Attachment B

Rancho Santiago Community College District

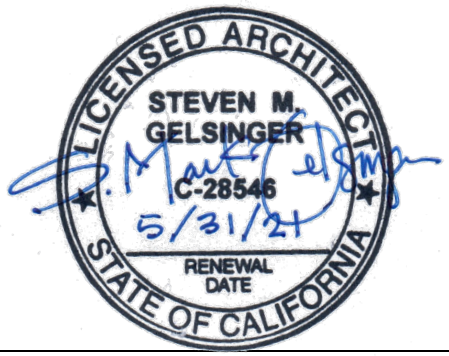
Santiago Canyon College Erosion Control Site Work

July 8, 2020

Prepared by Architecture 9 PLLLP

SPECIFICATIONS

Project:	**Santiago Canyon College Erosion Control Site Work**
District:	Rancho Santiago Community College District 2323 North Broadway, Suite 112 Santa Ana, California 92706-1640
Architect:	Architecture 9 PLLLP 8816 Foothill Boulevard #103-224 Rancho Cucamonga, California 91730



Steven M. Gelsinger C-28546
Architect

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ARCHITECTURAL SPECIFICATIONS

RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT
SANTIAGO CANYON COLLEGE EROSION CONTROL SITE WORK

JULY 8, 2020

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All SPECIFICATION SECTIONS ARE BASED ON CBC 2019 CODE

SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.01 SUMMARY

A. The Project consists of exterior site improvements northeast of the new Safety Portable Offices, building S. Adjust the existing grade as required for proper storm drainage and erosion control for Rancho Santiago Community College District, in compliance with the Contract Documents and Code requirements.

B. The furnishing of all labor, materials, equipment, services, and incidentals necessary for Work of Erosion Control Sitework, 8045 E. Chapman Ave., Orange, California 92869.

1.02 RELATED DOCUMENTS

A. Division 0

B. Drawings

C. Specifications

1.03 USE OF PREMISES

A. Contractor shall sequence, coordinate, and perform the Work to impose minimum impact on the operation and use of the facilities and/or Project site. Contractor shall install all necessary protection for existing improvements, Project site, property, and new Work against dust, dirt, weather, damage, vandalism, and maintain and relocate all protection to accommodate progression of the Work.

B. Contractor shall confine entrance and exiting to the Project site and/or facilities to routes designated by the District Representative.

C. Contractor to coordinate with District Representative to obtain keys. Contractor will be required to sign a release form. Key requests need to be made three (3) days in advance. If Contractor loses a key or fails to return a key to the District, Contractor shall be fined $1,000 for each key lost.

D. Obtain and pay for the use of field offices, storage, work areas, or parking needed for operations or Contractor's employees. Obtain and pay for all public right of way fees associated with utility connections, street use permits and protective canopies over public right of ways.

E. Within existing facilities, District Representative may remove portable equipment, furniture, and supplies from Work areas prior to the start of Work. Contractor shall cover and protect remaining items in areas of the Work.

F. Provide and maintain unimpeded access for police, fire fighting, or rescue equipment.

G. Contractor is advised school may be in session during performance of the Work. Contractor shall utilize all available means to prevent generation of unnecessary noise/vibrations and maintain noise/vibration levels to a minimum. When required by the District Representative, Contractor shall immediately discontinue noise-generating activities and/or provide alternative methods to minimize noise generation. Contractor shall install and maintain air compressors, tractors, cranes, hoists, vehicles, and other internal combustion engine equipment with mufflers, including unloading cycle of compressors. Contractor shall discontinue operation of equipment producing objectionable noise as determined by District Representative and/or District Representative. When applicable, District Representative will provide a testing schedule to indicate when work may not occur.

H. Contractor shall furnish, install, and maintain adequate supports, shoring, and bracing to preserve structural integrity and prevent collapse of existing improvements and/or Work modified and/or altered as part of the Work.

I. Contractor shall secure site, building entrances, exits, and Work areas with locking devices in an acceptable manner to District Representative.

J. Contractor assumes custody and control of Owner property, both fixed and portable, remaining in existing facilities vacated during the Work.

K. Contractor shall cover, maintain, and protect surfaces of rooms and spaces in existing facilities turned over for the Work, including Owner property remaining within as required to prevent soiling or damage from dust, dirt, water, and/or fumes. Contractor shall protect areas adjacent to the Work in a similar manner. Prior to Owner occupancy, Contractor shall clean all surfaces including Owner property.

L. Contractor shall protect all surfaces, coverings, materials, and finished Work from damage. Mobile equipment shall be provided with pneumatic tires.

M. The District reserves the right to place and install equipment in areas of the Project prior to Substantial Completion provided that it doesn't interfere with the completion of the Work. This partial occupancy shall not constitute acceptance of the Work by the District Representative.

N. Contractor shall not permit the use of portable and/or fixed radio's or other types of sound producing devices including Walkman's, iPod's, and similar devices.

1.04 EXISTING CONDITIONS

A. Contractor shall document the existing site and produce still photographs or video recording on DVD, sufficiently detailed, of existing conditions of adjoining construction, roads, and site improvements that might be misconstrued as damage caused by construction operations.

B. Contractor shall protect items indicated to remain against damage and soiling during construction.

C. Contractor shall protect existing IT equipment indicated to remain by properly covering and ventilating the equipment. Coordinate procedures with District Representative and District ITS Department.

D. Contractor shall sequence work in a manner that will prevent any damage upon new construction elements.

E. Contractor shall replace any items damaged during construction.

1.05 WORK NOT IN CONTRACT

A. The term "NIC" shall be construed to mean that portions of the Project are not to be furnished, installed or performed by the Contractor. The term shall mean "Not in Contract" or Not a Part of the Work to be performed by the Contractor" except that coordination and installation of certain NIC items specified shall be the Contractor's responsibility.

B. When the work of this Contract requires the Contractor to make allowance for the above in his work, and to provide supports, power, conduits, stub-outs and other services to these items, the drawings, manufacturer's data and other information necessary for the Contractor's work will be provided by the District Representative upon request.

1.06 OWNER FURNISHED CONTRACTOR INSTALLED (OFCI) MATERIALS

A. Certain materials identified in the Contract Documents as Owner Furnished Contractor Installed (OFCI) will be delivered to the Project site by the District Representative. Contractor shall unload, store, uncrate, assemble, install, and connect Owner supplied materials.

B. Ninety (90) days before the date the Contractor needs to have the OFCI materials on site, Contractor shall notify District Representative of the scheduled date for needed OFCI materials. Upon delivery to Project site, Contractor shall store OFCI materials inside rooms and/or protected spaces and will

be responsible for security of OFCI materials until Substantial Occupancy. District Representative will sign receipt or bill of lading as applicable.

C. Contractor shall, within ten days after delivery, uncrate and/or unpack OFCI materials in presence of District Representative who shall inspect delivered items. District Representative shall prepare an inspection report listing damaged or missing parts and accessories. District Representative shall transmit one copy of the report to Contractor. District Representative will procure and/or replace missing and or damaged OFCI materials, as indicated in inspection report.

D. Contractor shall install OFCI materials in the locations and orientation as indicated in the Contract Documents. Contractor shall verify exact locations with District Representative before final installation of OFCI materials.

E. If required, District Representative will furnish setting and or placement drawings for OFCI materials.

F. Contractor shall install OFCI materials by proper means and methods to ensure an installation as recommended by the manufacturer. Contractor shall furnish and install all necessary fasteners and required blocking to properly install OFCI materials.

G. Contractor shall install OFCI materials with manufacturer recommended fasteners for the type of construction to which the OFCI materials are being fastened and/or anchored.

H. Contractor shall provide final connections of any electrical, signal, gas, water, waste, venting and/or similar items to OFCI materials. Contractor shall, prior to final connection, verify the operating characteristics of OFCI materials are consistent with the designated supply.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION (Not applicable)

END OF SECTION 01 11 00

SECTION 01 12 16

PHASING OF THE WORK

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Requirements for phasing of the Work include logistics, phasing, and completion of designated phases prior to commencement of subsequent phases.

1.02 RELATED SECTIONS

A. Section 01 11 00: Summary of Work.

B. Section 01 31 13: Project Coordination.

C. Section 01 32 13: Construction Schedule.

D. Section 01 33 00: Submittal Procedures.

E. Section 01 50 00: Construction Facilities and Temporary Controls.

F. Section 01 77 00: Closeout Procedures.

1.03 SUBMITTALS

A. Contractor shall submit a Project site logistics plan in accordance with and as required by this Section.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION

3.01 LOGISTICS

A. Prior to commencement of the Work, Contractor shall prepare and submit to the District Representative, a detailed Project site logistic plan, in the same size and scale of the Drawings, setting forth Contractor plan of the Work relative to the following, but not limited to, items:

1. In accordance with local ordinances a truck access route to and from the Project site.
2. The identification of any overhead wire restrictions for power, street lighting, signal, and/or cable.
3. Local sidewalk access and street closure requirements.
4. Protection of sidewalk pedestrians and vehicular traffic.
5. Project site fencing and access gate locations.
6. Construction parking.
7. Material staging and/or delivery areas.
8. Material storage areas.
9. Temporary trailer locations.
10. Temporary service location and proposed routing of all temporary utilities.
11. Location of temporary and/or accessible fire protection
12. Trash removal and location of dumpsters.
13. Concrete pumping locations.

14. Crane locations.
15. Location of portable sanitary facilities.
16. Mixer truck wash out locations.
17. Traffic control signage.
18. Perimeter and site lighting.
19. Stockpile and/or lay down areas.
20. Emergency Vehicle Access Routes.

B. A revised Project site logistic plan may be required by the District Representative for separately identified phases of the Work as set forth in this Section.

C. Contractor is responsible for securing and obtaining all approvals and permits from authorities having jurisdiction relative to logistic plan activities.

3.03 PHASING OF THE WORK

A. Project will be constructed in separate Milestone increments, as identified or as described in this Section and/or the Contract Documents. Phasing will also delineate Work to be completed in each designated phase. Unless otherwise approved or directed by the District Representative, each phase shall be completed according to the approved Construction Schedule prior to the commencement of the next subsequent phase. Contractor shall incorporate and coordinate the Work of Separate Work Contracts relative to this Project into the Phasing and Construction Schedule.

B. Contractor shall install all necessary Work for phased Work before completion of the designated phase.

3.04 PHASING OF THE WORK – GENERAL

A. Contractor shall prepare the Milestone Schedule in order to complete the Work and related activities in accordance with the phasing plan. Contractor shall include all costs to complete all Work within the Milestones and Contract Time.

B. Owner will be seriously damaged by not having all Work completed within the Milestones and/or Contract Time. It is mandatory the Work be complete within the Milestones and Contract Time.

END OF SECTION 01 12 16

SECTION 01 21 00

ALLOWANCES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements governing Contract allowances.

1. Allowances as set forth in the Specifications are to be used as compensation for items as set forth in this Section. The amounts listed in the schedule or Specifications are to be included in the base bid and shall be listed separately in the Schedule of Values and Application for Payment.

1.02 RELATED SECTIONS

A. Section 01 29 73: Schedule of Values Procedures.

B. Section 01 29 76: Progress Payment Procedures.

C. Section 01 32 13: Construction Schedule.

D. Section 01 50 00: Construction Facilities and Temporary Controls.

1.03 ALLOWANCES

A. Use the allowances only as authorized for Owner purposes and only by submitting a form that indicates the amounts to be charged to the respective allowance amount to the District Representative.

B. District Representative and Architect will review Contractor's basis for its use of any Allowance costs included in Contract Sum as required, and prior to the execution of Work described in Allowances.

C. At Substantial Completion of the Work or at any time designated by the District Representative, credit unused amounts remaining in the allowances to the Owner via Change Order.

1.04 ALLOWANCE DISBURSEMENT

A. Contractor shall submit a request for allowance disbursement to the District Representative. Include all substantiating and/or required data along with the request.

B. The request shall have the requested amount listed as an allowance disbursement without Contractor overhead and markup.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.01 SCHEDULE OF ALLOWANCES

A. Include in the base bid the following allowances in the following amounts:

Allowance expenditures shall be used at the sole discretion of the District and exclusively for unforseen conditions and unknown underground existing conditions during the execution of excavating, grading, planting and demolition of flatwork at Santiago Canyon College as outlined in the summary of work. The request for allowance expenditures and the documentation required to review such requests, shall be treated similarly to a formal change order request as described in the general conditions.

Include in the Base Bid an allowance of $10,000

END OF SECTION 01 21 00

SECTION 01 26 13

REQUEST FOR INFORMATION PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Procedure for requesting information of the intent of the Contract Documents.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 11 00: Summary of Work.

C. Section 01 31 13: Project Coordination.

D. Section 01 32 13: Construction Schedule.

D. Section 01 77 00: Contract Closeout.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 PROCEDURE

A. Contractor shall prepare a Request for Information. Refer to Appendix A for a sample RFI form. Contractor shall transmit the Request for Information to Architect with sketches, pictures and a suggested solution (if applicable) with a concurrent copy to the District Representative.

B. Architect response is a clarification of the intent of the Contract Documents and does not authorize changes in the Contract Amount, Milestones, and/or Contract Time.

C. A Request for Information may be returned with a stamp or notation "Not Reviewed," if:

1. The requested information is ambiguous or unclear.

2. The requested information is equally available to the requesting party by researching and/or examining the Contract Documents.

3. Contractor has not reviewed the Request for Information prior to submittal.

D. Review Time: After receipt by Architect and District Representative, allow **(7)** calendar days for response time by Architect. Contractor shall verify and is responsible for verifying Architect and District Representative receipt of a Request for Information.

E. Subcontractor-Initiated and Supplier-Initiated RFIs: RFIs from subcontractors and material suppliers shall be submitted through, be reviewed by and be attached to an RFI prepared, Signed and submitted by Contractor. RFIs submitted directly by subcontractors or material suppliers will be returned unanswered to the Contractor.

1. Contractor shall review all subcontractor and supplier initiated RFIs and take actions to resolve issues of coordination, sequencing, and layout of the Work.

2. RFIs submitted to request clarification of issues related to means, methods, techniques and sequences of construction or for establishing trade jurisdictions and scopes of subcontracts will be returned without interpretation. Such issues are solely the Contractor’s responsibility.

3. Contractor shall be responsible for delays resulting from the necessity to resubmit an RFI due to insufficient or incorrect information presented in the RFI.

F. RFI Log: Contractor shall prepare and maintain a log of RFIs, and at any time requested by the Architect, Project Inspector, or District Representative, the Contractor shall furnish copies of the log showing all outstanding RFIs.

END OF SECTION 01 26 13

APPENDIX A – Sample RFI Form

REQUEST FOR INFORMATION *(RFI)*

School Name: _____ RFI Number: _____
Project Name: _____ Date: _____
Contractor: _____ Project No.: _____
Issued To: _____ DSA No.: _____
(Architect) Contract No.: _____

Drawing Number Detail	Drawing Page	Specification

SUBJECT: _____
Information Requested:

Suggested Course of Action:

Schedule Impact: ☐ YES ☐ NO Cost Impact: ☐ YES ☐ NO

Request Issued By:

Contractor's Signature	*Name (Printed)*	*Date*

Response:

Response Issued By:

Architect's Signature	*Name (Printed)*	*Date*

Responses Reviewed By:

Architect's Signature	*Name (Printed)*	*Date*

Proceeding with the Work in accordance with the above information indicates the Contractor's acknowledgement that there will be no change in the Contract Sum or Contract Time. If the Contractor considers that a change in Contract Sum or Contract Time is required, before proceeding with the work obtain authorization from the Owner by notifying the Owner and the Architect within five (5) working days and submit an itemized proposal within ten (10) days.

cc:

SECTION 01 29 73

SCHEDULE OF VALUES PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Procedure for submission of a Schedule of Values for review and approval by the District Representative.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 21 00: Allowances.

C. Section 01 29 76: Progress Payment Procedures.

D. Section 01 31 13: Project Coordination.

E. Section 01 32 13: Construction Schedule.

F. Section 01 32 29: Project Forms.

G. Section 01 33 00: Submittal Procedures.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 PREPARATION

A. In accordance with the General Conditions, Contractor shall commence preparation of a Schedule of Values on the form included in Section 01 32 29.

B. Contractor shall coordinate the preparation of a Schedule of Values with preparation of the Construction Schedule as set forth in Section 01 32 13.

C. Round amounts to the nearest whole dollar; the total shall equal the Contract Amount.

D. Provide a breakdown of the Contract Amount in enough detail acceptable to District Representative to facilitate continued evaluation of Application for Payment and progress reports. Coordinate with the Project Manual table of contents and Schedule of Values form under Section 01 32 29. Provide breakdown of all subcontract amounts.

E. Provide separate line items for items in the Schedule of Values for total installed value of that part of the Work.

F. Provide separate line item for labor and material when applicable.

G. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item except the amounts shown as separate line items as indicated under Schedule of Values form.

H. Temporary facilities and other cost items that are not direct cost of actual work-in-place shall be shown as separate line items as indicated under Schedule of Values form.

I. If at any time, District Representative determines, in its reasonable discretion, that the schedule of Values does not approximate the actual cost being incurred by Contractor to perform the Work, Contractor shall prepare, for District Representative approval, a revised Schedule of Values, which then shall be used as the basis for future progress payments. Without changing the Contract Amount, District Representative reserves the right to require Contractor:

1. To increase or decrease amounts within the line items in the Schedule of Values; and,

2. To conform the price breakdown to Owner accounting practice.

END OF SECTION 01 29 73

SECTION 01 29 76

PROGRESS PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements relative to an Application for Payment.

1. Coordinate the Schedule of Values and Application for Payment with, but not limited to, the Construction Schedule, submittal log, and list of Subcontractors.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 21 00: Allowances.

C. Section 01 29 73: Schedule of Values Procedures.

D. Section 01 32 13: Construction Schedule.

E. Section 01 32 29: Project Forms.

F. Section 01 74 19: Construction and Demolition Waste Management.

G. Section 01 77 00: Contract Closeout.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION

3.01 APPLICATION FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as reviewed by Project Inspector, Architect, and District Representative. The following Applications for Payment involve additional requirements:

1. The Initial Application for Payment

2. The Final Application for Payment

B. Payment Application Times: The period of Work covered by each Application for Payment is the payment date for each progress payment as specified in the General Conditions. The period covered by each Application for Payment is the previous month.

C. Contractor shall submit a draft Application for Payment seven (7) days prior to the first of each month, to be reviewed by the Architect, District Representative, and Project Inspector.

D. Payment Application Checklist: Use required form for the Application for Payment per Section 01 32 29.

E. Application Preparation: Complete every entry on the form. Include execution by a person authorized to sign legal documents on behalf of Contractor.

F. Transmittal: Submit a minimum of five (5) wet signature originals of each Application for Payment to the District Representative. All copies shall be complete, including releases and similar attachments.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to District Representative.

G. *Initial Application for Payment*: Administrative actions and submittals, that must precede or coincide with submittal for the first Application for Payment include, but are not limited to, the following:

1. Schedule of Values.
2. Construction Schedule.
3. Submittal Schedule.
4. Emergency Contact List.
5. Cal/OHSA Trenching Permit and Named Competent Person.
6. Storm Water Pollution Prevention Plan (SWPPP).
7. Local Hire Policy Forms.
8. Releases.
9. Resume of Contractor's Project Manager, Job Site Superintendent, and Land Surveyor.

H. *Applications for Payment*: Administrative actions and submittals that must precede or coincide with submittal of Progress Applications for Payment include, but are not limited to, the following:

1. Certified Payroll (submitted directly to Labor Compliance Consultant in electronic format as specified by District Representative).
2. Updated and current Project Record Drawings (as-built). Visual verification necessary only.
3. Monthly Construction Schedule (updated, submitted and approved).
4. Approved Schedule of Values.
5. List of Subcontractors (Payments Summary).
6. Storm Water Pollution Prevention Plan (SWPPP) – Site Monitoring Report, if applicable.
7. Waste Management Progress Report.
8. Waivers and Releases.
9. Updated Submittal Schedule.
10. Material invoices, evidence of equipment purchases, rentals, and other backup materials to support cost as requested by the District Representative.

I. *Final Payment Application*: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include, but are not limited to, the following:

1. Project Inspector's sign-off and final approval of Project's DSA Form(s) 152.
2. Contractor's submission of Contractor's Verified Report DSA Form 6-C.
3. Completion of Contract Closeout requirements.
4. Updated and Final As-Built drawings – in accordance with General Conditions.
5. Completion and acceptance of final punch list items.
6. Delivery of extra materials, products, and/or stock.
7. Identification of unsettled claims.
8. Proof that taxes, fees, and similar obligations are paid.
9. Operating and maintenance instruction manuals.
10. Consent of surety to final payment.

11. Waivers and releases.

12. Warranties, guarantees and maintenance agreements.

13. Training.

14. Removal of temporary facilities and services.

15. Removal of surplus materials, rubbish, and similar elements.

16. Deductive items pursuant to the General Conditions.

17. Completion and submission of all final change orders for the project.

18. Disabled Veteran Business Enterprise (DVBE) Contractor close-out statement.

J. Any payments made to Contractor where criteria set forth above have not been met shall not constitute a waiver of said criteria by District Representative. Instead, such payment shall be construed as a good faith effort by District Representative to resolve differences so Contractor may pay its Subcontractors and suppliers and that Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

END OF SECTION 01 29 76

SECTION 01 31 13

PROJECT COORDINATION

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements necessary for coordinating Work operations including, but not limited to, the following:

1. General coordination procedures.

2. Coordination drawings.

1.02 RELATED SECTIONS

A. Section 01 12 16: Phasing of the Work.

B. Section 01 31 19: Project Meetings.

C. Section 01 32 13: Construction Schedule.

D. Section 01 33 00: Submittal Procedures.

E. Section 01 45 23: Testing and Inspection.

F. Section 01 73 29: Cutting and Patching.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 COORDINATION

A. It is the Contractor's responsibility to coordinate the Work to minimize conflicts and optimize efficiency.

B. School occupancy will remain in session during the school year.

C. The placement of pipes, conduits, other materials, and the locations, size and reinforcement of holes in the building structure shall conform to the structural Drawings and Specifications. When the requirements of the Mechanical, Electrical or other sections of the Specifications or Drawings are in conflict with the structural requirements, the structural requirements shall take precedence. The Contractor shall take all precautions prior to coring into a building structure. The Contractor must notify the structural engineer and obtain written approval prior to completing any structural penetrations if the structural integrity of an existing building structure is compromised. Refer to section 01 73 29, Cutting and Patching.

D. Verify that utility, and other building system requirement characteristics of operating equipment are compatible with existing utilities, and other existing building systems. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

E. Contractor shall coordinate operations included in various sections of Contract Documents to assure efficient and orderly installation of each part of Work. Coordinate Work operations included under related sections of Contract Documents that depend on each other for proper installation, connection, and operation of Work, including but not limited to:

1. Schedule construction operations in sequence required where installation of one part of Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

3. Provide provisions to accommodate items scheduled for later installation.

4. Prepare and administer provisions for coordination drawings.

F. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required in notices, reports, attendance at meetings, and:

1. Prepare similar memoranda for District Representative and Separate Work Contract where coordination of their Work is required.

G. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.

2. Installation, relocation, and removal of temporary facilities.

3. Delivery and processing of submittals.

4. Progress meetings.

5. Project closeout activities.

H. Conservation: Coordinate Work operations to assure operations are carried out with consideration given to conservation of energy, water, materials, and:

1. Salvage materials and equipment involved in performance of, but not actually incorporated into Work.

I. Contractor shall provide advance notice (minimum of two (2) working days) to District Representative of any required electrical or HVAC shut down activities for the District to properly prepare for these activities and the down time that will occur.

J. Contractor shall provide advance notice (minimum of two (2) working days) to District Representative of any required testing of active cabling for the District to properly prepare for these activities and the down time that will occur.

3.02 SUBMITTALS

A. Coordination Drawings: Contractor shall prepare coordination drawings to coordinate the installation of products and materials fabricated, furnished and installed by separate entities, under different parts of the Contract. Contractor shall notify District Representative and Architect of all major conflicts in writing in a timely manner so that the design team can respond without construction delays. Coordination drawings shall address the following at a minimum:

1. Limitations in available space for installation or service. Contractor shall overlay plans of each trade and verify space requirements and conflicts between trades. Minor changes and adjustments that do not affect design intent shall be made by Contractor and shall be highlighted for Architect's review.

2. Incompatibility between items provided under different trades (such as difference in voltage between equipment specified under Divisions 22 and 23 and electrical power provided under Division 26.)

3. Inconsistencies between drawings, specifications and codes (between trades and within each trade).

4. Additional items required for existing facilities construction projects shall be designed and prepared from available as-built drawings that are verified through non-invasive and non-destructive, visual observation only. Contractor shall field verify actual existing conditions during and upon completion of demolition work and incorporate findings into preparation of coordination drawings. Minor changes and adjustments that do not affect design intent shall be made by Contractor and shall be highlighted for District Representative and Architect's reviews.

B. Contractor and each Subcontractor shall provide and forward reproducible copies and AutoCAD or Revit drawing files in the order described here:

1. Structural shop drawings shall indicate location and sizes of columns, beams and other structural members, as well as wall, roof and slab penetrations, and will be provided to mechanical, electrical, low voltage and plumbing Sub-Contractors for coordination. Structural items shall be indicated using black lines.

2. HVAC Subcontractor will indicate all ductwork, piping and equipment complete with installation and dimensioned service clearances, duct and pipe sizes, fitting types and sizes, top or bottom of duct and pipe elevations, distances of ducts, pipes and equipment from building reference points and hanger and support locations. Minor changes and adjustments that do not affect design intent shall be made by Subcontractor and shall be highlighted for District Representative and Architect's reviews. Forward drawings to plumbing Subcontractor for further coordination. HVAC items shall be indicated using orange lines.

3. Plumbing Subcontractor will indicate all plumbing lines, and equipment complete with installation and dimensioned service clearances, pipe sizes, fitting types and sizes, top or bottom of pipe elevations, distances of pipes and equipment from building reference points and hanger/support locations Coordinate with HVAC Subcontractor. Minor changes and adjustments that do not affect design intent shall be made by Subcontractor and shall be highlighted for District Representative and Architect's reviews. Upon completion, drawings shall be forwarded to Fire Sprinkler Subcontractor for further coordination. All Plumbing items shall be indicated using blue lines.

4. Fire sprinkler Subcontractor will indicate fire sprinkler piping and equipment complete with installation and dimensioned service clearances, pipe sizes, fitting types and sizes, top or bottom of pipe elevations, distances of pipes and equipment from building reference points and hanger or support locations. Coordinate with Plumbing and HVAC Subcontractors. Minor changes and adjustments that do not affect design intent shall be made by sub-Contractors and shall be highlighted for District Representative and Architect's reviews. Upon completion drawings shall be forwarded to Electrical Contractor for further coordination. Fire sprinkler equipment shall be indicated using red lines.

5. Electrical and Low Voltage Subcontractors will indicate service and feeder conduit runs and other electrical equipment complete, including low voltage with installation and dimensioned service clearances, sizes, top or bottom of conduit and rack elevations, distances of conduits and equipment from building reference points and hanger and support locations. Coordinate with Fire Sprinkler, Plumbing and HVAC Subcontractors. Minor changes and adjustments that do not affect design intent shall be made by sub-Contractors and shall be highlighted for District Representative and Architect's reviews. Upon completion drawings shall be forwarded to Contractor for further coordination. Electrical work shall be indicated in dark green lines. Low voltage work shall be indicated in light green lines.

6. Contractor will be responsible for the overall coordination review. As each coordination drawing is completed, Contractor will meet with Architect and/or District Representative to review and resolve conflicts on coordination drawings.

7. Coordination meetings will be held in Project field office of Contractor. Contractor is required to distribute Shop Drawings, cut sheets and submittals to Subcontractors where appropriate. Reviewed coordination drawings will be maintained in Project field office of Contractor. Meeting minutes shall be developed by Contractor and submitted to District Representative within five (5) days.

8. All Contractors shall review and sign the final coordinated set of drawing(s) prior to construction of system(s) depicted in the drawing(s).

END OF SECTION 01 31 13

SECTION 01 31 19

PROJECT MEETINGS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements for Project meetings, including but not limited to, the following:

1. Preconstruction meeting.
2. Pre-installation conferences.
3. Progress meetings.
4. Meetings as required by District Representative.

1.02 RELATED SECTIONS

A. Section 01 12 16: Phasing of the Work.

B. Section 01 31 13: Project Coordination.

C. Section 01 32 13: Construction Schedule.

D. Section 01 33 00: Submittal Procedures.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 PRECONSTRUCTION MEETING

A. District Representative will schedule a preconstruction meeting before starting the Work, at a time and date determined by District Representative. Meeting shall be held at the Project site or another location as determined by District Representative. Meeting will be held in order to review responsibilities, procedures, and other administrative requirements contained within the Contract Documents. Major trades may attend.

B. Authorized representatives of District, Project Inspector, Architect, Contractor and other parties shall attend the meeting. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda items shall include significant items which could affect progress of the Work, including, but not limited to the following:

1. Identification of District Representative, key team members, and roles/responsibilities
2. Preliminary Construction Schedule.
3. Critical work sequencing and coordination of other work on campus.
4. Designation of responsible personnel and emergency contacts.
5. Procedures for processing field decisions.
6. Request for Proposal.
7. Request for Information.

8. Construction Change Directive, Immediate Change Directive, and Change Order.
9. Procedures for processing Applications for Payment.
10. Labor Compliance and Wage Determinations.
11. Submittal and review of Shop Drawings, Product Data, material lists, and Samples.
12. Preparation of project record documents.
13. Use of the Project site and/or premises, staging plan, trucking routes, haul routes, etc.
14. Parking availability.
15. Office, work, and storage areas.
16. Equipment deliveries and priorities.
17. Safety procedures.
18. Emergency response.
19. First Aid.
20. Security.
21. Housekeeping.
22. Working hours.
23. Environmental Health and Safety / Import and Export Testing Requirements.
24. Substantial Occupancy, Administrative Closeout and Contract Completion requirements and procedures.
25. Storm Water Pollution Prevention Plan (SWPPP).
26. Local Hire.

D. District Representative shall prepare and issue meeting minutes to attendees and interested parties no later than three (3) calendar days after the meeting date.

3.02 PRE-INSTALLATION CONFERENCES

A. Contractor shall coordinate and conduct pre-installation conferences at the Project site as required by related Sections of the Contract Documents.

B. Contractor, manufacturers, and fabricators involved in or affected by the installation and its coordination or integration with other preceding and/or subsequent installations of Work shall attend the meeting. Contractor shall advise District Representative, Project Inspector, and Architect of scheduled meeting dates and provide an agenda 48 hours prior to meeting.

1. Contractor shall review the progress of construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:
    a. Contract Documents.
    b. Options.
    c. Related Construction Change Directives and Change Orders.
    d. Purchases.
    e. Deliveries.
    f. Shop Drawings, Product Data, and quality-control samples.
    g. Review of mockups.

h. Possible conflicts.

i. Compatibility problems.

j. Time schedules and work sequence.

k. Weather limitations.

l. Manufacturer's recommendations.

m. Warranty requirements.

n. Compatibility of materials.

o. Acceptability of substrates.

p. Temporary facilities.

q. Space and access limitations.

r. Governing regulations.

s. Safety.

t. Inspecting and testing requirements.

u. Required performance results.

v. Recording requirements.

w. Protection.

2. Contractor shall record significant discussions and directives received from each conference. Contractor shall, within three (3) calendar days after the meeting date, distribute the minutes of the meeting to all concerned parties, including but not limited to, District Representative, Project Inspector, and Architect.

3.03 PROGRESS MEETINGS

A. Progress meetings will be held at the Project site at regular intervals, typically weekly, as determined by the District Representative.

B. In addition to representatives of Contractor, District Representative, and Architect, each Subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of the Work shall, if requested by District Representative, be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude all matters relating to the Work.

C. Failure of Contractor to be so represented at any progress meeting which is held at a mutually agreed time or for which a written notice is given, shall not relieve Contractor from abiding by any and all District Representative determinations or directives issued at such meeting.

D. District Representative will review and correct or approve minutes of the previous progress meeting and will review other significant items affecting progress. Topics for discussion as appropriate to the status of the Project include but are not limited to:

1. Safety

2. DSA Field Engineer notes.

3. Interface requirements.

4. Construction Schedule.

5. Sequence and coordination.

6. Status of submittals / RFIs.

7. Deliveries.

8. Off-site fabrication.
9. Access.
10. Site utilization.
11. Temporary Construction Facilities and Controls.
12. Hours of work.
13. Hazards and risks.
14. Housekeeping.
15. Quality of materials, fabrication, and execution.
16. Unforeseen conditions.
17. Testing and Inspection.
18. Defective Work.
19. Construction Change Directive.
20. Request for Proposal.
21. Change Order Proposals and Change Orders.
22. Documentation of information for payment requests.
23. Application for Payment.
24. Other items as required or as brought forth.
25. Initial Notice of Start of Issue.
26. Final Notice of End of Issue.
27. Storm Water Pollution Prevention Plan.
28. CEQA Compliance.

A. No later than three (3) calendar days after each progress meeting, District Representative will prepare and distribute minutes of the meeting to each present and absent party. Include a brief summary, in narrative form, of progress, decisions, directives, actions taken, and all other issues since the previous meeting and report.

1. Schedule Updating: Contractor shall revise the Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized, and issue the revised schedule at the next scheduled progress meeting.

3.04 ADDITIONAL MEETINGS

A. District Representative, upon giving notice to the intended parties and without further obligation, may require additional meetings to discuss Work and/or Project related activities.

END OF SECTION 01 31 19

SECTION 01 32 13

CONSTRUCTION SCHEDULE

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Construction Schedule procedures, preparation, submittal, updates, and revisions.

