



4667 Telegraph Rd., Ventura, CA 93003

Ventura College Child Development Center Security Fencing Project Manual

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DSA File No.: 56-C1

RRM Design Group
422 East Main St.
Ventura, CA 93001



RRM Project No.: 3299-01-ED24

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Section 01 1000
Summary

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Ventura College Child Development Center Security Fencing
- B. Owner's Name: Ventura County Community College District.
- C. Architect's Name: RRM Design Group, Inc..
- D. The Project generally consists of the construction of new perimeter fencing and gates around the front of the childcare center. Alterations to existing concrete walks is part of the work. A video/intercom system is included in the design. The video/intercom system itself and appurtenant wiring will be installed by the college's vendor. All other work will be coordinated to accept the vendor's equipment...

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price under a competitively bid public contract.

1.03 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of alterations work is indicated on drawings.

1.04 OWNER OCCUPANCY

- A. District intends to occupy the Project during construction.. School will likely be in session during construction.
- B. Cooperate with District to minimize conflict and to facilitate District's operations.
- C. Schedule the Work to accommodate District occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Arrange use of site and premises to allow:
 - 1. District occupancy.
 - 2. Work by Others.
 - 3. Work by District.
 - 4. Use of site and premises by the public.
- B. Provide access to and from site as required by law and by District:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.

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Section 01 1000

2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Existing building spaces may not be used for storage.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

Section 01 2500
Substitutions

PART 1 - GENERAL

1.01 "Or Equal" Substitutions

- A. One Product Specified: Unless the Specifications state that no substitution is permitted, whenever in the Contract Documents any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction is indicated or specified by name, make, trade name, or catalog number, with or without the words "or equal", such specification shall be deemed to be used for the purpose of facilitating description of material, process, or article desired and shall be deemed to be followed by the words "or equal". Contractor may, unless otherwise stated, offer any material, process, or article, which shall be substantially equal or better in every respect to that so indicated or specified and will completely accomplish the purpose of the Contract Documents.
- B. Two or More Products Specified: When two or more acceptable products are specified for an item of the Work, the choice will be up to the Contractor. Contractor shall utilize the same product throughout the Project. If a timely substitution request as set forth in Section 1.02.A. is not provided and an "or equal" substitution is requested, the District may consider the substitution only if the product specified is no longer commercially available.
 - 1. The burden of proof as to the equality of any material, process or article shall rest with the Contractor, and the Contractor shall submit all data substantiating a request for an "or equal" substitution item as provided in Section 3400 of the Public Contract Code, Specification Section 01 3300 and other specific sections of the specifications prior to Award of Contract.

1.02 Request for Substitutions

- A. Substitute Request Form: Requests for substitutions of products, materials, or processes other than those specified must be made on the Substitution Request form attached. Requests must be submitted fourteen (14) calendar days prior to the date of the Bid Opening to be considered. An addendum will be issued seven (7) calendar days prior to Bid Opening, identifying all equipment and materials deemed equivalent to those specified and approved by the Architect.
- B. Substitution Request Content: A substitution request must constitute a representation that the subcontractor/general contractor:
 - 1. Has investigated proposed product and determined that it is equal in quality and serviceability of the specified item.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other work, which may be required for the work to be complete with no additional cost to General Contractor / Owner.
 - 4. Will be acceptable in consideration of the required design and artistic effect.
 - 5. Will require no excessive or more expensive maintenance including adequacy and availability of replacement parts.
 - 6. Waives claims for additional costs or time extension, which may subsequently become apparent.
 - 7. Will reimburse District for review or redesign services by the Landscape Architect and re-approval fees by authorities, agencies, or the District.

C. Substitution Submittal Procedure:

1. Contractor shall furnish four (4) copies of the requested information sufficient to determine whether the proposed substitution is equivalent including, but not limited to, all drawings, specifications, samples, performance data, calculations, and other information as may be required to assist the Landscape Architect and the District in determining whether the proposed substitution is acceptable.
2. The final decision shall be the District's. District may condition its approval of the substitution upon delivery to District of an extended warranty or other assurances of adequate performance of the substitution.
3. If the Substitution is Permitted: The Contractor shall be solely and directly responsible for fitting approved substituted material and equipment into the available space in a manner acceptable to the District and for the proper operation of the substituted equipment with all other equipment with which it may be associated. The Contractor shall bear all costs of meeting the above requirements for presenting a proposed substitution, and if the substitution is accepted, the Contractor must bear all costs involved including costs of Construction Manager's, Architect's, and Engineer's services required in adapting the substituted material or equipment to the installation to the complete satisfaction of the District.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

SECTION END

SUBSTITUTION OF "OR EQUAL" PRODUCT

Date:

Company:

Contact Person:

Address:

Telephone:

Fax:

Plan Sheet:

Specification Section:

Listing of Proposed "Or Equal" Products:

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Section 01 2613
Interpretation of Contract Documents (Prior to Bid)

PART 1 - GENERAL

1.01 Interpretation of Contract Documents

- A. If any firm contemplating submitting a bid for the proposed contract is in doubt as the true meaning of any part of the drawings, specifications, or other Contract Documents, or finds discrepancies in, or omissions from the drawings or specifications, he or she shall submit to the Architect a written request (use attached "Request for Interpretation" form) for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the Contract Documents will be made only by Addendum and will be faxed or e-mailed and/or mailed to each person receiving set of such documents. District will not be responsible for any other explanation or interpretation of the Contract Documents.

1.02 Requests for Interpretation

- A. Page 2 of Section 01 2613 is a form titled, "Request for Interpretation". Bidders are to use this form to submit written requests for interpretations or corrections by fax or e-mail to the District's Architect:

RRM Design Group
(805) 543-4609 Fax
Attention: Martin Hartmann
E-mail address: mhartmann@rrmdesign.com

To expedite the interpretation process, interpretations may be faxed or e-mailed to bidders as addenda, follow-up hard copies may be delivered by mail.

- B. All information must be filled out on the form as pertains to the Contractor's information: Company name, address, phone number, fax number, e-mail, contact person, date, and time of request. Questions or Requests for Clarification are to be printed or typed on these forms. If bidders have several questions, which will not fit on one form, the bidder is to photo copy the form, number each page, and submit multiple forms.
- C. Deadline for Requests for Interpretation: All requests for interpretation must be received by noon on the tenth (10th) calendar day preceding the bid date.

END OF SECTION

REQUEST FOR INTERPRETATION OF CONTRACT DOCUMENTS

Date:

Time:

Company:

Contact Person:

Address:

Telephone:

Fax:

E-mail:

Plan Sheet:

Specification Section:

Interpretation Requested:

Reply: See Addendum # _____ item # _____

Issued:

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Section 01 3300
Submittals

PART 1 - GENERAL

1.01 Description

- A. To ensure that specified products are furnished and installed in accordance with plans and specifications, transmittal procedures have been established for submittals for review by the Construction Manager, the Architect, and the Owner.
- B. Make all following submittals in strict accord with provisions of this Section and with requirements of the General Conditions:
 - 1. Progress Schedule.
 - 2. Schedule of Values
 - 3. Certification.
 - 4. Shop Drawings.
 - 5. Descriptive Data/Material Lists.
 - 6. Samples.
 - 7. Alternatives (Substitutions).

1.02 Related Requirements

- A. General Conditions.
- B. Section 01 7700 - Contract Closeout:
- C. Section 01 3216 - Construction Progress Schedule
- D. Test Reports: Pertinent Specification Sections.

PART 2 - PRODUCTS

2.01 Progress Schedule -- Prepare and submit progress schedule of procurement and fabrication activities, and component deliveries as required by Section 01 3216 and within the time of completion identified in Notice to Bidders.

2.02 Shop Drawings

- A. Submittals shall include six complete copies of each original, name and location of project, name of Contractor, and contract numbers and cross references to contract documents. Number shop drawings consecutively. Make drawings legible and complete in every respect. Refer to General Conditions.
- B. If shop drawings show variations from Contract requirements because of standard shop practice or other reason, make specific mention of such variations in letter of transmittal, as well as on drawings, in order that (if acceptable) suitable action may be taken for proper adjustment of Contract. Unless specific changes have been noted and accepted, no deviations from Contract

Documents will be permitted.

C.

2.03 Product Data/Material Lists

- A. Manufacturer's Standard Schematic Drawings:
 - 1. Modify drawings to delete information, which is not applicable to Project.
 - 2. Supplement standard information to provide additional information applicable to Project.
- B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data:
 - 1. Clearly mark each copy to identify pertinent materials, products, or models.
 - 2. Show dimensions and clearances required.
 - 3. Show performance characteristics and capacities.
 - 4. Show wiring diagrams and controls.
 - 5. Include calculations when applicable.

2.04 Samples -- Where required by the specifications and by change orders, the Contractor shall provide at no additional cost:

- A. Physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.
- B. Where size of samples is not specified, office samples should be of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of product or material, with integrally related parts and attachment devices.
 - a. After review, samples may be used in construction of project.

PART 3 - EXECUTION

3.01 Submission Requirements

- A. Schedule submissions at least eight weeks before dates reviewed submittals will be needed. Some submissions may be required to be submitted even earlier.
- B. Identification: Identify all submittals with names and location of project, name of Contractor and contract numbers.
 - 1. Submittals shall be accompanied by letter of transmittal addressed to Construction Manager following format and procedures established at the Preconstruction Conference.
 - 2. Each submittal shall be consecutively numbered and shall contain list of items submitted, properly identified as to drawing numbers, Specifications Section or other identification.
 - 3. Submittals not adequately identified will be returned to Contractor for correction and resubmittal.
- C. Landscape Architect will review submittals for conformance with Contract Documents and acceptance by Landscape Architect covers only such conformance. Responsibility for accuracy and correction and resubmittal shall be the Contractor's.

