



County of San Luis Obispo Animal Services Facility project using a Design-Build Delivery Method

The attached plans and project manual are for a new Animal Services Facility for the County of San Luis Obispo. The documents are draft and are provided for informational purposes only. The project will be constructed through a Design-Build project delivery process, and the attached documents will be part of the bridging documents included with a D-B Request for Proposals that is anticipated to be issued in November/December 2018. The D-B construction budget is estimated to be approximately \$10 million.

For more information, please feel free to contact Robert Ruiz at (805) 788-2114 (r Ruiz@co.slo.ca.us) or check the below link regularly

<http://www.slocounty.ca.gov/Departments/Public-Works/Current-Public-Works-Projects/Animal-Shelter-Facility.aspx>

PROJECT MANUAL / BRIDGING DOCUMENTS

PROJECT NO. 1702
June 22, 2018



SAN LUIS OBISPO COUNTY ANIMAL CARE FACILITY

The San Luis Obispo County Animal Shelter will be a public-accessible facility designed to hold, care for and adopt companion animals. The project design consists of a one-story, SF GSF full-sprinklered, Type-V non-rated building with a slab on grade and composite metal stud and light steel frame structure. The exterior features a three-part cement plaster acrylic finish coat with CMU at Dog Kennel areas as noted on the plans. Roof material will consist of a single-ply membrane system. Site walls consist of CMU, ornamental iron fencing and chain link along the site perimeter. All interior areas will be heated and air-conditioned with all animal holding and medical areas receiving 100% outside air.

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 11 00 - SUMMARY OF WORK

- A. The work of this Contract comprises construction of a one story addition to the San Luis Obispo County Animal Shelter.
 - 1. Architectural Narrative: Refer to Appendix A.
 - 2. Structural Narrative: Refer to Appendix B.
 - 3. Plumbing Narrative: Refer to Appendix C.
 - 4. Mechanical Narrative: Refer to Appendix D.
 - 5. Electrical Narrative: Refer to Appendix E.
 - 6. Civil Narrative: Refer to Appendix F.
- B. Use of the premises for work, storage, and vehicular parking is limited to the areas designated by the County. If the areas on the premises are not sufficient, obtain and pay for the use of additional work, storage, and parking areas needed.
- C. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage areas to designated areas.
- D. The Drawings do not show all existing water, gas, electrical lines and other items known or suspected to exist in the area of the work. Locate these existing installations before proceeding with demolition, earthwork, or other operations which may cause damage, maintain them in service where appropriate, and repair damage caused by the performance of the work, at no increase in the Contract Sum.

SECTION 01 23 00 – ALTERNATES

- A. Refer to Narratives in the Appendices and as indicated on the Drawings.

SECTION 01 31 19 - PROJECT MEETINGS

- A. Preconstruction Conference: Prior to commencement of work, the County will arrange for a preconstruction conference to be held to discuss and clarify administrative procedures to be followed during the progress of the work.
- B. Progress Meetings: Prepare Agenda, schedule and hold periodic meetings as required by the progress of the work. Take and distribute meeting notes to the attendees. Attendees taking exception to anything in the meeting notes shall state their objections in writing, within 5-working days following receipt.

SECTION 01 35 15 – CALGREEN REQUIREMENTS

- A. Comply with 2016 CALGreen nonresidential mandatory requirements.

SECTION 01 42 00 - REGULATORY AND REFERENCE STANDARDS

- A. Regulatory Requirements:
1. Unless otherwise indicated or specified, perform the work in conformance with the latest edition of applicable regulatory requirements.
 2. The codes adopted by the City, County, State and Federal agencies shall govern minimum requirements for this Project.
 3. Conflicts:
 - a. Between Referenced Regulatory Requirements: Comply with the one establishing the more stringent requirements.
 - b. Between Referenced Regulatory Requirements and Contract Documents: Comply with the one establishing the more stringent requirements.
- B. Reference Standards:
1. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.
 2. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.
 3. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.
 4. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.
 5. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity.
 6. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

SECTION 01 43 39 – MOCK-UPS

- A. Construct a freestanding exterior building mock-up to permit review of appearance, quality of workmanship, coordination, compatibility, and relationships with adjacent materials. Mock-up shall be constructed out of sequence, and will not be incorporated into the final building. The mock-up shall stand through the completion of the exterior and serve as the standard for workmanship once it has been approved in writing by the County. Construct the following mock-ups:
 1. Exterior cement plaster.
 2. Exterior aluminum storefront and window system.
- B. Construct a full size room mock-up within the building. The room to be mocked-up will be selected by the County. Room mock-up shall include all required floor, wall, and ceilings finishes, casework, light fixtures, door(s) and frame(s), glazing, mechanical diffusers, and other required materials and finishes. Make necessary modifications until room mock-up is approved by the County. Mock-up shall be constructed out of sequence. Upon approval, the room mock-up will be incorporated into the final completed Project.
- C. Special Finishes Mock-ups: Provide special finishes mock-ups of the following materials in rooms where directed by the County. Mock-ups shall show materials and workmanship to be expected in the completed work. Make necessary revisions as required until each special finishes mock-up is approved by the County. Approved mock-ups will be allowed to remain in place. Provide special finishes mock-ups of the following:
 1. Resilient sheet flooring specified in Section 09 65 16.
 2. Resinous flooring (ERC-1) specified in Section 09 67 23.
 3. Epoxy wall coating (ERC-2) specified in Section 09 96 56.
 4. Other finishes as directed by the County.

SECTION 01 45 00 - QUALITY CONTROL

- A. **Soils Engineer:** A civil engineer, licensed in the State of California, retained and paid by the Design/Build Entity to perform services as specified.
- B. **Testing Laboratory:** An independent commercial testing organization, retained and paid by the County to perform tests and report on work as specified and as required.
- C. **Design/Build Entity's Responsibilities:** Cooperate with Testing Laboratory personnel, secure and deliver to the Testing Laboratory adequate quantities of representational samples of materials proposed for use for which testing is required, furnish copies of product test reports as required, and notify the Architect sufficiently in advance of operations to allow for testing Laboratory assignment of personnel and scheduling of tests.
- D. **Retesting:** If the County has reasonable doubt that materials comply with Specification requirements, additional tests shall be made as directed. If additional tests establish that materials comply with Specification requirements, costs for such tests will be paid by the County. If additional tests establish that materials do not comply with Specification requirements, costs for such tests shall be paid by the Design/Build Entity.

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

- A. Temporary Utilities: Furnish, install, and maintain temporary utilities as required to perform the work. Materials, installation, and maintenance of temporary utilities shall be in compliance with applicable regulatory requirements. Remove temporary utilities, including associated materials and equipment when no longer required. Restore and recondition areas of the site damaged or disturbed by temporary utilities or their installation. Remove and properly dispose of debris resulting from removal and reconditioning operations.
1. Temporary Electric Power: Arrange with the utility company to provide temporary electric power and pay the cost associated with providing the service. Provide adequate lighting as required for performance of the work. Permanent lighting may be used during construction. Maintain lighting and make routine repairs.
 2. Temporary Ventilation:
 - a. Provide temporary ventilation as required to maintain adequate environmental conditions to facilitate progress of the work, to meet specified minimum conditions for the installation and curing of materials, and to protect materials and finishes from damage due to improper temperature and humidity conditions.
 - b. Provide adequate forced ventilation of enclosed areas as required for proper installation and curing of materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, and gases.
 - c. If permanently installed equipment is used, do not operate without filters; replace filters and clean grilles and registers before Contract Closeout.
 3. Temporary Water: Arrange with utility company to provide temporary water, for construction purposes and human consumption, and pay the cost associated with providing the service.
 4. Temporary Sanitary Facilities: Provide portable chemical toilets and locate where directed by the County. Maintain in a neat, sanitary condition.
 5. Temporary Fire Protection: Provide and maintain fire extinguishers, fire hoses, and other equipment necessary for proper fire protection during the progress of the work. Equipment shall be designed for fire protection only.
- B. Construction Aids: Install and maintain construction aids as required by the performance of the work; relocate as required by the progress of the work. Remove construction aids when no longer required and clean and repair damage caused by installation and use. Restore permanent facilities used for temporary purposes.
1. Temporary Enclosures and Protection of Work in Place: Provide temporary, weathertight enclosures as required for acceptable working conditions, weather protection for interior materials, effective temporary heating, and to prevent entry of unauthorized persons.
- C. Barriers and Enclosures: Provide and maintain suitable temporary barriers as required to prevent public entry; protect the work and persons from damage or injury from construction operations. Should regulatory requirements necessitate construction of temporary barriers, barricades, or pedestrian walkways, construct at no increase in Contract Sum.

1. Install enclosure fencing with locking entrance gates where required to enclose site work. Provide open-mesh, chain-link fencing with posts.
 2. Maintain temporary barriers in a structurally sound condition and neat appearance.
 3. Relocate as required by progress of the work. Restore and recondition site areas damaged or disturbed.
- D. Landscape Protection: Preserve and protect existing trees and plants which are not designated or required to be removed, and those adjacent to the site as specified in Section 01 56 39. Protect the entire property from excessive amounts of site erosion. Remove and replace soil that has been contaminated during the performance of the work by materials harmful to trees and plants, at no increase in Contract Sum. Replace existing trees that are damaged during the performance of the work with new trees of similar size, as approved by the County.
- E. Security: Install temporary enclosure of partially completed construction areas to prevent unauthorized entrance, vandalism and theft. Secure temporary storage areas as required to prevent theft.
- F. Temporary Controls:
1. Noise and Vibration Control: Comply with applicable regulatory requirements for the operation of powered construction equipment. Equipment and impact tools shall have intake and exhaust mufflers.
 2. Dust and Dirt Control: Conduct demolition and construction operations to prevent windblown dust and dirt from interfering with the progress of the work and from interfering with adjacent building operations. Hauling equipment and trucks carrying loads of debris shall have their loads sprayed with water or covered with tarpaulins. Prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drains.
- G. Field Offices and Sheds: Furnish, install, and maintain field offices and sheds. Construct, install, and maintain field offices and sheds in compliance with applicable regulatory requirements. Portable or mobile buildings complying with the specified requirements may be used. Obtain County approval for locations for field offices and storage sheds prior to commencing site preparation for the structures.

SECTION 01 56 39 - TREE AND PLANT PROTECTION

- A. Preserve, protect, and prune as necessary existing trees and shrubs, and other vegetation indicated to remain.
- B. All trees and plant materials to remain on site shall be protected from all trades working on the job, and it shall be the contractor's responsibility to insure that all subcontractors are aware of and held responsible for any damage to existing trees and plant material. In addition, the contractor shall be held responsible to insure that following protective measures are carried out throughout the entire construction period.
- C. Maintenance: throughout the life of the construction project, the contractor shall be responsible for overseeing the watering, fertilizing, pruning, and other measures necessary to protect all existing trees.

SECTION 01 61 00 – COMMON PRODUCT REQUIREMENTS

- A. Material and equipment incorporated in the work shall be new, unless otherwise specified, in a condition acceptable to the County, and suitable for the intended use.
- B. Transportation and Handling: Deliver manufactured products in the manufacturers' original unbroken containers or packaging, with identifying labels intact and legible. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and reviewed submittals, and verify that products are properly protected and undamaged. Handle products and packages in a manner to avoid soiling or damaging. Promptly remove damaged or defective products from the site, and replace at no increase in Contract Sum.
- C. Storage: Store manufactured products in accordance with the manufacturer's instructions, with seals and labels intact and legible.

SECTION 01 71 23 - FIELD ENGINEERING

- A. Layout of work to lines and grades required by a professional engineer licensed in the State of California.

SECTION 01 73 29 - CUTTING AND PATCHING

- A. Cutting and patching includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting and Patching Proposal: Submit a proposal describing cutting and patching procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information as applicable in the proposal:
 - 1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - 2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 - 3. List products to be used and firms or entities that will perform work.
 - 4. Indicate dates when cutting and patching is to be performed.
 - 5. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
- C. Structural Work: Do not cut and patch structural elements in a manner that would reduce their load carrying capacity or load deflection ratio.
- D. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the County's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a

visually unsatisfactory manner.

- E. Materials: Materials shall be identical to existing materials. If identical materials are not available, use materials that visually match existing adjacent surfaces.
- F. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- G. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.
 - 1. Use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
- H. Patching: Patch with durable seams that are as invisible as possible and acceptable to the County.
 - 1. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 2. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - 3. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch, after the patched areas has received primer and second coat.
- I. Clean areas and spaces where cutting and patching is performed or used as access. Remove paint, mortar, oils, putty and similar materials.

SECTION 01 74 00 - CLEANING

- A. Perform cleaning and disposal operations during the progress and completion of the work.
- B. Comply with applicable regulatory requirements during cleaning and disposal operations.
- C. Perform cleaning operations as required during construction to prevent accumulations of dust, dirt, soil, and debris.
- D. Clean interior spaces prior to the start of finish painting and the application of other finishes, and continue cleaning as required until such work is completed.

- E. Schedule cleaning operations to prevent dust and other contaminants from adhering to wet or newly finished surfaces.
- F. Remove dust, dirt, grease, stains, fingerprints, labels, spilled and spattered, and other materials from interior and exterior surfaces exposed to view.
- G. Wash and shine glazing and mirrors.
- H. Polish glossy surfaces to a clear shine.
- I. Ventilating Systems: Clean permanent filters and replace disposable filters of units operated during construction. Clean ducts, blowers, and coils of units operated during construction.
- J. Vacuum and wipe insides of electrical panels and cabinetwork.
- K. Broom clean interior spaces and exterior paving.
- L. Rake clean ground surfaces.

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT

- A. Construction Waste Management Requirements for the Project:
 - 1. This Project shall minimize the creation of construction and demolition waste on the Project site. Factors that contribute to waste such as over-packaging, improper storage, ordering error, poor planning, breakage, mishandling, and contamination, shall be minimized. Of the waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Minimize waste disposal in landfills.
 - 2. Diversion Requirements: A minimum 65-percent of total Project waste shall be diverted from landfill. The following waste categories, at a minimum, shall be diverted from landfill:
 - a. Land clearing debris
 - b. Clean dimensional wood, palette wood
 - c. Plywood, OSB and medium density fiberboard (MDF).
 - d. Concrete
 - e. Concrete Masonry Units (CMU)
 - f. Asphalt Concrete
 - g. Cardboard, paper, packaging
 - h. Metals
 - i. Gypsum Drywall (unpainted)
 - j. Paint. Paint containers shall be reused or recycled.

- k. Rigid Foam
 - l. Glass
 - m. Plastics
 - n. Carpet and pad
 - o. Beverage containers
 - p. Insulation
- B. Waste Management Plan: Within 10-calendar days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner, submit a Waste Management Plan containing the following:
- 1. Estimate of total Project waste to be generated, name of the landfill(s) where Project waste would normally be disposed of, tipping fees, and estimated cost of disposing of waste in landfill(s).
 - 2. Estimate of total cubic yards and in tons of waste to be diverted from landfill.
 - 3. Estimate of amounts (weight, feet, square yards, gallons, tons, etc.) of the following waste categories.
 - a. Metals
 - b. Carpet
 - c. Paint
 - 4. Estimate of net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material. "Net" means that the following have been subtracted from the cost of separating and recycling.
- C. Waste Management Plan Implementation:
- 1. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.
 - 2. Meetings: Conduct Construction Waste Management meetings. Meetings shall include subcontractors affected by the Waste Management Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:
 - a. Pre-bid meetings.
 - b. Pre-construction meeting.
 - c. Regularly scheduled job-site meetings.
 - d. Pre-installation meetings.

3. Separation Facilities: Designate a specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return. Recycling and waste bin areas shall be kept neat and clean and clearly marked to avoid co-mingling of materials. Protect bins during non-working hours from off-site contamination.
4. Materials Handling Procedures: Protect materials to be recycled from contamination. Handle, store and transport in a manner that meets the requirements set by the designated disposal facilities for acceptance.
5. Hazardous Wastes: Separate, store and dispose of hazardous wastes according to local, state, and federal regulations.

SECTION 01 74 23 – CONSTRUCTION INDOOR AIR QUALITY (IAQ)

- A. IAQ Summary:
 1. Prevent indoor air quality problems resulting from the construction process, to sustain long term installer and occupant health and comfort.
 2. Protect the ventilation system components during construction and clean contaminated components after construction is complete.
 3. Control sources of potential IAQ pollutants by controlling selection of materials and processes used in project construction.
 4. Develop and implement an IAQ management plan for the pre-occupancy phase as follows:
 - a. After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total air volume of 14,000-cu. ft. of outdoor air per sq. ft. of floor area while maintaining an internal temperature of at least 60-deg. F. and relative humidity no higher than 60-percent.
 - b. If occupancy is desired prior to completion of the flush-out, the space may be occupied following delivery of a minimum of 3,500-cu. ft. of outdoor air per sq. ft. of floor area to the space. Once a space is occupied, it shall be ventilated at a minimum rate of 0.30-cfm/sq. ft. of outside air or the design minimum outside air rate determined in EQ Prerequisite 1, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of 3-hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14,000-cu. ft./sq. ft. of outside air has been delivered to the space.

SECTION 01 77 00 – CLOSEOUT PROCEDURES

- A. Project Record Documents: Store Project documents and samples in field office apart from documents used for construction. Maintain Project documents in a clean, dry, legible condition and in good order. Do not use Project record documents for construction.
 1. Record information carefully and neatly, with felt tip pens, in color code designated, and in the manner approved in advance by the County.
 2. Record Drawings: Record the following kinds of information:

- a. Changes made by Change Orders and other modifications.
 - b. Locations of work concealed inside the building whose general location is changed from that shown on the Contract Documents.
 - c. Locations of items which have been changed, with the County's prior acceptance, from the locations indicated on the Contract Documents.
 - d. Keep up to date during the entire progress of the work, and make available to the County. Furnish additional drawings necessary for clarification. Record deviations from the sizes, locations, and other features of installations shown in the Contract Documents. Give sufficient information to locate work concealed in the Building.
3. "As-Built" Drawings: At time of acceptance of the work and prior to final payment, using the record drawings for reference, prepare "As-Built" drawings.
 4. Specifications and Addenda: Mark each Specification Section to record manufacturer, trade name, catalog number, and supplier of each product and item of equipment incorporated in the work.
- B. Product Data: Furnish electronic copy of manufacturers' product data, specifications, installation instructions, and maintenance instructions for products incorporated in the work; information shall be for products in addition to equipment items requiring operating and maintenance data specified elsewhere in this Section. Product data pertaining to an item shall be assembled together.
- C. Operation Tests: Conduct operational tests as required to demonstrate that all systems have been completed and are in compliance with all requirements. Furnish a written record of test results using recording type instruments where applicable and as directed.
- D. Operating and Maintenance Data: Where maintenance manuals, record data, and operating instructions are specified, include electronic copy.
- E. Instruction of Owner's Personnel: Where specified, furnish qualified personnel for on the job instruction of the County operating and maintenance personnel. Where possible, furnish instruction, including special start-ups and running time, prior to occupancy of the building, including special start-ups and running time, at no additional cost to the County.
- F. Service and Maintenance Contracts: Compile, review, and submit specified service and maintenance contracts as specified for warranties and bonds.
- G. Preparation for Final Inspection:
1. Perform final cleaning.
 2. Assemble warranties, service and maintenance contracts, operating and maintenance instructions, and other items as specified, and submit to the County.
 3. Remove temporary tapes, wrapping, coatings, paper labels, and other similar items. Dust, mop, wash, or wipe exposed and semi-exposed surfaces.

4. When the County determines that the Project is substantially complete and that final punch list items are completed, a final Project Inspection Report will be executed.
 5. Upon execution of the Final Project Inspection Report, record and pay for Notice of Completion and furnish a copy to the County.
- H. Restoration of Damaged Work: Restore or replace damaged materials and finishes caused by movement of equipment or other operations as specified or directed by the County. Restoration shall be equal to the original work, and finishes shall match the appearance of existing adjacent work.
- I. Remedial Work: Replace work due to faulty workmanship or materials at no additional cost to the County. Coordinate work with the County and perform at such time and manner to cause minimal interruption and inconvenience.
- J. Extra Materials: Where specified, provide extra materials in the quantities and manner specified. Delivery and certification of extra materials shall be prerequisite to Substantial Completion.

SECTION 01 78 36 – WARRANTIES

- A. Warranties: Manufacturers' warranties notwithstanding, warrant the entire work against defects in materials and workmanship for 12-months from the date of Substantial Completion. Warranties between Design/Build Entity and manufacturers, and the Design/Build Entity and suppliers shall not affect warranties between the Design/Build Entity and the County.

END OF DIVISION 01

DIVISION 02 – EXISTING CONDITIONS

SECTION 02 41 19 – SELECTIVE DEMOLITION

- A. This Section includes selective demolition and removal of portions of the existing building as required to perform the work.
- B. Pre-demolition Conference: Conduct conference at Project site as directed by the County.
- C. Hazardous Materials: It is not expected that asbestos or other hazardous materials will be encountered in the demolition work. If any materials suspected of containing asbestos or other hazardous materials are encountered, do not disturb the materials. Immediately notify the County.
- D. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services serving building to be selectively demolished.
- E. Conduct demolition operations and remove debris to ensure minimum interference with streets, walks, and other adjacent occupied and used facilities. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- F. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete work within limitations of governing regulations.
- G. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site. Transport demolished materials off Owner's property and legally dispose of them. Comply with construction waste management requirements specified in Section 01 74 19.
- H. Sweep the building broom clean on completion of selective demolition operation. Change filters on air-handling equipment on completion of selective demolition operations.

END OF DIVISION 02

DIVISION 3 - CONCRETE

SECTION 03 05 00 – CONCRETE FLOOR SEALER

- A. Clear concrete floor sealer on exposed concrete floors where scheduled.
- B. Concrete floor sealer shall react with concrete surfaces to produce a dense, hydrophobic, insoluble, moisture barrier to seal out contaminants, while hardening and densifying concrete surface.
- C. Warrant sealed concrete floors to be free of dusting from abrasion for a period of 10-years from Substantial Completion.
- D. Sealer/Hardener/Densifier: Solution of 100-percent active ingredient chemicals that penetrate concrete to seal, densify, dustproof, and harden to resist water and oil penetration, and contamination.

SECTION 03 30 00 – CAST-IN-PLACE CONCRETE

- A. Concrete work shall comply with the 2016 CBC Chapter 19.
- B. Forming and Accessories:
 - 1. Form materials shall be new, undamaged form lumber consisting of Douglas fir, Construction Grade, No. 2 or better, S1S2E; Plywood, five-ply, 3/4-inch thick, APA B-B Plyform, Class I, Exterior Type.
 - 2. Design, construct, and brace formwork and temporary falsework to safely support concrete and safely hold personnel during construction operations.
 - 3. Construct framework to tolerance complying with ACI 347.
- C. Concrete Reinforcing:
 - 1. Reinforcing steel shall comply with ASTM A615, Grade 60.
 - 2. Reinforcing steel to be welded shall comply with ASTM A706, Grade 60.
 - 3. Fabricate reinforcing in accordance with ACI 318.
 - 4. Welded wire reinforcement shall comply with ASTM A185, Plain Type. Provide in flat mats, rolls are not acceptable.
- D. Concrete:
 - 1. Submit certified mix design and test results on three cylinders for each specified mix, in accordance with ASTM C192 and ASTM C39.
 - 2. Concrete shall be ready-mixed in conformance with ASTM C94.
 - 3. Portland cement shall comply with ASTM C150, Type I, Type II, or Type V.
 - 4. Concrete aggregates shall comply with ASTM C33.
 - 5. Water shall be potable, clean, and not detrimental to concrete. Water shall contain less than 500-ppm of chlorides.
 - 6. Admixtures shall comply with ASTM C494.

7. Concrete mixing and placement shall comply with ASTM C94.
8. Finished concrete surfaces shall be smooth, free of fins, projections, loose materials, with honeycombs, aggregate pockets, voids and holes filled and patched in accordance with specified requirements.

SECTION 03 35 59 - COLORED CONCRETE FINISHING

- A. Chemically-stained concrete finish on interior concrete surfaces where scheduled.
- B. Mock-up: Prepare 4-foot x 4-foot mock-up where directed by the County. Construct mock-up using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in mock-up panels. Mock-up shall be stained and sealed by the individual workers who will be performing the work for the Project. Obtain written approval from County before start of work. Retain approved mock-up for use as a quality standard for finished work.
- C. Basis for Design: L.M. Scofield Company or equal.
 1. Chemical Stain: L.M. Scofield "Chemstain", reactive water-based solution of metallic salts which react with the calcium hydroxide in the cured concrete substrate to produce permanent, variegated or translucent color effects. Color as approved.
 2. Sealer: L.M. Scofield "Selectseal-W" or equal one-component, clear, acrylic-polyurethane sealer resistant to staining, abrasion and ultraviolet (UV) radiation.
 3. Sealant: L.M. Scofield "Lithoseal Trafficalk-3G" or equal, color to match stain.
 4. Grout: Provide colored portland cement grout in sawcut or scored joints in walking surfaces.

END OF DIVISION 03

DIVISION 04 - MASONRY

SECTION 04 22 00 – CONCRETE UNIT MASONRY

- A. Masonry work shall comply with the 2016 CBC Chapter 21.
- B. Mortar and Grout:
 - 1. Materials:
 - a. Portland Cement: ASTM C150, Type I or II.
 - b. Hydrated Lime: ASTM C207.
 - c. Aggregate for Mortar: ASTM C144. For joints less than 1/4-inch, use aggregate graded with 100-percent passing a No. 16 sieve.
 - d. Aggregate for Grout: ASTM C404.
 - e. Water: Clean and free of deleterious amounts of acid, alkalis, organic material, or other harmful substances.
 - f. Admixtures: Admixtures shall not adversely affect bond or compressive strength.
 - 2. Mortar: Comply with Articles 2.1A and 2.6A of TMS 602/ACI 530.1/ASCE 6. Use and place mortar in final position within 2-1/2-hours after mixing. Mortars that have stiffened due to evaporation of water may be re-tempered with water as required to restore required consistency during this period.
 - 3. Grout: Comply with Article 2.2 of TMS 602/ACI 530.1/ASCE 6.
- C. Hollow Loadbearing Block: Comply with Article 2.3 of TMS 602/ACI 503/ASCE6. Masonry units shall be as follows:
 - 1. Kennel Enclosures including Main Building Walls and Exterior 6-foot High Divider Walls: Standard grey, 8-inch x 8-inch x 18-inch block.
 - 2. Walls not within Kennel Wash Down Area: 8-inch x 8-inch x 16-inch grey block with scored face to simulate 8-inch x 8-inch block.
- D. Reinforcing Bars: CBC Section 2103.4 and ASTM A615, Grade 60 deformed bars.
- E. Masonry construction shall comply with CBC Sections 2104.1.1 and 2104.1.2 and with TMS 602/ACI 530.1/ASCE 6.
- F. Base Building Design:
 - 1. Provide ERC-2 as specified in Section 09 96 56 over all block in the Kennel wash down areas. Mortar joints shall be struck flush with the block face.
 - 2. In non-wash down areas, mortar joints shall be raked.

END OF DIVISION 04

DIVISION 05 - METALS

SECTION 05 12 00 – STRUCTURAL STEEL FRAMING

- A. Structural steel members shall comply with ASTM A992 for wide flange shapes and ASTM A36 for all channels, angles and plates.
- B. Structural tubing shall comply with ASTM A500, Grade B.
- C. Steel pipe shall comply with ASTM A501 or ASTM A53, Type S, Grade B, E or S.
- D. High-strength bolts, nuts, and washers shall comply with ASTM A325. Install bolts according to RCSC's "Specifications for Structural Joints Using ASTM A325 or A490 Bolts" for type of bolt and type of joint specified.
- E. Welding shall comply with AWS D1.1 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
- F. Anchor bolts shall comply with ASTM A307 or ASTM F1554.
- G. All exterior structural steel exposed to weather or moisture shall be galvanized by the hot-dip process according to ASTM A123.
- H. Nonshrink Grout: ASTM C 1107, factory-packaged, pre-mixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing additives, capable of developing a minimum compressive strength of 7,000 psi at 28 days.

SECTION 05 40 00 – COLD FORMED METAL FRAMING

- A. Exterior lateral load-bearing steel walls.
- B. Structural Performance: Engineer, fabricate, and erect cold-formed metal framing to withstand design loads within limits and under conditions required.
 - 1. Design Loads: As required by the 2016 CBC.
 - 2. Design framing systems to withstand design loads without deflections greater than $l/360$ of the wall height.
 - 3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subjected to a maximum ambient temperature change of 120-deg. F.
- C. Cold-formed metal framing shall comply with the 2016 CBC Section 2210.
- D. Galvanized Steel Sheet: Mill certified steel conforming to ASTM A653, G60 coating designation.
 - 1. 18-gauge and thinner: ASTM A653, minimum yield strength 33,000-psi.
 - 2. 16-gauge and thicker: ASTM A653, minimum yield strength 50,000-psi

- E. Steel Studs: Manufacturer's standard C-shaped steel studs of web depths indicated, with lipped flanges.
 - 1. Design Uncoated-Steel Thickness: As indicated or required to comply with specified deflection criteria based on stud depth and heights indicated.
 - 2. Flange Width: 1-5/8-inches minimum.
 - 3. Web: Punched.
- F. Steel Track: Manufacturer's standard U-shaped steel track, un-punched, of web depths indicated, with straight flanges, gauge to match studs minimum, manufacturer's standard deep flange.
- G. Deflection Track/Compensating Channels: Unpunched, deep leg tracks with straight flanges, 12-gauge, 2-1/2-inch deep flange.
- H. Steel Shapes and Clips: ASTM A36, zinc coated by the hot-dip process according to ASTM A123.
- I. Fasteners:
 - 1. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure.
 - 2. Powder-Actuated Anchors: Tempered steel pins with corrosion-resistant plating or coating. ICBO or ICC Evaluation Service approved.
 - 3. Mechanical Fasteners: Corrosion-resistant coated, self-drilling, self-threading steel drill screws. Low profile head when used beneath sheathing.
- J. Galvanizing Repair Paint: SSPC-Paint 20, with dry film containing a minimum of 94-percent zinc dust by content.
- K. Non-metallic, Non-shrink Grout: Premixed, non-metallic, non-corrosive, non-staining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C1107, with fluid consistency and a 30-minute working time.

SECTION 05 50 00 - METAL FABRICATIONS

- A. Materials:
 - 1. Steel Shapes, Bars, and Plates: ASTM A36.
 - 2. Steel Tubing: ASTM A500 or A501.
 - 3. Steel Pipe: ASTM A53.
 - 4. Fasteners: Type, grade, and class required, hot-dip galvanized or stainless steel for exterior use.
 - 5. Paint: Metal primer and galvanizing repair paint.

- B. Bollards: Steel pipe filled with concrete and set into recessed pipe sleeves. Bollards will be field painted as specified in Section 09 97 13.
- C. Fences and Gates: Fabricate from steel tubing to sizes and configurations indicated. Tubing gauges shall be as recommended by fabricator. Each intermediate vertical member shall be solidly welded to top and bottom rails. Exposed welds shall be ground smooth, flush and imperceptible. Provide hardware required for smooth and easy operation. Reinforce, drill, punch and tap members as required to receive hardware. Galvanize exterior gates, including tubing, fittings, brackets, fasteners and other ferrous components. Provide mesh infill panels where indicated. Gates will be field painted as specified in Section 09 97 13.
- D. Welded Wire Mesh Enclosures at Cat Porches, Sallyport and where Indicated: Fabricate from galvanized miscellaneous steel framing and welded wire mesh screens. Wire mesh enclosures will be field-finished as specified in Section 09 97 13.
- E. Sun Shade Grilles:
- F. Provide miscellaneous framing and supports, loose bearing and leveling plates, lintels, and angles required.