1.02 RELATED REQUIREMENTS

A. General Conditions.

B. Section 01 11 00: Summary of Work.

C. Section 01 12 16: Phasing of the Work.

D. Section 01 29 73: Schedule of Values Procedures.

E. Section 01 29 76: Progress Payment Procedures.

F. Section 01 31 13: Project Coordination.

G. Section 01 33 00: Submittal Procedures.

H. Section 01 45 23: Testing and Inspection.

I. Section 01 50 00: Construction Facilities and Temporary Controls.

J. Section 01 78 36: Warranty Procedures.

1.03 PROCEDURES

A. Within ten (10) calendar days after date of Notice to Proceed, Contractor shall submit to District Representative for review, a detailed Construction Schedule ("Preliminary Baseline Schedule") setting forth all requirements for complete execution of the Work.

B. Within seven (7) calendar days after receipt of the District Representative's review comments, submit a final Construction Schedule acceptable to District Representative ("Approved Baseline Schedule").

C. Include a written summary narrative sufficiently comprehensive to explain basis of Contractor's approach to work.

D. If a Construction Schedule is considered by District Representative to not be in compliance with any requirement of the Contract, Contractor will be notified to review and revise the Construction Schedule and bring it into compliance. Failure of Contractor to submit a Construction Schedule in full compliance with the Contract Documents will result in withholding of progress payment in accordance with the General Conditions or Construction Services Agreement. The Construction Schedule is to be used in evaluating progress for payment approval.

E. Subsequently with each Progress Payment Request, Contractor shall deliver to District Representative an updated Construction Schedule reflecting Work progress to the end of the Progress Payment Request period. Each such Construction Schedule shall indicate actual progress to date in execution of the Work, together with a projected schedule for completion of all the Work.

1.04 SCHEDULE SUBMITTAL PREPARATION GUIDELINES

A. The Contract Work shall be scheduled and progress monitored using a Critical Path Method (CPM) network type scheduling system. Schedule shall be broken into sub-activities which shall, as a minimum, include major suppliers, all submittal approvals, all major trades, plumbing, mechanical, electrical, security, fire, and elevators and escalators. Scheduling system shall indicate all inter-relationships between trades and suppliers.

B. Contractor shall utilize the Critical Path Method (CPM) in the development and maintenance of the construction schedule network.

C. Duration and events indicated on schedule shall conform to phasing set forth in Section 01 12 16: Phasing of the Work and shall show any area or building within a particular phase. Schedule shall indicate any and all Contract "milestone events" and other milestones agreed to by District Representative, but no other manually-imposed dates will be accepted unless approved by District Representative.

D. Construction Schedule shall represent a practical plan to complete the Work within the Contract time requirement.

1. A schedule extending beyond Contract time or less than Contract time will not be acceptable.

2. A schedule found unacceptable by District Representative shall be revised by Contractor and resubmitted.

E. Construction schedule shall clearly indicate sequence of construction activities, grouped by applicable phase and sorted by areas, buildings, or facilities within phase, and shall specifically indicate:

1. Start and completion of all Work items, their major components, and interim milestone completion dates, as determined by Contractor and District Representative.

2. Activities for procurement, delivery, installation of equipment, materials, and other supplies, including:

a. Time for submittals, resubmittals, and reviews. Include decision dates for selection of finishes.

b. Time for manufactured products for the Work fabrication and delivery.

c. Interdependence of procurement and construction activities.

d. As applicable, dates for testing, balancing equipment, and final inspection.

F. Schedule shall be in sufficient detail to assure adequate planning and execution of the Work.

1. Each task activity shall range in duration from a 1 workday minimum to a fifteen (15) workday maximum and shall be total of actual days required for completion. The activity duration shall include consideration of weather impact on completion of that activity.

2. Schedule shall be suitable, in judgment of District Representative, to allow monitoring and evaluation of progress in performance of the Work; it shall be calendar time-scaled.

3. Activities shall include:

a. Description; what is to be accomplished and where.

b. Workday duration.

c. Scheduled activities shall indicate continuous flow, from left to right.

4. Contractor shall setup up the schedule calendar to identify workdays per week and shifts per day worked, non-work days, weekends and holidays.

G. Failure to include any element of Work required for performance of this Contract shall not excuse Contractor from completing Work required to comply with the Contract Documents, notwithstanding acceptance of Construction Schedule.

H. Submittal of Construction Schedule shall be understood to be Contractor's confirmation that the schedule meets requirements of the Contract Documents, and that the Work will be executed in sequence indicated in schedule.

I. All Construction Schedule submittals shall be transmitted with a Letter of Transmittal and shall include six (6) copies and one reproducible copy of a sufficient agreed upon size and the electronic file of the schedule in the format as required by District Representative.

1.05 REVIEWS, UPDATES, AND REVISIONS

A. District Representative will review and return the initial submittal of Contractor's Construction Schedule, with summary comments. If revisions are required, Contractor shall resubmit Schedule within seven (7) calendar days following receipt of District Representative's comments.

B. After Contractor and District Representative agree to a base line schedule, it will become the Project Construction Schedule. No changes to the Baseline Schedule will be allowed unless accepted by District Representative.

C. Contractor shall analyze and update the Project Construction Schedule:

1. As part of monthly payment application, Contractor shall submit to and participate with District Representative in a schedule review to include:

a. Actual start dates for Work items started during report period.

b. The percent complete on activities that have actual start dates.

c. Actual completion dates for Work items completed during report period.

d. Estimated remaining duration for Work items in progress, which will not exceed original duration for activity.

e. Estimated start dates for Work items scheduled to start during month following report period, if applicable.

f. Changes in duration of Work items.

2. In case of a change to Contractor's planned sequence of Work, Contractor shall include a narrative report with updated progress schedule which shall include, but not be limited to, a description of problem areas, current and anticipated delaying factors, and any proposed revisions for a recovery plan.

3. Change Orders affecting the scheduled completion date shall be clearly identified as separate and new activities integrated into the schedule at the appropriate time and in the appropriate sequence as reviewed and approved by District Representative.

4. The Project Construction Schedule Review will not relieve Contractor of responsibility for accomplishing all Work in accordance with the Contract Documents.

D. Updates: Contractor shall submit to District Representative, with each payment application, an up-to-date Project Construction Schedule. Contractor submission of the Monthly Updated Project Construction Schedule is a condition precedent to District Representative's approval of Progress Payments. The Update Project Construction Schedule shall include the following:

1. Work Item Report: Detailing Work items and dependencies as indicated on the Schedule.

2. Actual Start and End Dates of Activities under construction

3. Separate listing of activities completed during reporting period.

4. Separate listing of activities which are currently in progress, indicating their remaining duration and percentages completed.

5. Separate listing of activities which are causing delay in Work progress.

6. Narrative report to define problem areas, anticipated delays, and impact on the Project Construction Schedule. Contractor shall report corrective action taken, or proposed, and its effect, including effect of changes on schedules of separate contractors.

7. Resolution of conflict between actual Work progress and schedule logic: when out-of-sequence activities develop in the Schedule because of actual construction progress, Contractor shall submit a revised schedule to conform to current job sequence and direction.

E. If, according to current updated Project Construction Schedule, District Representative determines Contractor is behind schedule or any interim milestone completion dates will not be met, considering all time extensions to which Contractor is entitled, Contractor shall submit a revised recovery schedule, showing a workable plan and a narrative description to complete the project on time. Refer to General Conditions.

F. Scheduling of change or extra Work orders is responsibility of Contractor.

1. Contractor shall revise the Project Construction Schedule to incorporate all activities involved in completing change orders or extra Work orders and submit it to District Representative for review.

G. If District Representative finds Contractor is entitled to extension of any completion date, under provisions of the Contract, District Representative's determination of total number of days of extension will be based upon an analysis of the current Project Construction Schedule, and upon data relevant to the extension.

H. Contractor acknowledges and agrees that delays to non-critical activities will not be considered a basis for a time extension unless activities become critical. Non-critical activities are those activities which, when delayed, do not affect an interim or Substantial Completion date.

I. Contractor shall allow Float time for inclement weather, Government Delay, and Project Float in the Baseline Schedule in accordance with the General Conditions. The Inclement Weather Float and the Government Delay Float shall each be identified as a Critical Activity in the Baseline Schedule. No other activities may be concurrent with them. When rainfall at the Project site impacts Critical Path activities, Contractor may provide District Representative with a written request for a rain impact day describing the inclement weather delay on the Critical path activities. The inclement weather delay must be clearly indicated by a seventy-five percent (75%) decrease in the normal field labor workforce hours on Critical Path activities on the day in question as indicated by Contractor's Daily reports from the day in question and the scheduled Work days prior to the day in question. Upon District Representative's independent confirmation of the amount of rainfall and impact, District Representative will authorize Contractor to reduce the duration of the Rain Day Impact Allowance by one day. Rainfall on non-scheduled workdays shall not be granted as rain impact days. If the effects of rain from a non-scheduled Work day carry forward to a scheduled work day and impacts the Critical Path as noted above, then the scheduled work day will be considered impacted by rain.

1.06 CONTRACTOR'S RESPONSIBILITY

A. Nothing in these requirements shall be deemed to be an usurpation of Contractor's authority and responsibility to plan and schedule Work as Contractor sees fit, subject to all other requirements of Contract Documents.

B. Contractor shall provide at all times sufficient competent labor, materials, and equipment to properly carry on Work and to insure completion of each part in accordance with Construction Schedule and within time allowed in the Contract.

C. Contractor shall be responsible for ensuring that all submittals to the District Representative are accurate and consistent. Damage, including extra time and cost, caused by inaccuracies from Contractor will be compensated by Contractor.

1.07 SUSPENSION OF PAYMENTS

A. Initial Submittal: If Contractor fails to comply with the specified requirements, District Representative reserves the right to engage an independent scheduling consultant to fulfill these requirements. Upon additional notice to Contractor, District Representative shall retain against Contractor all incurred costs for additional services.

B. Update Submittals: District Representative has the right to withhold progress payments if Contractor fails to update and submit the Project Construction Schedule and reports as required by District Representative.

1.08 RECORD COPY

A. Prior to the Contract Completion, Contractor shall submit the Project Construction Schedule showing the as-built sequence. The as-built schedule shall have all activities with actual start and end dates.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 32 13

SECTION 01 32 29

PROJECT FORMS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. The following, but not limited to, District administrative forms and documents listed in this Section to be utilized in the administration of the Work.

B. Electronic versions of these forms are available if requested from the District Representative.

C. From time to time, Owner may release new revisions and new Project Forms. At any time during the Project, if requested by District Representative, Contractor shall use the newly released Project Form(s).

1.02 RELATED DOCUMENTS

A. Division 0.

B. Division 01.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION

3.01 FORMS: Contractor to utilize the following District standard forms (refer to Appendix A for a copy of the forms listed below)

A. Application for Payment / Schedule of Values

B. Change Order

C. Conditional Waiver and Release – Final Payment

D. Conditional Waiver and Release – Progress Payment

E. Immediate Change Directive

F. Unconditional Waiver and Release – Final Payment

G. Unconditional Waiver and Release – Progress Payment

H. Construction Waste Management Plan

I. Construction Waste Management Progress Report

J. Request for Import Material Testing

K. Request for Export Material Testing

L. Certificate of Substantial Completion

M. Warranty Guarantee Form

3.02.1 PROCEDURES

A. Application for Payment/Schedule of Values: This form is used in requesting a progress payment and to establish the basis of the certified application for payment.

B. Change Order: This form is used to adjust the Contract Amount, Milestones and/or the Contract Time.

C. Conditional Waiver and Release: Use this form when the claimant is required to execute a waiver and release in exchange for or in order to induce the payment of a progress payment and the claimant has not been paid.

D. [RESERVED]

E. Immediate Change Directive: This form is used to issue an Immediate Change Directive.

F. Unconditional Waiver and Release: Use this form when the claimant is required to execute a waiver and release in exchange for or in order to induce payment of a progress payment and the claimant asserts in the waiver that he or she has in fact been paid the progress payment.

G. [RESERVED]

H. Construction Waste Management Plan: This form is used to provide a Waste Management Plan, submitted in accordance with Specification Section 01 74 19 and prior to any waste removal.

I. Construction Waste Management Progress Report: This form is used to provide a Waste Management Monthly Progress Report, summarizing waste generated by Project and submitted monthly with Application for Payment.

J. Request for Import Material Testing: This form is the be completed and provided to District Representative in accordance with Specification Section 01 45 24.

K. Request for Export Material Testing: This form is the be completed and provided to District Representative in accordance with Specification Section 01 45 24.

L. Certificate of Substantial Completion: This form is to be completed and signed by all parties once project has been determined to be substantially complete.

M. Warranty Guarantee Form: This form shall be filled out and signed by Contractor and Subcontractors prior to completion of closeout activities.

END OF SECTION 01 32 29

01 32 29 – PROJECT FORMS

APPENDIX A

Rancho Santiago Community College District
2323 North Broadway
Santa Ana, CA 92706

PAYMENT NO. _____

For the period: date to date
Contractor: _____
Address: _____
Phone: _____

DSA # _____
Project Name _____
P.O. No. _____

A. ANALYSIS OF ADJUSTED CONTRACT AMOUNT TO DATE

1. Original contract amount		
2. Change made from Approved Change Orders		$ -
4-B. Adjusted contract amount to date	*(sum: line 1 + line 2 + line 3)*	$ -

B. COMPUTATION OF PAYMENT DUE

1. Work completed to date on original contract		$ -
2. Change Order work performed to date		$ -
3. Total work performed to date	*(line 1 + line 2)*	$ -
4. Less: 5% retained	*(line 3 x 5%)*	$ -
5-C. Net amount earned to date	*(line 3 - line 4)*	$ -
6. Amount to be withheld because of: _____		$ -
7. Balance	*(line 5 - line 6)*	$ -
8. Less: Amount of previous payments	*(line 7 from previous application)*	
9. Amount due this payment	*(line 7 - line 8)*	$ -
10. Unpaid balance on RSCCD amount of contract	$ -	

C. CERTIFICATION OF CONTRACTOR OR HIS DULY AUTHORIZED REPRESENTATIVE

To the best of my knowledge and belief, I certify that all items and prices of work and material shown on this periodical estimate are correct; that all work has been performed and materials supplied in full accordance with the terms and conditions of the construction contract documents covering the work of the indicated contract, and all change orders approved by the **Board of Trustees**; that this is a true and correct statement of the contract account up to and including the last day of the period covered by this estimate and that no part of the amount "Amount Due This Payment" has been received.

I further certify that this payment will be used to pay all just and lawful bills against the undersigned for labor, materials and expendable equipment employed in the performance of the indicated contract.

Contractor	Date	Director	Date
Architect	Date	Asst. Vice Chancellor	Date
Inspector	Date	Vice Chancellor	Date
Construction Sprvsr/Mngr	Date		

E. CERTIFICATE OF PAYMENT

This is to certify that _____
Contractor is entitled to a payment of _____ Dollars $ _____

For the work performed at the _____

in accordance with terms of contract dated _____

Completion Accepted

RSCCD _____ Date _____

CONTINUATION SHEET

APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signing Certification, is attached. In tabulation below, amounts are stated to the nearest dollar. Use Column 1 and Contract where variable ratainage for line items may apply

Application No.: 0
Application Date: date
Period To: date

A	B	C			D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	ORIGINAL CONTRACT AMOUNT	CHANGE ORDER AMOUNT	CURRENT CONTRACT AMOUNT	WORK COMPLETED FROM PREVIOUS APPLICATIONS (D + E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C-G)	RETAINAGE (IF VARIABLE RATE)
	GENERAL CONDITIONS										
				$ -				$ -	#DIV/0!	$ -	$ -
				$ -				$ -	#DIV/0!	$ -	$ -
				$ -				$ -	#DIV/0!	$ -	$ -
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				$ -				$ -	#DIV/0!	$ -	$ -
	SUBTOTAL GENERAL CONDITIONS	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**	**$ -**	**$ -**
	SUBCONTRACTORS										
1				$ -		$ -		$ -	#DIV/0!	$ -	$ -
2				$ -		$ -		$ -	#DIV/0!	$ -	$ -
3				$ -		$ -		$ -	#DIV/0!	$ -	$ -
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5				$ -		$ -		$ -	#DIV/0!	$ -	$ -
6				$ -		$ -		$ -	#DIV/0!	$ -	$ -
7				$ -		$ -		$ -	#DIV/0!	$ -	$ -
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9				$ -		$ -		$ -	#DIV/0!	$ -	$ -
10				$ -		$ -		$ -	#DIV/0!	$ -	$ -
11				$ -		$ -		$ -	#DIV/0!	$ -	$ -
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13				$ -		$ -		$ -	#DIV/0!	$ -	$ -
14				$ -		$ -		$ -	#DIV/0!	$ -	$ -
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	SUBTOTAL SUBCONTRACTORS	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**	**$ -**	**$ -**
	SUBTOTAL	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**#DIV/0!**	$ -	$ -

	CHANGE ORDERS										
	Change order #1			$ -			$ -	$ -	#DIV/0!	$ -	$ -
				$ -			$ -	$ -	#DIV/0!	$ -	$ -
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	Current Billing Totals	$ -	$ -	$ -	$ -	$ -	$ -	$ -	#DIV/0!	$ -	$ -

Rancho Santiago Community College District

2323 North Broadway
Santa Ana, CA 92706

Change Order Tracker

PAYMENT NO. 0

For the period	date	to	date	DSA #	0
Contractor	0			Project Name	0
Address	0			P.O. No.	0
Phone	0				

CHANGE ORDER				ADDITIONS		
NO.	DATE	DESCRIPTION	Percentage Complete	CO AMOUNT ($)	COMPLETED TO DATE ($) (6)	
(1)	(2)	(3)	(4)	(5)	Previous Period	This Period
1		Change order #1	**#DIV/0!**	**$ -**	**$ -**	**$ -**
			#DIV/0!			
			#DIV/0!			
			#DIV/0!			
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				COMPLETED TO DATE ($)	$	-
2		0	**#DIV/0!**	**$ -**	**$ -**	**$ -**
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				COMPLETED TO DATE ($)	$	-
3		0	**#DIV/0!**	**$ -**	**$ -**	**$ -**
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				COMPLETED TO DATE ($)	$	-

4		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -**	**$ -**
					COMPLETED TO DATE ($)	$ -
5		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -**	**$ -**
					COMPLETED TO DATE ($)	$ -
6		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -** $ -	**$ -**
					COMPLETED TO DATE ($)	$ -
7		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -**	**$ -**
					COMPLETED TO DATE ($)	$ -

8		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -**	**$ -**
					COMPLETED TO DATE ($)	$ -
9		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -**	**$ -**
					COMPLETED TO DATE ($)	$ -
10		0	**#DIV/0!** #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!	**$ -**	**$ -**	**$ -**
					COMPLETED TO DATE ($)	$ -

Change Orders Total	$ -	Matches SOV
Previous Period Total	$ -	Matches SOV
This Period Total	$ -	Matches SOV
Completed to Date Total	$ -	Matches SOV

Facility Planning, District Construction & Support Services
2323 North Broadway, Rm 112
Santa Ana, CA 92706

Board Date: **January 0, 1900**

Project Name: **0**

Project/Bid No. 0

Contractor: 0

Site: 0

Contract No.: 0

Change Order (CO) No. : 0

Contract Schedule Summary

Notice to Proceed Date	Original Contract Duration (Days)	Original Contract Completion Date	Previous Extension Days Approved	Proposed CO Days Requested	New Revised Completion Date
01/00/00	0	01/00/00	0	0	1/0/1900

Change Order Summary

Description	Number	Amount	% of Contract
Original Contract Amount		$0.00	
Previous Change Orders	0	$0.00	#DIV/0!
This Change Order	**0**	**$0.00**	**#DIV/0!**
Total Change Order (s)		**$0.00**	**#DIV/0!**
Revised Contract Amount		**$0.00**	

Items in Change Order

Item No.	Description	Reason	Ext. Day	Credit	Add	**Net**
1	0	0	0	$0.00	$0.00	**$0.00**
		Subtotal		$0.00	$0.00	**$0.00**
		Grand Total				**$0.00**

1 - CODE REQUIREMENT
2 - FIELD CONDITION
3 - INSPECTION REQUIREMENT
4 - DESIGN REQUIREMENT
5 - OWNER REQUIREMENT

Facility Planning, District Construction & Support Services
2323 North Broadway, Rm 112
Santa Ana, CA 92706

Board Date: _____

Project Name: _____ **Project/Bid No.** _____

Contractor: _____ **Site:** _____

Contract No.: _____ **Change Order (CO) No. :** _____

Contract Schedule Summary					
Notice to Proceed Date	**Original Contract Duration (Days)**	**Original Contract Completion Date**	**Previous Extension Days Approved**	**Proposed CO Days Requested**	**New Revised Completion Date**

Change Order Summary			
Description	**Number**	**Amount**	**% of Contact**
Original Contract Amount		$0.00	
Previous Change Orders		$0.00	#DIV/0!
This Change Order		$0.00	**#DIV/0!**
Total Change Order (s)		$0.00	**#DIV/0!**
Revised Contract Amount		$0.00	

Items in Change Order						
Item No.	Description	Reason	Ext. Day	Credit	Add	**Net**
				$ -	$ -	**$ -**
		Subtotal		$ -	$ -	**$ -**
		Grand Total				**$ -**

1 - CODE REQUIREMENT
2 - FIELD CONDITION
3 - INSPECTION REQUIREMENT
4 - DESIGN REQUIREMENT
5 - OWNER REQUIREMENT

The Contractor is to provide a complete description and specification of work involved and reason. The documents supporting this Change Order, including any drawings and estimates of that cost are attached hereto and made a part thereof.

Contractor agrees to furnish all labor and materials and perform all of the above described work in accordance with the above terms in compliance with applicable sections of the Contract Documents. The amount of the charges under this Change Order is limited to the charges allowed under the General Conditions. The adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order shall constitute the entire compensation and/or adjustment in the contract time and contract sum due to the Contractor arising out of the change in the work covered by this Change Order, unless otherwise provided in this Change Order. It is understood that this Change Order shall be effective upon approval of

Contractor **Date**

Architect **Date**

Inspector **Date**

RSCCD Project Manager **Date**

Darryl Taylor
RSCCD Director **Date**

Carri M. Matsumoto
RSCCD Assistant Vice Chancellor **Date**

Peter J. Hardash
RSCCD Vice Chancellor **Date**

Project Name: _____

Project No.: _____ DSA Application No. _____

Conditional Waiver and Release Upon Final Payment

CALIFORNIA CIVIL CODE SECTION 8136

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: _____

Check Payable To: _____

Exceptions

This document does not affect any of the following: Disputed claims for extras in the amount of $_____.

Date: _____ _____
(Company Name)

BY: _____
(Signature)

_____
(Title)

Project Name: _____

Project No.: _____ DSA Application No. _____

Conditional Waiver and Release Upon Progress Payment

CALIFORNIA CIVIL CODE SECTION 8132

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT

Through Date: _____

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: _____

Check Payable To: _____

Exceptions

This document does not affect any of the following: (1) Retentions; (2) Extras for which claimant has not received payment; (3) The following progress payments for which the claimant has previously provided a conditional waiver and release but has not received payment: Date(s) of waiver and release: _____, Amount(s) of unpaid progress payment(s): $_____; (4) Contract rights including: (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Date: _____ _____
(Company Name)

BY: _____
(Signature)

_____
(Title)

Facility Planning, District Construction & Support Services
2323 North Broadway, Suite 112
Santa Ana, CA 92706-1640

Immediate Change Directive (ICD)

Date: _____
Project Name: _____ ICD No.: _____
Project No.: _____ Use of Allowance Dollars? <YES or NO>
Architect: _____ Reference RFI No.: _____
Contractor: _____ Reference COR No.: _____

Initiated By:
- ▫ District
- ▫ Architect
- ▫ Contractor
- ▫ Other: _____

WORK REQUIRED:

REASON FOR CHANGE DIRECTIVE:

STATUS OF WORK/CONSTRUCTION ACTIVITIES AFFECTED:

CONTRACTOR IS AUTHORIZED TO PROCEED WITH THE WORK PURSUANT TO THE CONSTRUCTION SERVICES AGREEMENT IN THE FOLLOWING MANNER:

- ▫ *Time & Materials (T&M), Not-to-Exceed* _____
  Complete work within dollar limit stated, submit daily time tickets
- ▫ *Lump Sum* _____
  Complete work for above indicated agreed upon lump sum
- ▫ *Directed to Proceed, Submit Pricing* _____
  Proceed with work immediately. Pricing shall be submitted per the Agreement

Additional Days Required: _____
Days beyond Approved Contract Completion Date

Schedule Activity Nos. Affected: _____

Pursuant to Article 7.3.1.2 an Immediate Change Directive is a written order to the Contractor prepared by the Architect and signed by the District (and CM if there is a CM on the Project) and the Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The District may by ICD, without invalidating the Contract, direct immediate changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions within. If applicable, the Contract Sum and Contract Time will be adjusted accordingly. CONTRACTOR SHALL PROCEED WITH WORK SET FORTH IN THIS ICD IMMEDIATELY UPON RECEIPT OR THE DISTRICT MAY EITHER HOLD THE CONTRACTOR IN EITHER PARTIAL DEFAULT PURSUANT TO ARTICLE 2.2 OR TOTAL DEFAULT PURSUANT TO ARTICLE 14.

CONTRACTOR:		DISTRICT:	Rancho Santiago Community College District
Approved By:		Approved By:	
Date:		Date:	
CM:		ARCHITECT:	
Approved By:		Approved By:	

Date: _____ Date: _____

Project Name: _____

Project No.: _____ DSA Application No. _____

Unconditional Waiver and Release Upon Final Payment

CALIFORNIA CIVIL CODE SECTION 8138

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following: Disputed claims for extras in the amount of $_____.

Date: _____ _____
(Company Name)

BY: _____
(Signature)

_____
(Title)

Project Name: _____

Project No.: _____ DSA Application No. _____

Unconditional Waiver and Release
Upon Progress Payment
CALIFORNIA CIVIL CODE SECTION 8134

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT

Through Date: _____

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: $_____.

Exceptions

This document does not affect any of the following: (1) Retentions; (2) Extras for which claimant has not received payment; (3) Contract rights including: (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Date: _____ _____
(Company Name)

BY: _____
(Signature)

_____
(Title)

Instructions regarding Form:

1. General:
   a. Attach proposed Recycling and Waste Bin Location Plan.
   b. Attach name and contact data for each recycling or disposal destination to be used.
2. Column 1: "Material Types" – Enter types of materials targeted for recycling, reuse, and/or salvage, either on or off-site, and include a category for waste materials requiring disposal.
3. Columns 2 – 4: "Estimated Generation" – Enter estimated quantities (tons) of recyclable, reusable, or salvageable waste materials anticipated to be generated and state number of salvageable items.
4. Column 5: "Estimated Landfill" – Enter quantities (tons) of materials to be disposed in landfill.
5. Column 6: "Disposal Location" – Enter end-destination of recycled, salvaged, and disposed materials.

(DELETE TEXT BOX BEFORE PROVIDING TO DISTRICT REPRESENTATIVE)

CONSTRUCTION WASTE MANAGEMENT PLAN

PROJECT NAME: _____

PROJECT SITE ADDRESS: _____

PROJECT NO: _____

NAME OF COMPANY: _____

CONTACT PERSON: _____

TELEPHONE: _____

PROJECT TYPE: ☐ NEW CONSTRUCTION ☐ DEMOLITION ☐ RENOVATION / ALTERATION PROJECTS

PROJECT SIZE (SQ. FT.): _____

DATE & ESTIMATED PERIOD: _____

(1) Material Type	(2) Tons Estimated Recycle	(3) Tons Estimated Reuse	(4) Tons Estimated Salvage	(5) Tons Estimated Landfill	(6) Proposed Disposal or Recycling Facility (e.g., Onsite, Name of Facility)
Total					
Diversion Rate: Columns [(2)+(3)+(4)] / [(2)+(3)+(4)+(5)]					=

Signature	Title	Date

Instructions regarding Form:

1. General:
   a. Attach proposed Recycling and Waste Bin Location Plan.
   b. Attach name and contact data for each recycling or disposal destination to be used.
2. Column 1: "Material Types" – Enter types of materials targeted for recycling, reuse, and/or salvage, either on or off-site, and include a category for waste materials requiring disposal.
3. Columns 2 – 4: "Estimated Generation" – Enter estimated quantities (tons) of recyclable, reusable, or salvageable waste materials anticipated to be generated and state number of salvageable items.
4. Column 5: "Estimated Landfill" – Enter quantities (tons) of materials to be disposed in landfill.
5. Column 6: "Disposal Location" – Enter end-destination of recycled, salvaged, and disposed materials.

(DELETE TEXT BOX BEFORE PROVIDING TO DISTRICT REPRESENTATIVE)

CONSTRUCTION WASTE MANAGEMENT PROGRESS REPORT

PROJECT NAME: _____

PROJECT SITE ADDRESS: _____

PROJECT NO: _____

NAME OF COMPANY: _____

CONTACT PERSON: _____

TELEPHONE: _____

PROJECT TYPE: ☐ NEW CONSTRUCTION ☐ DEMOLITION ☐ RENOVATION / ALTERATION PROJECTS

PROJECT SIZE (SQ. FT.): _____

PERIOD: _____

(1) Material Type	(2) Tons Actual Recycle	(3) Tons Actual Reuse	(4) Tons Actual Salvage	(5) Tons Actual Landfill	(6) Disposal or Recycling Facility (e.g., Onsite, Name of Facility)
Total					
Diversion Rate: Columns [(2)+(3)+(4)] / [(2)+(3)+(4)+(5)]					=

Signature	Title	Date

REQUEST FOR EXPORT MATERIALS TESTING FORM

Date:	
Project Name:	
RSCCD Project No.:	
Contractor:	
School Site Exporting Material (Name and Address):	

Location of Soil Receiving Site:	
Receiving Site Address:	
Receiving Site City:	
Major Cross Streets:	

Receiving Site Owner Information:	
Owner Name:	
Contact Name:	
Contact Phone Number:	

Receiving Site History:	
Describe Current Site Use:	
Describe Site History:	
Available Environmental Documents:	

Export Soil Description:		
Material Type:		
Import Soil Volume:		(Tonnage)
If in place material, depth and acres of excavation:		
❑ Only portion of material is available or ❑ All required material is available		❑ Stockpile or ❑ In Place
Area ready on Import Site?	❑ Yes ❑ No	

Schedule:	
Date and time when results are needed:	
Date formal report is needed:	

Comments:

Note: Contractor shall submit receiving facilities profile along with this testing form. Requests for export materials testing must be received a minimum of two (2) weeks in advance of material needing to be exported.

REQUEST FOR IMPORT MATERIALS TESTING FORM

Date:	
Project Name:	
RSCCD Project No.:	
Contractor:	
School Site Receiving Import (Name and Address):	

Location of Soil Borrow Site:	
Borrow Site Address:	
Borrow Site City:	
Major Cross Streets:	

Soil Owner Information:	
Soil Owner Name:	
Contact Name:	
Contact Phone Number:	

Site History:	
Describe Current Site Use:	
Describe Site History:	
Available Environmental Documents:	

Borrow Soil Description:		
Material Type:	❑ Fill Soil	
	❑ Other:	
Import Soil Volume:		(Tonnage)
If in place material, depth and acres of excavation:		
❑ Only portion of material is available or ❑ All required material is available		❑ Stockpile or ❑ In Place
Materials already on Import Site?	❑ Yes ❑ No	

Schedule:	
Date and time when results are needed:	
Date formal report is needed:	

Comments:

Note: Requests for testing at District pre-tested sites must be received four (4) weeks in advance of material being needed on site. Requests for non-pre-tested sites must be received eight (8) weeks in advance of material being needed on site.

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE:

SITE:	CONTRACT #:	
PROJECT NAME:	PROJECT ID#:	DSA#:
CONTRACTOR:	CONTRACT DATE:	

- ❑ This Certificate of Substantial Completion applies to ***all work*** under the Contract Documents.
- ❑ This Certificate of Substantial Completion applies to ***the following specific parts*** of the Contract Documents:

The work performed under the above-referenced Contract has been reviewed and found, by the signatory's (below) best knowledge, information and belief, to be "Substantially Completed" as defined in the Contract. The Substantial Completion Date of the Project or portion thereof designated above is hereby established as _____, 20___.

- ❑ The completion of the Punch List for Final Completion is attached hereto

This list may not be inclusive, and the failure to include an item on such list does not alter the responsibility of the Contractor to reach Final Completion of all work in accordance with the Contract Documents. Such work shall be completed or corrected to the satisfaction of the District within the number of days provided in the Contract for Punch List work.

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of the Contract's obligation to complete the Work in accordance with the Contract Documents.

Contractor	Date	RSCCD Project Manager	Date
Inspector	Date	RSCCD Director	Date
Architect	Date		

WARRANTY GUARANTEE FORM

(To issue to the Contractor by the District)

Project Name: _____

Project ID: _____

The following is a warranty and guarantee by the undersigned for the work which has been completed/installed at [provide a brief project description].

Capitalized terms not defined herein shall have the meanings assigned to them in the Contract Documents applicable to the Warranted Work at the time it was furnished and installed at the Project.

The undersigned hereby warrants and guarantees that (1) the Warranted Work (including, without limitation, all pieces and parts thereof that are incorporated into the Warranted Work), unless otherwise expressly permitted or required by the Contract Documents, is of first-class quality and new; and (2) the Warranted Work conforms with the requirements of the Contract Documents and Applicable Laws; and (3) the Warranted Work is and will remain free of defects appearing within a period of two (2) years from FINAL COMPLETION as defined in the Contract; ordinary wear and tear and unusual abuse or neglect excepted.

SYSTEM OR ITEM	WARRANTY DURATION (YEARS)

In the event of the Warranted Work is found not in compliance with the terms of this warranty, then the District shall have the right, after expiration of a reasonable period of time (not later than seven (7) calendar days) following mailing by regular mail of notification by the District to the undersigned as its last known or reputed address, to proceed to have the Warranted Work repair, replace or otherwise made good, to whatever extent necessary, to make the Warranted Work comply with its terms of this warranty.

Warranties shall provide by written endorsement that if warranted Work fails and is replaced, removed or substantially rebuilt, that the original warranty on such Work shall be renewed, whereas the full warranty periods starts over again, commencing from when Work covered by warranty was corrected.

