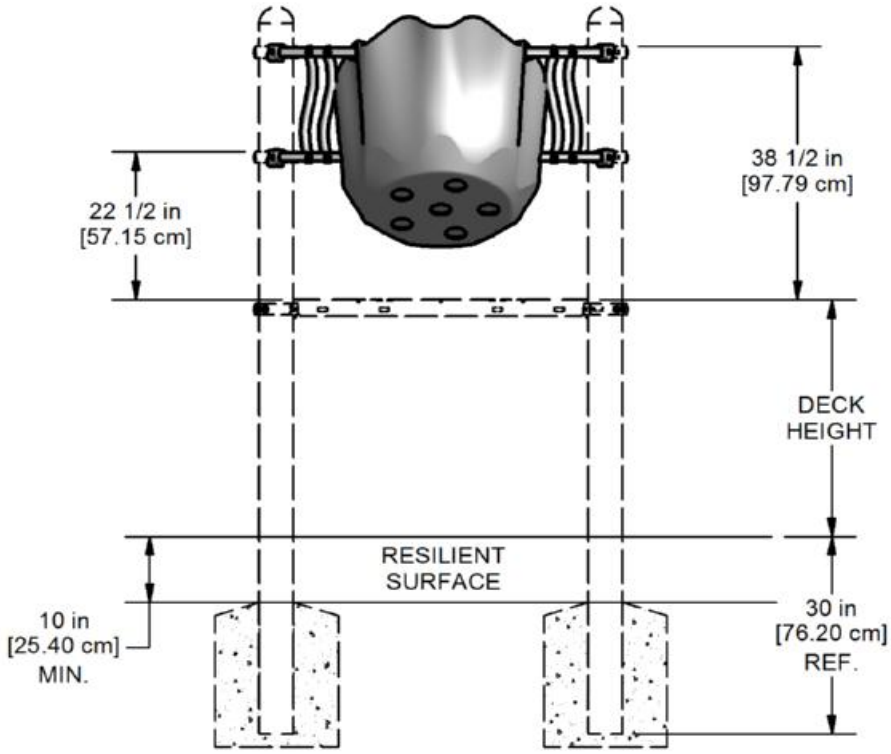
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

71424 Deep Kettle Drum

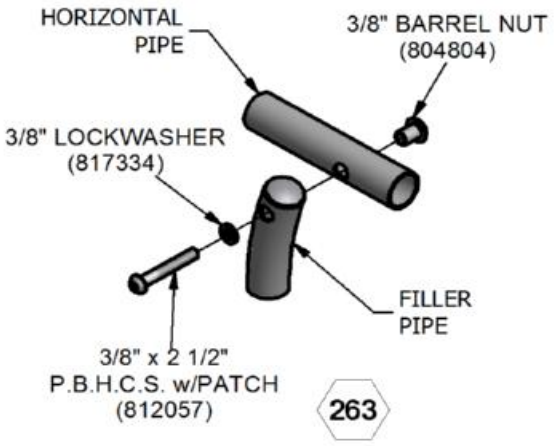


PLAN VIEW



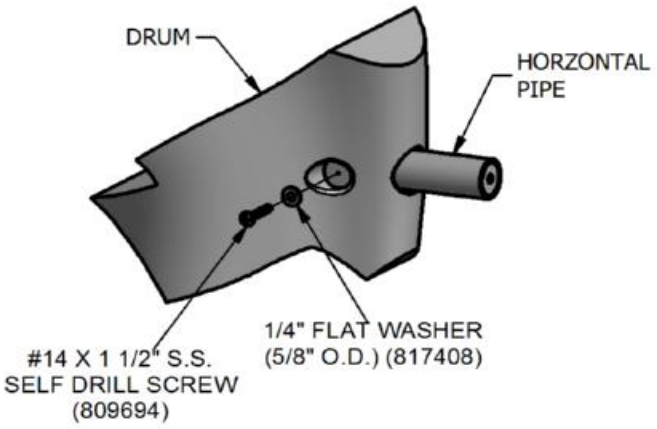
ELEVATION VIEW

71424 Deep Kettle Drum



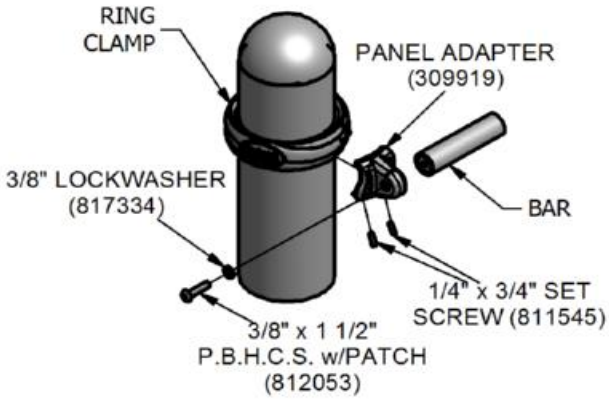
263

NOTE: DRILL Ø1/8" HOLE THRU PIPE TO RECEIVE HARDWARE.



264

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



455

71503 Flat Cap Package

Parts List			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	COATED FLAT CAP	1	139454
2	1/4" x 3/4" DRIVE RIVET	2	168449

Unless Otherwise Specified, All Units of Measure are Each
Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Assemble using Drive Rivets as shown in Detail 622.

2. Drive Rivets must not interfer with Ring Clamp.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

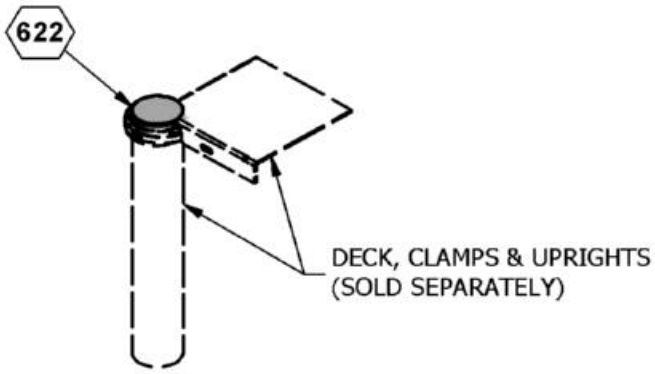
When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

Note: To cushion accidental falls by children, it is strongly recommended that the area under and around the play structure must be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10" for sand. Approved rubber safety matting can also be used. For details, please refer to your Safety Guidelines, provided within the assembly instruction packet.

71503 Flat Cap Package

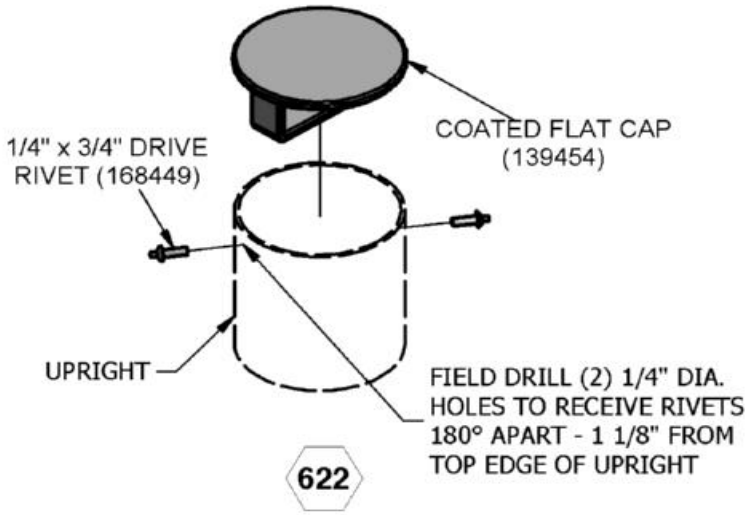
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check for rust, paint loss, and touch up if necessary with paint. Check for welded areas and verify integrity. Check all decks for peeling of Plastisol coating and touch up with Plastisol if necessary. Check for obstructed holes on deck, clean if necessary. Check for openings on plastic junctions and use clear silicone to fill. Check for cracks, gouges, or breakage on plastic. Check for integrity of plastic and keep plastic keep of any extraneous substances. Verify that any deformation does not create entrapment as specified on ASTM F1487 section 6. Periodically check resilient surfacing for appropriate depth, and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



GENERIC LENGTH POST SENT WITH ORDER. IF REQUIRED, CUT POSTS TO CORRECT LENGTH. TOP OF CAP MUST BE FLUSH WITH TOP SURFACE OF DECK.

FINISHED ASSEMBLY



⬡ = INSTALLATION DETAIL

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION

Parts List												
DESCRIPTION	71674	71715	71675	71676	71677	71678	71902	71903	72207	72209	72210	PART NUMBER
FOOTBUCK WELD ASS'Y	0	0	0	0	0	0	0	1	0	0	0	204879
1' STRAIGHT SECTION	1	0	0	0	0	0	0	0	0	0	0	205962
CURVED LEFT SECTION	0	0	1	0	0	0	0	0	0	0	0	205963
CURVED RIGHT SECTION	0	0	0	1	0	0	0	0	0	0	0	205964
SPIRAL SECTION	0	0	0	0	0	0	0	0	0	0	0	206170
EXIT SECTION	0	0	0	0	1	0	0	0	0	0	0	206179
2' STRAIGHT SECTION	0	1	0	0	0	0	0	0	0	0	0	207601
LONG EXIT SECTION	0	0	0	0	0	0	0	1	0	0	0	211303
SUPPORT PIPE WELD ASSEMBLY	0	0	0	0	0	0	0	0	0	0	1	220777
SUPPORT ASS'Y 1	0	0	0	0	0	0	1	0	0	1	0	312634
SUPPORT ASS'Y 2	0	0	0	0	0	1	0	0	0	0	0	312637
FOOTBUCK	0	0	0	0	1	0	0	0	0	0	0	312779
BANKED CASCADE EXIT	0	0	0	0	0	0	0	0	1	0	0	316987
FOOTBUCK A	0	0	0	0	0	0	0	0	1	0	0	317194
FOOTBUCK B	0	0	0	0	0	0	0	0	1	0	0	317197
FOOTBUCK C	0	0	0	0	0	0	0	0	1	0	0	317200
SURGE SLIDE FOOTBUCK EXTENSION	0	0	0	0	0	0	0	0	3	0	0	317203
HARDWARE COMPLETE	1	0	0	0	0	0	0	0	0	0	0	207032
HARDWARE COMPLETE	0	1	1	1	0	0	0	0	0	0	0	207033
HARDWARE COMPLETE	0	0	0	0	0	0	0	1	0	0	0	207035
HARDWARE COMPLETE	0	0	0	0	0	0	1	0	0	0	0	207036
HARDWARE COMPLETE	0	0	0	0	1	0	0	0	0	0	0	312781
HARDWARE COMPLETE	0	0	0	0	0	1	0	0	0	1	1	312782
HARDWARE COMPLETE	0	0	0	0	0	0	0	0	1	0	0	317204
6" EXTENSION	0	0	0	0	0	0	0	1	0	0	0	151080
EXTENSION LEG	0	0	0	0	0	0	1	0	0	0	0	152110
3/8" x 3/4" P.B.H.C.S. w/PATCH	0	0	0	0	4	0	0	4	6	0	0	812052
3/8" x 1" P.B.H.C.S. w/PATCH	2	4	4	4	0	2	2	0	0	2	2	812050
3/8" x 2" P.B.H.C.S. w/PATCH	5	5	5	5	5	0	0	5	0	0	0	812055
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	0	0	0	0	0	0	0	0	5	0	0	812056
3/8" x 2 1/2" HEX HEAD BOLT	0	0	0	0	0	0	1	0	0	0	0	801009
3/8" x 2 3/4" HEX HEAD BOLT	0	0	0	0	0	0	0	0	3	0	0	801010
3/8" x 3 1/2" HEX HEAD BOLT	0	0	0	0	0	0	0	1	0	0	0	801013
3/8" FLATWASHER	0	0	0	0	4	2	2	4	0	2	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	6	6	6	6	6	0	0	6	5	0	0	817424
3/8" LOCK WASHER	5	5	5	5	5	2	2	10	14	2	2	817334
3/8" BARREL NUT LONG	5	5	5	5	5	0	0	5	5	0	0	804820
3/8" HEX NUT	0	0	0	0	0	0	1	1	3	0	0	804053
1/2" FLAT WASHER (1 3/8" O.D.)	6	6	6	6	6	0	0	6	5	0	0	817425

71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Assemble slide sections on the ground. Bolt each section together using 3/8" Barrel Nut, 1/2" Lockwasher, 1/2" Flat Washer, 1/2" Flat Washer (1 3/8" O.D.), and 3/8" x 2 1/2" Threaded Stud. See Detail 787. **Note:** Hand tighten the five bolts that join each section. **Note:** Refer to your unit's top view for proper placement and orientation of each slide section.

2. Starting at the top section, tighten the five bolts with a wrench. Tighten the top 2 bolts first, the bottom single bolt second, then the remaining 2 bolts as shown, See Figure #1.

3. It is important that each seam between slide sections are as tight as possible. Be sure that the seams are flush or higher on the upper piece. See Figure #2.

4. After tightening all the pieces, if seam adjustment is necessary, slightly loosen the bolts in the area to be adjusted and repeat step 2 and 3 until seams are properly fitted.

5. Attach Footbuck to Exit Section using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Lockwasher, and 3/8" Flatwasher. See Detail 195. **Note:** Check slide exit for proper water drainage before concrete is poured. **Note:** The slope of the exit region shall be between 0 and -10° as measured from a plane parallel to the underlying surface.

NOTE: Cut footbuck pipe and support pipe or adjust depth of footing holes to meet correct exit height as shown on exit height chart.

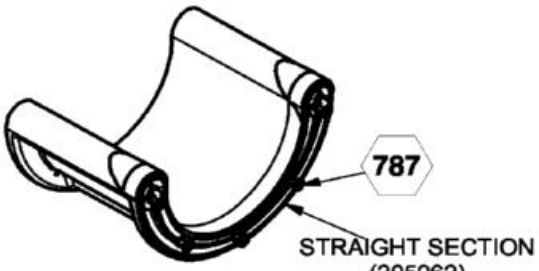
6. After the slide is adjusted and the bolts are tight, attach the slide supports (if required) using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lockwasher and 3/8" Flat Washer. See Detail 788. **NOTE: Refer to overall top view for slide support location.**

7. Use Detail 789 to plug inserts in Straight and Curved Sections as required with 3/8" x 1" P.B.H.C.S. w/Patch.

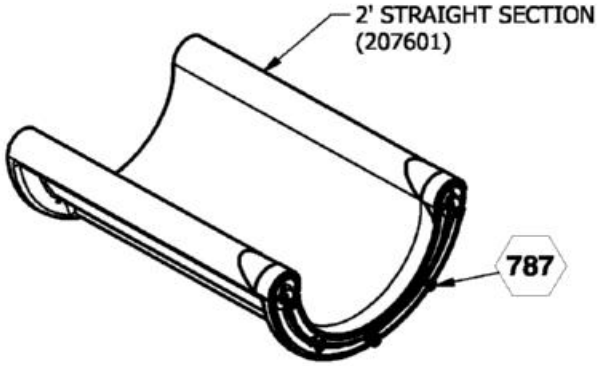
MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

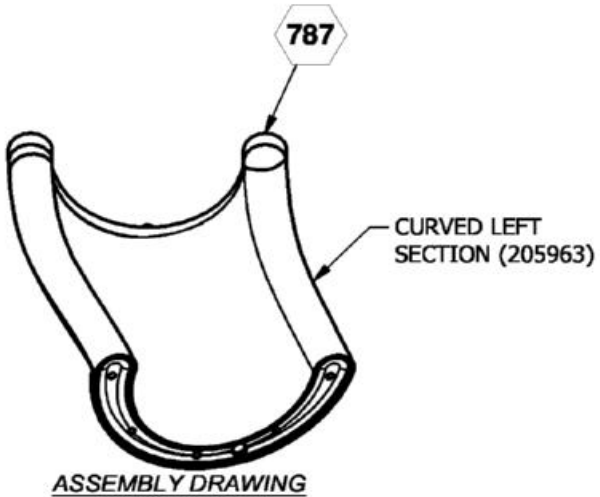
71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



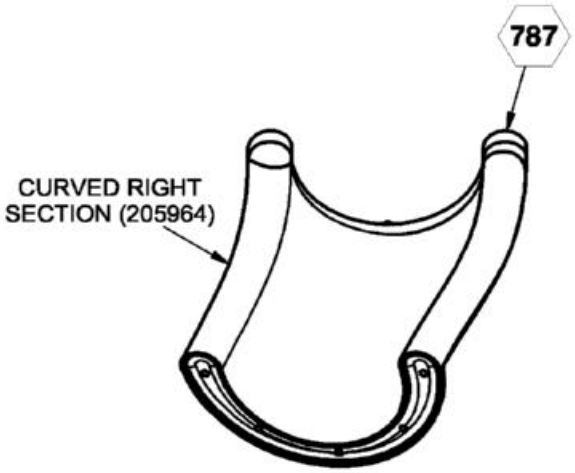
ASSEMBLY DRAWING
71674 SHOWN



ASSEMBLY DRAWING
71715 SHOWN



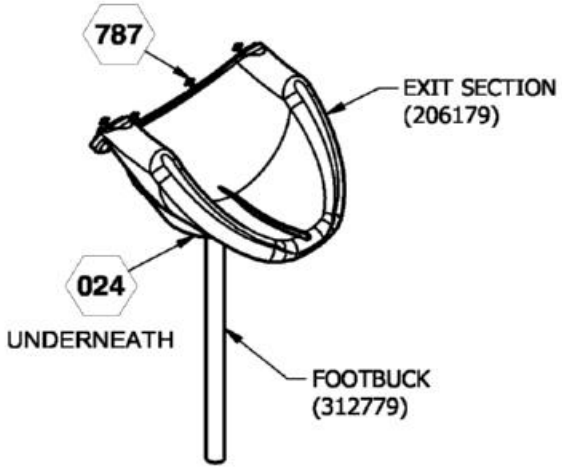
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71675 SHOWN



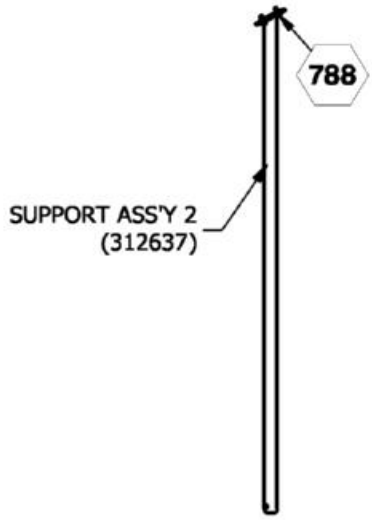
ASSEMBLY DRAWING
71676 SHOWN

⬡ = INSTALLATION DETAIL

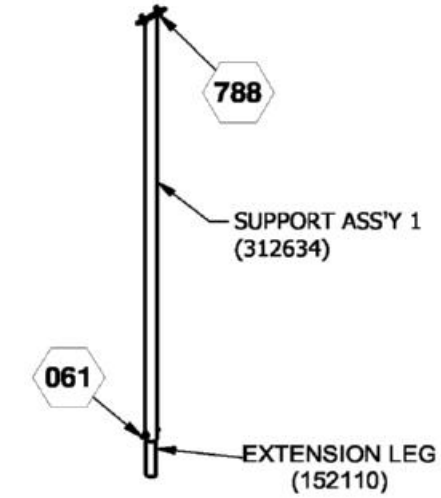
71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



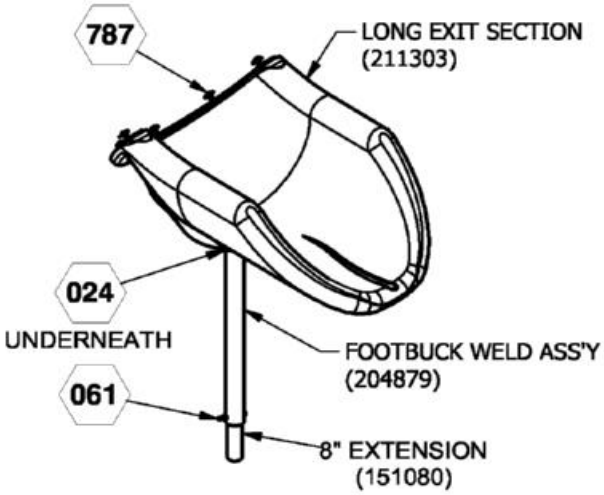
ASSEMBLY DRAWING
71677 SHOWN



ASSEMBLY DRAWING
71678 SHOWN



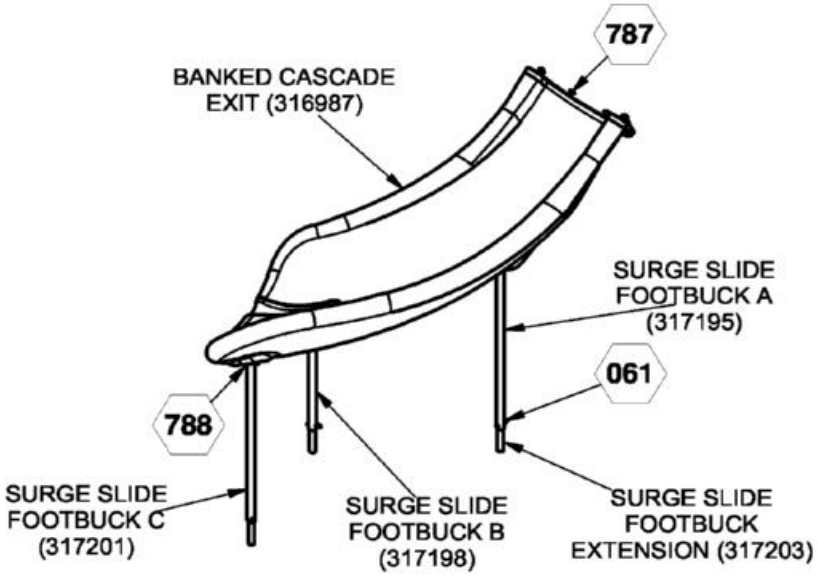
ASSEMBLY DRAWING
71902 SHOWN



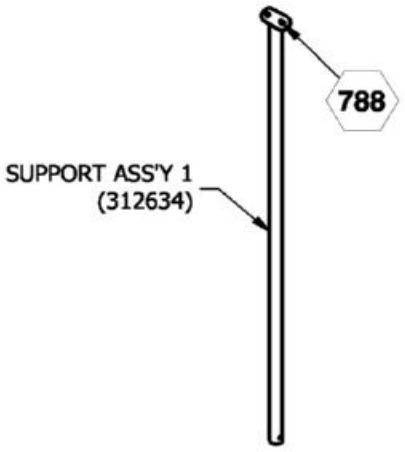
ASSEMBLY DRAWING
71903 SHOWN

⬡ = INSTALLATION DETAIL

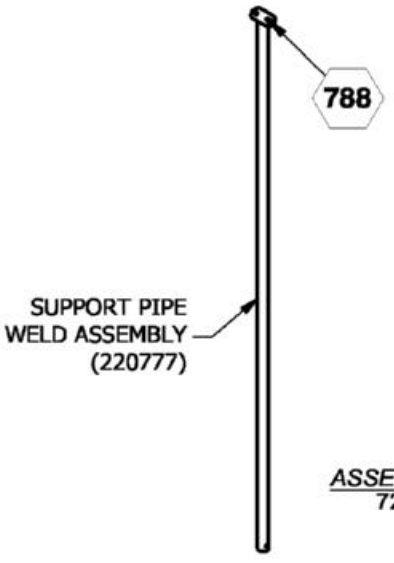
71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



ASSEMBLY DRAWING
72207 SHOWN



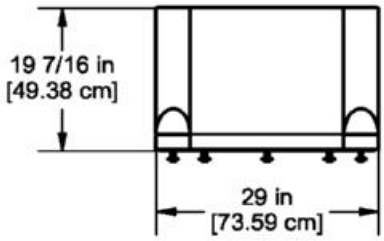
ASSEMBLY DRAWING
72209 SHOWN



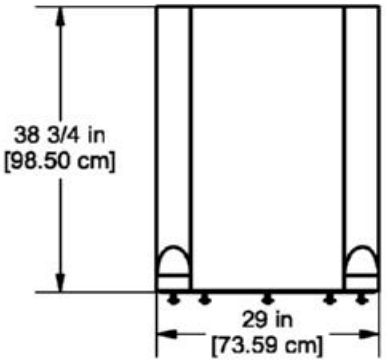
ASSEMBLY DRAWING
72210 SHOWN

⬡ = INSTALLATION DETAIL

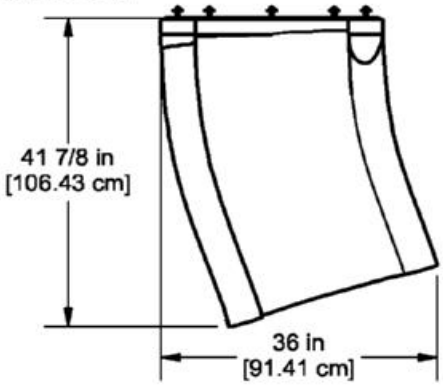
71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



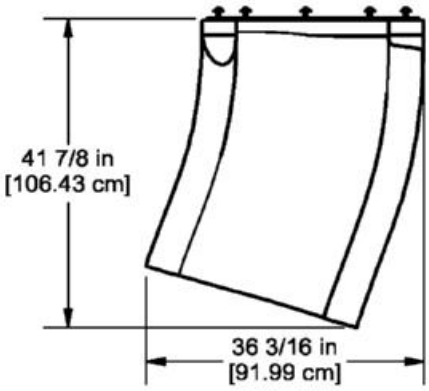
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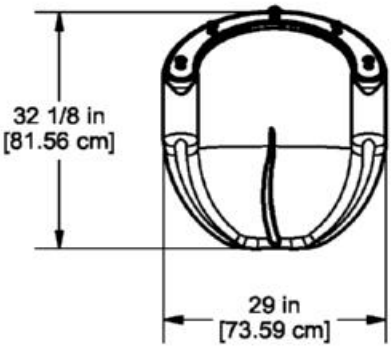
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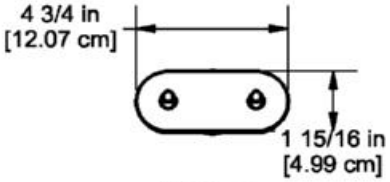
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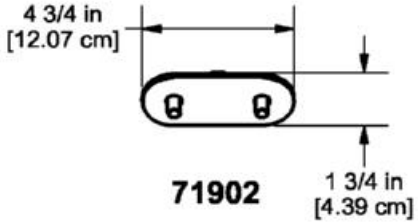
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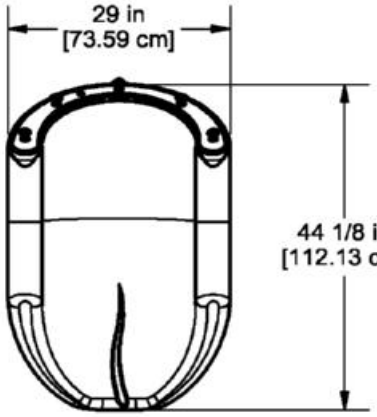
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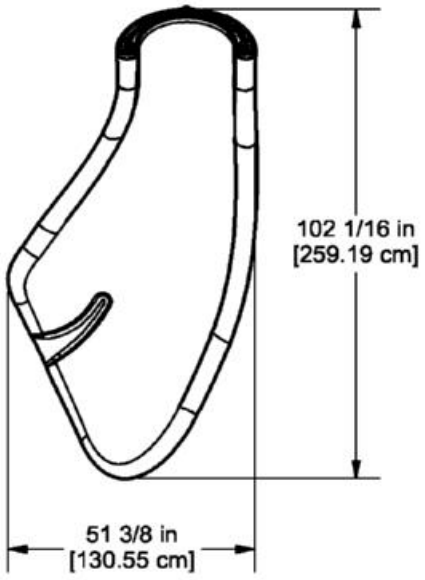
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71902



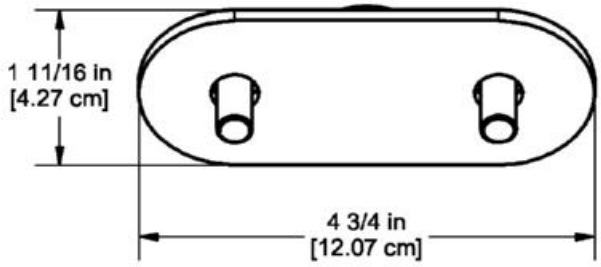
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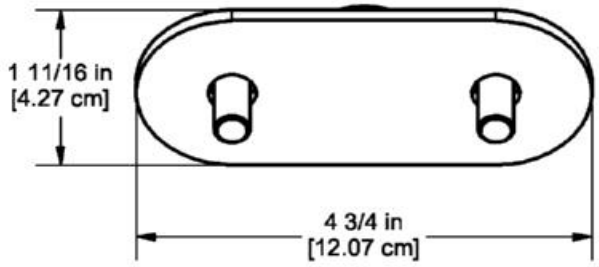
72207

TOP VIEWS

71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



72209



72210

TOP VIEWS

71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION

EXIT HEIGHT CHART -for- 4' and Under	
STANDARD	EXIT HEIGHT from SURFACING
ASTM	11" OR LESS
CSA	275mm OR LESS
EN	200mm OR LESS

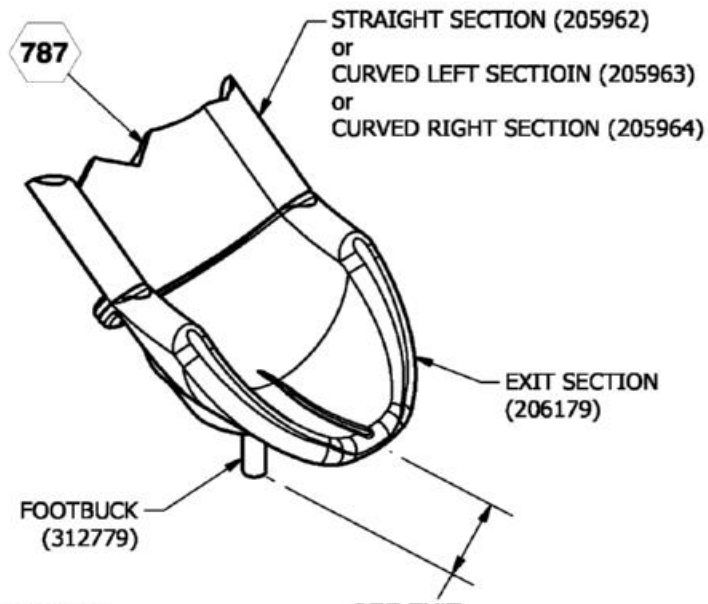
EXIT HEIGHT CHART -for- 4' 8" and Over	
STANDARD	EXIT HEIGHT from SURFACING
ASTM	7" TO 15"
CSA	175mm TO 380mm
EN	350mm OR LESS

NOTE: BEDWAY MUST NOT EXCEED 50° DOWNWARD ANGLE PER ASTM AND CSA STANDARD.

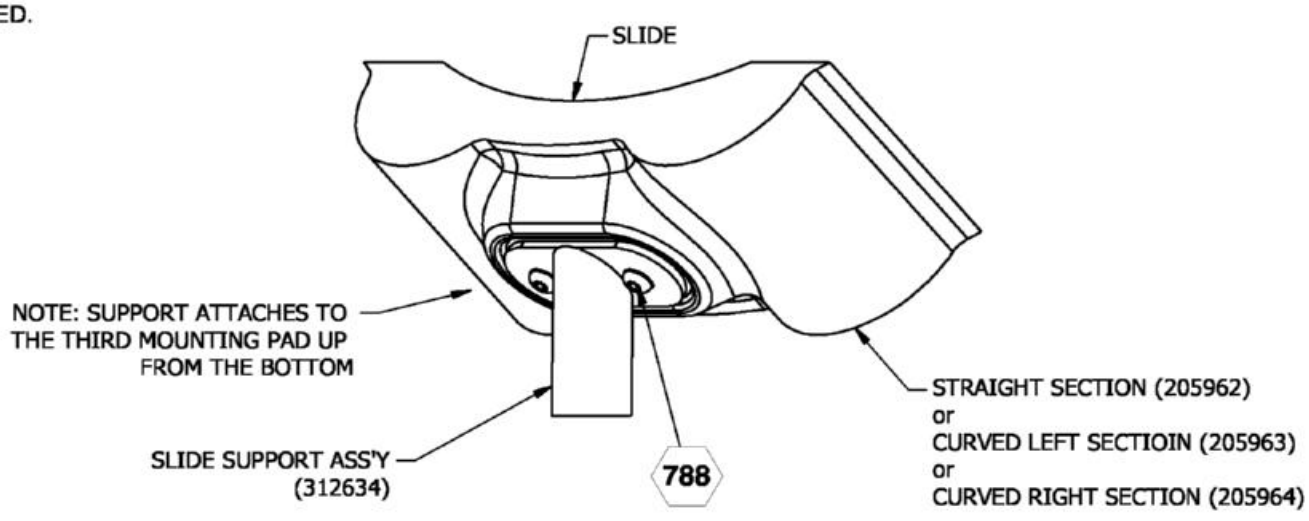
NOTE: THE SLOPE OF THE EXIT REGION SHALL BE BETWEEN 0 AND -10° AS MEASURED FROM A PLANE PARALLEL TO THE UNDERLYING SURFACE.

NOTE: CUT FOOTBUCK AND SUPPORT PIPE OR ADJUST DEPTH OF FOOTING HOLES TO MEET CORRECT EXIT HEIGHT AS SHOWN ON EXITH HEIGHT CHART.

NOTE: CHECK SLIDE EXIT FOR PROPER WATER DRAINAGE BEFORE CONCRETE IS POURED.



EXIT SECTION
ASSEMBLY DRAWING



SLIDE SUPPORT
ASSEMBLY DRAWING

71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION

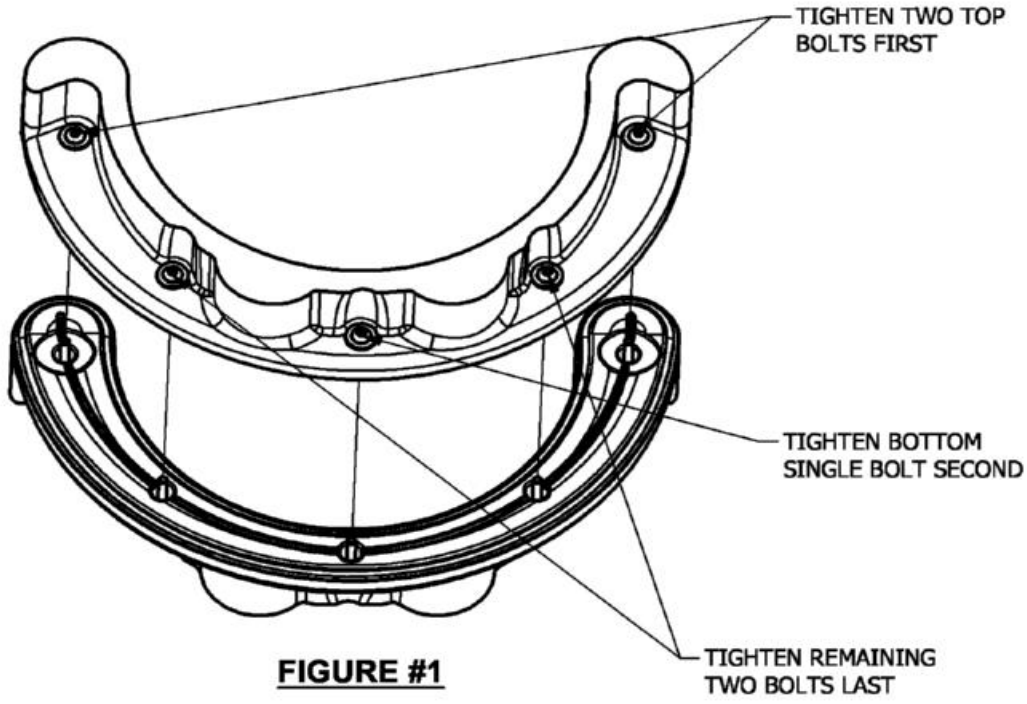


FIGURE #1

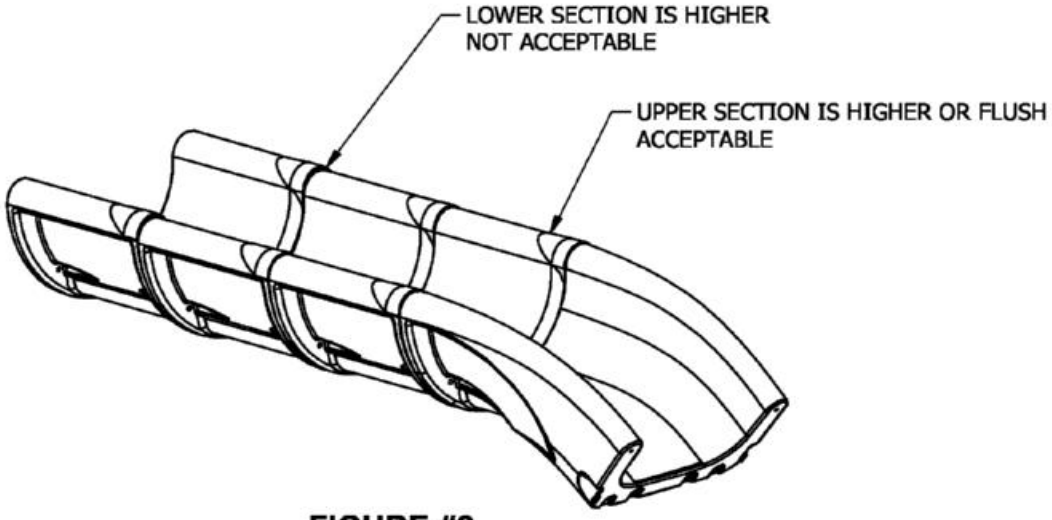
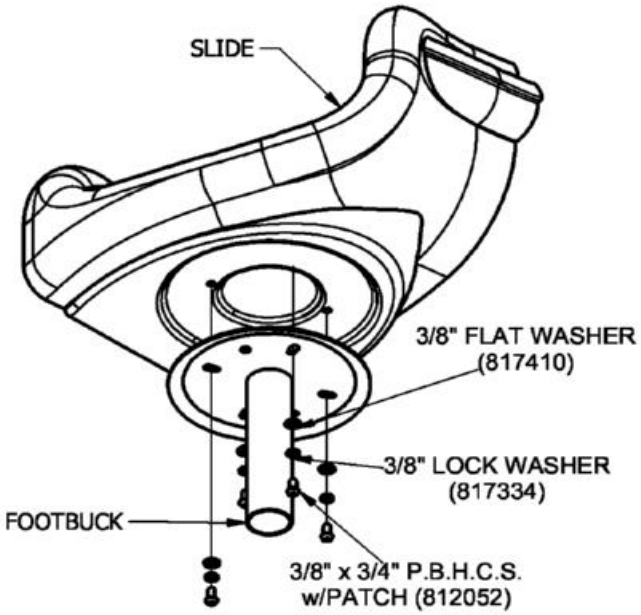


FIGURE #2

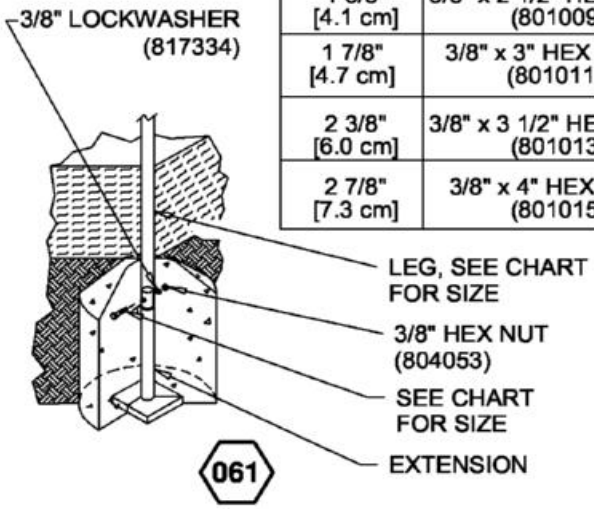
71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



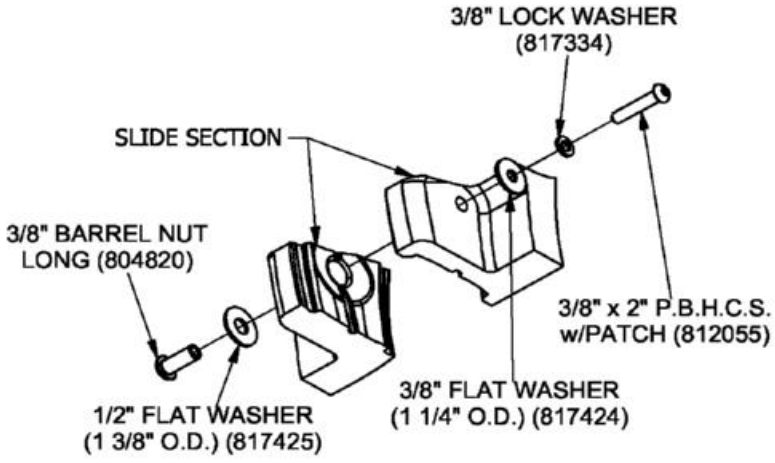
SOME SLIDES WILL ONLY HAVE TWO BOLTS PER FOOTBUCK CONNECTION

024

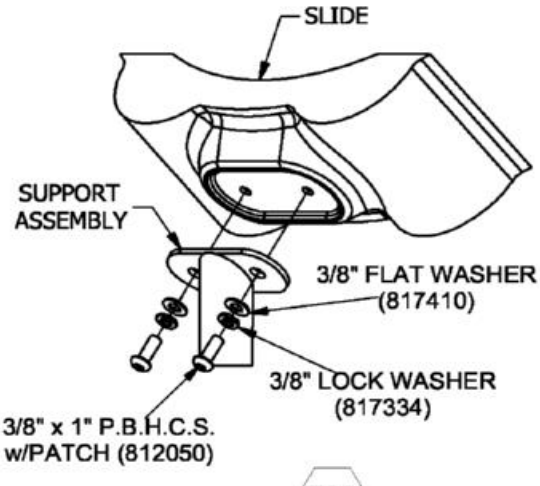
LEG (PIPE DIA.)	BOLT REQUIRED
1 5/16" [3.3 cm]	3/8" x 2" HEX HEAD (801007)
1 5/8" [4.1 cm]	3/8" x 2 1/2" HEX HEAD (801009)
1 7/8" [4.7 cm]	3/8" x 3" HEX HEAD (801011)
2 3/8" [6.0 cm]	3/8" x 3 1/2" HEX HEAD (801013)
2 7/8" [7.3 cm]	3/8" x 4" HEX HEAD (801015)



061

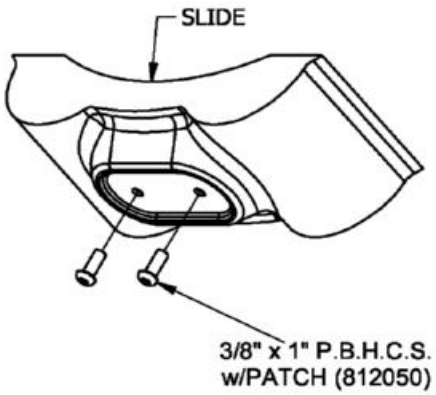


787



788

71674 1' STRAIGHT SECTION; 71715 2' STRAIGHT SECTION; 71675 CURVE LEFT SECTION; 71676 CURVE RIGHT SECTION; 71677 EXIT SECTION; 71678 SLIDE SUPPORT; 71902 SLIDE SUPPORT 2; 71903 LONG EXIT SECTION; 72207 SURGE EXIT SECTION



789

SuperMax Play Systems

71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)

Parts List		
DESCRIPTION	QTY	PART NUMBER
OFFSET ENTRY ARCHWAY	2	310071
PIPE ADAPTER	4	309915
PINNACLE CLIMBER	2	313521
SM FORMED MOUNTING BAR	2	313602
DOUBLE PINNACLE TAB	4	313580
DECK MOUNTING BAR ASS'Y	2	313546
BOTTOM FOOTBUCK	2	313598
T-BAR ASS'Y	1	313596
3 HOLE TAB ASS'Y	2	314962
HARDWARE COMPLETE	1	313639
1/4" x 3/4" SET SCREW	8	811545
3/8" x 3/4" P.B.H.C.S. w/PATCH	6	812052
3/8" x 1" P.B.H.C.S. w/PATCH	22	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	812054
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	4	812056
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	2	812058
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
3/8" BARREL NUT	14	804804
3/8" FLAT WASHER	24	817410
3/8" LOCK WASHER	26	817334
3/8" LOCK NUT	2	804353
3/8" T-NUT	4	804556

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)

INSTALLATION INSTRUCTIONS:

1. Locate deck opening to receive the Pinnacle Climber. See Plan and Elevation Views for clamp height and location. Dig footing holes as shown in Elevation View.
2. Attach Ring Clamps at required locations as shown in Elevation View. See Ring Clamp Installation Sheet.
3. Attach Pipe Adapters to the Ring Clamps using 1/4" x 3/4" Set Screws. See Detail 448.
4. Attach Offset Entry Archway to Pipe Adapters using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 448.
5. Attach Offset Entry Archway to Deck using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" Lock Nut. See Detail 026.
6. Attach SM Formed Mounting Bar to Deck using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" T-Nut. See Detail 802.
7. Attach Deck Mounting Bar Ass'y to Pinnacle Climber using 3/8" x 2 1/4" P.B.H.C.S. w/Patch and 3/8" Barrel Nut. See Detail 798.
8. Attach both Pinnacle Climbers together using 3/8" x 2 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 819.
9. Fill bottom four holes of the Pinnacle Climber using 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Barrel Nut. See Detail 801. ***Refer to Finished Assembly View** for location.*
10. Attach Deck Mounting Bar Ass'y and Pinnacle Climber to deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 799.
11. Once Pinnacle Climbers are assembled, attach T-Bar Ass'y. T-Bar Ass'y will require field cutting. Hint: Place 3 Hole Tab on Pinnacle Climbers and measure from bottom hole of the 3 Hole Tab to the bottom of the footing hole to cut T-Bar Ass'y to length.
12. Attach T-Bar Ass'y to both Pinnacle Climbers using 3 Hole Tab, 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Lock Washer. See Detail 820.
13. Attach Pinnacle Climber to Bottom Footbuck using Double Pinnacle Tab, 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Lock Washer. See Detail 815.
14. Fill remaining holes in Pinnacle Climber with 3/8" x 1" P.B.H.C.S. w/Patch. See Detail 800.
15. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

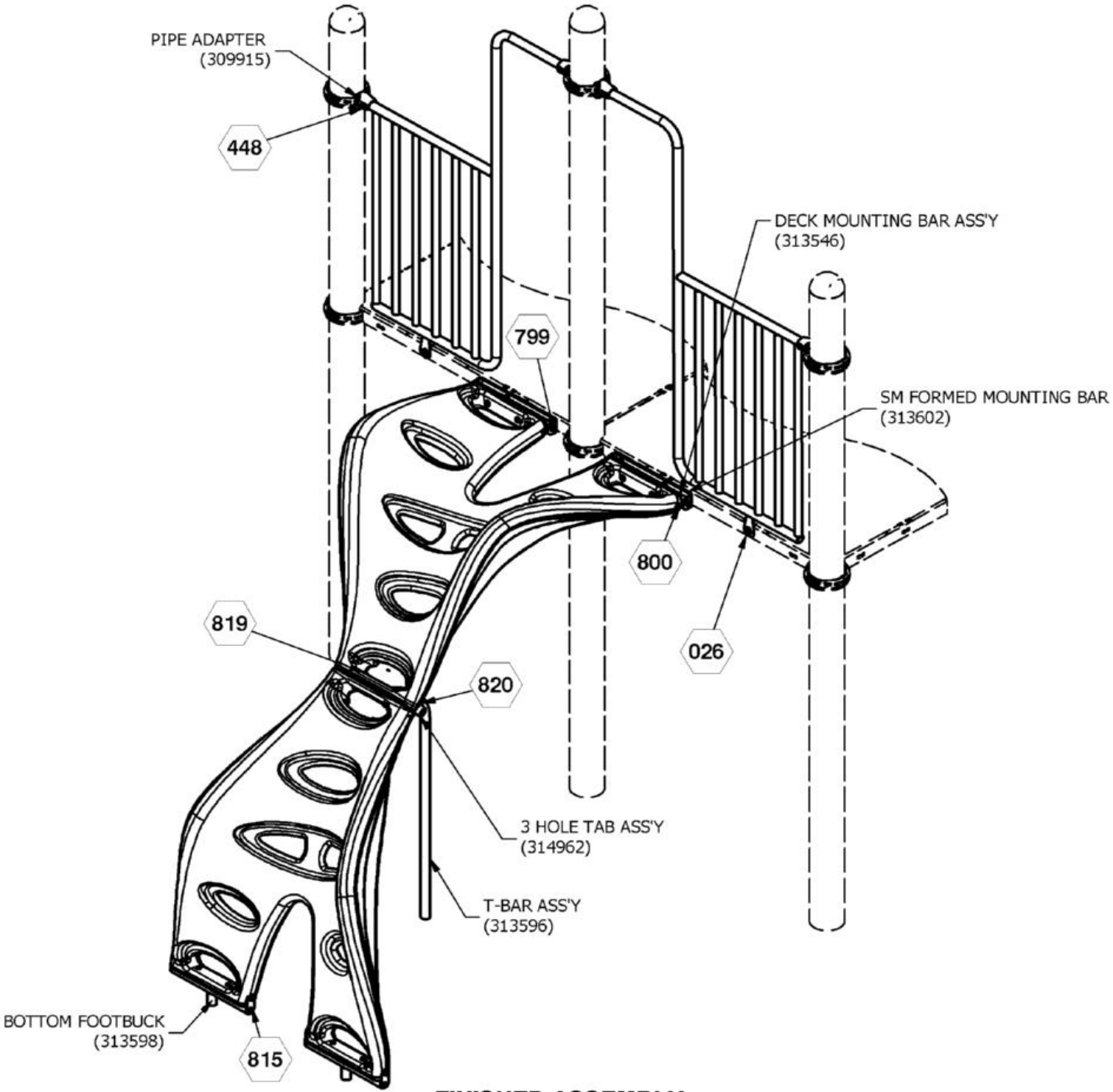
16. After entire unit is assembled pour concrete footings within 4' to the top and taper away from post for water drianage. Allow to cure at least 48 hours before use.
17. When the structure is finished and satisfactory, install 1/4" x 3/4" Drive Rivets in all Clamps to ensure Clamps cannot slide down posts, referring to Typ. Clamp Detail. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them***. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)



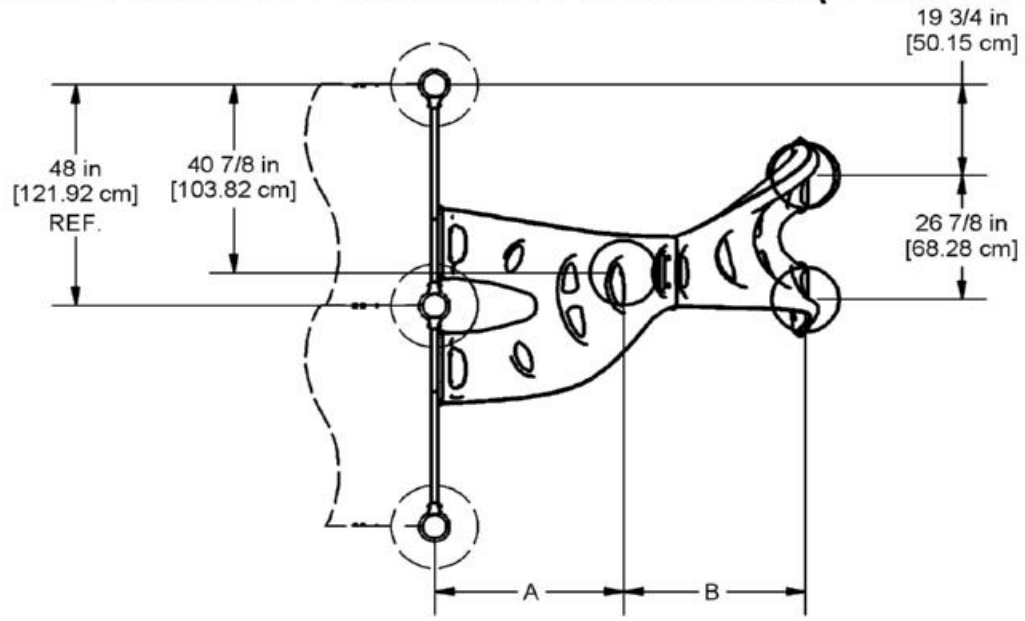
FINISHED ASSEMBLY
5'-4" DECK HEIGHT SHOWN

⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 5/22/2023

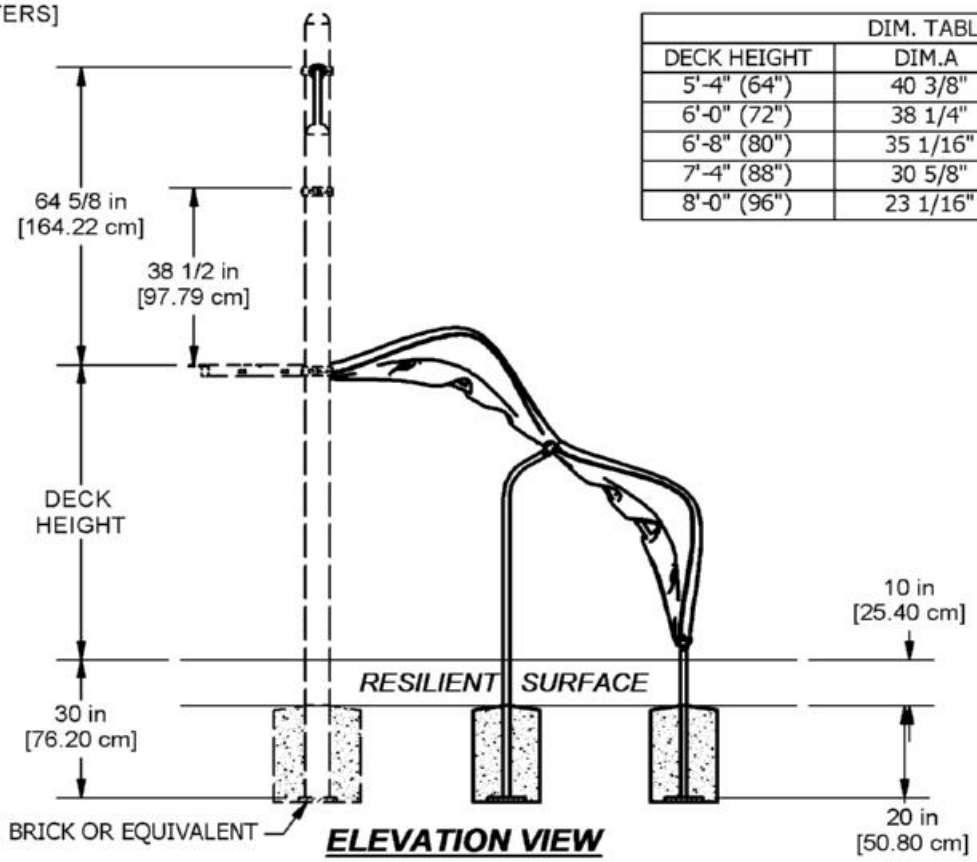
71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)



PLAN VIEW

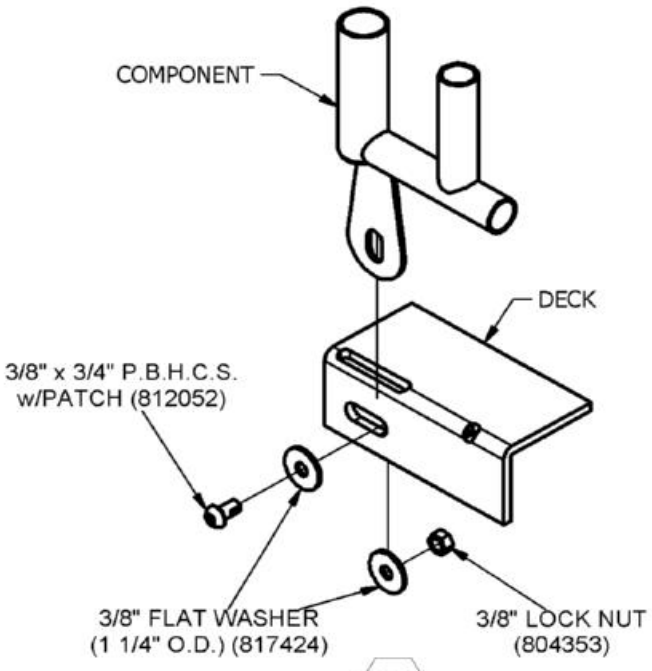
CONCRETE REQUIRED
0.18 CUBIC YARDS
[0.14 CUBIC METERS]

DIM. TABLE		
DECK HEIGHT	DIM.A	DIM. B
5'-4" (64")	40 3/8"	36 15/16"
6'-0" (72")	38 1/4"	30 7/8"
6'-8" (80")	35 1/16"	26 3/4"
7'-4" (88")	30 5/8"	19"
8'-0" (96")	23 1/16"	9 5/8"



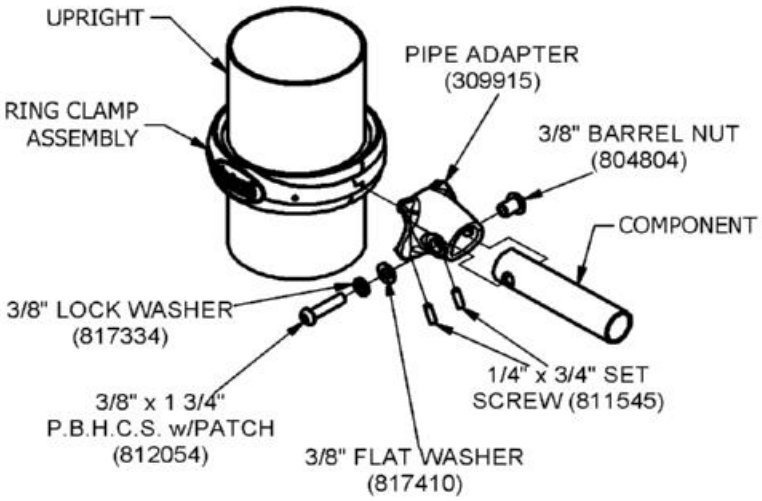
ELEVATION VIEW
5'-4" DECK HEIGHT SHOWN

71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)

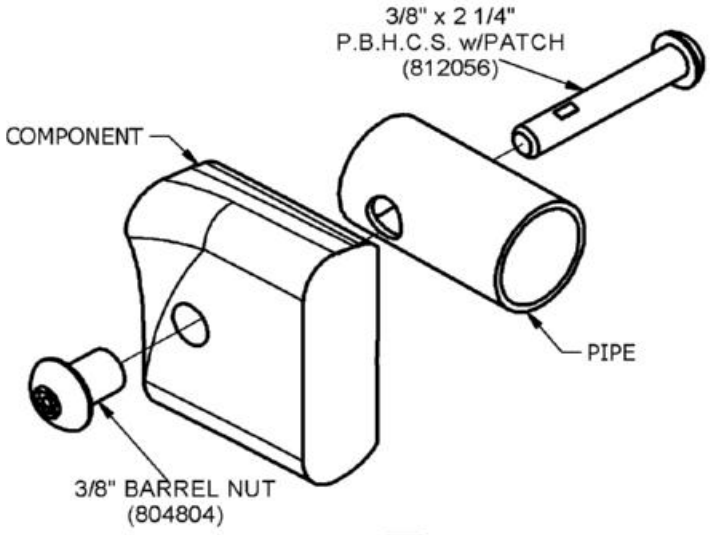


026

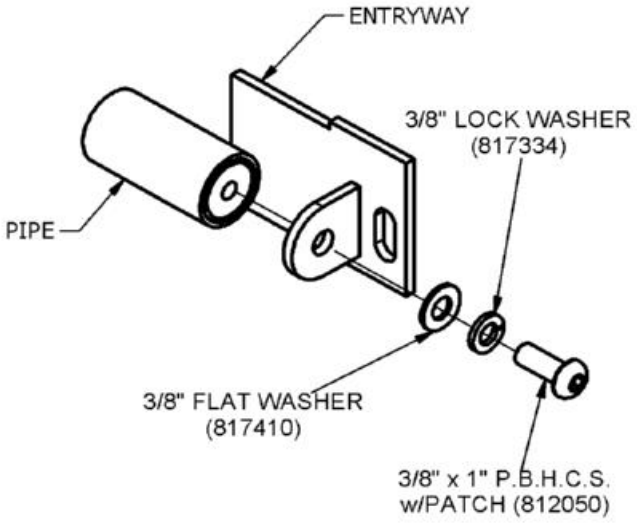
NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



448

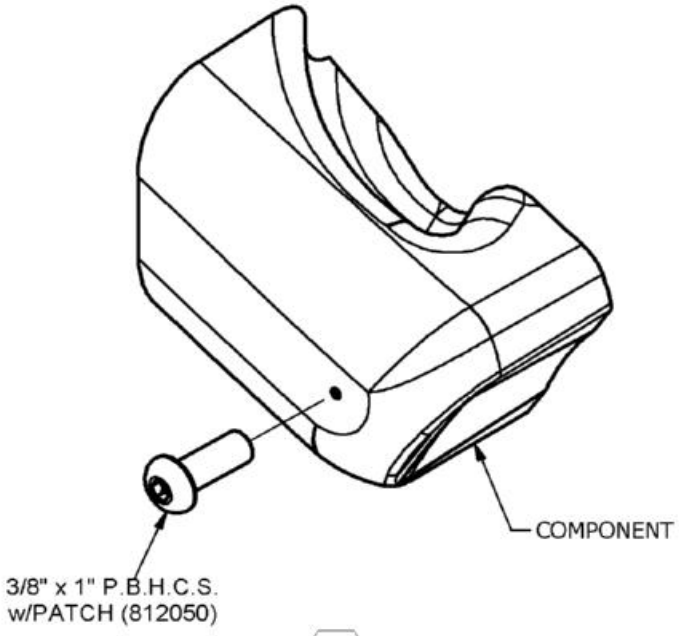


798

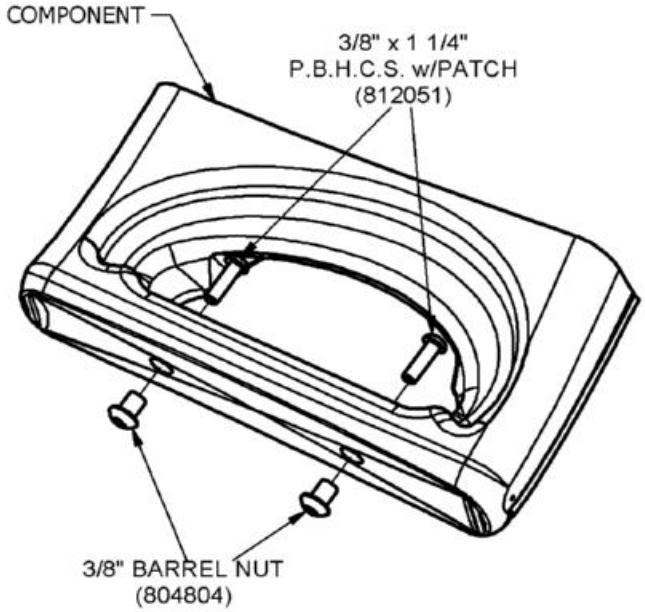


799

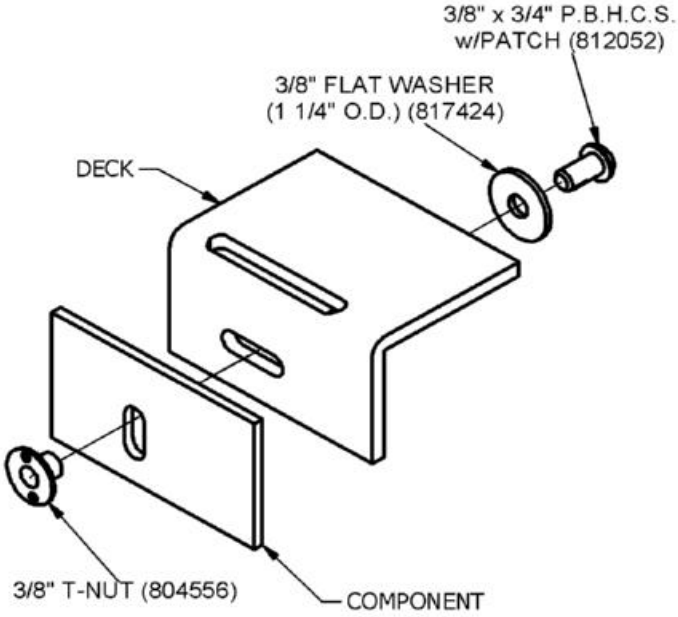
71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)



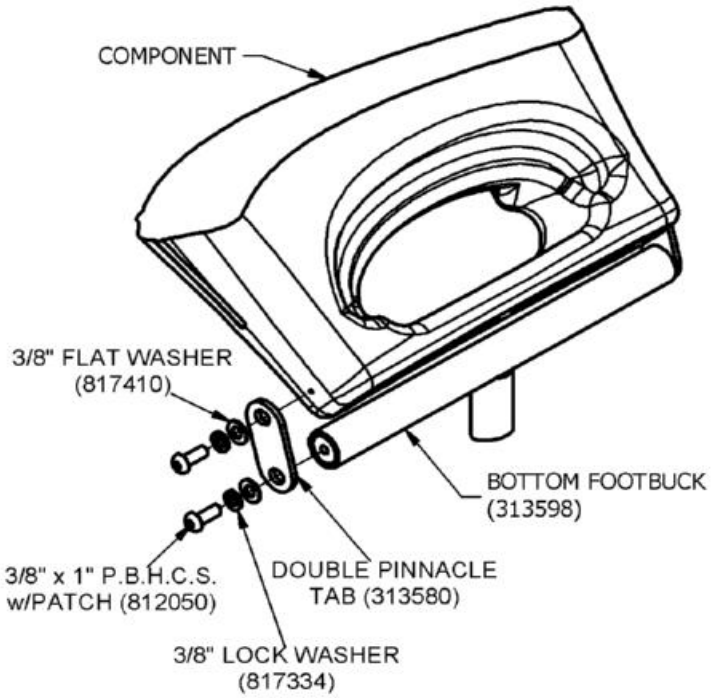
800



801

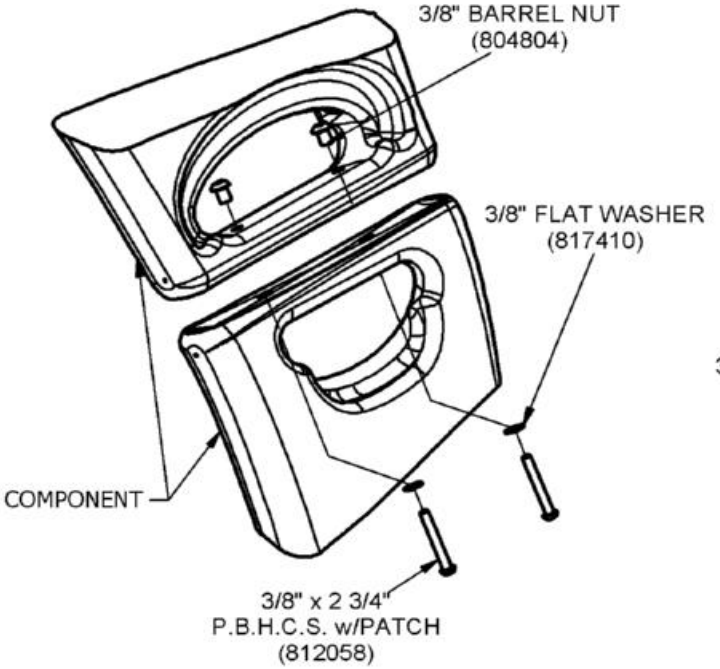


802

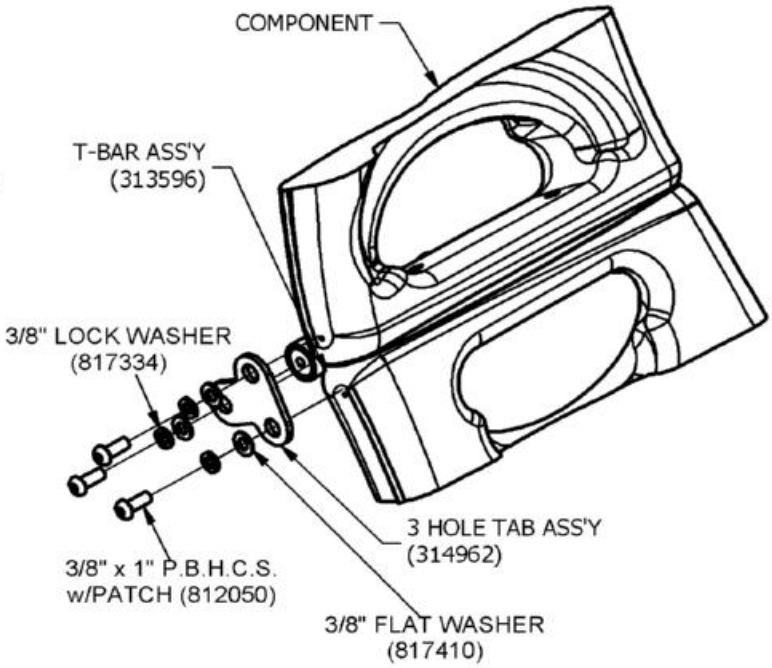


815

71760 DOUBLE PINNACLE CLIMBER (DOUBLE ENTRY)



819



NOTE: Make sure the Filler Rod on the 3 Hole Tab Ass'y is not facing out.

820

71763 ROLLER SLIDE

Parts List		
DESCRIPTION	QTY	PART NUMBER
METAL SLIDE HOOD	1	313813
LEFT ROLLER SLIDE RAIL WELD ASSY	1	315158
RIGHT ROLLER SLIDE RAIL WELD ASSY	1	315160
COATED TRANSITION PLATE	1	314085
IN-GROUND PIPE	2	313817
COVER PLATE	2	208616
PIPE ADAPTER	2	309915
ROLLER ASSEMBLY	65	220888**
HARDWARE COMPLETE	1	100148
3/8" x 1" P.B.H.C.S. w/PATCH	8	812050
3/8" x 1 1/4" P.B.H.C.S.w/PATCH	2	812051
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
3/8" BARREL NUT	6	804804
3/8" HEX NUT	8	804053
3/8" FLAT WASHER	8	817410
3/8" FLAT WASHER (1 1/4" O.D.)	10	817424
3/8" LOCK WASHER	12	817334
1/4" x 3/4" SET SCREW	4	811545
1/4" x 3/4" B.H.C.S.	6	811010
1/4" LOCKWASHER	6	817326
1/4" HEX NUT	6	804051
5/16" x 3/4" P.B.H.C.S. w/PATCH	130	812040
5/16" LOCKWASHER	130	817330
5/16" FLAT WASHER	130	817406
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	812053

Unless Otherwise Specified, All Units of Measure are Each
*** Included in Roller Package 100149*

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

71763 ROLLER SLIDE

INSTALLATION INSTRUCTIONS:

1. Determine whick deck is to receive the Roller Slide and dig footing at location shown in Top View. Refer to the Elevation View for footing depth.

2. Attach Ring Clamps to the Uprights. See Ring Clamp Installation sheet.

3. Attach Pipe Adapters to Metal Slide Hood using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Wahser, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 448.

4. Attach Pipe Adapters-Metal Slide Hood Assembly to Ring Clamps using 1/4" x 3/4" Set Screws. See Detail 448.

5. Attach the Transition Plate to the deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), 3/8" Lock Washer, and 3/8" Hex Nut. See Detail 831.

6. Attach the In-ground Pipes to the bottom of the Left and Right Roller Slide Side Rails using 3/8" x 1-1/2" P.B.H.C.S. w/Patch, and 3/8" Barrel Nut as shown in 835.

7. Place the In-ground Pipes/Side Rails into the groundholes, and attach the top of the Side Rails to the Side of the Transition Plate and to the deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3/8" Flat Washer (1 1/4" O.D.), 3/8" Lock Washer, and 3/8" Hex Nut. See Details 832, and 833. ***Important***: Tighten bolt in Detail xx3 first to pull Side Rails flush against deck face. DO NOT tighten hardware until assemble is complete.

8. Attach each Roller Assembly between the Side Rails using 5/16" x 3/4" P.B.H.C.S. w/Patch, 5/16" Lock Washer, and 5/16" Flat Washer
as shown in Detail 836.

9. After rollers are attached, fasten Cover Plates to Side Rails using 1/4" x 3/4" P.B.H.C.S. w/Patch, 1/4" Lock Washer, 1/4" Hex Nut. See Detail 837.

10. Attach Metal Slide Hood to the back of the Side Rails using Slide Entrance using 3/8" x 1-1/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Barrel Nut, as shown in Detail 834. Attach Caps to ends of Rails using 3/16" x 13/32" Drive Rivets as shown in Detail 597.

11. Plumb and level the entire assembly and tighten all fasteners.

12. After entire unit is assembled pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

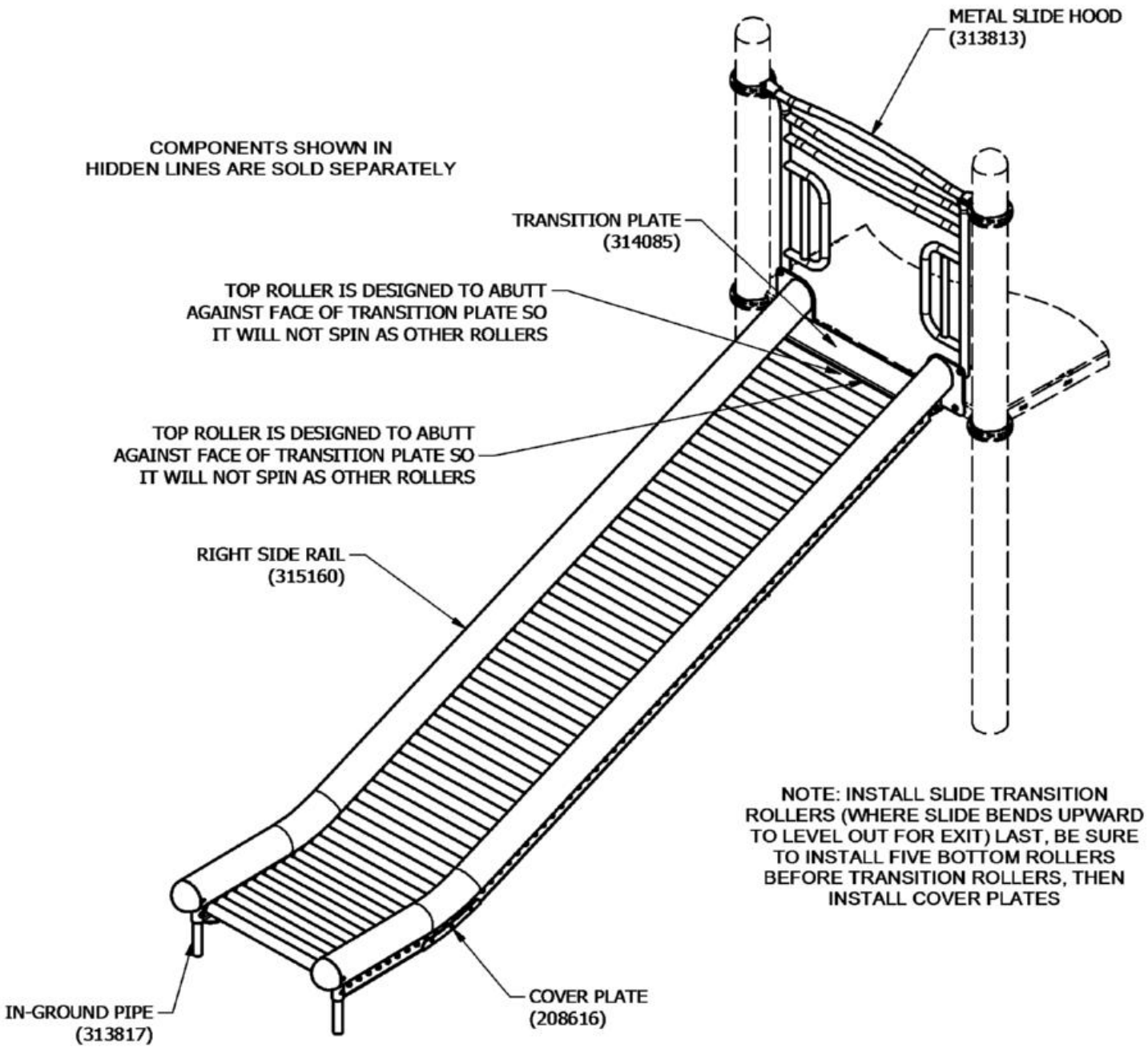
IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

13. When the structure is finished and satisfactory, Install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structures in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71763 ROLLER SLIDE

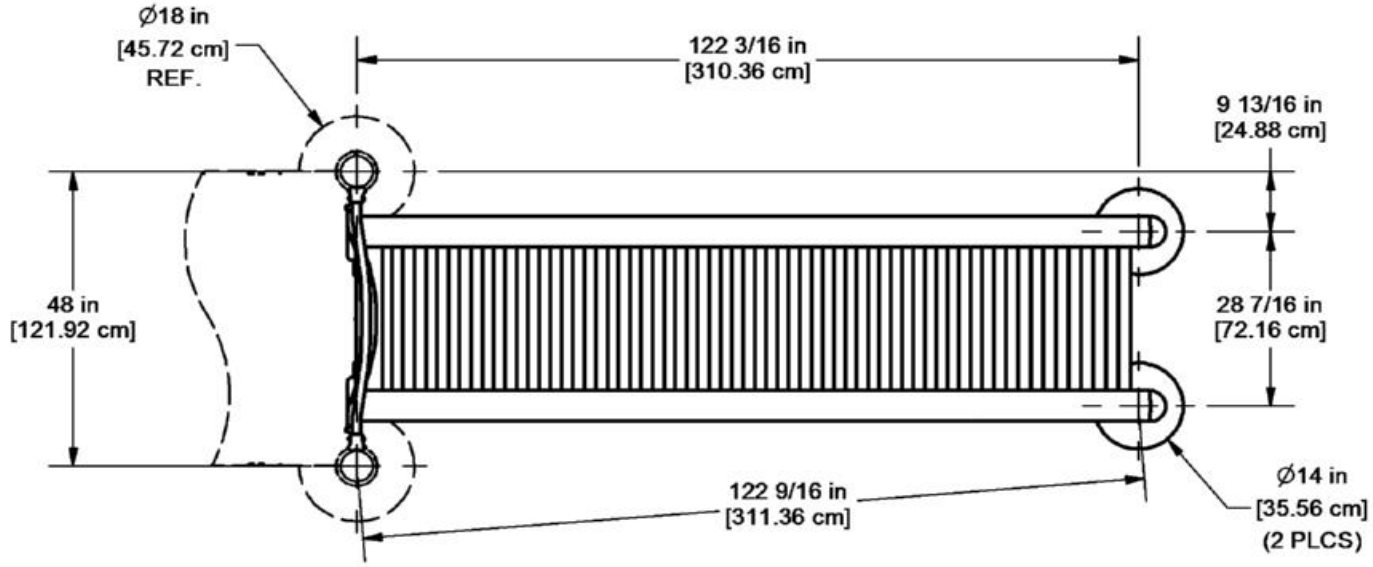


FINISHED ASSEMBLY

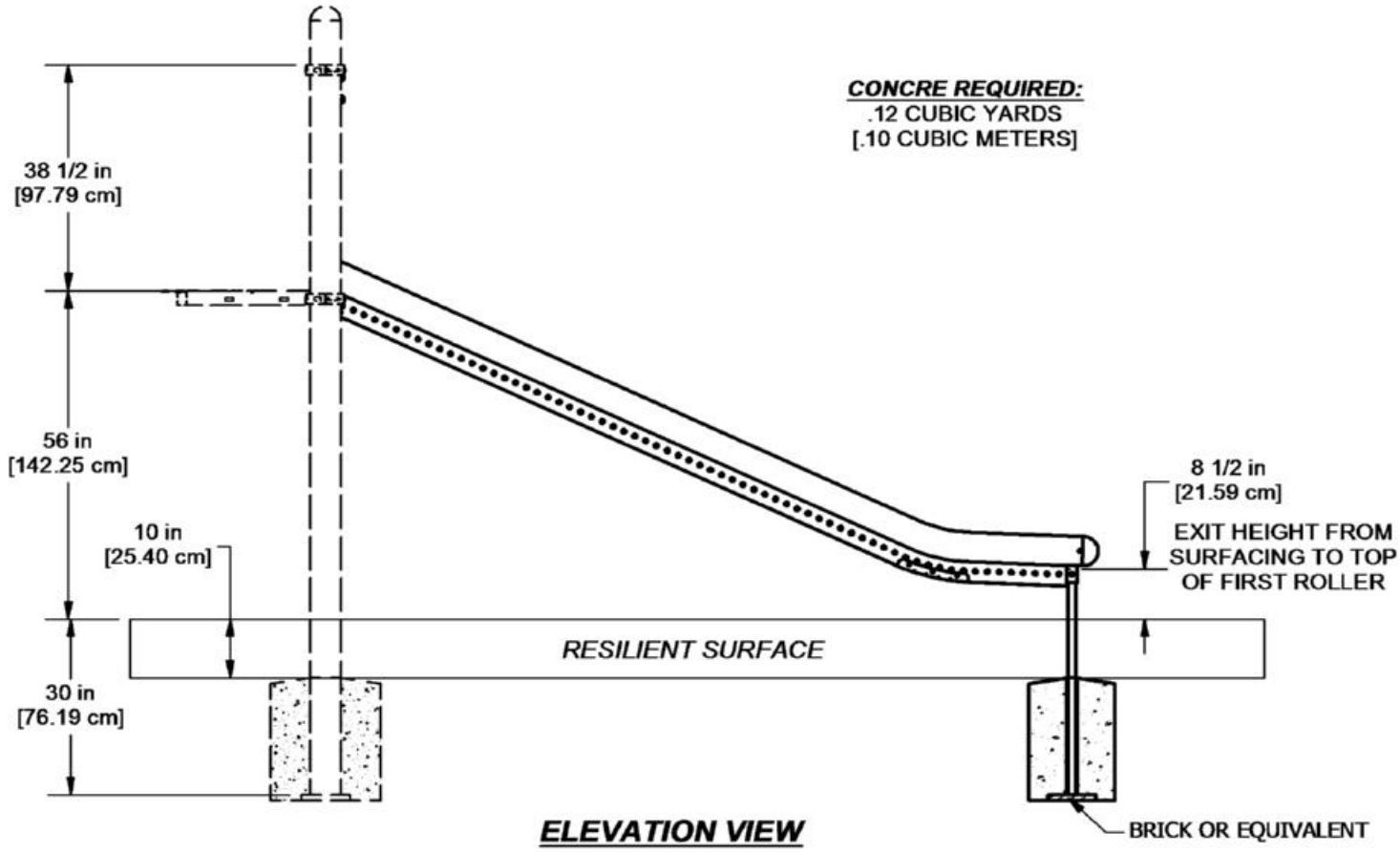
⬡ = INSTALLATION DETAIL

SuperMax Play Systems

71763 ROLLER SLIDE

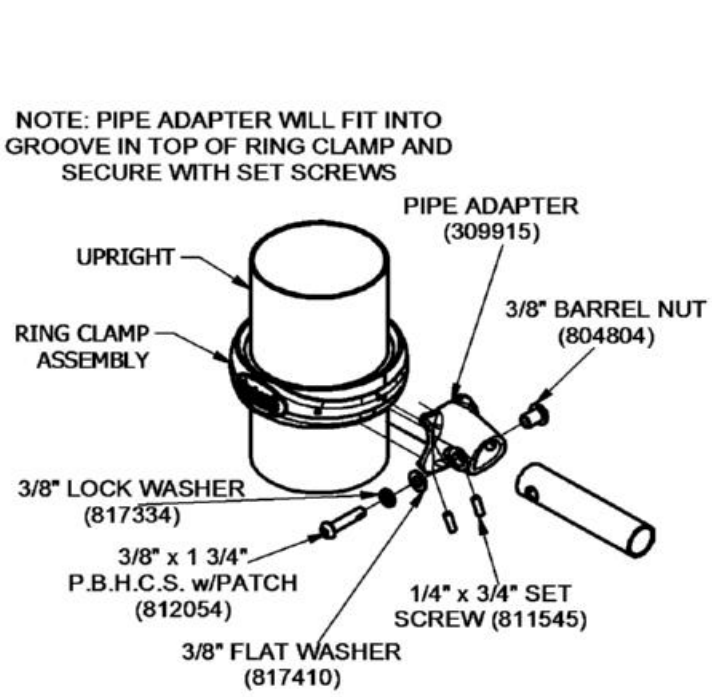


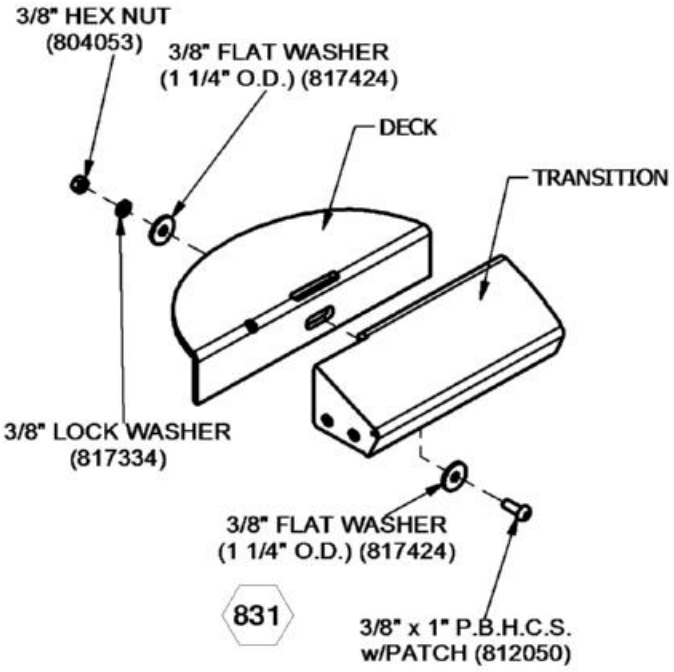
PLAN VIEW

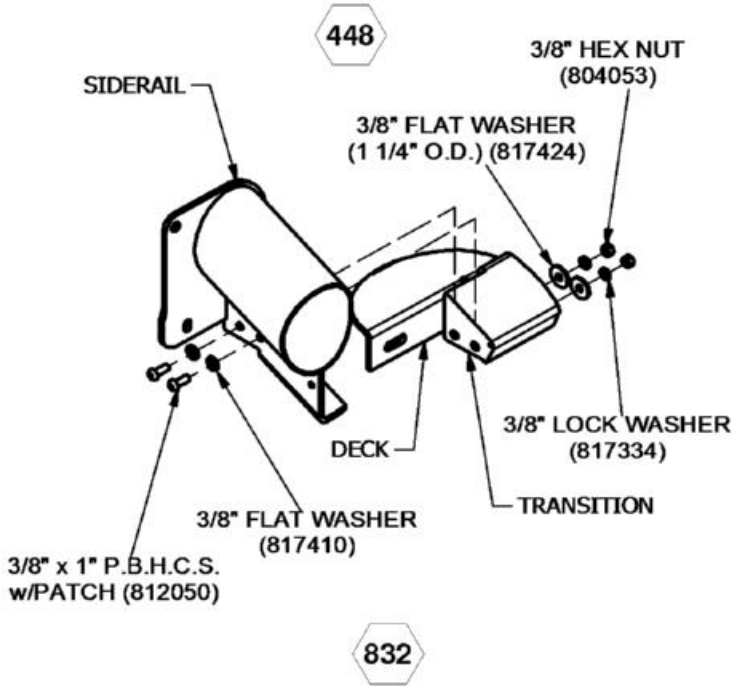


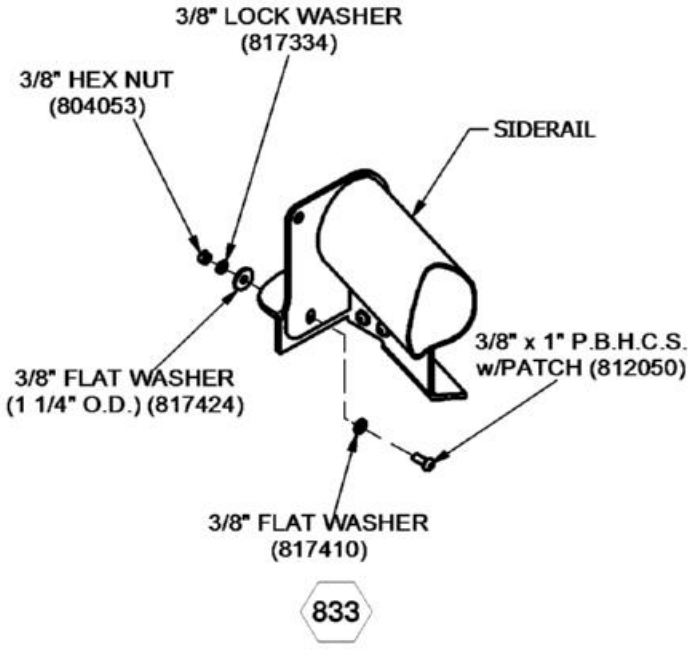
ELEVATION VIEW

71763 ROLLER SLIDE

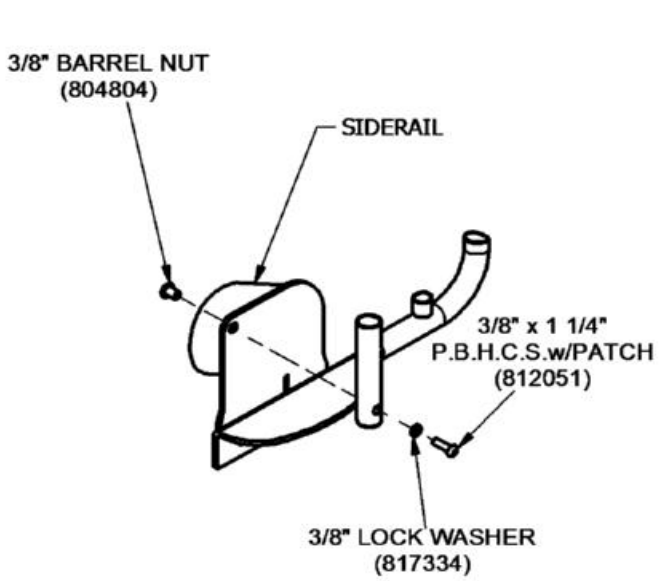




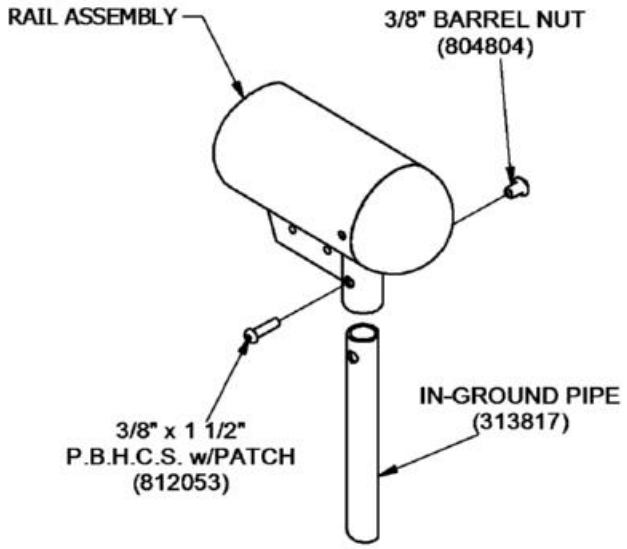




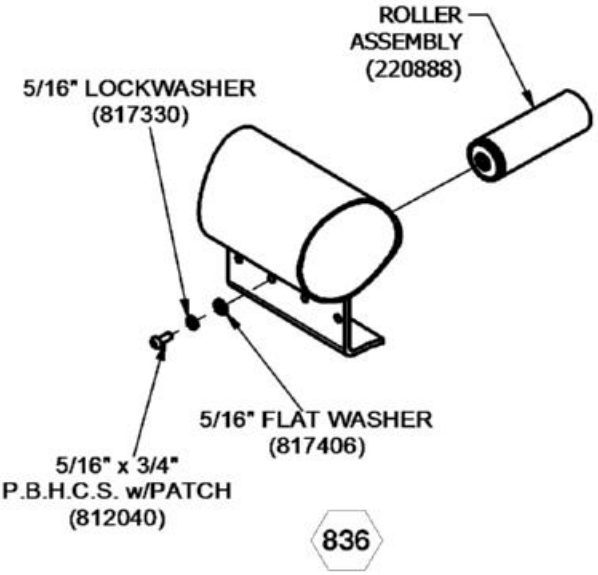
71763 ROLLER SLIDE



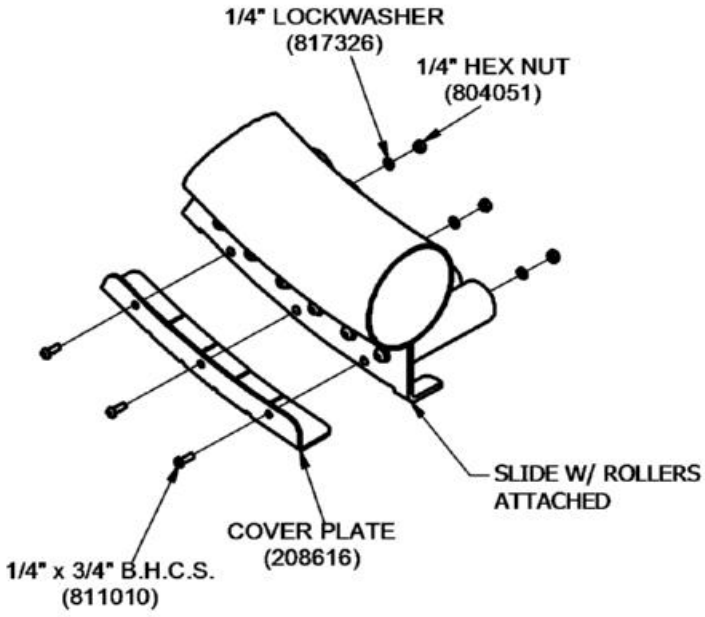
834



835

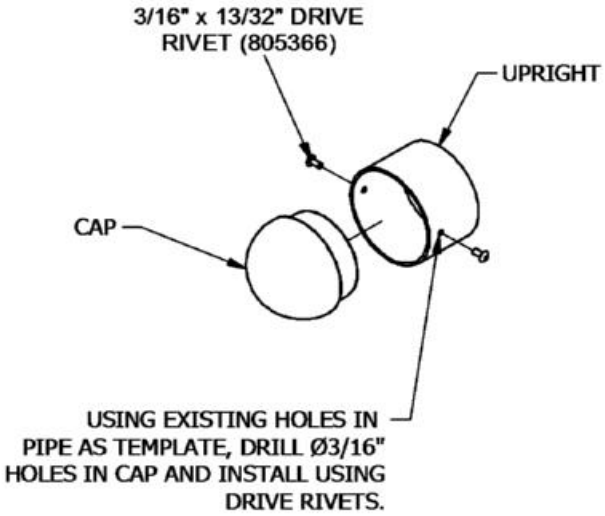


836



837

71763 ROLLER SLIDE



597

71841 SCRAMBLE UP w/ ENTRYWAY

Parts List		
DESCRIPTION	QTY	PART NUMBER
RING HALF CLAMP	8	309913
PIPE ADAPTER	4	309915
LEFT ENTRYWAY	1	314334
RIGHT ENTRYWAY	1	314346
UPPER RAIL ASS'Y	1	314413
LOWER RAIL ASS'Y	1	314416
SCRAMBLE UP NET	1	314426
HARDWARE COMPLETE	1	314321
1/4" x 3/4" SET SCREW	8	811545
1/4" x 1" DRIVE RIVET	8	805302
3/8" x 1" P.B.H.C.S. w/PATCH	8	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	16	812051
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	812054
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	14	812056
3/8" LOCK WASHER	4	817334
3/8" FLAT WASHER	34	817410
3/8" FLAT WASHER (1 1/4" O.D.)	44	817424
3/8" HEAVY HEX NUT	16	804200
3/8" LOCK NUT	4	804353
3/8" BARREL NUT	4	804804

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt and protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

71841 SCRAMBLE UP w/ ENTRYWAY

INSTALLATION INSTRUCTIONS:

1. Determine which decks are to receive the Scramble Up w/ Entryway. Refer to *Top View* for location.
2. Locate and fasten Ring Clamps to Upright Posts. See Ring Clamp Installation Sheet.
3. Attach Left Entryway and Right Entryway to Upright Posts using Pipe Adapters, 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, 1/4" x 3/4" Set Screws, and 3/8" Barrel Nut. See Detail 448.
4. Attach Left Entryway and Right Entryway to deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" Lock Nut. See Detail 318.
5. Attach Upper Rail Ass'y to Upright Posts using 3/8" x 1 1/2" P.B.H.C.S. w/Patch, 3/8" Flat Washer, 3 1/2" Half Clamp, and 3/8" Heavy Hex Nut. See Detail 736. **NOTE:** *Refer to Elevation View for height dimensions. Repeat step for Lower Rail Ass'y.*
6. Attach Scramble Up Net to Upper Rail Ass'y and Lower Rail Ass'y using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, and 3/8" Flat Washer. See Detail 735. **NOTE:** *Refet to the Finished Ass'y View for correct orientation of Scramble Up Net.*
7. Attach Scramble Up Net to Left Entryway and deck using 3/8" x 1" P.B.H.C.S. w/Patch, and 3/8" Flat Washer (1 1/4" O.D.). See Detail 919. **NOTE:** *Repeat step for Right Entryway.*
8. Attach Scramble Up Net to deck using 3/8" x 1" P.B.H.C.S. w/Patch, and 3/8" Flat Washer (1 1/4" O.D.). See Detail 920.
9. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

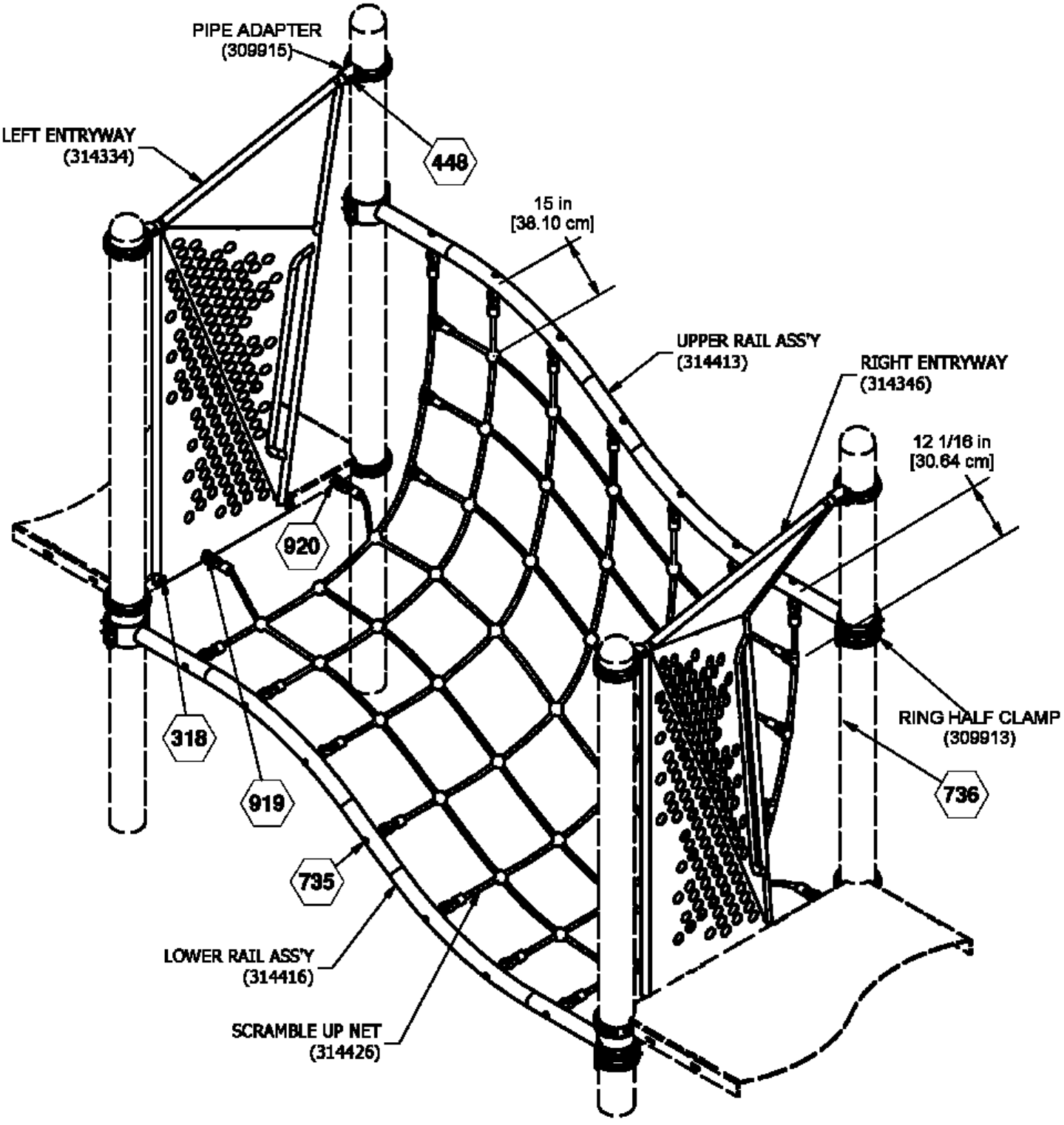
10. When the structure is finished and satisfactory, install 1/4" x 3/4" Drive Rivets in all Clamps to ensure Clamps cannot slide down posts, referring to Typ. Clamp Detail. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71841 SCRAMBLE UP w/ ENTRYWAY



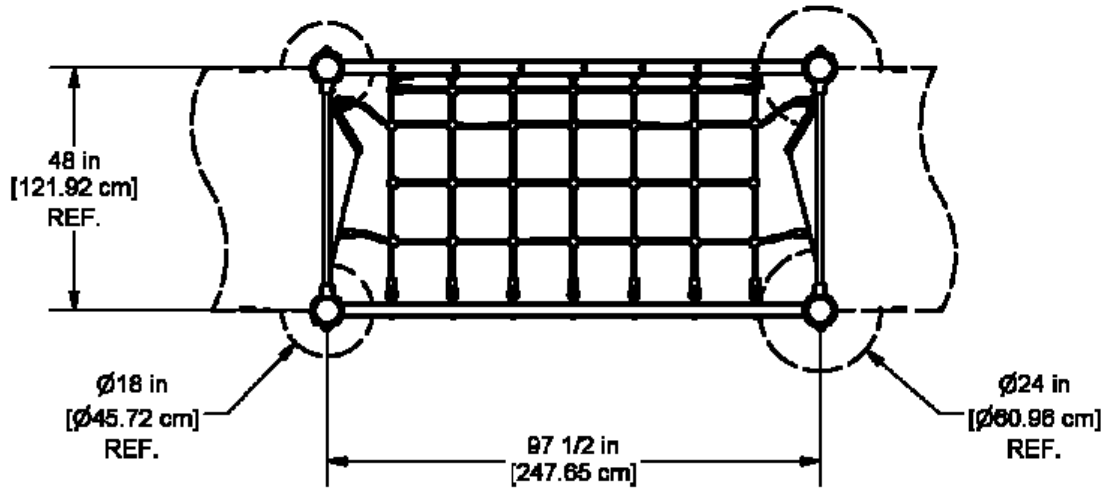
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

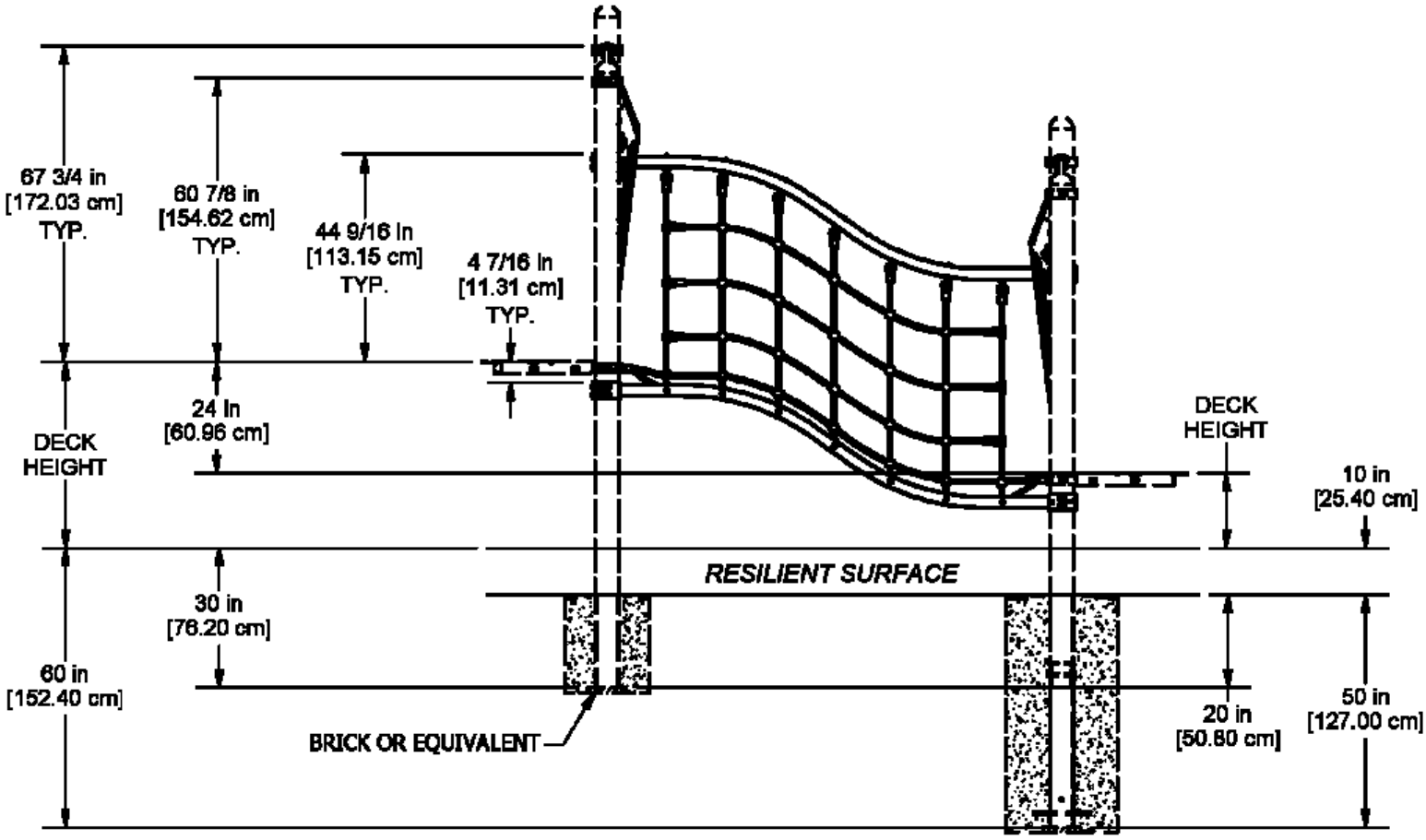
COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 1/29/2018

71841 SCRAMBLE UP w/ ENTRYWAY

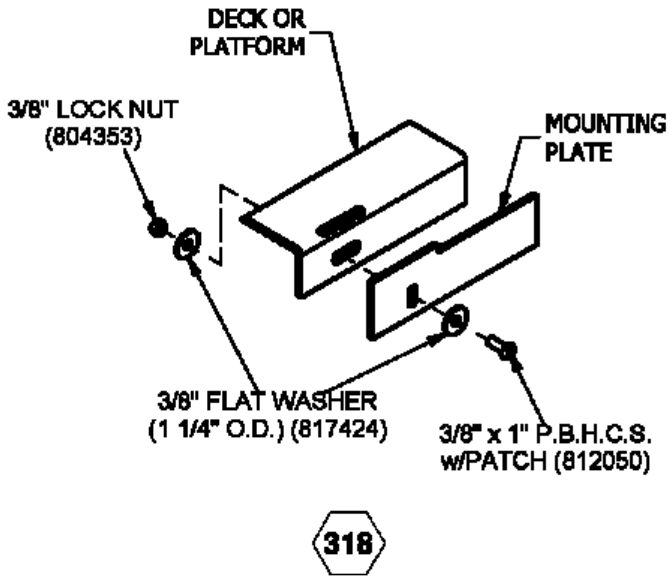


PLAN VIEW



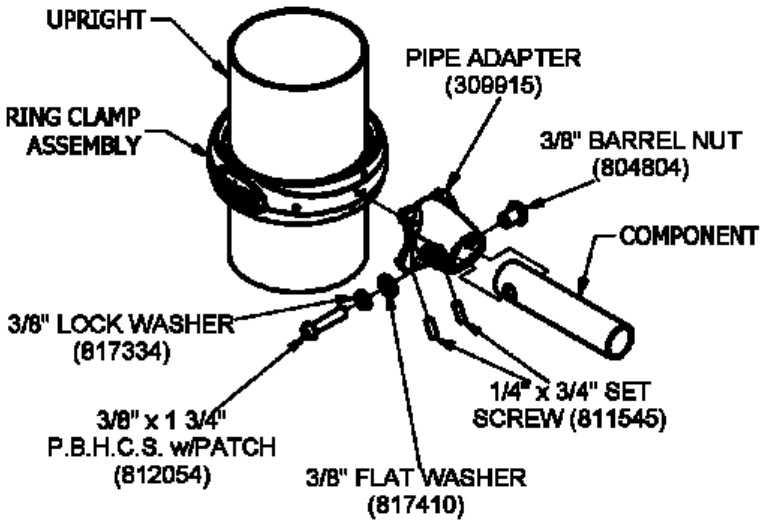
ELEVATION VIEW

71841 SCRAMBLE UP w/ ENTRYWAY

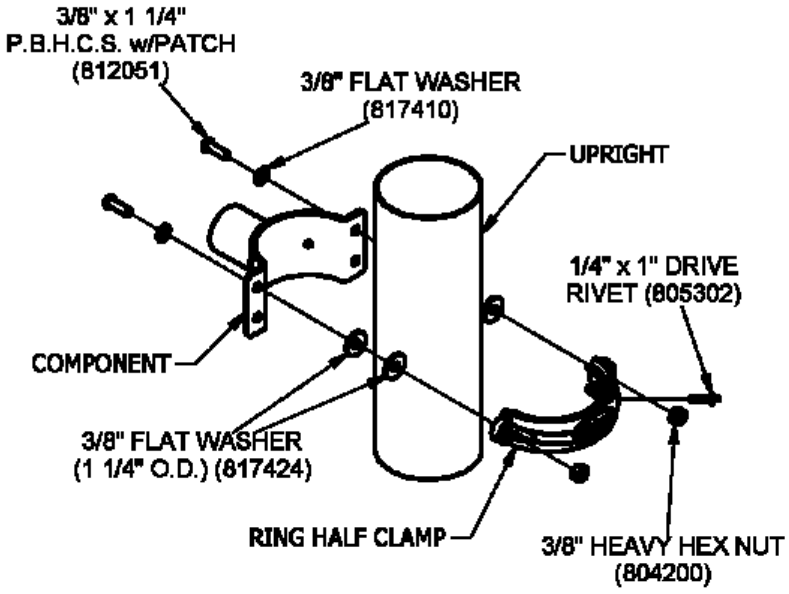


318

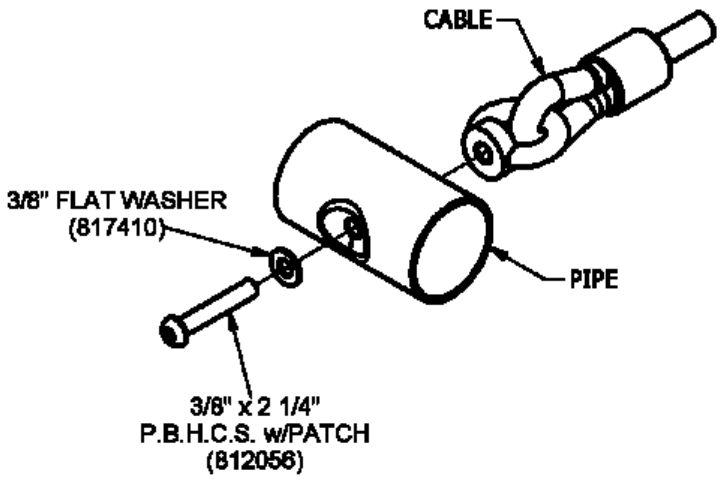
NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



448

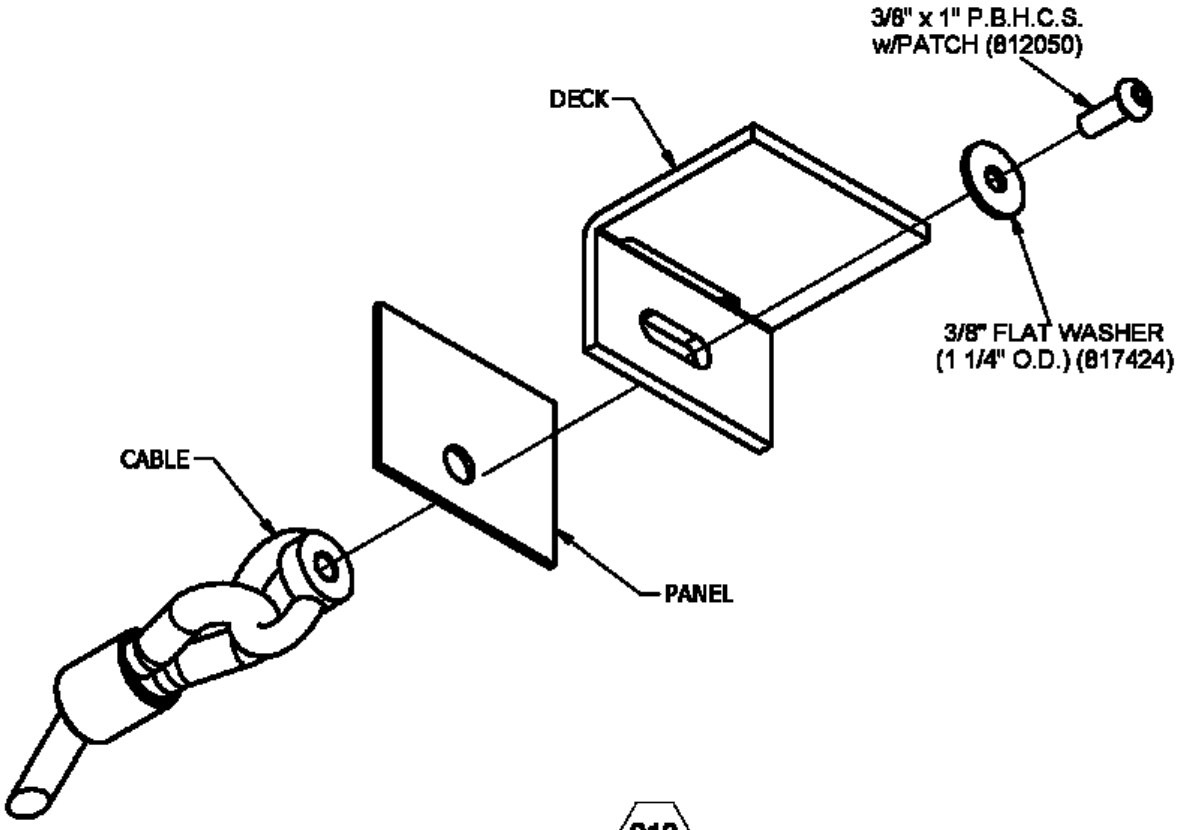


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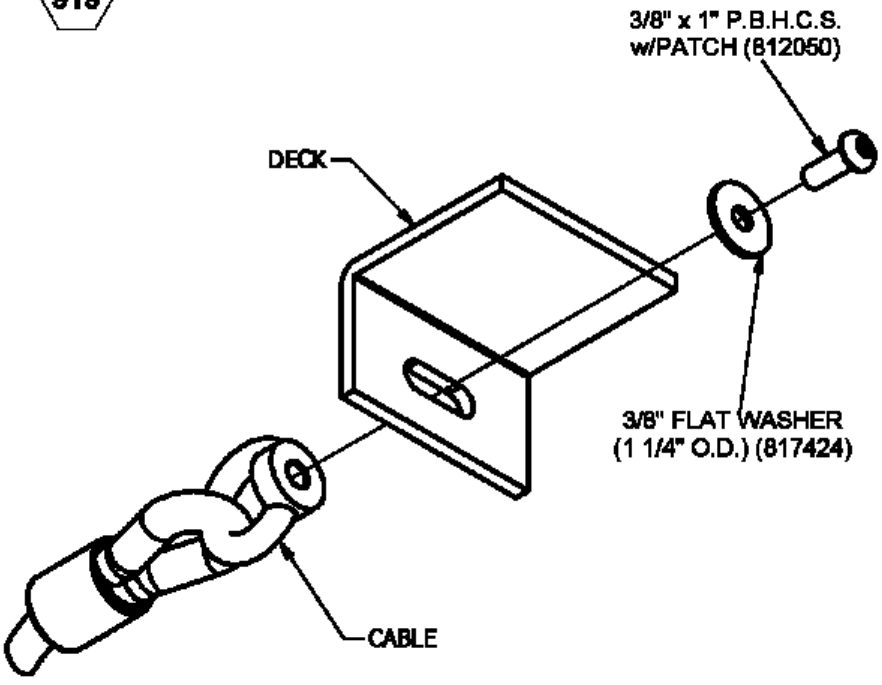


735

71841 SCRAMBLE UP w/ ENTRYWAY



919



920

71842 ORIGAMI FIN CLIMBER

Parts List		
DESCRIPTION	QTY	PART NUMBER
PIPE ADAPTER	3	309915
CLIMBER HANDHOLD #1	4	311375
CLIMBER HANDHOLD #2	4	311376
CLIMBER HANDHOLD #3	6	311377
FOOTBUCK	3	314332
FACETED CLIMBING FIN	1	314370
SMALL HDPE PANEL	2	314371
LARGE HDPE PANEL	1	314422
HARDWARE COMPLETE	1	314421
1/4" x 3/4" SET SCREW	6	811545
3/8" x 3/4" P.B.H.C.S. w/PATCH	13	812052
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	3	812051
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	3	812054
3/8" x 2" P.B.H.C.S. w/PATCH	3	812055
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	3	812056
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	4	812058
3/8" x 3" P.B.H.C.S. w/PATCH	4	812059
3/8" LOCK WASHER	3	817334
3/8" FLAT WASHER	34	817410
3/8" FLAT WASHER (1 1/4" O.D.)	13	817424
3/8" BARREL NUT	19	804804
3/8" LOCK NUT	14	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

71842 ORIGAMI FIN CLIMBER

INSTALLATION INSTRUCTIONS:

1. Determine which Upright is to receive Origami Fin Climber. See Finished Ass'y for reference.

2. Attach Handholds to HDPE Panel, on top connection use 3/8" x 3" P.B.H.C.S. w/Patch, on bottom connection use 3/8" x 2 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 965.

3. Attach Handhold to Faceted Climbing Fin, on top connection use 3/8" x 2 1/4" P.B.H.C.S. w/Patch, on bottom connection use 3/8" x 2" P.B.H.C.S. w/Patch 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 963.

4. Attach Footbuck to Faceted Climbing Fin Ass'y using 3/8" x 1 1/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 773.

5. Attach Large and Small HDPE Panel to Faceted Climbing Wall Ass'y using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" Barrel Nut. See Detail 791.

6. Add Ring Clamps to Uprights. See Ring Clamp Installation Sheet.

7. Attach Pipe Adapter to Faceted Climbing Fin Ass'y using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 448.

8. Attach Faceted Climbing Wall Ass'y with Pipe Adapter to Ring Clamp using 1/4" x 3/4" Set Screw. See Detail 448.

9.Plumb and level entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

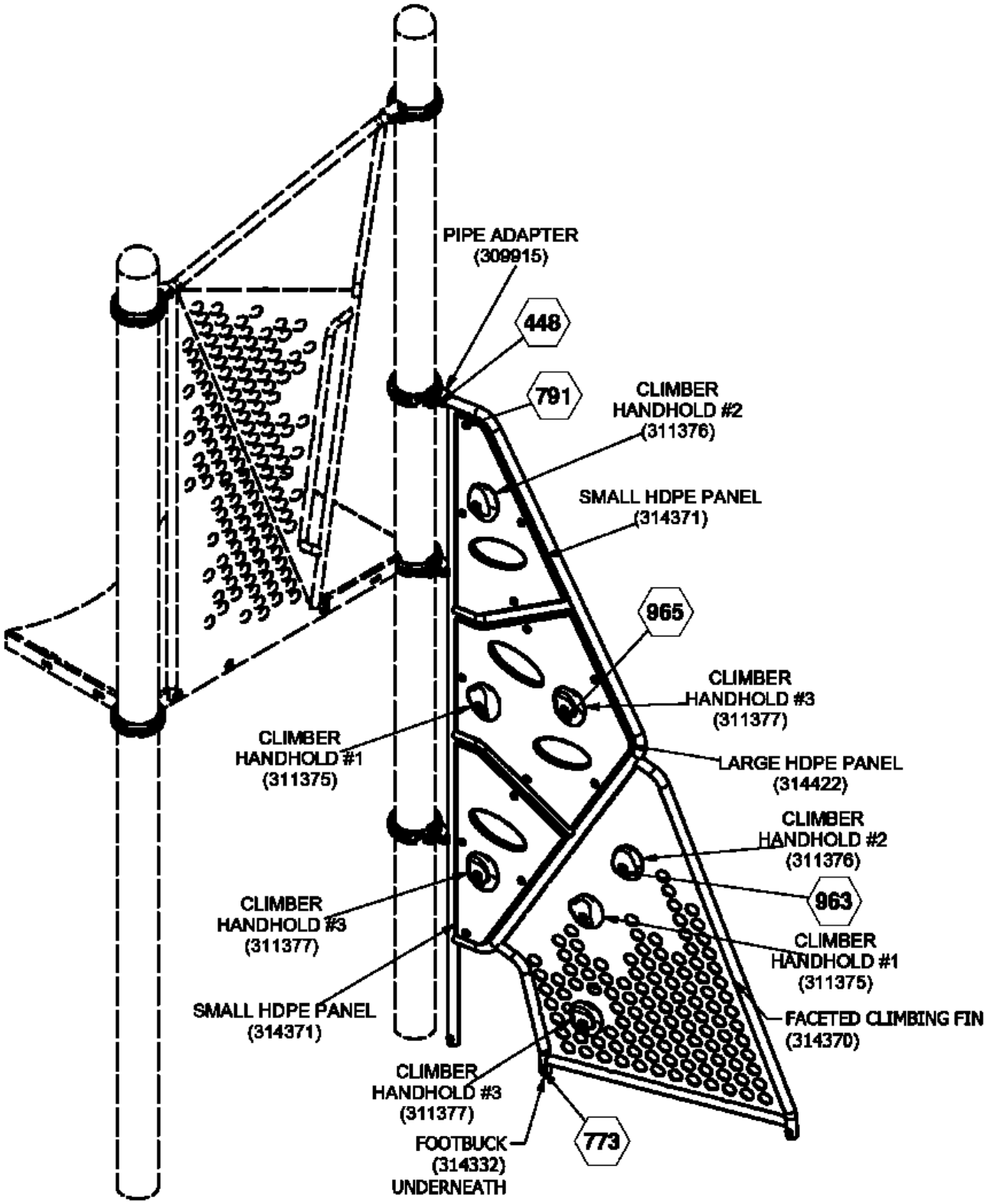
10. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least at least 48 hours before use. Temporary bracing may be required until concrete cures.

11. When the structure is finished and satisfactory, tighten all fasteners and Install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71842 ORIGAMI FIN CLIMBER



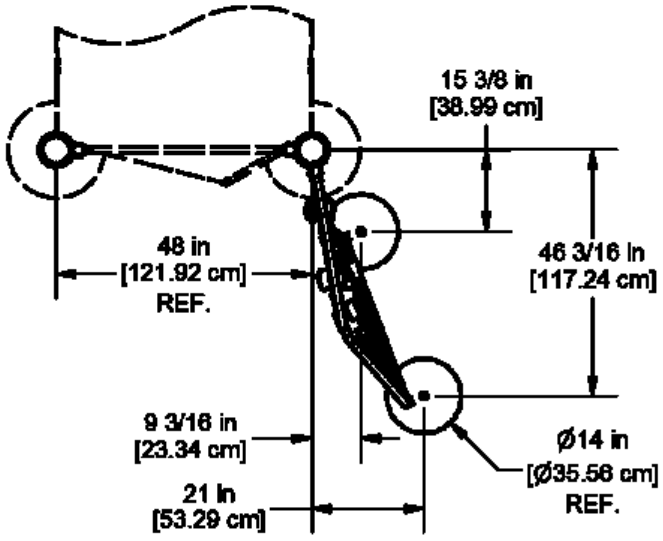
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Issued/Revised: 8/8/2017

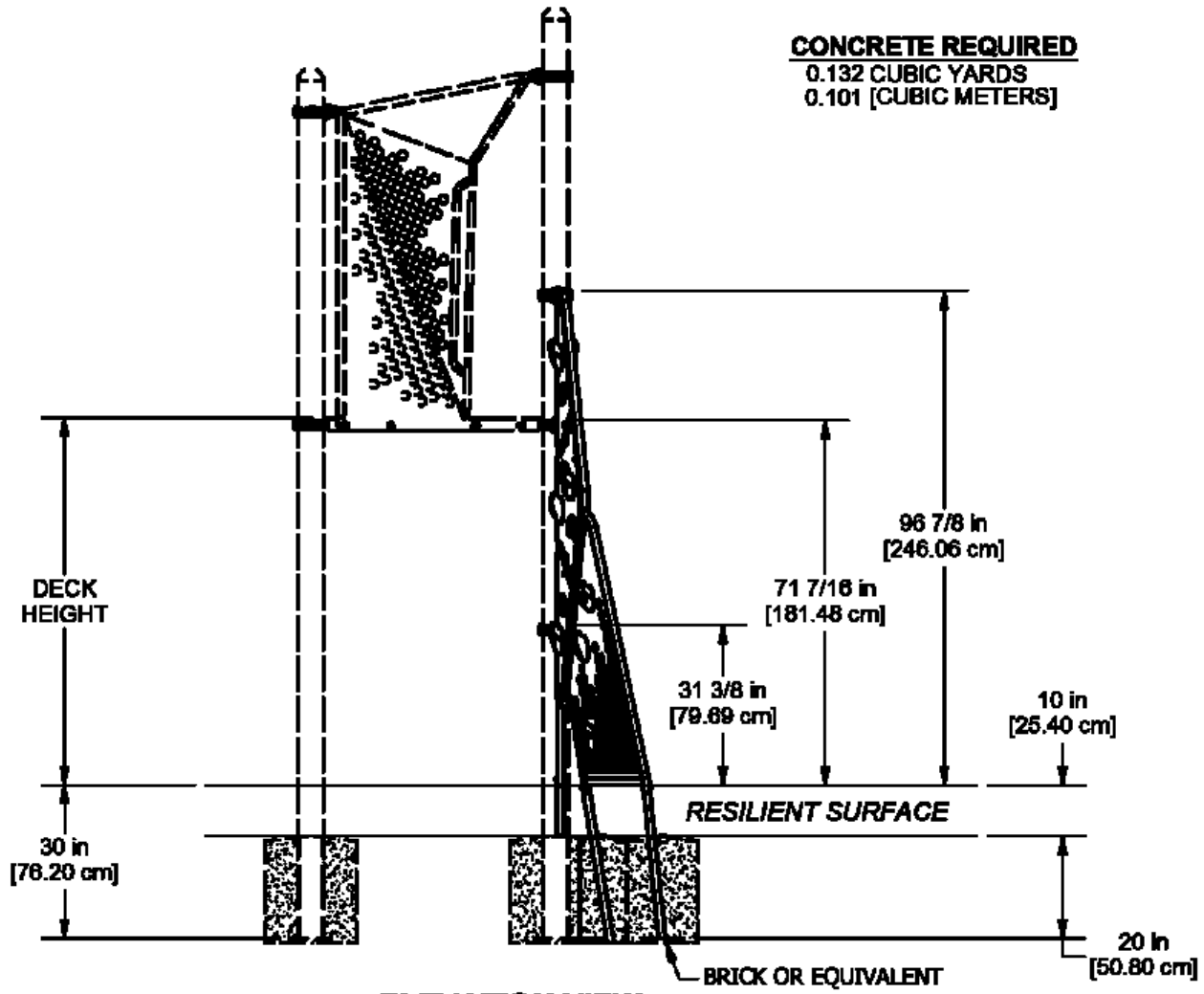
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

71842 ORIGAMI FIN CLIMBER



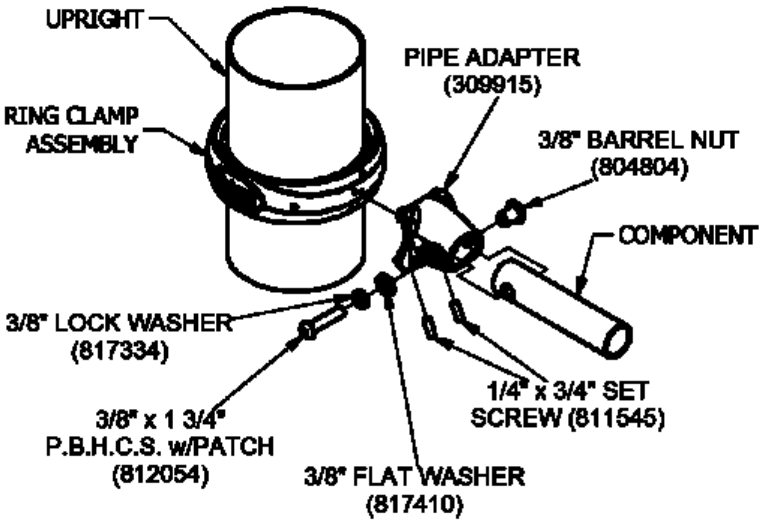
PLAN VIEW



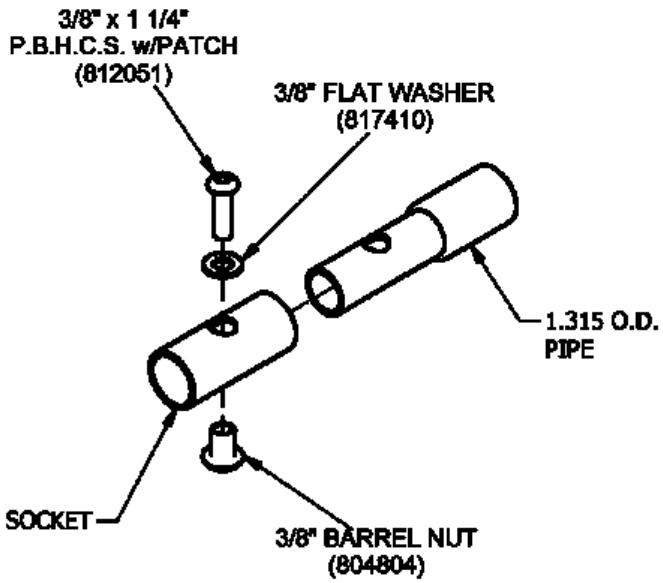
ELEVATION VIEW

71842 ORIGAMI FIN CLIMBER

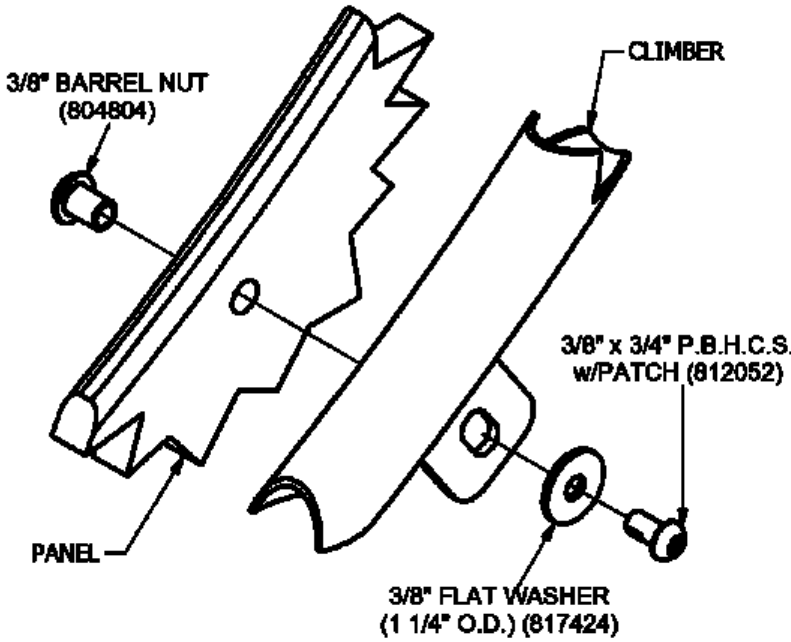
NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



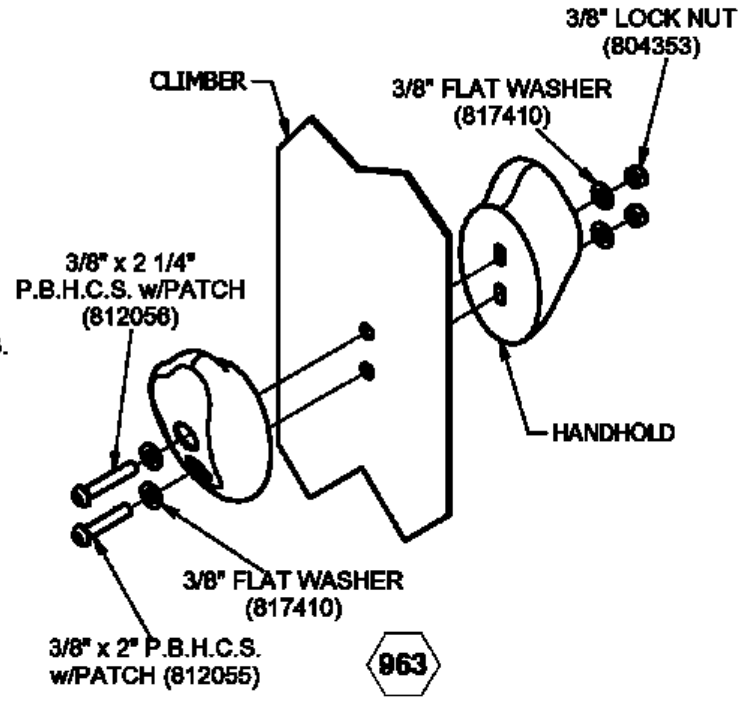
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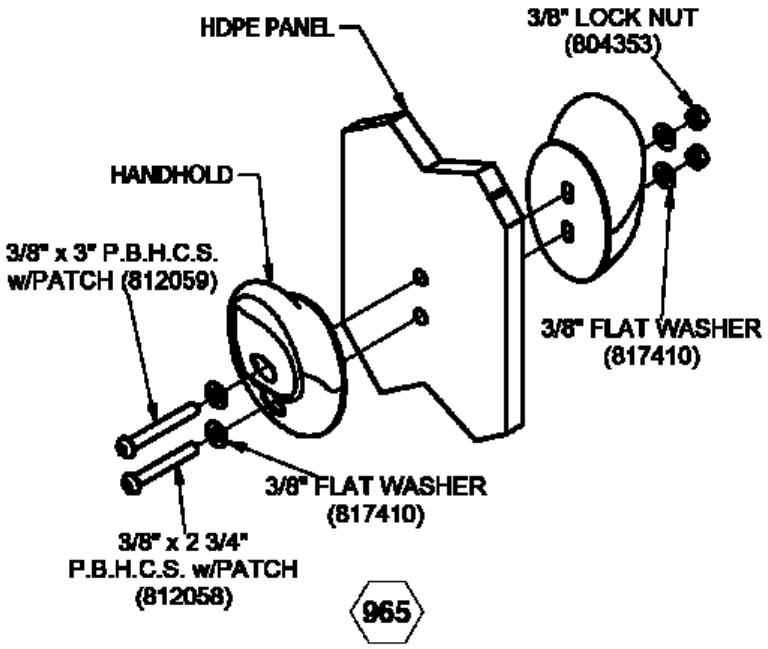


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963

71842 ORIGAMI FIN CLIMBER



SuperMax Play Systems

71864 ORIGAMI BARRIER

Parts List		
DESCRIPTION	QTY	PART NUMBER
PIPE ADAPTER	2	309915
LOWER FILLER PANEL	1	314351
HARDWARE COMPLETE	1	314328
1/4" x 3/4" SET SCREW	4	811545
3/8" x 1" P.B.H.C.S. w/PATCH	4	812050
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
3/8" LOCK WASHER	2	817334
3/8" FLAT WASHER	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
3/8" LOCK NUT	4	804353
3/8" BARREL NUT	2	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Origami Barrier, refer to your overhead drawing for location.

2. Attach Ring Clamps to Uprights. See Ring Clamp Installation sheet.

3. Attach Pipe Adapters to Lower Filler Panel using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 448.

4. Attach Lower Filler Panel with Pipe Adapters to the Ring Clamps using 1/4" x 3/4" Set Screws. See Detail 448.

5. Attach bottom of Lower Filler Panel to Deck using 3/8" x 1" P.B.H.C.S w/Patch, 3/8" Flat Washer (1 1/4" O.D), and 3/8" Lock Nut. See Detail 318.

6. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

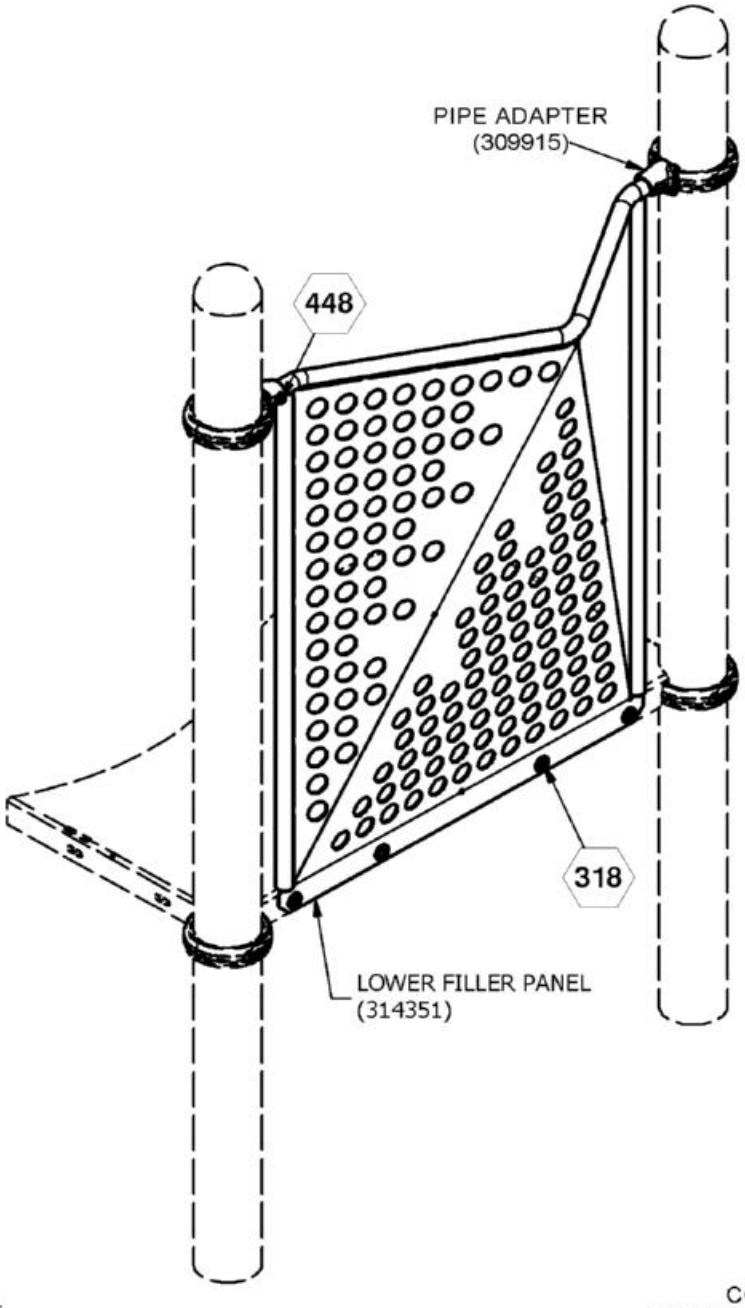
7. When the structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamp are not designed to support substantial weight without them.*** Alos eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

SuperMax Play Systems

71864 ORIGAMI BARRIER

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



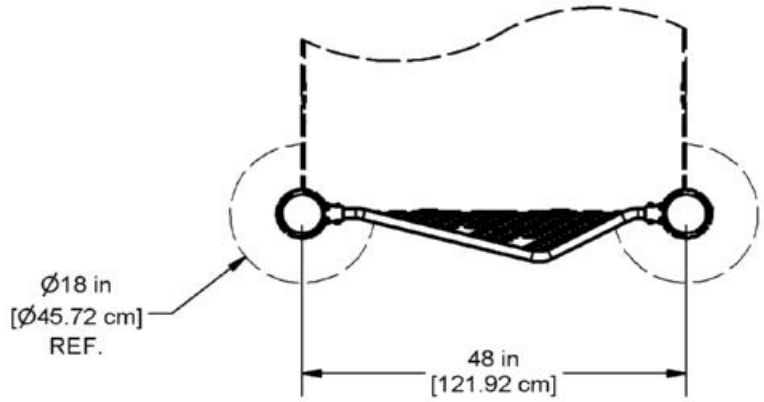
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

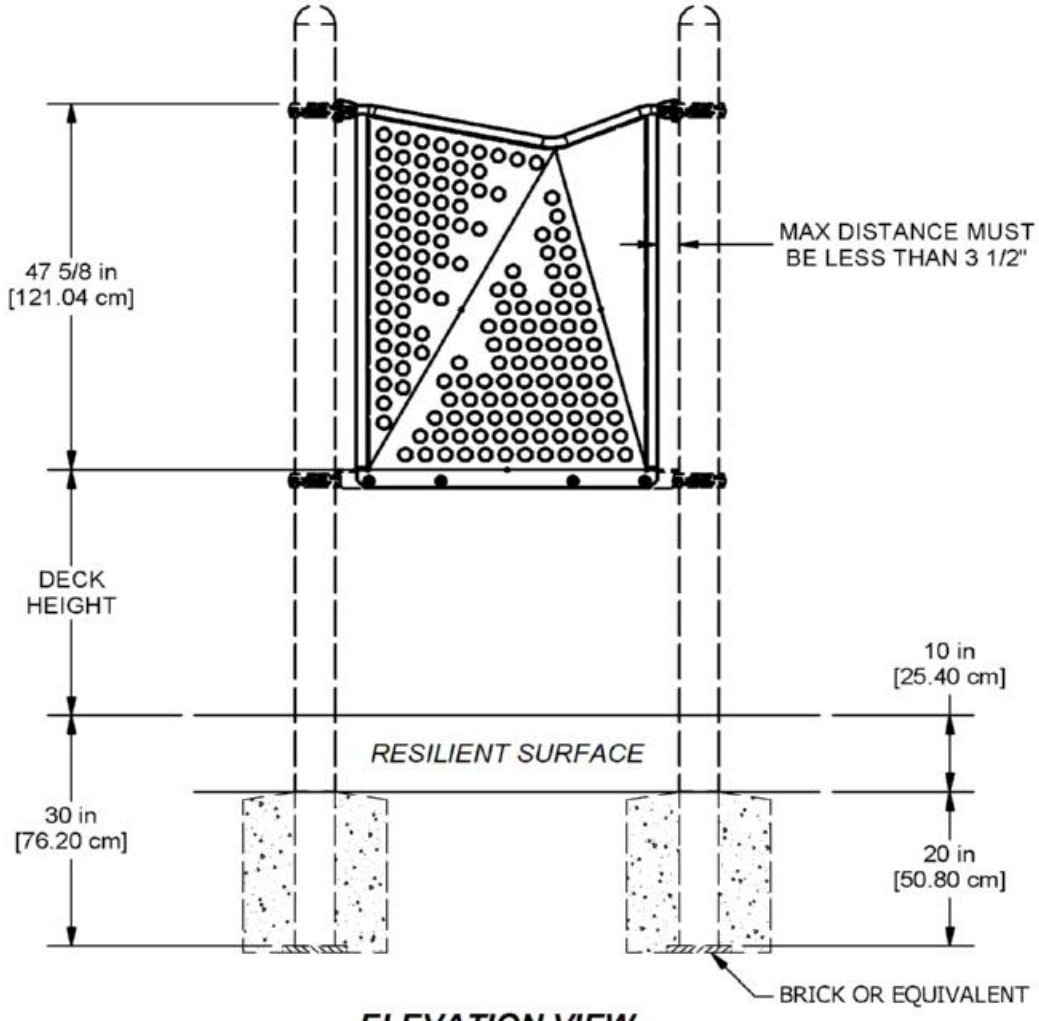
Issued/Revised: 12/13/2017

FINISHED ASSEMBLY

71864 ORIGAMI BARRIER

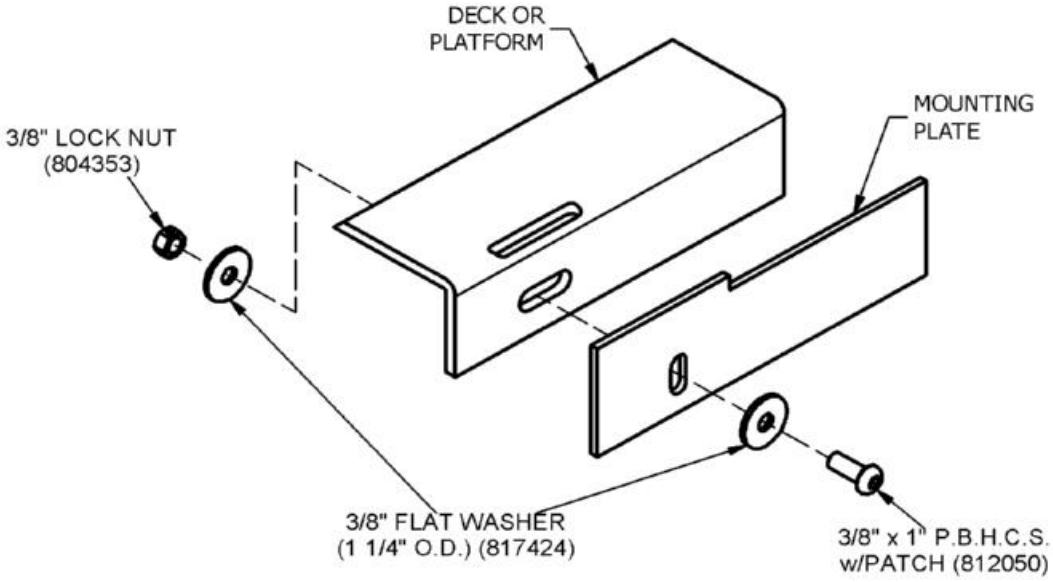


PLAN VIEW



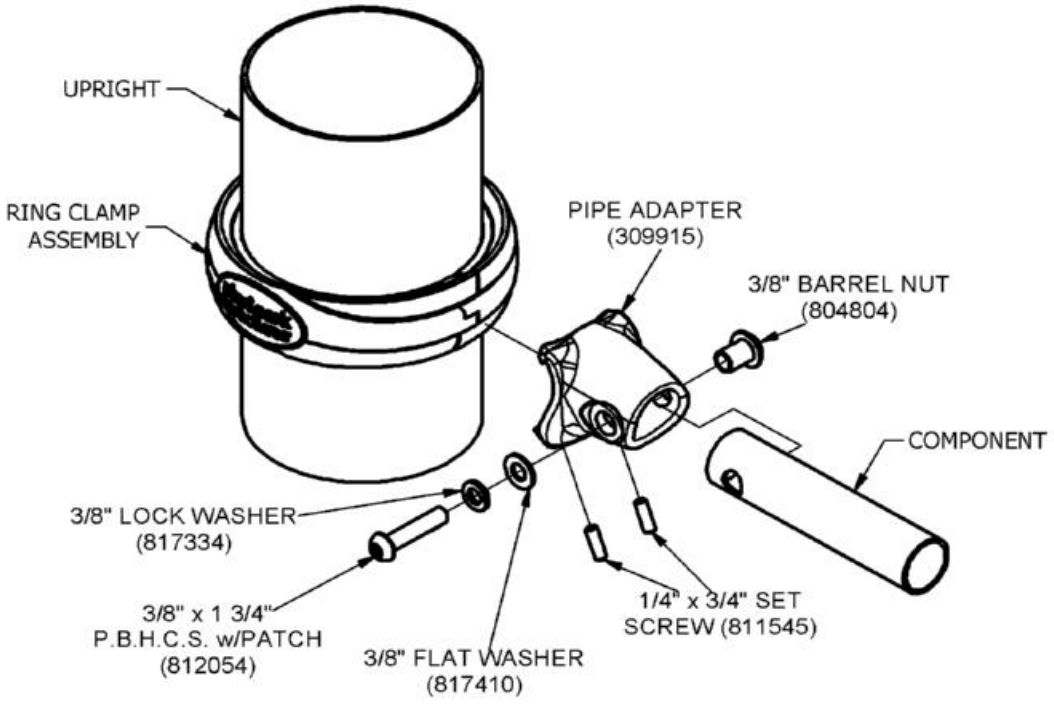
ELEVATION VIEW

71840 FACETED TWO PANELS WALL



318

NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



448

Issued/Revised: 12/13/2017

SHEET 4 OF 4

SuperMax Play Systems

This equipment is designed for children 5-12 years old

71879 Small Alpine Climber

Parts List		
DESCRIPTION	QTY	PART NUMBER
3 1/2" DOME CAP	1	212996
TREE FIN PANEL	2	314722
SHORT TREE ASSEMBLY	1	314729
HARDWARE COMPLETE	1	314731
3/16" x 13/32" DRIVE RIVET	2	805366
3/8" x 3/4" P.B.H.C.S. w/PATCH	8	812052
3/8" FLAT WASHER	8	817410
3/8" BARREL NUT	8	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Dig footings at locations as shown in Footing Diagram. Refer to your overhead drawing for location.

2. Attach 3 1/2" Dome Cap to Short Tree Ass'y. See Detail 597.

3. Attach Tree Fin Panel to Short Tree Ass'y. See Detail 602.

IMPORTANT! Make sure the distance from top edge of deck to transfer loop foot hold area is 13" min. to 16" max.

4. Place pre-assembled Tall Tree Assembly into appropriate Footing Hole.

5. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

6. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use.

7. When the structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamp are not designed to support substantial weight without them,*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nut, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

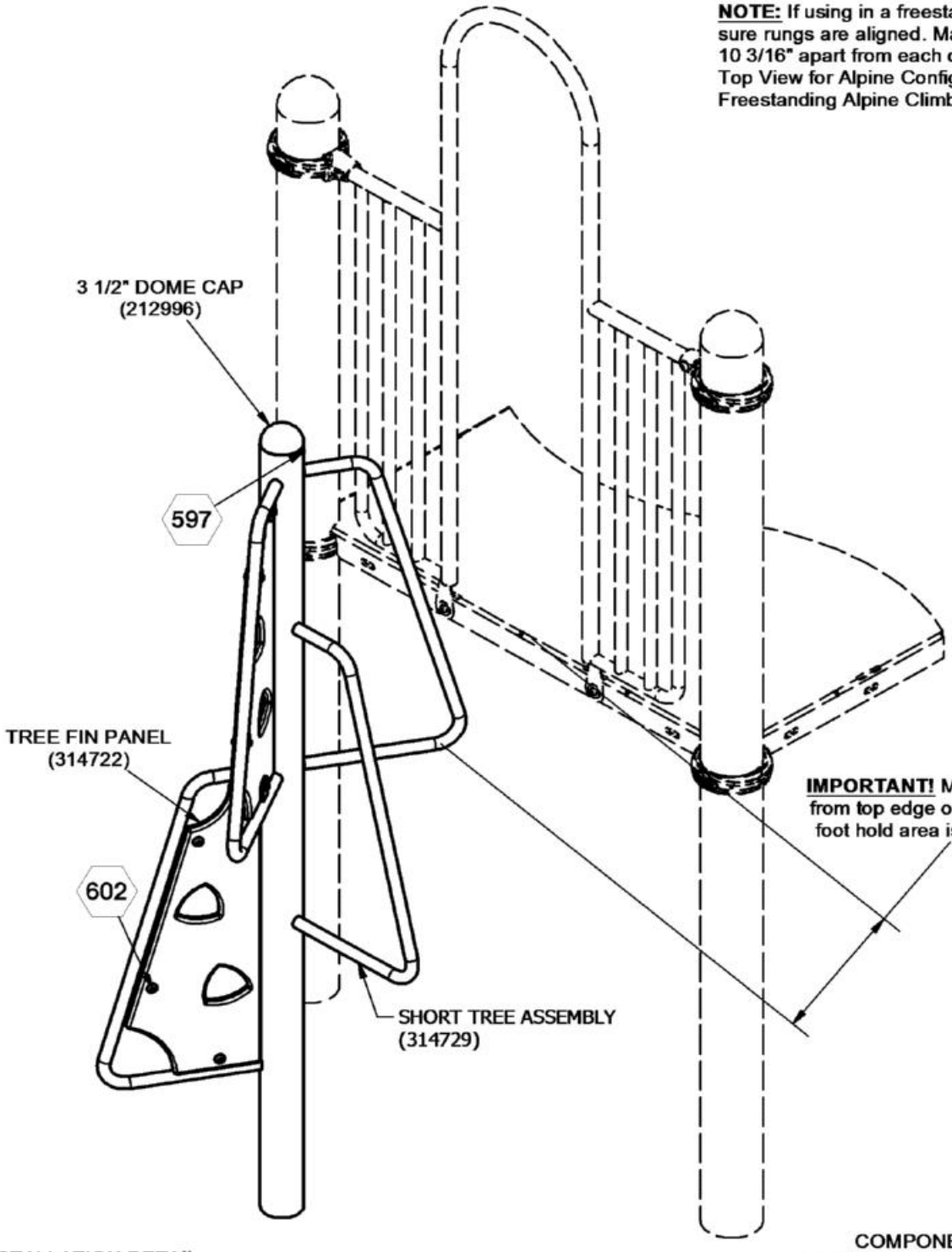
NOTE: If using in a freestanding setting make sure rungs are aligned. Make sure rungs are 10 3/16" apart from each other. Refer to overall Top View for Alpine Configuration. See Multiple Freestanding Alpine Climbers Page.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71879 Small Alpine Climber



= INSTALLATION DETAIL

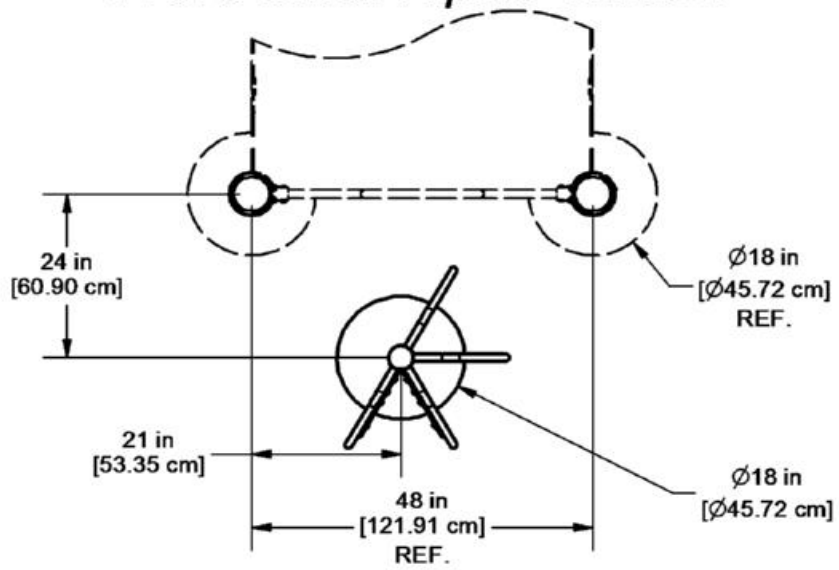
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

FINISHED ASSEMBLY

Issued/Revised: 5/24/2019

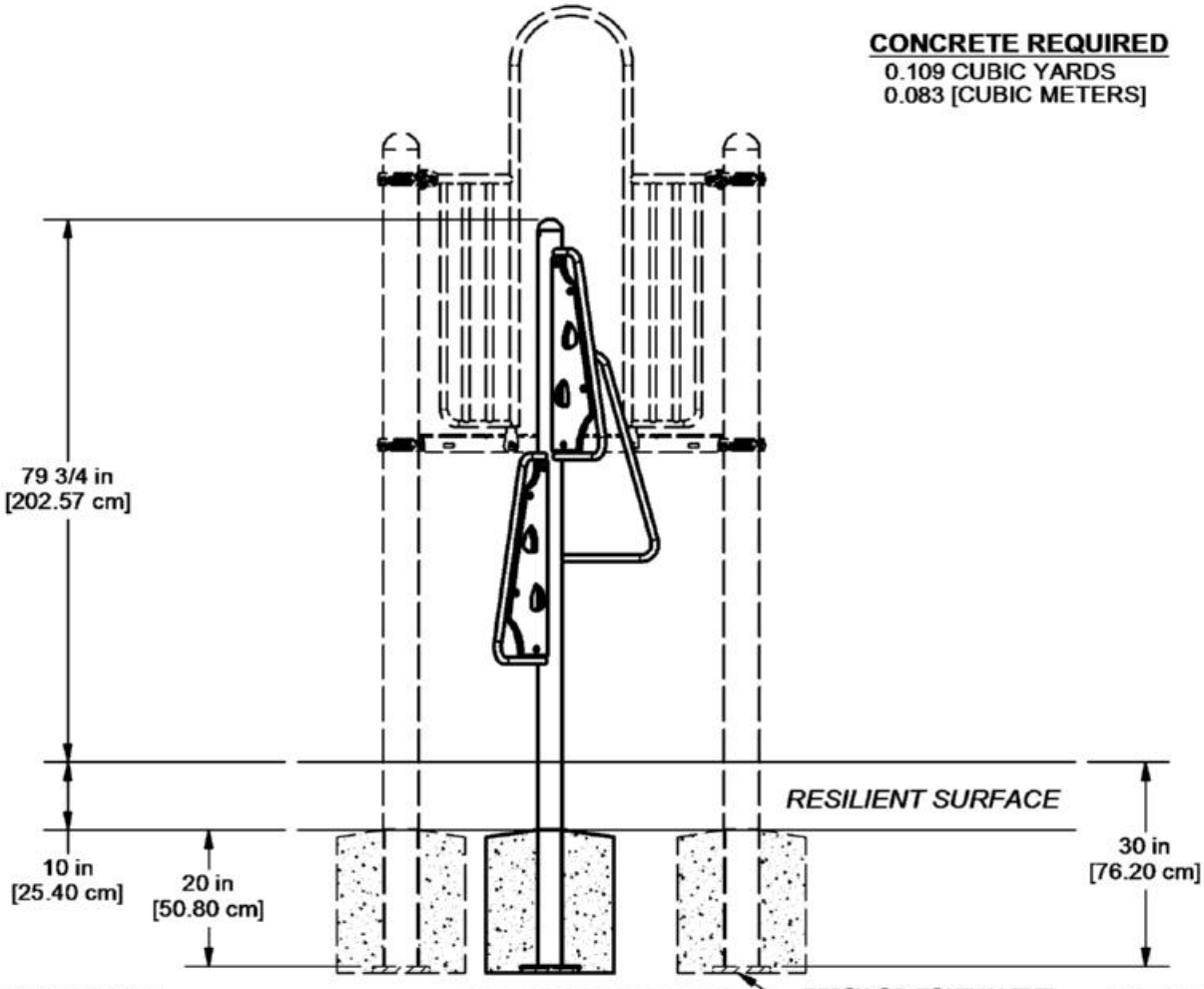
SuperMax Play Systems

71879 Small Alpine Climber



PLAN VIEW

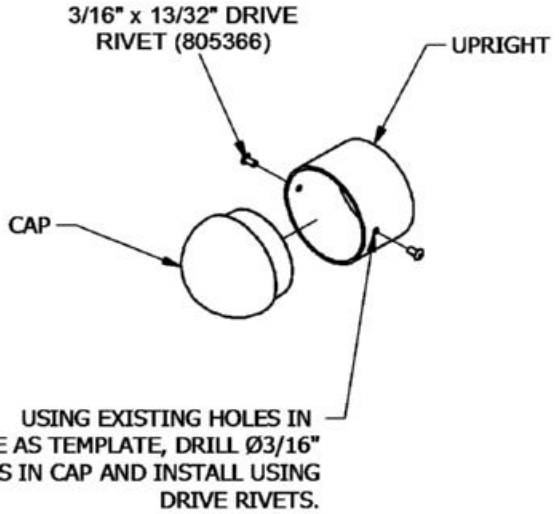
CONCRETE REQUIRED
0.109 CUBIC YARDS
0.083 [CUBIC METERS]



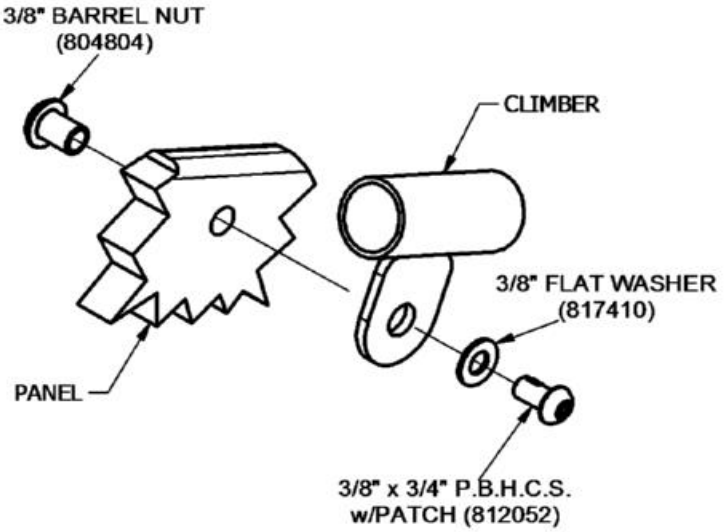
ELEVATION VIEW

Issued/Revised: 5/24/2019

71879 Small Alpine Climber

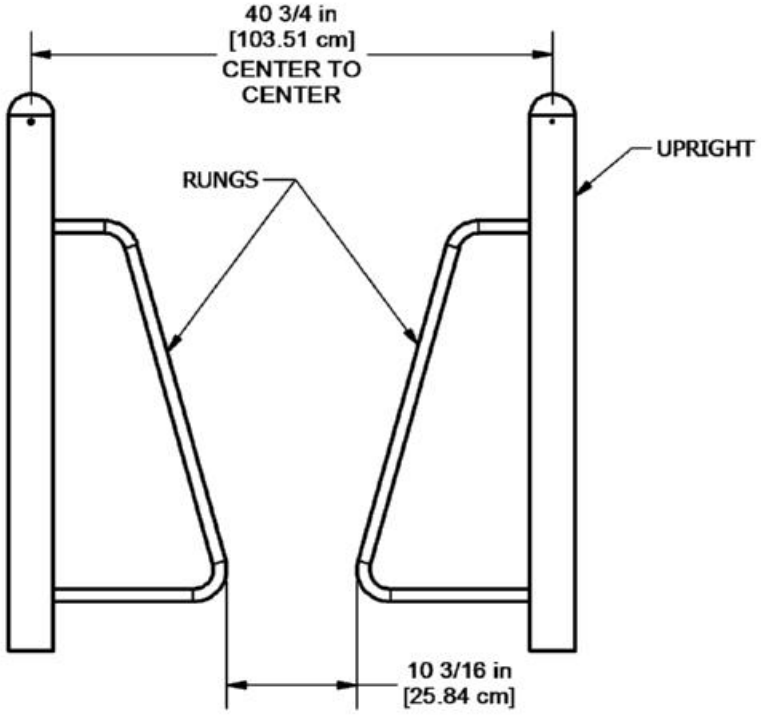


597



602

REFERENCE FOR MULTIPLE FREESTANDING ALPINE CLIMBERS



NOTE: REFER TO OVERALL TOP VIEW FOR ALPINE CONFIGURATION

Issued/Revised: 5/24/2019

71886 ORIGAMI CENTER ARCHWAY

Parts List		
DESCRIPTION	QTY	PART NUMBER
PIPE ADAPTER	2	309915
ORIGAMI ENTRYWAY METAL BARRIER ASS'Y	1	314781
HARDWARE COMPLETE	1	314800
1/4" x 3/4" SET SCREW	4	811545
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054
3/8" x 1" P.B.H.C.S. w/PATCH	4	812050
3/8" LOCK WASHER	2	817334
3/8" FLAT WASHER	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
3/8" LOCK NUT	4	804353
3/8" BARREL NUT	2	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

71886 ORIGAMI CENTER ARCHWAY

INSTALLATION INSTRUCTIONS:

1. Determine which openings receive Origami Center Archway. See Order Top View.

2. Attach Ring Clamps to Uprights. See Ring Clamp Installation Sheet.

3. Attach Pipe Adapter to Origami Entryway Metal Barrier Ass'y using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 448.

