

**SEACLIFF VILLIAGE PARK**  
**PRE-FABRICATED RESTROOM INSTALLATION**

**PROJECT #19C1-003**

**TECHNICAL SPECIFICATIONS**

**Volume II of III**

**COUNTY OF SANTA CRUZ, CALIFORNIA**  
**GENERAL SERVICES DEPARTMENT**  
**April 28, 2020**

PROPOSALS DUE: May 26, 2020 – 2:30 P.M.  
PROJECT NO: #19C1-003

PRE-BID CONFERENCE:  
May 12, 2020, 10:00 A.M.  
Seacliff Village Park  
120 Canterbury Dr, Seacliff, CA 95003

VOLUME I: General and Supplemental Conditions  
VOLUME II: Technical Specifications  
VOLUME III: Bid Proposal

For use in connection with Santa Cruz County standards and the 2019 California Building Code.

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**SECTION 01 10 00 - SUMMARY OF WORK**

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Abbreviated written summary / scope of work: Briefly and without force and effect upon the Contract Documents, the work of the Contract can be summarized to include as follows:
  - 1. Selective Demolition and Site Preparation
  - 2. Earthwork and Drainage
  - 3. Site Utilities
  - 4. Site Improvements including, but not limited to: Pre-fabricated restroom building and concrete pavements.
  
- B. Related sections:
  - 1. Drawings, Volumes I - III, including General Conditions and Special Conditions, and the technical specifications apply to this section.

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. Refer to SECTION 01 42 00 – REFERENCES.

1.03 PROJECT LOCATION

- A. The project is located at the corner of Canterbury Drive and McGregor Drive in Aptos, California.

1.04 CONTRACT DOCUMENTS

- A. The general nature and extent of the work and the appurtenant facilities are shown on the Drawings under the title: Seacliff Village Park Restroom Building Construction Document Set.
  
- B. Perform work within the Limit of Work line that may be indicated on the Drawings and per the discretion of the Owner.

1.05 DRAWINGS

- A. Drawings such as utility and irrigation plans, etc., are essentially diagrammatic. Actual runs indicated on the Drawings shall be followed as closely as coordination with the work of other trades will permit. The exact routing of such improvements and locations of equipment shall be governed by site conditions, obstructions and locations of other utilities as acceptable to the Owner.
  
- B. In the event that discrepancies arise over dimensions, product references, omissions, or written statements, these conflicts shall be immediately brought to

the Owner's attention by the Contractor. If available, this may be accomplished with the use of a "Request for Information" (RFI) form. While awaiting direction or clarification from the Owner, the Contractor shall re-direct work as necessary so as not to cause delay to the project.

- C. If discrepancies arise between plans, details, specifications, addenda or any other portion of the Contract Documents, these conflicts shall be immediately brought to the Owner's attention by the Contractor. If available, this may be accomplished with the use of a "Request for Information" (RFI) form. While awaiting direction or clarification from the Owner, the Contractor shall re-direct work as necessary so as not to cause delay to the project.
- D. Products, materials, labor, etc., installed or performed without proper clarification, or prior to Owner acceptance shall be the Contractor's sole responsibility and shall be removed, repaired, replaced, and/or reinstalled per the Owner's direction at no additional cost to the Owner or its agents.

#### 1.06 CONTRACTOR'S DUTIES

- A. Provide and pay for:
  - 1. Labor, materials, equipment, tools, construction equipment machinery and all other facilities and services necessary for proper execution and completion of the Contract.
  - 2. Water and temporary utilities required for proper execution and completion of the Contract excluding any metering and connection fees or charges.
    - a. Subject to the discretion of the Owners Representative (Contractor to verify), utilities that are in place and/or are in use by the Owner at the site (excluding telephone) may be utilized by the Contractor, to the extent available, at no cost.
  - 3. Other facilities and services necessary for proper execution and completion of the Contract to provide a facility capable of operation.
  - 4. Legally required sales, consumer and use taxes.
- B. Permits:
  - 1. The Owner shall obtain and pay for (if required) the building permit.
  - 2. The Contractor shall obtain and pay for other permits required by County and other agencies, including but not limited to business licenses, Winter Grading Permit, Traffic Control Plan, hauling & dumping permits and demolition authorization from the Monterey Bay Unified Air Pollution Control District as applicable.
    - a. Winter Grading Permit will be required if the project grading activity is not completed by October 15, 2020.
    - b. The project is covered by a SWPPP Small Construction Activity Waiver, with a Notice of Coverage date of Oct. 15. Any extension or new SWPPP required because the project NOC extends past Oct. 15 will be the sole responsibility of the Contractor. Refer to Vol. I Supplemental Conditions 5.F for more information.
  - 3. The provisions of all required permits and licenses, whether obtained by the Owner's Representative or the Contractor, shall become a part of the Contract Documents and shall be adhered to by the Contractor.

**SUMMARY OF WORK 01 10 00**

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- C. Comply with latest adopted edition of the governing building code and other codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of the work. Nothing in the Contract Documents shall be construed or understood to permit work not conforming to these applicable laws, ordinances, rules and regulations. In case of conflicts between code requirements, the most restrictive shall apply. The only exception being that where the requirements of these Specifications exceed code requirements, these Specifications shall govern.
- D. Attend prescheduled weekly on-site job conference meetings and/or any special meetings as may be required by the Owner's Representative.
- E. Promptly submit written notice to the Owner's Representative of any observed variance in Contract Documents from legal requirements. Appropriate modifications to the Contract Documents will be made by the Owner's Representative to incorporate such necessary modifications upon proper notice.
  - 1. Contractor shall assume responsibility for all work performed and known to be contrary to such requirements.
- F. Contractor shall enforce strict discipline and good order between the Contractor's or Sub-Contractors employees per the discretion of the Owner's Representative.
- G. Prior to bidding, the Contractor shall visit the site to become familiar with existing conditions and the requirements of the work.
- H. The Contractor shall be held to have examined the site and to have compared it with the Drawings and Specifications, to have carefully examined all of the Contract Documents and to be satisfied as to the conditions under which the work is to be performed before entering in this Contract. No allowance shall subsequently be made on behalf of the Contractor on account of an error on Contractors part or negligence or failure to be acquainted with the conditions of the site.

All discrepancies found by the Contractor shall be brought to the attention of the Owner's Representative prior to bid date.
- I. Examine the site and verify that site conditions are acceptable to begin any work. Verify that work specified elsewhere has been completed to an appropriate stage to begin any applicable work. This may include, but is not limited to: sleeves, utilities, lines, grades and surfaces prepared by others. Notify the Owner's Representative in writing of any irregularities or unacceptable conditions. Start of work by Contractor shall indicate Contractor's acceptance of site conditions.
- J. For the duration of the Contract, the Contractor shall be responsible for the general safety of the public. The Contractor shall take appropriate means at no extra cost to Owner to provide a safe and secure job site to the satisfaction of the Owner's Representative.
- K. Verify all measurements, materials and systems taken from the Contract

Documents. Contractor shall be responsible for all investigations, field measurements, layouts and coordination necessary to properly fit, install and complete the work required. This shall include the integration of new work into and with existing work or improvements.

- L. Contractor shall deliver, receive, store, protect, install and apply all materials in accordance with manufacturer's and/or industry specifications and instructions unless specifically modified and shown otherwise in the Contract Documents. All installations shall be tight, smooth, level, straight, true to line, and secure.

#### 1.07 PROTECTION OF PROPERTY, MATERIALS AND WORK

- A. Contractor shall be held responsible insofar as his operations are concerned for the care, protection and preservation of all adjoining premises, buildings, trees, landscaping, utilities, walks, streets and adjacent properties from damage resulting from or incidental to this Contract.
- B. Protect all existing structures, planted areas and improvements not designated for removal. Any damage to existing structures including asphalt paving, utilities, and fixtures shall be replaced to an "as was" or better condition, at Contractor's expense, per the direction and satisfaction of the Owner's Representative.
- C. All materials and equipment, both before and after installation, shall be properly protected by the Contractor from the weather and other hazards and kept in a clean and orderly condition.
- D. All utility piping, conduit stub-outs and other parts or equipment left un-connected shall be capped, plugged or otherwise properly protected by the Contractor to prevent damage or the intrusion of dirt or other foreign matter.
- E. Materials and equipment damaged or containing defects developed before acceptance of the work shall be replaced with new at the Contractor's expense.
- F. All new-planted areas shall be fenced off or protected during plant establishment and specified Landscape Maintenance Period(s) subject to the discretion of the Owner's Representative.

#### 1.08 WORK SEQUENCE/SCHEDULE

- A. The sequence and scheduling of the work to be performed by the Contractor shall be subject to review and acceptance by the Owner's Representative. The Contractor shall submit a Progress Schedule in accordance with SECTION 01 33 00 – Submittals prior to starting work. Schedule format shall contain critical path method (CPM) information such as milestones, task bars and critical path arrow sequencing for all construction activities, and not just bar (Gnatt) chart information. The schedule shall be organized into sections which correspond directly to the sections set forth in the Cost Breakdown of Contract Sum. Contractor shall submit revised schedules on a monthly basis at a minimum or as requested by the Owner's Representative. Recovery Schedules may be requested at anytime if the project fails to meet projected or actual deadlines and/or completion dates.

**1.09 CONTRACTOR'S USE OF PREMISES**

- A. Confine operations to areas immediately within the proposed project sites.
  - 1. Develop and utilize construction access and haul routes as per the rules and regulations pertaining to the locale in which the work is to be performed and per the discretion of the Owner's Representative.
  - 2. Do not encumber site with materials or equipment.
- B. Limit use of premises for work and construction operations to allow for work by other Contractors.
  - 1. Conduct operations so as not to cause unnecessary delay or hindrance to other Contractors.
  - 2. Conduct, adjust, correct, and coordinate work with others to prevent project discrepancies and/or delays.
- C. Assume full responsibility for protection and safekeeping of products stored on premises and work performed until Final Acceptance of the work.
- D. Move stored products under Contractor's control that interfere with operations of the Owner as necessary and at no additional cost to the Owner.
- E. Obtain and pay for use of additional storage or work areas needed for construction operations.

**1.10 WORK HOURS AND WORK DURING ONGOING ACTIVITIES**

- A. The Contractor shall carry on the work as quietly as possible to prevent any annoyance to adjacent persons or properties. Avoid unnecessary noise at all times. Comply with all local noise regulations or requirements. Construction shall be limited to weekdays, between the hours of 8:00 AM and 5:00 PM. No work, delivery of equipment or materials shall take place between the hours of 5:00 PM and 8:00 AM or during non-working hours/days without written authorization by the Owner's Representative.
- B. When connecting new utilities to existing or similar operations, the Contractor shall coordinate with the Owner's Representative, facility operators and applicable utility companies such operations to minimize interference with existing activities and operations.

**1.11 MATERIALS**

- A. All materials and equipment used in the work herein specified shall be in new, first class condition (unless otherwise noted or scheduled), suited to the intended use.
- B. Materials shall be delivered to the site and stored in original containers sheltered from the elements, but readily accessible for inspection by the Owner's Representative until installed.
- C. Materials of the same general type shall be of the same make and quality

throughout the work to provide uniform appearance, operation and maintenance ease.

- D. Equipment specified by manufacturer's number shall include all accessories, controls, etc., listed in catalog as standard equipment. Furnish optional or additional accessories as specified.
- E. Where no specified make of material or equipment is specified, any product by a reputable manufacturer which conform to the requirements of the Construction Documents may be used with the Owner's Representative's acceptance.
- F. Materials and equipment shall be current products by manufacturers regularly engaged in the production of such products.
  - 1. All equipment items shall be supported by service organizations that are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the Specified Warranty Period.

#### 1.12 NUISANCE WATER

- A. The Contractor shall protect the work at all times from damage and shall take measures to prevent delays in the progress of the work caused by nuisance water, such as rainfall, irrigation water, coastal tide and groundwater.
- B. The Contractor shall divert and/or dispose of nuisance water using appropriate mechanical means at their sole expense and without adverse effects upon the Owner's or any other property.
- C. The Contractor shall make bid allowance for and comply with any and all applicable non-point source pollution regulations required by the Owner and/or applicable governing agencies.

#### 1.13 COORDINATION

- A. The Contractor shall coordinate all items of work to assure efficient and orderly sequence of installation of construction elements.
  - 1. The Contractor shall make provisions for accommodating items installed by the Owner or under separate contracts.
  - 2. The Contractor shall coordinate and cooperate fully with all other agencies, sub-Contractors or utility company personnel furnishing labor, materials or services, so that the work, as a whole, shall be executed in the most efficient manner and without conflict or delay.
- B. The Contractor shall verify that characteristics of interrelated operating equipment are compatible and coordinate work having interdependent responsibilities for installing of mechanical, irrigation or electrical work that may be indicated diagrammatically on Drawings.
- C. The Contractor shall coordinate space requirements and installation of work that is indicated diagrammatically on Drawings.



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1. Follow routing shown for pipes, and conduits as closely as possible, run lines parallel with lines of construction edges whenever possible.
  2. Utilize spaces efficiently for other installations, for maintenance and for repairs.
  3. Work out all conditions involving work of all trades in advance of installation. If necessary and before work proceeds in areas with constricted clearances, prepare supplementary drawings for Owner's Representative review, showing all work in "tight" areas. Provide supplementary drawings and additional work necessary to overcome spatially constricted conditions.
- D. Differences or disputes concerning coordination, interference or extent of work between divisions shall be brought to the attention of the Owner's Representative.
- E. Access Service Requirements:
1. Coordinate access service requirements with each trade installing work to which access must be available to the Owner's Representative.

### 1.14 CUTTING AND PATCHING

- A. Contractor shall be responsible for all cutting, fitting or patching of work which may be required to make its several parts come together properly and fix it to receive or be received by work of other trades.
- B. Any cost caused by defective or poorly timed work shall be borne by the responsible party, as determined by the Owner's Representative. Contractor shall not endanger any work, persons or construction by cutting, digging, or otherwise and shall not alter the work of any other Contractor except as acceptable to the Owner's Representative.
- C. Patching of all openings for new installations and all openings resulting from the removal or relocation of any installations shall be done with material of the same type adjoining openings and as acceptable to the Owner's Representative.

### 1.15 CLEANING DURING CONSTRUCTION

- A. Execute weekly cleaning operations to keep the work, site, streets and adjacent properties free from accumulations of waste materials, rubbish and windblown debris resulting from construction operations.
1. The Owner's Representative may, at any time during construction, order general cleanup of the site by the Contractor at no additional cost to the Owner.
- B. Provide onsite containers for the collection of waste materials, debris and rubbish.
- C. Remove hazardous waste materials, debris and rubbish from the site periodically and properly dispose of such materials at legal disposal areas.
1. Location of legal disposal sites and all costs incurred from waste disposal and transportation shall be the responsibility of the Contractor.
  2. Waste material or debris shall not be buried or burned on the site.

1.16 PROJECT COMPLETION

- A. Conform to SECTION 01 77 00 – CONTRACT CLOSEOUT.
- B. The Contractor shall, at completion of the project, leave all work installed properly operating and in a thoroughly clean condition.
- C. Thoroughly instruct the Owner’s Representative and any applicable operation and maintenance personnel in the contents of the “operations and maintenance manual”. Refer to SECTION 01 33 00 – SUBMITTALS.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION – NOT USED**

**END OF SECTION 01 10 00**

**SECTION 01 25 00**  
**PRODUCT OPTIONS AND SUBSTITUTIONS**

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Scope of work:
  - 1. Wherever in the Contract Documents a material, article, or process is indicated or specified by trade, patent, proprietary name, or name of manufacturer, such specification shall be deemed to be followed by the words, "or equal, as accepted in writing by the Owners Representative". Refer to "1.03 Substitutions" below.
  - 2. The naming of more than one manufacturer in a section does not imply that all products produced by such manufacturers are acceptable for use on the project. Where more than one proprietary name, process, product, etc. is specified, the Contractor may provide materials or equipment of any one of the manufacturers specified, only if full compliance with other portions of the Contract Documents can be provided and the product is acceptable to the Owners Representative.
  
- B. Related sections can include, but may not be limited to the following:
  - 1. SECTION 01 33 00 – SUBMITTALS
  - 2. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

1.02 MATERIALS

- A. Unless otherwise specifically provided in the Contract Documents, all equipment, material and articles incorporated into the work shall be new and suitable for the purposes intended.
  
- B. Reference to any equipment, material, article or patented process, by trade name or catalog number shall not be construed as limiting competition. Specifications designating a material, product, or service by specific brand or trade name, with only one name listed may occur due to the fact that the product(s):
  - 1. Involve a unique or novel product application required to be used in the public interest
  - 2. Are to be used as a standard of quality, which must be satisfied without compromise
  - 3. Are the only brand or trade name known to the specifying agency

1.03 SUBSTITUTIONS

- A. Materials and equipment for the work shall be the standard product of a manufacturer regularly engaged in the production of such materials and equipment. Product options or substitutions shall not be the basis for any price increase above the original bid price for the Contract.

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- B. Substitutions which are equal in quality, efficiency, durability and utility to those specified will be permitted, subject to the following provisions:
1. All substitutions must be favorably reviewed and accepted by the Owners Representative in writing prior to implementation.
- C. **For products list priced at five thousand dollars (\$5,000.00) or more:**  
Submit to the Owners Representative, **no less than seven (7) working days prior to bid date**, a typewritten list containing a thorough side-by-side description of each proposed substitute item or material compared with the specified item as specified in SECTION 01 33 00. If the product substitution is approved by the Owners Representative, an addendum will be issued to all prospective Bidders on the plan holder's list notifying them of said substitution approval.
- For products list priced at less than five thousand dollars (\$5,000.00):**  
Submit to the Owners Representative, **no later than fifteen (15) working days after the date of Notice To Proceed**, a typewritten list containing a thorough side-by-side description of each proposed substitute item or material compared with the specified item as specified in SECTION 01 33 00.
1. Provide sufficient data, drawings, samples, literature and other detailed information that demonstrates to the Owners Representative that the proposed substitute is equal in quality, operating efficiency and durability of the material specified.
- D. The Owners Representative shall review such proposed substitutions and determine if a substitution is acceptable.
- E. Favorable review shall not relieve the Contractor from complying with the requirements of the Contract Documents and the Contractor shall be responsible for all expenses for any changes resulting from acceptable substitutions that affect other parts of the work.
- F. Failure of the Contractor to submit proposed substitutions for review in the manner specified shall be sufficient cause for rejection by the Owners Representative of any substitutions otherwise proposed.
- G. Failure to place orders for specified equipment or material sufficiently in advance of the scheduled date of installation shall not be considered a valid reason upon which the Contractor may base a request for any substitutions, delay claims or any deviations from the Contract Documents.
- H. The first or only named manufacturer is the basis for the project design and the use of alternative-names, second-names, or unnamed manufacturer's products may require modifications in the project design and construction.
1. Costs incurred due to requests, changes or revisions resulting from substitutions requiring drawings or services of the Owners Representative or project consultants to facilitate purchase, installation or erection of any portion of the work, shall be borne by the Contractor. A flat hourly rate,

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as agreed upon, shall be paid by the Contractor whether the change is accepted or not. This fee shall be deducted and paid from Contract moneys due to the contractor as determined by the Owners Representative.

- I. Contractor shall furnish full information concerning the material or articles being proposed for substitution.
  - 1. Testing of a proposed substitute material to assure compliance with the Specifications may be required by the Owners Representative at the Contractor's expense.
  - 2. Samples shall be submitted for review as specified in SECTION 01 33 00.
  - 3. Equipment, material and articles installed or used by the Contractor without required review, shall be at the Contractor's risk.
  
- J. Substitutions shall comply with or exceed all requirements of size, function, structure, durability and appearance without exception.
  - 1. Use of accepted substitutions shall in no way relieve the Contractor from responsibility for compliance with the Contract Documents after installation.
  - 2. The Contractor shall assume all extra costs caused by the use of such substitutions where they affect other work or trades.

**1.04 SUBSTITUTION REQUEST FORM**

- A. All requests for alternate materials or substitutions shall be submitted on the attached Substitution Request Form with descriptive information outlining the equivalent characteristics of the alternate product or material.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION**

**3.01 SUBSTITUTION REQUEST FORM**

- A. For all proposed substitutions, the Contractor shall complete the attached Substitution Request Form, attach all substantiating back-up literature and submit to the Owners Representative within time limit specified above.

**END OF SECTION 01 25 00**

ATTACHMENT: Substitution Request Form

**SUBSTITUTION REQUEST FORM**

DATE:

TO: Santa Cruz County Department of Parks, Open Space & Cultural Services  
Attn: Will Fourn  
979 17<sup>th</sup> Ave.  
Santa Cruz, CA 95062-4170

PROJECT: Seacliff Village Park Restroom Building Project

SPECIFIED ITEM: Section \_\_\_\_\_ Page \_\_\_\_\_ Item Number \_\_\_\_\_ Paragraph

DESCRIPTION:

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: (put N/A where not appropriate)

Manufacturer: \_\_\_\_\_ Color:

Model Number: \_\_\_\_\_ Material:

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the requests; applicable portions of the data are clearly identified.

Attached data also includes description of changes to Contract Documents, which the proposed substitution requires for proper installation.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown in the Contract Documents. If, in fact the substitution does affect dimensions, the Contractor

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shall provide shop drawings that accurately show all required changes to the Contract Documents.

