AFFILIATED AGENCIES

Orange County Transit District

Local Transportation Authority

Service Authority for Freeway Emergencies

Consolidated Transporation Service Agency

Congestion Management Agency

October 1, 2024

SUBJECT: Invitation for Bids (IFB) 4-2069
"Pavement Rehabilitation at the Naval Weapons Station Seal Beach"

Ladies/Gentlemen:

This letter and its attachments comprise **Addendum No. 3** to the above captioned Invitation for Bids issued by the Orange County Transportation Authority ("Authority").

1. Bidders are advised that the Pre-Bid Conference Registration Sheets are presented as Attachment A to this **Addendum No. 3**.

2. Bidders are advised that the Authority has revised the Project Specifications – Exhibit B; changes made to the Specifications are highlighted and are presented as Attachment B to this **Addendum No. 3**.

3. Bidders are advised that the Authority has revised the Drawings – Exhibit C: changes made to the drawings are clouded and are presented as Attachment C to this **Addendum No. 3**.

Bidders are reminded to acknowledge receipt of this **Addendum No. 3** in their "Bid Form". Bidders are advised that all changes addressed in this **Addendum No. 3** shall be incorporated into the final Agreement.

Questions regarding this Addendum No. 3 should be directed to the undersigned at 714-560-5670 or gvalle@octa.net.

Sincerely,

Gustavo Valle
Senior Contract Administrator
Contracts Administration and Materials Management

Attachments:
Attachment A: Pre-Bid Conference Registration Sheets
Attachment B: Project Specifications – Exhibit B
Attachment C: Drawings – Exhibit C

OCTA

PRE-BID CONFERENCE REGISTRATION

IFB No. 4-2069 **Date: September 17, 2024**

Title: Pavement Rehabilitation at the Naval Weapons Station Seal Beach

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1. **Company Name:** Excel Paving Co.

Attendee: Louis Flores

Address: 2230 Lemon Ave

City, State Zip: Long Beach, CA 90806

Phone Number: (562) 599-5841 **Registered on CAMM NET?** ☒ Yes ☐ No

Prime ☒ **Sub** ☐

E-Mail Address: estimating@excelpaving.net

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2. **Company Name:**

Attendee:

Address:

City, State Zip:

Phone Number: ( ) **Registered on CAMM NET?** ☐ Yes ☐ No

Prime ☐ **Sub** ☐

E-Mail Address:

---

3. **Company Name:**

Attendee:

Address:

City, State Zip:

Phone Number: ( ) **Registered on CAMM NET?** ☐ Yes ☐ No

Prime ☐ **Sub** ☐

E-Mail Address:

IFB 4-2069
ADDENDUM NO. 3
ATTACHMENT B

ORANGE COUNTY TRANSPORTATION AUTHORITY

Pavement Rehabilitation at the Naval Weapons Station Seal Beach Project

800 Seal Beach Blvd, Seal Beach, CA 90740

100% PROJECT SPECIFICATIONS

IFB 4-2069

EXHIBIT B

October 2024

ORANGE COUNTY TRANSPORTATION AUTHORITY

NMCPAC CWD Unit Seal Beach (USB)

Pavement Rehabilitation at the Naval Weapons Station Seal Beach Project,
in Orange County, California

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Pavement Rehabilitation at the Naval Weapons Station Seal Beach Project
800 Seal Beach Blvd,
Seal Beach, CA 90740

Product Requirements

Execution and Closeout Requirements

Technical Provisions

Attachment:

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. Contract documents: The Contractor shall obtain all copies of the Contract Drawings and Specifications including all addenda through the OCTA CAMMNET website, as required to perform the work. The cost for obtaining any additional documents required for the contractor shall be included in the bid price and no additional compensation will be allowed.

B. All drawings, specifications, and other contract documents, and copies furnished by the Authority are its property. They are not to be used on other work and with the exception of signed contract sets are to be returned to the Authority upon request at the completion of the work. The location of the work, its general nature and extent, and the form and general dimensions of the project and appurtenant works are shown on the contract drawings which are hereby made a part of these specifications as listed herein.

C. The general intent of the contract, specifications, drawings, and other contract documents is that the Contractor shall:

1. Furnish tools, qualified labor, material, equipment, qualified superintendence, and services, assurances and guarantees, and assumptions of risk and responsibility, necessary for the performance of the Work as set forth in the contract documents unless otherwise specifically provided.

2. Begin work promptly and proceed expeditiously and continuously without cessation or shutdown of Work unless otherwise specifically approved in writing by the OCTA Engineer, or directed by the contract documents.

3. Perform, complete, and make ready for its intended purpose, within the times specified, including additional times provided for certain conditions, the work or parts thereof covered by the contract, all in accordance with drawings, specifications, and modifications thereto and directions or instructions the OCTA Engineer may give to supplement the drawings and specifications. The Contractor shall retain sole responsibility and expense for quality control of the work.

D. Words and abbreviations which have well-known technical, or trade meanings are used in the contract documents in accordance with such recognized meanings.

E. The organization of the specifications into divisions, sections, parts, and paragraphs, and the arrangement of the drawings, shall not control the Contractor in dividing the work among subcontractors or in establishing the extent of work to be performed by

any trade. Study and compare the contract documents and immediately report to the OCTA Engineer any error, inconsistency, or omission that may be discovered. Contractor shall be liable to OCTA for damage resulting from unreported errors, inconsistencies, or omissions in the contract documents.

F. It will be the responsibility of the Contractor to stage the construction activities at the project site, using the Site-Specific Work Plan process (SSWP) and submit Traffic Control and Detour plans to OCTA Engineer for approval. A conceptual Traffic Detour plans will be provided as a reference (See Attachment F).

G. Ownership of Materials:

1. Materials furnished by the Contractor under this contract shall become the property of the OCTA.

H. General Summary of Work:

1. Work to be performed by Contractor shall consist of the construction of the work shown on the drawings and detailed in the specifications.

2. The descriptions provided in this section are general in nature and are not meant to detail all work required by the contract documents.

