

Addendum #1-A Bid 103-19 Division 01
Specification
SECTION 01 10 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY OF WORK

- A. This Contract includes work necessary for and incidental to execution and completion of

**ARBORETUM TRAILS PROJECT
PALOMAR COMMUNITY COLLEGE DISTRICT
SAN MARCOS, CA**

in accordance with DSA approved Contract Documents dated January 17, 2019, prepared by KTU+A Planning + Landscape Architecture, 3916 Normal Street, San Diego, California 92103.

1.02 GENERAL DESCRIPTION OF WORK

- A. Work under this Contract includes furnishing all labor, materials, services and transportation, except as specifically excluded which is required for completion of Project in accordance with provisions of Contract Documents.
- B. The intent of these Contract Documents is to construct this facility for compliance with 2013 California Building Code. Should any conditions arise, or be discovered, that are not covered by the Contract Documents, and that would cause the finished work to fail to comply with those requirements, a Change Order will be executed and approved DSA-ACS before proceeding with the Work.
- C. Work to be included as part of this Contract:
- Demolition of existing paving, stepping stones, rock retaining walls, structures, granitic rock removal as required for grading, installation of D.G. paths, concrete paving, swing gates, removable bollards, landscape boulders, retaining rocks and/or walls, irrigation mainline and wires, irrigation systems, controller installation and sensors, wye strainer, master valve, shut off valves, backflow preventer, quick couplers, conduit and all work required for complete installation, including stub-outs for future work, owner-furnished contractor-installed monument boulder, ADA signage and pavement markings, electrical conduit and j-boxes, and cable guardrails.
- D. Work to be performed by Owner:
1. Owner will supply Irrigation Controller to be installed by Contractor (OF CI) per plans.
 2. Owner will supply Monument Stone to be installed by Contractor (OF CI).
- E. The following restrictions apply to access and to use of site:

1. General: During construction period, Contractor shall have full use of premises for construction operations, including use of site within the Limits of Work shown on the plans. Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
 2. Use of Site: Limit use of premises to Work in areas indicated. Confine operations to areas within Contract limits indicated. Do not disturb portions of site beyond areas in which Work is indicated.
 3. Driveways and Entrances: Keep driveways and entrances serving premises clear and accessible to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
- F. Partial Owner Occupancy: Owner reserves right to occupy and to place and install equipment in completed areas of building before Certified Completion, provided such occupancy does not interfere with completion of Work. Such placing of equipment and partial occupancy shall not constitute acceptance of total Work.
- G. Limit site disturbance, including earthwork and clearing of vegetation, to 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches. Consult with Palomar's Grounds Supervisor a minimum of 1 week prior to clearing any and all vegetation regarding sensitivity of species and possible relocation by Palomar.
- 1.03 PERMISSIBLE WORKING DAYS AND HOURS
- A. Work may be conducted Monday - Saturday between the hours of 7:00 A.M. and 6:00 P.M.
 - B. Work may be conducted at any hour during Saturdays at no extra cost to the Owner, when written notification to Owner has been submitted a minimum of 48 hours in advance and anticipated schedule of Work activities has been approved.
 - C. Conform to Division 01, General Requirements for required payment for Inspector's services performed during overtime hours.
- 1.04 INTERRUPTION OF EXISTING UTILITY SERVICES
- A. When necessary to interrupt any existing utility service to make connections, minimum of 48 hours advance notice shall be given to Owner and Architect. Interruptions in utility services shall be of shortest possible duration for Work at hand and shall be approved by Architect.
 - B. In event any utility service is interrupted without required 48 hours notice, Contractor shall be financially liable for all damages suffered by Owner due to unauthorized interruption.

1.05 VERIFICATION OF EXISTING CONDITIONS

- A. Contractor shall be responsible to examine site of Work and after investigation to decide for himself/herself character of materials, equipment and utilities to be encountered and all other existing conditions affecting Work. Contractor is also responsible to provide sufficient costs to cover provisions of all items of Work under existing conditions referred to herein.

1.06 PHASING

- 1. Work shall be phased to allow continuous irrigation of all existing plant materials onsite without interruption.

PART 2 - PRODUCTS

2.01 NOT USED.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Unit Prices.
- B. Allowances.
- C. Changes in the Work.
- D. Schedule of Values.

1.02 UNIT PRICES

- A. Unit Price is an amount proposed and stated in Bid Form as price per unit of measurement for materials or services or both that will be added to or deducted from Contract Price by Change Order in event estimated quantities of Work required by Contract Documents are increased or decreased.
- B. Unit Prices include all necessary material, installation, labor, overhead, profit and applicable taxes.
- C. Owner reserves right to reject Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by independent surveyor acceptable to Contractor at Owner's expense.
- D. Measurement and Payment
 - 1. Unit Quantities: Quantities and measurements indicated in Bid Form are for Contract purposes only. Quantities and measurements supplied or placed in Work shall determine payment.
 - 2. Payment Includes: Full compensation for required installation labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of item of Work; overhead and profit.
 - 3. Defect Assessment: Replace Work, or portions of Work, not conforming to specified requirements. If, in opinion of Architect, it is not practical to remove and replace Work, Architect will direct appropriate remedy or adjust payment.

1.03 ALLOWANCES

- A. Cash Allowance
 - 1. Reference the General Conditions and Supplementary Conditions in addition to these requirements.
 - 2. Cash Allowance:
 - a. Description: Cash allowance for all costs associated with the installation of the Work as follows:
 - 1) Unit Price Allowance Items (see sample Bid Form in Bid Documents).

2) Owner's Allowances:	
Allowance for Weather Delays (beyond contract required)	\$ <u>10,000.00</u>
Allowance for Environmental Issues	\$ <u>20,000.00</u>
Allowance for Varying Site Conditions	\$ <u>100,000.00</u>
Allowance for Miscellaneous Added Scope	\$ <u>20,000.00</u>

- b. Include all Allowances in the Contract Sum.
- 3. Architect Responsibilities:
 - a. Prepare and issue a Construction Change Directive or Request for Proposal/Work Change Proposal Request describing Work required.
 - b. Prepare Change Order reflecting adjustments to Contract amount relative to allowance.
- 4. Contractor Responsibilities:
 - a. Itemize all costs associated with cost request in accordance with the General Conditions and Supplementary Conditions and herein in order to justify all costs affecting the allowance.
 - b. Include cost for materials, delivery, un-packaging, unloading, storage if any, taxes and installation costs.

1.04 CHANGES IN THE WORK

- A. Approval by Division of the State Architect (DSA) Required: Changes in the Work affecting Structural Safety, Access or Fire and Life Safety, will be submitted for DSA approval, using Form DSA-140 (Application for Approval of Construction Change Document - Category A) in accordance with CAC Section 4-338(c), prior to commencing the work described therein. Changes not affecting Structural Safety, Access or Fire and Life Safety (Form DSA-141 Application for Concurrence of Construction Change Document - Category B) will not be submitted for approval, only if required by DSA in writing.
- B. Minor Changes in the Work: Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710 or Architect's form, accompanied by Form DSA-141 or approved Form DSA-140.
- C. Proposal Requests
 - 1. Owner-Initiated Proposal Requests - Work Change Proposal Request (WCPR): Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time, on AIA Document G709 or Architect's form, referencing Form DSA-140 or DSA-141. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - a. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - b. Within time specified in the General and Supplementary Conditions after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - 1) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

- 2) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 3) Include costs of labor and supervision directly attributable to the change.
 - 4) Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 5) Quotation Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."
 - a) The CSI Forms mentioned above are available for purchase at www.cisresources.org.
2. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
- a. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - b. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - c. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - d. Include costs of labor and supervision directly attributable to the change.
 - e. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - f. Comply with requirements in Section 01 60 00 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 - g. Proposal Request Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."
 - 1) The CSI Forms mentioned above are available for purchase at www.cisresources.org.
- D. Construction Change Directive to the Contractor
1. Construction Change Directive: Architect will issue a Construction Change Directive on AIA Document G714 or Architect's form, accompanied by DSA-approved Form DSA-140 or Form DSA-141 or both, and completed WCPR (Work Change Proposal Request). Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Copy will be issued to the Project Inspector.
 - a. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

2. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - a. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract, using CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."
 - 1) The CSI Forms mentioned above are available for purchase at www.cisresources.org.

E. Change Orders Procedures: On Owner's approval of a completed Construction Change Directive, Architect will prepare and issue a Change Order for signatures of the Owner and Contractor on AIA Document G701 or Architect's form. Copies of signed Change Order will be distributed to Architect, IOR and Contractor, and submitted for Board Approval.

1. Stipulated Price Change Order: Based on Contractor's Change Order Request as approved by Architect.
2. Time and Material Change Orders: Submit itemized account and supporting data after completion of change within time limits indicated in Conditions of Contract. Architect will determine change allowable in Contract Price and Contract Time as provided in Contract Documents.
3. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in Work.
4. Refer to the General and Supplementary Conditions for additional requirements.
5. Execution of Change Orders: Architect will issue Change Orders for signature of parties as provided in Conditions of the Contract.
6. Unit Price Change Order: For pre-determined unit prices and quantities, Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of Work that are not pre-determined, execute Work under Construction Change Directive. Change in Contract Price or Contract Time will be computed as specified for Time and Material Change Order.

1.05 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA Forms G702 and G703 - Application and Certificate for Payment and Continuation Sheet. Contractor's standard form or electronic media printout will be considered, submit sample forms to Architect for approval.
- B. Submit application for progress payment in accordance with the General and Supplementary Conditions.
- C. Submit Schedule of Values in duplicate within 15 calendar days after date of Owner-Contractor Agreement for Architect's approval.
- D. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of the major Specification Section. Identify site mobilization and bonds and insurance. On projects of more than one building, list buildings separately. List mechanical, electrical, plumbing and fire protection Work separately for each building and for site Work.

- E. Break down the plumbing portions of the work at a minimum into a rough, and finish,
- F. Break out rough grading, fine grading, and underground utilities.
- G. Include separate line items, showing amount of General Contractor's overhead and profit, bonds and insurance, supervision, and then remainder of general items.
- H. Revise schedule to list approved Change Orders, with each Application for Payment.
- I. Include in each line item, amount of Allowances specified in this section. For Unit Cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for item.

PART 2 - PRODUCTS

2.01 NOT USED.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

**ARCHITECT'S
SUPPLEMENTAL INSTRUCTIONS**
(Architect's Response to RFI)

RFI No. _____

Date on RFI: _____

Date actually
received by Architect: _____

Copies to

- ☐ Owner
☐ Contractor
☐ Inspector (Field)

PROJECT: _____

OWNER: _____ Date of Issuance
to the Contractor: _____

TO: _____ ARCHITECT:
(Contractor)

CONTRACT FOR: _____ ARCHITECT'S:
PROJECT NO. _____

Conduct the Work in accordance with the following Supplemental Instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates acknowledgement that there will be no change in the Contract Price, Contract Time, or both. If a change in either or both the Contract Sum or Contract Time is anticipated, submit a Change Order Proposal for the Work before proceeding with the change. Submit the CO proposal within 7 days from the date of this response.

Description: _____

Response: _____

Attachments and Clarification Drawings:

Project Architect

END OF SECTION

SECTION 01 26 10

REQUESTS FOR INFORMATION (RFI)

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Administrative requirements for Requests for Information (RFI).

1.02 DEFINITIONS

A. Request for Information:

1. Written request prepared by Contractor requesting additional information necessary to clarify an item which he believes is not clearly shown or called for in the drawings or specifications, or to address problems which have arisen under field conditions, hereinafter referred to as RFI.
2. Properly prepared request for information shall include detailed written statement that indicates specific Drawings or Specification in need of clarification and nature of clarification requested.
 - a. Drawings shall be identified by Drawing number and location on Drawing sheet.
 - b. Specifications shall be identified by Section number, page and paragraph.
 - c. Include name and project number for Architect and Authority Having Jurisdiction (AHJ).
3. Contractor's documents with similar titles, such as "Request for Interpretation" or "Request for Clarification" shall be considered RFIs.
4. RFIs and Architect's responses are not Changes in the Work; if a Change in the Work is required in response to an RFI, separate documents shall be issued in accordance with Section 01 20 00.

B. Improper RFIs:

1. RFIs that are not properly prepared or incomplete.
2. Improper RFIs will be processed by Architect at Architect's standard hourly rate and Architect will charge Owner, and such costs will be deducted from moneys still due the Contractor. Architect will notify Contractor before processing of improper RFIs.

C. Frivolous RFIs:

1. RFIs that request information that is clearly shown on Contract Documents.
2. Frivolous RFIs may be returned unanswered or may be processed by Architect at Architect's standard hourly rate and Architect will charge Owner, and such costs will be deducted from moneys still due Contractor. Architect will notify Contractor before processing of frivolous RFIs.

1.03 CONTRACTOR'S REQUESTS FOR INFORMATION

- A. When the Contractor is unable to determine from Contract Documents, material, process or system to be installed, Architect will be requested to make clarification of indeterminate item.

1. Whenever possible, such clarification shall be requested at next appropriate project meeting, with response entered into meeting minutes. When clarification at meeting is not possible, because of urgency of need, or complexity of item, Contractor shall prepare and submit RFI to Architect.
- B. Contractor shall endeavor to keep number of RFIs to a minimum. In the event the process becomes unwieldy, in the opinion of Architect, because of number and frequency of RFIs submitted, the Architect may require the Contractor to abandon process and submit future requests as either submittals, substitutions or requests for change.
- C. RFIs shall be submitted on form acceptable to Architect. Forms shall be completely filled in, and transmitted to Architect via email. Each page of attachments to RFIs shall bear RFI number in lower right corner.
- D. RFI's shall be originated by Contractor:
 1. RFIs from subcontractors or material suppliers shall be submitted through, reviewed by, and signed by Contractor before submittal to Architect.
 2. RFIs sent by subcontractor or suppliers directly to Architect or Architect's consultants shall not be accepted and will be returned unanswered.
- E. Contractor shall carefully study Contract Documents to ensure that requested information is not available therein. RFIs which request information available in Contract Documents will be deemed "improper" or "frivolous" as noted above.
- F. In cases where RFIs are issued to request clarification of coordination issues, for example pipe and duct routing, clearances, specific locations of Work shown diagrammatically, and similar items, Contractor shall fully lay out suggested solution using drawings or sketches drawn to scale, and submit same with RFI. RFIs which fail to include suggested solution will be returned unanswered with requirement that Contractor submit a complete request.
 1. Contractors are encouraged to utilize photocopies of Contract Documents to completely illustrate their questions, and to provide sketches as required to communicate question, concepts and suggestions.
- G. Do not use RFIs for following purposes:
 1. To request approval of submittals.
 2. To request approval of substitutions.
 3. To request changes which entail additional cost or credit.
 4. To request changes which entail change of time of completion.
 5. To request different methods of performing Work than those drawn and specified.
- H. In event Contractor believes that clarification by Architect results in additional cost or time, Contractor shall not proceed with Work indicated by RFI until Change Order or Construction Change Directive is prepared and approved in accordance with Section 01 20 00. RFIs shall not automatically justify cost increase in Work or change in project schedule.
 1. Answered RFIs shall not be construed as approval to perform extra Work.
 2. Unanswered RFIs will be returned with stamp or notation: Not Reviewed.

- I. Contractor shall prepare and maintain log of RFIs, and at any time requested by Architect, Contractor shall furnish copies of log showing outstanding RFIs. Contractor shall note unanswered RFIs in log.
- J. Contractor shall allow up to 7 days review and response time for RFIs, however, Architect will endeavor to respond in timely fashion to RFIs.

1.04 ARCHITECT'S RESPONSE TO RFIs

- A. Architect will respond to RFIs on one of following forms:
 - 1. Properly prepared RFIs:
 - a. If no Change in the Work is required, Architect will respond in space provided on the RFI form.
 - b. If a Change in the Work is required, Architect will issue in accordance with Section 01 20 00.
 - 2. Improper or Frivolous RFIs:
 - a. Notification of Processing Fee(s).
 - b. Unanswered RFIs will be returned with stamp or notation: "Not Reviewed".
- B. Architect may opt to retain RFIs for discussion during regularly scheduled project meetings for inclusion of responses in meeting minutes in lieu of responding on written form.

PART 2 - PRODUCTS

2.01 NOT USED

PART 3 - EXECUTION

3.01 NOT USED

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Project Management and Coordination: Project Coordination, Irrigation Coordination, Project Meetings.
- B. Construction Progress Documentation: Construction Progress Schedule, Three-week Look Ahead Schedule, Coordinated Drawings.
- C. Submittal Procedures: Shop Drawings, Product Data, Samples.

1.02 PROJECT COORDINATION

- A. Coordinate scheduling, submittals, and Work of various Sections of Project Manual and Drawings to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Verify utility requirements and characteristics of operating equipment are compatible with site utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate site conditions with installation of irrigation Work that is indicated diagrammatically on Drawings. Follow routing shown for pipes as closely as practicable. Layout Work efficiently to maximize accessibility for maintenance and for repairs.
- D. Where possible, conceal pipes and wiring underground. Coordinate locations of above-grounded items with Project Manager and Landscape Architect.
- E. Coordinate completion and clean-up of Work of separate sections in preparation for Certified Completion and for portions of Work designated for Owner's occupancy.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.03 IRRIGATION COORDINATION

- A. Carefully coordinate interface between Sections 02228, 02230, 02300, 02316, 02411 and 02810 before submitting any products or phasing plans for review or commencing installation.
- B. Control Wiring:
 - 1. Consists of wiring in pilot circuits of contactors and starters, sensors, controllers, relays, and wiring for valve operators, etc.