2. The undersigned shall pay for changes to the design, including engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution shall not adversely affect other trades, construction schedule or specified warranty requirements.
4. Maintenance and service parts are locally available for the proposed substitution.

The Contractor undersigned further states that the function, appearance and quality of the proposed substitution are equivalent or superior to the specified item.

Submitted by:

Signature: \_\_\_\_\_ Title: \_\_\_\_\_

License Category: \_\_\_\_\_ License Number:  
\_\_\_\_\_

Firm: \_\_\_\_\_ Phone No.:  
\_\_\_\_\_

Address: \_\_\_\_\_ Fax  
No.: \_\_\_\_\_

Telephone: \_\_\_\_\_

**OWNERS REPRESENTATIVES REVIEW:**

\* NO EXCEPTIONS TAKEN    \* EXCEPTIONS TAKEN (SEE ATTACHED COMMENTS)

\* FURNISH AS CORRECTED    \* REVISE AND RESUBMIT

By: \_\_\_\_\_

Date: \_\_\_\_\_

Comments:

## **SECTION 01 33 00 - SUBMITTALS**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Scope of work:  
Contractor shall prepare and transmit a submittal or shop drawing for every product to be furnished on the project. Minor components may be excluded per the discretion of the Owners Representative. Submit all items as specified herein and as may be noted elsewhere in the Contract Documents.
- B. Related sections:
  - 1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

#### **1.02 SCHEDULE OF SUBMITTALS**

- A. Within ten (10) working days from date of Notice To Proceed, the Contractor shall submit to the Owner Representative a comprehensive list of all submittals (Submittal Schedule) and the Progress Schedule (refer to SECTION 01 10 00 – SUMMARY OF WORK) for review and acceptance.
- B. Upon acceptance by the Owners Representative, the list and Progress Schedule shall become part of the Contract Documents. **All project submittals shall be submitted to the Owners Representative within twenty (20) working days from the date of the Notice to Proceed unless noted otherwise.**
- C. Coordinate the Progress Schedule with all sub-contractors, material suppliers, etc. to ensure adherence to the schedule.
- D. Revise and update the Progress Schedule on a monthly basis to reflect on-going construction conditions and sequences.
- E. Submit one copy of the Progress Schedule monthly to the Owners Representative showing all revisions for review and comment. Coordinate this submittal with Progress Payment requests or as acceptable to the Owners Representative.
- F. Closeout Submittals: All submittals noted as Project Closeout submittals shall be furnished to the Owner's Representative for review and acceptance prior to issuance of the Project Acceptance.

#### **1.03 IDENTIFICATION OF SUBMITTALS**

- A. Identify each submittal with the following information:
  - 1. Date and revision dates
  - 2. Project title and number
  - 3. The names of:
    - a. Sub-contractor



- b. Supplier
- c. Manufacturer
- d. Separate detailer when pertinent
4. Identifications of product or material
5. Applicable standards
6. Identification of deviations from Contract Documents
7. Contractor's stamp, initialed or signed, certifying review of submittal, verification of field measurements and compliance with the Contract Documents.

## **PART 2 - PRODUCTS**

### **2.01 PRODUCT LITERATURE**

- A. Submit four (4) copies of the manufacturer's printed data and instructions to the Owners Representative for review. Two (2) copies shall be to be returned to the Contractor and two (2) copies shall be retained by the Owners Representative.
- B. Clearly indicate, by colored highlight or colored stamp (USING A COLOR THAT WILL PHOTOCOPY), which portion of the literature is submitted to be reviewed for compliance with the Contract Documents.

### **2.02 SHOP DRAWINGS**

- A. Shop drawings shall be drawn accurately to a scale sufficiently large to depict all aspect of the items and its methods of connection to the work. Submit shop drawings to the Owners Representative in the quantity specified in "PRODUCT LITERATURE" above.
- B. Review of the shop drawings by the Owners Representative shall not relieve the Contractor of the responsibility for errors and/or omissions in the design of adequate connections or satisfactory construction of the work or conformance to applicable codes etc.
- C. Clearly indicate, by colored highlight or colored stamp (USING A COLOR THAT WILL PHOTOCOPY), the desired deviations from the Drawings (as applicable).

### **2.03 SAMPLES**

- A. Samples shall be of the actual article(s) to be furnished.
- B. Submit four (4) samples to the Owners Representative for review. Two (2) samples shall be returned to the Contractor and two (2) shall be retained by the Owners Representative.
- C. When specifically acceptable to the Owners Representative the returned sample(s) may be used in the work as an installed item.
- D. Construct the work or re-submit in accordance with the Owners Representative's review.

**2.04 COLORS AND PATTERNS**

- A. As required in related sections of these Specifications, submit actual color chips of specified colors and patterns as applicable to the actual material proposed for use in the work. Submit quantity as noted in "SAMPLES" above.

**2.05 MANUALS**

- A. Submit four (4) copies of all required manuals.
- B. Unless specified elsewhere, all manuals shall be bound in identical plastic binders approximately 8.5" x 11" in size and shall contain at least the following:
  - 1. Label on the front cover and binding edge stating general nature of the manual
  - 2. Neatly typed table of contents
  - 3. Complete instructions regarding operation and maintenance of all equipment to be furnished as part of the work
  - 4. Complete list of replaceable parts with part numbers and name and address of nearest supplier
  - 5. Copies of all guarantees and warranties issued
  - 6. Copies of reviewed shop drawings
  - 7. Photographs of exposed work before final covering, if required by the Owners Representative
- C. When the manual includes manufacturer's catalog "cut-sheets", clearly indicate the actual items installed in the project.

**PART 3 - EXECUTION****3.01 SUBMITTAL ORGANIZATION**

- A. Contractor shall prepare and transmit a submittal or shop drawing for every product to be furnished on the project. Minor components may be excluded per the discretion of the Owners Representative. Submit all items as specified herein and as may be noted elsewhere in the Contract Documents.
- B. Unless otherwise directed by the Owners Representative, organize all submittals in categories by specification section number from which the submittal was requested and submit all at one time in format as described in "MANUALS" above.
- C. Owners Representative reserves the right to reject incomplete or partial submittals.

**3.02 SUBMITTAL REVIEW**

- A. Contractor shall sign or stamp all submittals as verification that the submittal complies with the Contract Documents.
- B. The Owners Representative shall review all submittals and respond with one of the following markings:

1. No Exceptions Taken
  2. Exceptions Taken (See attached comments)
  3. Furnish as Corrected
  4. Revise and Resubmit
- C. The Owners Representative's review of submittals shall not relieve the Contractor from responsibility for deviations from the Constructions Documents unless the contractor has called the Owner Representative's attention to such deviations and secured written acceptance, nor shall it relieve the Contractor from the responsibility for errors and/or omissions in shop drawings or other data.

### 3.03 RESUBMITTAL REQUIREMENTS

- A. General:
1. The Contractor shall make all submittals in advance of scheduled dates of installation to provide ample time for Owners Representative's review, for possible revision and re-submittal, placing orders, necessary delivery lead times and for delivery to project site.
  1. In scheduling, the Contractor shall allow at least ten full working days for the Owner Representative's review following receipt of the submittal. If a submittal is time sensitive, the Contractor shall clearly indicate this on the submittal and the Owners Representative shall make all reasonable effort to review the submittal and respond by the time it is needed.
- B. Financial impact of delays due to Contractor's tardiness of submittals will be back-charged as necessary to the Contractor and shall not be at the temporal or financial expense of the Owner.

**END OF SECTION 01 33 00**

## **SECTION 01 40 00 – QUALITY CONTROL**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Materials furnished and work performed under the Contract shall be subject to review by the Owners Representative. The Contractor shall be held strictly to the requirements of the Contract Documents with regard to quality of materials, workmanship and diligent execution of the Contract. Such review may include mill, plant, shop, or field review as deemed necessary.
  
- B. Scope of work:
  - 1. Work performed in the absence of any prescribed inspection or observation may be subject to removal and replacement. In such a case, the entire cost of removal and replacement shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not.
  - 2. Testing, inspection, or other related services shall be performed by an independent consultant, testing laboratory or services selected by the Owners Representative.
  - 3. Furnish labor necessary to obtain and handle testing samples at the project site or at other locations.
  
- C. Related sections can include, but may not be limited to the following:
  - 1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

#### **1.02 REFERENCES AND REGULATORY REQUIREMENTS**

- A. Control of Work: Conform to Section 5 of the State Standard Specifications.
  
- B. Control of Materials: Conform to Section 6 of the State Standard Specifications.

### **PART 2 - PRODUCTS**

#### **2.01 INSPECTION AND TESTS:**

- A. Inspections, observations and/or testing that may be required by the Contract Documents during progress of the work shall be made by a pre-qualified, independent testing agency selected and paid for by the Owners. When tests indicate non-compliance, the Contractor shall pay all direct and indirect costs of subsequent re-testing until compliance is established.
  
- B. Costs associated with testing, inspections and observations due to the following shall be the responsibility of the Contractor:
  - 1. Re-testing due to failure of initial samples
  - 2. Unacceptable changes in sources, lots, or suppliers of materials after

3. original testing established compliance  
Changes in methods or materials of construction by contractor that require testing, inspection or other related services in excess of that require by original design
4. Failure to properly notify the Owners Representative at critical stages of construction
5. Requesting testing, inspection, and/or observation of work not ready

## 2.02 TOLERANCES

- A. Tolerances not specifically identified shall meet the written standards and/or recognized commercial tolerances established for the specific materials or product. Refer to SECTION 01 42 00 - REFERENCES.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION OF CONDITIONS

- A. Prior to installing any portion of the work, the Contractor shall examine the site and verify that site conditions are acceptable to begin work of each section.
- B. Verify that work specified elsewhere has been completed to an appropriate stage to begin work of each section.
- C. Materials or products requiring installation under the supervision or inspection of a specific materials manufacturer or manufacturer's representative shall be examined and/or tested and accepted in writing, by such representative(s) prior to installation of work.
- D. Notify the Owners Representative immediately in writing of any irregularities or unacceptable conditions and re-direct work to avoid delay.
- E. Start of work by Contractor shall indicate Contractor's acceptance of site conditions.

**END OF SECTION 01 40 00**

**SECTION 01 42 00 – REFERENCES**

**PART 1 – GENERAL**

1.01 SUMMARY

- A. This section covers abbreviations, definitions and the general requirements for regulatory requirements pertaining to the work. This section shall be supplementary to all other abbreviations, definitions and regulatory requirements mentioned or references elsewhere in the Contract Documents.
- B. Scope of work:
  - 1. Reference Standards
  - 2. Abbreviations
  - 3. Definitions
- C. Related sections can include, but may not be limited to the following:
  - 1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- 1. Refer to latest editions of the references stated herein.
- 2. Work shall comply with the requirements of all applicable codes, laws, rules, regulations, and standards of applicable code enforcing authorities. Nothing in the Contract Documents shall be constructed to permit work not conforming to the applicable laws, ordinances, rules and regulations. In case of conflicts between code requirements, the most restrictive shall apply; except that where the requirements of these Specifications exceed code requirements, the Specifications shall govern. The following codes and specifications, listed not by way of limitation, are hereby referenced and considered part of these Contract Documents.
- 3. State Standard Specifications: Standard Specifications, State of California, Department of Transportation (Cal-trans) latest edition.
- 4. Uniform Building Code.
- 5. Uniform Mechanical Code.
- 6. Uniform Plumbing Code.
- G. Uniform Fire Code.
- H. Uniform and National Electrical Codes.
- I. American Society for Testing and Materials.

- J. American Association of State Highway and Traffic Officials.
- K. California Administrative Code (Title 8, 19, 22, and 24).
- L. California Building Code.
- M. International Conference of Building Officials.
- N. National Electrical Code (NEC) (NFPA-70, 2020 Edition) ANSI-C1.
- O. National Fire Protection Association.
- P. Occupational Safety and Health (ACT) Standards.
- Q. Other statutes, ordinances, laws, regulations, rules, orders and codes specified in other sections of the Specifications or bearing on the work.
- R. State and Local Public Health Codes.
- S. State Fire Marshall.
- T. Safety Orders of Division of Industrial Safety.
- U. State of California Public Utilities Commission.
- V. State of California Electrical Code (SEC).
- W. State of California Low Voltage Electrical Safety Orders (CAL/OSHA).
- X. Americans with Disabilities Act (ADA).
- Y. Consumer Products Safety Commission Guidelines (CPSC).
- Z. Santa Cruz County Design Criteria 2019

1.03 ABBREVIATIONS

Abbreviations for numerous common references, terms and materials used throughout the specifications include:

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturers Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Traffic Officials.
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
AEIC	Association of Edison Illuminating Companies
AFI	Air Filter Institute
AIA	American Institute of Architects
AIEEE	American Institute of Electrical and Electronic Engineers

**REFERENCES 01 42 00**

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AISC	American Institute of Steel Construction
AJCHN	American Joint Committee on Horticultural Nomenclature
AMCA	Air Moving and Conditioning Association
ANSI	American National Standard Institute
APA	American Plywood Association
APWA	American Public Works Association
ARI	American Refrigeration Institute
AHSRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BC	Bottom of Curb
BFP	Backflow Preventer
BOC	Back of Curb
CB	Catch Basin
CL	Center Line
CONC	Concrete
COTG	Clean Out To Grade
CS	U.S. Commercial Standards
CSI	Construction Specifications Institute
DG	Decomposed Granite
DHI	Door Hardware Institute
DI	Drain Inlet
FG	Finish Grade
FGMA	Flat Glass Marketing Association
FL	Flow Line
FM	Factory Mutual
FOC	Face of Curb
FS	Finish Surface
GA	Gypsum Association
HP	High Point
ICBO	International Conference of Building Officers
INV	Invert
LP	Low Point
MH	Manhole
NAAMM	National Association of Architectural Metal Manufacturers
NAFM	National Association of Fan Manufacturers
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electric Manufacturers Association
NFC	National Fire Code
NFPA	National Fire Protection Association
NLMA	National Lumber Manufacturers Association
NSF	National Sanitation Foundations
PDI	Plumbing and Drainage Institute



PL	Property Line
PS	Product Standard, U.S. Department of Commerce
PVC	Polyvinyl Chloride
RIS	Redwood Inspection Service
SDI	Steel Deck Institute
SDI	Steel Door Institute
SFPA	Southern Forest Products Association
SMACNA	Sheet Metal & Air Conditioning Contractors National Association, Inc.
SS	Sanitary Sewer
SD	Storm Drain
TC	Top of Curb
TYP	Typical
UBC	Uniform Building Code
UL	Underwriters Laboratory, Inc.
UON	Unless Otherwise Noted
WM	Water Meter
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California
WWDA	Wood Window and Door Association
WWM	Welded Wire Mesh
WWPA	Western Wood Products Association

1.04 DEFINITIONS

- A. Owner's Representative: Where the terms Architect, Landscape Architect, Engineer, Geotechnical Engineer and Inspector are used, they shall mean "Owner's Representative".
- B. Reference to Drawings: Where the words "shown", "indicated", "detailed", "noted", "scheduled". or words of similar import are used, it shall be understood that reference is made to the Drawings accompanying these Specifications, unless otherwise noted.
- C. Addendum: The word "Addendum" shall mean written and/or graphic modifications to the Contract Documents provided to holders of the Contract Documents prior to the opening of bids. The Owners Representative shall issue all addenda.
- D. Alternates: The word "Alternates" shall be understood to mean alternate products, materials, equipment, systems, methods, units of work or elements of the construction, which may, at the Owners option and under the terms established by the Contract Documents, be added to, or deleted from the work.
- E. Approvals: The words "approved", "approval", "acceptable", "acceptance", shall mean acceptance by the Owner or Owner's Representative is required.
- F. Change Order: The words "Change Order" shall mean a written authorization to the Contractor, covering changes to the Contract found by the Owner to be necessary for the proper completion or construction for the whole work required by the Contract. The Change Order shall establish the basis of payment and/or

time adjustments for the work affected by the changes.

- G. Contract Documents: The words "Contract Documents" shall mean the documents contained within the General Conditions, Special Provisions of the Contract, the Drawings, the Specifications, all Addenda, Change Orders, clarifications and other modifications issued by the Owners Representative prior to and after execution of the Contract.
- H. Directions: The words "directed", "designated", and "selected", shall mean the directions, designations, selection, of the Owners Representative, unless otherwise noted.
- I. Drawings: The word "Drawings" shall mean the official project bid or construction plans, plan details, profiles, typical cross sections, working drawings, shop drawings, supplemental drawings, and/or reproductions thereof, accepted or issued by the Owners Representative, which show the locations, character, dimensions, and details of work to be performed. All such documents are to be considered as a part of the Drawings.
- J. Equals: The words "or equal", "equal to", "approved equal", "or approved equal" and "equivalent", shall mean "equal to or acceptable in the opinion of the Owners Representative," unless stated otherwise.
- K. Language: Words and phrases requiring an action or performance, such as "perform", "provide", "install", "furnish", "connect", "test", "coordinate" and words and phrases of similar type and import, shall be understood to be preceded by the phrase "The Contractor shall" unless otherwise noted.
- L. Modifications: The word "modifications" shall mean a written amendment to the Contract signed by both parties, a Change Order, a written interpretation issued by the Owners Representative or a written order for a minor change in the work issued by the Owners Representative.
- M. Notice To Proceed: The words "Notice to Proceed" shall mean the written notice issued by the Owners Representative to the Contractor fixing the date on which or within which dates the Contractor shall start to perform the Contractor's obligations under the Contract Documents.
- N. Perform: The word "perform" shall mean that the Contractor, at his expense, shall perform all operations including necessary labor, tools and equipment and further including the furnishing and installation of materials that are indicated, specified and required to complete the conditions of the Contract and Contract Documents.
- O. Project: The word "project" shall mean the total process and construction of the work described within the Contract Documents.
- P. Provide: The word "provide" shall mean that the Contractor, at his expense, shall furnish and install the work, complete in place and ready for use, including furnishing of necessary labor, materials, tools, equipment and transportation.

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- Q. Required: The word "required" shall be understood to mean "as required to properly complete the work and as required and acceptable to the Owners Representative" unless otherwise noted.
- R. Shop Drawings: The words "shop drawings" shall mean drawings, diagrams, schedules, and other data specifically prepared for the work by the Contractor or his sub-Contractor, manufacturer, supplier or distributor to illustrate, in detail, a portion of the work.
- S. Site: The words "Site" or "Sites" shall be understood to mean the property or properties described within the Contract Documents where the work shall occur.
- T. Substantial Completion: The words "Substantial Completion" shall mean the time and date when the work, or designated portion thereof, is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the work, or designated portion thereof, for the use for which it was intended. Substantial Completion if given, shall set forth the date on which Substantial Completion is deemed by the Owners Representative in its sole discretion to have occurred. This may exclude correction of final punch list items(s) and the execution of any specified Landscape Maintenance Period. Substantial Completion or Completion for a particular item or area shall signify the date on which the accounting of Contract "Working Days" or "Calendar Days" is terminated insofar as they may relate to Liquidated Damages for such particular item or area. "Completion" may be given on project components. "Substantial Completion" would be given to describe the entire work.
- U. Work: The word "work" whether capitalized or in lower case, shall be understood to mean labor, materials, or both, and the entire construction encompassed by the Contract Documents.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION – NOT USED**

**END OF SECTION 01 42 00**

**CONSTRUCTION FACILITIES & TEMPORARY CONTROLS 01 50 00**

Seacliff Village Park Restroom Project, Santa Cruz County

**SECTION 01 50 00  
CONSTRUCTION FACILITIES & TEMPORARY CONTROLS**

**PART 1 – GENERAL**

**1.01 SUMMARY**

**A. Scope of work:**

Provide construction facilities and temporary controls required for the performance of the work, which can include, but are not necessarily limited to, the following:

1. Temporary utilities
2. Sanitary facilities
3. Enclosures, barricades, and fences
4. Fire protection
5. Protection of work
6. Bottled water

**B. Related sections can include, but may not be limited to the following:**

1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

**C. Submittals:**

1. Traffic Control Plan for all work that impacts vehicular, pedestrian, and/or bicycle traffic.

**1.02 SELECTED REFERENCE AND REGULATORY REQUIREMENTS**

**A. National Fire Protection Association (NFPA):**

1. 10 - Portable Fire Extinguishers.
2. 241 - Safeguarding Building Construction and Demolition Operations.

**B. State of California Department of Transportation Standard Specifications, current, ed.**

**1.03 UTILITY SERVICES**

**A. Power and Lighting:** Furnish, install and maintain temporary wiring, lamps and equipment as necessary to provide temporary lighting and power for the construction site.

**B. Water/Services:**

1. Install temporary piping and valves downstream from existing permanent locations as acceptable to the Owners Representative.
2. Locate temporary sources of water route, and construct pipelines so that they do not create a hazard or interfere with public access, traffic, or construction operations.
3. Design and construct such pipelines.