3. Project scope occurs at the Naval Weapons Station Seal Beach (NWSSB) at Seal Beach, California. The work under this contract consists of pavement rehabilitation work, including but not limited to mobilization, demobilization, roadway excavation, asphalt paving, concrete slab repair, existing railroad tracks removal, and overall work as reflected within the project plans and specifications.

Summary of Work

The purpose of this project is to make repairs to existing pavement that has deteriorated at the Naval Weapons Station Seal Beach (NWSSB). The pavement condition after the repairs shall provide a smooth driving surface applicable to the mission use of the paved surfaces. There are two distinct areas of the Project: the pavement repairs to the existing access road named Westminster Street (South of Westminster Boulevard) and the pavement repairs to the four paved areas adjacent to the loading docks at Magazines 824, 825, 826 and 827 (North of Westminster Boulevard).

Westminster Street Pavement Repairs

The existing Westminter Street roadway is a combination of jointed Portland Cement concrete pavement and small areas of asphaltic concrete pavement at locations where old railroad tracks were previously removed. There are also several locations along Westminter Street where railroad track crossings still exist. Those tracks are to be removed and new roadway sections constructed. Much of the work at Westminster Street consists of resurfacing the existing concrete and asphalt paving by grinding the surface of Westminster Street. There

are also certain areas where the existing concrete slabs have settled and jacking of the existing concrete pavement using grout to fill the voids is required. In addition, the existing joints in the concrete paving need to be cleaned and sealed. Other related work is indicated on the Plans and required by the Specifications.
The Bid Form lists separate bid items that make up the work to repair Westminster Street, including both unit price pay items and lump sum pay items.

Pavement Repairs at the Magazines

There are existing paved areas adjacent to the loading docks of four weapons storage magazines which require repairs. The work consists primarily of pulverizing in place the existing paved areas, adding or removing base material, grading, compaction and asphaltic concrete paving to the grades indicated on the Plans. Other ancillary work is indicated on the Plans. The Bid Form lists four lump sum bid items for the magazine Work, one for each of the four magazines. The Contract Documents indicate that only one magazine may be taken out of service at a time, so the Contractor will not be able to start work on the next magazine until the previously completed magazine is accepted by the NWSSB and can be utilized for its intended purpose. The sequential order of the magazine paving work will be determined by the NWSSB and the Authority prior to the start of work.

4. There are two distinct areas of the Project: the pavement repairs to the existing access road named Westminster Street (South of Westminster Boulevard) and the pavement repairs to the four paved areas adjacent to the loading docks at Magazines 824, 825, 826 and 827 (North of Westminster Boulevard).

Westminster Street Pavement Repairs

A. The existing Westminster Street roadway is a combination of jointed Portland Cement concrete pavement and small areas of asphaltic concrete pavement at locations where old railroad tracks were previously removed. There are also several locations along Westminter Street where railroad track crossings still exist. Those tracks are to be removed and new roadway sections constructed. Much of the work at Westminster Street consists of resurfacing the existing concrete and asphalt paving by grinding the surface of Westminster Street. There are also certain areas where the existing concrete slabs have settled and jacking of the existing concrete pavement using grout to fill the voids is required. In addition, the existing joints in the concrete paving need to be cleaned and sealed. Other related work is indicated on the Plans and required by the Specifications.
B. The Bid Form lists separate bid items that make up the work to repair Westminster Street, including both unit price pay items and lump sum pay items.

Pavement Repairs at the Magazines

A. There are existing paved areas adjacent to the loading docks of four weapons storage magazines which require repairs. The work consists primarily of pulverizing in place the existing paved areas, adding or removing base material, grading, compaction and asphaltic concrete paving to the grades indicated on the Plans. Other ancillary work is indicated on the Plans. The Bid Form lists four lump sum bid items for the magazine Work, one for each of the four magazines. The Contract Documents indicate that only one magazine may be taken out of service at a time, so the Contractor will not be able to start work on the next magazine until the previously completed magazine is accepted by the NWSSB and can be utilized for its intended purpose. The sequential order of the magazine paving work will be determined by the NWSSB and the Authority.

B. Some of the Magazine pavement repair may not be authorized due to funding limitations. Depending on the bids received for the work described by this IFB, the Authority may at its sole discretion delete one or more of the Magazine pavement repair bid items prior to issuance and execution of the Agreement.

1.02 BID ITEMS

A. Bid Item #1 – Mobilization
Refer to Section 01 71 13.

B. Bid Item #2 – Grind existing concrete pavement
Grind an average of 0.25 inches of the existing concrete pavement on Westminster St. to meet the smoothness requirements.
Refer to Section 03 64 00.

C. Bid Item #3 – AC cold milling
Grind an average of 0.25 inches of the existing asphalt concrete pavment on Westminster St. to meet the smoothness requirements.
Refer to Section 32 01 16.

D. Bid Item #4 – Clean and seal existing joints in concrete
Clean and seal the existing joints of the concrete pavement on Westminster St.
Refer to Section 03 66 00.

E. Bid Item #5 – Yellow traffic stripe
Construct yellow traffic stripe on Westminster St. (near 18th St).
Refer to Section 32 17 24.

F. Bid Item #6 – Remove stripe
Remove yellow traffic stripe on Westminster St. (near 18th St).
Refer to Section 32 17 24.

G. Bid Item #7 – Subsealing and jacking
Perform subsealing and jacking of an area (approx. 11'x15') at the intersection Westminster St and Westminster Dr.
Refer to Section 03 65 00.

H. Bid Item #8 – Crack treatment
Clean and fill/seal all and cracks in the existing concrete pavement surface on Westminster St.
Refer to Section 03 63 00.

I. Bid Item #9 – Spall repair
Repair concrete spall on Westminster St.
Refer to Section 03 63 50.

J. Bid Item #10 – Temporary traffic control
Provide temporary traffic control during the construction of Westminster St.
Refer to Section 01 14 43 and related sections.

K. Bid Item #11 – Remove railroad track
Sawcut the existing adjacent pavement to the limit of removal. Remove railroad track, ties and ballast to minimum of 17.5 inches below finish surface. Construct 12.5 inch thick aggregate base layer and 5 inches of hot mix asphalt (Type A). Import backfill material and compact at edges of roadway to match existing adjacent grades.
Refer to various applicable sections of the Specifications.

