DOCUMENT Appendix III

APPENDIX III:

SERVER ROOM UPGRADES TECHNICAL SPECIFICATIONS PREAPRED BY JK ARCHITECTURE ENGINEERING PROJECT #23-525

PROJECT MANUAL

ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM UPGRADES

Technical Specifications

ALUM ROCK UNION SCHOOL DISTRICT

SAN JOSE, CALIFORNIA

1/03/2024

JK Architecture Engineering
Project Number # 23-525

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SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. General description of scope

1. Demolition and removal of selected portions of buildings or structures.
    a. Including but not limited to:
        1) Existing Server Room related to HVAC upgrades – Building 300.
        2) Existing exterior Mechanical Enclosure related to HVAC upgrades.
2. Demolition and removal, disconnecting, capping and sealing, and abandoning in place of selected site elements.
3. Salvage of existing items to be reused or recycled.
4. Hazardous material remediation
5. Abandoning in-place and/or removing below-grade construction.

1.2 RELATED SECTIONS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 00 and 01 Specification Sections, apply to this Section.

1.3 DEFINITIONS

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

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

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

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

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

1.4 STANDARDS AND REFERENCES (Current Edition for All Standards Listed)

A. ASSE A10.6 – Safety and Health Program Requirements for Demolition Operations

B. 40 CFR 82 – Protection of Stratospheric Ozone

C. All applicable EPA notification regulations.

D. All applicable OSHA regulations.

E. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations

F. Resilient Floor Covering Institute (RFCI) - Recommended Work Practices for the Removal of Resilient Floor Coverings

Website Link: https://rikett.net/wp-content/uploads/2016/05/RFCI-Recommended-Work-Practices-for-the-Removal-of-Resilient-Flooring.pdf

1.5 SUBMITTALS

A. Submittals: Provide submittals per Section 01 33 00, “Submittal Procedures”.

B. Qualification Data: For refrigerant recovery technician.

C. Engineering Survey: Submit engineering survey of condition of building.

D. Proposed Protection Measures:

1. Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property.

2. Indicate proposed locations and construction of barriers.

3. Adjacent Buildings: Where damage to adjacent structures is possible, detail special measures proposed to protect adjacent buildings to remain, including means of egress from those buildings.

E. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.

2. Interruption of utility services: Indicate how long utility services will be interrupted.

3. Coordination for shutoff, capping, and continuation of utility services.

4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

F. Building Demolition Plans: Drawings shall indicate the following:

1. Locations of temporary protection, and means of egress protection, if applies, for adjacent occupied buildings.

G. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of work.

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

1. Submit before the Work begins.

I. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

J. Closeout Submittals:

1. Submittals: Provide submittals per Section 01 77 00, “Closeout Requirements”

2. Inventory: Submit a list of items that have been removed and salvaged.

3. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

1. Comply with ANSI A10.6 and NFPA 241.
2. Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
3. Comply with all OSHA regulations.
4. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

1.7 PRE-INSTALLATION CONFERENCE

A. Pre-demolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.8 COORDINATION

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

1.9 FIELD CONDITIONS

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

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

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

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

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

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

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

1.10 MATERIALS OWNERSHIP

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

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.11 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

E. Survey of Existing Conditions: Record existing conditions by use of measured drawings

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.

2. Arrange to shut off utilities with utility companies.

3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.

b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.

c. Equipment to Be Removed: Disconnect and cap services and remove equipment.

d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.

g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

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

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

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

4. Cover and protect furniture, furnishings, and equipment that have not been removed.

5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 50 00, "Temporary Facilities and Controls."

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

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

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain fire watch during and for at least 1 hours after flame-cutting operations

6. Maintain adequate ventilation when using cutting torches.

7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly. Comply with requirements in Section 01 50 13, "Construction Waste Management and Disposal."

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

C. Removed and Salvaged Items:
1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

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

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

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

E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

F. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight.

1. Remove existing roof membrane, flashings, copings, and roof accessories.

2. Remove existing roofing system down to substrate.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site. Recycle or dispose of them according to Section 01 50 13, "Construction Waste Management and Disposal.".

1. Do not allow demolished materials to accumulate on-site.

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

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

4. Comply with requirements specified in Section 01 50 13, "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.8 CLEANING

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

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1. SECTION INCLUDES

A. Misc. other sheet metal flashings and trims, – coordinate with work provided in other sections.

1.3 STANDARDS AND REFERENCES (Current Edition for All Standards Listed)

A. .ANSI SPRI ED-1 – Design Standard for Edge Systems Used with Low Slope Roofing Systems.

B. ASTM B32 - Standard Specification for Solder Metal

C. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

D. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction

E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

F. ASTM A924/A924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

G. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free

H. FS O-F-506 – Federal Specification: Flux Soldering: Past and Liquid.

I. NRCA (National Roofing Contractors Association)-Roofing Manual.

J. SMACNA - Architectural Sheet Metal Manual.

1.4 SUBMITTALS

A. Submit shop drawings and product data under provisions of Division 01 – General Requirements.

B. Describe material profile, jointing pattern, jointing details, fastening methods, and installation details.

C. Submit manufacturer's installation instructions under provisions of Division 01 – General Requirements.

1.5 QUALITY ASSURANCE

A. Fabricator: Company specializing in sheet metal flashing work with 5 years minimum experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products under provisions of Division 01 – General Requirements.

B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation.

C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

1.7 MOCKUPS

A. Provide mockups for Architect’s review and approval of critical transitions (corners, edge conditions, etc.)

B. Provide mockups of all profiles listed in drawing for Architect’s approval for size, gauge, and color.

C. Mockups may be included in final work.

1.8 WARRANTY

A. Warranty Submittals: Provide submittals per Division 01 – General Requirements.

B. Contractor's Guarantee:

1. Provide Owner with written Guarantee on Contractor's letterhead and signed by General Contractor and flashing system subcontractor.

2. Provide guarantee against the following defects for a time period of three years, commencing from the date of final acceptance of the project.

3. Flashing blow-off or permanent deformation from wind.

4. Water intrusion through flashing joints into the building interior.

5. Make inspections and emergency repairs to defects or leaks in the roof system within twenty-four (24) hours of receipt of notice from the Owner.

6. Restore the affected areas to the standard of the original specifications as soon as weather permits.

PART 2 - PRODUCTS

2.1 SHEET MATERIALS

A. Galvanized Steel:

1. Classification: Per ASTM A653/A653M and A924/A924M.

B. Finish: Hot Dip galvanized, G90 coating. See Section 09 91 00, “Painting” for preparation, primers and finishes related to galvanized sheet metal.

C. Gauge As specified and shown on drawings. If not shown on drawings, provide minimum 22 gauge.

D. Manufacture and install copings, roof edge flashings, etc. tested according to ANSI/SPRI ES-1 and capable of resisting the established design pressure.

2.2 ACCESSORIES

A. Fasteners: Galvanized steel with soft neoprene washers at exposed fasteners. Finish exposed fasteners same as flashing metal.

B. Sealant: Type specified in Section 07 92 00, “Joint Sealers”.

C. Solder: ASTM B 32; type with less than 0.2% lead.

D. Flux: FS O-F-506.

H. Counter-Flashing: Galvanized Steel, with wind-locks at 32 inches on center and at each corner.

I. Corners: Provide factory prefabricated corner assemblies.

J. Through Wall Flashing: Provide factory prefabricated Manufactured through-wall flashing

K. Components:

1. Provide sheet metal work as shown on Drawings and not specified under other Sections. Fabricate as indicated. Where specific details are not shown, fabricate according to applicable SMACNA "Architectural Sheet Metal Manual" criteria.

2. Form sections true to shape, accurate in size, square, and free from distortion or defects. Match profiles at connections. Provide ribs, cleats, and reinforcement necessary to make sections rigid and substantial. Allow for expansion and contraction.

3. Unless noted otherwise, fabricate cleats and starter strips of same material as sheet, minimum 2 inches wide, interlocked with fabrication.