**1.04 SANITARY FACILITIES**

**A. New and/or existing restroom facilities shall not be used by construction personnel except with written permission from the Owner.**

**1.05 FIELD OFFICE FOR CONTRACTOR (Not Applicable)**

**1.06 FIELD OFFICE FURNISHINGS (Not Applicable)**

**CONSTRUCTION FACILITIES & TEMPORARY CONTROLS 01 50 00**

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1.07 FIELD OFFICE SERVICES (**Not Applicable**)

1.08 COPY MACHINE (**Not Applicable**)

1.09 FACSIMILE TERMINAL (**Not Applicable**)

1.10 TELEPHONE (**Not Applicable**)

1.11 STORAGE ENCLOSURES (**As Applicable**)

- A. Provide sheds and enclosures necessary for storing applicable materials and equipment.
- B. Enclosures shall be conveniently located, substantially and neatly constructed, and weather tight.
- C. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible.
- D. For exterior storage of fabricated products, place all items on sloped supports, above ground.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent contamination by foreign matter.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.12 MAINTENANCE OF CONSTRUCTION FACILITIES

- A. All facilities shall be provided and maintained by the Contractor in accordance with Cal-OSHA and applicable laws and ordinances.

1.13 SECURITY

- A. Employment of a watchman for non-construction hours shall be left to the discretion of the Contractor, who shall be fully responsible for any theft or damage to any material, equipment or to portion of the work until Project Final Acceptance.
- B. All site security shall be paid for by and shall be the responsibility of the Contractor.

1.14 FIRE PROTECTION

- A. Take precautions to prevent and eliminate fire hazards. The Contractor shall be responsible for providing, maintaining, and enforcing any necessary or required fire prevention safeguards until Project Final Acceptance.

## CONSTRUCTION FACILITIES & TEMPORARY CONTROLS 01 50 00

Seacliff Village Park Restroom Project, Santa Cruz County

- B. Provide fire extinguishers on the premises during the course of construction of the type and sizes recommended by the NFPA 10 and NFPA 241 to control fires resulting from the particular work being performed. Instruct employees in their use. Place extinguishers in the immediate vicinity of the work being performed, ready for use.
- C. Fire Inspection: The Contractor's superintendent shall inspect the entire project as necessary to make certain the required precautions are being adhered to.
- D. Combustible and/or flammable Building Materials: Only an appropriate working supply of flammable fuel or building materials shall be located inside of any storage facility.
- E. During the use of hazardous equipment, such as acetylene torches, welding equipment, bitumen kettles, and similar devices, no work shall start or equipment used unless fire extinguishers of specified type and capacity are placed in the working area and available for use by workmen using such hazardous equipment.
  - 1. Extinguishers shall meet standards established by Underwriter's Laboratory, and shall be inspected at regular intervals and recharged by the Contractor as necessary.
- F. Combustible and/or flammable Waste Materials. Oil-soaked rags, papers, and other highly combustible materials must be stored in closed metal containers with tightly-hinged lids at all times and shall be removed from the site at the close of each day's work and more often when necessary.

### 1.15 BARRICADES

- A. Subject to the discretion of the Owner's Representative, furnish or construct fences, barricades, railing, warning lights, lights and other barricades required by law, Contract Documents and as necessary to ensure public safety.
- B. Give adequate warning to the public at all times whenever a dangerous condition exists as the result of construction work. Furnish Owners Representative with name, address, pager number and local telephone number of the superintendent responsible and at least one other person for the maintenance of barriers, signs, lights and other accident prevention devices for evenings and weekends.

### 1.16 PROTECTION OF WORK AND FACILITIES

- A. Protect adjacent property, roads, streets, curbs, planting areas, erosion control materials and other improvements during construction operations. All damaged materials shall be replaced and/or repaired at the expense of the contractor and to the satisfaction of the Owners Representative.
- B. Protect installed work and provide special protection where applicable.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

### 1.17 VEHICULAR SAFETY

- A. All motorized and/or self-propelled construction equipment shall be equipped with a reverse signal alarm (hub-cap type).

### 1.18 FIRST AID

- A. Provide and maintain first aid supplies as required by Cal-OSHA and any

**CONSTRUCTION FACILITIES & TEMPORARY CONTROLS 01 50 00**

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applicable local ordinances. Make arrangements with the local emergency center and nearest hospital to receive personnel requiring medical attention, including emergencies. Such information shall be conspicuously displayed at the construction office when an office is required on the project.

1.19 ACCESS ROADS & PARKING AREAS

- A. Construct, designate and maintain specific vehicular access as required for the orderly progress of the work. Provide adequate surface drainage without interrupting natural flow of existing drainage.
- B. Provide designated parking areas for use by construction personnel and Owners Representative(s) such parking areas are subject to the discretion of the Owners Representative.
- C. Restore temporary vehicular access and parking areas to original, specified, or better conditions prior to Project Final Acceptance.

1.20 HAUL ROUTES

- A. Comply with any and all local governing ordinances and guidelines.

1.21 MAINTENANCE AND REMOVAL

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the work. Coordinate removal of temporary facilities with the Owners Representative.
- B. After removal of temporary facilities, restore grounds or buildings that have been damaged or disturbed back to an "as was" or better condition subject to the discretion of the Owners Representative.

1.22 PROJECT SIGN (**Not Applicable**)

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION – NOT USED**

**END OF SECTION 01 50 00**

**SECTION 01 56 39 – TEMPORARY TREE PROTECTION**

**PART 1 - GENERAL**

**1.01 SUMMARY**

A. RELATED DOCUMENTS

1. Drawings, Volumes I - III, including General Conditions and Special Conditions, and the technical specifications apply to this section.
2. County of Santa Cruz Tree Protection; Chapter 16.34, amended ordinance 5160
3. SECTION 02 41 19 – SELECTIVE DEMOLITION  
SECTION 31 10 00 – SITE CLEARING  
SECTION 31 20 00 – EARTH MOVING

B. DESCRIPTION OF WORK

1. Protection and operational requirements of working around existing vegetation, as shown on the plans, to include, but not limited to, the following:
  - a. Existing Tree Protection (above and below ground portions)
  - b. Protective Fencing and Signage
  - c. Irrigation of Existing Trees
  - d. Tree Root Management

**1.02 REFERENCED STANDARDS**

- A. American Society of Consulting Arborists

**1.03 SUBMITTALS**

- A. General: Submit under the provisions of SECTION 01 33 00 - Submittals.
- B. Tree Protection Fencing Plan which indicates project site methods to be employed and procedures for compliance with the tree protection requirements.
- C. Tree Protection Fencing Schedule which details the sequence of installation and subsequent adjustment of protection measures when construction must occur within the limits of the tree protection measures.
- D. Demolition sequence of events and procedures for working within the critical root zone (CRZ) of existing trees.



**PART 2 – PRODUCTS** Not used.

**PART 3 - EXECUTION**

**3.01 GENERAL TREE PROTECTION**

- A. Contractor must meet with the Project Arborist on site before construction begins to discuss tree protection requirements and review the arborist's Inspection Schedule. The Project Arborist must be provided with construction schedules throughout the construction period and must also be notified of potential construction disturbances within the Critical Root Zones of existing trees, before such work begins.
- B. Before any construction may commence and equipment enters the site, the Contractor shall provide and install required Tree Protection Zone Fences to protect all existing trees and vegetation not designated for removal. The TPZ Fences shall be placed at the drip-line of trees and vegetation or at the closest proximity to the construction disturbances per the project details. These protective fences must be approved in writing by the project Arborist.
- C. Contractor shall repair or replace all existing trees, shrubs, or ground cover vegetation not designated for removal that are damaged by construction operations, in a manner acceptable to the County. This may include the hiring of a licensed arborist by the Contractor to provide repair recommendations, per the discretion of the County.
- D. No vehicle parking and equipment shall be allowed within drip lines of trees not designated for removal, nor can materials be stored or construction waste be disposed of within these protected areas.

**3.02 TREE ROOT TREATMENT**

- A. Preconstruction root exploration is necessary for all existing trees adjacent to trenching, grade changes or other activities that require exposure or removal of soil within the critical root zones of trees, as defined by their canopy drip line perimeters or their close proximity to such disturbances. The Project Arborist must provide direction regarding the locations and excavation of the required exploratory trenches within Critical Root Zones. Roots shall be located using non-invasive exploration procedures, such as hand digging using small tools, or a pneumatic air device, such as an Air-Spade®. The exposed roots must be examined by the Project Arborist who will make determinations as to whether they can be preserved or pruned if necessary.
- B. Cleanly cut all encountered roots. Bark should adhere to the wood without tearing. Wood fibers should remain intact without shattering. The following tools

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are acceptable for use: hand pruners, loppers, handsaw, Sawzall tool (best option) or a chainsaw.

- C. Contractor shall notify the County if any roots over 2” in diameter are required to be cut. In this case, all work within the drip line of the tree shall be suspended until notified by the County.
- D. Temporarily cover exposed roots with wet burlap to prevent roots from drying out and potential sun scald. Maintain moist condition of burlap at all times and remove burlap and cover with earth as soon as possible.

**3.03 DEMOLITION / TRENCHING / SITE WORK**

- A. In the event trenches for irrigation and/or lighting are required within a tree’s canopy, they shall be installed by hand in a radial direction to the trees’ trunks. If irrigation trenches cannot be routed as such, the work may need to be performed using a pneumatic air device, such as an Air-Spade®, to avoid unnecessary root damage.
- B. All demolition, trenching, and site work shall be done under the supervision of the project Arborist. Contractor shall provide advance request in writing per the General Conditions.

**END OF SECTION 01 56 39**

**SECTION 01 57 23 - TEMPORARY WATER POLLUTION CONTROL**

**PART 1 – GENERAL**

1.01 SECTION INCLUDES

- A. Work in this section includes furnishing all labor, equipment and materials necessary for the implementation of temporary Water Pollution Controls, including implementation, monitoring, and maintenance of Best Management Practices (BMPs).
- B. The anticipated area of disturbance for this project is less than one acre. If the area of disturbance will exceed one acre, the OWNER must obtain coverage under the State's Construction General Permit. The CONTRACTOR shall notify the ENGINEER in the event he anticipates the area of disturbance will exceed one acre. The CONTRACTOR shall not disturb more than one acre on the site, including staging, material lay-down, and equipment storage areas, if the OWNER has not gained coverage under the Permit
- C. Principal items of work include:
  - 1. Training employees and subcontractors in stormwater Best Management Practices (BMPs)
  - 2. Stormwater site inspections
  - 3. Reporting and recordkeeping
  - 4. Implementing and maintaining BMPs, and removing BMPs when no longer needed.
  - 5. Non-stormwater management and good housekeeping practices
  - 6. Final site cleanup

1.02 REFERENCES

- A. Standard Specifications, State of California, Department of Transportation (Caltrans), 2018 edition
- B. Standard Plans, State of California, Department of Transportation (Caltrans), 2018 edition
- C. Construction Site Best Management Practices Manual (BMP Manual), State of California, Department of Transportation (Caltrans), 2017 edition

1.03 QUALITY ASSURANCE

- A. CONTRACTOR's Water Pollution Control Manager (WPCM) is responsible for overseeing the implementation of Temporary Water Pollution Control (WPC) work on a day-to-day basis. The WPCM shall be an employee of the Contractor and shall be on site regularly.
- B. The WPCM shall educate, direct and enforce compliance with WPC requirements by all employees and subcontractors.

- C. All contractor employees, subcontractors, and heavy equipment operators shall attend a pre-construction WPC training session conducted by the Contractor's WPCM.

**1.04 GENERAL PERFORMANCE REQUIREMENTS**

- A. All storm water and non-storm water discharges shall be in compliance with all applicable federal, state, and local requirements.
- B. This Section outlines the contract minimum requirements and does not relieve the Contractor of his responsibilities for protection of water quality in accordance with all federal, state, and local requirements.
- C. Additional BMPs shall be required if the BMPs which are utilized are not adequately protecting water quality.
- D. The Contractor shall update the Water Pollution Control Drawings to indicate current operations, equipment used, sequence of work, and other aspects of the project, and maintain a copy on site at all times.
- E. Contractor is responsible for the performance of subcontractors. Contractor's WPCM shall inspect and monitor all subcontractors' work and storage areas for compliance with this Section.

**1.05 FINES AND PENALTIES**

- A. Contractor shall pay any fines and be liable for any other penalties that may be imposed by any federal, state, or local regulatory agency for non-compliance with any water quality requirement during the course of work.
- B. Contractor is responsible for implementing any and all BMP corrective measures, at his own expense, as may be directed by the regulatory agencies.

**PART 2 – PRODUCTS**

**2.01 MATERIALS**

- A. Provide all temporary and permanent water pollution control measures, equipment and materials as required by this Section and the Construction Drawings.
- B. Materials shall conform to the Caltrans Standard Specifications and Caltrans Standard Plans including Standard Specifications sections:
  - 1. 13-4 Job Site Management
  - 2. 13-5 Temporary Soil Stabilization
  - 3. 13-6 Temporary Sediment Control
  - 4. 13-7 Temporary Tracking Control
  - 5. 13-8 Temporary Active Treatment System
  - 6. 13-9 Temporary Concrete Washouts
  - 7. 13-10 Temporary Linear Sediment Barriers

8. 14-9 Air Quality
9. 14-10 Solid Waste Disposal and Recycling
10. 14-11 Hazardous Waste and Contamination

2.02 SUBMITTALS

- A. Provide documentation for WPCM, employee and subcontractor training, including pre-construction WPC training.

**PART 3 – EXECUTION**

3.01 MONITORING, INSPECTIONS AND REPORTING

- A. Monitor the National Weather Service (NWS) forecast on a daily basis during the rainy season.
- B. Conduct inspections:
  1. Within 72 hours prior to predicted rain events to ensure that the site is prepared for the rain event
  2. Within 48 hours after a rain event to evaluate BMP performance and identify corrective actions
  3. Conduct daily inspections of adjoining public roadways, material storage areas, and vehicle and equipment areas.
- C. Implement identified corrective actions within 72 hours, unless a later date is authorized.
- D. Notify the OWNER of any site visits by or correspondence received from any federal, state, or local agency, which are related to activities under this Section.

3.02 BEST MANAGEMENT PRACTICES

- A. Implement Best Management Practices as required by Sections 13 and 14 of the Caltrans Standard Specifications.
- B. Work shall comply with the following Caltrans Standard Specifications Sections, as applicable:
  1. 13-4 Job Site Management
  2. 13-5 Temporary Soil Stabilization
  3. 13-6 Temporary Sediment Control
  4. 13-7 Temporary Tracking Control
  5. 13-8 Temporary Active Treatment System
  6. 13-9 Temporary Concrete Washouts
  7. 13-10 Temporary Linear Sediment Barriers

**TEMPORARY WATER POLLUTION CONTROL 01 57 23**  
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8. 14-9 Air Quality
  9. 14-10 Solid Waste Disposal and Recycling
  10. 14-11 Hazardous Waste and Contamination
- C. Best Management Practices shall be implemented concurrent with the commencement of construction, shall be maintained throughout construction, and shall be removed when no longer required, when approved by the ENGINEER.

3.03 **COMPLETION OF WORK**

- A. Final site cleanup and stabilization shall be considered complete when all of the following have been achieved:
1. The site will not pose any additional sediment discharge risk than it did prior to the commencement of construction activity;
  2. There is no potential for construction-related storm water pollutants to be discharged into site runoff;
  3. Final stabilization has been reached;
  4. Construction materials and wastes have been disposed of properly;
  5. Post-construction storm water management measures have been installed;
  6. All construction-related equipment, materials and any temporary BMPs no longer needed are removed from the site.

**END OF SECTION 01 57 23**

**SECTION 01 60 00 – PRODUCT REQUIREMENTS**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Provide products of same kind from a single source. The term "product" includes the terms "material," "equipment," "system," and similar terms.
- B. Deliver, store, and handle products according to manufacturer's written instructions, using means and methods that will prevent damage, deterioration, and loss, including theft.
- C. Schedule delivery to minimize long-term storage and to prevent overcrowding construction spaces.
- D. Deliver in manufacturer's original sealed packaging with labels and written instructions for handling, storing, protecting, and installing.
- E. Inspect products at time of delivery for compliance with the Contract Documents and to ensure items are undamaged and properly protected.
- F. Store heavy items in a manner that will not endanger supporting construction.
- G. Store products subject to damage on platforms or pallets, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required.

1.02 PRODUCT SUBSTITUTIONS

- A. Submit product substitutions per SECTION 01 25 00 – PRODUCT OPTIONS AND SUBSTITUTIONS.

1.03 RELATED SECTIONS

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

**PART 2 - PRODUCTS**

2.01 PRODUCT OPTIONS

- A. Provide products that comply with the Contract Documents, are undamaged, and are new at the time of installation.
  - 1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.
- B. Do not attach manufacturer's labels or trademarks, except for required nameplates, on surfaces exposed to view in occupied spaces or on the exterior.
- C. Select products as follows:

## **PRODUCT REQUIREMENTS**

Seacliff Village Park Restroom Project, Santa Cruz County

1. Where only a single product or manufacturer is named, provide the item indicated. No substitutions will be permitted.
  2. Where two or more products or manufacturers are named, provide one of the items indicated. No substitutions will be permitted.
  3. Where products or manufacturers are specified by name, accompanied by the term "or equal," provide the named item or comply with provisions concerning "product substitutions" to obtain approval for use of an unnamed product or manufacturer.
  4. Where a product is described with required characteristics, with or without naming a brand or trademark, provide a product that complies with those characteristics and other Contract requirements.
- D. Where compliance with performance requirements is specified, provide products that comply and are recommended in writing by the manufacturer for the application.
- E. Where compliance with codes, regulations, or standards, is specified, select a product that complies with the codes, regulations, or standards referenced.
- F. Unless otherwise indicated, Architect will select color, pattern, and texture of each product from manufacturer's full range of options.

### **PART 3 – EXECUTION – NOT USED**

**END OF SECTION 01 60 00**



**SECTION 01 71 23 - FIELD ENGINEERING**

**PART 01 - GENERAL**

1.01 SUMMARY

- A. Provide survey control for clearing limits and all lines and grades required for the construction of this Project from the established reference points and data furnished on Drawings.
- B. The Contractor shall provide survey control for all lines and grades required for the construction of this Project from the established reference points and data furnished on Drawings.
  - 1. Job Conditions
    - a. Accuracy of Data: Site data given herein and on Drawings are as exact as could be secured, but their absolute accuracy cannot be guaranteed. Exact locations, distances, elevations, etc., shall finally be governed by field conditions and the County Representative's instructions.
    - b. Conflicts with Existing Conditions: In the event there is any conflict between actual conditions and Drawings, notify the Engineer immediately and do not proceed with the work until directed by the County Representative.
    - c. In the event that the construction staking reveals a design inconsistency or error, Contractor shall notify the Engineer immediately and shall not proceed with the work until directed by the Engineer.
  - 2. Protection of Existing Features
    - a. Preservation of Markers: All survey control points and project bench marks, which have been or may be established in any part of the site, shall be carefully preserved and respected by Contractor and shall be restored at Contractor's expense if lost or destroyed as a result of Contractor's operations.
- C. Minimum Staking Requirements: The following survey control shall be provided by Contractor for use in constructing the improvements as shown on the Contract Documents.
  - 1. Rough Grade Staking for parking areas and park improvement areas
    - a. Finish Grade Staking for slabs and sidewalk areas as shown on Drawings.
    - b. Underground Utilities
    - c. Storm Drain – Provide one set of two (2) stakes per storm drainage structure greater than 8-inches in diameter and one (1) stake every 100-feet for line and grade between these structures.

1.02 RELATED SECTIONS

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

**PART 02 – PRODUCTS – NOT USED**

**PART 03 – EXECUTION – NOT USED**

**END OF SECTION 01 71 23**

**SECTION 01 77 00 – CONTRACT CLOSE-OUT**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Scope of work:  
This section specifies administrative and procedural requirements for project closeout that may include but are not necessarily limited to:
  - 1. Inspection and/or observation procedures
  - 2. Project record document submittal
  - 3. Operating and maintenance manual submittal
  - 4. Warranty submittal
  - 5. Final cleaning
  
- B. Related sections can include, but may not be limited to the following:
  - 1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

1.02 PROJECT COMPLETION AND PROJECT ACCEPTANCE

- A. Refer to the General and Supplemental Conditions (as applicable) and SECTION 01 42 00 – REFERENCES, for procedures required to establish Project Acceptance as may be applicable.
  - 1. Final, regular Certificate for Payment (progress payment) shall be issued after all requirements of achieving Project Acceptance are met. Final retention payment shall be made after conclusion of any specified Landscape Maintenance Periods (subject to the discretion of the Owners Representative) and Project Final Acceptance by the County of Santa Cruz Board of Supervisors.
  
- B. Inspection Procedures: Upon receipt of a request for inspection or observation, the Owners Representative shall either proceed or advise the Contractor of unfilled requirements. The Owners Representative may declare Project Acceptance following review of the work or advise the Contractor of what must be completed or corrected by issuance of a "punch-list". Upon receipt of the "punch-list", the Contractor shall complete all work described in a timely manner subject to the discretion of the Owner's Representative.
  - 1. The Owners Representative shall repeat inspection and/or observation when requested provided the Contractor has made the request within the specified lead-time and given written assurance that the "punch-list" work has been completed.
  - 2. Results of the completed inspection and/or observation shall help form the basis of requirements for Project Acceptance (as may be applicable) and if work is found acceptable, may signal the beginning of the specified

Landscape Maintenance Period.