4. Attach Origami Entryway Metal Barrier Ass'y with Pipe Adapter to Ring Clamp using 1/4" x 3/4" Set Screws. See Detail 448.

5. Attach Origami Entryway Metal Barrier Ass'y to Deck using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" Lock Nut. See Detail 318.

6. Plumb and level the entire assembly and tighten all fasteners.

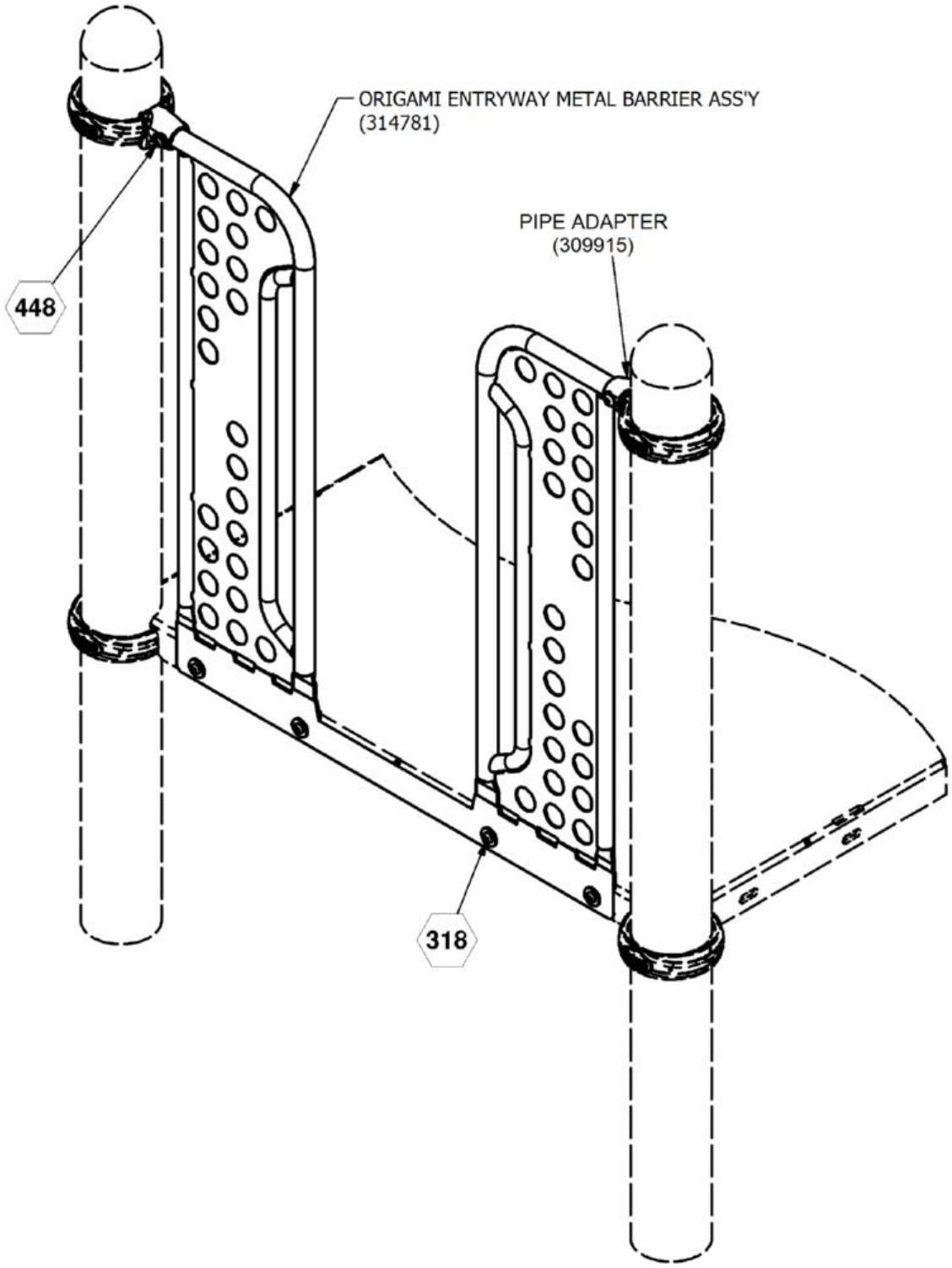
IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

7. When the structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71886 ORIGAMI CENTER ARCHWAY



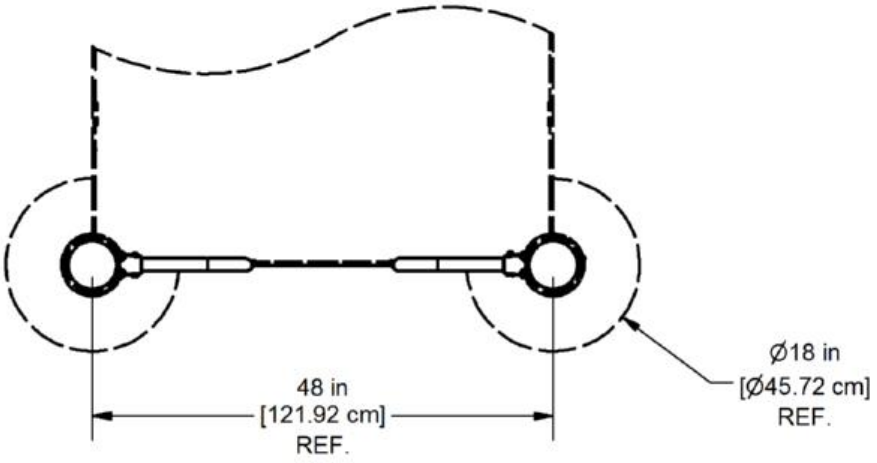
⬡ = INSTALLATION DETAIL

Issued/Revised: 8/1/2018

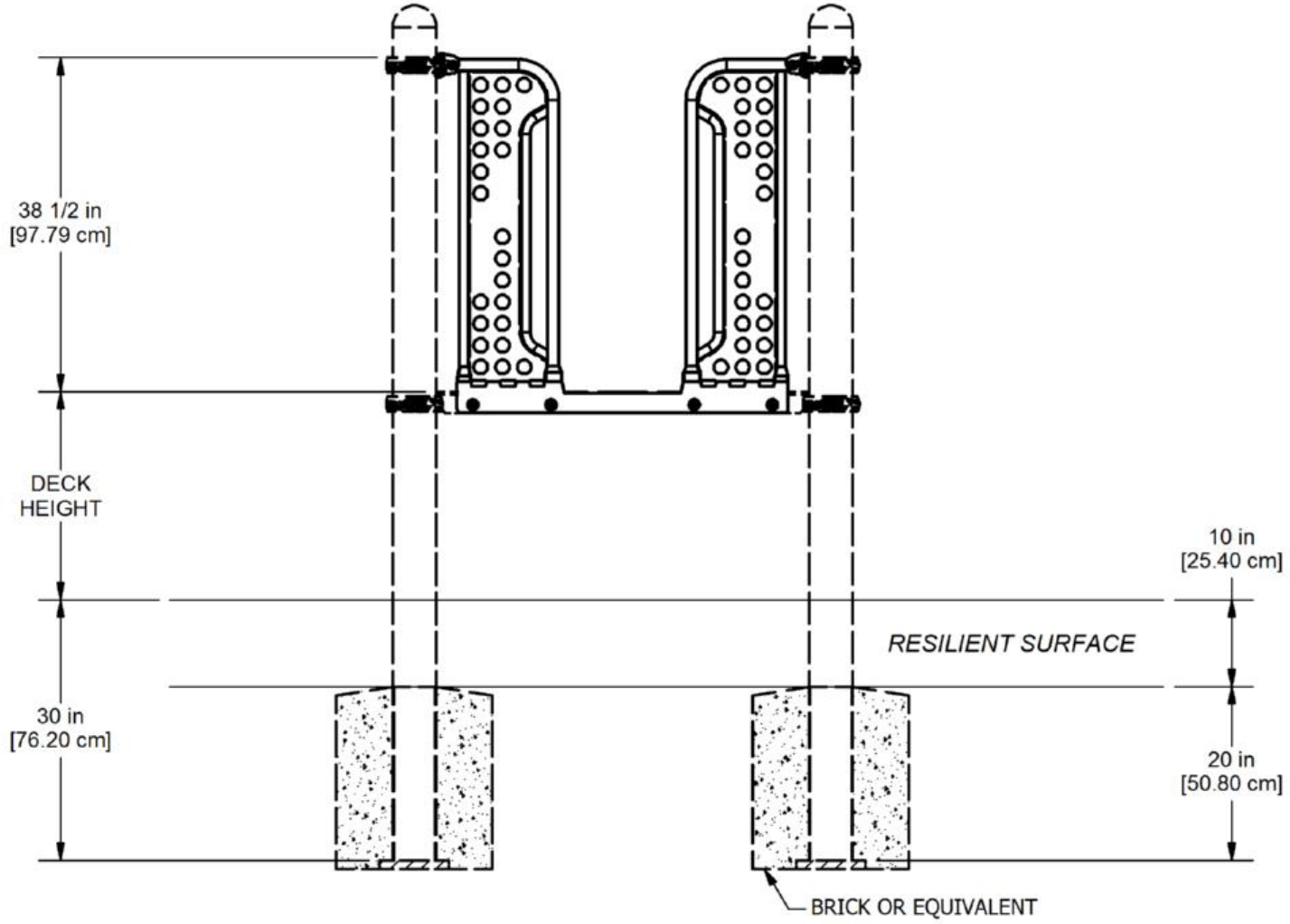
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

71886 ORIGAMI CENTER ENTRYWAY

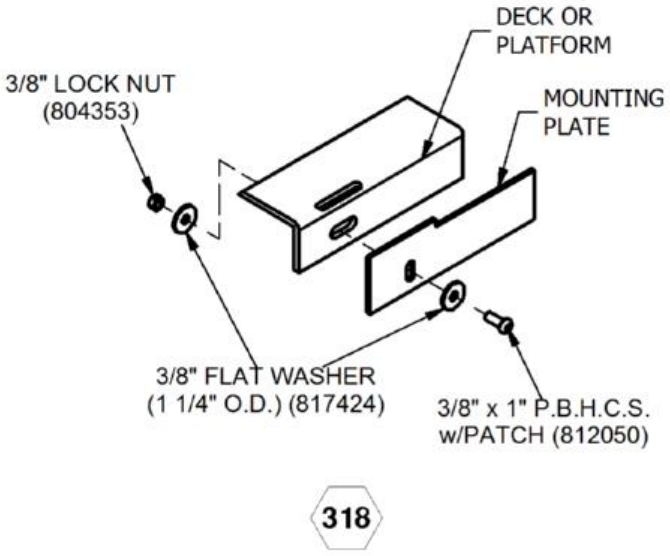


PLAN VIEW

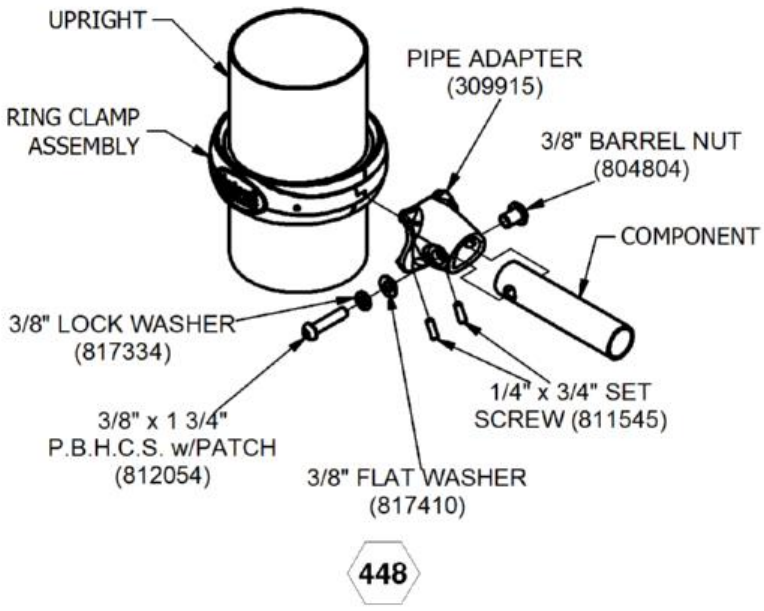


ELEVATION VIEW

71886 ORIGAMI CENTER ENTRYWAY



NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



SuperMax Play Systems

71897 DUELING CRISS-CROSS CASCADE

Parts List		
DESCRIPTION	QTY	PART NUMBER
FOOTBUCK WELD ASS'Y	1	204879
STRAIGHT SECTION	1	205962
CURVED RIGHT SECTION	1	205964
DOUBLE ENTRANCE SECTION	1	206167
DOUBLE STRAIGHT SECTION	1	207601
HELIX SPIRAL 140 DEGREES	1	210735
OVER AND UNDER SLIDE SUPPORT	1	211221
EXIT SECTION	1	211303
PANEL ADAPTER	2	309919
SUPPORT ASS'Y 1	1	312634
SUPPORT ASS'Y 2	1	312637
DOUBLE ENTRANCE SLIDEHOOD	1	312730
HARDWARE COMPLETE	1	304417
1/4" x 3/4" SET SCREW	4	811545*
3/8" x 3/4" P.B.H.C.S. w/PATCH	4	812052*
3/8" x 1" P.B.H.C.S. w/PATCH	14	812050*
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051*
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	812054*
3/8" x 2" P.B.H.C.S. w/PATCH	26	812055*
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	1	812056*
3/8" LOCK WASHER	33	817334*
3/8" FLAT WASHER	10	817410*
3/8" FLAT WASHER (1 1/4" O.D.)	32	817424*
3/8" BARREL NUT	2	804804*
3/8" BARREL NUT LONG	25	804820*
1/2" FLAT WASHER (1 3/8" O.D.)	26	817425*

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Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

71897 DUELING CRISS-CROSS CASCADE

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the slide and dig footing at location shown in Top View. Refer to the Elevation View for footing depth.
2. Using a 7/16" drill bit, ream out any excess Plastisol coating from all holes used on deck. Be careful not to expose the steel.
3. Attach the Ring Clamps to the Uprights. See Ring Clamp Installation Sheet.
4. Attach Panel Adapters to Double Entrance Slidehood using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer, and 3/8" Barrel Nut. See Detail 715.
5. Attach Panel Adapters with Double Entrance Slidehood to the Ring Clamps using 1/4" x 3/4" Set Screws. See Detail 715.
6. Attach Double Entrance Section to Deck using 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Flat Washer (1 1/4" O.D.). See Detail 136.
7. Attach Double Entrance Section to Double Entrance Slidehood using 3/8" x 2" P.B.H.C.S. w/Patch and 3/8" Flat Washer (1 1/4" O.D.). See Detail 716.
8. Assemble all Slide Sections on the ground. Attach each Section using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1 1/4" OD), 1/2" Flat Washer and 3/8" Barrel Nut Long. See Detail 787. **Note:** Hand tighten the 5 bolts that join each secion. **Note:** Refer to your unit's top view for proper placement and orientation of each slide section.
9. Once all sections are bolted together, hand tight, install the slides to the Double Entrance Sectionusing 3/8" x 2 1/2" Threaded Rod, 1/2" Flat Washer (1 3/8" O.D.), 1/2" Flat Washer, 1/2" Lock Washer, and 3/8" Barrel Nut.. See Detail 787.
10. Starting at the top section, tighten the 5 bolts with a wrench. Tighten the top 2 bolts first, the bottom bolt second, then the remaining 2 bolts as shown. See Figure #1.
11. It is important that each seam betweeen slide sections are as tight as possible. Be sure that the seams are flush or higher on the upper piece. See Figure #2.
12. After tightening all the pieces, if seam adjustment is necessary, slightly loosen the bolts in the are to be adjusted and repeat steps 10 and 11 until seams are properly fitted.
13. Attach Slide Support to Helix Spiral 140 degrees using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer (1 1/4" OD), 1/2" Flat Washer and 3/8" Barrel Nut Long. See Detail 392.
14. Attach Support Ass'y 2 to Helix Spiral 140 degrees using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flat Washer. See Detail 788.
15. Attach Support Ass'y 1 to Curved Left Section using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, ans 3/8" Barrel Nut. See Detail 788. **Note:** Support Ass'y 1 attaches to the third mounting pad up from the bottom.
16. Attach Foot Buck to Exit Section with 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Flatwasher. See Detail 024. **Note:** Check slide exit for proper water drainage before concrete is poured. **Note:** The slope of the exit region shall be between 0 and -10° as measured from a plane parallel to the underlying surface.
17. Use 3/8" x 1" P.B.H.C.S. w/Patch to fill unused support holes in remaining sections. See Detail 789.
18. When the Slide is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from supports to allow drainage. Allow to cure at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

71897 DUELING CRISS-CROSS CASCADE

19. When structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

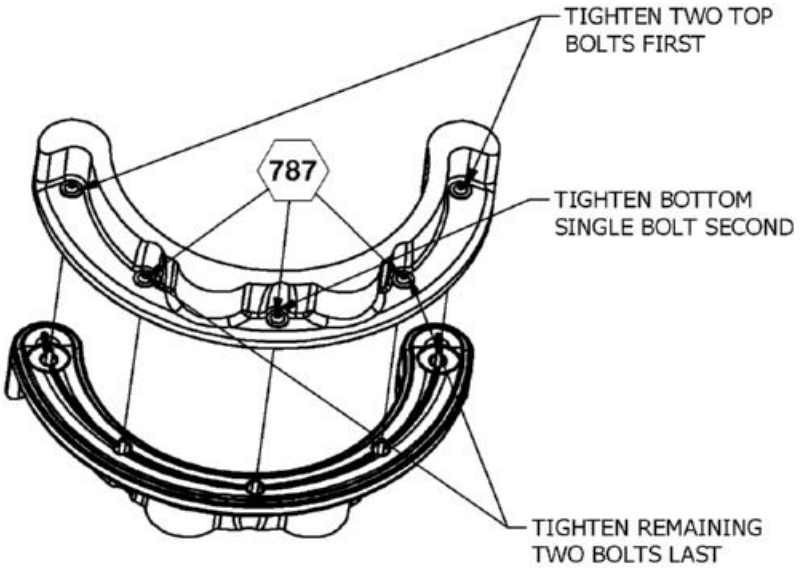


FIGURE #1

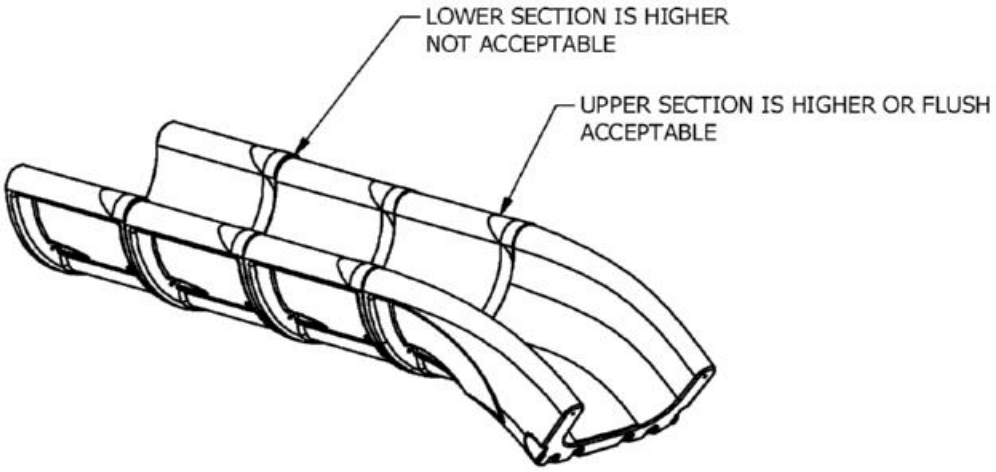
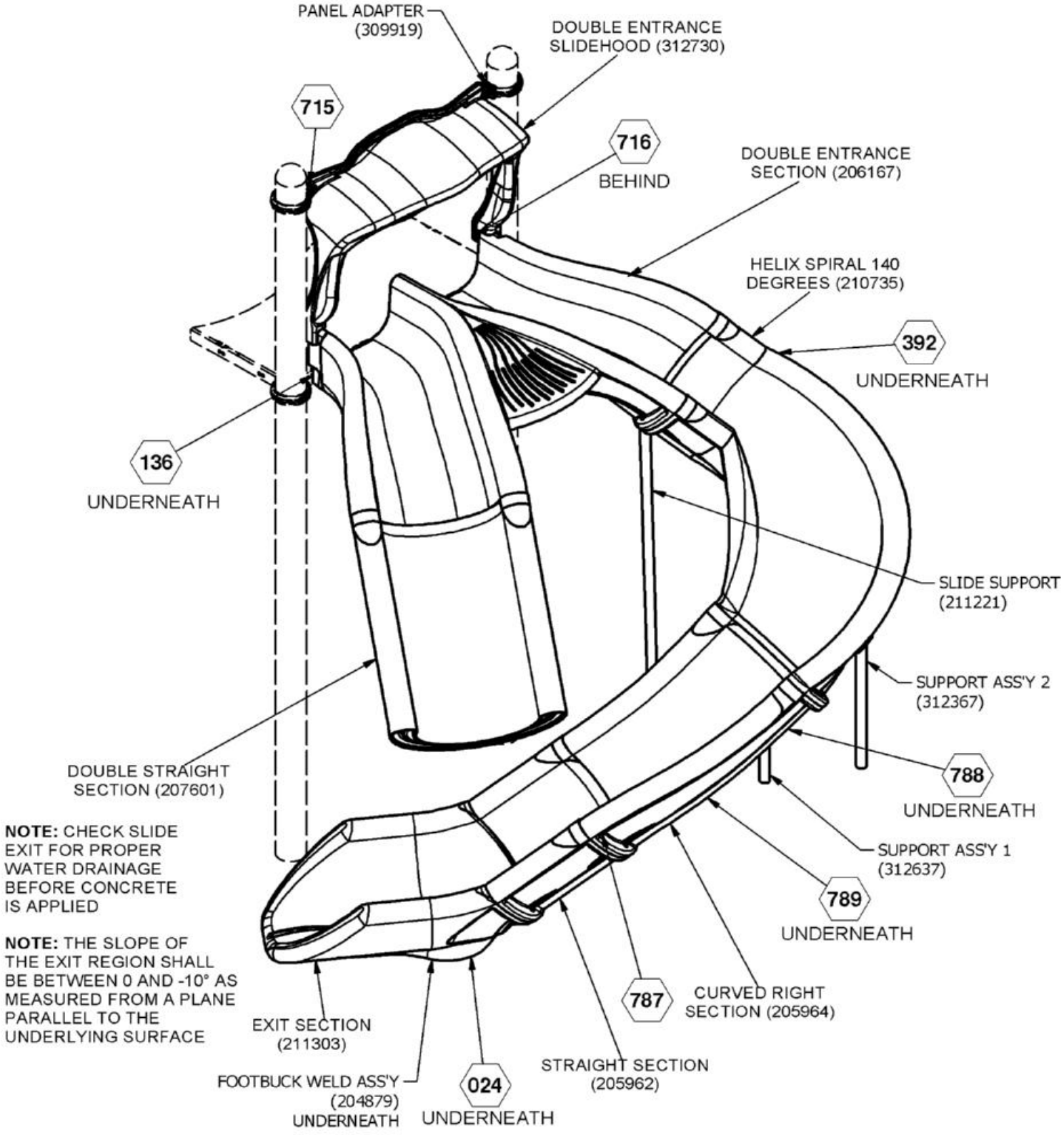


FIGURE #2

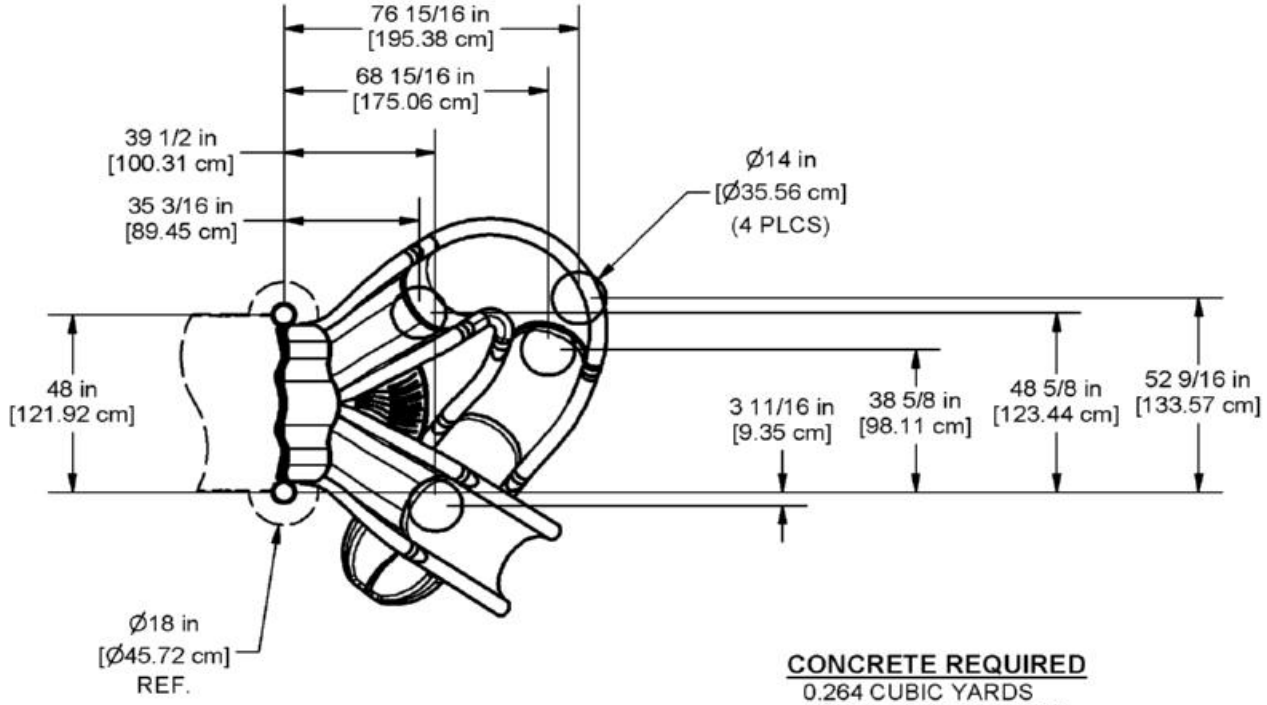
71897 DUELING CRISS-CROSS CASCADE



NOTE: CHECK SLIDE EXIT FOR PROPER WATER DRAINAGE BEFORE CONCRETE IS APPLIED

NOTE: THE SLOPE OF THE EXIT REGION SHALL BE BETWEEN 0 AND -10° AS MEASURED FROM A PLANE PARALLEL TO THE UNDERLYING SURFACE

71897 DUELING CRISS-CROSS CASCADE

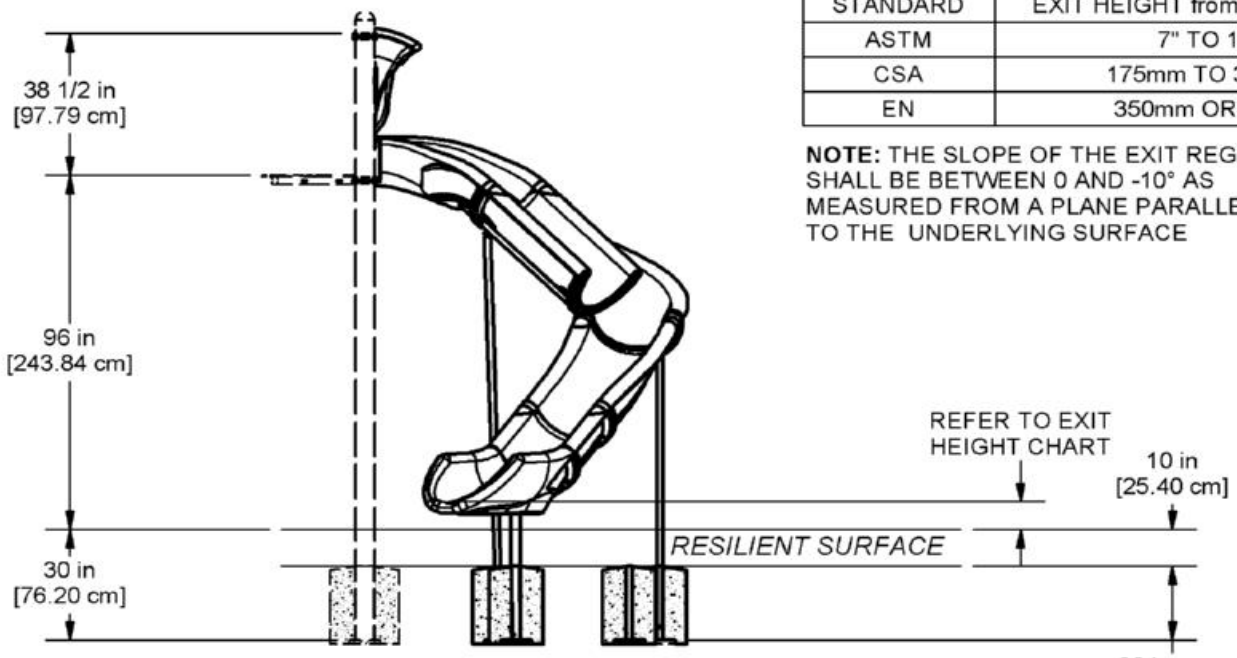


CONCRETE REQUIRED
0.264 CUBIC YARDS
0.200 [CUBIC METERS]

NOTE: BEDWAY MUST NOT EXCEED 50° DOWNWARD ANGLE PER ASTM AND CSA STANDARD.

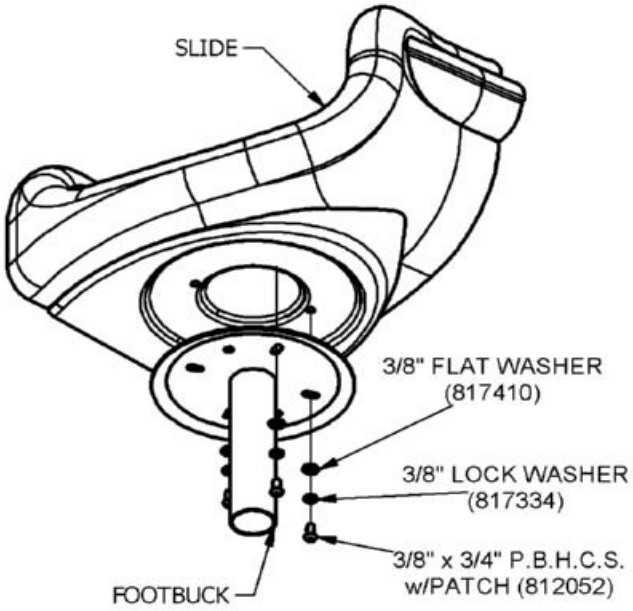
EXIT HEIGHT CHART	
STANDARD	EXIT HEIGHT from SURFACING
ASTM	7" TO 15"
CSA	175mm TO 380mm
EN	350mm OR LESS

NOTE: THE SLOPE OF THE EXIT REGION SHALL BE BETWEEN 0 AND -10° AS MEASURED FROM A PLANE PARALLEL TO THE UNDERLYING SURFACE



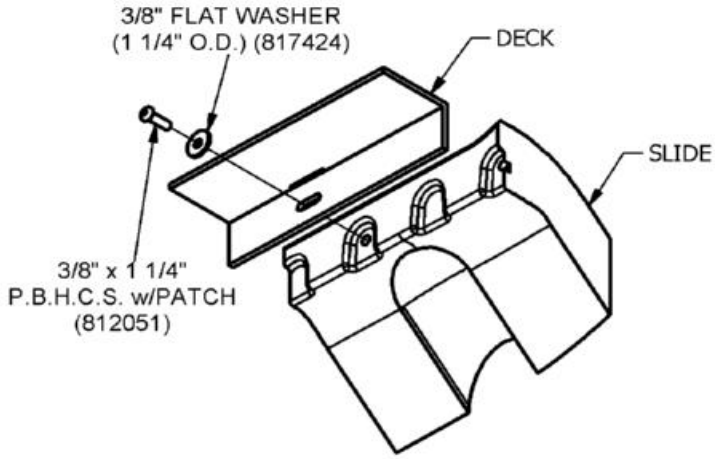
ELEVATION VIEW

71897 DUELING CRISS-CROSS CASCADE

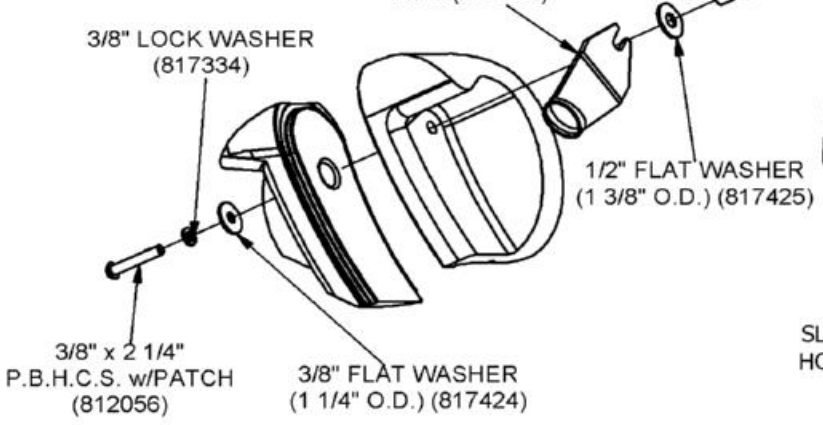


SOME SLIDES WILL ONLY
HAVE TWO BOLTS
PER FOOTBUCK CONNECTION

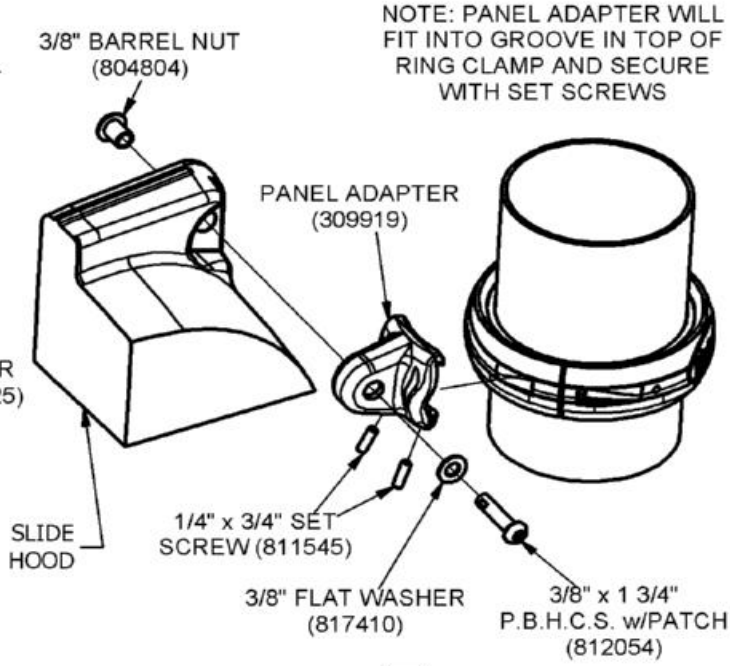
024



136

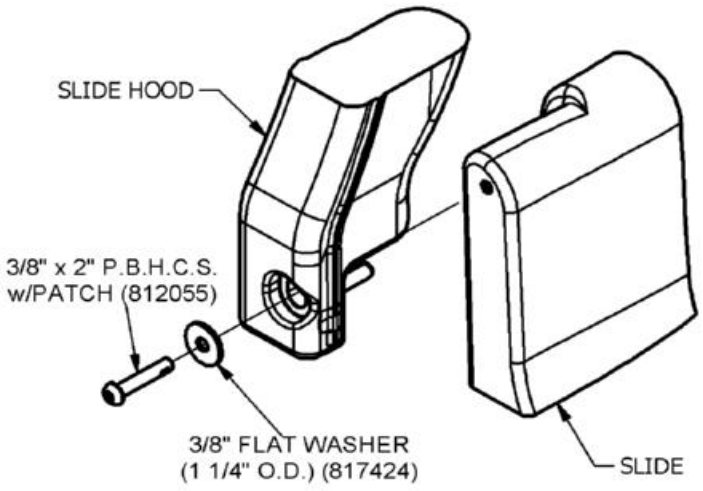


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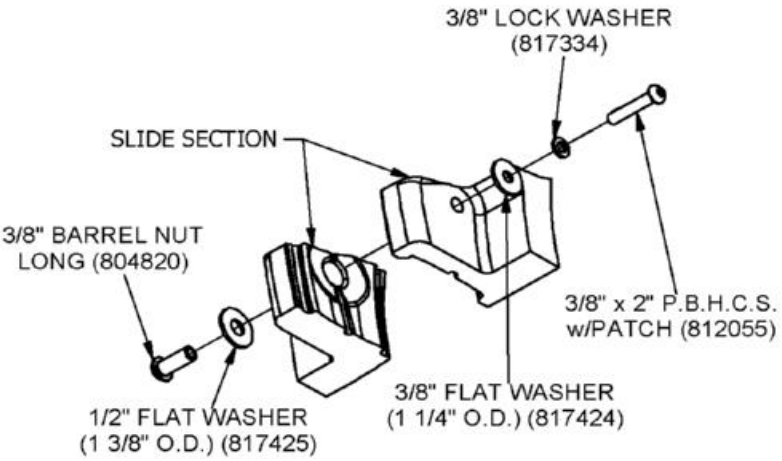


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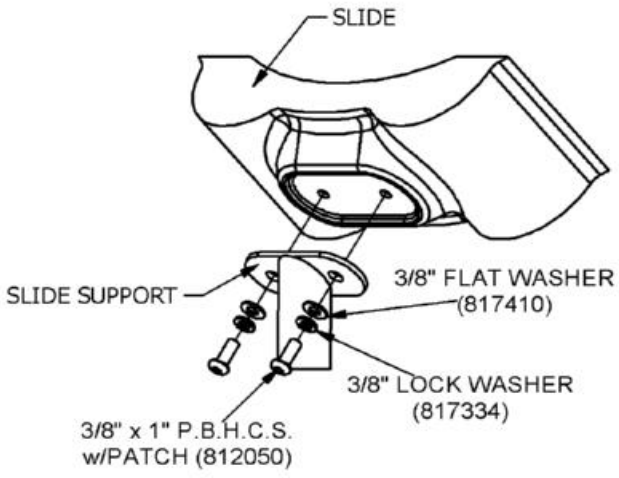
71897 DUELING CRISS-CROSS CASCADE



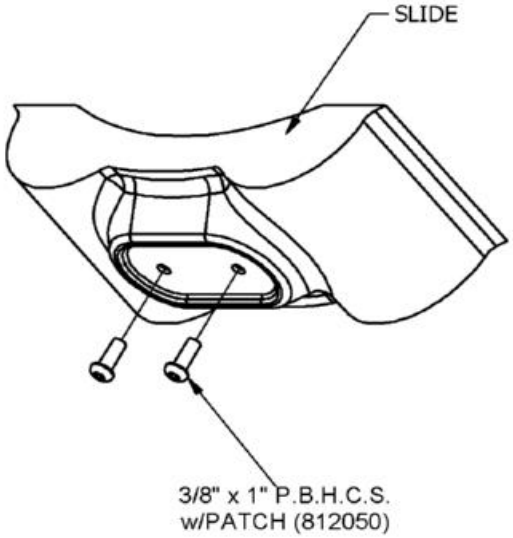
716



787



788



789

SuperMax Play Systems

71883 (32"), 71904 (40"), 71905 (48"), 71906 (56"), 71884 (72"), 71907 (80"), 71908 (88"), 71909 (96") Paragon Climber

Parts List									
DESCRIPTION	71883	71904	71905	71906	71884	71907	71908	71909	PART NUMBER
PARAGON CLIMBER HDPE INSERT	2	2	3	3	4	4	5	5	314741
ORIGAMI CLIMBER WELDMENT 2'-8"	1	1	0	0	0	0	0	0	314771
ORIGAMI CLIMBER WELDMENT 4'-0"	0	0	1	1	0	0	0	0	314956
ORIGAMI CLIMBER WELDMENT 6'-0"	0	0	0	0	1	1	0	0	314772
ORIGAMI CLIMBER WELDMENT 7'-4"	0	0	0	0	0	0	1	1	314959
PARAGON CLIMBER FOOTBUCK 2'-8"	2	2	2	2	0	0	0	0	314784
ORIGAMI LADDER FOOTBUCK 6'-0"	0	0	0	0	2	2	2	2	314785
HARDWARE COMPLETE	1	1	0	0	0	0	0	0	314743
HARDWARE COMPLETE	0	0	1	1	0	0	0	0	314969
HARDWARE COMPLETE	0	0	0	0	1	1	0	0	314744
HARDWARE COMPLETE	0	0	0	0	0	0	1	1	314970
3/8" x 3/4" P.B.H.C.S. w/PATCH	8	8	12	12	16	16	20	20	812052
3/8" x 1" P.B.H.C.S. w/PATCH	2	2	2	2	2	2	2	2	812050
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	4	4	4	4	4	4	4	812053
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	2	2	2	2	2	2	2	2	812054
3/8" LOCK WASHER	6	6	6	6	6	6	6	6	817334
3/8" FLAT WASHER (1 1/4" O.D.)	8	8	12	12	16	16	20	20	817424
3/8" T-NUT	4	4	4	4	4	4	4	4	804556
3/8" BARREL NUT	10	10	14	14	18	18	22	22	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

71883 (32"), 71904 (40"), 71905 (48"), 71906 (56"), 71884 (72"), 71907 (80"), 71908 (88"), 71909 (96") Paragon Climber

INSTALLATION INSTRUCTIONS:

1. Dig footings at locations as shown in Footing Diagram. Refer to your overhead drawing for location.

2. Attach Origami Ladder Footbuck to Origami Ladder Weldment using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Barrel Nut. See Detail 966.

3. Attach Origami Ladder HDPE Insert to Origami Ladder Weldment using 3/8" x 3/4" P.B.H.C.S. w/Patch, 3/8" Flat Washer (1 1/4" O.D.), and 3/8" Barrel Nut. See Detail 791.

4. Attach Origami Ladder Weldment to Entry Archway or Split Entrance and Deck using 3/8" x 1 3/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer and 3/8" T-Nut. See Detail 725 or 967. **Note:** Entryway sold seperately, if using Origami Entryway use 3/8" x 1 1/2" P.B.H.C.S. w/Patch. See Detail 992. Refer to overall Top View for entryway type.

5. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

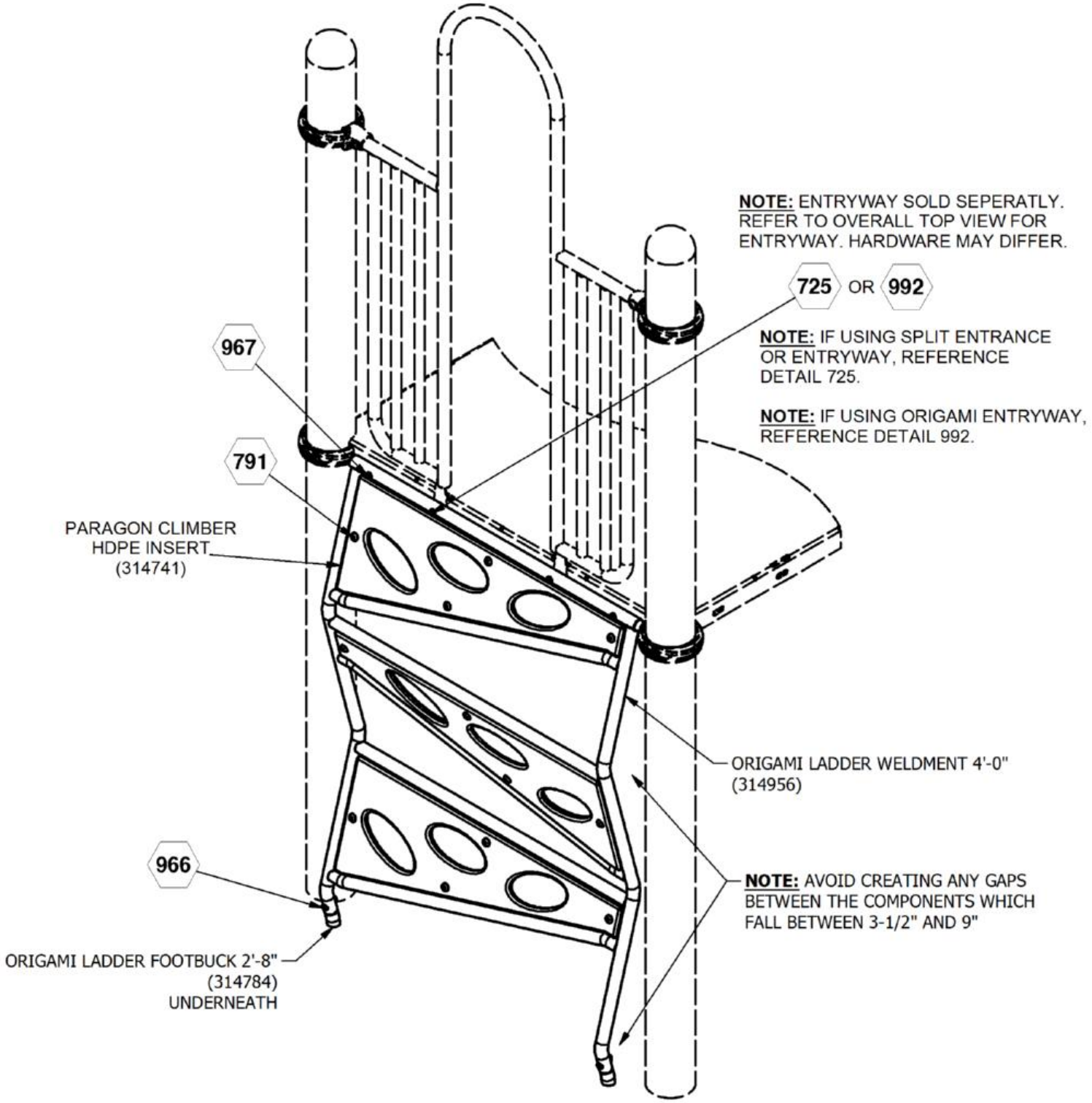
6. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use. Temporary bracing may be required until concrete cures.

7. When the structure is finished and satisfactory, tighten all fasteners and install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71883 (32"), 71904 (40"), 71905 (48"), 71906 (56"), 71884 (72"), 71907 (80"), 71908 (88"), 71909 (96") Paragon Climber



= INSTALLATION DETAIL

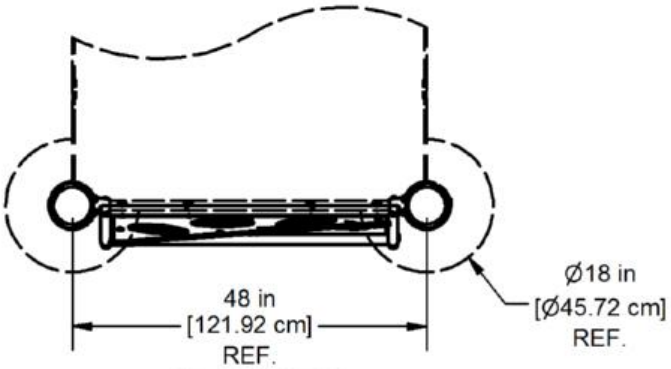
Issued/Revised: 5/23/2019

FINISHED ASSEMBLY

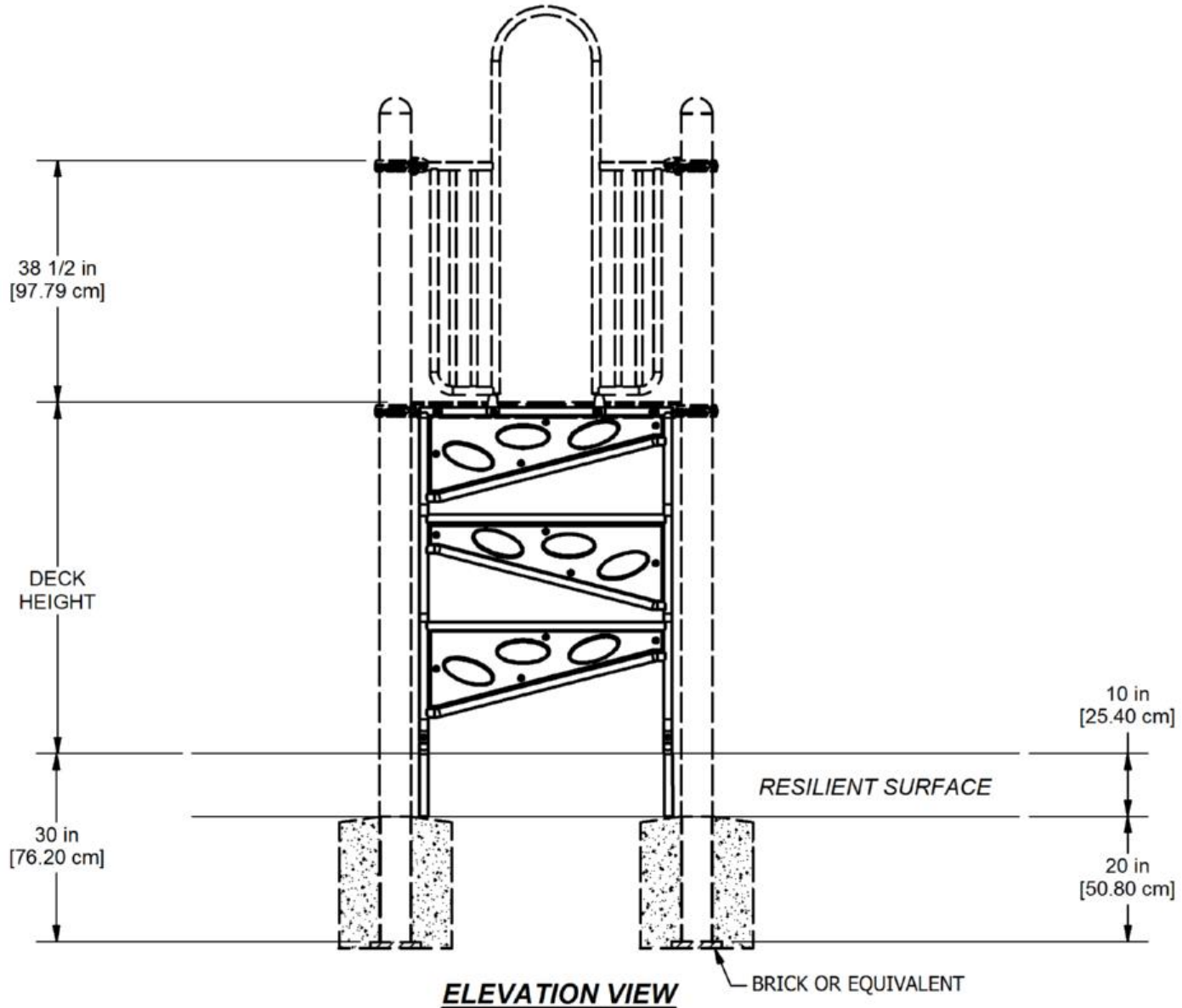
71906 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

71883 (32"), 71904 (40"), 71905 (48"), 71906 (56"), 71884 (72"), 71907 (80"), 71908 (88"), 71909 (96") Paragon Climber

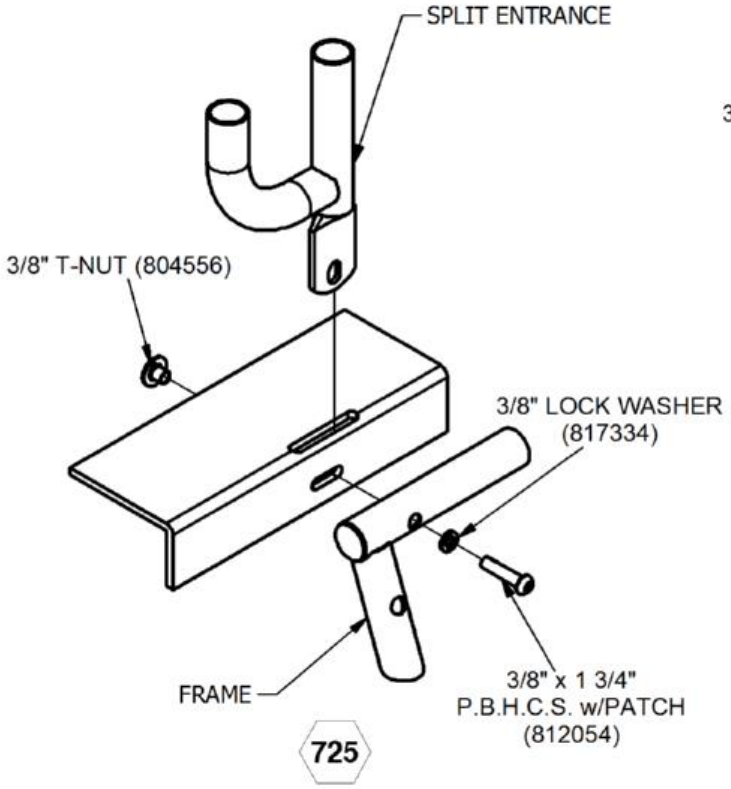


PLAN VIEW

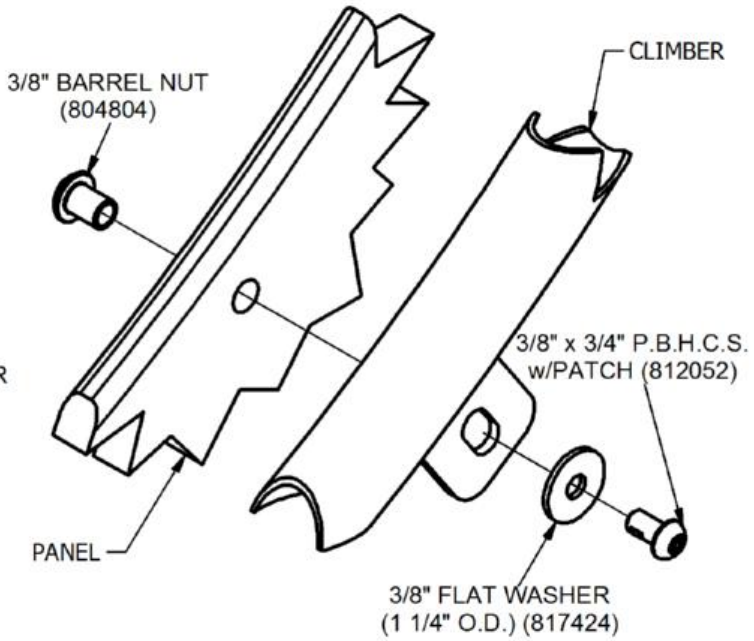


ELEVATION VIEW
71906 SHOWN

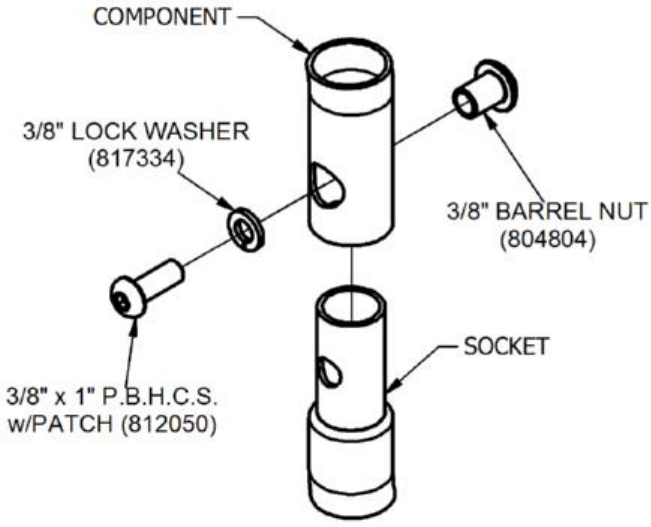
71883 (32"), 71904 (40"), 71905 (48"), 71906 (56"), 71884 (72"), 71907 (80"), 71908 (88"), 71909 (96") Paragon Climber



725

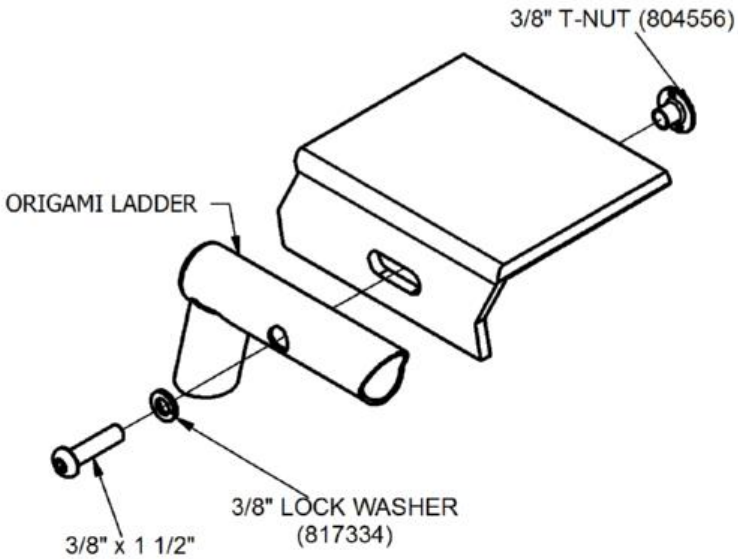


791



966

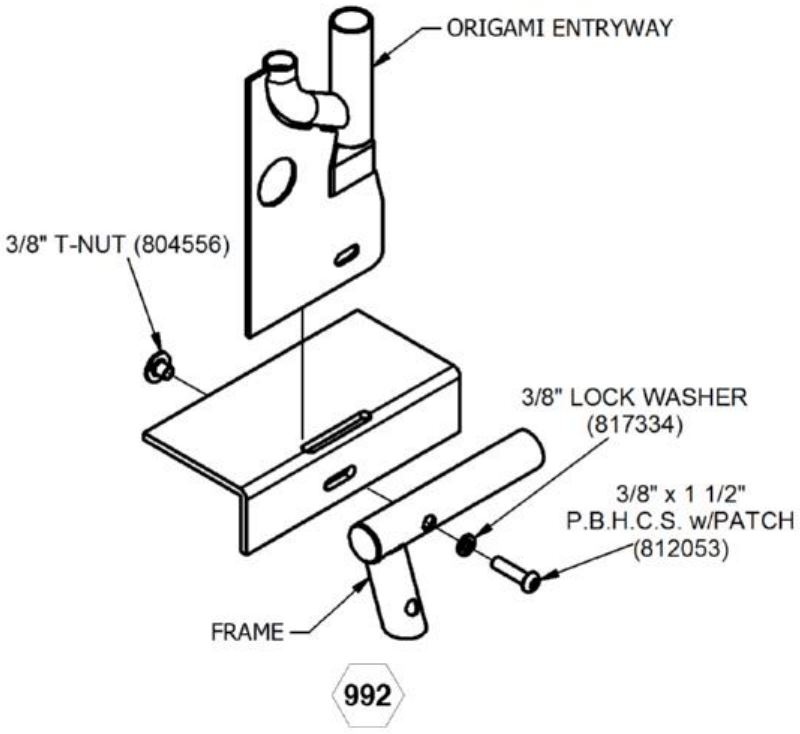
NOTE: MAKE SURE BOLT GOES ON BIG HOLE SIDE.



967

Issued/Revised: 5/23/2019

71883 (32"), 71904 (40"), 71905 (48"), 71906 (56"), 71884 (72"), 71907 (80"), 71908 (88"), 71909 (96") Paragon Climber



This equipment is designed for children 2-5 or 5-12 years old

71968 SHOP PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
90° ANGLE BRACKET	4	302334
PANEL ADAPTER	2	309919
SMASHED FOOTBUCK	2	314295
SHOP PANEL	1	315519
ORGANIC COUNTER PANEL	1	315520
HARDWARE COMPLETE	1	315521
1/4" x 3/4" SET SCREW	4	811545
3/8" x 3/4" CARRIAGE BOLT	8	800252
3/8" x 3/4" P.B.H.C.S. w/PATCH	2	812052
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	812053
3/8" FLAT WASHER	4	817410
3/8" BARREL NUT	12	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck to to receive the Shop Panel. Refer to your overhead drawing for location.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. Hook the Panel Adapters onto the Ring Clamps and attach. See Detail 467.
4. Attach the Organic Counter Panel to the Shop Panel. See Detail 519.
5. Attach Footbucks to Shop Panel. Flat side of Smashed Footbuck should face the inside of the Shop Panel. See Detail 631.
6. Connect Shop Panel to Panel Adapters. See Detail 467.
7. When the entire assembly in plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3-1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

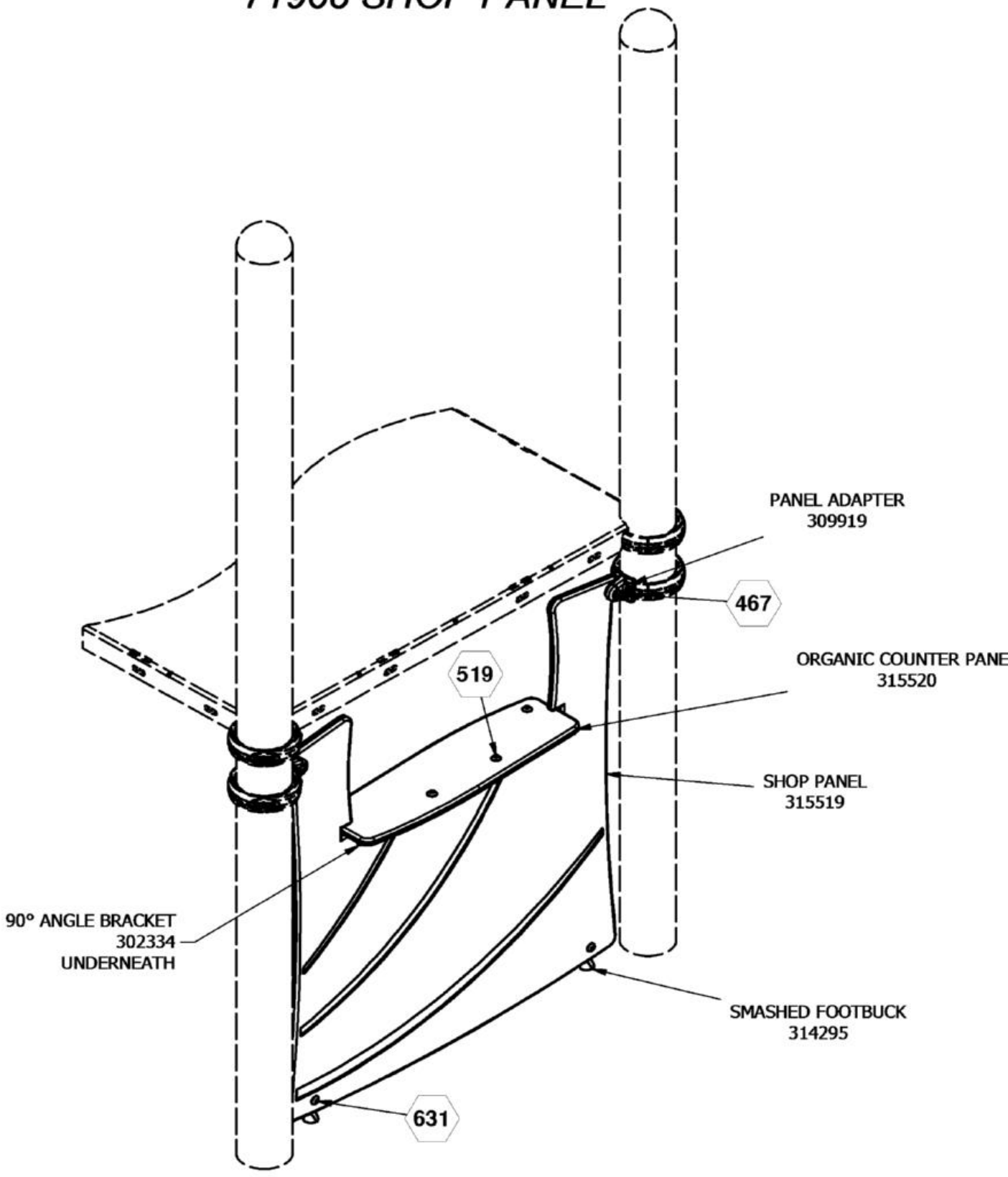
8. When the structure is finished and satisfied, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71968 SHOP PANEL



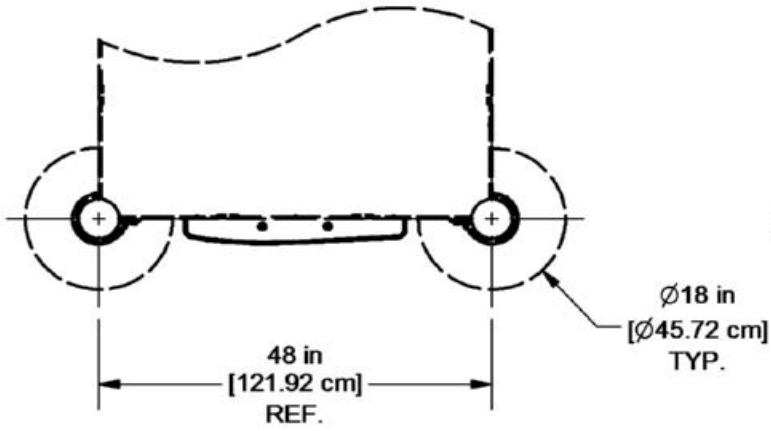
⬡ = INSTALLATION DETAIL

Issued/Revised: 2/15/2021

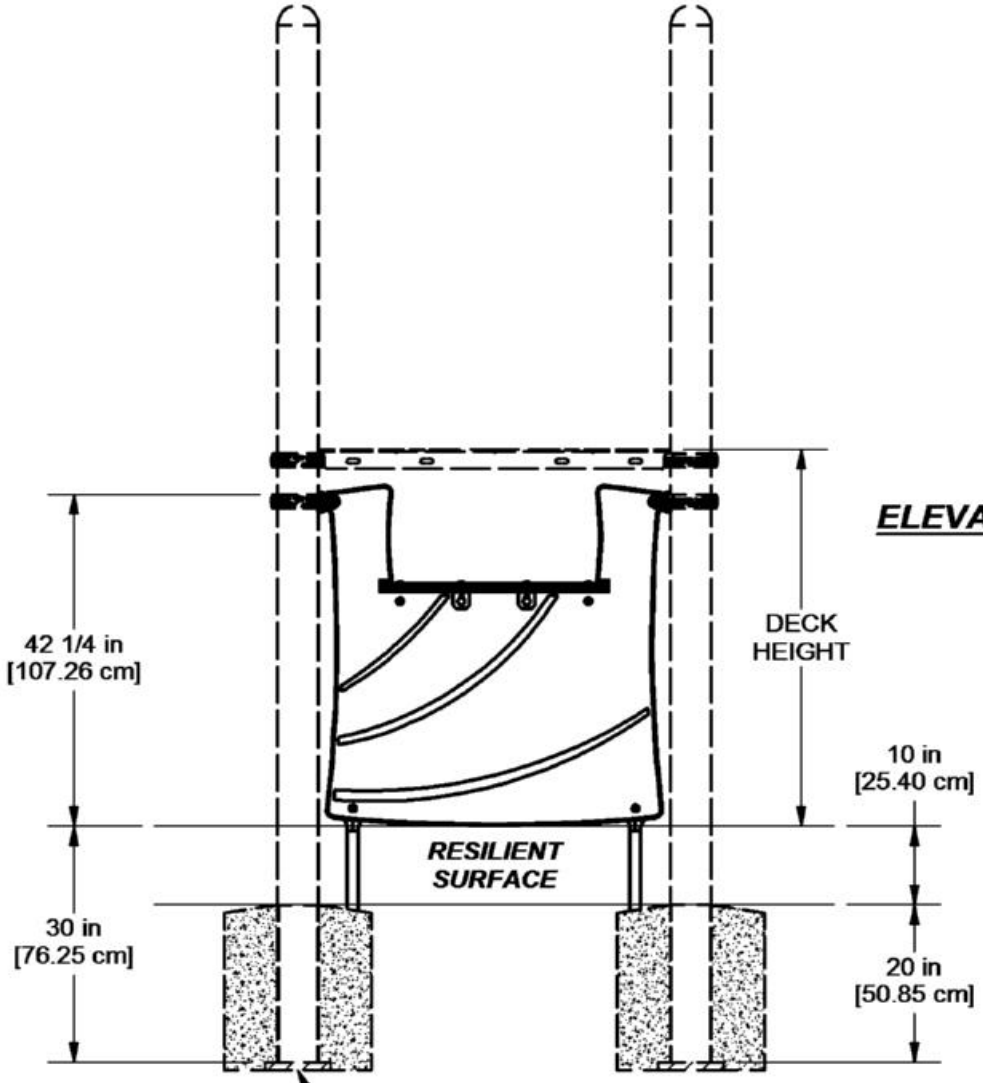
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

71968 SHOP PANEL



PLAN VIEW

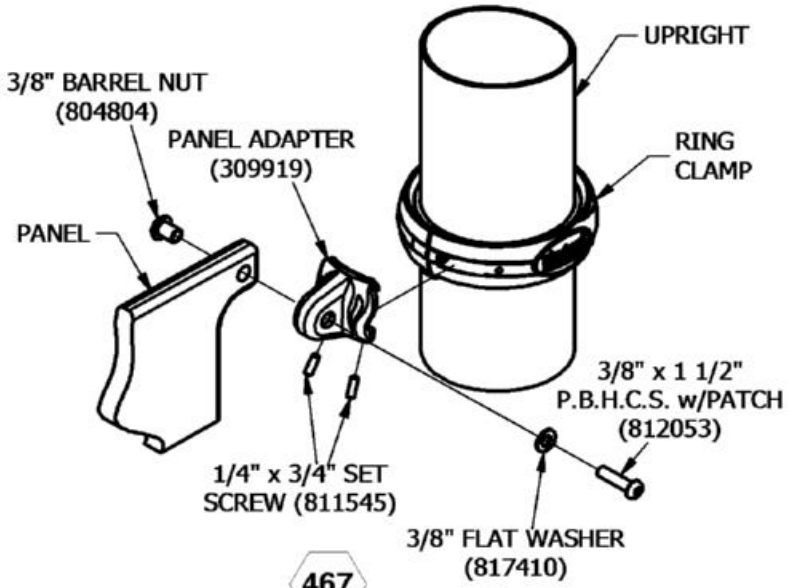


ELEVATION VIEW

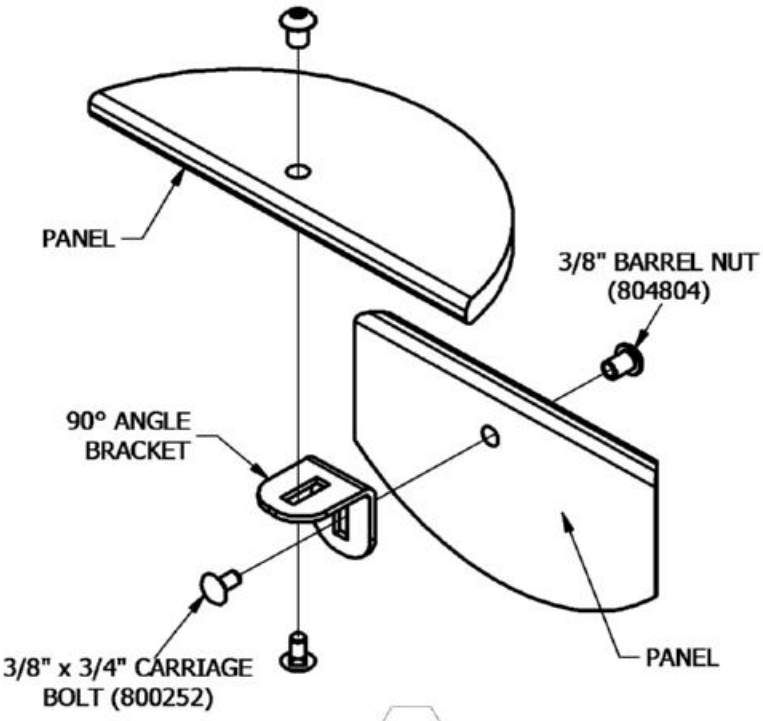
71968 SHOP PANEL

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

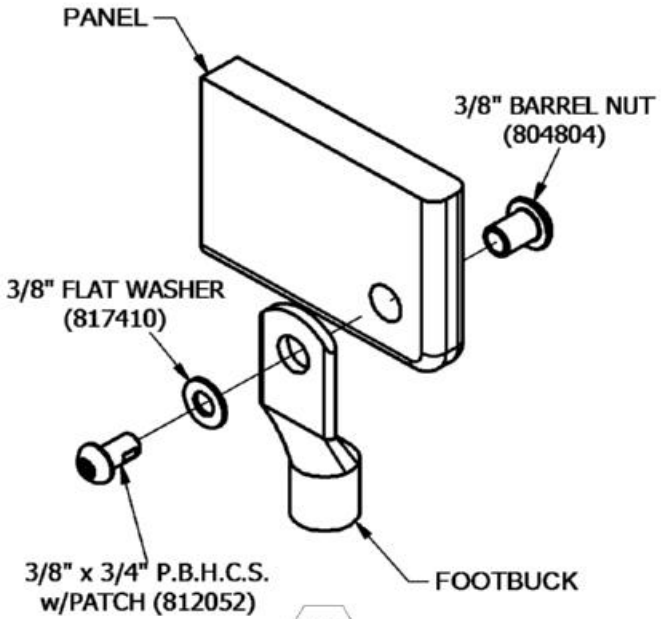
PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



467



519



631

Issued/Revised: 2/15/2021

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

71990 WATER CYCLE PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	2	309919
WATER CYCLE PANEL	1	315599
ARROW WHEEL	1	315636
HARDWARE COMPLETE	1	315660
1/4" x 3/4" SET SCREW	4	811545
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	812053
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	1	812056
3/8" FLAT WASHER	3	817410
3/8" FLAT WASHER (1 1/4" O.D.)	2	817424
3/8" BARREL NUT	5	804804
PROPELLER BUSHING	1	301152

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Water Cycle Panel. Refer to your overhead drawing for location.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. Hook the Panel Adapters onto the Ring Clamps and attach. See Detail 467.
4. Attach the Arrow Wheel to the Water Cycle Panel. See Detail 468.
5. Attach Water Cycle Panel to Panel Adapters. See Detail 467.
6. Attach Water Cycle Panel to Deck. See Detail 031.
7. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

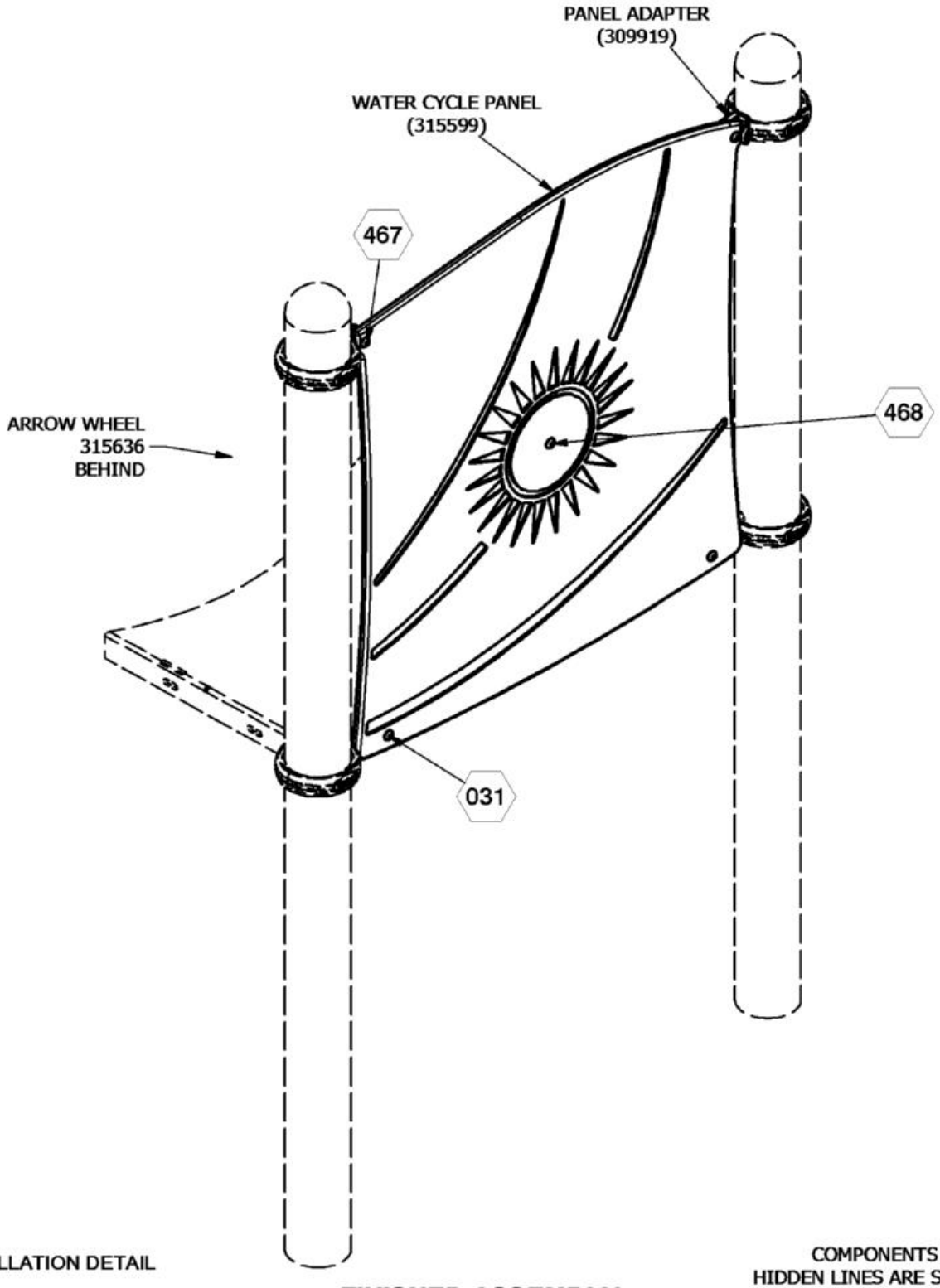
8. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the *Safety Guidelines*. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71990 WATER CYCLE PANEL



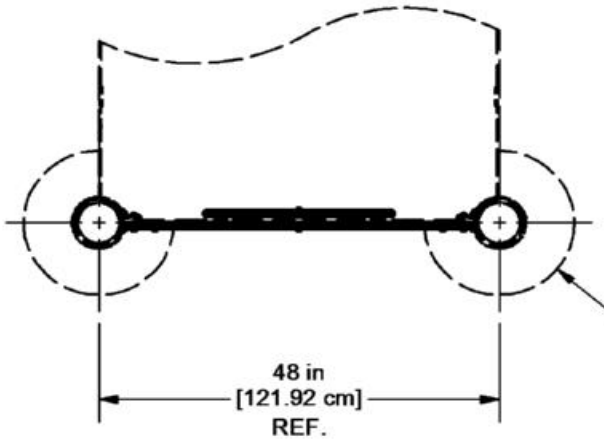
⬡ = INSTALLATION DETAIL

Issued/Revised: 5/13/2021

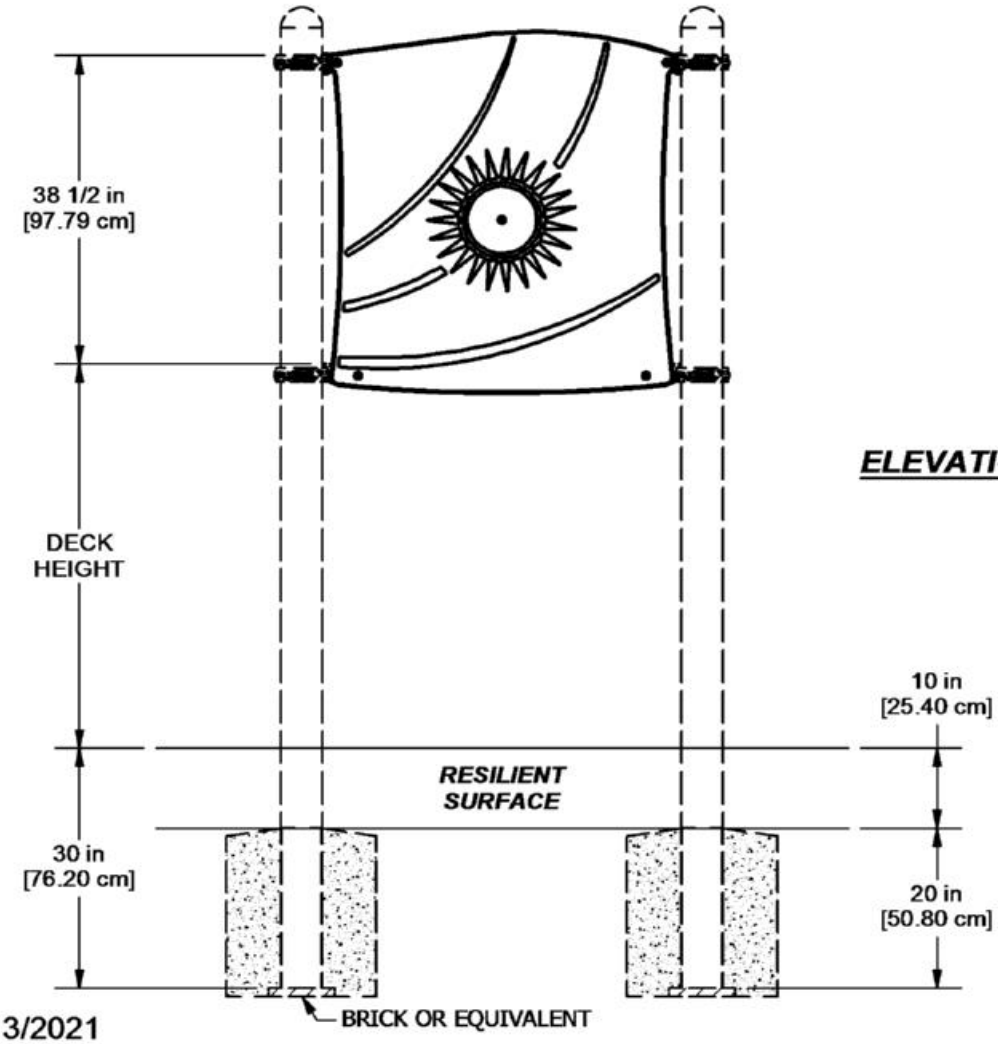
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

71990 WATER CYCLE PANEL

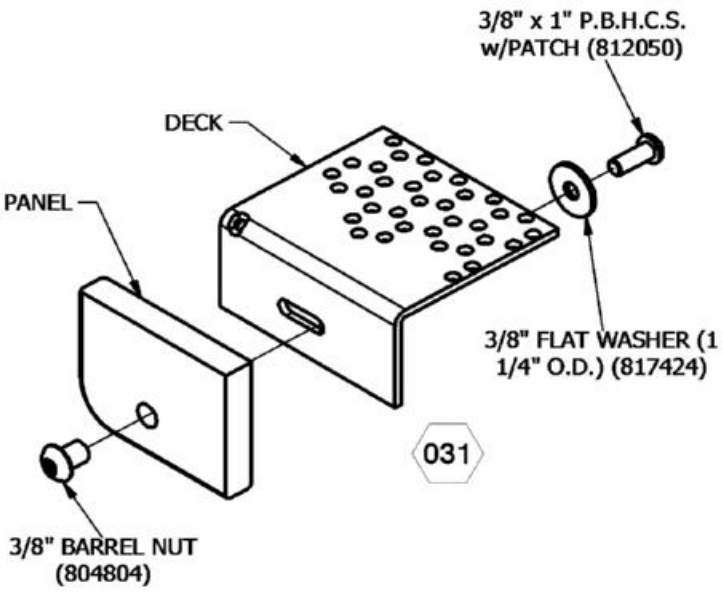


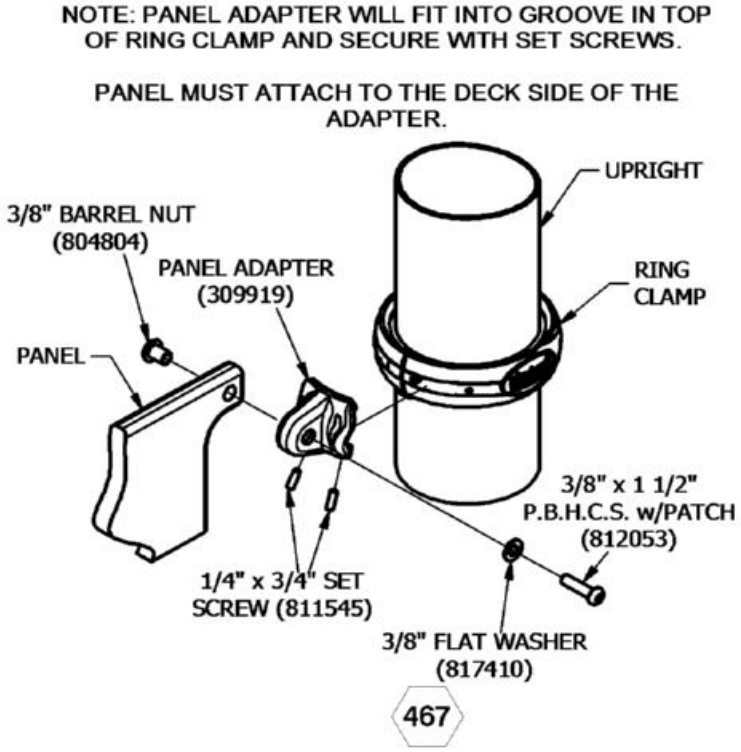
PLAN VIEW

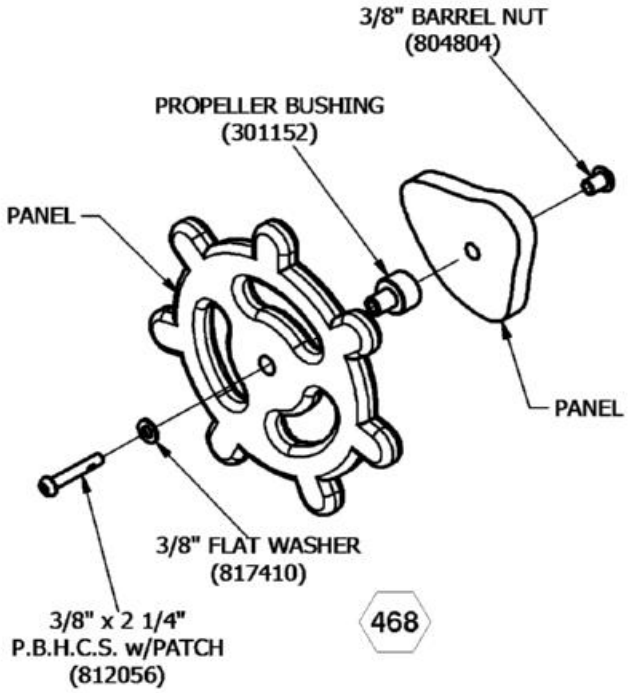


ELEVATION VIEW

71990 WATER CYCLE PANEL







Issued/Revised: 5/13/2021

This equipment is designed for children 2-5 or 5-12 years old

71994 FORTE

Parts List		
DESCRIPTION	QTY	PART NUMBER
COMPOSER MUSIC PANEL	1	219851
PANEL ADAPTER	4	309919
COMPOSER LEFT PANEL	1	315740
COMPOSER RIGHT PANEL	1	315741
SMALL BACK FILLER PANEL	1	316245
LARGE BACK FILLER PANEL	1	316246
HARDWARE COMPLETE	1	315664
#10 x 2" WOOD SCREW	7	810060
1/4" x 3/4" SET SCREW	8	811545
5/16" x 2 1/4" P.B.H.C.S. w/PATCH	4	812086
NUT 5/16"- INSERT TYPE 1	4	HWN0149
3/8" x 3 1/4" P.B.H.C.S. w/PATCH	4	812060
3/8" FLAT WASHER	4	817410
3/8" BARREL NUT	4	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which uprights are receiving the Composer Music Panel. Refer to Finished Assembly view.

2. Loosely attach Ring Clamps at correct heights on the Uprights. Refer to Elevation View.

3. Attach Composer Left Panel and Composer Right Panel to the front of the Composer Music Panel. See Detail 1138.

4. Attach the Panel Adapters to the ring clamp and the Composer Music Panel. See Detail 1139.

5. Attach the Small Back Filler Panel and Large Back Filler Panel to the back of the Composer Music Panel. See HDPE Location view and Detail 1167.

NOTE: If a conflict exists between a panel and/or panel clamp and an adjacent components panel and/or panel clamp you must move it up or down for it to work. Make sure the attachment point of the cable to the panel in not higher than 27". See Elevation and Back views.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

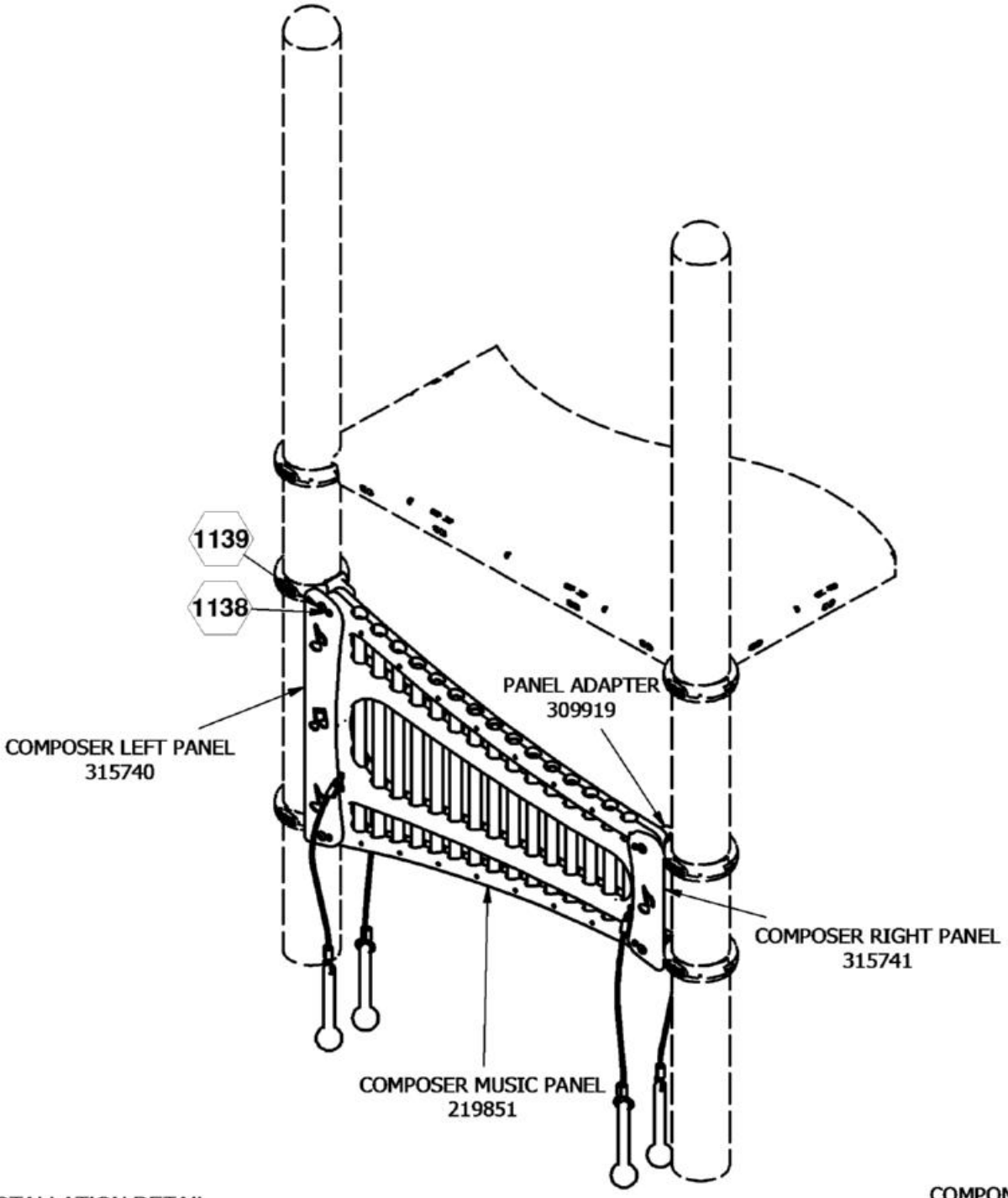
6. Plumb and level the entire assembly and tighten all fasteners.

7. When structure is finished and satisfactory, tighten all fastener and install Drive Rivets in all clamps to ensure clamps cannot slide down the posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety Guidelines.

71994 FORTE

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



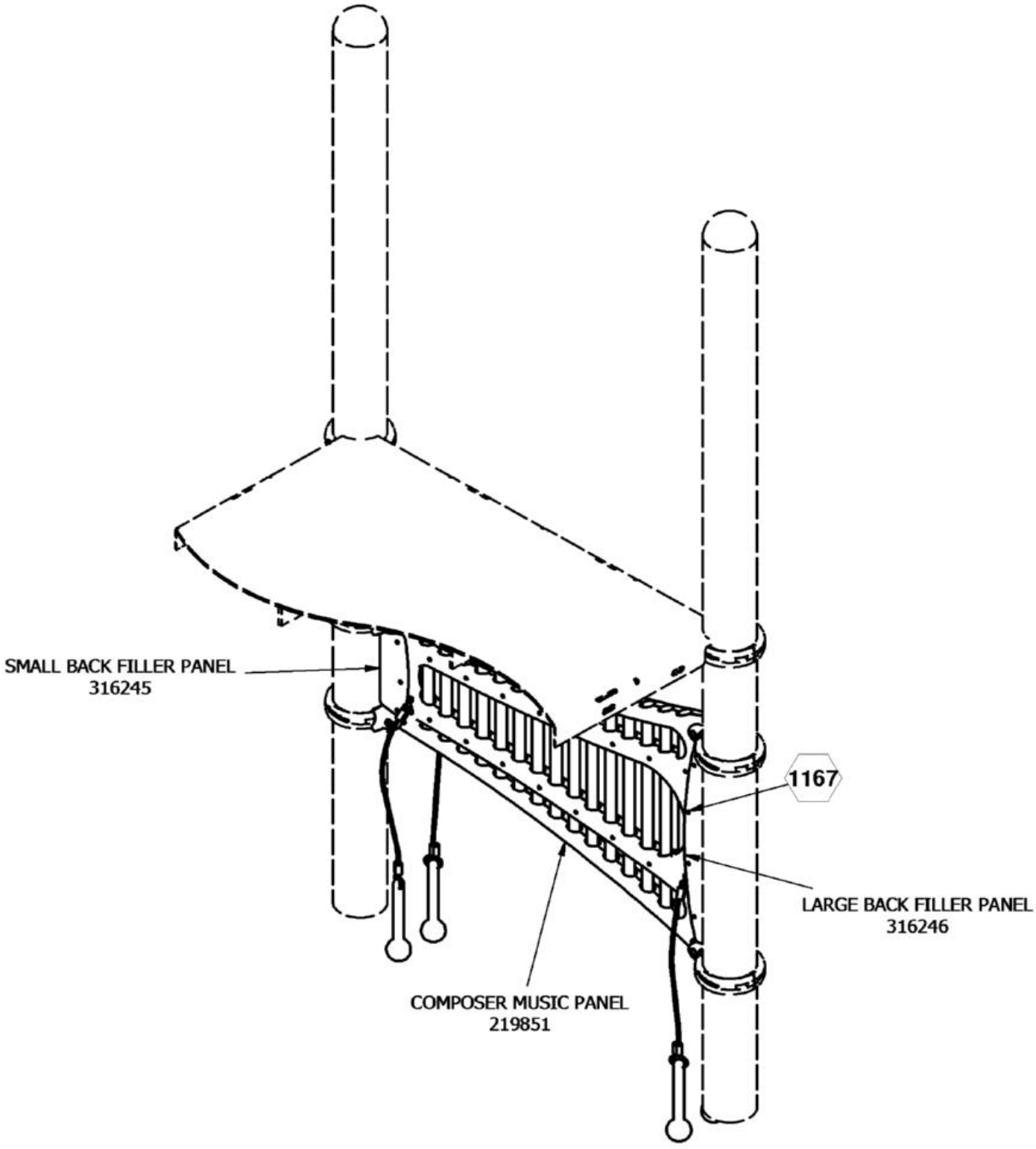
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 10/10/2022

FINISHED ASSEMBLY

71994 FORTE



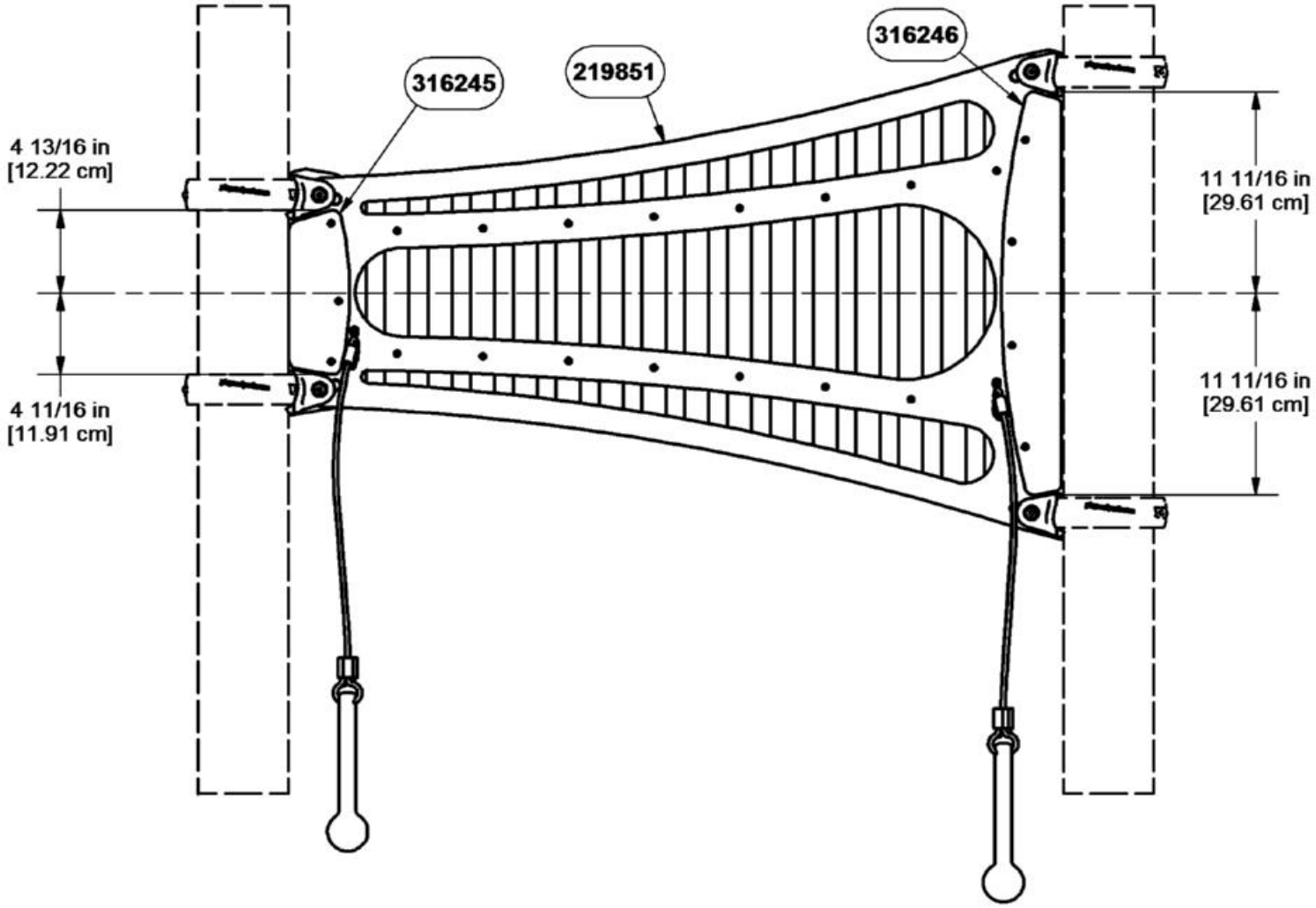
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Issued/Revised: 10/10/2022

FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

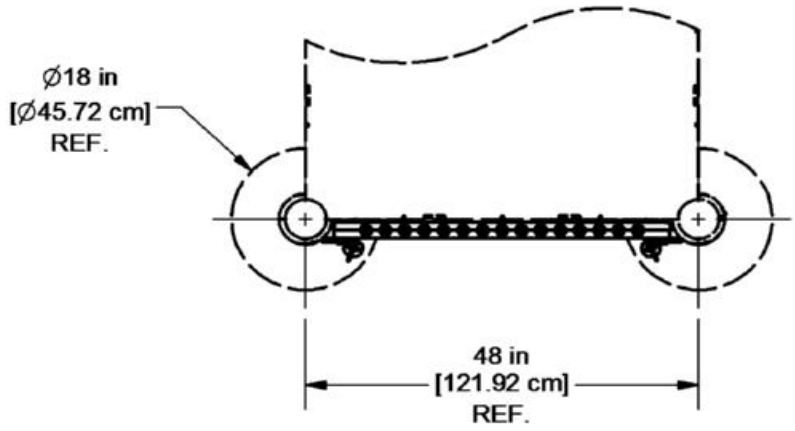
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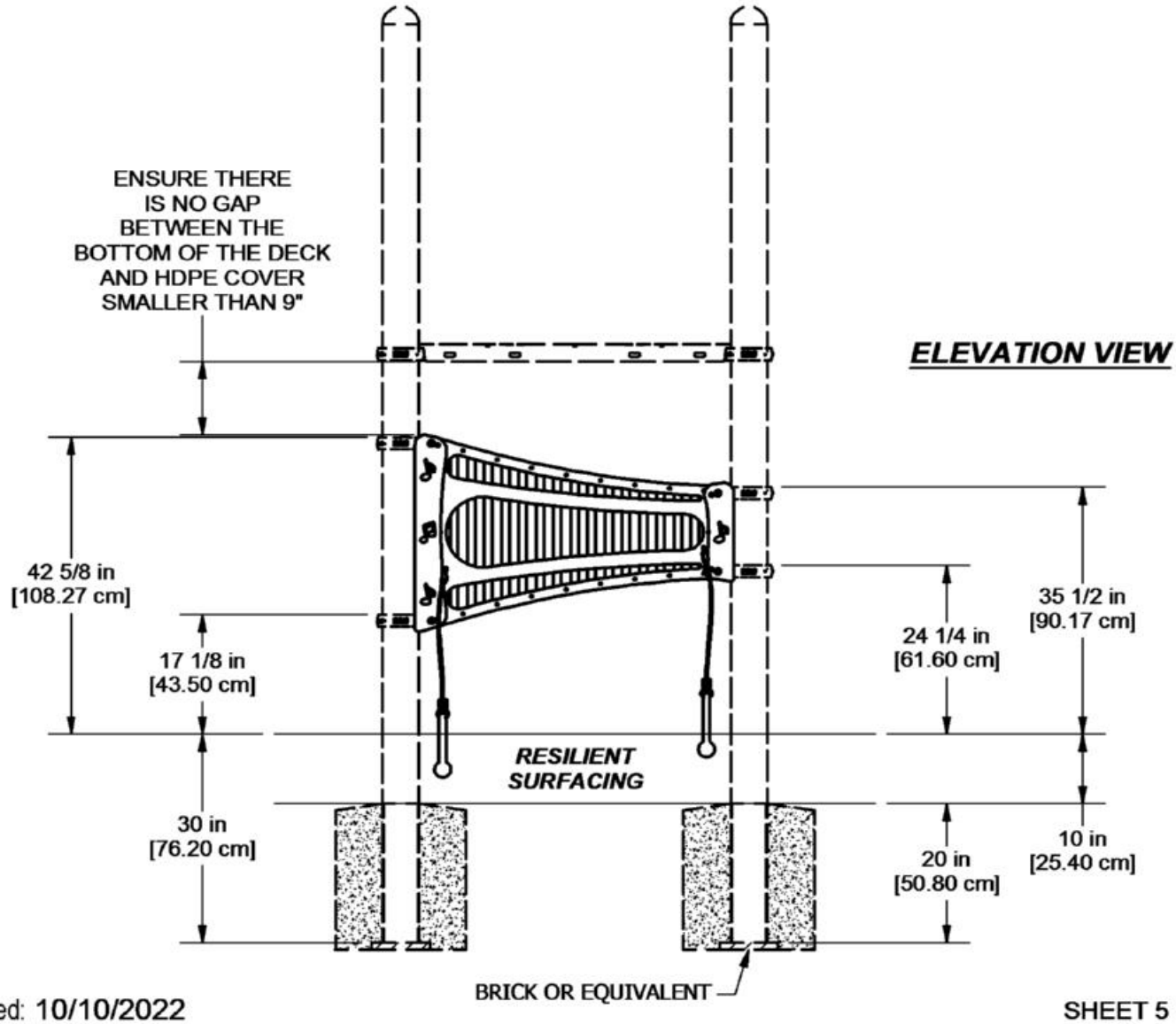
HDPE LOCATION VIEW

NOTE: ENSURE BACK OF FILLER PANELS ARE UP AGAINST UPRIGHTS.

71994 FORTE

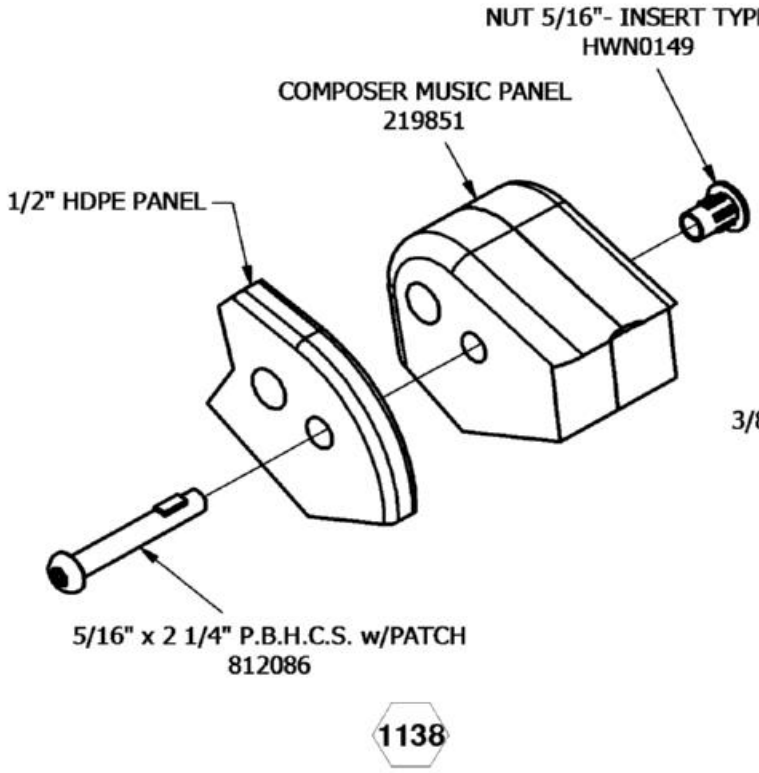


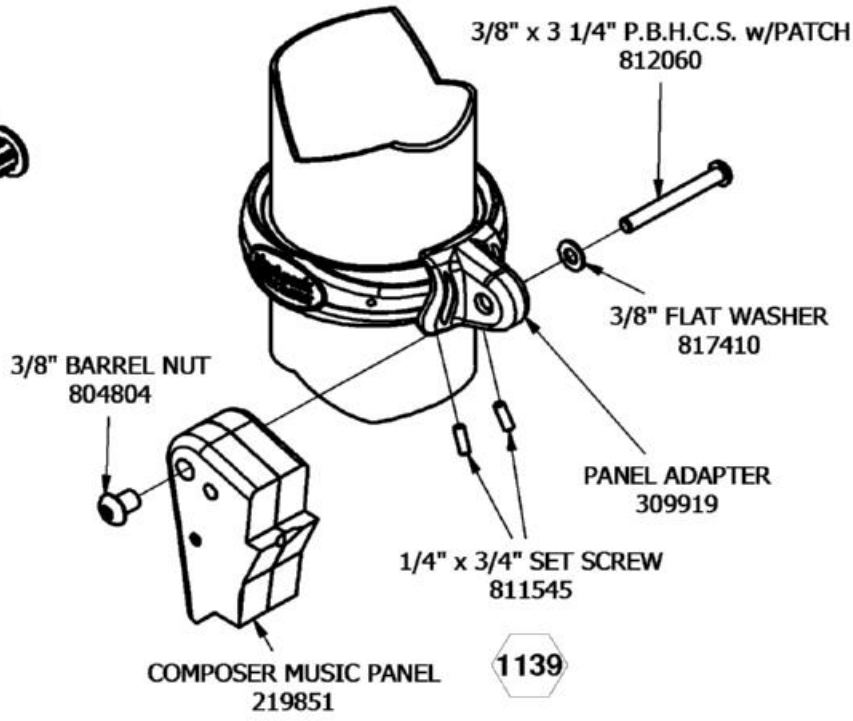
PLAN VIEW

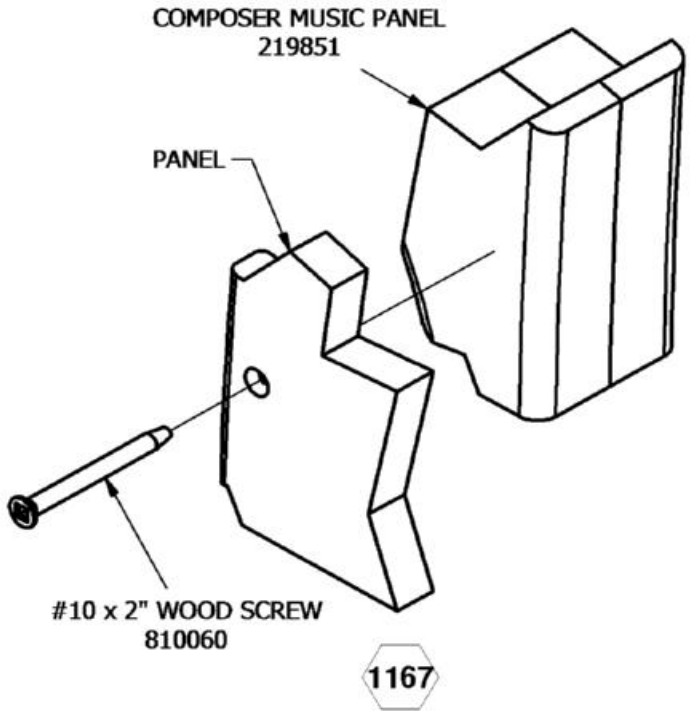


ELEVATION VIEW

71994 FORTE


NUT 5/16"- INSERT TYPE 1
HWN0149
COMPOSER MUSIC PANEL
219851
1/2" HDPE PANEL
5/16" x 2 1/4" P.B.H.C.S. w/PATCH
812086
1138


3/8" x 3 1/4" P.B.H.C.S. w/PATCH
812060
3/8" FLAT WASHER
817410
3/8" BARREL NUT
804804
PANEL ADAPTER
309919
1/4" x 3/4" SET SCREW
811545
COMPOSER MUSIC PANEL
219851
1139


COMPOSER MUSIC PANEL
219851
PANEL
#10 x 2" WOOD SCREW
810060
1167

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

71995 HARMONY

Parts List		
DESCRIPTION	QTY	PART NUMBER
DUO MUSIC PANEL	1	219845
RING HALF CLAMP	4	309913
DUO COVER	1	315662
DUO SUPPORT ASS'Y	1	315688
HARDWARE COMPLETE	1	315665
1/4" x 1" DRIVE RIVET	4	805302
3/8" x 1" P.B.H.C.S. w/PATCH	8	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	8	812051
3/8" FLAT WASHER	16	817410
3/8" FLAT WASHER (1 1/4" O.D.)	16	817424
3/8" HEAVY HEX NUT	8	804200

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Harmony and dig footings at location and depth as shown.

2. Loosely attach Duo Support Ass'y to uprights using Ring Half Calmps. See Detail 475.

3. Attach Duo Music Panel to Duo Support Ass'y. See Detail 1122.

4. Attach Duo Cover to Duo Music Panel. See Detail 1144. **NOTE:** See HDPE Location View. **NOTE:** Self Tapping Screws are supplied with Duo Music Panel (219845).

NOTE: If a conflict exists between a panel and/or panel clamp and an adjacent components panel and/or panel clamp you must move it up or down for it to work. Make sure the attachment point of the cable to the panel in not higher than 27". See Elevation and Back views.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

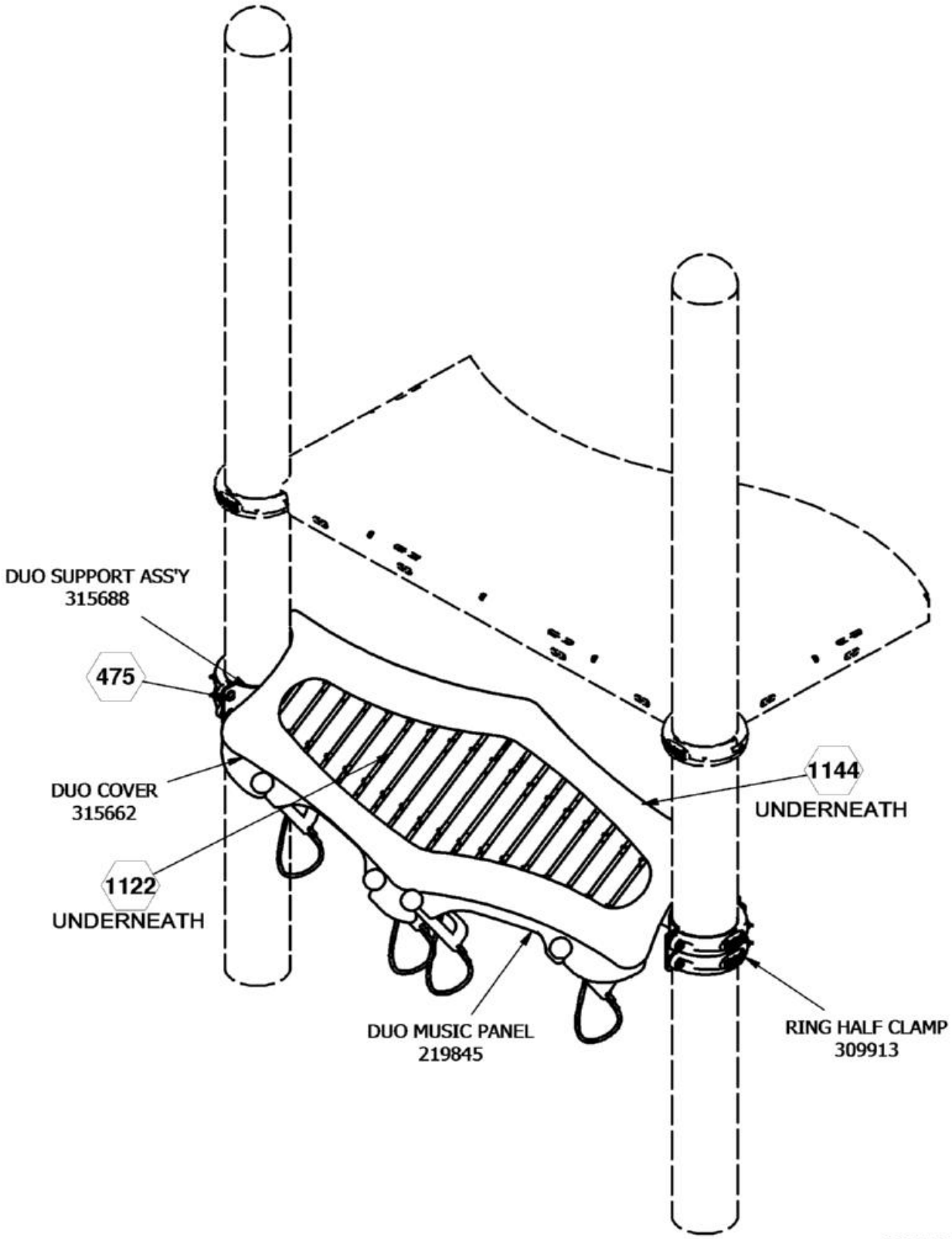
5. Plumb and level the entire assembly and tighten all fasteners.

6. When the assembly is finished and satifactory, install Drive Rivets in all Ring Half Clamps to ensure Ring Half Clamps cannot slide down posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed before allowing use of the equipment, as Ring Half Clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safey Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

71995 HARMONY



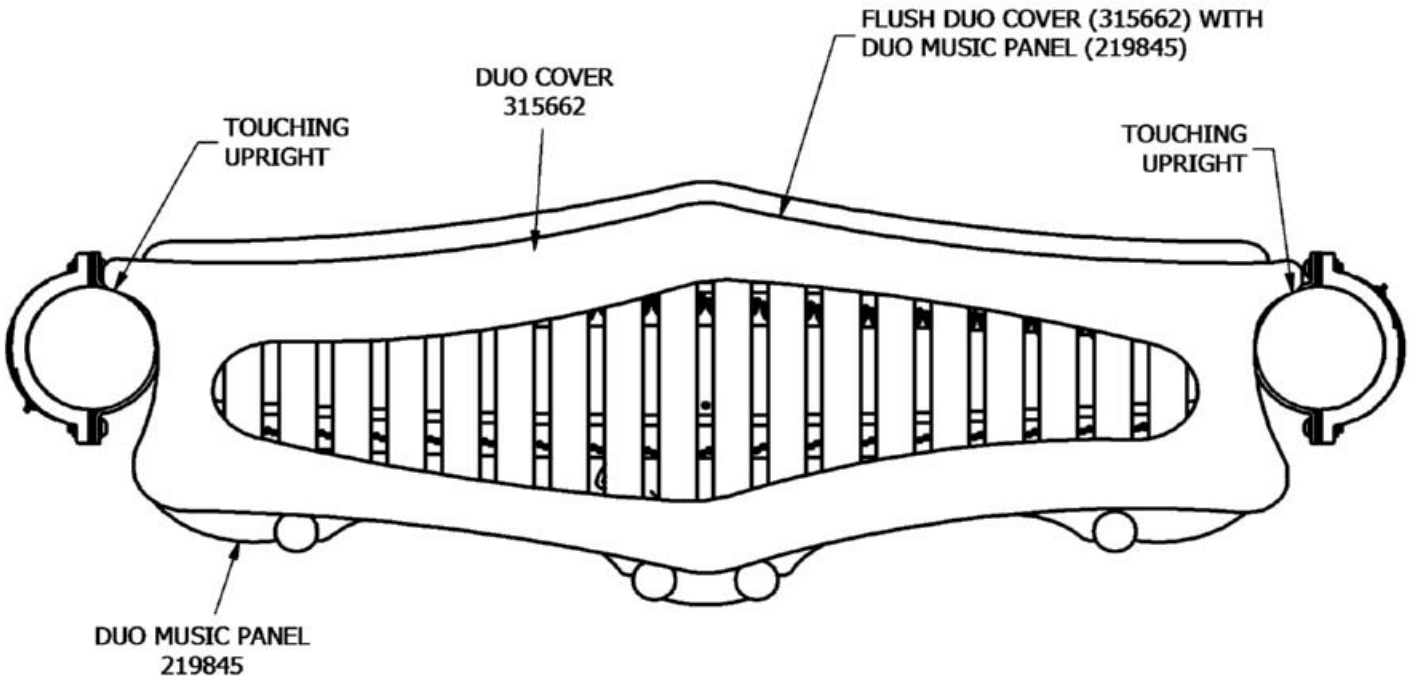
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 10/10/2022

FINISHED ASSEMBLY

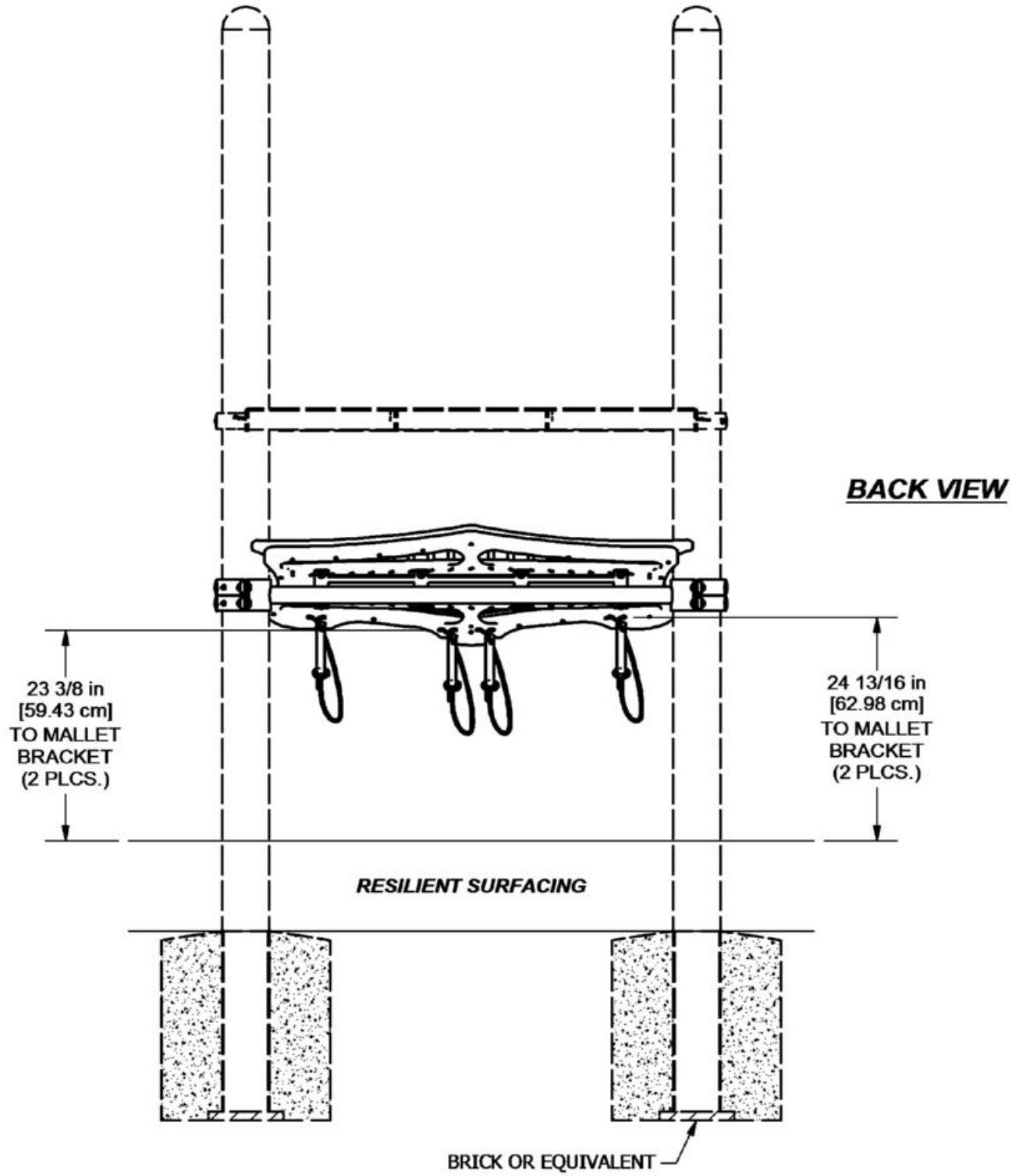
71995 HARMONY



HDPE LOCATION VIEW

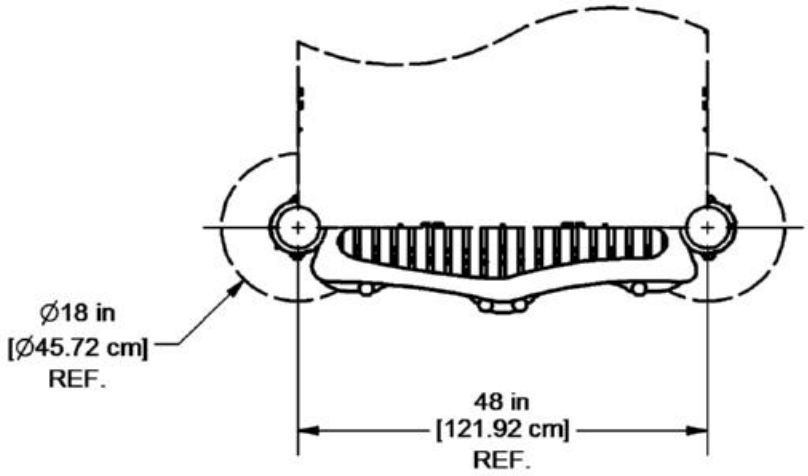
NOTE: ENSURE THAT THE CORNER OF EACH SIDE OF THE DUO COVER IS UP AGAINST THE UPRIGHT, AND THAT THE TOP EDGE IS FLUSH WITH THE DUO MUSIC PANEL (219845)

71995 HARMONY

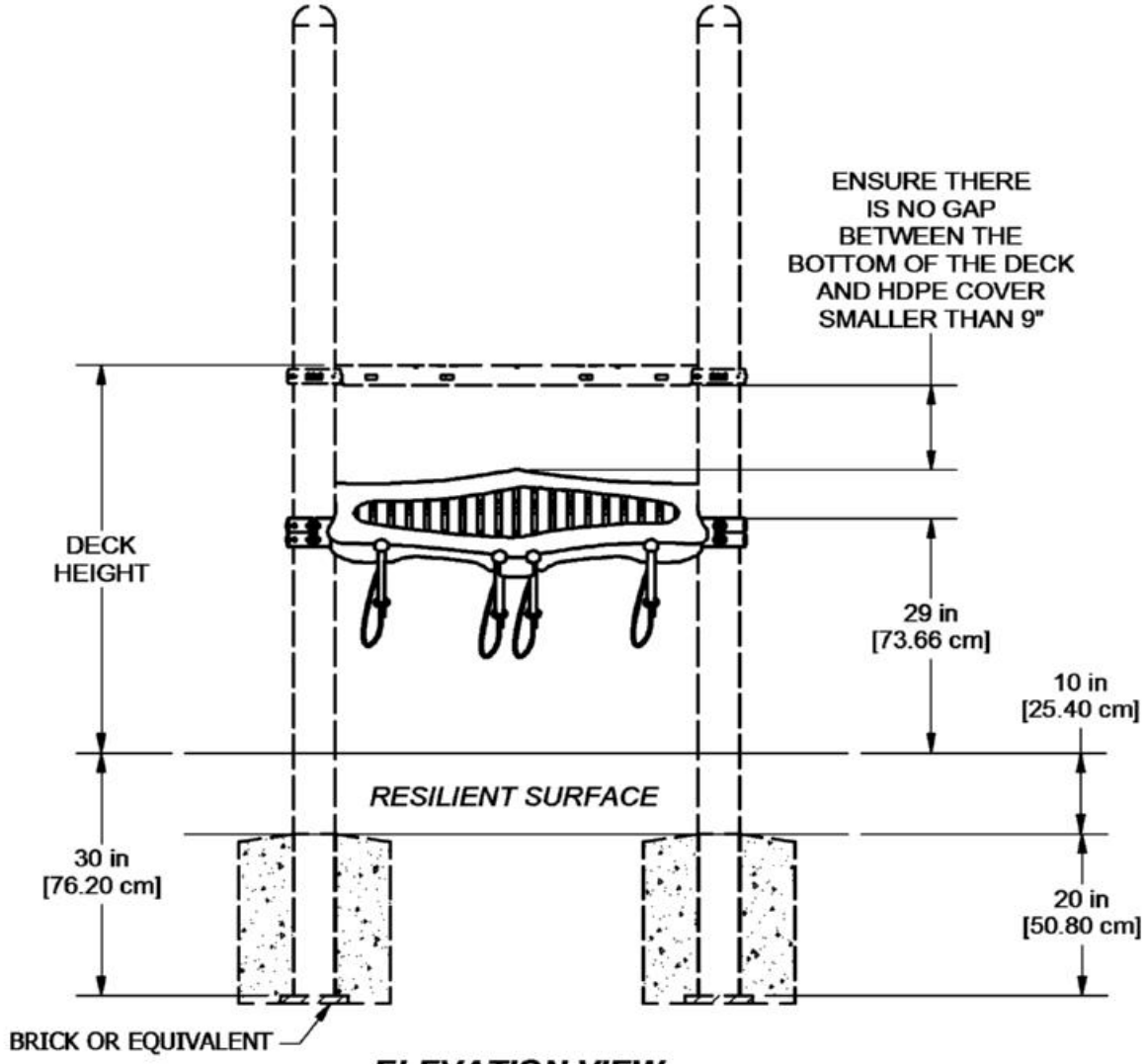


NOTE: MALLET HEIGHT CAN NOT EXCEED 27"

71995 HARMONY

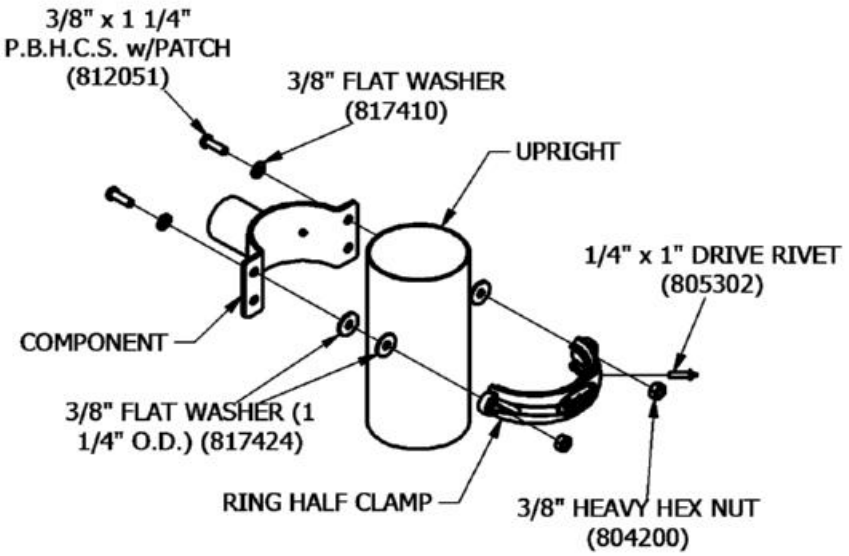


PLAN VIEW

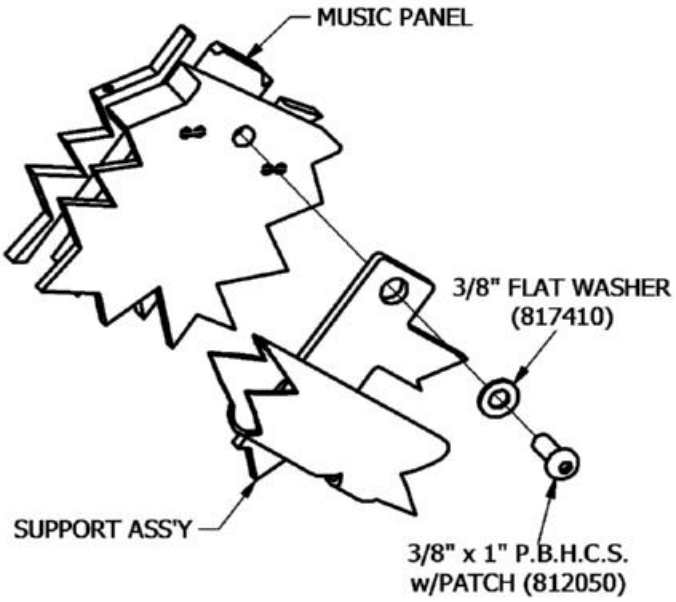


ELEVATION VIEW

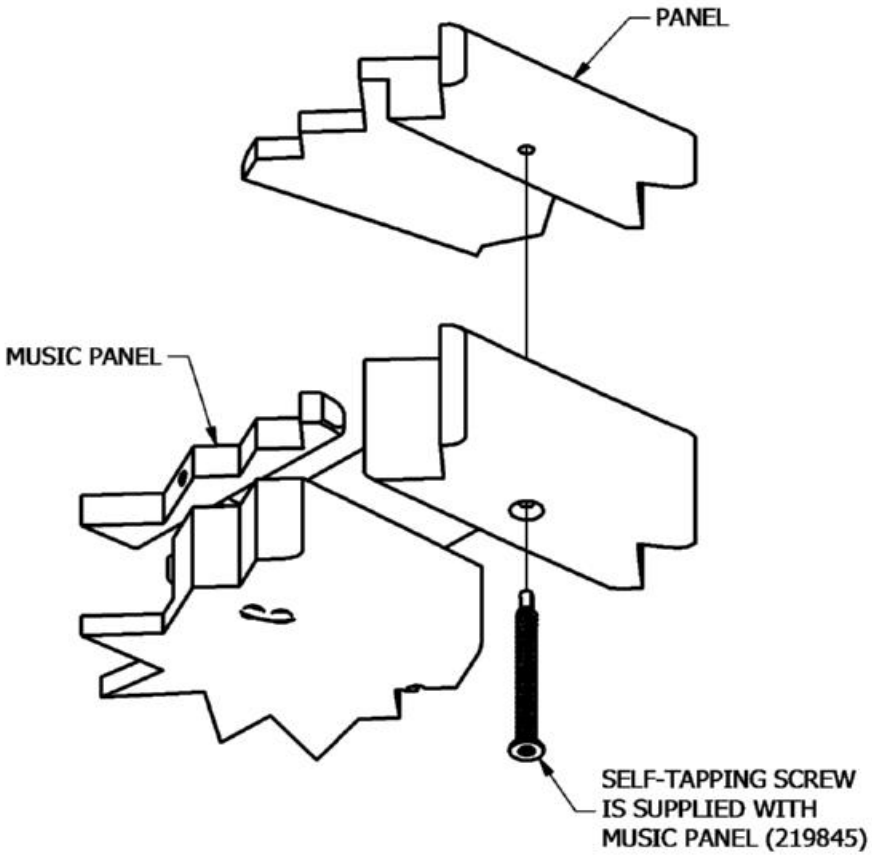
71995 HARMONY



475



1122



1144

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

71997 CADENZA AL

Parts List		
DESCRIPTION	QTY	PART NUMBER
ALUMINUM MUSIC PANEL	1	219784
RING HALF CLAMP	4	309913
SM SOLO ALUM HDPE COVER	1	315969
CADENZA SUPPORT ASS'Y	1	316101
HARDWARE COMPLETE	1	315739
1/4" x 1" DRIVE RIVET	4	805302
3/8" x 1" P.B.H.C.S. w/PATCH	6	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	8	812051
3/8" FLAT WASHER	14	817410
3/8" FLAT WASHER (1 1/4" O.D.)	16	817424
3/8" HEAVY HEX NUT	8	804200

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which uprights are to receive the Cadenza AL. Refer to you Finished Assembly view.

2. Attach the Cadenza Support Ass'y to the uprights. See Detail 475.

3. Attach the DM Solo HDPE Cover to the Fiberglass Music Panel. See Detail 1168. **NOTE:** Self Tapping Screws are supplied with Aluminum Music Panel (219784).

4. Attach the HDPE Cover and Music Panel assembly to the DM Solo Aluminum Support Ass'y. See Detail 1122.

NOTE: If a conflict exists between a panel and/or panel clamp and an adjacent components panel and/or panel clamp you must move it up or down for it to work. Make sure the attachment point of the cable to the panel in not higher than 27". See Back and Elevation views.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

5. Plumb and level the entire assembly and tighten all fasteners.

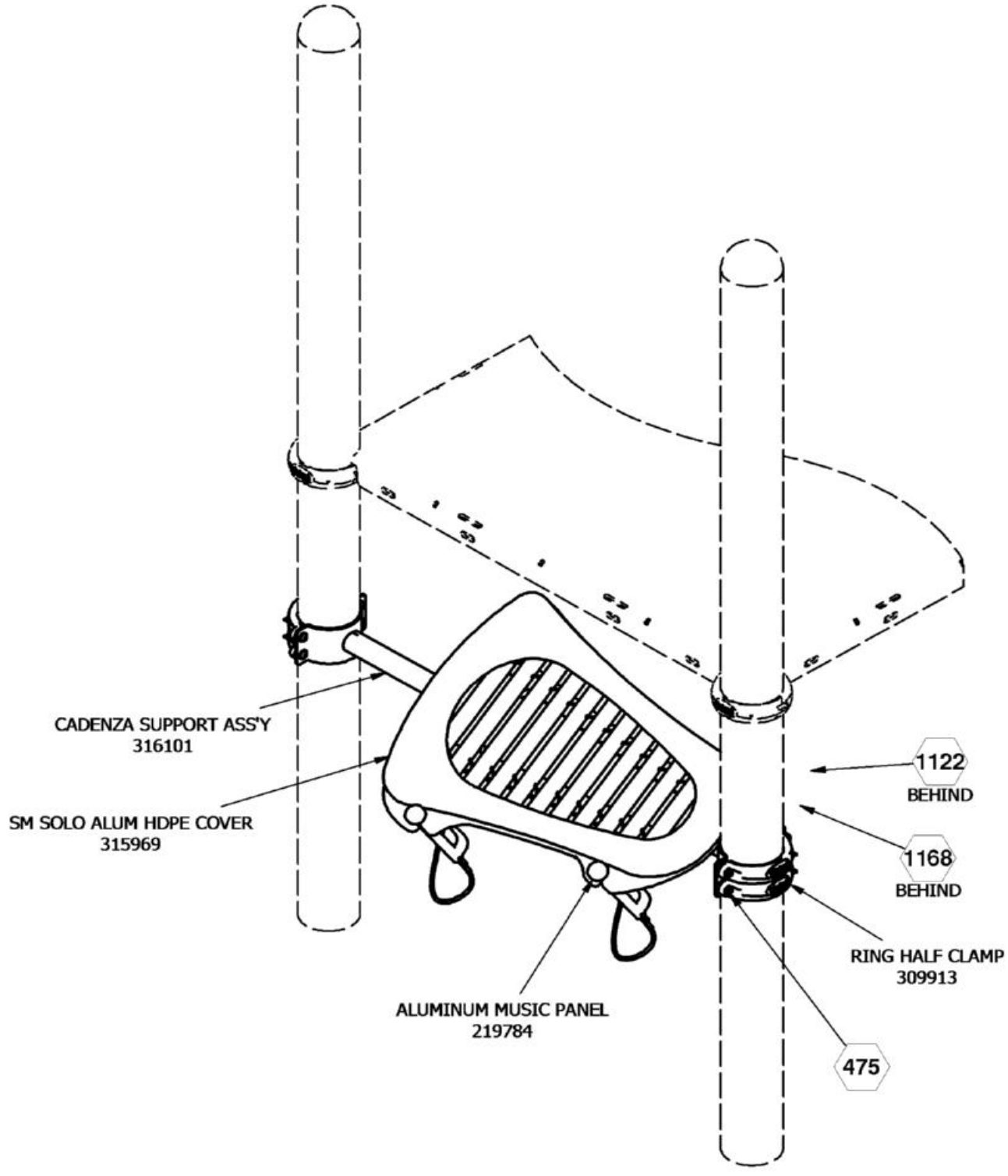
6. When the structure is finished and satisfactory, install Drive Rivets to all clamps to ensure clamps cannot slide down posts. See Pipe Clamps sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

71997 CADENZA AL



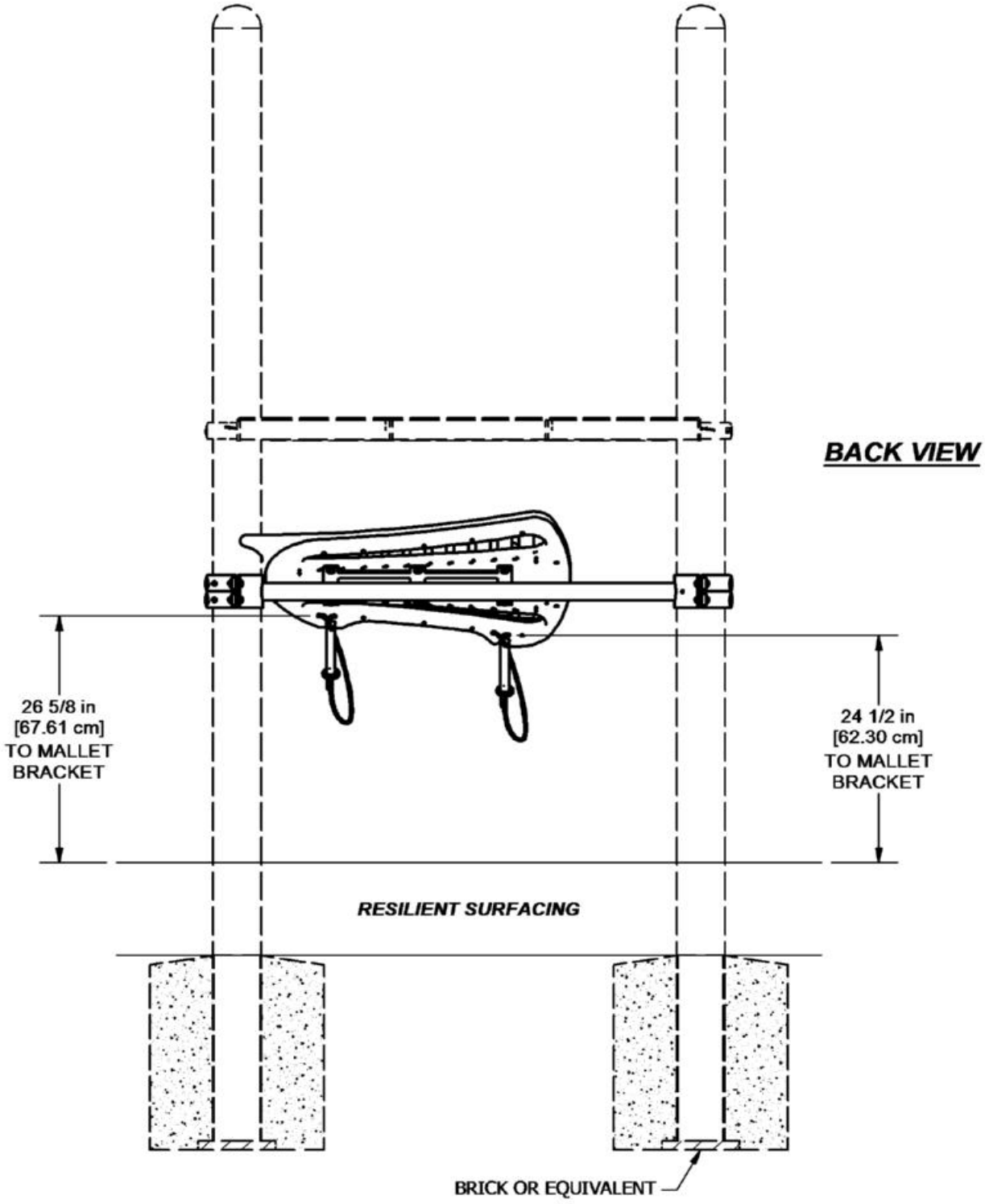
= INSTALLATION DETAIL

Issued/Revised: 10/10/2022

FINISHED ASSEMBLY

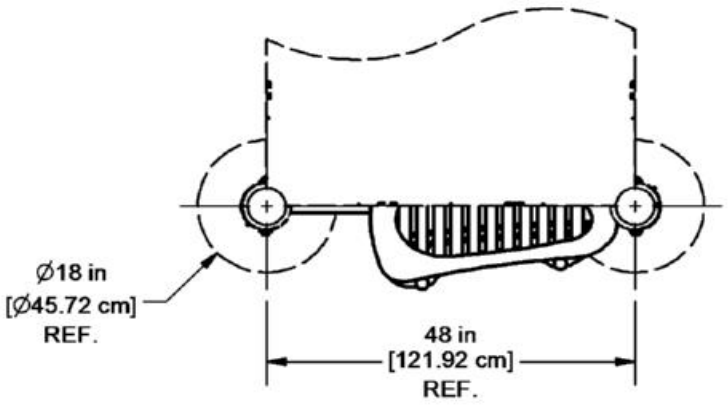
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

71997 CADENZA AL

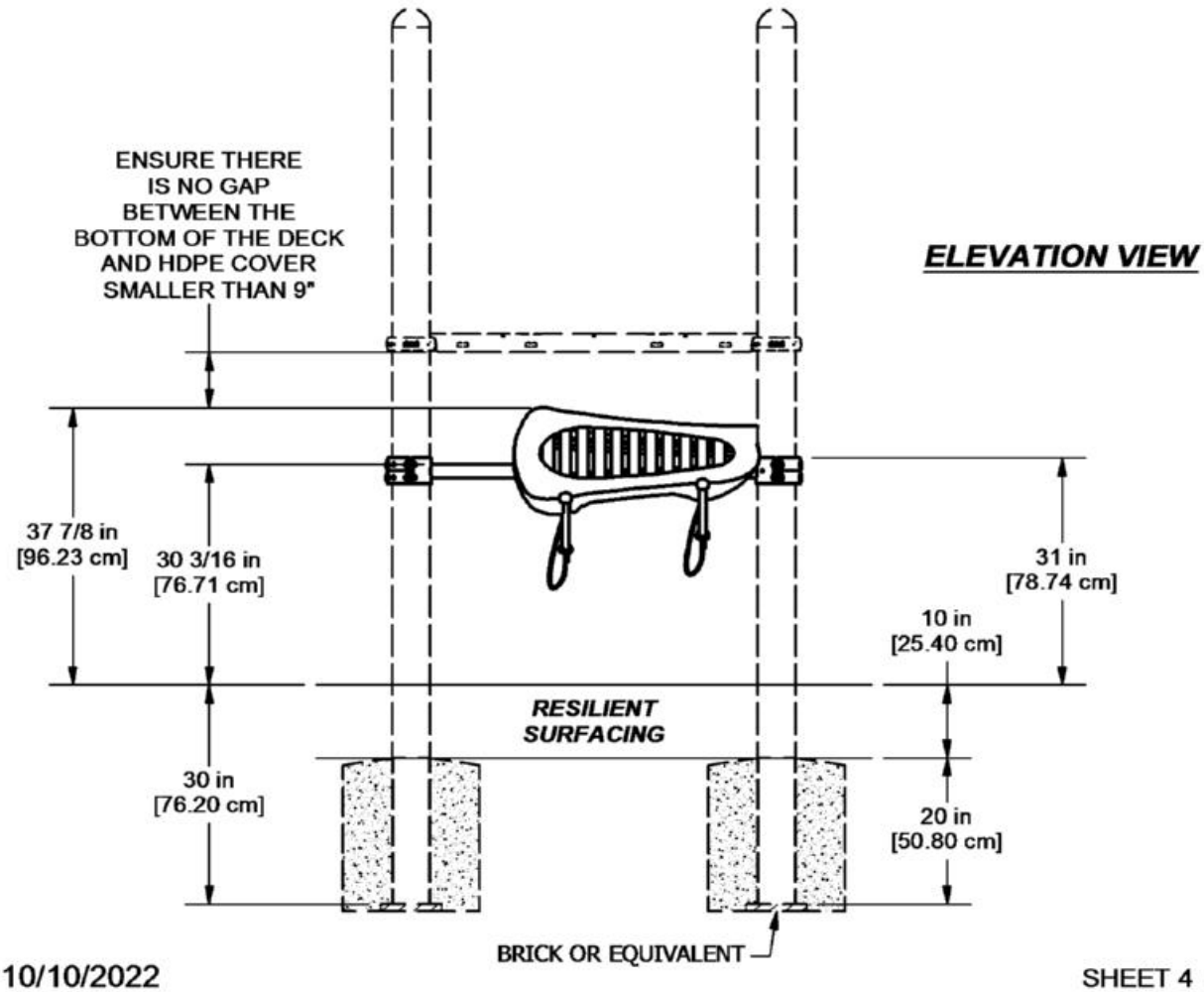


NOTE: MALLET HEIGHT CAN NOT EXCEED 27"

71997 CADENZA AL

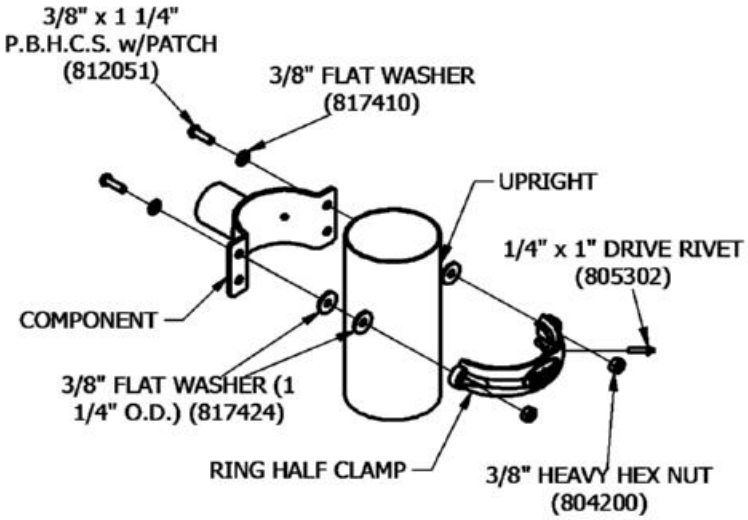


PLAN VIEW

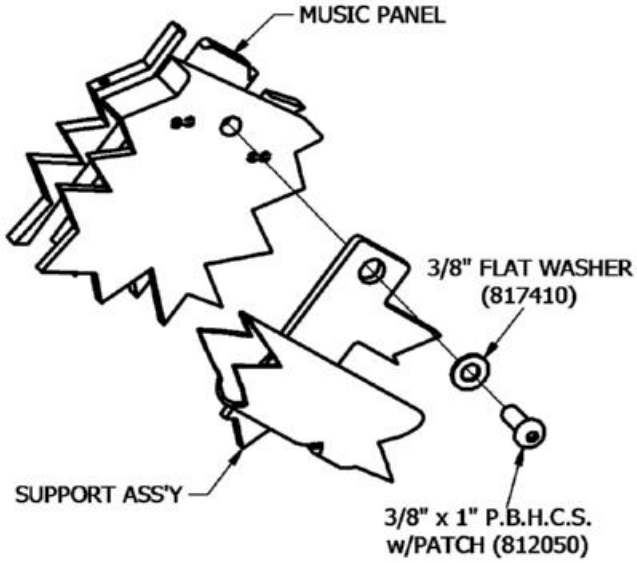


ELEVATION VIEW

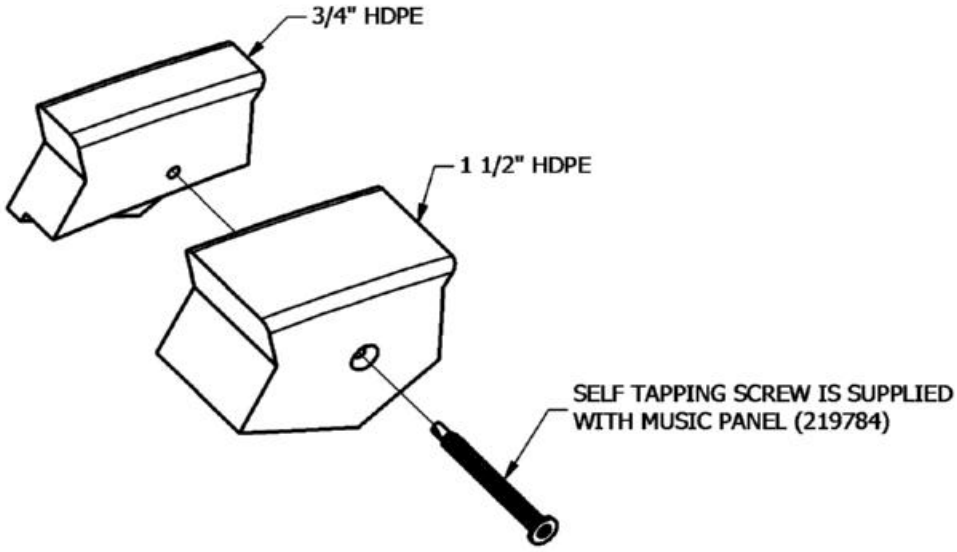
71997 CADENZA AL



475



1122



1168

72025 4'-8" & 5'-4" DOUBLE BEND CLIMBER

Parts List		
DESCRIPTION	72025	PART NUMBER
RING HALF CLAMP	4	309913
4'-8" DOUBLE BEND CLIMBER WELDMENT	1	316071
HARDWARE COMPLETE	1	316080
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	10	812051
3/8" FLAT WASHER (1 1/4" O.D.)	20	817424
3/8" HEAVY HEX NUT	8	804200
3/8" LOCK NUT	2	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*
Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Double Bend Climber. Refer to order ground view.

2. Connect the 4'-8" Double Bend Climber to the deck. See Detail 461.

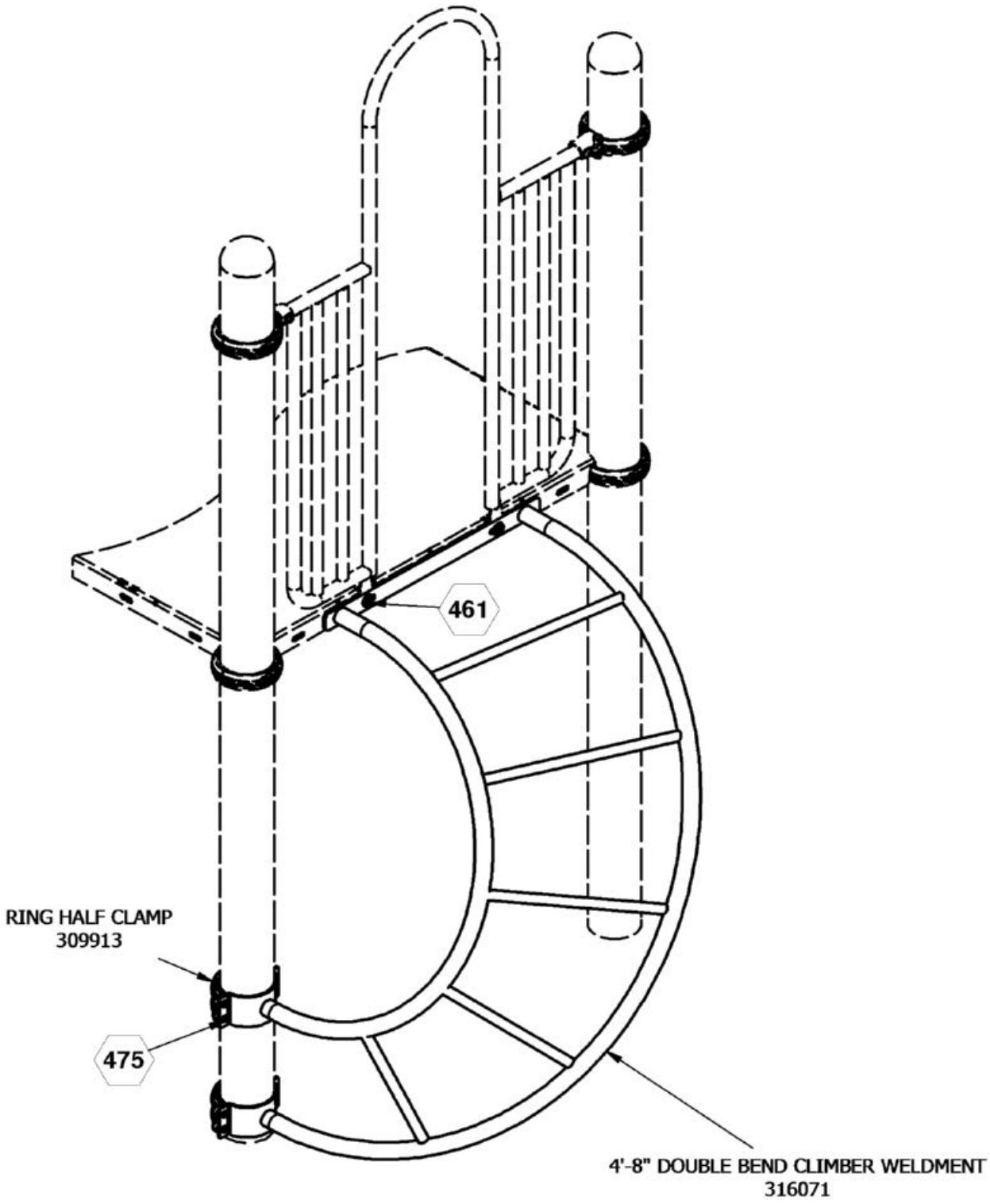
3. Connect the 4'-8" Double Bend Climber to the left upright. See Detail 475.