- C. Connections:
1. Provide connections to controls directly attached to piping and controllers with flexible connections.

1.04 PRECONSTRUCTION MEETING

~~A.~~

~~B.A.~~ Project Manager will schedule meeting after Notice of Award.

~~C.B.~~ Attendance Required: Owner's Project Manager, Landscape Architect, Civil Engineer, Prime Contractor's Project Manager and Superintendent, Major Subcontractors, Project Inspector, DSA Field Engineer, Grounds Supervisor and other key Owner personnel.

~~D.C.~~ Agenda:

1. Contract Agreement:
 - a. Submit required documents to Contracts Manager
2. Receive documentation from Contractor:
 - a. Construction Progress Schedule.
 - b. Schedule of Values.
 - c. List of Subcontractors with addresses and phone numbers.
 - d. List of Submittals and estimated date of submittal.
3. Project Administration:
 - a. Application for Payment, Stop-Notice Release, Record Drawings.
 - b. Change Order Requests, Change Orders, Request For Proposals, Construction Change Directive/Instruction Bulletins. Preparation of Change Orders by Landscape Architect.
 - c. Submittals
 - d. Site Meetings.
 - e. Testing Laboratory.
 - f. Verified Reports.
 - g. Phasing.
 - h. Critical work sequencing and long-lead items.
 - i. Designation of key personnel and their duties.
 - j. Lines of communications.
 - k. Procedures for RFIs.
 - l. Procedures for testing and inspecting.
 - m. Distribution of the Contract Documents.
 - n. Preparation of record documents.
 - o. Work restrictions.
 - p. Working hours.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Parking availability.
 - t. Storage areas.
 - u. Equipment deliveries and priorities.
 - v. Security.
 - w. Progress cleaning.
4. Special Owner Conditions:
 - a. Temporary Facilities.

- b. Work by Owner.
 - c. Access to Site - Owner Contact.
- 5. Construction Process:
 - a. Contractor shall discuss overview of construction.
 - b. Contractor shall identify items to be selected by Landscape Architect/Owner and date selections must be made.
 - c. Contractor shall review special requirements for equipment, safety, and noise.
- 6. Pre-Job Conference:
 - a. Prevailing Wage Requirements.
 - b. Checklist and signatures.

E.D. Owner's Project Manager will create agenda, record minutes and distribute copies within seven days after meeting to participants and those affected by decisions made.

1.05 PROGRESS MEETINGS

- A. Contractor's Project Manager will schedule and administer meetings throughout progress of Work as needed.
- B. Contractor's Project Manager will make arrangement for meetings, coordinate agenda with Owner's Project Manager and Landscape Architect. Owner's Project Manager will preside at meetings.
- C. Attendance Required: Owner's Project Manager, Grounds Supervisor, Landscape Architect, Civil Engineer, Contractor's Project Manager, Superintendent, Prime Contractors, Major Subcontractors and Suppliers, Project Inspector, key Owner personnel and Landscape Architect as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of Construction Phasing Plan.
 - 7. Maintenance of Construction Progress Schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Maintenance of quality and work standards.
 - 10. Effect of proposed changes on progress schedule and coordination.
 - 11. Other business relating to Work.
- E. Contractor's Project Manager will record minutes and distribute copies within two days after meeting to participants, and those affected by decisions made.

1.06 PREINSTALLATION MEETING

- A. When required in individual Specification Sections, convene pre-installation meeting before starting Work of Section.

- B. Require attendance of parties directly affecting, or affected by, Work of specific Section.
- C. Notify Landscape Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related Work.
- E. Contractor shall record minutes and distribute copies within three days after meeting to participants, Architect and those affected by decisions made.

1.07 SUBMITTAL PROCEDURES

- A. Transmit separate request for EACH Section submittal directly to Landscape Architect.
 - 1. Bind submittals sturdily, neatly label covers.
 - 2. Include Palomar's Project number as it appears on Contract Documents.
 - 3. Include Authority Having Jurisdiction application or approval number.
- B. Submittal number shall use a sequential number followed by a hyphen then the Specification Section followed by a hyphen and then the revision number (e.g., 0001-051200-0). Resubmittals shall have the original number and include the revision number as the suffix (e.g., 0001-051200-1).
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and Specification Section number, as appropriate.
 - 1. Provide name telephone number of individual who may be contacted for further information.
- D. Apply Contractor's dated stamp with Contractor's original signature or initials affixed thereto, certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of Work and Contract Documents. Stamped signatures or initials are not acceptable.
- E. Schedule submittals to expedite Project. Coordinate submission of related items.
 - 1. Make submittals according to Construction Schedule and adequate enough in advance of scheduled dates of installation to provide required time for reviews for securing necessary approvals for possible revision and re-submittal and for placing orders and securing delivery.
 - 2. Schedule submittals such that related materials and assemblies that support or are affected by the submitted materials are either submitted simultaneously or in order of installation sequence such that impacts and coordination can be evaluated as part of the review.
 - 3. Late submittals, not in accordance with the "Schedule for Submission of Shop Drawings, Product Data and Samples" and the Construction Schedule, will not be considered an acceptable reason for initiating a substitution requests caused by late ordering and procurement of materials.
- F. Identify variations from Contract Documents and Product or system limitations that is detrimental to performance of completed Work.

- G. Substitutions: Submit only as approved per Section 01 60 00, state effect of approved substitution on construction schedule, and changes required in other work or products.
- H. Owner-Directed Substitution Approval: Substitution submittals specifically directed by Owner to be approved by the Landscape Architect for this project shall pertain to a specific item only. The Landscape Architect's stamped approval of Owner-Directed Substitution does not constitute approval for any other item, other projects or parts of project. A Change Order shall be prepared to effect the Owner's authorization of Owner-Directed Substitution.
- I. Provide space for Contractor and Landscape Architect review stamps.
- J. Revise and resubmit submittals in their entirety, identify changes made since previous submittal.
- K. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- L. Determine and verify field dimensions and conditions, materials, catalog numbers and similar data.
- M. Coordinate as required with all trades and all public agencies involved.
- N. Unless otherwise specifically authorized by Landscape Architect, make submittals in groups containing associated items within the same Section. Landscape Architect may reject partial submittals as not complying with provisions of this Section.
- O. Where individual Sections require structural calculations, prepare submittal under direction of qualified California Licensed Structural Engineer and shall bear the Engineer's stamp and signature.
- P. Format of Submittals: Submit Electronic Submittals, including but not limited to Product Data, Shop Drawings, Schedules, Certifications, tests, logs, for ease of information distribution. At Contractor's option he may submit standard printed data on reproducible media and in number of copies required per this Section and other project Sections. Identify submitted items that are applicable to the project, including any deviations, with arrows, clouds, or other distinct graphic, or in highlighted writing that can be reproduced with black and white copiers easily discernible from background information.

1.08 CONSTRUCTION PROGRESS SCHEDULE

- A. Submit Construction Progress Schedule in duplicate within 14 calendar days after the date on the Notice to Proceed for Owner's Project Manager and Landscape Architect's review.
 - 1. Schedule shall reflect amount of time stipulated in Agreement.
 - 2. If the Contractor proposes an earlier completion dated than stipulated in the Agreement, Change Order will be issued reflecting revised completion date at no change in Contract Sum.
 - 3. Revise and resubmit as required.

- B. Scheduling may utilize programs including: Microsoft Project Schedule, Primavera Project Planner (P3), Primavera SureTrak Project Manager, Meridian Project Systems or similar programs addressing the requirements.
 - C. Submit computer generated network analysis diagram in accordance with Section 01 32 16.13 using Critical Path Method, generally as outlined in Associated General Contractors of America (AGC) publication "Construction Planning and Scheduling", latest Edition.
 - D. Indicate complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates and duration. Ownership of float time is shared commodity, not for exclusive use by either party. Use float time to make up Work behind schedule until float time is depleted. Submittals returned in less time than allowed by Contract, shall be used to reduce Contractor time extension requests.
 - E. Indicate Milestones and target date and their activities including completion dates.
 - F. No Time extensions will be granted nor delay damages paid until a delay occurs that impacts the schedule consumes all available float or contingency time available, and extends the work beyond the contract completion date.
 - G. Indicate estimated percentage of completion for each item of Work at each submission.
 - H. Schedule for Submission of Shop Drawings, Product Data and Samples: Incorporate "Schedule for Submission of Shop Drawings, Product Data and Samples" in Construction Progress Schedule. This schedule shall include submittal dates required for shop drawings, product data, samples and product delivery dates, including Deferred Approval Items, if any, and including those items furnished by Owner. Provide time in schedule for Landscape Architect's review of submittals according to Contract Time.
 - I. Submit revised schedules with each Application for Payment identifying changes since previous version.
 - J. As a minimum allow 15 calendar days in schedule for final inspections before final acceptance. Include time to correct punch list items prior to final acceptance.
- 1.09 THREE-WEEK LOOK AHEAD SCHEDULE
- A. Submit a Three Week Look Ahead Schedule and shall contain the following:
 - 1. Prepare detailed three-week schedule projections for the Work to be performed during the following weeks beyond the week it is presented at the weekly construction meeting or at the request of the Landscape Architect during the construction period.
 - 2. Be plotted in bar chart or time scale logic format and be of such size that all activity numbers and descriptions are clearly legible.
 - 3. Be sorted by subcontractor responsibility, actual start, early start and total float.
 - 4. Include activity ID, description and float for each activity.

5. Include all activities, completed, in progress and scheduled to start within the time frame of the date minus one week to the data date plus three weeks.
6. Schedule shall be updated and provided at each regular progress meeting for review and comparison to approved project schedule status.

1.10 CONSTRUCTION VIDEO

- A. Pre-Construction Video: Before starting construction, take video of Project site and surrounding properties. Show existing conditions adjacent to property.

1.11 COORDINATED DRAWINGS

- A. Submit drawings that indicate routing, locations sizes, types and number of components where potential conflict may occur between site features.
- B. Submit Irrigation Phasing Plan for review and coordination with Owner's Project Manager, Grounds Supervisor and Landscape Architect.
- C. Drawings shall be based on field measurements, shop drawings and product data.
- D. Conflicts shall be brought to Landscape Architect's attention immediately.
- E. Submit to Landscape Architect, in writing, requests for clarification or interpretations that will affect intent and/or scope of Contract Documents.
- F. Landscape Architect will review submittals, make appropriate notations and comments to ensure solution meets intent of Contract Documents and then return to Contractor for implementation.
- G. Contractor shall be responsible for proper coordination of Work of Sections of Specifications in execution of coordinated drawings. Installation of materials, components or equipment under one Section of Specifications without full and complete, agreement, knowledge and consent by fabricators of adjacent or otherwise related or affected Work will not be approved.
- H. It shall be incumbent upon Contractor that fabricators of Work involved in execution of coordinated drawings be informed, consulted and advised in sufficient advance time to arrive at solutions where no extension of contract time for extra cost to Owner will be approved due to Contractor's negligence in expeditious, timely submittal of coordinated drawings.

1.12 SHOP DRAWINGS

- A. Within 14 days from Notice to Proceed, submit to Landscape Architect for review and acceptance, "Schedule for Submission of Shop Drawings, Product Data and Samples" (Submission Schedule) listing required submittals and review dates. Schedule shall allow sufficient time for checking by Landscape Architect. Incorporate Submission Schedule in Construction Progress Schedule. Days: Calendar Days.

1. Additionally, submit all Shop Drawings, Product Data and Samples according to the following guidelines. Guidelines are provided to allow Landscape Architect and Engineers adequate time for review and is not intended to dictate contractor's means and methods:
 - a. Submit within 15 days from acceptance of Submission Schedule. Allow Landscape Architect 14 days to respond (defined as reviewed and returned). Re-submittals: allow contractor 7 days, allow Landscape Architect 10 days to respond.
- B. Submit newly prepared information, drawn to accurate scale. Highlight, encircle or otherwise indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to Project will not be approved as shop drawings.
- C. Shop drawings shall include fabrications and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include following information:
 1. Dimensions
 2. Identification of products and materials included.
 3. Compliance with specified standards.
 4. Notation of coordination requirements.
 5. Notation of dimensions established by field measurement.
- D. Sheet Size for print submittals: Except for templates, patterns and similar full-size drawings, submit shop drawings on sheets at least 8-1/2 inch x 11 inch, but not larger than 30 inch x 42 inch.
- E. Contractor shall review, stamp with his approval as herein required, and submit with reasonable promptness and in orderly sequence, according to Submittal Schedule, all shop drawings required by Contract Documents or subsequently by Architect as covered by modifications. Shop drawings shall be properly identified. At time of submission Contractor shall inform Landscape Architect in writing and with highlighted annotation on shop drawings of any deviation in shop drawings from requirements of Contract Documents.
- F. Stamp: Each page of shop drawings shall bear Contractor's stamp, which shall signify Contractor's representation that he has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated information contained in shop drawings. Each stamp shall be accompanied by wet signature or initial of employee of Contractor who may be contacted for information. Stamped signatures or initials are not acceptable.
- G. Method of Review: Submit Electronic Shop Drawing Submittals. At Contractor's option he may submit standard printed shop drawings, three (3) prints or bond copies and one (1) 20-lb xerographic bond (reproducible). Identify submitted items that are applicable to the project, including any deviations, with arrows, clouds, or other distinct graphic, or in highlighted writing that can be reproduced with black and white copiers easily discernible from background information.

1. Comments or corrections will be noted on submittals and returned to Contractor, who shall identify all changes made since previous submittal and resubmit in same manner. When reviewed, submittals will be stamped and returned to Contractor who shall make distribution of electronic copies as required.
- H. Processing Time
1. Allow enough time for submittal review, including time for re-submittals, as follows:
 - a. Time for review shall commence on Landscape Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
 - b. In accordance with the Schedule for Submission of Shop Drawings, Product Data and Samples. Review of each submittal for conformance with design concept of Project and with information given in Contract Documents. Architect's review of a separate item shall not indicate acceptance of assembly in which that item functions. Allow additional time if coordination with subsequent submittals is required. Landscape Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - c. Submittals requiring Consultants' Review: Where review of submittals by Architect's consultants is required, allow minimum 14 calendar days for review of each submittal.
 2. Re-submittal Review: In accordance with the Schedule for Submission of Shop Drawings, Product Data and Samples for each re-submittal.
- I. Submittal of shop drawings to Landscape Architect, shall be made by Contractor with dated transmittal form or letter, and not by subcontractors or suppliers.
- J. Landscape Architect's review of shop drawings shall not relieve Contractor of responsibility for any deviation from requirements of Contract Documents unless Contractor has informed Landscape Architect in writing of such deviation at time of submission and Landscape Architect has given written acceptance to specific deviation, nor shall Architect's review relieve Contractor from responsibility for errors or omissions in shop drawings.
- K. No portion of Work requiring shop drawings shall be commenced until shop drawings have been returned with review by Landscape Architect.
- 1.13 PRODUCT DATA
- A. Submit within time required by Shop Drawings.
 - B. Submit four (4) copies. Two (2) copies will be retained by Landscape Architect.
 - C. Mark each copy to identify applicable products, models, options and other data. Supplement manufacturers' standard data to provide information unique to this Project.
 - D. After review, distribute and provide copies for Record Documents.

1.14 SAMPLES

- A. Submit within time required by Shop Drawings.
- B. Submit samples to illustrate functional and aesthetic characteristics of product with integral parts and attachment devices. Coordinate sample submittals for interfacing Work.
- C. Submit samples of finishes from the full range of manufacturers' standard colors, textures and patterns for Landscape Architect selections, or in custom colors selected.
- D. Include identification on each sample with full Project information.
- E. Submit minimum of three (3) samples or as specified in individual Sections of Specifications, two (2) of which will be retained by Landscape Architect.
- F. Reviewed samples which may be used in the Work are indicated Sections of the Specifications, two (2) of which will be retained by the Landscape Architect.
- G. Selection or rejection of samples will be determined by Landscape Architect in writing.
- H. Colors: Materials that are visually related to other finishes require that subcontractors submit their samples before normally scheduled in order that color selection can be made for other items that are scheduled to be ordered earlier in construction schedule. Complete submittal of color charts and color samples shall be made before related colors will be selected Landscape Architect. Contractor shall be responsible to coordinate submittal schedules so as not to delay Work.

1.15 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual Specification Sections, submit manufacturer's printed instruction for delivery, storage, assembly, installation, start-up, adjusting and finishing in quantities specified for product data.
- B. Identify conflicts between manufacturer's instructions and contract documents.

1.16 MANUFACTURER'S CERTIFICATIONS

- A. When specified in individual Specification Sections, submit manufacturers' certificate to Landscape Architect for review in quantities specified for product data.
- B. Indicate that material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product but must be acceptable to Landscape Architect.