L. Bid Item #12 - #15 – Magazine 824, Magazine 825, Magazine 826 and Magazine 827.
Perform pavement repairs at each of the four Weapons Magazines as indicated on the Plans and described by the various applicable Specification sections. Contractor shall submit a separate price for each of the Magazines as shown on the Bid Form.

1.03 INTENT OF DRAWINGS AND SPECIFICATIONS

A. The intent of the drawings and specifications is to prescribe the details for construction and completion of the work that the Contractor undertakes to perform in accordance with the terms of the Contract. Where the drawings or specifications describe portions of the work in general terms, but not complete detail, it is understood that only the best industry practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and perform all the work involved in executing the contract in a satisfactory and workmanlike manner.

B. Drawings and specifications are essential parts of the Contract, and a requirement indicated in one is binding as though indicated in all. They are intended to be complementary and to describe and provide for the complete work.

C. Summaries or introductory descriptions of the work of individual sections do not limit requirements. The Contractor's responsibilities include all requirements for proper execution of the work.

D. Division 01 of the specifications governs all divisions. Comply with Division 01 requirements whether or not referenced in individual sections in Divisions 02-49.

E. References to the singular include the plural and do not imply that only one unit of a product is required.

F. Unless an object or activity is specified to be less than the total, the quantity or amount is all of the object or activity.

G. Unless a requirement is specified to apply for a limited time, it applies for the duration of the work.

H. "Including," "such as," "as follows," and similar terms do not limit the meaning to only items listed. The phrase "but not limited to" is understood to follow these expressions.

I. All items in a list apply unless the items are specified as choices.

1.04 REFERENCE MATERIAL

A. Reference specifications or standards referred to in the plans or specifications shall be the most recent version developed as of Contract award. Where referenced standards refer to the "specifications" or the "special conditions," this shall be understood by Contractor to mean the drawings and specifications of this contract. Contractor is responsible to obtain all reference material at its own expense and to make itself familiar with the requirements therein.

B. The Authority makes the following supplemental project information available:

1. **Attachment G:** Conceptual Traffic Detour Plans
2. **Attachment H:** Westminster Street Site Photos
3. **Attachment I:** Structural Pavement Investigation Report by Labelle Marvin

1.05 PROJECT ACCESS AND CONTRACT LIMITS

A. Contractor shall submit a Traffic Management Plan as required on Section 01 14 43 Environment Resource Protection, outlining access to the job site and maintaining the facility operational at all times.

B. Construction activity shall consist of an 8-1/2 hour period between 7:00 am to 3:30 pm Monday through Friday excluding Government holidays. Working hours for

Magazine 824-827 are limited to weekends and after regular working hours of weapons handling personnel and require government escort/oversight. See attachment D, Northside Work Restrictions, for working hours. Construction area shall be cordoned off using temporary barriers and chain link fencing unless otherwise noted on Contract Drawings.

C. Site Conditions:

The project sites are actively used for mission operations on a daily basis. Coordination with Naval Munitions Command (NMC) and Security will be required. Mission operations will take priority over the work of the Contract and the construction project schedule activities will need accommodate the NMC activities and its schedule. It should be anticipated that work will need to be conducted in off hours and on the weekends. To facilitate Contractor and NMC schedule coordination, the Contractor shall provide the proposed construction schedule to OCTA Engineer and Alex Burris of NMC at least 60 days prior to start of work in each work area.

All personnel working onboard Naval Weapons Station Seal Beach north of Westminster Blvd (Magazines 824, 825, 826 and 827) are required to be approved through the 5512 process and have a LEVEL 3 ID badges issued by the Security Pass & ID Office. See Attachment F, Security Guidelines for Contractors.

Escorting is not allowed under any circumstances, including for material and/or equipment deliveries. All delivery drivers must be approved through the same 5512 process.

Prior to any work beginning, a Construction Worker Authorization letter from the Explosive Safety Officer at Naval Weapons Station Seal Beach is required. The letter will include the specific work restrictions for the project and it will explain the requirement for workers to receive a Hazard Control Brief prior to beginning work. OCTA will submit the Construction Worker Authorization letter request to Alex Burris at least 30 days prior to any project mobilization.

Site Approval Requests for construction laydown yards must be submitted at least 30 days prior to start of construction. Contractor shall use the Site Approval Request form in the attachments and send the form to OCTA Engineer. Upon review and concurrence, OCTA shall submit to Alex Burris for final review and approval.

Alex Burris
Community Planning Liaison Officer
Naval Weapons Station Seal Beach
Office: (562) 626-7755
Email: alexander.j.burris.civ@us.navy.mil

PART 2 – PRODUCTS

Not Used

Pavement Rehabilitation at the Naval Weapons Station Seal Beach Project
800 Seal Beach Blvd,
Seal Beach, CA 90740

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 14 22

RULES AND HOURS OF OPERATION

PART 1 – GENERAL

1.01 SUMMARY

A. This section outlines rules and hours of operation to which Contractor shall conform during the execution of the work under this contract. It is Contractor's responsibility to ensure that these rules are acceptable to the Authority.

1.02 REFERENCE STANDARDS

Comply with the provisions of applicable local, State, and Federal codes, standard plans and specifications, and recommended practices, and with OCTA policy, including:

1. SSPWC: Public Works Standards, Inc., Standard Specifications for Public Works Construction.

2. Caltrans: California Department of Transportation, 2023 Standard Specifications.

3. Cal/OSHA: California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) regulations.

4. OSHA: Federal Occupational Safety and Health Administration regulations.

Environmental Requirements:

a. Air Quality:

1. PORTABLE GENERATORS - use of any portable equipment with a diesel engine (>50 bhp) during the project must either be registered with the California Air Resources Board (CARB) regulations or be permitted with local air district.

2. California Air Resources Board requires compliance with the 'REGULATION FOR IN-USE OFF-ROAD DIESEL-FUELED FLEETS' for any off road diesel equipment and with the 'LARGE SPARK-IGNITION (LSI) ENGINE FLEET REQUIREMENTS REGULATION' for any off-road non-diesel equipment >25 bhp / ≥19 kW (e.g. forklifts, loaders, backhoes, excavators, sweepers/scrubbers, industrial tow tractors, etc.). All applicable equipment that will be used in this project must be registered in the Diesel Off-Road On-Line Reporting System (DOORS) and the assigned Equipment Identification Number (EIN) red and white EIN label must be properly placed on both sides of the equipment.