SECTION 05 51 33 – METAL LADDERS

- A. This Section includes ladders at roof hatches.
- B. Ladders shall comply with OSHA/ANSI A14.3 standards.
- C. Prefabricated Aluminum Ladders at Roof Hatches:
 - 1. Rungs: Manufacturer's standard section, minimum 18-inches long, formed from tubular or round aluminum extrusions, serrated on all sides. Rungs shall withstand a 1,000-pound load without failure. Rungs shall be connected to side rails with rivets.
 - 2. Side Rails: Minimum .125-inch thick channels, 3-inches wide.
 - 3. Mounting Brackets: Minimum .125-inch thick.
 - 4. Finish: Mill finish aluminum.
 - 5. Security Door: Formed of .125-inch thick aluminum sheet, alloy 5005. Furnish with continuous aluminum piano hinge and heavy duty forged steel locking hasp.
 - 6. Fasteners: Size and type standard with manufacturer; same metal as fastened metal, except use stainless steel for fastening aluminum components.

SECTION 05 58 00 – FORMED METAL FABRICATIONS

- A. Formed metal fabrications including the following:
 - 1. Interior stainless steel sheet metal.
 - 2. Exterior prefinished sheet metal at canopies and miscellaneous façade locations.
- B. Sheet Metal Materials:

1. Metal sheets shall be selected for straightness and flatness, and shall be free of fabrication marks, dents, scratches, oil canning or other imperfections. Where thickness of sheet metal is not indicated or specified, provide thickness required to prevent oil canning or other imperfections.
2. Stainless Steel Sheet: ASTM A167 and AISI Type 302/304, with No. 4 finish.
3. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finished required, with temper as required to suit forming operations and performance required, minimum 0.040-inch thick.
 - a. Surface: Smooth, flat.
 - b. Finish:
 - 1) Where a clear anodized finish is required, exposed surfaces shall be finished with a Class I clear anodized finish conforming to AA-M12C22A41.
 - 2) Where a Kynar finish is required, exposed surfaces shall be finished with a full-strength 70-percent "Kynar 500" or "Hylar 5000" coating baked on for 15-minutes at 450-deg. F. to dry film thickness of 1.0-mil over 0.3-mil baked on epoxy primer. Custom color to be selected.
- C. Concealed Fasteners: Material shall same basic metal as the metal fastened. Do not use metals that are corrosive or incompatible with materials joined.
- D. Accessories: Provide components required for a complete installation, including clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match materials and finishes of sheet metal.
- E. Adhesives: As recommended by panel fabricator for laminating sheet metal to backing materials.
- F. Fabrication:
 1. Use materials that are smooth and free of blemishes such as pitting, seam marks, roller marks, trade names and roughness for work exposed to view. Metal surfaces shall be flat and square, free of oil canning, dents, scratches, or other defects.
 2. Form bent metal corners to the smallest radius possible without causing grain separation or otherwise damaging the work.
 3. Form sheet metal items in lengths to minimize joints or to result in joints only where indicated. Fold back exposed ends of unsupported sheet metal to form a 1/2-inch wide hem on the concealed side, or ease exposed edges with backing to a radius of approximately 1/32-inch.

END OF DIVISION 05

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

SECTION 06 05 73 – WOOD TREATMENT

- A. Preservative treated wood and fire-retardant treated wood.
- B. Preservative Wood Treatment: Provide for wood in contact with roofing, waterproofing, and flashing and sheet metal.
 - 1. Comply with applicable requirements of AWP Standards C2 (Lumber) and C9 (Plywood). Mark each treated item with AWPB or SPIB Quality Mark Requirements.
 - 2. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces to comply with AWP M14. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
- C. Fire-Retardant Treatment: Provide for wood used inside the building.
 - 1. Pressure impregnate lumber and plywood with fire-retardant chemicals to comply with AWP C20 and C27 respectively. Identify "fire-retardant-treated wood" with appropriate classification marking of UL or other testing and inspecting agency acceptable to authorities having jurisdiction.
 - 2. Inspect each piece of treated lumber and plywood after drying and discard damaged or defective pieces.

SECTION 06 10 00 – ROUGH CARPENTRY

- A. Lumber: Douglas Fir; S4S, grade stamped, WCLIB or WWPA; size conforming to PS 20; free of boxed heart; maximum 19-percent moisture content at time of installation.
- B. Plates and ledgers in contact with CMU or concrete shall be pressure-treated Douglas Fir.
- C. Provide all fasteners, connectors, hangers, adhesives and other necessary components for complete and proper installation of wood frame construction.
- D. Sheathing shall be softwood plywood; US PS-1; grade stamped by APA or other approved testing agency; 4 x 8-foot panels.
- E. Install sheathing perpendicular to framing, with ends staggered and allowing expansion space at edges and ends.

SECTION 06 10 53 – MISCELLANEOUS ROUGH CARPENTRY

- A. Miscellaneous rough carpentry items.
- B. Rough carpentry work shall comply with CBC Chapter 23.
- C. Lumber: Douglas Fir, No. 2, 19-percent maximum moisture content, preservative treated as specified in Section 06 05 73.
- D. Electrical/Telephone Backing Panels: C-D Plugged, Exposure 1, fire-retardant treated as specified in Section 06 05 73, 1/2-inch thick unless otherwise indicated.

- E. Fasteners and Anchors: Provide size, type, material and finish indicated and recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide hot-dip galvanized or stainless steel fasteners and anchors. Fasteners galvanized by other than the hot-dip process will not be permitted.

SECTION 06 16 43 - GYPSUM SHEATHING

- A. Gypsum Wall Sheathing: Georgia-Pacific "DensGlass Sheathing" or equal glass mat faced silicone-treated gypsum core panel, 5/8-inch thick.
 - 1. Where required for fire-rated walls, provide Georgia Pacific "DensGlass Fireguard Sheathing" or equal glass mat faced silicone-treated gypsum core panel, 5/8-inch thick.
- B. Fasteners: Provide screws with hot-dip zinc coating in accordance with ASTM A153 or stainless steel. Type and length as recommended by gypsum sheathing manufacturer.
- C. Sealant: Silicone, ASTM C920, Type S, Grade NS.
- D. Install in accordance with manufacturer's instructions, applicable instructions in GA-253 and ASTM C1280.

SECTION 06 17 00 – SHOP FABRICATED STRUCTURAL WOOD

- A. Wood open web trusses or I-joists with ICC-ES Evaluation Reports.
- B. Wood chord members per manufacturer's ICC-ES Evaluation Report.
- C. Joist Bracing and Bridging: Type, size, spacing and connections designed and provided by joist manufacturer.
- D. Fabricate joists to achieve structural requirements specified in accordance with manufacturer's ICC-ES Evaluation Report.

SECTION 06 18 00 – GLUED-LAMINATED CONSTRUCTION

- A. Glue-laminated timber shall comply with the 2016 CBC Section 2303.1.3.
- B. Grade Combination: 24F-V8 Douglas Fir-Larch for multiple spans or cantilevers, 24F-V4 Douglas Fir-Larch for simple spans.
- C. Allowable Bending Stress (fb): 2400 psi.
- D. Fabricate with wet-use adhesive in accordance with ASTM D2559.
- E. Fabricate in accordance with AITC Industrial appearance grade unless indicated otherwise. Architectural grade where exposed to view in the completed structure.
- F. Fabricate members with camber built in.

SECTION 06 40 23 – INTERIOR ARCHITECTURAL WOODWORK

- A. Interior architectural woodwork items.
- B. WI Certified Compliance Program (CCP):

1. Before delivery to the Project site, if the fabricator/supplier is:
 - a. A WI licensee, issue WI "Certificates of Compliance" certifying that items comply with WI requirements for specified grade.
 - b. A non-WI licensee, furnish a WI "Certified Compliance Tracking Acknowledgement" with the original submittal, evidencing that they have arranged for and will pay inspections required by the WI to comply with the specified requirements. Certified Compliance labels shall be affixed by the WI Inspector.
2. Upon completion of installation, furnish a WI Certified Compliance Certificate for the installation.
3. In the event of question as to compliance with the referenced standard of any item of work, the County may require independent inspection service of questioned items as specified in "Independent Inspection Service" of "WI Services and Quality Control Options" published by the WI.
- C. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is completed, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.
- D. Do not use wood products containing urea formaldehyde glues inside the shell of the building. When machining plastic products, protect surrounding areas from dust.
- E. Provide materials that comply with requirements of the North American Architectural Woodwork Standards (NAAWS) for each type of woodwork and quality grade specified.
- F. Wood Moisture Content: Comply with requirements of referenced quality standards for moisture content of lumber in relation to relative humidity conditions existing at time of fabrication and in installation areas.
- G. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to a radius as follows:
 1. Corners and edges of solid wood members less than 1-inch in nominal thickness: 1/16-inch.
 2. Edges of rails and similar members more than 1-inch in nominal thickness: 1/8-inch.
- H. Millwork and Trim for Transparent Finish:
 1. Quality Standard: Comply with NAAWS Section 6, Premium Grade.
 2. Backout or groove backs of flat trim members and kerf backs of other wide flat members, except for members with ends exposed in finished work.
 3. Assemble casings in plant except where limitations of access to place of installation require field assembly.
 4. Lumber Species: Maple.
 5. Finish: Field-applied transparent finish as specified in Section 09 91 00.
- I. Flush Wood Paneling and Wainscots for Transparent Finish:
 1. Quality Standard: Comply with NAAWS Section 8, Premium Grade.

2. Veneer Species: Maple.
 3. Matching of Adjacent Veneer Leaves: Book match.
 4. Veneer Matching Within Panel Face: Balance match.
 5. Panel-Matching Method: Match panels within each separate area by sequence-matched, uniform-size sets.
 6. Vertical Panel-Matching Method: End match.
 7. Core: Fire-retardant particleboard having a flame spread and smoke developed values of 25 when tested in accordance with ASTM E84.
 8. Finish: Shop-finished as specified.
- J. Shop-Finishing of Interior Architectural Woodwork:
1. Quality Standard: Comply with NAAWS Section 5.
 2. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces and similar preparation of architectural woodwork.
 3. Transparent Finish for Open-Grain Woods:
 - a. Grade: Premium.
 - b. NAAWS Finish System 12: Polyurethane, Water-Based.
 - c. Staining: Match approved sample for color.
 - d. Effect: Closed grain (filled finish).
 - e. Sheen: Satin 31- to 45-deg.
 4. Transparent Finish for Closed-Grain Woods:
 - a. Grade: Premium.
 - b. NAAWS Finish System 12: Polyurethane, Water-Based.
 - c. Staining: Match approved sample for color.
 - d. Effect: Closed grain.
 - e. Sheen: Satin 31- to 45-deg.
- K. Install interior architectural woodwork in accordance with NAAWS for same grade specified for woodwork involved.

SECTION 06 41 00 – ARCHITECTURAL WOOD CASEWORK

- A. This Section includes the following:
1. Custom plastic laminate faced cabinetwork where scheduled
 2. Plastic laminate countertops where scheduled.

3. Enhanced epoxy countertops where scheduled.
 4. Melamine faced adjustable shelving where scheduled.
- B. Materials and fabrication of cabinetwork shall be in accordance with the standards of the North American Architectural Woodwork Standards (NAAWS) for the grades specified.
- C. WI Certified Compliance Program (CCP):
1. Before delivery to the Project site, if the fabricator/supplier is:
 - a. A WI licensee, issue WI "Certificates of Compliance" certifying that items comply with Architectural Woodwork Standards (AWS) requirements for specified grade.
 - b. A non-WI licensee, furnish a WI "Certified Compliance Tracking Acknowledgement" with the original submittal, evidencing that they have arranged for and will pay inspections required by the WI to comply with the specified requirements. If fabrication and installation are in compliance with AWS standards, Certified Compliance labels will be affixed by the WI Inspector. After fabrication, stamp each piece of cabinetwork in an inconspicuous place with WI Compliance Grade Stamp.
 2. Each elevation of casework and plastic laminate countertops shall bear the WI Certified Compliance Label indicating conformance to specified grade.
 3. Upon completion of installation, furnish a WI Certified Compliance Certificate for the installation.
 4. In the event of question as to compliance with the referenced standard of any item of work, the Architect may require independent inspection service of questioned items as specified in "Independent Inspection Service" of "WI Services and Quality Control Options" published by the WI.
- D. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is completed, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.
- E. Do not use wood products containing urea formaldehyde glues inside the shell of the building. When machining plastic products, protect surrounding areas from dust.
- F. High-Pressure Decorative Laminate (HPDL): Comply with NAAWS Section 4 and NEMA LD3.
1. Horizontal Surfaces: HGS, 0.048-inch nominal thickness.
 2. Vertical Surfaces: VGS, 0.028-inch nominal thickness.
 3. Horizontal Post-formed Surfaces: HGP, 0.039-inch nominal thickness.
 4. Cabinet Liner: CLS, 0.020-inch nominal thickness.
 5. Backer: BKL, 0.020-inch nominal thickness, complying with NAAWS Section 4 for casework Grade specified.
- G. Low-Pressure Decorative Laminate (LPDL): Comply with NAAWS Section 4 and NEMA LD3. LPDL shall consist of melamine, polyester or foil resin-impregnated paper thermally fused under pressure to an approved core and have a balance sheet.

- H. Balance Sheet: HPDL or overlay of a compatible thickness.
- I. Hardboard: Manufactured of interfelted lignocellulosic fibers, consolidated under heat and pressure to a density of 31-pcf or greater, tempered grade, 1/4-inch-thick tempered, smooth both sides.
- J. Backing for Plastic Laminate: One of the following, at Design/Build Entity's option.
 - 1. Medium Density Fiberboard:
 - a. Dry Areas: Medite Corporation "Medite II" or equal medium density fiber board, 3/4-inch thick, 48-pcf density. Fiber board shall have a recycled content of 92-percent.
 - b. Countertops with Sinks: Medite Corporation "Medex" or equal medium density fiber board, 3/4-inch thick, 48-pcf density. Fiber board shall have a recycled content of 92-percent.
 - 2. Plywood: NAAWS Grade B close grain hardwood veneer plywood, smooth, well sanded, thickness indicated. Provide exterior grade with waterproof glue at countertops with sinks.
 - 3. Particleboard: One of the following at Design/Build Entity's option:
 - a. ANSI A208.1, Grade M-2. Particleboard shall contain 100-percent pre-consumer recycled wood fiber. Do not use at countertops with sinks.
 - b. Straw-based particleboard complying with ANSI A208.1, Grade M-2, except for density. Do not use at countertops with sinks.
- K. Subframe Lumber: No. 1 grade Douglas Fir or plain sawn Yellow Poplar.
- L. Enhanced Epoxy Countertops: Laboratory Tops, Inc. "Enhanced Epoxy Resin" or equal epoxy resin countertop, uniform mixture throughout, Black Onyx color.
- M. Adhesives: Contact, semi-rigid or rigid adhesives as recommended by laminated plastic manufacturer.
- N. Hardware: Furnish and install as required to provide a complete casework installation.
 - 1. Hinges: 120-degree opening, concealed hinge, passing 100,000-cycle test. Hinges shall be all-metal construction, meeting or exceeding the ANSI/BHMA Grade 1 performance and permanent set test requirements. Provide three hinges on doors over 48-inches high.
 - 2. Door and Drawer Pulls: Satin stainless steel.
 - 3. Door and Drawer Locks: Provide on casework where directed by the County.
 - 4. Drawer Guides:
 - a. Pencil Drawers: Minimum 50-pound capacity.
 - b. General Purpose Drawers: Full extension, minimum 100-pound capacity.
 - c. File Drawers: Full extension, minimum 150-pound capacity; 200-pound capacity at lateral file drawers wider than 30-inches.
 - 5. Adjustable Shelf Pins: 5mm nickel pins.

- 6 Grommets: Provide at penetrations through countertops. Material, size, finish, color and location as approved by the County.
- O. Fabricate products in accordance with the approved Shop Drawings and specified NAAWS Grade requirements.
- R. Fabricate laminated plastic casework in accordance with NAAWS Section 10, Custom grade, except as otherwise specified, Construction Type A – Frameless Construction; Interface Style 1 – Overlay.
 1. Exposed exterior portions shall be covered with a HPDL.
 2. Exposed interior surfaces, except at doors and drawer fronts shall be covered with a HPDL matching exposed exterior surfaces.
 3. Exposed interior surfaces of door and drawer fronts shall be covered with the same material, pattern, color and thickness as the door face.
 4. Edge Banding: HPDL, minimum 0.02-inch thick, color-matched to the exposed face.
 5. Semi-exposed surfaces of cabinet tops and bottoms, cabinet ends, fixed and adjustable shelves, cabinet back, cabinet doors, and drawers shall be finished with a polyester laminate; exposed edges of semi-exposed surfaces shall be finished with extruded PVC or self-edged plastic laminate.
 6. Door and Drawer Front Style: Flush overlay.
 7. Door and Drawer Edge: Square edge with thin applied band.
 8. Shelf Thickness: As specified in NAAWS for a uniform load of 50-lb./sq. ft.
- S. Laminated Plastic Countertops: Fabricate in accordance with NAAWS Section 11, Premium grade.
 1. Countertop Splash Assembly Type: 2.
 2. Countertop Edges: Self-edged with plastic laminate.
 3. Back Splash: Horizontal square butt joints.
 4. Top of Back Splash: Square with self edge.
- T. Enhanced Epoxy Countertops: Fabricate in accordance with NAAWS Section 11, Premium grade.
 1. Thickness: 1-1/4-inches.
 2. Type: Universal top (no lip) with front edge rounded to a ¼-inch radius with drip grooves on the underside of exposed edges to divert spillage away from cabinet face.
 3. Fabricate countertops with integrally coved splashes or separate and flat butted, as indicated.
 4. Backsplash Height: 4-inches unless otherwise indicated.
 5. Provide integral epoxy sinks of sizes as scheduled.
- U. Melamine-Faced Adjustable Shelving and Storage Assemblies:
 1. Fabricate shelving in accordance with NAAWS Section 11, Custom Grade.

2. Fabricate shelves of 3/4-inch thick plywood or formaldehyde-free medium density fiberboard. Finish both faces and all four edges with low pressure decorative white melamine overlay.
 3. Adjustable Hardware: Provide standards and shelf brackets. Space standards 3'-0" apart and not more than 12-inches from the end of any shelf.
- V. Install cabinetwork in accordance with NAAWS Premium Grade requirements.

END OF DIVISION 06

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DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 07 13 53 - ELASTOMERIC SHEET WATERPROOFING

- A. Elastomeric sheet waterproofing under mortar-set tile floors and showers.
- B. Warrant elastomeric sheet waterproofing to be free from defects in materials and workmanship for a period of 3-years from date of Substantial Completion. Warranty shall include removal and replacement of materials installed over elastomeric sheet waterproofing, including but not limited to mortar setting bed and tile.
- C. Sheet Membrane: Noble Company "Chloraloy 240" heavy-duty non-plasticized CPE synthetic elastomeric, 1mm (0.048-inch) nominal thickness or equal.
- D. Seam Cement: CPE solvent welding liquid, Xylene, or as recommended by sheet membrane manufacturer.
- E. Adhesive and Sealant: Noble Company "NobleSealant 150" or as recommended by sheet membrane manufacturer for seaming, caulking drains and adhering sheet.
- F. Preformed outside Corners: Noble Company "Inside Corners" and "Dam/Outside Corners" or as recommended by sheet membrane manufacturer for forming outside corners.

SECTION 07 14 16 - ELASTOMERIC LIQUID WATERPROOFING

- A. Elastomeric fluid-applied waterproofing under thin-set floor tile and under thin-set wall tile at showers.
- B. Warrant elastomeric liquid waterproofing to be free from defects in materials and workmanship for a period of 10-years from Date of Substantial Completion. This warranty shall include the cost to replace covering materials applied over cold fluid-applied waterproofing.
- C. Manufacturers: Laticrete International "Hydroban", Parex USA / Merkete "Hydro Guard SP1 Waterproof Membrane and Anti-Fracture Membrane" or equal.
- D. Membrane: Cold-applied liquid rubber latex with fabric reinforcement.
- E. Reinforcing: Rot-proof fabric, designed by membrane manufacturer for use in reinforcing membrane.

SECTION 07 19 00 - WATER REPELLENTS

- A. Fluid-applied water-repellent coating on exterior cementitious wall surfaces not scheduled or required to receive a graffiti-resistant coating.
- B. The water-repellent shall not darken, stain, or discolor substrate surfaces. The product shall not change the reflectivity of the surface by having a sheen or a gloss when dry.
- C. Materials shall comply with applicable statutory health and environmental requirements, including VOC limits.
- D. Warranty: Warranty treated surfaces for a period of 5-years from date of Substantial Completion, as follows:
 - 1. Loss of Water Repellency: 1.0 mil/20-minutes or greater (80-mph wind driven rain equivalent).

- E. Manufacturers: BASF Construction Chemicals, LLC "MasterProtect H 1000", Evonik Industries "Protectosil Chem-Trete BSM 400", PROSOCO, Inc. "Sure Klean SL 100", Tnemec, Inc. "Dur A Pell 100", Excrete Industries "Kelp Rime" or equal.
- F. Application Equipment: Low-pressure airless sprayer and hoses as recommended by water-repellent coating manufacturer.

SECTION 07 21 00 – THERMAL INSULATION

- A. Thermal blanket/batt insulation.
- B. Unfaced Formaldehyde-Free Mineral/Glass Fiber Blanket/Batt Insulation:
 - 1. Manufacturers: Johns Manville "Formaldehyde-free Unfaced", Owens Corning "EcoTouch Pink" or equal.
 - 2. Material: Thermal fiberglass insulation made from resilient glass fibers bonded with a formaldehyde-free acrylic thermosetting binder, complying with ASTM C665, Type I.
 - 3. Surface Burning Characteristics: Flame spread 25 or less; smoke developed 50 or less, when tested in accordance with ASTM E84.
 - 4. Thickness: As required for R-19 in walls and R-30 in ceilings where roof board insulation is not used.

SECTION 07 22 16 - ROOF BOARD INSULATION

- A. Roof board insulation.
- B. Design Criteria: Insulation and roof assembly shall provide a minimum thermal rating of LTTR R-30 over conditioned spaces. Provide insulation of indicated thickness at canopies and roof overhangs. At roof areas with tapered insulation, provide average LTTR R-values.
- C. Labels and Approvals: Roof insulation shall be listed by UL for use with UL Class A roof covering systems, and bear the UL label or be delivered with a UL certification of compliance.
- D. Roof Insulation at Single Ply Roofing:
 - 1. Polyisocyanurate Board Roof Insulation: HCFC-free rigid closed-cell, non-composite, polyisocyanurate board insulation integrally laminated to heavy non-asphaltic fiber-reinforced felt facers conforming to ASTM C1289, Type II, Class 1.
 - a. Thickness: As required to result in specified LTTR-value.
 - b. Compressive Strength: Minimum 25-psi.
 - c. Blowing Agent: HCFC free hydrocarbon.
 - d. Fire-Ratings: ASTM E108 Class A; ASTM E119 non-combustible.
 - e. Provide tapered units where required for slope to drain. Minimum thickness at tapered boards shall be 1/2-inch. Minimum slope to drains shall be ¼-inch per foot.
- E. Mechanical Fasteners: As recommended by roof insulation manufacturer for securing roof insulation to metal decking and as required for Factory Mutual wind uplift resistance rating of I-90.

- F. Asphalt Adhesive: Steep asphalt, as recommended by roof insulation manufacturer.

SECTION 07 26 23 – BELOW-GRADE VAPOR BARRIERS

- A. Moisture retarder under new concrete slabs-on-grade.
- B. Vapor Barrier Sheeting: Stego Industries LLC “Stego Wrap 15-mil Class A”, Reef Industries “Grifolyn Vaporguard” or equal.
 - 1. Water After-Conditioning Water Vapor Permeance: 0.01-perms, ASTM E1745 Section 7.1 sub-paragraphs 7.1.1 – 7.1.5.
 - 2. Water Vapor Barrier: Meets or exceeds Class A, ASTM E1745.
 - 3. Strength: ASTM D1745, Class A.
 - 4. Thickness: Not less than 15-mils.
- C. Seam Tape: High density polyethylene tape with pressure sensitive adhesive, minimum 4-inches wide. Tape shall have a water vapor transmission rate of 0.3-perms or less in accordance with ASTM E96.
- D. Mastic: As recommended by vapor barrier manufacturer. Mastic shall have a water vapor transmission rate of 0.3-perms or less in accordance with ASTM E96.
- E. Pipe Boots: Construct from vapor barrier sheeting material and pressure sensitive tape in accordance with manufacturer’s instructions.
- F. Perimeter/Edge Seal: As recommended by vapor barrier sheeting manufacturer.

SECTION 07 27 26 - VAPOR PERMEABLE MEMBRANE AIR BARRIERS

- A. Vapor permeable air barrier membrane systems over gypsum sheathing at exterior walls.
- B. Warrant vapor permeable air barrier membrane systems to be free from defects in materials and workmanship for 5-years from date of Substantial Completion.
- C. Manufacturers: Henry “Air-Bloc 33”, Tremco “ExoAir 230”, GCP Applied Technologies “Perm-A-Barrier VP” or equal.
- D. Vapor-Permeable Membrane Air Barriers: Fluid-applied, synthetic, vapor-permeable air barrier.
- E. Liquid Membrane for Details and Terminations: As recommended by membrane manufacturer.
- F. Wall Primer: As recommended by membrane manufacturer for priming substrates.
- G. Joint Reinforcing Strip: Air barrier manufacturer's approved tape.

SECTION 07 54 19 – POLYVINYL-CHLORIDE ROOFING

- A. Fully-adhered polyvinyl-chloride (PVC) elastomeric single ply roofing system.
- B. Manufacturer: Johns Manville “UltraGard SR-80” per County Building Standards.

- C. Fabric-Reinforced Polyvinyl Chloride Sheet: ASTM D4434, Type III, internally reinforced, nominal 80-mils thick, white color.
- D. Auxiliary Materials: Provide auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall be classified as no-VOC.
- E. Sheet Flashing: Manufacturer's sheet flashing of same material, type, reinforcement, thickness and color as sheet membrane.
- F. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel bars, with anchors.
- G. Metal Battens: Manufacturer's standard zinc-coated steel sheet, pre-punched.
- H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips and other accessories required for a complete, watertight installation.
- I. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads sourced from membrane roofing system manufacturer.

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

- A. Exterior sheet metal flashing and trim.
- B. Galvanized Steel: ASTM A653, G90, commercial or lock-forming quality, hot-dip galvanized steel sheet with 0.20-percent copper, mill phosphatized for painting; not less than 22-gauge.
- C. Solder: ASTM B32, Grade Sn50, used with rosin flux.
- D. Fasteners: Same metal as flashing and sheet metal or other noncorrosive metal recommended by sheet manufacturer.
- E. Bituminous Coating: SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- F. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- G. Epoxy Seam Sealer: 2-part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior non-moving joints including riveted joints.
- H. Reglets: Metal units of type and profile indicated, compatible with flashing indicated, noncorrosive.
- I. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.
- J. Roofing Cement: ASTM D4586, Type I, asbestos-free, asphalt-based.
- K. Edge Strips: Provide continuous edge strips for attaching exposed terminating edge of copings.
- L. General Metal Fabrication:

1. Comply with details indicated and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices.
2. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work.
3. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

SECTION 07 65 26 – SELF-ADHERING SHEET FLASHING

- A. Self-adhering modified bituminous membrane flashing under copings and sheet metal flashings.
- B. Membrane: Composite of polyethylene film and self-adhesive rubberized asphalt, conforming to the following physical properties:
 1. Thickness: 30-mils minimum.
 2. Tensile Strength: 250-psi minimum when tested in accordance with ASTM D412.
 3. Elongation: 250-percent minimum when tested in accordance with ASTM D412 (Die C) modified.
 4. Pliability, 180-deg. F. bend (1-inch mandrel at -25-deg. F): Unaffected when tested in accordance with ASTM D146.
 5. Optional Facing: 2-mil aluminum foil.
- C. Primer: As recommended by membrane manufacturer for priming substrates to receive flexible flashing.

SECTION 07 72 33 - ROOF HATCHES

- A. Roof hatches and safety posts.
- B. Hatch Size: As indicated.
- C. Cover: 11-gauge aluminum with a 4-inch beaded flange with formed reinforcing members. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.
- D. Cover Insulation: 2-inch thick polyisocyanurate with an R-value of 12, fully covered and protected by an 18-gauge aluminum liner.
- E. Curb: 12-inch high, 11-gauge aluminum. The curb shall be formed with a 4-1/2-inch flange with 7/16-inch holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners.
- F. Curb Insulation: 2-inch thick polyisocyanurate with an R-value of 12.

- G. Lifting Mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe welded to the curb assembly.
- H. Hardware: Provide manufacturer's heavy pintle hinges, spring latch with turn handles, and padlock hasps. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1-inch diameter red vinyl grip handle to permit easy release for closing.
- I. Finish: Mill finish aluminum.
- J. Safety Post: Install on fixed ladders below hatch covers. Device shall be manufactured of high strength steel with telescoping tubular section that locks automatically when fully extended. Upward and downward movement shall be controlled by a stainless steel spring balancing mechanism. Finish shall be hot dip galvanized. Unit shall be completely assembled with fasteners for securing to the ladder rungs in accordance with the manufacturer's instructions.
- K. Safety Railings: Posts and rails shall be pultruded from a fire-retardant fiberglass-reinforced polymer (FRP) with a molded-in, high-visibility, safety yellow color treated with a UV inhibitor. Mounting brackets shall be fabricated from 1/4-inch thick hot-dip galvanized steel. Gate hinges and post guides shall be constructed of 6063-T5 aluminum and torsion rod shall be Type 302 stainless steel. Fasteners shall be Type 316 stainless steel. Hatch rail safety railings shall comply with OSHA 29 CFR 1910.23 with a safety factor of two.

SECTION 07 84 00 - FIRESTOPPING

- A. UL Design Numbers: Furnish UL Design No. from the "Fire Resistance Directory - Volume II" for each required penetration type and configuration. Indicate which materials will be used in firestopping the penetration.
- B. Firestopping materials and systems shall be listed and labeled in accordance with requirements of Underwriters Laboratories, Inc. (UL) Building Materials Directory.
- C. Through-Penetration Firestopping Materials:
 - 1. General: Listed manufacturers of through-penetration firestopping are intended as guidelines only; manufacturer and material type shall be as required by the UL Design No. for each penetration to receive firestopping.
 - 2. Manufacturers: Hilti Construction Chemicals, Inc., STI Firestop, CWS Industrials / RectorSeal, Tremco, Inc., 3M Fire Protection Products or equal.
 - 3. Provide mortar, sealants and caulk, putty, wrap strips, pillows, bags, and other types required for UL Design No. for each penetration to receive firestopping.
- D. Mineral Fiber Firestopping Materials:
 - 1. Material: Semi-rigid mineral fiber insulation, minimum 4-pcf density; Owens Corning "Thermafiber Safing", Johns Manville "Insul-SHIELD", Tremco "TREMstop FS Blanket" or equal.