4. Plumb and level the entire assembly and tighten all fasteners.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

72025 DOUBLE BEND CLIMBER



⬡ = INSTALLATION DETAIL

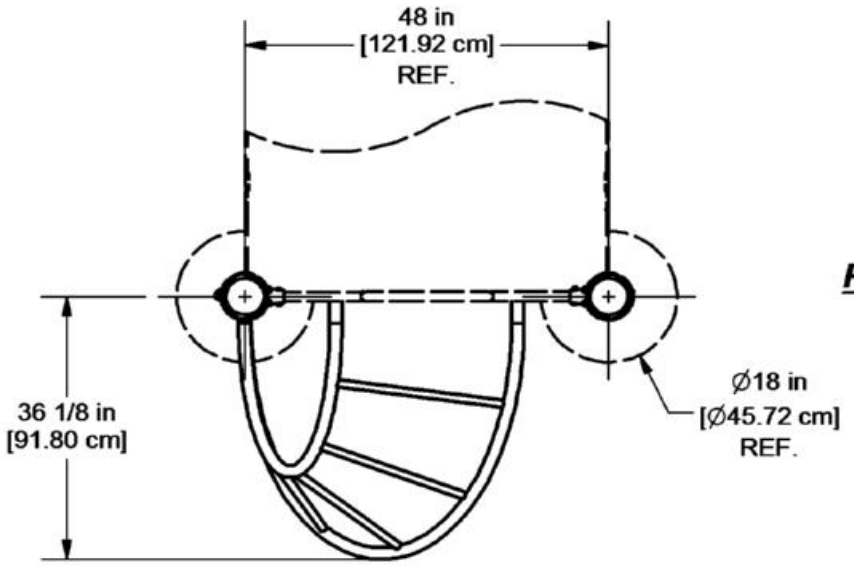
Issued/Revised: 9/7/2022

FINISHED ASSEMBLY

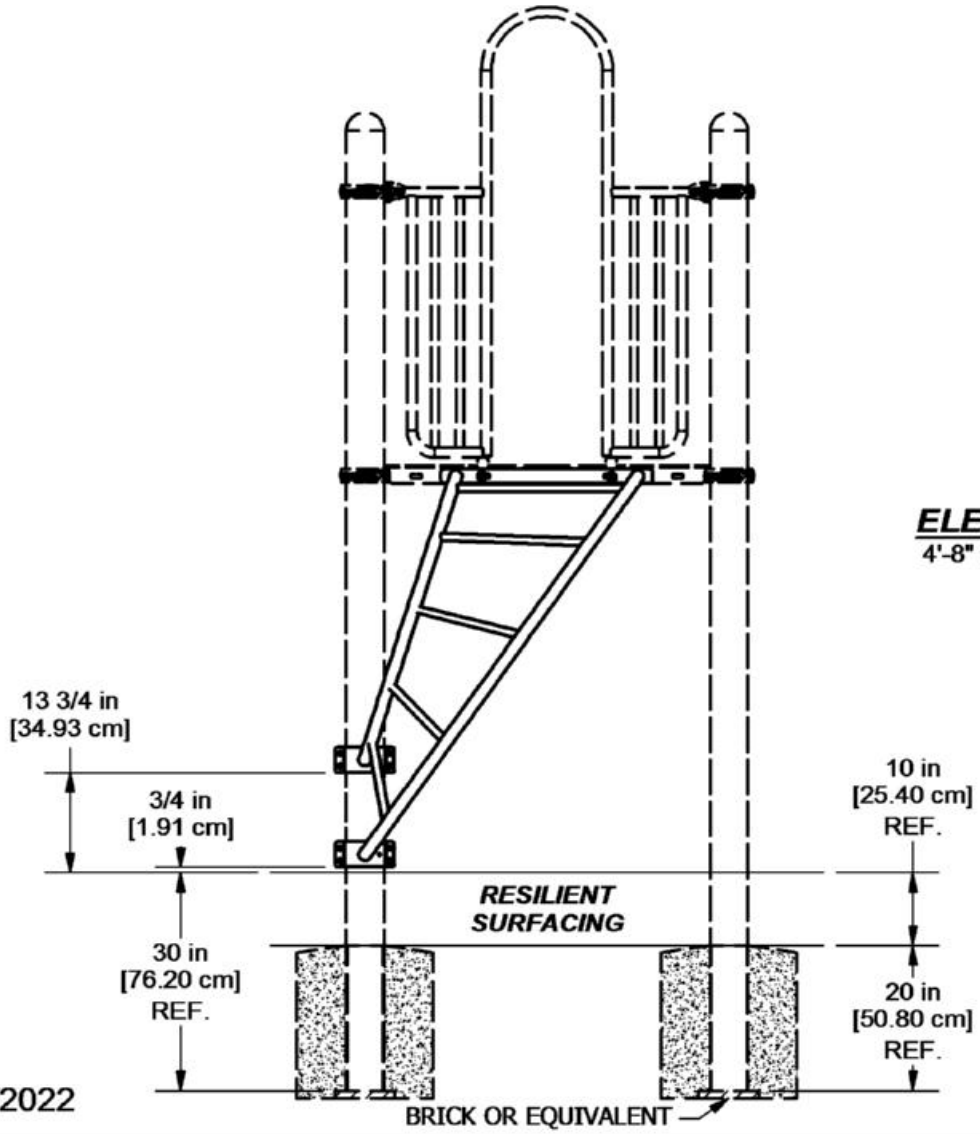
4'-8" CLIMBER SHOWN

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

72025 4'-8" DOUBLE BEND CLIMBER

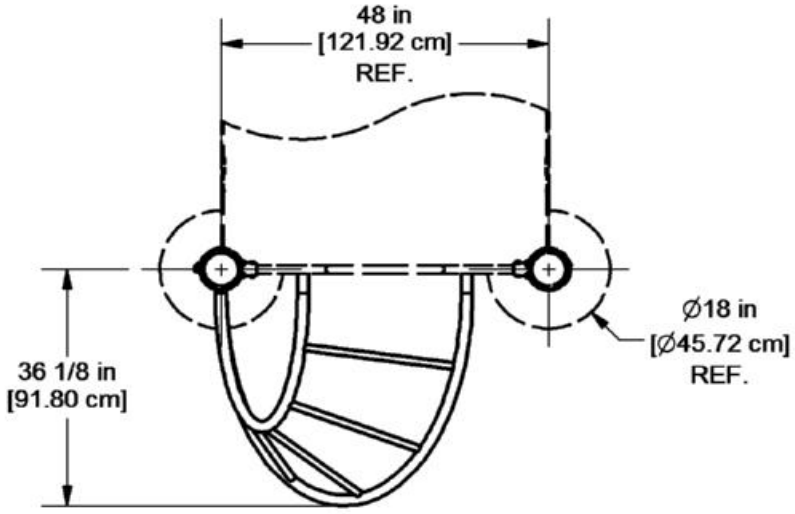


PLAN VIEW

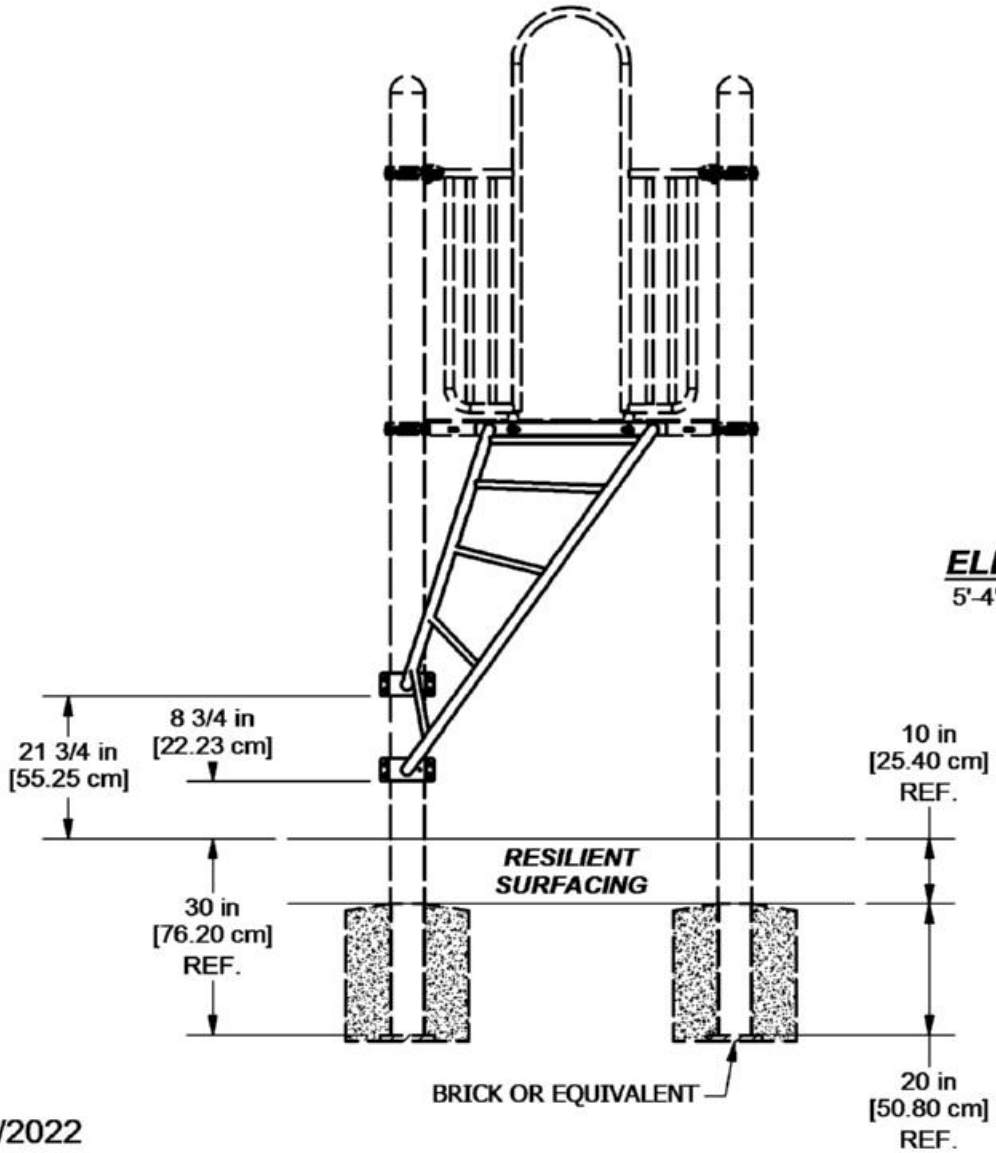


ELEVATION VIEW
4'-8" CLIMBER SHOWN

72025 5'-4" DOUBLE BEND CLIMBER

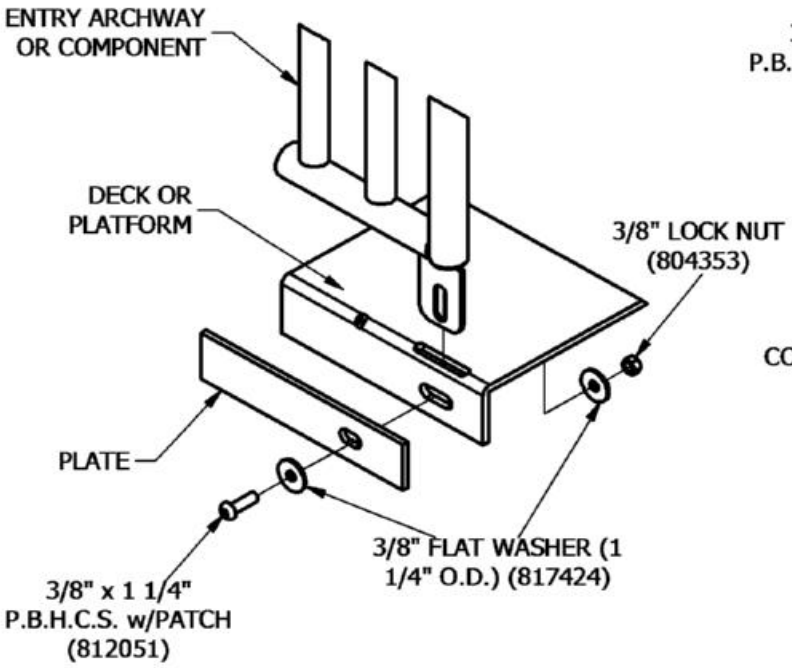


PLAN VIEW

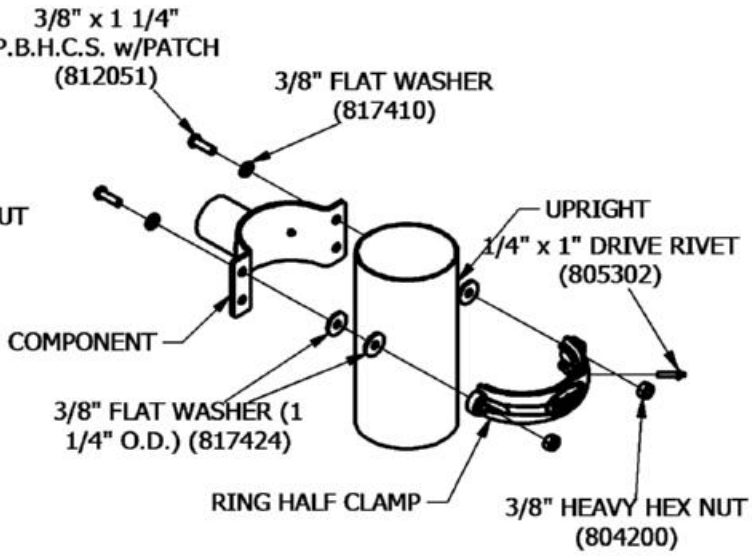


ELEVATION VIEW
5'-4" CLIMBER SHOWN

72025 DOUBLE BEND CLIMBER



461



475

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

72066 INTERACTIVE SENSOR PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
SUPPORT PIPE	2	307586
PANEL ADAPTER	2	309919
SM ACTIVITY PANEL	1	313586
HARDWARE COMPLETE	1	313459
1/4" x 3/4" SET SCREW	4	811545
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056
3/8" FLAT WASHER (1 1/4" O.D.)	6	817424
3/8" BARREL NUT	2	804804
3/8" LOCK NUT	2	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*
Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

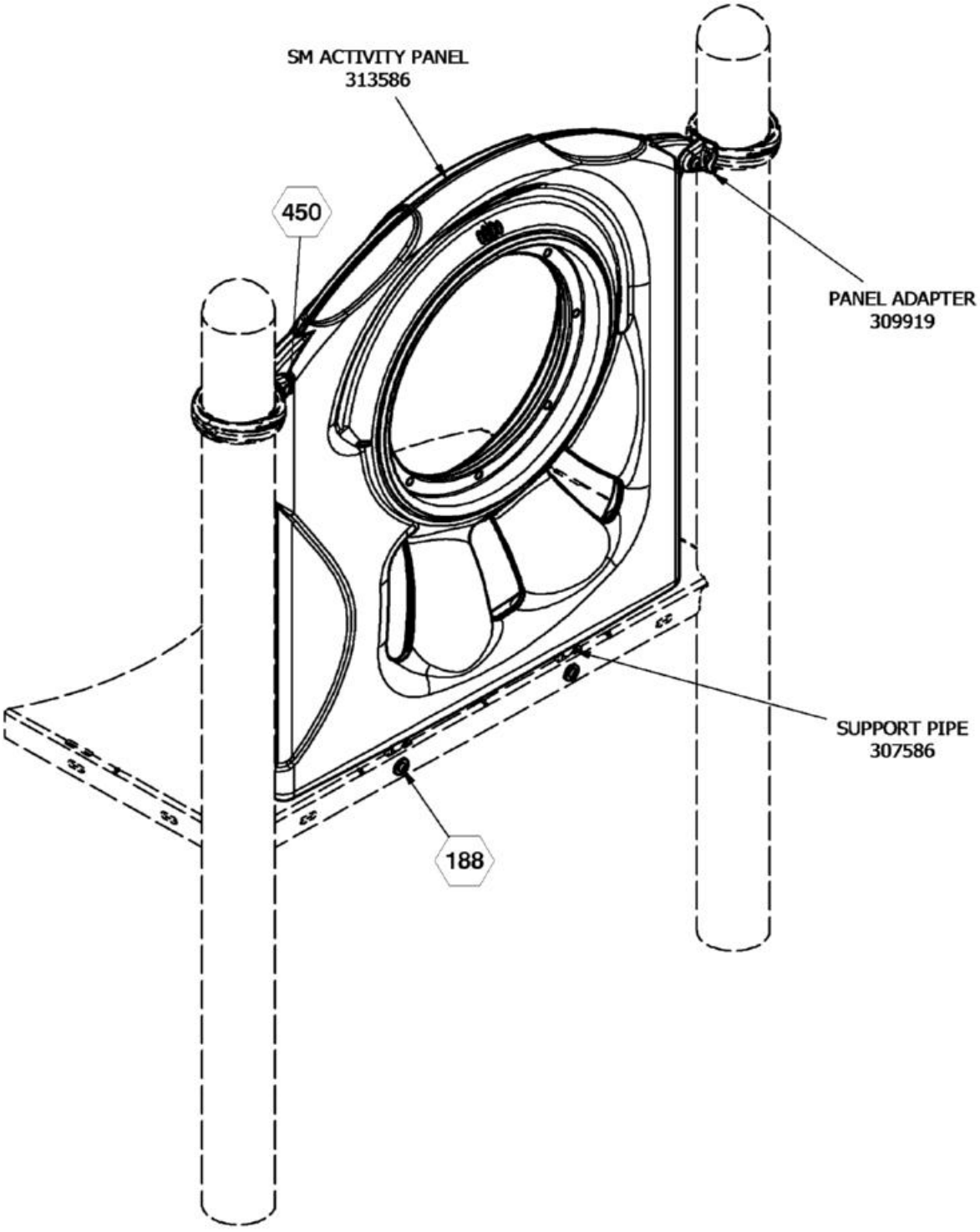
1. Determine which deck is to receive the Interactive Sensor Panel. Refer to Order Top View.
2. Attach the Support Pipes to the deck. See Detail 188.
3. Attach the Panel Adapters to the Ring Clamps. See Detail 450.
4. Slide the Activity Panel onto the Support Pipes and connect it to the Panel Clamps. See Detail 450.
5. Plumb and level the entire assembly and tighten all fasteners.
6. When the structure is finished and satisfactory, install Drive Rivets to all clamps to ensure clamps cannot slide down posts. See Pipe Clamps sub-assembly sheet. ***It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them.*** Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72066 INTERACTIVE SENSOR PANEL



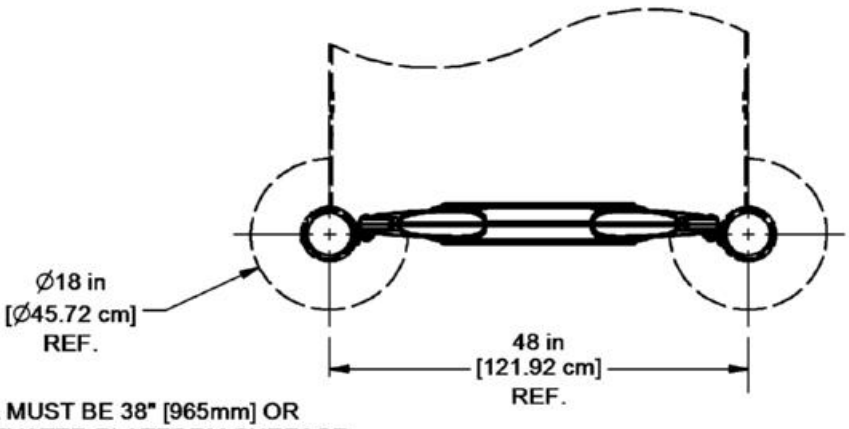
= INSTALLATION DETAIL

Issued/Revised: 12/14/2022

FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

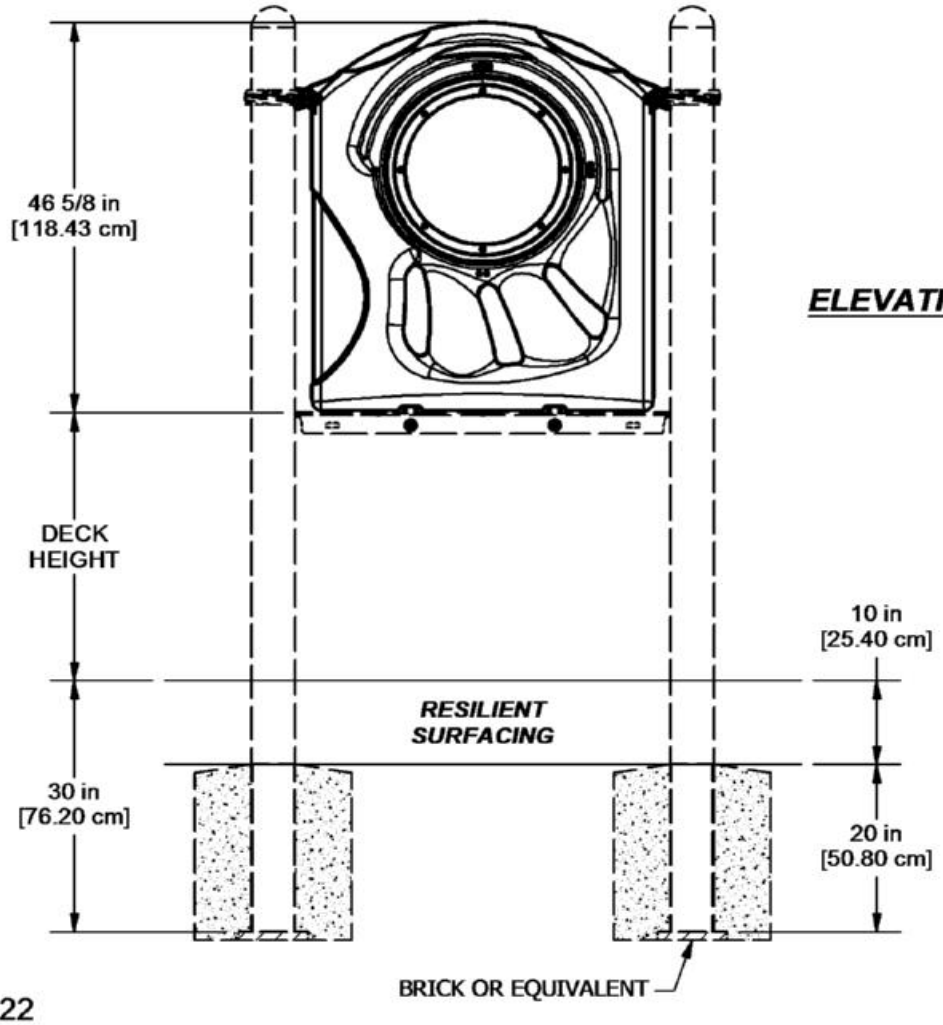
72066 INTERACTIVE SENSOR PANEL



PLAN VIEW

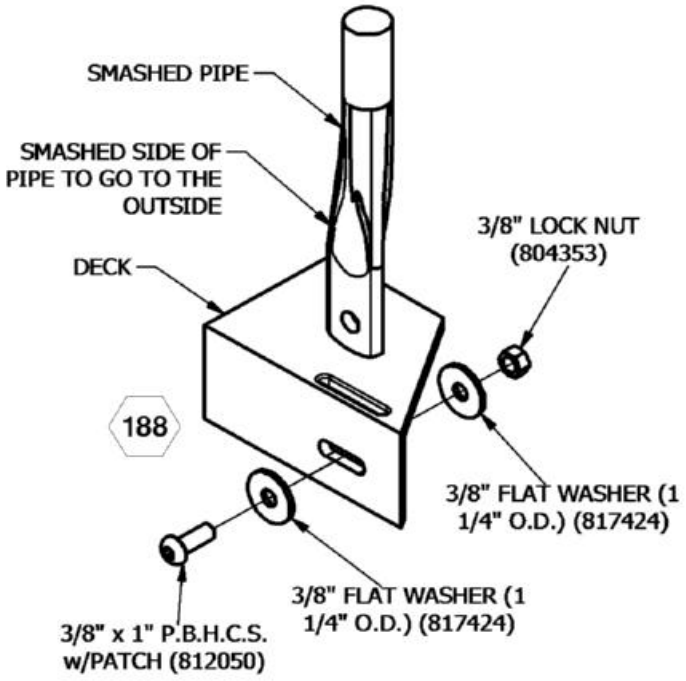
NOTE:
TOP EDGE OF PANEL MUST BE 38" [965mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 5-12 YEAR OLDS.

TOP EDGE OF PANEL MUST BE 29" [736mm] OR GREATER ABOVE ELEVATED PLATFORM SURFACE FOR USE BY 2-5 YEAR OLDS.



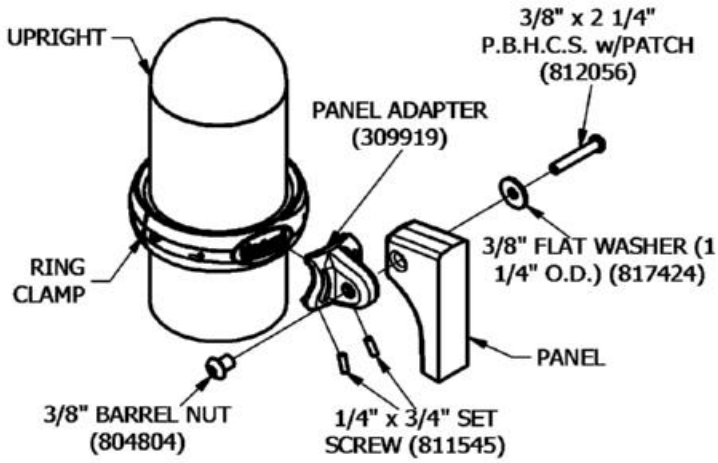
ELEVATION VIEW

72066 INTERACTIVE SENSOR PANEL



NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



450

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

72075 MAZE ACTIVITY PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	2	309919
CRAWL TUNNEL PANEL	1	309997
MOUNTING BRACKET	1	310919
SUPERMAX MAZE ACTIVITY PANEL	1	316392
HARDWARE COMPLETE	1	316393
1/4" x 3/4" SET SCREW	4	811545
5/16" x 1 1/2" P.B.H.C.S. w/PATCH	12	812045
5/16" LOCK WASHER	12	817330
5/16" FLAT WASHER (5/8" O.D.)	12	817406
5/16" T-NUT	12	804555
3/8" x 1" P.B.H.C.S. w/PATCH	2	812050
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	2	812056
3/8" LOCK WASHER	2	817334
3/8" FLAT WASHER	2	817410
3/8" FLAT WASHER (1 1/4" O.D.)	4	817424
3/8" BARREL NUT	2	804804
3/8" LOCK NUT	2	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

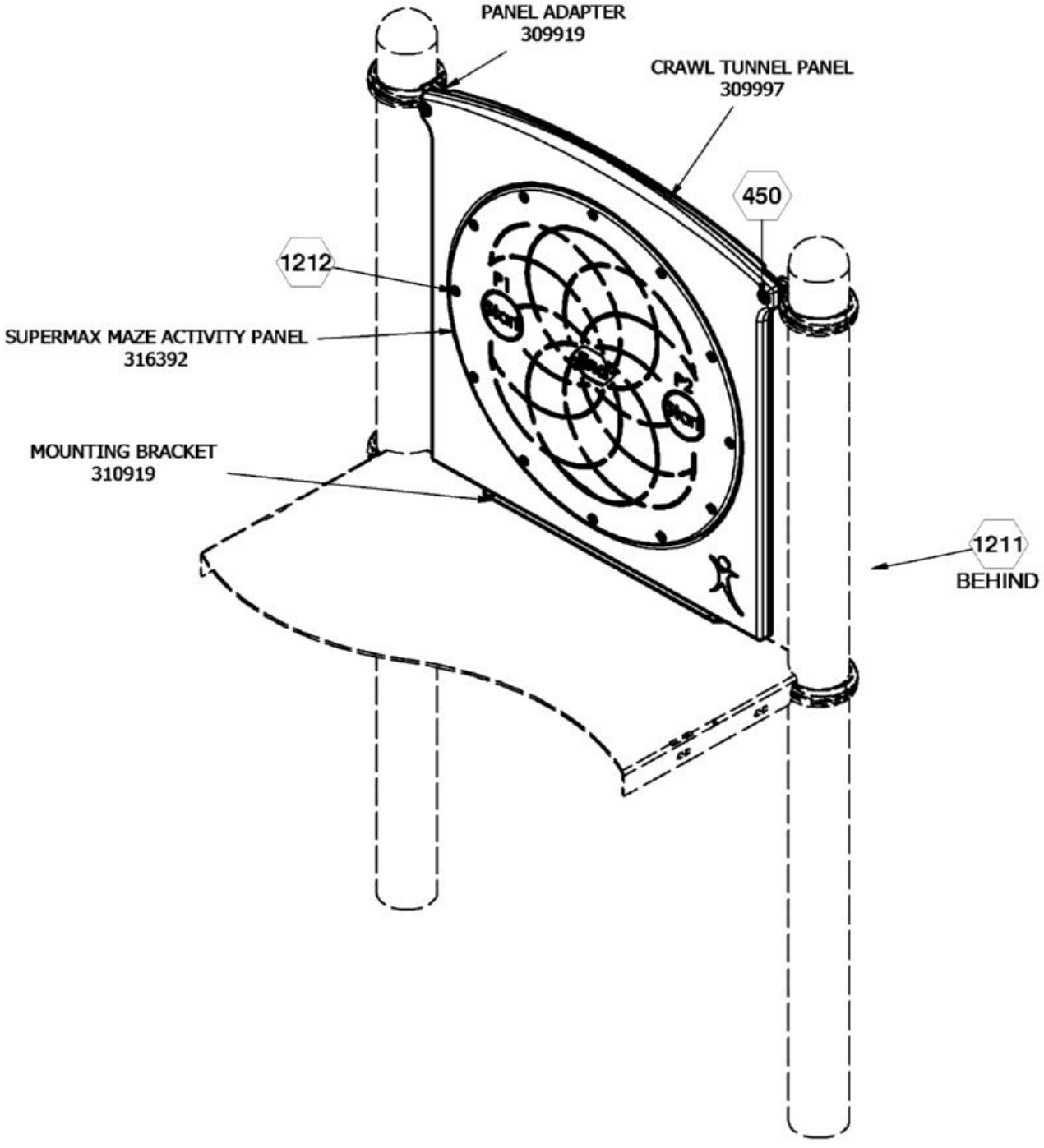
1. Determine which deck is to receive the Maze Activity Panel. Refer to Order Top View.
2. Attach the Panel Mounting Bracket to the deck. See Detail 1211.
3. Attach Maze Activity Panel to Crawl Tube Panel. See Detail 1212.
4. Loosely attach Ring Clamps. Refer to seperate Ring Clamp installation sheet.
5. Attach Panel Adapters to Ring Clamps. See Detail 450.
6. Slide the Maze Activity Panel assembly onto the Panel Mounting Bracket and attach it to the Panel Adapters. See Detail 450. Refer to Finished Assembly view for correct orientation.
7. Plumb and level the entire assembly and tighten all fasteners.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72075 MAZE ACTIVITY PANEL



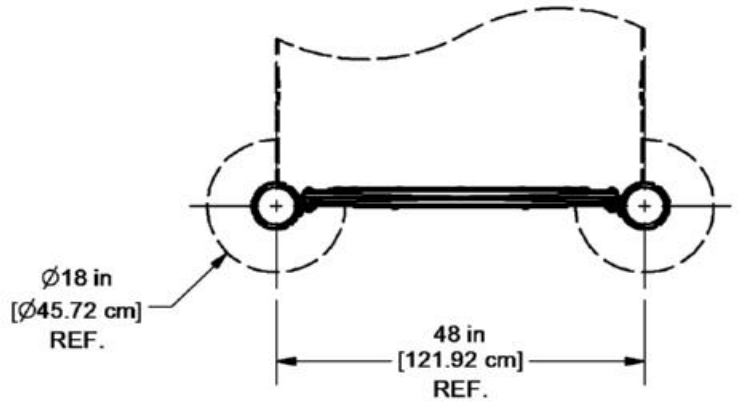
⬡ = INSTALLATION DETAIL

Issued/Revised: 3/15/2023

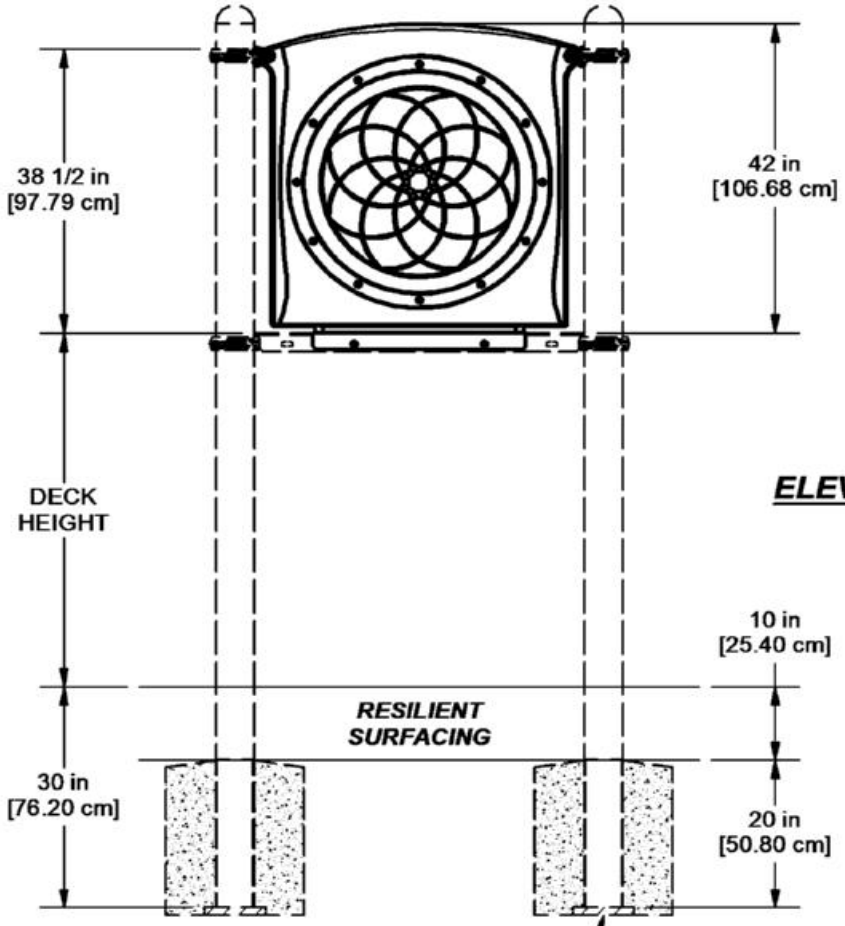
FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

72075 MAZE ACTIVITY PANEL



PLAN VIEW

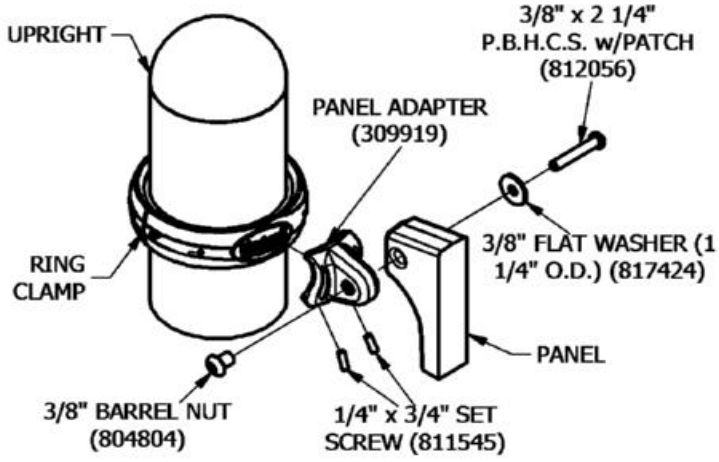


ELEVATION VIEW

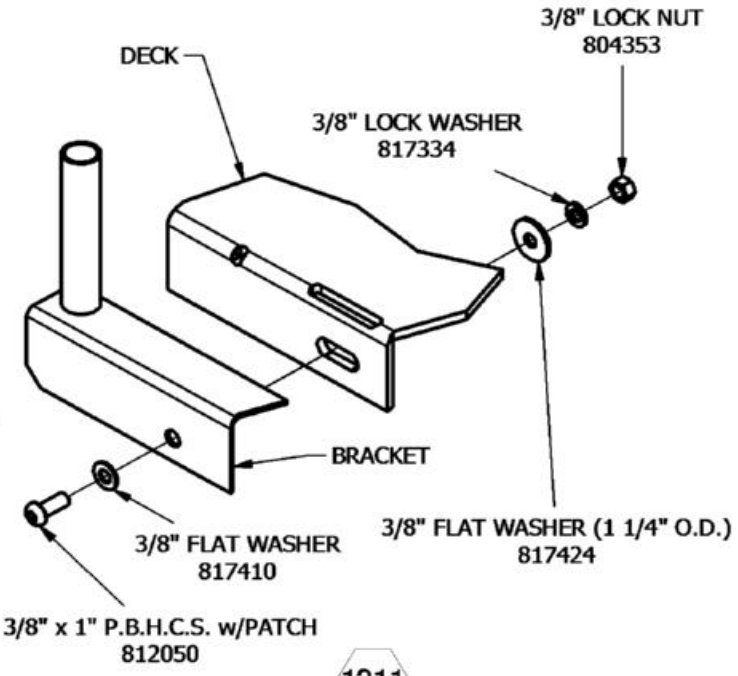
72075 MAZE ACTIVITY PANEL

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

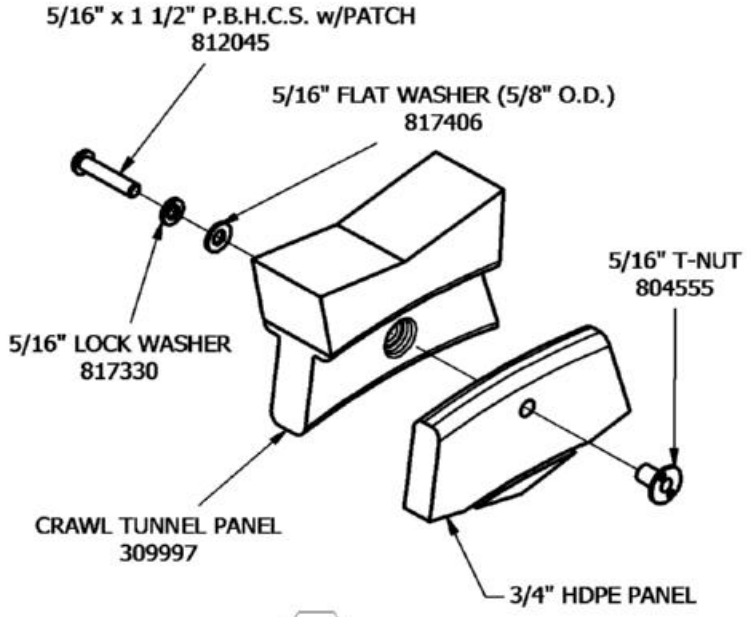
PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



450



1211



1212

72132 INSIDE OUT CLIMBER

Parts List		
DESCRIPTION	QTY	PART NUMBER
CONNECTOR CASTING A	4	315744
CONNECTOR CASTING B	4	315745
INSIDE OUT CLIMBER BOTTOM LEFT WELDMENT	1	316938
INSIDE OUT CLIMBER BOTTOM RIGHT WELDMENT	1	316945
INSIDE OUT CLIMBER BOTTOM NET	1	316946
INSIDE OUT CLIMBER TOP NET	1	316947
INSIDE OUT CLIMBER NET RUNG	1	316948
INSIDE OUT CLIMBER CONNECTION PLATE WELDMENT	1	316950
INSIDE OUT CLIMBER CROSSBAR WELDMENT	1	316953
INSIDE OUT CLIMBER TOP LEFT WELDMENT	1	316957
INSIDE OUT CLIMBER TOP RIGHT WELDMENT	1	316959
HARDWARE COMPLETE	1	316960
1/4" x 1" DRIVE RIVET	4	805302
1/4" BARREL NUT	21	804809
5/16" x 5/8" BUTTON HEAD SHOULDER BOLT	21	802742
5/16" LOCK WASHER	21	817330
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	8	812053
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	4	812056
3/8" x 2 3/4" P.B.H.C.S. w/PATCH	4	812058
3/8" LOCK WASHER	16	817334
3/8" FLAT WASHER	8	817410
3/8" FLAT WASHER (1 1/4" O.D.)	8	817424
3/8" BARREL NUT	8	804804
3/8" LOCK NUT	4	804353

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

72132 INSIDE OUT CLIMBER

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Inside Out Climber. Refer to order Top View.
2. Attach Top Left & Right Weldments to Crossbar Weldment. Refer to Finished Assembly view. See Detail 1297.
3. Attach Bottom Left & Right Weldments to Crossbar Weldment. Refer to Finished Assembly view. See Detail 1297.
4. Attach Net Rung to assembled Top Left & Right Weldments. See Detail 1292.
5. Attach Bottom Net to Bottom Left & Right Weldments and Crossbar Weldment. See Detail 1292.
6. Attach Top Net assembly to Top And Bottom Weldments. Refer to Finished Assembly view. See Detail 1292.
7. Attach Connector Casting A's to Top And Bottom Weldments. Refer to Finished Assembly view. See Detail 1080.
8. Attach Connection Plate Weldment to existing entryway and deck. See Detail 1034.
9. Attach assembled Inside Out Climber to uprights using Connector Casting B's. Refer to Finished Assembly view. See Detail 1090.
10. Attach Top Net to Connection Plate Weldment. See Detail 1292.
11. Plumb and level the entire assembly and tighten all fasteners.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

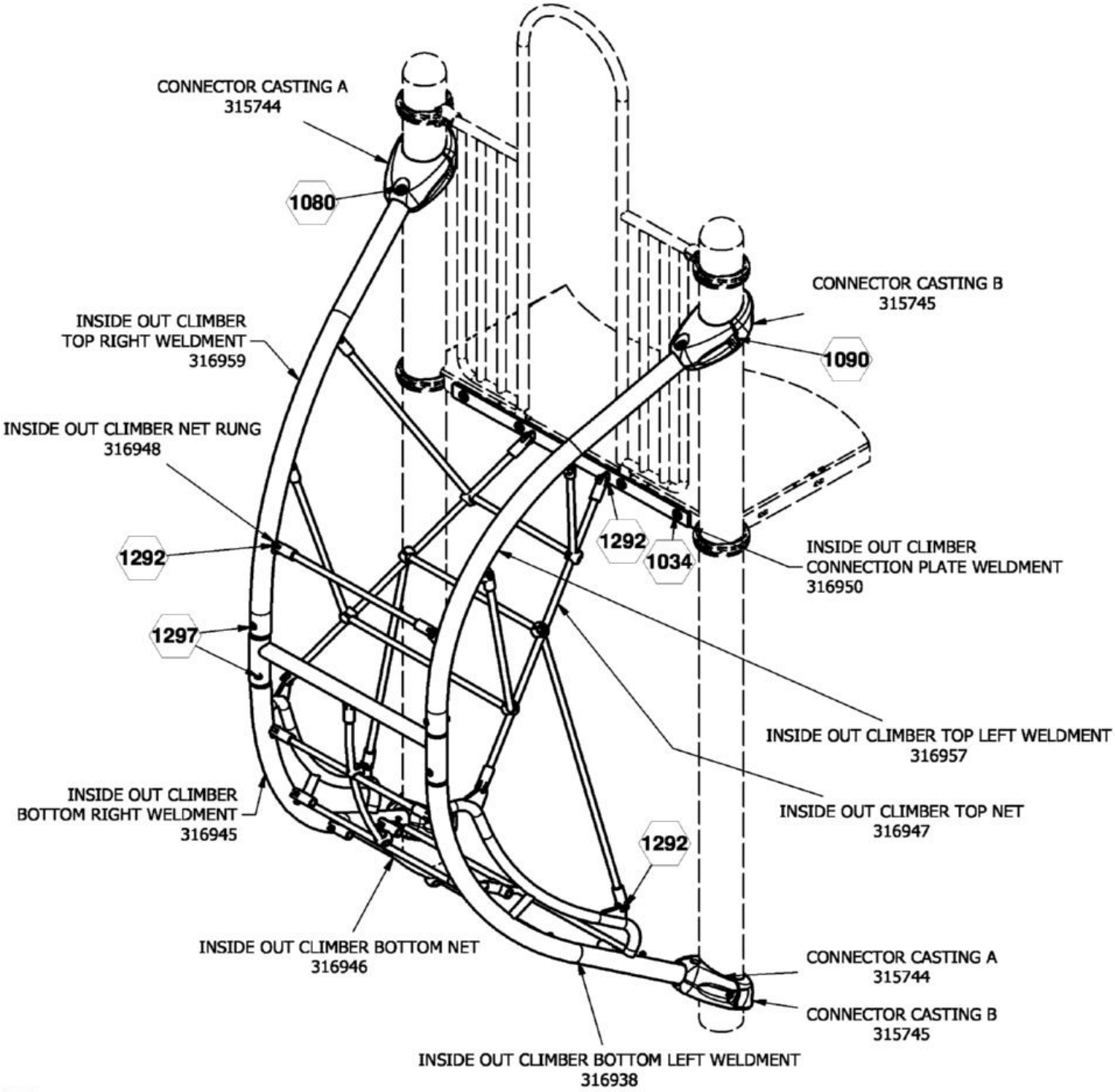
12. When the stucture is finished and satisfactory, tighten all fasteners and install Drive Rivets in all the clamps to ensure clamps cannot slide down posts. See Pipe Clamp sub-assembly sheet. It is very important that all Drive Rivets be installed prior to allowing use of equipment, as clamps are not designed to support substantial weight without them. Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of the play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidlines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72132 INSIDE OUT CLIMBER



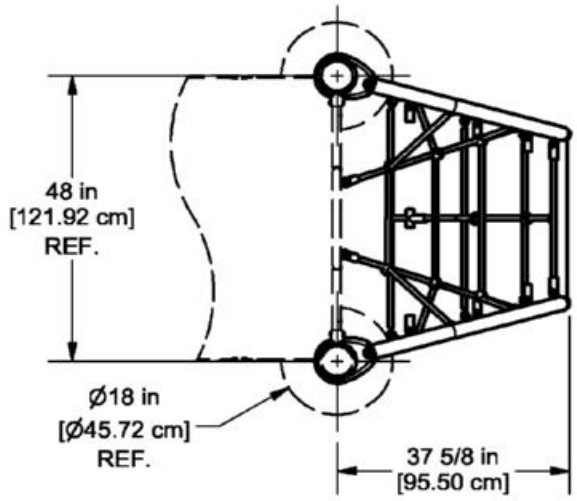
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

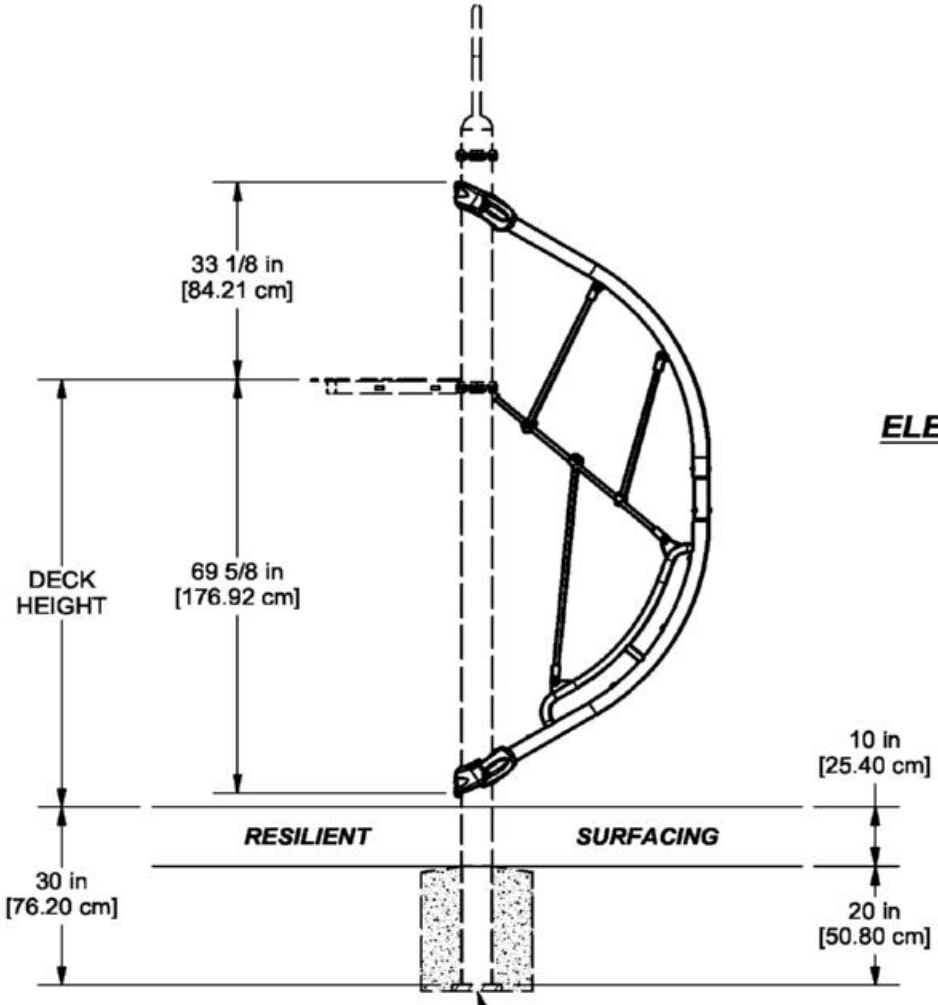
Issued/Revised: 4/24/2024

FINISHED ASSEMBLY

72132 INSIDE OUT CLIMBER

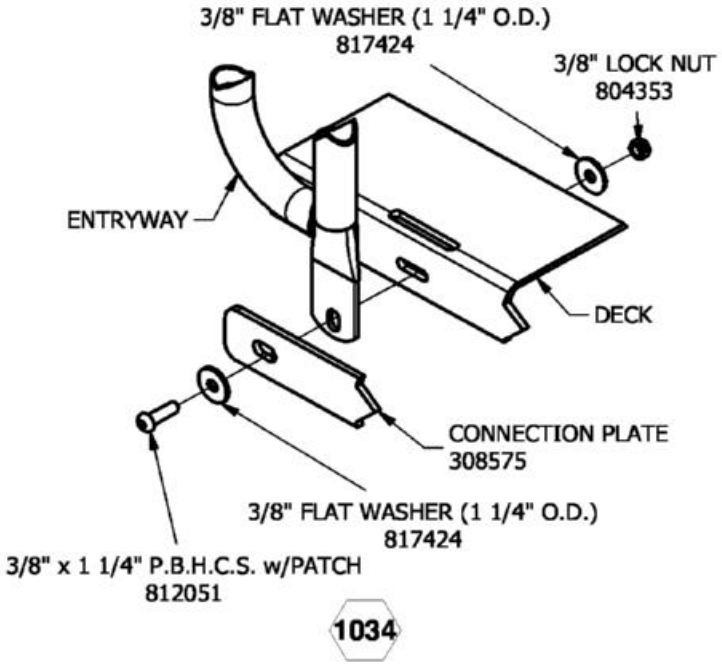


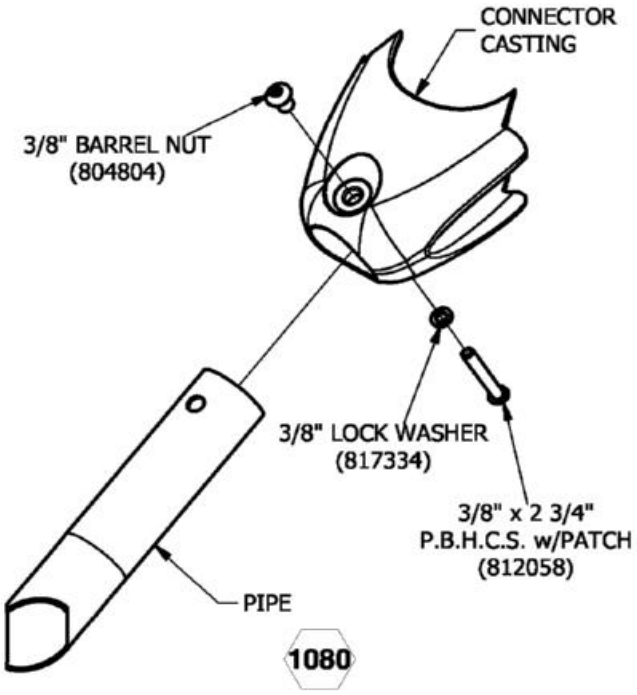
PLAN VIEW

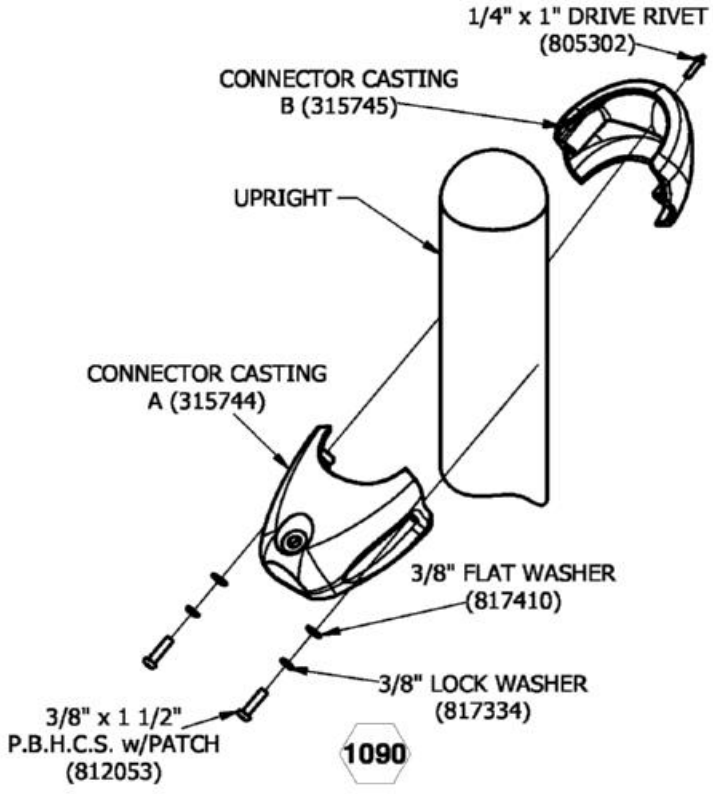


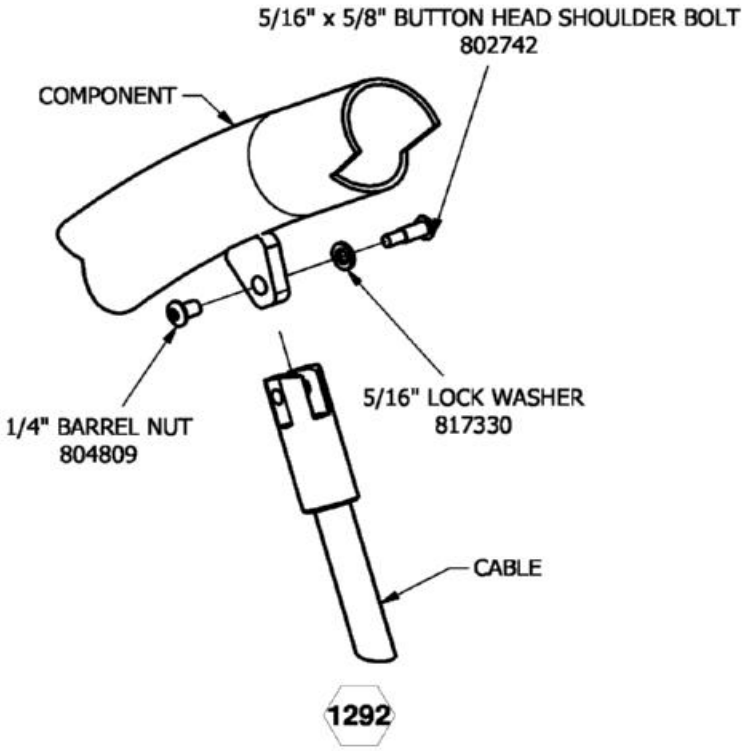
ELEVATION VIEW

72132 INSIDE OUT CLIMBER



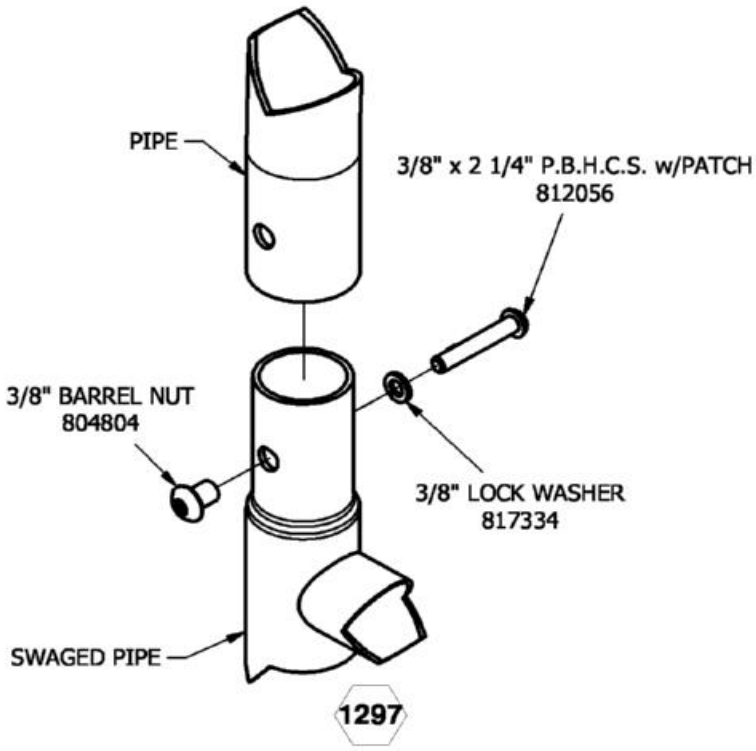






Issued/Revised: 4/24/2024

72132 INSIDE OUT CLIMBER



SuperMax Play Systems

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'

Parts List			
DESCRIPTION	72159	72160	PART NUMBER
10' SQUARE FABRIC PACKAGE	1	1	223002
CABLE CLAMPS	4	4	**
10' SQUARE SHADE FABRIC	1	1	**
3/16" CABLE, 50'-0" LG	1	1	**
10' RAFTER	4	4	223018
SHADE CROWN WELD ASSEMBLY	1	0	223039
SHADE CROWN WELD ASSEMBLY	0	1	223046
IN-GROUND EXTENSION	1	1	223118
GLIDE ELBOW	4	4	316306
HARDWARE COMPLETE	1	1	316969
1/4" x 1" SELF TAPPING TORX w/PATCH	8	8	HWS0021
3/8" x 1 1/4" SELF TAPPING TORX w/PATCH	8	8	HWS0081
1/2" x 4" HEX HEAD BOLT	4	4	801215
1/2" LOCKNUT	4	4	804355
1/2" ANCHOR ROD	2	2	135038

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'

INSTALLATION INSTRUCTIONS:

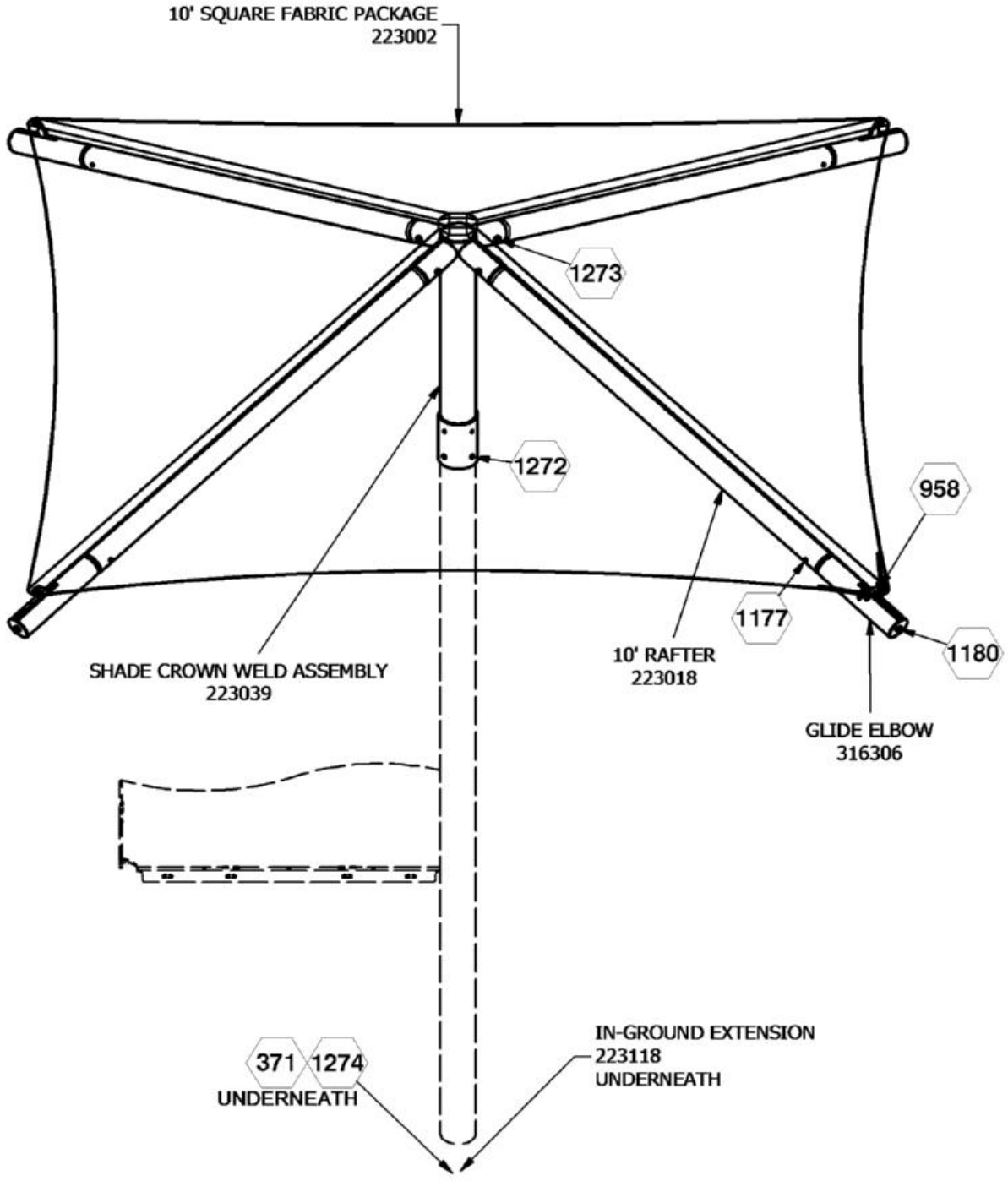
1. Determine which upright is to receive the 10' x 10' Shade. Refer to order Top View.
2. Put Anchor Rods into In-Ground Extensions. See Detail 371.
3. Attach the In-Ground Extension to the existing upright. See Detail 1274.
4. Attach the Shade Crown Weld Assembly to the existing upright. See Detail 1272.
5. Attach the Glide Elbows to the 10' Rafters. See Detail 956.
6. Attach the assembled rafters to Shade Crown Weld Assembly. See Detail 1273. **NOTE:** Orientation of hook on Glide Extension is critical.
7. Starting at any corner thread the steel cable through the jump-out hole under loop at the edge of the shade fabric until it comes out the end of the sleeve at the next corner. Continue threading cable through sleeve all the way around the shade fabric until the entire shade fabric has been encircled. Cable will exit through jump-out hole on the same corner it was started. Leave a loop of approximately 9 inches at each non-tensioning corner. Spread the shade fabric over the frame and secure corners to the Glide Hooks. It may be necessary to flap the loose corners up and down to stretch the shade fabric so that it fits over the Glide Hooks. **NOTE:** The Steel Cable must always pass under the Glide Hooks. See Detail 958.
8. Pull tight by hand then using the clamps provided, fasten the steel cables together. All clamps must be used. After clamps are tightened, thread the excess steel cable back into the jump-out holes in the shade fabric. **NOTE:** If any portion of the steel cable was bent/kinked during the tensioning process, it must be straightened by bending the steel cable back in the opposite direction of the bend. **NOTE:** Cable clamp must be installed with nuts facing down. Clamps must be touching each other. **NOTE:** Any bolt end protruding more than two full threads beyond face of the nut promptly cut-off flush, file smooth, and treat to prevent corrosion. See Detail 958.
9. Remove Cover Plate from Glide Insert to access tensioning nut. Take turns tensioning each Glide Insert in small increments. Make sure that the steel cables cross each other at the corner where the steel cable ends. DO NOT OVER TENSION! You can test the tightness of the shade fabric by hitting the perimeter steel cable with the palm of your hand to see how much it moves. If the shade fabric does not move more than 6" up or down then you have the correct tension. If the shade fabric bounces and has a ripple affect then you may need to apply more tension. Attach Cover Plate to Glide Insert. See Detail 957.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'



⬡ = INSTALLATION DETAIL

Issued/Revised: 11/2/2023

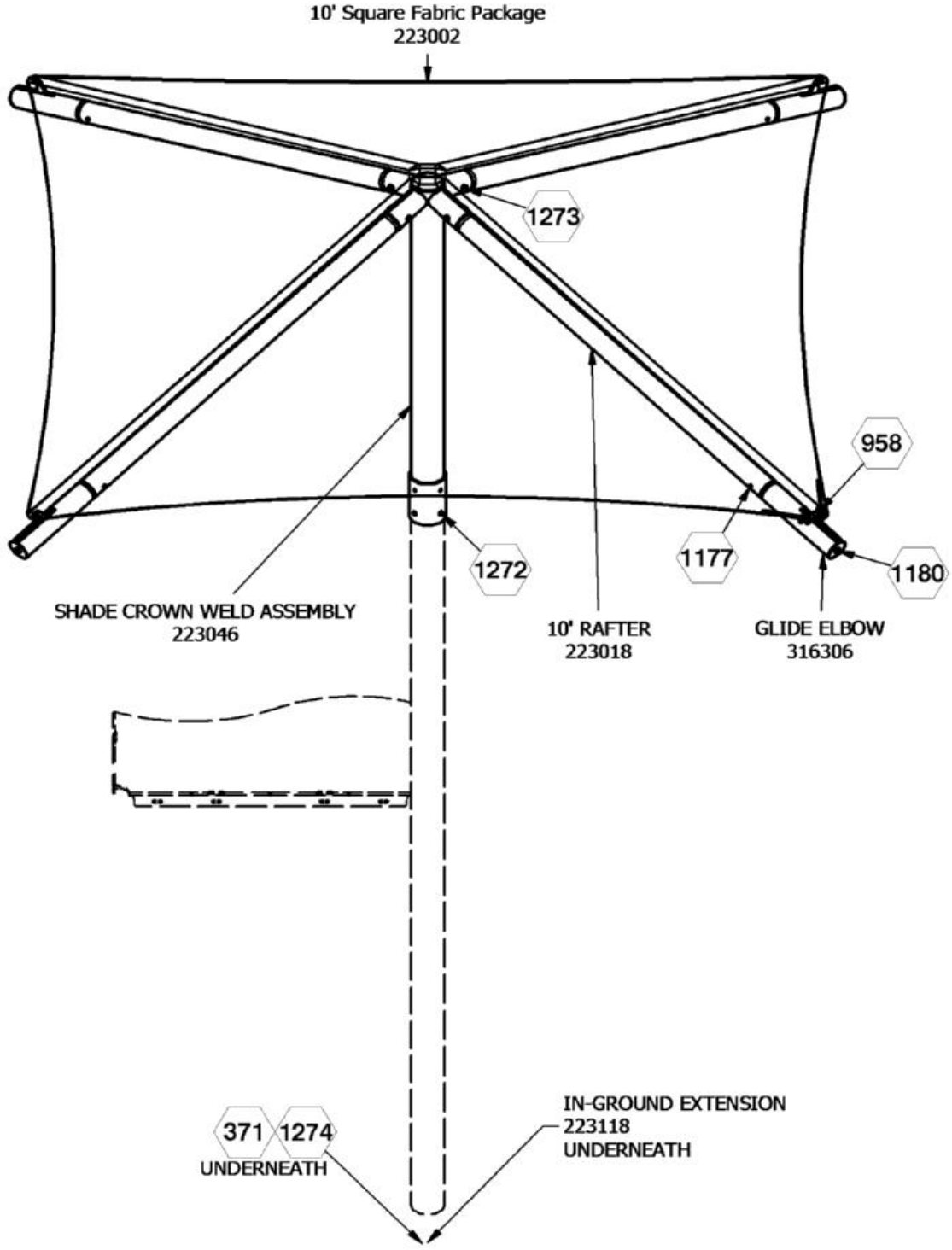
FINISHED ASSEMBLY

4'-0" SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'



⬡ = INSTALLATION DETAIL

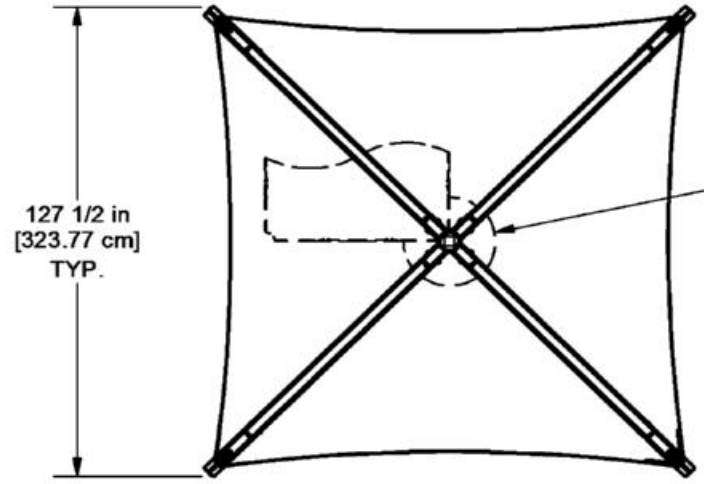
Issued/Revised: 11/2/2023

FINISHED ASSEMBLY

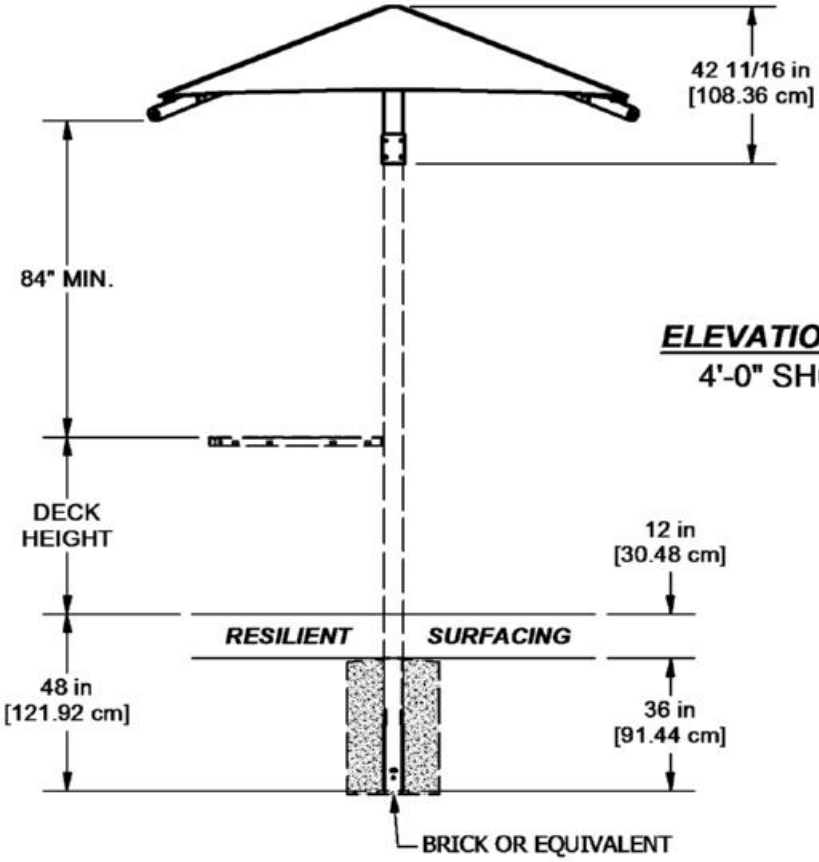
6'-8" SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'



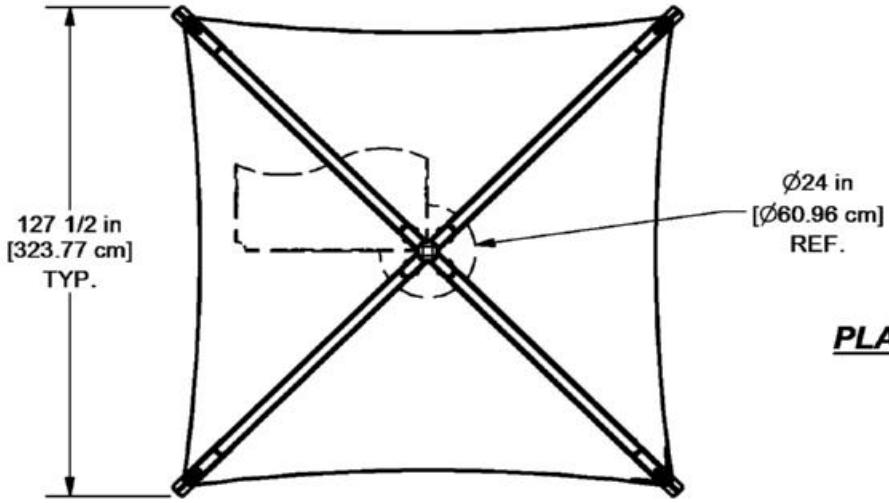
PLAN VIEW



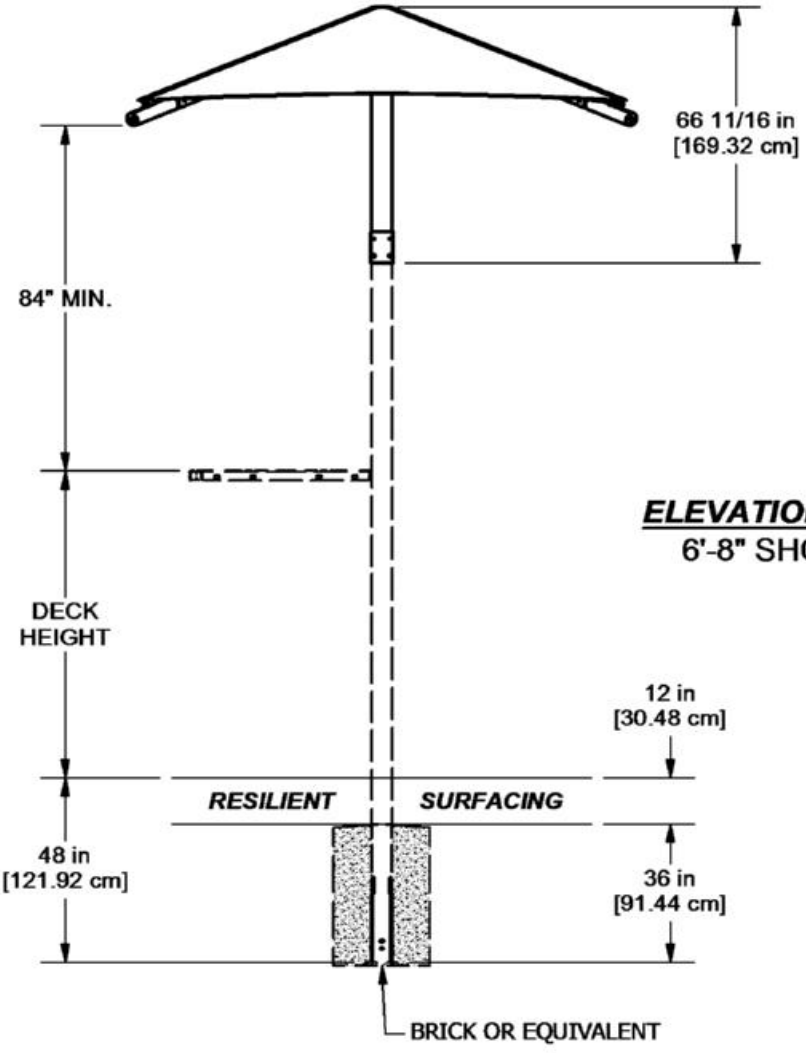
ELEVATION VIEW
4'-0" SHOWN

SuperMax Play Systems

72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'

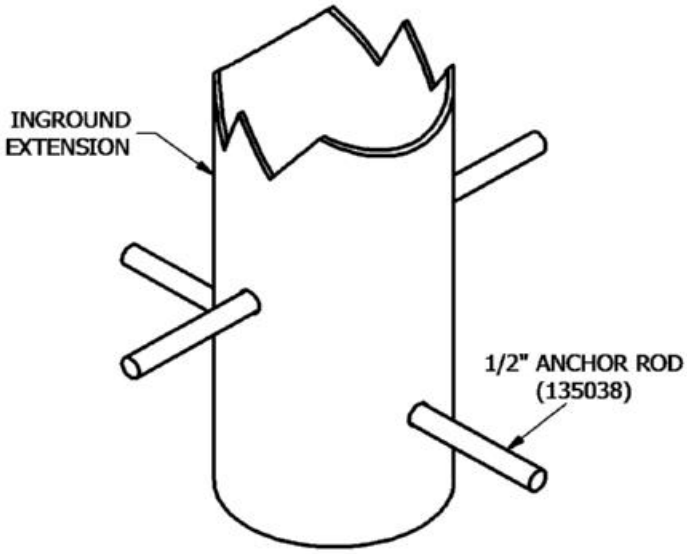


PLAN VIEW



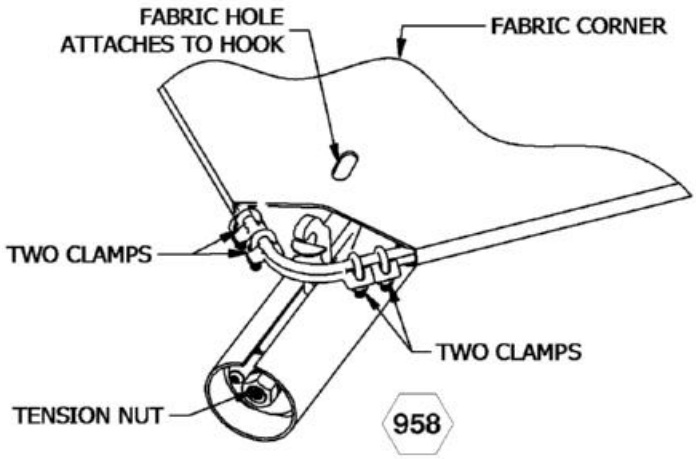
ELEVATION VIEW
6'-8" SHOWN

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'



371

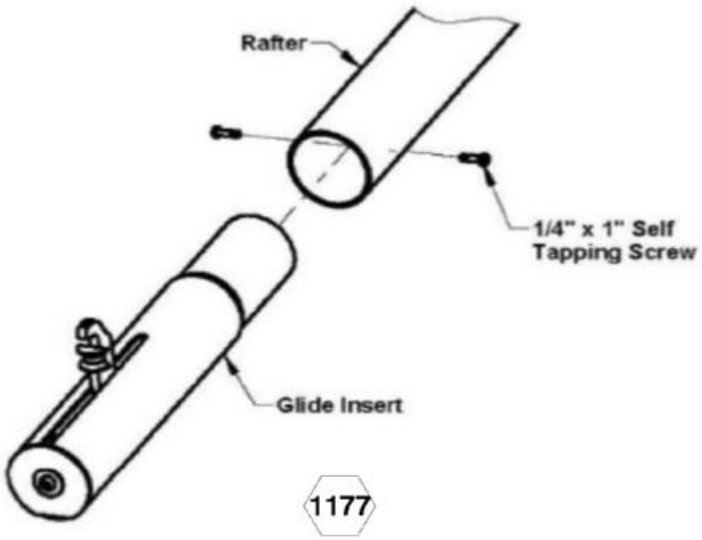
SMALLER GLIDE INSERTS WILL NOT HAVE A CABLE GUIDE ON THE GLIDE HOOK. THE CABLE FOLLOWED BY THE FABRIC HOLE ARE BOTH PLACED OVER THE HOOK.



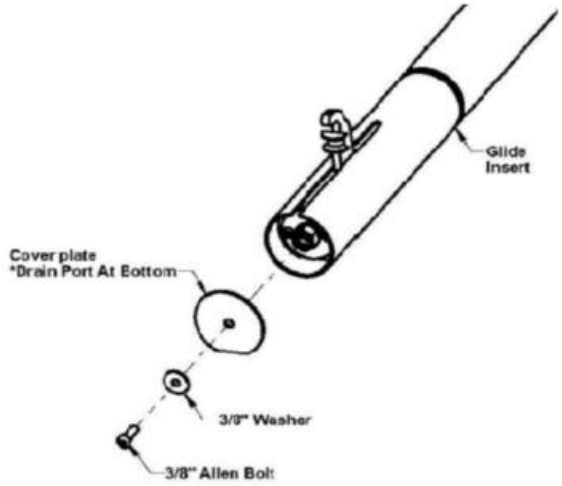
958

NOTE: ON THREE OF THE FOUR CORNERS THE CABLE WILL LOOP AROUND THE HOOK OR CABLE GUIDE.

ON THE FOURTH CORNER THE CABLE ENDS WILL OVERLAP AROUND THE HOOK OR CABLE GUIDE AND BE SECURED WITH TWO CABLE CLAMPS ON EITHER SIDE. THE FABRIC HOLE IS THEN PULLED OVER HOOK. LOOSE CABLE END ARE TO BE TUCKED BACK INTO FABRIC HEMS.

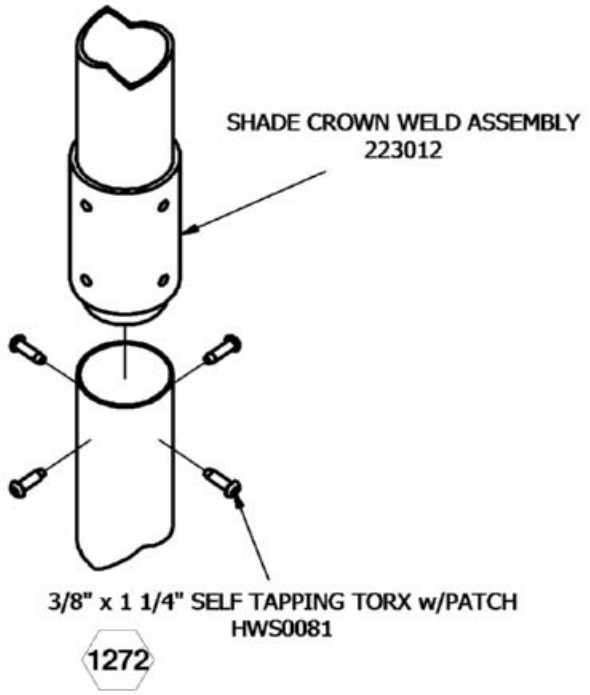


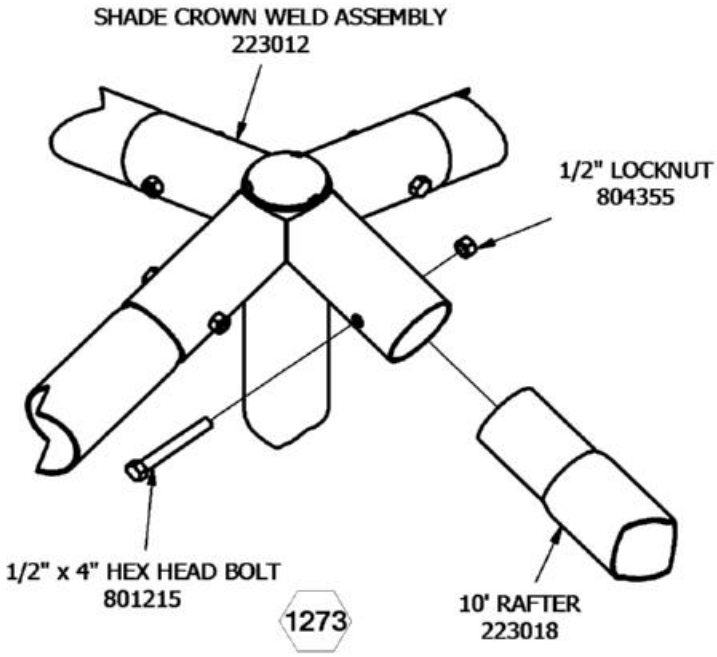
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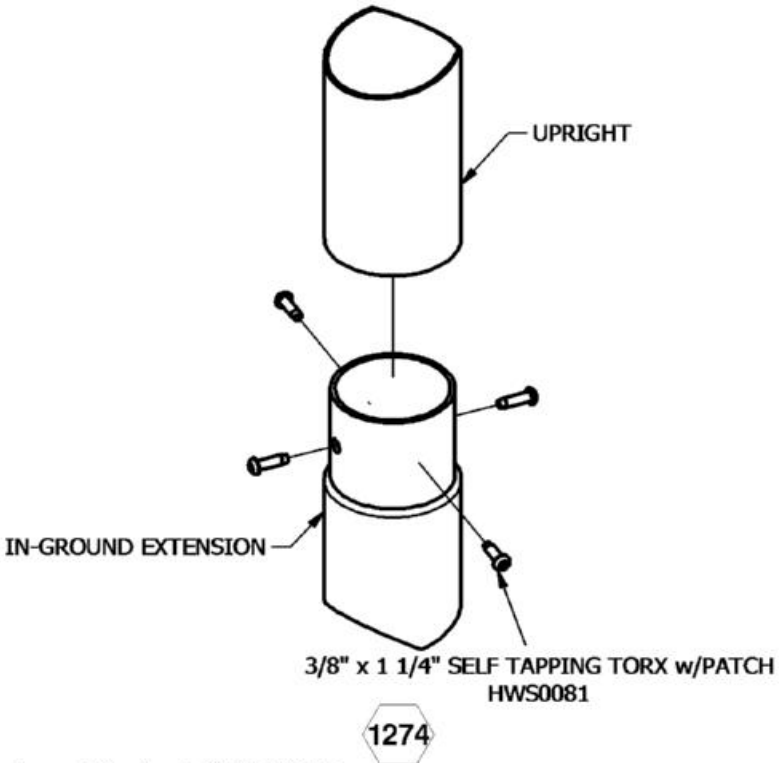


1180

72159 SUPERMAX 10' x 10' SHADE 1' TO 6'
72160 SUPERMAX 10' x 10' SHADE 6'-8" TO 8'







Issued/Revised: 11/2/2023

72168 RACECAR ROTOGEN PANEL

Parts List		
DESCRIPTION	QTY	PART NUMBER
PANEL ADAPTER	4	309919
RACECAR PANEL	1	317040
RACECAR TACK ON	1	317041
STEERING WHEEL INSERT	1	317027
HARDWARE COMPLETE	1	317038
#10 x 1" SELF-TAPPING SCREW	3	809608
1/4" x 3/4" SET SCREW	8	811545
1/4" x 1 1/4" P.B.H.C.S. w/Patch	1	812013
1/4" LOCK WASHER	1	817326
5/16" NYLON INSERT LOCKNUT	1	804352
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	4	812051
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	4	812053
3/8" FLAT WASHER	8	817410
3/8" BARREL NUT	8	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which deck is to receive the Racecar Rotogen Panel. Refer to order Top View.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. Hook the Panel Adapters onto the Ring Clamps and attach. See Detail 467.
4. Remove the back of Steering Wheel Insert, and drill pilot holes for Racecar Tack On. Attach Racecar Tack On to backing and reassemble. See Detail 1283.
5. Attach assembled Steering Wheel Insert to Racecar Panel. See Detail 1287.
6. Attach assembled Racecar Rotogen Panel to Panel Adapters. See Detail 467.
7. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

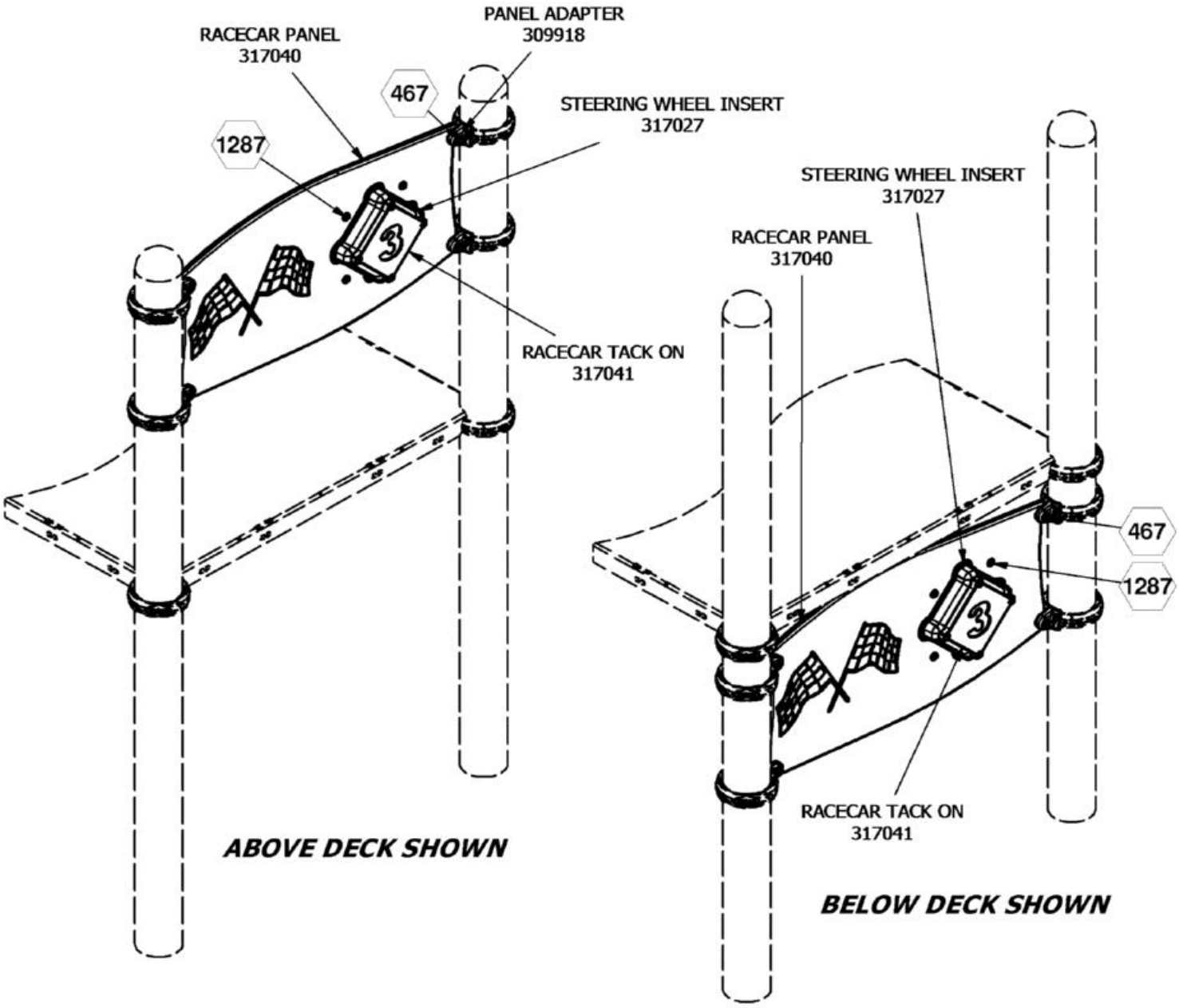
8. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

SuperMax Play Systems

72168 RACECAR ROTOGEN PANEL

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.



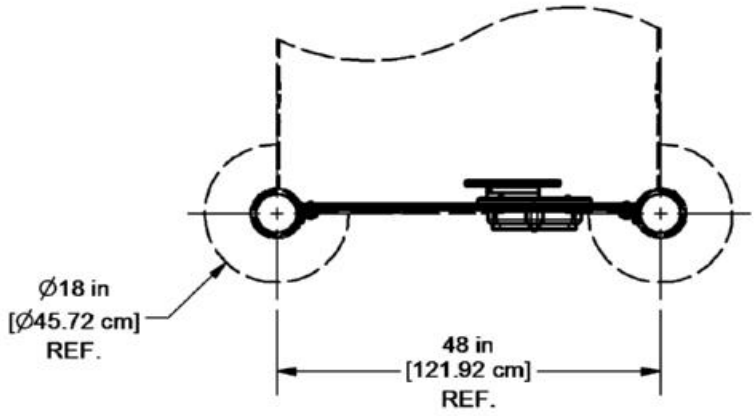
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

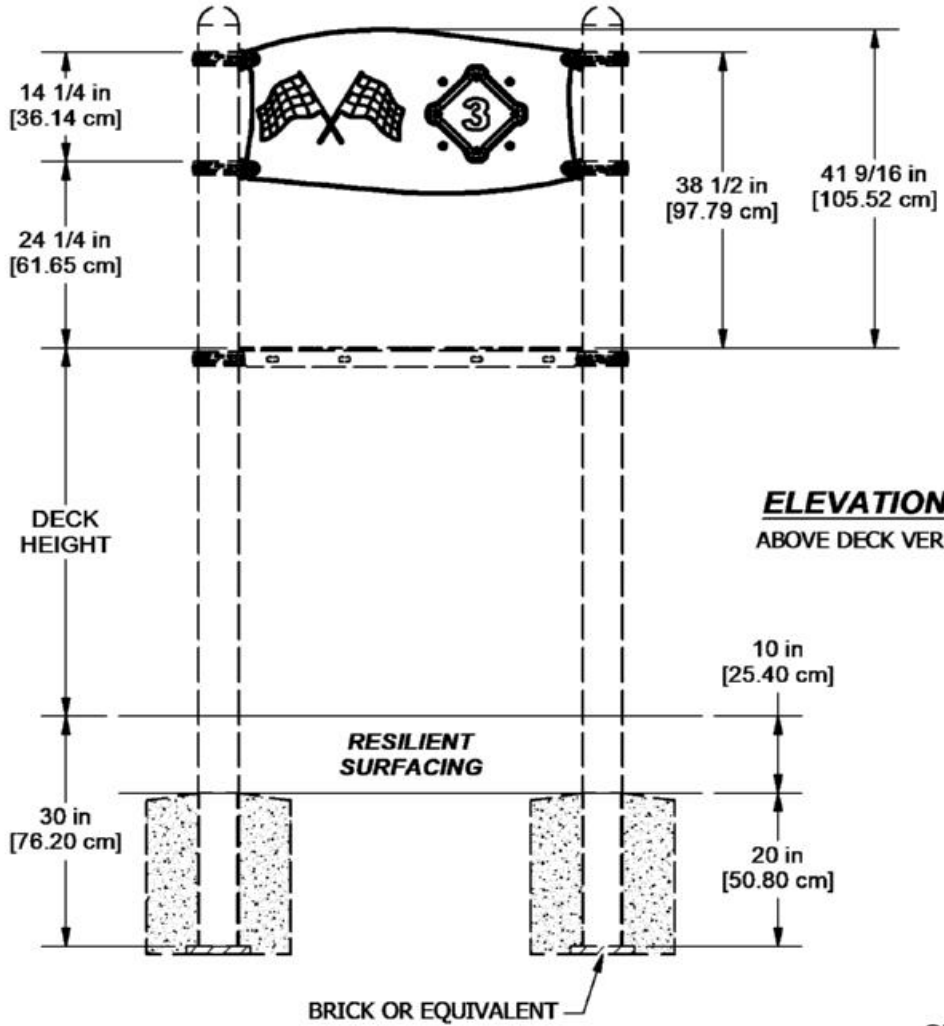
Issued/Revised: 6/12/2024

FINISHED ASSEMBLY

72168 RACECAR ROTOGEN PANEL (ABOVE DECK VER.)



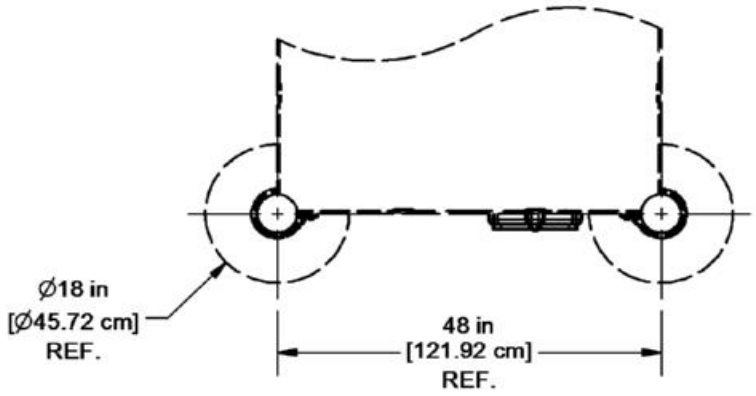
PLAN VIEW



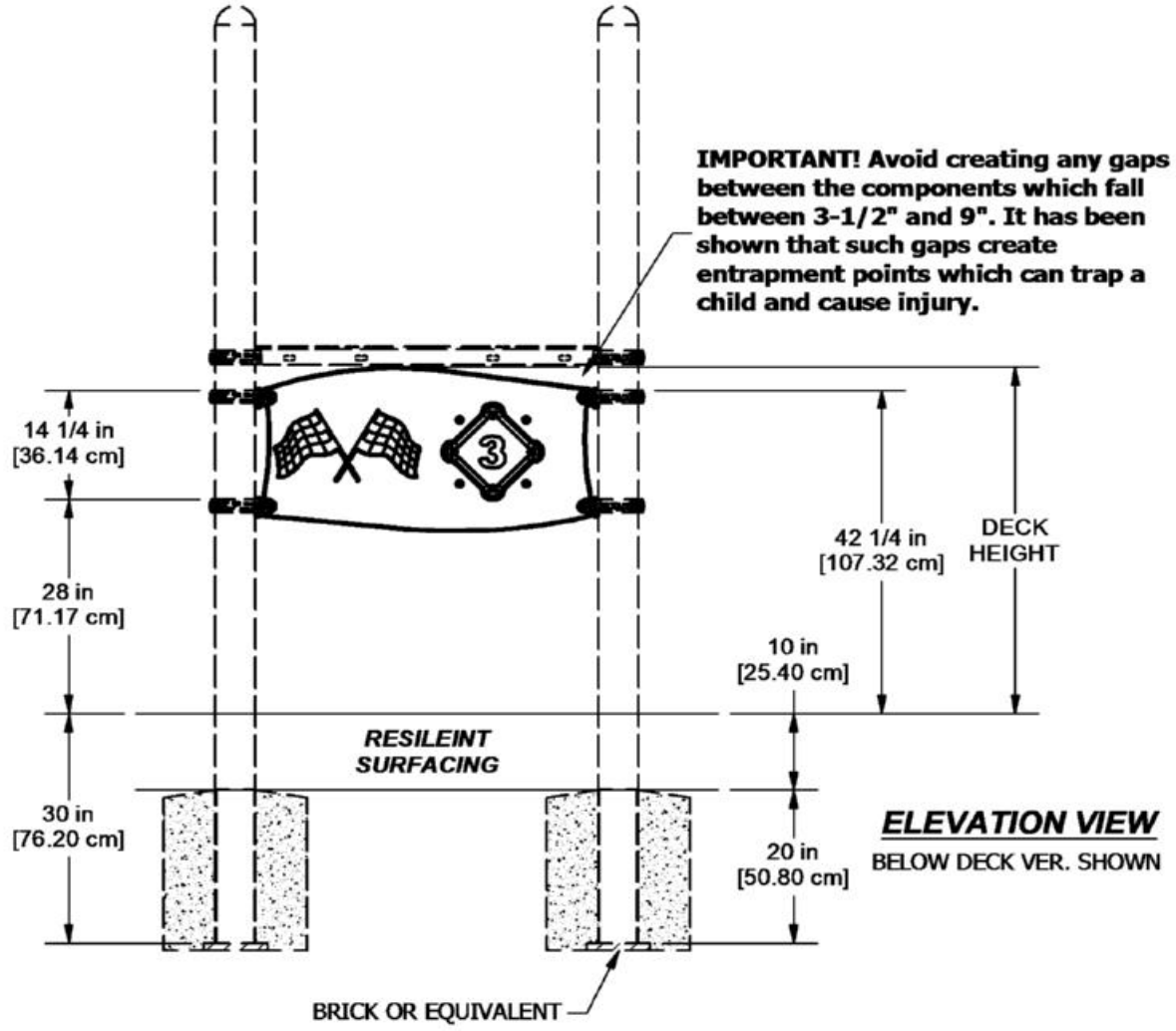
ELEVATION VIEW

ABOVE DECK VER. SHOWN

72168 RACECAR ROTOGEN PANEL (BELOW DECK VER.)



PLAN VIEW



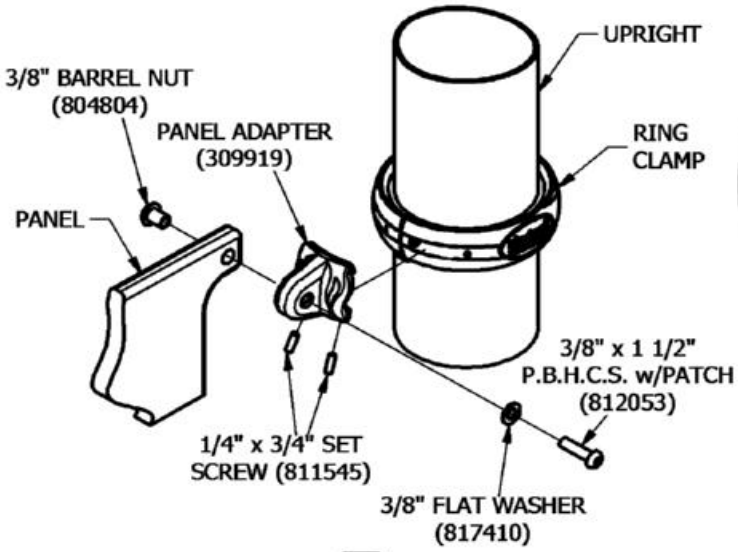
ELEVATION VIEW

BELOW DECK VER. SHOWN

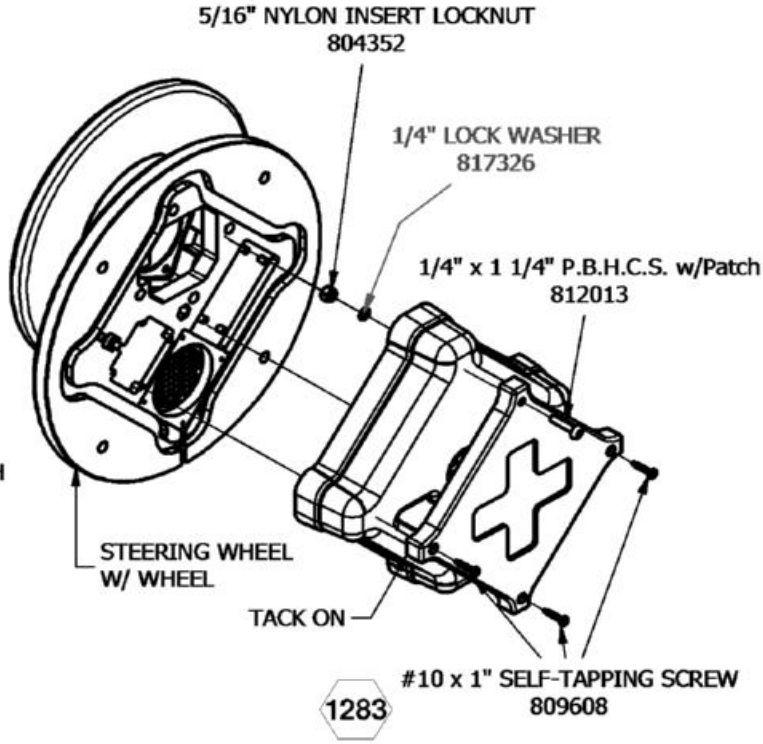
72168 RACECAR ROTOGEN PANEL

NOTE: PANEL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

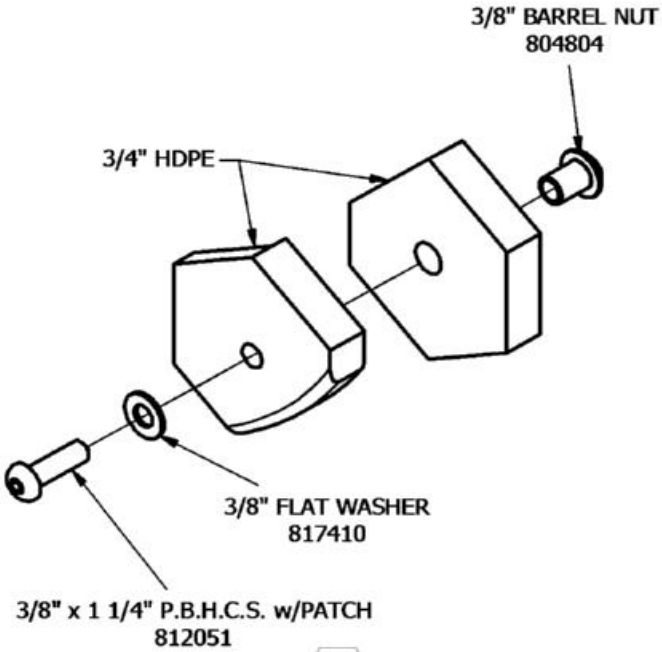
PANEL MUST ATTACH TO THE DECK SIDE OF THE ADAPTER.



467



1283



1287

72172 LOOKOUT STAIRS (1'-4"); 72173 (2'-0"); 72174 (2'-8"); 72175 (3'-4"); 72176 (4'-0")

Parts List						
DESCRIPTION	72172	72173	72174	72175	72176	PART NUMBER
PIPE ADAPTER	4	4	4	4	4	309915
COATED STAIRS (16" RISE)	1	0	0	0	0	307252
1'-4" STAIR BARRIER WELDMENT LEFT	1	0	0	0	0	317060
1'-4" STAIR BARRIER WELDMENT RIGHT	1	0	0	0	0	317062
1'-4" STAIR PANEL	2	0	0	0	0	317064
STAIRS (2'-0" RISE)	0	1	0	0	0	307274
2'-0" STAIR BARRIER WELDMENT LEFT	0	1	0	0	0	317076
2'-0" STAIR BARRIER WELDMENT RIGHT	0	1	0	0	0	317078
2'-0" STAIR PANEL	0	2	0	0	0	317080
STAIRS (2'-8" RISE)	0	0	1	0	0	307281
2'-8" STAIR BARRIER WELDMENT LEFT	0	0	1	0	0	317047
2'-8" STAIR BARRIER WELDMENT RIGHT	0	0	1	0	0	317049
STAIR PANEL BED LASER	0	0	2	0	0	317054
STAIRS (3'-4" RISE)	0	0	0	1	0	307288
3'-4" STAIR BARRIER WELDMENT LEFT	0	0	0	1	0	317083
3'-4" STAIR BARRIER WELDMENT RIGHT	0	0	0	1	0	317085
3'-4" STAIR PANEL BOTTOM	0	0	0	2	0	317087
3'-4" STAIR PANEL TOP	0	0	0	2	0	317089
STAIRS (64" DECK)	0	0	0	0	1	307297
4'-0" STAIR BARRIER WELDMENT LEFT	0	0	0	0	1	317092
4'-0" STAIR BARRIER WELDMENT RIGHT	0	0	0	0	1	317094
4'-0" STAIR PANEL BOTTOM	0	0	0	0	2	317096
4'-0" STAIR PANEL TOP	0	0	0	0	2	317098
HARDWARE COMPLETE	1	0	0	0	0	317065
HARDWARE COMPLETE	0	1	0	0	0	317081
HARDWARE COMPLETE	0	0	1	0	0	317052
HARDWARE COMPLETE	0	0	0	1	1	317090
1/4" x 3/4" SET SCREW	8	8	8	8	8	811545
5/16" x 3/4" P.B.H.C.S. w/PATCH	12	19	20	40	40	812040
5/16" LOCK WASHER	12	19	20	40	40	817330
5/16" FLAT WASHER (11/16" O.D.)	24	38	40	80	80	817406
5/16" NYLON INSERT LOCKNUT	12	19	20	40	40	804352
3/8" x 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	812052
3/8" x 1" P.B.H.C.S. w/PATCH	4	4	4	4	4	812050
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	812054
3/8" LOCK WASHER	4	4	4	4	4	817334
3/8" FLAT WASHER	4	4	4	4	4	817410
3/8" FLAT WASHER (1 1/4" O.D.)	16	16	16	16	16	817424
3/8" BARREL NUT	4	4	4	4	4	804804
3/8" LOCK NUT	8	8	8	8	8	804353

72172 LOOKOUT STAIRS (1'-4"); 72173 (2'-0"); 72174 (2'-8"); 72175 (3'-4"); 72176 (4'-0")

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**Items listed below Hardware Complete line are included with Hardware Complete Number*
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Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which decks are to receive the Lookout Stairs. Refer to order Top View.

2. With sufficient manpower, lift the stair and fasten to the decks. See Detail 090.

3. Attach four Ring Clamps to the Uprights. See separate Ring Clamp installation sheet. See Elevation View for clamp locations. Attach Pipe Adapters to the Ring Clamps. See Detail 448.

4. Attach Stair Panels to Stair Barrier Weldments. See Detail 1248.

5. Attach Barriers to Pipe Adapters. See Detail 448.

6. Attach the bottom tab of the Barriers to the decks. See Detail 449.

7. Using Detail 448, attach the Pipe Adapters to the Ring Clamps with 1/4" Set Screws.

8. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

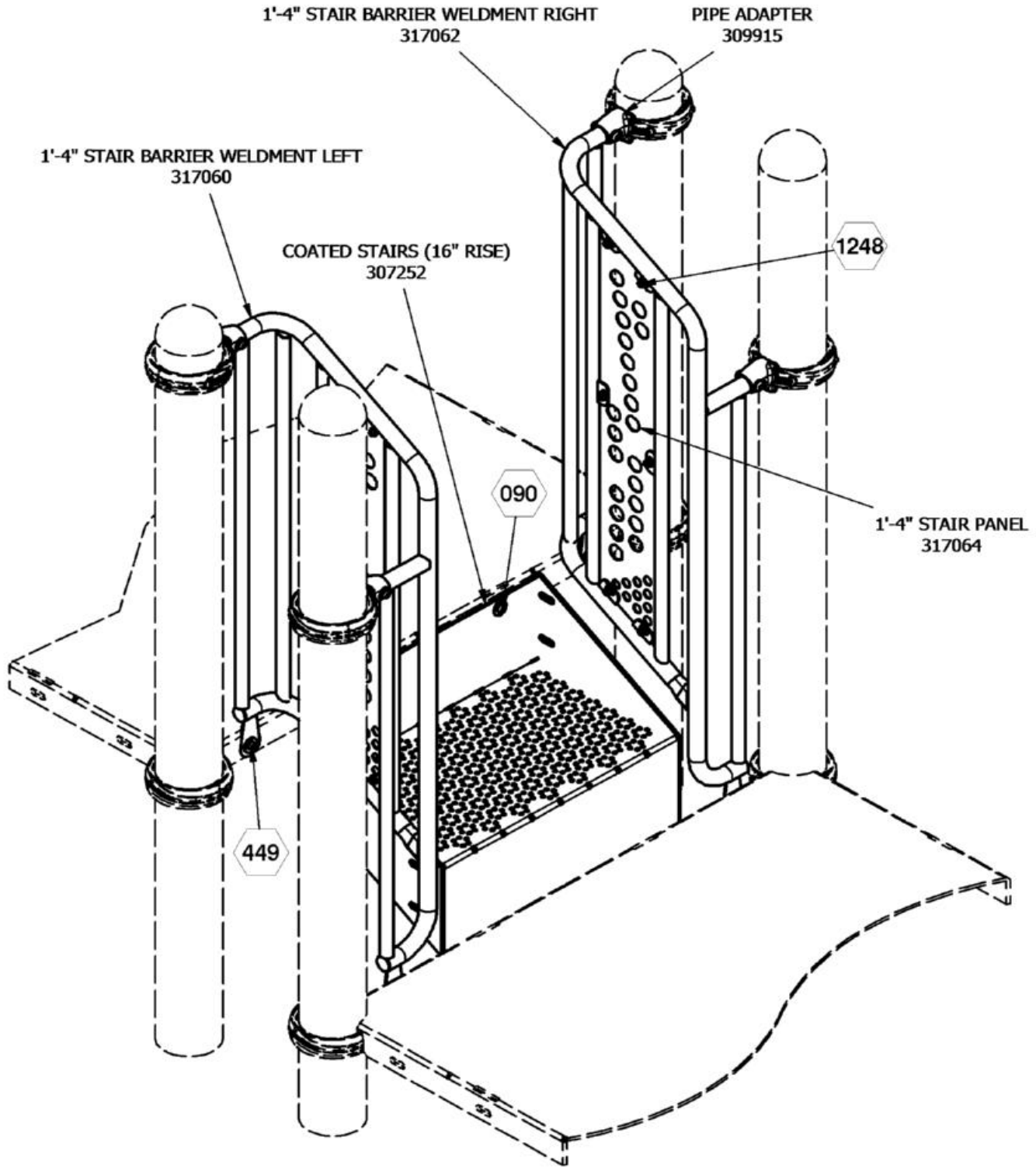
IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

9. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

72172 LOOKOUT STAIRS (1'-4")



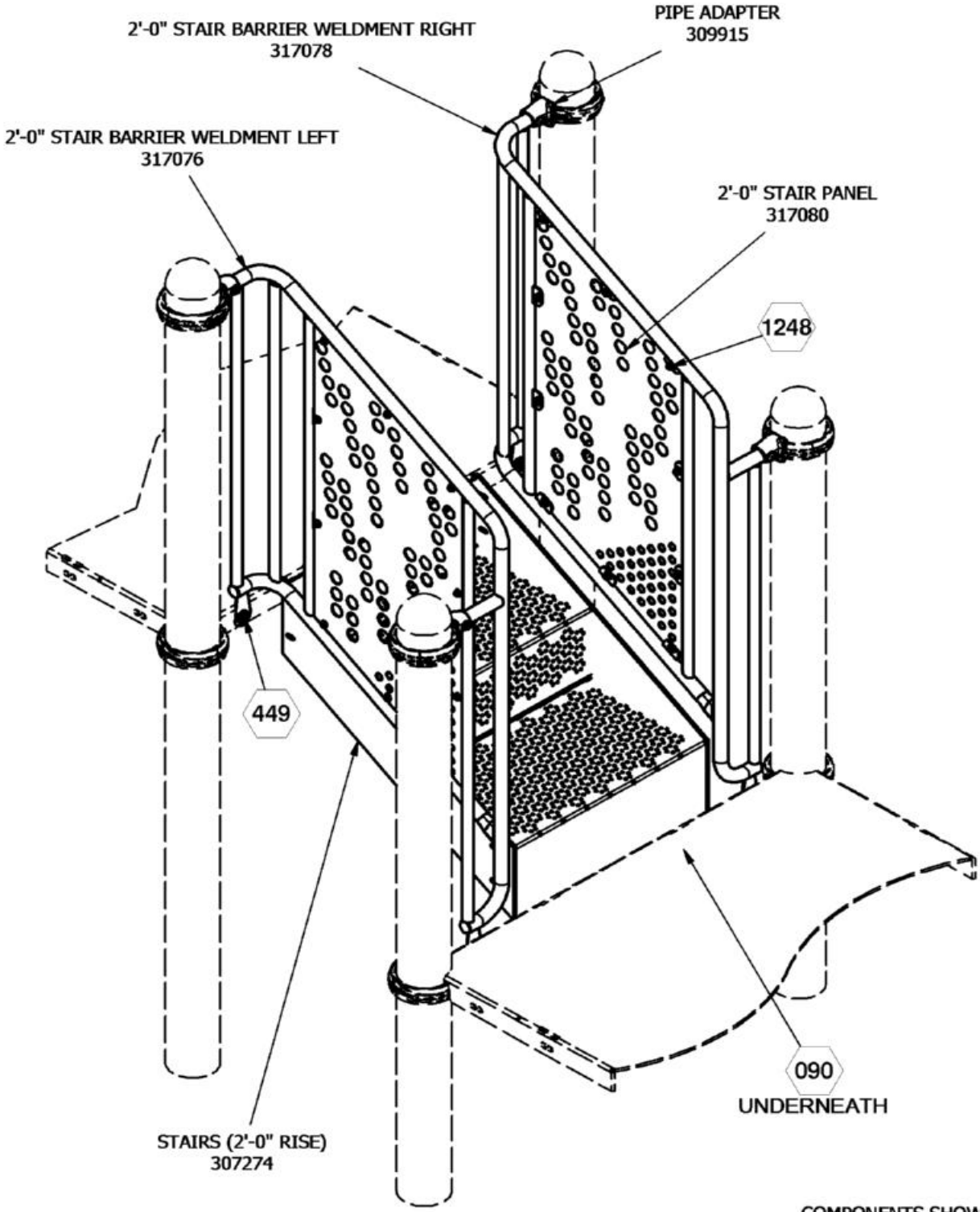
= INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 1/6/2025

FINISHED ASSEMBLY

72173 LOOKOUT STAIRS (2'-0")



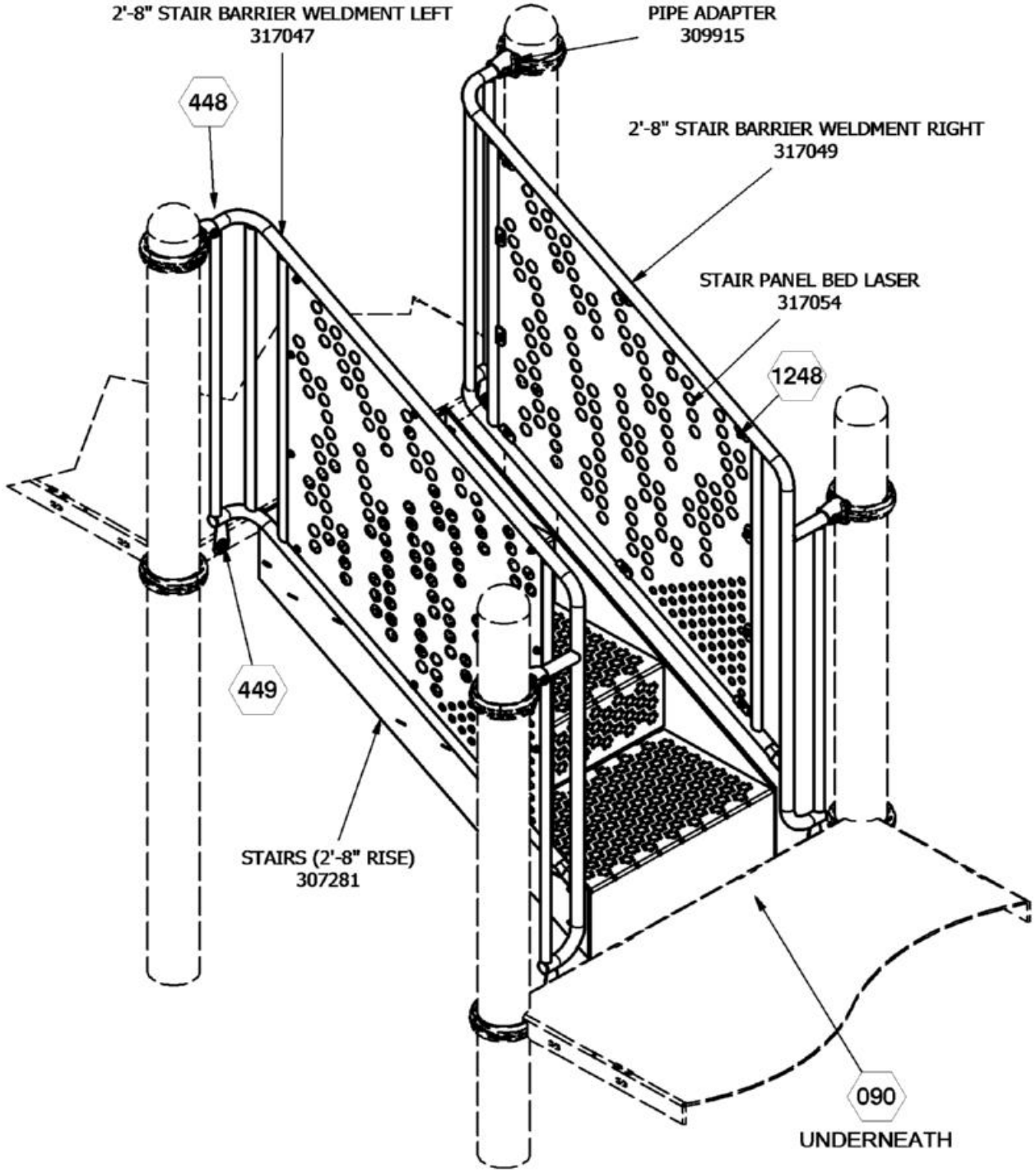
= INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 1/6/2025

FINISHED ASSEMBLY

72174 LOOKOUT STAIRS (2'-8")



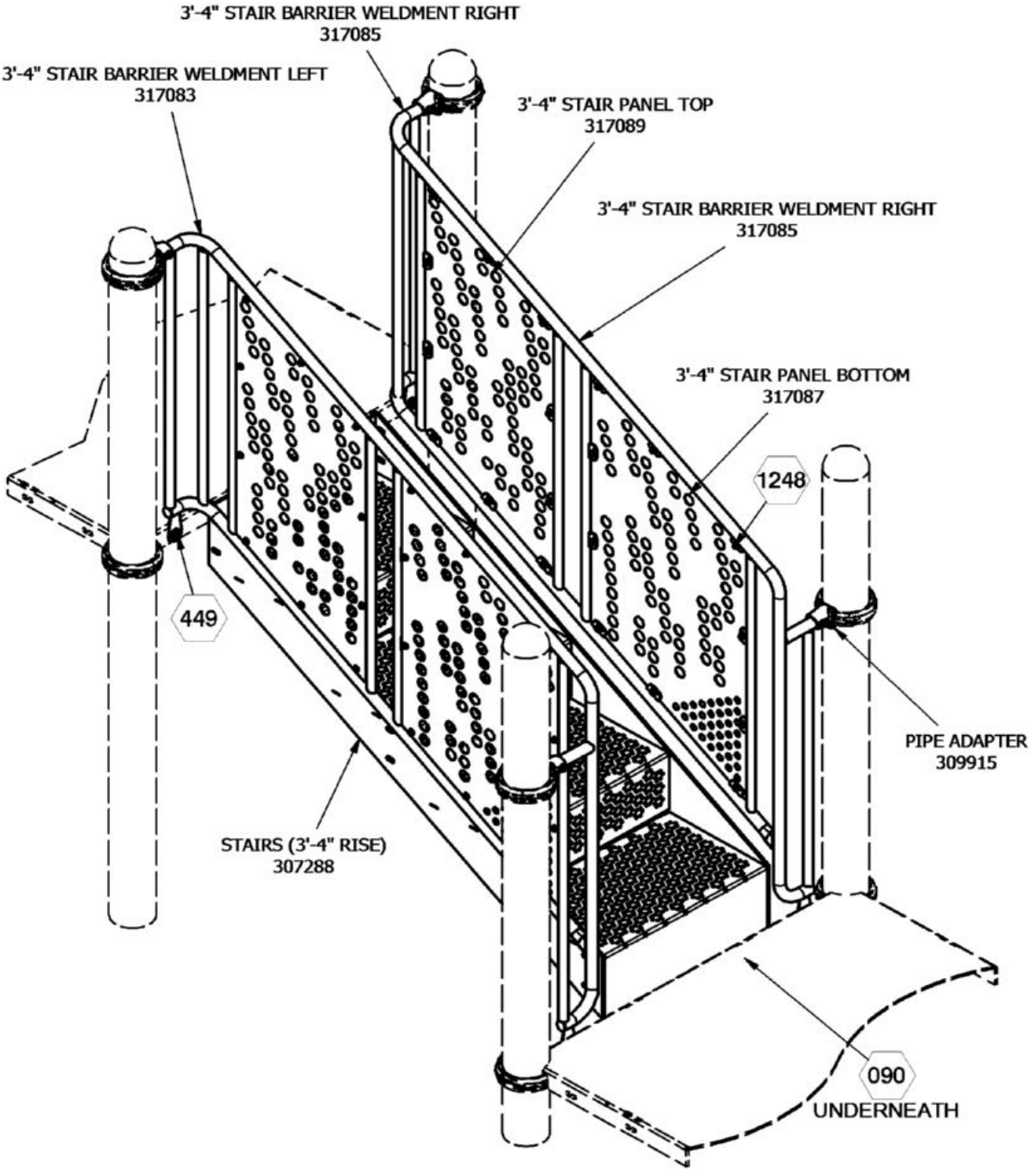
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 1/6/2025

FINISHED ASSEMBLY

72175 LOOKOUT STAIRS (3'-4")



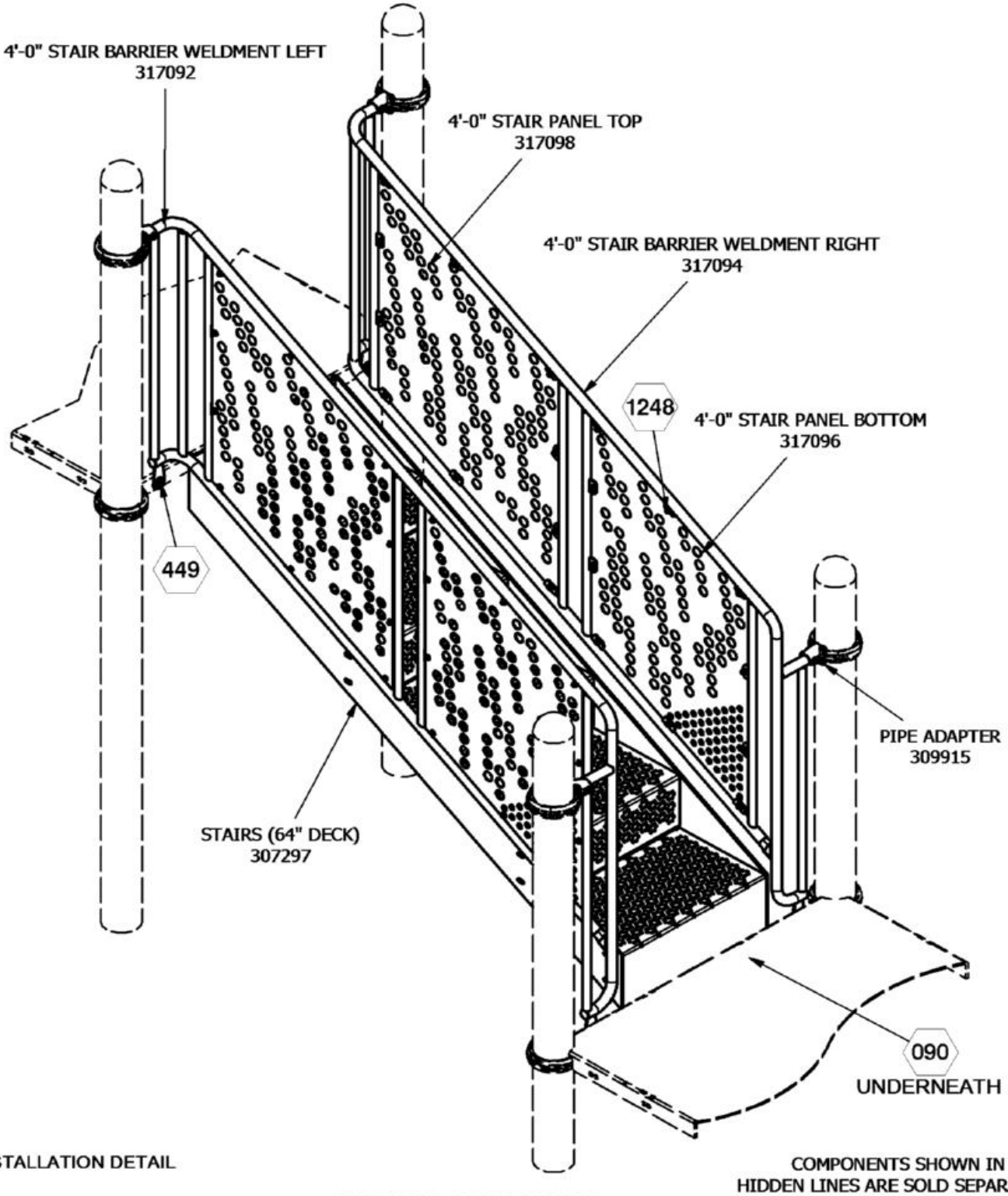
= INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 1/6/2025

FINISHED ASSEMBLY

72176 LOOKOUT STAIRS (4'-0")



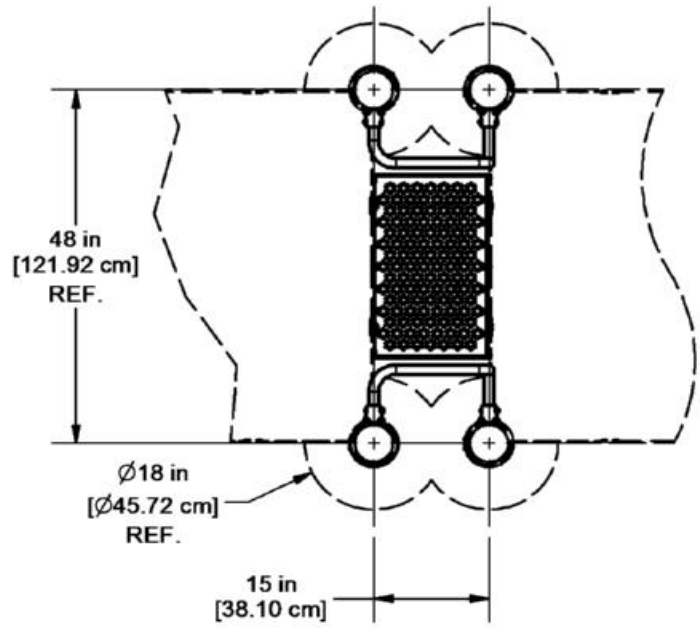
⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

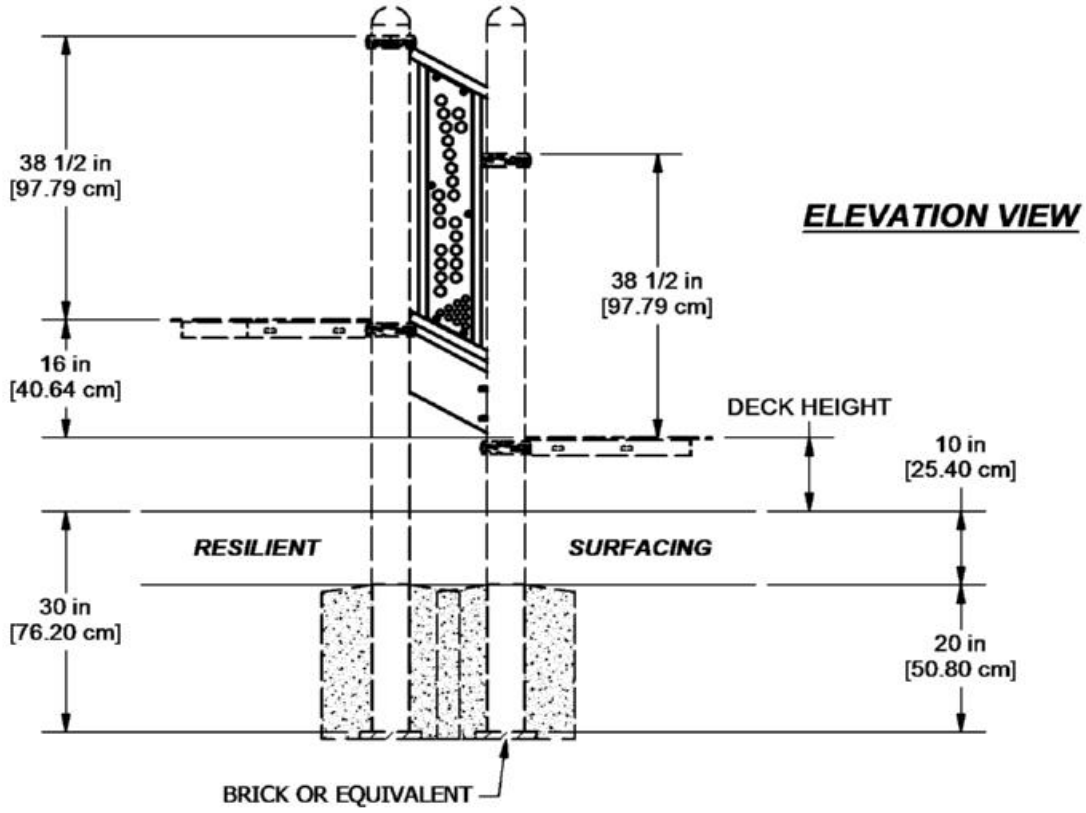
Issued/Revised: 1/6/2025

FINISHED ASSEMBLY

72172 LOOKOUT STAIRS (1'-4")

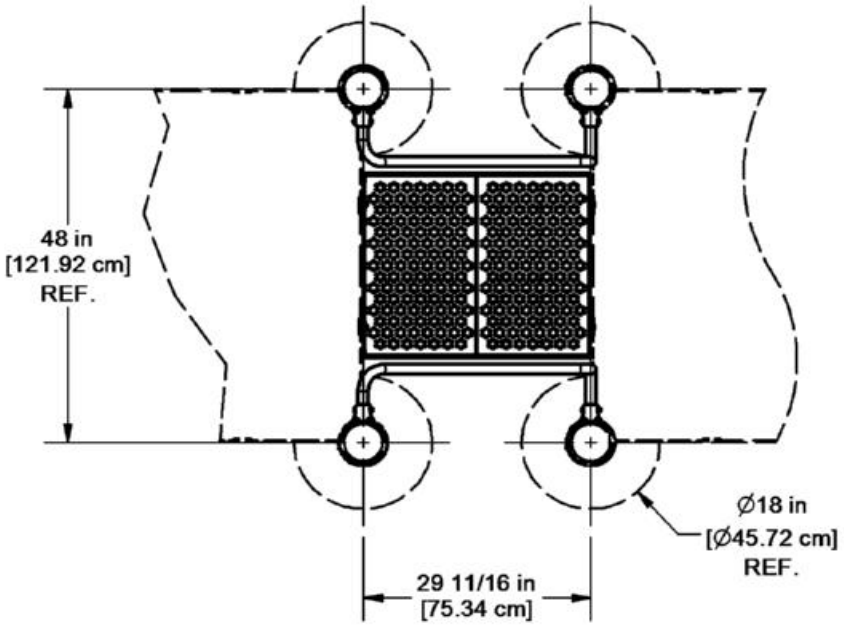


PLAN VIEW

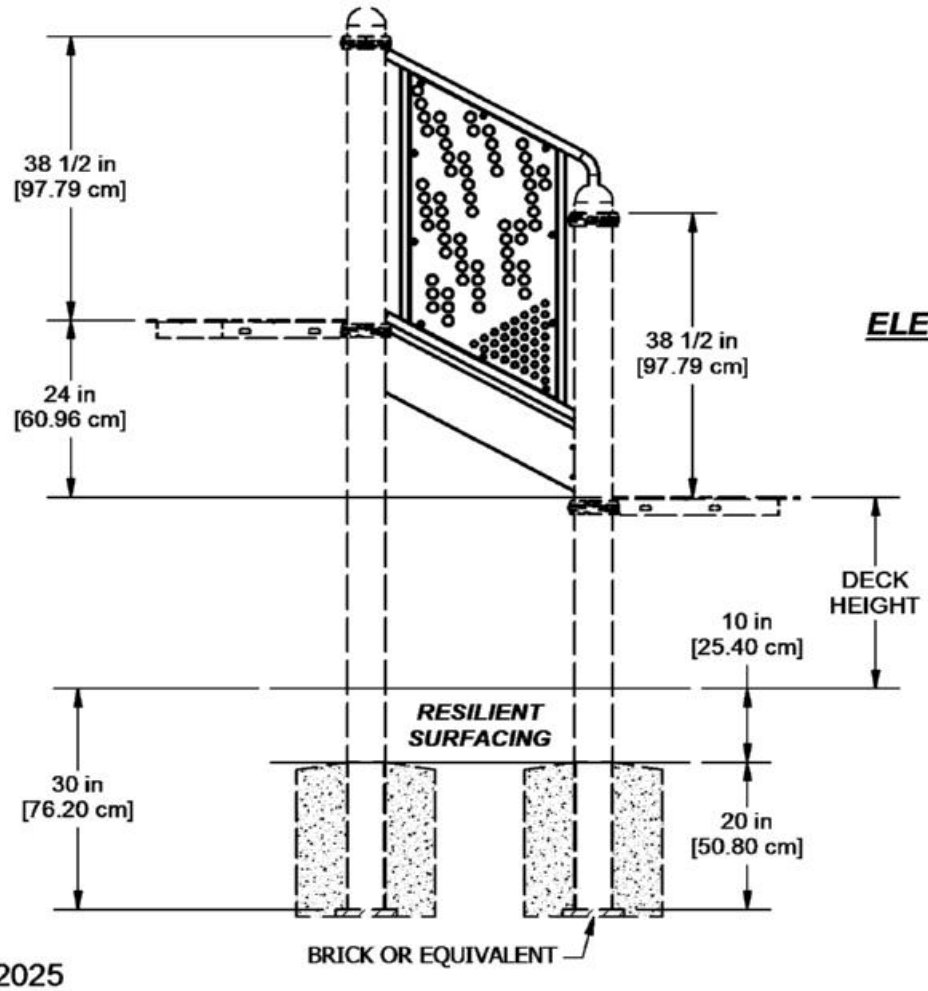


ELEVATION VIEW

72173 LOOKOUT STAIRS (2'-0")

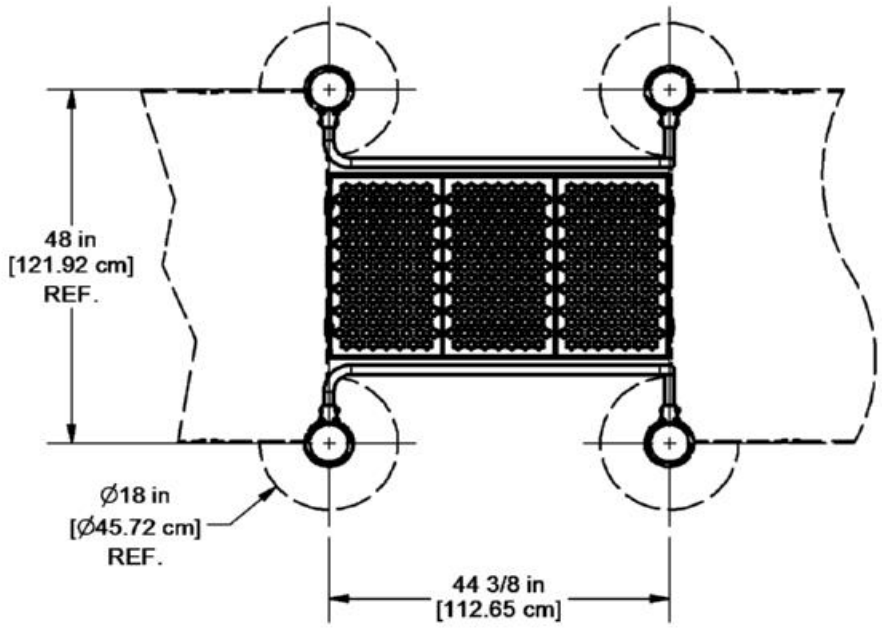


PLAN VIEW

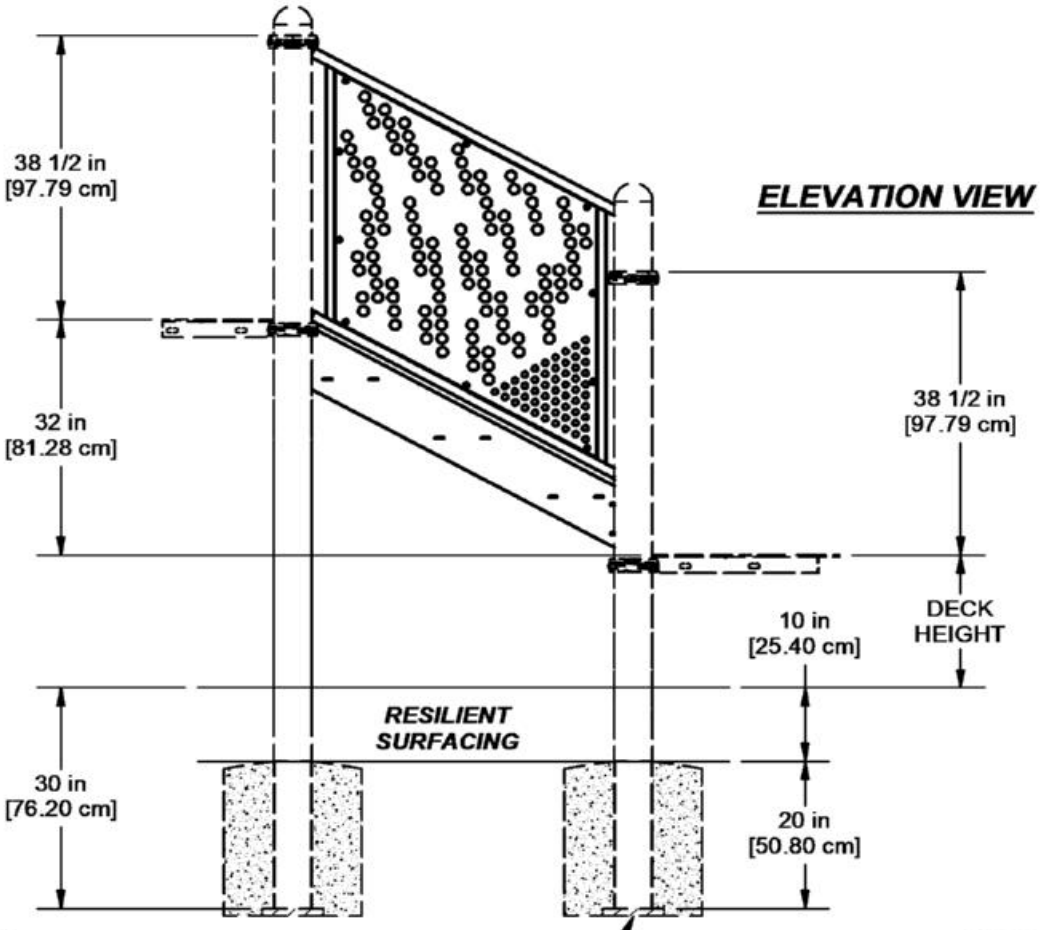


ELEVATION VIEW

72174 LOOKOUT STAIRS (2'-8")

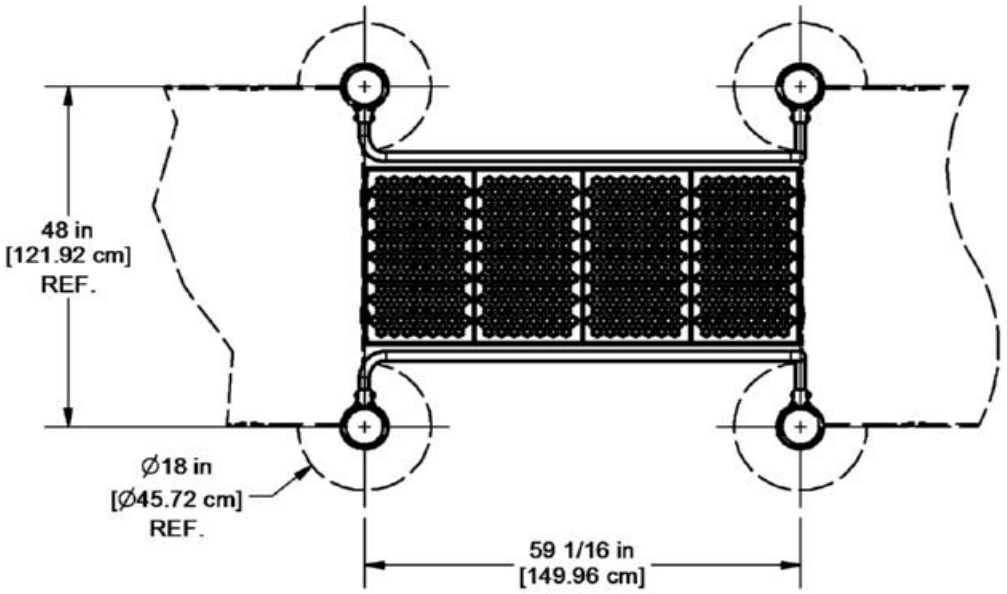


PLAN VIEW

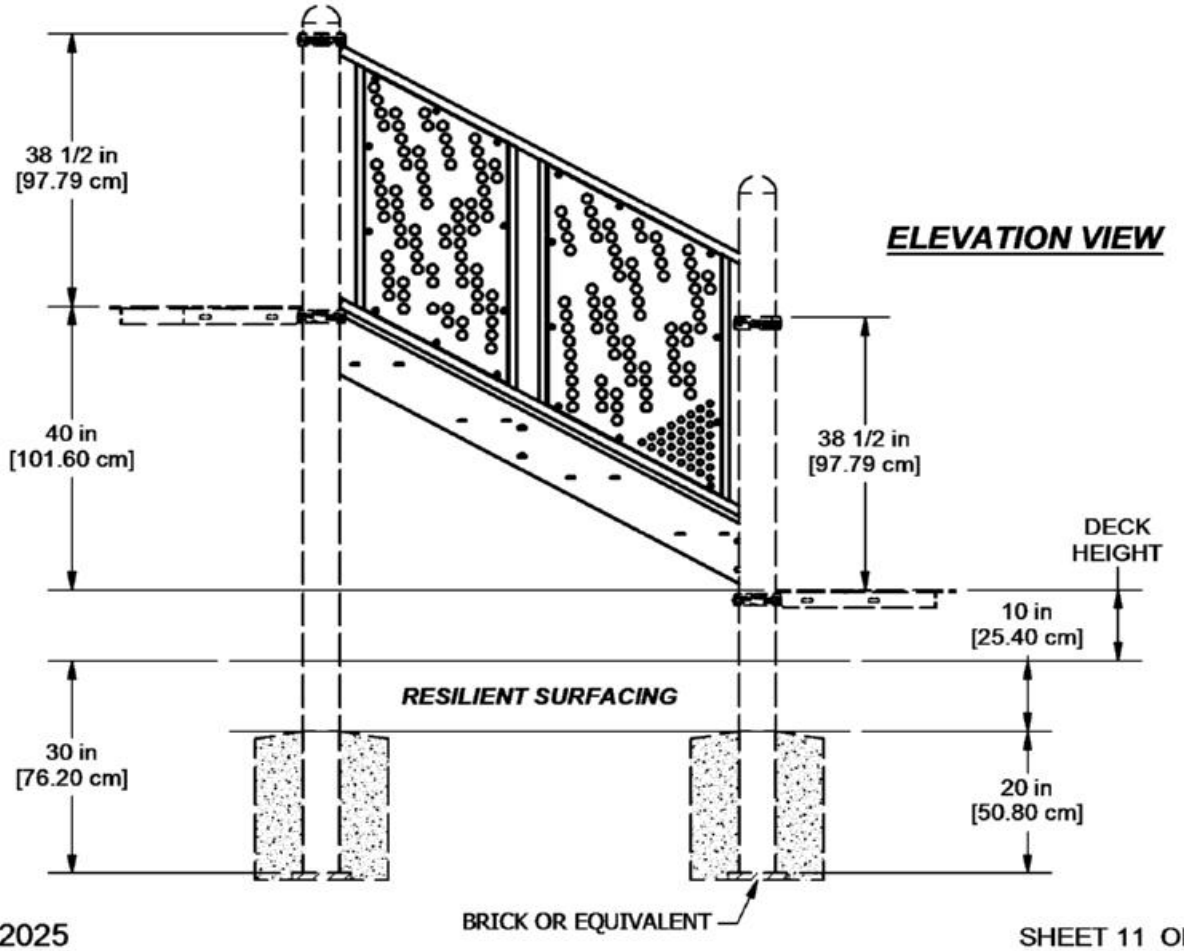


ELEVATION VIEW

72175 LOOKOUT STAIRS (3'-4")

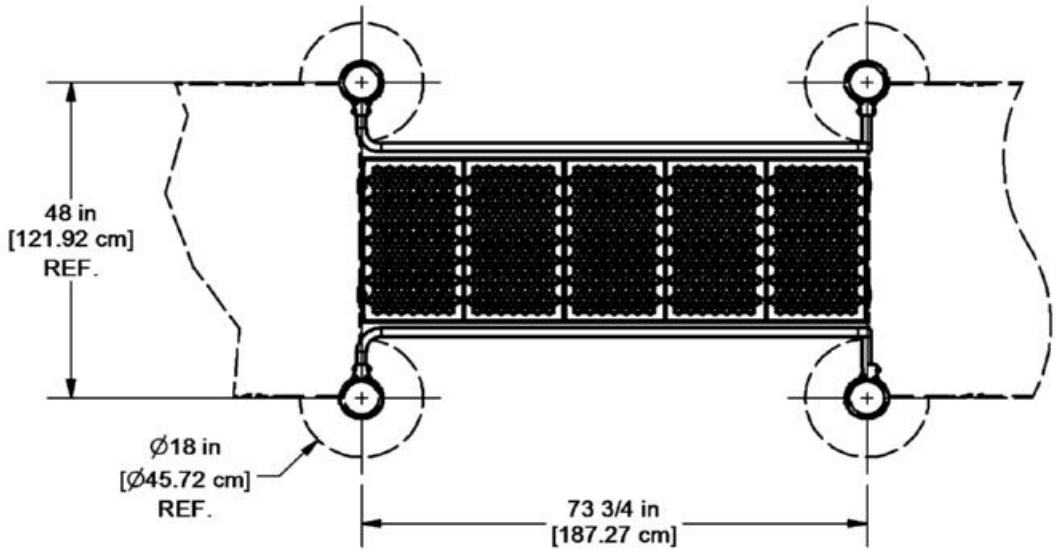


PLAN VIEW

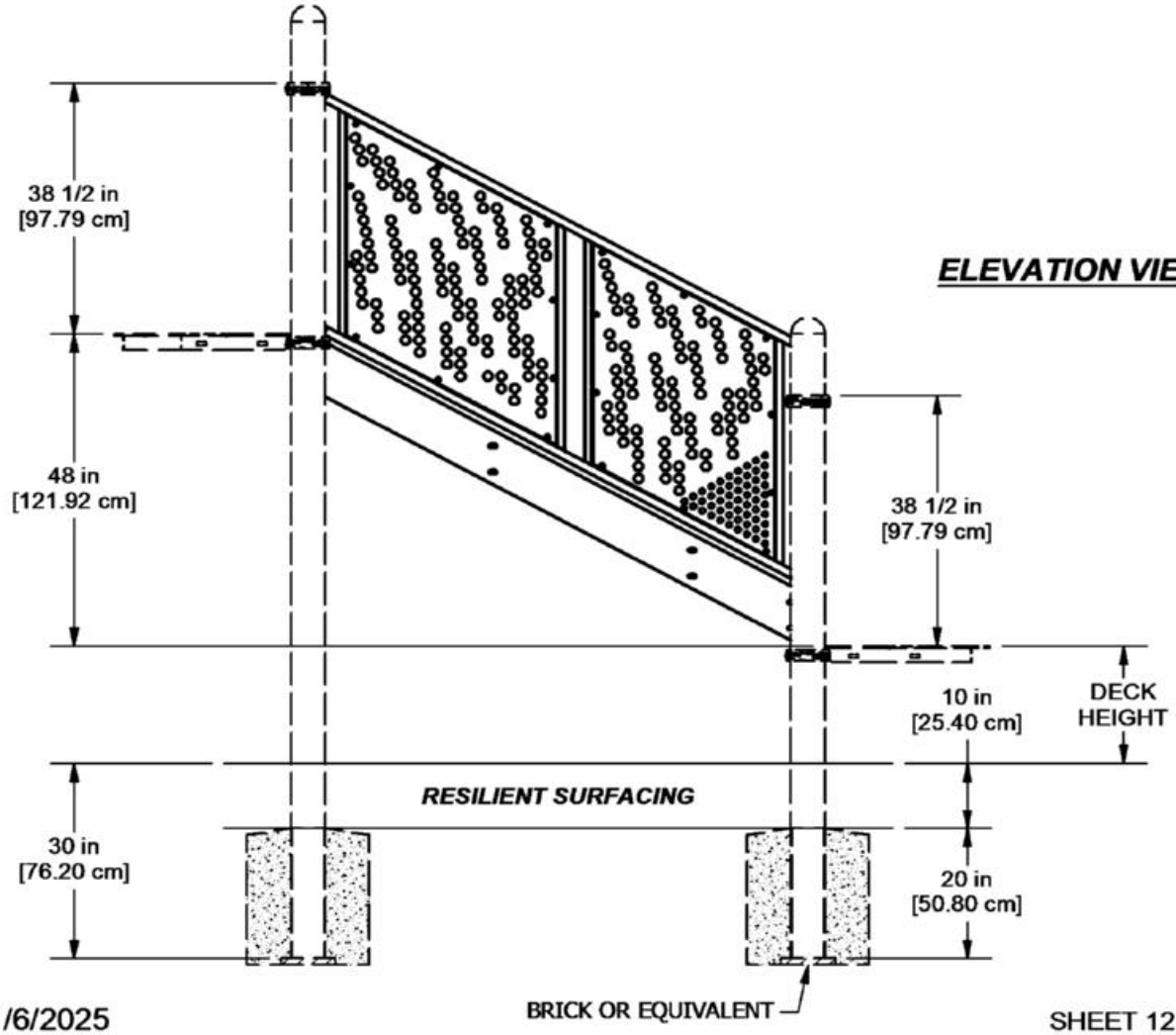


ELEVATION VIEW

72176 LOOKOUT STAIRS (4'-0")

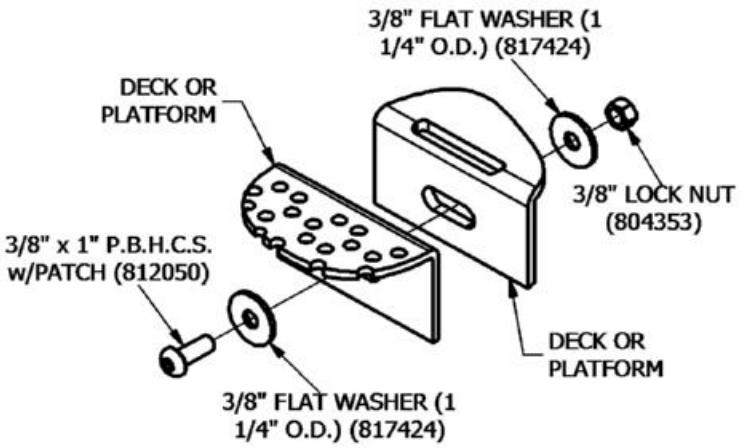


PLAN VIEW

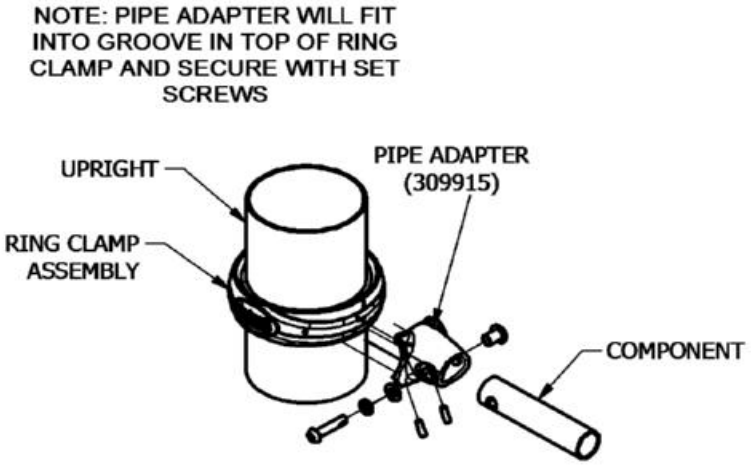


ELEVATION VIEW

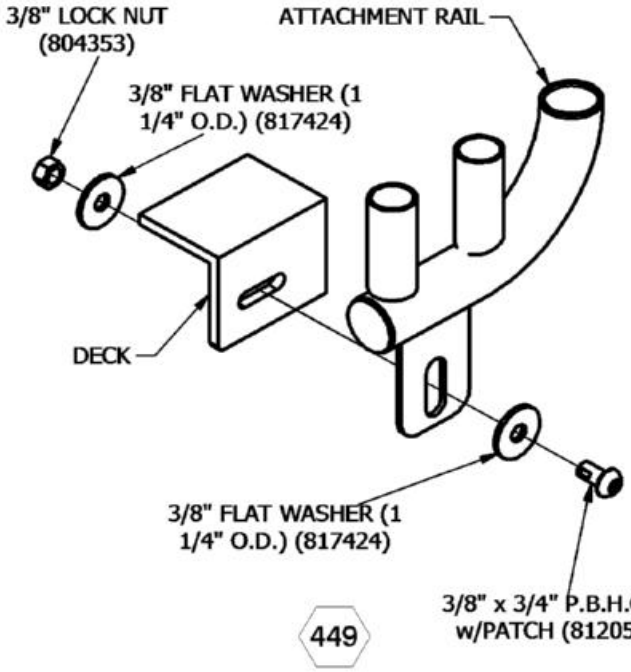
72172 LOOKOUT STAIRS (1'-4"); 72173 (2'-0"); 72174 (2'-8"); 72175 (3'-4"); 72176 (4'-0")



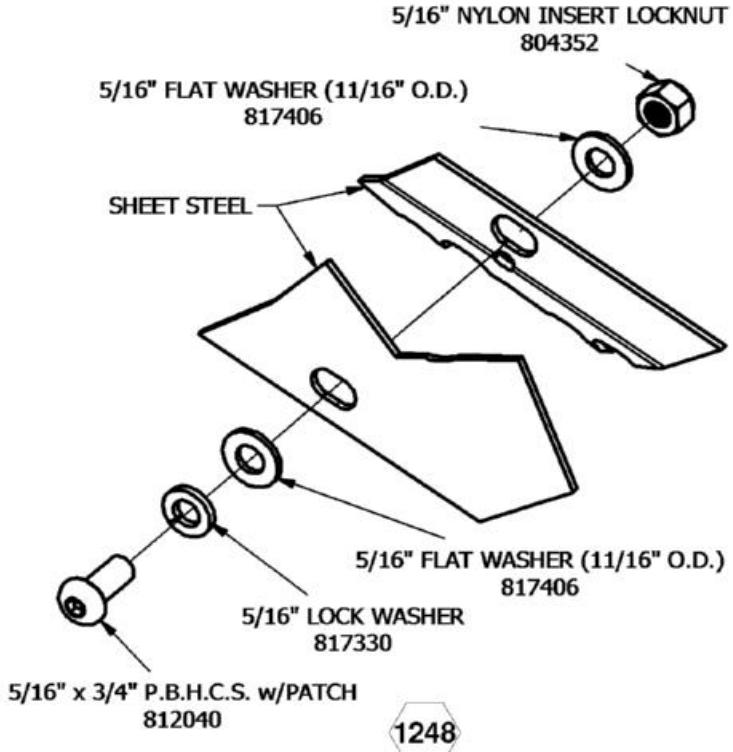
090



448



449



1248

72179 LOOKOUT STAIRS (1'-0"); 72180 (1'-8"); 72181 (2'-4"); 72182 (3'-0"); 72183 (3'-8")

Parts List						
DESCRIPTION	72179	72180	72181	72182	72183	PART NUMBER
PIPE ADAPTER	4	4	4	0	0	309915
1' RISE STAIR	1	0	0	0	0	316574
1'-0" STAIR BARRIER WELDMENT LEFT	1	0	0	0	0	317141
1'-0" STAIR BARRIER WELDMENT RIGHT	1	0	0	0	0	317143
1'-0" STAIR PANEL	2	0	0	0	0	317145
1'-8" RISE STAIRS	0	1	0	0	0	316531
1'-8" STAIR BARRIER WELDMENT LEFT	0	1	0	0	0	317147
1'-8" STAIR BARRIER WELDMENT RIGHT	0	1	0	0	0	317149
1'-8" STAIR PANEL	0	2	0	0	0	317151
2'-4" RISE STAIRS	0	0	1	0	0	316545
2'-4" STAIR BARRIER WELDMENT LEFT	0	0	1	0	0	317153
2'-4" STAIR BARRIER WELDMENT RIGHT	0	0	1	0	0	317155
2'-4" STAIR INLAY	0	0	2	0	0	317157
3'-0" RISE STAIRS	0	0	0	1	0	316559
3'-0" STAIR BARRIER WELDMENT LEFT	0	0	0	1	0	317159
3'-0" STAIR BARRIER WELDMENT RIGHT	0	0	0	1	0	317161
3'-0" STAIR PANEL BOTTOM	0	0	0	2	0	317163
3'-0" STAIR PANEL TOP	0	0	0	2	0	317165
3'-8" RISE STAIRS	0	0	0	0	1	316516
3'-8" STAIR BARRIER WELDMENT LEFT	0	0	0	0	1	317167
3'-8" STAIR BARRIER WELDMENT RIGHT	0	0	0	0	1	317169
3'-8" STAIR PANEL BOTTOM	0	0	0	0	2	317171
3'-8" STAIR PANEL TOP	0	0	0	0	2	317173
HARDWARE COMPLETE	1	0	0	0	0	317065
HARDWARE COMPLETE	0	1	1	0	0	317081
HARDWARE COMPLETE	0	0	0	1	1	317090
1/4" x 3/4" SET SCREW	8	8	8	8	8	811545
5/16" x 3/4" P.B.H.C.S. w/PATCH	12	20	20	40	40	812040
5/16" LOCK WASHER	12	20	20	40	40	817330
5/16" FLAT WASHER (11/16" O.D.)	24	40	40	80	80	817406
5/16" NYLON INSERT LOCKNUT	12	20	20	40	40	804352
3/8" x 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	812052
3/8" x 1" P.B.H.C.S. w/PATCH	4	4	4	4	4	812050
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	4	812054
3/8" LOCK WASHER	4	4	4	4	4	817334
3/8" FLAT WASHER	4	4	4	4	4	817410
3/8" FLAT WASHER (1 1/4" O.D.)	16	16	16	16	16	817424
3/8" BARREL NUT	4	4	4	4	4	804804
3/8" LOCK NUT	8	8	8	8	8	804353

72179 LOOKOUT STAIRS (1'-0"); 72180 (1'-8"); 72181 (2'-4"); 72182 (3'-0"); 72183 (3'-8")

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*
Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.
Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

INSTALLATION INSTRUCTIONS:

1. Determine which decks are to receive the Lookout Stairs. Refer to order Top View.
2. With sufficient manpower, lift the stair and fasten to the decks. See Detail 090.
3. Attach four Ring Clamps to the Uprights. See separate Ring Clamp installation sheet. See Elevation View for clamp locations. Attach Pipe Adapters to the Ring Clamps. See Detail 448.
4. Attach Stair Panels to Stair Barrier Weldments. See Detail 1248.
5. Attach Barriers to Pipe Adapters. See Detail 448.
6. Attach the bottom tab of the Barriers to the decks. See Detail 449.
7. Using Detail 448, attach the Pipe Adapters to the Ring Clamps with 1/4" Set Screws.
8. When the entire assembly is plumb and level, tighten all fasteners and pour concrete footings within 4" to the top and taper away from support posts to allow water drainage. Allow to cure for at least 48 hours before use.

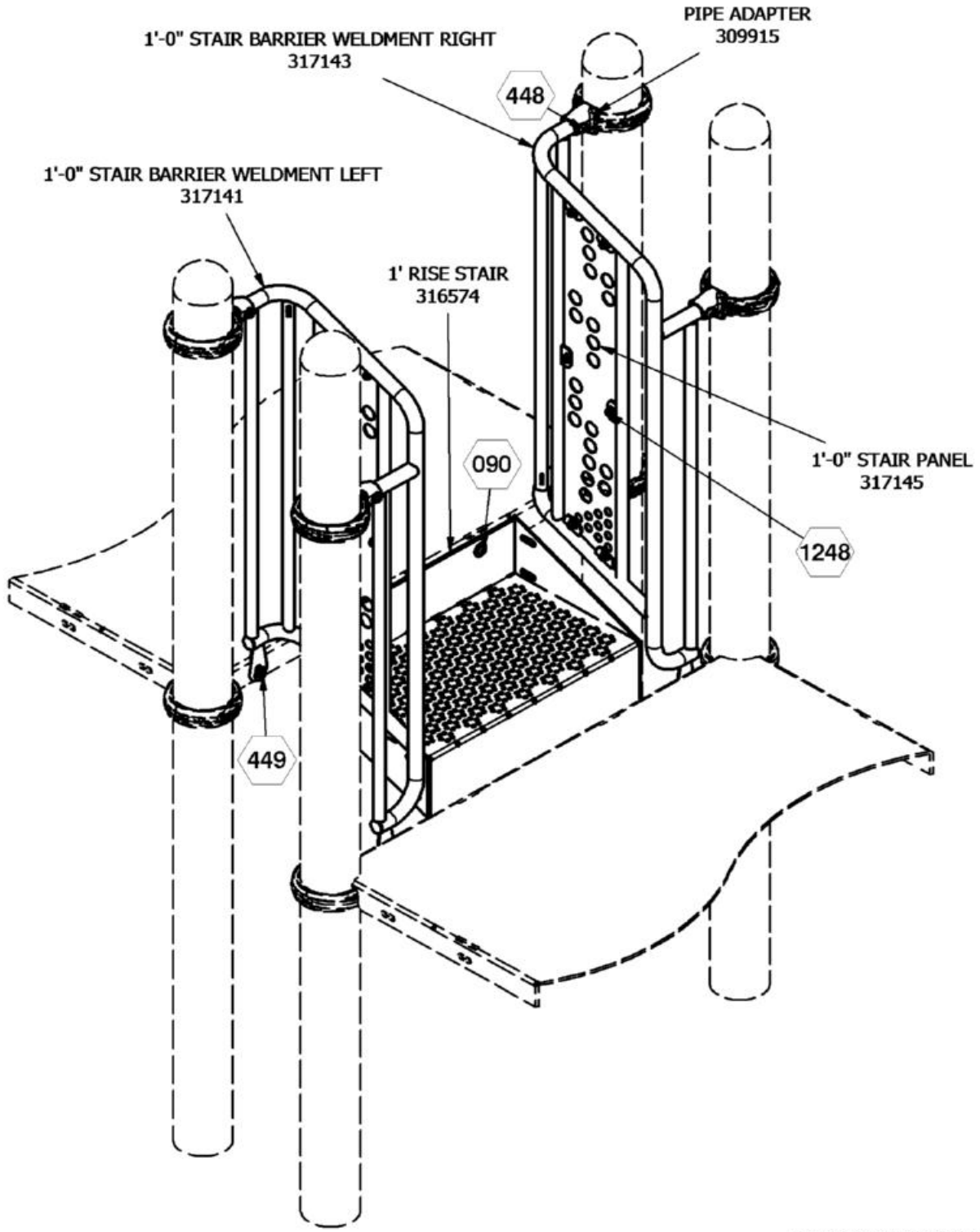
IMPORTANT! Avoid creating any gaps between the components which fall between 3 1/2" and 9". It has been shown that such gaps create entrapment points which can trap a child and cause injury.