1.03 UNCORRECTABLE WORK

- A. Should the Owners Representative determine it is not practical or possible for the Contractor to correct work that is damaged or improperly executed, an equitable deduction from the Contract sum may be made at the sole discretion of the Owners Representative.

1.04 CLOSE-OUT SUBMITTALS

- A. Submit two (2) copies of the following, where applicable, in accordance with applicable Contract Documents:
  - 1. Project record documents (as-constructed-refer to SECTION 01 78 39)
  - 2. Operation and maintenance manuals
  - 3. Warranties, guaranties, and bonds
  - 4. Keys and keying schedule
  - 5. Spare parts and extra materials
  - 6. Other items required as listed in each Technical Specification section
- B. Specified number of copies of above close-out submittals shall be received and accepted by the Owners Representative before Project Acceptance shall be given (subject to the discretion of the Owners Representative).
- C. In addition to those items previously mentioned in this section, the Contractor shall submit to the Owners Representative the following items before Final Acceptance:
  - 1. Up-to-date sub-contractor list with names, addresses and telephone numbers.
- D. Final Adjustment of Account:
  - 1. Submit a final statement of accounting to the Owners Representative showing all adjustments to the Contract sum that have not been addressed by Change Order.

1.05 MAINTENANCE MANUALS

- A. Submit two (2) copies of proposed manual(s) to the Owners Representative for review and acceptance. All maintenance manuals shall be received and accepted by the Owners Representative before Project Acceptance shall be given (subject to the discretion of the Owners Representative).
- B. Organize operating and maintenance data into properly indexed heavy-duty 2-inch, 3-ring vinyl covered binders. Mark appropriate identification on front and spine of each binder. Manuals can include but are not limited to the following types of information:
  - 1. Emergency instructions
  - 2. Spare parts list

3. Copies of warranties or actual warranty cards
4. Wiring diagrams
5. Recommended "turn around" cycles
6. Inspection procedures
7. Shop drawings and product data
8. Fixture lamping schedule

**1.06 DEMONSTRATION**

- A. Prior to Project Acceptance, the Contractor shall fully instruct Owners Representative's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment and systems installed.
  1. Provide services of factory trained instructors from the manufacturers of each major item of equipment or system, if necessary or requested by the Owners Representative.
- B. Operation and maintenance manual(s) shall be fully described at this instruction meeting.
  1. Review contents of manual(s) with personnel in full detail to explain all aspects of operations and maintenance such as:
    - a. Maintenance manuals
    - b. Record documents
    - c. Spare parts and materials
    - d. Tools
    - e. Fuels
    - f. Identification systems
    - g. Control sequences
    - h. Hazards
    - i. Cleaning
    - j. Warranties and bonds
    - k. Maintenance agreements and similar continuing commitments.
  2. As part of instruction for operating equipment, demonstrate the following procedures:
    - a. Start-up
    - b. Shutdown
    - c. Emergency operations
    - d. Noise and vibration adjustment
    - e. Safety procedures
    - f. Economy and efficiency adjustments
    - g. Effective energy utilization

**1.07 PROJECT RECORD DRAWINGS AND SPECIFICATIONS (AS-CONSTRUCTED)**

- A. Provide in accordance with SECTION 01 78 39 – PROJECT RECORD DRAWINGS.

1.08 WARRANTY/GUARANTY FORMAT

- A. Provide written warranties, guaranties (except manufacturers' standard printed warranties and/or guaranties), addressed to the Owners Representative, in the format shown in Volume III (Bid Proposal).

1.09 REMOVAL OF TEMPORARY FACILITIES

- A. Prior to final inspection, the Contractor shall remove tools, materials, sheds, temporary power poles, temporary tree protection and all other articles/materials from the project site. Should the Contractor fail to take prompt action, the Owners Representative may, given 30 days written notice, treat them as abandoned property.

1.10 FINAL BUILDING AND STRUCTURE CLEANING

- A. At the completion of the work, thoroughly clean the project area, including fixtures, equipment, walls, floors, and hardware.
- B. Thoroughly clean accumulated debris from sills, ledges, horizontal projections, steps, rails or other surfaces. Plumbing fixtures and natural metals shall be cleaned and polished.
- C. Use only those cleaning materials and methods recommended by manufacturer of the materials to be cleaned, and by the cleaning material manufacturer.
- D. Cleaning materials which will create hazards to health or property, or which will damage surfaces shall not be used.
- E. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from all exposed interior and exterior surfaces.
- F. Remove dust from all horizontal surfaces not exposed to view including light fixtures, ledges, and plumbing fixtures.

1.11 FINAL SITE CLEANING

- A. Broom clean exterior paved surfaces and adjacent public streets. Utilize appropriate cleaning methods to remove spills, stains, tire tracks, etc. from all paved surfaces. Rake clean other surfaces of the site.
- B. Hose down and scrub walls and paving surfaces dirtied or stained as a result of the construction work, and as directed by the Owners Representative.
- C. Remove from the site construction waste, unused materials, excess earth, and debris resulting from the work.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION – NOT USED**

**END OF SECTION 01 77 00**

## **SECTION 01 78 39 – PROJECT RECORD DRAWINGS**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Scope of work:
  - 1. Prepare Project Record Drawings of “as-constructed” conditions as required by various sections of these Specifications and whenever work is installed differently than as shown in the Construction Documents “as bid”.
  - 2. Maintain a continually updated Job set of as-constructed Contract Documents at the job site for review by the Owners Representative at all times.
  
- B. Related Sections:
  - 1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

#### **1.02 REFERENCES AND REGULATORY REQUIREMENTS**

- A. State of California Department of Transportation Standard Specifications, current ed.

#### **1.03 SUBMITTALS**

- A. Submit full Job set to Owners Representative for review and acceptance prior to preparation of final Project Record Drawings.
  
- B. After acceptance, prepare and submit final Project Record Drawings to Owners Representative at Contract CloseOut. Final Record Drawings shall be received prior to Project Acceptance (subject to the discretion of the Owners Representative).

#### **1.04 QUALITY ASSURANCE**

- A. Job set maintenance shall be delegated to one person on Contractor's staff who will be present at all meetings.
  
- B. Final Record Drawings shall be clearly drafted by a competent draftsman on reverse-reading erasable sepia mylar sheets

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store Job set separate from Construction Document sets in a safe fire-resistant location.
  
- B. Protect Job set and completed final Record Drawings from damage at all times.



- C. Maintain all documents in a neat, legible condition.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION**

**3.01 MAINTENANCE OF JOB SET**

- A. Clearly mark the designated Contract Documents as "Job set."
- B. Record all deviations from the "as-bid" contract Documents onto Job Set daily prior to covering of all work that has deviated.
- C. Convert schematic layouts to portray precise physical layout (including depths) of all exposed and concealed work.
- D. Clearly identify deviations by drawing a "cloud" around affected area and make sufficient notations to describe the change.
- E. Contractor shall solely bear any cost of uncovering, recording and re-covering work not recorded on Job Set.

**3.02 FINAL RECORD DOCUMENTS**

- A. Submit Job set for review and acceptance by the Owners Representative prior to preparing final Record Drawings.
- B. After acceptance by Owners Representative, the Contractor shall cleanly and clearly draft, on the non-erasable side of the sheet, all information contained in the accepted Job Set. The final Record Drawing sheet material shall be as specified above in 1.04 - Quality Assurance. One set of reproducible Drawings shall be provided for the Contractor by the Owners Representative at no cost.
- C. Deliver the Job Set and mylar final Record Drawings, plus one set of blue-line prints of final Record Drawings to the Owners Representative prior to Project Acceptance (subject to the discretion of the Owners Representative).

**END OF SECTION 01 78 39**

**SECTION 02 41 19 - SELECTIVE DEMOLITION**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

**1.02 DESCRIPTION OF WORK**

- A. The work of this Section consists of providing all necessary labor, materials, tools, equipment and incidentals to complete the demolition and salvage work specified herein; the extent of selective demolition work is indicated on drawings.
- B. Types of Selective Demolition Work: Demolition requires the selective removal and subsequent salvage or off-site disposal of the following:
  - 1. Temporary removal and/or protection of existing elements and equipment items indicated "to remain" or "preserve and protect".
  - 2. Removal and disposal of fixtures, elements, equipment, etc., indicated "demolish and remove".
  - 3. Removal, protection and salvage of elements, equipment, etc., indicated "remove and salvage".
- C. Limits of Selective Demolition include all areas within the project Limits of Work.
- D. Related Work Specified Elsewhere: As applicable, related work specified elsewhere may include, but is not limited to, the following:
  - 1. SECTION 01 56 39 – TEMPORARY TREE PROTECTION
  - 2. SECTION 31 10 00 – SITE CLEARING
  - 3. SECTION 31 20 00 – GRADING & EARTHWORK

**1.03 SUBMITTALS**

- A. General: Submit under the provisions of SECTION 01 33 00 – SUBMITTALS.
- B. Schedule: Submit estimated timeline schedule (gnatt chart) indicating proposed methods and sequence of operations for selective demolition work to Owner's Representative for review prior to commencement of work. Include coordination of shut-off, capping, and continuation of utility services as required, together with details and/or written plans for dust and noise control. Re-submit updated schedules per Owner's Representative request. Refer to Volume I General Conditions for more information.

- C. Demolition Plan which indicates project site methods to be employed, sequence of equipment, procedures, disposal sites and proposed haul routes. Specify safety measures in accordance with applicable codes including signs, barriers, and temporary pedestrian sidewalks. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations and neighboring businesses.
- D. Coordinate with Owner with respect to Owner's continuing occupation of portions of existing site and make necessary provisions as applicable.
- E. Permits and notices authorizing demolition.
- F. Copy of manifests showing delivery of disposed materials in accordance with permit conditions, within 24 hours from time of delivery.
- G. Record Documents: Provide copies of all approved submittals, specified herein, for record purposes in accordance with the requirements of section 01 78 38 PROJECT RECORD DRAWINGS.

**1.04 JOB CONDITIONS**

- A. Visit and examine the project site to determine the extent of demolition and disposal to be performed. Inspect existing conditions that will affect the execution of the Work.
- B. Facilities that will remain include all neighboring businesses, business parking lots, and private Right of Ways.
- C. Protection of Utilities:
  - 1. Project active sanitary sewer, water, gas, electric, communication, and other utilities, storm drainage and irrigation lines indicated or, when not indicated, found or otherwise made known to the Contractor before or during demolition work. If utility is damaged, immediately notify the County and the utility owner for corrective action.
  - 2. Arrange with and perform work required by utility companies and municipal departments for discontinuance or interruption of utility services due to demolition work.
- D. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
- E. Owner will remove and salvage selected elements from the area of work prior to start of demolition or during progress of work. Elements so affected will be clearly marked / identified and are to be excluded from work.
- F. Conditions existing at time of commencement of contract will be maintained by Owner insofar as practicable. However, variations within site may occur by Owner's removal and salvage operations prior to start of selective demolition work.

**SELECTIVE DEMOLITION 02 41 19**

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- G. Partial Demolition and Removal: Items indicated to be removed and disposed but of salvable value to Contractor may be removed from site as work progresses. Transport salvaged items from site as they are removed.
- H. Open depressions and excavations occurring as part of this work shall be barricaded and posted with warning lights when accessible through adjacent property or through public access. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
- I. Storage or sale of removed items on site is not permitted.
- J. Protections: Provide temporary fencing and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.
- K. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
- L. Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner. Restore damaged finishes to match adjacent undamaged work.
- M. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
- N. Explosives: Use of explosives is not permitted.
- O. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
- P. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, acceptable to governing authorities.
- Q. Environmental Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.
- R. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
- S. Noise and Dust Abatement: Comply with requirements specified in Document 00700, General Conditions and Document 00800 Special Conditions, and the following:
  - 1. Provide continuous noise and dust abatement as required to prevent disturbance and nuisance to the public and workers and to the occupants

of adjacent premises and surrounding areas. Dampen or cover areas affected by demolition operations as necessary to prevent dust nuisance.

2. When a certain level of noise is unavoidable because of the nature of the work or equipment involved, and such noise is objectionable to the occupants of adjacent premises, make arrangements with the jurisdictional authorities to perform such work or operate such equipment at the most appropriate time periods of the day.

## **1.05 REFERENCES**

- A. American National Standards Institute (ANSI):
  1. ANSI A10.6 Safety Requirements for Demolition Operations
- B. State of California, Department of Transportation (Caltrans), Standard Specifications, Section 15, Existing Facilities.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Provide temporary or permanent materials as required for the proper execution of the Work in this section.

### **2.02 BACKFILL**

- A. Materials used for backfill shall conform to the requirements for backfill of SECTION 31 20 00 – GRADING & EARTHWORK.

### **2.03 MARKING PAINT**

- A. Marking paint shall be a good quality, oil-based spray marking paint or a good quality, oil-based paint marker.
- B. Marking paint shall be removed from paving or other features that are indicated to remain prior to acceptance of work.

## **PART 3 - EXECUTION**

### **3.01 INSPECTION**

- A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph any existing conditions which could be misconstrued as damage resulting from selective demolition work and file a record copy with the Owner's Representative prior to starting work.

### **3.02 PREPARATION**

- A. Install all construction fencing and gates prior to commencement of work under this section.
- B. Locate, identify, stub off and disconnect utility services that are indicated to be removed and disposed.
- C. Establish and identify acceptable temporary debris stockpile locations and secure appropriate waste containers on-site prior to commencement of work under this section.
- D. Protect existing stone/concrete bounds and monuments. All disturbed benchmarks, bounds/monuments shall be reset by a Land Surveyor registered in the State of California, at the Contractor's sole expense.
- E. Call Underground Service Alert at 1-800-422-4133 to obtain a Dig Alert ID Number, 2 working days prior to the start of excavation.
- F. Call "Call Before You Dig" at 1-800-AT-FIBER for information on fiber optic cables, 2 working days prior to the start of excavation.

**3.03 DEMOLITION**

- A. Demolish concrete flatwork, curbs, and walls in small sections in accordance with the provisions in Section 15-3, "Removing Concrete" of the Standard Specifications and these technical specifications.
- B. Demolish and remove existing fences, including chain link and wood split rail, as shown on the plans, as specified in the Standard Specifications and these technical specifications, and as directed by the County. Holes and depressions caused by the removal of existing fences and foundations shall be backfilled with suitable native material or as specified in the Geotechnical Report and as acceptable to the Engineer.
- C. Demolish and completely remove underground utilities as shown on the plans. Where utilities are shown to abandon in place, grout solid as directed with Controlled Low Strength Material (CLSM). CLSM shall be 1 sack cement sand slurry with a compressive strength of no less than 50 psi and no greater than 150 psi.
- D. Completely fill below-grade areas and voids resulting from demolition work. Provide fill consisting of approved fill material, gravel or sand, free of trash and debris, stones over 6" diameter, roots or other organic matter. See SECTION 31 20 00 – EARTH MOVING for compaction requirements.
- E. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from Owner's Representative rearrange selective demolition schedule as necessary to continue overall job progress without delay.

**3.04 SALVAGE MATERIALS**

- A. Historic or archeological artifacts and other articles of historic significance remain the property of the Owner. Notify Owner's Representative if such items are encountered and obtain acceptance and direction before proceeding with any further work regarding method of removal and salvage for Owner.

**3.05 DISPOSAL OF DEMOLISHED MATERIALS**

- A. Remove debris, rubbish and other materials resulting from demolition operations from project site. Transport and legally dispose of materials off site on a daily basis and as dumpsters become full.
- B. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution. Notify Owner's Representative immediately.
- C. Burning of removed materials is not permitted.
- D. The Contractor shall be responsible to pay all applicable disposal fees.

**3.06 REMOVED AND REINSTALLED ITEMS**

- A. Clean and repair items to functional condition adequate for intended reuse.
- B. Protect items from damage during transport and storage.
- C. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

**3.07 CLEAN-UP AND REPAIR**

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- C. Damaged to existing trees to be protected in place is the responsibility of the contractor. Refer to "Tree Protection" section for more information.

**END OF SECTION 02 41 19**

**SECTION 03 20 00 - CONCRETE REINFORCEMENT**

**PART 1 - GENERAL**

**1.01 SUMMARY OF WORK**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.
- B. The work of this section consists of:
  - 1. Reinforcing steel bars and accessories for cast-in-place concrete.

**1.02 RELATED SECTION**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.
- B. See the following specification section for work related to the work of this section:
  - 1. Section 03 30 00 - Cast-in-Place Concrete

**1.03 REFERENCES**

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 315 – Details and Detailing of Concrete Reinforcing.
- C. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- D. ASTM A706 – Low alloy steel deformed bars for concrete reinforcement
- E. AWS D1.4 - Structural Welding Code for Reinforcing Steel.

**1.04 SUBMITTALS FOR REVIEW**

- A. Section 01 30 00 - Submittals: Procedures for submittals.
- B. Submit reinforcement shop drawings. Shop drawings shall be completely detailed, including bending schedules, bending diagrams, placing details, size and location of reinforcing steel, and any proposed welding. Shop drawings shall clearly specify bar locations. On elevations of walls, beams, and columns, locate sleeves that conflict with typical details or reinforcing. Shop drawings shall not be copies of the construction drawings. Reinforcement shall not be fabricated or placed before the Engineer of Record has reviewed the shop drawings.
- C. Architectural, structural, mechanical, electrical, and other contract documents shall be reviewed for anchor bolt schedules, location of anchors, inserts, conduits, sleeves, and any other items which are required to be cast in concrete. Provisions shall be made so that reinforcing steel will not interfere with the placement of such embedded items.

**1.05 DELIVERY AND STORAGE**



- A. Reinforcing shall be delivered to site properly bundled and tagged. Store reinforcing steel off the ground and as required to prevent excessive rusting. Protect reinforcing from any coating that will interfere with bond. Do not use damaged or reworked materials.

**1.06 QUALITY ASSURANCE**

- A. Perform Work in accordance with ACI 301.
- B. Maintain one copy of latest construction documents on site, including design drawings, approved shop drawings and permit drawings.

**PART 2 – PRODUCTS**

**2.01 REINFORCEMENT**

- A. Reinforcing Steel:
  - 1. ASTM A615, Grade 40, deformed bar, #3 and smaller, unless noted otherwise.
  - 2. ASTM A615, Grade 60, deformed bar, #4 and larger, unless noted otherwise.
  - 3. ASTM A706, where reinforcement is to be welded.
  - 4. Shall be new, free from rust, scale, oil, and dirt.
- B. Spiral Reinforcement:
  - 1. ASTM A615 Grade 60, deformed bar.

**2.02 ACCESSORIES**

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.
- C. Where supports bear on earth, use concrete blocks. For surfaces exposed to view, stainless steel support chairs, spacers, or bolsters shall be used.
- D. The use of wood or organic supports or spacers inside the forms is not permitted.

**2.03 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with ACI 301.
- B. Weld reinforcement in accordance with AWS D1.4. As a minimum, use E70 electrodes.
- C. Reinforcing splices not indicated on drawings shall be located at points of minimum stress and approved by the Engineer of Record prior to placement.

- D. In case of fabrication errors do not rebend reinforcement in a manner that will damage or weaken the material.

### **PART 3 – EXECUTION**

#### **3.01 PLACEMENT**

- A. Reinforcing steel shall be placed in accordance with the Construction Drawings, the reviewed shop drawings, and the requirements of the references. Place, support and secure reinforcement against displacement due to workmen and the placement of concrete. Do not deviate from required position.
- B. Maintain minimum concrete cover over reinforcing as follows unless noted otherwise:

Concrete Formed against Formwork	2 inches
Concrete Formed against Earth	3 inches
- C. Obstructions: Where conduits, piping, inserts, sleeves, etc., interfere with placing of reinforcing steel, consult the Engineer of Record for resolution before placing concrete.
- D. Accommodate placement of formed openings.
- E. Do not displace or damage vapor barriers.
- F. Tying: Push in tie wire so that concrete placement will not force the wire ends to the surface of exposed concrete.
- G. Splicing: Locate splices as specified in the Construction Drawings. Stagger splices in adjacent bars wherever possible.
- H. Field Bending: All reinforcing shall be bent cold. Assure that minimum bend radiuses are maintained. Do not rebend reinforcement within 6 inches of previously bent areas without approval from the Engineer of Record. Reinforcing partially embedded in concrete shall not be field bent.

#### **3.02 FIELD QUALITY CONTROL**

- A. Schedule inspections with the Engineer of Record a minimum of 48 hours prior to placing concrete.

**END OF SECTION 03 20 00**

**SECTION 03 30 00 - CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.01 SUMMARY OF WORK**

- A. Cast-in-place concrete slabs, footings, grade beam foundations, and drilled pier foundations.

**1.02 RELATED SECTIONS**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.
- B. Section 03 20 00 - Concrete Reinforcement

**1.03 REFERENCES**

- A. ACI 301 - Structural Concrete for Buildings
- B. ACI 302 - Guide for Concrete Floor and Slab Construction
- C. ACI 308 - Standard Practice for Curing Concrete
- D. ACI 309 - Guide for Consolidation of Concrete
- E. ACI 318 - Building Code Requirements for Structural Concrete
- F. ASTM C33 - Normal Weight Concrete Aggregates
- G. ASTM C94 - Ready-Mixed Concrete
- H. ASTM C150 - Portland Cement
- I. ASTM C309 - Liquid Membrane-Forming Compounds

**1.04 SUBMITTALS FOR REVIEW**

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Submit the proposed concrete mix designs stamped by a structural or civil engineer currently licensed in the State of California. The submittal should include a listing of all materials in the mix, source of materials, admixtures and their proportions, and product data sheets. Concrete shall not be placed before the Engineer of Record has reviewed the mix designs.