- D. Acceptance of submittals will be general and shall not relieve Contractor from responsibility for proper fitting and construction of work, nor from furnishing materials and work required by Contract, which may not be indicated on submittals.
- E. No portion of work requiring submittals that affect the construction shall be commenced until submittal has been reviewed and accepted by Landscape Architect. All such portions of work shall be in accordance with accepted submittals.
- F. Number of copies required by Landscape Architect: Provide copies as follows; or greater quantity where so specified in individual Specification Section. Add number of copies required by Contractor for distribution to the following numbers:
 - 1. Schedule of Values: Two (2) copies AIA form G107 with back up sheets.
 - 2. Certification: Three (3) copies
 - 3. Samples: As specifically indicated in pertinent Specification Section.
 - 4. Samples for Color/Pattern Selection. Three (3) sets of manufacturer's complete range for initial selection: and additional samples as requested of selected color/pattern for inclusion in final color schedule.
 - 5. Alternatives: Six (6) copies of all required related data and information.

3.02 Submittals shall include (where applicable):

- A. Date and revision dates.
 - 1. Project title and work order number.
 - 2. Names of Contractor, subcontractor and supplier or manufacturer.
 - 3. Identification of product or material.
 - 4. Relation to adjacent structure or material.
 - 5. Field dimensions, clearly identified as such.
 - 6. Specification Section number.
 - 7. Consecutive submittal number.
 - 8. Blank space for Landscape Architect's stamp and approving agency as required.
 - 9. Contractor's stamp, initialed or signed, certifying review of submittal, verification of field measurements and compliance with Contract Documents.

End of Section

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Section 01 4000
Quality Control

PART 1 - GENERAL

1.01 Inspection by the District

- A. The District, Construction Manager and Landscape Architect shall, at all times, have access for the purpose of inspection to all parts of the work and to the shops wherein the work is in preparation, and the Contractor shall at all times maintain proper facilities and provide safe access for such inspection.
- B. The District, Landscape Architect and Construction Manager shall have the right to reject materials and quality of work, which are defective, or to require their correction. Rejected work quality shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the District. If the Contractor does not correct such rejected work within a reasonable time, fixed by written notice, the District may correct same and charge the expense to the Contractor.
- C. Should it be considered necessary or advisable by the District, Landscape Architect or Construction Manager, at any time before final acceptance of the entire work to make an examination of the work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any respect due to the fault of the Contractor or his subcontractor, he shall defray all expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the additional cost of labor and material necessarily involved in the examination and replacement shall be allowed the Contractor.

1.02

PART 2 - PRODUCTS - NOT USED.

2.01

PART 3 - EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Landscape Architect before proceeding.

- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Landscape Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Landscape Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Landscape Architect, it is not practical to remove and replace the Work, Landscape Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

Section 01 4213
Abbreviations

PART 1 - GENERAL

1.01 Abbreviations

- A. The following abbreviations may be used in the contract documents:
1. AAMA Architectural Aluminum Manufacturers' Association
 2. AASHTO American Association of State Highway and Transportation Officials
 3. ACI American Concrete Institute
 4. AIA American Institute of Architects
 5. AIMA Acoustical and Insulation Materials Association
 6. AISC American Institute of Steel Construction
 7. ANSI American National Standards Institute
 8. APA American Plywood Association
 9. ASHRAE American Society of Heating, Refrigerating, and air-conditioning Engineers
 10. ASME American Society of Mechanical Engineers
 11. ASTM American Society for Testing and Materials
 12. AWI Architectural Woodwork Institute
 13. AWPI American Wood Preservers' Association
 14. AWS American Welding Society
 15. BHMA Builders Hardware Manufacturers' Association
 16. BMP Best Mangement Practices
 17. BTU British Thermal Unit
 18. CAC California Administrative Code
 19. CAL/OSHA State of California Construction Safety Orders
 20. CBC California Building Code
 21. CEC California Electric Code
 22. CFC Chlorofluorocarbon
 23. CLFMI Chain Link Fence Manufacturers' Institute
 24. CMC California Mechanical Code
 25. CPC California Plumbing Code
 26. CRSI Concrete Reinforcing Steel Institute
 27. CALTRANS State of California, Business and Transportation Agency, Department of Transportation, "Standard Specifications"
DSA Division of the State Architect
 28. ESO Electrical Safety Orders
 29. FAA Federal Aviation Administration
 30. FGMA Flat Glass Marketing Association
 31. FM Factory Mutual System, Factory Mutual Engineering Corporation
 32. FS Federal Specifications
 33. FSC Forest Stewardship Council
 34. HVAC Heating, Ventilation, & Air Conditioning
 35. IAQ Indoor Air Quality
 36. IBC International Building Code
 37. LEED Leadership in Energy and Environmental Design

- 38. MM State of California, Business and Transportation Agency, Department of Transportation, "Materials Manual"
- 39. NEC National Electrical Code
- 40. NEMA National Electric Manufacturers' Association
- 41. NFPA National Fire Protection Association
- 42. POT Path of Travel
- 43. PS United States Department of Commerce Product Standard
- 44. RIS Redwood Inspection Service
- 45. SFM State of California, Office of State Fire Marshal
- 46. SMACNA Sheet Metal and Air Conditioning Contractors National Association, Inc.
- 47. SRI Solar Reflectance Index
- 48. TCA Tile Council of America
- 49. UBC Uniform Building Code
- 50. UL Underwriters Laboratories, Inc.
- 51. USGBC United States Green Building Council
- 52. USS United States Standard
- 53. VOC Volatile Organic Compound
- 54. WCLIB West Coast Lumber Inspection Bureau
- 55. WI Woodwork Institute

B. Additional abbreviations used only on the drawings are listed and defined thereon.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

Section 01 5000
Construction Facilities & Temporary Controls

PART 1 GENERAL

1.01 Work Included

- A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Temporary electric power and light.
 - 2. Sanitary facilities, including drinking water and washing facilities.
 - 3. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage sheds.
 - 2. Temporary enclosures.
 - 3. Waste disposal services.
 - 4. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, and warning signs.
 - 3. Enclosure fence for the site.
 - 4. Environmental protection.

1.02 Quality Assurance

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police and fire department rules.
 - 5. Environmental protection regulations.
- B. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.03 Standards - Comply with the following listed standards

- A. NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations
- B. ANSI A10 Series standards for "Safety Requirements for Construction and Demolition
- C. NECA Electrical Design Library "Temporary Electrical Facilities
- D. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric

Code."

- E. NFPA 10 "Standard for Portable Fire Extinguishers"
- F. NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

1.04 Project Conditions

- A. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 PRODUCTS

2.01 Materials

- A. General: Provide new materials. If acceptable to the Landscape Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Open-Mesh Fencing: Provide 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chain link fabric fencing 6 feet (2 m) high with galvanized steel pipe posts, 1-1/2 inches (38 mm) I.D. for line posts.

2.02 Equipment

- A. General: Provide new equipment. If acceptable to the Landscape Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4-inch (19-mm), heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet (30 m) long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: Provide general service lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

- F. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Provide self contained washing facilities, stocked with soap, disposable towels, and drinking cups; Use only potable water in Health Dept. approved containers.
- G. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 EXECUTION

3.01 Installation

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.02 Temporary Utility Installation

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Obtain easements to bring temporary utilities to the site where the District's easements cannot be used for that purpose.
 - 3. Use Charges: Cost or use charges for temporary facilities are not chargeable to the District or Landscape Architect. Neither the District nor Landscape Architect will accept cost or use charges as a basis of claims for Change Orders.
- B. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switchgear.
 - 1. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
- C. Temporary Internet Access: Provide high speed internet access in the job trailer for use by superintendent and project staff.

- D. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs. Maintain service until District allows use of permanent facilities.
 - 1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
- E. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

3.03 Support Facilities Installation

- A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.
 - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
 - 1. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
- C. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

3.04 Security and Protection Facilities Installation

- A. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 - 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
- B. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and

warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

- C. Enclosure Fence: Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.
- D. Provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth or portable fencing, if appropriate, with sufficient hold down weight to prevent overturning..
- E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- F. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- G. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.05 Operation, Termination, and Removal

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Unless the Landscape Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.
 - 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing

authority.

3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
4. Replace air filters and clean inside of ductwork and housings.
5. Replace significantly worn parts and parts subject to unusual operating conditions.

END OF SECTION

Section 01 5713
Temporary Erosion and Sediment Control

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of District for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 RELATED REQUIREMENTS

- A. Section 32 1123 - Aggregate Base Courses: Temporary and permanent roadways.

1.03 REFERENCE STANDARDS

- A. ASTM D4355/D4355M - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus; 2014.
- B. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.; 1999a (Reapproved 2014).
- C. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles; 2015.
- D. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles; 2015a.
- E. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile; 2012.
- F. ASTM D4873/D4873M - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples; 2017.

1.04 SUBMITTALS

- A. See Section 01 3300 - Submittals, for submittal procedures.
- B. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
- B. Bales: Air dry, rectangular straw bales.
 - 1. Cross Section: 14 by 18 inches, minimum.
 - 2. Bindings: Wire or string, around long dimension.
- C. Bale Stakes: One of the following, minimum 3 feet long:
 - 1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot.
 - 2. Wood, 2 by 2 inches in cross section.
- D. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
 - 1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D4751.
 - 2. Permittivity: 0.05 sec^{-1} , minimum, when tested in accordance with ASTM D4491.
 - 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.
 - 4. Tensile Strength: 100 pounds-force, minimum, in cross-machine direction; 124 pounds-force, minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
 - 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
 - 6. Tear Strength: 55 pounds-force, minimum, when tested in accordance with ASTM D4533/D4533M.
 - 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
- E. Silt Fence Posts: One of the following, minimum 5 feet long:
 - 1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot.
- F. Gravel: See Section 32 1123 for aggregate.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.
 - 1. Width: As required; 20 feet, minimum.
 - 2. Length: 50 feet, minimum.
 - 3. Provide at each construction entrance from public right-of-way.
 - 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences.
 - 1. Provide linear sediment barriers:
 - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
 - 2. Space sediment barriers with the following maximum slope length upslope from barrier:
 - a. Slope of Less Than 2 Percent: 100 feet..
 - b. Slope Between 2 and 5 Percent: 75 feet.
 - c. Slope Between 5 and 10 Percent: 50 feet.
 - d. Slope Between 10 and 20 Percent: 25 feet.
 - e. Slope Over 20 Percent: 15 feet.
- D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
 - 1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
 - 2. Straw bale row blocking entire inlet face area; anchor into pavement.
- E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.
- F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.
- G. Soil Stockpiles: Protect using one of the following measures:
 - 1. Cover with polyethylene film, secured by placing soil on outer edges.
 - 2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.
- H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
- I. Temporary Seeding: Use where temporary vegetated cover is required.