3. Requirement: EIN Labels on Equipment.

b. Hazard Material:
   1. Contractor will be responsible for disposing all unwanted or empty hazardous material containers used during the project in a manner that complies with all federal, state and local regulations, and shall not dispose of any such waste into solid waste containers owned by the US government.

c. Storm Water:
   1. SPILL RESPONSE - Contractor shall ensure appropriate spill kit equipment is maintained at construction site, and in the event of an accidental spill contact know who to call. Contact the NWSSB Environmental Office for a Spill Notification Flow Chart.

   2. Watch Commander for Seal Beach: (562) 254-0047

   3. Command Duty Officer (CDO): (562) 972-9821.
      The Regional Dispatch Center (RDC): (562) 626-7222.
      Environmental Office Line: (562) 626-7776.

1.03 SUBMITTALS

A. Site Specific Work Plan (SSWP) containing the information specified herein.

1.04 PROJECT COORDINATION

A. Cooperate with the Authority in all matters requiring coordination.

B. Coordinate execution of the work with the Authority to eliminate or minimize to the greatest extent possible interference with other projects.

C. Keep the Authority fully informed regarding all work.

1.05 CONTRACTOR'S RESPONSIBILITY

A. Perform work in accordance with the contract and all applicable codes, ordinances, rules, regulations, orders, and other legal requirements of governmental bodies and public agencies having jurisdiction, including the Authority.

B. Damage caused by Contractor to third-party property, signal and communications equipment, or other facilities shall be repaired at Contractor's expense to a condition equal or better than the condition prior to Contractor entry and as accepted by the Authority. At the sole discretion of the Authority, the Authority may direct repairs to be performed by other contractors. Charges for those repairs shall be deducted from Contractor's payment due under this Contract.

C. Items shown on the drawings to be protected in place, or not identified as part of demolitions, removals, or modifications, shall be protected in place in accordance

with SSPWC Section 7-9, Protection and Restoration of Existing Improvements, at no additional cost to the Authority.

D. Perform work within the operating envelope or which affects the operating system only after submitting a Site-Specific Work Plan (SSWP) and receiving written approval of the SSWP from the Authority.

E. Furnish all labor, materials, and equipment as required to perform and complete the work within the work windows in accordance with the approved schedule in the SSWP.

1.06 BEST MANAGEMENT PRACTICES (BMP) – GENERAL CONTRACTOR REQUIREMENTS

A. BMPs must be of sufficient details, clarity, and organization to permit easy review and approval by the Authority before the proposed work is performed. BMPs shall be submitted to the Authority as follows:

1. At least 14 calendar days prior to start of work.

2. List of approved proposed work plans to be performed under the BMP, with names and phone numbers of Contractor's supervisors in charge of BMP tasks.

B. The Authority may request explanations and changes to the BMP. If the BMP is not acceptable, Contractor shall revise the BMP to make it acceptable. Contractor is responsible for submitting a revised BMP that can be reviewed and approved by the Authority at least seven days in advance of any work.

C. Contractor will be informed if the BMP is acceptable not less than seven calendar days prior to the scheduled start of work within the operating envelope. Once the BMP is accepted, Contractor shall assemble the resources necessary to perform the work represented by the BMP, so that necessary resources are available one day before the work is to be accomplished. At that time, the Authority will make a final decision as to whether or not the work is to proceed as planned or will be canceled. The prime consideration will be the stage of readiness of Contractor, which Contractor shall demonstrate to the Authority.

D. Contractor shall provide sufficient personnel, equipment, materials, and all other resources necessary to return impacted facilities to full service upon the conclusion of the approved work window.

E. Contractor shall perform the work expeditiously and continuously with no gaps or breaks in work activities or substantive reductions in the labor force, equipment, and materials necessary to construct, reconstruct, or repair the impacted facility to full service upon conclusion of the approved work window.

F. In general, open excavation areas shall be protected per OSHA regulations.

G. See attachment E, NWSSB Rules and Regulations, Section 6.

1.08 WORK WINDOWS - GENERAL

A. Site-specific available work windows shall be as approved by the Authority under established procedures.

B. Construction hours shall be limited to 7:00 am to 3:30 pm Monday through Friday unless approved in writing in advance by the Authority and appropriate regulatory agencies.

Working hours for Magazine 824-827 are limited to weekends and after regular working hours of weapons handling personnel and require NWSSB escort/oversight. See attachment D, Northside Work Restrictions, for working hours.

C. Construction work shall not be performed on the following holidays unless formally specifically approved in writing due to special unreasonably avoidable circumstances. Specific non-working holidays include New Year's Day, Washington's Day, Memorial Day, Juneteenth Day, Independence Day, Labor Day, Martin Luther King Jr. Day, Veterans Day, Thanksgiving, and Christmas Day.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

Pavement Rehabilitation at the Naval Weapons Station Seal Beach Project
800 Seal Beach Blvd,
Seal Beach, CA 90740

SECTION 01 14 23

COORDINATION WITH OCTA (THE AUTHORITY) AND LOCAL AGENCIES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Requirements for coordination with the Authority and Local Agencies.

1.02 REGULATIONS

A. If additional work is being performed by others, on or adjacent to the work site for this Contract, coordinate work with other activities in order to avoid conflicts.

1.03 COORDINATION

A. Coordination: Contractor shall coordinate the Work as stated in the Conditions of the Contract.

B. Relationship of Contract Documents: Drawings, Specifications and other Contract Documents are intended to be complementary. What is required by one shall be as if required by all. What is shown or required, or may be reasonably inferred to be required, or which is usually and customarily provided for similar work, shall be included in the Work.

C. Discrepancies in Contract Documents: In the event of error, omission, ambiguity or conflict in the Drawings or Specifications, Contractor shall bring the matter to the Authority's attention in timely manner, for the Authority's determination and direction in accordance with provisions of the Conditions of the Contract.