**1.05 QUALITY ASSURANCE**

- A. Perform Work in accordance with ACI 301.
- B. Maintain one copy of latest construction documents on site, including design drawings, approved shop drawings and permit drawings.
- C. Structural observation by the Engineer of Record at the following milestones:
  - 1. Reinforcing steel placement prior to placing concrete.

- D. Special Inspections. The following special inspections, as required by Section 1704.4 of the California Building Code, shall be provided during construction on the following types of work. The contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner. The Owner shall bear the costs of tests and inspections.

Continuous Inspection is required for the following:

1. During the placement of concrete.
2. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of concrete.
3. Installation of all post-installed anchors.

Periodic Inspection is required for the following:

1. At the start and during each phase of the project to ascertain proposed conformity of materials, personnel qualifications as required, and procedures with the applicable codes, plans and specifications.
2. At such frequency as necessary to clearly confirm the placement of reinforcing steel.
3. Shape, location and dimensions of formwork for concrete member being formed.
4. For verification of delivered mix design before any concrete is placed.
5. Maintenance of specified curing temperature and techniques.

## **PART 2 - PRODUCTS**

### **2.01 CONCRETE MATERIALS**

- A. Cement: ASTM C150, Type II, and shall be provided by one manufacturer.
- B. Pozzolan: Class F Fly Ash per ASTM C618 comprising 15-25% of total cementitious materials. Fly Ash may be added to a maximum ratio of 35% of total cementitious materials where testing reports are provided for the mix design review.
- C. Coarse Aggregates: Coarse aggregates shall conform to ASTM C33, sizes 57, 67 or 7. Pea gravel aggregate shall not be used.
- D. Fine aggregates: Fine Aggregates shall conform to ASTM C33.
- E. Water: Clean and not detrimental to concrete.

### **2.02 ADMIXTURES**

- A. No admixtures shall be allowed without written acceptance by the Engineer of Record. Admixtures that have a negative impact on concrete finish shall not be used. When more than one admixture is used, admixtures shall be compatible.

### **2.03 ACCESSORIES**

- A. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days. SIKAGrout 212 or approved equal.
- B. Exposed Form Snap-ties: Provide exposed fiberglass snap-ties installed per Landscape Architectural drawings.

**2.04 CONCRETE MIX**

- A. Mix and deliver concrete in accordance with ASTM C94.
- B. Addition of water to the mix after leaving the plant is not permitted.
- C. Provide normal weight concrete to the following criteria:

Compressive Strength (28 day):

Other Concrete	3,000 psi
Normal Weight Aggregate	
Water/Cement Ratio (maximum)	.50 by weight
Drying Shrinkage Limit (@ 21 days)	0.40%

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

- A. Verify requirements for concrete cover over reinforcement.
- B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

**3.02 PREPARATION**

- A. Prepare joints in previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

**3.03 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 301.
- B. Notify Engineer of Record and Special Inspector a minimum 48 hours prior to commencement of operations. Do not place concrete until forms and reinforcement as well as other required inspections have occurred and the Special Inspector is present to perform observations and testing during placement.

- C. Ensure reinforcement, anchor rods, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
- D. Separate slabs on grade from vertical surfaces with 1/2 inch thick joint filler. Place joint filler to required elevations. Secure to resist movement by wet concrete.
- E. Extend joint filler from bottom of slab to within 1/8 inch of finished slab surface.
- F. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- G. Place concrete continuously between predetermined contraction joints.
- H. Do not interrupt successive placement; do not permit cold joints to occur.

### **3.04 CONCRETE FINISHING**

- A. Provide formed concrete surfaces to be left exposed with a smooth finish. Coordinate finish with Landscape Architect prior to placing concrete.

### **3.05 CURING AND PROTECTION**

- A. 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.
- C. Cure floor surfaces in accordance with ACI 308.
- D. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

### **3.06 FIELD QUALITY CONTROL**

- A. Provide free access to Work and cooperate with Owner and Owner's representatives.
- B. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- C. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- D. At a minimum one slump test will be taken for each set of test cylinders taken.

### **3.07 PATCHING**

- A. Allow inspection of concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Engineer of Record upon discovery.
- C. Patch imperfections in accordance with ACI 301.

**3.08 DEFECTIVE CONCRETE**

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements; concrete with excessive honeycombs or other surface or finish defects.
- B. Repair or replacement of defective concrete will be determined by the Engineer of Record.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of the Owner or Engineer for each individual area.
- D. No additional compensation will be allowed for repair of defective concrete.

**END OF SECTION 03 30 00**

**SECTION 13 34 23 - PREFABRICATED RESTROOM  
STRUCTURE INSTALLATION**

**A. General, Specifications and Clarification of Prefabricated Building and Site Installation** This portion of the bid specifications does not follow the CSI standard format as the prefabricated structure in this bid is an **offsite constructed "product"** and not "typical" general construction.

1. The **installation of the product on site is general construction**, which must be coordinated between the general contractor and Public Restroom Company. Specifications for the building foundation/pad are provided in the project plans. Due to the responsibility of the specified building contractor for warranty, the site pad/foundation must meet Public Restroom Company's design so the pad and building can be considered from a single source for warranty purposes. The County and Public Restroom Company must accept the pad and compactions tests before they take responsibility for the entire system under their warranty.

**B. Architectural Design/Engineering and Insurance Responsibility**

1. While the County of Santa Cruz has provided bid specifications and a design for the building, the building design/build contractor remains legally responsible for architecture, engineering, and all applicable building, safety, health, fire, and accessibility code compliance. Since they hold professional design responsibility to the owner, the building contractor must furnish certification that they provide product liability insurance in the amounts required by the general specifications **to cover property damage and personal injury**. Final drawings of the pre-fabricated restroom building shall be provided by Public Restroom Company to the owner and will be stamped by a California engineer and California Department of Housing and Community Development, suitable for local permitting.

**C. Errors and Omissions Insurance**

1. The building design/build contractor must also provide an additional Professional Architectural and Engineering Errors and Omissions insurance, in the minimum amount of \$2,000,000, **to cover claims against the owner or the general contractor for State and Federal ADA handicapped accessibility and other design/engineering code issues**. This Errors and Omission Policy must remain in effect for 5 years from the completion and owner acceptance of the project.

**D. General Contractor Coordination with Public Restroom Company**

1. The specified prefabricated public restroom building requires coordination between the General Contractor (who prepares the site pad and delivery access for the prefabricated building) and the prefabricated restroom building contractor (who completes the architectural design, engineering, off-site building construction, delivery and installation on site.) The specified prefabricated restroom building specifications include unique components/systems which are custom to the restroom building contractor. Since the restroom contractor is responsible for design, additional insurance requirements for errors and omissions is required.

**E. General Contractor, General Scope of Work**

1. Contractor shall survey the site, establish survey for the building pad and prefabricated building slab elevation and front corners, excavate for building footings, locate footing sleeves for electrical, waste, and water, pour the footings, furnish sand base adjacent to



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subgrade pad, and provide location for utility POC's nominally 6' outside the foundation.

2. Preparation of Building Pad:
  - a. The building subgrade/footings shall be constructed per the bid drawings
  - b. Contractor is responsible for providing the building subgrade pad and footings to frost depth per Public Restroom Company design specifications. PRC will provide detailed drawings for the subgrade building pad, utilities POC's, and the footings.
3. Subgrade Pad/Foundation Requirements:
  - a. Contractor shall survey the building site and provide a finished slab elevation for the prefabricated building. The building pad size we require is larger than the final actual building footprint. Provide building front corner stakes with 10' offsets.
  - b. Excavate the existing site to the depth of the required footings to local code.
  - c. Furnish coarse concrete sand adjacent to subgrade pad so PRC can cut the utility trenches, install underground utilities, and screed sand.
4. Verification of site access to allow Building Delivery:
  - a. Certify to PRC that suitable delivery access to the proposed building site is available. Suitable access is defined as 14' minimum width, 16' minimum height, and sufficient turning radius for a crane and 70' tractor-trailer.
  - b. Crane must be able to get within 35' from the building center and for the delivery truck to be no more than 35' from the crane center picking point.
  - c. If the path to the building site traverses curbs, underground utilities, landscaping, sidewalks, or other obstacles that could be damaged, it is the Contractor's responsibility for repair and all costs, if damage occurs.
  - d. If trench plating is required, it shall be the cost responsibility of the Contractor.
  - e. If unseen obstacles are present when site installation begins, it is the Contractor's responsibility to properly mark them and verbally notify PRC before installation.
5. Installation Notice and Site Availability:
  - a. PRC will provide sufficient notice of delivery of the prefabricated building. The Contractor shall make the site available during the delivery period. During the delivery period, on an improved site, Contractor should stop site watering several days before delivery to minimize the impact on the soils for the heavy equipment needed for installation.
  - b. Caution: If site is not ready for PRC field crew to perform their installation and if no notice of delay in readiness from Contractor is received, PRC will provide a change order for re- mobilization on a daily basis until the site is ready, to be paid by Contractor. Ready means that the site pad is completed, the corner required survey stakes are in place, the slab elevation stakes are in place, the location of the front of the building is confirmed on site, and access to the site is available from an improved roadway. Owner shall sign the change order before PRC will continue delivery.
  - c. Public Restroom Company will "turn-key" set the buildings including the hook up of utilities inside the building (only) when they are available. PRC will use its own factory trained staff for the installation.
6. Utility Connections:
  - a. Contractor is responsible for flushing all water service lines before final connection.
  - b. Contractor is responsible for the final connections of water, sewer, and electrical at the exterior of building POC's.

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- c. PRC provides a POC for water, a POC DWV waste line with a clean out your service connection, and an electrical schedule 80 PVC sleeve at an exterior POC.
  - d. PRC provides and connects the interior building utility connections and the Contractor makes the exterior connections to POC's for services.
7. Special Conditions, Permits, and Inspection Fees:
- a. Follow any published specifications governing local building procedures for applicable building permit fees, health department fees, all inspection fees, site concrete testing fees, and compaction tests, as required by Owner. PRC is responsible for all required State inspections and final State insignia certification of the building, if applicable.
8. Jurisdiction for Off-site Work:
- a. Jurisdiction, for permitting and inspection of this building shall be either the State agency who manages prefabricated building compliance in the state or the local CBO (when the State does not provide certification.) If the responsibility for building inspection is the local CBO, PRC will provide a certified plan set, calculations, and a third-party engineer inspection report for any and all closed work the local official cannot see.

**F. Public Restroom Company, General Scope of Work:**

1. The prefabricated restroom building specialist will provide to the general contractor final building design architectural drawings and engineering calculations under the responsibility of a licensed structural engineer, in compliance with all local, state and federal codes. The design/build subcontractor shall construct the building offsite as a permanently relocatable building, transport it to the final required destination, and install the building turnkey, on a general contractor prepared pad per the drawings included in this bid.
2. Site Inspection:
  - a. PRC staff, upon site arrival, will verify the required dimensions of the building pad and the corner locations/elevation. PRC will also verify the delivery path from an accessible road or street and install the underground utilities to the point of connection nominally 6' from the exterior of the building.
3. Installation:
  - a. PRC will install the building turn-key, except for any exclusion (listed under "Exclusions," herein.)
4. Installation of Utilities under the Prefabricated Building:
  - a. PRC will fabricate off-site an underground utilities (water, and DWV piping and fittings) preassembled plumbing and electrical tree. Staff will set the underground tree in the excavated trench into code depth excavated trenches and install the coarse concrete sand to bed the piping per submitted drawing.
  - b. Contractor's utility POC's start nominally 6' from the building footprint where PRC picks up the task and connects services to the building stub downs. PRC provides all the under slab piping (including the driven electrical ground rod or lightning rod, if applicable.) Contractor brings utility services to within 6' of the pad.
5. Connection of Utilities Post Building Placement:
  - a. After placement of the building on the pad by PRC, PRC field staff will tie in the water and sewer connection "inside" the building only and terminate at a point of connection (POC) outside the building clearly marked for each utility service. The Contractor is responsible for final utility point of service

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- connections at the nominal 6' from building locations.
6. Electrical:
    - a. PRC provides the electrical conduit to the POC 6' from the building. The Contractor pulls the wire and ties it off on the electrical panel.
  7. Plumbing:
    - a. PRC provides the POC up to 6' from the building footprint and the Contractor connects the water to the stub out location.
  8. Sewer:
    - a. PRC will provide a sewer point of connection including a clean out to which Contractor will terminate the site sewer service.
  9. Testing of Water, Sewer, and Electrical in Plant and Final Site Utility Connection:
    - a. Before the building leaves the manufacturing center, PRC certifies a pressure water piping test, DWV, and the electrical connections for compliance with code. While the building is fully tested for leaks at the plant before shipment, road vibration may loosen some plumbing slip fittings and require tightening once the building services (water) is completed. Contractor is responsible for minor fitting tightening to handle small slip fitting leaks caused by transportation.
  10. Time of Completion:
    - a. PRC estimates a 150 day schedule to complete scope of work from receipt of written notice to proceed together with signed approved architectural submittals from all authorities required to approve them.
  11. Exclusions/Exceptions:
    - a. Access issues for delivery of the building when the Contractor has not provided a proper path to the final site. This exclusion covers sites whose access is limited by trees, inaccessible roadways, overhead power lines at location where crane will lift building, grade changes, berms, or uneven site grades, or when the path of travel is over improvements such as sidewalks, all of which are not within the scope of work by PRC. Any site soils damage or other site improvements if damaged during installation are by Contractor.
    - b. If weather on site causes site delivery issues the delivery may have to be diverted to an offsite location and the additional costs will be a change order to the bid. Our staff works with the owner in advance to make sure sound decisions for delivery are made to avoid this issue. But sometimes owners take risks for weather but this risk is clearly at the owner's risk not PRC.
    - c. Any trench plates needed for protection of site soils, sidewalks, or site utilities.
    - d. Sidewalks outside the building footprint.
    - e. Survey, excavation, and installation of the building pad and footings, if required, per our plans previously sent.
    - f. Soil conditions not suitable for bearing 1500 psf. If no soils testing report is available before bid, owner must verify site supporting soils at a minimum of 1000 psf are the least we can place our structures on or owner or engineer of record must design a foundation system to meet the imposed loads of site placement.
    - g. Improper water pressure, an undersized meter, or improper water volume flow to the building may necessitate a change order for the structure to install a 30 gallon pressure tank to provide the minimum flow rate and pressure. Building water service chlorination, post installation, is by owner, not PRC.
    - h. Building permits, a site survey, special inspection fees, minor trash removal, final utility connections to the onsite water, sewer and electrical are by others and since the building is fully inspected and tested in plant, minor plumbing leaks (if water is not available when building site work installation is

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- completed,) is by others.
- i. PRC crane costs are based on a maximum 35' radius from the center pin of the crane to center point of the furthest building module roof. If additional distance requires a larger crane, additional costs may be assessed by the crane company and a change order will be sent to the owner, to be responsibility of Contractor.
  - j. The Contractor shall be responsible for minor shrink wrap trash for building delivery protection and minor site debris removal or a location for placement on site (nominally one pickup truck of shipping materials.)

**END OF SECTION 13 34 23**

**SECTION 26 05 00 - GENERAL ELECTRICAL REQUIREMENTS**

**PART 1 – GENERAL**

**1.01 DESCRIPTION OF WORK**

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations that are shown on the Drawings, included in these specifications, or otherwise needed for a complete and fully operating facility.
- B. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.

**1.02 RELATED WORK**

- A. This Section provides the basic Electrical Requirements which supplement the General Requirements of Division 01 and apply to all Sections of Division 26.

**1.03 SUBMITTALS**

- A. As specified in Division 01. Submit to the Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site. Partial submittals are not acceptable and will be returned without review. Furnish manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable Federal, Industry and Technical Society Publication References, and years of satisfactory service of each item required to establish contract compliance. Photographs of existing installations and data submitted in lieu of catalog data are not acceptable and will be returned without approval.
- B. Organize submittals for equipment and items related to each specification section together as a package.
- C. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.
- D. Substitutions shall be proven to the Architect or Engineer to be equal or superior to the specified product. Architect's decision is final. The Contractor shall pay all costs incurred by the Architect and Engineer in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.
- E. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.
- F. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which are a result of the substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.

**1.04 QUALITY ASSURANCE**

- A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions following applicable codes:

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1. California Electrical Code (CEC).
  2. Occupational Safety and Health Act (OSHA) standards.
  3. All applicable local codes, rules and regulations.
  4. Electrical Contractor shall possess a C-10 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
- B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
- C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
- D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
- E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
- F. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.

**1.05 CONTRACT DOCUMENTS**

- A. Drawings and Specifications:
1. In the case of conflict between the drawings and specifications, the specifications shall take precedence.
  2. Drawings and specifications are intended to comply with all law, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, said laws, ordinance, rules and regulations shall be considered as a part of said Contract Documents within the limits specified. The Contractor shall bear all expenses of correcting work done contrary to said laws, ordinance, rules and regulations if the Contractor knew or should have known that the work as performed is contrary to said laws, ordinances, rules and regulations and if the Contractor performed same (1) without first consulting the Architect for further instructions regarding said work and/or (2) disregarded the Architect's instructions regarding said work.
- B. Drawings: The Electrical Drawings shall govern the general layout of the completed construction.
1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Architect prior to installation.
  2. Review the Drawings and Specification Divisions of other trades and perform the electrical work that will be required for those installations.

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3. Should there be a need to deviate from the Electrical Drawings and Specifications, submit written details and reasons for all changes to the Architect for approval.
4. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Architect.
5. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Architect prior to submitting bids.
6. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.

**1.06 CLOSEOUT SUBMITTALS**

- A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 01.

**1.07 COORDINATION**

- A. Coordinate the electrical work with the other trades, code authorities, utilities and the Architect.
- B. Provide and install all trenching, backfilling, conduit, pull boxes, splice boxes, etc. for all the locations indicated on the Drawings.
- C. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
- D. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
- E. When two trades join together in an area, make certain that no electrical work is omitted.

**1.08 JOB CONDITIONS**

- A. Operations: Perform all work in compliance with Division 01.
  1. Keep the number and duration of power shutdown periods to a minimum.
  2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
  3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.

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- B. Construction Power: Unless otherwise noted on specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on-site source. Energy costs shall be paid for by the Owner.
- C. Storage: Provide adequate storage for all equipment and materials which will become part of the completed facility so that it is protected from weather, dust, water, or construction operations.

**1.09 DAMAGED PRODUCTS**

- A. Notify the Architect in writing in the event that any equipment or material is damaged. Obtain approval from the Architect before making repairs to damaged products.

**1.10 LOCATIONS**

- A. General: Use equipment, materials and wiring methods suitable for the types of locations in which they are located.
- B. Dry Locations: All those indoor areas which do not fall within the definition below for Wet Locations and which are not otherwise designated on the Drawings.
- C. Wet Locations: All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Drawings.

**1.11 SAFETY AND INDEMNITY**

- A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
- B. No act, service, drawing review or construction review by the Owner, the Engineer or their Consultants is intended to include reviews of the adequacy of the Contractors safety measures in or near the construction site.
- C. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
- D. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and its abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Aurum Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.



## **PART 2 - PRODUCTS**

### **2.01 STANDARD OF QUALITY**

- A. Products that are specified by manufacturer, trade name or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are established to be equal to the specified product and approved by the Architect prior to installation.
- B. Material and Equipment: Provide materials and equipment that are new and are current products of manufacturers regularly engaged in the production of such products. The standard products shall have been in satisfactory commercial or industrial use for two years prior to bid opening. The two-year period includes use of equipment and materials of similar size under similar circumstances. For uniformity, only one manufacturer will be accepted for each type of product.
- C. Service Support: Submit a certified list of qualified permanent service organizations including their addresses and qualification for support of the equipment. These service organizations shall be convenient to the equipment installation and able to render service to the equipment on a regular and emergency basis during the warranty period of the contract.
- D. Manufacturer's Recommendations: Where installation procedures are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendation shall be cause for rejection of the equipment or material.

### **2.02 NAMEPLATES**

- A. For each piece of electrical equipment, provide a manufacturer's nameplate showing his name, location, the pertinent ratings, the model designation, and shop order number.
- B. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125-inch-thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Where not otherwise specified, lettering shall be a minimum of 0.25-inch-high normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.

### **2.03 FASTENERS**

- A. Fasteners for securing equipment to walls, floors and the like shall be either hot-dip galvanized after fabrication or stainless steel.

### **2.04 FINISH REQUIREMENTS**

- A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is otherwise unsatisfactory, to the satisfaction of the Architect.
- B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

### **PART 3 - EXECUTION**

#### **3.01 WORKMANSHIP**

- A. Ensure that all equipment and materials fit properly in their installation.
- B. Perform any required work to correct improperly fit installation at no additional expense to the owner.
- C. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the "NECA-1 Standard Practices for Good Workmanship in Electrical Contracting". Workmanship of the entire job shall be first class in every respect.