3.04 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
 - 1. Excavate minimum of 6 inches.
 - 2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
 - 3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.
- B. Silt Fences:

1. Store and handle fabric in accordance with ASTM D4873/D4873M.
 2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
 3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
 4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
 5. Install with top of fabric at nominal height and embedment as specified.
 6. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
 7. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.
 8. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.
- C. Straw Bale Rows:
1. Install bales in continuous rows with ends butting tightly, with one bale at each end of row turned uphill.
 2. Install bales so that bindings are not in contact with the ground.
 3. Embed bales at least 4 inches in the ground.
 4. Anchor bales with at least two stakes per bale, driven at least 18 inches into the ground; drive first stake in each bale toward the previously placed bale to force bales together.
 5. Fill gaps between ends of bales with loose straw wedged tightly.
 6. Place soil excavated for trench against bales on the upslope side of the row, compacted.
- D. Temporary Seeding:
1. When hydraulic seeder is used, seedbed preparation is not required.
 2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
 3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft.
 4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft.
 5. Incorporate fertilizer into soil before seeding.
 6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
 7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
 8. Repeat irrigation as required until grass is established.

3.05 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
 1. Promptly replace fabric that deteriorates unless need for fence has passed.

2. Remove silt deposits that exceed one-third of the height of the fence.
 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Straw Bale Rows:
1. Promptly replace bales that fall apart or otherwise deteriorate unless need has passed.
 2. Remove silt deposits that exceed one-half of the height of the bales.
 3. Repair bale rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- E. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Landscape Architect.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

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Section 01 6000
Product Requirements

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations.
- F. Procedures for District-supplied products.

1.02 RELATED REQUIREMENTS

- A. Section 01 2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.
- B. Section 01 2500 - Substitutions
- C. Section 01 3300 - Submittals
- D. Section 01 4000 - Quality Requirements: Product quality monitoring.
- E. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.
- F. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 REFERENCE STANDARDS

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Unforeseen historic items encountered remain the property of the District; notify District promptly upon discovery; protect, remove, handle, and store as directed by District.

- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the District, or otherwise indicated as to remain the property of the District, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
 - 1. Made using or containing asbestos
- C. Where other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions, as defined in Section 01 6116.
 - 2. If wet-applied, have lower VOC content, as defined in Section 01 6116.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures.
- B. Instructions to Bidders specifies time restrictions for submitting requests for substitutions during the bidding period and the documents required. Comply with requirements specified in Section 01 2500 or as otherwise specified in Instructions to Bidders.

3.02 OWNER-SUPPLIED PRODUCTS

- A. District's Responsibilities:
 - 1. Arrange for and deliver District reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 - 1. Review District reviewed shop drawings, product data, and samples.

2. Receive and unload products at site; inspect for completeness or damage jointly with District.
3. Handle, store, install and finish products.
4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide off-site storage and protection when site does not permit on-site storage or protection.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.

- I. Do not store products directly on the ground.
- J. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- K. Prevent contact with material that may cause corrosion, discoloration, or staining.
- L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

Section 01 7135
Restoration of Improvements

PART 1 - GENERAL

1.01 Structures

- A. The Contractor shall carefully cut and or remove such existing structures, utilities, and improvements as required to complete the work, including but not limited to: curbs, gutters, pipelines, sidewalks and utility poles, as may be necessary for the performance of the work and shall rebuild the structures thus removed in as good a condition as found. The Contractor shall also repair existing structures or improvements, which may be damaged as a result of the work under this contract.

1.02 Roads and Streets

- A. Unless otherwise specified, roads and streets in which the surface is removed, broken, or damaged, or in which the ground has caved or settled during the work under this contract, shall be resurfaced and brought to the original grade and section by the Contractor. Roadways used by the Contractor shall be cleaned and repaired to local County and State Standards. Before resurfacing material is placed, edges of pavements shall be trimmed back far enough to provide clean solid, saw-cut vertical faces, and shall be free of loose material.

1.03 Cultivated Areas and Other Surface Improvements

- A. Cultivated or planted areas and other surface improvements which are damaged by actions of the Contractor shall be restored to their original condition or better.
- B. Existing guard posts, barricades, and fences shall be protected and replaced if damaged.
- C. Special attention shall be given to avoid trees, bushes and shrubs not indicated for removal.

1.04 Protection of Existing Installations

- A. The Contractor shall immediately correct or replace existing equipment, controls or systems that are damaged as a result of his operations.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

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END OF SECTION

Section 01 7329
Cutting and Patching

PART I - GENERAL

1.01 SECTION INCLUDES

- A. Procedures for cutting and patching as may be required to complete the work of this project.

1.02 RELATED SECTIONS

- A. Section 01 5000 - Construction Facilities and Temporary Controls
- B. Section 01 7135 - Restoration of Improvements
- C. Section 01 7420 - Cleaning
- D. Section 01 7419 - Construction Waste Management & Disposal

1.03 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.04 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut or patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut or patch in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Landscape Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original installer, comply with original installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean, piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

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Section 01 7419
Construction Waste Management and Disposal

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. District requires that this project generate the least amount of trash and waste possible with the goal of diverting 70% of waste from the landfill.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
 - 1. Aluminum and plastic beverage containers.
 - 2. Corrugated cardboard.
 - 3. Wood pallets.
 - 4. Clean dimensional wood.
 - 5. Land clearing debris, including brush, branches, logs, and stumps; see Section 31 1000 - Site Clearing for use options.
 - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - 7. Paint.
 - 8. Fluorescent lamps (light bulbs).
- E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- F. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 3300 - Submittals: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

- C. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.
- E. Section 31 1000 - Site Clearing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. Submit Waste Management Plan within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner; submit projection of all trash and waste that will require disposal and alternatives to landfilling.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

- A. Waste management and diversion goals may be achieved by the following methods:
 - 1. Roll Off Waste Container: Contractor may hire a company which provides a roll off waste container which is then sorted off site.
 - 2. On Site Sorting: Contractor to sort waste on site.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, District, and Landscape Architect.
- C. 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.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.
 - 4. Job safety meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified

materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

Section 01 7420
Cleaning

PART 1 GENERAL

1.01 Section Includes

- A. Cleaning throughout the construction period, and final project cleaning prior to the acceptance tour.

1.02 Related Sections

- A. Section 01 5000 - Construction Facilities and Temporary Controls

1.03 Quality Assurance

- A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. Codes and Standards: In addition to the requirements specified herein, comply with pertinent requirements of authorities having jurisdiction.

PART 2 PRODUCTS

2.01 Cleaning Materials and Equipment

- A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 Compatibility

- A. Use cleaning materials and equipment that are compatible with the surfaces being cleaned, as recommended by the manufacturer of the material to be cleaned.

PART 3 EXECUTION

3.01 Progress Cleaning

- A. General:
 - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work. Debris shall be removed from the site and disposed of in a lawful manner. Disposal receipts or dump tickets shall be furnished to Architect upon request.
 - 3. At least twice each month, and more often if necessary, remove scrap debris, and waste material from the job site.

4. Provide adequate storage for items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove items to the place designated for their storage. Flammable waste shall be kept in sealed metal containers until removed from the site.
 2. Weekly, and more often if necessary, inspect, arrangements of materials stored on the site; restack, tidy, or otherwise service arrangements to meet the requirements specified above.
 3. Maintain the site in a neat and orderly condition.
- C. Structures:
1. Weekly, and more often if necessary, inspect the structures and pick up scrap, debris, and waste material. Remove items to the place designated for their storage.
 2. Weekly, and more often if necessary, sweep interior spaces clean.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a handheld broom, i.e., "broom-clean".
 3. As required preparatory to installation of succeeding materials, clean the structures of pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the required cleanliness.
 4. Following the installation of finish floor materials, clean the finish floor daily, and more often if necessary, and while work is being performed in the space in which finish materials have been installed.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material that, in the opinion of the Architect, may be injurious to the finish floor material, i.e., "vacuum-clean".
- D. General: The General Conditions require general cleaning during construction. Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste, conduct final progress cleaning as described below.
- E. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions. Unless otherwise specifically directed by the Architect, water and broom clean paved areas on the site and public paved areas directly adjacent to the site. Remove resultant debris
- F. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
1. Remove labels that are not permanent labels.
 2. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
- G. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces. Sweep and mop vinyl and rubber surfaces.
- H. Structures:

1. Exterior: In areas affected by the work under this contract, visually inspect exterior surfaces and remove traces of soil, waste material, smudges, and other foreign matter. Remove traces of splashed material from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure.
 2. In the event of stubborn stains not removable with water, the Landscape Architect may require light sandblasting or other cleaning at no additional cost to the District.
- I. Interior: In areas affected by the work under this contract, visually inspect interior surfaces and remove traces of soil waste material, smudges, and other foreign matter. Remove traces of splashed materials from adjacent surfaces. Remove paint drippings, spots, stains, and dirt from finished surfaces. Use only the cleaning materials and equipment instructed by the manufacturer of the surface material.
- J. Glass: Clean glass inside and outside.
- K. Polished surfaces: On surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished. Glossy surfaces shall be cleaned and shined as intended by the manufacturer
1. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 2. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
- L. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests.
- M. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- N. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the District's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
- O. Extra Materials: Where extra materials of value remain after completion of associated Work, they become the District's property. Dispose of these materials as directed by the Owner.
- P. Timing: Schedule final cleaning as accepted by the Landscape Architect to enable the District to accept a completely clean project.
- Q. Cleaning During District's Occupancy
1. Should the District occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the District, responsibilities for interim and final cleaning of the occupied spaces shall be determined by the Landscape Architect in accordance with the General Conditions of the Contract.

