BOARD OF EDUCATION
Julian Del Real-Calleros • Gary Hardie Jr., Ed.D.
Alfonso Morales, Esq. • Alma Carina Castro, Ed.D.• Maria G. Lopez
Superintendent: Dr. Patrick Gittisriboongul, Ed.D.

ADDENDUM 003

For

BID# 02MOT27 Lynwood HS Bullis HVAC Units Replacement - DSA 03-126002

October 20, 2026

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents. Acknowledge receipt of this Addendum in space provided on the Bid Form. Failure to acknowledge may subject Bidder to disqualification.

1. BID DOCUMENT

1.1. Reference to the **BID SCHEDULE.**

1.1.1. Revise specific Bid Schedule's due dates, as indicated in **Bid Schedule_ADD03** attachments below.

2. TECHNICAL SPECIFICATIONS

2.1- Reference to **Bid#02MOT27 TECHNICAL SPECIFICATIONS DSA 03-126002**

2.1-1. Remove previously posted **Bid#02MOT27 TECHNICAL SPECIFICATIONS DSA 03-126002**

2.1-1.1. Add DSA-Approved **Bid#02MOT27 TECHNICAL SPECIFICATIONS DSA 03-126002,** per attachment.

3. DSA FORM 103_A

3.1-1. Remove previously posted **Bid#02MOT27 DSA 03-126002 Form 103_A**

3.1-1.1. Add DSA-Approved **Bid#02MOT27 DSA 03-126002 Form 103_A,** per attachment.

4. DRAWINGS

4.1- Reference to **Bid#02MOT27 DRAWINGS DSA 03-126002**

4.1-1. Remove previously posted **Bid#02MOT27 DRAWINGS DSA 03-126002.**

4.1-1.1. Add DSA-Approved **DRAWINGS DSA 03-126002,** per attachment.

CC Attachement:

1. **BID SCHEDULE_ADD03**
2. DSA-Approved **SPECIFICATIONS DSA 03-126002**
3. DSA-Approved **DSA 03-126002 Form 103_A**
4. DSA-Approved **DRAWINGS DSA 03-126002.**

1. BID SCHEDULE_ADD03

The District reserves the right to change and/or modify the submittal schedule.

Scheduled Activities	Dates	Time
BIDs' Due	**Friday, October 30, 2026**	10:00am
Notice of Intent to Award	**Wednesday, November 4, 2026**	

NOTICE IS HEREBY GIVEN that Lynwood Unified School District, acting by and through its Board of Education, will receive up to, but not later than the above-stated date and time, Bid Proposals for the Work of the Project described above.

2) Technical Specifications

SPECIFICATIONS

LYNWOOD HIGH SCHOOL - HVAC REPLACEMENT PROJECT

DSA Number # 03-126002

DIVISION 0 – INTRODUCTORY PAGES

SECTION 00 00 02 - PROJECT DIRECTORY

PART 1 - GENERAL

School Site:
310-603-1542 PHONE
None FAX

Lynwood High School
12124 Bullis Road
Lynwood, CA 90262

Owner:
310-886-1601 PHONE
emorales@mylusd.org

Lynwood Unified School District
11321 Bullis Road
Lynwood, California 90262
Sr. Director of Facilities: *Eric Morales*

Structural Engineering:
949-404-3351 PHONE
None FAX
psarkis@petrastructural.com

Petra Structural Engineers
17981 SkyPark Circle, Suite O,
Irvine, CA 92614
Principal-in-Charge: *Peter Sarkis*

Mechanical Engineering:
714-693-2277 PHONE
None FAX
abanerjee@oed-inc.com

Optimum Energy Design
5200 E. La Palma Ave
Anaheim, CA 92807
Principal-in-Charge: *Abby Banerjee*

Electrical Engineering:
909-941-3008 PHONE
909-941-8211 FAX
leflores@oed-inc.com

Optimum Energy Design
5200 E. La Palma Ave
Anaheim, CA 92807
Principal-in-Charge: *Rolando E. Sotelo*
Contact: *Luis E. Flores*

PART 2 - PRODUCTS…… …….Not applicable—this section

PART 3 – EXECUTION……Not applicable –this section

-END OF SECTION-

DIVISION 0 – INTRODUCTORY PAGES

SECTION 00 00 03 – ARCHITECT AND ENGINEERS PROFESSIONAL STAMPS

Lynwood High School – HVAC Modernization Project
12124 Bullis Road
Lynwood, CA 90262

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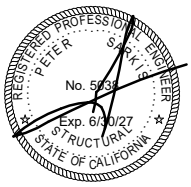
1. **Structural Engineer:** Peter Sarkis
   Petra Structural Engineers
   17981 SkyPark Circle, Suite O
   Irvine, CA 926140
   (949) 404-3351

   Seal:



2. **Electrical Engineer:** Rolando E. Sotelo
   Optimum Energy Design
   5200 E. La Palma Ave
   Anaheim, CA 92807
   (714)693-2277

   Seal:

3. **Mechanical Engineer:** Abby Banerjee
   Optimum Energy Design 5200
   E. La Palma Ave Anaheim,
   CA 92807
   (714)693-2277

   Seal:

Division of State Architect:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

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END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 26 00 - REQUESTS FOR INFORMATION

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes: Procedures for requesting clarification or information about the intent of the contract documents.

1.02 DEFINITIONS

A. Request for information: A request for information, clarification or interpretation is a formal means for the Contractor to verify or clarify the intent of the documents. Requests are presented in writing on a pre-approved form and answered in writing on the same form. Request is prepared by the Contractor, and submitted to the Engineer, to request clarifications or interpretations of the intent of the Contract Documents, or to notify the Engineer of potential conflicts in Contract Documents or between the Contract Documents and field conditions.

1.03 PROCEDURES FOR REQUESTING INFORMATION

A. The Engineer's response is an interpretation or clarification of the Contract Documents. Such request does not authorize changes in the work that impact Contract Sum or Contract Time.

B. When possible, request such clarification either verbally or in writing at the next scheduled Project meeting. When the information request is answered at the project meeting, number the request and enter the response into the meeting minutes. When the urgency or complexity requires more timely communication between meetings, prepare and submit a formal written information request to the Engineer, without delay.

C. Submit information requests within 3 days so as not to impede the progress of the work.

1. When an answer to an information request has an effect on cost or time, notify the Engineer in accordance with the Contract Documents. Do not perform such work until a Change Order has been reviewed by the Engineer and approved by the District.

2. When submitting an information request, indicate the time available for the Engineer to respond without causing an impact to the Contract Time.

D. When a request for information involves clarification of coordination issues, lay out Contractors' suggested solutions using scaled sketches, and submit with the request. If the request is such that choices of several logical solutions are apparent to the Contractor, include the logical solutions on the form.

E. Information requests may be returned with a stamp or notation "Not Reviewed", if, in the opinion of the Engineer:

1. The interpretation requested is ambiguous or unclear to the Engineer.

2. The answer is obvious and clear by researching the Contract Documents.

3. The Contractor has not reviewed the request prior to submittal to the Engineer.

4. The Contractor has not offered potential solutions to answer coordination issues or offered logical solutions.

F. Allow a minimum of 4 days for review and response time, after receipt by the Engineer. It is the responsibility of the Contractor to verify receipt by the Engineer. The response time may be increased if:

1. More information is required.

2. The information request is submitted out of sequence.

3. In the opinion of the Engineer, more time is needed to answer the information requests.

G. Do not use information requests for:

1. Submitting substitutions for consideration.

2. Requesting changes or additions of scope to the work.

3. Requesting “value engineering” cost-saving or time-saving changes.

H. If the Contractor believes that a clarification by the Engineer may result in a change, Contractor shall not proceed with the work indicated by the request until a change is approved by the District.

1. If the Contractor believes that a clarification by the Engineer results in additional cost, identify the basis of the Contractor’s bid in the information requests.

2. Answered information requests shall not be construed as an authorization to perform extra work.

I. Form: Submit requests in writing on a form approved by District.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 32 13 - CONSTRUCTION SCHEDULE - CPM

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes: Construction Schedule procedures, preparation, submittals, reviews, updates, and revisions.

C. Related Sections:

1. Section 01 33 00: Submittals.

2. Section 01 78 39: Project Record Documents.

1.02 SUBMITTALS

A. Approved Schedule: Submit 6 copies, one electronic format and one reproducible of approved Construction Schedule, signed by District and Contractor.

1.03 PROCEDURES

A. Within 15 days after Award of Contract, but not more than 7 days after Notice to Proceed, Contractor shall submit, for review, to the District, a detailed Construction Schedule setting forth requirements for complete execution of work. Construction schedule shall include, but not be limited to specific days, night work, description of work, anticipated completion date(s), phasing, unit building ‘down time’, mechanical system start-up and turnover date.

B. The District will review and return Contractor's Construction Schedule, with summary comments, within 7 days. If revisions are required, Contractor shall resubmit Construction Schedule within 3 days.

C. After approval, changes to Construction Schedule shall not be made unless mutually agreeable to District and Contractor.

D. Include in initial schedule a written summary narrative sufficiently comprehensive to explain basis of Contractor's approach to work.

E. If a Construction Schedule is considered by the District to be in non-compliance with any requirement of the Contract, Contractor will be notified to review and revise Construction Schedule and bring it into compliance. Failure of Contractor to submit a Construction Schedule in full compliance with the Contract may result in a delay in the processing of progress payments, since Construction Schedule will be used in evaluating progress for payment approval.

F. Simultaneously with each submittal of Progress Payment Request, Contractor shall deliver to the District an updated Construction Schedule reflecting work progress as of end of previous reporting period. Each such Construction Schedule shall show actual progress to date in execution of work, together with a projected schedule for completion of work. No changes in logic will be permitted unless agreed upon with District.

G. Scheduled submittals are subject to review and acceptance by the District. The District retains the right to withhold progress payments until Contractor submits a Construction Schedule acceptable to the District.

1.04 PREPARATION GUIDELINES

A. Construction Schedule shall be prepared using Critical Path Method (CPM) of scheduling.

B. Construction Schedule shall be computer-based, in a format acceptable to the District. Level of detail indicated in schedule shall be equal to or greater than the breakdown outlined in Table of Contents of the project manual.

C. Durations and events indicated on schedule shall conform to phasing set forth in the Contract and shall indicate any area or building within a particular phase. Schedule shall indicate Contract "milestone events" and other milestones agreed to by the District; no other milestone dates will be accepted unless approved as a change.

D. Construction Schedule shall represent a practical plan to complete work within time requirements of the Contract.

1. Schedule extending beyond limits of Contract time will not be acceptable.

2. Indicate "float" (plus or minus) in schedule milestone dates.

3. Schedule is subject to approval by the District. Revise and resubmit until approved.

E. Construction schedule shall clearly indicate sequences of construction activities and specifically indicate:

1. Start and completion of all items of work, their major components, and interim milestone completion dates as determined by Contractor and District.

2. Activities for procurement, delivery, installation of equipment, materials and other supplies, including:

a. Time for submittals, resubmittals, and reviews. Include decision dates for selection of finishes.

b. Time for fabrication and delivery of manufactured products for work.

c. Interdependence of procurement and construction activities.

d. Dates for testing and balancing equipment, and final inspection.

F. Schedule shall be in sufficient detail to assure adequate planning and execution of work.

1. Each activity shall range in duration from 1 to 5 workdays, with exception of fabrication and procurement activities, unless directed otherwise by the District. Activity duration shall be total of actual days required to perform and complete that activity and shall not include consideration of weather impact on activity.

2. Schedule shall be cost and resource-loaded with total equal to Contract sum, and shall include all associated interface activities in the Contract including, but not limited to, District's Maintenance Branch activities and Interim Housing schedules, which will be provided by the District.

3. Schedule shall allow monitoring and evaluation of progress in performance of work; it shall be time-scaled in precedence diagramming method (PDM), or arrow diagramming method (ADM).

4. Activities shall include:

a. Description: what is to be accomplished and where.

b. Workday duration.

c. Responsibility code; identifying who performs each individual activity.

5. Network shall show continuous flow from left to right.

6. Identify days per week and shifts per day worked; also, non-work days and holidays.

7. Identify activities which constitute controlling operations, i.e., milestones or critical path.

G. Failure to include any element of work required for performance of this Contract shall not excuse Contractor from completing work required to comply with Contract Documents and Construction Schedule.

H. Submittal of the Construction Schedule shall be interpreted as Contractor's confirmation that schedule meets requirements of the Contract Documents, and that the work will be executed in sequence indicated in schedule.

I. Contractor shall prepare construction only after careful coordination with the District, Probation and the Engineer has been done. Schedule must reflect all suggestions and recommendations by said parties. Construction phasing shall be executed consecutively and without period(s) of intermission. Contractor shall prepare his bid such that no less than ten (10) different phases are included to complete his scope of work indicated in the project documents. Any alteration or changes to phasing and/or execution of work must be approved by Probation and the District prior to start of work.

1.05 REVIEWS, UPDATES, AND REVISIONS

A. The District will review and return Contractor's Construction Schedule, with summary comments, within 10 days. If revisions are required, Contractor shall resubmit the construction schedule within 7 days following receipt of the District's comments.

B. After Contractor and the District agree to a final schedule, it will become the Project Construction Schedule and considered part of the Contract Documents.

C. Construction Schedule Reviews and Updates:

1. Periodically review schedule for:

a. Actual completion dates for work items completed during report period.

b. Actual commencement dates for work items started during report period.

c. Estimated remaining duration for work items in progress are always to be less than original duration, unless modified by change order.

d. Estimated commencement dates for work items scheduled to start during month following report period.

e. Changes in duration of work items.

f. Identification of current and most crucial critical paths to required completion dates.

2. In the case of a schedule change, Contractor shall include a narrative report with the updated progress analysis, which shall include, but not be limited to, a description of problem areas, current and anticipated delaying factors, and any proposed revisions for a recovery plan.

3. Change Orders affecting schedule shall be clearly identified as separate, new activities.

4. Review of Construction Schedule shall not relieve Contractor of the responsibility for accomplishing work in accordance with the Contract Documents.

D. Updates: Contractor shall submit to the District, with each Bi-Weekly payment application, an up-to-date Construction Schedule to include following:

1. Work Item Report: Detailing work items and dependencies as indicated on network diagram, listed in order of ascending work item number.

2. Separate listing of activities completed during reporting period.

3. Separate listing of activities which are currently in progress, indicating their remaining duration and percentages completed.

4. Separate listing of activities which are causing delay in work progress.

5. All reports shall be arranged based on appropriate phasing, areas within a phase, or broken down by building or facility.

6. Narrative report to define problem areas, anticipated delays, and impact on Construction Schedule. Report corrective action taken, or proposed, and its effect, including effect of changes on schedules of individual contractors.

7. Resolution of conflict between actual work progress and schedule logic: when out-of-sequence activities develop in schedule because of actual construction progress, Contractor shall submit a revised schedule to conform to current job sequence and direction.

E. If, according to current updated Construction Schedule, the District determines Contractor is behind the Contract completion date or any interim milestone completion dates and taking into account time extensions to which Contractor is entitled, Contractor shall submit a revised schedule, indicating a workable plan and a narrative description to complete project on time.

1. The District may withhold progress payments until schedule changes are approved.

F. Scheduling of change or extra work orders is responsibility of Contractor.

1. Contractor shall revise Construction Schedule to incorporate all activities involved in completing change orders, or extra work orders, and submit it to the District for review.

G. If the District finds Contractor is entitled to extension of any completion date under provisions of the Contract, the District's determination of total number of days extension will be based upon current analysis of Construction Schedule and upon data relevant to extension.

H. Contractor acknowledges and agrees that delays to non-critical activities (those with "float") will not be considered a basis for a time extension unless activities become critical. Non-critical activities are those activities which, when delayed, do not affect an interim or final Contract completion date.

I. Any claim for extension of time shall be made in writing to the District not more than 24 hours after commencement of delay; otherwise, it shall be deemed finally waived for all purposes. Contractor shall provide an estimate of probable effect of such delay on progress of the work as part of the claim.

1.06 CONTRACTOR'S RESPONSIBILITY

A. Contractor shall provide sufficient skilled labor, materials, and equipment to properly carry out the work in accordance with Construction Schedule.

1.07 SUSPENSION OF PAYMENTS

A. Initial Submittal: The District has the right to withhold progress payments until Construction Schedule is approved.

B. Monthly Submittals: The District has the right to withhold progress payments if Contractor fails to update and submit Construction Schedule and reports as specified.

1.08 RECORD COPY

A. At completion of work items, submit Construction Schedule reflecting actual project critical paths.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes:

1. Procedures for submitting, to the District, items such as schedules, shop drawings, product data, samples, material lists, manuals, warranties and certificates, required by this section and individual specification sections, finish hardware schedule and segregation of contract costs.

2. Wherever possible, throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by the name and catalog number of a manufacturer and by reference of recognized industry standards.

3. To ensure that specified products are furnished and installed in accordance with the design intent, procedures have been established for advance submittal of design data and for its review by the District.

C. Related Sections:

1. Section 01 32 13: Construction Schedule.

2. Section 01 78 39: Project Record Documents.

3. Other sections requiring submittals, as indicated in specification sections.

1.02 DEFINITIONS

A. Shop Drawings: Shop drawings are original drawings prepared by Contractor, subcontractor, supplier, or distributor which illustrate some portion of work by showing fabrication, layout, setting, or erection details.

1.03 SUBMITTAL PROCEDURES

A. After award of contract, Contractor will receive the documentation checklist for project completion forms provided by the District. Forms will indicate documentation requested by the District, such as shop drawings, manufacturer's catalogs, samples, warranties, operating and instruction manuals.

B. Upon receipt of checklist, Contractor shall, during course of project, secure and submit the required documentation to the District for review and approval.

C. After the District has date-stamped, signed and reviewed submittals, with corrections noted, if any, the District will transmit submittals to Contractor. Final inspection shall not be held until documentation checklist has been completed.

D. Timing of Submittals:

1. Within 7 days after award of contract, Contractor shall submit to the District shop and diagram drawings, materials lists and other submittals required by the specifications, prior to the establishment of a job start date. (Exception - Finish Hardware Schedule and Segregation of Contract Costs). Contractor shall submit a single, complete submittal package – multiple submittal packages will not be accepted unless otherwise agreed upon by the District and Engineer. Should Contractor submit multiple submittal packages without the approval of the District and Engineer, Contractor may be subject to fee charges for additional review time spent by District and/or Engineer.

2. Provide a schedule of submittals in conformance with construction schedule. Refer to Section 01 32 13: Construction Schedule - CPM.

    a. Submit and review with the District, a schedule for shop drawing submittal dates and date of return required by Contractor in order to maintain construction schedule. Schedule of submittals shall indicate adequate time between submittals in order to allow adequate time for review without impact to construction schedule.

3. Schedule of submittals shall be related to work progress, and shall be organized to allow sufficient time for mailing, reviewing, corrections, resubmission and re-reviewing.

4. Coordinate submittal of related items.

5. Revise, update and submit schedule of submittals to the District, on first of each month, or as required.

6. Allow at least 5 days for the District's review following receipt of submittal. For Divisions 23 and 26 submittals, allow a minimum of 7 days following receipt of submittal.

E. Make submittals in accordance with the construction schedule, and shop drawing submission schedule, in sequence that avoids delaying work and progress of related work.

F. Each submittal shall be accompanied by a letter of transmittal containing an itemized and numbered list of submitted materials. Separate letters of transmittal shall accompany each submittal from different subcontractors.

G. Resubmission: If requested, resubmit submittals within 3 days. Resubmit as specified for initial submittal but identify as such. Indicate changes which have been made other than those requested by the District.

PART 2 - PRODUCTS

2.01 CONSTRUCTION SCHEDULE

A. Provide in accordance with Section 01 32 13 Construction Schedule – CPM.

2.02 SHOP DRAWINGS

A. Draw shop drawings to an accurate scale that is large enough to indicate all pertinent features and methods.

B. Copies Required and Distribution: Submit electronic format to District, AOR and EOR.

C. Contractor MUST prepare shop drawings for all aspects of work, including but not limited to:

1. All work required for the replacement of the packaged rooftop unit and Split Dx unit. Drawings shall show plan (1/4” min) and elevation views (1/4” min) of the new unit dimensions, weight, service clearances, connection locations, and structural supports including curb modifications and anchorage. New ductworks drop and connect to the existing duct drop, including duct sizes, materials, transitions, routing. Gas and Condensate drain reconnection showing routing from the new unit to the existing drain including pipe size, slope, insulation, supports.

2. Provide roofing and penetration plans including curb locations, penetration sizes, required modifications, flashing, waterproofing, and coordination with roofing contractor for all interface details.

3. Controls wiring, schematics and sequences

D. All shop drawings must be approved by Engineer prior to the ordering, fabrication, and/or installation or equipment and/or contracted work.

E. See Section 23 30 00, paragraph 1.6 for additional requirements.

2.03 PRODUCT DATA

A. Manufacturer's Standard Schematic Drawings:

1. Delete information that is not applicable to project.

2. Supplement standard drawings to provide additional information applicable to Project.

B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data:

1. Clearly mark each copy to identify pertinent materials, products, or models.

2. Indicate dimensions and clearances required.

3. Indicate performance characteristics and capacities.

4. Indicate wiring diagrams and controls.

C. Copies required and Distribution: Submit electronic format to District, AOR and EOR.

2.04 SEGREGATION OF CONTRACT COSTS

A. Provide a Segregation of Contract Costs as required by the general condition requirements of the District.

2.05 MANUALS

A. Where manuals are required to be submitted covering items included in work, prepare manuals in Electronic format, approximately 8-1/2" by 11" in size, and provide following information:

1. Identification on, or readable through, front cover stating general nature of manual.

2. Neatly typewritten index at front of manual, furnishing immediate information as to location in manual of data or equipment involved.

3. Complete instructions regarding operation and maintenance of equipment involved.

4. Complete nomenclature of replaceable parts, their part numbers, current cost, and name and address of nearest vendor of parts.

5. Copy of all guarantees and warranties issued.

6. Copy of approved shop drawings with data concerning changes made during construction.

B. Extraneous Data: Where contents of manuals include manufacturers' catalog pages, clearly indicate precise items included in this installation and delete, or otherwise clearly indicate, manufacturers' data which is not part of this installation.

C. Number of Copies Required: Electronic format to the District for review, approval and distribution.

2.06 CERTIFICATES

A. Submit in triplicate, in accordance with requirements of each specification section.

2.07 MATERIAL LIST SUBMITTALS

A. Provide material lists on following:

1. Electrical.

2. Heating, ventilating and air conditioning.

3. Plumbing.

4. Controls.

B. Copies Required: Electronic format copy will be returned to Contractor.

C. Provide supplementary submittals for materials omitted or not approved.

D. Substitutions proposed by Contractor shall be made in accordance with the General Conditions of the Contract.

PART 3 - EXECUTION

3.01 SUBMITTAL REVIEW BY CONTRACTOR

A. Review submittals prior to submission to the District. Review and stamp submittals prior to review by District.

B. Clearly identify deviations from the Contract drawings and specifications on submittals. Prior approval of deviations by the District or their representative is required. Contractor shall not use the submittal process for substitution requests.

C. Deliver submittals to the District. Identify project name and address, telephone number of Contractor, subcontractor and supplier. Identify, as appropriate, pertinent drawing sheets, detail numbers and specification section numbers. Clearly identify deviations from contract documents.

3.02 SUBMITTAL REVIEW BY DISTRICT

A. District will not review submittals that have not been stamped and reviewed by Contractor. Such submittals will be returned, without review, to Contractor.

B. District will review submittals required, according to the submittal schedule, and make corrections, notes or modifications as appropriate. Submittals will be stamped, to indicate the action required, and returned to Contractor.

1. Submittals not required by the contract documents will be returned without review.

2. District's approval stamp is for design and quality only, and is not an approval for deviations or quantities.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 40 00 - QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Interpretation of requirements.

B. Quality assurance and control of installation.

C. Tolerances.

D. Field samples.

E. Mock-up.

F. Manufacturers' field services and reports.

1.02 INTERPRETATION OF REQUIREMENTS

A. 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.

B. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation shall comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits.

C. Where codes or specified standards indicate higher standards, more stringent tolerances or more precise workmanship than levels shown or specified, comply with most stringent requirements.

D. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. 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.

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. 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.

E. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

F. Comply fully with manufacturers' instructions, including each step in sequence.

G. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect

before proceeding.

H. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.04 TOLERANCES

A. Monitor tolerance control of installed products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturer's tolerances. Should manufacturer's tolerance conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.05 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications sections for review.

B. Acceptable samples represent a quality level for the Work.

C. Where field sample is specified in individual sections to be removed, clear area after field sample has been reviewed by Architect.

1.06 MOCK-UP

A. Mock-up will be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals and finishes.

C. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

D. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been reviewed by Architect.

1.07 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment and other field services as applicable, and to initiate instructions when necessary.

B. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

C. Submit report in duplicate within 15 days of observation to Architect for review.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 GENERAL INSTALLATION

A. Comply with requirements specified in Section 01 73 00.

3.02 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.03 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 42 13 - ABBREVIATIONS, SYMBOLS AND ACRONYMS

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes: List of abbreviations, symbols and acronyms used in these specifications:

1.02 ABBREVIATIONS

ac	Alternating current
amp	ampere
BTU	British thermal unit
cfh	Cubic feet per hour
cfm	Cubic feet per minute
cm	Centimeter
Co.	Company
COP	Coefficient of performance
Corp.	Corporation
d	Penny
db.	Decibel
DB	Dry bulb
dc	Direct current
EER	Energy efficiency ratio
F	Degrees Fahrenheit
fpm	Feet per minute
ft	Foot or feet
gph	Gallons per hour
gpm	Gallons per minute
HP	Horsepower
HVAC	Heating, ventilating and air conditioning
Hz	Hertz
Inc.	Incorporated
KHz	Kilohertz
Kip	thousand pounds
Ksf	Thousand pounds per square foot
Ksi	Thousand pounds per square inch
Kv	Kilovolt
KVA	Kilovolt amperes
KW	Kilowatt
KWH	Kilowatt hour
LF	Linear foot
lb	Pound
LED	Light emitting diode
MBH	1000 BTUs per hour
MHz	Mega hertz

mil	Thousandth of an inch
mm	Millimeter
mph	Miles per hour
oz.	Ounce
PCF	Pounds per cubic foot
pH	Acidity-alkalinity balance
psf	Pounds per square foot
psi	Pounds per square inch
psig	Pounds per square inch, gage
RF	Radio frequency
rpm	Revolutions per minute
SF	Square foot
SY	Square yard
V	Volt
WB	Wet bulb

1.03 SYMBOLS

#	Number or pound
'	Foot or feet
"	Inch(es)
%	Percent

1.03 ACRONYMS

AA	The Aluminum Association, Inc
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ADA	Americans for Disability Act
AGA	American Gas Association
AGCIH	American Conference of Governmental Industrial Hygienists
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute
APA	APA – The Engineered Wood Association
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATBCB	Architectural & Transportation Barriers Compliance Board
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association

AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CQC	California Quality Control (CMA Standards)
CRA	California Redwood Association
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards, U.S. Department of Commerce
CSFM	California State Fire Marshal
CSI	The Construction Specifications Institute
CTIOA	Ceramic Tile Institute of America
CTI	Cooling Tower Institute
DHI	Door and Hardware Institute
DSA	Division of the State Architect, Office of Regulation Services
EPA	Environmental Protection Agency
ETL	ETL Testing Laboratories
FCC	Federal Communication Commission
FM	Factory Mutual
FS	Federal Specifications
GA	Gypsum Association
GANA	Glass Association of North America
HMMA	Hollow Metal Manufacturer’s Association
HPVA	Hardwood Plywood & Veneer Association
IACS	International Annealed Copper Standards
IAMPO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
ICC	International Code Council
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical & Electronic Engineers, Inc.
IES	Illuminating Engineering Society
IMI	International Masonry Institute
IRI	Industrial Risk Insurers
ISO	International Organization for Standardization
MLSFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society of the Valve & Fittings Industry.

NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEMA	National Electrical Manufacturers Association
NEC	National Electrical Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NOFMA	National Oak Flooring Manufacturers Association
NPCA	National Paint and Coatings Association
NPDES	National Pollutant Discharge Elimination System
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NTMA	National Terrazzo & Mosaic Association
NUSIG	National Uniform Seismic Installation Guidelines
NWMA	National Woodwork Manufacturers Association
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standard, U.S. Department of Commerce
RIS	Redwood Inspection Service
RFCI	Resilient Floor Covering Institute
SCAQMD	South Coast Air Quality Management District
SDEI	Steel Deck Institute
SDI	Steel Door Institute
SFM	State Fire Marshal
SFPA	Southern Forest Products Association
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TCA	Tile Council of America
UBC	Uniform Building Code
UBPPA	Uni-Bell PVC Pipe Association
UCI	Uniform Construction Index
UFAS	Uniform Federal Accessibility Standards
UL	Underwriters' Laboratories, Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
WCLIB	West Coast Lumber Inspection Bureau

WDMA	Window and Door Manufacturers Association
WIC	Woodwork Institute of California
WWPA	Western Wood Products Association

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 51 00- CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes Description of temporary utilities and protection of construction facilities that are to be provided and maintained by Contractor.

1.02 TEMPORARY UTILITIES

A. Water:

1. Water used on work will be furnished and paid for by the District. Contractor shall provide necessary temporary piping from distribution point to points on site where water is necessary to carry on work, and upon completion of work shall remove temporary piping.

2. Provide suitable drainage system, subject to approval of the District Inspector, to carry construction wastewater from site to an approved disposal location.

B. Electricity:

1. The District will furnish and pay for electrical power necessary for construction purposes at site. Contractor shall provide necessary temporary wiring and lighting and shall remove all temporary wiring and lighting at the completion of the work. Temporary wiring and lighting shall comply with requirements of the Los Angeles Electrical Code. Contractor shall be responsible for all damage caused by overloading or other causes and the installation shall be satisfactory to the District Inspector.

2. Furnish and install area distribution boxes, so located that individual trades may use 100 feet maximum length extension cords to obtain adequate power and artificial lighting, at points where required for work, for inspection and for safety.

3. Provide electricity needed for construction including connections for construction equipment requiring power.

C. Gas: Contractor shall provide and install gas equipment and piping necessary to perform his work, and shall remove same upon completion of work. Contractor shall pay for the gas used in work.

D. Heating and Ventilation:

1. Provide, maintain, and pay for heat needed for proper installation of work and to protect materials and finishes from damage due to weather.

2. Provide ventilation of enclosed areas to cure materials, to disperse humidity, and to prevent accumulation of dust, fumes, or gases.

E. Temporary Telephone: Contractor shall provide and pay all costs for one cellular telephone or business telephone line at site for his use. Use of District telephones will not be permitted.

F. Temporary FAX: Make necessary arrangements and pay costs for installation and operation of telephone service to Contractor's office at site, suitable for sending and receiving FAX transmissions. Install a plain-paper FAX machine connected to this line and available 24 hours a day during construction operations.

G. Use means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of work.

H. Make required connections to existing utility systems with minimum disruption to services in existing utility systems. When disruption of existing service is required, do not proceed without the District Inspector's approval and, when required, provide alternate temporary service.

1.03 TEMPORARY HEATING AND COOLING

A. Equipment:

1. Contractor shall provide heating and/or cooling equipment as required to provide heated and/or cooled conditioned air to occupied spaces for which construction has temporarily disabled air conditioning equipment serving that space. All equipment must be sized properly to meet cooling and/or heating load requirements.

2. All temporary equipment must be secured with provisions stated in Section 1.04 of this specification.

3. Contractor shall be responsible for furnishing and installing all equipment and/or items required to properly mount or secure temporary equipment.

4. Upon completion of this project, Contractor shall remove all temporary equipment and appurtenances from the site. All areas and material finishes must be restored to their original state.

1.04 CONTRACTOR'S FACILITIES

A. Storage Units:

1. Provide secure and waterproof storage units where required for the temporary storage of furniture, equipment and other items. Storage unit must be located within the confines of a safety barricade (see below) and shall remain inaccessible to facility occupants.

2. Storage Unit Construction: Walls, roof and doors minimum 16 gage steel; floors 1 inch tongue and groove hardwood or 3/4 inch minimum exterior type plywood, with undercarriage designed to accommodate forklift blades 42 inch to 60 inch long; doors at one end of storage unit, double wide swing out with waterproof gaskets and lockable steel bars.

3. Pay all delivery charges and set the storage unit where directed by the District Inspector.

4. Remove storage unit from the site after removal of all the items that were

B. Contractor's Safety Barricade:

1. Contractor shall erect safety barricade as required by the District Inspector for the protection and safety of staff and the public. New or pre-used material can be utilized.

2. Unless otherwise indicated or specified, barricade shall be constructed of 8 feet high chain link fencing and shall be properly secured to the ground and/or structure. Space posts not to exceed 10 feet on centers.

3. Chain link fencing shall be free from barbs, icicles or other projections resulting from galvanizing process. Fence fabric having such defects will be rejected even though it has been erected.

4. Gates shall be fabricated of steel pipe with welded corners, and bracing as required. Fabric to be attached to frame at 12 inch centers. Provide all gate hardware of a strength and quality to perform satisfactorily until barricade is removed upon completion of work.

5. At completion of work, remove barricade and concrete post footings from site; backfill and compact fence footing holes. Existing surface paving that is cut into or removed shall be patched and sealed to match surrounding areas.

6. The Inspector may allow the use of panelized chain link fence or properly supported orange plastic fence.

7. Edge Protection Guardrails for roof work per OSHA and District Requirements. Cones and caution tape is not acceptable.

C. Other Enclosures:

1. Provide lockable, temporary weather-tight enclosures at openings in exterior walls to facilitate temporary cooling or heating and security.

2. Provide protective barriers around trees, plants and other improvements designated to remain.

D. Storage Yards and Sheds:

1. Contractor shall fence and maintain storage yards in an orderly manner.

2. Storage for materials that cannot be stored outside may be stored within building.

3. District Inspector shall approve exact location, size and access of storage yards.

4. Remove storage yards and sheds as rapidly as progress of work will permit.

E. Contractor's Parking:

1. Location and number of spaces for Contractor's parking as directed by the District Inspector, temporarily stored and when directed by the District Inspector.

1.05 GENERAL ITEMS

A. Staging areas for delivery of materials and equipment will be at locations designated by the District Inspector.

B. Safety and Security Lighting: Provide 20-foot candles minimum inside building(s) and 5 foot candles outside.

C. Noise Control: Muffle all equipment. All noise levels shall comply with OSHA and CAL/OSHA requirements. Excessive noise tasks such as coring etc. shall be performed after hours or weekends.

D. Dust and Odor Control: Dust and odor barriers shall be in place dividing areas of work and remainder of building to provide a safe and clean environment for building occupants. Provide adequate ventilation if required. Comply with all OSHA and CAL/OSHA requirements.

E. Where temporary noise/duct partitions are required, Contractor shall build a dividing partition, which will extend from finished floor up tight to the underside of existing ceiling. (Upon removing partition, Contractor shall repair floor and/or ceiling as required to match existing conditions.) Contractor shall construct partition in accordance with local building codes. Under no circumstances shall temporary partition block any means of egress or impede the regular flow of occupant traffic. Contractor shall provide District with a scaled drawing indicating the exact location of the temporary partition relative to its' surroundings. Contractor must have approval from District prior to the erection of such partition.

1.06 TRENCHES

A. Open trenches for installation of utility lines (water, gas, electrical and similar utilities) and open pits outside barricaded working areas shall be cordoned at all times. Barricades, shall be as identified in another part of this section. Walk Plates shall be installed at all pedestrians and vehicle traffic cross-area (see below).

Trenches shall be backfilled and patch-paved within 72 hours after approval of installation by the District Inspector.

B. Open trenches deeper than 42 inches, and not located within a parking area or public street access, shall be enclosed within an 8-foot high chain-link fence.

C. Trenches or excavations which cannot be properly back-filled and patched prior to the end of each work day shall be bridged to permit an unobstructed flow of traffic. Trench walls and adjacent soils shall be sufficiently stabilized prior to the use of steel plates for bridging.

1. Bridging must be secured against displacement by using adjustable cleats, angles, bolts, or other devices to prevent movement by traffic.

2. The trench must be adequately shored to support the bridging and traffic.

3. Steel plates used for bridging must extend 1 foot beyond the edges of the trench. Temporary paving materials (premix) should be used to feather the edges of the plate to minimize wheel impact.

D. All excavations in public rights-of-way shall be in compliance with all current Occupational Safety and Health Act (CAL/O.S.H.A.) requirements. Any person in an excavation not in compliance with CAL/O.S.H.A. regulations will be ordered out of the excavation until it is brought into compliance.

E.

F. All excavations or trenches made in the parking area or sidewalk shall be backfilled and patched in accordance with the current CDOT and/or NCDOT specifications. District inspector shall be notified prior to making an excavation or cutting a trench in any pavement or sidewalk.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes:

1. Quality assurance.

2. Delivery, storage and handling.

3. Installation requirements.

1.02 QUALITY ASSURANCE

A. Standard References: Material or procedure specified by reference to number, symbol, or title of a specific standard, such as a commercial standard, a Federal Specification, a trade association standard, or other similar standard document shall comply with requirements in latest version, revision, amendment or supplement of document in effect on date of executed contract, except as limited to type, class or grade, or modified in such reference.

1.03 DELIVERY, STORAGE AND HANDLING

A. All materials and products for the project shall be delivered in manufacturer's original, undamaged, factory sealed containers, with factory applied labels intact and legible.

B. The labels shall contain the following information as applicable: Manufacturer's name and address; brand name; product designation; type, class or grade; size or weight; batch number; testing lab certification and color.

1.04 EQUIPMENT FURNISHED BY THE DISTRICT

A. Delivery: Within 15 days after the Contract is awarded, Contractor shall notify the District, in writing, of date scheduled for installation of equipment. Upon delivery to site, Contractor shall store equipment inside rooms or protected spaces. The District Inspector will sign receipt, or bill of lading, as required.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. Install equipment in location and orientation indicated on drawings, or in locations provided by District Inspector.

B. Equipment shall be installed plumb and level, by means of shims or spacers, in a manner that with all mounting bolts fully tightened, no distortion nor undue stresses will be set up within equipment. Furnish other accessories and components necessary to properly install equipment, such as bolts, washers, fittings or blocking.

C. Floor Mounted Equipment:

1. Equipment designed or specified to be attached to substrates such as concrete or steel shall be secured with anchor bolts and tampins, cinch anchors or fastite bolts and shells of size recommended by manufacturer of equipment, or as required for secure mounting.

2. Equipment designed or specified to be attached to wood construction shall be secured with machine bolts or lag screws, of size recommended by manufacturer of equipment, and as directed by the District Inspector.

D. Bench Mounted Equipment: Secure to bench or table by machine bolts.

E. Equipment shall be connected only to outlets with correct electrical characteristics. Contractor shall ascertain that the electrical characteristics of the equipment are for outlets indicated. Report discrepancies immediately to the District Inspector.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes:

1. Cutting, patching, and alteration procedures:

a. Removals, cutting, alterations and repairs to existing facilities as required to complete work.

b. Relocation and reinstallation of existing construction and finish.

c. Salvage, storage and protection of existing items to be reinstalled.

d. Salvage and delivery to the District of items so designated for removal and salvaged by Contractor.

2. Examination by Contractor.

3. Final inspection.

1.02 SUBMITTALS

A. Shop Drawings: Submit details of cutting and patching, including transition to existing items being patched. Provide details of all piping and ductwork routing, elevations and sizes. Also provide equipment locations and dimensions relative to equipment pads and all equipment support and pad locations.

B. Schedules: Contractor must submit proposed work schedules, including dates and hours proposed. Schedule must be approved by District prior to starting any work. Where special work conditions apply, Contractor must provide a detailed work schedule which must include all duties, work dates and times, completion dates, and an explanation stating means and methods for executing such work.

C. All work executed within the building shall be done on Monday through Friday during the hours of 7:00 a.m. to 6:30 p.m. Any deviations from the said days and/or times must be approved with the District prior to executing such work. Any work to be done before and/or after stated times (except on Saturday or Sunday) shall be scheduled as required and done without additional cost to the District.

1.03 WARRANTIES

A. Existing Warranties: Repair materials and systems that have been cut, modified or damaged as a result of cutting, patching or alteration procedures, using methods and materials that will not void existing warranties. It shall be the responsibility of the Contractor to contact the District and/or Contractor backing an existing warranty – coordinate and consult as required to ensure that all materials are restored to their original condition and warranties are not voided. Any damage to existing systems under warranty shall be repaired by Contractor at no additional cost to the District.

1.04 REMOVAL, ALTERATIONS AND REPAIRS

A. Restore and refinish new and existing construction and improvements that are cut into, damaged, relocated, or reinstalled. Workmanship and materials shall conform to applicable provisions of other sections.

B. Provide new fasteners, connectors, adhesives, and other accessory materials or components as required to complete the work.

C. Perform removals and alterations only to the extent required to complete the work. Carefully remove work to be salvaged or reinstalled. Protect and store for reuse.

1. Walls, Partitions, and Ceilings: Remove by accurately cutting and carefully removing.

2. Concrete: Saw with powered concrete saw, or chip where sawing is not feasible, to prevent spalling of concrete to remain. Cut off reinforcing bars, except where bonded into new concrete or masonry, and paint ends with bituminous paint before enclosing.

3. Woodwork: Cut or remove to a joint or panel line. Undamaged removed material may be reused.

4. Sheet Metal: Remove back to joint, lap, or connection. Secure loose or unfastened ends or edges and make watertight.

5. Glass: Remove broken or damaged glass and clean rebates and stops of setting materials.

6. Plaster: Cut back to sound plaster on straight lines, and back-bevel edges of remaining plaster. Trim existing lath and prepare for new lath.

7. Gypsum Wallboard: Cut back on straight lines to undamaged surfaces, with at least two opposite cut edges centered on supports.

8. Acoustical Ceilings: Remove hanger wires where ceilings are not reinstalled.

9. Tile: Cut back to sound tile and backing on joint lines if portions are to remain.

10. Flooring: Completely remove flooring and clean backing of old cement or adhesive. Carefully remove wood flooring for patching and repairing of existing wood flooring to remain.

11. Miscellaneous Items: Grind items not mentioned but required to be removed in such manner as minimizes damage to Work to remain.

1.05 CUTTING AND PATCHING

A. Cutting, boring, saw cutting or drilling through new or existing structural elements to be done only when so detailed in drawings or accepted by the Structural Engineer, with approval from the District and DSA.

B. Batching, Repairing and Finishing:

1. Concrete: Keep the cut edges damp for 24 hours and scrub with a neat portland cement mortar just before new concrete is placed; epoxy adhesive may be used in lieu of cement mortar. Finish new concrete to match existing. Provide 3,000 psi concrete for repairs. At cut concrete edges to remain exposed, apply adhesive and restore with minimum 3/4" thick cement mortar finished to match adjoining surfaces.

2. Metal Items: Grind cut edges to remain exposed smooth and rounded.

3. Woodwork: Trim back to joint lines or splices, re-trim cut surfaces, and patch new matching or undamaged remove materials.

4. Sheet Metal: Restore removed or damaged sheet metal items as required or directed.

5. Glass: Install new matching glass and re-seal existing exterior windows, airtight.

6. Lath and Plaster:

a. Lath: Lath surfaces to be patched with matching lath as required, secured to supports at 6" centers. Lap new lath 6" over existing and wire-tie new and existing lath edges together at 6" intervals. Restore paper backings as required, shingled into existing.

b. Plaster: Apply a bonding agent on cut edges of existing plaster. Apply 3-coat plaster patching of type, thickness, finish, color, and texture to match existing plaster.

7. Gypsum Wallboard: Refasten cut edges of existing wallboard. Apply patches with at least two opposite edges centered on supports and secure at 6" centers. Tape and finish joints and fastener heads. Make patching non apparent when painted.

8. Acoustical Ceilings: Conform to requirements specified herein as necessary to match the existing conditions.

9. Resilient Flooring: Completely remove damaged flooring and clean off all old cement as specified. Install new flooring of color, pattern, and type as specified.

10. Painted Surfaces: Prepare patched areas and refinish as specified in Section 09 90 00: Painting.

1.06 PREPARATION OF EXISTING WORK

A. Holes: Drill holes through existing concrete or masonry for new conduit and/or piping, and do not jack-hammer.

B. Sandblasting: Work includes sandblasting of existing surfaces to receive materials secured by cementitious, adhesive, or chemical bond (such as concrete, toppings, elastomeric coatings, plaster, mortar, etc.), and the sandblasting of other surfaces as shown, specified, directed, or required for proper preparation of surfaces. Completely remove existing finishes, stains, oil, grease, bitumen, penetrated mastics and adhesives including primers, and substances deleterious to bond or connection of new materials, and expose clean sound surfaces. Employ wet sandblasting for interior surfaces, and for exterior surfaces where directed or necessary to prevent creation of a dust nuisance or required by Code.

C. Salvage: Existing removed items not indicated or specified to be reused or reinstalled the District intends to retain will be designated by District prior to start of removals in pertaining area. Carefully remove, salvage, box or bundle as approved, and deliver such items to storage at the site as the District Inspector directs.

D. Disposal: Conform to General Conditions. Dispose of removed material off the District's property except existing items to be salvaged or reinstalled. Promptly remove waste and debris and do not allow to accumulate within facilities or on site.

PART 2 - PRODUCTS

2.01 MATERIALS

A. New Materials: Use materials identical in appearance and performance characteristics to existing materials, so that patch or alterations will visually match and blend seamlessly into adjacent existing surfaces.

B. New ceiling tile to replace the obsolete existing tile – Armstrong 741. See specification 09 51 23.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify compatibility and suitability of existing before starting the work. Perform a detailed survey of existing site and building conditions before starting work. Report unsatisfactory conditions to the District Inspector, such as discrepancies or conflicts between Drawings and actual conditions.

3.02 FINAL INSPECTION

A. A final examination shall be made when work is substantially complete, except for minor corrective items, in accordance with District regulations.

B. Before final examination, completed documentation checklist shall have been received and project record documents shall be completed.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division One apply to this section.

B. Section Includes: Procedures and requirements for preparing project record documents for delivery to District upon completion of the work.

C. Related Sections:

1. General Conditions.

2. Section 01 33 00: Submittals.

3. Section 01 32 13: Construction Schedule-CPM.

1.02 PROCEDURES

A. Project Record Documents: Promptly following award of contract, Contractor shall secure from the District one complete set of Specifications and prints of contract drawings for use on the job site as project record drawings.

B. Timing of Entries: Make entries within 24 hours after receipt of information.

C. Contractor shall be responsible for maintaining and recording changes on project record documents set, by marking them on a daily basis to record the details of construction, including changes and substitutions.

D. Do not use project record documents set for any purpose except entry of new data, and for reference by the Engineer and District. Maintain separate sets for daily reference on job site.

E. Use all means necessary to protect project record documents set from deterioration, loss or damage.

F. Entries on Drawings: Using an erasable color pencil, other than blue, not ink or indelible pencil, clearly describe change by note and by graphic line as required. Date entries. Call attention to entry by a "cloud" around area or areas affected. In event of overlapping changes, different colors may be used for each change.

1. Changes due to approved change orders may be indicated by referencing change order number and scope of change in lieu of revising project record documents, but shall be indicated on the final as-built drawings.

2. Location and depth below finish grade or above ceilings and attic spaces of utilities shall be fully dimensioned and indicated on project record documents. Dimensions shall be taken to building lines or permanent landmarks.

G. District's periodic review of the progress being made on project record documents will be a prerequisite to District's approval of requests for progress or final payments.

1. Progress Approvals: Prior to submitting each request for progress payments, secure the District Inspector's approval of status of project record documents.

2. Prior to submitting request for final payment and final inspection, submit project record (as-built) documents set to the District Inspector, with transmittal letter, in duplicate, for approval and further processing.

3. The Contractor shall certify that the project record documents are complete and accurately reflect all changes or modifications to the original construction documents.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

DIVISION 02 – EXISTING CONDITIONS

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 DEFINITIONS

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

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and re-installed.

1.02 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Items of interest or value to Owner that may be uncovered during demolition remain the property of Owner. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.03 FIELD CONDITIONS

A. Owner may occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

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

C. Hazardous Materials: If suspected hazardous materials are encountered, do not disturb; immediately notify Owner. Hazardous materials will be removed by Owner under a separate contract.

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

E. Utility Service: Maintain existing utilities noted to remain in service and protect them against damage.

F. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 – PRODUCTS

2.01 PEFORMANCE 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/ASSE A10.6 and NFPA 241.

PART 3 – EXECUTION

3.01 EXAMINATION

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

C. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

D. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

E. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

-END OF SECTION-

SECTION 05 50 00 MISCELLANEOUS METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. SECTION INCLUDES: Completion of miscellaneous metal fabrications such as plates and sheet goods as indicated on the drawings and specified herein.

B. Substrates to which fabrications are to be attached or embedded.

1.2 REFERENCE STANDARDS

A. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

1. ASTM A36 – Standard Specification For Carbon Structural Steel.
2. ASTM A53 – Standard Specification For Pipe, Steel, Black And Hot-Dipped, Zinc-Coated, Welded And Seamless.
3. ASTM A108 – Standard Specification For Steel Bar, Carbon And Alloy, Cold-Finished.
4. ASTM A123 – Standard Specification For Zinc (Hot-Dipped Galvanized) Coatings On Iron And Steel Products.
5. ASTM A153 – Standard Specification For Zinc Coating (Hot-Dip) On Iron And Steel Hardware.
6. ASTM A307 – Standard Specification For Carbon Steel Bolts And Studs, 60000 Psi Tensile Strength.
7. ASTM A325 – Standard Specification For Structural Bolts, Steel, Heat Treated, 120/105 Ksi Minimum Tensile Strength.
8. ASTM A435 - Standard Specification For Straight-Beam Ultrasonic Examination Of Steel Plates.
9. ASTM A490 - Standard Specification For Structural Bolts, Steel, Heat Treated, 120/105 Ksi Minimum Tensile Strength.
10. ASTM A500 – Standard Specification For Cold-Formed Welded And Seamless Carbon Steel Structural Tubing In Round And Shapes.
11. ASTM A501 - Standard Specification For Hot-Formed Welded And Seamless Carbon Steel Structural Tubing.
12. ASTM A572 – Standard Specification For High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
13. ASTM A653 – Standard Specification For Steel Sheet, Zinc-Coated (Galvanized) Or Zinc-Iron Alloy-Coated (Galvannealed) By The Hot-Dip Process.
14. ASTM A673 - Standard Specification for Sampling Procedure for Impact Testing of Structural Steel,
15. ASTM A780 – Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
16. ASTM A992 – Standard Specification for Structural Steel Shapes.
17. ASTM C1107 – Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink).
18. ASTM E23 - Standard Test Methods for Notched Bar Impact Testing of Metallic Materials.
19. ASTM E112 - Standard Test Methods for Determining Average Grain Size.
20. ASTM F436 – Standard Specification for Hardened Steel Washers.
21. ASTM F959 - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners.
22. ASTM F1554 – Standard Specification for Anchor Bolts, Steel, 36, 55 and 105-Ksi Yield Strength.
23. ASTM F1852 – Standard Specification for “Twist Off” Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 120/105 ksi Minimum Tension Strength.

B. American Welding Society (AWS):

1. AWS D1.1 – Structural Welding Code - Steel.
2. AWS D1.8 – Structural Welding Code – Seismic Supplement.
3. AWS A2.4 – Standard Symbols for Welding, Brazing, and Nondestructive Examination.
4. AWS B2.1 – Specifications for Welding Procedures and Performance Qualification.

C. SSPC – Steel Structures Painting Council:
1. SP-2 - Hand Tool Cleaning.
2. PA-1 - Paint Application Specification No. 1.

D. Materials shall conform to California Building Code (CBC), Title 24, Part 2, Chapter 22A.

1.3 SUBMITTALS

A. Submit fabrication shop drawings on items to be provided.

B. Where other than mill finishes are specified, provide samples of required finish which will be reviewed for color, texture, style, and finish.

C. Submit mill test reports and chemical analyses of materials bearing heat numbers not required to be tested, in accordance with other sections of these specifications.

D. Submit testing results in accordance with other sections of these specifications.

1. Provide one tensile, and elongation test, and one bend or flattening test for each five tons or fraction, of each shape and size, for unidentified material.
2. The Owner reserves the right to reject materials, installed or not, which exhibit defects or do not pass inspections or tests.

E. Scrap collection and recycling plan: Contractor shall prepare and submit a scrap collection and recycling plan for all miscellaneous and structural steel.

1.4 SOURCE QUALITY CONTROL

A. Inspection and Testing:

1. Testing for steel, welding and fabrication shall be in accordance with California Building Code (CBC), Title 24, Part 2, Section 1704A.3.
2. Welding inspection shall be in accordance with Title 24, Part 2, Section 1704A.3.
3. Shop Welding: Ensure that shop welding is performed in an approved, licensed shop. Continuous inspection shall be required as noted in Table 1704A.3.
4. Field Welding: Stress-carrying welds are to be inspected by a qualified welding inspector. Inspections will be paid for by Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Structural steel shall comply with ASTM A6 and requirements of Title 24, Part 2, Chapter 22A.

B. Galvanized Carbon Steel Sheets: ASTM A653, with ASTM A525, G90 zinc coating.

C. Steel Wire Rope: ASTM A475, zinc coated steel wire strand, size and number of wires required, common grade with Class B zinc coating.

D. Shop Primer: Tnemec 10-99, or other approved.

E. Field Galvanizing: Provide ZRC Chemical, or other approved.

F. Common Bolts: ASTM A307 GR. A

G. Threaded Rods and Nuts: ASTM F1554 Gr. 36

2.2 FABRICATION

A. Verify actual field dimensions prior to fabrication.

B. Fabricate items with joints neatly fitted and properly secured.

C. Fit and shop assemble in largest practical sections for delivery to site.

D. Welding shall comply with California Building Code (CBC) Title 24, Part 2, Section 1704A.3. Employ certified welders in accordance with UBC Std. 27-6. Grind exposed welds smooth and flush with adjacent finished surfaces. Defective welds must be cut out and replaced per AWS D1.1.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts unobtrusively located, consistent with design of structure, except where specifically noted otherwise.

F. Make exposed joints flush butt type hair-line joints where mechanically fastened.

G. Supply components required for proper anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, unless otherwise specified or shown.

H. Thoroughly clean surfaces of rust, scale, grease and foreign matter prior to prime painting and galvanizing.

I. Galvanize miscellaneous ferrous metal fabrications exposed to view and prime paint other items. Do not shop prime surfaces in direct contact with concrete or other cementitious materials, or requiring field welding. Shop prime in two coats. Provide minimum G90 galvanized coating where galvanizing is required.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Surface Conditions: Inspect surfaces and work in place by others, and verify that such work is in a condition appropriate to receive work of this section. Do not apply or install work of this section until unsatisfactory work of others is in a condition which will ensure the correct installation of materials and products of this section.

3.2 INSTALLATION

A. Obtain approval of Architect prior to site cutting or making adjustments which are not part of intended work, or are not shown on shop drawings.

B. Install items square and level, accurately fitted and free from distortion and defects.

C. Make provisions for erection stresses by temporary bracing. Keep work in alignment.

D. Replace items damaged during installation.

E. Perform field welding in accordance with AWS D1.1.

F. After installation, touch-up field welds and scratched and damaged paint, or coated surfaces. Use primer and paint consistent with shop finish.

G. Supply and assist with setting items requiring to be cast into concrete, or embedded in masonry, complete with necessary setting templates.

3.3 CLEANING

A. Clean site after work of this section.

B. Remove weld splatters.

C. Use galvanizing repair coating specified, then re-prime areas of materials damaged during installation and other construction activities, and leave in condition for subsequent finish painting or application of additional finish materials provided by others.

END OF SECTION

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

SECTION 06 10 00 – ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Structural wall, and roof framing.

B. Floor, wall, and roof sheathing.

C. Wood furring, backing and grounds.

D. Preservative treatment of wood.

1.02 REFERENCES

A. CBC - California Building Code, (CCR) California Code of Regulations Title 24, Part 2.

B. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.

C. ANSI/AF&PA NDS - National Design Specifications for Wood Construction.

D. APA - The Engineered Wood Association.

E. ASTM E84 - Standard Test Method for Surface burning Characteristics of Building Materials.

F. AWPA - American Wood Preservers' Association: Book of Standards.

G. FSC – Forest Stewardship Council.

H. National Bureau of Standards - Product Standard PS-1 for Construction and Industrial Plywood.

I. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.

J. WWPA - Western Wood Products Association.

1.03 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.

B. Plywood Grading Agency: Certified by APA.

1.04 REGULATORY REQUIREMENTS

A. Conform to CBC, California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, Chapter 23.

B. Allowable stress design values shall be in compliance with the CBC, California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, Chapter 23 and ANSI/AF&PA NDS - National Design Specifications for Wood Construction.

1.05 SUBMITTALS

A. Provide technical data on wood preservative materials and application instructions.

B. In lieu of grade stamping exposed-to-view lumber and plywood, submit manufacturer's certificate under provisions of Section 01 6000 that products meet or exceed specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store and protect products under provisions of Section 01 4000.

B. Deliver materials free from pest infestation. Protect materials on site to prevent termite, beetle, or other wood boring insect attacks.

C. Stack lumber flat, off grade, with spacers between each bundle to promote air circulation. Provide for air circulation around and under coverings.

PART 2 - PRODUCTS

2.01 LUMBER MATERIALS

A. Lumber Grading Rules: WCLIB and WWPA. Lumber shall bear WCLIB grade stamp.

B. Beam Framing: Douglas Fir species, No. 1 grade UNO on plan.

C. Joist Framing: Douglas Fir species, No. 1 grade UNO on plan.

D. Rafter Framing: Douglas Fir species, No. 1 grade UNO on plan.

E. Structural Framing, Studs, Plate and Blocking: Douglas Fir Species, No. 1 grade UNO on plan.

F. Non-structural Light Framing Studs, Plate and Blocking: Douglas Fir species, construction grade.

2.02 MOISTURE CONTENT

A. 2x and 3x material, 19 percent moisture content, S-Dry. Structural and non-structural framing, beam, rafters, joists, studs, plates and blocking.

B. 4x and 6x material, 19 percent moisture content at time of application of Architectural finishes. 22 percent maximum moisture content at time of delivery to project site. Materials to be air dried as required to achieve 22 percent moisture content prior to delivery to site. Structural and non-structural faming, beam, rafters, joists, studs, plates and blocking.

C. Lumber materials with a moisture content above 19 percent and less than 22 percent at the time of installation shall be tested for moisture content prior to covering with Architectural finishes. Moisture tests shall be performed under the provisions of Section 01 4100.

D. No lumber shall be covered with an Architectural finish until the moisture content of the lumber is 19 percent or below.

2.03 PLYWOOD MATERIALS

A. Roof Sheathing: APA Structural I, Grade C-D, Exposure 1 minimum 5-ply construction, meeting product Standard PS-1.

B. Floor Sheathing: APA Structural I, Grade C-D, Exposure 1 minimum 5-ply construction, meeting product Standard PS-1.

C. Wall Sheathing: APA Structural I, Grade C-D, Exposure 1 minimum 5-ply construction, meeting product standard PS-1.

2.04 ACCESSORIES

A. Fasteners: Hot-dipped galvanized steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.

B. Connectors: As indicated.

C. Joist Hangers: Galvanized steel, sized to suit joists and framing conditions; manufactured by Simpson, USP Connectors.

D. Anchors: Thru bolt or anchor bolt to concrete or masonry unless otherwise noted. Bolt for anchorage to steel unless otherwise noted.

2.05 WOOD TREATMENT

A. Preservative Treatment: Where lumber or plywood is indicated as treated or is specified herein to be treated, comply with applicable requirements of AWPA Standards C2 (Lumber) and C9 (Plywood).

B. Pressure treat all lumber in contact with ground. After treatment kiln-dry lumber to a maximum moisture content of 19 percent.

C. Pressure treat above ground items as indicated. After treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping and similar members in connection with roofing, flashing, vapor barriers and waterproofing.

2. Horizontal wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.

3. Horizontal wood framing members less than 18 inches above grade.

4. Wood floor plates installed over concrete slabs directly in contact with earth.

5. Ends of wood girders entering masonry or concrete walls.

6. Framing members used in exterior door, window, or louver openings.

D. Complete fabrication of treated items prior to treatment, where possible. If cut or drilled after treatment, coat cut or drilled surfaces with heavy brush coat of same chemical used for treatment and to comply with AWPA M4. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

PART 3 - EXECUTION

3.01 FRAMING

A. Erect wood framing members level and plumb.

B. Place horizontal members laid flat, crown side-up.

C. Construct framing members full length without splices.

D. Double members at openings over 1 sq ft. Space short studs over and under opening to stud spacing.

E. Construct double joist headers at floor and ceiling openings. Frame rigidly into joists.

F. Construct double joists under wall studding.

G. Bridge joists in excess of 8 feet span at mid-span members. Fit solid blocking at ends of members.

3.02 FURRING, BLOCKING AND GROUNDS

A. Provide wherever shown and where required for attachment of other work. Coordinate with work of other sections.

B. Item locations include but are not limited to toilet accessories, toilet partitions, door frames, window frames, hardware, access doors and ladders, cabinetry, miscellaneous equipment locations and mechanical, plumbing and electrical item locations and all other locations of wall mounted items.

C. Install plywood backboards for telephone, data and other electrical equipment.

D. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

E. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated.

F. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finished work.

G. Firestop all concealed spaces of wood stud walls, ceilings and floor levels at 10 foot intervals both vertically and horizontally.

H. Firestop all concealed vertical and horizontal spaces as occur at soffits, vents, stair stringers, pipes and similar openings in compliance with CBC, (CCR) Title 24, Part 2, Section 708.

I. Firestopping shall consist of closely fitted wood blocks of 2 inch nominal thickness lumber of same width as framing members.

3.03 SHEATHING

A. Secure roof sheathing perpendicular to framing members with ends staggered. Secure sheet edges over firm bearing. Provide solid edge blocking between sheets.

B. Secure wall sheathing perpendicular to wall studs, with ends staggered, over firm bearing.

C. Install telephone and electrical panel back boards where required. Size of backboards to be 12 inches beyond size of electrical panel boards.

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 4000 and Section 01 4100.

B. Lumber materials will be inspected for compliance with material grading rules, limitations for moisture content and pest infestation prior to any materials being concealed from view or being covered with an architectural finish.

3.05 TOLERANCES

A. Framing Members: 1/4 inch maximum from true position.

B. Surface Flatness of Floor: 1/8 inch in 10 feet maximum.

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 07 01 50.72 - REHABILITATION OF BUILT-UP ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. New base and penetration flashings associated with HVAC installations.

1.2 MATERIALS OWNERSHIP

A. Demolished materials shall become Contractor's property and shall be removed from Project site.

1.3 DEFINITIONS

A. Retain definitions and terms that remain after this Section has been edited.

B. Roofing Terminology: Refer to ASTM D1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.

C. Existing Roofing System: Built-up asphalt roofing, and components and accessories between deck and roofing membrane.

D. Roofing Coating Preparation: Existing roofing that is to remain and be prepared to accept roof repairs.

E. Patching: Removal of a portion of existing membrane roofing system from deck or removal of selected components and accessories from existing membrane roofing system and replacement with similar materials.

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

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

H. Manufacturer: Manufacturer of roofing rehabilitation products, unless otherwise indicated.

I. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

J. Demolition Waste: Building and site improvement materials resulting from re-roofing preparation, demolition or selective demolition operations.

K. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

1.4 ROOFING CONFERENCES

A. Roofing Rehabilitation Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to roofing system.

1. Meet with Owner; roofing materials manufacturer's representative; roofing re-coating Installer including project manager and foreman; and installers whose work interfaces with or affects re-coating including

installers of roof accessories and roof-mounted equipment requiring removal and replacement as part of the Work.

2. Review methods and procedures related to new flashings, including roofing system manufacturer's written instructions.

3. Review drawings and specifications.

4. Review roof drainage during each stage of coating application and review roof drain plugging and plug removal procedures.

5. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

6. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect coating.

7. Review existing conditions that may require notification of Owner before proceeding.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product specified.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.

1. Letter written for this Project indicating manufacturer approval of Installer to apply specified products and provide specified warranty.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, and for dust control. Indicate proposed locations and construction of barriers.

C. Contractor's Product Certificate: Submit certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

1. Indicate that proposed system components are compatible.

D. Warranties: Unexecuted sample copies of special warranties.

E. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, which might be misconstrued as having been damaged by coating operations. Submit before Work begins.

F. Inspection Reports: Reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions required and carried out.

1. Submit report within 24 hours after inspection.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: To include in maintenance manuals.

B. Warranties: Executed copies of approved warranty forms.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and the following:

1. Qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.

B. Manufacturer Qualifications: Primary product manufacturer with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.

C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:

1. An authorized full-time technical employee of the manufacturer.

2. An independent party certified as a Registered Roof Observer by the Roof Consultants Institute, retained by the Contractor or the Manufacturer and approved by the Manufacturer.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with rehabilitation work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.

1. Store all materials prior to application at temperatures recommended by manufacturer.

2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer.

3. Do not apply roofing in rain, fog, or mist.

B. Protect building to be rehabilitated, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from rehabilitation operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1.10 WARRANTY

A. Installer Warranty: Installer's warranty signed by Installer, as follows.

1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.

2. Scope of Warranty: Work of this Section.

3. Warranty Period: 2 years from date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: The roof system specified in this Section is based upon products of Tremco CPG Incorporated. Provide specified products or pre-approved equivalent products.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Rehabilitated roofing shall withstand exposure to weather without failure or leaks due to defective manufacture or installation.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

2.3 MATERIALS, GENERAL

A. General: Roof rehabilitation coating materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.

B. Temporary Roofing Materials: Selection of materials and design of temporary roofing is responsibility of Contractor.

C. Temporary Roof Drainage: Design and selection of materials for temporary roof drainage are responsibilities of the Contractor.

D. Infill Materials: Where required to replace test cores and to patch existing roofing, use infill materials matching existing membrane roofing system materials, unless otherwise indicated.

2.4 RESTORATIVE COATINGS

A. Cold-Applied Rubberized Surfacer for Bituminous Roofing: Neoprene-modified water-based low VOC low odor asphalt emulsion surfacer formulated for use over new smooth surfaced bituminous roofing.

1. Tremco, Tremlastic S.

2. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 25 g/L.

3. Elongation, ASTM D412: 100 percent.

B. Cold-Applied Reflective Aluminum Roof Coating: Water-based aluminum coating approved by manufacturer.

2.5 FLASHING MATERIALS

A. Cold-applied bio-based low odor urethane roofing adhesive, two-part, USDA BioPreferred, formulated for compatibility and use with specified roofing membranes and flashings.

1. Tremco, Powerply Endure Bio Adhesive TF.

2. Volatile Organic Compounds (VOC), maximum, ASTM D3690: 0 g/L.

3. Low Temperature Flexibility, ASTM D2240: Pass at -30 deg F (-34 deg C).

4. Solids, by Volume, ASTM D2697: 100 percent.

5. Biobase Content, Minimum, ASTM D6866: 70 percent.

B. Base Sheet: ASTM D6164 Type I Grade S SBS/RET/Urethane-modified asphalt coated polyester reinforced high elongation sheet, smooth surfaced.

C. Reinforcing Fabric:

1. Reinforcing fabric, stitch-bonded polyester, 100 percent recycled content, infused with curing accelerant activated when installed in conjunction with specially formulated adhesive.
   a. Tremco, Rapid Set Fabric.

   b. Breaking Strength, minimum, ASTM D5034: Machine direction, 65 lbf/in (11 kN/m); Cross machine direction, 85 lbf/in (14 kN/m).

   c. Elongation, ASTM D5034: Machine direction, 24 percent; Cross machine direction, 95 percent.

   d. Weight, ASTM D3776: 2.5 lb/100 sq. ft. (120 g/m2).

   e. Thickness, minimum, ASTM D1777: 0.025 inch (0.63 mm).

   f. Recycled Content, post consumer: 83 percent.

2. Reinforcing fabric, stitch-bonded polyester, 100 percent recycled content, infused with curing accelerant activated when installed in conjunction with specially formulated adhesive.
   a. Tremco, Permafab.

   b. Breaking Strength, minimum, ASTM D 5034: Machine direction, 65 lbf/in (12.0 kN/m); Cross machine direction, 85 lbf/in (12.0 kN/m).

   c. Elongation: Machine direction, 24 percent; Cross machine direction, 95 percent.

   d. Weight, ASTM D 3776: 2.5 lb/100 sq. ft. (120 g/m2).

   e. Thickness, minimum, ASTM D 1777: 0.025 inch (0.63 mm).

   f. Recycled Content, post-consumer: 83 percent.

D. Bio-Based Polyurethane Roof Coating Base Coat: ASTM D7311, Two-part catalyzed low-odor polyurethane roof base coating formulated for direct application and for use with fiber reinforcement in conjunction with a compatible top coat.

E. Bio-Based Polyurethane Roof Coating Top Coat: ASTM D7311, Two-part catalyzed low-odor polyurethane roof top coating formulated for direct application over compatible reinforced base coat.

F. Polyurethane Metal Primer: Water-based, quick-drying, brush-grade one-part primer for use as an adhesion promoter for urethane sealants and coatings to non-porous surfaces.

G. Asphalt Primer, Water-Based: Water-based, polymer modified, asphalt primer.

1. Asbestos Content, EPA 600/R13/116: None.

2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 2 g/L.

2.6 AUXILIARY MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system.

B. Joint Sealant: Elastomeric joint sealant recommended in writing by joint sealant manufacturer as compatible with applied coating and project substrates, with movement capability appropriate for application.

1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
   a. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.

   b. Hardness, Shore A, ASTM C661: 40.

   c. Adhesion to Concrete, ASTM C794: 35 pli.

   d. Tensile Strength, ASTM D412: 350 psi (2410 kPa).

   e. Color: Aluminum Stone.

C. Skirt Metal: 22-gauge galvanized metal with hemmed edge.

D. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.7 WALKWAYS

A. Walkway Pads:

1. Walkway pads, ceramic-granule-surfaced reinforced asphaltic composition slip-resisting pads, manufactured as a traffic pad for foot traffic, 1/2 inch (13 mm) thick minimum.
   a. Flexural Strength at max. load, minimum, ASTM C203: 218 psi (1.5 kPa).

   b. Granule adhesion (weight loss), maximum, ASTM D4977: 1.1 gram.

   c. Impact Resistance at 77 deg. F (25 deg. C), ASTM D3746: No Damage to Roof.

   d. Pad Size: 36 by 48 inch (914 by 1220 mm).

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect existing roofing system that is indicated not to be rehabilitated, and adjacent portions of building and building equipment.

1. Mask surfaces to be protected. Seal joints subject to infiltration by coating materials.

2. Limit traffic and material storage to areas of existing roofing membrane that have been protected.

3. Maintain temporary protection and leave in place until replacement roofing has been completed.

B. Pollution Control: Comply with environmental regulations of authorities having jurisdiction. Limit spread of dust and debris.

1. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

2. Remove debris from building roof by chute, hoist, or other device that will convey debris to grade

C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

3.2 ROOFING PREPARATION

A. Membrane Surface Preparation:

1. Substrate Cleaning: Clean substrate of contaminants such as dirt, debris, oil, and grease that can affect adhesion of repair material.

2. Verify that existing substrate is dry before proceeding with application of coating. Spot check substrates with an electrical capacitance moisture-detection meter.

3. Verify adhesion of new products.

B. Surface Priming: Prime surfaces to receive fluid-applied coating using coating manufacturer's recommended product for surface material. Apply at application rate recommended by manufacturer.

1. Ensure primer does not puddle and substrate has complete coverage.

2. Allow to cure completely prior to application of coating.

3.3 REPLACEMENT FLASHING AND STRIPPING INSTALLATION

A. Fill in where any roofing is removed with substrate board (and insulation if applicable) matching height of the existing roof system. Secure to decking per manufacturer’s written instructions.

1. Use low rise foam to adhere any insulation and coverboard.

B. Install cant strips at transitions to vertical edges.

C. Install modified ply sheet set in urethane adhesive over substrate board (if present), up sides of curbs, and onto the field of the roof 6”.

D. Install two polyester ply sheets set in rubberized emulsion over the completed ply sheet extending 12” and 24” past the edge of the ply sheet.

E. Install skirt metal counterflashing secured at 8” oc.

F. Install fully reinforced liquid applied flashing system over all new penetrations.

3.4 COATING APPLICATION

A. Existing aluminized roofs: Once ply system has adequately cured, apply aluminized coating in number of coats and thickness of application recommended in writing my manufacturer for application.

B. Existing acrylic coated roofs: Once ply system has adequately cured, apply acrylic coating in number of coats and thickness of application recommended in writing my manufacturer for application.

C. Existing polyurethane coated roofs: Once ply system has adequately cured, apply bio based coating system in number of coats and thickness of application recommended in writing my manufacturer for application.

D. Joint Sealant: Apply joint sealant at terminations and penetrations of coatings as required to maintain weathertight application.

3.5 WALKWAY INSTALLATION

A. Walkway Pads: Install walkway pads surrounding all new equipment.

1. Set walkway pads in cold-applied adhesive.

3.6 DISPOSAL

A. Collect demolished and waste materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

3.7 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:
1. Sheet metal flashings in connection with roofing.
2. Reglet and counter flashing assemblies.
3. Miscellaneous metal flashing and counter flashing as required, except where provided under Division 23 or Division 26.
4. Coping caps.
5. Gravel stops and metal edging.
6. Gutters and downspouts.
7. Splash pans where downspouts empty onto roofing.
8. Conductor heads.
9. Drip flashings.
10. Sheet metal covering at outside storage units.
11. Sheet metal wall coverings.
12. Roof pipe flashings.
13. Roof expansion joint covers.
14. Other sheet metal items, not necessarily specified herein or in other sections, but required to prevent penetration of water into building.

C. Related Sections:
1. Division 23: Mechanical.
2. Division 26: Electrical.

1.02 SUBMITTALS

A. Shop Drawings: Submit for fabricated sheet metal indicating shapes, details, methods of joining, anchoring and fastening, thicknesses and gages of metals, concealed reinforcement, expansion joint details, sections, and profiles.

B. Samples: Submit Samples for materials or assemblies as requested.

C. Product Data: Submit brochures of manufactured items.

1.03 QUALITY ASSURANCE

A. Drawings and requirements specified govern. Provide the Work of this section in conformance with the Architectural Sheet Metal Manual published by SMACNA for conditions not indicated or specified and for general fabrication of sheet metal items.

B. Materials shall conform to following standards:
1. ASTM A 167 - Stainless and Heat-Resisting Crhomium-Nicket Steel Plate, Sheet and Strip.
2. ASTM A 653 - Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
3. ASTM B 370 - Copper Sheet and Strip for Building Construction.
4. ASTM B 749 - Lead and Lead Alloy Sheet, Strip and Plate Products.

C. Pre-installation Meetings: Refer to Division 7 roofing sections as appropriate. Attend the pre-installation and inspection meetings for roofing Work.

1.04 DELIVERY, STORAGE AND HANDLING

A. Do not install bent and/or otherwise damaged materials.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Galvanized Sheet Steel: ASTM A 653, coating designation G90, hot-dip galvanized

B. Copper Plate, Sheet and Strip: ASTM B 370, cold-rolled, tempered. Copper sheet and strip shall be cold-rolled-temper.

C. Sheet Lead: ASTM B 749, Type L50049 or L51121, weighing not less than 4 pounds per square foot.

D. Stainless Steel: Plate, sheet and strip shall conform to ASTM A 167, Type 304 or Type 316, No. 4 finish on exposed surfaces and No. 2 finish on concealed surfaces unless otherwise specified or indicated. Furnish Type 304 for general applications and Type 316 where exposed to acidic or alkaline conditions.

E. Fastenings:
   1. Galvanized Steel: Nails, rivets, and other fastenings furnished in connection with galvanized sheet steel Work shall be sealed with rust resistive coating. Rivets shall be tinned. Nails and other fastenings shall be zinc-coated.
   2. Copper: Nails, rivets, and other fastenings furnished in connection with copper sheet metal Work, shall be manufactured from hard-temper copper or hard brass.
   3. Stainless Steel: Nails, rivets and other fastenings furnished in connection with stainless steel Work, shall be 300 series alloy to match alloy of stainless steel being fastened.

F. Soldering Flux: Raw muriatic acid for galvanized steel; rosin for tin, lead and tinned copper; non-corrosive soldering salts for uncoated copper and acid-type flux formulated for soldering stainless steel.

G. Solder: ASTM B 32, Grade 50A. Name of product manufacturer and grade designation shall be stamped or cast onto each bar.

2.02 FABRICATION

A. General:
   1. Accurately form sheet metal Work to dimensions and shapes indicated and required. Cope finish molded and brake metal shapes with true, straight, sharp lines and angles and, where intersecting each other, to a precise fit. Unless otherwise specified, all galvanized sheet steel shall be 22 gage. Exposed edges of sheet metal shall have a 1/2 inch minimum hemmed edge.
   2. Soldering of sheet steel or copper shall be performed with well-heated copper soldering iron or soldering torch, joints full flowing, neat and consistent. Thoroughly clean materials at joints before soldering, and tin coppers before soldering. Exposed soldering on finished surfaces shall be scraped smooth. Lock seam Work shall be fabricated flat and true to line and soldered along its entire length. Acid-fluxed Work shall be neutralized after fabrication.
   3. Form and install sheet metal Work to provide proper allowances for expansion and contraction, without causing undue stresses in any part of completed Work. Installation shall be water and weathertight.

B. Gutters and Downspouts:
   1. Gutters: Fabricate from 22 gage galvanized steel to match existing size and design unless otherwise indicated. Drain gutter towards nearest downspout and provide an expansion joint at mid-point between downspout outlets, but not to exceed 50 feet on center. Gutters shall not pond water. Rivet joints and ends with a minimum of 6 rivets per joint or maximum rivet spacing not to exceed 1-1/2 inch on center. Sweat solder from inside of gutter and in horizontal position where possible. Neatly fit downspouts to gutter using a slip joint. Provide expansion joints, consisting of 3 inch lap joints at not over 30 feet.

2. Form and install sheet metal Work to provide allowance for expansion and contraction without causing undue stresses in the completed Work.
3. Downspouts: Fabricate downspouts from 3 inch round, or 3 inch by 4 inch rectangular shapes, 16 gage steel tubing with butt joints and mitered elbows, sized as indicated. Downspouts exceeding 30 feet in length may be fabricated with a slip joint or leader head. Downspout shall be fabricated with elbows at bottom discharge or connected to drains as indicated. Joints, except expansion joints shall be sealed with a continuous weld. Galvanize downspouts after fabrication.
4. Outlets: Fabricate outlets of 22 gage galvanized sheet steel with a 1/4 inch rolled flanged soldered continuously to gutter. Outside diameter shall be 1/8 inch less than the diameter of the downspout and extend into downspout 3 inches. Install a 1/4 inch galvanized rod over center of outlet opening, lapping 1 inch over each side of outlet and soldered in place. Galvanize rod after fabrication, before installation.

C. Conductor Heads:
   1. Fabricate conductor heads and outlets from 22 gage galvanized sheet steel. Cover tops of the conductor heads with 22 gage galvanized 1/4 inch wire mesh soldered securely to separately fabricated frame and mechanically fastened to top conductor head with a minimum of 2 fasteners.

D. Gravel Stops: Provide 24 gage galvanized sheet steel gravel stops wherever roof area drops to a lower level; at the eaves and rake of roof, where roof comes to an abrupt edge, and where indicated. Stops shall be of height indicated and shall be fabricated with 2 flanges. Horizontal flange shall be not less than 4 inches wide, and vertical flange shall extend down over vertical surfaces of trim or gutter. Gravel stops shall lap 4 inches at ends and corners, and shall be fabricated by notching and interlocking vertical face flanges. Contact surfaces of lapped flanges, including raised areas, vertical face and corners shall be completely covered with flashing compound. Fabricate lap joints so that they will be in the direction of water flow. Where flanges are over 5 inches wide, provide 20 gage continuous cleats fastened at 24 inches on center.

E. Overflow Outlets: Provide galvanized sheet steel overflow outlets at locations and of sizes indicated. Outlets shall extend through full thickness of wall in one continuous piece and completely line the opening. On outside face of wall, top and sides of outlet shall finish 1/2 inch on surface of wall. Bottom of outlet shall project 1-1/2 inch beyond face of wall, and shall be bent down slightly. Outlets shall be sealed on the surface of the building. On inside face, side and bottom flanges shall extend not less than 8 inches beyond edge of opening, and not less than 6 inches at top. Outlets shall be installed at time roof is being installed.

F. Reglet Type Counterflashing: Where roof comes in contact with vertical surfaces, provide counterflashing. Set top of counterflashing 8 inches above roof deck unless otherwise indicated, and extend down at least 5 inches or to top of cant strip. Counterflashing and reglet shall be 22 gage galvanized sheet steel. Lap counterflashing and reglet 3 inches minimum at splices and miter at angles, or supply special metal corner fittings. Reglet and method of securing flashing shall be so constructed that flashing is firmly locked in place, but may be readily removed for replacement.

G. Splash Pans: Provide splash pans for all downspouts, which empty onto lower roofs. Pans shall be galvanized sheet steel 12 inches by 18 inches, unless otherwise indicated, and turned up 2 inches on at least 3 sides.

H. Roof Expansion Joint Covers: Fabricate of 22 gage galvanized sheet steel, as detailed. One side of joint shall be zee shaped, with 3 inch standing leg extended over the joint and turned down. The other side shall be box shaped, fabricated to extend over the joint, over the standing leg, and turn down to form a water barrier. Prefabricated bellows type joint covers are not permitted.

I. Louvers, Fixed: For sizes 2’ x 3’ maximum (Provide heavier gages as required for sizes indicated on Drawings).
   1. Gages: #22 gage for spans to 24”, #20 gage for spans to 36”.
   2. Type: Similar to SMACNA Plates #102, #103A-2 frame, #103D-1 louvers, folded U-frame Plate #108B
      a. Insect Screen: 8 mesh with #27 gage galvanized wire

J. Miscellaneous Flashing: Unless otherwise indicated, miscellaneous flashing shall be fabricated of galvanized steel. Exterior doors and windows, unless covered by overhangs shall be provided with 22 gage galvanized steel drip flashing as detailed. At wood construction, nail flashing to framing before paper backed lath is installed.

K. Sheet Metal Roofing at Outside Storage Units: Cover outside storage unit roof with #26 gage galvanized sheet steel as indicated. Turn metal under edge at top, hem 1/2 inch, and secure with countersunk, flathead wood screws, spaced at 12 inches on centers.

L. Sheet Metal Wall Covering: Wall surfaces, where indicated, shall be covered with sheet metal to height indicated. Metal covering shall be 24 gage galvanized sheet steel, with joints between sheets occurring only over studs. Joints locked together and rolled flat. Exposed edges of sheet metal shall be hemmed at least 1/2 inch. Nail sheets in field along studding at 12 inches on center, and at top and bottom edges and seams at 4 inches on center, using 3d galvanized nails.

M. Roof Pipe Flashings: Provide welded seam 4 pound non-toxic lead flashings. Field fabricated flashings shall also be welded.

PART 3 - EXECUTION

3.01 PREPARATION

A. Concrete and masonry materials in contact with sheet metal shall be painted with alkali resistant coating, such as heavy-bodied bituminous paint. Wood in contact with sheet metal shall be painted with 2 coats of aluminum paint or one coat of heavy-bodied bituminous paint

3.02 INSTALLATION

A. General: Coordinate with installation of underlayment.

B. Gutters and Downspouts:
   1. Anchor gutters to structure with 10 gage steel straps, galvanized after fabricating. Secure straps with galvanized fasteners at 3 feet on center. Drill pilot holes and use 12 x 2 inch pan head screws.
   2. Install 1/4 inch galvanized wire mesh continuous cover on gutter where indicated.
   3. Secure downspouts to walls with 1/8 inch x 2 inch galvanized steel straps. Straps shall be located at top, bottom, and at not over 10 feet on center. Block downspouts out 1/2 inch from the finish wall surfaces. Secure straps to wall framing with 1/4 inch by 2 inch long galvanized anchors. Expansion type anchors shall be provided when anchoring to concrete and masonry. Provide toggle bolts for attachment to masonry or plaster. At steel columns, provide fasteners as indicated. Plastic anchors are not permitted.
   4. Anchor conductor heads to walls with 1/4 inch x 2-1/2 inch galvanized lag screws or 1/4 inch expansion type anchors.

C. Reglets: Install reglets at constant height above cant or as indicated. Provide minimum 3 inch lap at end splices of reglets. Caulk laps solidly.

D. Counterflashing:
   1. Install at constant horizontal elevation across roof slope and slope at constant height above cant or as indicated.
   2. Provide minimum 3 inch lap at all end splices of counterflashing.

E. Galvanized sheet steel parapet coping and flashing shall be continuous over top of parapet to form a watertight cap, with waterproof seams at approximately 10 feet on center, or as indicated. Anchor coping to outside of wall with a continuous cleat face nailed at 24 inch centers. Coping shall be fastened on inside wall with hex head screws and bonded sealing washers through oversized holes in the back of the coping. Corners and angles shall be lapped and soldered; do not install joint sealant.

F. Prefabricated Louvers: Install plumb and level; securely anchor; seal watertight to adjoining construction. Install screens, cranks, and blackout plates where required.

3.03 TESTING

A. Perform field water testing to demonstrate installation is watertight. Continue testing with a continuous hose stream applied at base of installation for at least 30 minutes. If leaking is observed, discontinue test and repair installation, then test until satisfactory results are obtained.

3.04 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.05 CLEANING

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

DIVISION 09 – FINISHES

SECTION 09 90 00 - PAINTING AND COATING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Interior and exterior painting.

B. Following items shall not be painted:

1. Brass valves, chromium or nickel-plated piping and fittings.

2. Refrigeration piping on top of aluminum jacket.

3. Fabric connections to fans.

4. Miscellaneous name plates, stamping, and instruction labels and manufacturer's data.

5. Mechanical and electrical utility lines, piping and heating and ventilation ductwork in tunnels, under-floor excavated areas or crawl spaces, attic spaces and enclosed utility spaces.

6. Flag, floodlight, parking light poles and loudspeaker poles, metal stairs, handrails and chain-link fence with a galvanized finish, unless otherwise noted.

7. Structural and miscellaneous steel, open web steel joists and metal floor decking, which will not be exposed in final construction, shall have no finish other than one coat of shop primer.

8. Hardboard covering on tops and backs of counters and benches.

9. Brass, bronze, aluminum, lead, stainless steel and chrome or nickel-plated surfaces.

10. Non-metallic walking surfaces unless specifically shown or specified to be painted.

C. Sheet metal paint.

1. Paint all exposed sheet metal ductwork and duct supports.

2. Paint all sheet metal roof curbs, cap flashing and sheet metal covers.

1.02 REGULATORY REQUIREMENTS

A. Paint materials shall comply with the Food and Drug Administration’s (F.D.A.) Lead Law and the current rules and regulations of local, state and federal agencies governing the use of paint materials.

1.03 SUBMITTALS

A. List of Materials: Before submittal of samples, submit a complete list of proposed paint materials, identifying each material by distributor's name, manufacturer's name, product name and number, including primers, thinners, and coloring agents, together with manufacturers' catalog data fully describing each material as to contents, recommended installation, and preparation methods. Identify surfaces to receive various paint materials.

B. Material Samples: Submit manufacturer's standard colors samples for each type of paint specified. Once colors have been selected, submit Samples of each color selected for each type of paint accordingly:

1. Samples of Paint and Enamel must be submitted on standard 8 ½" x 11" Leneta Opacity-Display Charts. Each display chart shall have the color in full coverage. The sample shall be prepared from the material to be installed on the Work. Identify the school on which the paint is to be installed, the batch number, the color number, the type of material, and the name of the manufacturer.

2. Elastomeric shall be submitted in duplicate samples of the texture coating. Samples will be not less than 2 ½ by 3 ½ in size and installed upon backing. Finished Work will match the reviewed Sample in texture.

3. Materials and color samples shall be reviewed and final approved by district before starting any painting.

1.04 QUALITY ASSURANCE

A. Certification of Materials: With every delivery of paint materials, the manufacturer shall provide written certification the materials comply with the requirements of this section.

B. Coats: The number of coats specified is the minimum number. If full coverage is not obtained with the specified number of coats, install additional coats as required to provide the required finish.

C. Install coats and undercoats for finishes in strict accordance with the recommendations of the paint manufacturer as reviewed by the Architect.

D. Paint materials shall comply with the following as a minimum requirement:

1. Materials shall be delivered to Project site in original unbroken containers bearing manufacturer's name, brand number and batch number.

2. Open and mix ingredients on premises in presence of the Project Inspector.

1.05 DELIVERY, STORAGE AND HANDLING

A. Storage and Mixing of Materials: Store materials and mix only in spaces suitable for such purposes. Maintain spaces clean and provide necessary precautions to prevent fire. Store paint containers so the manufacturer's labels are clearly displayed.

1.06 SITE CONDITIONS

A. Temperature: Do not install exterior paint in damp, rainy weather or until surface has thoroughly dried from effects of such weather. Do not install paint, interior, or exterior, when temperature is below 50 degrees F, or above 90 degrees F, or dust conditions are unfavorable for installation.

1.07 WARRANTY

A. Manufacturer shall provide a three year material warranty.

B. Installer shall provide a three year application warranty.

1.08 MAINTENANCE

A. Provide at least one gallon of each type, color and sheen of paint coating installed. Label containers with color designation indicated on Drawings.

PART 2 - PRODUCTS

2.01 PAINT MATERIALS

A. Furnish the products of only one paint manufacturer unless otherwise specified or required. Primers, intermediate and finish coats of each painting system must all be the products of the same manufacturer, including thinners and coloring agents, except for materials furnished with shop prime coat by other trades.

B. Factory mix paint materials to correct color, gloss, and consistency for installation to the maximum extent feasible.

C. Paint materials to be minimum “Architectural Grade”.

D. Gloss degree standards shall be as follows:

HIGH GLOSS	70 and above	EGGSHELL	30 to 47
SEMI-GLOSS	48 to 69	SATIN	15 to 29

2.02 MANUFACTURERS

A. Acceptable manufacturers, unless otherwise noted:

1. Dunn-Edwards Corporation Paints
2. Frazee Paints and Wall coverings
3. Vista Paints
4. Sherwin Williams
5. ICI Paints
6. Equal.

PART 3 - EXECUTION

3.01 PREPARATION

B. Examine surfaces to receive paint finish. Surfaces which are not properly prepared and cleaned or which are not in condition to receive the finish specified shall be corrected before prime coat is installed.

C. New woodwork shall be thoroughly cleaned, hand sandpapered, and dusted off. Nail holes, cracks or defects in Work shall be filled. On stained woodwork, fill shall be colored to match stain. Filling shall be performed after the first coat of paint, shellac or varnish has been installed.

D. Plaster surfaces except veneer plaster shall be allowed to dry at least 3 weeks before painting. Veneer plaster shall be allowed to dry sufficiently to receive paint as determined by moisture meter tests.

E. Metal surfaces to be painted shall be thoroughly cleaned of rust, corrosion, oil, foreign materials, blisters, and loose paint.

F. Do not install painting materials to wet, damp, dusty, dirty, finger marked, rough, unfinished or defective surfaces.

G. Concrete surfaces shall be dry, cleaned of dirt and foreign materials and in proper condition to receive paint. Neutralize spots demonstrating effects of alkali.

H. Mask off areas where necessary.

3.02 APPLICATION

A. Backpainting: Immediately upon delivery to the Project site, finish lumber and millwork shall be backpainted on surfaces that will be concealed after installation. Items to be painted shall be backpainted with priming coat specified under "Priming".

B. Priming: New wood and metal surfaces specified to receive paint finish shall be primed. Surfaces of miscellaneous metal and steel not embedded in concrete, and surfaces of unprimed plain sheet metal Work shall be primed immediately upon delivery to the Project site. Galvanized metal Work and interior and exterior woodwork shall be primed immediately after installation. Priming of surfaces and priming coat shall be as follows:

1. Knots, Pitch and Sap Pockets: Shellac before priming.

2. Galvanized Metal Work: Clean oil, grease and other foreign materials from surfaces. Install vinyl wash pretreatment coating. Follow manufacturer's instructions for drying time, and then prime with one coat of metal primer.

3. Unprimed Iron, Steel, and Other Uncoated Metals: Where specified to be painted, prime with one coat of metal primer.

4. Shop Primed Metal Items: Touch up bare and abraded areas with metal primer before installation of second and third coats.

5. Coats shall be installed evenly and with full coverage. Finished surfaces shall be free of sags, runs and other imperfections.

C. Allow at least 24 hours between coats of paint.

D. Each coat of paint or enamel shall be a slightly different tint as required. Each coat of paint, enamel, stain, shellac, and varnish will be inspected by the IOR before next coat is applied. Notify the Project Inspector that such Work is ready for inspection.

1. Tinting Guideline: The first coat, primer/undercoat(s) to be untinted or tinted up to 50 percent lighter or darker (at the discretion of the installer) than the finish coat. The second coat (or third coat if a seal coat and undercoat have been specified) is to be factory tinted in the range of 10 percent to 15 percent lighter or darker (at the discretion of the installer) than the finish coat. The final coat is to be factory tinted to the required color selected. These tinting guidelines shall be provided on all surfaces receiving paint.

E. Do not "paint-out" UL labels, fusible links and identification stamps.

F. Paint Roller, brush and spray.

1. Only Paint rollers shall be used on interior plaster, drywall, masonry/plaster and plywood surfaces, nap shall not exceed one half inch in length.

2. First coat on wood overhang and ceilings shall have material applied by roller and then brushed out in a professional manner to leave surface free of imperfections. Finish coat may be sprayed.

3. Other surfaces shall have all coatings applied with brushes of proper size.

4. Spray work is permitted only on radiators, acoustic plaster, masonry and plaster.

G. Where ceilings are specified to be painted, beams, cornices, coves, ornamental features, plaster grilles, etc. shall be included.

H. Ceilings shall be white, including classrooms, storage rooms, offices, arcades, etc. Boiler room and fan room ceiling color shall match adjacent walls.

3.03 CLEANING

A. Remove rubbish, waste, and surplus material and clean woodwork, hardware, floors, and other adjacent Work.

B. Remove paint, varnish and brush marks from glazing material and, upon completion of painting Work, wash and polish glazing material both sides. Glazing material, which is damaged, shall be removed and replaced with new material.

C. Clean hardware and other unpainted metal surfaces with recommended cleaner. Do not furnish abrasives or edged tools.

3.04 SCHEDULE

A. Interior:

1. Plaster: 4 coats.

a. First Coats: Pigmented wall sealer.

b. Second coat: Enamel under coater.

c. Third and Fourth Coats – Interior enamel, semi-gloss or gloss as indicated.

2. Gypsum Board: 4 coats.

a. First Coat: Drywall sealer.

b. Second Coat: Enamel under coater.

c. Third and Fourth Coats: Interior enamel, semi-gloss or gloss as indicated.

3. Metal: Shall be cleaned, pre-treated and painted with 3 coats. Items to be painted include, but are not limited to: exposed structural and miscellaneous steel, metal doors and frames, ladders, table and bench legs.

a. First Coat: Metal primer.

b. Second and Third Coats: Interior gloss enamel, except metal doors and frames which shall be semi-gloss or gloss to match adjacent wall.

B. Exterior:

1. Metal: 3 coats. Shall be cleaned and pre-treated. Items to be painted include, but are not limited to: steel columns and miscellaneous steel items, gravel stops, metal doors and frames, hoods and flashings.

a. First Coat: As specified in this section under Priming.

b. Second and Third Coats: Exterior gloss enamel.

C. Mechanical and Electrical Work:

1. Except where interior mechanical and electrical Work to be painted is specified to receive another paint finish, Work occurring in finished rooms and spaces shall be cleaned, pre-treated, and painted with 3 coats. Items to be painted include, but are not limited to: steel and copper piping, pipes, vents, fittings, ducts, plenums, miscellaneous supports and hangers, electrical conduit, fittings, pull boxes, outlet boxes, unfinished surfaces of plumbing fixtures, miscellaneous metal cabinets, panels, and access doors and panels.

a. First Coat: As specified in this section under Priming.

b. Second and Third Coats: Interior enamel, semi-gloss or gloss to match adjacent wall or ceiling finish.

2. Insulation and Taping on Pipes and Ducts: 3 coats.

a. Finished Rooms:

1) First Coat: Interior waterborne primer.

2) Second and Third Coats: Interior semi-gloss or gloss enamel to match adjoining wall or ceiling finish.

b. Building Exterior:

1) First Coat: Exterior waterborne primer.

2) Second and Third Coats: Exterior gloss enamel.

3. Inside surfaces of ducts, vents, dampers and louvers as far back as visible from room in which they open shall be painted with 2 coats of flat black paint.

3.05 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.06 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

DIVISION 22 – PLUMBING

SECTION 22 00 00 - PLUMBING

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Furnish all labor, materials, services, testing, transportation and equipment necessary for the completion of all plumbing work as indicated on drawings and specified herein. Work materials and equipment not indicated or specified which is necessary for the complete and proper operation of the work of this Section in accordance with the true intent and meaning of the contract documents shall be provided and incorporated at no additional cost to the Owner.

1.2 QUALITY ASSURANCE

A. Code Requirements: All work covered by this Section shall conform to the latest requirements of the following regulations:
   1. C.C.R., Title 24, Part 5 (2025 CPC).
   2. 2025 California Plumbing Code.
   3. SMACNA Seismic Restraint Manual Guidelines for Mechanical Systems.
   4. National Fire Protection Association.
   5. California Division of the State Architect.
   6. California State Division of Industrial Safety.
   7. County Health Department.
   8. Any other legally constituted body-having jurisdiction thereof.

B. Nothing in the specifications or drawings shall be construed to permit deviation from the requirements of governing codes unless approval for said deviation has been obtained from the legally constituted authorities having jurisdiction and from the Owner's representative.

1.3 DRAWINGS

A. Because of the small-scale drawings, it is not possible to indicate all offsets, fittings and accessories which may be required. The Contractor shall carefully investigate the conditions surrounding installation of his work, furnishing the necessary piping, fittings, valves, traps, and other devices which may be required to complete the installation.

B. The general arrangement indicated on the drawings shall be followed as closely as possible. Coordinate with the Architectural, Structural, Mechanical and Electrical Drawings and the work of other trades prior to installation of piping fixtures and equipment to verify adequate space available for installation of the work shown. In the event a field condition arises which makes it impossible to install the work as indicated, submit, in writing, the proposed departures to the Architect for his approval. Only when Architect's approval is given, in writing, shall Contractor proceed with installation of the work.

C. Special Note: Should the Contractor make changes in the installation differing from what is indicated on the contract drawings and not necessitated due to field conditions as indicated hereinabove, the Contractor shall be required to re-install the work to comply with what has been indicated on the contract drawings. Should it be impossible to re-install the work and the installation is in accordance with all governing authorities, the architect may permit the installation to remain. However, all costs incurred to revise the contract drawings by the engineer for resubmittal to the building department indicating the as-installed condition shall become the responsibility of the Contractor.

D. In case of a difference in the specifications or between the specifications and the drawings, the Contractor shall figure the most expensive alternate and after award of contract, shall secure direction from the Architect.

1.4 PERMITS, INSPECTIONS AND LICENSES

A. All permits, inspections and licenses required by the legally constituted authorities for installation of the work according to the plans and specifications shall be obtained and paid as a part of the work of this section.

1.5 EXAMINATION OF PREMISES

A. Before bidding on this work, Contractors shall make a careful examination of the premises and shall thoroughly familiarize themselves with the requirements of the contract. By the act of submitting a proposal for the work included in this contract, the Contractor shall be deemed to have made such study and examination, and that he is familiar with and accepts all conditions of the site.

1.6 PROTECTION

A. All work, equipment and materials shall be protected at all times. Contractor shall make good all damage caused either directly or indirectly by his own workmen. Contractor shall also protect his own work from damage. He shall close all pipe openings with caps or plugs during installation. He shall protect all his equipment and materials against dirt, water, chemical and mechanical injury. Upon completion, all work shall be thoroughly cleaned and delivered in a new condition.

B. Contractor shall be held responsible for all damage to equipment and materials until he has received written notice from the Architect or Engineer that his work has been accepted.

1.7 LOCATIONS

A. The locations of apparatus, piping and equipment indicated on the drawings are approximate. Piping and equipment shall be installed in such a manner as to avoid all obstruction, preserve headroom, and keep openings and passages clear. The locations of and mounting heights of all fixtures shall be coordinated with the architectural plans and room elevations.

B. Clearances and Openings: Contractor shall cooperate and coordinate his work with all other trades to avoid conflict and permit for a neat and orderly appearance of the entire installation. The Contractor shall, in advance of the work, furnish instructions to the General Contractor as to his requirements for equipment and material installation of any kind, whether or not specifically mentioned on drawings or in the specifications, and shall include recesses, chases in walls, and all required openings in the structure. Should furnishing this information be neglected, delayed or incorrect and additional cuttings are found to be required, the cost of the same shall be charged to this Contractor.

C. Contractor shall verify and coordinate pipe routing with location of all electrical rooms, elevator equipment rooms, telecom/data rooms, and other rooms dedicated to the housing of switchgear, panels, or other electrical equipment. In no case shall piping be installed within or above the ceiling of such rooms.

1.8 SUBMITTAL DATA (Also see General Conditions)

A. Submittal Requirements:
   1. Furnish, all at one time, prior to any installation, within the time noted below, six (6) copies of valid submittal data on all fixtures, material, equipment and devices. Each submitted item shall be indexed and referenced to these specifications and to identification numbers on fixtures and equipment schedules.
   2. Manufacturers' submittal literature and shop drawings are required on all items to ensure the latest and most complete manufacturer's data is available for review. Requirements of the submittals and Engineer's submittal notes are a part of the work of this Division except that Engineer's notes may not be used as a means of increasing the scope of work of this Division.
   3. Submittals will be checked for general conformance with the design concept of the project but the review

does not guarantee quantities shown and does not supersede requirements of this Division to properly install work.

4. To be valid, all submittals must:

   (a) Be delivered to the Architect's office within thirty-five (35) days of award of the contract. Contractor shall make time allowance for Engineer's review, return of comments, if any, and resubmittal if required. Corrections or changes in submittals returned as inadequate or incomplete shall be accomplished within this time limit.

   (b) Clearly indicate and label as such any items proposed as substitution for that specified or shown on plans.

   (c) Include all pertinent construction, installation, performance and technical data.

   (d) Have all product data sheets clearly labeled to indicate the individual items being submitted. In addition, all required options and accessories shall be clearly marked.

      (1) Product data sheets corresponding to items indicated on plans shall be clearly labeled with the corresponding fixture or equipment tag number.

      (2) Product data sheets corresponding to items indicated in specifications shall be clearly labeled with the specification section, page and item numbers.

   (e) Include, for every item which differs in size, configuration, connections, service, accessibility or any other significant way, a drawing to the same (or larger) scale as to the pertinent portions of the contract drawings. In this drawing show a complete layout of the system except that which is identical to the contract drawings, unless the unchanged portions must be shown to indicate such things as clearances. This drawing, together with the contract design drawings must show the complete system as revised to accommodate the proposed alternate.

B. Substitution Requirements:

1. Any items included in submittals and proposed by the Contractor as substitution for that specified or shown on plans shall be submitted within thirty five (35) days of award of the contract. After such time, proposed substitutions shall not be accepted for review, and the Contractor shall submit all items as specified or shown on plans.

   (a) For each item proposed as substitution for that specified or shown on plans, copies of product data sheets for the specified item shall be placed side by side with product data sheets for the proposed substitution item within the submittal.

      (1) In addition to the Submittal Requirements for labeling listed above, product data sheets for the specified item shall be clearly labeled "SPECIFIED ITEM, NOT SUBMITTED". Product data sheets for the corresponding proposed substitution item shall be clearly labeled "PROPOSED SUBSTITUTION".

   (b) Provide calculations and other detailed data justifying how any items proposed as substitution were selected for proposal. Data must be complete enough to permit detailed comparison of every significant characteristic for which the specified item was analyzed during design.

2. It shall be the Contractor's responsibility to provide sufficient information to allow the Engineer to analyze any proposed alternate. If inadequate information is provided, the proposal will not be approved and resubmittal will not be allowed.

3. The Contractor shall provide or perform tests required by Engineer for purpose of judging acceptability of proposed substitutions.

4. The Contractor assumes full responsibility that alternate items and procedures will meet the job requirements and is responsible for cost of redesign and of modifications to this and other parts of work caused by alternate items furnished under work in this Section. In view of these responsibilities, it is the purpose of these specifications to establish procedures to ensure that the Contractor has considered all the ramifications of proposed alternates before submitting them for review. Submittals which do not comply with the requirements of these specifications or which indicate proposed alternates that were selected without proper regard to the requirements of the job will not be approved. No more than one proposed alternate will be considered for each item.

5. Alternate items installed without Engineer's approval will be replaced with specified items at Contractor's expense.

6. The Architect or his authorized representative shall be the sole judge as to the quality and suitability of proposed alternate equipment, fixtures or materials. Decisions of the Architect or that of his representative shall be final and conclusive.

1.9 UNINSPECTED WORK

A. The Contractor shall not allow or cause any of his work to be covered up or closed in until it has been inspected, tested, approved by all authorities have jurisdiction, and until Project Record drawings have been properly annotated.

B. Should any of his work be covered up or closed in before such inspection, he shall, at his own expense, uncover the work to the satisfaction of the inspection party. All related repair work cost shall be borne by the Contractor.

1.10 RECORD DRAWINGS (Also see General Conditions)

A. Contractor shall provide and keep up-to-date a complete "as-built" record set of blueline prints which shall show every change from the original drawings and the exact "as-built" locations and sizes of the work provided under this Section of the specifications. This set shall include locations, dimensions, depth of buried piping, cleanouts, shut-off valves, sewer invert locations, plugged wyes, tees, etc. where applicable. On completion of the work, the Contractor shall incorporate all as-built information on a set of reproducible tracings provided by the Architect and this set of reproducibles shall be delivered to the Architect.

1.11 GUARANTEES (Also see General Conditions)

A. Contractor shall guarantee the entire plumbing and piping systems unconditionally for a period of one (1) year after final acceptance. If, during this period, any materials, equipment, or any part of the systems fail to function properly, the Contractor shall make good the defects promptly and without any expense to the Owner.

B. Contractor shall be responsible for all damage to any part of the premises caused by leaks in pipelines or equipment furnished and installed under this Section for a period of one (1) year after date of acceptance of his work.

C. All equipment and fixtures shall carry manufacturer's warranty against defective parts or poor workmanship for not less than one (1) year. See specific equipment specifications for extended warranty requirements.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT (See Schedules on Drawings)

A. General: All materials, as specified or required in the work, shall be new, free from defects and imperfections. All manufactured shall comply with California Assembly Bill 1953.

B. Pipe and Fittings:
1. Soil and Waste Piping:

(a) Soil and waste piping within the building itself and outside within five feet (5') of the foundation, shall be no-hub cast iron pipe and fittings, asphaltum coated, free from defects, and shall comply with CISPI. Standard 301, ASTM A-888 or ASTM A-74. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute. Fittings shall be made up with "Husky" SD 4000 series or “Clamp All” HI-TORQ 125 series stainless steel type 304 couplings and shall conform to ASTM C1540 & ASTM C564 except all above ground vent pipe fittings may be made with "Anaco" or "Tyler" stainless steel two band couplings conforming to CISPI Standard 310.

2. Vent Piping:

(b) Concealed or underground vent piping shall be cast iron pipe and fittings as specified for soil and waste piping.

(c) Exposed vent piping shall be Schedule 40 galvanized steel pipe, ASTM A53, with black cast iron recessed drainage fittings.

(d) Vent piping within and passing through fire rated partions shall be no-hub cast iron service weight pipe and fittings, asphaltum coated, free from defects, and shall comply with C.I.S.P.I. Standard 301-00 or ASTM A-888-98. Fittings shall be made up with "Anaco" or "Tyler" stainless steel two band couplings and shall comply with ASTM C564.

(1) All vents through roof shall terminate with vandal proof caps (Refer to “Roof Flashing” herein).

3. Domestic Water Piping:

(e) Piping within the building and above grade shall be Type "L" ASTM B88, hard drawn copper tubing with wrought copper sweat fittings ANSI B16.18 and B16.22.

(f) Outdoor underground piping in sizes 2-1/2" and 3" shall be Type "L" ASTM B88, hard drawn copper as specified for water piping within the building. Piping 2" and smaller shall be Type "K" ASTM B88, hard drawn copper with wrought copper sweat fittings ANSI B16.18 and B16.22. Piping below the building floor shall be Type "K" soft annealed copper tubing with no fittings below the slab.

4. Air Conditioning Condensate Drain Piping.

(a) Shall be Type "M" copper below roof and indoor.

(b) Shall be Schedule 80 CPVC on roof.

5. All exposed piping at plumbing fixtures shall be chrome plated yellow brass except exposed pipes in shop or utility areas.

6. Aluminum Jacketing.

(c) All insulated piping exposed indoors in occupied areas and equipment rooms to be protected by covering with .016 inch thick aluminum weather-proof jacket with vapor barrier liner of laminated asphalt covered kraft paper.

(d) Lap jacket at all joints and seams two inches (2"), cinched with staples and straps and finished with two (2) coats of asphalt base aluminum paint in strict accordance with manufacturer's recommendations.

7. Unions or flanges shall be furnished and installed at each threaded connection to all equipment or valves. The unions or flanges shall be located so that the piping can be easily disconnected for removal of the equipment, tank, or valve, and shall be of the type specified in the following schedule.

(e) Unions:

(1) Copper or Brass Tubing: 150 pound cast bronze or copper, ground joint, nonferrous seat with ends, by Walseal, Nibco or Mueller.

(f) Flanges: Tube Turn or approved equal, raised face 150 pound class forged steel, weld, neck or slip-on type conforming to ASA B16.5 and ASTM A181. For copper piping systems, provide flanges conforming to ANSI B16.24. The faces of the flanges being connected to be alike in all cases. Locate flanges so that the piping can be easily disconnected for removal of the equipment or valve. Gasket material shall be of material suiting the service of the opening system in which installed and which conforms to its respective ANSI Standard (A21.11. B16.21). Provide materials that will not be detrimentally affected by the chemical and thermal conditions of the fluid being carried.

8. All piping on roof shall be supported by pipe supports as manufactured by MAPA Products or Eaton B-Line Dura Blok. Products by Miro Industries and Erico shall be accepted for submittal review.

(g) Gravity System Piping 2” and Less: MS-1 single post, adjustable height pipe support.

9. All underground non-metallic piping shall have 14 gauge copper "Tracer Wire" continuous for entire length.

C. Traps, Strainers and Tailpieces: Every sanitary fixture, unless otherwise specified, shall be provided with a seventeen (17) gauge chromium tailpiece, a Los Angeles pattern chrome plated cast-brass trap and galvanized nipple trap arm and wall flanges. Trap arm shall be provided with chromium plated brass casing between the

trap and wall flanges at each fixture. All sanitary waste system floor drains and floor sinks shall have cast iron "P" traps.

D. Cleanouts: Shall be Jay R. Smith and Zurn.
   1. General: Provide cast-iron ferrule and countersunk brass clean-out plug with round cast iron access frame and heavy duty secured top cover.
   2. Wall Cleanouts: Jay R. Smith No. 4472 for steel pipe and Jay R. Smith No. 4532 for cast iron pipe.
   3. Floor Cleanouts: Jay R. Smith No. 4023 or 4028, bronze plug and non-skid nickel bronze top.
   4. Cleanouts to Grade: Jay R. Smith No. 4258 or Jay R. Smith No. 4253 with X-H bronze plug and X-X-H non-skid cover with lifting device set flush with surface for concrete areas. Asphalt or nonsurfaced areas shall be installed with ring of concrete poured around the bottom flange six inches (6") below surface. Use cast iron soil pipe on cleanout risers. For cleanouts in non-traffic areas, terminate cleanout plug in concrete yard box.