#### **3.02 EQUIPMENT INSTALLATIONS**

- A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
- B. Do all the cutting and patching necessary for the proper installation of work and repair any damage done.
- C. Earthquake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2 and ASCE7-10, Sections 13.3 and 13.6 and Table 13.6-1.
- D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pach-ometer, or prof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.

#### **3.03 FIELD TEST**

- A. Test shall be in accordance with Acceptance testing specifications issued by the National Electrical Testing Association (NETA).
- B. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service. Make additional calibration and adjustments if it is determined later that the initial adjustments are not satisfactory for proper performance. Perform equipment field test for equipment where equipment field tests are specified in the equipment Specifications. Give sufficient notice to the Architect prior to any test so that the tests may be witnessed.
- C. Provide instruments, other equipment and material required for the tests. These shall be of the type designed for the type of tests to be performed. Test instrument shall be calibrated by a recognized testing laboratory within three months prior to performing tests.
- D. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.
- E. Re-testing will be required for all unsatisfactory tests after the equipment or system has been repaired. Re-test all related equipment and systems if required by the Architect. Repair and re-test equipment and systems which have been satisfactorily tested but later fail, until satisfactory performance is obtained.

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- F. Maintain records of each test and submit five copies to the Architect when testing is complete. All tests shall be witnessed by the Architect. These records shall include:
1. Name of equipment tested.
  2. Date of report.
  3. Date of test.
  4. Description of test setup.
  5. Identification and rating of test equipment.
  6. Test results and data.
  7. Name of person performing test.
  8. Owner or Architect's initials.
- G. Items requiring testing shall be as noted in the additional electrical sections of these specifications.

**3.04 CLEANING EQUIPMENT**

- A. Thoroughly clean all soiled surfaces of installed equipment and materials.

**3.05 PAINTING OF EQUIPMENT**

- A. Factory Applied: Electrical equipment shall have factory applied painting system which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test and the additional requirements specified in the technical section.
- B. Field Applied: Paint electrical equipment as required to match finish of adjacent surfaces.

**3.06 RECORDS**

- A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revising, deleting and adding to the Drawing Sheets as required. The following requirements shall be complied with:
1. Cable Size and Type: Provide the size and type of each cable installed on project.
  2. Substructure: Where the location of all underground conduits, pull boxes, stub ups and etc. where are found to be different than shown, carefully mark the correct location on the Drawings. Work shall be dimensioned from existing improvements.
  3. Size of all conduit runs.
  4. Routes of concealed conduit runs and conduit runs below grade.
  5. Homerun points of all branch circuit.
  6. Location of all switchgear, panels, MCC, lighting control panels, pullcans, etc.

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7. Changes made as a result of all approved change orders, addendums, or field authorized revisions.
8. As Built: At the completion of the Work the Contractor shall review, certify, correct and turn over the marked-up Drawings to the Architect for his use in preparing "as built" plans.
9. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.

**3.07 CLEAN UP**

- A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Architect.

**END OF SECTION 26 05 00**

**SECTION 26 05 19 - LINE VOLTAGE WIRE AND CABLE**

**PART 1 - GENERAL**

**1.01 DESCRIPTION OF WORK**

- A. The work of this Section consists of providing all wire and cable rated 600 volts or less, including splices and terminations, as shown on the Drawings and as described herein.

**1.02 RELATED WORK**

- A. See the following Specification Section for work related to the work in this Section:
  - 1. 26 05 42 Conduits, Raceways and Fittings.

**1.03 QUALITY ASSURANCE**

- A. Field tests shall be performed as specified in paragraph 3.04 of this Section.

**PART 2 - PRODUCTS**

**2.01 CONDUCTORS**

- A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 90°C, 600 volt rated insulation.
- B. Conductors shall be stranded copper.
- C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- D. All conductors used on this Project shall be of the same type and conductor material.

**2.02 CABLES**

- A. All individual conductors shall be copper with type THHN/THWN, 90°C, 600 volt rated insulation.
- B. Insulation Marking - All insulated conductors shall be identified with printing colored to contrast with the insulation color.
- C. Color Coding - As specified in paragraph 3.03.
- D. Special Wiring - Where special wiring is proposed by an equipment manufacturer, submit the special wiring requirements to the Owner's Representative and, if approved, provide same. Special wire shall be the type required by the equipment manufacturer.
- E. Other Wiring - Wire or cable not specifically shown on the Drawings or specified, but required, shall be of the type and size required for the application and as approved by the Owner's Representative.
- F. Manufacturer - Acceptable manufacturers including Cablec, Southwire, or equal.

### **2.03 TERMINATIONS**

- A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
- B. Wire Terminations – Stranded conductors shall be terminated in clamping type terminations which serve to contain all the strands of the conductor. Curling of a stranded conductor around a screw type terminal is not allowed. For screw type terminations, use a fork type stake-on termination on the stranded conductor. Use only a stake-on tool approved for the fork terminals selected.
- C. End Seals - Heat shrink plastic caps of proper size for the wire on which used.

### **2.04 TAPE**

- A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

## **PART 3 - EXECUTION**

### **3.01 CABLE INSTALLATION**

- A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 26 05 42 - Conduits Raceway and Fittings.
- B. All line voltage wiring shall be installed in conduit.
- C. All feeder conductors shall be continuous from equipment to equipment. Splices in feeders are not permitted unless specifically noted or approved by the Electrical Engineer.
- D. All branch circuit wiring shall be run concealed in ceiling spaces, walls, below floors or in crawl spaces unless noted otherwise.
- E. Cable Pulling - Exercise care in pulling wires and cables into conduit or wireways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.
- F. Bending Radius - Cable bending radius shall be per applicable code. Install feeder cables in one continuous length.
- G. Equipment Grounding Conductors - Provide an equipment grounding conductor, whether or not it is shown on the Drawings, in all conduits or all raceways.
- H. Panelboard Wiring - In panels, bundle incoming wire and cables which are No. 6 AWG and smaller, lace at intervals not greater than 6 inches, neatly spread into trees and connect to their respective terminals. Allow sufficient slack in cables for alterations in terminal connections. Perform lacing with plastic cable ties or linen lacing twine. Where plastic panel wiring duct is provided for cable runs, lacing is not necessary when the cable is properly installed in the duct.

**3.02 CABLE TERMINATIONS AND SPLICES**

- A. Splices - UL Listed wirenuts.
- B. Terminations - Shall comply with the following:
  - 1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
  - 2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.

**3.03 CIRCUIT AND CONDUCTOR IDENTIFICATION**

- A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Conductor colors shall be as follows:

<u>VOLTAGE</u>	<u>120/240V</u>
Phase A	Black
Phase B	Red
Neutral	White
Ground	Green

- B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
- C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source transformer of the circuit and the building number(s) serviced by the circuit.

**3.04 FIELD TESTS**

- A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.
- B. Insulation Resistance Tests: Perform insulation resistance tests on circuits with #2 AWG and larger conductors to be energized with a line-to-neutral voltage of 120 volts or more. Make these tests before all equipment has been connected. Test the insulation with a 500Vdc insulation resistance tester with a scale reading 100 megohms. The insulation resistance shall be 2 megohms or more. Submit results for review.

**END OF SECTION 26 05 19**

**SECTION 26 05 26 - GROUNDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Conduits, wires, ground rods and other materials for the electrical grounding system.

**1.02 RELATED SECTIONS**

- A. Section 26 05 00 - Electrical General Requirements.

**PART 2 PRODUCTS**

**2.01 GROUND ROD**

- A. "Copperweld" ground rod conforming to or exceeding requirements of U.L. Specification No. 467 (ANSI C-33.8). Rod shall be 3/4" diameter and 10' in length, unless otherwise noted on the Drawings.

**2.02 BELOW GRADE CONNECTIONS**

- A. Compression fittings, Thomas & Betts, Series 52000, 53000 or 54000 or approved equal.

**2.03 HARDWARE**

- A. Bolts, nuts and washers shall be bronze, cadmium plated steel or other non-corrosive materials, approved for the purpose.

**2.04 WATERPROOF SEALANT**

- A. Use Kearney "Aqua Seal" mastic sealant on all below grade clamp or compression type connections.

**PART 3 EXECUTION**

**3.01 GROUNDING AND BONDING**

- A. Grounding and bonding shall be as required by codes and local authorities.
- B. All electrical equipment shall be grounded, including, but not limited to, panel boards, terminal cabinets and outlet boxes.
- C. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
- D. A green insulated copper ground wire, sized to comply with codes, shall be installed in all conduit runs.
- E. All metal parts of pull boxes shall be grounded per code requirements.
- F. All ground conductors shall be green insulated copper.



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- G. The ground system electrodes shall be tested for resistance before the equipment ground conductors are connected. Maximum ground system resistance shall be 25 ohms. Install up to two additional ground rods to meet the 25-ohm requirement. Multiple ground rods shall not be less than 10 feet apart.
- H. Grounding of equipment shall be completed as indicated on the Drawings.

**END OF SECTION 26 05 26**

**SECTION 26 05 42 - CONDUITS, RACEWAYS AND FITTINGS**

**PART 1 - GENERAL**

**1.01 DESCRIPTION OF WORK**

- A. The work of this section consists of furnishing and installing conduits, raceways and fittings as shown on the Drawings and as described herein.

**1.02 RELATED WORK**

- A. See the following specification sections for work related to the work in this section:

- 1. 26 05 19                      Line Voltage Wire and Cable

**PART 2 - PRODUCTS**

**2.01 CONDUITS, RACEWAYS**

- A. Galvanized Rigid Steel Conduit (GRS) shall be hot-dip galvanized after fabrication. Couplings shall be threaded type.
- B. Rigid Non-metallic Conduit: Rigid non-metallic conduit shall be PVC Schedule 40 (PVC-40 or NEMA Type EPC-40) conduit approved for underground use and for use with 90° C wires.

**2.02 CONDUIT SUPPORTS**

- A. Supports for individual conduits shall be galvanized malleable iron one-hole type with conduit back spacer.
- B. Supports for multiple conduits shall be hot-dipped galvanized Unistrut or Superstrut channels, or approved equal. All associated hardware shall be hot-dip galvanized.
- C. Clamp fasteners shall be by wedge anchors. Shot in anchors shall not be allowed.

**2.03 FITTINGS**

- A. Provide threaded-type couplings and connectors for rigid steel conduits; provide steel compression (watertight), or steel set-screw type for EMT, (die-cast zinc or malleable iron type fittings are not allowed). Provide threaded couplings and Meyers hubs for rigid steel conduit exposed to weather.
- B. Fittings for flexible conduit shall be Appleton, Chicago, IL, Type ST, O-Z Gedney Series 4Q by General Signal Corp., Terryville, CT, T & B 5300 series, or approved equal.
- C. Fittings for use with rigid steel shall be galvanized steel or galvanized cast ferrous metal; access fittings shall have gasketed cast covers and be Crouse Hinds Condulets, Syracuse, NY, Appleton Unilets, Chicago, IL, or approved equal. Provide threaded-type couplings and connectors; set-screw type and compression-type are not acceptable.
- D. Fittings for use with rigid non-metallic conduit shall be PVC and have solvent-weld-type conduit connections.

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- E. Union couplings for conduits shall be the Erickson type and shall be Appleton, Chicago, IL, Type EC, O-Z Gedney 3-piece Series 4 by General Signal Corp., Terryville, CT, or approved equal. Threadless coupling shall not be used.
- F. Bushings:
  - 1. Bushings shall be the insulated type.
  - 2. Bushings for rigid steel shall be insulated grounding type, O-Z Gedney Type HBLG, Appleton Type GIB, or approved equal.
- G. Conduit Sealants:
  - 1. Fire Retardant Types: Fire stop material shall be reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL Classification 35L4 or as specified on the Drawings.

**PART 3 - EXECUTION**

**3.01 CONDUIT, RACEWAY AND FITTING INSTALLATION**

- A. For conduit runs exposed to weather provide rigid metal (GRS).
- B. For conduit run underground, in concrete or masonry block wall and under concrete slabs, install minimum  $\frac{3}{4}$ " size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
- C. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
- D. Installation shall comply with the CEC.
- E. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 360 degrees.
- F. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
  - 1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete structure by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
    - a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
    - b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
  - 2. Support all conduits within three feet of any junction box, coupling, bend or fixture.
  - 3. Support conduit risers in shafts with Unistrut Superstrut, or approved equal, channels and straps.

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- I. Moisture Seals: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
- J. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20 mil tape and extend minimum 12" above grade.
- K. Provide a nylon pull cord in each empty raceway.
- L. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
- M. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.
- N. Conduits shall be blown out and swabbed prior to pulling wires, or installation of pull cord in empty conduits.

**END OF SECTION 26 05 42**

**SECTION 31 10 00 – SITE CLEARING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

**A. RELATED DOCUMENTS**

1. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.
2. State of California, Department of Transportation (Caltrans), Standard Specifications, latest edition:
  - a. Section 15 - Existing Highway Facilities.
  - b. Section 16 - Clearing and Grubbing.

**B. RELATED SECTIONS**

1. SECTION 01 56 39 – TEMPORARY TREE PROTECTION
2. SECTION 02 41 19 – SELECTIVE DEMOLITION
3. SECTION 31 20 00 – GRADING & EARTHWORK
4. SECTION 32 90 00 – PLANTING WORK

**C. DESCRIPTION OF WORK**

1. Extent of site clearing and grubbing as shown on drawings.
2. Site clearing work may include, but is not limited to:
  - a. Removal of vegetation designated for removal.
  - b. Topsoil stripping and stockpiling.
  - c. Clearing and grubbing of weeds and/or existing turf, and organic layer.
  - d. Dust Control.

**D. SUBMITTALS**

1. Submit, under the provisions of SECTION 01 33 00 - SUBMITTALS, the following in-formation:
  - a. Stockpiling Plan which indicates project site methods, sequence of equipment, procedures, locations, and approximate quantities of soil stockpiles.

**E. JOB CONDITIONS**

1. The Contractor shall visit and examine the project site to determine the extent of clearing, grubbing, removal, disposal, and general work to be done.
2. The Owner's Representative should be notified at least two (2) working days prior to any site clearing.
3. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
4. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements.
5. Protect improvements on adjoining properties and on Owner's property.
6. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.
7. Protection of Existing Trees and Vegetation per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
8. Provide temporary guards to protect trees and vegetation not designated for removal per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
9. Provide temporary protection to trees and vegetation to remain from herbicide application through the use of plywood shield during spraying.
10. If existing irrigation system is interrupted, water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
11. Trenching or excavation that is scheduled to occur within the dripline of trees/vegetation not designated for removal shall be done by hand per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
12. Contractor shall repair or replace trees and vegetation not designated for removal which are damaged by construction operations, in a manner acceptable to Owner's Representative. This can include the Contractor having to hire a licensed arborist to repair any such damages to trees and shrubs per the discretion of the Owner's Representative or to replace the tree in kind.
13. Topsoil: Topsoil is defined ASTM D 5268, pH range of 6.0 to 6.8, fertile, friable, natural topsoil of sandy loam character, without admixture of sub-

soil material, obtained from a well drained arable site, reasonably free from clay, lumps, coarse sands, stones, plants, roots, sticks, and other foreign materials.

**PART 2 – PRODUCTS**

- A. The Contractor shall furnish all materials, tools, equipment, facilities, and services as re-quired for performing site clearing, grubbing non native and invasive plant eradication and other site preparation work.

**PART 3 - EXECUTION**

**3.01 PREPARATION**

- A. Call Local USA Underground not less than two working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.

**3.02 PROTECTION**

- A. Locate, identify and protect utilities indicated to remain, from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping, per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
- C. Protect bench marks, and existing structures from damage or displacement.
- D. Carefully remove all items to be salvaged, and store on County property where indicated or as directed by the Owner's Representative.

**3.03 SITE CLEARING**

- A. Remove shrubs, grass and other vegetation, improvements, or obstructions interfering with installation of new construction and remove items noted for removal on the plans. Remove and dispose of such items off site or premises, unless otherwise noted or directed. Removal includes digging out stumps and roots.
- B. Where the work includes requirements for wood chip mulch, acceptable material from clearing and grubbing activities may be used to produce such mulch. Trees and tree limbs shown for removal (without reuse) shall be chipped for mulch except for allelopathic species such as eucalyptus. Woody matter from tree trunks and large branches is suitable for creation of mulch. Leaves, needles, foliage, twigs, damp matter and other such material is not suitable.
- C. Carefully and cleanly prune roots per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.

- D. Clearing: Clear site of trees, shrubs and other vegetation designated for removal Provide protection of trees to remain per SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
- E. Grubbing: Excavate, remove and dispose of all roots, stumps, and other vegetation to a minimum depth of 24" only where indicated on the plans. Measured depth shall be from existing ground surface or new finished grade, whichever is lower. Refer to SECTION 01 56 39 – TEMPORARY TREE PROTECTION and elsewhere in the contract documents for allowable grubbing techniques beneath or adjacent to existing tree drip lines.
- F. Removal of Existing Improvements & Pavements: Remove existing improvements necessary to permit construction, and other work as indicated.
- G. Temporary Removal of Existing Improvements: Carefully remove, stockpile and protect existing elements that will interfere with construction operations as necessary. These items shall be re-installed when timing is appropriate in a condition similar to, or better than, their original condition. Removal of abandoned underground piping or conduit interfering with construction is included under this section.
- H. Dust Control: Creation of dust shall be minimized as necessary by sprinkling, or other EPA approved method and as acceptable to the Engineer.
- I. Topsoil Stripping may be performed in areas to be paved, for re-use in Top Dressing Fill if approved by the Engineer in advance. After removal of all vegetative material, rocks and debris, strip approved topsoil to a minimum depth of four inches (4") in a manner to prevent intermingling with underlying subsoil or other objectionable material.
- J. Stop topsoil stripping at the driplines of trees and vegetation not designated for removal per the SECTION 01 56 39 – TEMPORARY TREE PROTECTION.
- K. Stockpile topsoil in storage piles where they will cause the least disturbance to construction operations. Construct storage piles to freely drain surface water. Treat storage piles as necessary to prevent erosion by wind or water. Monitor and control dust at all times.
- L. All topsoil (including any remaining vegetation) which is not classified as suitable fill material shall be excavated down to suitable fill material, except in plant bed areas.
- M. Stockpiling of items removed in conjunction with site clearing operations by the Contractor will only be allowed when the material will be re-used on site. Contractor shall remove and dispose of all other materials from the site on the same day as the site clearing operation occurs.

**3.04 ADJUST TO GRADE EXISTING MANHOLES, HANDHOLES, DRAINAGE / UTILITY STRUCTURES AND UTILITY VALVES**

- A. Construct or alter the structure to the required line and grade.



- B. Use approved cast iron or masonry riser collar. When adjusting Soquel Creek Water District meter, contact SCWD for materials to be used to adjust the box to grade. Also follow SCWD requirements for inspection of this type of work.
- C. Adjust frames and covers to new grade.
- D. Perform installation of new pavement work after all structures have been adjusted to new pavement grade.
- E. Maximum adjustment of manhole covers, drainage grates, and valve covers shall be 12 inches plus or minus, unless noted otherwise.

**3.05 CLEAN UP**

- A. Removal from Owner's Property: Remove all waste materials and unsuitable and excess topsoil from Owner's property and dispose of off-site in legal manner. Site is to be maintained in a clean condition at all times.

**END OF SECTION 31 10 00**

**SECTION 31 20 00 - GRADING AND EARTHWORK**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Earthwork shall include, but not be limited to:
  - 1. Excavation and over excavation.
  - 2. Fill placement, moisture conditioning, and compaction.
  - 3. Compaction of subgrade beneath pavement areas and structures
  - 4. Stockpiling of soil onsite, and/or an offsite location
  - 5. Finish grading.

1.02 STANDARDS

- A. Unless otherwise shown or specified, all materials and methods shall conform to the appropriate current sections of:
  - 1. The State of California Department of Transportation Standard Specifications (DTSS), except for measurement and payment requirements.
  - 2. Applicable ASTM Specifications as they reasonably apply to this work.

1.03 RELATED DOCUMENTS

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section
- B. "Preliminary Geotechnical Engineering Recommendations" dated May 13, 2013 by Earth Systems Pacific, and all subsequent supplemental data and review letters.

**PART 2 - PRODUCTS**

2.01 MATERIALS

- A. All fill materials shall be in accordance with the Soils Report and approved by the Geotechnical Engineer prior to use.
- B. Excess material suitable for re-use as fill material as determined by the Geotechnical Engineer shall be stockpiled as directed by the County Representative.

- C. Contractor shall make his/her own determination of the earthwork quantities.