4. Form pieces in longest practical lengths. Locate joints of fasciae, roof edges, and other sheet metal work exposed to view with respect to panel joints or other architectural features as indicated on Drawings, or as directed by Architect.

5. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip and cleat interlock.

6. Generally, provide shop joints single locked and soldered, or lapped, riveted and soldered. Provide field joints designed to permit expansion, with joint covers or lapped joints with "S" clips. Do not solder.

7. Provide all concealed stiffeners and bracing at roof edge trim, fascia and gutter cover as required by Architect.

8. Form material with flat lock seams unless noted otherwise. Overlap seams in direction of flow with finished width of lock seams and soldered lap seams not less than 1 inches, and finished width of unsoldered lap seams not less than 3 inches.

9. Where specified, solder and seal metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Provide smooth even surface on exposed soldering on finished surfaces.

10. Provide shop formed transition and corner pieces with locked and soldered corners. Locate field joints not less than one foot nor more than three feet from actual corner. Shortest length dimension of any corner piece leg shall not be less than one foot.

11. Locate parapet coping expansion joints 20 feet on center maximum, and as otherwise required to permit expansion and contraction.

12. Fabricate flashing assemblies as specified in this Section and as shown on Drawings.

2.2. FINISH

A. Paint flashing applications as specified below in off-site shop location.

2.3. OTHER \MATERIALS

A. Provide all other materials, not specifically described but required for complete and proper installation of this work, as selected by the contractor and subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection:

1. Prior to work of this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence.

2. Verify that work of this section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

3. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.

4. Verify roof membrane, elastomeric flashing, waterproof underlayment and base flashings are in place, sealed, and secure.

5. In the event of discrepancy, immediately notify the Architect.

6. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

B. Preparation:

1. Field measure site conditions prior to fabricating work.

2. Install starter and edge strips, and cleats before starting installation.

C. Flashing Installation:

1. Support all flashings with firm and stable attachments, anchored into solid backing as required.

2. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

3. Where required by installation, solder metal joints watertight for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

4. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Architect.

5. Insert flashings into reglets to form tight fit. Secure in place in accordance with the manufacturer's instructions.

D. Coping Installation:

1. Install coping with cleats and clips as specified and as shown on drawings. Provide continuous cleat at exterior surface. Provide approved fasteners at inside (roof) surface at 24 inches on center.

2. Install coping intermediate joints as specified.

3. Provide waterproof underlayment over wall framing and under coping flashing. Provide elastomeric flashing at all coping joints, extending 12 inches each side of joint. Coordinate with plaster underlayment installation.

4. Attach coping with welded connections, mechanical fasteners, clips, and brackets. Do not solder.

E. Fabrication Schedule:

1. Coping:

a. Material and Gage: Galvanized Steel.

b. Flashing with an exposed vertical face of 8" or less: 24 gauge.

c. Flashing with an exposed vertical face of 8" to 10": 22 gauge.

d. Flashing with an exposed vertical face of 10" to 15": 20 gauge.

e. Finish: As specified in this Section.

f. SMACNA Reference: Table 3-1, with J9 drive cleat, flat lock seam joint design, C1 corner, and E1 edge.

2. Prefabricated and Fabricated Reglet Counterflashing:

a. Material and Gauge: Galvanized steel, 22 gauge, painted.

b. Finish: As specified in this Section, painted.

3. Miscellaneous flashing, roof flashing, metal flashing assemblies and counterflashing:

a. Material and Gauge: Galvanized Steel:

b. Flashing with an exposed vertical face of 8" or less: 24 gauge.

c. Flashing with an exposed vertical face of 8" to 10": 22 gauge.

d. Flashing with an exposed vertical face of 10" to 15": 20 gauge.

e. Finish: As specified in this Section, painted

END OF SECTION

SECTION 07 92 00

JOINT SEALERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Preparing sealant substrate surfaces.

B. Sealant and backing.

1.2 REFERENCES

A. ASTM C834 – Latex Sealing Compounds.

B. ASTM D1056 – Flexible Cellular Materials – Sponge or Expanded Rubber.

C. FS TT-S-227 – Sealing Compound: Elastomeric Type, Multi-Component.

D. FS TT-S-230 – Sealing Compound: Elastomeric Type, Single Component.

E. FS TT-S-1543a – Sealing Compound: Silicone Type.

F. FS TT-S-001657 – Sealing Compound: Single Component, Butyl Rubber Based.

1.3 SUBMITTALS FOR REVIEW

A. Submit product data under provisions under Division 01.

B. Submit product data indicating sealant chemical characteristics, performance criteria, limitations, color availability and shore hardness.

C. Color of visible sealant to match adjacent painted surface unless specifically noted otherwise

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum five years experience.

B. Applicator: Company Specializing in applying the work of this Section with minimum three years experience.

C. Conform to Sealant and Waterproofers Institute requirements for materials.

1.5 FIELD SAMPLES

A. Provide samples under provisions under Division 01.

B. Construct one field sample illustrating sealant type, color, and tooled surface, maximum 12 inches long, in each differing sealant application.

C. Do not proceed with remainder of sealant application until approved by the Architect.

D. Approved sample may remain as part of the Work. Disapproved sample shall be removed.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation. Deliver materials in unopened containers, store in dry, covered area.

PART 2 - PRODUCTS

2.1 SEALANTS

A. Use sealants selected from the following types, as indicated on drawings or as appropriate to the joint being sealed. Refer to schedule for additional approved applications.

1. Type 1: One-part moisture curing Polyurethane sealant. FS TT-S-230C, Type II, non-sag, Class A DYNATROL I, manufactured by Pecora Corp., Harleysville, PA, SIKAFLEX-1a, manufactured by Silka Corp., Lyndhurst, NJ, or equal.

    a. Elongation Capability: 25 Percent.

    b. Shore A Hardness Range: 20 To 40.

2. Type 2: Multi-part Polyurethane Base. FS TT-S-227E, Class A, Type II, non-sag, DYNATROL II, manufactured by Pecora Corp., Harleysville, PA, SIKAFLEX-2c N/A, manufactured by Sika Corp., Lyndhurst, NJ, or equal.

    a. Elongation Capability: 50 Percent.

    b. Shore A Hardness Range: 20 To 35.

3. Type 3: One-part moisture curing Polyurethane sealant. FS TT-S-230C, Type 1, self leveling, Class A, UREXPAN NR-201, manufactured by Pecora Corp., Harleysville, PA, VULKEM 45, manufactured by MAMECO International

Inc., Cleveland, OH, or equal.

a. Elongation Capability: 25 Percent.

b. Shore A Hardness Range: 35.

4. Type 4: Multi-part Polyurethane Base. FS TT-S-227, Type I, self-leveling, Class A, DYNATRED or UREXPAN NR-200, manufactured by Sika Corp., Harleysville, PA, SIKAFLEX-2c N/A, manufactured by Sika Corp., Lyndhurst, NJ or equal.

   a. Elongation Capability: 250 – 300 Percent.

   b. Shore A Hardness Range: 40.

5. Type 5: One-part Silicone Sealant. FS TT-S-1543a Type S, non-sag, Class A, 863 ACETOXY Silicone Sealant, manufactured by Pecora Corp., Harleysville, PA, SCS 1200, manufactured by General Electric Co., Waterford, NY, or equal.

   a. Elongation Capability: 25 Percent.

   b. Shore A Hardness Range: 27.

6. Type 6: One-part, non-sag, acrylic latex sealing compound, ASTM C834, AC-20 manufactured by Pecora Corp., Harleysville, PA, ACRYLIC LATEX No. 834 manufactured by Tremco, Beachwood, OH, or equal.

7. Type 7: One-part, non-sag, butyl rubber base acoustical sealant ASTM C834, BA-98, manufactured by Pecora Corp., Harleysville, PA, SHEETROCK ACOUSTICAL SEALANT manufactured by USG, Chicago, IL, or equal.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 25 percent larger than joint width; DENVERFOAM or GREENROD, manufactured by Pecora Corp., Harleysville, PA. SONOFOAM BACKER ROD, manufactured by Sonneborn building Products, Minneapolis, MN, or equal.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application. Apply to bottom of joints which are too shallow to receive foam backer rod.