2. Support Clips: Manufacturer's standard impaling clips or custom designed to suit installation conditions, fabricated from galvanized sheet steel.
- E. Firestopping at Electrical Boxes and Utility Outlets:
1. Utility penetrations in walls, ceilings, or floors requiring protected openings shall be firestopped and sealed with an approved material securely installed, capable of maintaining its integrity when subjected to test temperatures specified in ASTM E814.
 2. Steel electrical outlet boxes on opposite sides of walls requiring protected openings shall be separated by a horizontal distance of 24-inches.
 3. Steel electrical outlet boxes which occur in combination with outlet boxes of any size such that the aggregate area of unprotected outlet boxes exceeds 100-square inches in any 100-square feet of wall area shall be protected by an approved material or detail to decrease the aggregate area of unprotected utility boxes to less than 100-square inches in any 100-square feet of wall.
 4. Steel electrical outlet boxes which exceed 16-square inches in area shall be protected by 3M "Moldable Putty Pads", STI Firestop "SpecSeal SSP Putty & Putty Pads" or equal.
 5. Utility and electrical outlets or boxes shall be securely fastened to the stud or framing of the wall or ceiling assembly. The opening in the gypsum board shall be cut so that the clearance between the box and the gypsum board does not exceed 1/8-inch.
 6. Fill the 1/8-inch gap with an approved fire-rated sealant.
- F. Firestopping at Metal Deck Flutes:
1. Steel Deck Insert: Hilti "Speed Plug CP 777" or equal one-piece fire-retardant plug for steel deck flutes.
 2. Fire-Rated Sealant: Hilti "Firestop Joint Spray CP 672 FC", 3M "Firedam Spray 200", Tremco "TREMstop Acrylic" or equal.
 3. Mineral Wool: Minimum 4-pcf density.

SECTION 07 92 00 - JOINT SEALANTS

- A. Sealants shall comply with local VOC requirements.
- B. Warranty: Warrant exterior sealants to be from defects in materials and workmanship for a period of 10-years from date of Substantial Completion.
- C. Joint Sealants:
1. Exterior Paintable Building Sealant: Bostik Findley, Inc. "Pro MS-50", BASF "Master Seal NP 150 Premium Sealant" or equal latex hybrid sealant.
 2. Exterior Building Sealant at Exposed Concrete, Storefront Framing and Areas where Sealant is Unpainted: Dow Corning "795 Silicone" or equal

3. Interior Sanitary Sealant: One-part mildew-resistant silicone; ASTM C920 Type S; Grade NS; Class 25; Uses NT, G, A and O; formulated with fungicide for sealing interior joints with nonporous substrates around ceramic tile, showers, sinks and plumbing fixtures; Dow Corning Corp. "786 Mildew Resistant", General Electric Co. "Sanitary 1700", Sonneborn Building Product Div. "Sonolastic Omniplus", Tremco Tremsil 200 or equal.
 4. Horizontal Joint Sealant: Two-part pourable urethane; ASTM C920, Type M; Grade P; Class 25; Uses T, M, A and O; Pecora Corp. "NR-200 Urexpan", Sonneborn "Sonolastic Paving Joint Sealant", Tremco, Inc. "THC-900/901" or equal. Horizontal joint sealant shall have a minimum Shore A hardness of 30.
 5. Polysulfide Sealant: Provide at areas exposed to chemicals. Do not use at locations with plastic (PVC, ABS or vinyl).
 6. Interior Building Sealant: Acrylic-emulsion; one-part, non-sag, mildew-resistant, complying with ASTM C834, formulated to be paintable; Pecora Corp. "AC-20", Sonneborn "Sonolac", Tremco Inc. "Tremco Acrylic Latex 834" or equal.
 7. Interior Sealant at Dog and Cat Wards: Dow Corning "790 Silicone", Sonneborn "Ultra" or equal one-part silicone complying with ASTM C920, Type S, Grade NS, Class 25, Use NT, M, G, A and O. Sealant shall withstand cleaning solvents and temperatures as high as 400-deg. F.
 8. Interior Sealant Between Gypsum Board and Concrete Masonry and Joints Between Epoxy Resin Floor Coating and Freestanding or Fixed Kennels: Sika "Sikaflex 1A" or equal moisture-cured, 1-component polyurethane-base, non-sag elastomeric sealant complying with ASTM C920, Type S, Grade NS, Class 25.
- D. Joint Fillers for Concrete Paving: Preformed cork strips complying with ASTM D1752 for Type II or preformed sponge rubber strips complying with ASTM D1752 for Type I.
- E. Joint Sealant Backing:
1. General: Provide sealant backings which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved by sealant manufacturer.
 2. Backer Rod at Exterior Locations: ASTM C1330, Type C, closed cell backer rods.
 3. Plastic Foam Joint-Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of plastic foam, of size, shape and density to control sealant depth.
 4. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer. Provide self-adhesive tape where applicable.
- F. Miscellaneous Materials:
1. Primer: As recommended by joint sealant manufacturer for adhesion of sealant to joint substrates.
 2. Cleaners for Nonporous Surfaces: Non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are not harmful to substrates and adjacent nonporous materials.
 3. Masking Tape: Non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints.

SECTION 07 92 19 – ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant: Non-drying, non-hardening, permanently flexible, non-skinning, non-staining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound; Pecora Corporation "BA-98", Tremco Inc. "Tremco Acoustical Curtainwall Sealant", USG "Sheetrock Brand Acoustical Sealant" or equal.
- B. Fire-rated Acoustical Sealant: Fire-rated, non-skinning, non-hardening, permanently flexible sealant; Pecora Corporation "AC-20 FTR", CSW Industrials / Rectorseal "Metacaulk 1000 Intumescent Firestop Sealant" or equal.
- C. Miscellaneous Materials:
 - 1. Sheet Caulking for Junction Boxes: Lowry's Electrical Box Sealer, Tremco sheet caulking or equal.
 - 2. Sheet Caulking for Junction at Fire-Rated Assemblies: Nelson Firestop Products "FSP Firestop Putty", Hilti CP 617, STI Firestop "SpecSeal SSP Firestop Putty" or equal.
 - 3. Backing Rod: Closed-cell, neoprene rod or polyethylene foam.
 - 4. Expanding Foam Sealant: UL Class 1 fire-retardant; AkzoNobel "Polycell Expanding Foam", Dow "Great Stuff Pro – Gaps & Cracks" or equal.

END OF DIVISION 07

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DIVISION 08 – OPENINGS

SECTION 08 11 13 – HOLLOW METAL (STEEL) DOORS AND FRAMES

- A. Steel doors and frames shall comply with ANSI A250.8.
- B. Doors:
 - 1. Interior Flush Doors: Steelcraft “L Series” or equal complying with ANSI/SDI A250.8, Level 2 - heavy duty, Model 2, minimum 18-gauge cold-rolled sheet steel faces.
 - 2. Exterior Flush Doors: Steelcraft “L Series” or equal complying with ANSI/SDI A250.8, Level 3 - extra heavy duty, Model 2, minimum 16-gauge galvanized steel faces.
 - 3. Interior Stile and Rail Doors: Steelcraft “S Series” or “A Series” or equal complying with ANSI/SDI A250.8, Level 3 – extra heavy duty, Model 3, minimum 16-gauge cold-rolled sheet steel.
 - 4. Exterior Stile and Rail Doors: Steelcraft “S Series” or “A Series” or equal complying with ANSI/SDI A250.8, Level 3 – extra heavy duty, Model 3, minimum 16-gauge galvanized steel.
 - 5. Internal Construction: Manufacturer's standard honeycomb core in accordance with ANSI/SDI A250.8 requirements.
 - 6. Clearance: Not more than 1/8-inch at jambs and heads, except not more than 1/4-inch between pairs of doors. Not more than 3/4-inch at bottom.
 - 7. Edges: Beveled latch stile for single doors, and meeting stile for pair doors; square elsewhere. No seams are allowed on vertical stile edges. Top and bottom edges shall be reinforced with 16-gauge steel channels; both edges flush and made watertight for exterior doors, top edge flush for interior doors.
- C. Door Frames: One-piece welded type, 16-gauge for interior openings; 14-gauge for exterior openings. Fabricate frames with mitered or coped and continuously welded corners.
 - 1. Frame Anchors: Provide a jamb anchor for each 2'-6" of door height or fraction thereof. Fabricate from minimum 16-gauge sheet steel. Secure a metal clip angle at bottom of each jamb member for anchoring to floor, with a minimum of two fasteners. Items to be built into exterior walls shall be hot-dip galvanized after fabrication.
 - 2. Door Silencers: Except on weatherstripped or smoke gasketed frames, drill stops to receive 3-silencers on strike jambs of single-swing frames and 2-silencers in heads of double-swing frames.
 - 3. Lower 18-inches of interior door frames at wash down areas shall be coated with an anti-corrosive industrial epoxy coating as specified in Section 09 91 00.
- D. Fabricate steel doors and frames to be rigid, neat in appearance and free from defects, warp or buckle. Comply with ANSI/SDI A250.8 requirements.
 - 1. Fabricate exposed faces of doors from cold-rolled steel.

2. Tolerances: Comply with ANSI/SDI A250.8.
3. Fabricate frames, concealed stiffeners, reinforcement, edge channels, and moldings from either cold-rolled or hot-rolled steel.
4. Fabricate exterior doors and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gauge inverted steel channels with channel webs placed even with top and bottom edges. Seal joints in top edges of doors against water penetration.
5. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware in accordance with final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI/SDI A250.8 for door frame preparation for hardware.
6. Locate hardware as indicated on final shop drawings or in accordance with Door Hardware Institute (DHI) "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames".
7. Shop Painting: Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces. Exterior doors and frames will be finished as specified in Section 09 97 13. Interior doors will be field painted as specified in Section 09 91 00.

SECTION 08 11 16.63 – INTERIOR ALUMINUM DOORS AND FRAMES

- A. Pre-finished interior aluminum doors, door frames, window frames, and matching trim pieces.
- B. Manufacturer: Wilson Partitions or equal.
- C. Aluminum Frames:
 1. Aluminum Extrusions: Alloy and temper recommended by manufacturer. Main frame members shall have a nominal wall thickness of 0.062-inch; frame and hinge anchorage areas shall be 0.130-inch thick.
 2. Fasteners: Screws, nuts, washers and similar fasteners shall be aluminum, stainless steel or other non-corrosive material compatible with aluminum. Exposed fasteners are not acceptable.
 3. Glazing Gaskets: Manufacturer's standard vinyl gaskets.
 4. Fabricate aluminum frames at manufacturer's shop prior to application of finish; profiles and shapes as indicated.
 5. Fabricate frames for attachment to partitions with concealed fasteners.
 6. Provide steel attachment clips for extrusion intersections.
 7. Fabricate frames to permit installation over prefinished walls.
 8. Provide continuous nylon backed wool pile sound and light-seal around perimeter of door stops.

9. Prepare aluminum door frames to receive hardware from reviewed hardware schedule, hardware templates, and hardware samples furnished by hardware supplier. Include reinforcements as required. Drill and tap mortised reinforcements at factory.
10. Provide matching sidelight frames where indicated.
11. Provide matching aluminum wall trim where indicated.

D. Aluminum Doors:

1. Flush Doors:

- a. Doors shall be constructed with tubular aluminum jamb rails and tubular grid sections with smooth 0.090-inch thick face sheets. Doors edges shall not be capped with channel moldings.
- b. At the top and bottom of each door there shall be an internal tubular section. The doors shall have an internal grid system comprised of tubular sections positioned horizontally no less than 24-inches on center. The perimeters of all cut-outs shall be reinforced with this section. Internal members shall be anodized for corrosion protection.
- c. Voids between tubular rails and grid sections shall be filled with a rigid, compressed high density mineral insulation have a flame spread rating of 25 when tested in accordance with ASTM E84.
- d. Door hinge and lock rails shall be assembled with horizontal and vertical grid sections attached with concealed interlocking aluminum channel clips. The clips shall be secured to the jamb rails by an integral "T" slot on the jamb rails and shall be pinned to the rails with stainless steel screws. The grid sections shall slip over the clips and shall be attached to the clips with stainless steel screws. The face sheet shall be bonded to the rim, grid sections and insulated core with a thermal-setting epoxy adhesive.
- e. Doors shall be reinforced to receive door hardware with 6061-T6 aluminum alloy extrusions, not less than .250-inch thick. Wooden block reinforcements are not acceptable.

2. Stile-and-Rail Doors:

- a. Construction: Aluminum heavy duty tubular doors. Doors shall be constructed from 6063-T5 alloy with .125-inch minimum thickness and shall be fabricated with 3/8-inch plated steel thru bolts in rails. Lock stile shall have integral bevel edge of 1/8-inch over two inches with a wool pile weather strip seal. Exposed fasteners shall be stainless steel.
- b. Glazing: As scheduled, held in place with snap-in, non-removable stops of extruded aluminum. Vinyl inserts shall be used for sealing. No exposed fasteners.
- c. Hardware Preparation: Prepare doors to receive door hardware as specified in Section 08 71 00.

- E. Finish: Aluminum shall be finished in a clear anodized finish unless otherwise indicated.

SECTION 08 14 16 - FLUSH WOOD DOORS

- A. Flush wood doors.
- B. Flush wood door construction shall comply with North American Architectural Woodwork Standards (NAAWS) Section 9.
- C. Fire-Rated Doors: Provide wood doors that comply with CBC; are identical in materials and construction to units tested in door and frame assemblies in accordance with NFPA 252; and are labeled and listed by UL, Warnock Hersey, or other testing and inspection agency acceptable to authorities having jurisdiction.
- D. Allowable Tolerances:
 - 1. Warp Tolerance: As specified in Section WDMA T-2. In addition, warp tolerance shall apply to pairs of doors and to doors in relation to the frame or jamb in which hung.
 - 2. Squareness: WDMA T-3.
 - 3. Gap Tolerance: As specified in NAAWS Section 9, Section 4.3.8 and Section 6.1.20.
 - 4. Flushness of Joinery: As specified in NAAWS Section 9, Section 6.1.21.
- E. Fire-rated flush wood doors and steel frames specified in Section 08 11 13 and aluminum frames specified in Section 08 11 16.63 shall comply with positive pressure test requirements of UL 10C and shall be labeled accordingly by the door and frame manufacturer in a manner approved by authorities having jurisdiction. Door label shall include hourly rating followed by the letter "S" indicating conformance with air leakage resistance testing, serial number, and the listing agency's certification mark.
- F. WI Certified Compliance Program (CCP):
 - 1. Before delivery to the Project site, if the fabricator/supplier is:
 - a. A WI licensee, issue WI "Certificates of Compliance" certifying that items comply with WI requirements for specified grade.
 - b. A non-WI licensee, furnish a WI "Certified Compliance Tracking Acknowledgement" with the original submittal, evidencing that they have arranged for and will pay inspections required by the WI to comply with the specified requirements. Certified Compliance labels shall be affixed by the WI Inspector.
 - 2. Upon completion of installation, furnish a WI Certified Compliance Certificate for the installation.

3. In the event of question as to compliance with the referenced standard of any item of work, the Architect may require independent inspection service of questioned items as specified in "Independent Inspection Service" of WI "Services and Quality Control Options" published by the WI.
- G. Warrant each solid core interior door against defects in materials and workmanship for the life of the original installation, including costs of rehangng. Defects include, but are not limited to the following:
1. Cores shall not telegraph through door faces. Stile, rail, and core show-through shall be considered a defect when the face of the door varies from a true plane in excess of 0.010-inch in a 3-inch span.
 2. Doors shall not have warped (bow, cup, or twist) more than 1/4-inch in a 42-inch x 48-inch section.
- H. Type: Flush veneered, five-ply construction. Doors with seven-ply construction will not be acceptable.
- I. Door Grade:
1. Fabricate flush wood doors to receive transparent finish in accordance with NAAWS Section 9, Premium Grade.
- J. Cross Banding: Manufacturer's standard, minimum 1/16-inch thick. Fire-retardant treated where required by testing agency.
- K. Fabricate wood doors in sizes indicated for either job-site fitting or factory fit doors to suit frame-opening sizes indicated, at the Contractor's option. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements of NFPA 80 for fire-resistance-rated doors.
- L. For doors that are pre-machined, factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame shop drawings, DHI A115-W series standards, and hardware templates. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory machining.
- M. Veneer:
1. Transparent Finished Doors:
 - a. Veneer Species and Grade: NAAWS Grade AA, Maple.
 - b. Veneer Matching: Book and balance matching.
 - c. Pairs and Sets: Provide pair matching and set matching for pairs of doors and for doors hung in adjacent sets.
 - d. Doors in same room or area shall be matched for color and grain.

- N. Adhesive: WDMA IS-1.6, Type II adhesive bond or better for cores, Type I adhesive bond for faces and cross bands.
- O. Cores:
1. Non-rated Doors: FSC certified core.
 2. 20-Minute Fire-Rated Doors: Solid particle board conforming to ANSI A208.1.
 3. Fire-Rated Doors Greater than 20-Minute Rated: Incombustible mineral approved by labeling authority. Provide top, bottom, and intermediate blocking for surface-mounted hardware.
 4. Cores shall contain no added urea-formaldehyde.
- P. Edge Construction:
1. 20-Minute Fire-Rated Doors and Non-rated Doors:
 - a. Stiles and Rails: Minimum 1-3/8-inch wide by full core thickness glued to core. Provide wider hinge stile where recommended by door manufacturer for door size and type of hinges to be used. Exposed edges of stiles shall be smooth, straight cut, free from knots, pitch pockets, and other defects for a minimum distance of 1/4-inch from the outside edge along the entire stile.
 - b. Species:
 - 1) Stiles: Same grade as face veneer for doors to receive transparent finish.
 - 2) Rails: Hardwood or softwood at manufacturer's option.
 - c. Edge Banding: Minimum 1/2-inch wide by full core thickness. Edge bands if used may reduce the width of stiles and rails. Species for doors to receive transparent finish shall be same as face veneer.
 2. Fire-Rated Doors Greater than 20-Minute Rated:
 - a. Top Rail: Door manufacturer's standard special laminated material.
 - b. Stiles and Rails: Hardwood, fire-retardant treated where required by label. Sizes required by testing agency.
- Q. Edge Clearances:
1. Jambs and Heads: 1/8-inch.
 2. Meeting Stiles of Pairs of Doors: 1/4-inch.
 3. Bottom of Door to Top of Finish Floor: 3/4-inch at concrete, 5/8-inch at resilient flooring, 3/8-inch at carpet, tile, thresholds, and other finish flooring.

SECTION 08 17 43 – FRP DOORS AND FRAMES

- A. Fiberglass reinforced polyester (FRP) flush doors with FRP frames (Alternate Bid).
- B. Warranty: Warrant FRP doors and frames to be free from defects in materials and workmanship for a period of 10-years from Date of Substantial Completion.
- C. Approved Manufacturers:
 - 1. Doors: Special-Lite, Inc. Model SI-220 Sandstone Texture Doors with fiberglass reinforced polyester (FRP) face sheets or approved equal.
 - 2. Frames: Tiger Door or approved equal.
- D. FRP Doors:
 - 1. Door Thickness: 1-3/4-inch.
 - 2. Stiles and Rails: Aluminum extrusions from 100% reprocessed 6063-T6 alloy, minimum 2-5/16-inch deep.
 - 3. Corners: Mitered.
 - 4. Provide joinery of 3/8-inch diameter full-width tie rods through extruded splines top and bottom integral to standard tubular shaped stiles and rails reinforced to accept hardware.
 - 5. Securing Internal Door Extrusions: 3/16-inch angle blocks and locking hex nuts for jointers.
 - 6. Furnish extruded stiles and rails with integral reglets to accept face sheets. Lock face sheets into place to permit flush appearance.
 - 7. Extrude top and bottom rail legs for interlocking continuous weather bar.
 - 8. Meeting Stiles: Pile brush weatherseals.
 - 9. Door Bottom: Install bottom weather bar with nylon brush weatherstripping into extruded interlocking edge of bottom rail.
 - 10. Face Sheet: Exterior grade UV-resistant FRP, 0.120-inch thick, finish color throughout, Sandstone texture, color to be selected by the Architect.
 - 11. Core: Poured-in-place polyurethane foam, minimum 5-pcf density, minimum R-value of 9.
 - 12. Cutouts: Manufacture doors with cutouts for vision lites, louvers, and panels.
- E. FRP Frames:
 - 1. Design: High-modulus pultruded structural FRP shape.
 - 2. Corner Joints: Frame jambs and header shall be joined at corners via miter connections with hidden FRP angle clips and fasteners.
 - 3. Hardware Reinforcement: FRP reinforcing chemically welded to frame at required locations.

4. Anchors: Manufacturer's standard stainless steel fasteners appropriate to wall types.
- F. Hardware: Pre-machine doors and frames in accordance with templates.

SECTION 08 31 13 - ACCESS DOORS AND FRAMES

- A. Non-Fire-Rated Access Doors with Exposed Trim in Non-Public Areas:
1. Door Design: Flush panel.
 2. Material: Commercial grade cold-rolled steel with 16-gauge frame and 14-gauge door; phosphate dipped with baked-on rust-inhibitive gray primer for field painting as specified in Section 09 91 00.
 3. Exposed Trim: 1-inch flange overlapping surfaces surrounding door frame.
 4. Hinge: Concealed pin hinge mechanism and continuous piano hinge.
 5. Latch/Lock: Flush screwdriver operated stainless steel cam latch.
- B. Non-Fire-Rated Access Doors with Exposed Trim in Toilet Rooms, Custodial Rooms, and other Wet Areas:
1. Door Design: Flush panel.
 2. Material: Stainless steel, 16-gauge frame and 14-gauge door; satin polish finish.
 3. Exposed Trim: Flange integral with frame, 1-inch wide, overlapping surrounding finished surface.
 4. Hinge: Concealed pin hinge mechanism and continuous piano hinge.
 5. Latch/Lock: Flush screwdriver operated stainless steel cam latch. Provide keyed locks at access doors located in public areas.
 6. Provide insulated doors in insulated or acoustically rated construction.
- C. Non-Fire-Rated Recessed Access Doors in Public Areas:
1. Door Design: Recessed to receive gypsum board or other finish material as indicated.
 2. Material: Cold Rolled sheet steel, 16-gauge, recessed 5/8-inch.
 3. Frame: 16-gauge cold rolled sheet steel with 22-gauge galvanized perimeter drywall bead; phosphate dipped with baked-on rust inhibiting primer for field painting as specified in Section 09 91 00.
 4. Hinge: Concealed pivoting rod.
 5. Lock: Key operated cylinder lock with two keys per lock, keyed alike.
 6. Provide insulated doors in insulated or acoustically rated construction.
- D. UL Fire-Rated Access Doors with Exposed Trim in Non-Public Areas:
1. Door Design: Flush panel.

2. Material: Commercial grade cold-rolled steel with 16-gauge frame and 20-gauge door; phosphate dipped with baked-on rust inhibiting primer for field painting as specified in Section 09 91 00.
 3. Insulation: 2-inch thick fire-rated insulation sandwiched between two pieces of 20-gauge steel.
 4. Exposed Trim: Flange integral with frame, 1-inch wide, overlapping surrounding finished surface.
 5. Hinge: Manufacturer's continuous hinge.
 6. Continuous Closer: Automatic spring closer to automatically close and latch door.
 7. Latch/Lock: Ball bearing cylinder lock operated by a recessed flush key lock. Panels shall have interior latch release mechanism allowing the door to be unlocked from the inside.
- E. UL Fire-Rated Access Doors with Exposed Trim at Toilet Rooms, Custodial Rooms, and Other Wet Areas:
1. Door Design: Flush panel.
 2. Material: Stainless steel, 16-gauge frame and 20-gauge door; satin polish finish.
 3. Insulation: 2-inch thick fire-rated insulation sandwiched between two pieces of 20-gauge steel.
 4. Exposed Trim: Flange integral with frame, ¾-inch wide, overlapping surrounding finished surface.
 5. Hinge: Manufacturer's continuous hinge.
 6. Continuous Closer: Automatic spring closer to automatically close and latch door.
 7. Latch/Lock: Ball bearing cylinder lock operated by a recessed flush key lock. Panels shall have interior latch release mechanism allowing the door to be unlocked from the inside.
- F. UL Fire-Rated Recessed Access Doors in Public Areas:
1. Door Design: Recessed to receive gypsum wallboard or other finish material as indicated.
 2. Material: Cold Rolled sheet steel, 16-gauge, recessed 5/8-inch.
 3. Frame: 16-gauge cold rolled sheet steel with 22-gauge galvanized perimeter drywall bead; phosphate dipped with baked-on rust inhibiting primer for field painting as specified in Section 09 91 00.
 4. Hinge: Concealed pivoting rod.
 5. Continuous Closer: Automatic spring closer to automatically close and latch door.
 6. Latch/Lock: Ball bearing cylinder lock operated by a recessed flush key lock. Panels shall have interior latch release mechanism allowing the door to be unlocked from the inside.

SECTION 08 33 23 – OVERHEAD COILING DOORS

- A. Overhead coiling doors at Sallyport.

- B. Performance Requirements:
1. Wind Loading: Design and reinforce exterior overhead service doors to withstand a 20-psf wind loading pressure.
 2. Door finish shall be free of corrosion when the material is subjected to salt spray resistance test ASTM B117 for 1,000-hours.
 3. Design doors of construction for high cycle use of up to 300,000 cycles for the life of the product
 4. Design doors of construction for high speed operation to achieve operational speed up to 24-inches per second open and up to 12-inches per second close
- C. Warrant overhead coiling doors to be free from defects in materials and workmanship for a period of 2-years from Date of Substantial Completion.
- D. Overhead Coiling Doors:
1. Manufacturer: CooksonCornell EPD 300, basis for Design or equal.
 2. Curtain:
 - a. Slats: Minimum 22-gauge interconnected strip steel conforming to ASTM A653.
 - b. Finish: Powder coating system including galvanized base coat, bonderized treatment, RAL powder coat color in custom color as approved.
 - c. Bottom Bar: Minimum two 2-inch x 2-inch x 1/8-inch structural steel angles finished to match curtain.
 3. Endlocks: Fabricate interlocking sections with malleable steel endlocks on continuous slats each secured two 1/4-inch rivets. Windlock material as required based on system description and manufacturer's recommendation. Provide windlocks as required to meet specified wind load.
 4. Guides: Structural steel angles bolted together with 3/8-inch fasteners to form a channel for the curtain to travel, with self-lubricating anti-wear strips. Finish with powder coat in color as approved.
 5. Shaft Assembly:
 - a. Barrel: Minimum 6-inch steel tubing capable of supporting curtain load with maximum deflection of 0.03-inches per foot of width
 - b. Springless Design: System shall be designed to operate safely without the use of a counterbalance system.
 6. Brackets: Steel, bolted to wall angle. Finish with powder coat in color as approved.

7. Hood: 24-gauge galvanized steel with reinforced top and bottom edges. Finish to match curtain.
8. Perimeter Sealing:
 - a. Bottom Bar: Neoprene astragal.
 - b. Guides: Nylon brush seals.
9. Operation: Motor operator and control system shall be designed for Continuous duty cycle, with a direct drive motor.
10. Entrapment Protection: UL325 compliant NEMA 4X photo eye sensors.
11. Control and Drive System: The motor operator shall be activated from inside the Sallyport by a 3 button push-button station in a NEMA 1 enclosure and from outside the Sallyport by a hand-held transmitter.

SECTION 08 33 26 – OVERHEAD COILING GRILLES

- A. Aluminum rolling grilles, complete with curtains, bottom bars, guides, brackets, hoods, and operating mechanisms.
- B. Grilles shall be designed to a standard maximum of 25 cycles per day and an overall maximum of 50,000 operating cycles for the life of the grille.
- C. Manufacturers: CooksonCornell, Overhead Door Corp., Pacific Rolling Door or equal.
- D. Grille Curtain: 5/16-inch diameter horizontal aluminum rods on 2-inch centers with 1/8-inch aluminum hinged vertical connecting links 9-inches on center. Finish with a clear anodized finish.
- E. Bottom Bar: Extruded aluminum tube with Cookson Featheredge safety edge system. Finish with clear anodized finish.
- F. Guides: Continuous aluminum wall angle and guide sections with continuous nylon wearstrips inserted on both sides of the guide to eliminate metal-to-metal contact. Finish with clear anodized finish.
- G. Brackets: Constructed of not less than 1/4-inch thick steel, finished with one coat of aluminum prime paint.
- H. Barrel: Steel tubing of not less than 6-inch in diameter, designed to limit the maximum deflection to .03-inch per foot of opening width. Oil tempered torsion springs shall counter balance the weight of the curtain. The springs shall be adjusted by means of an exterior wheel.
- I. Hood: Fabricate from .040 aluminum sheet and shall be formed to fit the curvature of the brackets. The finish with clear anodized finish.
- J. The grilles shall be operated at a speed of 2/3 foot per second by an electric motor. The motor operator shall include a geared limit switch, and an electrically interlocked emergency chain operator. The motor operator shall be activated by a 3 button push-button station in a NEMA 1 enclosure. The motor shall be UL listed.
- K. The grille shall include a safety edge system installed on the bottom bar of the grille and shall automatically reverse the grille if the device detects an obstruction in the downward travel of the grille.

- L. Motor operated grilles shall be secured by means of a cylinder lock in the bottom bar, electrically interlocked to prevent the motor from operating when the grille is locked.

SECTION 08 38 16 - DOUBLE ACTING IMPACT TRAFFIC DOORS

- A. Double acting, self-closing, impact traffic doors.
- B. Warranty: Warrant double acting impact traffic doors to be free from defects in materials and workmanship for a period of 2-years from date of Substantial Completion.
- C. Manufacturer: Eliason Corporation SCG-3 or equal.
- D. Size: As indicated.
- E. Core: 3/4-inch thick Moisture-resistant composite wood.
- F. Cladding: 18-gauge satin finish stainless steel.
- G. Edge Trim: 20-gauge stainless steel.
- H. Back Channel: 20-gauge stainless steel.
- I. Hardware:
 - 1. Hinges: EZ swing.
 - 2. Material: Stainless steel.
- J. Vision Window: 9-inch x 14-inch clear acrylic vision panel held in place by a gasket-style custom rubber extrusion.
- K. Perimeter Gasket: Manufacturer's full perimeter gasket.

SECTION 08 41 13 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

- A. Aluminum-framed storefront framing, window walls and entrance doors.
- B. Thermal Movement: Design the aluminum entrance and storefront framing systems to provide for expansion and contraction of the component materials without buckling, failure of joint seals, undue stress on structural elements, damaging loads on fasteners, reduction of performance, stress on glass, or other detrimental effects.
- C. Wind Loading: Provide aluminum entrance and storefront assemblies capable of withstanding wind pressures specified in CBC Chapter 16 when tested in accordance with ASTM E330.
- D. Air Infiltration: Provide aluminum entrance and storefront framing system with an air infiltration rate of not more than 0.06-cfm per sq. ft. of fixed area, excluding operable door edges, when tested in accordance with ASTM E283 at an inward test pressure differential of 1.57-psf.
- E. Water Penetration: Provide framing systems with no uncontrolled water penetration, excluding operable door edges, as defined in the test method when tested in accordance with ASTM E331 at an inward test pressure differential of 6.24-psf.
- F. Manufacturers: Kawneer, Oldcastle BuildingEnvelope, CRL / United States Aluminum or equal.

- G. Extruded Aluminum: 6063-T5 alloy and temper.
- H. Fasteners: Aluminum or Series 300 nonmagnetic stainless steel.
- I. Brackets and Reinforcements: Aluminum or nonmagnetic stainless steel. Provide non-staining, non-ferrous shims for installation and alignment as required.
- J. Door Hardware: As specified in Section 08 71 00.
- K. Glass and Glazing:
 - 1. Entrances: Tinted tempered float as specified in Section 08 80 00.
 - 2. Storefronts: Tinted insulating glass with Low E coating as specified in Section 08 80 00. Provide fully tempered lites where indicated or required by Code.
- L. Separate dissimilar metals with bituminous paint, suitable sealant, elastomeric tape, or gasket between the surfaces. Do not use coatings containing lead.
- M. Finish: Exposed surfaces shall be finished with a Class I clear anodized finish conforming to AA-M12C22A41.