The responsibility of the undersigned under this warranty includes, without limitation, replacement, removal and repair not only of the Warranted Work, but also of related or adjoining portions of work, equipment, materials or property as necessary to provide access for correction of the Warranted Work, as well as any other loss or damage (including, without limitation, economic loss) resulting directly or indirectly to District from the failure of the Warranted Work to comply with the terms of this warranty. All costs, expenses, damages and other losses to District due to the failure of the Warranted Work to comply with the terms of this warranty shall be deemed to be expenses of undersigned and shall be paid by the undersigned to the District upon demand.

Print-Subcontractor or Supplier (Company Name)	Signature of Subcontractor or Supplier	Date
Print-General Contractor (Company Name)	Signature of General Contractor	Date

Representative(s) to be contacted for service:

First and Last Name of Representative:	
Mailing Address:	
Email Address:	Contact Number:

Rancho Santiago Community College District

REQUEST FOR INFORMATION *(RFI)*

School Name: _____ **RFI Number:** _____

Project Name: _____ Date: _____

Contractor: _____ Project No.: _____

Date Issued To: (Architect) _____ DSA No.: _____

_____ Drawing Number Detail

_____ Drawing Page

_____ Specification

Information Requested:

Suggested Course of Action:

Schedule Impact: ❑ **Yes** ❑ **No** **Cost Impact:** ❑ **Yes** ❑ **No**

Request Issued by:

_____ ***Contractor's Signature*** _____ ***Name (Printed)*** _____ ***Date***

Response:

Response Issued by:

_____ ***Signature*** _____ ***Name (Printed)*** _____ ***Date***

Response Reviewed by:

_____ ***Architect's Signature*** _____ ***Name (Printed)*** _____ ***Date***

Proceeding with the Work in accordance with the above information indicates the Contractor's acknowledgement that there will be no change in the Contract Sum or Contract Time. If the Contractor considers that a change in Contract Sum or Contract Time is required, before proceeding with the work obtain authorization from the Owner by notifying the Owner and the Architect within five

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements for submittals required for the Work, including but not limited to; Shop Drawings, Product Data, Samples, material lists, and quality control items as required by the Contract Documents.

B. Wherever possible, throughout the Contract Documents, the minimum acceptable quality of workmanship and products has been defined by the name and catalog number of a manufacturer and by reference of recognized industry standards.

C. To ensure that specified products are furnished and installed in accordance with the design intent, Facility Design Standards and procedures have been established for submittal of design data and for its review by District Representative, Architect, and/or others.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 12 16: Phasing of the Work.

C. Section 01 29 73: Schedule of Values Procedures.

D. Section 01 29 76: Progress Payment Procedures.

E. Section 01 31 13: Project Coordination.

F. Section 01 32 13: Construction Schedule.

G. Section 01 45 23: Testing and Inspection.

H. Section 01 50 00: Construction Facilities and Temporary Controls.

I. Division 2 through Division 32.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION

3.01 GENERAL REQUIREMENTS AND PROCEDURES

A. Contractor shall package each submittal appropriately for transmittal and handling and will then send Architect, and District Representative submittal for review per the Project plans and specifications. Submittals will not be accepted from sources other than from Contractor.

1. All data active infrastructure and structured cabling submittals must also be provided to RSCCD ITS Department for electronic review in PDF format.

B. Contractor shall clearly identify any deviations from the Contract Documents on each submittal. Any deviation not so noted, even if stamped reviewed, is not acceptable.

C. After Architect review, Architect shall transmit submittals to Contractor, District Representative, and Project Inspector. Contractor shall further distribute to Subcontractors and others as required. Work shall not commence, unless otherwise approved by District Representative, and/or Architect until approved submittals are transmitted to Contractor.

D. Contractor's Review and Approval: Every submittal upon which proper execution of the Work is dependent shall bear the Contractor's review and approval stamp, dated and signed by Contractor. Certifying that Contractor (a) has reviewed, checked, and approved the submittal and has coordinated the submittal contents with requirements of Work and Contract Documents including related Work, (b) Contractor coordinated with all other shop drawings received to date and this duty of coordination has not been delegated to subcontractors, material suppliers, the Architect, or the engineers on this project, (c) determined and verified quantities, field measurements, construction criteria, materials, equipment, catalog numbers and identifications, and similar data, or will do so, and (d) states the Work illustrated or described in the submittal is recommended by Contractor and the Contractor's warranty will fully apply thereto.

E. Contractor shall coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities requiring sequential activity.

F. Timing of Submittals:

2. Submittals shall not delay the construction schedule and shall be submitted in timely manner in accordance with General Conditions.

3. In accordance with General Conditions, Contractor shall submit to the Architect, those Shop Drawings, Product Data, diagrams, materials lists, Samples and other submittals required by the Contract Documents.

4. The Contractor shall submit within ten (10) calendar days of the Notice to Proceed, an itemized listing of required submittals with a scheduled date for each submittal. The schedule of submittals shall provide adequate time between submittals in order to allow for proper review without negative impact to the Construction Schedule.

5. Schedule of submittals shall be related to Work progress, and shall be so organized as to allow sufficient time for transmitting, reviewing, corrections, resubmission, and re-reviewing.

6. Contractor shall coordinate submittal of related items and Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received by Architect.

7. Contractor shall revise, update and submit submittal schedule to District Representative and Architect on the first of each month, or as required by the District Representative.

8. Contractor shall allow in the Construction Schedule, at least ten (10) calendar days for Architect review following Architect receipt of submittal. For mechanical, plumbing, electrical, structural, and other submittals requiring joint review with Architect's Consultants, and/or others, Contractor shall allow a minimum of fourteen (14) calendar days following Architect receipt of submittal. Submittals will be reviewed with reasonable promptness, but Architect reserves the right of additional time where required based on but limited to submittal size, complexity, etc.

9. No adjustments to the Contract Time and/or Milestones will be authorized because of a failure to transmit submittals to Architect sufficiently in advance of the Work to permit review and processing.

10. In case of product substitution, Shop Drawing preparation shall not commence until such time Architect and District Representative reviews said submittal relative to the General Conditions.

G. If required, resubmit submittals in a timely manner. Resubmit as specified for initial submittal but identify as such. Review times for re-submitted items shall be as per the time frames for initial submittal review.

H. Architect, or authorized agent, will stamp each submittal with a uniform, action stamp. Architect, or authorized agent, will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When Architect, or authorized agent, marks a submittal "Reviewed" the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.

2. Final-But-Restricted Release: When Architect, or authorized agent, marks a submittal "Reviewed as Noted" the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.

3. Returned for Re-submittal: When Architect, or authorized agent, marks a submittal "Rejected, Revise and Resubmit" do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat as necessary to obtain different action mark. In case of multiple submittals covering same items of Work, Contractor is responsible for any time delays, schedule disruptions, out of sequence Work, or additional costs due to multiple submissions of the same submittal item. Do not use, or allow others to use, submittals marked "Rejected, Revise and Resubmit" at the Project site or elsewhere where Work is in progress.

4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect, or authorized agent, will return the submittal marked "Action Not Required".

I. Review of Submittals by the Architect: Submittals will be reviewed but only for conformance with the design concept of the Project and with the information indicated on the Drawings and stated in the Specifications. Review of a separate item as such will not indicate approval of the assembly in which the item functions. Review of submittals shall not relieve the Contractor of responsibility for any deviations from requirements of the Contract Documents or any revisions in resubmittals unless Contractor has given written notice of such deviation or revision at the time of submission or resubmission and written approval has been given to the specific deviation or revision, nor shall approval relieve the Contractor of responsibility for error or omissions in the submittals or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, functioning, and completion to the Work.

J. All costs for the preparation, correction, delivery, and return of the submittals shall be borne by the Contractor.

3.02 SHOP DRAWINGS

A. Shop Drawings are original drawings prepared by Contractor, Subcontractor, supplier, or distributor illustrating some portion of Work by showing fabrication, layout, setting, or erection details. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Copies of the Contract Drawing marked to show Shop Drawing information are not acceptable and will be not be reviewed and will be promptly returned to the Contractor.

B. Produce Shop Drawings to an accurate scale that is large enough to indicate all pertinent features and methods. Submit Shop Drawings on sheets at least 8-1/2 x 11 inches but no larger than 30 x 42 inches.

C. Shop Drawings shall include, at a minimum, fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:

1. Dimensions

2. Identification of products and materials included by sheet and detail number.

3. Compliance with specified standards.

4. Notation of coordination requirements.

5. Notation of dimensions established by field measurement.

C. Provide two (2) spaces, approximately 4 by 5 inches, on the label or beside the title block on Shop Drawings to record Contractor and Architect review, and the action taken. Include the following information on the label for processing and recording action taken:

1. Project name.
2. Project number.
3. Date.
4. Name and address of Architect.
5. Name and address of Contractor.
6. Name and address of Subcontractor.
7. Name and address of supplier.
8. Name and address of manufacturer.
9. Name and title of appropriate Specification section.
10. Drawing number and detail references, as appropriate.

E. Submit a sufficient number to allow for adequate Contractor, Subcontractor, supplier, manufacturer and fabricators distribution plus two (2) sets to be retained by Architect, one (1) set to Project Inspector, and one (1) set for the District Representative.

3.03 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of Work or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, wiring diagrams, schedules, illustrations, or performance curves.

1. Mark each copy to show or delineate pertinent materials, products, models, applicable choices, or options. Where Product Data includes information on several products that are not required, clearly mark copies to indicate the applicable information. Include the following information:
   a. Manufacturer's printed recommendations.
   b. Compliance with trade association standards.
   c. Compliance with recognized testing agency standards.
   d. Application of testing agency labels and seals.
   e. Notation of dimensions verified by field measurement.
   f. Notation of coordination requirements.
   g. Notation of dimensions and required clearances.
   h. Indicate performance characteristics and capacities.
   i. Indicate wiring diagrams and controls.
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

C. Required Copies and Distribution: Same as denoted in Section 3.02, E.

3.04 SAMPLES

A. Submit Samples of sufficient size, quantity (minimum of three), cured and finished and physically identical to the proposed product or material. Samples include partial or full sections or range of

manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches denoting color, texture, and/or pattern.

1. Mount or display Samples in the manner to facilitate review of qualities indicated. Include the following:
    a. Specification section number and reference.
    b. Generic description of the Sample.
    c. Sampling source.
    d. Product name or name of manufacturer.
    e. Compliance with recognized standards.
    f. Availability and delivery time.
2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    a. Where variations in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show the approximate limits of the variations.
    b. Refer to other Specification sections for requirements for Samples that illustrate workmanship, fabrication techniques, assembly details, connections, operation, and similar construction characteristics.
    c. Refer to other sections for Samples to be returned to Contractor for incorporation into the Work. Such Samples must be undamaged at time of installation. On the transmittal indicate special requests regarding disposition of Sample submittals.
    d. Samples not incorporated into the Work, or otherwise not designated as Owner property, remain the property of Contractor and shall be removed from the Project site prior to Substantial Completion.
3. Color and Pattern: Whenever a choice of color or pattern is available in a specified product, submit accurate color chips and pattern charts to Architect for review and selection by Architect and District Representative.
4. Required Copies and Distribution: Same as denoted in Section 3.02, E.

B. When specified, erect field Samples and mock-ups at the Project site to illustrate products, materials, or workmanship and to establish standards by which completed Work shall be judged.

C. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of the Work. Sample sets may be used to obtain final acceptance of the Work associated with each set.

3.05 DEFERRED SUBMITTAL REQUIREMENTS

A. Installation of deferred submittal items shall not be started until detailed plans, specifications, and engineering calculations have been: 1) accepted by the Architect or Engineer in general responsible charge of design, 2) signed by a California registered Architect or professional engineer who has been delegated responsibility covering the work shown on a particular plan or specification, and 3) approved by the Division of the State Architect (DSA). Deferred submittal items for this Project are as indicated in the Contract Documents.

B. Deferred submittal drawings and specifications become part of the approved documents for the Project when they are submitted to and approved by DSA.

C. Submit material using submittal process as defined above.

D. Identify and specify all supports, fasteners, spacing, penetrations, etc., for each of the deferred submittal items, including calculations for each and all fasteners.

E. Submit documents to Architect for review prior to requesting that the Architect forward it to the DSA.

F. Documents shall bear the stamp and signature of the Structural, Mechanical, or Electrical Engineer licensed in California who is responsible for that work.

G. Architect and its subconsultants will review the documents only for conformance with design concept. The Architect will then forward the Submittal to DSA for approval.

H. Contractor shall respond to review comments made by DSA and revise and resubmit submittal to the Architect for re-submittal to DSA for final approval.

3.06 QUALITY CONTROL SUBMITTALS

A. Submit quality control submittals, including design data, certifications, manufacturer's field reports, and other quality control submittals as required under other sections of the Contract Documents.

B. When other sections of the Contract Documents require manufacturer's certification of a product, material, and/or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.

C. Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the represented company.

D. Requirements for submittal of inspection and test reports are specified in other sections of the Contract Documents.

3.07 CERTIFICATES

A. Submit all certificates in triplicate to Project Inspector, in accordance with requirements of each Specification Section.

END OF SECTION 01 33 00

SECTION 01 45 23

TESTING AND INSPECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Testing and inspection services to meet requirements of California Building Standards Code, Title 24, California Code of Regulations.

B. Tests of materials are required by a DSA certified Testing Agency as set forth in Section 4-335 of the California Building Standards Commission's California Administrative Code.

1.02 RELATED SECTIONS

A. Division 0.

B. Section 01 31 13: Project Coordination.

C. Section 01 32 13: Construction Schedule.

D. Section 01 33 00: Submittal Procedures.

E. Section 01 50 00: Construction Facilities and Temporary Controls.

F. Section 01 73 29: Cutting and Patching.

G. Section 01 78 36: Warranty Procedures.

1.03 COORDINATION OF TESTS AND INSPECTIONS

A. Contractor shall establish a protocol for requesting inspections and special inspections so as to not delay the progress of the work. Contractor shall review General Conditions or Construction Services Agreement for additional requirements.

1.04 TESTING COSTS

A. District Representative will pay special inspections and testing identified in the Statement of Structural Tests and Special Inspection except Contractor shall reimburse the District Representative for retesting costs caused by failure of materials to pass initial tests. Contractor shall arrange and pay for all other testing that are specified in other specification sections.

1. Reimbursement of Inspection Costs: The Contractor shall reimburse to the District Representative all or any part, as the District Representative may deem just and proper, of the actual excessive inspection costs incurred by the District Representative due to any or all of the following:

i. Contractor's failure to complete the Work within the Contract Time stated in the Agreement, and any previously authorized extensions thereof.

ii. Claims between separate contractors

iii. Covering of any of the Work before the required inspections of tests are performed.

iv. Extra inspections required for Contractor's correction of defective Work.

v. Overtime costs for acceleration of Work done for Contractor's convenience.

1.07 CONTRACTOR-FURNISHED ASSISTANCE

A. When requested, Contractor shall furnish access, facilities, and labor assistance as necessary for duties to be performed at the site by Test Laboratory, and Inspector, including ladders, hoisting, temporary lighting, water, and like services.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 SCHEDULES FOR TESTING

A. Establishing Schedule:

1. By advance discussion with the testing laboratory selected by the District Representative, determine the time required for the laboratory to perform its tests and to issue each of its findings.

2. Provide required time within the construction schedule.

B. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the testing laboratory as required.

C. Adherence to Schedule: When the testing laboratory is ready to test according to the determined schedules, but is prevented from testing or taking specimens due to incompleteness of the work, extra charges for testing attributable to the delay may be back-charged to the Contractor and may be deducted by the District Representative from the contract sum.

3.02 REQUESTING TESTING

A. Contractor shall request testing and inspection through the Project Inspector. Contractor shall provide Project Inspector a minimum of twenty-four (24) hour notice prior to Project Inspector inspections being required and a minimum of forty-eight (48) hour notice prior to special testing and inspections being required.

3.03 TESTS

A. District Representative will select and provide an independent DSA certified testing agency (Testing Agency) to conduct tests, sampling, and testing of materials. Selection of material to be tested shall be by the Testing Agency and not by Contractor.

B. The Contractor shall not incorporate into the work any material shipped from the source of supply prior to having satisfactorily passed the required testing and inspection, or prior to the receipt of notice from Project Inspector that the testing and inspection is not required.

C. District Representative will select, and directly reimburse, the Testing Agency for costs of all DSA required tests and inspections; however, the District Representative may be reimbursed by Contractor for such costs as specified or noted in related sections of the Contract Documents.

D. The independent Testing Agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

E. The Testing Agency shall not perform any duties of Contractor.

F. Contractor shall provide an insulated curing box with the capacity for twenty (20) concrete cylinders and will relocate said box and cylinders as rapidly as required in order to provide for progress of the Work.

3.04 TEST REPORTS

A. Test reports shall include all tests performed, regardless of whether such tests indicate the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations, when and as required, shall also be reported. Reports shall indicate the material (or materials) was sampled and tested in accordance with requirements of CBC, Title 24, Parts 1 and 2, as indicated on the Drawings. Test reports shall indicate specified design strength and specifically state whether or not the material (or materials) tested comply with the specified requirements.

3.05 VERIFICATION OF TEST REPORTS

A. Each Testing Agency shall submit to the Division of the State Architect a verified report covering all tests required to be performed by that Testing Agency during the progress of the Work, in accordance with DSA PR 13-01.

3.06 INSPECTION BY DISTRICT REPRESENTATIVE

A. District Representative, and its representatives, shall have access, for purposes of inspection, at all times to all parts of the Work and to all shops wherein the Work is in preparation. Contractor shall, at all times, maintain proper facilities and provide safe access for such inspection.

B. District Representative shall have the right to reject materials and/or workmanship deemed defective Work and to require correction. Defective workmanship shall be corrected in a satisfactory manner and defective materials shall be removed from the premises and legally disposed of without charge to District Representative. If Contractor does not correct such defective Work within a reasonable time, fixed by written notice and in accordance with the terms and conditions of the Contract Documents, District Representative may correct such defective Work and proceed in accordance with related Articles of the Contract Documents.

C. Contractor is responsible for compliance to all applicable local, state, and federal regulations regarding codes, regulations, ordinances, restrictions, and requirements.

3.07 PROJECT INSPECTOR

A. A Project Inspector shall be employed by District Representative in accordance with requirements of Title 24 of the California Code of Regulations with their duties specifically defined therein. Additional DSA certified inspectors may be employed and assigned to the Work by District Representative in accordance with the requirements of California Building Standards Commission's, California Administrative Code with their duties as specifically defined in Section 4-333, 4-342, and in DSA IR A-8.

B. Inspection of Work shall not relieve Contractor from any obligation to fulfill all terms and conditions of the Contract Documents.

C. Contractor shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

3.08 TESTS AND INSPECTIONS

A. The following tests and inspections do not limit inspection of the Work but are required by DSA, other agencies, or are required in related Sections of the Contract Documents.

1. Concrete - CBC, Chapter 19A:

a. Materials:

i.	Test of Materials	1903A.1 – ACI 318
ii.	Portland Cement Tests	1916A.1 – ASTM C 150
iii.	Concrete Aggregate	1903A.5 – ACI 318

	iv.	Shotcrete Aggregate	1913A.3
	v.	Reinforcing Bars	1916A.2
	vi.	Prestressing Steel & Anchorage	1916A.3
	vii.	Structural Steel, Steel Pipe or Tubing	1906A.3
	viii.	Admixtures	1904A.4
b.	Quality:		
	i.	Proportions of Concrete	1905A.2
	ii.	Mixing and Placing	1905A.8 to; 1905A.12;
	iii.	Concrete Testing	1905A.6.3 to 1905A6.5
	iv.	Test of Shotcrete	1913A.5;1913A.10; 1916A.5
	v.	Composite Construction Cores	1916A.4
	vi.	Gypsum Concrete Strength Tests	1916A.6
c.	Inspection:		
	i.	Project Site Inspection	1905A.1
	ii.	Batch Plant or Weigh-master Inspection	1704A.4.2
	iii.	Pre-stressed Concrete Inspection	1704A.4.4
	iv.	Shotcrete Inspection	1704A
	v.	Reinforcing Bar Welding Inspection	1704A.3.1.4
2.	Lightweight Metal - CBC, Chapter 22A:		
a.	Materials:		
	i.	Alloys	2210A.1
	ii.	Identification	2210A.1
b.	Inspection:		
	i.	Welding	2211A.2.3
3.	Masonry - CBC, Chapter 21A:		
a.	Materials:		
	i.	Masonry Units	2103A.1,2,3,4,5,6,7
	ii.	Portland Cement	2103A.10.1; 2103A.10.2
	iii.	Mortar & Grout Aggregates	2103A.12.3
	iv.	Reinforcing Bars	2103A.13
b.	Quality:		
	i.	Portland Cement Tests	2105A.2.2
	ii.	Mortar & Grout Tests	2105A.2.2.1.4
	iii.	Masonry Prism Tests	2105A.2.2.2; 2105A.2.2.3
	iv.	Masonry Core Tests	2105A.4
	v.	Reinforcing Bars	2103A.13

c.	Inspection:		
i.		Reinforced Masonry	1704A.5
ii.		Reinforcing Bar Welding Inspection	1704A.3.1.3
4.	Steel - CBC, Chapters 17A & 22A:		
a.	Materials:		
i.		Structural Steel	2205A.1
ii.		Material Identification	2203.A.1
b.	Inspection and Tests:		
i.		Test of Structural Steel	1704A.3
ii.		Tests of High Strength Bolts,	1704A.3.3; 2212.A.1
iii.		Tests of End Welded Studs	2212A.2
iv.		Shop Fabrication Inspection	1704A.3.1.4
v.		Welding Inspection	1704A.3.1.4
vi.		High Strength Bolt Inspection	1704A.3.3
vii.		Steel Joist Load Tests	1703A.3.2.1
viii.		Spray applied fire resistance materials	1704A.12
5.	Wood - CBC, Chapter 23A:		
a.	Materials:		
i.		Lumber and Plywood Grading	2303.1
ii.		Glue - Laminated Members	2303.1.3
b.	Inspection:		
iii.		Glue - Laminated Fabrication	2303.1.3 – ASTM D 3737
iv.		Timber Connectors	2304.9
v.		Manufactured Trusses	2303.4

END OF SECTION 01 45 23

SECTION 01 45 24

ENVIRONMENTAL IMPORT/EXPORT MATERIALS TESTING

PART 1 – GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for the sampling, testing, transportation and certification of imported fill materials or exported fill materials from RSCCD Sites.

B. This Section defines:

1. Contractor requirements for use of existing, imported or generated materials on RSCCD Sites.

2. Contractor requirements for stockpiling materials for use on school sites.

3. Contractor requirements for exporting materials from a school site including transportation.

4. Testing requirements for all materials imported, exported, stockpiled or generated for use on the school site.

5. Testing and reporting requirements.

6. Contractor submittal requirements.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 11 00: Summary of Work.

C. Section 01 31 13: Project Coordination.

D. Section 01 32 13: Construction Schedule.

E. Section 01 32 29: Project Forms

F. Section 01 33 00: Submittal Procedures.

G. Section 31 22 00: Grading.

1.03 OBJECTIVES

A. Ensure that fill materials imported to RSCCD Sites are free of known and expected environmental contaminants for students, staff, and visitors.

B. Ensure that materials exported from RSCCD Sites comply with California Code of Regulations (CCR) Title 22 requirements.

C. Ensure that representative data be collected so that analytical determinations can be made in regards to the first two objectives.

1.04 SUBMITTALS

A. Contractor shall submit to District Representative for transmittal to RSCCD Environmental Consultant:

1. Written notification in the form of a memo or e-mail from the Contractor to the District Representative is required prior to the importing of soils from a school or borrow site. All hauling contracts must specify the use of “clean” trucks. Clean trucks shall be clean of any and all visible contamination or deleterious materials.

2. Written documentation confirming that the trucks traveled directly from the source location to the recipient location with no detours or stops at other locations and that short loads were not augmented by other materials that were not tested as part of the final

import/export activities. It is the Contractor's responsibility to document that no other trips or short load augmentation occurred and submit the documentation within seven (7) calendar days of the completion of the import/export activities. All import/export transportation activities shall be conducted in accordance with all applicable (local, State, Federal) rules and regulations.

3. The District's third party Environmental Consultant shall have the required tests performed and report results noting if the tested material passed or failed and shall furnish copies to the District Representative, Project Inspector (PI), Architect, Contractor and/or others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer or professional geologist and the material was tested in accordance with applicable provisions of the Contract Documents, DSA, and CCR Title 22.

4. Certification, in the form of haul tickets or completed waste manifests, documenting the volume/weight and recipient of all import/export materials and activities. This documentation shall be coordinated through the District Representative and RSCCD Environmental Consultant. Contractor shall provide, track, and maintain a log of all imported and exported materials.

5. Specific Import Requirements:

   a. Within Fourteen (14) calendar days of receipt of Notice to Proceed, the contractor shall submit a spreadsheet listing all required import material types including but not limited to backfill soil, sand, gravel, and crushed aggregate base **(NO Crushed Miscellaneous Base (CMB) shall be allowed for use on RSCCD projects)**. The list shall include estimated volumes/weights required by each subcontractor and the intended borrow site locations each contractor intends to procure material from.

   b. Prior to the import of material, the Contractor must provide a "Request for Import Material Testing" form a minimum of two (2) weeks prior to needing material on site. The "Request for Import Material Testing" form can be found in Specification Section 01 32 29.

   c. For import to the school project site, haul tickets shall be utilized, and shall contain the following minimum information:

      1) Date(s) of haul activity.

      2) Address of source site.

      3) Address of recipient.

      4) Load volume/weight.

      5) Day of departure from source.

      6) Day of arrival at recipient site.

      7) Signature of recipient or recipient's agent.

      8) It is the Contractor's responsibility to confirm that no other trips or short-load augmentation occurred and submit documentation to the District Representative.

1.05 APPROVALS

A. Import of soil, granular base, geotechnical grading or filling materials at RSCCD sites will occur only with prior approval of the District Representative.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Imported:

1. Soils: Soils proposed for import shall be tested pursuant to the requirements as outlined in Part 3 of this Section.

2. Gravels/CAB: Clean gravel, consisting of native rock from a commercial source, shall be tested pursuant to the requirements of this Section.

3. Sands: Clean sand from a commercial source shall be tested pursuant to the requirements of this Section. Contractor shall provide written documentation, which identifies the source, volume/weight and proposed transport date(s) of the material for review.

4. Miscellaneous Material: No crushed miscellaneous base (CMB) containing crushed concrete, asphalt, construction debris, recycled, or other potential deleterious materials may be utilized or imported to a RSCCD project site for use as fill or grading material.

B. Exported/Site Generated:

1. Contractor is responsible for finding an acceptable receiving site or facility including facilities permitted to receive exports deemed unusable or environmentally impacted/contaminated.

2. Contractor shall provide a waste acceptance letter to the District from the designated disposal facility prior to any export from the District's site.

3. Contractor must provide the appropriate waste manifest(s) and provide a copy, signed by the receiving site. A copy of the executed manifest shall be provided to the District Representative.

4. Materials identified as hazardous wastes will need the site US EPA waste generator identification number and hazardous waste manifests prepared with requisite information on generator and receiving facility.

5. Miscellaneous Material. No crushed miscellaneous material containing concrete, asphalt, construction debris, or other potential deleterious materials that is generated onsite may be used as fill or grading material for any RSCCD project. Crushed asphalt shall be segregated and stockpiled separately.

PART 3 – EXECUTION

3.01 GRADING/EXCAVATION

A. If the Contractor encounters an area(s) with discolored, stained, and/or odorous soils or any other evidence of contamination during excavation/grading work, Contractor must immediately notify the District Representative, cease work at the aforementioned area(s), and secure the area(s) with fencing, tape, stakes or other suitable means to prevent entry by personnel or equipment. Upon notification, the District Representative will immediately notify the RSCCD Environmental Consultant, which will initiate a construction response to address the area(s) of concern, in accordance with pertinent regulatory requirements.

3.02 SAMPLING AND TESTING

A. All import material testing will be performed by a testing laboratory selected by District's Environmental Consultant. Contractor must coordinate with the District per Item 1.04, of this Section, to request testing.

B. All fill/grading material must be tested at the site of origin. OWNER retains the right to refuse any fill material proposed for use at any RSCCD site.

C. Import fill materials will be deemed acceptable for import or reuse only when it has been tested and proven clean to the satisfaction of the District's Environmental Consultant.

D. Import fill material may be deemed defective for use by the RSCCD Environmental Consultant at a RSCCD site should any of the following compounds or chemicals exceed the prescribed volumes:

1. TPH are present at concentrations exceeding 100 milligrams per kilogram (mg/kg) for gasoline and/or 1,000 mg/kg for oil/diesel and long-chain hydrocarbons.

2. Solvents and other VOCs are present at concentrations exceeding the human health risk levels for unrestricted land use and/or hazardous waste characterization criteria whichever is lower.

3. PCBs are present at concentrations exceeding the human health risk levels for unrestricted land use and/or hazardous waste characterization criteria whichever is lower.

4. SVOCs are present at concentrations exceeding the human health risk levels for unrestricted land use and/or hazardous waste characterization criteria whichever is lower.

5. OCPs are present at concentrations exceeding the human health risk levels for unrestricted land use and/or hazardous waste characterization criteria whichever is lower.

6. OPPs are present at concentrations exceeding the human health risk levels for unrestricted land use and/or hazardous waste characterization criteria whichever is lower.

7. Chlorinated herbicides are present at concentrations exceeding the human health risk levels for unrestricted land use and/or hazardous waste characterization criteria whichever is lower.

8. California Code of Regulations Title 22 (CAM 17) Metals at concentrations exceeding human health risk levels for unrestricted land use or typical background levels expected in California and/or hazardous waste characterization criteria whichever is lower.

9. Hexavalent chromium is present at concentrations exceeding 17 mg/kg or failing hazardous waste STLC leachate criteria.

E. All import material shall be characterized, handled, and documented in accordance with applicable US EPA and State of California hazardous waste and hazardous materials regulations. For the purpose of this specification, "contaminated" shall mean any soil or geotechnical material with constituent concentrations, which would require disposal at a permitted facility (i.e., California hazardous or RCRA hazardous). District Representative must be notified at least five days prior to the disposal of any hazardous waste or hazardous material.

3.03 TRANSPORTATION

A. Details of the samples and testing must be submitted to and approved by RSCCD Environmental Consultant before the materials from which the samples were collected undergo transportation.

B. Haul Routes and Regulations/Restrictions: Contractor must comply with requirements of project environmental disclosure documents (e.g., CEQA EIR) and authorities having jurisdiction over the project area and the proposed activities (e.g. Regional Water Quality Control Board, Orange County Health Care Agency, DTSC, etc.).

3.04 COSTS

A. The District has pre-test sites for sand, aggregate, and CAB that the Contractor may use without requiring any additional environmental testing. If the Contractor elects to utilize a separate site from the pre-tested sites for these materials, the Contractor shall provide an import inspection request form in accordance with Section 1.04 above.

B. District will incur the costs of testing both mined (quarry) and borrow sites up to and including four (4) locations within a distance of 70 miles of project location. The costs for the need to test more than four (4) sites shall be incurred by the Contractor through the District's Environmental Consultant.

C. Contractor shall pay all fees associated with loading, hauling and disposal of exported soil and aggregates. Should contaminated soil be encountered, the district shall pay the fee difference if the soil is determined to be treated as a hazardous material.

D. Contractor shall pay all fees for loading, hauling, disposal and/or processing of contaminated and/or hazardous fill materials identified in the contract documents.

END OF SECTION 01 45 24

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities, construction facilities and controls to be provided, maintained, relocated, and removed by Contractor.

1.02 RELATED SECTIONS

A. Division 0.

B. Section 01 11 00: Summary of Work.

C. Section 01 29 73: Schedule of Values Procedures.

D. Section 01 32 13: Construction Schedule.

E. Section 01 45 23: Testing and Inspection.

F. Section 01 74 19: Construction and Demolition Waste Management.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 QUALITY ASSURANCE

A. Contractor shall comply with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building Code requirements.

2. Division of State Architect.

3. Health and safety regulations.

4. Utility company regulations.

5. Police, fire department and rescue squad requirements.

6. Environmental protection regulations.

B. Contractor shall arrange for the inspection and testing of each temporary utility prior to use. Obtain required certifications and permits and transmit to District Representative.

C. Contractor provided facilities are to be in place and available for District Representative use and occupancy within Fourteen (14) calendar days following the date of issue of the Notice to Proceed and shall remain in place and available for District Representative use and occupancy until Substantial Completion of the Project or an earlier date if agreed upon by the District Representative.

D. Contractor shall provide site layout to District Representative for District review and approval prior to installation.

3.02 TEMPORARY UTILITIES

A. Contractor shall submit to District Representative reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

B. Contractor shall coordinate with the appropriate utility company to install temporary services. Where the utility company provides only partial service, Contractor shall provide and install the remainder with matching compatible materials and equipment.

C. Temporary Water:

1. Contractor shall furnish, install and pay for all necessary permits, inspections, move ins/out, temporary water lines, connections and fees, extensions and distribution, metering devices and use charges, deliveries/pick-ups, rentals, storage, transportation, taxes, labor, insurance, bonds, material, equipment and all other miscellaneous items for the temporary water system, and upon Substantial Completion of the Work, removal of all such temporary water system devices and appurtenances.

2. Contractor shall provide and maintain temporary water service, including water distribution piping and outlet devices of the size and required flow rates in order to provide service to all areas of the Project site.

3. DISTRICT will pay for all water usage. Contactor shall assist the District in obtaining a separate meter for the water source.

4. Contractor shall at their expense and without limitation, remove, extend and/or relocate temporary water systems as rapidly as required in order to provide for progress of the Work.

D. Temporary Electric:

1. Contractor shall furnish, install, maintain and pay for all necessary permits, inspections, temporary wiring, metering devices, move ins/outs, connections and fees, service, extension and distribution, deliveries/pickups, rentals, storage, transportation, taxes, labor, insurance, bonds, materials, equipment and all other required miscellaneous items for the temporary electric systems and upon Substantial Completion of Work, removal of all such temporary electric systems and appurtenances.