2.3 FIRESTOP SEALANTS – **Not Used**

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that joint openings are ready to receive work and field measurements are as shown on Drawings and recommended by the manufacturer.

B. Beginning of installation means installer accepts existing surfaces.

3.2 PREPARATION

A. Clean and prime joints in accordance with manufacturer's instructions.

B. Remove loose materials and foreign matter which might impair adhesion of sealant. Remove dust with compressed air.

C. Verify that joint backing and release tapes are compatible with sealant.

D. Perform preparation in accordance with manufacturer's recommendations.

E. Protect elements surrounding the work of this Section from damage or disfiguration.

3.3 INSTALLATION

A. Install sealant in accordance with manufacturer's instructions, using hand pointing tools, hand- operated pressure guns or air operated guns with reciprocal pumps and hoses.

B. Measure joint dimensions and size materials to achieve required width/depth ratios.

C. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width. Where sealant is applied to concrete, concrete is to be fully cured.

D. Install bond breaker where joint backing is not used. Install removable masking material to maintain clean lines and protect adjoining surfaces.

E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges. Do not install sealant on wet or damp surfaces.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

G. Tool joints concave, channel shaped or as detailed. Use slicking agent type recommended by manufacturer.

3.4 CLEANING AND REPAIRING

A. Clean adjacent soiled surfaces immediately before sealant cures.

B. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.5 PROTECTION OF FINISHED WORK

A. Protect finished installation from the work of other sections.

B. Protect sealants until cured.

3.6 SCHEDULE

A. Exterior Joints; Unless Specified Otherwise in Individual Sections:

1. Joints between metal frames and concrete or masonry: Sealant Type (1).

2. Joints Between Impervious Materials: Sealant Type (1).

4. Joints in sheet metal flashings: Sealant Type (1).

B. Interior Joints; Unless Specified Otherwise in Individual Sections: **Not Used**

1. Vertical expansion and control joints: Sealant Type (1).

2. Joints between impervious materials: Sealant Type (1).

3. Horizontal expansion, control, isolation and abutment joints: Sealant Type (3) or (4).

4. Window and door perimeters: Sealant Type (1).

5. Gypsum Board Joints: Sealant Type (1).

6. For sink, tub or bath areas including countertop joints: Sealant Type (5).

7. Other interior joints as indicated or shown: Sealant Type (1).

8. Intersection of wall surface and cap strip at resilient flooring integral cove: Sealant Type (1).

9. Intersection of metal or wood thresholds and floor substrate, where building components are mechanically attached and required sealing: Sealant Type (6).

10. Perimeter of sound-rated walls, at intersection of gypsum board and abutting surfaces, both sides of wall: Sealant Type (7).

END OF SECTION

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.

B. Surface finish schedule includes painting of all exposed surfaces, except as otherwise specified or indicated.

D. Painting of all new and existing piping, ductwork, conduit and supports to match interior/exterior paint finishes.

1.2 RELATED SECTIONS

A. Section 00 72 00 - General Conditions.

B. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCES (Current Edition for All Standards Listed)

A. ASTM B117 – Standard Practice for Operating Salt Spray (Fog) Apparatus

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications. Note: Conform to this document for interpretation of terms used in this Section.

C. ASTM D3359 – Standard Test Methods for Rating Adhesion by Tape Test

D. ASTM D4060 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.

E. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials

F. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials

G. ASTM G154 - Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

H. Society for Protective Coatings (SSPC) & National Association of Corrosion Engineers (NACE):

1. SSPC Surface Preparation Specification No. 1 (SP 1) – Solvent Cleaning

2. SSPC Surface Preparation Specification No. 2 (SP 2) – Hand Tool Cleaning

3. SSPC Surface Preparation Specification No. 3 (SP 3) – Power Tool Cleaning

4. SSPC- Surface Preparation Specification No. 6 (SP 6) /NACE No. 3 - Commercial Blast Cleaning

1.4 REGULATORY REQUIREMENTS

A. Conform to the 2022 California Building Code for flame/spread/smoke density rating

requirements for finishes.

B. Furnish manufacturer's certification that all paint coatings furnished for project work comply with the EPA clean air act for permissible levels of volatile organic content for architectural coatings applied in California as designated by California Air Resources Board (CARB).

1.5 SUBMITTALS

A. Provide submittals under provisions of Section 01 33 00, "Submittal Procedures".

B. Product Data: Submit product data of all proposed products, identifying product series, material composition, performance characteristics and sheen. Product data shall include the paint manufacturers recommended mil thickness application of each coat for each type of paint specified.

C. Submit manufacturer's certificate that products comply with current safety and environmental regulations, including hazardous materials labeling and air quality/VOC regulations

D. Submit manufacturer's certificate that products are physically and chemically compatible with each other and meet listed ASTM or Federal Specifications.

E. Where applicable, provide manufacturer's written evaluation of existing paint/coating systems, including directions as to surface preparation and primers compatible with existing systems.

F. Submit manufacturer's application instructions for each painting system, including surface preparation.

G. Color Selection procedure:

1. Provide Architect with samples of complete color and sheen range available for submitted products.

2. Based on submitted samples and specified color criteria, Architect will prepare preliminary color schedule for all field applied coatings.

3. Based on preliminary color schedule, submit samples of all coatings, applied on specified substrate. Submit three samples, approximately 8 x 10 inch in size, illustrating each color and sheen scheduled.

4. After review of preliminary color schedule samples, Architect will prepare final color schedule. Where different from preliminary schedule, submit three samples, approximately 8 x 10 inch in size, illustrating revised color and sheen.

H. Submit four brush-out samples 8x10 inch in size illustrating color and sheen selected for each surface-finishing product shown in the finish schedule.

I. Field Sample: Furnish sample of actual paint colors selected on portion of building item to receive paint as directed by Architect, prior to beginning interior and exterior painting.

K. Applicator: Company specializing in commercial painting and finishing with five years documented experience.

L. Installing Foreman: Individual specializing in applying specified systems with minimum 10 years documented experience.

M. Special Inspection Procedures: See this Section.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 65 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.

C. Minimum Application Temperatures for Latex Paints: 50 degrees F. for exterior work; 45 degrees F for interior work, unless required otherwise by manufacturer's instructions.

D. Prior to beginning preparation and coating application, provide lighting level of 80 foot-candles measured mid-height at substrate surface. Where natural lighting does not provide such levels, provide temporary lighting.

E. Apply all alcohol-based primers, vanishes, lacquers or other products that produce excessive fumes after school hours or on weekends.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of Section 01 60 00, “Product Requirements”, in manufacturer's original unopened, labeled containers, inspect to verify acceptance.

B. Store and protect products from abuse and contamination, under provisions of Section 01 60 00, “Product Requirements”.

C. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.

D. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in an enclosed metal storage container located outside of building, unless required otherwise by manufacturer's instructions.

E. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.8 EXTRA STOCK

1. Provide one unopened five-gallon container of each color and sheen to Owner.
2. Label each container with color, sheen, and room locations, in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Basis of Design - Paint: Specific products listed on Schedule in Part 3 of this Section, are indicated to establish required level of quality, appearance, and performance.

1. Kelly Moore (Specification Basis of Design for Paint) Alternate Manufacturers - Paint:
2. Sherwin Williams
3. Or approved equal

B. Basis of Design, Paint Coatings - Contacts:

1. Kelly Moore (Paints

   Address: 987 Commercial Street, San Carlos, CA 94070

   Website - https://kellymoore.com/

   a. Kelly Moore Product Representative

      Eric Patricio, Phone - (650) 544-9759, E-mail - epatricio@kellymoore.com

2.2 MATERIALS

A. Coatings: Ready mixed manufacturers paint. Process pigments to a soft paste consistency capable of being readily and uniformly dispersed to a homogeneous coating, except field catalyzed coatings.

B. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.

C. Accessory Materials: Provide all admixtures, thinners, flow agents and other materials not specifically indicated but required to achieve the finishes specified.

2.3 FINISHES/COLOR

A. Colors shall be selected by Architect as specified.

B. Each coat shall be a perceptibly different tint.

C. Color Range (For Colors Not Selected Or Noted Elsewhere):

1. Unless noted otherwise, where exterior painting occurs, match existing school color scheme.

2. Where no color range is specified, provide single color for each item or component.

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

B. Verify that work of this Section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Measure moisture content of surfaces using an electronic moisture meter. Provide de-humidifiers and heat as necessary to obtain required environmental conditions for interior paint applications. Do not apply finishes unless moisture content of surfaces is below the following maximums:

1. Plaster, Gypsum Wallboard: 18 percent.

2. Interior Located Wood: 15 percent, measured in accordance with ASTM D4442.

3. Exterior Located Wood: 7 percent measured in accordance with ASTM D4442.

E. In the event of discrepancy, immediately notify the Architect.

F. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

G. Contractor to arrange for Inspector's verification of proper surface preparation prior to start of painting and between each coat.

H. Beginning of paint application to any new surface means acceptance of surfaces prepared under separate specification section.

3.2 PREPARATION

A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.

B. Remove all loose and peeling paints

C. Correct all defects on existing surfaces including patching holes in walls and ceilings, skimming surfaces, repairing cracks, puttying, sanding, etc. to restore original wall finish and provide a uniform texture. Spot prime all areas of repair.

D. Clean all surfaces thoroughly with approved cleaning product. Rinse thoroughly and allow to completely dry before coating.

E. Remove or seal marks which may bleed through surface finishes with B-I-N Primer (additional coats may be required), shellac, or other approved sealers, compatible with finishes to be applied.

F. Bare or Existing Metal Surfaces:

1. Unless otherwise specified, clean surfaces, per SSPC, SP 1, with a solvent approved by paint system manufacturer. Solvent shall be compatible with new paint system materials, OR sand and feather existing finishes in place using methods referenced within SSPC, SP 2 or SP 3 surface preparation standards. Use of acidic or other corrosive paint removal techniques generating caustic or noxious fumes is not permitted.

2. Surface Preparation For Materials With High Performance Coatings: SSPC-SP6/NACE No. 3 Commercial Blast Clean to create a dense, uniform and angular anchor profile of 2.0 mils minimum

3. Completely prime entire surfaces.

4. Use an approved primer that will be compatible and warranted by the selected paint manufacturer over any surface that has been previously painted with an oil-base finish.

K. Galvanized Metal Surfaces:

1. Unless otherwise specified, clean surfaces, per SSPC, SP 1, with a solvent approved by paint system manufacturer. Solvent shall be compatible with new paint system materials, OR sand and feather existing finishes in place using methods referenced within SSPC, SP 2 or SP 3 surface preparation standards. Use of acidic or other corrosive paint removal techniques generating caustic or noxious fumes is not permitted.

2. Test all galvanized steel surfaces for evidence of chromate conversion treatments or other post-galvanizing applications that are not compatible with paint finishes.

3. Where testing demonstrates presence of such treatment, brush blast or otherwise mechanically abrade the surface as required by coating manufacturer.

3.3 PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. All IDF's are to be properly protected in a manner that allows ventilation adequate to prevent damage to equipment. At completion of painting work, all IDF's must be professionally cleaned by an approved technician with a minimum of 3-years of experience in computer cleaning.

E. Remove all debris, including empty paint containers, from site and properly dispose of in lawful manner.

F. Do not use storm drain system for clean-up.

3.4 APPLICATION

A. Apply products in accordance with manufacturer's instructions. Provide coats in appropriate mill thickness to provide suitable cover. Additional coats may be required to provide an acceptable finish depending on base tint and existing color bleed through.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform finish. Number of coats in schedule are the minimum required, additional coats shall be applied as required to achieve a finish that is uniform in color and sheen

D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.

E. Sand lightly between coats to achieve required finish.

F. Allow applied coat to dry before next coat is applied.

G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Prime back surfaces of interior and exterior woodwork with primer paint as recommended by manufacturer.

I. Exterior surfaces, except as noted in other sections, including plasterconcrete, metal fabrications, structural components and metal flashings: Unless noted otherwise, apply paints and coatings as specified below:

1. Unless noted otherwise, do not paint exterior galvanized metals, including railings, steel structural components, all roof flashings and accessories, all plaster trim and accessories, and all mechanical and electrical system components.

2. Apply exterior paint to all roof penetrations visible to the eye from typically occupied locations in the finished project. "Typically occupied" includes those portions of the project visible to a standing person from elevated portions of the site.

3. Apply exterior paint to steel structural components, canopy decking, canopy framing, and miscellaneous fabrications visible to the eye from typically occupied locations in the finished project.

4. Unless designated as prefinished on drawings, apply exterior paint to metal roof copings, gutters, downspouts and flashings visible to the eye from typically occupied locations in the finished project.

5. Apply exterior paint to all plaster trim, reveals and accessories.

6. Do not paint exterior galvanized metal handrails and railings.

J. Apply paint to all other exterior components as specified or shown on drawings.

K. Paint suspended pipe batten systems with interior finish, applied by spray method. Paint all surfaces of grid members.

L. Paint all surfaces and building system components above ceiling grid line in single color, contrasting with grid, in system complying with schedule for specific surface or component.

3.5 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Paint shop primed equipment.

B. Do not paint factory finished mechanical and electrical equipment, except those exposed to view in non-utility areas. Paint factory prefinished items exposed to view in non-utility areas with color as directed by Architect.

C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

D. At interior and exterior applications, prime and paint exposed and insulated pipes, conduit, boxes, exposed and insulated ducts, mechanical equipment units, hangers, brackets, collars and supports, except where items are prefinished.

E. Replace identification markings on mechanical or electrical equipment when painted accidentally.

F. At all locations where new exposed duct work is to be painted, Contractor shall paint duct work at floor level prior to installing on wall. Once painted, protect duct work from overspray and other construction related debris. Ductwork finish shall be smooth and without blemishes. Once installed, carefully touchup any areas scratched during install.

G. Paint interior surfaces of air ducts, and convector and baseboard heating cabinets that are visible through grilles and louvers with flat black paint, to limit of sight line. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels, except fire dampers.

H. Paint exposed panels, pedestals, boxes, conduit and related electrical equipment occurring in exterior and interior finished areas.

I. Replace electrical plates, hardware, light fixture trim, and fittings removed prior to finishing.

3.6 CLEANING

A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.

B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

C. At end of workday remove from building flammable paint, solvents, and reducing agents.

D. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

E. Upon completion of the work of this section, remove all surplus material and related debris from the site.

3.7 SCHEDULE - GENERAL REQUIREMENTS:

A. For ease of specifying, unless otherwise noted, product numbers of Kelly Moore have been used.

1. Basis of Design Manufacturers - Paint:

a. Basis of Design – Paints, - Kelly Moore

2. Acceptable Paint Manufacturers – See Paragraph 2.1, this Section, for acceptable alternates. For alternates, a submittal is required showing equivalence to specified products per Section 01 25 00, “Substitution Procedures”

3.8 SCHEDULE - INTERIOR SURFACES – **NOT USED**

A. Descriptions in schedule apply to new and previously painted surfaces. Number of coats listed are a minimum, additional coats may be required to provide suitable uniform finish.