END OF SECTION

Section 01 7700
Contract Closeout

PART 1 - GENERAL

1.01 Requirements Included

- A. Closeout Procedures.
- B. Project Record Documents.
- C. Operation and Maintenance Data.
- D. Guaranties, Warranties, Bonds and Waivers.
- E. Spare Parts and Maintenance Materials.

1.02 Related Requirements

- A. General Conditions: Fiscal provisions, legal submittals and other administrative requirements.
- B. Section 01 1100 - Summary of Work
- C. Section 01 3300 - Submittals
- D. Section 01 7135 - Restoration of Improvements
- E. Section 01 7420 - Cleaning

1.03 Closeout Procedures

- A. Comply with procedures stated in General Conditions of the Contract.
- B. When Contractor considers work has reached substantial completion, submit written certification that work is ready for inspection.

1.04 Removal of Utilities, Facilities, and Controls

- A. Each trade/subcontractor responsible for installation shall be responsible for and not limited to the following:
 - 1. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to final application for payment inspection.
 - 2. Remove unused or temporary underground utilities or installations completely.
 - 3. Clean and repair damage caused by installation or use of temporary work.
 - 4. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.05 Project Record Drawings and Specifications

- A. General

1. Maintain, on daily basis, Record Drawings showing "as-built" condition of project; subject to monthly review by Landscape Architect, Construction Manager, or District.
 2. Store documents separate from those used for construction.
 3. At time of installation, installed locations of all work relating to above and underground utilities, architectural, structural, heating, ventilation, air conditioning, plumbing, electrical, and other scopes of work as may be required, shall be recorded on prints by Contractor, and reviewed with the Owner. Do not conceal work until required information is recorded.
 4. The Contractor will transfer installed locations to reproducible prints and submit prints for review by Landscape Architect through the Construction Manager.
 - a. All information entered on reproducible prints shall be neat, legible, and emphasized by drawing "balloons" around changed items.
 - b. Locate and dimension all work, including stubs for future connections, with reference to permanent landmarks or buildings and indicate approximate depth below finish grade.
 - c. Symbols and designations used in preparing Record Drawings shall match those used in Contract Drawings.
 5. Prior to final inspection, submit project record documents with transmittal letter containing date, project title, Contractor's name and address, list of documents and signature of Contractor.
 - a. Failure of the Contractor to comply with this section in total or in part may constitute reason for the withholding of all or part of the monthly progress payment due the Contractor for that month.
 6. Prior to processing the Contractor's monthly payment request, Construction Manager, Landscape Architect, or District's Representative will meet with the Contractor to review and verify that the Record Documents have been updated.
 7. Label and date each Record Drawing "RECORD DOCUMENT" in legibly printed letters.
- B. Record Drawing Information:**
1. Record the following information:
 - a. Locations of work buried under or outside each building, such as plumbing and electrical lines and conduits.
 - b. Actual numbering of each electrical circuit.
 - c. Locations of significant work concealed inside each building whose general locations are changed from those shown on the Contract.
 - d. Locations of all items, not necessarily concealed, which vary from the Contract Documents.
 - e. Installed location of all cathodic protection anodes.
 - f. Deviations from the sizes, locations and other features of installation shown in the Contract Documents.
 - g. Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, etc.
 - h. Sufficient information to locate work concealed in each building with reasonable ease and accuracy; in some instances, this may be by dimension. In others, it may be in relation to the spaces in the building near which it was installed.
 2. Provide additional drawings as necessary for clarification.
- C. Record Specifications**
1. District's Representative will provide Contractor with one (1) set of Contract Specifications, which shall be labeled "Record Document" in legible letters.
 2. Mark each section legibly to record manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

1.06 Operation and Maintenance Data

- A. Provide data for other Sections as required by the Contract Documents.
- B. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch three ring side binders with durable plastic covers; with identification on, or readable through, front cover stating general nature of manual.
- C. Provide a separate volume for each system, with a table of contents and index tabs for each volume; all material neatly typewritten; each volume containing:
 - 1. Part 1: Directory, listing names, addresses and telephone numbers of District's Representative, Contractor, and relevant Sub-Contractors; and index furnishing complete information as to location in manual of all emergency data regarding installation.
 - 2. Part 2: Operation and maintenance instructions, arranged by system. For each system, give names, addresses and telephone numbers of subcontractors and suppliers; and include the following:
 - a. List of equipment.
 - b. Parts list; including complete nomenclature and names and address of nearest vendor of parts.
 - c. Detailed operating instructions.
 - d. Maintenance instructions, equipment, including routine maintenance cards with time frequency of routine maintenance noted.
 - e. Maintenance instructions, finishes.
 - f. Shop drawings and product data, including changes made during construction.
 - g. Copies of Guaranties/Warranties.
- D. Extraneous Data: Where contents of manuals include manufacturers' catalog pages, clearly indicate precise items included in this installation and delete, or otherwise clearly indicate, all manufacturer's data with which this installation is not concerned.
- E. Final inspection will not be scheduled until all maintenance/operating manuals are delivered to the District Representative.
- F. Contractor will be responsible for training of District's personnel for operation of all building systems.

1.07 Guaranties, Warranties, and Bonds

- A. Standard Guarantee: Guarantee all work executed under this Contract to be free of all defects of work quality and materials for a period of one (1) year after completion and acceptance by the District. Refer to General Conditions and to other specific product and installation warranties listed in individual sections.

1.08 Spare Parts and Maintenance Materials Extra Stock

- A. Provide products, spare parts, and maintenance materials in guaranties specified in each section, in addition to that used for construction of work. Coordinate with the Construction Manager and deliver to project site. Provide with a detailed transmittal and obtain receipt prior to final payment.

END OF SECTION

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Section 02 4100
Demolition

<<<< UPDATE NOTES

PART 1 GENERAL

2.01 SECTION INCLUDES

- A. Selective demolition of built site elements.

2.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- C. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- D. Section 31 2323 - Fill: Filling holes, pits, and excavations generated as a result of removal operations.

PART 2 PRODUCTS

3.01 MATERIALS

- A. Fill Material: See Section 31 2323.

PART 3 EXECUTION

4.01 DEMOLITION

- A. Remove paving as required to accomplish new work.
- B. Remove other items indicated, for salvage, relocation, recycling, and _____.

4.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Provide, erect, and maintain temporary barriers and security devices.
 - 3. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 4. Do not close or obstruct walks without prior approval from the District.

5. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 6. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from District.
- C. Protect existing structures and other elements to remain in place and not removed.
1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- D. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- E. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface. Saw cuts shall occur at nearest existing joint beyond work limit shown. Pavement replacement shall occur from joint to joint.

4.03 EXISTING UTILITIES

- A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to District.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to District.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

4.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

Section 03 3000
Cast-in-Place Concrete

PART 1 GENERAL

1.01 Section Includes

- A. Concrete formwork.
- B. Concrete foundations for gate and fence posts.
- C. Concrete reinforcement.
- D. Joint devices associated with concrete work.
- E. Concrete curing.

1.02 Related Requirements

- A. Section 32 1313 - Concrete Paving: Sidewalks, curbs and gutters.

1.03 Reference Standards

- A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.
- C. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- D. ACI PRC-308 - Guide to External Curing of Concrete; 2016.
- E. ACI SPEC-301 - Specifications for Concrete Construction; 2020.
- F. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.
- G. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2016.
- H. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2015a.
- I. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2015.
- J. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.
- K. ASTM C150/C150M - Standard Specification for Portland Cement; 2016.

- L. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2014.
- M. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.
- N. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2013.
- O. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2015.
- P. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2014.
- Q. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.

1.04 Submittals

- A. See Special Provisions for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix Design: Submit proposed concrete mix design.
- D. Test Reports: Submit report for each test or series of tests specified.

1.05 Quality Assurance

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.

PART 2 PRODUCTS

2.01 Formwork

2.02 Concrete Materials

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type. Provide _____ manufactured by _____.
 - 1. Acquire cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.03 Admixtures

- A. Provide a list of all admixtures as part of submittal for approval.
- B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- C. Air Entrainment Admixture: ASTM C260/C260M.
- D. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

2.04 Concrete Mix Design

- A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
- B. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.
- C. Normal Weight Concrete:
 - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 2,800 pounds per square inch.
 - 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
 - 3. Water-Cement Ratio: Maximum 40 percent by weight.
 - 4. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
 - 5. Maximum Slump: 4 inches.
 - 6. Maximum Aggregate Size: 5/8 inch.

2.05 Mixing

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.
- C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 Examination

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 Preparation

- A. Verify that forms are clean and free of rust before applying release agent.
- B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

3.03 Placing Concrete

- A. Place concrete in accordance with ACI PRC-304.
- B. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.04 Concrete Finishing

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Medium Broom Finish.

3.05 Curing and Protection

- A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.06 Field Quality Control

- A. The District will perform field quality control tests.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.07 Defective Concrete

- A. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Landscape Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Landscape Architect for each individual area.

3.08 Protection

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

Section 05 1200
Structural Steel Framing

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural steel framing members.

1.02 REFERENCE STANDARDS

- A. AISC (MAN) - Steel Construction Manual; 2023.
- B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; 2022.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- D. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.
- E. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.
- F. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).

1.03 SUBMITTALS

- A. See Section 01 3300 - Submittals, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
 - 2. Connections not detailed.
- C. Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

- A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."

PART 2 PRODUCTS

2.01 MATERIALS

- A. Steel Angles and Plates: ASTM A36/A36M.
- B. Rolled Steel Structural Shapes: ASTM A992/A992M.
- C. Hot-Formed Structural Tubing: ASTM A501/A501M, seamless or welded.

D. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

2.02 FABRICATION

A. Shop fabricate to greatest extent possible.

2.03 FINISH

A. Powder coat all steel members black to match manufactured fence panels.

PART 3 EXECUTION

3.01 ERECTION

A. Erect structural steel in compliance with AISC 303.

END OF SECTION

SECTION 08 7100
DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Door hardware, including electric hardware.
2. Gate Hardware.
3. Power supplies for electric hardware.
4. Remote button release hardware.
5. Door position switches.
6. Cylinders for doors fabricated with locking hardware.