E. Access Panels: Wall access panels shall be minimum 12" x 12" for concealed valves and other equipment unless otherwise specified or indicated. Ceiling access panels shall be 18" x 18" minimum. Access panels shall be located and positioned for ready access and service of equipment housed within. Where access panels are specified with keyed cylinder locks, all such locks shall be identically keyed.
   1. Wall, Non-Fire Rated: Elmdor/Stoneman DW-SS-CL, drywall, stainless steel finish, cylinder lock.
   2. Ceiling, Non-fire Rated: Elmdor/Stoneman DW, drywall, prime coated finish, screwdriver latch.
   3. Wall, Fire Rated: Elmdor/Stoneman FR-SS-CL, fire rated, stainless steel finish, cylinder lock.
   4. Ceiling, Fire rated: Elmdor/Stoneman FRC, Fire rated, prime coated finish, return latch.

F. Yard Boxes & Vaults: For service shut-off valves on gas and domestic water; for pressure regulator assemblies and for cleanouts, shall be Brooks Products or Fraser Cement Products Co., rectangular concrete type with vandal-proof cast iron cover and name of service clearly marked on cover. Box shall be of size to permit full range of valve operation and to permit easy removal of valve assembly. Vaults shall be sectional type.

G. Roof Flashing:
   1. Sanitary vents thru roof and grease vents thru roof: Stoneman No. 1100-5, one (1) piece, seamless, four (4) pound, series with reinforcing steel boot counterflashed with cast iron flashing sleeve and equipped with vandal-proof hood for all vent piping. Seal joint between flashing and pipe with waterproofing compound per flashing manufacturer’s recommendations.
   2. Water, gas, condensate drainage and other metallic piping thru roof: Stoneman No. 1100-4, one (1) piece, seamless, four (4) pound, series with reinforcing steel boot counterflashed with cast iron flashing sleeve. Seal joint between flashing and pipe with waterproofing compound per flashing manufacturer’s recommendations

H. Escutcheons: Shall be chrome plated cast brass with setscrew locking device.

I. Dielectric Union Isolators: Connection between incompatible materials above grade and inside building shall be made with two (2) dielectric unions separated by a twelve inch (12") section of red brass pipe. Dielectric union isolator for connection piping or non-compatible materials shall be of standard commercial design with threaded connections.

J. Pipe Supports: Unless otherwise indicated on the drawings, shall be as follows:
   1. The Contractor shall furnish and install all miscellaneous iron work including angles, channels, etc., required to appropriately support the various piping systems. Hanger spacing and location shall conform to 2025 California Plumbing Code Table 313.1.
   2. All horizontal runs of piping within the building to be supported from the structural framing with steel rods and split ring hangers, B-Line, Grinnell Company, Tolco, or approved equal. Steel rods shall be secured to overhead framing with side beam connectors. Where necessary, install angle iron between framing to accommodate hanger rods. Where several pipes are running together, Unistrut, B-Line or Powerstrut channels with clamps may be used in lieu of individual pipe hangers, and supported from structure as herein specified. Submit test data for type of hanger supports to be provided. For support conditions other than specified herein, the Contractor shall submit method of support for approval prior to any

installation.

3. Horizontal Piping Hangers and Supports:

   (a) General: Provide factory fabricated horizontal hangers and supports complying with one of the following MSS types listed to suit horizontal-piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Select size of hangers and supports to exactly fit pipe size for bare piping, and to exactly fit around piping insulation with saddle or shield for insulated piping. Provide copper-plated hangers and supports for copper-piping systems.

      (1) Adjustable Steel Clevis Hangers: (MSS Type 1.) B-Line B 3100

      (2) Adjustable Swivel Pipe Rings: (MSS Type 5) B-Line B3690

4. Vertical-Piping Clamps:

   (a) General: Provide factory fabricated vertical-piping clamps complying with the following types listed, to suit vertical piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Select size of vertical piping clamps to exactly fit pipe size of bare pipe. Provide copper-plated clamps for copper-piping systems.

   (b) Two-Bolt Riser Clamps: (MSS Type 8) B-Line B3373

5. Hanger-Rod Attachments:

   (a) General: Provide factory fabricated hanger-rod attachments B-Line, Tolco or approved equal, selected by Installer to suit horizontal-piping hangers and building attachments, in accordance with MSS SP-58 and manufacturer's published product information. Select size of hanger-rod attachment to suit hanger rods. Provide copper-plated hanger-rod attachments for copper-piping systems.

   (b) Side beam eye socket, Tolco Fig. #57 for rod sizes 3/8" dia. and Tolco Fig. #25-30-251 for rod sizes 1/2" dia.

6. Building Attachments:

   (a) General: Provide factory fabricated building attachments, selected by Installer to suit building structural framing conditions, in accordance with MSS SP-69 and manufacturer's published product information. Select size of building attachments to suit hanger rods. Provide copper-plated building attachments for copper-piping systems.

7. Hanger Rods and Spacing shall conform to the following table:

Pipe Sizes	Spacing	Rods
2 Inch and Smaller	6 Feet	3/8 Inch

8. Hangers and Supports shall be adequate to maintain alignment and prevent sagging and shall be placed within 18 inches of joint. Support shall be provided at each horizontal branch connection.

9. Bracing all piping laterally to structural framing to prevent swaying or lateral movement per bracing detail on plans per seismic note on plumbing sheet P-0.1.

10. Miscellaneous Supports, Wall Brackets, Etc.: Provide where required in accordance with the best standard practices of the trade. Submit shop drawings for all fabricated supports.

11. Isolators. All piping which is not isolated from contact with the building by its insulation shall be installed with a manufactured type isolator. Isolators shall be B-Line vibra clamp and cushion, Super Strut, Stoneman "Trisolator", or approved equal. Piping shall be installed and supported in a manner to provide for expansion without strains. Guides shall be properly installed to ensure this requirement.

12. Shields:

   (a) General: Provide shields at piping hangers and supports, factory-fabricated, for all insulated piping as manufactured by Pipe shields Incorporated or approved equal. Size shields for exact fit to mate with pipe insulation.

   (b) Protection Shields: MSS Type 40; provide high density insert of same thickness of insulation or equal 100-psi average compressive strength, waterproofed calcium silicate, encased with a sheet metal shield. Insert and shield shall cover entire circumference of the pipe and shall be of length indicated by manufacturer for pipe size and thickness of insulation.

K. Insulation:
1. All condensate drain piping building shall be insulated.

(a) Owens Corning fiberglass SSL 11 with ASJ Max with wrap or equal, composite surface burning characteristics: flame spread 25, smoke developed 50. All condensate drain piping on roof shall have aluminum jacketing.

PART 3 – EXECUTION

3.1 INSTALLATION - GENERAL

A. Locations and Accessibility: Install equipment for ease of maintenance and repair. If changes in the indicated locations or arrangements are made by the Contractor, they shall be made without additional charges.

B. Openings: Furnish information to the other trades on size and location of openings which are required in walls, slabs, roof, for piping and equipment at the proper times.

C. Closing-In of Uninspected Work: Do not allow or cause any of the work to be covered up or enclosed until it has been inspected, tested, and approved by the Architect. Any work enclosed or covered prior to such inspection and test shall be uncovered and, after it has been inspected, tested, and approved, make all repairs with such materials as may be necessary to restore all work, including that of other trades, to its original and proper condition.

D. Before laying of any pipe or digging of any trenches, Contractor shall determine by actual excavation and measurement exact locations and depth of existing utility and service lines to which he is going to connect. In event depth of existing sewer main or storm drain is not sufficient to permit installation of piping as detailed on drawings or to make connection in manner indicated, Contractor shall confer with the Architect, Owner's representative and Engineer for Direction.

E. Excavation, Trenching and Backfill: Perform all necessary trench excavation, shoring, backfilling and compaction required for the proper laying of the pipe lines.
1. The Contractor shall coordinate the layout of all below grade piping and components with the General Contractor prior to bid to determine the extent of required sawcutting, excavation, alterations, and subsequent repair/restoration of all affected hardscape and softscape surfaces. All such items shall be included in bid.
2. Backfill shall be clean soil free from rocks and debris. Compact to ninety percent (90%) of surrounding soil. All piping shall be installed in a minimum 6" sand bed and covered with 6" of sand prior to backfill. Continue backfill with materials free of rocks and debris, properly moistened and mechanically tapered and compacted to 90% of surrounding soil.
3. Water, soil and waste piping shall have twenty-four (24") of cover minimum, except all PVC pipe material and all gas piping shall have eighteen (18") of cover minimum. All other pipe shall have not less than eighteen inches (18") of cover, unless otherwise noted on the drawings. Offset gas and water piping as required to permit crossover of underground piping systems, and electrical conduit systems.
4. Bottoms of Trenches: Cut to grade and excavate bell holes to ensure the pipes bearing for their entire length upon the outside periphery of the lower third of the pipe.
5. Water piping shall not be run in the same trench with sewer or drainage piping unless separated as required by the CPC.
6. All horizontal soil and waste piping 3” and smaller shall be installed to a uniform grade of not less than one-fourth inch (1/4") per foot. All horizontal soil and waste piping 4” and larger shall be installed to a uniform grade of not less than one-eighth inch (1/8") per foot, unless otherwise indicated or directed.

F. Piping Installation:
1. All piping shall be concealed in finished portion of the building except where otherwise indicated or directed at the time the work is done. All piping shall be installed to clear all framing members and beams, even if drawings do not indicate same. Contractor shall constantly check the work of other trades so as to prevent any interference with the installation of this work.
2. All piping into stem walls and footings shall be double half lap wrapped with 1/8" thick "Armaflex" insulation. The Contractor shall also provide blocked out areas in stem wall and footing as required for

the installation of the piping. All piping shall avoid the lower 9" of the footing and the Contractor shall coordinate and provide dropped footings as required for the installation of the underground piping.

3. Unions shall be installed on one side of all screwed shut-off valves, at both sides of screwed automatic valves and on all by-passes, at all equipment connections and elsewhere as indicated or required for ease of installation and dismantling.
4. Connections between copper tubing and equipment shall be with Mueller Brass Company, or approved equal, brass stream line copper to P.P.S. ground joint unions.
5. Cleanouts shall be installed on all condensate drain piping at each aggregate horizontal and vertical change in direction exceeding 135 degrees.
6. All condensate drain piping shall be installed with a minimum slope of 1/8”/FT.
7. All condensate piping on roof shall be painted with UV protection paint.
8. Corrosion Protection:

(a) General.

(1) Corrosion protection shall be provided for all below grade cast iron and copper piping and associated valves and fittings. Such piping shall be protected from corrosion by encasement in a polyethylene protective wrapping, referred to hereafter as polywrap. Although not intended to be a completely air and water tight enclosure, the polywrap shall provide a continuous barrier between the pipe and surrounding bedding and backfill.

(b) Materials.

(1) Cast iron piping encasement.

i. The polywrap shall be minimum 8 mil. in thickness, group 2, linear low density, flat tube, natural (clear) virgin polyethylene film formed into tubes or sheets as required. Material shall meet or exceed the requirements of AWWA C105, ANSI A21.5 and ASTM A674.

ii. The polywrap shall be as manufactured by Northtown Company or approved equal.

(2) Copper piping encasement.

i. The polywrap shall be minimum 6 mil. in thickness, group 2, linear low density, flat tube, natural (clear) virgin polyethylene film formed into tubes or sheets as required. Material shall conform to the requirements of ASTM D1248.

ii. The polywrap shall be as manufactured by Northtown Company or approved equal.

(3) The minimum Polywrap flat tube width for each pipe diameter shall be as follows:

Pipe Size / Type	Polywrap Flat Tube Width
½” to ¾” copper	2”
1” to 1-½ copper	3”
4” cast iron	16”

(4) The polywrap shall be secured as specified with 2 inch wide pressure sensitive plastic tape not less than 10 mils thick.

i. Tape shall be Scotchwrap No. 50, Polyken No. 900, Tapecoat CT, Johns-Manville No. V-10 Trantex or approved equal.

ii. Piping through exterior walls shall be sealed using Link Seal modular seal with nitrile seal elements and stainless steel bolts.

(c) Installation.

(1) The polyethylene tubing shall be cut into lengths approximately 2 feet longer than the pipe sections. Slip the tube around the pipe, centering it to provide a 1-ft overlap on each adjacent pipe section, and bunching it accordion fashion lengthwise until it clears the pipe ends. Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe. . A shallow bell hole must be made at each joint to facilitate installation of the polywrap. The bunched-up polywrap shall be pulled from the

preceding length of pipe, slipped over the end of the new length of pipe, and secured in place with one circumferential turn of tape plus enough overlap to assure firm adhesion. The end of the polywrap shall be slipped from the new pipe section over the end of the first wrap until it overlaps the joint at the end of the preceding length of pipe and tape it in place. The loose wrapping on the barrel of the pipe shall be pulled snugly around the barrel of the pipe and excess material folded over the top of the pipe and the folds held in place by means of short strips of adhesive tape, at about 3 foot intervals along the pipe.

(2) Rips, punctures or other damage to the tube shall be repaired with the adhesive tape or pieces of tube material secured with tape. Bends and reducers in the line shall be covered with polyethylene in the same manner as pipe.

(3) Valves, tees, crosses and outlets shall be wrapped with flat sheets of the same material. The sheets shall be passed under valves and brought up around the body to the stem. Edges shall be brought together, folded twice and secured with the adhesive tape.

G. Sleeves: Shall be plastic or galvanized steel where pipes pass through concrete walls or floor slabs.
1. Isolate pipes through ground floor slabs with Kraft paper, plastic tape or similar materials unless conduit is specified or indicated.
2. Sleeves for pipes through exterior walls shall be non-metallic with minimum 2” weep ring as manufactured by Link Seal. Pipe shall be sealed with Link Seal modular seal with EPDM seal elements.
3. Below-grade piping through exterior walls shall be sealed using Link Seal modular seal with nitrile seal elements and stainless steel bolts and sleeves as manufactured by Century Line.

H. Contraction and Expansion: Install all work in such a manner that its contraction and expansion will not do any damage to the pipes, the connected equipment, or the building. Install offsets, swing joints, expansion joints, seismic joints, anchors, etc., as required to prevent excessive strains in the pipe work. All supports shall be installed to permit the materials to contract and expand freely without putting any strain or stress on any part of the system. Provide anchors as necessary.

I. Pipe Joints and Connections:
1. Copper Tubing and Brass Pipe with Threadless Fittings:
(a) Solder joints for copper shall be made with 95/5 lead free solder in accordance with manufacturer's recommendations for the service intended.
(b) Use threaded adapters on copper tubing where threaded connections are required.

J. All closet bends shall be adequately blocked and secured. Trap arms and similar connections installed below the floor level or under concrete slabs shall be adequately supported and anchored to prevent motion in any direction. All piping installed above grade within buildings shall be secured to structural framing with Unistrut or pipe clamps to provide a rigid installation. Piping utilizing gaskets as a seal shall be given prime consideration to providing adequate stability through proper supports and anchors because of its flexible nature.

K. Each pipe penetration of the roof shall be separated from other piping and any roof equipment by a minimum of 18" to insure a proper pipe flashing installation.

L. Floor, Wall and Ceiling Plates: Where pipes pierce finished surfaces, C.P. brass split flanges with setscrew lock shall be provided.

M. Completion of Installation:
1. Cleaning and Flushing: Clean all equipment and materials thoroughly. Leave surface to be painted smooth and clean, ready for painting.
2. Flush each unit of water supply and distribution system thoroughly with clean water at the highest velocities attainable.
3. Clean all piping, valves, traps, water heaters, fixtures and other devices thoroughly and flush or blow out until free of scale, oil silt, sand, sediment, pipe dope and foreign matter of any kind.

3.2 OPERATION INSTRUCTION

A. Prior to occupancy or prior to the date of final inspection, whichever may occur first, the Contractor shall prepare two (2) sets of typewritten instructions for the operation of all equipment, valves, etc., specified and furnished as a part of the work under this section, and shall assign a competent person, thoroughly familiar with the job, to demonstrate and instruct a representative of the Owner in the operation of the equipment. The time of said demonstration and instructions shall be arranged with the Owner's representative approximately one (1) week in advance. Verbal instructions shall include shut-off location of gas and water. The Contractor shall assemble all operation and maintenance data supplied by the manufacturers of the various pieces of equipment, all keys and special wrenches required to operate and service the equipment (including keys for yard boxes, gas stops and fixture stops), and all equipment warranties and deliver same to the representative of the Owner on date of said instructions.

3.3 PIPE AND EQUIPMENT IDENTIFICATION

A. Each operating and service line shut-off valve shall be identified by a 19 ga. brass tag with stamped, engraved type of service identified and area served, complete with hole and brass chain mounted on valve stem or handle. Tag shall be a minimum of one and one-half inch (1-1/2") in diameter.

B. All piping systems shall be readily identifiable by appropriate labeling with the name of the piping contained. Such labeling shall be by means of metal tags, stenciling, stamping, or with adhesive markers, in a manner that is not readily removable. Labeling shall appear on the piping at intervals of not more than 20 ft and at least once in each room and each story traversed by the piping system.

C. Provide on exterior wall of each building opposite the building's main gas service a sign reading "Gas Shut Off". Sign shall be metal with minimum 1-1/2" high-embossed letters.

D. All equipment shall be provided with name plate indicating all pertinent information on it.

END OF SECTION

DIVISION 23 – HEATING, VENTILATING & AIR CONDITIONING

SECTION 23 01 30.51 - HVAC EQUIPMENT & DUCT CLEANING

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

A. Section includes commissioning process requirements for HVAC&R systems, assemblies, and equipment.

B. Related Sections:
   1. Section 01 33 00 Submittal
   2. Section 23 30 00 Heating, Ventilation and Air Conditioning

1.03 GENERAL CONDITIONS

A. General Conditions of the construction contract shall be a part of these specifications, and shall govern the HVAC Systems Rehabilitation Contractor. All work shall be done in accordance with requirements of the Owner and the construction contractor.

   1. Contractor's License: The Contractor shall be licensed in the State of California. This License shall be a C-61 Specialty License in the D-64 Duct Cleaning Sub-Division.
   2. "National Air Duct Cleaners Association (NADCA): The contractor shall be a Certified Member in good standing with NADCA.
   3. Contractor shall visit the site prior to bid and make himself thoroughly familiar with the site and existing conditions. By submitting a bid for HVAC equipment and duct cleaning, Contractor declares that he is familiar with existing conditions and is capable of executing work detailed herein at no additional cost(s) to the Owner.

1.04 QUALLITY ASSURANCE

A. Contractor shall have thorough knowledge and experience in the rehabilitation and cleaning of projects of similar type, size, and degree of difficulty completed within the last two years. Contractor agrees:

   1. All work shall be supervised by a foreman having thorough knowledge and experience in the cleaning of air conditioning systems. Experienced, qualified personnel shall perform the work.
   2. Contractor shall be fully covered by Workmen's Compensation, Public Liability and Property Damage Insurance, and certificates of these coverage's and limits shall be provided to the Owner upon request.
   3. Any mechanical problems discovered during the course of cleaning will be reported in writing within 24 hours to the project coordinator
   4. Contractor shall leave area of work in same condition as when work started (on a day-to-day basis and from project start to finish).
   5. Contractor shall keep work area free of all surplus material and debris. Upon completion of each shift, all tools, equipment, debris, etc. shall be moved to a designated area selected by the Owner.
   6. Contractor shall take all necessary measures to minimize the migration of dust and other air borne particles during the cleaning process. ALL outlets and inlets leading to (or from) occupied spaces must be covered with a leak-proof catch basin. At no time shall dust and/or other air borne particles be blown or dispersed into any space within the building.
   7. Contractor shall at all times be in compliance with Cal OSHA and EPA regulations.
   8. Unless otherwise noted, Contractor shall be responsible for cleaning all existing supply, return, exhaust, and outside air intake duct to remain as indicated on plans. Any deviations from said section must be approved in writing by the Owner.

B. Photo Documentation: Documentation shall include the use of a digital camera and a fiber optic borescope, where required. Contractor shall take photos of conditions before and after cleaning for inclusion in a project report to be presented to the Owner at the conclusion of the work.

1.05 LABOR AND MATERIALS

A. Contractor shall furnish all labor, materials, supplies, tools, equipment, supervision, transportation and any other services or items necessary to accomplish the work.

B. Safety Procedures and Policy: Contractor shall provide adequate and necessary management personnel to ensure that all safety policies and project requirements are met.

1. Maintain safe and healthy employee working conditions and establish safe operating procedures at each job site.
2. Comply with the safety standards of all federal and state regulatory agencies as a minimum requirement for safety performance at each job site.
3. Comply with all of the safety requirements of the job site and safety requirements mandated by the Owner.
4. Contractor shall provide all necessary safety devices and personal protective equipment for employee use, and shall require their use when needed.
5. The work in progress shall be subject to random unannounced inspections by a representative of Owner.
6. Upon total completion of the project, representatives of Owner will do a quality control inspection. Any area that does not meet the standards of this specification shall be redone at no additional cost.
7. Electrical equipment, sensors and control devices shall be masked, or blocked off where required for protection for water or chemicals.
8. Disinfectant, when used, shall be applied in accordance with the manufacturer instructions, and may be used prior to coating application. System shall be dried after application of disinfectant.
9. HVAC coating shall be applied according to manufacturer instructions. Coating shall be sprayed, brushed, or rolled directly into interior ductwork surface. A continuous film of coating must be achieved. (Provide supplemental ventilation as required.)
10. All ducts too small to allow direct entrance shall have access openings installed approximately every 10-15 feet as required, and at each elbow and vertical riser. Each access opening shall be recovered with a panel made of the same gauge metal, and installed in such a manner as to insure an airtight job. All sheet metal ductwork shall be in accordance with SMACNA Standards, unless otherwise noted.

PART 2 – PRODUCTS

2.01 MATERIALS AND PRODUCTS

A. Material Safety Data sheets for all materials and products used by Contractor shall be provided to Owner prior to start-up of cleaning operations.

B. Degreaser: Maintex 7-11 Armex Baking Soda Blasting Crystals or equal as approved by Owner.

C. Sanitizer Oxine BBJ Microblocide or other EPA registered equal as approved by Owner.

D. Re-Surfacing Treatments: Schuller Superseal Edgecoat Fosters 40-20 Vac-Systems Tough Coat Porta Sept by Porter Paints, containing EPA registered anti-microbial Swamp Cooler Repair condensate drain pan sealant or other EPA registered equal as approved by Owner.

E. Paint: Styletone Series 8 19 Machinery Grey Zynolite Spray Paint.

F. Insulating Lining Material: To match existing or Certainteed Tough Gard Certainteed Ultra-Lite Armaflex Astro-Foil or equal as approved by Owner.

G. Adhesives: Armstrong 520 DPIO/20 Super 77 Spray Adhesive or equal as approved by Owner.

H. Duct Sealant: DP 10/10 Top 12000 Silicone Sealant or equal as approved by Owner

PART 3 – EXECUTION

3.01 METHODOLOGY

A. Cleaning of Ductwork

1. All registers and diffusers shall be removed and cleaned with a mild detergent.
2. All ductwork (not accessible to personnel) shall be cleaned by compressed air, light brush agitation, or vibration agitation, or a combination of any of the above. All duct to be opened so the interior is as visible as possible.
3. Large ductwork shall be cleaned by manual brushing, or vibration agitation. All duct to be opened so as to visually observe the cleaning process.
4. All agitation of contaminants shall be accompanied by negative air pressure created by a negative air machine using a HEPA filter.
5. Access needed for proper cleaning shall be cut into rigid metal ducts at elbows and approximately every 15 feet. Holes shall be sized as appropriate to allow cleaning and visual inspection inside duct.
6. All flexible ducts shall be disconnected at joints and registers for cleaning. Flexible duct lengths of over 15 feet shall be cut at intervals not exceeding 15 feet.
7. Contractor shall provide access in existing ceilings and walls as required. Where openings are made for cleaning purposes, Contractor shall repair such ceilings and walls as required to give a uniform surface. Match existing materials, color and texture.
8. All interior dampers and turning vanes shall be cleaned with a stiff bristle brush and then vacuumed.
9. The surface of all unreplaced liner shall be coated. Any small tears in fiberglass will be repaired with lagging materials and then encapsulated.
10. All access holes made in ducts for cleaning purposes shall be sealed with galvanized sheet panels of the same of heavier gauge metal as the duct. Panels shall be installed with duct sealant and screwed into the duct at four-inch maximum on center, all around as required to maintain an airtight seal. Proof will be required.
11. All flexible ducts disconnected for the purpose of cleaning shall be reattached in the same manner as originally installed.
12. Clean all duct serving remodeled areas, including supply duct and transfer duct. Do not clean main return ductwork at the central air conditioning unit.

B. Hazardous Materials

1. When asbestos or other hazardous materials are encountered, Contractor shall document concern and forward to Owner forthwith.
2. Respiratory protection shall be OSAH/NIOSH approved with HEPA cartridges, or cartridges designed for specific contaminants.
3. No material that is not approved by regulatory authorities shall be introduced to the project as means for accomplishing work outlined herein.

END OF SECTION

DIVISION 23 – HEATING, VENTILATING & AIR CONDITIONING

SECTION 23 05 53 - MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Provide marking and identification required on all mechanical piping systems, ducts, controls, valves, apparatus, etc., as specified in this Section or any related Sections.

B. Related Sections:

1. Plumbing: Section 22 00 00.

2. Heating, Ventilating, and Air Condition: Section 23 30 00.

1.02 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Submit samples of materials.

1.03 QUALITY ASSURANCE

A. Comply with provisions of Section 01 40 00.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: All piping systems, controls, valves, apparatus, etc., except those that are installed in inaccessible locations in partitions, walls, and floors, and those buried underground, shall be permanently identified.

2.02 VALVES

A. Use existing chart or diagram for each piping system, indicating thereon by identifying letter or number each valve in the system, its location, and function.

B. Existing color chart is Per District.

C. Bind copies of each chart in Operating Instructions Manual.

D. Provide each valve with brass, aluminum or plastic disc, not less than 1-1/4" diameter bearing engraved numbers corresponding to those indicated on chart. Fasten discs to valve with No. 14 brass wire.

E. Provide an additional tag for all safety valves and other valves that could be hazardous to safety and health of occupants. Distinguish these tags from regular valve tags by color (such as yellow with black letters, and marked "Danger") submit sample tag to the District Inspector.

2.03 INSTRUMENTS AND CONTROLS

A. Identify all panel-mounted instruments and controls with engraved bakelite nameplates permanently affixed to Panel boards.

B. Identify all alarm indicating devices and alarm reset devices by nameplates.

C. Identify all damper motors and automatic valves, flow switches, pressure switches, etc., with embossed aluminum or plastic tape affixed to controller, indicating service and setting.

2.04 EQUIPMENT

A. Identify each major piece of equipment with stenciled designation corresponding to its designation on the Contract Drawings.

2.05 PIPELINES IDENTIFICATION

A. Identify all pipes by means of colored labels with directional arrows as indicated in schedule. (Contractor shall use District colors to distinguish equipment and/or piping use.)

B. Materials: Waterproof plastic cloth, all-temperature, self-adhering, or markers similar to Western "Tel-A-Pipe", Type I, or equal by W.H. Bradley Co.

C. Size: For pipes up to 3" diameter, 2-1/4" x 9" minimum, with 1/2" letters; for pipes over 3" diameter, 2-1/4" x 9" minimum, with 1-1/2" letters.

D. Colors:

1. Backgrounds: As indicated in schedule.

2. Letters: White on red background; black on all other backgrounds.

E. Locations:

1. On all accessible piping, whether insulated or not (including mechanical rooms, attic and ceiling spaces); except that labels shall be omitted from piping where use is obvious due to its connection to fixtures (such as faucets, water closets, etc.).

2. Near each valve and branch connection in such accessible piping.

3. At each pipe passage through wall or floor.

4. At not more than 40'-0" spacing on straight pipe run between bands required in 2 and 3 above.

5. At each change in direction.

F. Application: Apply on clean surfaces free of dust, grease, oil or any material that will prevent proper adhesion. Replace all non-adhering or curling labels with new labels, as approved by the District Inspector.

1. Use spray adhesive on insulated pipes in addition to adhesive on marker.

2. Finish all exposed markers with one coat of lacquer.

G. Schedule:

Content of Pipe	Legend	Color	Note
Domestic cold water	Dom. c.w.	G	*
Non-potable cold water	NP c.w.	G (1)	*
Domestic hot-water 140 F	Dom h.w. 140F	Y	*
Indirect drain	Ind drain	G (1)	*
Sump pump discharge	Pump discharge	G	*
Chilled water supply	Chill water supply	G	*

Chilled water return	Chill water return	G	*
Hot water	Hot Water Supply	Y	*
Hot water	Hot Water Return	Y	*
Condensate	CD		*

**Contractor shall verify all colors and verbiage with District prior to labeling.

H. Notes on Schedule:

1. Symbol * indicates flow arrow required.

2. Symbol (1) indicates 2-1/4" x 1" yellow label with 1/2" letters reading UNSAFE WATER at one end of primary label.

3. Hyphen between words indicates 2 separate stock labels are required, although a single special label with all lettering is equally acceptable.

4. Background colors: Symbol Y indicates yellow background color. Symbol G indicates green background color. Symbol R indicates red background color.

2.06 UNDERGROUND PIPE MARKERS

A. Pipe markers shall be furnished to grade at each horizontal change in direction for all non-metallic underground pipes. Markers shall be concrete plaque inscribed with the appropriate word "gas", "water", "sewer", "air", etc. Cleanouts to grade may serve as direction markers for waste lines. An electrically continuous #14 plastic covered copper tracer wire, Type TW, shall be run in trench along pipe. Wire shall be fastened to pipe at not greater than 20'-0" intervals. Wire shall terminate above ground with a 12" lead taped around each riser. Straight line transitions of metallic to non-metallic pipe shall have lead brought to grade under a marker.

B. Tracer wires for non-metallic pipe shall be color-coded as follows:

1. Gas: Yellow

2. Domestic Water: Blue

3. Fire Sprinkler: Red

4. Irrigation: Green

2.07 IDENTIFICATION OF AIR CONDITIONING EQUIPMENT

A. Identify location of air conditioning equipment above Tee Bar Ceilings. Install 3/4” to 1” diameter colored self adhesive dots to Tee Bar Ceiling grid showing access. Please note that the following identification shall be included on as built control drawings.

1. Fire Damper Red

2. Manual Volume Dampers Blue

   a. Supply Air Full Dot

   b. Return Air Half Dot.

3.	Fan coil unit	Green
4.	Filter Location if separate from fan coil	Yellow

PART 3 - EXECUTION

3.01 INSTALLATION

A. Report any conditions detrimental to proper and timely completion of work. Apply markers and identification tags as specified using approved materials and installation procedures recommended by manufacturer.

END OF SECTION

DIVISION 23 – HEATING, VENTILATING & AIR CONDITIONING

SECTION 23 05 93 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

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. Balancing Air Systems:
    1) Constant-volume air systems.
    2) Multizone systems.
    3) Induction-unit systems.
2. Duct leakage tests.

1.03 DEFINITIONS

A. AABC: Associated Air Balance Council.

B. BAS: Building automation systems.

C. NEBB: National Environmental Balancing Bureau.

D. TAB: Testing, adjusting, and balancing.

E. TABB: Testing, Adjusting, and Balancing Bureau.

F. TAB Specialist: An independent entity meeting qualifications to perform TAB work.

G. TDH: Total dynamic head.

1.04 PREINSTALLATION MEETINGS

A. TAB Conference: If requested by the Owner, conduct a TAB conference at Project site. Insert after approval of the TAB strategies and procedures plan to develop a mutual understanding of the details. Provide a minimum of 14 days' advance notice of scheduled meeting time and location.

1. Minimum Agenda Items:
    1) The Contract Documents examination report.
    2) The TAB plan.
    3) Needs for coordination and cooperation of trades and subcontractors.
    4) Proposed procedures for documentation and communication flow.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: Within 30 days of Contractor's Notice to Proceed, submit documentation that the TAB specialist and this Project's TAB team members meet the qualifications specified in "Quality Assurance" Article.

B. Contract Documents Examination Report: Within 30 days of Contractor's Notice to Proceed, submit the Contract Documents review report as specified in Part 3.

C. Strategies and Procedures Plan: Within 30 days of Contractor's Notice to Proceed, submit TAB strategies and step-by-step procedures as specified in "Preparation" Article.

D. System Readiness Checklists: Within 30 days of Contractor's Notice to Proceed, submit system readiness checklists as specified in "Preparation" Article.

E. Examination Report: Submit a summary report of the examination review required in "Examination" Article.

F. Certified TAB reports.

G. Retain first paragraph below for verification purposes unless standard report forms from AABC, NEBB, or TABB are acceptable.

H. Sample report forms.

I. Instrument calibration reports, to include the following:
   1. Instrument type and make.
   2. Serial number.
   3. Application.
   4. Dates of use.
   5. Dates of calibration.

1.06 QUALITY ASSURANCE

A. TAB Specialists Qualifications: Certified by AABC.
   1. TAB Field Supervisor: Employee of the TAB specialist and certified by AABC.
   2. TAB Technician: Employee of the TAB specialist and certified by AABC as a TAB technician.

B. Instrumentation Type, Quantity, Accuracy, and Calibration: Comply with requirements in ASHRAE 111, Section 4, "Instrumentation."

C. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 7.2.2 - "Air Balancing."

D. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6.7.2.3 - "System Balancing."

1.07 FIELD CONDITIONS

A. Full Owner Occupancy: Owner will occupy the site and existing building during entire TAB period. Cooperate with Owner during TAB operations to minimize conflicts with Owner's operations.

B. Partial Owner Occupancy: Owner may occupy completed areas of building before Substantial Completion. Cooperate with Owner during TAB operations to minimize conflicts with Owner's operations.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems designs that may preclude proper TAB of systems and equipment.

B. Examine installed systems for balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are applicable for intended purpose and are accessible.

C. Examine the approved submittals for HVAC systems and equipment.

D. See "Design Data" Article in the Evaluations.

E. Examine design data including HVAC system descriptions, statements of design assumptions for environmental conditions and systems output, and statements of philosophies and assumptions about HVAC system and equipment controls.

F. Examine ceiling plenums and underfloor air plenums used for supply, return, or relief air to verify that they are properly separated from adjacent areas. Verify that penetrations in plenum walls are sealed and fire-stopped if required.

G. Examine equipment performance data including fan and pump curves.
   1. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.
   2. Calculate system-effect factors to reduce performance ratings of HVAC equipment when installed under conditions different from the conditions used to rate equipment performance. To calculate system effects for air systems, use tables and charts found in AMCA 201, "Fans and Systems," or in SMACNA's "HVAC Systems - Duct Design." Compare results with the design data and installed conditions.

H. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.

I. Examine test reports specified in individual system and equipment Sections.

J. Examine HVAC equipment and verify that bearings are greased, belts are aligned and tight, filters are clean, and equipment with functioning controls is ready for operation.

K. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible and their controls are connected and functioning.

L. Examine heat-transfer coils for correct piping connections and for clean and straight fins.

M. Examine operating safety interlocks and controls on HVAC equipment.

N. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

3.2 PREPARATION

A. Prepare a TAB plan that includes the following:
   1. Equipment and systems to be tested.
   2. Strategies and step-by-step procedures for balancing the systems.
   3. Instrumentation to be used.
   4. Sample forms with specific identification for all equipment.

B. Perform system-readiness checks of HVAC systems and equipment to verify system readiness for TAB work. Include, at a minimum, the following:
   1. Airside:

      a. Verify that leakage and pressure tests on air distribution systems have been satisfactorily completed.
      b. Duct systems are complete with terminals installed.
         1) Volume, smoke, and fire dampers are open and functional.
         2) Clean filters are installed.
         3) Fans are operating, free of vibration, and rotating in correct direction.
         4) Variable-frequency controllers' startup is complete and safeties are verified.
         5) Automatic temperature-control systems are operational.
         6) Ceilings are installed.

7) Windows and doors are installed.
8) Suitable access to balancing devices and equipment is provided.

3.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

A. Perform testing and balancing procedures on each system according to the procedures contained in AABC's "National Standards for Total System Balance" and in this Section.

B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures.
   1. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts.
   2. After testing and balancing, install test ports and duct access doors that comply with requirements in Section 23 30 00.
   3. Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish according to Section 23 30 00 "Duct Insulation."

C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.

D. Take and report testing and balancing measurements in inch-pound (IP) units.

3.4 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Cross-check the summation of required outlet volumes with required fan volumes.

B. Prepare schematic diagrams of systems' "as-built" duct layouts.

C. For variable-air-volume systems, develop a plan to simulate diversity.

D. Determine the best locations in main and branch ducts for accurate duct-airflow measurements.

E. Check airflow patterns from the outdoor-air louvers and dampers and the return- and exhaust-air dampers through the supply-fan discharge and mixing dampers.

F. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.

G. Verify that motor starters are equipped with properly sized thermal protection.

H. Check dampers for proper position to achieve desired airflow path.

I. Check for airflow blockages.

J. Check condensate drains for proper connections and functioning.

K. Check for proper sealing of air-handling-unit components.

L. Verify that air duct system is sealed as specified in Section 23 30 00 – 2.4 Ductwork and Accessories.

3.5 PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS

A. Adjust fans to deliver total indicated airflows within the maximum allowable fan speed listed by fan manufacturer.
   1. Measure total airflow.
      a. Set outside-air, return-air, and relief-air dampers for proper position that simulates minimum outdoor-air conditions.

1) Where duct conditions allow, measure airflow by Pitot-tube traverse. If necessary, perform multiple Pitot-tube traverses to obtain total airflow.
2) Where duct conditions are not suitable for Pitot-tube traverse measurements, a coil traverse may be acceptable.
3) If a reliable Pitot-tube traverse or coil traverse is not possible, measure airflow at terminals and calculate the total airflow.

2. Measure fan static pressures as follows:
   a. Measure static pressure directly at the fan outlet or through the flexible connection.
   b. Measure static pressure directly at the fan inlet or through the flexible connection.
   c. Measure static pressure across each component that makes up the air-handling system.
   d. Report artificial loading of filters at the time static pressures are measured.
3. First two subparagraphs below may require changes to installed systems or equipment; these changes may require a Contract Modification.
4. Review Record Documents to determine variations in design static pressures versus actual static pressures. Calculate actual system-effect factors. Recommend adjustments to accommodate actual conditions.
5. Obtain approval from Architect/Engineer of Record for adjustment of fan speed higher or lower than indicated speed. Comply with requirements in HVAC Sections for air-handling units for adjustment of fans, belts, and pulley sizes to achieve indicated air-handling-unit performance.
6. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure that no overload occurs. Measure amperage in full-cooling, full-heating, economizer, and any other operating mode to determine the maximum required brake horsepower.

B. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows.
1. Measure airflow of submain and branch ducts.
2. Adjust submain and branch duct volume dampers for specified airflow.
3. Re-measure each submain and branch duct after all have been adjusted.

C. Adjust air inlets and outlets for each space to indicated airflows.
1. Set airflow patterns of adjustable outlets for proper distribution without drafts.
2. Measure inlets and outlets airflow.
3. Adjust each inlet and outlet for specified airflow.
4. Re-measure each inlet and outlet after they have been adjusted.

D. Verify final system conditions.
1. Re-measure and confirm that minimum outdoor, return, and relief airflows are within design. Readjust to design if necessary.
2. Re-measure and confirm that total airflow is within design.
3. Re-measure all final fan operating data, rpms, volts, amps, and static profile.
4. Mark all final settings.
5. Test system in economizer mode. Verify proper operation and adjust if necessary.
6. Measure and record all operating data.
7. Record final fan-performance data.

3.6 PROCEDURES FOR MOTORS

A. Motors 1/2 HP and Larger: Test at final balanced conditions and record the following data:
1. Manufacturer's name, model number, and serial number.
2. Motor horsepower rating.
3. Motor rpm.
4. Phase and hertz.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter size and thermal-protection-element rating.
8. Service factor and frame size.

B. Motors Driven by Variable-Frequency Controllers: Test manual bypass of controller to prove proper operation.

3.7 PROCEDURES FOR CONDENSING UNITS

A. Verify proper rotation of fans.

B. Measure entering- and leaving-air temperatures.

C. Record fan and motor operating data.

3.8 PROCEDURES FOR HEAT-TRANSFER COILS

A. Measure, adjust, and record the following data for each refrigerant coil:
1. Dry-bulb temperature of entering and leaving air.
2. Wet-bulb temperature of entering and leaving air.
3. Airflow.

3.9 DUCT LEAKAGE TESTS

A. Witness the duct pressure testing performed by Installer.

B. Verify that proper test methods are used and that leakage rates are within specified tolerances.

C. Report deficiencies observed.

3.10 CONTROLS VERIFICATION

A. In conjunction with system balancing, perform the following:
1. Verify temperature control system is operating within the design limitations.
2. Confirm that the sequences of operation are in compliance with Contract Documents.
3. Verify that controllers are calibrated and function as intended.
4. Verify that controller set points are as indicated.
5. Verify the operation of lockout or interlock systems.
6. Verify the operation of valve and damper actuators.
7. Verify that controlled devices are properly installed and connected to correct controller.
8. Verify that controlled devices travel freely and are in position indicated by controller: open, closed, or modulating.
9. Verify location and installation of sensors to ensure that they sense only intended temperature, humidity, or pressure.

B. Reporting: Include a summary of verifications performed, remaining deficiencies, and variations from indicated conditions.

3.11 TOLERANCES

A. Set HVAC system's airflow rates and water flow rates within the following tolerances:
1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus 10.
2. Air Outlets and Inlets: Plus or minus 10 percent.
3. Contractor to provide the necessary sheaves, pulleys and other accessories needed to meet the tolerance requirements.

B. Maintaining pressure relationships as designed shall have priority over the tolerances specified above.

3.12 PROGRESS REPORTING

A. Initial Construction-Phase Report: Based on examination of the Contract Documents as specified in "Examination" Article, prepare a report on the adequacy of design for systems balancing devices. Recommend changes and additions to systems balancing devices to facilitate proper performance measuring and balancing. Recommend changes and additions to HVAC systems and general construction to allow access for performance measuring and balancing devices.

B. Status Reports: Prepare monthly progress reports to describe completed procedures, procedures in progress, and scheduled procedures. Include a list of deficiencies and problems found in systems being tested and

balanced. Prepare a separate report for each system and each building floor for systems serving multiple floors.

3.13 FINAL REPORT

A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
   1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing engineer.
   2. Include a list of instruments used for procedures, along with proof of calibration.
   3. Certify validity and accuracy of field data.

B. Final Report Contents: In addition to certified field-report data, include the following:
   1. Fan curves.
   2. Manufacturers' test data.
   3. Field test reports prepared by system and equipment installers.
   4. Other information relative to equipment performance; do not include Shop Drawings and Product Data.

C. General Report Data: In addition to form titles and entries, include the following data:
   1. Title page.
   2. Name and address of the TAB specialist.
   3. Project name.
   4. Project location.
   5. Architect's name and address.
   6. Engineer's name and address.
   7. Contractor's name and address.
   8. Report date.
   9. Signature of TAB supervisor who certifies the report.
   10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
   11. Summary of contents including the following:
      a. Indicated versus final performance.
      b. Notable characteristics of systems.
      c. Description of system operation sequence if it varies from the Contract Documents.
   12. Nomenclature sheets for each item of equipment.
   13. Data for terminal units, including manufacturer's name, type, size, and fittings.
   14. Notes to explain why certain final data in the body of reports vary from indicated values.
   15. Test conditions for fans performance forms including the following:
      a. Settings for outdoor-, return-, and exhaust-air dampers.
      b. Conditions of filters.
      c. Cooling coil, wet- and dry-bulb conditions.
      d. Face and bypass damper settings at coils.
      e. Fan drive settings including settings and percentage of maximum pitch diameter.
      f. Inlet vane settings for variable-air-volume systems.
      g. Settings for supply-air, static-pressure controller.
      h. Other system operating conditions that affect performance.

D. System Diagrams: Include schematic layouts of air distribution systems. Present each system with single-line diagram and include the following:
   1. Quantities of outdoor, supply, return, and exhaust airflows.
   2. Duct, outlet, and inlet sizes.
   3. Terminal units.
   4. Position of balancing devices.

E. Air-Handling-Unit Test Reports: For air-handling units with coils, include the following:
   1. Unit Data:
      a. Unit identification.
      b. Location.
      c. Make and type.
      d. Model number and unit size.

e. Manufacturer's serial number.
f. Unit arrangement and class.
g. Discharge arrangement.
h. Sheave make, size in inches (mm), and bore.
i. Center-to-center dimensions of sheave and amount of adjustments in inches (mm).
j. Number, make, and size of belts.
k. Number, type, and size of filters.

2. Motor Data:
   a. Motor make, and frame type and size.
   b. Horsepower and rpm.
   c. Volts, phase, and hertz.
   d. Full-load amperage and service factor.
   e. Sheave make, size in inches (mm), and bore.
   f. Center-to-center dimensions of sheave and amount of adjustments in inches (mm).

3. Test Data (Indicated and Actual Values):
   a. Total airflow rate in cfm (L/s).
   b. Total system static pressure in inches wg (Pa).
   c. Fan rpm.
   d. Discharge static pressure in inches wg (Pa).
   e. Filter static-pressure differential in inches wg (Pa).
   f. Preheat-coil static-pressure differential in inches wg (Pa).
   g. Cooling-coil static-pressure differential in inches wg (Pa).
   h. Heating-coil static-pressure differential in inches wg (Pa).
   i. Outdoor airflow in cfm (L/s).
   j. Return airflow in cfm (L/s).
   k. Outdoor-air damper position.
   l. Return-air damper position.
   m. Vortex damper position.

F. Apparatus-Coil Test Reports:

1. Coil Data:
   a. System identification.
   b. Location.
   c. Coil type.
   d. Number of rows.
   e. Fin spacing in fins per inch (mm) o.c.
   f. Make and model number.
   g. Face area in sq. ft. (sq. m).
   h. Tube size in NPS (DN).
   i. Tube and fin materials.
   j. Circuiting arrangement.

2. Test Data (Indicated and Actual Values):
   a. Airflow rate in cfm (L/s).
   b. Average face velocity in fpm (m/s).
   c. Air pressure drop in inches wg (Pa).
   d. Outdoor-air, wet- and dry-bulb temperatures in deg F (deg C).
   e. Return-air, wet- and dry-bulb temperatures in deg F (deg C).
   f. Entering-air, wet- and dry-bulb temperatures in deg F (deg C).
   g. Leaving-air, wet- and dry-bulb temperatures in deg F (deg C).
   h. Water flow rate in gpm (L/s).
   i. Water pressure differential in feet of head or psig (kPa).
   j. Entering-water temperature in deg F (deg C).
   k. Leaving-water temperature in deg F (deg C).
   l. Refrigerant expansion valve and refrigerant types.
   m. Refrigerant suction pressure in psig (kPa).
   n. Refrigerant suction temperature in deg F (deg C).
   o. Inlet steam pressure in psig (kPa).

G. Gas- and Oil-Fired Heat Apparatus Test Reports: In addition to manufacturer's factory startup equipment reports, include the following:

1. Unit Data:
   a. System identification.
   b. Location.
   c. Make and type.
   d. Model number and unit size.
   e. Manufacturer's serial number.
   f. Fuel type in input data.
   g. Output capacity in Btu/h (kW).
   h. Ignition type.
   i. Burner-control types.
   j. Motor horsepower and rpm.
   k. Motor volts, phase, and hertz.
   l. Motor full-load amperage and service factor.
   m. Sheave make, size in inches (mm), and bore.
   n. Center-to-center dimensions of sheave and amount of adjustments in inches (mm).

2. Test Data (Indicated and Actual Values):
   a. Total airflow rate in cfm (L/s).
   b. Entering-air temperature in deg F (deg C).
   c. Leaving-air temperature in deg F (deg C).
   d. Air temperature differential in deg F (deg C).
   e. Entering-air static pressure in inches wg (Pa).
   f. Leaving-air static pressure in inches wg (Pa).
   g. Air static-pressure differential in inches wg (Pa).
   h. Low-fire fuel input in Btu/h (kW).
   i. High-fire fuel input in Btu/h (kW).
   j. Manifold pressure in psig (kPa).
   k. High-temperature-limit setting in deg F (deg C).
   l. Operating set point in Btu/h (kW).
   m. Motor voltage at each connection.
   n. Motor amperage for each phase.
   o. Heating value of fuel in Btu/h (kW).

H. Fan Test Reports: For supply, return, and exhaust fans, include the following:

1. Fan Data:
   a. System identification.
   b. Location.
   c. Make and type.
   d. Model number and size.
   e. Manufacturer's serial number.
   f. Arrangement and class.
   g. Sheave make, size in inches (mm), and bore.
   h. Center-to-center dimensions of sheave and amount of adjustments in inches (mm).

2. Motor Data:
   a. Motor make, and frame type and size.
   b. Horsepower and rpm.
   c. Volts, phase, and hertz.
   d. Full-load amperage and service factor.
   e. Sheave make, size in inches (mm), and bore.
   f. Center-to-center dimensions of sheave, and amount of adjustments in inches (mm).
   g. Number, make, and size of belts.

3. Test Data (Indicated and Actual Values):
   a. Total airflow rate in cfm (L/s).
   b. Total system static pressure in inches wg (Pa).
   c. Fan rpm.

d. Discharge static pressure in inches wg (Pa).
e. Suction static pressure in inches wg (Pa).

I. Round, Flat-Oval, and Rectangular Duct Traverse Reports: Include a diagram with a grid representing the duct cross-section and record the following:

1. Report Data:
   a. System and air-handling-unit number.
   b. Location and zone.
   c. Traverse air temperature in deg F (deg C).
   d. Duct static pressure in inches wg (Pa).
   e. Duct size in inches (mm).
   f. Duct area in sq. ft. (sq. m).
   g. Indicated airflow rate in cfm (L/s).
   h. Indicated velocity in fpm (m/s).
   i. Actual airflow rate in cfm (L/s).
   j. Actual average velocity in fpm (m/s).
   k. Barometric pressure in psig (Pa).

J. Air-Terminal-Device Reports:

1. Unit Data:
   a. System and air-handling unit identification.
   b. Location and zone.
   c. Apparatus used for test.
   d. Area served.
   e. Make.
   f. Number from system diagram.
   g. Type and model number.
   h. Size.
   i. Effective area in sq. ft. (sq. m).

2. Test Data (Indicated and Actual Values):
   a. Airflow rate in cfm (L/s).
   b. Air velocity in fpm (m/s).
   c. Preliminary airflow rate as needed in cfm (L/s).
   d. Preliminary velocity as needed in fpm (m/s).
   e. Final airflow rate in cfm (L/s).
   f. Final velocity in fpm (m/s).
   g. Space temperature in deg F (deg C).

K. System-Coil Reports: For reheat coils and water coils of terminal units, include the following:

1. Unit Data:
   a. System and air-handling-unit identification.
   b. Location and zone.
   c. Room or riser served.
   d. Coil make and size.
   e. Flowmeter type.

2. Test Data (Indicated and Actual Values):
   a. Airflow rate in cfm (L/s).
   b. Entering-water temperature in deg F (deg C).
   c. Leaving-water temperature in deg F (deg C).
   d. Water pressure drop in feet of head or psig (kPa).
   e. Entering-air temperature in deg F (deg C).
   f. Leaving-air temperature in deg F (deg C).

L. Instrument Calibration Reports:

1. Report Data:
    a. Instrument type and make.
    b. Serial number.
    c. Application.
    d. Dates of use.
    e. Dates of calibration.

3.14 VERIFICATION OF TAB REPORT

A. The TAB specialist's test and balance engineer shall conduct the inspection in the presence of Architect.

B. Architect shall randomly select measurements, documented in the final report, to be rechecked. Rechecking shall be limited to either 10 percent of the total measurements recorded or the extent of measurements that can be accomplished in a normal 8-hour business day.

C. If rechecks yield measurements that differ from the measurements documented in the final report by more than the tolerances allowed, the measurements shall be noted as "FAILED."

D. If the number of "FAILED" measurements is greater than 10 percent of the total measurements checked during the final inspection, the testing and balancing shall be considered incomplete and shall be rejected.

E. If TAB work fails, proceed as follows:
    1. TAB specialists shall recheck all measurements and make adjustments. Revise the final report and balancing device settings to include all changes; resubmit the final report and request a second final inspection.

    2. If the second final inspection also fails, Owner may contract the services of another TAB specialist to complete TAB work according to the Contract Documents and deduct the cost of the services from the original TAB specialist's final payment.

    3. If the second verification also fails, Owner may contact AABC Headquarters regarding the AABC National Performance Guaranty.

F. Prepare test and inspection reports.

3.15 ADDITIONAL TESTS

A. Within 90 days of completing TAB, perform additional TAB to verify that balanced conditions are being maintained throughout and to correct unusual conditions.

B. Seasonal Periods: If initial TAB procedures were not performed during near-peak summer and winter conditions, perform additional TAB during near-peak summer and winter conditions.

END OF SECTION 23 05 93

DIVISION 23 – HEATING, VENTILATING & AIR CONDITIONING

SECTION 23 30 00 - HEATING, VENTILATING AND AIR CONDITIONING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work under this section includes all labor, equipment, material, services, transportation, etc. required for and reasonably incidental to the complete and satisfactory installation of all of the HVAC Systems as indicated on the Drawings or specified herein.

1.2 WORK INCLUDED IN THIS SECTION

A. Package Roof Top Gas/Electric Units

B. Ductwork and Accessories

C. Grilles, Registers and Diffusers

D. Duct Cleaning

E. Test and Balance

F. Submittals and Shop Drawings

G. Record Drawings

H. Operation and Maintenance Manuals

I. Guarantee

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Electrical supply to units. See Electrical Drawings.

B. Cutting and Patching. See Division 1 and 7, and Mechanical Drawings.

C. Equipment Pads and Support. See Structural Drawings.

1.4 GENERAL REQUIREMENTS

A. This section of the specification shall be considered as a part of the entire specification and all applicable portions of General Conditions, Special Conditions, and Division 1 shall apply.

B. Before commencement of work this contractor shall determine the exact location, size, elevation, and availability of all utilities relevant to the mechanical work and immediately notify the District with written notification of any discrepancies. In addition, this Contractor shall contact all involved utility companies, make all necessary arrangements for service, and pay all fees incurred due to connection of services.

C. Erection: The Contractor shall furnish the services of an experienced superintendent, who shall be constantly in charge of the erection of the work, together with all necessary journeymen, helpers, and laborers required to properly unload, erect, connect, adjust, start of operate and test the work involved.

1.5 REFERENCES

A. AABC - National Standards for Field Measurement and Instrumentation, Total System Balance.

B. AMCA 210 - Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating

C. AMCA 300 - Reverberant Room Method for Sound Testing of Fans

D. ANSI/NFPA 90A - Installation of Air Conditioning and Ventilation System.

E. ARI 270 - Sound rating of Outdoor Unitary Equipment.

F. ASHRAE 52.2-2017 - Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency By Particle Size

G. ASTM A90 - a. Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings ASTM A120 - Black and Galvanized Steel Pipe

H. ASTM B88 - Seamless Copper Water Tube

I. ASTM C518 - Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

J. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications

K. ASTM C612 - Mineral Fiber Block and Board Thermal Insulation

L. ASTM E84 - Surface Burning Characteristics of Building Materials

M. ASTM E96/E96M - Gravimetric Determination of Water Vapor Transmission Rate of Materials

N. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems

O. SMACNA - HVAC Duct Construction Standards - Metal and Flexible

P. UL 181 - Factory Made Air Ducts and Connectors

Q. UL 723 - Surface Burning Characteristics of Building Materials

R. California Mechanical Code - 2025 Edition

S. California Building Code - 2025 Edition

T. CEC Title-24 – 2025 Edition

1.6 SUBMITTALS AND SHOP DRAWINGS

A. Contractor agrees that shop drawings submittals processed by the District do not become Contract Documents and are not Change Orders; that the purpose of the shop drawing review is to establish a reporting procedure and is intended for the Contractor's convenience in organizing his work and to permit the District to monitor the Contractor's progress and understanding of the design. The process of review of the Contractor's submittals is not of testing the District’s perception. If deviations, discrepancies or conflicts between shop drawings submittals and the Contract Documents are discovered either prior to or after the shop drawing submittals are processed by the District, the Contractor agrees that the Contract Documents shall control and shall be followed.

B. Prepare and furnish fully coordinated shop drawings showing ductwork and piping on separate drawings.

1. The drawings shall be minimum 1/4" = 1'-0" scale and shall show dimensioning of piping and ductwork from gridlines, bottom of elevation marks for ductwork and piping and fittings, valves, dampers, devices, etc. with labels.
2. In addition, coordinate with related work and reference on the same drawings major plumbing piping, structural steel, fire protection piping, conduit runs and cable trays.
3. Review and sign these drawings to verify coordination of related equipment.
4. Conflicts, which occur, shall be brought to the attention of the District Representative prior to issuance of the drawings.

C. Materials and Equipment:

1. As soon as possible and within 14 days after award of the contract, and before their purchase, the Contractor shall submit to the District electronic format submittals for approval containing a complete list of materials, specialties and equipment he is to furnish for the installation.
2. Literature shall be standard manufacturer's catalog cuts and items to be installed shall be clearly indicated.
3. All submittals shall be made at one time.

D. Each item shall be identified by manufacturer, brand and trade name, number, size, rating and whatever other data is necessary to properly identify and check the materials and equipment. The words: "as specified" will not be considered sufficient identification.

E. Accessories, controls, finish, etc., not submitted or identified with the submitted equipment shall be furnished and installed as specified.

F. 1 Sets of complete electronic format shop drawings shall be submitted for approval indicating all piping, equipment and ductwork. These drawings shall indicate sizes, locations and elevations of ductwork, equipment and equipment pads, piping and controls including transitions, valves etc.

G. Shop drawings shall be approved only to extent of information indicated. Approval of an item of equipment shall not be construed to mean approval for components for that item for which Contractor has provided no information.

H. Approval of shop drawings shall not relieve Contractor of responsibility for providing all controls, wiring, components, etc. which are shown or specified, or all additional controls, wiring, components, etc. required to provide complete and correctly operating mechanical systems.

I. Submit product data for the following manufactured products, assemblies, personnel and testing agencies required for this project.

1. Package Roof Top Gas/Electric Units (OFCI). Obtain submittals from district/owner prior to construction.
2. Split Heat Pump System(OFCI). Obtain submittals from district/owner prior to construction.
3. Duct Cleaning Guidelines
4. Diffusers, registers and grilles
5. Ductwork and Accessories
6. Insulation Materials
7. Filters
8. Controls

1.7 SUBSTITUTIONS

A. Should the Contractor desire to substitute any material, equipment or other items for those specified, he shall submit a complete list, including detailed equipment layouts and performance characteristics within 14 calendar days after the scheduled Start of Construction. Said data shall be submitted in 1 electronic format set, assembled in individual brochures.

B. The entire cost of all changes of any type due to substitution for materials specified shall be born by the Contractor at no extra cost to the District.

C. Unsolicited and voluntary deducts, on the part of the Contractor for substituting unapproved systems and/or equipment, shall not be considered for the purpose of awarding the Contract.

D. The contractor shall submit the amount of cost credit to the Contract in the event the proposed substitution is accepted.

E. In all cases where substitutions are proposed after bids are received, the Contractor shall bear the cost of evaluation on the basis of 2-1/2 times technical salaries of engineering personnel involved.

1.8 AVAILABILITY OF SPECIFIED EQUIPMENT

A. Verify prior to bidding that all specified equipment is available and can be obtained in time for installation during orderly and timely progress of the work.

B. In the event that specified items will not be so available, notify the District prior to receipt of bids.

C. Costs of delays because of non-availability of specified items, when such delays could have been avoided by proper investigation on the part of the Contractor, will be back-charged as necessary and shall not be born by the District.

1.9 RECORD DRAWINGS

A. The contractor shall arrange and pay for one set of white prints of the HVAC drawings, which he shall alter in red to show all changes made to the original layout. These drawings shall be kept current.

B. The contractor shall deliver these completed to the District when the job is finished and accepted prior to final payment, and provide copies of approved shop drawings in ACAD format to MEOR.

C. Contractor shall provide 1 complete set of electronic format drawings per District standard on BOX.

1.10 OPERATION AND MAINTENANCE DATA

A. Submit one (1) electronic format set prior to final inspection including cover sheet and table of contents. Prepare submittal with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", and title of project. Internally subdivide the section contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

B. Contents: Prepare a Table of Contents with each Product or system description identified.

1. Part 1:
   a. Directory listing names, addresses, and telephone numbers of District, Contractor, Subcontractors, and major equipment suppliers.
2. Part 2:
   a. Operation and maintenance instructions, arranged by system.
   b. Identify the following:
      1) Significant design criteria
      2) List of equipment
      3) Parts list for each component
      4) Operating instructions
      5) Maintenance instructions for equipment and systems
      6) Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

C. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with District comments. Revise content of documents as required prior to final submittal.

D. Submit final volumes (revised) within ten days after final inspection.

1.11 GUARANTEES

A. The Contractor, in accepting this contract, binds himself to replace or repair at his own expense any defect in workmanship or material which may appear within a period of one year from the date of the final acceptance of the building, and to pay for all resulting damage which shall appear within the said period; provided always that the Contractor shall not be liable for anything attributable to acts of the agents of the District, or for ordinary wear. Also, given date of work performed by the Contractor be accepted as complete, he shall agree to correct any deficiencies or omissions in respect to the plans or specifications which may appear in the afore-mentioned twenty-four-month period.

B. The Contractor guarantees that all piping as provided in this specification will be free from all obstructions, and that all piping will be tight and drip free.

1.12 LOCAL CONDITIONS

A. The Contractor and trade submitting tenders on this work shall visit and will be deemed to have visited the site to ensure that they are familiar with all conditions relating to the work. Failure to visit the site will in no way relieve the successful Contractor of the necessity of furnishing any material or performing any work that may be required to complete the work in accordance with the drawings and specifications without additional cost to the District.

1.13 RULES, REGULATIONS AND CODES

A. All work and materials shall be in full accordance with the latest California Mechanical Code, California Plumbing Code, California Building Code and local rules and regulations, State Fire Marshal regulations, the safety orders of the Division of Industrial Safety; the California Electric Code; the standards of the National Fire Protection Association; American Gas Association; Occupation and Safety Act; American National Standards Institute; American Society of Mechanical Engineers; American Society for Testing and Materials; Installation Standards published by the International Association of Plumbing And Mechanical officials (IAPMO) and other applicable laws, codes, or regulations. Nothing in these specifications shall be construed to permit work not conforming to these codes.

B. Electrical Work: Motors, electrical apparatus and wiring specified in this section shall conform to the National Electrical Manufacturer's Standards and the California Electric Code and bear the Underwriter's label of approval.

C. The Contractor shall furnish, without extra charge, any additional material and labor when and where required to comply with these rules and regulations, though the work be not mentioned in these Specifications or shown on the Drawings. When these Specifications or Drawings call for or describe materials or construction of a better quality or larger sizes than required by the above mentioned rules and regulations, the provisions of these specifications and accompanying drawings shall take precedence.

1.14 FEES AND PERMITS

A. The Contractor must obtain and pay all fees for permits, licenses, inspections, etc., which are required by any legally constituted authority. Coordinate exact requirements with the District prior to bid.

1.15 COORDINATION

A. Following the general arrangement indicated on the Drawings as closely as possible, the Contractor shall coordinate with the architectural, structural, plumbing, electrical and all other trades prior to installation of the materials and equipment to verify adequate space available for installation of the work shown. The District shall be immediately notified if an area of conflict occurs between trades.

B. The Contractor shall bear all costs incurred for work that must be relocated due to conflicts between trades.

C. The Mechanical Contractor shall coordinate all requirements for all points of connection with the General Contractor and other trades prior to bid.

1.16 DRAWINGS

A. The work shall be installed as indicated on Drawings, however, changes to accommodate installation of this work with other work, or in order to meet Architectural or structural conditions, shall be made without additional cost to the District.

B. For the purpose of clarity and legibility, the Drawings are essentially diagrammatic to the extent that many offsets, bonds, unions, special fittings and exact locations are not indicated. The Contractor shall make use of all data in all of the Contract Documents, and shall verify this information at the site.

1.17 INSPECTION

A. The Contractor shall not allow or cause any of his work to be covered up or closed in until it has been inspected, tested, approved by all authorities have jurisdiction, and until Project Record drawings have been properly annotated.

B. Should any of his work be covered up or closed in before such inspection, he shall, at his own expense, uncover the work to the satisfaction of the inspection party. All related repair work cost shall be borne by the Contractor.

1.18 DELIVERY, STORAGE AND PROTECTION OF PROPERTY

A. Place orders for all equipment in time to prevent any delay in construction schedule or completion of project. If any materials or equipment are not ordered in time, additional charges made by equipment manufacturers to complete their equipment in time to meet construction schedule, together with any special handling charges, shall be borne by the contractor.

B. Materials shall be delivered in ample quantities from time to time as may be necessary for the uninterrupted progress of the work. They shall be stored as to cause the least obstruction to the premises and distributed so as to prevent overloading to any portion of the structure.

C. The Contractor shall provide temporary storage and shop areas that are required at the site for the safe and proper storage of materials, tools, and other items used in the performance of this work. These areas shall be constructed only in approved locations and shall not interfere with the work of any other Contractor.

D. All work, equipment and materials shall be protected at all times. The Contractor shall make good all damage caused either directly or indirectly by his own workmen. The Contractor shall also protect his own work from damage. He shall close all pipe and duct openings with caps or plugs during installation. He shall protect all of his equipment and materials against dirt, water, chemical, and mechanical injury. Upon completion, all work shall be thoroughly cleaned and delivered in a new condition.

1.19 DAMAGE BY LEAKS, ETC.

A. The Contractor shall be responsible for all damage to any part of the premises or work of other Contractors, caused by leaks or breaks in the piping or equipment furnished and/or installed under this section, during the construction and guarantee period.

1.20 ACCESS TO EQUIPMENT FOR MAINTENANCE

A. Install all equipment, piping, etc. to permit access for normal maintenance. Maintain easy access to filters, motors, etc. Install all such equipment and accessories to facilitate maintenance. Perform any relocation of pipes, etc. required to permit access at request of District at no additional cost to District.

B. Furnish and install access doors or panels in walls, floors, and ceilings to permit access to equipment, dampers, and all other items requiring service. Coordinate location of access doors with other trades as required.

C. Size access panels to allow inspection and removal of all items served.

D. Use Milcor style as required for material in which door is installed. Where door is installed in fire rated construction, provide door bearing UL label required for condition.

1.21 QUALITY ASSURANCE

A. Abbreviations:

1. AABC - Associate Air Balance Council
2. ADC - Air Diffusion Council - Test Code
3. AGA - American Gas Association
4. AMCA - Air Moving and Conditioning Association
5. ANSI - American National Standards Institute
6. ARI - Air Conditioning and Refrigeration Institute
7. ASA - American Standards Association
8. ASC - Adhesive and Sealant Council
9. ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers
10. ASME - American Society of Mechanical Engineers
11. ASTN - American Society for Nondestructive Testing
12. ASSE - American Society of Sanitary Engineering
13. ASTM - American Society for Testing and Materials
14. AWS - American Welding Society
15. AWWA - American Water Works Association
16. CAC - California Administration Code
17. 2025 CBC - California Building Code
18. 2025 CEC - California Electrical Code
19. 2025 CMC - California Mechanical Code
20. California Fire Code with California Amendments.
21. MSS - Manufacturers' Standardization Society
22. NBS - National Bureau of Standards
23. NCWB - National Certified Piping Welding Bureau
24. NEMA - National Electrical Manufacturer's Association
25. NFPA - National Fire Protection Association
26. PDI - Plumbing and Drainage Institute
27. SMACNA - Sheet Metal and Air Conditioning Contractor's National Association, Inc.
28. UL - Underwriters Laboratories, Inc.

B. Rulings and interpretations of authorities shall be considered a part of the regulations.

C. Nothing in this document is to be construed to permit Work not conforming to these codes and regulations.

D. Should there be any direct conflict between the above rules, the most stringent shall govern.

E. The Contractor shall recognize that the design is based upon the equipment and material specified by name or construction and accept full responsibility for assuring that the quality, utility and performance of a substitution equals or exceeds that of the specified item.

F. Testing: Provide the services of a qualified testing laboratory/agency to perform the specified field tests. Notify the District Representative 48 hours in advance of performance of Work requiring testing. Provide all materials required for testing.

G. Factory and Field Testing:

1. See each Section for the required testing and their procedures.

Test reports shall include description of equipment tested, description of test procedures, test results, and names and signatures of witnesses of tests.

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials and equipment shall be new and of the best of their respective grades, free from all defects and of the make, brand or quality herein specified or as accepted by the District.

B. All materials and equipment shall be identified by manufacturer's name or nameplate data. Unidentified material or equipment shall be removed from the site.

C. Equipment specified by manufacturer's number shall include all accessories, controls, etc., listed in the catalog as standard with the equipment. Optional or additional accessories shall be furnished as specified.

D. Where no specific make of material or equipment is mentioned, any first class product of a reputable manufacturer may be used, provided it conforms to the requirements of the system and meets with the approval of the District.

E. Equipment and materials damaged during transportation, installation and operation shall be considered as "totally damaged" and shall be replaced with new. Any variance from this clause shall be made only with written approval of the District.

2.2 MANUFACTURER

A. Package Roof Top Gas/Electric Units: The HVAC Packaged units are Owner-Furnished and Contractor-Installed (OFCI) and are currently stored at two locations: 2850 EAST DEL AMO BOULEVARD, CARSON,CALIFORNIA 90221. The contractor shall be fully responsible for all handling, loading, transportation, delivery, unloading, staging, and installation of the equipment at the project site. Obtain submittals from district/owner prior to construction.

B. Split Heat Pump Units: The HVAC Split units are Owner-Furnished and Contractor-Installed (OFCI) and are currently stored at two locations: 2850 EAST DEL AMO BOULEVARD, CARSON,CALIFORNIA 90221. The contractor shall be fully responsible for all handling, loading, transportation, delivery, unloading, staging, and installation of the equipment at the project site. Obtain submittals from district/owner prior to construction.

2.3 Air Distribution

A. GENERAL

1. Data Sheet: Indicate materials of construction, finish and mounting details and performance data including throw vertical and horizontal, static pressure, sound ratings.
2. Source quality-control reports.
3. The air inlet/outlets shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006
4. All air inlets/outlets shall be of the sizes and mounting types shown on the plans and outlet schedule.

B. INSTALLATION

1. Install all air inlet/outlets level and plumb
2. Verify air patterns are as indicated on drawings during installation
3. Install air inlet/outlet with airtight connections to ducts and to allow service and maintenance of dampers, air extractors and fire dampers.

C. ARCHITECTURAL PLAQUE DIFFUSERS

1. Face Plate: shall be 22-gauge steel face panel, removable by means of four hanger brackets, exposed surface shall be smooth, flat, and free of visible fasteners, panel shall project no more than ¼ inch below

the outside border of the diffuser back pan, the face panel plaque shall have an aerodynamically shaped, rolled edge to ensure a tight horizontal discharge pattern. A plaque without a rolled edge on the face panel will not be accepted. Ceiling diffusers with a 24 x 24-inch full face shall have no less than an 18 x 18-inch face panel size.

2. Back pan: shall be one piece precision die-stamped and shall include an integrally drawn inlet (welded-in inlets and corner joints are not acceptable). The diffuser back pan shall be constructed of 22-gauge steel.
3. Neck: shall have a minimum of 1¼-inch depth available for duct connection.
4. Finish: Standard finish shall be #26 white. Optional finishes including special powder coat and wood grain patterns shall be available.
5. The standard finish shall be an anodic acrylic paint, baked at 315°F for 30 minutes.
6. The pencil hardness must be HB to H.
7. The paint must pass a 100-hour ASTM B117 Corrosive Environments Salt Spray Test without creepage, blistering or deterioration of film.
8. The paint must pass a 250-hour ASTM D870 Water Immersion Test. The paint must also pass the ASTM D2794 Reverse Impact Cracking Test with a 50-inch pound force applied.

D. HIGH-CAPACITY LOUVERED FACE

1. Face Plate: shall be 22-gauge steel face panel, removable by means of four hanger brackets, exposed surface shall be smooth, flat, and free of visible fasteners, panel shall project no more than ¼ inch below the outside border of the diffuser back pan, the face panel plaque shall have an aerodynamically shaped, rolled edge to ensure a tight horizontal discharge pattern. A plaque without a rolled edge on the face panel will not be accepted. Ceiling diffusers with a 24 x 24-inch full face shall have no less than an 18 x 18-inch face panel size.
2. Back pan: shall be one piece precision die-stamped and shall include an integrally drawn inlet (welded-in inlets and corner joints are not acceptable). The diffuser back pan shall be constructed of 22-gauge steel.
3. Neck: shall have a minimum of 1¼-inch depth available for duct connection.
4. Finish: Standard finish shall be #26 white. Optional finishes including special powder coat and wood grain patterns shall be available.
5. The standard finish shall be an anodic acrylic paint, baked at 315°F for 30 minutes.
6. The pencil hardness must be HB to H.
7. The paint must pass a 100-hour ASTM B117 Corrosive Environments Salt Spray Test without creepage, blistering or deterioration of film.
8. The paint must pass a 250-hour ASTM D870 Water Immersion Test. The paint must also pass the ASTM D2794 Reverse Impact Cracking Test with a 50-inch pound force applied.

E. SPIRAL DUCT MOUNTED GRILLE

1. The deflection blades shall be available parallel to the long or short dimension of the grille. All supply grilles shall be constructed with radius end caps and foam gaskets for a tight seal to the duct diameter. All supply grilles shall be constructed with a 1 3/8-inch wide border.
2. Blades shall be constructed of heavy duty extruded aluminum and shall be spaced ¾-inch apart. Blades shall extend completely through the side frame on each side to ensure stability throughout the complete cfm operating range of the grille. Blades shall be individually adjustable without loosening or rattling and shall be securely held in place with tension wire.
3. Optional air scoop damper/extractor (option ASD) shall be constructed of heavy duty aluminum. The ASD must be operable from the face with a screwdriver.
4. The grille finish shall be #26 white. The finish shall be an anodic acrylic paint, baked at 315°F for 30 minutes. The pencil hardness must be HB to H. The paint must pass a 100-hour ASTM B117 Corrosive Environments Salt Spray Test without creepage, blistering or deterioration of film. The paint must pass a 250-hour ASTM D870 Water Immersion Test. The paint must also pass the ASTM D2794 Reverse Impact Cracking Test with a 50-inch pound force applied.

F. ALUMINUM RETURN GRILLE

1. The fixed deflection blades shall be available parallel to the long or short dimension of the grille. Construction shall be of extruded aluminum with a 1¼-inch wide border on all sides. Minimum border thickness shall be 0.040-0.050 inch. Sizes 24 x 24 inches and smaller shall be constructed using a roll-formed frame.

2. Corners shall be welded with full penetration resistance welds. Sizes larger than 24 x 24 inches shall be constructed by using heavy aluminum extrusions and shall be interlocked at the four corners and mechanically staked to form a rigid frame. Screw holes shall be counter-sunk for a
3. neat appearance.
4. Deflection blades shall be contoured to a specifically designed and tested cross-section to meet published test performance data. Blades shall be firmly held in place by mullions from behind the grille and fixed in place by crimping or welding. Blade deflection angle shall be available at 35°.
5. Optional opposed blade volume damper shall be constructed of heavy gauge steel or aluminum. Damper must be operable from the face of the grille.
6. The grille finish shall be #26 white. The finish shall be an anodic acrylic paint, baked at 315° F for 30 minutes. The pencil hardness must be HB to H. The paint must pass a 100-hour ASTM B117 Corrosive Environments Salt Spray Test without creepage, blistering or deterioration of film. The paint must pass a 250-hour ASTM D870 Water Immersion Test. The paint must also pass the ASTM D2794 Reverse Impact Cracking Test with a 50-inch pound force applied.

G. EGGCRATE RETURN GRILLE

1. Return grilles must provide a free area of at least 90%. Outer borders shall be constructed of heavy extruded aluminum with a thickness of 0.040-0.050 inch and shall have countersunk screw holes for a neat appearance. Border width shall be
2. 1¼ inches on all sides and shall be interlocked at the four corners and mechanically staked to form a rigid frame. Choice of three sizes of aluminum grid: ½ x ½ x ½ inch, ½ x ½ x 1 inch, or 1 x 1 x 1 inch shall
3. be available.
4. Optional opposed-blade volume damper shall be constructed of heavy gauge steel or aluminum. Damper must be operable from the face of the grille.
5. The grille finish shall be #26 white. The finish shall be an anodic acrylic paint, baked at 315°F for 30 minutes. The pencil hardness must be HB to H. The paint must pass a 100-hour ASTM B117 Corrosive Environments Salt Spray Test without creepage, blistering or deterioration of film. The paint must pass a 250-hour ASTM D870 Water Immersion Test. The paint must also pass the ASTM D2794 Reverse Impact Cracking Test with a 50-inch pound force applied.
6. See equipment schedule for more details.

2.4 DUCTWORK AND ACCESSORIES

A. General:

1. Non-combustible or conforming to requirements for Class 1 air duct materials, or UL 181.

B. Steel Ducts:

1. ASTM A653 galvanized steel sheet, lock-forming quality, having zinc coating of 1.25 oz per sq ft for each side in conformance with ASTM A90.
2. Round duct shall be spiral seam construction.

C. Flexible Ducts:

1. Interlocking spiral of galvanized steel or aluminum construction; rated to (2 inches WG positive and 1.5 inches WG negative for low pressure ducts) (and 15 inches WG positive or negative for medium high-pressure ducts.)

D. Insulated Flexible Ducts:

1. Flexible duct wrapped with flexible glass fiber insulation, enclosed by Pressure Ductwork: seamless aluminum pigmented plastic vapor barrier jacket; maximum 0.23 K value at 75 degrees F w/metal connectors.

E. Fasteners:

1. Rivets, bolts, or sheet metal screws.

F. Sealant:

1. Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.

G. Hanger Rod:

1. Steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

H. Low Pressure Ducts:

1. Fabricate and support in accordance with 2025 CMC, SMACNA Low Pressure Duct Construction Standards and ASHRAE handbooks, except as indicated. Gages for galvanized steel ducts for low pressure systems where velocities do not exceed 2000 FPM shall be as follows:
   a.

RECTANGULAR DUCT		ROUND DUCT	
Dimension of Largest Side (L) in Inches	Gage	Diameter (D) in Inches	Ga.
$L \leq 12$	26	$D < 9$	26
$12 \leq L \leq 30$	24	$9 \leq D < 14$	24
$30 < L \leq 54$	22	$14 \leq D < 23$	22
$54 < L \leq 84$	20	$23 \leq D < 37$	20
$84 < L$	18	$37 \leq D < 51$	18
		$51 \leq D < 61$	16
		$61 \leq D < 84$	14

   b. All joints and seams as indicated in the 2025 CMC are acceptable.

2. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts. No variation of duct configuration or sizes permitted except by written permission.
3. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows are used, provide turning vanes.
4. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.
5. Use double nuts and lock washers on threaded rod supports.

I. Volume Control Dampers:

1. Fabricate in accordance with SMACNA Low Pressure Duct Construction Standards, and as indicated.
2. Opposed blade dampers shall have factory-fabricated blades, with factory assembled linkages, mounted in frames.
   a. Blades shall have interlocking edges and ends.
   b. Rectangular dampers 6" or more wide shall be the multi-blade type.
   c. Blades on multi-blade type dampers must not be over 6" wide.
   d. Dampers shall be of the opposed blade type.
   e. Dampers shall have bar or channel frames and corner bracing.
   f. All blade and linkage bearings shall be self-lubricating plastic.
   g. Damper assembly leakage not to exceed 1% with 4.0 W.C. static pressure.
3. Provide locking, indicating quadrant regulators on single and multi-blade dampers.
4. On insulated ducts mount quadrant regulators on stand-off mounting brackets, bases, or adapters.

J. Duct Test Holes:

1. Cut or drill temporary test holes in ducts as required. Cap with neat patches, neoprene plugs, threaded plugs, or threaded or twist-on metal caps.

2.5 INSULATION

A. General:
   1. All insulation shall have composite (insulation, jacket or facing, and adhesive used to adhere the facing or jacket to the insulation) fire smoke hazard ratings as tested by procedure ASTM E84, NFPA 255 and UL 723 not exceeding:
      a. Flame Spread: 25
      b. Smoke Developed: 50
   2. All products or their shipping cartons shall bear a label indicating that flame and smoke ratings do not exceed above requirements. Any treatment of jackets or facings to impart flame and smoke safety shall meet the above requirements.
   3. The Contractor shall certify that all products used have met the above criteria.
   4. The insulation values shown are a minimum. If the requirements of Title 24 exceed these values, the amount of and/or type must be increased to meet the Title 24 requirements.

B. Duct Insulation:
   1. Fiberglass Duct Wrap:
      a. Insulation: ASTM C553; flexible, noncombustible blanket.
         1) K' value: ASTM C518, 0.48 at 75 degrees F.
         2) Maximum service temperature: 250 degrees F.
         3) Density: 0.75 lb/ ft3.
      b. Vapor Barrier Jacket:
         1) Kraft paper reinforced with glass fiber yarn and bonded to aluminized film vinyl.
         2) Moisture vapor transmission: ASTM E96; 0.5 perm.
         3) Secure with pressure sensitive tape.
      c. Vapor Barrier Tape: Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.
      d. Tile Wire: Annealed steel, 16 gage.
   2. Glass Fiber Duct Liner, Flexible:
      a. Insulation: ASTM C553; flexible, noncombustible blanket.
         1) 'K' value: ASTM C518, 0.24 at 75 degrees F.
         2) Maximum service temperature: 250 degrees F.
         3) Density: 1.5 to 3.0 lb/ft3.
         4) Maximum Velocity on Coated Air Side: 4,000 ft/min.
      b. Adhesive: Waterproof (fire-retardant) type.
      c. Liner Fasteners: Galvanized steel, self-adhesive pad.
   3. Glass Fiber Duct Liner, Rigid:
      a. Insulation: ASTM C612; semi-rigid, noncombustible.
         1) 'K' value: ASTM C518, 0.24 at 75 degrees F.
         2) Maximum service temperature: 250 degrees F.
         3) Density: 1.5 to 3.0 lb/cu ft.
         4) Maximum Velocity on Coated Air Side: 4,000.
   4. Adhesive: Waterproof (fire-retardant) type.

C. Pipe Insulation:
   1. See specification 23 07 19 for more details. Should there be any direct conflict between the above rules, the most stringent shall govern.
   2. Insulation and covering on pipe and tubing shall have flame spread rating not to exceed 25 and a smoke density not to exceed 50 when tested in accordance with UL 723 and ASTM E84.
      a. Aluminum Jacket:
         1) All outdoor exposed insulation piping and insulated piping exposed indoors in occupied areas and equipment rooms to be protected by covering with .016-inch-thick aluminum weather-proof jacket with vapor barrier liner of laminated asphalt covered kraft paper.
         2) Lap jacket at all joints and seams two inches (2"), cinched with staples and straps and finished with two (2) coats of asphalt base aluminum paint in strict accordance with manufacturer's recommendations.
   3. Split System Insulation
      a. Insulation Specification

1) Manufacturer: (i.) Reftekk (ii.) aerocell-sspt or Approved Equal.
2) Material: Low-density EPDM closed cell elastomeric foam, CFC and HCFC gas free with over-lap seal
3) Thermal Conductivity: 0.235 (BTU * in/h *ft2 * °F) at 75°F.
4) Water Vapor Permeability: <0.03 perm (4.38 x 10-11g/Pa*s*m) per ASTM E96.
5) Water Absorption: <0.2% by volume per ASTM C 209.
6) Working Temperature: -70 °F to 257 °F (-57 °C to 125 °C) continuous per ASTM C 411.
7) Surface Burning Characteristics: Meets 25/50 Flame-Spread/ Smoke-Generated per UL 723 and ASTM E84. Additionally meets UL-94 5 V-A, V-0 and is self-extinguishing per ASTM D 635.
8) UV Resistant: EPDM provides UV Resistance in accordance with ASTM G7/G90.
9) Ozone Resistant: Meets ASTM D 1171

b. Title 24 Insulation Wall Thickness Specification
   1) Liquid pipes:
      a) 1” wall thickness (R-7.7 with insulation conductivity 0.22-0.28 in Btu•in/h•ft2 • °F at 100 F mean operating temperature) for less than 1” pipe nominal pipe diameter
      b) 1.5” wall thickness (R-12.5 with insulation conductivity 0.22-0.28 in Btu•in/h•ft2 •°F at 100 F mean operating temperature) for pipe greater and equal to 1” and less than 1.5” nominal pipe diameter
   2) Suction Gas pipes
      a) 1.5”” wall thickness (R-11.5 with insulation conductivity 0.25-0.29 in Btu•in/h•ft2 •°F at 125 F mean operating temperature) for less than 1.5” nominal pipe diameter

4. Contractor shall provide continuous insulation R-value and thickness at all supports and hangers.

2.6 CONTROLS

A. The Mechanical Contractor shall be responsible for the proper coordination of all control work and electrical work in connection therewith. He shall also be responsible for the proper operation of the entire system.

B. The Electrical Contractor shall furnish and install all line voltage control wiring, and in conduit. Wire sizing and length of run shall be coordinated with the manufacturer and Electrical Engineer. All Energy Management Controls, wiring, and conduit shall be by Controls Contractor.

C. Electrical Work: All electric relays, hand off automatic switches and all electrical wiring and all conduits will be provided under the Electrical Section, except as otherwise specified. Furnish and install additional conduit, wiring, relays, hand off automatic switches made necessary by the use of approved substituted equipment under this Section with no additional cost to the Owner.

D. Refer to drawings for control diagrams and additional requirements.

E. Calibration of Controls: The Controls Contractor shall carefully calibrate and adjust all controls as required to maintain comfort conditions and maximum energy conservation.

F. Thermostats and temperature sensors shall be by Venstar and Mitsubishi or approved equal.

G. Where stand-alone controls are indicated, mechanical contractor shall be responsible for low voltage controls conduit, wiring, and thermostat.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Equipment Installation:

1. All equipment provided under this section of the specifications shall be installed in strict accordance with the manufacturer's recommendations.
2. Should the drawings or specifications indicate the equipment is to be installed in a manner not in accordance with the manufacturer's recommendations; the Contractor shall obtain direction from the

Engineer prior to proceeding with the installation. If the Contractor proceeds with the installation without obtaining direction from the Engineer, the Contractor shall be required to make all required corrections to the installation at no additional cost to the contract.

3. Space Consideration:
   a. Certain equipment and ductwork will have to be installed within the limited space available as indicated on the drawings.
   b. Exact field measurements of existing conditions will be the responsibility of this Contractor to assure that the equipment and ductwork to be installed under this Section of the specifications can be installed as indicated.
   c. Contractor shall submit shop drawings for approval prior to installation.
   d. These field verified dimensions shall be made prior to purchase of equipment or fabrication of ductwork.
4. Line all duct as indicated on mechanical sheets. Line ductwork as per General Notes, including but not limited to all ductwork at Bypass Damper connection locations.

B. Roof and Wall Flashings:

1. Ducts penetrating roof shall have twenty-two (22) gauge sheet metal flashing with a minimum of ten inches (10") of the base extended on to the roof, or roof curb, as indicated on the drawings.
2. Ducts through walls shall be sealed with galvanized angle iron on all sides.
3. Where required or indicated, a weather hood constructed of galvanized sheet metal with galvanized birdscreen shall be provided.
4. Refrigerant piping penetrating roof shall provide lead free flashing and counter flashing.

C. Openings through Walls and Roof:

1. Framed openings in walls and roof for ductwork to be coordinated in advance of the work. Installer shall furnish shop drawings showing the correct dimensions and locations of the required openings.
2. The Contractor shall provide and install "line-seals" where pipes pass through masonry walls or floors.
3. All pipes passing through walls, floors, ceilings, and partitions in finished portions of the buildings shall be provided with chromium plated, cast brass, set screw plates.
4. Where sleeves and plates are installed around insulated pipes, they shall be of sufficient size to allow the insulation to go through them, presenting a neat finish.

D. Sleeves and Seals: (Provide for pipes passing through walls or floor slabs).

1. Sheet-Metal Sleeves (above grade): 10-gauge, galvanized sheet metal, round tube closed with welded longitudinal joint.
2. Steel Sleeves (below grade): 10-gauge, galvanized sheet metal, round tube closed with welded longitudinal joint.
3. Polyethylene Sleeves (above grade): Manufacturer's standard product.
4. Mechanical Sleeve Seals (install where indicated on drawings): Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and sleeve, connected with bolts and pressure plates which cause rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.
5. Isolate pipes through ground floor sleeves with Kraft paper, plastic tape or similar materials.
6. Pack space between pipe and sleeve with ceramic fiber and Dow Fire Stop No. UL827U sealant so as to absolutely fireproof and watertight.

E. Ductwork and Accessories:

1. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
2. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
3. Install accessories in accordance with manufacturer's instructions and per seismic note on mechanical sheet M-0.1.

4. Provide balancing dampers at points on low-pressure supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Use splitter dampers only where indicated.
5. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized equipment.
6. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, and elsewhere as indicated. Provide minimum 8 x 8 inch size for hand access, 18 x 18 inch size for shoulder access, and as indicated.
7. Provide duct test holes where indicated and required for testing and balancing purposes.
8. Check location of outlets and inlets and make necessary adjustments in position to conform to Architectural features, symmetry, and lighting arrangement.
9. Install diffusers to ductwork with airtight connection.
10. Provide balancing dampers on duct take-off to diffusers and registers, regardless of whether dampers are specified as part of the diffuser, or register assembly.
11. Paint ductwork visible behind air outlets and inlets matte black.
12. Hanger straps to turn under bottom of rectangular ducts and shall attach with sheet metal screws at this point as well as minimum two (2) additional screws into sides of duct for sizes eighteen inches (18") and under three (3) screws for sizes above eighteen inches (18). (Typical for each strap). Ducts in sizes above forty-eight inches (48") shall run continuous under bottom of duct. Straps for round duct shall run completely around underside of duct and shall be secured in place with minimum of two (2) sheet metal screws each side.
    a. Strap Installation: In general, provide in accordance with SMACNA duct installation standards. Contractor may request approval of alternate support methods to type specified. Shop drawings will be required.
    b. Concrete: Secure supports to concrete with concrete inserts. Branch ductwork in sizes eighteen inch (18") and smaller may be secured by power actuated fasteners. Contractor shall submit sizes and maximum loading data.
    c. Bracing all ductwork laterally to structural framing to prevent swaying or lateral movement per bracing details on plans per seismic note on mechanical sheet M-01.
13. Turning Vanes: All elbows having a centerline radius less than the width of the duct shall be square elbows with turning vanes, or proper radius and spacing. These turning vanes shall be multi-vane type and shall be carefully installed in accordance with the manufacturer's instructions. Provide turning vanes for duct widths of 18 inches or greater. Provide single thickness vanes for ducts of less than 18 inches. Contractor may submit for approval shop fabricated vanes conforming to SMACNA Duct Manual Standard. Where required or indicated on drawings, provide acoustic turning vanes constructed of air foil shaped aluminum extrusion with perforated faces and fiberglass fill.
14. Flexible Duct Connections: Shall be provided where indicated as required and shall be "Vent-glass", "Ventbestos", or Duro-Dyne Durolan super metal-fab.
15. Duct Tape and Sealer:
    a. All longitudinal snap lock joints shall be made airtight with high pressure duct sealant TREMCO J.S. 773, GREY A.F., and transverse joints sealed with Hardcast AFG No. 1402 foil grip instant tape sealant for rectangular ducts and round ducts, all U.L. classified. At contractor's option, all round duct transverse joints may be made with MIRACLE D-619 water based, duct sealant U.L. classified 309U as manufactured by MIRACLE ADHESIVES CORP.
    b. Exposed outdoor ductwork shall be sealed as described herein and, in addition, all transverse joints shall be covered with Glenkote "Seal-Flex".

F. Thermostats and over-ride switches:

1. Install at 48" above finished floor unless otherwise stated.
2. Coordinate with other trades.
3. All thermostats and over-ride switches shall be by Venstar.
4. Controls Contractor shall be responsible for verifying, furnishing all controls and wiring for tie-in of thermostats to new building energy management system and shall co-ordinate all requirements with other trades including notifying electrical contractor of necessary conduit and power requirements.
5. All costs for scope of work shall be submitted for final bid.
6. All control conduits shall be by Controls Contractor.

G. Insulation:

1. Duct Insulation:
   a. Unless specifically indicated on the drawings the Contractor may line or wrap ductwork to meet insulation requirements.
   b. Fiberglass duct wrap:
      1) Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
      2) Secure insulation without vapor barrier with staples, tape, or wires.
      3) Install without sag on underside of ductwork. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift ductwork off trapeze hangers and insert spacers.
      4) Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
      5) Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.
   c. Duct (and Plenum) liner Application:
      1) Install as indicated (sound lining) on the drawings.
      2) Adhere insulation with adhesive for 100 percent coverage. Secure insulation with mechanical liner fasteners. Refer to SMACNA Standards for spacing. Seal and smooth joints. Seal liner surface penetrations with adhesive.
      3) Duct dimensions indicated are outside dimensions required for airflow.

3.2 PIPING APPLICATIONS FOR REFRIGERANT R-410A

A. Suction Lines NPS 2 (DN 50) and Smaller for Conventional Air-Conditioning Applications: Copper, Type ACR, straight annealed-temper tubing and wrought-copper fittings with brazed or soldered joints.

B. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, Type ACR, straight annealed- or drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.

C. Safety-Relief-Valve Discharge Piping: Copper, Type ACR, straight annealed- or drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.

D. No Coiled Temper (Soft Annealed), ACR, shall be used in this project.

3.3 VALVE AND SPECIALTY APPLICATIONS

A. Install diaphragm packless valves in suction and discharge lines of compressor.

B. Install service valves for gage taps at inlet and outlet of hot-gas bypass valves and strainers if they are not an integral part of valves and strainers.

C. Install a check valve at the compressor discharge and a liquid accumulator at the compressor suction connection.

D. Except as otherwise indicated, install diaphragm packless valves on inlet and outlet side of filter dryers.

E. Install a full-size, three-valve bypass around filter dryers.

F. Install solenoid valves upstream from each expansion valve and hot-gas bypass valve. Install solenoid valves in horizontal lines with coil at top.

G. Install thermostatic expansion valves as close as possible to distributors on evaporators.

1. Install valve so diaphragm case is warmer than bulb.
2. Secure bulb to clean, straight, horizontal section of suction line using two bulb straps. Do not mount bulb in a trap or at bottom of the line.
3. If external equalizer lines are required, make connection where it will reflect suction-line pressure at bulb location.

H. Install safety relief valves where required by 2021 ASME Boiler and Pressure Vessel Code. Pipe safety-relief-valve discharge line to outside according to ASHRAE 15.

I. Install moisture/liquid indicators in liquid line at the inlet of the thermostatic expansion valve or at the inlet of the evaporator coil capillary tube.

J. Install strainers upstream from and adjacent to the following unless they are furnished as an integral assembly for the device being protected:

1. Solenoid valves.
2. Thermostatic expansion valves.
3. Hot-gas bypass valves.
4. Compressor.

K. Install filter dryers in liquid line between compressor and thermostatic expansion valve, and in the suction line at the compressor as required by manufacturer.

L. Install receivers sized to accommodate pump-down charge.

M. Install flexible connectors at compressors.

3.4 PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems; indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Shop Drawings.

B. Install refrigerant piping according to ASHRAE 15.

C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

F. Install piping adjacent to machines to allow service and maintenance.

G. Install piping free of sags and bends.

H. Install fittings for changes in direction and branch connections.

I. Select system components with pressure rating equal to or greater than system operating pressure.

J. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.

K. Arrange piping to allow inspection and service of refrigeration equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or panels as specified in plans if valves or equipment requiring maintenance is concealed behind finished surfaces.

L. Install refrigerant piping in protective conduit where installed belowground.

M. Install refrigerant piping in rigid or flexible conduit in locations where exposed to mechanical injury.

N. Slope refrigerant piping as follows:

1. Install horizontal hot-gas discharge piping with a uniform slope downward away from compressor.
2. Install horizontal suction lines with a uniform slope downward to compressor.
3. Install traps and double risers to entrain oil in vertical runs.
4. Liquid lines may be installed level.

O. When brazing or soldering, remove solenoid-valve coils and sight glasses; also remove valve stems, seats, and packing, and accessible internal parts of refrigerant specialties. Do not apply heat near expansion-valve bulb.

P. Before installation of steel refrigerant piping, clean pipe and fittings using the following procedures:

1. Shot blast the interior of piping.
2. Remove coarse particles of dirt and dust by drawing a clean, lintless cloth through tubing by means of a wire or electrician's tape.
3. Draw a clean, lintless cloth saturated with trichloroethylene through the tube or pipe. Continue this procedure until cloth is not discolored by dirt.
4. Draw a clean, lintless cloth, saturated with compressor oil, squeezed dry, through the tube or pipe to remove remaining lint. Inspect tube or pipe visually for remaining dirt and lint.
5. Finally, draw a clean, dry, lintless cloth through the tube or pipe.
6. Safety-relief-valve discharge piping is not required to be cleaned but is required to be open to allow unrestricted flow.
7. Install piping with adequate clearance between pipe and adjacent walls and hangers or between pipes for insulation installation.

3.5 PIPE 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. Fill pipe and fittings with an inert gas (nitrogen or carbon dioxide), during brazing or welding, to prevent scale formation.

D. Soldered Joints: Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook."

E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," Chapter "Pipe and Tube."
1. Use Type BCuP (copper-phosphorus) alloy for joining copper socket fittings with copper pipe.
2. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze or steel.

F. Threaded Joints: Thread steel 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 to 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.

G. Steel pipe can be threaded, but threaded joints must be seal brazed or seal welded.

H. Welded Joints: Construct joints according to AWS D10.12M/D10.12.

I. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

3.6 HANGERS AND SUPPORTS

A. Install the following pipe attachments:

1. Adjustable steel clevis hangers for individual horizontal runs less than 20 feet (6 m) long.
2. Roller hangers and spring hangers for individual horizontal runs 20 feet (6 m) or longer.
3. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet (6 m) or longer, supported on a trapeze.
4. Spring hangers to support vertical runs.
5. Copper-clad hangers and supports for hangers and supports in direct contact with copper pipe.

B. Install hangers for copper tubing with the following maximum spacing and minimum rod diameters:
1. NPS 1/2 (DN 15): Maximum span, 60 inches (1500 mm); minimum rod, 1/4 inch (6.4 mm).
2. NPS 5/8 (DN 18): Maximum span, 60 inches (1500 mm); minimum rod, 1/4 inch (6.4 mm).
3. NPS 1 (DN 25): Maximum span, 72 inches (1800 mm); minimum rod, 1/4 inch (6.4 mm).
4. NPS 1-1/4 (DN 32): Maximum span, 96 inches (2400 mm); minimum rod, 3/8 inch (9.5 mm).
5. NPS 1-1/2 (DN 40): Maximum span, 96 inches (2400 mm); minimum rod, 3/8 inch (9.5 mm).
6. NPS 2 (DN 50): Maximum span, 96 inches (2400 mm); minimum rod, 3/8 inch (9.5 mm).

3.7 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
1. Comply with ASME B31.5, Chapter VI.
2. Test refrigerant piping, specialties, and receivers. Isolate compressor, condenser, evaporator, and safety devices from test pressure if they are not rated above the test pressure.
3. Test high- and low-pressure side piping of each system separately at not less than the pressures indicated in "Performance Requirements" Article.
   a. Fill system with nitrogen to the required test pressure.
   b. System shall maintain test pressure at the manifold gage throughout duration of test.
   c. Test joints and fittings with electronic leak detector or by brushing a small amount of soap and glycerin solution over joints.
   d. Remake leaking joints using new materials and retest until satisfactory results are achieved.
4. Comply with bracing details on plans per seismic note on mechanical sheet M-01.

B. Prepare test and inspection reports.

3.8 SYSTEM CHARGING

A. Charge system using the following procedures:
1. Install core in filter dryers after leak test but before evacuation.
2. Evacuate entire refrigerant system with a vacuum pump to 500 micrometers (67 Pa). If vacuum holds for 12 hours, system is ready for charging.
3. Break vacuum with refrigerant gas, allowing pressure to build up to 2 psig (14 kPa).
4. Charge system with a new filter-dryer core in charging line.

3.9 ADJUSTING

A. Adjust thermostatic expansion valve to obtain proper evaporator superheat.

B. Adjust high- and low-pressure switch settings to avoid short cycling in response to fluctuating suction pressure.

C. Adjust set-point temperature of air-conditioning or chilled-water controllers to the system design temperature.

D. Perform the following adjustments before operating the refrigeration system, according to manufacturer's written instructions:
1. Open shutoff valves in condenser water circuit.
2. Verify that compressor oil level is correct.
3. Open compressor suction and discharge valves.
4. Open refrigerant valves except bypass valves that are used for other purposes.
5. Check open compressor-motor alignment and verify lubrication for motors and bearings.

E. Replace core of replaceable filter dryer after system has been adjusted and after design flow rates and pressures are established.

3.10 SOUND AND VIBRATION ISOLATION

A. All vibrating equipment shall be sound isolated from the structure.

B. The Contractor shall submit all necessary data for each vibration isolator, including static deflection and weight loading, for equipment in operation.

C. Vibration isolators shall have a valid OSHPD approval number.

3.11 JOB COMPLETION

A. Equipment Identification:
   1. All equipment furnished under this section shall be provided with the manufacturer's metal identification labels securely attached and showing all pertinent data, including performance characteristics, size, model, and serial number. Labels shall not be obscured in any manner.
   2. Identification name plates shall be provided on all equipment and control components, including room thermostat numbers coded to their respective automatic zone damper, valve, or air conditioning unit. Name plates shall be constructed of black bakelite with white center engraved letters three-sixteenth inch (3/16") high and shall be cemented to equipment with an epoxy resin. The Contractor shall submit to the Architect, a complete list of name plate titles for approval prior to installation.
   3. Each valve shall be identified by a number brass tag with hole and brass chain mounted on valve stem or handle. Tag shall be a minimum of one and one-half inch (1-1/2") in diameter and numbers shall be at least one-fourth inch (1/4") high stamped into the tag.

B. Identification:
   1. See Specification Section 23 05 53 for requirements.

C. Final Operation: Upon completion of the installation of the equipment and after all systems have been tested, cleaned, the Contractor shall place a competent person in charge who shall operate the equipment for a period of three eight-hour days. During this period of operation, all safety and operating controls shall be actuated to demonstrate proper operation. During this operating period, the Owner's representative shall be instructed in all details of operation and maintenance. All required instructions from the equipment manufacturer's representative shall be given during the period.

D. Operation Instructions:
   1. Prepare a diagram of the entire control system with a full description of the heating, ventilating and air conditioning systems.
   2. After approval by the Engineer, the control diagram and complete operating instructions shall be mounted under glass and installed where directed.
   3. Prepare two (2) maintenance manuals which shall include all the necessary or pertinent data, such as:
      a. Names, addresses and emergency phone numbers of all suppliers and manufacturers.
      b. Part numbers of all replaceable items.
      c. Oiling and lubrication instructions.
      d. Air balance report.
      e. Control diagram and operation sequence, together with labeling of controls and instruments to match the diagram.
      f. A maintenance schedule which shall list all required maintenance on all equipment furnished under this section of the specifications and the intervals of which the items are to be performed.
   4. An identification chart indicating valve operating in the piping system shall be installed as located by the Owner. Identification charts shall be mounted behind glass in a frame.

E. Clean-Up:
   1. After all heating, ventilating and air conditioning work has been tested and approved, the Contractor shall thoroughly clean all parts of the equipment installation. Exposed parts which are to be painted are to be thoroughly cleaned of cement plaster and other materials and all greases and oil spots removed with solvent. Exposed rough metal work to be carefully brushed down with steel brushes to remove rust and other spots and left in proper condition to receive painter's finish.
   2. Remove all debris from the job site, all cartons, boxes, packing crates, excess materials not used occasioned by the work and to the satisfaction of the Owner.

3. If the above requirements of clean-up are not to the satisfaction of the Owner, the Owner reserves the right to order the work done and the cost of which shall be borne by the Contractor.
4. The Contractor shall remove on a daily basis all debris from the job site, to the satisfaction of the Owner.
5. If the above requirements of clean-up are not to the satisfaction of the Owner, the Owner reserves the right to order the work done by a third party and the cost of which shall be borne by the Contractor.

DIVISION 26 – ELECTRICAL

SECTION 26 00 00 - GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

A. Work of this section includes everything necessary for or incidental to completing the electrical work, to provide a complete and operable electrical system, except as herein specifically excluded.

1.2 GENERAL REQUIREMENTS

A. Electrical System Characteristics: 480/277V. 3PH, 4W., 208/120V. 3PH, 4W.

B. Guarantee: Furnish a written guarantee for a period of one-year from date of acceptance.

C. Codes and Regulations: Work done under this Section shall comply with the latest adopted edition of the following: California Electrical Code, State of California Title 24, State Building Standards, Occupational Safety and Health Administration (CAL / OSHA) requirements, State of California Title 17 and to all local codes having jurisdiction. In the case where the codes have different levels of requirements, the most stringent rule shall apply.

D. Wherever a discrepancy in quantity or size of conduit, wire, equipment, devices, circuit breakers, etc., (all materials), arises on the Drawing and/or Specifications, the Contractor shall be responsible for providing and installing all material and services required by the strictest condition noted on Drawings and/or in Specifications to insure complete and operable systems as required by the Owner and Engineer.

E. The General and Supplementary Conditions, as well as Special Conditions apply in addition to items in the Electrical Section. Special attention is directed to the following sections:

1. Drawings and Specifications at the site.

2. Shop drawings and samples.

3. Record drawings.

4. Cutting and Patching.

5. Cleaning up.

6. Guarantees / Warranty.

7. Tests.

F. Additional Work: Refer to Mechanical and Plumbing drawings and specifications for additional Electrical requirements.

G. Testing:

1. Scan:
   a. Infrascan test for new distribution and branch circuit panels shall be required.
   b. Infrascan test of existing switchboards, distribution and branch circuit panels modified as part of the scope of work shall be required.
   c. Infrascan certified reports shall be submitted on completion to the Owner and Engineer.
   d. Scans shall be performed by an independent testing laboratory with total connected loads in operation.
2. Megger:
   a. New branch circuit - phase, neutral and ground conductors.
   b. New circuits from existing panels.

c. New insulated bonding conductors.

3. All circuits shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.

4. Grounding System: Shall be tested by an independent testing laboratory to meet resistance specified in Part 3.1, D.3 of these Specifications. It shall be this Contractor's responsibility to make adjustments, as required, to upgrade non-complying systems to proper and safe operation.

5. All certified testing reports shall be submitted to the Owner at completion of project.

H. All Core Cutting, Drilling, and Patching:

1. For the installation of work under this Section, the aforementioned shall be performed under this Section of the Specifications and the Concrete section of the Specifications.

2. No holes will be allowed in any structural members without the written approval of D.S.A. or the Structural Engineer.

3. For penetrations of concrete slabs or concrete footings, the work will be as directed in the Concrete Section of Specifications.

4. The contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.

5. Penetrations shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.

I. Verifying Drawings and Job Conditions:

1. This Contractor shall examine all Drawings and Specifications in a manner to be fully cognizant of all work required under this Section.

2. This Contractor shall visit the site and verify existing conditions. Where existing conditions differ from Drawings, adjustment shall be made and allowances included for all necessary equipment to complete all parts of the Drawings and Specifications.

J. Shop Drawings:

1. Drawings shall be submitted in six (6) bound sets accompanied by Letter of Transmittal, which shall give a list of the number and dates of the drawings submitted. Drawings shall be complete in every respect and bound in sets.

2. The Drawings submitted shall be marked with the name of the project, numbered consecutively and bear the approval of the Contractor as evidence that the Drawings have been checked by the Contractor. Any Drawings submitted without this approval will be returned to the Contractor for resubmission.

3. If the shop drawings show variations from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in his letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper adjustment which may be caused by the substitution. Samples shall be submitted when requested.

4. Shop drawings shall be submitted on the following but not limited to:

a. Distribution and Branch Circuit panels.

b. Circuit breakers. Submit mounting hardware for new circuit breakers installed in existing panels.

c. Safety/Disconnect switches.

d. Receptacles.

e. Fuses.

f. Pull boxes, junction boxes, outlet boxes, covers and wall plates.

g. Wire/Cable.

h. Conduit and fittings.

i. Conduit supports.

j. Transformers.

K. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of blueprints. These shall be corrected daily and show every change from the original Drawings. This set of prints shall be kept on the job site and shall be used only as a record set. This shall not be construed as authorization for the Contractor to make changes in the layout without definite instruction in each case. Upon completion of the work, a set of reproducible Contract Drawings shall be obtained from the General Contractor and all changes as noted on the record set of prints shall be incorporated thereon with black ink in a neat, legible, understandable and professional manner. Refer to the Supplementary General Conditions for complete requirements.

L. Provide minimum of twenty percent (20%) spare fuses of each size specified on plan.

1.3 WORK IN COOPERATION WITH OTHER TRADES

A. Examine the Drawings and Specifications and determine the work to be performed by the electrical, mechanical, plumbing, building contractor and other trades. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, disconnects, relays, and other devices for the required operation sequence of all electrical, mechanical and other systems or equipment.

B. Provide power and control circuits, conduit and wire as indicated on the Mechanical and Plumbing drawings as required for complete and operable systems.

1.4 TESTING AND ADJUSTMENT

A. Upon completion of all electrical work, this Contractor shall test all circuits, switches, motors, breakers, motor starter(s) and their auxiliary circuits and any other electrical items to insure perfect operation of all electrical equipment.

B. Equipment and parts in need of correction and discovered during such testing shall be immediately repaired or replaced with all new equipment and that part of the system shall then be retested. All such replacement or repair shall be done at no additional cost to the Owner.

C. All circuit shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.

D. All certified testing reports shall be submitted to the Engineer at completion of project.

1.5 IDENTIFICATION

A. Identification nameplates shall be Micarta 1/8" thick and of approved size, with bevelled edges and engraved white letters 1/4" high minimum on black background. Nameplates shall be provided for all circuits in the distribution switchboards, and selector switches. Inscriptions on equipment shall be identical to those indicated in panels and/or motor control centers and other similar devices. Each nameplate shall be provided with drillings and suitable mounting screws corresponding to finish of the nameplate. The inscriptions in each nameplate shall be as indicated on the Drawings.

B. Identification of Air Conditioning Equipment: Equipment to be so identified shall include, but shall not be limited to: Pressure and temperature controllers; switches; equipment motors and boxes or cans housing other control items. Mechanical equipment nameplates shall have letters a minimum of 3/8" high and be mechanically fastened to equipment.

1.6 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRINGDIAGRAMS

A. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four (4) copies of operating and maintenance and servicing instructions, as well as four (4) complete wiring diagrams for the following item(s) or equipment:

1. Panels.
2. Disconnect switches.
3. Circuit breakers.
4. Receptacles.

B. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Two (2) copies shall be presented to the Electrical Engineer and four (4) copies to the Owner.

1.7 ELECTRICAL CONTRACTOR'S RESPONSIBILITY

A. It shall be the Electrical Contractor's responsibility to obtain a complete set of Drawings and Specifications. He shall check the Drawings of the other trades and shall carefully read the entire Specifications and determine his responsibilities.