B. **New Gypsum Board Walls and Soffits** at classrooms, offices, storage rooms, etc. (non "wet" type spaces) - Low Sheen/Eggshell Paint Finish:

1. Prep as described in Paragraph 3.2 H in this Section.
2. One coat: KM 971 Acry-Plex Low VOC Interior PVA Primer.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/971-TDS.pdf
3. Two coats: KM 1007 Premium Professional Low VOC Interior Low Sheen.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1007-TDS.pdf
4. Or two coats: KM 1010 Premium Professional Low VOC Interior Eggshell.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1010-TDS.pdf

C. **New Gypsum Board Ceilings** at classrooms, offices, storage rooms, etc. (non "wet" type spaces) - Flat Finish:

1. Prep as described in Paragraph 3.2 H in this Section.
2. One coat: KM 971 Acry-Plex Low VOC Interior PVA Primer.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/971-TDS.pdf
3. Two coats: KM 1005 Premium Professional Low VOC Interior Flat.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1005-TDS.pdf

D. **New Gypsum Board Walls, Soffits Ceilings** at toilet rooms, locker rooms, kitchens, custodian rooms, and similar "wet" spaces – Semi-Gloss Paint Finish:

1. Prep as described in Paragraph 3.2 H in this Section.
2. One coat: KM 971 Acry-Plex Low VOC Interior PVA Primer.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/971-TDS.pdf
3. Two coats: KM 1685 Dura-Poxy 100% Acrylic Semi-Gloss Enamel.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1685-TDS.pdf?sfvrsn=2

E. **Existing Gypsum Board Walls & Soffits** at classrooms, offices, storage rooms, etc. –

Low Sheen/Eggshell Paint Finish:

1. Prep as described in Paragraphs 3.2 A-G & H in this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

   Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

   Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx
3. Two Coats: KM 1007 Premium Professional Low VOC Interior Low Sheen.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1007-TDS.pdf

F. **Existing Gypsum Board Ceilings** at classrooms, offices, storage rooms, etc. (non "wet" type spaces) - Flat Finish:

1. Prep as described in Paragraphs 3.2 A-F & H in this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

   Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

   Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx
3. Two coats: KM 1005 Premium Professional Low VOC Interior Flat

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1005-TDS.pdf

G. **Existing Gypsum Board Walls and Ceilings** at toilet rooms, locker rooms, kitchens, custodian rooms, and similar "wet" spaces – Semi-Gloss Paint Finish:

1. Prep as described in Paragraphs 3.2 A-F & H in this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

   Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

   Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx
3. Two coats: KM 1685 Dura-Poxy 100% Acrylic Semi-Gloss Enamel.

Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1685-TDS.pdf?sfvrsn=2

H. **Acoustical Ceiling Tiles**, Where painting is indicated – Flat:

1. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

   Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

   Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx

2. Two coats: KM 1005 Premium Professional Flat Wall Paint

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1005-tds.pdf

I. **Wall Preparation For Vinyl Wall Coverings**:

1. One Coat Sealer: ZINSSER SHIELDZ Universal Wallcovering Primer

   Product Website Link: https://www.rustoleum.com/product-catalog/consumer-brands/zinsser/wallpaper-primers/shieldz-universal-wallcovering-primer/

J. **Interior Non-Galvanized Metal** - Doors and Frames, Ferrous Metal Piping, Structural Steel, Miscellaneous Metal Fabrications, and Related Components:

1. Prep per Paragraphs 3.2 A-G, K, M, & N this Section.
2. One Coat: KM 6646 DTM Acrylic Eggshell Primer Finish

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6646-TDS.pdf?Status=Master&sfvrsn=8

3. Two Coats: KM 6648 DTM High Performance Acrylic Semi-Gloss Enamel.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6648-TDS.pdf?sfvrsn=2

4. Note: Interior structural steel and miscellaneous metal fabrications shall be shop-primed as described above and included in the scope of work for the following sections:
   a. Section 05 12 00 - Structural Steel
   b. Section 05 50 00 - Metal Fabrications
   c. Section 08 11 13 - Hollow Metal Doors and Frames

K. **Interior Galvanized and Zinc Alloy Metal** - Semi-Gloss Enamel:

1. Prep per Paragraph 3.2 L, this Section.
2. Clean and etch with phosphoric acid solution and rinse with clear water. Rustoleum KRUD KUTTER Metal Clean and Etch

Product Website Link:
https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Krud%20Kutter/KRK-19_Metal_Clean_and_Etch_TDS.ashx

3. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

   Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

   Product Website Link:
   https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx

4. Two Coats: KM 6648 DTM High Performance Semi-Gloss Enamel

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6648-TDS.pdf

L. **Interior Cement Plaster and Interior Exposed Concrete** - Semi-Gloss at Walls and Flat at Ceilings, Enamel:

1. Prep per Paragraphs 3.2 A-G & I, this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

   Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

   Product Website Link:
   https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx

3. Two Coats: KM 1050 Premium Professional Low VOC Interior Semi-Gloss Enamel

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1050-TDS.pdf

M. **Interior Concrete Block** - Semi-Gloss:

1. Prep per Paragraphs 3.2 A-F, this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

3. Two Coats: KM 1050 Premium Professional Low VOC Interior Semi-Gloss Enamel

N. **New or Existing Interior Painted Woodwork, Wood Windows and Casework** - Semi-Gloss Enamel:

1. Prep per Paragraphs 3.2 A-F & O this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

Or, if heavily stained - Zinsser B-I-N Primer-Sealer Stain-Killer,

Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Zinsser/BIN-03-B-I-N_Shellac-Base_Primer_Ultimate_Stain_Blocker_TDS_2.ashx

3. Two Coats: KM 1050 Premium Professional Low VOC Interior Semi-Gloss Enamel

Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1050-TDS.pdf

3.9 SCHEDULE - EXTERIOR SURFACES - PAINT

A. Descriptions in schedule apply to new and previously painted surfaces. Number of coats listed are a minimum, additional coats may be required to provide suitable uniform finish.

B. **Exterior Non-Galvanized Ferrous Metal Fabrications** - Steel Doors and Frames, Flashings and Similar Items – Semi-Gloss Enamel:

1. Prep as described in Paragraphs 3.2 A-G, K, M and N in this Section.
2. Clean and etch with phosphoric acid solution and rinse with clear water. Rustoleum KRUD KUTTER Metal Clean and Etch

   Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Krud%20Kutter/KRK-19_Metal_Clean_and_Etch_TDS.ashx
3. One Coat: KM 6646 DTM Acrylic Eggshell Metal Primer

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6646-TDS.pdf
4. Two Coats: KM 6648 DTM High Performance Acrylic Semi-Gloss Enamel.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6648-TDS.pdf

C. **Exterior Galvanized Ferrous Metal Fabrications** - Steel Doors and Frames, Flashings and Similar Items – Semi-Gloss Enamel:

1. Prep as described in Paragraphs 3.2 A-G & L in this Section.
2. Clean and etch with phosphoric acid solution and rinse with clear water. Rustoleum KRUD KUTTER Metal Clean and Etch

   Product Website Link: https://www.rustoleum.com/~/media/DigitalEncyclopedia/Documents/RustoleumUSA/TDS/English/CBG/Krud%20Kutter/KRK-19_Metal_Clean_and_Etch_TDS.ashx
3. One Coat: KM 6646 DTM Acrylic Eggshell Metal Primer

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6646-TDS.pdf
4. Two Coats: KM 6648 DTM High Performance Acrylic Semi-Gloss Enamel.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6648-TDS.pdf

D. **Exterior Galvanized Metal Railings – Painted**, As Noted In Drawings - Gloss Urethane Enamel:

1. Prep as described in Paragraphs 3.2 A-G & K in this Section.
2. Clean and etch with phosphoric acid solution and rinse with clear water. Rustoleum KRUD KUTTER Metal Clean and Etch

Product Website Link: https://www.rustoleum.com/product-catalog/consumer-brands/krud-kutter/

3. One Coat: KM 6646 DTM Acrylic Eggshell Metal Primer

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6646-TDS.pdf?sfvrsn=2

4. Two Coats: KM 1828 Envy Interior/Exterior Semi-Gloss Enamel

E. **Exterior Aluminum Panels – Non-primed**:

1. Prep as described in Paragraphs 3.2 A-G in this Section.
2. Clean and etch with phosphoric acid solution and rinse with clear water. Rustoleum KRUD KUTTER Metal Clean and Etch

   Product Website Link: https://www.rustoleum.com/product-catalog/consumer-brands/krud-kutter/