1.17 SPECIAL PROCEDURES - ACCELERATION OF THE WORK

- A. If, in judgment of Landscape Architect or Owner, it becomes necessary at any time to accelerate Work or portion thereof, Contractor, when ordered or directed by Landscape Architect or Owner, shall deploy workers in such portions of Project where directed to enable others to properly engage and carry on their work.
 - 1. If circumstances require that entire Work or portion thereof be completed at date earlier than Contract Completion Date as adjusted by change orders, Contractor, when ordered or directed by Owner or Landscape Architect, shall increase his forces, equipment, hours of work, and/or number of shifts and shall expedite delivery of materials to meet the altered completion date or dates ordered or directed. Any increase in cost to Contractor in compliance with such orders or directives will be adjusted in accordance with Contact Documents.
- B. If, in judgment of Landscape Architect or Owner, Work is behind schedule and rate of placement of work is inadequate to regain scheduled progress so as to ensure timely completion of Work or separable portion thereof, Contractor, when so informed by Landscape Architect or Owner, shall immediately take action to increase rate of Work placement.
 - 1. This shall be accomplished by any one or combination of following or other suitable measures:
 - a. An increase in working forces,
 - b. An increase in equipment or tools,
 - c. An increase in hours of work or number of shifts,
 - d. Expediting delivery of materials.
 - 2. Contractor shall, within ten (10) calendar days after being so informed, notify Architect of specific measures taken and/or planned to increase rate of progress together with estimate of when scheduled progress will be regained. Should plan of action be deemed inadequate by Landscape Architect or Owner, Contractor will take additional steps or make adjustments as necessary to his plan of action until it meets with Landscape Architect's or Owner's approval.
 - 3. Acceleration of Work will continue until scheduled progress is regained. Scheduled progress shall be established from latest revised approved progress schedule for Project.
 - 4. Timely completion will be understood as Contract Completion Date as revised by all time extensions granted at time acceleration is undertaken.
 - 5. Contractor shall not be entitled to additional compensation for additional effort he applies to Work under terms of this sub-paragraph.
- C. Any directive or order to accelerate Work will be in writing. Any directive or order terminating accelerated Work will be in writing.

1.18 PRECEDENCE

- A. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

- B. In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:
1. The Agreement.
 2. Addenda, with those of later date having precedence over those of earlier date.
 3. The Supplementary Conditions.
 4. The Special Conditions of the Contract for Construction.
 5. The General Conditions of the Contract for Construction.
 6. Drawings and Technical Specifications.
 7. In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Landscape Architect's interpretation.
 8. Any work called for in the Drawings and not mentioned in the Specifications, or vice versa, shall be performed as though fully set forth in both.
 9. Contractor shall secure written permission from, Landscape Architect before proceeding with work affected by omission or discrepancies in the Contract.
- C. Separate sections of this Specification are arranged only for convenience of Contractor, and nothing stated herein should be misconstrued as suggesting jurisdiction over items of work by any different building trades.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. Refer to Section 01 70 00 Execution Requirements.
- B. New Materials: As specified in product sections; match existing products and Work for patching and extending Work.
- C. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing Work as standard.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01 32 16.13
CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. References
- B. Quality Assurance.
- C. Format
- D. Schedule
- E. Submittals
- F. Review and Evaluation.
- G. Updating Schedule.
- H. Distribution

1.02 REFERENCES

- A. "Construction Planning and Scheduling", The Associated General Contractors of America (AGC), Washington, D.C., Latest Edition.

1.03 QUALITY ASSURANCE

- A. Scheduler: Contractor's Personnel specializing in CPM scheduling with one year minimum experience in scheduling construction Work of complexity comparable to this Project, and having use of computer facilities capable of delivering detailed graphic printout within 48 hours of request.
- B. Contractor's Administrative Personnel: One year minimum experience in using and monitoring CPM schedule on comparable projects.

1.04 FORMAT

- A. Scheduling may utilize programs (Latest Editions) including Microsoft Project, Primavera Project Planner for Windows (P3), Primavera SureTrack Project Manager, Meridian Project Systems or similar programs addressing the requirements.
- B. Listings: Reading from left to right, in ascending order for each activity. Identify each activity with applicable Specification section number.
- C. Diagram Sheet Size: 11 inches high by width required.
- D. Scale and Spacing: To allow for notations and revisions.

1.05 SCHEDULE

- A. Prepare Network Analysis Schedule and supporting mathematical analyses using Critical Path Method, under concepts and methods outlines in AGC's "Construction Planning and Scheduling".
- B. Diagrams to illustrate order and interdependence of activities and sequence of Work, how start of given activity depends on completion of preceding activities, and how completion of activity may restrain start of subsequent activities.
- C. Illustrate complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates and duration. Provide dates for procurement and delivery of critical products and dates for installation and provision for testing. Provide legend for symbols and abbreviations used. Indicate fabrication, delivery and installation activities.
- D. Incorporate Schedule for Submission of Shop Drawings and Samples. Submittal dates required for shop drawings, product data, samples and product delivery dates, including those furnished by Owner. Provide time in schedule for review of submittals.
- E. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates and identifying for each activity:
 - 1. Preceding and following event number.
 - 2. Activity description.
 - 3. Estimated duration of activity, in maximum 15 day intervals.
 - 4. Earliest start date.
 - 5. Earliest finish date.
 - 6. Actual start date.
 - 7. Actual finish date.
 - 8. Latest start date.
 - 9. Latest finish date.
 - 10. Lag time, total and free float for each activity and critical path.
 - 11. Monetary value of activity, keyed to Schedule of Values.
 - 12. Manpower and cost loading of scheduled activities.
 - 13. Percentage of activity completed.
 - 14. Responsibility
- F. Analysis Program: Capable of compiling monetary value of completed and partially completed activities of accepting revised completion dates and re-computation of all dates and float.
- G. Required Sorts: List activities in sorts or groups:
 - 1. By preceding Work item or event number from lowest to highest.
 - 2. By amount of float, then in order of early start.
 - 3. By responsibility in order of earliest possible start date.
 - 4. In order of latest allowable start dates.
 - 5. In order of latest allowable finish dates.
 - 6. Contractor's periodic payment request sorted by Schedule of Values.
 - 7. Listing of basic input data that generates report.
 - 8. Listing of activities on critical path.

- H. Coordinate contents with Schedule of Values.
- I. Contractor shall not sequester float through strategies including extending activity duration estimates to consume available float, using preferential logic, using extensive or insufficient crew or resource loading, use of float suppression techniques, special lead or lag logic restraints or imposed dates.

1.06 SUBMITTALS

- A. PRELIMINARY Network Analysis Schedule: Within 14 days after date established in the Award of Contract, submit proposed PRELIMINARY Network Analysis Schedule defining planned operations for first 60 days of Work, with general outline for remainder of Work.
- B. PRELIMINARY Network Analysis Schedule: Within 20 days after joint review of proposed PRELIMINARY Network Analysis Schedule, submit proposed COMPLETE Network Analysis Schedule for review consisting of network diagrams and mathematical analysis. Include written certification that subcontractors have reviewed and accepted proposed schedule.
- C. Participate in review of Preliminary and Complete Network Analysis Schedule jointly with Architect.
- D. Number of opaque reproductions Contractor requires, plus three copies which will be retained by Landscape Architect.
- E. All schedule submittals, including progress updates for duration of Work, shall include electronic submittal in original file format, by e-mail or delivered on storage media agreed to.
- F. Updated network schedule with each Application for Payment.

1.07 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of network diagrams and analysis with Architect at each submittal.
- B. Evaluate project status to determine Work behind schedule and Work ahead of schedule.
- C. After review, revise as necessary as result of review and resubmit within 10 days.

1.08 UPDATING SCHEDULE

- A. Maintain schedule to record actual start and finish dates of completed activities.
 - 1. Submit updated schedule at each scheduled project meeting or monthly, whichever is more frequent.
- B. Indicate progress of each activity to date of revision with project completion date of each activity. Update diagrams to graphically depict current status of Work.

- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Indicate changes required to maintain Date of Certified Completion.
- E. Submit sorts required to support recommended changes.
- F. Provide narrative report to define problem areas, anticipated delays and impact on Schedule. Report corrective action taken, or proposed and its effect including effect of change on schedule of separate contractors.

1.09 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedule to Contractor's project site file, to Subcontractors, Suppliers, Landscape Architect, Owner, IOR and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedule.

PART 2 - PRODUCTS

2.01 NOT USED.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01 35 16
ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Products and installation for patching and extending Work.
- B. Transition and adjustments.
- C. Repair of damaged surfaces, finishes and cleaning.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in products Sections, match existing products and work for patching and extending Work. Maintain fire-rated construction.
- B. Type and Quality of Existing Products: Determine by inspection and testing of products where necessary, referring to existing Work as standard.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that demolition is complete and areas are ready for installation of new Work.
- B. Beginning of restoration Work means acceptance of existing conditions.

3.02 PREPARATION

- A. Cut, move or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- C. Remove debris and abandoned items from work area and from concealed spaces.
- D. Prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

3.03 INSTALLATION

- A. Remove, cut and patch Work in manner to minimize damage and to provide means of restoring products and finishes to original or specified condition.

- B. Refinish visible existing surfaces to remain in renovated spaces, to specified conditions for each material with neat transition to adjacent finishes.
- C. Restore existing systems to their full operating condition(s) at no additional cost that were damaged and/or removed during the scope of this contractor's work. Advise Landscape Architect of any deficiencies and/or pre-existing deficient conditions prior to starting work.
- D. Install products as specified in individual Sections and Drawings.

3.04 TRANSITIONS

- A. Where new Work abuts or aligns with existing, perform smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- B. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and make recommendation to Landscape Architect.

3.05 ADJUSTMENTS

- A. Where change of plane of 1/4 inch or more occurs, request instructions from Landscape Architect.

3.06 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces that are damaged, lifted, discolored or showing other imperfections.
- B. Repair substrate prior to patching finish.

3.07 FINISHES

- A. Finish surfaces to match existing.
- B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest Intersections.

3.08 CLEANING

- A. Conform to Division 01, General Requirements and Section 01 70 00, Execution Requirements.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Reference Standards.
- B. Quality Assurance and Control of Installation.
- C. Field Samples.
- D. Mock-up
- E. Project Inspector and Inspections.
- F. Permits and Fees.
- G. Verified Reports.
- H. Manufacturers' Field Services and Reports.
- I. Laboratory Testing Services.

1.02 REFERENCE STANDARDS

- A. Conform to current adopted reference standards by date of issue of the current code cycle and the date of the Contract Documents.
- B. For products or workmanship specified by Association, Trade or Federal Standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- C. Obtain copies of standards when required by Contract Documents.
- D. Maintain copy of standards at jobsite during submittals, planning and progress of the specified Work until Certified Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from the Landscape Architect before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

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

- B. Comply fully with manufacturers' instructions including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Landscape Architect before proceeding.
- D. Perform Work by persons qualified to produce workmanship of specified quality.
- E. Where experience minimums for workmen, applicators, companies or manufacturers are required in individual Sections, written certification and documentation substantiating such minimums shall be submitted and approved by the Landscape Architect, when requested.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
- G. Field Samples
 - 1. Obtain field samples for review by Landscape Architect.
- H. Mock-Up
 - 1. Test will be performed under provisions identified in this Section.
 - 2. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals and finishes.
 - 3. Where mock-ups are specified in individual Sections, shall be removed after approval per this Section unless are to remain as part of the Work.

1.04 PROJECT INSPECTOR

- A. An Inspector, herein referred to as the "Project Inspector", "Job Inspector", or "Inspector of Record" (IOR) will be employed by the Owner approved by the Landscape Architect, Structural Engineer, and the Division of State Architect (DSA) in accordance with 2013 California Code of Regulations, Title 24, Part 1, California Administrative Code, Section 4-333(b). The Inspector of Record's duties are described in CAC Sections 4-341(d), 4-342, and DSA Procedure 13-01.
- B. Class of Inspector required for this project in accordance with Title 24, Part I, Section 4-333.1.
- C. The Work of construction in all stages of progress shall be subject to the personal continuous observation of the Project Inspector. He shall have free access to any or all part of the Work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the Work and the character of the materials. Inspection of the Work shall not relieve the Contractor from any obligation to fulfill this Contract.

1.05 PERMITS AND FEES

- A. Where required by the provisions of individual sections of the Specifications, and where required to carry out construction operations, Contractor shall obtain and pay for permits and fees, including, but not limited to, Demolition, Grading, Disposals, requirements of Water, Gas, Sewer, Flood and Sanitary Districts, Municipal and County Building Departments having jurisdiction.
 - 1. Fees for final utility connections shall be paid by the Contractor and reimbursed to the Contractor by the Owner at direct cost.
 - 2. Building Permits or approvals issued by DSA requiring fees will be obtained and paid by the Owner.

1.06 DSA BOX

- A. All DSA required documents shall be submitted via DSA Box per DSA PR 13-01.
- B. DSA Box is a secure cloud based collaborative solution initiated by the Division of the State Architect (DSA) to allow greater transparency and communication between DSA Field Engineers and designated stakeholders.
 - 1. Invitation shall be sent by email from Box.com.
 - 2. Additional information can be found at:
 - 3. www.dsg.ca.gov/dsa/Programs/progProject/dsabox.aspx

1.07 VERIFIED REPORTS

- A. Contractor shall comply with CAC Sections 4-336 and 4-343 and issue verified reports through the Landscape Architect as required.

1.08 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable and to initiate instructions when necessary.
- B. Manufacturers' representatives shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report of observation to Landscape Architect for review.

1.09 CODES AND REGULATIONS

- A. All work pertaining to and all materials supplied for executing and completing this Contract shall comply with provisions specified in the Contract Documents and with all applicable laws, regulations and ordinances governing Work including, but not necessarily limited to, those of:
 - 1. California Code of Regulations (CCR), Title 24, California Building Standards Code
 - a. CAC - 2013 California Administrative Code, 24 CCR Part 1

- b. CBC – 2013 California Building Code, 24 CCR Part 2, Volumes 1 and 2 ('15 IBC w/CA Amendments)
- 2. California Code of Regulations (CCR), Title 19, Public Safety, Division 1, State Fire Marshal.
- 3. Addenda Compliance per CBC Section 4-338(b), Part 1.
- B. Administrative Regulations, CCR Title 24, Part 1, California Administrative Code, Chapters 1, 4, 5:
 - 1. DSA not subject to Arbitration.
 - 2. Copy of Part 1 and Part 2, Volume 1 and 2 (CBC), and Parts 3 through 5 of Title 24 CCR, shall be kept and made available at the construction site office during construction.
- C. ADA - Americans with Disabilities Act of 1990, as amended
 - 1. Standards - ADA Title II Regulations and the 2010 ADA Standards for Accessible Design.
- D. Enforcement includes all other codes, regulations, or standards referenced in the above listed codes.
- E. The preceding listed codes, regulations and ordinances of the regulatory agencies are hereby made a part of this Contract. Nothing in the Contract shall be construed as allowing any violation of any provision of any of above listed documents. Maintain copies of Codes listed above at the construction site.
- F. Threaded Steel Anchor Bolts and Anchor Rods requirements: DSA Interpretation of Regulation IR 17-11 requirements for identification, sampling and testing of threaded steel anchor bolts and anchor rods used for anchor structural elements to foundations.
 - 1. Anchor bolt and anchor rod materials identifications, sampling and testing shall be performed in accordance with IR 17-11 and the applicable standards. Anchor bolts and anchor rods not readily identifiable by physical markings, nor traceable by documentation accompanying the material's shipment, shall be treated according:
 - a. Sampled and tested to established conformity to the project documents.
 - b. Remove from the jobsite and replaced with identifiable material.
 - 2. Copy of IR 17-11 may be obtained at:
 - 3. www.dgs.ca.gov/dsa/Resources/IRManual.aspx.
- G. The intent of these drawings and specifications is that the work of the alteration, rehabilitation or reconstruction is to be in accordance with Title 24, California Code of Regulations. Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the contract documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required work shall be submitted to and approved by DSA before proceeding with the work.

- H. Should any existing conditions such as deterioration or noncomplying construction be discovered which is not covered by the DSA approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work.

1.10 VARIATIONS WITH LAWS

- A. If Contractor, his subcontractors or suppliers, or any of their employees ascertain at any time that requirements of this Contract conflict with or are in violation of applicable laws, codes, regulations and ordinances he shall not proceed with Work in question, except at his own risk. Contractor shall be required to remove that Work from site and replace such Work with all complying Work at no additional cost to Owner.

1.11 SELECTION AND PAYMENT - TESTING LABORATORY AND SPECIAL INSPECTORS

- A. Owner will employ and pay for services of independent Testing Laboratory and Special Inspectors approved by Landscape Architect and DSA to perform inspection and testing in accordance with Part 1, Title 24, Section 4-335, California Code of Regulations and this Section.
- B. Offsite fabrication requiring Inspection and Testing: submit the qualifications of Inspectors and laboratory, including proposals for services, to the Owner and Landscape Architect for approval of qualifications and costs. Inspectors and laboratories shall conform to the requirements of Part 1 Title 24 Section 4-335.
- C. Inspector of Record (IOR) / Testing Laboratory Travel Expenses
 1. Initial Testing. For initial testing required by this Manual, Owner shall pay IOR, Testing Laboratory or both, for travel expenses, including mileage, room and board, when travel for inspection and testing of products purchased by the Contractor exceeds 50 miles or 2 hours from the project site.
 2. Additional Testing. When initial testing fails, IOR and Testing Laboratory travel expenses, as described above, attributable to required retesting shall be borne by the Contractor and will be deducted by Change Order from funds due and payable, or that become due and payable to Contractor.
 3. IOR, Testing Laboratory or both, as applicable, shall forward billings and records of such expenses to the Owner.
- D. When tests and inspections are required on an overtime basis, initial payment will be made by Owner. At termination of Work or completion of Project, all costs for overtime testing and inspections will be deducted from Contractor's final payment (or any funds due and payable) by Change Order.
- E. Before the Testing Laboratory files testing and inspection billings with Owner, they shall be billed indicating segregated straight time from overtime costs. All overtime costs shall be substantiated with detailed explanation for necessity of such work costs.