B. The contractor shall be responsible for reviewing the plans and specifications to ensure each room, where electrical line or low voltage equipment is to be installed, has sufficient space to accommodate the system cabinets, equipment and terminations while maintaining code mandated clearances about said equipment. The contractor shall identify problem areas prior to bid, include all costs required for corrective measures in his bid and submit alternate equipment and materials suitable for the installation to the Architect/Engineer for acceptance as part of the product submittal process.

1.8 FINAL INSPECTION AND ACCEPTANCE

A. After all requirements of the Specifications and/or the Drawings have been fully completed, representatives of the Owner will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system to the full satisfaction of each representative.

B. Final acceptance of the work will be made by the Owner after receipt of approval and recommendation of acceptance from each representative.

1.9 RECORD DRAWINGS

A. Contractor shall furnish one set of reproducible record drawings before final payment of retention.

1.10 SUBSTITUTIONS

A. Substitution to specified equipment shall be submitted and received by the Engineer fifteen (15) days after the bid date for review and approval. Obtain D.S.A. approval for all substitutions.

B. To receive consideration, requests for substitutions must be accompanied by documentary proof of its equality with the specified material. Documentary proof shall be in letter form and identify the specified values/materials alongside proposed equal values/materials. In addition,catalog brochures and samples must be included in the submittal.

C. In the event that authorization is given for a substitute equal to bid, after award of contract the Contractor shall submit to the Engineer certified quotations from suppliers of both the specified and proposed equal material for price comparison and delivery dates.

D. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, arranged by Change Order.

E. The Contractor warrants that substitutions proposed for specified items will fully perform the functions required.

F. Substitutions or requests for substitution shall not be accepted and rejected for failure to comply with items A-E above.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials and Equipment: All electrical materials and equipment shall be new and shall be listed by Underwriter's Laboratories and bear their label, or listed and certified by a nationally recognized testing authority where UL does not have an approval. Custom made equipment must have complete test data submitted by the manufacturer attesting to its safety. In addition, the materials and equipment shall comply with the requirements of the following:

1. American Society of Testing Materials (ASTM).

2. Insulated Cable Engineers Association (ICEA).

3. National Electrical Manufacturer's Association (NEMA).

4. National Fire Protection Association (NFPA).

5. American National Standard Institute (ANSI).

B. Panelboards – Branch Circuit:

1. Branch circuit panelboards shall be of the dead front safety type equipped with thermal-magnetic bolt-on type 40 deg C. circuit breakers. Panels shall be suitable for the disaggregation of loads with provisions for the installation of future current transformer (CT's). Enclosure shall be minimum 20" wide (Eaton split-bus type panel) or 30" wide (not split-bus) and 5-3/4" deep unless otherwise noted on plan. Refer to panel schedule for ratings and quantity of circuits to be provided. Panels shall be provided with copper busses. Branch circuit panelboards shall be Eaton or approved equal Siemens, Square D or General Electric to match the main switchboard manufacturer. Equipment manufactured by third party OEM is not acceptable.

2. Circuit breakers shall be fully rated to provide the symmetrical interrupting capacity indicated on the single line diagram. Circuit breakers shall be the number of poles and current capacity as indicated on the panel schedule with terminals/lugs UL listed for 75˚C. Circuit breakers shall be fully coordinated to ensure a local fault does not trip any upstream circuit breaker.

3. Trims shall have doors equipped with flush type combination lock and catch, two milled type keys supplied with each panel. All locks shall be keyed alike and each door shall have a plastic covered directory frame with a typed identification card of all circuit and panel numbers for branch circuit panelboards and engraved lamacoid nameplates for power distribution panelboards.

4. Provide nameplate for all panelboards, 1/8" thick, Micarta or Lamacoid plate of approved size, with bevelled edges and engraved white letters on black background. Install nameplates on exterior trim of panel, above the panel door. Provide Arc-Fault warning labels on panel fronts.

5. All wiring shall be neatly arranged and laced together.

6. All circuit breakers shall be provided with a device for locking circuit breaker in "OFF" position.

7. Refer to Painting Section of these Specifications for all panel finish. Interior panels shall be primered for painting. Exterior panels shall be painted to match surface it is attached to.

8. Neutral and Ground bus bars shall be full size, rectangular in cross section constructed of copper and interconnections.

9. Where indicated on plan, panels housing time clocks and contactors for control of lighting shall be provided with an auxiliary section. Panel shall consist of a two-section panelboard with two boxes and one trim/cover, each with their own door/lock.

C. Conduit:

1. Rigid conduit shall be full weight threaded type aluminum or steel, except where specifically required to be steel. Steel conduit shall be protected by overall zinc coating to inside and outside surfaces, applied by the hot dip, metallizing or sherardizing process.

2. Galvanized Rigid Conduit (GRC), shall be full weight threaded type aluminum or steel, except where specifically required to be steel. Steel conduit shall be protected by overall zinc coating to inside and outside surfaces, applied by the hot dip, metallizing, or sherardizing process.

3. Intermediate Metal Conduit (IMC), shall be hot-dipped galvanized in accordance with UL 1242 and meeting Federal Specification WWC-581 (latest revision).

4. Electrical Metallic Tubing (EMT), shall be zinc-coated steel with baked enamel or plastic finish on inside surfaces.

5. Flexible metal conduit shall be constructed of aluminum or hot-dipped galvanized steel strips wound spirally with interlocking edges to provide greatest flexibility with maximum strength. Interior surfaces shall be smooth and offer minimum drag to pulling in conductors. Used only as directed by the Engineer.

6. Liquid-tight conduit (Seal-Tite) shall be galvanized steel flexible conduit as above except with moisture and oil-proof jacket, pre-cut lengths and factory installed fittings. For outdoor installations and motor connection.

7. Non-Metallic Conduit:

   a. Polyvinyl chloride (PVC) rigid conduit, Schedule 40, Type II for underground installation only.
   b. Conduit and fitting shall be produced by the same manufacturer.

8. MC Cable or Mineral Insulated Cable: Not allowed.

D. Fittings:

1. Condulet type fittings shall be smooth inside and out, taper threaded with integral insulating bushing and of the shapes, sizes and types required to facilitate installation or removal of wires and cables from the conduit and tubing system. These fitting shall be of metal, smooth inside and out, thoroughly galvanized, and sherardized cadmium plated.

2. Metallic condulet covers shall have the same finish as the fitting and shall be provided for the opening of each fitting where conductor do not pass through the cover.

3. Connector, coupling, locknut, bushings and caps used with rigid conduit shall be steel, threaded and thoroughly galvanized. Bushings shall be insulated.

4. EMT fittings, connectors and couplings, shall be steel, zinc or cadmium plated, raintight, threadless, compression or tap-on multiple point, steel locking ring type with insulated throat.

5. Flexible steel conduit connectors shall be or malleable iron clamp or squeeze type or steel twist-in type with insulated throat. The finish shall be zinc or cadmium plating.

6. Die cast, set screw or indenter type fittings are not acceptable.

7. Conduit unions shall be "Erickson" couplings, or approved equal. The use of running threads will not be permitted.

E. 600 Volt Conductors - Wire and Cable:

1. All conductors shall be copper. Simpull or equal.

2. Type THHN/THWN thermoplastic, 600 volt, UL approved, dry and wet locations, for conductor sizes up to and including #4 AWG.

3. Type XHHW cross-linked synthetic polymer, 600 volt, UL approved, for dry and wet locations, for conductor sizes #2 AWG. and above.

4. Cross-linked synthetic polymer, XHHW, 600 volts, UL approved, for installation underground, in concrete or masonry.

5. Wire and cable shall be new, manufactured not more than six (6) months prior to installation, shall have size, type of insulation, voltage rating and manufacturer's name permanently marked on outer covering at regular intervals.

6. Wire and cable shall be factory color coded by integral pigmentation with a separate color for each phase and neutral. Each system shall be color coded and it shall be maintained throughout.

7. Systems Conductor Color Coding:

   k. Power 480/277V, 3PH, 4W:
      (1) Phase A = Brown
      (2) Phase B = Orange
      (3) Phase C = Yellow
      (4) Neutral = White

   l. Power 208/120V, 3PH, 4W:
      (1) Phase A = Black
      (2) Phase B = Red
      (3) Phase C = Blue
      (4) Neutral = White

   m. Ground Conductors:
      (1) Green

8. All color coding for #8 conductor and above shall be as identified above, utilizing phase tape at each termination.

9. No conductors carrying 120 volt or more shall be smaller than #12 AWG.

F. Junction and Pullboxes:

1. For outside, damp or interior/exterior surface mounted locations, boxes shall be heavy cast aluminum or cast iron with removable, gasketed, non-ferrous machine screw secured covers.

2. All boxes shall be sized for the number and sizes of conductors and conduits entering the box and equipped with plaster rings where required. Each conductor shall be terminated at an insulated, barriered terminal connector and completely identified with an engraved fiber identification marker, Electrovert or Underwriter's Safety Device Company.

3. For interior dry locations, boxes shall be galvanized one-piece drawn steel, knockout type, with removable, machine screw secured covers.

G. Outlet Boxes:

1. For surface mounting, wet or damp locations, outlet boxes shall be heavy cast aluminum or cast iron with threaded hubs, covers shall be watertight with gaskets and non-ferrous screws.

2. For locations where standard boxes are not suitable due to number and size of conduit to be terminated, special boxes shall be designed to fit space or meet other requirements and submitted for approval.

3. Unless otherwise noted on plan or specified herein, outlet boxes shall be 4” square x 2 1/8” deep, one-piece drawn steel, knockout type, mounted flush with in wall. Provide with plaster rings and wall plate.

H. Switches:

1. Switches controlling or disconnecting single phase motor loads in excess of 1/3HP shall be horsepower rated and approved or motor control service. Switches shall be complete with overload device of proper motor nameplate rating, where required.

2. Switches located outdoors or in damp or wet locations shall be the same as above provided with steel locking weatherproof lift cover.

3. Disconnect (safety) switches shall be fused, heavy duty type meeting NEMA Specifications. Switches shall be provided with rejection type fuse blocks. Provide switches with the number of poles, the voltage, current and horsepower ratings as required. Provide externally operable, quickmake, quick-break type mechanism with cover interlock and padlockable in either the open or closed position. Unless indicated otherwise, provide switches indoors in NEMA Type 1 enclosure and in NEMA Type 3R rain-tight enclosure where indicated to be outdoors or weatherproof. Provide nameplate indicating equipment served. Provide unit as manufactured by Challenger or approved equal Siemens or Westinghouse.

I. Receptacles:

1. Receptacles shall consist of duplex convenience receptacle mounted in a surface/cast box on the wall, and shall be complete with plate/cover.

2. Receptacles for convenience outlets, unless otherwise indicated, shall be industrial heavy duty type, duplex 3W grounding type, 20A, 125V, Hubbell-Bryant #5362-*. (*) color as selected by Architect.

3. Indoor receptacle located in damp/wet locations shall be industrial heavy duty type, ground fault interrupter, 20 ampere, three wire grounding type, 120 volt, Hubbell-Bryant # GF-5362-I.

4. Receptacles located outdoors shall be industrial heavy duty type, ground fault interrupter, 20 ampere, three wire grounding type, 120 volt, Hubbell-Bryant # GF-5362-I mounted in weatherproof box and lockable lift cover U.L. listed for “wet” locations when in operation.

5. Specialty receptacles, identified on plans, for use with Owner furnished equipment shall be provided complete with outlet box, wall plate and receptacle to match the configuration of the plug being provided with the subject equipment.

J. Painting:

1. Junction boxes, pull boxes, etc., and conduit installed exposed/surface mounted indoors and in public view shall be painted with colors selected by the Owner to match the subject surface.

K. Seismic Design and Anchoring of Electrical Equipment:

1. Seismic anchorage of electrical equipment shall conform to C.C.R. Title 24, 2025 CBC. Anchorage details for roof/floor mounted equipment shall be as shown on plans.

PART 3 - EXECUTION

3.1 PREPARATION AND INSTALLATION

A. Installation of Conduit and Outlet Boxes:

1. All interior conduit run exposed shall be galvanized rigid steel conduit (GRC), or intermediate metal conduit (IMC). Exterior exposed conduit shall be PVC coated steel.

2. Rigid conduit may be installed under floor slabs, under concrete sidewalls an as noted on the Drawings. Rigid conduit installed under slabs shall be 1" trade size minimum and shall be wrapped with 20 mil. polyvinyl chloride plastic tape.

3. All conduit except as hereinafter specified, installed in concrete/masonry, damp locations, hazardous locations, surface mounted up to 8’-0” above finished floor or subject to mechanical injury shall be heavy wall, threaded, galvanized rigid steel conduit (GRC), or intermediate metal conduit (IMC).

4. Flexible steel conduit shall only be permitted to be used at light fixture outlets and connections to vibrating electrical equipment. All flexible steel conduit runs shall be less than 6'-0". All outdoor installation shall be made using liquid-tight flex with approved fittings. Use of flexible conduit shall be as approved by the Engineer.

5. Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or EMT and in accordance with Article 345 of CEC and UL Information card #DYBY.

6. All conduit installed in the dry walls or ceilings of the building shall be steel tube (EMT), Galvanized Rigid Steel (GRC), or Intermediate Metal Conduit (IMC).

7. Conduit shall be run so as not to interfere with other piping fixtures or equipment.

8. The ends of all conduit shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.

9. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.

10. PVC conduit shall not be run in walls or above grade.

11. Where conductors enter a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductors shall be protected by a plastic bushing type fitting providing a smoothly rounded insulating surface.

12. Where conduit extends through roof to equipment on roof area, this Contractor shall provide 24 gauge galvanized sheet metal flashing cones with 4" flanges on roof surface. This flashing shall be delivered to the roofing contractor for installation. The actual location of all such roof penetrations and outlet shall be verified by the Contractor.

13. All conduit shall be supported at intervals not less than 10'-0" and within 12" from any outlet and at each side of bends and elbows. Conduit supports shall be galvanized, heavy stamped, two hole conduit clamp properly secured to structure.

14. Where conduit racks are used the rack shall consist of two piece conduit clamps attached to galvanized steel slotted channels, properly secured via threaded rods attached directly to the building structure.

15. Nail-in conduit supports will not be allowed. One piece set-screw type conduit clamps or perforated iron for supporting conduit will not be permitted.

16. Seismic Conduit Support:

    a. All conduit shall be supported in such a manner that it is securely attached to the structure of the building. Attachment is to be capable of supporting the tributary weight of conduit and contents in any direction. Maximum spacing of support and braces are to be as follows:

CONDUIT SIZE	MAXIMUM SPACING
EMT, IMC	10'-0"
GRC (3/4" thru 1 ½")	10'-0"
GRC (2" thru 2½")	16'-0"
GRC (3" and larger)	20'-0"

17. All conduit runs shall be installed parallel or perpendicular to walls, structural members, or intersection of vertical planes and ceilings. Field made bends and offset shall be avoided where possible. Crushed or deformed raceway shall not be installed.

18. Open knockouts in outlet boxes only where required for inserting conduit.

19. All boxes shall be covered with outlet box protector, Appleton SB-CK. Keep dirt from entering box or panels. If dirt does get in, it shall be removed prior to pulling wires.

20. All boxes installed outdoors shall be PVC coated, gasketed, screw cover.

21. Exterior conduits installed on building walls shall be provided with a painted sheet metal cover to conceal the conduit from public view. Sheet metal cover shall be rectangular, 4" deep maximum, width required to conceal the conduits and the conduit supports, full height of wall, secured to the building with ½" anchors and painted with weatherproof paint to match building finish/color.

22. All conduit entries to outdoor mounted panels, cabinets, boxes, etc., shall be made using Myers "SCRU-TITE" hubs Series ST.

23. All conduit shall have a 200 lb test poly-propylene pull line left in place for future use in all runs tagged with a plastic tag at terminating end indicating the location of the opposite end of the conduit.

24. All rotating electrical equipment shall be supplied with flexible, liquid-tight conduit with appropriate slack and shall not exceed thirty-six (36) inches.

25. All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/rack, see note 14. Refer to note 13 for support of single conduit runs within suspended ceilings. Conduit shall not be allowed to lay on ceiling or be supported from ceiling suspension wires or other suspension system.

26. Provide conduit only for routing of HVAC control wiring. Refer to Mechanical drawings for conduit requirements.

B. Installation of 600 Volt Conductors:

1. All line voltage wire, including control circuits, shall be installed in conduit.

2. All circuits and feeder wires for all systems shall be continuous from the service point to terminal or farthest outlet. No joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.

3. Thoroughly clean all conduit and wire-ways and see that all parts are perfectly dry before pulling any wires. No joint shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.

4. Install UL approved, fixture wire from all lighting fixture lamp sockets into fixture outlet or junction box.

5. Provide conduit only for routing of HVAC control wiring. Refer to Mechanical drawings for conduit requirements.

C. Joints in 600 Volt Conductors:

1. Joints in 600 volt conductors smaller than No. 4 AWG shall be made with Scotchlok spring type connectors. Wires No 4 AWG and larger shall be joined together with approved type of pressure connector and taped with #33 3M tape, three (3) layers minimum to provide insulation not less than that of conductor. Connections to switch or busbar shall be made with one-piece copper lugs. Splicing of all 600 volt or less in-line connections #2 AWG through 350 MCM shall be made with 3M brand PST connector.

2. Joints/splices shall be done in junction or pull boxes.

3. Splices of communications wire/cable will not be permitted. Communications wire/cable shall run continuously from its point of origin to its destination point.

D. Grounding:

1. Provide grounding for entire electric installation as shown on plans and as required by applicable codes. Included as requiring grounding are:

   a. Conduit.
   b. Neutral or identified conductors of interior wiring system.
   c. Non-current carrying metal parts of fixed equipment.
   d. Branch circuit panelboards.

2. Grounding and bonding conductors shall be sized per the latest edition of the California Code of Regulations, Title 24, State of California and CEC.

3. Provide and install an equipment grounding conductor in all feeder and branch circuit conduits.

4. Grounding resistance to ground shall not exceed 25 ohm.

E. Prefabricated Equipment: Installation of all prefabricated items and equipment shall conform to the requirements of the manufacturer's specifications and installation instruction pamphlets. Where code requirements affect installation of materials and equipment, the more stringent requirements, code or manufacturer's instructions and/or specifications, shall govern the work.

END OF SECTION

3) DSA-103-25

DSA

103-25

LIST OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

☐ Project has a geotechnical report or construction documents require special inspection by a geotechnical engineer.
☑ Project does NOT have and does NOT require a geotechnical report.

	TYPE	BY
S1 | SOILS - GENERAL		
☐ S1a: Site Preparation	See Notes	PI
S2 | COMPACTION AND FILL		
☐ S2a: Fill Materials	Test	LOR*
☐ S2b: Fill Placement	Continuous	LOR*
☐ S2c: Compaction	Test	LOR*
S3 | DRIVEN DEEP FOUNDATIONS (PILES)		
☐ S3a: Materials and Members	Continuous	GE*
☐ S3b: Pile Capacity	Test	LOR*
☐ S3c: Driving Operations	Continuous	GE*
☐ S3d: Pile Installation	Continuous	GE*
☐ S3e: Specialty Piles	*	*
S4 | CAST-IN-PLACE DEEP FOUNDATIONS (PIERS)		
☐ S4a: Drilling Operations	Continuous	PI
☐ S4b: Pier Construction	Continuous	PI
☐ S4c: Bearing Strata	Continuous	GE*
S5 | RETAINING WALLS		
☐ S5a: Backfill Placement	Continuous	GE*
☐ S5b: Soil Reinf. and Drainage	Continuous	GE*
☐ S5c: Segmental Retaining Walls	Continuous	GE*
S6 | OTHER SOILS		
☐ S6a: Soil Improvement Test	Test	GE*
☐ S6b: Soil Improvement Inspection	Continuous	GE*
☐ S6c: Not used.	N/A	N/A
☐ S6d: Not used.	N/A	N/A
☐ S6e: Not used.	N/A	N/A
☐ S6f: Not used.	N/A	N/A
☐ S6g: Not used.	N/A	N/A
☐ S6h: Not used.	N/A	N/A
☐ S6i: Not used.	N/A	N/A
☐ S6j: Not used.	N/A	N/A
☐ S6k: Not used.	N/A	N/A
☐ S6l: Not used.	N/A	N/A
☐ S6m: Not used.	N/A	N/A
☐ S6n: Not used.	N/A	N/A

* See Appendix for additional information.

	TYPE	BY
C1 | CAST-IN-PLACE CONCRETE		
☐ C1a: Mix Design	Continuous	SI
☐ C1b: Reinforcing Steel	Test	LOR
☐ C1c: Concrete Material	Test	LOR
☐ C1d: Strength Test	Test	LOR
☐ C1e: Batch Plant Inspection		SI
C2 | PRESTRESSED CONCRETE		
☐ C2a: Tendons and Anchorage	Test	LOR
☐ C2b: Tendon Placement	Periodic	SI
☐ C2c: Concrete Strength	Periodic	SI
☐ C2d: Stressing Operations	Continuous	SI
C3 | PRECAST CONCRETE		
☐ C3a: General Fabrication	Continuous	SI
☐ C3b: General Erection	Periodic	SI*
☐ C3c: Diaphragm Connections	Continuous	SI
☐ C3d: Diaphragm Tolerances	Periodic	SI
C4 | SHOTCRETE		
☐ C4a: Placement	Continuous	SI
☐ C4b: Shotcrete Material	Test	LOR
C5 | POST-INSTALLED ANCHORS		
☐ C5a: Inspection	See notes	SI*
☐ C5b: Test	Test	LOR
C6 | OTHER CONCRETE		
☐ C6a: Not used.	N/A	N/A
☐ C6b: Not used.	N/A	N/A
☐ C6c: Not used.	N/A	N/A
☐ C6d: Not used.	N/A	N/A
☐ C6e: Not used.	N/A	N/A
☐ C6f: Not used.	N/A	N/A
☐ C6g: Not used.	N/A	N/A
☐ C6h: Not used.	N/A	N/A
☐ C6i: Not used.	N/A	N/A
☐ C6k: Not used.	N/A	N/A
☐ C6l: Not used.		
Not used.		

* See Appendix for additional information.

Project Name: **Lynwood High School**
School District: **Lynwood Unified School District**

Application No.: **03-126002** Increment:
File No.: **19-H31**

LIST OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

	TYPE	BY
M1 | STRUCTURAL MASONRY f'm PSI:		
☐ M1a: Mill Certificates - Reinf.	Periodic	SI*
☐ M1b: Material Certificates	Test	LOR
☐ M1c: Strength Test	Test	LOR
☐ M1d: Mortar Proportions	Periodic	SI
☐ M1e: Grout Proportions	Periodic	SI
☐ M1f: Batch Plant Inspection		SI
☐ M1g: Core Tests	Test	LOR
☐ M1h: Prisms	Continuous	SI
☐ M1i: Dowels and Supports	Periodic	SI
☐ M1j: Reinforcement and Members	Periodic	SI
☐ M1k: Reinforcement Placement	Continuous	SI
☐ M1l: Grout Placement	Continuous	SI
☐ M1m: Unit Layup and Joints	Periodic	SI*
☐ M1n: Cold/Hot Weather Work	Periodic	SI
☐ M1o: Anchors and Embeds	Continuous	SI
☐ M1p: Grout Cavity	Continuous	SI
M2 | VENEER OR GLASS BLOCK PARTITIONS		
☐ M2a: Mortar and Grout	Periodic	SI
☐ M2b: Unit Layup and Joints	Periodic	SI
☐ M2c: Wires and Connector	Periodic	SI
☐ M2d: Anchors and Embeds	Periodic	SI
☐ M2e: Cold/Hot Weather Work	Periodic	SI*
☐ M2f: Adhered Veneer Bond	Test	LOR
M3 | POST-INSTALLED ANCHORS		
☐ M3a: Inspection	Varies*	SI*
☐ M3b: Test	Test	LOR
M4 | OTHER MASONRY		
☐ M4a: Not used.	N/A	N/A
☐ M4b: Not used.	N/A	N/A
☐ M4c: Not used.	N/A	N/A
☐ M4d: Not used.	N/A	N/A
☐ M4e: Not used.	N/A	N/A
☐ M4f: Not used.	N/A	N/A
☐ M4g: Not used.	N/A	N/A
☐ M4h: Not used.	N/A	N/A
☐ M4i: Not used.	N/A	N/A
☐ M4j: Not used.	N/A	N/A
☐ M4k: Not used.		
☐ M4l: Not used.		
☐ M4m: Not used.		
Not used.		

* See Appendix for additional information.

	TYPE	BY
S/A1 | STEEL AND ALUMINUM		
☑ S/A1a: Material Identification	Periodic	*
☑ S/A1b: Unidentified Material	Test	LOR
☑ S/A1c: Steel Fabrication	Periodic	SI
☐ S/A1d: Buckling Restrained Brace	Test*	LOR
S/A2 | HIGH-STRENGTH BOLTS		
☐ S/A2a: Product Verification	Periodic	SI
☐ S/A2b: Bolts, Nuts, and Washers	Test	LOR
☐ S/A2c: Snug Tight	Periodic	SI
☐ S/A2d: Pretensioned / Slip-Critical	*	SI
S/A3 | WELDING		
☐ S/A3a: Weld Material	Periodic	SI
☐ S/A3b: Certificate of Compliance	Periodic	SI
☐ S/A3c: WPS and Qualifications	Periodic	SI
S/A4 | SHOP WELDING		
☐ S/A4a: Weld Category A	Continuous	SI
☐ S/A4b: Weld Category B	Periodic	SI
☐ S/A4c: Stairs and Railing	Periodic	SI
☐ S/A4d: Reinf. Steel Weldability	Periodic	SI
☐ S/A4e: Reinforcing Steel	Continuous	SI
S/A5 | FIELD WELDING		
☐ S/A5a: Weld Category A	Continuous	SI
☐ S/A5b: Weld Category B	Periodic	SI
☐ S/A5c: End Welded Studs	Periodic	SI
☐ S/A5d: Deck Welds	Periodic	SI
☐ S/A5e: Cold-Formed Steel	Periodic	SI
☐ S/A5f: Stairs and Railing	Periodic	SI
☐ S/A5g: Reinf. Steel Weldability	Periodic	SI
☐ S/A5h: Reinforcing Steel	Continuous	SI
S/A6 | NONDESTRUCTIVE TESTING		
☐ S/A6a: Ultrasonic	Test	LOR
☐ S/A6b: Magnetic Particle	Test	LOR
☐ S/A6c:Not used.	N/A	N/A
☐ S/A6d:Not used.	N/A	N/A
☐ S/A6e:Not used.	N/A	N/A
S/A7 | STEEL JOISTS AND TRUSSES		
☐ S/A7a: Fabrication	Continuous	SI
S/A8 | METAL BUILDING		
☐ S/A8a: Inspection	Periodic	SI
S/A9 | SPRAYED FIRE-RESISTANT MATERIALS		
☐ S/A9a: Surface and Installation	Periodic	SI
☐ S/A9b: Density	Test	LOR
☐ S/A9c: Bond: Adhesion/Cohesion	Test	LOR

* See Appendix for additional information.

Project Name: **Lynwood High School** Application No.: **03-126002** Increment:

School District: **Lynwood Unified School District** File No.: **19-H31**

LIST OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

	TYPE	BY
S/A10 | ANCHOR BOLTS AND ANCHOR RODS		
☐ S/A10a: Anchor Rods and Bolts	Test	LOR
☐ S/A10b: Other Threaded Rods	Test	LOR
S/A11 | STORAGE RACK SYSTEMS		
☐ S/A11a: Material Verification	Periodic	SI
☐ S/A11b: Fabrication	Periodic	SI
☐ S/A11c: Anchorage	Periodic	SI
☐ S/A11d: Completed System	Periodic	SI*
S/A12 | OTHER STEEL AND ALUMINUM		
☐ S/A12a: Not used.	N/A	N/A
☐ S/A12b: Not used.	N/A	N/A
☐ S/A12c: Not used.	N/A	N/A
☐ S/A12d: Not used.	N/A	N/A
☐ S/A12e: Not used.	N/A	N/A
☐ S/A12f: Not used.	N/A	N/A
☐ S/A12g: Not used.	N/A	N/A
☐ S/A12h: Not used.	N/A	N/A
☐ S/A12i: Not used.	N/A	N/A
☐ S/A12j: Not used.	N/A	N/A
W1 | PREFABRICATED WOOD TRUSSES		
☐ W1a: Open Web Truss Fabrication	Continuous	SI
☐ W1b: Metal Plate Truss Fabrication	Continuous	SI
W2 | MANUFACTURED WOOD ELEMENTS		
☐ W2a: GL Timber Fabrication	Continuous	SI
☐ W2b: CLT Fabrication	Continuous	SI
☐ W2c: Mass Timber Erection	Periodic	SI
☐ W2d: Connections Type A	Periodic	SI
☐ W2e: Connections Type B	Continuous	SI
☐ W2f: Sealants	Periodic	SI
W3 | OTHER WOOD		
☐ W3a: Not used.	N/A	N/A
☐ W3b: Not used.	N/A	N/A
☐ W3c: Not used.	N/A	N/A
☐ W3d: Not used.	N/A	N/A
☐ W3e: Not used.	N/A	N/A
☐ W3f: Not used.	N/A	N/A
☐ W3g: Not used.	N/A	N/A
☐ W3h: Not used.	N/A	N/A

* See Appendix for additional information.

	TYPE	BY
X | OTHER		
☐ X01: Product Load Test*	Test	LOR
☐ X02: Non-HSB Installation Torque	Continuous	SI*
☐ X03: Not used.	N/A	N/A
☐ X04: Not used.	N/A	N/A
☐ X05: Not used.	N/A	N/A
☐ X06: Not used.	N/A	N/A
☐ X07: Not used.	N/A	N/A
☐ X08: Not used.	N/A	N/A
☐ X09: Not used.	N/A	N/A
☐ X10: Not used.	N/A	N/A

EXEMPTIONS

Those items identified on the DSA-approved construction documents with a note indicating they are not part of the DSA approval or those items checked below are exempt from test and special inspection requirements. The project inspector shall verify all construction complies with the approved construction documents.

- ☐ Soils: Eligible shallow foundation elements**.
- ☐ Soils: Eligible deep foundation elements - type 1**.
- ☐ Soils: Eligible deep foundation elements - type 2**.
- ☐ Concrete/Masonry: Eligible post-installed anchors**.
- ☐ Concrete: Batch plant inspection for items listed in and complying with CBC Section 1705A.3.3.2.
- ☐ Concrete: Epoxy shear dowels in nonstructural slab-on-grade per CBC Section 1910A.5.4, Exception #4.
- ☐ Concrete/Masonry: Reinforcing bar testing for items listed in and complying with CBC Section 1910A.2.
- ☐ Masonry: Freestanding site walls and retaining walls per DSA IR 21-1.

Concrete: Eligible precast elements**.

- ☐ Welding: Eligible fences and gates**.
- ☐ Welding: Eligible railing and ramps**.
- ☐ Welding: Eligible interior cold-formed steel framing**.
- ☐ Welding: Eligible equipment curbs**.
- ☐ Welding: Eligible components supporting MEP distribution systems**.
- ☐ Welding: Eligible mounts and recreational equipment**.
- ☐ Welding: Eligible nonstructural components**.

** See Appendix for eligibility requirements.

Project Name: **Lynwood High School** Application No.: **03-126002** Increment:

School District: **Lynwood Unified School District** File No.: **19-H31**

LIST OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Any items indicated on the approved construction documents with a note stating that the items are not part of the DSA approval are not considered in this form. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The exemption appendix at the end of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of nonstructural components, etc., per Title 24, Part 2, Chapter 17A.

Legend to TYPE and BY Columns:

Continuous - Indicates continuous special inspection is required.

Periodic - Indicates periodic special inspection is required.

Test - Indicates a test is required.

GE – Indicates special inspection shall be performed by a registered geotechnical engineer or his/her authorized representative, usually associated with the Laboratory of Record.

LOR – Indicates test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program (i.e., the Laboratory of Record for the project). See CAC Section 4-335.

PI - Indicates special inspection may be performed by a project inspector when specifically approved by DSA.

SI - Indicates special inspection shall be performed by an appropriately qualified/approved special inspector.

Required Verified Reports:

1. Structural Testing and Inspection: Form DSA 291
2. Shop Welding Inspection: Form DSA 291 or DSA 292

Verified reports are required on the following DSA forms:

DSA 291: Laboratory of Record Verified Report

DSA 292: Special Inspectors Employed Directly by the District Verified Report

DSA 293: Geotechnical Verified Report

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

Name of Design Professional in General Responsible Charge:

PETER SARKIS

Name of Structural Engineer of Record (when applicable):

Signature of Architect or Structural Engineer: **Date:**

05/06/2026

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

Project Name: **Lynwood High School**
School District: **Lynwood Unified School District**

Application No.: **03-126002** Increment:
File No.: **19-H31**

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Appendix: LIST OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

S/A1. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES	
Test or Special Inspection	**Code References and Notes**
S/A1a: Material Identification | Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements. • Material sizes, types and grades comply with requirements.	**Table 1705A.2.1 Item 3a–3c.** 2201A.2**;** AISI S100 Section A3.1 & A3.2, AISI S240 Section A3 & A5, AISI S220 Sections A4 & A6. *By special inspector or qualified technician when performed off-site.
S/A1b: Unidentified Material | Test unidentified materials	**2201A.2.**
S/A1c: Steel Fabrication | Verify and document steel fabrication per DSA- approved construction documents.	Not applicable to cold-formed steel light-frame construction, except for trusses (**1705A.2.5**).
S/A1d: Buckling Restrained Brace | Verify and document steel fabrication per DSA-approved construction documents.	Testing and special inspections in accordance with IR 22-4. For DSA accepted fabrication shops, BRB manufacturer's Certificate of Compliance in lieu of testing and special inspections. See IR 22-4.

S/A2. HIGH-STRENGTH BOLTS:	
Test or Special Inspection	**Code References and Notes**
S/A2a: Product Verification | Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	**Table 1705A.2.1 Items 1a & 1b, 2201A.2;** AISC 360 Section A3.3, J3.1, and N3.2; RCSC Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.
S/A2b: Bolts, Nuts, and Washers | Test high-strength bolts, nuts and washers.	**Table 1705A.2.1 Item 1c, 2216A.1**; RCSC Section 7.2; DSA IR 17-8.
S/A2c: Snug Tight | Bearing-type ("snug tight") connections.	**Table 1705A.2.1 Item 2a, 1705A.2.8, 2201 A.4**; AISC 360 J3.1, J3.2, M2.5 & N5.6; RCSC Section 9.1; DSA IR 17-9.
S/A2d: Pretensioned / Slip-Critical | Pretensioned and slip-critical connections.	**Table 1705A.2.1 Items 2b & 2c, 1705A.2.8, 2201A.4;** AISC 360 J3.1, J3.2, M2.5 & N5.6; RCSC Sections 9.2 & 9.3; DSA IR 17-9 *"Continuous" or "Periodic" depends on the tightening method used.

S/A3. WELDING:	
Test or Special Inspection	**Code References and Notes**
S/A3a: Weld Material | Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	**1705A.2.7, Table 1705A.2.1 Items 4 & 5**; AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3.
S/A3b: Certificate of Compliance | Verify weld filler material manufacturer's certificate of compliance.	DSA IR 17-3.
S/A3c: WPS and Qualifications | Verify WPS, welder qualifications and equipment.	DSA IR 17-3.

4) Drawings

LYNWOOD HIGH SCHOOL- HVAC REPLACEMENT
LYNWOOD UNIFIED SCHOOL DISTRICT

12124 BULLIS RD,
LYNWOOD, CA 90262

NON-UTILIZATION OF ASBESTOS MATERIAL

NO ASBESTOS OR ASBESTOS-CONTAINING PRODUCTS SHALL BE USED IN THIS CONSTRUCTION OR IN ANY TOOLS, DEVICES, CLOTHING OR EQUIPMENT USED TO AFFECT THIS CONSTRUCTION.

ASBESTOS AND OR ASBESTOS CONTAINING PRODUCTS SHALL BE DEFINED AS ALL ITEMS CONTAINING BUT NOT LIMITED TO CRYSTALLITE, CROCIDOLITE, AMOSITE, ANTHOPYLLITE, TERMOLITE AND ANTINOLITE.

ANY OR ALL MATERIAL CONTAINING GREATER THAN ONE TENTH OF ONE PERCENT(>.1 %) ASBESTOS SHALL BE DEFINED AS ASBESTOS CONTAINING MATERIAL.

ANY DISPUTES INVOLVING THE QUESTION OF WHETHER OR NOT MATERIAL INSTALLED WITH ASBESTOS-CONTAINING EQUIPMENT WILL BE SETTLED BY ELECTRON MICROSCOPY: THE COST OF ANY SUCH TEST SHALL BE PAID BY THE CONTRACTOR.

ALL WORK OR MATERIALS FOUND TO CONTAIN ASBESTOS OR WORK OR MATERIAL INSTALLED WITH ASBESTOS-CONTAINING EQUIPMENT WILL BE IMMEDIATELY REJECTED AND THIS WORK WILL BE REMOVED AT NO ADDITIONAL COST TO THE DISTRICT.

DECONTAMINATION AND REMOVAL

DECONTAMINATION AND REMOVAL OF WORK FOUND TO CONTAIN ASBESTOS OR WORK INSTALLED WITH ASBESTOS-CONTAINING EQUIPMENT SHALL BE DONE ONLY UNDER SUPERVISION OF A QUALIFIED CONSULTANT, KNOWLEDGEABLE IN THE FIELD OF ASBESTOS ABATEMENT AND ACCREDITED BY THE ENVIRONMENTAL PROTECTION AGENCY.

THE ASBESTOS REMOVAL CONTRACTOR SHALL BE AN EPA ACCREDITED CONTRACTOR QUALIFIED IN THE REMOVAL OF ASBESTOS AND SHALL BE CHOSEN AND APPROVED BY THE ASBESTOS CONSULTANT WHO SHALL HAVE SOLE DISCRETION AND FINAL DETERMINATION IN THIS MATTER.

THE ASBESTOS CONSULTANT SHALL BE CHOSEN AND APPROVED BY THE DISTRICT WHO SHALL HAVE SOLE DISCRETION AND FINAL DETERMINATION IN THIS MATTER.

THE WORK WILL NOT BE ACCEPTED UNTIL ASBESTOS CONTAMINATION IS REDUCED TO LEVELS DEEMED ACCEPTABLE BY THE ASBESTOS CONSULTANTS.

HOLD HARMLESS

INTERFACE OF WORK UNDER THIS CONTRACT WITH WORK CONTAINING ASBESTOS SHALL BE EXECUTED BY THE CONTRACTOR AT HIS RISK AND HIS DISCRETION WITH FULL KNOWLEDGE OF THE CURRENTLY ACCEPTED STANDARDS, HAZARDS RISKS, AND LIABILITIES ASSOCIATED WITH ASBESTOS WORK AND ASBESTOS CONTAINING PRODUCTS.

BY EXECUTION OF THIS CONTRACT THE CONTRACTOR ACKNOWLEDGES THE ABOVE AND AGREES TO HOLD ASSIGNS FOR ALL ASBESTOS LIABILITY WHICH MAY BE ASSOCIATED WITH THIS WORK AND AGREES TO INSTRUCT HIS EMPLOYEES WITH RESPECT TO THE ABOVE MENTIONED STANDARDS, HAZARDS, RISKS AND LIABILITIES.

THE CONTRACTOR SHALL, PRIOR TO COMMENCEMENT OF THIS WORK, PROVIDE A DULY SIGNED AND NOTARIZED AFFIDAVIT THAT HE HAS INSTRUCTED HIS EMPLOYEES WITH RESPECT TO THE ABOVE MENTIONED STANDARDS, HAZARDS, RISKS AND LIABILITIES AND THE CONTENTS AND REQUIREMENTS OF THIS PORTION OF THE CONTRACT DOCUMENTS.

HAZARD MATERIALS

IN THE EVENT THE CONTRACTOR ENCOUNTERS ON THE SITE MATERIALS REASONABLY BELIEVED TO BE ASBESTOS OR POLYCHLORINATED BIPHENYL (PCB) WHICH HAS NOT BEEN RENDERED HARMLESS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO THE DISTRICT AND ENGINEER IN WRITING.

THE WORK IN THE AFFECTED AREA SHALL NOT THEREAFTER BE RESUMED EXCEPT BY WRITTEN AGREEMENT OF THE DISTRICT AND CONTRACTOR IF IN FACT THE MATERIAL IS ASBESTOS OR POLYCHLORINATED BIPHENYL (PCB), OR WHEN IT HAS BEEN RENDERED HARMLESS, BY WRITTEN AGREEMENT OF THE DISTRICT AND CONTRACTOR, OR IN ACCORDANCE WITH FINAL DETERMINATION BY THE ENGINEER.

MATERIAL SAFETY DATA SHEETS (MSDS)

CONTRACTOR IS REQUIRED TO ENSURE THAT MATERIAL SAFETY DATA SHEETS ARE AVAILABLE IN A READILY ACCESSIBLE PLACE AT THE WORK SITE; FOR ANY MATERIAL REQUIRING A MATERIAL SAFETY DATA SHEET PER THE FEDERAL "HAZARD COMMUNICATION" STANDARD, OR EMPLOYEES RIGHT TO KNOW LAW.

THE CONTRACTOR IS ALSO REQUIRED TO ENSURE PROPERLY LABELING ANY SUBSTANCE BROUGHT ONTO THE JOB SITE, AND THAT ANY PERSON WORKING WITH THE MATERIAL, IS INFORMED OF THE HAZARDS OF THE SUBSTANCE AND FOLLOWS PROPER HANDLING AND PROTECTION PROCEDURES.

ASBESTOS STATEMENT

PARTIAL LIST OF APPLICABLE CODES

2025 BUILDING STANDARD ADMINISTRATIVE CODE, PART 1 TITLE 24 C.C.R.
2025 CALIFORNIA BUILDING CODE (CBC). PART 2, TITLE 24 C.C.R.
2025 CALIFORNIA ELECTRICAL CODE (CEC). PART 3, TITLE 24 C.C.R.
2025 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.
2025 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
2025 CALIFORNIA ENERGY CODE , PART 6, TITLE 24 C.C.R.
2025 CALIFORNIA FIRE CODE , PART 9, TITLE 24 C.C.R.
2025 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 C.C.R.
2025 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R.
2025 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 C.C.R.
TITLE 19 C.C.R. , PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS. AMERICAN WITH DISABILITY ACT.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13	AUTOMATIC SPRINKLER SYSTEMS	2025 EDITION
NFPA 14	STANDPIPE SYSTEMS (CA AMENDED)	2024 EDITION
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2024 EDITION
NFPA 17A	WET CHEMICAL SYSTEMS	2024 EDITION
NFPA 20	STATIONARY PUMPS	2025 EDITION
NFPA 24	PRIVATE FIRE MAINS (CA AMENDED)	2025 EDITION
NFPA 72	NATIONAL FIRE ALARM CODE (CA AMENDED)	2022 EDITION
(NOTE:	SEE UL STANDARD 1971 FOR "VISUAL DEVICES")	
NFPA 253	CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS	2023 EDITION
NFPA 2001	CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	2022 EDITION

REFERENCE CODE SECTION FOR NFPA STANDARDS-2025 CBC CHAPTER 35 AND 2025 CALIFORNIA FIRE CODE

APPLICABLE STANDARDS

1. DIMENSIONS ARE TYPICALLY TO STRUCTURAL GRID LINES, THE FACE OF CONCRETE AND THE FACE OF STUD, UNLESS NOTED OTHERWISE. DIMENSIONS AND OTHER INFORMATION INDICATED ON LARGER SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER DIMENSIONS AND OTHER INFORMATION INDICATED ON SMALLER SCALE DRAWINGS. IN NO CASE SHALL DIMENSIONS BE DETERMINED BY SCALING THE DRAWINGS, UNLESS DIRECTED BY THE ENGINEER.
2. OCCUPANTS OF THE EXISTING BUILDING SHALL BE SPARED INCONVENIENCE DUE TO THE CONTRACTOR'S WORK, DEBRIS, ETC. ENTRANCES AND CORRIDORS SHALL BE PROTECTED AND KEPT FREE OF CONSTRUCTION. SEE SPECIFICATIONS FOR THE CONSTRUCTION OF SEPARATION PARTITION(S).
3. DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL LIKE CASES. WHERE NO SPECIFIC DETAIL IS SHOWN, THE CONSTRUCTION SHALL BE IDENTICAL OR SIMILAR TO THAT DETAILED FOR SIMILAR CASES OF CONSTRUCTION.
4. COORDINATE THE REQUIREMENTS OF ALL DISCIPLINES HEREIN, AND THE REQUIREMENTS OF THEIR SPECIFICATIONS, IN ORDER THAT ALL ITEMS RELATING TO EACH OTHER, BUT INDICATED BY DIFFERENT SOURCES OR DISCIPLINES, COORDINATE, FIT AND WORK PROPERLY.
5. PROVIDE THE LATEST EDITION OF THE GUIDELINES FOR SEISMIC RESTRAINTS AS DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
6. ENACT ALL MEASURES REQUIRED TO PROTECT AND SAFEGUARD ALL WORK AND MATERIALS FROM DAMAGE BY ANY MEANS. ALL AREAS ARE TO BE LEFT CLEAN AND IN GOOD REPAIR. REPLACE OR REPAIR WORK, MATERIALS AND FINISHES DAMAGED DURING THE EXECUTION OF THIS CONTRACT TO EQUAL OR BETTER CONDITION.
7. RUN-OFF FROM PETROLEUM PRODUCTS, LIME AND MORTAR, SOIL STERILANTS, AND THE WASHING OF EQUIPMENT USED TO APPLY THESE MATERIALS, IS PROHIBITED WITHIN PLANTED AREAS.
8. LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING, PIPING, OR CONDUITS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREON OR NOT AND TO PROTECT THEM FROM DAMAGE. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DISTRICT PROJECT MANAGER OF ANY UNIDENTIFIED CONDITIONS AS DISCOVERED. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE PROSECUTION OF THIS WORK.
9. NONRESIDENTIAL ENERGY STANDARDS COMPLIANCE STATEMENT (TITLE 24, PART 6):

   THE DESIGN INDICATED HEREIN COMPLIES WITH THE REQUIREMENTS OF THE ENERGY CONSERVATION STANDARDS OF TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS. THE PROPOSED BUILDING(S) WILL BE IN COMPLIANCE WITH THE ENERGY CONSERVATION STANDARDS PROVIDED IN (THEY) IS (ARE) BUILT ACCORDING TO THESE DRAWINGS AND SPECIFICATIONS AND PROVIDED ANY FUTURE IMPROVEMENTS ARE COMPLETED ACCORDING TO THE REQUIREMENTS OF TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS. THESE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED TO INCLUDE ALL SIGNIFICANT ENERGY CONSERVATION FEATURES REQUIRED FOR COMPLIANCE WITH THE STANDARDS. BUILDING AREAS THAT ARE UNCONDITIONED AND/OR NOT SUBJECT TO THE STANDARDS ARE INDICATED ON THE PLANS.
10. THE DRAWINGS INDICATE THE END RESULT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE JOB SITE PRIOR TO BID SUBMITTAL TO DETERMINE ANY PROBLEMS HE WILL HAVE IN PERFORMING THE WORK. THE BID SHALL INCLUDE THE COST OF THE RESOLUTION OF ALL CHALLENGES.
11. ANY CONDITIONS NOT COVERED BY THESE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER ON RECORD BY THE CONTRACTOR AND THE DISTRICT PRIOR TO BIDDING.
12. CONTRACTOR SHALL PROVIDE THE ENGINEER AND DISTRICT WITH A CONSTRUCTION SCHEDULE (WHICH SHALL BE APPROVED IN WRITING) PRIOR TO START OF CONSTRUCTION. ALL ASPECTS OF CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO TRENCHING, TEMPORARY WALK AND DRIVE WAYS, UNIT SYSTEM DISABLING, PIPE REMOVAL/INSTALLATION, UNIT START-UP, CONTROLS INSTALLATION, PHASING, ETC. SHALL BE CONSIDERED.
13. THESE PLANS WERE PREPARED IN A MANNER CONSISTENT WITH EXISTING PROFESSIONAL STANDARDS AND WITH THE UNDERSTANDING THAT THESE DRAWINGS WOULD BE USED SOLELY BY QUALIFIED AND EXPERIENCED CONTRACTORS AND/OR DESIGN PROFESSIONALS FOR USE IN THE CON- STRUCTION OF THIS SPECIFIC PROJECT ONLY. THE DETAILS INDICATED ON THESE PLANS REPRESENT GENERAL TYPICAL DETAILS REQUIRED FOR COMMUNICATING THIS PROJECT'S DESIGN INTENT TO SUCH AN MAY NOT INCLUDE ALL THE DETAILS NECESSARY FOR THE FINAL COMPLETION OF THIS PROJECT.
14. FOR NEW WORK ABOVE CEILING, CAREFULLY REMOVE CEILING TILE AND SAVE. CUT AROUND GYPSUM BOARD OR PLASTER CEILING, PREPARE SURFACE TO RECEIVE NEW WORK. AFTER WORK IS DONE, REPAIR, RE- PLASTER OR INSTALL NEW GYPSUM WALLBOARD TO MATCH ADJACENT SURFACE AND REINSTALL ACOUSTICAL TILE. IF TILE IS DAMAGED, REPLACE WITH NEW TILE TO MATCH EXISTING.
15. OCCUPANTS OF THE EXISTING BUILDING SHALL BE SPARED INCONVENIENCE DUE TO THE CONTRACTOR'S WORK, DEBRIS, ETC. ENTRANCES AND CORR- IDORS SHALL BE PROTECTED AND KEPT FREE OF CONSTRUCTION. THE DISTRICT SHALL BE NOTIFIED IN ADVANCE OF TIMES OF DELIVERY OF EQUIPMENT AND/OR MATERIALS.
16. WHERE PROJECT DRAWINGS AND SPECIFICATIONS LIST CONFLICTING REQUIREMENTS, MOST STRINGENT REQUIREMENTS SHALL APPLY.
17. CONTRACTOR MUST COMPLY WITH APPROVED SCHEDULE. ALL FEES REQUIRED FOR THE EXECUTION AND COMPLETION OF WORK INDICATED HEREIN SHALL BE INCLUDED IN THE CONTRACTORS BID.
18. ANY EXCESS SOIL MATERIALS RESULTING FROM THE EXECUTION OF THIS CONTRACT SHALL BE DELIVERED OFF-SITE AT CONTRACTOR'S EXPENSE.
19. ALL WORK SHALL BE DONE DURING REGULAR WORK HOURS, MONDAY THROUGH FRIDAY. EXCEPTION: CONTRACTOR SHALL INCLUDE IN HIS BID FEES REQUIRED TO COVER THE FOLLOWING SPECIAL WORKING CONDITIONS:

    -ALL OTHER WORK, INCLUDING BUT NOT LIMITED TO CONTROLS WORK, DUCTWORK, PIPING, ETC. SHALL BE DONE MONDAY THROUGH FRIDAY DURING THE HOURS OF 8:00 A.M. TO 5:00 P.M. ANY DEVIATIONS FROM THE SAID HOURS MUST BE APPROVED BY THE DISTRICT PRIOR TO EXECUTING SUCH WORK. (THIS NOTE APPLIES ONLY TO WORK DONE WITHIN THE BUILDING. ALL OTHER WORK MAY DONE DURING REGULAR WORK HOURS FROM MONDAY THROUGH FRIDAY - SEE NOTES BELOW.) FINAL SCHEDULE SHALL BE PER DISTRICT.
    - ALL DUCT CLEANING MUST BE DONE MONDAY THROUGH FRIDAY DURING THE HOURS OF 8:00 A.M. TO 5:00 P.M. ANY DEVIATIONS FROM THE SAID HOURS MUST BE APPROVED BY THE DISTRICT PRIOR TO EXECUTING SUCH WORK. FINAL SCHEDULE SHALL BE PER DISTRICT.
    - ALL AIR AND WATER BALANCING MUST BE DONE MONDAY THROUGH FRIDAY DURING THE HOURS OF 8:00 A.M. TO 5:00 P.M. ANY DEVIATIONS FROM THE SAID HOURS MUST BE APPROVED BY THE DISTRICT PRIOR TO EXECUTING SUCH WORK.
20. WHERE REMOVAL OF CONCRETE WALKS, MOW STRIPS, CURBS AND GUTTERS IS REQUIRED TO INSTALL UNDERGROUND UTILITIES, REMOVE THE CONCRETE WORK TO THE NEAREST EXISTING EXPANSION OR CONTROL JOINT (SAWCUT IF REQUIRED). MOWSTRIPS, CURBS AND GUTTERS MAY BE REMOVED IN MINIMUM LENGTHS OF 6 FEET IF THE DISTANCE BETWEEN EXISTING JOINTS IS 12 FEET OR MORE. REPLACE REMOVED WORK WITH REINFORCED CONCRETE TO MATCH ADJACENT EXISTING WORK IN PROFILE, JOINT LAYOUT AND FINISH.
21. COORDINATE THE REMOVAL, RELOCATION OR MODIFICATION OF EXISTING IRRIGATION LINES WITH THE PROJECT MANAGER PRIOR TO ANY TRENCHING, CLEARING AND GRUBBING, OR OTHER SITE EXCAVATIONS REQUIRED FOR EXECUTION OF WORK.
22. CONTRACTOR SHALL MAINTAIN PLANTING WITHIN THE JOB SITE FENCE ENCLOSURE DURING DEMOLITION AND CONSTRUCTION PHASES. EXISTING IRRIGATION SYSTEMS SHALL EITHER REMAIN OPERATIONAL FOR CONTRACTOR'S USE OR CONTRACTOR SHALL HAND-WATER EXISTING PLANT MATERIALS AT LEAST ONCE A WEEK. TURN SHALL BE MOWED AT LEAST ONCE EVERY TWO WEEKS.
23. WHERE THE REMOVAL OF PLANT LIFE IS REQUIRED FOR THE PURPOSE OF PERFORMING WORK INDICATED HEREIN, CONTRACTOR SHALL RESPONSIBLE FOR REMOVING AND REPLACING PLANTS. CONTRACTOR MAY TEMPORARILY TRANSPLANT PLANTING AND RE-PLANT UPON COMPLETION OF WORK IF SO DESIRED. 'NEW' PLANTS SHALL BE THE SAME TYPE AND SIMILAR IN SIZE AS REMOVED PLANT(S).
24. WHEN ITEMS ARE REMOVED FROM AND/OR INSTALLED ANYWHERE ON SITE, ALL SURFACES SHALL BE FINISHED AS REQUIRED TO GIVE A UNIFORM SURFACE. MATCH EXISTING MATERIALS, COLOR AND TEXTURE.
25. CONTRACTOR SHALL INCLUDE IN HIS BID ALL PREMIUM TIME TO WHICH HE MAY BE SUBJECTED FOR PERFORMING WORK IN SUCH PROCEDURE AND AT SUCH TIME AS MAY BE NECESSARY TO CAUSE THE LEAST INTERFERENCE WITH THE FUNCTION OF THIS FACILITY. ALL WORK MUST BE COORDINATED WITH THE DISTRICT PROJECT MANAGER PRIOR TO START OF WORK AT ANY PARTICULAR LOCATION ON SITE. 72-HOUR ADVANCED NOTICE MUST BE GIVEN FOR ONSITE WORK LOCATION CHANGE AND/OR COMMENCEMENT. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
26. FURNISH AND INSTALL TEMPORARY HEATING AND/OR COOLING SYSTEMS AS REQUIRED BY THE DISTRICT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SETUP/TAKE-DOWN AND OPERATION LOGISTICS FOR AS LONG AS SAID SYSTEM IS REQUIRED. CONTRACTOR SHALL OBTAIN IN WRITING, APPROVAL FOR ANY TEMPORARY HVAC SYSTEM TO BE INCLUDED AS A MEANS FOR ABIDING BY THE GENERAL PROVISIONS SET FORTH BY THE DISTRICT.
27. DEMOLITION WORK SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. ALL CONDITIONS MAY NOT BE SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL ITEMS THAT WILL INTERFERE WITH NEW CONSTRUCTION. STRUCTURAL ITEMS THAT ARE TO BE REMOVED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE DISTRICT PROJECT MANAGER PRIOR TO REMOVAL.
28. THE EXISTENCE OR LOCATION OF UNDERGROUND PIPING SHOWN ON THESE PLANS WERE OBTAINED BY SEARCH OF AVAILABLE RECORDS AND CORRESPONDENCE WITH DISTRICT EMPLOYEES. THE CONTRACTOR SHALL ASCERTAIN THE TRUE VERTICAL AND HORIZONTAL LOCATION AND SIZE OF ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR DAMAGE TO ANY PUBLIC OR PRIVATE UTILITIES, SHOWN OR NOT SHOWN HEREON.
29. WORKERS ARE ONLY ALLOWED IN AREAS THAT ARE APPROPRIATE TO THE REQUIRED WORK AND SHALL MAKE EVERY EFFORT NOT TO DISTURB THE FUNCTION OF THE FACILITY OR IT'S OCCUPANTS. WORK AREAS SHALL BE PRE-DETERMINED AND COORDINATED WITH THE DISTRICT PROJECT MANAGER. CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM PROBATION OFFICIALS PRIOR TO STARTING WORK IN ANY PARTICULAR AREA - NO EXCEPTIONS.
30. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT.
31. 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).
32. TITLE 24, PARTS 1-5 AND 9 MUST BE KEPT ON SITE DURING CONSTRUCTION.
33. SUBMIT RFI'S TO DESIGN TEAM IN CASE OF INCONSISTENCIES BETWEEN APPROVED DRAWINGS AND APPROVED SPECIFICATIONS IN THE DESCRIPTIONS OF WORK TO BE DONE, EQUIPMENT TO BE PROVIDED OR MATERIAL TO BE USED. IT SHALL BE THAT THE MORE STRINGENT, THE MORE RESTRICTIVE, THE HIGHER QUALITY, AND THE GREATER QUANTITY OF WORK SHALL APPLY. SUBMIT REVISED DRAWINGS OR SPECIFICATIONS AS RESULT OF SUCH RFI'S TO DSA VIA CCD'S IF REQUIRED BY IR A-6.
34. ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING MATERIALS INSTALLATION TO COMPLY WITH APPLICABLE CODES, STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS.
35. THE PROJECT INSPECTION (PI) SHALL WITNESS AND VERIFY GROUNDING.

GENERAL REQUIREMENTS

36. ALL WORK SHALL CONFORM TO 2025 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
37. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGED DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
38. A "DSA CERTIFIED" CLASS 3 PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.
39. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
40. 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, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, 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, CCR)
41. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
42. AN INSPECTOR WHO IS SPECIALLY QUALIFIED IN MECHANICAL AND ELECTRICAL WORK WILL BE REQUIRED FOR THIS PROJECT.
43. COMPLY WITH CFC CHAPTER 33 AND CBC CHAPTER 33.
44. ENERGY COMPLIANCE REVIEW AND APPROVAL IS REQUIRED PRIOR TO DSA APPROVAL OF THE CONSTRUCTION DOCUMENTS.
45. CONTRACTOR OPERATIONS SHALL NOT BLOCK, HINDER, IMPEDE OR OTHERWISE INHIBIT THE USE OF REQUIRED EXITS AT ANY TIME. CONTRACTOR SHALL MAINTAIN UNOBSTRUCTED ACCESS TO FIRE EXTINGUISHERS, FIRE HYDRANTS, TEMPORARY FIRE PROTECTION FACILITIES, STAIRWAYS AND OTHER ACCESS ROUTES FOR FIRE-FIGHTING EQUIPMENT AND OR PERSONNEL.

ACCEPTANCE TESTING

46. 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.
47. LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).
48. MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.
49. ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OF RECORD OR THE OWNER'S AGENT.
50. 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.
51. 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.
52. PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

PROJECT SCOPE:

BUILDING A
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (9) EXISTING HEAT PUMP PACKAGE UNITS SERVING THE ADMINISTRATION BUILDING, TEACHERS LOUNGE AND CLASSROOMS AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.
   - 1.3. EXISTING ELECTRICAL ROOM IS NOT IN SCOPE OF WORK AND IS SERVED BY A SEPARATE SPLIT SYSTEM THAT IS NOT A PART OF THIS PROJECT.

BUILDING B
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (6) EXISTING HEAT PUMP PACKAGE UNITS SERVING THE CLASSROOMS, AND ADULT EDUCATION ROOMS AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.
   - 1.3. HOME ECONOMIC ROOM IS NOT PART OF SCOPE.

BUILDING C (ONLY ELECTRICAL SCOPE)
1. THIS PROJECT CONSISTS OF PROVIDING A NEW BRANCH CIRCUIT PANEL, CONDUITS, CONDUCTORS, FITTINGS, FUSES AND DISCONNECTS FOR EXISTING HVAC UNITS ON ROOF.

BUILDING F (2-STORY)
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (5) EXISTING HEAT PUMP PACKAGE UNITS SERVING CLASSROOMS, VOCAL MUSIC, INSTRUMENTAL MUSIC AND MUSIC ROOM AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.
   - 1.3. TOILET ROOMS AND HEATER ROOMS ARE NOT PART OF SCOPE.

BUILDING G
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (3) EXISTING HEAT PUMP PACKAGE UNITS SERVING THE CLASSROOM, AND STORAGE ROOM AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.

BUILDING N
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (7) EXISTING HEAT PUMP PACKAGE UNITS SERVING THE STORAGE, WORKROOM AND CLASSROOMS AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.

BUILDING S
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (3) EXISTING HEAT PUMP PACKAGE UNITS SERVING THE GIRLS LOCKER ROOM, SHOWER, TOILET, FIRST AID, OFFICE AND EQUIPMENT STORAGE AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.

BUILDING T(GYM)
1. THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF EXISTING HVAC UNITS AND ASSOCIATED MECHANICAL, ELECTRICAL, STRUCTURAL, AND ROOFING WORK NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
   - 1.1. REMOVE (11) EXISTING HEAT PUMP PACKAGE UNITS SERVING THE GYMNASIUM, BOYS LOCKER ROOM, SHOWER, OFFICE, STORAGE, EQUIPMENT STORAGE, AND COACHES ROOM AND REPLACE LIKE FOR LIKE AS INDICATED ON PLANS.
   - 1.2. REUSE EXISTING AIR DISTRIBUTION AND PROVIDING NEW CONNECTIONS AS NECESSARY TO CONNECT TO EXISTING.

GENERAL NOTES

GENERAL
1. T-1 TITLE SHEET
2. T-2 SITE PLAN

STRUCTURAL
3. S001 GENERAL NOTES
4. S002 SPECIAL INSPECTION
5. S111 BLDG A ROOF FRAMING PLAN
6. S121 BLDG B ROOF FRAMING PLAN
7. S131 BLDG F ROOF FRAMING PLAN
8. S141 BLDG G ROOF FRAMING PLAN
9. S151 BLDG N ROOF FRAMING PLAN
10. S161 BLDG S ROOF FRAMING PLAN
11. S171 BLDG T ROOF FRAMING PLAN
12. S601 FRAMING DETAILS
13. S602 FRAMING DETAILS

MECHANICAL
14. M-0.1 MECHANICAL GENERAL NOTES & LEGEND
15. M-0.2 MECHANICAL SCHEDULES
16. M-0.3 MECHANICAL SCHEDULES
17. M-0.4 MECHANICAL SCHEDULES
18. MD-1.1 MECHANICAL DEMO PLAN - BLDG A
19. MD-1.2 MECHANICAL DEMO PLAN - BLDG B
20. MD-1.3 MECHANICAL DEMO FLOOR PLAN - BLDG F
21. MD-1.3.1 MECHANICAL DEMO ROOF PLAN - BLDG F
22. MD-1.4 MECHANICAL DEMO PLAN - BLDG G
23. MD-1.5 MECHANICAL DEMO PLAN - BLDG N
24. MD-1.6 MECHANICAL DEMO PLAN - BLDG S
25. MD-1.7 MECHANICAL DEMO FLOOR PLAN - BLDG T
26. MD-1.7.1 MECHANICAL DEMO ROOF PLAN - BLDG T
27. M-1.1 MECHANICAL REMODEL PLAN - BLDG A
28. M-1.2 MECHANICAL REMODEL PLAN - BLDG B
29. M-1.3 MECHANICAL REMODEL FLOOR PLANS - BLDG F
30. M-1.3.1 MECHANICAL REMODEL ROOF PLAN - BLDG F
31. M-1.4 MECHANICAL REMODEL PLAN - BLDG G
32. M-1.5 MECHANICAL REMODEL PLAN - BLDG N
33. M-1.6 MECHANICAL REMODEL PLAN - BLDG S
34. M-1.7 MECHANICAL REMODEL FLOOR PLAN - BLDG T
35. M-1.7.1 MECHANICAL REMODEL ROOF PLAN - BLDG T
36. M-4.1 MECHANICAL DETAILS
37. M-4.2 MECHANICAL DETAILS
37. M-5.1 MECHANICAL CONTROLS
38. M-6.1 MECHANICAL TITLE 24 COMPLIANCE
39. M-6.2 MECHANICAL TITLE 24 COMPLIANCE
40. M-6.3 MECHANICAL TITLE 24 COMPLIANCE
41. M-6.4 MECHANICAL TITLE 24 COMPLIANCE
42. M-6.5 MECHANICAL TITLE 24 COMPLIANCE
43. M-6.6 MECHANICAL TITLE 24 COMPLIANCE
44. M-6.7 MECHANICAL TITLE 24 COMPLIANCE
45. M-6.8 MECHANICAL TITLE 24 COMPLIANCE
46. M-6.9 MECHANICAL TITLE 24 COMPLIANCE
47. M-6.10 MECHANICAL TITLE 24 COMPLIANCE
48. M-6.11 MECHANICAL TITLE 24 COMPLIANCE
49. M-6.12 MECHANICAL TITLE 24 COMPLIANCE
50. M-6.13 MECHANICAL TITLE 24 COMPLIANCE
51. M-6.14 MECHANICAL TITLE 24 COMPLIANCE
52. M-6.15 MECHANICAL TITLE 24 COMPLIANCE
53. M-6.16 MECHANICAL TITLE 24 COMPLIANCE

ELECTRICAL
54. E-0.1 GENERAL NOTES & SYMBOL LIST
55. E-0.2 DEMOLITION SINGLE LINE DIAGRAM
56. E-0.3 DEMOLITION SINGLE LINE DIAGRAM
57. E-0.4 REMODEL SINGLE LINE DIAGRAM
58. E-0.5 REMODEL SINGLE LINE DIAGRAM
59. E-0.6 PANEL SCHEDULES
60. E-0.7 ELECTRICAL DETAILS
61. E-1.0 POWER SITE PLAN
62. ED-1.1 BUILDING A DEMOLITION PLANS
63. ED-1.2 BUILDING B DEMOLITION PLANS
64. ED-1.3 BUILDING F DEMOLITION FLOOR PLANS
65. ED-1.3.1 BUILDING F DEMOLITION ROOF PLAN
66. ED-1.4 BUILDING G DEMOLITION PLANS
67. ED-1.5 BUILDING N DEMOLITION PLANS
68. ED-1.6 BUILDING S DEMOLITION PLANS
69. ED-1.7 BUILDING T DEMOLITION PLAN
70. ED-1.7.1 BUILDING T DEMOLITION ROOF PLAN
71. E-1.1 BUILDING A REMODEL PLANS
72. E-1.2 BUILDING B REMODEL PLANS
73. E-1.3 BUILDING F REMODEL FLOOR PLANS
74. E-1.3.1 BUILDING F REMODEL ROOF PLAN
75. E-1.4 BUILDING G REMODEL PLANS
76. E-1.5 BUILDING N REMODEL PLANS
77. E-1.6 BUILDING S REMODEL PLANS
78. E-1.7 BUILDING T REMODEL PLAN
79. E-1.7.1 BUILDING T REMODEL ROOF PLAN

PLUMBING
80. P-0.1 PLUMBING GENERAL NOTES & LEGEND
81. PD-1.1 PLUMBING DEMO PLAN - BLDG A
82. PD-1.2 PLUMBING DEMO PLAN - BLDG B
83. PD-1.3 PLUMBING DEMO FLOOR PLAN - BLDG F
84. PD-1.3.1 PLUMBING DEMO ROOF PLAN - BLDG F
85. PD-1.4 PLUMBING DEMO PLAN - BLDG G
86. PD-1.5 PLUMBING DEMO PLAN - BLDG N
87. PD-1.6 PLUMBING DEMO PLAN - BLDG S
88. PD-1.7 PLUMBING DEMO FLOOR PLAN - BLDG T
89. PD-1.7.1 PLUMBING DEMO ROOF PLAN - BLDG T
90. P-1.1 PLUMBING REMODEL PLAN - BLDG A
91. P-1.2 PLUMBING REMODEL PLAN - BLDG B
92. P-1.3 PLUMBING REMODEL FLOOR PLANS - BLDG F
93. P-1.3.1 PLUMBING REMODEL ROOF PLAN - BLDG F
94. P-1.4 PLUMBING REMODEL PLAN - BLDG G
95. P-1.5 PLUMBING REMODEL PLAN - BLDG N
96. P-1.6 PLUMBING REMODEL PLAN - BLDG S
97. P-1.7 PLUMBING REMODEL FLOOR PLAN - BLDG T
98. P-1.7.1 PLUMBING REMODEL ROOF PLAN - BLDG T
99. P-4.1 PLUMBING DETAILS

SHEET INDEX

MECHANICAL & PLUMBING (PRIME)
OPTIMUM ENERGY DESIGN
5200 E. LA PALMA
ANAHEIM, CALIFORNIA 92807
(714) 693-2277
CONTACT: ABBY BANERJEE, P.E., PRINCIPAL

STRUCTURAL (CONSULTANT)
PETRA STRUCTURAL ENGINEERS, INC
17981 SkyPark Circle, Suite 0
IRVINE, CA 92614
(949) 404-3351
CONTACT: Peter Sarkis S.E.

OWNER
LYNWOOD UNIFIED SCHOOL DISTRICT
11321 BULLIS ROAD,
LYNWOOD, CA , 90262
(310) 886-1601
CONTACT: ERIC MORALES

ELECTRICAL (CONSULTANT)
OPTIMUM ENERGY DESIGN
5200 E. LA PALMA
ANAHEIM, CALIFORNIA 92807
(714) 693-2277
CONTACT: ROLANDO E. SOTELO

PROJECT CONTACT INFO

I FIND THAT: ☒ ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET
☐ THIS DRAWING OR PAGE

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:
1) DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
2) COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.
THE 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. (TITLE 24, PART 1, SECTION 4-316 [B])

☒ IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN INTENT, AND
☒ HAVE/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS.

03/02/2024
SIGNATURE — DATE
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE

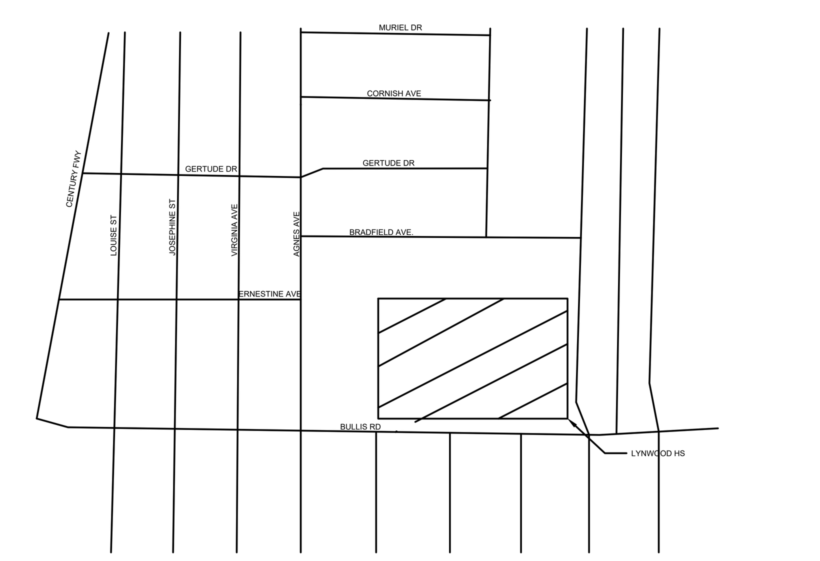
ABBY BANERJEE
PRINT NAME
M29253 — 06/30/2027
LICENSE NUMBER — EXPIRATION DATE

☐ IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN INTENT, AND
☐ HAVE/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS.

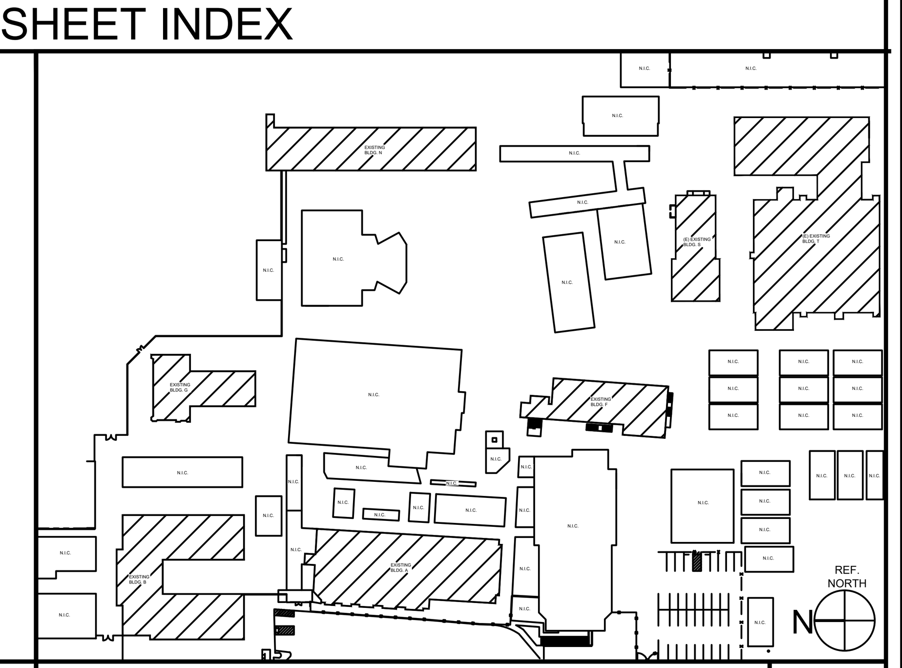
SIGNATURE — DATE
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE

PRINT NAME
LICENSE NUMBER — EXPIRATION DATE

DSA IR A-18



VICINITY MAP



KEY PLAN

NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

oed optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
PETER SARKIS
No. 5038
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

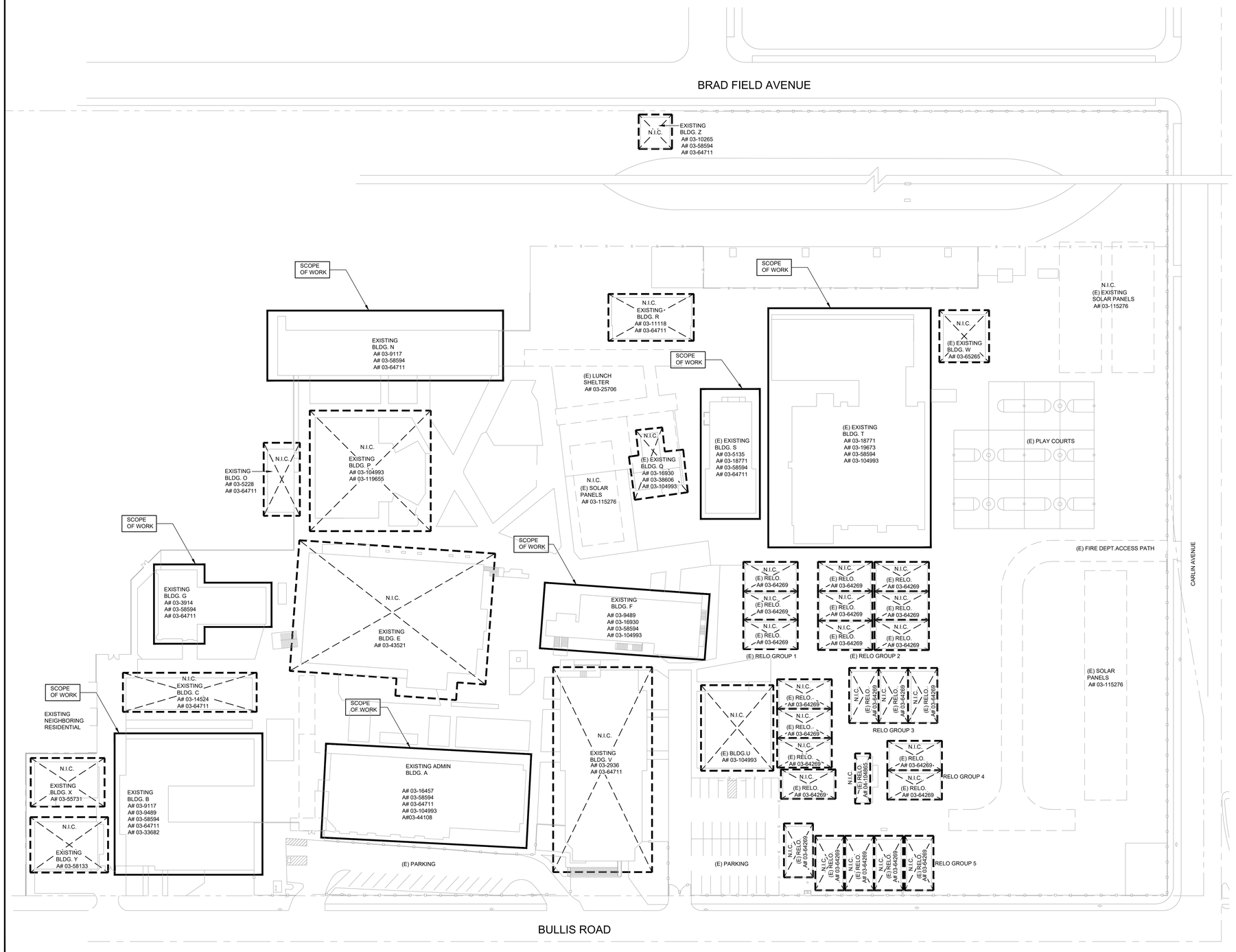
STAMP

SHEET DESCRIPTION:
TITLE SHEET

SHEET NO:
T-1

BLDG DATA

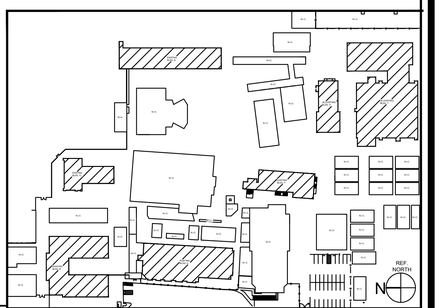
BUILDING	OCCUPANCY CONSTRUCTION TYPE	BASIC ALLOWABLE S.F.	ACTUAL S.F.
A	B / VN	8,000	10,260
	E-1 / VN	9,100	8,151
B	B / VN	8,000	599
	E-1 / VN	9,100	9,200
G	E-1 / VN	9,100	4,992
F	E-1 / V-1	15,700	4,737/ 4,781
N	E-1 / V-1	9,100	6,412
S	E-1 / VN	9,100	5,482
T	A2.1 / V-1	10,500	13,380
	E-1 / V-1	15,700	9,368
Z	E-1 / VN	8,000	828



MECHANICAL SITE PLAN

1" = 40'-0"

1



KEY PLAN

NOT TO SCALE

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optimum energy design
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5200 E. La Palma Ave
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STAMP

REGISTERED PROFESSIONAL ENGINEER
PETER SARKISIAN
No. 5831
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL

12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:

SITE PLAN

SHEET NO:

T-2

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:26 PM

ABBREVIATIONS

ABBREVIATIONS

#	POUNDS; NUMBER
&	AND
<	LESS THAN
>	GREATER THAN
@	AT
°	DEGREES
±	PLUS OR MINUS
≤	LESS THAN OR EQUAL TO
≥	GREATER THAN OR EQUAL TO
A	AREA
AB	ANCHOR BOLT
ABV	ABOVE
ADD/ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT/ADJUSTABLE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
APPVD	APPROVED
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL; ARCHITECT
AR	ANCHOR ROD
BAL	BALANCE
BEL	BELOW
BC	BOTTOM CHORD
BD	BOARD
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BNDRY	BOUNDARY
B/BOT/BOTT	BOTTOM
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BP	BASE PLATE
BRB	BUCKLING-RESTRAINED BRACE
BRBF	BUCKLING-RESTRAINED BRACED FRAME
BRCG	BRACING
BRDG	BRIDGING
BRG	BEARING
BS	BOTH SIDES
BSMT	BASEMENT
BTW	BETWEEN
BYND	BEYOND
C	CAMBER
CA	COLUMN ABOVE
CANT	CANTILEVER
CB	COLUMN BELOW
CBC	CALIFORNIA BUILDING CODE
CBF	CONCENTRICALLY BRACED FRAME
CC	CENTER TO CENTER
CCR	CALIFORNIA CODE OF REGULATIONS
CF	CUBIC FEET
CG	CENTER OF GRAVITY
CHKD	CHECKERED
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION; CONNECT
CONST	CONSTRUCTION
CONT	CONTINUE; CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE; COORDINATES
CP	COMPLETE PENETRATION
CTR	CENTER
CTRL JT	CONTROL JOINT
CVN	CHARPY V-NOTCH
CY	CUBIC YARD
d	PENNY (NAIL OR db)
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBLR	DOUBLER
DEPT	DEPARTMENT
DET	DETAIL
DEG	DEGREE
DEGF	DEGREE FAHRENHEIT
DEPR	DEPRESS; DEPRESSED; DEPRESSION
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DWG	DRAWING
DWL	DOWEL
(E)	EXISTING
E	EAST
EA	EACH
EBF	ECCENTRICALLY BRACED FRAME
EF	EACH FACE
EFF	EFFECTIVE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMB	EMBEDDED; EMBEDMENT
EN	EDGE NAIL
ENGR	ENGINEER
EOR	ENGINEER OF RECORD
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ES	EACH SIDE
ETC	ET CETERA
EW	EACH WAY
EXC	EXCAVATE
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	FAHRENHEIT
FAB	FABRICATE; FABRICATION; FABRICATOR
Fb	ALLOWABLE BENDING STRESS
F'c	CONCRETE COMPRESSIVE STRENGTH
FCAW	FLUX CORED ARC WELDING
FD	FLOOR DRAIN
FDN/FOUND	FOUNDATION
FF	FINISH FLOOR; FAR FACE
FIN	FINISH
FJ	FLOOR JOIST
FLG	FLANGE
FLR	FLOOR
FN	FIELD NAIL
F'm	MASONRY COMPRESSIVE STRENGTH
FO	FACE OF
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOS	FACE OF STUD
FOW	FACE OF WALL
FP	FIREPROOF; FULL PENETRATION
FRMG	FRAMING
FS	FULL SIZE; FAR SIDE
FT	FOOT; FEET
FTG	FOOTING
FUT	FUTURE
Fy	YIELD STRENGTH
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GLB	GLUED-LAMINATED BEAM
GMAW	GAS METAL ARC WELDING
GR	GRADE
GRTG	GRATING
HD	HOLDOWN
HDR	HEADER
HGR	HANGER
HK	HOOK
H/HORIZ	HORIZONTAL
HR	HARD ROCK; HANDRAIL
HS	HIGH STRENGTH
HT	HEIGHT
I	MOMENT OF INERTIA
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IN	INCH
INCL	INCLUDE; INCLUDING
INFO	INFORMATION
INSP	INSPECTION; INSPECTOR
INT	INTERIOR
INV	INVERT; INVERTED
JST	JOIST
JT	JOINT
K/KIP	1,000 POUNDS
KO	KNOCK-OUT
KP	KING POST
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LAB	LABORATORY
LBS	POUNDS
LDGR	LEDGER
LF	LINEAR FOOT
LG	LONG
LIN	LINEAL; LINEAR
LL	LIVE LOAD
LLBB	LONG LEGS BACK-TO-BACK
LLH	LONG LEG HORIZONTAL
LNDG	LANDING
LNTL	LINTEL
LOC	LOCATION
LONGIT	LONGITUDINAL
LSH	LONG SLOTTED HOLES
LTWT	LIGHTWEIGHT
LVL	LEVEL; LAMINATED VENEER LUMBER
LWC	LIGHTWEIGHT CONCRETE

ABBREVIATIONS CONT:

MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MDF	MEDIUM DENSITY FIREBOARD
MECH	MECHANICAL
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MOV	MOVABLE
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
MULTI	MULTIPLE
MWFRS	MAIN WIND-FORCE RESISTING SYSTEM
(N)	NEW
N	NORTH
NAT	NATURAL
NDT	NON-DESTRUCTIVE TESTING
NF	NEAR FACE
NIC	NOT IN CONTRACT
NIP	NOT IN PERMIT
NLG	NAILING
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
o/	OVER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
OWJ	OPEN WEB JOIST
PAR	PARALLEL
PC	PRECAST; PIECE; PILECAP
PCF	POUNDS PER CUBIC FOOT
PCI	POUNDS PER CUBIC INCH
PAF	POWDER ACTUATED FASTENER
PDF	POWDER DRIVEN FASTENERS
PLF	POUNDS PER LINEAR FOOT
PE	PROFESSIONAL ENGINEER
PERP	PERPENDICULAR
PI	PLYWOOD INDEX
PJ	POUR JOINT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE; PROPERTY LINE
PLAT	PLATFORM
PLY	PLYWOOD
PLC	PLACE
PLBG	PLUMBING
PLMB	PLUMBING
PLWD	PLYWOOD
PNL	PANEL
PP	PARTIAL PENETRATION
PQR	PROCEDURE QUALIFICATION RECORD
PREFAB	PREFABRICATED
PRKG	PARKING
PROJ	PROJECT
PROP	PROPERTY
PS	PRESTRESS; PRESTRESSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POST TENSION; POST TENSIONED
PUN	PUNCHED
PVMT	PAVEMENT
PWJ	PLYWOOD WEB JOIST
RAD	RADIUS
RAFT	RAFTER
RBS	REDUCED BEAM SECTION
RD	ROOF DRAIN; ROAD
REF	REFERENCE
REG	REGULAR
REINF	REINFORCE; REINFORCING
REMOV	REMOVE; REMOVABLE
REQ	REQUIRED
RET	RETAINING
REV	REVISION
RF	ROOF
RJ	ROOF JOIST
RM	ROOM
RO	ROUGH OPENING
RTNG	RETAINING
S	SOUTH; ELASTIC SECTION MODULUS
SAD	SEE ARCHITECTURAL DRAWINGS
SAW	SUBMERGED ARC WELDING
SCHED	SCHEDULE
SCL	STRUCTURAL COMPOSITE LUMBER
SE/SEOR	STRUCTURAL ENGINEER (OF RECORD)
SECT	SECTION
SEL	SELECT
SEP	SEPARATION
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SJ	SEISMIC JOINT
SLBB	SHORT LEGS BACK-TO-BACK
SLRS	SEISMIC LOAD RESISTING SYSTEM
SLV	SLEEVE
SMS	SHEET METAL SCREWS
SOG	SLAB ON GRADE
SPA/SPC	SPACES
SPCG	SPACING
SPCL	SPECIAL
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	SELECT STRUCTURAL; STAINLESS STEEL
SSH	SHORT SLOTTED HOLES
STAGG	STAGGER; STAGGERED
STD	STANDARD
STIFF	STIFFENER
STIRR	STIRRUP
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
T	TOP
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
T/	TOP OF
TB	TIE BEAM
TC	TOP CHORD
TEMP	TEMPERATURE; TEMPORARY
THK/THKN	THICK; THICKNESS
THRU	THROUGH
TL	TOTAL LOAD
TN	TOE NAIL
TOB	TOP OF BEAM
TOC	TOP OF CURB; TOP OF CONCRETE
TOF	TOP OF FOOTING
TOL	TOP OF LEDGER
TOS	TOP OF STEEL
TOSH	TOP OF SHEAR WALL
TOSL	TOP OF SLAB
TOW	TOP OF WALL
TRANSV	TRANSVERSE
TSG	TAPERED STEEL GIRDER
TYP	TYPICAL
UL	UNDERWRITER'S LABORATORY, INC
UNO/UON	UNLESS NOTED OTHERWISE
UT	ULTRASONIC TEST
V/VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WEST
WF	WIDE FLANGE
w/	WITH
W/C	WATER/CEMENT
W/O	WITHOUT
WD	WOOD
WP	WORK POINT; WATERPROOF
WPS	WELD PROCEDURE SPECIFICATIONS
WWF	WELDED WIRE FABRIC
WHT/WT	WEIGHT

STRUCTURAL STEEL SHAPES:

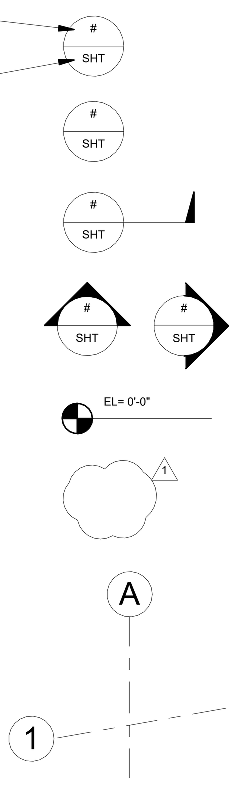
W	W SHAPES
S	S SHAPES
M	M SHAPES
HP	HP SHAPES
C	STD CHANNEL
MC	MISC CHANNEL
L	ANGLES
WT, ST, MT	STRUCT TEES CUT FROM W, S, M SHAPE
P#	STANDARD PIPE
PX#	EXTRA STRONG PIPE
PXX#	DOUBLE EXTRA STRONG PIPE
HSS	HOLLOW STRUCTURAL SECTION
TS	TUBE SECTION

INSTITUTIONS:

ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWPB	AMERICAN WOOD PRESERVERS BUREAU
AWS	AMERICAN WELDING SOCIETY
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
DSA	DIVISION OF THE STATE ARCHITECT
IAPMO-ES	IAPMO EVALUATION SERVICE
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ICC	INTERNATIONAL CODE COUNCIL
ICC-ER	ICC-ES LEGACY REPORT
ICC-ES	ICC EVALUATION SERVICE
ICC-ESR	ICC-ES REPORT
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
PCI	PRE-CAST CONCRETE INSTITUTE
PTI	POST-TENSION CONCRETE INSTITUTE
SJI	STEEL JOIST INSTITUTE
TPI	TRUSS PLATE INSTITUTE

SYMBOLS

DETAIL NUMBER
SHEET NUMBER
DETAIL REFERENCE
SECTION REFERENCE
WALL ELEVATION
DATUM ELEVATION
REVISION & CLOUD
GRID SYSTEM



WOOD

1. ALL STRUCTURAL LUMBER SHALL BE DOUGLAS FIR-LARCH, VISUALLY GRADED OR MACHINE GRADED UNDER THE STANDARD GRADING RULES, NO.
17 OF THE WEST COAST LUMBER INSPECTION BUREAU, AND SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 23 OF THE CBC. ALL RAMING SHALL BE LESS THAN 19% MOISTURE CONTENT AT TIME OF INSTALLATION AS WELL AS BEFORE ENCLOSURE. ALL FRAMING MEMBERS SHALL BE AS FOLLOWS:

SIZE AND APPLICATION	GRADE
2x TOP PLATES & SILLS	STANDARD OR NO. 2
2x4 STUDS (UP TO 9'-0")	STUD
2x4 STUDS (OVER 9'-0")	NO. 2, UNO
2x6 STUDS (UP TO 10'-0")	STUD
2x6 STUDS (OVER 10'-0")	NO. 2, UNO
4x AND LARGER BEAMS AND POST	NO. 1, UNO
JOIST AND ALL OTHER 2" TO 4" SAWN LUMBER	NO. 2, UNO

2. ALL WOOD BEARING ON CONCRETE OR MASONRY IN DIRECT CONTACT WITH EARTH SHALL BE PRESSURE TREATED DOUGLAS FIR IN ACCORDANCE WITH CBC 2303.1.9 AND 2304.12. ALL CUTS, HOLES & NOTCHES BE TREATED WITH A PRESERVATIVE APPROVED BY THE STRUCTURAL ENGINEER.
3. FASTENERS FOR PRESSURE-PRESERVATIVE TREATED WOOD SHALL BE HOT-DIPPED ZINC COATED GALVANIZED, STAINLESS STEEL, SILICON BRONZE OR COPPER PER CBC 2304.10.5. (EXCEPTION: PLAIN CARBON STEEL FASTENERS INCLUDING NUTS AND WASHERS IN SBX/DOT AND ZINC BORATE PRESERVATIVE-TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT SHALL BE PERMITTED.)
4. ALL STRUCTURAL SHEATHING SHALL BE DOUGLAS FIR STANDARD GRADE STRUCTURAL I WITH EXTERIOR GLUE CONFORMING TO THE LATEST EDITIONS OF PS 1 AND PS 2 UNO. ALL PANELS SHALL BEAR LEGIBLE APA STAMPS. NO INDIVIDUAL SHEETS SHALL BE LESS THAN 2 FEET IN WIDTH. FULL SHEETS (4'-0"x8'-0") SHALL BE USED WHEREVER POSSIBLE.
5. ALL FLOOR AND ROOF SHEATHING SHALL BE LAID FACE GRAIN PERPENDICULAR TO FRAMING UNO. ALL SHEATHING SHALL BE APPROVED BY THE BUILDING INSPECTOR BEFORE COVERING.
6. UNLESS NOTED OTHERWISE, ALL WOOD SILL PLATE UNDER BEARING, EXTERIOR, OR SHEAR WALLS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE BOLTED TO CONCRETE OR MASONRY WITH 5/8" Ø HEADED ANCHOR BOLTS w/ 7" MIN CONCRETE/MASONRY EMBED AT 4'-0" OC UNO, & AT 4" MIN AND 12" MAX FROM EACH END OF THE PLATES. A MINIMUM OF TWO ANCHOR BOLTS SHALL BE PLACED IN ANY ONE PIECE OF SILL PLATE.
7. ALL BOLT HEADS AND NUTS WHICH BEAR AGAINST THE FACE OF WOOD MEMBERS SHALL BE PROVIDED WITH 2"x2"x3/16" STEEL PLATE WASHERS UNO. ALL ANCHOR BOLTS FOR SHEAR WALLS SHALL BE PROVIDED WITH A 3"x3"x0.229" MIN STEEL PLATE WASHER UNO ON SHEAR WALL SCHEDULE.
8. ALL NAILS FOR CONNECTING WOOD MEMBERS SHALL BE COMMON NAILS. MINIMUM NAILING REQUIREMENTS OUTLINED IN TABLE 2304.10.2 SHALL BE FOLLOWED UNLESS NOTED OTHERWISE.
9. RETIGHTEN BOLTS BEFORE CLOSING-IN.
10. USE OF MACHINE NAILING IS SUBJECT TO A SATISFACTORY JOBSITE DEMONSTRATION FOR EACH PROJECT AND THE APPROVAL BY THE ARCHITECT OR STRUCTURAL ENGINEER AND THE JURISDICTION. THE APPROVAL IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. MACHINE NAILING WILL NOT BE APPROVED IN 5/16" SHEATHING. IF NAIL HEADS PENETRATE THE OUTER PLY MORE THAN WOULD BE NORMAL FOR A HAND HAMMER OR IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY.
11. ALL WOOD HARDWARE CONNECTORS SHALL BE SIMPSON STRONG-TIE UNLESS NOTED OTHERWISE.
12. PROVIDE FULL DEPTH BLOCKING AT 4'-0" OC BETWEEN ADJACENT JOISTS UNDER ALL PERPENDICULAR PARTITIONS. PROVIDE DOUBLE JOIST UNDER ALL PARALLEL PARTITIONS UNLESS NOTED OTHERWISE.
13. UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED, NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE SEOR.
14. ROOF SHEATHING SHALL BE INSPECTED PRIOR TO PLACING INSULATION AND ROOFING.
15. SOLID BLOCKING (2x MIN) SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS & @ 8'-0" OC MAX.
16. ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554 GR 36. ALL BOLTS SHALL CONFORM TO ASTM A307 UNO.
17. HOLES FOR BOLTS SHALL BE BORED 1/32" TO 1/16" LARGER THAN NOMINAL BOLT DIAMETER. (THIS INCLUDES HOLES FOR ANCHOR RODS IN SILL PLATE).
18. JOIST CONNECTIONS SHALL BE SIMPSON 'LUS' UNLESS NOTED OTHERWISE.
19. ALL POSTS CONNECTION AT TOP AND BOTTOM SHALL BE SIMPSON 'CC' UNO.
20. ALL POST CONNECTIONS LOCATED DIRECTLY ON CONCRETE SHALL BE SIMPSON 'CB' UNLESS NOTED OTHERWISE.
21. FILL ALL NAIL HOLES OF WOOD CONNECTION HARDWARE (STRAPS, HANGERS, ETC.)
22. ALL NON-SHEAR WALLS SHALL HAVE BRACING PROVIDED BY ONE OF THE METHODS REQUIRED BY CODE SECTION 2308.9.3.
23. ALL LAG SCREWS AND WOOD SCREWS SHALL CONFORM TO ANSI/ASME B18.2.1 FOR LAG SCREWS & ANSI/ASME B18.6.1 FOR WOOD SCREWS
24. SECURE ALL EMBEDDED HARDWARE PRIOR TO FOUNDATION INSPECTION.
25. EACH SHEET OF SHEATHING SHALL BE IDENTIFIED WITH THE GRADE TRADE MARK OF AN APPROVED TESTING AND GRADING AGENCY. THE SHEATHING SHALL MEET THE REQUIREMENTS OF PRODUCT STANDARD (DOC) PSI AND PS2 OR APA PRP-108. INSTALL SHEATHING PANELS IN A DIRECTION AS SHOWN ON PLANS. PANELS WITH DIMENSION LESS THAN 24 INCHES IN ANY DIRECTION SHALL NOT BE USED UNLESS ALL EDGES ARE BLOCKED WITH MIN 2x FRAMING MEMBERS. PANELS INSTALLED AT LOCATIONS PERMANENTLY EXPOSED TO WEATHER SHALL BE GRADED WITH EXTERIOR EXPOSURE. THE LOWER GRADED VEENER IS INSTALLED FACING THE FRAMING.

ROOF SHEATHING	
THICKNESS & GRADE	19/32" C-D
EXPOSURE	EXPOSURE 1
PANEL INDEX	40/20
NAILING	8d @ 6" OC BN & EN; 8d @ 12" OC FN
BLOCKING	NONE
FLOOR SHEATHING T&G	
THICKNESS & GRADE	23/32" C-D
EXPOSURE	EXPOSURE 1
PANEL INDEX	48/24
NAILING	10d @ 6" OC BN & EN; 10d @ 12" OC FN
BLOCKING	NONE
EXTERIOR DECK SHEATHING T&G	
THICKNESS & GRADE	23/32" A-C
EXPOSURE	EXTERIOR EXPOSURE
PANEL INDEX	48/24
NAILING	10d @ 6" OC BN & EN; 10d @ 12" OC FN
BLOCKING	NONE
SHEAR PANEL	
THICKNESS	1 PER SHEAR WALL SCHEDULE
EXPOSURE	EXPOSURE 1
PANEL INDEX	16/0
NAILING	PER SHEAR WALL SCHEDULE
BLOCKING	BLOCKED, UNO

26. LAG SCREWS: ANSI/ASME STANDARD CUT B18.2.1-2012 2012 NDS FOR LAG SCREW DIMENSIONS. PRE-DRILL ALL HOLES. HOLE AT SHANK PORTION TO MATCH DIAMETER OF SHANK. HOLES AT THREADED PORTION TO BE 60 TO 70 PERCENT OF SHANK DIAMETER AND EQUAL TO LENGTH OF THREADED PORTION UNO. USE SOAP AND LUBRICANTS TO FACILITATE INSTALLATION. DRIVING WITH HAMMER IS NOT PERMITTED. EXPOSED STEEL SHALL BE HOT-DIPPED GALVANIZED.
27. LATERAL SUPPORT FOR BEAMS, RAFTERS AND JOISTS: CBC SECTION 2308.8.2 (JOISTS SHALL BE SUPPORTED LATERALLY AT THE ENDS AND AT EACH SUPPORT BY SOLID BLOCKING EXCEPT WHERE THE ENDS OF JOISTS ARE NAILED TO A HEADER, AND OR RIM JOIST OR TO AN ADJOINING STUD OR BY OTHER APPROVED MEANS. SOLID BLOCKING SHALL NOT BE LESS THAN 2 INCHES (51 mm) IN THICKNESS AND THE FULL DEPTH OF JOIST.)
28. BEAMS OR DRAG STRUTS: LAMINATED OR DOUBLE JOIST SHALL BE SPIKED TOGETHER WITH 16d NAILS AT 9" OC STAGGERED. IF USING 3 OR MORE JOIST TOGETHER, CONNECT WITH 1/2"Ø MACHINE BOLTS @ 24" OC STAGGERED.

NAILING NOTES

1. ALL NAILS TO BE COMMON UNLESS OTHERWISE SPECIFIED.
2. USE ONLY STAINLESS STEEL OR HOT DIP GALVANIZED (PER ASTM A 153 CLASS D) NAILS FOR TREATED WOOD CONNECTIONS.
3. ALL NAILS TO BE TRUESPEC HEAD ID FASTENERS AS MANUFACTURED BY TREE ISLAND STEEL (ICC ESR 1768, LARR 25895).
4. ALL SUBSTITUTIONS MUST BE SUBMITTED TO THE ENGINEER OF RECORD ALONG WITH A CURRENT ESR FOR APPROVAL.

TYPE 'D'	LENGTH (IN)	DIAMETER
8 COOLER	2 3/8	0.113
10 FRAMING LITE	3	0.120
16 FRAMING LITE	3 1/4	0.120
8 COMMON	2 1/2	0.131
10 FRAMING	3	0.131
16 SHORT	3 1/4	0.131
16 BOX	3 1/4	0.135
10 PLYWOOD	2 1/8	0.148
10 PLYWOOD	2 1/4	0.148
10 PLYWOOD	2 3/8	0.148
10 COMMON	3	0.148
16 SINKER	3 1/4	0.148
16 COMMON	3 1/2	0.162

TYPE 'HARDWARE'	LENGTH (IN)	DIAMETER
N8 HARDWARE	1 1/2	0.131
N10 HARDWARE	1 1/2	0.148
HARDWARE	2 1/2	0.131
HARDWARE	2 1/2	0.148
N16 HARDWARE	2 1/2	0.162

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED BY AN APPROVED AND LICENSED FABRICATOR IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS (LATEST EDITION), AND WITH CHAPTER 22A OF THE CODE.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION AS INDICATED BELOW (UNO):

WF AND WT SHAPES	A992
PIPE COLUMNS	A53, GRADE B
HSS SECTIONS	A500, GRADE C
HIGH-STRENGTH BOLTS	F3125, GRADE F1852
HEADED BOLTS IN CONCRETE/MASONRY/WOOD	A307, GRADE A
ANGLES, CHANNELS, PLATES	A36
THREADED ANCHOR RODS	F1554, GRADE 36 UNO

3. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS TO THE ARCHITECT OF ALL STEEL FOR ARCHITECTS, AND STRUCTURAL ENGINEERS, REVIEW AND APPROVAL BEFORE FABRICATION.
4. BOLT HOLES USED IN STEEL SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, EXCEPT AS NOTED.
5. ALL STRUCTURAL STEEL SURFACES THAT ARE ENCASED IN CONCRETE, OR MASONRY, SPRAY ON FIREPROOFING, OR ARE ENCASED BY BUILDING FINISH, SHALL BE LEFT UNPAINTED.
6. ALL WELDING IS TO BE DONE BY CERTIFIED WELDERS APPROVED USING E70XX ELECTRODES (UNO). ALL WELDS SHALL BE IN CONFORMITY WITH THE PROJECT SPECIFICATIONS AND THE CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1 LATEST REVISION) OF THE AMERICAN WELDING SOCIETY. SEE SPECIAL INSPECTIONS SECTION FOR WELDING INSPECTION REQUIREMENTS.
7. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED IN AISC 360, TABLE J2.4.
8. ALL EXPOSED STRUCTURAL STEEL AND MISCELLANEOUS METAL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
9. ALL GROOVE WELDS SHALL BE COMPLETE JOINT PENETRATION UNLESS NOTED OTHERWISE.
10. WHERE FINISH IS ATTACHED TO STRUCTURAL STEEL PROVIDE 1/2"DIA. BOLT HOLES @ 48" OC @ W, C, L, MEMBERS AND 1/2"Ø. WELDED STUDS @ 48" OC @ TUBE & PIPE MEMBERS FOR ATTACHMENT OF NAILERS, SEE ARCHITECTURAL DRAWINGS FOR FINISHES.
11. SEISMIC LOAD RESISTING SYSTEM (SLRS) IS DEFINED AS THE ASSEMBLY OF STRUCTURAL ELEMENTS IN THE BUILDING THAT RESISTS SEISMIC LOADS, INCLUDING COLUMNS, BEAMS, GIRDERS, STRUTS, COLLECTORS, CHORDS AND BRACES, AND THE CONNECTIONS BETWEEN THESE ELEMENTS SPECIFICALLY DESIGN TO RESIST SEISMIC FORCES, AS DESIGNATED ON THE DRAWINGS.
12. WELD MATERIALS USED IN SLRS WELD CONNECTIONS SHALL CONFORM TO THE FOLLOWING TOUGHNESS REQUIREMENTS:
    A. WELD CONNECTIONS SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPHY V-NOTCH TOUGHNESS OF 20 FT-LB AT 0 DEGREES F AS DETERMINED BY THE APPROPIATE AWS CLASSIFICATION TEST METHOD.
    B. WELDED CONNECTIONS DESIGNATED AS 'DEMAND CRITICAL' SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT 20 DEGRESS F AS DETERMINED BY THE APPROPIATE AWS CLASSIFICATION TEST METHOD, AND 40 FT-LB AT 70 DEGRESS F AS DETERMINED BY APPENDIX X OF ANSI/AISC 341.

PETRA SHEET INDEX	
Sheet Number	Sheet Name
S001	GENERAL NOTES
S111	BLDG A ROOF FRAMING PLAN
S121	BLDG B ROOF FRAMING PLAN
S131	BLDG F ROOF FRAMING PLAN
S141	BLDG G ROOF FRAMING PLAN
S151	BLDG N ROOF FRAMING PLAN
S161	BLDG S ROOF FRAMING PLAN
S171	BLDG T ROOF FRAMING PLAN
S601	FRAMING DETAILS
S602	FRAMING DETAILS

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
3. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
4. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
TITLE 24, PART 2 CALIFORNIA CODE OF REGULATIONS WITH 2025 CALIFORNIA AMENDMENTS AND LATEST REVISIONS REFERRED TO HERE AS "THE CODE", AND ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES & STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
5. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
    A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED.
    B. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-BEARING PARTITIONS.
    C. SIZE AND LOCATION OF ALL CONCRETE CURBS, EQUIPMENT PADS, PITS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGE IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC.
    D. SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS EXCEPT AS SHOWN.
    E. FLOOR AND ROOF FINISHES.
    F. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
6. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
    A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
    B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
    C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
    D. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
    E. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS.
7. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
8. OPENINGS, POCKETS, ETC., LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, WALLS, UNLESS SPECIALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., LARGER THAN 6" NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS. FOR ANY FURTHER RESTRICTIONS ON OPENINGS IN STRUCTURAL ELEMENTS, SEE APPLICABLE SECTIONS BELOW.
9. PIPES LARGER THAN 1 1/2" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED. NO CONDUITS SHALL BE PLACED IN CONCRETE FILL OVER METAL DECKING.
10. ASTM SPECIFICATIONS ON THE DRAWINGS SHALL BE OF THE LATEST REVISION.
11. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS
CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE
FOUND, STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
12. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED ROOF OR FLOOR. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND / OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.

LOADING

1. DESIGN LOADS
    FLOOR LIVE LOAD = 40 PSF
    ROOF LIVE LOAD = 20 PSF
2. WIND ANALYSIS PER CHAPTER 16A OF THE CODE
    RISK CATEGORY = III
    BASIC WIND SPEED, V = 101 mph
    EXPOSURE = C
3. SEISMIC ANALYSIS PER CHAPTER 16A OF THE CODE UTILIZING THE FOLLOWING:
    A. SYSTEM - NONSTRUCTURAL COMPONENTS - AIR-SIDE HVACR...

SEISMIC PARAMETERS			
S_S =	1.95g	S_{DS} =	1.40g
S_1 =	0.80g	S_{D1} =	1.14g
		DESIGN CATEGORY =	E
		SITE CLASS =	DEFAULT
I_P =	1.0		
R_{PO} =	2.0		
C_{AR} =	1.4	Ω_{OP} =	2.0

STRUCTURAL OBSERVATIONS

1. PERIODIC STRUCTURAL OBSERVATION SHALL BE PERFORMED BY THE ENGINEER OF RECORD AT CRITICAL STAGES OF CONSTRUCTION IN ACCORDANCE WITH CBC 1704A. STRUCTURAL OBSERVATION DOES NOT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF SPECIAL INSPECTION. SEE 'SPECIAL INSPECTION NOTES' FOR ITEMS REQUIRING INSPECTION.
2. NOTIFY THE ENGINEER AT SIGNIFICANT CONSTRUCTION STAGES 72 HOURS IN ADVANCE AND PROVIDE ACCESS FOR STRUCTURAL OBSERVATIONS.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 2025-164-02-04
DATE: 08/27/2026
DRAWN: RL
CHECK: SG
DESIGNER: PS
ENGINEER: PSE
DSA NUMBER: 03-126002

CONSULTANT
PETRA STRUCTURAL ENGINEERS
17981 Sky Park Circle
Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP
REGISTERED PROFESSIONAL ENGINEER
PETER SARKIS
No. 5038
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
GENERAL NOTES

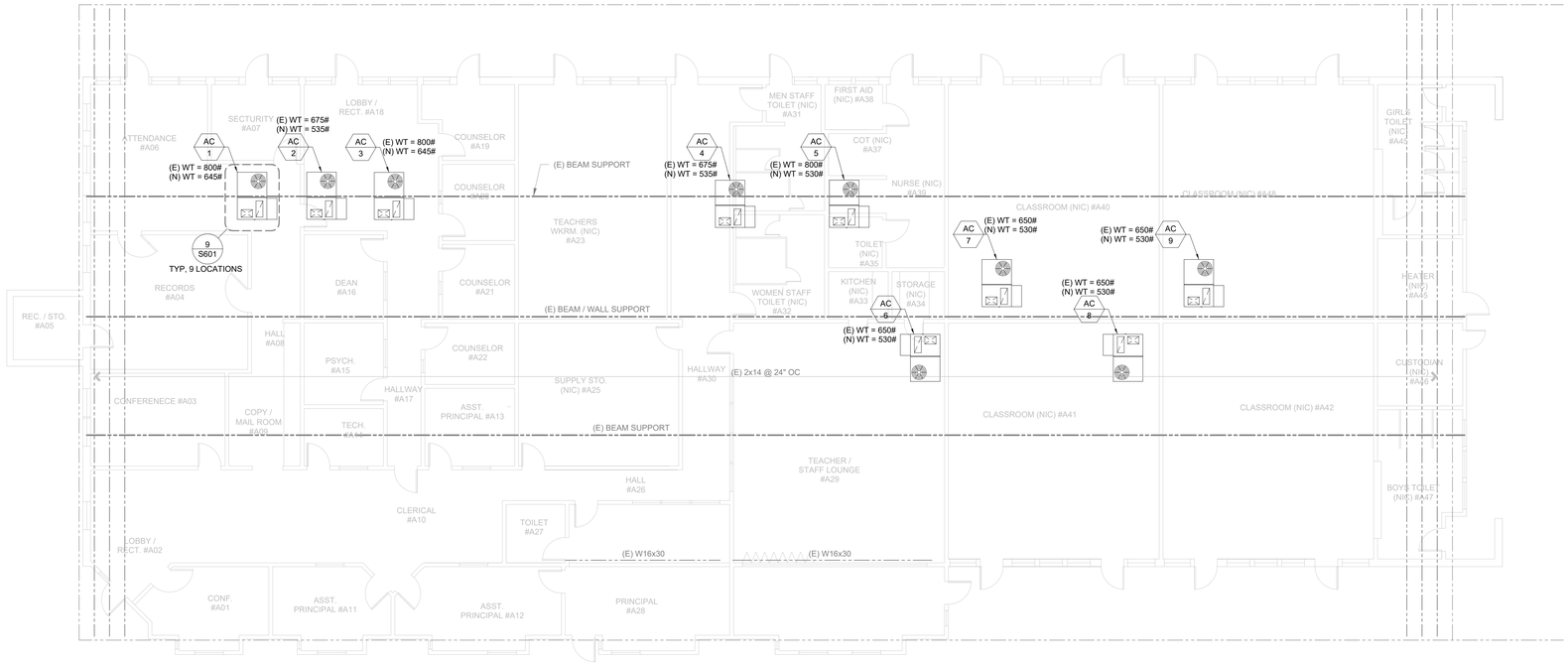
SHEET NO:
S001

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:28 PM

FRAMING NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEETS **S001**.
2. FOR TYPICAL WOOD DETAILS SEE SHEETS **S601 & S602**.
3. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, FINISH FLOORS, SLOPES, DRAINS, DEPRESSIONS, CURBS, EDGE OF SLABS, HOUSEKEEPING PADS, EQUIPMENT LOCATIONS, LANDSCAPE ELEMENTS, ETC WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
4. UNITS ARE REPLACE-IN-KIND ON EXISTING PLATFORM AND CURBS. ALL WORK WILL BE FROM ABOVE AND ATTACH TO EXISTING CONDITIONS. NO NEW FRAMING IS EXPECTED UNLESS THE CONDITIONS REQUIRE.
5. DO NOT INTERRUPT EXISTING STUDS OR JOISTS WITH NEW DUCT OR PLUMBING INSTALLATION.