3. One Coat: KM 6646 DTM Acrylic Eggshell Metal Primer

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6646 DTM-TDS.pdf?sfvrsn=2

4. Two Coats: KM 6648 DTM High Performance Semi-Gloss Enamel

F. **Exterior Aluminum Panels – Pre-primed**:

1. Prep as described in Paragraphs 3.2 A-G in this Section.
2. Clean and etch with phosphoric acid solution and rinse with clear water. Rustoleum KRUD KUTTER Metal Clean and Etch

   Product Website Link: https://www.rustoleum.com/product-catalog/consumer-brands/krud-kutter/

3. One Coat: Factory Prime coat (Touch up if abraded)
4. Two Coats: KM 6648 DTM High Performance Semi-Gloss Enamel

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/6648 DTM-TDS.pdf?sfvrsn=2

G. **Exterior Cement Plaster and Exposed Exterior Concrete** - Semi-Gloss Enamel:

1. Prep as described in Paragraphs 3.2 A-F in this Section.
2. One Coat: KM 247 Acry-Shield 100% Masonry Primer

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/247-TDS.pdf?Status=Master&sfvrsn=0

3. Two Coats: KM 1148 Inspire Exterior Acrylic Semi-Gloss Finish

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1148-tds.pdf.pdf

H. **New Concrete Block** - Semi-Gloss:

1. Prep as described in Paragraphs 3.2 A-F in this Section.

2. One Coat: KM 521 Color Shield Prime & Fill Acrylic Block Filler

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/521-TDS.pdf

3. Two Coats: KM 1148 Inspire Exterior Acrylic Semi-Gloss Finish

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1148-tds.pdf.pdf

I. **Existing Concrete Block** - Semi-Gloss:

1. Prep as described in Paragraphs 3.2 A-F in this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

3. Two Coats: KM 1148 Inspire Exterior Acrylic Semi-Gloss Finish

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1148-tds.pdf.pdf

J. **Cementitious Siding and Soffits** - Flat:

1. Prep as described in Paragraphs 3.2 A-F in this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

3. Two Coats: KM 1142 Inspire Exterior 100% Acrylic Flat.

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1142-TDS.pdf

K. **Exterior Wood, Wood Windows, Etc. – Painted** -Semi-Gloss:

1. Prep as described in Paragraphs 3.2 A-F & O in this Section.
2. One Coat: KM 295 Kel-Bond Universal Primer,

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/295-TDS.pdf?Status=Master&sfvrsn=0

3. Two Coats: KM 1148 Inspire Exterior Acrylic Semi-Gloss Finish

   Product Website Link: https://kellymoore.com/wp-content/uploads/products/data-sheets/1148-tds.pdf.pdf

END OF SECTION

SECTION 31 23 33

TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.1 SECTION INCLUDES:

A. Description of requirements for materials, equipment and services necessary to complete trenching, excavation, backfilling and compaction as shown and specified for utilities and related structures and thrust blocks.

1. Utilities companies' requirements where applicable will take precedence over these specifications.

1.2 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies.

B. Safety Regulations: Work shall comply with all Federal, state and municipal regulations regarding safety, including the requirements of the following:

1. William-Steiger Occupational Safety & Health Act of 1970.

2. All trenching work shall conform to Trench Construction Safety Orders of California State Industrial Accident Commission.

C. References and Standards:

1. American Society for Testing and Materials (ASTM):

a. D1557-78- "Moisture-Density Relations of soils Using 10 ¬lb. (4.5 kg) Rammer and 18-in. (457 mm) Drop."

D. Observations and Inspections: The District Site Inspector will observe will inspect utilities trenching, excavation, backfilling and compaction as appropriate. Contractor shall appropriately schedule all inspections prior to commencing trenching and backfilling operations. All installations are subject to satisfactory inspection by the District Site Inspector.

E. Testing:

1. Backfill material compaction inspection and other tests will be performed as deemed necessary by the District Site Inspector.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe bedding and initial backfill (electric conduits): Sand graded in accordance with ASTM D448 #67, and within the following limits:

1. ½ inch sieve: 100% passing.

2. Sand equivalent to be 50 minimum.

B. Trench Backfill material for backfilling trenches, above the pipe bedding and initial backfill material, shall be well-graded on-site native fill, less than 2 inches in greatest dimension,

PART 3 - EXECUTION

3.1 TRENCHING

A. Make all trenches open vertical or sloped construction, as recommended by the manufacturer of the pipe, and with sufficient width to provide free working space at both sides of trench and around installed item as required for caulking, joining, backfilling, and compacting. Where no manufacturer's recommendations are available, trenches shall be not less than 8 inches nor more than 16 inches wider than pipe or conduit diameter.

1. Where recommended trench widths are exceeded redesign shall be performed at no extra cost to the Owner, using stronger pipe or special installation procedures.

2. Restore all surfaces damaged or cut during excavation to original condition.

B. Excavate trench straight and true to line and grade and to a depth below the bottom of the pipe sufficient to provide for pipe bedding material as required. Trenches over-excavated in depth shall be re-filled with suitable materials and compacted to 90 percent (90%) relative compaction.

C. Excavations for utilities related structures and appurtenances, manholes, drop inlets or similar structures shall be sufficient to leave at least 12 inches clear between the outer structure surface and face of the excavations. When concrete is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation.

D. Hand excavate final 3 inches to accurate grade to provide firm and uniform bearing for conduits, or excavate additional 4 inches and provide 4 inch bed of sand to proper grade.

E. Unsatisfactory material shall be removed and replaced with suitable material compacted to 90 percent (90%) relative compaction.

F. Where depths are not shown, trench to sufficient depth to give minimum fill above top of installed item measured from adjacent finished grade as follows: (unless shown differently by electrical or telecom engineer or as required by local utility)

1. Low Voltage electrical conduit: 24 inches

3.2 CONTROL OF GROUND WATER

A. The Contractor shall provide all labor, equipment and materials for dewatering trenches and excavations and subsequent control of ground water.

3.3 PIPE BEDDING PLACEMENT

A. A four-inch (4”) layer of pipe bedding material compacted to 90 percent (90%) relative compaction (per ASTM D1557) shall be placed and accurately shaped as required for the indicated pipe elevations and grades.

3.4 BACKFILLING

A. Initial Backfill Placement: Initial backfill material shall be placed and compacted to 90 percent (90%) relative compaction (per ASTM D1557) on both sides of the pipe simultaneously to avoid displacement of the pipe, four inches (4") above pipe.

B. If trench is over excavated for any reason, use bedding material to bring the trench bottom to the elevation required.

C. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

D. Trench Backfill Placement: Subsequent trench backfill material shall be placed in layers not exceeding six inches thick, and compacted to 90 percent (90%) relative compaction (per ASTM D1557) up to six inches from finish surface or subgrade.

E. Install locator wire as indicated on the Plans.

F. Install warning tape directly above utilities, 12 inches above top of pipe.

G. Trench "Capping" Material: The trench shall be "capped" above the trench backfill with trench "capping" material compacted to 95 percent (95%) relative compaction (per ASTM D1557) to subgrade or finish surface.

H. Backfill for utility related or similar structures shall be placed as specified above and in such a manner that the structure will not be damaged.

I. Remove excess earth from site.

J. Requirements from material manufacturers shall take precedence over minimum requirements listed in this section.

3.5 COMPACTION METHODS

A. Mechanically compacted backfill: Backfill shall be mechanically compacted by means of tamping rollers, sheep foot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers.

B. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will achieve the required compaction results or will not result in damage to adjacent ground, existing improvements, or improvements installed under contract. The contractor shall make his own determination in this regard.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING AND STRIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Asphalt concrete pavement – patch back existing paving.

B. Aggregate base course.

C. Paving accessories as specified.

1.2 REFERENCES

A. Standard Specifications for Public Works Construction (SSPWC - "Green Book"),//State of California, Department of Transportation (CalTrans), Standard Specifications,// latest edition, as adopted by jurisdictional authority, including amendments.