D. Construction Interfacing and Coordination: Layout, Phasing, and Sequencing of Work shall be solely the Contractor's responsibility. Contractor shall bring together the various parts, components, systems and assemblies as required for the correct interfacing and integration of all elements of Work. Contractor shall coordinate Work to correctly and accurately connect abutting, adjoining, overlapping and related elements, including utilities, for a complete operational system to the satisfaction of the Authority, agencies, and companies. Do not block non-construction areas.

E. Contractor shall notify the Authority a minimum of three (3) working days before excavation begin. The work shall be construction in phases where indicated on the contract drawings or specifications. A phase shall be completed and operational before proceeding to the next phase.

F. The Contractor shall cooperate fully with all forces of the Authority and Local Agencies. Contractor should note that additional work is being conducted on site with other construction contracts and work of this contract must be coordinated amounts the trades and not additional compensation will be allowed for this coordination work.

G. Unless otherwise directed, provide twenty (20) days notice of all utility outages and shutdowns. Duration of outages and shutdowns shall not hinder normal operations and maintenance of the facility. In case of accidental damage to power or utility lines, repair power or utility line immediately, provide alternate source of power to keep facility operation during the repair period.

1.04 GENERAL REQUIREMENTS

A. Adhere to work window rules detailed in the approved SSWP under Section 01 14 22, Rules and Hours of Operation and the specifications.

B. See Section 01 14 22, Rules and Hours of Operation

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 14 25

PROCEDURES IN CONSTRUCTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Procedures used in performance of work of a general nature, including work by Contractor, Contractor use of work site, work zone limitations of site, and pollution controls.

B. Related Sections:

1. Section 01 14 22, Rules and Hour of Operation.

2. Section 01 14 27, Legal Relations and Responsibility.

1.02 WORK BY CONTRACTOR

A. Provide work reasonably inferred from the drawings and specifications as being required to produce the intended result whether or not specifically called for.

B. Work, materials, or equipment described in words which have known technical, or trade meaning shall be deemed to carry the accepted meaning of recognized standards.

C. Complete all work enumerated under the contract including but not limited to the following:

1. Perform work set forth in the contract documents, including the drawings and specifications.

2. Obtain required permits, inspections, and certifications for material compliance.

1.03 SUBMITTALS

A. All required submittals per OCTA Level 3 Health, Safety and Environmental Specification.

B. Material Safety Data Sheets (MSDSs).

1.04 STORM WATER MANAGEMENT

A. Contractor is responsible for preventing and/or mitigating potential chemical releases, erosion and sedimentation impacts associated with storm water runoff. Contractor shall comply with the Statewide General Permit for Storm Water Discharges Associated with Industrial Activities (IGP) order number 2014-0057-DWQ or the latest order (See link below). Contractor shall prepare and submit a best management practices (BMP) plan for OCTA's review and acceptance; and shall implement BMP plan and maintain the BMPs for the duration of the project. See Section 01 57 13, Temporary Erosion and Sedimentation Control, for additional requirements.
(http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0057_dwq_rev_mar2015.pdf).

B. Use best management practices (BMPs) Contractor proposes in connection with the execution of construction activity at the project site. Use BMPs included in the Construction Site Best Management Practices (BMP) Manual prepared by the California Stormwater Quality Association, *www.cabmphandbooks.com*.

C. Provide copies of the contractor's BMP plan to subcontractors and keep a copy available onsite at the project office. Provide amendments to the BMP plan when there is a change in construction or operations, or where storm water runoff conditions may affect the discharge of significant quantities of pollutants to surface waters, groundwater, or separate municipal storm sewer systems. Submit the amended BMP plan to the Authority for review and acceptance as soon as practicable and retain the amended plan on site.

D. Preparation and implementation of an OCTA accepted BMP plan does not relieve the Contractor or subcontractors of their responsibilities to comply with state, county, and local governmental requirements, including those for storm water management and non-point source runoff controls.

1.05 MATERIAL SAFETY DATA SHEETS (MSDS)

A. Material Safety Data Sheets (MSDSs) are prepared by manufacturers and suppliers of products that contain hazardous materials. Hazardous material is defined as any substance which is a physical or health hazard or is included in the Cal/OSHA Director's List of Hazardous Substances or is listed by the California EPA Office of Environmental Health Hazard Assessment under Title 27 of the California Code of Regulations, Section 27001, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity.

B. No hazardous materials shall be delivered, stored, or used at any work site or facility unless they are properly labeled, tagged, or marked and a copy of the MSDS has

been provided to the Authority. Provide a copy of any updated MSDS to the Engineer immediately.

C. Maintain a file of MSDSs at the work site. Keep MSDS files current; add new or updated MSDSs immediately and provide a copy to the Authority.

D. See Contract Documents for OCTA Level 3 Health, Safety, and Environmental Specifications for additional requirements.

1.06 CONTRACTOR USE OF WORK SITE

A. Coordinate access, use, and preparation of facilities adjacent to project areas with owners and agencies. Coordination shall include but not be limited to the following:

1. Staging and laydown area for use under this Contract is as shown on the Drawings. Staging and laydown areas not covered in the Contract Documents shall be requested in writing and approved by the Authority. The Authority may or may not grant approval. No equipment may be operated, or materials stored or placed for any period of time in unfenced areas. Provide a 6' high chain link fence with vertical slats for privacy to enclose each laydown or staging area within the right-of-way. Furnish the Authority with photographs of all staging and laydown areas to document their condition prior to start of work.

2. Contractor shall submit construction staging plan as a part of SSWP for review and approval by OCTA. The staging plan must be accepted by the Authority prior to undertaking work in accordance with the staging plan. A conceptual detour plan will be provided to the Contractor as reference (see Attachment G).

3. Prior to demobilization, restore to full serviceability fences, walls, signs, and gates affected by Contractor's access to the right-of-way.

B. Confine work site operations to areas permitted by law, ordinances, permits, and the contract.

C. Consider the safety of the work, and property on and adjacent to the work site when determining amount, location, movement, and use of materials and equipment on work site.

D. Do not load work site with excessive amounts of material, equipment, or other items which have the potential to interfere with the work or emergency vehicle access or otherwise create jobsite hazards and potential for theft or vandalism.