NOTE:
(E) CONDITIONS ARE SHOWN TO THE BEST OF OUR KNOWLEDGE AND BASED ON DRAWINGS NOT PREPARED BY PETRA STRUCTURAL ENGINEERS. THE CONTRACTOR SHOULD VERIFY ALL (E) FIELD CONDITIONS BEFORE COMMENCING WORK. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER IF CONDITIONS ARE DIFFERENT THAN SHOWN.



KEY PLAN

REF. NORTH

N

BLDG A - ROOF FRAMING PLAN

1/8" = 1'-0"

1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

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ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

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REGISTERED PROFESSIONAL ENGINEER
PETER SARKIS
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STRUCTURAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:

BLDG A ROOF FRAMING PLAN

SHEET NO:

S111

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:30 PM

FRAMING NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEETS **S001**.
2. FOR TYPICAL WOOD DETAILS SEE SHEETS **S601 & S602**.
3. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, FINISH FLOORS, SLOPES, DRAINS, DEPRESSIONS, CURBS, EDGE OF SLABS, HOUSEKEEPING PADS, EQUIPMENT LOCATIONS, LANDSCAPE ELEMENTS, ETC WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
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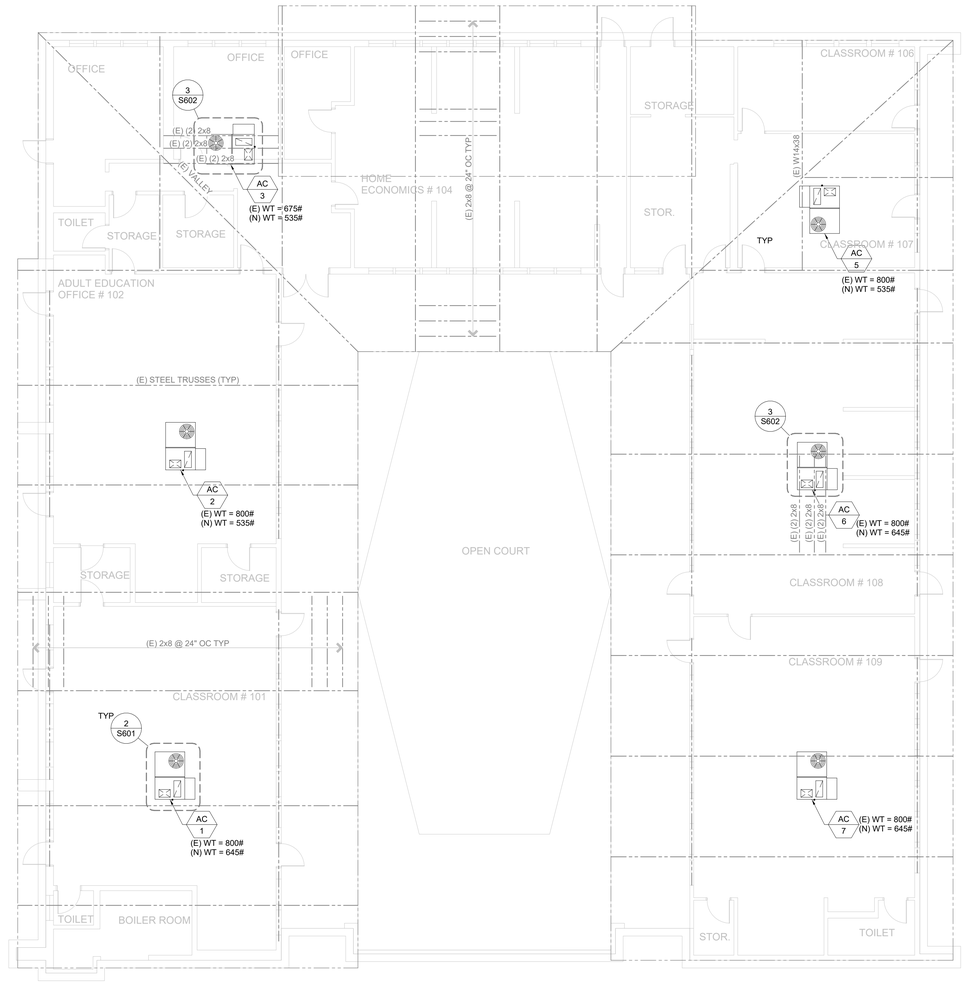

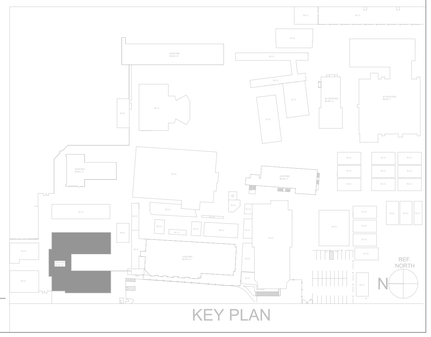

KEY PLAN

N REF. NORTH

BLDG B - ROOF FRAMING PLAN

1/8" = 1'-0"

1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL

12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO:	2025-164-02-04
DATE:	08/27/2026
DRAWN:	RL
CHECK:	SG
DESIGNER:	PS
ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

PETRA STRUCTURAL ENGINEERS
17981 Sky Park Circle
Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP

SHEET DESCRIPTION:

BLDG B ROOF FRAMING PLAN

SHEET NO:

S121

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:31 PM

FRAMING NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEETS **S001**.
2. FOR TYPICAL WOOD DETAILS SEE SHEETS **S601 & S602**.
3. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, FINISH FLOORS, SLOPES, DRAINS, DEPRESSIONS, CURBS, EDGE OF SLABS, HOUSEKEEPING PADS, EQUIPMENT LOCATIONS, LANDSCAPE ELEMENTS, ETC WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
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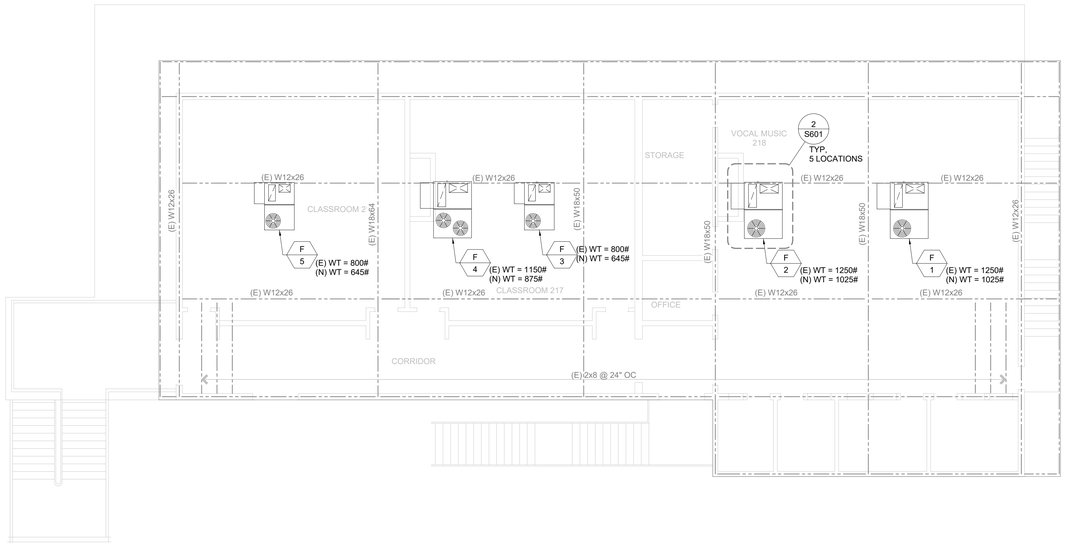

REF NORTH N

BLDG F - ROOF FRAMING PLAN

1/8" = 1'-0"

1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
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DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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JOB NO:	2025-164-02-04
DATE:	08/27/2026
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CHECK:	SG
DESIGNER:	PS
ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

PETRA STRUCTURAL ENGINEERS
17981 Sky Park Circle
Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP

REGISTERED PROFESSIONAL ENGINEER PETER SARKIS No. 5031 Exp. 6/30/27 STRUCTURAL STATE OF CALIFORNIA

SHEET DESCRIPTION:

BLDG F ROOF FRAMING PLAN

SHEET NO:

S131

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:33 PM

FRAMING NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEETS **S001**.
2. FOR TYPICAL WOOD DETAILS SEE SHEETS **S601 & S602**.
3. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, FINISH FLOORS, SLOPES, DRAINS, DEPRESSIONS, CURBS, EDGE OF SLABS, HOUSEKEEPING PADS, EQUIPMENT LOCATIONS, LANDSCAPE ELEMENTS, ETC WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
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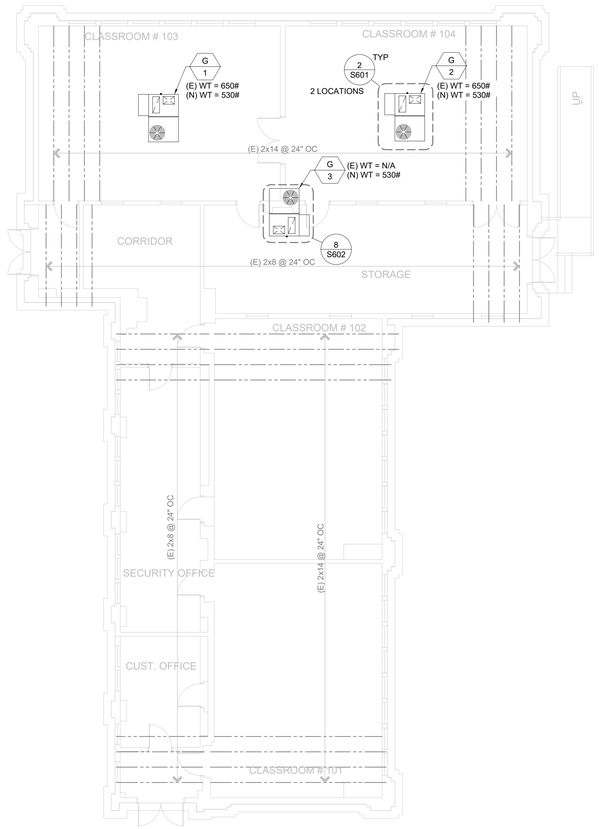

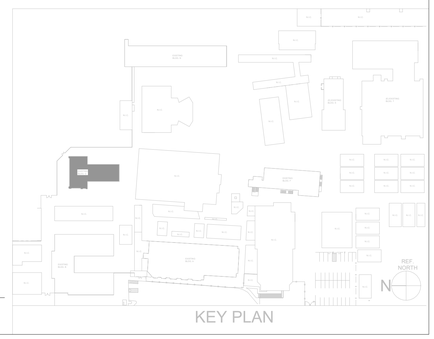

KEY PLAN

N REF. NORTH

BLDG G - ROOF FRAMING PLAN

1/8" = 1'-0"

1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO:	2025-164-02-04
DATE:	08/27/2026
DRAWN:	RL
CHECK:	SG
DESIGNER:	PS
ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

PETRA STRUCTURAL ENGINEERS
17981 Sky Park Circle
Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP

REGISTERED PROFESSIONAL ENGINEER
PETER SARKIS
No. 5[illegible]
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:

BLDG G ROOF FRAMING PLAN

SHEET NO:

S141

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:34 PM

FRAMING NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEETS **S001**.
2. FOR TYPICAL WOOD DETAILS SEE SHEETS **S601 & S602**.
3. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, FINISH FLOORS, SLOPES, DRAINS, DEPRESSIONS, CURBS, EDGE OF SLABS, HOUSEKEEPING PADS, EQUIPMENT LOCATIONS, LANDSCAPE ELEMENTS, ETC WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
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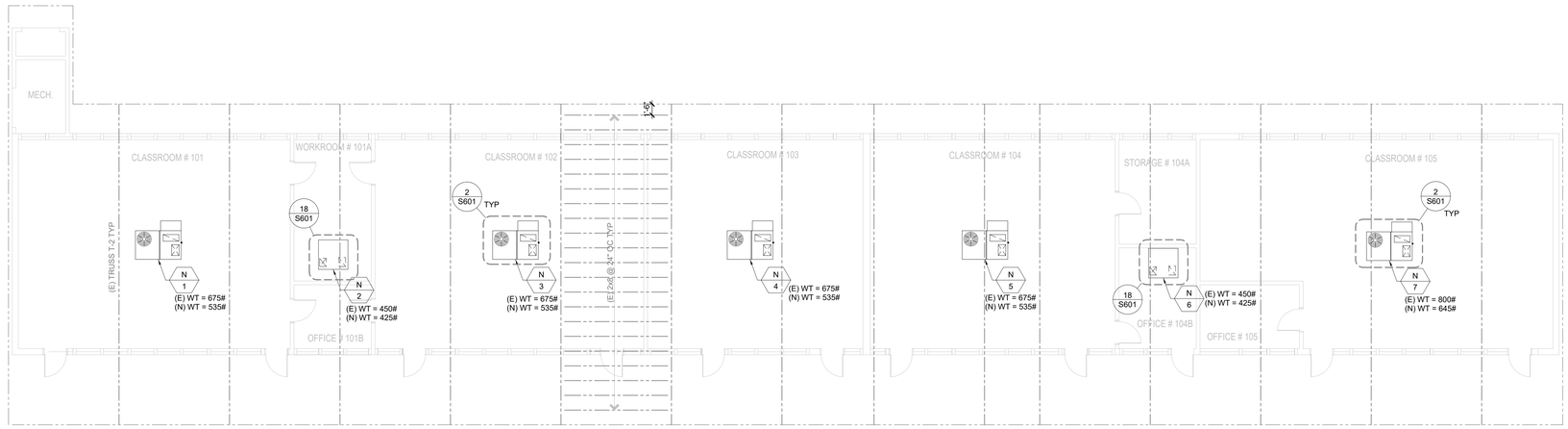

BLDG N - ROOF FRAMING PLAN

1/8" = 1'-0"

1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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JOB NO:	2025-164-02-04
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ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

PETRA
STRUCTURAL ENGINEERS
17981 Sky Park Circle
Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP

REGISTERED PROFESSIONAL ENGINEER
PETER SAKIS
No. 5[illegible]
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:

BLDG N ROOF FRAMING PLAN

SHEET NO:

S151

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:36 PM

FRAMING NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEETS **S001**.
2. FOR TYPICAL WOOD DETAILS SEE SHEETS **S601 & S602**.
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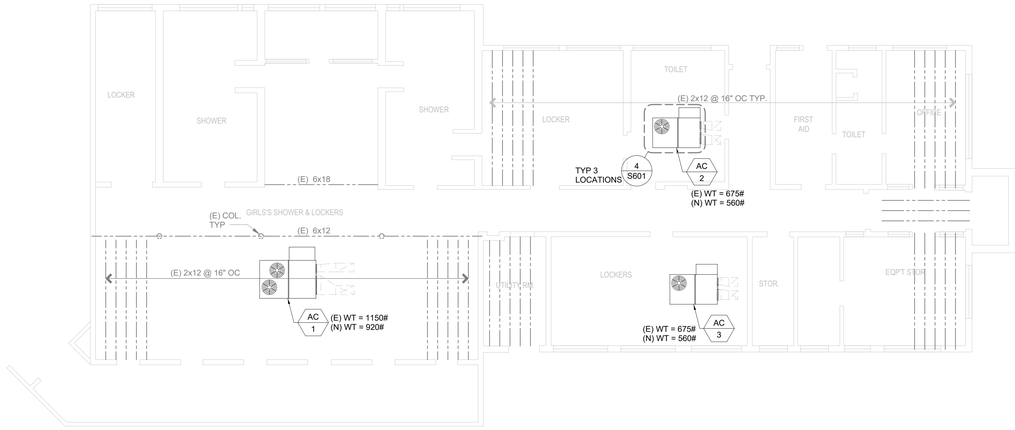

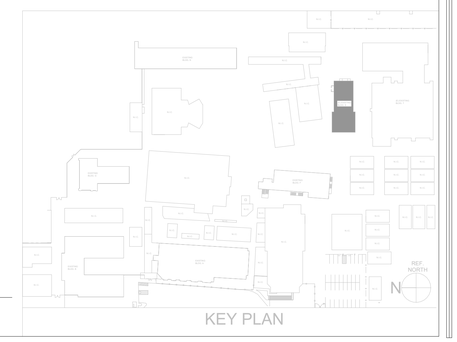

KEY PLAN

N REF. NORTH

BLDG S - ROOF FRAMING PLAN

1/8" = 1'-0"

1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
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5200 E. La Palma Ave
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STAMP

PROJECT NAME:

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12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

PETRA STRUCTURAL ENGINEERS
17981 Sky Park Circle
Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP

REGISTERED PROFESSIONAL ENGINEER
PETER SARKIS
No. 5[illegible]
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:

BLDG S ROOF FRAMING PLAN

SHEET NO:

S161

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:38 PM

FRAMING NOTES:

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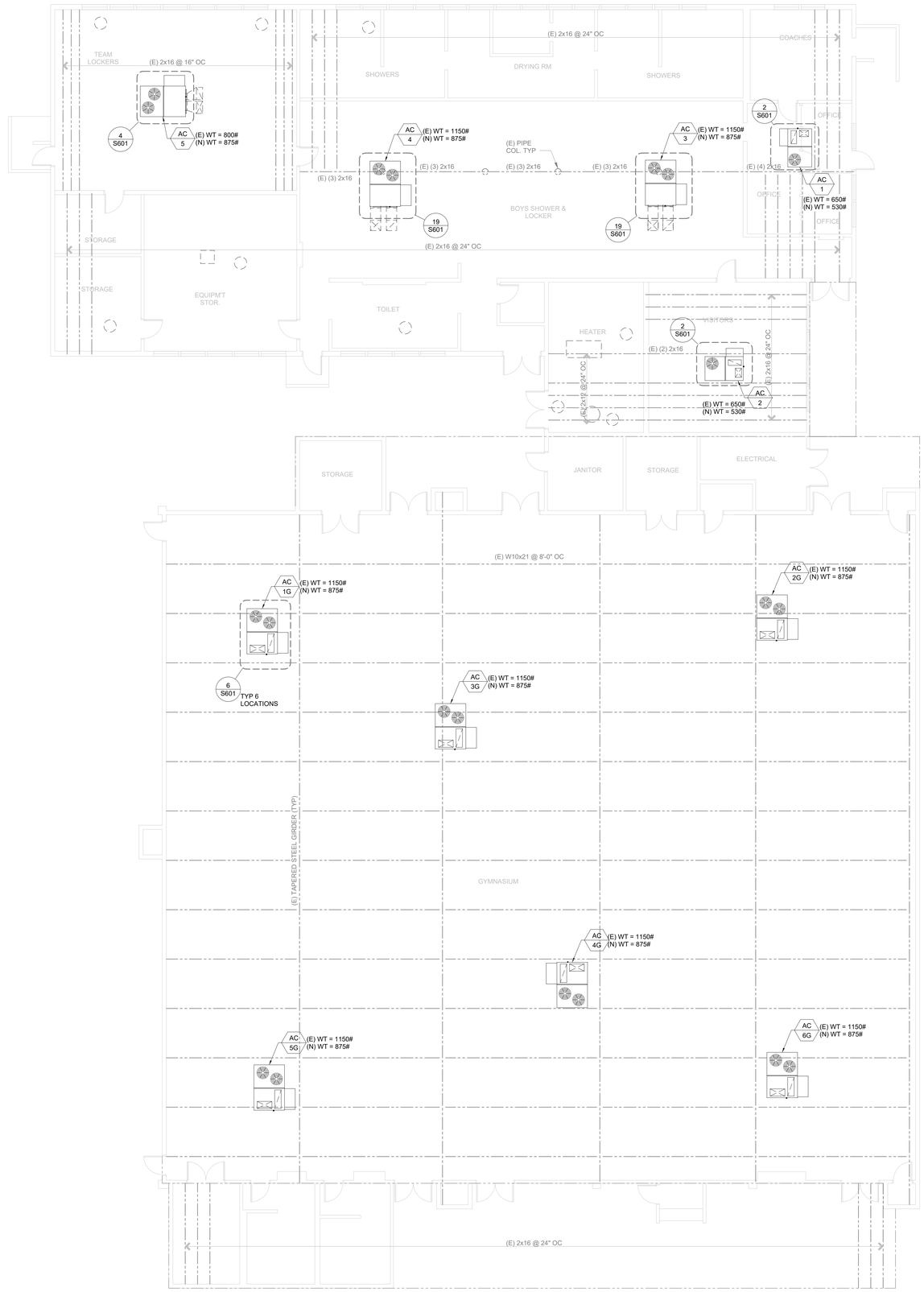
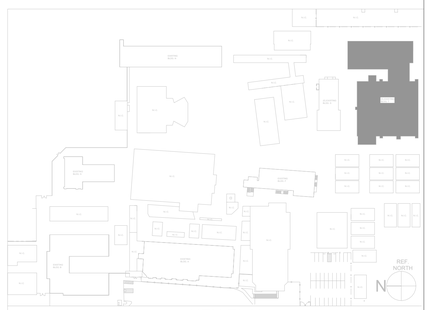


REF NORTH
N
BLDG T - ROOF FRAMING PLAN
1/8" = 1'-0"
1



KEY PLAN

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
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optimum energy design
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5200 E. La Palma Ave
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Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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ENGINEER:	PSE
DSA NUMBER:	03-126002

CONSULTANT

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Suite O
Irvine, CA 92614
Tel: (949) 748-7170

STAMP

REGISTERED PROFESSIONAL ENGINEER
PETER SARKIS
No. 5031
Exp. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:

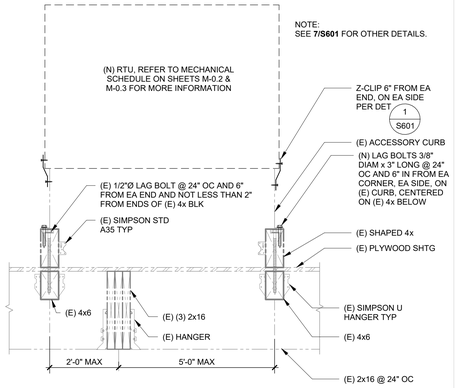
BLDG T ROOF FRAMING PLAN

SHEET NO:

S171

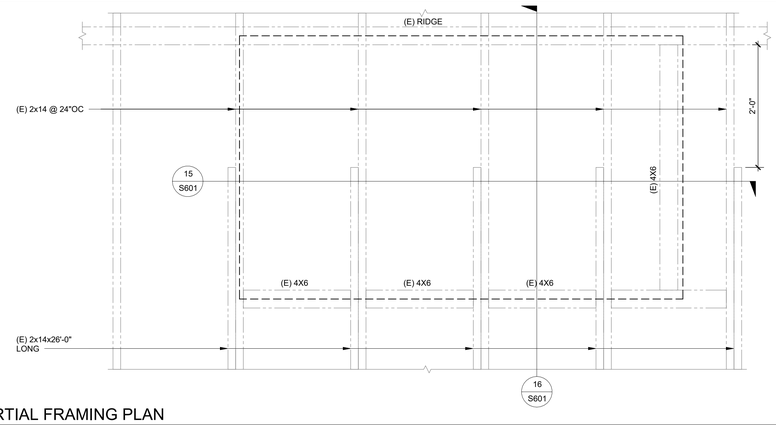
Plot Date: 5/12/2026 5:19:42 PM

Project # 2025-164-02-04_Bullis_R6



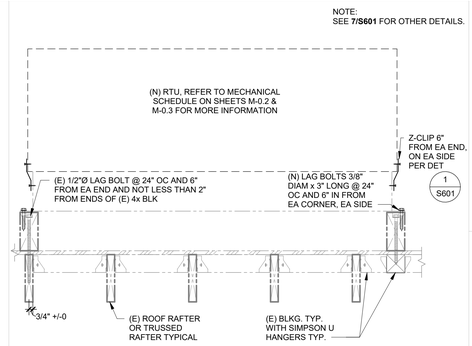
DETAIL

SCALE: NTS 17



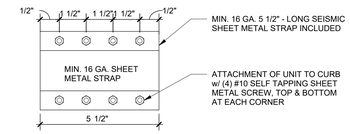
PARTIAL FRAMING PLAN

SCALE: NTS 9



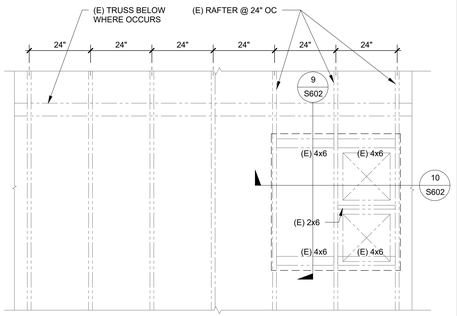
SECTION

SCALE: NTS 5



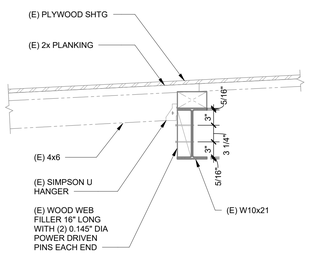
TYPICAL DETAIL NOTES & Z CLIP

SCALE: NTS 1



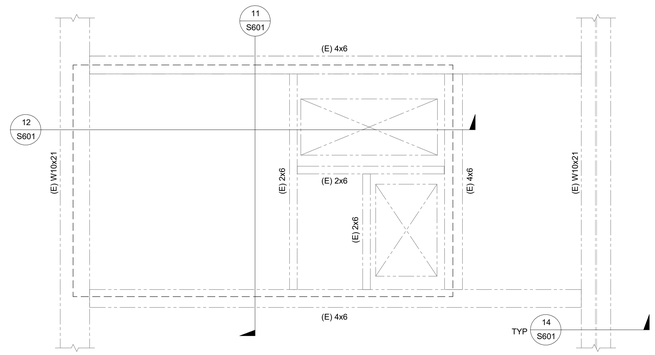
PARTIAL FRAMING PLAN

SCALE: NTS 18



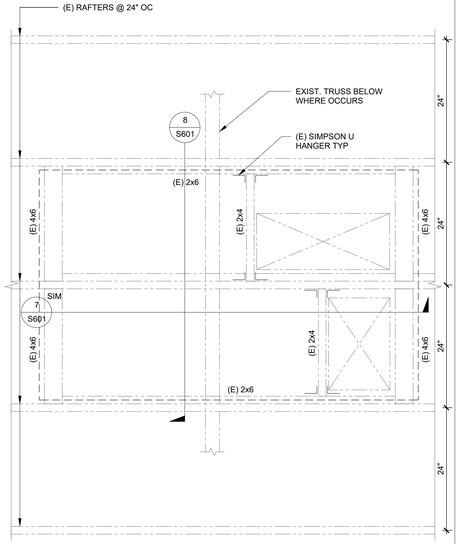
DETAIL

SCALE: NTS 14



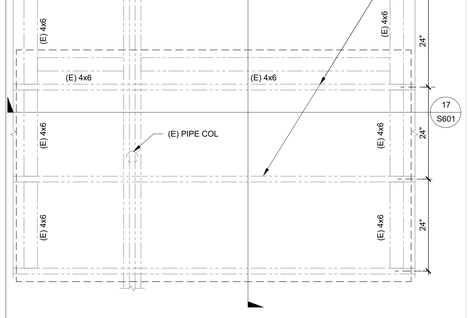
PARTIAL FRAMING PLAN

SCALE: NTS 6



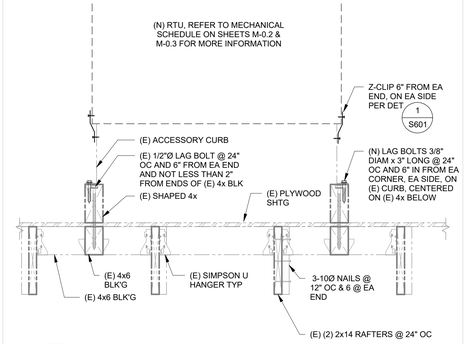
PARTIAL FRAMING PLAN

SCALE: NTS 2



PARTIAL FRAMING PLAN

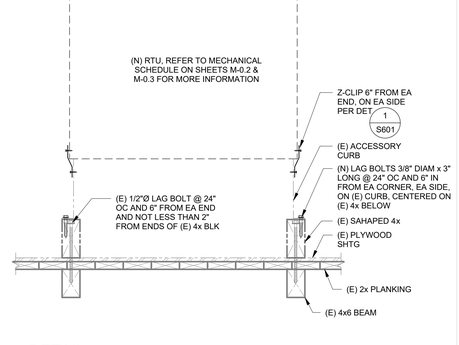
SCALE: NTS 19



DETAIL

SCALE: NTS 15

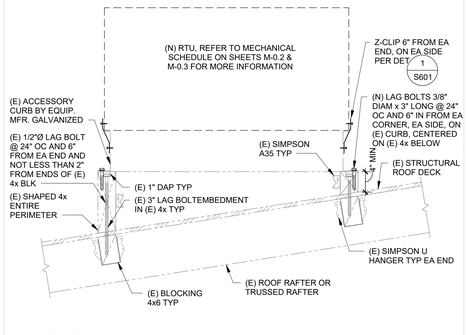
NOTE:
SEE 7/S601 FOR OTHER DETAILS.



DETAIL

SCALE: NTS 11

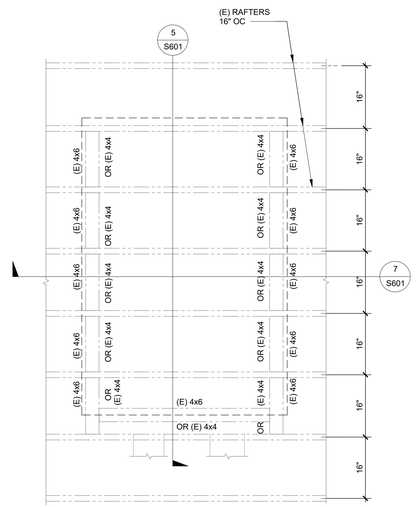
NOTE:
FACTORY CURBS SHALL BE INTERCONNECTED AT THE CORNERS WITH WELDS OR BOLTS.



SECTION

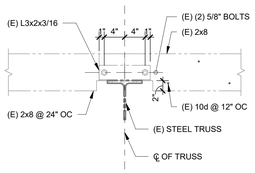
SCALE: NTS 7

NOTE:
(E) 4x4 BLOCKING IS USED WHERE (E) 2x4 RAFTERS OCCURS



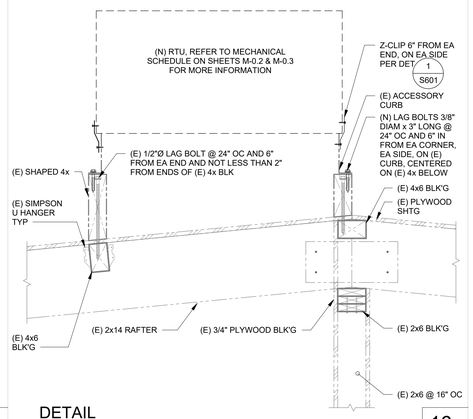
PARTIAL FRAMING PLAN

SCALE: NTS 4



DETAIL

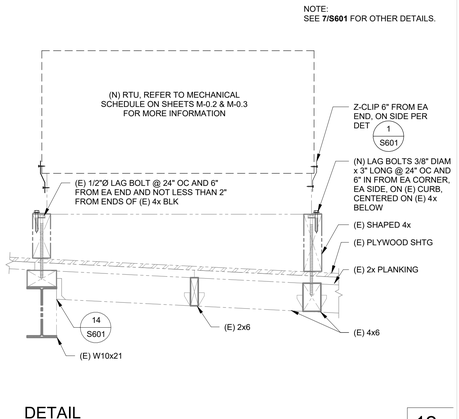
SCALE: NTS 20



DETAIL

SCALE: NTS 16

NOTE:
SEE 7/S601 FOR OTHER DETAILS.



DETAIL

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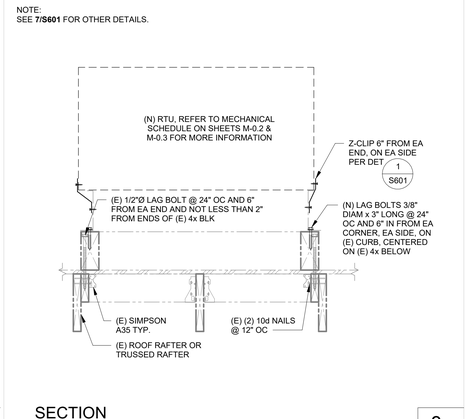
NOTE:
SEE 7/S601 FOR OTHER DETAILS.



SECTION

SCALE: NTS 8

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 2025-164-02-04
DATE: 08/27/2026
DRAWN: RL
CHECK: SG
DESIGNER: PS
ENGINEER: PSE
DSA NUMBER: 03-126002

CONSULTANT

PETRA
STRUCTURAL ENGINEERS
17981 Sky Park Circle
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REGISTERED PROFESSIONAL ENGINEER PETER SAKAI No. S6161 Exp. 6/30/27 STRUCTURAL STATE OF CALIFORNIA

SHEET DESCRIPTION:

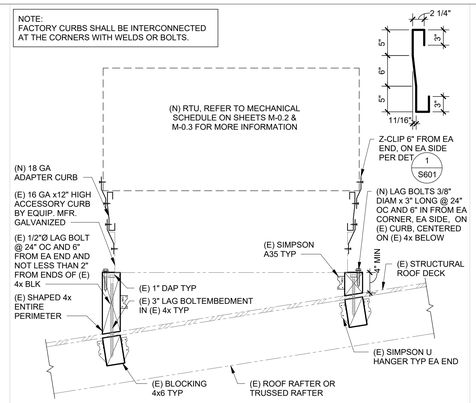
FRAMING DETAILS

SHEET NO:

S601

Project # 2025-164-02-04_Bullis_R6 Plot Date: 5/12/2026 5:19:44 PM

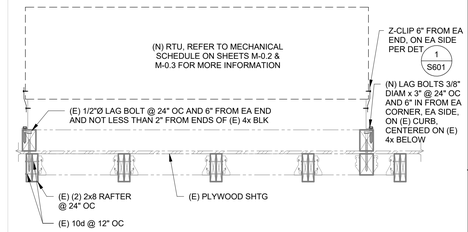
NOTE:
FACTORY CURBS SHALL BE INTERCONNECTED AT THE CORNERS WITH WELDS OR BOLTS.



SECTION 9

SCALE: NTS

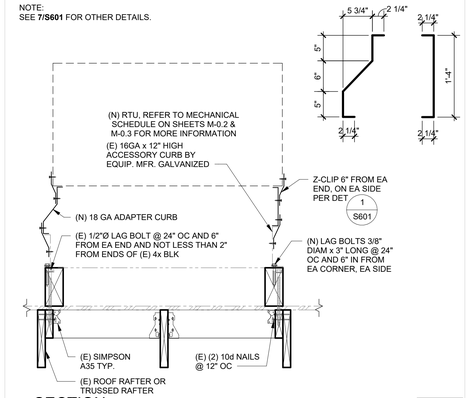
NOTE:
SEE **5/S601** FOR OTHER DETAILS.



DETAIL 1

SCALE: NTS

NOTE:
SEE **7/S601** FOR OTHER DETAILS.



SECTION 10

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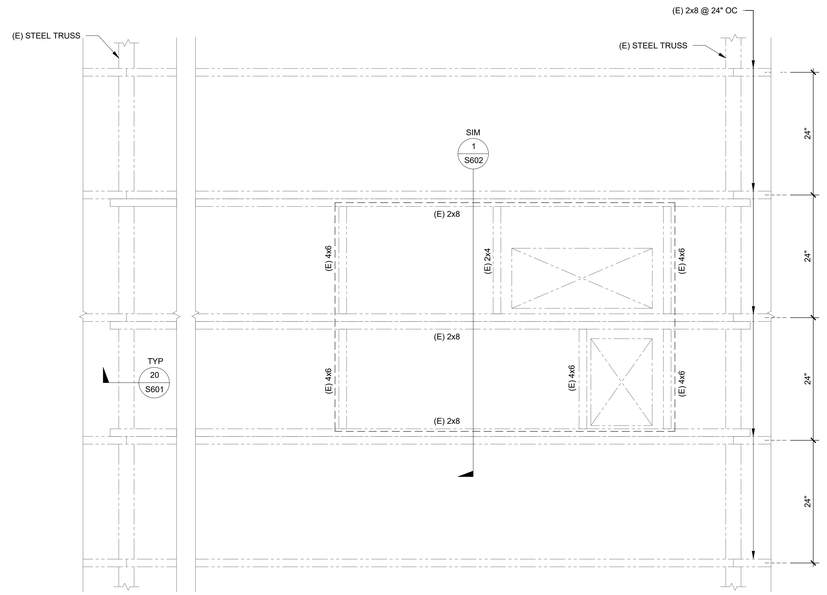
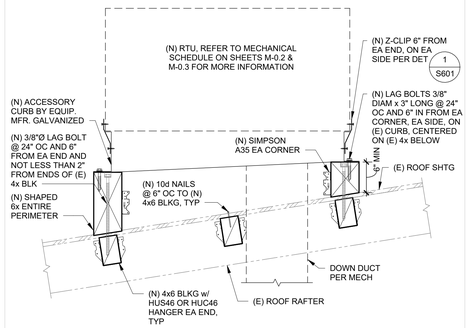


PARTIAL FRAMING PLAN 3

SCALE: NTS

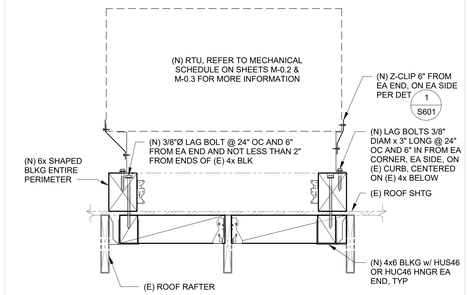
NOTE:
FACTORY CURBS SHALL BE INTERCONNECTED AT THE CORNERS WITH WELDS OR BOLTS.



SECTION 11

SCALE: NTS

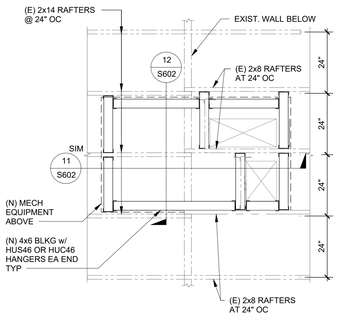
NOTE:
SEE **7/S601** FOR OTHER DETAILS.



SECTION 12

SCALE: NTS

NOTE:
ALIGN EQUIP. AS SHOWN BELOW SO THAT DUCT PENETRATIONS DO NOT OCCUR OVER EXIST. RAFTERS, BEAM OR HORIZONTAL FRAMING MEMBERS.



PARTIAL FRAMING PLAN 8

SCALE: NTS

AGENCY APPROVAL

IDENTIFICATION STAMP
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APP: 03-126002 INC:
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SS ☑ FLS ☑ ACS ☐
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CONSULTANT

PETRA STRUCTURAL ENGINEERS
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Irvine, CA 92614
Tel: (949) 748-7170

STAMP

REGISTERED PROFESSIONAL ENGINEER PETER R. SCHULTZ No. 5634 Exp. 6/30/27 STRUCTURAL STATE OF CALIFORNIA

SHEET DESCRIPTION:

FRAMING DETAILS

SHEET NO:

S602

GENERAL NOTES

----- GENERAL NOTES -----

1. ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE 2025 CALIFORNIA MECHANICAL CODE, 2025 CALIFORNIA BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS, INCLUDING 2025 BUILDING ENERGY EFFICIENCY STANDARDS DIVISION T-24.

2. 2025 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE INCLUDING THE APPLICABLE MANDATORY MEASURES:

   - 5.201.1 CALIFORNIA ENERGY CODE, FOR THE PURPOSES OF MANDATORY ENERGY EFFICIENCY STANDARDS IN THIS CODE, THE CALIFORNIA ENERGY COMMISSION WILL CONTINUE TO ADOPT MANDATORY STANDARDS.

   - 5.504.3: COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. AT THE TIME OF ROUGH INSTALLATION AND DURING STORAGE ON THE CONSTRUCTION SITE UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER AND DEBRIS WHICH MAY ENTER THE SYSTEM.

   - 5.504.5.3.1 FILTERS. IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 13. MERV 13 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL. EXCEPTIONS:
   -A. EXISTING MECHANICAL EQUIPMENT.

   - 5.506.1 OUTSIDE AIR DELIVERY. FOR MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDINGS, MEET THE MINIMUM REQUIREMENTS OF SECTION 121 (REQUIREMENTS FOR VENTILATION) OF THE 2025 CALIFORNIA ENERGY CODE, OR THE APPLICABLE LOCAL CODE, WHICHEVER IS MORE STRINGENT, AND DIVISION 1, CHAPTER 4 OF CCR, TITLE 8.

   - 5.508.1 OZONE DEPLETION AND GREENHOUSE GAS REDUCTIONS. INSTALL HVAC AND REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH 5.508.1.1 AND 5.508.1.2.

   - 5.508.1.1 CHLOROFLUOROCARBONS (CFCS). INSTALL HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN CFCS.

   - 5.508.1.2 HALONS. INSTALL HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN HALONS.

   - ADHESIVES, SEALANTS AND CAULKS SHALL MEET CALGREEN REQUIREMENTS.

   - INSTALLER AND SPECIAL INSPECTORS SHALL MEET ALL QUALIFICATIONS LISTED IN SECTION 702 OF THE 2025 CALIFORNIA GREEN BUILDING STANDARDS CODE.

3. COORDINATE ENTIRE INSTALLATION OF THE HVAC SYSTEM WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ITEMS TO BE PROVIDED BY OTHER TRADES WHERE MENTIONED IN THE CONTRACT DOCUMENTS PRIOR TO BID - NO EXCEPTIONS.

4. COORDINATE THE LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH THE ARCHITECTURAL REFLECTIVE CEILING PLAN, ELECTRICAL LIGHTING LAYOUT AND ARCHITECTURAL ROOM ELEVATIONS. THE ARCHITECT AND ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY CONFLICTS PRIOR TO FABRICATION AND INSTALLATION.

5. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER OF CONSTRUCTION PHASING PRIOR TO START OF CONSTRUCTION, REMOVAL, AND/OR REPLACEMENT OF ANY EQUIPMENT. CONTRACTOR SHALL RECEIVE PERMISSION IN WRITING PRIOR TO THE START OF ANY WORK DURING ANY PHASE FOR WORK SHOWN HEREIN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT WORK AND ARRANGE HIS WORK IN A MANNER THAT WILL CAUSE MINIMAL INTERFERENCE WITH DAILY FUNCTIONS WITHIN THE FACILITY. ANY EXPECTED DOWNTIME SHALL BE COORDINATED WITH THE OWNER.

6. ALL EQUIPMENT, DUCTS, PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHER-PROOFED AND PAINTED TO MATCH, COORDINATE WITH ARCHITECT PRIOR TO PAINTING.

7. THE OWNER ACKNOWLEDGES THAT THE DESIGN PROFESSIONAL'S PLANS ARE INSTRUMENTS OF PROFESSIONAL SERVICE. NEVERTHELESS, THE PLANS PREPARED UNDER THIS AGREEMENT SHALL BECOME THE PROPERTY OF THE OWNER UPON COMPLETION OF THE WORK. THE OWNER AGREES TO HOLD HARMLESS AND INDEMNIFY THE DESIGN PROFESSIONAL AGAINST ALL DAMAGES, CLAIMS AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY RESCUE OF THE PLANS WITHOUT THE WRITTEN AUTHORIZATION OF THE DESIGN PROFESSIONAL.

8. ALL DIMENSIONS SHOWN ON THESE PLANS ARE APPROXIMATE AND MUST BE CONFIRMED ON SITE.

9. PRIOR TO OCCUPANCY, THE ENTIRE H.V.A.C. SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH (AABC) ASSOCIATED AIR BALANCE COUNCIL STANDARDS BY AN INDEPENDENT AIR BALANCE CONTRACTOR. CERTIFICATION SHALL BE PROVIDED BY THE CONTRACTOR FOR AIR AS APPLICABLE. SYSTEMS SHALL BE BALANCED AS INDICATED ON PLANS INCLUDING FRESH AIR VENTILATION. WHERE THERE IS A CONFLICT WITH THE MECHANICAL PLANS, THE AIR BALANCE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO BALANCING OF SYSTEM. IF NOT THE AIR BALANCE CONTRACTOR SHALL BEAR ALL COSTS INCURRED FOR WORK THAT MUST BE RE-BALANCED DUE TO CONFLICTS ON CONTRACT DOCUMENTS. CONTRACTOR SHALL PROVIDE THREE COPIES OF THE AIR BALANCE REPORT TO THE ENGINEER FOR APPROVAL.

10. FOR INACCESSIBLE AREAS THE CONTRACTOR SHALL PROVIDE ACCESS PANELS FOR ALL DAMPERS, EQUIPMENT, SMOKE DETECTORS, AND CONTROL DEVICES. THESE PANELS SHALL MATCH THE RATING OF THE WALL AND/OR CEILING THAT THEY ARE LOCATED IN. MINIMUM ACCESS PANEL SIZES SHALL BE AS FOLLOWS:

    1) HAND ACCESS: 12"x12"

    2) BODY ACCESS: 30"x30" MIN. WHERE A LARGER ACCESS SIZE IS REQUIRED DUE TO INSTALLATION CONSTRAINTS, THE CONTRACTOR SHALL DO SO AT NO ADDITIONAL COST AND SHALL NOTIFY THE ARCHITECT AND ENGINEER OF DEVIATIONS PRIOR TO INSTALLATION.

11. ALL EQUIPMENT, ACCESSORIES, AND RELATED PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.

12. MAINTENANCE LABEL SHALL BE AFFIXED TO ALL MECHANICAL EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED FOR THE OWNER'S USE.

13. PROVIDE MERV 13 EFFICIENCY THROWAWAY FILTERS FOR ALL AIR CONDITIONING UNITS. SEE EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR TYPE. SIZES SHALL BE AS RECOMMENDED BY THE MANUFACTURER, UNLESS OTHERWISE SPECIFIED.

14. AIR FILTERS SHALL BE STATE FIRE MARSHAL APPROVED AND LISTED. PREFORMED FILTERS HAVING COMBUSTIBLE FRAMING SHALL BE TESTED AS A COMPLETE ASSEMBLY. AIR FILTERS SHALL BE ACCESSIBLE FOR CLEANING OR REPLACEMENT.

15. ALL EQUIPMENT WITH MOVING PARTS SHALL BE PROVIDED WITH FLEXIBLE DUCT AND PIPE CONNECTIONS.

16. ALL EQUIPMENT SHALL BE LABELED AS TO THE SPACE IT SERVES.

17. ALL HVAC EQUIPMENT SHALL BE CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION TO COMPLY WITH LATEST EFFICIENCY STANDARDS.

18. PROVIDE MANUAL VOLUME DAMPERS AND BACKDRAFT DAMPERS FOR FRESH AIR INTAKES ON ALL AIR HANDLING EQUIPMENT AND SUPPLY AIR FANS SERVING CONDITIONED SPACES.

19. ALL AIR HANDLING EQUIPMENT SERVING CONDITIONED SPACES SHALL PROVIDE CONTINUOUS FRESH AIR TO SPACES IN OCCUPIED MODE.

20. CONTRACTOR SHALL VERIFY ALL CLEARANCES AND INSTALL HVAC UNITS PER MANUFACTURER GUIDELINES.

21. CONTRACTOR TO SUBMIT ALL EQUIPMENT AND OTHER ACCESSORIES TO THE ENGINEER FOR APPROVAL PRIOR TO ANY ORDERING OF SUCH ITEMS.

22. CONTRACTOR SHALL BE RESPONSIBLE FOR COMMISSIONING OF EQUIPMENT.

23. PAINT EXPOSED SURFACES, WHETHER OR NOT COLORS ARE DESIGNATED IN SCHEDULES, EXCEPT WHERE A SURFACE OR MATERIAL IS SPECIFICALLY INDICATED NOT TO BE PAINTED OR IS TO REMAIN NATURAL. WHERE AN ITEM OR SURFACE IS NOT SPECIFICALLY MENTIONED, PAINT THE SAME AS SIMILAR ADJACENT MATERIALS OR SURFACES. IF COLOR OR FINISH IS NOT DESIGNATED, THE OWNER'S REPRESENTATIVE WILL SELECT FROM STANDARD COLORS OR FINISHES AVAILABLE.

    1) PAINTING INCLUDES FIELD PAINTING EXPOSED BARE AND COVERED PIPES AND DUCTS (INCLUDING COLOR CODING), HANGERS, EXPOSED STEEL AND IRON WORK, AND PRIMED METAL SURFACES OF MECHANICAL AND ELECTRICAL EQUIPMENT.

24. THE HVAC UNITS ARE OWNER-FURNISHED AND CONTRACTOR-INSTALLED (OFCI) AND ARE CURRENTLY STORED AT TWO LOCATIONS:
    - 2850 EAST DEL AMO BOULEVARD, CARSON, CALIFORNIA 90221

    THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL HANDLING, LOADING, TRANSPORTATION, DELIVERY, UNLOADING, STAGING, AND INSTALLATION OF THE EQUIPEMENT AT THE PROJECT SITE.

25. ALL MECHANICAL PIPING SYSTEMS, DUCTS, CONTROLS, VALVES, APPARATUS, ETC., EXCEPT THOSE THAT ARE INSTALLED IN INACCESSIBLE LOCATIONS IN PARTITIONS, WALLS, AND FLOORS, AND THOSE BURIED UNDERGROUND, SHALL BE PERMANENTLY MARKED AND IDENTIFIED AS INDICATED IN THE RELATED SPECIFICATIONS.

26. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE CITY INSPECTOR.

----- CONTROLS -----

1. CONTROL SCHEMATICS ARE FOR SEQUENCE ONLY. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ALL ELECTRICAL DEVICES REQUIRED.

2. ALL LINE VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT. ALL LINE VOLTAGE CONDUIT AND WIRING, INCLUDING FINAL CONNECTIONS, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THE ELECTRICAL DRAWINGS OR SPECIFIED IN THE ELECTRICAL SECTION OF THE SPECIFICATIONS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS OF ALL GOVERNING BODIES HAVING JURISDICTION THEREOF.

3. ALL LOW VOLTAGE CONDUIT AND WIRING AS APPLICABLE, INCLUDING FINAL CONNECTIONS, SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR AS INDICATED ON THE MECHANICAL DRAWINGS.

    A1) ALL LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT.

    A2) ALL LOW VOLTAGE WIRING SHALL BE PLENUM - RATED.

    B) WHERE THE CONTROLS CONTRACTOR IS RETAINED BY THE OWNER, THEY SHALL BE RESPONSIBLE FOR THE FOLLOWING:

    1) FURNISH AND INSTALL ALL DEVICES, WIRING, AND TERMINATIONS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

    2) COORDINATE ALL WORK AND REQUIREMENTS WITH OTHER TRADES INCLUDING GENERAL, MECHANICAL, AND ELECTRICAL CONTRACTORS PRIOR TO BID.

    3) CONTRACTOR SHALL FOLLOW ALL SUBMITTAL REQUIREMENTS PER DRAWINGS.

4. ELECTRICAL CONTRACTOR SHALL PROVIDE REQUIRED RELAY ACCESSORIES FOR CONNECTION OF 120 VOLT 1 PHASE VENTILATION EQUIPMENT TO 277 VOLT 1 PHASE LIGHTING AS APPLICABLE.

5. ALL THERMOSTATS SHALL HAVE LOCKABLE COVERS (WHERE INDICATED ON PLANS) AND SHALL BE OF THE ELECTRONIC, PROGRAMMABLE, AUTOMATIC CHANGEOVER TYPE TO SEQUENCE HEATING OR COOLING. SET POINT RANGE SHALL BE 10 DEGREES F. BETWEEN FULL HEATING AND COOLING. THEY SHALL HAVE CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NO MORE THAN 70 DEGREES F., AND COOLING AT A TEMPERATURE NOT LESS THAN 78 DEGREES F. ADJUSTABLE TEMPERATURE DIFFERENTIAL SHALL BE 1- 1/2 DEGREES F. CONTROL LIMITS SHALL BE FROM 55 DEGREES F. TO 85 DEGREES F. MOUNT AT 48 INCHES ABOVE FLOOR OR AS REQUIRED BY LOCAL AUTHORITIES OR HANDICAP CODES.

    NOTES: 1) THERMOSTATS THAT ARE PART OF AN ENERGY MANAGEMENT SYSTEM SHALL FOLLOW CONTROL SPECIFICATIONS AND DRAWING REQUIREMENTS.

    2) SHOULD THE LOCATION OF THE THERMOSTAT NOT MEET THE ADA HEIGHT REQUIREMENTS DUE TO OBSTRUCTIONS, THEN AN ALTERNATE LOCATION SHALL BE PROPOSED OR REQUESTED BY THE CONTRACTOR THAT SHALL BE APPROVED BY THE ENGINEER AND ARCHITECT.

6. LINE VOLTAGE THERMOSTATS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

7. CONTROLS CONTRACTOR AND AIR BALANCE CONTRACTOR SHALL COORDINATE WORK AND PERFORM NECESSARY TASKS AS REQUIRED TO OBTAIN AIR AND WATER FLOW QUANTITIES FOR SYSTEMS SHOWN HEREIN.

8. CONTROLS SHALL BE PROVIDED TO PROVIDE THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY THE STATE ENERGY REGULATIONS.

----- AIR DISTRIBUTION -----

1. ALL DUCTWORK SHALL BE SHEET METAL CONSTRUCTED OR SPIRAL, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, CHAPTER 8 OF THE MECHANICAL CODE, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION.

2. CONTRACTOR SHALL PROVIDE EXTERIOR MANUAL VOLUME DAMPER HANDLES W/ LOCK-DOWN AFTER COMPLETING AIR BALANCE & OBTAIN FINAL APPROVAL FROM ENGINEER.

3. ALL RECTANGULAR DUCT TURNS IN OUTSIDE AIR DUCTS SHALL HAVE SINGLE WALL TURNING VANES WITH TRAILING EDGE, UNLESS OTHERWISE NOTED.

4. MANUAL VOLUME DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES TO INDIVIDUAL FRESH AIR INTAKE DUCTS. DAMPERS SHALL BE LOCATED AT THE BRANCH DUCT LOCATIONS. THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF DAMPERS WITH THE AIR BALANCE CONTRACTOR PRIOR TO BID, SO THEY ARE ACCESSIBLE PRIOR TO INSTALLATION. IN LOCATIONS WHERE THESE DAMPERS ARE INACCESSIBLE, CABLE OPERATED ADJUSTMENT CONTROLS SHALL BE PROVIDED AT NO ADDITIONAL COST. OPPOSED BLADE DAMPERS SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.

5. UNLESS OTHERWISE NOTED THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING EXTERIOR LOUVERS CALLED OUT HEREIN. COORDINATE SIZE(S) AND LOCATION(S) WITH OTHER TRADES AS NECESSARY PRIOR TO BID.

6. ALL FLEXIBLE DUCTWORK SHALL NOT EXCEED FIVE FEET IN LENGTH TO RESPECTIVE DIFFUSERS, GRILLES, AND REGISTERS, OR OTHER AIR DEVICES.

7. ALL DUCT TURNS IN SUPPLY, RETURN, AND EXHAUST DUCTS SHALL HAVE TURNING VANES UNLESS OTHERWISE NOTED.

8. DUCTWORK HANDLING CONDITIONED AIR SHALL BE INSULATED AS INDICATED ON DRAWINGS. SUPPLY AND RETURN DUCT INSULATION SHALL BE MIN. 2" THICK, 3/4 LB./CUBIC FT. DENSITY AND HAVE A MIN. VALUE OF R-8 WHERE LOCATED IN ONE OR MORE OF THE FOLLOWING SPACES:
   - OUTDOORS, OR
   - IN A SPACE BETWEEN THE ROOF AND AN INSULATED CEILING, OR
   - IN A SPACE DIRECTLY UNDER A ROOF WITH FIXED VENTS OR OPENINGS TO THE OUTSIDE OR UNCONDITIONED SPACES, OR
   - IN AN UNCONDITIONED CRAWLSPACE; OR
   - IN OTHER UNCONDITIONED SPACES

   PER 2025 CEC, OTHERWISE PROVIDE R-4.2 WHEN LOCATED IN CONDITIONED ATTIC SPACES ABOVE CEILINGS . ALL DUCTWORK EXPOSED ON ROOF SHALL BE .2" THICK, 1.5LB./CUBIC FT LINER. DENSITY DUCT INSULATION UNLESS OTHERWISE INDICATED OR SPECIFIED. ALL DUCT SIZES ARE NET CLEAR INSIDE DIMENSIONS. SEALED PER CHAPTER 6 MECHANICAL CODE REQUIREMENTS. PROVIDE PIPING AND DUCT INSULATION IN ACCORDANCE WITH THE LATEST STANDARDS OF THE CALIFORNIA ENERGY COMMISSION.

LEGEND

SYMBOL	ABBR.	DESCRIPTION
	-	SUPPLY AIR RISER
	-	RETURN AIR RISER
	-	EXHAUST AIR RISER
	SAG	SUPPLY AIR GRILLE
	RAG	RETURN AIR GRILLE
	EAG	EXHAUST AIR GRILLE
	SWR	SIDEWALL REGISTER
	(L)	LINED DUCTWORK
	-	FLEXIBLE CONNECTION
	FC	FLEXIBLE CONNECTION
	-	NEW DUCT (SEE PLAN)
	-	EXISTING DUCT (SEE PLAN)
	-	DEMO DUCT (SEE PLAN)
	MVD	MANUAL VOLUME DAMPER
	BDD	BACKDRAFT DAMPER
SF	SFD	SMOKE / FIRE DAMPER
F	FD	FIRE DAMPER
	DL	DOOR LOUVER
U.C.	UC	UNDERCUT DOOR 3/4"
RS	RS	REFRIGERANT SUCTION LINE
RL	RL	REFRIGERANT LIQUID LINE
CD	CD	CONDENSATE DRAIN
	S.D.	SMOKE DETECTOR
	P.O.C.	POINT OF CONNECTION
	T-STAT	THERMOSTAT
H	H	HUMIDISTAT
TS	TS	TEMPERATURE SENSOR
OS	OS	OVERRIDE SWITCH
PD	PD	PRESSURE DIFFERENTIAL SWITCH
S	S	SWITCH
	O.C.	ON CENTER
	HWR	HOT-WATER RETURN
	HWS	HOT-WATER SUPPLY
	I.D.	INSIDE DIAMETER
	O.D.	OUTSIDE DIAMETER
	W/	WITH
	S/M	SHEET METAL
	S/S	STAINLESS STEEL
	G.C.	GENERAL CONTRACTOR
	VTR	VENT THRU ROOF
	EMS	ENERGY MANAGEMENT SYSTEM
	OBD	OPPOSED BLADE DAMPER
	FSC	FAN SPEED CONTROL
E	E	ITEMS FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AS SPECIFIED ON THE ELECTRICAL CONTRACT DOCUMENTS
M	M	ITEMS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS SPECIFIED ON THE MECHANICAL CONTRACT DOCUMENTS
EM	EM	ITEMS FURNISHED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.
ME	ME	ITEMS FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.
	C.C.	CONTROLS CONTRACTOR
	CBD	COUNTER-BALANCE DAMPER
DS	D.S.	DOOR SWITCH

SHEET INDEX

S.NO.	SHEET No.	SHEET TITLE
1	M-0.1	MECHANICAL GENERAL NOTES & LEGEND
2	M-0.2	MECHANICAL SCHEDULES
3	M-0.3	MECHANICAL SCHEDULES
4	M-0.4	MECHANICAL SCHEDULES
5	MD-1.1	MECHANICAL DEMO PLAN - BUILDING A
6	MD-1.2	MECHANICAL DEMO PLAN - BUILDING B
7	MD-1.3	MECHANICAL DEMO FLOOR PLAN - BUILDING F
8	MD-1.3.1	MECHANICAL DEMO ROOF PLAN - BUILDING F
9	MD-1.4	MECHANICAL DEMO PLAN - BUILDING G
10	MD-1.5	MECHANICAL DEMO PLAN - BUILDING N
11	MD-1.6	MECHANICAL DEMO PLAN - BUILDING S
12	MD-1.7	MECHANICAL DEMO FLOOR PLAN - BUILDING T
13	MD-1.7.1	MECHANICAL DEMO ROOF PLAN - BUILDING T
14	M-1.1	MECHANICAL REMODEL PLAN - BUILDING A
15	M-1.2	MECHANICAL REMODEL PLAN - BUILDING B
16	M-1.3	MECHANICAL REMODEL FLOOR PLAN - BUILDING F
17	M-1.3.1	MECHANICAL REMODEL ROOF PLAN - BUILDING F
18	M-1.4	MECHANICAL REMODEL PLAN - BUILDING G
19	M-1.5	MECHANICAL REMODEL PLAN - BUILDING N
20	M-1.6	MECHANICAL REMODEL PLAN - BUILDING S
21	M-1.7	MECHANICAL REMODEL FLOOF PLAN - BUILDING T
22	M-1.7.1	MECHANICAL REMODEL ROOF PLAN - BUILDING T
23	M-4.1	MECHANICAL DETAILS
24	M-4.2	MECHANICAL DETAILS
25	M-5.1	MECHANICAL CLIMAVISION CARRIER CONTROLS
26	M-6.1	MECHANICAL TITLE 24 COMPLIANCE
27	M-6.2	MECHANICAL TITLE 24 COMPLIANCE
28	M-6.3	MECHANICAL TITLE 24 COMPLIANCE
29	M-6.4	MECHANICAL TITLE 24 COMPLIANCE
30	M-6.5	MECHANICAL TITLE 24 COMPLIANCE
31	M-6.6	MECHANICAL TITLE 24 COMPLIANCE
32	M-6.7	MECHANICAL TITLE 24 COMPLIANCE
33	M-6.8	MECHANICAL TITLE 24 COMPLIANCE
34	M-6.9	MECHANICAL TITLE 24 COMPLIANCE
35	M-6.10	MECHANICAL TITLE 24 COMPLIANCE
36	M-6.11	MECHANICAL TITLE 24 COMPLIANCE
37	M-6.12	MECHANICAL TITLE 24 COMPLIANCE
38	M-6.13	MECHANICAL TITLE 24 COMPLIANCE
39	M-6.14	MECHANICAL TITLE 24 COMPLIANCE
40	M-6.15	MECHANICAL TITLE 24 COMPLIANCE
41	M-6.16	MECHANICAL TITLE 24 COMPLIANCE

APPLICABLE CODES

2025 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1 TITLE 24 C.C.R.
2025 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.
2025 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NEC)
2025 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.
2025 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
2025 CALIFORNIA ENERGY CODE , PART 6, TITLE 24 C.C.R.
2025 CALIFORNIA FIRE CODE , PART 9, TITLE 24 C.C.R.
2025 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
2025 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R.

TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
AMERICAN WITH DISABILITY ACT.

PARTIAL LIST OF APPLICABLE STANDARDS.

NFPA 13	AUTOMATIC SPRINKLER SYSTEM. 2025 EDITION.
NFPA 24	PRIVATE FIRE MAINS (INCLUDED IN 2025 NFPA 13) 2025 EDITION.
NFPA 72	NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDED) 2025 EDITION. (NOTE: SEE UL STANDARD 1971 FOR "VISUAL DEVICES")

REFERENCE CODE SECTION FOR NFPA STANDARDS - 2025 CBC (SFM) CHPT. 35

SHOP DRAWINGS NOTES

CONTRACTOR SHALL SUBMIT A COMPLETE SET OF SHOP DRAWINGS 14 DAYS AFTER OFFICIAL PROJECT START DATE. INCLUSIVE OF ALL TRADE (MECHANICAL, PLUMBING, ELECTRICAL, ETC.) TO SCALE (MIN. 1/4"=1'-0") PRIOR TO FABRICATION AND OR INSTALLATION OF ANY AND OR ALL HVAC COMPONENTS, SYSTEM AND EQUIPMENT. SHOP DRAWINGS SHALL BE SUBMITTED AS A SINGLE ALL INCLUSIVE PACKAGE DIGITALLY (AUTOCAD 2014). AT A MINIMUM 4 HARD COPY SETS ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW. INCOMPLETE AND UNCOORDINATED SUBMITTALS SHALL BE REJECTED UPON RECEIPT.

SEISMIC NOTES

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 2025 CBC Sections 1617A.1.18 through 1617A.1.26 and ASCE 7-22 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 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 7-22 Section 13.3 as defined in ASCE 7-22 Sections 13.6.5, 13.6.6, 13.6.7, 13.6.8; and 2025 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 guide (e.g., OSHPD 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 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 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 the applicable OSHPD Pre-Approval (OPM #) #_____.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
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Telephone (714) 693-2277

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REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL GENERAL NOTES & LEGENDS

SHEET NO:
M-0.1

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING A

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/EER	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE									V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
AC 1	50FCQA06A2M6-3A0A0	BLDG A	61.90	48.96	56.80	3.80	14.30/11.2	1995	330	215	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,10
AC 2	50FCQA05A2M6-3A0A0	BLDG A	49.92	37.82	46.10	3.70	14.30/11.8	1600	340	270	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	45 / -	535	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 3	50FCQA06A2M6-3A0A0	BLDG A	61.90	48.96	56.80	3.80	14.30/11.2	1995	330	225	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 4	50FCQA05A2M6-3A0A0	BLDG A	49.92	37.82	46.10	3.70	14.30/11.8	1600	340	250	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	45 / -	535	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 5	50FCQA04A2M6-3A0A0	BLDG A	36.98	27.93	34.10	3.70	14.30/11.7	1200	420	190	0.54	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 6	50FCQA04A2M6-3A0A0	BLDG A	36.98	27.93	34.10	3.70	14.30/11.7	1200	320	130	0.54	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 7	50FCQA04A2M6-3A0A0	BLDG A	36.98	27.93	34.10	3.70	14.30/11.7	1200	320	130	0.54	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 8	50FCQA04A2M6-3A0A0	BLDG A	36.98	27.93	34.10	3.70	14.30/11.7	1200	320	130	0.54	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10
AC 9	50FCQA04A2M6-3A0A0	BLDG A	36.98	27.93	34.10	3.70	14.30/11.7	1200	320	130	0.54	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	9 S601	1,2,3,4,5,6,7,8,9,10

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW OSA & FAN STATUS SENSOR & CONNECTION TO NEW UNIT. NEW T24 COMPLIANT VENSTAR T8850 THERMOSTAT AND SENEVA TOTAL SENSE SERIES AQ2W-ACAAAAS C02 SENSOR PROVIDE WITH OLED DISPLAY AND SOLID COVER.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. PROVIDE DEMAND CONTROL VENTILATION.
10. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING B

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/EER	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE									V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
AC 1	50FCQA06A2M6-3A0A0	BLDG B	61.90	48.96	56.80	3.80	14.30/11.2	1995	520	1175	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,9,10
AC 2	50FCQA05A2M6-3A0A0	BLDG B	49.92	37.82	46.10	3.70	14.30/11.8	1600	200	180	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	45 / -	535	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10
AC 3	50FCQA05A2M6-3A0A0	BLDG B	49.92	37.82	46.10	3.70	14.30/11.8	1600	200	150	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	45 / -	535	2 M-4.1	3 S602	1,2,3,4,5,6,7,8,10
AC 5	50FCQA05A2M6-3A0A0	BLDG B	49.92	37.82	46.10	3.70	14.30/11.8	1600	200	155	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	45 / -	535	2 M-4.1	3 S602	1,2,3,4,5,6,7,8,9,10
AC 6	50FCQA06A2M6-3A0A0	BLDG B	61.90	48.96	56.80	3.80	14.30/11.2	1995	520	210	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	3 S602	1,2,3,4,5,6,7,8,9,10
AC 7	50FCQA06A2M6-3A0A0	BLDG B	61.90	48.96	56.80	3.80	14.30/11.2	1995	520	155	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	3 S602	1,2,3,4,5,6,7,8,9,10

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW OSA & FAN STATUS SENSOR & CONNECTION TO NEW UNIT. NEW T24 COMPLIANT VENSTAR T8850 THERMOSTAT AND SENEVA TOTAL SENSE SERIES AQ2W-ACAAAAS C02 SENSOR PROVIDE WITH OLED DISPLAY AND SOLID COVER.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. PROVIDE DEMAND CONTROL VENTILATION.
10. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING F

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/EER	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE									V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
F 1	50FCQM12A2M6-3A0A0	BLDG F	125.29	93.44	116.40	3.40	15.00/11.00	4000	1240	370	1.00	2.07	460	3	60	28	30	NONE	NONE	NONE	NONE	NONE	NONE	NONE	955	68 / -	1025	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,9,10
F 2	50FCQM12A2M6-3A0A0	BLDG F	125.29	93.44	116.40	3.40	15.00/11.00	4000	800	170	1.00	2.07	460	3	60	28	30	NONE	NONE	NONE	NONE	NONE	NONE	NONE	955	68 / -	1025	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,9,10
F 3	50FCQA06A2M6-3A0A0	BLDG F	61.90	48.96	56.80	3.80	14.30/11.2	1995	825	325	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,9
F 4	50FCQM08A2M6-3A0A0	BLDG F	89.50	66.85	85.60	3.40	15.00/11.20	3000	400	130	1.00	1.28	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	68 / -	875	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,9,10
F 5	50FCQA06A2M6-3A0A0	BLDG F	61.90	48.96	56.80	3.80	14.30/11.2	1995	400	125	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	45 / -	645	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,9

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW OSA & FAN STATUS SENSOR & CONNECTION TO NEW UNIT. NEW T24 COMPLIANT VENSTAR T8850 THERMOSTAT AND SENEVA TOTAL SENSE SERIES AQ2W-ACAAAAS C02 SENSOR PROVIDE WITH OLED DISPLAY AND SOLID COVER.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. SEE ELECTRICAL PLANS FOR ADDITIONAL DETAILS.
10. PROVIDE DEMAND CONTROL VENTILATION.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

AGENCY APPROVAL

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APP: 03-126002 INC:
REVIEWED FOR
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DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL SCHEDULES

SHEET NO:
M-0.2

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING G

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/EER	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE									V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
G 1	50FCQA04A2M6-3A0A0	BLDG G	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	300	110	0.50	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11
G 2	50FCQA04A2M6-3A0A0	BLDG G	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	350	170	0.50	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11
G 3	50FCQA04A2M6-3A0A0	BLDG G	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	300	45	0.50	0.25	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	8 S602	1,2,3,4,5,6,7,8,9,12

REMARK:

1. PROVIDE HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION.
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW OSA & FAN STATUS SENSOR & CONNECTION TO NEW UNIT. NEW T24 COMPLIANT VENSTAR T8850 THERMOSTAT AND SENEVA TOTAL SENSE SERIES AQ2W-ACAAAAS C02 SENSOR PROVIDE WITH OLED DISPLAY AND SOLID COVER.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. PROVIDE 14" TALL STRUCTURALLY CALCULATED PREFABRICATE ROOF CURB. CANFAB, MICROMETL OR APPROVED EQUAL.
10. PROVIDE DEMAND CONTROL VENTILATION.
11. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
12. PROVIDE NEW FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. SEE ELECTRICAL PLANS FOR ADDITIONAL DETAILS.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE. EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING N

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/EER	SEER2/EER2	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	CURB ADAPTER WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE										V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
N 1	50FCQA05A2M6-3A0A0	BLDG N	49.92	37.82	46.10	3.70	14.30/ 11.8	- / -	1600	410	165	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	-	45 / -	535	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11
N 2	50VT-K24---3	BLDG N	23.36	18.09	24.08	3.70	- / -	13.40/ 11.00	825	150	50	0.50	0.22	208	1	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	335	80	10 / -	425	3 M-4.2	18 S601	1,2,3,4,5,6,7,8,9
N 3	50FCQA05A2M6-3A0A0	BLDG N	49.92	37.82	46.10	3.70	14.30/ 11.8	- / -	1600	410	160	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	-	45 / -	535	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11
N 4	50FCQA05A2M6-3A0A0	BLDG N	49.92	37.82	46.10	3.70	14.30/ 11.8	- / -	1600	410	130	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	-	45 / -	535	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11
N 5	50FCQA05A2M6-3A0A0	BLDG N	49.92	37.82	46.10	3.70	14.30/ 11.8	- / -	1600	410	150	1.00	0.81	460	3	60	11	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	490	-	45 / -	535	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11
N 6	50VT-K24---3	BLDG N	23.36	18.09	24.08	3.70	- / -	13.40/ 11.00	825	150	50	0.50	0.22	208	1	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	335	80	10 / -	425	3 M-4.2	18 S601	1,2,3,4,5,6,7,8,9
N 7	50FCQA06A2M6-3A0A0	BLDG N	61.90	48.96	56.80	3.80	14.30/ 11.2	- / -	1995	520	210	1.00	0.90	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	600	-	45 / -	645	2 M-4.1	2 S601	1,2,3,4,5,6,7,8,10,11

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION.
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW OSA & FAN STATUS SENSOR & CONNECTION TO NEW UNIT. NEW T24 COMPLIANT VENSTAR T8850 THERMOSTAT AND SENEVA TOTAL SENSE SERIES AQ2W-ACAAAAS C02 SENSOR PROVIDE WITH OLED DISPLAY AND SOLID COVER.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. PROVIDE 16" TALL STRUCTURALLY CALCULATED PREFABRICATE ADAPTOR CURB. CDI CURBS OR APPROVED EQUAL.
10. PROVIDE DEMAND CONTROL VENTILATION.
11. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. SEE ELECTRICAL PLANS FOR ADDITIONAL DETAILS.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE. EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING S

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/EER	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE									V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
AC 1	50FCQM08A2M6-3A0A0	BLDG S	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	600	215	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	115 / -	920	2 M-4.1	4 S601	1,2,3,4,5,6,7,8,9
AC 2	50FCQA04A2M6-3A0A0	BLDG S	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	250	100	1.00	0.51	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	75 / -	560	2 M-4.1	4 S601	1,2,3,4,5,6,7,8,9
AC 3	50FCQA04A2M6-3A0A0	BLDG S	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	250	170	1.00	0.51	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	75 / -	560	2 M-4.1	4 S601	1,2,3,4,5,6,7,8,9

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION.
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW T24 COMPLIANT CLIMAVISION MYSTAT V2 IAQ THERMOSTAT AND CO2 SENSOR.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. SEE ELECTRICAL PLANS FOR ADDITIONAL DETAILS.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE. EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL SCHEDULES

SHEET NO:
M-0.3

PACKAGED ROOF TOP HEAT PUMP UNIT SCHEDULE - BUILDING T (GYM)

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	COP	IEER-SEER/ EER	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/ PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE									V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP						
AC 1	50FCQA04A2M6-3A0A0	BLDG T	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	200	100	1.00	0.51	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	2 S601	1,2,3,4,5,6,7,8
AC 2	50FCQA04A2M6-3A0A0	BLDG T	36.98	27.93	34.10	3.70	14.30/ 11.7	1200	200	75	1.00	0.51	460	3	60	10	15	NONE	NONE	NONE	NONE	NONE	NONE	NONE	485	45 / -	530	2 M-4.1	2 S601	1,2,3,4,5,6,7,8
AC 3	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	400	160	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	19 S601	1,2,3,4,5,6,7,8,9
AC 4	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	400	170	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	19 S601	1,2,3,4,5,6,7,8,9
AC 5	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	400	165	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	4 S601	1,2,3,4,5,6,7,8,9,10
AC 1G	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	500	350	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	6 S601	1,2,3,4,5,6,7,8,9,10
AC 2G	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	500	380	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	6 S601	1,2,3,4,5,6,7,8,9,10
AC 3G	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	500	270	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	6 S601	1,2,3,4,5,6,7,8,9,10
AC 4G	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	500	275	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	6 S601	1,2,3,4,5,6,7,8,9,10
AC 5G	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	500	380	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	6 S601	1,2,3,4,5,6,7,8,9,10
AC 6G	50FCQM08A2M6-3A0A0	BLDG T	89.50	66.85	85.60	3.40	15.0/ 11.20	3000	500	355	1.00	1.13	460	3	60	19	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	805	70 / -	875	2 M-4.1	6 S601	1,2,3,4,5,6,7,8,9,10

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION
4. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW T24 COMPLIANT CLIMAVISION MYSTAT V2 IAQ THERMOSTAT AND CO2 SENSOR.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100% BAROMETRIC RELIEF.
6. PROVIDE 2" THICK MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
7. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.
8. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
9. REUSE EXISTING FIRE ALARM CONTROL RELAY TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. SEE ELECTRICAL PLANS FOR ADDITIONAL DETAILS.
10. PROVIDE DEMAND CONTROL VENTILATION.

NOTE:

1. PROVIDE MERV 13 FILTER FOR ALL HP UNITS.
2. SEE ABOVE - "PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP HEAT PUMP UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

* CONTRACTOR TO MEASURE EXISTING OUTSIDE AIR PRIOR TO REMOVAL OF UNIT & SUBMIT TO ENGINEER FOR REVIEW & SHALL MAKE ALL NECESSARY ADJUSTMENTS PER ENGINEER COMMENTS.

AIR DISTRIBUTION SCHEDULE

SYM.	MFR. & MODEL #	NECK SIZE	CFM RANGE	MAX. NECK VELOCITY	MAX. N.C.	S.P. DROP	TYPE	DAMPER	REMARKS
- SD-1	PRICE RCDE ROUND CONE DIFFUSER	8"Ø	0-175	500	30	.06	ROUND CONE DIFFUSER	MVD	STEEL CONSTRUCTION, DUCT MOUNT, 3 CONE
- SD-2	PRICE 520S LOUVERED GRILLE	10"X10" 20"X10"	0-200 201-500	500	30	.06	DOUBLE DEFLECTION	MVD	STEEL CONSTRUCTION SIDE WALL MOUNT, FRAME FOR WALL MOUNT, 22.5° DEFLECTION, FRONT BLADES PARALLEL TO SHORT DIMENSION,
- RG-1	PRICE 500S LOUVERED GRILLE	10"X10" 20"X10"	0-200 201-500	500	30	.06	SINGLE DEFLECTION	MVD	STEEL CONSTRUCTION DUCT MOUNT, DUCT ADAPTOR FOR DUCT MOUNT, 22.5° DEFLECTION, FRONT BLADES PARALLEL TO SHORT DIMENSION,
- RG-2	PRICE 500S LOUVERED GRILLE	10"X10" 20"X10"	0-200 201-500	500	30	.06	SINGLE DEFLECTION	MVD	STEEL CONSTRUCTION SIDE WALL MOUNT, FRAME FOR WALL MOUNT, 22.5° DEFLECTION, FRONT BLADES PARALLEL TO SHORT DIMENSION,
- TG-1	PRICE 530L LOUVERED GRILLE	24"X24"	0-200	500	30	.06	SINGLE DEFLECTION	MVD	STEEL CONSTRUCTION SIDE WALL MOUNT, FRAME FOR T-BAR MOUNT, 45° DEFLECTION, FRONT BLADES PARALLEL TO LONG DIMENSION, SQUARE TO ROUND ADAPTOR

LEGEND

400 / SD-1 — 400 = CFM; SD-1 = AIR DISTRIBUTION DEVICE

SD	SUPPLY DIFFUSER	TG	TRANSFER GRILLE
RG	RETURN GRILLE	EG	EXHAUST GRILLE

NOTE:
CONTRACTOR SHALL COLOR MATCH DIFFUSERS AND GRILLES TO ADJACENT SPACES.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

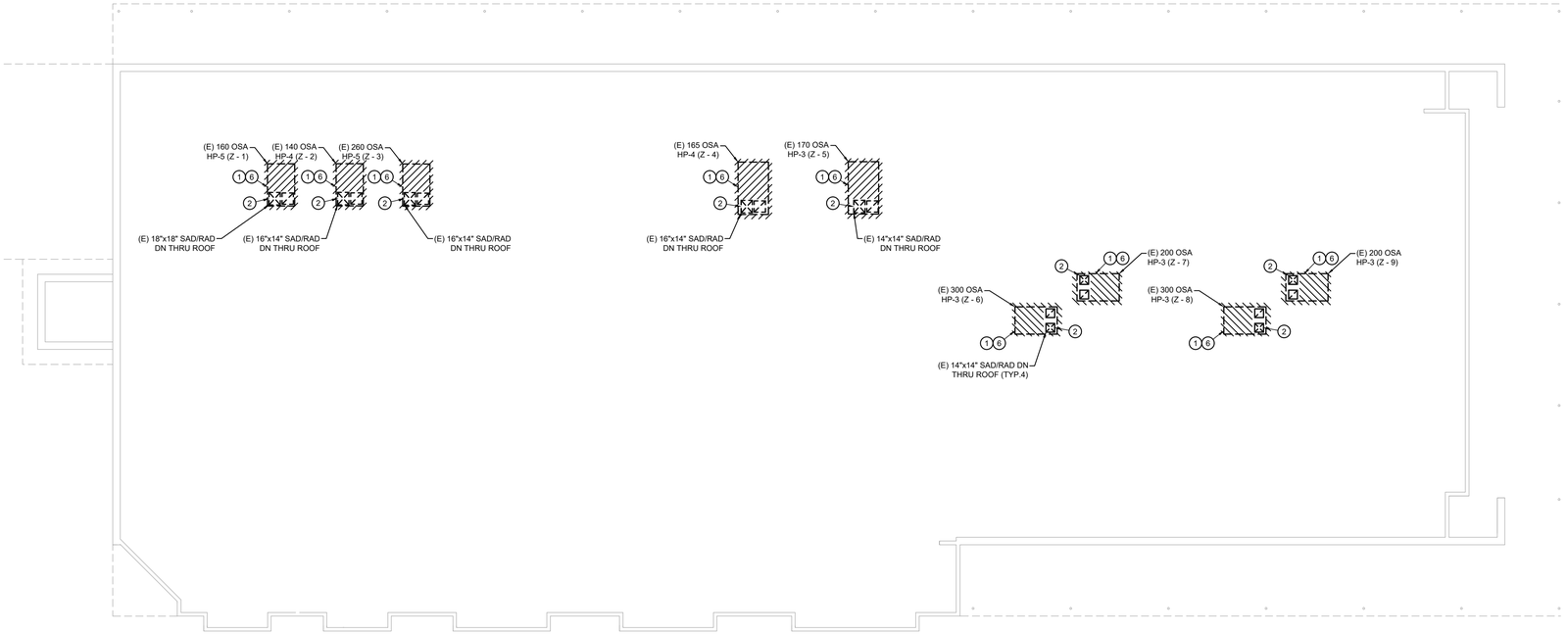
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

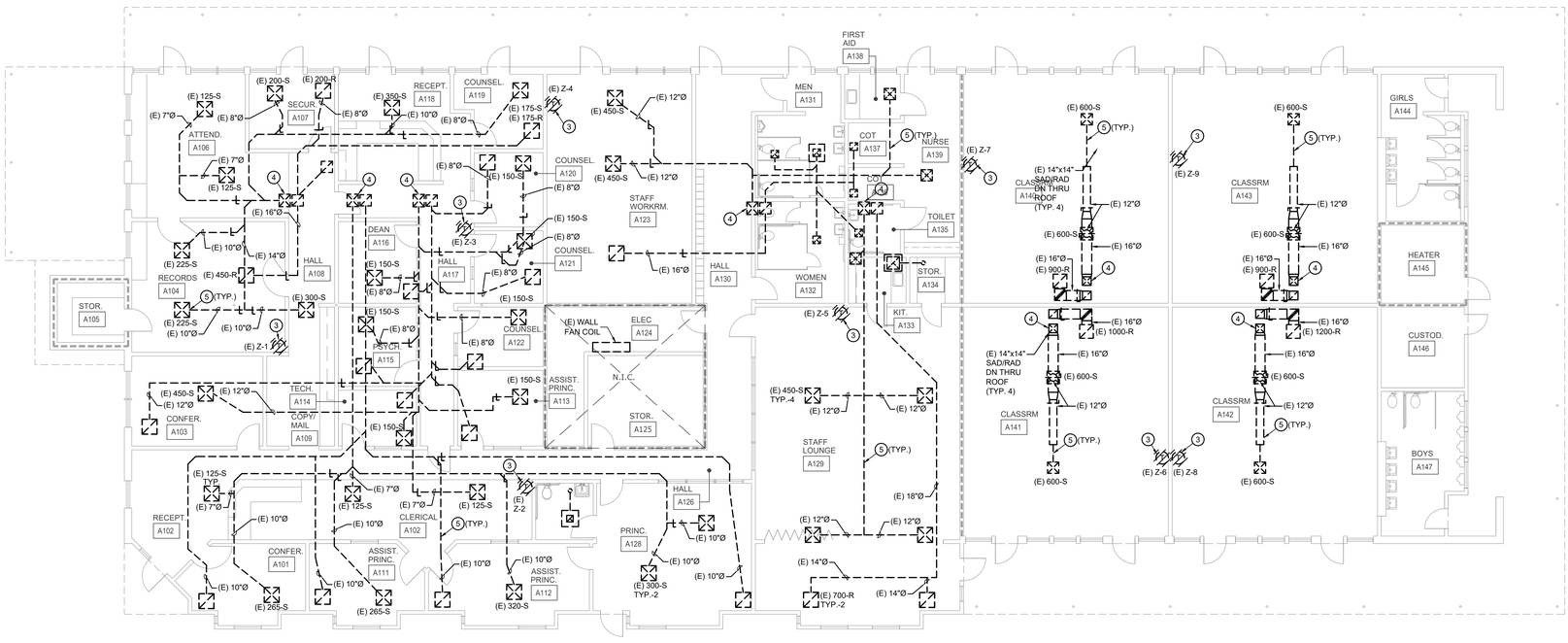
SHEET DESCRIPTION:
MECHANICAL SCHEDULES

SHEET NO:
M-0.4



REF. NORTH

MECHANICAL DEMOLITION ROOF PLAN - BUILDING A | 1/8" = 1'-0" | 2



REF. NORTH

MECHANICAL DEMOLITION FLOOR PLAN - BUILDING A | 1/8" = 1'-0" | 1

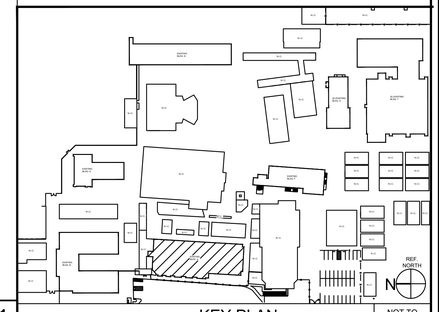
DEMOLITION KEY NOTES:

1. EXISTING PACKAGED ROOF TOP UNIT TO BE REMOVED. EXISTING ROOF CURB TO REMAIN. PROTECT IN PLACE. SEE ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
2. EXISTING SUPPLY AIR AND RETURN AIR DUCT DOWN THRU ROOF TO REMAIN. CLEAN AND PROTECT IN PLACE AFTER REMOVING EXISTING PACKAGED UNIT.
3. EXISTING THERMOSTAT AND LOW VOLTAGE WIRING TO BE REMOVED AND REPLACED WITH NEW. FIELD VERIFY ALL EXISTING LOCATIONS.
4. EXISTING SUPPLY AND RETURN AIR DUCTS UP THROUGH ROOF TO REMAIN. KEEP EXISTING FLEX CONNECTORS. REPLACE ONLY IF DAMAGED.
5. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN. VERIFY ALL EXISTING LOCATIONS IN FIELD.
6. CONTRACTOR TO DO PRE-READ TAB AIR BALANCE FOR TOTAL SUPPLY, TOTAL RETURN, TOTAL OSA & PROVIDE REPORT TO DISTRICT & ENGINEER.

DEMOLITION GENERAL NOTES:

1. CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY THE SCOPE OF DEMOLITION WORK DEMOLITION IS INDICATED AS A CONVENIENCE FOR THE CONTRACTOR AND MAY NOT INDICATE THE FULL SCOPE OF DEMOLITION REQUIRED TO COMPLETE THE NEW WORK.
2. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED REQUIRED.
3. GENERAL CONTRACTOR SHALL PATCH ALL OPENINGS IN WALLS, ROOF, ETC. THAT WILL NOT BE REUSED FOR FUTURE WORK. COORDINATE AS NECESSARY WITH OTHER TRADES. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO COMPLETE THE NEW WORK.
4. PRIOR TO ANY WORK BEING DONE CONTRACTOR SHALL MAKE A CAREFUL EVALUATION OF THE EXISTING CONDITIONS AND VERIFY ALL METHODS OF REMOVAL AND INSTALLATION OF MECHANICAL EQUIPMENT.
5. CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE WORK OF ALL OTHER TRADES.
6. CONTRACTOR SHALL CLEAN ALL AIR DEVICES TO REMAIN PER SPECIFICATIONS.
7. CONTRACTOR SHALL CLEAN ALL EXISTING DUCTWORK INCLUDING LINED DUCTWORK TO REMAIN PER SPECIFICATIONS. PRIOR TO BID AND BEFORE COMMENCEMENT OF ANY WORK ALL EXISTING DUCTWORK TO REMAIN SHALL BE CONFIRMED ON SITE.
8. ANY VENTS, CONDUIT, & GAS LINES LOCATED ON THE ROOF THAT ARE NOT SHOWN ON THIS SHEET AND/OR NOT EXPLICITLY INDICATED TO BE DEMOLISHED, SHALL REMAIN AND BE PROTECTED IN PLACE. CONTRACTOR TO FIELD VERIFY EXISTING ROOF CONDITIONS, AND TAKE MEASURES TO DEMOLISH ONLY THE ITEMS INDICATED.
9. ALL NEW WORK SHALL MATCH EXISTING IN KIND, QUALITY AND FINISH U.O.N.
10. CONTRACTOR SHALL INCLUDE IN THE SCOPE OF WORK ALL WORK REQUIRED TO PATCH, FINISH, MATCH, AND BLEND NEW SURFACES IO EXISTING AS IMPACTED BY THE AREAS OF NEW WORK.
11. CONTRACTOR SHALL PATCH AND REPAIR EXISTING WALLS, FLOORS,CEILINGS, AND/OR ROOF OPENING(S) AS NECESSARY FOR EXISTING EQUIPMENT, DUCTS, PIPING, & ETC. BEING REMOVED AND/OR MODIFIED. MATCH SURROUNDING MATERIAL AND MAINTAIN FIRE RATING.
12. NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA.

WALL MATERIAL LEGEND	
	1-HR. FIRE RATED WALL



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

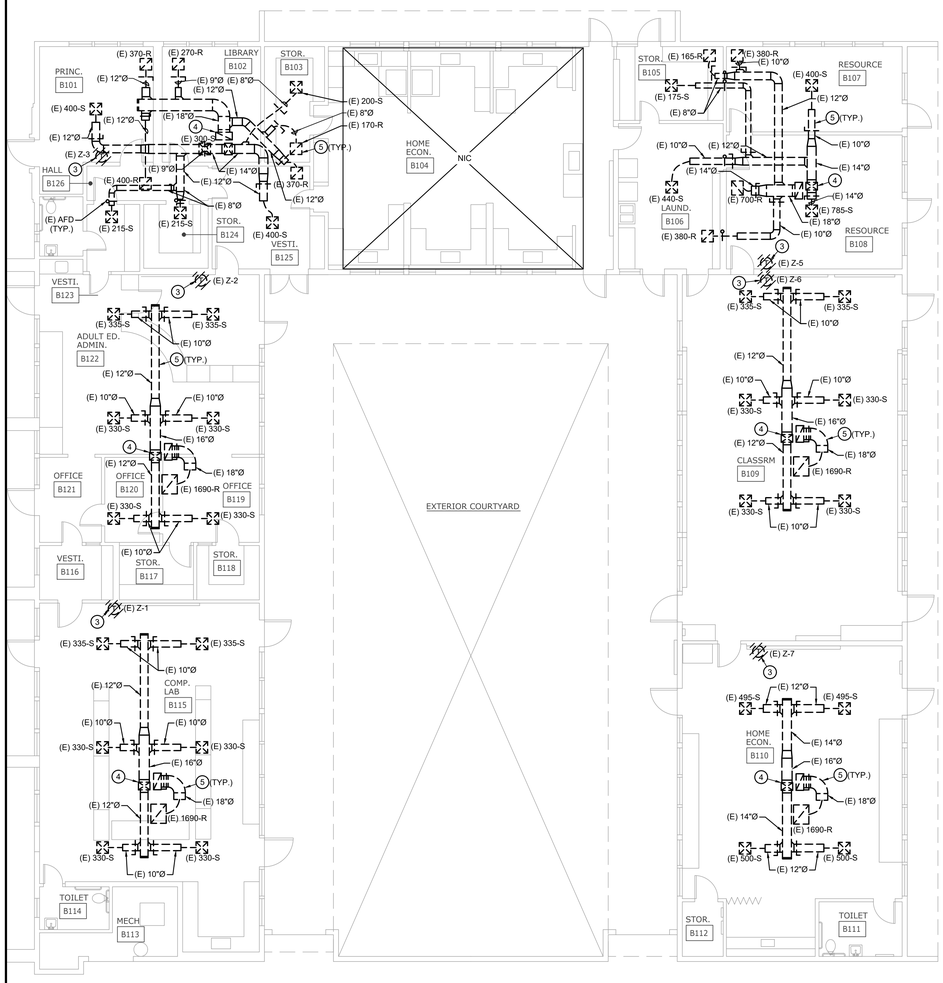
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

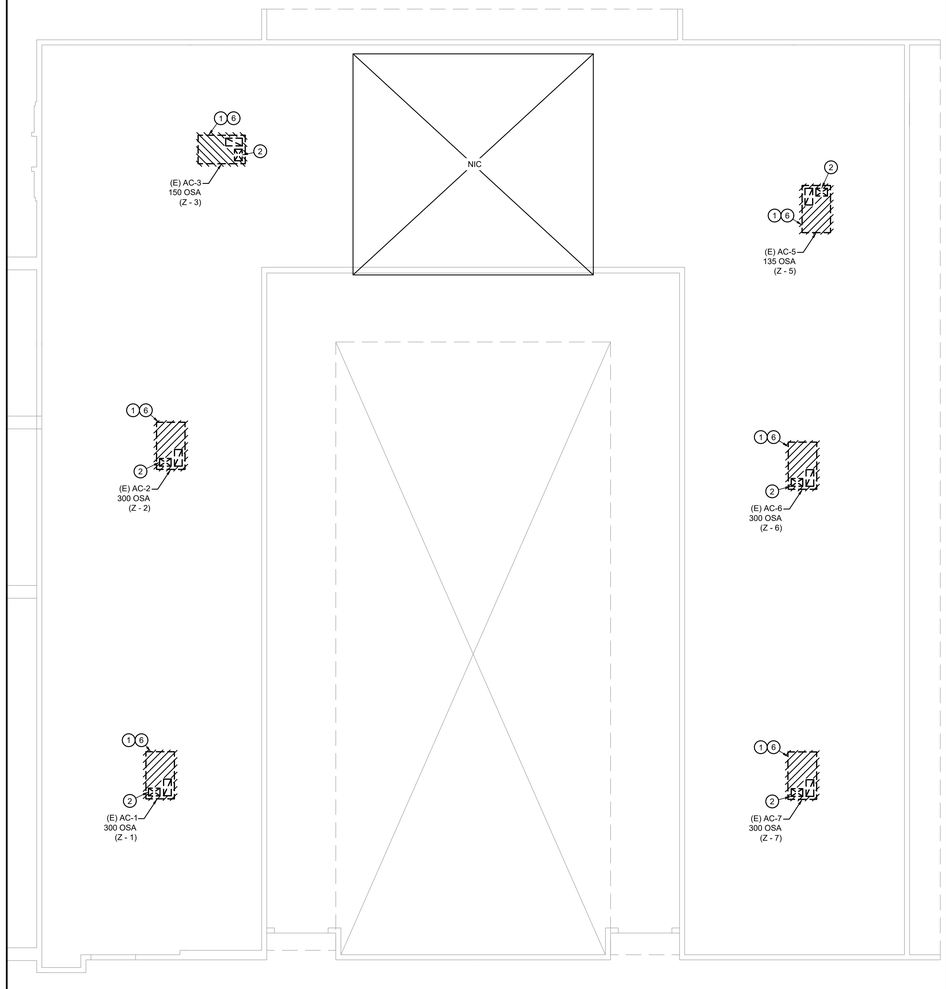
STAMP

SHEET DESCRIPTION:
MECHANICAL DEMO PLAN - BUILDING A

SHEET NO:
MD-1.1



MECHANICAL DEMOLITION FLOOR PLAN - BUILDING B | 1/8" = 1'-0" | 1



MECHANICAL DEMOLITION ROOF PLAN - BUILDING B | 1/8" = 1'-0" | 2

DEMOLITION KEY NOTES:

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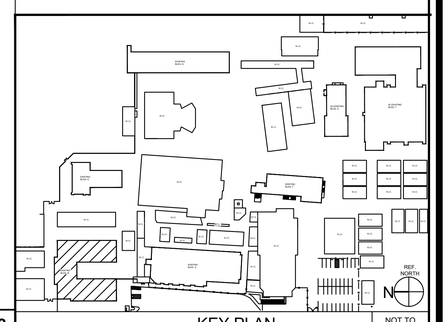

KEY PLAN | NOT TO SCALE

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Anaheim, CA 92807
Telephone (714) 693-2277

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REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

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12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

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DATE:	08/27/2026
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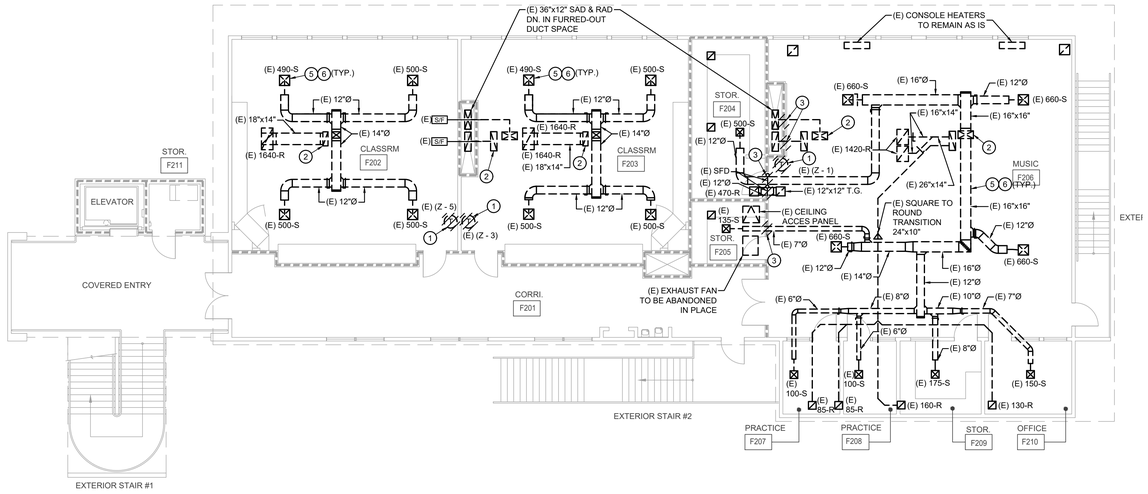
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

CONSULTANT

STAMP

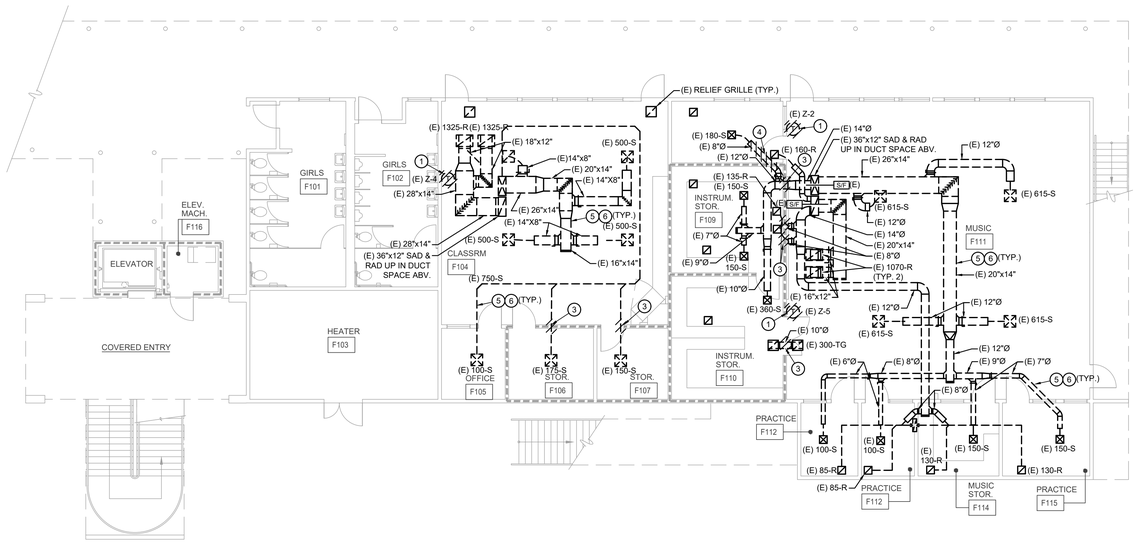
SHEET DESCRIPTION:
MECHANICAL DEMO PLAN - BUILDING B

SHEET NO:
MD-1.2



REF. NORTH

MECHANICAL DEMOLITION SECOND FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 2



REF. NORTH

MECHANICAL DEMOLITION FIRST FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 1

DEMOLITION KEY NOTES:

1. EXISTING THERMOSTAT AND LOW VOLTAGE WIRING TO BE REMOVED AND REPLACED WITH NEW. VERIFY ALL EXISTING LOCATIONS IN FIELD.
2. EXISTING SUPPLY AND RETURN AIR DUCTS UP THROUGH ROOF TO REMAIN. KEEP EXISTING FLEX CONNECTORS. REPLACE ONLY IF DAMAGED.
3. DEMOLISH PORTION DUCT WORK THRU WALL NECESSARY TO INSTALL A NEW COMBINATION SMOKE FIRE DAMPER.
4. DEMOLISH DUCT WORK AND CAP TAP OFF MAIN. PATCH AND REPAIR WALL TO MAINTAIN FIRE RATING.
5. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.VERIFY ALL EXISTING LOCATIONS IN FIELD.
6. CONTRACTOR TO DE PRE-READ TAB AIR BALANCE FOR TOTAL SUPPLY, TOTAL RETURN, TOTAL OSA & PROVIDE REPORT TO DISTRICT & ENGINEER.

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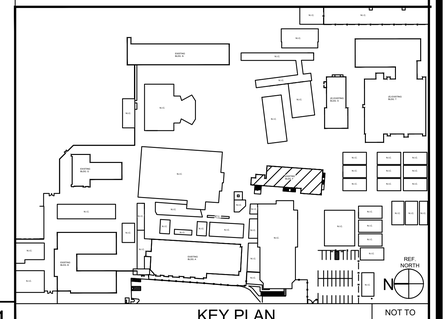
WALL MATERIAL LEGEND	
- - - - - -	1-HR. FIRE RATED WALL



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

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optimum energy design
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5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

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REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M29253
Exp. 6/30/27
MECHANICAL
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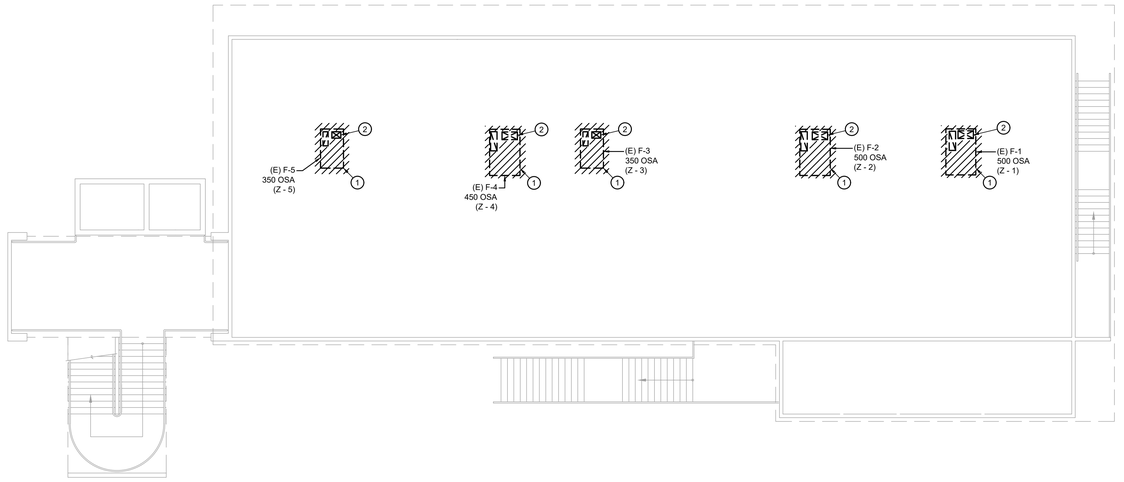
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DEMO FLOOR PLANS - BUILDING F

SHEET NO:
MD-1.3



MECHANICAL DEMOLITION ROOF PLAN - BUILDING F | 1/8" = 1'-0" | 1

DEMOLITION KEY NOTES:

1. EXISTING PACKAGED ROOF TOP UNIT TO BE REMOVED. EXISTING ROOF CURB TO REMAIN, PROTECT IN PLACE. SEE ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION
2. EXISTING SUPPLY AIR AND RETURN AIR DUCT DOWN THRU ROOF TO REMAIN. CLEAN AND PROTECT IN PLACE AFTER REMOVING EXISTING PACKAGED UNIT.

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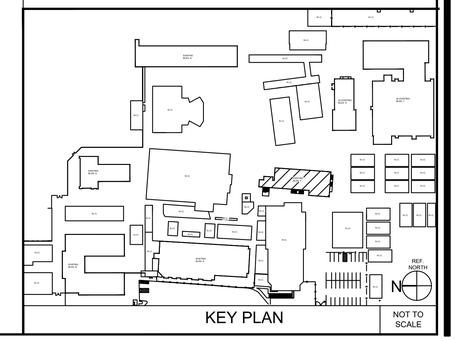

KEY PLAN | NOT TO SCALE

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CONSULTANT

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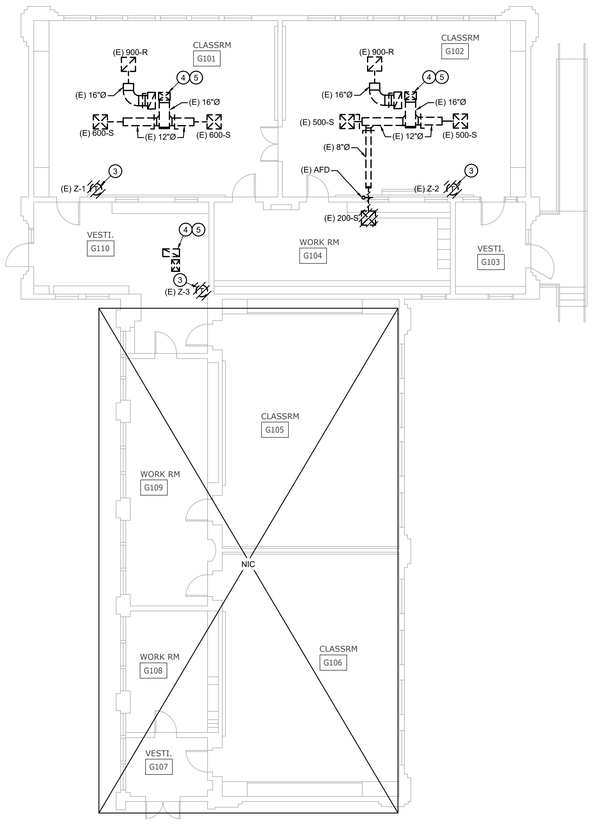
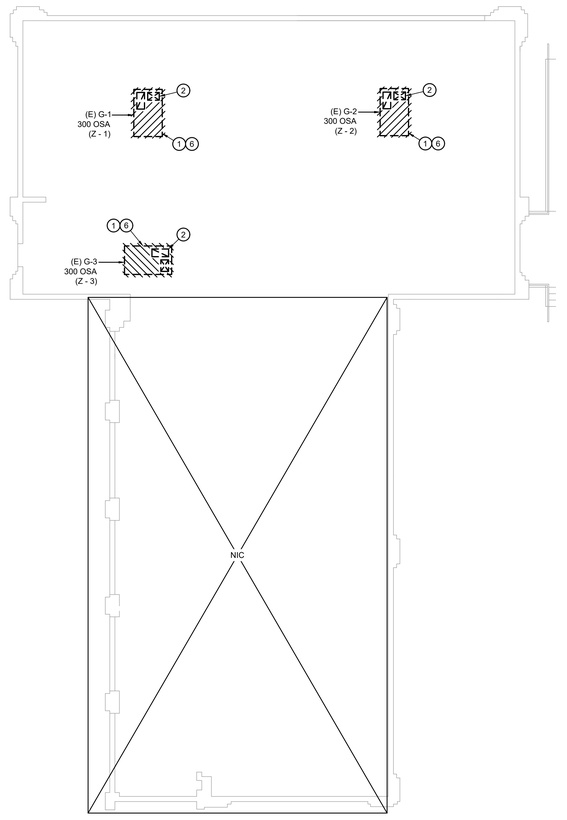
SHEET DESCRIPTION:
MECHANICAL DEMO ROOF PLAN - BUILDING F

SHEET NO:
MD-1.3.1



MECHANICAL DEMOLITION FLOOR PLAN - BUILDING G | 1/8" = 1'-0" | 1



MECHANICAL DEMOLITION ROOF PLAN - BUILDING G | 1/8" = 1'-0" | 2

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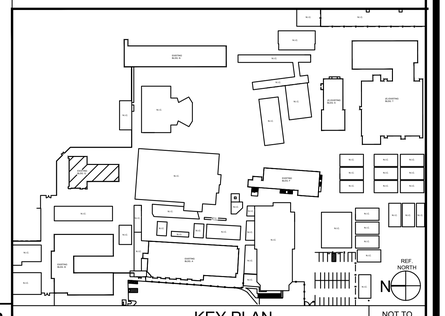
12. NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

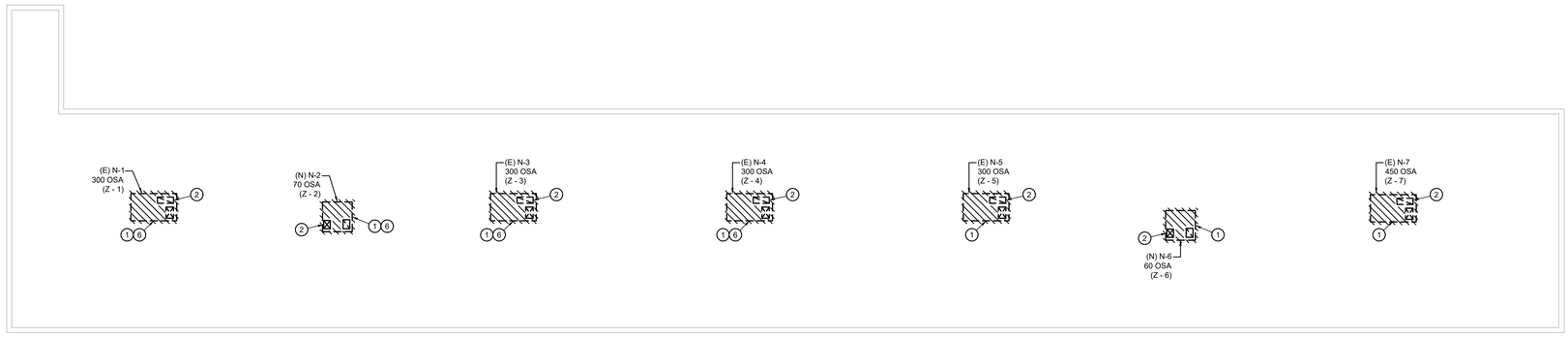
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DEMO PLAN - BUILDING G

SHEET NO:
MD-1.4



MECHANICAL DEMOLITION ROOF PLAN - BUILDING N | 1/8" = 1'-0" | 2

DEMOLITION KEY NOTES:

1. EXISTING PACKAGED ROOF TOP UNIT TO BE REMOVED. EXISTING ROOF CURB TO REMAIN, PROTECT IN PLACE. SEE ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION
2. EXISTING SUPPLY AIR AND RETURN AIR DUCT DOWN THRU ROOF TO REMAIN. CLEAN AND PROTECT IN PLACE AFTER REMOVING EXISTING PACKAGED UNIT.
3. EXISTING THERMOSTAT AND LOW VOLTAGE WIRING TO BE REMOVED AND REPLACED WITH NEW. VERIFY ALL EXISTING LOCATIONS IN FIELD.
4. EXISTING SUPPLY AND RETURN AIR DUCTS UP THROUGH ROOF TO REMAIN. KEEP EXISTING FLEX CONNECTORS. REPLACE ONLY IF DAMAGED.
5. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN. VERIFY ALL EXISTING LOCATIONS IN FIELD.
6. CONTRACTOR TO DE PRE-READ TAB AIR BALANCE FOR TOTAL SUPPLY, TOTAL RETURN, TOTAL OSA & PROVIDE REPORT TO DISTRICT & ENGINEER.