B. ASTM D 1188 - Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures

C. ASTM D1557 - Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3).

D. ASTM D 2170 - Test Method for Kinematic Viscosity of Asphalts (Bituminous)

E. ASTM D 2172 - Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures

1.3 SUBMITTALS

A. Mix Design: Submit asphalt mix design prepared by a certified laboratory, selected by Owner and acceptable to Owner, for review and approval.

B. Accompanying mix design, submit materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.4 SITE CONDITIONS

A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg F (10 deg C) and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

B. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 deg F (4 deg C) and when base is dry. Base course may be placed when air temperature is above 40 deg F (minus 1 deg C) and rising.

C. Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE COURSE MATERIAL

A. Provide "Crushed Aggregate Base" per SSPWC Section 200-2.2 // Section 26, CalTrans Standard Specifications,

2.2 ASPHALTIC CONCRETE PAVEMENT MATERIALS

A. Asphaltic Concrete Pavement Mixture:

1. Mix Characteristics:

a. Vehicular Paving: ½-inch aggregate asphalt concrete with a target 4 percent air voids with the binder content adjusted during production to target 3 percent air voids.

2. Asphalt binder: Asphalt binder shall consist of PG64-28.

3. Asphaltic concrete pavement shall be produced at a commercial central mixing plant.

B. Tack Coat: Slow setting asphalt emulsion SS1h per SSPWC Section 203-3 // Section 39-4.02, CalTrans Standard Specifications.

C. Tack Coat at pavement fabric: Provide AR4000 paving asphalt in compliance with SSPWC Section 302-7.2.2 // Section 88, CalTrans Standard Specifications.

D. Herbicide: Provide approved herbicide, tinted for visual identification, non-flammable formulation, and complying with all current California and EPA environmental regulations.

E. Surface Sealer: Asphalt Emulsion, www.aema.org., SS1-h, per SSPWC Section 203-9 // Sections 37 and 94, CalTrans Standard Specifications.

F. Surface Sealer: BIPCO, phone (760) 599-7210, Series 180, no known equal.

G. Surface Sealer: Guard Top by Vulcan Materials, Satin Seal by Blue Diamond or equal.

H. Paint Schedule: Alkyd-resin type, ready-mixed complying with AASHTO M 248, Type I. Apply 2-coat pavement and curb markings as scheduled below and indicated on the drawings.

a. Parking Stripes - Color: White.

2.3 OTHER MATERIALS

A. Provide all other materials, not specifically described but required for complete and proper installation of this work, as selected by the contractor and subject to the approval of the Architect.

2.4 DESIGN CRITERIA

A. General:

1. All improvements shall be constructed per the referenced standards, the contract documents, and as specified in this section.

2. Where criteria shown on drawings or specified in this specification exceed that of the referenced standards, the more stringent criteria shall apply.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS AND PREPARATION

A. Inspection:

1. Prior to work of this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence.

2. Verify that work of this section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

3.2 PLACEMENT OF AGGREGATE BASE COURSE

A. Deliver base course to site as uniform mixtures.

B. Spread each layer in one operation, free from pockets of coarse or fine material , and in compliance with SSPWC 302-2 //Section 39, CalTrans Standard Specifications.

1. Where asphalt paving is installed to replace existing on-site locations, match existing base thickness.

3. Where asphalt paving is installed at areas without prior paving, provide minimum 6 inch compacted base thickness.

C. Application:

1. Where the required thickness is 0.5 foot or less, spread and compact base in one layer.

2. Where the required thickness is more than 0.5 foot, spread and compact base material in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 0.5 foot, or less if compaction cannot be obtained with 0.5 lift.

D. Each layer shall be spread and compacted in a similar manner. When vibrating or other acceptable types of special compacting equipment are used, the entire course may be placed in one layer, provided the ability of such equipment to achieve acceptable compaction to the full layer depth is demonstrated.

E. No thin layers of fine materials shall be added to the top layer of the subbase or base course in order to meet the grade.

3.3 BASE COURSE COMPACTION AND PROTECTION

A. Compact base course material to not less than 95 of the maximum laboratory density as determined by ASTM D-1557.

B. Remove damaged base course to subgrade and place, grade and compact new base course in settled, eroded, and wetted areas to specified tolerances.

C. Where completed base course areas are disturbed by subsequent construction operations or adverse weather, remove base course in damaged areas to subgrade, and place and compact new base course to required density prior to further construction.

3.4 PREPARATION FOR PAVING

A. Apply tack coat to vertical faces of existing or previously constructed bituminous pavement, curbs, gutters, slab edges, and all structures to be in actual contact with the bituminous pavement.

B. Coat surfaces of catch basin frames with oil to prevent bond with asphalt pavement. Do not tack coat these surfaces.

C. Prior to applying the tack coat, sweep or otherwise clean surface free of dust or other foreign material.

D. Protect all surfaces not required to receive tack coat from any inadvertent application.

E. Do not place tack coat when air temperature in the shade or the roadbed temperature is below 50 degrees F, or during rain, fog, or other adverse weather conditions.

F. After application of tack coat, allow sufficient time for complete separation of asphalt and water before paving operations begin. Do not leave tack coat exposed overnight. Apply tack coat to only those surfaces as will be paved in the same day.

G. Apply primer coat to base course surfaces in conformance with Section 302-5.3, SSPWC, //Section 39, CalTrans Standard Specifications,//at rate of 0.10 to 0.25 gallons per square yard. Allow to cure prior to application of asphalt course.

3.5 PLACEMENT OF ASPHALTIC CONCRETE PAVEMENT

A. Conform to SSPWC Section 302-5 //Section 39, CalTrans Standard Specifications.

B. Do not place asphaltic concrete paving when the air temperature in the shade or the roadbed temperature is below 50 degrees F, or during rain, when the base course surface is wet, or during other adverse weather conditions.

C. Place asphalt pavement as required to provide compacted depth as indicated on the plans, in a continuous operation. Place inaccessible and small areas by hand.

1. Provide minimum 3 inch compacted thickness or as required to match existing, whichever is greater.

2. Where asphalt paving is installed to replace existing on-site locations, install in compacted thickness to match existing paving.

D. Place asphalt in single or multiple lifts per SSPWC Section 302-5.5 //Section 39-6, CalTrans Standard Specifications.

E. Ensure joints made during paving operations are straight, clean, vertical and free of broken or loose material. Carefully make joints to insure a continuous bond between old and new pavement, or between successive day's work. Provide a continuous bond between adjoining work.

3.6 ROLLING

A. Monitor temperatures of the asphalt concrete mixture as delivered to the site and during laydown to insure conformance with SSPWC Section 302-5.5 //Section 39-6, CalTrans Standard Specifications.

B. Roll and compact to specified density in accordance with SSPWC Section 302-5.6 //Section 39-6, CalTrans Standard Specifications .

C. Compact asphalt paving course to 95 percent of the maximum laboratory density, as obtained with the California Kneading Compactor, per California Test 304.

D. Perform hand tamping in areas not accessible to rolling equipment.

3.8 SEAL COAT

A. Allow completed paving to cure for minimum of 1 month prior to application of specified seal coat.

B. Conform to the manufacturers recommendations for two coat application.

C. Conform to SSPWC Section 302-8.2 //Section 39, CalTrans Standard Specifications,//for application.

D. Provide surface finish free of ridges, lap marks, coarse textured areas, or other appearance and performance defects.

A. Conform to Section 32 17 23 of this Project Manual.

3.10 PROTECTION

A. After final rolling, do not permit vehicular traffic on pavement until it has cooled to atmospheric temperature and hardened, but in no case less than 8 hours.

B. Erect barricades in accordance with requirements of Division 1 to protect paving from traffic until mixture has cooled in accordance with the specifications.

C. Do not use completed paving surface for storage of construction vehicles or construction materials.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Chain link fence framework, fabric, and accessories.