**PART 3 – EXECUTION**

**3.01 CULTURAL RESOURCES**

- A. Pursuant To Section 16.40.040 Of The Santa Cruz County Code, If at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible contractor persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner and the Planning Director. If the Coroner determines that the remains are not of recent origin, a full archeological report shall be prepared by the County and representatives of the local Native California Indian Group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

**3.02 OBSERVATION AND TESTING**

- A. The Geotechnical Engineer will be selected and paid for by the County. The Geotechnical Engineer will observe clearing and stripping operations and recommend the maximum depth of stripping required and any over excavation required due to contamination of materials or concentrations of vegetation. The Geotechnical Engineer will observe the excavation, scarifying, moisture conditioning and re-compaction operations. After the completion of these operations and before placement of fill, Contractor shall obtain the Geotechnical Engineer's approval of the site preparation in each area.
- B. The Geotechnical Engineer shall perform field and laboratory tests to evaluate quality, degree of relative compaction and percent moisture content of the materials used.
- C. The Geotechnical Engineer shall be notified at least five (5) days in advance of the site preparation work and the placement of fills.
- D. If Contractor should fail to meet the technical or design requirements embodied in this section, the applicable Drawings, and the geotechnical report, he shall make the necessary readjustments until all work is deemed satisfactory, as determined by the Geotechnical Engineer and the County Representative. No deviation from the specifications shall be made except upon written approval of the Geotechnical Engineer or County Representative.

**3.03 PREPARATION**

- A. Preparation for earthwork shall be in accordance with the Soils Report

**3.04 INSTALLATION:**

- A. Requirements:

## GRADING & EARTHWORK

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1. All site grading shall be accomplished in accordance with the requirements of the Soils Report and as indicated on the Drawings.
  2. All site grading shall be coordinated with the Geotechnical Engineer.
  3. The work includes clean and scraping site of debris prior to landscaping and as a part of finish grading.
  4. All site grading work must be complete by October 15, 2020. Any grading activity beyond that date will require the Contractor to obtain a Winter Grading Permit. All permit application requirements and fees shall be the sole responsibility of the Contractor.
  5. The project is covered by a SWPPP Small Construction Activity Waiver, with a Notice of Coverage date of Oct. 15. Any extension or new SWPPP required because the project NOC extends past Oct. 15 will be the sole responsibility of the Contractor. Refer to Vol. I Supplemental Conditions 5.F for more information.
- B. No soil shall be compacted during periods of rain, nor on ground which is not drained of all free water. Soil which has been stockpiled and wetted by rain or by any other cause shall not be compacted until completely drained and until the moisture content is within the limits approved by the Geotechnical Engineer.
- C. Grading: Perform work in such a manner as to obtain the design grades in all areas and execute any fine grading which may be necessary for drainage or incidental operations.
- D. Use of stripped materials: The stripped materials shall not be reused as compacted fill. Non-deleterious topsoil from the stripping operation shall be stockpiled for future use on cut and fill slopes the enhance vegetation and to flatten slopes.
- E. Material spillage and dust control
1. Prevent spillage of materials when hauling on any public or private roadways. In the event that such spillage occurs, remove same and sweep, wash or otherwise clean such roads as necessary.
  2. Also take all precautions necessary to prevent a dust nuisance to adjacent public and private properties and to prevent erosion and transportation of soil to downstream properties due to work under this contract. Any damage so caused shall be corrected or repaired by Contractor at no cost to the County.
  3. Keep the onsite work haul roads and areas of work adequately watered and maintained so that dust emission form the site is minimized.
- F. Clean-up: The entire site shall be kept clean at all times. Upon completion of the work, remove all stones and debris from the site and leave it in a finished condition.

**GRADING & EARTHWORK**

Seacliff Village Park Restroom Project, Santa Cruz County

- G. Temporary construction slopes shall not exceed requirements set forth in Cal/OSHA Industrial Safety Orders, or ratio determined to be safe in the field by the Geotechnical Engineer.

**END OF SECTION 31 20 00**

**SECTION 31 23 33 - TRENCHING AND BACKFILL**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.
- B. "Preliminary Geotechnical Engineering Recommendations" dated May 13, 2013 by Earth Systems Pacific, and all subsequent supplemental data and review letters.

**1.02 SUMMARY**

- A. This SECTION includes:
  - 1. Trench excavation, shoring, and dewatering
  - 2. Pipe bedding, installation, and alignment
  - 3. Concrete encasement
  - 4. Warning tape and tracer wire
  - 5. Trench backfilling and compaction
  - 6. Surface restoration
  - 7. Record drawing requirement

**1.03 RELATED SECTIONS**

- A. SECTION 31 2 000 – GRADING AND EARTHWORK
- B. SECTION 33 10 00 – WATER UTILITIES
- C. SECTION 33 40 00 – STORM DRAINAGE UTILITIES

**1.04 REFERENCES**

- A. California Building Standards Code (CCR Title 24), 2018 Edition
- B. Project Geotechnical Report
- C. California Code 4216 – Protection of Underground Infrastructure
- D. California Occupational Safety and Health Administrative Code
- E. Standard Specifications (DTSS), State of California, Department of Transportation (Caltrans), 2018 Edition
- F. ASTM C 136 – Standard Test Method for Sieve Analysis of Fine and Course Aggregates

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- G. ASTM D1556 – Standard Test Method for Density of Soil in Place by the Sand - Cone Method
- H. ASTM D 1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
- I. ASTM D 2321 – Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
- J. ASTM D 2419 – Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
- K. ASTM D 2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- L. ASTM D 2922 – Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- M. ASTM D 3017 – Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
- N. ASTM F 1668 – Standard Guide for Construction Procedures for Buried Plastic Pipe
- O. All standards shall include the latest additions and amendments as of the date of advertisement for bids

### **1.05 SUBMITTALS**

- A. Submit proposed foundation, bedding, and backfill materials to the Geotechnical Engineer at least two (2) weeks prior to planned delivery or use.
- B. Submit manufacturer's cut sheets for all other materials to the County Representative.
- C. Submit samples and test results at least two (2) weeks prior to planned purchase/delivery.
- D. Project Schedule for trenching operations before commencing work. Refer to section 01 10 00 SUMMARY OF WORK for more schedule information.

### **1.06 DEFINITIONS**

- A. Relative Compaction, RC, or Percent Compaction: Dry density expressed as a percentage of the maximum dry density at optimum moisture content obtained in accordance with ASTM D1557.
- B. Remove: Remove and dispose of off-site, in a legal manner.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Pipe: as specified for the utility being installed.
- B. Foundation, bedding and backfill materials shall be as noted on the Drawings and as specified for the type of facility being installed.
- C. Concrete encasement: Minor concrete conforming to DTSS Section 90.
- D. Controlled density fill (CDF): 2-sack slurry cement backfill conforming to DTSS Section 19.
- E. Aggregate base: Class 2 aggregate base conforming to DTSS Section 26.
- F. Clean Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, or organic matter; maximum particle size and volume of 1/2 inch and 18 percent respectively, with minimum Sand Equivalent value of 30 per California Test 217 or ASTM D2419
- G. Select native material may be used for bedding and/or backfill only if approved by the Geotechnical Engineer.

### **2.02 ACCESSORIES**

- A. Detection tape: Polyethylene plastic warning tape, minimum 3.5 mils thick, 6-inches wide, appropriately labeled and color coded.
- B. Tracer wire: Insulated No. 12 copper wire.
- C. Geotextile fabric: in accordance with DTSS Section 88 and as approved by the Geotechnical Engineer.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. All improvements shall be constructed in accordance with the California Building Standards Code, the Geotechnical Report, the Drawings, and these Specifications.
- B. Onsite grading and earthwork, site preparation, excavation, trenching, and compaction shall be observed and tested by the Geotechnical Engineer. All grading and earthwork shall be done to the satisfaction of the Geotechnical Engineer.
- C. In the event that any unusual conditions are encountered during grading operations which are not covered by the Geotechnical Report or these Specifications, the



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Geotechnical Engineer shall be immediately notified such that additional recommendations may be made.

- 3.02 Where work is performed in public streets or rights of way, or on public utilities, perform the work in accordance with the requirements of the authority having jurisdiction and/or utility owner, if such requirements are more stringent than the requirements of this section.

### **3.03 SAFETY**

- A. Work shall comply with all federal, state, and local safety requirements
- B. Except by permission of the County, no trench shall remain open overnight.

### **3.04 PROTECTION**

- A. Protect trees, shrubs, lawns, rock outcropping, and other landscape features to remaining as portion of final landscaping.
- B. Protect benchmarks, existing structures, fences, roads, sidewalks, paving, curbs and other improvements to remain.
- C. Locate and protect above and below grade utilities which are to remain.
- D. Document all pre-existing surface defects by photographic means prior to conducting trenching operations. Upon completion of construction, all surfaces showing non-documented settlement, spalls, gouges, cracks or other defects shall be repaired or replaced to the satisfaction of the County Representative.
- E. Return all surface improvements designated to remain, which are removed for excavation, to their original condition, except as required to comply with other portions of the contract.
- F. Utility trenches which are parallel to the side of a footing shall be placed so that the trench bottom does not extend below a plane sloping downward and away from the building/footing at an inclination of 2:1 (H:V) from the bottom outside edge of the footing.

### **3.05 POTHOLING**

- A. Pothe utility lines at crossings in advance of construction to determine if adjustment in horizontal or vertical location of pipe line is required. Submit drawing to the County Representative showing located utility locations and elevations.
- B. If potholing indicates a conflict between existing and proposed facilities, notify the County Representative immediately. Do not perform work on systems which may be affected by the conflict until a resolution has been reached and you have been notified by the County Representative.

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- C. Contractor shall locate existing utilities, including water, sewer, storm drain, gas, electric, and telecommunications prior to performing trenching work or any excavation.
- D. Contractor shall notify the County Representative a minimum of two (2) weeks prior to planned utility location work. The County Representative may identify areas for underground utility location, other than those shown on the Drawings.
- E. The precise locations and elevations of all utility crossings and points of connection must be verified by Contractor prior to construction of systems which may be affected by the existing utility's location. Utilities shall be located by potholing where location and/or grade is critical

### 3.06 EXCAVATION, BEDDING, PIPE PLACEMENT, AND BACKFILLING

- A. Trenching
  - 1. Excavate to the lines and grades indicated on the Drawings. The County reserves the right to make changes to lines, grades, and depths when required due to field conditions.
  - 2. The excavation and the preparation of the trench shall be completed a sufficient distance in advance of pipe laying to prevent dislodged material from entering the pipe.
  - 3. If the foundation soil is soft, wet, spongy or unstable, the trench shall be excavated to stable soil as determined by the Geotechnical Engineer, and the excavation backfilled with pipe bedding material.
- B. Shoring
  - 1. The sides of all excavations shall be laid back or supported in the manner set forth by Cal/OSHA.
  - 2. Sheet piling and other shoring shall be withdrawn in such a manner as to prevent caving of the walls of excavations or damage to piping or other structures.
  - 3. Whenever timber or other sheeting is driven to a depth below the elevations of the top of the pipe, that portion of the sheeting below the elevation of the top of the pipe shall not be disturbed or removed.
- C. Dewatering
  - 1. Remove all water which may accumulate in the excavation during progress of the work so that all work can be done under dry conditions. Trenches shall be kept free from water while the pipe or other structures are installed, while concrete is setting, and until backfill has progressed to a sufficient height to anchor the work against possible flotation or leakage.
  - 2. Dewatering shall conform to the best management practices as outlined in the California Stormwater Quality Association's *Stormwater Best Management Practice Handbook: Construction*, latest edition.
- D. Pipe Bedding
  - 1. Bedding shall be placed in such a manner that the pipe may be laid true to line and grade. When the pipe is bedded, it shall be brought into true alignment and secured.

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2. Place and compact the initial backfill material to the pipe spring line in maximum 8 inch lifts. Carefully compact this material around and under the pipe.
3. Place and compact the initial backfill material to 12 inches above the top of the pipe in maximum 8 inch lifts. Carefully compact this material around and under the pipe.
4. Place and compact final trench backfill material in maximum 8-inch lifts to the final grade or subgrade elevation.
5. Bedding and backfill shall be compacted to at least 95 percent relative compaction in improved areas, and 90 percent in landscaped or unimproved areas.
6. Where slurry cement is utilized for pipe bedding, the pipe shall be set on precast mortar blocks or similar devices to allow for placement of required thickness of material under and around the pipe. Contractor must take the necessary steps to avoid pipe flotation or misalignment.

### **E. Pipe Installation**

1. Pipe installation shall be in accordance with the manufacturer's instructions.
2. All pipe handling shall be done in a manner that will not damage the materials. Pipe shall be carried into position, not dragged, and shall be carefully lowered into the trench. Under no circumstances shall the pipe or accessories be dropped into the trench.
3. Before lowering into the trench, and while suspended, the pipe shall be inspected for defects. Any defective, damaged or unsound pipe shall be rejected and replaced with sound material. The interior of the pipe shall be clean and free of debris.
4. Joints shall be centered and tight. Cutting of pipe for inserting fittings or for pipe connections shall be done in a neat and skillful manner without damage to the pipe. Each joint shall be inspected to ensure it is properly made before backfilling is done.
5. The pipe shall be laid true to line and grade. When completed, the pipe shall have a smooth and uniform invert. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe.
6. Where piping is installed on curves, the maximum deflection of each joint shall be no more than 80 percent of the maximum deflection recommended by the pipe manufacturer.

### **F. Trench Backfill and Compaction**

1. All backfill shall be placed in a manner to avoid rock pockets, voids, or other conditions that could lead to future settlement of the backfill.

## **3.07 TEMPORARY PIPE COVER**

- A. Provide temporary backfill or other means as necessary to protect underground utilities from heavy construction loads.

**3.08 CONTROLLED DENSITY FILL (CDF)**

- A. Backfill trenches with CDF where trenches cross below footings, including perimeter footings. CDF plug shall be a minimum of 3 feet long, and shall extend a minimum of 1 foot beyond the edge of footing.
- B. Backfill trenches with CDF where pipes are “nested” in clusters where adequate compaction cannot be achieved between and around the pipes, and at all pipe connections, valves, utility vaults, etc. where adequate compaction cannot be achieved by mechanical means.
- C. Backfill other areas with CDF where indicated on the Drawings and as directed by Geotechnical Engineer.
- D. If pipe will be partly or entirely embedded in CDF, support and brace the pipe in a manner that will prevent movement or displacement of the pipe during testing and during placement and consolidation of the slurry backfill. Consolidate CDF under and around the pipe without displacing the pipe.

**3.09 CONCRETE BACKFILL**

- A. Place concrete backfill where indicated on the Drawings.
- B. If pipe will be partly or entirely embedded in concrete, support and brace the pipe in a manner that will prevent movement or displacement of the pipe during testing and during placement and consolidation of the concrete. Consolidate concrete under and around the pipe without displacing the pipe.

**3.10 WARNING TAPE**

- A. Provide warning tape for
  - 1. All exterior gas pipes
  - 2. All other pipes which are 2-inches-diameter and larger
- B. Install 12-inches above the pipe.

**3.11 TRACER WIRE**

- A. Tape continuous tracer wire on top of and along entire length of pipes and extend to the grade at each end of the utility pipe so locator equipment can be connected.
- B. Install tracer wire on:
  - 1. All exterior gas pipes
  - 2. All exterior nonmetallic pressure pipes 2.5-inches-diameter and greater (water, recycled water, sewer force mains, and gas)

**3.12 SURFACE RESTORATION**

- A. Any pavement, curb, walk or any other surface or subsurface improvement removed or damaged during progress of the work, shall, before termination of the contract, be restored to its original condition whether or not such restoration is shown on the Drawings.
- B. The trench patch structural section shall be equivalent to the existing structural section, or 2.5-inch Hot Mix Asphalt (Type A) on 8-inch Class 2 Aggregate Base, whichever is greater. Trench patch shall extend min 6-inches beyond trench wall (“tee cut”).
- C. All street cuts shall be neatly sawcut on true line to 1-1/2-inches minimum depth at a minimum of 6-inches beyond edge of trench wall.

**END OF SECTION 31 23 33**

**SECTION 32 11 23 – AGGREGATE BASE COURSE**

**PART 1 – SUMMARY**

1.01 RELATED DOCUMENTS

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

1.02 SUMMARY

- A. This Section includes:
  - 1. Class 2 aggregate base
  - 2. Permeable aggregate base (1-1/2")

1.03 REFERENCES

- A. Standard Specifications, State of California, Department of Transportation (Caltrans), 2018 edition.
- B. ASTM D1557 - Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>).
- C. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand - Cone Method
- D. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- E. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.04 SUBMITTALS

- A. Results of laboratory testing for gradation, R-value, Sand Equivalent, and Durability Index in accordance with Sections 25 and 26 of the Standard Specifications.
- B. Materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, the specified requirements.

**PART 2 – PRODUCTS**

2.01 MATERIALS

- A. Class 2 Aggregate Base shall conform to Section 26 of the Standard Specifications.
- B. Permeable Aggregate base shall conform to ASTM No. 4 or No. 5 gradation

**PART 3 – EXECUTION**

3.01 GENERAL

- A. Perform work in conformance 26 of the Caltrans Standard Specifications.

3.02 PREPARATION

- A. Prepare subgrade as specified in Section 310000.

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- B. Sprinkle the subgrade regularly to moisten the surface and to prevent it from drying out and/or cracking prior to the placement of aggregate base.

3.03 INSTALLATION

- A. Deliver, handle, place and compact aggregate base per Sections 25 and 26 of the Standard Specifications.
- B. Compact aggregate subbase and aggregate base to at least 95 percent relative compaction as determined by ASTM D1557.

3.04 FIELD QUALITY CONTROL

- A. The GEOTECHNICAL ENGINEER will field test subgrade and aggregate base course compaction.

**END OF SECTION 32 11 23**

**SECTION 32 13 13 - CONCRETE PAVING**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.
- B. Related Sections:
  - 1. SECTION 31 20 00 - EARTH MOVING
  - 2. SECTION 32 11 23 - AGGREGATE BASE COURSES

**1.02 DESCRIPTION OF WORK**

- A. Provide all necessary materials, labor, tools and equipment to perform the work included in the section for the:
  - 1. Installation of forming for slabs-on-grade, walks, curbs, footings and paving.
  - 2. Placing reinforcement.
  - 3. Placing and finishing concrete.
  - 4. Curing of concrete.

**1.03 SUBMITTALS**

- A. General:
  - 1. Submit under the provisions of SECTION 01 33 00 - SUBMITTALS.
- B. Comply with City Standard Specifications and ACI 301, ACI 302.1R, ACI 305 R, ACI 306 R, ACI 306 R, ACI 308, ACI 309 R, ACI 318 & ACI 347.
- C. SHOP DRAWINGS: for reinforcing showing layout, dimensions and materials.
- D. REPORTS/TESTS:
  - 1. Certificates or mill test reports indicating physical and chemical properties of reinforcing.
  - 2. Compressive strength test reports from previous applications for each class of concrete.
- E. PRODUCT DATA: Concrete design mix, Color admixtures, non-shrink grout, curing compound, absorptive mats, expansion joint filler, and bonding agent.
- F. MOCK-UPS: For a textured or colored concrete surface, construct a 24-by-24-inch test panel for each type of texture and color.
- G. Project Schedule for concrete paving operations before commencing work. Refer to section 01 10 00 SUMMARY OF WORK for more schedule information.

**1.04 QUALITY ASSURANCE**

- A. Perform Work in accordance with ACI 301.
- B. Maintain one copy of latest construction documents on site, including design drawings, approved shop drawings and permit drawings, and special inspection and testing agreement



- C. Acquire cement and aggregate from same source for all work.
- D. Tolerances: Tolerances for sub-grade, subbase and finished grade shall be as specified by the Standard Specifications except that Contractor shall install the aggregate base and concrete to the minimum thickness shown. No combination of high and low tolerances will be permitted.
- E. All concrete work installed that does not conform to the approved samples shall be removed and replaced by Contractor at Contractor's expense.

**1.05 JOB CONDITIONS**

- A. Weather Conditions: Construct concrete surface course only when atmospheric temperature is above 40 degrees F., when the underlying base is dry, and when weather is not rainy.
- B. Grade Control: Establish and maintain the required lines and grades, including cross-slope during construction operations.

**1.06 REFERENCES**

- A. In addition to complying with all pertinent standards, codes and regulations, comply with all requirements of:
  - 1. ACI 308 - Standard Practice for Curing Concrete.
  - 2. ACI 309 - Guide for Consolidation of Concrete.
  - 3. ASTM C33 - Concrete Aggregates.
  - 4. ASTM C94 - Ready-Mixed Concrete.
  - 5. ASTM C150 - Portland Cement.
  - 6. ASTM C309 - Liquid Membrane-Forming Compounds

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Forming Materials:
  - 1. Unless otherwise indicated, materials for formwork shall be wood, steel, fiber or reinforced plastic and of suitable quality to achieve required finishes. Contractor shall conform to considerations and recommendations in ACI-347, Chapter 3.
  - 2. Unless otherwise indicated, contact surfaces in fabricated forms shall be smooth and uniform without warps, bends, dents, sags or irregular absorptive conditions and imperfections.
  - 3. Form ties and spreaders shall leave a hole not larger than 7/8-inch nor less than 1/2-inch in diameter in the concrete surface. The portion of the tie remaining in the concrete shall be at least 1-inch back from the concrete surface that will be exposed to view, painted, damp proofed or waterproofed.
  - 4. Radiused chamfer strips shall be milled from clear straight-grain lumber, surfaced on all sides. Other material of equal quality may be used only as authorized by Engineer's representative or Owner. Radii shall be as detailed in the Landscape drawings.
  - 5. Form coatings and bond breaking materials shall be non-staining and completely compatible with finish materials and other surface treatment materials to be used.