E. Protect products, equipment, and materials stored on work site.

F. Coordinate operations and secure, at no additional cost to the Authority, additional storage or work areas needed for proper execution of the work. Adhere to the noise levels and work hours of local ordinances.

G. Protect the general public and military personnel from work-related activities, and do not unnecessarily inconvenience those persons by work activities.

H. Site Approval Requests for construction laydown yards must be provided at least 30 days prior to mobilization for construction. Use the Site Approval Request form and send the send the form to OCTA Engineer. Upon review and concurrence, OCTA shall submit to Alex Burris for final review and approval.

I. Preserve drainage facilities throughout the duration of the work so that there is no ponding or accumulation of water in any work site area, there is no flow of water diverted out of normal drainage channels. Maintain culvert inlets and outlets free of debris.

J. Preserve existing right-of-way fences and walls, and replace any fences or walls damaged during the work to the satisfaction of the owner(s) of the fences or walls.

K. Provide and maintain barriers and chain-link fence around the work area as required on Section 01 14 43 Environment Resource Protection.

1.07 WORK ZONE LIMITATIONS OF SITE

A. In addition to site utilization limitations and requirements indicated in contract documents, divide available space equitably among subcontractors and other entities needing access and space so as to provide best overall efficiency in performance of total work of the project.

B. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site, with minimal disruption to adjoining property owners and operations. Pick-up and delivery shall be conducted only during working hours and as approved by the Authority. Contractor shall provide 48-hours' notice to the Authority prior to delivery of equipment or materials to the project site.

1.08 POLLUTION CONTROLS

A. Conduct operations for the execution of the project in compliance with applicable Federal, State, and local regulations controlling pollution and noise levels related to construction work, in accordance with Section 01 14 27, Legal Relations and Responsibility.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 14 27

LEGAL RELATIONS AND RESPONSIBILITY

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Laws to be observed, fire prevention, protection of premises, use of explosives, access roads, construction roads, waste control, public relations, and pollution controls.

2. This section complements requirements in other sections.

1.02 LAWS TO BE OBSERVED

A. Keep fully informed of State and Federal laws; county, municipal, and other local ordinances; regulations; and orders of authorities having jurisdiction that affect those engaged in the work, materials used in the work, or conduct of the work.

B. Observe and comply with laws, ordinances, regulations, and orders of authorities having jurisdiction over the work. Contractor's responsibilities include causing Contractor's agents, employees, subcontractors, and visitors to observe and comply with these laws, ordinances, regulations, and orders.

C. Protect and indemnify the Authority and its officers and employees against claims and liabilities arising from or based on Contractor's violation of a law, ordinance, regulation, or order.

D. Report to the Authority, in writing within two days of discovery, discrepancies or inconsistencies discovered in the drawings, specifications, or contract documents in relation to laws, ordinances, regulations, or orders.

1.03 COORDINATION WITH UTILITIES

A. Coordinate with utility companies to ensure that utility locations are clearly marked for the duration of construction activities.

B. Fully comply with California Dig Alert requirements prior to commencing any dig related activities. (Reference https://www.digalert.org)

1.04 FIRE PROTECTION

A. Comply with Federal, State, county, municipal, and other laws and regulations pertaining to the prevention, control, and fighting of fire and to the conduct of welding and burning operations. Procure all related permits and licenses.

B. Supply fire-fighting equipment, supplies, and personnel and perform work required by laws and regulations pertaining to fire protection. If loss or damage results from fire or other cause, promptly repair loss or damage at no expense to the Authority.

1.05 PROTECTION OF PREMISES

A. Take precautions necessary and be responsible for maintaining lights, guards, signs, temporary passages, or other protection. Protection of the jobsite is the sole responsibility of the contractor, from mobilization through final project turnover and the Authority's formal final acceptance of the Work.

B. Restore loss or damage to materials, tools, or other articles used or held for use in connection with the work at no expense to the Authority.

C. Restore loss or damage as a result of theft, vandalism, fire or other cause attributable to Contractor or subcontractors at no expense to the Authority. Promptly repair damage and restore loss to materials, tools, or other articles used or held for use in connection with the work. Carry the work to completion without damage to or interference with other work or contiguous property.

1.06 *{Paragraph is Not Applicable}*

A. N/A

1.07 WORK SITES AND WASTE MATERIAL

A. Obtain required approvals and bear costs of location, construction, maintenance, operation, removal, and transportation of sanitation facilities and waste material from work sites. Sanitation shall conform to local, State, and Federal requirements. Maintain work sites in a neat and orderly condition.

B. Before starting work, submit to the Authority a contingency plan for cleanup of accidental spillage of toxic or detrimental materials and for restoration of soil damaged thereby to near-natural conditions. Conduct the handling, storage, and disposal of waste material so as to avoid pollution of rivers, streams, ponds, or wells, and in compliance with local, State, and Federal environmental laws and regulations.

1.08 PUBLIC RELATIONS, CONVENIENCE, AND NOTICE OF DAMAGE

A. Conduct operations so as to offer the least possible obstruction and inconvenience to the public. Have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public. Control temporary noise from construction equipment by using work hour controls and maintenance of muffler systems on machinery as necessary.

B. Provide, at Contractor's expense, adequate safeguards, safety devices, and protective equipment, and take other needed action, both at Contractor's own volition and as the Authority may determine reasonably necessary, to protect property, life, health, and public safety in connection with the performance of the work covered by the contract.

C. Notify the Authority in writing within 24 hours after causing injury to persons or damage to public or private property, including above and below ground structures. Contractor shall be responsible and liable for all damages and injuries.

1.09 ENVIRONMENTAL AND ANTI-POLLUTION

A. Comply with Federal, State, county, municipal, and other local laws and regulations pertaining to the environment, including noise, aesthetics, air quality, water quality, and resources of archaeological significance. Refer also to Section 01 14 43 Environmental Resource Protection for additional requirements. Expense of compliance with these laws and regulations is included in the lump sum and unit prices. Provide water used for dust control, or for pre-wetting areas to be paved, as required; no payment will be made by the Authority for this water.

B. Carry out grading and other work in a manner which will not create a pollution problem. Temporary construction roads, haul roads, and work areas shall be maintained free from excessive dust by an approved program of sprinkling, graveling, chemical treatment, temporary asphalt pavement, or combination thereof for the duration of the work.