9. When the structure is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp subassembly sheets. ***It is very important that all Drive Rivets be installed prior to allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

72179 LOOKOUT STAIRS (1'-0")



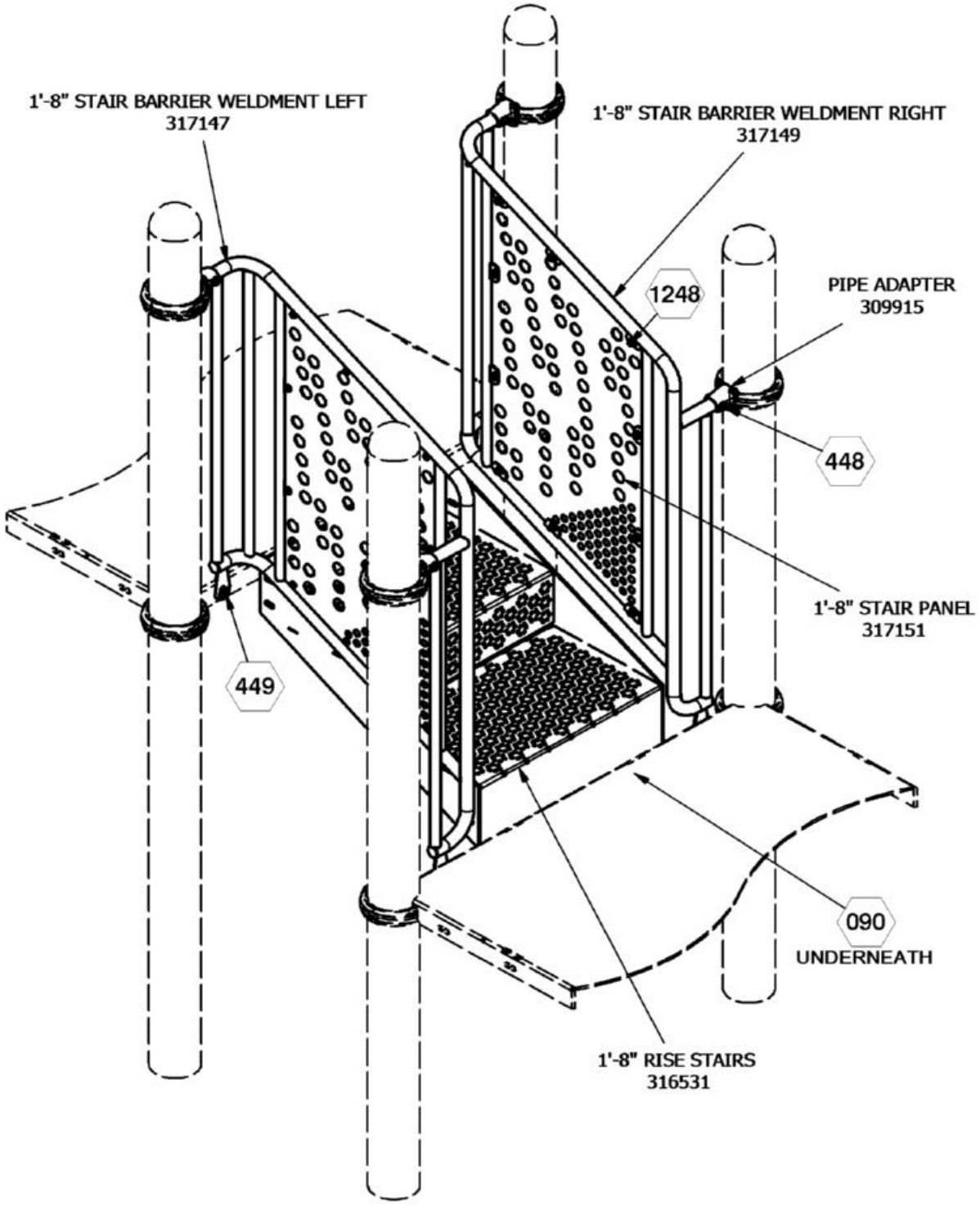
= INSTALLATION DETAIL

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 8/13/2024

72180 LOOKOUT STAIRS (1'-8")



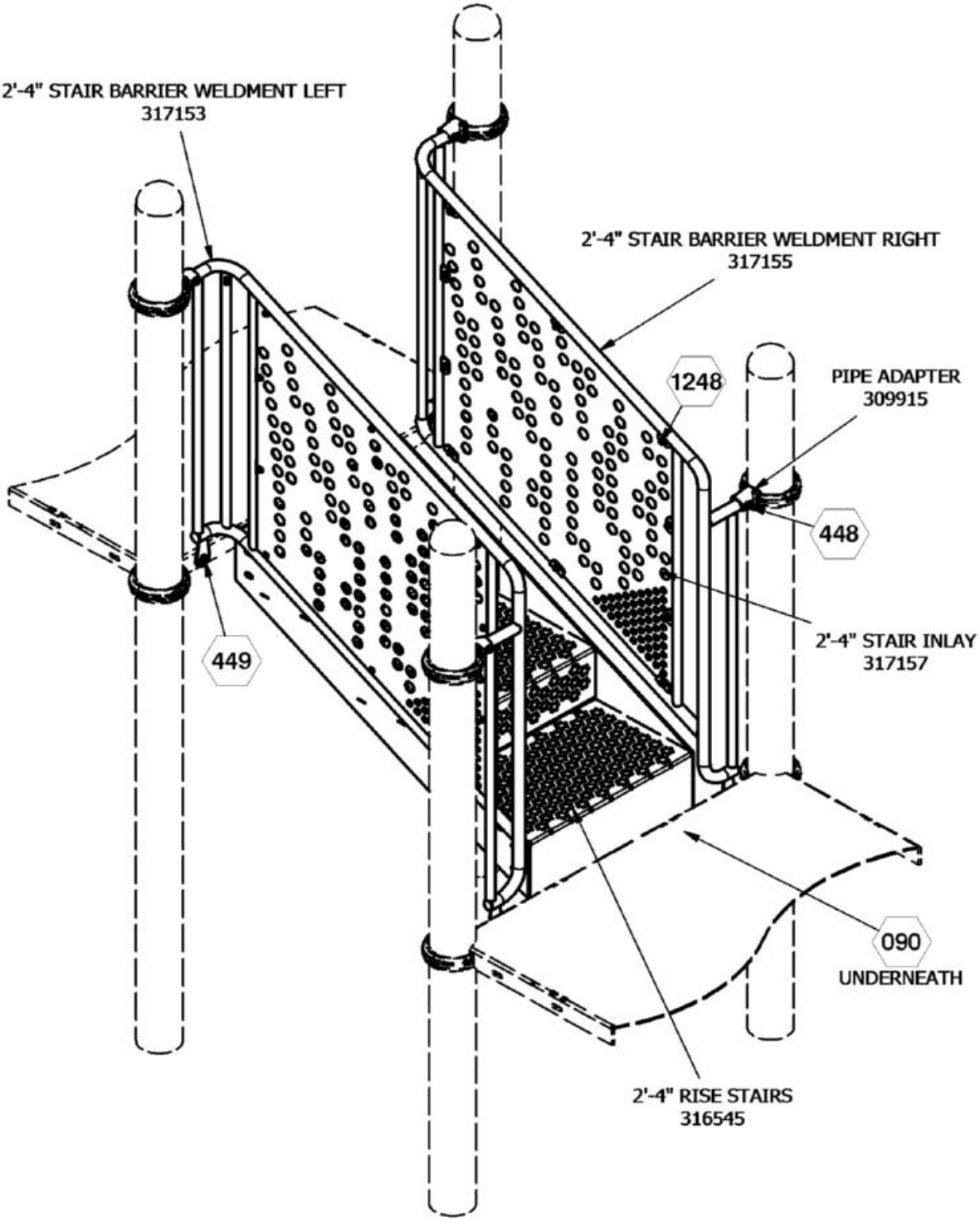
⬡ = INSTALLATION DETAIL

Issued/Revised: 8/13/2024

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

72181 LOOKOUT STAIRS (2'-4")



⬡ = INSTALLATION DETAIL

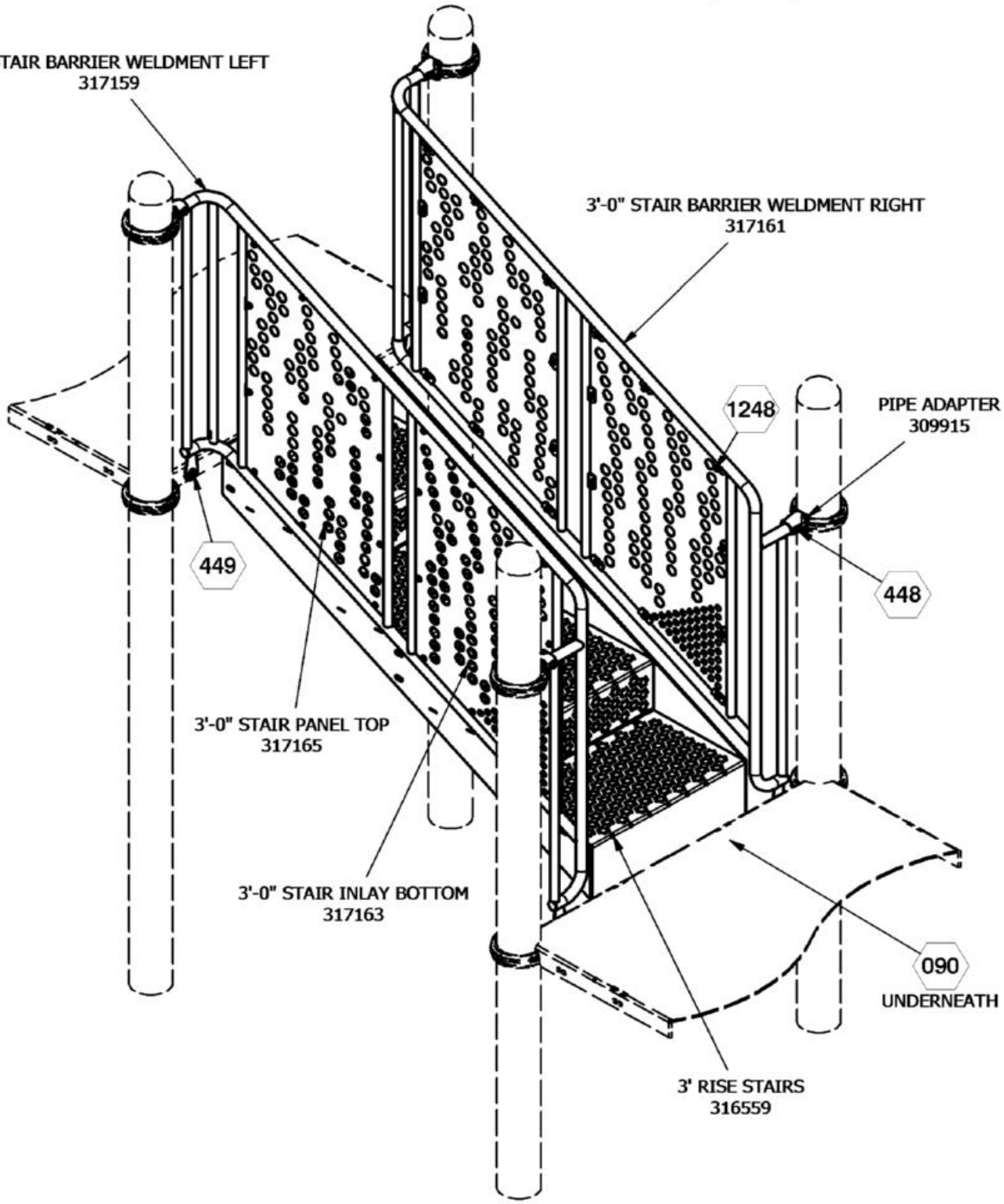
Issued/Revised: 8/13/2024

FINISHED ASSEMBLY

COMPONENTS SHOWN IN
HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72182 LOOKOUT STAIRS (3'-0")



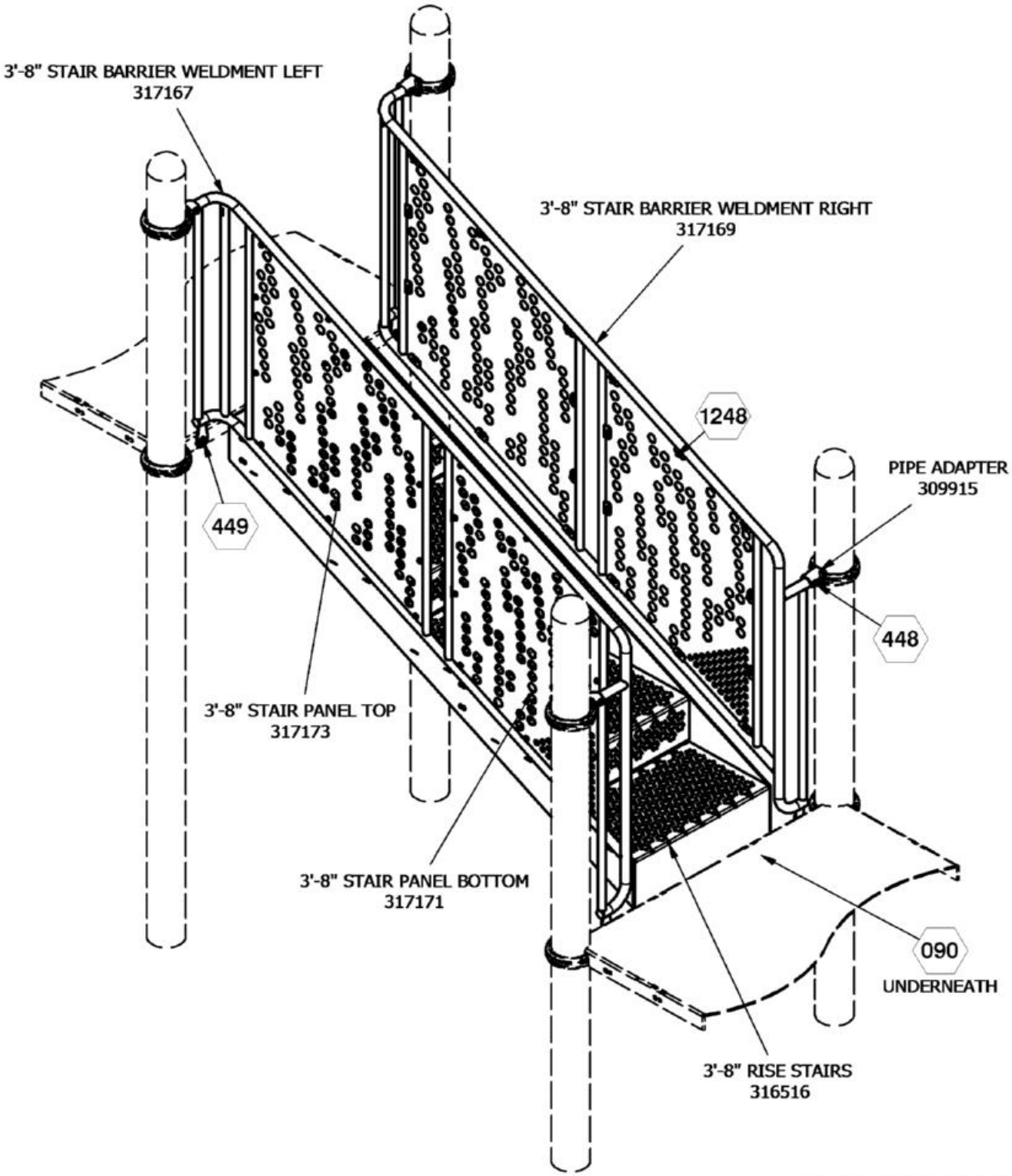
⬡ = INSTALLATION DETAIL

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 8/13/2024

72183 LOOKOUT STAIRS (3'-8")



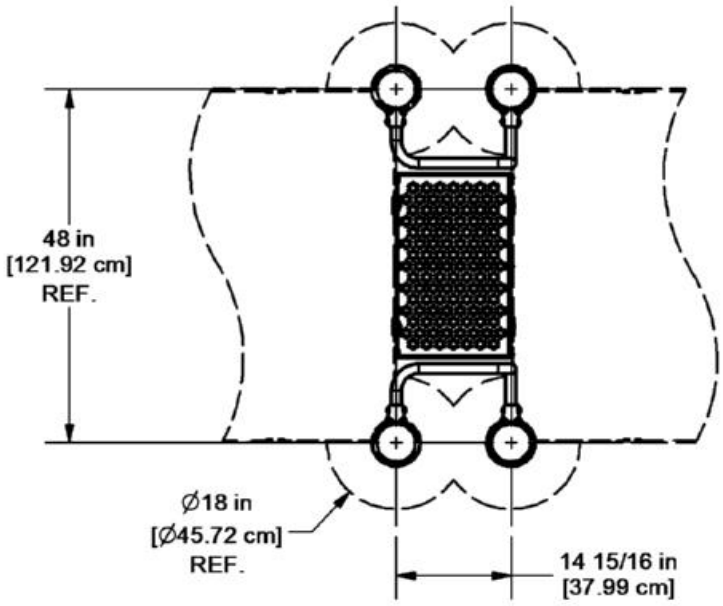
= INSTALLATION DETAIL

FINISHED ASSEMBLY

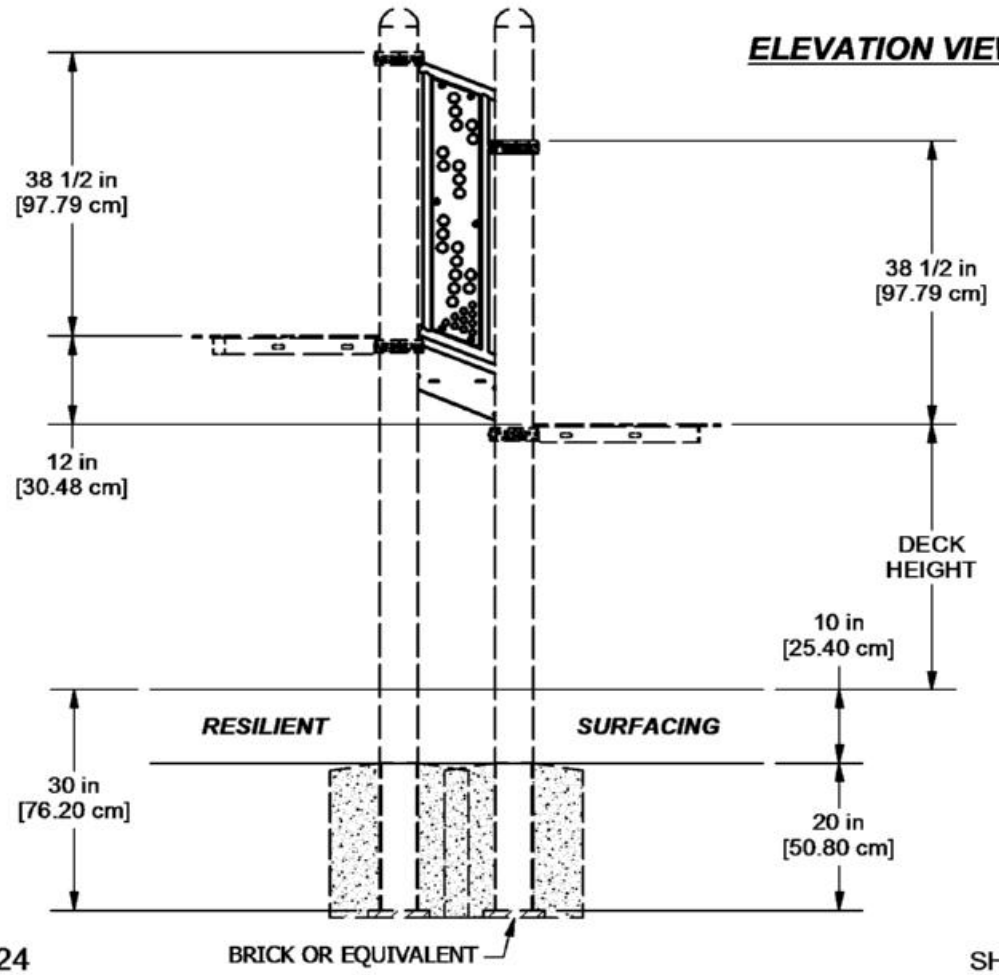
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

Issued/Revised: 8/13/2024

72179 LOOKOUT STAIRS (1'-0")

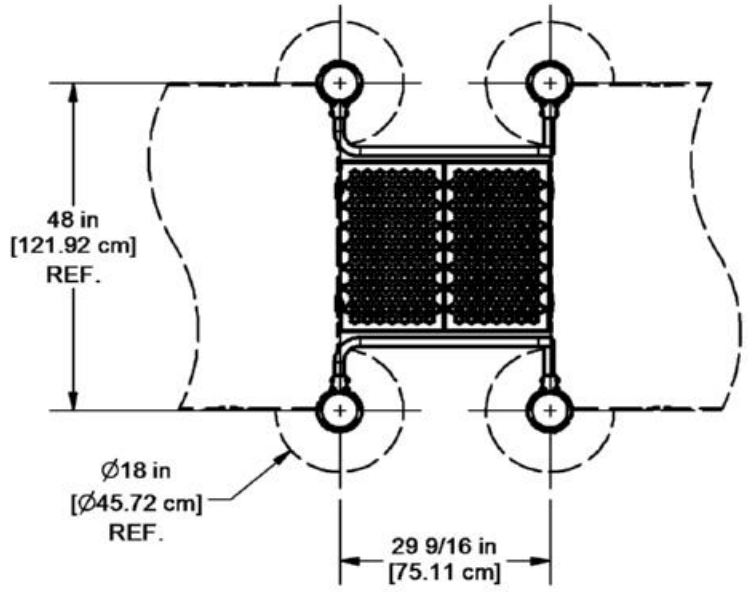


PLAN VIEW



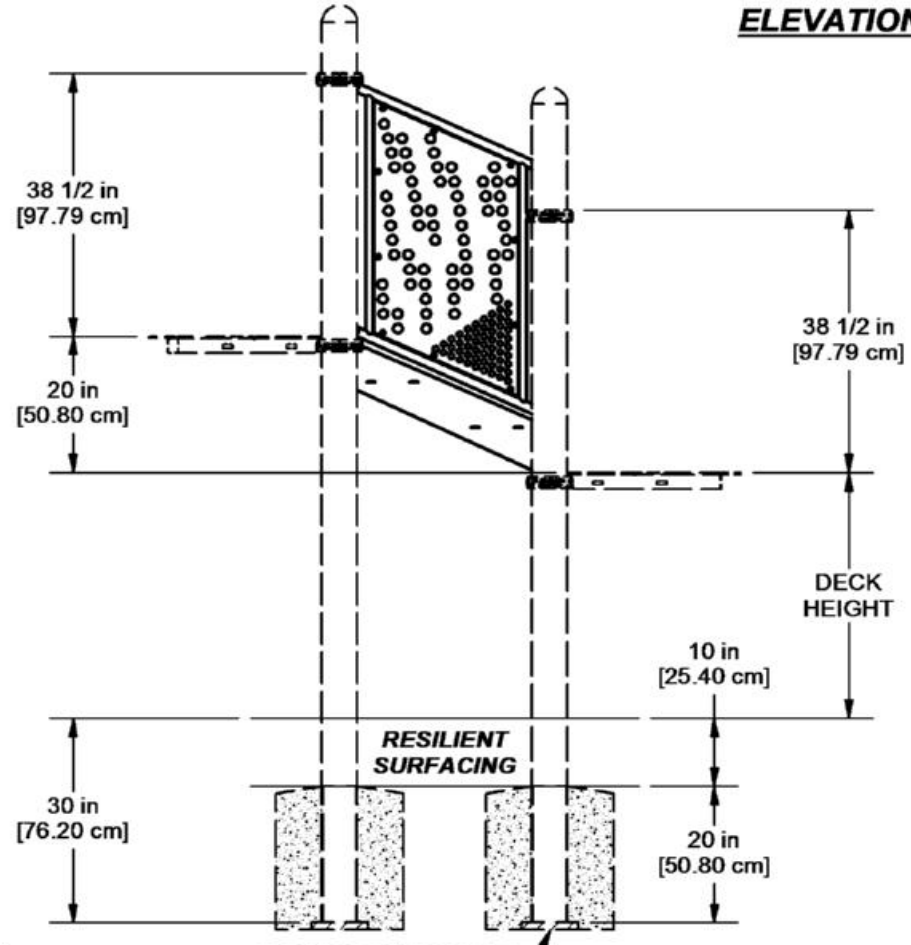
ELEVATION VIEW

72180 LOOKOUT STAIRS (1'-8")

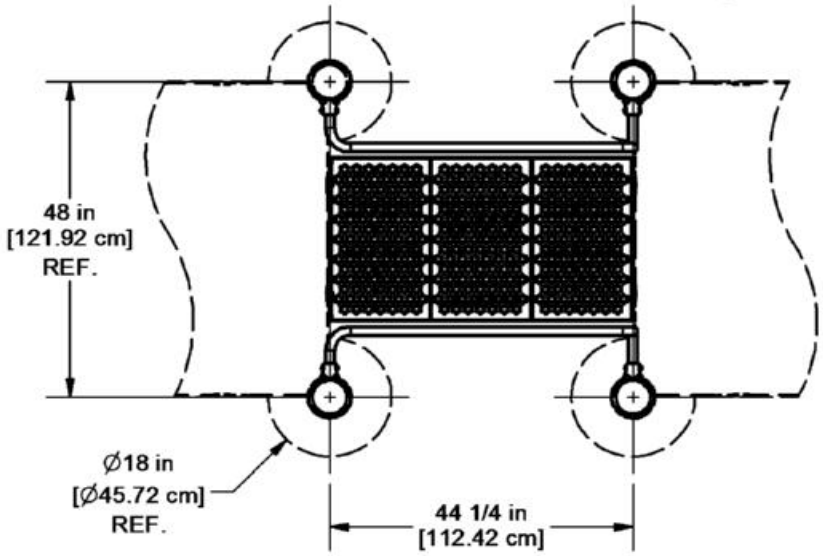


PLAN VIEW

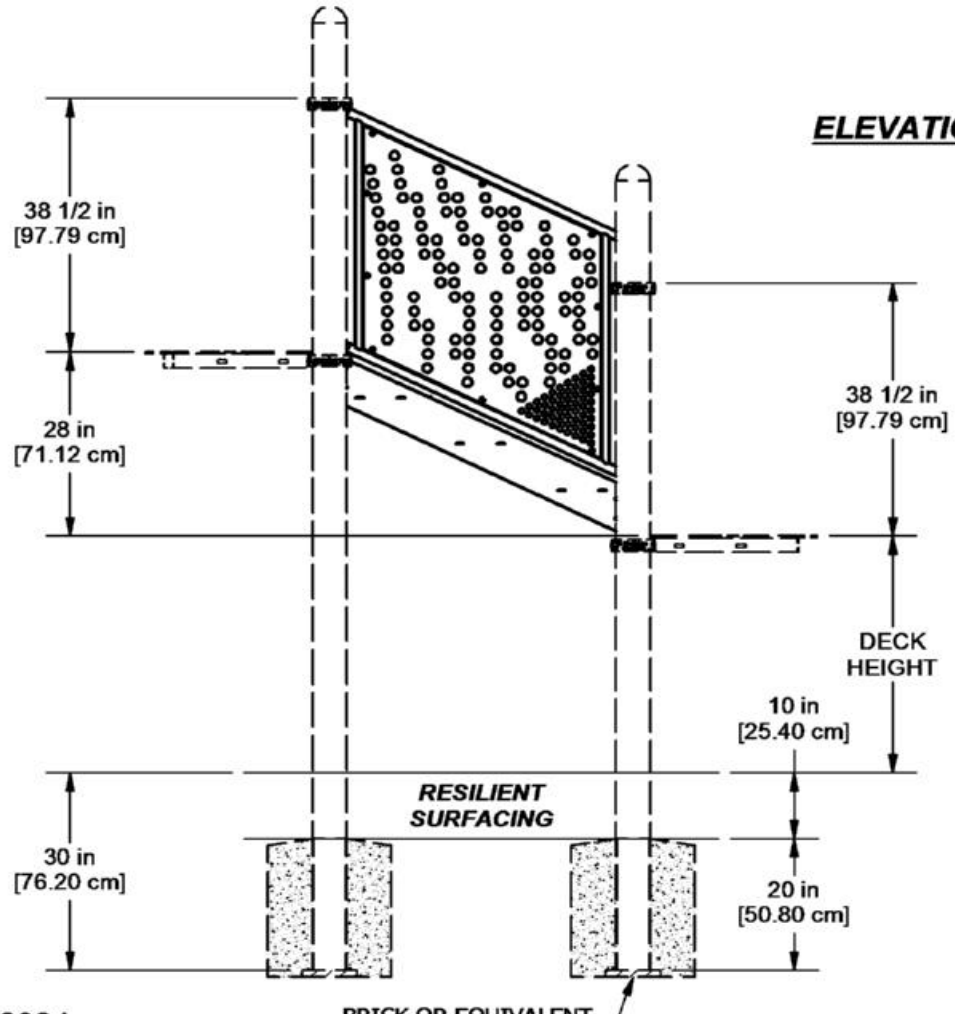
ELEVATION VIEW



72181 LOOKOUT STAIRS (2'-4")

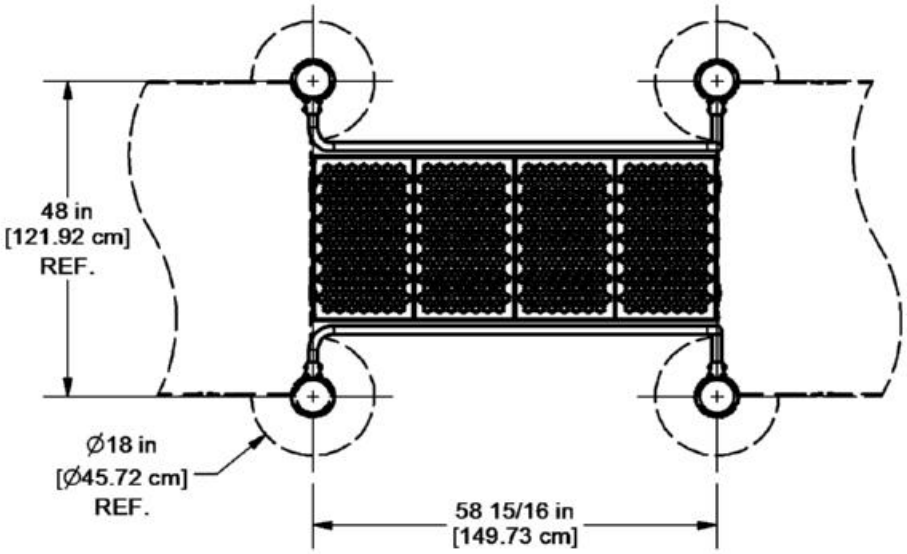


PLAN VIEW

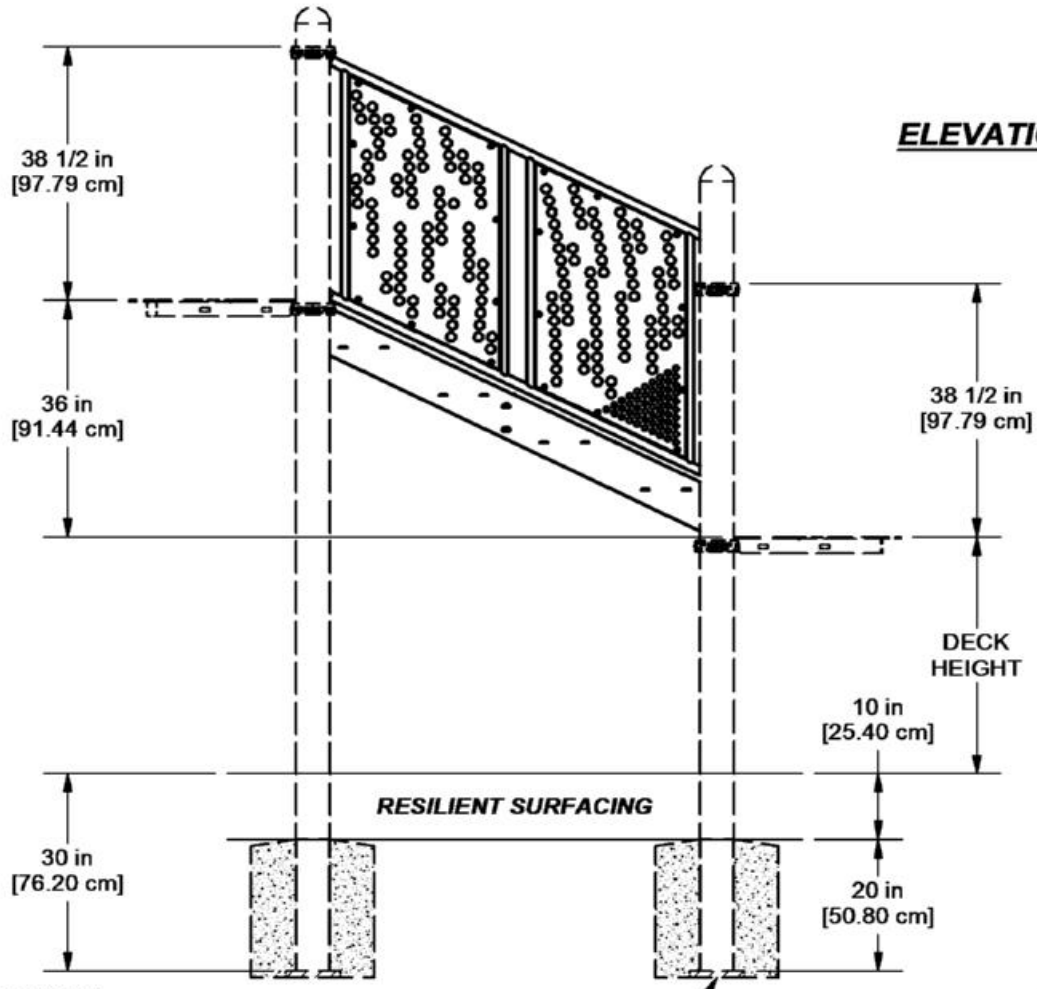


ELEVATION VIEW

72182 LOOKOUT STAIRS (3'-0")

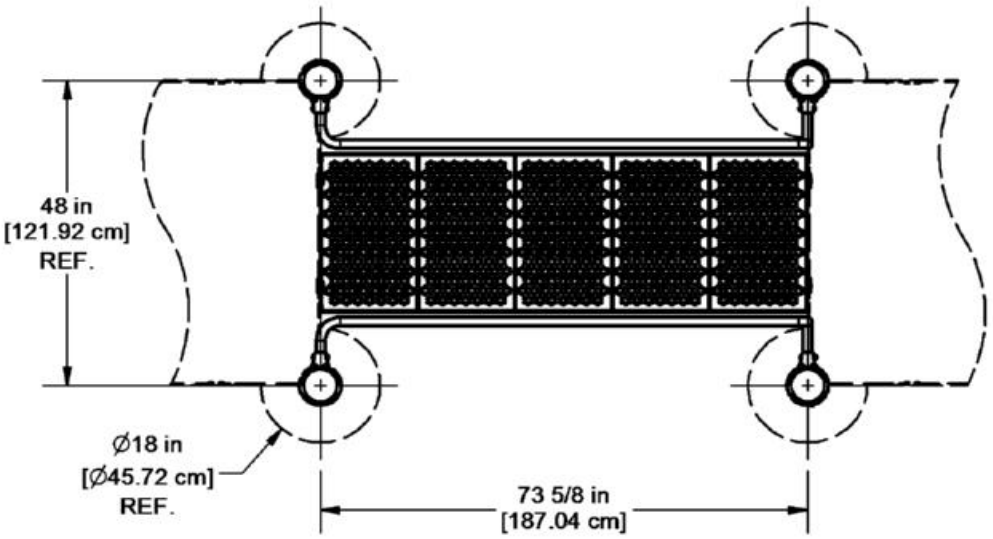


PLAN VIEW

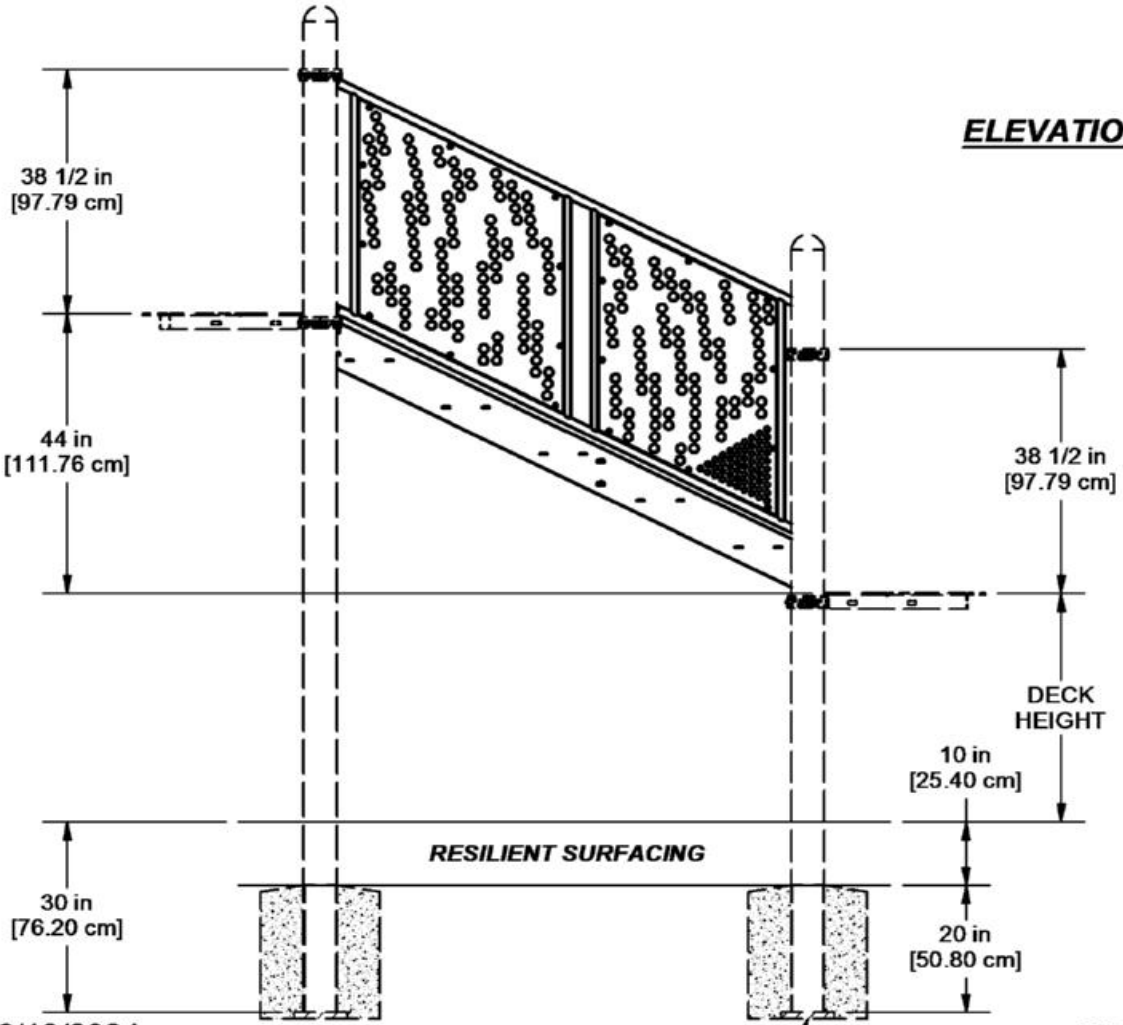


ELEVATION VIEW

72183 LOOKOUT STAIRS (3'-8")

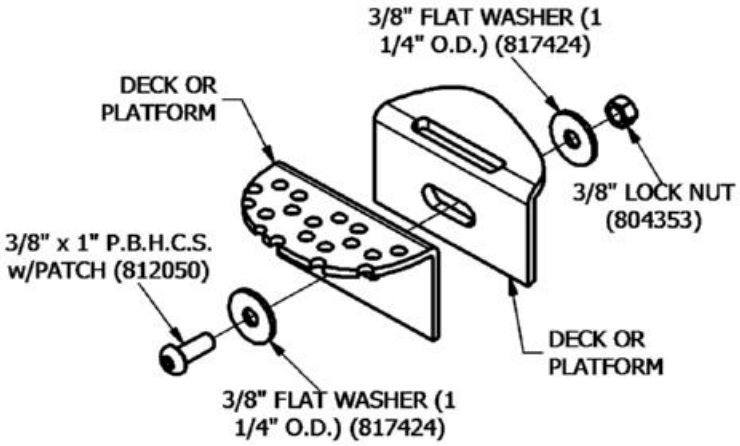


PLAN VIEW



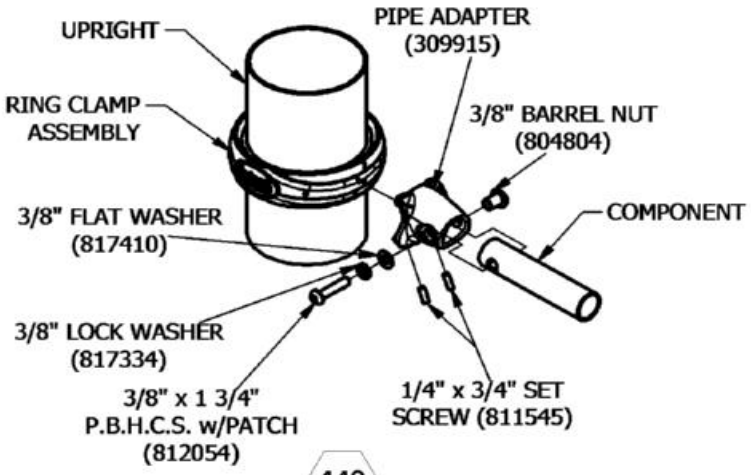
ELEVATION VIEW

72179 LOOKOUT STAIRS (1'-0"); 72180 (1'-8"); 72181 (2'-4"); 72182 (3'-0"); 72183 (3'-8")

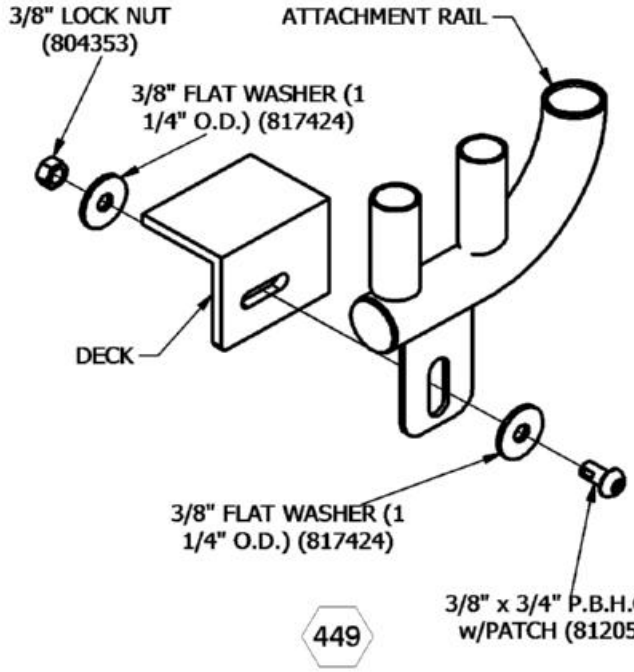


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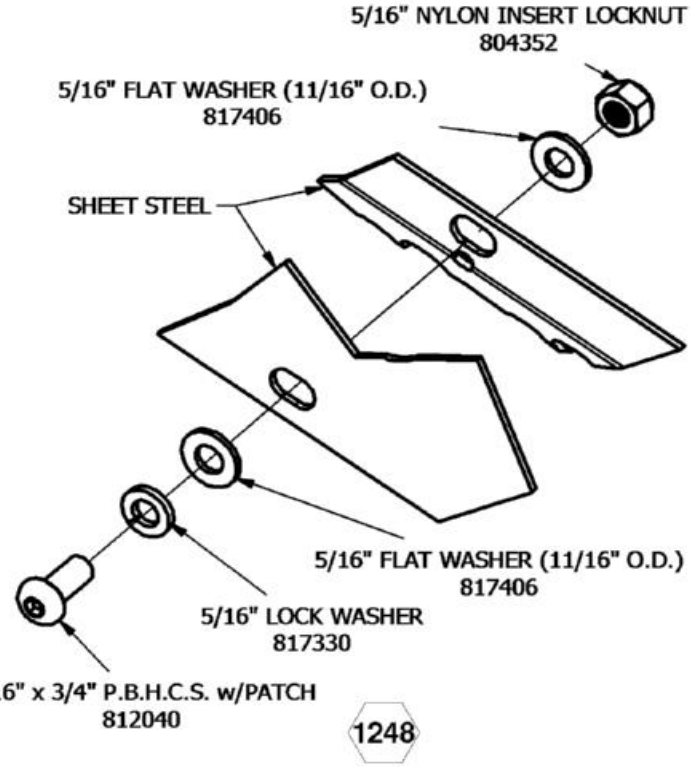
NOTE: PIPE ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS



448



449



1248

SuperMax Play Systems

This equipment is designed for children 2-5 or 5-12 years old

72201 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK A
72230 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK B
72231 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK C
72232 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK D

Parts List					
DESCRIPTION	72201	72230	72231	72232	PART NUMBER
HOURGLASS SENSOR RAMP ASSEMBLY	0	1	0	0	7368
20" BELL SENSOR RAMP ASSEMBLY	1	0	0	0	7369
HYPNETIC SENSOR RAMP ASSEMBLY	0	0	1	0	7370
PIANO SENSOR RAMP ASSEMBLY	0	0	0	1	7371
12" BELL SENSOR RAMP ASSEMBLY	0	0	1	0	7372
TOPOGRAPHIC SENSOR RAMP ASSEMBLY	1	0	0	1	7373
HYPNO WHEEL SENSOR RAMP ASSEMBLY	0	1	0	1	7374
MIRROR BUBBLE SENSOR RAMP ASSEMBLY	1	1	1	1	7375
WINDOW PANEL SENSOR RAMP ASSEMBLY	1	1	1	1	7376
12" ROLLER BALLS SENSOR RAMP ASSEMBLY	0	0	1	0	7377
FINGER MAZE SENSOR RAMP ASSEMBLY	1	1	0	0	7378
HAND HOLD	1	1	1	1	176728
VERTICAL ADAPTER	2	2	2	2	309917
12' RAMP INLAY BARRIER WELDMENT	1	1	1	1	317259
12' SENSORY RAMP SIDE BOTTOM GROUND TO 1'	1	1	1	1	317289
12' SENSORY RAMP SIDE MID GROUND TO 1'	1	1	1	1	317291
12' SENSORY RAMP SIDE TOP GROUND TO 1'	1	1	1	1	317293
HARDWARE COMPLETE	1	1	1	1	317459
1/4" x 3/4" SET SCREW	4	4	4	4	811545
5/16" x 3/4" P.B.H.C.S. w/PATCH	42	42	42	42	812040
5/16" LOCK WASHER	42	42	42	42	817330
5/16" FLAT WASHER (11/16" O.D.)	84	84	84	84	817406
5/16" NYLON INSERT LOCKNUT	42	42	42	42	804352
3/8" x 1" P.B.H.C.S. w/PATCH	10	10	10	10	812050
3/8" x 1 3/4" P.B.H.C.S. w/PATCH	4	4	4	4	812054
3/8" LOCK WASHER	12	12	12	12	817334
3/8" FLAT WASHER	10	10	10	10	817410
3/8" T-NUT	4	4	4	4	804556
3/8" ACORN NUT	8	8	8	8	804002
3/8" BARREL NUT	2	2	2	2	804804

Unless Otherwise Specified, All Units of Measure are Each
**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

72201 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK A
72230 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK B
72231 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK C
72232 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK D

INSTALLATION INSTRUCTIONS:

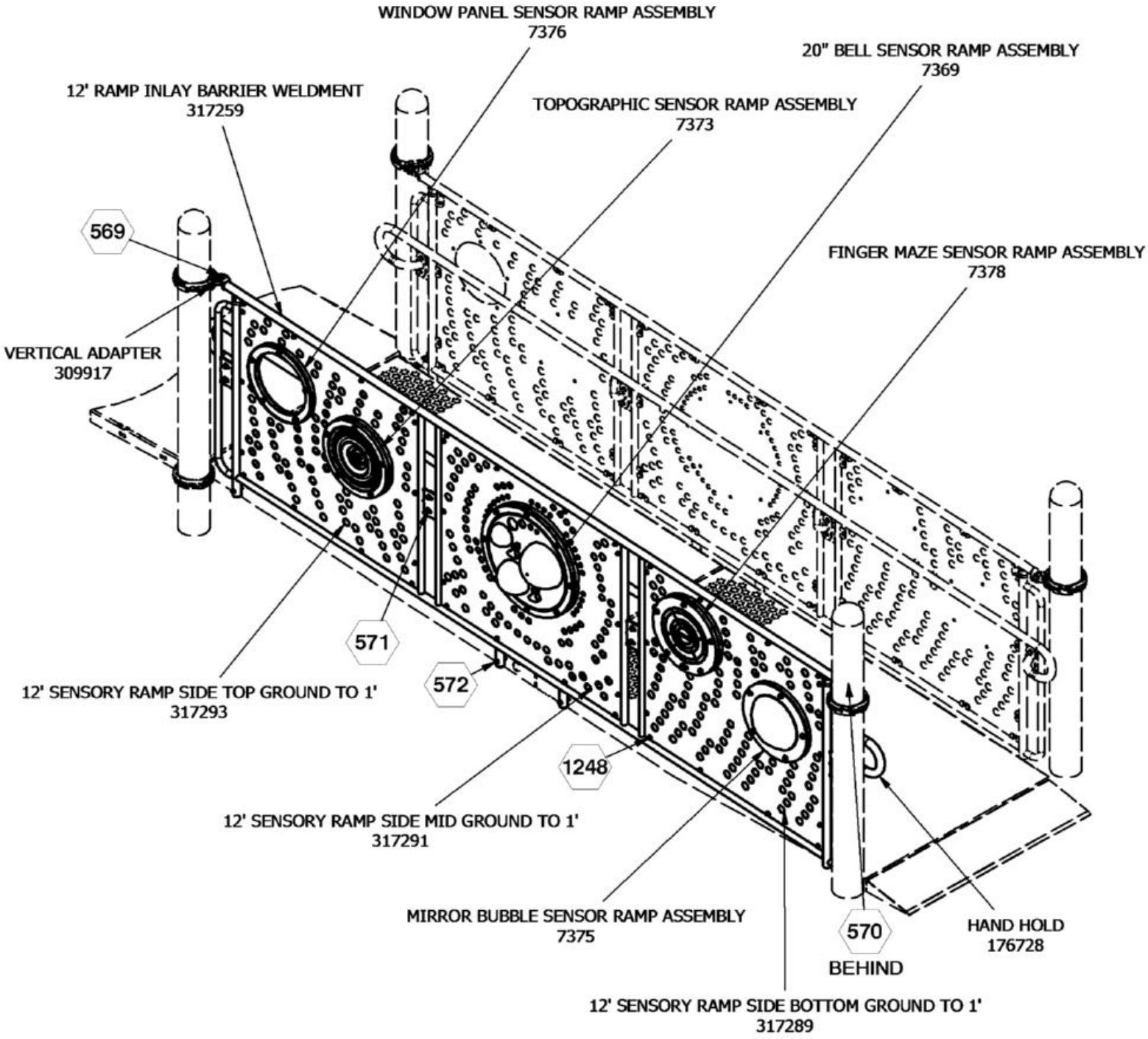
1. Determine which ramp barrier is to receive which ramp Sensor Package. Refer to order Top View.
2. Attach the Sensor Ramp Side Top, Middle and Bottom to the Inlay Barrier Weldment. See Detail 1248.
3. Attach top of the Barrier to the existing Ring Clamps using Vertical Adapters. See Details 569 & 570.
4. Attach the bottom of the Barrier to the side of the Ramp. See Detail 572.
5. Refer to specific installation sheets for all necessary installation steps for correct sensors.
6. Attach Hand Hold to the Barrier. See Detail 571.
7. When the assembly is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed before allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72201 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK A



= INSTALLATION DETAIL

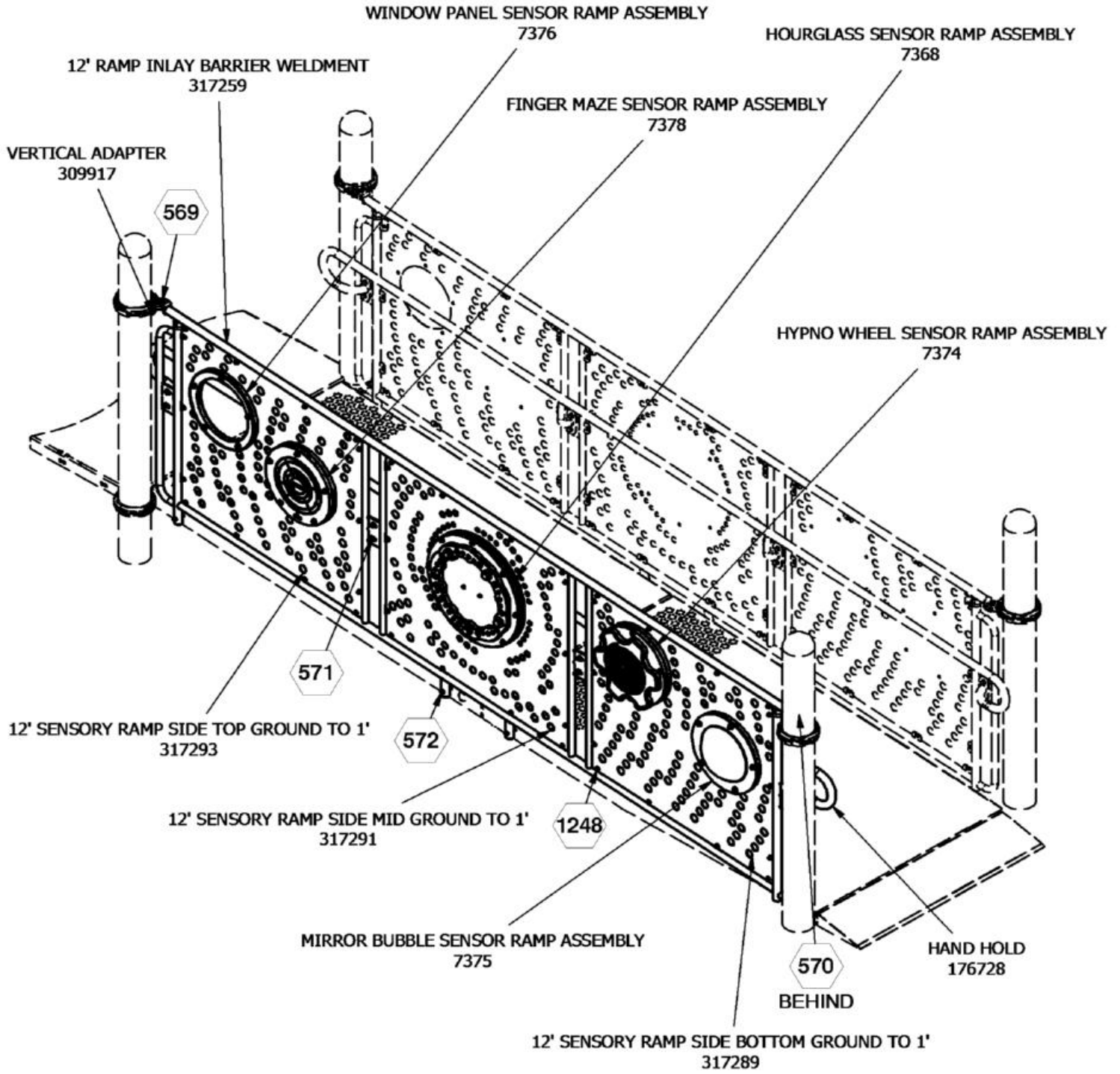
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

FINISHED ASSEMBLY

Issued/Revised: 12/11/2024

SuperMax Play Systems

72230 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK B



⬡ = INSTALLATION DETAIL

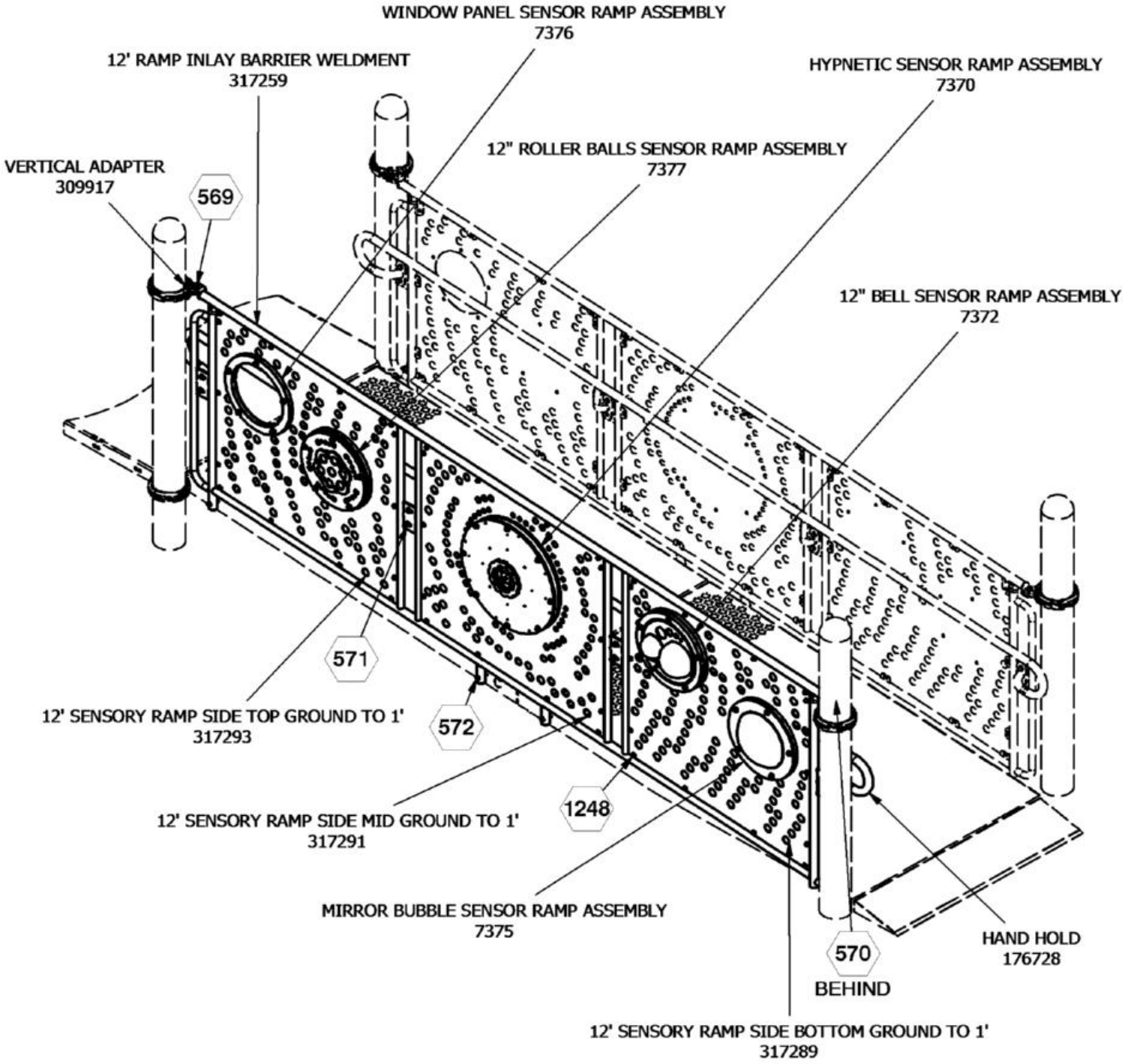
Issued/Revised: 12/11/2024

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72231 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK C



⬡ = INSTALLATION DETAIL

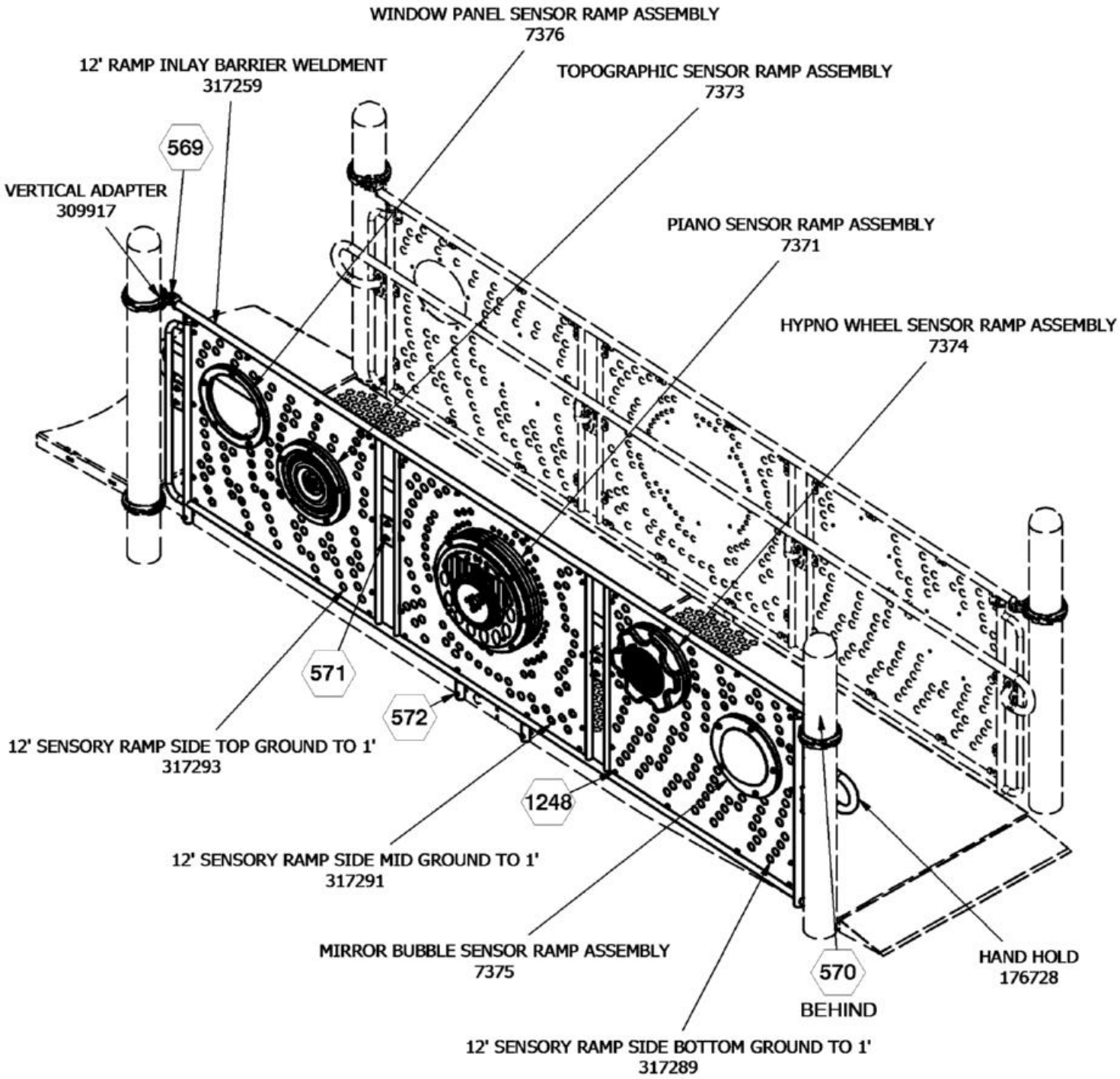
Issued/Revised: 12/11/2024

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72232 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK D



= INSTALLATION DETAIL

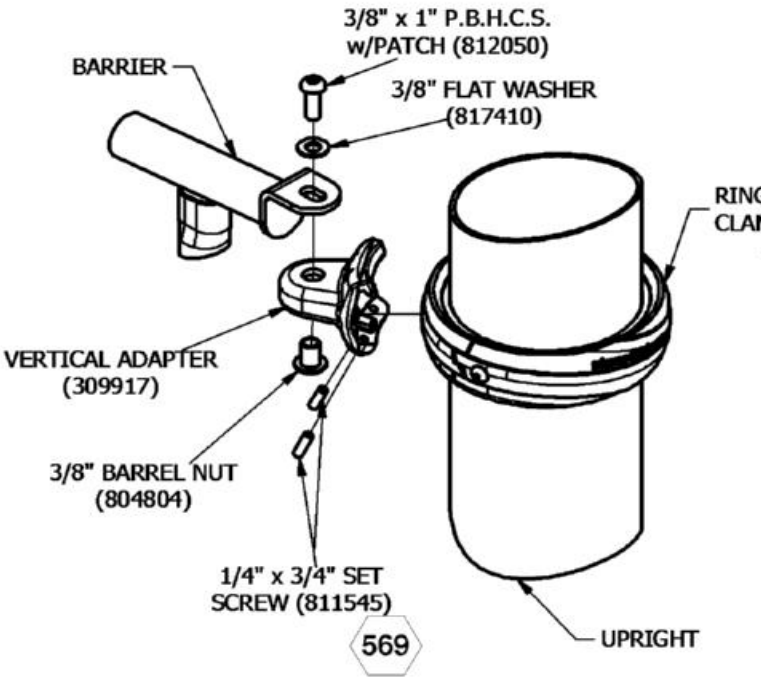
Issued/Revised: 12/11/2024

FINISHED ASSEMBLY

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

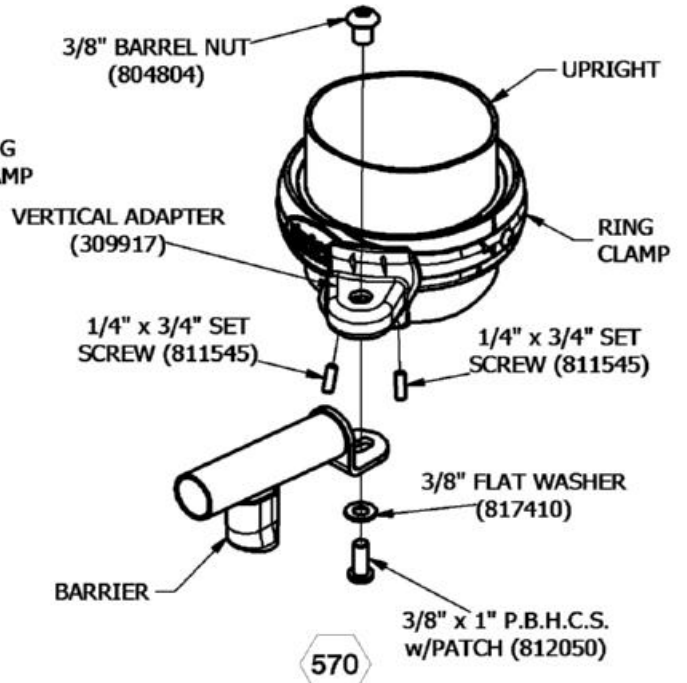
72201 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK A
72230 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK B
72231 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK C
72232 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK D

NOTE:VERTICAL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

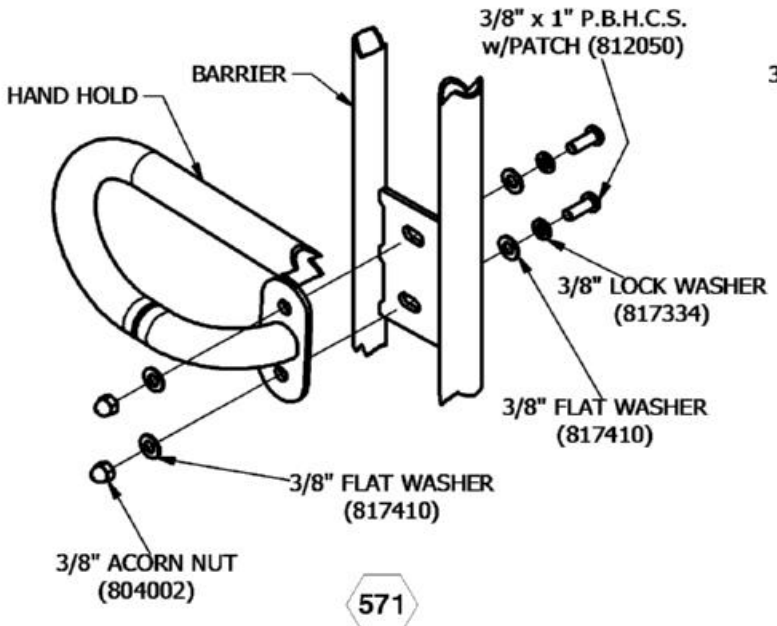


569

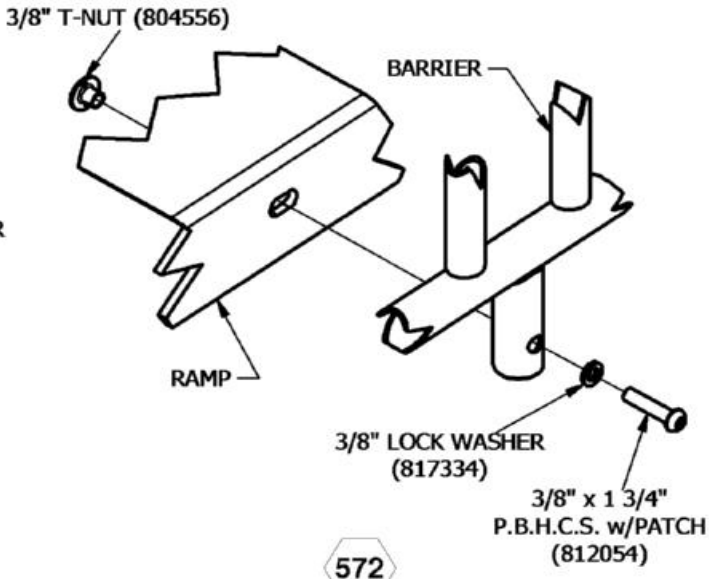
NOTE:VERTICAL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.



570

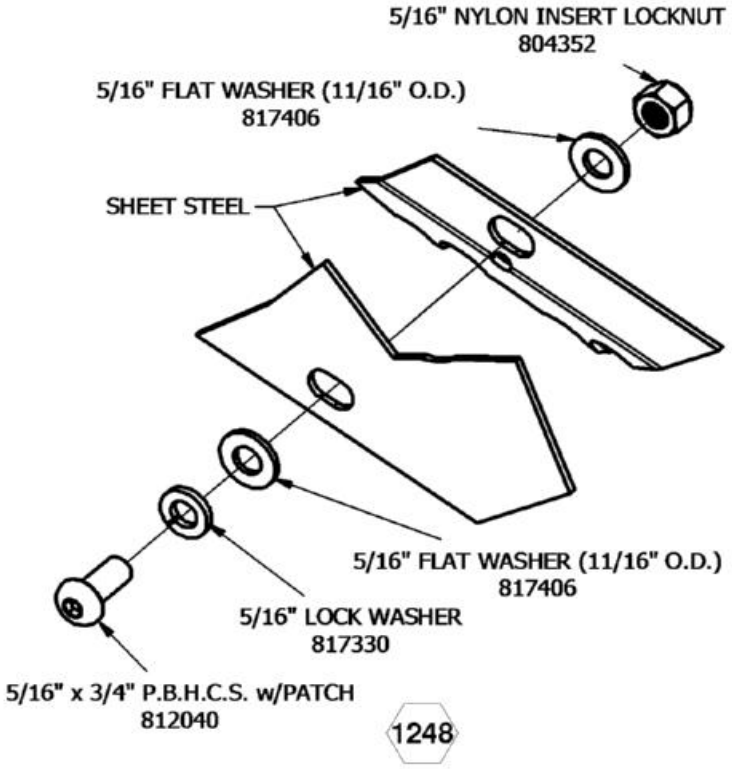


571



572

72201 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK A
72230 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK B
72231 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK C
72232 INLAY RAMP (12' SPAN 12" RISE) GROUND TO DECK D



72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)

Parts List					
DESCRIPTION	72244	72245	72246	72247	PART NUMBER
8" EXTENSION	0	0	0	2	151080
GROUND SUPPORT 1'	0	0	2	0	205412
GROUND SUPPORT 2'	0	0	0	2	205414
ALUMINUM COLLAR	2	0	2	0	301605
TRANSITION PLATE	1	0	1	0	303867
PANEL ADAPTER	2	0	2	0	309919
CROSS BAR	1	0	1	0	310032
RAMP	1	1	0	0	311019
RAMP	0	0	2	2	311030
HARDWARE COMPLETE	1	0	0	0	317323
HARDWARE COMPLETE	0	1	0	0	317324
HARDWARE COMPLETE	0	0	1	0	317325
HARDWARE COMPLETE	0	0	0	1	317326
1/4" x 3/4" SET SCREW	4	0	4	0	811545
3/8" x 3/8" SET SCREW	2	0	2	0	811549
3/8" x 1" P.B.H.C.S. w/PATCH	8	8	12	12	812050
3/8" x 1 1/2" P.B.H.C.S. w/PATCH	2	0	2	0	812053
3/8" x 3 1/2" HEX HEAD BOLT	0	0	0	2	801013
3/8" LOCK WASHER	2	0	2	2	817334
3/8" FLAT WASHER (1 1/4" O.D.)	16	16	24	24	817424
3/8" HEX NUT	0	0	0	2	804053
3/8" LOCK NUT	8	8	12	12	804353

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)

INSTALLATION INSTRUCTIONS:

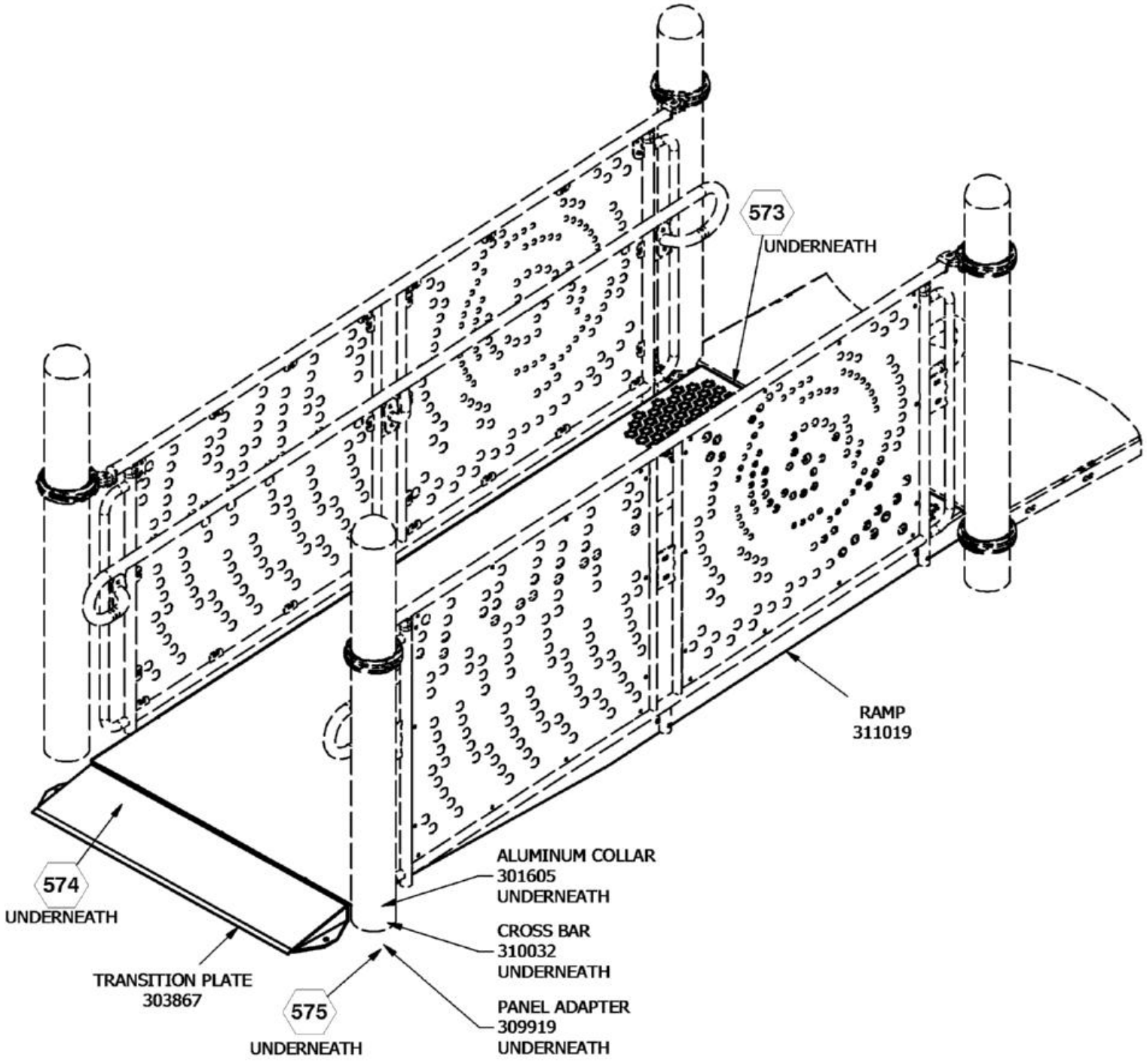
1. Determine which deck(s) are to receive the Ramp, and dig footing holes in locations and depths shown as needed.
2. Loosely attach Ring Clamps to Uprights at noted height using information provided in Ring Clamp Installation Sheet.
3. For 72246 and 72247, attach ramps together. See Detail 573.
4. For 72246 and 72247, dig footing holes as shown in Plan Views.
5. For 72247, attach 8" Extensions to Ground Support 2'. See Detail 171.
6. For 72246 and 72247, attach Ground Supports to ramps. See Detail 1332.
7. Attach Ramp(s) to existing deck(s). See Detail 573.
8. For 72244 and 72246, attach lower end of Ramp to the existing Uprights using Crossbar, Aluminum Collar and Panel Adapters. See Detail 575. Ramp should be centered between uprights and secured by tightening set screws in collar.
9. For 72244 and 72246, attach Transition Plate to the lower end of Ramp. See Detail 574.
10. When the assembly is finished and satisfactory, install Drive Rivets in all clamps to ensure clamps cannot slide down posts. See Ring Clamp sub-assembly sheet. ***It is very important that all Drive Rivets be installed before allowing use of the equipment, as clamps are not designed to support substantial weight without them.*** Also eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also check all metal parts for rust, paint loss and touch-up if necessary with paint. Check welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

72244 8FT RAMP GROUND TO DECK (RAMP ONLY)



= INSTALLATION DETAIL

Issued/Revised: 9/19/2024

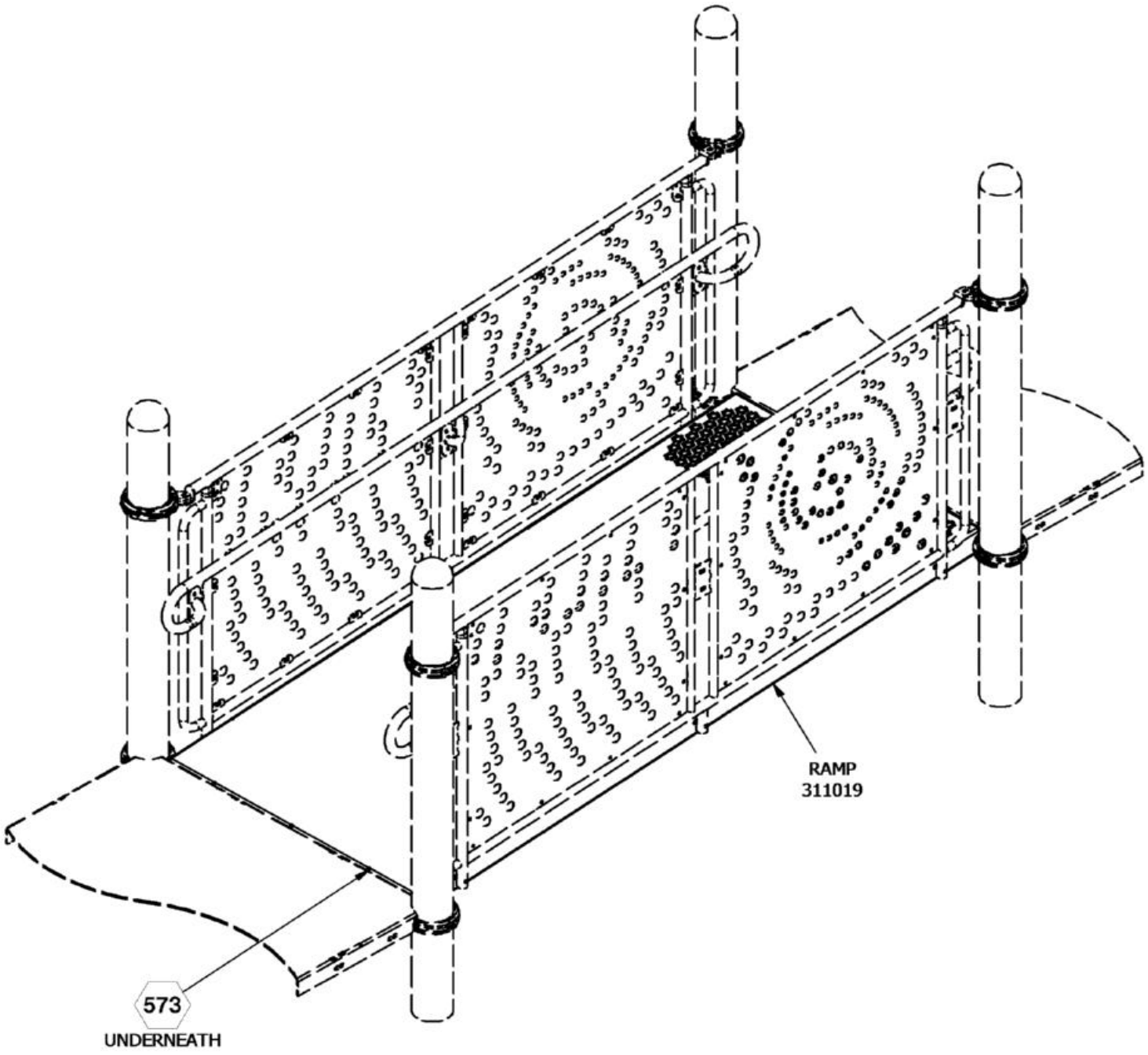
FINISHED ASSEMBLY

72244 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72245 8FT RAMP DECK TO DECK (RAMP ONLY)



⬡ = INSTALLATION DETAIL

Issued/Revised: 9/19/2024

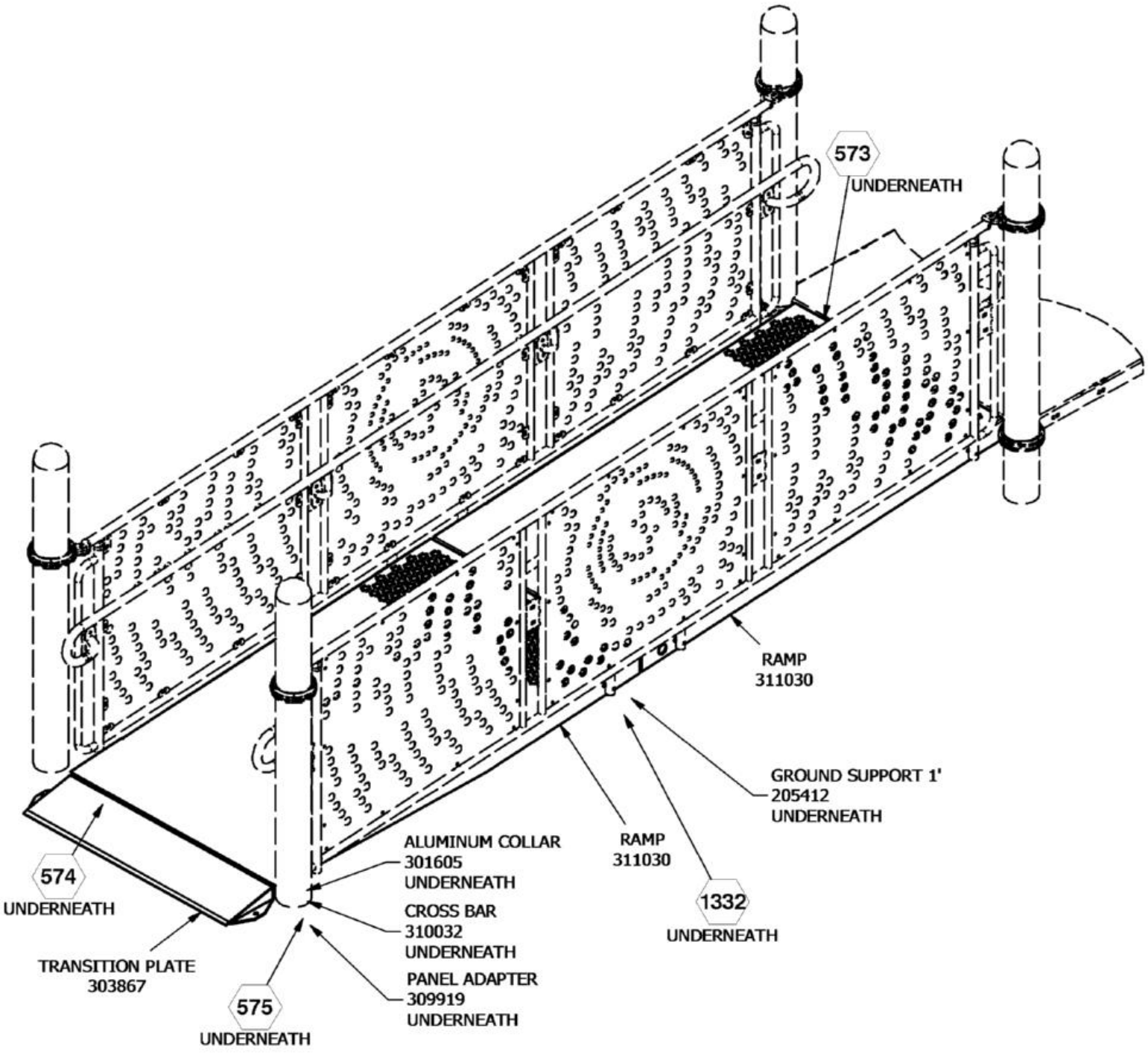
FINISHED ASSEMBLY

72245 SHOWN

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

SuperMax Play Systems

72246 12FT RAMP GROUND TO DECK (RAMP ONLY)



⬡ = INSTALLATION DETAIL

COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

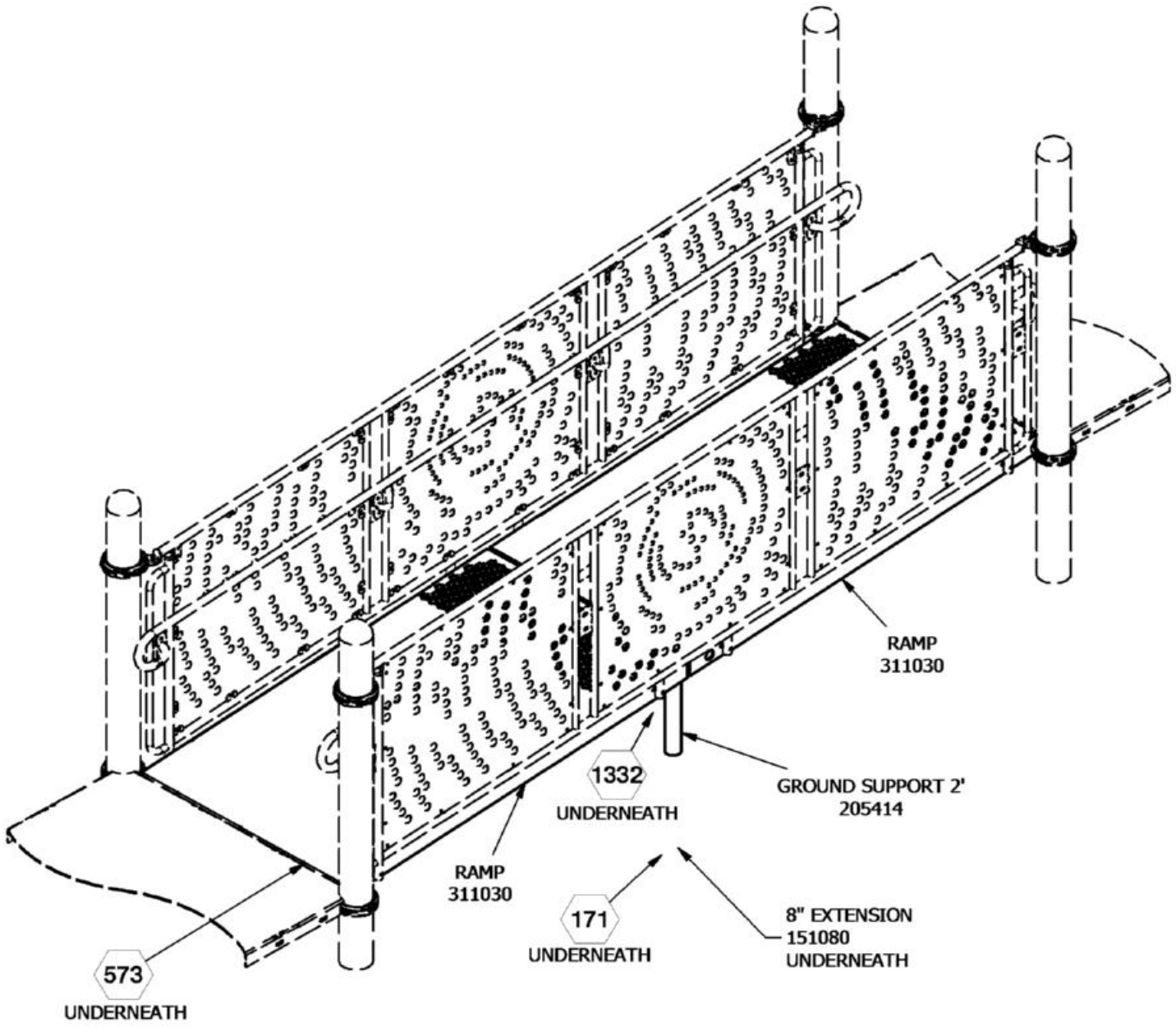
Issued/Revised: 9/19/2024

FINISHED ASSEMBLY

72246 SHOWN

SuperMax Play Systems

72247 12FT RAMP DECK TO DECK (RAMP ONLY)



⬡ = INSTALLATION DETAIL

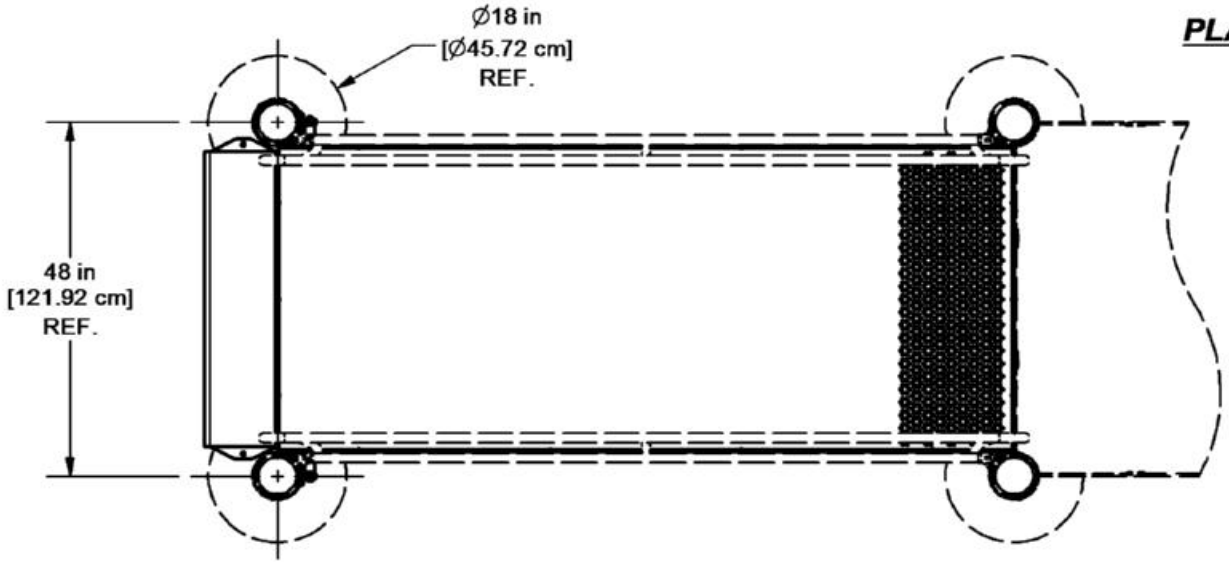
Issued/Revised: 9/19/2024

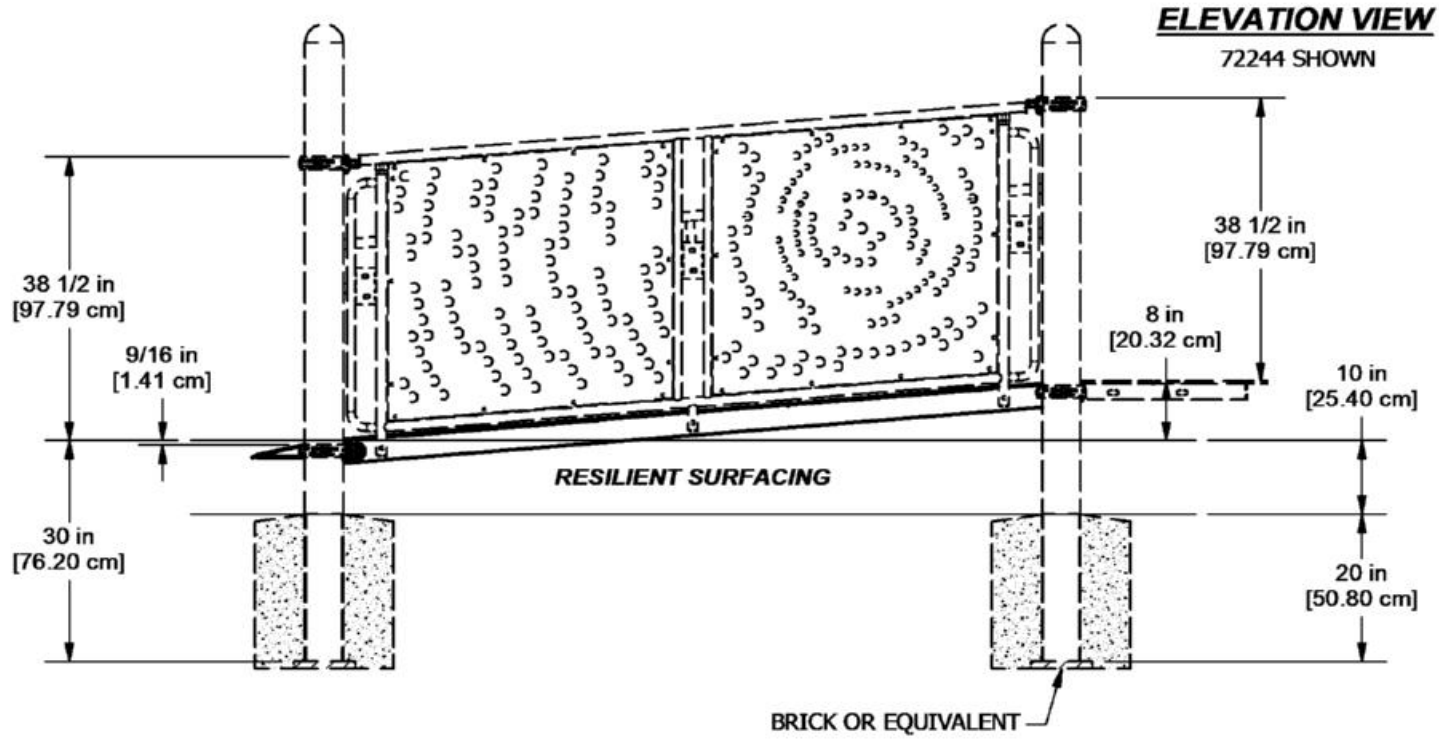
FINISHED ASSEMBLY

72247 SHOWN

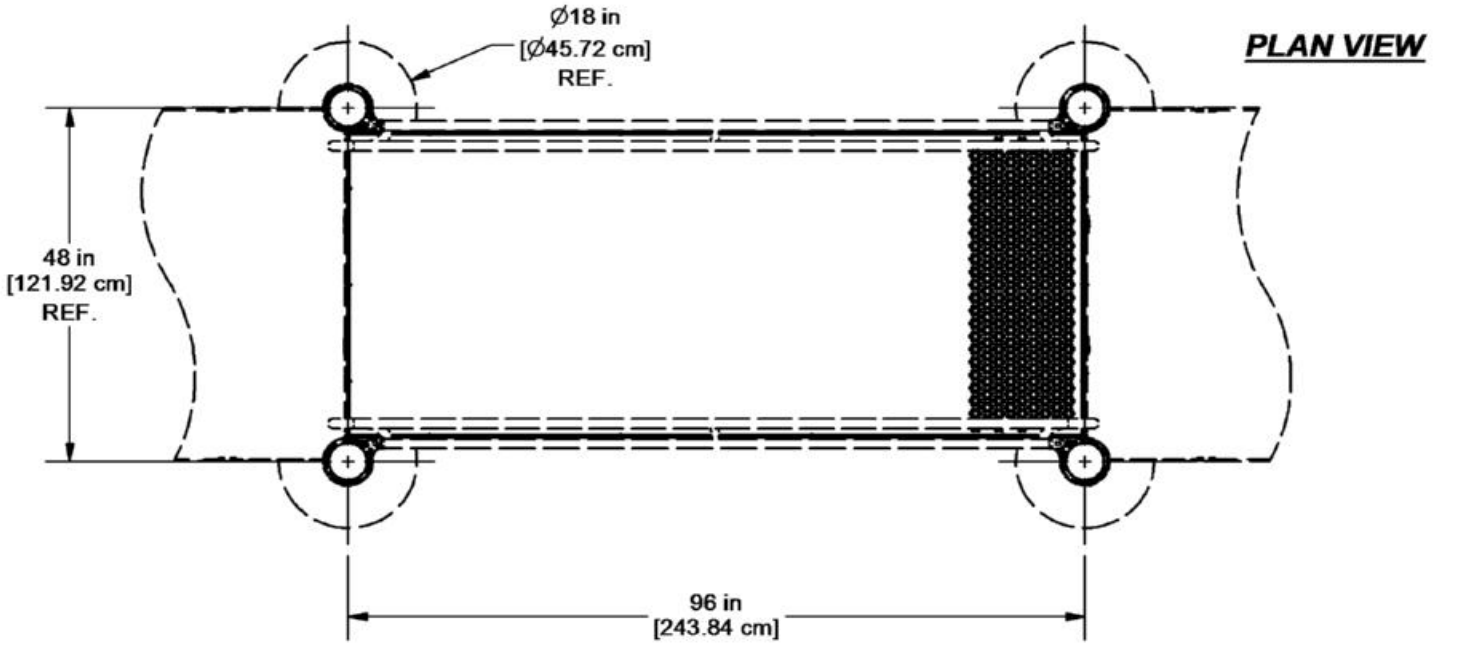
COMPONENTS SHOWN IN HIDDEN LINES ARE SOLD SEPARATELY

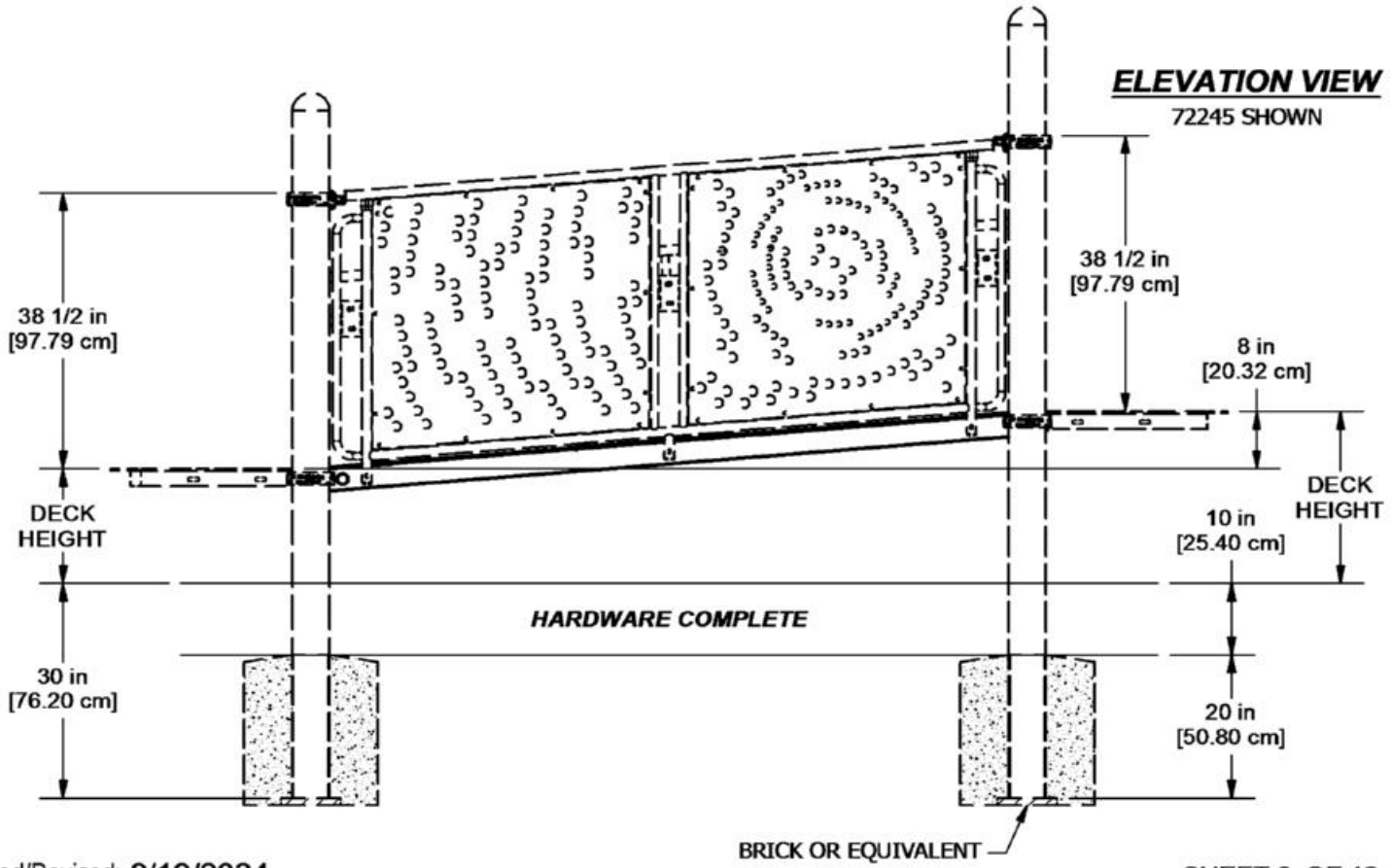
72244 8FT RAMP GROUND TO DECK (RAMP ONLY)





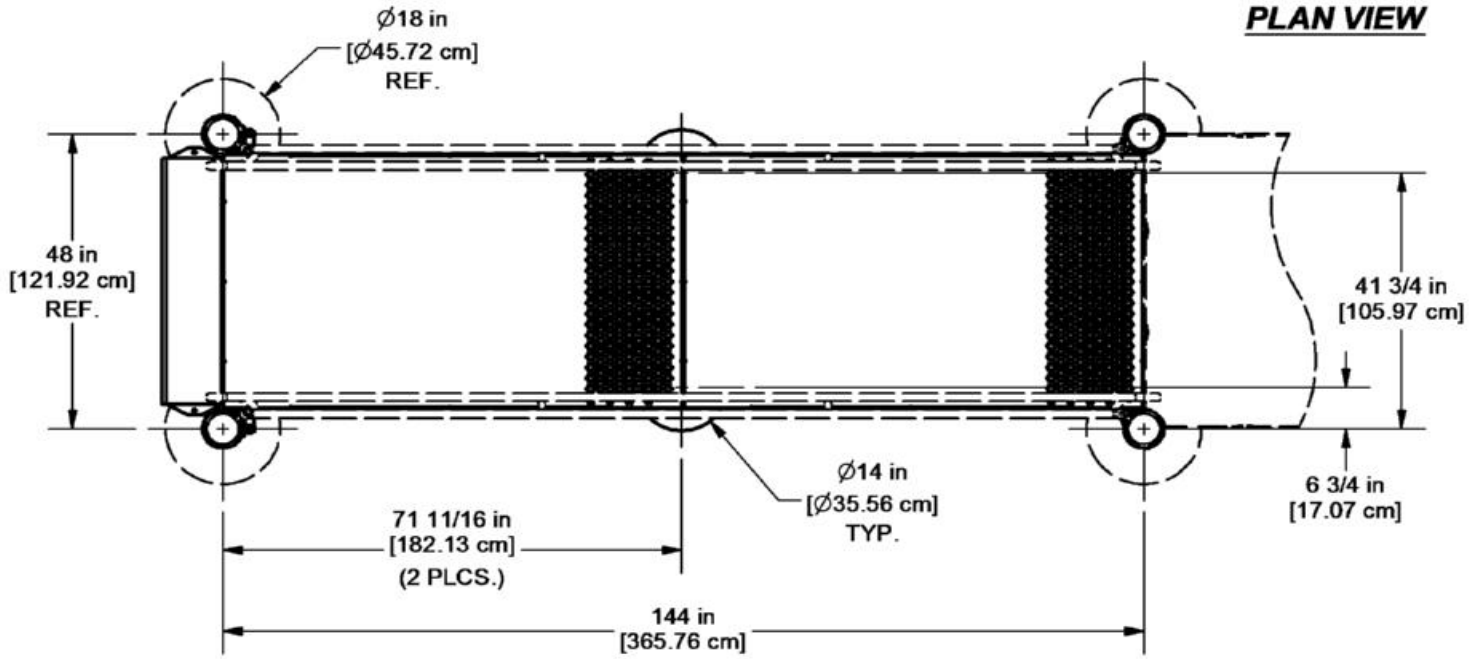
72245 8FT RAMP DECK TO DECK (RAMP ONLY)





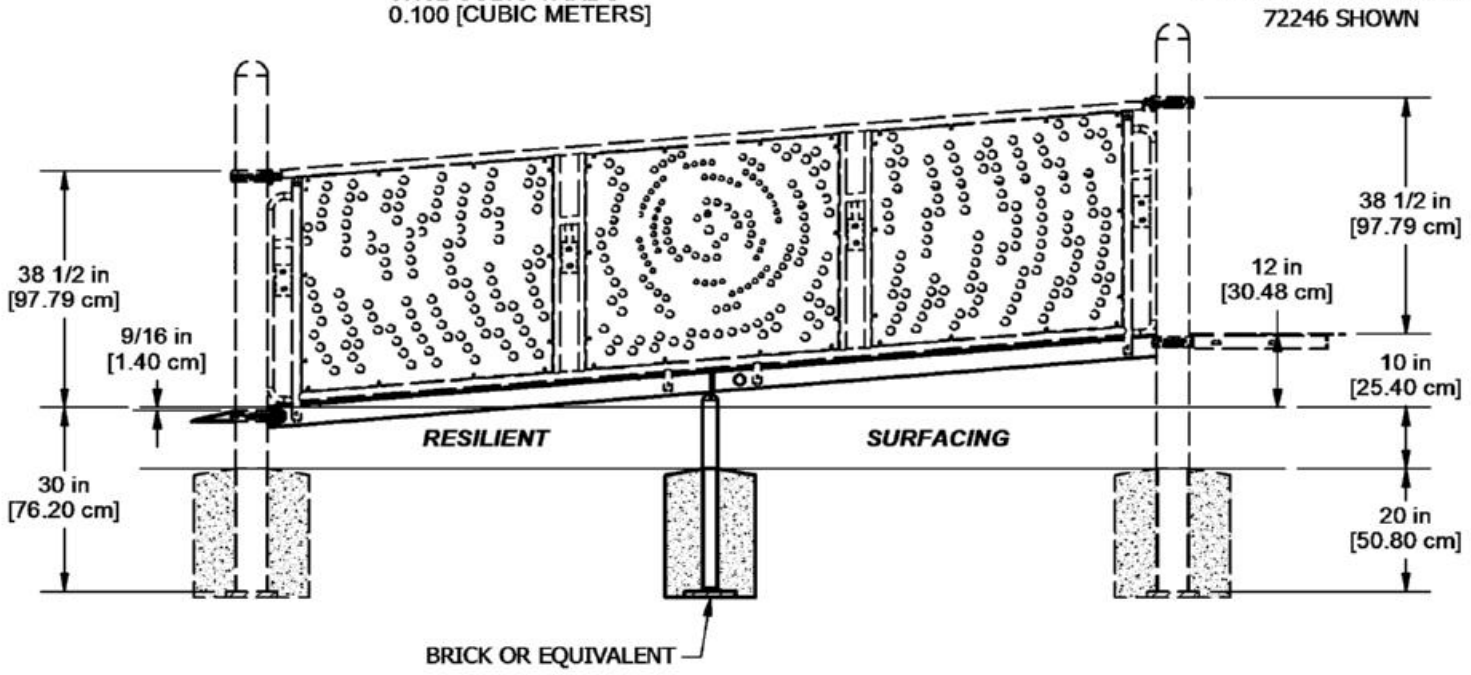
72246 12FT RAMP GROUND TO DECK (RAMP ONLY)

PLAN VIEW



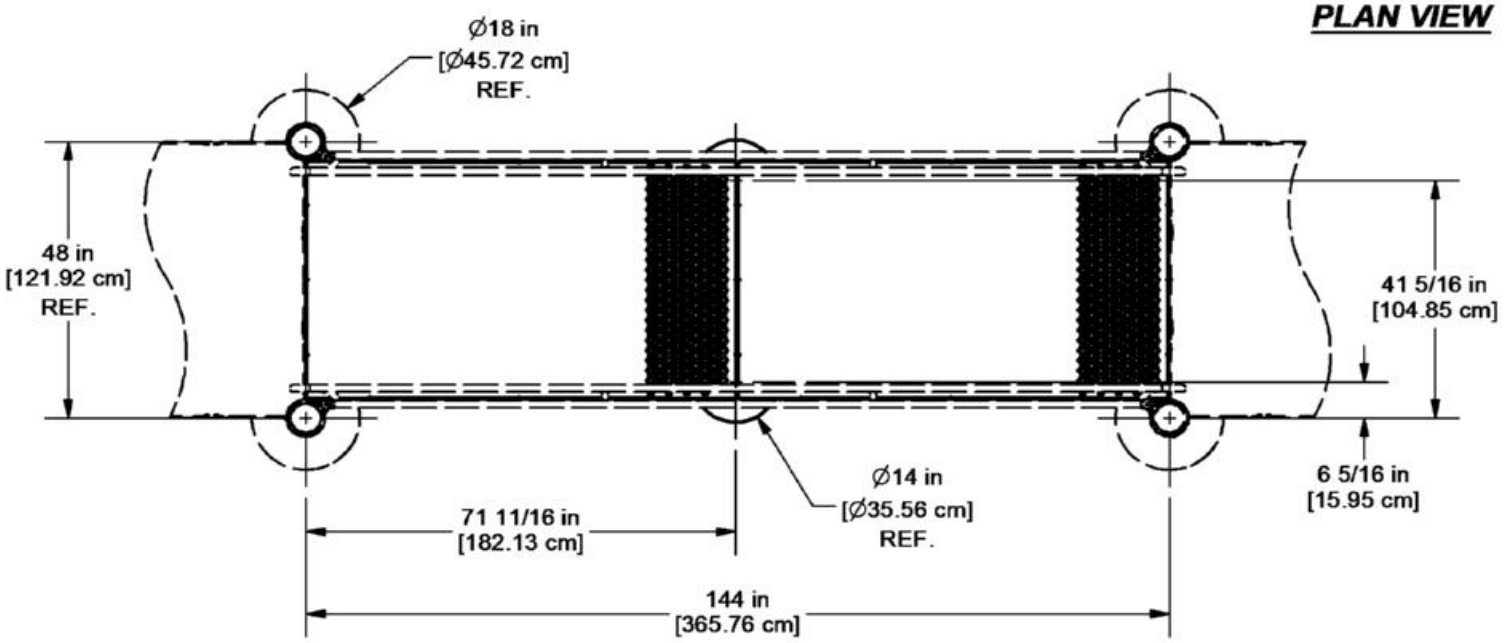
CONCRETE REQUIRED
0.132 CUBIC YARDS
0.100 [CUBIC METERS]

ELEVATION VIEW
72246 SHOWN



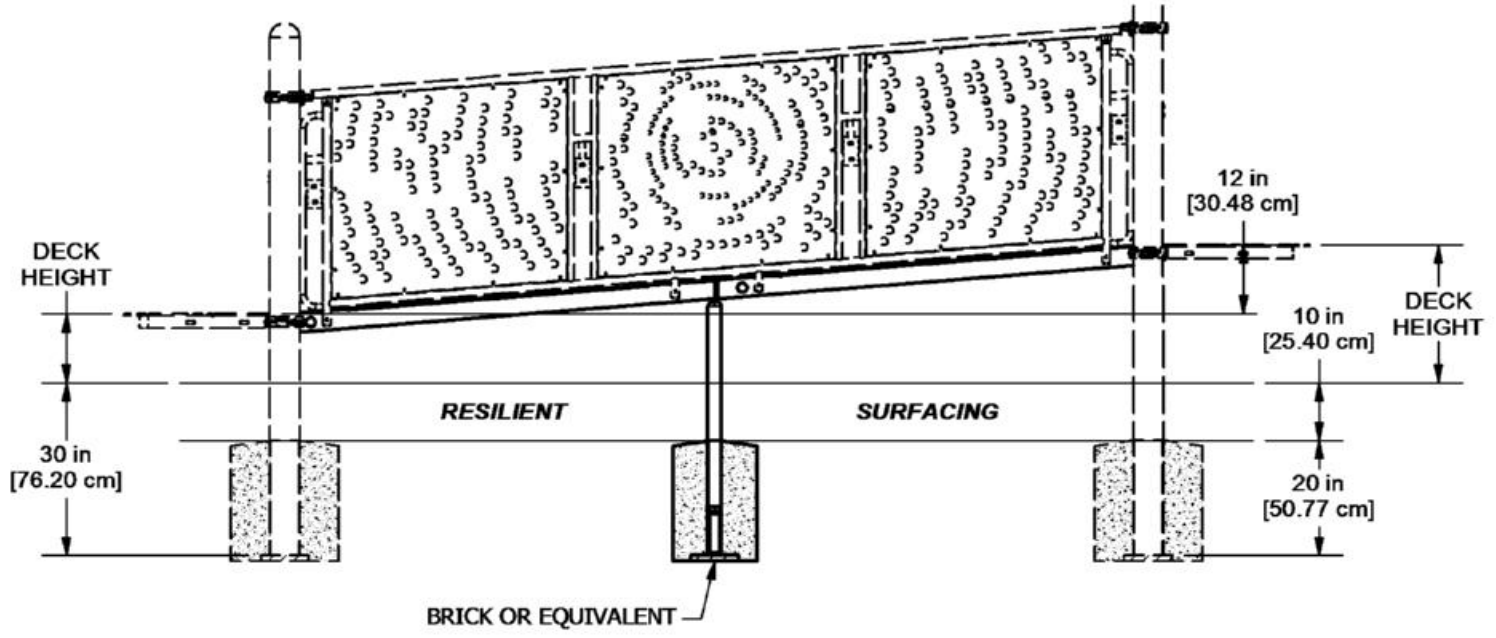
72247 12FT RAMP DECK TO DECK (RAMP ONLY)

PLAN VIEW

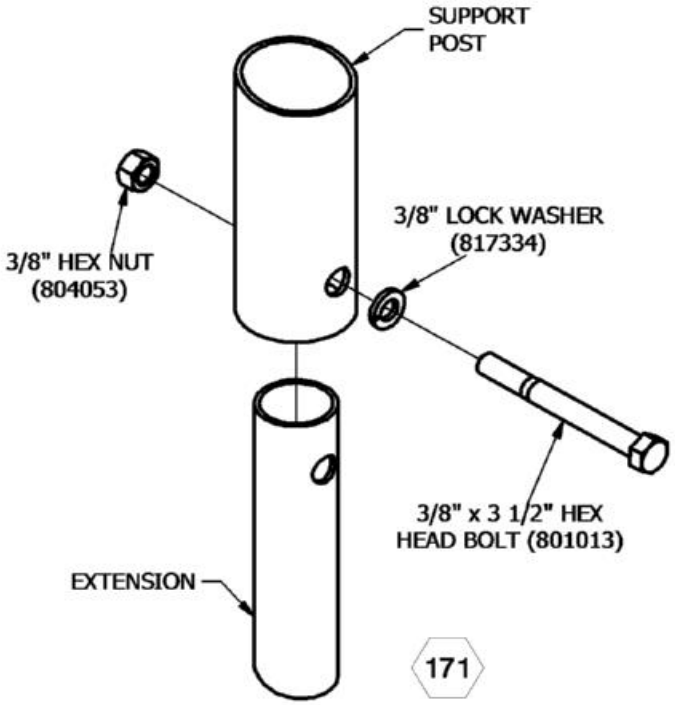


CONCRETE REQUIRED
0.132 CUBIC YARDS
0.100 [CUBIC METERS]

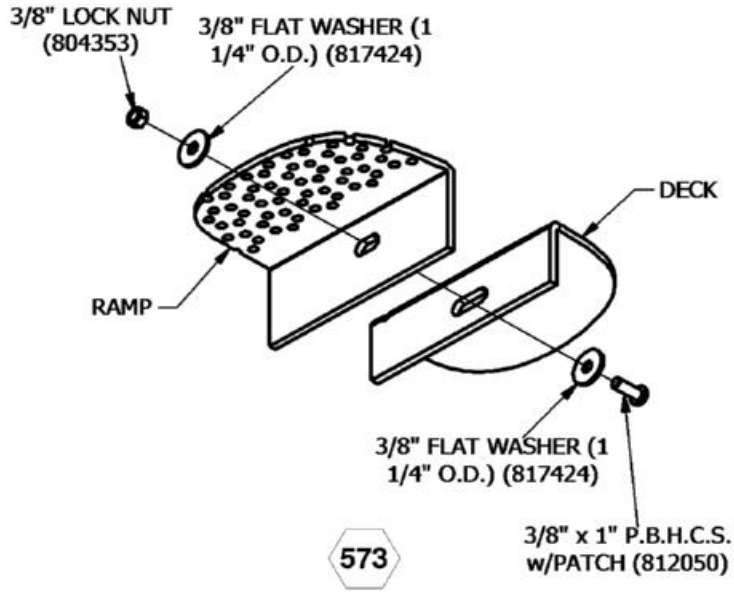
ELEVATION VIEW
72247 SHOWN



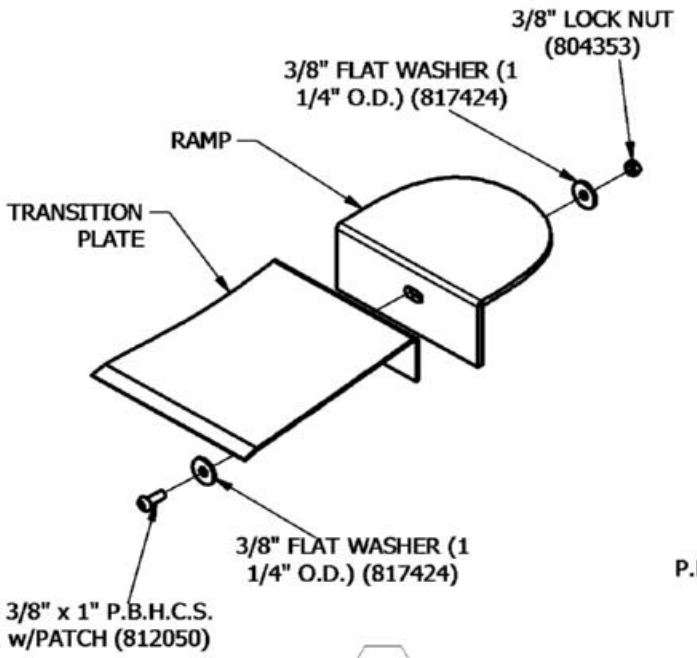
72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)



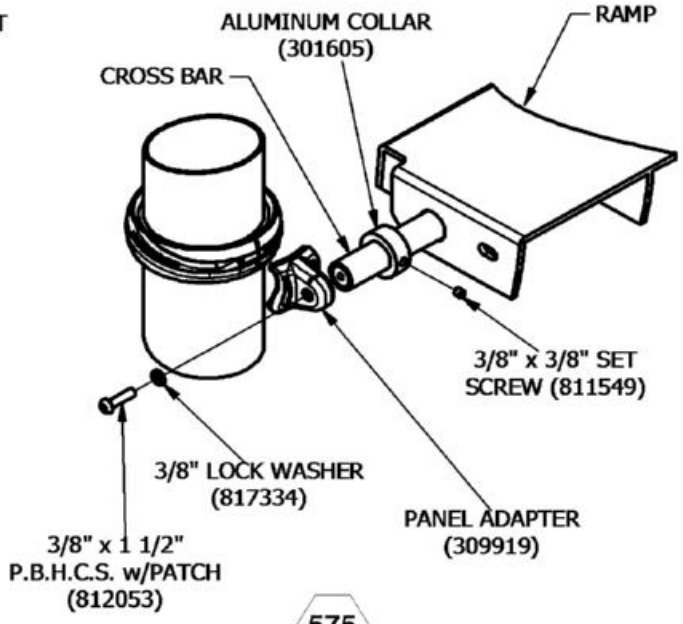
171



573



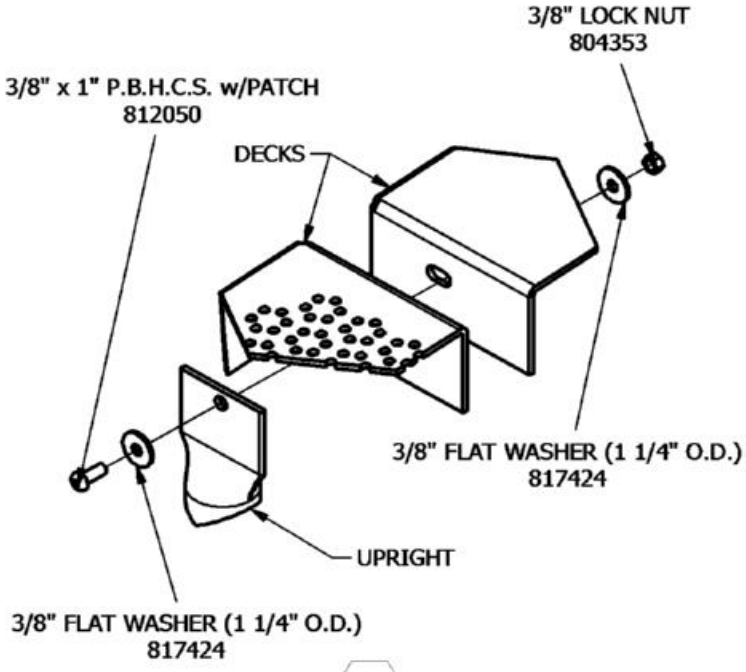
574



575

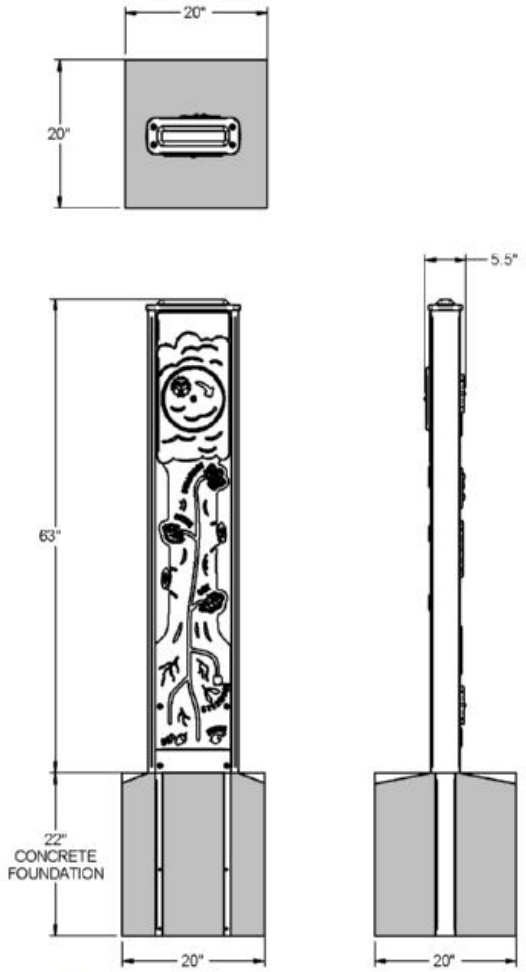
NOTE:VERTICAL ADAPTER WILL FIT INTO GROOVE IN TOP OF RING CLAMP AND SECURE WITH SET SCREWS.

72244 8FT RAMP GROUND TO DECK (RAMP ONLY); 72245 8FT RAMP DECK TO DECK (RAMP ONLY); 72246 12FT RAMP GROUND TO DECK (RAMP ONLY); 72247 12FT RAMP DECK TO DECK (RAMP ONLY)



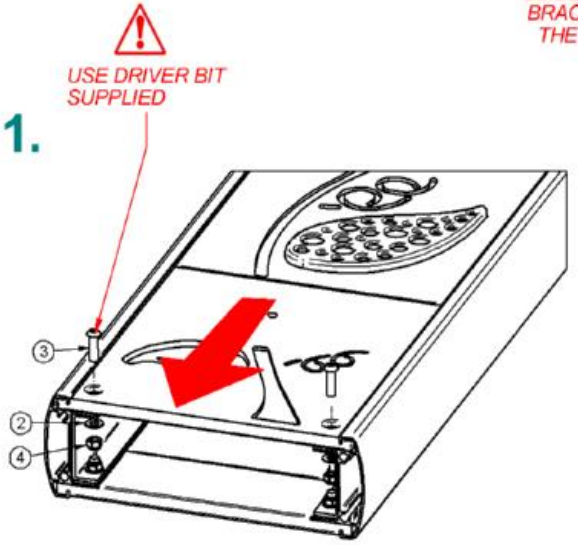
YP446 - Sensory Totem

FITMSEN - Sensory Totem Installation Instructions



Prepare foundation detail as specified above.

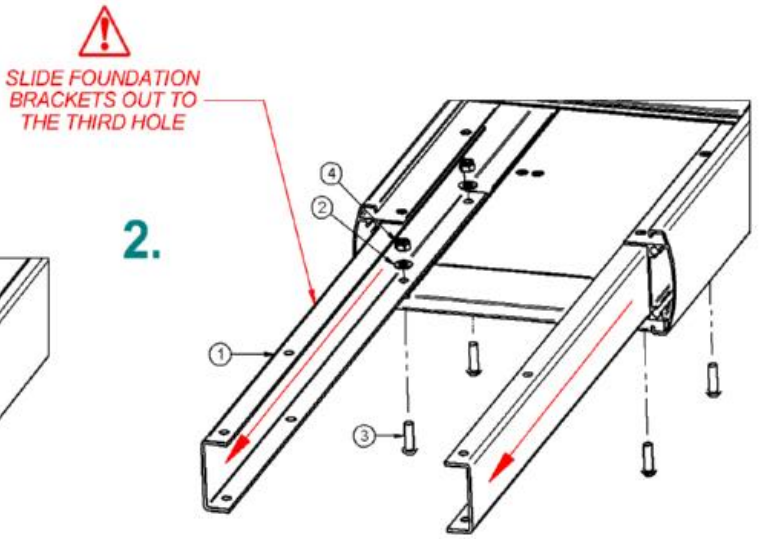
1.



i) Remove the Totem Assembly from the packaging and place the unit horizontally on the floor - use the packaging to lay the Totem on in order to avoid any damage to either face of the unit.

ii) Slide the Larger Lower Panel out of the totem by removing the fixing shown above with the supplied driver bit.

2.



i) Remove the Fixings on the remaining Lower Panel and the fixings located on at the bottom of the Front Panel, using the Driver Bit supplied.

ii) Slide each of the Foundation Brackets out of the Aluminium profile on either side of the Totem, ensuring the third set of fixing holes in the Foundation Brackets line up with the holes in the lower panels (see illustration).

iii) Secure by replacing the fixings previously removed from the Lower Panel and the fixings located slightly higher on the Front Panel

Parts List

Item	Code	Description	Qty
1	FME0684-C	Totem Foundation Anchor	2
2	FSU0039-A	M8 Washer - SS (Form B)	7
3	FSU0071-A	M8 x 25mm Button Head Bolt - Security Pin - SS	7
4	FSU0087-A	M8 Nylock Nut - ZP	6
5	FXS0001-A	H5 Hex Security Driver Bit	1
6	FXS0002-A	T40 Torx Security Driver Bit	1

Modification	Date	Approved
New Drawing	05/10/21	LG
Updated to include new fixings	04/01/22	JC
Updated Lower Panel	24/01/22	JC
Updated to 15mm	06/02/24	JW
Totem foundation anchor updated	15/03/24	JB

play&park structures
a PLAYCORE company

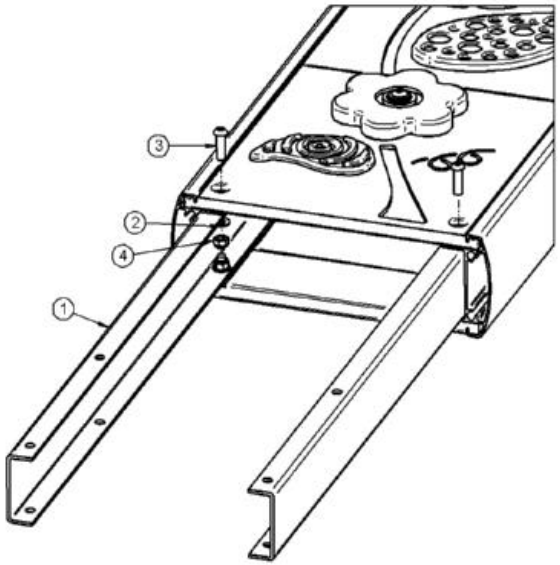
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All Dimensions in mm | 1 of 2 | Not To Scale

YP446 - Sensory Totem

FITMSEN - Sensory Totem Installation Instructions

3.



i) Slide the Rear Panel back to its previous position and secure by replacing the previously removed fixings.

ii) Once assembled, place totem into prepared footing and concrete into position



Maintenance Inspection

FREQUENCY	WHAT TO DO
VISUAL INSPECTION (EVERY MONTH)	Identify any risks stemming from vandalism, intensive use or unusual weather
	Check for missing or broken parts
	Make sure that all protective covers are in place
	Inspect surfacing below and around equipment
FUNCTIONALITY INSPECTION (EVERY MONTH)	Check that the equipment, or the part concerned is operating correctly
	Check all fixings, joints and stability of the equipment and tighten or replace if necessary
	Check all parts for wear and tear and replace if necessary
	Thorough cleaning of equipment and any stainless steel parts with water and detergent
COMPREHENSIVE INSPECTION (EVERY 6 MONTHS)	All of the above plus:
	Inspect the anchoring system
	Inspect any moving, mechanical and electrical parts are operating correctly
	Check overall condition of any paintwork or galvanizing – repaint / touch up if necessary

Caution
Heavy

Total Weight:
49kg total

Parts List

Item	Code	Description	Qty
1	FME0684-C	Totem Foundation Anchor	2
2	FSU0039-A	M8 Washer - SS (Form B)	7
3	FSU0071-A	M8 x 25mm Button Head Bolt - Security Pin - SS	7
4	FSU0087-A	M8 Nylock Nut - ZP	6
5	FXS0001-A	H5 Hex Security Driver Bit	1
6	FXS0002-A	T40 Torx Security Driver Bit	1

Modification	Date	Approved
New Drawing	05/10/21	LG
Updated to include new fixings	04/01/22	JC
Updated Lower Panel	24/01/22	JC
Updated to 15mm	06/02/24	JW
Totem foundation anchor updated	15/03/24	JB

play&park structures
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All Dimensions in mm | 2 of 2 | Not To Scale

SuperMax Play Systems

60040 (11'), 60041 (13'), 60042 (14'), 60089 (12'), 60246 (10'), 60944 (15'), 60945 (9'), 61540 (4'), & 61541 (5') SUPERMAX POST W/O CAP

(ADD G PREFIX FOT GALV. POST)

Parts List										
DESCRIPTION	60040	G60040	60041	G60041	60042	G60042	60089	G60089	60246	PART NUMBER
5" O.D. POST (ALUMINUM) 11'	1	0	0	0	0	0	0	0	0	302277
5" O.D. POST (GALVANIZED) 11'	0	1	0	0	0	0	0	0	0	G02277
5" O.D. POST (ALUMINUM) 13'	0	0	1	0	0	0	0	0	0	302278
5" O.D. POST (GALVANIZED) 13'	0	0	0	1	0	0	0	0	0	G02278
5" O.D. POST (ALUMINUM) 14'	0	0	0	0	1	0	0	0	0	302279
5" O.D. POST (GALVANIZED) 14'	0	0	0	0	0	1	0	0	0	G02279
5" O.D. POST (ALUMINUM) 12'	0	0	0	0	0	0	1	0	0	301921
5" O.D. POST (GALVANIZED) 12'	0	0	0	0	0	0	0	1	0	G01921
5" O.D. POST (ALUMINUM) 10'	0	0	0	0	0	0	0	0	1	301923

Parts List										
DESCRIPTION	G60246	60944	G60944	60945	G60945	61540	G61540	61541	G61541	PART NUMBER
5" O.D. POST (GALVANIZED) 10'	1	0	0	0	0	0	0	0	0	301922
5" O.D. POST (ALUMINUM) 15'	0	1	0	0	0	0	0	0	0	305797
5" O.D. POST (GALVANIZED) 15'	0	0	1	0	0	0	0	0	0	G05797
5" O.D. POST (ALUMINUM) 9'	0	0	0	1	0	0	0	0	0	305799
5" O.D. POST (GALVANIZED) 9'	0	0	0	0	1	0	0	0	0	G05799
5" O.D. POST (ALUMINUM) 4'	0	0	0	0	0	1	0	0	0	305616
5" O.D. POST (GALVANIZED) 4'	0	0	0	0	0	0	1	0	0	G05616
5" O.D. POST (ALUMINUM) 5'	0	0	0	0	0	0	0	1	0	305617
5" O.D. POST (GALVANIZED) 5'	0	0	0	0	0	0	0	0	1	G05617

Unless Otherwise Specified, All Units of Measure are Each

**Items listed below Hardware Complete line are included with Hardware Complete Number*

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.

Note: Loctite (supplied by others) should be used on any non-patch hardware.

60040 (11'), 60041 (13'), 60042 (14'), 60089 (12'), 60246 (10'), 60944 (15'), 60945 (9'), 61540 (4'), & 61541 (5') SUPERMAX POST W/O CAP

(ADD G PREFIX FOT GALV. POST)

INSTALLATION INSTRUCTIONS:

1. Component numbers are for one (1) Upright Post only. Please refer to your Plan Drawing and Footing Diagram to determine the proper quantity required and locations of Upright Posts.

2. Measure up from the lower end of each Upright Post and mark using a felt-tip marker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof naker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be instaling. Using your footing diagram and elevation view as a reference, move and dig holes accordingly.

3. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.

4. Once the entire play structure is assembled, and all posts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete has a downward slope of 45° at the top away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like nuts, bolts, etc.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

SuperMax Play Systems

60040 (11'), 60041 (13'), 60042 (14'), 60089 (12'), 60246 (10'), 60944 (15'), 60945 (9'), 61540 (4'), & 61541 (5') SUPERMAX POST W/O CAP

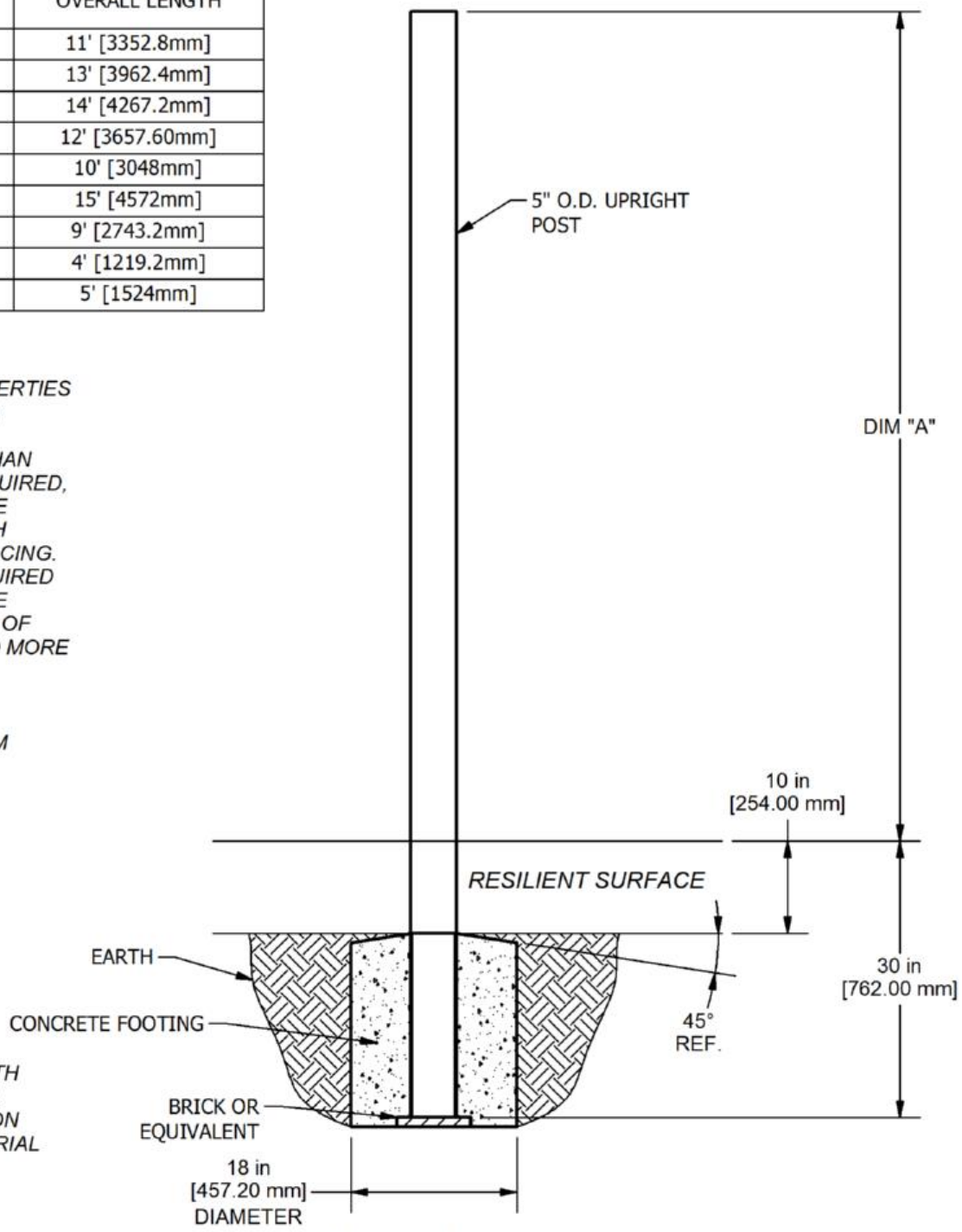
(ADD G PREFIX FOT GALV. POST)

NO.	DIM "A"	OVERALL LENGTH
60040	8'-6" [2590.8mm]	11' [3352.8mm]
60041	10'-6" [3200.4mm]	13' [3962.4mm]
60042	11'-6" [3505.2mm]	14' [4267.2mm]
60089	9'-6" [2895.6mm]	12' [3657.60mm]
60246	7'-6" [2286mm]	10' [3048mm]
60944	12'-6" [3810mm]	15' [4572mm]
60945	6'-6" [1981.2mm]	9' [2743.2mm]
61540	1'-6" [457.2mm]	4' [1219.2mm]
61541	2'-6" [762mm]	5' [1524mm]

SHOCK ABSORBING PROPERTIES OF RESILIENT SURFACING MATERIALS VARY. IF YOU DETREMINE THAT LESS THAN 10" OF SURFACING IS REQUIRED, MAKE UP THE DIFFERENCE IN ELEVATION WITH EARTH BEFORE APPLYING SURFACING. IF MORE THAN 10" IS REQUIRED MAKE UP THE DIFFERENCE BY REDUCING THE DEPTH OF THE GROUND HOLE BY NO MORE THAN 2".

NOTE:
-SUGGESTED MINIMUM CONCRETE RATING 3000 PSI

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF RESILIENT SURFACE MATERIAL AND CONCRETE



ELEVATION VIEW

Issued/Revised: 7/11/2019

MODEL NO. 60944 Aluminum 180" Post w/o Cap
MODEL NO. G60944 Galvanized 180" Post w/o Cap

PARTS LIST

DESCRIPTION	60944	G60944	PART NUMBER
5" O.D. Post w/o Cap (Aluminum)	1	0	305797
5" O.D. Post w/o Cap (Galvanized)	0	1	G05797

Warning: Small parts and hardware items may present a potential choking hazard. Promptly remove all unused parts from play area.

ALUMINUM SPECIFICATIONS:
Post is 5" O.D. x 180", 0.125" wall thickness 6005-T5 extruded seamless Aluminum tubing. Tensile strength is 38,000 psi, and yield strength is 35,000 psi. Entire post is polyester powder-coated after fabrication.

Weight: 33.75 lb. / 15.30 kg.

GALVANIZED SPECIFICATIONS:
Post is 5" O.D. 11-gauge galvanized steel tubing with a baked-on polyester powder-coated finish.

Weight: 93.81 lb. / 42.55 kg.

INSTALLATION INSTRUCTIONS:

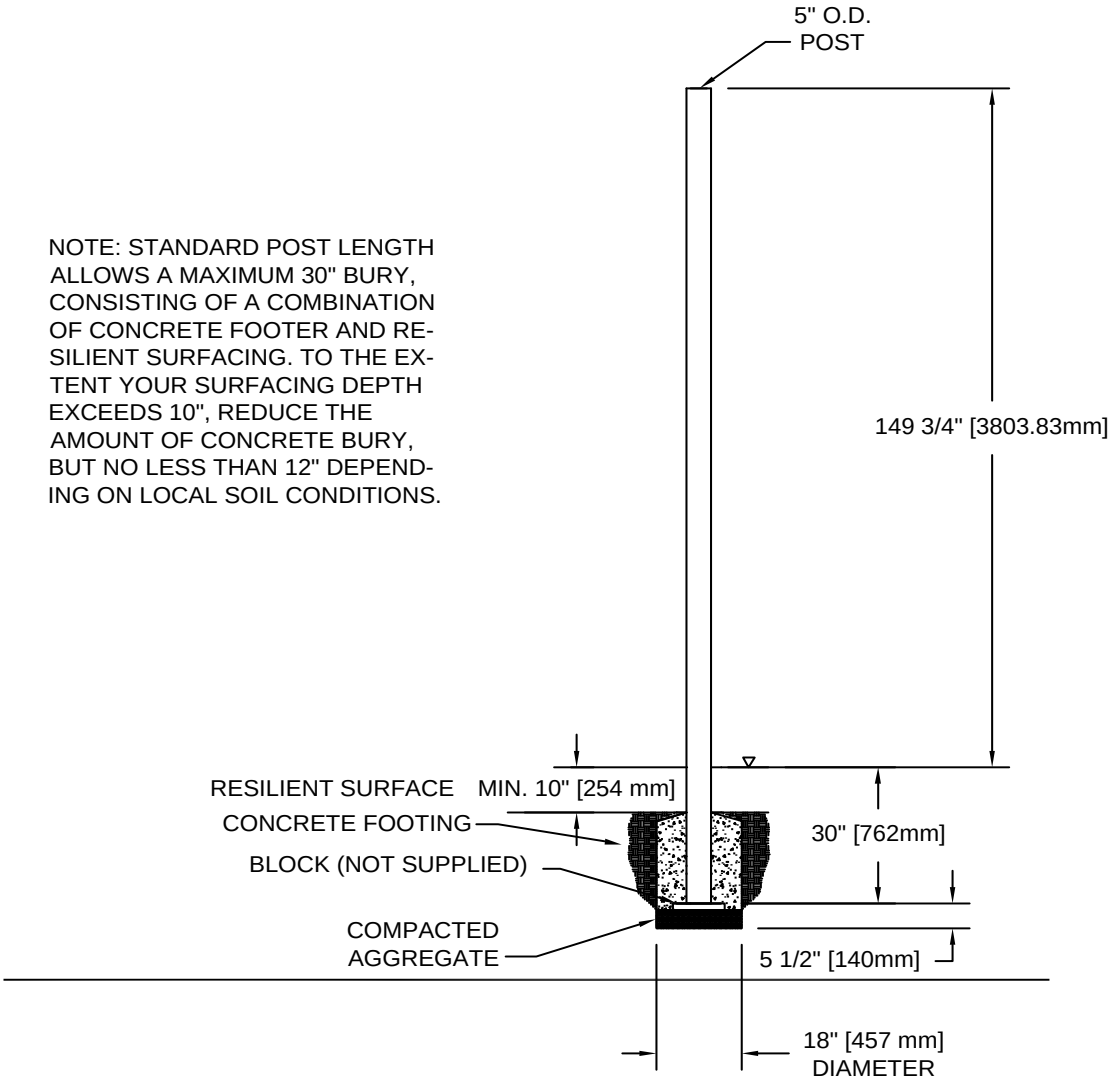
1. The models 60944 and G60944 are for one (1) Upright Post only. Please refer to your plan drawing and footing diagram to determine the proper quantity required and locations of Upright Posts.
2. Measure from the lower end of each Upright Post and mark us ing a felt-tip maker 30" up from the end (optionally, this mark can be made with a fluorescent weather-proof maker of paint. It would become exposed as resilient surfacing wears away, thereby alerting maintenance personnel that it is time to replenish the surfacing). This should be your grade level once the post is in the ground and resilient surfacing is installed. To locate the finished ground level, you must decide how much resilient surface material you will be installing. (Refer to the Safety Guidelines to decide how much resilient surface to use, and note that a maximum total bury of 30" is provided per post, to include both the resilient surfacing and the concrete per post, to include both the resilient surfacing and the concrete footer. See the accompanying diagram.) Place a mark below the 30" level to represent the finished ground level in the amount of resilient surface you will be installing.
3. Run a string line along the side of a row of posts. Select a row of posts, which are common to a majority of the play structure. Using a string level, make sure the string line is at the projected finish grade mark. Now, measure and dig footings for posts along the string line according to the footing diagram. As you go along, you will want to run new string lines for each row of posts, and set posts so that the top mark on each post meets the string line.
4. Set the upright posts into the excavated footings in accordance with the footing diagram. Use a brick, small piece of plywood, or other blocking device (not supplied) at the bottom of each post to prevent the posts from sinking into the earth during plumbing and leveling.
5. Once the entire play structure is assembled, and all po sts have been properly braced, re-check plumb and level. Pour concrete per the typical footing diagram only when all positions are correct. When pouring the footers, make sure the concrete level has a slight downward slope away from the post. Concrete that may have splashed onto the post should be washed off before it dries. Allow all concrete to harden a minimum of 48 hours before allowing children to play on the structures. Eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc.

MODEL NO. 60944 Aluminum 180" Post w/o Cap
MODEL NO. G60944 Galvanized 180" Post w/o Cap

IMPORTANT:
To cushion accidental falls, park Structures strongly recommends that the area under and around the play structure be covered with a resilient material, such as sand, mulch, etc., to a minimum depth of 10", and as much as 12" for fall heights greater than 48". Approved rubber safety matting can also be used. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the Safety Guidelines provided within the assembly Instructions packet.

MAINTENANCE PROCEDURE:
Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts are repaired or replaced. Check all decks for Plastisol-coating peeling and touch-up with Plastisol if necessary. Check for hdes on deck, clean if necessary. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair
records for each public-use playground equipment.

NOTE: STANDARD POST LENGTH ALLOWS A MAXIMUM 30" BURY, CONSISTING OF A COMBINATION OF CONCRETE FOOTER AND RESILIENT SURFACING. TO THE EXTENT YOUR SURFACING DEPTH EXCEEDS 10", REDUCE THE AMOUNT OF CONCRETE BURY, BUT NO LESS THAN 12" DEPENDING ON LOCAL SOIL CONDITIONS.



65166 PINNACLE DOME CLIMBER

Parts List		
DESCRIPTION	QTY	PART NUMBER
TOP BAR ASS'Y	1	314936
PINNACLE CLIMBER	3	313521
DOUBLE PINNACLE TAB	12	313580
BOTTOM FOOTBUCK	6	313598
HARDWARE COMPLETE	1	314937
3/8" x 1" P.B.H.C.S. w/PATCH	30	812050
3/8" x 1 1/4" P.B.H.C.S. w/PATCH	12	812051
3/8" x 2 1/4" P.B.H.C.S. w/PATCH	6	812056
3/8" LOCK WASHER	30	817334
3/8" FLAT WASHER	24	817410
3/8" BARREL NUT	18	804804

Unless Otherwise Specified, All Units of Measure are Each
"Items listed below Hardware Complete line are included with Hardware Complete Number

Warning: During Installation, Hardware And Small Parts Are Choking Hazards For Young Children. Store Unused Parts Appropriately Until Assembly Is Completed. Once Assembly Is Completed, Remove Any Unused Parts From The Play Environment And Dispose/Save Them In A Secure Location. Any bolt end protruding more than two full threads beyond the face of the nut causes risk of clothing entanglement. Promptly cut-off flush, file smooth, and treat to prevent corrosion.

Note: Peen Tee-Nuts and Flatwashers to match radius of pipe after assembly is complete.
Note: Loctite (supplied by others) should be used on any non-patch hardware.

SPECIFICATIONS:

Top Bar Ass'y:
Shall be fabricated from 1 1/4" O.D. x .083" (14 gauge) wall galvanized steel tubing. The Top Bar Ass'y shall be an all-welded assembly and shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Pinnacle Climber:
Shall be rotational molded from polyethylene. The polyethylene shall be linear low-density material with UV-stabilized color and an anti-static compound additive. All rotational molded products shall meet or exceed the following specifications: ASTM D-1298, type 2, class A and Federal specification LP-390c, type 1, class M, grade 2, category 3; Density (ASTM D-155); Brittleness Temperature (ASTM D-746), Tensile Values (ASTM-638); Flexural Modulus (ASTM-D-790); Heat Distortion (ASTM-648); Low Temperature Impact (ARM-STD)

Double Pinnacle Tab:
Shall be fabricated from 3/16" x 1 1/2" hot rolled pickled and oiled flat steel. The Double Pinnacle Tab shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

Bottom Footbuck:
Shall be fabricated from 1 5/16" O.D. x .083" (14 gauge) wall galvanized steel tubing with a .375" zinc plated .5 mil coating with chromate finish pipe insert. In-ground bar shall be fabricated from 1 5/16" O.D. x .083" (14 gauge) wall galvanized steel tubing. The Bottom Footbuck shall be an all-welded assembly an shall be coated after fabrication with a custom formula of TGIC polyester powder coating in conformance with specifications outlined herein.

65166 PINNACLE DOME CLIMBER

Powder Coat Finish:
Shall be an electrostatically applied custom formula of TGIC polyester powder. All components will be free of sharp edges and excess weld spatter and shall be cleaned in a four stage solvent/zirconium based bath system (free of iron phosphate), as a rust inhibitor, and a zirconium conversion coating to prevent flash rusting before coating. In addition, all welds shall be protectivel coated with ZRP, a zinc rich primer that forms a rust-resistant barrier layer over each weld prior to application of the powder coating. The powder coating shall have a super tough finish with maximum exterior durability and will have superior adhesion characteristics. Typical characteristics are: Two coat process to achieve 3.0 - 5.0 mil thickness and oven cured between 375 to 425 degrees Fahrenheit. Pencil Hardness H (ASTM D-3363), Impact (ASTM D-2794-69), Wedge Bend (ASTM D-522-68), Adhesion (Cross Hatch ASTM D-3359 & Knife Scratch ASTM D-2197), Environmental (Stain Resistance ASTM D-2247-87, Salt Spray ASTM B-117 & Fadometer 300 hrs with no loss of gloss), Over-bake Stability 200% at 350 degrees Fahrenhei for 10 minutes.

Hardware:
All nuts, bolts, screws, inserts, and lock washers used in the assembly of all play equipment shall be stainless steel, yellow dichromate plated steel blue-coat plated steel, mechanically galvanized or powder coated/yellow dichromate plated steel. All primary fasteners shall be 304 alloy stainless steel. Fasteners with yellow dichromate treatment have an electro-deposited, 99.9% pure zinc substrate applied from a specially formulated solution sealed with yellow dichromate top coat designed to work in conjunction with the zinc plating. Yellow dichromate has a 320% longer life to white corrosion and 275% longer to red corrosion than does hot-dip galvanizing. Stainless steel fasteners shall be button pin-in head, hex socket cap screws with two-part epoxy locking patch added to the threads. The two-part locking patch shall consist of one part resin and one part catalyst which are activated during installation. After curing, the material shall require a minimum of five times the installation torque to remove the fastener. Manufacturer shall provide special installation tools for pinned fasteners.

INSTALLATION INSTRUCTIONS:

1. Locate and dig footing holes according to Plan View. See Plan View for dimensions and notes regarding surfacing, etc. **NOTE:** *Due to extremes in weather and soil conditions, hole sizes may have to be increased to meet local conditions.*

2. Attach Double Pinnacle Tab to Bottom Footbuck and Pinnacle Climber using 3/8" x 1" P.B.H.C.S. w/Patch, 3/8" Lock Washer, 3/8" Flat Washer. See Detail 815.

3. Attach Top Bar Ass'y to Pinnacle Climber using 3/8" x 2 1/4" P.B.H.C.S. w/Patch, 3/8" Lock Washer, and 3/8" Barrel Nut. See Detail 909.

4. Fill bottom four holes that are not used in the Pinnacle Climber with 3/8" x 1 1/4" P.B.H.C.S. w/Patch and 3/8" Barrel Nut. See Detail 801.

5. Fill remaining unused holes inside Pinnacle Climber with 3/8" x 1" P.B.H.C.S. w/Patch. See Detail 800.

6. Plumb and level the entire assembly and tighten all fasteners.

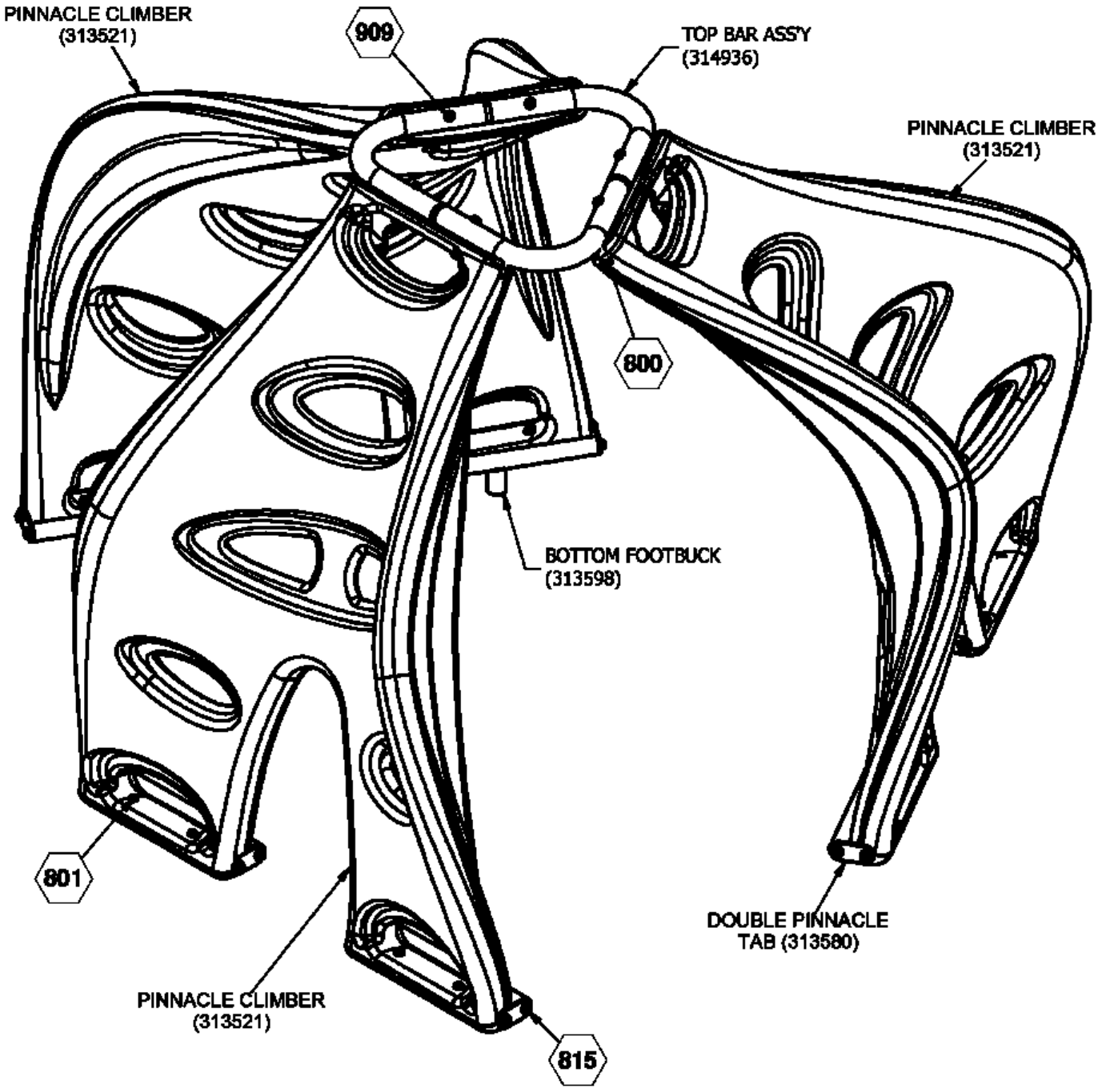
7. After entire unit is assembled, pour concrete footings within 4" to the top and taper away from post for water drainage. Allow to cure at least 48 hours before use.

8. When the structure is finished and satisfactory, eliminate sharp points and sharp edges (burring) on installed hardware like bolts, nuts, etc. Install resilient surfacing material within the use zone of play structure in accordance with ASTM specifications F1292 appropriate for the fall height of each structure. Refer to the safety guidelines.

MAINTENANCE PROCEDURE:

Periodically check hardware for tightness, and tighten as necessary. Always check all parts for breakage or wear, and immediately put equipment out of service until any faulty parts found are repaired or replaced. Also Check all metal parts for rust, paint loss and touch-up if necessary with paint. Check for welded areas and verify integrity. Check periodically resilient surfacing for appropriate depth and remove extraneous materials that could cause injury, infection, or disease. Maintain detailed installation, inspection, maintenance, and repair records for each public-use playground equipment.