2. Contractor shall furnish, install, maintain, extend and distribute temporary electric area distribution boxes, so located that individual trades can obtain adequate power and artificial lighting, at all points required for the Work, for inspection and for safety.

3. Contractor shall provide temporary electric for construction, temporary facilities, and connections for construction equipment requiring power or lighting, at all points required for the Work, for inspection and safety.

4. Contractor shall provide adequate task lighting and safe exit(s) inside building(s), as per Cal/OSHA guidelines, for safety and security.

5. Contractor shall ensure welding equipment is supplied by electrical generators.

6. Contractor shall at their expense and without limitation remove, extend and/or relocate temporary electric systems as rapidly as required in order to provide for progress of the Work.

7. Contractor to provide temporary power plan indicating source and power pole locations, for District review.

3.03 CONTRACTOR PROVIDED FACILITIES

A. Contractor shall provide temporary offices, utilities, storage units, fencing, barricades, chutes, elevators, hoists, scaffolds, railings and other facilities or services as required. Contractor shall be responsible for providing/supplying, installing and maintaining all items indicated under this specification Section 01 50 00.

B. Temporary Offices:

1. No Temporary Office Required.

C. Temporary Storage Units:

1. Contractor shall provide secure and waterproof storage units for the temporary storage of furniture, equipment and other items requiring protection.

2. Contractor shall be responsible for delivery charges and will install the storage unit in an appropriate area.

3. Contractor shall remove the storage unit from the Project site when the storage unit is no longer required for the Work or upon Substantial Completion of the Work.

4. Contractor shall at their expense and without limitation remove and/ or relocate storage units as rapidly as required in order to provide for progress of the Work.

D. Temporary Sanitary Facilities:

1. Contractor shall provide portable chemical toilet facilities, hand wash facilities, and trash receptacles. Quantity of units shall be based on total number of workers and shall be in accordance with Cal/OSHA standards and in compliance with SWPPP.

2. Portable chemical toilet facilities, hand wash facilities, and trash receptacles shall be maintained with adequate supplies and in a clean and sanitary condition and shall be removed from the Project site upon Substantial Completion of the Work. Contractor shall maintain District Representative trailer restroom clean and operational at all times.

3. Contractor employees shall not use school toilet facilities.

4. At Contractor's expense and without limitation remove and/or relocate portable chemical toilet facilities as rapidly as required in order to provide for progress of the Work.

5. Contractor will contain their breaks and lunch periods to the areas designated by District Representative or any public area outside the Project site. Contractor shall provide a suitable container within the break/lunch area for the placement of trash. Areas used for break/lunch must be maintained clean and orderly. Once finish flooring has been installed in a particular area, no food or beverages will be permitted in that area.

E. Temporary Security Fence/Barricade:

1. Contractor shall install temporary Project site security barricade(s) as indicated on Drawings or as required for safety and as specified herein. New or used material may be furnished. Security of Project site and contents is a continuous obligation of Contractor.

2. Unless otherwise indicated or specified, security fence shall be constructed of 6-foot high chain link fencing with 6-foot high green screen. Post spacing shall not exceed ten feet on center. Posts shall be of following nominal pipe dimensions: terminal, corner, and gatepost 2 ½-inches, line posts 2-inch. Chain link fence shall be not less than #13 gauge, 2-inch mesh, and in one width. Posts, fence and accessories shall be as follows:

a. Shall be on T-stands with sand bags, unless required otherwise in writing by District Representative.

b. Green screen shall be attached to fence mesh on the construction side of the fence and steel tension wires at 18-inch centers with a minimum of #14 gauge tie wire. Green screen shall be maintained and all rips, tears, missing sections shall be corrected upon notification by District Representative.

c. Gates shall be fabricated of steel pipe with welded corners, and bracing as required. Fence and fabric to be attached to frame at 12-inch on center. Provide all gate hardware of a strength and quality to perform satisfactorily until barricade is removed upon Substantial Completion of the Work. Each gate shall have a chain and combo padlock. At Substantial Completion of the Work, remove barricade from Project site, backfill and compact fence footing holes. Existing surface paving that is cut into or removed shall be patched and sealed to match surrounding areas.

d. At Contractor's expense and without limitation remove or relocate fencing, fabric and barricades or other security and protection facilities as rapidly as required in order to provide for progress of the Work.

F. Other Temporary Enclosures and Barricades:

1. Provide lockable, temporary weather-tight enclosures at openings in exterior walls to create acceptable working conditions, to allow for temporary heating and for security.

2. Provide protective barriers around trees, plants and other improvements designated to remain.

3. Temporary partitions shall be installed at all openings where additions connect to existing buildings, and where to protect areas, spaces, property, personnel, students and faculty and to separate and control dust, debris, noise, access, sight, fire areas, safety and security. Temporary partitions shall be as designated on the Drawings or as specified by Architect. At Contractor's expense and without limitation remove and/or relocate enclosures, barriers and temporary partitions as rapidly as required in order to provide for progress of the Work.

4. Since the Work of this Project may be immediately adjacent to existing occupied structures and vehicular and pedestrian right of ways, Contractor shall, in accordance with applicable safety standards, provide temporary facilities, additional barricades, protection and care to protect existing structures, occupants, property, pedestrians and vehicular traffic. Contractor is responsible for any damage, which may occur to the property and occupants of the property of District Representative or adjacent private or public properties which in any way results from the acts or neglect of Contractor.

5. Contractor shall be responsible for cleaning up all areas adjacent to the construction site which have been affected by the construction; and for restoring them to at least their original condition- including landscaping; planting of trees, sod, and shrubs damaged by construction; and raking and disposal of debris such as roofing shingles, paper, nails, glass sheet metal, bricks, and waste concrete. Construction debris shall be removed and properly disposed of. Culverts and drainage ditches with sediment from the construction area shall be cleared routinely to maintain proper drainage and re-cleaned prior to completion of the contract.

6. Contractor shall ensure sediment does not block storm drains. Contractor shall be responsible for cleaning storm drains blocked due to erosion or sediment from the work area.

7. Contractor shall provide temporary shade for all break areas as required by Cal/OSHA's Heat Safety Regulations.

G. Temporary Storage Yards:

1. Contractor shall fence and maintain storage yards in an orderly manner.

2. Provide storage units for materials that cannot be stored outside.

3. At Contractor's expense and without limitation remove and/or relocate storage yards and units as rapidly as required in order to provide for progress of the Work.

H. Temporary De-watering Facilities and Drainage:

1. Contractor shall be responsible for, but not limited to, de-watering of excavations, trenches and below grade areas of buildings, structures, the Project site and related areas.

I. Temporary Protection Facilities Installation:

1. Contractor shall not change over from using temporary facilities and controls to permanent facilities, except as permitted by District Representative

2. Until permanent fire protection needs are supplied and approved by authorities having jurisdiction, Contractor shall provide, install and maintain temporary fire protection facilities of the types needed in order to adequately protect against fire loss. Contractor shall adequately supervise welding operations, combustion type temporary heating and similar sources of fire ignition.

3. Contractor shall provide, install and maintain substantial temporary enclosures of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security. Where materials, tools and equipment are stored within the Work area, Contractor shall provide secure lock up to protect against vandalism, theft and similar violations of security. District Representative accepts no financial responsibility for loss, damage, vandalism or theft.

4. Contractor operations shall not block, hinder, impede or otherwise inhibit the use of required exits and/or emergency exits to the public way, except as approved by District Representative. CONTACTOR shall maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for firefighting equipment and/or personnel.

J. Temporary Security and Safety Measures:

1. During performance of the Work in existing facilities and/or on a Project Site occupied by students, Contractor shall provide, install and maintain substantial temporary barriers and/or partitions separating all Work areas from areas occupied by students, faculty and/or administrative staff.

2. During performance of the Work, Contractor shall provide an employee meeting the requirements of Education Code Section 45125.2.(2) to continually supervise and monitor all employees of Contractor and Subcontractor. For the purposes of this Section, Contractor employee shall be someone whom the Department of Justice has ascertained has not been convicted of a violent or serious felony as listed in Penal Code Section 667.5(c) and/or Penal Code Section 1192.7(c). To comply with this Section, Contractor shall have his employee submit his or her fingerprints to the Department of Justice pursuant to Education Code Section 45125.1(a).

3. Penal Code Sections 290 and 290.4 commonly known as “Megan’s Law”, require, among other things, individuals convicted of sexually oriented crimes, to register with the chief of police where the convicted individual resides or with a county sheriff or other law enforcement officials. Contractor shall check its own employees and require each Subcontractor to check its employees and report to Contractor if any such employees are registered sex offenders. Contractor shall check monthly during the life of the Contract to ascertain this information and report same to District Representative. Before starting the Work, and monthly thereafter during the life of Contract, Contractor shall notify District Representative in writing if any of its employees and/or if any Subcontractor’s employees is a registered sex offender. If so, the DISTRICT may elect and request to have such individuals removed from project and replaced.

4. Contractor shall employ and maintain sufficient security and safety measures to effectively prevent vandalism, vagrancy, theft, arson, and all other such negative impacts to the Work. Any impacts to the progress of the Work of Contractor, District Representative, or District Representative’s forces, due to loss from inadequate security, will be the responsibility of Contractor.

K. Temporary Access Roads and Staging Areas:

1. Due to the limited amount of on and off Project site space for the parking of staff and campus visitor vehicles there will be no parking of Contractor vehicles in areas designated for campus use only. Contractor shall provide legal access to and maintain Contractor designated areas for the legal parking, loading, off-loading and delivery of all

vehicles associated with the Work. Contractor shall be solely responsible for providing and maintaining these requirements whether on or off the Project site. Contractor shall provide and maintain ample on-site parking spaces designated for the exclusive use of District Representative. Contractor shall erect signs as required by District Representative each of these spaces and prevent all unauthorized vehicles from parking in the District Representative-reserved spaces.

2. Temporary access roads are to be installed and maintained by Contractor to all areas of the Project site.

3. Contractor will be permitted to utilize existing facility campus roads as designated by District Representative. Contractor shall only utilize those entrances and exits as designated by District Representative and Contractor shall observe all traffic regulations of District Representative.

4 Contractor shall maintain roads and walkways in a clean condition including removal of debris and/or other deleterious material on a daily basis.

3.04 PROJECT SIGNAGE

A. No signs shall be displayed without approval of District Representative. At Contractor's expense and without limitation remove and/or relocate Project signage and related facilities as rapidly as required in order to provide for progress of the Work.

B. Contractor shall remove any approved signage at Substantial Completion of the Work.

C. Contractor shall employ appropriate means to remove all graffiti from buildings, equipment, fences and all other temporary and/or permanent improvements on the Project site within twenty-four (24) hours from the date of report or forty-eight (48) hours of each occurrence.

D. Contractor shall provide and install signage to provide directional identification, safety, and contact information to construction personnel and visitors as follows and as reviewed by District Representative.

1. For construction traffic control/flow at entrances/exits, and as designated by District Representative.

2. To direct visitors.

3. For construction parking.

4. To direct deliveries.

5. For Warning Signs as required.

6. For trailer identification and Project site address.

7. For "No Smoking" safe work site at designated locations.

8. Emergency contact information and phone number of Contractor.

9. Emergency contact information and phone number of local police, fire, and emergency personnel.

10. For Labor Compliance Program (LCP) as required by the DIR (Prevailing wage rates and Notice of LCP).

11. Employee benefits payments paid to trust funds are required under the General Conditions/CSA.

3.05 TRENCHES

A. All open trenches for installation of utility lines (water, gas, electrical and similar utilities) and open pits shall be barricaded at all times in a legal manner, as required by Cal/OSHA and determined by Contractor. Trenches shall be backfilled and patch-paved within twenty-four (24)

hours after approval of installation by authorities having jurisdiction or shall have "trench plates" installed. Required access to buildings shall be provided and maintained. Contractor shall comply with all applicable statutes, codes and regulations regarding trenching and trenching operations.

3.06 DUST CONTROL

A. Contractor is responsible for dust control on and off the Project site. When Work operations produce dust the Project site and/or streets shall be sprinkled with water to minimize the generation of dust. Contractor shall clean all soils and debris from construction vehicles and cover both earth and debris loads prior to leaving the Project site. Contractor shall, on a daily basis, clean all streets and/or public improvements within the right of way of any and all debris, dirt, mud and/or other materials attributable to operations of Contractor.

3.07 WASH OUT

A. Contractor shall provide and maintain wash out boxes of sufficient size and strength to provide for concrete mixer wash out. Contractor shall locate and relocate both the wash out boxes and wash out areas in order to accommodate the progression of the Work. Contractor shall legally dispose of the contents of the wash out boxes and area on an as needed basis or as required by District Representative.

3.08 WASTE DISPOSAL

A. Contractor shall provide and maintain trash bins on the Project site and in compliance with SWPPP requirements. Trash bins shall be serviced on an as needed basis and Contractor is responsible for the transportation of and the legal disposal of all contents.

3.09 ADVERSE WEATHER CONDITIONS

A. Should warnings of adverse weather conditions such as heavy rain and/or high winds be forecasted, Contractor shall provide every practical precaution to prevent damage to the Work, Project site and adjacent property. Contractor precautions shall include, but not be limited to, enclosing all openings, removing and/or securing loose materials, tools, equipment and scaffolding.

B. Contractor shall provide and maintain drainage away from buildings and structures.

C. Contractor shall implement all required storm water mitigation measures as required under related Sections.

3.10 DAILY AND MONTHLY REPORTS

A.. By the end of each workday, Contractor shall submit to District Representative and Project Inspector a daily construction report denoting the daily manpower counts and a brief description/location of the workday activities. Manpower shall be broken down by trade classification such as foreman, journeyman or apprentice. The report shall also note the date, day of the week, weather conditions, deliveries, equipment on the Project site whether active and/or idle, visitors, inspections, accidents and unusual events, meetings, stoppages, losses, delays, shortages, strikes, orders and requests of governing agencies, Construction Directive and/or Change Orders received and implemented, services disconnected and/or connected, equipment start up or tests and partial use and/or occupancies. Contractor shall also include on the daily construction report the above information for all Subcontractors at whatever tier.

END OF SECTION 01 50 00

SECTION 01 71 23

FIELD ENGINEERING

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Layout of the work.

B. Verification of work.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 11 00: Summary of Work.

C. Section 01 31 13: Project Coordination.

D. Section 01 32 13: Construction Schedule.

E. Section 01 33 00: Submittal Procedures.

F. Section 01 77 00: Contract Closeout.

1.03 SURVEY CONTROLS

A. Vertical and horizontal control shall use same benchmark used in the preparation of topographic survey. When Work consists of both on-site and off-site and benchmarks differ, an equation shall be indicated on Drawings.

1.04 LAYOUT OF WORK

A. All work related to staking shall be by a Land Surveyor or Civil engineer registered with the State of California to perform land surveying and employed by Contractor.

B. Before commencement of Work, Land Surveyor shall locate all reference points and benchmarks to be used for vertical and horizontal control.

C. Land Surveyor shall lay out entire Work, set grades, lines, levels, control points, elevations, grids and positions.

1.05 VERIFICATION OF WORK

A. All curb and gutter, sidewalks, pavers, ramps, concrete flatwork, and asphalt will be subject to line and grade certification. This task shall be performed by a licensed Land Surveyor in the State of California, employed by the Contractor, and shall certify that:

1. The forms for all curb and gutter, sidewalks, pavers, ramps, concrete flatwork, and asphalt are within conformance of the Contract Documents and that no rates of grade are in excess of the rates of grade shown on the approved precise grading plan. These certifications shall be signed by the Land Surveyor and submitted to the District Representative, Architect, and Project Inspector forty-eight (48) hours prior to concrete pour or product placement.

2. The as-built conditions for all curb and gutter, sidewalks, pavers, ramps, concrete flatwork, and asphalt are within conformance of the Contract Documents and that no rates of grade are in excess of the rates of grade shown on the approved precise grading plan. These certifications shall be signed by the Land Surveyor and submitted and approved by the District prior to the finalization of the project.

B. All of the above certifications shall be performed at the contractor's expense and the District reserves the right to use an outside consultant to verify any work that the Project Inspector deems necessary in order to ensure compliance with the above specifications.

1.06 SUBMITTALS

A. Land Surveyor: Shall submit name, address and license number to District Representative, including any changes as they occur.

B. Field notes: Upon request by District Representative, submit copies of cut sheets, coordinate plots, data collector printouts, marked-up construction staking plans and other documentation as available to verify accuracy of field engineering work during and at completion of project. Submittals to District Representative must be signed and sealed by Surveyor and counter-signed by Contractor

C. Statement of Compliance: Contractor shall submit a statement of certification signed and sealed by Land Surveyor, counter-signed by Contractor indicating compliance with grades and alignment of construction plans at rough grade, fine grade, and top of rock stages. Project Inspector shall review survey submittals for each stage of construction prior to proceeding with Work.

D. Upon Substantial Completion, Contractor shall obtain and pay for reproducible survey drawings (or "As Built").

E. Completed record drawings shall be signed and certified as correct and within specified tolerances by licensed Land Surveyor. Originals and two sets of blueprints shall be submitted to District Representative.

1.07 RECORD DOCUMENTS

A. Maintain complete and accurate log of all control and survey documentation as work progresses.

B. Record, by coordinates, all new underground utilities outside building perimeter with top of pipe elevations, at major grade and alignment changes, rim, grate or top of curb and flow line elevations of all drainage structures and sewer manholes. For groups of conduits encased in a duct bank, provide coordinates and elevations of duct bank encasement

C. Indicate reference and control points on record drawings. The basis of elevation shall be one of the established benchmarks.

D. Upon Substantial Completion, obtain and pay for reproducible plans and provide to District Representative. Clearly indicate all differences between original drawings and completed work within specified tolerances. In addition, provide AutoCAD files of each survey performed for District records.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 PREPARATION

A. Pre-mark areas of excavation in accordance with the requirements of "Dig-Alert". Request locators two (2) days before commencing excavation.

B. Before commencing Work, establish all horizontal and vertical reference points used in Contract Documents according to existing field conditions.

C. Preserve established reference lines and benchmarks.

D. Differentiate school and city datum as applicable.

E. Relocate bench marks that may interfere with Work.

F. Reset and re-establish reference marks damaged or lost during construction.

3.02 SURVEY REQUIREMENTS GENERAL

A. Establish a minimum of two permanent horizontal and vertical control points on Project site, remote from construction area, referenced to data established by control points.

B. Indicate reference points, relative to benchmark elevation, on record drawings.

C. Provide grade stakes and elevations to construct over excavation and re-compaction, rough and final grades, paved areas, curbs, gutters, sidewalks, building pads, landscaped areas, and other areas as required.

D. Calculate and layout proposed finished elevations and intermediate controls, as required, to provide smooth transitions between spot elevations indicated on Drawings.

E. Provide stakes and elevations for grading, fill, and topsoil placement.

F. Provide adequate horizontal and vertical control to locate utility lines, including but not limited to, storm, sewers, water mains, gas, electric and signal and provide vertical control in proportion to the slope of the line as required for accurate construction. Dry utilities will be based upon adequate horizontal and vertical control layout. Prior to trench closure, survey and record invert and flow line elevations. Survey and record top of curb and flow line elevations on finished concrete or asphaltic concrete (AC) surfaces at key locations such as beginning-of-curve (BC), end-of-curve (EC), grade breaks, corners or angle points in sufficient number to demonstrate the Work complies with the intent of the Contract Documents.

G. Provide horizontal and vertical control for batter boards for drainage, utility, and other on-site structures as required.

H. Furnish building corner offsets as required to adequately locate building pads. Provide cut and fill stakes within the building pad perimeter adequate to control both over excavation and re-compaction and the final sub-grade elevation of the building pad.

I. Submit a certification signed by the Land Surveyor confirming the elevations and locations of improvements are in conformance with the Contract Documents. The statement shall include survey notes for the finish floor and building pad, showing the actual measured elevations on the completed sub-grade, recorded to the nearest 0.01 of a foot. Building pad tolerance will be plus or minus 0.1 of a foot.

J. Mark boundaries for rights-of-way dedications and easements for utilities prior to making location of buildings and utilities.

K. Layout all lines, elevations, and measurements needed for construction or installation of buildings, grading, paving utilities according to the following:

1. Identify site boundary, property lines.
2. Provide working benchmarks.
3. Set stakes for Bottom of Excavated Plane (B.E.P.).
4. Set gridlines, radii, working points etcetera, for foundation.
5. Set and verify building pad elevations.
6. Set finish floor elevations.
7. Stake location and elevations for exterior ramps and stairs.
8. Set gridlines, radii, working points, etc, for all floors of multi-story buildings.
9. Set storm drain and sanitary sewer inverts and other utilities as needed at 5-foot off-set from building lines.
10. For new facilities, establish permanent onsite Benchmark with 2-inch diameter brass disk. Location of Benchmark to be determined by District Representative.

3.03 SURVEY REQUIREMENTS FOR GRADING

A. Provide grade stakes and elevations as follows:

1. Removal limits (cut lines).
2. Rough grade staking: 60-foot maximum grid plus additional stakes at grade changes and pertinent locations. Flag all grade changes including ridges, flow lines and grade breaks.
3. Fine grade for top of dirt: 30-foot maximum grid plus additional stakes at grade changes and pertinent locations. Flag all grade changes including ridges, flow lines and grade breaks.
4. Verify fine grade for top of rock: 30-foot maximum grid plus additional stakes at grade changes and pertinent locations. Flag all grade changes including ridges, flow lines and grade breaks.
5. Finish grade marks on all buildings, structures and at pertinent locations.
6. Finish grades and offsets for all concrete work, flatwork, sidewalks, pavers, curbs and gutters, asphalt, utilities, landscape areas, and structures.
7. Provide controls and baselines for playground striping.
8. Offsite improvements: set grades and provide grade sheets as required by local authorities.

B. Provide a minimum of two permanent horizontal and vertical control points onsite, remote from building area, referenced to data established by survey control points.

3.04 SURVEY REQUIREMENTS FOR UTILITIES

A. Locate “wet” utility lines and provide vertical control proportionate to slope of line as required for accurate construction. “Dry” utilities shall have adequate horizontal and vertical control layout supplied by others.

B. Prior to back-filling trench, survey and record invert and flow line elevations. Survey and record top of curb and flow line elevations on finished surfaces at key locations (such as Back of Curbs, grade breaks, corners or angle points) in sufficient number to demonstrate Work complies with intent of Contract Documents.

C. Provide horizontal and vertical control for batter boards for drainage, utility, and other on-site structures as required.

1. Set grades for vaults one inch higher than adjacent surrounding design grades, unless noted otherwise.

D. Leave all trenches open until required inspection is completed.

3.05 SURVEY REQUIREMENTS FOR STRUCTURES

A. Furnish building corner offsets as required to adequately locate building pads. Provide cut and fill stakes within building pad perimeter adequate to control both over excavation and re-compaction and final sub-grade elevation of building pad.

B. Submit a certification signed by Land Surveyor confirming elevations and locations of improvements are in conformance with Contract Documents. Statement shall include survey notes for finish floor and building pad, showing actual measured elevations on completed sub-grade, recorded to nearest 0.01 of a foot. Building pad tolerance will be plus or minus 0.1 of a foot.

END OF SECTION 01 71 23

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section specifies procedural requirements for cutting and patching.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 29 73: Schedule of Values Procedures.

C. Section 01 31 13: Project Coordination.

D. Section 01 31 19: Project Meetings.

E. Section 01 32 13: Construction Schedule.

F. Section 01 33 00: Submittal Procedures.

G. Section 01 71 23: Field Engineering.

H. Section 01 78 36: Warranty Procedures.

1.03 SUBMITTALS

A. The word "cutting" as used in the Contract Documents includes, but is not limited to, cutting, drilling, chopping, and other similar operations and the word "patching" includes, but is not limited to, patching, rebuilding, reinforcing, repairing, refurbishing, restoring, replacing, or other similar operations.

B. Cutting and Patching Proposal: Contractor shall submit a work plan describing procedures well in advance of the time cutting and patching will be performed if the Contract Documents requires approval of these procedures before proceeding. Include the following information, as applicable, in the work plan:

1. Describe the extent of cutting and patching required. Denote how it will be performed and indicate why it cannot be avoided.

2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance or other significant visual elements.

3. List products to be used and firms or entities that will perform this Work.

4. Indicate dates when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching operations will disturb or affect. List utilities to be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.

6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.

7. Review by Architect and DSA prior to proceeding with cutting and patching does not waive Architect right to later require complete removal and replacement of defective Work.

1.04 QUALITY ASSURANCE

A. Requirements for structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. Obtain approval from Architect and DSA of the cutting and patching work plan before cutting and patching the following structural elements:

a. Foundation construction.

b. Bearing and retaining walls.

c. Structural concrete.

d. Structural steel.

e. Lintels.

f. Timber and primary wood framing.

g. Structural decking.

h. Stair systems.

i. Miscellaneous structural metals.

j. Exterior curtain-wall construction.

k. Equipment supports.

l. Piping, ductwork, vessels, and equipment.

m. Any other structural systems not listed above.

B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain review of the cutting and patching work plan before cutting and patching the following operating elements or safety related systems:

a. Primary operational systems and equipment.

b. Air or smoke barriers.

c. Water, moisture, or vapor barriers.

d. Membranes and flashings.

e. Fire protection systems.

f. Noise and vibration control elements and systems.

g. Control systems.

h. Communication and/or data systems.

i. Conveying systems.

j. Electrical wiring systems.

k. Any other operating systems not listed above.

C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the opinion of Architect, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

1.05 WARRANTY

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION

3.01 INSPECTION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02 PREPARATION

A. Temporary support: Provide adequate temporary support of existing improvements or Work to be cut.

B. Protection: Protect existing improvements and Work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of existing improvements or Work that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Where the Work requires sandblasting of existing surfaces in order to receive new materials secured by cementitious, adhesive or chemical bond, completely remove existing finishes, stains, oil, grease, bitumen, mastic and adhesives or other substances deleterious to the new bonding or fastening of new Work. Utilize wet sand blasting for interior surfaces and for exterior surfaces where necessary to prevent objectionable production of dust.

3.03 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Carefully remove existing Work to be salvaged and/or reinstalled. Protect and store for reuse into the Work. Verify compatibility and suitability of existing substrates before starting the Work.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining Work. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or a diamond-core drill. Saw cut reinforcing bars and paint ends per approved submittal except where bonded into new concrete or masonry.

4. Comply with requirements of applicable Sections of Divisions 31, 32, and 33 where cutting and patching requires excavating, backfill, and recompaction.

5. Woodwork: Cut and or remove to a panel or joint line.

6. Sheet Metal: Remove back to joint, lap, or connection. Secure loose or unfastened ends or edges and seal watertight.

7. Glass: Remove cracked, broken, or damaged glass and clean rebates and stops of setting materials.

8. Plaster: Cut back to sound plaster on straight lines, and back bevel edges of remaining plaster. Trim existing lath and prepare for new lath.

9. Gypsum: Cut back on straight lines to undamaged surfaces with at least two opposite cut edges centered on supports.

10. Acoustical ceilings: Remove hanger wires and related appurtenances where ceilings are not scheduled to be installed.

11. Tile: Cut back to sound tile and backing on joint lines.

12. Curb, gutters, and flat work: Saw cut joint to nearest joint.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with required tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation. Verify conditions of existing substrates prior to executing Work.

2. Restore exposed finishes of patched areas and extend finish restoration into retaining adjoining construction in a manner that will eliminate all evidence of patching and refinishing.

3. Non-Structural Concrete Flatwork: Finish placed concrete to match existing unless noted otherwise. Concrete shall have a compressive strength of 2,500 psi where installed to repair and match existing improvements, unless noted otherwise.

4. Metal Fabrications: Items to remain exposed shall have their edges cut and ground smooth and rounded.

5. Sheet Metal: Replace removed or damaged sheet metal items for new Work.

6. Painting: Prepare areas to be patched, patch and paint as specified under related sections of the Contract Documents.

3.04 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged coverings to their original condition.

END OF SECTION 01 73 29

SECTION 01 74 19

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Preparation and implementation, including reporting and documentation, of a Waste Management Plan for reusing, recycling, salvage or disposal of non-hazardous waste materials generated during demolition and new construction (Construction and Demolition (C&D) Waste), to foster material recovery and re-use and to minimize disposal in landfills.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 32 29: Project Forms.

C. Section 01 33 00: Submittal Procedures.

D. Section 01 50 00: Construction Facilities and Temporary Controls.

1.03 REFERENCES

A. California Integrated Waste Management Act (IWMA) of 1989 (AB 939).

B. California Code of Regulations Title 14, Section 18700 et seq.

C. California Green Building Standards Code, Part 11 of Title 24.

1.04 SYSTEM DESCRIPTION

A. Collection and separation of all C&D waste materials generated on-site, reuse or recycling on-site, transportation to approved recyclers or reuse organizations, or transportation to legally designated landfills, for the purpose of recycling salvaging and reusing a minimum of 75% of the C&D waste generated.

1.05 SUBMITTALS

A. Per Section 01 32 29, Contractor to provide a C&D Waste Management Plan within ten (10) calendar days after the Notice to Proceed and prior to any waste removal. Submit the following to the District Representative for review and approval:

1. Materials to be recycled, reused, or salvaged, either onsite or offsite.

2. Estimates of C&D waste quantity (in tons) by type of material. (If waste is measured by volume, give factors for conversion to weight in tons.)

3. Procedures for recycling and reuse program.

4. Permit or license and location of Project waste-disposal areas.

5. Site plan for placement of waste containers.

B. Per Section 01 32 29, Contractor to provide a C&D Waste Management Monthly Progress Report, summarizing waste generated by Project and submitted monthly with Application for Payment. Include:

1. Firm(s) accepting the recovered or waste materials.

2. Type and location of accepting facilities (landfill, recovery facility, used materials yard, etcetera). If materials are reused or recycled on the Project site, location should be designated as “on-site reuse and recycling”.

3. Type of materials and net weight (tons) of each.

4. Value of the materials or disposal fee paid.

5. Attach weigh bills and other documentation confirming amount and disposal location of waste materials.

C. C&D Waste Management Final Compliance Report: Final update of Waste Management Plan to provide summary of total waste generated by Project.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 IMPLEMENTATION

A. Implement approved Waste Management Plan including collecting, segregating, storing, transporting and documenting each type of waste material generated, recycled or reused, or disposed in landfills.

B. Designate an on-site person to be responsible for instructing workers and overseeing the sorting and recording of waste/recyclable materials.

C. Include waste management and recycling in worker orientation and as an agenda item for regular Project meetings.

D. Recyclable and waste bin areas shall be limited to areas approved on the Waste Management Plan. Keep recycling and waste bins neat and clearly marked to avoid contamination of materials.

END OF SECTION 01 74 19

SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section includes administrative and procedural requirements for Contract Closeout, including but not limited to, the following:

1. Inspection procedures.
2. Project record documents submittal.
3. Operation and maintenance manual submittal.
4. Owner orientation and instruction.
5. Final cleaning.

1.02 RELATED SECTIONS

A. Section 01 29 76: Progress Payment Procedures.

B. Section 01 32 13: Construction Schedule.

C. Section 01 32 29: Project Forms.

D. Section 01 33 00: Submittal Procedures.

E. Section 01 50 00: Construction Facilities and Temporary Controls.

F. Section 01 74 19: Construction Demolition and Waste Management.

G. Section 01 78 36: Warranties.

1.03 REQUIREMENTS FOR PREPARATORY FINAL INSPECTION

A. All contract work completed.

B. Remove temporary facilities from the Project site.

C. Thoroughly clean the Buildings and Project site.

D. All mechanical equipment shall operate quietly and free from vibrations. Properly adjust, repair, balance, or replace equipment producing objectionable noise or vibration in the occupied areas of the buildings. Provide additional brackets, bracing, or other methods to prevent objectionable noise or vibration. All systems shall operate without humming, surging, or rapid cycling.

E. Properly mount all operation instructions for equipment and post as specified in their respective Sections.

F. Job Record specifications and prints “as builts” shall be completed, signed, and submitted to the District Representative as specified in respective Specification Sections.

G. Submit to the District Representative, the material and equipment maintenance instructions, as specified in the body of the Specification Sections.

H. Submit to the District Representative, all warranties, guarantees, and bonds, as specified in the body of the Specification Sections.

I. When requested, submit certificates indicating payment of all debts and Claims arising from the Work.

J. Deliver all tools which are a permanent part of equipment installed in the Work to the District Representative.

K. Deliver all keys, construction and permanent, properly identified, to the District Representative.

L. Deliver all extra stock items, as directed by the District Representative, to a location within the District.

M. Contractor determined the Work has been completed. All life safety items are completed and in working order.

N. Electrical circuits scheduled in panels and disconnect switches labeled.

O. Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

P. Work cleaned, free of stains, scratches, marks, dirt, superfluous labels, and other foreign matter, replacement of damaged and broken material.

Q. Finished and decorative work shall have marks, dirt and superfluous labels removed.

R. Final cleanup complete.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 SUBSTANTIAL COMPLETION

A. Inspection Procedures: After all requirements preparatory to the final inspection have been completed, as herein specified in the Specification Sections, the Contractor will notify the District Representative, Architect, and Project Inspector to perform the final inspection.

1. If after inspection of the Work, District Representative does not consider the Work complete, District Representative will notify Contractor.

2. If after inspection, District Representative considers the Work complete, Architect shall prepare a Punch List of items to be corrected.

B. Re-inspection Procedures: Project Inspector, District Representative, Contractor and Architect will inspect the Work upon notice the Work, including final inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to District Representative.

1. Upon completion of inspection, District Representative will recommend Final Completion. If the Work is incomplete, District Representative will advise Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for Final Completion.

2. If necessary, re-inspection will be repeated, but may be assessed against Contractor if Owner is subject to additional professional service and or additional costs of inspection.