SECTION 08 51 13 – ALUMINUM WINDOWS

- A. Exterior aluminum windows.
- B. Design Requirements: Comply with air infiltration, water penetration and structural performance requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440 for the type, grade and performance class of window units specified.
- C. Testing: Each type and of window unit shall have been tested through a recognized testing laboratory or agency, in accordance with ASTM E330 for structural performance, ASTM E283 for air infiltration, and ASTM E331 and ASTM E547 for water penetration.
 - 1. Structural Performance: No failure or permanent deflection in excess of 4-percent of any member's span after removal of the imposed load, for a positive and negative test pressure of 1.5 times specified Design Pressure.
 - 2. Air Infiltration: Maximum 0.30-cfm per ft. of operable sash joint when tested at an inward test pressure of 6.24-lbs. per sq. ft.
 - 3. Water Penetration: No water penetration at an inward test pressure of 15-percent of the specified Design Pressure.
- D. Warranty: Warrant aluminum windows to be free from defective materials and workmanship for a period of 3-years from date of Substantial Completion.
- E. Materials:
 - 1. Aluminum Extrusions: 6063-T5 alloy and temper.

2. Fasteners: Aluminum, non-magnetic stainless steel, epoxy adhesive, or other materials warranted by the manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors, and other components.
 3. Anchors, Clips and Window Accessories: Aluminum, non-magnetic stainless steel, or hot-dip zinc coated steel or iron complying with ASTM B633.
 4. Weatherstripping: Manufacturer's standard material.
 5. Sealant within Fabricated Windows: Type recommended by the manufacturer for joint size and movement. Sealant shall remain permanently elastic, non-shrinking, and non-migrating.
 6. Insect Screen: Painted roll-formed aluminum frame to match window frame with charcoal fiberglass mesh.
- F. Glazing: As indicated on the Drawings.
- G. Window Types:
1. Awning Windows: AAMA/WDMA/CSA Grade and Performance Class C50 (Design Pressure of 50-psf), including vertical deflection test, hardware load test, and torsion test performance requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440.
- H. Finish: Exposed surfaces shall be finished with a Class I clear anodized finish conforming to AA-M12C22A41.

SECTION 08 62 23 - TUBULAR SKYLIGHTS

- A. Tubular skylight system and related components.
- B. Warranty: Tubular skylights shall be free from defects in materials and workmanship for a period of 10-years from Date of Substantial Completion.
- C. Manufacturer: Solatube International, Inc. "Brighten-Up Series Model 290DS", basis for Design or equal.
- D. Materials:
1. Roof dome Assembly: Transparent, UV and impact resistant dome with flashing base supporting dome and top of tube.
 - a. Outer Dome Glazing: Type DA, 0.125-inch minimum thickness impact resistant injection molded acrylic classified as CC2 material; UV inhibiting, impact modified acrylic blend.
 - b. Raybender 3000: Variable prism optic molded into outer dome to capture low angle sunlight and limit high angle sunlight.
 - c. LightTracker Reflector: Aluminum sheet, thickness 0.015-inch with Spectralight Infinity. Positioned in dome to capture low angle sunlight.

2. Flashing Base: One piece seamless, leak-proof flashing functioning as base support for dome and top of tube.
 - a. Base Material: Sheet steel, corrosion resistant, meeting ASTM A653 or ASTM A463, 0.028-inch thick.
 - b. Provide base type appropriate for roof slope and type.
3. Tube Ring: Attached to top of base section; 0.090-inch nominal thickness injection molded high impact acrylic; to prevent thermal bridging between base flashing and tubing and channel condensed moisture out of tubing.
4. Reflective Extension Tube: Aluminum sheet, thickness 0.015-inch, 24-inches long.
 - a. Interior Finish: Spectralight Infinity, high reflectance specular finish on exposed reflective surface. Visible spectrum greater than 99-percent. Total solar spectrum less than 80.2-percent.
5. Tube Diameter: As indicated.
6. Ceiling Ring: Injection molded impact resistant acrylic. Nominal 0.110-inch thick.
7. Dual Glazed Diffuser Assembly:
 - a. Upper Glazing: PET GAG plastic with EPDM low density sponge seal to minimize condensation and bug, dirt, and air infiltration per ASTM E283. Nominal thickness of 0.039-inch. Lens to be selected by the Architect from manufacturer's standards.
 - b. Lower Glazing: Molded polycarbonate plastic, 0.022-inch thick classified as CC1 material or acrylic plastic, 0.090-inch thick classified as CC2 material, as selected by the Architect.
 - c. Diffuser Trim Ring: Injection molded acrylic, to be selected by the Architect.
8. Accessories:
 - a. Fasteners: Same material as metals being fastened, non-magnetic steel, non-corrosive metal of type recommended by manufacturer or injection molded nylon.
 - b. Suspension Wire: Steel, annealed, galvanized finish, size and type for application and ceiling system.
 - c. Sealant: Polyurethane or copolymer based elastomeric sealant as recommended by skylight manufacturer.

SECTION 08 71 00 - FINISH HARDWARE

- A. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide hardware which has been tested and listed by UL for types and sizes of doors required and complies with door and frame labels.

- B. Key System: Schlage "Primus Level 3 Interchangeable Core (IC)", factory-registered, to match County Building Standards; no substitutions. Furnish to County to stamp with County's identification system.
- C. Locksets: Schlage Series L or Series D with Primus 6 pin keyway, Level 3 IC cylinders, to match County Building Standards; no substitutions. County will key and provide Primus cores.
- D. Deadbolts: Schlage IC type body, large format, with Primus core, B700R or B600R Series, to match County Building Standards; no substitutions.
- E. Combination Entry Control Locks: Schlage AD Series, to match County Building Standards; no substitutions.
- F. Electronic Access Controls: Schlage AD Series, MTK with 8 AA batteries, to match County Building Standards; no substitutions.
- G. Padlocks: Schlage Kryptonite Series, to match County Building Standards; no substitutions.
- H. Cabinet Locks: Schlage CL1000/2000 to match County Building Standards; no substitutions.
- I. Door Closers: LCN to match County Building Standards; no substitutions.
 - 1. Exterior Doors: LCN 4040 Series with EDA arms at out-swinging doors.
 - 2. Interior Doors: LCN 4040 Automatic Operators.
- J. Panic Hardware: Von Duprin CD98 Series or CD35 Series to match County Building Standards; no substitutions.
- K. Mullions: Von Duprin KR Series with MT54 storage bracket kit to match County Building Standards; no substitutions.
- L. Hinges and Butts:
 - 1. Butt Hinges: Ives CB1 Series, Stanley, Hager, McKinney or equal.
 - 2. Continuous Hinges: Pemko Hager, Zero or equal.
- M. Door Stops: Ives, Quality, Rockwood or equal.
- N. Overhead Stops: Glynn Johnson 90 Series and 100 Series or equal.
- O. Thresholds: Pemko or equal.
- P. Door Plates:
 - 1. Kickplates: Ives 8400 Series, 12-inches high x 2-LDW, Hager or equal.
 - 2. Push/Pull Plates: Ives, Hager, Rockwood or equal.
 - 3. Latch Guards: Ives, Hager, Rockwood or equal.
- Q. Door Seals: Pemko, Zero, Reese or equal.

- R. Hardware Finish: As approved by the County.

SECTION 08 71 13 – AUTOMATIC DOOR OPERATORS

- A. Exterior barrier free door operators.
- B. Barrier free door operators shall comply with ANSI A156.19, Low-Energy Automatic Door Standard.
- C. Manufacturer: Dor-O-Matic “Senior Swing” to match County Building Standards; no substitutions.
- D. Operator: Low-energy, self-contained, electromechanical design. The operator shall be powered open with a DC motor with closing by spring force. The motor shall be off when the door is in the closing mode. The door shall be manually operated with power on or off without damage to the operator.
 - 1. Operator shall permit manual opening of door and automatic operation when actuated with pushbutton switch.
 - 2. The operator shall include the following variable adjustments in compliance with ANSI A156.19:
 - a. Opening Speed: 3- to 5-seconds.
 - b. Closing Speed: 3- to 5-seconds.
 - c. Time Delay Before Closing: 2- to 30-seconds.
 - 3. Opening and closing force, measured 2-inches out from the lock stile of the door, shall not exceed 15-pounds of force to stop the door when operating in either direction.
 - 4. Operator shall be mounted and concealed in an extruded aluminum cover running full width of door. Finish aluminum with a clear anodized finish.
- E. Control Switch: Round stainless steel engraved handicap design, marked "Push to Open", one for each side of opening.
- F. Electrical Requirements: 120-VAC, 1-phase, 60-Hz to operator; low voltage wires from push-plate switches to operator.

SECTION 08 75 80 - WINDOW OPERATORS

- A. Motorized window operators on operable clerestory windows.
- B. Warranty: Warrant window operators to be free from defects in materials and workmanship for a period of 3-years from date of Substantial Completion. Failures include, but are not limited to faulty operation and deterioration of metals, metal finishes, and other materials beyond normal weathering.
- C. Manufacturer: Clearline Incorporated “Motorized Window Control Systems” or equal.
- D. Window Operator:

1. Type: Motorized.
2. Finish: As approved.
3. Provide wall mounted switches of style and color to coordinate with other electrical switches in the same room or area.
4. High tensile strength flexible steel cable shall be contained in plastic-lined steel conduit.
5. Provide quick disconnect at vents for access to windows for cleaning.
6. Provide multiple operators on wide windows if recommended by manufacturer. Provide miscellaneous support brackets and angles for mounting of operators as required. Coordinate switching of multiple vents with the County.
7. Conductors and conduit shall be concealed in wall or ceiling framing. If required to be exposed, locate where indicated on the shop drawings and finish to match windows as approved. Provide escutcheons as required.

SECTION 08 80 00 - GLAZING

- A. Interior and exterior glazing.
- B. Exterior Glass Types: As indicated on the Drawings.
- C. Interior Glass Types:
 1. Clear Tempered Float Glass: 1/4-inch thick.
 2. Clear Laminated Float Glass: Two sheets of 1/4-inch thick heat-strengthened float glass laminated together with a 0.030-inch thick clear plastic interlayer.
 3. Mirror Glass: ASTM C1036, Type I, Class 1, Quality q1 for units under 25-square feet, Quality q2 for units over 25-square feet, silver coated and electrolytically copper plated, with edges protected with clear vinyl tape or other protective coating applied before installation.
 - a. Provide stainless steel channel or angle frames with maximum 1/2-inch exposed legs, with No. 4 finish.
 - b. Mirrors shall be in single piece units for each location unless otherwise indicated.
- D. Glazing Materials:
 1. Silicone Glazing Sealant: One-part elastomeric silicone sealant complying with ASTM C920, Type S, Grade NS, Class 100/50, Uses NT, G, A and 0 as applicable; Dow Corning 999A, General Electric "SCS 1200 Construction Sealant", Tremco "Proglaze" or equal.
 2. Glazing Sealant for Fire-Rated Glass: Rectorseal "Metacaulk 835+", DAP 1012 or equal, listed and approved by UL, Warnock Hersey or other approved testing agency.

3. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100-percent, non-staining and non-migrating in contact with nonporous surfaces, with or without spacer rod as recommended by tape and glass manufacturers for application indicated, packaged in rolls with a release paper backing, complying with AAMA 800.
4. Expanded Cellular Glazing Tape: Closed-cell, polyvinyl chloride foam tape, factory coated with adhesive on both surfaces, packaged on rolls with release liner protecting adhesive, and complying with AAMA 800 for product 810.5.
5. Glazing Tape for Fire-Rated Glass: EPDM or other approved flame resistant gasket material approved by testing agency.
6. Dense Elastomeric Compression Seal Gaskets: Molded or extruded neoprene, EPDM, or silicone gaskets of profile and hardness required to maintain watertight seal; complying with ASTM C864.
7. Soft Compression Gaskets: Extruded or molded closed cell, integral-skinned neoprene, EPDM, or silicone of profile and hardness required to maintain watertight seal; complying with ASTM C509, Type II, black.
8. Setting Blocks: Silicone blocks, 80 to 90 Shore A durometer hardness.
9. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place.
10. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement.
11. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonstaining, nonextruding, nonoutgassing, strips of closed-cell plastic foam of density, size, and shape to control sealant depth and otherwise contribute to produce optimum sealant performance.
12. Mirror Mastic: Palmer Products "Mirro-Mastic", TAP Plastics "Gunther Premier Plus" or equal for securing glass mirrors.

SECTION 08 91 00 - LOUVERS

- A. Extruded aluminum drainable blade louvers.
- B. Extrusion Thickness: .081-inch.
- C. Blade Centers: 3-1/2-inches.
- D. Blade Angle: 45-degrees.
- E. Free Area: 46-percent for a 4- x 4-foot louver.
- F. Size and Configuration: As indicated.
- G. Insect Screens: Aluminum wire in aluminum frame, finished to match louvers.

- H. Finish: Exposed surfaces shall be finished with a Class I clear anodized finish conforming to AA-M12C22A41.

END OF DIVISION 08

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DIVISION 09 - FINISHES

SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING

- A. Interior non-structural metal framing for walls and partitions.
- B. Metal Studs: Galvanized steel conforming to ASTM A653, G40 coating, minimum yield strength 33,000-psi. Formed C-channel section conforming to ASTM C645.
- C. Runner Tracks: Galvanized steel conforming to ASTM A653, G40 coating, minimum yield strength 33,000-psi. Formed channel section conforming to ATM C645 with minimum 1-inch flange width; web depth matching studs.
- D. Metal Channels: Galvanized steel conforming to ASTM C653, G40 coating, minimum yield strength 33,000-psi.
 - 1. Framing, Furring, and Stiffening:

<u>Size, Inches</u>	<u>Pounds per 1,000 Lineal Feet</u>
3/4 cold rolled	300
1-1/2 cold rolled	475
2 cold rolled	590
 - 2. Furring Channels: Minimum 26-gauge galvanized steel with knurled faces; hatshaped or Z-section as required.
- E. Tie Wire: No. 16-gauge, galvanized, single-strand annealed steel or No. 18-gauge, galvanized, double-strand annealed steel.
- F. Screws: ASTM C1002, Type S, pan head sheet metal screws, minimum 1/2-inch length.
- G. Runner Track Fasteners: Tempered-steel pins with corrosive resistant plating or coating.
- H. Install non-load-bearing steel framing members in accordance with ASTM C754.

SECTION 09 22 26.23 – METAL SUSPENSION SYSTEMS

- A. Ceiling suspension systems, including suspended grillage for gypsum board and plaster ceilings and soffits.
 - 1. Proprietary gypsum board suspension systems by USG or equal may be used at Design/Build Entity's option.
- B. Ceiling-support system shall limit deflection of finished ceilings to less than L/360.
- C. Metal Channels: Galvanized steel conforming to ASTM C653, G40 coating, minimum yield strength 33,000-psi.
 - 1. Framing, Furring, and Stiffening:

<u>Size, Inches</u>	<u>Pounds per 1,000 Lineal Feet</u>
3/4 cold rolled	300

- | | | |
|--|-------------------|-----|
| | 1-1/2 cold rolled | 475 |
| | 2 cold rolled | 590 |
2. Furring Channels: Minimum 26-gauge galvanized steel with knurled faces; hat-shaped or Z-section.
 - D. Hanger Wire: Galvanized, soft, mild annealed steel; 8-gauge, unless otherwise indicated.
 - E. Diagonal Bracing Wire: Galvanized, soft, mild annealed steel; 12-gauge, unless otherwise indicated.
 - F. Tie Wire: No. 16-gauge, galvanized, single-strand annealed steel or No. 18-gauge, galvanized, double-strand annealed steel.
 - G. Screws: ASTM C1002, Type S, pan head sheet metal screws, minimum 1/2-inch length.
 - H. Hanger and Bracing Wire Fasteners:
 1. Hanger Wires: Connection device capable of carrying not less than 100-pounds.
 2. Bracing Wires: Connection device capable of carrying not less than 200-pounds or the actual design load, whichever is greater, with a safety factor of 2 without yielding.
 - I. Uplift Stiffeners: 3/4-inch EMT if less than 4-feet long; 20-gauge channel studs, 2-1/2-inches if less than 10-feet long.

SECTION 09 22 36.23 – METAL LATH AND ACCESSORIES

- A. Metal lath and accessories.
- B. Perform work in accordance with the applicable requirements of California Building Code (CBC) Section 2507.2 and Table 2507.2.
- C. Metal Lath: ASTM C847, cold-rolled carbon steel sheet with ASTM A653 G60 (Z180) galvanized coating.
 1. Self-Furring Welded Wire Lath: Structa Wire Corp. "Structalath Twin Trac", ICC ESR-2017 or equal welded wire lath, 17-gauge galvanized steel wire welded to form 1-1/2-inch x 1-1/2-inch openings with secondary cold-rolled longitudinal wires.
 - a. Weight: 1.14-lby/sq. yd.
 - b. Finish: Class 1 galvanized coating complying with ASTM A641.
 2. Self-Furring Welded Wire Lath for Stud Spacing over 16-inches on center: Structa Wire Corp. "Megalath", ICC ESR-2017 or equal self-furring welded wire lath, 17-gauge x No. 16 galvanized steel wire welded to form 0.7-inch x 1.5-inch openings with five additional secondary cold-rolled longitudinal wires spaced every 6.5-inches..
 - a. Weight: 1.95-lb./sq. yd.
 - b. Finish: Class 1 galvanized coating complying with ASTM A641.

3. Ceiling Rib Lath: Structa Wire Corp. "V Truss Walls & Ceilings", ICC ESR-2017 or equal, 0.7-inch x 1-1/2-inch rectangular openings with flattened cold-rolled line wires spaced 3/4-inch apart, and heavy hole-punched kraft paper attached between primary wires and backing wires.
 - a. Weight: 2.2-lb/sq. yd.
 - b. Finish: Class 1 galvanized coating complying with ASTM A641.
- D. Fasteners:
 1. General: Fasteners shall comply with ASTM C1063.
 2. Fasteners for Securing Metal Lath to Wood Framing:
 - a. 1-1/2-inch roofing nails for horizontal applications and 1-inch roofing nails, 1-inch wide crown staples, or 6d common nails bent over to engage at least three strands of lath for vertical applications. Fasteners shall be of sufficient length to penetrate a minimum of 3/4-inch into stud.
 - b. Staples or nails used to attach 3/8-inch rib lath shall penetrate horizontal framing members a minimum of 1-3/4-inch and vertical framing members a minimum of 3/4-inch. Nails shall be bent over the rib or the staple shall straddle the rib.
 3. Fasteners for Securing Metal Lath to Metal Framing:
 - a. Corrosion-resistant screws complying with ASTM C1002 for attachment to metal framing 25-gauge and lighter framing and ASTM C954 for attachment to metal framing 20-gauge and heavier. Minimum head size shall be 7/16-inch with a pan or wafer head large enough to engage at least three strands of lath.
 - b. Screws shall have a minimum #8 shank and shall penetrate the framing a minimum of 3/8-inch.
 4. Fasteners for Securing Metal Lath to Concrete or Concrete Block: Hardened concrete stub nails, minimum 3/4-inch long with minimum 3/8-inch heads, in rows not more than 16-inches on center with fasteners spaced a maximum of 7-inches on center along each row. Provide additional powder-actuated fasteners located at each corner and midway along the long edge of the sheet.
 5. Tie Wires: No. 16-gauge, galvanized, single strand annealed steel or No. 13-gauge, galvanized, double strand annealed steel.
- E. Metal Accessories:
 1. General: Comply with ASTM C1063, minimum 26-gauge galvanized steel or zinc alloy, perforated or expanded flanges. Galvanized surfaces to be field painted shall be bonderized. Coordinate depth of trim and accessories with plaster thickness and number of plaster coats required.
 2. Provide corner beads, casing beads, corner reinforcement, strip reinforcement, expansion and control joints, sill screeds and soffit vents.

SECTION 09 24 00 - PORTLAND CEMENT PLASTER

- A. Three-coat application cement plaster application over metal lath with acrylic finish and acrylic finish coat over concrete block walls where indicated.
- B. Code Requirements: Comply with applicable requirements of California Building Code (CBC) Chapter 25.
- C. Allowable Tolerances of Finished Surface: Maximum deviation from true plane shall not exceed 1/4-inch as measured from the line of a 5-foot straightedge placed at any location on the surface.
- D. Warranty: Warrant portland cement plaster to be free from defects in materials and workmanship for a period of 15-years from date of Substantial Completion.
- E. Manufacturers: BMI Products ICC ESR-2535, Dryvit Systems, LaHabra or equal.
- F. Materials:
 - 1. Scratch and Brown Coats: BMI 690 Plaster or BMI 690 Light Plaster, delivered in automated silo or 90-lb. bags.
 - 2. Base Coat: BMI 777 Base Coat with BMI alkali-resistant glass fiber reinforcing mesh, 4.5-oz./sq. yd..
 - 3. Reinforcing Mesh: Manufacturer's recommended fiberglass mesh.
 - 4. Color-Matched Primer: BMI Acrylic Primer, water based, pigmented acrylic primer applied over the cured plaster base coat. Color to closely match acrylic finish.
 - 5. Acrylic Finish Coat: BMI Acrylic with integral color, color and texture to match approved mock-up.

SECTION 09 28 13 - CEMENTITIOUS BACKING BOARDS

- A. Cementitious backing boards at tiled walls and behind epoxy wall coating.
- B. Cementitious Backing Board: Aggregated portland cement board with polymer-coated, glass-fiber mesh encompassing edges, back, and front surfaces.
 - 1. Thickness: 1/2-inch and 5/8-inch.
 - 2. Flexural Strength, ASTM C947:
 - a. 1/2-inch thick: >750-psi.
 - b. 5/8-inch thick: >480-psi.
 - 3. Indentation Strength, ASTM D2394: >1250-psi.
 - 4. Shear Bond Strength, ANSI A118.4: >50-psi.

5. Nail Pull Resistance, ASTM C473: >90-psi.
6. Mold Resistance:
 - a. ASTM G21: Rating 0, no growth.
 - b. ASTM D3273: 10/10.
7. Noncombustibility, ASTM E136: Pass.
8. Surface-Burning Characteristics, ASTM E84: Flame – 0 / Smoke - 0.
- B. Joint Reinforcement: Glass-fiber tape, vinyl coated, open-weave tape; 2-inches wide; pressure-sensitive.
- C. Fasteners: Self-drilling screws with corrosion resistant finish.
 1. At Cementitious Backing Board: Screws with flat wafer head capable of being driven flush to surface of tile backer board; 1- 1/4-inch long.
 2. When cementitious backing board is installed over gypsum board base layer, screws shall be 1-5/8-inches long.
- D. Water Barrier at Shower Walls: Vapor permeable membrane, 15 lb. asphalt felt or TYVEK building paper by E.I. du Pont de Nemours & Company.
- E. Setting Materials: Latex-portland cement mortar complying with ANSI A118.4.
- F. Joint Compound: Setting type or Lightweight Setting Type Joint Compound.

SECTION 09 29 00 - GYPSUM BOARD

- A. Gypsum board work shall comply with ASTM C840, and CBC Chapter 25.
- B. Installation and finishing of gypsum board shall comply with GA-216.
- C. Allowable Tolerances:
 1. Gypsum board surfaces shall have no measurable variation in any 2-foot direction and a maximum variation of 1/8-inch in 10-feet when a straightedge is laid on the surface in any direction. Specified tolerances apply to both plumbness of walls and levelness of ceilings.
 2. Shim work as required to comply with specified tolerances.
 3. Do not exceed 1/16-inch offset between planes of abutting sheets at edges or ends.
- D. Fire-Rated Gypsum Board: ASTM C1396, Type X, 5/8-inch thick, with tapered and wrapped long edges.

- E. Moisture-Resistant Gypsum Board: ASTM C1396, Type X, 5/8-inch thick, with tapered and wrapped long edges. Provide for exposed and concealed locations at walls of toilet rooms, janitor rooms, and other wet spaces; do not use on ceilings. Wet spaces include all animal wash down rooms including kennels and rooms containing a Spray Masters Technology power wash system.
- F. Screws: ASTM C954 or C1002.
 - 1. Use Type S screws for gypsum board attachment to light steel framing.
 - 2. Use Type S-12 screws for gypsum board attachment to 20-gauge and heavier steel framing.
 - 3. Use Type G screws for gypsum board attachment to gypsum board.
 - 4. Use Type W screws for gypsum board attachment to wood framing.
- G. Metal Trim: Zinc-coated conforming to ASTM A525, G90 coating designation.
 - 1. Corner Bead: Fine-mesh expanded-steel wing type.
 - 2. Control Joint: Steel, perforated-flange wing type, with single bead.
 - 3. Edge Trim: Fine-mesh expanded-steel flange.
- H. Joint-Treatment Materials: ASTM C475.
 - 1. Joint Tape: Paper reinforcing tape.
 - 2. Joint Compound: Ready mixed, all-purpose; one grade for bedding tapes and filling depressions, one for second and third coats.
 - 3. Water-Resistant Joint Compound: Use special joint compound to treat joints and cut edges of moisture-resistant gypsum board.
- I. Finish Levels: Unless otherwise scheduled, required finish levels for various areas shall be as follows:
 - 1. Level 0: In areas of temporary construction, no taping or accessories are required.
 - 2. Level 1: In plenum areas above ceilings, attics, electrical closets, and other areas not normally exposed to the public, joints and interior angles shall have tape embedded in joint compound. Surfaces shall be free of excess joint compound. Tool marks and ridges are acceptable.
 - 3. Level 2: Not used.
 - 4. Level 3: Where wall coverings are to be applied, joints and interior angles shall have tape embedded in joint compound and one separate coat of joint compound applied over joints, angles, fastener heads, and accessories. Joint compound shall be smooth and free of tool marks and ridges.

5. Level 4: Unless otherwise specified in another finish level, joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over joints, angles, fastener heads, and accessories. Joint compound shall be smooth and free of tool marks and ridges.
6. Level 5: Provide at gypsum board surfaces in public areas and surfaces subject to severe or critical natural or artificial side lighting.

SECTION 09 30 00 - TILE

- A. Interior wall and floor tile.
- B. Tile: As approved.
- C. Thresholds: As approved. Provide at interior door openings at public areas where thresholds are to be used.
- D. Mortar:
 1. Cement Mortar: Job-mixed portland cement, sand, and water (hydrated lime at Contractor's option), proportions specified in referenced TCA and ANSI standards.
 2. Dry-Set Mortar: ANSI A118.1.
 3. Latex-Portland Cement Mortar: ANSI A118.4.
- E. Reinforcing: Galvanized welded wire fabric, 2-inches x 2-inches - W0.3 x W0.3 (16 ASW gage or 0.0625-inch diameter).
- F. Bond Coat: Portland cement paste on a plastic setting bed or dry-set or latex-portland cement mortar on a cured setting bed.
- G. Grout: Colors as approved.
 1. Floors: Latex portland cement.
 2. Toilet Room and Shower Floors: Epoxy.
 3. Walls: Latex portland cement.
- H. Tile Installation Methods:
 1. Wall Tile: Thin set over cementitious backerboard in accordance with ANSI A108.5 using TCNA Method W244.
 2. Floor Tile: Thin set over concrete slabs on ground in accordance with ANSI A108.5 using TCNA Method F113.
 3. Floor Tile in Toilet Rooms and other Wet Areas: Thin set over waterproofing in accordance with ANSI A108.5 using TCNA method F122. Waterproofing is specified in Section 07 14 16.
 4. Showers:

- a. Walls: Thin-set over ceramic tile backerboard in accordance with ANSI A108.5 using TCNA Method W244 and B415, modified to include waterproofing over cementitious backing board. Waterproofing is specified in Section 07 14 16.
 - b. Floors: Mortar-set over waterproofing in accordance with ANSI A108.1 using TCNA Method F121 and B415. Waterproofing is specified in Section 07 13 53.
- I. Expansion Joints: Comply with TCNA Method EJ171. Proposed joint locations shall be approved by the Architect.
1. Interior: Provide expansion joints at 24- to 36-feet on center in both directions, over cold joints and saw-cut control joints, and where tile abuts restraining surfaces. Joint spacing for tile exposed to direct sunlight or moisture shall be 12-to 16-feet on center. Joint width for paver tile shall be minimum 1/4-inch wide; ceramic mosaic tile and glazed wall tile shall be minimum 1/8-inch.

SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

- A. Acoustical suspension system and lay-in acoustical ceiling panels.
- B. Warrant acoustical ceiling panels to be free from visible sag and against mold, mildew and bacteria for a period of 30-years from Date of Substantial Completion.
- C. Narrow Face Exposed Grid System:
1. Main Runners: 9/16-inch flange with 1/4-inch wide reveal, 1-1/2-inch high web.
 2. Cross Runners: 9/16-inch flange with 1/4-inch wide reveal, 1-25/32-inch high web.
 3. Wall Angle, Reveals, and Miscellaneous Trim: Roll-formed from electro-galvanized steel strip
 4. Finish: Factory-applied white low gloss enamel.
 5. Structural Classification: Heavy duty meeting the requirements of ASTM C635.
- D. Wide Face Exposed Grid System:
1. Main Runners: 15/16-inch flange, 1-1/2-inch high web.
 2. Cross Runners: 15/16-inch flange, 1-inch high web.
 3. Wall Angle, Reveals, and Miscellaneous Trim: Roll-formed from electro-galvanized steel strip.
 4. Finish: Factory-applied white low gloss enamel.
 6. Structural Classification: Heavy duty meeting the requirements of ASTM C635.
- E. Exposed Aluminum Grid System:
1. Main Runners: 15/16-inch flange, 1-1/2-inch high web.

2. Cross Runners: 15/16-inch flange, 1-1/2-inch high web.
 3. Wall Angles, Reveals and Miscellaneous Trim: Hemmed, all-aluminum.
 4. Finish: Factory-applied white low gloss enamel.
 5. Structural Classification: Light duty meeting the requirements of ASTM C635.
- F. Acoustical Panels: As indicated on the Drawings.
- G. Suspension Materials and Fastenings:
1. Wire: ASTM A641, 12-gauge, galvanized steel, regular coating, soft temper; factory pre-straightened units.
 2. Wire Connections to Overhead Structures:
 - a. Hanger Wires: Connection device capable of carrying not less than 100-pounds.
 - b. Bracing Wires: Connection device capable of carrying not less than 200-pounds or the actual design load, whichever is greater, with a safety factor of 2 without yielding.
 3. Fastenings for Accessories:
 - a. Bolts or screws of adequate size, in types appropriate for conditions and materials involved, made of corrosion-resistant materials or coated as approved.
 - b. Concealed only, unless otherwise indicated or approved.
 4. Compression Struts: 1-1/4-inch EMT conduit or as indicated.

SECTION 09 51 23 - ACOUSTICAL TILE CEILINGS

- A. Adhesively-applied 12 inch x 12 inch acoustical tile over gypsum board .
- B. Acoustical Tile: As indicated on the Drawings.
- C. Tile Adhesive: W.W. Henry No. 237 or equal. Tile adhesive shall have a flame spread of 25 or less and smoke development rating of 450 or less when tested in accordance with ASTM E84.
- D. Leveling Splines for Adhesively Applied Tiles: Tile manufacturer's standard flat splines.