DEMOLITION GENERAL NOTES:

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2. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED REQUIRED.
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6. CONTRACTOR SHALL CLEAN ALL AIR DEVICES TO REMAIN PER SPECIFICATIONS.
7. CONTRACTOR SHALL CLEAN ALL EXISTING DUCTWORK INCLUDING LINED DUCTWORK TO REMAIN PER SPECIFICATIONS. PRIOR TO BID AND BEFORE COMMENCEMENT OF ANY WORK ALL EXISTING DUCTWORK TO REMAIN SHALL BE CONFIRMED ON SITE.
8. ANY VENTS, CONDUIT, & GAS LINES LOCATED ON THE ROOF THAT ARE NOT SHOWN ON THIS SHEET AND/OR NOT EXPLICITLY INDICATED TO BE DEMOLISHED, SHALL REMAIN AND BE PROTECTED IN PLACE. CONTRACTOR TO FIELD VERIFY EXISTING ROOF CONDITIONS, AND TAKE MEASURES TO DEMOLISH ONLY THE ITEMS INDICATED.
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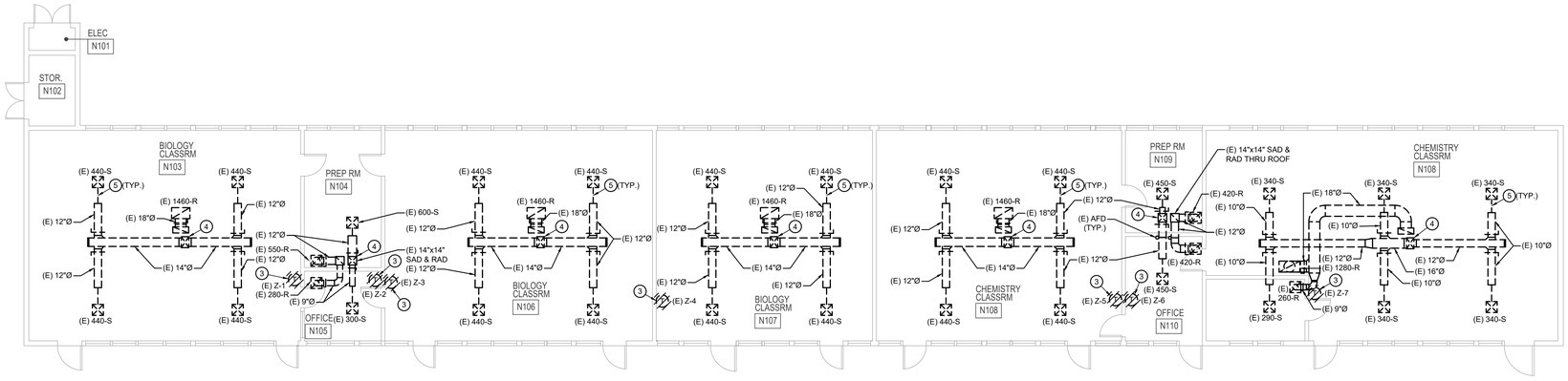
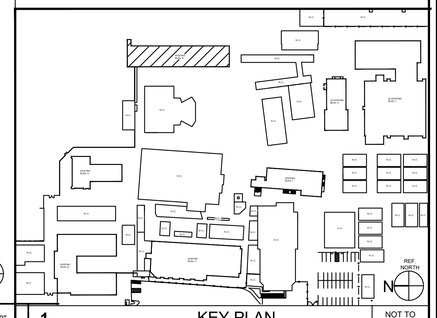


MECHANICAL DEMOLITION FLOOR PLAN - BUILDING N | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

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optimum energy design
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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4		

JOB NO: 501-26-0009
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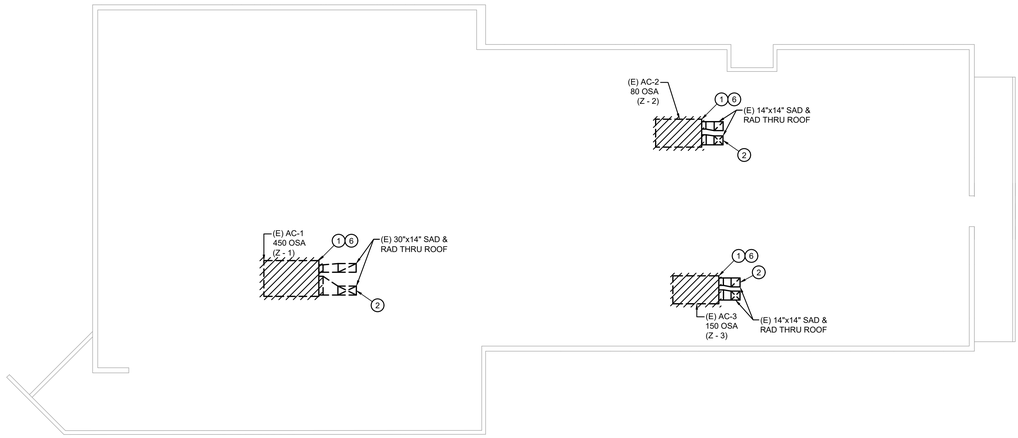
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

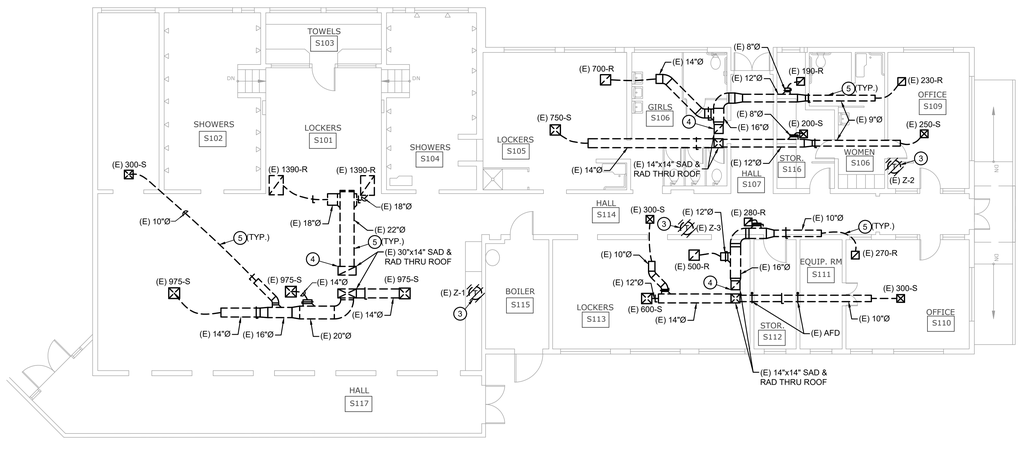
STAMP

SHEET DESCRIPTION:
MECHANICAL DEMO PLAN - BUILDING N

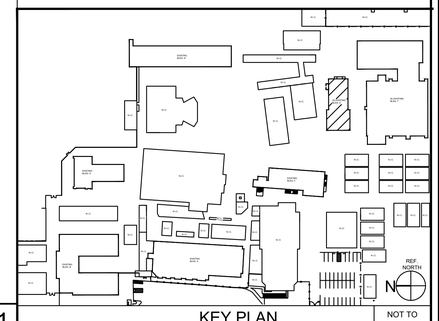
SHEET NO:
MD-1.5



MECHANICAL DEMOLITION ROOF PLAN - BUILDING S | 1/8" = 1'-0" | 2



MECHANICAL DEMOLITION FLOOR PLAN - BUILDING S | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

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APP: 03-126002 INC:
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SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

oed optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
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4		

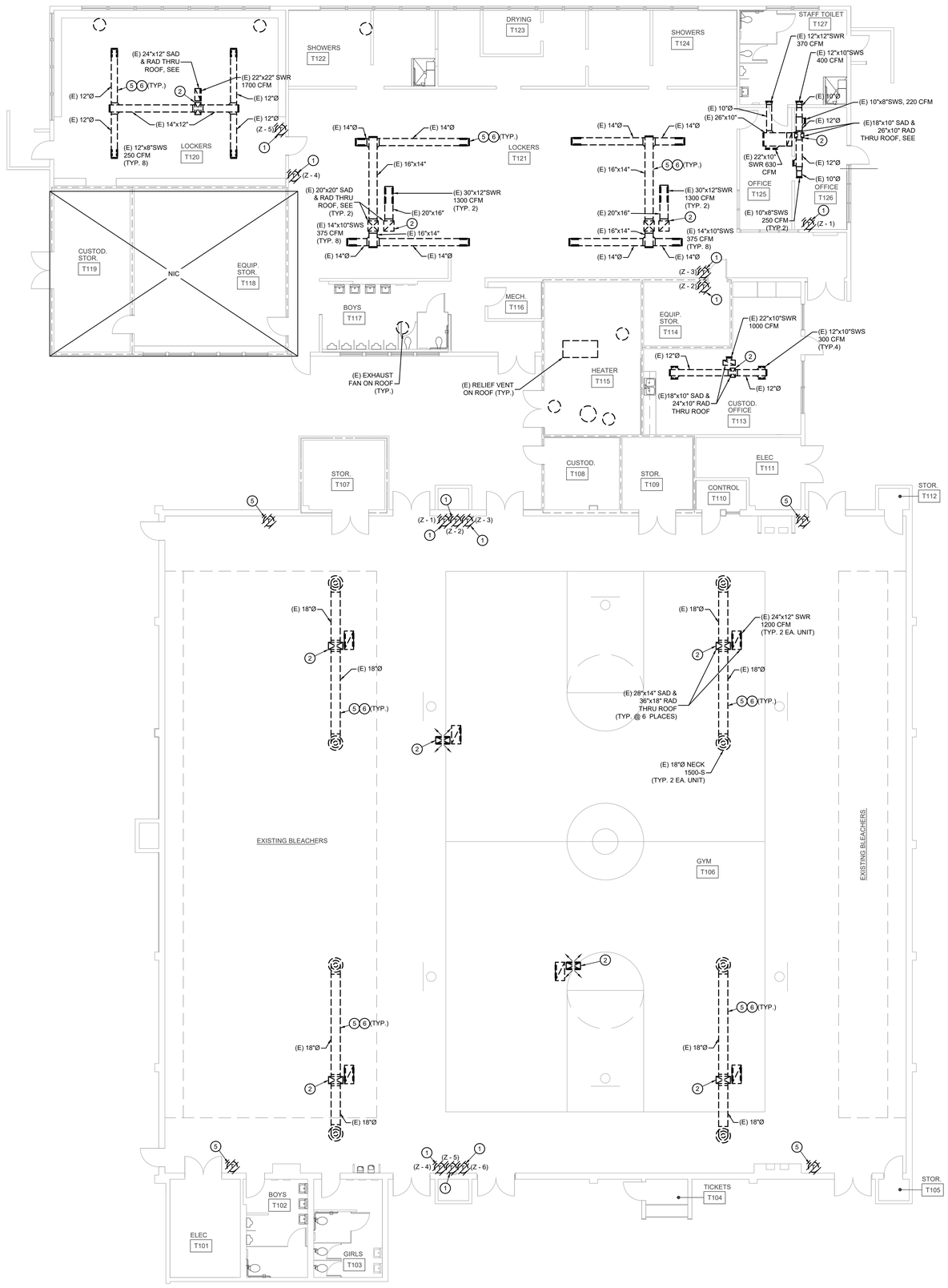
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DEMO PLAN - BUILDING S

SHEET NO:
MD-1.6



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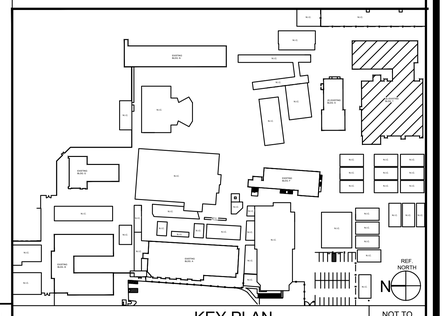

KEY PLAN

MECHANICAL DEMOLITION FLOOR PLAN - BUILDING T

1/8" = 1'-0"

1

NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. BAKER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
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JOB NO: 501-26-0009
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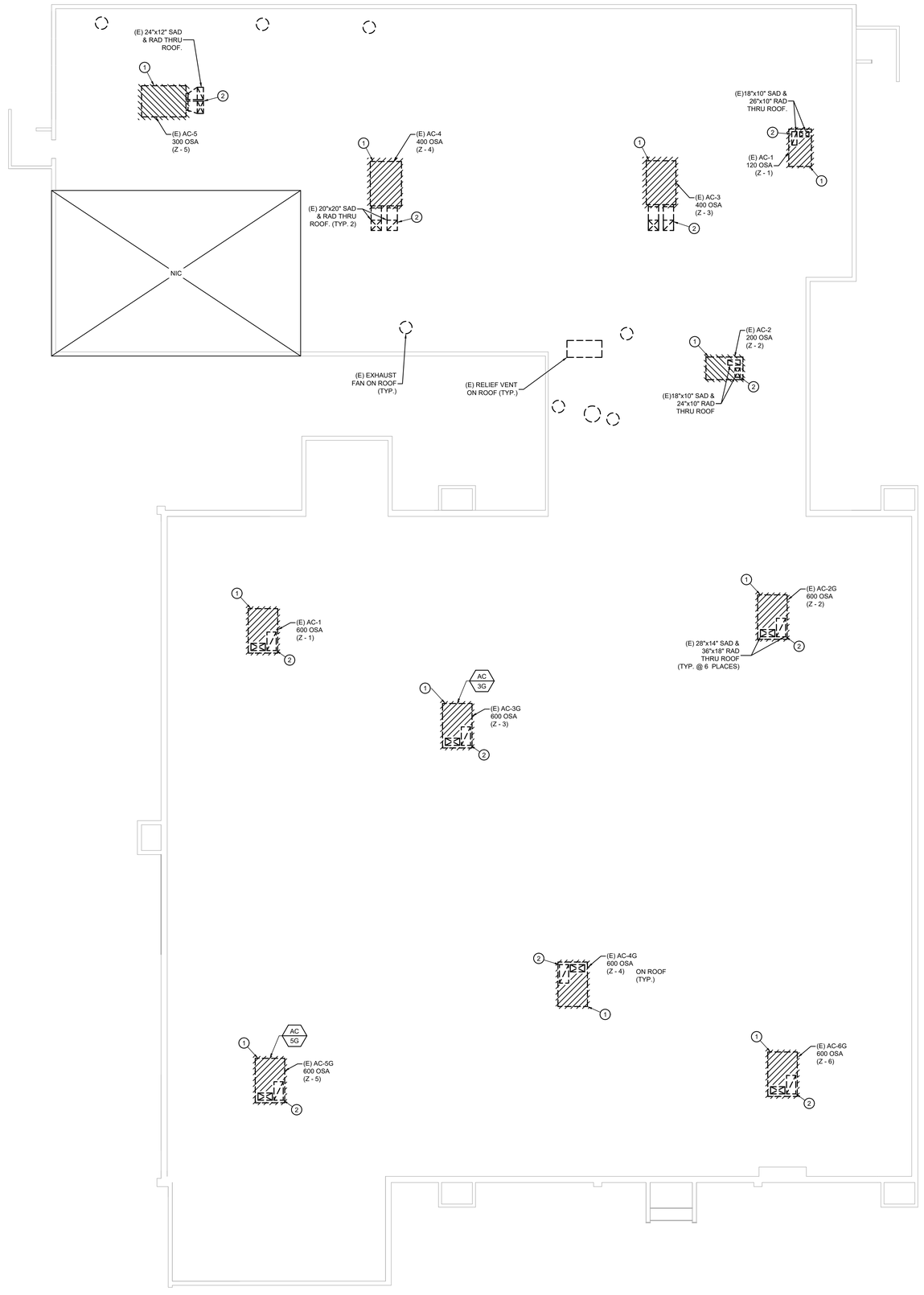
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DEMO FLOOR PLAN - BUILDING T

SHEET NO:
MD-1.7



DEMOLITION KEY NOTES:

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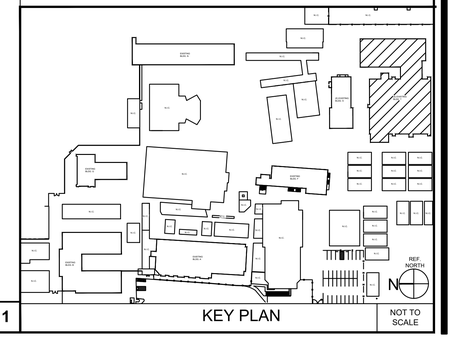
MECHANICAL DEMOLITION ROOF PLAN - BUILDING T | 1/8" = 1'-0" | 1



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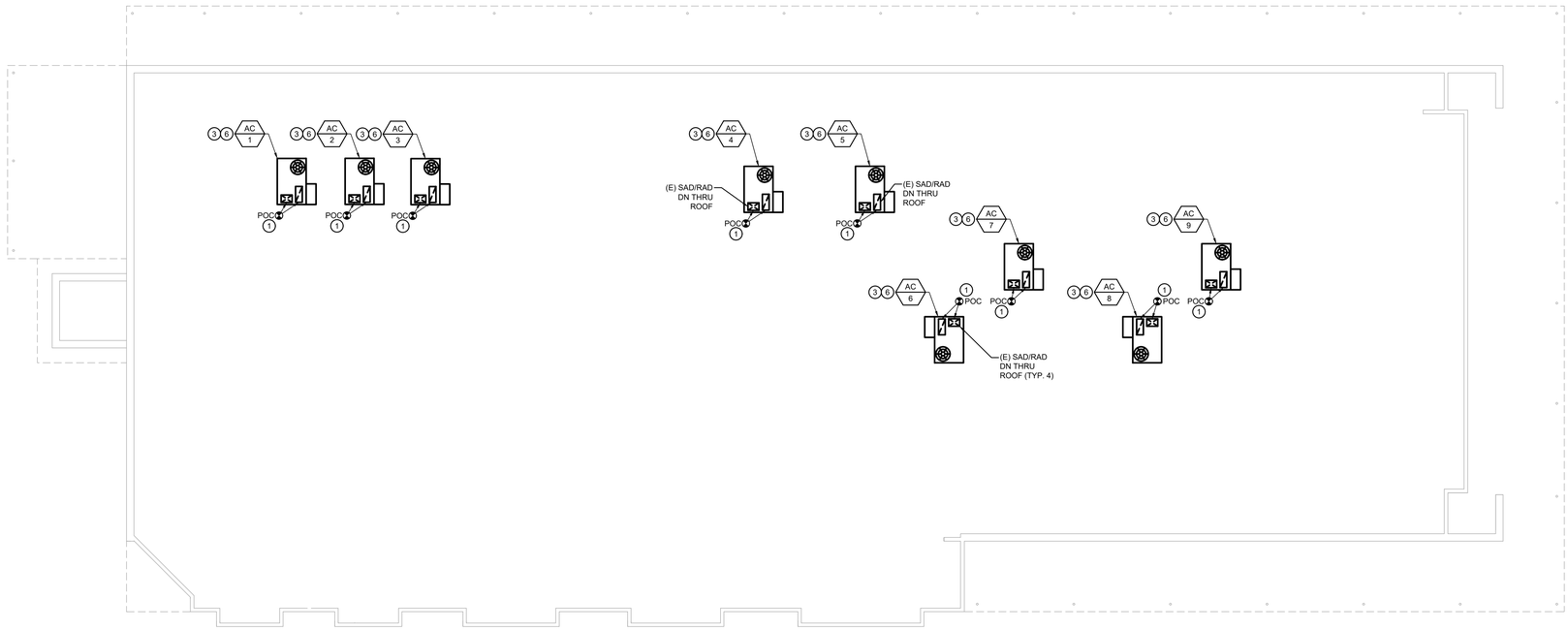
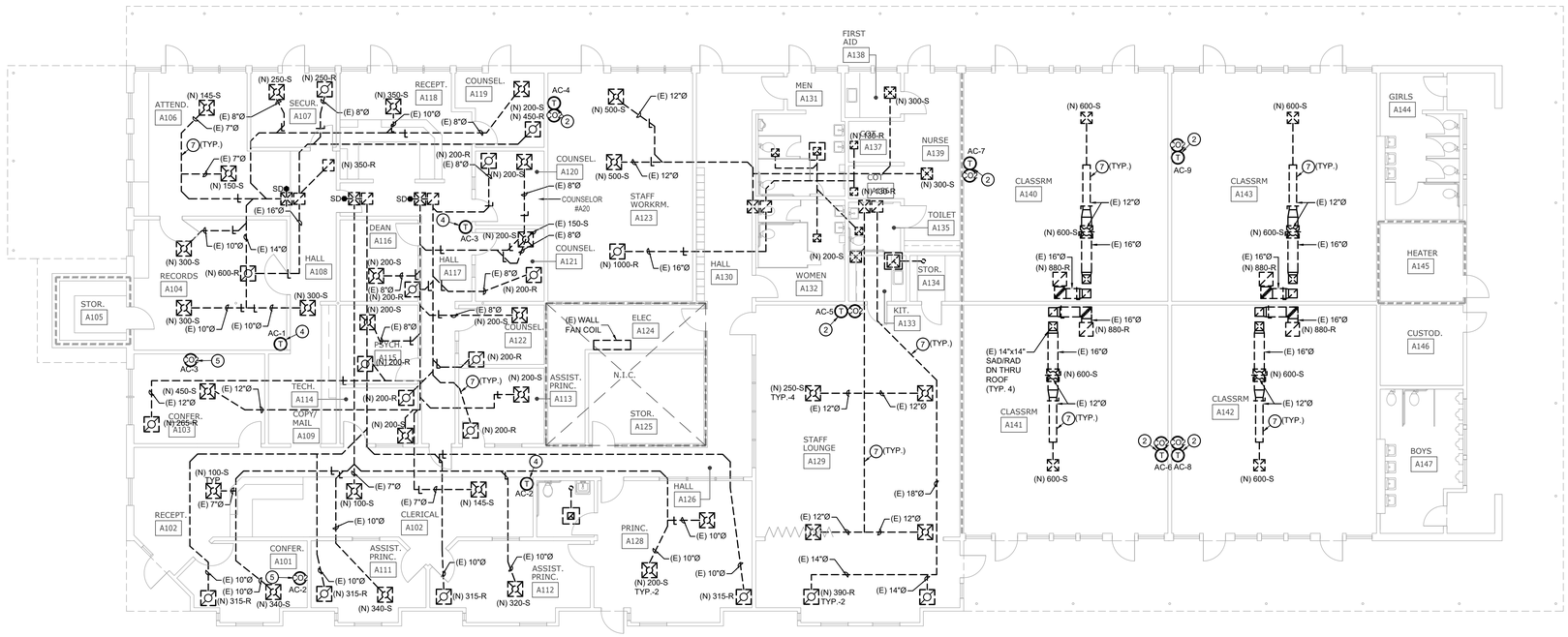
SHEET DESCRIPTION:
MECHANICAL DEMO ROOF PLAN - BUILDING T

SHEET NO:
MD-1.7.1



REF. NORTH

MECHANICAL REMODEL ROOF PLAN - BUILDING A | 1/8" = 1'-0" | 2



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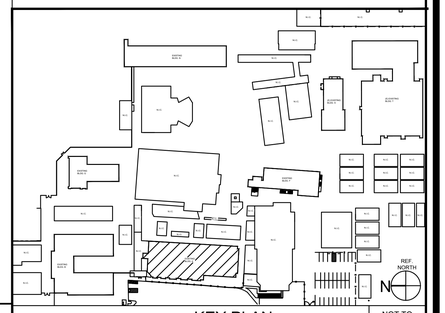


KEY PLAN | NOT TO SCALE

CONSTRUCTION KEY NOTES:

1. CONTRACTOR SHALL UTILIZE EXISTING DUCT-WORK AND PROVIDE NEW DUCT-WORK TO MAKE CONNECTION TO EXISTING DUCT-WORK
2. INSTALL NEW THERMOSTAT/CO2 SENSOR AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
3. SEE DETAIL 9/S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
4. INSTALL NEW THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING PER MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
5. INSTALL NEW CO2 SENSOR AT 48" AFF. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING PER MANUFACTURER GUIDELINES.
6. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
7. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.

CONSTRUCTION GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
2. BEFORE BIDDING ON THIS WORK, THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES, EXISTING EQUIPMENT AND SERVICES. HE SHALL DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE NEW EQUIPMENT, DUCTWORK, AND PIPING THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT AND MATERIALS INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE PROJECT. FAILURE TO VISIT THE SITE WILL IN NO WAY RELIEVE THE CONTRACTOR OF THE NECESSITY OF FURNISHING ANY MATERIAL OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS ADDITIONAL WORK SHALL BE PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER.
3. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND ELECTRICAL SERVICES IN THE AREA OF CONSTRUCTION AND NOTIFY THE ENGINEER OR ANY DISCREPANCIES.
4. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO FACILITATE DEMOLITION AND/OR PERFORMANCE OF THE NEW WORK. ALL NEW WORK SHALL MATCH IN KIND, QUALITY AND FINISH U.O.N.
5. CONTRACTOR SHALL MINIMIZE IMPACT TO EXISTING GLU-UP & T-BAR CEILING TILES AND IMPLEMENT MEASURES TO MITIGATE DAMAGE TO THE EXISTING CEILING SYSTEM.
6. CONTRACTOR SHALL MAINTAIN PROPER CLEARANCES FROM ALL ELECTRICAL EQUIPMENT AND SERVICE CLEARANCES FOR MECHANICAL EQUIPMENT.
7. CONTRACTOR SHALL INSTALL DUCTWORK SUCH THAT EQUIPMENT AND ALL APPURTENANCES ARE EASILY SERVICEABLE.
8. FRESH AIR INTAKES SHALL BE 10'-0" MIN. AWAY FROM ALL EXHAUST OUTLETS, PLUMBING VENTS, AND FLUES.
9. ALL NEW EXPOSED SHEET METAL DUCT WORK,SHEET METAL CURB/PLATFORM AND DUCT SUPPORT SHALL BE PREPARED AND PAINTED PER DISTRICT STANDARD COLOR. PROVIDE SAMPLE TO DISTRICT FOR APPROVAL.

WALL MATERIAL LEGEND	
	1-HR. FIRE RATED WALL

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

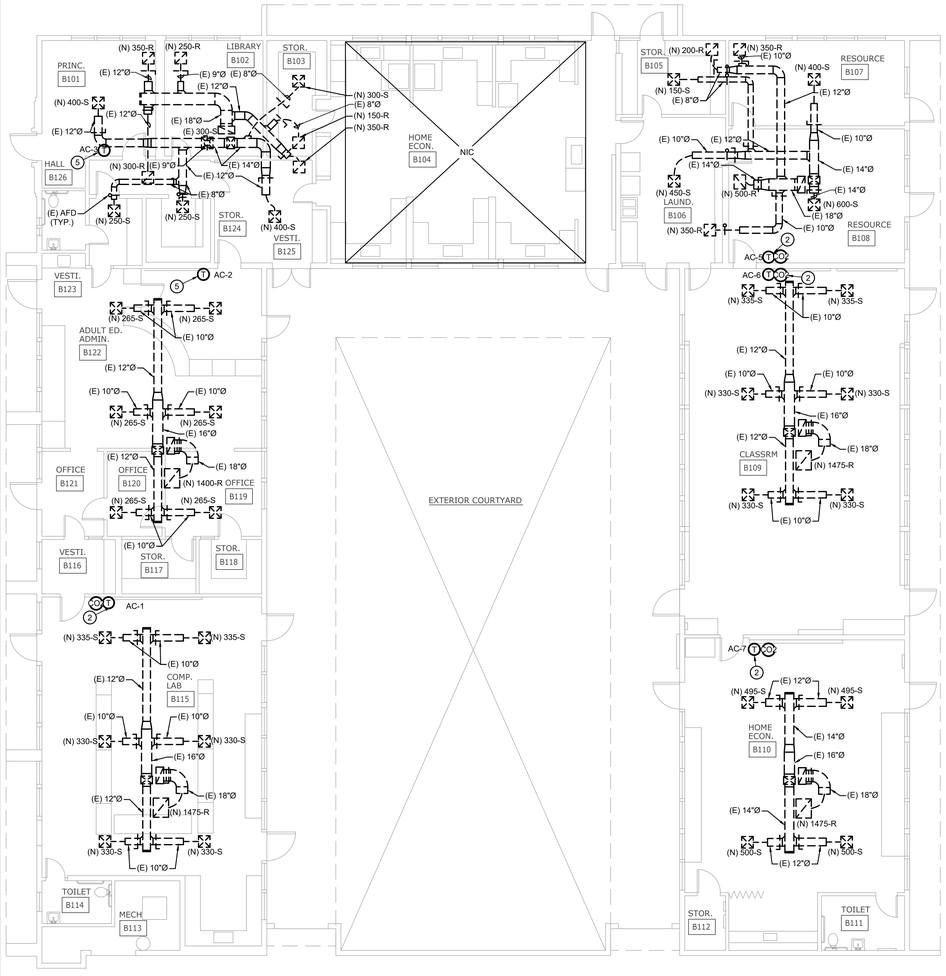
JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	HT
CHECK:	CC
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

CONSULTANT

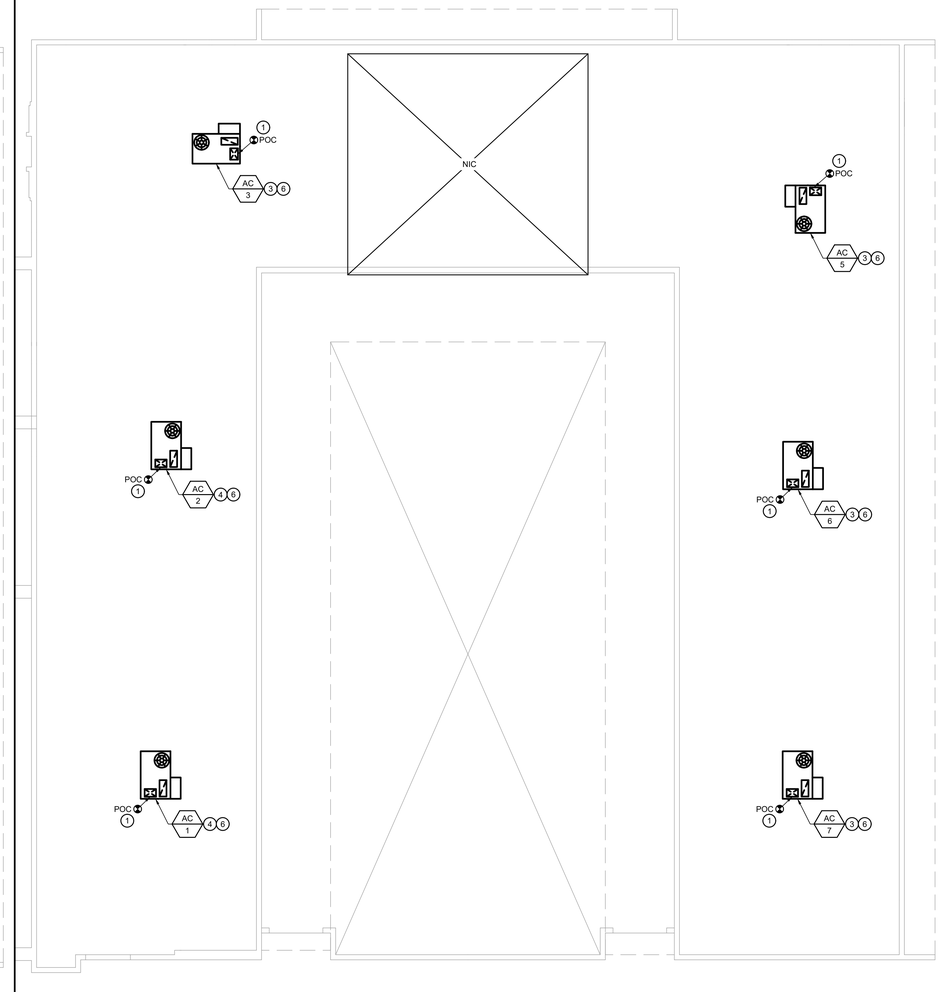
STAMP

SHEET DESCRIPTION:
MECHANICAL REMODEL PLAN - BUILDING A

SHEET NO:
M-1.1



MECHANICAL REMODEL FLOOR PLAN - BUILDING B | 1/8" = 1'-0" | 1



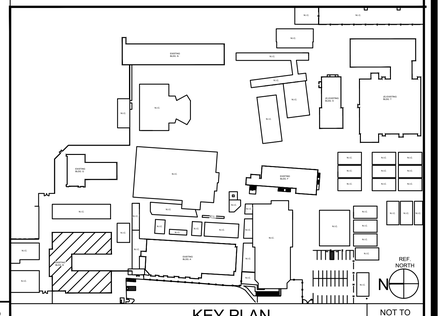
MECHANICAL REMODEL ROOF PLAN - BUILDING B | 1/8" = 1'-0" | 2

CONSTRUCTION KEY NOTES:

1. CONTRACTOR SHALL UTILIZE EXISTING DUCT-WORK AND PROVIDE NEW DUCT-WORK TO MAKE CONNECTION TO EXISTING DUCT-WORK.
2. INSTALL NEW THERMOSTAT/CO2 SENSOR AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTRO NEW UNIT ECONOMIZER PER MANUFACTURER GUILDLINES.
3. SEE DETAIL 3/S602 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
4. SEE DETAIL 2/S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
5. INSTALL NEW THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT POWER.
6. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.

CONSTRUCTION GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
2. BEFORE BIDDING ON THIS WORK, THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES, EXISTING EQUIPMENT AND SERVICES. HE SHALL DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE NEW EQUIPMENT, DUCTWORK, AND PIPING THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT AND MATERIALS INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE PROJECT. FAILURE TO VISIT THE SITE WILL IN NO WAY RELIEVE THE CONTRACTOR OF THE NECESSITY OF FURNISHING ANY MATERIAL OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS ADDITIONAL WORK SHALL BE PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER.
3. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND ELECTRICAL SERVICES IN THE AREA OF CONSTRUCTION AND NOTIFY THE ENGINEER OR ANY DISCREPANCIES.
4. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO FACILITATE DEMOLITION AND/OR PERFORMANCE OF THE NEW WORK. ALL NEW WORK SHALL MATCH IN KIND, QUALITY AND FINISH U.O.N.
5. CONTRACTOR SHALL MINIMIZE IMPACT TO EXISTING GLU-UP & T-BAR CEILING TILES AND IMPLEMENT MEASURES TO MITIGATE DAMAGE TO THE EXISTING CEILING SYSTEM.
6. CONTRACTOR SHALL MAINTAIN PROPER CLEARANCES FROM ALL ELECTRICAL EQUIPMENT AND SERVICE CLEARANCES FOR MECHANICAL EQUIPMENT.
7. CONTRACTOR SHALL INSTALL DUCTWORK SUCH THAT EQUIPMENT AND ALL APPURTENANCES ARE EASILY SERVICEABLE.
8. FRESH AIR INTAKES SHALL BE 10'-0" MIN. AWAY FROM ALL EXHAUST OUTLETS, PLUMBING VENTS, AND FLUES.
9. ALL NEW EXPOSED SHEET METAL DUCT WORK,SHEET METAL CURB/PLATFORM AND DUCT SUPPORT SHALL BE PREPARED AND PAINTED PER DISTRICT STANDARD COLOR. PROVIDE SAMPLE TO DISTRICT FOR APPROVAL.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
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5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
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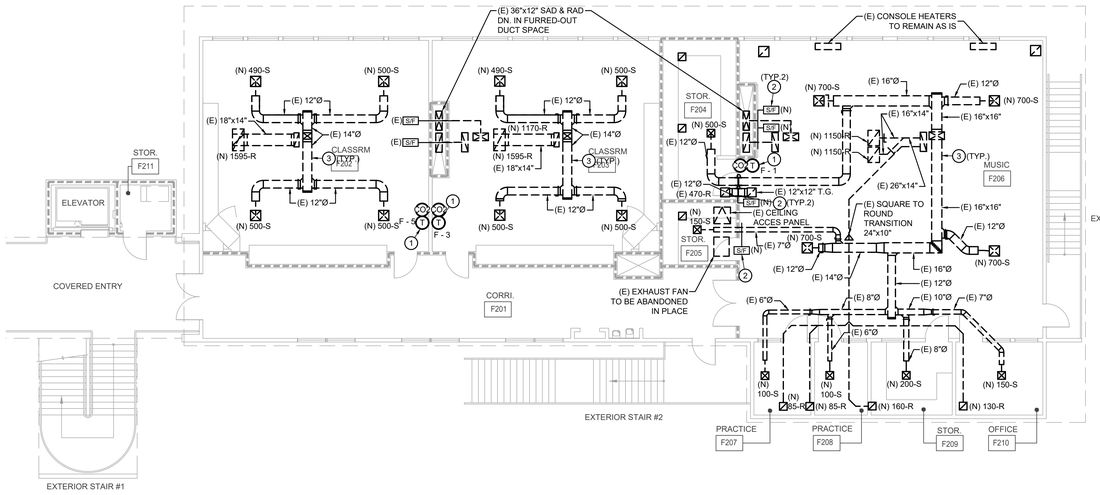
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

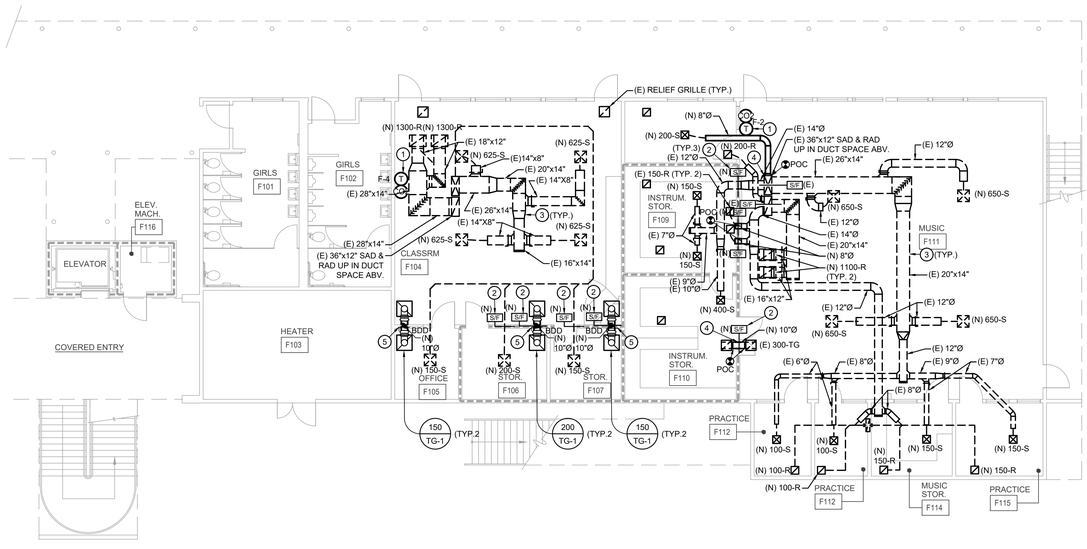
SHEET DESCRIPTION:
MECHANICAL REMODEL PLAN - BUILDING B

SHEET NO:
M-1.2



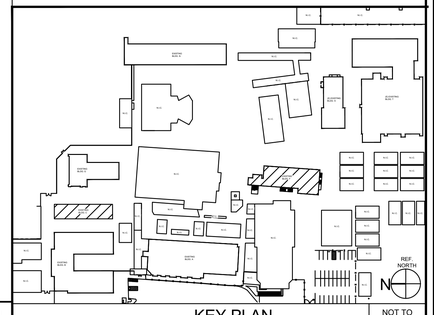
REF. NORTH

MECHANICAL REMODEL SECOND FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 2



REF. NORTH

MECHANICAL REMODEL FIRST FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

CONSTRUCTION KEY NOTES:

1. INSTALL NEW THERMOSTAT/CO2 SENSOR AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
2. INSTALL NEW COMBINATION SMOKE FIRE DAMPER. PROVIDE POTTORFF FSD-142 SIEMENS CEBERUS PRO COMPATIBLE ACTUATOR OR APPROVED EQUAL. MODIFY DUCTWORK AS NECESSARY TO RECONNECT. SEE DETAIL 10/M-4.1 FOR ADDITIONAL INFORMATION. FOR ADDITIONAL ELECTRICAL REQUIREMENTS SEE SHEET E-0.6.
3. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.
4. RECONNECT TO EXISTING DUCTWORK.
5. PROVIDE MANUAL VOLUME DAMPER AND COUNTER BALANCE BACK-DRAFT DAMPER IN TRANSFER DUCT.

CONSTRUCTION GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
2. BEFORE BIDDING ON THIS WORK, THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES, EXISTING EQUIPMENT AND SERVICES. HE SHALL DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE NEW EQUIPMENT, DUCTWORK, AND PIPING THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT AND MATERIALS INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE PROJECT. FAILURE TO VISIT THE SITE WILL IN NO WAY RELIEVE THE CONTRACTOR OF THE NECESSITY OF FURNISHING ANY MATERIAL OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS ADDITIONAL WORK SHALL BE PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER.
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5. CONTRACTOR SHALL MINIMIZE IMPACT TO EXISTING GLU-UP & T-BAR CEILING TILES AND IMPLEMENT MEASURES TO MITIGATE DAMAGE TO THE EXISTING CEILING SYSTEM.
6. CONTRACTOR SHALL MAINTAIN PROPER CLEARANCES FROM ALL ELECTRICAL EQUIPMENT AND SERVICE CLEARANCES FOR MECHANICAL EQUIPMENT.
7. CONTRACTOR SHALL INSTALL DUCTWORK SUCH THAT EQUIPMENT AND ALL APPURTENANCES ARE EASILY SERVICEABLE.
8. FRESH AIR INTAKES SHALL BE 10'-0" MIN. AWAY FROM ALL EXHAUST OUTLETS, PLUMBING VENTS, AND FLUES.
9. ALL NEW EXPOSED SHEET METAL DUCT WORK,SHEET METAL CURB/PLATFORM AND DUCT SUPPORT SHALL BE PREPARED AND PAINTED PER DISTRICT STANDARD COLOR. PROVIDE SAMPLE TO DISTRICT FOR APPROVAL.

WALL MATERIAL LEGEND	
- - - - - -	1-HR. FIRE RATED WALL

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anahiem, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — No. M25253 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

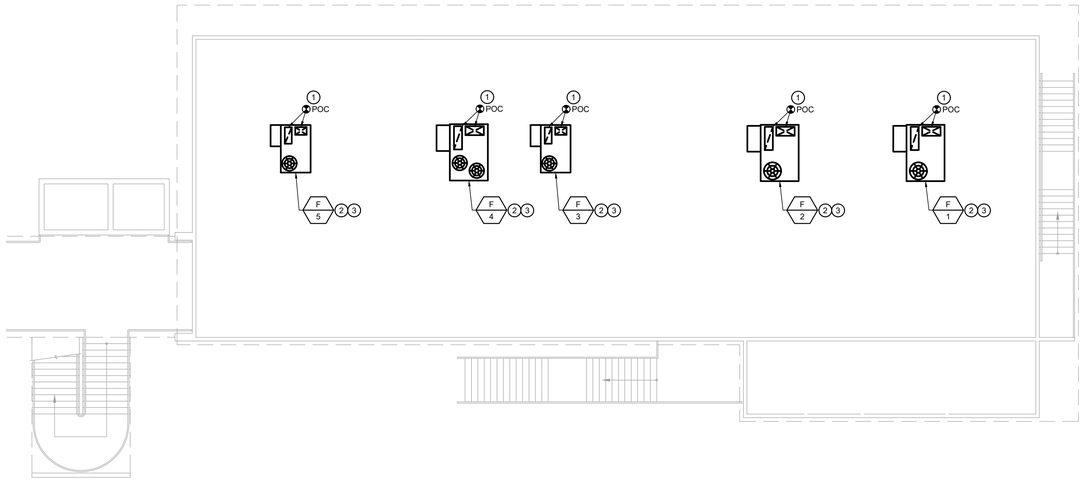
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CC
CHECK: HL
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL REMODEL FLOOR PLANS - BUILDING F

SHEET NO:
M-1.3



REF. NORTH

N

MECHANICAL REMODEL ROOF PLAN - BUILDING F | 1/8" = 1'-0" | 1

CONSTRUCTION KEY NOTES:

1. CONTRACTOR SHALL UTILIZE EXISTING DUCT-WORK AND PROVIDE NEW DUCT-WORK TO MAKE CONNECTION TO EXISTING DUCT-WORK
2. SEE DETAIL 2/S-S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
3. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.

CONSTRUCTION GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
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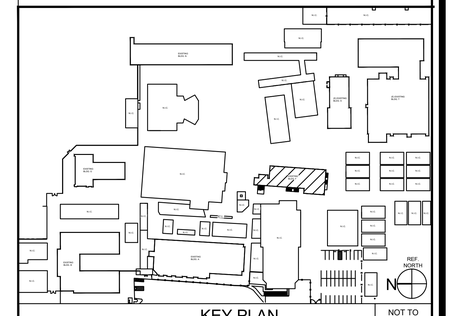
3. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND ELECTRICAL SERVICES IN THE AREA OF CONSTRUCTION AND NOTIFY THE ENGINEER OR ANY DISCREPANCIES.
4. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO FACILITATE DEMOLITION AND/OR PERFORMANCE OF THE NEW WORK. ALL NEW WORK SHALL MATCH IN KIND, QUALITY AND FINISH U.O.N.
5. CONTRACTOR SHALL MINIMIZE IMPACT TO EXISTING GLU-UP & T-BAR CEILING TILES AND IMPLEMENT MEASURES TO MITIGATE DAMAGE TO THE EXISTING CEILING SYSTEM.
6. CONTRACTOR SHALL MAINTAIN PROPER CLEARANCES FROM ALL ELECTRICAL EQUIPMENT AND SERVICE CLEARANCES FOR MECHANICAL EQUIPMENT.
7. CONTRACTOR SHALL INSTALL DUCTWORK SUCH THAT EQUIPMENT AND ALL APPURTENANCES ARE EASILY SERVICEABLE.
8. FRESH AIR INTAKES SHALL BE 10'-0" MIN. AWAY FROM ALL EXHAUST OUTLETS, PLUMBING VENTS, AND FLUES.
9. ALL NEW EXPOSED SHEET METAL DUCT WORK,SHEET METAL CURB/PLATFORM AND DUCT SUPPORT SHALL BE PREPARED AND PAINTED PER DISTRICT STANDARD COLOR. PROVIDE SAMPLE TO DISTRICT FOR APPROVAL.



KEY PLAN | NOT TO SCALE

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CONSULTANT

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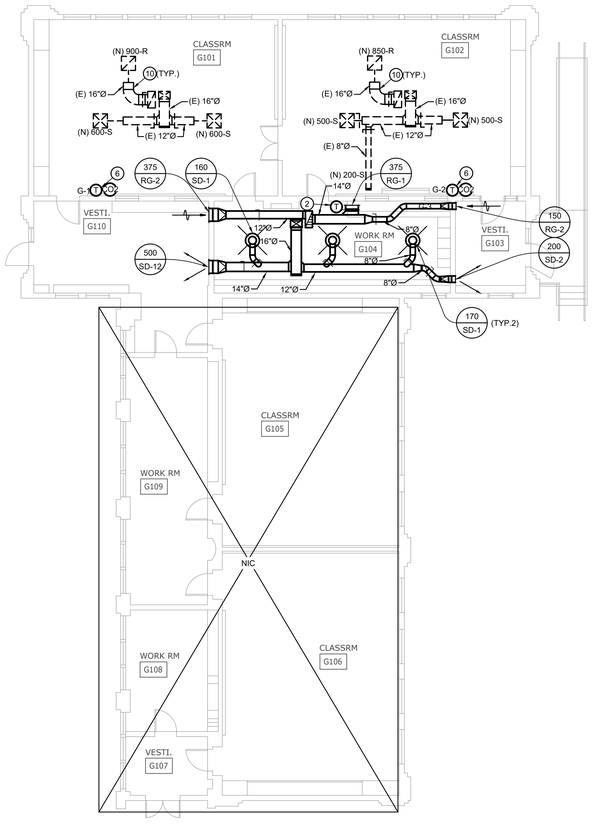
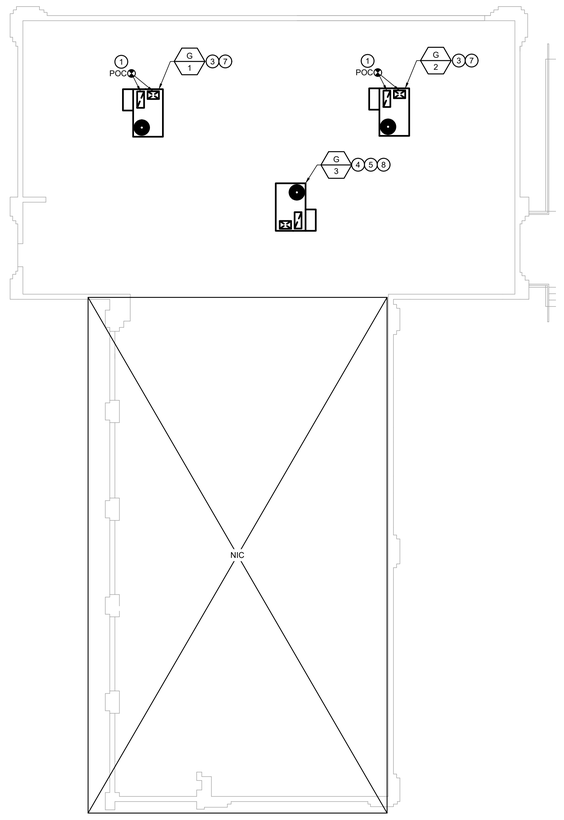
SHEET DESCRIPTION:
MECHANICAL REMODEL ROOF PLAN - BUILDING F

SHEET NO:
M-1.3.1





CONSTRUCTION KEY NOTES:

1. CONTRACTOR SHALL UTILIZE EXISTING DUCT-WORK AND PROVIDE NEW DUCT-WORK TO MAKE CONNECTION TO EXISTING DUCT-WORK
2. INSTALL NEW THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT POWER PER MANUFACTURER GUIDELINES.
3. SEE DETAIL 2/S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
4. LINED SUPPLY(18"X12") AND RETURN(26"X10") AIR DUCT DROPS DOWN THRU ROOF TO SPACE BELOW.
5. SEE DETAIL 8/S602 FOR ANCHORAGE. PROVIDE NEW ROOF CURB. CONTRACTOR SHALL REPAIR SURROUNDING ROOF AREA PER DISTRICT ROOFER STANDARD.
6. INSTALL NEW THERMOSTAT/CO2 SENSOR AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
7. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
8. CONTRACTOR TO CONNECT NEW FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
9. MOUNT DUCT WORK HIGH. AVOID CASTING SHADOWS FROM LIGHTS.
10. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.

CONSTRUCTION GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
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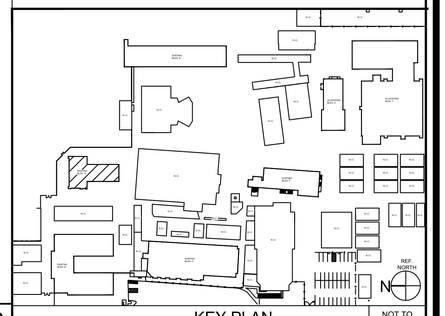


KEY PLAN — NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

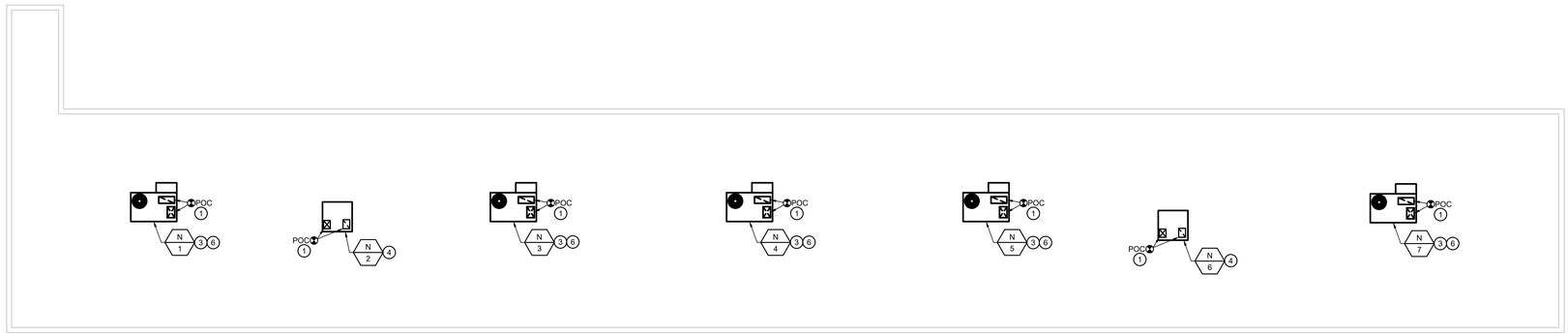
STAMP

SHEET DESCRIPTION:
MECHANICAL REMODEL PLANS - BUILDING G

SHEET NO:
M-1.4

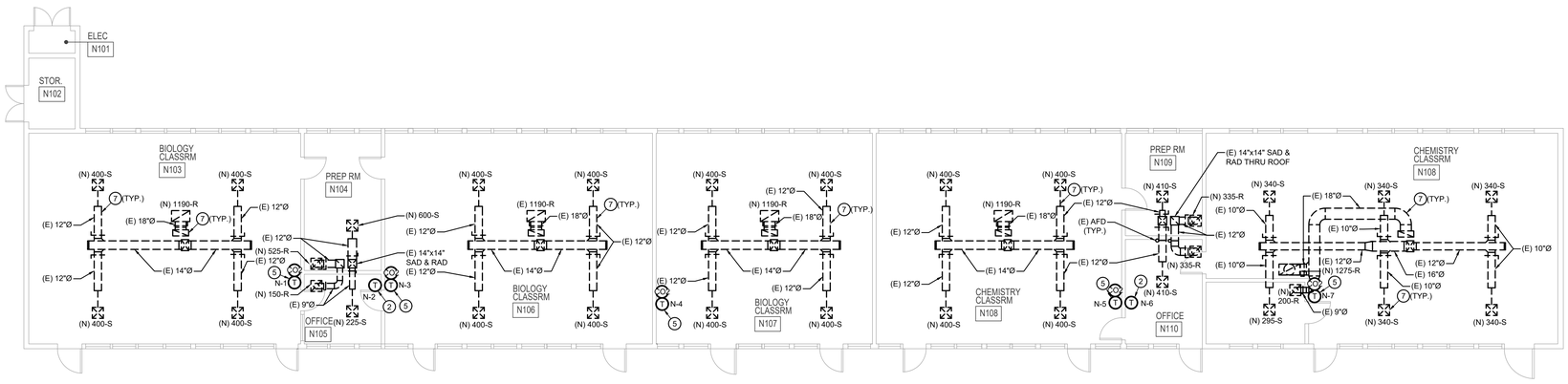
MECHANICAL REMODEL FLOOR PLAN - BUILDING G — 1/8" = 1'-0" — 1

MECHANICAL REMODEL ROOF PLAN - BUILDING G — 1/8" = 1'-0" — 2



REF. NORTH
N

MECHANICAL REMODEL ROOF PLAN - BUILDING N | 1/8" = 1'-0" | 2



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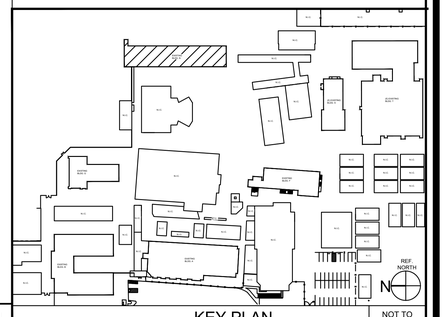
MECHANICAL REMODEL FLOOR PLAN - BUILDING N | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

CONSTRUCTION KEY NOTES:

1. CONTRACTOR SHALL UTILIZE EXISTING DUCT-WORK AND PROVIDE NEW DUCT-WORK TO MAKE CONNECTION TO EXISTING DUCT-WORK
2. INSTALL NEW THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT PER MANUFACTURER GUIDELINES.
3. SEE DETAIL 2/S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
4. SEE DETAILS 18/S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.CONTRACTOR SHALL PROVIDE ROOF CURB ADAPTOR AND DUCT TRANSITION AS REQUIRED TO MAKE CONNECTION WITH EXISTING DUCTWORK. ATTACH UNIT TO CURB WITH SEISMIC CLIPS PER DETAIL 4/M-4.1.
5. INSTALL NEW THERMOSTAT/CO2 SENSOR AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
6. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
7. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.

CONSTRUCTION GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
2. BEFORE BIDDING ON THIS WORK, THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES, EXISTING EQUIPMENT AND SERVICES. HE SHALL DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE NEW EQUIPMENT, DUCTWORK, AND PIPING THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT AND MATERIALS INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE PROJECT. FAILURE TO VISIT THE SITE WILL IN NO WAY RELIEVE THE CONTRACTOR OF THE NECESSITY OF FURNISHING ANY MATERIAL OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS ADDITIONAL WORK SHALL BE PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER.
3. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND ELECTRICAL SERVICES IN THE AREA OF CONSTRUCTION AND NOTIFY THE ENGINEER OR ANY DISCREPANCIES.
4. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO FACILITATE DEMOLITION AND/OR PERFORMANCE OF THE NEW WORK. ALL NEW WORK SHALL MATCH IN KIND, QUALITY AND FINISH U.O.N.
5. CONTRACTOR SHALL MINIMIZE IMPACT TO EXISTING GLU-UP & T-BAR CEILING TILES AND IMPLEMENT MEASURES TO MITIGATE DAMAGE TO THE EXISTING CEILING SYSTEM.
6. CONTRACTOR SHALL MAINTAIN PROPER CLEARANCES FROM ALL ELECTRICAL EQUIPMENT AND SERVICE CLEARANCES FOR MECHANICAL EQUIPMENT.
7. CONTRACTOR SHALL INSTALL DUCTWORK SUCH THAT EQUIPMENT AND ALL APPURTENANCES ARE EASILY SERVICEABLE.
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ROBERT BAKEMEYER
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CONSULTANT

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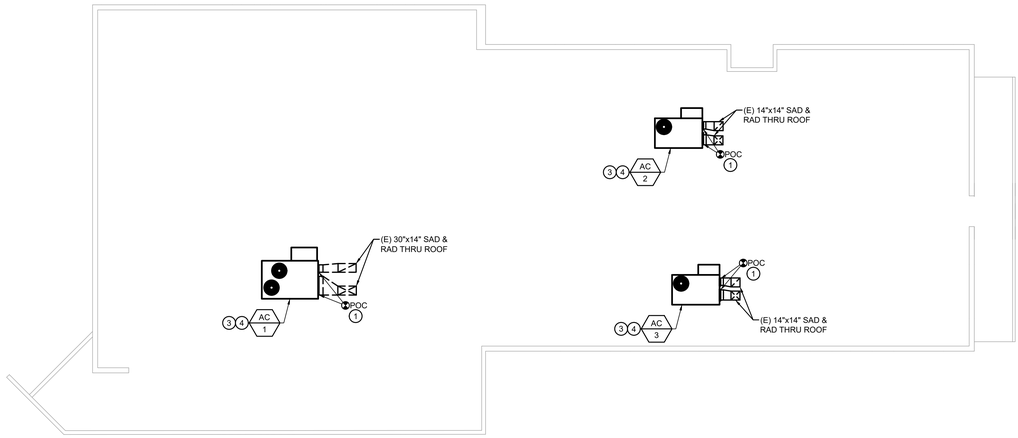
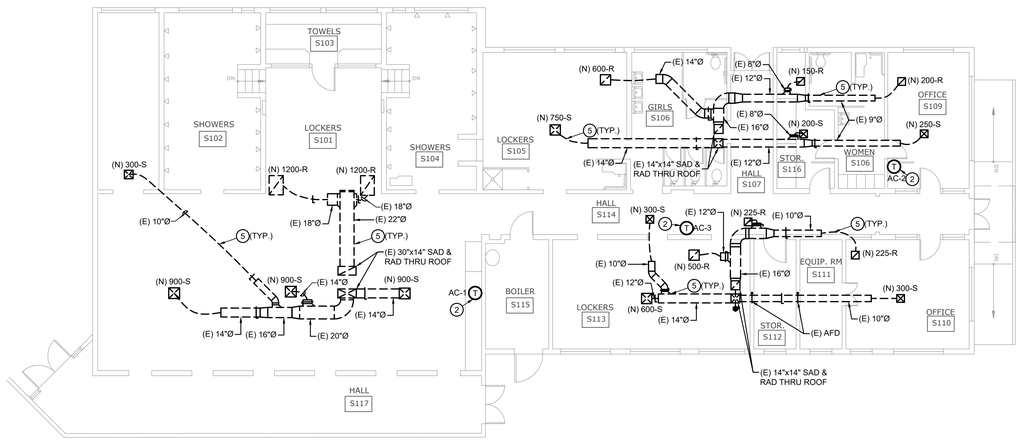
SHEET DESCRIPTION:
MECHANICAL REMODEL PLANS - BUILDING N

SHEET NO:
M-1.5



N REF. NORTH

MECHANICAL REMODEL ROOF PLAN - BUILDING S | 1/8" = 1'-0" | 2



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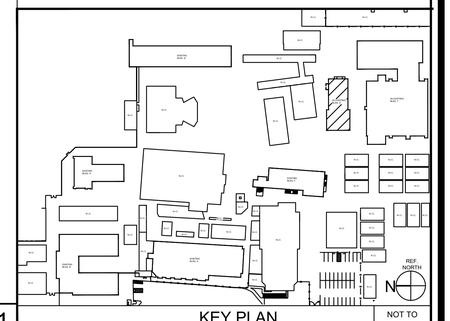
MECHANICAL REMODEL FLOOR PLAN - BUILDING S | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

CONSTRUCTION KEY NOTES:

1. CONTRACTOR SHALL UTILIZE EXISTING DUCT-WORK AND PROVIDE NEW DUCT-WORK TO MAKE CONNECTION TO EXISTING DUCT-WORK
2. INSTALL NEW THERMOSTAT/CO2 AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND FOR CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
3. SEE DETAIL 4/S601 FOR ANCHORAGE. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE LINE ITEM COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 3/M-4.1.
4. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
5. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.

CONSTRUCTION GENERAL NOTES:

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2. BEFORE BIDDING ON THIS WORK, THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES, EXISTING EQUIPMENT AND SERVICES. HE SHALL DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE NEW EQUIPMENT, DUCTWORK, AND PIPING THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT AND MATERIALS INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE PROJECT. FAILURE TO VISIT THE SITE WILL IN NO WAY RELIEVE THE CONTRACTOR OF THE NECESSITY OF FURNISHING ANY MATERIAL OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS ADDITIONAL WORK SHALL BE PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER.
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4. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO FACILITATE DEMOLITION AND/OR PERFORMANCE OF THE NEW WORK. ALL NEW WORK SHALL MATCH IN KIND, QUALITY AND FINISH U.O.N.
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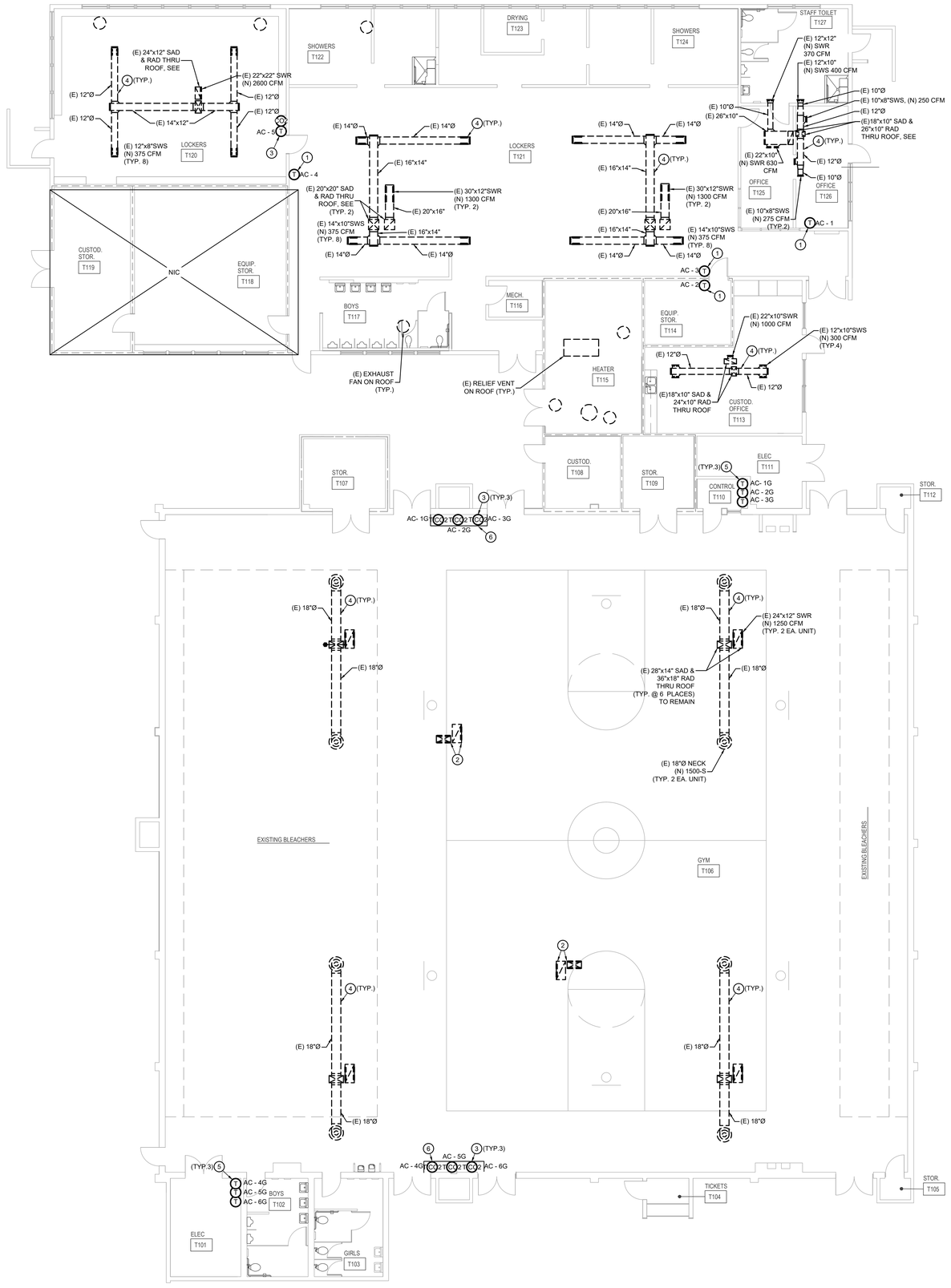
CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL REMODEL PLANS - BUILDING S

SHEET NO:
M-1.6



CONSTRUCTION KEY NOTES:

1. INSTALL NEW THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH PER MANUFACTURER GUIDELINES.
2. EXISTING SAD/RAD DUCT DROPS TO REMAIN.
3. INSTALL NEW CLIMAVISION MULTI SENSOR TEMPERATURE/CO2 SENSOR AT 72" AFF. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER (WHERE APPLICABLE) AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES.
4. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.
5. INSTALL NEW CLIMAVISION HYPERLITE THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY EXACT LOCATIONS. CONNECT WITH ASSOCIATED CLIMAVISION MULTI-SENSOR
6. PROVIDE THERMOSTAT GUARD TO PROTECT CLIMAVISION MULTI-SENSORS IN GYM AREA. TYPICAL.

CONSTRUCTION GENERAL NOTES:

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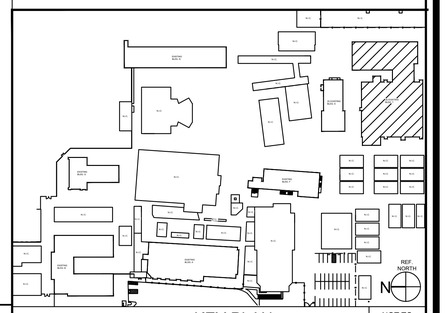

KEY PLAN — NOT TO SCALE

MECHANICAL REMODEL FLOOR PLAN - BUILDING T — 1/8" = 1'-0" — 1

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REGISTERED PROFESSIONAL ENGINEER — ROBERT BAKERVEE — No. M29253 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

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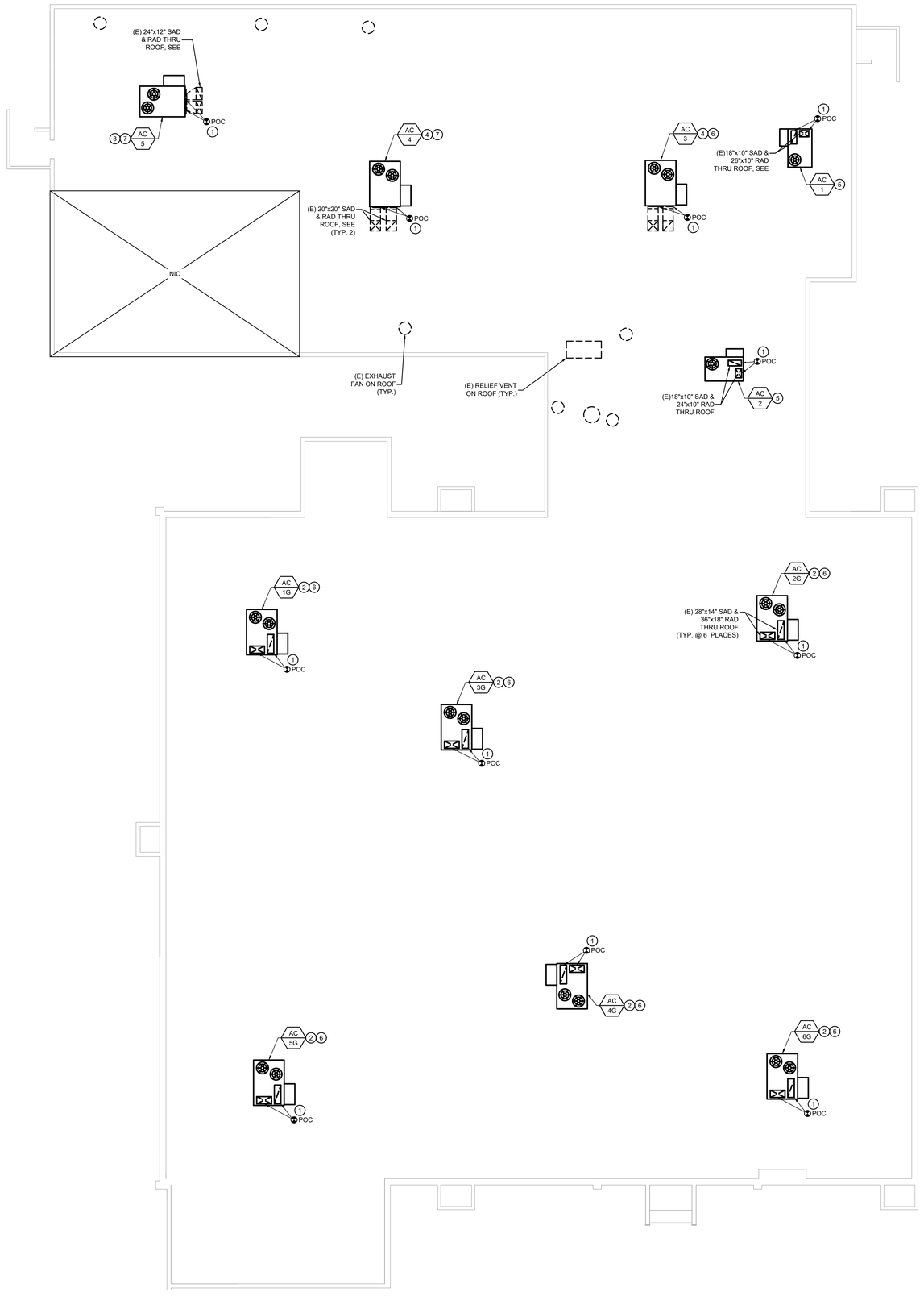
MECHANICAL REMODEL FLOOR PLAN - BUILDING T

SHEET NO:
M-1.7



CONSTRUCTION KEY NOTES:

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6. CONTRACTOR TO RECONNECT EXISTING FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
7. CONTRACTOR TO CONNECT NEW FIRE ALARM CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM FOR HVAC UNIT SHUT DOWN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.

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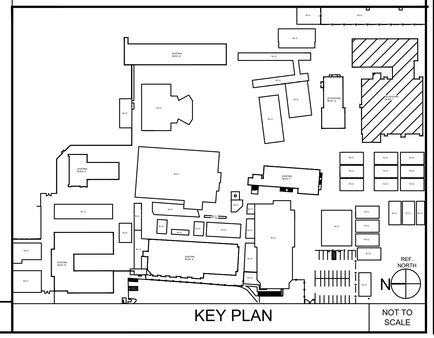
REF. NORTH
N

1/8" = 1'-0"

MECHANICAL REMODEL ROOF PLAN - BUILDING T

1



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SHEET NO:
M-1.7.1

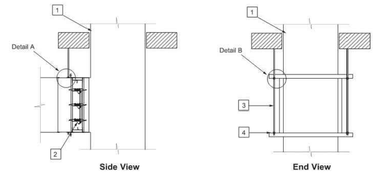
POTTORFF®

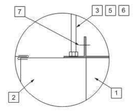
1½ and 3 hour — fire and combination fire/smoke damper UL V-5 ventilation duct assembly installation instructions

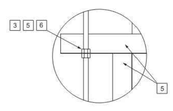
The following installation details apply to models **FD-140, FD-150, FD-340, FSD-141, FSD-142, FSD-143, FSD-151, FSD-152, FSD-341, FSD-342, FSD-343, VFD-10, VFD-30, VFD-10D and VFD-30D**

These installation instructions outline the required details to properly install vertical dampers in fire resistant ventilation ducts. These installation instructions apply to UL Ventilation Duct Assembly No. V-5.

A. The damper sleeve must slip inside the fire resistant duct spool. Damper sleeve assembly will be ½" (6) min., ½" (13) max., smaller than duct spool size.
B. Damper to be supplied with factory mounted sleeve. Sleeve gauge shall be minimum of 16 (1.6) gauge for dampers up to 36"w x 24"h (914 x 610) and 14 (2) gauge for dampers exceeding 36"w x 24"h (914 x 610).
C. Mounting Angles: 1½" x 1½" x ⅛" (38 x 38 x 6) up to and including 24" (610) long.
2" x 2" x ⅛" (51 x 51 x 6) over 24" (610) up to and including 32" (813) long.
2½" x 2½" x ⅛" (64 x 64 x 6) over 32" (813) up to and including 40" (1016) long.
3" x 3" x ⅛" (76 x 76 x 6) up to and including 40" (1016) long.
D. Mounting Angle Fasteners shall be: #10 (4) bolts or screws or ⅛" (4) steel rivets or ½" (13) long welds.
E. Mounting Angle Fasteners Spacing: Mounting angles to damper sleeve, space fasteners 6" (152) on center.
Mounting angle to spool flange, space fasteners 12" (35) on center.
Note: Minimum of 2 fasteners per side.
F. Hanger Rods: ½" (10) threaded rod anchored to the floor above and attached to the mounting angles through hole in the angles and secured with hex nut and washer (Items #5 and 6 below). Anchor to masonry per UL assembly No. V-5.
F. Duct to Damper Sleeve Connection: Refer to fire damper or combination fire/smoke damper installation instructions as well as sleeve termination installation instructions.







ITEM	DESCRIPTION
1.	Fire Resistant Ventilation Duct (UL Category Control No. HNLN. Assembly No. V-5).
2.	Fire Damper or Combination Fire/Smoke Damper.
3.	Hanger Rods in Accordance with Assembly No. V-5.
4.	Mounting Angles (See Note #C).
5.	½" (10) Hex Nuts.
6.	½" (10) Flat Washer.
7.	Mounting Angle Fasteners (See Note #D).

CLASSIFIED SEE DETAILS ON UL CLASSIFICATION MARKING ON ENCLOSED PRODUCT

Information is subject to change without notice or obligation.

NOTE: Dimensions in parentheses ( ) are millimeters.

POTTORFF® 5101 Blue Mound Road, Fort Worth, Texas 76106 www.pottorff.com

Fire Damper **#FVBA** September 2013

COMBINATION SMOKE/FIRE DAMPER INSTALLATION

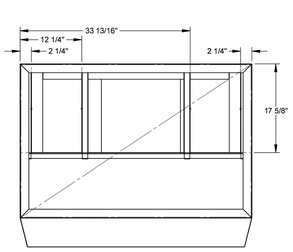
SCALE NONE | 10

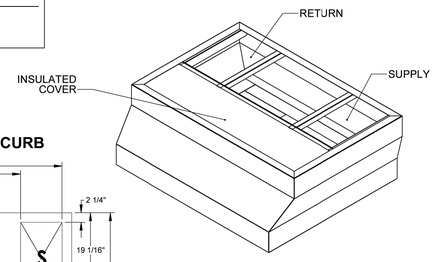
OPTIONS:
INSULATED PANELS (WHERE REQUIRED)
1" 1-1/2LB DUCT INSULATION (R VALUE 3.85)
GASKET PROVIDED WITH CURB

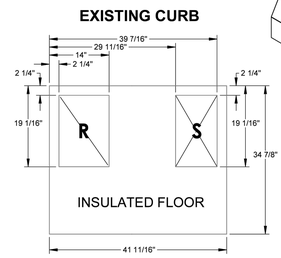
DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

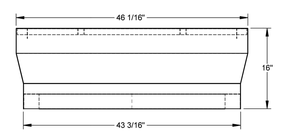
Attn:_____
Approval:_____
RTU TAG(S):

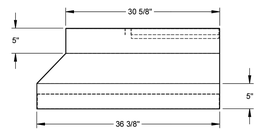
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	INITIAL DRAWING	11-17-2021	IC











NOTES:

1. CONTRACTOR SHALL FOLLOW MFR. GUIDELINES FOR A COMPLETE AND FULLY FUNCTIONAL ASSEMBLY. COORDINATE WITH OTHER TRADES AS NECESSARY.
2. CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS OF THE ADAPTOR CURB NECESSARY IN FIELD PRIOR TO PURCHASE AND INSTALL.

Material: 18 ga. G-90 Galv Steel
Existing Curb Oversized by: 1.5 Inches
Operational Height(Raise unit by):13 Inches

THIS DRAWING & THE INFORMATION CONTAINED THEREIN IS THE CONFIDENTIAL, PROPRIETARY INFORMATION OF CRYSTAL DISTRIBUTION INC., AND IS NOT TO BE DISCLOSED OR USED WITHOUT THE APPROVAL OF CRYSTAL DISTRIBUTION, INC. ALL RIGHTS RESERVED.

APPROVALS		DATE
DRAWN:	ICHAVEZ	11/17/2021
CHECKED:		

DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]

*VERIFY EXISTING CURB CD
*VERIFY SUPPLY AND RETURN OPENINGS
*NOTE ANY CHANGES
*CALL WITH ANY QUESTIONS
*FAX BACK IF DRAWING IS OK AS IS

CDI CRYSTAL DISTRIBUTION INC. Contact us @ www.cdicurbs.com or 1-888-234-7001

TITLE/FILE NAME: 1-4026-4021

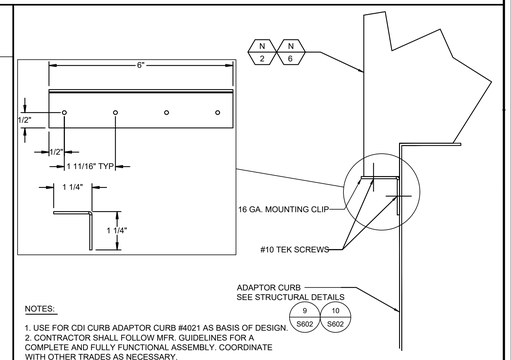
APPROXIMATE CURB WEIGHT (LBS.): 79.89

SIZE: B | REV: 1 | SCALE: 1:16 | SHEET: 1 OF 4

\\crystal.cdicurbs.com\eng\files\CURBS_CURB_ADAPTERS\1-XXXX-XXXX_CURB_ADAPTERS\1-4XXX-XXXX_CARRIER\1-4026-4021

NEW ROOF CURB DETAIL - UNIT N-2 & N-6

SCALE NONE | 6

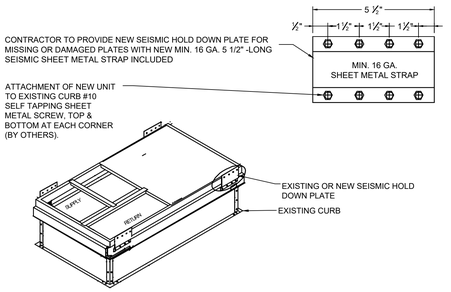


NOTES:

1. USE FOR CDI CURB ADAPTOR CURB #4021 AS BASIS OF DESIGN.
2. CONTRACTOR SHALL FOLLOW MFR. GUIDELINES FOR A COMPLETE AND FULLY FUNCTIONAL ASSEMBLY. COORDINATE WITH OTHER TRADES AS NECESSARY.
3. (4) CLIPS TOTAL, 2 PER LONG SIDE OF UNIT.

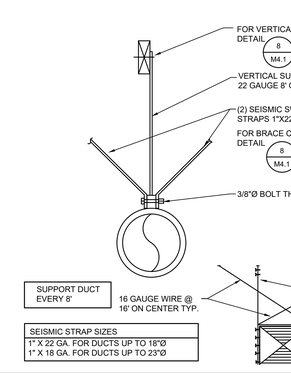
ADAPTOR CURB SEISMIC CLIP DETAIL

SCALE NONE | 4



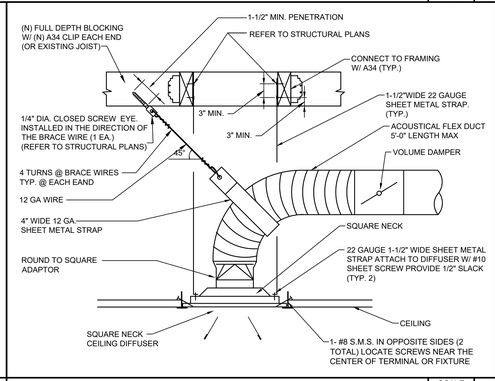
SEISMIC PLATE DETAIL

SCALE NONE | 3



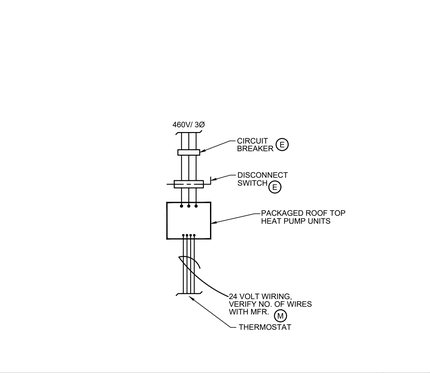
EXPOSED DUCT SUPPORT DETAIL

SCALE NONE | 7



CEILING DIFFUSER MOUNTING

SCALE NONE | 5

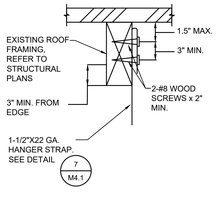


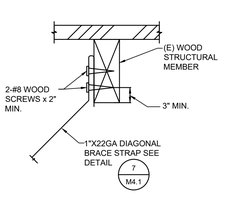
A/C CONTROL(ECONOMIZER)

SCALE NONE | 2

NEW ROOF CURB DETAIL - UNIT G-3

SCALE NONE | 9

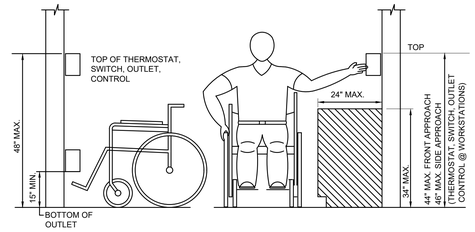


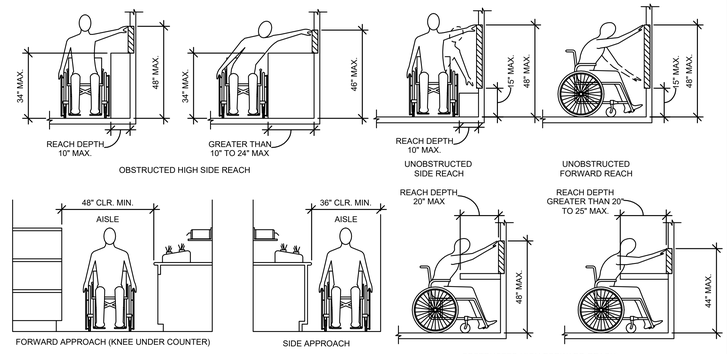


DUCTWORK CONNECTION TO WOOD STRUCTURE

SCALE NONE | 8

REACH RANGE NOTES
FORWARD REACH TO WALL MOUNTED OBJECTS W/O OBSTRUCTIONS
30"x48" CLEAR FLOOR SPACE FOR FORWARD APPROAC IS PROVIDED TO OBJECT.
• ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE ADJOINS AN ACCESIBLE ROUTE OR ADJOINTS ANOTHER WHEELCHAIR CLEAR FLOOR SPACE
SIDE REACH - WALL MOUNTED OBJECTS W/O OBSTRUCTIONS
30"x48" CLEAR FLOOR SPACE FOR PARALLEL APPROACH IS PROVIDED AT OBJECT.
• ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE ADJOINS AN ACCESIBLE ROUTE OR ADJOINTS ANOTHER WHEELCHAIR CLEAR FLOOR SPACE





CONTROL DEVICE MOUNTING DETAIL

SCALE NONE | 1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER No. M29253 Exp. 6/30/27 MECHANICAL STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

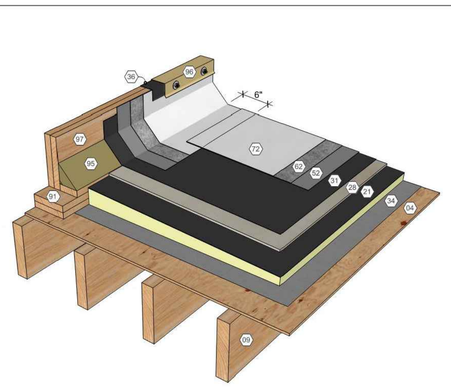
No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DETAILS

SHEET NO:
M-4.1



KEY NOTES

- 04 WoodDeck
- 09 Roof Structure
- 21 Polyisocyanurate Insulation (Adhered)
- 28 Cover Board (Adhered)
- 31 Base Sheet(Adhered)
- 34 Vapor Barrier (Optional)
- 36 Base Sheet Liner
- 52 Emulsion
- 62 Rapid set polyester
- 72 Approved coating
- 91 Wood Blocking
- 95 Cant Strip
- 96 Metal Cap
- 97 Wood Curb Assembly

TREMCO Roofing & Building Maintenance

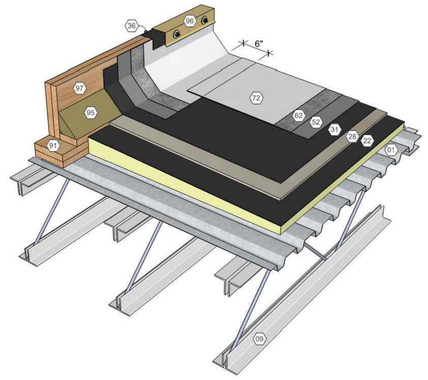
SHEET TITLE: AlphaGuard® BIO Plus Wood Curb Detail, Wood Deck

SCALE: NTS

DRAWING No.: DWG NO. 23134

2023

FLASHING WOOD DECK | SCALE NONE | 6



KEY NOTES

- 01 Metal Deck
- 09 Roof Structure
- 22 Polyisocyanurate Insulation (Adhered)
- 28 Cover Board (Adhered)
- 31 Base Sheet (Adhered)
- 36 Base Sheet Liner
- 52 Emulsion
- 62 Rapid set polyester
- 72 Approved coating
- 91 Wood Blocking
- 95 Cant Strip
- 96 Metal Cap
- 97 Wood Curb Assembly

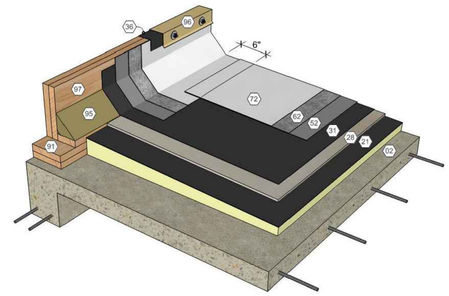
TREMCO Roofing & Building Maintenance

SHEET TITLE: Flashing Wood Curb Detail, Metal Deck

SCALE: NTS

2023

FLASHING METAL DECK | SCALE NONE | 5



KEY NOTES

- 02 Structural Concrete Deck
- 21 Polyisocyanurate Insulation (Adhered)
- 28 Cover Board (Adhered)
- 31 Base Sheet (Adhered)
- 36 Base Sheet Liner
- 52 Emulsion
- 62 Rapid set polyester
- 72 Approved coating
- 91 Wood Blocking
- 95 Cant Strip
- 96 Metal Cap
- 97 Wood Curb Assembly

TREMCO Roofing & Building Maintenance

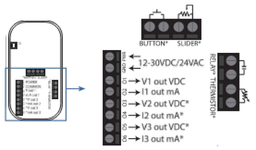
SHEET TITLE: Flashing Wood Curb Detail, Structural Concrete Deck

SCALE: NTS

2023

FLASHING CONCRETE DECK | SCALE NONE | 3

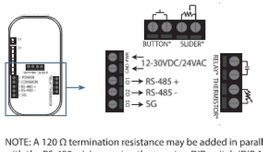
Analog Wiring



*These terminals may not be populated depending on which model is ordered.

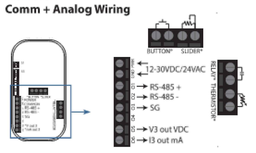
Outputs 1(V1,I1), 2(V2,I2) and 3(V3,I3), will be auto populated in order of the AQ2W ordering matrix:
CO2, RH, Temp, VOC, PM, Slider, CO, O3

Communications Wiring



NOTE: A 120 Ω termination resistance may be added in parallel with the RS-485 +/- by moving the very top DIP switch (DIP 1) to the left position. See "DIP Configuration" section for more information.

Comm + Analog Wiring



SENVA CO2 SENSOR SPECS - BLDG A, B, F, G, & N | SCALE NONE | 4

Higher Reliability, Faster Installation, Superior Accuracy | Sense the Difference

TotalSense Series

IAQ/Occupancy Sensor

Specify MODEL# AQ2W-ACAAAAS

Industry's first IAQ sensor with PIR motion detection
Nine environmental sensors: PIR, PMx, VOC, CO2, CO, RH, T, ambient light, barometric pressure
BACnet/Modbus or analog outputs with set-point relay

DESCRIPTION

The TotalSense Series provides more data for more advanced ventilation control while drastically reducing installation cost and time on a project. It includes a comprehensive selection of IAQ sensing with carbon dioxide (CO2), relative humidity (RH), and temperature plus options for occupancy detection (PIR), total volatile organic compounds (TVOC), particulate matter (PM), Carbon Monoxide (CO), and ambient light. More than an IAQ sensor, it's the first fully configurable Indoor Environmental Quality (IEQ) sensor matrix. Motion detection (PIR) can initiate ventilation upon occupancy, providing air exchanges the instant people are present, allowing for cleaner and safer indoor spaces while still saving energy.

APPLICATIONS

- Verify effectiveness of IAQ strategies in post covid environment
- Energy management/building control
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Contributes toward satisfying Feature A08 and T06 under the WELL Building Standard®

Display, AQ ring, and standard designs

PIR Motion Detection (optional) - Detect occupancy for quicker and safer ventilation

Configure up to nine sensors

Change any setting, press ENTER to see the setup menu and navigate to parameter

NEW! PID control - program any analog output for local control of dampers or valves

RESET monitors are tested and certified for your RESET Air Projects.

866-660-8864 | fax 503-296-2529 | www.senvainc.com V7 07/06/23 1

Higher Reliability, Faster Installation, Superior Accuracy | Sense the Difference

ORDERING

AQ2 W -

Mounting Type	Output Type (1)(2)(4)	CO2 (2)	Humidity Sensor (RH)	Volatile Organic Compounds (VOC)	Advanced Sensors(3)(5)(6)	Temperature (4)	Display (5)	Optional Accessories
W= Wall Mount	A = Analog B = BACnet/Modbus D= Dual Analog + BACnet/Modbus	A = None C = CO_2 D= Dual Channel CO_2	A= None 2= 2% RH Sensor	A= None V= VOC	A= None C= CO P= (PM) Particulate Matter 1.0, 2.5, 4.0,10.0 B= CO+PM	A= None B= Transmitter C= 100PIRTD D= 1000PIRTD E= 10K Type 2 F= 10K Type 3 G= 10KW/ 11K H= 3K I = 2K2 J = 1K8 K= 20K	X= None D= OLED Display S= OLED w Solid Cover R= Air Quality Ring	Blank= None *(See below for options)*

Setpoint Slider (6)	Slider Offset Resistor	Pushbutton (6)	PIR Sensor
Blank = None C = 1K Ω F = 10K Ω G = 20K Ω T= 200-900 Ω	Blank= None E = 910 Ω K= 6K Ω	Blank= None S= Slider Override Pushbutton (7) O= Thermistor Override Pushbutton (8) U= Stand Alone PB Terminals B= Comms Only PB (No Terminals)	Blank= None P= PIR Sensing

(1) Ambient light detection standard on all models with BACnet/Modbus and D display option
(2) Barometric pressure sensing included standard on all models with CO2
(3) All PM options only available with BACnet/Modbus models.
(4) Only Transmitter option is shown on display and readable via BACnet/Modbus. Thermistor versions not available to display on OLED or to read over BACnet/Modbus.
(5) CO sensor only available with display and Temp/RH for calibration purposes.
(6) Slider and pushbutton options not available with PM sensor. Call for additional slider and override options.
(7) Slider required, shorts slider terminals to read pushbutton.
(8) Thermistor Required, shorts thermistor terminals to read pushbutton.

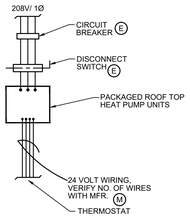
Example: AQ2 W - B C 2 V P F D F S P

	Mount	Output	CO_2	RH	VOC	PM	Temp. Display	Slider	Push-Button	PIR

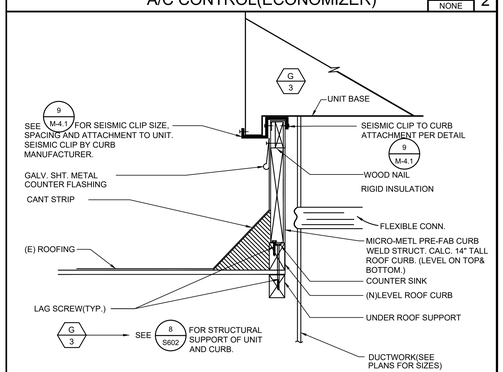
(TotalSense Wall mount with BACnet/Modbus RS-485, Temp, CO2, 2% RH, VOC, PM, 10KT3 Temp, OLED, 10K Slider, Slider Override PB, No Offset Ω, PIR Sensor)

Specify MODEL# AQ2W-ACAAAAS

866-660-8864 | fax 503-296-2529 | www.senvainc.com V7 07/06/23 3



A/C CONTROL(ECONOMIZER) | SCALE NONE | 2



ROOFTOP HP UNIT MOUNTING W/ NEW CURB | SCALE NONE | 1

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT BAERVELDT
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

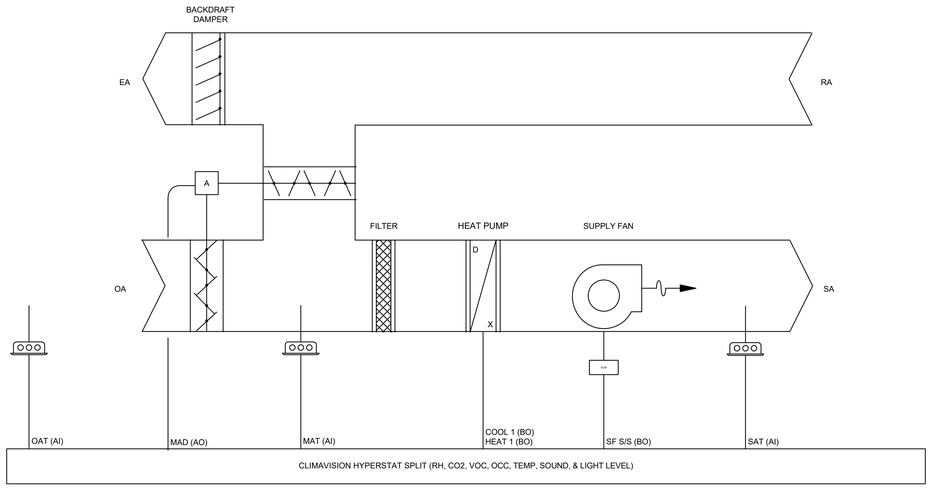
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DETAILS

SHEET NO:
M-4.2



CONTROLS PROVIDED AND INSTALLED BY RUSSELL SIGLER INC CONTROLS GROUP

INDOOR FAN:
DURING OCCUPIED PERIODS, THE FAN SHALL OPERATE CONTINUOUSLY. DURING UNOCCUPIED PERIODS, THE FAN SHALL OPERATE WHEN THE SPACE TEMPERATURE EXCEEDS THE UNOCCUPIED HEATING OR COOLING SET. THE FAN OPERATES AT CONSTANT SPEED.

HEATING MODE:
WHEN SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT, UNIT SHALL OPERATE IN THE HEATING MODE. UNIT SHALL STAGE AVAILABLE HEAT STAGE TO SATISFY DEMAND IN THE OCCUPIED SPACE.

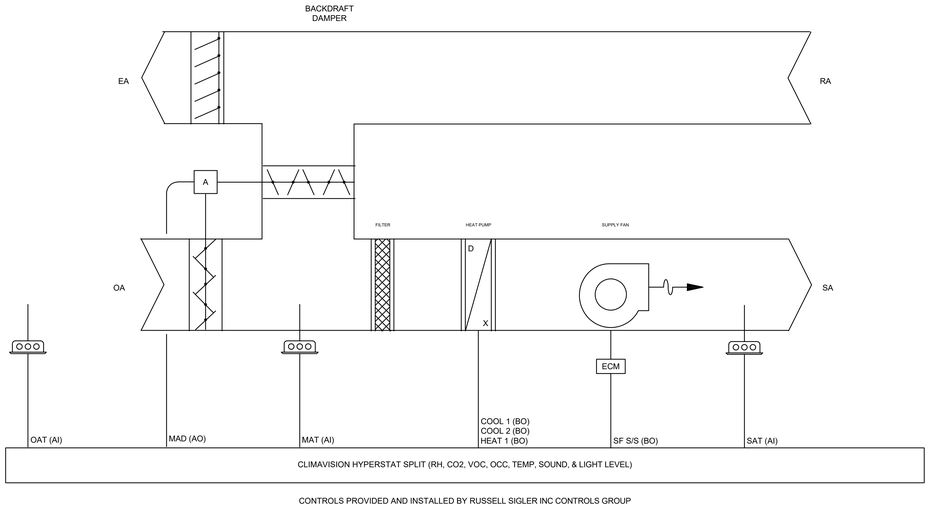
COOLING MODE:
WHEN SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, UNIT SHALL OPERATE IN THE COOLING MODE. UNIT SHALL STAGE AVAILABLE COOLING STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

ECONOMIZER:
ECONOMIZER SHALL CLOSE WHEN FAN IS OFF OR DURING A LOSS OF POWER. DURING OCCUPIED HOURS WHEN FANS IS ENERGIZED, THE ECONOMIZER SHALL OPEN TO ADJUSTABLE MINIMUM POSITION. WHEN OUTSIDE AIR TEMPERATURE IS BELOW 71 DEGREES F AND OCCUPIED SPACE REQUIRES COOLING, ECONOMIZER SHALL OPEN. IF ECONOMIZER AIR IS NOT SUFFICIENT TO MEET THE DEMAND IN THE OCCUPIED SPACE, UNIT SHALL ENABLE AVAILABLE MECHANICAL COOLING STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

CO2 CONTROL (IF APPLICABLE):
UNIT SHALL MONITOR SPACE CO2 WHEN THE SUPPLY FAN IS ENERGIZED. WHEN CO2 IS ABOVE SETPOINT OF 1000 PPM, ECONOMIZER SHALL MODULATE OPEN TOWARDS AN ADJUSTABLE MAXIMUM CO2 POSITION AS THE CO2 LEVEL IN THE SPACE INCREASES ABOVE THE SETPOINT, THE MINIMUM POSITIONS OF THE DAMPERS WILL BE INCREASED PROPORTIONALLY. UNIT THE MAXIMUM VENTILATION SETTING IS REACHED. AS THE SPACE CO2 LEVEL DECREASES BECAUSE OF THE INCREASE IN FRESH AIR, THE OUTDOOR-DAMPER WILL FOLLOW THE HIGHER DEMAND CONDITION FROM THE DCV MODE OR FROM THE FREE-COOLING MODE.

CLIMAVISION CARRIER (1C/1H) ROOFTOP UNIT – (S-2, S-3 ,T-1, & T-2) - CONTROL DIAGRAM

SCALE NONE | 4



CONTROLS PROVIDED AND INSTALLED BY RUSSELL SIGLER INC CONTROLS GROUP

INDOOR FAN:
DURING OCCUPIED PERIODS, THE FAN SHALL OPERATE CONTINUOUSLY. DURING UNOCCUPIED PERIODS, THE FAN SHALL OPERATE WHEN THE SPACE TEMPERATURE EXCEEDS THE UNOCCUPIED HEATING OR COOLING SET. THE FAN OPERATES AT 1 OF 2 SPEEDS DEPENDING ON THE MODE OF OPERATION AND LOAD CONDITIONS. DURING VENT ONLY MODE AND LOW LOAD CONDITIONS, THE FAN OPERATES AT LOW SPEED. IF LOAD CONDITIONS INCREASE OR IF THERE IS A CALL FOR HEATING, THE FAN OPERATES AT HIGH SPEED.

HEATING MODE:
WHEN SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT, UNIT SHALL OPERATE IN THE HEATING MODE. UNIT SHALL STAGE AVAILABLE HEAT STAGE TO SATISFY DEMAND IN THE OCCUPIED SPACE.

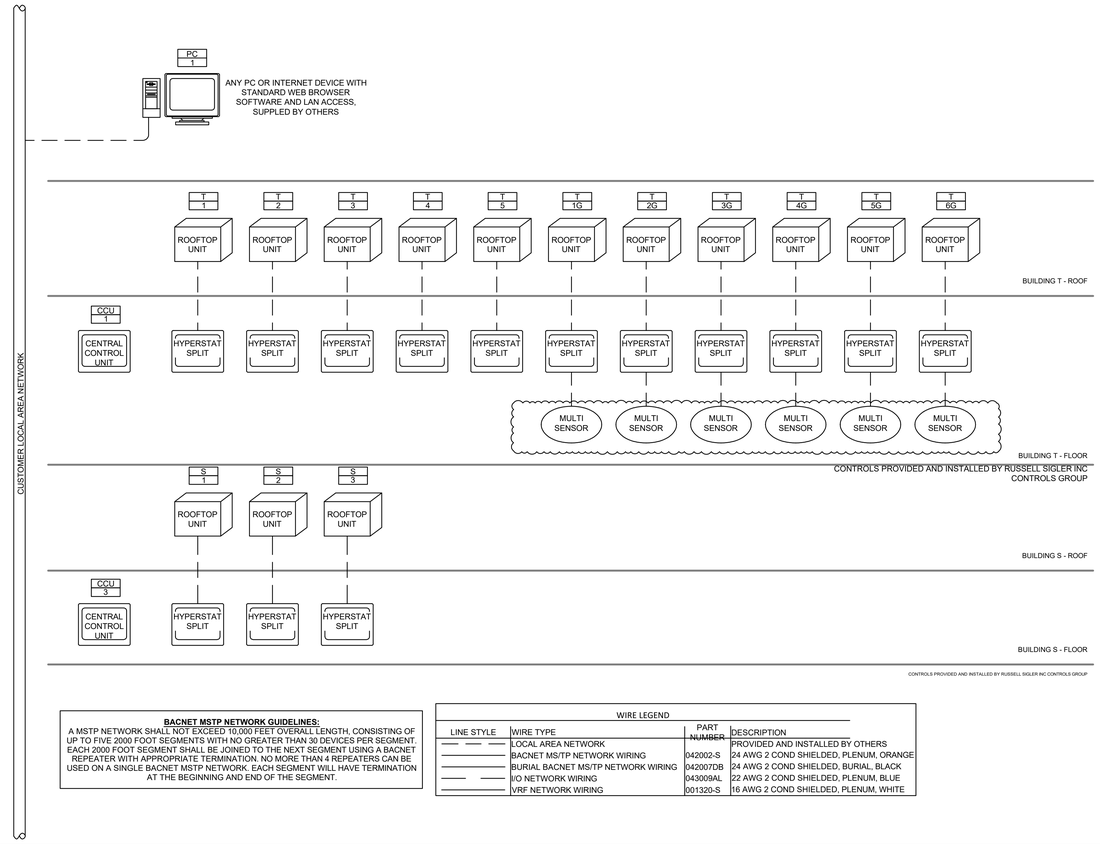
COOLING MODE:
WHEN SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, UNIT SHALL OPERATE IN THE COOLING MODE. UNIT SHALL STAGE AVAILABLE COOLING STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

ECONOMIZER:
ECONOMIZER SHALL CLOSE WHEN FAN IS OFF OR DURING A LOSS OF POWER. DURING OCCUPIED HOURS WHEN FANS IS ENERGIZED, THE ECONOMIZER SHALL OPEN TO ADJUSTABLE MINIMUM POSITION. WHEN OUTSIDE AIR TEMPERATURE IS BELOW 71 DEGREES F AND OCCUPIED SPACE REQUIRES COOLING, ECONOMIZER SHALL OPEN. IF ECONOMIZER AIR IS NOT SUFFICIENT TO MEET THE DEMAND IN THE OCCUPIED SPACE, UNIT SHALL ENABLE AVAILABLE MECHANICAL COOLING STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

CO2 CONTROL (IF APPLICABLE):
UNIT SHALL MONITOR SPACE CO2 WHEN THE SUPPLY FAN IS ENERGIZED. WHEN CO2 IS ABOVE SETPOINT OF 1000 PPM, ECONOMIZER SHALL MODULATE OPEN TOWARDS AN ADJUSTABLE MAXIMUM CO2 POSITION. AS THE CO2 LEVEL IN THE SPACE INCREASES ABOVE THE SETPOINT, THE MINIMUM POSITIONS OF THE DAMPERS WILL BE INCREASED PROPORTIONALLY. UNIT THE MAXIMUM VENTILATION SETTING IS REACHED. AS THE SPACE CO2 LEVEL DECREASES BECAUSE OF THE INCREASE IN FRESH AIR, THE OUTDOOR-DAMPER WILL FOLLOW THE HIGHER DEMAND CONDITION FROM THE DCV MODE OR FROM THE FREE-COOLING MODE.

CLIMAVISON CARRIER (2C/1H) ROOFTOP UNIT – (S-1, T-3 THRU T-5, & T-1G THRU T-6G) CONTROL DIAGRAM

SCALE NONE | 3



BACNET MSTP NETWORK GUIDELINES:
A MSTP NETWORK SHALL NOT EXCEED 10,000 FEET OVERALL LENGTH, CONSISTING OF UP TO FIVE 2000 FOOT SEGMENTS WITH NO GREATER THAN 30 DEVICES PER SEGMENT. EACH 2000 FOOT SEGMENT SHALL BE JOINED TO THE NEXT SEGMENT USING A BACNET REPEATER WITH APPROPRIATE TERMINATION. NO MORE THAN 4 REPEATERS CAN BE USED ON A SINGLE BACNET MSTP NETWORK. EACH SEGMENT WILL HAVE TERMINATION AT THE BEGINNING AND END OF THE SEGMENT.