- F. When materials tested fail to meet requirements herein specified, they shall be promptly corrected or removed and replaced, re-inspected and retested in a manner required by the Landscape Architect. Costs involved in re-inspection and retesting will be paid by the Owner and deducted from Contractor's final payment (or any funds due and payable) by Change Order.
- G. Employment of testing laboratory shall in no way relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.12 LABORATORY RESPONSIBILITIES

- A. Laboratory shall be licensed to conduct testing and inspection operations in California and shall be approved by DSA. It shall be supervised by a State Licensed Civil Engineer who shall certify and sign all reports.
- B. Provide qualified personnel at site. Cooperate with Landscape Architect, Project Inspector and Contractor in performance of services.
- C. Perform specified inspection, sampling and testing of products in accordance with standards specified herein.
- D. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- E. Promptly notify Landscape Architect, Project Inspector and Contractor by letter of observed irregularities or non-conformance of Work or products.
- F. Perform additional inspections and test required by Landscape Architect or governing agencies.
- G. Immediately upon Testing Laboratory determination of a test failure, the laboratory shall telephone the results of test to Landscape Architect. On the same day, laboratory shall send written test results to those named on the distribution list below.

1.13 LABORATORY REPORTS

- A. After each inspection and test, promptly submit one copy of laboratory report to the following:
 - 1. Owner
 - 2. Contractor
 - 3. Inspector of Record (IOR)
 - 4. Special Inspectors: Special Inspector's Verified Reports as required by Section 4-336 and shall be submitted in a timely manner.
 - 5. Landscape Architect
 - 6. Civil Engineer.
 - 7. Division of the State Architect (DSA)
- B. Include:
 - 1. Date issued.
 - 2. Project title, Landscape Architect's number, DSA Application and File number.
 - 3. Name of inspector.

4. Date and time of sampling and Specifications Section.
 5. Identification of product and Specifications Section.
 6. Location in the Project.
 7. Type of inspection or tests.
 8. Date of test and ambient conditions at time of test.
 9. Results of tests.
 10. Conformance with Contract Documents.
 11. Signature by Registered Professional Engineer licensed in California.
 12. Statement that tests were conducted in accordance with Parts 1 and 2, Title 24, California Code of Regulations.
- C. Test reports shall include tests made, whether such tests indicate that the material performed satisfactorily or not. Samples taken but not tested shall be reported. Reports shall show that the materials were sampled and tested in accordance with the requirements of the approved Specifications. Reports shall show the specified design strength and shall state whether or not the materials tested comply with requirements. Report special sampling operations where required.
- D. Submit a report verifying that tests and inspections herein specified and otherwise required have been completed and material and workmanship complies with the Contract Documents. Such verification reports shall be submitted at the completion of the Project and at any time the Project is suspended. Parties to receive such reports are the same as listed above.
- E. When requested by Landscape Architect, provide interpretation of test results.
- 1.14 LIMITS ON TESTING LABORATORY AUTHORITY
- A. Laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.
 - B. Laboratory may not approve or accept any portion of the Work.
 - C. Laboratory may not assume any duties of Contractor.
 - D. Laboratory has no authority to stop the Work.
 - E. Laboratory shall not interpret code in relation to the design of the building.
- 1.15 CONTRACTOR RESPONSIBILITIES
- A. Administration of construction by Contractor per CAC Sections 4-330 and 4-343.
 - B. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing. Selection of materials required to be tested shall be by the Lab or Owner's Representative and not by the Contractor.
 - C. Cooperate with laboratory personnel, Owner's Representative, Project Inspector and the Landscape Architect, and provide access to the Work including weekends and after work hours and to manufacturer's facilities.

- D. Provide incidental labor materials and facilities to provide at all times, safe access to Work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.
- E. Notify Landscape Architect, Project Inspector and laboratory 24 hours prior to expected time for operations requiring inspection and testing services. Contractor shall pay for costs incurred if testing or inspections are cancelled and are required to be rescheduled due to the Contractor's failure to notify the Project Inspector in advance as required. Also, notify Owner in advance of manufacturer of materials to allow testing at source of supply.
- F. In accordance with CBC-17A, Section 1704A.4, Contractor shall execute and submit a Statement of Responsibility regarding special inspections and testing required for principal wind- and seismic-load bearing systems to the Inspector of Record and the Owner.
- G. The Owner, Project Inspector, or the Landscape Architect shall have the right to reject materials and workmanship that are defective or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without cost to the Owner. If the Contractor fails to correct such rejected Work within a reasonable time, fixed by written notice, the Owner will correct same and charge the expense to the Contractor by Change Order.
- H. Should it be considered necessary or advisable by the Owner at any time before date of completion of the entire Work to make an examination of Work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such Work is found to be defective in any respect due to fault of the Contractor or his subcontractor, all extra expenses shall be charged to the Contractor by Change Order. If however such Work is found to meet the requirements of the Contract Documents, the additional cost of labor and materials involved in the examination and for replacement costs shall be allowed to the Contractor by Change Order.
- I. When changes of construction schedule are necessary during construction, coordinate such changes with the Testing Laboratory as required.
- J. When the Testing Laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, extra charges for testing attributable to the delay shall be charged to the Contractor by Change Order.
- K. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.
- L. Selection of materials to be tested shall be made by the Testing Laboratory or the Project Inspector and not by the Contractor.
- M. Any material shipped by the contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated in the Work.

1.16 SCHEDULE OF STRUCTURAL TESTS AND INSPECTIONS

- A. Refer to Form DSA-103, Statement of Structural Tests and Inspections, attached hereto.

1.17 MOISTURE AND ALKALINITY, AND RELATIVE HUMIDITY TESTING

- A. Field Testing of concrete slabs, moisture testing per ASTM F1869 -2009. The test area should be at the same temperature and humidity expected during normal use, minimum testing conditions shall be 75 ± 10 degrees F. and $50 \pm 10\%$ relative humidity. Maintain these conditions 48 hours prior to, and during testing.
- B. Field Testing of concrete slabs, relative humidity per ASTM F2170.
- C. Field Testing of concrete slabs, resilient flooring per ASTM F710.
- D. Alkalinity testing: per ASTM F710, ranges shall not exceed those recommended by the flooring manufacturer.

1.18 EXPANSION BOLTS OR EPOXY-TYPE ANCHORS - APPROVED ANCHORS

- A. Basis of Design Capacities: Design capacities for expansion type and epoxy (adhesive) type anchors should reflect the tested capacity of the anchors including the degree of scatter in the recorded peak loads and the load-displacement response, the type and mechanical properties of the concrete or masonry in which the anchor is installed, anchor edge distance and spacing, and whether the anchors are installed through metal decking into concrete fill. In addition, the potential for concrete cracking in the vicinity of the anchor during its service life and the effect of such cracking on the capacity of the anchor to resist loads shall be considered. The effects of temperature variations on epoxy (adhesive) type anchors shall also be taken into account where applicable. The age, composition and mechanical properties of the materials in which the anchor will be installed shall be evaluated.
- B. The relevant mechanical properties include unit weight, compressive strength, and aggregate size and type. Evaluation of compressive strength on the basis of cores taken at or near the anchor locations shall be permitted. The compressive strength of the material in which the anchor will be installed shall meet or exceed the compressive strength of the material in which the anchor was tested.
- C. Expansion-type anchors: Concrete
 1. Kwik Bolt TZ (KB-TZ) Concrete Anchor, 3/8 to 3/4 inch diameter, ICC ESR-1917, by Hilti Inc., Tulsa, OK.
 2. Simpson Strong-Bolt 2 concrete anchor, 1/2, 5/8, 3/4 and 1 inch diameter, ICC ESR-3037, by Simpson Strong-Tie, Pleasanton, CA,
 3. Power-Stud+SD2 concrete anchor, 3/8 to 3/4 inch diameter, ICC ESR-2502, by DeWalt, Towson, MD.
 4. Or equal with ICC Report Number.
- D. Expansion-type anchors: Grout filled CMU Masonry
 1. Kwik Bolt 3 (KB3) Masonry Anchors, 1/4 to 3/4 inch diameter, ICC ESR-1385, by Hilti.

2. Wedge-All grout-filled CMU anchor, 3/8, 1/2, 5/8, and 3/4 inch diameter, ICC ESR-1396, by Simpson Strong-Tie.
 3. Power-Stud+SD1 masonry anchor, 3/8 to 5/8 inch diameter, ICC ESR-2966, by DeWalt, Towson, MD.
 4. Or equal with ICC Report Number.
- E. Epoxy-Type Adhesive Anchors:
1. For fully grouted CMU
 - a. HIT HY-70 by Hilti, ICC ER-2682.
 - b. AC100+Gold by DeWalt, ICC ESR-3200
 - c. Or equal with ICC Report Number.
 2. For Normal Weight concrete with min. compressive of 2500 psi or 4000 psi.
 - a. HIT-RE 500 V3 Adhesive Anchor System by Hilti, ICC ESR-3814.
 - b. SET-XP adhesive by Simpson Strong-Tie, ICC ESR-2508
 - c. Pure-110+ adhesive anchoring system for standard cure applications by DeWalt/Powers, ICC ESR-3298.
 - d. AC200+ adhesive anchoring system for fast cure applications by DeWalt/Powers, ICC ESR-4027.
 - e. Or equal with ICC Report Number.
- F. Expansion-type anchors. Expansive type anchors may be used, provided the allowable shear and tension loads are determined by test in accordance with following:
1. The allowable values listed in an ICC-ES Evaluation Service Report, with special inspection, may be used for allowable stress design, provided the report states that the anchors were tested in accordance with AC 01, latest revision, including the seismic qualification tests of AC 01 Section 5.6. Strength design values may be used provided the anchors have been tested in accordance with AC193, latest revision, including the seismic qualification tests of ACI 355.2 Sections 9.6 and 9.7 and Annex 1 of AC-193.
 2. For anchors installed in the underside of a beam/slab, the allowable tension load design values should be based on the tabulated value of the anchors installed without special inspection (special inspection is still required), unless allowable load values for anchors installed in cracked concrete are provided in the ICC-ES Report, or the anchors have been tested in accordance with ACI 355.2, latest revision, Table 5.2 and Annex 1 of AC-193, or ACI-318-14 Chapter 17. Shear values are based on the tabulated values in the ICC-ES Report. Once an ICC-ES Report complying with AC-193 has been issued, it shall take precedence over any previous report.
 3. If anchors have not been tested in accordance with the requirements for seismic qualification tests of AC 01, Section 5.6, the allowable load values listed in the ICC-ES Report may be used with the following modifications:
 - a. Allowable shear and tension loads shall be limited to 80% of the tabulated allowable values for anchors installed with special inspection.
 - b. For anchors installed in the underside of a beam/slab, the allowable tension load should be based on 80% of the tabulated allowable value for anchors installed without special inspection (special inspection is still required). Allowable shear values should be based on "a." above.
 4. Underside of Beam/Slab Installations: except as noted in Section, all expansion type anchors installed in the underside of a beam/slab should use the reduced allowable design load values determined in F.1 and F3.b above.

- a. The allowable design loads in F.1, F3.a above may be used for expansion-type anchors installed in the underside of a beam/slab, provided the installation meets one of the following criteria:
 - b. The design engineer provides information that indicates the anchor installation will occur in the negative moment (-M) region of the beam/slab, considering unbalanced loading, or
 - c. Data is submitted to indicate that specific anchor is suitable for use in cracked concrete (testing per ACI 355.2, Table 5.2, including Annex 1 of ACI 193), or
 - d. The anchor is installed in the high flute (rib) of the metal deck in a concrete on metal deck assembly, or
 - e. The anchor is installed with sufficient embedment that the load transfer zone is above the neutral axis of the beam/slab.
 - f. When installing expansion-type anchors through the low flutes of metal deck into concrete, the anchors should be placed as close to the center of the flute width as practicable. The deck shall be 20-gage minimum thickness per CBC Section 2210A.1.1.2 and the flute width shall meet or exceed the value set forth in the ICC-ES Report for the anchor. The minimum effective depth of embedment shall be as noted in the ICC-ES Report for the anchor.
- G. Epoxy-type anchors. Epoxy-type (adhesive) anchors include anchors that rely on organic and inorganic compounds (including) epoxies, polyurethanes, methacrylates and vinyl esters) to develop the bond to the concrete.
1. The use of shallow epoxy-type (adhesive) anchors to resist direct tension loads where concrete cracking may occur is not permitted. Shallow epoxy-type (adhesive) anchors are those with an embedment to diameter ratio less than 8.
 2. Epoxy-type (adhesive) anchors should only be installed in conditioned, interior spaces. Where epoxy type anchors are used as shear dowels at the perimeter of an existing opening (slab or wall) to be filled with concrete, or are being used to connect new concrete elements to existing concrete elements (e.g. gunite), they may be installed in exterior locations with prior approval by .
 3. If epoxy-type (adhesive) anchors are exposed to fire, all anchors in the affected area shall be inspected and evaluated by a qualified person to ensure their load carrying capability has not been compromised.
 4. The design shear and tension capacities of epoxy-type anchors must be determined in accordance with the following:
 - a. The allowable loads may be based on the values listed in an ICC ES Report that complies with requirements of AC 58 for a specific anchor in the same configuration as tested. Supporting data shall include the Seismic Qualification test performed in accordance with procedures of Section 5.3.7 of AC 58.
 - b. Where epoxy-type (adhesive) anchors are used for structural applications, such as dowels between new and existing concrete the anchors shall be installed in a manner such as that the ultimate tensile capacity is controlled by the ultimate strength of the steel element.

- H. When epoxy-type (adhesive) anchors are used to resist tensile forces in structural applications, the minimum depth of embedment shall be greater than or equal to the development length, l_d , determined in ACI 318-14 for a cast-in-place reinforcing bar of the same diameter and grade when considering a tensile splitting failure mode. Where tensile splitting need not be considered, the depth of embedment, may be determined in accordance with Chapter 17 of ACI 318-14 as amended by Section 3.3 of AC 308.
 - I. Embedment, Spacing, and Edge Distance: All anchors shall meet the minimum embedment, spacing, edge distance, and slab thickness criteria established by the relevant ICC-ES Report.
 - J. Unless otherwise noted in the Report, the edge distance should be a minimum of ten (10) bolt diameters from the free edge of the slab and center-to-center spacing should be a minimum of twelve (12) bolt diameters. Holes shall be clean and free from dust immediately prior to installation of the anchor.
- 1.19 TESTING AND INSPECTION REQUIREMENTS FOR EXPANSION AND EPOXY ANCHORS
- A. Post-installed anchors shall be tested in accordance with the provisions of CBC Section 1910A.5 by an accepted testing facility or Special Inspector. If any anchor fails testing, test all anchors of the same type, not previously tested until twenty (20) consecutive anchors pass, then resume the initial test frequency. If the anchors are used for the support and bracing of non-structural components (pipe, duct or conduit), the twenty (20) shall be only those anchors installed by the same trade. Refer to CBC Section 1910A.5.5 for acceptance/failure criteria.
 - B. Structural Applications: Test all expansion-type anchors. Expansion-type anchors shall not be used as hold-down bolts. When used for sill plate bolting application 10% of the anchors shall be tested.
 - C. Non-Structural Applications: Test 50% or alternate bolts including at least one-half the anchors in each group, shall be tested. in a group. Nonstructural may include such applications as equipment anchorage.
 - D. Testing shall be done in the presence of the project inspector and a report of the test results shall be submitted to DSA. If any anchors fail the testing requirements, the additional testing requirements shall be acceptable to DSA.. The requirements shall also apply to bolts or anchors set in concrete with chemical (adhesives) if the long-term curability and stability of the chemical material and its resistance to loss of strength and chemical change at elevated temperatures are established to the satisfaction of the DSA.
 - E. Expansion Type Anchors Setting Verification:
 - 1. Torque-Controlled Anchors: Following attainment of 10% of the required torque, torque-controlled anchors shall not require more than six (6) additional complete turns of the nut during installation to achieve the manufacturer's specified installation torque. The extent of bolt projection after installation shall be measured to confirm that this requirement has been meet.