3.02 PROJECT RECORD DOCUMENT SUBMITTAL

A. General: Do not use project record documents for construction purposes. Protect record documents from deterioration and loss. Provide access to record documents for Architect, Project Inspector, and District Representative reference during normal working hours. Project record document shall be updated on a daily basis prior to work being concealed. Prior to submitting each application for payment, secure Project Inspector approval of project record documents.

B. Record Drawings: Maintain a clean, undamaged set of prints of Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies from the Work as originally shown. Mark the Drawing that is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Drawings.

Provide detailed and accurate field dimensions for concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work. Date and number entries in the same format as submitted. Call attention to entry by a "cloud" around the affected areas.

2. Mark new information important to Owner but was not shown on Drawings or Shop Drawings.

3. Utility mainlines and duct-banks within the building footprint shall be indicated by location and depth below finished grade. All utilities and above ceilings and attic spaces shall be fully dimensioned and indicated on record drawings. Dimensions shall be measured from building lines or permanent landmarks and shall be triangulated to those features.

4. Note related Change Order or Construction Directive numbers where applicable. RFI submissions shall be referenced on each affected sheet, Drawing and Shop Drawing.

5. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

6. Prior to Contract Completion of the Work, review of the project record drawings by Architect; prepare a final set of project record drawings and submit to Architect.

C. Record Specifications: Maintain one (1) complete copy of the Specifications, including Addenda. Include with the Specifications two copies of other written Contract Documents, such as Change Orders or Construction Directives issued during construction.

1. Mark these record documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.

2. Give particular attention to substitutions and selection of options and information on concealed Work that cannot otherwise be readily discerned later by direct observation.

3. Note related record document information with Product Data.

4. Prior to Contract Completion of the Work, submit record Specifications to Architect for Owner records.

CI. Record Samples: Immediately prior to Substantial Completion, Contractor shall meet with Architect and District Representative at the Project site to determine which Samples are to be transmitted to Owner for record purposes. Comply with District Representative instructions regarding delivery to Owner storage area.

CII. Miscellaneous Records: Refer to other Specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Prior to the date of Contract Completion, complete and compile miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to Architect for Owner records.

CIII. Maintenance Manuals: Shall be submitted and approved by the Architect prior to commissioning and startup of the corresponding system/product. Organize operation and maintenance data into suitable three (3) sets of manageable size. Bind properly, indexed data in individual, heavy-duty, three-inch 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Provide a table of contents in front and all items shall be indexed with tabs. Each manual shall also contain a list of subcontractors, with their scope of work, addresses, phone numbers, email, and the names of persons to contact in cases of emergency. Identifying labels shall provide names of manufactures, their addresses, ratings, and capacities of equipment and machinery. Submit to Architect for Owner records. Include the following types of information.

1. Table of Contents (in each binder)

2. Emergency instructions.

3. Spare parts list.
4. Copies of warranties.
5. Wiring diagrams.
6. Recommended “turn-around” cycles.
7. Inspection procedures.
8. Shop Drawings and Product Data.
9. Fixture lamping schedule.
10. Note which items also have video training.

G. Provide one (1) electronic version of all documents listed above on one (1) flash drive to the District Representative.

3.03 OPERATION AND MAINTENANCE:

A. Operation and Maintenance Instructions: Prior to Substantial Completion, arrange for each installer of equipment that requires regular operation and maintenance to meet with designated Owner personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer’s representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.
2. Spare parts and materials.
3. Tools.
4. Lubricants.
5. Fuels.
6. Identification systems.
7. Control sequences.
8. Hazards.
9. Cleaning.
10. Warranties and bonds.
11. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

C. Notice of Termination: Contractor shall submit a Notice of Termination (NOT) to the District for District issuance to the local Regional Water Quality Control Board (RWQCB). Provide a copy of NOT to District Representative.

3.04 FINAL CLEANING

A. General: The Contractor shall be solely responsible for all cleaning operations during the Project.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for a certificate of Substantial Completion.

a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finished to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the Project site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

f. Complete the final filter change replacing all HVAC filters.

END OF SECTION 01 77 00

SECTION 01 78 36

WARRANTY PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section includes procedural requirements for warranties, including manufacturers and installer's standard warranties on products and special product warranties.

1.02 RELATED SECTIONS

A. General Conditions.

B. Section 01 32 29: Project Forms

C. Section 01 73 29: Cutting and Patching.

D. Division 2 through Division 32.

1.03 SUBMITTALS

A. Form of Submittal: In accordance with the General Conditions, compile two (2) copies of each required final warranty properly executed by Contractor, or by Contractor and Subcontractor, installer, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the Specifications and provide a table of contents.

B. Bind warranties and bonds in heavy-duty, commercial-quality, durable three ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½ by 11 paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the item or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.

2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title and/or name, and name of Contractor.

3. When warranted Work requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

C. Provide one (1) electronic version of all documents listed above on one (1) flash drive to the District Representative.

D. Provide a Warranty Guarantee Form on the District's form provided in Section 01 32 29 as part of the Closeout documentation.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION (Not applicable)

END OF SECTION 01 78 36

PART 1 - GENERAL

1.01 SUMMARY

A. Principal Work Items Are:
   1. Rebar.

B. Related Work:
   1. Cast-In-Place Concrete: Section 03 30 00.
   2. Portland Cement Concrete Paving: Section 32 13 13

1.02 REFERENCES

A. Requirement in Addenda, Conditions and Division 1 collectively apply to this work.

B. ASTM A82/A82M-07 - Cold Drawn Steel Wire for Concrete Reinforcement.

C. ASTM A615/A615M-09b - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement and ASTM A706 Grade 60 for all reinforcing bars to be welded.

D. CRSI - Concrete Reinforcing Steel Institute Manual of Standard Practice.

E. CRSI 63 - Recommended Practice for Placing Reinforcing Bars.

F. CRSI 65 - Recommended Practice for Placing Bar Supports, Specifications and Nomenclature.

1.03 SUBSTITUTIONS

Only written approval of Architect, by addenda or change order, will permit substitutions for materials specified. Refer to Sections 01 25 13 - Product Options and Substitutions procedures.

1.04 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies:
   1. Codes: Conform to Title 24, CCR and CBC, latest Edition.
   2. Off-site Work: Conform to local governing agency requirements.

B. Source Quality Control: Refer to Section 01400, Quality Control and Testing Services for analyses and tests required.

C. Perform concrete reinforcement work in accordance with CRSI, CRSI 63, and CRSI 65.

1.05 SUBMITTALS

A. Submit reports for analyses and tests per Section 01 45 00.

B. Submit mill certificates of supplied concrete reinforcing, indicating physical and chemical analysis.

C. Certificate For Off-site Work: Provide for off-site work, per Section 01 77 00, Project Closeout.

D. Submit shop drawings per Section 01 33 00. Indicate sizes, locations and quantities of reinforcing steel, bending and cutting schedules, splicing, stirrup spacing, supporting and spacing devices.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to Site in bundles marked with metal tags indicating bar size, length, configuration and building location.

B. Handle and store materials to prevent injury or unwanted bends.

C. Store materials on blocking to prevent contact with ground. Do not store materials in water puddles.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Conform to applicable Codes; refer to Title 24, Section 19A in particular.

B. Rebar: CBC, latest Edition, Section 1905A which is based on ASTM A615; deformed; grade 60 typical, other stresses where noted.

C. Welded Wire Mesh: Refer to ASTM A1064; 75,000 psi tensile strength for 10 gauge and larger wire, 70,000 psi tensile strength for 11 gauge and smaller wire. Flat sheets only.

D. Tie Wire: Refer to ASTM A1064; annealed steel, 16 gauge minimum.

2.02 FABRICATION OF REBAR

A. General: Per CRSI Standards.

B. Fabricate to lengths and shapes required.
   1. Bends: Bend cold around a pin; minimum diameter shall conform to Title 24, Section 1907A.2.
   2. Do not bend or straighten bars in a manner which will injure material.
   3. Do not re-bend bars.
   4. Bending of reinforcement shall comply with ACI310, Sections 7.1 through 7.4.

C. Locate reinforcing splices, not indicated on Drawings, at points of minimum stress. Indicate locations on shop drawings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install dowels in concrete, to match locations of masonry wall reinforcement.

B. Do not use rebar which has bends or kinks other than those required.

C. Do not heat, bend, cut, or alter rebar at Site without concurrence of Architect.

D. Place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.

E. Spacing: Maintain following minimum clear distances between bars, or greater distances where required.
   1. All Cases: 1-1/2" minimum.
   2. Parallel Bars (except at splices): 1-1/2 times nominal diameter.

F. Clearances: Maintain following minimum clear distances to provide concrete coverage for protection of rebar, or greater distances where required.
   1. Footing surfaces poured directly on earth: 3".
   2. Walls against earth, but place in forms: 2".
   3. Other formed walls: 1-1/2".
   4. Columns: 2".
   5. Per CBC Section 1907A.6.
   6. Walls formed 3/4" from CMU walls.

G. Splices:
   1. Splice only at approved locations.
   2. Lap Splices: Wire tie securely together.
      a. Use typically for splices, corners, intersections.
      b. Minimum lap distance, unless otherwise required:
         1) Concrete: 40 bar diameters, but not less than 24".
   3. Other Splice Methods: Only with specific Architect approval.
   4. Separate splices: Code required distances.

3.02 FIELD QUALITY CONTROL

Inspection: Refer to Section 01 45 00, Quality Control and Testing Services.

3.03 ADJUSTMENT AND CLEANING

Prior to concrete placement, clean reinforcement coatings, rust, scale, that will reduce or destroy bond. Reinforcement appreciably reduced in section by cleaning shall be replaced as directed by Architect. Reposition misaligned reinforcement.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Cast-in-place concrete for the following:
      a. Electronic Directory footing.
      b. Sidewalk replacement.
   2. Formwork.
   3. Curing and protection.
   4. Finishing.
   5. Vapor Barrier.

B. Related Work:
   1. Requirements in Addenda, Conditions and Division 1 collectively apply to this work.
   2. Portland Cement Concrete Paving: Section 32 13 13.
   3. Steel Reinforcement: Section 03 21 00.

1.02 SUBSTITUTIONS

Only written approval of Architect, by Addenda or Construction Change Document, will permit substitutions for materials specified. Refer to Section 01 25 13 - Product Options and Substitutions for procedure.

1.03 REFERENCES

A. ASTM C33/C33M-13 - Concrete Aggregates.

B. ASTM C94/C94M-13a - Ready-Mixed Concrete.

C. ASTM C150/CM150-12 - Portland Cement.

D. ASTM C260/C260M-10a - Air-Entraining Admixtures for Concrete.

E. ASTM C494/C494M-13 - Chemical Admixtures for Concrete.

1.04 QUALITY ASSURANCE

A. Design Criteria for Formwork:
   1. Contractor shall be solely responsible for formwork and shall:
      a. Design, construct and maintain formwork to safely support loads.
      b. Obtain governing agency approval.

B. Testing Agency:
   1. On-Site Work: District designated Testing Laboratory.
   2. Off-Site Work: Governing agency approved Testing Laboratory.

C. Requirements of Regulatory Agencies:
   1. Codes: Conform to Title 24 of the CCR and conform to CBC, latest Edition.

2. Off-Site Work:
    a. Conform to local governing agency requirements.
    b. Obtain and pay for permits, licenses and fees.
    c. Arrange for tests and inspections.

D. Tests and Inspections: See Section 01 45 00, Quality Control and Testing Services.

E. Allowable Tolerances for Concrete Surface Smoothness: 1/8" maximum permissible variation from a true plane measured from a 10' straight edge placed anywhere on the surface.

F. Source Quality Control:
1. Testing Laboratory shall provide continuous inspection at concrete batch plant for structural concrete, defined as follows: Footings, foundation walls, floor slabs-on-grade, and exterior reinforced slabs.
2. Furnish Weighmaster's Certificates for all concrete.

1.05 SUBMITTALS

A. Concrete Design Mix: Reviewed by Testing Laboratory.
1. Per ACI 318, Section 5.2 and 5.3.

B. Test Reports: Source and Field Quality Control tests.

C. Certificates:
1. Weighmaster's Certificates: Per DSA requirements.
2. Certificate for Off-Site Work: Provide for off-site work, per Section 01 77 00, Project Closeout.

D. Provide product data for specified products, under provisions of Section 01 33 00.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Storage:
1. Cement: Store in weather-tight enclosures and protect against dampness, contamination and warehouse set.
2. Aggregates:
    a. Stockpile to prevent excessive segregation or contamination with other materials or other sizes of aggregates.
    b. Use only one supply source for each aggregate stockpile.
3. Admixtures:
    a. Store to prevent contamination, evaporation or damage.
    b. Protect liquid admixtures from freezing or harmful temperature ranges.
    c. Agitate emulsions prior to use.

B. Deliver Ready-Mixed Concrete in conformance with Title 24, Section 1905A.8 (which refers to ACI 318 Section 5.8).

C. Formwork Materials:
   1. On delivery to Site, place materials in area protected from weather.
   2. Store materials above ground on framework or blocking and cover with protective waterproof covering providing for adequate air circulation or ventilation.
   3. Handle materials to prevent damage.

1.07 JOB CONDITIONS

A. Environmental Requirements:
   1. Allowable Concrete Temperatures:
      a. Cold Weather: When depositing concrete in freezing or near-freezing weather, concrete mix temperature shall be between 50°F and 90°F when cement is added. Maintain a concrete temperature of 50°F minimum for 72 hours after placing, or until concrete has thoroughly hardened. When necessary, heat concrete materials before mixing. Take necessary precautions to protect transit-mix concrete.
      b. Hot Weather: 90°F maximum.

B. Protection:
   1. Do not place concrete during rain, sleet, or snow unless protection is provided.
   2. After placement, protect from injury by elements, traffic, construction operations and other causes.

C. Sequencing, Scheduling: Coordinate work with earthwork, trenching for foundations, underground utilities, plumbing, electrical, mechanical, imbedded items, steel reinforcement and related work of other sections.

PART 2 - PRODUCTS

2.01 MATERIALS; GENERAL

Conform to Codes and additional requirements stated herein.

2.02 BASIC CONCRETE MATERIALS

A. Portland Cement:
   1. Type II; per Title 24, Section 1903A.5 and modified ACI 318 Section 3.3.2.
   2. Use tested cement only per Section 1903A. Use same cement brand for all exposed work.
   3. Recycled content shall be maximum 15% (15% flyash per DSA IR 19-3 and 10% reclaimed aggregate per DSA IR 19-4).

B. Water: Clean, fresh, free of injurious amounts of minerals, organic, substances, salts, acids or alkali.

C. Aggregates:
   1. General: Per Title 24, Section 1903A.
   2. Aggregates: Per CBC Section 1903A.3.3.
      a. Fine: Sand; well graded from coarse to fine.
         1) 15% Flyash: Per CBC Section 1903A.4, ACI 318-05, ASTM C618-12a, ASTM C311/C311M-13 and ASTM C94/C94M-13a.
      b. Coarse: Uniformly graded from 1/4" to maximum permissible size. Maximum size per Title 24, Section 1903A.3, but not to exceed 1-1/4". See Structural Drawings.
      c. Combined grading shall meet Table 19A-J, Title 24, Part 2.
   3. The nominal maximum size of coarse aggregate shall not be larger than one-fifth the narrowest dimension between sides of forms, nor one-third the depth of slabs, nor three-fourths the minimum clear spacing between individual reinforcing bars or wires, bundles of bards, or Pre-stressing tendons or ducts.

2.03 ADMIXTURES
A. Inclusion of admixtures in concrete mix is at Contractor's Option and expense. Types shall conform to the following:
   1. Conform to Title 24, Section 1903A.5. Admixtures shall increase workability and reduce water demand.
   2. Acceptable Products:
      a. Floor slabs-on-grade: Red Label or Anti-Hydro International Inc. or approved equivalent. Mix per manufacturer's recommendations.

2.04 CONCRETE SURFACE TREATMENTS
A. Liquid Curing Compounds:
   1. General: Conform to ASTM C309-11.
   2. Acceptable Manufacturers: Hunt Process Co., Edoco/Burke Construction Chemicals, Scofield, Sonneborn (Degussa Construction Chemicals); US Spec (US Mix Products Co.).
   3. "Clear", Oxidizing Type (For exterior areas): Hunt "Clear #ARB" as a standard of quality.

B. Liquid Curing Compound (for interior slabs):
   1. General: Penetrating curing compound.
   2. Acceptable manufacturers: Curranseal, Innerseal.
   3. Acceptable Products:
      a. Curranseal PM 3300 (714) 641-1121.
      b. Innerseal DPS; 800-999-9385.
      c. No other substitutions allowed.
   4. Apply penetrating sealer within 24 hours of slab placement while concrete is still "green."

5. Application of compound shall be by a trained applicator acceptable to the compound manufacturer.
6. Provide manufacturer's standard 10 year warranty covering both labor and materials necessary to repair floor slab, repair or replace floor finish if repairs cannot be made.
7. Repair all cracks in interior slabs with "crack chaser" saw, fill crack with sealant. This requirement shall be provided prior to application of finish floor materials and is required to validate manufacturer's 10 year warranty.

2.05 WOOD FORMWORK

A. Grade Marks and Rules for Lumber and Plywood: Per Specifications Sections 03 11 00 - Concrete Formwork and 06 10 00 - Rough Carpentry.

B. Boards For Unexposed Concrete and Basic Forms: Douglas Fir, S4S; Standard Grade or better.

C. Form Coatings and Release Agents:
1. Per manufacturer's recommendations, suitable for type of form materials and finished concrete surface.
2. Materials shall not stain or change color of exposed concrete.
3. Materials shall be compatible with finishes to concrete.

2.06 ACCESSORIES AND MISCELLANEOUS

A. Non-Shrink Grout (Drypack Under Base Plates): Five Star high early strength grout by U.S. Grout Corporation. The grout shall be mixed and installed in accordance with manufacturer's recommendations. Tensile strength (ASTM C307-03(2012)): 2000 psi; Flexural strength (ASTM C580-02(2012)): 4000 psi.

B. Epoxy Adhesive: Simpson Epoxy-Tie ET-High Strength Adhesive or Hilti Equal. Two component solid epoxy system meeting minimum requirements of ASTM C881/C881M-10 specification for Type I, II, IV, and V, Grade 3, Class B and C.
1. Compressive Yield Strength: 13,390 psi minimum at 7 days per ASTM D695-10.
2. Heat Deflector Temperature: 168° (76°C) minimum per ASTM D648-07.
3. Bond Strength: 4,420 psi at 14 days per ASTM C882/C882M-13.
4. Codes: ESR-3372; SBCCI-94145; City of Los Angeles RR25185, RR25120.

C. Concrete Stair Nosing: Refer to Section 05 50 00 - Metal Fabrications.

D. Vapor Barrier Membrane under interior concrete slabs:
1. Membrane shall be Stego Wrap 15 mil as manufactured by Stego Industries (949) 257-4100.
   a. Acceptable Manufacturer: Vaporguard by Reef Industries.
2. Vapor barrier membrane shall have the following properties.

a. Permeance as tested after mandatory conditioning (ASTM E154/E154M-08a (2013)e1, Section 8, 11, 12, 13) less than 0.01 Perms.
b. Strength: ASTM E1745 Class A.
c. Thickness: 15 mils minimum.
d. Installation shall be in accordance with ASTM E1643-11 and manufacturer's instructions.

2.07 MIXES, CONCRETE

A. Mix Proportioning:
1. General:
a. Non-designed Mix, per Title 24, Section 1905A.8 which refers to ACI 318 Section 2.
b. Design shall include admixtures and/or additives. Use as approved by DSA.
c. Do not add salt, chemicals, or other materials to prevent freezing.
2. Strengths, Proportions and Criteria: Typical for all locations; except where higher strengths are indicated on the Drawings.
a. Strength: 3,000 psi at 28 days; 1,800 psi at 7 days.
b. Cement Content: Minimum 6 sacks (94#) cubic yard.
c. Slump: Maximum four inches.

B. Mixing:
1. General: Per Title 24, Section 1905A.8 which refers to ACI 318 Section 5.8 and Section 5.2.
2. Batch Mixed: Use ASTM C94 batch mixer; or capacity to handle one or more full sack batches. No split-sack batches.
3. Transit Mixed: Per CBC latest edition Section 1905A.9 which refers to ACI 318 section 5.9.
4. Mix concrete only in quantities necessary for immediate use.
5. Do not retemper concrete.
6. Discharge wash water from mixer before reloading.
7. Include additives and admixtures.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine excavations for foundations, footings, and structures and examine earthwork operations and subgrade for defects that will adversely affect the execution and quality of work.

B. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause hardship in placing concrete.

C. Do not start work until unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Layout: Accurately layout work to properly position elements to lines and levels.

B. Joining To Previous Pours or Existing Work: Sandblast, roughen and clean existing joining concrete and rebar surfaces to provide a proper bond to new work.

C. At locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with epoxy cement.

D. Slabs-on-Grade:
   1. Refer to Section 31 00 00, Earthwork.
   2. Moisten surface sufficiently to prevent suction of water from concrete mix, except where a membrane is used.
   3. All interior slabs-on grade shall be poured over 6 mil visqueen vapor barrier membrane protected with 1" of sand overlay over crushed rock porous fill. Vapor barrier shall conform to ASTM E1745-09.

3.03 FORMWORK ERECTION

A. Scope:
   1. General: Concrete shall be cast in forms.
   2. Footings: When specifically approved by Architect/Engineer and DSA, earth banks may be used as forms in lieu of wood forms.

B. Form Face Types: Plywood or horizontal boards.

C. General Construction:
   1. Forms shall be substantial, unyielding, true to line and level; sufficiently tight to prevent leakage; adequately tied and braced; and conform exactly to dimensions of finish concrete.
   2. Forms shall provide adequate work clearances, temporary access openings necessary for concrete placement, provisions for attachment to previous work; and provide for stripping without injury to concrete work.
   3. Cleanouts: Provide continuous cleanouts on one side at bottom of vertical work (such as walls), and other openings as necessary to facilitate cleaning and inspection of the work.

D. Fabrication:
   1. Nail form faces securely to studs. Space studs to adequately support form faces and prevent bulging. Provide stud or solid backing at joints.
   2. Install chamfer strips at exposed corners and edges.
   3. Securely fasten chamfers, control joints and other detail work.

E. Erection:
   1. Erect formwork plumb and level; double walls; adequately brace, shore and support; set so finished concrete surfaces will drain.
   2. Footings and Foundation Walls: Form both sides; secure to stakes.

F. Form Coatings and Release Agents: Apply per manufacturer's recommendations to evenly coat contact surfaces.

3.04 EMBEDDED ITEMS

A. General:
   1. Install per Title 24, Section 1906A.
   2. Place accurately; anchor securely to prevent displacement.
   3. No wood to be permanently embedded in concrete, except where indicated.
   4. Coordinate, notify, and provide access for other Specifications Sections to set their required work.
   5. Install doweling with epoxy adhesive per manufacturer's recommendations.
   6. Install safety treads and nosing specified in Section 05 50 00 - Metal Fabrications, embedded in wet concrete mix per the manufacturer's recommendations in the exterior, cast-in-place concrete steps as located on the Drawings.

3.05 CONCRETE PLACEMENT

A. General: Comply with Title 24, Section 1905A.10 which refers to ACI 318, Section 5.10.

B. Notify Architect and the Inspector of Record minimum 48 hours prior to commencement of all concreting operations.

C. Preparation and Inspection Prior to Concrete Placement:
   1. Do not place concrete until:
      a. Footing excavations are clean and dry.
      b. Steel reinforcement is correctly positioned, securely anchored and cleaned.
      c. Forms are cleaned, coated, and ties are tightened.
      d. Embedded items are positioned and anchored.
      e. Construction joints are cleaned and prepared.
      f. Subgrade is prepared and moistened.
      g. Preparations for a pour are completed.
      h. Work has been inspected.
   2. Inspection: Formwork, steel reinforcement, footing excavations and preparation work, as stated above, to be examined by the IOR and/or Architect/Engineer, prior to pouring concrete.

D. Placement (per CBC Section 1905A.10):
   1. Convey concrete from mixer to final position by method which will prevent separation or loss of material and cause minimum handling.
   2. Place concrete continuously between predetermined construction and control joints.
   3. Regulate rate of placement so concrete remains plastic and flows into position.
   4. Do not use partially hardened or contaminated concrete; and do not use concrete which has been remised after initial set.

E. Consolidation:
   1. Use hand rodding, spading and tamping.
   2. Vertically insert and remove hand-held tools.
   3. Work concrete thoroughly around reinforcement, embedded items and into all parts of forms.
   4. Consolidate to a dense, uniform mass without voids, rock pockets, or entrapped air. Consolidate each layer.
   5. Mechanically powered vibrators may be used. Such use shall be limited to vertical consolidation of concrete over 8" thick and all walls. Do not use to move concrete laterally or in any other means that may cause aggregate separation.

F. Slabs, Walks and Flatwork:
   1. Lift reinforcement at placement progresses to proper position in slab.
   2. Tamp and screed to required lines and levels.
   3. Depress coarse aggregate with grille-blade tamper.

3.06 FINISHING

A. Provide concrete formed surfaces to be left exposed with smooth rubbed finish.

B. Interior Flatwork (Floor slabs):
   1. Smooth trowel finish surface texture unless otherwise indicated to receive ceramic tile, terrazzo, a concrete topping, or other surfacing which would benefit from the additional bonding of a comparatively rough surface.
   2. Grind smooth any irregularities or improper levels in finished work.

3.07 FINISHING WALLS AND VERTICAL CONCRETE SURFACES

A. Scope: Finish walls and vertical concrete surfaces as specified herein, except for school name and office signs. Provide concrete formed surfaces, to be left exposed, with smooth rubbed (sacked) finish.

B. Exposed Concrete At Tops of Forms:
   1. Strike concrete smooth and level.
   2. Float and/or trowel to texture comparable to formed surfaces.

C. Preparation, Formed Surfaces:
   1. Remove fins and irregularities while concrete is green.
   2. Tie Holes: Fill full and flush with compacted drypack.
   3. Surface Defects:
      a. Cut out blemished and defective areas as directed by Architect.
      b. Patch flush with drypack, typically, or as directed by Architect.

D. Cleaning:
   1. Exposed Surfaces:
      a. Remove form coatings, bond breakers and other surface coatings.
      b. Scrub formed surfaces with solution of 1-1/2 lbs. caustic soda to one-gallon water.
      c. Scrub smooth wood or waste mold areas with 20% muriatic or hydrochloric acid solution.
      d. Wash surfaces clean with clear water, immediately after scrubbing.
      e. If above methods fail to remove all substances, lightly sandblast surfaces clean as directed by Architect.
   2. Surfaces With Finish Materials Applied Directly to Concrete: Clean as stated for Exposed Surfaces, except where uncleaned surface will not affect application, bond, performance, or appearance of finish materials.

E. Sacked Finish on Exposed Concrete:
   1. General: Schedule work to complete entire panel, element, or area in one continuous operation.
   2. Application:
      a. Wet surface to control suction of water from grout.
      b. Apply grout mix; uniformly spread and scour to fill depressions.
      c. While still plastic, sponge rubber float finish surface, and remove excess grout.
   3. Sacking: Allow surface to dry, but not completely harden. Then rub vigorously with clean dry burlap to remove loose excess material. Finished surface to have a smooth slick burnished finish (similar to a steel trowel finish) which is free of defects and blemishes.

3.08 PROTECTION AND CURING OF CONCRETE

A. Protection: Protect work from damage and defacement during construction operations.

B. Curing:
   1. Keep concrete surfaces wet until curing medium is applied.
   2. Flatwork:
      a. Spray apply specified liquid curing compounds to exterior flatwork (slabs, walks, and similar work).

b. Application: Apply uniform, continuous, tightly adhered film, free from pinholes or defects at rate of 1 gallon per 250 sq. ft. Brush out puddles and runs.

3. The length of time, temperature and moisture conditions for curing concrete shall be in accordance with Section 1905A.11 which refers to ACI 318 Section 5.11.

3.09 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 45 00, Quality Control and Testing Services.

B. Inspections:
1. Steel reinforcement.
2. Structural concrete.

C. Tests:
1. Concrete slump.
2. Making concrete compression test cylinders.
3. Core tests of defective work.

3.10 ADJUSTMENT AND CLEANING

A. Correction of Defective Work:
1. Work not conforming to Contract requirements shall be removed and replaced except where patching or other remedial work is specifically permitted by Architect. Contractor shall bear costs of correction of defective work.
a. Surface patching materials and methods shall be as approved by Architect.
b. Structural concrete replacement, strengthening, and repair methods and materials shall be as approved by Architect/Engineer and DSA.

B. Clean exposed joint surfaces to receive joint sealant per Section 07 92 00.

C. Clean exposed surfaces prior to acceptance.

3.11 CONSTRUCTION JOINTS

A. Comply with Section 1906A.4, CBC, latest edition.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated ferrous metal items, galvanized and prime painted.

B. Metal fabrications in this work may include, but are not necessarily limited to:
   1. Steel pipe railing.
   2. All other metal fabrication items not specifically described in other Section of these Specifications.

1.02 RELATED WORK

A. Requirements in Addenda, Alternates, Conditions and Division 1, collectively apply to this work.

B. Section 03 30 00 - Cast-in-Place Concrete (Placement of sleeves in concrete).

1.03 REFERENCES AND STANDARDS

A. References:
   1. Code References and Requirements: Title 24 of the California Code of Regulations (CCR), CBSC current Edition.
   2. "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" of the American Institute of Steel Construction.
   3. Specifications for the Design of Cold-Formed Steel Structural Members of the American Iron and Steel Institute.
   4. Recommended Practices for Resistance Welding of the American Welding Society.

B. Industry Standards:
   1. ASTM A36/A36M-12 - Structural Steel.
   2. ASTM A53/A53M-12 - Hot-dipped, Zinc-coated Welded and Seamless Steel Pipe.
   3. ASTM A307-12 - Low-Carbon Steel Externally and Internally Threaded Fasteners.
   4. ASTM A325-10e1 - High Strength Bolts for Structural Steel Joints.
   5. ASTM A123/A123M-13 - Zing-Coating (Hot-dip) on Assembled Steel Products.
   6. ASTM A500/A500M-13 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing.
   7. ASTM A501-07 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
   8. AWS D1.1 - Structural Welded Code.
   9. FS TT-P-31 - Paint, Oil, Iron Oxide, Ready Mix, Red and Brown.
   10. FS TT-P-541 - Primer Coating, Zinc Dust Zinc Oxide (for galvanized surfaces).
   11. FS TT-P-645 - Primer, Paint, Zinc Chromate, Alkyd Type.

1.04 QUALIFICATIONS OF WELDERS

All welding shall be performed by certified welders, using shielded arc process.

1.05 SUBMITTALS

A. Provide required submittals prior to installation in accordance with Section 01 33 00 - Submittals.
   1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, type of fasteners and accessories.
   2. Include erection drawings, elevations and details.

B. Submit five copies of Shop Drawings, prepared under the direction of a licensed Structural Engineer, to the Architect for approval. Indicate all locations, markings, quantities, materials, sizes and shapes and all methods of connecting, anchoring, fastening, bracing and attaching to the work of other trades. Indicate welded connections using standard AWS A2-0 welding symbols. Indicate net weld length.

PART 2 - PRODUCTS

2.01 FERROUS METALS

A. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
   1. Steel Plates, Shapes and Bars: ASTM A36/A36M-12.
   2. Steel Bar Grating: ASTM A569/A569M-98 or ASTM A36/A36M-12.
   3. Steel Tubing: Cold Formed, ASTM A500/A500M-13, Grade B.
   4. Structural Steel Sheet: Hot-rolled, ASTM A570/A570M-98; or cold-rolled ASTM A611, Class 1; of grade required for design loading.
   5. Galvanized Structural Steel Sheet: ASTM A446-76(1981)e1 of grade required for design loading. Coating designation as indicated or if not indicated, G90-10.
   6. Steel Pipe: ASTM A53/A53M-12: Type and grade (if applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
   7. Gray Iron Casting: ASTM A48/A48M-03 (2012), Class 61.
   8. Malleable Iron Casting: ASTM A47/A47M-99(2009), grade as selected by fabricator.
   9. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

10. Concrete Inserts: Threaded or wedge type; galvanized ferrous casting either malleable iron, ASTM A47/A47M-99(2009), or cast steel, ASTM A27/A27M-13. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A53/A153M-12.
11. Surface Preparation:
    a. Prepare ferrous metal surfaces to comply with minimum requirements indicated below for Steel Structures Painting Council (SSPC) surface preparation specifications and environmental exposure conditions of installed metal fabrications:
        1) Exteriors (SSPC Zone 1B): SSPC-SP6 "Commercial Blast cleaning.
        2) Interiors (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning".

B. Pipe: ASTM A53/A53M-12 Grade B Schedule 40, galvanized for exterior applications.

C. Bolts, Nuts, and Washers: ASTM A325-10e1, galvanized to ASTM A153/A153M-09 for galvanized components.

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

E. Fittings, Elbows, T-shapes, wall brackets, escutcheons, cast steel.

F. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

G. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.

H. Touch-Up Primer for Galvanized Surfaces: Zinc rich type.

I. Stainless Steel: ASTM A167-99 (2009), Type 304, commercial grade.

2.02 FASTENERS

A. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.

B. Bolts and Nuts: Regular hexagon head type, ASTM A307-12, Grade A.

C. Machine Screws: Cadmium plated steel, FS FF-S-92.

D. Plain Washers: Round, carbon steel, FS FF-W-92.

E. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.

F. Lock Washers: Helical spring-type carbon steel, FS FF-W-84.

2.03 FINISHES

A. Clean surfaces of rust, scale, grease and foreign matter prior to finishing.

B. Paint:
   1. Shop Primer for Ferrous Metal: Manufacturer's or fabricator's standard, fast-curing, lead-free, universal primer; selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated and for capacity to provide a sound foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS-P-645. Shop prime all steel except galvanized steel and steel to be encased in concrete or masonry. Before prime painting, thoroughly clean all steel including that to be encased in concrete. Preparation shall conform to SSPC-SP6.
   2. Galvanizing Repair Paint: High zinc dust content paint for re-galvanizing welds in galvanized steel, complying with the Military Specifications MIL-P-21035 (Ships) or SSPC-Paint-20.
   3. Galvanized items shall receive minimum 2.0 oz./sq.ft. coating in accordance with ASTM A123/A123M-13.