WIRE LEGEND

LINE STYLE	WIRE TYPE	PART NUMBER	DESCRIPTION
—— —— ——	LOCAL AREA NETWORK		PROVIDED AND INSTALLED BY OTHERS
—— —— ——	BACNET MS/TP NETWORK WIRING	042002-S	24 AWG 2 COND SHIELDED, PLENUM, ORANGE
—— —— ——	BURIAL BACNET MS/TP NETWORK WIRING	042007DB	24 AWG 2 COND SHIELDED, BURIAL, BLACK
—— —— ——	I/O NETWORK WIRING	043009AL	22 AWG 2 COND SHIELDED, PLENUM, BLUE
—— —— ——	VRF NETWORK WIRING	001320-S	16 AWG 2 COND SHIELDED, PLENUM, WHITE

CLIMAVISION CARRIER MECHANICAL CONTROLS BACS DIAGRAM

SCALE NONE | 2

COMMON ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AC	AIR CONDITIONING
ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
AUTO	AUTOMATIC
AUX	AUXILIARY
BAI	BACNET ANALOG INPUT
BAO	BACNET ANALOG OUTPUT
BBI	BACNET BINARY INPUT
BBO	BACNET BINARY OUTPUT
BI	BINARY INPUT
BO	BINARY OUTPUT
C	COMMON
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
COND	CONDENSER
CW	CONDENSER WATER
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DA	DISCHARGE AIR
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
EA	EXHAUST AIR
EF	EXHAUST FAN
EVAP	EVAPORATOR
F	FAHRENHEIT
FCU	FAN COIL UNIT
HOA	HAND/OFF/AUTO
HP	HEAT PUMP
HRU	HEAT RECOVERY UNIT
HTEX	HEAT EXCHANGER
HW	HOT WATER
HWP	HOT WATER PUMP
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MAX	MAXIMUM
MIN	MINIMUM
MISC	MISCELLANEOUS
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTDOOR AIR
RA	RETURN AIR
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SF	SUPPLY FAN
SP	STATIC PRESSURE
TEMP	TEMPERATURE
UH	UNIT HEATER
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME
VAVTU	VARIABLE AIR VOLUME TERMINAL UNIT
VVT	VARIABLE VOLUME & TEMPERATURE
W/	WITH
W/O	WITHOUT
WSHP	WATER SOURCE HEAT PUMP

SYMBOL LEGEND

RETURN FAN, SUPPLY FAN, BAROMETRIC RELIEF, MANUAL DAMPER, FILTER, HORIZONTAL ECONOMIZER, VERTICAL ECONOMIZER, COOLING, HEATING, DUCT TEMP SENSOR, STATIC PRESSURE SENSOR, DIFF. PRESSURE SENSOR, ENTHALPY OR HUMIDITY, SPACE SENSOR, DOOR CONTACT, CEILING MOUNT MOTION SENSOR, WELL TEMP SENSOR, LIQUID FLOW METER, LIQUID DIFF PRESSURE SENSOR, 2-WAY VALVE, 3-WAY VALVE, WIRE NUT, PUMP

GENERAL INFORMATION

GENERAL NOTES
1. The 2 conductor communication cable and sensor cables must always be in a separate jacket from one another. Never run these cables in the same conduit as, or bundle them with, AC power wiring of any voltage . Do not strap these cables along any conduits that contain AC power wiring of any voltage. Do not run these cables in rings or conduit with fire, life, safety, security, network, telephone, power, or other wiring. When running communication and sensor wiring parallel to other cabling or conduit maintain a 12 in. distance.
2. Ethernet and/or Internet connection to i-Vu are supplied and maintained by building owner/operator.

INSTALLATION COORDINATION NOTES
1. Installer shall coordinate all power and data connection requirements with the GC onsite.
2. Install all components in accordance with the specification, applicable codes and manufacturer 's literature

MECHANICAL CONTROLS LEGEND AND GENERAL NOTES

SCALE NONE | 1

AGENCY APPROVAL

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER ABBY BARRETT MECHANICAL No. M29253 Exp. 6/30/27 STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/24/2026
DRAWN: CC
CHECK: HL
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL CLIMAVISION CARRIER CONTROLS

SHEET NO:
M-5.1 ADD01

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING A | **Report Page:** (Page 1 of 25)
Project Address: | **Date Prepared:** 2026-04-03T08:32:43-04:00

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD	04	Total Conditioned Floor Area	11036
02	Climate Zone	8	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

● Classroom ● Office

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01 Air System(s)	02 Wet System Components	03 Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

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CERTIFICATE OF COMPLIANCE NRCC-MCH-E
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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08	09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)															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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01 System Name	02 Quantity	03 System Serving	04 System Status	05 Space Type	06 Utilizing Recovered Heat
AC-1 & AC-3	1	Single zone	Alteration	School or Classroom	☐
AC-2 & AC-4	1	Single zone	Alteration	School or Classroom	☐

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01 System Name	02 Quantity	03 System Serving	04 System Status	05 Space Type	06 Utilizing Recovered Heat
AC-5, AC-6, AC-7, AC-8 & AC-9	1	Single zone	Alteration	School or Classroom	☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]			Cooling Output [2,3]		Load Calculations [3,4]	
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
AC-1 & AC-3	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	56.8	56.8	0	48.96	61.9	56.8	48.96
AC-2 & AC-4	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	46.1	46.1	0	37.82	49.92	46.1	37.82
AC-5, AC-6, AC-7, AC-8 & AC-9	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	34.1	34.1	0	27.93	36.98	34.1	27.93

[1] FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.
[2] It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
		Heating Mode				Cooling Mode			
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
AC-1 & AC-3	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75
AC-2 & AC-4	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75
AC-5, AC-6, AC-7, AC-8 & AC-9	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75

Mechanical Heat Recovery§140.4(s)

01 Name or Item Tag	02 Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	03 Design Capacity of All Mechanical Cooling Systems[2] (kBtu/h)	04 Design Capacity of All Service Water Heating Systems[1] (kBtu/h)	05 Design Capacity for all space heating systems (kBtu/h)	06 Simultaneous Mechanical Heat Recovery	07

[1] FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.
[2] FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.

G. PUMPS

This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	AC-1 & AC-3	Quantity	2	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,995	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
AC-1 & AC-3	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.67
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.67

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-2 & AC-4	Quantity	2	Fan System Status	New	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,600	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
AC-2 & AC-4	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.6
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.6

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-5	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
AC-5	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.278	Manufacturer provided		0.4
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.4

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-6, AC-7, AC-8 & AC-9	Quantity	4	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
AC-6, AC-7, AC-8 & AC-9	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.278	Manufacturer provided		0.4
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.4

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..
[7] Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01 Fan System Name	02 Qty	03 Hours of Operation per Year	04 Design Supply Airflow Rate	05 Outdoor Airflow	06 % Outdoor Air at Full Design Airflow	07 Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	08 Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	09 Type Of Heat Recovery Rating	10 Required Recovery Ratio	11 Energy Recovery Bypass
AC-1 & AC-3			1,995	330	17	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
AC-2 & AC-4			1,600	340	21	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
AC-5			1,200	420	35	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.1

C:\Users\RAJDEEP\OneDrive - Optimum Energy Design\Brianna Ocon's files - 501-25-0131 Lynwood - Districtwide HVAC Replacement\4_Lynwood HS\x-refs\TITLE 24\BUILDING AS\LYNWOOD-HIGH-SCHOOL-NRCCMCH01E - BUILDING A Page 010.jpg

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING A	Report Page:	(Page 11 of 25)
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I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
AC-1 & AC-3	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
AC-2 & AC-4	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
AC-5, AC-6, AC-7, AC-8 & AC-9	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] *FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*

STATE OF CALIFORNIA
Mechanical Systems
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J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)3B § 140.4(o) and § 140.4(q) for all nonresidential and hotel/motel and d:\24\ref\olink/}160.2, §160.3(a)3D, §170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. in lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

04		05			06			07
System Name	AC-1	System Design OA CFM Airflow[1]		330	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
RECORDS (A104)	Occupiable storage rooms for dry materials	362		0	54.3			DCV: Provided per §120.1(d)4; Occ Sensor: NA: Alteration
ATTEND. (A106), HALL (A108)	Classroom (ages 9-18)	511		12	191.62			DCV: Provided per §120.1(d)4; Occ Sensor: NA: Alteration
SECUR. (A107), COUNSEL. (A119)	Office space	221		1	33.15			DCV: Provided per §120.1(d)4; Occ Sensor: NA: Alteration

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J. VENTILATION AND INDOOR AIR QUALITY

RECEPT. (A118)	Reception area	333		1	49.95			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				329.02	18	Ventilation for this System Complies?		Yes

04		05			06			07
System Name	AC-3	System Design OA CFM Airflow[1]		330	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CONFER. (A103)	Lecture/ postsecondary classroom	213		5	79.87			DCV: Provided per §120.1(d)4; Occ Sensor: NA: Alteration
COPY/MAIL (A109), STORAGE (A125)	Occupiable storage rooms for dry materials	300		0	45			DCV: Provided per §120.1(d)4; Occ Sensor: NA: Alteration

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J. VENTILATION AND INDOOR AIR QUALITY

DEAN (A116), COUNSELL (A121), PSYCH. (A115), COUNSELL (A122), ASSIST. PRINC. (A113), COUNSELOR (A20), TECH. (A114)	Office space	700		3	105			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
ELEC. (A124)	All others	189		0	28.35			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				258.22	18	Ventilation for this System Complies?		Yes

04		05			06			07
System Name	AC-2	System Design OA CFM Airflow[1]		340	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
RECEPT. (A102), CLERICAL (A102)	Reception area	809		4	121.35			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration

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J. VENTILATION AND INDOOR AIR QUALITY

CONFER. (A101)	Conference/ meeting	155		5	76.72			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
ASSIST. PRINC. (A111), ASSIST. PRINC. (A112), PRINC. (A128)	Office space	745		3	111.75			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
TOILET	Toilet, private	59	1	1	15		100	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				324.82	18	Ventilation for this System Complies?		Yes

04		05			06			07
System Name	AC-4	System Design OA CFM Airflow[1]		340	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
HALL (A130)	Lecture/ postsecondary classroom	371		9	139.12			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
STAFF WORKRM (A123)	Office space	599		2	89.85			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration

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J. VENTILATION AND INDOOR AIR QUALITY

MEN (A131), WOMEN (A132), TOILET(A135)	Toilet, public	382	6	0	57.3		300	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
FIRST AID , NURSE (A138) (A139)	Office space	303		1	45.45			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				331.72	18	Ventilation for this System Complies?		Yes

04		05			06			07
System Name	AC-5	System Design OA CFM Airflow[1]		420	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
STAFF LOUNGE (A129)	Break room	1153		27	405			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
KIT. (A133)	Kitchenettes	48		0	7.2	14.4	50	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
STOR. (A134)	Occupiable storage rooms for dry materials	42		0	6.3			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				418.5	18	Ventilation for this System Complies?		Yes

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

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J. VENTILATION AND INDOOR AIR QUALITY

04		05			06			07
System Name	AC-6	System Design OA CFM Airflow[1]		320	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CLASSRM (A141)	Lecture/ postsecondary classroom	846		21	317.25			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				317.25	18	Ventilation for this System Complies?		Yes

04		05			06			07
System Name	AC-7	System Design OA CFM Airflow[1]		320	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CLASSRM (A140)	Lecture/ postsecondary classroom	845		21	316.87			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				316.87	18	Ventilation for this System Complies?		Yes

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

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J. VENTILATION AND INDOOR AIR QUALITY

04		05			06			07
System Name	AC-8	System Design OA CFM Airflow[1]		320	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CLASSRM (A142)	Lecture/ postsecondary classroom	849		21	318.37			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				318.37	18	Ventilation for this System Complies?		Yes

04		05			06			07
System Name	AC-9	System Design OA CFM Airflow[1]		320	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
								Provided

08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CLASSRM (A143)	Lecture/ postsecondary classroom	848		21	318			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				318	18	Ventilation for this System Complies?		Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.2

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
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J. VENTILATION AND INDOOR AIR QUALITY

[2] Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

[3] Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

[4] See Standards Tables 120.1-A and 120.1-B.

[5] For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

[6] §120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

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N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Form/Title	Systems/Spaces To Be Field Verified

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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

NRCA-MCH-02-A - Outdoor Air	AC-1 ; AC-3; AC-2; AC-4; AC-5; AC-6; AC-7; AC-8; AC-9
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	AC-1 & AC-3; AC-2 & AC-4; AC-5, AC-6, AC-7, AC-8 & AC-9
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	AC-1 & AC-3; AC-2 & AC-4; AC-5; AC-6, AC-7, AC-8 & AC-9
NRCA-MCH-06-A Demand Control Ventilation Systems	RECORDS (A104); ATTEND. (A106), HALL (A108); SECUR. (A107), COUNSEL. (A119); RECEPT. (A118); CONFER. (A103); COPY/MAIL (A109), STORAGE (A125); DEAN (A116), COUNSELL (A121), PSYCH. (A115), COUNSELL (A122), ASSIST. PRINC. (A113), COUNSELOR (A20), TECH. (A114); ELEC. (A124); RECEPT. (A102), CLERICAL (A102); CONFER. (A101); ASSIST. PRINC. (A111), ASSIST. PRINC. (A112), PRINC. (A128); TOILET; HALL (A130); STAFF WORKRM (A123); MEN (A131), WOMEN (A132), TOILET(A135); FIRST AID , NURSE (A138) (A139); STAFF LOUNGE (A129); KIT. (A133); STOR. (A134); CLASSRM (A141); CLASSRM (A140); CLASSRM (A142); CLASSRM (A143)

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P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M-0.1
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.1
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

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Project Address:	Date Prepared:	2026-04-03T08:32:43-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Micah Fluhmiller	Documentation Author Signature: Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/AEA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
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STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
ABBY BANERJEE
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

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SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.3

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
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This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD CITY	04	Total Conditioned Floor Area	7000
02	Climate Zone	8	05	Total Unconditioned Floor Area	115
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

● Classroom ● Office

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08	09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)															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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
AC-2, AC-3 & AC-5	3	Single zone	Alteration	School or Classroom	☐
AC-1, AC-6 & AC-7	3	Single zone	Alteration	School or Classroom	☐

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]			Cooling Output [2,3]		Load Calculations [3,4]	
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
AC-2, AC-3 & AC-5	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	46.1	46.1	0	37.82	49.92	46.1	37.82
AC-1, AC-6 & AC-7	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	56.8	56.8	0	48.96	61.9	56.8	48.96

[1] FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.
[2] It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Size Category (Btu/h)	Heating Mode				Cooling Mode			
		Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
AC-2, AC-3 & AC-5	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75
AC-1, AC-6 & AC-7	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Mechanical Heat Recovery §140.4(s)

01	02	03	04	05	06	07
Name or Item Tag	Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	Design Capacity of All Mechanical Cooling Systems [2] (kBtu/h)	Design Capacity of All Service Water Heating Systems [1] (kBtu/h)	Design Capacity for all space heating systems (kBtu/h)	Simultaneous Mechanical Heat Recovery	

[1] FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.
[2] FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.

G. PUMPS

This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	AC-2 , AC-3 , AC-5	Quantity	3	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,600	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm) [3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
AC-2 , AC-3 , AC-5	Supply	3	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.59
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)		0.232	Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)		0	Fan System Allowance (kW) [3]		1.92	Fan System Electrical Input Power (kW)	1.79

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-1 , AC-6 , AC-7	Quantity	3	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,995	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm) [3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
AC-1 , AC-6 , AC-7	Supply	3	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.66
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)		0.232	Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)		0	Fan System Allowance (kW) [3]		2.4	Fan System Electrical Input Power (kW)	1.99

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..
[7] Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
AC-2 , AC-3 , AC-5			1,600	200	13	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
AC-1 , AC-6 , AC-7			1,995	520	26	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
AC-2 , AC-3 , AC-5	<1.00 HP or 0.89 kW	
AC-1 , AC-6 , AC-7	<1.00 HP or 0.89 kW	

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I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
AC-2, AC-3 & AC-5	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
AC-1, AC-6, AC-7	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)3B § 140.4(p) and § 140.4(g) for all nonresidential and hotel/motel and d:\24ref\nolink\}160.2, §160.3(a)3D, §170.2(a)4N, 170.2(e)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.
Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems		

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Mechanical Systems
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J. VENTILATION AND INDOOR AIR QUALITY

	04	05			06		07	
System Name	AC-2 , AC-3 , AC-5	System Design OA CFM Airflow [2]		200	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
							Provided	
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[6] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
OFFICE	Office space	1180		5	177			DCV: Provided per §120.1(d)4
								Occ Sensor: NA: Alteration
17	Total System Required Min OA CFM				177	18	Ventilation for this System Complies?	Yes

	04	05			06		07	
System Name	AC-1 , AC-6 , AC-7	System Design OA CFM Airflow [2]		520	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
							Provided	
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[6] §160.2(c)5D §160.2(c)5E §160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CLASSROOM	Classroom (ages 5-18)	1367		34	512.62			DCV: Provided per §120.1(d)4
								Occ Sensor: NA: Alteration
17	Total System Required Min OA CFM				512.62	18	Ventilation for this System Complies?	Yes

[1] FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.4

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING B	Report Page:	(Page 10 of 13)
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J. VENTILATION AND INDOOR AIR QUALITY

[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.*

[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).*

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

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N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air	AC-2 , AC-3 , AC-5; AC-1 , AC-6 , AC-7
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	AC-2, AC-3 & AC-5; AC-1, AC-6, AC-7
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	AC-2 , AC-3 , AC-5; AC-1 , AC-6 , AC-7
NRCA-MCH-06-A Demand Control Ventilation Systems	OFFICE; CLASSROOM

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		M-0.2
Duct Insulation per §120.4		M-0.**1**
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.**1**
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Micah Rummler	Documentation Author Signature: Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/AEA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.5

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE **NRCC-MCH-E**
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.
Project Name: LYNWOOD HIGH SCHOOL - BUILDING F **Report Page:** **(Page 1 of 20)**
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A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD CITY	04	Total Conditioned Floor Area	8000
02	Climate Zone	8	05	Total Unconditioned Floor Area	1150
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	2

● Classroom ● Office

B. PROJECT SCOPE
This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

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C. COMPLIANCE RESULTS
Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08		09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2		Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND			COMPLIES
Mandatory Measures Compliance (See Table Q for Details)																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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)
Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
F-1 & F-2	1	Single zone	Alteration	School or Classroom	☐
F-3 & F-5	1	Single zone	Alteration	School or Classroom	☐

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)
Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
F-4	1	Single zone	Alteration	School or Classroom	☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]		Cooling Output [2,3]		Load Calculations [3,4]		
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
F-1 & F-2	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	116.4	116.4	0	93.44	125.29	116.4	93.44
F-3 & F-5	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	56.8	56.8	0	48.96	61.9	56.8	48.96
F-4	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	85.6	85.6	0	66.85	89.5	85.6	66.85

[1] FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.
[2] It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)
Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Size Category (Btu/h)	Heating Mode				Cooling Mode			
		Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
F-1 & F-2	>=65,000 and <135,000	47°Fdb/ 43°Fwb OSA	COP	Federal Minimum	3.4		EER	10.8	11
							IEER	0	15
F-3 & F-5	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75
F-4	>=65,000 and <135,000	47°Fdb/ 43°Fwb OSA	COP	Federal Minimum	3.4		EER	10.8	11.2
							IEER	0	15

Mechanical Heat Recovery§140.4(s)

01	02	03	04	05	06	07
Name or Item Tag	Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	Design Capacity of All Mechanical Cooling Systems[2] (kBtu/h)	Design Capacity of All Service Water Heating Systems[1] (kBtu/h)	Design Capacity for all space heating systems (kBtu/h)	Simultaneous Mechanical Heat Recovery	

[1] FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.
[2] FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.

G. PUMPS
This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS
This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	F-1	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	4,000	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
F-1	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		1.52
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)		0.232	Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)		0	Fan System Allowance (kW)[3]		2.22	Fan System Electrical Input Power (kW)	1.52

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	F-2	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	4,000	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
F-2	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		1.52
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)		0.232	Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)		0	Fan System Allowance (kW)[3]		2.22	Fan System Electrical Input Power (kW)	1.52

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	F-3	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,995	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
F-3	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.66
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.66

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	F-4	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	3,000	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
F-4	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.94
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.94

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	F-5	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,995	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
F-5	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.66
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhuast/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.66

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..
[7] Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

Generated Date/Time:
CA Building Energy Efficiency Standards - 2025 Nonresidential Compliance
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Report Generated: 2026-04-03 05:47:58

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.6

H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
F-1			4,000	1,240	31	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
F-2			4,000	800	20	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
F-3			1,995	820	41	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

F-4			3,000	600	20	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
F-5			1,995	400	20	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
F-1	Embedded Fan <5HP or <4.1kW	
F-2	Embedded Fan <5HP or <4.1kW	
F-3	Embedded Fan <5HP or <4.1kW	
F-4	Embedded Fan <5HP or <4.1kW	
F-5	<1.00 HP or 0.89 kW	

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
F-1 & F-2	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
F-3 & F-4	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
F-4	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] *FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)3B § 140.4(p) and § 140.4(q) for all nonresidential and hotel/motel and d:\t24ref\nolink/160.2, §160.3(a)3D, §170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

04		05			06			07	
System Name	F-1	System Design OA CFM Airflow[1]		1240	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[6] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
MUSIC(F111), MUSIC STOR. (F114, F115), PRACTICE (F112), INSTRUM. STOR. (F109, F110)	Music/theater/dance	2500		82	1,237.5			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				1237.5	18	Ventilation for this System Complies?		Yes

J. VENTILATION AND INDOOR AIR QUALITY

04		05			06			07	
System Name	F-2	System Design OA CFM Airflow[1]		800	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
CLASSRM (F104)	Lecture/ postsecondary classroom	861		21	322.87			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
STOR. (F106, F107)	Occupiable storage rooms for dry materials	190		0	28.5			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
OFFICE (F105)	Office space	76		0	11.4			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				362.77	18	Ventilation for this System Complies?		Yes

04		05			06			07	
System Name	F-3	System Design OA CFM Airflow[1]		825	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	

J. VENTILATION AND INDOOR AIR QUALITY

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
MUSIC(F206)	Music/theater/dance	1500		49	742.5			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
OFFICE (F210)	Office space	108		0	16.2			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
STOR. (F204, F205)	Occupiable storage rooms for dry materials	275		0	41.25			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
PRACTICE (F207, F208)	All others	135		0	20.25			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				820.2	18	Ventilation for this System Complies?		Yes

04		05			06			07	
System Name	F-4	System Design OA CFM Airflow[1]		400	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		

J. VENTILATION AND INDOOR AIR QUALITY

CLASSRM (846)	Lecture/ postsecondary classroom	846		21	317.25			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				317.25	18	Ventilation for this System Complies?		Yes

04		05			06			07	
System Name	F-5	System Design OA CFM Airflow[1]		400	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
CLASSRM(F202)	Lecture/ postsecondary classroom	812		20	304.5			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				304.5	18	Ventilation for this System Complies?		Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.*

[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).*

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air	F-1; F-2; F-3; F-4; F-5
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	F-1 & F-2; F-3 & F-4; F-4
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	F-1 ; F-2; F-3; F-4; F-5
NRCA-MCH-06-A Demand Control Ventilation Systems	MUSIC(F111), MUSIC STOR. (F114, F115), PRACTICE (F112), INSTRUM. STOR. (F109, F110); CLASSRM (F104); STOR. (F106, F107); OFFICE (F105); MUSIC(F206); OFFICE (F210); STOR. (F204, F205); PRACTICE (F207, F208); CLASSRM (846); CLASSRM(F202)

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
Hector Tobey Baltazar
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.7

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING F	Report Page:	(Page 19 of 20)
	Date Prepared:	2026-04-03T08:47:47-04:00

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M-0.1
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.1
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING F	Report Page:	(Page 20 of 20)
Project Address:	Date Prepared:	2026-04-03T08:47:47-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Micah Rummler	Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/AEA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

CA Building Energy Efficiency Standards - 2025 Nonresidential Compliance
Generated Date/Time:
Report Version: 2025.0.000
Schema Version: rev 20250101
Documentation Software: Energy Code Ace
Compliance ID: ECA-392322-0426-0002
Report Generated: 2026-04-03 05:47:58

AGENCY APPROVAL

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DIV. OF THE STATE ARCHITECT
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SS ☑ FLS ☑ ACS ☐
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STAMP

REGISTERED PROFESSIONAL ENGINEER
Abby Banerjee
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD, CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.8

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING G	Report Page:	(Page 1 of 15)
Project Address:	Date Prepared:	2026-04-03T06:48:52-04:00

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD CITY	04	Total Conditioned Floor Area	2216
02	Climate Zone	8	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

● Classroom ● Office

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING G	Report Page:	(Page 2 of 15)
	Date Prepared:	2026-04-03T06:48:52-04:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08		09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2		Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND			COMPLIES
Mandatory Measures Compliance (See Table Q for Details)																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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
G-1, G-2 & G-3	1	Single zone	Alteration	School or Classroom	☐

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING G	Report Page:	(Page 3 of 15)
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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]			Cooling Output [2,3]		Load Calculations [3,4]	
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
G-1, G-2 & G-3	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	34.1	34.1	0	27.93	36.98	34.1	27.93

[1] FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.
[2] It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Size Category (Btu/h)	Heating Mode				Cooling Mode			
		Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
G-1, G-2 & G-3	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Mechanical Heat Recovery§140.4(s)

01	02	03	04	05	06	07
Name or Item Tag	Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	Design Capacity of All Mechanical Cooling Systems[2] (kBtu/h)	Design Capacity of All Service Water Heating Systems[1] (kBtu/h)	Design Capacity for all space heating systems (kBtu/h)	Simultaneous Mechanical Heat Recovery	

[1] FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.
[2] FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.

G. PUMPS

This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	G-1	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Allowance		Design				
									Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
G-1	Supply	1	Hydronic/DX cooling coil or heat pump coil			100			0.139	0.278	Manufacturer provided				0.18
			MERV 13-16 Filter upstream of thermal conditioning equipment			100			0.139						
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)						Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.18

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	G-2	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Allowance		Design				
									Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
G-2	Supply	1	Hydronic/DX cooling coil or heat pump coil			100			0.139	0.278	Manufacturer provided				0.18
			MERV 13-16 Filter upstream of thermal conditioning equipment			100			0.139						
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)						Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.18

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	G-3	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Allowance		Design				
									Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
G-3	Supply	1	Hydronic/DX cooling coil or heat pump coil			100			0.139	0.278	Manufacturer provided				0.18
			MERV 13-16 Filter upstream of thermal conditioning equipment			100			0.139						
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)						Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.18

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..
[7] Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
G-1			1,200	300	25	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
G-2			1,200	350	28	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
G-3			1,200	300	25	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
G-1	<1.00 HP or 0.89 kW	

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Fan Energy Index (FEI)

G-2	<1.00 HP or 0.89 kW	
G3	<1.00 HP or 0.89 kW	

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
G-1, G-2 & G-3	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)3B § 140.4(p) and § 140.4(q) for all nonresidential and hotel/motel and d:\24ref\nolink/]160.2, §160.3(a)3D, §170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROBERT J. BAKER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.9

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J. VENTILATION AND INDOOR AIR QUALITY

04		05			06			07	
System Name	G-1	System Design OA CFM Airflow[1]		300	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
CLASSRM (G101)	Lecture/ postsecondary classroom	731		18	274.12			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
17	Total System Required Min OA CFM				274.12	18	Ventilation for this System Complies?		Yes

04		05			06			07	
System Name	G-2	System Design OA CFM Airflow[1]		350	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
CLASSRM (G102)	Lecture/ postsecondary classroom	731		18	274.12			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type

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J. VENTILATION AND INDOOR AIR QUALITY

WORK RM (G104)	Office space	370		1	55.5			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
VESTIBULE (G103)	Corridor	110		0	16.5			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
17	Total System Required Min OA CFM				346.12	18	Ventilation for this System Complies?		Yes

04		05			06			07	
System Name	G-3	System Design OA CFM Airflow[1]		300	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
VESTI. (G-3)	Corridor	274		1	41.1			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
17	Total System Required Min OA CFM				41.1	18	Ventilation for this System Complies?		Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

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J. VENTILATION AND INDOOR AIR QUALITY

[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.*

[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).*

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air	G-1; G-2; G-3
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	G-1, G-2 & G-3
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	G-1 ; G-2; G-3
NRCA-MCH-06-A Demand Control Ventilation Systems	CLASSRM (G101); CLASSRM (G102); WORK RM (G104); VESTIBULE (G103); VESTI. (G-3)

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M-0.1
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.1
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

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CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
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Project Address:		**Date Prepared:** 2026-04-03T08:28:10-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Micah Rummler	Documentation Author Signature: Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/AEA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.10

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING N	Report Page:	(Page 1 of 15)
Project Address:	Date Prepared:	2026-04-03T09:42:26-04:00

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD CITY	04	Total Conditioned Floor Area	6000
02	Climate Zone	8	05	Total Unconditioned Floor Area	85
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

● Classroom ● Office

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08		09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND			COMPLIES
Mandatory Measures Compliance (See Table Q for Details)																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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
N-1, N-3, N4 & N-5	1	Single zone	Alteration	School or Classroom	☐
N-2 & N-6	1	Single zone	Alteration	School or Classroom	☐

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
N-7	1	Single zone	Alteration	School or Classroom	☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]		Cooling Output [2,3]		Load Calculations [3,4]		
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
N-1, N-3, N4 & N-5	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	46.1	46.1	0	37.82	49.92	46.1	37.82
N-2 & N-6	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (1phase)	Yes	24.08	24.08	0	18.09	23.36	24.08	18.09
N-7	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	56.8	56.8	0	48.96	61.9	56.8	48.96

[1] FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.
[2] It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Size Category (Btu/h)	Heating Mode				Cooling Mode			
		Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
N-1, N-3, N4 & N-5	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75
N-2 & N-6	<65,000		HSPF2	Federal Minimum	6.7		SEER2	FederalMinimum	13.4
N-7	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75

Mechanical Heat Recovery§140.4(s)

01	02	03	04	05	06	07
Name or Item Tag	Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	Design Capacity of All Mechanical Cooling Systems[2] (kBtu/h)	Design Capacity of All Service Water Heating Systems[1] (kBtu/h)	Design Capacity for all space heating systems (kBtu/h)	Simultaneous Mechanical Heat Recovery	

[1] FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.
[2] FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.

G. PUMPS

This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	N-1, N3, N4 & N5	Quantity	4	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,600	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
N-1, N3, N4 & N5	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.59
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]				0.6

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	N-2 & N-6	Quantity	2	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	825	Site Elevation	54	Economizer	NA: <=33 kBtu/h cooling
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
N-2 & N-6	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.16
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.16

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	N-7	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,995	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Allowance: Component Allowance (watt/cfm)	Allowance: Fan Allowance (watt/cfm)[3]	Design: Design Electrical Input Power Method	Design: Motor Nameplate Horsepower	Design: Fan Electrical Input Power (kW)
N-7	Supply	1	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.66
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			Fan System Allowance (kW)[3]			Fan System Electrical Input Power (kW)	0.66

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..
[7] Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
N-1, N3, N4 & N5			1,600	410	26	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
N-2 & N-6			825	150	18	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
N-7			1,995	520	26	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
N-1, N3, N4 & N5	<1.00 HP or 0.89 kW	

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Fan Energy Index (FEI)

N-2 & N-6	<1.00 HP or 0.89 kW	
N-7	<1.00 HP or 0.89 kW	

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
N-1, N-3, N-4 & N-5	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
N-2 & N-6	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
N-7	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

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Mechanical Systems
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J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)38 § 140.4(p) and § 140.4(q) for all nonresidential and hotel/motel and d:\24\refnolink\160.2, §160.3(a)3D, §170.2(q)4N, 170.2(q)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

04	05			06			07
System Name	N-1, N-3, N-4 & N-5	System Design OA CFM Airflow[1]	410	System Design Transfer Air CFM	0		Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2] Provided
08	09	10	11	12	13	14	15	16

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3				Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CLASSRM (N103, N106, N107, N108)	Lecture/ postsecondary classroom	1067		26	400.12			DCV: Provided per §120.1(d)4
								Occ Sensor: NA: Alteration
17	Total System Required Min OA CFM				400.12	18	Ventilation for this System Complies?	Yes

04	05			06			07
System Name	N-2 & N-6	System Design OA CFM Airflow[1]	150	System Design Transfer Air CFM	0		Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2] Provided
08	09	10	11	12	13	14	15	16

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Mechanical Systems
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J. VENTILATION AND INDOOR AIR QUALITY

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3				Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
OFFICE (N105, N110)	Office space	300		1	45			DCV: Provided per §120.1(d)4
								Occ Sensor: NA: Alteration
17	Total System Required Min OA CFM				45	18	Ventilation for this System Complies?	Yes

04	05			06			07
System Name	N-7	System Design OA CFM Airflow[1]	520	System Design Transfer Air CFM	0		Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2] Provided
08	09	10	11	12	13	14	15	16

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3				Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[4] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
CHEM. CLASSRM (N108)	Lecture/ postsecondary classroom	1380		34	517.5			DCV: Provided per §120.1(d)4
								Occ Sensor: NA: Alteration
17	Total System Required Min OA CFM				517.5	18	Ventilation for this System Complies?	Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.*

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Mechanical Systems
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J. VENTILATION AND INDOOR AIR QUALITY

[6]§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

Generated Date/Time:
CA Building Energy Efficiency Standards - 2025 Nonresidential Compliance
Report Version: 2025.0.000
Schema Version: rev 20250101
Documentation Software: Energy Code Ace
Compliance ID: ECA-392781-0426-0004
Report Generated: 2026-04-03 06:42:37

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING N	**Report Page:**	**(Page 13 of 15)**
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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air	N-1, N-3, N-4 & N-5; N-2 & N-6; N-7
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	N-1, N-3, N-4 & N-5; N-2 & N-6; N-7
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	N-1, N3, N4 & N5; N-7
NRCA-MCH-06-A Demand Control Ventilation Systems	CLASSRM (N103, N106, N107, N108); OFFICE (N105, N110); CHEM. CLASSRM (N108)

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Generated Date/Time:
CA Building Energy Efficiency Standards - 2025 Nonresidential Compliance
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Schema Version: rev 20250101
Documentation Software: Energy Code Ace
Compliance ID: ECA-392781-0426-0004
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STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M-0.1
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.1
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

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Report Version: 2025.0.000
Schema Version: rev 20250101
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STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

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Project Address:	**Date Prepared:**	2026-04-03T09:42:26-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Micah Rummler	Documentation Author Signature: Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/AEA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

Generated Date/Time:
CA Building Energy Efficiency Standards - 2025 Nonresidential Compliance
Report Version: 2025.0.000
Schema Version: rev 20250101
Documentation Software: Energy Code Ace
Compliance ID: ECA-392781-0426-0004
Report Generated: 2026-04-03 06:42:37

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.12

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING S	Report Page: (Page 1 of 16)
Project Address:	Date Prepared: 2026-04-03T09:27:45-04:00

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD CITY	04	Total Conditioned Floor Area	3700
02	Climate Zone	8	05	Total Unconditioned Floor Area	1005
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

● Classroom ● Office

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

STATE OF CALIFORNIA
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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08	09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)															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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
AC-1	1	Single zone	Alteration	School or Classroom	☐
AC-2 & AC-3	1	Single zone	Alteration	School or Classroom	☐

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]			Cooling Output [2,3]		Load Calculations [3,4]	
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
AC-1	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	85.6	85.6	0	66.85	89.5	85.6	66.85
AC-2 & AC-3	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	34.1	34.1	0	27.93	36.98	34.1	27.93

[1] FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.
[2] It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Size Category (Btu/h)	Heating Mode				Cooling Mode			
		Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
AC-1	>=65,000 and <135,000	47°F db/ 43°F wb OSA	COP	Federal Minimum	3.4		EER	10.8	11.2
							IEER	0	15
AC-2 & AC-3	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Mechanical Heat Recovery §140.4(s)

01	02	03	04	05	06	07
Name or Item Tag	Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	Design Capacity of All Mechanical Cooling Systems[2] (kBtu/h)	Design Capacity of All Service Water Heating Systems[1] (kBtu/h)	Design Capacity for all space heating systems (kBtu/h)	Simultaneous Mechanical Heat Recovery	

[1] FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.
[2] FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.

G. PUMPS

This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	AC-1	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	3,000	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Allowance		Design				
									Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
AC-1	Supply	1	Hydronic/DX cooling coil or heat pump coil			100			0.139	0.324	Manufacturer provided				0.83
			MERV 13-16 Filter upstream of thermal conditioning equipment			100			0.139						
			Economizer Return Damper			100			0.046						
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)						Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.83

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-2	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Differential Temperature
01	02	03	04			05		06	07	08	09			10	11
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Allowance		Design				
									Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
AC-2	Supply	1	Hydronic/DX cooling coil or heat pump coil			100			0.139	0.324	Manufacturer provided				0.37
			MERV 13-16 Filter upstream of thermal conditioning equipment			100			0.139						
			Economizer Return Damper			100			0.046						
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)						Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.38

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-3	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Differential Temperature
01	02	03	04			05		06	07	08	09			10	11
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Allowance		Design				
									Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
AC-3	Supply	1	Hydronic/DX cooling coil or heat pump coil			100			0.139	0.324	Manufacturer provided				0.38
			MERV 13-16 Filter upstream of thermal conditioning equipment			100			0.139						
			Economizer Return Damper			100			0.046						
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)						Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.38

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..
[7] Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
AC-1			3,000	600	20	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
AC-2			1,200	250	21	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
AC-3			1,200	250	21	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
AC-1	Embedded Fan <5HP or <4.1kW	

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Fan Energy Index (FEI)

AC-2	<1.00 HP or 0.89 kW	
AC-3	<1.00 HP or 0.89 kW	

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
AC-1	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
AC-2 & AC-3	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

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SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.13

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J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)38 § 140.4(p) and § 140.4(q) for all nonresidential and hotel/motel and d:\24refnolink\j160.2, §160.3(a)3D, §170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

04	05			06			07
System Name	AC-1	System Design OA CFM Airflow[1]	600	System Design Transfer Air CFM	0		Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
							Provided
08	09	10	11	12	13	14	15	16

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3				Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[6] §160.2(c)5D §160.2(c)5E §160.2(c)5D		
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
LOCKERS (S101)	Locker room (athletic facility)	1587		0	238.05	793.5	825	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				238.05	18	Ventilation for this System Complies?		Yes

04	05			06			07
System Name	AC-2	System Design OA CFM Airflow[1]	250	System Design Transfer Air CFM	0		Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
							Provided
08	09	10	11	12	13	14	15	16

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J. VENTILATION AND INDOOR AIR QUALITY

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3				Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[6] §160.2(c)5D §160.2(c)5E §160.2(c)5D		
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
LOCKERS (S105)	Locker room (athletic facility)	336		0	50.4	168	168	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
TOILETS (S106)	Toilet, public	360	6	0	54		250	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
OFFICE (S109)	Office space	189		0	28.35			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
STOR. (S116)	Occupiable storage rooms for liquids/ gels	104		0	15.6		210	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				148.35	18	Ventilation for this System Complies?		Yes

04	05			06			07
System Name	AC-3	System Design OA CFM Airflow[1]	250	System Design Transfer Air CFM	0		Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]
							Provided
08	09	10	11	12	13	14	15	16

Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3[3] & §160.2(c)3				Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3[6] §160.2(c)5D §160.2(c)5E §160.2(c)5D		
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
LOCKERS (S113)	Locker room (athletic facility)	367		0	55.05	183.5	185	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
OFFICE (S110)	Office space	229		1	34.35			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
HALL (S114, S107)	Corridor	427		2	64.05			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
STOR. (S112)	Occupiable storage rooms for liquids/ gels	78		0	11.7		120	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				165.15	18	Ventilation for this System Complies?		Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined In accordance with the California Building Code.*

[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).*

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

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L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air	AC-1; AC-2; AC-3
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	AC-1; AC-2 & AC-3
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	AC-1; AC-2; AC-3
NRCA-MCH-06-A Demand Control Ventilation Systems	LOCKERS (S101); LOCKERS (S105); TOILETS (S106); OFFICE (S109); STOR. (S116); LOCKERS (S113); OFFICE (S110); HALL (S114, S107); STOR. (S112)

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M-0.1
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.1
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Micah Fluhmiller	Documentation Author Signature: Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/ACA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, Ca 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.14

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CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
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This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	LYNWOOD CITY	04	Total Conditioned Floor Area	17800
02	Climate Zone	8	05	Total Unconditioned Floor Area	1100
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

• Gymnasium • Office

B. PROJECT SCOPE

This table Includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, §170.2(b) or §141.0(b)2 and §180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
☒ Ventilation (including DOAS, ERV, HRV systems)	☐ System Piping	☒ Fan Systems
Mechanical Controls	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	
☒ Mechanical Controls (existing to remain, altered or new)	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. 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		05		06		07		08	09
System Summary §110.1, §110.2, §140.4, §170.2(c), §141.0(b), §180.2(b2)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/Economizers §140.4(c), §140.4(e), §140.4(p), §170.2(c)	AND	System Controls § 110.2, §120.2, §140.4(f), §140.4(r), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §140.4(l), §160.2, §160.3, §141.0(b)2D, §180.2(b)2Bi	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)															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.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
AC-1 & AC-2	2	Single zone	Alteration	All Other Occupancies	☐

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
AC-3, AC-4, AC-5, AC-1G, AC-2G, AC-3G, AC-4G, AC-5G, AC-6G	9	Single zone	Alteration	All Other Occupancies	☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4(a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output [2,3]			Cooling Output [2,3]		Load Calculations [3,4]	
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] §140.4(a) and §170.2(c)1	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
AC-1 & AC-2	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	34.1	34.1	0	27.93	36.98	34.1	29.73
AC-3, AC-4, AC-5, AC-1G, AC-2G, AC-3G, AC-4G, AC-5G, AC-6G	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	85.6	85.6	0	66.85	89.5	85.6	66.85

[1] *FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.*
[2] *It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.*
[3] *If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.*
[4] *Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c).*

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09	10
		Heating Mode				Cooling Mode			
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Refrigerant Loop Heat Recovery	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
AC-1 & AC-2	<65,000		HSPF2	Federal Minimum	6.95		SEER2	FederalMinimum	13.75
AC-3, AC-4, AC-5, AC-1G, AC-2G, AC-3G, AC-4G, AC-5G, AC-6G	>=65,000 and <135,000	47°Fdb/ 43°Fwb OSA	COP	Federal Minimum	3.4		EER	10.8	11.2
							IEER	0	15

Mechanical Heat Recovery§140.4(s)

01	02	03	04	05	06	07
Name or Item Tag	Coincident Peak Cooling Load of All High Load Spaces (kBtu/h)	Design Capacity of All Mechanical Cooling Systems[2] (kBtu/h)	Design Capacity of All Service Water Heating Systems[1] (kBtu/h)	Design Capacity for all space heating systems (kBtu/h)	Simultaneous Mechanical Heat Recovery	

[1] *FOOTNOTES: Excluding systems expected to operate less than 5 hours per week.*
[2] *FOOTNOTES: If the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces.*

G. PUMPS

This section does not apply to this project.

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H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e), §140.4(m), §170.2(c)3, and §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	AC-1 & AC-2	Quantity	2	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	54	Economizer	Fixed Temperature
01	02	03	04			05		06	07	08	09			10	11

							Allowance		Design			
Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)		Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method	Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
AC-1 & AC-2	Supply	2	Hydronic/DX cooling coil or heat pump coil	100			0.139	0.324	Manufacturer provided		0.37
			MERV 13-16 Filter upstream of thermal conditioning equipment	100			0.139				
			Economizer Return Damper	100			0.046				
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)				Fan System Allowance (kW)[3]				0.75

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	AC-3, AC-4, AC-5	Quantity	3	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units?	Not Serving Dwelling Units	Fan System Airflow (cfm)	3,000	Site Elevation	54	Economizer	Differential Temperature
01	02	03	04			05		06	07	08	09			10	11

						Allowance		Design		
Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method	Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
AC-3, AC-4, AC-5,	Supply	3	Hydronic/DX cooling coil or heat pump coil	100		0.139	0.324	Manufacturer provided		0.83
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		0.139				
			Economizer Return Damper	100		0.046				
Supply Fan Base Allowance (watt/cfm)		0.232	Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)		0	Fan System Allowance (kW)[3]		3.61	Fan Systm Electrical Input Power (kW)	2.49

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I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)B or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
AC-1 & AC-2	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
AC-3, AC-4, AC-5, AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G	Single zone	<= 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] *FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)3B § 140.4(p) and § 140.4(q) for all nonresidential and hotel/motel and d:\z4refnolink/§160.2, §160.3(a)3D, §170.2(e)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING T (GYM)	Report Page:	(Page 8 of 16)
	Date Prepared:	2026-04-03T10:45:24-04:00

H. FAN SYSTEMS & AIR ECONOMIZERS

[6] *Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document..*
[7] *Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.*

H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4O	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
AC-1 & AC-2			1,200	200	17	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
AC-3, AC-4, AC-5			3,000	400	13	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G			3,000	500	17	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
AC-1 & AC-2	<1.00 HP or 0.89 kW	
AC-3, AC-4, AC-5	Embedded Fan <5HP or <4.1kW	
AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G	Embedded Fan <5HP or <4.1kW	

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
HEATHER BAKER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.15

STATE OF CALIFORNIA
Mechanical Systems
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CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING T (GYM)	**Report Page:**	**(Page 10 of 16)**
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I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n), §170.2(c)4D §170.2(c)4L or requirements in §141.0(b)2E §180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10	11
System Name	System Zoning	Conditioned Floor Area Being Served (ft^2)	Thermostats §110.2(b) & (c)[1], §120.2(a) §160.3(a)2A or §160.3(b)8 or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2(e) & §160.3(a) 2D	Isolation Zone Controls §120.2(g) & §160.3(a) 2F	Demand Response §110.12 §120.2(b) & §160.3(a)2B	Supply Air Temp. Reset §140.4(f) & §170.2(c) 4D	Window Interlocks per §140.4(n) & §170.2(c)4D	Direct Digital Control (DDC) per §120.2	Heat Pump Defrost per §160.3(b)7
AC-1 & AC-2	Single zone	<= 25,000 ft^2	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units
AC-3, AC-4, AC-5, AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G	Single zone	<= 25,000 ft^2	Setback + DR Tstat per §110.12	Auto Timer Switch	NA: Single Zone	DR Tstat per §110.12	NA: Single Zone	NA: Alteration Project	NA: Single Zone	NA Heat Pump not serving dwelling units

[1] *FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 § 120.2(e)3B § 140.4(p) and § 140.4(q) for all nonresidential and hotel/motel and d:\t24refnolink\1160.2, §160.3(a)3D, §170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.
Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems		

STATE OF CALIFORNIA
Mechanical Systems
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J. VENTILATION AND INDOOR AIR QUALITY

04		05			06			07	
System Name	AC-1 & AC-2	System Design OA CFM Airflow[1]		200	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft^2)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
OFFICE (T126,T125 & T113)	Office space	614		3	92.1			DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				92.1	18	Ventilation for this System Complies?		Yes

04		05			06			07	
System Name	AC-3, AC-4, AC-5	System Design OA CFM Airflow[1]		400	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft^2)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
LOCKERS (T120, T121)	Locker room (athletic facility)	1130		0	169.5	565	1635	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				169.5	18	Ventilation for this System Complies?		Yes

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J. VENTILATION AND INDOOR AIR QUALITY

04		05			06			07	
System Name	AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G	System Design OA CFM Airflow[1]		500	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) §141.0(b)2 and §160.2(c)21 [2]	
								Provided	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)[3] & §160.2(c)3					Exh. Vent per §120.1(c)4 & §160.2(c)4		DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)[3] §160.2(c)5D §160.2(c)5E §160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft^2)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
1	Gym/ sports arena (play area)	2350		23	352.5		6465	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Alteration
17	Total System Required Min OA CFM				352.5	18	Ventilation for this System Complies?		Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.*

[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft^2 or smaller, multipurpose rooms less than 1,000 ft^2, classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).*

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
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	Date Prepared:	2026-04-03T10:45:24-04:00

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

01	☐	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. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-E - Must be submitted for all buildings

STATE OF CALIFORNIA
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CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING T (GYM)	**Report Page:**	**(Page 14 of 16)**
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O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air	AC-1 & AC-2; AC-3, AC-4, AC-5; AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G
NRCA-MCH-03-A - HVAC and Heat Pumps - Const Volume Single Zone HVAC	AC-1 & AC-2; AC-3, AC-4, AC-5, AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G
NRCA-MCH-05-A - Air Economizer, DOAS, HRV, & ERV Controls	AC-1 & AC-2; AC-3, AC-4, AC-5; AC-1G, AC-2G, AC-3G, AC-4G, AC-5G & AC-6G
NRCA-MCH-06-A Demand Control Ventilation Systems	OFFICE (T126,T125 & T113); LOCKERS (T120, T121); 1

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

STATE OF CALIFORNIA
Mechanical Systems
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CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums		M-0.2
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M-0.1
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a)-(f)		M-0.1
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

STATE OF CALIFORNIA
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CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: LYNWOOD HIGH SCHOOL - BUILDING T (GYM)	**Report Page:**	**(Page 16 of 16)**
Project Address:	**Date Prepared:**	2026-04-03T10:45:24-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Micah Rummler	Documentation Author Signature: Micah R
Company: Optimum Energy Design	Signature Date: 04/06/2026
Address: 5200 E La Palma Ave.	CEA/AEA/ECC Certification Identification (if applicable):
City/State/Zip: Anaheim, CA 92807	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 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 Person Name: Abby Banerjee	Responsible Person Signature:
Responsible Person Scope:	
Company: Optimum Energy Design	Date Signed: 04/06/2026
Address: 5200 E La Palma Ave.	License: M29253
City/State/Zip: Anaheim, CA 92807	Phone:

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
Abby Banerjee
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: HT
CHECK: CC
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL
TITLE 24
COMPLIANCE

SHEET NO:
M-6.16

GENERAL NOTES

1. THIS CONTRACTOR SHALL SUPPLY POWER TO AND MAKE CONNECTION TO ALL MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS SHOWN ON THE MECHANICAL AND PLUMBING DRAWINGS, INCLUDING ALL FRACTIONAL HORSEPOWER MOTORS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE MECHANICAL AND PLUMBING DRAWINGS FOR DUCTS, LINES AND EQUIPMENT.

2. ALL COMMUNICATIONS WORK SHALL BE COORDINATED WITH THE COMMUNICATION SYSTEMS EQUIPMENT MANUFACTURER AND THE SCHOOL DISTRICT MAINTENANCE DEPARTMENT PRIOR TO ROUGH -IN AND INSTALLATION OF ANY AND ALL COMMUNICATION SYSTEM DEVICES AND RELATED CONDUIT AND WIRE.

3. THE CONTRACTOR SHALL SECURE AND PAY FOR PERMITS AND FEES NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY THE LOCAL GOVERNMENT AGENCIES AND THE UTILITY COMPANIES.

4. UNLESS OTHERWISE NOTED, MOUNTING HEIGHTS INDICATED ON ELECTRICAL OUTLETS ARE FROM FINISHED FLOOR TO CENTER OF OUTLETS.

5. NO CONDUIT SHALL BE RUN HORIZONTALLY IN CONCRETE FLOOR SLABS.

6. ALL FINAL CONNECTIONS TO CONTRACTOR-FURNISHED EQUIPMENT SHALL BE MADE BY THIS CONTRACTOR.

7. 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 2025 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 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 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8 AND 2025 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 GUIDE (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 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 PROJECTS SPECIFIC NOTES AND DETAILS.

   MP☐MD☐PP☐E☐ - OPTION 2: SHALL COMPLY WITH HCAI PRE-APPROVAL (OPM #) #_____

8. SHUT DOWN OF EXISTING ELECTRICAL SYSTEMS SERVING THE REST OF THE SCHOOL WILL NOT BE ALLOWED UNLESS SCHEDULED WITH THE C.M. AND THE DISTRICT.

9. THIS CONTRACTOR SHALL COORDINATE ALL LINE AND LOW VOLTAGE COMPONENTS AND WIRING TYPES TO, MATCH EXISTING SYSTEMS, WITH THE SCHOOL DISTRICT PRIOR TO BID AND INCLUDE ALL COSTS FOR A COMPLETE OPERABLE SYSTEM EXPANSION.

10. ALL EXPOSED CONDUIT SHALL BE PAINTED TO MATCH EXISTING FINISH, COLOR TO BE SELECTED BY THE OWNER. SEE SPECIFICATION 26 00 00 SECTION 2.1 I(1).

11. THE NUMERAL(S) SHOWN AT TOP LIGHT FIXTURE IDENTIFICATION SYMBOL WHICH INDICATES NUMBER OF LIGHT FIXTURES REQUIRED SHALL NOT BE USED BY THE CONTRACTOR FOR HIS QUANTITY TAKE-OFF AT BIDDING OR FOR DETERMINATION OF HOW MANY FIXTURES WILL BE INSTALLED. THE CONTRACTOR SHALL INSTALL A LIGHT FIXTURE WHEREVER A FIXTURE OUTLET IS SHOWN ON DRAWINGS.

12. IDENTIFICATION NAME PLATES FOR PANELS AND SWITCHBOARDS/DISTRIBUTION PANEL FEEDER CIRCUIT BREAKERS SHALL MATCH THE NOMENCLATURE PROVIDED BY THE OWNER AT THE END OF THE CONTRACT.

13. ALL EXTERIOR MOUNTED EQUIPMENT SHALL BE WEATHERPROOF AND PROVIDED IN A WEATHERPROOF ENCLOSURE.

14. INSTALL RACEWAY SYSTEMS AS FOLLOWS:

   A. RIGID GALVANIZED STEEL IN ALL OUTDOOR LOCATIONS AND IN INDOOR LOCATIONS WHERE SUBJECT TO PHYSICAL DAMAGE.

   B. I.M.C. OR E.M.T. IN ALL INDOOR AREAS.

   C. FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO LIGHT FIXTURES, MOTORS, VIBRATING ELECTRICAL EQUIPMENT AND HORIZONTAL RUNS IN WOOD STUD WALLS.

   D. PVC CONDUIT FOR UNDERGROUND RUNS. USE 20 MIL PVC TAPED RIGID STEEL RISER ELBOWS AND RISERS FOR CONDUIT STUB-UPS.

   E. USE COMPRESSION TYPE FITTINGS FOR ALL METALLIC CONDUIT.

   F. 1" CONDUIT MINIMUM FOR UNDERGROUND INSTALLATIONS.

15. ALL NEW WIRING SHALL BE COPPER.

16. PROVIDE THE OWNER AND THIS ENGINEER WITH ONE SET OF ELECTRICAL "AS-BUILTS" AT THE COMPLETION OF JOB.

17. CONDUIT ROUTING INDICATED ON THESE PLANS IS DIAGRAMMATIC. ACTUAL ROUTING OF CONDUITS SHALL BE COORDINATED IN THE FIELD TO AVOID INTERFERENCE WITH OTHER UTILITIES AND TRADES. THE CONTRACTOR SHALL INSTALL ALL CONDUIT, JUNCTION/PULL BOXES, ETC., AS REQUIRED FOR A COMPLETE SYSTEM IN FULL COMPLIANCE WITH ALL APPLICABLE CODES.

18. ALL OUTLET LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS PRIOR TO INSTALLATION.

19. ALL WORK SHOWN ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.

20. ELECTRICAL CONTRACTOR SHALL PERFORM ALL WORK IN STRICT ACCORDANCE WITH GOVERNING CODES.

21. ALL EQUIPMENT SHALL BE NEW AND BEAR A "UL" LABEL - U.O.N..

22. COMPLETE ELECTRICAL INSTALLATION SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF (1) YEAR - U.O.N..

23. ELECTRICAL CONTRACTOR SHALL VISIT SITE PRIOR TO BID DATE, TO VERIFY ALL EXISTING CONDITIONS TO BE ENCOUNTERED IN THE INSTALLATION OF ALL NEW EQUIPMENT, FIXTURES DEVICES, FEEDERS, ETC., EXACT INSTALLATION METHOD AND REQUIREMENTS SHALL BE VERIFIED AND DETERMINED PRIOR TO BID DATE. CONTRACTORS SHALL IMMEDIATELY NOTIFY THIS ENGINEER OF ANY REQUIRED MODIFICATIONS WHICH ARE NOT SHOWN ON THESE DRAWINGS. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED.

24. ALL EQUIPMENT ELECTRICAL CHARACTERISTICS, LOCATIONS, AND CONNECTION REQUIREMENTS SHALL BE VERIFIED PRIOR TO ANY ROUGH-IN WORK.

25. ALL POWER AND LIGHTING BRANCH CIRCUITS SHALL BE INSTALLED WITH A #12 GREEN GROUND WIRE U.O.N. THE COMPLETE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH ARTICAL 250 OF THE CALIFORNIA ELECTRICAL CODE (CEC).

26. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO DO ALL CORING, CUTTING, PATCHING AND REFINISHING OF WALLS AND SURFACES WHEREVER IT IS NECESSARY FOR HIM TO PENETRATE FOR HIS WORK. ALL OPENINGS MADE SHALL BE SEALED TO MEET THE RATED INTEGRITY OF THE PARTICULAR WALL, FLOOR OR CEILING.

27. THE CONTRACTOR SHALL STRATEGICALLY LOCATE JUNCTION BOXES AND PULL BOXES, ETC., IN ACCESSIBLE CEILING SPACES. PROVIDE ACCESS PANELS WHERE JUNCTION/PULL BOXES ARE LOCATED IN INACCESSIBLE CEILING SPACES. COORDINATE LOCATION OF REQUIRED ACCESS PANELS PRIOR TO ROUGH-IN.

28. ALL WIRING AND ELECTRICAL EQUIPMENT INSTALLED FOR MECHANICAL AND PLUMBING EQUIPMENT SHALL BE IN ACCORDANCE WITH THESE DRAWINGS AND THE WIRING DIAGRAMS OF THE MECHANICAL AND PLUMBING DRAWINGS.

29. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED, NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.

DEMOLITION NOTES

1. ALL ELECTRICAL EQUIPMENT, OUTLETS, DEVICES, ETC., THAT ARE MARKED FOR DELETION SHALL BE REMOVED COMPLETELY, INCLUDING CONDUIT AND WIRES BACK TO THE LAST REMAINING FIXTURE, OUTLET, DEVICE, SERVING PANEL, ETC.

2. WHERE EXISTING OUTLET/DEVICES TO REMAIN ARE FED BY OUTLETS BEING REMOVED BY WORK UNDER THIS CONTRACT, THE CONTRACTOR SHALL ROUTE NEW CONDUIT, WIRE, ETC., AS REQUIRED TO MAINTAIN THE SUBJECT OUTLETS IN OPERATION.

3. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF EXISTING ELECTRICAL/LOW VOLTAGE EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS, IN AS-FOUND CONDITION. EQUIPMENT THAT IS TO BE TURNED OVER SHALL BE BOXED AND TAGGED TO IDENTIFY THE SPECIFIC EQUIPMENT.

4. ALL EXISTING CONDUITS WITHIN PROJECT AREA FOR LIGHTING FIXTURES, RECEPTAGLES, OTHER BRANCH CIRCUITS LOADS AND COMMUNICATIONS/SIGNAL SYSTEMS, WHETHER SHOWN ON PLANS OR NOT, SHALL BE A PART OF THIS CONTRACT.

5. IN GENERAL, THE DEMOLITION PLAN SHOWS EXISTING EQUIPMENT THAT IS TO REMAIN, BE REMOVED OR REMOVED AND RELOCATED. HOWEVER, ELECTRICAL EQUIPMENT WHETHER SHOWN ON THIS DRAWING OR NOT, THAT IS LOCATED IN A REMOVED WALL OR CEILING, SHALL BE REMOVED UNLESS OTHERWISE NOTED.

6. WHERE EXISTING EQUIPMENT IS REMOVED BY WORK UNDER THIS CONTRACT, EXISTING CONDUIT FEEDS UP THROUGH THE FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH FLOOR AND CONDUCTORS REMOVED FROM THAT POINT BACK TO THE LAST OUTLET REMAINING IN SERVICE. WHERE THE SUBJECT CONDUIT FEEDS OUTLETS/ DEVICES REMAINING IN OPERATION THE CONTRACTOR SHALL REROUTE THE SUBJECT CONDUIT AND CONDUCTORS AS REQUIRED TO MAINTAIN OPERATION OF SUCH CIRCUITS/SYSTEMS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND DIMENSION ALL SUCH CONDUITS ON THE "RECORD" DRAWINGS.

7. WHERE EXISTING ROOF MOUNTED EQUIPMENT IS REMOVED BY WORK UNDER THIS CONTRACT, THE EXISTING CONDUIT FEEDS UP THROUGH THE ROOF SHALL BE REMOVED FROM THAT POINT BACK TO THE SERVING PANEL OR LAST EQUIPMENT REMAINING IN SERVICE. WHERE THE SUBJECT CONDUIT FEEDS EQUIPMENT REMAINING IN OPERATION THE CONTRACTOR SHALL REROUTE THE SUBJECT CONDUIT AND CONDUCTORS AS REQUIRED TO MAINTAIN OPERATION OF SUCH EQUIPMENT. THE CONTRACTOR SHALL PATCH, REPAIR AND REFINISH ALL WALL AND ROOF PENETRATIONS AFFECTED BY THE REMOVAL OF THE CONDUIT.

8. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO MAINTAIN CONTINUITY OF ALL ELECTRICAL AND COMMUNICATION SYSTEMS, EQUIPMENT, ETC., REMAINING IN OPERATION. MAINTAINING CONTINUITY SHALL CONSIST OF RE-ROUTING CONDUIT, WIRE, ETC., AS REQUIRED TO MAINTAIN THE SUBJECT SERVICES IN OPERATION.

9. EXISTING CIRCUITS THAT ARE REMOVED AND NOT RE-USED SHALL BE IDENTIFIED ON THE PANEL SCHEDULE AS "SPARE".

10. REFER TO GENERAL NOTES, THIS SHEET, FOR ADDITIONAL REQUIREMENTS.

11. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED,NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.

REFERENCES & ABBREVIATIONS

⊖	DETAIL REFERENCE	MCB	MAIN CIRCUIT BREAKER
1	KEYNOTE REFERENCE	FLA	FULL LOAD AMPS
A.F.F.	ABOVE FINISH FLOOR	C.	CONDUIT
U.O.N.	UNLESS OTHERWISE NOTED	V.	VOLTS
C.O.	CONDUIT ONLY W/PULL ROPE	A	AMPS
WP	WEATHER PROOF	GFI	GROUND FAULT INTERRUPTER
CU.	COPPER	GND	GROUND
M.L.O.	MAIN LUGS ONLY	V.L.	VERIFY LOCATION
E or (E)	EXISTING TO REMAIN	A.C.	ABOVE COUNTER
E.Q.	EQUAL	N.L.	NIGHT LIGHT

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS, AND THE REQUIREMENTS OF THE CALIFORNIA CODE OF REGULATIONS (C.C.R.), TITLE 24, INCLUSIVE OF:

2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR

2025 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR

2025 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR

2025 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR

2025 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR

2025 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR

2025 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR

2025 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR

2025 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN), PART 11, TITLE 24 CCR

2025 CALIFORNIA REFERENCED STANDARDS CODE, PART 12 TITLE 24 CCR

TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

SYMBOL LIST

- CONDUIT RUN, CONCEALED IN CEILING, WALLS OR UNDER FLOOR 3/4" MIN. IN CEILING OR WALLS, 1"C. MINIMUM FOR UNDERGROUND / UNDER FLOOR.
- CONDUIT TURNED DOWN.
- CONDUIT TURNED UP.
- CONDUIT RUN UNDERGROUND, 1"C. MINIMUM. PROVIDE SIZE PER PLAN.
- #10 — CROSS LINES ON CONDUIT RUNS INDICATE NUMBER OF #12 WIRES CONTAINED THEREIN. TWO #12 ARE TO BE PROVIDED WHEN CROSS LINES ARE NOT SHOWN. NUMERALS ADJACENT TO CROSS LINES ON CONDUIT RUNS INDICATE SIZE OF CONDUCTORS IN LIEU OF #12. PROVIDE CONDUIT SIZE AS REQUIRED TO ACCOMMODATE THE WIRE SIZE TO BE CONTAINED THEREIN.
- B-1,3 — CONDUIT HOME RUN TO PANELBOARD. LETTER AND NUMERALS INDICATES ELECTRICAL PANEL AND CIRCUIT NUMBER.
- WP — WEATHERPROOF.
- BRANCH CIRCUIT PANEL, MOUNTING AS SHOWN ON SCHEDULES.
- MOLDED CASE CIRCUIT BREAKER (SINGLE LINE DIAGRAM).
- AT — CIRCUIT BREAKER AMPERE TRIP RATING (SINGLE LINE DIAGRAM).
- — E — EXISTING CONDUIT AND CONDUCTORS TO REMAIN IN PLACE.
- — EX — EXISTING CONDUIT TO BE RE-USED. CONDUCTORS TO BE DISCONNECTED AND REMOVED.
- — EN — EXISTING CONDUIT WITH NEW CONDUCTORS.
- — EA — EXISTING CONDUIT TO BE ABANDONED IN PLACE. CONDUCTORS TO BE DISCONNECTED AND REMOVED.
- — ER — EXISTING CONDUIT AND CONDUCTORS TO BE DISCONNECTED AND REMOVED.
- (E) — EXISTING EQUIPMENT TO REMAIN IN OPERATION.
- (N) — NEW EQUIPMENT.
- (R) — EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED. REMOVE ALL EXISTING CONDUIT AND FEEDERS FROM EQUIPMENT MARKED TO BE REMOVED ALL THE WAY BACK TO THE SERVING PANEL UNLESS OTHERWISE NOTED.
- (RR) — EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED.
- (EN) — EXISTING EQUIPMENT IN NEW LOCATION.
- 2 POLE MOTOR RATED SWITCH.
- C J WP — JUNCTION BOX. WP = WEATHER PROOF NEMA 3R. C = CEILING TYPE.
- GFI — DUPLEX RECEPTACLE, WITH GROUND FAULT INTERRUPTER (20 AMP, 120V., 5W) WALL PLATE TO MATCH DEVICE) MTD. AT +15". RECEPTACLE SHALL BE PROVIDED COMPLETE WITH WEATHERPROOF COVERS U.L. LISTED FOR WET LOCATIONS WHEN IN USE.
- AC 1 — HVAC EQUIPMENT DESIGNATION. SEE MECHANICAL PLANS.
- _AS/_P/_ AF — FUSED DISCONNECT SWITCH, HEAVY DUTY TYPE WITH REQUIRED QUANTITY OF DUAL ELEMENT TIME DELAY FUSES. NEMA 3R FOR OUTDOOR USE. AS=SWITCH AMPERE RATING. P=NUMBER OF POLES. AF=FUSE AMPERE RATING.
- _AS/_P — NON-FUSED DISCONNECT SWITCH, HEAVY DUTY TYPE. AS=SWITCH AMPERE RATING. P=NUMBER OF POLES.
- 1 — NOTE IDENTIFICATION SYMBOL.
- X 5.4X — DETAIL IDENTIFICATION SYMBOL.
- T — THERMOSTAT, MOUNTED AT +48" A.F.F. TO TOP OF BOX. SEE MECHANICAL. FOR EXACT REQUIREMENTS.
- H-O-A — COMBINATION FUSED DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER. ROMAN NUMERAL INDICATES THE STARTER SIZE. H-O-A INDICATES DOOR MOUNTED HAND-OFF-AUTO SELECTOR SWITCH. FUSES AND OVERLOADS SHALL BE SIZED PER THE EQUIPMENT NAME PLATE.
- S_a^3 — SINGLE POLE SWITCH, LETTER AT BOTTOM INDICATES OUTLETS CONTROLLED. MOUNTED AT +48" TO TOP OF THE BOX. STAINLESS STEEL WALL PLATE. SUPERSCRIPT DENOTES: 2 - DOUBLE POLE; 3 - THREE WAY; 4 - FOUR WAY; P - PILOT LIGHT; K - KEY OPERATED; T - TIMER
- S_m — SINGLE POLE MANUAL MOTOR STARTER WITH THERMAL OVERLOAD.
- (SD)(E) — EXISTING FIRE ALARM SMOKE DETECTOR. AM03-119800
- CR — ADDRESSABLE CONTROL RELAY MODULE. SIEMENS #HTRI-R. CSFM LISTING 7300-0061:0242.
- SFD — SMOKE FIRE DAMPER. REFER TO MECHANICAL DRAWINGS FOR DEVICE SPECIFICATION.
- — F10 — SLC CIRCUIT WIRING. (2)-2/16 WITHIN 3/4" CONDUIT. ATLAS WIRE 222-16-1-ITP (INSIDE ONLY). ATLAS WIRE 213-16-19-2J (UNDERGROUND).

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — DANIEL E. BANEKE — No. M29253 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

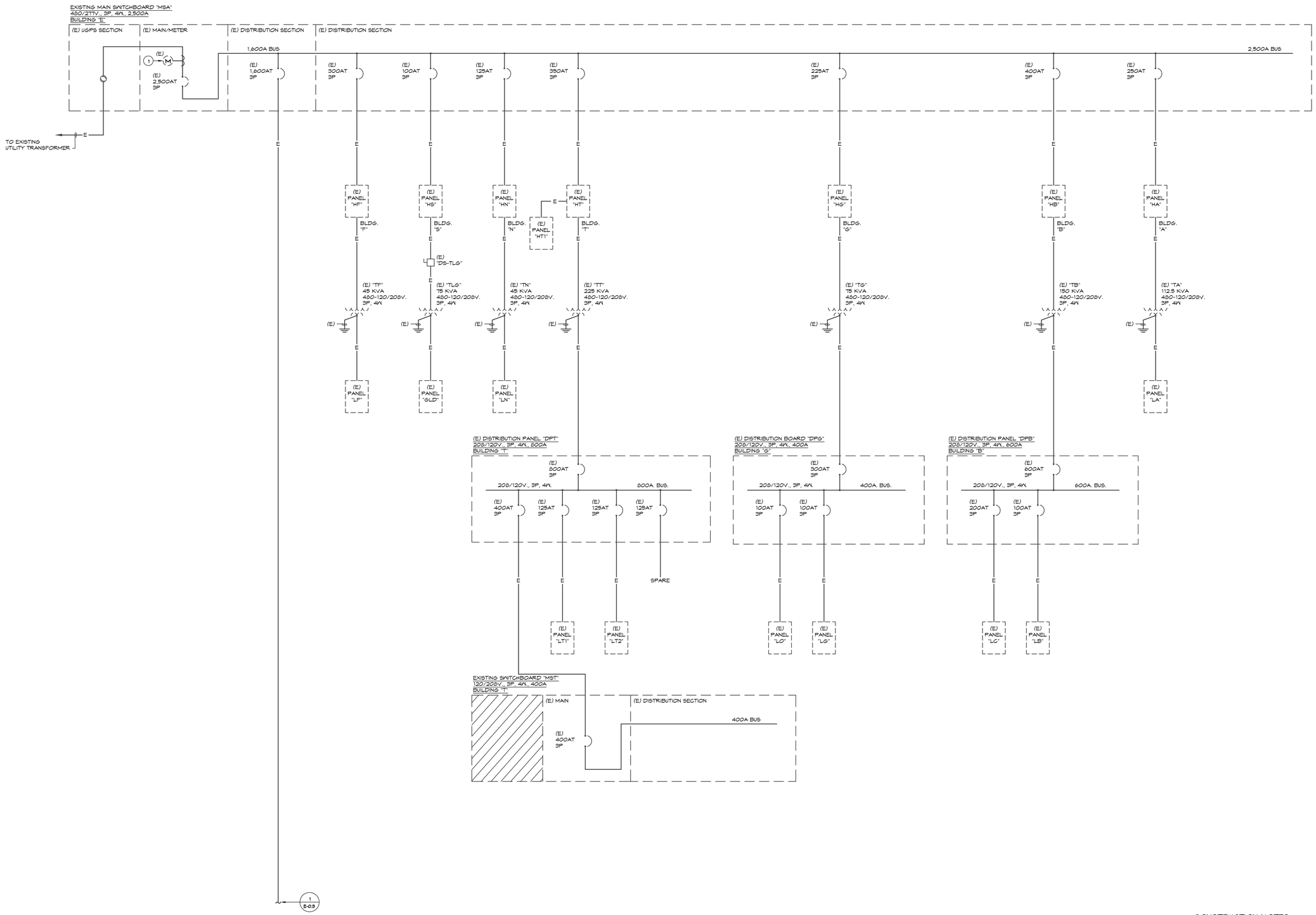
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER — DANIEL E. BANEKE — No. E17229 6/30/28 — ELECTRICAL — STATE OF CALIFORNIA

SHEET DESCRIPTION:
GENERAL NOTES AND SYMBOL LIST

SHEET NO:
E-0.1



CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR TO PROVIDE UPDATED NAME PLATES TO IDENTIFY THE NEW CIRCUIT BREAKERS WITHIN THE MAIN SWITCHBOARD AND DISTRIBUTION BOARDS. CONTRACTOR TO PROVIDE NEW TYPED PANEL DIRECTORIES FOR BRANCH CIRCUIT PANELS AFFECTED BY THE SCOPE OF WORK UPON COMPLETION OF THE REMODEL WORK.
3. CONTRACTOR TO PROVIDE ALL REQUIRED MOUNTING HARDWARE REQUIRED FOR FULLY OPERABLE CIRCUIT BREAKERS.

SINGLE LINE NOTES:

1. EXISTING SCE UTILITY METER #V349N-012515 TO REMAIN.

AGENCY APPROVAL

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DSA NUMBER: N/A

CONSULTANT

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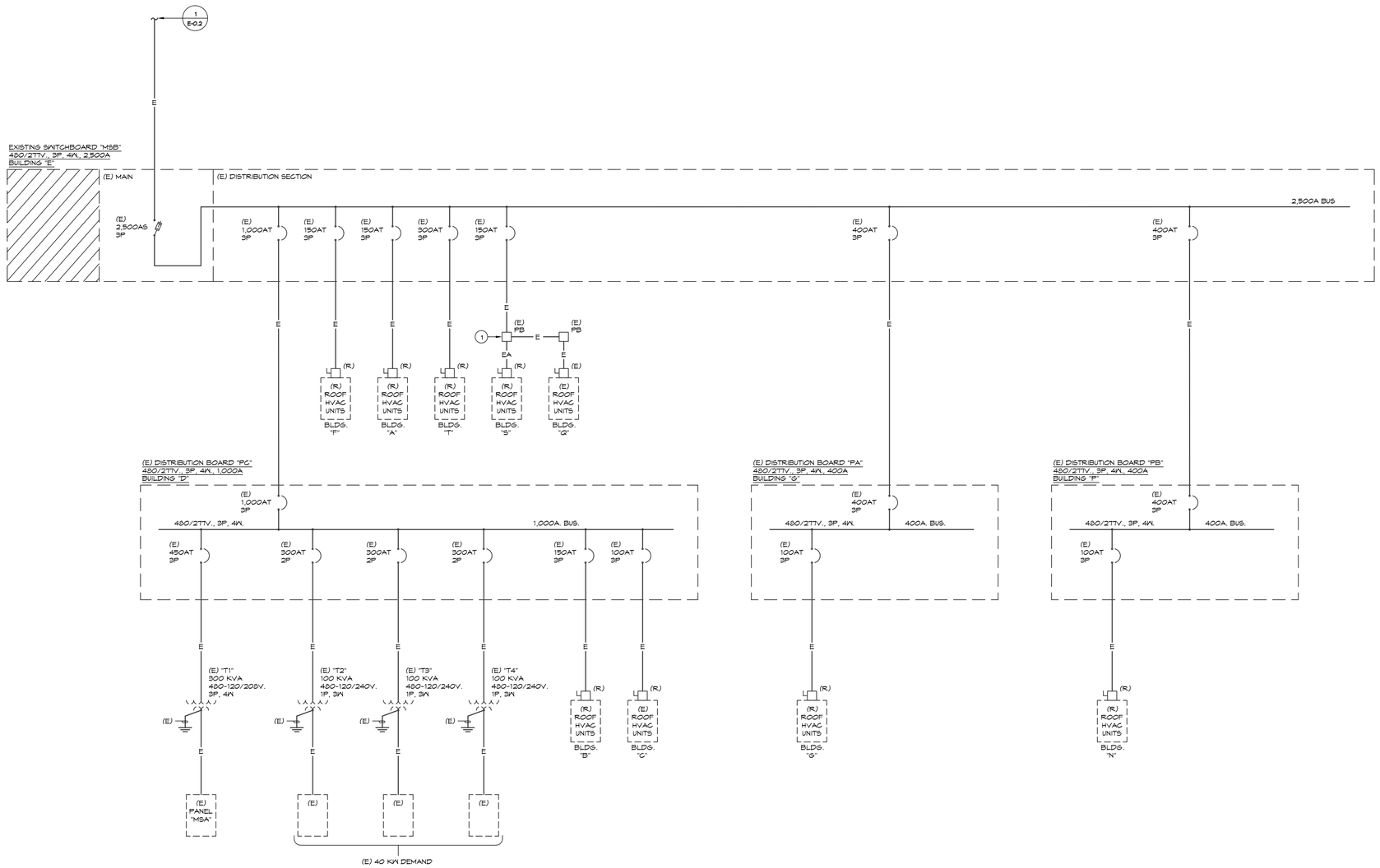
REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
DEMOLITION SINGLE LINE DIAGRAM

SHEET NO:
E-0.2



CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR TO PROVIDE UPDATED NAME PLATES TO IDENTIFY THE NEW CIRCUIT BREAKERS WITHIN THE MAIN SWITCHBOARD AND DISTRIBUTION BOARDS. CONTRACTOR TO PROVIDE NEW TYPED PANEL DIRECTORIES FOR BRANCH CIRCUIT PANELS AFFECTED BY THE SCOPE OF WORK UPON COMPLETION OF THE REMODEL WORK.
3. CONTRACTOR TO PROVIDE ALL REQUIRED MOUNTING HARDWARE REQUIRED FOR FULLY OPERABLE CIRCUIT BREAKERS.

SINGLE LINE NOTES:

1. CONTRACTOR SHALL INTERCEPT EXISTING BUILDING Q AND BUILDING S HVAC UNIT FEEDER SPLICE WITHIN EXISTING UNDERGROUND PULL BOX. CONTRACTOR SHALL REMOVE EXISTING CONDUIT AND CONDUCTORS ROUTED BETWEEN THIS UNDERGROUND PULL BOX AND HVAC UNIT DISCONNECT SWITCH LOCATED AT BUILDING S. BUILDING Q HVAC FEEDER SHALL REMAIN IN PLACE AND IN OPERATION. REFER TO REMODEL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.

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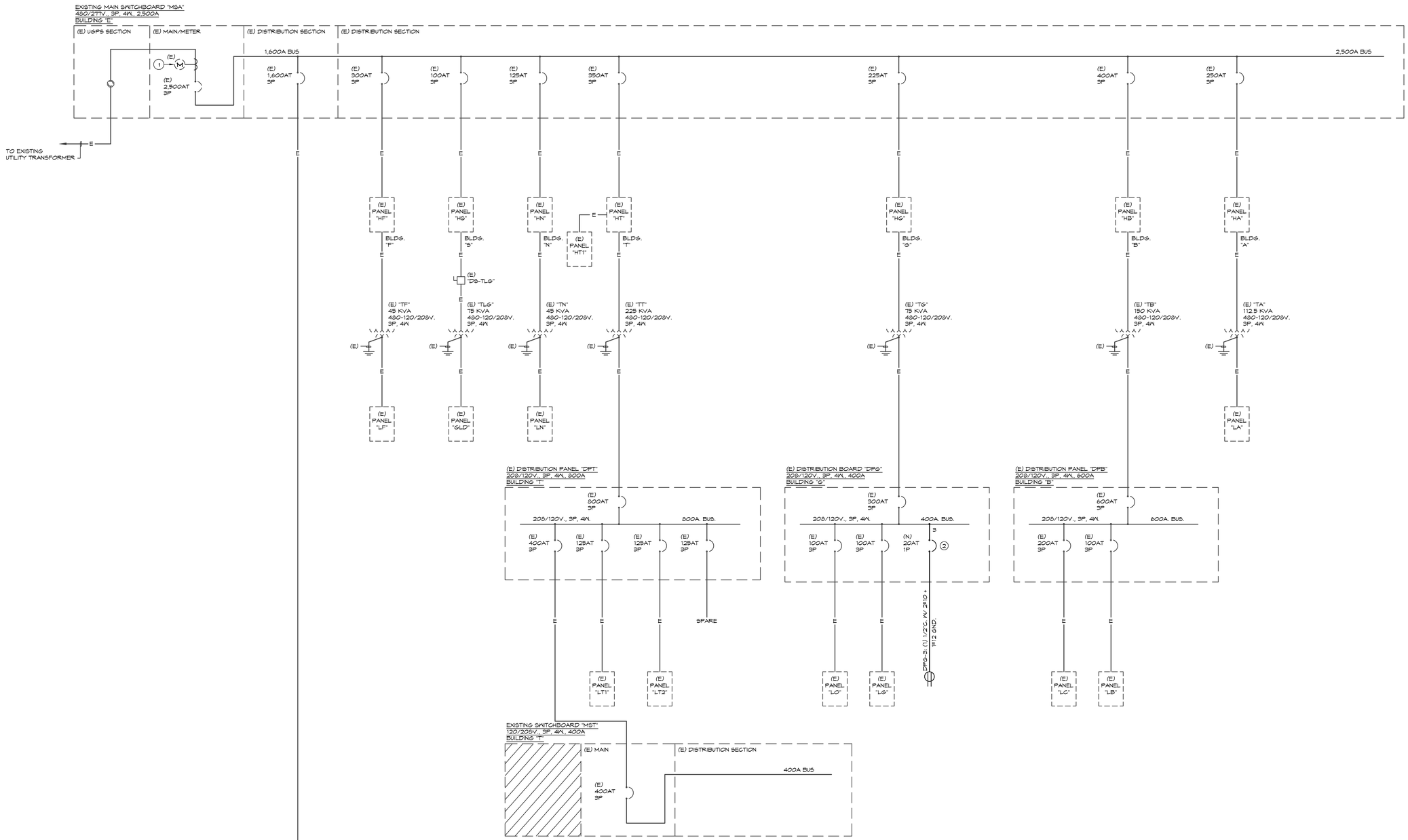
STATE OF CALIFORNIA

SHEET DESCRIPTION:
DEMOLITION SINGLE LINE DIAGRAM

SHEET NO:
E-0.3



CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATED MICARTA NAME PLATES TO IDENTIFY THE NEW CIRCUIT BREAKERS WITHIN THE MAIN SWITCHBOARD AND ALL DISTRIBUTION BOARDS. CONTRACTOR SHALL PROVIDE NEW TYPED PANEL DIRECTORIES FOR BRANCH CIRCUIT PANELS AFFECTED BY THE SCOPE OF WORK UPON COMPLETION OF THE REMODEL WORK.
3. CONTRACTOR SHALL PROVIDE ALL REQUIRED MOUNTING HARDWARE REQUIRED FOR FULLY OPERABLE CIRCUIT BREAKERS.
4. CONTRACTOR SHALL EXPAND NEW BUSSING WITHIN EXISTING MAIN SWITCHGEAR, DISTRIBUTION BOARDS AND ALL BRANCH CIRCUIT PANELS AS REQUIRED FOR INSTALLATION OF NEW CIRCUIT BREAKERS.

SINGLE LINE NOTES:

1. EXISTING SCE UTILITY METER #V349N-012515 TO REMAIN.
2. NEW CIRCUIT BREAKER SHALL MATCH EXISTING IN MANUFACTURER AND OPERATION. AIC RATING SHALL BE EQUAL TO OR GREATER THAN THE HIGHEST AIC RATED CIRCUIT BREAKER IN THE PANEL. PROVIDE REQUIRED MOUNTING HARDWARE.

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ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

CONSULTANT

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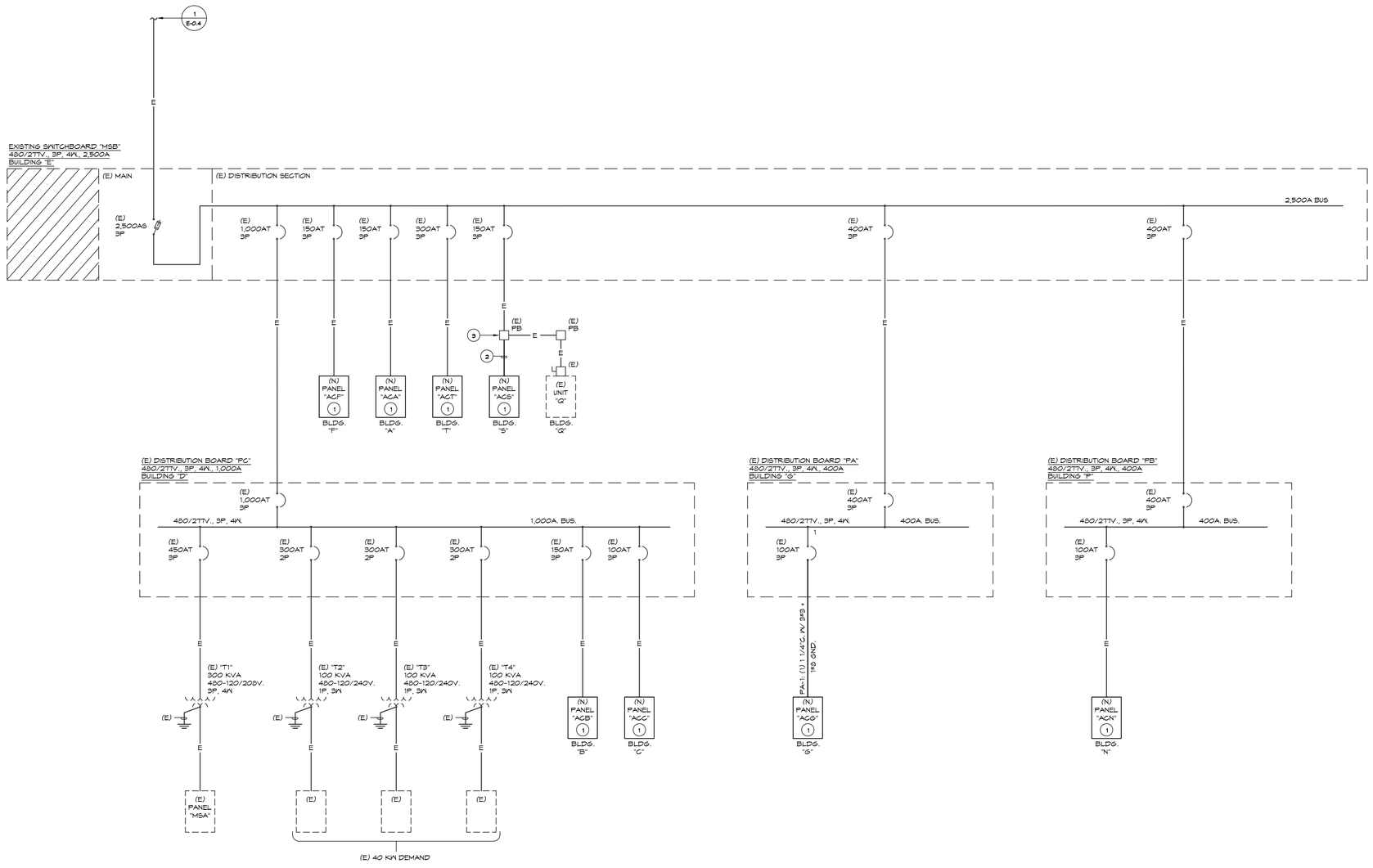
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
REMODEL SINGLE LINE DIAGRAM

SHEET NO:
E-0.4



SWITCHBOARD "MSB" MAIN BREAKER: 2,500A. SCA: 65 KAIC
VOLTAGE: 480/277V-4-WIRE BUS SIZE MOUNT: FLOOR
LOCATION: BUILDING E COPPER: 2,500A. ENTRY: BOTTOM

DESCRIPTION	OKT	CB	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
DISTRIBUTION BOARD "PC"	1	1000	3					32099	32099	32099	
BUILDING F - PANEL "ACF"	2	150	3					27945	27945	27945	
BUILDING A - PANEL "ACA"	3	150	3					27117	27117	27117	
BUILDING T - PANEL "ACT"	4	300	3					52847	52847	52847	
BUILDINGS S/Q PNL "ACS"	5	150	3					10791	10791	10791	
DISTRIBUTION BOARD "PA"	6	400	3					8301	8301	8301	
DISTRIBUTION BOARD "PB"	7	400	3					15773	15773	15773	
SUB TOTAL VOLT/AMPS:								174873	174873	174873	
TOTAL AMPS/PHASE:								631	631	631	

DISTRIBUTION BOARD PA MAIN BREAKER: 400A. SCA:
VOLTAGE: 480/277V-4-WIRE BUS SIZE MOUNT: FLOOR
LOCATION: BUILDING G COPPER: 400A. ENTRY: BOTTOM

DESCRIPTION	OKT	CB	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
BUILDING G - PANEL "ACG"	1	100	3					8301	8301	8301	
SUB TOTAL VOLT/AMPS:								8301	8301	8301	
TOTAL AMPS/PHASE:								30	30	30	

DISTRIBUTION BOARD PB MAIN BREAKER: 400A. SCA:
VOLTAGE: 480/277V-4-WIRE BUS SIZE MOUNT: FLOOR
LOCATION: BUILDING P COPPER: 400A. ENTRY: BOTTOM

DESCRIPTION	OKT	CB	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
BUILDING N - PANEL "ACN"	1	100	3					15773	15773	15773	
SUB TOTAL VOLT/AMPS:								15773	15773	15773	
TOTAL AMPS/PHASE:								57	57	57	

DISTRIBUTION BOARD PC MAIN BREAKER: 1000A. SCA:
VOLTAGE: 480/277V-4-WIRE BUS SIZE MOUNT: FLOOR
LOCATION: BUILDING D COPPER: 1000A. ENTRY: BOTTOM

DESCRIPTION	OKT	CB	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
TRANSFORMER "T1"	1	450	3								
TRANSFORMER "T2"	2	300	3								
TRANSFORMER "T3"	3	300	3								
TRANSFORMER "T4"	4	300	3								
BUILDING B - PANEL "ACB"	5	150	3					19923	19923	19923	
BUILDING C - PANEL "ACC"	6	100	3					12176	12176	12176	
SUB TOTAL VOLT/AMPS:								32099	32099	32099	
TOTAL AMPS/PHASE:								116	116	116	

CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATED MICARTA NAME PLATES TO IDENTIFY THE NEW CIRCUIT BREAKERS WITHIN THE MAIN SWITCHBOARD AND ALL DISTRIBUTION BOARDS. CONTRACTOR SHALL PROVIDE NEW TYPED PANEL DIRECTORIES FOR BRANCH CIRCUIT PANELS AFFECTED BY THE SCOPE OF WORK UPON COMPLETION OF THE REMODEL WORK.
3. CONTRACTOR SHALL PROVIDE ALL REQUIRED MOUNTING HARDWARE REQUIRED FOR FULLY OPERABLE CIRCUIT BREAKERS.
4. CONTRACTOR SHALL EXPAND NEW BUSSING WITHIN EXISTING MAIN SWITCHGEAR, DISTRIBUTION BOARDS AND ALL BRANCH CIRCUIT PANELS AS REQUIRED FOR INSTALLATION OF NEW CIRCUIT BREAKERS.

SINGLE LINE NOTES:

1. NEW NEMA 3R, THREE PHASE, THREE WIRE BRANCH CIRCUIT PANEL AT REMOVED DISCONNECT SWITCH. REFER TO REMODEL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL ROUTE (1) 1 1/2"C. W/ 3#1/0 + #6 GND. BETWEEN EXISTING UNDERGROUND PULL BOX AND NEW BRANCH CIRCUIT PANEL "ACG" AT BUILDING S.
3. CONTRACTOR SHALL RE-ESTABLISH INTERCEPTED BUILDING G AND BUILDING S HVAC UNIT FEEDER SPLICE WITHIN UNDERGROUND PULL BOX. CONTRACTOR SHALL SPLICE TOGETHER EXISTING CONDUCTORS WITH NEW CONDUCTORS SPECIFIED IN SINGLE LINE NOTE 2.

AGENCY APPROVAL
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANESH E. VARJI
No. M29283
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
RICHARD E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
REMODEL
SINGLE LINE
DIAGRAM

SHEET NO:
E-0.5

PANEL "ACA"

MAIN BREAKER: 150A. SCA:
VOLTAGE: 480/277V-3-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING A COPPER: 200A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
AC-1	1	20	3			1		3597			
W/CKT. 1	3	----	---						3597		
W/CKT. 1	5	----	---							3597	
AC-2	7	15	3			1		3044			
W/CKT. 7	9	----	---						3044		
W/CKT. 7	11	----	---							3044	
AC-3	13	20	3			1		3597			
W/CKT. 13	15	----	---						3597		
W/CKT. 13	17	----	---							3597	
AC-4	19	15	3			1		3044			
W/CKT. 19	21	----	---						3044		
W/CKT. 19	23	----	---							3044	
AC-5	25	15	3			1		2767			
W/CKT. 25	27	----	---						2767		
W/CKT. 25	29	----	---							2767	
AC-6	31	15	3			1		2767			
W/CKT. 31	33	----	---						2767		
W/CKT. 31	35	----	---							2767	
AC-7	37	15	3			1		2767			
W/CKT. 37	39	----	---						2767		
W/CKT. 37	41	----	---							2767	
	SUB TOTAL VOLT/AMPS:							21583	21583	21583	
AC-8	2	15	3			1		2767			
W/CKT. 2	4	----	---						2767		
W/CKT. 2	6	----	---							2767	
AC-9	8	15	3			1		2767			
W/CKT. 8	10	----	---						2767		
W/CKT. 8	12	----	---							2767	
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							5534	5534	5534	
	PANEL SUB TOTAL VOLT/AMPS:							27117	27117	27117	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							27117	27117	27117	
	TOTAL AMPS/PHASE:							98	98	98	

CONNECTED: 81351 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 81351 VA = 97.85 AVERAGE AMPS

PANEL "ACB"

MAIN BREAKER: 150A. SCA:
VOLTAGE: 480/277V-3-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING B COPPER: 200A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
AC-1	1	20	3			1		3597			
W/CKT. 1	3	----	---						3597		
W/CKT. 1	5	----	---							3597	
AC-2	7	15	3			1		3044			
W/CKT. 7	9	----	---						3044		
W/CKT. 7	11	----	---							3044	
AC-3	13	15	3			1		3044			
W/CKT. 13	15	----	---						3044		
W/CKT. 13	17	----	---							3044	
AC-5	19	15	3			1		3044			
W/CKT. 19	21	----	---						3044		
W/CKT. 19	23	----	---							3044	
AC-6	25	20	3			1		3597			
W/CKT. 25	27	----	---						3597		
W/CKT. 25	29	----	---							3597	
AC-7	31	20	3			1		3597			
W/CKT. 31	33	----	---						3597		
W/CKT. 31	35	----	---							3597	
SPARE	37	20	1								
SPARE	39	20	1								
SPARE	41	20	1								
	SUB TOTAL VOLT/AMPS:							19923	19923	19923	
SPACE	2										
SPACE	4										
SPACE	6										
SPACE	8										
SPACE	10										
SPACE	12										
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							0	0	0	
	PANEL SUB TOTAL VOLT/AMPS:							19923	19923	19923	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							19923	19923	19923	
	TOTAL AMPS/PHASE:							72	72	72	

CONNECTED: 59769 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 59769 VA = 71.89 AVERAGE AMPS

PANEL "ACF"

MAIN BREAKER: 150A. SCA:
VOLTAGE: 480/277V-3-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING F COPPER: 200A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
F1	1	30	3			1		7747			
W/CKT. 1	3	----	---						7747		
W/CKT. 1	5	----	---							7747	
F2	7	30	3			1		7747			
W/CKT. 7	9	----	---						7747		
W/CKT. 7	11	----	---							7747	
F3	13	20	3			1		3597			
W/CKT. 13	15	----	---						3597		
W/CKT. 13	17	----	---							3597	
F4	19	20	3			1		5257			
W/CKT. 19	21	----	---						5257		
W/CKT. 19	23	----	---							5257	
F5	25	20	3			1		3597			
W/CKT. 25	27	----	---						3597		
W/CKT. 25	29	----	---							3597	
SPACE	31										
SPACE	33										
SPACE	35										
SPACE	37										
SPACE	39										
SPACE	41										
	SUB TOTAL VOLT/AMPS:							27945	27945	27945	
SPACE	2										
SPACE	4										
SPACE	6										
SPACE	8										
SPACE	10										
SPACE	12										
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							0	0	0	
	PANEL SUB TOTAL VOLT/AMPS:							27945	27945	27945	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							27945	27945	27945	
	TOTAL AMPS/PHASE:							101	101	101	

CONNECTED: 83835 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 83835 VA = 100.84 AVERAGE AMPS

PANEL "ACG"

MAIN BREAKER: 100A. SCA:
VOLTAGE: 480/277V-3-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING G COPPER: 100A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
G1	1	15	3			1		2767			
W/CKT. 1	3	----	---						2767		
W/CKT. 1	5	----	---							2767	
G2	7	15	3			1		2767			
W/CKT. 7	9	----	---						2767		
W/CKT. 7	11	----	---							2767	
G3	13	15	3			1		2767			
W/CKT. 13	15	----	---						2767		
W/CKT. 13	17	----	---							2767	
SPACE	19										
SPACE	21										
SPACE	23										
	SUB TOTAL VOLT/AMPS:							8301	8301	8301	
SPACE	2										
SPACE	4										
SPACE	6										
SPACE	8										
SPACE	10										
SPACE	12										
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
	SUB TOTAL VOLT/AMPS:							0	0	0	
	PANEL SUB TOTAL VOLT/AMPS:							8301	8301	8301	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							8301	8301	8301	
	TOTAL AMPS/PHASE:							30	30	30	

CONNECTED: 24903 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 24903 VA = 29.95 AVERAGE AMPS

PANEL "ACN"

MAIN BREAKER: 100A. SCA:
VOLTAGE: 480/277V-3-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING N COPPER: 100A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
N1	1	15	3			1		3044			
W/CKT. 1	3	----	---						3044		
W/CKT. 1	5	----	---							3044	
N3	7	15	3			1		3044			
W/CKT. 7	9	----	---						3044		
W/CKT. 7	11	----	---							3044	
N4	13	15	3			1		3044			
W/CKT. 13	15	----	---						3044		
W/CKT. 13	17	----	---							3044	
N5	19	15	3			1		3044			
W/CKT. 19	21	----	---						3044		
W/CKT. 19	23	----	---							3044	
N7	25	20	3			1		3597			
W/CKT. 25	27	----	---						3597		
W/CKT. 25	29	----	---							3597	
SPACE	31										
SPACE	33										
SPACE	35										
SPACE	37										
SPACE	39										
SPACE	41										
	SUB TOTAL VOLT/AMPS:							15773	15773	15773	
SPACE	2										
SPACE	4										
SPACE	6										
SPACE	8										
SPACE	10										
SPACE	12										
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							0	0	0	
	PANEL SUB TOTAL VOLT/AMPS:							15773	15773	15773	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							15773	15773	15773	
	TOTAL AMPS/PHASE:							57	57	57	

CONNECTED: 47319 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 47319 VA = 56.92 AVERAGE AMPS

PANEL "ACS"

MAIN BREAKER: 150A. SCA:
VOLTAGE: 480/277V-4-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING S COPPER: 200A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
AC1	1	20	3			1		5257			
W/CKT. 1	3	----	---						5257		
W/CKT. 1	5	----	---							5257	
AC2	7	15	3			1		2767			
W/CKT. 7	9	----	---						2767		
W/CKT. 7	11	----	---							2767	
AC3	13	15	3			1		2767			
W/CKT. 13	15	----	---						2767		
W/CKT. 13	17	----	---							2767	
SPACE	19										
SPACE	21										
SPACE	23										
SPACE	25										
SPACE	27										
SPACE	29										
SPACE	31										
SPACE	33										
SPACE	35										
SPACE	37										
SPACE	39										
SPACE	41										
	SUB TOTAL VOLT/AMPS:							10791	10791	10791	
SPACE	2										
SPACE	4										
SPACE	6										
SPACE	8										
SPACE	10										
SPACE	12										
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							0	0	0	
	PANEL SUB TOTAL VOLT/AMPS:							10791	10791	10791	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							10791	10791	10791	
	TOTAL AMPS/PHASE:							39	39	39	

CONNECTED: 32373 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 32373 VA = 38.94 AVERAGE AMPS

PANEL "ACT"

MAIN BREAKER: 300A. SCA:
VOLTAGE: 480/277V-3-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING T COPPER: 400A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
AC1	1	15	3			1		2767			
W/CKT. 1	3	----	---						2767		
W/CKT. 1	5	----	---							2767	
AC2	7	15	3			1		2767			
W/CKT. 7	9	----	---						2767		
W/CKT. 7	11	----	---							2767	
AC3	13	20	3			1		5257			
W/CKT. 13	15	----	---						5257		
W/CKT. 13	17	----	---							5257	
AC4	19	20	3			1		5257			
W/CKT. 19	21	----	---						5257		
W/CKT. 19	23	----	---							5257	
AC5	25	20	3			1		5257			
W/CKT. 25	27	----	---						5257		
W/CKT. 25	29	----	---							5257	
AC-1G	31	20	3			1		5257			
W/CKT. 31	33	----	---						5257		
W/CKT. 31	35	----	---							5257	
AC-2G	37	20	3			1		5257			
W/CKT. 37	39	----	---						5257		
W/CKT. 37	41	----	---							5257	
	SUB TOTAL VOLT/AMPS:							31819	31819	31819	
AC-3G	2	20	3			1		5257			
W/CKT. 2	4	----	---						5257		
W/CKT. 2	6	----	---							5257	
AC-4G	8	20	3			1		5257			
W/CKT. 8	10	----	---						5257		
W/CKT. 8	12	----	---							5257	
AC-5G	14	20	3			1		5257			
W/CKT. 14	16	----	---						5257		
W/CKT. 14	18	----	---							5257	
AC-6G	20	20	3			1		5257			
W/CKT. 20	22	----	---						5257		
W/CKT. 20	24	----	---							5257	
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							21028	21028	21028	
	PANEL SUB TOTAL VOLT/AMPS:							52847	52847	52847	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							52847	52847	52847	
	TOTAL AMPS/PHASE:							191	191	191	

CONNECTED: 158541 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 158541 VA = 190.70 AVERAGE AMPS

EXISTING

PANEL "LF"

MAIN BREAKER: 175A. SCA:
VOLTAGE: 208/120V-4-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING F COPPER: 200A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
✱ CLASSROOM REC.	1	20	1								
CLASSROOM REC.	3	20	1								
CLASSROOM REC.	5	20	1								
CLASSROOM REC.	7	20	1								
CLASSROOM REC.	9	20	1								
CLASSROOM REC.	11	20	1								
HAND DRYER	13	20	1								
HAND DRYER	15	20	1								
HAND DRYER	17	20	1								
HAND DRYER	19	20	1								
RESTROOM RECEPTACLE	21	20	1								
CLASSROOM REC.	23	20	1								
CLASSROOM REC.	25	20	1								
CLASSROOM REC.	27	20	1								
CLASSROOM REC.	29	20	1								
FIRE DAMPER	31	20	1								
SPARE	33	20	1								
PAF	35	20	1								
OUTDOOR RECEPTACLE	37	20	1								
FIRE ALARM	39	20	1								
△ □ SMOKE FIRE DAMPERS	41	20	1			12				600	
	SUB TOTAL VOLT/AMPS:							0	0	600	
✱ CLASSROOM REC.	2	20	1								
CLASSROOM REC.	4	20	1								
CLASSROOM REC.	6	20	1								
ELEVATOR CON. PWR	8	20	1								
ELEVATOR OUTLET	10	20	1								
ELEVATOR PIT LIGHTS	12	20	1								
CLASSROOM REC.	14	20	1								
CLASSROOM REC.	16	20	1								
CLASSROOM REC.	18	20	1								
CLASSROOM REC.	20	20	1								
CLASSROOM REC.	22	20	1								
CLASSROOM REC.	24	20	1								
CLASSROOM REC.	26	20	1								
IDF	28	20	1								
FIRE DAMPER	30	20	1								
POWER POLE	32	20	1								
CLASSROOM REC.	34	20	1								
OUTDOOR RECEPTACLE	36	20	1								
OUTDOOR RECEPTACLE	38	20	1								
TIMER	40	20	1								
POWER POLE	42	20	1								
	SUB TOTAL VOLT/AMPS:							0	0	0	
	PANEL SUB TOTAL VOLT/AMPS:							0	0	600	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							0	0	600	
	TOTAL AMPS/PHASE:							0	0	5	

CONNECTED: 600 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 600 VA = 1.67 AVERAGE AMPS

✱ = EXISTING LOAD TO REMAIN.
□ = NEW LOAD AND NEW CIRCUIT BREAKER AT EXISTING SPACE. NEW CIRCUIT BREAKER SHALL MATCH EXISTING IN MANUFACTURER AND DUTY.
△ = CIRCUIT BREAKER SHALL BE PROVIDED WITH LOCK ON DEVICE AND BE RED IN COLOR.

PANEL "ACC"

MAIN BREAKER: 100A. SCA:
VOLTAGE: 480/277V-4-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING C COPPER: 100A. ENTRY: BOTTOM

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
C1	1	15	3			1		3044			
W/CKT. 1	3	----	---						3044		
W/CKT. 1	5	----	---							3044	
C2	7	15	3			1		3044			
W/CKT. 7	9	----	---						3044		
W/CKT. 7	11	----	---							3044	
SPACE	13										
SPACE	15										
SPACE	17										
SPACE	19										
SPACE	21										
SPACE	23										
SPACE	25										
SPACE	27										
SPACE	29										
SPACE	31										
SPACE	33										
SPACE	35										
SPACE	37										
SPACE	39										
SPACE	41										
	SUB TOTAL VOLT/AMPS:							6088	6088	6088	
C3	2	15	3			1		3044			
W/CKT. 2	4	----	---						3044		
W/CKT. 2	6	----	---							3044	
C4	8	15	3			1		3044			
W/CKT. 8	10	----	---						3044		
W/CKT. 8	12	----	---							3044	
SPACE	14										
SPACE	16										
SPACE	18										
SPACE	20										
SPACE	22										
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							6088	6088	6088	
	PANEL SUB TOTAL VOLT/AMPS:							12176	12176	12176	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							12176	12176	12176	
	TOTAL AMPS/PHASE:							44	44	44	

CONNECTED: 36528 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 36528 VA = 43.94 AVERAGE AMPS

EXISTING

PANEL "LC"

MAIN BREAKER: 200A. SCA:
VOLTAGE: 208/120V-4-WIRE BUS SIZE MOUNT: SURFACE
LOCATION: BUILDING C COPPER: 225A. ENTRY: TOP

DESCRIPTION	CKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
✱ CLASSROOM C1 RECEPS	1	20	1					540			
CLASSROOM C1 RECEPS	3	20	1						540		
CLASSROOM C1 RECEPS	5	20	1							540	
CLASSROOM C1 RECEPS	7	20	1					540			
CLASSROOM C3 RECEPS	9	20	1						540		
CLASSROOM C3 RECEPS	11	20	1							540	
CLASSROOM C3 RECEPS	13	20	1					540			
CLASSROOM C3 RECEPS	15	20	1						540		
SPARE	17	20	1								
SPARE	19	20	1								
SPARE	21	20	1								
SPACE	23										
SPACE	25										
SPACE	27										
SPACE	29										
SPACE	31										
SPACE	33										
SPACE	35										
SPACE	37										
SPACE	39										
□ ROOF RECEPTACLES	41	20	1		4					720	
	SUB TOTAL VOLT/AMPS:							1620	1620	1800	
✱ CLASSROOM C2 RECEPS	2	20	1					540			
CLASSROOM C2 RECEPS	4	20	1						540		
CLASSROOM C2 RECEPS	6	20	1							540	
CLASSROOM C2 RECEPS	8	20	1					540			
CLASSROOM C4 RECEPS	10	20	1						540		
CLASSROOM C4 RECEPS	12	20	1							540	
CLASSROOM C4 RECEPS	14	20	1					540			
CLASSROOM C4 RECEPS	16	20	1						540		
SPARE	18	20	1								
SPARE	20	20	1								
SPARE	22	20	1								
SPACE	24										
SPACE	26										
SPACE	28										
SPACE	30										
SPACE	32										
SPACE	34										
SPACE	36										
SPACE	38										
SPACE	40										
SPACE	42										
	SUB TOTAL VOLT/AMPS:							1620	1620	1080	
	PANEL SUB TOTAL VOLT/AMPS:							3240	3240	2880	
	TOTAL LCL/PHASE:							0	0	0	
	TOTAL VOLT/AMPS:							3240	3240	2880	
	TOTAL AMPS/PHASE:							27	27	24	

CONNECTED: 9360 VA
25% OF MTR: VA
25% OF LCL: 0 VA
CALCULATED: 9360 VA = 25.98 AVERAGE AMPS

✱ = EXISTING LOAD TO REMAIN.
□ = NEW LOAD AND NEW CIRCUIT BREAKER AT EXISTING SPACE. NEW CIRCUIT BREAKER SHALL MATCH EXISTING IN MANUFACTURER AND DUTY.

PLAN NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE ELECTRICAL ENGINEER PRIOR TO MAKING ANY ADJUSTMENT / CHANGES TO ANY BRANCH CIRCUIT PANEL CIRCUIT BREAKER ARRAIGNMENT.
3. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL PROVIDE NEW TYPED PANEL DIRECTORY FOR EACH PANEL AFFECTED WITHIN THIS SCOPE OF WORK. PANEL DIRECTORIES SHALL REFLECT THE APPROVED DRAWINGS AND AS-BUILT CONDITIONS.

AGENCY APPROVAL
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
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STAMP
REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:
LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

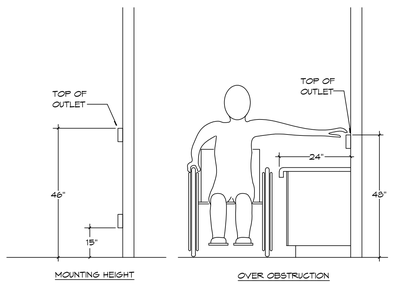
No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002
CONSULTANT

STAMP
REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

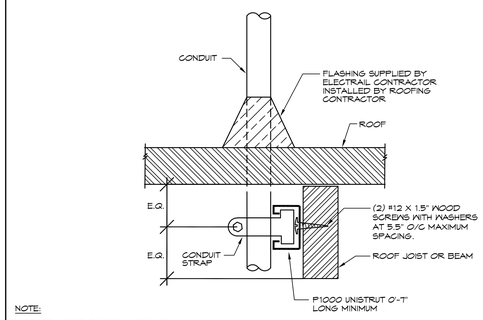
SHEET DESCRIPTION:
PANEL SCHEDULES

SHEET NO:
E-0.6



DEVICE MOUNTING HEIGHTS

SCALE: NONE | 1

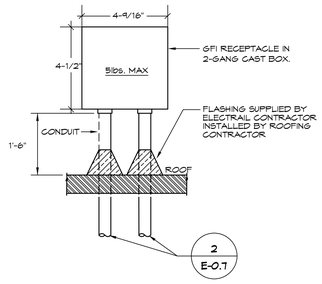


NOTE:

1. CONTRACTOR TO SEAL AROUND CONDUIT AND FLASHING WHERE THEY MEET.

CONDUIT ROOF PENETRATION

SCALE: NONE | 2

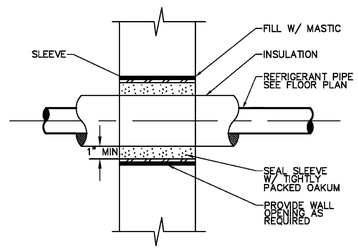


NOTE:

CONTRACTOR TO SEAL AROUND CONDUIT AND FLASHING WHERE THEY MEET.