2. Displacement-Controlled Anchors: The position of the plug in the anchor shell shall be checked with the manufacturer-supplied installation tool or other appropriate device. The position of the plug shall conform to the manufacturer's specifications.
- F. Testing for Expansion-Type Anchors: The test load may be applied by any method that will effectively measure the tension in the anchor, such as direct pull with a hydraulic jack, calibrated spring loaded devices, or a calibrated torque wrench. Displacement-Controlled anchors such as drop-in shall not be tested using a torque wrench. Required test loads may be determined by either of the following methods:
1. Twice the allowance tension load as determined in Article 1.18., or;
 2. Tension or torque test values from the table and procedures below.
 3. Anchors tested with a hydraulic jack should exhibit no discernable movement during the tension test, e.g., as evidenced by loosening of the washer under the nut. Anchors tested with a calibrated torque wrench must attain the specified torque within ½ turn of the nut.
- G. Test Values: Conform to the following table for either Hardrock or Lightweight Concrete and Masonry:
1. All anchor bolts of the expansion type installed in concrete shall be one of the following or equal:
 - a. Hilti, Inc. - Qwik Bolt TZ - Wedge Anchor-ICC/ES ESR-1917
 - b. Simpson - Strong Bolt - Wedge Bolt - Wedge Anchor-ICC/ES ESR-3037
 - c. DeWalt/Powers - Power-Stud+SD2 - Wedge Anchor - ICC/ES ESR-2502

Minimum Test Values - Normal Weight or Lightweight Concrete

ANCHOR	WEDGE		
Dia(in)	Tension Load(lbs)	Torque(ft-lbs)	Embedment(in)
-	-	-	-
3/8	1105	25	2
1/2	2420	40	3-1/4
5/8	4015	60	4
3/4	4690	110	4-3/4

- 2.
3. All anchor bolts of expansion type installed in grout filled masonry shall be one of the following or equal:
 - a. Hilti, Inc - Kwik Bolt III-Wedge Anchor-ICC/ES NO.1385
 - b. Simpson-Wedge All-Wedge Anchor-ICC/ES NO. 1396
 - c. DeWalt/Powers - Power-Stud+SD1 - Wedge Anchor - ICC/ES NO. 2966

Minimum Test Values - Grout Filled Concrete Masonry

ANCHOR	WEDGE		
Dia(in)	Tension Load(lbs)	Torque(ft-lbs)	Embedment(in)
1/4	432	4	2
3/8	626	15	2-1/2
1/2	724	25	3-1/2
5/8	1035	65	4

3/4	1368	120	4-3/8
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4. Anchor diameter refers to the thread size for the WEDGE ANCHORS.
5. Reaction loads from test fixtures may be applied close to the anchor being tested, provided the anchor is not restrained from withdrawing by the fixture(s).
6. Test equipment (including torque wrenches) shall be calibrated by an approved testing laboratory in accordance with standard recognized procedures.
7. The following criteria apply for the acceptance of installed anchors:
 - a. Hydraulic Ram Method: The anchor shall have no observable movement at the applicable test load. For wedge and sleeve anchors, a practical way to determine observable movement is that the washer under the nut becomes loose
 - b. Torque Wrench Method: The applicable test torque must be reached within the following limit for wedge type:
 - 1) Wedge or Sleeve type: One-half (1/2) turn of the nut.
 - 2) One-quarter (1/4) turn of the nut for the 3/8 inch sleeve anchor only.
8. Testing shall occur within 24 hours after installation.
9. If the manufacturer's recommendation installation torque is less than the test torque listed in the table above, the manufacturer's installation torque shall be used in lieu of the tabulated values.

1.20 EPOXY-TYPE (ADHESIVE) ANCHORS AND SCREW-TYPE ANCHORS

- A. Epoxy-type (adhesive) anchors shall be tension tested per Section 1910.A.5 . The tension test load shall equal twice the allowable load for the specific location of the anchor to be tested (i.e., accounting for edge distance) or 80% of the yield strength of the bolt (0.8AbFy), whichever is less. The test procedures for expansion-type anchors in the attached table shall also be used for epoxy-type (adhesive) anchors. Torque testing of epoxy-type (adhesive) anchors is not permitted.
- B. Where epoxy-type (adhesive) anchors are used as shear dowels across cold joints in slabs on grade and the slab is not part of the structural system, testing of those dowels is not required.
- C. Anchors shall exhibit no discernible movement during the tension test.
- D. Screw Anchors: The fastener is produced from hardened steel with threads, similar in appearance to a lag bolt. Screw anchors may be used, provided the allowable shear and tension loads are determined in accordance with the following:
 1. The allowable values listed in an ICC ES Report, with special inspection, may be used for allowable stress design, provided the report states that the anchors were tested in accordance with AC 106, latest revisions, including the seismic qualification tests of AC106 Section 4.6.
 2. Welding to these anchors is not permitted.
 3. Screw anchors may be used to attach components, such as equipment, mechanical vibration isolators or snubbers, to structural (reinforced) concrete, or for sill bolting applications. All screw anchors installed through a wood sill plate requires a plate washer in conformance with Section 2308.3.2.
 4. The use of screw anchors is not permitted in overhead applications or for discrete hold down forces, such as shear walls.

5. Masonry Anchors: 1/4" diameter, Tapcon with Advance Threadform Technology, heat-treated steel, by Illinois Tool Works/Buildex, ICC-ESR-1671. Slotted Hex Washer Head.
- E. Screw-type anchors shall be torque tested in accordance with the testing procedures in Test Values Table and procedures herein. 3/16", 1/4", Tapper+, Perma-Seal coating by DeWalt/Powers, ICC-ESR-3196. Slotted hex head and flat head.
- F. Screw-type anchors: Simpson Strong-Tie Titen-HD concrete anchor, 3/8, 1/2 and 3/4 inch diameter, ICC ESR-2713, by Simpson Strong-Tie, Pleasanton, CA or equal with ICC report number. DeWalt/Powers Screw-Bolt+ concrete anchor, 1/4 to 3/4 inch diameter, ICC ESR-3889, by DeWalt/Powers. Towson, MD.
- G. Screw-type anchors: Simpson Strong-Tie Titen-HD grout-filled CMU anchor, 3/8, 1/2, 5/8, and 3/4 inch diameter, ICC ESR-1056, by Simpson Strong-Tie, Pleasanton, CA or equal with ICC report number. DeWalt/Powers Wedge-Bolt+ grout-filled CMU anchor, 1/4 to 3/4 inch diameter, ICC ESR-1678, by DeWalt/Powers. Towson, MD.

1.21 POWDER ACTUATED FASTENERS

- A. Powder-Actuated Fasteners: Powder-actuated fasteners (shot pins) are not addressed by Chapter 1901A.3 of CBC and ACI 318. Powder-actuated fasteners may be used for limited application provided the allowable shear and tension loads are determined in accordance with the following:
 1. The allowable values listed in an ICC ES Evaluation Services Report, with special inspection, may be used for allowable stress design, provided the report states that the anchors were tested in accordance with AC 70, latest revision. Powder-actuated fasteners may be used for hanging metal suspension systems for lay-in panel ceilings and for the attachment of metal track in conjunction with non-bearing partitions. The use of powder-actuated fasteners for other applications shall be subject to review and approval of DSA.
- B. Powder actuated fasteners (Shot Pins): Installer shall utilize tools recommended by the manufacture in compliance with the ICC code reports. Pins shall have a minimum diameter of 0.145 inch and be installed to conform to the load requirements of this Section and:
 1. Tables 1 (driven into steel), 2 (driven into concrete), and 4 (driven into Structural. lightweight concrete) of ICC ESR-1663, Hilti or
 2. Table 1 or 3 (driven into concrete), 2 (driven into steel), 5 (driven into structural lightweight concrete), and 6 (driven in hollow concrete masonry units) of ICC ESR-2138, Simpson Strong-Tie powder-actuated fasteners or
 3. Table 1 and 2 (driven into concrete), 3 (driven into structural lightweight concrete), 4 (driven into hollow concrete masonry units), 5 (driven into steel) of ICC ESR-2811, Simpson Strong-Tie gas-actuated fasteners or equal with ICC report.
 4. Table 1 (driven into concrete), 3 (driven into lightweight concrete and sand-lightweight concrete over steel deck), and 5 (driven into steel) of ICC ESR-2024, DeWalt/Powers powder-actuated fasteners.

5. Table 3 (driven into concrete), 4 (driven into lightweight concrete and sand-lightweight concrete over steel deck), and 5 (driven into grouted / hollow concrete masonry units) 6,7 (driven into steel) of ICC ESR-3275, DeWalt/Powers gas-actuated fasteners or equal with ICC report.
- C. Allowable Loads: Limited to 100 lbs. maximum or 80% of ICC approved values whichever is less. Testing required.
- D. Use of Powder actuated fasteners for tension loads is limited to support of minor loads such as suspended acoustical ceilings, ductwork and conduit. Permissible Loads for Ceiling Clip Assembly:
1. Normal-Weight Concrete: Ceiling Clip Assembly Hilti X-CW, minimum 0.138" diameter, minimum penetration 1-1/8". Allowable Loads: 210 lbs. tension listed in ICC Report: ICC ESR 2184: 4000 psi Concrete Compressive Strength.
 - a. Type X-CW X-C 32 KWIK, by Hilti, Inc., Tulsa, OK, or equal.
 2. Lightweight Concrete: Ceiling Clip Assembly, minimum 0.138" diameter, minimum penetration 1-1/8". Required Allowable Loads: 150 lbs tension values listed in ICC ESR 2184: 3000 psi Concrete Compressive Strength.
 - a. Type X-CW C-C 32, by Hilti, Inc., Tulsa, OK, or equal.
 3. Use manufacture's drill bits and recommended tools.
 4. Normal-Weight Concrete: Ceiling Clip Assembly DeWalt/Powers 0.3 Head Standard, minimum 0.145" diameter, min. penetration 1". Allowable loads: 100 lbs. tension listed in ICC Report: ICC ESR 2024: 4000 psi concrete compressive strength.
 - a. 0.3" Head Standard, by DeWalt/Powers, Towson, MD, or equal.
 5. Light-weight Concrete: Ceiling Clip Assembly, minimum 0.145" diameter, minimum penetration 1". Required Allowable Loads 60 lbs tension values listed in ICC ESR 2024: 3000 psi concrete compressive strength.
 - a. 0.3" Head Standard by DeWalt/Powers, Towson, MD, or equal.
 6. Use manufacturer's recommended tools.
- E. Permissible Loads for Sills. Light gage steel and Interior Wood Plate Anchorages:
1. Low Velocity Power-Driven Fasteners: normal-weight concrete: Hilti DS and X-CR (stainless steel for exterior applications), 0.177", 0.145 for X-CR, shank diameter with washers, ICC-ESR Report ER-1663, Table 2. Exterior or Perimeter Sill and Interior Plate Anchorages.
 2. Low Velocity Power-Driven Fasteners: normal-weight concrete: Simpson PDPWL-300, 3 inches long, 0.300 inch head diameter and 0.145 inch shank diameter with washer, ICC ESR-2138, Table 1 or 4. Exterior or Perimeter Sill and Interior Plate Anchorages.
 3. Low Velocity Power-Driven Fasteners: normal-weight concrete: DeWalt/Powers: 0.3" and 8 mm Head Drive Pins, 0.145", shank diameters with washers, ICC-ESR-2024, Table 7A. Wood Still Plate Anchorages

1.22 REQUIRED TESTING FOR POWDER ACTUATED FASTENERS

- A. Testing: Operator, tool and fastener shall be pre-qualified by the Project Inspector.
1. Tools shall conform to ANSI A10.3 safety requirements for Powder Actuated Fastening Systems and to all OSHA requirements.

2. Manufacturer's representative shall provide safety training for all installation personnel and provide powder actuated tool operator certification in accordance with OSHA requirements.
 - B. The Project Inspector shall observe the testing of the first 10 fastener installations.
 - C. A test pullout load of not less than twice the design load or 200 lbs., whichever is greater, shall be applied to the fastener in such a manner as not to resist the spalling tendency of concrete in which the fastener is imbedded. Thereafter, random tests under the Project Inspector's supervision shall be made of approximately 1 in 10 fasteners.
 - D. Should failure occur on any fastener tested, all installations shall be tested until twenty consecutive fasteners pass, then resume the initial testing frequency.
- 1.23 INSTALLATION
- A. When installing drilled-in anchors or powder driven pins in reinforced concrete, use care and caution to avoid cutting or damaging reinforcing bars. When required by the Landscape Architect, locate the reinforcing by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging reinforcing during installation. Maintain a minimum clearance of one inch between the reinforcing and the anchor and/or pin.

PART 2 - PRODUCTS

2.01 NOT USED.

PART 3 - EXECUTION

3.01 ATTACHMENTS

- A. Form DSA-103, Statement of Structural Tests and Inspections.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary Utilities: Electricity, lighting, wireless internet, water and sanitary facilities.
- B. Temporary Controls: Barriers, enclosures, fencing, protection of Work and security.
- C. Construction Facilities: Access roads, Parking, progress cleaning, project sign and field office trailer.
- D. Special Controls: Waste disposal facilities, Water Control, Dust Control, Erosion and Sediment Control, Noise Control, Pollution Control.
- E. Comply with Title 24, Part 9, California Fire Code, Chapter 33 Fire Safety During Construction and Demolition, during all Phases of project.

1.02 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Phasing Plan: Submit Phasing Plan to confirm understanding of phasing work required and in coordination with Landscape Architect's Irrigation Plans.

1.03 TEMPORARY ELECTRICITY

- A. Provide temporary electrical service suitable to conduct construction operations.
- B. Connect to existing power service. Power consumption shall not disrupt Owner's need for continuous service.
- C. Owner will pay cost of energy used. Exercise measures to conserve energy.
- D. Provide power outlets for construction operations with branch wiring and distribution boxes located where needed. Provide flexible power cords as required.
- E. Provide feeder switch at source distribution equipment.

1.04 TEMPORARY LIGHTING

- A. Provide temporary LED lighting as required with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
- B. Maintain lighting and provide routine repairs.

- C. Install and operate temporary lighting as requires that fulfills security and protection requirements without operating entire system.

1.05 WIRELESS DATA / INTERNET SERVICES

- A. Provide, maintain and pay for wireless data / internet services for Project Inspector at Inspector's Office Trailer.
- B. Provide and pay for cellular telephone service for Project Inspector's use at time of project mobilization.
- C. Provide, maintain, and pay for copy machine with 11 by 17 inch capability for use by Project Inspector.

1.06 TEMPORARY WATER SERVICE

- A. Provide for suitable quality water service. Connect to existing water source for construction operations.
- B. Owner will pay cost of water used. Exercise measures to conserve water.
- C. Extend branch piping with outlets located so water is available by hose with threaded connections.

1.07 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facilities shall not be used.

1.08 TEMPORARY FIRE PROTECTION

- A. Provide fire protection during construction according to CFC Chapter 33, including but not limited to fire extinguisher requirements and exit access requirements.
- B. Conform to Title 24, Part 9, California Fire Code, Chapter 33, Fire Safety During Construction/Demolition.

1.09 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades required by governing authority and Supplementary Conditions for public rights-of-way and for public access to existing facilities.
- C. Provide protection for plant life designated to remain. Replace all damaged plant life.
- D. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

- E. Provide steel trench plates, orange mesh fencing, construction site marker and other protective means to keep site and users, Owner's personnel, visitors and students safe, protected, and separated from ongoing construction operations. Provide temporary access at all paths of travel. Yellow warning tape is not acceptable means of separation and protection. At all open trenching operations, enclose entire trenching operation area including stockpiled backfill within orange mesh construction fencing. Provide steel trench plate "bridges" at all walkways.
 - 1. Notify Fire Marshall at least 48-hours prior to beginning utility work in an existing Fire Lane.
 - 2. Allow Fire Marshall access at reasonable times during progress of the work for inspections.

1.10 FENCING FOR CONSTRUCTION OPERATIONS

- A. Construction: Commercial grade chain link fence, top and bottom knuckled selvage (closed end). Posts to be driven, unless noted otherwise.
 - 1. Provide screen full height of fence, 1-3/4 inch mesh, 11 gauge, woven open mesh 100% polypropylene with 78 percent wind break, reinforced tape at grommets at 18 inches centers at perimeter, attach screen to chain link fence with 11 gauge hog rings by Roxford Fordell, Los Angeles, CA or equal.
- B. Install 6-foot high fence with screen around street/parking lot frontage (west & north Limits of Work as shown on Sheet C-1); equip with vehicular and pedestrian gates with locks. Contractor shall also provide 18" x 24" painted plywood signage at all street facing trail entries to the Arboretum labeled: "ARBORETUM CLOSED FOR CONSTRUCTION – NO ENTRY".
- C. Install orange snow fence (at the northeast and east Limits of Work as shown on Sheet C-1) to protect surrounding vegetation and at south side of Nursery lot (Staging Area), located as to not interfere with work scope.
- D. Nursery lot is currently fenced on south, west and north sides. Any need to add gates shall be coordinated with Owner's Project Manager.
- E. Submit detailed fencing and construction traffic plan for review and approval by Architect.
- F. At completion of project repair concrete or A.C. substrate, fill holes to match existing materials flush with adjacent surface.
- G. STAGING AREAS
 - 1. Construction Staging Area is designated on the plans as the existing Nursery Lot. Submit Staging Area plan and coordinate all set-up with Owner's Project Manager in advance.

1.11 EXTERIOR ENCLOSURES

- A. Provide protection for products and prevent entry of unauthorized persons to Staging Area. Provide access gates as required with hardware and locks.

1.12 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.
- C. Prohibit traffic from landscaped areas.

1.13 SECURITY

- A. Provide security and facilities to protect Work, existing facilities and Owner's operations from unauthorized entry, vandalism or theft.
- B. Coordinate with Owner's security program.

1.14 ACCESS ROADS

- A. Construct and maintain temporary roads accessing to serve construction area.
- B. Extend and relocate as Work progress requires.
- C. Provide and maintain access to fire hydrants, free of obstructions. Where required by local fire authority, provide and maintain a 26 foot wide fire apparatus access road.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads may be used for construction traffic.
- F. Where construction traffic occurs when students and staff are on campus, provide "spotter" responsible for leading construction traffic through site areas.
- G. Route construction equipment, trucks, and similar vehicles via existing public streets to and from site as approved by governing authorities.

1.15 PARKING

- A. Construction parking to accommodate construction personnel shall be in existing Nursery Lot designated as the Staging Area.

1.16 PROGRESS CLEANING

- A. Refer to Section 01 70 00 Execution Requirements and the requirements of this Section.
- B. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- C. Remove debris and rubbish from remote spaces.
- D. Remove waste materials, debris and rubbish from site weekly and dispose off-site.

- E. Maintain campus streets as required by College and public streets as required by jurisdictional authority free of mud, dust and debris.