65166 PINNACLE DOME CLIMBER

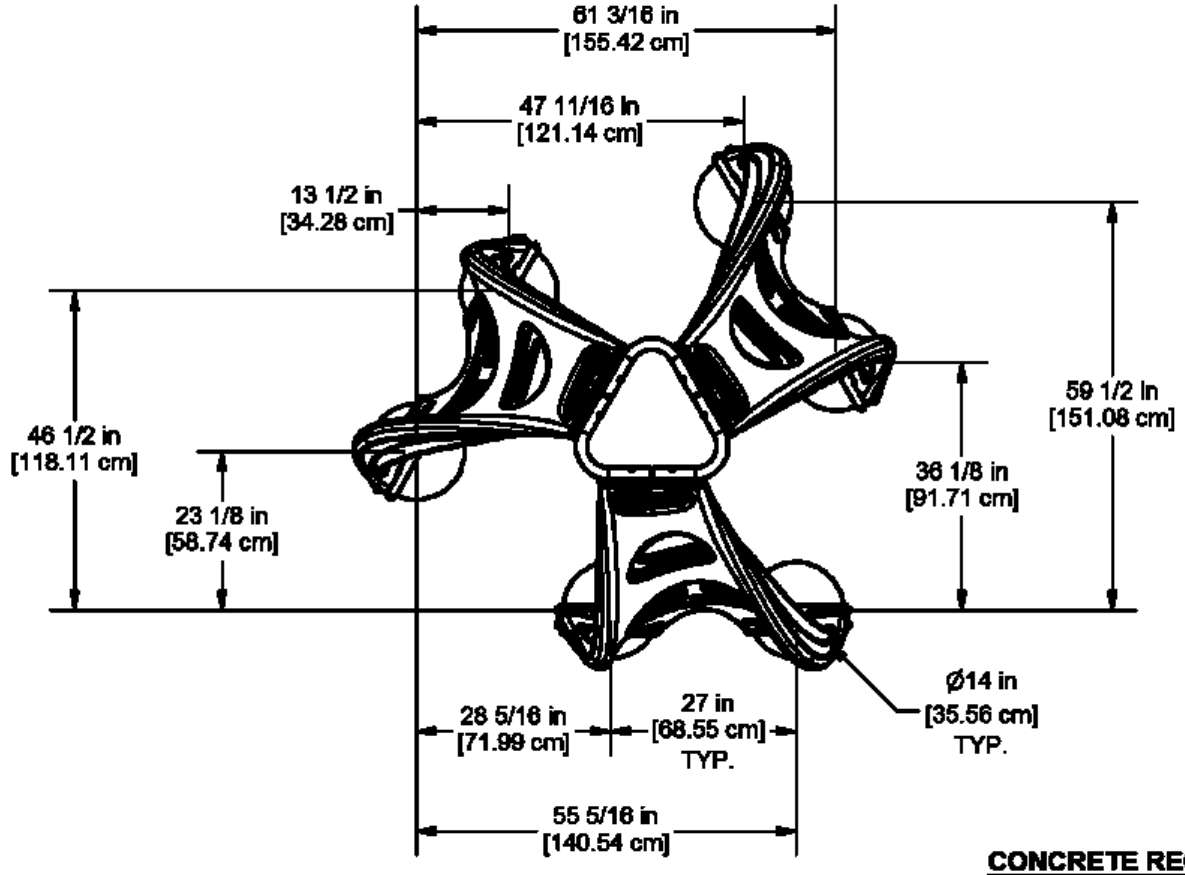


FINISHED ASSEMBLY

⬡ = INSTALLATION DETAIL

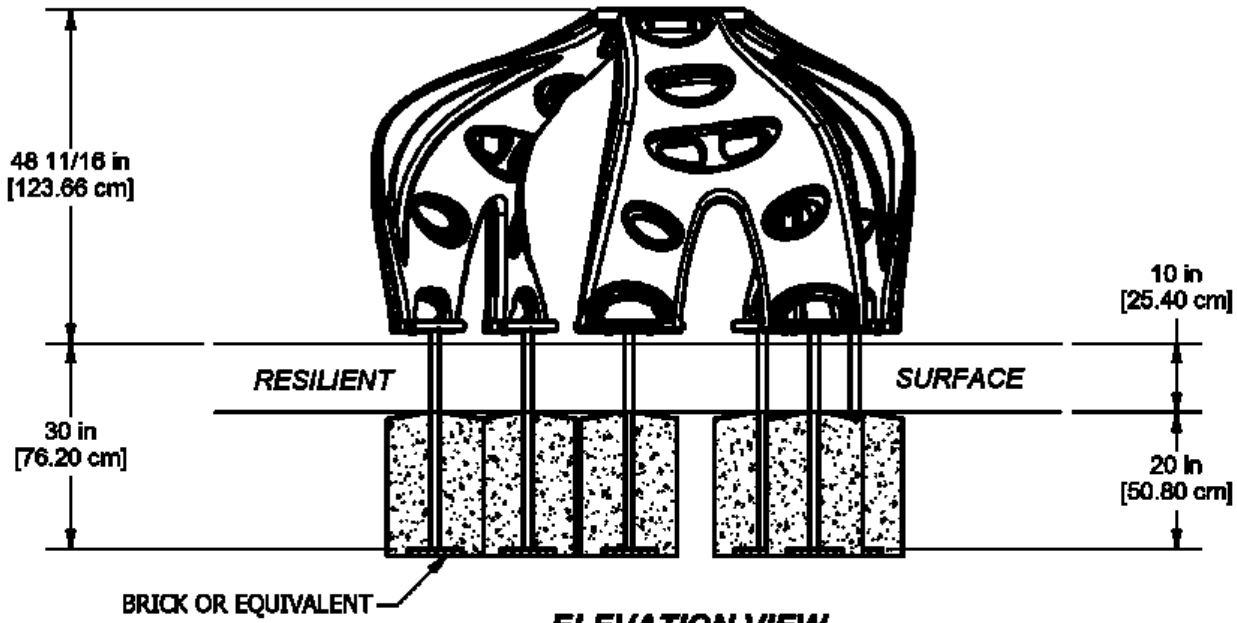
Issued/Revised: 11/15/2018

65166 PINNACLE DOME CLIMBER



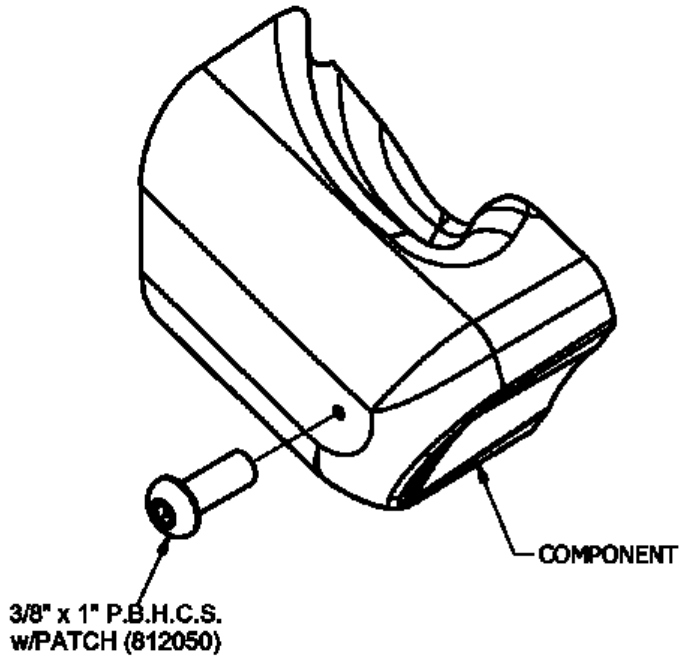
PLAN VIEW

CONCRETE REQUIRED
0.396 CUBIC YARDS
0.303 [CUBIC METERS]

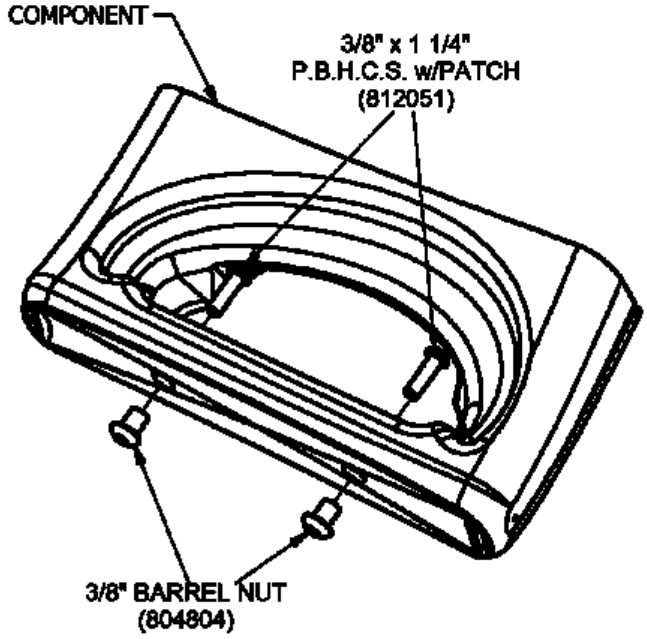


ELEVATION VIEW

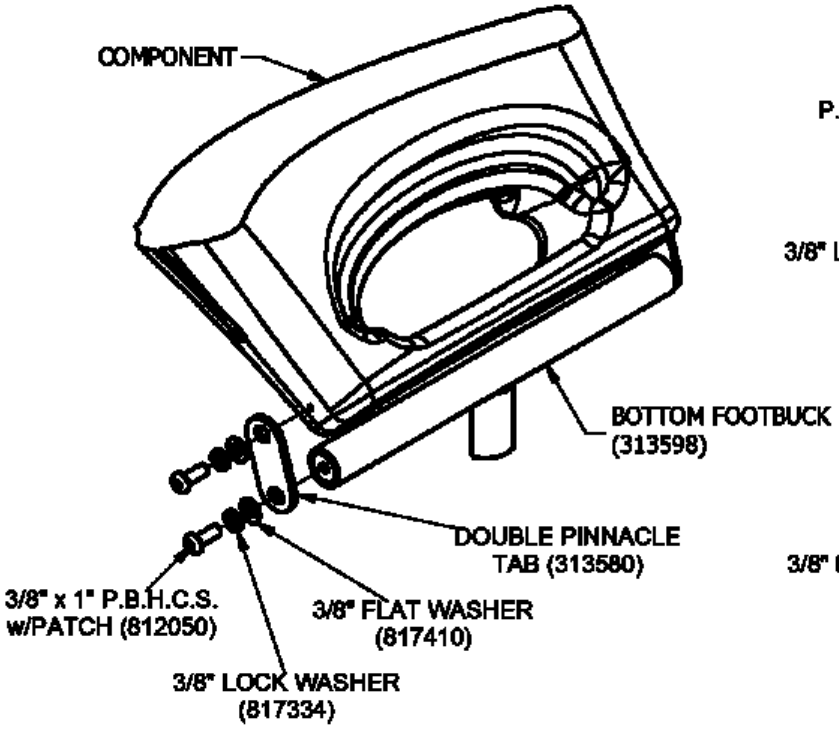
65166 PINNACLE DOME CLIMBER



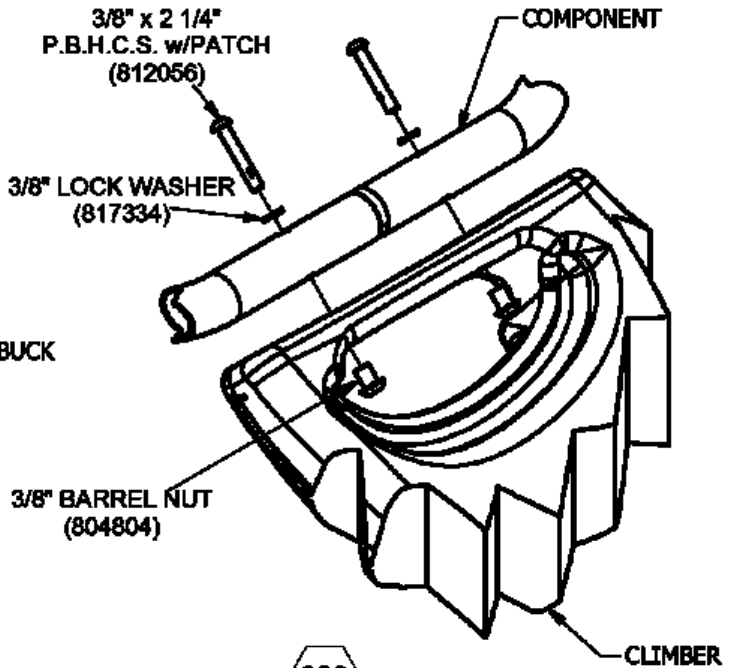
800



801



815



909

Portola Elementary School
Ventura, CA
1st-5th Grades, Option 2

Play & Park Structures

This play equipment is recommended for children ages:
5-12

Minimum Area Required:
Per Drawing

Scale: 1/4" = 1'-0"
This drawing can be scaled only when in an 24" x 36" format

Drawn By:
Cassie Pruitt
Date:
10/1/25
Quote Number:
821-176092B

play&park structures
A PLAYCORE Company
544 Chestnut Street
Chattanooga, TN 37402
800-727-1907 / www.playandpark.com

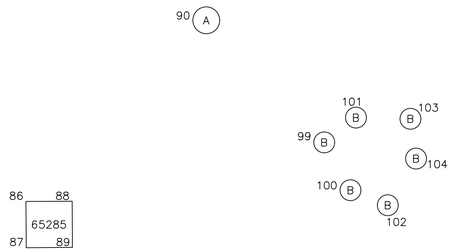
Total Play Components	56		
Elevated Play Components	18		
Elevated Play Components Accessible by Ramp	5	Req.	4
Elevated Components Accessible by Transfer	18	Req.	4
Accessible Ground Level Components Shown	38	Req.	0
Different Types of Ground Level Components	5	Req.	0

User Capacity
150-160
Critical Fall Height
8'-0"

SUPERmax PLAY SYSTEMS

ISO 9001 CERTIFIED













FOOTINGS ORDINATE TABLE			
HOLE	X	Y	DIAG
1	−27'−8"	−5'−4 1/2"	28'−2 1/2"
2	−22'−1"	−14'−11 1/2"	26'−8 1/2"
3	−19'−10 1/2"	−12'−8 1/2"	23'−7"
4	−19'−7 1/2"	−17'−0 1/2"	26'
5	−18'−2"	−17'−2 1/2"	25'−0 1/2"
6	−18'−1"	−19'−11 1/2"	26'−11 1/2"
7	−18'−0 1/2"	−14'−11 1/2"	23'−5"
8	−17'−8"	−33'−3 1/2"	37'−8 1/2"
9	−16'−6 1/2"	−10'−3 1/2"	19'−6"
10	−16'−1 1/2"	−21'−9 1/2"	27'−1 1/2"
11	−14'−1"	−11'−7 1/2"	18'−3"
12	−13'−8 1/2"	−33'−7 1/2"	36'−3 1/2"
13	−13'−5 1/2"	−14'−10 1/2"	20'−1"
14	−13'−5"	−21'−10 1/2"	25'−8"
15	−11'−7 1/2"	−16'−1 1/2"	19'−10 1/2"
16	−11'−5 1/2"	−13'−10 1/2"	18'
17	−11'−5 1/2"	−19'−8 1/2"	22'−9 1/2"
18	−10'−11"	11'−5 1/2"	15'−10"
19	−10'−8 1/2"	−36'−3 1/2"	37'−10"
20	−9'−10 1/2"	−15'−9 1/2"	18'−7 1/2"
21	−9'−10 1/2"	−14'−11 1/2"	17'−11 1/2"
22	−9'−10 1/2"	−14'−0 1/2"	17'−2"
23	−9'−10"	−40'−2 1/2"	41'−4 1/2"
24	−9'−3"	−20'−0 1/2"	22'−1"
25	−9'−3"	−9'−10 1/2"	13'−6 1/2"
26	−8'−2 1/2"	−23'−6 1/2"	24'−11"
27	−8'−1 1/2"	−6'−5 1/2"	10'−4 1/2"
28	−8'	3'−11 1/2"	8'−11"
29	−7'−5 1/2"	−3'−5 1/2"	8'−3"
30	−6'−10 1/2"	−22'−8 1/2"	23'−8 1/2"
31	−6'−9"	−7'−2 1/2"	9'−10 1/2"
32	−5'−10"	−17'−7 1/2"	18'−7"
33	−5'−3"	−12'−5 1/2"	13'−6 1/2"
34	−4'	3'−11 1/2"	5'−7 1/2"
35	−3'−10"	−30'−9 1/2"	31'−0 1/2"
36	−3'−3 1/2"	6 1/2"	3'−4"
37	−1'−3 1/2"	−29'−10 1/2"	29'−11"
38	0"	−29'−0 1/2"	29'−0 1/2"
39	0"	−25'−0 1/2"	25'−0 1/2"
40	0"	−16'−11 1/2"	16'−11 1/2"
41	0"	−12'−11 1/2"	12'−11 1/2"
42	0"	−8'−0 1/2"	8'−0 1/2"
43	0"	−4'−0 1/2"	4'−0 1/2"
44	0"	−1/2"	1/2"
45	0"	11'−11 1/2"	11'−11 1/2"
46	6 1/2"	5'−11 1/2"	5'−11 1/2"
47	10"	−39'−3 1/2"	39'−3 1/2"
48	2'−3"	−10'−11 1/2"	11'−2 1/2"
49	3'−2"	−39'−3 1/2"	39'−5"
50	3'−5 1/2"	5'−11 1/2"	6'−10 1/2"
51	4'	−29'−0 1/2"	29'−4"
52	4'	−25'−0 1/2"	25'−4 1/2"
53	4'	−16'−11 1/2"	17'−5"
54	4'	−12'−11 1/2"	13'−7"
55	4'	−8'−0 1/2"	9'
56	4'	−4'−0 1/2"	5'−8 1/2"
57	4'	−1/2"	4'
58	4'	11'−11 1/2"	12'−7"
59	8'	−16'−11 1/2"	18'−9"
60	8'	−12'−11 1/2"	15'−3"
61	8'	−8'−0 1/2"	11'−4"
62	8'	−4'−0 1/2"	8'−11 1/2"
63	8'	−1/2"	8'
64	12'	−16'−11 1/2"	20'−9 1/2"
65	12'	−12'−11 1/2"	17'−8"
66	13'−3"	−27'−1 1/2"	30'−2"
67	13'−3"	−23'−1 1/2"	26'−8"
68	13'−3"	−19'−1 1/2"	23'−3"
69	14'−6"	−33'−8 1/2"	36'−8 1/2"
70	14'−7"	−30'−0 1/2"	33'−5"
71	15'−5 1/2"	−14'−11 1/2"	21'−6 1/2"
72	16'−7"	−37'−4 1/2"	40'−11"
73	16'−8 1/2"	−25'−1 1/2"	30'−2"
74	16'−8 1/2"	−21'−1 1/2"	26'−11"
75	16'−8 1/2"	−17'−1 1/2"	23'−11"
76	18'−2"	−27'−6 1/2"	33'
77	18'−7 1/2"	−20'−5 1/2"	27'−8"
78	18'−10 1/2"	−30'−5 1/2"	35'−10"
79	19'−5"	−20'−11 1/2"	28'−7"
80	19'−5"	−18'−8 1/2"	26'−11 1/2"
81	20'−3"	−30'−5 1/2"	36'−7"
82	20'−7 1/2"	11'−7 1/2"	23'−8"
83	23'−11 1/2"	11'−9 1/2"	26'−8"
84	26'−8"	−2'−8 1/2"	26'−9 1/2"
85	27'−3"	12'−0 1/2"	29'−9 1/2"
86	63'−0 1/2"	2'−9 1/2"	63'−1"
87	63'−0 1/2"	2 1/2"	63'−0 1/2"
88	65'−7 1/2"	2'−9 1/2"	65'−8"
89	65'−7 1/2"	2 1/2"	65'−7 1/2"
90	73'−1 1/2"	12'−10 1/2"	74'−3"
91	75'−6"	−40'−5 1/2"	85'−8"
92	75'−6"	−32'−8 1/2"	82'−3 1/2"
93	75'−6"	−21'−9 1/2"	78'−7"
94	75'−6"	−9'−3 1/2"	76'−1"
95	78'−6"	−40'−5 1/2"	88'−4"
96	78'−6"	−32'−8 1/2"	85'−0 1/2"
97	78'−6"	−21'−9 1/2"	81'−5 1/2"
98	78'−6"	−9'−3 1/2"	79'−0 1/2"
99	79'−8 1/2"	6'−1 1/2"	79'−11 1/2"
100	81'−2"	3'−4 1/2"	81'−3"
101	81'−6"	7'−5 1/2"	81'−10"
102	83'−3"	2'−6 1/2"	83'−3 1/2"
103	84'−6 1/2"	7'−4 1/2"	84'−10 1/2"
104	84'−10"	5'−2 1/2"	85'

IF FOOTING CONTAINS A COMPONENT NUMBER, REFERENCE THE INSTALLATION MANUAL FOR COMPONENT FOOTING SPECS.

FOOTINGS TABLE			
TYPE	DIAMETER/SIDE	DEPTH	QTY.
A	1'−6" [45.72cm]	2'−6" [76.20cm]	61
B	1'−2" [35.56cm]	2'−6" [76.20cm]	21
C	2'−0" [60.96cm]	4'−0" [121.92cm]	6
D	2'−0" [60.96cm]	2'−6" [76.20cm]	8

It is the manufacturer's opinion that the structure shown herein complies with current ada standards concerning accessibility if used with proper accessible surfacing and together with other necessary ground level play equipment.
Top View drawings and measurements are for overall site and structure appearance purposes. Top view should not be conceived as a construction detail; therefore, all measurements and slope requirements should be field verified prior to construction.
IMPORTANT: Never install play equipment over hard, unresilient surfaces such as asphalt, concrete, or compacted earth. It is the owner's responsibility to ensure the "minimum area required" contains an appropriate amount of resilient material to cushion accidental falls.

Portola Elementary School
Ventura, CA
1st-5th Grades, Option 2

Play & Park Structures

This play equipment is recommended for children ages:
5-12

Minimum Area Required:
Per Drawing

Scale: 3/16" = 1'-0"
This drawing can be scaled only when in an 24" x 36" format

Drawn By:
Cassie Pruitt
Date:
10/1/25
Quote Number:
821-176092B

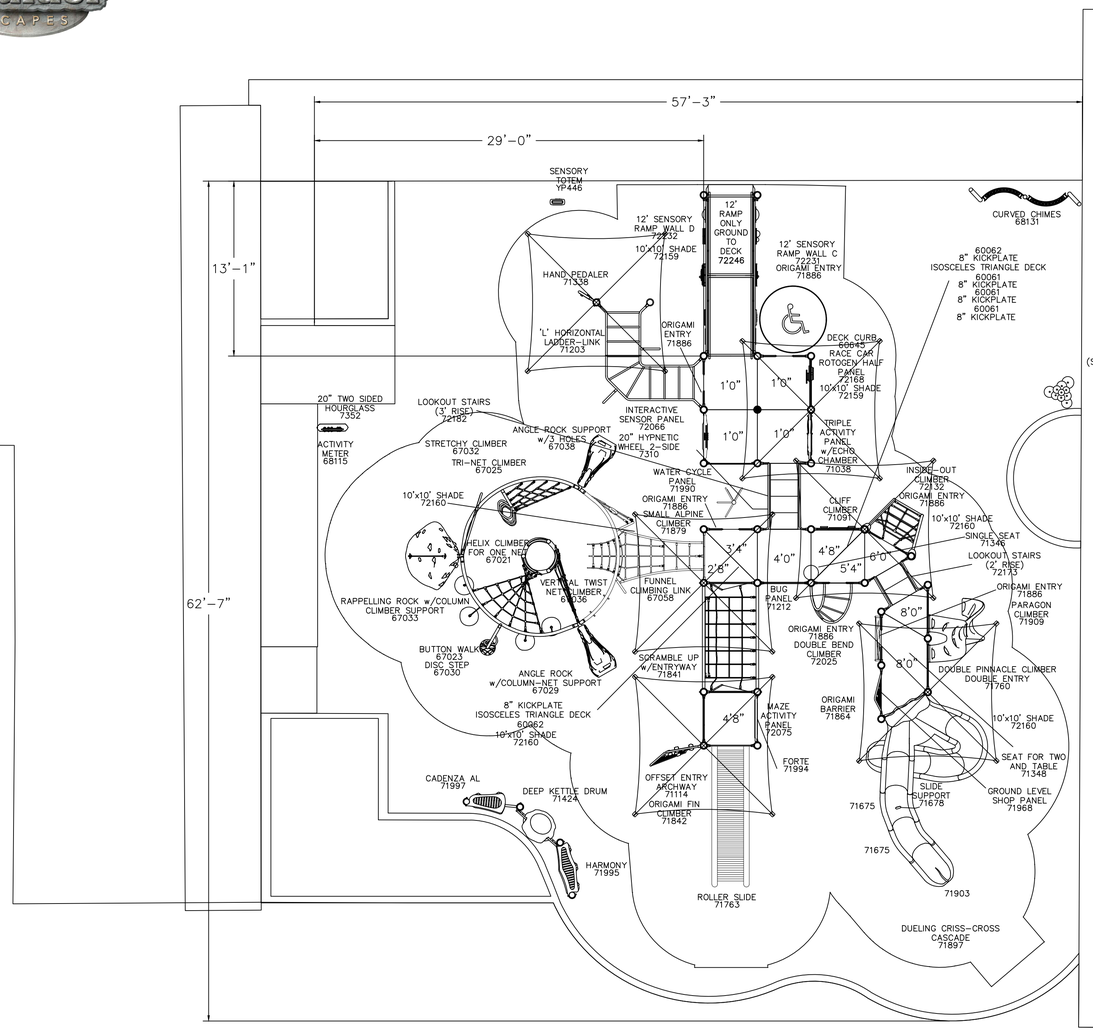
play&park structures
A PLAYCORE Company
544 Chestnut Street
Chattanooga, TN 37402
800-727-1907 / www.playandpark.com

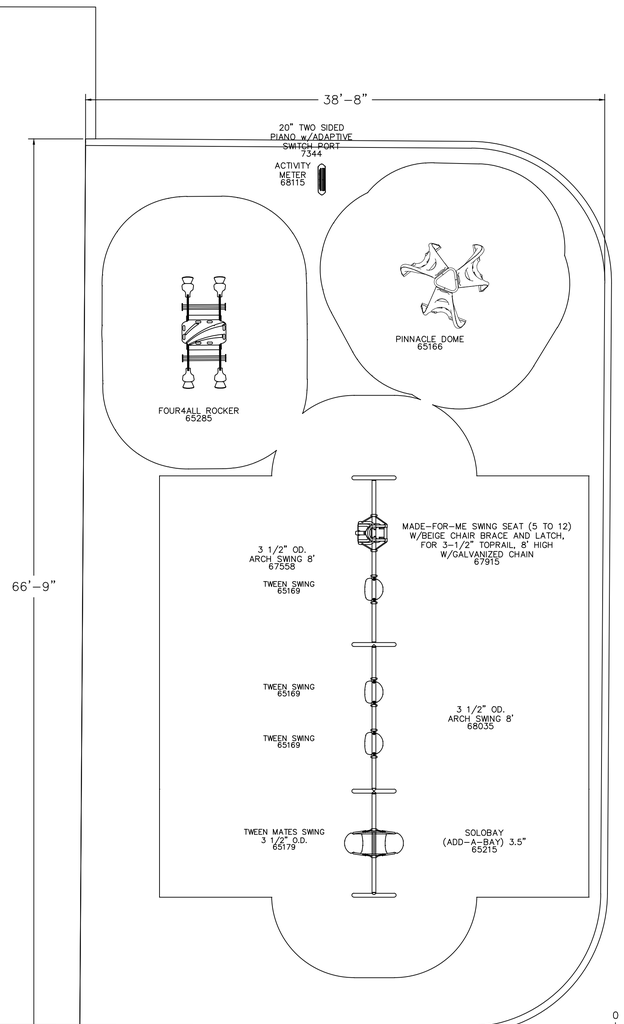
Total Play Components	56			User Capacity
Elevated Play Components	18			150-160
Elevated Play Components Accessible by Ramp	5	Req.	4	Critical Fall Height
Elevated Components Accessible by Transfer	18	Req.	4	8'-0"
Accessible Ground Level Components Shown	38	Req.	0	
Different Types of Ground Level Components	5	Req.	0	

SUPERmax PLAY SYSTEMS
Boulder SCAPES

ISO 9001 CERTIFIED

This equipment is designed for children 5-12 years old





0 5 10 20

THE SITE DIMENSIONS WERE REFERENCED FROM SATELLITE IMAGING AND MUST BE VERIFIED FOR ACCURACY.

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Drawn By:
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10/1/25
Quote Number:
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play&park structures
A PLAYCORE Company
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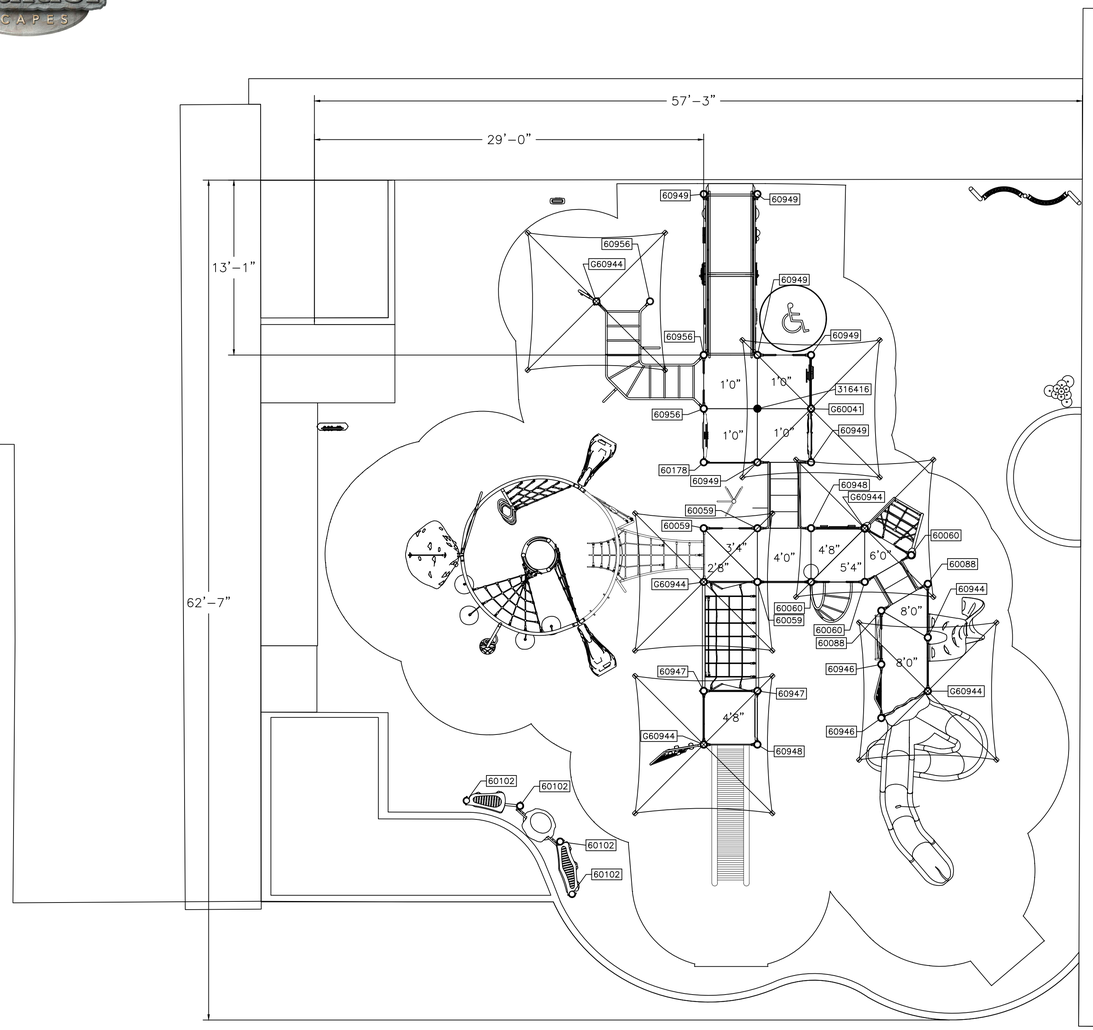
Total Play Components	56		
Elevated Play Components	18		
Elevated Play Components Accessible by Ramp	5	Req.	4
Elevated Components Accessible by Transfer	18	Req.	4
Accessible Ground Level Components Shown	38	Req.	0
Different Types of Ground Level Components	5	Req.	0

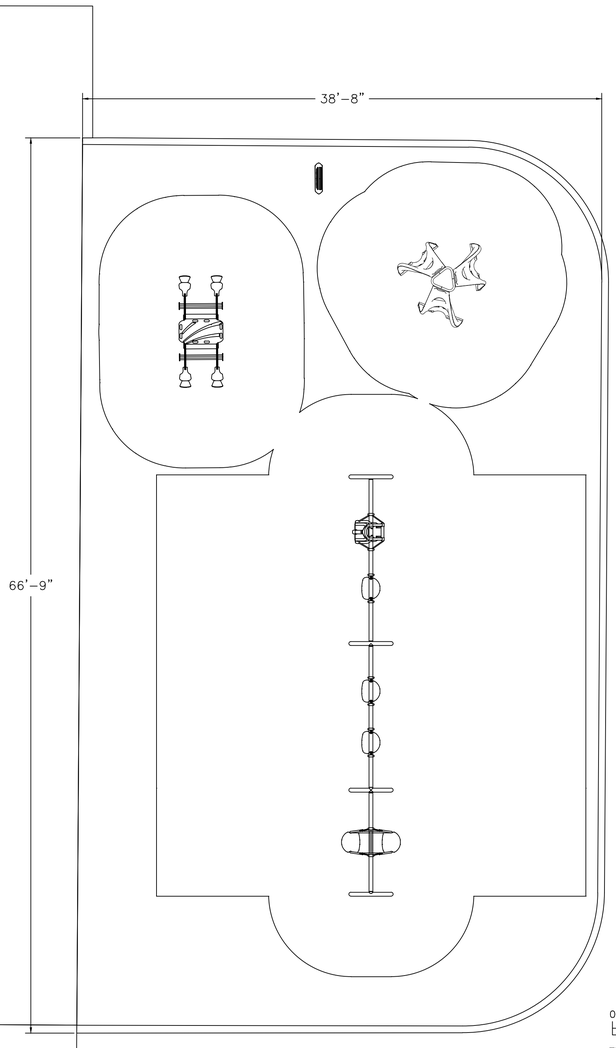
User Capacity
150-160
Critical Fall Height
8'-0"

SUPERmax PLAY SYSTEMS
Boulder SCAPES

ISO 9001 CERTIFIED

This equipment is designed for children 5-12 years old





UPRIGHT INFORMATION

UPRIGHT	DESCRIPTION
316416	41.625" ALUM FLAT CAP UPRIGHT
60059	10' GENERIC UPRIGHT w/CAP
60060	12' GENERIC UPRIGHT w/CAP
60088	14' GENERIC UPRIGHT w/CAP
60102	6' GENERIC UPRIGHT w/CAP
60178	8' GENERIC UPRIGHT w/CAP
60944	15' GENERIC UPRIGHT wo/CAP
60946	15' GENERIC UPRIGHT w/CAP
60947	13' GENERIC UPRIGHT w/CAP
60948	11' GENERIC UPRIGHT w/CAP
60949	7' GENERIC UPRIGHT w/CAP
60956	9' GENERIC UPRIGHT w/CAP
G60041	13' GENERIC UPRIGHT wo/CAP
G60944	15' GENERIC UPRIGHT wo/CAP

0 5 10 20

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I. Allow concrete to cure to specified compressive strength.

J. Ensure sediment and debris does not collect in trench drain system.

K. Install channel grates in accordance with manufacturer's instructions to meet load rating, using stainless steel screws with grate lock.

3.7 ADJUSTING

A. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by District.

3.8 CLEANING

A. Clean trench drain system of accumulated sediment and debris before final project completion.

3.9 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by the District's representative.

B. Request inspection prior to and immediately after placing backfill cover over pipe.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to the District.

3.10 PROTECTION

A. Protect pipe and backfill cover from damage or displacement until backfilling operation is in progress.

B. Organization and mobilization of the Contractor's forces.

C. Transporting construction equipment to the Jobsite and setting up of same.

D. Transporting various tools, materials, and equipment to the Jobsite.

E. Erection of temporary buildings and facilities as required for field offices, staging, storage, and construction operations.

END OF SECTION 33 40 00

SPEARHEAD
LOCATING SERVICES

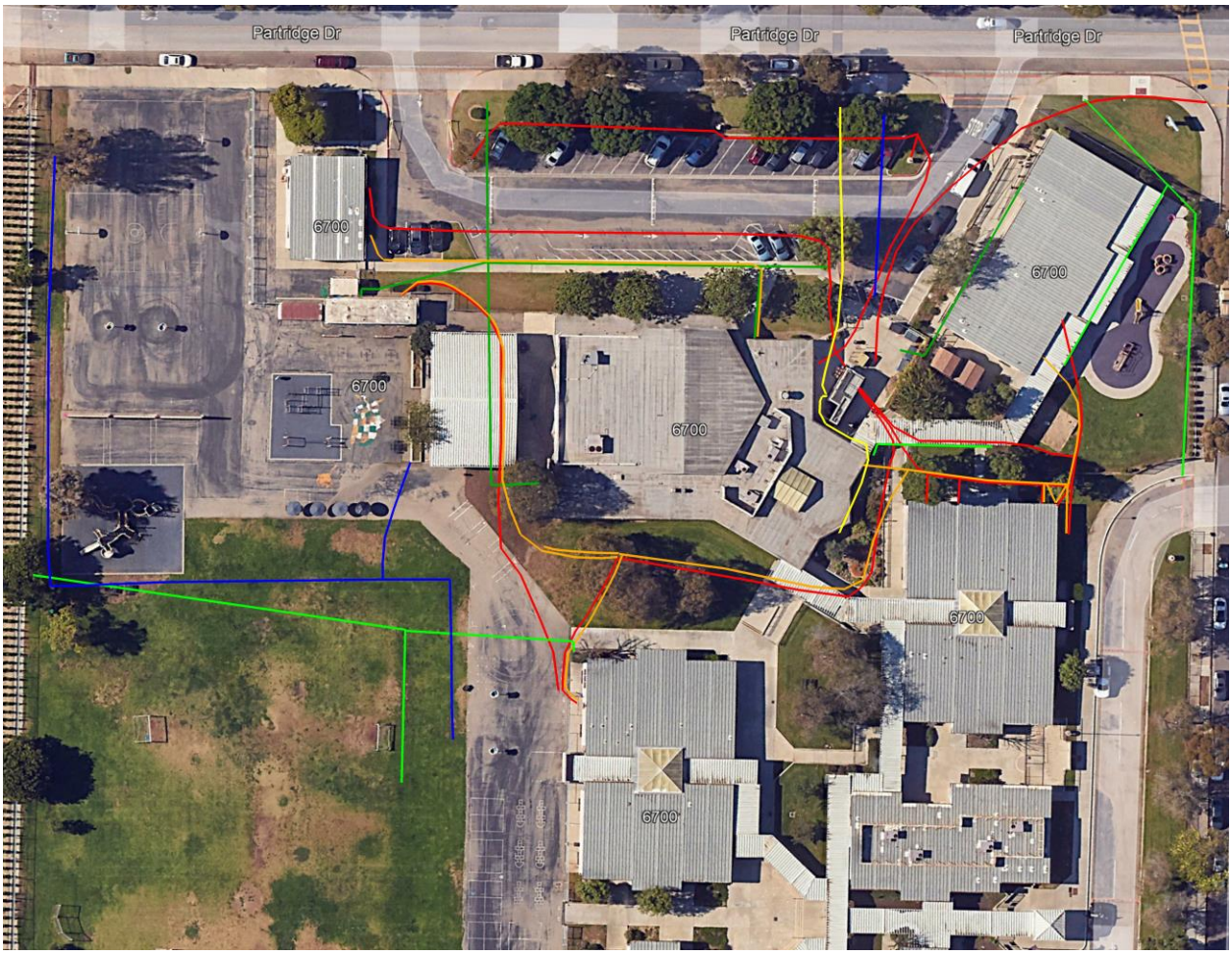
UTILITY SURVEY REPORT

DATE:	12/16/24
CUSTOMER:	ECG
PROJECT:	Portola School
ADDRESS:	

Customer supply as built drawings:	No
Findings walkthrough with customer:	No
GPS Mapping performed:	No

Job summary: Marked out utilities at school. Unable to locate most water lines.

As our customer you should understand that the detection of buried objects cannot be guaranteed. Spearhead Locating Services requests the customer supply maps of any existing utilities in the proposed survey area to verify our finds. Inherent limitations in locating equipment exist and site conditions may prevent the equipment from performing optimally. Soil conditions, nearby powerlines, reinforced rebar concrete, ghost signals, no trace wires are some of the site issues that may limit the effectiveness of the locating equipment. As result, Spearhead Locating Services, Inc. makes no implied or expressed guarantee regarding the accuracy of the findings or responsibility for any damage to any utility done by contractor due to our findings.




















SEWER
BROOKS


11




SD
1
5'2"
BTM


SD 36'


T6














33°




1
62"





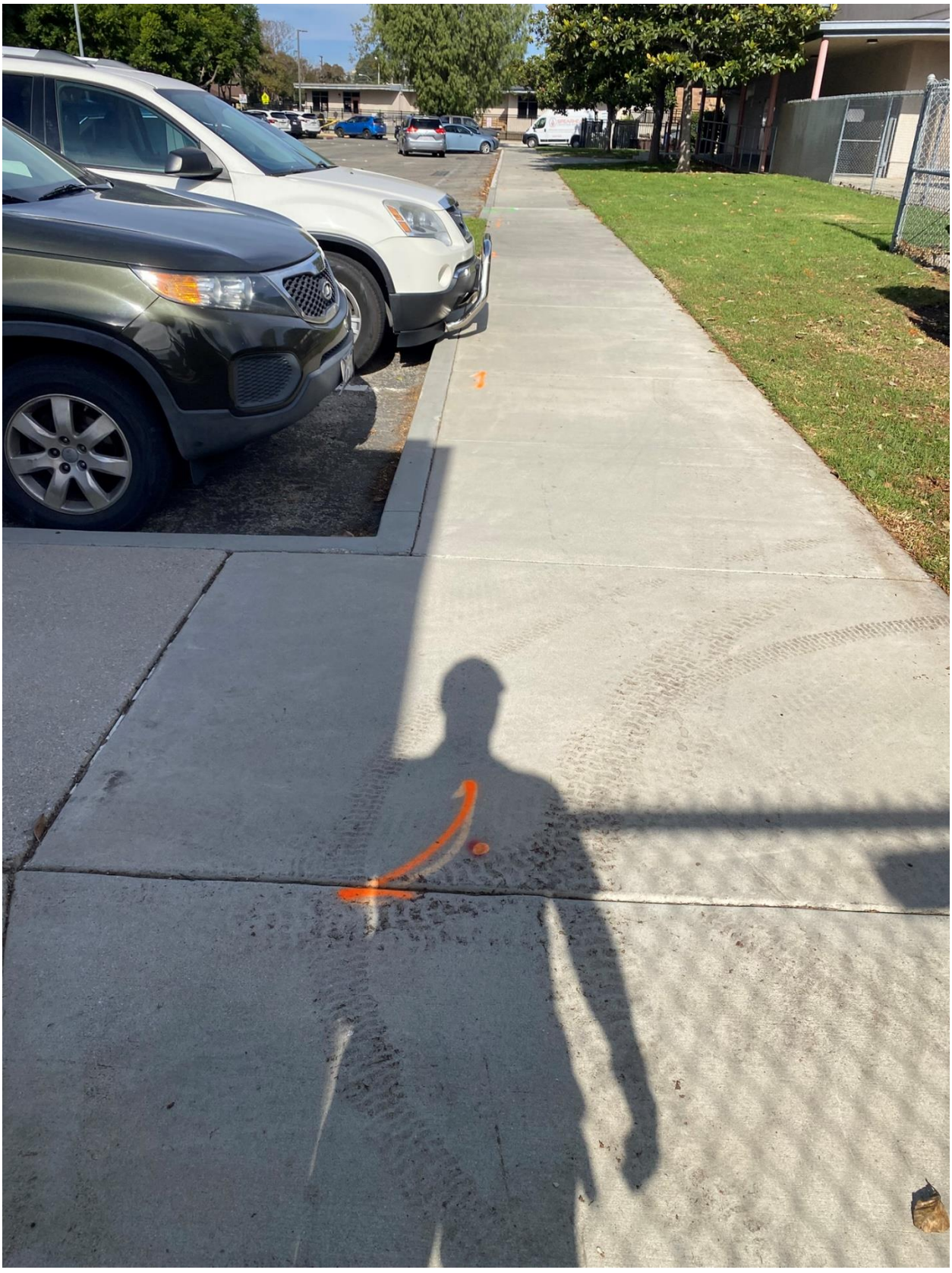



PORTOLA PLAYGROUND RULES
On Playground Equipment:






BLOCK














6'10"






SPEARHEAD
LOCATING SERVICES


49.7°


SL WTR
6G23469




1
1






NO PARKING
7NCJ531






California
9KQM785
HONDA
8WD1695




1


17


25


25



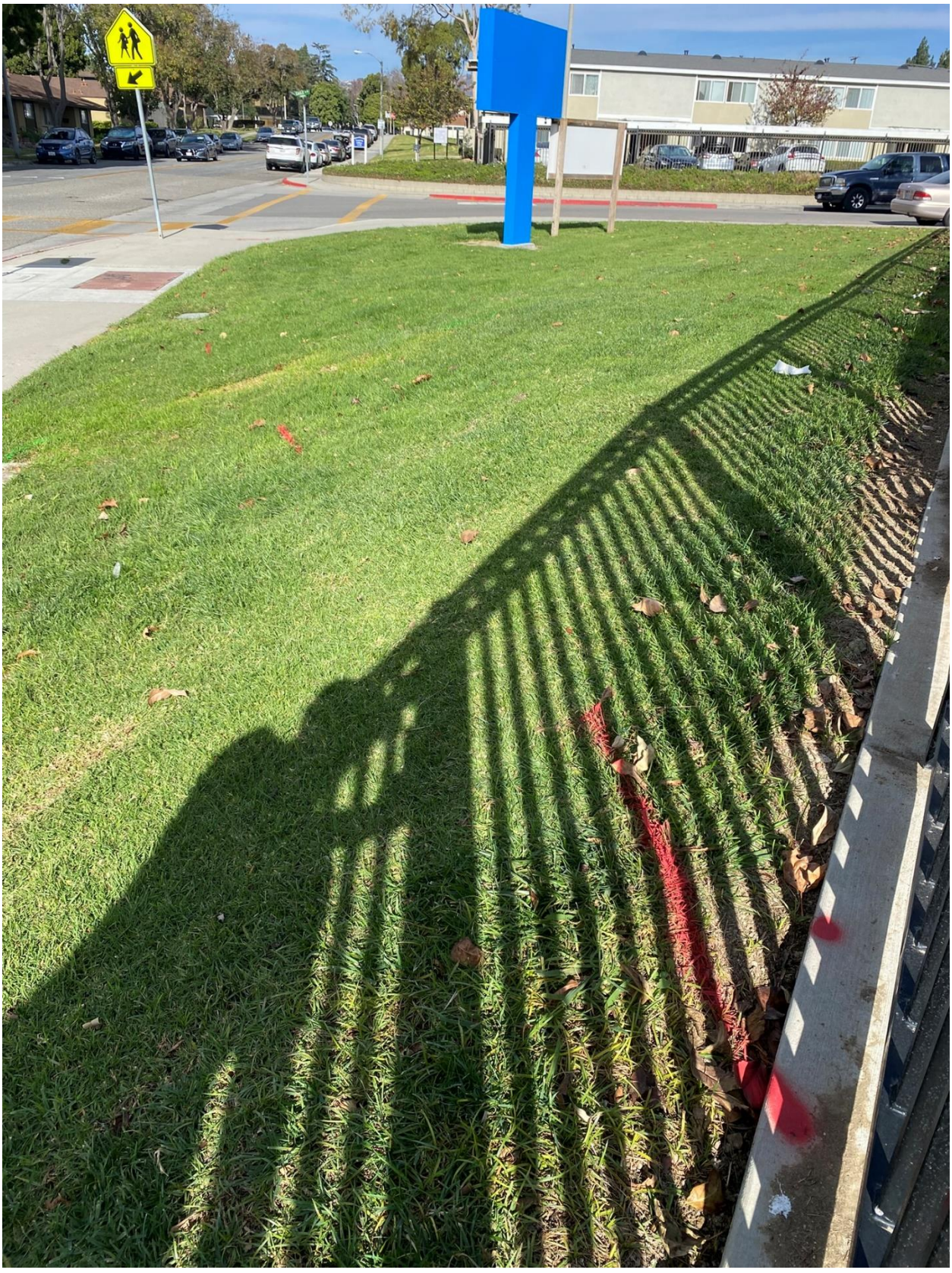

DCH
CN65W88
DCH HONDA OF OXNARD
8WMB186




STOP


FOR
STUDENT
SAFETY
CLOSE THE
GATE



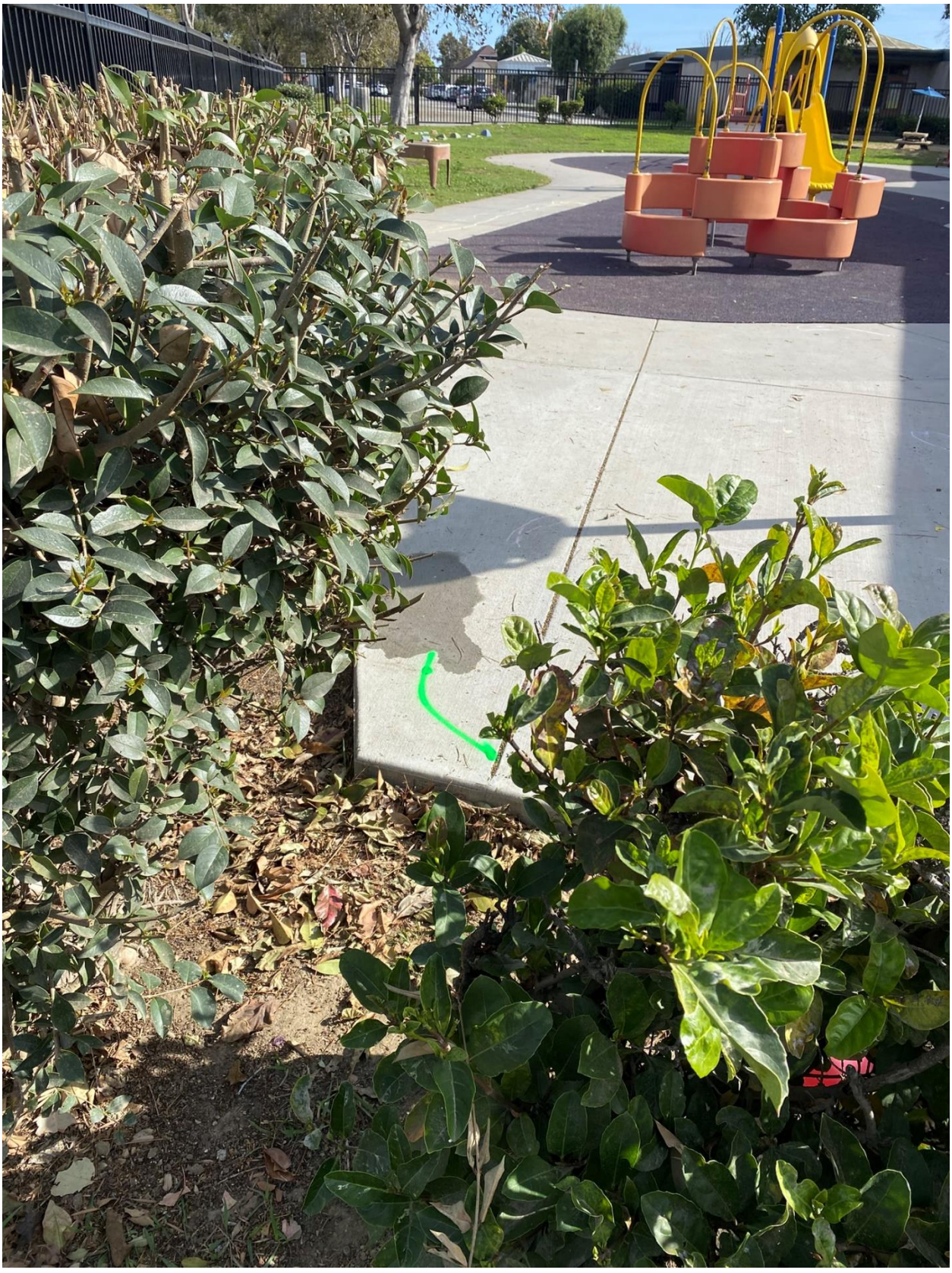










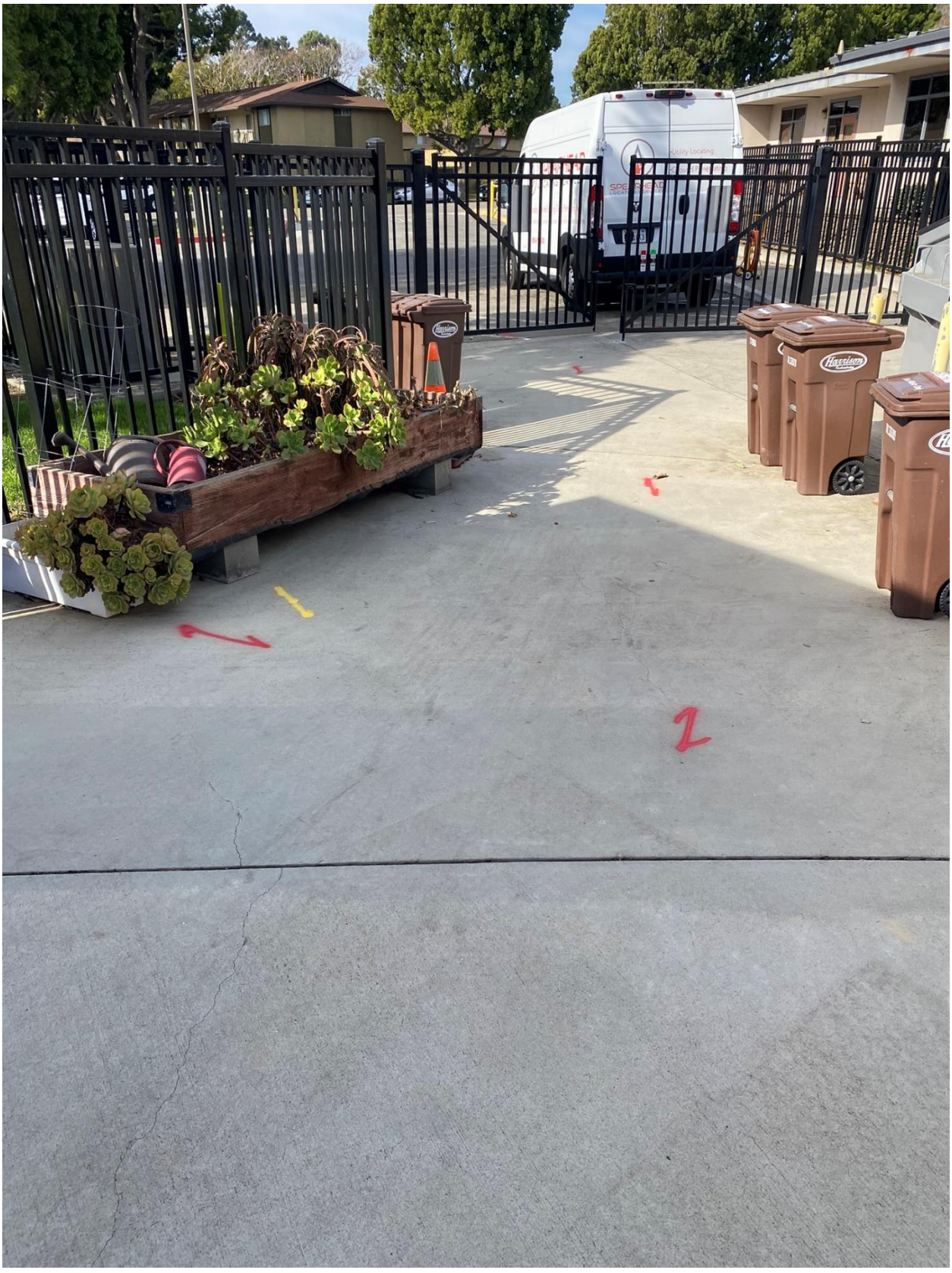





NO
PARKING
FIRE
LANE


NOTICE
NOTICE
NO TIRES
NOTICE
E.J. HARRISON & SONS INC.
1-800-41-TRASH
(87274)
NOTICE


NOTICE
NOTICE
NO TIRES
NOTICE
E.J. HARRISON & SONS INC
1-800-41-TRASH
(87274)
NOTICE
CAUTION
NOTICE
RECYCLE THESE ITEMS
RECYCLABLES ONLY
NOTICE
NOTICE
NO TIRES
NOTICE
RECYCLE THESE ITEMS


Utility Locating
Harrison
Harrison
1
1










LIBRARY






RARY
QUIET ZONE. THANK YOU!










ELECTRICAL












ELECTRICAL






















Winther




22
23
















ELECTRIC
BROOKS


ELECTRIC




BROOKS

PORTOLA - MODULAR RESTROOM

CONSTRUCTION OF 1-12x60 RELOCATABLE TOILET BLDG.

PORTOLA ELEMENTARY SCHOOL
6700 EAGLE ST, VENTURA, CA 93003

C2-26

PROJECT TEAM

CLIENT
VENTURA UNIFIED SCHOOL DISTRICT
359 S. VICTORIA AVE.
VENTURA, CA 93003
T. 805.289.7981 EXT. 1012
JASON MCILHANEY, FACILITIES PLANNER

ARCHITECT
ROESLING NAKAMURA TERADA
ARCHITECTS, INC.
285 N. VENTURA, CA 93003
T. 805.626.5330
TYSON CLINE, PRINCIPAL-IN-CHARGE
CATHERINE YOUNG, PROJECT MANAGER
CLINE@RNTARCHITECTS.COM

CIVIL ENGINEER
ENCOMPASS CONSULTANT GROUP, INC.
333 NORTH LANTANA ST., SUITE 287
CAMARILLO, CA 93010
GLEN H. PACE, PRINCIPAL
SAL CONTRERAS, PRINCIPAL
T. 805.322.4443

MECHANICAL AND PLUMBING ENGINEER
AE GROUP MECHANICAL ENGINEERS, INC.
838 EAST FRONT STREET
VENTURA, CA 93001
HUGH MCTERNAN
T. 805.653.1722

ELECTRICAL ENGINEER
JMPE ELECTRICAL ENGINEERING
LIGHTING DESIGN
5500 MING AVE. SUITE 251
BAKERSFIELD, CA 93309
JOHN MALONEY
T. 661.831.7851
F. 661.831.7813

MODULAR
SILVER CREEK MODULAR, LLC.
2830 BARRETT AVE.
PERRIS, CA 92571
RYAN MCINTOSH
T. 951.943.5393
C. 951.300.6055

FLOOD HAZARD MAP

DSA PR 14-01

FLOOD ZONE DESIGNATION: ZONE X
FIRM PANEL DESIGNATION: 06111C0765E
EFFECTIVE DATE: JANUARY 20, 2010
BASE FLOOD ELEVATION: 0.0'
APPLICABLE COMMUNITY ORDINANCE SECTION: VENTURA COUNTY, CA

GEOHAZARD REPORT

DSA IR A-4

PER DSA **IR A-4 PARAGRAPH 3.3** A GEOHAZARD REPORT IS NOT REQUIRED.

DEFERRED SUBMITTALS

NONE.

SITE STRUCTURAL DESIGN DATA

SITE WIND DEISGN DATA (CBC 1603A.1.4)
V = 93 MPH (CBC 1609A.3 FIGURE (1))
V_{ASD} = 78 MPH (CBC 1609A.3.1)
RISK CATEGORY = II
WIND EXPOSURE = C
EARTHQUAKE DESIGN DATA (CBC 1603A.1.5)
RISK CATEGORY = II
SEISMIC IMPORANCE FACTOR I_e = 1.00
S_S = 1.973g
S_1 = 0.74g
SITE CLASS = D
S_{DS} = 1.578g
SEISMIC DESIGN CATEGORY = D
GEOTECHNICAL INFORMATION (CBC 1603A.1.6)
SOIL LOAD-BEARING VALUE = 1,500 PSF (**CBC TABLE 1806A.2**)
GEOTECHNICAL REPORT NOT REQUIRED PER **DSA IR A-4**

FLOOR LIVE LOAD: 50+15 PSF (REFER TO SHEET A-0)

APPLICABLE CODE OF REGULATIONS

MODULAR BUILDING CONSTRUCTION SHALL COMPLY WITH THE BUILDING CODES LISTED ON THEIR RESPECTIVE COVER SHEETS.

SITE CONSTRUCTION SHALL COMPLY WITH THE RELEVANT PORTIONS OF FOLLOWING PARTS OF THE TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS (CCR):

2022 CALIFORNIA BUILDING STANDARDS CODE C.C.R. TITLE 24:
2022 CALIFORNIA ADMINISTRATIVE CODE, C.C.R. TITLE 24 PART 1
2022 CALIFORNIA BUILDING CODE (CBC), C.C.R. TITLE 24 PART 2
2022 CALIFORNIA ELECTRICAL CODE (CEC), C.C.R. TITLE 24 PART 3
2022 CALIFORNIA MECHANICAL CODE (CMC), C.C.R. TITLE 24 PART 4
2022 CALIFORNIA PLUMBING CODE (CPC), C.C.R. TITLE 24 PART 5
2022 CALIFORNIA ENERGY CODE, C.C.R. TITLE 24 PART 6
2022 CALIFORNIA FIRE CODE, C.C.R. TITLE 24 PART 9
2022 CALIFORNIA EXISTING BUILDING CODE, C.C.R. TITLE 24 PART 10
2022 CALIFORNIA GREEN BUILDING STDS CODE, C.C.R. TITLE 24 PART 11
2022 CALIFORNIA REFERENCED STANDARDS CODE, C.C.R. TITLE 24 PART 12

TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS:
2022 CBC REFERENCED STANDARDS CHAPTER 35

PREFABRICATED BUILDING NOTES

1. THE FOLLOWING DOCUMENTS SHALL BE ON THE JOBSITE PRIOIR TO INSTALLATION OF THE UNIT(S) INCLUDING THE SERIAL NUMBER FOR EACH UNIT:
   A. IN-PLANT VERIFIED REPORT
   B. LABORATORY VERIFIED REPORT
   C. WELDING VERIFIED REPORT
2. THE SITE PROJECT INSPECTOR SHALL VERIFY THE ABOVE DOCUMENTS ARE APPLICABLE TO EACH UNIT PRIOR TO INSTALLATION OF THE UNIT(S).
3. THE SITE PROJECT INSPECTOR NOTIFY THE ARCHITECT AND THE DIVISION OF THE STATE ARCHITECT FIELD ENGINEER IF ANY DISCREPANCIES OCCUR.

ARCHITECT'S STATEMENT OF GENERAL CONFORMANCE

DSA IR A-18

☒ ALL DRAWING SHEETS INCLUDED IN THIS SET NOT BEARING MY STAMP AND SIGNATURE.

☐ DRAWINGS SHEETS DENOTED IN THE SHEET INDEX AS FOLLOWS:

_____

☐ DRAWING SHEETS INCLUDED UNDER THE FOLLOWING PC APPROVAL(S):

_____

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND AUTHORIZED TO PREPARE SUCH DRAWINGS (PLANS IN THE STATE. THEY HAVE BEEN EXAMINED BY ME FOR:

1. DESIGN INTENT AND APPEAR TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
2. COORDINATION WITH MY DRAWINGS (PLANS) AND SPECIFICATIONS AND ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THE PROJECT.

PER TITLE 24, PART 1, SECTION 4-317 [b] THIS STATEMENT OF GENERAL CONFORMANCE SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344 of TITLE 24, PART 1.

SIGNATURE — DATE: 2/8/2025

ARCHITECT IN RESPONSIBLE CHARGE: TYSON CLINE
LICENSE NUMBER: C-34436
EXPIRATION DATE: 1-31-2027

EVCS REQUIREMENTS

PROJECT INCLUDES PARKING LOT RECONFIGURATION AND IS NOT AN ALTERATION. NO EVCS REQUIRED AS PART OF PROJECT.

PROJECT DESCRIPTION

SITE CONTRACTOR: CONSTRUCTION OF CONCRETE FOUNDATION PER MODULAR BUILDING DRAWINGS AND CONNECTIONS OF ALL UTILITIES. CONNECT FIRE ALARM FROM PROPOSED MODULAR BUILDING TO (E) SYSTEM. ITEMS LISTED BELOW FOR CONVENIENCE ONLY AND ARE NOT COMPREHENSIVE, REFER TO DRAWINGS FOR FULL SCOPE:

- DEMOLITION OF EXISTING RESTROOM BUILDING, AND INTERRUPTION OF UTILITIES. INCLUDES ABATEMENT OF ASBESTOS PER HAZARDOUS MATERIALS REPORT
- FIRE ALARM SYSTEM - FCI CERTIFIED INSTALLER (IN-WALL CONDUIT BY MODULAR CONTRACTOR)
- FIRE ALARM SYSTEM (IN-WALL CONDUIT BY MODULAR CONTRACTOR)
- CONCRETE FOUNDATION, WELD PLATE EMBEDS, SLEEVES, COUNTERFLASHING
- VENT/ACCESS WALLS, DRYWELLS, GRATES AND ANGLES
- GUTTERS AND DOWNSPOUTS
- ACCESSIBLE PARKING IMPROVEMENTS, CONCRETE WALK, LOADING ZONE, CURB RAMP AND CURBS
- ASPHALT PAVEMENT
- DOOR STOPS
- CEMENT PLASTER EXTERIOR WALL FINISH AND ACCESSORIES
- EXTERIOR LIGHTS (INSTALL, FURNISHED BY MODULAR CONTRACTOR)
- ROOM SIGNAGE
- SITE UTILITIES TO DESIGNATED POINT OF CONNECTION
- TURF REPAIR
- FENCE REMOVAL FOR ACCESS TO AREA OF WORK, NEW CHAIN LINK FENCE AND GATES

MODULAR CONTRACTOR:
CONSTRUCTION AND PLACEMENT OF (1) 60' X 12' MODULAR RESTROOM BUILDING. PREPARATION FOR FIRE ALARM SYSTEM. FINAL CONNECTION OF UTILITIES FROM POINT OF CONNECTION.

OWNER:
IRRIGATION SHUT OFF AND RESTORATION, FURNISH WASHING MACHINE.

CERTIFICATION NOTES

NO RESTRICTIONS, ALL PREVIOUS PROJECTS CERTIFIED.

INSPECTOR OF RECORD

DSA IR A-7

A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. THE PROJECT INSPECTOR SHALL BE CERTIFIED BY DSA TO INSPECT CLASS III (SITE) RBIP OR CLASS II (IN-PLANT) MINIMUM CONTRUCTION PER DSA IR A-7.

GENERAL DSA NOTES

1. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENT WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, C.C.R., A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, C.C.R.).
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY THE ADDENDA OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1 TITLE 24, CCR.
3. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE SCHOOL BOARD SHALL CONDUCT ALL REQUIRED TESTS & INSPECTIONS FOR THE PROJECT.
4. ALL WORK SHALL CONFORM TO 2022 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
5. WHENEVER DSA FINDS ANY CONSTRUCTION WORK IS BEING PERFORMED IN A MANNER CONTRARY TO THE PROVISIONS OF CALIFORNIA BUILDING CODE AND THAT WOULD COMPROMISE THE STRUCTURAL INTEGRITY OF THE BUILDING, THE DEPARTMENT OF GENERAL SERVICES, STATE OF CALIFORNIA, IS AUTHORIZED TO ISSUE A STOP WORK ORDER PER SECTION 4-334.1 CALIFORNIA ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR).
6. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
7. TITLE 24, PARTS 1-5 AND 9 MUST BE KEPT ON SITE DURING CONSTRUCTION.
8. ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING MATERIALS INSTALLATION TO COMPLY WITH APPLICABLE CODES, STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS.
9. THE PROJECT INSPECTION (PI) SHALL WITNESS AND VERIFY GROUNDING.

SHEET INDEX

ARCHITECTURAL BY A.O.R. 7 SHEETS
T-100 GENERAL PROJECT INFORMATION
T-200 SYMBOLS AND ABBREV.
T-300 ARCH DRAWING INFO AND NOTES
A-101 CODE ANALYSIS SITE PLAN
A-103 FLOOR PLAN
AD-201 DETAILS
AD-203 ACCESSIBLE PARKING DETAILS

*CIVIL BY OTHER DESIGN PROFESSIONAL 10 SHEETS
C1.01 COVER SHEET
C1.02 GENERAL NOTES
C2.01 DEMOLITION PLAN
C2.02 DEMOLITION PLAN
C3.01 EROSION CONTROL PLAN
C3.02 EROSION CONTROL DETAILS
C4.01 GRADING, DRAINAGE, & PAVING PLAN
C4.02 GRADING, DRAINAGE, & PAVING PLAN
C4.03 SITE SECTIONS
C5.01 DETAIL SHEET

*PLUMBING BY OTHER DESIGN PROFESSIONAL 4 SHEETS
P-101 PLUMBING NOTES
P-102 PARTIAL SITE DEMO PLUMBING PLAN
P-103 PARTIAL SITE PLUMBING PLAN
P-104 PLUMBING FLOOR PLAN & DETAILS

*ELECTRICAL & FIRE ALARM BY OTHER DESIGN PROFESSIONAL 9 SHEETS
E000 NOTES, CODES, SYMBOLS, SINGLE LINE DIAGRAM
E001 DETAILS
E002 FIRE ALARM DETAILS, CALCS, & NOTES
E003 FIRE ALARM RISER DIAGRAM
E100 ELECTRICAL SITE PLAN
E201 ENLARGED ELECTRICAL PLAN
E300 ENLARGED ELECTRICAL PLAN
E400 ELECTRICAL SPECIFICATIONS
E500 ELECTRICAL FIRE ALARM SPECIFICATIONS

*MODULAR BY OTHER DESIGN PROFESSIONAL 31 SHEETS

*ARCHITECTURAL - 15 SHEETS
A-0 COVER SHEET
A-0.1 SYMBOLS LEGEND, ABBREVIATION, AND ADA SIGNAGE
A-0.2 SCHEDULES
A-0.6A CERTIFICATE OF COMPLIANCE FORMS
A-0.6B CERTIFICATE OF COMPLIANCE FORMS
A-0.6C CERTIFICATE OF COMPLIANCE FORMS
A-0.6D CERTIFICATE OF COMPLIANCE FORMS
A-1.01 FLOOR PLAN & REFLECTED CEILING PLAN
A-2.21 CEILING DETAILS HARD LID
A-3.01 ROOF PLAN
A-3.50 ROOF DETAILS STANDING SEAM ROOF
A-4.01 EXTERIOR ELEVATIONS & INTERIOR ELEVATIONS
A-5.51 ARCHITECTURAL DETAILS - WOOD STUD - PLASTER
A-5.70 ARCHITECTURAL DETAILS - FLOOR
A-5.72 DETERIORATION PROTECTION DETAILS

*FOUNDATION - 3 SHEETS
F-1.01 CONCRETE FOUNDATION PLAN
F-2.50 FOUNDATION DEAILS
F-2.51 FOUNDATION DEAILS

*STRUCTURAL - 9 SHEETS
S-0.1 STRUCTURAL SPECIFICATIONS
S-1.01 FLOOR FRAMING PLAN & ROOF FRAMING PLAN
S-1.60 FLOOR FRAMING DETAILS - CONCRETE FLOOR
S-2.51 ROOF FRAMING DETAILS
S-2.60 ROOF FRAMING DETAILS
S-3.01 FRAMING ELEVATIONS & CROSS SECTIONS
S-5.00 WALL FRAMING ELEVATIONS - WOOD STUDS
S-5.10 WALL FRAMING DETAILS - WOOD STUDS
S-5.11 WALL FRAMING DETAILS - WOOD STUDS

*MECHANICAL - 1 SHEET
M-0.1 MECHANICAL NOTES AND DETAILS

*PLUMBING - 2 SHEETS
P-1.01 PLUMBING DETAILS AND PLUMBING SCHEDULES
P-2.01 PLUMBING PLAN AND ISOMETRICS

*ELECTRICAL - 1 SHEET
E-1.01 ELECTRICAL PLAN

61 SHEETS TOTAL

WORK EXEMPT (DSA 103)

BELOW ARE THE ELEMENTS OF THE WORK THAT ARE EXEMPT FROM DSA REQUIREMENTS FOR STRUCTURAL TESTS AND SPECIAL INSPECTIONS. FOR MORE INFORMATION REFER TO DSA FORM 103 STRUCTURAL TESTS/SPECIAL INSPECTIONS.

SOILS EXEMPT FROM INSPECTION:
2. SHALLOW FOUNDATIONS.
   B) SOIL SCARFICATION/RECOMPACTION NOT EXCEEDING 12" DEPTH.
   C) NATIVE SOIL OR FILL SOIL SUPPORTING EXTERIOR NON-STRUCTURAL FLATWORK.
   E) UTILITY TRENCH BACKFILL WITH DEPTH NOT EXCEEDING 12".

CONCRETE/MASONRY EXEMPT FROM INSPECTION:
1. POST INSTALLED ANCHORS.
   A) EXEMPT NON-STRUCTURAL COMPONENTS (E.G. MECHANICAL, ELECTRICAL, PLUMBING EQUIPMENT).
4. EPOXY SHEAR DOWELS IN SITE FLATWORK AND/OR OTHER NON-STRUCTURAL COMPONENTS.
5. TESTING OF REINFORCING BARS IS NOT REQUIRED FOR ITEMS GIVEN IN CBC SECTION 1910A.2 SUPJECT TO THE REQUIREMENTS AND LIMITATIONS OF THAT SECTION.
   APPLIES TO ONE-STORY BUILDINGS, PROVIDE CERTIFIED MILL TEST REPORTS TO INSPECTOR OF RECORD FOR EACH SHIPMENT OF SUCH REINFORCEMENT.

ACCEPTANCE TESTING

THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.

LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).

MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.

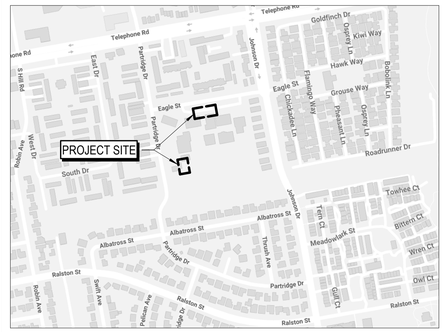
ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OF RECORD OR THE OWNER'S AGENT.

A LISTING OF CERTIFIED ATT CAN BE FOUND AT: HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TEST-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM/ACCEPTANCE.

THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.

PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

VICINITY MAP



IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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LICENSED ARCHITECT — TYSON CLINE — NO. C-34436 — REN. 1-31-27 — STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT
FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

GENERAL PROJECT INFORMATION

RNT Project No.	1041
Date	07/08/2025
Drawn by	EE
Checked by	CY

Sheet Number

T-100

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ABBREVIATIONS

Ø	DIAMETER
&	AND
℄ CL OR C	CENTERLINE
#	POUND OR NUMBER
A.B.	ANCHOR BOLT
ABV.	ABOVE
ACP	ACOUSTICAL CEILING PANEL
A.D.	AREA DRAIN
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
ALUM.	ALUMINUM
A.G.	ANTI-GRAFFITI
BLDG.	BUILDING
BLKG.	BLOCKING
BM.	BEAM
B.O.B.	BOTTOM OF BEAM
BOT.	BOTTOM
BTWN.	BETWEEN
CAB.	CABINET
CALIF.	CALIFORNIA
C.B.	CATCH BASIN
C.F.O.I	CONTRACTOR FURNISHED OWNER INSTALLED
C.I.P.	CAST IN PLACE
CJ	CONSTRUCTION JOINT
C.J.	CONTROL JOINT
C.L.	CHAIN LINK
CLG.	CEILING
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
COL.	COLUMN
COMP.	COMPOSITION
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CORR.	CORRIDOR
C.O.T.	CENTER OF TRUSS
C.T.	CERAMIC TILE
DBL.	DOUBLE
D.D.	DECK DRAIN
DF	DOUGLAS FIR
D.F.	DRINKING FOUNTAIN
DFCI	DISTRICT FURNISHED CONTRACTOR INSTALL
DG	DECOMPOSED GRANITE
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DN	DOWN
DR.	DOOR
D.S.	DOWNSPOUT
DWG	DRAWING
(E)	EXISTING
EA	EACH
EJ	EXPANSION JOINT
ELECT.	ELECTRICAL
ELEV.	ELEVATION
ENCL.	ENCLOSURE
EQ	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
FAC.	FACTORY
F.B.	FIRE BLANKET
FD	FLOOR DRAIN
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.	FINISH FLOOR
F.F.E.	FINISH FLOOR ELEVATION
FIN.	FINISH
FLASH'G	FLASHING
FLR.	FLOOR
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
FRAM'G	FRAMING
FRP	FIBERGLASS REINFORCED PANEL
FT.	FOOT OR FEET
FTG.	FOOTING
F.V.	FIELD VERIFY
GA.	GAUGE
GALV.	GALVANIZED
G.I.	GALVANIZED IRON
GL.	GLASS
GLB.	GLU-LAM BEAM
GOV'T	GOVERNMENT
GWB	GYPSUM WALL BOARD
GYP. BD.	GYPSUM BOARD
H.D.	HOLD DOWN
HDWR.	HARDWARE
HDG	HOT DIP GALV
HDR.	HEADER
HGR.	HANGER
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
H.M.	HOLLOW METAL
HR.	HOUR
HT.	HEIGHT
INSUL.	INSULATION
INT.	INTERIOR
JT.	JOINT
JST.	JOIST
LAM.	LAMINATE
LAV.	LAVATORY
LT.	LIGHT
L.P.	LOW POINT
MFR.	MANUFACTURER
MATR'L	MATERIAL
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MIN.	MINIMUM
MIN	MINUTE
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
M.R.	MOISTURE RESISTANT
MTL.	METAL
(N)	NEW
N.I.C.	NOT IN CONTRACT
NO. OR #	NUMBER
N.T.S.	NOT TO SCALE
O/	OVER
O.C.	ON CENTER
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
O.H.	OPPOSITE HAND
OPN'G	OPENING
OPP.	OPPOSITE
PB	PULL BOX
PERF.	PERFORATED
PL.	PLATE OR PLASTIC
PLAST.	PLASTER
PLYWD.	PLYWOOD
PR.	PAIR
PROJ.	PROJECTION
P.T.D.F.	PRESSURE TREATED DOUGLAS FIR
R OR RAD	RADIUS
R.D.	ROOF DRAIN
REC.S	RECOMMENDATIONS
REF.	REFER
REFL.	REFLECTED
REFRIG.	REFRIGERATOR
REINF.	REINFORCED OR REINFORCEMENT
REQ.	REQUIRED OR REQUIREMENTS
RET.	RETAINING
RF.	ROOF
RM.	ROOM
ROOF'G	ROOFING
S.C.	SOLID CORE
SCHED.	SCHEDULE
SHT'G	SHEATHING
SHT.	SHEET
SIM.	SIMILAR
SJ	SAWCUT JOINT
S.M.S.	SHEET METAL SCREWS
SQ.	SQUARE
S.S.	STAINLESS STEEL
ST.	STANDARD
STL.	STEEL
STN.	STAIN
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
T.A.	TOILET ACCESSORY
T&B	TOP & BOTTOM
TEL.	TELEPHONE
TEMP.	TEMPERED
TG	TOP OF GRATE
TJ	TOOLED JOINT
T.O.	TOP OF
T.O.B.	TOP OF BEAM
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL FRAMING
T.O.SHTG	TOP OF SHEATHING
TPA	TRI-POLYMER ALLOY
TS	TUBE STEEL
T.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
U.O.N.	UNLESS OTHERWISE NOTED
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
V.G.D.F.	VERTICAL GRAIN DOUGLAS FIR
V.I.F.	VERIFY IN FIELD
W/	WITH
W.C.	WATERCLOSET
WD.	WOOD
W.J.	WEAKENED-PLANE JOINT
W.O.	WHERE OCCURS
W.P.	WATERPROOF
W.P.B.	WATERPROOF BARRIER
W.P.M.	WATERPROOF MEMBRANE
W.R.	WATER RESISTANT
W.R.B.	WATER RESISTANT BARRIER
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC

SYMBOLS

PROPERTY LINE

78 — NEW OR FINISHED CONTOURS

71 — EXISTING CONTOURS

1:12 — SLOPING SURFACE

11 — GRID LINE

SECTION

1 / A-101 — DRAWING NUMBER / SHEET NUMBER

EXTERIOR ELEVATION

1 / A-101 — DRAWING NUMBER / SHEET NUMBER

INTERIOR ELEVATION

a — ELEVATION NUMBER

1 / A-101 — DRAWING NUMBER / SHEET NUMBER

DETAILS

1 / AD-101 — DRAWING NUMBER / SHEET NUMBER

CONCRETE

SOIL

CONCRETE MASONRY UNIT

PLYWOOD

STEEL

WOOD BLOCKING

WOOD CONTINUOUS MEMBER

WORK POINT, CONNECTION POINT, DATUM POINT OR CONTROL POINT

10000A — KEYNOTE

101A — DOOR NUMBER REFERENCE, REFER TO DOOR SCHEDULE

101A — WINDOW NUMBER REFERENCE, REFER TO WINDOW TYPES

1A — WALL TYPE REFERENCE, REFER TO

a — SIGN TYPE REFERENCE, REFER TO AD 201

ALIGN FINISHES

48" — TICK INDICATES DIMENSIONS TO FACE OF STUD, GRIDLINES OR FACE OF STRUCTURE

48" — DOT INDICATES DIMENSION TO CENTERLINE

3' - 6" — ARROW INDICATES DIMENSION TO F.O. FINISH OR CLEAR DIMENSION

SPOT ELEVATION

1 — REVISION DELTA (CLOUD INDICATES AREA REVISED)

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LICENSED ARCHITECT
TYSON CLINE
NO. C-34436
REN. 1-31-27
STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

SYMBOLS AND ABBREV.

RNT Project No.	1041
Date	07/08/2025
Drawn by	EE
Checked by	CY

Sheet Number

T-200

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ENERGY CODE ACCEPTANCE TESTING

1. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.
2. LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).
3. MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.
4. ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OF RECORD OR THE OWNER'S AGENT.
5. A LISTING OF CERTIFIED ATT CAN BE FOUND AT: HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TEST-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM/ACCEPTANCE.
6. THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.
7. PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

DEMOLITION NOTES

1. IDENTIFY ALL DAMAGED ELEMENTS DESIGNATED TO REMAIN OR BE RELOCATED. REQUEST CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING WITH DEMOLITION WORK.
2. GENERAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND VERIFYING DEMOLITION PLANS IN RELATION TO CONSTRUCTION DRAWINGS. CONTRACTOR SHALL VERIFY AND COORDINATE THE EXTENT OF DEMOLITION WORK WITH NEW WORK. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL CONFLICTS, DISCREPANCIES OR PROBLEMS.
3. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO DEMOLITION. THE CONTRACTOR SHALL BEWARE OF POTENTIAL HAZARDS FROM DEMOLITION WORK NEAR UTILITIES. PIPES AND CONDUIT ENCOUNTERED IN DEMOLISHED PARTITIONS AND AREAS WHICH ARE TO REMAIN IN USE SHALL BE RE-ROUTED AND CONCEALED. THOSE WHICH ARE TO BE ABANDONED SHALL BE CAPPED AND CONCEALED IN FLOOR, WALL OR CEILING.
4. THE CONTRACTOR SHALL PERFORM ALL DEMOLITION WORK REQUIRED INCLUDING THE REMOVAL AND PROPER DISPOSAL OF ALL DEBRIS, BROKEN CONCRETE, ETC., FROM THE SITE. PROPER SHORING SHALL BE EXECUTED FOR THE SAFETY OF THE STRUCTURE AND WORKMEN.
5. THE OWNER SHALL HAVE FIRST RIGHTS OF REFUSAL FOR ALL DEMOLISHED MATERIALS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM DEMOLITION AT NO ADDITIONAL COST TO THE OWNER. THE GENERAL CONTRACTOR SHALL BE EXTREMELY CAREFUL TO PROTECT AND NOT TO DAMAGE ANY PORTION OF EXISTING INSTALLATION NOT BEING REMOVED. ANY EXISTING FACILITIES INDICATED TO REMAIN WHICH ARE SO DAMAGED SHALL BE REPLACED EQUAL TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER.
7. CUT EXISTING PORTIONS OF WALLS, FLOORS, CEILINGS, ETC., WHERE INDICATED AND AS NECESSARY FOR NEW WORK. UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOR NOTCHED, WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER, THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION.
8. ALL TRADES CONCERNED SHALL COORDINATE EACH OTHER'S WORKS PRIOR TO AND DURING DEMOLITION.
9. ANY PROJECTING OR SURFACE-MOUNTED ITEMS BEING ABANDONED SHALL BE REMOVED, CAPPED AND CONCEALED BEHIND FINISHED SURFACES, UNLESS OTHERWISE NOTED. PATCH AND FINISH TO MATCH EXISTING ADJACENT SURFACE.
10. SURFACES WHERE MATERIAL IS REMOVED TO INSTALL NEW WORK OR TO RECEIVE NEW FINISH SHALL BE REPAIRED AND PATCHED TO MATCH ORIGINAL CONDITIONS. RETEXTURE AND REPAINT WALL OR CEILING WHERE PATCHED TO MATCH EXISTING, WITH NO EVIDENCE THAT PATCH HAS OCCURRED.
11. ALL EXISTING AREAS TO REMAIN OR NEW CONSTRUCTION WORK THAT ARE DAMAGED SHALL BE PATCHED AS REQUIRED TO MATCH EXISTING ADJACENT AREA IN MATERIAL, FINISH AND COLOR, UNLESS OTHERWISE NOTED.
12. ALL EQUIPMENT AND MATERIAL WHICH ARE IN OPERATING CONDITION WHEN REMOVED SHALL BE MAINTAINED AS SUCH AND RETURNED TO THE OWNER OR TO BE REINSTALLED WHERE INDICATED. PROPERLY RECONNECT EQUIPMENT TO RESUME OPERATION.
13. CAREFULLY & THOROUGHLY SURVEY EXISTING IRRIGATION SYSTEMS AT AREAS OF TRENCHING PRIOR TO BEGINNING SUCH WORK. MEET WITH OWNER MAINTENANCE STAFF TO COORDINATE SHUT-OFF AT AREAS OF WORK. REPAIR ALL IRRIGATION DAMAGED AS A RESULT OF DEMOLITION & NEW WORK TO ORIGINAL FUNCTIONING CONDITION.
14. ALL TRENCHING OPERATIONS SHALL BE PERFORMED WITH A SPOTTER. SPOTTER SHALL CONTINUOUSLY OBSERVE EXCAVATIONS TO LOCATE IRRIGATION LINES, CONDUITS AND ANY OTHER UTILITIES OR SUBTERRANEAN EQUIPMENT. ANY ITEMS ENCOUNTERED SHALL BE EXCAVATED BY HAND. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR ANY IRRIGATION, UTILITIES, OR OTHER ITEMS DAMAGED AS A RESULT OF EXCAVATION.
15. THE GENERAL CONTRACTOR SHALL BE EXTREMELY CAREFUL TO PROTECT AND NOT TO DAMAGE ANY PORTION OF THE EXISTING INSTALLATION NOT BEING REMOVED

GREEN BUILDING NOTES

FINISH MATERIAL POLLUTANT CONTROL.

1. FINISH MATERIALS SHALL COMPLY WITH CALGREEN SECTIONS 5.714.4.4.1 THROUGH 5.714.4.4.4.5.714.4.4.1 ADHESIVES, SEALANTS AND CAULKS. ADHESIVES, SEALANTS AND CAULKS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS.
   A. ADHESIVES, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, SEALANTS, SEALANT PRIMERS AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL OR AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE, OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN TABLES 5.504.4.1 AND 5.504.4.2 IN DIVISION 5.5. SUCH PRODUCTS ALSO SHALL COMPLY WITH THE RULE 1168 PROHIBITION ON THE USE OF CERTAIN TOXIC COMPOUNDS (CHLOROFORM, ETHYLENE DICHLORIDE, METHYLENE CHLORIDE, PERCHLOROETHYLENE, AND TRICHLOROETHYLENE), EXCEPT FOR AEROSOL PRODUCTS AS SPECIFIED IN SUBSECTION B, BELOW.
   B. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH CALGREEN SECTION 94507.
2. PAINTS AND COATINGS. ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS IN TABLE 1 OF THE ARB ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, AS SHOWN IN TABLE 5.504.4.3 IN DIVISION 5.5,UNLESS MORE STRINGENT LOCAL LIMITS APPLY. THE VOC CONTENT LIMIT FOR COATINGS THAT DO NOT MEET THE DEFINITIONS FOR THE SPECIALTY COATINGS CATEGORIES LISTED IN TABLE5.504.4.3, SHALL BE DETERMINED BY CLASSIFYING THE COATING AS A FLAT, NON FLAT OR NON FLAT-HIGH GLOSS COATING, BASED ON ITS GLOSS, AS DEFINED IN SUBSECTIONS 4.21, 4.36 AND 4.37OF THE 2007 CALIFORNIA AIR RESOURCES BOARD, SUGGESTED CONTROL MEASURE, AND THE CORRESPONDING FLAT, NON FLAT, OR NON FLAT-HIGH GLOSS VOC LIMIT IN TABLE 5.504.4.3 SHALL APPLY.
   A. AEROSOL PAINTS AND COATINGS. AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC IN SECTION 94522(A)(3) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES, IN SECTIONS 94522(C)(2) AND (D)(2) OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION94520; AND IN AREAS UNDER THE JURISDICTION OF THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT ADDITIONALLY COMPLY WITH THE PERCENT VOC BY WEIGHT OF PRODUCT LIMITS OF REGULATION 8 RULE 49.
   B. VERIFICATION. VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AT THE REQUEST OF THE ENFORCING AGENCY. DOCUMENTATION MAY INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:
      1. MANUFACTURERS PRODUCT SPECIFICATION
      2. FIELD VERIFICATION OF ON-SITE PRODUCT CONTAINERS

ACCESS COMPLIANCE NOTES

WALKS AND SIDEWALKS

1. CONTINUOUS SURFACE: WALKS AND SIDEWALKS SUBJECT TO THESE REGULATIONS SHALL HAVE A CONTINUOUS COMMON SURFACE, NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL EXCEEDING 1/2 INCH AND SHALL BE A MINIMUM OF 48 INCHES IN WIDTH. CROSS-SLOPES SHALL NOT EXCEED 2%. SLOPE IN DIRECTION OF TRAVEL SHALL NOT EXCEED 5%. CBC 11B-403.3. SURFACES SHALL BE SLIP-RESISTANT AS FOLLOWS: (SECTION 11B-302)
   A. SLOPES LESS THAN 6 PERCENT: SURFACES WITH A SLOPE OF LESS THAN 6 PERCENT GRADIENT SHALL BE AT LEAST AS SLIP-RESISTANT AS DESCRIBED FOR A MEDIUM SALTED (MEDIUM BROOM) FINISH.
   B. SLOPES 6 PERCENT OR GREATER: SURFACES WITH A SLOPE GREATER THAN 6 PERCENT GRADIENT SHALL BE SLIP-RESISTANT.
2. GRATINGS: WALKS, SIDEWALKS AND PEDESTRIAN WAYS SHALL BE FREE OF GRATINGS WHENEVER POSSIBLE. FOR GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS IN GRATINGS SHALL BE LIMITED TO 1/2 INCH (13 MM) IN THE DIRECTION OF TRAFFIC FLOW. (2022 CBC 11B-302.3)
3. CHANGES IN LEVEL: ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE SHALL NOT EXCEED 1/2 INCH. WHEN CHANGES IN LEVEL DO OCCUR, THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1 UNIT VERTICAL IN 2 UNITS HORIZONTAL, EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4 INCH MAY BE VERTICAL. WHEN CHANGES IN LEVELS GREATER THAN 1/2 INCH ARE NECESSARY THEY SHALL COMPLY WITH THE REQUIREMENTS FOR RAMPS PER CBC 11B-405 OR CURB RAMPS PER CBC 11B-406.
4. WARNING CURBS: ABRUPT CHANGES IN LEVEL, EXCEPT BETWEEN A WALK OR SIDEWALK AND AN ADJACENT STREET OR DRIVEWAY, EXCEEDING 4 INCHES IN A VERTICAL DIMENSION, SUCH AS AT PLANTERS OR FOUNDATIONS LOCATED IN OR ADJACENT TO WALKS, SIDEWALKS OR OTHER PEDESTRIAN WAYS, SHALL BE IDENTIFIED BY CURBS PROJECTING AT LEAST 6 INCHES IN HEIGHT ABOVE THE WALK OR SIDEWALK SURFACE TO WARN THE BLIND OF A POTENTIAL DROP OFF. WHEN A GUARDRAIL OR HANDRAIL IS PROVIDED, NO CURB IS REQUIRED WHEN A GUIDE RAIL IS PROVIDED CENTERED 2 TO 4 INCHES ABOVE THE WALK OR SIDEWALK. (SECTION 11B-303.5)
5. PROVIDE A 60" X 60" LEVEL AREA WHERE A DOOR (OR GATE) SWINGS TOWARD THE WALK IN THE ACCESSIBLE ROUTE OF TRAVEL. EXTEND WALK A MINIMUM 24" BEYOND THE STRIKE EDGE OF ANY DOOR (OR GATE) THAT SWINGS TOWARDS THE WALK.
6. WALKS WITH CONTINUOUS GRADIENTS SHALL BE PROVIDED WITH LEVEL AREAS A MINIMUM 5'-0" LONG AT INTERVALS OF 400'-0" MAXIMUM PER SECTION 11B-403.7.
7. A 36" WIDE DETECTABLE WARNING MATERIAL SHALL BE PROVIDED AT BOUNDARIES BETWEEN WALKWAYS AND VEHICULAR WAYS. MATERIAL SHALL COMPLY WITH CRITERIA OF SECTIONS 11B-705.
8. COLOR YELLOW FOR DETECTABLE WARNING SURFACE SHALL CONFORM TO COLOR NO. 33538 PER FEDERAL STANDARD NO. 595C, EXCEPT AT CURB RAMPS, ISLANDS, OR CUT-THROUGH MEDIANS. (CBC SECTIONS 11B-705.1.1.5)
9. PROVIDE MINIMUM 5 YEAR WARRANTY FOR DETECTABLE WARNING SURFACE.

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THAT ALL WORKMANSHIP, MATERIALS AND CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE APPLICABLE CODES AND FEDERAL REQUIREMENTS AND REGULATIONS.
2. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING A BID. THE CONTRACTOR IS ALSO RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
3. VERIFY ALL EXISTING CONDITIONS, GRADES, ELEVATIONS AND DIMENSIONS BEFORE STARTING WORK. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY OR INCONSISTENCY.
4. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL EXISTING UTILITY SERVICES IN THE AREA TO BE EXCAVATED PRIOR TO THE BEGINNING OF EXCAVATION. THE CONTRACTOR SHALL PROTECT ALL UTILITY LINES AND SERVICE LINES TO REMAIN WHICH ARE ENCOUNTERED DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENFORCEMENT OF FEDERAL AND STATE OF CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS AND REGULATIONS.
6. DO NOT SCALE ANY DRAWINGS IN THIS SET. SUBMIT A REQUEST FOR INFORMATION TO THE ARCHITECT PRIOR TO BID IF A SPECIFIC DIMENSION IS NEEDED FOR ITS BID PREPARATION BUT IS NOT AVAILABLE IN THE CONTRACT DOCUMENTS.
7. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
8. ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY BEFORE PROCEEDING WITH ANY WORK SO INVOLVED. NO CHANGES ARE TO BE MADE UNLESS THE ARCHITECT AND THE OWNER ARE NOTIFIED IN WRITING AND APPROVE SUCH A CHANGE ACCORDING TO THE CONTRACT.
9. THE ARCHITECT IS NOT RESPONSIBLE FOR ASBESTOS ABATEMENT.
10. PROVIDE BACKING AT ALL INDICATED LOCATIONS OF FIXTURES, SIGNS, HANDRAILS, ETC.
11. TRADE NAMES AND MANUFACTURERS REFERRED TO ARE FOR QUALITY STANDARDS ONLY. SUBSTITUTIONS WILL BE PERMITTED AS APPROVED BY THE OWNER AND THE ARCHITECT ONLY UPON SUBMITTAL, AND FOR A LIMITED PERIOD.
12. ITEMS SHOWN AS N.I.C. ON PLANS REQUIRE COOPERATION BY THE CONTRACTOR WITH THE OWNER'S THIRD PARTY INSTALLER A, COOPERATION AND COLLATERAL WORK. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF SUPPORT INFRASTRUCTURE FOR N.I.C. EQUIPMENT.
13. CONTRACTOR SHALL VERIFY MINIMUM 2% SITE DRAINAGE TO DRAINAGE INLETS. EXCEPTION: CROSS SLOPE OF ACCESSIBLE PATH OF TRAVEL SHALL BE 2% MAXIMUM.
14. CONTRACTOR SHALL ENSURE ALL FINISH MATERIALS WILL BE FLUSH WHERE NEW FINISH SURFACE MATERIALS JOIN EXISTING TO PROVIDE SMOOTH TRANSITION.
15. CONTRACTOR ACKNOWLEDGES THAT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE TO REPRESENT THE INTENT OF THE WORK TO BE ACCOMPLISHED. CONTRACTOR IS TO INSTALL MATERIALS AND SYSTEMS WITH EXPERIENCED SKILLED CRAFTSMEN WHO WILL BE RESPONSIBLE FOR THE INTEGRITY OF THEIR RESPECTIVE WORK. NOT EVERY DETAIL OF EACH CONDITION IS DRAWN. CONTRACTOR AND SUB-CONTRACTOR ARE RESPONSIBLE FOR COMPLETE WORKMANLIKE INSTALLATION OF ALL MATERIALS AND SYSTEMS AND WILL NEED TO PROVIDE ADDITIONAL DETAILS FOR INSTALLATION BASED ON GENERAL INFORMATION SHOWN. FOR INSTANCE, NOT EVERY WATERPROOFING OR FLASHING DETAIL FOR EVERY CONDITION IS SHOWN. CONTRACTOR IS TO PROVIDE DETAILS AND INSTALLATION FOR A COMPLETE WATERTIGHT INSTALLATION.
16. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CHANGE ORDER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
17. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
18. THE FINISH SURFACE OUTSIDE EVERY EXTERIOR DOOR SHALL SLOPE NO MORE THAN 2% IN ANY DIRECTION IN THE AREA EXTENDING 66" IN FRONT OF THE DOOR AND 30" ON EACH SIDE
19. PROVIDE WEATHERSTRIPPING, CAULKING, FLASHING, AND OTHER MATERIALS AND DETAILING AS SHOWN IN THE DRAWINGS AND AS NECESSARY TO ENSURE A WATERPROOF BUILDING ENVELOPE.
20. WORK SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 33 OF CBC & CFC," FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

Roesling Nakamura Terada Architects
285 N Ventura Ave #102
Ventura, CA 93001
P805.626.5330
F805.626.5350
www.RNTarchitects.com

LICENSED ARCHITECT
TYSON CUNE
NO. C-34436
REN. 1-31-27
STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

ARCH DRAWING INFO AND NOTES

RNT Project No.	1041
Date	07/08/2025
Drawn by	CY
Checked by	CY

Sheet Number

T-300

Autodesk Docs://1003 - VUSD EP Foster Restroom/VUSD Portola RR R22.rvt
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DSA **810**

FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for site alternate design means for fire department emergency vehicle access, and fire suppression water supply.

Information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 7 is to be completed when an alternate means is utilized. Acknowledgement by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and imaged onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and imaged on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy *PI, 09-01: Fire Flow for Buildings.*

PROJECT INFORMATION

School District/Owner:	Ventura Unified School District
Project Name/School:	Portola Elementary School / Construction of 1-1-12x60 Relocatable Toilet Bldg.
Project Address:	6700 Eagle St., Ventura, CA 93003

FIRE & LIFE SAFETY INFORMATION

1.	Has a fire hydrant flow test been performed within the past 12 months? *(If yes, provide a copy of the test data.)*	Yes ☑		No ☐
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes ☑		No ☐
3.	Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal-Fire? *(If yes, indicate FHSZ classification below.)*	Yes ☐		No ☑
	Refer to the following website for FHSZ locations: Fire Hazard Severity Zones in State Responsibility Area	Moderate ☐	High ☐	Very High ☐
	Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)*			WIFA ☐

CONDITION MEANS AND METHODS RESOLUTION		ALTERNATE ACCEPTED			
		Yes	No	N/A	N/R
4.	Emergency vehicle access roadways do not meet CFC requirements.			✓	
4a.	**Acceptable Alternate:** Emergency vehicle and personnel access as proposed by the project architect is acceptable for providing fire suppression and protection of life and property.				
5.	**Fire Hydrants:** Number and spacing does not meet CFC requirements.			✓	
5a.	**Acceptable Alternate:** Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property.				
6.	**Fire Hydrants:** Water flow and pressure are less than CFC minimum.			✓	
6a.	**Acceptable Alternate:** The available flow and pressure is acceptable for providing fire suppression and protection of life and property.				
7.	Location of fire department connection(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements.			✓	
7a.	**Acceptable Alternate:** The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.				

School District Acceptance of Acceptable Design Alternates

By signing this form, the school district acknowledges and accepts the proposed design as an alternative to California Building Code (CBC) and California Fire Code (CFC) minimum requirements, as indicated by one or more of the conditions indicated at items 4a, 5a, 6a or 7a, for providing fire and life safety protection of life and property.

Accepted by: _____ Title: _____

Signature: _____ Date: _____

LOCAL FIRE AUTHORITY (LFA) INFORMATION

LFA Agency Name:	Ventura City Fire Department
LFA Review Official:	Brett Reed
Title:	Fire Marshal
Work Phone:	(805) 654-7795
Work Email:	breed@cityofventura.ca.gov

LFA Reviewer's Signature: _____ Date: _____

VENTURA WATER

Ventura Water

FIREFLOW TEST DATA

PROJECT: _____ ASSESSOR'S PARCEL NUMBER: _____

PROJECT NUMBER: _____ DEVELOPER: Ventura Unified School District

FIRE DEPARTMENT: City of Ventura OBSERVERS: David M/Andrew L/Leon L

WATER PURVEYOR: Ventura Water FIRM: _____

TEST	LOCATION	TIME: DATE	TIME	DAY	C	DIA. (in)	PRESSURES (psi): STATIC	PITOT	RESIDUAL	FLOW RATES (gpm): OBSERVED	ACTUAL at 20 psi
1	Partridge Dr. Accessroom Basketball Courts at Portola Elementary School	1-27-25	2:26 PM		90	2.5	55	30	50	919	2628
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

The formula used to compute the discharge, Q, in gpm from these measurements is:

$Q = 29.83\, cd^2\sqrt{p}$

where c is the coefficient of discharge
d the diameter of the outlet in inches, and
p the velocity of the pressure in psi.

If flow tubes (stream straighteners) are being utilized, a coefficient of 0.95 if suggested unless the coefficient of the tube is known.

Outlet square and Projecting into Barrel Coef (0.70) | Outlet square and Sharp Coef (0.80) | Outlet Smooth and Well Rounded Coef (0.90)

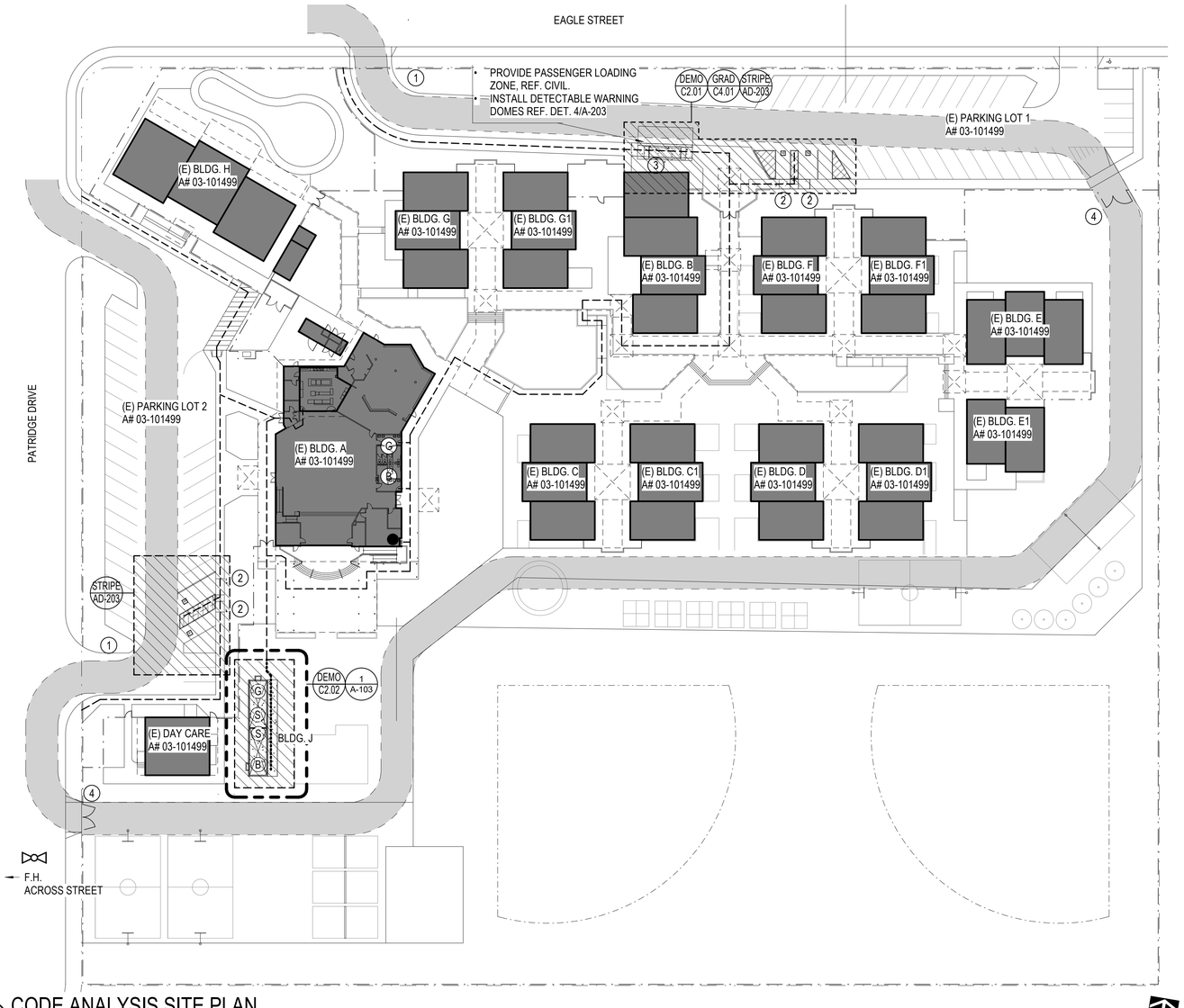
The formula which is generally used to compute the discharge at the specified residual pressure or for any desired pressure drop is:

$Q_R = Q_t \times \frac{h_r^{0.54}}{h_t^{0.54}}$

Q_R = flow available at desired residual pressure
Q_t = flow during test
h_r = pressure drop to desired residual pressure
h_t = pressure drop during test

Return this completed test within 30 days of this date _____: Ventura Water • 336 Sanjon Rd, Ventura, CA 93001

VW 931 9/18



1 CODE ANALYSIS SITE PLAN
1" = 40'-0"

DSA CERTIFICATION STATUS

DSA APPL. NO.	CERTIFICATION STATUS
MEDIA CENTER BUILDING A 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS B 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS C & C1 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS D & D1 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS E & E1 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS F & F1 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS G & G1 03-101499	#2 CERTIFICATION
CLASSROOM BUILDINGS H 03-101499	#2 CERTIFICATION
PARKING LOTS 03-101499	#2 CERTIFICATION
DEMO RESTROOM BUILDING J 03-101499	

PARKING CALCULATION

LOT 1	EXISTING	REQUIRED	PROPOSED
PARKING SPACES:	38	N/A	37
ACCESSIBLE:	0	2	2
VAN ACCESSIBLE:	0	1	1

LOT 2	EXISTING	REQUIRED	PROPOSED
PARKING SPACES:	38	N/A	38
ACCESSIBLE:	0	2	2
VAN ACCESSIBLE:	0	1	1

ACCESSIBLE P.O.T. NOTES

1. ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAX SLOPE, OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAX, AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP RESISTANT. CROSS SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5%, UNLESS OTHERWISE INDICATED. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM, AND PROTRUDING OBJECTS GREATER THAN 4" FROM THE WALL AND ABOVE 27" AND LESS THAN 80". ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.
2. ALL GRATINGS IN PATH OF TRAVEL SHALL HAVE GAPS NO GREATER THAN 1/2" IN THE DIRECTION OF TRAVEL.
3. ALL EXISTING BUILDINGS, PARKING LOTS, PATHS OF TRAVEL, SANITARY FACILITIES, DRINKING FOUNTAINS, SIGNAGE & PUBLIC TELEPHONES DSA CERTIFIED UNDER A#'S INDICATED.
4. THE PATH OF TRAVEL (P.O.T.) IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQ. FOR ALTERATIONS, ADDITIONS, AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE P.O.T. WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE P.O.T THAT WEER DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS, AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE P.O.T. THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.
5. DURING CONSTRUCTION, IF P.O.T. ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

CODE ANALYSIS

RESTROOM BUILDING (PORTABLE)

CONSTRUCTION TYPE:	IV-B	# OF EXITS REQUIRED:	4
OCCUPANCY:	E	# OF EXITS PROVIDED:	4
MAX OCCUPANT LOAD:	17 (PER FIXTURE #)	# OF STORIES ALLOWED:	1
SPRINKLED:	NO	# OF STORIES PROVIDED:	1
AREA:	720 SF		

LEGEND

- PROPERTY LINE
- NEW ACCESSIBLE PATH OF TRAVEL
- EXISTING ACCESSIBLE PATH OF TRAVEL A# 03-101499
- (E) FIRE TRUCK ACCESS A# 03-101499 20'-0" WIDE MIN. 28' MIN. CENTER LINE TURNING RADIUS.
- AREA OF WORK
- (E) FIRE HYDRANT
- (B) ACCESSIBLE BOYS' TOILET ROOM
- (G) ACCESSIBLE GIRLS' TOILET ROOM
- (S) ACCESSIBLE STAFF TOILET ROOM
- TRUNCATED DOMES, REF. 20 / AD-203
- (E) LIGHT A# 03-101499
- (E) ACCESSIBLE DRINKING FOUNTAIN A# 03-101499
- (1) PROVIDE TOW-AWAY SIGN, REF. 14 / AD-203
- (2) (E) ACCESSIBLE PARKING DETAIL REQUIREMENTS REF. AD-203
- (3) ACCESSIBLE LOADING ZONE REF. CIVIL
- (4) PROVIDE KNOX BOX ON GATE

ARCHITECT'S STATEMENT

REFER TO DSA PR 15_01
A. THE P.O.T. IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE P.O.T. WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE P.O.T. THAT WERE DETERMINED TO BE NONCOMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE P.O.T. THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.
B. DURING CONSTRUCTION, IF P.O.T. ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

FIRE DEPARTMENT NOTES

A. PROVIDE A MINIMUM, UNOBSTRUCTED WIDTH OF 20 FEET CLEAR TO SKY, VEHICULAR ACCESS TO WITHIN 150 FEET OF ALL PORTIONS OF THE EXTERIOR WALLS. FIRE CODE 902.2.1
B. EXISTING FIRE DEPARTMENT ACCESS TO REMAIN.
C. VEHICULAR ACCESS MUST BE PROVIDED AND MAINTAINED SERVICEABLE THROUGHOUT CONSTRUCTION.
D. THE FIRE FLOW FOR ON-SITE HYDRANT MEETS THE REQUIREMENTS FOR THIS FIRE AUTHORITY.
E. INSPECTION FOR COMPLIANCE WITH THESE CONDITIONS AND GENERAL SAFETY WILL BE REQUIRED PRIOR TO OCCUPANCY.

IDENTIFICATION STAMP
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APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

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LICENSED ARCHITECT TYSON CLINE NO. C-34436 REN. 1-31-27 STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

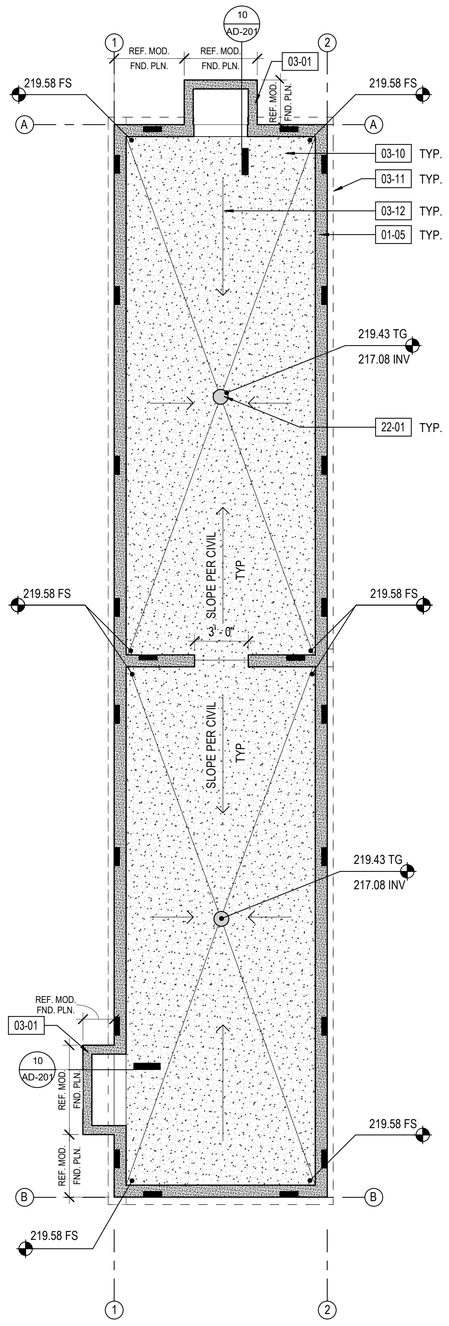
CODE ANALYSIS SITE PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	CY, EE
Checked by	CY

Sheet Number

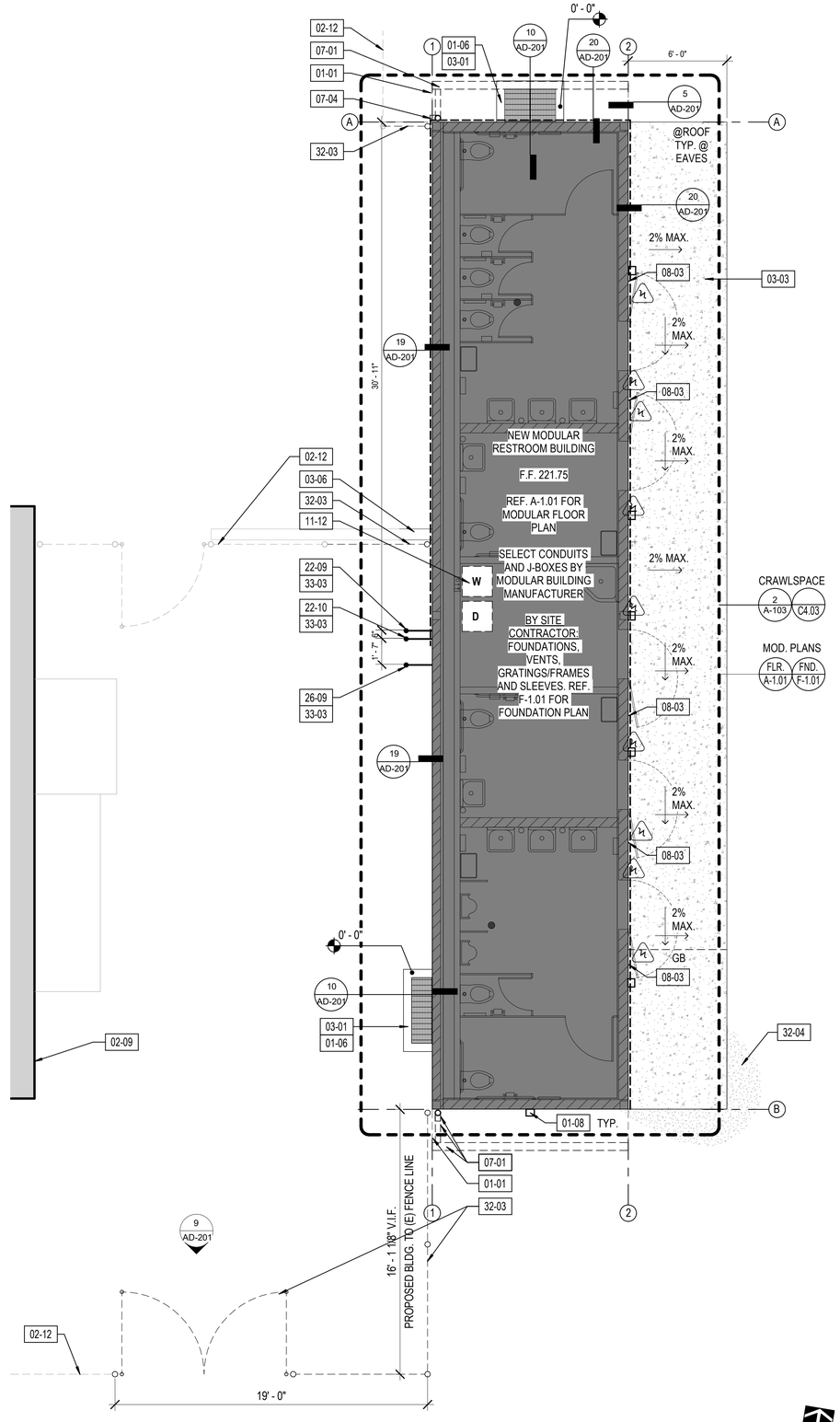
A-101

Autodesk Docs://1003 - VUSD EP Foster Restroom/VUSD Portola RR R22.rvt
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2 CRAWLSPACE PLAN
1/4" = 1'-0"

NORTH



1 FLOOR PLAN
1/4" = 1'-0"

NORTH

GENERAL NOTES FOR SITE CONTRACTOR

1. REFER TO SHEET T-100 FOR PROJECT INFORMATION AND STANDARDS.
2. REFER TO SHEET T-200 FOR ARCHITECTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET T-300 FOR GENERAL NOTES.
4. REFER TO "T" SHEETS AND A-101 FOR ADDITIONAL CODE RELATED INFORMATION INCLUDING OCCUPANCY LOADS, CODE REQUIRED EXITS AND PATH OF EGRESS.
5. REFER TO CIVIL, PLUMBING, ELECTRICAL AND MODULAR BUILDING SHEETS FOR MORE INFORMATION.
6. ALL ITEMS ARE CONSIDERED NEW UNLESS NOTED AS (E) EXISTING.
7. IF SHEET IS LESS THAN 24"x36" IT IS A REDUCED PRINT SCALE REDUCED ACCORDINGLY.
8. NON-SLIP FINISH REQUIRED ON ALL WALK SURFACES, REFER TO ACCESSIBILITY NOTES T-300.
9. PAINT EXPOSED PLUMBING AND ELECTRICAL PIPING AND CONDUITS TO MATCH BUILDING.
10. COORDINATE IRRIGATION SHUT OFF WITH OWNER. REPAIR IRRIGATION DAMAGED BY CONSTRUCTION OPERATIONS.
11. RESTORE TURF DAMAGED BY CONSTRUCTION OPERATIONS.
12. VERIFY LOCATIONS OF EXISTING UTILITIES AND RELOCATE OUTSIDE BUILDING FOOTPRINT.
13. PROVIDE CEMENT PLASTER WALL AND SOFFIT FINISH. REF. MODULAR MANUFACTURER DRAWINGS FOR DETAILS AND CONTROL JOINT LOCATIONS. WEATHER RESISTANT BARRIER BY MODULAR MANUFACTURER.
14. REFER TO T-100 WORK EXEMPT FOR WORK EXEMPT FROM DSA 103 STRUCTURAL TESTS / SPECIAL INSPECTIONS.

LEGEND

- PROVIDE SIGNAGE, REFER TO MODULAR DRAWINGS
- NEW BUILDING FLOOR PLAN, REFER TO MODULAR DRAWINGS
- CONCRETE WALK, REFER TO CIVIL DRAWINGS FOR EXTENT AND LOCATION OF CONTROL AND EXPANSION JOINTS
- INSTALL SELF-ADHERING WATERPROOFING 12" ABOVE FINISH FLOOR TO 6" BELOW TOP OF FOOTING

KEYNOTES

01-01	ROOF OVERHANG ABOVE.
01-05	PROVIDE FOUNDATION, STEM WALL AND EMBED PLATES AND COORDINATE PLACEMENT OF MODULAR RESTROOM BUILDING BY MODULAR MANUFACTURER. REF. MOD. DWGS.
01-06	REFER TO CRAWL SPACE PLAN 2/-
01-08	INSTALL LIGHT, FURNISHED BY MODULAR MANUFACTURER. REF. MOD. MFR. DWGS.
02-09	P.I.P. (E) BUILDING
02-12	P.I.P. (E) CHAIN-LINK FENCE
03-01	PROVIDE CONCRETE FOUNDATION ACCESS WELL WALL AND GRATE PER MODULAR PLANS. MITERED STEEL FRAME FURNISHED BY AND INSTALLED BY SITE CONTRACTOR. NOT IN ACCESSIBLE PATH OF TRAVEL. REFER TO MODULAR DRAWINGS.
03-03	CONSTRUCT CONC. LANDING, MAX 2% SLOPE ANY DIRECTION AT ACCESSIBLE DOOR CLEAR SPACE. REF. CIVIL.
03-06	CONC. CURB, REF. CIVIL.
03-10	PROVIDE 2" CONC. GOPHER SLURRY AND VAPOR RETARDER, REFER TO CIVIL FOR SLOPES AND ELEVATIONS
03-11	EDGE OF FOOTING, REFER TO MODULAR DRAWINGS
03-12	SLOPE TO DRAIN, REF. PLUMB. AND CIVIL.
07-01	PROVIDE GUTTER AND DOWNSPOUT. REFER TO MODULAR DRAWINGS FOR COORDINATION OF FLASHING. PROVIDE GALVANIZED SCHEDULE 40 PIPE FOR DOWNSPOUT WITHIN 6' OF GRADE WITH WELDED AND MITERED ELBOWS, PAINT TO MATCH DOWNSPOUT.
07-04	DIRECT DOWNSPOUT TOWARDS GRASS.
08-03	PROVIDE WALL MOUNTED DOOR STOP AT 6'-8" A.F.F AND 2' FROM HINGE SIDE OF DOOR, HAGER 255S OR EQUAL.
11-12	INSTALL WASHER AND DRYER, O.F.C.I.
22-01	PROVIDE STORM DRAIN INLET, REF. PLUMBING.
22-09	2"Ø WATER P.O.C. 18" FROM FACE OF BUILDING, REFER TO MODULAR DRAWINGS, PLUMBING AND CIVIL FOR SITE CONTINUATION.
22-10	4"Ø WASTE P.O.C. 18" FROM FACE OF BUILDING, REFER TO MODULAR DRAWINGS, PLUMBING AND CIVIL FOR SITE CONTINUATION.
26-09	ELECTRICAL, DATA AND FIRE ALARM P.O.C., REFER TO ELECTRICAL FOR SITE CONTINUATION AND MODULAR DRAWINGS.
32-03	PROVIDE GALVANIZED CHAIN LINK FENCING AND GATES.
32-04	ASPHALT, TYP. REF. CIVIL.
33-03	PROVIDE SLEEVE THROUGH FOUNDATION, REFER TO MODULAR DRAWINGS.

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LICENSED ARCHITECT
TYSON CLINE
NO. C-34436
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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

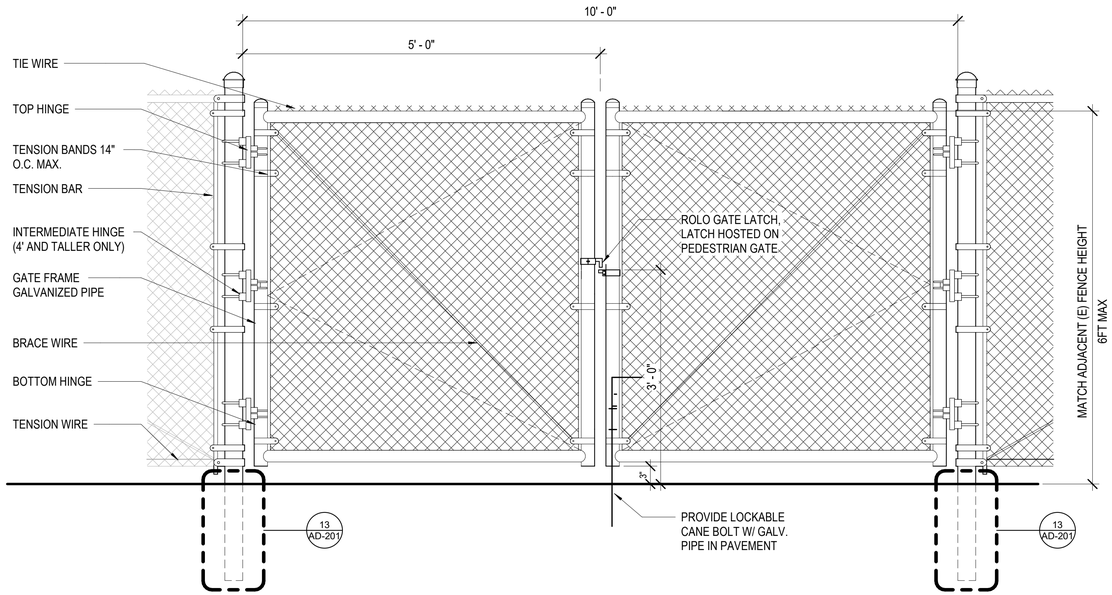
FLOOR PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	CY, EE
Checked by	CY

Sheet Number

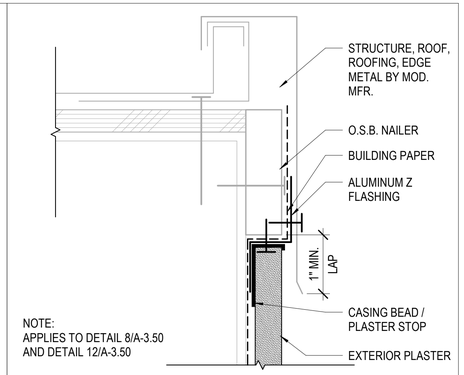
A-103

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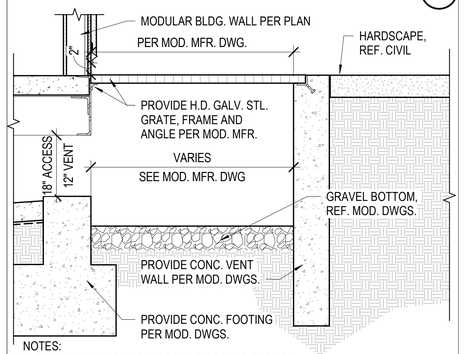
NOTE:
POLES SUPPORTING OPEN MESH FENCES LESS THAN 8FT TALL ARE EXEMPT FROM DSA SS REVIEW PER DSA IR A-22

SWINGING CHAIN LINK MAINTENANCE GATE 1" = 1'-0" 9



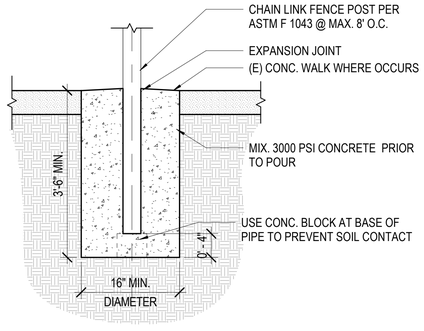
NOTE:
APPLIES TO DETAIL 8/A-3.50 AND DETAIL 12/A-3.50

STUCCO/PLASTER STOP 6" = 1'-0" 5

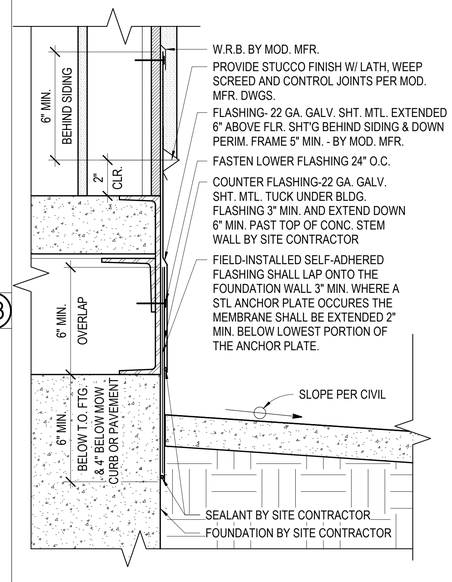


NOTES:
1. SEE MOD MFR. DWGS. FOR VENT/ACCESS SECTION.
2. SEE DETAIL 20/-- FOR ADDITIONAL INFORMATION.

VENT/ACCESS 1" = 1'-0" 10

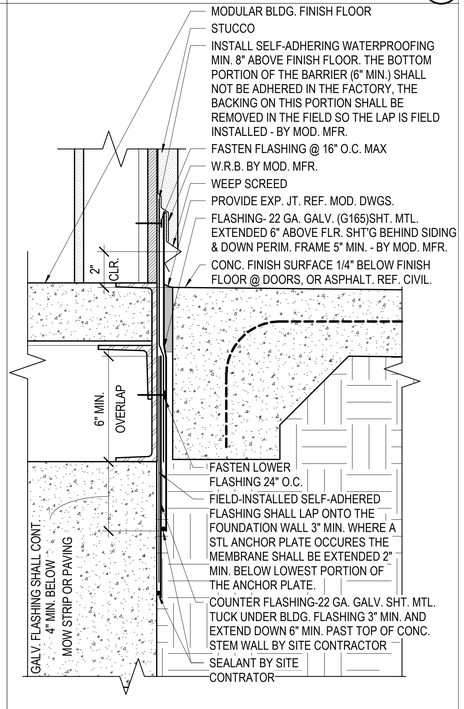


FENCE POST FOOTING 1" = 1'-0" 13



NOTE:
SEE DETAIL 20/--- FOR ADDITIONAL INFORMATION
SEE DSA IR 16-1 FOR ADDITIONAL REQUIREMENTS

FLASHING @ GRADE 3" = 1'-0" 19



NOTE:
SEE DSA IR 16-1 FOR ADDITIONAL REQUIREMENTS

FLASHING PAVING 3" = 1'-0" 20

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LICENSED ARCHITECT TYSON CUNE NO. C-34436 REN. 1-31-27 STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

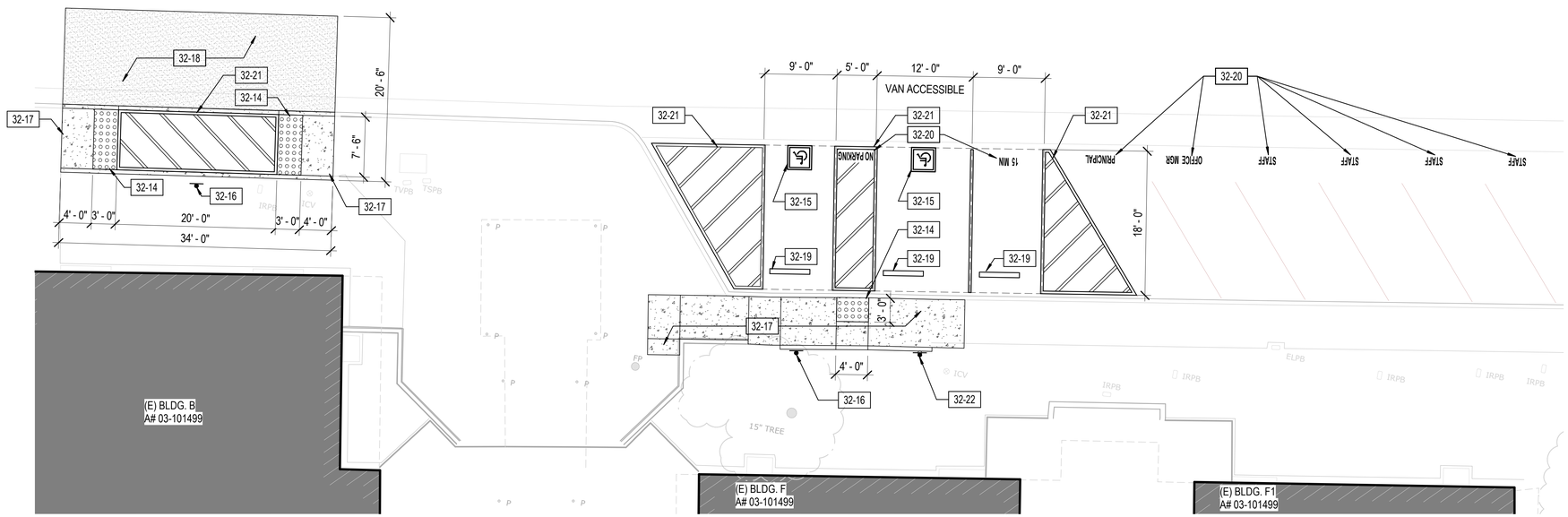
DETAILS

RNT Project No.	1041
Date	07/08/2025
Drawn by	CY, EE
Checked by	CY

Sheet Number

AD-201

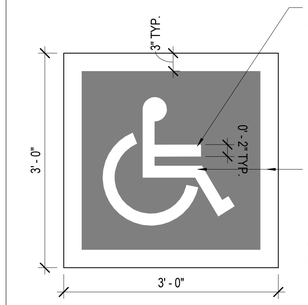
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KEYNOTES

32-14	TRUNCATED DOMES, REFER TO 20/AD-203
32-15	ACCESSIBLE PARKING PAVEMENT SYMBOL, REFER TO 5/AD-203
32-16	ACCESSIBLE PARKING SIGN, REFER TO 10/AD-203
32-17	CONCRETE SITEWORK, REFER TO CIVIL
32-18	ASPHALT PAVING, REFER TO CIVIL
32-19	PRECAST WHEEL STOP, REFER TO 15/AD-203
32-20	PAINT 12" TALL WHITE LETTERING
32-21	PAINT 4" WIDE WHITE HATCHED LINES @ 36" O.C. MAX. WITH 4" WIDE BLUE BORDER
32-22	VAN ACCESSIBLE PARKING SIGN, REFER TO 10/AD-203

PARKING LOT 1 ENLARGED PLAN — 1/8" = 1'-0" (9)



INTERNATIONAL SYMBOL OF ACCESSIBILITY TO BE PAINTED WHITE ON BLUE BACKGROUND (FS 15090 IN FED. STD. 595C) ON PAVEMENT PER CBC FIGURE 11B-703.7.2.1 AND CBC 11B-502.6.4

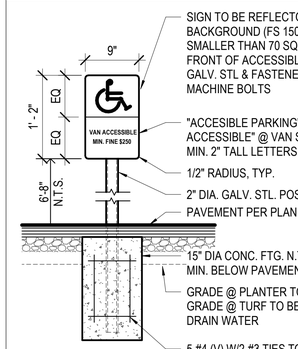
WHITE REFLECTORIZED STRIPING 2 COATS, TYP.

NOTE:

PROVIDE SYMBOL AT ACCESSIBLE PARKING STALLS

CBC 11B-502.6.4, 11B-703.7.2.1

ACC. PARKING PAVEMENT SYMBOL — 1" = 1'-0" (5)



SIGN TO BE REFLECTORIZED WHITE ON BLUE BACKGROUND (FS 15090 IN FED. STD. 595C) NOT SMALLER THAN 70 SQ. INCHES & CENTERED IN FRONT OF ACCESSIBLE STALL - SIGN SHALL BE GALV. STL & FASTENED TO POST W/ (2) GALV. MACHINE BOLTS

"ACCESIBLE PARKING". "VAN ACCESSIBLE" @ VAN STALLS ONLY. MIN. 2" TALL LETTERS

1/2" RADIUS, TYP.

2" DIA. GALV. STL. POST

PAVEMENT PER PLAN

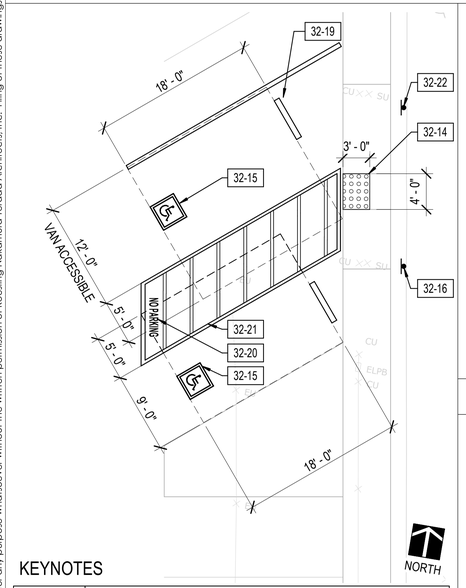
15" DIA CONC. FTG. N.T.S. - B.O. FTG. TO BE 24" MIN. BELOW PAVEMENT OR GRADE

GRADE @ PLANTER TO BE 4" BELOW T.O. FTG. GRADE @ TURF TO BE FLUSH AND SLOPED TO DRAIN WATER

5-#4 (V) W/2-#3 TIES TOP & BOTTOM

CBC 11B-502.6, 11B-703.5.5

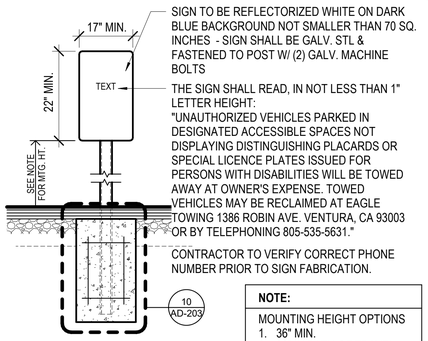
ACCESSIBLE PARKING SIGN — 1" = 1'-0" (10)



KEYNOTES

32-14	TRUNCATED DOMES, REFER TO 20/AD-203
32-15	ACCESSIBLE PARKING PAVEMENT SYMBOL, REFER TO 5/AD-203
32-16	ACCESSIBLE PARKING SIGN, REFER TO 10/AD-203
32-17	CONCRETE SITEWORK, REFER TO CIVIL
32-18	ASPHALT PAVING, REFER TO CIVIL
32-19	PRECAST WHEEL STOP, REFER TO 15/AD-203
32-20	PAINT 12" TALL WHITE LETTERING
32-21	PAINT 4" WIDE WHITE HATCHED LINES @ 36" O.C. MAX. WITH 4" WIDE BLUE BORDER
32-22	VAN ACCESSIBLE PARKING SIGN, REFER TO 10/AD-203

PARKING LOT 2 ENLARGED PLAN — 1/8" = 1'-0" (16)



SIGN TO BE REFLECTORIZED WHITE ON DARK BLUE BACKGROUND NOT SMALLER THAN 70 SQ. INCHES - SIGN SHALL BE GALV. STL & FASTENED TO POST W/ (2) GALV. MACHINE BOLTS

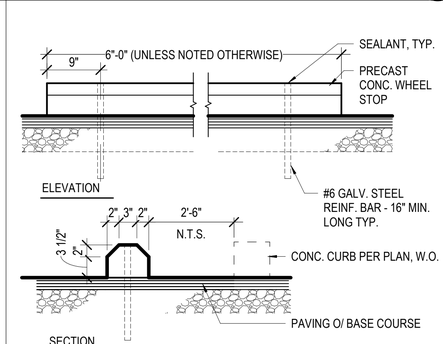
THE SIGN SHALL READ, IN NOT LESS THAN 1" LETTER HEIGHT:
"UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENCE PLATES ISSUED FOR PERSONS WITH DISABILITIES WILL BE TOWED AWAY AT OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT EAGLE TOWING 1386 ROBIN AVE. VENTURA, CA 93003 OR BY TELEPHONING 805-535-5631."

CONTRACTOR TO VERIFY CORRECT PHONE NUMBER PRIOR TO SIGN FABRICATION.

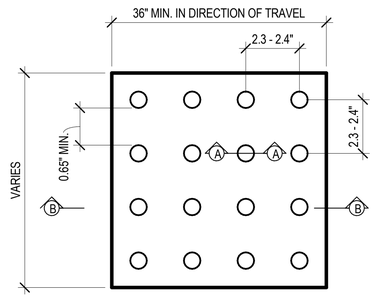
NOTE:

MOUNTING HEIGHT OPTIONS
1. 36" MIN.
2. 80" IN PATH OF TRAVEL

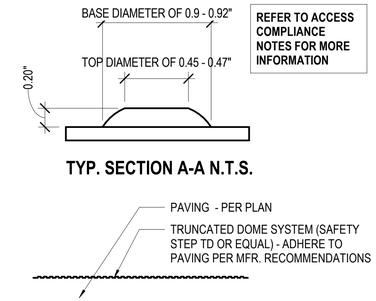
ACCESSIBLE PARKING ENTRY SIGN — 1" = 1'-0" (14)



WHEEL STOP PRE-CAST — 1" = 1'-0" (15)



TYP. ALIGNED PLAN N.T.S.



TYP. SECTION A-A N.T.S.

SECTION B-B

REFER TO ACCESS COMPLIANCE NOTES FOR MORE INFORMATION

CBC 11B-705.1

DETECTABLE WARNING — 1" = 1'-0" (20)

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TYSON CUNE
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FILE NO.: 56-40

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DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

ACCESSIBLE PARKING DETAILS

RNT Project No.	1041
Date	07/08/2025
Drawn by	CY, EE
Checked by	CY

Sheet Number

AD-203

CIVIL IMPROVEMENTS FOR PORTOLA MODULAR RESTROOM IN THE CITY OF VENTURA, CA

SURVEY NOTES

1. MAPPING

TOPOGRAPHIC MAPPING WAS COMPILED AT A SCALE OF 1"=10, WITH A 1 FOOT CONTOUR INTERVAL FROM DATA COLLECTED IN A FIELD SURVEY PERFORMED USING CONVENTIONAL EQUIPMENT AND PROCEDURES ON OCTOBER 11, 2024, AT THE REQUEST OF VUSD.

2. RECORD COMPILED BOUNDARY AND EASEMENTS

BOUNDARY AND EASEMENT MAPPING WAS NOT REQUESTED FOR THIS PROJECT. NO BOUNDARY MONUMENTS HAVE BEEN SEARCHED FOR OR LOCATED AS A PART OF THIS SURVEY AND NO OFFICE BOUNDARY OR EASEMENT MAPPING HAS BEEN COMPLETED.

3. BASIS OF BEARINGS AND COORDINATES

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM NAD83, ZONE 5, EPOCH 2017.50 AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS) AND/OR CONTINUOUS OPERATING REFERENCE STATIONS (CORS) SOMT & VNCO BEING SOUTH 73°35'09" WEST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC).

4. ELEVATIONS

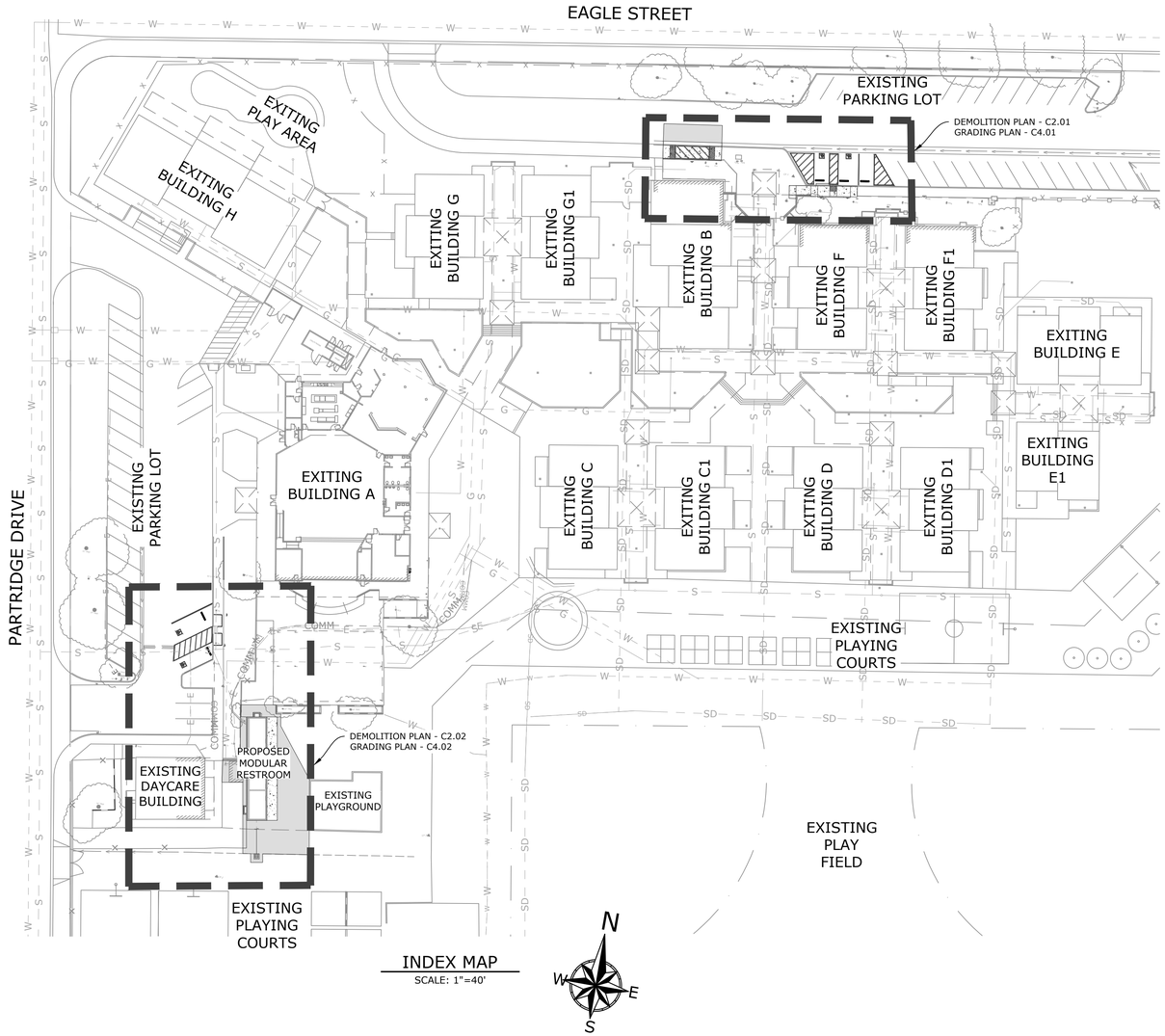
THE VERTICAL DATUM OF THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), PER GPS TIES & GEOID MODELING (GEOID18) TO CGPS STATION SOMT. ELLIPSOID HEIGHTS ARE CONSTRAINED PER CSRC. NO COUNTY BENCHMARKS WERE MEASURED IN THIS SURVEY.

5. UTILITIES

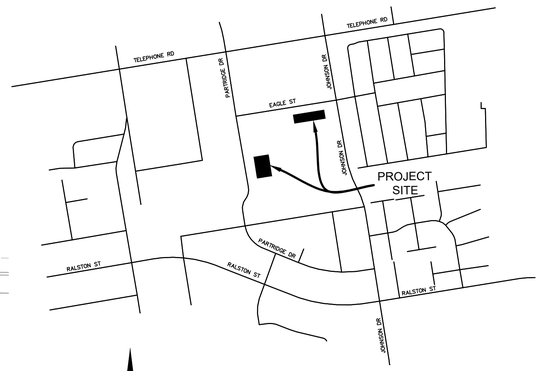
SURFACE UTILITY FEATURES SHOWN HEREON WERE LOCATED AS A PART OF THE FIELD SURVEY PERFORMED BY ECG BASED ON VISIBILITY ON THE DATE OF SURVEY. NO RESEARCH OR MAPPING OF SUBSURFACE UTILITIES HAS BEEN PERFORMED.

LEGEND

- PROPOSED AC PAVING
- PROPOSED PC CONCRETE PAVING
- PROPOSED SAWCUT
- PROPOSED FENCE
- EXISTING FENCE
- RIGHT OF WAY/PROPERTY LINE
- GRADE BREAK
- 221 PROPOSED MINOR CONTOURS
- 220 PROPOSED MAJOR CONTOURS
- 221 EXISTING MINOR CONTOURS
- 220 EXISTING MAJOR CONTOURS
- EXISTING STREET CENTERLINE
- SD PROPOSED STORM DRAIN LINE
- OHW EXISTING OVER HEAD WIRE
- E EXISTING ELECTRICAL LINE
- G EXISTING GAS LINE
- W EXISTING WATER LINE
- SD EXISTING STORM DRAIN LINE
- FW EXISTING FIREWATER LINE
- S EXISTING SEWER LINE
- COMM EXISTING COMMUNICATION LINE
- 221.55 FS PROPOSED ELEVATION
- (221.30) EG EXISTING ELEVATION
- 1.5% PROPOSED GRADE



INDEX MAP
SCALE: 1"=40'



VICINITY MAP
N.T.S.

ABBREVIATIONS

ABBR	ABBREVIATION	FG	FINISH GRADE	R.O.W.	RIGHT OF WAY
A.C.	ASPHALT CONCRETE	FL	FLOWLINE	RPD	RESIDENTIAL PLANNED DEVELOPMENT
A.C.P.	ASBESTOS CONCRETE PIPE	FS	FINISHED SURFACE	RT	RIGHT
AP	ANGLE POINT	FT/S	FEET PER SECOND	RW	RECLAIMED WATER
ARCH.	ARCHITECT	FUT	FUTURE	R/W	RIGHT OF WAY
ASSOC.	ASSOCIATION	GB	GRADE BREAK	SCE	SOUTHERN CALIFORNIA EDISON
AVE	AVENUE	GF	GARAGE FLOOR	SCO	SEWER CLEAN OUT
BC	BEGIN CURVE	GM	GAS METER	SD	STORM DRAIN
BCR	BEGIN CURB RETURN	G.P.	GRADING PERMIT	SDMH	STORM DRAIN MANHOLE
BDY.	BOUNDARY	GV	GAS VALVE	SDR	STANDARD DIMENSION RATIO
BEG	BEGIN	HGL	HYDRAULIC GRADE LINE	S.E.	SAND EQUIVALENT
BFP	BACKFLOW PREVENTER	HOA	HOME OWNERS ASSOCIATION	SF	SQUARE FOOT/FEET
BLDG	BUILDING	HORZ.	HORIZONTAL	SHT	SHEET
BOT	BOTTOM OF PIPE	HP	HIGH POINT	SHTS	SHEETS
BS	BOTTOM OF STEP	HPS	HIGH PRESSURE SODIUM	S.L.	SEWER LATERAL
BVC	BEGIN VERTICAL CURVE	HW	HEADWALL	SLDS	STANDARD LAND DEVELOPMENT SPECIFICATIONS
BW	BACK OF WALK OR BOTTOM OF WALL	ICP	INTERLOCKING CONCRETE PAVERS	S'LY	SOUTHERLY
CB	CATCH BASIN	ICV	IRRIGATION CONTROL VALVE	SMH	SEWER MANHOLE
CBC	CALIFORNIA BUILDING CODE	INT.	INTERSECTION	S.N.S.	STREET NAME SIGN
C-C	CENTER TO CENTER	INV	INVERT	SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
CF	CURB FACE	IRR	IRRIGATION	SS	SANITARY SEWER
CFS	CUBIC FEET PER SECOND	LAT	LATERAL	SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
CL	CENTERLINE OR CLASS	LDM	LAND DEVELOPMENT MANUAL	ST	STREET
CLF	CHAIN LINK FENCE	LDSP	LANDSCAPE	STD	STANDARD
CLR	CLEAR	LF	LINEAR FEET	SW	SIDEWALK
CMB	CRUSHED MISCELLANEOUS BASE	LN	LANE	SWCT	SAWCUT
CMP	CORRUGATED METAL PIPE	LP	LOW POINT	TC	TOP OF CURB
CMU	CONCRETE MASONRY UNIT	LT	LEFT	TEL	TELEPHONE
CO	CLEANOUT	MAX	MAXIMUM	TG	TOP OF GRATE
CONC	CONCRETE	MH	MANHOLE	TF	TOP OF FOOTING
CONT	CONTROL	MIN	MINIMUM	TI	TRAFFIC INDEX
CPS	CONNECTOR PIPE SCREEN	MOC	MIDDLE OF CURVE	TMH	TELEPHONE MANHOLE
CT	COURT	N'LY	NORTHERLY	TOE	TOE OF SLOPE
DBL	DOUBLE	NO.	NUMBER	TOP	TOP OF SLOPE OR PIPE
DES	DESIGN	N.T.S.	NOT TO SCALE	TPL	TRIPLE
DG	DECOMPOSED GRANITE	O.C.	ON CURB OR ON CURVE OR ON CENTER	TR	TRACT
DI	DROP INLET	OHW	OVERHEAD WIRE	TS	TOP OF STEP
D.I.	DUCTILE IRON	PB	PULL BOX	TW	TOP OF WALL
DIA	DIAMETER	P.C.C.	PORTLAND CEMENT CONCRETE OR POINT OF COMPOUND CURVE	TYP	TYPICAL
DR	DRIVE	PI	POINT OF INTERSECTION	UG	UNDERGROUND
DWG	DRAWING	P/L	PROPERTY LINE	VAR	VARIES
EASE	EASEMENT	PMB	PROCESSED MISC. BASE	V.C.	VERTICAL CURVE
EBAA	EBAA IRON, INC.	POC	POINT OF CONNECTION	VERT.	VERTICAL
EC	END CURVE	PRC	POINT OF REVERSE CURVE	VLT	VAULT
ECR	END CURB RETURN	PT	POINT	VLV	VALVE
EG	EXISTING GROUND	PTDF	PRESSURE TREATED DOUGLAS FIR	W	WATER
ELEC	ELECTRIC	PUB	PUBLIC	W'LY	WESTERLY
ELEV	ELEVATION	PVC	POLYVINYL CHLORIDE	WM	WATER METER
E'LY	EASTERLY	PVMT	PAVEMENT	WSEL	WATER SURFACE ELEVATION
ELLIP	ELLIPTICAL	PVT	PRIVATE	WV	WATER VALVE
EP	EDGE OF PAVEMENT	RCB	REINFORCED CONCRETE BOX	W.W.M.	WELDED WIRE MESH
ESMT	EASEMENT	RCP	REINFORCED CONCRETE PIPE	YR	YEAR
EVC	END VERTICAL CURVE	RD	ROAD		
EQ	EQUIVALENT	RET	RETAINING		
FED.	FEDERAL	RWGV	RESILIENT WEDGE GATE VALVE		
FF	FINISHED FLOOR				

ENGINEER'S NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN ON THESE PLANS WAS OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND ANY DISCREPANCY BETWEEN THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR ALSO AGREES TO DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

JOSIAH D. JENISON — 77454 — R.C.E. — 06/27/2025 DATE

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C5.01	DETAIL SHEET

Know what's below. Call before you dig.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

Roesling Nakamura Terada Architects

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

COVER SHEET

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ

Sheet Number

C1.01

Autodesk Docs://1032 - VUSD Portable Athletic Bldg Ventura HS/1023 VUSD VHS Port Team Room - rvt22.rvt
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GENERAL NOTES

1. CONTRACTOR SHALL REVIEW GRADING AND DRAINAGE AND UTILITY PLANS; AND PROTECT ALL EXISTING FACILITIES TO REMAIN. ADJUST ALL UTILITY SURFACE FEATURES TO FINAL GRADES.
2. CONTRACTOR SHALL REMOVE ALL TREES AND EXISTING ROOTS SYSTEMS WITHIN THE PROJECT AREA TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO EXISTING BUILDINGS AND HYDRANTS THROUGHOUT CONSTRUCTION AND COORDINATE ANY SHUT DOWNS WITH THE OWNER'S REPRESENTATIVE.
4. CONTRACTOR SHALL THOROUGHLY REVIEW CONSTRUCTION DOCUMENTS IN THEIR ENTIRETY FOR PROJECT DEMOLITION AND CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING FACILITIES AND FEATURES WITHIN THE PROJECT LIMIT WHICH ARE REQUIRED FOR THE PROJECT CONSTRUCTION. CONTRACTOR SHALL PROTECT ALL EXISTING FACILITIES THAT ARE TO REMAIN IN PLACE AND PROMPTLY REPAIR ANY DAMAGES CAUSED BY DEMOLITION AND CONSTRUCTION AT ITS OWN EXPENSE. ALL EXISTING UTILITIES WITHIN THE BUILDING FOOTPRINT SHALL BE CAPPED AT THE NEAREST TEE, VALVE, OR MANHOLE. CONTRACTOR SHALL REMOVE ALL DEMOLITION/WASTE MATERIALS FROM THE PROJECT SITE AND LEGALLY DISPOSE OF THEM AT A DUMP SITE OFF-CAMPUS.
6. REVIEW LANDSCAPE PLANS FOR IRRIGATION DESIGN TO REMOVE EXISTING IRRIGATION SYSTEM IN CONFLICT WITH CONSTRUCTION, AND CONSTRUCT NEW FACILITIES.
7. CONTRACTOR SHALL CONSTRUCT EROSION CONTROL DEVICES PER PROJECT EROSION CONTROL PLANS AND AS REQUIRED FOR SITE CONDITIONS. NO SILT AND DEBRIS SHALL BE ALLOWED TO DEPART FROM THE CONSTRUCTION LIMITS OR ENTER THE STORM DRAIN SYSTEM.
8. CONTRACTOR SHALL PREPARE AND PROVIDE ALL CONSTRUCTION STAKING FOR THE CONSTRUCTION OF THIS PROJECT.
9. CONTRACTOR SHALL USE PROVIDED COORDINATES TO INITIALLY LOCATE THE BUILDINGS AND CONSTRUCT THE BUILDINGS PER THE ARCHITECTURAL PLANS. THE AUTOCAD DRAWING FILES MAY BE PROVIDED TO THE CONTRACTOR FOR STAKING PURPOSES DURING CONSTRUCTION.
10. CONTRACTOR SHALL PROVIDE A SUITABLE STABILIZED CONSTRUCTION ENTRANCE/EXIT AT ALL ACCESS POINTS FROM THE JOB SITE TO PREVENT TRACKING OF MUD ONTO CAMPUS AND PUBLIC ROADS. ADDITIONALLY PROVIDE SWEEPER SERVICE ON THE FREQUENCY NECESSARY TO MITIGATE UNDESIRABLE CONDITIONS, AS APPROVED BY THE OWNER'S REPRESENTATIVE.
11. CONTRACTOR SHALL SUBMIT A DRAWING OF THE PROPOSED STAGING AREA AND CONSTRUCTION FENCING TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. CONSTRUCTION STAGING SHALL NOT BLOCK FIRE ENGINE ACCESS OR EXISTING FIRE HYDRANTS.

GENERAL DEMOLITION NOTES

1. DEMOLITION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO REMOVE EXISTING STRUCTURES, UTILITIES, AND ALL OTHER MATERIAL FROM THE PROJECT SITE.
2. DISPOSAL OF MATERIALS SHALL BE DONE IN A SAFE AND LEGAL MANNER AND SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
3. THE CONTRACTOR SHALL CONTINUOUSLY CLEAN AND REMOVE DEMOLISHED MATERIALS FROM THE SITE EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.
4. EXISTING UNDERGROUND UTILITIES SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND ANY ITEMS DAMAGED DURING THE DEMOLITION PROCESS THAT ARE INTENDED TO REMAIN.
6. ALL EXISTING LANDSCAPE INSIDE THE LIMITS OF WORK SHALL BE REMOVED, UNLESS OTHERWISE NOTED ON THE PLANS.
7. ALL SURFACE FEATURES FOR EXISTING UNDERGROUND UTILITIES SHALL REMAIN AND BE ADJUSTED TO MATCH NEW FINISH GRADE - UNLESS OTHERWISE NOTED.
8. SAWCUT EXISTING PAVEMENT FULL DEPTH TO A CLEAN STRAIGHT EDGE.
9. ALL TREE ROOTS, ABANDONED IRRIGATION LINES, UTILITY SERVICES, SEPTIC TANKS (AS NOTED) AND SIMILAR MATERIALS SHALL BE REMOVED FROM THE SITE AND VOIDS CREATED THEREBY SHALL BE PROPERLY FILLED AND COMPACTED AS DIRECTED BY THE ENGINEER.
10. CONTRACTOR TO COORDINATE WITH CITY STAFF FOR LOCATION OF EXISTING COMMUNICATION AND ELECTRICAL STUBS.
11. EXCAVATIONS AND DEPRESSIONS RESULTING FROM FOUNDATION AND BELOW-GRADE STRUCTURE REMOVAL SHALL NOT BE FILLED IN PRIOR TO OBSERVATION BY THE GEOTECHNICAL REPRESENTATIVE.
12. CONTRACTOR SHALL PROVIDE LATERAL SUPPORT OF EXCAVATIONS, AS NEEDED, TO PREVENT LATERAL AND VERTICAL MOVEMENT OF ADJACENT EXISTING FACILITIES.

GRADING NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE CALIFORNIA BUILDING CODE. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTIONS (GREEN BOOK) LATEST EDITION AND AMENDMENTS WHENEVER SPECIAL REQUIREMENTS CONFLICT ON ANY SUBJECT MATTER. THE ENGINEER OF RECORD AND/OR HIS REPRESENTATIVE WILL DETERMINE WHICH SPECIAL REQUIREMENT AND/OR CODE WILL GOVERN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING AND DISPOSAL OF THE PROPOSED WORK AREA.
3. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS IN ACCORDANCE WITH CITY, COUNTY, AND STATE ORDINANCES AND STATUTES.
4. NO FILL SHALL BE PLACED ON THE EXISTING GROUND UNTIL THE GROUND HAS BEEN CLEARED OF WEEDS, DEBRIS, TOPSOIL, DELETERIOUS MATERIAL AND SCARFIED PER THE PROJECT SPECIFICATIONS.
5. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL.
6. FILLS SHALL BE COMPACTED THROUGHOUT TO THE MAXIMUM DENSITY AS DETERMINED THE GEOTECHNICAL ENGINEER.
7. AREAS TO RECEIVE FILL SHALL BE PROPERLY PREPARED AND APPROVED BY THE GEOTECHNICAL ENGINEER AND/OR HIS REPRESENTATIVE PRIOR TO PLACING OF FILL.
8. FILL SLOPES SHALL BE KEYED AND BENCHED WITH APPROVED MATERIAL AND PER THE RECOMMENDATIONS OF THE PROJECT SOILS REPORT.
9. ALL EXISTING FILLS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND OR HIS REPRESENTATIVE BEFORE ANY ADDITIONAL FILLS ARE ADDED.
10. ANY EXISTING IRRIGATION LINES AND CISTERNS SHALL BE REMOVED OR CRUSHED IN PLACE AND BACKFILLED AND APPROVED BY THE GRADING INSPECTOR AND GEOTECHNICAL ENGINEER, UNLESS OTHERWISE NOTED ON THE PLANS.
11. SLOPES EXCEEDING FIVE FEET IN HEIGHT MUST BE PLANTED AND AN APPROVED IRRIGATION SYSTEM SHALL BE INSTALLED.
12. ALL TRENCH BACKFILLS SHALL BE TESTED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PER THE GRADING AND EXCAVATION CODE.
13. ALL CUT SLOPES SHALL BE INVESTIGATED BOTH DURING AND AFTER GRADING BY AN ENGINEERING GEOLOGIST TO DETERMINE IF ANY SLOPE STABILITY PROBLEM EXISTS SHOULD EXCAVATION DISCLOSE ANY GEOLOGICAL HAZARDS OR POTENTIAL GEOLOGICAL HAZARDS. THE ENGINEERING GEOLOGIST SHALL RECOMMEND NECESSARY TREATMENT TO THE CONSTRUCTION MANAGER FOR APPROVAL.