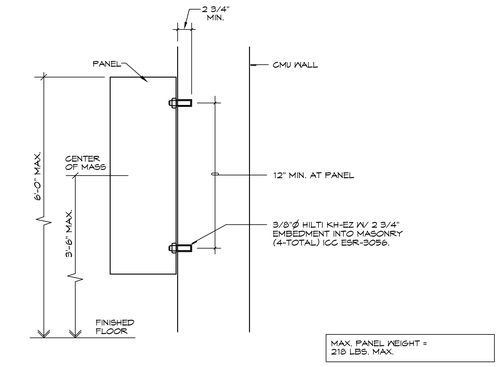
ROOF RECEPTACLE

SCALE: NONE | 3



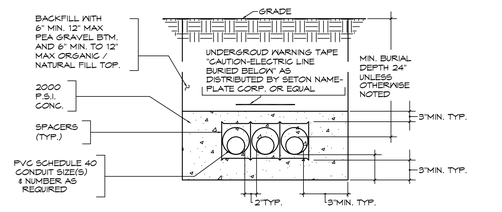
NON FIRE RATED WALL PENETRATION

SCALE: NONE | 4



PANEL/CABINET - MASONRY WALL

SCALE: NONE | 5

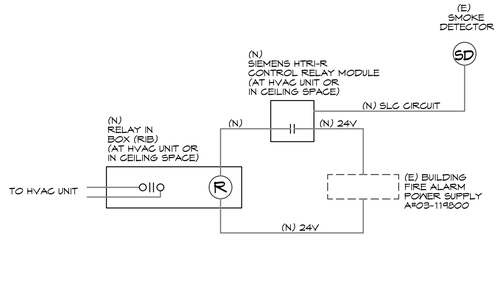


NOTES:

1. SLOPE RUNS A MIN. OF 4" IN 100 FT. BETWEEN MANHOLES OR MANHOLE AND VAULT OR CABLE RISERS.
2. RUN SHALL BE STRAIGHT WITHOUT ANY HIGH OR LOW POINTS BETWEEN ENDS, THE HIGHER END SHALL BE AT A VENTILATED MANHOLE,VAULT, OR CABLE RISER.

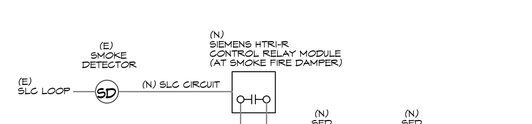
UNDERGROUND DUCT BANK

SCALE: NONE | 6



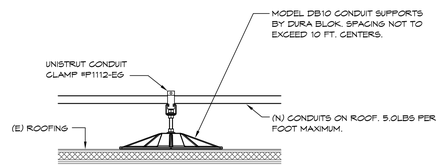
HVAC UNIT SHUT-DOWN

SCALE: NONE | 7



SMOKE FIRE DAMPER

SCALE: NONE | 8

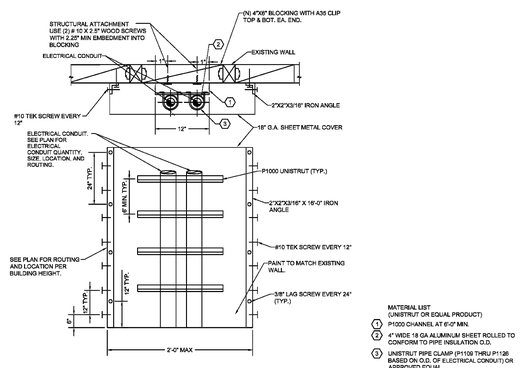


INSTALLATION

1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
2. IF GRAVEL TOP ROOF, GRAVEL MUST BE REMOVED AROUND AND UNDER PIPE SUPPORT.
3. ALWAYS CONSULT ROOFING MANUFACTURER FOR ROOF MEMBRANE COMPRESSION CAPACITIES. IF NECESSARY, A COMPATIBLE SHEET OF ROOFING MATERIAL (RUBBER PAD) MAY BE INSTALLED UNDER ROOFTOP SUPPORT TO DISPERSE CONCENTRATED LOADS AND ADD FURTHER MEMBRANE PROTECTION.
4. USE PROPERLY SIZED CLAMPS TO SUITE PIPE (CONDUIT) SIZES.

ROOF MOUNTED CONDUIT

SCALE: NONE | 9



MATERIAL LIST
(UNISTRUT OR EQUAL PRODUCT)

1. P1000 CHANNEL AT 6'-0" MIN.
2. 4" WIDE 16 GA ALUMINUM SHEET ROLLED TO CONFORM TO PIPE INSULATION O.D.
3. UNISTRUT PIPE CLAMP (P1109 THRU P1126 BASED ON O.D. OF ELECTRICAL CONDUIT) OR APPROVED EQUAL.

NOTE:
MAX. WEIGHT 2 LBS/FT FOR EACH PIPE.

VERTICAL PIPE - SHEET METAL COVER

SCALE: NONE | 10

NOT USED

SCALE: NONE | 11

NOT USED

SCALE: NONE | 12

NOT USED

SCALE: NONE | 13

NOT USED

SCALE: NONE | 14

NOT USED

SCALE: NONE | 15

NOT USED

SCALE: NONE | 16

AGENCY APPROVAL

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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — BANESH E. — No. M29283 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2	10/12/2026	Addendum # 1

JOB NO:	501-26-0009
DATE:	04/02/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

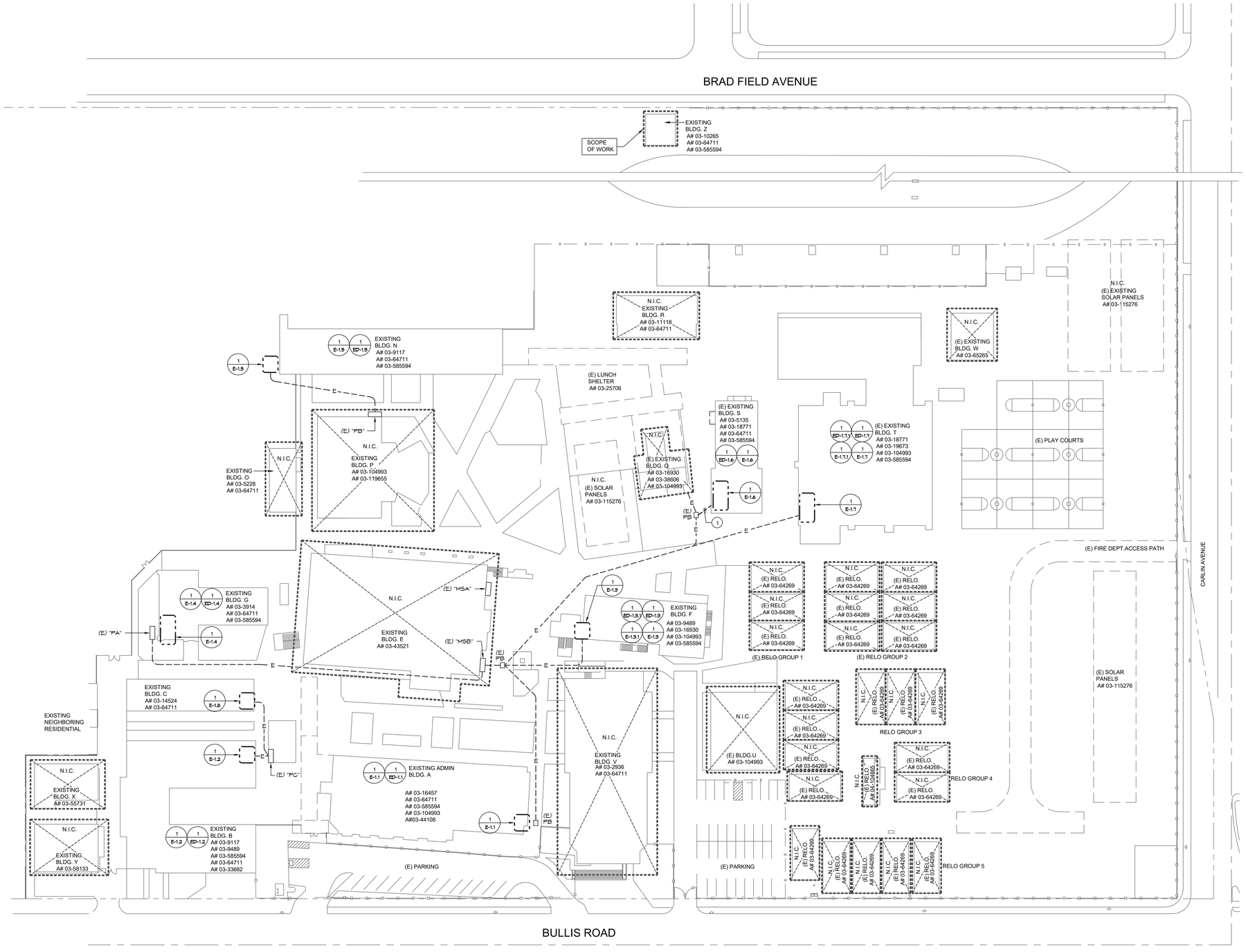
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER — LEONARD F. LOFARO — No. E17229 6/30/28 — ELECTRICAL — STATE OF CALIFORNIA

SHEET DESCRIPTION:
ELECTRICAL DETAILS

SHEET NO:
E-0.7 ADD01



POWER SITE PLAN | 1" = 40'-0" | 1

PLAN NOTES:

1. NEW (1) 1 1/2"C. W/ 3#1/0 + 1#6 GND. REFER TO REMODEL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.

CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE CAMPUS THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
3. THE CONTRACTOR SHALL NOTE THAT THE DRAWINGS IS DIAGRAMMATIC. EXACT ROUTING OF NEW CONDUITS AND LOCATION OF JUNCTION BOXES AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD. NEW CONDUIT, JUNCTION BOXES AND PULL BOXES SHALL BE ROUTED / PLACED IN SUCH A MANNER AS TO ADHERE TO ALL APPLICABLE CODES AND TO AVOID INTERFERENCE WITH EXISTING BUILDING STRUCTURES, UTILITIES AND THE WORK BEING PERFORMED BY OTHER TRADES. ALL EXTERIOR CONDUIT, FITTINGS, JUNCTION BOXES AND PULL BOXES TO BE WEATHER PROOF TYPE; NEMA 3R.
4. SEE REMODEL SINGLE LINE DIAGRAM FOR CONDUIT SIZE, WIRE SIZE AND QUANTITIES REQUIRED FOR ALL ELECTRICAL EQUIPMENT.
5. CONDUIT AND WIRE INDICATED ON THE SINGLE LINE DIAGRAM, WHETHER SHOWN ON THIS DRAWING OR NOT, SHALL BE A PART OF THIS CONTRACT AND THE RESPONSIBILITY OF THIS CONTRACTOR TO PROVIDE REQUIRED MATERIAL AND ROUTING TO MEET THE INTENT OF THESE PLANS AND SPECIFICATIONS.
6. CONTRACTOR TO PROVIDE ENGRAVED LABELING AT EACH RECEPTACLE, DATA OUTLET, JUNCTION BOX, DISCONNECT SWITCH, ECT. DISPLAYING THE IDF OR PANEL (WITH CIRCUIT) FEEDING THE DATA OUTLET, RECEPTACLE, JUNCTION BOX, DISCONNECT SWITCH, ECT.
7. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS SHALL BE CONCEALED.

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

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STAMP

REGISTERED PROFESSIONAL ENGINEER
LARRY F. BANEKE
No. M29283
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD, CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

CONSULTANT

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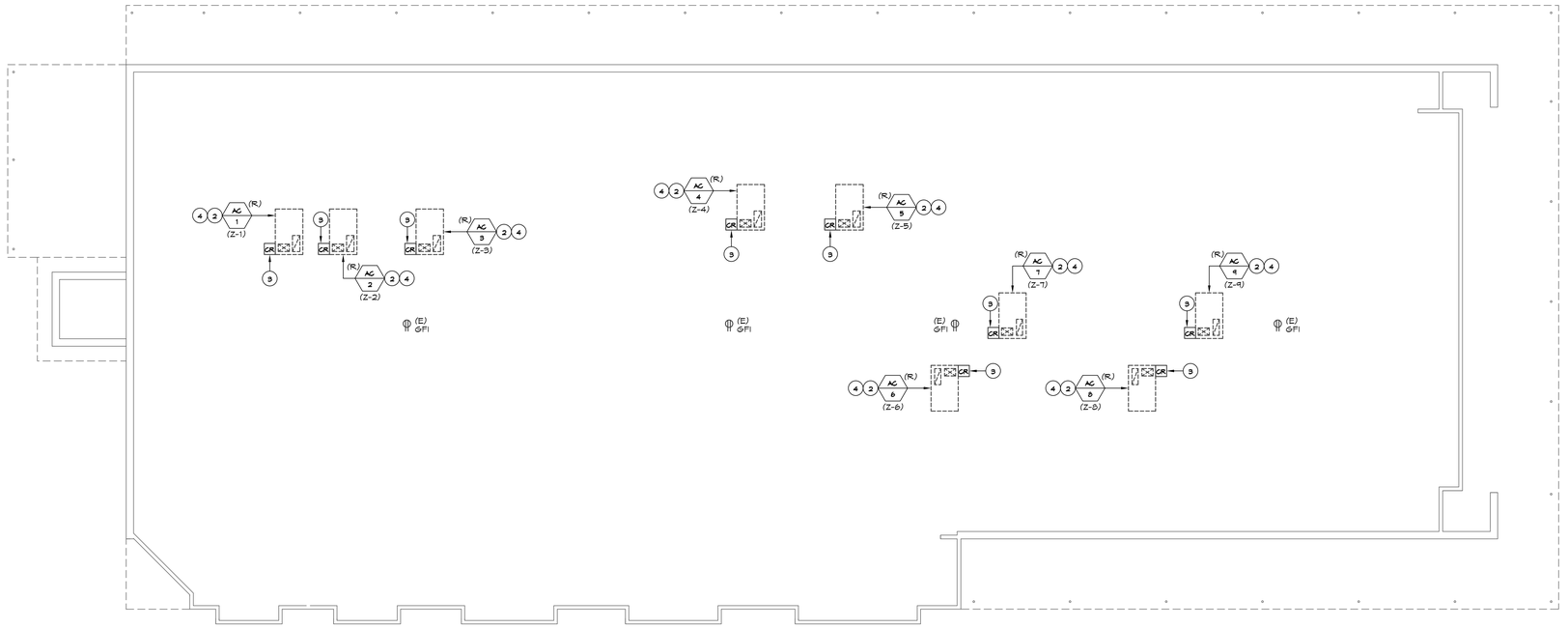
REGISTERED PROFESSIONAL ENGINEER
RICHARD C. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
POWER
SITE PLAN

SHEET NO:
E-1.0



REF. NORTH

N

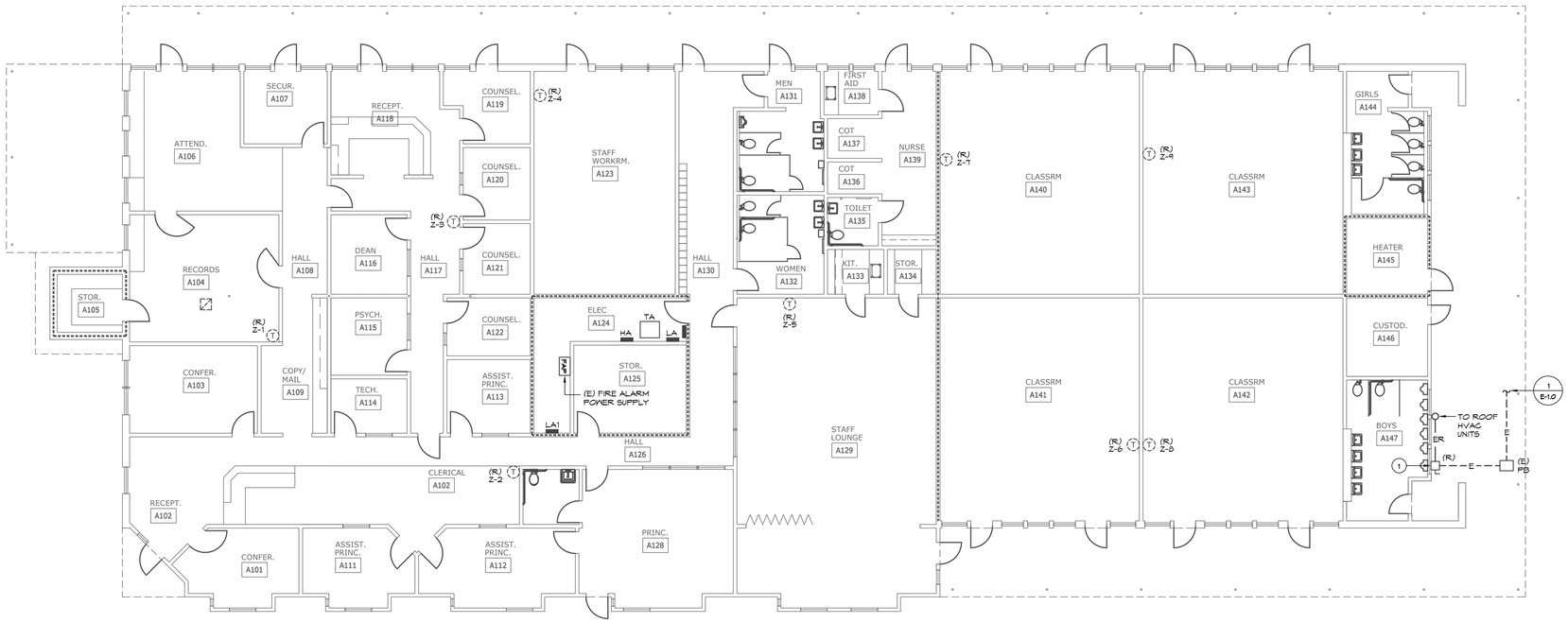
DEMOLITION ROOF PLAN | 1/8" = 1'-0" | 2

PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. EXISTING FEEDER (CONDUIT AND CONDUCTORS) ENTERING DISCONNECT SWITCH FROM SWITCHGEAR 'MSB' SHALL REMAIN FOR CONNECTION TO NEW BRANCH CIRCUIT PANEL. EXISTING FEEDER (CONDUIT AND CONDUCTORS) LEAVING DISCONNECT SWITCH UP TO ROOF MOUNTED HVAC EQUIPMENT SHALL BE COMPLETELY REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT, DISCONNECT SWITCH AND FEEDER. CONTRACTOR SHALL REMOVE FEEDER (CONDUIT AND CONDUCTORS) BACK TO SERVING DISCONNECT SWITCH ON SIDE OF BUILDING. REFER TO NOTE 1, THIS DRAWING, FOR ADDITIONAL REQUIREMENTS.
3. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND FRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL REMOVE EXISTING SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE AND ASSOCIATED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL TURN OVER REMOVED SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE TO THE OWNER UPON COMPLETION OF DEMOLITION WORK.

CONSTRUCTION NOTES:

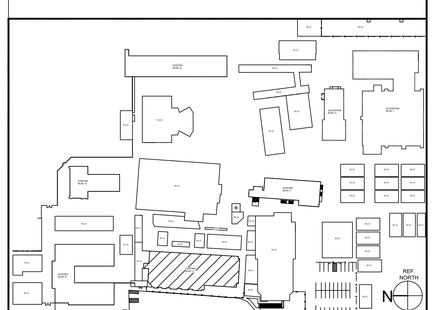
1. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR ALL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED.
4. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.



REF. NORTH

N

DEMOLITION FLOOR PLAN | 1/8" = 1'-0" | 1



REF. NORTH

N

KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 03-126002 INC:

REVIEWED FOR

SS ☑ FLS ☑ ACS ☐

DATE: 10/16/2026

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STAMP

REGISTERED PROFESSIONAL ENGINEER
BANEKE
No. M29203
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

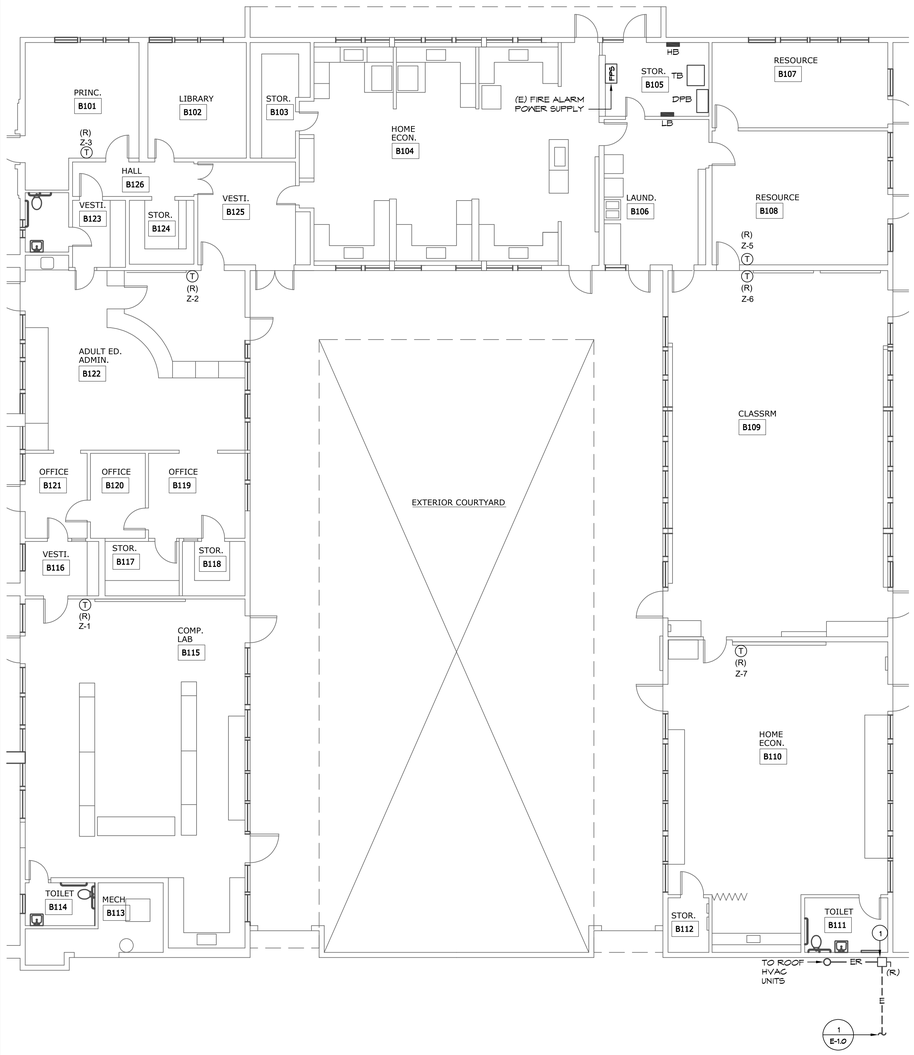
CONSULTANT

STAMP

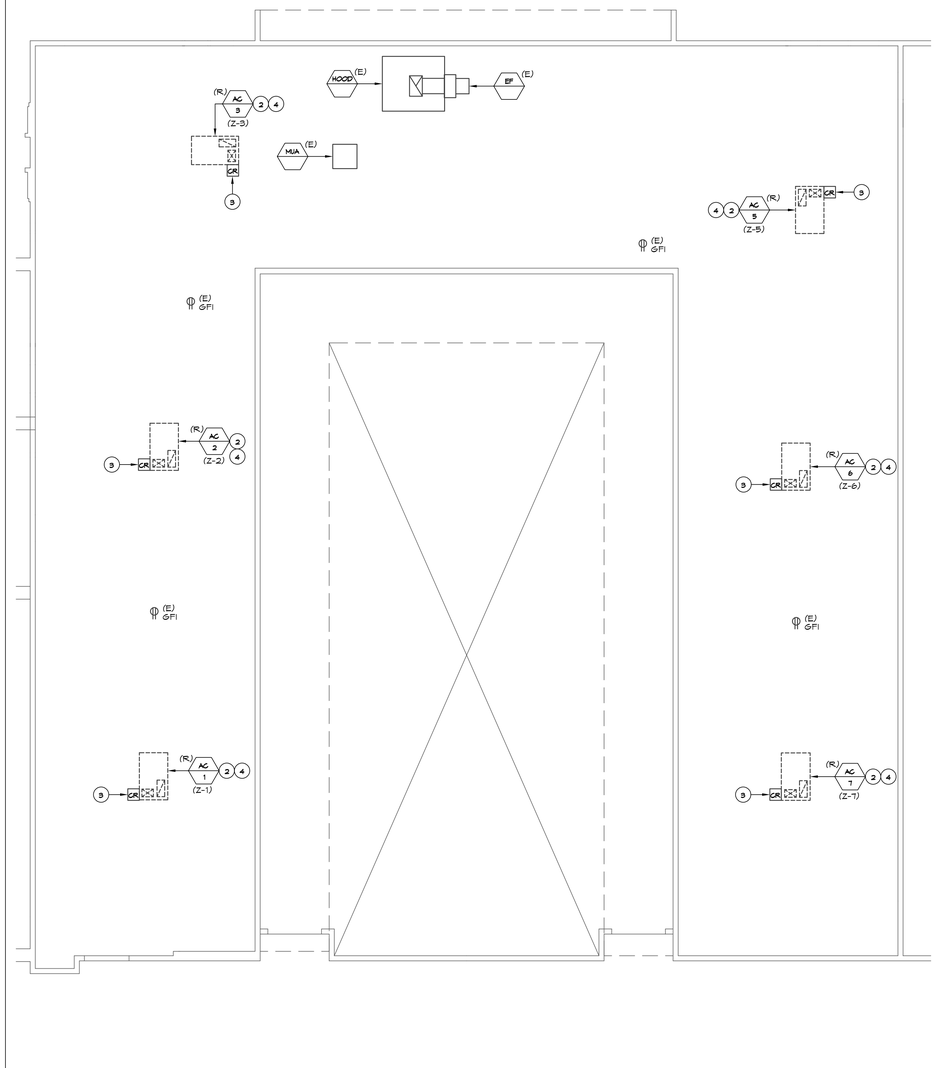
REGISTERED PROFESSIONAL ENGINEER
RICHARD E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING A DEMOLITION PLANS

SHEET NO:
ED-1.1



DEMOLITION FLOOR PLAN | 1/8" = 1'-0" | 1



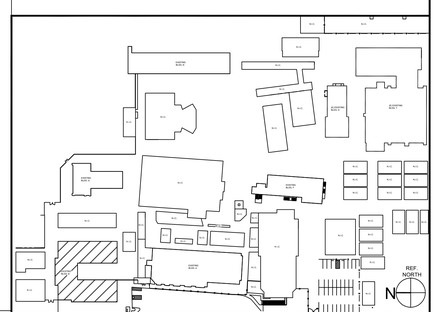
DEMOLITION ROOF PLAN | 1/8" = 1'-0" | 2

PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. EXISTING FEEDER (CONDUIT AND CONDUCTORS) ENTERING DISCONNECT SWITCH FROM DISTRIBUTION BOARD 'PC' SHALL REMAIN FOR CONNECTION TO NEW BRANCH CIRCUIT PANEL. EXISTING FEEDER (CONDUIT AND CONDUCTORS) LEAVING DISCONNECT SWITCH UP TO ROOF MOUNTED HVAC EQUIPMENT SHALL BE COMPLETELY REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT, DISCONNECT SWITCH AND FEEDER. CONTRACTOR SHALL REMOVE FEEDER (CONDUIT AND CONDUCTORS) BACK TO SERVING DISCONNECT SWITCH ON SIDE OF BUILDING. REFER TO NOTE 1, THIS DRAWING, FOR ADDITIONAL REQUIREMENTS.
3. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND PRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL REMOVE EXISTING SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE AND ASSOCIATED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL TURN OVER REMOVED SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE TO THE OWNER UPON COMPLETION OF DEMOLITION WORK.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR ALL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED.
4. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
JAMES F. BANEKE
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD, CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

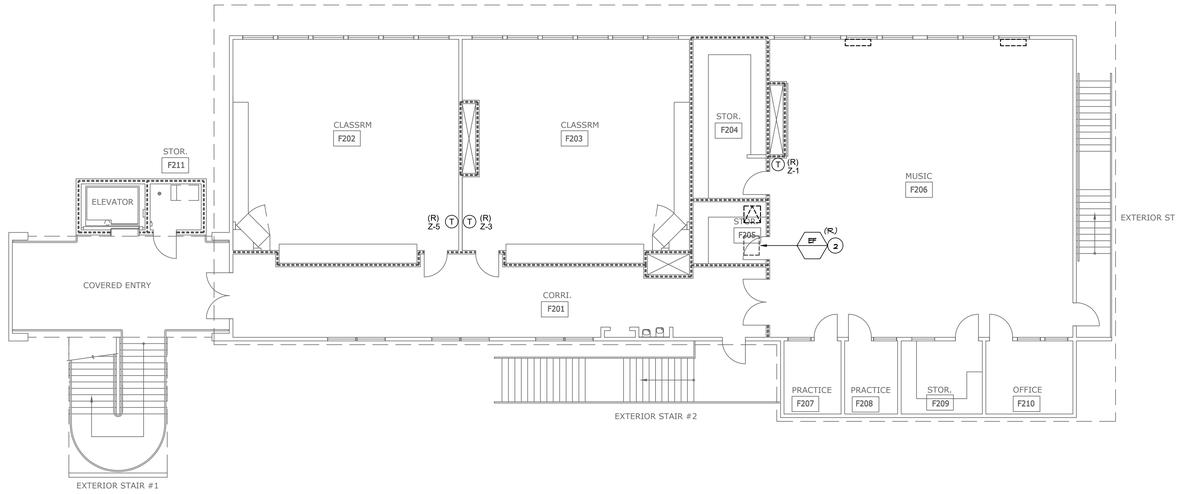
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
EDWARD E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING B DEMOLITION PLANS

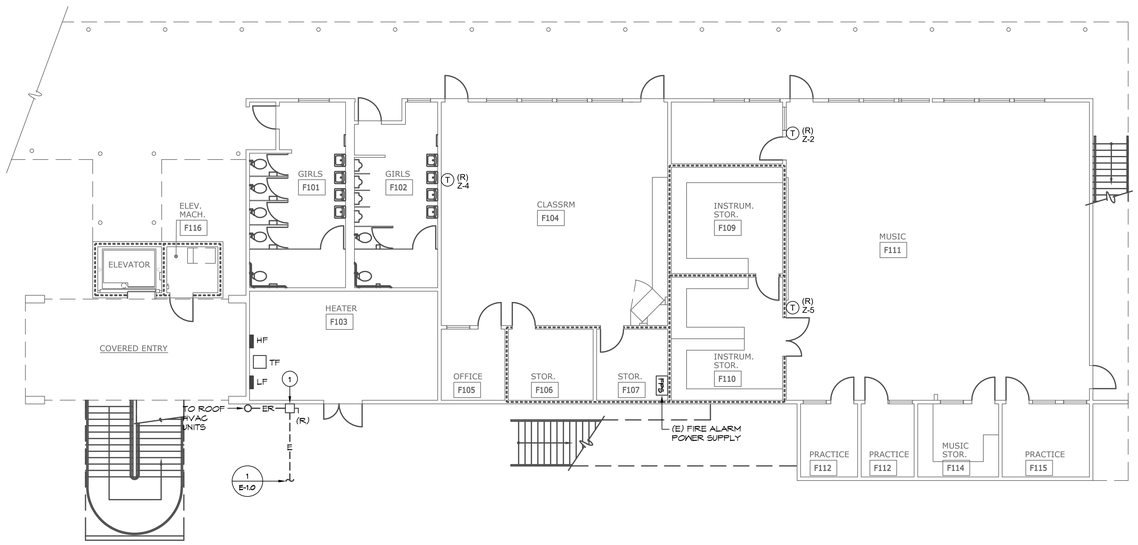
SHEET NO:
ED-1.2



REF NORTH

N

SECOND FLOOR DEMOLITION PLAN | 1/8" = 1'-0" | 2



REF NORTH

N

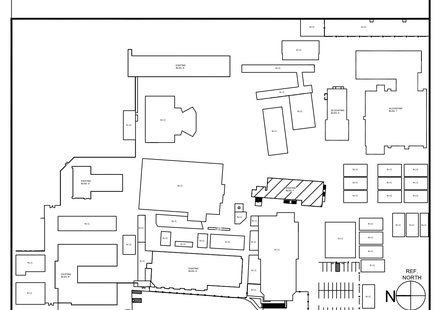
FIRST FLOOR DEMOLITION PLAN | 1/8" = 1'-0" | 1

PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. EXISTING FEEDER (CONDUIT AND CONDUCTORS) ENTERING DISCONNECT SWITCH FROM SWITCHGEAR "MSB" SHALL REMAIN FOR CONNECTION TO NEW BRANCH CIRCUIT PANEL. EXISTING FEEDER (CONDUIT AND CONDUCTORS) LEAVING DISCONNECT SWITCH UP TO ROOF MOUNTED HVAC EQUIPMENT SHALL BE COMPLETELY REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING EXHAUST FAN AND DISCONNECT SWITCH. EXISTING CONDUIT AND CONDUCTORS SHALL BE ABANDONED IN PLACE. CONTRACTOR SHALL MARK BRANCH CIRCUIT BREAKER AS SPARE WITHIN SERVING BRANCH CIRCUIT PANEL AND BE PLACED IN THE "OFF" POSITION.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTE THAT THE DRAWINGS IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR ALL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED.
4. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANEKJE
No. M29283
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

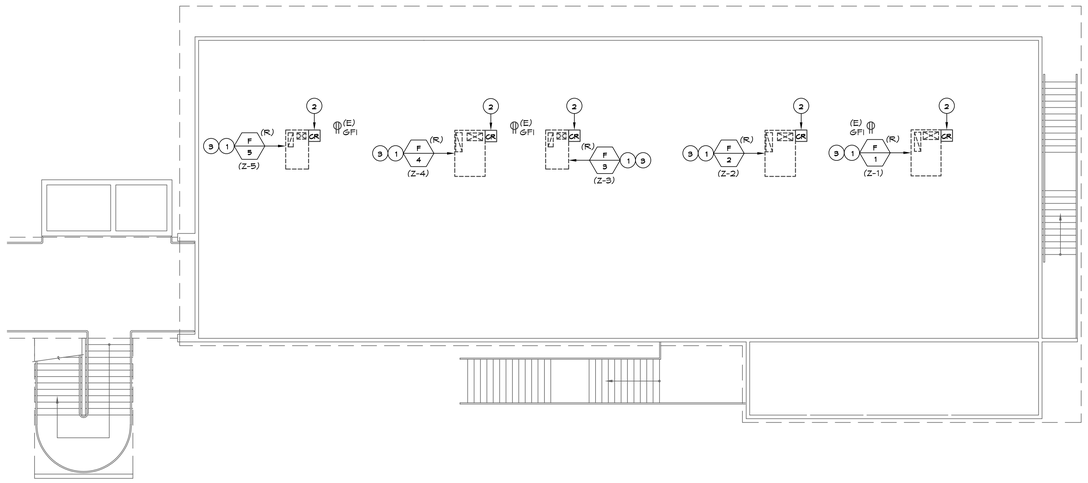
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLAND E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING F
DEMOLITION
FLOOR PLANS

SHEET NO:
ED-1.3



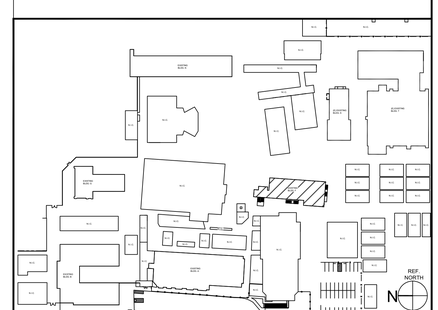
DEMOLITION ROOF PLAN | 1/8" = 1'-0" | 1

PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT, DISCONNECT SWITCH AND FEEDER. CONTRACTOR SHALL REMOVE FEEDER (CONDUIT AND CONDUCTORS) BACK TO SERVING DISCONNECT SWITCH ON SIDE OF BUILDING. REFER TO NOTE 1, DRAWING ED-1.3, FOR ADDITIONAL REQUIREMENTS.
2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND PRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE EXISTING SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE AND ASSOCIATED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL TURN OVER REMOVED SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE TO THE OWNER UPON COMPLETION OF DEMOLITION WORK.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR ALL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED.
4. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

PROJECT NAME:

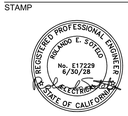
LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

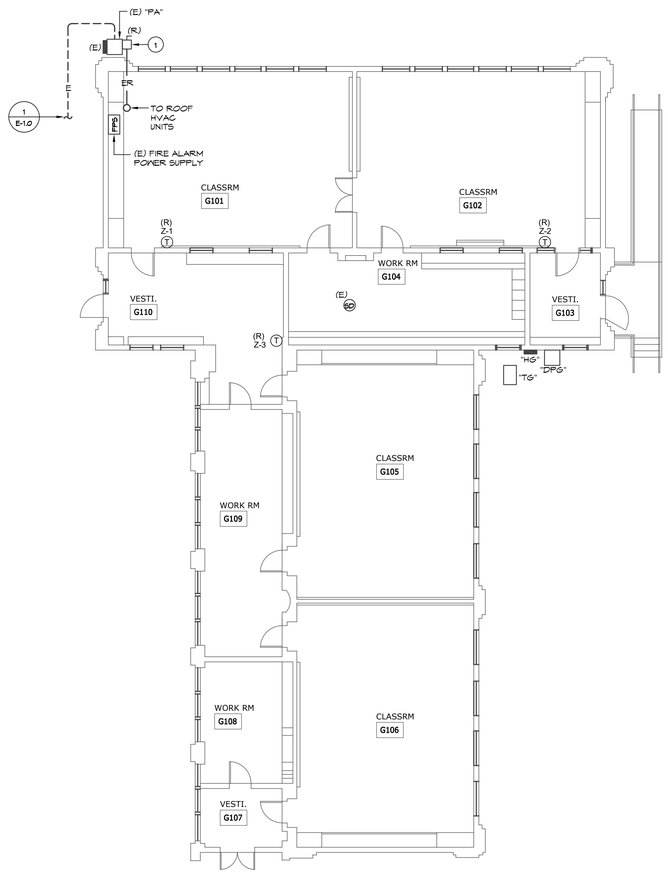
CONSULTANT

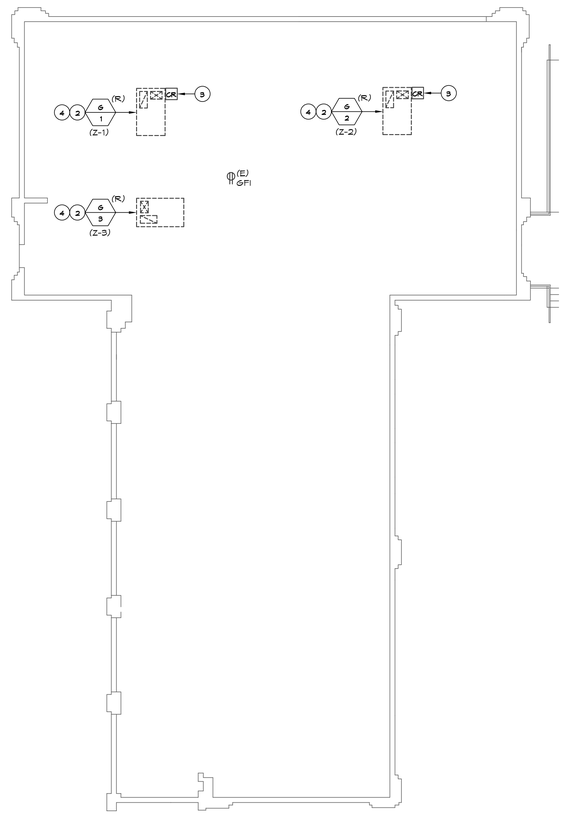
STAMP



SHEET DESCRIPTION:
BUILDING F
DEMOLITION
ROOF PLAN

SHEET NO:
ED-1.3.1



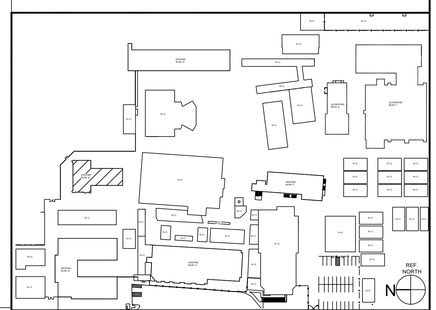


PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING EQUIPMENT MOUNTED HVAC UNIT(S) DISCONNECT SWITCH AND ASSOCIATED FEEDER (CONDUIT AND CONDUCTORS) ENTERING DISCONNECT SWITCH FROM DISTRIBUTION BOARD "PA". EXISTING FEEDER (CONDUIT AND CONDUCTORS) LEAVING DISCONNECT SWITCH UP TO ROOF MOUNTED HVAC EQUIPMENT SHALL BE COMPLETELY REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT, DISCONNECT SWITCH AND FEEDER. CONTRACTOR SHALL REMOVE FEEDER (CONDUIT AND CONDUCTORS) BACK TO SERVING DISCONNECT SWITCH ON SIDE OF DISTRIBUTION BOARD "PA". REFER TO NOTE 1, THIS DRAWING, FOR ADDITIONAL REQUIREMENTS.
3. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND PRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL REMOVE EXISTING SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE AND ASSOCIATED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL TURN OVER REMOVED SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE TO THE OWNER UPON COMPLETION OF DEMOLITION WORK.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR ALL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED.
4. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.



KEY PLAN — NOT TO SCALE

DEMOLITION FLOOR PLAN — 1/8" = 1'-0" — 1

DEMOLITION ROOF PLAN — 1/8" = 1'-0" — 2

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — BANESH E. — No. M29353 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

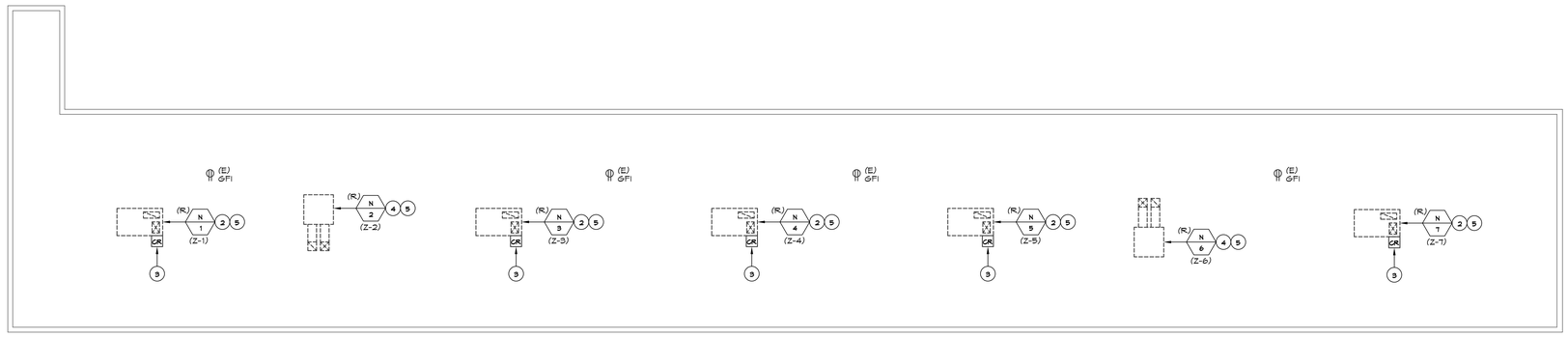
CONSULTANT

STAMP

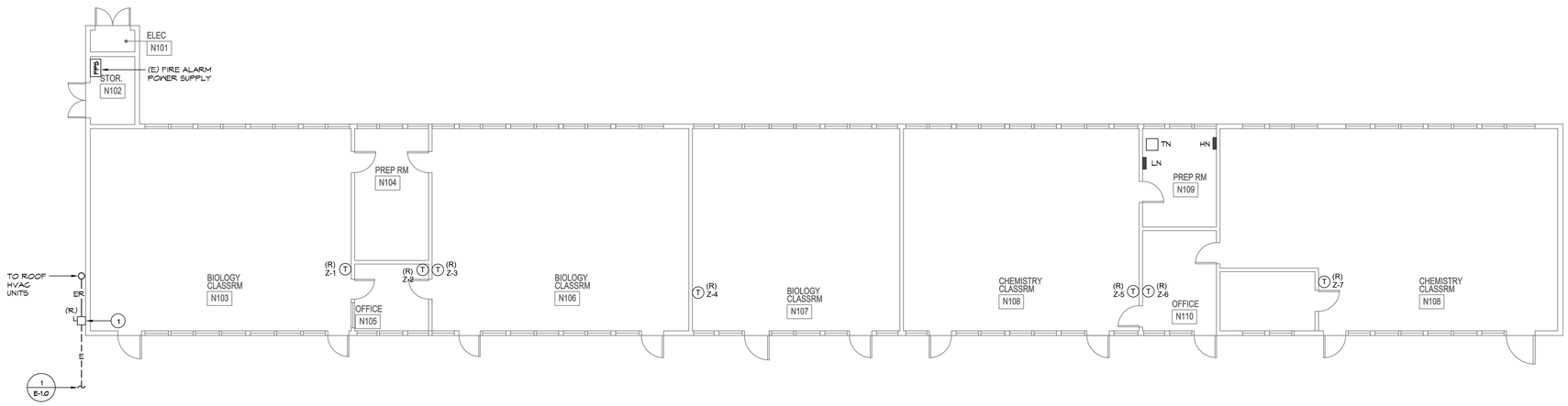
REGISTERED PROFESSIONAL ENGINEER — SEAMUS E. SAYKO — No. E17229 6/30/28 — ELECTRICAL — STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING G
DEMOLITION
PLANS

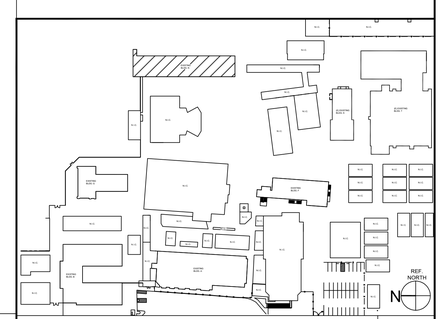
SHEET NO:
ED-1.4



DEMOLITION ROOF PLAN | 1/8" = 1'-0" | 2



DEMOLITION FLOOR PLAN | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. EXISTING FEEDER (CONDUIT AND CONDUCTORS) ENTERING DISCONNECT SWITCH FROM DISTRIBUTION BOARD "FB" SHALL REMAIN FOR CONNECTION TO NEW BRANCH CIRCUIT PANEL. EXISTING FEEDER (CONDUIT AND CONDUCTORS) LEAVING DISCONNECT SWITCH UP TO ROOF MOUNTED HVAC EQUIPMENT SHALL BE COMPLETELY REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT, DISCONNECT SWITCH AND FEEDER. CONTRACTOR SHALL REMOVE FEEDER (CONDUIT AND CONDUCTORS) BACK TO SERVING DISCONNECT SWITCH ON SIDE OF BUILDING. REFER TO NOTE 1, THIS DRAWING, FOR ADDITIONAL REQUIREMENTS.
3. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND PRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT AND DISCONNECT SWITCH ONLY. CONTRACTOR SHALL UTILIZE EXISTING CONDUIT AND CONDUCTORS FOR CONNECTION OF NEW HVAC UNIT AND NEW DISCONNECT SWITCH. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
5. CONTRACTOR SHALL REMOVE EXISTING SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE AND ASSOCIATED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL TURN OVER REMOVED SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE TO THE OWNER UPON COMPLETION OF DEMOLITION WORK.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
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5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.

AGENCY APPROVAL

IDENTIFICATION STAMP
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APP: 03-126002 INC:
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SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANEKJE
No. M29283
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

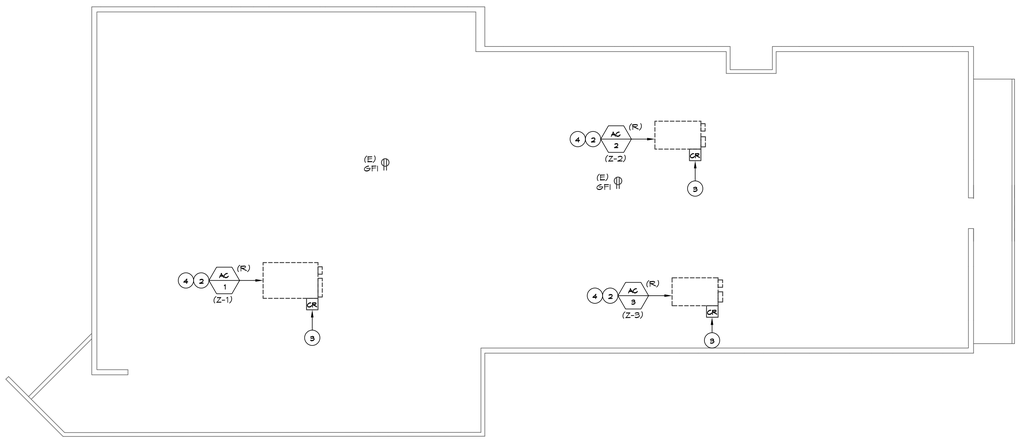
CONSULTANT

STAMP

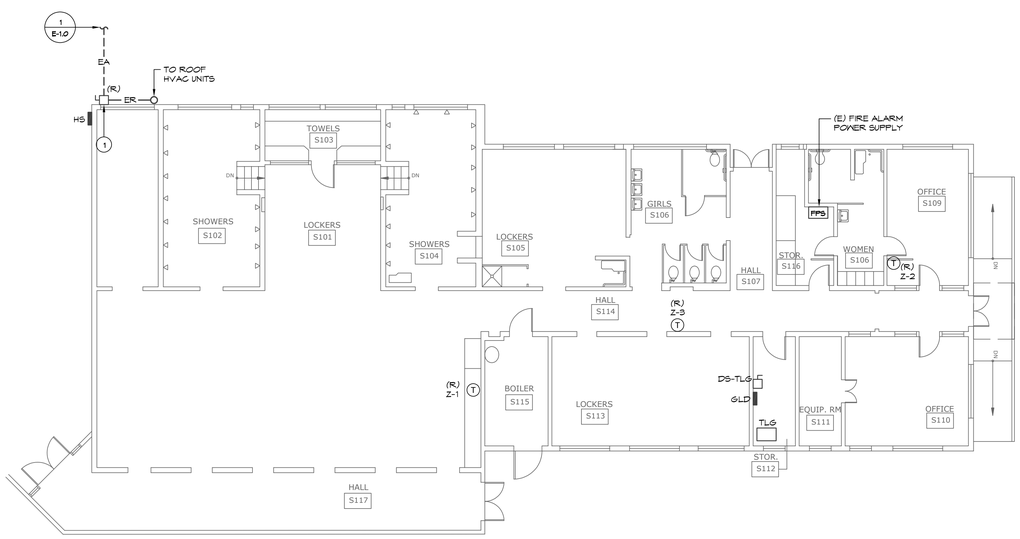
REGISTERED PROFESSIONAL ENGINEER
BRANDO E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING N DEMOLITION PLANS

SHEET NO:
ED-1.5



DEMOLITION ROOF PLAN | 1/8" = 1'-0" | 2



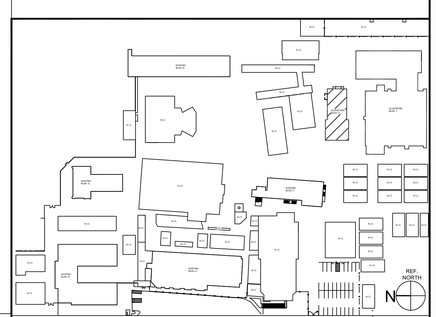
DEMOLITION FLOOR PLAN | 1/8" = 1'-0" | 1

PLAN NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. EXISTING FEEDER (CONDUIT AND CONDUCTORS) ENTERING DISCONNECT SWITCH FROM SWITCHGEAR 'MSB' SHALL REMAIN FOR CONNECTION TO NEW BRANCH CIRCUIT PANEL. EXISTING FEEDER (CONDUIT AND CONDUCTORS) LEAVING DISCONNECT SWITCH UP TO ROOF MOUNTED HVAC EQUIPMENT SHALL BE COMPLETELY REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING HVAC UNIT, DISCONNECT SWITCH AND FEEDER. CONTRACTOR SHALL REMOVE FEEDER (CONDUIT AND CONDUCTORS) BACK TO SERVING DISCONNECT SWITCH ON SIDE OF BUILDING. REFER TO NOTE 1, THIS DRAWING, FOR ADDITIONAL REQUIREMENTS.
3. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND PRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL REMOVE EXISTING SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE AND ASSOCIATED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL TURN OVER REMOVED SOUTHERN CALIFORNIA EDISON (SCE) CYCLING DEVICE TO THE OWNER UPON COMPLETION OF DEMOLITION WORK.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT POWER FROM MECHANICAL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED AS REQUIRED. CONTRACTOR SHALL RECONNECT POWER TO ALL MECHANICAL EQUIPMENT BEING RE-USED AND/OR RELOCATED AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR ALL EQUIPMENT TO BE REMOVED, RELOCATED, RE-USED AND/OR REPLACED.
4. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
5. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
LARRY M. BANEKE
No. M29283
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

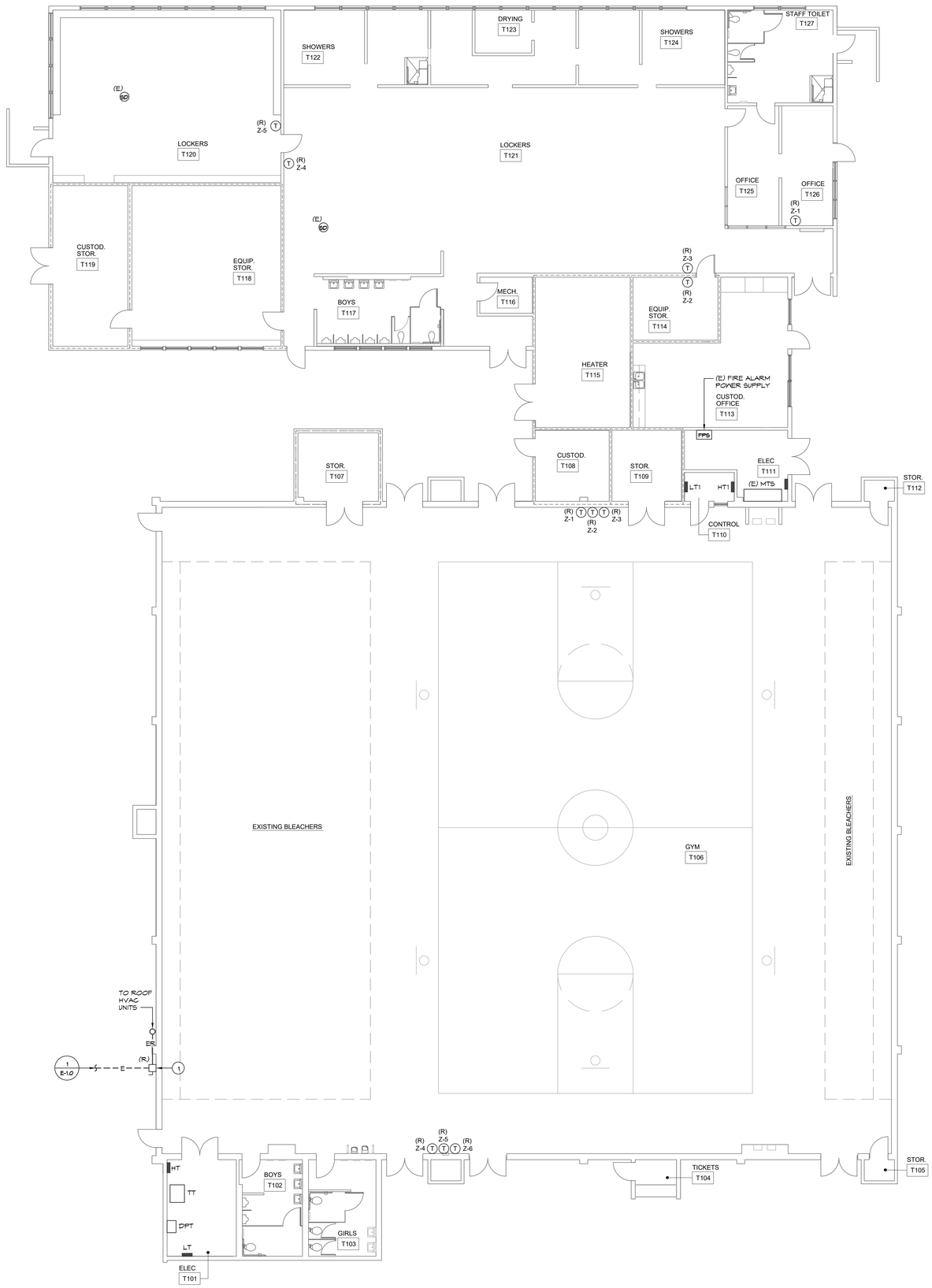
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLAND E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING S
DEMOLITION
PLANS

SHEET NO:
ED-1.6



PLAN NOTES:

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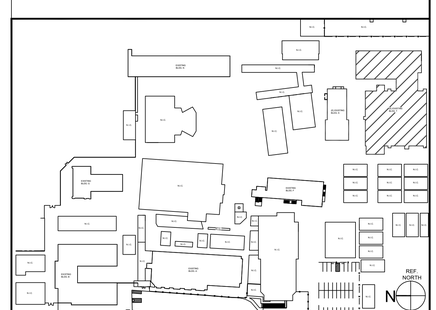

DEMOLITION FLOOR PLAN

1/8" = 1'-0"

1

KEY PLAN

NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 03-126002 INC:

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DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANEKE
No. M29203
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD , CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

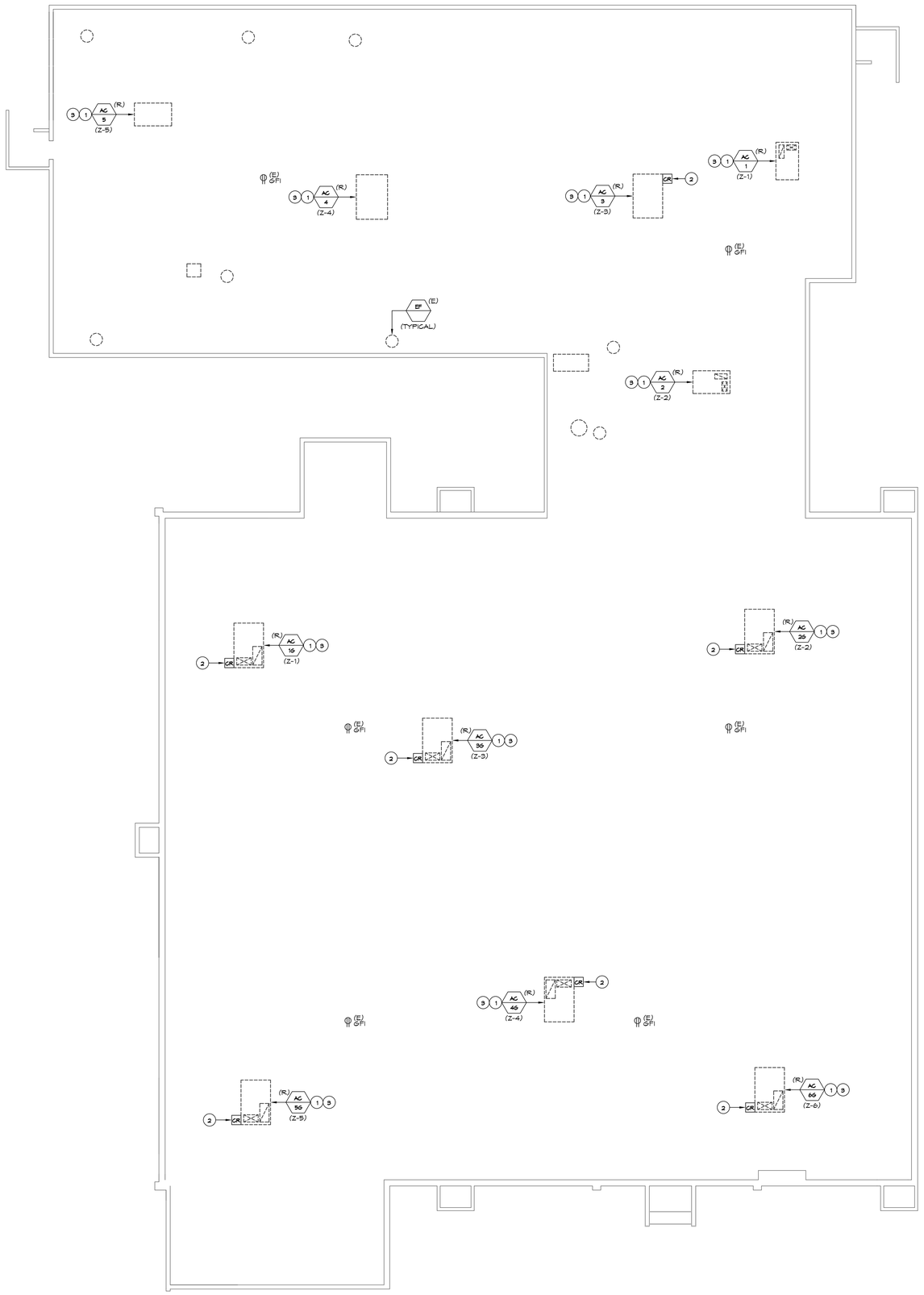
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLAND C. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING T
DEMOLITION
PLAN

SHEET NO:
ED-1.7



DEMOLITION ROOF PLAN

1/8" = 1'-0"

1

PLAN NOTES:

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2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL DISCONNECT EXISTING CONTROL RELAY AND PRESERVE DEVICE, CONDUIT AND CABLES / CONDUCTORS FOR RECONNECTION DURING REMODEL WORK. EXISTING CONDUIT, CABLES / CONDUCTORS SHALL BE USED TO ENERGIZE / RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. REFER TO REMODEL PLAN FOR ADDITIONAL REQUIREMENTS.
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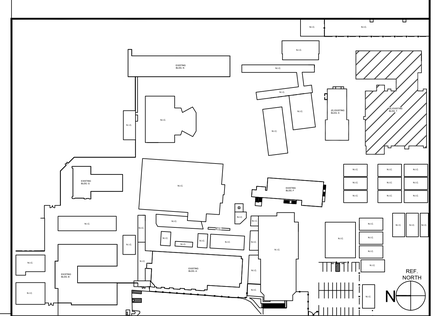

KEY PLAN

NOT TO SCALE

AGENCY APPROVAL

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APP: 03-126002 INC:
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SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

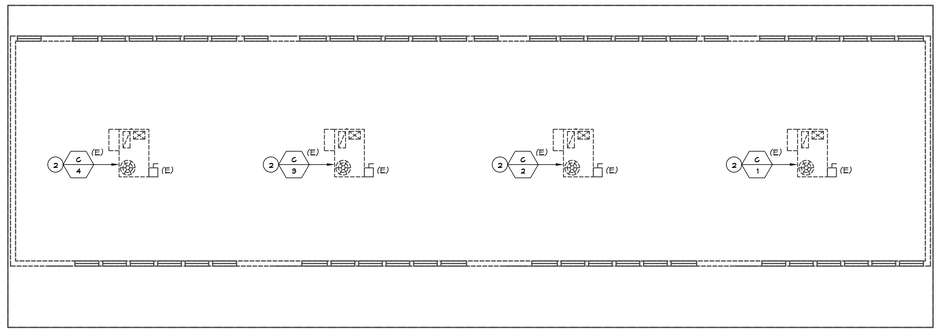
CONSULTANT

STAMP

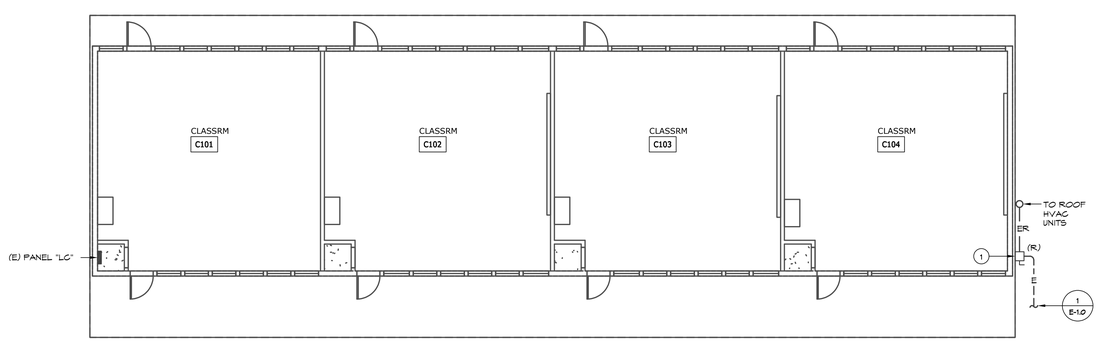
REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING T
DEMOLITION
ROOF PLAN

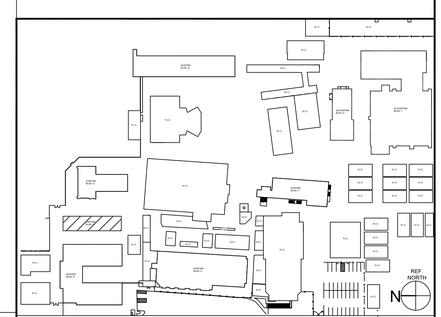
SHEET NO:
ED-1.7.1



DEMOLITION ROOF PLAN | 1/8" = 1'-0" | 2



DEMOLITION FLOOR PLAN | 1/8" = 1'-0" | 1



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CONSTRUCTION NOTES:

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APP: 03-126002 INC:
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optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

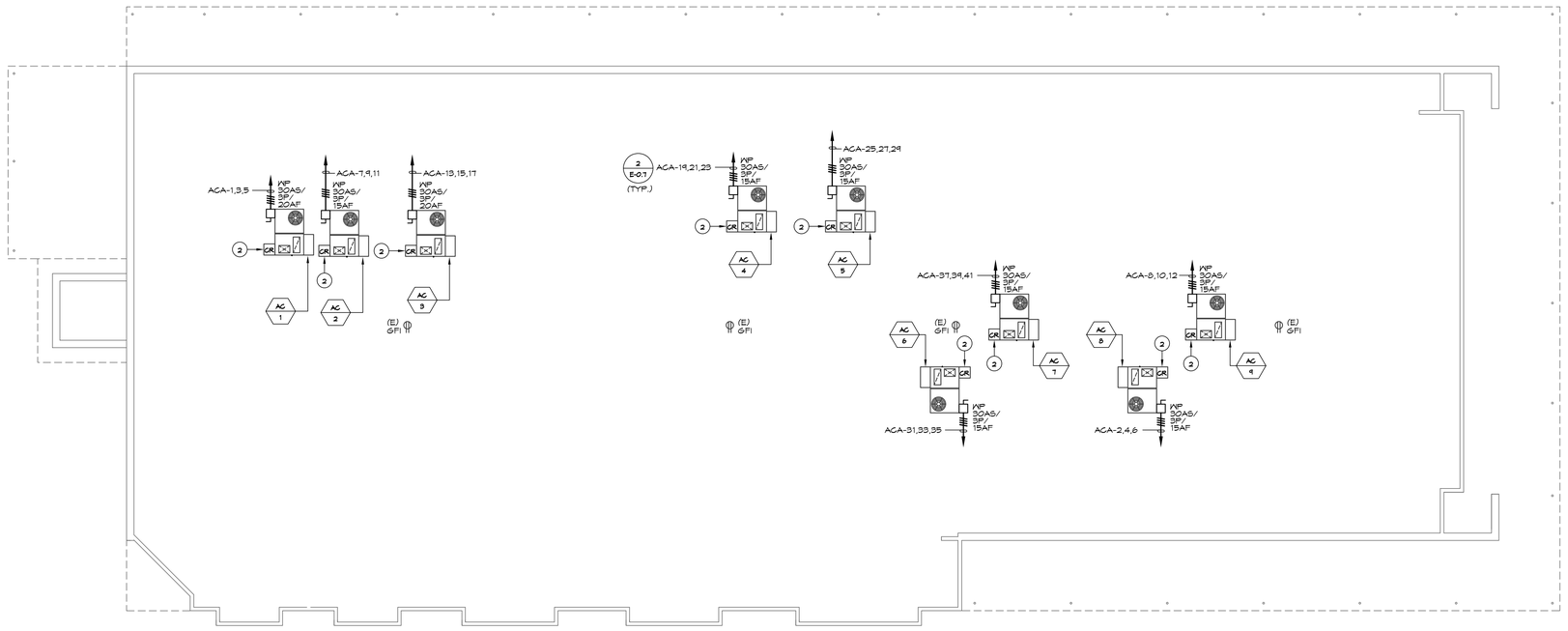
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING C DEMOLITION PLANS

SHEET NO:
ED-1.8



REF. NORTH

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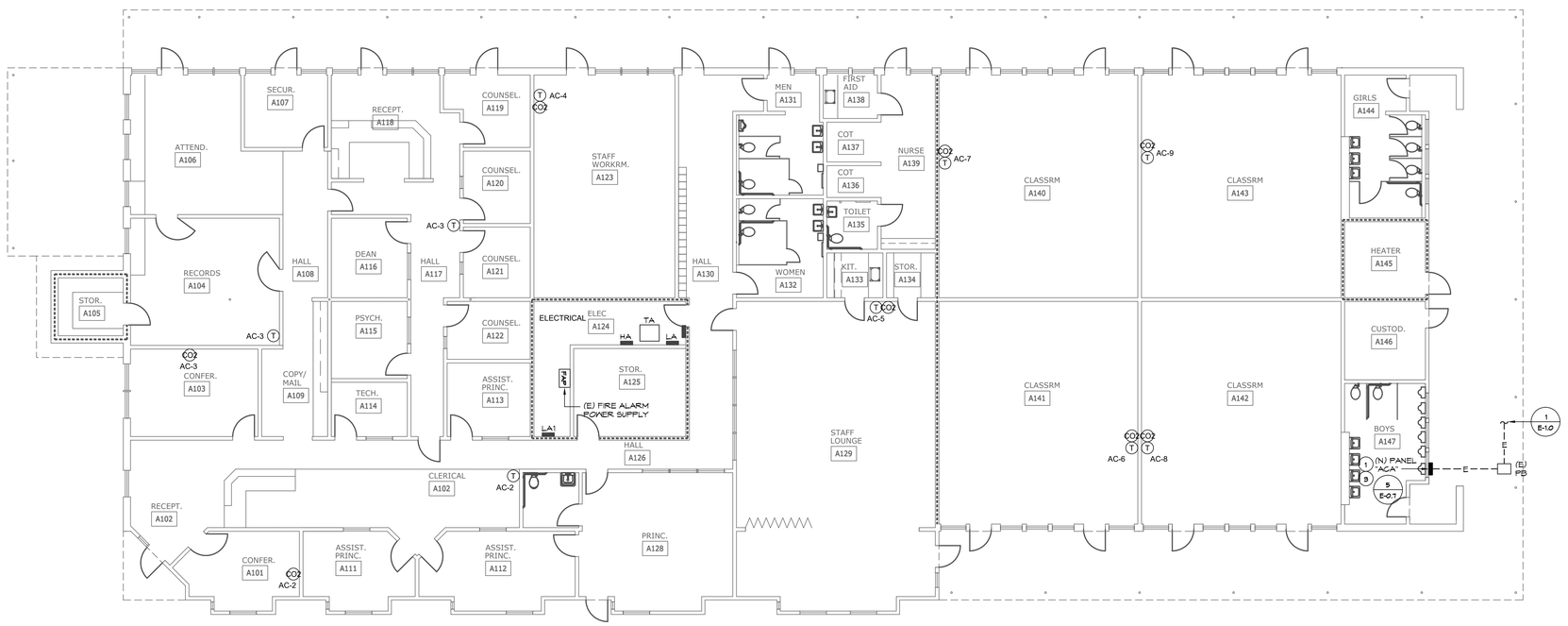
REMODEL ROOF PLAN | 1/8" = 1'-0" | 2



REF. NORTH

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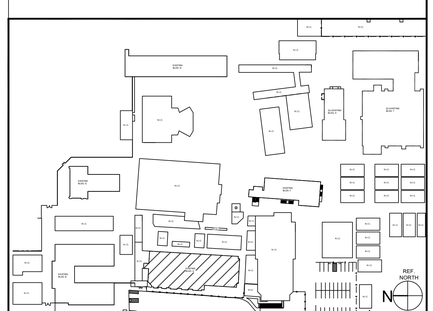
REMODEL FLOOR PLAN | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

PLAN NOTES:

1. NEW BRANCH CIRCUIT PANEL AT REMOVED WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CONDUCTORS, FITTINGS, ETC. AS REQUIRED TO CONNECT EXISTING FEEDER FROM SWITCHGEAR "MSB" TO NEW BRANCH CIRCUIT PANEL.
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3. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS TO BE CONCEALED.

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4. SEE SINGLE LINE DIAGRAM FOR CONDUIT SIZE, WIRE SIZE AND QUANTITIES TO BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT.
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6. THE CONTRACTOR SHALL REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR EXACT EQUIPMENT LOCATIONS AND ELECTRICAL CONNECTIONS REQUIREMENTS / POINTS OF CONNECTION. CONTRACTOR SHALL PROVIDE ALL POWER AND CONTROL CONNECTIONS AS INDICATED ON THE MECHANICAL AND PLUMBING DRAWINGS.
7. NO EXPOSED CONDUIT ALLOWED ON THE ROOF. CONTRACTOR SHALL ROUTE ALL NEW HVAC UNIT BRANCH CIRCUITS IN THE ATTIC SPACE AND THEN UP THROUGH THE HVAC UNIT CURB TO UNIT DISCONNECT SWITCH.

AGENCY APPROVAL

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APP: 03-126002 INC:
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
LARRY M. FRANKLIN
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
DATE: 08/27/2026
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ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

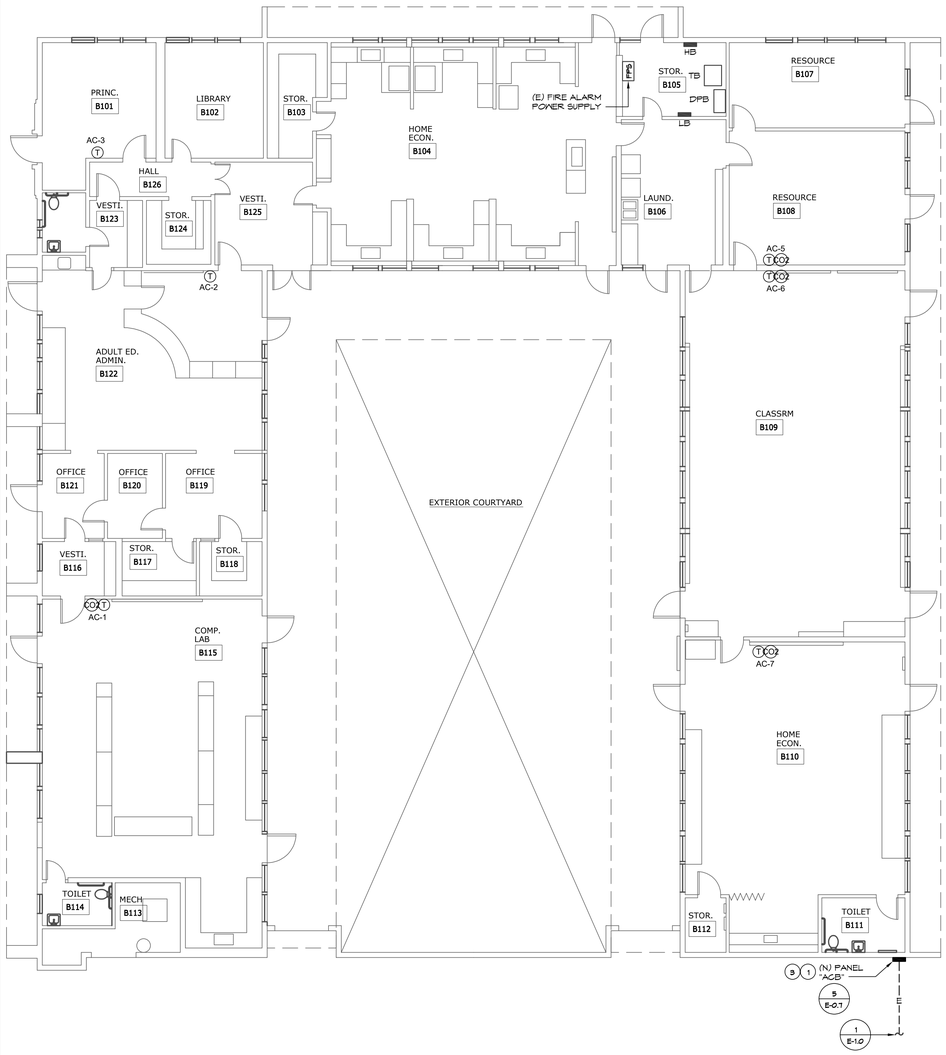
CONSULTANT

STAMP

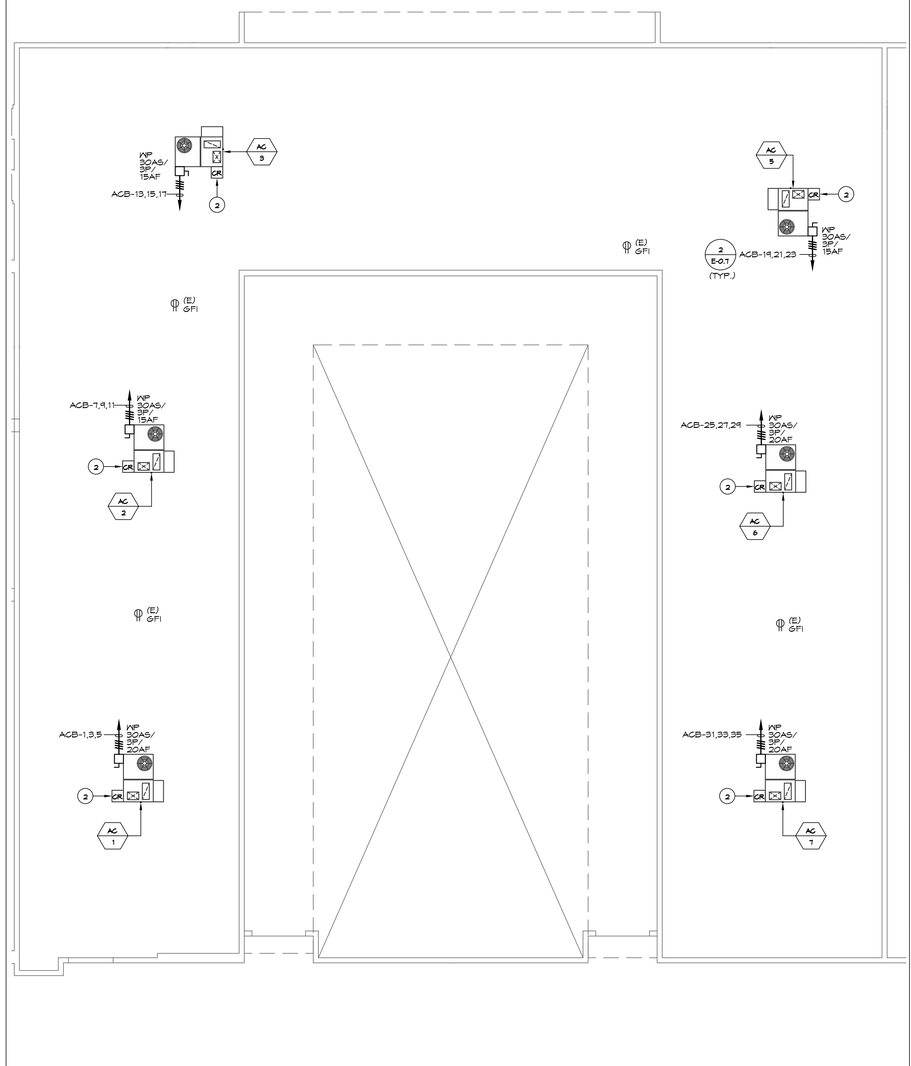
REGISTERED PROFESSIONAL ENGINEER
RICHARD E. YOVICO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING A REMODEL PLANS

SHEET NO:
E-1.1



REMODEL FLOOR PLAN | 1/8" = 1'-0" | 1



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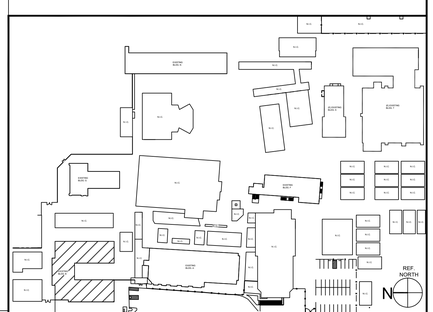

KEY PLAN | NOT TO SCALE

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3. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. SEE SINGLE LINE DIAGRAM FOR CONDUIT SIZE, WIRE SIZE AND QUANTITIES TO BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT.
5. ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED.
6. THE CONTRACTOR SHALL REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR EXACT EQUIPMENT LOCATIONS AND ELECTRICAL CONNECTIONS REQUIREMENTS / POINTS OF CONNECTION. CONTRACTOR SHALL PROVIDE ALL POWER AND CONTROL CONNECTIONS AS INDICATED ON THE MECHANICAL AND PLUMBING DRAWINGS.
7. NO EXPOSED CONDUIT ALLOWED ON THE ROOF. CONTRACTOR SHALL ROUTE ALL NEW HVAC UNIT BRANCH CIRCUITS IN THE ATTIC SPACE AND THEN UP THROUGH THE HVAC UNIT CURB TO UNIT DISCONNECT SWITCH.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
JAMES E. BANEKE
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

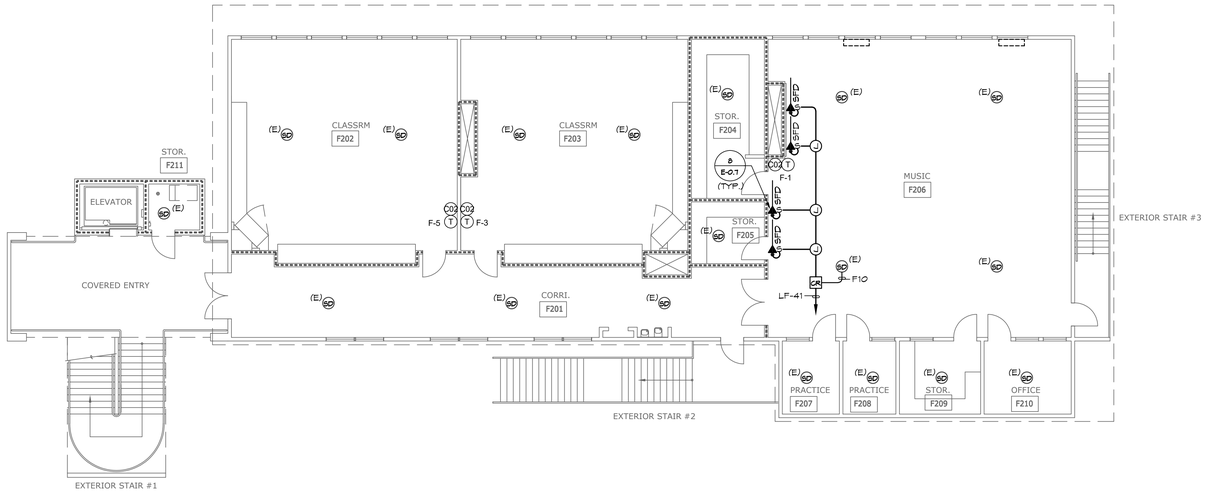
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOLIVA
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

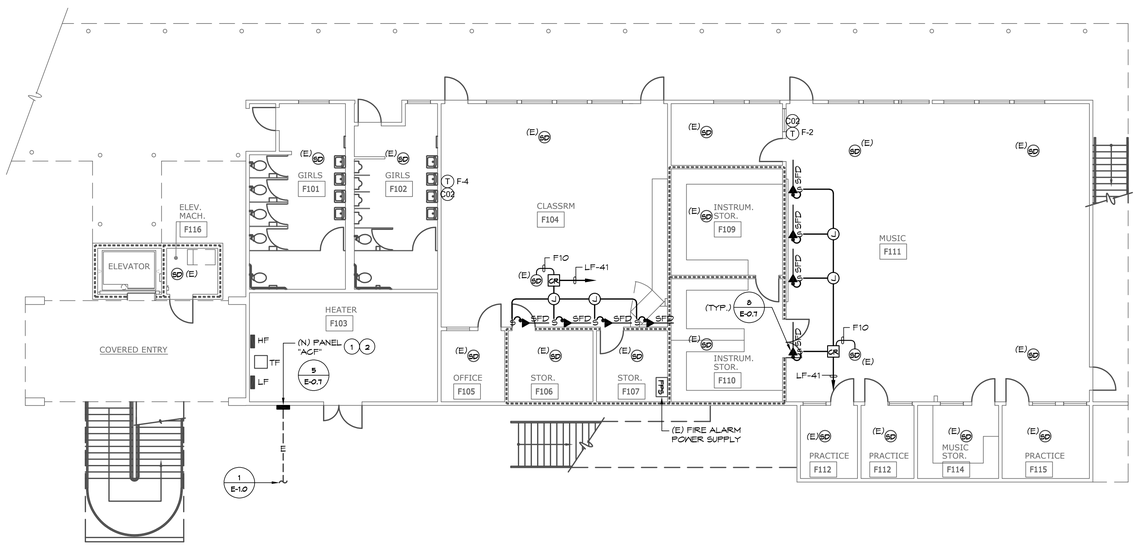
SHEET DESCRIPTION:
BUILDING B REMODEL PLANS

SHEET NO:
E-1.2



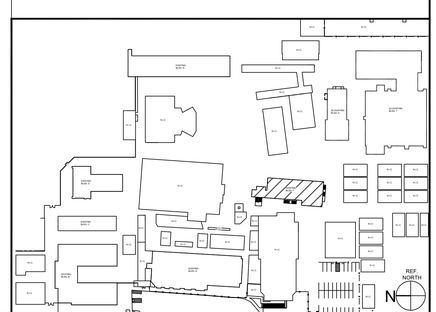
SECOND FLOOR REMODEL PLAN

1/8" = 1'-0" | 2



FIRST FLOOR REMODEL PLAN

1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

PLAN NOTES:

1. NEW BRANCH CIRCUIT PANEL AT REMOVED WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CONDUCTORS, FITTINGS, ETC. AS REQUIRED TO CONNECT EXISTING FEEDER FROM SWITCHGEAR "MSB" TO NEW BRANCH CIRCUIT PANEL.
2. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS TO BE CONCEALED.

CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. SEE SINGLE LINE DIAGRAM FOR CONDUIT SIZE, WIRE SIZE AND QUANTITIES TO BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT.
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6. THE CONTRACTOR SHALL REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR EXACT EQUIPMENT LOCATIONS AND ELECTRICAL CONNECTIONS REQUIREMENTS / POINTS OF CONNECTION. CONTRACTOR SHALL PROVIDE ALL POWER AND CONTROL CONNECTIONS AS INDICATED ON THE MECHANICAL AND PLUMBING DRAWINGS.
7. NO EXPOSED CONDUIT ALLOWED ON THE ROOF. CONTRACTOR SHALL ROUTE ALL NEW HVAC UNIT BRANCH CIRCUITS IN THE ATTIC SPACE AND THEN UP THROUGH THE HVAC UNIT CURB TO UNIT DISCONNECT SWITCH.

AGENCY APPROVAL

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APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANESH
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

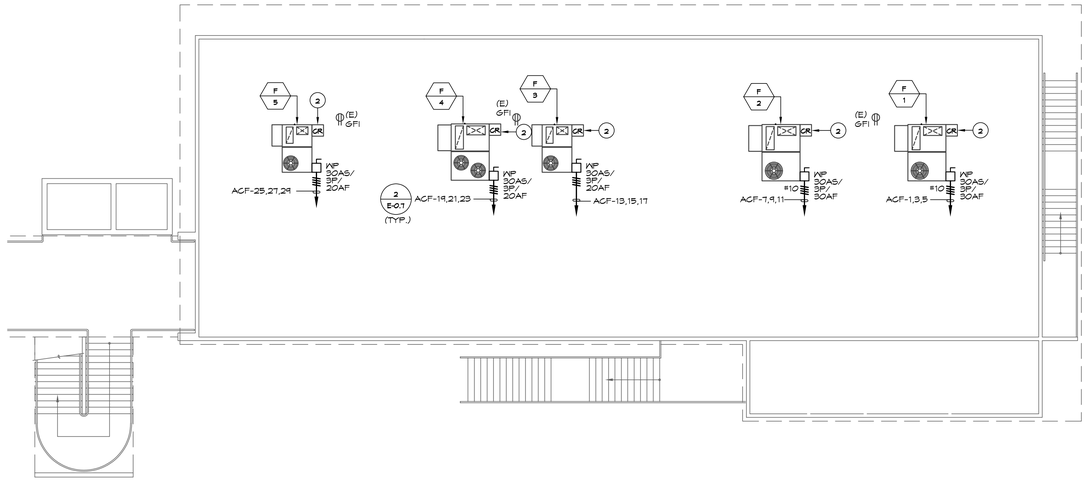
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING F
REMODEL
FLOOR PLANS

SHEET NO:
E-1.3



REMODEL ROOF PLAN | 1/8" = 1'-0" | 1

PLAN NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CABLES / CONDUCTORS AS REQUIRED TO ENSURE FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF RECONNECTION AND REMODEL WORK. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK. REFER TO DEMOLITION PLAN FOR ADDITIONAL REQUIREMENTS.

CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
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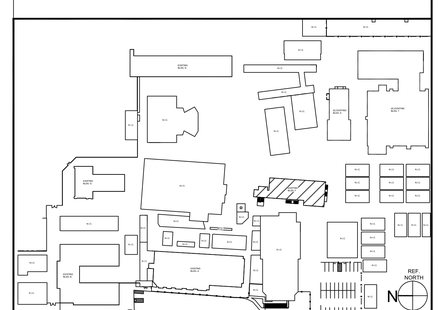
8. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS TO BE CONCEALED.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

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APP: 03-126002 INC:
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STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
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JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

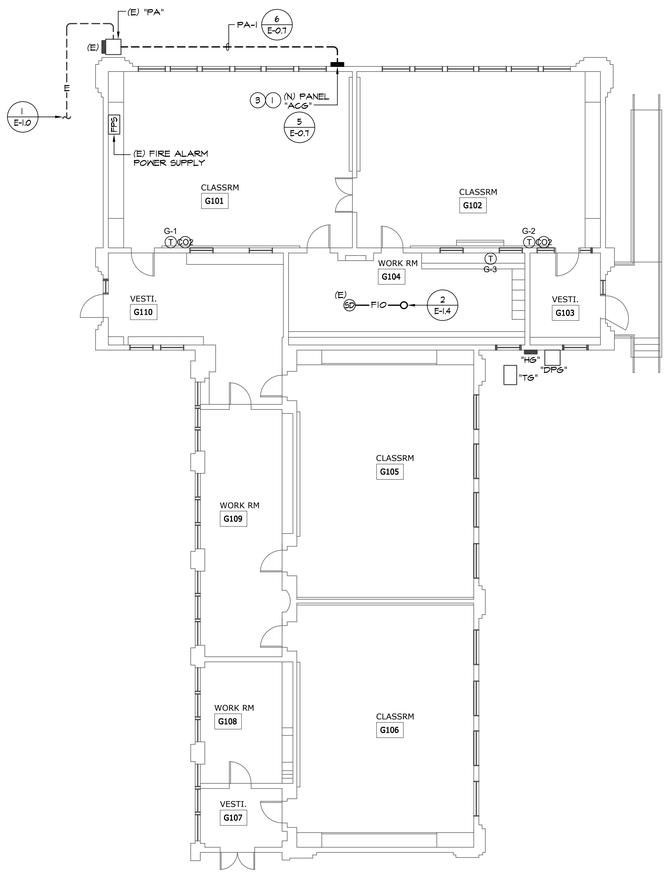
CONSULTANT

STAMP

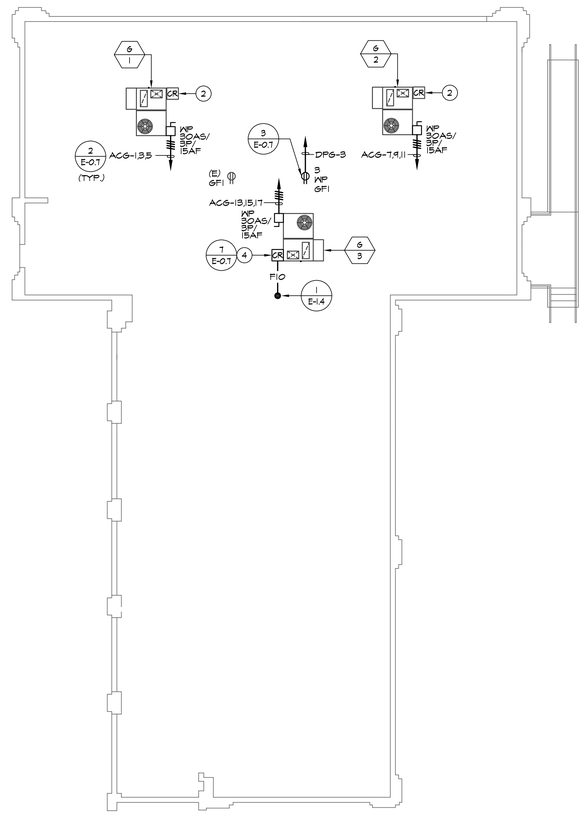
REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING F
REMODEL
ROOF PLAN

SHEET NO:
E-1.3.1



REMODEL FLOOR PLAN | 1/8" = 1'-0" | 1



REMODEL ROOF PLAN | 1/8" = 1'-0" | 2

PLAN NOTES:

1. NEW NEMA 3R, THREE PHASE THREE WIRE BRANCH CIRCUIT PANEL.
2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL REGONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CABLES / CONDUCTORS AS REQUIRED TO ENSURE FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF REGONNECTION AND REMODEL WORK. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK. REFER TO DEMOLITION PLAN FOR ADDITIONAL REQUIREMENTS.
3. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS TO BE CONCEALED.
4. NEW CONTROL RELAY FOR UNIT SHUT DOWN. SEE DRAWING E-0.7, DETAIL 7, FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL PROVIDE / PERFORM ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK.

CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
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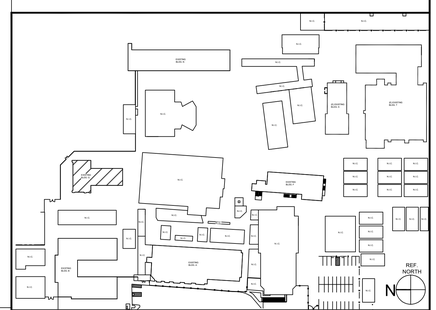
6. THE CONTRACTOR SHALL REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR EXACT EQUIPMENT LOCATIONS AND ELECTRICAL CONNECTIONS REQUIREMENTS / POINTS OF CONNECTION. CONTRACTOR SHALL PROVIDE ALL POWER AND CONTROL CONNECTIONS AS INDICATED ON THE MECHANICAL AND PLUMBING DRAWINGS.
7. NO EXPOSED CONDUIT ALLOWED ON THE ROOF. CONTRACTOR SHALL ROUTE ALL NEW HVAC UNIT BRANCH CIRCUITS IN THE ATTIC SPACE AND THEN UP THROUGH THE HVAC UNIT CURB TO UNIT DISCONNECT SWITCH.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANEE K. ABDO
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD , CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

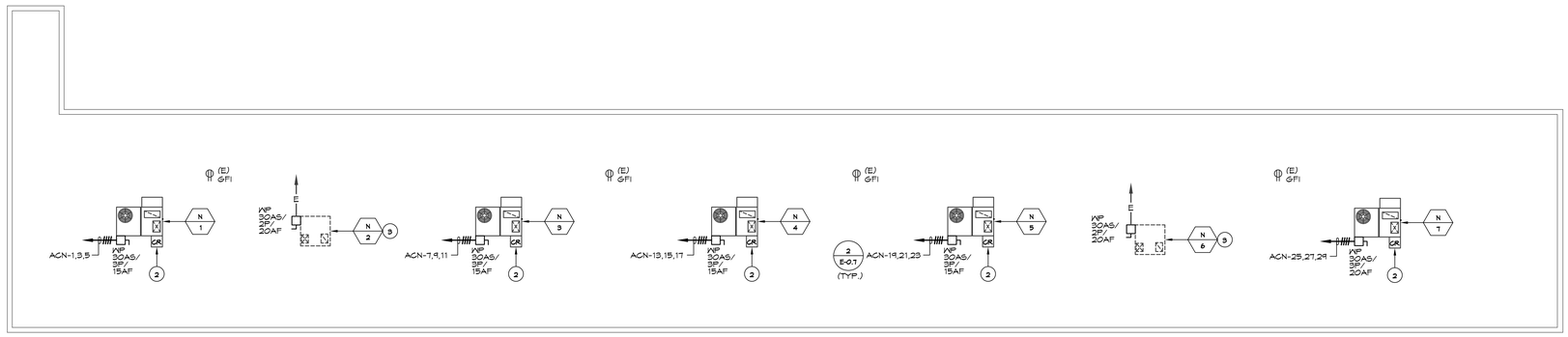
CONSULTANT

STAMP

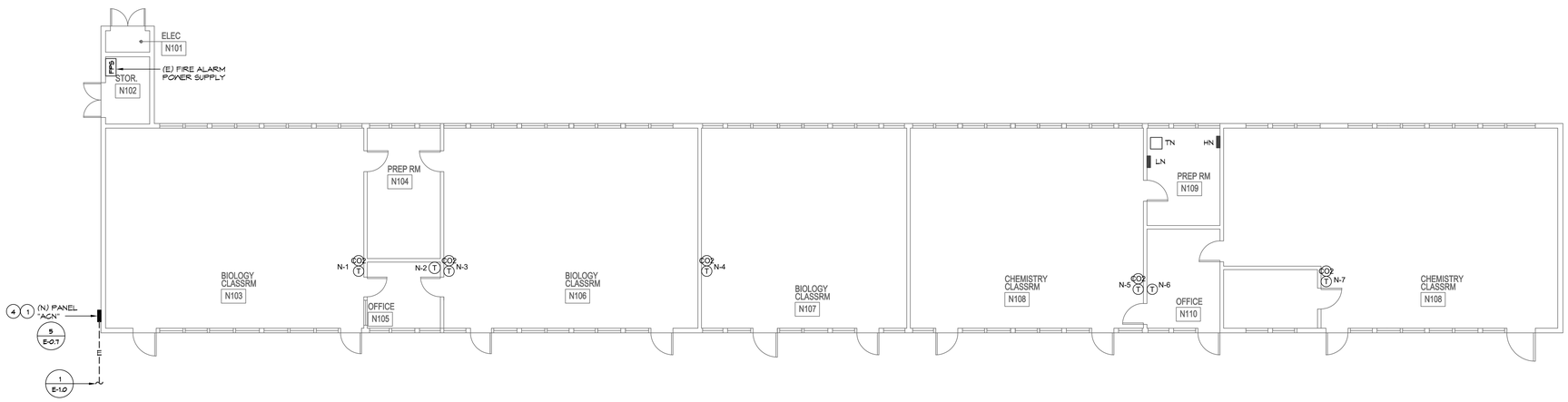
REGISTERED PROFESSIONAL ENGINEER
EDWARD E. SOTKO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING G
REMODEL
PLANS

SHEET NO:
E-1.4



REMODEL ROOF PLAN | 1/8" = 1'-0" | 2



REMODEL FLOOR PLAN | 1/8" = 1'-0" | 1

PLAN NOTES:

1. NEW BRANCH CIRCUIT PANEL AT REMOVED WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CONDUCTORS, FITTINGS, ETC. AS REQUIRED TO CONNECT EXISTING FEEDER FROM DISTRIBUTION BOARD "PB" TO NEW BRANCH CIRCUIT PANEL.
2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CABLES / CONDUCTORS AS REQUIRED TO ENSURE FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF RECONNECTION AND REMODEL WORK. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK. REFER TO DEMOLITION PLAN FOR ADDITIONAL REQUIREMENTS.
3. NEW HVAC UNIT AND NEW DISCONNECT SWITCH AT REMOVED HVAC UNIT AND DISCONNECT SWITCH. CONTRACTOR SHALL CONNECT NEW HVAC UNIT TO THE EXISTING CONDUCTORS PREVIOUSLY FEEDING THE REMOVED HVAC UNIT. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT / CONDUCTORS AS REQUIRED TO ENSURE A FULLY OPERABLE HVAC UNIT UPON COMPLETION OF INSTALLATION. REFER TO DEMOLITION PLAN FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS TO BE CONCEALED.

CONSTRUCTION NOTES:

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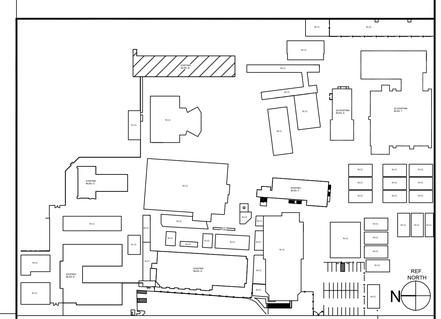

KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

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optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
LMF BANEKJE
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

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ENGINEER:	OED
DSA NUMBER:	N/A

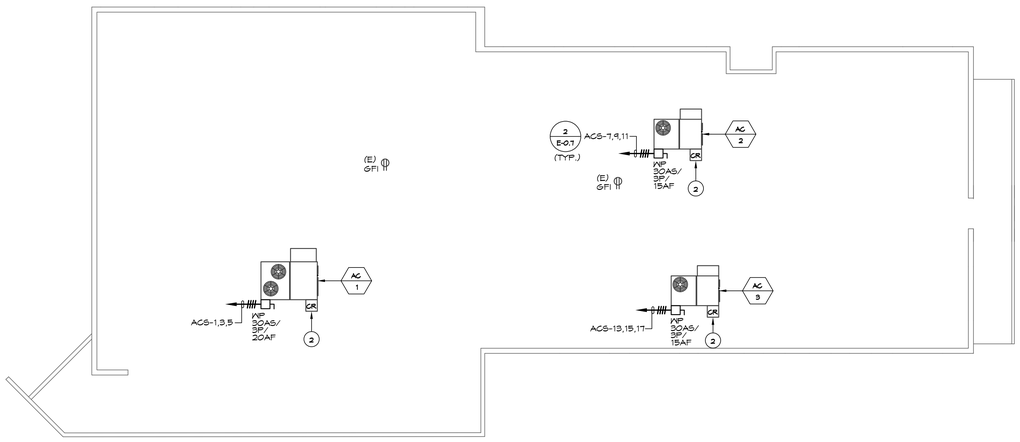
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLAND E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

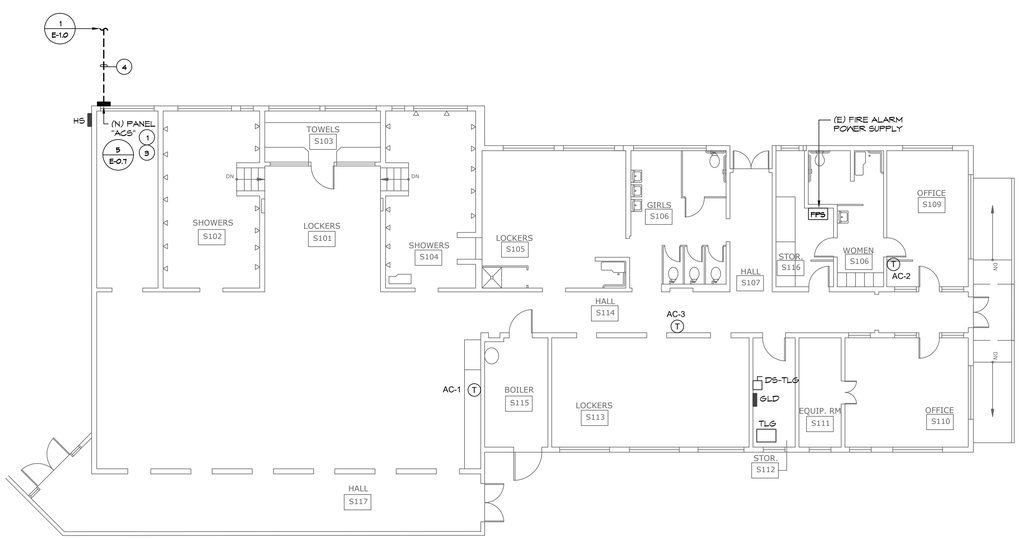
SHEET DESCRIPTION:
BUILDING N
REMODEL
PLANS

SHEET NO:
E-1.5



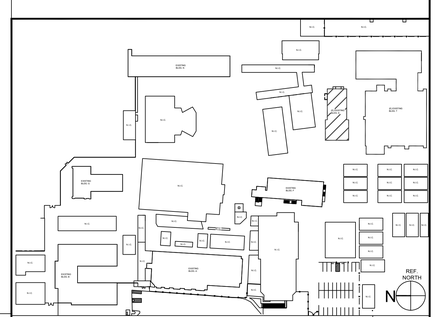
N REF. NORTH

REMODEL ROOF PLAN | 1/8" = 1'-0" | 2



N REF. NORTH

REMODEL FLOOR PLAN | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

PLAN NOTES:

1. NEW BRANCH CIRCUIT PANEL AT REMOVED WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CONDUCTORS, FITTINGS, ETC. AS REQUIRED TO CONNECT EXISTING FEEDER FROM SWITCHGEAR "MSB" TO NEW BRANCH CIRCUIT PANEL.
2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CABLES / CONDUCTORS AS REQUIRED TO ENSURE FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF RECONNECTION AND REMODEL WORK. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK. REFER TO DEMOLITION PLAN FOR ADDITIONAL REQUIREMENTS.
3. CONTRACTOR SHALL CONCEAL ALL NEW SURFACE MOUNTED CONDUITS ON EXISTING BUILDINGS WITH A SHEET METAL STRUCTURE. SHEET METAL STRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING BUILDING OR SURFACE THE NEW CONDUITS ARE ATTACHED TO. ENTIRE LENGTH OF NEW CONDUITS TO BE CONCEALED.
4. NEW (1) 1 1/2"C. W/ 3#1/0 + 1#6 GND. REFER TO REMODEL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.

CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
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6. THE CONTRACTOR SHALL REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR EXACT EQUIPMENT LOCATIONS AND ELECTRICAL CONNECTIONS REQUIREMENTS / POINTS OF CONNECTION. CONTRACTOR SHALL PROVIDE ALL POWER AND CONTROL CONNECTIONS AS INDICATED ON THE MECHANICAL AND PLUMBING DRAWINGS.
7. NO EXPOSED CONDUIT ALLOWED ON THE ROOF. CONTRACTOR SHALL ROUTE ALL NEW HVAC UNIT BRANCH CIRCUITS IN THE ATTIC SPACE AND THEN UP THROUGH THE HVAC UNIT CURB TO UNIT DISCONNECT SWITCH.