- B. Reinforcement:
1. Reinforcing Bars: Deformed, new billet-steel bars, conforming to ASTM Designation A 615, Grade 60 or ASTM A706 unless noted otherwise.
  2. Tie wires: ASTM A82
  3. Reinforcement supports:
    - i. At reinforcing placed over sand or earth, use precast concrete cubes.
    - ii. At reinforcing placed over forms, provide supports with legs which are hot dip galvanized, stainless steel or plastic protected.
  4. Mechanical Bar Splice: Xtender by Headed Reinforcement Corp. or equal to develop a minimum of 125% of yield strength of bar.
  5. Dowels: Deformed steel bars, ASTM A 615, Grade 60, unless otherwise shown.
  6. Welded Wire Mesh: Welded plain cold-drawn steel wire fabric, ASTM A 185. Furnished in flat sheets, not rolls.
- C. Portland Cement: ASTM C 150, Type II or V, gray as noted in 2.02 below. Shall be provided by one manufacturer.
- D. Normal-Weight Aggregates: ASTM C 33, uniformly graded, 3/4-inch max. Provide aggregates from a single source. Pee gravel or smooth aggregate shall not be used.
- E. Water: The water used in the concrete mix shall be clear and free from injurious amounts of oil, salts, acid, alkali, organic matter, or other deleterious substances.
- F. Air-Entraining Admixture: ASTM C 260. "Daravair", "Micro-Air", manufactured by W.R. Grace, Master Builders or equal.
- G. No admixtures shall be allowed without written acceptance by the Owner's Representative. Admixtures that have a negative impact on concrete finish shall not be used. When more than one admixture is used, admixtures shall be compatible. Provide letter from admixture manufacturer that it is appropriate for proposed mix design.
- H. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- I. Expansion- and Isolation-Joint Filler Strips: ASTM D 1752, cork or self-expanding cork; 3/8-inch thick asphalt impregnated fiberboard ASTM D 1571.
- J. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days. SIKAGrout 212 or approved equal.
- K. Epoxy Grout: Two-part epoxy adhesive product that conforms to the requirements of Simpson SET-XP High Strength Epoxy (ICC ESR-2508) by Simpson Strong Tie or equal product with prior written approval of the Owner's Representative. Installation shall be in strict conformance with the manufacturer's recommendations.

## **2.02 CONCRETE MIXTURES**

- A. Proportion normal-weight concrete mixes to provide the following properties:
1. Compressive Strength: Minimum 2,500 psi at 28 days.
  2. Slump Limit: Minimum 2 inches, maximum 4 inches.
  3. Aggregate Size (maximum): 1-1/2 inch.
  4. W/C Ratio: 0.50 maximum at point of placement.

5. Air Content: 3 percent plus or minus 1.5 percent.
6. Drying Shrinkage Limit: 0.04 percent. Drying shrinkage limit is percentage of change in length after 21 days of drying when tested per ASTM C157.
7. All other site concrete shall be mixed using gray Portland cement conforming to 2.01.C above.

**PART 3 - EXECUTION****3.01 EXAMINATION**

- A. Verify requirements for concrete cover over reinforcement.
- B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.
- C. Subgrade: Verify that subbase is properly compacted and at suitable grade and prepare as required in the Geotechnical Report, if available or per the drawings.
- D. Protection: Take all steps necessary not to discolor or damage existing improvements. If damage occurs, repair immediately and if repair cannot be made to the satisfaction of the Owner's Representative, remove and replace at no expense to the Owner.

**3.02 PREPARATION**

- A. Accurately position and support reinforcement, and secure against displacement.
- B. Locate and install contraction, construction, isolation, and expansion joints as indicated or required.

**3.03 INSTALLATION**

- A. Place concrete in accordance with ACI 301.
- B. Place concrete in a continuous operation within planned joints or sections. Do not add water to adjust slump.
- C. Do not interrupt successive placement; if interrupted for more than 1/2 hour, place a construction joint.
- D. Concrete shall be thoroughly consolidated during placement and shall be worked around reinforcement and embedded fixtures.
- E. In depositing concrete in piers, or thin sections, provide openings in forms, elephant trunks, tremies or other recognized devices, to prevent segregation and accumulation of partially hydrated concrete on forms or metal reinforcement above level of concrete being placed. Such devices shall be installed so that concrete will be dropped vertically. Unconfined vertical drop of concrete from end of such devices to placement surface shall not exceed 6 feet.
- F. Joints: Construct expansion and construction joints true-to-line with face perpendicular to surface of the concrete, unless otherwise shown. Construct transverse joints at right angles to the centerline, unless otherwise noted.
  1. Tool edges to a radius of 1/2 inch.
  2. Tool joints to a radius of 1/4 inch, 1/4 inch depth of concrete thickness.
  3. Saw-cut joints to be 3/16 inch, 1/4 inch depth of concrete thickness.

4. Separate slabs on grade from vertical surfaces with 1/2 inch thick joint filler. Place joint filler to required elevations. Secure to resist movement by wet concrete.
  5. Extend joint filler from bottom of slab to within 1/8 inch of finished slab surface.
  6. Furnish joint fillers in one-piece lengths for the full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together. Form top edge of filler to conform to top profile of concrete.
  7. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
- G. Where new curb, gutter, and sidewalk adjoins existing, dowel to existing curb, gutter, and sidewalk with two #3 dowels 12-inches long
- H. Begin curing after finishing concrete. Keep concrete continuously moist for at least seven days.
- I. Remove and replace concrete paving that is broken, damaged, or defective. Exclude traffic from paving for at least 14 days.
- J. Notify the Owner's Representative a minimum two working days prior to commencement of operations. Do not place concrete until forms and reinforcement as well as other required inspections have occurred, and the Owner's Representative is present to perform observations and testing during placement.
- K. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

**3.04 CONCRETE FINISHES**

- A. After striking-off and consolidating concrete, smooth the surface by screeding and floating. Use hand methods only where mechanical floating is not possible. After floating, test surface for trueness with a 10-foot straight-edge -- maximum 1/8-inch variation from any edge to concrete surface. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous, smooth finish. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2-inch radius, unless otherwise shown. Eliminate any tool marks on concrete surface. After completion of floating and when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
1. Concrete Walks and Curbing: Broom Finish: Draw a stiff hair broom across concrete surface, perpendicular to line of traffic. Repeat operation if required to provide a fine line texture. Texture must be true and straight across entire width of concrete slab.
    - i. Walks shall be given a medium broom finish or otherwise match finish of existing, adjacent concrete unless noted otherwise.

**3.05 CURING AND PROTECTION**

- A. 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 County will employ a testing agency to sample concrete, perform tests, and submit test reports during concrete placement.

- B. Provide free access to Work and cooperate with Owner's Representative, and Special Inspector.
- C. Testing and Inspections shall be performed in accordance with City requirements.
- D. One test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- E. At a minimum one slump test will be taken for each set of test cylinders taken.

**3.07 PATCHING**

- A. Allow Owner's Representative to inspect concrete surfaces immediately upon removal of forms.
- B. Honeycomb or embedded debris in concrete is not acceptable. Notify Owner's Representative upon discovery.
- C. Patch imperfections in accordance with ACI 301 and satisfaction of Owner's Representative.

**3.08 DEFECTIVE CONCRETE**

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Owner's Representative.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.
- D. No additional compensation will be allowed for repair of defective concrete.

**END OF SECTION 32 13 13**

**SECTION 33 10 00 - WATER UTILITIES**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

**1.02 DESCRIPTION OF WORK**

- A. Extent: Furnish all labor, material, equipment, tools, and incidentals necessary for Water Utilities work as shown on the Drawings and as specified in this Section. The work includes:
  - 1. Installation of all 1" Water pipe services and meters.
  - 2. Removal and disposal of 9 LF of 5/8" water service and replace with 1" polyethylene tubing water service.
  - 3. All trenching, backfill and surface repair required to complete the work under this section.

**1.03 STANDARDS**

- A. State of California, Department of Transportation (Caltrans) Standard Specifications, dated May 2018.
- B. ASTM – American Society for Testing Materials
  - 1. CTS SDR-9 200 psi polyethylene tubing.
- C. Soquel Creek Water District, Standard Drawing No. S-3
- D. Soquel Creek Water District, Standard Drawing No. S-19

**1.04 TESTING**

- A. Factory Quality Control: The Contractor shall test all products as required herein and by the reference specifications.

**1.05 SUBMITTALS**

- A. Shop Drawings: Submit product data from the manufacturer on all materials and products proposed for use, for the review and approval of the Engineer, to include but not limited to:
  - 1. Pipe, fittings, and accessories.
  - 2. Structures and appurtenances.

**1.06 SITE CONDITIONS**

- A. Existing Utilities: Locations of existing pipelines, utilities and substructures shown on the Drawings are approximate. It shall be the Contractor's responsibility to contact all owners of lines and structures that may interfere with the work. Contact Underground Service Alert (1-800-642-2444) at least 48 hours before commencing work. It is the Contractors

**WATER UTILITIES**  
**Seacliff Village Park Restroom Building, Santa Cruz County**

responsibility to pothole and locate existing utilities before construction is started to verify that no conflicts exist. It is the Contractors responsibility to notify the County of any conflicts with each location verified with horizontal and vertical information noted. If uncharted or incorrectly charted piping or other utilities are encountered during excavation, consult the County immediately. Cooperate with the County and utility agencies to keep services and facilities in operation. Repair damaged substructure to the satisfaction of the County at no additional cost to the County. Do not interrupt existing utilities serving facilities occupied and used by others, except when permitted in writing by the County or private utility owner(s) and then only after acceptable temporary utility services have been provided. Conflicts: Do not prepare any shop drawings for, or make final order for, or design any pipe materials, structures, or swales for any particular section of work until utilities in that section of work have been exposed and until such time as no interferences are found between said existing utilities and the proposed improvement. If interferences are found, do not prepare any shop drawings for, or make final order for, or design any pipe materials, structures, or swales for that particular section of work until the alignment has been modified by the Engineer to eliminate such interferences.

- B. Protection: Ensure the safe passage of persons around the area of work. Conduct operations to prevent damage to adjacent buildings, structures, utilities, other facilities, and injury to persons. See Special Provisions for additional information regarding building access.
- C. Damage: Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.

**PART 2 - PRODUCTS**

**2.01 GENERAL**

- A. Pipe sizes are nominal inside diameter unless otherwise noted.
- B. All materials delivered to the job site shall be new, free from defects, and marked to identify the material, class, and other appropriate data such as thickness for piping.
- C. Acceptance of materials shall be subject to strength and quality testing in addition to inspection of the completed product.

**2.02 DOMESTIC WATER PIPE**

- A. Domestic Water Pipe and Fittings:
  - 1. 1" nominal size: Polyethylene
- B. Water Service per Soquel Creek Water District, Standard Drawing No. S-3
- C. Backflow Preventer per Soquel Creek Water District, Standard Drawing No. S-19

**PART 3 - EXECUTION**

**3.01 PIPE AND STRUCTURE INSTALLATION**

- A. Prior to laying any pipe, this subcontractor shall verify the elevations of water line to which installed pipes are to connect. It shall be the subcontractors responsibility to install pipes with the slopes shown on the drawings regardless of whether or not existing invert elevations shown are correct. If actual elevations of existing utilities vary from those shown on the drawings by more than two tenths of a foot, the subcontractor shall notify the County Engineer immediately and shall not proceed with the work until receiving further instructions.
  
- B. General Piping Installation:
  - 1. Trenching, bedding, and backfill for buried piping shall be as shown on the Drawings and as specified in these specifications and County Standards.

**END OF SECTION 33 10 00**



**SECTION 33 30 00 - SANITARY SEWER**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings, Volumes I - III, including General Conditions and Supplemental Conditions, and the technical specifications apply to this section.

**1.02 DESCRIPTION OF WORK**

- A. All Sanitary Sewers shall be constructed in accordance with the County of Santa Cruz Standard Details. Polyvinylchloride lateral, in locations as shown on the plans, shall be ASTM D3034 SDR 26 polyvinylchloride (PVC) pipe. Gaskets shall be as supplied by manufacturer for PVC pipe.
- B. The work included under this section consists of furnishing, installing, and testing all plastic pipe and fittings, cleanouts, and other components as shown on the plans and as herein specified.
- C. Related work:
  - 1. Trenching, Backfilling and Compacting

**1.03 SUBMITTALS**

- A. Contractor shall submit product data from the manufacturer on all materials and products proposed use, for review and approval of the Engineer. Shop drawings shall include catalog cuts for the pipe, fittings, and cleanouts.

**PART 2 - PRODUCTS**

**2.01 PVC PIPE AND FITTINGS**

- A. Connections of PVC pipe to pipe or fittings of other material shall be made with PVC pipe adaptors or flexible couplings. Adaptors shall have ends specifically manufactured to receive the adjoining pipes.
- B. Laterals shall be laid at a 2% minimum grade.

**2.02 SEWER CLEANOUT**

- A. All cleanouts shall have a concrete collar 12" in depth and 26" in diameter. The collar shall be down approximately 2" from finished grade in pavement areas.
- B. Cleanout enclosure shall have "SEWER" cast into the iron cover. The make and model shall be Christy No. G5 or equal. Extension shall be 4" in diameter and shall be one piece or as specifically approved. All steel lids shall be epoxy sand coated in paved areas.

### **2.03 SHORING AND BRACING**

- A. Excavation shall be in compliance with the rules, orders and regulations of the State Division of Industrial Safety. If the Contractor desires to deviate from the safety orders, he shall submit data by a registered civil engineer to the State Division of Industrial Safety, justifying the alternate procedures to be used. Failure to comply with any of these rules, orders and regulations shall be sufficient cause for the Owner to immediately suspend all work. Compensation for losses incurred by the Contractor by such an emergency suspension shall not be allowed. During backfilling, the bottom of the shoring shall be kept above the level of the backfill at all times.

### **2.04 CONNECTIONS TO EXISTING SEWER**

- A. All connections to existing structures shall match the existing pipe material and size. Fittings and adapters to convert pipe sizes and materials to PVC shall be done underground and within three feet of the connection.

## **PART 3 - EXECUTION**

### **3.01 EXCAVATION**

- A. All excavation shall be unclassified. Earth shall be removed as required for properly constructing the water system to the lines and grades as shown on the plans with due consideration for the space required for the removal of such materials which are unsuitable for pipe bedding.
- B. Trenches may be excavated either by hand, or by machine and shall be cut with sides substantially vertical. Trenches shall be excavated with sufficient width to provide adequate room for working therein. Such space shall be a minimum clear distance of 6 INCHES AND A MAXIMUM OF 12 INCHES on each side of the pipe barrel when the pipe is properly placed and aligned in conformity with the Plans.
- C. Caution shall be used in saw cutting or breaking any pavement. Damage to pavement outside the trench section shall be repaired by the Contractor at no expense to the Owner. Motorized pavement breaker will be permitted. Where concrete or asphalt base is encountered, the base shall also be saw cut before removal.
- D. Bell holes or depressions shall be dug by hand at the proper locations, of sufficient size to permit making up the joints, but not larger than actually required.
- E. Trenches shall be excavated to a depth of approximately four inches below the grade for the bottom of the pipe barrel and then filled with sand to the proper elevation to provide an even bed for the pipe.
- F. Excavated material may be piled neatly along the side of the trench in such a manner as to be of as little inconvenience as possible to the public traffic or to the occupants of the park and shall not interfere with surface drainage.

- G. The Engineer shall have the right to limit the amount of trench, which is opened or partially opened at any one time; and also to limit the amount of trench left without backfill at any one time. In no case shall the length of open trench exceed 200 feet at any one time, from the point of removing existing pavement to the point of flush backfill. Contractor shall construct pipeline and backfill all the trench opened each day. No trenches shall be left open over-night or during weekends and holidays.
- H. The Contractor shall take such measures as may be required and shall furnish, install and operate such pumps and other devices as may be required or necessary, to remove any seepage, storm water or sewage that may be found or may accumulate in the excavations during the progress of the work. The Contractor shall keep all excavations entirely free from water at all times during the construction of the work.
- I. Trench excavation shall be backfilled or covered and protected before leaving the work site at the end of the day unless otherwise authorized by the Engineer. Loose stone in the work area caused by construction shall be controlled by sweeping.
- J. Dust shall be prevented from rising off the ground or pavement at all times by watering or other means.
- K. All excess material shall be hauled off site at the end of each day.

### **3.02 BURIED PIPE INSTALLATION**

- A. All pipe and fittings shall be carefully handled during hauling, unloading and placing operations, so as to avoid breakage or damage to same, or to the coatings and linings. Any cracked or broken units shall be discarded and replaced with sound material. Any damage to coating or linings shall be repaired to the satisfaction of the Engineer.
- B. All pipes shall be laid on a sand bed, as specified herein, and furnish a true and firm bearing on the pipe, throughout its entire length. Adjustment of the pipe to line and grade shall be made by scraping away or filling in the tamping sand under the body of the pipe throughout its entire length and not by blocking or wedging.
- C. Bell holes shall be provided under the bell of each pipe length, of sufficient size to permit making up the particular type of joint being used.
- D. Pipes shall be laid accurately in conformity with the prescribed lines and grades. Each length shall be joined to the preceding section as herein specified and after said jointing procedure has been completed, there shall be no movement of the pipe whatsoever in subsequent operations.
- E. All trenches shall be of sufficient depth to provide a minimum cover of 24 inches, measured from top of the pipe to the finish grade level unless noted otherwise on the plans. Greater depths of cover shall be provided when so indicated on the plans or herein specified. Cover of less than 24 inches may be allowed with Engineer's approval, where the Engineer determines that it is not practical to go under an obstruction.
- F. Before each new length of pipe is placed, the interior of the preceding pipe shall be carefully cleaned of all dirt and debris. Pipe ends shall be plugged each night and

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during excavating or backfilling as necessary to keep the inside of the pipe clean. If water or debris is in the trench when work is resumed, the plug shall not be removed until adequate provision has been made to prevent any water or debris entering the pipe even though this may necessitate dewatering the trench.

**3.03 BACKFILLING**

- A. No backfill shall be placed in trenches or excavations until the sewer lines, in the particular section involved, have been inspected and approved for backfilling by the Engineer.
- B. Backfill material and compaction shall be per Santa Cruz County Design Criteria, Figure SS-2A or SS-2B.

**3.04 TESTING**

- A. After backfill and compaction of the base rock, all sewer mains, and laterals and shall be required to pass a mandrel test. The Contractor shall furnish all equipment, labor and materials needed to perform the test.

**MANDREL TEST**

The Mandrel shall be 4% smaller than the inside diameter of the pipe tested.

**END OF SECTION 33 30 00**

County

**LIST OF SUBMITTALS REQUIRED**

The following represents a summary of the anticipated submittals required within the Technical Specifications, to be completed as outlined in section 01 33 00 – SUBMITTALS. This list is intended to be a guide for the Contractor to understand the extent of submittals, but may not represent a complete list of all submittals required. It also does not list any submittal requirements set forth Volume III BID PROPOSAL.

*\*denotes submittal requirement at Project Close-out*

**VOL I: GENERAL CONDITIONS**

- Cost Breakdown of Contract Sum (Schedule of Values)

**DIVISION 01: GENERAL REQUIREMENTS**

Section 01 10 00 – Summary of Work

- Project Schedule

Section 01 33 00 – Submittals

- Submittal Schedule

Section 01 50 00 – Construction Facilities & Temporary Controls

- Traffic Control Plan

Section 01 56 39 – Temporary Tree Protection

- Tree Protection Fencing Plan

Section 01 57 23 – Temporary WPC

- Temporary Water Pollution Control Plan
- Material Certifications

Section 01 77 00 – Contract Closeout

- Operations / Maintenance Manuals\*
- Warranties, Guarantees, Bonds\*
- Spare parts / Extra materials\*

Section 01 78 39 – Record Drawings

- Project Record Drawings\*

**DIVISION 02: EXISTING CONDITIONS**

Section 02 41 19 – Selective Demolition

- Demolition Plan

**DIVISION 03 – CONCRETE**

Section 03 31 00 – Structural Cast-In-Place Concrete

- Product Mix Design
- Product Data Information
- Transit Mix Delivery Slips\*

**DIVISION 13: SPECIAL CONSTRUCTION**

Section 13 34 23 – Fabricated Structure Restroom Facility

- Licenses
- Architectural Shop Drawings & Calculations
- Operations and Maintenance Manual
- Warranty
- Materials & Finishes samples

**LIST OF SUBMITTALS**

Seacliff Village Park Restroom Project, Santa Cruz

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- Compliance Certifications

**DIVISION 26: ELECTRICAL**

- Manufacturer's Data and Certificates
- Single Line Diagram / Shop Drawings
- Equipment and Control Manual\*

**DIVISION 31: EARTHWORK**

Section 31 10 00 – Site Clearing

- Soil Stockpile Plan

Section 31 23 33 – Trenching and Backfill

- Product Data Information & Test Results

**DIVISION 32: EXTERIOR IMPROVEMENTS**

Section 32 13 13 – Concrete Paving

- Product Mix Design
- Product Data Information
- Flatwork Jointing Plan
- Transit Mix Delivery Slips\*

**DIVISION 33: UTILITIES**

Section 33 30 00 – Sanitary Sewer

- Product Data Information

**END OF SECTION**