C. Stainless Steel: ASTM A167-99 (2009) Type 304, No. 4 Satin finish, commercial grade.

2.04 FABRICATION, GENERAL

A. Workmanship:
   1. Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on Shop Drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.
   2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
   3. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
   4. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated, or if not indicated, Phillips flat-head (counter-sunk) screws or bolts.
   5. Provide for anchorage of type shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
   6. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

B. Galvanizing:
   1. Provide a zinc coating for those items shown or specified to be galvanized, as follows:
      a. ASTM A153/A153M-09: For galvanizing iron and steel hardware.
      b. ASTM A123/A123M-13: For galvanizing rolled, pressed and forged steel shapes, plates, bars, and strip 1/8" thick and heavier.
   2. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

C. Steel Pipe Railings: ASTM A53/A53M-12, Type E (electric-resistance welded) or Type S (seamless), Grade B, Schedule 40. Fabricate to dimensions indicated on Drawings, Field Verify. Cope vertical railings intersecting horizontal members. Provide radius bends at changes in direction. Finish: Prime painted at interior applications and galvanized at exterior applications, ready to paint.
   1. Set-in sleeves and secure railings to other construction, as indicated on Drawings.
   2. Handrails and Top Rails: Design point load 200 lbs., downward or horizontal and uniform load of 50 lb. /lin/ ft. applied simultaneously in both vertical and horizontal directions. Concentrated and uniform loads need not be assumed to act concurrently.
   3. Intermediate Rails: Uniform load of 25 lbs./sq.ft. of gross area of railing system, including open area.
   4. Handrail Brackets: Cast iron with 1-1/2" clear, from face of wall. Finish as indicated below.
      a. Interior: Prime paint finish, as indicated in Section 09900 - Painting.
      b. Exterior: Galvanized steel ready to paint.
   5. Handrails for stairs and ramps shall be 1-1/4" to 1-1/2" (1-1/2" nominal) diameter.
   6. All welded joints and surfaces shall be ground smooth, no sharp or abrasive corner edges or surfaces. Wall surface adjacent to handrail shall be smooth.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, do not delay job progress, allow for

trimming and fitting where taking field measurements before fabrication might delay work.

C. Coordinate and furnish anchorage, setting drawings, diagrams, templates, instructions, and directions for installation of anchorage such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.03 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete inserts, through-bolts and other connections as required.

B. Cutting, Fitting and Placement:
   1. Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete masonry or similar construction.
   2. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shopping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and we are intended for bolted or screwed field connections.

C. Field Welding:
   Comply with AWS D1.1 Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made and methods used in correcting welding work.

D. Install items plumb and level, accurately fitted, free from distortion or defects.
   1. Coordinate installation schedule with the schedule of other trades to ensure orderly and timely progress of the Work.
   2. Erect and install all metal fabrications in strict accordance with the Drawings, the approved Shop Drawings and the referenced standards, aligning straight, plumb and level with a tolerance of 1 in 200.

E. Handrails and Railings: Furnish anchors required for connecting railings to Structure. Anchor railing to structure.

F. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

G. Obtain Architect approval prior to site cutting or making adjustments not scheduled.

H. After the erection and installation is complete, touch up all shop priming coats damaged during transportation and erection and grind and prime coat all field weld, using priming paint specified for the shop priming.

I. Touch up all galvanized areas damaged by welding or during erection with specified galvanizing repair paint. At galvanized handrails touch up welds with 50/50 bar (50% zinc/50%lead).

J. Weld joints in stainless steel, work tight, without open seams.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes exterior Portland cement concrete paving for the following: Walkways

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Section 03 21 00 - Steel Reinforcement.
   2. Section 03 30 00 - Cast-in-Place Concrete.

1.03 PROJECT CONDITIONS

Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.01 FORMS

A. Form Materials: Plywood, metal, metal framed plywood, or other acceptable panel type materials to provide full depth, continuous, straight, smooth exposed surfaces.

B. Form Release Agent: Provide commercial formulation form release agent with a maximum of 350 g/L volatile organic compounds (VOC) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.02 REINFORCING MATERIALS

A. Reinforcing Bars and Tie Bars: ASTM A615/A615M-13, Grade 60, deformed.

B. Plain, Cold-Drawn Steel Wire: ASTM A82-02.

C. Welded Steel Wire Fabric: ASTM A185-02. Furnish in flat sheets, not rolls, unless otherwise acceptable to Architect.

D. Fabricated Bar Mats: Welded or clip-assembled steel bar mats, ASTM A184/A184M-05. Use ASTM A615/A615M-13, Grade 60 steel bars, unless otherwise indicated.

E. Joint Dowel Bars: Plain steel bars, ASTM A615/A615M-13, Grade 60. Cut bars true to length with ends square and free of burrs.

2.03 CONCRETE MATERIALS

A. Portland Cement: ASTM C150/C150M-12, Type I. Use one brand of cement throughout Project unless otherwise acceptable to Architect.

B. Fly Ash: ASTM C618-12a, Type F.

C. Normal Weight Aggregates: ASTM C33/C33M-13, Class 4, and as follows. Provide aggregates from a single source.
   1. Maxim Aggregate Size: 3/4 inches.
   2. Do not use fine or coarse aggregates that contain substances that cause spalling.
   3. Local aggregate not complying with ASTM C33/C33M-13 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Architect.

D. Water: Potable.

2.04 ADMIXTURES

A. Provide concrete admixtures that contain not more than 0.1% chloride ions and are certified to be compatible with each other.

B. Air-Entraining Admixture: ASTM C260/C260M-10a.

C. Water-Reducing Admixture: ASTM C494/C494M-13, Type A.

D. High-Range Water-Reducing Admixture: ASTM C494/C494M-13, Type F or Type G.

2.05 CURING MATERIALS

A. Clear Waterborne Membrane-Forming Curing Comb: ASTM C309-11, Type I, Class B. Provide material that has a maximum VOC rating meeting California Air Resource Board requirements.

2.06 CONCRETE MIX

A. Prepare design mixes for each type and strength.

B. Proportion mixes conforming to CALTRANS Class B minimum to provide normal-weight concrete with the following properties:
   1. Compressive Strength (28-Day): 2500 psi.
   2. Maximum Water-Cement Ratio at Point of Placement: 0.45.

3. Slump Limit at Point of Placement: 3".
   a. Slump limit for concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8" after adding admixture to site-verified 2" slump concrete.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows with a tolerance of +/- 1-1/2%

D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.

2.07 CONCRETE MIXING

A. Ready-Mixed Concrete: Comply with requirements and with ASTM C94/C49M-13.

B. When air temperature is between 85°F (30°C) and 90°F (32°C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90°F (32°C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.01 SUBSURFACE PREPARATION

A. Proof-roll prepared sub base surface to check for unstable areas and verify need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

B. Remove loose material from compacted sub base surface immediately before placing base aggregate and concrete.

C. Provide 2" crush aggregate base under all exterior 4" concrete site walk and hardcourt paving with crushed rock aggregate base under other paving as depicted on the Portland Cement Pavement Sections table.

PORTLAND CEMENT CONCRETE PAVEMENT SECTIONS

R - Value Subgrade Soils - 7 (tested) Design Method - CALTRANS 1995

Traffic Index (Assumed)	Pavement Use	Rigid Pavements	
		Portland Cement Concrete (Inches)	Aggregate Base Thickness (Inches)
4.5	Auto Parking Areas	4.5	4.0 Crusher Rock
5.0	Light Traffic	6.0	4.0 Crusher Rock
5.5	Truck Traffic	6.5	4.0 Crusher Rock
5.5	Fire Lane	6.5	4.0 Crusher Rock
7.0	Bus Lane	8.0	4.0 Crusher Rock
N/A	Site Walks and Hardcourt Areas	4.0	2.0 Crushed Rock

Notes:

1. Aggregate base should be CalTrans Class 2 (3/4-in. maximum) and compacted to a minimum of 95% of ASTM D1557-12 maximum dry density near its optimum moisture.
2. All pavements should be placed on 12 inches of moisture-conditioned subgrade, compacted to a minimum of 90% for flexible and 95% for rigid pavements of ASTM D1557-12 maximum dry density near its optimum moisture.
3. Portland cement concrete should have a minimum of 3250 psi compressive strength at 28 days.
4. Equivalent Standard Specifications for Public Works Construction (Green book) may be used instead of CalTrans specifications for asphaltic concrete and aggregate base.

3.02 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for paving to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

B. Check completed formwork and screeds for grade and alignment to following tolerances:
   1. Top of Forms: Not more than 1/8" in 10'
   2. Vertical Face on Longitudinal Axis: Not more than 1/4" in 10'

C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

3.03 PLACING REINFORCEMENT

A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.04 JOINTS

A. General: Construct contraction, construction, expansion, and isolation joints true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to the centerline, unless indicated otherwise.

1. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.

B. Contraction Joints: Provide weakened-plane contraction joints, sectioning concrete into areas as shown on Drawings. Construct contraction joints for a depth equal to at least 1/4 of the concrete thickness, as follows:
   1. Tooled Joints: Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool.
   2. Inserts: Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strips into fresh concrete until top surface of strip is flush with paving surface. Radius each joint edge with a jointer tool. Carefully remove strips or caps of two-piece assemblies after concrete has hardened. Clean groove of loose debris.
   3. Spacing: Contraction joints shall not exceed 10' O.C. but shall be spaces no further than the width of the paved surface. Example: a 5' wide walk has contraction joints 5' O.C. maximum.

C. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than 1/2 hour, unless paving terminates at isolation joints.
   1. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
   2. Provide tie bars at sides of paving strips where indicated.
   3. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.

D. Expansion and Isolation Joints: Form isolation joints of preformed joint filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
   1. Locate expansion joints at intervals not exceeding 36 times the paving thickness. Example: A 4" thick paving thickness would have expansion joints spaced at 12'-0" maximum. Greater thickness of paving would not exceed 20'-0" maximum.
   2. Extend joint fillers full width and depth of joint, not less than 1/2" or more than 1" below finished surface where joint sealant is indicated.
   3. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
   4. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

E. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat 1/2 of dowel length to prevent concrete bonding to one side of joint.

3.05 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from sub base surface and reinforcing before placing concrete. Do not place concrete on surfaces that are frozen.

C. Moisten sub base to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.

D. Comply with requirements and with ACI 304R for measuring, mixing, transporting, and placing concrete.

E. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
   1. When concrete placing is interrupted for more than 1/2 hour, place a construction joint.

F. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

G. Consolidate concrete by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. Use equipment and procedures to consolidate concrete complying with ACI 309R.
   1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcing, dowels, and joint devices.
   2. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.

3.06 CONCRETE FINISHING

A. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/4" in 10' as determined by a 10' straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.

1. Portland cement concrete paving shall have a medium broom finish on all surfaces less than 6% and a heavy broom finish on all surfaces greater than 6%.
2. Striating of surfaces shall be perpendicular to line of traffic.

B. Final Tooling: Tool edges of paving, gutters, curbs, and joints formed in fresh concrete with a jointing tool to the following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces. Radius: 3/8".

C. Exterior Flatwork (Slabs, Walks, and Similar Work):
1. General:
   a. In indicated areas, finish concrete as specified herein.
   b. Work to match approved samples.
   c. Contractor to limit pour areas and provide sufficient ratio of finishers to product specified finishes.
2. "Sweated" Finish:
   a. Two steel trowellings, while concrete is still "green."
   b. Non-slip "sweated" finish with regular light trowel marks in an approximately 2' circular arc pattern.
3. Medium Broom Finish: Broom while concrete is still "green" perpendicular to direction of travel. Provide heavy broom finish at slopes at 6% or greater.
4. Tooling: Radius tool exposed edges, edges adjacent to permanent wood headers and edges at each side of metal joint screeds.
5. Sawcut control joint at an optimum time after finishing. Use 3/16" thick blade, cutting 1/3 into depth of slab thickness.
6. Separate exterior slab on fill from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/2" of finished slab surface.
7. In general, if not indicated otherwise, all exterior slabs along the accessible path-of-travel will have a finished slope away from the building or towards street or parking at 1/4" per foot maximum, perpendicular to the path-of-travel, and 5% maximum to the path-of-travel.

3.07 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of ACI 306R for cold weather protection and ACI 305R for hot weather protection during curing.

B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:
   1. Moisture Curing: Keep surfaces continuously moist for not less than 7 days with the following materials:
      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with a 12" lap over adjacent absorptive covers.

E. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12", and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

F. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.08 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective, or does not meet the requirements of this Section.

B. Protect concrete from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than 2 days prior to date scheduled for Substantial Completion inspections.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Principal Work Items Are:
   1. Chain link fence.
   2. Hardware, except padlocks.
   3. Vinyl Privacy Slats

B. Related Work Specified Elsewhere:
   1. Requirements in Addenda, Alternates, Conditions, and Division 1 collectively apply to this Work.
   2. Cast-In-Place Concrete: Section 03 30 00.

1.02 SUBMITTALS

Shop Drawings: Submit for all sliding gates, and all swing gates where leaf width exceeds 9'-0"; reference to the Architect's Drawings; four copies. Refer to 01 33 00 Submittal for procedure.

1.03 DELIVERY, STORAGE AND HANDLING

Deliver materials with manufacturer's tags and labels intact. Handle and store so as to avoid damage.

1.04 JOB CONDITIONS

A. Sequencing, Scheduling: Coordinate with earthwork and paving installers.

B. Where fencing is installed on continuous concrete curbs and/or masonry walls, assist Concrete Section in proper placement of sleeves for fence posts.

PART 2 - PRODUCTS

2.01 MATERIALS

Fence components to be galvanically compatible.

2.02 FABRIC

A. Drawn steel wire, hot-dipped zinc coated after weaving, ASTM A392-11a Class 1, 1.2 ounce per SF of wire surface, per ASTM A90/A90M-13 stripping test; withstand 5 one-minute immersions per Preece test per ASTM A392-11a and A90/A90M-13.

B. Fence and Gate Fabric:
   1. One-piece fabric full-height for fence through 12'-0"; edges knuckle-knuckle selvage for fences 6'-0" high and below; edges shall be knuckle-twist for fences 6'-0" high and above.

2. Mesh Size: 2" typical except fencing within 6' of buildings mesh size to be 1-1/2".
3. Wire Diameter: No. 9 typical.
4. All fabric to be vinyl coated after hot-dipped zinc coating.

2.03 MATERIALS; FRAMEWORK

A. Pipe: ASTM A120, Schedule 40, standard welded steel pipe, commercial hot-dipped zinc coated, 1.8 ounce per SF minimum evenly deposited; reasonably straight, burrs removed, free of defects and roughness.

B. Sizes: For fencing 8' high or less.

ITEM	INCHES	LBS/LF
1. Line Posts:	2.875	5.79
2. Corner, Terminal and Pull Posts:	3.5	7.58
3. Pedestrian Gate Posts:		
a. Leaf 3'-0" through 8'-0" wide:	4.0	9.11
4. Driveway Gate Posts:		
For gate leaf widths as listed:		
a. 8'-1" through 13':	6.625	18.97
b. 13'-1" through 18':	8.625	28.55
5. Top Rails, Brace Rails and Transom Rails:	1.9	2.72
6. Gates: For gate leaf widths as listed.		
a. Frame through 12':	1.90	2.72
b. Frame over 12':	2.375	3.65
c. Bracing:	1.9	2.72

C. All components and framework to be vinyl coated after hot-dipped zinc coating.

2.04 ACCESSORIES

A. Wire: All galvanized.
1. Tension: No. 6 galvanized steel cold drawn; ASTM A82-79.
2. Ties: Soft annealed steel; FS QQ-W-461.
a. No. 9 galvanized to posts.
b. No. 14 galvanized to top rail, and tension wire.
c. Bottom tension wire: Marcelled No. 6 gauge, hog-ringed (not woven) to fabric, wrapped around line posts with spring at 150' centers.

B. Galvanizing; Accessories, Except Wire: ASTM A153/A153M-09.

C. Fittings:
1. Tension Bars: 3/16" x 3/4", mild steel.
2. Steel Bands: 1/8" x 1" typical, 1/8" x 3/4" at gates; milled steel.
3. Post Caps: Cast malleable iron or pressed steel; snug fit to exclude moisture from posts; hole to accommodate top rail.
4. Truss Rods: 3/8" diameter steel; adjustable length.

5. Turnbuckles for Tension Wire: Eye/eye type, drop forged steel, 5/16" minimum screws with 4-1/2" minimum take-up.
6. Bolts: 3/8" diameter minimum; cadmium plated.
7. Couplings for Top Rail: Steel, 6" long; to fit inside rail; with expansion spring where noted.
8. Miscellaneous: All other required fittings.
9. Sleeves For Posts: Steel Pipe; diameters sized to suit posts. 12" deep for fence heights to 8' maximum; greater depths for higher fences.
10. All accessories to be vinyl coated after hot-dipped zinc coating.

2.05 GATE HARDWARE

A. Gates which are placed across a required exit pathway leading to a safe dispersal area or public way shall comply with latest edition of CFC Section 1208 and latest edition of CBC Sections 11B-404 and 1007.3.11.
   1. Hardware for these gates shall be as scheduled on plans and section 08 71 00 Door Hardware for electronic locks.
   2. Padlocks may be utilized to secure gates in the open position, but never used to secure gates in the closed position.
   3. These gates shall latch or lock by panic hardware, only.

B. Galvanizing For Parts: ASTM A153/A153M-09; galvanize after fabrication.

C. Hinges: Malleable iron, double clamping, non-lift-off, offset type for 180° swing.

D. Latches: Malleable iron, forked or plunger-bar type, permit operation from either side of gate, gravity type automatically engaging gate frame; with padlock eye.

E. Keeper: Malleable iron; automatically engage gate when swung open 180° and hold until manually released.

F. Pairs of Gates:
   1. Stops: Flush steel plate, with anchors.
   2. Latch: Center drop rod or plunger bar; with integral padlock eyes.

2.06 VINYL PRIVACY SLATS

A. Winged Slat as manufactured by PrivacyLink, Pexco PDS Fence Products or acceptable equal, with the following characteristics:
   1. Material: ASTM F3000 extruded high density polyethylene with color pigments and ultraviolet inhibitors.
   2. Configuration: Rigid, flat-tubular body with internal supports and flexible, resilient, serrated wings on each side of slat body; slats shall be self-locking.
   3. Slats to be full height of fence except at HVAC enclosures to have 18: clear space at base of fence to provide air circulation.
   4. Color: Match existing or as selected by the Architect from full range of manufacturer's standard colors.

2.07 MISCELLANEOUS

A. Portland Cement Concrete: 1:2-1/2:3-1/2 mix (2000 psi minimum).

B. Non-Shrink Grout: As specified in Section 03 30 00.

C. Paint touch-up for galvanizing work: Galvalloy Metalloy Products Co., Los Angeles, California as a standard of quality.

2.08 FABRICATION - GATES

A. Frame: Weld frames with integral radius corners; horizontal bracing rails for gates exceeding 6' high; vertical bracing rails at 6' o.c. maximum for gates exceeding 9' wide; diagonal cross-bracing truss rods. Galvanize after fabrication.

B. Fabric: Stretch taut; tension bars and bands a 15" o.c. maximum at vertical edges. Wire tie fabric at 12" o.c. maximum top, bottom, and bracing rails. Galvanized after weaving.

C. Hardware: Attach all hardware securely. Unless specified on Drawings, provide 2 hinges per gate leaf typical; 3 hinges per leaf where leaf exceeds 100 SF. Refer to Drawings for Hardware Specification.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify that final grading and paving at fence location is completed without irregularities which would interfere with fence installation.

B. Do not commence work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Layout: Measure and lay out complete fence line.

B. Post Spacing: Locate line posts at equal-distance spacing in a run, but do not exceed 10' on center.

3.03 INSTALLATION - FOOTINGS

A. Sizes:
Post Footing Sizes: As detailed and scheduled on the Drawings.

B. Holes: Drill holes in firm, undisturbed, or compacted soil.

3.04 ERECTION - FRAMEWORK

A. Posts:
1. Typical Installation; Posts Set Into Concrete Footings:
a. General: Set posts into concrete footings plumb, centered, and aligned; 3" concrete cover between post bottom and earth.

b. Concrete: Place in continuous pour in hole; tamp to consolidate; crown concrete to drain water away from posts.

2. Installation Where Indicated; Posts Set Into Sleeves:
   a. Check and verify that sleeves were properly installed by Concrete and Brick Masonry Sections.
   b. Set posts plumb and true to line.
   c. Fill space between post and sleeve solid with non-shrinking grout. Mix and place per manufacturers printed recommendations.
3. Corner Terminal Pull Posts: Install at ends of runs, horizontal direction changes of 15o or more, vertical grade changes of 5o or more, ends of curved fence section; pull post each 500' run of fence.
4. Gate Posts: Install each side of gates.

B. Top Rail: Install continuous at top of all fencing; insert through posts caps; join pipe lengths (20'-0" plus or minus) with couplings, with expansion spring every fifth coupling.

C. Post Bracing Assemblies: Install horizontal brace rail, and diagonal truss rod in each fence panel adjacent to terminal, corner, pull, and gate posts. Brace rail not required for 4' or less height fence.

3.05 ERECTION - FENCE FABRIC

A. Install on outside of posts, next to property line; one continuous piece wherever possible; stretch taut.

B. Fastenings:
   1. At terminal corner pull gates and posts, thread tension bars through mesh; secure to posts with bands at 15" o.c. maximum.
   2. Wire-tie fabric to line posts at 16" o.c.; to top rail, brace rails, and bottom tension wire at 18" o.c.

C. Bottom Tension Wire: Insert through bottom diamond of fabric; install a turnbuckle each 150' of wire; wire tie to posts.

D. Clearances: Set bottom of fence fabric to maintain stated clear distances.
   1. Mow Strip: 1" maximum above surface; trench and shape locally to permit uniform top and bottom alignment of fabric.
   2. Asphalt Concrete Paving: 1" maximum above surface.

3.06 ERECTION - GATES

A. Install gates plumb and level to a tolerance of 1/4" in 10'.

B. Install ground-set items in concrete.

C. Adjust hardware to provide smooth operation. Lubricate where required.

D. Upon final adjustment, weld in place all gate hardware.

3.07 INSTALLATION - MOW STRIPS

Where fence is not over paving, excavate as required and install a minimum 12" wide x 4" deep concrete mow strip under centerline of fence. Widen mow strip to join any paralleling walks or paving which are less than 2'-0" distance from fence line.

3.08 ADJUST AND CLEANING

A. Adjustment: Adjust brace rails and tension rods for rigid installation. Tighten hardware, fasteners, and accessories.

B. Cleaning: Remove excess and waste materials from project site.

END OF SECTION

SANTIAGO CANYON COMMUNITY COLLEGE
EROSION CONTROL PROJECT
LANDSCAPE IRRIGATION SYSTEM - SECTION 32 8000
RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT
03/19/21

PART 1.00 - GENERAL

1.01 SCOPE OF WORK

A. Provide all labor and materials, transportation, and services necessary to furnish and install Irrigation Systems, as shown on the Drawings and described herein.

B. It is the intent of the Drawings and Specifications to provide an irrigation system ready for the Owner's use. Any items not specifically shown in the Drawings or called for in the Specification but normally required to conform to such intent are to be considered as part of the work.

C. Maintain entire irrigation system for a period of ninety (90) days upon completion of all punchlist items.

D. Supply accurate as-builts for the District upon completion of project (See Section 1.04 B).

1.02 RELATED WORK

A. Landscape Planting - Section 32 9000

1.03 QUALITY ASSURANCE AND REQUIREMENTS

A. Permits and Fees: It shall be the responsibility of the Contractor to apply for and arrange for all County, Water District and Utility Services and permits required for the completed College Campus Project. The Contractor is responsible for all costs of temporary services.

B. The Contractor shall posses all insurance, licenses, and permits required to perform the work of this contract, including a C-27 State Contractors License.

C. Backflow testing: Contractor shall posses valid certification and state contractor’s license to test backflow preventer in the County where project resides.

C. Manufacturer’s Directions: Manufacturer’s directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this contract furnish directions covering points not shown in the Drawings and specifications.

D. Ordinances and Regulations: All local, municipal and state laws, and rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these Specifications, and their provisions shall be carried out by the Contractor. Anything contained in these Specifications shall not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when these Specifications and Drawings call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the

above rules and regulations, the provisions of these Specifications and Drawings shall take precedence.

E. Superintendent:

1. A superintendent satisfactory to the Owner's Representative shall be present on the site at all times during progress of the work.

2. The Superintendent shall not be changed except with the consent of the Owner's Representative.

3. The Superintendent shall be authorized to represent the Contractor.

F. Explanation of Drawings:

1. Due to the scale of Drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.

2. The word "District" as used herein shall refer to the Rancho Santiago Community College District's Authorized Representative.

3. All work called for on the Drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the Specifications.

4. The Contractor shall not willfully install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the District and Landscape Architect. Any discrepancies shall be documented in writing. In the event this notification is not performed, the Irrigation Contractor shall assume full responsibility for any revision necessary.

5. Work of this Section, which is allied with the work of other Trades, shall be coordinated as necessary.

G. Applicable Standards: Current published standards, Specifications, tests or recommended methods of trade, industry or governmental organizations apply to work of this Section where cited by abbreviations noted below:

Underwriters Laboratories (UL)
American Society of Testing and Materials (ASTM)
National Sanitation Foundation (NSF)
American National Standard Institute (ANSI)
American Standards Association (ASA)
American Society of Irrigation Consultants (ASIC)
National Electrical Code (NEC)

1.04 SUBMITTALS

A. Material List: (Coordinate and submit simultaneously with Landscape Planting Submittal, Section 32 9000, Part 1.04)

1. The Contractor shall furnish the articles, equipment, materials, or processes specified by name in the Drawings and Specifications. No substitution will be allowed without prior written approval by the District/ Landscape Architect.

2. Complete material(s) list, digital submittal, (PDF form) shall be submitted to the District/ Landscape Architect for their approval prior to performing any work. Material list shall include the manufacturer, model number, and description of all materials and equipment to be used.

Materials and supplier information for Submittal shall reflect project plans. The items listed below are not reflective of this project.
THE FOLLOWING IS A GUIDE ONLY TO PROPER SUBMITTAL FORMAT. THE PRODUCTS LISTED BELOW ARE NOT NECESSARILY THOSE THAT ARE SPECIFIED

Item	Description	Manufacturer	Model
1.	Backflow Preventer	Febco	825Y
2.	Automatic Controller	Rainmaster	Evolution Series
3.	Gate Valve	Nibco	T-113
4.	Etc.	Etc.	Etc.

Irrigation submittal must be specific and complete. All items must be listed and should include solvent/primer, wire, wire connectors, valve boxes, etc.

NOTE: Copies of manufacturer's literature (digital PDF form catalog cuts) are required as part of submittal information for Inspector and School District use.

3. The Contractor may submit substitutions for equipment and materials listed on the Irrigation Drawings by following procedures as outlined in Part 1.05 of these Irrigation Specifications.

4. Equipment or materials installed or furnished without prior approval of the District or Landscape Architect may be rejected. The Contractor may be required to remove such materials, (to be determined by the District or Landscape Architect) from the site at the Contractor's own expense.

5. Approval of any item, alternate or substitute indicates only that the product or products apparently meet the requirements of the Drawings and Specifications on the basis of the information or samples submitted.

6. Manufacturer's warranties shall not relieve the Contractor of their liability under

the guarantee. Such warranties shall only supplement the guarantee.

7. Certification documentation for backflow preventer. Certification copies shall be forwarded to District and Landscape Architect prior to project turnover.

B. Record and As-Built Drawings:

1. The Contractor shall provide and keep up to date a complete “as-built” record set of prints which shall be corrected daily and show every change from the original Drawings and Specifications and the exact “as-built” locations, sizes, and kinds of equipment. Prints for the purpose of "as-builts" may be obtained from the District at cost. This set of Drawings shall be kept on the site and shall be used only as a record set. Current working as-built plans that are kept on site may be hand drawn as described above or digital PDF mark-up.

2. These Drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. These Drawings shall be available at all times for site reviews and shall be kept in a location designated by the District. Should the record print as-built progress sheets not be available for review or not up to date at the time of any site reviews by the District and or Landscape Architect (refer to Section 1.08), it will be assumed no work has been completed. If this occurs, the Contractor will be assessed the cost of that site visit at the current billing rate of the District/ Landscape Architect. No other inspections shall take place prior to payment of that assessment.

3. The Contractor shall make neat and legible notations on the as-built progress sheets daily as the work proceeds, showing the work as actually installed. For example, should a piece of equipment be installed in a location that does not match the plan, the Contractor must indicate that equipment has been relocated in a graphic manner so as to match the original symbols as indicated in the Irrigation legend. The relocated equipment and dimensions will then be transferred to the original as-built plan at the proper time.

4. Before the date of the final site review, the Contractor shall transfer all information from the “as-built” print(s) to a clean print procured from the District. All work shall be done in ink and applied to the paper by a pen made expressly for use on this material. The dimensions shall be made so as to be easily readable even on the final controller chart (See Section 1.04C). As an alternate, the contractor may provide a final as-built plan in PDF form with as-built notations and dimensions made in a red. The original “as-built” plan shall be submitted to the Landscape Architect for approval prior to the making of controller chart. The Contractor shall be responsible for keeping the final “as-built” plan clean, (free of dirt, smudges, extraneous marks, etc. Along with providing the Owner with the hard copy “as-built” plans the Contractor shall also be responsible for scanning full size “as-built(s)” plan(s) to a USB thumb drive. Scan shall be of a quality to produce a readable similar size print. Contractor shall provide two (2) USB thumb drives, one (1) for the Owner and one (1) for the Landscape Architect.

5. The Contractor shall document the location of all existing irrigation, (valves, boxes, all above ground equipment and pipe where visible) and utilities pertinent to the existing or proposed irrigation system on the as-built plans. Existing lateral line and head location does not need to be documented.

6. The Contractor shall dimension from two permanent points of reference, building

corners, sidewalks, or road intersections, etc., the location of the following items:

a. Connection to existing water lines.

b. Connection to existing electrical power/ irrigation controller.

c. Isolation valves.

d. Pressure reducing valve.

e. Master valve.

f. Flow sensor.

g. Quick coupler valves.

h. Remote control valves.

i. Routing and/or directional turns of sprinkler pressure lines (dimension maximum 100-feet along routing).

j. Routing of control wiring.

k. Other related equipment as directed by the Architect.

7. On or before the date of the final site review, the Contractor shall deliver the corrected and completed “as-built” file to the District. Delivery of the files will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the files.

C. Controller Charts:

1. The Landscape Architect shall approve as-built drawings before controller charts are prepared.

2. Provide one (1) controller chart for each controller supplied.

3. The chart shall show the area controlled by the automatic controller and shall be the maximum size, which the controller door will allow.

4. The chart is to be a reduced drawing of the actual as-built system, of a maximum size that will fit inside controller housing, double sided if required for readability. Contractor may propose a different format to the Landscape Architect for the controller chart to enhance readability. This format must be approved by the Landscape Architect.

5. The chart shall be a blackline print and a different color shall be used to indicate the area of coverage for each station, using pastel or transparent colors.

6. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being minimum 20 mils thick.

7. These charts shall be completed and approved by the Landscape Architect prior to final acceptance of the irrigation system.

8. A digital PDF copy of the controller chart shall be provided by the contractor to the District/ Landscape Architect. This final controller chart is to be copied onto the same USB thumb drive that contains the final as-built plan.

D. Operation and Maintenance Manuals:

1. Prepare and deliver to the Architect within 10 calendar days prior to completion of construction, a digital, (PDF form) of the following information:

a. An index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representative.

b. Catalog and part sheets on every material and equipment installed under this contract.

c. Signed Guarantee statement. See Section 1.09.

d. Complete operating and maintenance instruction on all major equipment specified in plans including controllers, booster pump system, etc.

2. In addition to the above-mentioned maintenance manuals, provide the Owner's maintenance personnel with instructions for the operation of all major equipment and show evidence in writing to the District and Landscape Architect at the conclusion of the project that this service has been rendered.

E. Equipment to Be Furnished:

1. Supply as part of this contract the following tools:

a. One (1) quick-coupler key and matching hose swivel and globe valve for every five (5), or fraction thereof, valves installed.

b. Two (2) keys for opening valve boxes.

c. Two (2) keys for each automatic controller/ controller enclosure.

d. One (1) Oakfield Model B soil sampler kit. Available from Oakfield Apparatus, email: sales@oakfieldapparatus.com, www.soilsamplers.com

2. The above-mentioned equipment shall be turned over to the District at the conclusion of the project. Before final acceptance can occur, evidence that the District has received material must be shown to the District and Landscape Architect.

1.05 SUBSTITUTIONS

A. If the Irrigation Contractor chooses to substitute any equipment or materials for those equipment or materials listed on the Irrigation Drawings and Specifications, he may do so by providing the following information to the Architect and Landscape Architect for written approval:

1. Provide a statement indicating the reason for making the substitution. Use a

separate sheet of paper for each item to be substituted.

2. Provide descriptive catalog literature, performance charts and flow charts for each item to be substituted illustrating that alternate item meets or exceeds Specifications of original item.

3. Provide the amount of cost savings if the substituted item is approved.

B. Contractor shall be responsible for the total performance of such substitution to equal or surpass the original in every respect.

C. If the substitution proves to be unsatisfactory in the opinion of the District/ Landscape Architect, Contractor shall remove such work and replace it with originally specified item (including installation) as part of the work of this section.

D. District/ Landscape Architect shall have the sole responsibility for accepting or rejecting any substituted item as an approved equal to equipment and materials listed on the Irrigation Drawings and Specifications.

E. Refer to Substitution Approval Request Form in the Appendix, Exhibit 1, at the end of this specification. Form must be completed by Contractor and accompany all requests for substitutions.