C. Give attention to the effect of work operations upon the landscape, and take care to maintain natural surroundings undamaged. Disturbances of land or waters outside the limits of construction shall be rehabilitated by Contractor at its expense, when and as directed by the Authority.

D. Prevent pollution of storm drains, rivers, streams, irrigation ditches, and reservoirs with sediment or other harmful materials. Fuels, oils, bitumen, calcium chloride, cement, or other contaminants that would contribute to water pollution shall not be dumped into or placed where they will leach into storm drains, rivers, streams, irrigation ditches, or reservoirs. If operating equipment in streambeds or in and around open waters, protect the quality of ground water, wetlands, and surface waters.

E. Protect adjacent properties and water resources from erosion and sediment damage throughout the duration of the contract. Comply with any applicable Environmental Protection Agency (EPA) or National Pollutant Discharge Elimination System (NPDES) permits and Best Management Practices (BMP) requirements. See Section 01 14 25, Procedures in Construction, and Section 01 57 13, Temporary Erosion and Sedimentation Control.

F. If archaeological remains are uncovered during construction, stop grading operations in the vicinity of the find and immediately notify the Authority. Refer to Section 01 14 43, Environmental and Resource protection for additional requirements.

G. Costs associated with environmental and pollution control measures are considered incidental to the contract work, at no additional cost to the Authority.

H. Take the following actions and others as necessary to control environmental pollution:

1. Reduce air pollution by minimizing dust, containing chemical vapors, and controlling engine exhaust gases. Limit idling of machinery as directed by the Authority.

2. Reduce water pollution by control of sanitary facilities and proper storage of fuel and other contaminants.

3. Reduce turbidity and siltation by controlling erosion and sedimentation.

4. Minimize noise levels.

5. Dispose of waste and spoil properly.

6. Prevent landscape defacement and damage.

I. Comply with South Coast Air Quality Management District (SCAQMD) Rule 403 to control fugitive dust emissions. In addition to the requirements contained therein, comply with the following:

1. Water all land clearing/earth moving activity areas to control dust as required by the Authority. Areas shall remain visibly moist during active operations.

2. Visually inspect construction equipment prior to leaving work sites. Wash off any loose dirt with wheel washers as necessary.

3. Properly tune and maintain all construction equipment in accordance with manufacturer’s specifications.

4. Maintain and operate construction equipment so as to minimize exhaust emissions. During construction activities, trucks and vehicles in loading and unloading queues shall have their engines turned off when not in use to reduce noise and exhaust emissions.

5. Establish on-site construction equipment staging areas and construction worker parking lots on either paved surfaces or unpaved surfaces treated with soil stabilization materials.

6. Use electricity from power poles where feasible, rather than temporary diesel or gasoline powered generators. Muffle noise from generators to the extent practical.

7. Use on-site mobile equipment powered by alternative fuel sources, such as ultra-low sulfur diesel, methanol, natural gas, propane or butane.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 01 14 43

ENVIRONMENTAL RESOURCE PROTECTION

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Protection of species habitat.
2. Protection of archaeological resources.
3. Protection of paleontological resources (fossils).
4. Protection of human remains.
5. Protection from previously existing contamination.
6. Prevention of fuel spills and hazardous material spills.
7. Prevention of stored fuel leaks.
8. Protection of stormwater quality and control of stormwater quantity.
9. Prevention of traffic impacts.
10. Prevention of road damage.
11. Prevention of fugitive dust.
12. SCAQMD requirements.
13. Disposal of refuse.

B. Related Sections:

1. Section 01 14 25, Procedures in Construction.
2. Section 01 14 27, Legal Relations and Responsibility.

1.02 SUBMITTALS

A. Submit under Section 01 33 00, Submittal Procedures.

B. Written commitment to clean up leaks of fuel or hazardous materials.

C. Traffic Management plan.

1.03 GENERAL

A. Provisions of this section are required to reduce or avoid potential environmental impacts of the project, in accordance with environmental mitigation measures imposed by the Authority and other responsible agencies.

B. This section summarizes required mitigation. Proceed with mitigation only after consultation with the Authority and Contractor's biological, archaeological, and geological consultants.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 PROTECTION OF SPECIES HABITAT

A. Avoid placement of construction equipment and personnel within environmentally sensitive habitat areas used by target species of concern. Activities that cannot be conducted without placement of construction equipment and personnel within sensitive habitats shall be timed to avoid the breeding season of the target species of concern. Coordinate such activities and their timing with the Authority.

B. Locate equipment storage, fueling and staging areas to minimize risks of direct drainage or runoff into riparian areas or other environmentally sensitive habitats. Take every precaution to prevent the release of toxic substances into surface waters. Report immediately all project spills of hazardous materials to the Authority, US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB). Immediately clean up hazardous materials and remove all contaminated soils; dispose of only at approved disposal sites.

C. Stockpiling and staging of materials shall be limited to disturbed areas without native vegetation, areas to be impacted by the project or in non-sensitive habitats.

D. Establish No-Fueling zones within a minimum of 10 meters (33 feet) from all drainages and fire-sensitive areas.

E. Maintain project areas clean of debris to avoid attracting predators of the target species of concern. Enclose all food related trash in sealed containers and regularly remove from site. Pets of construction personnel shall not be allowed on site where they may come into contact with any listed species.

F. If dead or injured listed species are located, biologist, in consultation with the Authority, will notify the USFWS and the CDFG according to required protocols. Obtain instructions form the Authority on how to proceed following such discovery.

G. Nesting avian species protected by the Migratory Bird Treaty Act (MBTA):

1. For any construction activities or vegetation removal between February 15 and August 31, a nesting bird survey shall be conducted by contractor's qualified biologist of all habitats within 250 feet of the construction area. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities and vegetation removal. The nesting bird surveys will be conducted in accordance with CDFG protocol as applicable. If no active nests are identified on or within 250 feet of the construction site, no further mitigation is necessary. A copy of the pre-construction survey shall be submitted to the local agencies' jurisdiction. If an active nest of a MBTA protected species is identified onsite (per established thresholds) a 100-foot no-work buffer shall be maintained between the nest and construction activity. This buffer can be reduced in consultation with CDFW and/or USFWS.