B. Related Divisions:

1. Division 06 – door hardware installation
2. Division 08 – metal doors and frames, integrated security systems,.
3. Division 26 – sections for connections to electrical power system and for low-voltage wiring.
4. Division 28 – sections for coordination with other components of electronic access control system.

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.

1. Rough hardware.
2. Conduit, junction boxes & wiring.

1.2 REFERENCES:

A. Use date of standard in effect as of Bid date.

1. American National Standards Institute
 - a) ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties.
2. BHMA – Builders Hardware Manufacturers Association
3. 2022 California Building Code.
 - a) Chapter 11B – Accessibility To Public Buildings, Public Accommodations, Commercial Buildings and Public Housing.
4. DHI – Door and Hardware Institute.
5. NFPA – National Fire Protection Association
6. UL – Underwriters Laboratories
 - a) UL 305 – Panic Hardware
7. WHI – Warnock Hersey Incorporated State of California Building Code
8. Local applicable codes
9. SDI – Steel Door Institute

10. NAAMM – National Association of Architectural Metal Manufacturers

B. Abbreviations

1. Manufacturers: see table at 2.1.A of this section.
2. Finishes: see 2.5 of this section.

1.3 SUBMITTALS & SUBSTITUTIONS

A. SUBMITTALS: Submit electronic copy of schedule. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Minimum 10pt font size. Include following information:

1. Type, style, function, size, quantity, and finish of hardware items.
2. Use BHMA Finish codes per ANSI A156.18.
3. Name, part number and manufacturer of each item.
4. Fastenings and other pertinent information.
5. Location of hardware set coordinated with floor plans and door schedule.
6. Explanation of abbreviations, symbols, and codes contained in schedule.
7. Mounting locations for hardware.
8. Door and frame sizes, materials, and degrees of swing.
9. List of manufacturers used and their nearest representative with address and phone number.
10. Catalog cuts.
11. Point-to-point wiring diagrams.
12. Manufacturer’s technical data and installation instructions for electronic hardware.

B. Bid and submit manufacturer’s updated/improved item if scheduled item is discontinued.

C. Deviations: Highlight, encircle or otherwise identify deviations from “Schedule of Finish Hardware” on submittal with notations clearly designating those portions as deviating from this section.

D. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.

E. Substitutions per Division 1. Include product data and indicate benefit to the Project. Furnish operating samples on request.

F. Items listed with no substitute manufacturers have been requested by Owner to meet existing standard.

G. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, riser and point-to-point wiring diagrams, manufacturers’ installation, adjustment and maintenance information, and supplier’s final inspection report.

1.4 QUALITY ASSURANCE:

A. Qualifications:

1. Hardware supplier: direct factory contract supplier who employs a hardware consultant, available at reasonable times during course of work for project hardware consultation to Owner, Architect and Contractor.
 - a) Responsible for detailing, scheduling, and ordering of finish hardware. Detailing implies that the submitted schedule of hardware is correct and complete for the intended function and performance of the openings.
 - B. Hardware: Free of defects, blemishes, and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges, and closers) from one manufacturer.
 - C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.
 - D. Furnish hardware items required to complete the work in accordance with specified performance level and design intent, complying with manufacturers' instructions and code requirements.
- 1.5 DELIVERY, STORAGE AND HANDLING:
- A. Delivery: coordinate delivery to appropriate locations (shop or field).
 1. Permanent keys and cores: secured delivery direct to Owner's representative.
 - B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.
 - C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.
- 1.6 PROJECT CONDITIONS AND COORDINATION:
- A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.
 - B. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:
 1. Location of embedded and attached items to concrete.
 2. Location of wall-mounted hardware, including wall stops. Note: Careful coordination required for reinforcement/blocking for wall stop support. If random inspection yields an unsupported wall stop, all locations will be rebuilt at no expense to the Owner or Architect.
 3. Location of finish floor materials and floor-mounted hardware.

- 4. At masonry construction, coordinate with the anchoring and hollow metal supplier prior to frame installation by placing a strip of insulation, wood, or foam, on the back of the hollow metal frame behind the rabbet section for continuous hinges, as well as at rim panic hardware strike locations, silencers, coordinators, and door closer arm locations. When the frame is grouted in place, the backing will allow drilling and tapping without dulling or breaking the installer's bits.
 - 5. Locations for conduit and raceways as needed for electrical, electronic, and electro-pneumatic hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.
 - 6. Coordinate: low-voltage power supply locations.
 - 7. Manufacturers' templates to door and frame fabricators.
- C. Check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.
- D. Environmental considerations: segregate unused recyclable paper and paper product packaging, uninstalled metals, and plastics, and have these sent to a recycling center.

1.7 WARRANTY:

- A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' written warranties.
- B. Include factory order numbers with close-out documents to validate warranty information, required for Owner in making future warranty claims:
- C. Minimum warranties:
 - 1. Exit Devices: Ten years mechanical
Three years electrical
 - 2. Closers: Thirty years mechanical
 - 3. Other Hardware Two years

1.8 COMMISSIONING:

- A. Conduct these tests prior to request for certificate of substantial completion:
 - 1. With installer present, test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.
 - 2. With installer, access control contractor and electrical contractor present, test electrical, electronic, and electro-pneumatic hardware systems for satisfactory operation.

1.9 REGULATORY REQUIREMENTS:

- A. Locate latching hardware between 34 inches to 44 inches above the finished floor, per-2022 California Building Code, Section 11B-404.2.7.
 - 1. Panic hardware: locate between 36 inches to 44 inches above the finished floor.
- B. Handles, pull, latches, locks, other operable parts:
 - 1. Readily openable from egress side with one hand and without tight grasping, tight pinching, or twisting of the wrist to operate. 2022 California Building Code Section 11B-309.4.
 - 2. Force required to activate the operable parts: 5.0 pounds maximum, per 2022 California Building Code Section 11B-309.4.
- C. Adjust doors to open with not more than 5.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors. As allowed per 2022 California Building Code Section 11B-404.2.9, local authority may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15-pounds.
 - 1. Exception: exterior doors' pressure-to-open may be increased to 8.5-pounds if: at a single location, and one of a bank of eight leaves or fraction of eight, and one leaf of this bank is fitted with a low- or high-energy operator.
- D. Adjust door closer sweep periods so that from an open position of 90 degrees, the door will take at least 5 seconds to move to a point 12 degrees from the latch, measured to the landing side of the door, per 2022 California Building Code Section 11B-404.2.8.
- E. Smooth surfaces at bottom 10 inches of push sides of doors, facilitating push-open with wheelchair footrests, per 2022 California Building Code Section 11B-404.2.10.
 - 1. Applied kickplates and armor plates: bevel the left and right edges; free of sharp or abrasive edges. Cavities created by kickplates to be capped per 2022 California Building Code Section 11B-404.2.10.
 - 2. Tempered glass doors without stiles: bottom rail may be less than 10 inches if top leading edge is tapered 60 degrees minimum.
- F. Door opening clear width no less than 32 inches, measured from face of frame stop, or edge of inactive leaf of pair of doors, to door face with door opened to 90 degrees. Hardware projection not a factor in clear width if located above 30 inches and below 80 inches, and the hardware projects no more than 4 inches. 2022 California Building Code Section 11B-404.2.3.
 - 1. Exception: In alterations, a projection of 5/8 inch (15.9 mm) maximum into the required clear width shall be permitted for the latch side stop.
 - 2. Door closers and overhead stops: not less than 78 inches above the finished floor or ground, per 2022 California Building Code 11B-307.4.
- G. Thresholds: floor or landing no more than 0.50 inches below the top of the threshold of the doorway, per 2022 California Building Code Section 11B-404.2.5. Vertical rise no more than 0.25 inches, change in level between 0.25 inches and 0.50 inches: beveled to slope no greater than 1:2 (50 percent slope). 2022 California Building Code Section 11B-303.2 & ~.3.

- H. Floor stops: Do not locate in path of travel. Locate no more than 4 inches from walls, per DSA Policy #99-08 (Access).
- I. Pairs of doors with independently activated hardware both leaves: limit swing of right-hand or right-hand-reverse leaf to 90 degrees to protect persons reading wall-mounted tactile signage, per 2022 California Building Code Section 11B-703.4.2.

PART 2 PRODUCTS

2.1 MANUFACTURERS:

- A. Listed acceptable alternate manufacturers: these will be considered; submit for review products with equivalent function and features of scheduled products.

ITEM:	MANUFACTURER:	ACCEPTABLE ALTERNATE:
Key System	(C-R) Corbin Russwin	Owner standard
Electronic Locks	(SCE) Schlage Electronics	Owner standard
Exit Devices	(VON) Von Duprin	Owner standard
Closers	(LCN) LCN	Owner standard
Push & Pull Plates	(IVE) Ives	Rockwood, Trimco

2.2 HINGING METHODS:

- A. Drawings typically depict doors at 90 degrees, doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening. Advise architect if 8-inch width is insufficient.
- B. Conform to manufacturer's published hinge selection standard for door dimensions, weight and frequency, and to hinge selection as scheduled. Where manufacturer's standard exceeds the scheduled product, furnish the heavier of the two choices, notify Architect of deviation from scheduled hardware.
- C. Conventional Hinges: Steel or stainless-steel pins and approved bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing.

1. Out-swinging exterior doors: non-ferrous with non-removable (NRP) pins and security studs.
2. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.

2.3 EXIT DEVICES / PANIC HARDWARE

A. General features:

1. Independent lab-tested 1,000,000 cycles.
2. Push-through push-pad design. No exposed push-pad fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.
3. Deadlocking latchbolts, 0.75-inch projection.
4. End caps: impact-resistant, flush-mounted. No raised edges or lips to catch carts or other equipment.
5. No exposed screws to show through glass doors.
6. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.
7. Accessibility: Require not more than 5 lb. to retract the latchbolt, per CBC 2022 11B-404.2.7 and 11B-309.4.
 - a) Mechanical method: Von Duprin "AX - feature", where touchpad directly retracts the latchbolt with 5 lb. or less of force. Provide testing lab certification confirming that the mechanical device is independent third-party tested to meet this 5 lb. requirement.