GRADING NOTES (CONTINUED)

14. THE FINAL COMPACTION REPORT AND APPROVAL FROM THE GEOTECHNICAL ENGINEER SHALL CONTAIN THE TYPE OF FIELD TESTING PERFORMED. THE METHOD OF OBTAINING THE IN-PLACE DENSITY, WHETHER SAND CONE, NUCLEAR GAGE, OR DRIVE RING SHALL BE NOTED FOR EACH TEST. SUFFICIENT MAXIMUM DENSITY DETERMINATIONS SHALL BE PERFORMED TO VERIFY THE ACCURACY OF THE MAXIMUM DENSITY CURVES USED BY THE FIELD TECHNICIAN.
15. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF AND PROTECT ALL EXISTING UTILITIES AND TO ENSURE SERVICE IS NOT DISRUPTED TO EXISTING FACILITIES.
17. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE MUST CONTINUE TO FUNCTION, ESPECIALLY DURING STORM CONDITIONS AND APPROVED PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING THE GRADING PROJECT. IN ALL CASES, THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO CONSTRUCTING NATURAL OR EXISTING DRAINAGE PATTERNS.
18. WHENEVER THERE IS AN EXISTING CATCH BASIN ALONG OR ADJACENT TO THE CONSTRUCTION SITE FRONTAGE, AN ON-SITE STORM DRAIN OR SWALE SHALL BE CONSTRUCTED TO CONVEY WATER DIRECTLY TO THE BASIN. EXCEPTIONS SHALL REQUIRE APPROVAL BY THE CIVIL ENGINEER.
19. ALL PLANTERS ADJACENT TO THE FOUNDATIONS SHALL BE SEALED ALONG SIDE OF THE FOUNDATION FOOTING AND EXTENDED UNDER THE PLANTER AREA TO A MINIMUM OF 12 INCHES TO PREVENT MOISTURE FROM REACHING THE FOUNDATION SUBGRADE SOILS.
20. EXPORT SOILS MUST GO TO A LEGAL DUMP SITE OR TO A PERMITTED SITE APPROVED BY THE LOCAL AGENCY HAVING JURISDICTION.
21. ANY DIRT, ROCK OR CONSTRUCTION MATERIAL THAT MAY BE TRACKED OR DROPPED WITHIN THE PUBLIC RIGHT-OF-WAY DURING THE TRANSPORTATION OF SAID MATERIAL OR EQUIPMENT ASSOCIATED WITH THE PROJECT SHALL BE CLEANED OR REMOVED DAILY AND AS DEEMED NECESSARY BY THE CONSTRUCTION MANAGER.
22. DIRT ACCESS RAMPS OVER CURB AND GUTTER TO CONSTRUCTION SITE ARE NOT ALLOWED. WHEN NECESSARY FOR ENTRANCE TO SUCH CONSTRUCTION SITES, ASPHALT RAMPS WITH A MINIMUM 3" DIAMETER PIPE WILL BE CONSTRUCTED TO CONVEY GUTTER DRAINAGE. ALL BASE, GRAVEL, SOIL OR OTHER MATERIAL CARRIED INTO THE ROADWAY BY CONTRACTORS PERSONNEL OR EQUIPMENT WILL BE CLEANED AS NECESSARY AND NO LESS THAN ONCE A DAY. TRUCKS HAULING BASE, GRAVEL, FILL OR EXPORT MATERIALS WILL BE TARPED AS NECESSARY TO PREVENT MATERIAL FROM SPILLING INTO THE ROADWAY.
23. PRIOR TO ANY CONSTRUCTION WHICH INVOLVES HAZARDOUS CONDITIONS, THE CONTRACTOR SHALL FIRST OBTAIN A PERMIT FROM THE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (OSHA).
24. PROPOSED REVISIONS TO THE GRADING PLAN SHALL BE DRAWN IN RED PENCIL ON BOND COPIES OF THE APPROVED PLAN. THESE REDLINES ARE THEN TO BE SUBMITTED TO THE OWNERS REPRESENTATIVES FOR REVIEW AND APPROVAL. ONLY AFTER THE BOND COPIES APPROVAL IS GIVEN SHOULD THE ORIGINALS BE AS-BUILT BY THE ENGINEER/ARCHITECT.
25. RULE 403, AIR QUALITY CONTROL MANAGEMENT DISTRICT, MUST BE IMPLEMENTED DURING CONSTRUCTION.
    a. A PERSON SHALL NOT CAUSE OR ALLOW THE EMISSIONS OF FUGITIVE DUST FROM ANY TRANSPORT, HANDLING, CONSTRUCTION OR STORAGE ACTIVITY SO THAT THE PRESENCE OF SUCH DUST REMAINS VISIBLE IN THE ATMOSPHERE BEYOND THE PROPERTY LINE OF THE EMISSION SOURCE. (DOES NOT APPLY TO EMISSION EMANATING FROM UNPAVED ROADWAYS OPEN TO PUBLIC TRAVEL OR FARM ROADS. THIS EXCLUSION SHALL NOT APPLY TO INDUSTRIAL OR COMMERCIAL FACILITIES).
    b. A PERSON SHALL TAKE EVERY REASONABLE PRECAUTION TO MINIMIZE FUGITIVE DUST EMISSIONS FROM WRECKING EXCAVATION GRADING, CLEARING OF LAND AND SOLID WASTE DISPOSAL OPERATIONS.
    c. A PERSON SHALL NOT CAUSE OR ALLOW PARTICULATE WATER TO EXCEED 100 MICROGRAMS PER CUBIC METER WHEN DETERMINED AS THE DIFFERENCE BETWEEN UPWIND AND DOWN WIND SAMPLES COLLECTED ON HIGH VOLUME SAMPLERS AT THE PROPERTY LINE FOR A MINIMUM OF FIVE HOURS.
    d. A PERSON SHALL TAKE EVERY REASONABLE PRECAUTION TO PREVENT VISIBLE PARTICULATE WATER FROM BEING DEPOSITED UPON PUBLIC ROADWAYS. PRECAUTIONS SHALL INCLUDE BUT ARE NOT LIMITED TO, THE REMOVAL OF PARTICULATE MATTER FROM EQUIPMENT PRIOR TO MOVEMENT ON PAVED STREETS ONTO WHICH SUCH MATERIAL HAS BEEN DEPOSITED.
    e. SUBSECTIONS (A) AND (B) SHALL NOT BE APPLICABLE WHEN THE WIND SPEED INSTANTANEOUSLY EXCEEDS 40 KILOMETERS (25 MILES) PER HOUR, OR WHEN THE AVERAGE WIND SPEED IS GREATER THAN 24 KILOMETERS (15 MILES) PER HOUR. THE AVERAGE WIND SPEED DERMINATIONS SHALL BE ON A 15 MINUTE AVERAGE AT THE NEAREST OFFICIAL AIR-MONITORING STATION OR BY WIND INSTRUMENT LOCATED AT THE SITE BEING CHECKED.
26. CONTRACTORS SHALL USE LOW EMISSION MOBILE CONSTRUCTION EQUIPMENT DURING ALL SITE PREPARATION, GRADING AND CONSTRUCTION ACTIVITIES, WHERE FEASIBLE.
27. CONTRACTORS SHALL MAINTAIN ALL CONSTRUCTION ENGINES TUNED CONSISTENT WITH MANUFACTURER'S SPECIFICATIONS DURING ALL SITE PREPARATION, GRADING AND CONSTRUCTION ACTIVITIES.
28. CONTRACTORS SHALL USE LOW SULFUR FUEL FOR STATIONARY CONSTRUCTION EQUIPMENT AS REQUIRED BY AQMD RULES 431.1 AND 431.2 AND SHALL USE EXISTING POWER SOURCES AND CLEAN FUEL GENERATORS AS FEASIBLE, DURING ALL SITE PREPARATION, GRADING AND CONSTRUCTION ACTIVITIES.
29. CONSTRUCTION PARKING SHALL BE ONSITE. TRAFFIC CONTROL AND ACCESS SHALL BE IN ACCORDANCE WITH COUNTY CONSTRUCTION REQUIREMENTS. CONSTRUCTION VEHICLE ROUTES SHALL NOT DISRUPT SCHOOL OPERATIONS.
30. THE SPEED OF TRUCKS ONSITE SHALL BE LIMITED TO 15 MPH.
31. TRUCKS AND LARGE CONSTRUCTION VEHICLES WILL OBTAIN APPROVED TRUCK ROUTES FROM THE AGENCIES HAVING JURISDICTION OVER PROPOSED ROUTES.
32. THE CONTRACTOR SHALL CONTROL DUST IN AREAS USED FOR OFF-ROAD PARKING MATERIALS LAYDOWN OR THOSE AWAITING FUTURE CONSTRUCTION. FREQUENTLY ACCESSED AREAS SHALL BE PAVED AS EARLY AS POSSIBLE TO MINIMIZE DIRT TRACKOUT TO THE PUBLIC RIGHT OF WAY.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING MEASURES:
    a. CESSATION OF ACTIVITIES DURING A STAGE-2 SMOG EPISODE. CALL 1-800-242-4022 FOR THE DAILY SMOG FORECAST.
    b. TRUCK ROUTES AND SCHEDULES FOR THE RECEIPT OF MATERIALS SHALL BE COORDINATED WITH THE MANAGER OF BUILDING AND SAFETY.
    c. WHERE FEASIBLE, ON-ROAD VEHICLES AND OFF-ROAD EQUIPMENT SHALL BE TURNED OFF AND SUBSEQUENTLY RESTARTED IF THE ANTICIPATED DURATION OF IDLING IS EXPECTED TO EXCEED FIVE (5) MINUTES.
34. THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING HIGH WIND DUST CONTROL WHEN WIND GUSTS EXCEED 25 MPH:
    a. TERMINATION/MODIFICATION OF OPERATION OF SCRAPERS, GRADERS OR DOZERS ON UNPAVED SURFACES UNTIL WINDS SUBSIDE.
    b. APPLICATION OF WATER AS NEEDED TO ANY UNPAVED SURFACE WITH VEHICLE OR EQUIPMENT OPERATIONS.
    c. APPLICATION OF WATER OR OTHER DUST CONTROL MATERIAL TO ANY PREVIOUSLY GRADED SURFACE IF DUST EMANATION IS VISIBLE FROM SUCH A SURFACE.
35. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EQUIPMENT TO PREVENT VISIBLE SOOT FROM REDUCING LIGHT TRANSMISSION THROUGH THE EXHAUST STACK BY MORE THAN 20 PERCENT FOR MORE THAN THREE MINUTES PER HOUR AND USE LOW-SULFER FUEL AS REQUIRED BY SCAQMD REGULATIONS.
36. TRUCKS USED IN HAULING DIRT TO OR FROM THE SITE ON PUBLIC ROADS WILL BE COVERED OR WILL MAINTAIN A SIX INCH DIFFERENTIAL BETWEEN THE MAXIMUM HEIGHT OF ANY HAULED MATERIAL AND THE TOP OF THE TRAILER. HAUL TRUCK DRIVERS WILL LOAD PRIOR TO LEAVING THE SITE TO PREVENT SOIL LOSS DURING TRANSPORTATION.
37. PURSUANT TO SECTION 8771 OF THE BUSINESS AND PROFESSIONS CODE, EXISTING SURVEY MONUMENTS SHALL BE NOTED AND DOCUMENTED BEFORE CONSTRUCTION. IF MONUMENTS ARE DISTURBED DURING CONSTRUCTION, THE CONTRACTOR SHALL PAY A LICENSED LAND SURVEYOR OR REGISTERED ENGINEER TO RESET SUCH MONUMENTS.

EXISTING UTILITY NOTES

1. THE GENERAL CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AND NOTIFY APPROPRIATE UTILITY AGENCIES TO VERIFY AND LOCATE ALL EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING ANY EXCAVATION.
2. THE GENERAL CONTRACTOR SHALL POTHOLE TO LOCATE AND VERIFY ALL EXISTING UTILITIES, POINT OF CONNECTIONS, AND CROSSINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNERS REPRESENTATIVE.
3. THE LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY; ALL UTILITIES MAY NOT BE SHOWN.
4. SOME IRRIGATION PIPING AND ELECTRICAL CONDUIT LOCATIONS AND SIZES ARE UNKNOWN AND NOT IDENTIFIED HEREON.
5. SUBSURFACE UTILITIES SHOWN HEREON HAVE BEEN COMPILED FROM RECORD INFORMATION GATHERED FROM VARIOUS SOURCES. THE SUBSURFACE INFORMATION, INCLUDING LOCATION, SIZES, AND CAPACITIES IS AN ESTIMATION BASED ON AVAILABLE DATA AND MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. ECG DOES NOT WARRANT THE ACCURACY OF COMPLETENESS OF SAID RECORD INFORMATION.
6. THE CONTRACTOR, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, UNDERSTANDS THAT THEY AGREE TO ASSUME LIABILITY, AND AGREE TO HOLD THE UNDERSIGNED HARMLESS FOR ANY LIABILITY FOR DAMAGE RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED ON THE RECORDS PROVIDED, LOCATED AT VARIANCE WITH THAT REPORTED OR SHOWN ON AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING TO WORK.
7. THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO BUILDINGS OR OTHER STRUCTURES INTENDED TO REMAIN IN OPERATIONAL SERVICE DURING THE COURSE OF CONSTRUCTION.

STORMWATER POLLUTION PLAN NOTES

1. A STAND-BY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON (NOVEMBER 1 TO APRIL 15). NECESSARY MATERIALS SHALL BE AVAILABLE ON-SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF EMERGENCY DEVICES WHEN RAIN IS IMMINENT.
2. EROSION CONTROL DEVICES SHOWN ON THIS PLAN MAY BE REMOVED WHEN APPROVED BY THE BUILDING OFFICIAL IF THE GRADING OPERATION HAS PROGRESSED TO THE POINT WHERE THEY ARE NO LONGER REQUIRED.
3. GRADED AREAS ADJACENT TO FILL SLOPES LOCATED AT THE SITE PERIMETER MUST DRAIN AWAY FROM THE TOP OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY. ALL LOOSE SOILS AND DEBRIS THAT MAY CREATE A POTENTIAL HAZARD TO OFF-SITE PROPERTY SHALL BE STABILIZED OR REMOVED FROM THE SITE ON A DAILY BASIS.
4. ALL SILT AND DEBRIS SHALL BE REMOVED FROM ALL DEVICES WITHIN 24 HOURS AFTER EACH RAINSTORM AND BE DISPOSED OF PROPERLY.
5. A GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN ANY DEVICE EXCEEDS TWO FEET. THE DEVICE SHALL BE DRAINED OR PUMPED DRY WITHIN 24 HOURS AFTER EACH RAINSTORM. PUMPING AND DRAINING OF ALL BASINS AND DRAINAGE DEVICES MUST COMPLY WITH THE APPROPRIATE BMP FOR DEWATERING OPERATIONS.
6. THE PLACEMENT OF ADDITIONAL DEVICES TO REDUCE EROSION DAMAGE AND CONTAIN POLLUTANTS WITHIN THE SITE IS LEFT TO THE DISCRETION OF THE FIELD ENGINEER. ADDITIONAL DEVICES AS NEEDED SHALL BE INSTALLED TO RETAIN SEDIMENTS AND OTHER POLLUTANTS ON SITE.
7. DESILTING BASIN MAY NOT BE REMOVED OR MADE INOPERABLE BETWEEN NOVEMBER 1 AND APRIL 15 OF THE FOLLOWING YEAR WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL. STORM WATER POLLUTION AND EROSION CONTROL DEVICES ARE TO BE MODIFIED, AS NEEDED, AS THE PROJECT PROGRESSES, THE DESIGN AND PLACEMENT OF THESE DEVICES IS THE RESPONSIBILITY OF THE FIELD ENGINEER.
8. PLANS REPRESENTING CHANGES MUST BE SUBMITTED FOR APPROVAL IF REQUESTED BY THE BUILDING OFFICIAL.
9. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON STORM WATER FROM THE PROJECT SITES AT ALL TIMES.
10. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
11. STOCKPILES OF EARTH AND OTHER CONSTRUCTION-RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
12. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND AREA NOT TO CONTAMINATE THE SOILS AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
13. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
14. CONTRACTORS ARE RESPONSIBLE TO INSPECT ALL EROSION CONTROL DEVICES BMPs ARE INSTALLED AND FUNCTIONING PROPERLY IF THERE IS A 40% CHANCE OF 0.25 INCHES OR GREATER OF PREDICTED PRECIPITATION, AND AFTER ACTUAL PRECIPITATION. A CONSTRUCTION SITE INSPECTION CHECKLIST AND INSPECTION LOG SHALL BE MAINTAINED AT THE PROJECT SITE AT ALL TIMES AND AVAILABLE FOR REVIEW BY THE BUILDING OFFICIAL. (COPIES OF THE SELF INSPECTION CHECK LIST AND INSPECTION LOGS ARE AVAILABLE UPON REQUEST).
15. TRASH AND CONSTRUCTION-RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OR RAINWATER AND DISPERSAL BY WIND.
16. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
17. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
18. THE FOLLOWING BMPs FROM THE "CALIFORNIA STORM WATER BMP CONSTRUCTION HANDBOOK" - LATEST EDITION, MUST BE IMPLEMENTED FOR ALL CONSTRUCTION ACTIVITIES AS APPLICABLE.

EROSION CONTROL:

EC-1	SCHEDULING
EC-2	PRESERVATION OF EXISTING VEGETATION
EC-3	HYDRAULIC MULCH
EC-4	HYDROSEEDING
EC-5	SOIL BINDERS
EC-6	STRAW MULCH
EC-7	GEOTEXTILES & MATS
EC-8	WOOD MULCHING
EC-9	EARTH DIKES AND DRAINAGE SWALES
EC-10	VELOCITY DISSIPATION DEVICES
EC-11	SLOPE DRAINS
EC-12	STREAMBANK STABILIZATION
EC-13	RESERVED
EC-14	COMPOST BLANKETS
EC-15	SOIL PREPARATION/ROUGHENING
EC-16	NON-VEGETATIVE STABILIZATION

TEMPORARY SEDIMENT CONTROL:

SE-1	SILT FENCE
SE-2	SEDIMENT BASIN
SE-3	SEDIMENT TRAP
SE-4	CHECK DAM
SE-5	FIBER ROLLS
SE-6	GRAVEL BAG BERM
SE-7	STREET SWEEPING AND VACUUMING
SE-8	SANDBAG BARRIER
SE-9	STRAW BALE BARRIER
SE-10	STORM DRAIN INLET PROTECTION
SE-11	ACTIVE TREATMENT SYSTEMS
SE-12	TEMPORARY SILT DIKE
SE-13	COMPOST SOCKS AND BERMS
SE-14	BIOFILTER BAGS

EQUIPMENT TRACKING CONTROL:

TC-1	STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC-2	STABILIZED CONSTRUCTION ROADWAY
TC-3	ENTRANCE/OUTLET TIRE WASH

WIND EROSION CONTROL:

WE-1	WIND EROSION CONTROL

NON-STORMWATER MANAGEMENT:

NS-1	WATER CONSERVATION PRACTICES
NS-2	DEWATERING OPERATIONS
NS-3	PAVING AND GRINDING OPERATIONS
NS-4	TEMPORARY STREAM CROSSING
NS-5	CLEAR WATER DIVERSION
NS-6	ILLICIT CONNECTION/DISCHARGE
NS-7	POTABLE WATER/IRRIGATION
NS-8	VEHICLE AND EQUIPMENT CLEANING
NS-9	VEHICLE AND EQUIPMENT FUELING
NS-10	VEHICLE AND EQUIPMENT MAINTENANCE
NS-11	PILE DRIVING OPERATIONS
NS-12	CONCRETE CURING
NS-13	CONCRETE FINISHING
NS-14	MATERIAL OVER WATER
NS-15	DEMOLITION ADJACENT TO WATER
NS-16	TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL:

WM-1	MATERIAL DELIVERY AND STORAGE
WM-2	MATERIAL USE
WM-3	STOCKPILE MANAGEMENT
WM-4	SPILL PREVENTION AND CONTROL
WM-5	SOLID WASTE MANAGEMENT
WM-6	HAZARDOUS WASTE MANAGEMENT
WM-7	CONTAMINATED SOIL MANAGEMENT
WM-8	CONCRETE WASTE MANAGEMENT
WM-9	SANITARY/SEPTIC WASTE MANAGEMENT
WM-10	LIQUID WASTE MANAGEMENT

NOTE:
SITE INSPECTIONS ARE REQUIRED BEFORE AND AFTER STORMS TO ENSURE THAT ALL BMP'S ARE FUNCTIONAL AND TO DETERMINE MAINTENANCE.

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VENTURA UNIFIED SCHOOL DISTRICT
FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM
6700 EAGLE ST.
VENTURA, CA 93003

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A# 03-125061

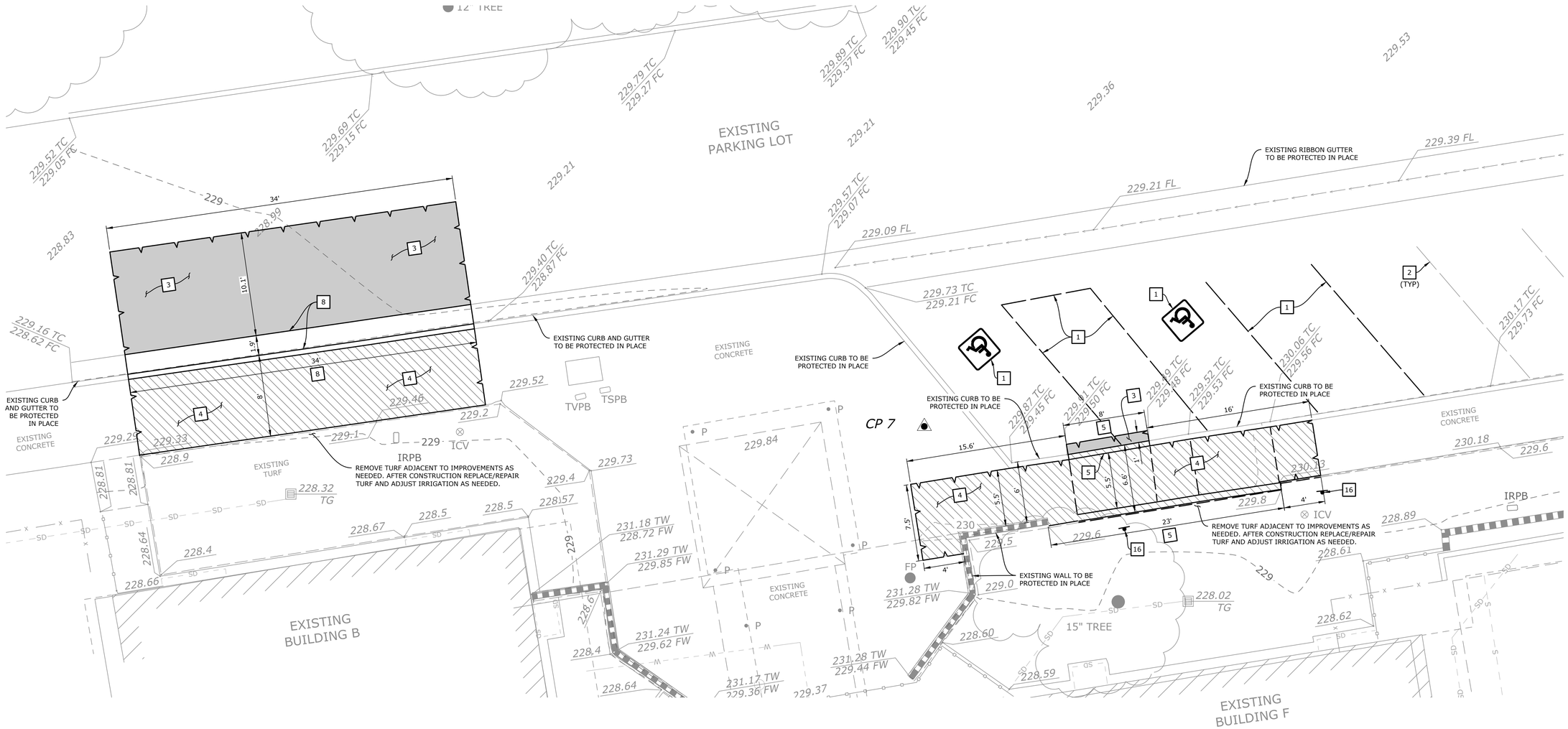
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Sheet Name
GENERAL NOTES

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ

Sheet Number
C1.02

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DEMOLITION NOTES

1	REMOVE EXISTING PARKING STALL STRIPING.
2	PROTECT EXISTING STRIPING IN PLACE.
3	SAWCUT AND REMOVE EXISTING AC PAVING TO LIMITS SHOWN.
4	SAWCUT AND REMOVE EXISTING PCC PAVING TO LIMITS SHOWN.
5	REMOVE EXISTING CURB TO LIMITS SHOWN.
6	REMOVE EXISTING STRUCTURE.
7	REMOVE EXISTING FENCE AND CONCRETE POST FOOTINGS COMPLETE TO LIMITS SHOWN.
8	REMOVE EXISTING CURB AND GUTTER TO LIMITS SHOWN.
9	REMOVE EXISTING BUILDING VENT.
10	EXISTING UTILITY TO BE PROTECTED IN PLACE.
11	ADJUST EXISTING UTILITY COVER TO FINISH SURFACE.
12	EXISTING RISERS TO BE RECONSTRUCTED PER ELECTRICAL PLANS.
13	REMOVE EXISTING WALL.
14	REMOVE EXISTING STRUCTURE. COORDINATE REMOVAL WITH DISTRICT.
15	REMOVE PORTION OF THE EXISTING SPEED BUMP ENCROACHING INTO PROPOSED ADA-ACCESSIBLE PARKING STALLS. PATCH BACK ASPHALT AND BASE TO MATCH EXISTING THICKNESSES.
16	REMOVE EXISTING SIGN AND POST.

DEMOLITION LEGEND

	PROPOSED SAWCUT
	EXISTING AC PAVING REMOVAL
	EXISTING PCC PAVING REMOVAL
	EXISTING STREET CENTERLINE
	EXISTING RIGHT OF WAY/PROPERTY LINE
W	EXISTING WATER LINE
G	EXISTING GAS LINE
S	EXISTING SEWER LINE
SD	EXISTING STORM DRAIN LINE
OHW	EXISTING OVERHEAD WIRE
E	EXISTING ELECTRICAL LINE
COMM	EXISTING COMMUNICATION LINE

N W E S

SCALE: 1"=5'

0 5 10 15

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No.	Description	Date

Sheet Name

DEMOLITION PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ
Sheet Number	C2.01

DEMOLITION NOTES

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4. SAWCUT AND REMOVE EXISTING PCC PAVING TO LIMITS SHOWN.
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16. REMOVE EXISTING SIGN AND POST.

DEMOLITION LEGEND

- PROPOSED SAWCUT
- EXISTING AC PAVING REMOVAL
- EXISTING PCC PAVING REMOVAL
- EXISTING STREET CENTERLINE
- EXISTING RIGHT OF WAY/PROPERTY LINE
- W — EXISTING WATER LINE
- G — EXISTING GAS LINE
- S — EXISTING SEWER LINE
- SD — EXISTING STORM DRAIN LINE
- OHW — EXISTING OVERHEAD WIRE
- E — EXISTING ELECTRICAL LINE
- COMM — EXISTING COMMUNICATION LINE

PARTRIDGE DRIVE

EXISTING AC

EXISTING DAYCARE BUILDING

EXISTING PARKING LOT

EXISTING FENCE TO BE PROTECTED IN PLACE

EXISTING STORAGE CONTAINER

EXISTING RETAINING CURB TO BE PROTECTED IN PLACE

EXISTING TURF

REMOVE TURF ADJACENT TO IMPROVEMENTS AS NEEDED. AFTER CONSTRUCTION REPLACE/REPAIR TURF AND ADJUST IRRIGATION AS NEEDED.

EXISTING FENCE TO BE PROTECTED IN PLACE

EXISTING ZERO INCH CURB TO BE PROTECTED IN PLACE

EXISTING WALL TO BE PROTECTED IN PLACE

10" TREE

EXISTING PLAY GROUND

SCALE: 1"=5'

0 5 10 15

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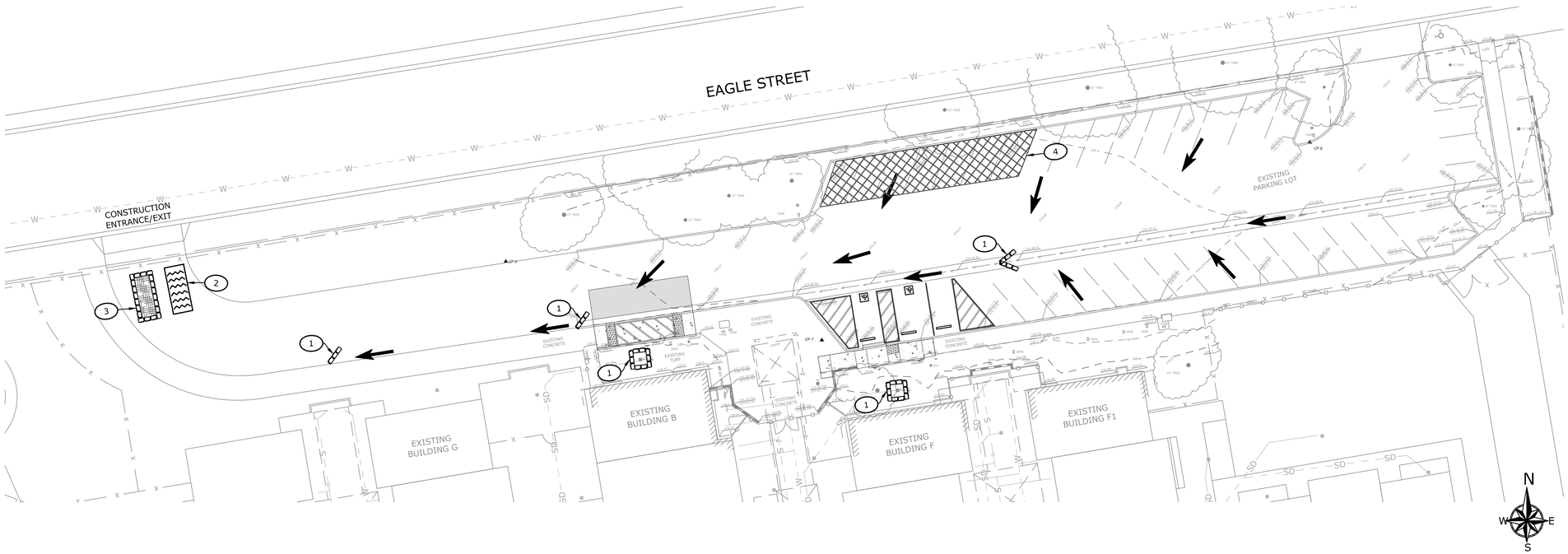
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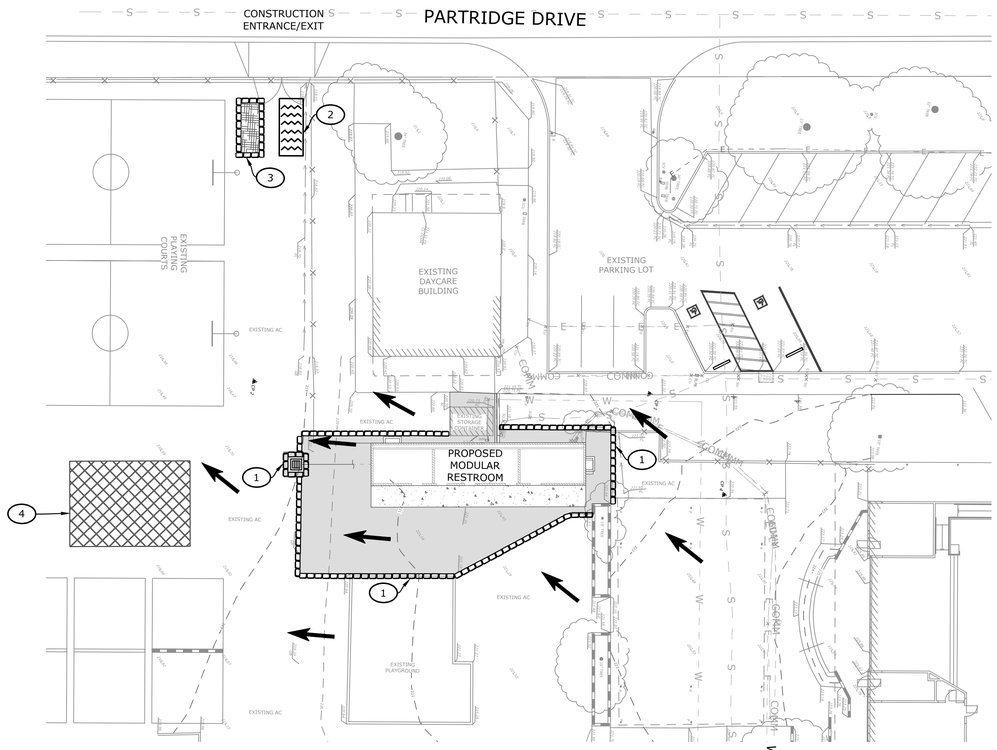
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DEMOLITION PLAN

RNT Project No.	1041
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EROSION CONTROL CONSTRUCTION NOTES

1. CONSTRUCT TEMPORARY GRAVEL BAG CHECK DAM OR CATCH BASIN SEDIMENT BARRIER PER BMP SE-4 AND SE-10 IN CURRENT CASQA CONSTRUCTION BMP HANDBOOK. SEE DETAIL "B" AND "F" ON SHEET C3.02. ALL GRAVEL BAGS MUST BE IN PLACE DURING PROJECT CONSTRUCTION.
2. CONSTRUCT "RUMBLE RACKS" AT ALL CONSTRUCTION SITE ENTRANCES/EXITS. RECOMMENDED LOCATION SHOWN, CONTRACTOR SHALL SUBMIT FINAL LOCATION TO SCHOOL'S REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION. SEE BMP TC-1 IN CURRENT CASQA CONSTRUCTION BMP HANDBOOK AND DETAIL "C" ON SHEET C3.02.
3. PROPOSED CONCRETE WASH-OFF AREA PER BMP WM-8 IN CURRENT CASQA CONSTRUCTION BMP HANDBOOK AND DETAIL "D" ON SHEET C3.02. WASH-OFF AREA SHALL BE IN PLACE AT ALL TIMES DURING GRADING AND PAVING OPERATIONS. CONTRACTOR SHALL NOT TRACK SOLIDS OR CONCRETE WASH OUT OR DEBRIS ON PUBLIC ROADWAYS. RECOMMENDED LOCATION SHOWN, CONTRACTOR SHALL SUBMIT FINAL LOCATION TO SCHOOL'S REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION.
4. PROPOSED STOCKPILE AND MATERIAL STORAGE AREA PER BMP WM-1 AND WM-3 IN CURRENT CASQA CONSTRUCTION BMP HANDBOOK AND DETAILS "E" AND "G" ON SHEET C3.02.

FLOW DIRECTION

SCALE: 1"=20'
0 20 40 60

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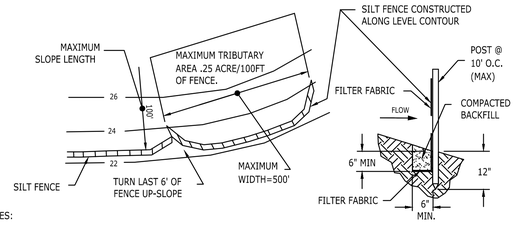
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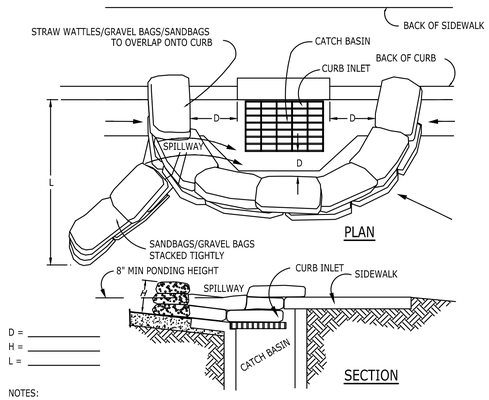
A SILT FENCE SE-1



NOTES:

1. CONSTRUCT THE SILT FENCE ALONG A LEVEL CONTOUR.
2. SILT FENCES SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.
3. PROVIDE SUFFICIENT ROOM FOR RUNOFF TO POND BEHIND THE FENCE AND ALLOW SEDIMENT REMOVAL EQUIPMENT TO PASS BETWEEN THE SILT FENCE AND TOE OF SLOPE OR OTHER OBSTRUCTIONS. ABOUT 1200 SQ. FT. OF PONDING AREA SHALL BE PROVIDED FOR EVERY ACRE DRAINING TO THE FENCE.
4. TURN THE ENDS OF THE FILTER FENCE UPHILL TO PREVENT STORMWATER FROM FLOWING AROUND THE FENCE.
5. LEAVE AN UNDISTURBED OR STABILIZED AREA IMMEDIATELY DOWNSLOPE FROM THE FENCE.
6. DO NOT PLACE IN LIVE STREAM OR INTERMITTENTLY FLOWING CHANNELS.
7. WHEN STANDARD FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS.
8. REFER ALSO TO BMP SE-1 FROM 2013 CALIFORNIA STORMWATER B.M.P. HANDBOOK FOR CONSTRUCTION.

B CATCH BASIN/INLET PROTECTION SE-10

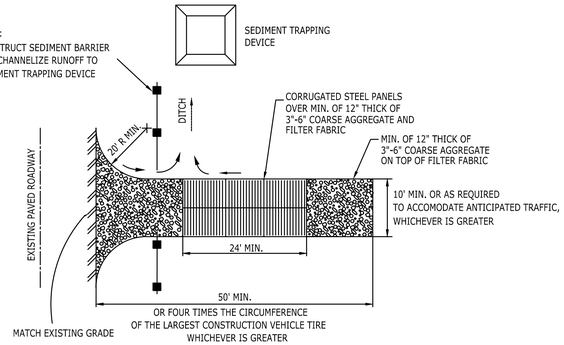


NOTES:

1. CATCH BASIN/INLET PROTECTION SHALL BE INSTALLED WHEREVER THERE IS A POTENTIAL OF STORMWATER OR NON-STORMWATER BEING DISCHARGED INTO IT.
2. INLET PROTECTION IS REQUIRED ALONG WITH OTHER POLLUTION PREVENTION MEASURES SUCH AS; EROSION CONTROL, SOIL STABILIZATION, AND MEASURES TO PREVENT TRACKING ONTO PAVED SURFACES.
3. MODIFY INLET PROTECTION AS NEEDED TO AVOID CREATING TRAFFIC HAZARDS.
4. INCLUDE INLET PROTECTION MEASURES AT HILLSIDE V-DITCHES AND MISC. DRAINAGE SWALES.
5. INLET PROTECTION SHALL BE INSPECTED AND ACCUMULATED SEDIMENTS REMOVED. SEDIMENT SHALL BE DISPOSED OF PROPERLY AND IN A MANNER THAT ASSURES THAT THE SEDIMENT DOES NOT ENTER THE STORM DRAIN SYSTEM.
6. DAMAGED BAGS SHALL BE REPLACED IMMEDIATELY.
7. ADDITIONAL SANDBAG SEDIMENT TRAPS SHALL BE PLACED AT INTERVALS AS INDICATED ON SITE PLAN.

C STABILIZED CONSTRUCTION ENTRANCE TC-1

NOTE:
CONSTRUCT SEDIMENT BARRIER AND CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE



NOTES:

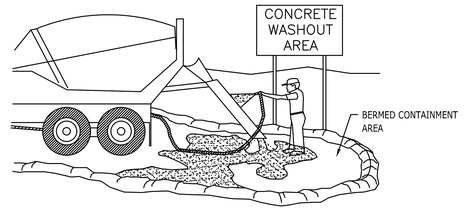
1. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC ROADS. DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
   A. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT OF WAY, STREET, ALLEY, AND SIDEWALK OR PARKING AREA.
   B. A SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN 3"-6" COARSE AGGREGATE WITH LENGTH, WIDTH & THICKNESS AS NEEDED TO ADEQUATLY PREVENT ANY TRACKING ONTO PAVED SURFACES.
3. ADDING A WASH RACK WITH A SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER CAN GREATLY IMPROVE EFFICIENCY.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.

STREET MAINTENANCE SE-7

NOTES:

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
2. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM.

D CONCRETE WASTE MANAGEMENT WM-8



NOTES:

1. EXCESS AND WASTE CONCRETE SHALL NOT BE WASHED INTO THE STREET OR INTO A DRAINAGE SYSTEM.
2. FOR WASHOUT OF CONCRETE AND MORTAR PRODUCTS, A DESIGNATED CONTAINMENT FACILITY OF SUFFICIENT CAPACITY TO RETAIN LIQUID AND SOLID WASTE SHALL BE PROVIDED ON SITE.
3. SLURRY FROM CONCRETE AND ASPHALT SAW CUTTING SHALL BE VACUUMED OR CONTAINED, DRIED, PICKED UP AND DISPOSED OF PROPERLY.
4. CONCRETE WASHOUT AREA SHALL BE LINED WITH A MINIMUM 10 MIL. POLYETHYLENE SHEETING. REFER TO BMP #WM-8 FROM THE 2013 CALIFORNIA CONSTRUCTION BMP HANDBOOK

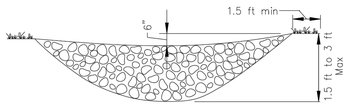
E MATERIAL STORAGE AND DELIVERY WM-1

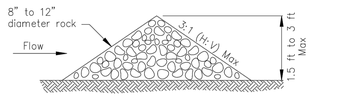
APPLY BMP WM-1 FROM THE 2013 CALIFORNIA STORMWATER BMP HANDBOOK FOR CONSTRUCTION AVAILABLE AT www.cabmphandbooks.com.

MINIMUM REQUIREMENTS FROM WM-1:

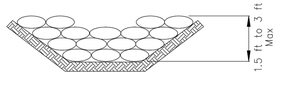
1. MATERIAL DELIVERY AND STORAGE AREAS SHOULD BE LOCATED NEAR THE CONSTRUCTION ENTRANCES, AWAY FROM WATERWAYS OR DRAINAGE PATHS. PREFERRED METHOD OF MATERIAL STORAGE IS INDOORS WITHIN EXISTING STRUCTURES OR SHEDS WHEN AVAILABLE. AT A MINIMUM, MATERIAL STORAGE AREA SHALL BE SURROUNDED WITH PROTECTIVE BERMS.
2. MATERIALS SHOULD BE STORED IN THEIR ORIGINAL CONTAINERS AND THE ORIGINAL PRODUCT LABELS SHOULD BE MAINTAINED IN PLACE IN A LEGIBLE CONDITION.
3. MATERIALS SHOULD BE STORED ON PALLETS AND SHOULD NOT BE ALLOWED TO ACCUMULATE ON THE GROUND. SECONDARY CONTAINMENT SHALL BE PROVIDED, WHEN POSSIBLE, TO PROVIDE PROTECTION FROM WIND AND RAIN, MATERIALS SHOULD BE COVERED DURING NON-WORKING DAYS AND PRIOR TO AND DURING RAIN OR WIND EVENTS.
4. EMPLOYEES AND SUBCONTRACTORS SHALL BE TRAINED ON PROPER MATERIAL DELIVERY AND STORAGE PRACTICES AND IN EMERGENCY SPILL CLEANUP PROCEDURES.

F CHECK DAMS SE-4

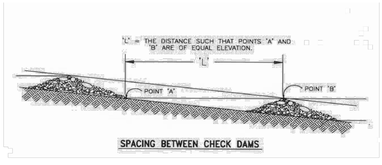




ROCK CHECK DAM
NOT TO SCALE

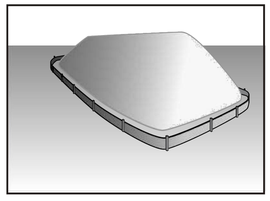


NOT TO SCALE



G STOCKPILE MANAGEMENT WM-3

Stockpile Management WM-3



Treat Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose
Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as Portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Suitable Applications
Implement in all projects that stockpile soil and other loose materials.

Limitations
- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of Plastic materials and photodegradable plastics should be avoided.

Implementation
Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

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Stockpile Management WM-3

- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- After 14 days of inactivity, a stockpile is non-active and requires further protection described below. All stockpiles are required to be protected as non-active stockpiles immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles
A stockpile is considered non-active if it either is not used for 14 days or if it is scheduled not to be used for 14 days or more. Stockpiles need to be protected immediately if they are not scheduled to be used within 14 days. Non-active stockpiles of the identified materials should be protected as follows:

Soil stockpiles
- Soil stockpiles should be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Temporary vegetation should be considered for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base
- Stockpiles should be covered and protected with a temporary perimeter sediment barrier at all times.

Stockpiles of "cold mix"
- Cold mix stockpiles should be placed on and covered with plastic sheeting or comparable material at all times and surrounded by a berm.

Stockpiles of fly ash, stucco, hydrated lime

Stockpile Management WM-3

- Stockpiles of materials that may raise the pH of runoff (i.e., basic materials) should be covered with plastic and surrounded by a berm.

Stockpiles/Storage of treated wood
- Treated wood should be covered with plastic sheeting or comparable material at all times and surrounded by a berm.

Protection of Active Stockpiles
A stockpile is active when it is being used or is scheduled to be used within 14 days of the previous use. Active stockpiles of the identified materials should be protected as follows:
- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Inspection and Maintenance
- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

References and Additional Resources
Construction Site Best Management Practices (BMPs) Manual, CTSW-RT-24-425.11.1, California Department of Transportation (Caltrans), March 2024.

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VENTURA UNIFIED SCHOOL DISTRICT
FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

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A# 03-125061

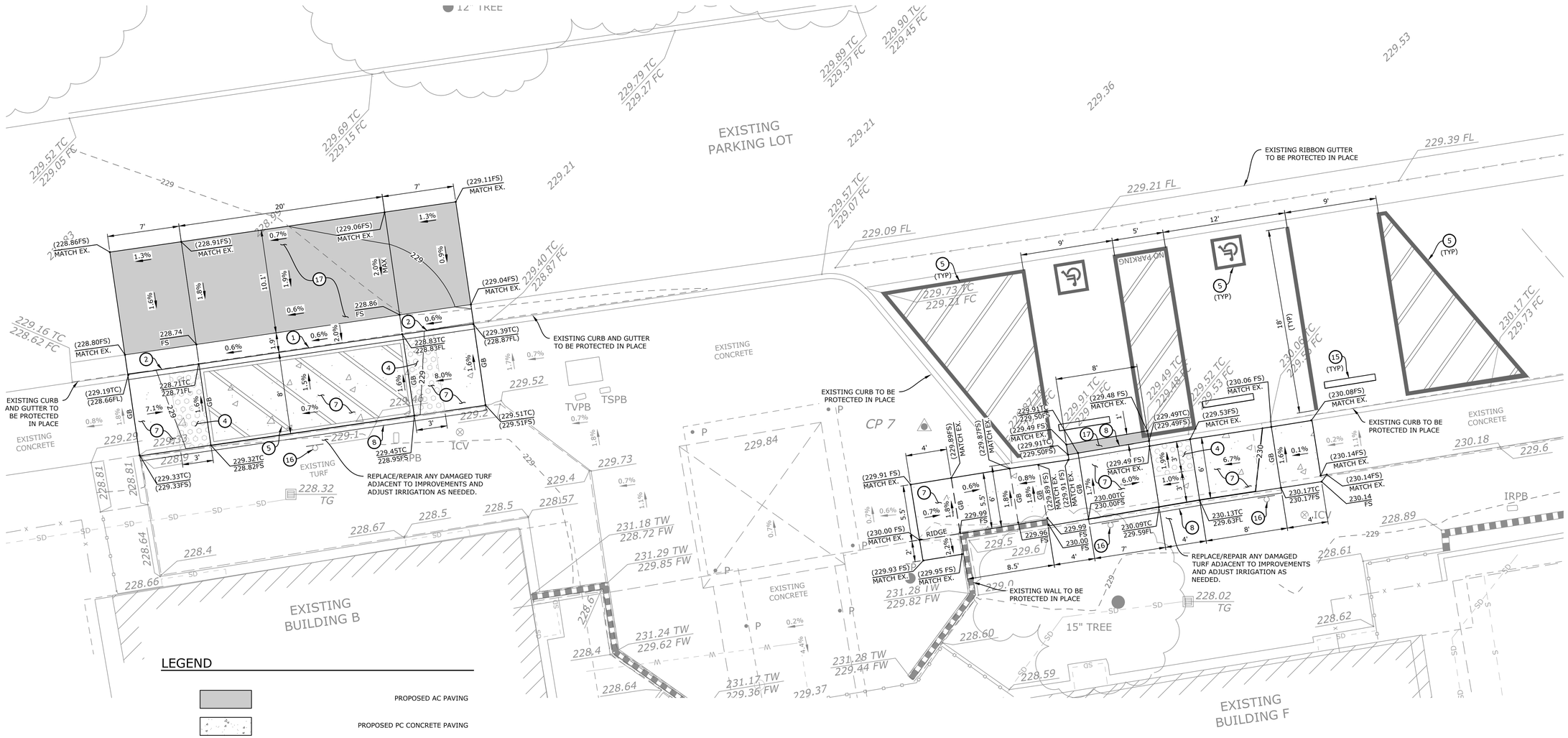
No.	Description	Date

Sheet Name
EROSION CONTROL DETAILS

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ

Sheet Number
C3.02

811 Know what's below. Call before you dig.



LEGEND

- PROPOSED AC PAVING
- PROPOSED PC CONCRETE PAVING
- PROPOSED FENCE
- EXISTING FENCE
- RIGHT OF WAY/PROPERTY LINE
- GRADE BREAK
- PROPOSED PATH OF TRAVEL
- EXISTING PATH OF TRAVEL
- 221 — PROPOSED MINOR CONTOURS
- 220 — PROPOSED MAJOR CONTOURS
- 221 — EXISTING MINOR CONTOURS
- 220 — EXISTING MAJOR CONTOURS
- EXISTING STREET CENTERLINE
- SD — PROPOSED STORM DRAIN LINE
- OHW — EXISTING OVER HEAD WIRE
- E — EXISTING ELECTRICAL LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM DRAIN LINE
- FW — EXISTING FIREWATER LINE
- S — EXISTING SEWER LINE
- COMM — EXISTING COMMUNICATION LINE
- 221.55 FS — PROPOSED ELEVATION
- (221.30) EG — EXISTING ELEVATION
- 1.5% — PROPOSED GRADE

GRADING AND PAVING CONSTRUCTION NOTES

SHEETS C4.01 AND C4.02

1. CONSTRUCT 0" CURB AND GUTTER MODIFIED PER SPPWC STD PLAN 120-3, TYPE A2-6(150). SEE DETAIL "E", SHEET C5.01.
2. CONSTRUCT VARIABLE HEIGHT CURB AND GUTTER MODIFIED PER SPPWC STD. PLAN 120-3, TYPE A2-6(150). SEE DETAIL "E", SHEET C5.01.
3. CONSTRUCT AC PAVEMENT TO MATCH EXISTING AC AND BASE THICKNESS OR 3" OF AC OVER 4" OF CAB, WHICHEVER IS THICKER. OVER EXCAVATE SUBGRADE TO A DEPTH OF 12" MINIMUM AND RECOMPACT TO 95% RELATIVE COMPACTION. WHERE ASPHALT ABUTS TURF OR OTHER SOFT-SCAPE, CONSTRUCT REDWOOD HEADER EDGE TREATMENT.
4. CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL PLANS.
5. CONSTRUCT STRIPING PER ARCHITECTURAL PLANS.
6. CONSTRUCT FENCE PER ARCHITECTURAL PLANS. SEE SHEET AD-201.
7. CONSTRUCT PC CONCRETE PAVEMENT PER DETAIL "A"-"D", SHEET C5.01.
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11. CONSTRUCT PCC RETAINING CURB TO MATCH EXISTING.
12. CONSTRUCT CONNECTION OF STORM DRAIN TO CRAWL SPACE DRAIN LINE. SEE PLUMBING PLANS FOR CONTINUATION.
13. CONSTRUCT CRAWLSPACE VENT PER ARCHITECTURAL PLANS.
14. REMOVE EXISTING STRUCTURE. COORDINATE REMOVAL WITH DISTRICT.
15. CONSTRUCT WHEEL STOP PER ARCHITECTURAL PLANS.
16. CONSTRUCT SIGN PER ARCHITECTURAL PLANS.
17. CONSTRUCT AC PAVEMENT TO MATCH EXISTING AC AND BASE THICKNESS OR 4" OF AC OVER 6" OF CAB, WHICHEVER IS THICKER. OVER EXCAVATE SUBGRADE TO A DEPTH OF 12" MINIMUM AND RECOMPACT TO 95% RELATIVE COMPACTION.

CAUTION: UNDERGROUND UTILITIES

THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN ON THESE PLANS ARE BASED ON AVAILABLE RECORDS AND LIMITED FIELD INVESTIGATIONS. THE INFORMATION IS PROVIDED FOR REFERENCE ONLY AND SHOULD NOT BE CONSIDERED COMPLETE OR ACCURATE. THE PRESENCE OF ADDITIONAL UNDERGROUND UTILITIES OR STRUCTURES, WHETHER KNOWN OR UNKNOWN, REPORTED OR UNREPORTED, SHOULD BE ANTICIPATED.

BY ACCEPTING THESE PLANS AND PROCEEDING WITH CONSTRUCTION, THE CONTRACTOR ACKNOWLEDGES AND ASSUMES ALL RISKS ASSOCIATED WITH THE EXISTENCE OF UNDERGROUND UTILITIES AND STRUCTURES, INCLUDING THOSE NOT SHOWN OR INACCURATELY DEPICTED ON THE PLANS. THE ENGINEER, OWNER, AND THEIR REPRESENTATIVES, SHALL NOT BE LIABLE FOR ANY DAMAGES, DELAYS, CLAIMS, OR ADDITIONAL COSTS RESULTING FROM UNKNOWN OR INACCURATELY LOCATED UNDERGROUND UTILITIES OR STRUCTURaES.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO POTHOLING, UTILITY COORDINATION, AND COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS, TO VERIFY THE EXACT LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY OWNERS, CONDUCT FIELD INVESTIGATIONS, AND CONTACT 811 AS REQUIRED BY LAW BEFORE COMMENCING ANY EXCAVATION WORK.

IF THE CONTRACTOR ENCOUNTERS ANY UNDERGROUND UTILITIES OR STRUCTURES THAT ARE NOT SHOWN ON THE PLANS, ARE INACCURATELY DEPICTED, OR OTHERWISE VARY FROM EXPECTED CONDITIONS, THEY SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE UTILITY OWNER. NO ADDITIONAL COMPENSATION OR TIME EXTENSIONS WILL BE GRANTED FOR DELAYS OR COSTS INCURRED DUE TO SUCH DISCOVERIES UNLESS OTHERWISE AUTHORIZED BY CONTRACT PROVISIONS.

IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROTECT ALL UNDERGROUND UTILITIES AND STRUCTURES THROUGHOUT THE DURATION OF CONSTRUCTION. ANY DAMAGE CAUSED TO EXISTING UTILITIES OR STRUCTURES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.

EXISTING UTILITIES NOTE

CONTRACTOR SHALL ADJUST ALL EXISTING UTILITY PULL BOXES, CLEANOUTS, VAULTS AND OTHER SURFACE LIDS/COVERS WITHIN THE PROJECT AREA TO FINISH SURFACE ELEVATION.

N / W / E / S

SCALE: 1"=5'

0 5 10 15

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DATE: 07/09/2025

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

GRADING, DRAINAGE, & PAVING PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ

Sheet Number

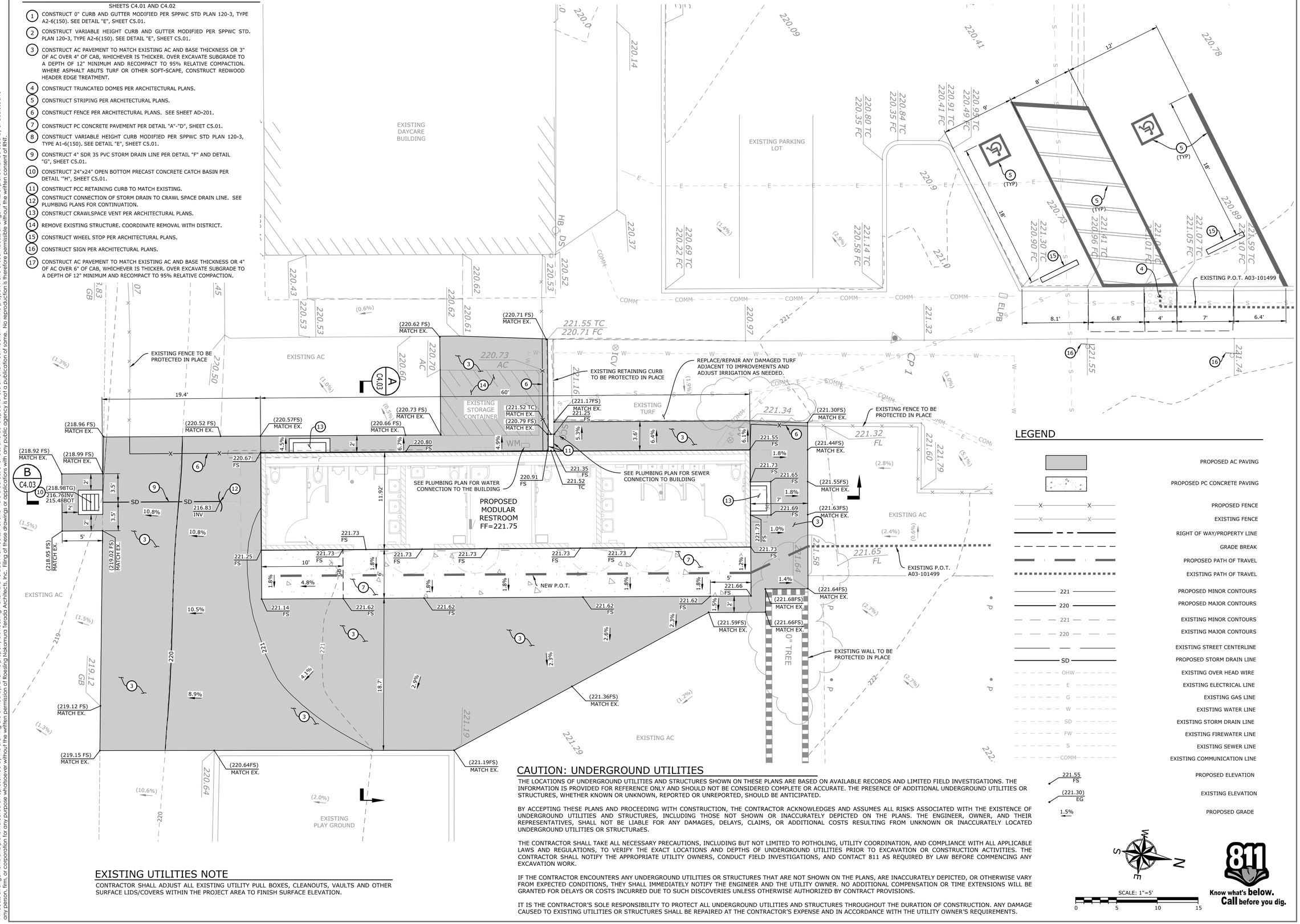
C4.01

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LEGEND

- PROPOSED AC PAVING
- PROPOSED PC CONCRETE PAVING
- PROPOSED FENCE
- EXISTING FENCE
- RIGHT OF WAY/PROPERTY LINE
- GRADE BREAK
- PROPOSED PATH OF TRAVEL
- EXISTING PATH OF TRAVEL
- PROPOSED MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- EXISTING MAJOR CONTOURS
- EXISTING STREET CENTERLINE
- PROPOSED STORM DRAIN LINE
- EXISTING OVER HEAD WIRE
- EXISTING ELECTRICAL LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING FIREWATER LINE
- EXISTING SEWER LINE
- EXISTING COMMUNICATION LINE
- PROPOSED ELEVATION (221.55 FS)
- EXISTING ELEVATION (221.30 EG)
- PROPOSED GRADE (1.5%)

SCALE: 1"=5'

0 5 10 15

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CAUTION: UNDERGROUND UTILITIES

THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN ON THESE PLANS ARE BASED ON AVAILABLE RECORDS AND LIMITED FIELD INVESTIGATIONS. THE INFORMATION IS PROVIDED FOR REFERENCE ONLY AND SHOULD NOT BE CONSIDERED COMPLETE OR ACCURATE. THE PRESENCE OF ADDITIONAL UNDERGROUND UTILITIES OR STRUCTURES, WHETHER KNOWN OR UNKNOWN, REPORTED OR UNREPORTED, SHOULD BE ANTICIPATED.

BY ACCEPTING THESE PLANS AND PROCEEDING WITH CONSTRUCTION, THE CONTRACTOR ACKNOWLEDGES AND ASSUMES ALL RISKS ASSOCIATED WITH THE EXISTENCE OF UNDERGROUND UTILITIES AND STRUCTURES, INCLUDING THOSE NOT SHOWN OR INACCURATELY DEPICTED ON THE PLANS. THE ENGINEER, OWNER, AND THEIR REPRESENTATIVES, SHALL NOT BE LIABLE FOR ANY DAMAGES, DELAYS, CLAIMS, OR ADDITIONAL COSTS RESULTING FROM UNKNOWN OR INACCURATELY LOCATED UNDERGROUND UTILITIES OR STRUCTURaES.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO POTHOLING, UTILITY COORDINATION, AND COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS, TO VERIFY THE EXACT LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY OWNERS, CONDUCT FIELD INVESTIGATIONS, AND CONTACT 811 AS REQUIRED BY LAW BEFORE COMMENCING ANY EXCAVATION WORK.

IF THE CONTRACTOR ENCOUNTERS ANY UNDERGROUND UTILITIES OR STRUCTURES THAT ARE NOT SHOWN ON THE PLANS, ARE INACCURATELY DEPICTED, OR OTHERWISE VARY FROM EXPECTED CONDITIONS, THEY SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE UTILITY OWNER. NO ADDITIONAL COMPENSATION OR TIME EXTENSIONS WILL BE GRANTED FOR DELAYS OR COSTS INCURRED DUE TO SUCH DISCOVERIES UNLESS OTHERWISE AUTHORIZED BY CONTRACT PROVISIONS.

IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROTECT ALL UNDERGROUND UTILITIES AND STRUCTURES THROUGHOUT THE DURATION OF CONSTRUCTION. ANY DAMAGE CAUSED TO EXISTING UTILITIES OR STRUCTURES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.

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DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

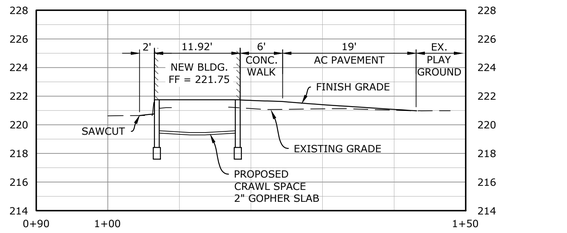
GRADING, DRAINAGE, & PAVING PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ

Sheet Number

C4.02

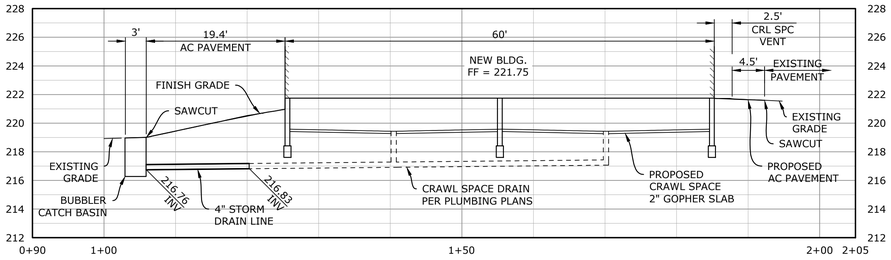
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SECTION "A"

SCALE: 1"=10' HORZ
1"=5' VERT

A
C4.02



SECTION "B"

SCALE: 1"=10' HORZ
1"=5' VERT

B
C4.02

811
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Sheet Name

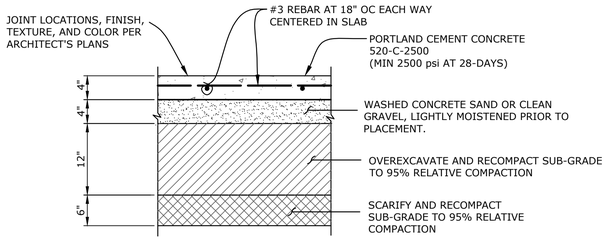
SITE
SECTIONS

RNT Project No.	1041
Date	07/08/2025
Drawn by	MEM
Checked by	JDJ

Sheet Number

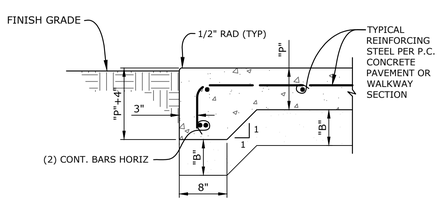
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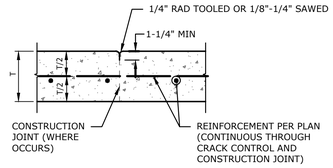
NOTES:
1. CONSTRUCT THICKENED EDGE AT WALKWAY PERIMETER PER DETAIL "B" THIS SHEET.
2. SAWCUT OR TOOLED CRACK CONTROL JOINTS PER DETAIL "C" THIS SHEET.
3. CONSTRUCT EXPANSION JOINTS PER DETAIL "D" THIS SHEET.
4. SECTION IS ESTIMATE ONLY. SOILS ENGINEER TO GIVE FINAL RECOMMENDATION BASED ON R-VALUE TEST RESULTS TAKEN PRIOR TO CONSTRUCTION.

PCC PEDESTRIAN PAVEMENT SECTION (A)
SCALE: N.T.S.



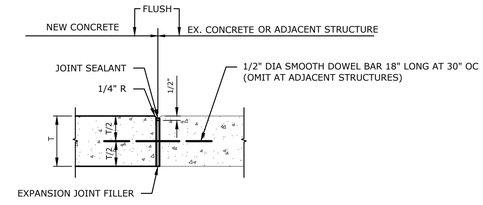
"P"= PORTLAND CEMENT CONCRETE THICKNESS (INCHES)
"B"= BASE LAYER THICKNESS (INCHES)

PCC PAVEMENT OR WALKWAY THICKENED EDGE (B)
SCALE: N.T.S.



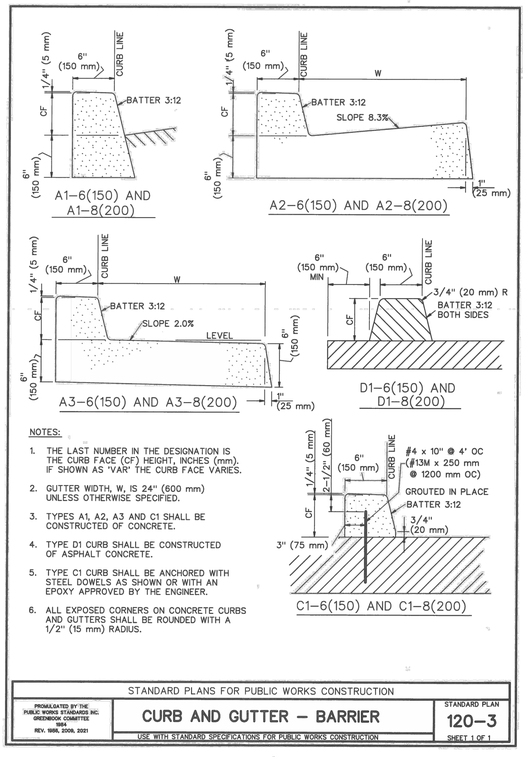
NOTES:
1. SEE SPECIFICATIONS FOR TYPE OF JOINT SEALANT.
2. CONSTRUCTION JOINTS SHALL ONLY BE LOCATED WHERE A CRACK CONTROL JOINT OR OTHER JOINT WOULD OTHERWISE HAVE BEEN REQUIRED.
3. SEE PLAN FOR THICKNESS, T.
4. CRACK CONTROL JOINTS TO BE SPACED AT 12' MAX O.C. E.W.

CONSTRUCTION/CRACK CONTROL JOINT (C)
SCALE: N.T.S.



NOTES:
1. SEE SPECIFICATIONS FOR TYPE OF JOINT SEALANT & EXPANSION JOINT FILLER.
2. USE SMOOTH BARS FOR DOWELS COATED TO PREVENT BOND, GREASE END PRIOR TO POUR.
3. SEE PLAN FOR THICKNESS, T.
4. PROVIDE ADEQUATE SUPPORT FOR DOWELS TO ENSURE THEY REMAIN LEVEL WITH FINISH SURFACE.
5. STOP SLAB REINFORCING AT EXPANSION JOINTS.
6. EXPANSION JOINTS TO BE CONSTRUCTED AT ADJACENT STRUCTURES, CURBS AND WALLS.

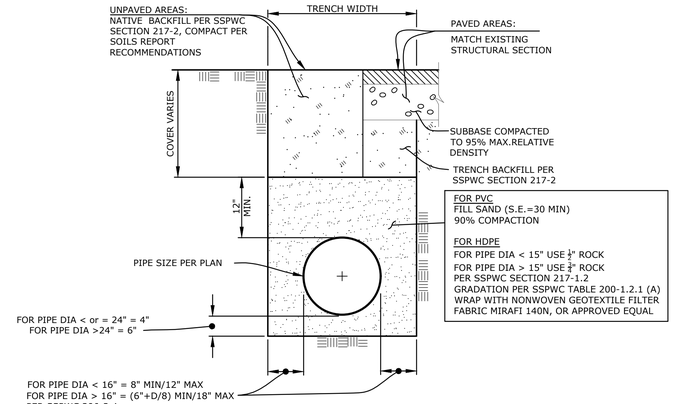
EXPANSION JOINT (D)
SCALE: N.T.S.



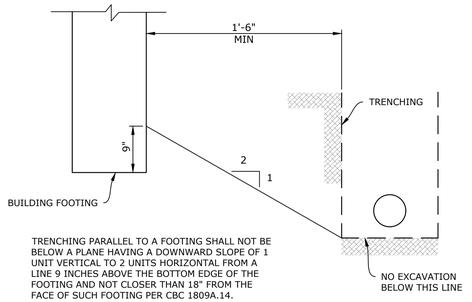
NOTES:
1. THE LAST NUMBER IN THE DESIGNATION IS THE CURB FACE (CF) HEIGHT, INCHES (mm). IF SHOWN AS 'VAR' THE CURB FACE VARIES.
2. GUTTER WIDTH, W, IS 24" (600 mm) UNLESS OTHERWISE SPECIFIED.
3. TYPES A1, A2, A3 AND C1 SHALL BE CONSTRUCTED OF CONCRETE.
4. TYPE D1 CURB SHALL BE CONSTRUCTED OF ASPHALT CONCRETE.
5. TYPE C1 CURB SHALL BE ANCHORED WITH STEEL DOWELS AS SHOWN OR WITH AN EPOXY APPROVED BY THE ENGINEER.
6. ALL EXPOSED CORNERS ON CONCRETE CURBS AND GUTTERS SHALL BE ROUNDED WITH A 1/2" (15 mm) RADIUS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 2024 REV. 1998, 2006, 2021	CURB AND GUTTER – BARRIER	STANDARD PLAN 120–3
	USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION	SHEET 1 OF 1

CURB AND GUTTER DETAILS (E)
SCALE: N.T.S.

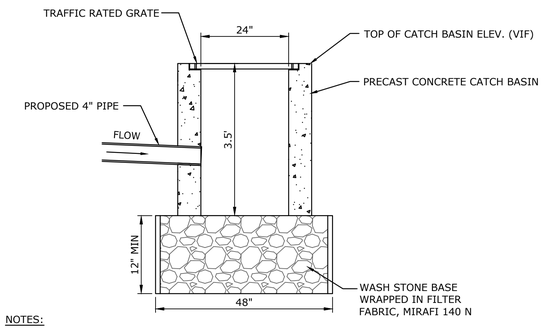


TYPICAL PLASTIC GRAVITY PIPE TRENCH (F)
SCALE: N.T.S.



TRENCHING PARALLEL TO A FOOTING SHALL NOT BE BELOW A PLANE HAVING A DOWNWARD SLOPE OF 1 UNIT VERTICAL TO 2 UNITS HORIZONTAL FROM A LINE 9 INCHES ABOVE THE BOTTOM EDGE OF THE FOOTING AND NOT CLOSER THAN 18" FROM THE FACE OF SUCH FOOTING PER CBC 1809A.14.

TYPICAL TRENCH AND FOOTING DETAIL (G)
SCALE: N.T.S.



NOTES:
1. ALL STEEL METAL PARTS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION AND WELDING, AND BEFORE ASSEMBLY.
2. GRATE AND FRAME SHALL BE SIMILAR TO ALHAMBRA FOUNDRY CO., LTD. OR APPROVED EQUAL.
3. GRATES SHALL BE OF VANDAL-RESISTANT CONSTRUCTION.
4. SEE UTILITY PLAN FOR INVERT ELEVATIONS

OPEN BOTTOM PRECAST CONCRETE CATCH BASIN (H)
SCALE: N.T.S.

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DETAIL SHEET

RNT Project No.	1041
Date	07/08/2025
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Checked by	JDJ
Sheet Number	C5.01

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PLUMBING NOTES

1. SCOPE OF WORK: FURNISH AND INSTALL ALL FIXTURES & PIPING SHOWN ON THE PLUMBING AND ARCHITECTURAL DRAWINGS AND DESCRIBED IN THESE NOTES AND THE BOOK SPECIFICATIONS. UNLESS OTHERWISE DIRECTED BY BUILDING OWNER, CONTRACTOR SHALL ARRANGE FOR AND PAY ALL FEES FOR CONNECTIONS TO UTILITIES FOR WATER, & SEWER. IN CONNECTION WITH THIS WORK, CONTRACTOR SHALL ALSO FURNISH AND INSTALL ALL NECESSARY LABOR, DEVICES, HARDWARE AND SYSTEMS REQUIRED TO MAKE SAID SYSTEMS PROPERLY AND SAFELY OPERABLE, INCLUDING, BUT NOT LIMITED TO, TRENCHING, BACKFILL, CUTTING, AND PATCHING. PROVIDE ALL SEWER & WATER PIPING TO NEW MODULAR CLASSROOMS INCLUDING BUT NOT LIMITED TO PIPE, VALVES, & CONNECTIONS TO EXISTING UTILITIES NECESSARY FOR A COMPLETE SYSTEM. SEE BOOK SPECIFICATIONS FOR MORE INFORMATION. VERIFY ALL CONNECTION SIZES. CUT AND PATCH FINISHED SURFACES AS REQUIRED. REPAIR ANY DAMAGED (E) PIPING. DO NOT COVER UNTIL RECEIVING POSITIVE APPROVAL FROM INSPECTOR. PROVIDE CONNECTIONS TO MODULAR CLASSROOM PIPING. VERIFY LOCATION.

2. EXAMINATION OF SITE AND CONTRACT DOCUMENTS. EACH BIDDER SHALL, AT ITS SOLE COST AND EXPENSE, INSPECT THE SITE OF THE PROPOSED WORK TO BECOME FULLY ACQUAINTED WITH CONDITIONS RELATING TO THE WORK AND TO FULLY UNDERSTAND THE FACILITIES, DIFFICULTIES AND RESTRICTIONS ATTENDING THE EXECUTION OF THE WORK UNDER THE CONTRACT DOCUMENTS AND COST THEREOF. BIDDERS SHALL THOROUGHLY REVIEW AND BE FAMILIAR WITH THE CONTRACT DOCUMENTS, INCLUDING WITHOUT LIMITATION, THE SPECIFICATIONS AND THE DRAWINGS. THE FAILURE OR OMISSION OF ANY BIDDER TO RECEIVE OR EXAMINE ANY OF THE CONTRACT DOCUMENTS, FORMS, INSTRUMENTS, ADDENDA, OR OTHER DOCUMENTS OR TO INSPECT THE SITE SHALL NOT RELIEVE SUCH BIDDER FROM ANY OBLIGATIONS WITH RESPECT TO THE BID PROPOSAL, THE CONTRACT OR THE WORK REQUIRED UNDER THE CONTRACT DOCUMENTS. THE OWNER ASSUMES NO RESPONSIBILITY OR LIABILITY TO ANY BIDDER FOR, NOR SHALL THE OWNER BE BOUND BY, ANY UNDERSTANDINGS, REPRESENTATIONS OR AGREEMENTS OF THE OWNER'S AGENTS, EMPLOYEES OR OFFICERS CONCERNING THE CONTRACT DOCUMENTS OR THE WORK MADE PRIOR TO EXECUTION OF THE CONTRACT. THE SUBMISSION OF A BID PROPOSAL SHALL BE DEEMED PRIMA FACIE EVIDENCE OF THE BIDDER'S FULL COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION.

3. INTERPRETATION OF DRAWINGS, SPECIFICATIONS OR CONTRACT DOCUMENTS. IF ANY BIDDER IS IN DOUBT AS TO THE TRUE MEANING OF ANY PART OF THE DRAWINGS, THE SPECIFICATIONS OR OTHER PORTIONS OF THE CONTRACT DOCUMENTS; FINDS DISCREPANCIES, ERRORS OR OMISSIONS THEREIN; OR FINDS VARIANCES IN ANY OF THE CONTRACT DOCUMENTS WITH APPLICABLE RULES, REGULATIONS, ORDINANCES AND/OR LAWS, A WRITTEN REQUEST FOR AN INTERPRETATION OR CORRECTION THEREOF MAY BE SUBMITTED TO THE ENGINEER. IT IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE BIDDER TO SUBMIT SUCH REQUEST IN SUFFICIENT TIME FOR THE PREPARATION OF A RESPONSE THERETO AND DELIVERY OF SUCH RESPONSE TO ALL BIDDERS PRIOR TO THE SCHEDULED CLOSING FOR RECEIPT OF BID PROPOSALS. ANY REQUEST OF ANY BIDDER, PURSUANT TO THE FOREGOING SENTENCE THAT IS MADE LESS THAN SEVEN DAYS PRIOR TO THE SCHEDULED CLOSING DATE FOR THE RECEIPT OF BID PROPOSALS SHALL BE DEEMED UNTIMELY. ANY INTERPRETATION OR CORRECTION OF THE CONTRACT DOCUMENTS WILL BE MADE ONLY BY WRITTEN ADDENDUM DULY ISSUED BY THE OWNER OR THE ENGINEER. A COPY OF ANY SUCH ADDENDUM WILL BE MAILED OR OTHERWISE DELIVERED TO EACH BIDDER RECEIVING A SET OF THE CONTRACT DOCUMENTS. NO PERSON IS AUTHORIZED TO RENDER AN ORAL INTERPRETATION OR CORRECTION OF ANY PORTION OF THE CONTRACT DOCUMENTS TO ANY BIDDER, AND NO BIDDER IS AUTHORIZED TO RELY ON ANY SUCH ORAL INTERPRETATION OR CORRECTION. FAILURE TO REQUEST INTERPRETATION OR CLARIFICATION OF THE DRAWINGS, THE SPECIFICATIONS OR OTHER PORTIONS OF THE CONTRACT DOCUMENTS PURSUANT TO THE FOREGOING SHALL BE DEEMED TO BE A WAIVER OF ANY DISCREPANCY, DEFECT, OR CONFLICT THEREIN.

4. DIMENSIONS. ALL DIMENSIONS SHALL HAVE PREFERENCE OVER SCALE. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND ENGINEERING DRAWINGS BEFORE PROCEEDING WITH WORK. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON WORKING DRAWINGS. ALL SIZES OF EQUIPMENT AND MATERIALS SHALL BE VERIFIED WITH EQUIPMENT MANUFACTURER. ALL PLUMBING FIXTURES SHALL BE INSTALLED PER THE DIMENSIONS ON THE ARCHITECTURAL DRAWINGS.

5. CODES AND STANDARDS: ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE 2022 CALIFORNIA PLUMBING CODE, THE 2022 CALIFORNIA MECHANICAL CODE, THE 2022 CALIFORNIA BUILDING CODE, THE STATE OF CALIFORNIA, THE LOCAL JURISDICTION, AND STANDARD CONSTRUCTION PRACTICES. ALL PLUMBING FIXTURES SHALL BE IN STRICT ACCORDANCE WITH THE FIXTURE SCHEDULE, AND SHALL BE NEW AND FREE FROM DEFECTS. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES, AND SHALL OBTAIN APPROVED INSPECTIONS FOR ALL WORK AS REQUIRED BY OWNER, DSA, AND LOCAL JURISDICTION. CONTRACTOR SHALL MAINTAIN IN EFFECT ALL INSURANCE REQUIRED BY STATE LAWS, LOCAL JURISDICTION, AND GENERAL CONTRACTOR / OWNER. WHERE CONFLICT OR VARIATION EXISTS AMONGST CODES, SPECIFICATIONS, OR DRAWINGS, THE MOST STRINGENT SHALL GOVERN.

6. SUBMITTALS REQUIRED: PRIOR TO ORDERING FIXTURES AND MATERIALS, CONTRACTOR SHALL FURNISH SUBMITTALS OF ALL FIXTURES AND MATERIALS PROPOSED FOR USE IN THIS PROJECT. ALL FIXTURES AND MATERIALS SHALL BE INSTITUTIONAL GRADE HEAVY DUTY QUALITY. ORDERING OF FIXTURES AND MATERIALS SHALL ONLY PROCEED AFTER SATISFACTORY REVIEW OF ALL SUBMITTALS BY ENGINEER / OWNER. COPIES OF ALL OWNER'S MANUALS, WARRANTIES, AND OTHER WRITTEN INFORMATION REGARDING SYSTEMS SHALL BE SUBMITTED TO OWNER.

7. CONSTRUCTION OBSERVATION: IN ADDITION TO THE REQUIREMENT FOR OBTAINING INSPECTIONS BY THE LOCAL JURISDICTION, CONTRACTOR SHALL NOTIFY ENGINEER AT APPROPRIATE TIMES DURING THE CONSTRUCTION PROCESS SO THAT ENGINEER CAN VISIT SITE TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF CONTRACTOR'S WORK AND TO DETERMINE IF THE WORK IS PROCEEDING IN GENERAL ACCORDANCE WITH THE CONTRACT DOCUMENTS.

8. UNDERGROUND ALERT: CALL 811 BEFORE YOU DIG OR VISIT CALIFORNIA811.ORG TO REQUEST A TICKET ONLINE."

DO NOT START ANY EXCAVATION JOB WITHOUT FIRST OBTAINING A POSITIVE RESPONSE FROM SOCALGAS THAT YOUR LOCATE AND MARK REQUEST HAS BEEN ADDRESSED.

BEFORE LAYING OUT PIPING AND PERFORMING TRENCHING, CONTRACTOR SHALL DETERMINE LOCATIONS OF EXISTING UNDERGROUND UTILITIES. CONTACT "DIG ALERT / UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA" - 811 OR CALIFORNIA811.ORG. CONTRACTOR SHALL ALSO CONTACT OWNER'S REPRESENTATIVE TO ASCERTAIN LOCATIONS OF UNDERGROUND PIPING AND OTHER CONDITIONS AFFECTING TRENCHING, AND SHALL PERFORM TESTING AND SUBSURFACE EXPLORATION AS NECESSARY TO LOCATE UTILITIES.

9. TRENCHING: MATERIAL SHALL BE EXCAVATED FROM TRENCHES AND PILED ADJACENT TO THE TRENCH. MATERIAL SHALL BE PILED IN SUCH A MANNER THAT WILL CAUSE A MINIMUM OF INCONVENIENCE TO PUBLIC TRAVEL. ALL ROCK, BOULDERS, AND STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX (6) INCHES UNDER AND AROUND PIPES. EXCAVATIONS SHALL BE KEPT FREE OF WATER. TRENCHES SHALL BE DUG TO TRUE AND SMOOTH BOTTOM GRADES AND IN ACCORDANCE WITH THE LINES INDICATED ON DRAWINGS AND AS DIRECTED. TRENCH WIDTHS SHALL NOT EXCEED 30 INCHES OR 1.5 TIMES OUTSIDE DIAMETER OF THE PIPE PLUS 18 INCHES WHICHEVER IS GREATER. MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF PIPE INSTALLED PLUS 12 INCHES.

DEPTH OF TRENCHING FOR WATER AND GAS PIPING SHALL BE SUCH AS TO GIVE A MINIMUM COVER OF 18 INCHES OVER THE TOP OF THE PIPE. DEEPER EXCAVATION MAY BE REQUIRED DUE TO LOCALIZED BREAKS IN GRADE, OR TO INSTALL THE NEW PIPING UNDER EXISTING CULVERTS OR OTHER UTILITIES WHERE NECESSARY.

TRENCHING FOR SEWERS AND DRAINS SHALL BE OF SUFFICIENT WIDTH TO PERMIT PROPER JOINTING OF THE PIPE AND BACKFILLING OF MATERIAL ALONG THE SIDES OF THE PIPE. TRENCH WIDTH AT THE SURFACE OF THE GROUND SHALL BE KEPT TO THE MINIMUM AMOUNT NECESSARY TO INSTALL THE PIPE IN A SAFE MANNER. TRENCHES SHALL BE EXCAVATED BELOW THE BARREL OF THE PIPE A SUFFICIENT DISTANCE TO PROVIDE FOR BEDDING MATERIAL.

WHERE THE TRENCH BOTTOM IS IN A MATERIAL WHICH IS UNSUITABLE FOR FOUNDATION OR WHICH WILL MAKE IT DIFFICULT TO OBTAIN UNIFORM BEARING FOR THE PIPE, SUCH MATERIAL SHALL BE REMOVED AND A STABLE FOUNDATION PROVIDED. THIS SHALL INCLUDE THE PREPARATION OF THE NATIVE TRENCH BOTTOM AND/OR THE TOP OF THE FOUNDATION MATERIAL TO A UNIFORM GRADE SO THAT THE ENTIRE LENGTH OF PIPE RESTS FIRMLY ON A SUITABLE PROPERLY COMPACTED MATERIAL. GRAVEL TO BE USED FOR FOUNDATION PURPOSES SHALL BE OF A TYPE AND GRADATION TO PROVIDE A SOLID COMPACT BEDDING IN THE TRENCH.

10. BACKFILL: CONTRACTOR SHALL COMPLETE 4" SAND (COMPACTED) BEDDING AND THEN BACKFILL TO 6 INCHES OVER THE TOP OF THE PIPE WITH SAND BEFORE STARTING BACKFILLING OPERATIONS. TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE PIPE FROM DAMAGE, MOVEMENT AND SHIFTING. COMPACTION EQUIPMENT USED ABOVE THE PIPE ZONE SHALL BE OF A TYPE THAT DOES NOT INJURE THE PIPE. WHERE ORIGINAL EXCAVATED MATERIAL IS UNSUITABLE FOR TRENCH BACKFILL, BACKFILL GRAVEL SHALL BE PLACED. UNSUITABLE MATERIAL SHALL BE REMOVED TO A DISPOSAL AREA. WHEREVER A TRENCH IS EXCAVATED IN A PAVED ROADWAY, SIDEWALK OR OTHER AREA WHERE MINOR SETTLEMENTS WOULD BE DETRIMENTAL AND WHERE NATIVE EXCAVATED MATERIAL IS NOT SUITABLE FOR COMPACTION AS BACKFILL, TRENCH SHALL BE BACKFILLED WITH BACKFILL GRAVEL. WARNING TAPE MARKERS AND TRACER WIRES SHALL BE INSTALLED DURING BACKFILL OPERATIONS.

THE METHOD OF COMPACTION SHALL BE AT CONTRACTOR'S OPTION, UNLESS EXCAVATION PERMIT REQUIRES A SPECIFIC TYPE. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THE PROPER SIZE AND TYPE OF COMPACTION EQUIPMENT AND SELECT THE PROPER METHOD OF UTILIZING SAID EQUIPMENT TO ATTAIN THE REQUIRED COMPACTION DENSITY. COMPACTION BY WATER JETTING WILL NOT BE PERMITTED.

WHERE BACKFILL IS REQUIRED TO BE COMPACTED TO A SPECIFIED DENSITY, TESTS FOR COMPLIANCE SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITY. ALLOW TESTING SERVICE TO INSPECT AND APPROVE EACH SUBGRADE AND FILL LAYER BEFORE FURTHER FILL, BACKFILL OR CONSTRUCTION WORK IS PERFORMED.

11. PIPING LOCATIONS: PIPING LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL LATERAL STUBS, OFFSETS, OBSTRUCTIONS, ETC REQUIRED IN THE FIELD. THE ACTUAL LOCATIONS OF LINES, CLEANOUTS AND CONNECTIONS MAY VARY PROVIDED THAT COMPLETE SYSTEMS ARE SIZED AND INSTALLED IN COMPLIANCE WITH CODES. ANY SIGNIFICANT DEVIATIONS FROM THE PLANS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER PRIOR TO INSTALLATION. VERIFY CONNECTIONS LOCATIONS AND RELOCATABLES. CUT & PATCH FINISHED SURFACES AS NEEDED FOR PIPE INSTALLATION. PATCH SHALL MATCH ADJACENT SURFACES.

12. STORM DRAIN PIPING: ALL STORM DRAINS SHALL BE US -MANUFACTURED SDR 35 PVC PIPE MEETING THE REQUIREMENTS OF ASTM D3034. EXTENSIONS TO SERVE CLEANOUTS AT GRADE SHALL BE PVC. ALL LINES SHALL BE SLOPED AS PER PLAN IN COMPLIANCE WITH CODE. INSTALL TAPE MARKERS AND TRACER WIRES FOR ALL BURIED PLASTIC PIPE.

13. WASTE AND VENT PIPING: ALL DRAINS, VENTS, FITTINGS, AND THE BUILDING DRAIN SHALL BE US - MANUFACTURED CAST IRON PIPING. THE BUILDING SEWER (BEYOND 5 FEET OF FOUNDATION) SHALL BE US -MANUFACTURED ABS DWV SCH. 40 PIPE MEETING THE REQUIREMENTS OF ASTM D3965. EXTENSIONS TO SERVE CLEANOUTS AT GRADE SHALL BE CAST IRON. ALL LINES SHALL BE SLOPED AS PER PLAN IN COMPLIANCE WITH CODE. WHERE VENT PIPES PENETRATE THE ROOF, PIPING SHALL BE FLASHED AND COUNTER-FLASHED. VANDAL-PROOF VENT CAPS (JR SMITH 1748, ZURN Z-193, OR EQUAL) SHALL BE INSTALLED ON EVERY PLUMBING VENT. LAVATORY AND SINK P-TRAPS SHALL BE CHROME PLATED VANDAL-PROOF CAST BRASS, MCGUIRE MFG CO "VANDAL TRAP", OR EQUAL. WHERE PIPING PENETRATES WALL, CHROME PLATED CAST BRASS ESCUTCHEONS WITH SET SCREWS SHALL BE INSTALLED. INSTALL TAPE MARKERS AND TRACER WIRES FOR ALL BURIED PLASTIC PIPE.

14. SITE SEWER PIPING SHALL BE US - MANUFACTURED ABS DWV SCH. 40 PIPE MEETING THE REQUIREMENTS OF ASTM D-3965. EXTENSIONS TO SERVE CLEANOUTS TO GRADE SHALL BE CAST IRON. ALL LINES SHALL BE SLOPED @ 1/4"/FT MIN OR IN COMPLIANCE WITH CODE. WHERE PIPING SLOPES LESS THAN 1/4"/FOOT A LICENSED SURVEYOR SHALL BE EMPLOYED TO VERIFY SEWER SLOPE. PROVIDE ACTUAL INVERT ELEVATIONS AT CLEANOUTS.

15. WATER PIPING: ALL UNDERGROUND SITE PIPING SHALL BE U.S. MANUFACTURED SCHEDULE 80 PVC. ALL ABOVEGROUND PIPING SHALL BE U.S. MANUFACTURED TYPE "L" HARD COPPER WITH (NON-LEAD) SOLDER SWEAT JOINTS. TRANSITIONS FROM PVC TO ABOVE GROUND COPPER SHALL BE MADE WITH U.S. MANUFACTURED TYPE "K" SOFT COPPER, USING MALE PVC / FEMALE COPPER ADAPTERS, WITH NO JOINTS ALLOWED UNDER BUILDING SLABS. UNDERGROUND JOINTS SHALL BE BRAZED. DEPTH OF COVER 30" IN PAVED AREAS / 18" IN LANDSCAPING. INSTALL TAPE MARKERS AND TRACER WIRES FOR ALL BURIED PLASTIC PIPE. INDIVIDUAL SHUTOFF VALVES SHALL BE NIBCO - S-685-80-LF BALL VALVES. MAIN SHUTOFF VALVES SHALL BE NIBCO T-113-LF GATE VALVE.

16. CLEANOUTS: CLEANOUTS TO GRADE SHALL BE J.R. SMITH 4253S OR EQUAL WITH BRONZE PLUG AND NON-SKID COVER WITH LIFTING DEVICE SET FLUSH WITH SURFACE FOR PAVED AREAS. NON-TRAFFIC OR NON-SURFACED AREAS SHALL BE INSTALLED WITH CAST IRON CLEANOUT RISERS TERMINATING WITH BRONZE PLUG WITHIN CHRISTY (OR EQUAL) CONCRETE YARD BOX WITH CAST IRON COVER AND THE WORDS "SEWER" MARKED ON COVER.

17. PIPING SUPPORT: ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2022 CALIFORNIA PLUMBING CODE. HORIZONTAL WATER PIPES AND CONDENSATE DRAINS SHALL BE HUNG WITH SUPERSTRUT C-727-F ADJUSTABLE FELT-LINED PIPE HANGERS, THREADED ROD, AND BEAM ATTACHMENT BRACKETS, LOCATED AT SIX FOOT MAXIMUM INTERVALS. VERTICAL WATER PIPES AND CONDENSATE DRAINS SHALL BE SUPPORTED AT THEIR BASES AND AT EACH STORY OR AT TEN FOOT MAXIMUM INTERVALS. TO PREVENT SWAYING, PROVIDE LATERAL BRACING AT SIX FOOT INTERVALS ANCHORED TO OVERHEAD FRAMING. HORIZONTAL CAST IRON PIPING SHALL BE HUNG WITH SUPERSTRUT C-710 ADJUSTABLE CLEVIS HANGERS, THREADED ROD, AND BEAM ATTACHMENT BRACKETS, LOCATED AT FIVE FOOT MAXIMUM INTERVALS. TO PREVENT SWAYING, PROVIDE LATERAL BRACING AT FIVE FOOT INTERVALS ANCHORED TO OVERHEAD FRAMING. VERTICAL PIPING SHALL BE SUPPORTED AT EACH FLOOR WITH SUPERSTRUT C-720 RISER CLAMPS AND AT MIDSPAN WITH C-708 CLAMPS INTO SUPERSTRUT CHANNEL.

18. TESTING: ALL PIPING AND FIXTURES INSTALLED SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2022 CALIFORNIA PLUMBING CODE AND THE LOCAL JURISDICTION.

19. CORRECTION OF WORK: THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK THE SCHOOL DISTRICT FINDS DEFECTIVE OR FAILING TO CONFORM TO THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BEAR ALL COSTS REQUIRED BY THE CONTRACT DOCUMENTS. IF ANY OF THE WORK IS FOUND TO BE DEFECTIVE OR NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL CORRECT IT PROMPTLY AFTER RECEIPT OF A WRITTEN NOTICE FROM THE SCHOOL DISTRICT TO DO SO.

20. WARRANTY: THE CONTRACTOR SHALL WARRANT THAT ALL SYSTEMS, SUBSYSTEMS, AND COMPONENT PARTS ARE FULLY FREE FROM DEFECTIVE DESIGN, MATERIALS, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE SCHOOL DISTRICT.

21. AS-BUILT DRAWINGS SHALL BE GIVEN TO THE SCHOOL DISTRICT PRIOR TO ACCEPTANCE OF THE PROJECT.

22. CLEANUP: CONTRACTOR SHALL THOROUGHLY CLEAN ENTIRE JOBSITE EVERY DAY OF ALL DEBRIS ASSOCIATED WITH PLUMBING INSTALLATION.

23. COORDINATION: CONTRACTOR SHALL COORDINATE WITH THE SCHOOL DISTRICT'S PROJECT MANAGER AND ALL RELATED TRADES.

24. CUTTING AND PATCHING. WORK INCLUDES CUTTING AND PATCHING (TO MATCH EXISTING) ALL SURFACES AND SYSTEMS DISTURBED BY THE PLUMBING WORK.

25. TEST & VIDEO NEW SEWER MAIN AFTER SOIL COMPACTION TO VERIFY NO BELLIES EXIST. RUN APPROX 2 GALLON/MIN WHILE VIDEOING THE ENTIRE MAIN SEWER. REVIEW VIDEO W/ INSPECTOR & ENGINEER. REINSTALL PIPE AT ANY LOCATION WHERE STANDING WATER OCCURS.

26. POTHOLE EXISTING UTILITIES AT BEGINNING OF PROJECT. PROVIDE LOCATION, SIZE, & INVERT ON AS-BUILTS. VERIFY AVAILABLE INVERT FOR SEWER DRAINAGE.

27. DISINFECTION OF DOMESTIC WATER PIPING SYSTEM:

A. PRIOR TO STARTING WORK. VERIFY SYSTEM IS COMPLETE, FLUSHED AND CLEAN.
B. ENSURE PH OF WATER TO BE TREATED IS BETWEEN 7.4 AND 7.6 BY ADDING ALKALI (CAUSTIC SODA OR SODA ASH) OR ACID (HYDROCHLORIC).
C. INJECT DISINFECTANT, FREE CHLORINE IN LIQUID, POWDER, TABLET OR GAS FORM, THROUGHOUT SYSTEM TO OBTAIN 50 TO 80 mg/L RESIDUAL.
D. BLEED WATER FROM OUTLETS TO ENSURE DISTRIBUTION AND TEST FOR DISINFECTANT RESIDUAL AT MINIMUM 15 PERCENT OF OUTLETS.
E. MAINTAIN DISINFECTANT IN SYSTEM FOR 24 HOURS.
F. IF FINAL DISINFECTANT RESIDUAL TESTS LESS THAN 25 mg/L, REPEAT TREATMENT.
G. FLUSH DISINFECTANT FROM SYSTEM UNTIL RESIDUAL EQUAL TO THAT OF INCOMING WATER OR 1.0 mg/L.
H. TAKE SAMPLES NO SOONER THAN 24 HOURS AFTER FLUSHING, FROM 10 PERCENT OF OUTLETS AND FROM WATER ENTRY AND ANALYZE IN ACCORDANCE WITH AWWA C651.
I. PRIOR TO PLACING DOMESTIC WATER SYSTEM IN SERVICE FOR HUMAN CONSUMPTION, THE PLUMBING CONTRACTOR SHALL PROVIDE PROMPTLY TO THE OWNER AND ENGINEER THE WRITTEN TEST RESULTS.

IMPORTANT NOTICE

ALL UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR IS TO NOTIFY UNDERGROUND SERVICE ALERT TWO WORKING DAYS PRIOR TO STARTING ANY EXCAVATION OR RESURFACING.

CONTACT 811 OR california811.org

DIGALERT

CONTACT 811
AT LEAST TWO DAYS BEFORE YOU DIG

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

ABBREVIATIONS

ABBR.	ABBREVIATIONS
ABV.	ABOVE
APPROX.	APPROXIMATELY
AFF	ABOVE FINISHED FLOOR
BLDG	BUILDING
BLW.	BELOW
BOT	BOTTOM
CFM	CUBIC FEET PER MINUTE
CL	CENTERLINE
COND	CONDENSATE
CONT	CONTINUED
DIA	DIAMETER
DWN	DOWN
DS	DOWN SPOUT
DWG	DRAWING
(E)	EXISTING
EA.	EACH
ELEV	ELEVATION
ELEC.	ELECTRIC
EQUIP	EQUIPMENT
FIN	FINISHED
FLR	FLOOR
FRM	FROM
G	GAS
GPM	GALLONS PER MINUTE
MAX.	MAXIMUM
MIN.	MINIMUM
MPG	MEDIUM PRESSURE GAS
(N)	NEW
OC	ON CENTER
POC	POINT OF CONNECTION
RD	ROOF DRAIN
SHT	SHEET
SOV	SHUT-OFF VALVE
TYP	TYPICAL
UGND	UNDERGROUND
VTR	VENT TO ROOF
WCO	WALL CLEAN-OUT
YB	YARD BOX

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVEABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER, "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

APPLICABLE CODE: 2022 CBC

APPENDIX A: TYPICAL MEP DISTRIBUTION SYSTEM NOTE
MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK, AND ELECTRICAL CONDUIT:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, AND 13.6.8; AND 2022 CBC, SECTION 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW AND SHALL BE IN ACCORDANCE WITH DSA IR 16-13. EACH SYSTEM SHALL BE DESIGNED BY A STRUCTURAL ENGINEER AND COORDINATED WITH THE STRUCTURAL BUILDING DESIGN.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☒ E ☐ - IR 16-13 SECTION 2.1: PROJECT-SPECIFIC DESIGN
SHEET NUMBERS_____
MP ☐ MD ☐ PP ☐ E ☐ - IR 16-13 SECTION 2.2: DESIGN BASED ON OSHPD OPM, PART OF PROJECT SUBMITTAL
OPM NUMBERS:_____
SHEET NUMBERS:_____
MP ☐ MD ☐ PP ☐ E ☐ - IR 16-13 SECTION 2.2.6 DESIGN BASED ON OSHPD OPM, DEFERRED APPROVAL

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

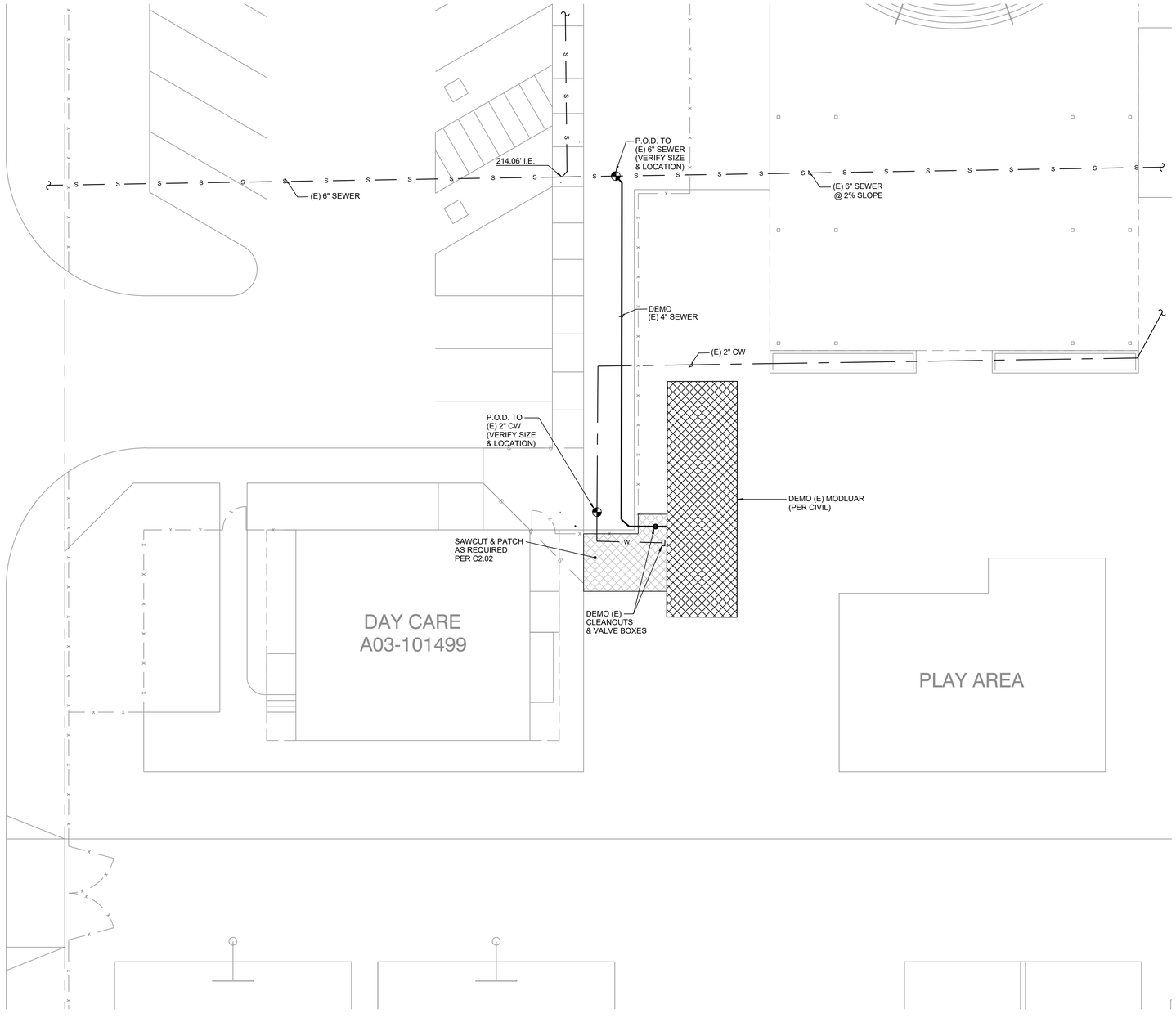
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PLUMBING NOTES

RNT Project No.	1041
Date	07/08/2025
Drawn by	TP
Checked by	RR/HM
Sheet Number	P-101

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1 PARTIAL SITE DEMOLITION PLUMBING PLAN

SCALE: 1" = 10' - 0"

N

LINE LEGEND

- DEMO COLD WATER
- (E) COLD WATER
- (E) GAS
- DEMO SEWER
- (E) WASTE OR SEWER

SYMBOL LEGEND

- CLEAN-OUT TO GRADE IN YARD BOX
- CLEAN-OUT TO GRADE
- POD — POINT OF DISCONNECTION
- TEE
- SHUT OFF VALVE
- BUILDING DEMO

DEMO NOTES:

1. EXISTING UNDERGROUND PIPING AS SHOWN ON THE DRAWINGS PROVIDED BY THE DISTRICT IS INDICATED ON THIS PLAN. HOWEVER THE PIPING LOCATIONS AND DEPTHS HAVE NOT BEEN INDEPENDENTLY VERIFIED AND MAY NOT BE COMPLETE.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING DEPTH AND COMPLETE FUNCTIONING SYSTEM, DETERMINING ACTUAL LOCATIONS WILL REQUIRE INVESTIGATION, POT HOLING, AND SURVEYING.
3. DEMOLISH & REMOVE (DEMO) EXISTING WATER AND SEWER PIPE THAT IS INDICATED TO BE REMOVED, TO THE GREATEST EXTENT PRACTICAL & CAP. LEAVE IN PLACE (ABANDON) REMAINING PIPES THAT ARE NOT IDENTIFIED TO BE REMOVED. IDENTIFY ALL PIPES ON AS-BUILT DRAWINGS.

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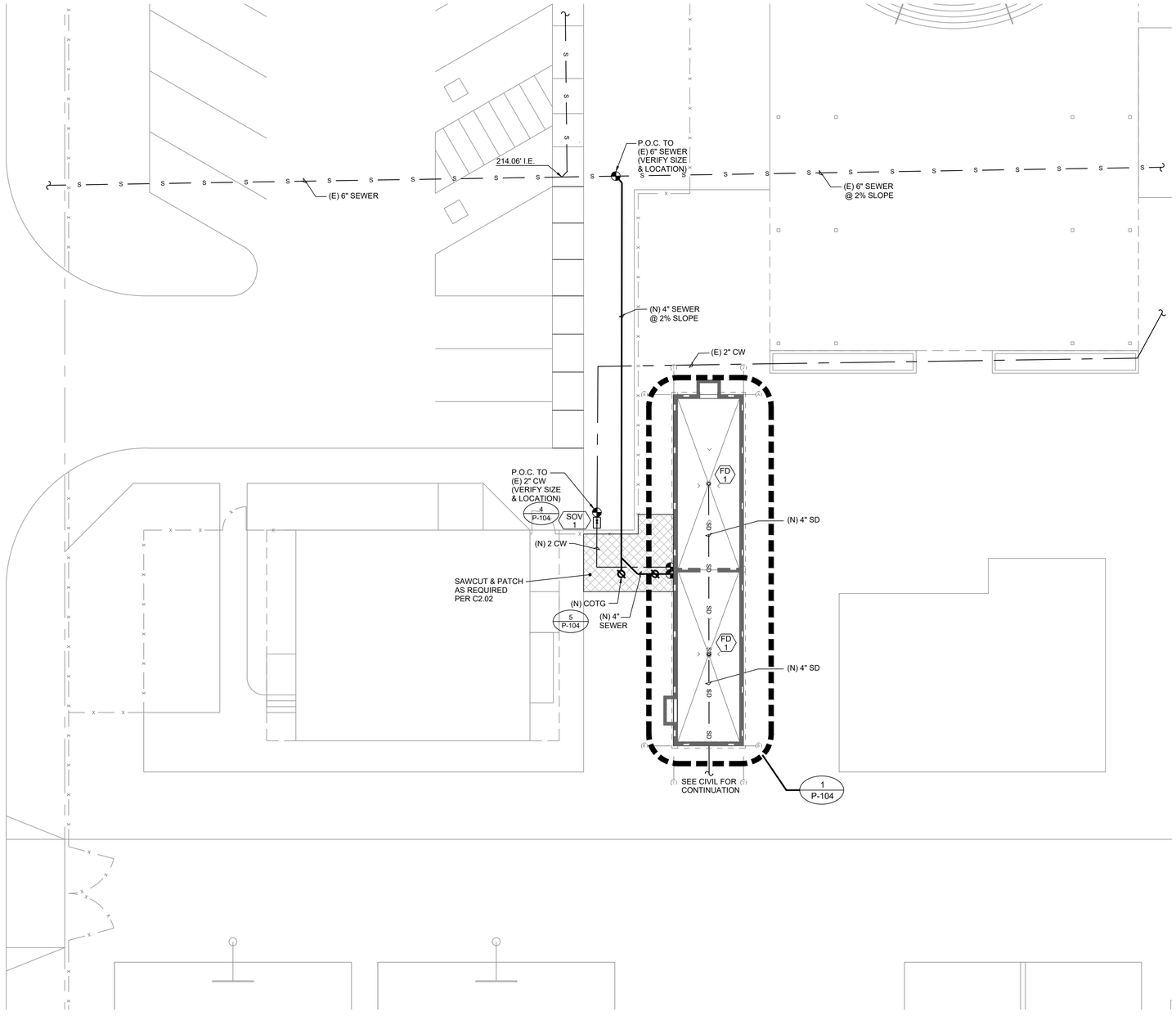
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PARTIAL SITE DEMO PLUMBING PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	TP
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Autodesk Docs://1041 - 1050 ET Portel Restroom/1041 Portel RR.rvt
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1 PARTIAL SITE PLUMBING PLAN
SCALE: 1" = 10' - 0"

LINE LEGEND

- (N) COLD WATER
- (E) COLD WATER
- (E) GAS
- (N) WASTE OR SEWER
- (E) WASTE OR SEWER
- (N) STORM DRAIN

SYMBOL LEGEND

- CLEAN-OUT TO GRADE IN YARD BOX
- CLEAN-OUT TO GRADE
- POC — POINT OF CONNECTION
- TEE
- SHUT OFF VALVE

NOTES:

1. BEFORE COMMENCING WORK, INDEPENDENTLY VERIFY OR DETERMINE THE PRESENCE OF EXISTING BURIED PIPELINES, CONDUITS AND STRUCTURES AND DETERMINE THE EXACT LOCATION INCLUDING DEPTHS OF ALL SUCH FACILITIES WHICH MAY AFFECT OR BE AFFECTED BY CONSTRUCTION. THIS WILL REQUIRE INVESTIGATION, POT HOLING AND SURVEYING. PROVIDE RESULTS OF THIS INVESTIGATION AND SURVEY TO OWNERS REPRESENTATIVE FOR REVIEW BEFORE WORK IS COMMENCED. ALLOW FIVE (5) WORKING DAYS FOR REVIEW.
2. IN ANY CASE, UPON BECOMING AWARE OF EXISTING BURIED PIPELINES, CONDUITS OR STRUCTURES NOT SHOWN OR LOCATED DIFFERENTLY THAN SHOWN ON THE DRAWING AND WHICH MAY AFFECT OR BE AFFECTED BY CONSTRUCTION, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE BY TELEPHONE AND IN WRITING.
3. VERIFY ALL CONNECTION SIZES.
4. CUT AND PATCH FINISHED SURFACES AS REQUIRED.
5. REPAIR ANY DAMAGED (E) PIPING. DO NOT COVER UNTIL RECEIVING POSITIVE APPROVAL FROM INSPECTOR.

PLUMBING SCHEDULE:

SYMBOL	W	V	CW	HW	DESCRIPTION
SOV 1	-	-	-	-	WATER SHUT OFF VALVE: TWO PIECE BALL VALVE: NIBCO S-685-80-LF, W/ CHRISTY B12 PRE-CAST CONCRETE BOX W/ CAST IRON LID AT UNPAVED AREAS & ASPHALT AND CONCRETE LID AT SIDEWALKS. LABEL THE COVER "WATER".
FD 1	4	-	-	-	FLOOR DRAIN. OATEY MODEL 72000. ABS DRAIN, ROUND GRATE, W/ ADJUSTABLE TO MEET CRAWL SPACE FINISH SURFACE, REF. ARCH. AND CIVIL.

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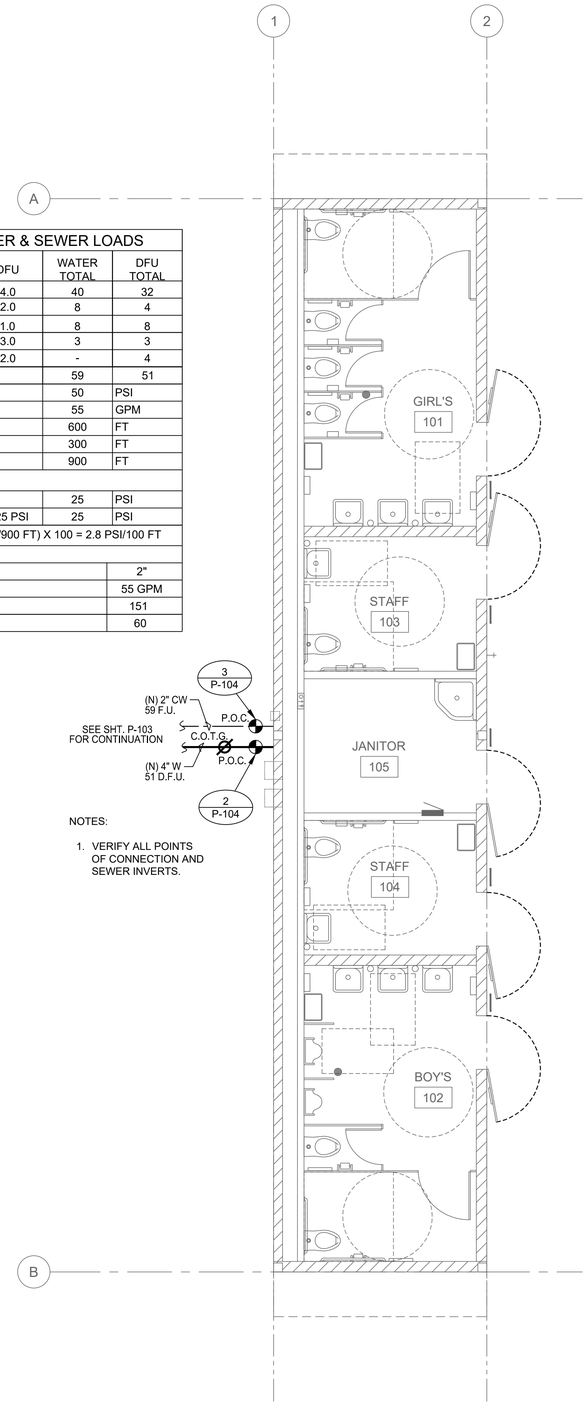
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PARTIAL SITE PLUMBING PLAN

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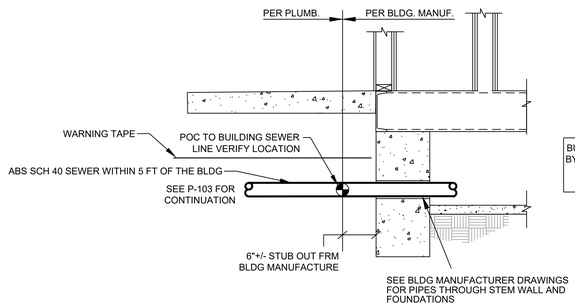
PORTOLA ELEMENTARY SCHOOL WATER & SEWER LOADS					
ITEM	QTY	CW FU	DFU	WATER TOTAL	DFU TOTAL
WATER CLOSETS	8	5.0	4.0	40	32
URINAL	2	4.0	2.0	8	4
LAVATORIES	8	1.0	1.0	8	8
MOP SINK	1	3.0	3.0	3	3
FLOOR DRAIN	2	-	2.0	-	4
TOTAL FIXTURE UNITS				59	51
PRESSURE AT SCHOOL				50	PSI
DEMAND LOAD FROM CHART A-2.1				55	GPM
MAXIMUM DISTANCE TO FURTHEST FIXTURE				600	FT
PLUS 50% FOR FITTINGS				300	FT
TOTAL				900	FT
MIN PRESSURE AT FIXTURE				25	PSI
PRESSURE AVAIL. FOR FRICTION	50 PSI - 25 PSI = 25 PSI			25	PSI
PRESSURE AVAIL. PER 100 FT. OF COPPER	(25 PSI /900 FT) X 100 = 2.8 PSI/100 FT				
PIPE SIZE				2"	
CW (MAX GPM @ 7 FPS)				55 GPM	
TANK TYPE FIXTURE UNITS				151	
F.V. FIXTURE UNITS				60	



NOTES:

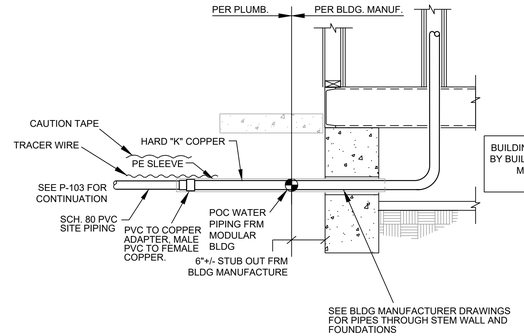
1. VERIFY ALL POINTS OF CONNECTION AND SEWER INVERTS.

1 / P-104 PLUMBING PLAN
SCALE: 1/4" = 1' - 0"



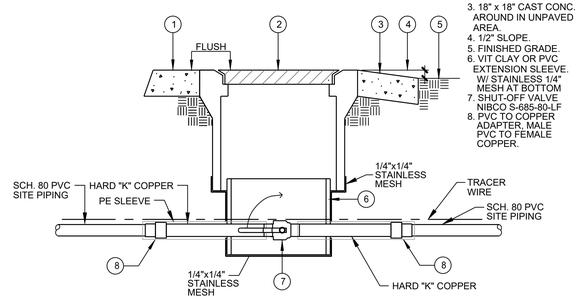
BUILDING INTERIOR PIPING & DETAILD DONE BY BUILDING MANUFACTURER. SEE BUILDING MANUFACTURE PLANS FOR MORE INFORMATION

2 / P-104 BUILDING SEWER DETAIL
SCALE: NTS



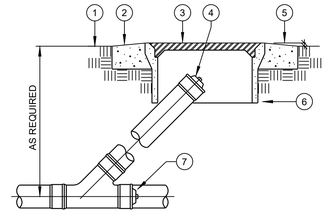
BUILDING INTERIOR PIPING & DETAILD DONE BY BUILDING MANUFACTURER. SEE BUILDING MANUFACTURE PLANS FOR MORE INFORMATION

3 / P-104 BUILDING WATER SUPPLY DETAIL
SCALE: NTS



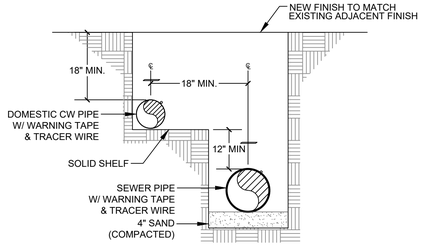
1. FINISHED FLOOR OR ASPHALT.
2. PRE-CAST CONCRETE BOX WITH CAST IRON COVER. LABEL THE COVER "WATER".
3. 18" x 18" CAST CONC. AROUND IN UNPAVED AREA.
4. 1/2" SLOPE.
5. FINISHED GRADE.
6. VIT CLAY OR PVC EXTENSION SLEEVE. W/ STAINLESS 1/4" MESH AT BOTTOM
7. SHUT-OFF VALVE NIBCO S-685-80-LF
8. PVC TO COPPER ADAPTER, MALE PVC TO FEMALE COPPER.

4 / P-104 WATER SHUTOFF VALVE DETAIL
SCALE: NTS



1. FINISHED GRADE
2. 4" DEEP CONCRETE PAD IN UNPAVED AREA. EXTEND 6" MIN ALL AROUND BOX.
3. LABEL COVER "SEWER"
4. BRONZE CLEANOUT PLUG.
5. 1/2" SLOPE
6. PRE-CAST CONCRETE BOX WITH CAST IRON COVER (CHRISTY #B3 W/ C.I. LID)
7. PLUGGED WYE AT END OF RUNS

5 / P-104 SURFACE CLEANOUT TO GRADE IN YARD BOX (COTG IN YB)
SCALE: NTS



TYPICAL TRENCH & INSTALLATION OF PIPING WHERE LINES RUN PARALLEL
6 / P-104
SCALE: NTS

LINE LEGEND

- COLD WATER
- (E) COLD WATER
- (E) GAS
- WASTE OR SEWER
- (E) WASTE OR SEWER

SYMBOL LEGEND

- CLEAN-OUT TO GRADE IN YARD BOX
- CLEAN-OUT TO GRADE
- POC — POINT OF CONNECTION
- TEE
- SHUT OFF VALVE

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VENTURA UNIFIED SCHOOL DISTRICT
FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

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DSA REVIEW
A# 03-125061

No.	Description	Date

Sheet Name
PLUMBING FLOOR PLAN & DETAILS

RNT Project No.	1041
Date	07/08/2025
Drawn by	TP
Checked by	RR/HM
Sheet Number	P-104

APPLICABLE CODE: 2022 CBC

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURE ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK AND ELECTRICAL CONDUIT:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7 AND 13.6.8 AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐	MD ☐	PP ☐	E ☒	OPTION 1: PROJECT-SPECIFIC DESIGN.
MP ☐	MD ☐	PP ☐	E ☐	OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL
MP ☐	MD ☐	PP ☐	E ☐	OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL

APPLICABLE CODE REQUIREMENTS

PERFORMANCE OF THE WORK OF THIS CONTRACT SHALL CONFORM TO THE REQUIREMENTS OF APPLICABLE GOVERNING CODES AND ORDINANCES INCLUDING THE FOLLOWING:

2022 BUILDING STANDARDS ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24, C.C.R.

2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (2020 IBC, VOLUMES 1-3 WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2020 N.E.C. WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R (2020 U.M.C. WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2020 U.P.C. WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 C.C.R.

2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 C.C.R. (2012 I.F.C. WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 C.C.R.

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen), PART 11, TITLE 24 C.C.R.

2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 C.C.R. TITLE 19 C.C.R. PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

NFPA 13 AUTOMATIC SPRINKLER SYSTEM ----------2022 EDITION

NFPA 14 STANDPIPE SYSTEM ----------2019 EDITION

NFPA 17A WET CHEMICAL SYSTEM ----------2021 EDITION

NFPA 24 PRIVATE SERVICE MAINS ----------2019 EDITION

NFPA 72 NATIONAL FIRE ALARM CODE ----------2022 EDITION (NOTE SEE UL STANDARDS 1971 FOR ("VISUAL DEVICES")

GENERAL NOTES

1. VISIT JOB SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BID.
2. THE ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2022 CALIFORNIA ELECTRICAL CODE AND ALL APPLICABLE LOCAL ORDINANCES. WHERE PLANS CALL FOR A HIGHER STANDARD THAN APPLICABLE CODES, THE PLANS SHALL GOVERN.
3. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD TO SUIT FIELD CONDITIONS.
4. ALL ELECTRICAL EQUIPMENT, APPLIANCES AND LIGHTING FIXTURES SHALL BE LISTED BY A RECOGNIZED TEST LAB AND BEAR THAT LABEL OF APPROVAL.
5. CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL MATERIAL AND EQUIPMENT FOR THIS WORK UNLESS OTHERWISE NOTED.
6. ALL SPACES AS INDICATED ON PANELS OR SWITCHBOARDS SHALL BE COMPLETE WITH HARDWARE AND BUSSING FOR FUTURE BREAKER OR SWITCH.
7. GROUNDING AND BONDING SHALL BE PER CODE PLUS ANY ADDITIONAL PROVISIONS SPECIFIED OR SHOWN ON DRAWINGS.
8. ALL CONDUIT RUNS SHALL CONTAIN A CODE SIZED GREEN GROUND WIRE.
9. THESE PLANS ARE NOT COMPLETE UNTIL APPROVED BY THE AUTHORITY HAVING JURISDICTION.
10. ALL CONDUCTORS SHALL BE IN CONDUIT.
11. ALL CONDUCTORS SHALL BE COPPER WITH TYPE THHN/THWN INSULATION.

ACCESSIBILITY NOTES

Installation of switches, outlets and controls to reflect the accessibility requirements of the 2022 CBC Chapters 11A and 11B for Accessibility.

1. CBC 11B-308.1.1 Electrical controls and switches intended to be used by the occupant of a room or area shall be located within the allowable reach ranges. Low reach shall be measured from the bottom of the outlet box and high reach is measured to the top of the outlet box.

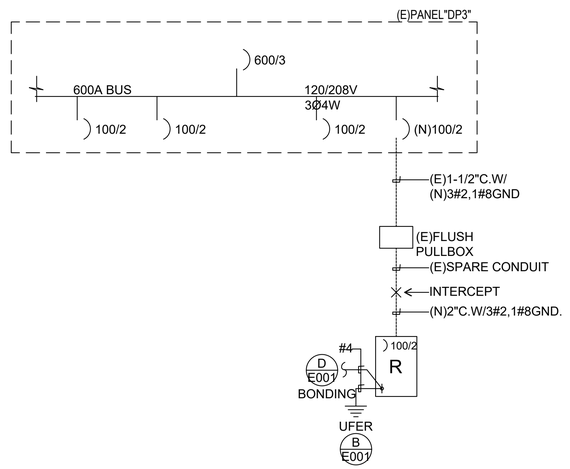
2. CBC 11B-308.1.2 Electrical receptacle outlets on branch circuits of 30 amperes or less and communication system receptacles shall be located in the allowable reach range. Low reach shall be measured from the bottom of the outlet box and high reach is measured to the top of the outlet box.

3. CBC 11B-308.2.1 High forward reach that is unobstructed shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above finish floor or ground.

4. CBC 11B-308.2 Forward Reach Obstructed - Electrical receptacle outlets shall be located no more than 44 inches measured from the top of the receptacle outlet box when the obstruction is over 20" and does not exceed 25". When the depth is less than 20" height can be increased to 48". (desk counters)

5. CBC 11B-308.3 Side Reach Obstructed - Electrical receptacle outlets shall be located no more than 46 inches measured from the top of the receptacle outlet box when the obstruction is over 10" and does not exceed 24". When the depth is less than 10" height can be increased to 48".

6.Overhang light fixtures or wall fixtures projecting more than 4" from the wall surface shall be a minimum of 80" above the walking surface.



SINGLE LINE DIAGRAM

SCALE : NONE

EXISTING ELECTRICAL SERVICES HAS BEEN INVESTIGATED AND FOUND TO HAVE ADEQUATE CAPACITY FOR THE PROPOSED LOAD ADDITION SHOWN ON THESE PLANS.
SITE INSPECTOR IS TO WITNESS AND VERIFY GROUNDING TESTS

SYMBOLS

	CONDUIT EXISTING
	CONDUIT CONCEALED IN WALL OR CEILING
	CONDUIT CONCEALED UNDER FLOOR OR BELOW GRADE
	CONDUIT STUBBED OUT AND CAPPED
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
	HATCH MARKS INDICATE NO. OF #12 WIRES IN CODE SIZED CONDUIT (3) MAX. IN 1/2" C., (5) MAX. IN 3/4" C., (8) MAX. IN 1"C., NO MARKS = 2#12
A-3	HOME RUN: LETTER INDICATES PANEL, NUMBER(S) INDICATES CIRCUIT(S).
	SAWCUT
	GROUND CONNECTION
	DISTRIBUTION SWITCHBOARD OR PANEL
	PANEL, BRANCH CIRCUIT TYPE, SURFACE AND FLUSH
	SIGNAL TERMINAL CABINET, SURFACE & FLUSH
	LINEAR SURFACE FIXTURE
2 a	OUTLET DATA: BAR INDICATES WALL MOUNT, LETTER INDICATES SWITCH CONTROL, NO. INDICATES CIRCUIT.
	SURFACE FIXTURE ON FLUSH OUTLET.
	RECESSED FIXTURE WITH JUNCTION BOX FOR THRU WIRING
	EXIT LIGHT WITH ARROWS AS SHOWN ON PLANS, WALL AND CEILING MOUNT.
	LOW LEVEL EXIT SIGN, +6" AFF, +4" FROM DOOR JAMB
A 100	LIGHT FIXTURE DESIGNATION. LETTER INDICATES TYPE, NO. INDICATES WATTAGE. SEE FIXTURE SCHEDULE.
FC 1	MECHANICAL EQUIPMENT DESIGNATION. SEE MECHANICAL DRAWINGS.
	SPECIAL RECEPTACLE - SEE PLAN
M	METER
	FLUSH FLOOR RECEPTACLE
	RECEPTACLE, DUPLEX, 15A, 125V, NEMA 5-15R +18" U.N.O.
	DUPLEX RECEPTACLE MTD. ABOVE BACKSPLASH
	DUPLEX RECEPTACLE W/LOWER HALF SWITCHED
GFI	GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	CEILING RECEPTACLE
	RECEPTACLE, DUPLEX, 20A, 125V, NEMA 5-20R +18" U.N.O.
J	JUNCTION BOX 4" SQUARE, 1-1/2" DEEP U.N.O.
T	THERMOSTAT F.B.O. +48"
2	MOTOR, NO. INDICATES HORSEPOWER
	CLOCK OUTLET +7'-6" U.N.O.
	DISCONNECT SWITCH, NON-FUSED
F	DISCONNECT SWITCH FUSED HORSEPOWER RATED OR SIZED AS NOTED
	COMBINATION MAGNETIC STARTER WITH DISCONNECT SWITCH AND FUSES
	MAGNETIC MOTOR STARTER W/OVERLOADS IN EACH PHASE
D	DIMMER W/INTEGRAL "ON-OFF" SW.
	PUSHBUTTON
PC	PHOTOCELL
SD	SMOKE DETECTOR
	TELEPHONE/COMPUTER/DATA OUTLET, TWO GANG BOX W/1 GANG COVERPLATE & GROMMETED OPENING +18" U.N.O.
TV	CABLE TV OUTLET +18" U.N.O.
M	MOTION SENSOR
$	EXISTING SWITCH
S	SINGLE POLE SWITCH
^{2}	DOUBLE POLE SWITCH
^{3}	THREE WAY SWITCH
^{P}	SWITCH W/PILOT LT.
	(S, ^{2}, ^{3}, ^{P}: QUIET TOGGLE TYPE RATED AT 20A, 120/277V A.C. +42" U.N.O.)
^{M}	MANUAL MOTOR STARTER
FACP	FIRE ALARM CONTROL PANEL
GFI	GROUND FAULT CIRCUIT INTERRUPTING
LST	LABOR SAVING TANDEM
MLO	MAIN LUGS ONLY
w/	WITH
C.O.	CONDUIT ONLY
W.P.	WEATHERPROOF
F.B.O.	FURNISHED BY OTHERS, INSTALL & CONNECT
U.N.O.	UNLESS NOTED OTHERWISE
N.E.C.	NATIONAL ELECTRICAL CODE
N.I.C.	NOT IN CONTRACT
(E)	EXISTING
(N)	NEW
(R)	REMOVE
(RL)	RELOCATE
S/M	SURFACE MOUNT
U/G	UNDERGROUND
CWP	COLD WATER PIPE
AFF	ABOVE FINISHED FLOOR
HACR	HEATING AND AIR CONDITIONING RATED CIRCUIT BREAKER
N.L.	NIGHT LIGHT

NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON THIS PROJECT.

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

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VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

NOTES, CODES, SYMBOLS, SINGLE LINE DIAGRAM

RNT Project No.	1041
Date	07/08/2025
Drawn by	Author
Checked by	Checker

Sheet Number

E000

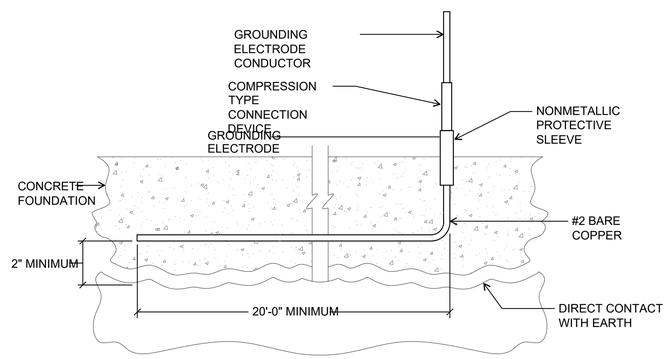
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GROUND ACCESS BOX

SCALE : NONE

A E001

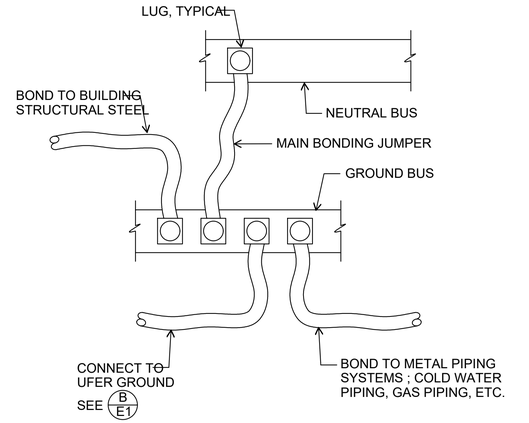


THE GROUNDING SYSTEM SHALL CONSIST OF A "UFER" TYPE 20' LONG OF #3/0 BARE COPPER CONDUCTOR EMBEDDED ALONG THE BOTTOM OF A CONCRETE FOOTING OR GRADE BEAM THAT IS IN DIRECT CONTACT WITH THE EARTH.

UFER GROUND DETAIL

SCALE : NONE

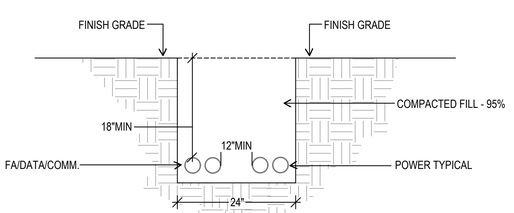
B E001



BONDING DIAGRAM

SCALE : NONE

D E001



TRENCH DETAIL

SCALE : NONE

C E001

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DATE: 07/09/2025

VENTURA
UNIFIED
SCHOOL
DISTRICT

FILE NO.: 56-40

PORTOLA
-MODULAR
RESTROOM

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DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

DETAILS

RNT Project No.	1041
Date	07/08/2025
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Checked by	Checker

Sheet Number

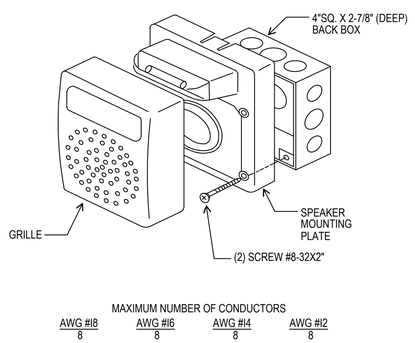
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FIRE ALARM SYSTEM REQUIREMENTS

1) APPLICABLE STANDARD 2022 NFPA 72
2) INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.
3) UPON COMPLETION OF THE INSTALLATION OF THE SYSTEMS, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4) A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5) ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6) DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7) ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA. APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.
8) WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR ENTIRE LENS TO BE BETWEEN 80" AND 90"FROM FINISHED FLOOR.
9) WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10) AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIM HEARING DISTANCE . SOUND LEVEL SHALL BE MAINTAIND FOR DURATION OF AT LEAST 60 SECTIONS 5 DBA MUST BE MAINTAINED.
11) AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12) THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
13) VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14) UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.
15) ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
16) PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.
17) SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18) ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMETS.
19) FIRE ALARM PANEL, REMOTES, AND COMPONENETS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
20) A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL.". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
21) THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, REQUIREMENTS.
22) CONTROL PANELS, REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" 23) THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.3.
24) SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
25) OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.
26) A DSA CLASS 3 INSPECTOR SHALL BE HIRED BY THE DISTRICT AND APPROVED BY DSA TO INSPECT THIS PROJECT.

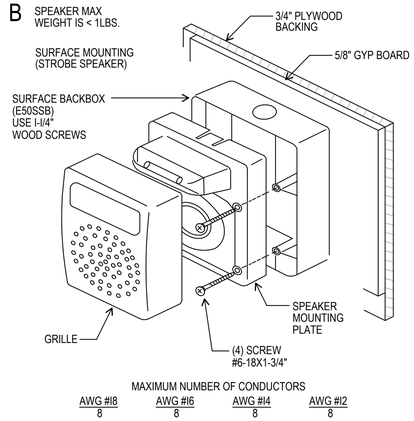
A



MAXIMUM NUMBER OF CONDUCTORS

AWG #18	AWG #16	AWG #14	AWG #12
8	8	8	8

B



MAXIMUM NUMBER OF CONDUCTORS

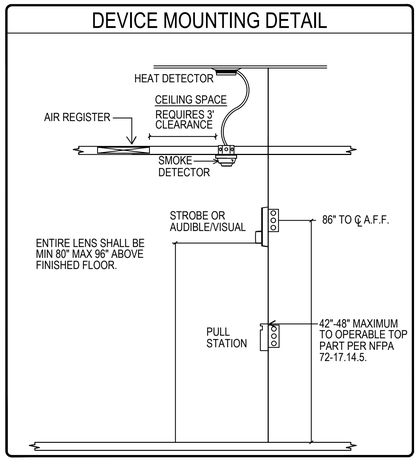
AWG #18	AWG #16	AWG #14	AWG #12
8	8	8	8

EXTERIOR WP SPEAKER MOUNTING DETAILS

SCALE : NONE

B / E002

DEVICE MOUNTING DETAIL



FIRE ALARM MOUNTING DETAIL

SCALE : NONE

A / E002

FIRE LIFE SAFETY NOTES

1 CBC 3401.12 - BUILDING AND PARTS OF THEREOF SHALL BE MAINTAINED IN A SAFE AND SANITARY CONDITION. DEVICES OR SAFEGUARDS WHICH ARE REQUIRED BY THIS CODE SHALL BE MAINTAINED IN CONFORMANCE WITH THE CODE EDITION UNDER WHICH INSTALLED. THE OWNER OR THE OWNERS DESIGNATED AGENT SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF BUILDING.

2 CFC 503.1; TITLE 19 DIVISION 1 §3.05 MAINTAIN FIRE ACCESS ROUTE(S). PUBLIC STREET ACCESS - PROVIDE SIGN(S) 'NO PARKING FIRE LANE WITH CALIFORNIA VEHICLE CODE 22500.1' AND DETAIL. (OR INCLUDE NOTE - EXISTING NO PARKING FIRE LANE SIGN TO BE FIELD VERIFIED BY IOR)

3 CFC 503.1 - MAINTAIN / PROVIDE KEY BOXES FOR FIRE DEPARTMENT ACCESS, AS APPROPRIATE.

4 CFC 701.2 - WHERE ANY COMPONENTS IN THIS CHAPTER ARE NOT MAINTAINED AND DO NOT FUNCTION AS INTENDED OR DO NOT HAVE THE FIRE RESISTANCE REQUIRED BY THE CODE UNDER WHICH THE BUILDING WAS CONSTRUCTED, REMODELED OR ALTERED, SUCH COMPONENT(S) OR PORTIONS THEREOF SHALL BE DEEMED AN UNSAFE CONDITION, IN ACCORDANCE WITH SECTION 110.1.1. COMPONENTS OR PORTIONS THEREOF DETERMINED TO BE UNSAFE SHALL BE REPAIRED OR REPLACED TO CONFORM TO THAT CODE UNDER WHICH THE BUILDING WAS CONSTRUCTED, REMODELED, ALTERED OR THIS CHAPTER, AS DEEMED APPROPRIATE BY THE FIRE CODE OFFICIAL.

5 CFC 703.1 AND TITLE 19 DIVISION 1 §1.14 - THE REQUIRED FIRE-RESISTANCE RATING OF FIRE-RESISTANCE CONSTRUCTION (INCLUDING WALLS, FIRESTOPS, SHAFT ENCLOSURES, PARTITIONS, SMOKE-BARRIERS, FLOORS, FIRE-RESISTIVE COATINGS AND SPRAYED FIRE-RESISTANT MATERIALS APPLIED TO STRUCTURAL MEMBERS AND FIRE-RESISTANT JOINTS SYSTEMS) SHALL BE MAINTAINED. SUCH ELEMENTS SHALL BE VISUALLY INSPECTED BY THE OWNER AND PROPERLY REPAIRED, RESTORED OR REPLACED WHEN DAMAGED, ALTERED, BREACHED OR PENETRATED. OPENINGS THROUGH FIRE-RESTANCE-RATED ASSEMBLIES SHALL BE PROTECTED BY SELF- OR AUTOMATIC-CLOSING DOORS OF APPROVED CONSTRUCTION MEETING THE FIRE PROTECTION REQUIRMENTS FOR THE ASSEMBLY.

6 CFC 703.2 - OPENING PROTECTIVE SHALL BE MAINTAINED IN AN OPERATIVE CONDITION IN ACCORDANCE WITH NFPA 80. FIRE DOORS AND SMOKE BARRIER DOORS SHALL NOT BE BLOCKED OR OBSTRUCTED OR OTHERWISE BE MADE INOPERABLE. FUSIBLE LINKS SHALL BE REPLACED PROMPTLY WHENEVER FUSED OR DAMAGED. FIRE ASSEMBLIES SHALL NOT BE MODIFIED.

7 CFC 901.4; 907.8.5 AND TITLE 19 DIVISION 1 1.14 - INSTALLATION FIRE PROTECTION SYSTEM SHALL BE MAINTAINED IN ACCORDANCE WITH ORIGINAL INSTALLATION STANDARDS FOR THAT SYSTEM. REQUIRED SYSTEMS SHALL BE EXTENDED, ALTERED OR AUGMENTED AS NECESSARY TO MAINTAIN AND CONTINUE PROTECTION WHENEVER THE BUILDING IS ALTERED, REMODELED OR ADDED TO. ALTERATIONS TO FIRE PROTECTION SYSTEM SHALL BE DONE IN ACCORDANCE WITH APPLICABLE STANDARDS.

8 TITLE 19 DIVISION 1 §1.14 - EVERY FIRE ALARM SYSTEM OR DEVICE, SPRINKLER SYSTEM, FIRE EXTINGUISHER, FIRE HOSE, FIRE-RESISTIVE ASSEMBLY OR ANY OTHER FIRE SAFETY ASSEMBLY, DEVICE MATERIAL OR EQUIPMENT INSTALLED AND RETAINED IN SERVICE IN ANY BUILDING OR STRUCTURE SUBJECT TO CALIFORNIA CODE OF REGULATIONS, TITLE 19 DIVISION 1 REGULATIONS SHALL BE MAINTAINED IN AN OPERABLE CONDITION AT ALL TIMES IN ACCORDANCE WITH CALIFORNIA CODE OF REGULATIONS TITLE 19 DIVISION 1 REGULATIONS AND WITH THEIR INTENDED USE.

9 TITLE 19 DIVISION 1 §3.24 - UPON DISRUPTION OF DIMINISHMENT OF THE FIRE PROTECTIVE QUALITIES OF SUCH EQUIPMENT, MATERIAL OR SYSTEMS IMMEDIATE ACTION SHALL BE INSTITUTED TO EFFECT A REESTABLISHMENT OF SUCH EQUIPMENT MATERIAL OR SYSTEMS TO THEIR ORIGINAL NORMAL OPERATIONAL CONDITION.

10 CFC 901.5.1 - IT SHALL BE UNLAWFUL TO OCCUPY ANY PORTION OF A BUILDING OR STRUCTURE UNTIL THE REQUIRED FIRE DETECTION, ALARM SYSTEM HAS BEEN TESTED AND APPROVED.

11 CFC 901.5.1 - IT SHALL BE UNLAWFUL TO OCCUPY ANY PORTION OF A BUILDING OR STRUCTURE UNTIL THE REQUIRED FIRE DETECTION, ALARM SYSTEM HAS BEEN TESTED AND APPROVED.

12 FIRE ALARM SCOPE REQUIRES DSA APPROVED DRAWINGS FOR REFERENCE OF AREAS IN SCOPE INCLUDE COMPLIANT FIRE ALARM COMPONENTS (SMOKE-HEAT-AUDIBLE-VISUAL-MANUAL). (STATEMENT OF COMPLIANCE PER CFC 901.2.1; 901.6.2.1 & TITLE 19 DIVISION 1§ 904.1(b) 904.2(c) RECORD AS-BUILT DRAWINGS AND TEST REPORTS.) ROOMS / AREAS IN SCOPE TO INCLUDE EXISTING FIRE ALARM COMPONENTS.

13 CFC 1030.1 - THE MEANS OF EGRESS FOR BUILDING OR PORTIONS THEREOF SHALL BE MAINTAINED IN ACCORDANCE WITH THIS SECTION.

14 CFC 1030.4 - EXIT SIGNS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH SECTION 1011.

15 CFC CHAPTER 11, PROVISIONS APPLICABLE TO EXISTING BUILDING.

16 CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION APPLICABLE PROVISIONS TO BE REPLICATED VERBATIM - SAMPLE SECTIONS - 3304 PRECAUTIONS AGAINST FIRE: 3304.2 WASTE DISPOSAL; 3304.5 FIRE WATCH; 3304.6 CUTTING AND WELDING; 3305 FLAMMABLE AND COMBUSTIBLE LIQUIDS; 3306 OWNERS RESPONSIBILITY; 3310 ACCESS FOR FIREFIGHTING; 3311 MEANS OF EGRESS; 3315 FIRE EXTINGUISHERS.

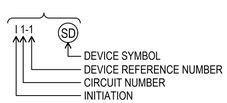
FIRE WATCH, FIRE MARSHAL REQUIREMENTS:

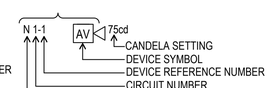
REQUIREMENTS FOR DISABLING THE FIRE ALARM SYSTEM;

1. AS REQUIRED BY THE 2022 CALIFORNIA FIRE CODE, SECTION 901.7, STANDBY PERSONNEL OR SYSTEMS TEMPORARILY "OUT OF SERVICE". THE LOCAL FIRE MARSHAL IS AUTHORIZED TO REQUIRE THE CONTRACTOR TO PROVIDE STANDBY PERSONNEL AS SET FORTH IN THESE SECTIONS, UNTIL THE SYSTEM IS RESTORED TO OPERATION.
2. SUCH INDIVIDUAL SHALL BE SUBJECT TO THE LOCAL FIRE MARSHAL'S ORDER AT ALL TIMES WHEN SO EMPLOYED AND SHALL REMAIN ON DUTY DURING THE TIME SUCH PLACES ARE OPEN TO THE PUBLIC OR WHEN SUCH PUBLIC ACTIVITY IS BEING CONDUCTED. FIRE WATCH PERSONNEL SHALL BE PROVIDED WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT.
3. SUCH INDIVIDUALS SHALL KEEP A DILIGENT WATCH FOR FIRES AND BE ABLE TO TAKE PROMPT AND APPROPRIATE ACTION IN THE EVENT OF A FIRE. SUCH INDIVIDUALS SHALL NOT BE REQUIRED OR PERMITTED, WHILE ON DUTY, TO PERFORM ANY OTHER DUTIES THAN THESE HEREIN SPECIFIED.

DEVICE NUMBERING LEGEND

DEVICE ADDRESS:

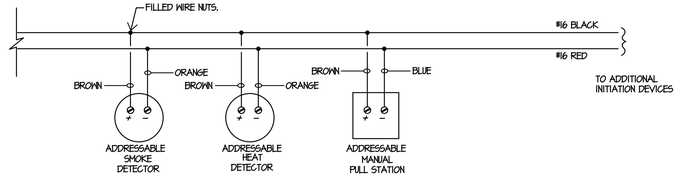




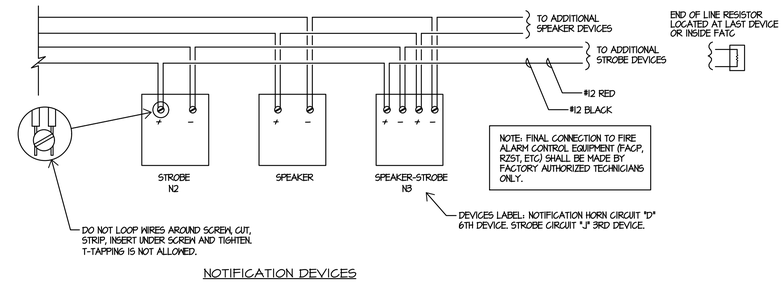
FIRE ALARM SEQUENCE OF OPERATION

INPUT & OUTPUT MATRIX

SYSTEM OUTPUTS		SYSTEM INPUTS: AREA SMOKE DETECTOR	AREA HEAT DETECTOR	FIRE ALARM SYSTEM AC POWER FAILURE	FIRE ALARM SYSTEM LOW BATTERY	OPEN CIRCUIT	GROUND FAULT	NOTIFICATION APPLIANCE CIRCUIT SHORT
Control Unit Annunciation	ACTUATE COMMON ALARM SIGNAL INDICATOR (RED LED)	●	●					
	ACTUATE AUDIBLE ALARM SIGNAL (PIEZO BUZZER)	●	●					
	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR (AMBER LED)							
	ACTUATE AUDIBLE SUPERVISORY SIGNAL (PIEZO BUZZER)							
	ACTUATE COMMON TROUBLE SIGNAL INDICATOR (AMBER LED)			●	●	●	●	●
	ACTUATE AUDIBLE COMMON TROUBLE SIGNAL (PIEZO BUZZER)			●	●	●	●	●
Notification	ACTUATE EVACUATION SIGNAL THROUGHOUT THE BUILDING SPEAKERS & SPEAKER/STROBES	●	●					
	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	●	●					
	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION							
	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION			●	●	●	●	●
Supplementary								



INITIATION DEVICES



NOTIFICATION DEVICES

FIRE ALARM DEVICES TYPICAL MOUNTING DETAIL

SCALE : NONE

C / E002

CENTRAL STATION MONITORING	
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ADDRESS:	2191 E. THOMPSON BLVD., VENTURA, CA 93001
PHONE:	(805)643-4438
LICENSE NUMBER:	C10-782794
U.L. LISTING CERT:	#821965
ACCOUNT #:	194107

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name

FIRE ALARM DETAILS, CALCS, & NOTES

RNT Project No.	1041
Date	07/08/2025
Drawn by	Author
Checked by	Checker

Sheet Number

E002

C:\Users\robar\OneDrive - JMPE Electrical Engineering\DWG\2024 DWGS\24775\24775 E003.dwg, 2/27/2025 10:57:59 AM, DWG To PDF.pc3
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FIRE ALARM SYMBOL LIST MATRIX					
	SYMBOL	DEVICE	MFR & CAT#	REMARKS	CSFM LISTING
(E)	FACP	MAIN FIRE ALARM PANEL	FCI 7200	SURFACE MOUNT W/ SOFTWARE UPDATE	7165-0559:0500
(E)	F	FA PULL STATION	IDP-PULL-BA	MOUNT TO 4S J-BOX	7150-0559:0157
(N)	SD	SMOKE DETECTOR	SILENT KNIGHT IDP-PHOTO	PROVIDE 4"SQ. DEEP BOX	7272-0028:0206
(N)	HD	HEAT DETECTOR (IN ATTIC SPACE)	SILENT KNIGHT IDP-HEAT	PROVIDE 4"SQ. DEEP BOX	7270-0028:0502
(N)	AV	HORN STROBE CEILING MOUNT	SYSTEM SENSOR SPSR(A)	PROVIDE 4"SQ. DEEP BOX	7320-1653:0201
(N)	H WP	EXTERIOR HORN WALL MOUNT	SYSTEM SENSOR SPRK(A)	PROVIDE MWBB BACKBOX	7320-1653:0201
	V	STROBE	SYSTEM SENSOR SCSR(A)	PROVIDE 4"SQ. DEEP BOX	7270-0559:0127
	—	AQ CABLE	WEST PENN AQ294		7161-0859:0101
	—	AQ CABLE	WEST PENN AQC294		7161-0859:0102
	—	FA CABLE	WEST PENN 975		7161-0859:0103
	—	FA CABLE	WEST PENN 998		7161-0859:0104

SCOPE OF FIRE ALARM WORK

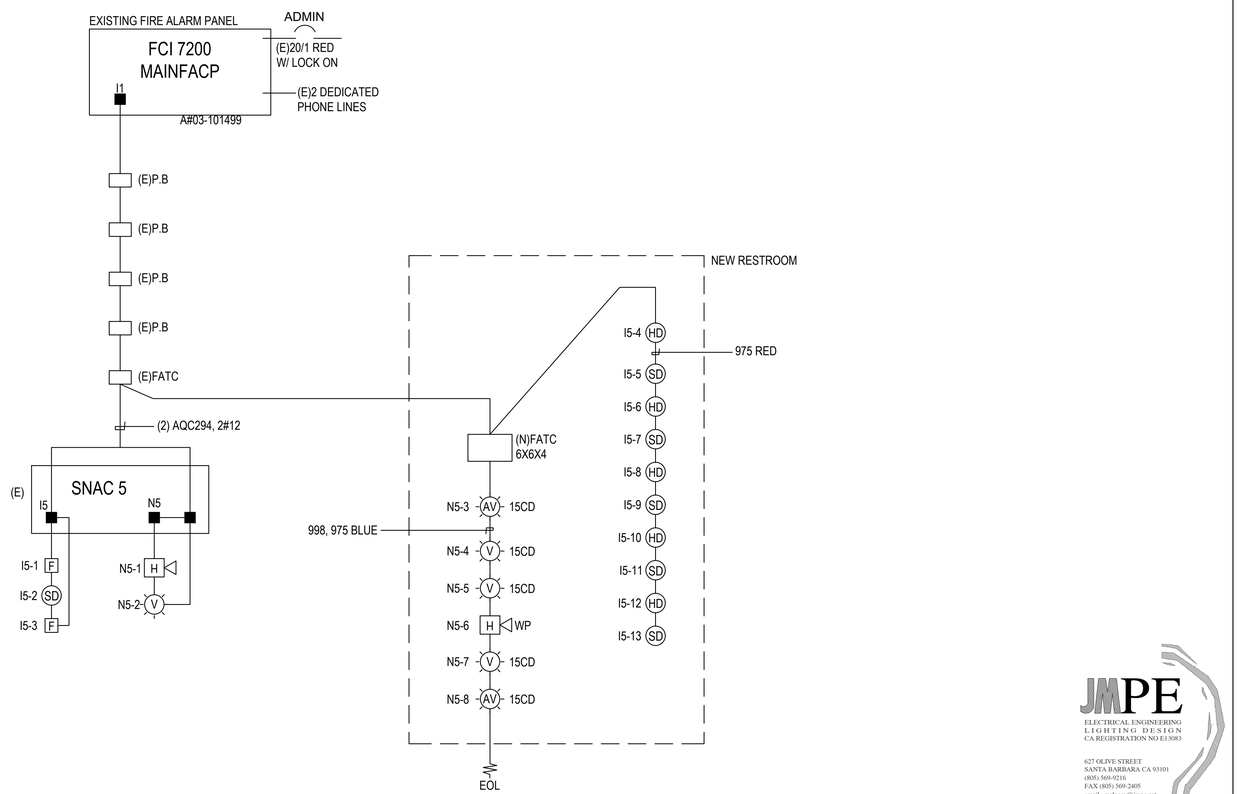
THIS IS AN ADDITION TO AN EXISTING FIRE ALARM SYSTEM.
THERE IS NO EVAC SYSTEM ON CAMPUS.
THIS ADDITION OF THIS SINGLE, MODULAR RESTROOM BUILDING DOES NOT REQUIRE THE EVACS BE ADDED.

(E)POWERSUPPLY SNAC-5

EQUIPMENT DESCRIPTION		QUANTITY		SUPERVISORY CURRENT (AMPERES)		ALARM CURRENT (AMPERES)	
		EXISTING	NEW	EACH	SUB-TOTAL	EACH	SUB-TOTAL
DVC		0	1	0.44	0.44	0.44	0.44
DAA		0	1	0.35	0.35	1.9	1.9
DAC		0	1	0.4	0.4	0.4	0.4
			0		0		0
¼ Watt Speaker		0	2	0	0	0.017	0.034
½ Watt Speaker		0	0		0	0.034	0
1 Watt Speaker		0	10	0	0	0.068	0.68
2 Watt Speaker		0	5		0	0.132	0.66
		0	0		0	0	0
VISUALS	75 cd	0	0		0	0.158	0
VISUALS	30 cd	0	0	0	0	0.094	0
VISUALS	15 cd	0	0	0	0	0.066	0
		0	0	0	0	0	0
					0		0
		0	0	0	0	0	0
SUB TOTAL AMPERES				1.19 AMPS		4.114 AMPS	
				x 24 HOURS		X 0.25 HOURS	
SUB TOTAL AMPERE-HOURS				28.56	A.H.	1.0285	A.H.
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE						29.5885	A.H.
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR						x 1.25	
TOTAL MINIMUM AMPERE HOURS REQUIRED						35.5062	A.H.
PROVIDED BATTERY CAPACITY						55.00	A.H.

(E)FACP BATTERY CALCULATION FACP- FCI 7200 IN ROOM 421, BUT NETWORKED VIA FIBER TO MFCP

EQUIPMENT DESCRIPTION		QUANTITY		SUPERVISORY CURRENT (AMPERES)		ALARM CURRENT (AMPERES)	
		EXISTING	NEW	EACH	SUB-TOTAL	EACH	SUB-TOTAL
FIRE ALARM PANEL		0	1	0.2	0.2	0.555	0.555
DIGITAL ALARM COMMUNICATOR		0	0	0.04	0	0.04	0
DVC		0	0	0.44	0	0.44	0
DAA 5025		0	0	0.35	0	1.9	0
FRM		0	0	0.0003	0	0.0003	0
FDM/FMM		0	0	0.0003	0	0.005	0
PULL STATION		0	1	0.00035	0.0084	0.0035	0.0035
SMOKE DETECTOR		18	20	0.00039	0.01482	0.00039	0.01482
HEAT DETECTOR		4	26	0.00035	0.0105	0.00035	0.0105
					0		0
WP Speakers		0	0		0	0	0
AUDIBLE/VISUALS	15 cd	0	0		0	0.066	0
AUDIBLE/VISUALS	30 cd	0	0	0	0	0.077	0
AUDIBLE/VISUALS	75 cd	0	10	0	0	0.158	1.58
AUDIBLE/VISUALS	95 cd	0	0	0	0	0.202	0
VISUALS	15 cd	0	0		0	0.066	0
		0	0	0	0	0	0
SUB TOTAL AMPERES				0.23372 AMPS		2.16382 AMPS	
				x 24 HOURS		x 0.25 HOURS	
SUB TOTAL AMPERE-HOURS				5.60928	A.H.	0.540955	A.H.
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE						6.150235	A.H.
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR						x 1.25	
TOTAL MINIMUM AMPERE HOURS REQUIRED						7.380282	A.H.
PROVIDED BATTERY CAPACITY						36.00	A.H.



FIRE ALARM RISER DIAGRAM

SCALE : NONE

A
E003

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DATE: 07/09/2025

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LICENSED ARCHITECT
TYSON CLINE
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REN. 1-31-25
STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

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LIGHTING DESIGN
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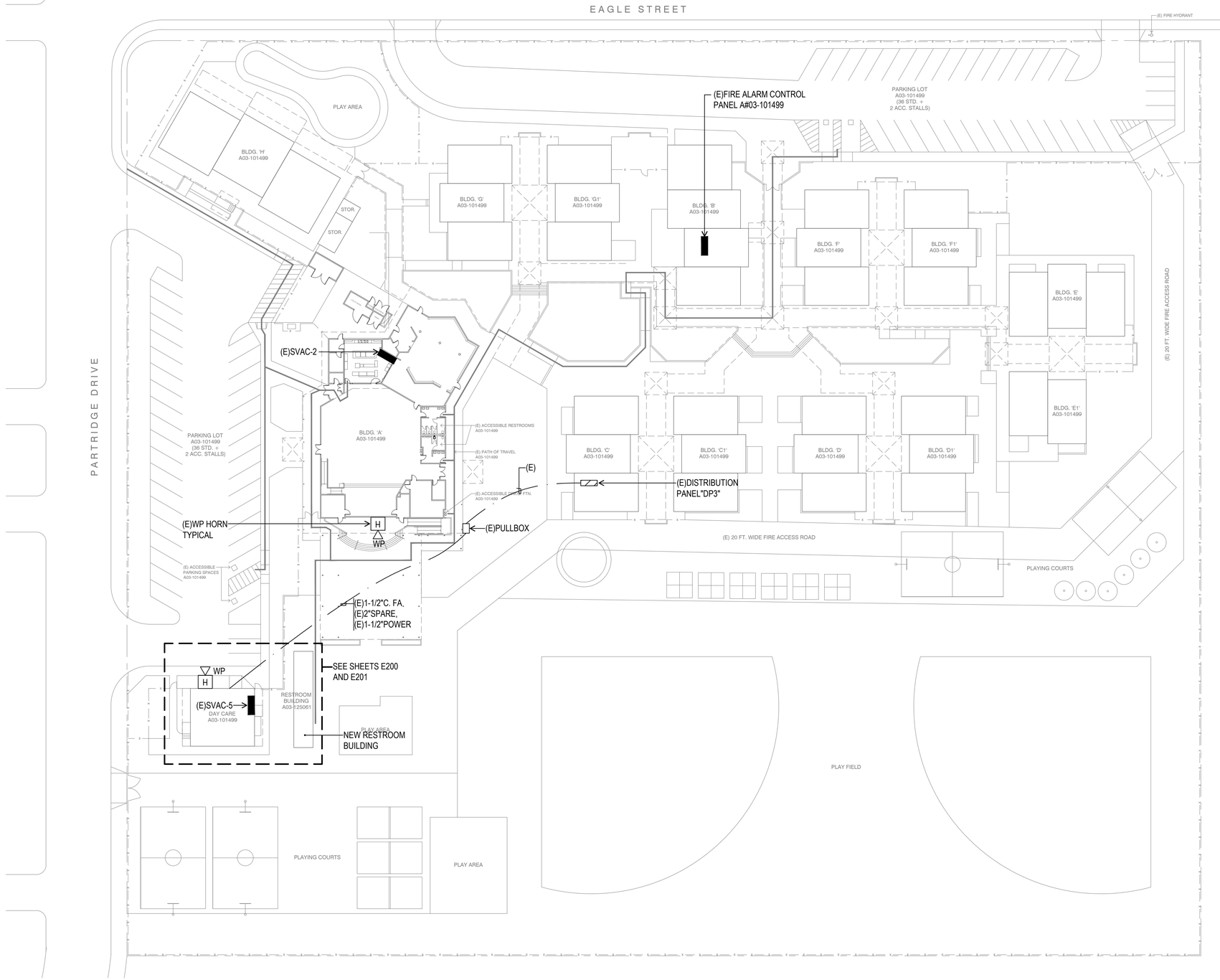
REGISTERED PROFESSIONAL ENGINEER
ROBERT A. MAHONEY
No. E013083
EXP. 09/30/2025
ELECTRICAL
STATE OF CALIFORNIA

Sheet Name
FIRE ALARM RISER DIAGRAM

RNT Project No.	1041
Date	07/08/2025
Drawn by	Author
Checked by	Checker

Sheet Number
E003

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NORTH

ELECTRICAL SITE PLAN

SCALE : 1/32" = 1'-0"

0 4 8 16 32 64

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DATE: 07/09/2025

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VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

JMPE
ELECTRICAL ENGINEERING
LIGHTING DESIGN
CA REGISTRATION NO E13083

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STATE OF CALIFORNIA

Sheet Name

ELECTRICAL SITE PLAN

RNT Project No.	1041
Date	07/08/2025
Drawn by	Author
Checked by	Checker

Sheet Number

E100

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(E) ACCESSIBLE
PARKING SPACES
A03-101499

(E)2"C.W/(N)3#2,1#8GND.
FROM DP3

(E)SPARE 2"C.

INTERCEPT CONDUIT
AND EXTEND TO
(N)RESTROOM

(N)2"C.W/3#2,1#8GND.

(E)FATC

RESTROOM
BUILDING
A03-125061

PANEL FURNISHED
W/ RESTROOM BUILDING

(N)FATC
6x6x4

(N)1-1/2"C.W/ AQC294,
AQC294 AND 2#12

DAY CARE
A03-101499

PLAY AREA

NORTH

ENLARGED ELECTRICAL PLAN
SCALE : 1/8" = 1'-0"

0 4 8 16 32 64

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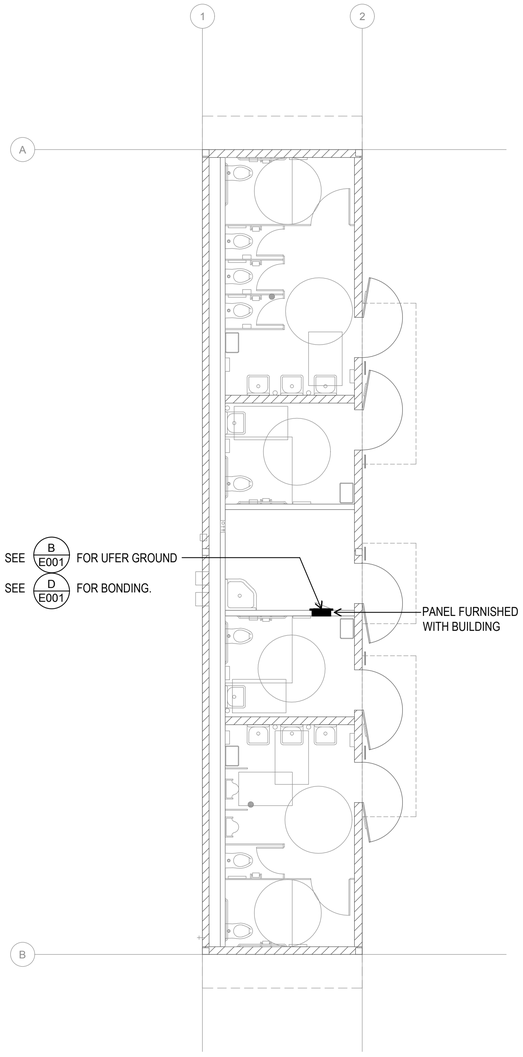
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Sheet Name
ENLARGED
ELECTRICAL
PLAN

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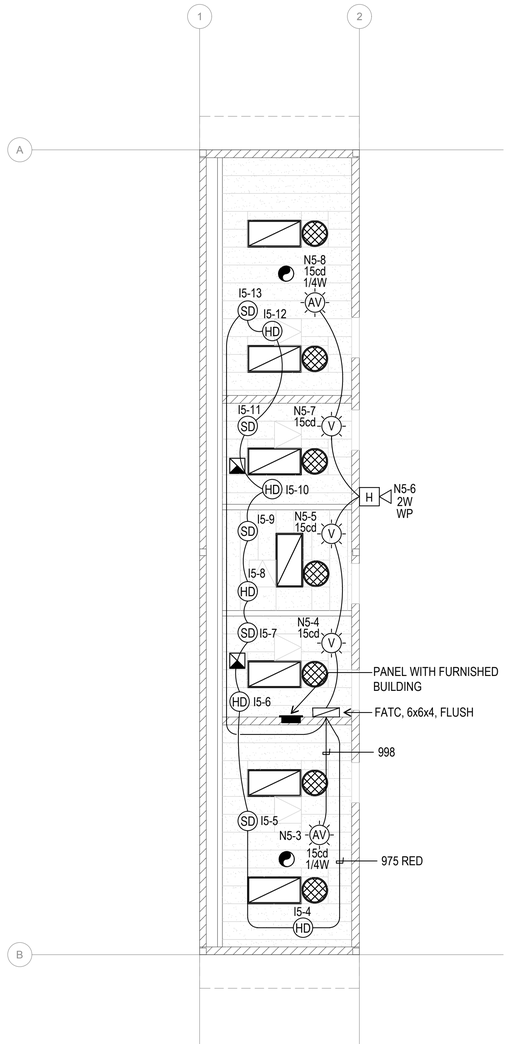


NORTH

ENLARGED GROUNDING PLAN

SCALE : 3/16" = 1'-0"

0 1 2 4 8 12



NORTH

ENLARGED FIRE ALARM PLAN

SCALE : 3/16" = 1'-0"

0 1 2 4 8 12

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SECTION 26 00 00 - ELECTRICAL

PART 1 _ GENERAL

1.1 IDENTIFICATION OF EQUIPMENT

A. DISTRIBUTION PANELBOARDS: IDENTIFICATION SHALL BE WITH 1" X 4" LAMINATED, WHITE ON BLACK, MICARTA NAMEPLATES ON EACH MAJOR COMPONENT, EACH WITH NAME AND/OR NUMBER OF UNIT AND OTHER PERTINENT DATA AS REQUIRED. EMERGENCY POWER DISTRIBUTION PANELS SHALL BE IDENTIFIED WITH WHITE ON RED MICARTA NAMEPLATES. LETTERS SHALL BE NO LESS THAN 3/8" HIGH.

B. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY NUMBER AND NAME WITH 3/4" X 1-1/2" LAMINATED MICARTA NAMEPLATES WITH 3/16" HIGH LETTERS MOUNTED ADJACENT TO CIRCUIT BREAKER OR SWITCH.

C. MISCELLANEOUS EQUIPMENT (ELECTRICAL), SUCH AS INDIVIDUALLY MOUNTED SAFETY SWITCHES, STARTERS, STEP-DOWN TRANSFORMERS, PULL BOXES, JUNCTION BOXES, ETC., SHALL BE IDENTIFIED AS REQUIRED BY THE USE OF SUCH EQUIPMENT WITH P-TOUCH LABELS AS REQUIRED.

1.2 ARC FLASH LABELING

A. ALL PANELS, CIRCUIT BREAKER ENCLOSURES, SWITCHBOARDS AND MOTOR CONTROL CENTERS SHALL BE LABELED WITH ARC FLASH WARNING STICKERS.

B THESE LABELS SHALL CONTAIN THE FOLLOWING:

1. ARC FLASH BOUNDARY
2. MINIMUM ARC RATING
3. PERSONAL PROTECTIVE EQUIPMENT LEVEL, PPE
4. SHOCK HAZARD LEVEL
5. FAULT CURRENT

1.3 MOUNTING

A. PROVIDE MATERIALS AND ACCESSORIES NECESSARY TO PROPERLY MOUNT AND SECURE EQUIPMENT FURNISHED AND/OR INSTALLED UNDER THE ELECTRICAL WORK. THIS INCLUDES BUT IS NOT LIMITED TO SUCH ITEMS AS CONDUIT, OUTLETS, JUNCTION BOXES, SWITCHES, RELAYS, DISCONNECT SWITCHES, LIGHTING FIXTURES, CABINETS, AND TRANSFORMERS.

PART 2 _ PRODUCTS AND EXECUTION

2.1 CONDUIT

A. RIGID STEEL CONDUIT:

1. RIGID STEEL CONDUIT SHALL HAVE ZINC COATED EXTERIOR, ZINC OR ENAMEL INTERIOR, STANDARD WEIGHT, ZINC COATED COUPLINGS, LOCKNUTS AND BUSHINGS AND SHALL BEAR THE U.L. LABEL. RIGID CONDUIT SHALL NOT BE INSTALLED UNDERGROUND.
2. USE RIGID CONDUIT ONLY FOR EXPOSED EXTERIOR CONDUIT RUNS, WHEREVER SUBJECT TO PHYSICAL DAMAGE, OR WHERE SPECIFICALLY CALLED FOR ON THE DRAWINGS OR REQUIRED BY A SERVING UTILITY.
3. INTERMEDIATE METALLIC CONDUIT (I.M.C.) MAY BE USED IN LIEU OF RIGID STEEL CONDUIT.
4. USE LIQUID_TIGHT FLEXIBLE CONDUIT IN LIEU OF FLEXIBLE CONDUIT FOR WET, DAMP, OR OUTDOOR AREAS OR WHERE WEATHERPROOF FLEXIBLE CONDUIT IS CALLED FOR ON THE DRAWINGS OR BY CODE.

B. PLASTIC CONDUIT:

1. PLASTIC CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE (PVC) UNDERWRITER'S APPROVAL, SCHEDULE 40. CONNECTIONS AND FITTINGS SHALL BE "OUTSIDE" TYPE ASSEMBLED IN ACCORDANCE WITH THE RECOMMENDED METHODS OF THE MANUFACTURER.
2. UNDERGROUND PVC CONDUIT SHALL BE BURIED A MINIMUM OF 24 INCHES BELOW GRADE. WHERE MORE THAN TWO CONDUITS ARE INSTALLED ADJACENTLY UNDERGROUND, USE FACTORY MADE CONDUIT SPACERS.
3. PVC CONDUIT SHALL BE USED FOR UNDERGROUND CONDUIT RUNS IN LIEU OF WRAPPED RIGID CONDUIT EXCEPT AS NOTED OTHERWISE ON THE DRAWINGS OR REQUIRED BY THE SERVING UTILITY.
4. PROVIDE A CODE SIZE GROUND CONDUCTOR IN EACH CONDUIT.
5. ONLY BRAIDED POLYETHYLENE OR SIMILAR PULL ROPE SHALL BE USED.

C. INSTALLATION OF CONDUIT:

1. UNDERGROUND CONDUIT.

a. KEEP INTERIOR OF CONDUIT CLEAN AND CLEAR. CLEAN UNDERGROUND CONDUITS BY PULLING A MANDREL THROUGH CONDUIT RUN FOLLOWED WITH A SWAB BEFORE PULLING WIRE.

b. REROUTE CONDUIT FROM LOCATIONS SHOWN ON THE DRAWINGS WHERE IT IS NECESSARY TO CLEAR OBSTRUCTIONS.

c. PROVIDE JUNCTION OR PULL BOXES WHERE REQUIRED FOR PULLING CONDUCTORS DUE TO EXCESSIVE NUMBER OF BENDS OR LENGTH OF CONDUIT RUNS.

d. BURY UNDERGROUND CONDUIT, EXCEPT THOSE UNDER BUILDINGS, A MINIMUM OF 24 INCHES BELOW FINISHED GRADE. CONDUITS UNDER ROADWAYS SHALL BE A MINIMUM OF 36 INCHES BELOW FINISHED GRADE. CONDUIT RUNS 3/4 INCH AND SMALLER IN SLABS SHALL BE LOCATED ABOVE VAPOR BARRIERS. BURY CONDUIT RUNS LARGER THAN 3/4 INCH TO A MINIMUM DEPTH OF 12 INCHES BELOW FLOOR SLABS.

e. STANDARD FACTORY ELLS SHALL NOT BE USED IN UNDERGROUND SERVICE CONDUITS OR OTHER LONG UNDERGROUND RUNS. FIELD BENDS SHALL NOT BE FLATTENED OR KINKED AND SHALL NOT MATERIALLY REDUCE THE INTERNAL DIAMETER OF THE CONDUIT. BENDS IN LONG UNDERGROUND RUNS SHALL BE MADE IN LONG SWEEPING BENDS. DO NOT BEND AT COUPLINGS. APPROVED CONDUIT BENDING METHODS SHALL BE USED.

f. ALL CONDUIT RUNS SHALL HAVE A CODE SIZE INSULATED GROUNDING CONDUCTOR.

g. PROPERLY SEPARATE TWO OR MORE CONDUITS INSTALLED UNDERGROUND IN A COMMON CONCRETE ENVELOPE WITH APPROVED FACTORY MADE CONDUIT SPACERS.

h. LOCATE CONDUIT STUB_OUTS DIMENSIONALLY FROM BUILDING OR CURB LINES ON RECORD DRAWINGS.

i. PULL WIRES SHALL BE INSTALLED IN EMPTY CONDUITS INCLUDING TELEPHONE CONDUITS AND STUB_OUTS, NO. 12 AWG, TYPE "THWN" INSULATED COPPER WIRE OR 1/8-INCH POLYETHYLENE ROPE SHALL BE USED.

2. EXPOSED/CONCEALED CONDUIT:

a. PROVIDE SECURE MOUNTING FACILITIES FOR CONDUITS. WIRE OR PLUMBERS TAPE SHALL NOT BE USED FOR HANGING CONDUIT. STRAP SHALL BE FACTORY MADE OF THE ONE HOLE MALLEABLE IRON OR TWO HOLE GALVANIZED CLAMP TYPE.

b. PROVIDE EXPANSION COUPLINGS WHEREVER CONDUITS CROSS EXPANSION JOINTS.

c. RUN CONDUIT AT RIGHT ANGLES OR PARALLEL TO STRUCTURAL MEMBERS, WALLS, FLOORS AND CEILINGS. WHERE SEVERAL CONDUITS ARE RUN TOGETHER OR SUSPENDED, THEY SHALL BE HUNG ON UNISTRUT TRAPEZES WITH MINIMUM 3/8-INCH ROD HANGERS.

d. CUT ENDS OF CONDUIT SQUARE AND REAM TO REMOVE BURRS OR SHARP EDGES. TERMINATE CONDUITS PROPERLY WITH BUSHINGS, LOCKNUTS, ETC. TERMINATE ONE (1) INCH AND LARGER CONDUITS WITH INSULATED BUSHINGS.

e. RENDER CONDUITS PROJECTING THROUGH THE ROOFING WATERTIGHT BY PROPER FLASHINGS. SECURELY FASTEN A SHEET METAL CAP AND TIGHTEN BANK OR STORM COLLAR TO THE CONDUITS. EXTEND FLASHING A MINIMUM OF SIX (6) INCHES IN ALL DIRECTIONS. COORDINATE AND INSTALL ROOF FLASHING FOR CONDUITS TO THE SATISFACTION OF THE PROJECT MANAGER.

f. ALL CONDUIT RUNS SHALL HAVE A CODE SIZE INSULATED GROUNDING CONDUCTOR.

g. PULL WIRES SHALL BE INSTALLED IN EMPTY CONDUITS INCLUDING TELEPHONE CONDUITS AND STUB_OUTS, NO. 12 AWG, TYPE "THWN" INSULATED COPPER WIRE OR 1/8-INCH POLYETHYLENE ROPE SHALL BE USED.

h. FLEXIBLE CONDUIT CONNECTIONS SHALL COMPLY WITH NEC SECTION 350-22.

2.2 WIRE AND CABLE

A. 600 VOLT CONDUCTORS:

1. CONDUCTORS SHALL BE COPPER AND DELIVERED TO THE SITE IN THEIR ORIGINAL, UNBROKEN PACKAGES PLAINLY MARKED OR TAGGED WITH U.L. LABEL, SIZE, KIND, INSULATION, NAME OF MANUFACTURER AND TRADE NAME OF THE WIRE.
2. TYPE "THWN", 600 VOLT INSULATION FOR DAMP OR WET LOCATIONS OR ON BOILERS AND FURNACES AND THEIR CONTROLS.
3. TYPE "THHN" 600 VOLT INSULATION SHALL BE USED IN OTHER LOCATIONS UNLESS NOTED.
4. MINIMUM SIZE CONDUCTOR SHALL BE #12.
5. CONDUCTORS SHALL BE STRANDED.
6. GROUND CONDUCTORS SHALL BE BARE COPPER OR HAVE GREEN INSULATION.

B. INSTALLATION:

1. CONDUCTORS SHALL BE CONTINUOUS BETWEEN OUTLETS OR JUNCTION BOXES AND NO SPLICES SHALL BE MADE EXCEPT IN OUTLET BOXES, PULL BOXES, PANELBOARD GUTTERS OR HANDHOLES.
2. JOINTS, SPLICES AND TAPS NO. L0 OR SMALLER (INCLUDING FIXTURE PIGTAILS) SHALL BE CONNECTED WITH "FLOATING SPRING" TYPE CONNECTORS. NO. 8 AND LARGER SHALL BE CONNECTED WITH SOLDERLESS CONNECTORS OF 100% ELECTROLYTIC COPPER. SPLIT_BOLT CONNECTORS ARE NOT ACCEPTABLE.
3. TIGHTEN PRESSURE TYPE LUGS ON PANELS AND EQUIPMENT, AND THEN RETIGHTEN 24 HOURS OR MORE LATER AFTER ENERGIZING. PROVIDE WRITTEN REPORT OF TORQUE VALUES ON LUGS.
4. OIL OR GREASE SHALL NOT BE USED WHEN PULLING CONDUCTORS. USE U.L. APPROVED CABLE LUBRICATION ONLY.
5. LACE OR TRAIN CONDUCTORS NEATLY IN PANELS, CABINETS AND EQUIPMENT. USE PLASTIC WIRE TIES TO ROUTE CONDUCTORS AT EDGE OF ENCLOSURE AWAY FROM OVERCURRENT DEVICES.
6. BRANCH CIRCUITS SHALL BE COLOR CODED IN COMPLIANCE WITH SECTION 210_5 OF THE CALIFORNIA ELECTRICAL CODE. COLORED TAPE IS NOT ACCEPTABLE.
7. ALL WIRING, BOTH LINE AND LOW VOLTAGE, SHALL BE INSTALLED IN CONDUIT UNLESS OTHERWISE NOTED.

END OF SECTION 26 00 00

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ELECTRICAL SPECIFICATIONS

RNT Project No.	1041
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E400

SECTION 28 31 11 - FIRE DETECTION AND ALARM SYSTEM

PART 1 - GENERAL

1.1 BASIC SYSTEM FUNCTIONAL OPERATION

A. WHEN A FIRE ALARM CONDITION IS DETECTED AND REPORTED BY ONE OF THE SYSTEM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL IMMEDIATELY OCCUR:

1. THE SYSTEM ALARM LED ON THE SYSTEM DISPLAY SHALL FLASH.
2. A LOCAL PIEZO ELECTRIC SIGNAL IN THE CONTROL PANEL SHALL SOUND.
3. A BACKLIT LCD DISPLAY SHALL INDICATE ALL INFORMATION ASSOCIATED WITH THE FIRE ALARM CONDITION, INCLUDING THE TYPE OF ALARM POINT AND ITS LOCATION WITHIN THE PROTECTED PREMISES.
4. PRINTING AND HISTORY STORAGE EQUIPMENT SHALL LOG THE INFORMATION ASSOCIATED EACH NEW FIRE ALARM CONTROL PANEL CONDITION, ALONG WITH TIME AND DATE OF OCCURRENCE.
5. ALL SYSTEM OUTPUT PROGRAMS ASSIGNED VIA CONTROL-BY-EVENT INTERLOCK PROGRAMMING TO BE ACTIVATED BY THE PARTICULAR POINT IN ALARM SHALL BE EXECUTED, AND THE ASSOCIATED SYSTEM OUTPUTS (NOTIFICATION APPLIANCES AND/OR RELAYS) SHALL BE ACTIVATED.

PART 2 - PRODUCTS

2.1 EQUIPMENT AND MATERIAL, GENERAL

A. ALL EQUIPMENT AND COMPONENTS SHALL BE NEW, FCI / GAMEWELL CURRENT MODELS, THE MATERIALS, APPLIANCES, EQUIPMENT AND DEVICES SHALL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED APPROVALS AGENCY FOR USE AS PART OF A PROTECTIVE SIGNALING SYSTEM, MEETING THE NATIONAL FIRE ALARM CODE.

B. ALL EQUIPMENT AND COMPONENTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH FCI's RECOMMENDATIONS. CONSULT THE MANUFACTURER'S INSTALLATION MANUALS FOR ALL WIRING DIAGRAMS, SCHEMATICS, PHYSICAL EQUIPMENT SIZES, ETC., BEFORE BEGINNING SYSTEM INSTALLATION.

C. ALL EQUIPMENT SHALL BE ATTACHED TO WALLS AND CEILING/FLOOR ASSEMBLIES AND SHALL BE HELD FIRMLY IN PLACE (E.G., DETECTORS SHALL NOT BE SUPPORTED SOLELY BY SUSPENDED CEILINGS). FASTENERS AND SUPPORTS SHALL BE ADEQUATE TO SUPPORT THE REQUIRED LOAD.

2.2 MAIN FIRE ALARM CONTROL PANEL OR NETWORK NODE

A. EXISTING MAIN FACP IS AN FCI #7200 CONVENTIONAL FIRE ALARM PANEL.

B. OPERATOR CONTROL:

1. ACKNOWLEDGE SWITCH:

a. ACTIVATION OF THE CONTROL PANEL ACKNOWLEDGE SWITCH IN RESPONSE TO NEW ALARMS AND/OR TROUBLES SHALL SILENCE THE LOCAL PANEL PIEZO ELECTRIC SIGNAL AND CHANGE THE ALARM AND TROUBLE LEDS FROM FLASHING MODE TO STEADY-ON MODE. IF MULTIPLE ALARM OR TROUBLE CONDITIONS EXIST, DEPRESSION OF THIS SWITCH SHALL ADVANCE THE LCD DISPLAY TO THE NEXT ALARM OR TROUBLE CONDITION.

b. DEPRESSION OF THE ACKNOWLEDGE SWITCH SHALL ALSO SILENCE ALL REMOTE ANNUNCIATOR PIEZO SOUNDERS.

2. ALARM SILENCE SWITCH: ACTIVATION OF THE ALARM SILENCE SWITCH SHALL CAUSE ALL PROGRAMMED ALARM NOTIFICATION APPLIANCES AND RELAYS TO RETURN TO THE NORMAL CONDITION AFTER AN ALARM CONDITION. THE SELECTION OF NOTIFICATION CIRCUITS AND RELAYS THAT ARE SILENCEABLE BY THIS SWITCH SHALL BE FULLY FIELD PROGRAMMABLE WITHIN THE CONFINES OF ALL APPLICABLE STANDARDS. THE FACP SOFTWARE SHALL INCLUDE SILENCE INHIBIT AND AUTO-SILENCE TIMERS.

3. ALARM ACTIVATE (DRILL) SWITCH: THE ALARM ACTIVATE SWITCH SHALL ACTIVATE ALL NOTIFICATION APPLIANCE CIRCUITS. THE DRILL FUNCTION SHALL LATCH UNTIL THE PANEL IS SILENCED OR RESET.

4. SYSTEM RESET SWITCH: ACTIVATION OF THE SYSTEM RESET SWITCH SHALL CAUSE ALL ELECTRONICALLY-LATCHED INITIATING DEVICES, APPLIANCES OR SOFTWARE ZONES, AS WELL AS ALL ASSOCIATED OUTPUT DEVICES AND CIRCUITS, TO RETURN TO THEIR NORMAL CONDITION.

5. LAMP TEST: THE LAMP TEST SWITCH SHALL ACTIVATE ALL LOCAL SYSTEM LEDS, LIGHT EACH SEGMENT OF THE LIQUID CRYSTAL DISPLAY AND DISPLAY THE PANEL SOFTWARE REVISION FOR SERVICE PERSONAL.

C. SYSTEM CAPACITY AND GENERAL OPERATION

1. THE CONTROL PANEL OR EACH NETWORK NODE SHALL PROVIDE, OR BE CAPABLE OF EXPANSION TO 636 INTELLIGENT/ADDRESSABLE DEVICES.
2. THE CONTROL PANEL OR EACH NETWORK NODE SHALL INCLUDE FORM-C ALARM, TROUBLE, SUPERVISORY, AND SECURITY RELAYS RATED AT A MINIMUM OF 2.0 AMPS @ 30 VDC.
3. IT SHALL ALSO INCLUDE FOUR CLASS B (NFPA STYLE Y) OR CLASS A (NFPA STYLE Z) PROGRAMMABLE NOTIFICATION APPLIANCE CIRCUITS.
4. THE NOTIFICATION APPLIANCE CIRCUITS SHALL BE PROGRAMMABLE TO SYNCRONIZE WITH SYSTEM SENSOR, GENTEX AND WHEELOCK NOTIFICATION APPLIANCES.
5. THE SYSTEM SHALL INCLUDE A FULL FEATURED OPERATOR INTERFACE CONTROL AND ANNUNCIATION PANEL THAT SHALL INCLUDE A BACKLIT LIQUID CRYSTAL DISPLAY (LCD), INDIVIDUAL COLOR CODED SYSTEM STATUS LEDS, AND AN ALPHANUMERIC KEYPAD WITH EASY TOUCH RUBBER KEYS FOR THE FIELD PROGRAMMING AND CONTROL OF THE FIRE ALARM SYSTEM.
6. THE SYSTEM SHALL BE PROGRAMMABLE, CONFIGURABLE, AND EXPANDABLE IN THE FIELD WITHOUT THE NEED FOR SPECIAL TOOLS, PROM PROGRAMMERS OR PC BASED PROGRAMMERS. IT SHALL NOT REQUIRE REPLACEMENT OF MEMORY ICS TO FACILITATE PROGRAMMING CHANGES.
7. THE SYSTEM SHALL ALLOW THE PROGRAMMING OF ANY INPUT TO ACTIVATE ANY OUTPUT OR GROUP OF OUTPUTS. SYSTEMS THAT HAVE LIMITED PROGRAMMING (SUCH AS GENERAL ALARM), HAVE COMPLICATED PROGRAMMING (SUCH AS A DIODE MATRIX), OR REQUIRE A LAPTOP PERSONAL COMPUTER ARE NOT CONSIDERED SUITABLE SUBSTITUTES.

   THE FACP SHALL SUPPORT UP TO 20 LOGIC EQUATIONS, INCLUDING "AND," "OR," AND "NOT," OR TIME DELAY EQUATIONS TO BE USED FOR ADVANCED PROGRAMMING. LOGIC EQUATIONS SHALL REQUIRE THE USE OF A PC WITH A SOFTWARE UTILITY DESIGNED FOR PROGRAMMING.
8. THE FACP OR EACH NETWORK NODE SHALL PROVIDE THE FOLLOWING FEATURES:

a. DRIFT COMPENSATION TO EXTEND DETECTOR ACCURACY OVER LIFE. DRIFT COMPENSATION SHALL ALSO INCLUDE A SMOOTHING FEATURE, ALLOWING TRANSIENT NOISE SIGNALS TO BE FILTERED OUT.

b. DETECTOR SENSITIVITY TEST, MEETING REQUIREMENTS OF NFPA 72, CHAPTER 7.

c. MAINTENANCE ALERT, WITH TWO LEVELS (MAINTENANCE ALERT/MAINTENANCE URGENT), TO WARN OF EXCESSIVE SMOKE DETECTOR DIRT OR DUST ACCUMULATION.

d. NINE SENSITIVITY LEVELS FOR ALARM, SELECTED BY DETECTOR. THE ALARM LEVEL RANGE SHALL BE .5 TO 2.35 PERCENT PER FOOT FOR PHOTOELECTRIC DETECTORS AND 0.5 TO 2.5 PERCENT PER FOOT FOR IONIZATION DETECTORS. THE SYSTEM SHALL ALSO SUPPORT SENSITIVE ADVANCED DETECTION LASER DETECTORS WITH AN ALARM LEVEL RANGE OF .03 PERCENT PER FOOT TO 1.0 PERCENT PER FOOT. THE SYSTEM SHALL ALSO INCLUDE UP TO NINE LEVELS OF PREALARM, SELECTED BY DETECTOR, TO INDICATE IMPENDING ALARMS TO MAINTENANCE PERSONNEL.

e. THE ABILITY TO DISPLAY OR PRINT SYSTEM REPORTS.

f. ALARM VERIFICATION, WITH COUNTERS AND A TROUBLE INDICATION TO ALERT MAINTENANCE PERSONNEL WHEN A DETECTOR ENTERS VERIFICATION 20 TIMES.

g. PAS PRESIGNAL, MEETING NFPA 72 3-8.3 REQUIREMENTS.

h. RAPID MANUAL STATION REPORTING (UNDER 3 SECONDS) AND SHALL MEET NFPA 72 CHAPTER 1 REQUIREMENTS FOR ACTIVATION OF NOTIFICATION CIRCUITS WITHIN 10 SECONDS OF INITIATING DEVICE ACTIVATION.

i. PERIODIC DETECTOR TEST, CONDUCTED AUTOMATICALLY BY THE SOFTWARE.

j. SELF OPTIMIZING PRE-ALARM FOR ADVANCED FIRE WARNING, WHICH ALLOWS EACH DETECTOR TO LEARN ITS PARTICULAR ENVIRONMENT AND SET ITS PREALARM LEVEL TO JUST ABOVE NORMAL PEAKS.

k. CROSS ZONING WITH THE CAPABILITY OF COUNTING: TWO DETECTORS IN ALARM, TWO SOFTWARE ZONES IN ALARM, OR ONE SMOKE DETECTOR AND ONE THERMAL DETECTOR.

l. WALK TEST, WITH A CHECK FOR TWO DETECTORS SET TO SAME ADDRESS.

m. CONTROL-BY-TIME FOR NON-FIRE OPERATIONS, WITH HOLIDAY SCHEDULES.

n. DAY/NIGHT AUTOMATIC ADJUSTMENT OF DETECTOR SENSITIVITY.

o. DEVICE BLINK CONTROL FOR SLEEPING AREAS.

F. SIGNALING LINE CIRCUITS (SLC):

1. EACH FACP OR FACP NETWORK NODE SHALL SUPPORT UP TO TWO SLCS. EACH SLC INTERFACE SHALL PROVIDE POWER TO AND COMMUNICATE WITH UP TO 159 INTELLIGENT DETECTORS (IONIZATION, PHOTOELECTRIC OR THERMAL) AND 159 INTELLIGENT MODULES (MONITOR OR CONTROL) FOR A LOOP CAPACITY OF 318 DEVICES. THE ADDITION OF THE OPTIONAL SECOND LOOP SHALL DOUBLE THE DEVICE CAPACITY, SUPPORTING A TOTAL OF 636 DEVICES. EACH SLC SHALL BE CAPABLE OF NFPA 72 STYLE 4, STYLE 6, OR STYLE 7 (CLASS A OR B) WIRING.

2. CPU SHALL RECEIVE ANALOG INFORMATION FROM ALL INTELLIGENT DETECTORS TO BE PROCESSED TO DETERMINE WHETHER NORMAL, ALARM, PREALARM, OR TROUBLE CONDITIONS EXIST FOR EACH DETECTOR. THE SOFTWARE SHALL AUTOMATICALLY MAINTAIN THE DETECTOR'S DESIRED SENSITIVITY LEVEL BY ADJUSTING FOR THE EFFECTS OF ENVIRONMENTAL FACTORS, INCLUDING THE ACCUMULATION OF DUST IN EACH DETECTOR. THE ANALOG INFORMATION SHALL ALSO BE USED FOR AUTOMATIC DETECTOR TESTING AND FOR THE AUTOMATIC DETERMINATION OF DETECTOR MAINTENANCE REQUIREMENTS.

I. POWER SUPPLY:

1. A HIGH TECH OFF-LINE SWITCHING POWER SUPPLY SHALL BE AVAILABLE FOR THE FIRE ALARM CONTROL PANEL OR NETWORK NODE AND PROVIDE 6.0 AMPS OF AVAILABLE POWER FOR THE CONTROL PANEL AND PERIPHERAL DEVICES.
2. PROVISIONS WILL BE MADE TO ALLOW THE AUDIO-VISUAL POWER TO BE INCREASED AS REQUIRED BY ADDING MODULAR EXPANSION AUDIO-VISUAL POWER SUPPLIES.
3. POSITIVE-TEMPERATURE-COEFFICIENT (PTC) THERMISTORS, CIRCUIT BREAKERS, OR OTHER OVER-CURRENT PROTECTION SHALL BE PROVIDED ON ALL POWER OUTPUTS. THE POWER SUPPLY SHALL PROVIDE AN INTEGRAL BATTERY CHARGER FOR USE WITH BATTERIES UP TO 55 AH OR MAY BE USED WITH AN EXTERNAL BATTERY AND CHARGER SYSTEM. BATTERY ARRANGEMENT MAY BE CONFIGURED IN THE FIELD.
4. THE POWER SUPPLY SHALL CONTINUOUSLY MONITOR ALL FIELD WIRES FOR EARTH GROUND CONDITIONS, AND SHALL HAVE THE FOLLOWING LED INDICATORS:

   GROUND FAULT LED
   AC POWER FAIL LED
   NAC ON LED (4)

5. THE MAIN POWER SUPPLY SHALL OPERATE ON 120 VAC, 60 HZ, AND SHALL PROVIDE ALL NECESSARY POWER FOR THE FACP.
6. THE MAIN POWER SUPPLY SHALL PROVIDE A BATTERY CHARGER USING DUAL-RATE CHARGING TECHNIQUES FOR FAST BATTERY RECHARGE AND BE CAPABLE OF CHARGING BATTERIES UP TO 200 AH.
7. ALL CIRCUITS SHALL BE POWER-LIMITED, PER UL864 REQUIREMENTS.

2.3 SYSTEM COMPONENTS

A. STROBE LIGHTS SHALL MEET THE REQUIREMENTS OF THE ADA, UL STANDARD 1971, BE FULLY SYNCHRONIZED, AND SHALL MEET THE FOLLOWING CRITERIA:

1. THE MAXIMUM PULSE DURATION SHALL BE 2/10 OF ONE SECOND
2. STROBE INTENSITY SHALL MEET THE REQUIREMENTS OF UL 1971.
3. THE FLASH RATE SHALL MEET THE REQUIREMENTS OF UL 1971.

2.4 SYSTEM COMPONENTS - ADDRESSABLE DEVICES

A. ADDRESSABLE DEVICES - GENERAL:

1. ADDRESSABLE DEVICES SHALL USE SIMPLE TO INSTALL AND MAINTAIN DECADE, DECIMAL ADDRESS SWITCHES. DEVICES SHALL BE CAPABLE OF BEING SET TO AN ADDRESS IN A RANGE OF 001 TO 159.
2. ADDRESSABLE DEVICES, WHICH USE A BINARY-CODED ADDRESS SETTING METHOD, SUCH AS A DIP-SWITCH, ARE NOT AN ALLOWABLE SUBSTITUTE.
3. DETECTORS SHALL BE INTELLIGENT (ANALOG) AND ADDRESSABLE, AND SHALL CONNECT WITH TWO WIRES TO THE FIRE ALARM CONTROL PANEL SIGNALING LINE CIRCUITS.
4. ADDRESSABLE SMOKE AND THERMAL DETECTORS SHALL PROVIDE DUAL ALARM AND POWER/POLLING LEDS. BOTH LEDS SHALL FLASH GREEN UNDER NORMAL CONDITIONS, INDICATING THAT THE DETECTOR IS OPERATIONAL AND IN REGULAR COMMUNICATION WITH THE CONTROL PANEL, AND BOTH LEDS SHALL BE PLACED INTO STEADY RED ILLUMINATION BY THE CONTROL PANEL, INDICATING THAT AN ALARM CONDITION HAS BEEN DETECTED. IF REQUIRED, THE LED FLASH SHALL HAVE THE ABILITY TO BE REMOVED FROM THE SYSTEM PROGRAM. AN OUTPUT CONNECTION SHALL ALSO BE PROVIDED IN THE BASE TO CONNECT AN EXTERNAL REMOTE ALARM LED.
5. THE FIRE ALARM CONTROL PANEL SHALL PERMIT DETECTOR SENSITIVITY ADJUSTMENT THROUGH FIELD PROGRAMMING OF THE SYSTEM. THE PANEL ON A TIME-OF-DAY BASIS SHALL AUTOMATICALLY ADJUST SENSITIVITY.
6. USING SOFTWARE IN THE FACP, DETECTORS SHALL AUTOMATICALLY COMPENSATE FOR DUST ACCUMULATION AND OTHER SLOW ENVIRONMENTAL CHANGES THAT MAY AFFECT THEIR PERFORMANCE. THE DETECTORS SHALL BE LISTED BY UL AS MEETING THE CALIBRATED SENSITIVITY TEST REQUIREMENTS OF NFPA STANDARD 72, CHAPTER 7.
7. THE DETECTORS SHALL BE CEILING-MOUNT AND SHALL INCLUDE A SEPARATE TWIST-LOCK BASE WITH TAMPER PROOF FEATURE. BASES SHALL INCLUDE A SOUNDER BASE WITH A BUILT-IN (LOCAL) SOUNDER RATED AT 85 DBA MINIMUM, A RELAY BASE AND AN ISOLATOR BASE DESIGNED FOR STYLE 7 APPLICATIONS.
8. THE DETECTORS SHALL PROVIDE A TEST MEANS WHEREBY THEY WILL SIMULATE AN ALARM CONDITION AND REPORT THAT CONDITION TO THE CONTROL PANEL. SUCH A TEST MAY BE INITIATED AT THE DETECTOR ITSELF (BY ACTIVATING A MAGNETIC SWITCH) OR INITIATED REMOTELY ON COMMAND FROM THE CONTROL PANEL.
9. DETECTORS SHALL ALSO STORE AN INTERNAL IDENTIFYING TYPE CODE THAT THE CONTROL PANEL SHALL USE TO IDENTIFY THE TYPE OF DEVICE (ION, PHOTO, THERMAL).
10. DETECTORS WILL OPERATE IN AN ANALOG FASHION, WHERE THE DETECTOR SIMPLY MEASURES ITS DESIGNED ENVIRONMENT VARIABLE AND TRANSMITS AN ANALOG VALUE TO THE FACP BASED ON REAL-TIME MEASURED VALUES. THE FACP SOFTWARE, NOT THE DETECTOR, SHALL MAKE THE ALARM/NORMAL DECISION, THEREBY ALLOWING THE SENSITIVITY OF EACH DETECTOR TO BE SET IN THE FACP PROGRAM AND ALLOWING THE SYSTEM OPERATOR TO VIEW THE CURRENT ANALOG VALUE OF EACH DETECTOR.
11. ADDRESSABLE DEVICES SHALL STORE AN INTERNAL IDENTIFYING CODE THAT THE CONTROL PANEL SHALL USE TO IDENTIFY THE TYPE OF DEVICE.
12. A MAGNETIC TEST SWITCH SHALL BE PROVIDED TO TEST DETECTORS AND MODULES. DETECTORS SHALL REPORT AN INDICATION OF AN ANALOG VALUE REACHING 100% OF THE ALARM THRESHOLD.
13. ADDRESSABLE MODULES SHALL MOUNT IN A 4-INCH SQUARE (101.6 MM SQUARE), 2-1/8 INCH (54 MM) DEEP ELECTRICAL BOX. AN OPTIONAL SURFACE MOUNT LEXAN ENCLOSURE SHALL BE AVAILABLE.

B. ADDRESSABLE MANUAL FIRE ALARM BOX (MANUAL STATION):

1. ADDRESSABLE MANUAL FIRE ALARM BOXES SHALL, ON COMMAND FROM THE CONTROL PANEL, SEND DATA TO THE PANEL REPRESENTING THE STATE OF THE MANUAL SWITCH AND THE ADDRESSABLE COMMUNICATION MODULE STATUS. THEY SHALL USE A KEY OPERATED TEST-RESET LOCK, AND SHALL BE DESIGNED SO THAT AFTER ACTUAL EMERGENCY OPERATION, THEY CANNOT BE RESTORED TO NORMAL USE EXCEPT BY THE USE OF A KEY.
2. ALL OPERATED STATIONS SHALL HAVE A POSITIVE, VISUAL INDICATION OF OPERATION AND UTILIZE A KEY TYPE RESET.
3. MANUAL FIRE ALARM BOXES SHALL BE CONSTRUCTED OF LEXAN WITH CLEARLY VISIBLE OPERATING INSTRUCTIONS PROVIDED ON THE COVER. THE WORD FIRE SHALL APPEAR ON THE FRONT OF THE STATIONS IN RAISED LETTERS, 1.75 INCHES (44 MM) OR LARGER.

C. INTELLIGENT PHOTOELECTRIC SMOKE DETECTOR: THE DETECTORS SHALL USE THE PHOTOELECTRIC (LIGHT-SCATTERING) PRINCIPAL TO MEASURE SMOKE DENSITY AND SHALL, ON COMMAND FROM THE CONTROL PANEL, SEND DATA TO THE PANEL REPRESENTING THE ANALOG LEVEL OF SMOKE DENSITY.

D. INTELLIGENT LASER PHOTO SMOKE DETECTOR:

1. THE INTELLIGENT LASER PHOTO SMOKE DETECTOR SHALL BE A SPOT TYPE DETECTOR THAT INCORPORATES AN EXTREMELY BRIGHT LASER DIODE AND AN INTEGRAL LENS THAT FOCUSES THE LIGHT BEAM TO A VERY SMALL VOLUME NEAR A RECEIVING PHOTO SENSOR. THE SCATTERING OF SMOKE PARTICLES SHALL ACTIVATE THE PHOTO SENSOR.
2. THE LASER DETECTOR SHALL HAVE CONDUCTIVE PLASTIC SO THAT DUST ACCUMULATION IS REDUCED SIGNIFICANTLY.
3. THE INTELLIGENT LASER PHOTO DETECTOR SHALL HAVE NINE SENSITIVITY LEVELS AND BE SENSITIVE TO A MINIMUM OBSCURATION OF 0.03 PERCENT PER FOOT.
4. THE LASER DETECTOR SHALL NOT REQUIRE EXPENSIVE CONDUIT, SPECIAL FITTINGS OR PVC PIPE.
5. THE INTELLIGENT LASER PHOTO DETECTOR SHALL SUPPORT STANDARD, RELAY, ISOLATOR AND SOUNDER DETECTOR BASES.
6. THE LASER PHOTO DETECTOR SHALL NOT REQUIRE OTHER CLEANING REQUIREMENTS THAN THOSE LISTED IN NFPA 72. REPLACEMENT, REFURBISHMENT OR SPECIALIZED CLEANING OF THE DETECTOR HEAD SHALL NOT BE REQUIRED.
7. THE LASER PHOTO DETECTOR SHALL INCLUDE TWO BICOLOR LEDS THAT FLASH GREEN IN NORMAL OPERATION AND TURN ON STEADY RED IN ALARM.

E. INTELLIGENT IONIZATION SMOKE DETECTOR: THE DETECTORS SHALL USE THE DUAL-CHAMBER IONIZATION PRINCIPAL TO MEASURE PRODUCTS OF COMBUSTION AND SHALL, ON COMMAND FROM THE CONTROL PANEL, SEND DATA TO THE PANEL REPRESENTING THE ANALOG LEVEL OF PRODUCTS OF COMBUSTION.

F. INTELLIGENT THERMAL DETECTORS: THERMAL DETECTORS SHALL BE INTELLIGENT ADDRESSABLE DEVICES RATED AT 135 DEGREES FAHRENHEIT (58 DEGREES CELSIUS) AND HAVE A RATE-OF-RISE ELEMENT RATED AT 15 DEGREES F (9.4 DEGREES C) PER MINUTE. IT SHALL CONNECT VIA TWO WIRES TO THE FIRE ALARM CONTROL PANEL SIGNALING LINE CIRCUIT.

2.5 BATTERIES

A. THE BATTERY SHALL HAVE SUFFICIENT CAPACITY TO POWER THE FIRE ALARM SYSTEM FOR NOT LESS THAN TWENTY-FOUR HOURS PLUS 5 MINUTES OF ALARM UPON A NORMAL AC POWER FAILURE.

B. THE BATTERIES ARE TO BE COMPLETELY MAINTENANCE FREE. NO LIQUIDS ARE REQUIRED. FLUID LEVEL CHECKS FOR REFILLING, SPILLS, AND LEAKAGE SHALL NOT BE REQUIRED.

C. IF NECESSARY TO MEET STANDBY REQUIREMENTS, EXTERNAL BATTERY AND CHARGER SYSTEMS MAY BE USED.

END OF SECTION 28 31 11

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ROBERT MALONEY
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EXP. 06/30/2026
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APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

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STATE OF CALIFORNIA

VENTURA UNIFIED SCHOOL DISTRICT

FILE NO.: 56-40

PORTOLA -MODULAR RESTROOM

6700 EAGLE ST.
VENTURA, CA 93003

DSA REVIEW

A# 03-125061

No.	Description	Date

Sheet Name
FIRE ALARM SPECIFICATIONS

RNT Project No.	1041
Date	07/08/2025
Drawn by	Author
Checked by	Checker

Sheet Number
E500

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VENTURA U.S.D.
12' x 40' RESTROOM BLDG.

BY

SILVER CREEK MODULAR, LLC..

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PHONE : (951) 943-5393 FAX : (951) 943-2211

SITE:

PORTOLA ELEMENTARY SCHOOL

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VENTURA, CA 93003

SCM PROJECT # 115995

GENERAL NOTES

1. THIS BUILDING IS DESIGNED STRUCTURALLY TO SUPPORT THE WEIGHT OF A FIRE SPRINKLER SYSTEM.
2. ALL WORK SHALL CONFORM TO TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
3. PURSUANT TO D.S.A. APPROVAL ALL PRODUCTS CAN BE SUBSTITUTED BY AN "EQUAL".
4. THE BUILDING PAD ELEVATION SHALL ABOVE THE DESIGN FLOOD ELEVATION.

APPLICABLE STANDARDS

NFPA 13 AUTOMATIC SPRINKLER SYSTEMS (CA. AMENDED) 2022 EDITION
NFPA 72 NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDED) 2022 EDITION
(NOTE: SEE UL STANDARD 1971 FOR "VISUAL DEVICES")
ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE 2019 EDITION
ASME A17.1 (W/A17.1A CSA B44A-2019 ADDENDA) SAFETY CODE FOR ELEVATORS & ESCALATORS. 2019 EDITION

APPLICABLE CODES

LIST OF 2022 CALIFORNIA CODE OF REGULATIONS

2022 BUILDING ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 C.C.R.
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R.
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 C.C.R.
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 C.C.R.
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R.
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 C.C.R.
TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

APPLICABLE STANDARDS:

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

BUILDING DATA

NUMBER OF STORIES:	1 - STORY
OCCUPANCY:	E
TYPE OF CONSTRUCTION:	V-B
FLOOR LIVE LOAD:	50+15 PSF
ROOF LIVE LOAD:	20 PSF
FLOOR DEAD LOAD:	CONCRETE FLOOR - 33 PSF
ROOF DEAD LOAD:	18 PSF (INCLUDING SPRINKLER LOAD)
SOLAR ALLOWANCE:	0.6 PSF OVER ENTIRE ROOF AREA
RAMP LIVE LOAD:	100 PSF
BUILDING AREA: ALLOWABLE AREA: 9,000 S.F.	720 SF (780 SF INCLUDING OVERHANGS)
FOUNDATION: CONCRETE BELOW GRADE	
CEC CLIMATE ZONE: 6	

ALLOWABLE SOIL PRESSURE

CONCRETE FOOTING (DL & DL+LL & DL+LL+SEISMIC)	1,500 psf

ROOF SNOW LOAD

GROUND SNOW LOAD, P_g FROM COUNTY	0
SNOW EXPOSURE FACTOR C_s	-
SNOW IMPORTANCE FACTOR I_s	1.0
THERMAL FACTOR C_t	-

WIND DESIGN

BASIC WIND SPEED (3 SECOND GUST) V_{ult}	93
RISK CATEGORY	II
WIND EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR K_{zt}	1

SEISMIC DESIGN

LATERAL FORCE-RESISTING SYSTEM	OMF
ANALYSIS PROCEDURE	EQIV. LATERAL FORCE
SEISMIC DESIGN CATAGORY (SDC)	D
SEISMIC IMPORTANCE FACTOR I_e	1.0
SEISMIC RESPONSE COEFFICIENT C_s	0.316
RESPONSE MODIFICATION COEFFICIENT R	3.5
SITE CLASS	D
MAPPED SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD S_S	1.973
SHORT PERIOD SITE COEFFICIENT F_a	1.2
DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD S_{DS}	1.578
MAPPED SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIOD S_1	0.740
LONG PERIOD SITE COEFFICIENT, F_v	-
DESIGN SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIOD S_{D1}	-
HORIZONTAL OR VERTICAL IRREGULARITY TYPES	NONE
REDUNDANCY FACTOR Rho	1.3
FUNDAMENTAL PERIOD T	< 0.5s

THERE IS NO PV SYSTEM INCLUDED WITHIN THIS APPLICATION. THERE IS NO PV SYSTEM REQUIRED FOR COMPLIANCE WITH THE 2022 CALIFORNIA ENERGY CODE IN ACCORDANCE WITH THE RESULTS OF THE BUILDING ENERGY MODELING PER 2022 CALIFORNIA ENERGY CODE SECTION 140.1 (PERFORMANCE APPROACH: ENERGY BUDGETS).

SHEET ARCHITECTURAL

A-0	COVER SHEET
A-0.1	SYMBOLS LEGEND, ABBREVIATION, AND ADA SIGNAGE
A-0.2	SCHEDULES
A-0.6A	CERTIFICATE OF COMPLIANCE FORMS
A-0.6B	CERTIFICATE OF COMPLIANCE FORMS
A-0.6C	CERTIFICATE OF COMPLIANCE FORMS
A-0.6D	CERTIFICATE OF COMPLIANCE FORMS
A-1.01	FLOOR PLAN & REFLECTED CEILING PLAN
A-2.21	CEILING DETAILS HARD LID
A-3.01	ROOF PLAN
A-3.50	ROOF DETAILS STANDING SEAM ROOF
A-4.01	EXTERIOR ELEVATIONS & INTERIOR ELEVATIONS
A-5.51	ARCHITECTURAL DETAILS - WOOD STUD - PLASTER
A-5.70	ARCHITECTURAL DETAILS - FLOOR
A-5.72	DETERIORATION PROTECTION DETAILS

SHT NO. FOUNDATION

F-1.01	CONCRETE FOUNDATION PLAN
F-2.50	FOUNDATION DETAILS
F-2.51	FOUNDATION DETAILS

SHT NO. STRUCTURAL

S-0.1	STRUCTURAL SPECIFICATIONS
S-1.01	FLOOR FRAMING PLAN & ROOF FRAMING PLAN
S-1.60	FLOOR FRAMING DETAILS - CONCRETE FLOOR
S-2.51	ROOF FRAMING DETAILS
S-2.60	ROOF FRAMING DETAILS
S-3.01	FRAMING ELEVATIONS & CROSS SECTIONS
S-5.00	WALL FRAMING ELEVATIONS - WOOD STUDS
S-5.10	WALL FRAMING DETAILS - WOOD STUDS
S-5.11	WALL FRAMING DETAILS - WOOD STUDS

SHT NO. MECHANICAL

M-0.1	MECHANICAL NOTES AND DETAILS

SHT NO. PLUMBING

P-1.01	PLUMBING DETAILS AND PLUMBING SCHEDULES
P-2.01	PLUMBING PLAN AND ISOMETRICS

SHT NO. ELECTRICAL

E-1.01	ELECTRICAL PLAN

TOTAL SHEETS (31)

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

COVER SHEET

REVISIONS

1.
2.
3.
4.
5.

PC STATE AGENCY APPROVAL

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PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER
JOHN W STARUCH
29575
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

SHEET NUMBER

A-0

REFLECTED CEILING NOTES

1. CEILING SYSTEM GENERAL NOTES

1.01 Ceiling system components shall comply with ASTM C635 and Section 5.1 of ASTM E580.
1.02 The ceiling grid system must be rated heavy duty as defined by ASTM C635.
1.03 Ceiling systems. The following ceiling system(s) is/are part of the scope of this project:

Manufacturer:	Armstrong
Evaluation Report Type and Number:	ICC ESR-1308
Main Runner Part, Model, or Catalog Number:	7301
Cross Runner Part, Model, Catalog Number:	XL7328

1.04 Seismic Wall Clip:

Manufacturer's Model:	BERC-2

1.05 Ceiling panels shall not support any luminaires, air terminals or devices.
1.06 For ceiling installations utilizing acoustical tile panels of mineral or glass fiber, it is not mandatory to provide ½" clearance between the acoustical tile panels and the wall on the sides of the ceiling which are free to slip. For all other ceiling panel types, provide ¾" clearance between the ceiling panel and the wall on the sides of the ceiling free to slip. Clearance between ceiling grid runners/members and walls shall comply with the details on these drawings regardless of ceiling tile material.

2. MATERIALS

2.01 Ceiling wire shall be Class 1 zinc coated (galvanized) carbon steel conforming to ASTM A641. Wire shall be #12 gauge (0.106" diameter) with soft temper and minimum ultimate tensile strength = 70 ksi.
2.02 Galvanized sheet steel (including that used for metal stud and track compression struts/post) shall conform to ASTM A653, or other equivalent sheet steel listed in Section A3.1 of the North American Specification for the Design of Cold-Formed Steel Structural Members, (AISI S100). Material 43 mil (18 gauge) and lighter shall have minimum yield strength of 33 ksi. Material 54 mil (16 gauge) and heavier shall have a minimum yield strength of 50ksi.
2.03 Electrical metallic tube (EMT) shall be ANSI C80.3/UL 797 carbon steel with G90 galvanizing. EMT shall have minimum yield strength (FY) of 30 ksi and minimum ultimate strength (FU) of 48 ksi.

3. ATTACHMENT OF HANGER AND BRACING WIRES

3.01 Separate all ceiling hanger and bracing wires at least 6 inches from all unbraced ducts, pipes, conduit, etc.
3.02 Hanger and bracing wires shall not attach to or bend around obstructions including but not limited to piping, ductwork, conduit and equipment.
3.03 Hanger wires that are more than one (horizontal) in six (vertical) out of plumb shall have counter-sloping wires.
3.04 Slack safety wires shall be considered hanger wires for installation and testing requirements.
3.05 Hanger and bracing wire anchorage to the structure shall be installed in such a manner that the direction of the anchorage aligns closely with the direction of the wire (e.g., bracing wire ceiling clips must be bent as shown in the details and rotated as required to align closely with the direction of the wire, screw eyes in wood must be installed so they align closely with the direction of the wire, etc.).

4. FASTENERS AND WELDING

4.01 Sheet metal screws shall comply with ASTM C1513 and ASME B18.6.3. Penetration of screws through joined material shall not be less than three exposed threads.
4.02 Expansion anchors shall be: [RDP to indicate manufacturer, product, evaluation report number and test load for each size specified per CBC 1910A.5.4.]
4.03 Power-Actuated Fasteners shall be: [RDP to indicate manufacturer, product, evaluation report number.]
4.04 If not otherwise specified in the evaluation report, power-actuated fasteners installed in steel shall be installed so the entire pointed end of the fastener is driven through the steel member
4.05 Power-actuated fasteners in concrete or masonry are not permitted for bracing wires.
4.06 Concrete reinforcement and prestressing tendons shall be located by non-destructive means prior to installing post-installed anchors.
4.07 Welding shall be in accordance with AWS D1.3 using E60XX series electrodes.

5. TESTING

5.01 All field testing must be performed in the presence of the project inspector.
5.02 Post-installed anchors in concrete used to support hanger wires shall be tested at a frequency of 10 percent. Power-actuated fasteners in concrete shall be field tested for 200 pounds in tension. All other post-installed anchors in concrete shall be tested in accordance with CBC Section 1910A.5.
5.03 Post-installed anchors in concrete used to attach bracing wires shall be tested at a frequency of 50 percent in accordance with CBC Section 1910A.5.

6. LUMINAIRES

6.01 All luminaires shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the luminaire. A minimum of two screws or approved fasteners are required at each luminaire, per ASTM E580 Section 5.3.1.
6.02 Surface-mounted luminaires shall be attached to the main runner with at least two positive clamping devices. The clamping device shall completely surround the supporting ceiling runner and be made of steel with a minimum thickness of #14 gauge. Rotational spring catches do not comply. A #12 gauge slack safety wire shall be connected from each clamping device to the structure above. Provide additional supports when a luminaire is 8 feet or longer or exceeds 56 pounds. Maximum spacing between supports shall not exceed 8 feet.
6.03 Luminaires weighing less than or equal to 10 pounds may be supported directly on the ceiling runners, shall have a minimum of one #12 gauge slack safety wire connected from the fixture housing to the structure above.
6.04 Luminaires weighing greater than 10 pounds but less than or equal to 56 pounds may be supported directly on the ceiling runners, but they shall have a minimum of two #12 gauge slack safety wires connected from the fixture housing at diagonal corners to the structure above.
Exception: All luminaires greater than two by four feet weighing less than 56 pounds shall have a #12 gauge slack safety wire at each corner.
6.05 All luminaires weighing greater than 56 pounds shall be independently supported by not less than four taut #12 gauge hanger wires (one at each corner) attached from the fixture housing to the structure above or other approved hangers. The four taut #12 gauge wires or other approved hangers, including their attachment to the structure above, shall be capable of supporting four times the weight of the fixture.

7. SERVICES WITHIN THE CEILING

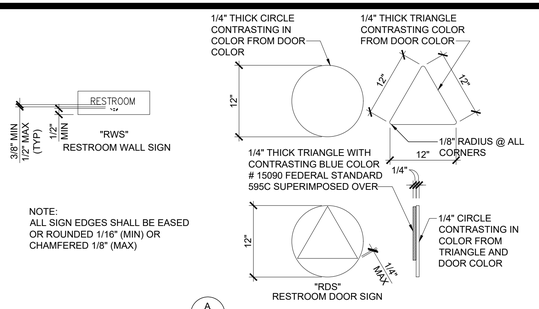
7.01 All flexible sprinkler hose fitting mounting brackets, ceiling-mounted air terminals or other services shall be positively attached to the ceiling suspension systems by mechanical means. Screws or approved fasteners are required. A minimum of two attachments are required at each component.
7.02 Ceiling-mounted air terminals or other services weighing less than or equal to 20 pounds shall have one #12 gauge slack safety wire attached from the terminal or service to the structure above.
7.03 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 20 pounds but less than or equal to 56 pounds shall have two #12 gauge slack safety wires (at diagonal corners) connected from the terminal or service to the structure above.
7.04 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 56 pounds shall be supported directly from the structure above by not less than four taut #12 gauge hanger wires attached from the terminal or service to the structure above or other approved hangers.

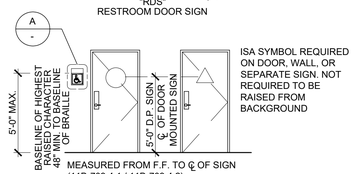
8. OTHER DEVICES WITHIN THE CEILING

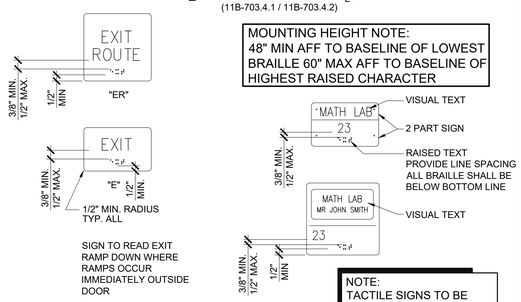
8.01 All lightweight miscellaneous devices, such as strobe lights, occupancy sensors, speakers, exit signs, etc., shall be attached to the ceiling grid. In addition, devices weighing more than 10 pounds shall have a #12 gauge slack safety wire anchored to the structure above. Devices weighing more than 20 pounds shall be supported independently from the structure above.

NOTE:
ACOUSTICAL PANELS SHALL BE 5/8" MINIMUM THICK, MINERAL FIBERBOARD OR VINYL FACED FIBERGLASS LAY-IN PANELS SQUARE EDGE AND CBC CLASS C FLAME-SPREAD 76-200; SMOKE-DEVELOPED 0-450.

NOTE:
PER CBC SECTION 718.2.1. FIRE BLOCKS MAY BE OF GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR MINERAL OR GLASS FIBER, OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIRE BLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. (SECTION 718.2.1). FLAME SPREAD - 25 SMOKE DEVELOPMENT - 50 MAX.
FIRE BLOCKING IS NOT REQUIRED WITHIN CONCEALED SPACES CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS







SIGNAGE TEMPLATES

COORDINATE WITH SIGNAGE NOTES (BELOW)

SIGNAGE NOTES

1. CHARACTER TYPE: CHARACTERS ON TACTILE SIGNS SHALL BE RAISED 1/32" (0.794 mm) MINIMUM ABOVE THEIR BACKGROUND AND SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE. (SEE NOTE 5 BELOW) 11B-703.2.1 & 11B-703.2.2 &11B-703.23.

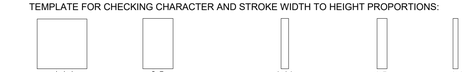
2. RAISED CHARACTER HEIGHT: CHARACTER HEIGHT MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8" (15.9 mm) MINIMUM AND 2 INCH (51 mm) MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I". 11B-703.2.5

3. FINISH AND CONTRAST: SYMBOLS OF ACCESSIBILITY AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH SYMBOLS. SYMBOLS OF ACCESSIBILITY SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER A LIGHT SYMBOL ON A DARK BACKGROUND OR A DARK SYMBOL ON A LIGHT BACKGROUND. 11B-703.7.1.

4. PROPORTIONS: RAISED CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MIN AND 110% MAX OF THE HEIGHT OF THE UPPERCASE LETTER "I". STROKE THICKNESS OF THE UPPERCASE "I" SHALL BE 15% MAX OF THE HEIGHT OF THE CHARACTER. 11B-703.2.4 + 11B-703.2.6

VISUAL CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MIN AND 110% MAX OF THE HEIGHT OF THE UPPERCASE LETTER ' I '. STROKE THICKNESS OF THE UPPER CASE ' I ' SHALL BE 10% MIN. AND 20% MAX OF THE HEIGHT OF THE CHARACTER.

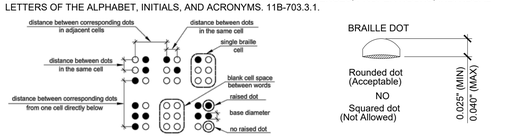
TEMPLATE FOR CHECKING CHARACTER AND STROKE WIDTH TO HEIGHT PROPORTIONS:



5. CHARACTER SPACING: CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT RAISED CHARACTERS WITHIN A MESSAGE, EXCLUDING WORD SPACES. WHERE CHARACTERS HAVE RECTANGULAR CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/8" (MIN) AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH (MAX). WHERE CHARACTERS HAVE OTHER CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/16" (MIN) AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH (MAX) AT THE BASE OF THE CROSS SECTIONS, AND 1/8" (MIN) AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH (MAX) AT THE TOP OF THE CROSS SECTIONS. CHARACTERS SHALL BE SEPARATED FROM RAISED BORDERS AND DECORATIVE ELEMENTS 3/8" (MIN). 11B-703.2.7

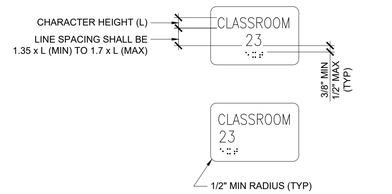
6. LINE SPACING: SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF RAISED CHARACTERS WITHIN A MESSAGE SHALL BE 135% (MIN) AND 170% (MAX) OF THE RAISED CHARACTER HEIGHT. 11B-703.2.8

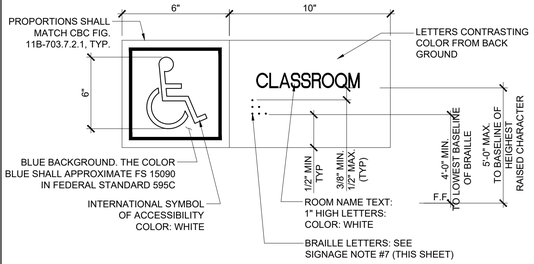
7. BRAILLE: BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH SECTIONS 11B-703.3 AND 11B-703.4. DIMENSIONS AND CAPITALIZATION: BRAILLE DOTS SHALL HAVE A DOMED OR ROUNDED SHAPE AND SHALL COMPLY WITH TABLE 11B-703.3.1. THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMS. 11B-703.3.1.



MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6mm)
Distance between two dots in the same cell[1] (#footnote-1)	*0.100 (2.5 mm)*
Distance between corresponding dots in adjacent cells[1] (#footnote-1)	*0.300 (7.6 mm)*
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below[1] (#footnote-1)	0.395 (10 mm) to 0.400 (10.2 mm)

1. Measured center to center.





NOTE:
SIGN MATERIAL TO BE 1/8" THK. E.S. PLASTIC W/1/32" RAISED GRAPHICS AND LETTERS. PROVIDE MECHANICAL MOUNTING W/ VANDAL RESISTANT FASTENERS. CBC SECTION 11B-703. WHERE RAISED BOARDERS OCCUR, PROVIDE 1/2" MIN. CLEARANCE BETWEEN TOP OF BOARDER AND LOWEST LEVEL OF BRAILLE TEXT.

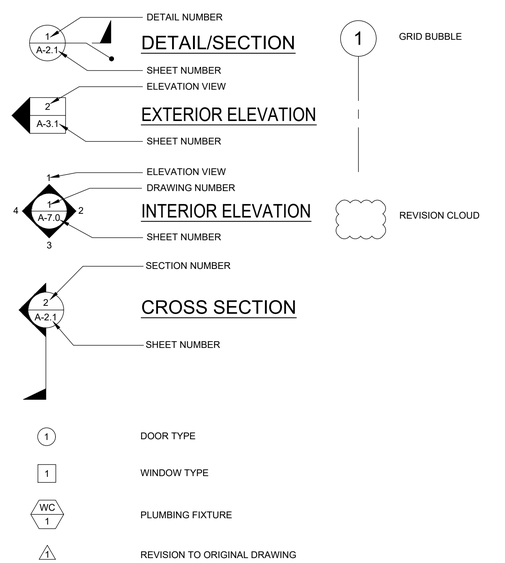
A ROOM IDENTIFCATION ROOM SIGNAGE (BY DISTRICT)

FOR SITE SPECIFIC LOCATIONS ARCHITECT TO PROVIDE BUILDING / ROOM IDENTIFICATION SIGNS. DETAILS AND LOCATIONS OF SIGNAGE TO BE INDICATED.

COORDINATE WITH SIGNAGE NOTES 1 THROUGH 7 ON THIS SHEET.

THIS DETAIL FOR REFERENCE ONLY

SYMBOLS LEGEND



ABBREVIATIONS

AB	ANCHOR BOLT	FIN	FINISH	℄ OR PL	PLATE
ABS	ABSOLUTE	FLR	FLOOR	PC	PRE-CHECKED
ABV	ABOVE	FN	FIELD NAILING	PLAS	PLASTER
ACC	ACCESS	FND	FOUNDATION	PLYWD	PLYWOOD
ADDL	ADDITIONAL	FOC	FACE OF CONCRETE	PNL	PANEL
ADJ	ADJACENT	FOS	FACE OF STUD	POC	POINT OF CONNECTION
AFF	ABOVE FINISH FLOOR	FTG	FOOTING	POT	PATH OF TRAVEL
AFG	ABOVE FINISH GRADE	FOF	FACE OF FINISH	PSF	POUNDS PER SQUARE FOOT
AGC	ABOVE GRADE CONCRETE			PSI	POUNDS PER SQUARE INCH
ALT	ALTERNATE	GA	GAUGE	PT	PRESSURE TREATED
AOR	ARCHITECT OF RECORD	GALV	GALVANIZE		
APPROX	APPROXIMATE	GC	GENERAL CONTRACTOR	RAG	RETURN AIR GRILLE
ARCH	ARCHITECTURAL / ARCHITECT	GR	GRADE	RD	ROOF DRAIN
		GYP	GYPSUM	REF	REFERENCE
BD	BOARD	GYP BD	GYPSUM BOARD	REINF	REINFORCE
BGC	BELOW GRADE CONCRETE			REQ'D	REQUIRED
BLDG	BUILDING	HB	HOSE BIBB	REV	REVISION
BLK	BLOCK	HD	HEAVY DUTY	RF	ROOF
BLKG	BLOCKING	HDR	HEADER	RM	ROOM
BM	BEAM	HDW	HARDWARE	RO	ROUGH OPENING
BOT	BOTTOM (OR BTM)	HF	HEM FIR	ROH	ROOF OVERHANG
BTWN	BETWEEN	HORIZ	HORIZONTAL		
BU	BUILT UP	HT	HEIGHT	SCHED	SCHEDULE
		HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	SEC	SECTION
CAB	CABINET			SHT	SHEET
CBC	CALIFORNIA BUILDING CODE			SHTG	SHEATHING
CI	CAST IRON			SIM	SIMILAR
CJ	CONTROL JOINT	INCL	INCLUDED	SPEC	SPECIFICATION
CJP	COMPLETE JOINT PENETRATION	INFO	INFORMATION	SQ	SQUARE
		INT	INTERIOR	SST	STAINLESS STEEL
℄	CENTER LINE			STD	STANDARD
CLG	CEILING	J-BOX	JUNCTION BOX	STIFF	STIFFENER
CO	CLEAN OUT	JST	JOIST	STL	STEEL
COL	COLUMN	JT	JOINT	STS	SELF-TAPPING SCREW
CONC	CONCRETE			STSMS	SELF-TAPPING SHEET METAL SCREW
CONN	CONNECTION	KO	KNOCK OUT		
CONST	CONSTRUCTION				
CONT	CONTINUOUS	LAB	LABORATORY		
CPT	CARPET	LAM	LAMINATED	T&B	TOP AND BOTTOM
CSK	COUNTERSINK	LAV	LAVATORY	T&G	TONGUE AND GROOVE
CTR	CENTER	LB	POUNDS	TEL	TELEPHONE
		LT	LIGHT	THK	THICK
DBL	DOUBLE	LT WT	LIGHT WEIGHT	TOC	TOP OF COLUMN
DET	DETAIL	LVR	LOUVER	TOS	TOP OF STEEL
DF	DOUGLAS FIR			TS	TUBE STEEL
DIA OR Ø	DIAMETER	MAX	MAXIMUM	TV	TELEVISION
DIAG	DIAGONAL	MB	MACHINE BOLT	TYP	TYPICAL
DIM	DIMENSION	MED	MEDIUM		
DSA	DIVISION OF THE STATE ARCHITECT	MFR	MANUFACTURER	UBC	UNIFORM BUILDING CODE
		MIN	MINIMUM	UON	UNLESS OTHERWISE NOTED
DWG	DRAWING	MISC	MISCELLANEOUS		
		MOD	MODULE	UR	URINAL
(E)	EXISTING	MTL	METAL		
EA	EACH			VERT	VERTICAL
EJ	EXPANSION JOINT	(N)	NEW	VCT	VINYL COMPOSITION TILE
ELEV	ELEVATION	N	NORTH		
EN	END NAIL	NIC	NOT IN CONTRACT (NOT IN SILVER CREEK'S SCOPE OF WORK	W/	WITH
EQ	EQUAL			WC	WATER CLOSET
EQUIP	EQUIPMENT	NO	NUMBER	WCO	WALL CLEAN OUT
EW	EACH WAY	NTS	NOT TO SCALE	WD	WOOD
EXT	EXTERIOR			WH	WATER HEATER
		OC	ON CENTER	WIC	WOODWORK INSTITUTE OF CALIFORNIA
FA	FIRE ALARM	OD	OUTSIDE DIAMETER		
FCO	FLOOR CLEAN OUT	OH	OPPOSITE HAND	WND	WINDOW (OR WDW)
FF	FINISH FLOOR	OPNG	OPENING	W/O	WITHOUT
FG	FINISH GRADE	OPP	OPPOSITE	WP	WATER PROOF

SPECIFICATIONS

DIVISION 5 - METALS
- ALL WELDED JOINTS AND SURFACES SHALL BE GROUNDED SMOOTH, NO SHARP OR ABRASIVES CORNERS, EDGES OR SURFACES. WALL SURFACES ADJACENT TO HANDRAILS SHALL BE SMOOTH,
- ALL HANDRAILS SHALL BE ROUND OR SHALL HAVE RADIUSED EDGES (r = 1/8" MIN)

DIVISION 6 - WOOD AND PLASTICS
- ALL CABINET AND DRAWERS WILL HAVE U-SHAPED WIRE PULLS

DIVISION 9 - FINISHES
- CEILING INSTALLATION SHALL BE PER THE NOTES PROVIDED ON THIS SHEET.

DIVISION 10 - SPECIALITIES
- ALL TOILET ACCESSORIES SHALL BE INSTALLED AT THE HEIGHT AND CLEARANCES SHOWN ON SHEET P-1.01

DIVISION 22 - PLUMBING
- FAUCETS SHALL BE LEVER OPERATED (4" MIN BLADE) OR SHALL BE PUSH TYPE OR AUTOMATIC ELECTRONICALLY CONTROLLED. CONTROLS TO BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE.
- FORCE TO ACTIVATE CONTROLS SHALL NOT BE GREATER THAN 5 LBS
- FORCE TO REMAIN OPEN FOR A MINIMUM OF 10 SECONDS WHEN SELF CLOSING VALVES ARE USED
- PIPE COVERS SHALL BE PROVIDED FOR WATER LINES AND DRAIN PIPES UNDER ACCESSIBLE SINKS AND LAVATORIES
- ACCESSIBLE SINKS SHALL NOT BE DEEPER THAN 6 1/2"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

SYMBOLS LEGEND, ABBREVIATIONS & ADA SIGNAGE

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 29775 STRUCTURAL STATE OF CALIFORNIA

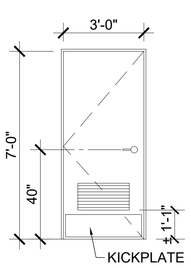
SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

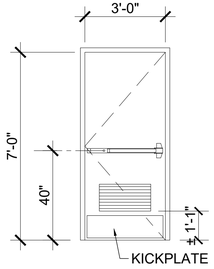
SHEET NUMBER

A-0.1

DOOR TYPES



DOOR TYPE "A"



DOOR TYPE "B"

DOOR SCHEDULE

DOOR NO	WIDTH	HEIGHT	DOOR TYPE	QTY	DOOR MAT/FIN	FRAME MAT/FIN	HARDWARE SET	LOCKABLE FROM INT.	NOTES*
1	3'-0"	7'-0"	B		HM	WF	HW - 1	NO	GIRLS RR, 180° DOOR SWING
2	3'-0"	7'-0"	A		HM	WF	HW - 2	YES	STAFF RR, 180° DOOR SWING
3	3'-0"	7'-0"	A		HM	WF	HW - 3	NO	JANITOR RR, 180° DOOR SWING
4	3'-0"	7'-0"	A		HM	WF	HW - 2	YES	STAFF RR, 180° DOOR SWING
5	3'-0"	7'-0"	B		HM	WF	HW - 1	NO	BOYS RR, 180° DOOR SWING

DOOR MATERIAL AND FINISH ABBREVIATIONS

HM:	18 GA HOLLOW METAL	KD:	16 GA KNOCK DOWN FRAME	*EXTERIOR DOORS TO BE UNINSULATED SINGLE LAYER DOORS W/ U-FACTOR OF 1.450 MAX
WF:	16 GA WELDED FRAME	SCL:	SOLID CORE WOOD LEGACY	

DOOR NOTES

1. DOOR HANDLE FOR LOCK SETS AND PANIC HARDWARE TO BE CENTERED AT 40" AFF
2. ALL EXIT DOORS TO BE OPENABLE FROM THE INSIDE WITHOUT THE USE ANY SPECIAL TOOLS, KNOWLEDGE OR EFFORT. LEVERS TO RETURN TO WITHIN 1/2" OF DOOR.
3. ALL DOORS SHALL BE 1 3/4" THICK U.N.O.
4. CLOSER SHALL BE SET FOR MAXIMUM OPENING PRESSURE OF 5 LBS AT EXTERIOR AND INTERIOR DOORS.
5. PANIC HARDWARE IS REQUIRED TO BE INSTALLED WHEN THE CONFIGURATION OF ANY ROOM PROVIDES AN OCCUPANT LOAD OF 50 OR GREATER.
6. ALL HARDWARE SHALL COMPLY WITH SILVER CREEK'S SPECS ON THIS SHEET AND CBC SECTIONS 11B-206.5,11B-404.1 & 1010.
7. DOOR CLOSER SHALL BE ADJUSTED TO SO THAT FROM AN OPEN POSITION OF 90°, THE DOOR WILL TAKE AT LEAST 5 SECONDS TO MOVE TO A POINT 12° FROM THE LATCH, MEASURED TO THE LANDING SIDE OF THE DOOR.
8. PANIC AND FIRE EXIT HARDWARE. WHERE THIS TYPE HARDWARE IS INSTALLED, IT SHALL COMPLY WITH THE FOLLOWING:
   - THE ACTUATING PORTION OF THE RELEASING DEVICE SHALL EXTEND AT LEASE ONE-HALF OF THE DOOR LEAF WIDTH.
   - THE MAXIMUM FORCE TO ACTIVATE ANY OPERABLE PART SHALL NOT EXCEED 5 LBS PER THE 2022 CBC, PANIC HARDWARE SHALL COMPLY WITH CBC SECTION 1010.1.10
9. ALL HAND ACTIVATED HARDWARE SHALL BE LEVER TYPE, PANIC BARS, PUSH/PULL TYPE OR 'U' SHAPED HANDLES.
10. ALL HAND ACTIVATED HARDWARE SHALL BE EASY TO OPERATE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF WRIST TO OPERATE AND WILL OPERATE WITH W/ 5 LBS OR LESS FORCE.
11. FLOOR STOP SHALL BE LOCATED 4" MAX FROM FACE OF WALL.

FINISH SCHEDULE

ROOM NAME	FLOORING		WALL FINISH				CEILING		NOTES
	FLOOR	BASE	FRONT	LEFT	REAR	RIGHT	CEILING	CEILING HT	
GIRLS RR 101	EP	EP	CT/FRP	CT/FRP	CT/FRP	CT/FRP	HC	8'-6"	
BOYS RR 102	EP	EP	CT/FRP	CT/FRP	CT/FRP	CT/FRP	HC	8'-6"	
STAFF RR 103	EP	EP	CT/FRP	CT/FRP	CT/FRP	CT/FRP	HC	8'-6"	
STAFF RR 104	EP	EP	CT/FRP	CT/FRP	CT/FRP	CT/FRP	HC	8'-6"	
JANITOR 105	EP	EP	FRP	FRP	FRP	FRP	HC	8'-6"	

FLOOR, WALL, CEILING MATERIALS

FLOORING

EP: EPOXY FLOOR FINISH OVER CONCRETE FLOOR

BASE

EP: 6" EPOXY COVE BASE. (EPOXY BASE COVE TO BE FLUSH W/ WALL TILE)

WALLS

CT/FRP: 5' CERAMIC TILE WAINSCOT W/ ELASTOMERIC NON-SANDED GROUT OVER 1/2" CEMENT TILE BACKER BOARD W/ 3'-6" FRP ABOVE CERAMIC TILE.

FRP: 1/8" FIBER REINFORCED PANEL OVER ½" WATER RESISTANT GYPSUM BOARD

CEILING

HC: 5/8" GYPSUM BOARD; TAPE; TEXTURE; PAINTED FINISH (HARD LID CEILING)

INSULATION SPECIFICATIONS

MOISTURE PROTECTION INSULATION:

DESCRIPTION OF WORK: THE FURNISHING AND INSTALLING OF ALL INSULATION FOR ALL CEILING, FLOOR AREAS, PIPES AND EXTERIOR WALLS. (CLASS A = 0-25 FLAME SPREAD:) SMOKE DEVELOPMENT DENSITY LESS THAN 450.

MATERIAL:
INSULATING MATERIAL FOR WALLS SHALL BE FIBERGLASS BATTS (UNFACED) AND SHALL COMPLY WITH CBC 720.1, 720.2, 720.3, 720.5 AND 720.7. INSULATION SHALL BE AS MANUFACTURED BY OWENS-CORNING, JOHNS-MANVILLE, OR EQUAL.

INSULATING MATERIAL FOR ROOFS SHALL BE CLOSED CELL SPRAY FOAM AND SHALL COMPLY WITH CBC 720.1, 720.2, 720.3, 720.5 AND 720.7. INSULATION SHALL HAVE A MINIMUM R-VALUE OF R-6 PER EACH INCH OF THICKNESS, AN AIR PERMEANCE RATE OF NOT MORE THAN 0.02 L/s AT 75 Pa, AND A WATER VAPOR TRANSMISSION RATE OF NOT MORE THAN 0.9 PERMS. THE FOAM SHALL BE APPLIED TO FILL ALL VOIDS IN THE ROOF FRAMING MEMBERS.

MIN INSULATION VALUES:

EXTERIOR WALL INSULATION (MIN.)
R-19 (6" WALL)

INTERIOR WALL INSULATION (MIN.)
R-13

FLOOR INSULATION
NONE (CONCRETE MASS)

ROOF INSULATION (MIN.)
R-30 (CLOSED CELL SPRAY FOAM)

FINISH NOTES

1. ALL FINISHES SHALL COMPLY WITH CBC, CFC AND TITLE 19 CCR.
2. PREPARATION FOR SUB-FLOOR TO ACCEPT FINISH FLOORING IS BY FLOORING CONTRACTOR. PLYWOOD SUB-FLOOR IS 2.4.1. PLYWOOD. OUTER PLYWOOD IS PLUGGED AND TOUCH SANDED. ANY DEFORMITIES DUE TO STANDARD CONSTRUCTION PRACTICES SHALL BE FILLED AND SANDED BY FLOORING CONTRACTOR. THE JOINT AT THE MODLINE SHALL NOT BE LARGER THAN 1/8" AND SHALL BE FILLED AND SANDED BY FLOORING CONTRACTOR.
3. RESILIENT FLOORING DEMONSTRATING A COEFFICIENT OF FRICTION OF AT LEAST 0.6 PER ASTM D2047, WILL BE ACCEPTED AS MEETING THE INTENT OF SLIP RESISTANCE.
4. CARPET SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT, OR LEVEL CUT / UNCUT PILE TEXTURE AND MAXIMUM PILE HEIGHT OF 1/2" PER THE 2022 CBC. CARPET EDGED SHALL COMPLY WITH THE 2022 CBC
5. INTERIOR WALL AND CEILING FINISHES (INCLUDING TOILET PARTITIONS) SHALL COMPLY WITH CBC SECTION 803 AND SHALL BE CLASSIFIED FOR FIRE PERFORMANCE AND SMOKE DEVELOPMENT IN ACCORDANCE WITH CBC SECTION 803.1.1 OR 803.1.2. ROOMS AND ENCLOSED SPACES SHALL HAVE A "CLASS C" CLASSIFICATION OR BETTER. CORRIDORS SHALL HAVE A "CLASS B" CLASSIFICATION OR BETTER.
6. INTERIOR FLOOR FINISHES SHALL COMPLY WITH CBC SECTION 804 AND SHALL CLASSIFIED IN ACCORDANCE WITH CBC SECTION 804.2. ALL FLOOR FINISHES SHALL HAVE A MINIMUM CRITICAL RADIANT FLUX CLASSIFICATION OF NOT LESS THAN "CLASS II".

DOOR HARDWARE

DOOR W/ PANIC HARDWARE - EXTERIOR DOOR HW-1

EXIT DEVICE	VON DUPRIN AX-PA-CD-99EO-36"	Finish Alum	or equal
RIM CYLINDER	SCHLAGE 20-079	Finish 626	or equal
PRIMUS CORE ONLY	20-740 FP KEYWAY	Finish 626	or equal
MORTISE CYLINDER	SCHLAGE 20-094	Finish 626	or equal
CORE ONLY	SCHLAGE 20-030	Finish 626	or equal
DOOR PULL	TRIM 1096-HA-SGL -VON 99EO-36"	Finish 626	or equal
CONT. HINGE	PEMKO CFM83HD	Finish 626	or equal
CLOSER	LCN P4040XP EDA 180 degree max. open	Finish 689	or equal
KICKPLATE	HAGER 190S 10"X34"	Finish 630	or equal
WEATHER STRIP	HAGER 891SAV 3684	Finish Alum	or equal
THRESHOLD	HAGER 428SA 36	Finish Alum	or equal
DOOR SHOE/DRIP	HAGER 783SAV 36"W/O GASKET	Finish Alum	or equal
DOOR SWEEP	HAGER 802S	Finish Alum	or equal
LOUVER	ANEMO 24 x 12	Painted	
SILENCERS	HAGER 307D (HM FRAMES)	Finish Gry	

(NOTE; PANIC HARDWARE AND DOOR CLOSER TO BE INSTALLED WITH THROUGH BOLTS)

EMERGENCY EXIT AND PANIC HARDWARE IS TO COMPLY WITH SFM STANDARD 12-10-3, SECTION 12-10-302:
a) THE CROSS BAR SHALL EXTEND ACROSS NOT LESS THAN ONE-HALF THE WIDTH OF THE DOOR/GATE.
d) THE ENDS OF THE CROSS-BAR SHALL BE CURVED, GUARDED OR OTHERWISE DESIGNED TO PREVENT CATCHING ON THE CLOTHING OF PERSONS DURING EGRESS.

STAFF RESTROOM - EXTERIOR DOOR HW-2

LOCKSET	SCHLAGE L9040 06A PRIVACY LATCH OUTSIDE LEVER IVES LG10 LOCKGUARD	Finish 626	or equal
PRIMUS CORE ONLY	SCHLAGE 20-740 FP KEYWAY	Finish 626	or equal
CONT. HINGE	PEMKO CFM83HD	Finish 626	or equal
CLOSER	LCN P4040XP EDA 180 degree max. open	Finish 689	or equal
KICKPLATE	HAGER 190S 10"x34"		
DOOR SHOE/DRIP	HAGER 783SAV - 36" W/O GASKET	Finish Alum	
DOOR SWEEP	HAGER 802S	Finish Alum	or equal
WEATHER STRIP	HAGER 891SAV 3684	Finish Alum	or equal
THRESHOLD	HAGER 428SA 36	Finish Alum	or equal
LOUVER	ANEMO 24 x 12	Painted	
SILENCER	HAGER 307D (HM FRAMES)	Finish Gry	

(NOTE; PRIMUS CYLINDER REQUIRED)
(NOTE; DOOR CLOSER TO BE INSTALLED WITH THROUGH BOLTS)

JANITOR - EXTERIOR DOOR HW-3

LOCKSET	SCHLAGE L9080T 06A X LESS OUTSIDE LEVER	Finish 626	or equal
DOOR PULL	TRIMCO 1096-HA SGL 36"	Finish 630	
PRIMUS CORE ONLY	SCHLAGE 20-740 FP Keyway	Finish 626	or equal
LOUVER	ANEMO 24x12	Painted	
CONT. HINGE	PEMKO CFM83HD 626	Finish 26D	or equal
CLOSER	LCN P4040XP EDA 180 degree max. open	Finish 689	or equal
KICKPLATE	HAGER 190S 10"x34"	Finish 630	
DOOR SHOE/DRIP	HAGER 783SAV - 36" W/O GASKET	Finish Alum	
WEATHER STRIP	HAGER 891SAV 3684	Finish Alum	or equal
THRESHOLD	HAGER 428SA 36	Finish Alum	or equal
DOOR BOTTOM	HAGER 8025	Finish Alum	or equal
SILENCERS	HAGER 307D (HM FRAMES)	GRY	

(NOTE; DOOR CLOSER TO BE INSTALLED WITH THROUGH BOLTS)

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

THESE DRAWINGS AND ALL MATERIAL CONTAINED HEREIN ARE THE PROPERTY OF SILVERCREEK MODULAR, INC (SCM Inc) AND SHALL NOT BE REPRODUCED, COPIED OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY AND SHALL NOT BE USED IN WHOLE OR IN PART TO ASSIST IN THE MAKING OF OR FOR THE PURPOSE OF FURNISHING ANY INFORMATION FOR THE MAKING OF DRAWINGS, PRINTS, APPARATUS OR PARTS THEREOF WITHOUT THE FULL KNOWLEDGE AND WRITTEN CONSENT OF SCM Inc. ALL PATENTABLE MATERIAL CONTAINED HEREIN AND ORIGINATING WITH SCM Inc SHALL BE THE PROPERTY OF SCM Inc

PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

SCHEDULES

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
25975
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-0.2

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
Project Name:	SILVER CREEK PC - TYPICAL CLASSROOM	Report Page: (Page 1 of 6)
Project Address:		Date Prepared: 2023-01-31T18:53:26-05:00

This document is used to demonstrate compliance with mandatory commissioning requirements in 120.8 for nonresidential buildings and hotel/motel or mixed-use buildings with nonresidential spaces. This document does not demonstrate compliance with commissioning requirements within Title 24, Part 11, which need to be documented separately if they apply.

A. GENERAL INFORMATION

01	Project Location (city)	Perris	04	Building Size (ft²)	960
02	Occupancy Type	Nonresidential	05	Nonresidential Conditioned Floor Area (ft²)	< 10,000 ft²
03	Project Type	Newly constructed	06	HVAC System Type	Unitary or packaged equipment each serving one zone
			07	Climate Zone	10

B. PROJECT SCOPE

Based on project information provided in Table A, Table B indicates which commissioning related requirements apply per 120.8. Table B is not editable by the user.

Commissioning Requirements per 120.8			
01	Table F: Design Review Kickoff	120.8(d)1 and 120.8(d)2	The design review kickoff meeting establishes who will play the role of the design reviewer, the project schedule and identify owner's requirements. This meeting should be conducted during schematic design.
02	Table G: Owner's Project Requirements (OPR)	120.8(b)	This requirement does not apply.
03	Table H: Basis of Design (BOD)	120.8(c)	This requirement does not apply.
04	Table I: Design Review	120.8(d) and 120.8(e)	The design reviewer(s) reviews the construction documents for clarity, completeness, and adherence to the owner's goals. Commissioning measures must be included in the construction documents to facilitate the design review and commissioning process. For projects with >= 10,000 ft² of nonresidential conditioned floor area, the design review is for adherence with the Owner's Project Requirements (OPR) and Basis of Design (BOD). This should be conducted during design.
05	Table J: Commissioning Plan	120.8(f)	This requirement does not apply.
06	Table K: Functional Performance Testing	120.8(g)	This requirement does not apply.
07	Table L: Documentation and Training	120.8(h)	This requirement does not apply.
08	Table M: Commissioning Report	120.8(i)	This requirement does not apply.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
Documentation Software: Energy Code Ace Compliance ID: 86563-0123-0005 Report Generated: 2023-01-31 15:53:28

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-CXR-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 2 of 6)
Project Address: Date Prepared: 2023-01-31T18:53:26-05:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with commissioning requirements per 120.8. This table is not editable by the user. If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	02	03	04	05	06	07	08	09
Design Kickoff Review	Owner's Project Requirements	Basis of Design	Design Review	Commissioning Plan	Functional Performance Testing	Documentation and Training	Commissioning Report	Compliance Results
Table F	Table G	Table H	Table I	Table J	Table K	Table L	Table M	
Yes			Yes					COMPLIES
10	Design Reviewer(s) for the project include:			John Starlin				COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
Documentation Software: Energy Code Ace Compliance ID: 86563-0123-0005 Report Generated: 2023-01-31 15:53:28

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-CXR-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 3 of 6)
Project Address: Date Prepared: 2023-01-31T18:53:26-05:00

F. DESIGN REVIEW KICKOFF MEETING

This table indicates that the design reviewer meets the qualification requirements per Title 24, Part 1 Section 10-103(a)1 and demonstrates compliance with design review kickoff requirements per 120.8(d)2. This meeting should occur during the Schematic Design phase of the project.

Design Review Kickoff Meeting Details				
01	Date of Design Review Kickoff Meeting			2022-12-05
02	Meeting Attendees: (one person may play multiple roles)			
☒	Owner/Facility Manager:	Ryan McIntosh	☐ Design Reviewer(s)	
☐	Project Manager:		☒ Design Architect/ Engineer(s):	John Starlin
☐	Contractor:		☐ Certified Acceptance Test Tech(s):	
☐	Commissioning Provider:		☒ Energy/ T24 Part 6 Consultant:	John Starlin

Design Reviewer Qualifications per Title 24 Part 1 Section 10-103(a)1			
The design reviewer(s) must be licensed professional engineers or licensed architects, or licensed contractors representing services performed by or under the direct supervision of a licensed engineer or architect, as specified in the provisions of Division 3 of the Business and Professions Code.		Do the Design Reviewer(s) meet these qualifications?	
		Yes	No
03	In addition, for buildings with < 10,000 ft², the design reviewer(s) may be the engineer or architect of record. The design reviewer(s) may also be a qualified in-house engineer or architect with no other project involvement or a third party engineer, architect or contractor.	●	○
04	The design reviewer(s) for this project will be:	John Starlin	

Preliminary Construction Schedule			
		Start Date	Completion Date
05	Schematic Design	2022-12-05	2022-12-05
06	Design Development	2022-12-05	2022-12-05
07	Construction Documents	2022-12-05	2023-02-24
08	Construction	2024-01-01	2024-01-01
09	Building Turnover	2024-01-01	2024-01-01

Project Goals Related to Energy Efficiency		
10	Operational Costs	Code Minimum performance
11	Desired Building Lifespan	30 - 50 years.
12	Equipment Lifecycle	Industry standard.
13	Project Energy Efficiency Goals	Code Minimum performance

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
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STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-CXR-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 4 of 6)
Project Address: Date Prepared: 2023-01-31T18:53:26-05:00

F. DESIGN REVIEW KICKOFF MEETING

14	Envelope Goals	Code minimum performance.
15	HVAC System Goals	Code minimum performance.
16	Indoor Lighting System Goals	Code minimum performance.
17	Outdoor Lighting System Goals	Code minimum performance.
18	Water Heating System Goals	Code minimum performance.
19	Equipment and System Specifications	Industry standard equipment.
20	Operations and Maintenance	No specific requirements.

G. OWNER'S PROJECT REQUIREMENTS (OPR)

This section does not apply to this project.

H. BASIS OF DESIGN (BOD)

This section does not apply to this project.

I. CONSTRUCTION DOCUMENT DESIGN REVIEW CHECKLIST

This table is only completed if a design review document is not attached to permit application to demonstrate compliance with 120.8(b) and 120.8(e). For buildings with >= 10,000 ft² conditioned floor area, the design review will ensure the construction documents meet the Owner's Project Requirements (Table G.) and the Basis of Design Documents (Table H.). For buildings with < 10,000 ft² conditioned floor area, the design review will ensure the construction documents meet the goals documented in Table F. during the Design Review Kickoff

01	Attaching Completed Design Review Documentation?	YES	NO
		○	●

Design Review Checklist		
02	Envelope Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.
03	HVAC System Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.
04	HVAC Controls Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.
05	Indoor Lighting System Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.
06	Indoor Lighting Controls Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
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STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-CXR-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 5 of 6)
Project Address: Date Prepared: 2023-01-31T18:53:26-05:00

I. CONSTRUCTION DOCUMENT DESIGN REVIEW CHECKLIST

07	Outdoor Lighting System and Controls Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.
08	Water Heating System Design	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.
09	Other Systems and Features	The design represents the typical PC building design with updates (as applicable) for the 2022 code cycle.

J. COMMISSIONING PLAN

This section does not apply to this project.

K. FUNCTIONAL PERFORMANCE TESTING

This section does not apply to this project.

L. DOCUMENTATION AND TRAINING

This section does not apply to this project.

M. COMMISSIONING REPORT

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

There are no forms required for this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
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STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-CXR-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 6 of 6)
Project Address: Date Prepared: 2023-01-31T18:53:26-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ryan McIntosh	Documentation Author Signature:
Company: Silver Creek Industries, LLC	Signature Date: 02-20-2023
Address: 2830 Barrett Ave	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Starlin	Responsible Designer Signature:
Company: Silver Creek Industries, LLC	Date Signed: 02-20-2023
Address: 2830 Barrett Ave	License: 2475
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
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STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name:	SILVER CREEK PC - TYPICAL CLASSROOM	Report Page: (Page 1 of 4)
Project Address:		Date Prepared: 2023-01-31T18:53:58-05:00

This document is used to demonstrate compliance with mandatory requirements in 130.5, for electrical systems in newly constructed nonresidential and hotel/motel occupancies and 160.6 and 160.9 for electrical systems in newly constructed multifamily occupancies. Additions and alterations to electrical service systems in nonresidential and hotel/motel occupancies will also use this document to demonstrate compliance per 141.0(a) or 141.0(b)2Pi for alterations. For multifamily addition or alterations compliance will be documented per 180.1(a) or 180.2 (b)4Bvii

A. GENERAL INFORMATION

01	Project Location (city)	Perris	02	Climate Zone	10
			03	Occupancy Types Within Project:	Classroom

B. PROJECT SCOPE

This table includes electrical systems that are within the scope of the permit application.

01	02	03	04	05	06	07
Electrical Service Designation/ Description	Scope of Work[1]	Rating[2] (kVA)	Utility Provided Metering System Exception to 130.5(a)/ 160.6(a)[3]	System subject to CA Elec Code Article 517 Exception to 130.5(a)and (b)	Demand Response Controls	Provides power to dwelling units/common living areas only in multifamily occupancy
Site feeder	Add/Alt to feeders and branch circuits only	---	☐	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections 120.2/ 160.3, 130.1/ 160.5, and 130.5/ 160.5, and mechanical, indoor lighting, and sign lighting Certificate of Compliance documents will indicate when demand response controls are required.	☐

FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c)/160.6(c), no other requirements from 130.5/160.6 are required.
[2] If common use areas in a multifamily are submetered, rating is for submeter size serving common use areas.
[3] Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
Documentation Software: Energy Code Ace Compliance ID: 86563-0123-0006 Report Generated: 2023-01-31 15:54:00

STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-ELC-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 2 of 4)
Project Address: Date Prepared: 2023-01-31T18:53:58-05:00

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through J. Note: if any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01		02		03		04	05	06
Service Electrical Metering 130.5(a)/ 160.6(a) (See Table F)	AND	Separation for Monitoring 130.5(b)/ 160.6(b) (See Table G)	AND	Voltage Drop 130.5(c)/ 160.6(c) (See Table H)	AND	Controlled Receptacles 130.5(d)/ 160.6(d) (See Table I)	Electric Ready 160.9 (See Table J)	**Compliance Results**
	AND		AND	Yes	AND			COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

H. VOLTAGE DROP

This table includes entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with 130.5(c)/ 160.6(c). For alterations, only the altered circuits must demonstrate compliance per 141.0(b)2Pii/ 180.2(b)4Bviic.

01	02			03	04	05	
Electrical Service Designation/Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method			Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
						Pass	Fail
Site feeder	☒	Voltage drop less than 5%	☐	Permitted by CA Elec Code (Exception to 130.5(c))*	Contractor Responsible		☐ ☐

** NOTES: If "Permitted by CA Elec Code "* is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".

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Documentation Software: Energy Code Ace Compliance ID: 86563-0123-0006 Report Generated: 2023-01-31 15:54:00

STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-ELC-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 3 of 4)
Project Address: Date Prepared: 2023-01-31T18:53:58-05:00

K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-ELC-E - Must be submitted for all buildings

L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
Documentation Software: Energy Code Ace Compliance ID: 86563-0123-0006 Report Generated: 2023-01-31 15:54:00

STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-ELC-E
Project Name: SILVER CREEK PC - TYPICAL CLASSROOM Report Page: (Page 4 of 4)
Project Address: Date Prepared: 2023-01-31T18:53:58-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ryan McIntosh	Documentation Author Signature:
Company: Silver Creek Industries, LLC	Signature Date: 02-20-2023
Address: 2830 Barrett Ave	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Starlin	Responsible Designer Signature:
Company: Silver Creek Industries, LLC	Date Signed: 02-20-2023
Address: 2830 Barrett Ave	License: 2475
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101
Documentation Software: Energy Code Ace Compliance ID: 86563-0123-0006 Report Generated: 2023-01-31 15:54:00

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC: A
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

CERTIFICATE OF COMPLIANCE FORMS

REVISIONS
1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STARLIN 2475 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

SHEET NUMBER

A-0.6A

CERTIFICATE OF COMPLIANCE, NONRESIDENTIAL BUILDING COMMISSIONING

CERTIFICATE OF COMPLIANCE, ELECTRICAL POWER DISTRIBUTION

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	SILVER CREEK PC - TYPICAL CLASSROOM	Report Page:	(Page 1 of 8)
Project Address:		Date Prepared:	2023-01-31T18:54:22-05:00

This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2i for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Biv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

A. GENERAL INFORMATION

01	Project Location (city)	Perris	04	Total Illuminated Hardscape Area (ft²)	60
02	Climate Zone	10			
03	Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):				
☐	LZ-0: Very Low - Undeveloped Parkland	☐	LZ-2: Moderate - Urban Clusters	☐	LZ-4: High - Must be reviewed by CA Energy Commission for Approval
☐	LZ-1: Low - Rural Areas	☒	LZ-3: Moderately High - Urban Areas		
05	Occupancy Types within Project				
• Classroom					

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6i or 141.0(b)2i / 180.2(b)4Bv for alterations.

My Project Consists of:

01	02
☒ New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ○ Yes ○ No

03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%		

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.*

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C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2I, / 180.2(b)4Bv												Compliance Results		
01		02		03		04		05		06		07	08	09
General Hardscape Allowance 140.7(d1) / 170.2(e)6 (See Table I)	+	Per Application 140.7(d2) / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d2 (See Table K)	+	Ornamental 140.7(d2 / 170.2(e)6, (See Table L)	+	Per Specific Area 140.7(d2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2I, / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
258.06	+	19	+	---	+	---	+	---	OR	---	=	277.06	≥	30	COMPLIES
Shielding Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with unedifiable comments because of selections made or data entered in tables throughout the form.

Selections made in Certificates of Installation Table have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

(NRCI-LTO-01-E Explanation) 1

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F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2I, only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 3]	How is Wattage determined	Total Number Luminaires [2]	Luminaire Status[3]	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4]	Field Inspector	
										Pass	Fail
F-1	0 Watt LED Wallpack	☐ Linear	30	Mfr. Spec	1	New	☐	30	NA, < 6200 lumens	☐	☐
							Total Design Watts:	30			

* NOTES: Selections with a * require a note in the space below explaining how compliance is acheived.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)*
[2] *For linear luminaires, wattage should be indicated as W/ft instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.*
[3] *Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.*
[4] *Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)*

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

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H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
Entry: "F-1"	Photocontrol	Provided	NA: Facade, etc. >=24 ft	☐	☐

[1] *FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.*
[2] *Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.*
[3] *Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.*

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I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-B while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

01								
	☒ General Hardscape Allowance Table I (below)	"Use it or lose it" Allowance (select all that apply) (select all that apply)						
		☒ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☐ Per Specific Area Table M			
02	03	04	05	06	07	08	09	
Area Description	Area Wattage Allowance (AWA)			Linear Wattage Allowance (LWA)			Total General AWA + LWA (Watts)	
	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)		
Entry	60	0.021	1.26	34	0.2	6.8	8.06	
Initial Wattage Allowance for Entire Site (Watts):							250	
Instances of Initial Wattage Allowance (LZ 0 only)[1]								
Total General Hardscape Allowance (Watts):							258.06	

J. LIGHTING ALLOWANCE: PER APPLICATION

This table includes areas using the wattage allowance per application from Table 140.7-B / Table 170.2-S.

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			**DESIGN WATTS**				Additional Allowance (Watts)
Area Description	Application per Table 140.7-B[1]	# of Locations	Allowance per Location[2]	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	
Entry Door	Building Entrance/Exit	1	19	19	F-1	30	1	30	19
					Total Design Watts for this Area:			30	
					Total Allowance (Watts) All Areas:				19

[1] *FOOTNOTES: Primary entrance applications are only available for senior care facilities, healthcare facilities, police stations, hospitals, fire stations, and emergency vehicle facilities.*
[2] *The Allowance per Location for ATMs is 100W for the first ATM and 35W for each additional per Table 140.7-B /Table 170.2-S.*
[3] *For luminaires indicated in Table F as linear, wattage in column D1 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column D8 instead of number of luminaires.*

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

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O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	Entry: "F-1"

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ryan McIntosh	Documentation Author Signature:
Company: Silver Creek Industries, LLC	Signature Date: 02-16-2023
Address: 2830 Barrett Ave	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Starlin	Responsible Designer Signature:
Company: Silver Creek Industries, LLC	Date Signed: 02-16-2023
Address: 2830 Barrett Ave	License: 2475
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

CERTIFICATE OF COMPLIANCE, OUTDOOR LIGHTING

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	SILVER CREEK PC - TYPICAL CLASSROOM	Report Page:	(Page 1 of 6)
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This document is used to demonstrate compliance for nonresidential occupancies with requirements in 110.1, 110.3, 120.3, and 140.5, and with requirements in 141.0 for additions and alterations, for domestic water heating scopes using the prescriptive path. For high-rise residential and hotel/motel occupancies compliance is demonstrated with requirements in 110.1, 110.3, 160.4 and 170.2(d), and with requirements 180.1 for additions and 180.2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	Perris	02	Climate Zone	10
03	Occupancy Types Within Project (select all that apply):				
• Classroom sinks and restroom lavatories					

B. PROJECT SCOPE

This table includes domestic water heating systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in 140.7 / 170.2(d) or 141.0(a)/ 180.1, or 141.0(b)2N / 180.2 for additions or alterations. Solar water heating systems are documented on the NRCC-SAB compliance document. Combined hydronic space heating systems are documented on the NRCC-MCH compliance document.

01	02	03
My project consists of (check all that apply):	System Type[1,2]	System Components
☒ New system (NEW system being installed for the first time in newly constructed building)	Individual System (serving nonresidential spaces)	☒ Equipment ☒ Distribution ☒ Controls
☐ System Alteration (equipment, distribution or controls)		☐ Equipment ☐ Distribution ☐ Controls

[1] *FOOTNOTES: Pools, solar water heaters, or other non-central systems used to serve nonresidential spaces, are considered individual systems.*
[2] *Dwelling units refers to hotel/motel guest rooms and units in a multifamily residential occupancy.*
[3] *DHW systems serving 4 or more dwelling units are considered "Central Systems" for multifamily occupancies*

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with water heating requirements. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. or the table indicated as not compliant for guidance.

01	02	03	04
Domestic Hot Water Equipment	Distribution Systems	Controls	**Compliance Results**
Table F	Table G	Table H	
Yes	Yes	Yes	COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with unedifiable comments because of selections made or data entered in tables throughout the form.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

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E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. DOMESTIC HOT WATER EQUIPMENT

This table is used to demonstrate compliance with mandatory equipment requirements in 110.1 and 110.3. Compliance with prescriptive requirements in 140.5(c) / 170.2(d) must also be demonstrated and with 141.0 / 180.1/ 180.2 for additions and alteration scopes.

Equipment Schedule: Water Heating Efficiency and Standby Loss

03	04	05	06					
System Name	WH-1	Exception to 140.5(c)/ 170.2(d)3	Recirculation Dist. Do Not Apply	☐	Gas Service Water Heating System >= 1MMBtu/h[1]	Capacity Weighted Average Efficiency %		
07	08	09	10		11	12	13	14	15
Name or Item Tag	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Max GPM at First Hour Rating (FHR)	Rated Efficiency	Minimum Efficiency Required	Efficiency Unit	Designed Standby Loss	Maximum Standby Loss
WH-1	Consumer Rated Electric Instantaneous (<=12kW)	<=2	10,264	0 <= GPM	0.91	0.91	UEF		

[1] *FOOTNOTE: In systems >= 1MMBtu/h with multiple units, gas water heaters with input capacity > 100,000 Btu/h may meet 90% Et requirements via an input capacity-weighted average.*

Water Heating Equipment All Occupancies

	Yes	No	Not Applicable	Requirement
18	☐	☐	☒	Unfired storage tank insulation shall have minimum R-12 Internal + External >=R-16 OR External >=R-3.5. Label required per 110.3(c)3
19	☐	☐	☒	New state buildings shall use heat energy for service water heating from site solar energy or recovered energy per 110.3(c)5
20	☐	☐	☒	Isolation valves for instantaneous water heaters with input rating >6.8 kBTUH or 2 kW has been specified per 110.3(c)6
21	☐	☐	☒	School buildings < 25,000 ft² and < 4 stories must install a heat pump water heating system per 140.5(a)1. Water heating systems serving an individual bathroom or kitchen may be an instantaneous electric water heater.

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G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM

This table is used to demonstrate compliance for nonresidential occupancies with distribution requirements in 120.3 and 140.5. For multifamily and hotel/motel occupancies, compliance is demonstrated with requirements 110.3(c), 160.4, 170.2(d).

Mandatory Pipe Insulation All Occupancies

13	☐	For systems serving dwelling units, pipe insulation shall meet the minimum insulation requirements in Table 160.4-A (see blow) except: • Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall abut securely against all framing members • Piping installed in interior or exterior walls shall not be required to have pipe insulation if all of the requirements are met for compliance with Quality Insulation Installation (QII) as specified in the Reference Residential Appendix RA3.5. • Piping surrounded with a minimum of 2 inch of wall insulation, 2 inches of crawlspace insulation, or 4 inches of attic insulation, shall not be required to have pipe insulation
14	☒	For systems serving nonresidential spaces, pipe insulation for the following applications specified to comply with Table 120.3-A (see below) per 120.3: • Recirculating system piping, including supply and return piping of the water heater • The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system • Pipes that are externally heated
15	☒	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service per 120.3(b) / 160.4(f). Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve.

TABLE 120.3-A / 160.4-A PIPE INSULATION THICKNESS

Fluid Temperature Range (°F)	Conductivity Range (Btu-in per hour per ft² per °F)	Insulation Mean Rating Temp (°F)	Nominal Pipe Diameter (in)			
			< 1	1 to < 1.5	1.5 to < 4	1.5 to < 4 Multifamily & Hotel/Motel
			Minimum Insulation Required			
105-140	0.22 - 0.28	100	1.0 in or R-7.7	1.5 in or R-12.5	2.0 in or R-11	2.0 in or R-16

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H. DOMESTIC HOT WATER CONTROLS

This table is used to demonstrate compliance with control requirements in 110.3 for all occupancies. For multifamily residential and hotel/motel occupancies, compliance is also demonstrated with requirements in 160.4(e) / 170.2(d).

	Yes	No	Not Applicable	Requirement
01	☒	☐	☐	Construction documents require manufacturer certification that service water-heating systems are equipped with automatic temperature controls capable of adjusting temperature settings per 110.3(a).
02	☐	☐	☒	Systems with capacity > 167,000 BTUH equipped with outlet temperature controls per 110.3(c)1 unless covered by California Plumbing Code 613.0.
03	☐	☐	☒	Controls for circulating pumps or electrical heat trace systems are capable of automatically turning off the system per §110.3(c)2 unless systems serves healthcare facility.
04	☐	☐	☒	For recirculation systems serving multiple dwelling units, design includes automatic pump controls per 110.3(c)3 or 180.1(b)3 for additions.
05	☐	☐	☒	For recirculation systems serving individual dwelling units, design includes manual on/off controls as specified in Reference Appendix RA4.4.9 per 170.2(d).
06	☐	☐	☒	Combustion air positive shut-off shall be provided per 160.4(3).on all newly installed commercial boilers as follows: • Boilers with input capacity >= 2.5 MMBtu/h, in which the boiler is designed to operate with a nonpositive vent static pressure • Boilers where one stack serves two or more boilers with a total combined input capacity per stack of 2.5 MMBtu/h.
07	☐	☐	☒	Boiler combustion air fans with motor >= 10 hp shall meet one of the following • The fan motor shall be driven by a variable speed drive OR • The fan motor shall include controls that limit the fan motor demand to <=30% of the total design wattage at design of the design air volume.
08	☐	☐	☒	Newly installed boilers with an input capacity (d.gte)' 5MMBtu/h and a steady state full-load combustion efficiency < 90% shall maintain excess (stack-gas) oxygen concentrations <= 5% by volume on a dry basis over firing rates of 20-100%. Combustion air volume shall be controlled with respect to firing rate or flue gas oxygen concentration. Use of a common gas and combustion air control linkage or jack shaft is prohibited.

I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-PLB-E - Must be submitted for all buildings

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

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J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no forms required for this project.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ryan McIntosh	Documentation Author Signature:
Company: Silver Creek Industries, LLC	Signature Date: 02-16-2023
Address: 2830 Barrett Ave	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Starlin	Responsible Designer Signature:
Company: Silver Creek Industries, LLC	Date Signed: 02-16-2023
Address: 2830 Barrett Ave	License: 2475
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

CERTIFICATE OF COMPLIANCE, WATER HEATER SYSTEM

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

THESE DRAWINGS AND ALL MATERIAL CONTAINED HEREIN ARE THE PROPERTY OF SILVERCREEK MODULAR, INC (SCM Inc) AND SHALL NOT BE REPRODUCED, COPIED OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY AND SHALL NOT BE USED IN WHOLE OR IN PART TO ASSIST IN THE MAKING OF OR FOR THE PURPOSE OF FURNISHING ANY INFORMATION FOR THE MAKING OF DRAWINGS, PRINTS, APPARATUS OR PARTS THEREOF WITHOUT THE FULL KNOWLEDGE AND WRITTEN CONSENT OF SCM Inc. ALL PATENTABLE MATERIAL CONTAINED HEREIN AND ORIGINATING WITH SCM Inc SHALL BE THE PROPERTY OF SCM Inc

PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

CERTIFICATE OF COMPLIANCE FORMS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-PV	Report Page: (Page 1 of 5)
Project Address:	Date Prepared: 2023-03-17T18:05:07-05:00

This document is used to demonstrate compliance with prescriptive PV and battery requirements in 140.10/ 170.2 for nonresidential, multifamily and mixed-use buildings and prescriptive solar thermal requirements in 170.2(d)3C for multifamily and hotel/ motel occupancies. When PV/battery/solar thermal requirements don't apply or are traded using the performance approach, this document demonstrates compliance with mandatory solar readiness requirements in 110.10/ 160.8 for newly constructed buildings which are either multifamily ten stories or fewer, hotel/motel ten stories or fewer or all other nonresidential buildings three stories or fewer. It is also used to demonstrate compliance with solar readiness in 110.10/ 160.8 for additions to nonresidential, multifamily or hotel/motel building types which add more than 2,000 ft² of roof area. Alterations, or additions of less than 2,000 ft² of roof area, are not required to comply with solar readiness, solar PV and battery requirements and do not need to complete this document.

A. GENERAL INFORMATION

01	Project Location (city)	N/A	04	Building Occupancies	School or Classroom
02	Climate Zone	15	05	Construction Type	New construction
03	Conditioned Floor Area (ft²)	4800	06	Number of Stories	Bldg <= 3 stories

B. PROJECT SCOPE

The compliance path the project is using to comply per 110.10(b)1B/ 140.10/ 170.2(g and h) is indicated below.

Compliance with Solar Photovoltaic (PV) and Battery Requirements in 140.10/ 170.2(g and h)

	01	
☐	Provided PV system and battery storage sized per 140.10/ 170.2 (g and h)	The project has included an installed PV system and battery storage system per requirements in 140.10/ 170.2(g and h) as documented in Table J.
☐	Exception to PV and Battery: Not enough Solar Access Roof Area	The total of all available Solar Access Roof Area(s) of the project site is less than three percent of the conditioned floor area as documented in Table J.
☐	Exception to PV and Battery: Required PV < 4kW	The required PV system size is less than 4 kW dc as documented in Table J..
☐	Exception to PV and Battery: No contiguous Solar Access Roof Area	The Solar Access Roof Area(s) of the project site contains less than 80 contiguous square feet as documented in Table J.
☐	Exception to PV and Battery: Can't meet snow load	The project has a roof design where the enforcement authority has verified it is not possible for the PV system, including panels, modules, components, supports, and attachments to the roof structure, to meet ASCE 7-16 Chapter 7, Snow Loads.
☐	Exception to PV and Battery: Multi-tenant without VNEM or Community Solar	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.
☐	The prescriptive PV/battery requirement has been traded off using the performance compliance approach as documented on the PRF Certificate of Compliance form.	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90125-0223-0002 Report Generated: 2023-02-17 15:05:11

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-PV	Report Page: (Page 2 of 5)
Project Address:	Date Prepared: 2023-02-17T18:05:07-05:00

Compliance with Solar Thermal Water Heating Requirements in 170.2(d)3C (Multifamily and hotel/ motel occupancies only)

	01
☐	The project includes a hotel/motel or multifamily occupancy with a gas or propane central water-heating system (serves 2+ dwelling units) and includes a permanently installed domestic solar water-heating system to comply with 170.2(d)3C and Reference Residential Appendix RA4, as documented in Table H. Compliance meets Exception 2 to solar ready requirements in 110.10(b).

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D for guidance or see the applicable Table referenced below.

Allocated Solar Zone				Installed PV System					Installed SWH System				Smart Tstat and Alternative EE Measure		Compliance Results
01		02		03		04			05		06		07	08	
Required Minimum Area (ft²)	<=	Designated Area (ft²)	OR	Required Minimum DC Power Rating (Watts)	<=	Designed DC Power Rating (Watts)	OR		Required Minimum Solar Savings Fraction	<=	Designed/Rated Solar Savings Fraction	OR	JA5 Compliant Thermostat Specified?	Alternative Energy Efficiency Measure	COMPLIES
(See Table F)				(See Tables G or J)					(See Table H)				(See Table I)		
	<=		OR	11,810	<=	11,810	OR			<=		OR			
Location in construction documents showing the location for inverters and metering equipment and a pathway for the routing of conduit/ plumbing to the electrical service/ water heating system per §110.10(c).															
Battery storage system design meets the minimum requirements in Joint Appendix JA12 and the minimum energy (kWh)/ power (kW) capacity per Table J.															Not Applicable

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with unedittable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table is includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90125-0223-0002 Report Generated: 2023-02-17 15:05:11

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-PV	Report Page: (Page 3 of 5)
Project Address:	Date Prepared: 2023-02-17T18:05:07-05:00

F. ALLOCATED SOLAR ZONE

This section does not apply to this project.

G. PERMANENTLY INSTALLED SOLAR PV FOR SOLAR READY EXCEPTION

This section does not apply to this project.

H. PERMANENTLY INSTALLED SOLAR HOT WATER SYSTEMS

This section does not apply to this project.

I. SMART THERMOSTATS AND ALTERNATIVE EFFICIENCY MEASURE FOR SOLAR READY EXCEPTION

This section does not apply to this project.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90125-0223-0002 Report Generated: 2023-02-17 15:05:11

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-PV	Report Page: (Page 4 of 5)
Project Address:	Date Prepared: 2023-02-17T18:05:07-05:00

J. PHOTOVOLTAIC (PV) AND BATTERY SYSTEMS

This table documents compliance with prescriptive photovoltaic and battery system requirements in 140.10/ 170.2(g and h). Unless the project meets one of the listed exceptions, or trades-off PV in an energy model using performance path, 140.10/ 170.2(g and h) requires installed photovoltaic and battery systems for newly constructed buildings. The installed PV systems must meet the minimum requirements in Joint Appendix 11.

Photovoltaic (PV) System

01	02	03	04	05	06	07	08
Occupancy	Conditioned Floor Area (ft²)	Area of New Roof[1] (ft²)	Roof Area < 70% Solar Access[2] (ft²)	Plansheet or Document showing Solar Access Calculations	Occupied Roof Area[3] (ft²)	Solar Access Roof Area (SARA) (ft²)	Min Size of PV System Required (kWdc)
School or Classroom	4,800	5,700	0	Sheet A-0.7	0	5,700	11.8
						Total Min Size PV System Required for all Spaces (kWdc):	11.81
						Total Size PV System in Design (kWdc):	11.81

[1]FOOTNOTES: Includes the area of the building's roof space capable of structurally supporting a PV system and the area of all roof space on covered parking areas, carports, and all other newly constructed structures on the site that are compatible with supporting a PV system per Title 24, Part 2 Section 1511.2.
[2]Solar access must be determined using CEC approved solar access calculation tools found at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/solar-assessment-tools.
[3]As specified by CBC Section 503.1.4.

K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-SAB-01-E - Must be submitted for all buildings that must comply with solar readiness or PV/Battery requirements.

L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90125-0223-0002 Report Generated: 2023-02-17 15:05:11

CERTIFICATE OF COMPLIANCE, SOLAR & BATTERY - PV

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 1 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

This document is used to demonstrate compliance with prescriptive PV and battery requirements in 140.10/ 170.2 for nonresidential, multifamily and mixed-use buildings and prescriptive solar thermal requirements in 170.2(d)3C for multifamily and hotel/ motel occupancies. When PV/battery/solar thermal requirements don't apply or are traded using the performance approach, this document demonstrates compliance with mandatory solar readiness requirements in 110.10/ 160.8 for newly constructed buildings which are either multifamily ten stories or fewer, hotel/motel ten stories or fewer or all other nonresidential buildings three stories or fewer. It is also used to demonstrate compliance with solar readiness in 110.10/ 160.8 for additions to nonresidential, multifamily or hotel/motel building types which add more than 2,000 ft² of roof area. Alterations, or additions of less than 2,000 ft² of roof area, are not required to comply with solar readiness, solar PV and battery requirements and do not need to complete this document.

A. GENERAL INFORMATION

01	Project Location (city)	N/A	04	Building Occupancies	School or Classroom
02	Climate Zone	15	05	Construction Type	New construction
03	Conditioned Floor Area (ft²)	960	06	Number of Stories	Bldg <= 3 stories

B. PROJECT SCOPE

The compliance path the project is using to comply per 110.10(b)1B/ 140.10/ 170.2(g and h) is indicated below.

Compliance with Solar Readiness Requirements in 110.10(b)1B

	01	
☒	Provide Solar Ready Area no exceptions	The project has allocated a solar zone on the roof plan per requirements in §110.10(b), as documented in Table F.
☐	Exception to Solar Ready Area: Installed Solar Photovoltaic System	The project includes a permanently installed solar electric system having a nameplate DC power rating, measured under Standard Test Conditions, of no less than one watt per square foot of roof area as documented in Table G..
☐	Exception to Solar Ready Area: Installed Solar Water Heating System	The project is a hotel/motel or high-rise multifamily occupancy and includes a permanently installed domestic solar water-heating system complying with 170.2(d)3C and Reference Residential Appendix RA4, as documented in Table H.
☐	Exception to Solar Ready Area: Smart Thermostat and Alternative Energy Efficiency Measure	The project is a multifamily occupancy where all thermostats in each dwelling unit comply with §110.12(a) AND at least one additional measure listed in Exception 4 to §110.10(b)1B is installed, as documented in Table I.
☐	Exception to Solar Ready Area: Roof is designed for vehicular traffic, parking or for heliport	Plan sheet showing roof designed for vehicular traffic, parking or heliport
☐	Exception to Solar Ready Area: Roof too small	The project is new construction and has a total roof area <= 533 square feet[1]
☐	Exception to Solar Ready Area: Number of building stories	The project is nonresidential > 3 stories or multifamily/ hotel/motel > 10 stories.

[1]FOOTNOTE: Buildings with roof area <=533 ft² would have a required solar zone < 80 ft² and are therefore exempt per 110.10(b)1.

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STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 2 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

Compliance with Solar Photovoltaic (PV) and Battery Requirements in 140.10/ 170.2(g and h)

	01	
☐	Provided PV system and battery storage sized per 140.10/ 170.2 (g and h)	The project has included an installed PV system and battery storage system per requirements in 140.10/ 170.2(g and h) as documented in Table J.
☐	Exception to PV and Battery: Not enough Solar Access Roof Area	The total of all available Solar Access Roof Area(s) of the project site is less than three percent of the conditioned floor area as documented in Table J.
☒	Exception to PV and Battery: Required PV < 4kW	The required PV system size is less than 4 kW dc as documented in Table J..
☐	Exception to PV and Battery: No contiguous Solar Access Roof Area	The Solar Access Roof Area(s) of the project site contains less than 80 contiguous square feet as documented in Table J.
☐	Exception to PV and Battery: Can't meet snow load	The project has a roof design where the enforcement authority has verified it is not possible for the PV system, including panels, modules, components, supports, and attachments to the roof structure, to meet ASCE 7-16 Chapter 7, Snow Loads.
☐	Exception to PV and Battery: Multi-tenant without VNEM or Community Solar	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.
☐	The prescriptive PV/battery requirement has been traded off using the performance compliance approach as documented on the PRF Certificate of Compliance form.	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.

Compliance with Solar Thermal Water Heating Requirements in 170.2(d)3C (Multifamily and hotel/ motel occupancies only)

	01
☐	The project includes a hotel/motel or multifamily occupancy with a gas or propane central water-heating system (serves 2+ dwelling units) and includes a permanently installed domestic solar water-heating system to comply with 170.2(d)3C and Reference Residential Appendix RA4, as documented in Table H. Compliance meets Exception 2 to solar ready requirements in 110.10(b).

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
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STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 3 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D for guidance or see the applicable Table referenced below.

Allocated Solar Zone				Installed PV System					Installed SWH System				Smart Tstat and Alternative EE Measure		Compliance Results
01		02		03		04			05		06		07	08	
Required Minimum Area (ft²)	<=	Designated Area (ft²)	OR	Required Minimum DC Power Rating (Watts)	<=	Designed DC Power Rating (Watts)	OR		Required Minimum Solar Savings Fraction	<=	Designed/Rated Solar Savings Fraction	OR	JA5 Compliant Thermostat Specified?	Alternative Energy Efficiency Measure	COMPLIES
(See Table F)				(See Tables G or J)					(See Table H)				(See Table I)		
171	<=	172	OR	0	<=	0	OR			<=		OR			
N/A				Location in construction documents showing the location for inverters and metering equipment and a pathway for the routing of conduit/ plumbing to the electrical service/ water heating system per §110.10(c).											COMPLIES
Battery storage system design meets the minimum requirements in Joint Appendix JA12 and the minimum energy (kWh)/ power (kW) capacity per Table J.															Not Applicable

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with unedittable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table is includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
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STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 4 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

F. ALLOCATED SOLAR ZONE

This table is completed if the project is designating a solar zone to comply with §110.10(b)1B. New construction consider the total roof area; Additions consider newly added roof area. This table demonstrates that the project has designated the minimum area required for the Allocated Solar Zone, and also that the requirements for Solar Zone Subareas have been met. Each subarea must be shown on a roof plan or documented in construction documents. The solar zones must also comply with fire code requirements, including, but not limited to, setback and pathway requirements. Requirements for interconnection pathways must also be included in construction documents, and the location is specified in this table.

Required Minimum Solar Zone

01	02	03	04	05	06		07	08
Minimum Solar Zone Area Calculation Method	Total New or Added Roof Area (ft²)	Total New or Added Roof Area Covered with Skylights (ft²)	Minimum Solar Zone Based on Total or Added Roof Area (0.15 x (Roof-Sky)) (ft²)	Method/ Tools Used to Determine Annual Solar Access for Potential Zones[1]	Potential Solar Zone Areas: Roof areas with >= 70% Solar Access		Minimum Solar Zone Based on Potential Zone (0.5 x (Total Potential Zone)) (ft²)	Required Minimum Solar Zone Area (ft²)
					Low-Sloped Area (<= 2:12 pitch) (ft²)	Steep-Sloped Area (> 2:12 pitch) Oriented 90° - 300° (ft²)	Total Potential Solar Zone Area (ft²)	
Total New or Added Roof Area	1140	0	171					171

Designated Solar Zone Subareas

09	10	11	12	13	14	15	16	17	18	19
Subarea Name or Tag	Building Plan Reference	Roof or Overhang Slope (Low <= 2:12 pitch) (Steep > 2:12 pitch)	Is Steep-Sloped Roof or Overhang between 90 and 300 degrees?	Subarea Complies with Title 24, Part 9	Solar Zone Subarea Free of Obstructions per §110.10(b)3A	Subarea is Required Distance from Potential Obstructions per §110.10(b)3B	Is the Smallest Dimension 5 feet or greater?	Min. Area Required per Subarea (ft²)	Designated Area (ft²)	Subarea Complies?
Solar Zone	Roof plans sheets A-3.xx	Low slope		Yes	Yes	Yes	Yes	80	172	COMPLIES

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CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90123-0223-0003 Report Generated: 2023-02-17 15:06:58

CERTIFICATE OF COMPLIANCE, SOLAR & BATTERY - SOLAR READY AREAS

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 5 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

Interconnection Pathways

location in construction documents showing the location for inverters and metering equipment and a pathway for the routing of conduit/ plumbing to the electrical service/ water heating system per §110.10(c).	N/A

[1]FOOTNOTE: This field is used to document how the percentage of annual solar access was determined per §110.10(b)1B. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

G. PERMANENTLY INSTALLED SOLAR PV FOR SOLAR READY EXCEPTION

This section does not apply to this project.

H. PERMANENTLY INSTALLED SOLAR HOT WATER SYSTEMS

This section does not apply to this project.

I. SMART THERMOSTATS AND ALTERNATIVE EFFICIENCY MEASURE FOR SOLAR READY EXCEPTION

This section does not apply to this project.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90123-0223-0003 Report Generated: 2023-02-17 15:06:58

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 6 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

J. PHOTOVOLTAIC (PV) AND BATTERY SYSTEMS

This table documents compliance with prescriptive photovoltaic and battery system requirements in 140.10/ 170.2(g and h). Unless the project meets one of the listed exceptions, or trades-off PV in an energy model using performance path, 140.10/ 170.2(g and h) requires installed photovoltaic and battery systems for newly constructed buildings. The installed PV systems must meet the minimum requirements in Joint Appendix 11.

Photovoltaic (PV) System

01	02	03	04	05	06	07	08
Occupancy	Conditioned Floor Area (ft²)	Area of New Roof[1] (ft²)	Roof Area < 70% Solar Access[2] (ft²)	Plansheet or Document showing Solar Access Calculations	Occupied Roof Area[3] (ft²)	Solar Access Roof Area (SARA) (ft²)	Min Size of PV System Required (kWdc)
School or Classroom	960	1,140	0	Roof plans A-3.xx	0	1,140	1.56
						Total Min Size PV System Required for all Spaces (kWdc):	0
						Total Size PV System in Design (kWdc):	0

[1]FOOTNOTES: Includes the area of the building's roof space capable of structurally supporting a PV system and the area of all roof space on covered parking areas, carports, and all other newly constructed structures on the site that are compatible with supporting a PV system per Title 24, Part 2 Section 1511.2.
[2]Solar access must be determined using CEC approved solar access calculation tools found at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/solar-assessment-tools.
[3]As specified by CBC Section 503.1.4.

K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-SAB-01-E - Must be submitted for all buildings that must comply with solar readiness or PV/Battery requirements.

L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90123-0223-0003 Report Generated: 2023-02-17 15:06:58

STATE OF CALIFORNIA
Solar And Battery
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: 40- PC-Solar Ready	Report Page: (Page 7 of 7)
Project Address:	Date Prepared: 2023-02-17T18:06:54-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ryan McIntosh	Documentation Author Signature:
Company: Silver Creek Industries, LLC	Signature Date: 02-20-2023
Address: 2830 Barrett Ave	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Starlin	Responsible Designer Signature:
Company: Silver Creek Industries, LLC	Date Signed: 02-20-2023
Address: 2830 Barrett Ave	License: 2475
City/State/Zip: Perris/CA/92571	Phone: (951) 943-53931

Registration Number: | Generated Date/Time: | Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Report Version: 2022.0.000 Schema Version: rev 20220101 | Compliance ID: 90123-0223-0003 Report Generated: 2023-02-17 15:06:58

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC: A
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

CERTIFICATE OF COMPLIANCE FORMS

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STARLIN 24755 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-0.6C

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 1 of 7)
Project Address:	Date Prepared: 2023-05-06T21:56:51-04:00

This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

A. GENERAL INFORMATION

01	Project Location (city)	Perris	04	Total Conditioned Floor Area (ft²)	0
02	Climate Zone	10	05	Total Unconditioned Floor Area (ft²)	720
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

▪ School or Classroom

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☒ New Lighting System	N/A	0	Complete Building Method	720
☐ New Lighting System - Parking Garage	N/A	0	N/A	0
Total Area of Work (ft²)			720	

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 2 of 7)
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C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)						Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)				Compliance Results
	01	02	03	04	05		06	07		08	09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 / 170.2(e)4	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+)	Tailored 140.6(c)3 / 170.2(e)4B (+)	Total Allowed (Watts)		Total Designed (Watts)	Adjustments PAF Lighting Control Credits 140.6(a)2 / 170.2(e)1B (-)		Total Adjusted (Watts) *Includes Adjustments	05 must be >= 08 140.6 / 170.2(e)
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table F)	(See Table P)			
Conditioned					=	≥			=		
Unconditioned	432				= 432	≥	400		=	400	COMPLIES
Controls Compliance (See Table H for Details)											COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)											

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 3 of 7)
	Date Prepared: 2023-05-06T21:56:51-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change	Watts per luminaire[1]	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)3 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
L1	2x4 LED	No	NA	50	Mfr. Spec	8	No	400	☐	☐
					Total Designed Watts: UNCONDITIONED SPACES			400		

[1]FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.
[2]Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03	
		Field Inspector	
		Pass	Fail
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	☐	☐
NA < 4,000W subject to multilevel	See Area/Space Level Controls		

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 4 of 7)
	Date Prepared: 2023-05-06T21:56:51-04:00

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)4A	Multi-Level Controls 130.1(b) / 160.5(b)4B	Shut-Off Controls 130.1(c) // 160.5(b)4C	Primary/Sky lit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(d) / 160.5(b)4D	Interlocked Systems 140.6(a)1/ 170.2(e)2A	Field Inspector	
								Pass	Fail
Restrooms	School or Classroom	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
							13		
							Plan Sheet Showing Daylit Zones:		

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used .

Unconditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
Restrooms	School or Classroom	0.6	720	432	No	No
		TOTALS:	720	432	See Tables *L* or *P* for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 5 of 7)
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K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 6 of 7)
	Date Prepared: 2023-05-06T21:56:51-04:00

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	Restrooms

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: 60 PC	Report Page: (Page 7 of 7)
Project Address:	Date Prepared: 2023-05-06T21:56:51-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ryan McIntosh	Documentation Author Signature:
Company: Silver Creek	Signature Date: 5.6.23
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the project and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Starlin	Responsible Designer Signature:
Company: Silver Creek	Date Signed: 5.6.23
Address:	License: 2475
City/State/Zip:	Phone:

SINGLE MODULE TOILET BUILDING OPTION - INTERIOR LIGHTING COMPLIANCE FORMS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC: A
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

SINGLE MODULE TOILET BUILDING COMPLIANCE FORMS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

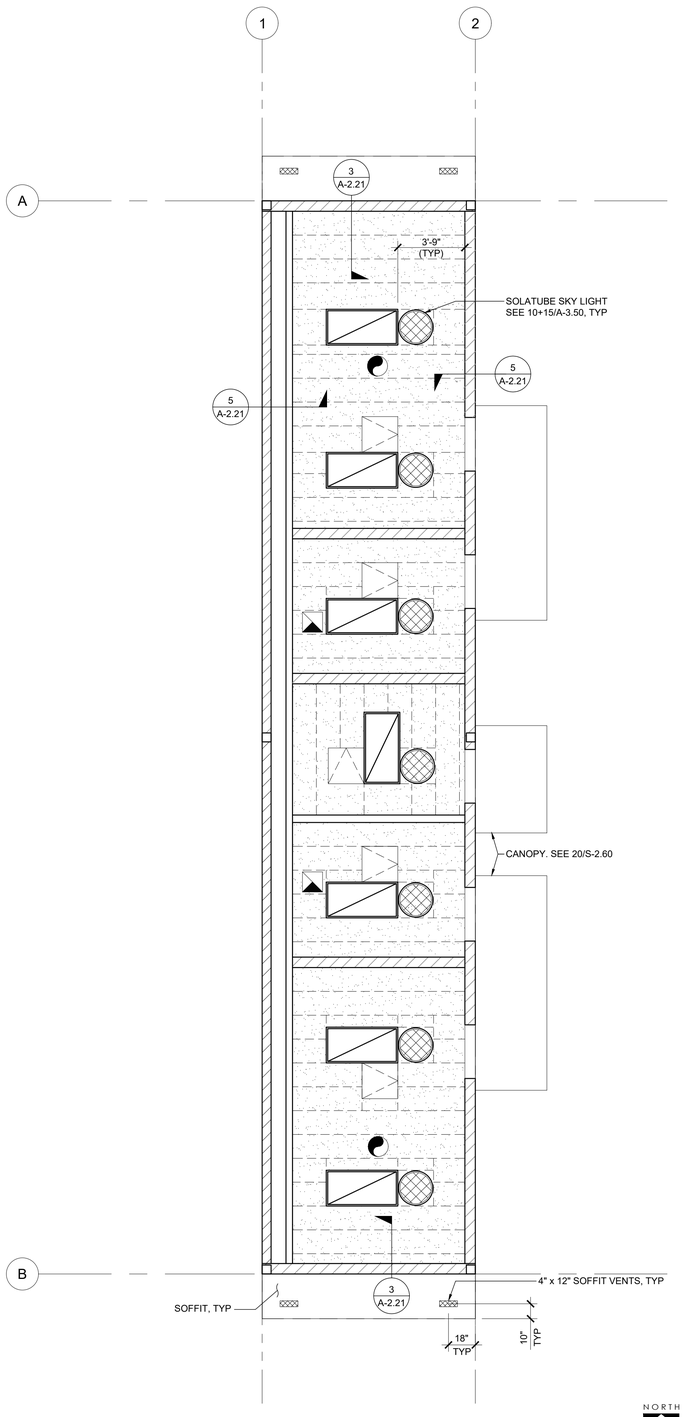
REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLIN
2475
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

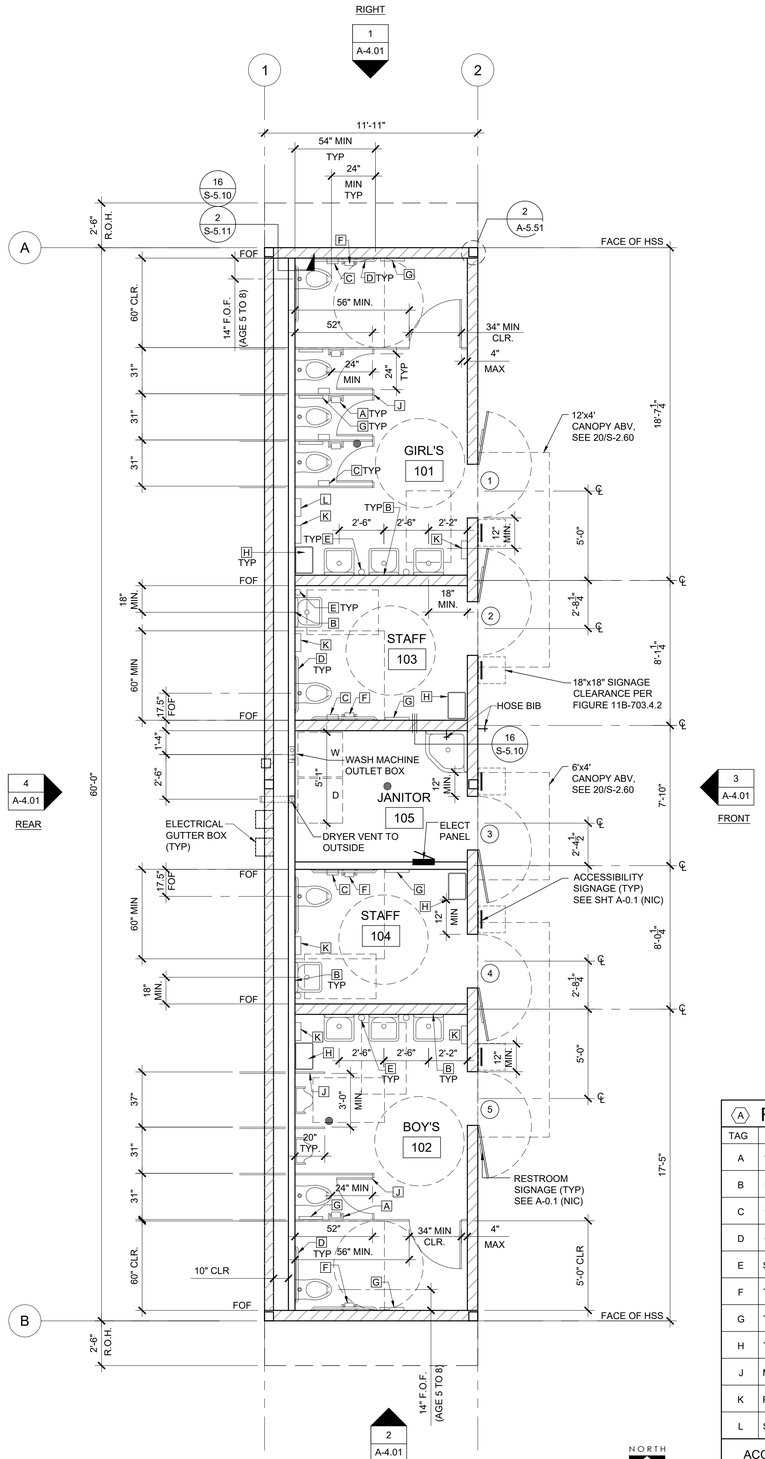
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-0.6D



REFLECTED CEILING PLAN SCALE: 1/4" = 1'-0" 2



FLOOR PLAN SCALE: 1/4" = 1'-0" 1

NOTES

1. PLACE (2) PERMANENT METAL IDENTIFICATION LABELS ON EACH MODULE. PER IR 16-1 (4.1)
   (1) LABEL AT REAR EXTERIOR AND (1) LABEL ABOVE CEILING LINE AT INTERIOR FRAME. LABELS WILL BE MECHANICALLY FASTENED AND SHOW THE DSA APPLICATION NUMBER, MANUFACTURER'S NAME AND SERIAL NUMBER, DESIGN LIVE LOAD FOR ROOF AND FLOOR FRAMING, WIND SPEED, EXPOSURE CATEGORY, AND Kzt = 1.0 2022 CBC, DESIGN CLIMATE ZONE, SEISMIC PARAMETER = S_S .
2. NOT USED.
3. FOR BUILDINGS THAT ARE MANUFACTURED IN-PLANT, THE IN-PLANT INSPECTOR IS TO ATTACH A VERIFIED REPORT INSIDE EACH BUILDING, WHICH SHALL INDICATE THE MANUFACTURER'S NAME AND THE SERIAL NUMBER FOR EACH BUILDING MODULE AS WELL AS THE DSA FILE AND APPLICATION NUMBES, PER IR 16-1.13 (2.1)
4. ALL FIXTURE HEIGHTS TO BE VERIFIED PRIOR TO CONSTRUCTION.
5. REQ. LOCATION OF LAV. TO BE 19" MIN. FROM FACE OF FIN. OF WALL WHEN ACCESSORIES (PAPER TOWEL DISP., ELECTRIC HAND DRYERS, ETC.) HAVING A 4" PROJECTION ARE TO BE INSTALLED, SO AS NOT TO ENCROACH INTO THE 30" x 48" CLEAR SPACE.
6. SEE SHEET 15/P-1.01 FOR ACCESSIBLE MOUNTING HEIGHT CHART & FIXTURE DIMENSIONS BY AGE GROUP.
7. SEE SHEET P-1.01 FOR TYPICAL ACCESSIBLE PLUMBING FIXTURE DETAILS.
8. ALL TOILET FIXTURE EQUIPMENT DEVICES TO HAVE A 4" MAX. PROTRUSION FROM THE WALL FINISH.

LEGEND

- NOMINAL 4" WALL STUD
- NOMINAL 6" WALL STUD
- ALL INTERIOR PARTITIONS ARE FULL HEIGHT WALLS (SEE 1 & 2/S-5.11)
- (#) DOOR PER SCHEDULE SHEET A-0.2
- 60" CIRCLE CLEAR SPACE
- 30"x48" CLEAR SPACE
- HARD LIDCEILING FRAMING: SEE 4, 5, 10/A-2.21
- 2' x 4' RECESSED LIGHT FIXTURE, (SEE ELECTRICAL PLAN)
- ACCESS PANEL; SEE 1,6/A-2.21
- CEILING EXHAUST FAN
- SOLATUBE 750 DS-C 21" SKYLIGHT, NON-MOTERIZED, SEE 10+15/A-3.50

(A) RESTROOM ACCESSORIES

TAG	ACCESSORY	MAKE	MODEL #	DESCRIPTION
A	TOILET PAPER DISPENSER	BOBRICK	B-2888	SURFACE MOUNTED, MULTI-ROLL, TOILET PAPER DISPENSER (BY SCM)
B	MIRROR	BOBRICK	B-165	1836 CHANNEL FRAMED MIRROR (BY SCM)
C	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270	SURFACE MOUNTED OR EQUAL (BY SCM)
D	GRAB BAR	BOBRICK	B-6806	36" AND 42" LENGTH, STAINLESS STEEL GRAB BAR - SATIN FINISH, (BY SCM)
E	SOAP DISPENSER	BOBRICK	B-2111	LIQUID SOAP DISPENSER 4" MAX PROJECTION (OFCI)
F	TOILET PAPER DISPENSER	BOBRICK	B-35833	RECESSED, MULTI-ROLL (BY SCM)
G	TOILET SEAT COVER DISPENSER	BOBRICK	B-221	SURFACE MOUNTED OR EQUAL (BY SCM)
H	TRASH BIN	-	-	(OFCI)
J	MODESTY PARTITION	-	-	SOLID PLASTIC PARTITIONS (BY SILVER CREEK) SEE 5/A-4.01 FOR TOE CLEARANCE REQUIREMENT AT ACCESSIBLE STALL (BY SCM)
K	PAPER TOWEL DISPENSER	BOBRICK	B-262	SURFACE MOUNTED, 4" MAX PROJECTION (OFCI)
L	SANITARY NAPKIN DISPENSER	BOBRICK	B-2706	SURFACE MOUNTED, 4" MAX PROJECTION (BY SCM)

ACCESSORY NOTES:
1. FOR TOILET ACCESSORIES, SEE SHEET P-1.01 FOR ACCESSIBLE ELEVATION & DIMENSIONS.
2. SCI TO PROVIDE BACKING AND ANCHORAGE FOR ALL ITEMS.
3. (OFCI) OWNER FURNISHED CONTRACTOR INSTALLED. (NOT BY SILVER CREEK MODULAR).

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FLOOR PLAN & REFLECTED CEILING PLAN

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

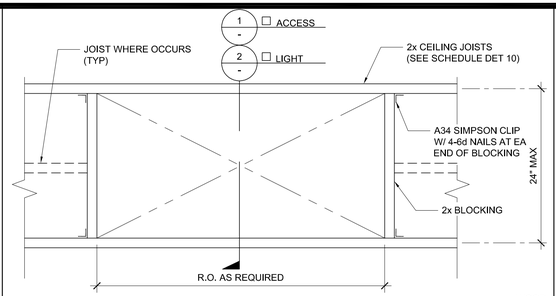
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

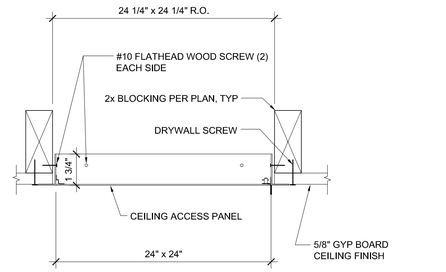
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-1.01

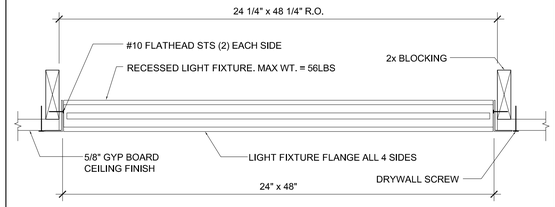


16 | 11 | RECESS WOOD CEILING JOIST FRAMING PLAN SCALE : 1" = 1'-0" | 6



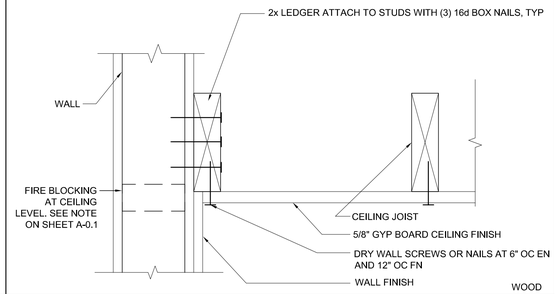
CEILING ACCESS PANEL SCALE : 3" = 1'-0" | 1

17 | 12 | 7



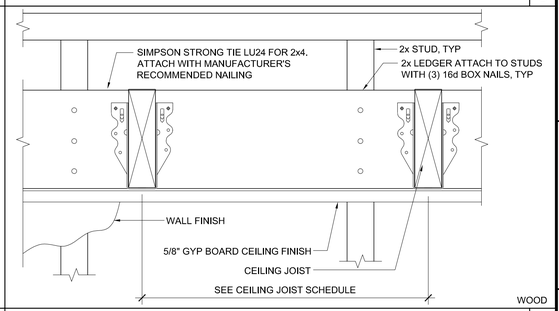
RECESSED LIGHT FIXTURE AT HARD LID SCALE : 1 1/2" = 1'-0" | 2

18 | 13 | 8



HARD LID CEILING CONNECTION SCALE : 3" = 1'-0" | 3

19 | 14 | 9

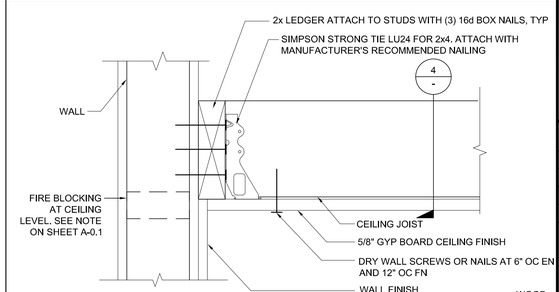


HARD LID CEILING CONNECTION SCALE : 3" = 1'-0" | 4

20 | 15 | WOOD CEILING JOIST SCHEDULE SCALE : NTS | 10

2X4 JOIST TABLE - MAX SPAN

SPACING	HEMFIR STUD	HEMFIR NO 2	HEMFIR NO 1	DFL STUD	DFL NO. 2
12" OC	11' - 3"	11' - 7"	12' - 2"	11' - 10"	12' - 5"
16" OC	10' - 3"	10' - 6"	11' - 0"	10' - 9"	11' - 3"
24" OC	8' - 11"	9' - 2"	9' - 8"	9' - 5"	9' - 10"



HARD LID CEILING CONNECTION SCALE : 3" = 1'-0" | 5

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

CEILING DETAILS
HARD LID

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STANLEY 2475 STRUCTURAL STATE OF CALIFORNIA

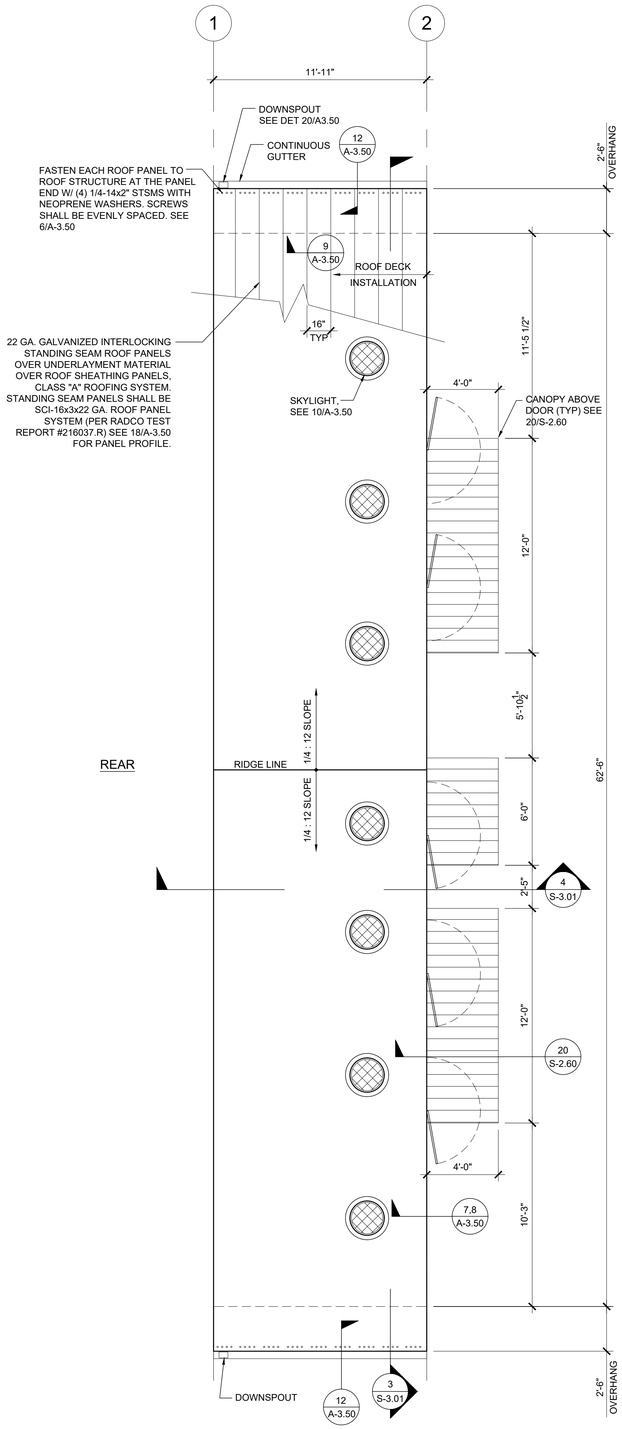
SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-2.21

RIGHT



REAR

FRONT

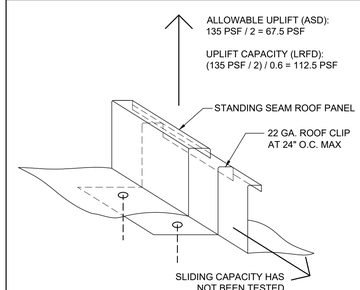
LEFT

NORTH

NOTES

1. BUILDINGS SHALL HAVE ROOF COVERINGS AS SPECIFIED IN CBC TABLE 1505.1 - CLASS A.
2. LOCATIONS OF DRAFTSTOP AND/OR FULL HEIGHT PARTITIONS AS REQUIRED PER CBC-718.4.3 SHALL BE SHOWN ON PROJECT PLANS.
3. NOT USED.
4. SEE DETAIL "A" (THIS SHEET) FOR ROOF SYSTEM UPLIFT CAPACITY
5. NOT USED.

LEGEND



NOTES:

1. THE ALLOWABLE UPLIFT VALUES PROVIDED ABOVE ARE BASED ON TESTING PERFORMED IN ACCORDANCE WITH UL STANDARD 1897 (UPLIFT TEST FOR ROOF COVERING SYSTEM).

   TEST REPORT:
   TI RADCO (RADCO, A TWINING COMPANY)
   REPORT # 216037.R
   DATE: 6.22.2021
2. THE ULTIMATE LOAD DETERMINED BY TESTING = 135 PSF.
   A SAFETY FACTOR OF 2.0 HAS BEEN USED IN CALCULATING THE ALLOWABLE VALUES.
3. PV PANEL ATTACHMENT OPTION IS NOT INCLUDED WITHIN THIS PC.
4. THE CLIP SLIDING CAPACITY HAS NOT BEEN TESTED. IF PV PANELS ARE INSTALLED THE SLIDING CAPACITY OF THE ROOF PANEL SYSTEM MUST BE DETERMINED BY FIELD TESTING FOR ROOF SLOPES OF NOT LESS THAN 7 DEGREES.
   EXCEPTION: WHERE THE SLIDING LOAD FOR SEISMIC AND WIND FORCES ON THE PV PANEL SYSTEM IS LESS THAN THE DISPLACED DESIGN LIVE LOAD SLIDING COMPONENT PER DSA IR 16-8 (SECTION 5.1.1.2).
5. CONVERSION FROM ALLOWABLE UPLIFT (ASD) TO UPLIFT CAPACITY (LRFD) IS BASED ON ASD WIND PRESSURE = 0.6 x (LFRD WIND PRESSURE).

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ROOF PLAN

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

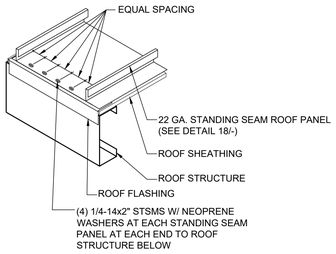
REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
24775
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-3.01

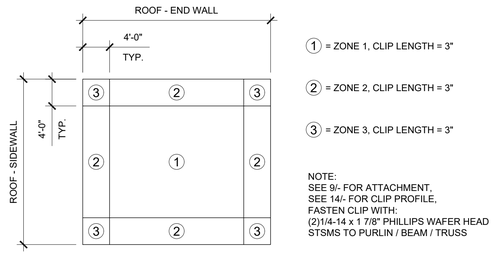


REF: A3.50

STANDING SEAM PANEL AT ENDS SCALE : NTS 6

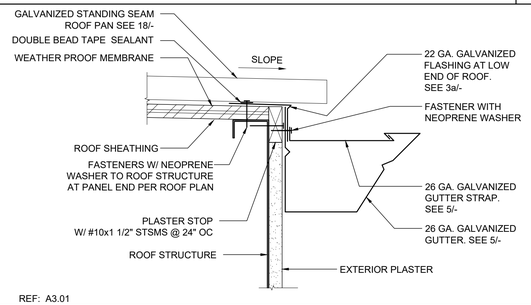
1a

1b



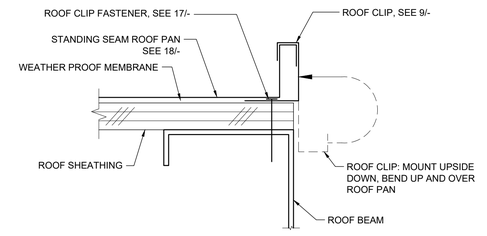
REF: A3.50

ROOF CLIP ZONES NTS 17



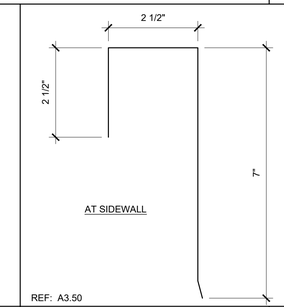
REF: A3.01

GUTTER AT ROOF FASCIA BEAM SCALE : 3"=1'-0" 12



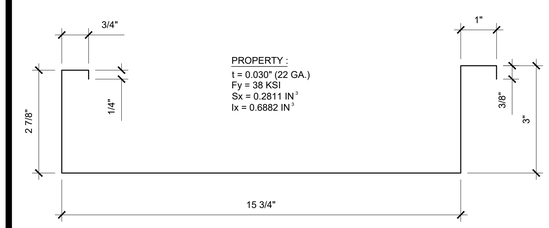
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STARTER ROOF PAN CONNECTION SCALE : 6"=1'-0" 7



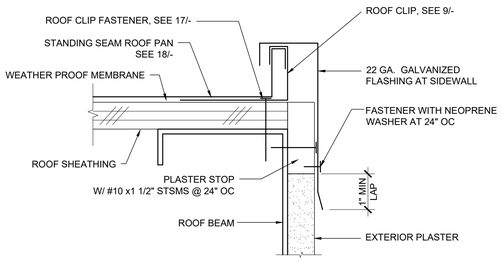
REF: A3.50

2b ROOF FLASHING SCALE : 6"=1'-0" 2a



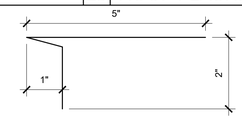
REF: A3.50

ROOF DECK PROFILE SCALE : NTS 18



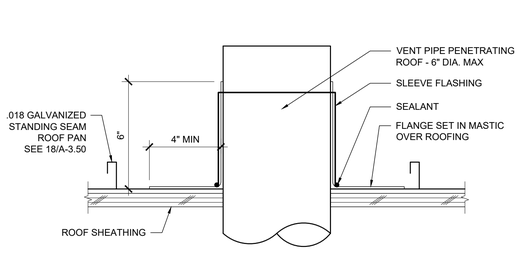
REF: A3.01

ROOF FLASHING AT SIDEWALL SCALE : 6"=1'-0" 8

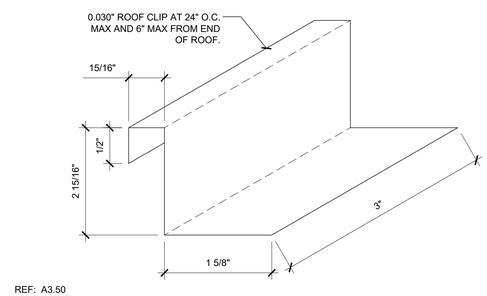


FLASHING AT ROOF LOW SIDE(S) SCALE : 6"=1'-0" 3a

3b

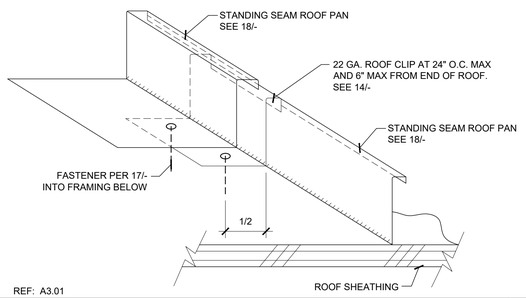


PIPE PENETRATION THROUGH ROOF SCALE : 3"=1'-0" 19



REF: A3.50

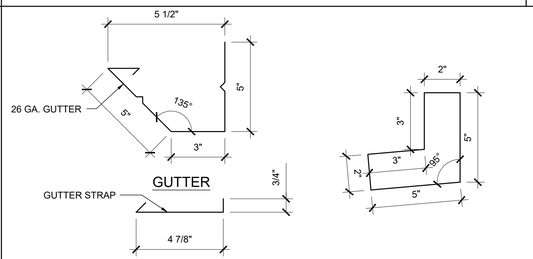
ROOF CLIP SCALE : 1'-0"=1'-0" 14



REF: A3.01

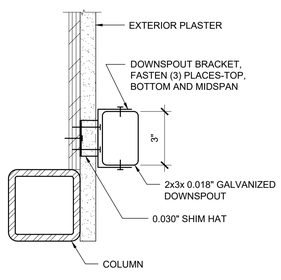
ROOF CLIP @ STANDING SEAM SCALE : NTS 9

4



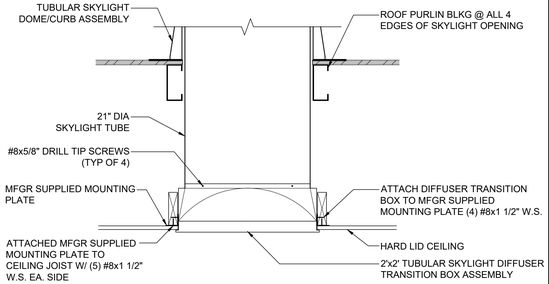
REF: A3.50

GUTTER AND STRAP & DOWNSPOUT SCALE : 3"=1'-0" 5

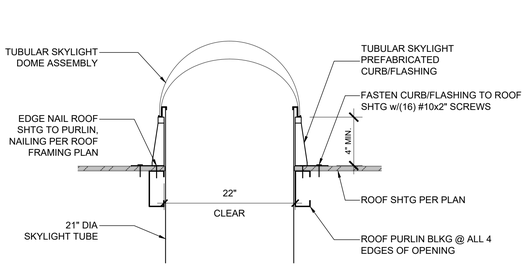


REF: A3.01

DOWNSPOUT ATTACHMENT SCALE : 3"=1'-0" 20



TUBULAR SKYLIGHT DIFFUSER SECTION SCALE: 1"=1'-0" 15



TUBULAR SKYLIGHT SECTION SCALE: 1"=1'-0" 10

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ROOF DETAILS
STANDING SEAM
ROOF DECK

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

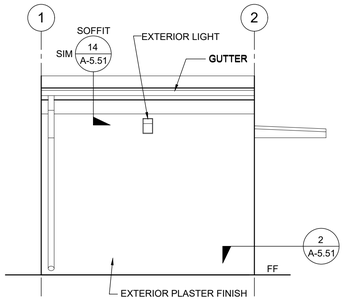
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24175 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

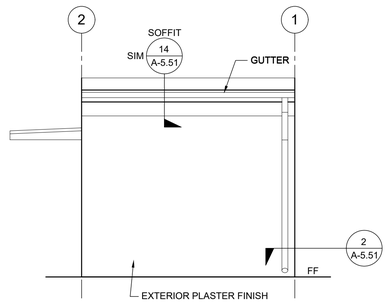
PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

SHEET NUMBER

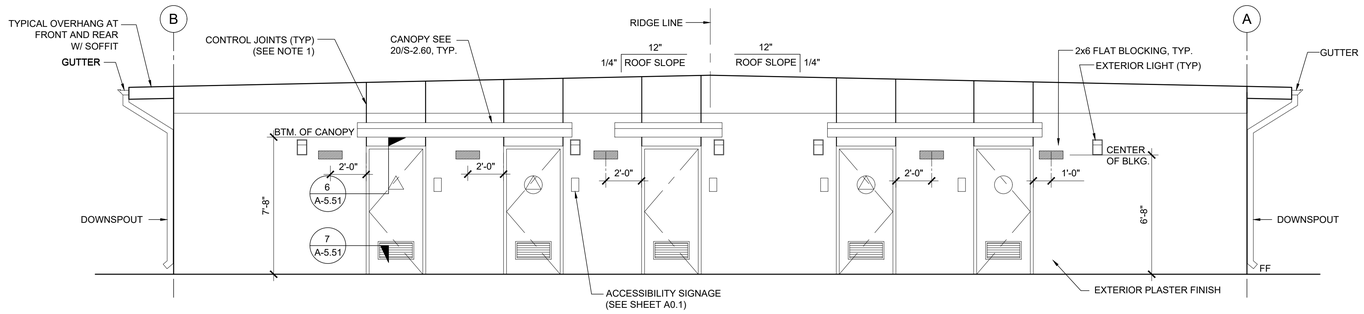
A-3.50



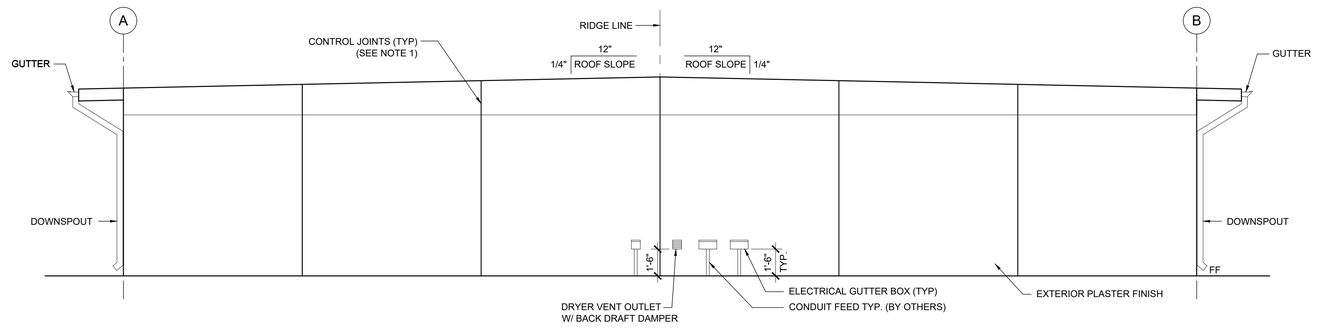
EXTERIOR ELEVATION - LEFT — SCALE: 1/4" = 1' - 0" — 2



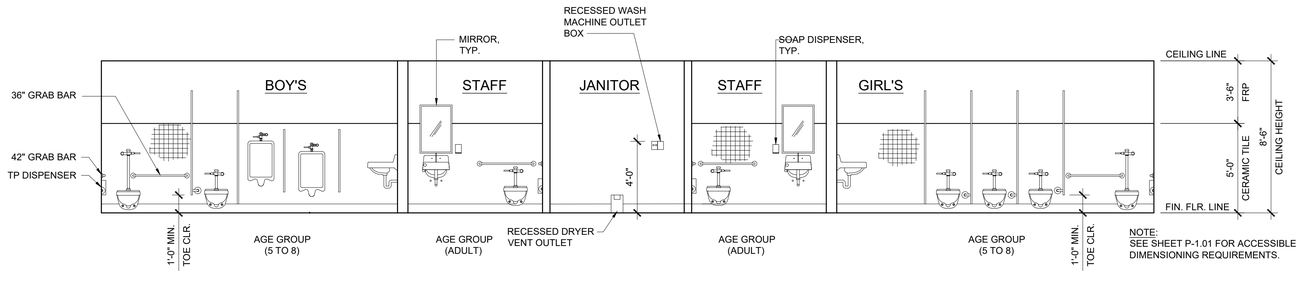
EXTERIOR ELEVATION - RIGHT — SCALE: 1/4" = 1' - 0" — 1



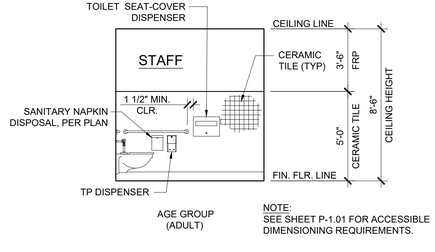
EXTERIOR ELEVATION - FRONT — SCALE: 1/4" = 1' - 0" — 3



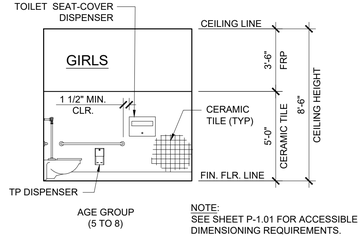
EXTERIOR ELEVATION - REAR — SCALE: 1/4" = 1' - 0" — 4



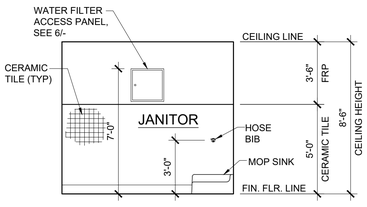
INTERIOR ELEVATIONS — 5



NOTE:
SEE SHEET P-1.01 FOR ACCESSIBLE DIMENSIONING REQUIREMENTS.