1.17 PROJECT SIGNAGE AND BANNERS

- A. Provide project sign, as designed by Landscape Architect. Fabricate using exterior-grade plywood and wood frame construction, acrylic painted with exhibit lettering by professional sign painter. Sign size shall be 4' x 8'.
 - 1. List title of Project, names of Owner, Landscape Architect and Contractor.
 - 2. Erect on site at 2 locations established by mutual agreement of Owner, Architect and Contractor.
- B. Provide and install signage to provide directional, identification, and contact information to construction personnel and visitors as follows:
 - 1. For construction traffic control/flow at entrances/exits; provide STOP signs at all exit points.
 - 2. To direct visitors.
 - 3. For construction parking.
 - 4. For Warning Signs as required.
 - 5. Per CAL/OSHA standards as necessary.
 - 6. Emergency contact information and phone number of local police, fire, and emergency personnel.
- C. Except for signs required by law, no other signs will be permitted without express written permission from Owner. Signs required by law may not obscure any of the banners.

1.18 FIELD OFFICE TRAILER(S)

- A. Owner will provide space for office and project meetings.
- B. Contractor's Field Office Trailer: Provide field office trailer, weather tight with lighting, electrical outlets, communications capabilities, heating, cooling and ventilating equipment and equipped to adequately conduct meetings for construction operations, minimum size; 480 sq. ft. Provide restroom: facilities within trailer, plumb sanitary facilities inside trailer. OR chemical toilet(s) portable chemical toilet facilities. Quantity of portable chemical toilet facilities shall be based on total number of workers and shall be in accordance with CAL/OSHA standards.
 - 1. In SAME Contractor's Field Office Trailer provide separate private office similarly equipped and furnished with desk, 2 drawer file cabinet, a table and two chairs for use by Project Inspector including plan rack suitable for 30 by 42 inch drawings, minimum size 120 square feet. Office must be lockable and have direct access to outside. Alternatively, provide a SECOND separate Field Office Trailer similarly equipped as Contractor's office trailer, and furnished desks, 2 drawer file cabinets, table, chairs and lockable for use by Project Inspector, size 240 sq. ft. In either situation, provide wireless Internet and pay for Inspector's cell service.
 - 2. See additional criteria in General Conditions and Supplementary Conditions.
- C. Cost of use permits, occupancy permits and related fees, if any required by Governing Authorities for temporary construction facilities, shall be paid by Contractor.

- D. Provide 4 by 8 feet conference table, 8 conference chairs and 3 by 6 feet white markerboard at conference room.
- E. Install no closer than 45 feet from project buildings in accordance with NFPA 241.
- F. Maintain facility until Substantial Completion of entire project. Remove within 1 week of Substantial Completion.
- G. Provide property insurance and protection.

1.19 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials prior to Certified Completion inspection.
- B. Remove temporary underground or overhead installations.
- C. Clean and repair damage caused by installation or use of temporary Work.
- D. Restore permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.20 RELOCATION OF UTILITIES

- A. Contractor shall not have responsibility of timely removal, relocation or protection of public utility facilities that are not identified by Owner in Drawings and Specifications, in accordance with California Government Code 4215. Owner shall compensate Contractor for costs of locating and repairing damage not due to failure of Contractor to exercise reasonable care in removing and relocating such public utility facilities. If Contractor, while performing Contract, discovers public utility facilities not identified by Owner in Contract Drawings or Specifications, he shall immediately notify Owner and utility in writing. Contractor shall not be assessed liquidated damages for delay when delay was caused by failure of Owner to provide for relocation for utility facilities.

1.21 WATER CONTROL

- A. Do not permit surface, rainwater or subsurface water or other liquids to accumulate in or about premises and vicinity thereof. Should such conditions be encountered or develop, control water or other liquid shall be suitably disposed of by means of temporary pumps, piping, drainage lines, troughs, ditches, dams or other methods as reviewed by Architect and approved by authority having jurisdiction.
- B. Reference Section 01 57 23.10 for Storm Water Pollution Prevention Plan Requirements.
- C. Dewatering Facilities and drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations and construction free of water.
 - 1. Refer to Storm Water Pollution Prevention Plan included with the bid documents for further requirements.

- D. Dispose of rainwater in lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.

1.22 DUST CONTROL

- A. Conduct earthwork operations in a manner to prevent windblown dust and dirt from interfering with progress of Work, Owner's activities and existing occupied structures in areas immediately adjacent as well as adjacent properties.
- B. Periodically water construction areas as required minimizing accumulation of dust and dirt.
- C. Water spray or cover with tarpaulins truck loads of soil to additionally minimize generation of dust and dirt from construction operations.
- D. Prevent dust and dirt from accumulating on walks, roadways, parking areas and from washing into sewer and storm drain lines.

1.23 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize amount of bare soil exposed at one time.
- C. Provide temporary measures such as berms, dikes and drains to prevent water flow over adjacent properties or City rights-of-way.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Reference Section 01 57 23.10 for Storm Water Pollution Prevention Plan Requirements.

1.24 NOISE CONTROL

- A. Avoid excessive noise where adjacent Owner's functions may be detrimentally affected.
- B. Refer to requirements in Section 01 57 20, Control of Construction Noise.

1.25 POLLUTION CONTROL

- A. Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.
- B. Burning of refuse, debris or other materials will not be permitted on Site.

- C. Comply with regulatory requirements and anti-pollution ordinances during course of construction and disposal operations.

1.26 WASTE DISPOSAL FACILITIES

- A. Comply with requirements of Authorities Having Jurisdiction. Remove loose refuse and dispose off site legally.
- B. Provide waste-collection containers in sizes adequate to handle waste from construction operations.
- C. Provide and maintain trash bins on the Project site. Trash bins shall be serviced on an as needed basis.
- D. Free Fall Maximum: 8 ft. Provide enclosed waste CHUTES for higher fall.
 - 1. Provide disposals sufficiently sized to prevent debris from scattering around areas.
 - 2. Use support systems, intake hoppers, protective liners and durable non-breakable chutes. Max-Access Inc., Houston, TX, Chutes International, White Plains, MD or equal.
 - 3. When using demolition chutes, chute opening must be sealed when not in use. Chute and dumpster shall be sprayed with water to maintain dust control.
 - 4. Do not use Owner's disposal system.

1.27 PROTECTION OF EXISTING FACILITIES AND SITEWORK

- A. Provide site plan of proposed route of construction equipment for approval by Owner.
- B. Use caution to minimize disturbance and damage to existing landscaped areas and sitework.
- C. Protect sidewalks, curbs, entry areas and utilities.
- D. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) and irrigation on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- E. Protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work.

- F. Repair landscaped areas, irrigation and sidewalks and any other damaged facilities where trucks, erection equipment or other construction equipment was used in removal and replacement of the HVAC units during construction. Repair damaged areas to match existing construction to satisfaction of the Owner, and at no additional cost to the Owner.

1.28 CONTRACTOR CONDUCT AND DRESS CODE

- A. Contractor's and subcontractors' personnel shall observe and abide by Owner requirements concerning appropriate conduct, loud noise (unrelated to construction activities) and dress requirements for a safe and un-disturbing work place. Conduct work activities in a professional manner at all times.
- B. Dress Code requirements: contractor's personnel shall wear traditional work attire or uniforms without logos, graphics or wording detrimental to school environment; unless logos, graphics or wording are for business identification purposes.
- C. Contractors and subcontractors shall wear orange safety vests along with other required safety attire including hard hats and safety glasses.
- D. Identification badges, if issued by the Owner, shall be worn at all times, worn on the left side shirt-pocket area, displayed in full view and not concealed.
- E. No radios permitted on the job site.
- F. Owner reserves the right to remove any person(s) not observing conduct and dress requirements specified herein.
- G. Animals: Contractors' and workers' pets or animals of any kind are not permitted on the Campus, including being retained in a vehicle.

1.29 WORK RESTRICTIONS - COORDINATION WITH OCCUPANTS, PEDESTRIAN AND VEHICULAR TRAFFIC

- A. During the course of construction provide the following traffic controls:
 - 1. Provide signs with arrows and text direction pedestrian traffic. Signs, exterior grade: aluminum metal, 0.125" thick with distinct graphics, and lettering not less than 1" high Helvetica Medium. Mounting on walls, fencing or 2" x 2" galvanized steel post.
 - 2. Provide shop drawing of layout and design to District for approval.
 - 3. Install crosswalk at locations where existing crosswalks are obstructed by construction operations.
 - 4. Vehicle Control: Assign flagman or contractor's personnel in distinct orange safety vests and hard hats to direct vehicular traffic flow of parents' vehicles during student drop-off and pick-up times. Assign not less than 2 persons per control point for directing traffic. Supply District with the names of persons involved.
 - 5. Pedestrian Control: Assign contractor's personnel in distinct orange safety vests and hard hats directing pedestrian traffic flow during drop-off and pick-up times. Assign not less than 2 persons per control point for directing traffic.

6. Coordinate with District and school site administrators on daily drop-off and pick-up times as they change throughout the school year.

B. Removal

1. Remove equipment and devices when no longer required.
2. Repair damage caused by installation.
3. Reinstall original crosswalks, signs, landscape construction to original condition.

1.30 MOBILIZATION AND DEMOBILIZATION

- A. The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the Contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the Contract. Mobilization will not be considered as work in fulfilling the Contract requirements for commencement of work.
- B. Mobilization - Equipment and Material: Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable.
- C. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this Contract.
- D. This work includes mobilization and demobilization required by the Contract at the time of Award. If additional mobilization and demobilization activities and costs are required during the performance of the Contract as a result of changed, deleted, or added items of work for which the contractor is entitled to an adjustment in Contract Price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.
- E. Payment: Payment will be made as the work proceeds, after presentation of paid invoices or documentation of direct costs by the contractor showing specific mobilization and demobilization costs and supporting evidence of the charges of suppliers, subcontractors, and others. When the total of such payments is less than the lump sum Contract Price, the balance remaining will be included in the final Contract payment. Payment of the lump sum Contract Price for mobilization and demobilization will constitute full compensation for completion of the work.
- F. Payment will not be made under this item for the purchase costs of materials having a residual value, the purchase costs of materials to be incorporated in the project, or the purchase costs of operating supplies.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials for temporary work may be new or used.

1. Use materials that are adequate in capacity for the required use and loads.
2. Do not use materials that would create unsafe conditions.
3. Do not violate requirements of authorities having jurisdiction.

B. Electrical Materials

1. Power Receptacles: 15 ampere, 120 volt, duplex grounding type with ground fault circuit interrupters. Furnish in suitable boxes with hinged cover plates.
2. Light Fixtures and Lamps: Medium-base, rubber pigtail, type lamp sockets or porcelain lampholders furnish with boxes, and lamps.
3. Conductors: insulated copper or aluminum, with phase conductor insulation rated for the circuit voltage, and insulation or jacketing suitable for the conditions, and branch circuit conductors - No. 12 AWG minimum size, except No. 10 AWG where length of branch circuit exceeds 100 feet.

C. Mechanical Materials

1. Portable Equipment may be new or used, temporary units that will not damage construction materials or processes, that will not create unhealthy conditions for workers, and that can be operated with approval from the authorities having jurisdiction.
2. Fixed Equipment may be new or used, temporary or permanent, devices including any heat generating or cooling equipment that can be operated in a safe manner and with approval from the authorities having jurisdiction.
3. Fuel. Use only devices that burn either natural gas or fuel oil.
 - a. Store fuel oil in portable tanks with a 60 gallon maximum capacity, located on the same level as the devices, and equipped with fills and vents outside the enclosed space.
 - b. Locate the tanks a minimum of 10 feet from heating devices. Label tanks with proper type of fuel.

PART 3 - EXECUTION

3.01 REMOVAL

- A. Remove all temporary control measures in accordance with regulatory requirements at completion of construction.

END OF SECTION

SECTION 01 57 20

CONTROL OF CONSTRUCTION NOISE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to work of this section.

1.02 DESCRIPTION

- A. This section specifies the control of noise arising from construction operations and associated activities. Noise control measures specified are an obligation of the Contractor with the costs included within the various contract items of work.

1.03 QUALITY ASSURANCE

- A. Establish and maintain quality assurance program for the control of noise.

1.04 SUBMITTALS

- A. Noise Control Plan: After the contract is awarded, prior to the commencement of the Work, the Contractor shall meet with the Owner to discuss the proposed Noise Control Plan and to develop mutual understanding relative to details of the Plan.
 - 1. The Noise Control shall comply with the constraints set forth by the Owner, and be in compliance with the noise control regulations of the Owner and the City of San Marcos, CA.
 - 2. Submit a description of the instruments to be used in monitoring noise.
 - 3. Show the areas and boundaries where noisy work will occur.
 - 4. Approval of the Contractor's Noise Control Plan will not relieve the Contractor of responsibility for proper and continuing control of noise throughout the project site.

1.05 NOISE CONTROL

- A. General: Take every practicable precaution and action to eliminate or minimize noise emanating from the construction operations.
- B. Timing: Perform noise-producing work in less-sensitive hours of the day or week as directed by the Owner.
- C. Constraints: Control and abate noise produced by the Work at or below the decibel levels and within the time periods specified.
 - 1. Repetitive, high level impact noise will be permitted only between normal construction time specified in Section 01 10 00 Summary of Work unless otherwise permitted by the Owner. Repetitive impact noise on the property shall not exceed the following dB limitations:

Time Duration of Impact Noise	Sound Level in dB
-------------------------------	-------------------

- | | |
|-------------------------------------|----|
| More than 12 minutes in any hour | 70 |
| Less than 30 seconds of any hour | 85 |
| Less than three minutes of any hour | 80 |
| Less than 12 minutes of any hour | 75 |
2. Provide equipment, sound-deadening devices, and take noise abatement measures that are necessary to comply with the requirements specified, and comply with the following:
 - a. Maximum permissible construction equipment noise levels within 50 feet of any building on the premises shall be 75 decibels.
 - b. Provide shields or other physical barriers to restrict the transmission of noise.
 - c. Provide soundproof housings or enclosures for noise-producing machinery.
 - d. Use intake and exhaust mufflers on internal combustion engines that are maintained to have equipment perform below noise levels specified.
 - e. Line hoppers and bins with sound deadening material.
 - f. Conduct truck loading, unloading and hauling operations so that noise is kept to a minimum.

 - D. At least once every five successive working days while work is being performed, above 55 dBA noise level, measure sound level for noise exposure due to the construction. Measure noise exposure at the property line or 50 feet from the noise source, whichever is greater. Measure the sound levels on the A weighing network of a General Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, measurements may be taken three to six feet in front of any building face. Submit the recorded information to the Architect noting any problems and the alternatives for mitigating actions.

PART 2 - PRODUCTS

2.01 NOT USED.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01 57 23

STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes

1. Implementation and monitoring of Storm Water Pollution Prevention Plan (SWPPP) for the purpose of preventing the discharge of pollutants from the Project site into receiving waters. This includes the elimination of pollution discharges such as improper dumping, storm water that has been in contact with pollutants, erosions, spills or leakage from storage tanks or transfer areas.
2. Compliance with local, state, and federal regulations.
3. Payment of application and annual fees required by the State Water Resources Control Board (SWRCB) up until the date of Substantial Completion.
4. Certification the Project has met all of the conditions of the General Construction Activity Storm Water Permit (GCASP).

B. Related Sections:

1. Section 01 50 00: Temporary Facilities and Controls
2. Section 01 70 00: Execution Requirements

1.02 SUBMITTALS

A. Provide documentation in accordance with specific requirements of approved SWPPP.

B. Retain the following documents on site until Substantial Completion.

1. Copy of NOI and supporting documents
2. SWPPP and Monitoring Program

C. Retain the following documents on site until Substantial Completion. Upon Substantial Completion, forward all required documentation to Landscape Architect.

1. Inspection Records.
2. Annual Compliance Certification.
3. Noncompliance Reporting.
4. Training Records.

1.03 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: California Storm Water Best Management Practice Handbook for Construction Activity (BMP Handbook) Current adopted edition.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide the quality, grade and type of materials as specified in Best Management Practice, BMP, Handbook

PART 3 - EXECUTION

3.01 IMPLEMENTATION

- A. Install perimeter controls prior to starting Work at the Project site.
- B. Contain on-site storm water on the Project site. Do not drain on-site water directly into the storm drain.
- C. Designate trained QSP for the proper implementation of the SWPPP.
- D. Revise SWPPP to suit changing Project site conditions and also when properly installed systems are ineffective.
- E. Upon Substantial Completion:
 - 1. Leave storm water pollution prevention controls in place when required for post-construction storm water management and remove those that are not needed as determined by Civil Engineer. OWNER will maintain prevention controls left in place.
 - 2. Provide Site Monitoring Reports, SWPPP revisions, Compliance Certifications and related documents to Landscape Architect. Post-construction storm water operation and the management plan as mentioned in the compliance certifications are considered to be in place at Substantial Completion.
 - 3. Notice of Termination (NOT)

3.02 MONITORING

- A. Conduct examination of pollution prevention controls and provide Site Monitoring Reports on a monthly basis, as well as before and after each storm and each day during storm events. Prepare and maintain, at the Project site, a log of each inspection using Site Monitoring Report forms. Notify to RWQCB within 30 days if there is any noncompliance.
- B. CONTRACTOR shall provide proof annually (no later than July 1) that construction activities are in compliance with SWPPP. Non-compliance shall be reported to OAR immediately.

3.03 SPECIAL MONITORING OF RUNOFF

- A. CONTRACTOR is responsible for providing proper storage of tools and materials. If rain or storm water run off comes in contact with pollutants (such as soil stabilizers, paint or fluid from vehicles) report to Architect immediately. CONTRACTOR will be required to sample and remediate contaminated water.