B. Specific features:

1. Electrically Operated Devices: Single manufacturer source for electric latch retraction devices, electrically controlled trim, power transfers, power supplies, monitoring switches and controls.
2. Accepted substitutions: None.

2.4 CLOSERS

A. Surface Closers: 4040XP

1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast-iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
 1. ISO 2000 certified. Units stamped with date-of-manufacture code.
 2. Independent lab-tested 10,000,000 cycles.
 3. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.
 4. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.

5. Adjust doors to open with not more than 5.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors. As allowed per 2022 California Building Code Section 11B-404.2.9, local authority may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15-pounds.
 - a) Exception: exterior doors' pressure-to-open may be increased to 8.5-pounds if: at a single location, and one of a bank of eight leaves or fraction of eight, and one leaf of this bank is fitted with a low- or high-energy operator.
6. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.
7. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.
8. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
9. Exterior doors: seasonal adjustments not required for temperatures from 120 degrees F to -30 degrees F, furnish checking fluid data on request.
10. Non-flaming fluid will not fuel door or floor covering fires.
11. Pressure Relief Valves (PRV) not permitted.
12. Accepted substitutions: None.

2.5 FINISH:

- A. Generally: BHMA 626 Satin Chromium.
 1. Areas using BHMA 626: furnish push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise scheduled.
- B. Door closers: factory powder coated to match other hardware, unless otherwise noted.

2.6 KEYING REQUIREMENTS:

- A. Key System: existing Corbin-Russwin system. Initiate and conduct meeting(s) with Owner to determine system structure, furnish Owner's written approval of the system; do not order keys or cylinders without written confirmation of actual requirements from the Owner. Furnish temporary construction-keyed and permanent cylinders. Contractor to demonstrate to the Owner that temporary keys no longer operate the locking cylinders at the end of the project.

PART 3 - EXECUTION

3.1 ACCEPTABLE INSTALLERS:

- A. Can read and understand manufacturers' templates, suppliers' hardware schedule and printed installation instructions. Can readily distinguish drywall screws from manufacturers' furnished fasteners. Available to meet with manufacturers' representatives and related trades to discuss installation of hardware.

3.2 PREPARATION:

- A. Ensure that walls and frames are square and plumb before hardware installation. Make corrections before commencing hardware installation. Installation denotes acceptance of wall/frame condition.
- A. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
 - 1. Notify Architect of code conflicts before ordering material.
 - 1. Locate latching hardware between 34 inches to 44 inches above the finished floor, per California Building Code, Section 1008.1.9.2 and 11B-404.2.7.
 - 2. Locate panic hardware between 36 inches to 44 inches above the finished floor.

3.3 INSTALLATION

- A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by Architect.
 - 1. Use manufacturers' fasteners furnished with hardware items or submit Request for Substitution with Architect.
 - 2. Replace fasteners damaged by power-driven tools.
- B. Locate floor stops no more than 4 inches from walls and not within paths of travel. See paragraph 2.2 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Architect for direction.

3.4 ADJUSTING

- A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.
 - 1. Hardware damaged by improper installation or adjustment methods: repair or replace to Owner's satisfaction.
 - 2. Adjust doors to fully latch with no more than 1 pound of pressure.
 - a) Door closer valves: turn valves clockwise until at bottom – do not force. Turn valves back out one and one-half turns and begin adjustment process from that point. Do not force valves beyond three full turns counterclockwise.
 - 3. Adjust door closers per 1.9 this section.
- B. Final inspection: Installer to provide letter to Owner that upon completion installer has visited the Project and has accomplished the following:
 - 1. Has re-adjusted hardware.

2. Has evaluated maintenance procedures and recommend changes or additions and instructed Owner's personnel.
3. Has identified items that have deteriorated or failed.
4. Has submitted written report identifying problems.

3.5 DEMONSTRATION:

- A. Demonstrate mechanical hardware and electrical, electronic, and pneumatic hardware systems, including adjustment and maintenance procedures.

3.6 PROTECTION/CLEANING:

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation / reinstallation process.

3.7 SCHEDULE OF FINISH HARDWARE

- A. See door schedule in drawings for hardware set assignments.
- B. Do not order material until submittal has been reviewed, stamped, and signed by Architect's door hardware consultant.
- C. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

Opt. #: OPT0369559 V-2

Hardware Group No. 01

For use on Door #(s):
 G01

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HW BALL BARRING HING	BY GATE MANUFACTURER	600	
1	EA	DOOR CORD	798-18 LESS WIRES	626	SCE
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
1	EA	PANIC HARDWARE	LD-PA-AX-98-EO-WH	630	VON
1	EA	ELEC PANIC HARDWARE	RX-QELX-PA-AX-98-NL-OP-110MD-WH	630	VON
1	EA	MULLION STORAGE KIT	MT54	689	VON
1	EA	MORTISE CYLINDER	IC MORTISE CYL X TEMP CORE AS REQ'D (MULLION)	626	C-R
1	EA	RIM CYLINDER	IC RIM CYL X TEMP CORE AS REQ"D	626	C-R
2	EA	IC PERMANENT CORE	AS REQUIRED PER DISTRICT STANDARD	626	C-R
2	EA	WELD-IN LOCK BX	K-BXED-V990NL-2	600	KEE
1	EA	DOOR PULL	VR910 NL SNB	630	IVE
2	EA	SURFACE CLOSER	4040XP SHCUSH SRI	689	LCN
2	EA	PA MOUNTING PLATE	4040XP-18PA SRT (AS REQUIRED)	689	LCN
2	EA	PA FLUSH PANEL ADAPTER	4040XP-419 SRT SRI AS REQ'D	689	LCN
1	EA	MULLION SEAL	8780NBK PSA	BK	ZER
3	EA	DESK MOUNT BUTTON	660-PB	628	SCE
2	EA	DOOR CONTACT	7766	628	SCE
1	EA	POWER SUPPLY	PS902 BBK 900-2RS 120/240 VAC	LGR	SCE
1	EA	VIDEO INTERCOM	AIPHONE JPS-4AEDV		
2	SET	NOTE	REMAINDER OF HARDWARE BY GATE MANUFACTURER/SUPPLIER		B/O

Job Name: Ventura College Child Development Center Security Fencing

Job Number: 3299-01-ED24







Section 08 7100

Hardware Group No. 02

For use on Door #(s):

G02 G03 G04

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	PANIC HARDWARE	LD-PA-AX-98-NL-OP-110MD-WH		630	VON
1	EA	RIM CYLINDER	IC RIM CYL X TEMP CORE AS REQ'D		626	C-R
1	EA	IC PERMANENT CORE	AS REQUIRED PER DISTRICT STANDARD		626	C-R
1	EA	WELD-IN LOCK BX	K-BXED-V990NL-2		600	KEE
1	EA	DOOR PULL	VR910 NL SNB		630	IVE
1	EA	SURFACE CLOSER	4040XP SHCUSH SRI		689	LCN
1	EA	PA MOUNTING PLATE	4040XP-18PA SRT (AS REQUIRED)		689	LCN
1	EA	PA FLUSH PANEL ADAPTER	4040XP-419 SRT SRI AS REQ'D		689	LCN
	SET	NOTE	REMAINDER OF HARDWARE BY GATE MANUFACTURER/SUPPLIER			B/O

END OF SECTION

Section 31 1000
Site Clearing

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Clearing and protection of vegetation.
- B. Removal of existing vegetation and debris.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- B. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCE STANDARDS

- A. "GREENBOOK" Standard Specifications for Public Works, 2018 edition.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fill Material: As specified in Section 31 2200 - Grading
- B. Herbicide: As specified in Section 32 9000 - Exterior Plants

PART 3 EXECUTION

3.01 SITE CLEARING

- A. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

3.02 EXISTING UTILITIES AND BUILT ELEMENTS

- A. Coordinate work with utility companies.
 - 1. Notify utility companies 48 hours prior to work.
 - 2. Comply with all utility companies requirements.
 - 3. An encroachment permit is required for any work done within the City right-of-way.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.

- D. Protect existing structures and other elements that are not to be removed.

3.03 VEGETATION

- A. Scope: Remove trees, shrubs, brush, and stumps in areas to be covered by improvements.
- B. Do not begin clearing until vegetation to be relocated has been removed.
- C. Do not remove or damage vegetation beyond the limits indicated on drawings.
 - 1. Exception: Specific trees and vegetation indicated on drawings to be removed.
- D. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.
- E. Vegetation Removed: Remove and dispose from the site in a legal manner. Do not burn, bury, landfill, or leave on site, except as indicated.
 - 1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.
 - 2. Trees: Sell if marketable; if not, treat as specified for other vegetation removed; remove stumps and roots to depth of 18 inches.
 - 3. Fill holes left by removal of stumps and roots, using suitable fill material, with top surface neat in appearance and smooth enough not to constitute a hazard to pedestrians.
- F. Dead Wood: Remove all dead trees (standing or down), limbs, and dry brush on entire site; treat as specified for vegetation removed.
- G. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to County.

3.04 GRUBBING

- A. Remove all surface rocks, debris and trash.
- B. Grub soils to a depth adequate to remove all deleterious material from the working are of the site.
- C. Do not leave any root greater than one inch in diameter in the ground to a depth of at least 12 inches below the existing ground surface or subgrade or the new graded surface, whichever is lower. Treat root remaining in the soil with an herbicide.

3.05 DEBRIS

- A. Remove debris, junk, and trash from site in a lawful manner.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

3.06 DUST CONTROL

- A. Use chemical palliative or spread water as required to maintain strict control of dust generated by operation of work under this Section.

3.07 CLEAN-UP

- A. Maintain cleanliness on roadways and other public area used by equipment. Immediately remove all spillage on these pavings.

END OF SECTION

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Section 31 2316.13
Trenching

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Trenching, backfilling and compacting for utilities to tie into existing services..
- B. Footing excavation.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete.
- B. Section 31 2200 - Grading: Site grading.
- C. Section 31 2323 - Fill: Backfilling trenches.