SECTION 09 61 43 - WATER VAPOR EMISSION AND HUMIDITY TESTING AND CONTROL SYSTEMS

- A. Retain and pay for an independent Testing Laboratory to perform moisture vapor emission testing on new concrete slabs to receive resilient flooring and epoxy resin flooring and for applying a vapor emission control system treatment when testing reveals vapor emission levels exceeding specified maximums.

- B. Warranty failure of finish flooring system due to concrete water vapor emission to the installed system for a period of 10-years from date of Substantial Completion. Include replacement of finish flooring material, and reapplication of adhesive, vapor emission control system.
- C. Vapor Emission Testing:
 - 1. Perform pre-installation testing of the concrete slab by a calcium chloride test prior to the application of specified water vapor emission control system treatment. Testing shall be performed by a qualified testing personnel and Testing Laboratory.
 - 2. Perform three tests for the first 1,000-sq. ft. of flooring and one additional test for each additional 1,000-sq. ft. of flooring. Conduct around the perimeters of the room, at columns and where moisture may be evident.
 - 3. Tests shall determine the change in weight of moisture-absorbing anhydrous calcium chloride and the results shall represent the amount of moisture transmitting out of the concrete slab area. The value shall be expressed in pounds and shall be equivalent to the weight of the water that is emitted from a 1,000-sq. ft. concrete slab area in a 24-hour period of time.
- D. If calcium chloride testing reveals water vapor emission levels greater than 3-pound per 1,000-sq. ft., apply floor sealer in accordance with manufacturer's instructions.

SECTION 09 65 13 - RESILIENT BASE AND ACCESSORIES

- A. Resilient wall base and resilient flooring accessories.
- B. Rubber Wall Base:
 - 1. Style: Cove with top-set toe for use with resilient flooring, straight with no toe for use with carpet.
 - 2. Height: 4-inches and 6-inches, as indicated.
 - 3. Lengths: Coils in lengths standard with manufacturer but not less than 100-feet.
 - 4. Interior and Exterior Corners: Pre-molded or formed on job at installer's option.
 - 5. Ends: Pre-molded.
 - 6. Color: As approved.
- C. Rubber Accessories: Provide reducer strip for resilient flooring. Color as selected by the Architect from manufacturer's standards.
- D. Adhesives: VOC-compliant water-resistant type recommended by manufacturer to suit resilient flooring product and substrate conditions indicated.

SECTION 09 65 16 – RESILIENT SHEET FLOORING

- A. Resilient sheet flooring where scheduled.

- B. Resilient Sheet Flooring: Armstrong “Medintech”, basis for Design or equal, 0.08-inch thick. Color as approved.
- C. Rubber Flooring: Mondo America, Inc. “Sport Impact”, basis for Design or equal, 3/8-inch thick, smooth. Color as approved.
- D. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
- E. Trowelable Underlayments and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by tile manufacturer for applications indicated.
- F. Adhesives: VOC-compliant water-resistant type recommended by flooring manufacturer for flooring products and substrate conditions.
- G. Install resilient sheet flooring heat with heat-welded seams and 6-inch high integral cove base with metal edge strip.
- H. Install resilient rubber flooring with heat-welded seams. Seal with manufacturers recommended sealer.

SECTION 09 65 19 – RESILIENT TILE FLOORING

- A. Resilient tile flooring where scheduled.
- B. Resilient Tile Flooring: Armstrong “Premium Excelon”, Stonetex colors, basis for Design or equal, 12-inch x 12-inch x 1/8-inch.
- C. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
- D. Trowelable Underlayments and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by tile manufacturer for applications indicated.
- E. Adhesives: VOC-compliant water-resistant type recommended by flooring manufacturer for flooring products and substrate conditions.

SECTION 09 67 23 – RESINOUS FLOORING (ERC-1)

- A. Resinous flooring (ERC-1), consisting of a two-component epoxy primer, 2-component base coat, 2-component receiving coat, 2-component grout coat, and 2-component top coat.
- B. Warranty: Resinous flooring shall be free from defects in materials and workmanship for a period of 3-years from Date of Substantial Completion.
- C. Manufacturer: Ongoing maintenance of animal holding areas and the abuse these areas undergo from power wash down twice a day, every day, is a primary concern of this Project. While we understand there are many ERC products on the market, we have found that BASF and Stonhard products perform better and have been successfully used in more new animal care facilities. We urge the Design/Build Entity to select one of these two manufacturers - BASF “MasterTop 1254”, Stonehard “HRI”, modified to include vinyl flakes to match approved sample and mock-up, or Master Architect approved equal. If an alternate manufacturer is considered, Master Architect approval must be received prior to presentation of your Bid.

1. Resinous flooring and epoxy wall coatings (ERC-2) specified in Section 09 96 56 shall be by the same manufacturer.
- D. Resinous Flooring:
1. Primer: Mix and apply at a rate of 200-sq. ft./gal.
 2. Base Coat: Mix and apply at a thickness of 1/8-inch.
 3. Receiving Coat: Mix and apply at a rate of 150-sq. ft./gal. and broadcast aggregate into the wet receiving coat. Allow to cure.
 4. Grout Coat: Mix and squeegee-apply clear grout coat at a rate of 100-sq. ft./gal. Lightly back-roll.
 5. Top Coat: Mix and apply clear top coat at a rate of 250-sq. ft./gal.
 6. Thickness: 3/16-inch minimum.
- E. Texture: Medium.
- F. Color: As approved.
- G. Miscellaneous Materials:
1. Cove Base Termination Strip: Clear anodized aluminum or zinc strip.
 2. Joint Sealant Materials: Type produced by resinous flooring manufacturer for type of service and joint condition indicated.
 3. Epoxy Mortar for Control Joints: Flooring manufacturer's recommended epoxy joint filler.
- H. Install with integral cove base terminated in a zinc or aluminum strip. Taper base with bullnose termination at concrete block walls.

SECTION 09 72 00 – WALL COVERINGS

- A. Fire Hazard Classification: Provide materials bearing UL, Warnock Hersey or other label and marking, indicating fire hazard classification of wall covering, as determined by ASTM E84. Provide materials with flame spread not more than 25, and smoke developed not more than 50.
- B. Warranty: Wall covering materials, when adhered to a sound surface shall be free of manufacturing defects for a period of 5-years. Manufacturing defects include permanent surface staining attributable to mildew and/or bleed-through of foreign impurities embedded in the backing, and separation of the vinyl from its backing.
- C. Wall Coverings: Genon Sandown, basis for Design, complying with CC-W-408 Type II, medium duty with Class 2 mildew resistance and cloth backing.
- D. Adhesives: VOC-compliant adhesive, primer, and sealer, for use with selected wall covering on indicated substrate. Provide materials that are mildew-resistant and non-staining to wall covering.

- E. Release Coat: VOC-compliant water base sealer or enamel undercoater for substrates as recommended by wall covering manufacturer.

SECTION 09 72 23 – PLASTIC PANELING (FRP)

- A. Fiberglass reinforced plastic (FRP) coated wall panels and decorative fiberglass reinforced plastic (FRP) coated wall panels.
- B. Fiberglass Reinforced Plastic (FRP) Coated Wall Panels:
 - 1. Manufacturers: Crane Composites "KEMLITE Fire-X Glasbord" or "Sequentia Flat", NUDO "FiberLite", Sequentia "Structoglas", Marlite "Regular" or equal.
 - 2. Texture: Smooth.
 - 3. Thickness: Manufacturer's standard.
 - 4. Color: As approved.
 - 5. Flame Spread: 25 or less, ASTM E84.
 - 6. Smoke Developed: 450 or less, ASTM E84.
 - 7. Panels shall exhibit no more than a 0.038-percent weight loss after a 25-cycle Taber Abrasion Test.
- C. Miscellaneous Materials:
 - 1. Adhesive: VOC-compliant waterproof adhesive as recommended by panel manufacturer for installation conditions.
 - 2. Moldings: PVC. Provide inside corners, outside corners, edging, division strips, and base molding.

SECTION 09 77 23 - THERMOPLASTIC SHEET PANELS (TPS)

- A. Thermoplastic sheet panels (TPS).
- B. Manufacturer: Koroseal "Korogard" Protective Wallcovering" or equal.
- C. Thermoplastic Sheet Panels (TPS): Rigid high-impact acrylic/polyvinyl chloride (PVC) sheet.
 - 1. Thickness: 0.040-inch.
 - 2. Color: As approved.
 - 3. Texture: Haircell.
- D. Adhesive: VOC-compliant type as approved by the manufacturer.
- E. Accessories: Provide manufacturer's standard inside corner molding.

SECTION 09 81 00 - ACOUSTIC INSULATION

- A. Sound attenuation blanket insulation.
- B. Formaldehyde-Free Unfaced Mineral/Glass Fiber Blanket/Batt Acoustical Insulation: Acoustical insulation produced by combining glass fibers with formaldehyde-free thermosetting resins to comply with ASTM C665, Type I.
 - 1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50 when tested in accordance with ASTM E84.
 - 2. Manufacturers: Johns Manville "Formaldehyde-Free Sound Control Fiber Glass Batts", CertainTeed "NoiseReducer Sound Attenuation and Acoustical Ceiling Batts" or equal.
 - 3. Thickness: As indicated.
- C. Black-Faced Acoustical Insulation: Inorganic glass fiber material with a minimum density of 2-pcf with a non-erosive coating on the face.
 - 1. Manufacturers: Johns Manville "Insul-SHIELD Black", Owens Corning "SelectSound" Black Acoustic Board", CertainTeed "CertaPro AcoustaBlanket Black" or equal.
 - 2. Thickness: 2-inches.
 - 3. Insulation shall be free of all logos or other markings with face finish continuous black in color and core material black in color.
 - 4. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50 when tested in accordance with ASTM E84.
- D. Mechanical Anchors: Gemco, Inc. "Insulation Hangers" or equal. Provide protective covers or an approved unpointed clip for all areas. Provide adhesive for securing mechanical clip anchors to required substrates. Black color.

SECTION 09 91 00 - PAINTING

- A. Manufacturers: Benjamin Moore, Dunn Edwards, Kelly Moore, Sherwin Williams or equal.
- B. Colors: Match color samples furnished by the Architect.
- C. Exterior Paint Systems: Specified paint systems are those of Sherwin Williams.
 - 1. Galvanized and Zinc Alloy Metal: As specified in Section 09 97 13.
 - 2. Concrete, 100% Acrylic Flat:
 - First Coat: A24W300 Loxon Primer
 - Second and Third Coats: A-100 A6 Flat
 - 3. Concrete Block, 100% Acrylic Flat:
 - First Coat: B25W25 Prep Rite Block Filler
 - Second and Third Coats: A-100 A6 Flat

- D. Interior Paint Systems: Specified paint systems are those of Sherwin Williams.
1. Wood, Acrylic Low Odor/Zero VOC Semigloss:
First Coat: ProMar 200 Zero B28-200 Primer
Second and Third Coats: ProMar 200 Zero B31-2600 Semi-Gloss
 2. Wood, Clear Satin Urethane Finish:
First Coat: A68V91 Wood Classics WB Polyurethane Varnish GL
Second and Third Coats: A68 Wood Classics WB Polyurethane Varnish SG
 3. Wood, Stain and Satin Varnish:
First Coat: Minwax 250 Oil Stain
Second Coat: A68V91 Wood Classics WB Polyurethane Varnish GL
Third and Fourth Coats: A68 Wood Classics WB Polyurethane Varnish SG
 4. Concrete Block, Acrylic Low Odor/Zero VOC Semigloss:
First Coat: B24W265 PrepRite Block Filler
Second and Third Coats: HP Acrylic B22W651 Semi-Gloss
 5. Gypsum Board, Acrylic Low Odor/Zero VOC Eggshell:
First Coat: ProMar 200 Zero B28W2600 Primer
Second and Third Coats: ProMar 200 Zero B30W2651 Eggshell
 6. Gypsum Board, Acrylic Low Odor/Zero VOC Semigloss:
First Coat: ProMar 200 Zero B28W2600 Primer
Second and Third Coats: HP Acrylic B66W5651 Semi-Gloss
 7. Ferrous Metal, Acrylic Low Odor/Zero VOC Semigloss:
First Coat: ProCryl B66-310 Acrylic Primer; touch-up marred shop coated surfaces.
Second and Third Coats: HP Acrylic B66W651 Semi-Gloss
 8. Anti-Corrosive Industrial Epoxy Coating on Lower 18-inches of Interior Hollow Metal Door Frames:
First Coat: Sherwin Williams Macropoxy 646-100

SECTION 09 92 23 - GRAFFITI-RESISTANT COATINGS

- A. Graffiti-resistant coatings on exterior wall surfaces.
- B. Warrant graffiti-resistant coatings to be free from defects in materials and workmanship for a period of 10-years from date of Substantial Completion.
- C. Provide materials that comply with local Air Quality Management District's VOC classification.
- D. Siloxane Penetrating Water Sealer: Compatible with graffiti solution system. Provide over concrete, masonry surfaces prior to application of undercoating.
- E. Undercoating: Water-based high-performance under coating used as a sealer.
- F. Topcoating: Permanent anti-graffiti top coating.

SECTION 09 96 56 - EPOXY WALL COATINGS (ERC-2)

- A. Epoxy wall coating system (ERC-2) where scheduled. Epoxy wall coating system consists of primer, top coat and final top coat.
- B. Warranty epoxy wall coatings to be free from defects in materials and workmanship for a period of 3-years from Date of Substantial Completion.
- C. Manufacturer: Ongoing maintenance of animal holding areas and the abuse these areas undergo from power wash down twice a day, every day, is a primary concern of this Project. While we understand there are many ERC products on the market, we have found that BASF and Stonehard products perform better and have been successfully used in more new animal care facilities. We urge the Design/Build Entity to select one of these two manufacturers - BASF "MasterTop 1291 GLAZ" with vinyl flakes, Stonehard "VSF", modified to include vinyl flakes to match approved sample and mock-up, or Master Architect approved equal. If an alternate manufacturer is considered, Master Architect approval must be received prior to presentation of your Bid.
 - 1. Epoxy wall coating and resinous flooring (ERC-1) specified in Section 09 67 23 shall be by the same manufacturer.
- D. Epoxy Wall Coating:
 - 1. Primer Coat: Mix and apply at a rate of 200-sq. ft./gal. and allow to cure.
 - 2. Top Coat: Mix and apply at a rate of 250-sq. ft./gal. and allow to cure. Apply additional coats if required to produce an acceptable surface.
 - 3. Final Top Coat: Mix and apply at a rate of 300-sq. ft./gal. and allow to cure.
 - 4. Total Thickness: 30 to 40 mils. At metal trim, increase thickness to create a flush condition with base.
- E. Miscellaneous Materials:
 - 1. Joint Sealant Materials: Type produced by epoxy wall coating manufacturer for type of service and joint condition indicated.

SECTION 09 97 13 – STEEL COATINGS

- A. Special coatings on exterior exposed steel items.
- B. Manufacturer: Tnemec Company, Basis for Design, Ameron, Rust-Oleum or equal.
- C. Materials:
 - 1. Urethane zinc-rich primer, 90-97 Tneme-Zinc.
 - a. Adhesion: Not less than 800-psi pull, average of three trials, ASTM D4541.
 - b. Salt Spray (Fog): No blistering, cracking, spot rusting or delamination of film. No more than 1/64-inch rust creepage at scribe and no rusting at edges after 3,000-hours exposure, ASTM B117.

- c. Solids by Volume: 63.0-percent + or - 2.
 - d. Metallic Zinc Content: 83.0-percent + or - 2 by weight in dry applied film.
2. Aliphatic acrylic polyurethane finish, Series 73/74 Endura-Shield, with the following minimum properties:
- a. Abrasion: No more than 96-mg. loss after 1,000-cycles, ASTM D4060, CS-17 Wheel, 1,000 grams load.
 - b. Adhesion: Not less than a rating of 4, average of three tests, ASTM D3359 Method B.
 - c. Humidity: No blistering, cracking, softening or delamination of film after 1,000-hours, ASTM D4585.
 - d. Salt Spray (Fog): No blistering, cracking, softening or delamination of film after 1,000-hours exposure, ASTM B117.
 - e. Solids by Volume: Not less than 58-percent (mixed).
 - f. Color: Custom as approved.

END OF DIVISION 09

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DIVISION 10 - SPECIALTIES

SECTION 10 11 00 - VISUAL DISPLAY SURFACES

- A. Markerboards and tackboards.
- B. Markerboards:
 - 1. Construction: 24-gauge Facing Sheet: 24-gauge white porcelain enamel steel facing sheet suitable for use with liquid felt tip markers laminated to particleboard or plywood core.
 - 2. Trim: Extruded aluminum with clear anodized finish. Provide markerboards complete with integral hanging hooks on rear, and marker tray.
 - 3. Furnish each markerboard with 4 assorted color markers and a felt eraser.
- C. Tackboards:
 - 1. Construction: Tackable core material with fabric covering as selected by the Architect.
 - 2. Trim: Extruded aluminum with clear anodized finish. Provide integral hanging hooks on rear.

SECTION 10 14 00 - SIGNAGE

- A. Exterior and interior code-required signage and exterior monument sign.
- B. Exterior Signs:
 - 1. Exterior Monument Sign Letters and Logo: Aluminum with painted finish.
 - 2. Entrance Signs: Building entrances that are accessible to and useable by physically handicapped persons shall be identified with at least one standard accessibility symbol sign and with additional directional signs as required, to be visible to persons along approaching pedestrian ways. Comply with CBC Section 1127B.3.
 - 3. Parking Stall Accessibility Symbols and Signs:
 - a. Each parking space reserved for the handicapped shall have a surface identification outlining a profile view of a wheelchair with occupant in white on blue background, 36-inches high x 36-inches wide.
 - b. Provide a reflectorized sign permanently posted immediately adjacent to and visible from each parking stall or space reserved for the handicapped, consisting of a profile view of a wheelchair with occupant in white on blue background. Size shall be minimum 70-square inches, mounted not more than 80-inches from the bottom of the sign to the parking space grade.
 - c. Comply with CBC Section 1129B.4.

4. Unauthorized Vehicle Sign: Post the following sign in a conspicuous place at each entrance to the off-street parking area, not less than 17-inches x 22-inches in size with lettering not less than 1-inch in height, which clearly states: "Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed away at Owner's expense. Towed vehicles may be reclaimed at _____ or by telephoning _____. Comply with CBC Section 1129B.4.

C. Interior Sign Types:

1. Type A: Individual brushed aluminum letters, 4-inch high x 1/4-inch thick, concealed mounting to substrate.
2. Type B: Room signage.
 - a. Basis for Design: Mohawk Series 200A with sign design M203-6 PMR frame.
 - b. Size and Type: 6-inch high, 1/8-inch thick melamine with contrasting color core. Raised letters from Universe 67, 5/8-inch with Grade 2 Braille below copy, copy position centered.
 - c. Provide at every door to a permanent space, including toilet rooms, mechanical rooms, and janitor closets.
3. Type C: Room signage at all animal rooms. Similar to Type B except 6-inch x 12-inch with removable data cards for animal identification.
4. Type D: Toilet room entry signage.
 - a. Provide clear matte acrylic plastic with symbols as follows. Colors as approved.
 - 1) Men: 12-inch equilateral triangle with international symbol for men.
 - 2) Women: 12-inch diameter circle with international symbol for women.
 - 3) Gender Neutral: 12-inch diameter circle with 12-inch equilateral triangle.
 - 4) Comply with CBC Section 1115B.6 and ADA Article 4.30.
 - b. Provide sign with raised letters and Braille on the wall adjacent to the latch outside the door. Where there is no wall space on the latch side and at double leaf doors, provide sign on nearest adjacent wall. Comply with CBC Section 1117B.5.
 - c. Center symbols on door and signs on wall at a height of 60-inches above finished floor.

SECTION 10 21 13 – TOILET COMPARTMENTS

- A. Solid composite overhead-braced toilet compartments and wall hung urinal screens.
- B. Warranty: Warrant toilet compartments to be free from defects in materials and workmanship for a period of 15-years from date of Substantial Completion.

- C. Manufacturer: Santana or equal.
- D. Solid Composite Panels: High density polyethylene (HDPE) with minimum 10-percent recycled content, 1-inch thick, color as approved.
- E. Pilaster Shoes and Caps: ASTM A167, Type 302/304 stainless steel, not less than 3-inches high, 20-gauge, finished to match hardware.
- F. Stirrup Brackets: Either chromium-plated non-ferrous cast alloy or anodized aluminum, design to attach panels to walls and pilasters.
- G. Hardware and Accessories: Heavy-duty operating hardware and accessories of chromium-plated non-ferrous cast alloy.
- H. Anchors and Fastenings: Exposed fasteners of stainless steel, chromium-plated steel, or brass, finished to match hardware, with theft-resistant type heads and nuts. For concealed anchors, use hot-dip galvanized, cadmium-plated, or other rust-resistant protective-coated steel.
- I. Overhead Bracing: Continuous extruded aluminum tubing in anti-grip profile, with clear anodized finish.
- J. Provide doors, panels, screens, and pilasters fabricated from solid composite panels. Furnish units with cutouts and drilled holes to receive partition-mounted hardware, accessories, and grab bars, as indicated. Fabrication panels in accordance with manufacturer's recommendations using proper tools and procedures.
- K. Door Dimensions: Unless otherwise indicated, provide 24-inch wide in-swinging doors for regular stalls and 34-inch wide clear opening out-swinging doors at stalls equipped for use by the handicapped.
- L. Overhead-Braced Compartments: Provide galvanized steel supports and leveling bolts at pilasters, as recommended by manufacturer to suit floor conditions. Make provisions for setting and securing continuous aluminum overhead-bracing tube at top of each pilaster. Furnish shoe at each pilaster to conceal supports and leveling mechanism.
- M. Wall-Hung Urinal Screens: Provide panel units in sizes indicated, of same construction and finish as partition system panels.
- N. Hardware:
 - 1. Hinges: Adjustable to hold door open at any angle up to 90-deg. Provide gravity type, spring-action cam type, or concealed torsion rod type.
 - 2. Latch and Keeper: Surface-mounted latch unit, designed for emergency access, with combination rubber-faced door strike and keeper.
 - 3. Coat Hook: As specified in Section 10 28 13.
 - 4. Door Pull: Manufacturer's standard.

SECTION 10 26 00 - CORNER GUARDS AND CHAIR RAILS

- A. Stainless steel corner guards and extruded aluminum chair rails.
- B. Stainless Steel Corner Guards:
 - 1. Manufacturers: Hiawatha Inc. "Saf-T-Guard", Koroseal Wall Protection Systems "Koroguard", Gamco USA or equal.
 - 2. Material: Stainless steel, complying with AISI Type 304, minimum 16-gauge, No. 4 satin finish.
 - 3. Wing Sizes: 1-1/2-inches at public areas, 3-1/2-inches at staff areas.
 - 4. Mounting Method: Double-faced self-adhesive foam tape or epoxy adhesive complying with VOC requirements.
 - 5. Corner Radius: 1/8-inch.
 - 6. Corner Guard Height: As indicated on the interior elevations. Most corner guards align with chair rail or wainscot unless otherwise indicated.
 - 7. Provide custom U-shaped wall end guards where indicated.
- C. Aluminum Chair Rails:
 - 1. Manufacturer: Stylmark, basis for Design or equal.
 - 2. Material: Extended Aluminum mill finish
 - 3. Size: 1/2-inch x 1-1/2-inch; Part #110225.
 - 4. Base "Wall" Connector: Part #410443.
 - 5. End Caps: Part #310213 at exposed ends.

SECTION 10 28 13 - TOILET ACCESSORIES

- A. Partition-Mounted Toilet Paper Dispenser: Bobrick B-386 or equal.
- B. Recessed Toilet Paper Dispenser: Bobrick B-4388 or equal.
- C. Surface-Mounted Toilet Paper Dispenser: Bobrick B-2888.
- D. Combination Toilet Paper Dispenser, Seat Cover Dispenser and Sanitary Napkin Disposal: Bobrick B375 at two compartments; B-3571 at two compartments with one ADA compartment; B-3574 at single compartments.
- E. Combination Toilet Paper Dispenser and Seat Cover Dispenser: Bobrick B-347 at two compartments; B-3471 at two compartments with one ADA compartment; B-3574 at one compartment.
- F. Surface-Mounted Soap Dispenser: Bobrick B-2111 or equal.
- G. Recessed Paper Towel Dispenser: Bobrick B-262 or equal.

- H. Recessed Combination Paper Towel Dispenser and Waste Receptacle: Bobrick B-3944 or equal.
- I. Surface-Mounted Seat Cover Dispenser: Bobrick B-221 or equal.
- J. Baby Changing Station: Bobrick / Koala Kare Products KB110-SSWM or equal.
- K. Recessed Waste Receptacle: Bobrick B-3644 or equal.
- L. Freestanding Waste Receptacle: Bobrick B-2300 or equal.
- M. Recessed Sanitary Napkin Vendor: Bobrick B-3706, single coin operation.
- N. Grab Bars: Bobrick or equal, configurations required.
- O. Folding Utility Shelf: Bobrick B-287 or equal.
- P. Robe Hooks: Bobrick B-6717 or equal.
- Q. Mirrors: Bobrick B-165 Series or equal.
- R. Mop and Broom Holder: Bobrick B-223 x 24 or equal.
- S. Combination Shelf/Mop Holder: Bobrick B-239 or equal.

SECTION 10 41 16 – EMERGENCY KEY CABINETS

- A. Emergency Key Cabinets Building Entrances including Site Gates: Knox Company “Knox-Vault 4400 Series” or approved equal.
 - 1. Construction: Heavy-duty, high security, 1/4-inch thick plate steel housing.
 - 2. Door: 5/8-inch solid steel with interior gasket seal and stainless steel hinge.
 - 3. Lock: UL-listed, double-action rotating tumblers and hardened steel pins accessed by a biased cut key, with 1/8-inch stainless steel dust cover with tamper seal mounting capability.
 - 4. Size: 7-inches high x 7-inches wide.
 - 5. Mounting: Recessed.
 - 6. Color: As approved.
- B. Emergency Key Cabinets at Automatic Gates: Knox Company Model 3200 or approved equal.
 - 1. Construction: Heavy-duty, high security.
 - 2. Door: 1/2-inch solid steel.
 - 3. Size: 7-inches high x 7-inches wide.
 - 4. Mounting: Recessed.

5. Color: As approved.
 6. Key Control Switch: Knox #3502 single switch. Provide inside key cabinet.
- C. Fastenings: Non-ferrous, type to suit installation conditions.

SECTION 10 44 00 - FIRE PROTECTION SPECIALTIES

- A. Fire extinguishers and fire extinguisher cabinets.
- B. Fire Extinguishers: Multi-purpose dry chemical type; UL-rated 2A:10BC, 5-lb. nominal capacity, in enameled steel container.
- C. Fire Extinguisher Cabinets:
1. Approved Manufacturers: J.L. Industries, Larsen's Manufacturing Co., Potter-Roemer, Inc. or approved equal.
 2. Construction: Enameled steel box.
 3. Cabinet Type: Semi-recessed.
 4. Trim Style: Rolled edge.
 5. Door Material: Enameled steel.
 6. Door Style: Vertical Duo-Panel with clear tempered float glass.
 7. Door Hardware: Manufacturer's standard door operating hardware for cabinet type, trim style, and door material and style specified. Provide recessed door handle, exposed or concealed, and friction latch. Provide concealed or continuous type hinge permitting door to open 180-deg.

SECTION 10 51 13 - METAL LOCKERS

- A. Welded metal lockers.
- B. Warrant lockers to be free from defects in materials and workmanship for a period of 10-years from the date of Substantial Completion.
- C. Sheet Steel: Mild cold-rolled and leveled steel, free from buckle, scale, and surface imperfections.
- D. Fasteners: Cadmium, zinc, or nickel plated steel; slotless exposed bolt heads; self-locking nuts or lock washers for nuts on moving parts.
- E. Equipment: Hooks and hang rods of cadmium-plated steel or cast aluminum.
- F. Locker Construction: Lockers shall be built on the unit principle. Each locker shall have an individual door and frame, an individual top, bottom, back and shelves with common intermediate uprights separating units.

- G. Door Frames: 16-gauge, formed into 1-inch wide face channel shapes with a continuous vertical door strike integral with the frame on both sides of the door opening.
- H. Doors: 16-gauge or 18-gauge steel for short or narrow doors as standard with locker manufacturer, formed with a full channel shape on the lock side to fully conceal the lock bar, channel formation on the hinge side and right angle formation across the top and bottom. Single tier doors 60- and 72-inches in height and 18-inch and wider doors shall have a diagonal reinforcing angle welded to inner surface. Doors for box lockers 3, 4, 5 and 6 openings high shall be 16- or 18-gauge steel and shall be formed with right angle flanges on all four sides. Locker doors shall be ventilated by louvers on the face of each door, top and bottom.
- I. Pre-Locking Device: All tiered lockers shall be equipped with a positive automatic pre-locking device whereby the locker may be locked while door is open and then closed without unlocking and without damaging locking mechanism.
- J. Latching: Latching shall be a one-piece, pre-lubricated spring steel latch, completely contained within the lock bar under tension to provide rattle-free operation. The lock bar shall be of pre-painted, double-channel steel construction held laterally in the door channel by means of non-removable self-formed retainers pierced from the door. There shall be three latching points for lockers over 42-inches high and two latching points for all tiered lockers 42-inches and under in height. Frame hooks to accept latching shall be of heavy gauge steel, set close in and welded to the door frame. Continuous vertical door strike shall protect frame hooks from door slam damage. The impact caused by the door closing shall be absorbed by a soft rubber silencers securely installed on each frame hook. Box locker doors shall be equipped with a padlock hasp and a stainless steel strike plate with an integral handle pull or built-in locks as directed by the Architect.
- K. Handles: Handle parts shall be made from zinc die cast material. The fixed case shall be attached to the door with two hex head screws and a shock absorbing stud. The case shall fully shield the lifting trigger from below. The lifting trigger shall have two right angle lugs that insert into the lock bar without the use of a fastening device. The lifting trigger shall be equipped with rubber silencers at top and bottom to prevent metal-to-metal contact. The padlock attachment with 3/8-inch diameter hole shall be positioned so that the fixed handle case provides a padlock strike. The handle design shall be free of openings or surfaces that permit leverage to be applied.
- L. Hinges: 2-inches high, 5-knuckle, full loop, tight pin style, securely welded to frame and double riveted to the inside of the door flange. Locker doors 42-inches high and less shall have two hinges. Doors over 42-inches high shall have three hinges.
- M. Body: 24-gauge upright sheets, backs, tops, bottoms and shelves. Tops, bottoms and shelves flanged on all four sides; backs flanged on two sides. Uprights shall be offset at the front and flanged at the rear to provide a double lapped rear corner. Bolts and nuts shall be zinc plated.
- N. Interior Equipment: Single tier lockers over 42-inches high shall have one hat/book shelf. Other tiered lockers do not require shelves. Single, double and triple tier lockers shall have one double prong back hook (single prong in 9-inch width) and two single prong wall hooks in each compartment. Hooks shall be made of steel, formed with ball points, zinc-plated and attached with two bolts or rivets. Lockers under 20-inches high are not equipped with hooks.
- O. Number Plates: Each locker shall have a polished aluminum number plate with black numerals not less than ½-inch high. Plates shall be attached with rivets to the door face.