1.06 PRODUCT DELIVERY

A. Delivery: Deliver materials in manufacturer's original unopened containers, with each container identified with manufacturer's name, brand or type. Deliver pipe in a manner that allows sections to lay flat along its full length.

B. Storage:

1. Store materials at a location directed by the Owner's Representative.

2. Store pipe flat along its entire length.

3. Store materials in an orderly manner. Avoid interference with other construction activities.

C. Protection:

1. Protect all materials to prevent intrusion of dirt and moisture.

2. Protect PVC pipe/ other PVC materials from sunlight.

3. Protect the installed work and materials of other trades.

1.07 PROJECT CONDITIONS

A. Contractor(s) shall acquaint themselves with all site conditions and exercise extreme care in excavating and working near existing utilities. Call Underground Service Alert of Southern California (811) www.digalert.org two (2) days prior to any excavation.

B. Should Contractor find any utilities during his inspections or excavations that are not shown on the plans, Contractor shall promptly notify Landscape Architect and

Superintendent in writing for instructions as to further action. Failure to do so will make Contractor liable for any damage thereto arising from his operations subsequent to discovery of such utilities not shown on plans. These utilities shall be noted on the as-built plans.

C. Where existing irrigation to be protected in place exists within the scope of work area, the Contractor shall be responsible for walking the site with the District or their authorized representative to verify the condition, (operational integrity) of the existing irrigation and landscape. The condition of the existing irrigation system to be protected shall be documented and the opinions of its condition shall be agreed upon by the Contractor, the District and the General Contractor. Digital photographs showing conditions of existing above ground irrigation equipment shall be used to supplement the report. The contractor shall be responsible for any irrigation component that is directly dependent upon the portion of the system within the scope of work area.

D. The Contractor shall measure and document the available static and dynamic pressure at the designated point of connection. Exact location of point of measurement shall be documented. Multiple measurements shall be taken and reported. Pressure readings shall be submitted to District and Landscape Architect during the pre-construction meeting. Refer to Section 1.08 A1

1.08 INSPECTIONS

A. All observations herein specified shall be made by the District. The Contractor shall request observations at least 48 hours in advance. Failure to notify the Landscape Architect will make Contractor responsible for any deficiencies that might arise. Coordinate trips with Landscape Planting - Section 32 9000. Site visits will be required (at a minimum) on the following parts of the work:

1. Pre-construction Conference, verification of available pressure to irrigation system at point of connection. It will be the responsibility of the contractor to coordinate applicable representative attendance.

2. Pressure supply line routing, installation and testing. Planter dimension verification, and irrigation head layout.

3. Irrigation Coverage Test and/or plant material location as required.

4. Point of connection and controller certifications if required. Refer to plans.

5. Backflow preventer shall be certified by qualified personnel. Documentation shall be forwarded to Client and Landscape Architect prior to project turn over.

6. Site review to release to maintenance.

7. Final site review and acceptance

    a. The Contractor shall operate each system in its entirety for the District at time of final observation. Any system deemed not acceptable by the District or not in compliance with these Specifications and Drawings, shall be reworked to the complete satisfaction of the District.

    b. The Contractor shall show evidence to the District that the District has received all accessories, charts, record drawings, and equipment as

required (See Section 1.04) before final observation can occur.

B. Contractor shall be responsible for scheduling any other inspections required by other agencies and coordinate Districts/ Landscape Architect's involvement as necessary.

C. When observations have been conducted by other than the District, show evidence in writing of when and by whom these observations were made. Contractor shall send District/ Landscape Architect copies of all meeting/ inspection documentation.

D. No site observations will commence without as-built drawings. In the event the Contractor calls for a site visit without as-built drawings, without completing previously noted corrections, or without preparing the system for said visit, he shall be responsible for reimbursing the District/ Landscape Architect at his current billing rates per hour, portal to portal, (plus transportation costs) for inconvenience. No further site visits will be scheduled until this charge has been paid and received.

E. If in the District's/ Landscape Architect's opinion the work scheduled for inspections is not ready, the Contractor shall reimburse the Landscape Architect for his time, prior to any further inspections.

1.09 DOCUMENTATION

A. The contractor shall be responsible for documenting installation of specific underground equipment. Documentation shall be done with digital photographs. All digital photographs shall be copied onto a USB thumb drive. Contractor shall forward copies of thumb drives to District authorized representative and Landscape Architect. Where necessary, the Contractor shall use a ruler or yardstick to provide relative distance/ size where required. This shall be done to facilitate future repairs, construction and to verify construction compliance. Failure to document the minimum as listed below may result in the Contractor being responsible for excavation so that documentation can be done. Contractor shall maintain a file of photos that can be readily accessed during any site meeting or inspection.

1. Installation of flow sensor showing pipe lengths on either side of sensor.

2. Installation of mainline piping showing depth.

3. Installation of sleeving to show location where it passes under paving and through walls.

4. Any mainline piping where lines cross other utility lines.

5. Location of any transite pipe found. Document both horizontal and vertical location along with probable direction of pipe.

6. Any other areas that are called to be documented on the plans.

1.10 GUARANTEE

A. Guarantee for the sprinkler irrigation system shall be made in accordance with the following form. The general conditions and supplementary conditions of these Specifications shall be filed with the Owner or his representative prior to acceptance of the irrigation system. Standard one-year guarantee shall include:

1. Filling and repairing depressions and replacing plantings due to settlement of irrigation trenches for one year following acceptance of Project.

B. A copy of the guarantee form shall be included in the operations and maintenance manual.

C. Refer to additional District required warranties.

` D. Guarantee shall be retyped onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR SPRINKLER IRRIGATION SYSTEM

We hereby guarantee that the sprinkler irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the Drawings and Specifications, ordinary wear and tear and unusual abuse or neglect expected.

We agree to repair or replace any defects in material or workmanship, which may develop during the period of one year from the date of acceptance and also to such defects at no additional cost to the Owner. We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice from Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT:_____

CONTRACTOR:_____

ADDRESS:_____

PHONE NO:_____ BY:_____

DATE OF ACCEPTANCE:_____ BY:_____

PART 2.00 PRODUCTS

2.01 MATERIALS

A. General: Use only new materials of brands and types noted on Drawings, specified herein, or approved equals.

2.02 PIPE AND FITTINGS

A. Domestic Water – Pressure Mainline Piping

1. Pressure mainline piping, sizes 2-inch, 2.5-inch and 3-inch shall be PVC class 315 solvent weld type or (as a Contractor option) rubber gasket type, unless otherwise noted on drawing. Pressure mainline piping, sizes 4-inch through 8-inch shall be PVC class 200 gasketed.

2. Pressure mainline fittings, sizes 2-inch, 2.5-inch and 3-inch shall be PVC schedule 40 solvent weld type or (as a Contractor option) rubber gasket type,

unless otherwise noted on drawings. Pressure mainline fittings, sizes 4-inch and larger shall be gasketed ductile iron. All gasketed fittings must be thrust blocked or utilize joint restraints.

3. Pressure mainline piping and fittings, sizes 1.5-inch and smaller shall be solvent weld Schedule 40 PVC.

B. Domestic Water – Lateral Non-Pressure Piping

1. Non-pressure lateral line piping, sizes 2-inch, 2.5-inch and 3-inch shall be PVC class 315 solvent weld type or (as a Contractor option) rubber gasket type, unless otherwise noted on drawing. Lateral line piping, sizes 4-inch through 8-inch shall be PVC class 200 gasketed.

2. Non-pressure lateral line fittings, sizes 2-inch, 2.5-inch and 3-inch shall be schedule 40 PVC solvent weld type or (as a Contractor option) rubber gasket type, unless otherwise noted on drawings. Lateral line fittings, sizes 4-inch and larger shall be gasketed ductile iron. All gasketed fittings must be thrust blocked or utilize joint restraints.

3. Non-pressure lateral line fittings, sizes 1.5-inch and smaller shall be solvent weld Schedule 40 PVC.

C. Copper Pipe and Fittings:

1. Pipe shall be Type K, hard tempered and conform to the requirements of ASTM B 88 for seamless copper water tube. Copper pipe shall be of domestic manufacture. Copper pipe and fittings used shall be specifically manufactured for either brazing or soldering.

2. Copper fittings shall be copper conforming to ASME B16.18, ASME B16.22, ASME B16.26, ASME B16.50, With solder end joints. Fittings 3/8” and smaller may have flared end connections or compression joint connections.

3. Joints shall be soldered with solder fill metal that conforms to ASTM B 32. Solders having greater than 0.20- percent lead (Pb) content are prohibited from use in potable water systems. Where local codes permit, use alloy Sn50 only for non-potable water applications. Do not use for any piping that may come in contact with potable water system

4. Brazing filler metals (BCuP Series and BAg Series) shall conform to ANSI/ AWS A5.8. Proprietary filler metals having compositions no conforming to the exact ANSI/ AWS A5.8 classifications for BCuP and BAg Series filler metals shall be permitted when used according to the manufacturer’s written instructions.

5. Soldering and Brazing Fluxes: Soldering and brazing fluxes having greater than 0.20 percent lead (Pb)content are prohibited from use in potable water systems and shall not be used.
   a. Soldering Fluxes: ASTM B 813, liquid or paste type.
   b. Brazing Fluxes: ANSI/ AWS A5.31, type FB3-A or FB3-C. The use of brazing flux is not necessary if the components being joined are wrought copper tube, wrought copper fittings and the filler metal being used is of the BCuP series.

D. Brass Pipe, Nipples and Fittings:

1. Brass pipe shall be 58% red brass (ASTM B43), Schedule 40 screwed pipe.

2. Fittings shall be medium brass, screwed 125-pound class.

E. Galvanized Pipe and Fittings:

1. Pipe shall be galvanized steel (ASTM A53), Schedule 40 galvanized, mild steel screwed pipe.

2. Fittings shall be screwed beaded malleable iron, or #125 cast iron; flanged.

3. Unions (2-inch and smaller) shall be ground joint pattern.

4. Unions (Larger than 2-inch) shall be flanged-type. Gasket shall be 1/8" thick U.S. Pipe 'Ring Flange-TYTE' SBR elastomer, (Styrene butadiene) or approved equivalent. Gasket shall adhere to ANSI/AWWA C115/A21.15 Appendix A Sec. A.2

F. Ductile Iron Fittings and Joint Restraints. None specified this project.

G. All PVC pipe and fittings shall conform to specific requirements as follows:

1. PVC (Solvent Weld)

a. Pipe shall be manufactured from virgin polyvinyl chloride compound in accordance with ASTM D 1785, cell classification 12454B, hydrostatic design stress rating not less than 2000 PSI.

b. Fittings (solvent weld or thread) shall be standard weight, schedule 40, side gated, injection molded PVC complying with ASTM D 2466, cell classification 13454B, including threads when required.

c. Fittings (solvent weld or thread) shall be heavy weight, schedule 80, side gated, injection molded PVC complying ASTM standard dimensions for schedule 80 fittings, ASTM D 1785, sockets, ASTM D 2467-15, NPT ANSI B1.20.1, ASTM F 1498. Classification 13454B, including threads when required.

2. PVC nipples shall be schedule 80 with molded threads.

3. All PVC pipe must bear the following markings:

a. Manufacturer's name

b. Nominal pipe sizes

c. Schedule or class

d. Pressure rating in AST

e. NSF approval

f. Date of extrusion

4. Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation method prescribed by the pipe manufacturer.

5. Lettering shall be facing up on all underground PVC. The OSA Inspector will verify.

H. Sleeving:

1. Sleeving for irrigation piping shall be schedule 40 PVC for 3-inch diameter and smaller (for piping to be sleeved, sizes 1.5-inch and smaller) Class 200 for 4-inch to 8-inch (for piping to be sleeved, sizes 2-inch to 4-inch). Sleeving size for 12-inch and larger (for piping to be sleeved, sizes 6-inch and larger) shall be galvanized corrugated steel or HDPE pipe.

2. Seal ends of pipe sleeve with expandable foam. Seal to ensure that there is no intrusion of insects, pests, dirt or water.

I. Conduit:

1. Conduit for low voltage cable shall be PVC schedule 40 PVC for sizes, 3-inch and smaller and PVC class 200 for sizes, 4-inch and larger.

2. Sweep ells, schedule 40 PVC, 90 and 45 degree.

2.03 ELECTRICAL (HIGH VOLTAGE)

A. All high voltage electrical materials and service required for automatic controller and other equipment noted on drawing for irrigation system shall be provided by General Contractor/ Electrical Engineer's Drawings.

B. All above grade connections between electrical services and equipment shall be in rigid galvanized electrical conduit, (no PVC allowed) with conduit and wiring size as required. All line voltage electrical work shall be performed by a licensed electrician and done per local codes and ordinances. All work shall follow NEC and IEEE best recommended practices.

C. Conduits for grounding wires for irrigation controller shall follow the minimum requirements as outlined in Article 250 of the 2005 of the NEC.

2.04 ELECTRICAL (LOW-VOLTAGE)

A. Connections between controller and remote control valves shall be made with direct burial copper AWG-UF, 600-Volt wire, insulation thickness 3/64-inch, utilizing low-density high molecular weight polyethylene insulation. Wire shall be Paige P7079D or approved equivalent.

B. Splices, where permitted, shall 3M Scotchcast Connector Sealing Pack 3570G-N or approved equivalent and housed in a splice/ pull box. Boxes for other irrigation use may be utilized for this purpose. Make only one splice with each connector sealing pack.

C. In no case shall wire size be less than #14 "UF" 600-Volt underground wiring. Common

wire(s) to be white in color with a color stripe that matches that controllers active RCV wires and sized, (minimum #10) to accommodate the maximum allowed simultaneous operation for each controller. Each controller used on site shall have a single dedicated color for all RCV wires serviced by that controller.

1. Extra remote control valve wires specified for each controller shall be of a unique color to distinguish them from active wires of other controllers and other extra wires for other controllers.

D. Electrical sealer putty for sealing conduit in splice/ pull boxes shall be Duct Sealing Compound #1003 manufactured by Sealers, Inc. or approved equivalent.

1. Sealing compound shall be asbestos free and non-corrosive.

2. Permanently soft, non-toxic.

3. Non-irritant: No irrigation to eyes or skin as listed in CFR, Title 16 “Appraisal of the safety of chemicals in food, drugs and cosmetics.

4. Material to have dielectric strength of approximately 110 volts per mil, (ASTM D149-64)

E. Connections between Calsense Controller and flow sensor shall be made with one (1) black and one (1) red #14 AWG irrigation wire. Install no splices.

H. Tracer Tape shall be Christy’s Detectable Tape.

1. For use on potable mainline that does not have remote control valve wiring associated with pipe, and piping is deeper than 18 inches, use Christy’s TA-DT-02-B-PW. Where piping is deeper than 18 inches, use Christy’s TA-DT-03-B-PW.

I. Non-Detectable warning tape shall be Christy’s Non-Detectable warning tape.

1. For use on conduit housing low-voltage wires. Use Christy’s TA-ND-02-R-E. Contractor shall note color of tape used, on as-built plans.

2.05 AUTOMATIC CONTROLLER

A. Type: (refer to plan for mounting type) fully automatic operation, capable of operating the number of stations and type indicated on Drawings. See plan for pump, flow sensor, master valve, radio remote requirements, etc., if applicable.

1. Controller assembly shall be obtained from Calsense. Contact Mark Huntzinger (760) 580-1827 for ordering and lead times.

2. Solid-state type controller in a weatherproof housing with locking hinged covers.

3. Fuse and chassis ground all controller components.

4. The controller shall be housed inside a stainless-steel, vandal-resistant freestanding enclosure (see plan for manufacturer’s model number) with a stainless-steel predrilled removable backboard, controller, terminal strip, and 117-Volt outlet. The 117-Volt duplex box shall be provided with an on/off switch and 117-Volt receptacle. Metal conduit shall run from the 117-Volt supply to the

controller housing. All power within the housing shall be properly phased. A pre-wired terminal strip shall be provided clearly indicating the proper points of connection of all appropriate wiring.

5. Valves to be connected in sequence as shown on drawing.

6. The controller assembly shall have all hardware associated with communication to all sensors specified in construction documents as well as all hardware associated with WiFi connection. Refer to irrigation legend for exact model of controller specified and features required to be provided with controller assembly.

2.06 BACKFLOW PREVENTION UNITS

A. Backflow preventer assembly shall be designed to operate on a “reduced pressure” or “pressure-type” principle; equipped with isolation valves and field test cocks (verify type on plan).

B. Wye strainers at backflow prevention units shall be 125# class cast brass with 40-mesh Monel screen, unless otherwise noted on Drawings.

2.07 PUMP ASSSEMBLY AND COMPONENTS

A. None specified this project.

2.08 OPTIONAL PUMP ASSEMBLY FEATURES

(For optional pump components specified, see Model Number. Section 2.07 B)

A. None specified this project.

2.09 FERTILIZER INJECTOR

A. None specified this project.

2.10 VALVES

A. Isolation valves, remote control valves, quick couplers, manual control valves, and hose bibbs shall be of the type and manufacturer stated on Drawings.

B. Gate valves, sizes 3-inch and smaller (unless otherwise noted on Drawings) Provide Nibco Series T-113 Threaded Class 125 Bronze Gate Valve. Valve shall be ASTM B62 brass body, 150 pound saturated steam rated; with screwed joints; non-rising stem; screwed bonnet, solid disc. Provide with hand wheel.

C. Ball valves for isolating individual remote control valves, (if called for in remote control valve detail) and for isolation valves for irrigation mainline for applications of valves, sizes 2-inch and smaller shall be Nibco T-585-70 threaded bronze full port ball valve with two piece body and blowout-proof stem.

D. Quick coupling valves shall be one-piece type brass body, 150-pound class, with 1-inch female threads opening at base, permitting operation with a special connecting device (coupler) designed for this purpose.

1. Coupler threads shall be lug type.

2. Hinge cover shall be rubber-like vinyl cover.

E. Master valve shall be of the type and manufacturer stated on Drawings.

F. Anti-drain valves shall be those manufactured by Valcon Automatic Irrigation Equipment Co., or equal.

2.11 VALVE BOXES

A. Valve boxes shall be fabricated from a durable plastic material resistant to weather, sunlight and chemical action of soils.

B. Valve box extensions shall be by the same manufacturer as the valve box.

C. Gate valve boxes shall be round plastic boxes with flex lock covers, CARSON or approved equal.

D. Ball valve boxes shall be rectangular and be large enough to allow full operation of handle. Add box extensions as required. Refer to irrigation legend for type of operator, (lever, hand wheel, nut, etc.)

D. Remote control valve boxes shall be rectangular plastic boxes, CARSON or approved equal, with hinged covers with flex lock. Refer to RCV detail in construction documents for required clearances for RCV assembly within box. Size box accordingly.

E. Concrete boxes shall be used where box must be installed in concrete or AC paving or as specified in shrub planter areas on plans. Install reinforced concrete box with lockable cast iron lid or reinforced concrete lid. Refer to plan for lid requirements. Install Christy or approved equivalent. Refer to plans/ details for type of lid required. Where cast iron, diamond plate, or reinforced concrete lids are used to house remote control valves plastic valve tags must be used to identify valve stationing on all valves inside concrete valve box.

2.12 SPRINKLER HEADS

A. All sprinkler heads shall be of the same size, type, and deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as shown on the Drawings and/or as specified herein.

B. Spray heads shall have a screw adjustment.

C. Riser units shall be fabricated in accordance with the installation details.

D. Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler body.

E. All sprinkler heads of the same type shall be by the same manufacturer.

2.13 MOISTURE SENSING DEVICES

A. None specified this project.

2.14 FLOW SENSORS

A. Calsense flow sensors (FSB series) provided by Calsense. Contact: Calsense, (800) 572-8608.

2.15 WEATHER STATION

A. None specified this project.

2.16 PLASTIC IDENTIFICATION TAGS.

A. For remote control valves serviced by domestic water, provide Christy's 2.25"x2.75" yellow standard valve I.D. tag hot-stamped in black with valve designation 1.125" high, model ID.STD.Y1

1. Tags shall be manufactured from polyurethane Behr Desopan.
2. Attached neck and reinforced hole are capable of withstanding 180lbs of pull of resistance.
3. Contractor shall order tags with range of controller capacity. All unused tags shall be forwarded to owner with turnover items at completion of project.

PART 3.00 EXECUTION

3.01 WATER SUPPLY

A. Sprinkler irrigation system shall be connected to water supply points of connection as indicated on the Drawings.

B. Connections shall be made at approximate locations as shown on Drawings. Contractor is responsible for minor changes caused by actual site conditions. Document exact location of POC on as-built plans.

3.02 PIPE

A. General

1. All irrigation pipe and fittings shall be installed in complete accord with manufacturer instructions for it.

2. Line Clearance: All lines shall have a minimum clearance of 6-inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.

3. Contractor shall notify District subsequent to main line installation for approval (See Section 1.08).

B. Underground Pipe

1. Trenching:

a. Excavate trenches to required depths. Follow approved layout for each system.

b. Trench bottom shall be flat to ensure piping is supported continuously on

an even grade.

c. Where lines occur under paved areas, consider dimension to be below the sub-grade.

d. Provide minimum coverage under finish grade as follows:

1) Pressure supply lines, sizes 2.5-inch and smaller shall be buried 18 inches below finish grade.

2) Pressure supply lines domestic and recycled, sizes 3-inch and larger shall be buried 24 inches below finish grade.

3) Non-pressure lines, sizes 3-inch and smaller shall be buried 12 inches below finish grade.

4) Non-pressure lines, sizes 4-inch and larger shall be 18 inches below finish grade.

5) Control wire shall be 18/24-inches.

e. Contractor shall notify District prior to backfilling for Pressure Test (See Section 1.08).

f. Trenching depth needs to be to the top of the pipe. Example: 2-inch PVC to be set at 12 inches deep needs a 14-inch deep trench.

g. Flood all trenches when backfilling.

h. Mark all sleeving that goes under sidewalks, etc., with arrow chiseled on sidewalks or curb as applicable.

i. Install thrust blocking as required per details on plans. Thrust blocks shall be required where piping makes a change of direction in either a horizontal or vertical direction. Refer to gasketed pipe manufacturer's specification for maximum deflection allowed in straight line pipe. Deflection over manufacturer's maximum allowable shall require the contractor to install thrust blocks on connections in straight line piping. Refer to detail for more information. Exact size of thrust block shall be dictated by bearing capacity of soil surrounding fitting. Contractor shall consult soil engineer for final size/ configuration of thrust block.

2. Backfilling:

a. Buried pipe in trenches shall be center loaded only until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.

b. A fine granular material backfill will be initially placed on all lines. No

foreign matter larger than .5-inch in size will be permitted in the initial backfill.

c. Flooding of trenches will be permitted only with approval of the District.

d. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the District.

3. Trenching and Backfill under Paving:

a. Trenches located under areas where paving, asphaltic concrete or concrete will be installed shall be backfilled with sand (a layer 6 inches below the pipe and 3 inches above the pipe), and compacted in layers to 95% compaction using manual or mechanical tamping devices. Trenches for piping shall be compacted to equal the compaction of the existing adjacent undisturbed soil and shall be left in a firm unyielding condition. All trenches shall be left flush with the adjoining grade. The Sprinkler Irrigation Contractor shall set in place, cap, and pressure test all piping under paving prior to the paving work.

4. There is no new work utilizing transite, Asbestos Cement Pipe (AC pipe). Any existing transite pipe called on plans to be abandoned, cut, tapped, etc. or if there are any unavoidable breaks in the existing charged line, the Contractor shall comply with all applicable Federal, State, Local, EPA, and OSHA regulations pertaining to exposure to and handling, containment, transport, and disposal of asbestos material. If the bidding Contractor is not licensed in the State of California to perform these services, the Contractor shall retain the services of a licensed Asbestos Abatement Sub-Contractor to perform said services. Further, the Contractor/ Sub-Contractor must utilize the services of a commercial hauler registered to transport asbestos with the State of California. The Contractor/ Sub-Contractor must dispose of any asbestos waste material generated at a solid waste facility authorized for asbestos waste disposal. The contractor per OSHA requirements must train field personnel in the identification of asbestos containing material. The Contractor must submit the following items with the bid:

a. Name and license number of the Asbestos-Abatement Contractor that will be responsible for the work described above.

b. References (including the Owner’s name, address and Telephone number) for at least five comparable projects performed by the Asbestos-Abatement Contractor.

c. A work plan, describing work procedures, equipment to be used, transportation procedures and final disposal facility for asbestos material.

d. A health and safety plan which includes air-monitoring procedures as required by OSHA.

e. Measurement and Payment Asbestos-Cement Pipe Taps – The asbestos-cement pipe taps shall be measured on a lump sum basis and shall be at the contract unit price shown in the Bid Schedule, which shall

be full compensation for furnishing all labor, equipment, materials, and incidentals, required for a complete tap/ cut into existing asbestos cement pipe including final cleanup and disposal of any generated asbestos waste material. No mobilization and demobilization costs will be paid.

f. Emergency Asbestos Cement Pipe Removal for damaged or disturbed pipe – Asbestos pipe removal shall b e measured in linear feet along the centerline of the pipe, including fittings. Payment for asbestos cement pipe removal shall be at the Contractor unit price shown in the Bid Schedule. This price shall be full compensation of furnishing all labor, equipment, materials and incidentals required for a complete removal and final cleanup. Mobilization and demobilization for emergency asbestos cement pipe removal and payment for mobilization and demobilization shall be at the contract unit price shown on the Bid Schedule for each incident, which shall be full compensation for transporting all labor, equipment, materials, and incidentals required for removal of asbestos material including transporting asbestos waste material to an authorized disposal facility.

C. Grades and Draining:

1. Finish grade shall be adjusted to sheet flow water away from valve boxes. Contractor shall not install valve and valve boxes within established swales or low points.

D. Copper Pipe and Fittings:
All copper pipe and fittings installed below grade shall be brazed. All above connections may be soldered with the approval of the Client.

1. Cut tubing square and remove burrs to restore full inside diameter and remove burr from outer diameter. Prevent annealing of fittings and tubing when making connections. Do no miter joints for elbows or notch straight runs of pipe for tees.

2. Remove scale, slag, dirt and debris from inside and outside of pipe, tube and fittings before assembly.

3. Soldered joints: construct joints according to ASTM B 828.

4. Brazed Joints: Construct joints according to ANSI/ AWS C3.4.

5. Threaded joints: Ream threaded pipe ends to remove burrs and restore full inside diameter. Join pipe fittings and valves as follows:
   i. Note the length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
   ii. Apply appropriate tape or thread compound to external pipe threads (except where dryseal threading is specified).
   iii. Align threads at point of assembly.
   iv. Tighten joint with wrench and backup wrench as required.
   v. Damaged Threads: Do not use pipe or pipe fittings having threads that are corroded or damaged.

6. Brazing procedures shall be in accordance with Section 316.1.7 of California Plumbing code. Brazing shall be performed on all underground copper pipe

connections.

E. On Grade PVC and Galvanized Pipe:

1. None specified this project.

F. Brass Pipe and Fittings:

1. Cut brass piping by power hacksaw, circular cutting machine using an abrasive wheel, or hand hacksaw. Cut no piping with metallic wheel cutter of any description. Ream and remove rough edges or burrs so smooth and unobstructed flow is obtained.

2. Carefully and smoothly place on male thread only. Tighten screwed joints with tongs or wrenches. Caulking is not permitted.

G. Galvanized Pipe and Fittings:

1. Do not bend or spring pipe. Make all offsets or changes in direction with fittings. Cut threads with sharp, clean dies to conform to ASA Specification B2. Assemble pipes free from dirt and scale. Ream and deburr. Make up joints by applying oil base compound to male threads only. Remove excessive compound after makeup.

H. Ductile Iron Fittings and Joint Restraints

1. None specified this project.

I. Assemblies:

1. Routing of sprinkler irrigation lines as indicated on the Drawings is diagrammatic. Install lines (and various assemblies) in such a manner as to conform to the details per plans.

2. Install NO multiple assemblies in plastic lines. Provide each assembly with its outlet.

3. Install all assemblies specified herein in accordance with respective details. In the absence of detail Drawings or Specifications pertaining to specific items required to complete work, perform such work in accordance with best standard practice, with prior approval from Architect.

4. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.

5. On PVC to metal connections, the Contractor shall work the metal connections first. Teflon tape or approved equal shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.

J. Sleeving:

1. All sleeves set in place under paving shall extend 12 inches minimum beyond such paving and be capped hand tight. No in-line fittings, including couplings will be permitted under surfaces to be paved, except where the length of the line under the paving is 20 feet or where shown on the Drawings, i.e., parking lots, etc.

3.03 ELECTRICAL SUPPLY

A. 120VAC independent electrical service for automatic controller shall be provided for by General Contractor/ Electrical Engineer's plans to point shown on plans.

B. Electrical wiring from electrical source to Controller shall be in rigid galvanized conduit. All work shall be per local codes and ordinances.

C. Provide grounding rods for irrigation electrical. Provide one (1) for each controller assembly. See detail on Drawings. All work shall conform to the latest version of Article 250 of the NEC.

3.04 PILOT WIRES

A. None specified this project.

3.05 LOW-VOLTAGE ELECTRICAL

A. Control Wiring:

1. Wiring:

a. Install control wires with sprinkler mains and laterals in common trenches wherever possible. Lay under pipeline. Bundled wires shall be held together with flexible non-adhesive tape every 10 feet minimum. This bundle shall be tied to the bottom of the mainline every 10 feet minimum with the same flexible non-adhesive tape. Provide expansion curl every 100 feet on runs of more than 100 feet in length. Provide looped slack at valves and changes in direction of 90 degrees and snake wires in trench to allow for contraction of wires.

b. Where valve wires must be run and there is no mainline in the same trench, wires must be encased in PVC schedule 40 conduit. Conduit size shall be as required to house number of wires. Warning tape shall be used atop conduit. Use Christy TA-ND-02-R-E Non detectable tape along entire length of conduit.

c. Refer to plans for exact number and location of required extra wires to be run from controller to field. There shall be a minimum (2) wires routed from each controller along longest run, (furthest RCV) for each respective controller. These extra wires shall be routed up into dedicated pull box and tagged as extra wires. Refer to plans for any other required extra wires.

d. Furnish different color control cable for each controller. Each common cable shall be white with a color strip to match the color of control cable it

serves. Spare cables shall be a color different from any control cable.

2. Splices:

a. Control wire splices at remote control valves to be crimped and sealed with specified splicing materials, refer to 2.04 B. 3M Scotchcast Connector Sealing Pack 3570G-N shall be installed per manufacturers installation directions. Line splices will be allowed only on runs of more than 500 feet. Line splices are to be installed in splice boxes and their locations noted on as-built plans.

b. No splices allowed in Paige communication cable.

B. Ethernet cable:

1. None specified this project.

C. Tracer tape, detectable and non-detectable shall be placed atop pipe to be marked. Tape shall be continuous.

3.06 AUTOMATIC CONTROLLER

A. Automatic controller(s) shall be size and type shown on the Drawings.

B. Final location of automatic controller(s) shall be approved by District.

C. Unless otherwise noted on the Drawings, the 120-Volt electrical power to each automatic controller location is to be furnished by others. The final electrical hook-up shall be the responsibility of the Contractor.

D. Install per manufacturer's instructions. Remote control valves shall be connected to controllers in numerical sequence as indicated on Drawings.

3.07 BACKFLOW PREVENTER

A. Backflow Preventer Assembly shall be installed in planter area (where applicable) per manufacturers recommendation and local codes. Exact location and positioning shall be verified on site (See Section 1.08). Final location to be approved by District representative.

3.08 PUMP ASSEMBLY

A. None specified this project.

3.09 FERTILIZER INJECTOR

A. None specified this project.

3.10 VALVES

A. Isolation valves, quick couplers, pressure reducing valves, etc:

1. Install per detail and as indicated on plans.

B. Remote Control Valve:

1. Install each control valve in separate valve box as shown and detailed. Group boxes together where practical. Place no closer than 12 inches to buildings and walls. Provide 4-inch minimum clearance between valve and valve box lid. Remote control valve manifold location shall be approved by Authorized District Representative

C. Anti-Drain Valves:

1. Install per manufacturer's recommendations as indicated on plans or where needed.

3.11 VALVE BOXES

A. All buried valves and equipment shall be installed with a proper box.

B. Set valve boxes over valve so all parts of valve can be reached for service.

C. Heat brand valve station on cover of box. Letters/ numbers shall be 2" in height.

D. Affix anodized aluminum valve tags to cast iron lids or composite/ concrete lids with approved epoxy. Follow manufacturer's direction for installation.

E. Fill area underneath box with a minimum of 1.5 cubic feet of pea gravel before box is installed.

F. Valve boxes shall be set 1 inch above finish grade in turf areas and 4 inches above finish grade in shrub planter areas. Mulch layer shall be flush with top of box. Grade soil around box to allow for required full depth of mulch. Grade around box shall allow for water to drain away from box.

G. Identification tags shall be attached to each remote control valve, showing number that corresponds with controller sequence.

H. Maintain 4-inch minimum clearance between bottom of valve box lid and top of valve stem.

3.12 IRRIGATION HEADS

A. Install all irrigation heads as designated on the Drawings and in accordance with their respective detail.

B. Spacing of heads shall not exceed the maximum indicated on the Drawings. In no case shall the spacing exceed the maximum recommended by the manufacturer.

C. Final location of sprinkler heads shall ensure that all shrubs in planters receive adequate irrigation. Contractor shall observe any and all existing elements in planters that will affect coverage. If there exists, elements within planter that may have not been shown in base drawings or elements that may have been discovered may severely affect spray pattern, contractor shall contact landscape architect for instruction. Failure to do so will result in Contractor being responsible for any changes that may result.

3.13 MOISTURE SENSING DEVICES

A. None specified this project.

3.14 FLOW SENSORS

A. Install per manufacturer's direction, detail on Drawings, and where indicated on plans.

3.15 WEATHER STATION

A. None specified this project.

3.16 FIELD QUALITY CONTROL

A. Adjustment of the System:

1. The Contractor shall adjust all sprinkler heads and valves for optimum performance and to prevent as much as possible any over-spray onto walks and roadways. No spray is permitted on buildings.