1.03 REFERENCE STANDARDS

- A. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; 2015.
- B. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2014.
- C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012.
- D. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).
- E. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); 2012.
- F. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- G. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2011.
- H. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.
- I. Perform Work in accordance with [Standard Specifications] for [Public Works Construction], [Latest] Edition
- J. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2010.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General Fill- Fill Type Trench Backfill: Subsoil excavated on-site.
 - 1. Graded.
 - 2. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
 - 3. Complying with ASTM D2487 Group Symbol CL.
- B. Concrete for Fill: As specified in Section 03 3000; compressive strength of 2500 pounds per square inch.
- C. Sand: Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter.
 - 1. Graded in accordance with ASTM C136/C136M; within the following limits:
 - a. No. 4 sieve: 100 percent passing.
 - b. No. 14 sieve: 10 to 100 percent passing.
 - c. No. 50 sieve: 5 to 90 percent passing.
 - d. No. 100 sieve: 4 to 30 percent passing.
 - e. No. 200 sieve: 0 percent passing.
- D. Topsoil: See Section 31 2200.

2.02 SOURCE QUALITY CONTROL

- A. Where fill materials are specified by reference to a specific standard, testing of samples for compliance will be provided before delivery to site.
- B. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Notify utility company to remove and relocate utilities.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Protect plants, rock outcroppings, and other features to remain.

- F. Grade top perimeter of trenching area to prevent surface water from draining into trench. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by the Landscape Architect.

3.03 TRENCHING

- A. Notify Landscape Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- B. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Cut trenches wide enough to allow inspection of installed utilities.
- E. Hand trim excavations. Remove loose matter.
- F. Footing excavations shall be approved by the Soils Engineer prior to concrete placement.
- G. Remove excavated material that is unsuitable for re-use from site.
- H. Remove excess excavated material from site.
- I. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Landscape Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- J. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Landscape Architect.

3.04 PREPARATION FOR UTILITY PLACEMENT

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.05 BACKFILLING

- A. Backfill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- G. Correct areas that are over-excavated.
 - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- H. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction: 95 percent of maximum dry density.
- I. Reshape and re-compact fills subjected to vehicular traffic.

3.06 BEDDING AND FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. Utility Piping, Conduits, and Duct Bank:
 - 1. Bedding: Use general fill.
 - 2. Cover with general fill.
 - 3. Fill up to subgrade elevation.
 - 4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.
- C. At French Drains:
 - 1. Use granular fill.
 - 2. Fill up to 8 inches below finish grade.
 - 3. Compact to 95 percent of maximum dry density.

3.07 TOLERANCES

- A. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.08 FIELD QUALITY CONTROL

- A. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.
- B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D1557 ("modified Proctor"), AASHTO T 180, or ASTM D698 ("standard Proctor").
- C. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- D. Frequency of Tests: As directed by the Authorized Representative.

3.09 CLEANING

- A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- B. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

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Section 31 2323
Fill

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Filling, backfilling, and compacting for paving and site structures.
- B. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 - Grading: Site grading.

1.03 REFERENCE STANDARDS

- A. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2014.
- B. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2011.

1.04 SUBMITTALS

- A. See Special Provisions for Submittal procedures.
- B. Soil Samples: 10 pounds sample of each type of fill; submit in air-tight containers to testing laboratory.
- C. Materials Sources: Submit name of imported materials source.
- D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.

1.05 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where designated.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General Fill: Subsoil excavated on-site.
 - 1. Graded.
 - 2. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
 - 3. Complying with ASTM D2487 Group Symbol CL.

- B. Sand: Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter.
 - 1. Graded in accordance with ASTM C136/C136M; within the following limits:
 - a. No. 4 sieve: 100 percent passing.
 - b. No. 14 sieve: 10 to 100 percent passing.
 - c. No. 50 sieve: 5 to 90 percent passing.
 - d. No. 100 sieve: 4 to 30 percent passing.
 - e. No. 200 sieve: 0 percent passing.

- C. Topsoil: Conforming to State of California Highway Department standard.

2.02 ACCESSORIES

- A. Geotextile Fabric: Myrafi N series or approved equal

2.03 SOURCE QUALITY CONTROL

- A. Where fill materials are specified by reference to a specific standard, testing of samples for compliance will be provided before delivery to site.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- C. Verify areas to be filled are not compromised with surface or ground water.

3.02 PREPARATION

- A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.

- C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

- A. Fill up to subgrade elevations unless otherwise indicated.
- B. Employ a placement method that does not disturb or damage other work.
- C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- D. Maintain optimum moisture content of fill materials to attain required compaction density.
- E. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- F. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- G. Correct areas that are over-excavated.
 - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- H. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction: 95 percent of maximum dry density.
- I. Reshape and re-compact fills subjected to vehicular traffic.
- J. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Landscape Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

3.04 FILL AT SPECIFIC LOCATIONS

- A. Over Buried Utility Piping, Conduits, and Duct Bank in Trenches:
 - 1. Bedding: Use general fill.
 - 2. Cover with general fill.
 - 3. Fill up to subgrade elevation.
 - 4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.
- B. Inside Planter Boxes:
 - 1. Use granular fill, 4 inches deep.
 - 2. Cover with geotextile fabric.
 - 3. Cover with sand, 2 inches deep.
 - 4. Finish with topsoil, to within 2 inches of planter rim, lightly tamped.
- C. At Lawn Areas:

1. Use general fill.
 2. Fill up to 6 inches below finish grade elevations.
 3. Fill up to subgrade elevations.
 4. Compact to 95 percent of maximum dry density.
 5. See Section 31 2200 for topsoil placement.
- D. At Planting Areas Other Than Lawns :
1. Use general fill.
 2. Fill up to 12 inches below finish grade elevations.
 3. Fill up to subgrade elevations.
 4. Compact to 95 percent of maximum dry density.
 5. See Section 31 2200 for topsoil placement.
- E. At Playgrounds
1. Use approved fall zone surfacing material such as engineered wood fiber, or other approved materials
 2. Fill depth shall be determined by fall height of existing play equipment. Refer to manufacturer's recommendations for equipment in place to determine depths required.
 3. Play fill shall not be compacted beyond manufacturer's recommendations.
 4. Final fill elevations shall be consistent with manufacturer's intended finish elevations as they relate to the play equipment. Allow for shrinkage and natural compaction of material. Provide additional material in order to meet final elevations.

3.05 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.06 CLEANING

- A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- B. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

Section 32 1123
Aggregate Base Courses

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aggregate base course.
- B. Paving aggregates.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 - Grading: Preparation of site for base course.
- B. Section 31 2316.13 - Trenching: Compacted fill over utility trenches under base course.
- C. Section 31 2323 - Fill: Topsoil fill at areas adjacent to aggregate base course.
- D. Section 31 2323 - Fill: Compacted fill under base course.
- E. Section 32 1216 - Asphalt Paving: Finish and binder asphalt courses.
- F. Section 32 1313 - Concrete Paving: Finish concrete surface course.
- G. "GREENBOOK" Standard Specifications for Public Works, 2018 edition.

1.03 REFERENCE STANDARDS

- A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses; 1965 (2004).
- B. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; 2015.
- C. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2014.
- D. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).
- E. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); 2012.
- F. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.

1.04 SUBMITTALS

- A. See Special Provisions - General Requirements - Administrative Requirements, for submittal procedures.
- B. Materials Sources: Submit name of imported materials source.
- C. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- D. Compaction Density Test Reports.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Aggregate Type Class 2: Coarse aggregate, conforming to Section 26 of the State of California Department of Transportation Standard Specifications, latest edition ____
 - 1. The aggregate shall be free from vegetable matter and other deleterious substances.
 - 2. Aggregate shall consist of material of which at least 60 percent by weight shall be crushed particles as determined by Test Method No. Calif. 205.
 - 3. Gradings shall be determined by Test Method No. Calif. 202.
- B. Herbicide: Spray applied herbicide, currently approved for designated use by all applicable agencies, including air pollution control jurisdiction.

2.02 SOURCE QUALITY CONTROL

- A. See Special Provisions General Requirements - Quality Requirements, for general requirements for testing and analysis of aggregate materials.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

3.02 PREPARATION

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.

- B. Do not place aggregate on soft, muddy, or frozen surfaces.

3.03 INSTALLATION

- A. Proofroll subgrade immediately prior to commencement of spreading of aggregate base.
- B. Spread aggregate over prepared substrate to a total compacted thickness as shown on the plans.
- C. Aggregate base material shall be delivered to the roadbed as uniform mixtures.
- D. Each layer shall be spread in one operation.
- E. Material shall be spread upon the prepared subgrade by means of vehicles equipped with approved spreading devices at a uniform quantity per linear foot.
- F. Depositing and spreading shall commence at the part of the work farthest from the supply of base material and shall progress continuously without breaks, unless otherwise directed by the Geotechnical Engineer.
- G. Where the required thickness is 6 inches or less, the base material may be spread and compacted in one layer.
- H. Where the required thickness is more than 6 inches, the base material shall be spread and compacted in 2 or more layers of approximately equal thickness, and the maximum compacted thickness of any one layer shall not exceed 6 inches.
- I. Level and contour surfaces to elevations and gradients indicated.
- J. Compact to 95 percent of maximum dry density.
- K. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- L. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- M. Base shall be firm and unyielding when proof rolled with heavy, rubber-tired grading equipment prior to continuing construction.
- N. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
- O. Base material placed in areas inaccessible to the spreading equipment may be spread in one or more layers by any means that will make possible the specified compaction and surface.
- P. The base material, after spreading, shall be shaped by means of a blade grader to such thickness that after watering and compacting, the completed base will conform to the required grade and cross section within the tolerances specified.
- Q. Segregation of aggregate shall be avoided; the base shall be free from pockets of coarse or fine material.
- R. Apply herbicide to finished surface.

- S. Finished base that does not conform to the foregoing requirements shall be reshaped or reworked, watered, and thoroughly recompact to conform thereto.
- T. The Contractor shall not allow any completed untreated rock base to be subject to public or construction traffic, except the latter necessary to the completion of the overlying surface courses.