3.04 LIABILITIES AND PENALTIES

- A. Review of the SWPPP and inspection log by Architect shall not relieve CONTRACTOR from liabilities arising from non-compliance of storm water pollution regulations.
- B. Payment of penalties for non-compliance by CONTRACTOR shall be the sole responsibility of CONTRACTOR.
- C. Compliance with the Clean Water Act pertaining is the sole responsibility of CONTRACTOR. Any fine against OWNER due to non-compliance by CONTRACTOR, OWNER shall recover all costs of the fine by appropriate OWNER Assessment.

3.05 CHANGE OF INFORMATION

- A. Submit to Architect completed NOI Form for change of information (Construction Site Information and Material Handling/Management Practices).

3.06 NOTICE OF TERMINATION

- A. Upon Substantial Completion CONTRACTOR shall submit a Notice of Termination (NOT) to Architect.

3.07 ATTACHMENTS

- A. Attachment A - Site Monitoring Report.
- B. Attachment B - Compliance Certification.

END OF SECTION

Arboretum Trails Project

**Palomar Community College District
As OWNER
ATTACHMENT "A"
STORM WATER POLLUTION
PREVENTION
SITE MONITORING REPORT**

STATE OF CALIFORNIA
STATE WATER
RESOURCES CONTROL
BOARD

Site Name: _____

Project Description: _____

Contract Number _____

I. Type of Examination: (Use one form for each type of examination):

☐ Prior to Anticipated Storm
Event

☐ After Actual Storm
Event

☐ Monthly

Date Examined: _____

II. Check the response for each SWPPP question below:

	YES	NO
1 Do you have an approved Storm Water Pollution Prevention Plan (SWPPP) and a BMP Handbook on the Project site?	☐	☐
2 Does your SWPPP incorporate an up-to-date erosion control plan?	☐	☐
3 Is the erosion control installed per plan?	☐	☐
4 Is the Work at a stage where the erosion control plan can not be constructed, is the erosion control at the Maximum Extent Practicable for the stage you are in?	☐	☐
5 Did you observe the presence of any floating materials such as oil, grease, pieces of wood, paper, etc., odor, toxics, and/ or sediments?	☐	☐
6 If yes, what is it that you observed? _____		

III. Check the status of the following items as observed:

Item #	SWPPP Items	Acceptable	Not Acceptable	Repairs Required	Date Repairs Completed
1.					
2.	De-silting Basins (Cleaned)	☐	--	☐	
3.	Water Quality Basin	☐	--	☐	
4.	Silt Fences	☐	--	☐	
5.	Hay bales/ Check dams/ Sandbags	☐	--	☐	
6.	Berms and Dikes	☐	--	☐	
7.	Sand/Gravel Inlet	☐	--	☐	
8.	Slope Protection - Polymer and Mulch	☐	--	☐	
9.	Vegetation / Re-vegetation	☐	--	☐	
10.	Dust Control	☐	--	☐	
11.	Surface Erosion	☐	--	☐	
12.	Slope Instability	☐	--	☐	

13.	Storage	☐	--	☐	--	☐	_____
14.	Disposal	☐	--	☐	--	☐	_____
15.	Spills	☐	--	☐	--	☐	_____
16.	Clean-up	☐	--	☐	--	☐	_____
17.	_____	☐	--	☐	--	☐	_____
18.	_____	☐	--	☐	--	☐	_____

IV. Describe any problems or required repairs checked above and the necessary actions needed:

Item	Description of Problem or Required Repair	Action Needed
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Examination Performed by
CONTRACTOR:

_____	_____
By (Print Name, Title and Sign)	Date

Verified by IOR:

_____	_____
Print Name, Title and Sign	Date

END OF ATTACHMENT "A"

Arboretum Trails Project

**Palomar Community College District
As OWNER
ATTACHMENT "B"
GENERAL CONSTRUCTION ACTIVITY
STORM WATER PERMIT
COMPLIANCE**

STATE OF CALIFORNIA
STATE WATER BOARD
WDID NO. _____

Site Name: _____

Project Description: _____

Contract Number _____

ANNUAL CERTIFICATION

I certify the Project has met the following conditions: All elements of the Storm Water Pollution Prevention Plan are in place; construction materials and equipment maintenance waste have been disposed of properly; and the Project site is in compliance with all local storm water management requirements including erosion/sediment control requirements, and the appropriate use permits have been obtained.

CONTRACTOR: _____

Print Name: _____

Title: _____

Signature: _____

Date: _____

SUBSTANTIAL COMPLETION CERTIFICATION

I certify the Project has been completed and the following conditions have been met: All elements of the Storm Water Pollution Prevention Plan have been completed; construction materials and equipment maintenance waste have been disposed of properly; the Project site is in compliance with all local storm water management requirements including erosion/sediment control requirements and the appropriate use permits have been obtained; and a post-construction storm water operation, and management plan is in place.

CONTRACTOR: _____

Print Name: _____

Title: _____

Signature: _____

Date: _____

END OF ATTACHMENT "B"

SUBSTITUTION REQUEST FORM

Project: _____ Substitution Request Number: _____
To: _____ From: _____
Re: _____ Date: _____
Architect's Project Number: _____ Contract For: _____
Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____
Proposed Substitution: _____
Manufacturer: _____ Address: _____
Trade Name: _____

Attached data shall include: product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitutions will require for its proper installation, at no cost to the Owner.

The Undersigned Certifies:

- Proposed substitution has been fully investigated and determined shall be equal or superior in respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing and construction costs caused by the substitutions.
- Reason(s) why substitution is being submitted.
 - ☐ Specified product or material is not available. Explain in detail as attachment.
 - ☐ Cost savings to Owner. Indicate comparative cost analysis as attachment.
 - ☐ Other. Explain:

Submitted by _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

A/E's REVIEW AND ACTION

- ☐ Substitution Approved
- ☐ Substitution Rejected as marked below:
 - ☐ Insufficient information submitted
 - ☐ Submitted late.
 - ☐ Information not clearly marked.
 - ☐ Full line product information (Binder not provided).
 - ☐ Does not meet performance / design requirements of Paragraph _____
 - ☐ Comparisons not properly identified on product data sheets.

Signed by: _____ Date: _____

Substantiating Data Required:

- ☐ Drawings ☐ Tests if required in individual sections
- ☒ Product Data ☐ Reports if required in individual sections
- ☒ Samples ☐ Other: _____

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Products
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions

1.02 PRODUCTS

- A. Product: means new material, machinery, components, equipment, fixtures and systems forming Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- C. Provide interchangeable components from the same manufacturer.

1.03 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.04 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground and protect as necessary to prevent deterioration or damage to the product.

- C. When approved by the Owner, provide off-site storage and protection in a bonded warehouse approved by Owner when site does not permit on-site storage or protection at no cost to Owner.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to ensure products are undamaged and are maintained under specified conditions.

1.05 PRODUCT OPTIONS

- A. Where products are specified by reference standards or by description only, provide products meeting those standards or that description, made by a manufacturer acceptable to Landscape Architect.
- B. Where products are specified by naming one or more manufacturers, provide products of one of the named manufacturers that meets or exceeds specifications.
- C. Where any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction is indicated or specified by name, make, trade name, or catalog number, whether with or without the phrase "or equal," such specification shall be deemed to establish the minimum qualities of function, dimension, appearance, and performance (collectively the Basis of Design) for that material, process, or article. Such specification shall be deemed to be followed by the phrase "or equal."
- D. If a named product, or named manufacturer's equivalent product does not fully meet the specification, that manufacturer shall provide a custom or modified product to meet the specification.
- E. Where expressly noted "no substitutions" in individual Sections, no product options are permitted.
- F. When the phrase "or equal" is used or implied, it shall mean "an equivalent product, approved by the Architect in accordance with the requirements of this Section."
- G. Products, proposed as substitutions, shall conform to requirements listed in the respective Section of this Manual and have at least 10 successful installations in commercial projects similar in scale and complexity to those required for this Project that have been in service for minimum of 5 years and remain in satisfactory condition.

1.06 SUBSTITUTIONS

- A. Manufacturers and products listed in Specifications form basis for design and quality intended. Bidders may propose substitutions of equal design and quality and must be accompanied by completed Request Form included at end of this Section, other forms not permitted. Submit separate form for each proposed substitution.
1. Substitution requests, if any, shall be submitted to Contracts Manager by the last day for Requests for Information prior to the bid date as specified in the Bid Documents. Landscape Architect will issue acceptance or rejection of request.
- B. Substitutions must clearly be in Owner's best interest because of quality, cost, performance, conformity to code requirements or availability. Landscape Architect will make decision as to acceptance of proposed substitution.
1. Submittal of proposed substitutions shall be made only by Prime Contractor(s). Landscape Architect will not review direct submittal by manufacturers, suppliers or subcontractors.
 2. Burden of proof as to equality of any material, process or article shall rest with Contractor. Provision authorizing submissions of "or equal" justification data shall not in any way authorize an extension of time for performance of this Contract.
 3. Substitutions shall, without exception, be manufactured of same basic materials and comply with or exceed all Specification requirements of dimension, function, structure and appearance, without deviation. Provide itemized comparison of quality and performance.
 4. Use of approved substitutions shall in no way relieve Contractor from responsibility for compliance with Contract Documents after installation. Contractor shall assume all extra costs caused by use of approved substitute materials.
 5. Statement indicating why specified material or product cannot be provided.
 6. Coordination information, including list of changes or modifications needed to other parts of Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 7. Detailed side by side comparison of significant qualities of proposed substitution with those of the Work specified. Mark clearly affected specification Section for any differences from item specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect and specific features and requirements indicated.
 8. Product Data Samples, including drawings and descriptions of products and fabrication and installation procedures.
 9. List of similar installations for completed projects with project names and addresses and names and addresses of Landscape Architects and Owners.
 10. Material test reports from qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 11. Cost information, including a proposal of change, if any, in the Contract Sum.
 12. Substitutions for specified product, brand or manufacture that have been submitted and disapproved by Landscape Architect shall not be resubmitted in any modified form.
 13. In case materials are substituted and installed without proper authorization, Contractor shall remove such materials and install those specified at his own expense.

14. Contractor shall determine effect approved substitutions will have on other portions of Work and so inform his subcontractors and employees of these effects.
 15. Acceptance of proposed substitution shall be determined solely by specifying Architect. The final decision shall be the Architect's in accordance with the General Conditions.
- C. Substitutions may be considered when product becomes unavailable through no fault of Contractor. Provide letter from manufacturer, on manufacturer's letterhead, stating lack of availability.
 - D. Unacceptable Substitutions: substitution requests initiated by late submittals that have caused materials to become unavailable due to delay in ordering and procurement will not be acceptable reason for substitutions.
 - E. Provide same warranty for substitution as for specified product.
 - F. Contractor shall pay costs for time required by Landscape Architect for review and for any redesign services associated with substitutions and for costs of re-approval by Regulatory Agencies.
 - G. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request.
 - H. Each subcontractor is responsible for providing products and construction methods compatible with products and construction methods of other subcontractors. If dispute arises between subcontractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.
 - I. Substitution Submittal Procedure: In accordance with Division 01, General Requirements for Administrative Requirements and this Section.
 - J. All Substitutions for any material, system or product that would otherwise be regulated by DSA shall be included in an Addendum or Form DSA-140, and shall be approved by DSA prior to fabrication or use. (CAC Section 4-338(c) and IR A-6)
- 1.07 OWNER-FURNISHED, OWNER-INSTALLED WORK (OFOI)
- A. Indicate in construction progress schedule owner-furnish owner-installed items and schedule time for installation. Provide notification to Owner not less than 30 days prior to scheduled installation for coordination.
 - B. Items indicated on Drawings as OFOI will be furnished by Owner and installed by Owner. Work indicated as OFOI will be performed under separate contract employees by Owner at its discretion. Where work of this Contract adjoins or conflicts with OFOI, work, Contractor shall cooperate with Owner and its employees in manner that will provide for reasonable and accurate completion of this Contract and work under separate contract.
 - C. Coordinate with OFOI work affecting this contract. Including verification and interfacing of this contract with OFOI work.

- D. OWNER-FURNISHED, CONTRACTOR-INSTALLED WORK (OFCI)
- E. Indicate in the construction progress Schedule Owner-Furnish Contractor-Installed items and schedule time for their installation.
- F. Contractor shall verify exact sizes and services required for each item of equipment indicated on Drawings or in Project Manual as OFCI and shall obtain from Owner rough-in drawings, diagrams, setting templates and other necessary information to ensure proper mating of assemblies.
- G. Contractor shall receive at project site each item of equipment from Owner and from that time on shall assume full responsibility for items and equipment until Substantial Completion.
- H. Contractor shall give Owner 15 days prior notice of requirements for delivery to site of all OFCI equipment.
- I. Contractor shall be responsible for receiving OFCI items and equipment and shall uncrate, inspect and notify Owner in writing within 7 days of receiving said items or equipment of acceptance or rejection of items or equipment. Owner, after receiving notice, will take appropriate action to have items or equipment made acceptable for Contractor's use. Rejected items shall be carefully stored and protected from damage by Contractor until Owner takes appropriate action.
- J. Contractor shall be responsible for final placing, installation, connection, start-up, checking, testing and demonstrated satisfactory operation. Owner will provide names of manufacturer's representatives, who shall assist the Contractor in checking, testing and demonstrating equipment.

PART 2 - PRODUCTS

2.01 NOT USED

PART 3 - EXECUTION

3.01 NOT USED

END OF SECTION

WARRANTY/GUARANTEE

Warranty/Guarantee for _____ [Specification Section Number and Name]

We hereby warrant/guarantee the Material and Labor which we have installed at _____ [Project] _____ has been performed in accordance with the plans, drawings and specifications and that the work as installed will fulfill the requirements included in the specifications and the Contract Documents. The undersigned agrees to repair or replace any or all of such work, together with any other adjacent work which may be displaced in connection with such repair or replacement, that may prove to be defective in workmanship or material within a period of _____ () year(s) from the date of completion of the Project, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above-mentioned conditions within a reasonable period of time, as determined by the _____ [Owner], but no later than ten (10) calendar days after being notified in writing by the [Owner] _____, the undersigned authorizes the _____ [Owner] to proceed to have said defects repaired or replaced and made good at the expense of the undersigned, which will pay the costs and charges therefore upon demand.

Subcontractor's Typed Name

Prime/General Contractor

By: _____

By: _____

Print Name/Title

Print Name/Title

Signature of Subcontractor

Signature of Authorized Signer

Representative to be contacted for Services:

Name: _____

Address: _____

Phone Number: _____ State License

No: _____

SECTION 01 70 00
EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Field engineering and surveying.
- B. Requirements and limitations for cutting and patching of Work.
- C. Cleaning throughout construction period.
- D. Project Record Documents.
- E. Closeout procedures.
- F. Adjusting
- G. Operation and maintenance data.
- H. Warranty and Guarantee.
- I. Spare parts and maintenance materials.
- J. Instruction to Owner's personnel.

1.02 FIELD ENGINEERING QUALITY CONTROL

- A. Employ Land Surveyor registered in the State of California and acceptable to Landscape Architect.
- B. Submit name, address and telephone number of Surveyor before starting survey work.
- C. Maintain complete and accurate log of control and survey Work as it progresses.
- D. On completion of foundation walls, floor slabs and major site improvements, prepare a certified survey illustrating dimensions, locations, angles and elevations of construction.

1.03 SURVEY REFERENCE POINTS

- A. Contractor to locate and protect survey control and reference points.
- B. Control datum for survey is that established by Owner provided survey.
- C. Protect survey control points prior to starting site Work; preserve permanent reference points during construction.
- D. Promptly report to the Landscape Architect loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to the Landscape Architect.

1.04 SURVEY REQUIREMENTS

- A. Provide field engineering services. Use recognized engineering survey practices.
- B. Establish a minimum of two permanent 3-inch diameter brass plate benchmarks on site, referenced to established control points. Record locations, with horizontal and vertical data on Project Record Documents. Establish additional temporary bench marks at all floor levels.
- C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means, make use of laser instrumentation. Contractor shall arrange and pay for Field Engineering and Staking.
 - 1. Site improvements including pavements; stakes for grading, fill placement; utility locations, slopes, invert elevations and batter boards.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
 - 4. Floor elevations of existing structures that relate to project.
 - 5. Partition layouts on rough floor as a guide to all trades.
- D. Periodically verify layouts by same means.

1.05 layout markings

- A. Layout markings shall not be made with xylene-based inks, paint, or dyes, or with other solvent-based products that may bleed through finishes.

1.06 EXISTING CONDITIONS

- A. Before beginning Work, investigate and verify existence and location of mechanical, drainage, and electrical systems and other construction affecting Work, including underground utilities as necessary.
 - 1. Before construction, survey and record points of connection of utility services.
 - 2. Locate invert elevation at points of connection to existing sanitary- and storm drain, water-service piping, and underground electrical services.
 - 3. Employ a utility service locator company to locate underground utilities.
 - 4. Verify Owner's Record Drawings.
 - 5. Furnish survey of existing utilities.

1.07 CUTTING AND PATCHING

- A. Where Work requires that particular existing paving or similar element be removed, it is the intention of this Specification that such Work be part of the Demolition Section and not part of Cutting and Patching.
- B. New Work required to replace such removals is considered as part of separate sections of Specifications covering similar new construction.