2. If it is determined that minor adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may include changes in nozzle sizes or degrees of arc, as required.

3. All sprinkler heads shall be set perpendicular to finished grades unless otherwise designated on the plans and at height and distance from walks, buildings, etc, as noted.

B. Contractor is responsible for protecting all existing landscaping. Any existing landscaping removed shall be properly replaced, unless approved in writing by District.

C. Testing of Irrigation System:

1. Test all pressure lines under hydrostatic pressure of 150 PSI, and prove water-tight. Test lateral, (non-pressurized) lines as directed on plans in the same manner as main lines.

2. Testing of pressure (and non-pressurized lateral lines if specified) main lines shall occur prior to installation of remote control valves, quick couplers or any other equipment that might prevent a proper test from being performed.

3. All piping under paved areas shall be tested under hydrostatic pressure of 150 PSI, and proved watertight, prior to paving.

4. Sustain pressure in lines for not less than 2 hours. If leaks develop, replace joints and repeat test until entire system is proven watertight.

5. All hydrostatic tests shall be made only in the presence of the District (Refer to Section 1.08.) No pipe shall be completely backfilled until it has been inspected, tested and approved in writing.

6. Furnish necessary force pump and all other test equipment.

7. When the sprinkler irrigation system is completed, perform a coverage test in the presence of the District, to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from plans, or where the system has been willfully installed as indicated on the Drawings when it is obviously inadequate, without bringing this to the attention of the District/ Landscape Architect. This test shall be accomplished before any ground cover is planted. (Refer to Section 1.08.)

8. Upon completion of each phase of work, entire system shall be tested and adjusted to meet site requirements.

9. Low-voltage wiring under paving shall be tested for continuity, prior to paving.

3.17 CLEANUP

A. Clean-up shall be performed as each portion of the work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained to the work of others shall be repaired and work returned to its original condition.

3.18 OPERATING INSTRUCTIONS

A. Contractor shall be required to train District's maintenance personnel in proper operation of all major equipment. Provide written evidence of the person or persons so trained to the Architect.

3.19 MAINTENANCE

A. Inspection of valves, hose bibbs and other pressurized above ground connections shall be performed on a minimum weekly basis throughout maintenance period.

B. Inspection of irrigation heads to correct alignment, clear lateral lines adjust spray patterns, clean screens, and repair damaged heads shall be performed before commencement of maintenance period and prior to final acceptance (end of maintenance period).

C. Contractor shall be responsible for interrupting irrigation program to eliminate watering during a rainstorm.

D. Contractor shall, on a weekly basis, inspect system for damage. Any problems shall be brought to the attention of the District and rectified immediately.

END OF SECTION

Appendix
Exhibit 1

SUBSTITUTION APPROVAL REQUEST FORM

Contractor requests for substitutions will be considered upon receipt of this completed Substitution Approval Request Form and all required supporting documentation. Substitutions made without completion of this form and the Landscape Architect's approval will be considered defective work.

Project _____

The contractor proposes the following substitutions in accordance with the requirements of the Contract Documents:

Scope of substitution _____

Specification reference _____

Drawing reference _____

Reasons for proposed
Substitutions _____

Impact on project
Schedule _____

Impact on guarantees
And warranties _____

Coordination required w/
Adjacent materials and
Related systems _____

Deviations from
Specified requirements _____

Attachments _____ yes _____ no (Attach supporting documentation sufficient for the Landscape Architect to evaluate substitution. Substitution request forms submitted without adequate documentation will be returned without review).

SANTIAGO CANYON COMMUNITY COLLEGE
EROSION CONTROL PROJECT
LANDSCAPE PLANTING - SECTION 32 9000
RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT
03/19/21

PART 1.00 - GENERAL

1.01 SCOPE OF WORK

A. The work includes all services, labor, materials, transportation and equipment necessary to perform the work indicated on the Drawings.

B. It is the intent of the Drawings and Specifications to provide planting with plants in vigorous growth, ready for Owners use. Any items not specifically shown in the Drawings or called for in the Specifications but normally required to conform to such intent are to be considered as part of the work.

C. Maintain entire landscape for ninety (90) days, upon completion of all punch-list items.

1.02 RELATED WORK

A. Landscape Irrigation: Section 32 8000.

1.03 QUALITY ASSURANCE AND REQUIREMENTS

A. The word “District” as used herein shall refer to the Rancho Santiago Community College District’s Authorized Representative.

B. Requirements of Regulatory Agencies:

1. Comply with Federal, State and local laws and regulations pertaining to all work included in this section.

C. Qualifications:

1. Hydroseed Application: Fully trained in the preparation and seeding techniques described in this section and working under the direct supervision of a qualified foreman with not less than 5-years experience in hydroseeding.

2. Pest Control Applicator: Trained and State licensed for application of weed control chemicals.

3. The Contractor shall possess all insurance, licenses and permits required to perform the work of this contract including a C-27 State Contractor’s License.

D. Tests:

1. Imported Soils: Soil structure, infiltration rate and standard agricultural suitability analysis of any imported soil to be included. Test shall include laboratory recommendations for soil amendment for backfill mix for shrubs and trees and any amendments/ methods to mitigate any soil problems that may exist with import. Contractor shall provide project plant list

to Laboratory for their use to provide suitable backfill mix/ amendments for specific species of plants as required. Plant list shall be forwarded to Lab along with sample of import soil sample. The location of import soil on site shall be documented on the planting plan sheets, (as-builts). A copy of this/ these signed planting sheets exhibiting location of soil import shall be provided to the Laboratory and Landscape Architect for their records. Contact Wallace Laboratories to coordinate soil sample analysis, telephone (310) 615-0116. info@wlabs.com. www.wlabs.com

2. Contractor is responsible for all soil import collection and testing fees.

3. Tree pit percolation testing:
None specified this project.

4. Installer's Personnel Certification: Certified Landscape Technician CLT-Exterior.

E. Applicable Standards:

1. Nursery Standards: USDA Standard for nursery stock, current edition, American Association of Nurserymen.

2. American Standard for Nursery Stock Published by AmericanHort, ANSI Z60.1

1.04 SUBMITTALS

A. Material(s) List: (Coordinate and submit simultaneously with Landscape Irrigation Submittal, Section 32 80 00, Part 1.04)

1. The Contractor shall furnish the plant material, articles, planting appurtenances, products, materials, or processes specified by name in the Drawings and Specifications. No substitution will be allowed without prior written approval by the District.

2. Complete material(s) list, PDF format, shall be submitted to the Architect for his approval prior to performing any work. Material(s) list shall include representative photographs of trees and written specifications of all tree and shrub species. Contractor shall also list supplier for which material is supplied.

Materials and supplier information for Submittal shall reflect project plans. The items listed below are not reflective of this project. **The following is a guide only to proper submittal format.**

TREES

Qty	Item	Size	Spec	Supplier
128	Platanus acerifolia	24" Box	10-12'x 4' 2" caliper	Valley Crest
11	Cinnamomum camphora	48" Box	15'-17' X 10'-12'	Bergen's Nursery

Etc	Etc	Etc	Etc	Etc

SHRUBS

Qty	Item	Size	Spec	Supplier
120	Ligustrum japonicum 'Texanum'	5 gal	30”x 24”	Village Nursery
720	Rhaphiolepis indica ‘Springtime’	5 gal	24”x 24”	Norman’s Nursery
Etc	Etc	Etc	Etc	Etc

PLANTING APPURTENANCES

Item	Supplier
Mulch	AG Organics, Inc.
Root Barriers	Deep Root
Fertilizers	Gro-Power
Pre-emergent Herbicide	Elanco Surftan
Etc	Etc

Planting Submittal must be specific and complete. All items must be listed and should include supporting information such as, tree ties, stakes, soil amendment, etc.

NOTE: **Copies of manufacturer’s literature (catalog cuts) are required as part of submittal information for Inspector and District use.**

3. The Contractor may submit substitutions for plant material and material listed on the Planting Drawings by following procedures as outlined in Part 1.05 of these Landscape Planting Specifications.

B. Submit to District/ Landscape Architect/ in PDF form, test results reflecting specification conformance (Section 2.01) for approval/review prior to placing imported soils, backfill mix and fertilizer on the project site. This should be coordinated and submitted simultaneously with Landscape Planting and Landscape Irrigation Submittal.

C. Certificates of Inspection required by law for transportation shall accompany invoice for each shipment of plants. File copies of certificates with District/ Landscape Architect after acceptance of material. Inspection Certificates by Federal or State governments at place of growth do not preclude rejection of plants at project site. All forms/ certificates, etc. shall be submitted in PDF form.

D. Submit to District/ Landscape Architect, PDF form of written guarantee prior to final acceptance (See Section 1.09.) Form shall be digitally signed, (E-sign or equivalent).

E. Submit to District/ Inspector, in PDF form, all purchase/delivery receipts for fertilizers,

amendments, etc. delivered to site.

F. Submit to District/ Inspector, in PDF form, all copies of MSDS statements for all pesticides, herbicides, etc. used on project.

G. Submit to District/ Inspector, in PDF form copies of seed tags for all seed used on project.

H. Submit to District/ Inspector and Architect, in PDF form all copies of all signed delivery tags for delivery of amendments for turf playfield. Contractor shall provide calculated square footage of area to be amended as well as calculated amount of amendment to be incorporated into soil. Contractor shall verify required amount installed.

I. Contractor shall submit .5 cubic foot sample of shredded bark mulch to District for approval.

J. Contractor shall submit digital photographs, (in PDF form) of work in progress verifying work done as per specifications. Work to be verified shall include:

1. As per direction per Owner's Authorized Representative during pre-construction meeting or during progress of project.

1.05 SUBSTITUTIONS

A. Substitutions will not be permitted without the District's/ Landscape Architect's written approval.

B. If a specified plant species or variety is not obtainable or if size is not up to industry standards, Contractor may submit a proposal to provide the nearest equivalent size or variety to the District/ Landscape Architect for their consideration.

C. If approval is granted for substitution, adjustment in Contract will be made in accordance with the Contract Conditions.

1.06 PRODUCT DELIVERY

A. Delivery: Deliver all materials in manufacturer's original unopened containers. Containers are to be clearly labeled container with weight, analysis and manufacturer's name and brand applicable. Coordinate with Owner, location and extent of staging/ storage area for Contractor's materials, equipment and deliverables.

B. Storage:

1. Secure Owner's permission to store plant materials on the project site.

2. Store all materials in an orderly manner and locate so as to avoid interfering with other construction activities.

C. Protection:

1. Store fertilizers above ground and protect from moisture absorption with approved covering.

2. Protect the installed work and materials of other trades.

1.07 PROJECT CONDITIONS

A. Verify all dimensions and planting area conditions prior to proceeding with work.

B. Notify the Landscape Architect immediately if any discrepancies exist between the Drawings, the Specifications and actual site conditions.

C. Do not perform work in any area that is unsuitable for successful plant material establishment until all such conditions have been corrected and approved by the District/ Landscape Architect.

D. Examine surfaces for conditions that will adversely affect execution permanence and quality of work.

E. Contractor shall walk site prior to work to establish condition of existing landscape. Walk shall include General Contractor, Owner's Authorized Representative. The Contractor shall document existing conditions of landscape with written report and digital photographs. Copy of written report shall be forwarded to Landscape Architect.

F. During site walk, Contractor shall also determine with General Contractor and Owner's Authorized Representative location of all temporary fencing, staging/ storage areas and exact limits of work and areas that may be outside of original scope of work that must be maintained by Contractor due to site fencing requirements.

G. Contractor shall determine with General Contractor and Owner's Authorized Representative to what extent and what method of temporary fencing shall be acceptable to cordon off planting material during establishment.

1.08 INSPECTIONS

A. All observations herein specified shall be made by authorized District Representative. The Contractor shall request observations at least 48 hours in advance. Failure to notify the District Representative will make Contractor responsible for any deficiencies that might arise. Coordinate trips with Landscape Irrigation System, Section 32 8000. Site visits will be required on the following parts of the work:

1. Pre-Construction Meeting.

2. Review of trees and shrubs spotted for planting, prior to excavating holes; and finish grading, prior to planting lawn and ground cover.

3. Pre-Maintenance: When planting, irrigation and all other indicated or specified work has been completed.

4. Final Observation: At completion of maintenance period.

B. Contractor shall personally accompany the District Representative on each of the above-required inspections.

C. If, in the District Representative's opinion, the work scheduled for inspection is not ready, the Contractor shall reimburse the District, at his/ her hourly rate, for the time spent portal to portal. No site visits will be scheduled until these fees have been paid.

D. Contractor shall be responsible for scheduling any other inspections required by any other agencies and coordinating District's/ Landscape Architect involvement as necessary.

1.09 GUARANTEE

A. Guarantee for all items specified in this section shall be made in accordance with the following form. The general conditions and supplementary conditions of these Specifications shall be filed with the Owner or his representative prior to final acceptance. The guarantee form shall be retyped onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR LANDSCAPE MATERIALS

We hereby guarantee that all landscaping materials we have furnished and installed are free from defects in materials and workmanship, pests, diseases, and the work has been completed in accordance with the Drawings and Specifications.

We agree to repair or replace any defects in material or workmanship, which may develop during the period of one year from the date of acceptance, and also to such defects at no additional cost to the Owner. We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice from Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand. We guarantee to make replacements immediately as project site conditions will permit.

PROJECT:_____

CONTRACTOR:_____

ADDRESS:_____

PHONE NO:_____ BY:_____

DATE OF ACCEPTANCE:_____ BY:_____

B. The guarantee to the Owner shall be that all trees, shrubs and plant materials will maintain vigorous and healthy growth for the following specified guarantee periods:

1. Hydroseed mix of annuals, perennials, ground cover shrubs: 1 year.

C. The guarantee for each period shall begin on date of final acceptance of work by the Owner (after successful completion of the specified maintenance period).

D. Guarantee to replace all dead and dying plants and all plants not reflecting vigorous growth.

E. Plants that are to be replaced shall be of the same variety and size (minimum) originally planted. If landscape has matured since original installation, replacement plant size shall match in size to originally installed plants of similar size plus added growth during maturity. Included will be all materials pertaining to installation of replacement plants, including:

1. Soil preparation, planting and fertilization, staking or guying involved

in replacement, shall conform to original specifications, including guarantees.

PART 2.00 - PRODUCTS

2.01 SOIL MATERIALS

A. Topsoil:

1. On-site Soil: Use existing on-site soil, which has been stockpiled and identified for use as topsoil for planting purposes, to the maximum extent possible.

2. Use only topsoil materials, which have been approved by the soil laboratory.

B. Imported Soil: Coordinate with Civil Engineer's Plan for stockpiled topsoil.

1. Provide sandy texture material from an approved source. Stockpile in an approved area and use materials, which do not exceed the following limits:

a. Silt plus Clay Content: 15 percent by weight.

b. Boron Context: 1 part per million maximum as measured on the saturation extract.

c. Sodium Absorption Ratio (SAR): 3.0 millimhos per centimeter at 25 degrees C.

2. Agricultural suitability analysis of imported soil shall be verified prior to delivery. See Section 1.04.

C. Existing soil to be amended: Inspect existing soil and provide all amendments needed to conform to recommendations by soil laboratory. See Section 1.03 D.

2.02 Fertilizers and Soil Conditioners:

A. Soil Conditioners: As outlined in soil report on construction documents.

B. Fertilizer: As outlined in soil report on construction documents.

2.03 PLANT MATERIALS

A. Species and Size: Provide as indicated on "Plant Legend" on Drawings.

B. Tag all plant materials with name and size in accordance with American Association of Nurserymen's "Standards of Practice", latest edition of ANSI Z60.1

Seeds

1. First quality, fresh and clean, as approved by Landscape Architect.

D. Stolons:

1. None specified this project.

F. Sod:

1. None specified this project.

2.04 HYDROSEED MATERIALS

A. Seed: Refer to Plant Legend for Seed Mix(es) including germination, purity, etc.

B. Mulch: Wood cellulose fiber or cellulose paper fiber.

C. Tackifier: M-Binder or equal.

2.05 MISCELLANEOUS MATERIALS

A. Tree Staking:

1. None specified this project.

B. Herbicides: Commercial quality pre/post-emergent type as approved by a licensed Pest Control Advisor for use with species of plants specified on the Planting Plans. All herbicides shall be EPA approved for use as a post emergent.

C. Tree-guying (if called for on Drawings):

1. None specified this project.

D. Root Barriers:

1. None specified this project.

E. Redwood Header-boards:

1. None specified this project.

E. Recycled plastic Header-board:

1. None specified this project.

G. Concrete Mowbands:

1. None specified this project.

H. Erosion Control Fabric (2.5:1 slopes, or greater, use where specified only):

1. Fabric to be heavy jute mesh of a uniform open plain weave of single jute yarn averaging 130 lbs. per 900 square feet spindle. The yarn shall be of loosely twisted construction and meet the following requirements:

a. Length of Roll: Approximately 75 yards.

b. Width: 48-inches, +/-1-inch.

c. Warp Ends per Width of Cloth: 41.

d. Weight of Cloth: 1.22 lbs. per linear yard, +/-5%.

e. Color: Natural

Fabric to be Poly Jute Netting model 814312 and anchor stakes model 00042579500581 manufactured by DeWitt Co or approved equivalent.

2. Staples:

Staples on lengthwise overlaps shall be 1.5-inch hog ring staples, low tensile. Staples on ends and end overlaps shall be DeWitt #11 gauge steel wire formed into a U-shape, 6-inches long as noted above or approved equivalent

I. Infield mix for Baseball and Softball Field Infields:

1. None specified this project.

J. Decomposed Granite (DG):

1. None specified this project.

K. Shredded Bark Mulch:

1. Provide Nutra Mulch AG-203 Top Dressing available from AG Organics, Inc. or approved equivalent. Telephone (951) 780-2280 / FAX (951) 780-2287. Email:info@agsoil.com

2. Bark Mulch shall be comprised of only arborist trimmings with no palm and no grass material. Size of mulch shall be 3-inch and smaller.

3. Mulch shall meet the criteria of CHPs, (Collaborative for High performance Schools).

4. Mulch shall consist of sized material that is 10% 3-inch, 40% 2-inch, 25% 1-inch and 25% 1-inch and smaller.

L. Shredded Bark Mulch stabilizer:

1. None specified this project.

M. General Planter Mix, (Organic amendment):

1. Provide AG Organics, Inc. AG-140 Premium Forest Compost or approved equal, available from AG Organics, Inc. Telephone (951) 780-2280 / FAX (951) 780-2287. info@agsoil.com. Refer to soil laboratory recommendations.

2. Planter mix shall meet criteria of CHPS (Collaborative for High Performance Schools) by being 100% recycled wood products.

N. Decorative stone:

1. None specified this project.

O. Weed Control Barrier Fabric:

1. Mirafi 140N nonwoven geotextile or approved equivalent.

2. DeWitt #11 gauge steel wire hold down stake formed into a U-shape 6-inches long as noted above or approved equivalent.

PART 3.00 - EXECUTION

3.01 GRADING

A. Remove and dispose of soil in planting areas that contain deleterious substances such as oil, plaster, concrete, wood, gasoline, paint, or solvents. Remove soil to a minimum depth of 6 inches, or to the level of dryness in affected areas.

B. Control all airborne dust caused by grading operations using water tankers and sprinklers.

C. Do not work soil when moisture content is so great that excessive compaction will occur, or when soil is so dry that dust will form or clods will not break up. Water shall be applied, if necessary, to provide ideal moisture content for filling and for planting as herein specified.

D. Preliminary grading shall be done in such a manner as to anticipate the finish grading. Excess soil shall be removed or redistributed before the application of fertilizer and mulch. Where soil is to be replaced by plants and mulch, allowance shall be made so that when finish grading has begun, there shall be no deficiency in the specified depth of mulched-planted beds.

E. Contractor shall check the site for weed growth prior to grading or disturbance of the soil in planting areas. Refer to Section 3.03 for Weed Eradication for weed eradication requirements. All herbicides/ application methods and application shall be per licensed pest control applicator.

F. Finish grading shall consist of bringing all ground areas to uniform slopes, meeting grades of installed curbs, paving, etc. and drainage at a 2% slope unless otherwise indicated on the Drawings. Ground shall be 2 inches below walks, curbs and headers in ground cover and shrub areas and 1-inch below it in lawn areas. Refer to plans for final finish grade. Areas in project site may require allowances for depth of mulches. Accurate flow lines shall be set by instrument to catch basins or other points of drainage flow. Mounding of finish grade shall be done as directed by the Architect/ Landscape Architect.

G. Allow for addition of soil conditioners in establishing finish grades.

H. Make minor grade adjustments, as directed by District Representative.

I. Warp grades as necessary to prevent accumulation of water at locations where designed drainage meets an obstruction

J. Finish-grade all planting areas to a smooth and even condition. Make sure that no water pockets or irregularities remain.

K. Remove all foreign materials. Remove clods and rocks larger than 1.5-inches diameter in any direction from soils within 3 inches of the finish grades to required

elevations so that after conditioning and planting grade is .5 inch below tops of curbs and walks. Slope to drain toward adjacent drainage swales or catch basins.

L. Dethatching in turf areas where specified on plans:

1. None specified this project.

M. Aeration in turf areas where specified on plans:

1. None specified this project.

N. Removal of existing turf, where specified on plans:

1. None specified this project.

3.02 SOIL CONDITIONING (on-site soil)

A. Plant Areas (graded 3:1 or flatter): Grade to finish elevation, allowing for amendments, and then, incorporate the amendments uniformly into the top 4 inches to 6 inches for each 1,000 square feet of area. The amendments shall be per soil report included in the construction documents

B. Remove all rock and unbroken clods larger than 1- to 1.5-inches in any dimension brought to the surface.

3.03 WEED ERADICATION:

The work described below is provided as an example of work involved for bidding purposed only. The eradication of weeds, (both selection of chemicals and methods) shall be as specified by a licensed pest control advisor/ applicator. All local codes, regulations, application methods and timing, notices, etc. required by local, regional, State and Federal authorities for the application of any chemicals used shall be followed. Contractor shall provide adequate protection, (as dictated by law) for all personnel in contact with any chemicals used. Protection of any other persons onsite during and after application shall also be the responsibility of the Contractor. Provide all warning signage and notices as required by law.

A. Weed Eradication Procedures: All planting areas as designated on the plans to receive ground cover, (includes mulch only areas and areas to receive decomposed granite) shall receive the following weed eradication procedures after the irrigation system has been installed and accepted and after all boxed trees have been installed and accepted, but prior to the installation of container trees, shrubs and groundcover.

B. Clean up work: Manually remove all existing vegetation and dispose of it off-site in a suitable and lawful manner.

C. Fertilizer: Fertilize all planting areas with Gro-Power at the rate of 30 pounds per 1,000 square feet and begin watering process.

D. Watering Process: Water all planting areas thoroughly and continuously for a period of three (3) weeks. The Owner’s Authorized Representative shall approve a specific watering duration and frequency program designed to germinate all residual weeds.

E. First Weed Spray: Discontinue watering process for two (2) days and then apply a contact weed killer at maximum label rate. The contractor shall apply the above agent to a planting area of approximately 1,000 square feet and then evaluate effective

coverage of weed species involved. The contractor shall make application adjustment such as the inclusion of additional spreading agent or spraying techniques in order to maximize the effective use of the contact weed killer as specified above. No irrigation water shall be applied for a minimum of four (4) days following application of contact weed killer.

F. Watering Process: Water all planting areas thoroughly and continuously for a period of three (3) additional weeks. A shorter watering period may be permissible at the discretion of the Owner's Authorized Representative if they so determine that germination of the balance of weed seeds is sufficient for an effective kill.

G. Second Weed Spray: Discontinue watering process for two (2) days and then apply a contact weed killer at maximum label rates. The Contractor shall apply the above agent to a planting area of approximately 1,000 square feet and then evaluate effective coverage of weed species involved. The Contractor shall make application adjustment such as the inclusion of additional spreading agent or spraying techniques in order to maximize the effective use of the contact weed killer as specified above. Allow a minimum of four (4) days without irrigation for effective, final weed kill.

H. Clean-up work: Manually clean and remove all weeds from the work area and continue planting process as noted and detailed.

3.04 CONTAINER COVER PLANTING

A. None specified this project.

3.05 STOLONS

A. None specified this project.

3.06 HYDROSEEDING

A. Preparation:

1. Manually remove and dispose of all existing vegetation.

2. Fertilize areas scheduled to be hydroseeded (3:1 slope and less) with 200 lbs.Gro-Power Plus per 1,000 sq. ft. Refer to Section 3.02A, till into top 6 inches of soil.

    a. Add soil amendments as required by soil analysis.

3. Begin watering immediately to activate fertilizer and chemicals.

    a. Water all areas thoroughly and uniformly. Continue watering at the frequency and duration necessary to germinate all residual weed seeds and as directed by the Architect.

    b. Unless otherwise directed, maintain watering for not less than 2 weeks.

    c. If annual/perennial weeds appear, apply approved post emergent herbicide over affected areas. Apply according to directions of a licensed Pest Control Applicator.

    d. Do not water affected areas for a period recommended by manufacturer,

following application of contact herbicides.

e. Follow manufacturer's instructions relating to time required for chemicals to effectively destroy all weed growth.

f. If weeds persist, continue applications of post emergent herbicide under the recommendations of licensed Pest Control Advisor/Applicator.

g. Remove all desiccated weeds to finish grade.

h. Water planting areas thoroughly and continuously for 3 consecutive days. Saturate upper soil layers.

i. Allow soil surface to dry for 1 day immediately prior to hydroseeding.

1) Exercise care not to allow the soil surface to become supersaturated with water prior to hydroseeding; do not permit soils to become bone dry.

2) The top .25-inch of soil surface must evidence residual moisture at time of hydroseeding.

B. Application:

1. Perform hydroseeding in 1 application as follows:

a. Perform hydroseeding in one application with seed, fertilizer, stabilizer and specified quantity of fiber mulch.

2. Begin hydroseeding immediately those soils, which have been prepared and watered as specified.

3. Mix Proportions and prepare slurry mixture at the site. Mix components to provide the following application rates:

a. Seed Mix: Refer to Plant Legend.

b. Fertilizer: Gro-Power Plus - 1100 lbs. per acre (only if Gro-Power was not included in Soil Preparation, Section 3.05A).

NOTE: For soil prepared areas, apply 350 lbs. Gro-Power Hi-Nitrogen (14-4-9) per acre in slurry only.

c. Cellulose Wood Fiber Mulch: 1500 lbs. per acre.

d. Tackifier: 20 lbs. per acre.

e. Add water to the tank with engine at half throttle.

1) When water reaches the height of the agitator shaft, and good recirculation has been established, add fertilizers to the mixture.

2) Tank must be at least 1/3 filled with water at this time.

f. Open engine throttle to full speed when tank is 1/2 filled with water.

1) Add all organic amendments, fibers and chemicals, when tank is 2/3 to 3/4 full.

2) Add seed mix.

g. Begin spraying immediately when tank is full, and slurry is thoroughly blended.

4. Application:

a. Hydraulically apply mulch in a manner to form a “blotter-like” material uniformly on all scheduled areas.

b. Apply uniformly on all surfaces. Use the dark color of the fiber as a guide to indicate coverage.

c. Direct spray operation so that slurry spray will penetrate the soil surface, and in a manner so as to drill and mix slurry into the soil, with maximum impregnation and coverage.

d. Apply slurry in a manner to provide maximum moisture retention in the soils, and stabilize surfaces and inhibit erosion.

e. Do not allow slurry components to remain in the machine for longer than 2 hours to avoid destruction of seed, except as follows:

1) If unused slurry components have been in the machine for 2 hours after original mixing, add 50% more of the specified seedmix to the remaining slurry mix.

2) If unused slurry components have been in the machine for 8 hours after original mixing, add 75% more of the specified seedmix to the remaining slurry mix.

3) Do not use slurry mixture, which has not been applied within 8 hours after original mixing.

4) Dispose of rejected slurry material to a legal off-site disposal area.

f. Do not permit workmen to walk on seeded areas unnecessarily before, during and after seeding operations. It shall be the responsibility of the Contractor to coordinate a barrier method to cordon off and protect germinating turf with General Contractor and school Principal.

3.07 SODDING

A. None specified this project.

3.08 MISCELLANEOUS ITEMS

A. Tree Staking:

1. None specified this project.

B. Tree Guying:

1. None specified this project.

C. Root Barriers:

1. None specified this project.

D. Erosion Control Fabric:

1. Refer to notes/ details in contract documents.

E. Redwood Header-boards:

1. None specified this project.

F. 'Benda Board' Recycled plastic header-board. Secure with 'Benda Board' plastic stakes at 3' on center and at joint ends.

1. None specified this project.

F. Concrete Mow Bands:

1. None specified this project.

G. Herbicides: Apply only under licensed pest control applicators recommendations and per manufacturer's directions.

I. Infield mix for Baseball and Softball Infields:

1. None specified this project.

J. Decomposed Granite (DG):

1. None specified this project.

K. Jute Mesh Installation:

1. Prior to placing jute mesh, complete container landscape and irrigation installation. Jute mesh installation shall be performed prior to hydroseeding. Slope shall be smoothed out and cleaned of exposed stones lumps, and other materials that will prevent the mesh from snugly contacting the underlying soil.

2. Jute mesh should be applied by unrolling down the slope or in the direction of water flow in a ditch line. Do not stretch the mesh, allowing it to fully contact the soil. Cut out as required to accommodate irrigation and plant material.

3. Overlap adjacent strips by at least 6-inches.

4. Overlay adjoining ends by at least 6-inches.

5. Secure jute mesh with staples 18-inches X 24-inches apart throughout the matting, (approximately 200 staples per 100 square yards). All staples shall be driven flush to the ground. The beginning and end, (top and bottom of slope) shall be secured by anchoring the matting into slots minimum 6 inches deep. Staple mesh into slots.

6. After placing jute mesh, embed it into soil by firmly tamping or rolling. Secure mesh over soil surface irregularities with extra staples to provide overall contact with the soil.

L. Shredded Bark Mulch:

1. Refer to plan for depth of mulch required.

2. Mulch shall be kept clear of shrub stems and tree trunks.

3. Prepare finish grade adjacent to finish surfaces to allow for full depth of required mulch depth.

M. Shredded Bark Mulch Stabilizer:

1. None specified this project

N. Decorative stone:

1. None specified this project

O. Weed Control Fabric:

1. All weeds shall be eradicated prior to fine grading. Refer Section 3.03.

2. Fine grade, removing all stones as noted in Section 3.02.

3. Unroll fabric parallel to the long dimension of planter. Overlap edges 4”-6”. Secure edges and overlaps with staples. Install staples at 6’ oc along edges and 4’oc along overlaps.

4. Make ‘X’ incisions in fabric to accommodate plantings.

3.09 MAINTENANCE PERIOD

A. Maintenance period shall begin when all work indicated on Drawings and Specifications have been completed, inspected, and approved by the Architect/ Landscape Architect. (Refer to Article 1.08 of this Section).

1. Maintenance work shall be performed as specified herein, and shall be continued for a period of ninety (90) days.

B. Tree Pruning:

1. None specified this project.

2. Stripping of lower branches (“raising-up”) of young trees is not permitted.

Retain lower branches in a “tipped back” or pinched condition, with as much foliage as possible to promote trunk growth (tapered trunk). Lower branches may be cut flush with the branch collar only after the tree is able to stand erect without staking or other support.

3. Perform primary pruning of deciduous trees during the dormant season. Prune damaged trees or those that constitute health or safety hazards promptly, without regard to season.

4. Make all pruning cuts of lateral branches or buds just above collar. “Stubbing” is not permitted.

C. Shrub Pruning:

1. Objectives of shrub pruning are as specified for trees.

2. Do not clip shrubs into balled or boxed forms except where required by the design and so identified on the Plant Legend.

D. Plant Supports:

1. Inspect stakes and guys to prevent girdling of trunks or branches. Make adjustments as necessary to prevent rubbing or injury of bark.

2. Remove stakes and guys as soon as plants no longer require their support.

E. Insect and Disease Control: Maintain effective controls using approved materials and application techniques.

F. Pest Control:

1. Provide all measures necessary to exterminate gophers and moles immediately when their presence is discovered.

2. Repair and restore surfaces to original condition.

G. Fertilizer: Provide applications of Gro-Power Plus at the rate of 20 lbs. per 1,000 square feet or at the rate recommended by the soil report at the following periods:

1. Thirty (30) calendar days following beginning date of the maintenance period.

2. Sixty (60) calendar days following beginning date of the maintenance period and every 30 calendar days thereafter until maintenance period if complete.

H. Plant Replacement: Refer to Section 1.09.

I. Groundcover:

1. Apply specified pre-emergent herbicide to all broadleaf groundcover areas. Apply in accord with manufacturer’s instructions.

2. Edge groundcover to keep in bounds; trim top growth as necessary to maintain an overall uniform appearance.

3. Remove accumulated trash weekly.

J. Lawns:

1. None specified this project.

K. Jute Mesh:

1. Contractor shall inspect on a regular basis, jute mesh fabric and ensure that mesh is always in contact with soil. Add extra staples as required to keep fabric in contact with soil.

2. Ensure that staples are flush with soil.

3. Replace/ repair any mesh that becomes torn, loose or undermined. Repair any slope erosion to the satisfaction of the client prior to repair/ replacement of jute.

L. Decomposed Granite (DG):

1. None specified this project.

M. Shredded Bark Mulch:

1. Re-charge any bark areas noted as deficient during inspection. These areas shall be treated with bark stabilizer prior to final acceptance.

N. Baseball/ Softball infields:

1. None specified this project.

3.10 FINAL ACCEPTANCE

A. Final approval and acceptance of the work will be given when the following conditions, as determined by the Architect, are met:

1. At the completion of the ninety (90) day maintenance period and when all plant material clearly exhibits healthy, vigorous growth.

2. After final inspection and acceptance by the District.

3. The District reserves the option to extend the maintenance period beyond the ninety (90) days specified if he/she determines that further maintenance is necessary to comply with requirements set by the contract documents.

4. Approval and acceptance will be given in writing.

END OF SECTION