3.04 TOLERANCES

- A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/4 inch.
- C. Variation From Design Elevation: Within 1/2 inch.

3.05 FIELD QUALITY CONTROL

- A. See Special Provisions for quality requirements, field inspections, and testing.
- B. Compaction density testing will be performed on compacted aggregate base course in accordance with City standards and ASTM D1556. and Method C of ASTM D 1557.
- C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

3.06 CLEANING

- A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION

Section 32 1313
Concrete Paving

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete sidewalks.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete.
- B. Section 31 2200 - Grading: Preparation of site for paving and base and preparation of subsoil at pavement perimeter for planting.
- C. Section 32 1123 - Aggregate Base Courses: Concrete Paving and Block wall base course.
- D. Section 32 1713 - Parking Bumpers: Precast concrete parking bumpers.

1.03 REFERENCE STANDARDS

- A. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000.
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- C. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2016.
- D. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2015a.
- E. ASTM C150/C150M - Standard Specification for Portland Cement; 2016.

1.04 SUBMITTALS

- A. See Special Provisions for submittal procedures.
- B. Product Data: Provide data on joint filler, admixtures, and curing compound.

PART 2 PRODUCTS

2.01 FORM MATERIALS

- A. Wood form material, profiled to suit conditions.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M, Grade 80 (80,000 psi) yield strength; deformed billet steel bars; unfinished.

2.03 CONCRETE MATERIALS

- A. Obtain cementitious materials from same source throughout.
- B. Concrete Materials: Provide in accordance with City of Simi Valley Public Works standards.
- C. Water: Clean, and not detrimental to concrete.

2.04 ACCESSORIES

2.05 CONCRETE MIX DESIGN

- A. Concrete Properties:
 - 1. Compressive strength, when tested in accordance with ASTM C39/C39M at 28 days; 2800 psi.
 - 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
 - 3. Water-Cement Ratio: Maximum 40 percent by weight.
 - 4. Maximum Slump: 3 inches.

2.06 MIXING

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

3.02 SUBBASE

- A. See Section 32 1123 for construction of base course for work of this Section.

3.03 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.

3.04 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.05 REINFORCEMENT

- A. Place reinforcement as indicated.
- B. Place dowels to achieve pavement and curb alignment as detailed.

3.06 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.
- C. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.07 JOINTS

- A. Place 3/8 inch wide expansion joints at approximately 20 foot intervals and to separate paving from vertical surfaces and other components and in pattern indicated.
 - 1. Form joints with joint filler extending from bottom of pavement to within 1/2 inch of finished surface.
- B. Provide tooled joints.
 - 1. At no greater than 10 feet intervals.
 - 2. Between sidewalks and curbs.
 - 3. Between curbs and pavement.

3.08 FINISHING

- A. Sidewalk Paving: Medium broom finish with troweled and radiused edge 1/4 inch radius.

3.09 TOLERANCES

- A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.
- B. Maximum Variation From True Position: 1/4 inch.

3.10 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian traffic over pavement for 7 days minimum after finishing.

END OF SECTION

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**DECORATIVE METAL FENCING
SECTION 32 31 19**

PART 1 - GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the welded ornamental steel fence system defined herein at (Ventura College Child Development Center).

1.02 RELATED WORK

Division 31 - Earthwork

Division 03 - Concrete

1.03 SYSTEM DESCRIPTION

Basis of Design: total fence system of Montage II® **Welded and Rackable** Ornamental Steel Invincible II™ design. The system shall include all fence panel and bracket system components required.

Equivalent fencing panel products submitted for review prior to bid question deadline.

1.04 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.05 REFERENCES

- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- ASTM D523 - Test Method for Specular Gloss.
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
- ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

1.06 SUBMITTAL

The manufacturer's literature shall be submitted prior to installation.

1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

1.08 PRODUCT WARRANTY

A. All structural fence components (i.e. rails, pickets, and posts) shall be warranted within specified limitations, by the manufacturer for a period of 20 years from date of original purchase. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering or corroding.

B. Reimbursement for labor necessary to restore or replace components that have been found to be defective under the terms of manufactures warranty shall be guaranteed for five (5) years from date of original purchase.

PART 2 - MATERIALS

2.01 MANUFACTURER

The fence system shall conform to Montage II® **Welded and Rackable** (ATF – All Terrain Flexibility) Ornamental Steel, Invincible II design, extended picket bottom rail treatment style manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma.

Equivalent fencing panel products submitted for review prior to bid question deadline.

2.02 MATERIAL

A. Steel material for fence panels 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.

B. 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 the drawings.

C. Finishes for fence posts, gate posts, and gates shall be per the drawings.

2.03 FABRICATION

A. Pickets and rails shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.

B. 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. The aligned pickets and rails shall be joined at each picket-to-rail intersection by Ameristar's proprietary fusion welding process, thus completing the rigid panel assembly.

C. The manufactured panels shall be subjected to an inline electrodeposition coating (E-Coat) process consisting of a multi-stage pretreatment/wash, 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).

D. 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.

E. Pedestrian swing gates shall be self-closing, having a gate leaf no larger than 48" width. Integrated hinge-closer set (3 qty) shall be 2022 CBC compliant that shall include a variable speed and final snap adjustment with compact

design (no greater than 5" x 6" footprint). Hinge-closer set (3 qty) shall be tested to a minimum of 500,000 cycles and capable of self-closing gates up to a maximum gate weight of 260 lbs. and maximum weight load capacity of 1,500 lbs. Hinge-closer device shall be externally mounted with tamper-resistant security fasteners, with full range of adjustability, horizontal (.5" - 1.375") and vertical (0 - .5"). Maintenance free hinge-closer set shall be tested to operate in temperatures of negative 20 F to 200 F degrees, and swings to negative 2 degrees to ensure reliable final lock engagement.

Table 2 – Coating Performance Requirements		
<u>Quality Characteristics</u>	<u>ASTM Test Method</u>	<u>Performance Requirements</u>
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 1,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822 D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

Table 3 – Montage II – Post Spacing By Bracket Type				
Span	For INVINCIBLE® 8' Nominal (91-1/2" Rail)			
Post Size		4"		4"
Bracket Type	Industrial Flat Mount (BB301)*		Industrial Line 2-1/2" (BB319) 3" (BB320)	
Post Settings ± 1/2" O.C.		96"***		96"***
<p>*Note: When using BB304 swivel brackets on either or both ends of a panel installation, care must be taken to ensure the spacing between post and adjoining pickets meets applicable codes. This will require trimming one or both ends of the panel. When using the BB301 flat mount bracket for Invincible style, rail may need to be drilled to accommodate rail to bracket attachment.</p> <p>**Note: Field verify with 4x4 posts called out on proposed site plan.</p>				

PART 3 EXECUTION

3.01 Inspection

- A. Inspection – Examine the areas and conditions under which gate items are to be installed, and correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

- A. Preparation – Follow manufacturer’s recommendations for installation preparations. Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorage, such as steel column, welded angle, and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate delivery of such items to project site. Verify the gate posts are plumb and gate moves freely.

- B. Review District As Builts for utilities. Notify District of potential utility conflicts prior to excavation. Where utilities are known to be within 3 ft of fencing, hand trenching shall be required in lieu of mechanical trenchers.

3.03 Gate Swing

- A. Verify the gate posts are plum and gate operates freely.
- B. Perform any required maintenance before continuing.
- C. Verify gate swing direction and layout for each gate on site with District representative prior to fabrication. Gates shall open to the full 180 degree position and shall stage in the open position directly adjacent the next fence panel. Gates shall not obstruct the path of travel in anyway while in open position.
- D. Gates receiving panic bars shall have perforated metal panel sheets of same color installed (welded) on both adjacent fence panels to avoid intruders reaching through fence to open gate.

3.04 Fencing Installation

- A. Fastening to In-Place Construction -- Provide anchorage devices and fasteners as required by drawings for securing miscellaneous metal fabrications to in-place construction.
- B. Install system in strict accordance with manufacturer's instructions.
- C. Contractor to arrange fence posts to maximize clearance between fence posts and existing trees. Contractor to use care when digging footings for fence posts to avoid damage to existing tree trunks and roots.
- D. Fence locations and mowcurb shall generally be parallel to existing walks, and hardscape. Install mowcurbs under fencing so that the curb runs directly adjacent existing hardscape improvements.
- E. Cutting, Fitting, and Placement
 1. Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications.
 2. Set work accurately in location, alignment, and elevation, and make plumb, level, true and free from rack, measured from established lines and levels.
 3. Provide temporary bracing or anchors in formwork for items, which are to be built into concrete or similar construction.
 4. Fit exposed connections accurately together to form tight hairline joints.
 5. Weld connections, which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. 6.Grind exposed joints smooth, and touch up shop paint coat or galvanizing. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
 6. Additional Plate Paneling. Plates shall be parallel with ground plane and protect any sharp protruding objects from fencing. Color shall match rest of fencing. Touch up color on welds and connections.
 7. Perforated Paneling. New fencing around utility areas such as backflow preventors, gas meters, etc shall receive perforated metal sheet panels fastened to the fence

panels. Perforated panels shall be welded in place at a minimum of 18" O.C. or as otherwise approved.

F. Touch-Up Painting

1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply or brush or spray to provide minimum dry film thickness of 0.051 mm (2.0 mils).
2. At all galvanized products, clean all damaged areas and re-coat using specified galvanizing coating per manufacturer's criteria.

3.05 Instructions

- A. Provide operation instructions to District to insure complete understanding of operations.

3.06 Irrigation Conflicts

- A. Contractor shall anticipate having to adjust irrigation pop-up rotors and laterals in locations where fencing is installed along edges of grass planters. All existing heads in conflict with new fencing and mowcurb improvements shall be relocated to new edge of grass planter as part of bid cost for fencing improvements.

3.07 Warranty

- A. Provide the manufacturer's listed warranty for fence materials, finishes, and workmanship.
- B. Contractor shall provide their own separate 1 year minimum warranty for installation.

END OF SECTION