C. Excavation for footings.

D. Concrete footings

1.2 RELATED SECTIONS - NONE

1.3 REFERENCES (The latest/most current edition of each document listed below shall apply)

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

B. ASTM A153 / A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

C. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric

D. ASTM C94 / C94M - Standard Specification for Ready-Mixed Concrete

E. ASTM F567 - Standard Practice for Installation of Chain-Link Fence

F. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC), Polyolefin and Other Polymer-Coated Steel Chain Link Fence Fabric

G. ASTM F1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework

H. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.

I. Chain Link Fence Manufacturers' Institute (CLFMI) - Product Manual.

https://chainlinkinfo.org/wp-content/uploads/2017/05/CLFMI-Product-Manual-revised-March-2017-1.pdf

1.4 SYSTEM DESCRIPTION

A. Fence Height: 6'-0", unless otherwise noted.

B. Line Post Spacing: At intervals not exceeding 10 feet.

1.5 QUALITY ASSURANCE

A. Manufacturer: Company specializing in commercial quality chain link fencing with five (5) years experience.

B. Installation: Company with demonstrated experience installing specified products within 12 month period prior to contract award and in compliance with ANSI/ASTM F567.

1) If any welding is required provide welders' certificates, verifying AWS qualification within the previous 12 months.

1.6 FIELD MEASUREMENTS

A. Verify field measurements are as indicated on shop drawings.

1.7 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 33 00.

B. Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorages, and schedule of components.

C. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

D. Submit manufacturer's certificate of compliance with specified requirements.

E. Submit samples of screen cloth for color selection by Architect.

1.8 WARRANTY AND GUARANTEE

A. Guarantee

1. Provide guarantee under provisions of Section 01 77 00.

2. Provide guarantee, for a period of three (3) years following final completion, against the following:

a. Corrosion of base material.

b. Fabric sagging, bowing, breakage or similar defects.

c. Fence framework failure, footing subsidence, or similar defects.

B. Warranty: Provide manufacturers five (5) year warranty coverage.

C. Warranty: Manufacture of slats to provide a 10 year warranty against color fading and breakage of slats.

PART 2 - PRODUCTS

2.1 FENCE FRAMEWORK

A. General. Conform to CLFMI Product Manual

B. Manufacturer: Provide a single manufacturer for all like products.

C. Type: Steel pipe, Schedule 40, plain end pipe complying with ASTM F 1083.

D. Fence Fabric Coating: Hot Dipped galvanized per ASTM F 1083.

E. Polymer Coating (PVC) Finish: Minimum 7 mil PVC thermal fused coating over hot dipped galvanized per ASTM F1043. Color: Standard Black.

F. Size:

1. Line Posts:

a. Fabric less than six feet high: 2.0 inches

2. Top, Bottom, Center and Brace Rail: 1.5 inches

G. Privacy Shade Screen Cloth: Heavy duty knitted polyethylene material, cloth height for 6'-0" fencing, binding edge on all sides, solid brass grommets every 24 inches and triple grommet corner. Color: Black

H. Accessories:

1. Tension Wire: ASTM A 824; 7 gage, Class 2 galvanized zinc coating.

2. Tension bars: Steel, galvanized, 3/4 inch x 1/4 inch x full length.

3. Tie Wire: 6 gage, galvanized, unless noted otherwise.

4. Hog Rings: 9 gage, galvanized steel wire.

5. Truss Rods: 3/8 inch diameter, with turnbuckle and hook or approved equal.

6. Post Cap: cast iron or steel, configuration as required to provide weatherproof closure, hot dip galvanized, set screw retainer.

7. Fittings: cast iron or steel, configuration as required for installation, hot dip galvanized.

8. Finish coating/color to match fence fabric.

2.2 FENCE FABRIC

A. Manufacturer: Provide a single manufacturer for all like products.

B. Type: Steel Wire Fabric, zinc coated, mesh woven. Top selvage twisted tight, bottom selvage knuckled end closed.

C. Characteristics:

1. Size: Two inch diamond mesh.

2. Wire gage: No.9 -

3. Edge: Knuckled selvedge at top and bottom of all fabric.

D. Finish: Class 2 zinc coating with Black PVC finish.

2.6 CONCRETE

A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94/C 94M.

1. Concrete Mixes: Normal-weight concrete**,** 2% to 4% air entrained with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.

B. Materials: Dry-packaged concrete mix complying with ASTM C 387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

2.7 POST SLEEVES

A. Provide hot dipped galvanized steel sleeve, schedule 40, sized to permit minimum of 3/4 inch grout space between post and inside of sleeve.

2.8 GROUT

A. Atlas Ultimate HP Grout or equal, non-shrink when tested in accordance with CRD-C-621 and ASTM C 827, providing minimum compressive strength of 2,500 psi at 24 hours and 8,000 psi at 28 days.

1) Website Product Link:

2) https://www.atlasform.com/pages/Atlas%20Tech-Concrete%20Chemicals%20&%20Repair%20Materials/technical%20data%20sheet/atlas%20ultimate%20hp%20grout.pdf

2.9 OTHER MATERIALS

A. Provide all other materials, not specifically described but required for complete and proper installation of this work, as selected by the contractor and subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection

1. Prior to work of this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence.

2. Verify that work of this section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

3. In the event of discrepancy, immediately notify the Architect.

4. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 FOOTING PREPARATION AND INSTALLATION

A. Install concrete foundations at all fencing posts.

1. Line Posts:

a. Fabric less than six feet high: 30 inch deep x 8 inch diameter.

2. Corner, Gate and Terminal Posts:

a. Fabric less than six feet high: 36 inch deep x 12 inch diameter.

B. Install concrete with crown watershed, set 2 inches above adjacent grade.

C. Where fencing is installed in curbs, slabs or walls, provide specified sleeves. Center post in sleeve and fill with non-shrink grout.

3.3 INSTALLATION

A. General

1. Install framework in accordance with ANSI/ASTM F567, at height indicated on drawings.

2. Install framework following profile of finish grade, with maximum of 1 inch between bottom of fence edge or bottom rail and adjacent grade or paving. Do not install posts in ditches, dips or on mounds.

3. Set terminal, gate and line posts plumb and aligned. Embed post to within 3 inches of bottom of footing. Slope top of concrete for water runoff.

4. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail, one bay from end and gate post.

5. Provide top rail through line post tops and splice with 6 inch long rail sleeves.

6. All field welding to be performed by certified welder and all welds are to be ground down smooth.

7. All clamping bolts protruding from clamp shall be cut off flush to nut and exposed end of bolt shall be galvalumed. Galvanized acorn nut is also an acceptable means of protecting students from sharp edges.

B. Line Posts

1. Space line posts at intervals not exceeding 10 feet, equidistant between break points.

D. Rails, Tension Wire and Truss Rods

1. Provide top rail through line post tops and splice with 7 inch long rail sleeves.

a. Provide center rail at mid height of all tennis court fencing.

2. Provide tension wire, 2 inches above grade, stretched between terminal posts. Fasten at each line post.

E. Fabric

1. Allow concrete to attain sufficient strength prior to installing fabric.

2. Stretch fabric between terminal posts.

3. Position bottom of fabric approximately 1 inch above finished grade.

4. Where possible, place wire fasteners, clip ends and other fastening devices on fence side away from student path. Fasten fabric to top rail, line posts and bottom tension wire with tie wire at maximum 15 inches on centers.

5. Fasten fabric to rails, braces and line posts with wire ties maximum 12 inches on centers. Weave tie through fabric, around post and twist minimum three turns. Cut off wire ends.

6. Install bottom tension wire stretched taut between terminal posts.

7. Attach fabric to terminal posts and gate frames with tension bars and tension bar bands or clips, spaced maximum 12 inches on center. Extend tension bar full height of fabric.

F. Install bottom tension wire stretched taut between terminal posts.

3.4 ERECTION TOLERANCES

A. Maximum Variation From Plumb: 1/8 inch.

B. Maximum Offset From True Position: 3/8 inch.

C. Components shall not infringe adjacent property lines.

END OF SECTION