- P. Continuous Sloping Tops: Minimum 20-gauge sheet steel, approximately 25-deg. pitch, in lengths as long as practicable but not less than 4 lockers. Provide closures at ends. Finish to match lockers, unless otherwise indicated.
- Q. Filler Panels: Provide filler panels where indicated or required for a complete installation, of not less than 18-gauge steel sheet, factory-fabricated and finished to match locker units.
- R. Color: Doors and exposed body parts shall be finished in colors approved. Non-exposed body parts shall be finished in manufacturer's standard Tan color.
- S. Assembly: Locker assembly shall be accomplished by the use of zinc plated, low round head, slotless, fin neck machine screws with hex nuts, producing a strong mechanical connection.
- T. Locker Sizes and Configuration: As indicated.
- U. Install lockers on manufacturer's standard "Z" metal base finished to match lockers.

SECTION 10 99 00 – MISCELLANEOUS SPECIALTIES

- A. Central Pressure Wash System:
 - 1. Manufacturer: Spray Master Technologies, basis for Design or equal.
 - 2. Description: 4 pumps, 18 station 600 REK System with remote stations with key lock cover and hose reel carts.
- B. Stainless Steel Exam Tables:
 - 1. Manufacturer: Shore-Line Product #903.1030.00 or equal.
 - 2. Size: 22-inches wide x 46-inches long.
 - 3. Features:
 - a. One-piece top, die-formed with perimeter groove to prevent runoff; smooth rounded corners.
 - b. 11-inch wide x 15-1/2-inch long x 4-1/4-inch high stainless steel drawer suspended under the table on the wall side.
- C. T-Kennel Components:
 - 1. Approved Manufacturer: T Kennel Systems or approved equal.
 - 2. Drain Covers: 16-gauge stainless steel spanning the width of the kennel preventing contact with the drain system. A 1-1/2-inch space between floor and drain cover allows flushing debris into the trench.
 - 3. Provide gates, guillotine doors and counterweight mechanism, and additional components as required for a complete installation.
- D. Stainless Steel Shelf at Hand Sanitizers:

1. Material: 20-gauge stainless steel #4 finish.
2. Locate under each Hand Sanitizer as indicated.
3. Install with stainless steel flat head counter sunk screws. Finish all edges so as to avoid sharp corners.

E. Grooming Tub:

1. Manufacturer: Petlift Equipment Corp. "Aqua-Quest" Model #AQ58K or equal.
2. Material: 16-gauge Type 304 stainless steel tub and backsplash liner.
3. Features: Access door and built-in ramp, removable stainless steel front door with handle, roll-out portable ramp/sliding entry, heavy duty metal sprayer head, PVC hose, spray hose hook, faucet, built-in strainer and stopper.
4. Accessories: Provide bottle rack, animal restraint track system, faucet sprayer, hose and hose hook, and hair traps.
5. Dimensions: 58-inches long x 24-inches wide x 24-inches deep with 28-inch long ramp.
6. Coordinate with plumbing rough-ins.

END OF DIVISION 10

DIVISION 11 - EQUIPMENT

SECTION 11 00 01 – OWNER-PURCHASED ITEMS

- A. This Section describes the requirements for the following:
1. OPCI Items: Provide utility and rough-ins and installing County-furnished items.
 2. OPOI Items: Provide utility and rough-ins as required for County-furnished and installed items.
- B. Contractor's Responsibilities:
1. Verify mounting and utility requirements for specified items.
 2. Provide mounting and utility rough-in for items where required, regardless of equipment responsibility designation.
 - a. Rough-in locations, sizes, capacities, and similar type items shall be as indicated and required by product manufacturer.
 - b. If the County substitutes items similar to those scheduled, there shall be no change in rough-in cost, unless substitution occurs after rough-in has been completed or rough-in involves other mounting requirements, utilities or utilities of different capacity from that required by item originally specified.
 3. For items designated to be Owner furnished, the County will make available manufacturer's literature or information and shop drawings showing required mounting and rough-in information.
- C. Items Purchased and/or furnished by the Owner, installed by the Contractor (OPCI):
1. **General:** The County and the Design/Build Entity will coordinate deliveries of items to coincide with construction schedule.
 2. The County will furnish OPCI items with rough-in dimensions and characteristics indicated and tailgate deliver equipment to the site.
 3. The Design/Build Entity Shall:
 - a. Receive items at site and give written receipt at time of delivery, noting visible defects or omissions; if such declaration is not given, the Design/Build Entity shall assume responsibility for such defects and omissions.
 - b. Store items until ready for installation and protect from loss and damage.
 - c. Uncrate, assemble, and set in place.
 - d. Provide required backing plates and structural supports.

- e. Install items in accordance with manufacturer's recommendations, instructions, and shop drawings under supervision of manufacturer's representative where specified, supplying labor and material required and making mechanical, plumbing, and electrical connections required to operate items.
- D. Compatibility with Space and Service Requirements:
 - 1. Items shall be compatible with space limitations indicated and with mechanical and electrical services indicated and specified in other Sections.
 - 2. Modifications to items required to conform with space limitations or with utility services specified for rough-in shall not cause additional cost to the County.
- E. Manufacturer's printed descriptions, specifications, and instructions shall govern the work unless specifically indicated or otherwise specified.
- F. Specifications, standards, tests, and recommended methods cited in this Section to govern use of items shall also govern component parts.
- G. Owner-Purchased Items:
 - 1. Owner-Purchased, Contractor Installed (OPCI) Items: Refer to the Drawings.
 - 2. Owner-Purchased and Installed (OPOI) Items: Refer to the Drawings.

SECTION 11 12 00 - PARKING CONTROL EQUIPMENT

- A. Vehicle detectors and hand-held fob transmitters for control of gate operators specified in Section 33 31 00.
- B. Vehicle Detector:
 - 1. Provide solid state, electronic vehicle detector units designed to detect the presence or transit of a vehicle over an embedded loop of wire and emit an electrical pulse to close the overhead coiling grille. Provide a 3-position sensitivity switch and detection indicator light on the front panel.
 - 2. Provide detector loops consisting of multiple strands of wire of the gauge, number of turns, size, and method of placement as recommended by the parking equipment manufacturer.
- C. FOB Transmitters: Transmitter to activate proximity readers and open and close automatic swinging gates. Provide type and quantity as directed by the County.
- D. Mounting Pedestals: Provide 42-inch high gooseneck pedestal with base plate and mounting plate for mounting keyless entry proximity readers. Finish pedestals with a black powder coating.
- E. Schedule of Equipment:
 - 1. Staff Parking Ingress: Hand-held transmitter to open gate and vehicle detector loop to close gate.
 - 2. Staff Parking Egress: Vehicle detector loop to open and close gate.

SECTION 11 24 19 – CENTRAL VACUUM HAIR REMOVAL SYSTEM

- A. Manufacturer: Sierra Flo Master C650 or equal.
- B. Provide complete system ready for connection to electrical power with components as required for complete operational installation.
 - 1. System: Central vacuum hair removal system. Canister shall be remotely located where indicated.
 - 2. Outlets: Provide as indicated for work stations.
 - 3. Hose: Ceiling-hung with retractable cord.
 - 4. Faceplates: Satin chrome plated.
 - 5. Accessories: Provide main air duct, branch lines, control wiring, and accessories as required for complete operational installation.
- C. Electrical components shall be UL listed and approved.

SECTION 11 41 29 – WALK-IN FREEZERS

- A. Construction: 4-inch thick, polyurethane insulated wall and ceiling panels.
 - 1. Exterior Finish: Minimum 26-gauge acrylic-coated stucco galvanized steel.
 - 2. Interior Finish: Type 304 stainless steel.
 - 3. Wall panels shall include vinyl seals for sealing to concrete curb.
- B. Floor: Cast-in-place concrete with 6-inch high concrete curb. Finish with ERC-1 specified in Section 09 67 23.
- C. Roof: Membrane roof with trim.
- D. Door: Swinging type, 26-inches wide with adjustable cam-lift hinges, spring-actuated door closer, deadbolt locking handle with key/padlock and inside safety release, and perimeter door heater wire.
- E. Refrigeration System: Packaged unit complete with condensing unit, evaporator coil, defrost timer, and compressor.
- F. Provide digital thermometer, LED light fixture, and light switch.

SECTION 11 31 00 – APPLIANCES

- A. Refrigerator/Freezer at Staff Break Room and Multi-Purpose Room: Energy Star Rated with ice maker, 22-cu. ft. minimum. Refer to Equipment Schedule on the Drawings for manufacturer and model.
- B. Undercounter Refrigerator: Energy Star Rated, freestanding, 4.8-cu. ft. minimum. Refer to Equipment Schedule on the Drawings for manufacturer and model.
- C. Refrigerator/Freezer at Food Prep.: Energy Star Rated, freestanding, 18-cu. ft. minimum. Refer to Equipment Schedule on the Drawings for manufacturer and model.
- D. Dishwasher at Staff Break Room: ADA compliant, Energy Star Rated. Refer to Equipment Schedule on the Drawings for manufacturer and model.
- E. Washer: Refer to Equipment Schedule on the Drawings for manufacturer and model.
- F. Gas Dryer: Refer to Equipment Schedule on the Drawings for manufacturer and model.

- G. Undercounter Sanitizer: Hobart LXiH or equal.

SECTION 11 52 13 - PROJECTION SCREENS

- A. Motorized Projection Screens:

1. Screen Case: Metal-lined motor compartment, with hinged or removable access panel to motor compartment, electrical outlet box, and finished with manufacturer's standard prime coat. Equip case with hinged bottom for automatic opening and closing with raising and lowering of screen surface.
2. Motor Unit: Size and capacity recommended by the screen manufacturer, preset limit switches to automatically stop screen in "up" and "down" position. Provide a 3-button remote control switch with cover plate for flush wall-mounting.
3. Screen Fabric: Flame and mildew-resistant glass-beaded with chemical coating.

END OF DIVISION 11

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DIVISION 12 - FURNISHINGS

SECTION 12 21 23 – ROLL-DOWN SHADES

- A. Manual Window Shades:
 - 1. Approved Manufacturers: MechoShade Systems, Draper, Lutron, Silent Gliss or equal.
 - 2. Window Shade Summary:
 - a. Single sunscreen shadeband or blackout shadeband as selected.
 - b. Shade Orientation: Regular-roll, with shadecloth falling at window side of roller.
 - 3. Shadecloth: Shadecloth shall meet requirements of FS CCC-C-521E for fire retardancy, NFPA 701 Small-Scale and/or NFPA 701 Large-Scale requirements.
 - a. Sunscreen Fabric: To be selected.
 - b. Blackout Fabric: Washable and colorfast laminated and embossed vinyl coated fabric, 0.012-inches thick blackout material and weighing 0.81-lbs. per square yard, with a minimum of 62-threads per square inch in colors selected from manufacturer's standards.
 - 4. Fascia: Extruded aluminum which continuously fits on the end and center brackets as a one-piece section over shadeband.
 - 5. Installation Fasteners: Fabricated from metal non-corrosive to window shade hardware and adjoining construction and to support window shade units under conditions of normal use.

SECTION 12 31 23 – STAINLESS STEEL CASEWORK

- A. Custom stainless steel casework, countertops, shelving and wall cladding where scheduled.
- B. Stainless Steel Casework:
 - 1. Stainless Steel: Type 304, ASTM A240. Exposed surfaces shall be a No. 4B finish.
 - a. Door pans, drawer fronts, scribing strips, filler panels, enclosures, drawer bodies, shelves, security side panels and sloping tops shall be 20-gauge.
 - b. Case tops, ends, bottoms, bases, backs, vertical posts, uprights, glazed door members, and access panels shall be 18-gauge.
 - c. Top front rails, top rear gussets, intermediate horizontal rails, table legs and frames, leg rails and stretchers shall be 16-gauge.
 - d. Door and case hinge reinforcements and front corner reinforcements shall be 14-gauge.
 - 2. Hardware and Trim:

- a. Drawer and Door Pulls: Solid metal, surface or recessed thru-bolt to door or drawer from back face. Pulls shall have a chemical-resistant finish. Provide two pulls on drawers wider than 24-inches.
 - b. Hinges: Stainless steel, brushed finish, institutional five-knuckle rounded edge barrel. Hinges shall be attached to both door and case with minimum of two tamper-resistant screws. Provide one pair for doors less than 36-inches in height and 1-1/2-pair for doors over 36-inches.
 - c. Locks: Five tumbler, heavy-duty cylinder type. Exposed nose shall be satin nickel plated and stamped with identifying numbers. Furnish two keys with each keyed different lock or lock series. Furnish two master keys with each system. Coordinate with Owner's keying requirements.
 - d. Door Catches: Minimum 7-pound pull, with metal strike plates. Provide two catches on doors over 5-feet high.
 - e. Shelf Adjustment Clips: Nickel plated steel to engage in pre-formed shelf adjustment shapes.
 - f. Drawer Roller Guides: Ball bearing nylon rollers. Drawers shall have a self-closing feature when opened a nominal 5-inches. Guides shall be corrosion-resistant, 100-pound capacity, full extension type; 150-pound capacity full extension type on drawers over 30-inches wide.
 - g. Leveling Device: Bolts shall be cadmium plated steel and accessible for adjustment through case bottoms, drawer openings, or toe space.
- C. Fabrication:
- 1. Units shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, in same plane without overlap. Provide heavy back-up reinforcement at exterior corners. Face joints shall be welded and ground smooth to provide a continuous flat plane. Provide a uniform clearance around doors and drawers.
 - 2. Base and Full Height Units:
 - a. Case bottom shall be pan type formed from one piece of metal with both sides and back formed up with a radius or be sealed to sides to contain liquids and to provide for ease of cleaning, front shall be offset to provide a door and drawer recess rabbet.
 - b. Toe space rail shall extend up and forward to engage bottom rail to form a smooth surfaced fully enclosed toe space, minimum 3-inches deep and 4-inches high.
 - c. Provide gussets with leveling device in each bottom corner of base units.
 - d. Provide back construction with access to utility chase through either access panels in integral fixed backs or pack panels removable from the interior of an installed case. Access shall be with the use of common tools. Open backed cabinets are not acceptable except at sink base units.

- e. Knee space back panel shall be 18-gauge, finished same as cabinets, and easily removable for access to utility chase.
 - f. Drawers shall be mountable in any location in cabinet. Drawer guides shall prevent friction contact with other surfaces.
 - 1) Drawer front shall be double wall construction, fill with fire-resistant sound deadening material. Corners shall be welded and ground smooth.
 - 2) Drawer bodies shall be of one piece construction, including the bottom, two sides, back and inner front. Interior bottom shall be covered for easy cleaning. Top edges shall be smooth formed for strength and to provide a convenience hand hold when drawer is removed.
 - 3) Drawers designated as file drawers shall be capable of installation of letter size front to back hanging file folder system.
 3. Doors shall consist of an inner and outer door pan. Welds, corners, and edges shall be ground smooth to prevent exposure of sharp edges of metal. Fill the space between door pans at time of assembly with fire-resistant sound deadening material.
 4. Adjustable shelves shall be full depth, constructed with a 3/4-inch double channel formation at front and rear edges, and flanged down at ends. Shelves over 42-inches long and shelves over 12-inches in depth shall be additionally reinforced by a flanged channel shaped member electro-welded to underside of shelf. Shelves shall be adjustable on 1/2-inch centers in base units and 1-inch centers elsewhere.
- D. Stainless Steel Countertops:
1. Materials:
 - a. Stainless steel shall be Type 304, ASTM A240.
 - b. Exposed surfaces shall be a No. 4B finish. Stainless steel nuts, screws, bolts, and rivets shall be of the same type stainless steel as in the sheet material and shall have a tumbled finish closely resembling that of the countertop.
 2. Countertops:
 - a. Stainless steel welding material shall be of type similar to the sheet material or a richer quality. Joints in stainless steel tops shall be welded. Welds shall be made without discoloration and shall be ground, polished, and passivated to blend with the countertop finish.
 - b. Countertop shall be 16-gauge. Stainless steel sides and backsplashes shall be integrally welded with top and finished to match. Edges shall be flanged down 1-inch and returned minimum 1/2-inch over wood core to simplify securing top material to cabinet or structural frame. Under surface shall be reinforced with 16-gauge steel channels as required to ensure rigidity and prevent buckling, warping, or oil canning. Underside of top shall have a heavy mastic agent coating and/or marine plywood provide sound deadening. The back side of exposed backsplashes shall be finished to match front and sides.

- c. Countertops shall be fabricated with a marine edge at sink units and shall be pitched to sink bowl for proper drainage. Marine edges shall be seamless die-formed. Other countertops shall have a plain edge.
 - d. Sink bowls integral with countertop shall be 16-gauge stainless steel. Sink units shall be designed and fabricated with sufficient reinforcement to prevent oil canning. Sink joints shall be butt welded, ground smooth and polished to the same finish as countertop. Inside radii shall be 1-inch. Bottoms shall be pitched to the drain inlet. No soldering will be permitted in connection with sink construction. Sink bowl dimensions indicated are inside dimensions. Coordinate with plumbing fixtures.
- 3. Open Adjustable Shelves: Shelves shall be 16-gauge perforated stainless steel with 3/4-inch diameter holes at 2-inch centers, with stainless steel vertical supports and brackets.
 - 4. Provide minimum 16-gauge stainless steel wall flashing at walls adjacent to stainless steel casework and countertops.

SECTION 12 31 26 – METAL CASEWORK

- A. Epoxy-coated metal casework where scheduled.
- B. Metal Casework:
 - 1. Steel Sheet: Mild, cold rolled and leveled unfinished steel.
 - a. Door pans, drawer fronts, scribing strips, filler panels, enclosures, drawer bodies, shelves, security side panels and sloping tops shall be 20-gauge.
 - b. Case tops, ends, bottoms, bases, backs, vertical posts, uprights, glazed door members, and access panels shall be 18-gauge.
 - c. Top front rails, top rear gussets, intermediate horizontal rails, table legs and frames, leg rails and stretchers shall be 16-gauge.
 - d. Door and case hinge reinforcements and front corner reinforcements shall be 14-gauge.
 - 2. Steel Finish: Epoxy coated in custom color.
 - 3. Hardware and Trim:
 - a. Drawer and Door Pulls: Solid metal, surface or recessed thru-bolt to door or drawer from back face. Pulls shall have a chemical-resistant finish. Provide two pulls on drawers wider than 24-inches.
 - b. Hinges: Stainless steel, brushed finish, institutional five-knuckle rounded edge barrel. Hinges shall be attached to both door and case with minimum of two tamper-resistant screws. Provide one pair for doors less than 36-inches in height and 1-1/2-pair for doors over 36-inches.

- c. Locks: Five tumbler, heavy-duty cylinder type. Exposed nose shall be satin nickel plated and stamped with identifying numbers. Furnish two keys with each keyed different lock or lock series. Furnish two master keys with each system. Coordinate with Owner's keying requirements.
 - d. Door Catches: Minimum 7-pound pull, with metal strike plates. Provide two catches on doors over 5-feet high.
 - e. Shelf Adjustment Clips: Nickel plated steel to engage in pre-formed shelf adjustment shapes.
 - f. Drawer Roller Guides: Ball bearing nylon rollers. Drawers shall have a self-closing feature when opened a nominal 5-inches. Guides shall be corrosion-resistant, 100-pound capacity, full extension type; 150-pound capacity full extension type on drawers over 30-inches wide.
 - g. Leveling Device: Bolts shall be cadmium plated steel and accessible for adjustment through case bottoms, drawer openings, or toe space.
- C. Fabrication:
- 1. Units shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, in same plane without overlap. Provide heavy back-up reinforcement at exterior corners. Face joints shall be welded and ground smooth to provide a continuous flat plane. Provide a uniform clearance around doors and drawers.
 - 2. Base and Full Height Units:
 - a. Case bottom shall be pan type formed from one piece of metal with both sides and back formed up with a radius or be sealed to sides to contain liquids and to provide for ease of cleaning, front shall be offset to provide a door and drawer recess rabbet.
 - b. Toe space rail shall extend up and forward to engage bottom rail to form a smooth surfaced fully enclosed toe space, minimum 3-inches deep and 4-inches high.
 - c. Provide gussets with leveling device in each bottom corner of base units.
 - d. Provide back construction with access to utility chase through either access panels in integral fixed backs or pack panels removable from the interior of an installed case. Access shall be with the use of common tools. Open backed cabinets are not acceptable except at sink base units.
 - e. Knee space back panel shall be 18-gauge, finished same as cabinets, and easily removable for access to utility chase.
 - f. Drawers shall be mountable in any location in cabinet. Drawer guides shall prevent friction contact with other surfaces.
 - 1) Drawer front shall be double wall construction, fill with fire-resistant sound deadening material. Corners shall be welded and ground smooth.

- 2) Drawer bodies shall be of one piece construction, including the bottom, two sides, back and inner front. Interior bottom shall be coved for easy cleaning. Top edges shall be smooth formed for strength and to provide a convenience hand hold when drawer is removed.
- 3) Drawers designated as file drawers shall be capable of installation of letter size front to back hanging file folder system.
3. Doors shall consist of an inner and outer door pan. Welds, corners, and edges shall be ground smooth to prevent exposure of sharp edges of metal. Fill the space between door pans at time of assembly with fire-resistant sound deadening material.
4. Adjustable shelves shall be full depth, constructed with a 3/4-inch double channel formation at front and rear edges, and flanged down at ends. Shelves over 42-inches long and shelves over 12-inches in depth shall be additionally reinforced by a flanged channel shaped member electro-welded to underside of shelf. Shelves shall be adjustable on 1/2-inch centers in base units and 1-inch centers elsewhere.
 - a. Open adjustable stainless steel shelving shall be perforated for drainage.
- D. Stainless Steel Countertops: As specified in Section 12 31 23.

SECTION 12 36 61.16 - SOLID SURFACING COUNTERTOPS

- A. Solid surfacing countertops and backsplashes where scheduled.
- B. Warrant solid surfacing countertops to be free from defects in materials and workmanship for a period of 10-years from date of Substantial Completion. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.
- C. Solid Surfacing Material:
 1. Manufacturer, Finish and Color: As indicated on the Drawings.
 2. Thickness: 1/2-inch.
 3. Edge Treatment: As indicated.
 4. Backsplash and Sidesplashes: Applied.
- D. Joint Adhesive: Manufacturer's VOC-compliant one- or two-part adhesive kit to create inconspicuous, nonporous joints.
- E. Sealant: Manufacturer's VOC-compliant mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

SECTION 12 48 16 – ENTRANCE FLOOR GRIDS AND FRAMES

- A. Manufacturer: Mats, Inc. "Grate Grid", basis for Design or equal.
- B. Material: 6063-T52 aluminum.

- C. Grids: I-beam construction secured with key-lock bars. Tread insert material as approved. Distance between treads shall not exceed 1/8-inch. Panel thickness 1-3/4-inch.
- D. Frame: 2-inch deep recessed aluminum frame in 6063-T5 aluminum alloy with 3/16-inch wide exposed surface. Frame color shall be mill finish. Frame surfaces in contact with concrete shall be primer coated.

SECTION 12 93 00 - SITE FURNISHINGS

- A. Provide the following site furnishings, including accessories, as required for complete, finished installation.
 - 1. Tables.
 - 2. Trash and Recycling Receptacles.
 - 3. Flag Poles.
 - 4. Planters Pots.
 - 5. Bicycle Racks.
- B. Tables: Quantity: Per Plans
 - 1. Shall be TBD. Surface mount furnishing, refer to layout plans for locations or as directed by the Engineer. Install per the manufacturer's recommendations.
- C. Trash and Recycling Receptacles: Quantity: Per Plans
 - 1. Trash receptacles shall be TBD. Surface mount furnishing, refer to layout plans for locations or as directed by the Engineer. Install per the manufacturer's recommendations.
 - 2. Recycling receptacle shall be TBD. Surface mount furnishing, refer to layout plans for locations or as directed by the Engineer. Install per the manufacturer's recommendations.
- D. Flag Poles: Quantity: Per Plans
 - 1. Shall be TBD. Surface mount furnishing, refer to layout plans for locations or as directed by the Engineer. Install per the manufacturer's recommendations.
- E. Planters Pots: Quantity: Per Plans
 - 1. Shall be TBD. Surface mount furnishing, refer to layout plans for locations or as directed by the Engineer. Install per the manufacturer's recommendations.
- F. Bicycle Racks: Quantity: Per Plans
 - 1. Shall be TBD. Surface mount furnishing, refer to layout plans for locations or as directed by the Engineer. Install per the manufacturer's recommendations.

END OF DIVISION 12

DIVISION 31 – EARTHWORK

SECTION 31 10 00 - SITE CLEARING

- A. Protecting existing trees, shrubs, groundcovers, plants, and grass to remain.
- B. Removing existing trees, shrubs, groundcovers, plants and grass.
- C. Clearing and grubbing.
- D. Stripping and stockpiling topsoil.
- E. Disconnecting and capping or sealing site utilities.
- F. Temporary erosion and sedimentation control measures.
- G. Material Ownership: Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.
- H. Projection Conditions:
 - 1. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 2. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 3. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- I. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- J. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- K. Do not commence site-clearing operations until temporary erosion and sedimentation control measures are in place.

SECTION 31 20 00 - EARTHWORK

- A. Preparing subgrades for pavements.
- B. Excavating and backfilling for structures.
- C. Excavating and backfilling for utility trenches.
- D. Soil Materials:
 - 1. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

2. Satisfactory Soils: Sand, gravel, friable earth, or non-expansive clays, subject to the Geotechnical Engineer's approval and defined as being a coarse grained soil (ASTM D 2488-09a) and having an expansion index of 10 or less (ASTM D 4829-08a).
 - a. Fill and backfill material shall be free of organic material, slag, cinders, expansive soils, trash or rubble and rocks having maximum dimension greater than 6 inches.
 - b. No rocks having a maximum dimension greater than 3 inches shall be allowed in the upper 3 feet of fill.
3. Unsatisfactory Soils: Expansive and other soils as defined in the project's geotechnical investigation report.
 - a. Unsatisfactory soils also include satisfactory soils not maintained within 4 percent of optimum moisture content at time of compaction.
4. Aggregate Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed rock, and natural or crushed sand; ASTM D 2940-09; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve. Additionally, aggregate base shall conform to the requirements in Section 26 of the Caltrans Standard Specifications.

SECTION 31 37 00 - RIPRAP AND ROCK LINING

- A. Providing Rip Rap at culvert pipe ends as shown on project Plans.
- B. Riprap Materials: Rock used for rock slope protection shall be sized as shown on the project Plans and shall conform to the grading table for Method A placement in Section 72-2 of the Caltrans Standard Specifications.
- C. Geotextile Fabric: Non-biodegradable, woven; Mirafi 500x, manufactured by Mirafi, or equivalent.

SECTION 31 45 13 – GROUND IMPROVEMENT BY VIBRO-REPLACEMENT STONE COLUMNS

- A. Design the Replacement Stone Column installations, furnishing all supervision, labor, materials, equipment, and related services necessary to complete all soil improvement by Dry Bottom-Feed Vibro-Replacement Stone Columns.
- B. Install the Vibro-Replacement Stone Columns to at least the minimum lines and grades designated on the contract documents.
- C. The Vibro-Replacement Stone Columns shall be constructed with aggregate using a dry bottom feed vibroflot. The use of Rammed Aggregate Piers is not permitted.

END OF DIVISION 31

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 32 01 90 - LANDSCAPE MAINTENANCE

- A. Maintaining exterior site landscape areas for a period of 90-days for the following:
 - 1. Maintenance of plantings.
 - 2. Maintenance of landscaped grounds.
 - 3. Disposal of green and trash waste.
 - 4. Labor and equipment for work in this Section.
 - 5. Replacement and replanting of failed plantings.
 - 6. Preparation of year-round maintenance manual.
- B. Replacement Plants
 - 1. Plant Materials: Nursery-grown stock requirements as specified in Section 32 90 00 – Planting.
 - 2. Landscape Plants:
 - a. Match species, size, form and quality, subject to approval.
 - b. Source: Same nursery that supplied the original plants, unless otherwise approved.
- C. Planting Accessories: As specified in Section 32 90 00 - Planting.
- D. Fertilizers
 - 1. Plantings: Commercial complete fertilize with a N-P-K nutrient ratio of 3-1-1 as approved.

SECTION 32 11 23 - AGGREGATE BASE

- A. Base course for concrete pavements.
- B. Base course for asphalt paving.
- C. Aggregate: Material shall be Class 2 Aggregate Base, conforming to the grading requirements found in Section 26-1.02 of the Caltrans Standard Specifications. Aggregate shall be free from organic matter and other deleterious substances prior to compaction.

SECTION 32 12 16 - ASPHALTIC CONCRETE PAVEMENT

- A. Hot-mix asphalt paving, patching and paving overlay
- B. Concrete Wheel Stops
- C. Aggregates:

1. Coarse Aggregate: Crushed rock conforming to SSPWC 200-1.2.
 2. Fine Aggregate: Sand, rock dust, mineral filler, or a blend of these materials. Sand shall conform to the requirements of SSPWC section 200-1.5.2. Rock dust shall conform to the requirements of SSPWC section 200-1.2. Mineral filler, if required, shall conform to SSPWC section 203-6.2.3.
- D. Asphalt Materials:
1. Asphalt Binder: Paving asphalt, viscosity grade AR 4000 conforming to SSPWC section 203-1.
 2. Tack Coat: AR 4000/AR 8000 applied in conformance with SSPWC section 302-5.4.
 3. Mixes: Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mix D1-AR-4000 designed in conformance with SSPWC section 203-6.
- E. Auxiliary Materials:
1. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.
 2. Pavement-Marking Paint in accordance with Section 32 17 23.13 - Painted Traffic Lines and Markings.
 3. Wheel Stops: Precast.
 4. Dowels: Galvanized steel, 3/4-inch diameter, 24-inch minimum length.
- F. Mixes:
1. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mix D1-AR-4000 designed in conformance with SSPWC section 203-6 and complying with the following requirements:
 2. Base Course: Crushed Aggregate Base in conformance with SSPWC Section 200-2.2 or Crushed Miscellaneous Base in conformance with SSWPC Section 200-2.4.

SECTION 32 13 13 - CEMENT CONCRETE PAVEMENT

- A. Exterior cement concrete pavement for the following:
1. Driveways
 2. Curbs and gutters
 3. Walkways
- B. Steel Reinforcement:
1. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
 3. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice."
- C. Concrete Materials:
1. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:
 - a. Portland Cement: ASTM C 150, Type II, low alkali. Supplement with the following:
 - b. Pozzolan: ASTM C618, Class F or N Fly Ash, 100 pounds maximum per cubic yard, containing one percent or less carbon. Fly ash shall not be used in excess of 15 percent by weight of total cement quantity.
 2. Combined Aggregates: Gradation "C" conforming to SSPWC Section 201-1.3.2.
 3. Water: ASTM C 94/C 94M.
- D. Curing Materials:
1. Liquid Curing Compound: ASTM C309, fugitive dye dissipating type.
 2. Moisture-Retaining Cover (Curing Sheet): ASTM C 171, non-staining polyethylene film or white burlap-polyethylene sheet.
- E. Water: Potable.
- F. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- G. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- H. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- I. Pavement-Marking Paint in accordance with Section 32 17 23.13 - Painted Traffic Lines and Markings.
- J. Concrete Mixtures:
1. Prepare design mixtures, proportioned according to ACI 301, with the following properties:
 - a. Compressive Strength (28 Days): 4000 psi for driveways and loading areas and 2,500 psi for curb and gutter and walkways/sidewalks.
 - b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45
 - c. Slump Limit: 4 inches, plus or minus 1 inch.
 - d. Color Pigment: Add color pigment to concrete mixture according to

manufacturer's written instructions.