NOTE:
SEE SHEET P-1.01 FOR ACCESSIBLE DIMENSIONING REQUIREMENTS.



NOTES

1. FOR PLASTER, PROVIDE CONTROL AT 10'-0" OC AT SIDE WALLS, AND / OR ABOVE AND BELOW OPENINGS.
2. EXTERIOR PROJECTIONS SHALL COMPLY W/ SECTION 705 AND 1406, 2022 CBC

NOTE;
EXTERIOR TO BE WRAPPED W/ TYVEK STUCCO WRAP W/ PLASTER FINISH BY OTHER.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
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DATE: 07/09/2025

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

EXTERIOR & INTERIOR ELEVATIONS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

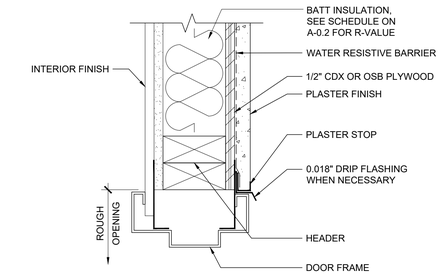
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

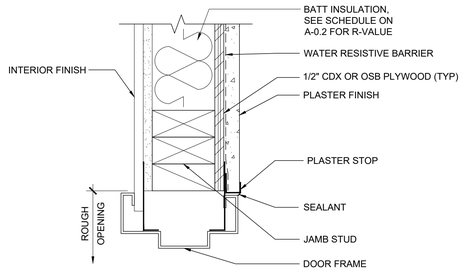
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

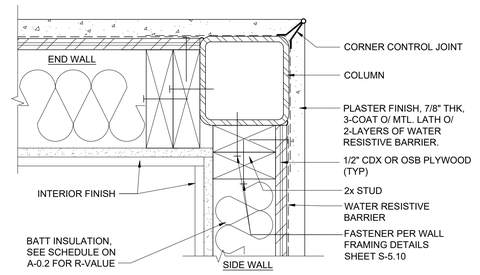
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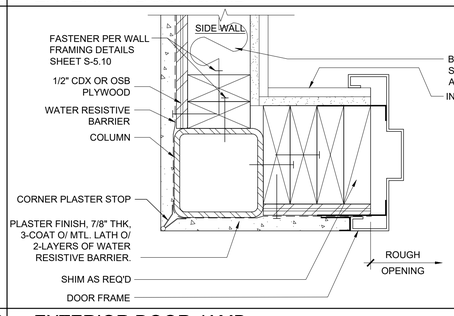
16 | 11 | EXTERIOR DOOR HEADER SCALE : 3"=1'-0" | 6 | 1



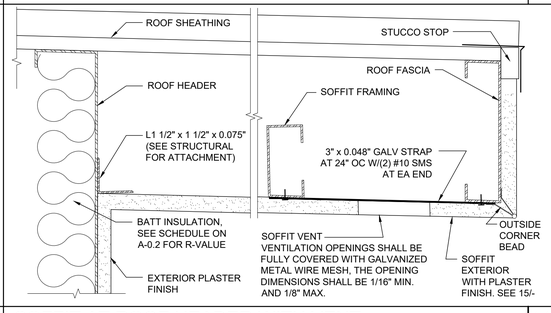
17 | 12 | EXTERIOR DOOR JAMB SCALE : 3"=1'-0" | 7



COLUMN AT CORNER SCALE : 3"=1'-0" | 2



18 | 13 | EXTERIOR DOOR JAMB SCALE : 3"=1'-0" | 8 | 3



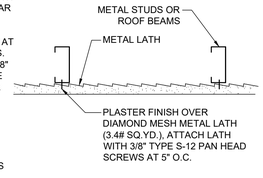
19 | SOFFIT AT ROOF HEADER WITH VENT SCALE : 3" = 1'-0" | 14 | 9 | 4

1. METAL LATH SHALL BE ATTACHED TO METAL SUPPORTS WITH NOT LESS #10 U.S. GAUGE THE WIRE SPACED NOT MORE THAN 6" APART OR WITH APPROVED EQUIVALENT ATTACHMENTS.

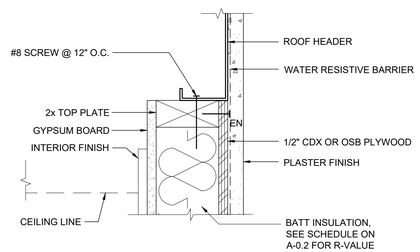
2. METAL LATH OR WIRE FABRIC SHALL BE APPLIED WITH THE LONG DIMENSION OF THE SHEETS PERPENDICULAR TO SUPPORTS.

3. METAL LATH SHALL BE LAPPED NOT LESS THAN 1/2" AT SIDES AND 1" AT ENDS. WIRE FABRIC AT SIDES & ENDS. BUT NOT LESS THAN 1", AND METAL GREATER THAN 1/8" SHALL BE LAPPED AT THE SIDES BY NESTING OUTSIDE HOLE. WHERE EDGE LAPS OF SHEETS DO NOT OCCUR OVER SUPPORTS. THEY SHALL BE SECURELY TIED TOGETHER WITH NOT LESS THAN 18 GA. WIRE

4. CORNERITE SHALL BE INSTALLED IN ALL INTERNAL CORNERS TO RETAIN POSITION DURING PLASTERING CORNERITE MAY BE OMITTED WHEN LATH IS CONTINUOUS OR WHEN PLASTER IN NOT CONTINUOUS FROM ONE PLANE TO AN ADJACENT PLAN.



20 | METAL LATH ATTACHMENT TO METAL JOIST SCALE : NTS | 15 | 10



TOP PLATE AT ROOF HEADER SCALE : 3" = 1'-0" | 5

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ARCHITECTURAL DETAILS
WOOD STUD - PLASTER

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

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REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
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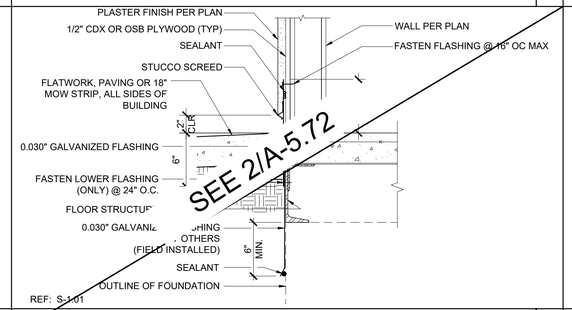
A-5.51

16

11

6

1



17 SKIRT FLASHING (CONCRETE FLOOR) SCALE : 1 1/2"=1'-0"

12

7

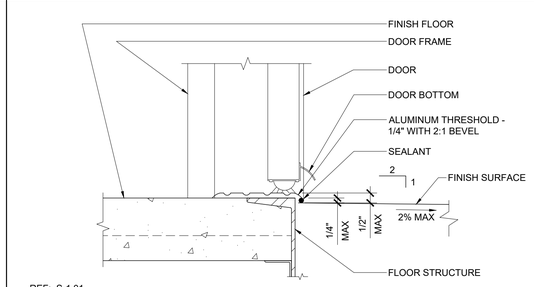
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18

13

8

3

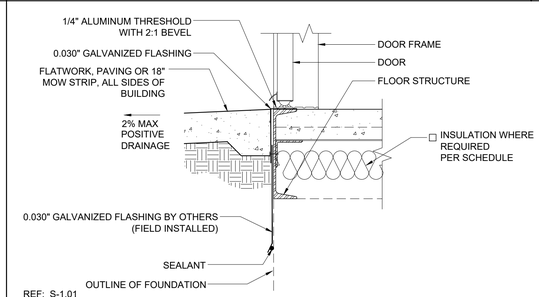


19 THRESHOLD SCALE : 3"=1'-0"

14

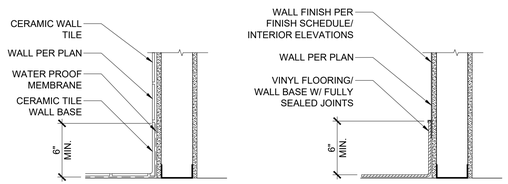
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4



20 TYPICAL SILL AT FLOOR (CONCRETE FLOOR) SCALE : 1 1/2"=1'-0"

15



WALL BASE AT TOILET ROOMS SCALE : 1 1/2"=1'-0"

10

5

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ARCHITECTURAL DETAILS
FLOOR

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

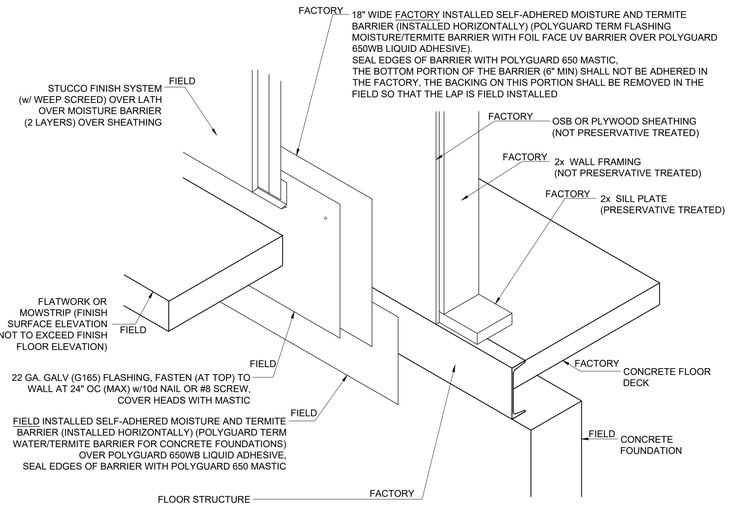
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24075 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

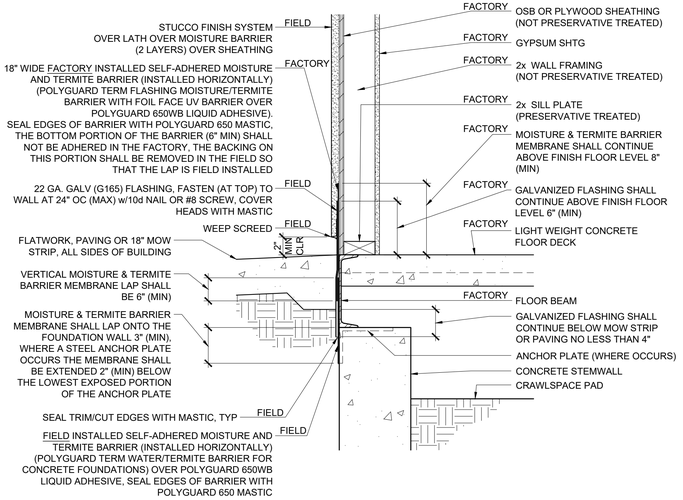
SHEET NUMBER

A-5.70



NOTE:
SEE DETAIL 10/- FOR DETERIORATION PROTECTION REQUIREMENTS

ISOMETRIC VIEW

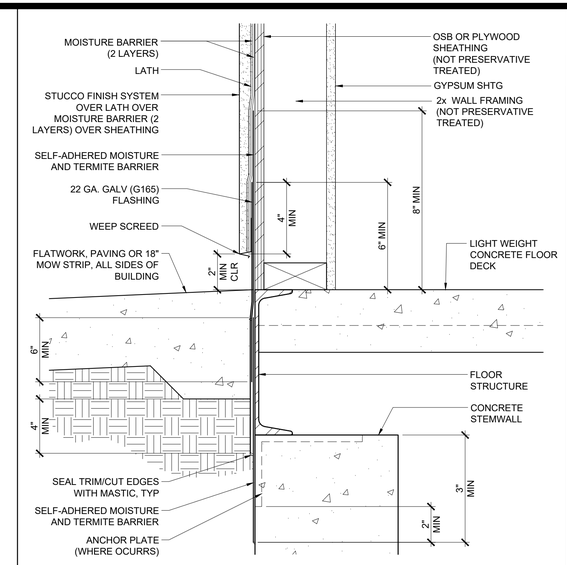


NOTE:
WHERE THE EXTERIOR GRADE IS BELOW THE TOP OF THE FOUNDATION WALL AND THE BOTTOM OF THE FOUNDATION ANCHOR PLATE(S) (WHERE OCCURS) THE FLASHING AND MEMBRANE OCCURRING BELOW GRADE MAY BE OMITTED.

SECTION VIEW

DETERIORATION PROTECTION

SCALE : NTS | 7



NOTE:
SEE DETAIL 7/- FOR MORE INFO ON FLASHING & DETERIORATION PROTECTION

TYPICAL EXTERIOR WALL SILL

SCALE : NTS | 2

OUTSIDE CORNER

DETERIORATION PROTECTION - CORNER CONDITIONS

SCALE : NTS | 14

MOISUTRE AND TERMITE BARRIER MEMBRANE FLASHING INSTALLATION REQUIREMENTS

- ALL SURFACES SHALL BE CLEAN (FREE OF DIRT, DUST, OIL AND OTHER DEBRIS) PRIOR TO APPLICATION OF THE ADHESIVE AND MEMBRANE.
- ALL SURFACE VOIDS GREATER THAN 1/8" IN WIDTH SHALL BE FILLED WITH SEALANT PRIOR TO INSTALLATION.
- APPLY LIQUID ADHESIVE TO ALL SURFACES WHICH WILL RECEIVE THE FLASHING BARRIER.
- CUT PIECES OF MEMBRANE TO LENGTH AS NEEDED AND APPLY TO SUBSTRATE ONCE THE LIQUID ADHESIVE HAS BECOME TACKY. IMMEDIATELY PRIOR TO MEMBRANE APPLICATION, THE INSTALLER SHALL VERIFY THAT THE ADHESIVE IS STILL TACKY TO THE TOUCH, IF NECESSARY A SECOND LAYER OF ADHESIVE SHALL BE PROVIDED.
- INSTALL MEMBRANE IN A HORIZONTAL ORIENTATION.
- WHERE A HORIZONTAL LAP OCCURS, THE JOINTS SHALL BE LAPPED 2 1/2 INCHES MINIMUM.
- AT BUILDING CORNERS THE MEMBRANE SHALL BE WRAPPED AROUND THE CORNER AND SHALL EXTEND NO LESS THAN 6" BEYOND THE CORNER PRIOR TO LAPPING ANOTHER SHEET. SEE DETAIL 14/-
- WHERE ARE MODULE JOINT (MODLINE) OCCURS THE FACTORY INSTALLED MEMBRANE SHALL BE TERMINATED WITHIN 1" OF THE EDGE OF THE MODULE. A FIELD INSTALLED MEMBRANE PIECE SHALL BE APPLIED FOLLOWING THE INSTALLATION OF THE MODULES ON THE FOUNDATION. THE FIELD INSTALLED MEMBRANE PIECE SHALL LAP THE FACTORY INSTALLED MEMBRANE 3" MINIMUM AT EACH END.
- WHERE A VERTICAL LAP OCCURS THE UPPER MEMBRANE LAYER SHALL BE LAPPED OVER THE LOWER MEMBRANE LAYER 6" MINIMUM.
- THE MEMBRANE SHALL BE ROLLED FIRMLY INTO PLACE USING HAND ROLLER.
- APPLY MASTIC OR SEALANT TO TERMINATING EDGES AND AROUND PIPES OR OTHER PENETRATIONS.
- WHERE THE SURFACES ARE OFFSET MORE THAN 1/8" OUT-OF-PLANE PROVIDE SEALANT OR ANOTHER STABLE MATERIAL TO TRANSITION BETWEEN THE SURFACES.
- WHERE A HORIZONTAL LAP OCCURS IN THE GALVANIZED FLASHING THE JOINTS SHALL BE LAPPED 2 1/2" MINIMUM
- REFER TO DETAIL 20/- FOR MODLINE DETERIORATION PROTECTION

REPAIR REQUIREMENTS

WHERE DAMAGE OCCURS, THE REPAIRS SHALL BE AS FOLLOWS:

1. WHERE THE DAMAGE MEASURES LESS THAN ½" IN ANY DIRECTION THE PUNCTURE SHALL BE SEALED WITH MASTIC.
2. WHERE THE DAMAGE MEASURES MORE THAN ½", BUT LESS THAN 2", IN ANY DIRECTION A PATCH SHALL BE INSTALLED OVER THE DAMAGE USING THE SAME MEMBRANE MATERIAL. THE PATCH SHALL OVERLAP 4" MINIMUM IN ALL DIRECTION.
3. WHERE THE DAMAGE MEASURES MORE THAN 2" IN ANY DIRECTION THE DAMAGED PORTION SHALL BE REMOVE AND A PIECE OF MEMBRANE SHALL BE INSTALLED. THE PATCH SHALL OVERLAP 4" MINIMUM IN ALL DIRECTIONS.

INSPECTION REQUIREMENTS

THE IN-PLANT INSPECTOR SHALL OBSERVE THE INSTALLATION OF FACTORY INSTALLED PORTION OF THE MEMBRANE FLASHING. THE ADHESIVE AND MEMBRANE SHALL BE INSTALLED IN ACCORDANCE WITH THESE INSTALLATION INSTRUCTIONS. ALL OVERLAPS SHALL BE AS INDICATED WITHIN THIS DRAWING PACKAGE. THE MEMBRANE SHALL BE CONTINUOUS UP THE WALL TO A MINIMUM HEIGHT ABOVE FINISH FLOOR AS INDICATED WITHIN THIS DRAWING PACKAGE.

THE ON-SITE INSPECTOR SHALL OBSERVE THE INSTALLATION OF THE SITE INSTALLED PORTION OF THE MEMBRANE FLASHING. THE FACTORY INSTALLED MEMBRANE SHOULD BE INVESTIGATED TO DETERMINE IF ANY DAMAGE OCCURRED DURING MODULE SHIPMENT/INSTALLATION PRIOR TO PROCEEDING WITH THE SITE INSTALLED MEMBRANE PLACEMENT. THE ADHESIVE AND MEMBRANE SHALL BE INSTALLED IN ACCORDANCE WITH THESE INSTALLATION INSTRUCTIONS. ALL OVERLAPS SHALL BE AS INDICATED WITHIN THIS DRAWING PACKAGE. THE MEMBRANE SHALL BE LAPPED ONTO THE FOUNDATION WALL AS INDICATED WITHIN THIS DRAWING PACKAGE. THE GALVANIZED FLASHING SHALL BE INSTALLED OVER THE MEMBRANE. THE GALVANIZED FLASHING SHALL BE CONTINUOUS UP THE WALL TO A MINIMUM HEIGHT ABOVE FINISH FLOOR AS INDICATED WITHIN THIS DRAWING PACKAGE AND SHALL CONTINUE BELOW THE BOTTOM OF THE FLATWORK OR MOW STRIP AS INDICATED WITHIN THIS DRAWING PACKAGE.

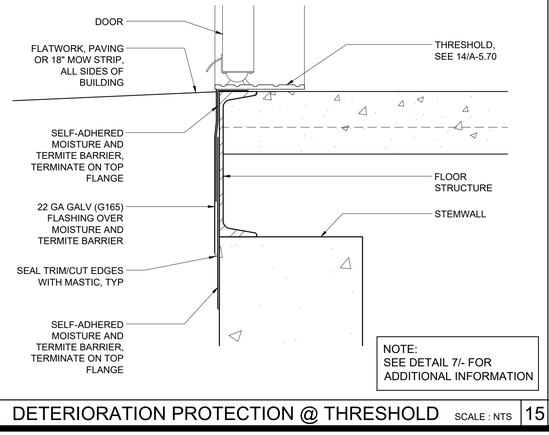
DETERIORATION PROTECTION REQUIREMENTS

10

NOTE:
SEE DETAIL 7/- FOR MORE INFO ON FLASHING & DETERIORATION PROTECTION

EXTERIOR WALL SILL @VENT / ACCESS

SCALE : NTS | 4



NOTE:
SEE DETAIL 7/- FOR ADDITIONAL INFORMATION

DETERIORATION PROTECTION @ THRESHOLD

SCALE : NTS | 15

20

5

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DATE: 07/09/2025

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

DETERIORATION PROTECTION
STUCCO EXTERIOR FINISH
CONC FLOOR - WD STUDS

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

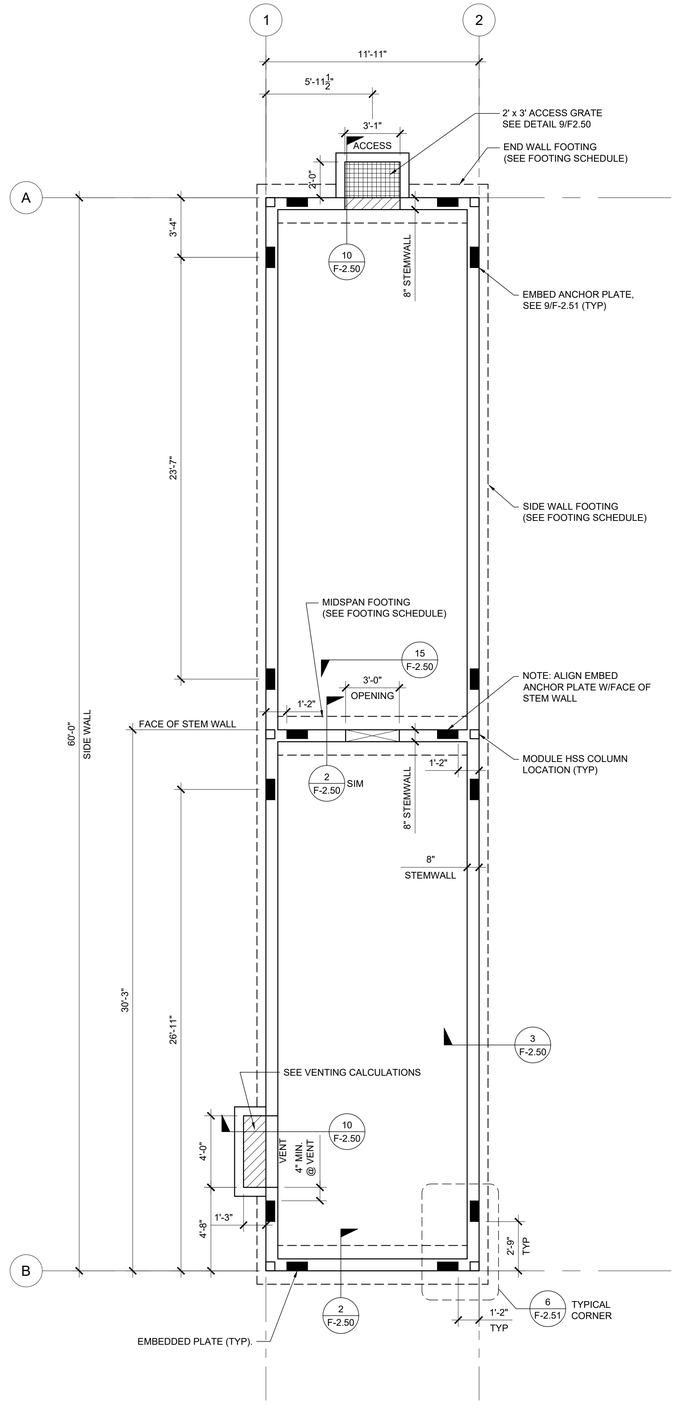
REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLIN
24775
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

A-5.72



NOTES

1. NOT USED.
2. 8'-0" MAXIMUM VENT SIZE AT SIDE WALLS
   4'-0" MAXIMUM VENT SIZE AT END WALLS
   3'-0" MINIMUM DISTANCE FROM EDGE OF VENT TO STEMWALL CORNER
   2'-0" MINIMUM DISTANCE BETWEEN VENT EDGES
3. CRAWLSPACE VAPOR RETARDERS (WHERE INDICATED):

   THE TOTAL AREA OF VENTILATION OPENINGS IS PERMITTED TO BE REDUCED TO 1/1500 FACTOR WITH AN APPROVED VAPOR RETARDER MATERIAL PER CBC SECTION 1202.4.1.2.
   MATERIALS:
   GROUND SURFACE COVERED WITH AN APPROVED VAPOR RETARDER MATERIAL; MUST HAVE A PERM RATING OF ONE OR LESS; SHOULD BE CONTINUOUS; POLYETHELYNE FILM (≥ 6 MIL); POOL LINER (PUNCTURE RESISTANT); AND POLYETHELYNE FILM WITH RAT SLAB.
   INSTALLATION RECOMMENDATIONS:
   OVERLAP JOINTS BY 6 INCHES; TAPE OR SEAL ALL JOINTS; EXTEND VAPOR RETARDER A MINIMUM OF 6 INCHES UP THE STEM WALL (MORE IS BETTER); SEAL TO ALL PIERS AND OTHER PENETRATIONS, SEE DETAIL 11/F-2.51.
4. SOIL BEARING PRESSURE OF 1500 PSF USED FOR DESIGN.
5. PROFESSIONAL SOILS REPORT: (NOT REQUIRED)
6. WHERE THE BUILDING OCCURS ON OR ADJACENT TO A SLOPE (GREATER THAN 33%) THE SETBACK SHALL COMPLY WITH CBC SECTION 1808.7. THE MINIMUM SETBACK AT THE TOP OF THE SLOPE SHALL BE NOT LESS THAN SMALLER OF 40'-0" OR 1/3 THE HEIGHT OF THE SLOPE. THE MINIMUM SETBACK AT THE BOTTOM OF THE SLOPE SHALL BE NOT LESS THAN THE SMALLER OF 15'-0" OR 1/2 THE HEIGHT OF THE SLOPE. THE SETBACK DISTANCES INDICATED HERE MAY BE REDUCED WHEN A SITE SPECIFIC GEOTECHNICAL REPORT IS PROVIDED.
7. A COLD JOINT MAY BE PROVIDED BETWEEN THE FOOTING AND THE VERTICAL FOUNDATION WALL. THE JOINT SHALL BE KEYED (2 1/2" WIDE (MIN) x 1 1/2" DEEP) AND ALL VERTICAL REINFORCING THAT CROSSES THE JOINT SHALL BE PLACED PRIOR TO THE PLACEMENT OF CONCRETE.

VENTING CALCULATION

CRAWL SPACE AREA: 720 SF
REQUIRED VENTILATION AREA = 720 / 150 = 4.80 SF

VENTING SUPPLIED

VENT: (4'-0" x 15" METAL SCREEN COVER)
3'-10" x 12" = 3.83 S.F. VENTILATION
3.83 S.F. x .6 = 2.30 REDUCED FREE AREA

ACCESS/VENT: (3'-0" x 2'-0" METAL SCREEN COVER)
2'-10" x 18" = 4.25 S.F. VENTILATION
4.25 S.F. x .6 = 2.55 REDUCED FREE AREA

VENT : (1) 4'-0"x1'-3" (2.30 SF EA) = 2.30 SF
ACCESS : (1) 3'-0"x2'-0" (2.55 SF EA) = 2.55 SF
TOTAL = 4.85 S.F. PROVIDED > 4.80 SF REQ'D

ANCHORAGE NOTES:
1. ANCHOR PLATES SHALL BE PLACED SUCH THAT THE FOLLOWING MINIMUM CRITERIA ARE MET:
   - ONE (1) ANCHOR PLATE WITHIN 35" OF OVERALL BUILDING CORNERS IN EACH DIRECTION.
   - EIGHT (8) ANCHOR PLATES TOTAL ALONG EACH SIDE WALL.
2. SIDE WALL PLATES SHALL BE PLACED AS NOTED ABOVE. PLATE LOCATION MAY BE ADJUSTED TO AVOID VENT/ACCESS OPENINGS.
3. ANCHOR PLATES WITHIN 21" OF AN OPENING SHALL BE REINFORCED WITH HAIRPINS PER 19/F-2.51.

FOOTING SCHEDULE

DESIGN FLOOR LIVE LOAD	SIDEWALL FOOTING	ENDWALL FOOTING	MIDSPAN FOOTING
50 + 15 PSF	12" WIDE (2) #5 CONT T&B	18" WIDE (3) #5 CONT T&B	18" WIDE (3) #5 CONT T&B

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FOUNDATION PLAN

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

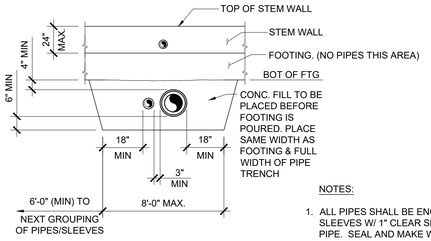
REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
24775
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

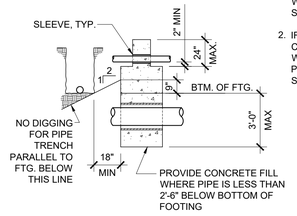
SHEET NUMBER

F-1.01



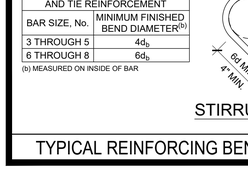
NOTES:

1. ALL PIPES SHALL BE ENCASED IN SLEEVES W/ 1" CLEAR SPACE AROUND PIPE. SEAL AND MAKE WATERTIGHT WITH PLASTIC MATERIAL (REF CPC SECTION 313.10 SLEEVES)
2. IF PIPE IS IN PLACE PRIOR TO POURING CONCRETE, WRAP PIPE WITH 1" GLASS WOOL OR POLYSTYRENE TAPE BEFORE POURING CONCRETE IN LIEU OF SLEEVES



PIPE SLEEVE DETAIL

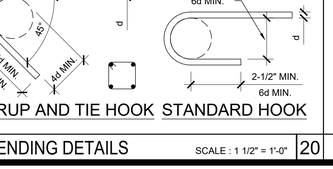
SCALE : 1/4"=1'-0" | 17



SECTION B

NOTES:

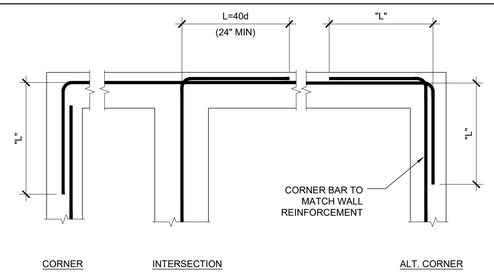
1. ALL PIPES SHALL BE ENCASED IN SLEEVES W/ 1" CLEAR SPACE AROUND PIPE. SEAL AND MAKE WATERTIGHT WITH PLASTIC MATERIAL (REF CPC SECTION 313.10 SLEEVES)



SECTION A

PIPE SLEEVE THRU FOUNDATION FOOTING

SCALE : 1/4"=1'-0" | 18

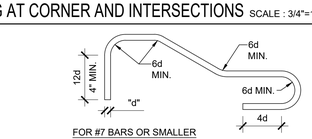


TYPICAL REINFORCING AT CORNER AND INTERSECTIONS

SCALE : 3/4"=1'-0" | 19

STANDARD HOOKS FOR PRIMARY REINFORCEMENT	
BAR SIZE, No.	MINIMUM FINISHED BEND DIAMETER[a]
3 THROUGH 8	$6d_b$
9 THROUGH 11	$8d_b$
14 AND 18	$10d_b$

(a) MEASURED ON INSIDE OF BAR



TYP. REINF. BENDING DETAIL

STANDARD HOOKS FOR STIRRUPS AND TIE REINFORCEMENT	
BAR SIZE, No.	MINIMUM FINISHED BEND DIAMETER[b]
3 THROUGH 5	$4d_b$
6 THROUGH 8	$6d_b$

(b) MEASURED ON INSIDE OF BAR

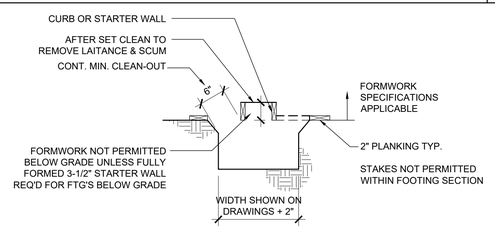
STIRRUP AND TIE HOOK

STANDARD HOOK

TYPICAL REINFORCING BENDING DETAILS

SCALE : 1 1/2" = 1'-0" | 20

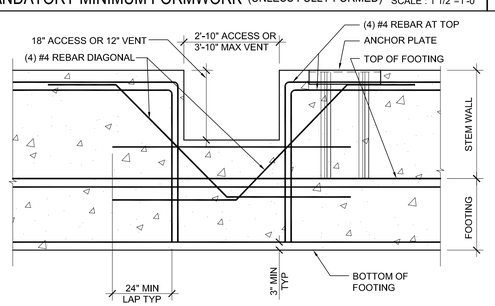
	11		6		1
	12		7		2
	13		8		3
	14		9		4
	15		10		5



"FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE AS DETERMINED BY THE ARCHITECT (STRUCTURAL ENGINEER). SUBJECT TO THE APPROVAL OF THE DIVISION OF THE STATE ARCHITECT. IN SUCH CASE THE MINIMUM FORMWORK SHOWN ON THE DRAWINGS IS MANDATORY TO INSURE CLEAN EXCAVATIONS IMMEDIATELY PRIOR TO AND DURING THE PLACING OF CONCRETE."

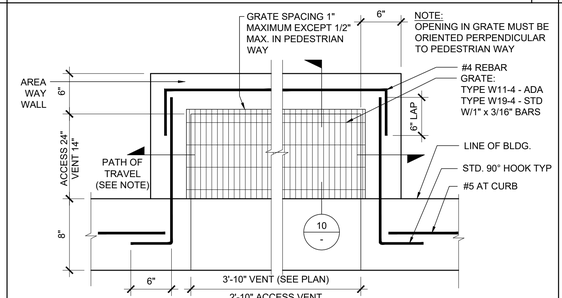
MANDATORY MINIMUM FORMWORK (UNLESS FULLY FORMED)

SCALE : 1 1/2"=1'-0" | 14



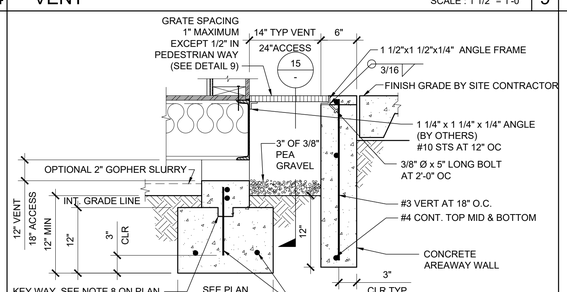
VENT OPENING

SCALE : 1" = 1'-0" | 15



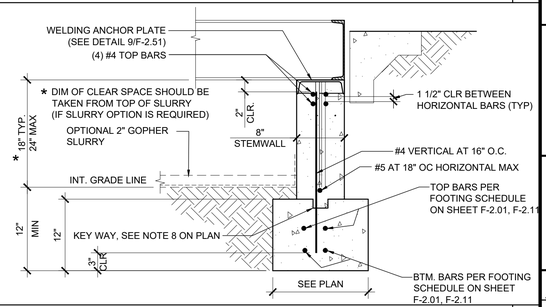
VENT

SCALE : 1 1/2" = 1'-0" | 9



VENT/ACCESS SECTION

SCALE : 1" = 1'-0" | 10



END WALL FOOTING - WELDED

SCALE : 1" = 1'-0" | 2

SIDE WALL FOOTING

SCALE : 1" = 1'-0" | 3

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VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

CONCRETE FOUNDATION DETAILS
BELOW GRADE

REVISIONS

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5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

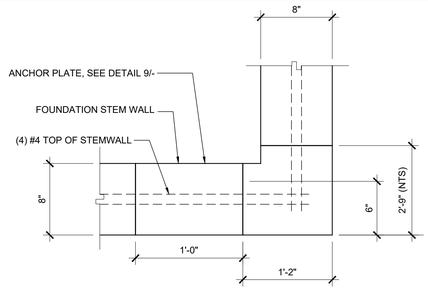
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24575 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

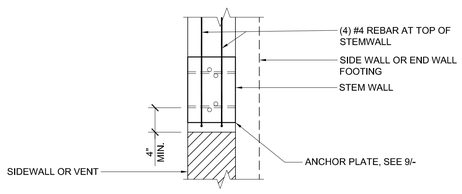
SHEET NUMBER

F-2.50

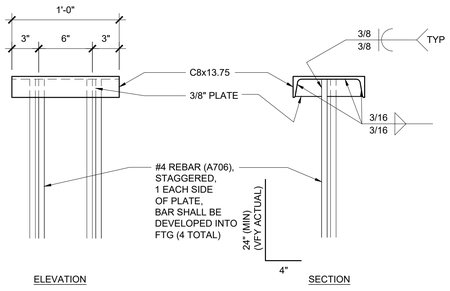


16 | 11 | ANCHOR PLATE AT CORNER SCALE : 1 1/2" = 1'-0" | 6 | 1

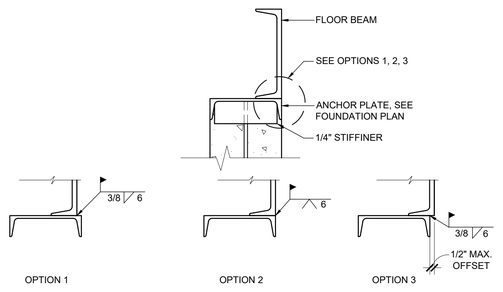
17 | 12 | 7 | 2



18 | 13 | 8 | 3



ANCHOR PLATE AT SIDEWALL OR ENDWALL @ VENT | 19 | 14 | EMBED ANCHOR PLATE SCALE : 1 1/2"=1'-0" | 9



20 | 15 | ANCHOR PLATE WELDING SCALE : 1 1/2"=1'-0" | 10 | 5

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FOUNDATION DETAILS
CONCRETE

REVISIONS
1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
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MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

SHEET NUMBER

F-2.51

STRUCTURAL SPECIFICATIONS

FOUNDATIONS:

GEOTECHNICAL INVESTIGATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH SECTIONS 1803A.3 THROUGH 1803A.8. EXCEPTIONS, 1) GEOTECHNICAL REPORTS ARE NOT REQUIRED FOR ONE-STORY, WOOD-FRAME AND LIGHT-STEEL-FRAME BUILDINGS OF TYPE II OR TYPE V CONSTRUCTION AND 4,000 SQUARE FEET OR LESS IN FLOOR AREA, NOT LOCATED WITHIN EARTHQUAKE FAULT ZONES OR SEISMIC HAZARD ZONES AS SHOWN IN THE MOST RECENTLY PUBLISHED MAPS FROM THE CALIFORNIA GEOLOGICAL SURVEY (CGS) OR IN SEISMIC HAZARD ZONES AS DEFINED IN THE SAFETY ELEMENT OF THE LOCAL GENERAL PLAN, 2) A PREVIOUS REPORT FOR A SPECIFIC SITE MAY BE RESUBMITTED, PROVIDED THAT A REEVALUATION IS MADE AND THE REPORT IS FOUND TO BE CURRENTLY APPROPRIATE. ALLOWABLE FOUNDATION AND LATERAL SOIL PRESSURE VALUES MAY BE DETERMINED FROM TABLE 1806A.2 PER CBC SECTION 1803A.2

CONCRETE

PROVIDE NECESSARY SHIMS ON FOOTINGS NOT LEVEL WITHIN THE 1/2" ALLOWABLE TOLERANCE. THE DISTRICT SHALL PROVIDE CLEAR AND UNOBSTRUCTED ACCESS TO THE SITE. THE DISTRICT IS RESPONSIBLE FOR ALL SURVEYING, STAKING THE BUILDING CORNERS, SETTING THE FINISH FLOOR ELEVATION, RIGGING, CRANING, EXCAVATION, SPOIL REMOVAL, AND BACKFILL.

THE FOUNDATION AND THE METHOD OF FASTENING THE UNITS SHALL BE AS SHOWN ON DRAWINGS WHERE APPLICABLE. HIGH STRENGTH GROUT SHALL BE EMBECO 885 NON-SHRINK, METALLIC AGGREGATE GROUT OR A DSA APPROVED EQUAL.

THE DESIGN OF CONRETE FOUNDATIONS WILL BE AS FOLLOWS:

1. FURNISH AND INSTALL ALL CONCRETE WORK AS SHOWN ON THE DRAWINGS AND AS SPECIFIED.
2. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN AND / OR THE DETAILS ON THE DRAWINGS, ALL WORK INCLUDED IN THIS SECTION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF CODES AND STANDARDS.
   a) ALL WORK AND MATERIALS SHALL CONFORM TO TITLE 24, CALIFORNIA CODE OF REGULATIONS, AND CHAPTER 19A.
   b) AMERICAN CONCRETE INSTITUTE (ACI): BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-19.
   c) SOCIETY FOR TESTING AND MATERIALS (ASTM): THE SPECIFICATIONS AND STANDARDS HEREINAFTER REFERENCED TO SHALL BE OF THE LATEST EDITION.
3. CONCRETE FOUNDATION TESTS AND INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE ARCHITECT AND OR INSPECTOR.
4. DESIGN MIXE SHALL BE AS FOLLOWS:

   WHERE A GEOTECHNICAL REPORT IS NOT PROVIDED:
   MINIMUM COMPRESSIVE STRENGTH = 5,000 PSI
   MAXIMUM WATER/CEMENT RATIO = 0.40
   CEMENT TYPE = V COMPLYING WITH ACI 318-19, TABLE 19.3.2.1, FOOTNOTE 8
   NORMAL WEIGHT
   NO ADMIXTURES CONTAINING CALCIUM CHLORIDE

5. FORMS SHALL BE SUBSTANTIAL, PLUMB, LEVEL, SQUARE, TRUE TO LINE, WATER TIGHT AND ACCURATE TO THE DIMENSIONS REQUIRED.
6. THE ARCHITECT SHALL APPROVE LOCATION OF:
   a) OPENINGS FOR MECHANICAL AND ELECTRICAL: PROVIDE FOR OPENINGS IN THE CONCRETE WITH THE TRADE(S) INVOLVED AND INSTALL SLEEVES AS MAY BE REQUIRED.
   b) OPENINGS FOR VENT WELLS FOR UNDER FLOOR VENTILATION: PROVIDE FOR ALL OPENINGS IN THE CONCRETE WITH THE TRADE(S) INVOLVED. INSTALL ALL SLEEVES AS MAY BE REQUIRED.
7. VARIANCE IN TOP OF STEMWALL AND/OR ANCHOR PLATE SURFACE SHALL BE NO MORE THAN 1/16" IN 10 FEET
8. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, AND EMBEDDED ITEMS ARE TO BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED "WET SETTING" IS NOT ALLOWED.
9. REFER TO ARCHITECTURAL, ELECTRICAL, AND MECHANICAL PLANS FOR SLEEVES, INSERTS CURBS, DEPRESSED AREAS, AND ETC.
10. CONCRETE MIX REQUIRED: CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR FOOTINGS TO PROFESSIONAL OF RECORD FOR APPROVAL PRIOR TO POURING CONCRETE.

1705A.3.3. WAIVER OF BATCH PLAN INSPECTION.

A. WHEN BATCH PLANT INSPECTION IS WAIVED, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1. QUALIFIED TECHNICIAN OF THE TESTING LABORATORY SHALL CHECK THE FIRST BATCHING AT THE START OF DAY.
2. LICENSED WEIGHMASTER TO POSITIVELY IDENTIFY MATERIALS AS TO QUANTITY AND CERTIFY TO EACH LOAD BY A TICKET.
3. BATCH TICKETS, INCLUDING ACTUAL MATERIAL QUANTITIES AND WEIGHTS SHALL ACCOMPANY THE LOAD AND SHALL BE TRANSMITTED TO THE INSPECTOR OF RECORD BY A TRUCK DRIVER WITH LOAD IDENTIFIED THEREON. THE LOAD SHALL NOT BE PLACED WITHOUT A BATCH TICKET IDENTIFYING THE MIX. THE INSPECTOR WILL KEEP A DAILY RECORD OF PLACEMENTS, IDENTIFYING EACH TRUCK , IT'S LOAD, TIME OF RECEIPT AND APPROXIMATE LOCATION OF DEPOSIT IN THE STRUCTURE AND WILL TRANSMIT A COPY OF THE DAILY RECORD TO THE ENFORCEMENT AGENCY.

REINFORCING STEEL:

1. MATERIAL: ALL REINFORCING STEEL SHALL BE BILLET STEEL PER ASTM A-615 MIN. GRADE 60. EXCEPT #3 ANCHOR REINFORCEMENT SHALL BE GRADE 40.
2. SPLICES: ALL SPLICES SHALL BE LAPPED A MINIMUM 48" #5 BARS AND 30" #4 BARS UNLESS OTHERWISE DETAILED. SPLICES SHALL BE STAGGERED A MINIMUM OF 24" FROM ADJACENT HORIZONTAL BARS.
3. REINFORCING FABRICATION AND PLACEMENT: FABRICATION AND PLACING OF REINFORCING SHALL CONFORM TO THE "CODE OF STANDARD PRACTICE AND SPECIFICATIONS FOR PLACING REINFORCEMENT OF THE CONCRETE REINFORCING STEEL INSTITUTE".
4. MINIMUM COVERAGE: ALL REINFORCING SHALL HAVE THE FOLLOWING MINIMUM COVERAGE WITH CONCRETE:

LOCATION	AMOUNT
FORMED EARTH	2"
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
WALL-EXPOSED FACE	
#5 OR SMALLER	2"
#6 OR LARGER	2"
WALL-UNEXPOSED FACE	3/4"

5. HOOKS SHALL BE STAGGERED IN ALTERNATING DIRECTIONS.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL OTHER THAN TUBE AND PIPE COLUMNS SHALL CONFORM TO ASTM A-36.
2. TUBE COLUMNS SHALL CONFORM TO ASTM A500 GRADE B, OR A1085
3. PIPE COLUMNS SHALL CONFORM TO ASTM A501 OR ASTM A53, TYPE E OR S, GRADE B. OR A1085
4. TUBE STEEL USED FOR RAMPS & STAIRS SHALL CONFORM TO MT1020 OR BETTER

STEEL FRAME BUILDING/STEEL FRAME CONSTRUCTION SHALL MEET THE MINIMUM DESIGN REQUIREMENTS OF STUD SPACING, ETC. PER LATEST EDITION OF 2022 CALIFORNIA BUILDING CODE. ALL WORK AND MATERIALS SHALL CONFORM TO THE "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," AMERICAN INSTITUTE OF STEEL CONSTRUCTION: TITLE 24, CCR, AND UNIFORM BUILDING CODE. STRUCTURAL STEEL SHALL BE MADE EITHER THE OPEN-HEARTH OR ELECTRIC FURNACE PROCESS ONLY AND SHALL CONFORM TO THE "SPECIFICATION FOR STRUCTURAL STEEL" ASTM DESIGNATION A36, CURRENT EDITION.

ROOF FRAMING, FLOOR FRAMING, AND WALL FRAMING SHALL BE PER MANUFACTURER'S PC PLANS AND PER APPLICABLE CODES.

ALL STRUCTURAL MEMBERS BELOW THE SUB-FLOOR, IE, GIRDERS, JOISTS, HEADERS, BLOCKING, SHALL BE STEEL. MINIMUM JOIST SPACING SHALL BE PER PLAN.

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AISC STANDARD SPECIFICATIONS, THE APPLICABLE REGULATORY AGENCY AND THE AMERICAN IRON AND STEEL INSTITUTE SPECIFICATIONS FOR DESIGN OR LIGHT GAUGE STEEL STRUCTURAL MEMBERS. WELDING: SHALL COMPLY WITH THE PERTINENT PROVISIONS OF THE APPLICABLE REGULATORY AGENCY. ALL WELDING SHALL BE DONE BY OPERATORS WHO ARE QUALIFIED AS PRESCRIBED IN THE "QUALIFICATION PROCEDURE" OF THE AMERICAN WELDING SOCIETY TO PERFORM THE TYPE OF WORK REQUIRED.

STEEL SHALL BE COATED WITH ONE SHOP COAT OF MANUFACTURER'S STANDARD CHASSIS PAINT OR EQUAL.

BOLTS:

ALL COMMON BOLTS AND ANCHOR BOLTS SHALL CONFORM TO ASTM A-307.

STRUCTURAL WELDING: SPECIAL INSPECTOR REQUIRED

GENERAL: DURING THE WELDING OF ANY MEMBER OR CONNECTION THAT IS DESIGNED TO RESIST LOADS AND FORCES REQUIRED BY THIS CODE.

ALL WELDS USED IN PRIMARY MEMBERS AND CONNECTIONS IN THE LATERAL FORCE-RESISTING SYSTEMS SHALL BE MADE WITH A FILLER METAL THAT HAS A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT/LBS AT MINUS 20 DEGREES F AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.

ALL STRUCTURAL WELDING SHALL BE BY "ELECTRIC ARC PROCESS" PER AWS STANDARD CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. ALL LIGHT GAUGE STEEL (SHEET STEEL) SHALL BE WELDED PER AWS D1.3. ALL REINFORCING STEEL SHALL BE WELDED WITH LOW HYDROGEN RODS PER AWS D1.4, OR REINFORCING STEEL SHALL CONFORM TO ASTM A-706. ALL SHOP WELDED MUST BE PERFORMED BY "APPROVED" WELDERS IN A SHOP OF A LICENSED FABRICATOR. ALL FIELD WELDING SHALL BE PERFORMED BY "APPROVED" WELDERS. ELECTRODES SHALL BE E70XX FOR STRUCTURAL STEEL AND REBAR AND SHALL BE E60XX FOR LIGHT GAUGE STEEL. * (SEE OPTIONAL PROCESS)

THE SPECIAL INSPECTOR NEED NOT BE CONTINUOUSLY PRESENT DURING WELDING OF THE FOLLOWING ITEMS, PROVIDED THE MATERIALS, WELDING PROCEDURES AND QUALIFICATION OF WELDERS ARE VERIFIED PRIOR TO THE START OF WORK: PERIODIC INSPECTIONS ARE MADE OF WORK IN PROGRESS, AND A VISUAL INSPECTION OF ALL WELDS IS MADE PRIOR TO SHIPMENT OF SHOP WELDING.

a) FLOOR AND ROOF DECK WELDING.
b) WELDED STUDS WHEN USED FOR STRUCTURAL DIAPHRAGM OR COMPOSITE SYSTEMS.
c) WELDED SHEET STEEL FOR COLD-FRAMED STEEL FRAMING MEMBERS SUCH AS STUDS AND JOISTS WHICH ARE NOT PART OF AN ORDINARY MOMENT FRAME.
d) SINGLE PASS FILLET WELDS NOT EXCEEDING 5/16".

MATERIAL SHALL BE IDENTIFIED BY MARKING OR STAMPING THE I.D. NUMBER ON STRUCTURAL STEEL COMPONENTS BY LICENSED FABRICATION SHOP.

ALL BUTT, BEVEL, GROOVE, VEE, U AND J WELDS SHALL BE PREQUALIFIED COMPLETE PENETRATION WELDS.

FILLER MATERIAL FOR WELDING: SHIELDED METAL-ARC: AWS A5.1 OR 15.5 E70XX ELECTRODES.

HOLES IN STRUCTURAL STEEL SHALL NOT BE PERMITTED UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

STRUCTURAL STEEL SHALL BE THOROUGHLY CLEANED BY SCRAPING OR WIRE BRUSHING AND SHOP PRIMED.

ALL STEEL WORK, INCLUDING WELD AND CONNECTIONS EXCEPT WHERE ENTIRELY ENCASED IN CONCRETE SHALL BE GIVEN ONE COAT OF ACCEPTABLE METAL PROTECTION WELL WORKED INTO JOINTS AND OPEN SPACES.

* OPTIONAL USE OF: FCAW PROCESS: E71T-8 FOR STRUCTURAL/REBAR (MEETS ALL CHARPY REQUIREMENTS)
E71T-11 FOR METAL DECKING

COLD-FORMED STEEL FRAMING:
STRUCTURAL LIGHT GAUGE STEEL FRAMING AND ACCESSORIES SHALL BE FABRICATED IN ACCORDANCE WITH ASTM A-1011/A GRADE AS LISTED BELOW, SEE PLAN FOR MINIMUM YIELD.
MATERIAL THICKNESS 0.060" OR LESS: ASTM A-1011/A GRADE 33 (UNO)
MATERIAL THICKNESS 0.060" OR GREATER: ASTM A-1011/A GRADE 50

SHEET STEEL DESIGNATION (GAUGE)	MINIMUM DELIVERED THICKNESS (INCHES)
26	0.017
22	0.029
20	0.034
18	0.046
16	0.057
14	0.071
12	0.100
11	0.114
10	0.128

LIGHT GAUGE STEEL STUDS AND TRACKS SHALL COMPLY WITH ASTM A-1003 STRUCTURAL GRADE 33 TYPE H

ALL WELDING SHALL BE IN CONFORMANCE WITH AWS D1.3, "STRUCTURAL WELDING CODE - SHEET STEEL". QUALIFICATION OF WELDERS SHALL BE IN ACCORDANCE WITH AWS D1.1, CHAPTER 5, PART C, "WELDER QUALIFICATIONS".

BOLTS, SCREWS, ETC. EXPOSED TO THE EXTERIOR SHALL BE GALVANIZED

MACHINE BOLTS USED SHALL CONFORM TO SPECIFICATIONS OF ASTM STANDARD A-307.

NTD:
(b) CJP GROOVE WELD NDT
ULTRASONIC TESTING SHALL BE PERFORMED ON 100 PERCENT OF CJP GROOVE WELDS IN MATERIALS 5/16 in. (8mm) THICK OR GREATER. ULTRASONIC TESTING IN MATERIALS LESS THAN 5/16 in. (8 mm) THICK IS NOT REQUIRED. MAGNETIC PARTICLE TESTING SHALL BE PERFORMED ON 25 PERCENT OF ALL BEAM-TO-COLUMN CJP GROOVE WELDS.

WOOD:

FRAMING: ALL FRAMING LUMBER SHALL BE GRADE MARKED BY AN APPROVED GRADING AGENCY AND SHALL BE OF THE FOLLOWING MINIMUM GRADES OR BETTER, PER WCLB RULES #16. MOISTURE CONTENT = 19% MAX.
PLATES AND BLOCKING - STANDARD GRADE OR BETTER
STUDS AND HEADER = HF #2, OR DF #2, OR BETTER

SHEATHING:
AMERICAN PLYWOOD ASSOCIATION PS 1-07. EACH SHEET SHALL BE GRADE MARKED BY THE AMERICAN PLYWOOD ASSOCIATION, AND SHALL CONFORM TO THE REQUIREMENTS OF STANDARD GRADE GROUP 1 OR BETTER GRADE STAMPED AND IDENTIFIED UNDER THE PROCEDURES AND QUALIFICATIONS SET FORTH BY PS 1-07.

1. PLYWOOD SUB FLOOR: 1 1/8" T&G UNBLOCKED PLYWOOD. PROVIDE SEAMLESS WOVEN POLYFLEX BOTTOM BOARD FOR MOISTURE PROTECTION
2. PLYWOOD ROOF DECK: APA RATED 3/4" T&G OSB OR EQUIVALENT RATED SHEATHING WITH APPROVAL FROM DSA
3. EXTERIOR WALL SIDING:
   i. STANDARD: 5/8" DURATEMP OR 5/8" SMART PANEL
   ii. OPTIONAL: 5/8" MDO
   iii. OPTIONAL: 1/2" OSB OR CDX PLYWOOD FOR PLASTER/STUCCO FINISH
4. EXTERIOR WALL SIDING ATTACHMENT:
   FASTENERS USED FOR THE ATTACHMENT OF EXTERIOR WALL COVERINGS SHALL BE HOT-DIPPED GALVANIZED, MECHANICALLY DEPOSITED ZINC-COATED, STAINLESS STEEL, SILICON BRONZE OR COPPER PER CBC SECTION 2304.10.1.1

TREATED WOOD:

ALL WOOD INCLUDING WOOD SHEATHING IN CONTACT WITH CONCRETE OR MASONRY AND LOCATED LESS THAN 18" FROM EXPOSED EARTH SHALL BE "PRESERVATIVE TREATED" OR SHALL BE "NATURALLY DURABLE" MATERIAL PER (CBC SECTION 2304.12.1.2).

1. ALL ROUGH LUMBER SHALL BE DF #2 OR BETTER.
2. WOOD FASTENERS OTHER THAN SCREWS.
   ALL POWER DRIVEN FASTENERS SHALL BE HILTI FASTENERS ICC# ESR-1663, AND RAMSET POWER DRIVEN FASTENERS (ICC# ESR-1799), OR SIMPSON POWER DRIVEN FASTENERS ICC #ESR-2138, OR OTHER EQUIVALENT PRODUCTS WITH ICC REPORTS AND APPROVED BY DSA.
3. FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER PER CBC 2304.10.5.1

CONTINUOUS INSPECTION:

PROJECT INSPECTOR TO PROVIDE CONTINUOUS FIELD INSPECTION.

IN-PLANT INSPECTOR SHALL PROVIDE CONTINUOUS INSPECTION IN-PLANT

METALS, STRUCTURAL, AND MISC. STEEL:

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, AND SERVICES REQUIRED FOR STRUCTURES AND MISCELLANEOUS STEEL AS SPECIFIED AND INDICATED IN THE DRAWINGS.

STEEL SHEETS: STEEL SHEETS FOR LIGHT GAUGE STEEL SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-1011/A, GRADE 40 U.O.N. SHEET METAL GRAVEL STOPS AND FLASHINGS SHALL BE MINIMUM 0.030 THICKNESS AND SHALL BE GALVANIZED.

ERECTION:
ALL STRUCTURAL STEEL SHALL BE ERECTED TRUE, STRAIGHT, PLUMB AND TO ITS DESIGNED LOCATION. TEMPORARY BRACING OR SHORING SHALL BE INSTALLED WHEREVER NECESSARY TO TAKE CARE OF LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING ERECTION EQUIPMENT AND THE OPERATION OF SAME. CONNECTIONS SHALL BE ADEQUATE TO WITHSTAND STRESSES TO WHICH THEY ARE NORMALLY SUBJECTED. CONNECTIONS SHALL BE STEEL, EXCEPT AS OTHERWISE NOTED. FIELD CONNECTIONS SHALL BE BOLTED OR WELDED AS SHOWN ON THE DRAWINGS.

SHOP PAINT:

* EXPOSED STEEL COATED WITH ONE SHOP COAT OF PRIMER.
* NON-EXPOSED STEEL COATED WITH ON SHOP COAT OF PRIMER.
* ALL SURFACES THOROUGHLY CLEANED BY EFFECTIVE MEANS PRIOR TO APPLICATION OF SHOP COATS.

POWER DRIVEN FASTENERS FOR SILL PLATE, WOOD NAILERS TO STEEL COLUMNS, AND SHEET METAL TO STRUCTURAL STEEL:

ALL POWER DRIVEN FASTENERS SHALL BE HILTI FASTENERS ICC# ESR-1663, OR RAMSET POWER DRIVEN FASTENERS (ICC# ESR-1799), OR SIMPSON POWER DRIVEN FASTENERS ICC #ESR-2138, OR OTHER EQUIVALENT PRODUCTS WITH ICC REPORTS AND APPROVED BY DSA.

WOOD ROUGH CARPENTRY:

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS AND STEPS NECESSARY TO PROTECT ALL COMPLETED, SEMI-COMPLETED, AND TEMPORARY WORK FROM COMMENCEMENT OF PROJECT TO COMPLETE, SEMI-COMPLETION OF SAME ANY PORTION OF THE WORK DAMAGED OR DISFIGURED SHALL BE SATISFACTORILY REPAIRED OR REPLACED AND THE WORK AS A WHOLE LEFT WITHOUT BLEMISH AT FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL NECESSARY MEASUREMENTS AT THE BUILDING, THE ACCURATE FITTING OF ALL WORK AND PROPER ACCOMMODATION OF OTHER TRADES.

DESCRIPTION OF WORK:
THIS SECTION INCLUDES FURNISHING OF ALL LABOR, MATERIAL, TOOLS, EQUIPMENT, TRANSPORTATION, AND FACILITIES TO COMPLETE FLOOR AND ROOF JOISTS, BEAMS AND ROUGH CARPENTRY AS INDICATED IN THE DRAWINGS AND AS SPECIFIED HEREIN.

WORKMANSHIP:
ALL WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE BEST PRACTICE, SHALL BE ACCURATE AS TO MEASUREMENT AND SHALL BE CAREFULLY DONE. PLYWOOD SHEATHING SUBFLOOR SHALL PROVIDE A SMOOTH UNIFORM SURFACE CAPABLE PROPERLY ACCEPTING A CARPET FINISH.

ROOF DIAPHRAGM:
3/4" T&G APA RATED SHEATHING - STRUCTURE 1 EXPOSURE 1 SPAN RATING 48/24 MIN.
FASTEN TO ROOF JOISTS AND BEAMS W/ #10 X 1 1/4" LG. SELF DRILLING SELF-TAPPING PHILLIPS FLAT-HEAD ZINC COATED TEKS SCREWS AT 6" OC AT BOUNDARIES, 6" OC AT EDGES, AND 6" OC FIELD SCREWS MIN. 3/8" EDGE DISTANCE FOR FASTENERS TO PLYWOOD EDGE PER CBC SECTION 2306.2.

FLOOR DIAPHRAGM:
1 1/8" PLYWOOD - STURD-I-FLOOR
EXTERIOR - TONGUE AND GROOVE EDGES
SPAN RATING: 48"
FASTEN TO FLOOR JOISTS AND BEAMS W/ #10 - 24 X 1 3/4 LG. SELF-DRILLING, SELF-TAPPING PHILLIPS FLAT-HEAD ZINC COATED TEKS SCREWS MIN. 3/8" EDGE DISTANCE FOR FASTENERS TO PLYWOOD EDGE PER CBC SECTION 2306.2.

@ 150-PSF ((FULLY BLOCKED))
FASTEN TO SHEET METAL SUPPORTS w/ #10 - 24 x 1 3/4 LG. SELF-DRILLING, SELF-TAPPING PHILLIPS FLAT-HEAD ZINC COATED TEKS SCREWS AT 4" O.C. BOUNDARIES + CONT. PANEL EDGES, 6" O.C. @ ALL OTHER PANEL EDGES 12" O.C. INTERMEDIATE.
ALL EDGES OF ALL PANELS SHALL BE ATTACHED TO FRAMING MEMBERS OR BLOCKING. WHERE USED AS BLOCKING, FLAT STRAPPING SHALL BE A MINIMUM THICKNESS OF 33 MILS WITH A MINIMUM WIDTH OF 1.5 INCHES. SCREWS SHALL BE INSTALLED THROUGH THE SHEATHING TO THE BLOCKING.

CONCRETE FLOOR DATA: LIGHTWEIGHT CONCRETE FLOOR
STRENGTH: 3000 PSI MIN
TYPE: I OR II
DENSITY: 110 PCF - MAX

DIMENSION LUMBER ATTACHMENT TO STEEL FRAMING:
2 X STUDS AT CORNER STEEL COLUMNS (NAILING STUD)
USE: #10 - 24 X 2 1/2" LG. SELF-DRILLING SELF-TAPPING PHILLIPS FLAT-HEAD WITH WASHER ZINC COATED TEK SCREWS AT 24" O.C.

REFERENCE STANDARDS NOTES:

INTENT OF DRAWINGS AND SPECIFICATIONS IS TO CONSTRUCT THE BUILDING IN ACCORDANCE WITH THE STATE OF CALIFORNIA, CALIFORNIA CODE OF REGULATIONS, PART 1, 2, 3, 4, 5, 6, 9, AND 12, SUB-CHAPTER 1. CALIFORNIA BUILDING CODE, 2022 EDITION, MANUAL OF STEEL CONSTRUCTION, (AISC) 15TH EDITION, AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE, AWS D1.1, AMERICAN INSTITUTE OF TIMBER CONSTRUCTION STANDARD, (AITC) 109 ARCHITECTURAL SHEET METAL MANUAL, AIA FILE NO. 12-L (SMACNA) LATEST ADOPTED EDITION UNLESS OTHERWISE NOTED.

WORKMANSHIP:
WORKMANSHIP AND MATERIALS SHALL BE SUCH THAT BUILDING WILL BE WEATHERTIGHT AND WATERTIGHT.

INSPECTIONS:
A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.

CHANGES:
CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR A CONSTRUCTION CHANGE DOCUMENT APPROVED BY THE DIVISION OF THE STATE ARCHITECT AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.

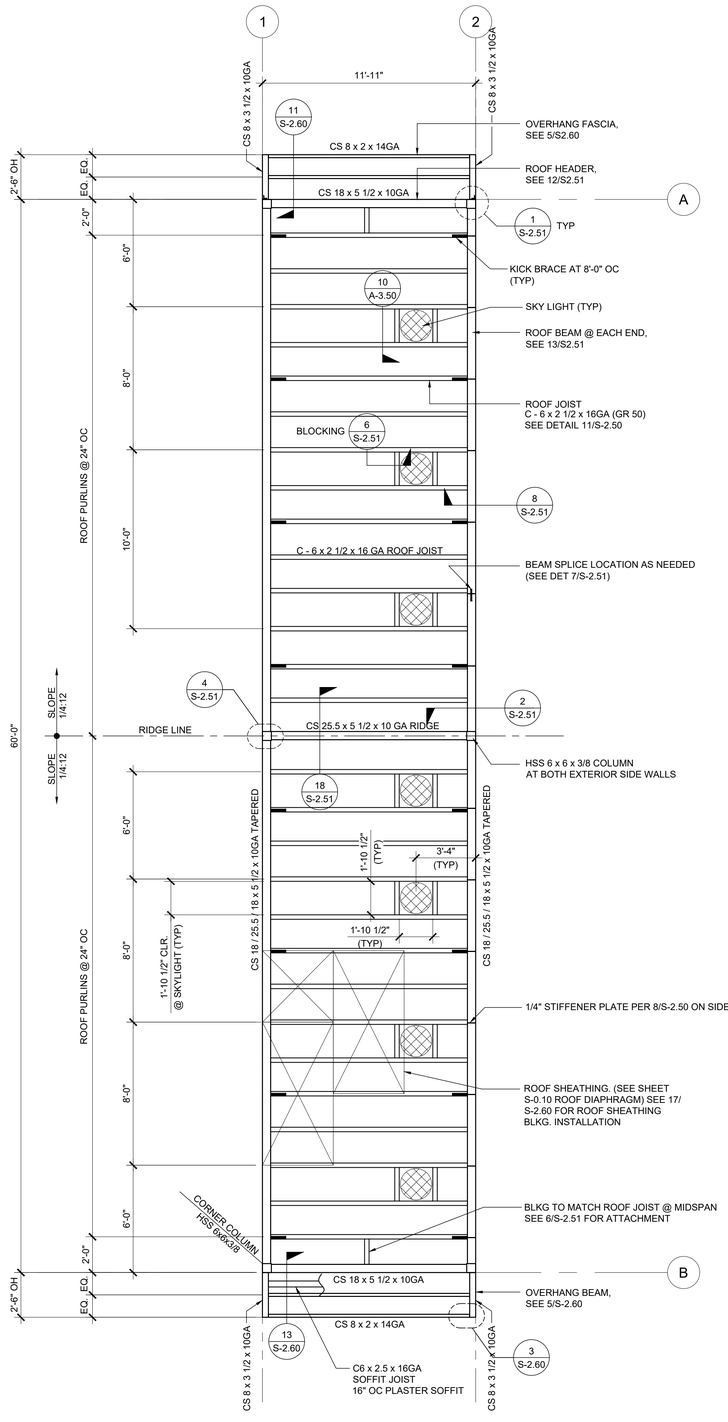
NAILING NOTES:
1. ALL NAILS SHALL BE COMMON UNLESS OTHERWISE NOTED
2. MACHINE APPLIED 16d FASTENERS SHALL HAVE AN EMBEDMENT OF NOT LESS THAN 1 1/2" INTO THE SECOND MEMBER, AND SHALL BE NOT LESS THAN 3" IN OVERALL LENGTH. THE ABOVE NAILS SHALL ALSO BE ACCEPTABLE FOR HAND NAILING, PROVIDED THE REQUIRED EMBEDMENT IS MAINTAINED.

CONNECTION AND FASTENERS:
ALL CONNECTIONS AND FASTENERS AS STATED ON THESE DRAWINGS CAN BE SUBSTITUTED BY AN EQUIVALENT PRODUCT WITH ICC REPORTS AND APPROVAL BY DSA.

CONNECTION OF LAG SCREWS:
AS REQUIRED PER ANSI / AF&PA NDS-2012, LAG SCREWS MUST BE INSTALLED INTO A PRE-DRILLED PILOT HOLE WITH A STANDARD WASHER AND TURNED WITH A WRENCH. DO NOT DRIVE IN WITH A HAMMER. OVER-TORQUING CAN SIGNIFICANTLY REDUCE THE LATERAL RESISTANCE OF THE LAG SCREW AND SHOULD BE AVOIDED.

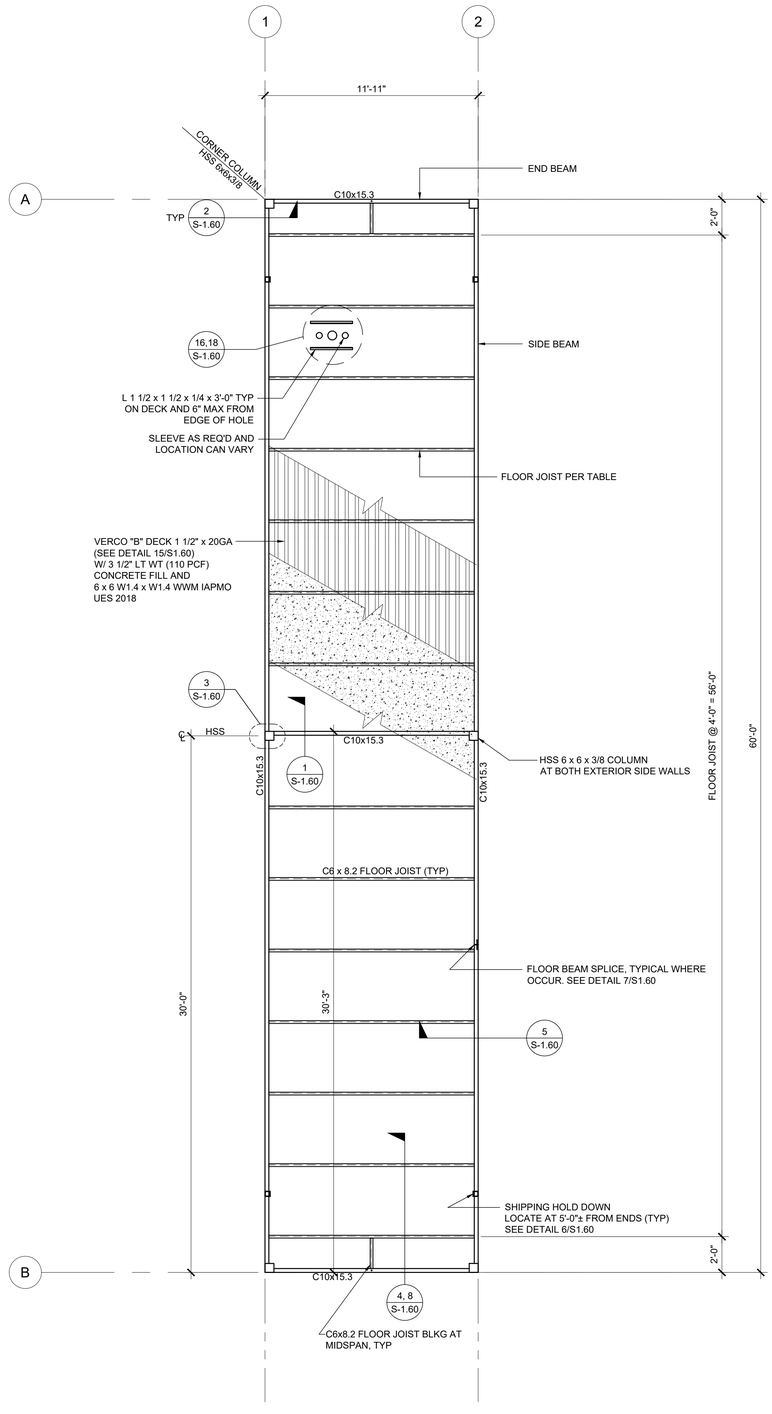
FASTENING SCHEDULE (2022 CBC TABLE 2304.10.1)

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
Roof		
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each end, toenail
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 1/2" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail
	2-16 d common (3 1/2" × 0.162") 3-3" × 0.131" nails 3-3" 14 gage staples	End nail
Flat blocking to truss and web filler	16d common (3 1/2" × 0.162") @ 6" o.c. 3" × 0.131" nails @ 6" o.c. 3" × 14 gage staples @ 6" o.c	Face nail
2. Ceiling joists to top plate	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.7.3.1, Table 2308.7.3.1)	3-16d common (3 1/2" × 0.162"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4. Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)	Per Table 2308.7.3.1	Face nail
5. Collar tie to rafter	3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6. Rafter or roof truss to top plate (See Section 2308.7.5, Table 2308.7.5)	3-10 common (3" × 0.148"); or 3-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail[c]
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown; or	End nail
	3-10d common (3" × 0.148"); or 4-16d box (31/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail
Wall		
8. Stud to stud (not at braced wall panels)	16d common (3 1/2" × 0.162");	24" o.c. face nail
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	16" o.c. face nail
9. Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	16d box (3 1/2" × 0.135"); or	12" o.c. face nail
	3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	12" o.c. face nail
10. Built-up header (2" to 2" header)	16d common (3 1/2" × 0.162"); or	16" o.c. each edge, face nail
	16d box (3 1/2" × 0.135")	12" o.c. each edge, face nail
11. Continuous header to stud	4-8d common (2 1/2" × 0.131"); or 4-10d box (3" × 0.128")	Toenail
12. Top plate to top plate	16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
13. Top plate to top plate, at end joints	8-16d common (3 1/2" × 0.162"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14. Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	16d box (3 1/2" × 0.135"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2" × 0.162"); or 3-16d box (3 1/2" × 0.135"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16. Stud to top or bottom plate	4-8d common(2 1/2" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown; or	Toenail
	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17. Top plates, laps at corners and intersections	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
18. 1" brace to each stud and plate	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail
19. 1" × 6" sheathing to each bearing	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128")	Face nail
20. 1" × 8" and wider sheathing to each bearing	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128")	Face nail
Floor		
21. Joist to sill, top plate, or girder	3-8d common (2 1/2" × 0.131"); or floor 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Toenail
22. Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common (2 1/2" × 0.131"); or 10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	6" o.c., toenail
23. 1" × 6" subfloor or less to each joist	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128")	Face nail
24. 2" subfloor to joist or girder	2-16d common (3 1/2" × 0.162")	Face nail
25. 2" planks (plank & beam — floor & roof)	2-16d common (3 1/2" × 0.162")	Each bearing, face nail
26. Built-up girders and beams, 2" lumber layers	20d common (4" × 0.192")	32" o.c., face nail at top and bottom staggered on opposite sides
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and



ROOF FRAMING PLAN

SCALE: 1/4" = 1' - 0" | 2



NORTH

FLOOR FRAMING PLAN

SCALE: 1/4" = 1' - 0" | 1

NOTES

1. NOTE USED.

ROOF DIAPHRAGM SCHEDULE

	FASTENER REQUIREMENTS
BLOCKED DIAPHRAGM	TEK SCREWS @ 6" OC B.N., 6" OC E.N., 6" OC F.N. @ BLOCKED DIAPHRAGM. (SEE S-0.1 ROOF DIAPHRAGM FOR ADDITIONAL INFORMATION)

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FLOOR FRAMING PLAN & ROOF FRAMING PLAN

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

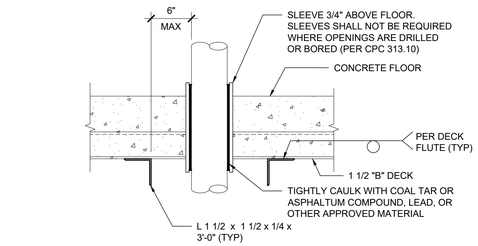
MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
24975
CIVIL
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES	
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

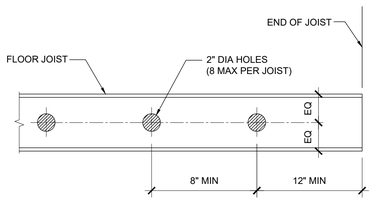
S-1.01



REF: S-1.01

FLOOR PENETRATION

SCALE : 3" = 1'-0" | 16

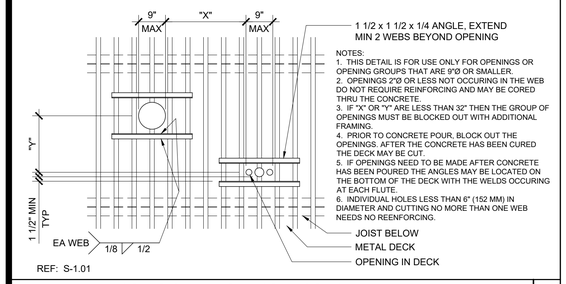


NOTE:
HOLES NOT ALLOWED IN C10x
PERIMETER FLOOR FRAME

REF: S-1.01

FLOOR JOIST HOLES (OPTIONAL)

SCALE : 1/8" = 1'-0" | 17



NOTES:
1. THIS DETAIL IS FOR USE ONLY FOR OPENINGS OR OPENING GROUPS THAT ARE 9"Ø OR SMALLER.
2. OPENINGS 2"Ø OR LESS NOT OCCURING IN THE WEB DO NOT REQUIRE REINFORCING AND MAY BE CORED THRU THE CONCRETE.
3. IF "X" OR "Y" ARE LESS THAN 32" THEN THE GROUP OF OPENINGS MUST BE BLOCKED OUT WITH ADDITIONAL FRAMING.
4. PRIOR TO CONCRETE POUR, BLOCK OUT THE OPENINGS. AFTER THE CONCRETE HAS BEEN CURED THE DECK MAY BE CUT.
5. IF OPENINGS NEED TO BE MADE AFTER CONCRETE HAS BEEN POURED THE ANGLES MAY BE LOCATED ON THE BOTTOM OF THE DECK WITH THE WELDS OCCURING AT EACH FLUTE.
6. INDIVIDUAL HOLES LESS THAN 6" (152 MM) IN DIAMETER AND CUTTING NO MORE THAN ONE WEB NEEDS NO REENFORCING.

REF: S-1.01

PENETRATIONS IN DECK (OPTION)

SCALE : 1/2"=1'-0" | 18

	19
	20

	11
	12
	13
2 3/8" 3 5/8" 1 1/2" 3/4" 1 3/4" 36"	14
	15

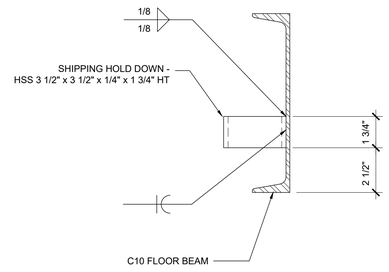
TYPE B-36 (INTERLOCK)

DECK PROPERTIES:
TYPE: B
THICKNESS (IN): 0.036"
I (IN⁴): 0.22
POSITIVE (IN³): 0.235
NEGATIVE (IN³): 0.246

REF: S-1.01

FLOOR DECK PROPERTY

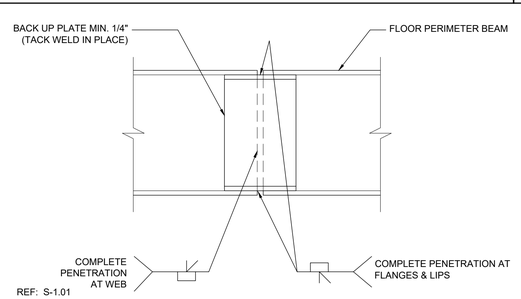
SCALE : 1 1/2" = 1'-0" | 15



REF: S-1.01

SHIPPING HOLD DOWN DETAIL

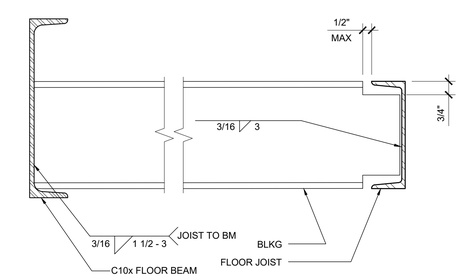
SCALE : 3"=1'-0" | 6



REF: S-1.01

FLOOR BEAM SPLICE

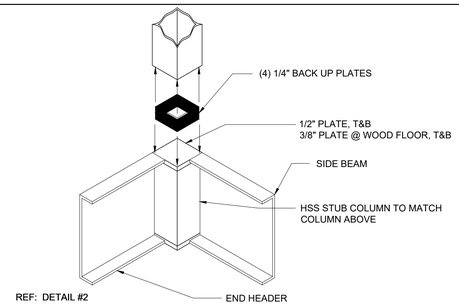
SCALE : 3" = 1'-0" | 7



REF: S-1.01

BLOCKING TO JOIST

SCALE : 3"=1'-0" | 8



REF: DETAIL #2

COLUMN CONNECTION AT FLOOR

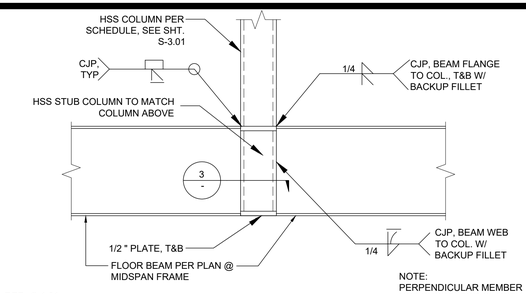
SCALE : NTS | 10

	1
	2
	3
	4
	5

REF: S-1.01

FLOOR BEAM TO COLUMN CONNECTION

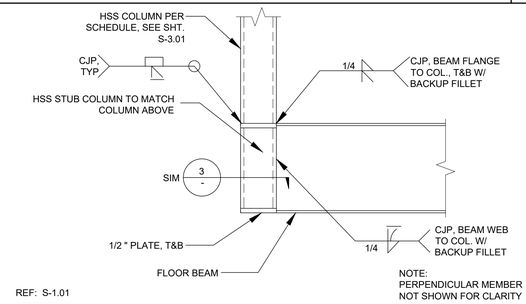
SCALE : 1 1/2" = 1'-0" | 1



REF: S-1.01

FLOOR BEAM TO COLUMN CONNECTION

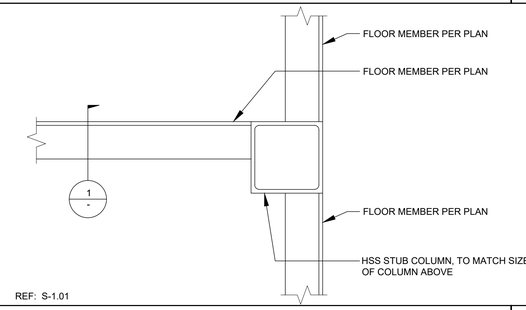
SCALE : 1 1/2" = 1'-0" | 2



REF: S-1.01

FLOOR BEAM TO COLUMN CONNECTION

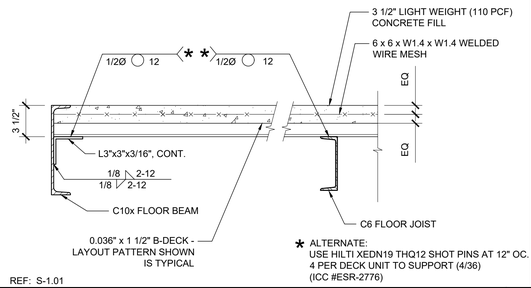
SCALE : 1 1/2" = 1'-0" | 3



REF: S-1.01

COLUMN CONNECTION

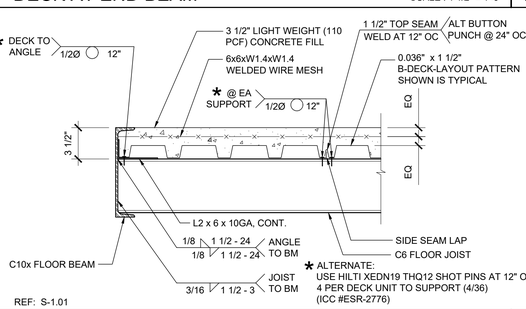
SCALE : 3" = 1'-0" | 3



REF: S-1.01

DECK AT END BEAM

SCALE : 1 1/2" = 1'-0" | 4



REF: S-1.01

JOIST TO SIDE BEAM

SCALE : 1 1/2" = 1'-0" | 5

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DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FLOOR FRAMING DETAIL
CONCRETE FLOOR

REVISIONS

1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

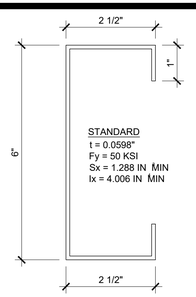
REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
24775
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

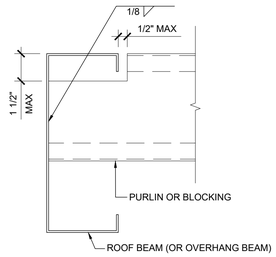
SHEET NUMBER

S-1.60



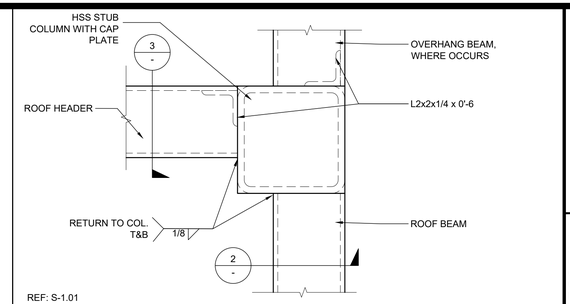
REF: S-1.01

16 ROOF PURLIN — SCALE : 6"=1'-0"



REF: S-1.01

11 TYPICAL PURLIN CONNECTION DETAIL — SCALE : 3" = 1'-0"



REF: S-1.01

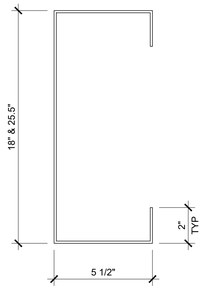
6 COLUMN AT ROOF - PLAN — SCALE : 3" = 1'-0"

1

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DATE: 07/09/2025

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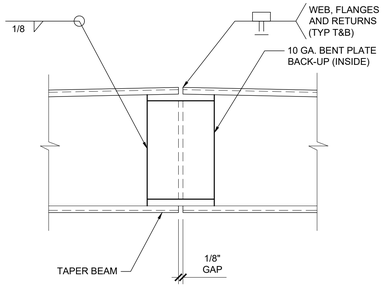
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18"	25 1/2"
t = 0.128	t = 0.128
Fy = 50 KSI	Fy = 50 KSI
Sx = 21.990 IN^3	Sx = 35.675 IN^3
Ix = 197.910 IN^4	Ix = 454.860 IN^4

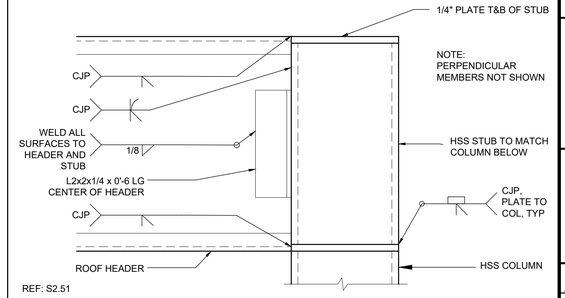
REF: S-1.01

17 ROOF HEADER — SCALE : NTS



REF: S-1.01

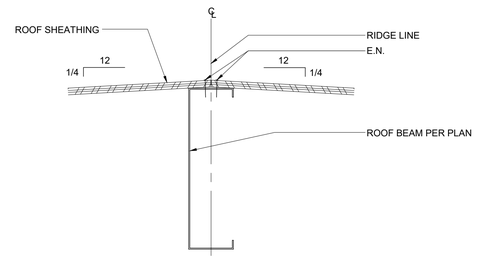
12 BEAM SPLICE — SCALE: 3" = 1'-0"



REF: S2.51

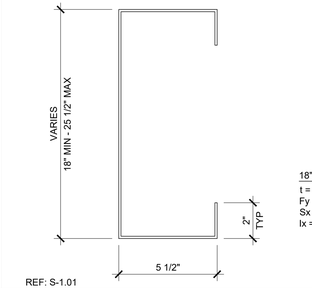
7 COLUMN AT ROOF - SECTION — SCALE : 3" = 1'-0"

2



REF: S-1.01

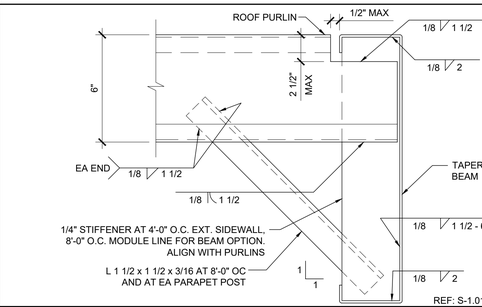
18 ROOF RIDGE — SCALE : 1 1/2"=1'-0"



18"	25 1/2"
t = 0.128	t = 0.128
Fy = 50 KSI	Fy = 50 KSI
Sx = 21.990 IN^3	Sx = 35.675 IN^3
Ix = 197.910 IN^4	Ix = 454.860 IN^4

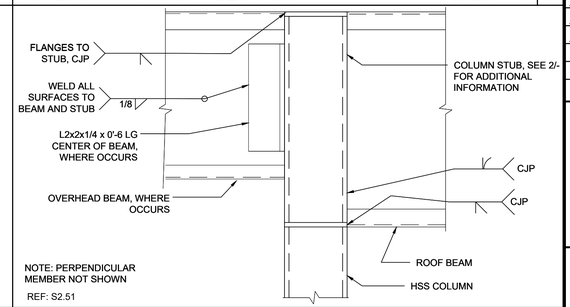
REF: S-1.01

13 SIDE BEAM — SCALE : NTS



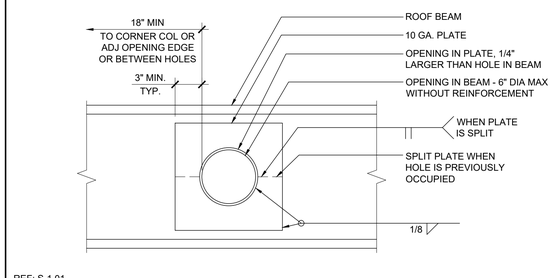
REF: S-1.01

8 PURLIN TO ROOF BEAM @ STIFFENER — SCALE : 3"=1'-0"



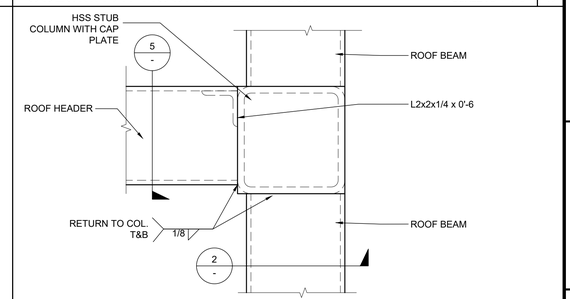
REF: S2.51

3 COLUMN AT ROOF OVERHANG — SCALE : 3" = 1'-0"

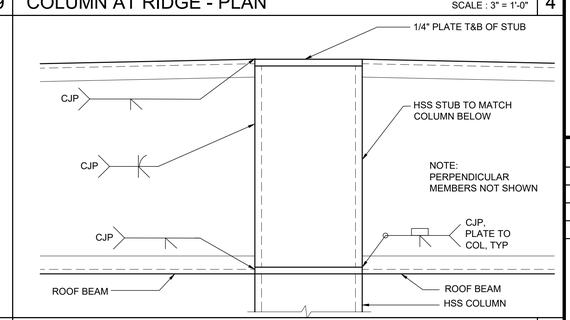


REF: S-1.01

14 SIDEWALL BEAM PENETRATION — SCALE : 1 1/2"=1'-0"



4 COLUMN AT RIDGE - PLAN — SCALE : 3" = 1'-0"



9

19

20

15

10

5 COLUMN AT RIDGE - SECTION — SCALE : 3" = 1'-0"

PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ROOF FRAMING DETAILS
DUAL SLOPE

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

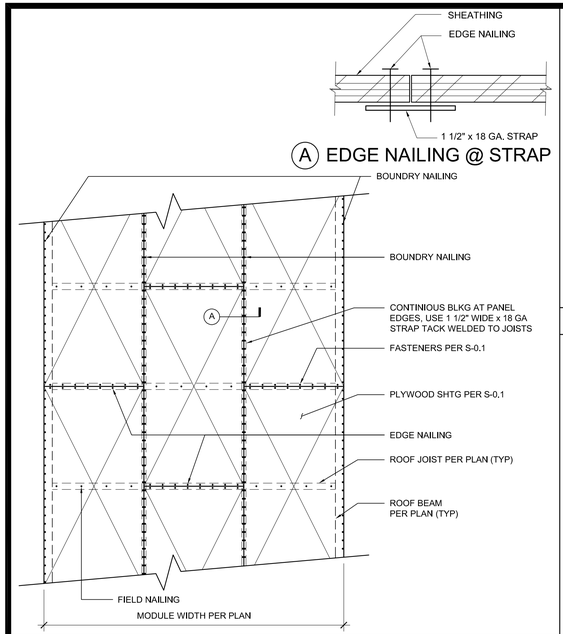
REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
24775
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

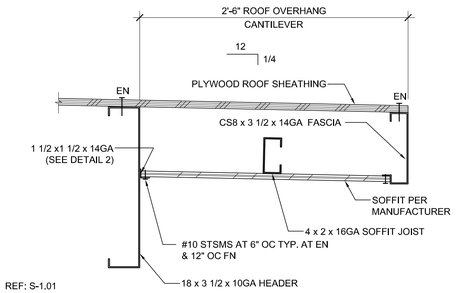
SHEET NUMBER

S-2.51



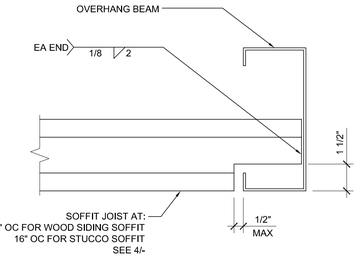
A EDGE NAILING @ STRAP

ROOF DIAPHRAGM BLOCKING SCALE: N.T.S. 17



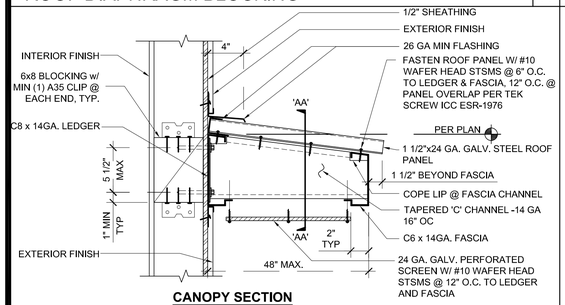
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OVERHANG SECTION SCALE : 1 1/2" = 1'-0" 11

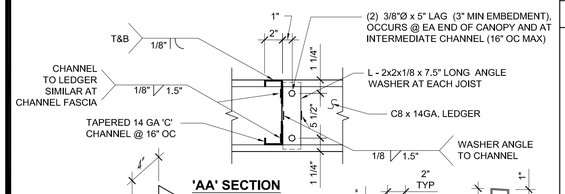


REF: S-1.01

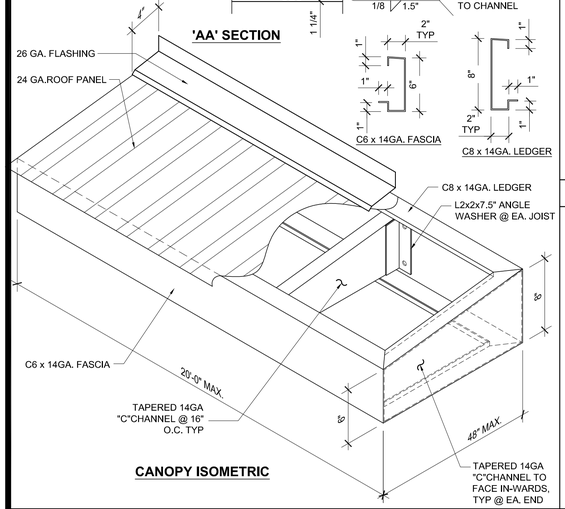
SOFFIT JOIST TO OVERHANG BEAM SCALE : 3"=1'-0" 1



CANOPY SECTION



'AA' SECTION



CANOPY ISOMETRIC

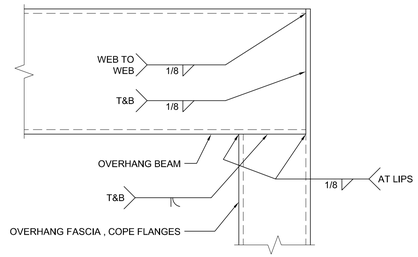
CANOPY SCALE : 1 1/2" = 1'-0" 20

13

14

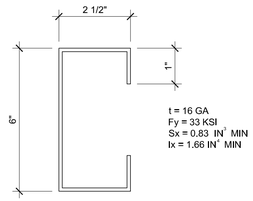
15

12



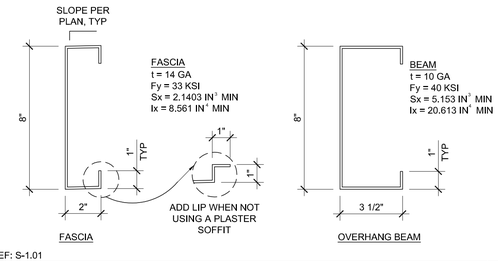
REF: S-1.01

OVERHANG FASCIA TO BEAM CONNECTION SCALE : 6"=1'-0" 3



REF: S-1.01

SOFFIT JOIST SCALE : 6"=1'-0" 4



REF: S-1.01

OVERHANG FASCIA & BEAM SCALE : 3"=1'-0" 5

6

7

8

9

10

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ROOF FRAMING DETAILS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

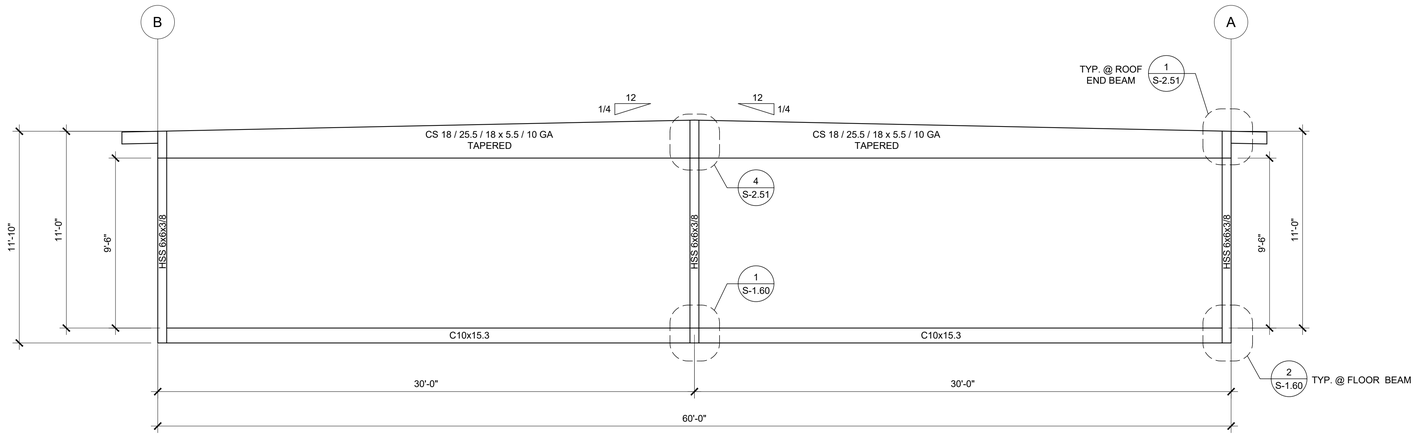
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 2475 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

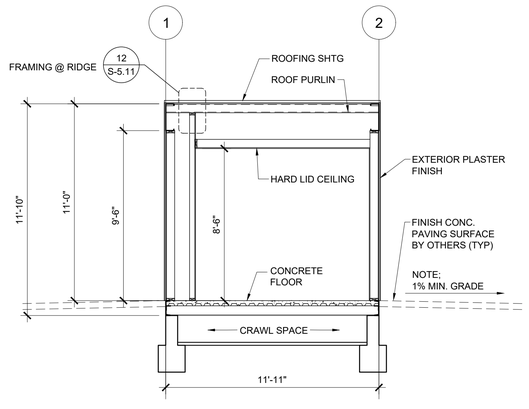
SHEET NUMBER

S-2.60



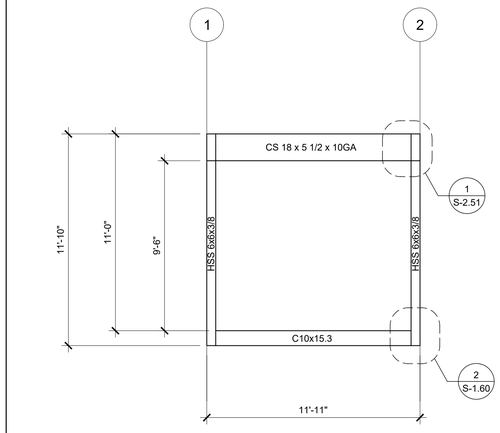
SIDEWALL FRAME ELEVATION

SCALE: 1/4" = 1' - 0" | 1



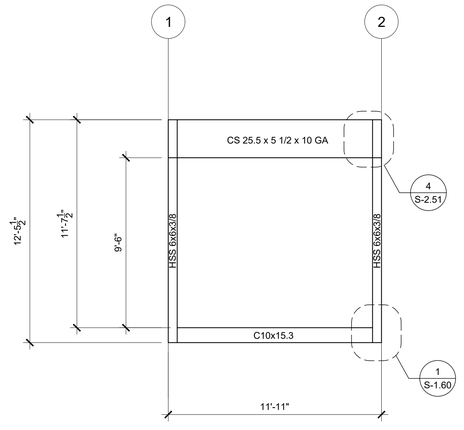
TRANSVERSE CROSS SECTION

SCALE: 1/4" = 1' - 0" | 5



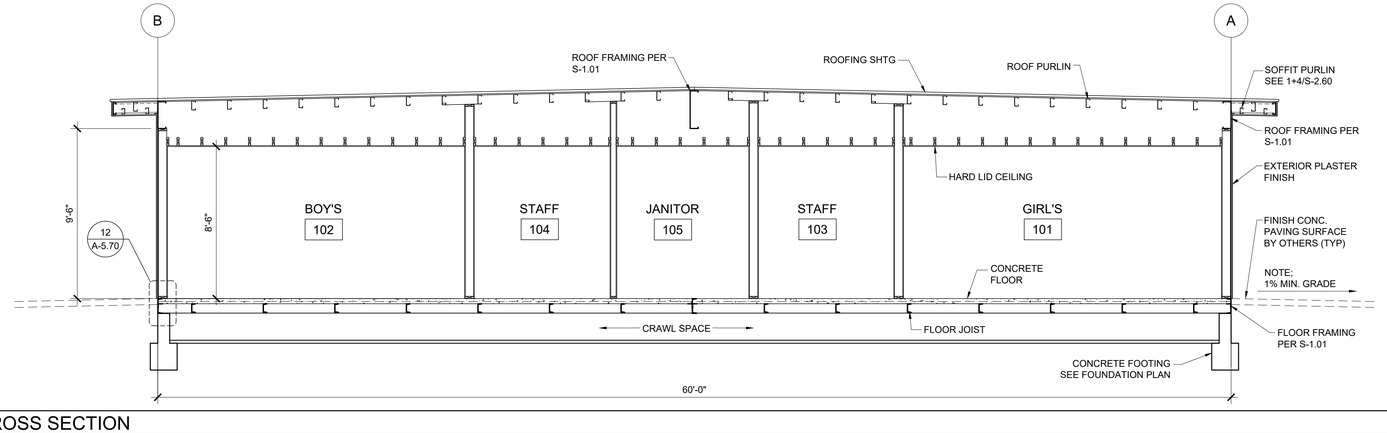
ENDWALL FRAME ELEVATION

SCALE: 1/4" = 1' - 0" | 4



RIDGE FRAME ELEVATION

SCALE: 1/4" = 1' - 0" | 2



LONGITUDINAL CROSS SECTION

SCALE: 1/4" = 1' - 0" | 3

NOTES

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FRAME ELEVATIONS AND CROSS SECTIONS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

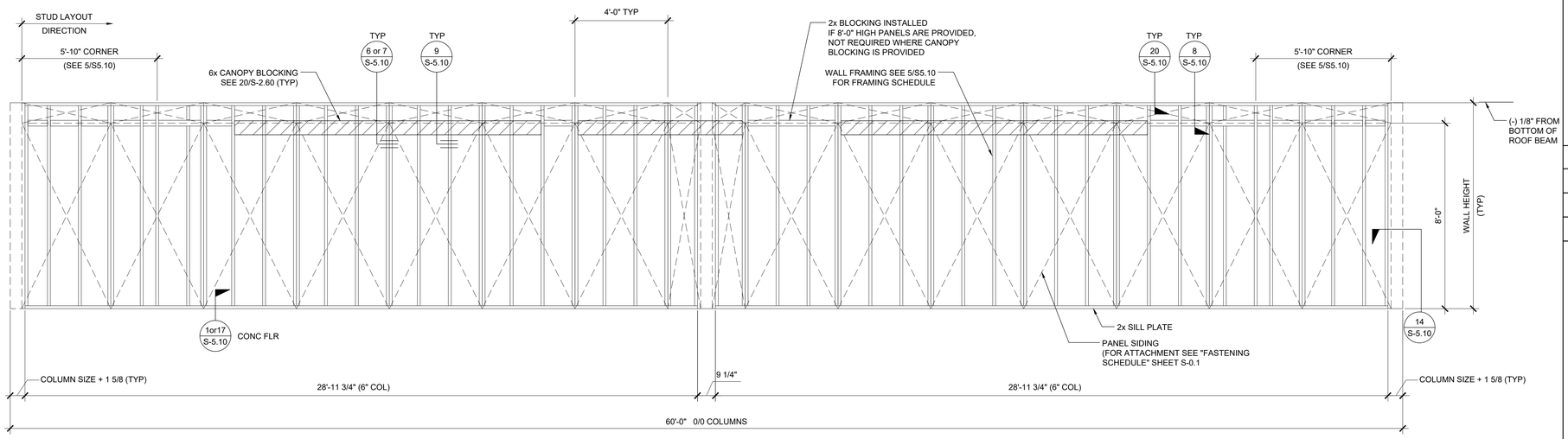
MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
24776
STRUCTURAL
STATE OF CALIFORNIA

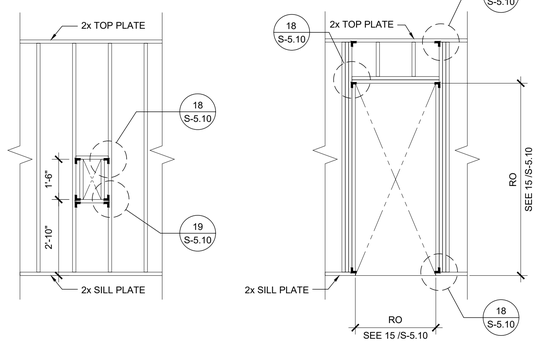
SILVER CREEK INDUSTRIES	
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

S-3.01

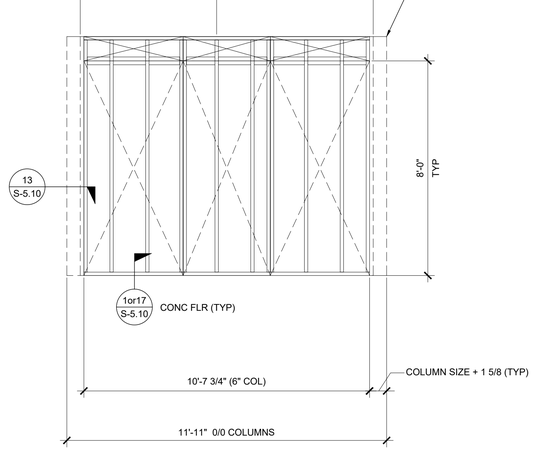


TYPICAL SIDE WALL



FIRE EXTINGUISHER CABINET BLOCKOUT

TYPICAL DOOR



TYPICAL END WALL

NOTES

WALL HEIGHT SCHEDULE

COLUMN HEIGHT		9'-6"		
WALL HEIGHT		9'-5 7/8"		

NOTE:
ALL EXTERIOR WALL FRAMING SHALL BE 2x6 (MIN). SEE 20/S-5.11.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

FRAMING ELEVATIONS
WOOD STUDS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

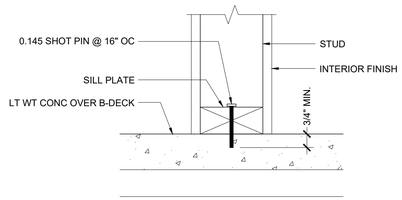
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

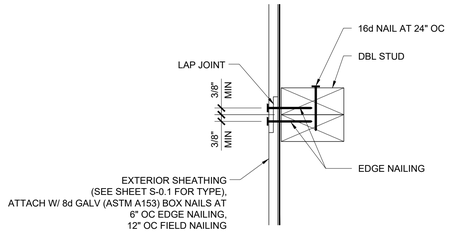
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

S-5.00

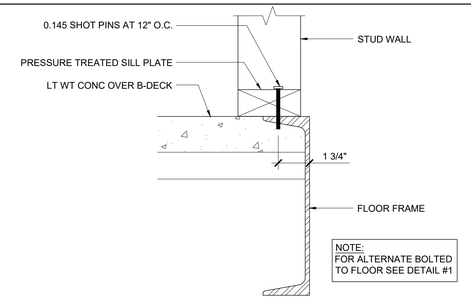


PARTITION CONNECTION AT CONC FLOOR SCALE : 3"=1'-0" | 16

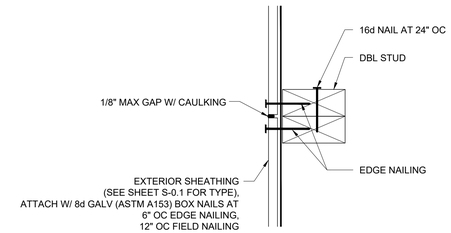


VERTICAL SHEATHING LAP JOINT SCALE : 3"=1'-0" | 11

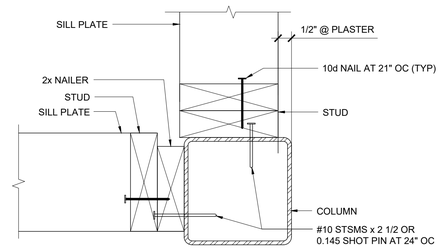
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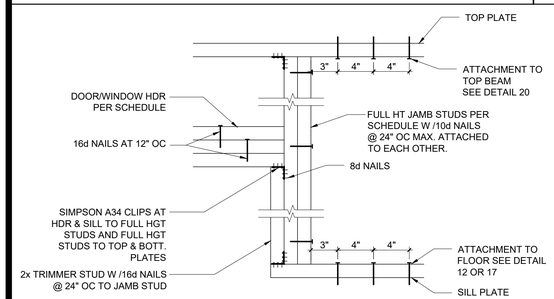
WALL SILL AT CONCRETE FLOOR SCALE : 3"=1'-0" | 17



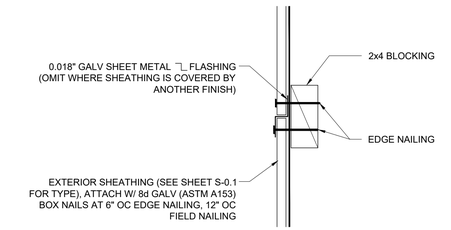
VERTICAL SHEATHING BUTT JOINT SCALE : 3"=1'-0" | 7



COLUMN AT ENDWALL (2x6) SCALE : 3"=1'-0" | 2

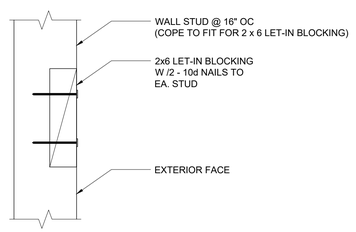


DOOR/WINDOW HEADER AND JAMB SCALE : 1 1/2"=1'-0" | 18

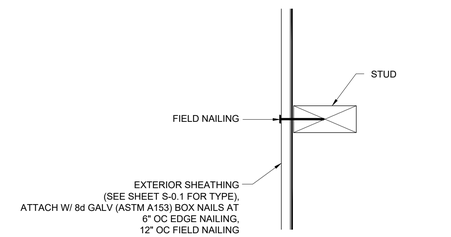


HORIZONTAL SHEATHING JOINT SCALE : 3"=1'-0" | 8

19

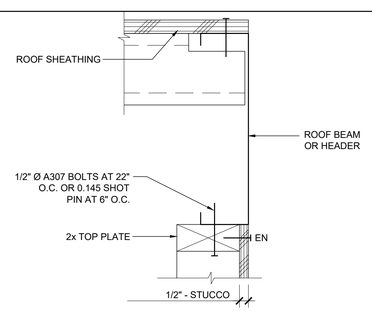


LET-IN BLOCK ATTACHMENT SCALE : 3"=1'-0" | 14



SECTION AT SHEATHING TO STUD ATTACHMENT SCALE : 3"=1'-0" | 9

4



TOP PLATE AT ROOF BEAM SCALE : 3" = 1'-0" | 20

NOT USED | 15

10

5

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

WALL FRAMING DETAILS
WOOD STUDS

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

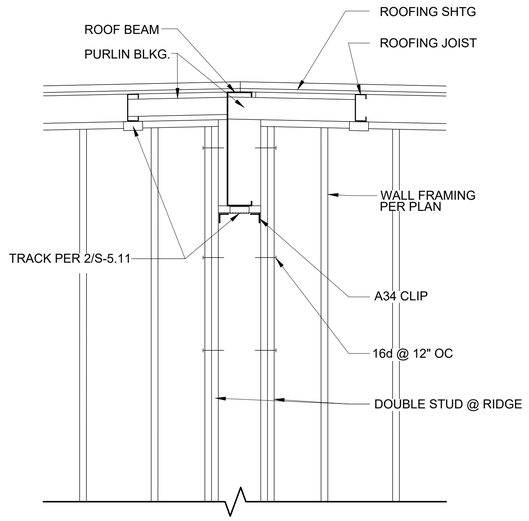
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24975 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

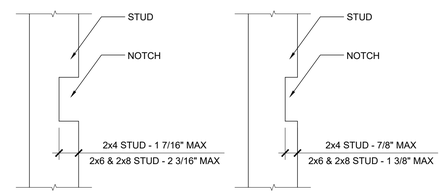
PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

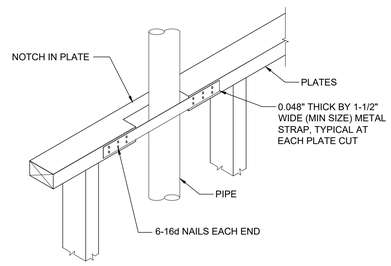
SHEET NUMBER

S-5.10

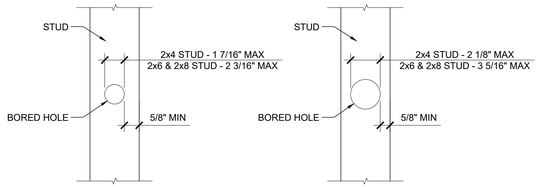


14 WALL FRAMING @ RIDGE SCALE: 3/4" = 1'-0"

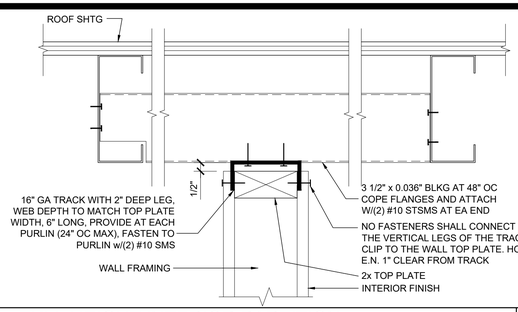




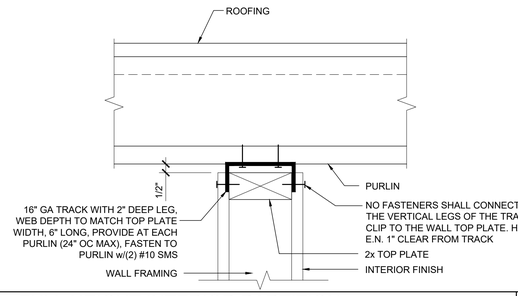
12 CUTTING AND NOTCHING SCALE : 1 1/2" = 1'-0"



8 BORED HOLES SCALE : 1 1/2" = 1'-0"



FULL HEIGHT INTERIOR PARTITION SCALE : 3" = 1'-0" 1



FULL HEIGHT INTERIOR PARTITION SCALE : 3" = 1'-0" 2

COLUMN HEIGHT	OPENING SIZE	EXT FINISH	HEADER				SILL				FULL HEIGHT KING STUD			
			NUMBER	SIZE	LUMBER	TYPE	NUMBER	SIZE	LUMBER	TYPE	NUMBER	SIZE	LUMBER	TYPE
UP TO 10'-6"	3070	ANY	(1)	2X6	HF	#2		N/A			(1)	2X6	HF	#2
		ANY (OPT)	(1)	2X6	DF	#2		N/A			(1)	2X6	DF	#2
	4070	ANY	(1)	2X6	HF	#2		N/A			(1)	2X6	HF	#2
		ANY (OPT)	(1)	2X6	DF	#2		N/A			(1)	2X6	DF	#2
	6040	ANY	(1)	2X6	HF	#2	(1)	2X6	HF	#2	(2)	2X6	HF	#2
		ANY (OPT)	(1)	2X6	DF	#2	(1)	2X6	DF	#2	(2)	2X6	DF	#2
	8040	ANY	(1)	2X6	HF	#2	(1)	2X6	HF	#2	(2)	2X6	HF	#2
		ANY (OPT)	(1)	2X6	DF	#2	(1)	2X6	DF	#2	(2)	2X6	DF	#2

2x6 OPENING STUDS SCHEDULE 19

COLUMN HEIGHT	EXT FINISH	WOOD WALL FRAMING					4' CORNER OF WOOD WALL FRAMING (ZONE 5)				
		NUMBER	SIZE	LUMBER	TYPE	OC	NUMBER	SIZE	LUMBER	TYPE	OC
UP TO 10'-6"	NO PLASTER	(1)	2X6	HF	#2	16" OC	(1)	2X6	HF	#2	16" OC
	NO PLASTER (OPT)	(1)	2X6	DF	#2	16" OC	(1)	2X6	DF	#2	16" OC
	W/ PLASTER	(1)	2X6	HF	#2	16" OC	(1)	2X6	HF	#2	16" OC
	W/ PLASTER (OPT)	(1)	2X6	DF	#2	16" OC	(1)	2X6	DF	#2	16" OC

NOTE:
1. INTERIOR WALLS MAY BE 2x4 OR 2x6 HF #2 (OR BETTER) SPACED AT NOT MORE THAN 24" OC.

2x6 WALL FRAMING SCHEDULE 20

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

WALL FRAMING DETAILS
WOOD STUDS

REVISIONS

1.
2.
3.
4.
5.

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
2975
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
SCALE: AS NOTED
DATE: 07/08/2025

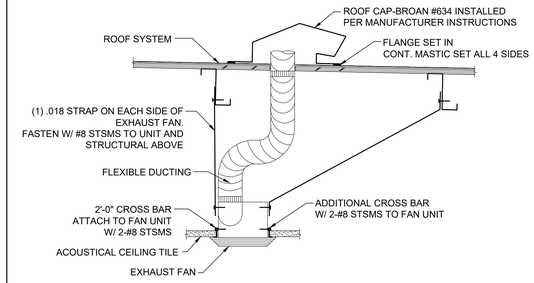
SHEET NUMBER

S-5.11

10 5 15 4

LEGEND

SYMBOL	ABB.	DESCRIPTION
	SAD	SUPPLY AIR DUCT
	RAD	RETURN AIR DUCT
	EAD	EXHAUST AIR DUCT
	(L)	LINED DUCTWORK
	CD	SUPPLY CEILING DIFFUSER
	CR	RETURN CEILING REGISTER
	ER	EXHAUST CEILING REGISTER
	VTR	VENT THRU ROOF
	FD	FIRE DAMPER
	MVD	MANUAL VOLUME DAMPER
UC	UC	UNDERCUT DOOR
T	STAT	THERMOSTAT
BT	BT	BYPASS TIMER
	P.O.C	POINT OF CONNECTION
CO		CO^2 SENSOR

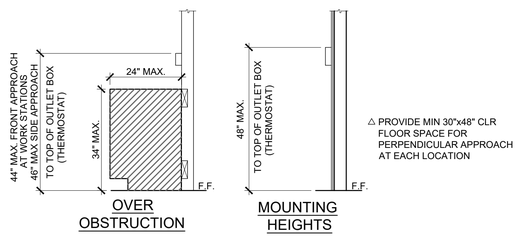


EXHAUST FAN INSTALLATION SCALE : 1"=1'-0"

CEILING MOUNTED EXHAUST FAN SCHEDULE

SYM.	LOCATION	SERVICE	MANUF.	MODEL	CFM	SONES	SP	ELECTRICAL			WGT.	REMARKS
								VOLTS	Ø	POWER		
EF 1	CEILING	TOILET EXHAUST	BROAN*	L100	109	1.0	0.25	120	1	87 WATTS	22.80 LBS.	WITH BROAN ROOF CAP #634. PROVIDE 6" DIA. EXHAUST DUCT UP TO ROOF. INTERLOCK WITH LIGHT SWITCH.
EF 2	CEILING	TOILET EXHAUST	BROAN*	L200	210	2.0	0.25	120	1	127 WATTS	23.0 LBS.	WITH BROAN ROOF CAP #634. PROVIDE 8" DIA. EXHAUST DUCT UP TO ROOF. INTERLOCK WITH LIGHT SWITCH.
EF 3	CEILING	TOILET EXHAUST	BROAN*	L300	308	2.8	0.25	120	1	212 WATTS	23.10 LBS.	WITH BROAN ROOF CAP #634. PROVIDE 8" DIA. EXHAUST DUCT UP TO ROOF. INTERLOCK WITH LIGHT SWITCH.

*OR APPROVED EQUAL.



MEP COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPOORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.C

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRAVERSE AND LONGITUDINAL DIRECTIONS.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION QUIDE (E.G., HCAI OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF THE DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP☐MD☒PP☐E☒OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☐ MD☐ PP☐ E☐ OPTION 2: SHALL COMPLY WITH HCAI PREAPPROVAL (OPM #) #----------. AS INCLUDED IN THESE DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.

LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).

MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.

A LISTING OF CERTIFIED ATT CAN BE FOUND AT HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TEST-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM/ACCEPTANCE

THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.

PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

THIS LIST OF REQUIRED ACCEPTANCE TESTS FOR THE PROJECT IS FOUND IN THE LAST PAGES OF THE ENERGY COMPLIANCE REPORTS (T24) UNDER DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE.

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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

MECHANICAL NOTES, SCHEDULES, & DETAILS

REVISIONS

1.
2.
3.
4.
5.

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
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MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER
JOHN W STARLING
29575
STRUCTURAL
STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

M-0.1

THE DIVISION OF THE STATE ARCHITECT, OFFICE OF REGULATION SERVICES ACCEPTS THE FOLLOWING DIMENSIONS AS ADEQUATELY SERVING THE NEEDS OF CHILDREN IN PROJECTS UNDER THEIR JURISDICTION. THESE DIMENSIONS ARE BASED ON CBC TABLE 11B-604.9 SUGGESTED DIMENSIONS FOR SERVING CHILDREN AGES 3 TO 12.

ACCESSIBILITY DIMENSIONS	11B-604.9 SUGGESTED DIMS			
	ADULT		AGES 5 THROUGH 8	
TOILET CENTERING FROM WALL	17" - 18"		12" - 15"	
TOILET SEAT HEIGHT (DIM TO TOP OF SEAT)	17" - 19"		12" - 15"	
GRAB BAR HEIGHT (TO TOP)	33" - 36"		20" - 25"	
TOILET PAPER IN FRONT OF TOILET	7" - 9"		7" - 9"	
NAPKIN DISPOSAL	**		N/A	
MIRROR HEIGHT (TO BOTTOM OF GLASS)	40" MAX.		36" MAX.	
DISPENSER HEIGHT	19" MIN.		14" - 17"	
LAVATORY/SINK TOP HEIGHT	34" MAX.		31" MAX.	
LAVATORY/SINK KNEE CLEARANCE	27" MIN.		24" MIN.	
URINAL LIP HEIGHT	17" MAX.		15" MAX	
URINAL FLUSH HANDLE HEIGHT	44" MAX.		37" MAX. *	
DRINKING FOUNTAIN BUBBLER HT. (LOW)	36" MAX.		30" MAX.	
DRINKING FOUNTAIN KNEE CLEARANCE	27" MIN.		SIDE APPROACH	
HANDRAIL HEIGHT (TO TOP)	34" - 38"		34" - 38"	

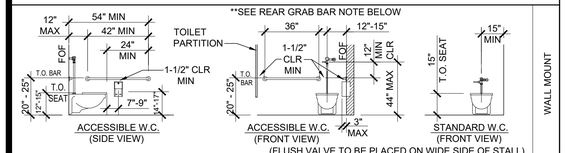
STANDARD DIMENSIONS	ALTERNATE HEIGHT (DIMS)			
	ADULT		AGES 5 THROUGH 8	
TOILET CENTERING FROM WALL/PARTITION	15" MIN		15" MIN	
TOILET SEAT HEIGHT/DIM TO TOP OF SEAT	15"		15"	
TOILET CLEARANCE/FRONT	24"		24"	
URINAL LIP HEIGHT	24"		18"	
URINAL CENTER FROM WALL/PARTITION	12"		12"	

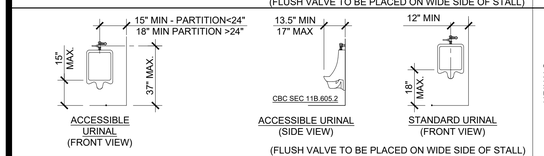
PLUMBING ACCESSORIES (REF. ONLY-MODELS FURNISHED AND INSTALLED BY DISTRICT U.N.O.)

- A — SOAP DISPENSER: LIQUID SOAP DISPENSER 4" MAX. PROJECTION
- B — PAPER TOWEL DISPENSER/TRASH BIN COMBO: SURFACE MOUNTED 4" MAX. PROJECTION-CANNOT ENCROACH INTO 30x48 CLEAR SPACE OF FIXTURE
- C — TOILET PAPER HOLDER: SINGLE ROLL SEMI-RECESSED OR 3" MAX PROJECTION
- D — TOILET SEAT DISPENSER: SURFACE MOUNTED

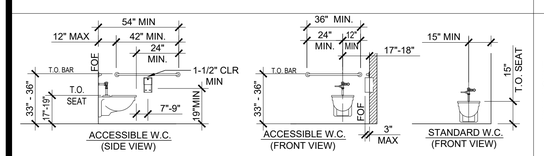
* 44" MAX. PER CODE
** MOUNTED BETWEEN BACK WALL AND TOILET PAPER DISP.

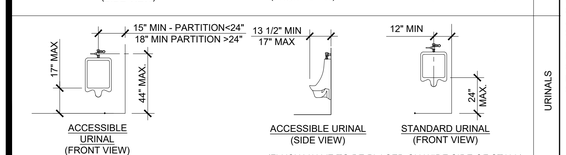
MOUNTING HEIGHTS TABLE 15



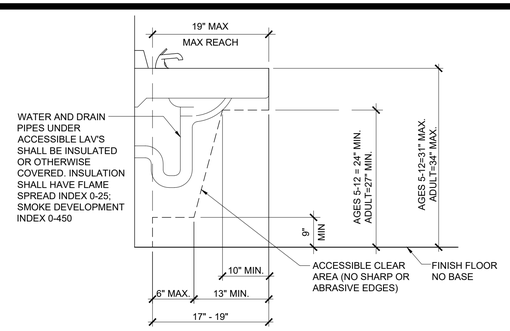


TOILET FIXTURE MOUNTING HEIGHTS (AGES 5 THRU 8) 17





TOILET FIXTURE MOUNTING HEIGHTS (ADULT) 18



ACCESSIBLE LAV CLEARANCE SCALE: N.T.S. 10

TRAP PRIMER TO FLOOR DRAIN SCALE: N.T.S. 12

GRAB BAR CONNECTION DETAIL 13

TOILET FIXTURE MOUNTING HEIGHTS (ADULT) 18

TOILET ACCESSORIES MOUNTING HEIGHTS 14

VERTICAL PIPE SUPPORT DETAIL SCALE: 3" = 1' - 0" 4

SYMBOL	FIXTURE	COLD WATER	HOT WATER	WASTE	VENT	FIXTURE DESCRIPTION (AS CALLED OUT OR APPROVED EQUAL)
WC 1	[ADULT] WATER CLOSET WALL MTD/FLUSH (ACCESSIBLE)	1"	-	3"	2"	KOHLER KINGSTON ULTRA #K84325-0 WALL MOUNT (1.28 GPF) VITREOUS CHINA ELONGATED RIM, FLUSH VALVE TYPE, SIPHON JET; OLSONITE 10SSCTFR SOLID OPEN WHITE ELONGATED PLASTIC SEAT; SLOAN ROYAL #111-1.28 LOW CONSUMPTION FLUSHOMETER VALVE; JAY R SMITH #210-LY OR RY NO-HUB ADJUSTABLE FIXTURE SUPPORT CARRIER
WC 2	[AGE 5-8] WATER CLOSET WALL MTD/FLUSH (ACCESSIBLE)	1"	-	3"	2"	KOHLER KINGSTON ULTRA #K84325-0 WALL MOUNT (1.28 GPF) VITREOUS CHINA ELONGATED RIM, FLUSH VALVE TYPE, SIPHON JET; OLSONITE 10SSCTFR SOLID OPEN WHITE ELONGATED PLASTIC SEAT; SLOAN ROYAL #115-1.28 LOW CONSUMPTION FLUSHOMETER VALVE; JAY R SMITH #210-LY OR RY NO-HUB ADJUSTABLE FIXTURE SUPPORT CARRIER
WC 3	[AGE 5-8] WATER CLOSET WALL MTD/FLUSH (NON-ACCESSIBLE)	1"	-	3"	2"	KOHLER KINGSTON ULTRA #K84325-0 WALL MOUNT (1.28 GPF) VITREOUS CHINA ELONGATED RIM, FLUSH VALVE TYPE, SIPHON JET; OLSONITE 10SSCTFR SOLID OPEN WHITE ELONGATED PLASTIC SEAT; SLOAN ROYAL #111-1.28 LOW CONSUMPTION FLUSHOMETER VALVE; JAY R SMITH #210-LY OR RY NO-HUB ADJUSTABLE FIXTURE SUPPORT CARRIER
UR 1	URINAL (ACCESSIBLE)	3/4"	-	2"	1 1/2"	KOHLER #K5452-ET (0.125 GPF) VITREOUS CHINA, WALL HUNG, SIPHON JET URINAL WITH INTEGRAL TRAP; SLOAN ROYAL 186-0.125 LOW CONSUMPTION FLUSHOMETER VALVE
UR 2	URINAL (NON-ACCESSIBLE)	3/4"	-	2"	1 1/2"	KOHLER #K5452-ET (0.125 GPF) VITREOUS CHINA, WALL HUNG, SIPHON JET URINAL WITH INTEGRAL TRAP; SLOAN ROYAL 186-0.125 LOW CONSUMPTION FLUSHOMETER VALVE
LAV 1	LAVATORY (ACCESSIBLE)	1/2"	-	2"	1 1/2"	AMERICAN STANDARD 0355.012 LUCERNE 20"x18" VITREOUS CHINA; JAY R SMITH #722 CONCEALED HANGER, CHICAGO #333-665PSHABCP SINGLE HANDLE FAUCET (0.5 GPM)
WM 1	WASHING MACHINE OUTLET BOX	1/2"	-	2"	-	RECESSED WASHING MACHINE OUTLET BOX W/ COLD WATER & DRAIN OUTLET
MS 1	MOP SINK	1/2"	-	2"	1 1/2"	AMERICAN STANDARD #7741.811 28"x28" W/RIM GUARD CAST IRON AND 2" K-9142 STRAINER
FD 1	FLOOR DRAIN	-	-	2"	1 1/2"	JAY R SMITH #2005YA-02-P050-NB. FLOOR DRAIN TAPPED FOR PRIMER. 5" NICKEL BRONZE STRAINER W/ 1/4" MAX. GRATE OPENINGS
TP 1	TRAP PRIMER	1/2"	-	-	-	PR-500 WITH 8"x12" LOCKABLE BOX, 1/2" BALL SHUT-OFF VALVE, AND PPP DU-U FRESH WATER DISTRIBUTION SYSTEM
WHA 1	WATER HAMMER ARRESTOR	1"	-	-	-	PPP SC-1000
HB 1	HOSE BIB	1/2"	-	-	-	ACORN #8140, RECESSED HOSE BIB W/ VACUUM BREAKER
HB 2	HOSE BIB	1/2"	-	-	-	ACORN #8121CR-LF, HOSE BIB W/ VACUUM BREAKER, (MOUNT @ +36" AFF AT MOP SINK)

PLUMBING FIXTURE SCHEDULE SCALE: N.T.S. 1

NOTE:
1. THE TOTAL WEIGHT OF THE CONDUITS, PIPES, AND DUCTS SUPPORTED BY THE JOIST SHALL NOT EXCEED 35 PLF

HORIZONTAL PIPE SUPPORT DETAIL SCALE: N.T.S. 2

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DIV. OF THE STATE ARCHITECT
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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

PLUMBING PLAN

REVISIONS
1
2
3
4
5

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
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MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24175 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

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DATE:	07/08/2025

SHEET NUMBER

P-1.01

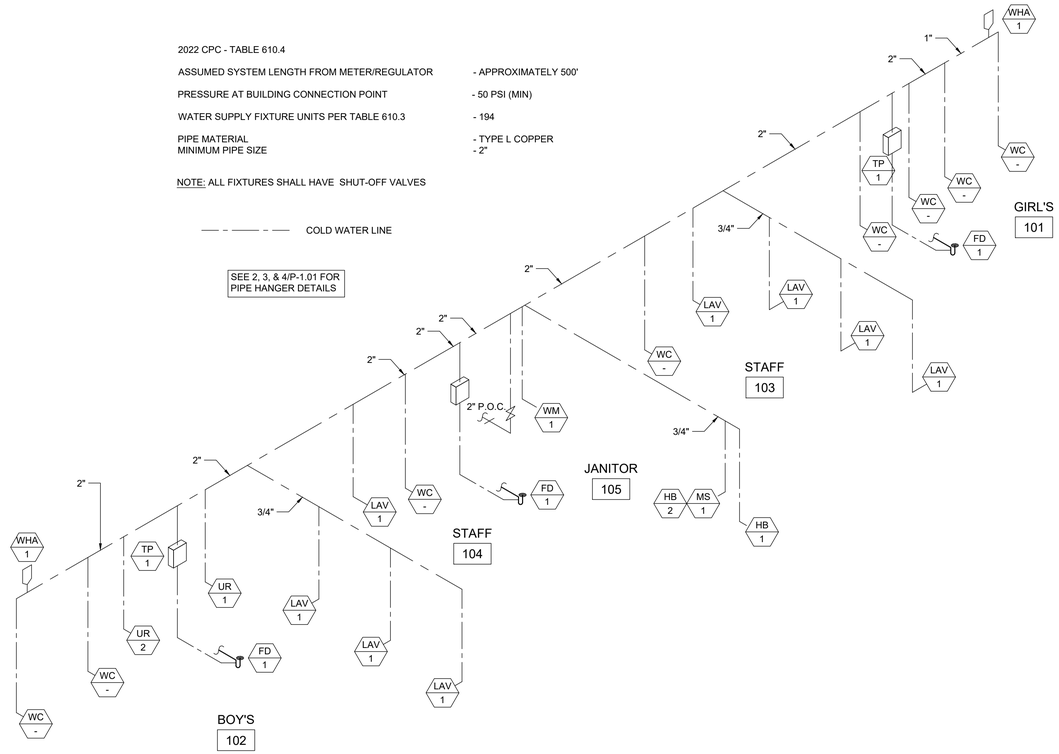
2022 CPC - TABLE 610.4

ASSUMED SYSTEM LENGTH FROM METER/REGULATOR	- APPROXIMATELY 500'
PRESSURE AT BUILDING CONNECTION POINT	- 50 PSI (MIN)
WATER SUPPLY FIXTURE UNITS PER TABLE 610.3	- 194
PIPE MATERIAL	- TYPE L COPPER
MINIMUM PIPE SIZE	- 2"

NOTE: ALL FIXTURES SHALL HAVE SHUT-OFF VALVES

COLD WATER LINE

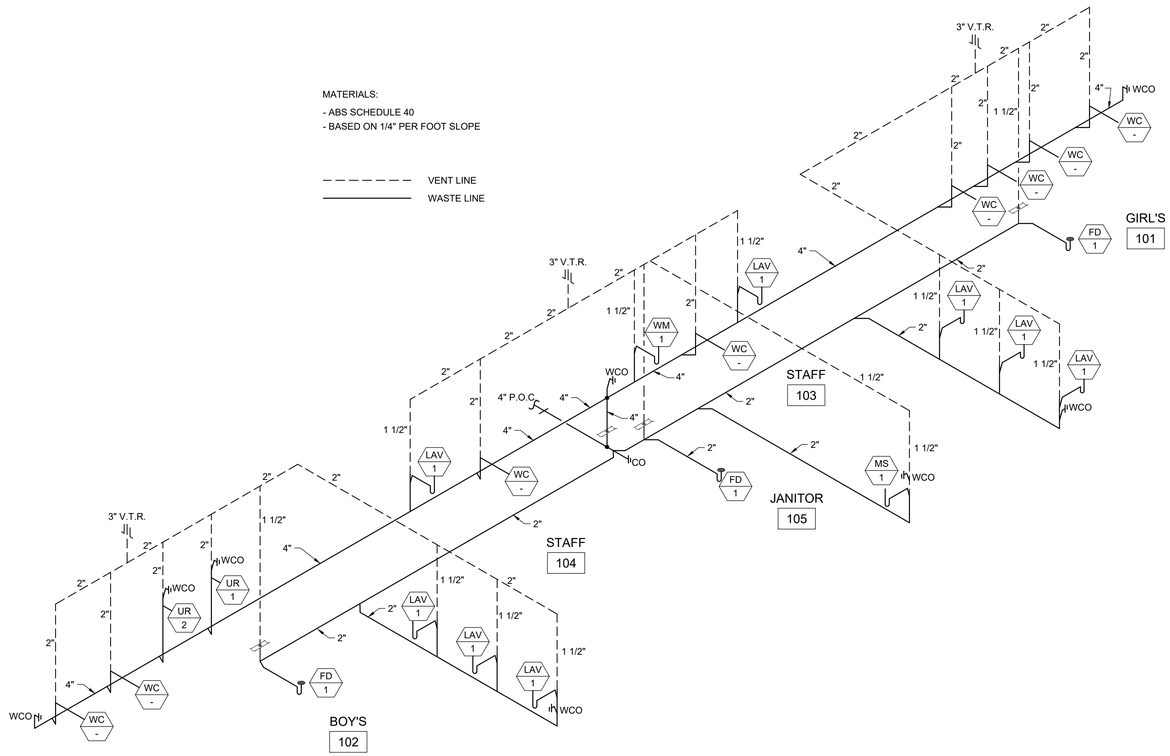
SEE 2, 3, & 4/P-1.01 FOR PIPE HANGER DETAILS



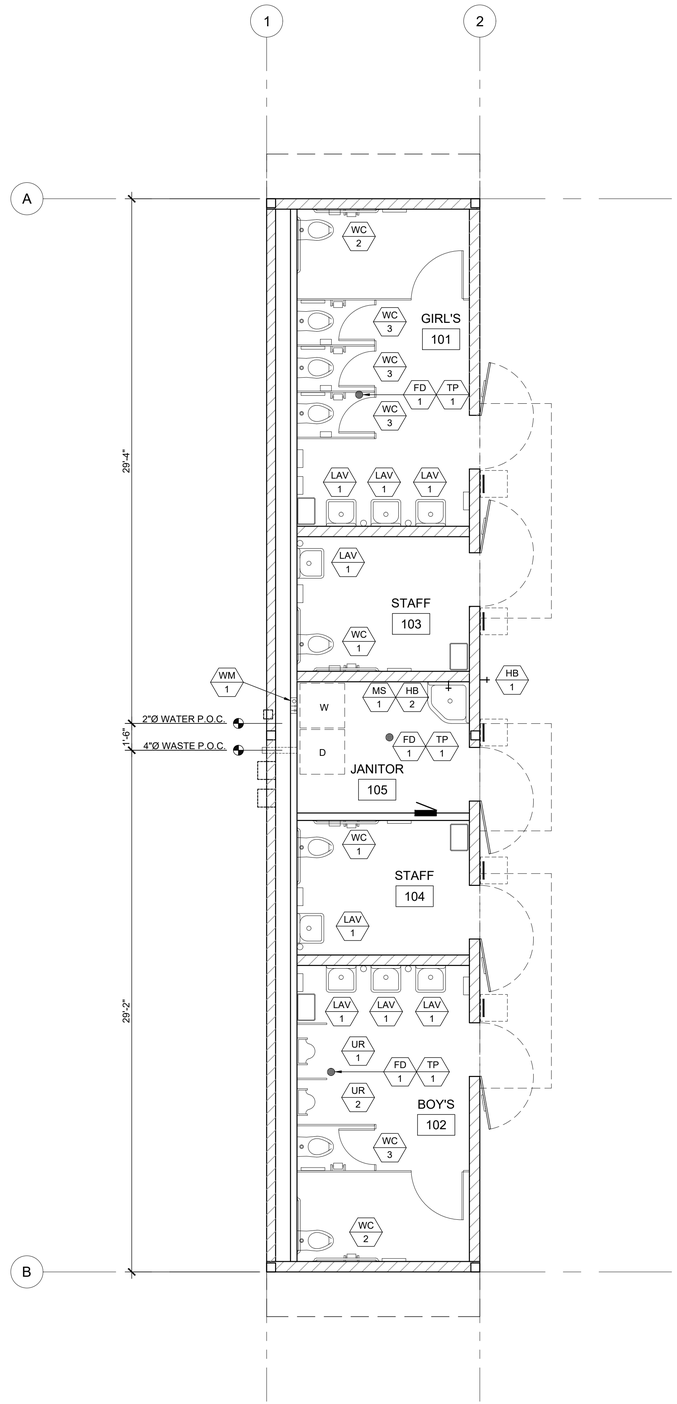
MATERIALS:
- ABS SCHEDULE 40
- BASED ON 1/4" PER FOOT SLOPE

VENT LINE

WASTE LINE



PLUMBING ISOMETRIC | 2



NORTH

PLUMBING PLAN | SCALE: 1/4" = 1' - 0" | 1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2025

PROJECT SPECIFIC STATE AGENCY APPROVAL

THESE DRAWINGS AND ALL MATERIAL CONTAINED HEREIN ARE THE PROPERTY OF SILVERCREEK MODULAR, INC (SCM Inc) AND SHALL NOT BE REPRODUCED, COPIED OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY AND SHALL NOT BE USED IN WHOLE OR IN PART TO ASSIST IN THE MAKING OF OR FOR THE PURPOSE OF FURNISHING ANY INFORMATION FOR THE MAKING OF DRAWINGS, PRINTS, APPARATUS OR PARTS THEREOF WITHOUT THE FULL KNOWLEDGE AND WRITTEN CONSENT OF SCM Inc. ALL PATENTABLE MATERIAL CONTAINED HEREIN AND ORIGINATING WITH SCM Inc SHALL BE THE PROPERTY OF SCM Inc

PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

PLUMBING PLAN

REVISIONS

1	
2	
3	
4	
5	

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

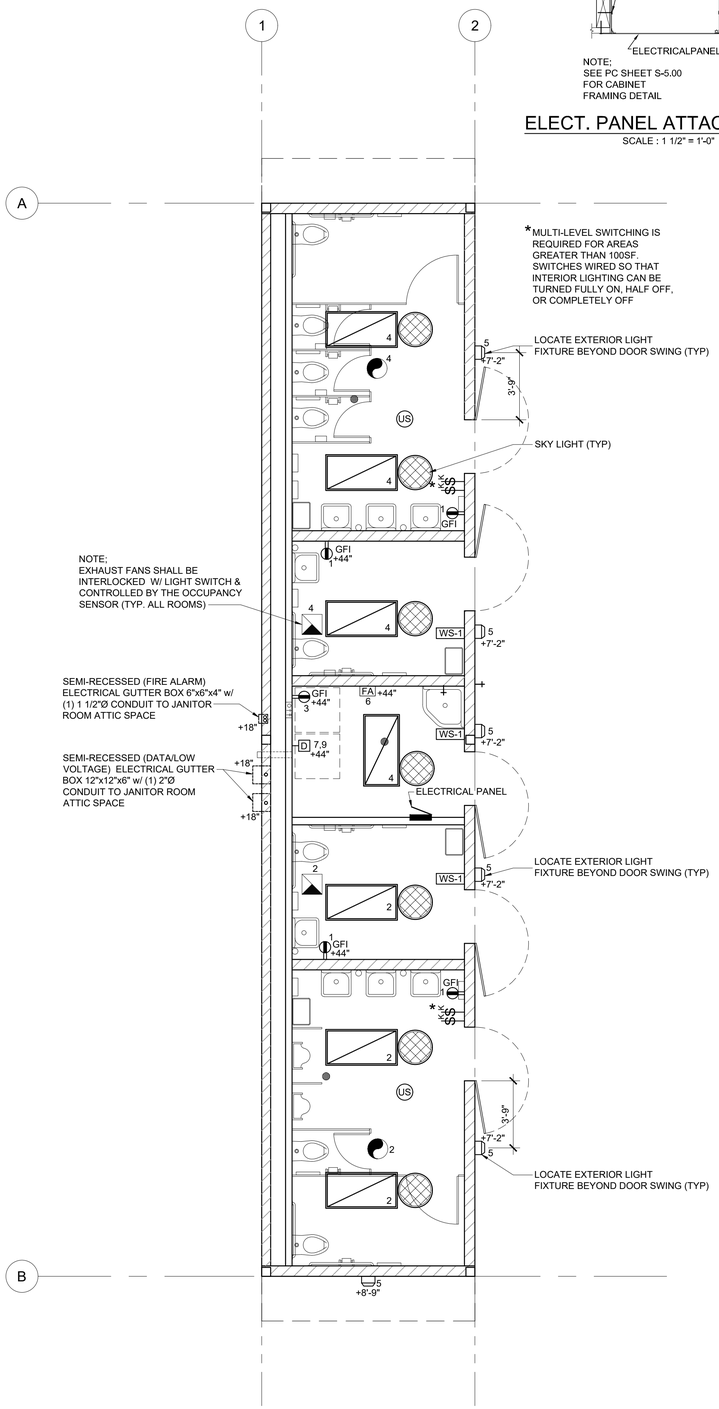
REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

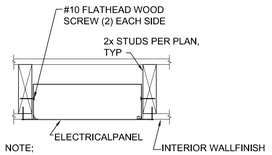
SILVER CREEK INDUSTRIES

PROJECT NO:	11595
DRAWN BY:	RDL
SCALE:	AS NOTED
DATE:	07/08/2025

SHEET NUMBER

P-2.01

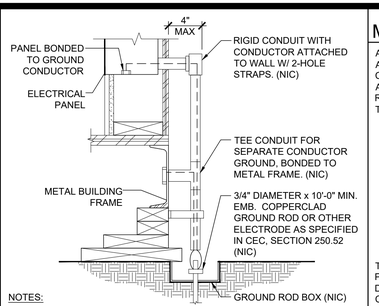




NOTE;
SEE PC SHEET S-5.00 FOR CABINET FRAMING DETAIL

ELECT. PANEL ATTACHMENT - 1A

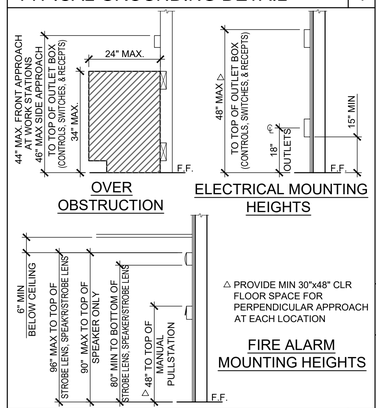
SCALE : 1 1/2" = 1'-0"



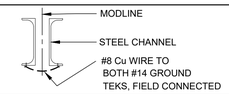
NOTES:

1. SIZE OF CONDUCTORS SHALL COMPLY WITH CEC TABLE 250.66
2. ELEC. TRADE SHALL CHECK AREA FOR EXISTING CONDUITS, SEWER, GAS & WATER PIPING BEFORE DRIVING GROUND RODS.
3. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELEC'L. PANEL & TO METAL BUILDING FRAME (CEC 250.52) IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL GROUND TO METAL UNDERGROUND WATER PIPE IN DIRECT CONTACT WITH THE EARTH FOR 10 FT. OR MORE, IF AVAILABLE (CEC 250.52)
4. ALL MODULES OF METAL FRAME BLDGS. SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING). BONDING SHALL INCLUDE METAL RAMP.
5. CHECK RESISTANT TO GROUND. IF RESISTANCE EXCEEDS 25 ohms, INSTALL ADDITIONAL GROUND ROD SIX FEET OR GREATER AWAY. ONCE THE SECOND GROUND ROD IS INSTALLED, ADDITIONAL GROUND RESISTANCE TESTING IS NOT REQUIRED (CEC 250.53[A]&[B]).

TYPICAL GROUNDING DETAIL | 1



ACCESSIBLE HEIGHTS | 2



GROUND JUMPER AT MODLINE | 3

GROUND JUMPER AT MODLINE

EACH BUILDING SHALL BE SEPARATELY GROUNDED WITH A 3/4" RD. X 8' COPPERCLAD STEEL GROUND ROD, WHERE ROCK BOTTOM IS ENCOUNTERED, ROD SHALL BE DRIVEN AT AN ANGLE NOT TO EXCEED 45 DEGREE'S FROM THE VERTICAL OR SHALL BE BURIED IN A TRENCH THAT IS AT LEAST 30" DEEP (BY SITE ELECTRICAL).

TESTING: TEST FOR RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS SEPARATED AT LEAST 6'-0" UNTIL RESISTANCE IS REDUCES TO 25 OHMS OR LESS. (BY SITE ELECTRICAL).

APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF THIS FIRE ALARM FOR ALL SITES. THE FIRE ALARM SYSTEM AND/OR COMPONENTS MAYBE REQUIRED TO BE CHANGED DUE TO SITE LOCATION EXISTING CONDITIONS OR INCOMPATIBLE COMPONENTS.

GROUND MG TEST SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR. ALL GROUNDING SHALL BE IN ACCORDANCE WITH CEC ARTICLE 250.

FIRE ALARM NOTES

1. SMOKE AND HEAT DETECTOR CONDUIT AND DEVICES PROVIDED AND INTERCONNECTED BY OTHERS TO FIRE ALARM SYSTEM
2. PROVIDE DEDICATED FIRE ALARM 120 VOLT CIRCUIT CONNECTED TO LOCKED-ON BREAKER. THE CIRCUIT BREAKER SHALL BE LOCKED-ON WITH APPROVED LOCKING DEVICE, MARKED RED AND IDENTIFIED AS "FIRE ALARM CONTROL CIRCUIT". NFPA 72 SECTION 10.6.5.2

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8 AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 & 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPA FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEM (E):

MP☐ MD☐ PP☐ E☑ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATIONS

THE LIGHTING CONTROL SYSTEM BASIS OF DESIGN SHALL BE THE LUTRON VIVE WIRELESS LIGHTING CONTROL SYSTEM.
THE SYSTEM SHALL BE CAPABLE OF PROVIDING MANUAL CONTROL, OCCUPANCY SENSING CONTROL AND DAYLIGHT HARVESTING CONTROL.

SEQUENCE:

OCCUPANT ENTERS:
ALL LIGHTS AUTOMATICALLY TURN ON TO 50% LIGHT LEVEL. OCCUPANT MAY INCREASE LIGHTS TO MAXIMUM LEVEL MANUALLY WITH WALL CONTROL.
WHEN OCCUPIED:
LIGHTING IN DAYLIT ZONES AUTOMATICALLY DIM/BRIGHTEN BASED ON DAYLIGHT AVAILABILITY.
OCCUPANT MAY MANUALLY DIM/BRIGHTEN THE LIGHTS WITH WALL CONTROL.
OCCUPANT EXITS:
ALL LIGHTS AUTOMATICALLY TURN OFF 15 MINUTES AFTER VACANCY.

CONDUIT FILL AND CONDUCTOR CAPACITY TABLE

(ALL CONDUCTORS SHALL BE TYPE THHN/THWN 90°C. COPPER)

WIRE SIZE	CAPACITY	WIRE TYPE	NO. OF CONDUCTOR PERMITTED 1/2" C	3/4" C	1" C	1 1/4" C
#12	20A	THHN	9	16	25	45
#10	30A	THHN	5	10	16	28
#8	45A	THHN	2	5	8	14
#6	65A	THHN	1	3	5	10
#4	85A	THHN	1	2	4	7

JUNCTION BOX SIZE TABLE

BOX	SIZE	CU. IN.	MAX NO. OF CONDUCTORS #12	#10	#8	#6
4SS	1 1/4" x 4" SQ	18.0	8	7	6	0
4S	1 1/2" x 4" SQ	21.0	9	8	7	0
4SD	2 1/8" x 4" SQ	30.3	13	12	10	6
4SX	2 7/8" x 4" SQ	43.5	23	21	17	10
5SD	2 1/8" x 4-11/16" SQ	42.0	18	16	14	6
5SX	3 7/8" x 4-11/16" SQ	86.0	38	34	28	17
664	4" x 6" SQ	144.0	64	57	48	28

* DEDUCT ONE CONDUCTOR FOR (1) OR MORE GROUNDING CONDUCTORS ENTERING THE BOX

LEGEND

- 2x4 CEILING RECESSED LIGHT, LED LIGHT FIXTURE WITH DIMMING WATTAGE: 51 WATTS (MAX), 5000L (MIN)
- ELECTRICAL PANEL AT +60" AFF TO TOP OF ELECTRICAL PANEL WITH 1 1/2" DIA POWER STUB OUT (U.N.O.)
- (OS) CEILING MOUNTED OCCUPANCY SENSOR
- (PC) CEILING MOUNTED PHOTOCELL
- (US) ULTRASONIC CEILING OCCUPANCY SENSOR. SENSOR TO BE CONNECTED TO KEYED LIGHT SWITCHES FOR MANUAL OVERRIDE AND USE FOR RESTROOM W/ PARTITIONS.
- WS-1 SINGLE SWITCH WALL OCCUPANCY SENSOR. WATTSTOPPER PW-100 OR EQUAL. SENSOR TO BE MOUNTED AT +44" AFF
- $D DIMMER SWITCH, AT +48" AFF. TO TOP OF OUTLET BOX
- $ LIGHT SWITCH. MOUNT AT +48" AFF TO TOP OF OUTLET BOX
- $3 3-WAY LIGHT SWITCH. MOUNT AT +48" AFF TO TOP OF OUTLET BOX
- $K KEYED SWITCH MOUNT AT +48" AFF TO TOP OF OUTLET BOX
- DUPLEX (WALL MOUNTED) RECEPTACLE 15A - 125V - 3 WIRE. MOUNT AT +18" AFF U.O.N. TO CENTERLINE OF DEVICE
- WP EXTERIOR WEATHER PROOF GFI RECEPTACLE AT +24 " AFF FOR A/C SERVICES (MAX 25'-0" FROM UNITS)
- GFI GROUND FAULT CIRCUIT INTERRUPT RECEPTACLE WITHIN 6'-0" OF ALL SINKS
- ROOF ROOF MOUNTED WEATHER PROOF GFI RECEPTACLE
- EXTERIOR LED LIGHT FIXTURE W/ PHOTOCELL W/ 30w MAX. MOUNTING HEIGHT PER PLAN
- EXIT EXIT SIGN WITH 90 MIN. BATTERY BACK UP. EXIT SIGN REQUIRED FOR CLASSROOMS WITH TWO OR MORE EXTERIOR DOORS. CLASSROOMS WITH ONE EXTERIOR DOOR - OPTIONAL)
- 4SD J-BOX FOR FIRE ALARM PULL STATION (DEVICE BY OTHERS). MOUNT AT +48" AFF TO TOP OF OUTLET BOX WITH 3/4" CONDUIT TO FIRE ALARM STROBE WITH PULL STRING
- 4SD J-BOX FOR FIRE ALARM STROBE OR VOICE EVAC SPEAKER/STROBE (DEVICE BY OTHERS). BOTTOM OF LENS SHALL BE BETWEEN 80" AND 96" AFF AND WITH 3/4" CONDUIT TO EXTERIOR FIRE ALARM SPEAKER/HORN WITH PULL STRING
- (H) 4SD J-BOX FOR EXTERIOR FIRE ALARM SPEAKER (DEVICE BY OTHERS). MOUNT AT +90" AFF TO TOP OF DEVICE WITH 3/4" CONDUIT STUBBED TO ATTIC WITH PULL STRING
- RECESSED 4SD J-BOX W / COVER PLATE FOR FUTURE FIRE ALARM SYSTEM BY OTHERS. MOUNT AT +18" AFF U.O.N. TO CENTERLINE OF BOX AND PROVIDE 1" CO STUB TO ATTIC SPACE WITH PULL STRING
- (S) 4SD J-BOX IN ATTIC FOR CEILING MOUNTED SMOKE DETECTOR (DEVICE BY OTHERS). MAXIMUM 21'-0" FROM ANY POINT IN ROOM AND 30'-0" BETWEEN THEM. PROVIDE A 6'-0" CONDUIT FROM EACH J-BOX TO SMOKE DETECTOR LOCATION. CONDUIT & CONNECTION TO CEILING DEVICE & DEVICE BY OTHERS (ALARM NOTE #1)
- (H) 4SD J-BOX IN ATTIC FOR ATTIC MOUNTED HEAT DETECTOR (DEVICE BY OTHERS). MAXIMUM 35'-0" FROM ANY POINT IN ATTIC AND 50'-0" BETWEEN THEM. PROVIDE A 6'-0" CONDUIT FROM EACH J-BOX TO HEAT DETECTOR LOCATION. CONDUIT & CONNECTION TO CEILING DEVICE & DEVICE BY OTHERS (ALARM NOTE #1)
- 100 CFM CEILING MOUNTED EXHAUST FAN. INTERLOCKED WITH LIGHT SWITCH
- 300 CFM CEILING MOUNTED EXHAUST FAN. INTERLOCKED WITH LIGHT SWITCH
- D 208 VOLT DRYER OUTLET, 30 AMP

PANEL: A	PHASE:	VOLTS:	BUSS:	MAIN:	LOCATION:	FEED:	MOUNTING:
S/N:	SINGLE	120/208	100 AMP	100 AMP	INTERIOR	BOTTOM	RECESSED

OBJECT DESCRIPTION	WATT PER	NO. OF	LCL	WATTS A	WATTS B	BRK	POLE	WIRE SIZE	CKT NO	LEG A	LEG B	CKT NO	WIRE SIZE	POLE	BRK	WATTS A	WATTS B	LCL	NO OF	WATT PER	OBJECT DESCRIPTION
RECEPTS	180	4		720		20	1	#12	1	X		2	#12	1	20	300		x	5	60	INT. LIGHTS + E.F
WASH MACHINE	1250	1			1250	20	1	#12	3		X	4	#12	1	20		360	x	6	60	INT. LIGHTS + E.F
EXT. LIGHTS	30	6	x	180		20	1	#12	5	X		6	#12	1	20	180			1	180	FIRE ALARM
DRYER	2800	1			2800	30	2	#10	7		X	8					0				
DRYER	2800	1		2800		/	/	#10	9	X		10				0					
					0				11		X	12					0				
				0					13	X		14				0					
					0				15		X	16					0				
				0					17	X		18				0					
					0				19		X	20				0					
LEG TOTALS				3700	4050											480	360	LEG TOTALS			

LCL=210+8590=8800
TOTAL WATTS=8800
LEG BALANCE = 2.7%
TOTAL AMPS: 42.31

THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.

LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).

MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.

A LISTING OF CERTIFIED ATT CAN BE FOUND AT HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TEST-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM/ACCEPTANCE

THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.

PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

THIS LIST OF REQUIRED ACCEPTANCE TESTS FOR THE PROJECT IS FOUND IN THE LAST PAGES OF THE ENERGY COMPLIANCE REPORTS (T24) UNDER DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE.

NORTH

ELECTRICAL PLAN — SCALE: 1/4" = 1'-0" | 1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125061 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
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PROJECT NAME:

VENTURA USD
PORTOLA E.S.
12' x 60'
RESTROOM BUILDING

SHEET TITLE:

ELECTRICAL PLAN

REVISIONS

1.
2.
3.
4.
5.

PC STATE AGENCY APPROVAL

Silver Creek
2830 BARRETT AVE PERRIS, CALIFORNIA 92571
PHONE: 951-943-5393 FAX: 951-943-2211

MODULAR BUILDING DESIGN PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER JOHN W STARLING 24775 STRUCTURAL STATE OF CALIFORNIA

SILVER CREEK INDUSTRIES

PROJECT NO: 11595
DRAWN BY: RDL
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E-1.01