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BANEKE
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1
2		
3		
4		

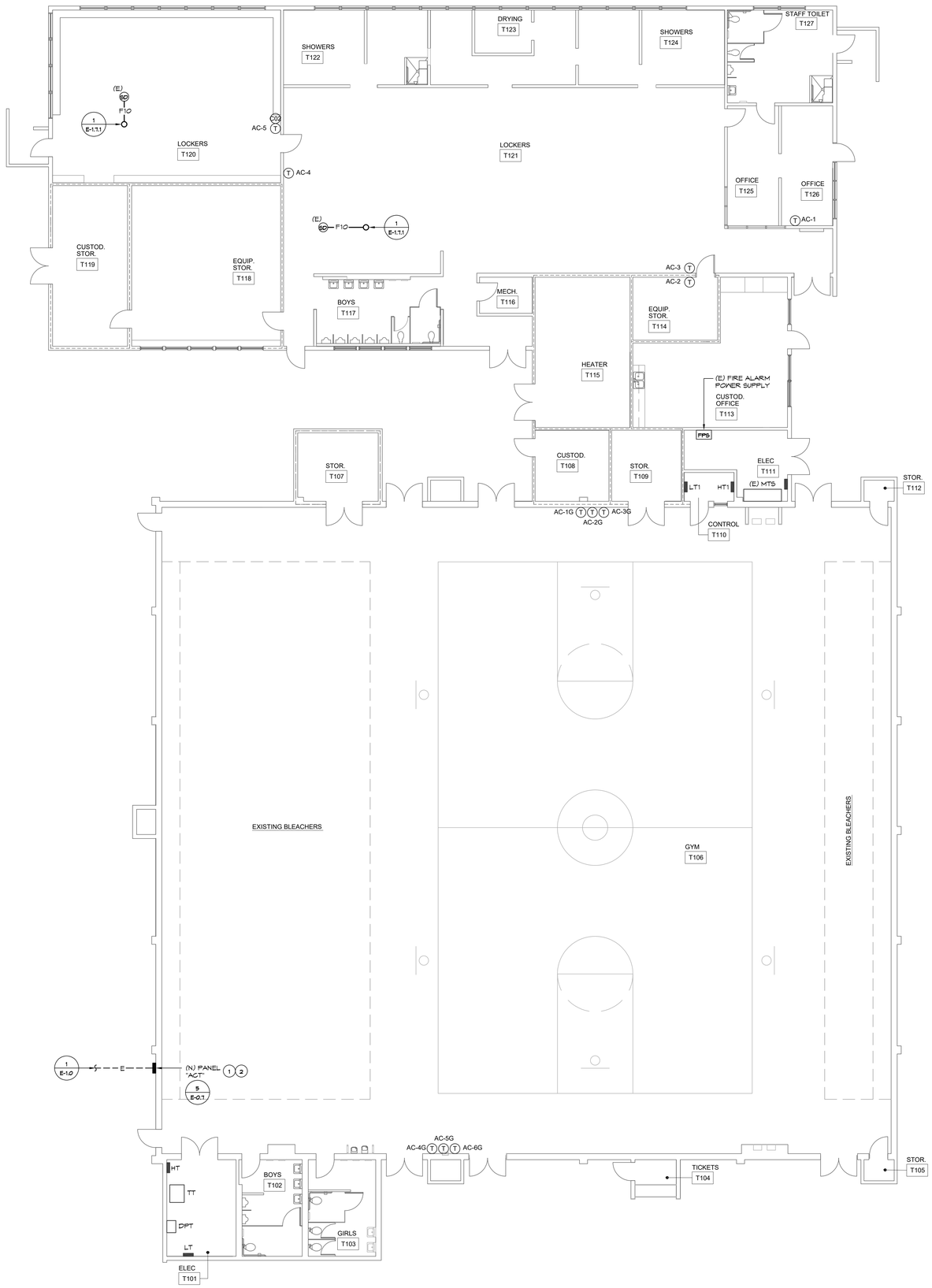
JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	CBF
CHECK:	LMF
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A
CONSULTANT	

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING S
REMODEL
PLANS

SHEET NO:
E-1.6



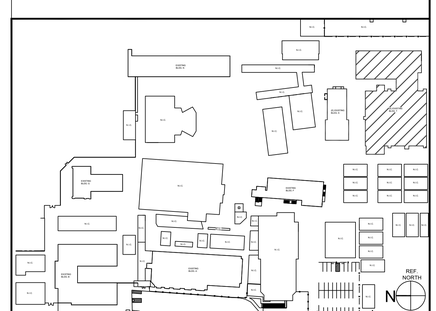
REMODEL FLOOR PLAN

1/8" = 1'-0"

1

REF. NORTH

N



KEY PLAN

NOT TO SCALE

PLAN NOTES:

1. NEW BRANCH CIRCUIT PANEL AT REMOVED WALL MOUNTED HVAC UNIT(S) DISCONNECT SWITCH. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CONDUCTORS, FITTINGS, ETC. AS REQUIRED TO CONNECT EXISTING FEEDER FROM SWITCHGEAR "MSB" TO NEW BRANCH CIRCUIT PANEL.
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CONSTRUCTION NOTES:

1. REFER TO GENERAL NOTES AND DEMOLITION NOTES, DRAWING E-0.1, FOR ADDITIONAL REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORY (TYPED) AT ALL EXISTING DISTRIBUTION BOARDS AND BRACH CIRCUIT PANELS FOR ALL REMOVED AND ADDED HVAC EQUIPMENT.
3. THE CONTRACTOR SHALL NOTE THAT THE DRAWING IS DIAGRAMMATIC. EXACT ROUTING OF EXISTING CONDUITS AND LOCATION OF EXISTING JUNCTION BOXES, DISCONNECT SWITCHES, AND PULL BOXES SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
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APP: 03-126002 INC:

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SS ☑ FLS ☑ ACS ☐

DATE: 10/16/2026

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REGISTERED PROFESSIONAL ENGINEER
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No. M29353
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MECHANICAL
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PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
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CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: N/A

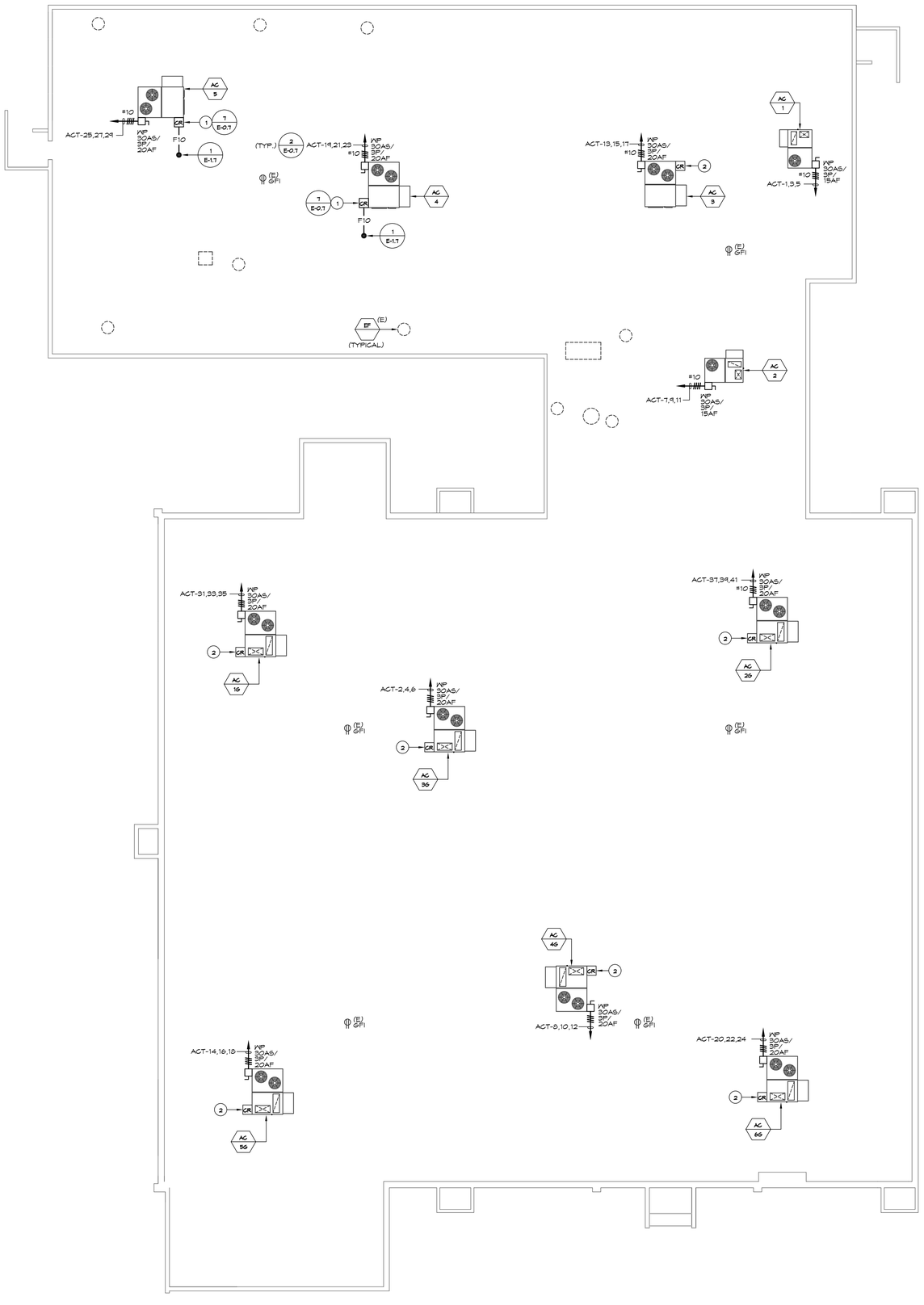
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLAND E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING T
REMODEL
PLAN

SHEET NO:
E-1.7



PLAN NOTES:

1. NEW CONTROL RELAY FOR UNIT SHUT DOWN. SEE DRAWING E-0.7, DETAIL 1, FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL PROVIDE / PERFORM ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK.
2. EXISTING FIRE ALARM CONTROL RELAY FOR HVAC UNIT SHUT DOWN. CONTRACTOR SHALL RECONNECT THE EXISTING CONTROL RELAY TO THE EXISTING FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE AND EXTEND NEW CONDUIT, CABLES / CONDUCTORS AS REQUIRED TO ENSURE FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF RECONNECTION AND REMODEL WORK. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL FIRE ALARM SYSTEM PROGRAMMING IN ORDER TO HAVE A FULLY OPERABLE CONTROL RELAY UPON COMPLETION OF WORK. REFER TO DEMOLITION PLAN FOR ADDITIONAL REQUIREMENTS.

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REF. NORTH

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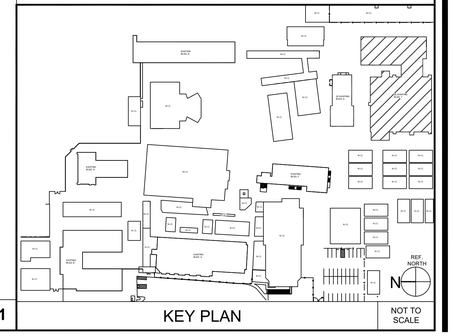
REMODEL ROOF PLAN | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

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APP: 03-126002 INC:
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SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

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REGISTERED PROFESSIONAL ENGINEER
CRAIG B. BANESKE
No. M29353
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO:	501-26-0009
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ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	N/A

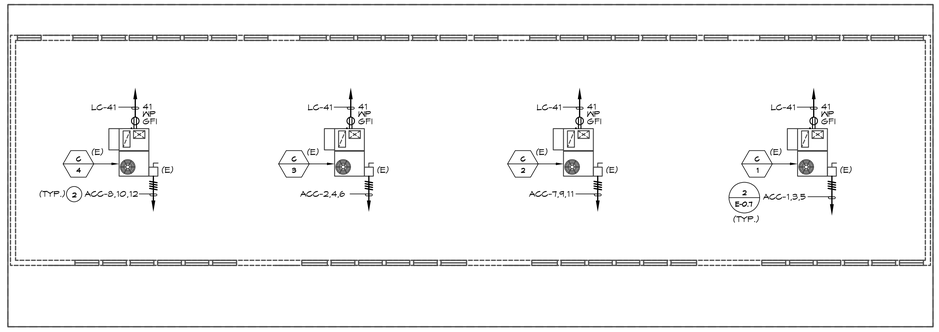
CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
HOANG E. SOTO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING T
REMODEL
ROOF PLAN

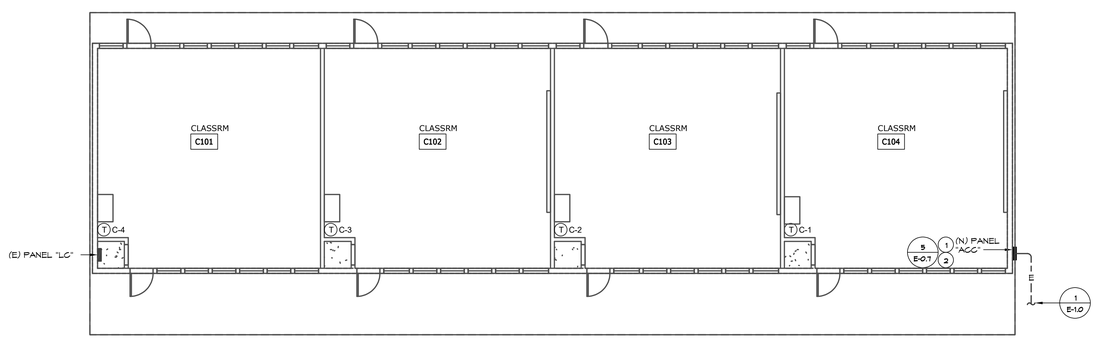
SHEET NO:
E-1.7.1



REF. NORTH

N

REMODEL ROOF PLAN | 1/8" = 1'-0" | 2



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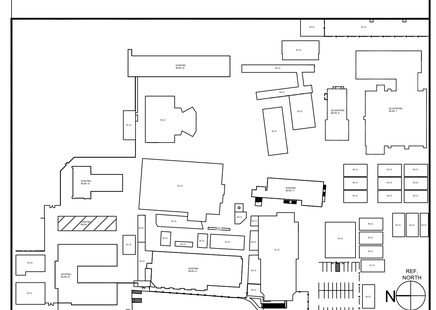
REMODEL FLOOR PLAN | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

PLAN NOTES:

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REGISTERED PROFESSIONAL ENGINEER
ABBY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	7/31/2026	Backcheck # 1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: CBF
CHECK: LMF
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

REGISTERED PROFESSIONAL ENGINEER
ROLANDO E. SOTELO
No. E17229
6/30/28
ELECTRICAL
STATE OF CALIFORNIA

SHEET DESCRIPTION:
BUILDING C REMODEL PLANS

SHEET NO:
E-1.8

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 2025 CBC Sections 1617A.1.18 through 1617A.1.26 and ASCE 7-22 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 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

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 7-22 Section 13.3 as defined in ASCE 7 Sections 13.6.5, 13.6.6, 13.6.7, 13.6.8; and 2025 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. 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 CODES

BUILDING OCCUPANCY CLASSIFICATION: -

THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF:

CODES

2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2025 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
2025 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
2025 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
2025 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
2025 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2025 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
2025 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2025 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2025 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXACT LOCATION OF EXISTING LINES, LATERALS AND WYES BEFORE STARTING. SHOULD IT BE NECESSARY TO REROUTE LINES DUE TO CONDITIONS FOUND ON THE SITE OR IF INDICATED P.O.C. CANNOT BE MADE TO THE LINES AS FOUND, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT BEFORE INSTALLING ANY WORK WHICH MAY BE AFFECTED.
2. OFFSET PIPES AS REQUIRED TO CLEAR MECHANICAL DUCTWORK.
3. SEAL AND FLASH ALL PENETRATIONS THROUGH ROOF WATERTIGHT.
4. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF ALL A.C. UNITS.
5. UNLESS OTHERWISE NOTED, ALL CONDENSATE DROPS SHALL BE CONCEALED IN WALLS.
6. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS AND LOCATIONS ARE NOT EXACTLY LOCATED. THE CONTRACTOR SHALL LOCATE ALL OFFSETS, BENDS, AND SPECIAL FITTINGS TO SUIT JOB SITE CONDITIONS. THEREFORE THE CONTRACTOR SHALL MAKE HIMSELF FULLY AWARE OF ALL EXISTING CONDITIONS AND LOCATE ALL REQUIRED SPECIAL FITTINGS TO SUIT EXISTING CONDITIONS.
7. THIS CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT HIS WORK AND EQUIPMENT. HE SHALL COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER TRADES AND ALL JOB CONDITIONS.
8. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, CHARGES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENT AGENCIES.
9. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORKS AS SHOWN ON THE PLANS SHALL BE INCURRED BY THE CONTRACTOR, ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
10. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM, TO THE FULL SATISFACTION OF EACH REPRESENTATIVE. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.
11. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF MECHANICAL EQUIPMENT MATERIAL ARISES ON THE DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON DRAWINGS AND/OR IN THE SPECIFICATION TO ENSURE COMPLETE AND OPERABLE SYSTEMS.
12. ALL PIPING INSULATION AND SEALING MATERIALS SHALL HAVE FLAME SPREAD RATING NOT EXCEEDING 25 AND SMOKE DEVELOPED RATING NOT EXCEEDING 50.
13. BEFORE ORDERING ANY PIECE OF EQUIPMENT, THE CONTRACTOR SHALL PROVIDE EQUIPMENT SUBMITTALS, AND SHOP DRAWINGS WITH EQUIPMENT DIMENSIONS, AND SITE CLEARANCE AVAILABLE. WHERE REQUIRED BY SPACE LIMITATIONS HAVE UNITS SHIPPED IN SECTIONS.
14. ALL PIPE BRANCH CONNECTIONS SHALL OFF-SET. NO "BULL HEAD" CONNECTIONS WILL BE ALLOWED.
15. ALL EXISTING PLUMBING LINES SHOWN ARE TAKEN FROM EXISTING DRAWINGS WHICH INDICATE APPROXIMATE LOCATION ONLY. THE CONTRACTOR IS TO INCLUDE IN HIS BID TO PERFORM FIELD INVESTIGATION TO PIN POINT THE EXACT LOCATION AS REQUIRED FOR DEMOLITION OR MAKING NEW CONNECTION.
16. INTERRUPTION OF EXISTING SERVICES: THE CONTRACTOR'S ATTENTION IS CALLED TO THE PRESENCE OF EXISTING, CONDUIT, PIPING, ETC. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGE BY HIM OR HIS CAUSED WORK TO EXISTING BUILDINGS, CONDUIT, PIPING, PLANTS, ETC. NEW WORK AND INSTALLATIONS SHALL BE MADE WITH MINIMAL INTERRUPTIONS OF SERVICES TO EXISTING BUILDINGS ANY INTERRUPTIONS REQUIRED SHALL BE SCHEDULED TO MINIMIZE INCONVENIENCE TO THE OWNER, AND AT TIMES AS APPROVED IN ADVANCE BY THE ARCHITECT. NEW WORK AND INSTALLATIONS SHALL NOT IMPAIR THE PROPER FUNCTIONING OF THE EXISTING FACILITY. THE COMPLETED PROJECT SHALL BE A PROPERLY FUNCTIONING ENTITY THROUGHOUT. FURNISH ALL LABOR AND MATERIALS REQUIRED TO RELOCATE, REMOVE, REINSTALL, RECONNECT, REPLACE, ETC., ANY EXISTING PIPING TO ACCOMMODATE THE WORK. MATERIALS SHALL BE AS SPECIFIED UNLESS OTHERWISE APPROVED IN WRITING BY THE ARCHITECT. CONTRACTOR SHALL INCLUDE IN HIS BID ANY EXTRA WORK REQUIRED TO MINIMIZE SHUTDOWN TIME.
17. WHERE EQUIPMENT IS NOTED AND/OR SHOWN TO BE REMOVED AND/OR RELOCATED, THIS REMOVAL AND/OR RELOCATION SHALL INCLUDE ALL PIPING, SUPPORT, TRIM, ETC. CONSIDERED TO BE A FUNCTIONING PART OF THE ITEM.
18. ALL EXISTING PIPING AND EQUIPMENT THAT IS REMOVED SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
19. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.
20. CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS, FLOORS AND CEILING OPENED DURING CONSTRUCTION TO MATCH EXISTING.
21. ALL UTILITIES BEING REMOVED FOR THE PROJECT SHALL BE REMOVED BACK TO ITS SOURCE.
22. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.
23. ALL PIPING AND RELATED VALVES AND FITTINGS TO BE DEMOLISHED SHALL BE DISPOSED AND REMOVED FROM THE PROJECT SITE.
24. ALL PIPING SHOWN TO BE DEMOLISHED AND/OR REMOVED SHALL BE CAPPED OFF AT THE POINT OF DEMOLITION AND CLEAR FROM INTERFERENCE FROM NEW WORK BEING INSTALLED.
25. ANY DISCREPANCIES ARISE BETWEEN THE PLUMBING DRAWINGS AND OTHER DISCIPLINES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BID AND CONSTRUCTION.
26. PROVIDE INSULATION FOR ALL CONDENSATE DRAIN INDOOR.
27. ALL CONDENSATE DRAIN PIPING SHALL SLOPE 1/8"/FT. MINIMUM.
28. PAINT ALL EXPOSED COPPER PIPING PER APPROVED COLOR TO MATCH EXTERIOR BUILDING COLOR, TYPICAL.

LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER
CD	CD	CONDENSATE DRAIN
OCD	OCD	OVERFLOW CONDENSATE DRAIN
TP	TP	TRAP PRIMER
G	G	GAS LINE
		DIRECTION OF FLOW
	SOV	SHUT-OFF VALVE
	SOV/GC	SHUT-OFF VALVE OR GAS COCK IN YARD BOX
	GC	GAS COCK
	BV	BALANCING VALVE
	FCO	FLOOR CLEANOUT
	WCO	CLEANOUT
		RISER UP
		RISER DOWN
	ABV	ABOVE
	BEL	BELOW
	CLG	CEILING
	CONT	CONTINUATION
	DN	DOWN
	EXIST	EXISTING
	FLR	FLOOR
	POC	POINT OF CONNECTION
#		DEMOLITION KEYNOTE
#		REMODEL KEYNOTE
		POINT OF DISCONNECT
	RT	REFRIGERANT TONNAGE

PIPE MATERIAL SCHEDULE

SERVICE	ABBR:		MATERIAL: SEAMLESS COPPER TUBING, TYPE L DRAWN TEMPER, ASTM B88	CPVC SCH 80 PAINTED WITH UV PROTECTION	COPPER TYPE M 95/5 SOLDER	BLACK STEEL SCH 40	REMARKS
CONDENSATE DRAIN	(CD)	INDOOR			●		GRAVITY @ 1% SLOPE MIN. PROVIDE INSULATION FOR INDOOR PIPING. PAINTED W/ UV INHIBITOR FOR EXPOSED OUTDOOR PIPE.
		OUTDOOR			●		

SHEET INDEX

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3	PD-1.2	PLUMBING DEMO PLAN - BUILDING B
4	PD-1.3	PLUMBING DEMO FLOOR PLANS - BUILDING F
5	PD-1.3.1	PLUMBING DEMO ROOF PLAN - BUILDING F
6	PD-1.4	PLUMBING DEMO PLAN - BUILDING G
7	PD-1.5	PLUMBING DEMO PLAN - BUILDING N
8	PD-1.6	PLUMBING DEMO PLAN - BUILDING S
9	PD-1.7	PLUMBING DEMO FLOOR PLAN - BUILDING T
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11	P-1.1	PLUMBING REMODEL PLAN - BUILDING A
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19	P-1.7.1	PLUMBING REMODEL ROOF PLAN - BUILDING T
20	P-4.1	PLUMBING DETAILS

AGENCY APPROVAL

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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER ABBY BAKEVIER No. M25253 Exp. 6/30/27 MECHANICAL STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

JOB NO:	501-26-0009
DATE:	08/24/2026
DRAWN:	JE
CHECK:	HA
ARCHITECT:	PETRA
ENGINEER:	OED
DSA NUMBER:	126002

CONSULTANT

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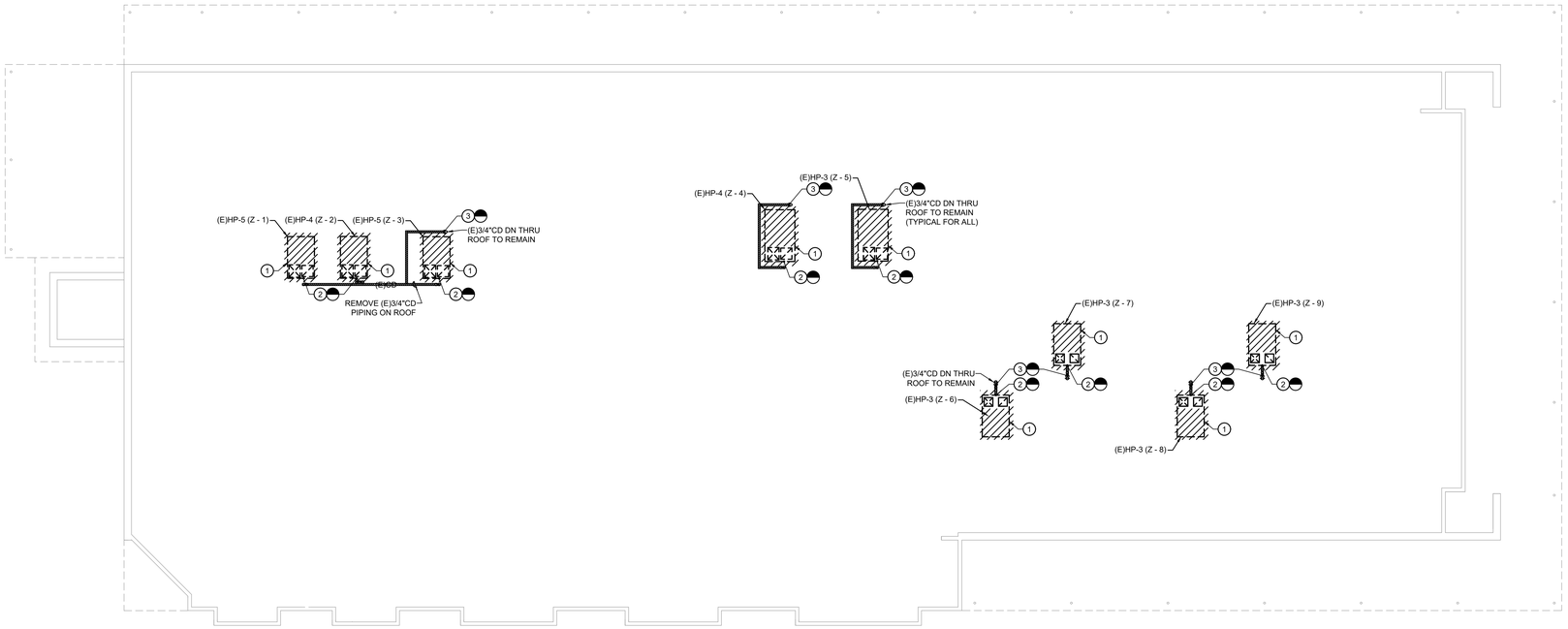
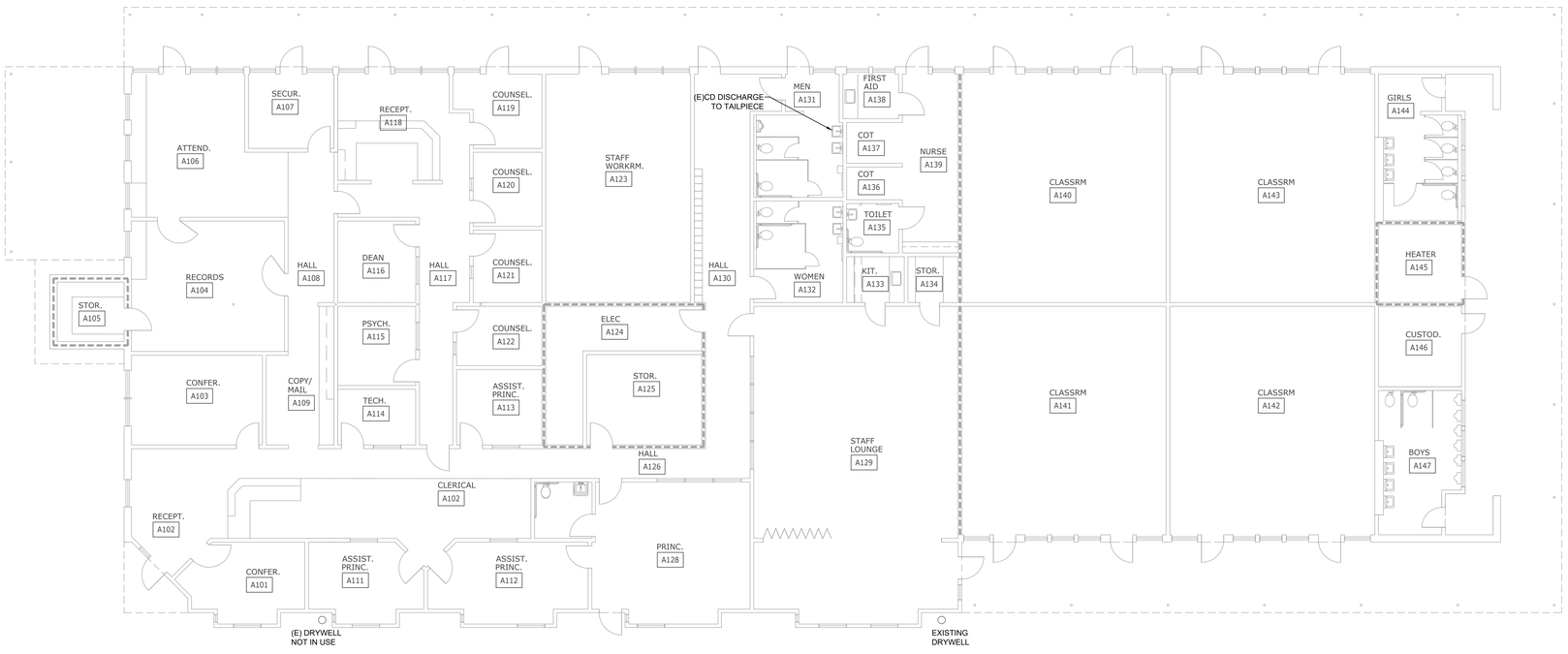
SHEET DESCRIPTION:
PLUMBING GENERAL NOTES & LEGEND

SHEET NO:
P-0.1 ADD01



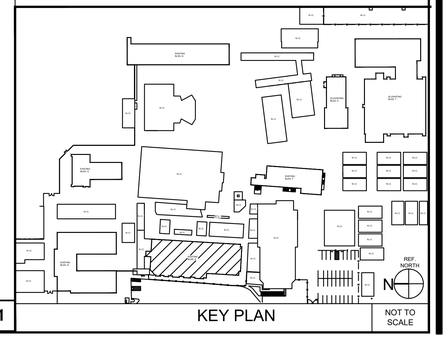
PLUMBING DEMOLITION ROOF PLAN - BUILDING A | 1/8" = 1'-0" | 2



PLUMBING DEMOLITION FLOOR PLAN - BUILDING A | 1/8" = 1'-0" | 1

DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED.
3. EXISTING 3/4"CD TO BE CAPPED ABV ROOF.



KEY PLAN | NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER
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LYNWOOD ,CALIFORNIA 90262

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JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

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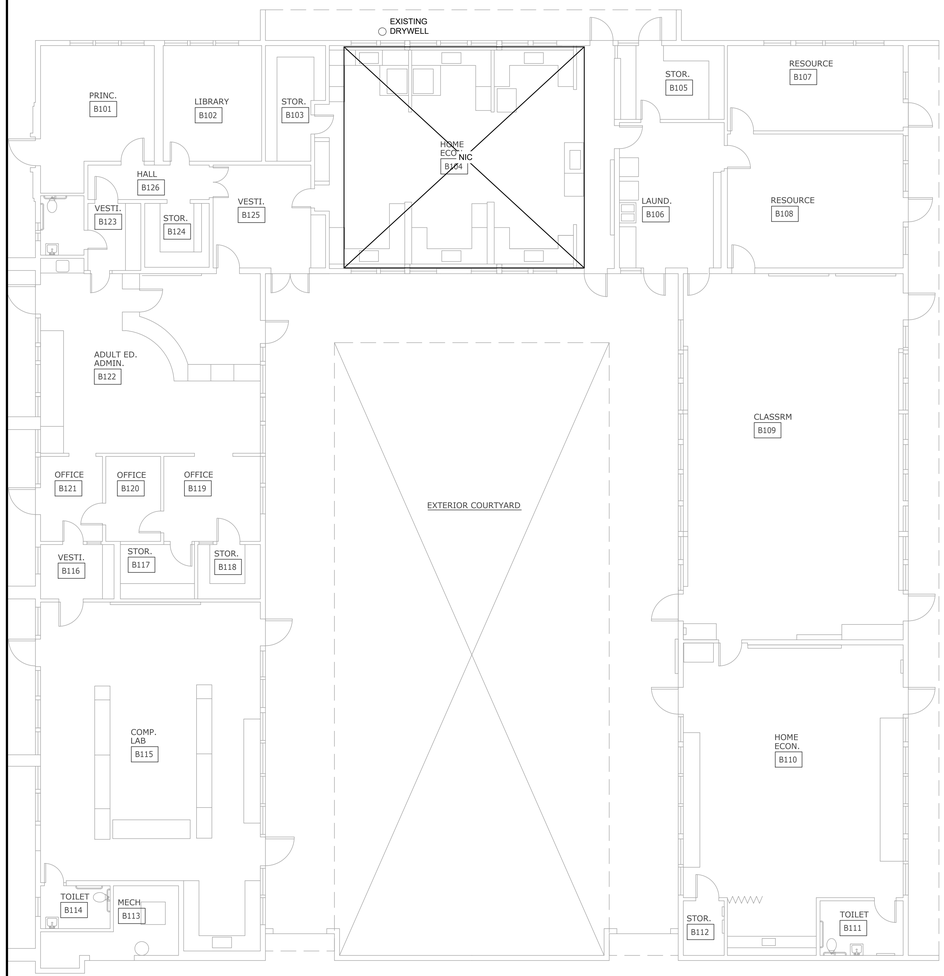
SHEET DESCRIPTION:
PLUMBING DEMO PLAN - BUILDING A

SHEET NO:
PD-1.1



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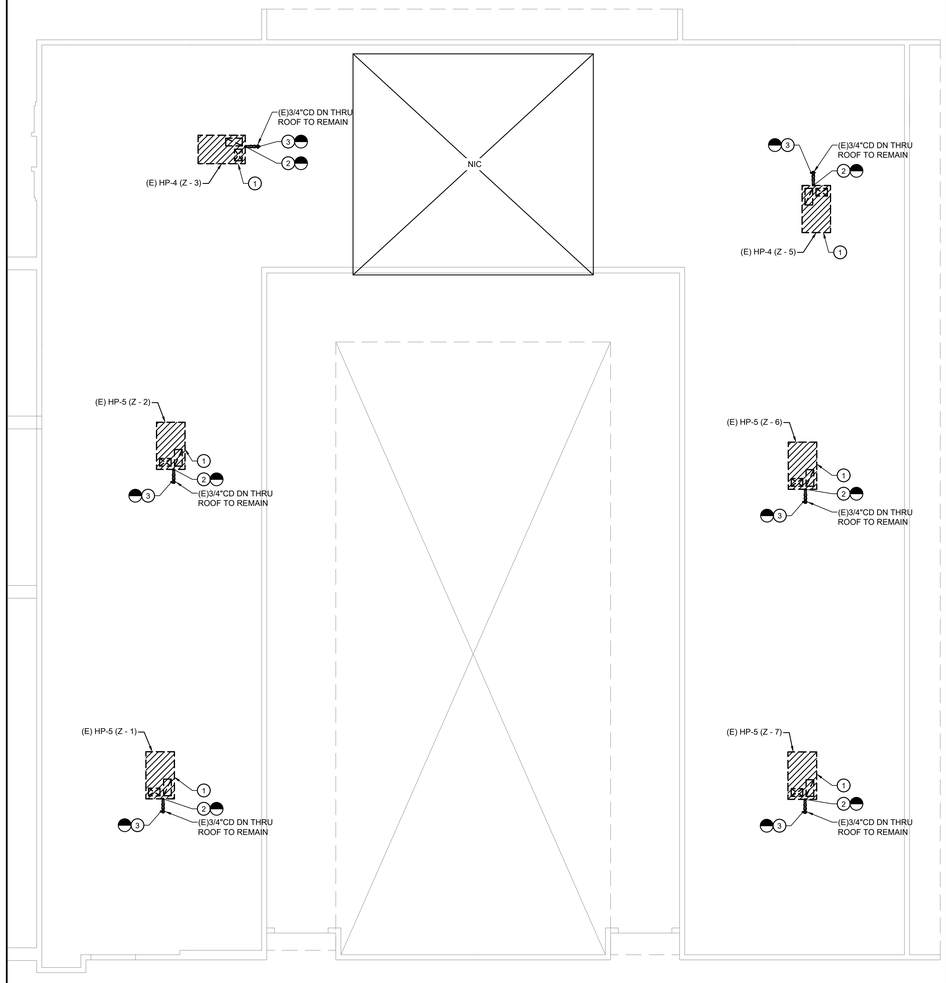
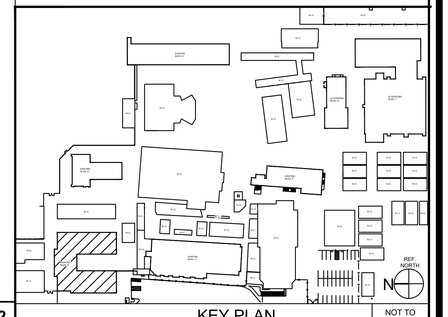


PLUMBING DEMOLITION ROOF PLAN - BUILDING B | 1/8" = 1'-0" | 2

DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED.
3. EXISTING 3/4"CD TO BE CAPPED ABV ROOF.



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LYNWOOD ,CALIFORNIA 90262

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1	07/31/2026	Backcheck #1
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4		

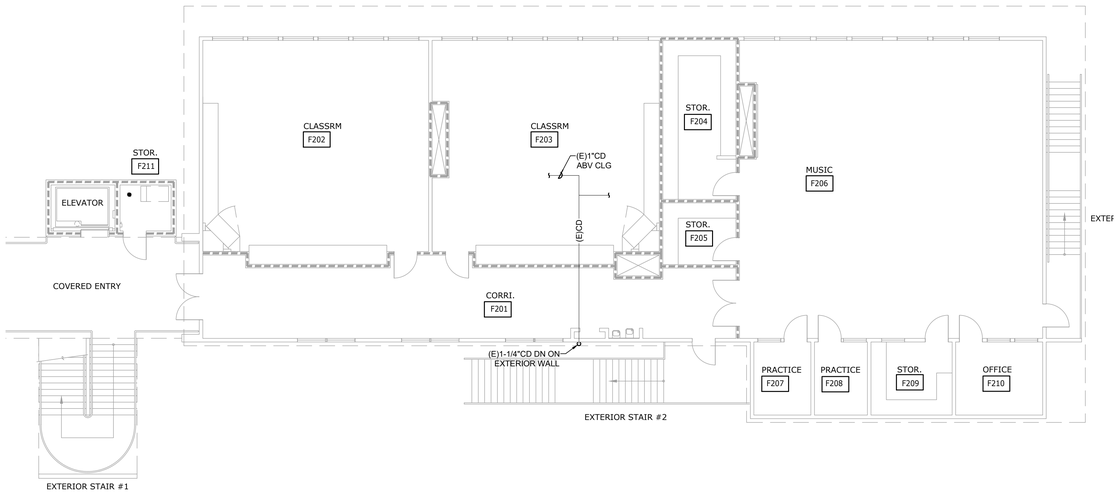
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

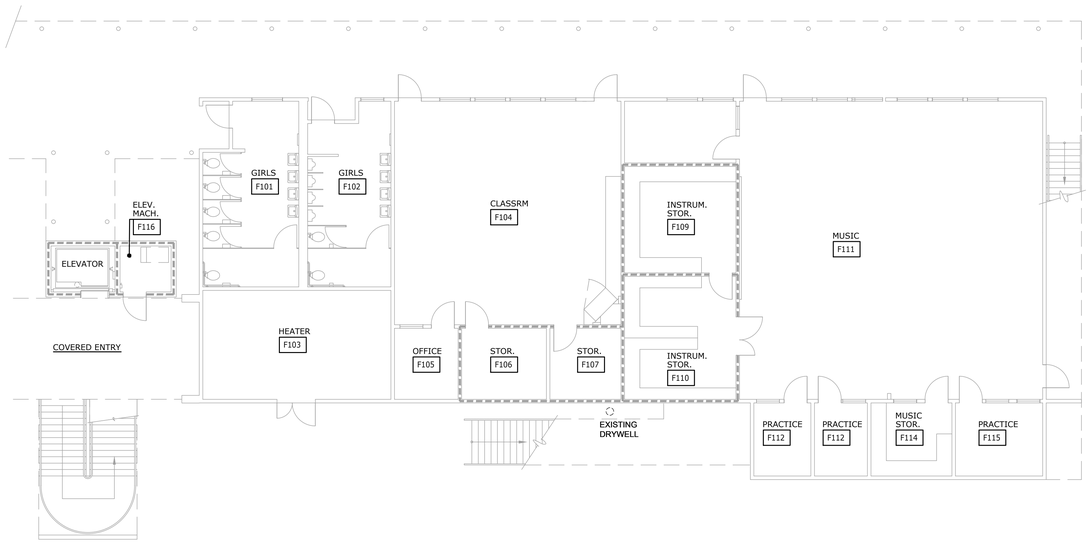
SHEET DESCRIPTION:
PLUMBING
DEMO PLAN -
BUILDING B

SHEET NO:
PD-1.2



REF. NORTH

PLUMBING DEMOLITION SECOND FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 2



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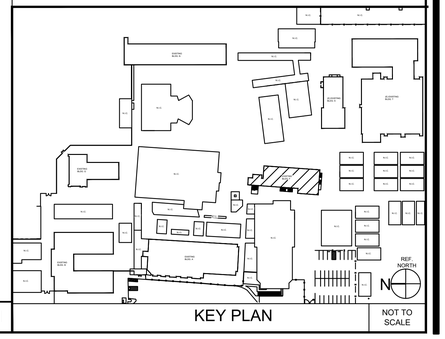
PLUMBING DEMOLITION FIRST FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 1



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No.	Rev. Date	Description
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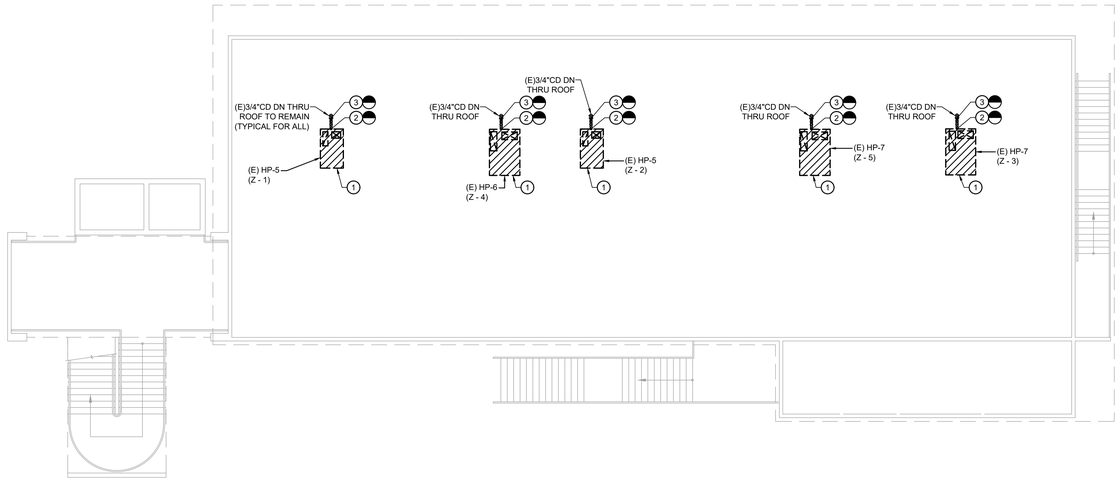
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING DEMO FLOOR PLANS - BUILDING F

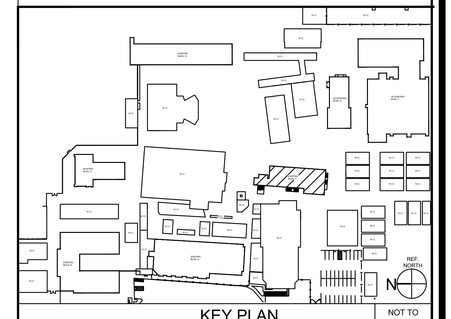
SHEET NO:
PD-1.3



PLUMBING DEMOLITION ROOF PLAN - BUILDING F | 1/8" = 1'-0" | 1

DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED.
3. EXISTING 3/4"CD TO BE CAPPED ABV ROOF.



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STATE OF CALIFORNIA

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ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

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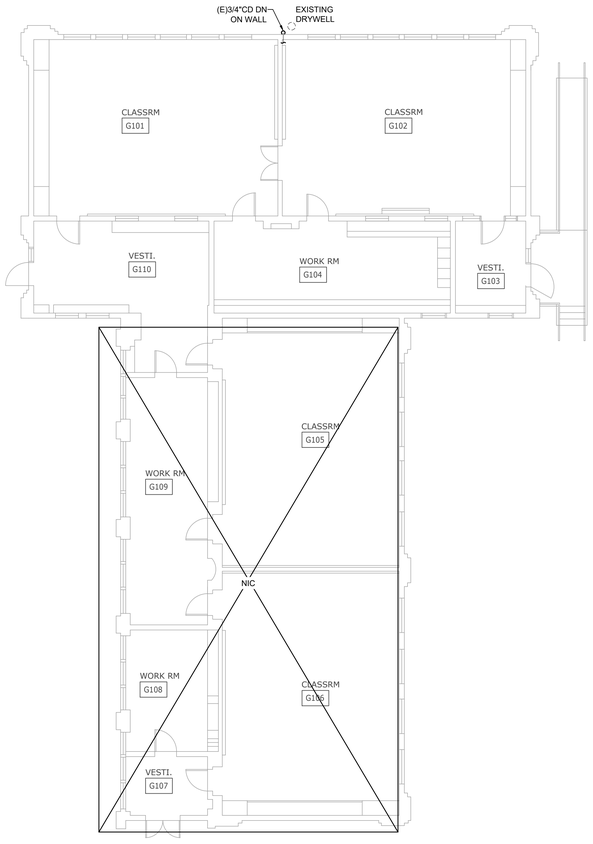
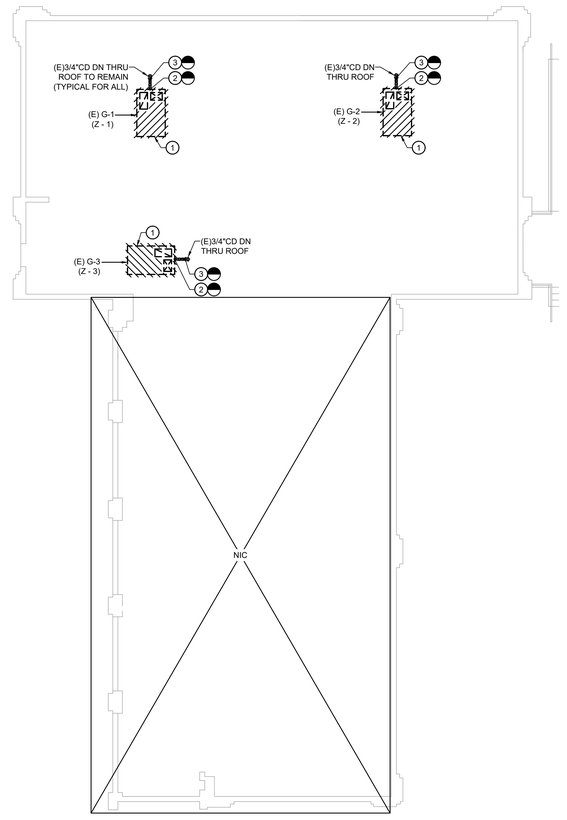
SHEET DESCRIPTION:
PLUMBING DEMO ROOF PLAN - BUILDING F

SHEET NO:
PD-1.3.1



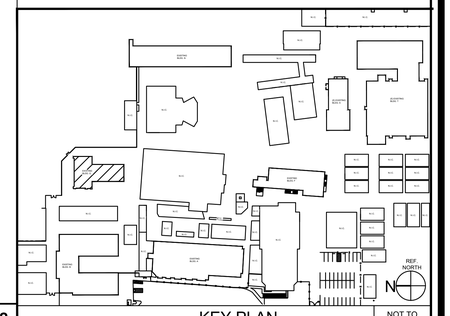
PLUMBING DEMOLITION FLOOR PLAN - BUILDING G | 1/8" = 1'-0" | 1



PLUMBING DEMOLITION ROOF PLAN - BUILDING G | 1/8" = 1'-0" | 2

DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED.
3. EXISTING 3/4"CD TO BE CAPPED ABV ROOF.



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STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBEY BAKERIAN
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

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LYNWOOD ,CALIFORNIA 90262

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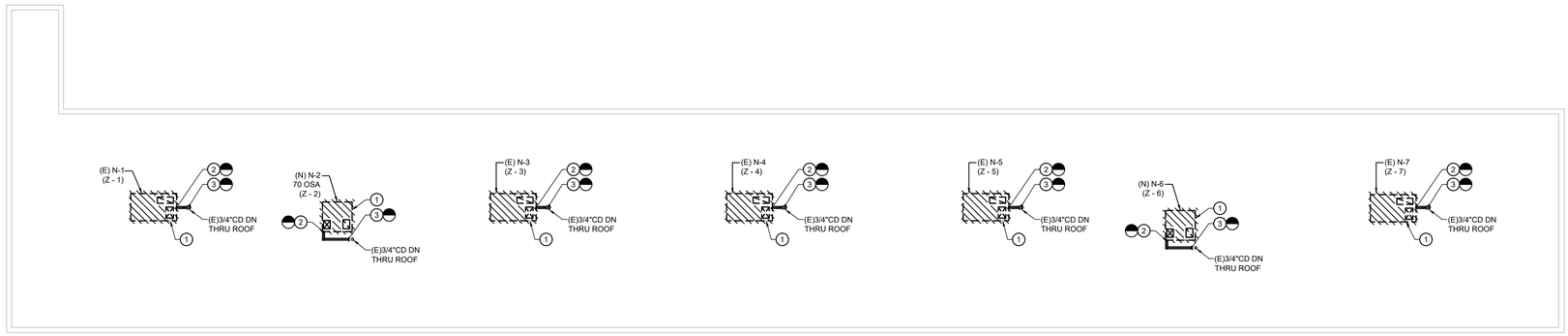
JOB NO:	501-26-0009
DATE:	08/27/2026
DRAWN:	JE
CHECK:	HA
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

CONSULTANT

STAMP

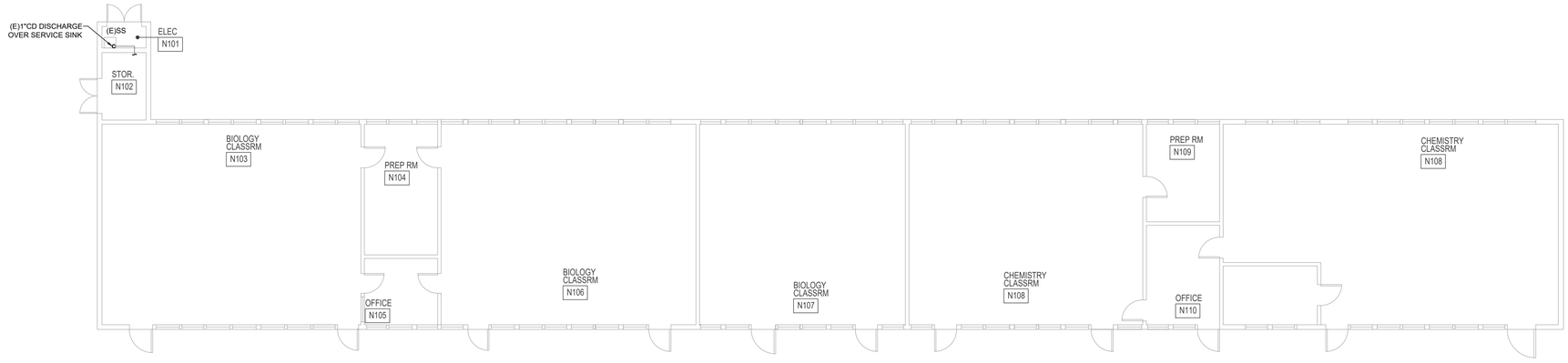
SHEET DESCRIPTION:
PLUMBING DEMO PLAN - BUILDING G

SHEET NO:
PD-1.4



REF. NORTH
N

PLUMBING DEMOLITION ROOF PLAN - BUILDING N | 1/8" = 1'-0" | 2

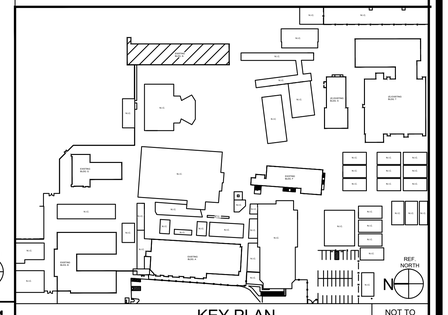


REF. NORTH
N

PLUMBING DEMOLITION FLOOR PLAN - BUILDING N | 1/8" = 1'-0" | 1

DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED.
3. EXISTING 3/4"CD TO BE CAPPED ABV ROOF.



REF. NORTH
N

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STAMP

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

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LYNWOOD ,CALIFORNIA 90262

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1	07/31/2026	Backcheck #1

JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

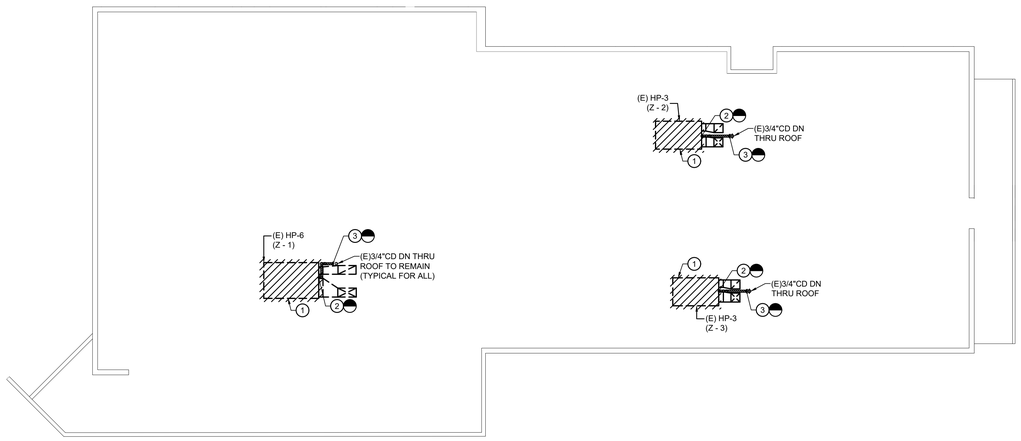
STAMP

SHEET DESCRIPTION:
PLUMBING DEMO PLAN - BUILDING N

SHEET NO:
PD-1.5

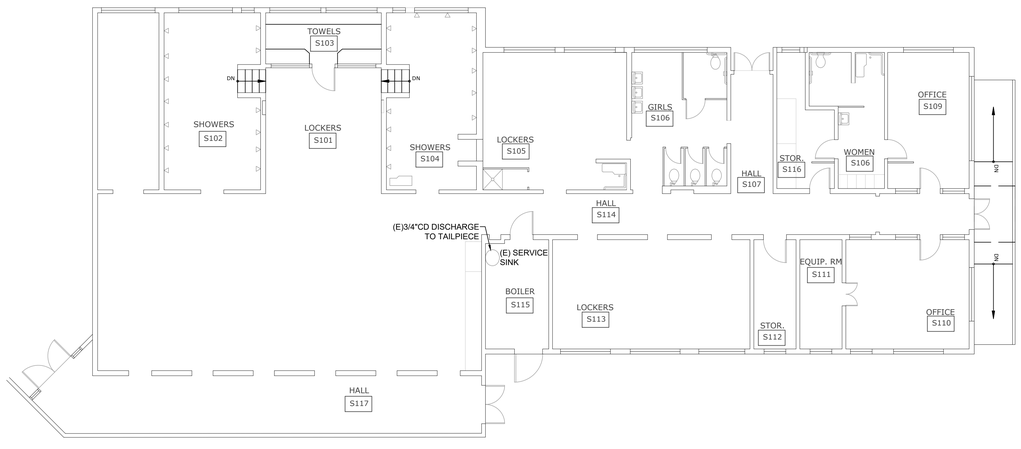
DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED.
3. EXISTING 3/4"CD TO BE CAPPED ABV ROOF.



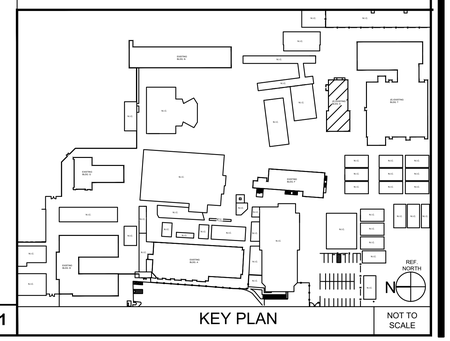
N REF. NORTH

PLUMBING DEMOLITION ROOF PLAN - BUILDING S | 1/8" = 1'-0" | 2



N REF. NORTH

PLUMBING DEMOLITION FLOOR PLAN - BUILDING S | 1/8" = 1'-0" | 1



N REF. NORTH

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Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

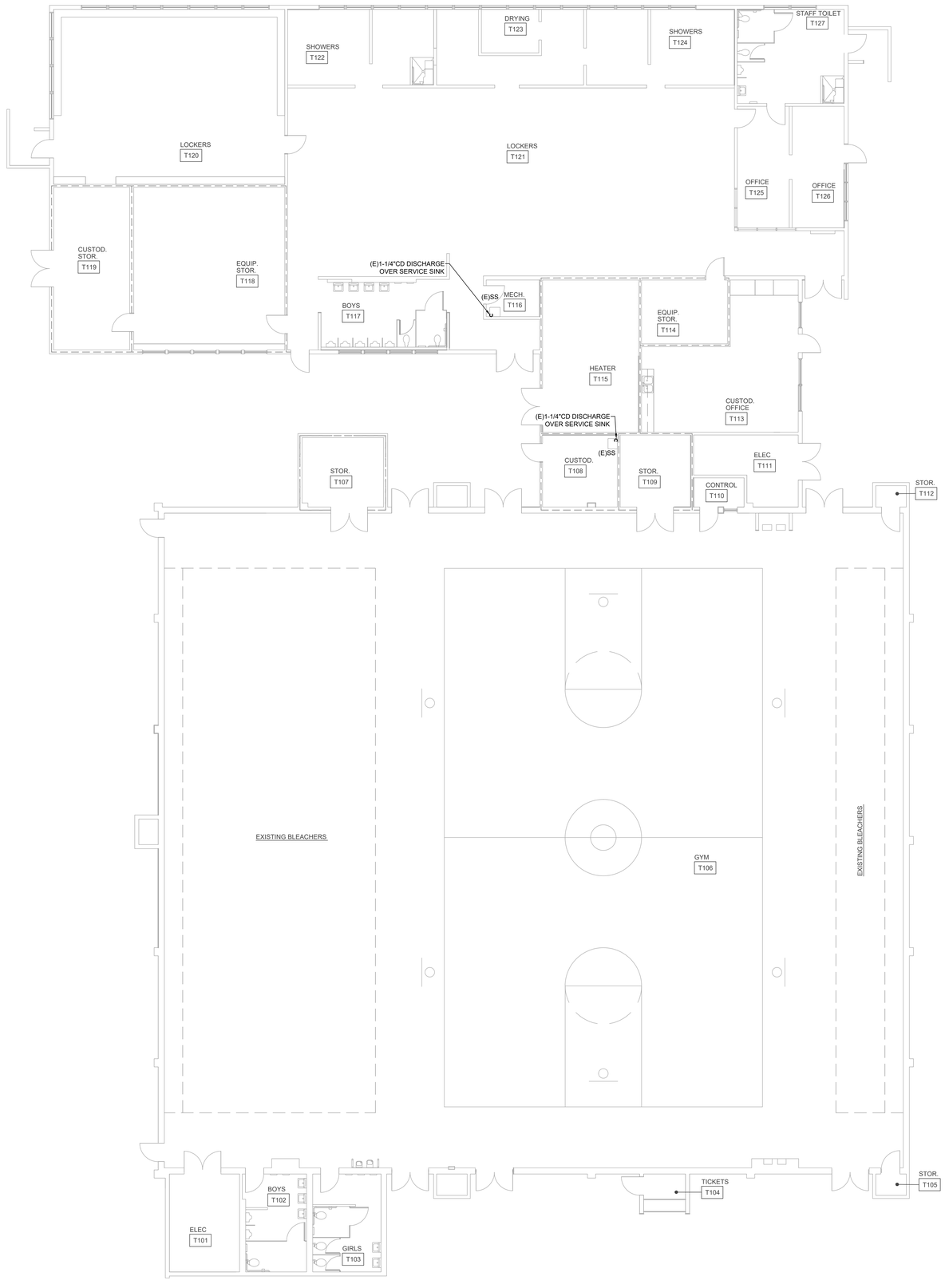
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING DEMO PLAN - BUILDING S

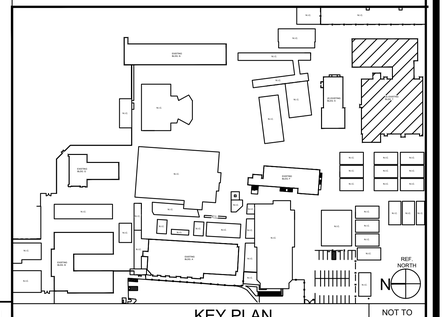
SHEET NO:
PD-1.6



PLUMBING DEMOLITION FLOOR PLAN - BUILDING T

1/8" = 1'-0"

1



KEY PLAN

NOT TO SCALE

AGENCY APPROVAL

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DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
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DATE: 08/27/2026
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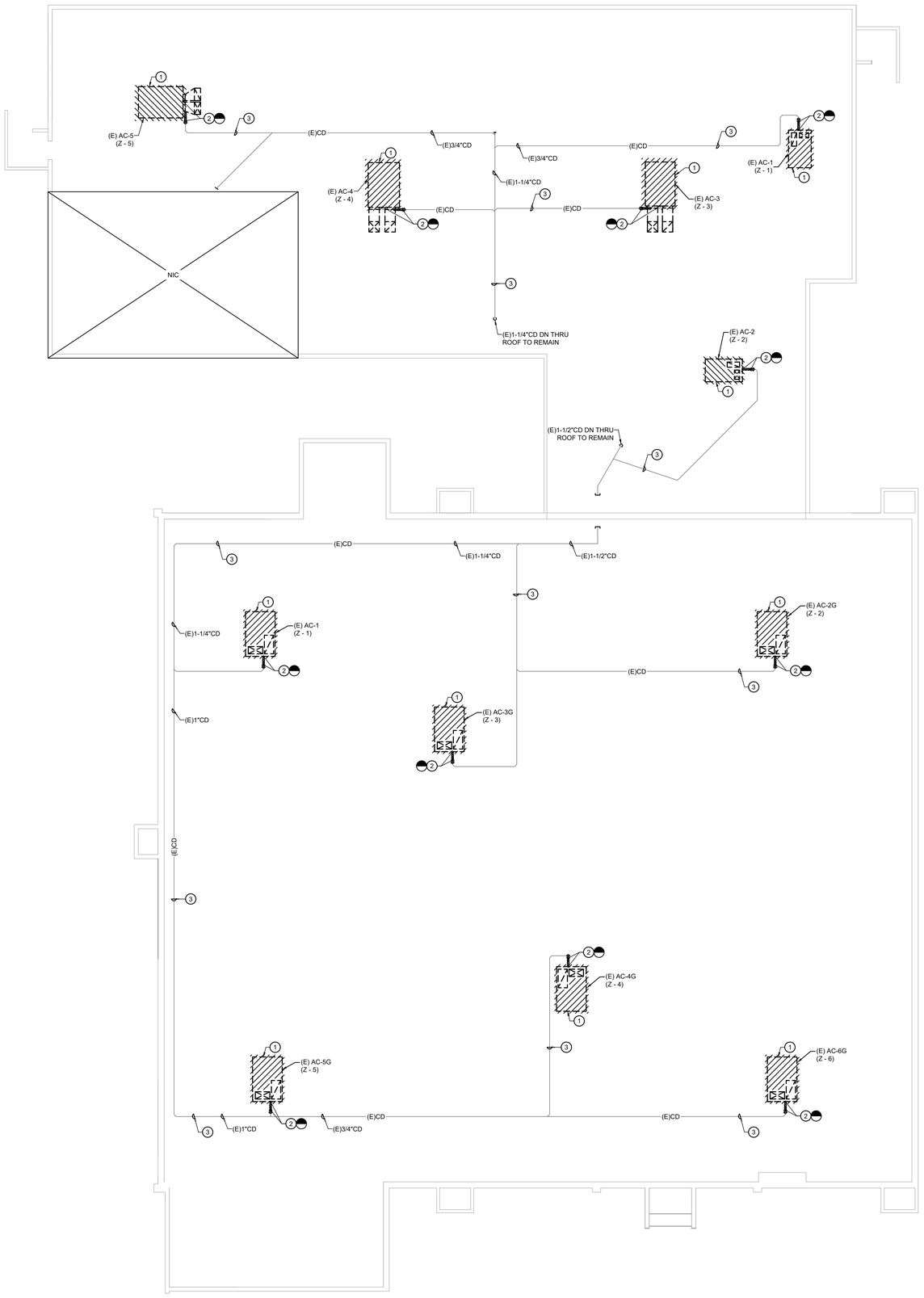
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING
DEMO
FLOOR PLAN -
BUILDING T

SHEET NO:
PD-1.7



DEMOLITION KEYNOTES:

1. (E) MECHANICAL UNIT TO BE REMOVED.
2. (E) CONDENSATE DRAIN WITH VENTED P-TRAP AND RELATED PIPING TO BE REMOVED. CAP EXISTING 3/4"CD AT UNIT.
3. EXISTING CONDENSATE DRAIN PIPING ON ROOF TO REMAIN.

AGENCY APPROVAL

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LYNWOOD HIGH SCHOOL
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DRAWN:	JE
CHECK:	HA
ARCHITECT:	
ENGINEER:	OED
DSA NUMBER:	126002

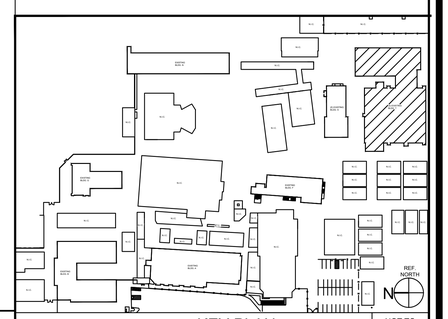
CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING
DEMO
ROOF PLAN -
BUILDING T

SHEET NO:
PD-1.7.1

REF. NORTH
N



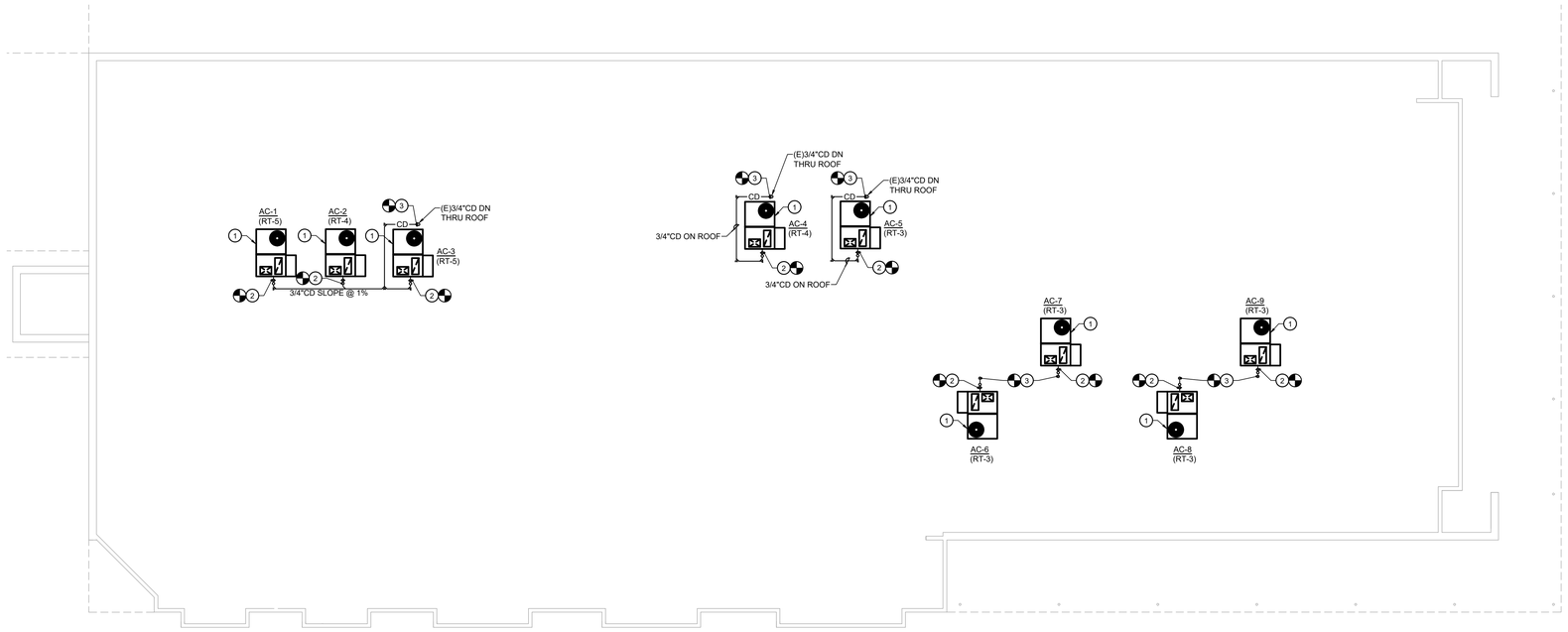
KEY PLAN

NOT TO SCALE

PLUMBING DEMOLITION ROOF PLAN - BUILDING T

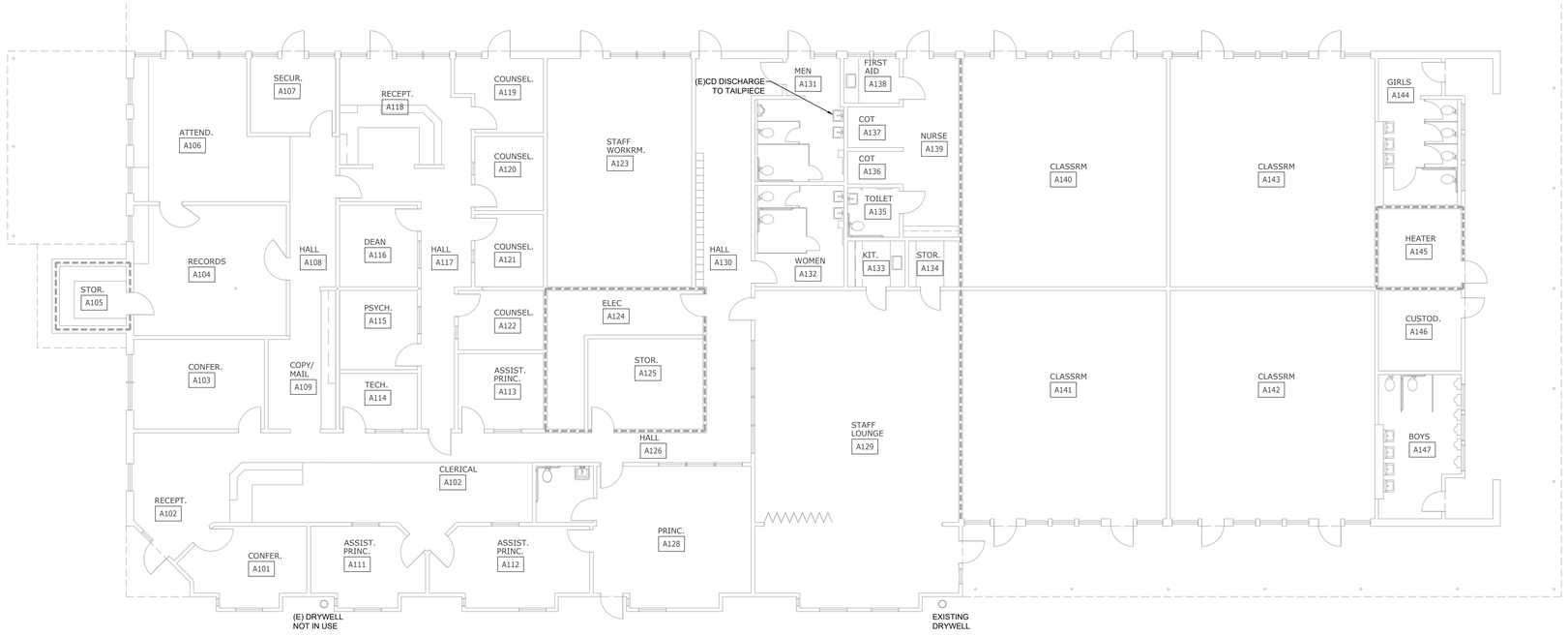
1/8" = 1'-0"

1



REF. NORTH

PLUMBING REMODEL ROOF PLAN - BUILDING A | 1/8" = 1'-0" | 2



REF. NORTH

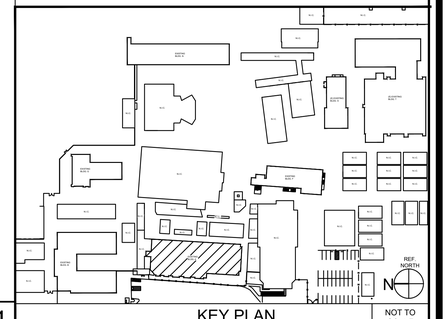
PLUMBING REMODEL FLOOR PLAN - BUILDING A | 1/8" = 1'-0" | 1

CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

CONSTRUCTION KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. CONNECT NEW 3/4"CD AT EXISTING 3/4"CD ABV ROOF.



KEY PLAN | NOT TO SCALE

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optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

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REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

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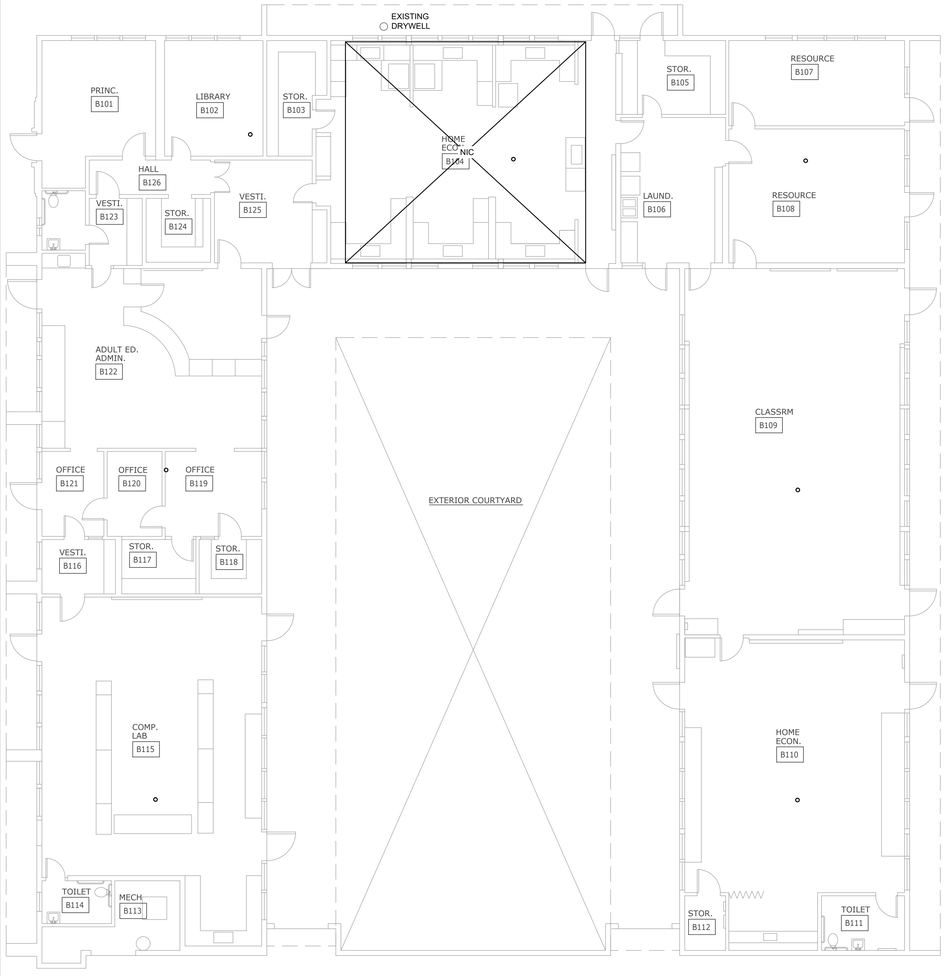
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

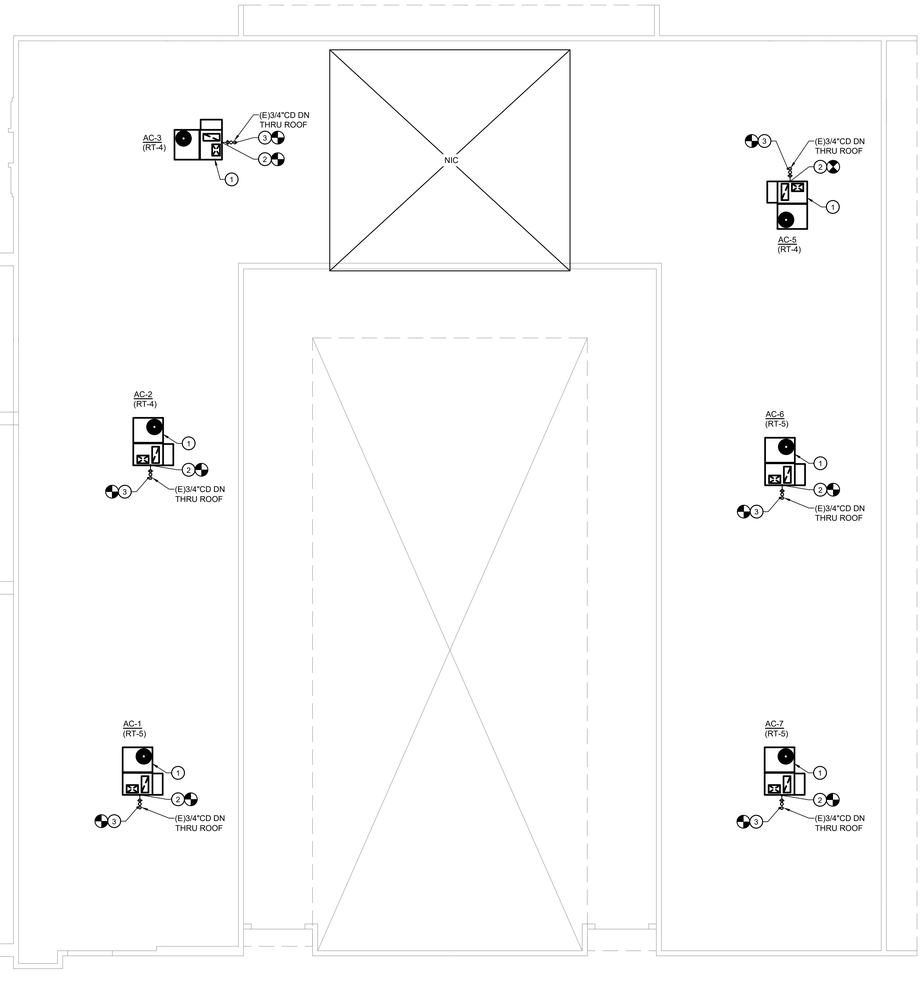
STAMP

SHEET DESCRIPTION:
PLUMBING REMODEL PLAN - BUILDING A

SHEET NO:
P-1.1



PLUMBING REMODEL FLOOR PLAN - BUILDING B | 1/8" = 1'-0" | 1



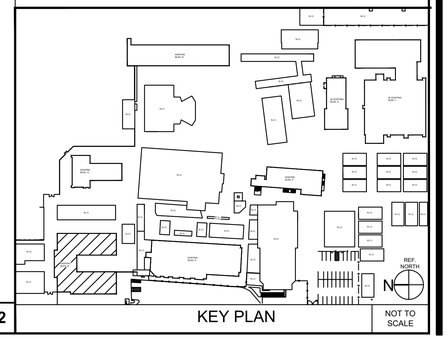
PLUMBING REMODEL ROOF PLAN - BUILDING B | 1/8" = 1'-0" | 2

CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

PLUMBING KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. CONNECT NEW 3/4"CD AT EXISTING 3/4"CD ABV ROOF.



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

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APP: 03-126002 INC:
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optimum energy design
Consulting Engineers
5200 E. La Palma Ave
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REGISTERED PROFESSIONAL ENGINEER
No. M29253
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STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1
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JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

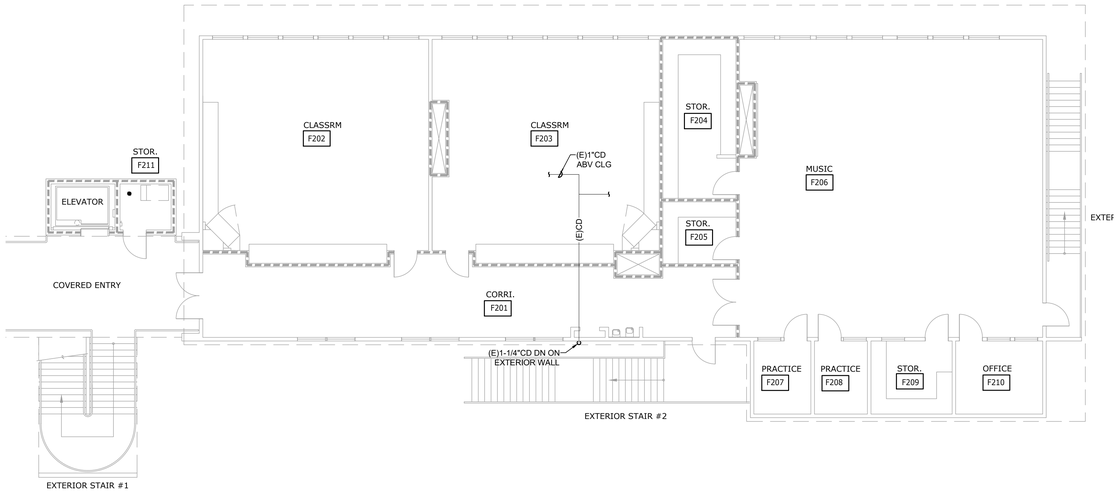
STAMP

SHEET DESCRIPTION:
PLUMBING REMODEL PLAN - BUILDING B

SHEET NO:
P-1.2

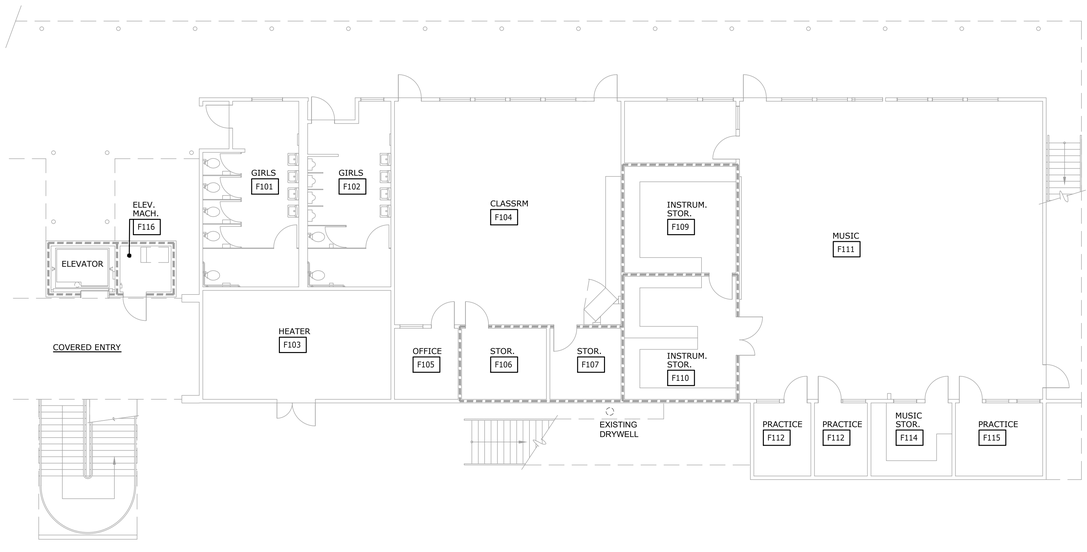
CONSTRUCTION NOTES:

1. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.



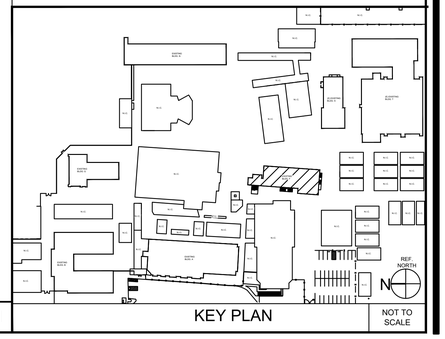
REF. NORTH

PLUMBING REMODEL SECOND FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 2



REF. NORTH

PLUMBING REMODEL FIRST FLOOR PLAN - BUILDING F | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

AGENCY APPROVAL

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DIV. OF THE STATE ARCHITECT
APP: 03-126002 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 10/16/2026

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

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REGISTERED PROFESSIONAL ENGINEER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

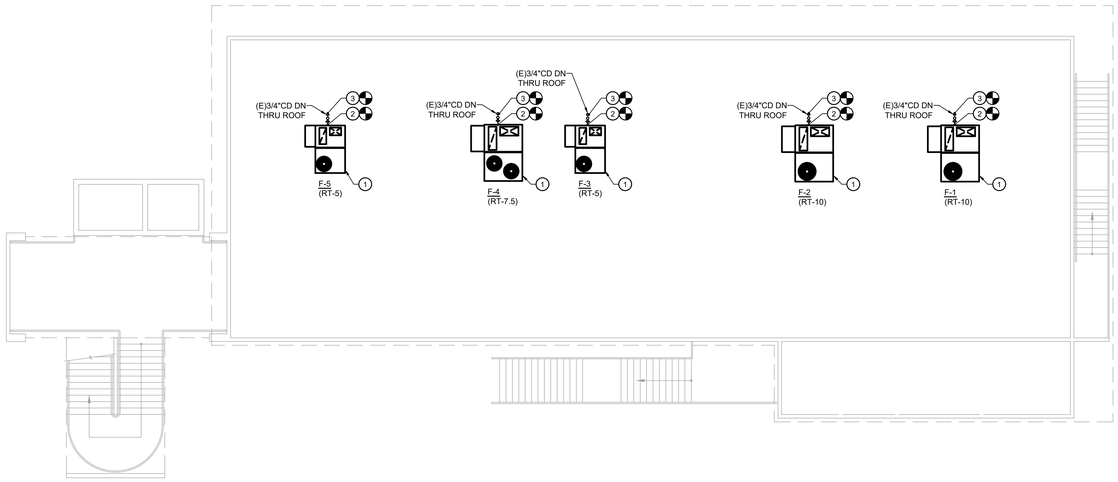
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING REMODEL FLOOR PLANS - BUILDING F

SHEET NO:
P-1.3



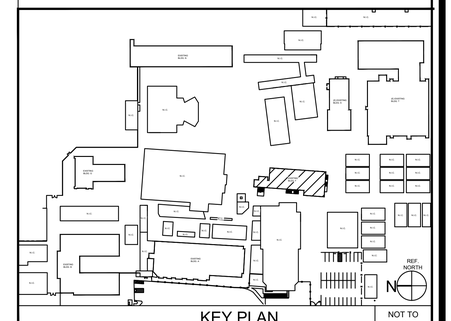
PLUMBING REMODEL ROOF PLAN - BUILDING F | 1/8" = 1'-0" | 1

CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

PLUMBING KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. CONNECT NEW 3/4"CD AT EXISTING 3/4"CD ABV ROOF.



KEY PLAN | NOT TO SCALE

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DATE: 10/16/2026

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REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKER
No. M25253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

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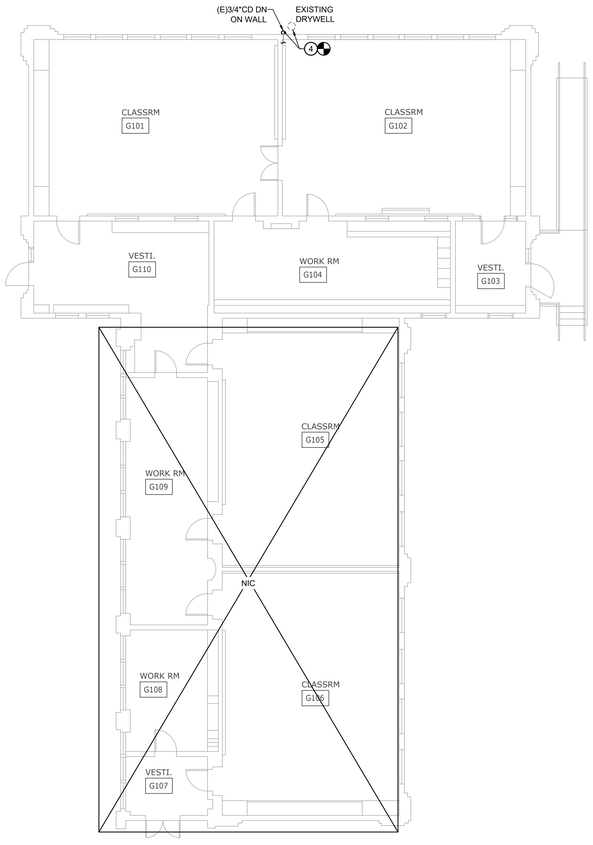
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

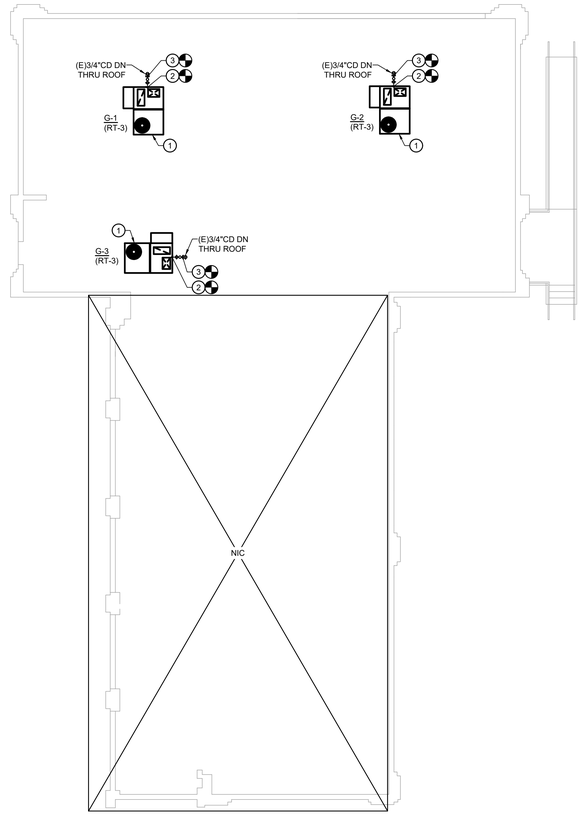
STAMP

SHEET DESCRIPTION:
PLUMBING REMODEL ROOF PLAN - BUILDING F

SHEET NO:
P-1.3.1



PLUMBING REMODEL FLOOR PLAN - BUILDING G | 1/8" = 1'-0" | 1



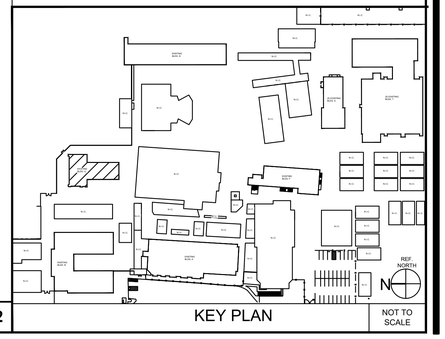
PLUMBING REMODEL ROOF PLAN - BUILDING G | 1/8" = 1'-0" | 2

CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

PLUMBING KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. CONNECT NEW 3/4"CD AT EXISTING 3/4"CD ABV ROOF.
4. EXISTING DRYWELL TO BE REFURBISHED. RECONNECT EXISTING 3/4"CD ON WALL TO DRYWELL.



KEY PLAN | NOT TO SCALE

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Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
BABY BANERJEE
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

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LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

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JOB NO: 501-26-0009
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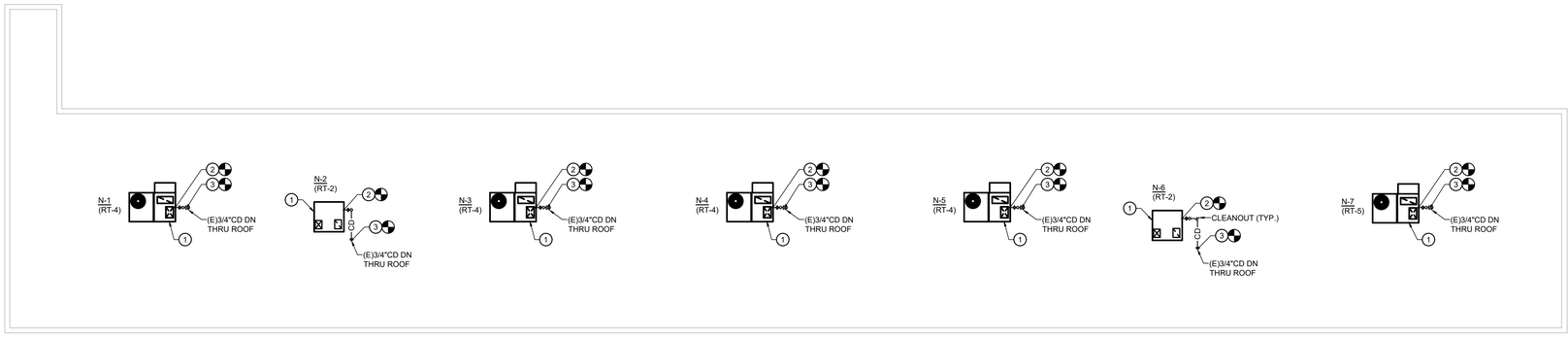
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

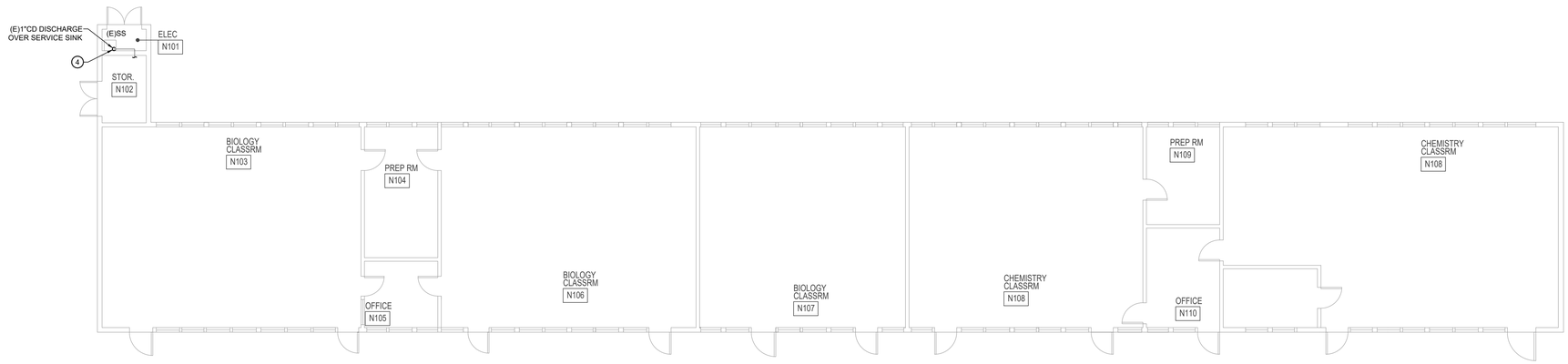
SHEET DESCRIPTION:
PLUMBING REMODEL PLANS - BUILDING G

SHEET NO:
P-1.4



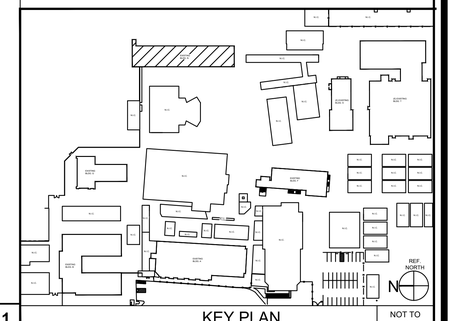
REF. NORTH
N

PLUMBING REMODEL ROOF PLAN - BUILDING N | 1/8" = 1'-0" | 2



REF. NORTH
N

PLUMBING REMODEL FLOOR PLAN - BUILDING N | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

PLUMBING KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. CONNECT NEW 3/4"CD AT EXISTING 3/4"CD ABV ROOF.
4. PROVIDE 2" AIR GAP MINIMUM TO EXISTING 1"CD AT SERVICE SINK.

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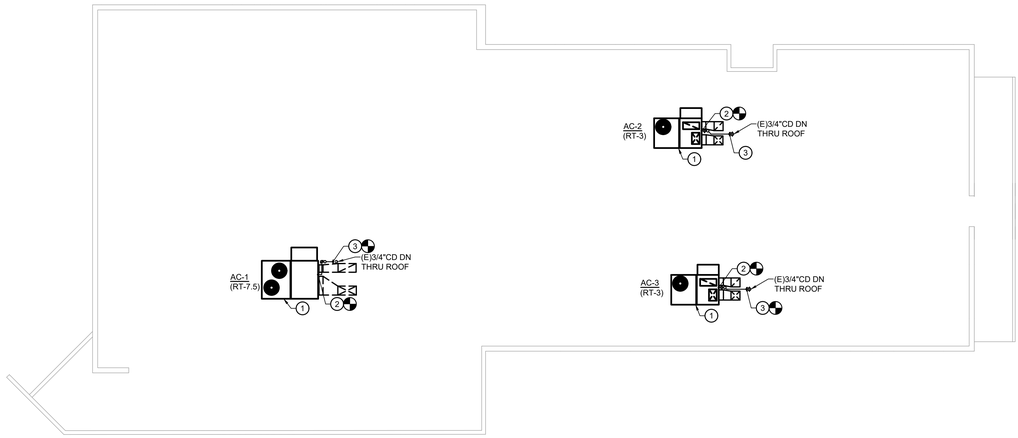
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

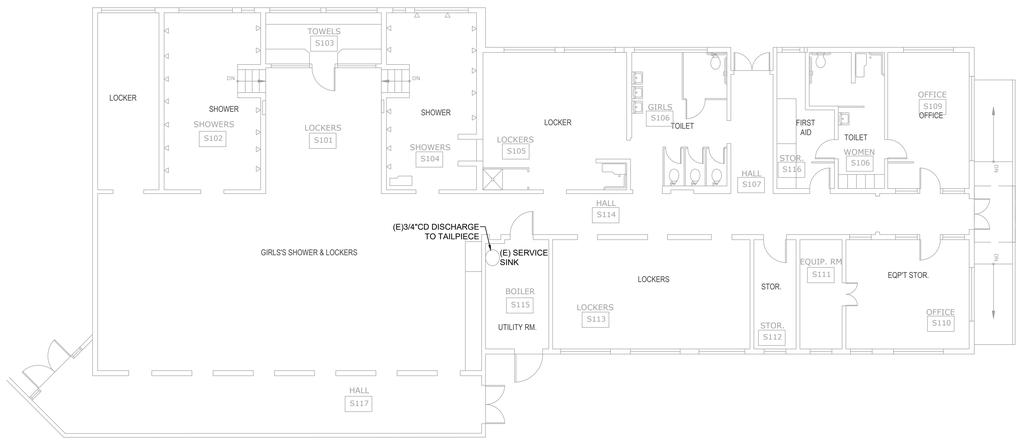
STAMP

SHEET DESCRIPTION:
PLUMBING REMODEL PLANS - BUILDING N

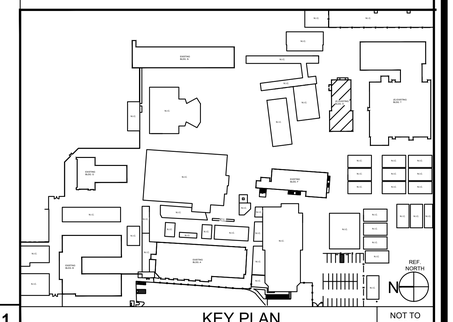
SHEET NO:
P-1.5



PLUMBING REMODEL ROOF PLAN - BUILDING S | 1/8" = 1'-0" | 2



PLUMBING REMODEL FLOOR PLAN - BUILDING S | 1/8" = 1'-0" | 1



KEY PLAN | NOT TO SCALE

CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

PLUMBING KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. CONNECT NEW 3/4"CD AT EXISTING 3/4"CD ABV ROOF.

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optimum energy design
Consulting Engineers
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Telephone (714) 693-2277

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REGISTERED PROFESSIONAL ENGINEER
ROBERT BAKEMEYER
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

LYNWOOD HIGH SCHOOL
12124 BULLIS RD
LYNWOOD ,CALIFORNIA 90262

No.	Rev. Date	Description
1	07/31/2026	Backcheck #1

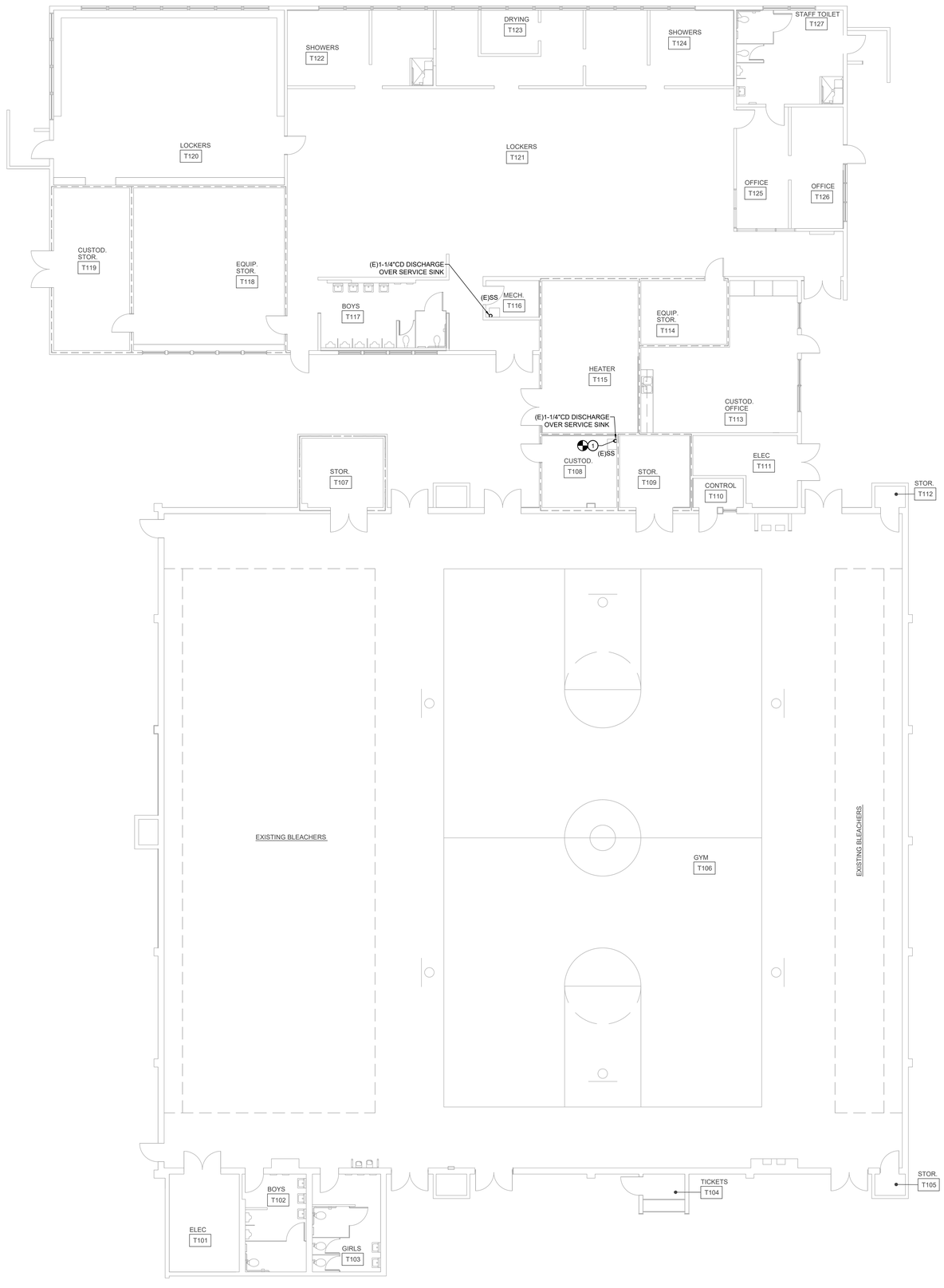
JOB NO: 501-26-0009
DATE: 08/27/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 126002

CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING REMODEL PLANS - BUILDING S

SHEET NO:
P-1.6

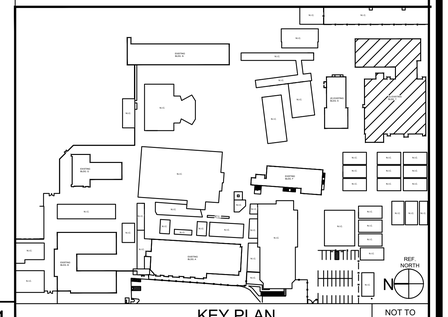


CONSTRUCTION NOTES:

1. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
2. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.

PLUMBING KEYNOTES:

(1) CONNECT NEW CONDENSATE DRAIN PIPING TO EXISTING CONDENSATE DRAIN PIPING AT CLG AND SPILL OVER SERVICE SINK WITH 2" AIR GAP MINIMUM.



KEY PLAN

NOT TO SCALE

PLUMBING REMODEL FLOOR PLAN - BUILDING T

1/8" = 1'-0"

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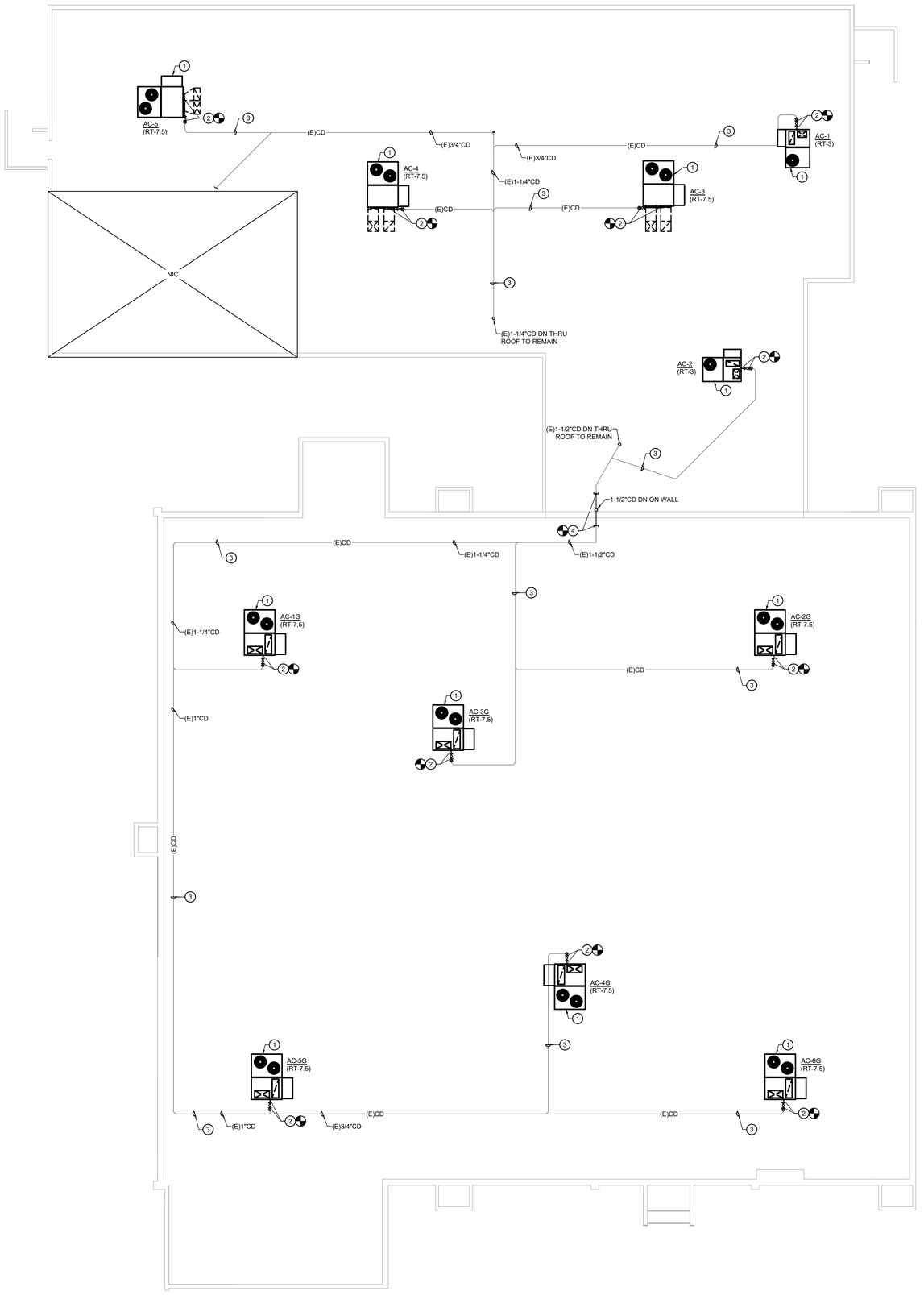
SHEET DESCRIPTION:
PLUMBING REMODEL FLOOR PLAN - BUILDING T

SHEET NO:
P-1.7

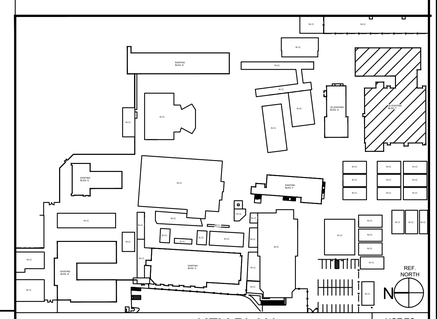


CONSTRUCTION NOTES:

1. COORDINATE WITH OTHER TRADES PRIOR TO MAKING ANY ROOF OPENINGS.
2. FIELD VERIFY EXISTING INDOOR CONDENSATE DRAIN IS INSULATED AND DISCHARGES TO AN APPROVED RECEPTOR WITH A 1-1/2" AIR GAP MINIMUM OR SINK TAILPIECE CONNECTION.
3. ALL EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED.
4. PROVIDE UV INHIBITOR COATING FOR EXPOSED OUTDOOR PIPING.

PLUMBING KEYNOTES:

1. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. CONNECT NEW 3/4"CD PLUG & VENTED P-TRAP. SEE SHEET P-4.1 DETAIL NUMBER 1. SLOPE CONDENSATE DRAIN @ 1%.
3. EXISTING CONDENSATE DRAIN PIPING ON ROOF TO BE ADJUSTED AND RE-SLOPED @ 1% MINIMUM.
4. CONNECT NEW 1-1/2"CD TO EXISTING ON UPPER ROOF, ROUTE DN TO LOWER ROOF AND CONNECT TO EXISTING 1-1/2"CD.



KEY PLAN

NOT TO SCALE

PLUMBING REMODEL ROOF PLAN - BUILDING T

1/8" = 1'-0"

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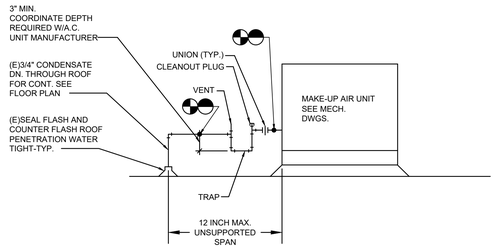
PLUMBING REMODEL ROOF PLAN - BUILDING T

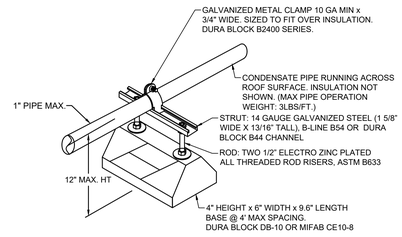
SHEET NO:
P-1.7.1



GAS & CD CONNECTIONS OF MECH UNIT ON ROOF | SCALE NONE | 3

MODEL #: DURA BLOCK DB-10 OR MIFAB CE10-8

INSTALLATION INSTRUCTIONS: THE RUBBER BASES CAN BE DIRECTLY PLACED ON THE ROOF SURFACE. USE CHEMLINK M-1 STRUCTURAL ADHESIVE/ SEALANT OR EQUAL FOR ATTACHMENT TO STRUCTURE.
ADJUST THE CROSSBEAM BY LOOSENING THE NUTS AND ADJUST THE STRUT TO DESIRED HEIGHT AND RE-TIGHTEN NUTS. 4 FEET MAXIMUM SPACING FOR CONDENSATE DRAIN PIPE.



NOTE:
12 INCH MAXIMUM HEIGHT OR PROVIDE ANCHORAGE TO ROOF STRUCTURE MEMBERS. SLEEP LENGTH OF BASE TO BE 2 TIMES THE ACTUAL HEIGHT.

CONDENSATE DRAIN PIPE SUPPORT ON ROOF DETAIL | SCALE NONE | 2

NOTES:

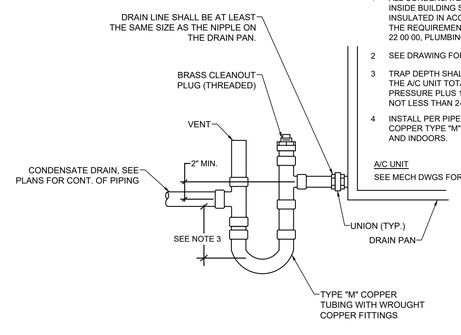
1 ALL CONDENSATE DRAIN LINES INSIDE BUILDING SHALL BE INSULATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 22 00 00, PLUMBING SPECS

2 SEE DRAWING FOR SIZES.

3 TRAP DEPTH SHALL BE EQUAL TO THE A/C UNIT TOTAL STATIC PRESSURE PLUS 1-INCH BUT NOT LESS THAN 2-INCHES.

4 INSTALL PER PIPE MATERIAL COPPER TYPE "M" FOR OUTDOORS AND INDOORS.

A/C UNIT
SEE MECH DWGS FOR LOCATION



CONDENSATE TRAP DETAIL | SCALE NONE | 1

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PLUMBING DETAILS

SHEET NO:
P-4.1