- K. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates to Architect for each batch discharged and used in the Work.
- L. Wheel Stops: Precast concrete.
 - 1. Dowels: Galvanized steel, 3/4-inch diameter, 24-inch minimum length

SECTION 32 17 23.13 - PAINTED TRAFFIC LINES AND MARKINGS

- A. Painted traffic and parking stall striping and symbols on pavements and curbs, complete with reflective glass beads where indicated on plans.
- B. Pavement Marking Paint: Comply with Section 84, "Traffic Stripes and Pavement Markings", of the State of California Department of Transportation (Caltrans) Standard Specifications.
- C. Waterborne Traffic Line: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with State Specification Number PTWB-01, with drying time of less than 45 minutes.
 - 1. Colors: White, Yellow and Black
- D. Waterborne Traffic Line for disabled persons' parking, and other curb markings: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with State Specification Number FS TT-P-1952D, with drying time of less than 45 minutes.
 - 1. Colors: Blue, Red and Green
- E. Reflective Glass Beads: If noted on plans, paints shall be reflectorized with Type II glass beads. Comply with Caltrans State Specifications No. 8010-004.

SECTION 32 18 13 - SYNTHETIC GRASS SURFACING

- A. Artificial turf at dog exercise areas.
- B. Warranty: Warrant synthetic grass surfacing to be free from defects in materials and workmanship for a period of 8-years from date of Substantial Completion. Warranty shall include ultraviolet degradation due to normal exposure to the sun.
- C. Manufacturer: Heavenly Greens Easyturf "UltimateGrass" Pedigree UG-PET-C or equal.
- D. Synthetic Grass Surfacing:
 - 1. Pile Yarn Type: UV-resistant polyethylene.
 - 2. Yarn Structure: Field Green/Olive Green - Monofilament.
 - a. Yarn Denier: 9000, ASTM D1577.
 - 3. Yarn Structure: Olive Green - Slit-Film.

- a. Yarn Denier: 5000, ASTM D1577.
4. Pile Height: 1-5/8-inches, ASTM D5823.
5. Pile Weight: 44-oz./sq. yd., ASTM D5848.
6. Primary Backing Weight: >7-oz/sq. yd., dual layer woven polypropylene, ASTM D5848.
7. Secondary Backing Weight: 20-oz/sq. yd., dual system permeable polyurethane, ASTM D5848.
8. Total Weight: 71-oz/sq. yd., ASTM D5848.
9. Stitch Gauge: 3/8-inch centers, ASTM D5793.
10. Tuft Bind: >9 lbs/force, ASTM D1335.
11. Water Permeability: >250-inch/hr., DIN 18-035.
12. Total Infill: 2- to 3-lbs/sq. ft.
- B. Infill System: Controlled mixture of selected graded dust-free silica sand and hammer milled cryogenic crumb rubber approved by the manufacturer. The infill material shall fill the voids between the fibers allowing the fibers to remain vertical and non-directional.
- C. Entire system shall be resistant to weather, insects, rot, mildew, fungus growth, and shall be non-toxic. Synthetic grass surfacing shall contain Microban antimicrobial protection to help reduce the creation of ammonia.
- D. Adhesive: Mapei "Ultrabond TurfPU 1K" or equal, fast-setting, moisture-curing, one-component polyurethane adhesive for seaming and direct bonding of synthetic turf.

SECTION 32 31 13 - GATE OPERATORS

- A. Sliding gate operators at staff parking entries.
- B. Warrant gate operators to be free from defects in materials and workmanship for a period of 5-years from date of Substantial Completion.
- C. Sliding Gate Operators: HySecurity "SlideDriver" Model 50VF3 or approved equal.
 1. Features: Fully enclosed hydraulic motor drives a rigid drive rail passing between two compressed polyurethane wheels.
 2. Operator: Continuous duty, hydraulic, smart touch controller with diagnostics and integrated security reporting.
 3. Duty Cycle: Continuous.
 4. Horsepower: 2 HP.
 5. Drive Wheels: Two 8-inch wheels.

6. Gate Weight: 5,000-lb. max.
7. Drawbar Pull: 300-lb.
8. Rate of Travel: 36-inches per second.
9. UL Listing: III, IV.
10. Electrical: 208-volts, 3-phase.
11. Provide warning signs permanently affixed to each side of the sliding gate panel.
12. Controls: Ingress and egress opening and closing of gates shall be controlled by hand held transmitters or vehicle detector loops as specified in Section 11 12 00. Provide entrapment and alarm protection as required by UL 325 for Class III gate operator classification.

SECTION 32 31 19 - ORNAMENTAL METAL FENCE AND GATES

- A. Section Includes: The contractor shall provide all labor, materials and appurtenances necessary for installation of the welded ornamental steel fence system defined herein.
- B. Excavate for post bases and provide concrete anchorage for posts.
- C. Steel material for fence panels and posts shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 45,000 psi (310 MPa) and a minimum zinc (hot-dip galvanized) coating weight of 0.90 oz/ft² (276 g/m²), Coating Designation G-90. A minimum of 62% of the steel material shall be derived from recycled scrap metal.
- D. Material for pickets shall be 1" square x 14 Ga. tubing. The rails shall be steel channel, 1.75" x 1.75" x .105". Picket holes in the rail shall be spaced 4.715" o.c. Fence posts and gate posts shall meet the minimum size requirements of Table 1.
- E. Fabrication:
 1. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.
 2. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture.
- F. The manufactured panels and posts shall be subjected to an inline electrodeposition coating (E-Coat) process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by a duplex application of an epoxy primer and an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). The color shall be (Black). The coated panels and posts shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2 (Note: The requirements in Table 2 meet or exceed the coating performance criteria of ASTM F2408).
- G. The manufactured fence system shall be capable of meeting the vertical load, horizontal load, and infill performance requirements for Industrial weight fences under ASTM F2408.

SECTION 32 31 26 - CHAIN LINK FENCE AND GATES

- A. Provide galvanized chain link fencing, fence framing and fabric, with accessories as required for complete fence installation.
- B. Excavate for post bases and provide concrete anchorage for posts.
- C. Manufacturer: Established firm capable of producing premium quality chain link fencing materials and accessories as required for complete installation, with minimum five years successful experience in manufacturing of materials to be provided for Project.
- D. Standard Chain Link Fabric: Galvanized zinc coated wire, conforming to ASTM A 392, with 2-inch diamond mesh openings woven of 11 gage steel wires.
- E. Standard Chain Link Fence Accessories:
 - 1. Steel Pipe: Standard weight schedule 40 pipe with minimum yield strength of 25,000 psi, hot-dipped galvanized with a minimum average 1.8 oz/sq. ft. of coated surface area.
 - 2. Framework: Fence framework to comply with strength requirements conforming to ASTM F667; ASTM A1083, Schedule 40, butt weld, standard weight, hot dip galvanized to 1.8 oz/sf coating; Type I weight.
 - 3. Provide galvanized steel tension bars and other accessories required for the fabrication of the fence panels.
- F. Gates: ASTM F900; manufacturer's standard galvanized zinc coated wire steel gates, 3'-0" wide unless otherwise indicated; welded construction.
 - 1. Provide gates complete with hardware including hasp for padlock.
- G. Concrete: ASTM C94, normal Portland cement, 2,500 psi at 28 days, 2" to 3" slump, 2 to 4 percent entrained air.

SECTION 32 80 00 - IRRIGATION SYSTEMS

- A. Design and provide a programmable, automatically controlled underground sprinkler irrigation system for landscape plantings, including piping and fittings, backflow prevention, control system, and accessories, as required for a complete finished, operational installation.
- B. Automatic Irrigation System Description:
 - 1. Design Requirements:
 - a. Code Compliance: Irrigation system shall comply with all applicable governing codes.
 - b. Systems' components, equipment and accessories shall comply with existing Owner irrigation standards.
 - c. Select sprinklers and water delivery outlets and accessories based on the types of plants and their water demand, with efficient water use and water conservation as

- requirements.
- d. Design sprinklers for head-to-head coverage to achieve uniform application of water throughout a planting area.
2. Sprinklers controlled by each valve shall have the same precipitation rate regardless of radius of each outlet.
 3. Backflow prevention: Provide backflow preventer downstream of point of connection for water supply complying with State and local codes.
 4. Provide a system with components produced by manufacturers matching the standard irrigation equipment being used by the Owner, including heads, valves, piping circuits, controls, and accessories, or approved equal.
- C. Control System: Provide each irrigation controller with independent low voltage common ground wire.
- D. Performance Requirements:
1. Irrigation controllers shall be programmable to provide the required amount of water needed to sustain healthy plant health.
 2. Control system shall be programmable for run time adjustments according to water demand based on local evapotranspiration data, seasonal weather changes, plant material, mounds and slopes, sun, shade, and wind exposure.
 3. Minimum water coverage shall not be less than following.
 - a. Planting Areas: 100%.
 4. Water Conserving Management Program:
 - a. Prepare a year-round watering program to guide ongoing irrigation management according to seasonal evapotranspiration data for the region. See Section 32 01 90 – Landscape Maintenance.
 - b. Each control valve shall be programmed to apply water for durations of run time without resulting in runoff. Program valves for multiple applications when necessary to apply the required amount of water.
 5. Mainline Layout: Wherever possible, provide looped layout with isolation valves to equalize pressures and to provide redundant supply.
 6. Isolation Valve: Locate at strategic points of mainline piping to allow isolation of subsystems for repair and maintenance.
 7. Quick Coupling Valve: In landscape areas where there are no hose bibbs nearby, provide quick coupling valves in planting areas adjacent to walkways and pavements for manual water supply at every 100 feet maximum distance.
- E. Shop Drawings: Submit design and layout of automatic irrigation system for approval; include flow

calculations for each valve.

- F. Procure irrigation system's components from established firms capable of producing premium quality products and materials as required for the complete installation, with a minimum of five years of successful experience in the manufacturing of materials required for the Work in this Section.
- G. Irrigation Controller:
1. Shall be TBD. Provide electrical power and dedicated internal ethernet connection. Final location of controller, electrical POC, and appurtenances shall be confirmed with owner's authorized representative prior to commencing work.
 2. Provide new batteries in controllers to retain program in memory during temporary power failures.
 3. Provide a diagram of the numbered valves and the respective irrigated areas for the inside panel of each controller.
 4. Irrigation Controller Enclosure:
 - a. Shall be TBD. Pedestal Mount. Final location to be determined in the field.
 - b. Contractor shall provide concrete base for pedestal mount controller, install per manufacturers specifications.
 5. Flow Sensor: Shall be TBD. wire to controller using P7171D cable in 1" conduit, install per manufacturers recommendations
 6. Rain sensor: Shall be TBD. Final location to be determined in the field. Install per manufacturers recommendations
- H. ET Gage: Shall be TBD. Install per manufacturers recommendations
- I. Transformer: To convert building service voltage to control voltage of 24 volts.
1. Circuit Control: Each circuit variable from approximately 5 to 60 minutes; include switch for manual or automatic operation of each circuit.
 2. Timing Device: Adjustable, 24-hour and 7 or 14 day clocks to operate any time of day and skip any day in a 7 or 14 day period.
 3. Allow for manual or semi-automatic operation without disturbing preset automatic operation.
 4. Wiring: Solid copper with UL approval for direct burial in ground. Provide one spare control wire along entire wire routing for each controller for each unused station at controller. Loop 36" excess wire into each single valve box and into one valve box in each group of valves.
 5. Control Wire Servicing Remote Control Valves: #14-1 wire with unique color insulating jacket for each controller.

6. Common Ground Wire: #12-1 wire with white insulating jacket and stripe of color that matches control wire color choice for specific controller.
 7. Spare Wire: #14-1 wire with black insulating jacket.
 8. Splices: 3M-DBY seal packs.
- J. Mainline Pipe and Fittings (3-in and Larger):
1. PVC Plastic Pipe: Rigid unplasticized polyvinyl chloride (PVC) 1120, Type 1, Grade 1, NSF-approved pipe, extruded from material meeting the requirements of ASTM D 2241.
 2. Provide Class 315, SDR-13.5, solvent weld pipe for piping. Provide Schedule 40, Type 1, PVC solvent weld fittings conforming to ASTM D 2466 and ASTM D 1784.
 3. Primer: As recommended by pipe manufacturer.
 4. Mainline to Control Valve Connections: Schedule 80 PVC threaded both ends.
 5. Solvent Cement: Conform to ASTM D 2564.
- K. Mainline Pipe and Fittings (Smaller than 3-in.):
1. Rigid Unplasticized polyvinyl chloride (PVC) 1120, Type 1, Grade 1, NSF-approved, color white, complying with ASTM D 1785. .
 2. Pipe and Fittings: Schedule 40 solvent weld pipe, and Schedule 40, Type 1, PVC Solvent weld fitting conforming to ASTM D 2466 and ASTM D 1784.
 3. Mainline to Control Valve Connections: Schedule 80 PVC threaded both ends.
 4. Primer: As recommended by pipe manufacturer.
 5. Solvent Cement: Conform to ASTM D 2564.
- L. Lateral Pipe and Fittings (Downstream of Control Valves):
1. Rigid Unplasticized polyvinyl chloride (PVC) 1120, Type 1, Grade 1, NSF-approved, color white, complying with ASTM D 1784. .
 2. Pipe and Fittings: Schedule 40 solvent weld pipe, and Schedule 40, Type 1, PVC Solvent weld fitting conforming to ASTM D 2466 and ASTM D 1784.
 3. Primer: As recommended by pipe manufacturer.
 4. Solvent Cement: Conform to ASTM D 2564.
 5. Galvanized Steel Pipe and Fittings: Pipe standard weight, seamless or welded, galvanized conforming to ASTM A 53. Fittings galvanized malleable-iron, threaded fittings conforming to ANSI B 16.3
- M. Copper Pipe and Fittings: Pipe Type L seamless copper water tube, drawn temper, conforming to

ASTM B 88. Fittings wrought copper or cast brass, recessed solder joint type fittings conforming to ANSI B 16.22

N. Sleeving:

1. Rigid, Unplasticized polyvinyl chloride (PVC) 1120, Type 1, Grade 1, NSF-approved pipe, extruded from material meeting the requirements of ASTM D. 1784, white color.
2. Provide Schedule 40 solvent weld pipe for sleeving.

O. Pipe Thread Sealant:

1. Permatex 51.
2. Rector Seal T+2.

P. Sprinkler Remote Control Valves (RCV): As indicated in plans and details.

1. Angle Valves: As indicated in plans and details.
2. Globe valves: As indicated in plans and details.
3. Furnish cast bronze bodies, unless otherwise indicated.

Q. Sprinkler Manual Control Valves (MCV): As indicated in plans and details, with cast bronze body or approved equal. Furnish two valve keys. 3-ft. long with tee handles and key end to fit valves.

R. Isolation Valves:

1. 3-in. and smaller: As indicated in plans and details. with cast bronze body or approved equal. Furnish two valve keys, 3-ft. long with tee handles and key end to fit valves.
2. Larger than 3-in.: Comply with Section 33 11 00 – Water Distribution System

S. Quick Coupling Valves: Red brass two-piece design, locking cap, key operated. As indicated in plans and details or approved equal. Furnish two valve keys per quick coupling valve.

T. Automatic Drain Valves: Designed to open for drainage when line pressure drops below 3 psi.

U. Spring Loaded Check Valve in Sprinkler Riser Assembly: Provide where low outlet drainage could cause erosion or excess water.

1. Type: Hunter/HCV Series, King Brothers Inc./CV-FF Series, or approved equal.

V. Swing Check Valve in Sprinkler Riser Assembly:

1. Type: King Brothers Inc./KSC-T Series.

W. Valve Box: Green plastic valve boxes with bolt down, non-hinged cover marked "IRRIGATION".

1. Box Body: Include knock-outs.

2. Manufacturers: Carson-Brooks, DFW, or approved equal.
- X. Water Meter: Type and size as approved, conforming to Owner standards and Section 02510 Water Distribution System.
- Y. Backflow Preventer: Provide backflow preventer to suit irrigation system, complying with applicable codes.
 1. Type: As indicated in plans and details.
- Z. Sprinkler Heads: As indicated in plans and details.
- AA. Drip Line: As indicated in plans and details.
- AB. Air Relief Valve: As indicated in plans and details.
- AC. Flush Valve As indicated in plans and details.
- AD. Bubblers: As indicated in plans and details.
 1. Bubblers (Tree), Two per Tree: As indicated in plans and details.
- AE. Drainage Backfill: Cleaned gravel or crushed stone, graded from 2" maximum to 3/4" minimum.

SECTION 32 90 00 - PLANTING

- A. Furnishing plants and installing landscape planting and lawns, with related accessories and material as required for complete installation.
- B. Provide planting accessories, soil amendments, fertilizers, mulches and other material as required for complete installation.
- C. Provide all labor and equipment for the work specified herein.
- D. Provide initial maintenance until Date of Substantial Completion.
- E. Provide 90-Days Maintenance from Date of Substantial Completion.
- F. Plant Materials: Provide nursery-grown stock.
 1. Quality and Size: Conform to State of California Grading Code for Nursery Stock Number 1 grade and conforming to ANSI Z60.1 standards.
 2. Measurements of Plants: Provide plants of uniform and standard sizes, neither overgrown nor too recently canned so root system is not thoroughly established throughout can.
 3. Plants of the same botanical name and container size shall be matching in form and size.
 4. Plant Label: Identify species and variety of each container plant on waterproof label; do not make variety substitutions without prior approval.
- G. Trees

1. Standard Trees: Single, straight trunk tree with well-balanced crown and intact leader, in containers or boxes.
 2. Multi-stem Trees: Minimum of 3 stems rising from the crown of root ball, branched or pruned naturally according to species and type and with relationship of caliper, height, and branching according to ANSI Z60.1.
- H. Shrubs:
1. Deciduous Shrubs: Grown in containers, with no less than the minimum number of canes requires by and measured according to ANSI Z60.1 for the type, shape, and height normal for the size specified.
 2. Evergreen Shrubs: Container grown, with well-balanced form, of the type, height, spread, and shape required, complying with ANSI Z60.1, normal for the size specified.
- I. Vines:
1. Provide vines grown in pots or other containers of adequate size and acclimated to outside conditions.
 2. Provide minimum 2-year old plants with well-branched and leaved tops, not less than 3 runners of 18 inches or more in length, and with a vigorous, well-developed root system.
- J. Espaliers: Provide container grown plants with a minimum of 4 canes trained on a nursery provided trellis, with canes in balanced, uniform distribution.
- K. Ground Cover and Other Plants:
1. Ground Cover: Provide ground cover of species indicated, established and well rooted in pots or similar containers, complying with ANSI Z60.1 and as indicated on drawings.
 2. Perennials: Provide healthy container grown plants with well-developed roots system and branches from a commercial nursery, of the species and variety indicated.
- L. Topsoil: Tested to be sandy loam to loam with pH range of 6.5 to 7.5, ECe less than 2, SAR less than 4, and boron less than 0.7 ppm, a minimum of 2 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth or as recommended by the soil testing laboratory.
- M. In-situ soil: Use stockpiled on site surface soil for topsoil only if recommended by laboratory soil report. Submit a sample to a certified laboratory for fertility, agricultural suitability, and physical appraisal soil testing and analysis, for every 1,000 cu. Yd. of soil for use in planting work.
- N. Planting Backfill: Prepare planting backfill using on-site soil as applicable, in accordance with recommendations of the Soil Report.
- O. Imported Soil: Meeting the requirements specified herein and subject to the Owner approval.
- P. Commercial Fertilizer for Backfill Soil: As recommended by Soil Report.

- Q. Mulch:
1. Ground or shredded pine or fir bark or other Owner approved mulch.
 2. Particle size shall be within 1" and with not over 10% wood fibers, free of salt, foreign materials such as clods, coarse objects, sticks, roots, weeds or weed seeds.
 3. Maximum pH: 5.5.
- R. Fertilizers and Planting Amendments
1. Fertilizer for planting soil: Supply commercial fertilizers as recommended by soil report.
 2. Fertilizer Tablets: Slow release 20-10-5 tablets by Agriform or approved equal.
 3. Provide three 21 gram tablets for each tree
 4. Provide two 10-gram tablets for each shrub and vines.
- S. Staking and Tree Protector Materials:
1. Stakes: Minimum 2" square or diameter, not less than 8 feet long lodge pole pine stakes, or as long as necessary to properly support tree as indicated, minimum two per tree.
 2. Cross Brace: 1" by 4" by 18" Redwood cross brace attached to stakes centered 16" above ground; attached with two 6d galvanized nails at each stake.
 3. Cinch-Ties: 24" long, four required for each tree (two at 12" from top of stake, two at 36" from top of stake); type as approved by the Owner.
 4. Staples: 1-1/2" fence staple, galvanized.
 5. Tree Guards: As indicated in plans and details. See specification section 12 93 00 - Site Furnishings.
- T. Jute Netting: Jute fiber fabric with open weaving and having the following characteristics:
1. 50% open weave area, in 4 feet wide rolls.
 2. Netting Fabric Thickness: 0.35-inch minimum.
 3. Tensile Strength: 300 x 175 lb/ft minimum.
 4. Weight: 9 oz. Per square yard minimum.
 5. Netting Staples: No. 11 gauge steel wire or heavier, 6 inch length minimum. Provide a minimum of 200 staples per 100 square yard of installation surface.
- U. Geotextiles: Provide Christy's 2.0 oz Spunbond Landscape Fabric on all shrub and groundcover planting areas.
1. Provide 6" of overlap where two sheets come together.

2. Shall be held down with jute staples, No. 11 gauge steel wire or heavier, 6 inch length minimum. Provide a minimum of 200 staples per 100 square yard of installation surface.
- V. Steel Edging: Steel with powder coating, baked on enamel finish in black color,
1. Provide 3/16 inch by 4 inch x 16 feet lengths, fabricated with slots for stakes; edging by Sure Loc or approved equal.
 2. Provide stakes fabricated of 14-gauge steel, 15 inches long, by Sure-Loc or approved equal.
- W. Plastic Header Board: Fabricated from recycled plastic, 2 inch thick x 4 inch x 16 feet long, brown color, by Bend-a-Board or approved equal.
- X. Herbicide: When necessary, provide per recommendation of a licensed California Pest Control Advisor.
- Y. Pesticide: When necessary, provide per recommendation of a licensed California Pest Control Advisor.

END OF DIVISION 32

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DIVISION 33 – UTILITIES

SECTION 33 11 00 - WATER DISTRIBUTION

- A. Section includes:
- a. Waterline pipe and fittings.
 - b. Water Valves
 - c. Water Meters
 - d. Fire Hydrants
 - e. Fire Department Connections
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified in the County of San Luis Obispo Standard Specifications and Details. Manufacturers offering products that may be incorporated into the Work include, but are not limited to:
1. Armorcast Products
 2. Brooks Products
 3. FEBCO
 4. Ford Meter Box Company
 5. James Jones Company
 6. EBAA Iron
 7. NAPPCO Fastener Company
 8. NIBCO
 9. Potter Roemer
 10. Smith-Blair, Inc.
- C. Main Line Pipe:
1. Ductile Iron Water Distribution Pipe: Ductile Iron pipe shall be cement-lined and shall conform to AWWA C111, C104, C105, C150 and C151 for both quality and strength.
 2. PVC Water Distribution Pipe (Polyvinyl Chloride)
 - a. Pipe used for all water lines 4" in diameter and larger, including fire service lines, shall be type C900, class 200.
 - b. Approved PVC water main manufacturers:

- | | | | |
|--|----|----------------|-------------------|
| | 1) | Certainteed | “Vinyl Iron Pipe” |
| | 2) | John Mansville | “Blue Brute Pipe” |
| | 3) | UPONOR ETI | “Ultra Blue” |
- D. Main Line Fittings: All fittings, mechanical joints and restraints, push-on joints, flanges, flexible couplings, transition couplings and flanged coupling adapters shall be in accordance with the latest County of San Luis Obispo Standard Specifications and Details.
- E. Service Line Pipe and Fittings:
1. All service line pipes less than 4” in diameter, and all service line fittings shall be in accordance with the latest County of San Luis Obispo Standard Specifications and Details.
 2. Copper service lines must be sleeved with a plastic sleeve to minimize corrosion.
 3. All water connections shall have an accessible valve at the water main, except for ¾” and 1” connections.
 4. A vinyl coated solid copper tracing wire, 12 or 14 gauge, shall be used on all non-metallic pipe service runs and shall be stubbed up in the meter box for accessibility.
- E. Water Main Gate Valves: Water Main Gate Valves shall likewise be in accordance with the latest County of San Luis Obispo Standard Specifications and Details.
- F. Gate Valve Boxes and Covers: Gate Valve Boxes and Covers shall likewise be in accordance with the latest County of San Luis Obispo Standard Specifications and Details.
- G. Water Meters: Water meter(s) indicated on drawings shall be furnished and installed by the County of San Luis Obispo, Water Division, at the expense of the Owner.
- H. Fire Hydrants:
1. Before procurement, verify that approval has been issued by the Fire Department having jurisdiction.
 2. Fire Hydrant(s) indicated on drawings shall be Wet Barrel type and shall be shall be in accordance with the latest County of San Luis Obispo Standard Specifications and Details.
 3. Combined length of bury and extension shall be as indicated. Where not indicated, install top of hydrant flange 3 inches above finished surface.
- I. Blowoff Assemblies: Blowoff Assemblies indicated on drawings shall be in accordance with the latest County of San Luis Obispo Standard Specifications and Details.
- J. Combination Air Release Valves: Combination Air Release Valves indicated on drawings shall likewise be in accordance with the latest County of San Luis Obispo Standard Specifications and Details and shall conform to AWWA C-512.

- K. Fire Department Connection: Fire Department Connections shall be either two-way or four-way square connections with clapper body, as indicated on drawings. Fire Department Connections shall be Potter-Roemer type 5761, (two-way), or 5775/5776, (four-way), or approved equal.

SECTION 33 30 00 - SANITARY SEWERAGE

- A. Section Includes:
 - a. Gravity-flow, nonpressure Sewer Pipe and Fittings.
 - b. Sewer Cleanouts
 - c. Pre-cast Concrete Manholes
 - d. Force Main Sewer Pipe and Fittings
 - e. Force Main Cleanouts
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work are listed in the County of San Luis Obispo Standard Specifications for Construction of Sanitary Sewers. All materials shall never be less than those approved by AWWA, ASA and ASTM as last revised.
- C. Nonpressure-Type Pipe:
 - 1. Nonpressure PVC Pipe:
 - a. PVC Sewer Pipe and Fittings, NPS 15 and Smaller: ASTM D 3034, SDR 35, with integral wall belled ends and elastomeric joints with ASTM F 477, elastomeric seals.
- D. Pressure-Type Pipe:
 - 1. Force main PVC sewer-piping:
 - a. PVC Sewer Pipe and Fittings, AWWA C900, DR 18, Class 150 with integral wall belled ends and elastomeric joints with ASTM F 477, elastomeric seals.
- E. Nonpressure-Type Pipe Couplings: Comply with ASTM C 1173, and the County of San Luis Obispo Standard Specifications and Details for joining underground nonpressure piping.
- F. Sewer Cleanouts: Pressure and Non-Pressure sewer cleanouts shall be constructed from materials as shown on the project detail plan sheet.
- G. Manholes: Standard Pre-cast Concrete Manholes per County of San Luis Obispo Standards: ASTM C 478, pre-cast reinforced concrete, of depth indicated, with provision for sealant joints.
 - 1. Diameter: 48 inches, unless otherwise indicated.
- H. Concrete:
 - 1. General: Cast-in-place concrete according to ACI 318/318R, ACI 350R, and the following:

- a. Cement: ASTM C 150, Type II.
- b. Fine Aggregate: ASTM C 33, sand.
- c. Coarse Aggregate: ASTM C 33, crushed gravel.
- d. Water: Potable.
2. Portland Cement Design Mix: 3250 psi minimum, with 0.45 maximum water/cementitious materials ratio.
3. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
4. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel.
- I. Manhole Channels and Benches: Factory or field formed from concrete. Portland cement design mix, 3250 psi minimum, with 0.45 maximum water/cementitious materials ratio. Include channels and benches in manholes.
 1. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
 - a. Invert Slope: 2 percent through manhole unless otherwise noted.
 2. Benches: Concrete, sloped to drain into channel.
 - a. Slope: 4 percent.
 3. Ballast and Pipe Supports: Portland cement design mix, 3250 psi minimum, with 0.45 maximum water/cementitious materials ratio.
 4. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
 5. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel.

SECTION 33 40 00 - STORM DRAINAGE

- A. Section Includes:
 1. Gravity-flow, nonpressure storm drainage pipe
 2. Drainage Structures outside the building
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified on Plans.
- C. PVC Pipe and Fittings:

1. PVC Pipe and Fittings, NPS 15 and Smaller: ASTM D 3034, SDR 35, with bell-and-spigot ends for gasketed joints with ASTM F 477, elastomeric seals.
 2. PVC Pipe and Fittings, NPS 18 and Larger: ASTM F 679, T-2 wall thickness, with bell-and-spigot ends for gasketed joints with ASTM F 477, elastomeric seals.
- D. Nonpressure-Type Pipe Couplings:
1. Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition coupling, for joining underground nonpressure piping. Include ends of same sizes as piping to be joined and corrosion-resistant-metal tension band and tightening mechanism on each end.
 2. Sleeve Materials:
 - a. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
 - b. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.
 3. Ring-Type Flexible Couplings: Elastomeric compression seal with dimensions to fit inside bell of larger pipe and for spigot of smaller pipe to fit inside ring.
 4. Manufacturers:
 - a. Fernco Inc.
 - b. Logan Clay Products Company (The).
 - c. Mission Rubber Company; a division of MCP Industries, Inc.
 - d. Any equivalent manufacturer.
- E. Standard Precast Concrete Manholes: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
1. Diameter: 48 inches minimum, unless otherwise indicated.
- F. Concrete:
1. General: Cast-in-place concrete according to ACI 318/318R, ACI 350R, and the following:
 - a. Cement: ASTM C 150, Type II.
 - b. Fine Aggregate: ASTM C 33, sand.
 - c. Coarse Aggregate: ASTM C 33, crushed gravel.
 - d. Water: Potable.
 2. Ballast and Pipe Supports: Portland cement design mix, 3250-psi minimum, with 0.45 maximum water-cementitious materials ratio.

3. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain
 4. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel.
- G. Standard Precast Concrete Catch Basins: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
1. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
 2. Top Section: Eccentric-cone type unless flat-slab-top type is indicated.
 3. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
 4. Frames and Grates: ASTM A 536, Grade 60-40-18, ductile iron designed for A-16 (heavy traffic) structural loading unless otherwise indicated. Include 24-inch ID by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch - diameter flat grate with small square or short-slotted drainage openings.
 5. Grate Free Area: Approximately 50 percent, unless otherwise indicated.

END OF DIVISION 33

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Section 3: SCOPE OF CONSTRUCTION/BASIS OF DESIGN – STRUCTURAL

DESIGN CRITERIA:

The following criteria are provided to define the scope of the project and provide guidance to the Design-Builder. The Design-Builder shall be responsible for ensuring that design and construction of all improvements complies with all laws, codes, and regulations applicable to the facility and that all systems are complete, integrated, cohesive and functional for their intended purposes.

The Design-Builder shall provide detailed calculations and design documentation for all systems prior to construction and submit for review by the applicable Authority Having Jurisdiction (AHJ). Performance criteria identify minimum levels of quality, materials, and workmanship.