- C. Where incidental cutting and patching is required for installation of a specific item or piece of equipment (including piping, ductwork, conduit, etc.), such cutting and patching is considered to be specified as part of that Section.
- D. Contractor shall verify and check areas to be cut and patched and shall coordinate Work of various trades involved.
- E. Where doubt exists as to size, location, or method of cutting concrete or any other structural element, including metal stud framing, Contractor shall contact Landscape Architect before proceeding.
- F. Where doubt exists, Contractor shall distinguish between "cutting" and "demolition".
- G. Unless specifically indicated otherwise, existing Work cut, altered, or revised to accommodate new Work shall be patched to duplicate undisturbed adjacent finishes, colors, textures, and profiles. New Work in existing portions shall also be finished to match adjacent existing Work unless noted otherwise.
- H. Submit written request in advance of cutting or alteration which affects any of the following.
 - 1. Structural integrity of any element of Project
 - 2. Integrity of weather-exposed or moisture-resistant element
 - 3. Efficiency, maintenance or safety of any operational element
 - 4. Visual qualities of sight exposed elements
 - 5. Work of Owner or separate Contractor
- I. Include in request:
 - 1. Identification of Project.
 - 2. Location and description of affected Work.
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed Work and products to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on Work of Owner or separate Contractor.
 - 7. Written permission of affected separate Contractor.
 - 8. Date and time Work will be executed.

1.08 QUALITY ASSURANCE - CLEANING

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

1.09 PAYMENT WITHHELD - CLEANING

- A. Owner reserves right to withhold certification of payment requests for failure on part of Contractor to regularly clean Project in conformance with Requirements of this Section.

1.10 CLOSEOUT PROCEDURES

A. Owner Occupancy:

1. Conform to Part 1, Title 24, Section 4-336 CCR Requirements for Verified Reports and Closeout Procedures.
2. In conjunction with Project Inspector, Contractor shall prepare list of items (Punchlist) to be completed or corrected. List may be developed by areas when approved by Landscape Architect.
3. Within time specified in the Certificate for Substantial completion after receipt of list, Architect will inspect to determine status of completion.
4. Should Landscape Architect determine that Work is not complete:
 - a. Architect will promptly notify Contractor in writing, giving reasons for his determination.
 - b. Contractor shall remedy deficiencies and notify Landscape Architect when Work is ready for re-inspection.
 - c. Landscape Architect will re-inspect Work.
5. When Landscape Architect concurs that Work is substantially complete and ready for occupancy.
 - a. Owner will prepare the Notice of Completion accompanied by Contractor's list (Punchlist) of items to be completed or corrected as verified by Architect.
 - b. The Certified Notice of Completion will be submitted to the Owner and to Contractor for their written acceptance of responsibilities assigned to them in such notice.
 - c. Contractor shall provide consent by insurer for Partial or Beneficial Occupancy.

B. Final Completion:

1. Prepare and submit notice that Work is ready for final inspection and acceptance.
2. Verify Work is complete.
3. Clarify that:
 - a. Work has been inspected by all governing agencies and is in compliance with Contract Documents.
 - b. Work has been completed in accordance with Contract Documents.
 - c. Equipment and systems have been tested as required and are operational.
 - d. Work is completed and ready for final inspection.
4. Landscape Architect will make an inspection to verify status of completion.
5. Should Landscape Architect determine Work is incomplete or defective:
 - a. Architect will promptly notify Contractor in writing, listing incomplete or defective Work.
 - b. Contractor shall remedy deficiencies promptly and notify Landscape Architect when ready for re-inspection.
6. When Landscape Architect determines Work is acceptable under the Contract Documents, he will request Contractor to make closeout submittals.

C. Closeout Submittals include, but are not necessarily limited to:

1. Project Record Documents.
2. Operation and maintenance data for items so listed in pertinent Sections of these Specifications and for other items when so approved by Landscape Architect.
3. Warranties and Guarantees.
4. Keys and keying schedule.
5. Spare parts, materials, extra stock to be turned over to Owner.

6. Evidence of payment and release of Stop Notices , when requested by Owner.
7. List of subcontractors, service organizations and principal vendors, including names, addresses and telephone numbers, where they may be contacted for emergency service at all times, including nights, weekends and holidays.
8. Final Site Survey.
9. Notification of insurer for completion of Project.
10. As condition precedent to Final Payment, submit documentation identifying amounts paid to Disabled Veteran Business Enterprises DVBE.

D. Final Payment:

1. Submit Final Payment Request, showing all adjustments to Contract Sum.
2. Retention will be released no sooner than 35 days after Notice of Completion has been recorded with County Records Office.

1.11 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.12 PROJECT RECORD DOCUMENTS

- A. Record Documents: As-Built Drawings, Project Manual with Specifications including but not limited to the documents required herein.
- B. Owner will provide one set of drawings and one copy of Project Manual for use during construction to record changes made during construction.
- C. Record Documents: As-Built drawings and Project Manual, record in concise manner using industry-standard drafting techniques on drawings, on weekly basis all actual revisions to Work.
1. Changes made on Drawings, including Clarification Drawings.
 2. Changes made to Specifications.
 3. Changes made by Addenda.
 4. Changes made by Construction Change Directives/Instruction Bulletins, Architect's Supplemental Instructions, minor changes.
 5. Change Orders or other authorized Modifications to Contract.
 6. Revisions made to shop drawings, product data and samples.
- D. Store Record Documents separate from documents used for construction. Replace soiled or illegible documents.
- E. Record information concurrent with construction progress.
- F. Specifications: Legibly mark and record at each product Section description of actual products installed, including following:
1. Manufacturer's name, trade name, product model and number and supplier.
 2. Authorized product substitutions or alternates utilized.
 3. Changes made by Addenda and Modifications.
- G. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Identify drains and sewers by invert elevation.
 2. Field changes of dimension and detail.
 3. Details not on original drawings.
- H. Obtain Landscape Architect's signed certification that Record Documents have been fully updated prior to submitting monthly payment requests. Compliance is mandatory before payment will be made.
- I. Submit Record Documents certified by Inspector to Landscape Architect with claim for final Application for Payment. Fully completed Record Documents are a prerequisite to final payment.
- J. RECORD DRAWINGS: In addition to the As-Built Drawings required by this Section, upon completion of Work obtain a set of Project's reproducible drawings from Owner's Representative, incorporate all changes from the As-Built Drawings onto the Record Drawing set. Include all Change Orders, Addenda, Field Orders and as-installed conditions. All changes shall be neatly and legibly drawn to scale using standard architectural or engineering drafting practices. Identify set as "RECORD DRAWINGS". Deliver to Landscape Architect, (1) electronic (CD) copy, (1) field set, and one bond (hard) copy.
- 1.13 OPERATION AND MAINTENANCE DATA
- A. Submit six (6) sets prior to final inspection, bound in 8-1/2 by 11 inch text pages, in binders with durable covers. Include operation and maintenance data for all items for which submittals are requested in individual Sections of Specifications.
- 1.14 WARRANTY AND GUARANTEE
- A. Contractor, manufacturer's warranties and guarantees notwithstanding, warrants entire Work against defects in materials and workmanship for twelve (12) months from date of Certified Notice of Completion. Warranties and guarantees between Contractor and manufacturers and Contractor and suppliers shall not affect warranties or guarantees between Contractor and Owner. Refer to General and Supplementary Conditions for additional requirements.
- B. Execute and assemble documents from subcontractors, suppliers and manufacturers.
- C. Submit prior to final Application for Payment.
- D. For items of Work delayed beyond date of Notice of Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of Guarantee Period.
- 1.15 WARRANTIES - FORM OF SUBMITTALS
- A. Bind in commercial quality, 8-1/2 by 11 inch, three-ring side binders with hardback, cleanable, plastic covers.

- B. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.
- C. Table of Contents: Neatly typed, in sequence of Table of Contents of Project Manual, with each item identified with number and title of Specification Section in which specified, and name of product or Work item.
- D. Separate each warranty or bond with index tab sheets keyed to Table of Contents listing. Provide full information, using separate typed sheets as necessary. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.16 WARRANTIES - PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item or Work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until date of Certified Notice of Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

1.17 WARRANTIES - TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission submit documents within ten days after acceptance.
- B. Make other submittals within ten days after date of Certified Notice of Completion , prior to final Application for Payment.
- C. For items of Work when acceptance is delayed beyond date of Notice of Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty period.

1.18 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to project site location as directed by Owner.

1.19 INSTRUCTIONS TO OWNER'S PERSONNEL

- A. Instruct Owner's personnel in proper operation and maintenance of all systems, equipment and similar items which were provided as part of Work. Provide maintenance and inspection schedules that conform to manufacturer's recommendations.

- B. Contractor shall provide schedule to Owner for approval for each of instruction periods required.
 - 1. Organize instruction sessions into group sizes and schedule elapsed time for instruction in manner to provide complete coverage of subject matter. Video tape each session and provide Owner with two (2) copies.
- C. Instruction sessions will be held in Owner designated area on project site and at Owner's convenience.
- D. Prepare and submit to Architect a sign-in sheet with subject, date and time, signed by all participants for each session.
- E. Instructors shall be qualified by product manufacturer in subject matter presented at each session.

PART 2 - PRODUCTS

2.01 MATERIALS - CUTTING AND PATCHING

- A. Primary Products: Those required for original installation.

2.02 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in product sections; match existing products and Work for patching and extending Work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing Work as standard.

2.03 CLEANING MATERIALS AND EQUIPMENT

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

2.04 COMPATIBILITY

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

PART 3 - EXECUTION

3.01 EXAMINATION - CUTTING AND PATCHING

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching. Confirm status and current warranties and guarantees.
- B. Indicate proposed routing of utilities in Coordinated Drawings and submit to Landscape Architect. Do not commence cutting operations prior to approval of Coordinated Drawings.

- C. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION - CUTTING AND PATCHING

- A. Provide temporary support to ensure structural integrity of Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas that may be exposed by uncovering Work.
- C. Maintain excavations free of water.

3.03 CUTTING AND PATCHING

- A. Execute cutting, fitting, and patching to complete Work.
- B. Fit products together, to integrate with other Work.
- C. Uncover Work to install ill-timed Work.
- D. Remove and replace defective non-conforming Work.
- E. Provide openings in Work for penetration of mechanical and electrical Work.

3.04 PERFORMANCE - CUTTING AND PATCHING

- A. Execute Work by methods to avoid damage to other Work and which will provide appropriate surfaces to receive patching and finish.
- B. Cut rigid materials using masonry saw core drill orPneumatic tools
- C. Restore Work with new products in accordance with requirements of Contract Documents.
- D. Fit Work air tight to pipes, sleeves, ducts, conduits and other penetrations through surfaces.
- E. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- F. Extend patching to point where patching is not evident unless directed otherwise by Landscape Architect.

3.05 PROGRESS CLEANING

- A. General:
 - 1. Comply with all requirements of Owner's Storm Water Pollution Prevention Plan, Section 01 57 23.10.
 - 2. Retain stored items in orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing required protection of materials.
 - 3. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.

4. At least twice each month, and more often if necessary, remove scrap, debris, and waste material from jobsite.
5. Provide adequate storage for items waiting removal from jobsite, observing requirements for fire protection and protection of ecology.

B. Site:

1. Daily, and more often if necessary, inspect site and pick up all scrap, debris, and waste material. Remove items to place designated for their storage. Combustible waste shall be removed from site. Flammable waste shall be kept in sealed metal containers until removed from site.
2. Weekly, and more often if necessary, inspect, arrangements of materials stored on site, re-stack, tidy, or otherwise service arrangements to meet requirements specified above.
3. Maintain site in neat and orderly condition.

C. Structures:

1. Weekly, and more often if necessary, inspect grounds and pick up scrap, debris, and waste material. Remove items to place designated for their storage.
2. As required preparatory to installation of succeeding materials, clean structures of pertinent portions thereof to degree of cleanliness recommended by manufacturer of succeeding material, using equipment and materials required to achieve required cleanliness.
3. Clean substrate; remove dirt, oil, grease, construction markings, and foreign matter that could adversely affect surface finish appearance or performance.

3.06 FINAL CLEANING

A. General: Complete following cleaning operations before requesting inspection for certification of Notice of Completion.

1. Prior to completion of Work, remove from jobsite all tools, surplus materials, equipment, scrap, debris, and waste, conduct final progress cleaning as described above.
2. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - a. Unless otherwise specifically directed by Landscape Architect, water and broom clean paved areas on site and public paved areas directly adjacent to site. Remove resultant debris.
3. Rake grounds that are neither planted nor paved to smooth, even-textured surface.

B. Structures:

1. Exterior: In areas affected by Work under this Contract, visually inspect exterior surfaces and remove traces of soils, waste material, smudges and other foreign matter. Remove traces of splashed material from adjacent surfaces. If necessary to achieve uniform degree of exterior cleanliness, hose down exterior of structure. In event of stubborn stains not removable with water, Landscape Architect may require light sandblasting or other cleaning at no additional cost to Owner.
2. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

- a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - C. Timing: Schedule final cleaning acceptable to the Landscape Architect to enable Owner to accept completely clean project.
- 3.07 CLEANING DURING OWNER'S OCCUPANCY
- A. Should Owner occupy Work or any portion thereof prior to its completion by Contractor and acceptance by Owner, responsibilities for interim and final cleaning of occupied spaces shall be determined by Architect in accordance with General Conditions of the Contract.

END OF SECTION

SECTION 01 80 00
SYSTEMS OPERATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Starting systems.
- B. Demonstration and instructions.
- C. Testing and adjusting.

1.02 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Landscape Architect and Owner's Representative 7 days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper conditions to avoid damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for each equipment are complete and tested.
- F. Execute start-up under supervision of responsible manufacturer's representative or approved Contractors' personnel in accordance with manufacturers' instructions.
- G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present as site to inspect, check and approved equipment or system installation prior to start-up and to supervise placing equipment or system in operation.
- H. Submit written report that equipment or system has been properly installed and is functioning correctly.

1.03 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Product to Owner's personnel two weeks prior to date of Notice of Completion.
- B. Demonstrate Project equipment and provide instruction by qualified manufacturer's representative who is knowledgeable about Project.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.

- D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance and shutdown of each item of equipment at agreed-upon times at equipment location. Video tape each session and provide Owner with two (2) copies.
- E. Prepare and submit to Landscape Architect a sign-in sheet with subject, date and time, signed by all participants for each session.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. Amount of time required for instruction on each item of equipment and system is that specified in individual Sections.

1.04 TESTING AND ADJUSTING OF EQUIPMENT

- A. Refer to Section 02810 Irrigation System.

PART 2 - PRODUCTS

2.01 NOT USED.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01 91 14
O&M TRAINING REVIEW

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Section 01 30 00, Administrative Requirements
- B. Section 02810, Irrigation System

PART 2 - PRODUCTS

2.01 NOT USED

PART 3 - EXECUTION

3.01 TRAINING OF OWNER PERSONNEL

- A. The CONTRACTOR is responsible for training coordination and scheduling and ultimately for ensuring that training is completed.
- B. The CONTRACTOR shall be responsible for overseeing and approving the content and adequacy of the training of Palomar FACILITIES personnel for irrigation system equipment.
 - 1. The CONTRACTOR shall interview FACILITIES personnel to determine the special needs and areas where training will be most valuable. The OWNER'S REPRESENTATIVE and CONTRACTOR shall decide how rigorous the training should be for each piece of equipment. The CONTRACTOR shall communicate the results to the subcontractors who have training responsibilities.
 - 2. In addition to these general requirements, specific training requirements are specified in Section 02810.
 - 3. The irrigation subcontractor responsible for training will submit a written training plan to the CONTRACTOR for review and approval prior to training.
 - 4. The CONTRACTOR develops an overall training scope for commissioned equipment and coordinates and schedules with the OWNERS REPRESENTATIVE. The CONTRACTOR develops criteria for determining that the training was satisfactorily completed, including attending some of the training. The CONTRACTOR recommends approval of the training to the CONTRACTOR using a standard form.
- C. The Irrigation subcontractor shall provide operating manuals, training to maintenance to OWNERS REPRESENTATIVE.

END OF SECTION

SECTION 01 91 16

LANDSCAPE IRRIGATION COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. General requirements that apply to implementation of commissioning of the landscape irrigation system.
- B. Related Sections:
 - 1. 01 30 00 Administrative Requirements
 - 2. 01 80 00 Systems Operation
 - 3. 01 91 14 O&M Training Review
 - 4. 02810 Irrigation Systems

1.02 RESPONSIBILITIES

- A. Contractors: Participate in the Commissioning process.

1.03 SUBMITTALS

- A. Contractors shall provide submittal documentation relative to commissioning as required in Section 01 30 00 Administrative Requirements.

PART 2 - PRODUCTS

2.01 TEST EQUIPMENT

- A. Refer to Section 01 80 00 for requirements.

PART 3 - EXECUTION

3.01 COMMISSIONING PROCESS REQUIREMENTS

- A. Refer to Section 01 91 14, regarding functional testing, operations & maintenance data, training requirements, and other commissioning activities.

3.02 TESTING REQUIREMENTS

- A. This section specifies the functional testing requirements for Division 2 systems and equipment. From these requirements, the Contractor and Subcontractor will develop testing procedures in accordance with Section 01 80 10 and 01 91 14. The test procedures for each piece of equipment or system will contain the information below.
 - 1. Contractors responsible for installation, maintenance, and testing must be completed with these tasks prior to commissioning testing.
 - 2. Contractor responsibilities for executing functional tests
 - 3. A list of equipment & components being tested
 - 4. Functions, modes, and testing conditions

5. Required monitoring
 6. Acceptance criteria
 7. Sampling strategies allowed
- B. This section specifies the acceptance testing requirements for the landscape irrigation system.
1. Irrigation pipes and connections
 2. Irrigation heads and coverage
 3. Back-flow devices
 4. Coverage of irrigation
 5. Automatic sensors, timers and other controls

END OF SECTION