Codes & Standards:

The structural design of the project shall be based on the following codes and standards:

- 2016 California Building Code (CBC), California Code of Regulation, Title 24, Part 2-Volumes 1 and 2 as amended therein.
- 2016 California Electrical Code (CEC), California Code of Regulation, Title 24, Part 3 as amended therein.
- 2016 California Mechanical Code (CMC), California Code of Regulation, Title 24, Part 4 as amended therein.
- 2016 California Plumbing Code (CPC), California Code of Regulation, Title 24, Part 5 as amended therein.
- 2016 California Energy Code, California Code of Regulation, Title 24, Part 6 as amended therein.
- 2016 California Fire Code (CFC), California Code of Regulation, Title 24, Part 9 as amended therein.
- 2016 California Green Building Standards.
- American Society of Civil Engineers – Minimum Design Loads for Buildings and Other Structures (ASCE 7-10)
- American Society of Civil Engineers – Building Code Requirements for Masonry Structures (ASCE 5-13)
- American Society of Civil Engineers – Specification for Masonry Structures (ASCE 6-13)
- American Concrete Institute - Building Code Requirements for Structural Concrete (ACI 318-14)
- American Institute of Steel Construction – Steel Construction Manual (AISC 360-10)
- American Institute of Steel Construction - Seismic Provisions for Structural Steel Buildings (AISC 341-10)

Section 2: SCOPE OF CONSTRUCTION/BASIS OF DESIGN – STRUCTURAL

- ❑ American Welding Society AWS D-1.1, "Structural Welding Code-Steel", latest edition.
- ❑ American Welding Society AWS D-1.3, "Structural Welding Code-Sheet Steel" latest edition.
- ❑ American Iron and Steel Institute - Specification for the Design of Cold-Formed Steel Structural Members (AISI S100-07/S2-10)
- ❑ National Design Specifications (NDS) for Wood Construction with 2012 Supplement (ANSI/AWC NDS 2015)
- ❑ Special Design Provisions for Wind and Seismic (AWC SDPWS 2015)

BASIS OF DESIGN:**General Design Criteria:**

The structural design of the project shall be based on the following design criteria:

- ❑ **Dead Loads:** In addition to the self-weight of the structural framing members, dead loads include but are not limited to mechanical and electrical equipment, suspended mechanical ducts, piping including the weight of the water, plumbing and fire protection pipes, electrical lighting and cables, ceiling, floor finishes, walls, insulation and roofing. Mechanical equipment weight shall also include the weights of curbs and accessories and be clearly identified on the plans.
- ❑ **Live Load:**
 - Roof = 20 psf
 - Live loads are reducible as allowed by CBC Section 1607.10.
- ❑ **Seismic:**
 - Seismic Design Category D
 - Importance Factor, $I_E = 1.0$, and Risk Category II
 - All life safety equipment to function after an earthquake shall be anchored using an $I_p = 1.5$, including fire protection sprinkler system. All other equipment shall be anchored using an $I_p = 1.0$.
- ❑ **Wind:**
 - Ultimate Design Wind Speed (Vult) = 110 mph
 - Exposure Level - Exposure C

Structural Systems

System description:

Section 3: SCOPE OF CONSTRUCTION/BASIS OF DESIGN – STRUCTURAL

- ❑ The facility shall be based on being constructed using the following material: The roof systems shall consist of plywood sheathing over wood joists, wood I-joists or wood open-web trusses at 24 inch on center maximum spanning to wood bearing walls, sawn or glulam beams. The beams shall be supported on wood or steel columns. The lateral-force-resisting-system shall consists of wood or concrete masonry unit (CMU) shear walls. The bearing and shear walls shall be supported on a continuous footing, and the columns supported on spread footings. The remaining nonbearing walls shall consist of wood stud framing. A concrete slab on grade shall be used.
- ❑ Due to the loose and/or soft condition of the soil and the expansive potential for the soil at the site, ground improvement, such as vibro-replacement, shall be required and cover beyond the entire footprint of the building with the extent and depth recommended by the geotechnical engineer. Vibro-replacement stone columns shall be by the dry bottom-feed method. A layer of imported non-expansive soils shall be required at the surface (a few feet) to support the conventional foundations and to protect the slabs on grade from the expansive soils.
- ❑ Freestanding walls or partial height kennel walls shall be fully grouted reinforced concrete masonry unit (CMU) walls and shall be designed to support their own vertical and lateral loads.
- ❑ Mechanical screen walls shall be wood framed walls braced and supported off the roof framing.
- ❑ The canopies shall be supported off the exterior walls, where possible. If not possible, provide exterior columns to support the canopies.
- ❑ Adoption Ward 3 to 6 shall be structurally separated from the rest of the building with a seismic joint.

ALTERNATE SYSTEMS:

The structural design of the project shall make provisions for the following alternates:

Alternates Allowed

- ❑ Freestanding walls or partial height kennel walls may be cast-in-place concrete.
- ❑ Joists or stud walls may be light gauge cold-formed steel.
- ❑ Shear walls may be light gauge cold-formed steel shear walls.
- ❑ In lieu of ground improvement, use a typical slab on grade interconnected with concrete grade beams supported on drilled

Section 7: SCOPE OF CONSTRUCTION/BASIS OF DESIGN – STRUCTURAL

cast-in-place caissons. The caissons shall extend below the underlying bedrock, as recommended by the geotechnical engineer. When drilling, due to the possibility of encountering asbestos-bearing rock, serpentinite, special considerations with respect to spoil handling and disposal may be needed to reduce the potential for asbestos exposure. A layer of imported non-expansive soils shall be required at the surface (a few feet) to provide protection for the slabs on grade.

Alternates Not Allowed

- Post-tensioned concrete slab shall not be permitted.

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SAN LUIS OBISPO COUNTY – ANIMAL CARE FACILITY CIVIL ENGINEERING ANALYSIS

RICK ENGINEERING
March 2018

OVERVIEW:

This analysis provides a summary of the site constraints and the civil engineering improvements identified for the San Luis Obispo County Animal Care Facility and is based on the 100% complete Conceptual Access and Utilities Plan and the Conceptual Grading and Drainage Plan (Conceptual Plans) prepared by Rick Engineering Company. The basis for the design development, including site constraints and existing infrastructure, are described in the following sections.

CONSTRAINTS:

A survey prepared by Golden State Aerial, dated July 21, 1999 provides topographic information for outlying portions of the proposed San Luis Obispo County Animal Care Facility project. A detailed survey performed by Terrain Survey, dated August 31, 2017 supplements the aerial information in the immediate area of the building site.

A portion of the building site is located in a flood zone with depth of flooding up to 2 feet. The flood limits and base flood elevations are identified in the "Detailed Drainage Analysis, Proposed Animal Shelter Site County Operations Center" prepared by KVC Keith V. Crowe Consulting Engineer, dated October 23, 2017.

The site is also located in County of SLO Water Management Zone 1 and is subject to the County of San Luis Obispo Post-Construction Stormwater Management Requirements which include the following Performance Requirements (PRs): PR No. 1 – Site Design and Runoff Reduction, PR No. 2 – Water Quality Treatment, PR No. 3 - Runoff Retention, and PR No. 4 - Peak Management. Water quality treatment is proposed to be met within the onsite basins. Detention is proposed to be met offsite, in adjacent vacant areas of the County properties.

A geotechnical investigation was completed in the project area and the results are contained in report entitled "Geotechnical Feasibility Study, Oklahoma Avenue Extension Master Plan, Oklahoma Avenue, San Luis Obispo, California" prepared by Earth Systems Pacific, dated July 13, 2015. The in situ soils are described as loose and soft and have the potential for excessive settlement under both static and seismic conditions. Soils testing also revealed that the site soils are considered to be moderately to severely corrosive.

There is currently not an improved access road or utility mains fronting the project site. Streets and utilities proposed to be extended are expected to be designed and constructed to County of San Luis Obispo standards and specifications.

OFFSITE ACCESS IMPROVEMENTS:

The existing 40-foot wide, paved access street, Oklahoma Avenue, currently terminates at the entrance to the existing Woods Humane Society Animal Shelter parking area, immediately southwest of the proposed County Animal Care Facility site.

Figure 1 shows the proposed improvements for extending Oklahoma Avenue to the project site. The preliminary road design includes extending Oklahoma Avenue approximately 385 feet southeasterly, at a slope of 1.5%, to the proposed driveway entrance location. Sheet 1 of the Conceptual Plans shows the proposed typical roadway section being a County standard 40-foot wide paved road with 3-foot wide aggregate base shoulders. The proposed road is crowned at the centerline and incorporates a 2% cross slope on the pavement and a 5% cross slope on the shoulders. The elevations of the proposed road are intended to reduce disturbance and balance earthwork (final earthwork is dependent on final design). The minimum pavement section required by the County is 2-inches of asphalt concrete on 6-inches of aggregate base. However, the final pavement section will be determined based detailed geotechnical information and on the R-value of the subgrade taken at the time of construction. A pavement section of 4-inches asphalt concrete on 10 to 12 inches of aggregate base is a typical road section for the San Luis Obispo area soils.

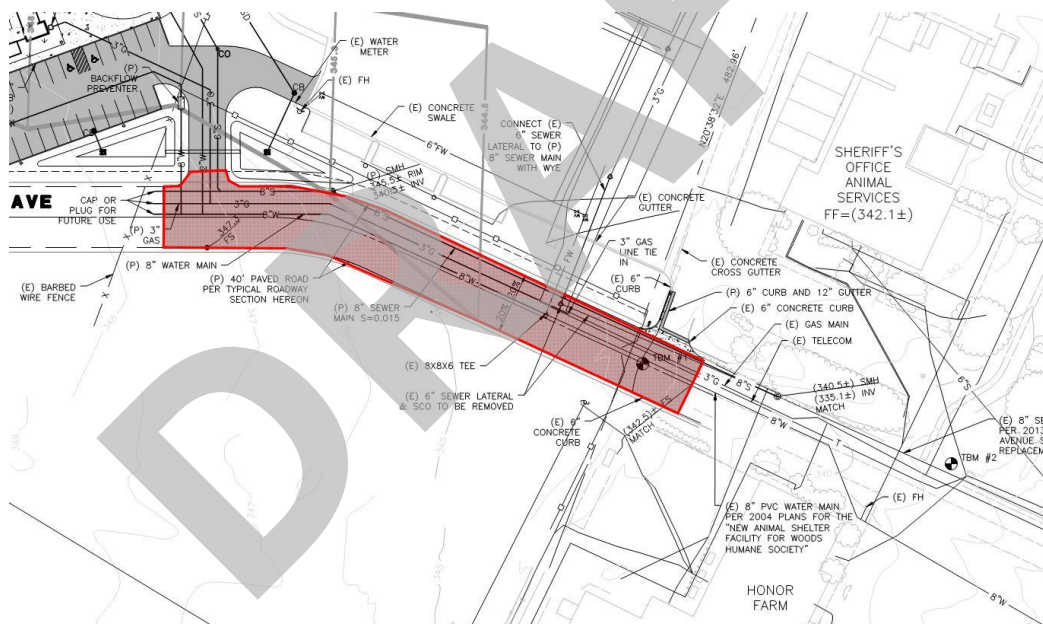


Figure 1: Offsite Access Improvements for Oklahoma Avenue

SEWER MAIN IMPROVEMENTS:

An existing 8-inch sewer main is located in Oklahoma Avenue and terminates at a manhole in Oklahoma Avenue between the Sheriff's Office and the Animal Services building. Plans showing the existing sewer main are entitled "2013 Oklahoma Avenue Sewer Line Replacement Plans". An existing 6-inch sewer lateral extends approximately 160 feet easterly from the terminal manhole, along Oklahoma Avenue and its future easterly extension, before it turns 90° and runs southerly to serve the Woods Humane Society Animal Shelter site. An existing

cleanout is located at the angle point, which falls in an undeveloped area of the future road extension.

Figure 2 shows the proposed sewer main improvements in Oklahoma Avenue and the future extension of the sewer. The preliminary sewer design includes removal of approximately 150 feet of the existing 6-inch sewer lateral, between the manhole and the existing cleanout described above, and will replace it with a new 8-inch sewer main. The new 8-inch sewer main will be extended from the existing manhole, approximately 430 feet southeasterly at a slope of approximately 1.5%, to just past the proposed driveway entrance to the new Animal Care Facility. The new sewer main will be stubbed out to the east, to facilitate extension to potential future development areas by the County. The existing 6-inch lateral from the Woods Humane Society Animal Shelter site will be connected to the new 8-inch sewer main and the cleanout will be removed.

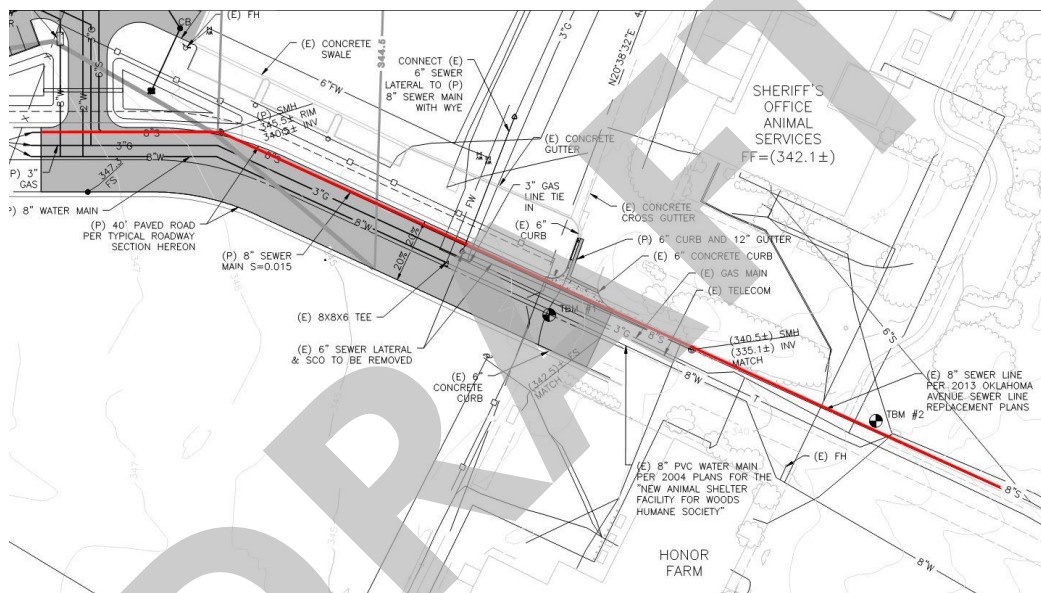


Figure 2: Sewer Main Improvements in Oklahoma Avenue

WATER MAIN IMPROVEMENTS:

An existing 8-inch PVC water main is located in Oklahoma Avenue and continues easterly to terminate at an 8X8X6 tee located just north of the Woods Humane Society Animal Shelter site, near the sewer lateral cleanout at the angle point as described in the section above. An existing 6-inch PVC water line runs southerly from the tee to serve the existing Woods Humane Society Animal Shelter facility with fire water and domestic water. Plans for the existing water lines in the area affected are dated 2004 and entitled "New Animal Shelter Facility for Woods Humane Society".

Figure 3 shows the proposed water main improvements in the area of the future extension of Oklahoma Avenue. The preliminary water design includes installation of a new 8-inch PVC water main that will tie into the existing tee and be extended approximately 270 feet easterly. An 8-inch fire water line and a 2-inch domestic water service line will tee off the new 8 inch water main to serve the new SLO County Animal Care facility.

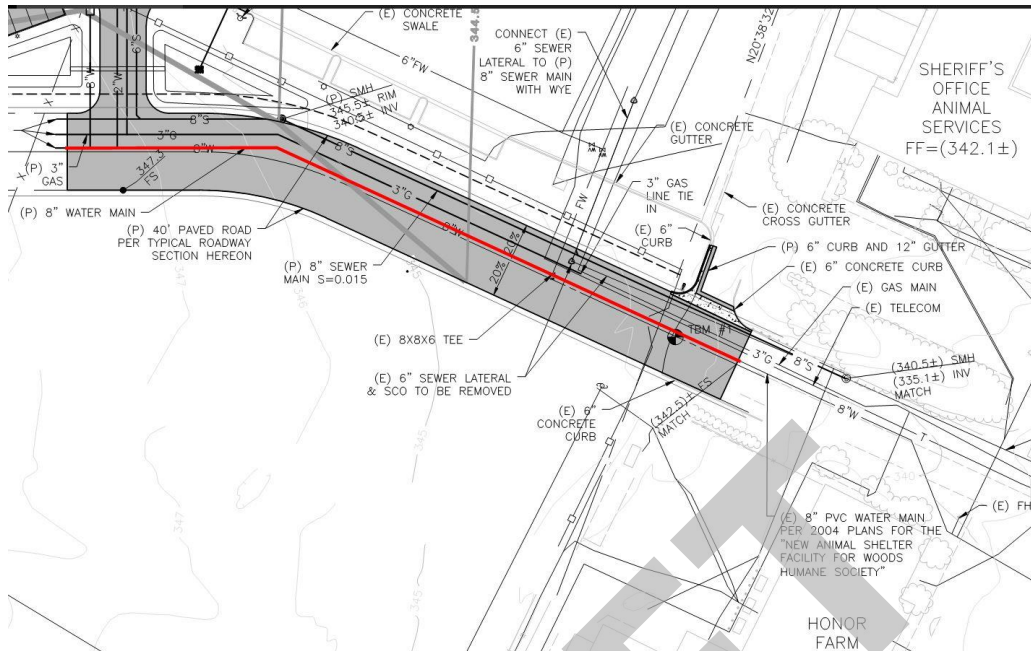


Figure 3: Water Main Improvements in Oklahoma Avenue

GAS MAIN IMPROVEMENTS:

An existing 3-inch gas line is located in Oklahoma Avenue and continues easterly to a point near the water main tee and sewer lateral cleanout in the existing undeveloped area just north of the Woods Humane Society Animal Shelter site, where it then turns 90° and runs southerly to serve the existing Woods Humane Society Animal Shelter facility. Plans for the existing gas line are dated 2004 and entitled "New Animal Shelter Facility for Woods Humane Society".

Figure 4 shows the proposed gas main improvements in the area of the future extension of Oklahoma Avenue. The preliminary gas line design includes installation of a new 3-inch gas main that will tie into the existing main and be extended approximately 290 feet easterly. A new 3-inch gas line to serve the new SLO County Animal Care facility will tee off the new main at the proposed driveway location. Final gas line layout and installation requirements and specifications are expected to be provided by the utility purveyor.

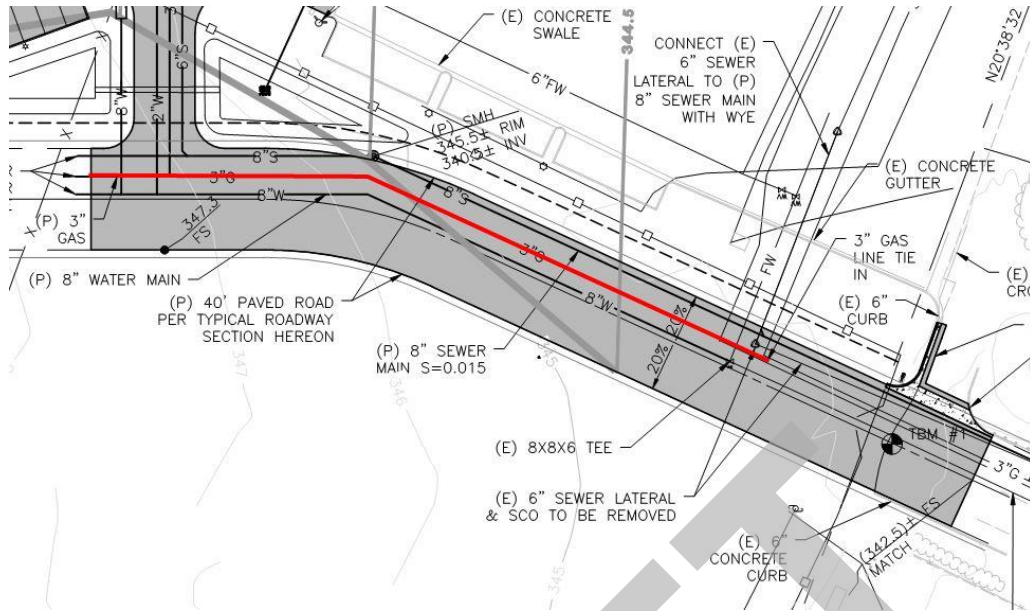


Figure 4: Gas Line Improvements in Oklahoma Avenue

Onsite Grading, Drainage, and Utilities:

Preliminary grading and drainage concepts for the site are shown on Sheet 2 of the Conceptual Plans. It will be necessary to divert offsite run-on from the hillside to the north, around the proposed buildings and site improvements. Roof downspouts are proposed to be disconnected, where feasible, and allowed to flow across open ground before being conveyed to the proposed treatment system. The project proposes approximately 83,000 square feet of impervious area, including the main building and barn, the paved driveway and parking areas, and the extension of Oklahoma Avenue. Onsite stormwater run-off will be directed to the proposed onsite water quality treatment basins. (Note – wash down waste water that enters the trench drains within the animal care facility, will be diverted to the sewer system with flushing and cleaning system designed by the mechanical/plumbing engineer.)

Preliminary calculations indicate that a basin, or a series of basins, with capacity of 4,000 cubic feet would be able to provide the necessary water quality treatment for the project. A conservative estimate of the required detention volume, to attenuate the post construction runoff rates to that of the predeveloped condition, is estimated at 35,000 cubic feet. The detention for the project is expected to be provided within a separate area of the County owned properties. However, the depth of the onsite basins could also be increased as needed to contain the required increase in runoff volume.

A preliminary layout for onsite water, sewer and gas service was developed as shown on Sheet 2 of the Conceptual Plans. Fire hydrant and fire-turnaround locations were coordinated between the architect and CalFire and provided to us. Light standard locations were coordinated between the architect and the electrical consultant and provided to Rick Engineering. Utility points of connection at the building were coordinated with the architect, mechanical and plumbing consultants.

APPENDIX A

ARCHITECTURAL NARRATIVE

SAN LUIS OBISPO COUNTY ANIMAL SHELTER

The San Luis Obispo County Animal Shelter will be a public-accessible facility designed to hold, care for and adopt companion animals. The project design consists of a one-story, SF GSF full-sprinklered, Type-V non-rated building with a slab on grade and composite metal stud and light steel frame structure.

The exterior features a three-part cement plaster acrylic finish coat with CMU at Dog Kennel areas as noted on the plans. Roof material will consist of a single-ply membrane system. Site walls consist of CMU, ornamental iron fencing and chain link along the site perimeter. All interior areas will be heated and air-conditioned with all animal holding and medical areas receiving 100% outside air.

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SLO Animal Clinic Plumbing Systems

Plumbing Systems Narrative Design Criteria

The purpose of this narrative is to define a certain minimum level of performance, capacity and quality, which shall be provided by the successful design/build contractor. The respondent shall define any limitations, exceptions, and exclusions at the time of submitting the design/build proposal. The criteria presented herein represent a guideline for the design and installation of the Plumbing systems with minimum requirements. Actual system sizing and selection will be the responsibility of the successful design/build contractor. The respondent shall be responsible for and accept professional liability for the accuracy, appropriateness, completeness, and code compliance for the design and installation of the plumbing systems. The plumbing construction documents shall be designed and stamped and signed by a professional mechanical engineer who is registered in the State of California with training and experience in projects similar in type and size to the SLO Animal Clinic.

The successful design/build contractor shall provide drawings indicating all equipment selections and layouts, fixtures, piping, installation and anchorage details, seismic bracing, points of connection, performance criteria, required information for coordination with other disciplines, material submittals, startup reports, O&M's, close-out documents.

This is an integrated project requiring close coordination and planning with other disciplines and trades including but not limited to HVAC, electrical, structural, roofing, framing, slab on grade, wall-floor-ceiling finishes, and owner provided equipment.

Include all necessary and required penetration assemblies for fire and smoke rated walls and partitions.

Provide for ease of maintenance and equipment replacement , as this is extremely important to the County.

Comply with all applicable codes and standards, except where the requirements stated in the Plumbing Systems Narrative provide for a higher quality and/or performance criteria.

Applicable codes and standards:

- American Society of Heating, Refrigeration and Air Conditioning Engineers, inc. (ASHRAE)
- American Society of Mechanical Engineers (ASME)
- National Fire Protection Association (NFPA)
- Occupational Health and Safety Administration (OSHA)
- Sheet Metal and Air Conditioning Contractors National Association, inc. (SMACNA)
- Underwriter's Laboratories, inc. (UL)
- California Building Code, 2016
- California Energy Code, 2016

- California Mechanical Code, 2016
- California Plumbing code, 2016
- National Electric Code
- All applicable state and local codes, standards, supplements, etc.

Scope of Work:

Domestic hot and cold water systems

Wash down systems including hose reels and hose bibs (Chemical cleaning system similar to Spray Masters Technology as an additive alternate)

Roof drain and overflow drain systems

Floor drain systems

Plumbing fixtures

Plumbing vent systems

Natural gas piping

Seismic bracing and anchorage

Factory authorized startup of plumbing equipment

Balance report by for the hot water return system by a qualified individual or firm

Operation and maintenance manuals specific to the equipment and systems on this project

Owner training and demonstration of plumbing system operation

Attachments:

Kennel Drain Details, Sheet P2.1

Plumbing Fixture Plan with Base Bid Trench Drains, Sheet P2.2

Plumbing Fixture Plan with Optional Individual Drains, Sheet P2.3

Roof Drain Plan, P2.4

Optional Chemical Cleaning System, P2.5

HVAC Roof Plan, M2.2

Base Bid:

Base bid to include plumbing fixtures as shown on P2.2 and P2.4. Provide a local encased tempering valve system (similar to Zurn Z-1327-EZ or equal) for each of the hose bib locations. Include (6) additional hose bibs in your base bid pricing. Provide a single central tempering valve in the water heater room for the hose reels. Hose reels to be similar to Reelcraft D83075 OLP or equal. Include gas piping and condensate drains for the rooftop package units shown on M2.2.

Option I:

Same as Base Bid except substitute trench drains with individual floor drains.

Additive Alternate I:

Replace the hose reel system in the Base Bid and Option I with a chemical cleaning system (similar to Spray Masters Technology or equal) as shown on P2.3.

SLO Animal Clinic HVAC System

HVAC System Narrative Design Criteria

The purpose of this narrative is to define a certain minimum level of performance, capacity and quality, which shall be provided by the successful design/build contractor. The respondent shall define any limitations, exceptions, and exclusions at the time of submitting the design/build proposal. The criteria presented herein represent a guideline for the design and installation of the HVAC systems with minimum requirements. Actual system sizing and selection will be the responsibility of the successful design/build contractor. The respondent shall be responsible for and accept professional liability for the accuracy, appropriateness, completeness, and code compliance for the design and installation of the HVAC systems. The HVAC construction documents shall be designed and stamped and signed by a professional mechanical engineer who is registered in the State of California with training and experience in projects similar in type and size to the SLO Animal Clinic.

The successful design/build contractor shall provide drawings indicating all equipment selections and layouts, ductwork, grilles, piping, installation and anchorage details, seismic bracing, airflow quantities, performance criteria, required information for coordination with other disciplines, temperature and pressurization and fire protection controls and devices, sequence of operation instruction, material submittals, startup reports, O&M's, close-out documents.

This is an integrated project requiring close coordination and planning with other disciplines and trades including but not limited to plumbing, electrical, structural, roofing, framing, slab on grade, wall-floor-ceiling finishes, and owner provided equipment.

Include all necessary and required penetration assemblies for fire and smoke rated walls and partitions.

Provide for ease of maintenance and equipment replacement , as this is extremely important to the County.

Comply with all applicable codes and standards, except where the requirements stated in the HVAC System Narrative provide for a higher quality and/or performance criteria.

Applicable codes and standards:

- American Society of Heating, Refrigeration and Air Conditioning Engineers, inc. (ASHRAE)
- American Society of Mechanical Engineers (ASME)
- National Fire Protection Association (NFPA)
- Occupational Health and Safety Administration (OSHA)
- Sheet Metal and Air Conditioning Contractors National Association, inc. (SMACNA)
- Underwriter's Laboratories, inc. (UL)
- California Building Code, 2016

- California Energy Code, 2016
- California Mechanical Code, 2016
- California Plumbing code, 2016
- National Electric Code
- All applicable state and local codes, standards, supplements, etc.

Scope of Work:

Gas/Electric package units on roof for indoor temperature control and makeup air

Exhaust systems

Plenums, ductwork, supply, return and exhaust grilles

Roof curbs and platforms

Sound and vibration control

Seismic bracing and anchorage

Temperature and pressurization controls

Fire and smoke dampers where required by code

Factory authorized startup of HVAC equipment

Test & Balance report by an NEBB or TABB qualified individual or firm

Operation and maintenance manuals specific to the equipment and systems on this project

Owner training and demonstration of HVAC system operation

Design Conditions:

Per ASHRAE

Attachments:

HVAC Zone Map and Design Criteria, Sheet M2.1

Mechanical Roof Plan, Sheet M2.2

SLO County Animal Care Facility
Electrical, Telecom and Technology Scope Narrative

The purpose of this narrative is to define a certain minimum level of performance, capacity and quality, which shall be provided by the successful design/build contractor. The respondent shall define any limitations, exceptions and exclusions at the time of submitting the design/build proposal. The criteria presented herein represent a guideline for the design and installation of the Electrical and Telecom systems with the minimum requirements. Actual system sizing and selection will be the responsibility of the design/build contractor. The contractor shall be responsible for and accept professional liability for the accuracy, appropriateness, completeness, and code compliance of the final design and installation. The electrical construction documents shall be designed and stamped/signed by a CA state registered professional electrical engineer, who shall have experience with projects similar in type and scope to this project.

The contractor shall provide electrical drawings and exhibits (plans), matching the format of the submitted architectural and other sub-consultant plans describing (but not limited to):

- Electrical and Telecommunications Utility Site Plan(s)
- Electrical Branch Circuit Distribution and Lighting Site Plan(s)
- Electrical Floor Plan(s)
- Lighting Floor Plan(s)
- Telecommunications and Technology Floor Plan(s)
- Single Line Diagrams and Electrical Panel Schedules
- Light Fixture Schedule
- Fire Alarm System Plan
- Technology Systems Riser Diagrams, Details and Schedules
- Equipment Schedules
- Mounting/Anchorage Details for Equipment

Prior to approval for construction the contractor shall submit for approval:

- Material Submittals
- Shop Drawings
- Equipment Cut Sheets

At the completion of construction, the contractor shall submit/provide for approval:

- User training of specialized systems (as provided by the contractor)
- O&M manuals (format to be determined by County staff)
- Certifications, Start-up Reports
- As Built plans

Applicable Standards Include (but are not limited to):

- California Electrical Code, 2016
- California Energy Code, 2016
- California Green Building Code, 2016
- National Fire Protection Association (NFPA)
- Telecommunications Industry Association (TIA) 568, 569.
- Nationally Recognized Standards Listing Companies such as Underwriters Laboratories (UL)

Scope of work:

- Electrical and Telecommunications Utility Coordination and Substructure Installation
- Electrical power and lighting systems for Site and Buildings
- Telecommunications and Technology Cabling Infrastructure and Pathways
- Fire Alarm System (as required by the responding agency)
- Access Control/Security Systems Infrastructure (as required to accommodate County vendor systems)
- Coordination with other design and construction trades as required to accommodate systems and equipment that require power, lighting and/or technology systems interface.
- Start-up and user training
- Certifications, warranties and O&M manuals

Attachments:

E1.0 Electrical Site Plan

E2.0 Electrical Lighting Plan

E3.0 Electrical Power and Communications Floor Plan

E4.0 Electrical Details

E5.0 Electrical Details