2. Completion of the nesting cycle shall be determined by qualified ornithologist or biologist.

3.02 PROTECTION OF ARCHAEOLOGICAL RESOURCES

A. If evidence of an archaeological site or other suspected historical resource as defined by CEQA Guidelines Section 15064.5, including darkened soil representing past human activity, that could conceal material remains (e.g., worked stone, fired clay vessels, faunal bone, hearths, storage pits, or burials) are discovered during any project-related earth-disturbing activities (including projects that would not encounter undisturbed soils), all earth-disturbing activity within 100 feet of the find shall be halted and the Authority shall be notified.

3.03 PROTECTION OF PALEONTOLOGICAL RESOURCES (FOSSILS)

A. Should paleontological resources (i.e., fossil remains) be identified at a particular site during project construction, the construction foreman shall cease construction within 100 feet of the find until a qualified professional can provide an evaluation.

3.04 PROTECTION OF HUMAN REMAINS

A. In the event of the discovery of human remains during construction, procedures outlined in Section 15064.5(e) of the CEQA Guidelines shall be strictly followed. Upon discovery all excavation at the site or any nearby area reasonably suspected to overlie human remains shall cease immediately. Notify the Authority immediately. The Authority will notify County Coroner who will determine if remains are Native American. If the remains are determined to be Native American, the coroner will contact the Native American Heritage Commission (NAHC). The NAHC will identify the Most Likely Descendent (MLD). The MLD will make recommendations for the appropriate treatment and disposition of the remains and any associated artifacts in accordance with Public Resources Code (PRC), Section 5097.98. Do not commence construction in the area until notified to do so by the Authority.

3.05 PROTECTION FROM PREVIOUSLY EXISTING CONTAMINATION

A. In the event that previously unknown or unidentified soil and/or groundwater contamination that could present a threat to human health or the environment is encountered during construction of the proposed project, construction activities in the immediate vicinity of the contamination shall cease immediately. If contamination is encountered, a Risk Management Plan shall be prepared and implemented that (1) identifies the contaminants of concern and the potential risk each contaminant would pose to human health and the environment during construction and post development and (2) describes measures to be taken to protect workers, and the public from exposure to potential site hazards. Such measures could include a range of options, including, but not limited to, physical site controls during construction, remediation, long-term monitoring, post development maintenance or access limitations, or some combination thereof. Depending on the nature of contamination, if any, appropriate agencies shall be notified. If needed, a Site Health and Safety Plan that meets Occupational Safety and Health Administration requirements shall be prepared and in place prior to commencement of work in any contaminated area.

3.06 PREVENTION OF FUEL SPILLS AND HAZARDOUS MATERIAL SPILLS

A. Store fuel, hazardous materials, and chemicals of all types in a contained staging area in full compliance with all applicable OSHA, EPA, NFPA and other governing regulations

B. Conduct equipment refueling and maintenance in the contained staging area.

C. Check vehicles daily for leaks.

3.07 PREVENTION OF STORED FUEL LEAKS

A. Provide berms or other secondary containment at fuel/chemical storage areas in full compliance with all applicable OSHA, EPA, NFPA and other governing regulations.

B. Test storage tanks, valves, etc., for leaks.

C. Submit a written commitment to provide labor, equipment, and materials to promptly clean up any leakage.

3.08 PROTECTION OF STORMWATER QUALITY AND CONTROL OF QUANTITY

A. Comply with the stormwater quality plan prepared before issuance of construction permits. The plan will incorporate the state's industrial best management practices and other techniques if more effective. Refer to Section 01 14 25 Procedures in Construction for additional requirements.

B. Runoff from impervious areas is to be detained, treated to industrial standards, and released under control.

3.09 PREVENTION OF TRAFFIC IMPACTS

A. The Contractor shall prepare and submit a Traffic Management Plan in conjunction with local jurisdictions addressing the following:

1. Detours.

2. Coordination with any other construction projects.

3. Length and timing of street closures.

4. Coordination with NWSSB regarding changes in emergency access routes.

5. Contact information for the Authority, contractors, and their personnel.

B. Conform to all conditions required therein. The Authority in advance of any constructions activities that could potentially violate the requirements and conditions set forth in the plan.

C. No complete closure on the entire Westminster Street in one stage.

D. No closing all Magazines in one stage. Magazines can only be closed one at a time.

E. Construction parking shall be configured to minimize traffic interference during the construction period and, therefore, reduce idling of traffic.

F. Temporary traffic controls are provided, such as a flag person, during all phases of construction to facilitate smooth traffic flow.

G. To ensure adequate access for emergency vehicles when construction activities would result in temporary lane or roadway closures, the contractor shall consult with the NWSSB and Authority to disclose temporary lane or roadway closures and alternative travel routes. If construction activities require the complete closure of a roadway segment, the Contractor shall coordinate with NWSSB and the Authority to designate proper detour routes and signage indicating alternative routes.

3.10 PREVENTION OF ROAD DAMAGE

A. Before and after offsite road and utility construction, videotape the affected roadway and its access roads.

B. Temporarily repair roadway damage caused during construction.

C. Permanently restore damaged roadway to its original condition immediately after offsite improvements are completed.

D. Establish construction truck routes with local jurisdictions before beginning offsite work. Refer to Section 01 14 27 Legal Relations and Responsibility for additional requirements.

E. Consult with local jurisdictions to coordinate offsite work with other projects in the vicinity.

3.11 SCAQMD REQUIREMENTS

A. Refer to Section 01 14 27 Legal Relations and Responsibility for these requirements.

B. All diesel-powered equipment used will be retrofitted with after-treatment products (e.g., engine catalysts).

C. All heavy-duty diesel-powered equipment operating and refueling at the project site use low-NOX diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California Air Resources Board diesel) in the South Coast Air Basin (this does not apply to diesel powered trucks traveling to and from the project site).

D. Construction equipment engines be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction.

E. Construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines.

F. As required by South Coast Air Quality Management District Rule 403—Fugitive Dust, all construction activities that are capable of generating fugitive dust are

required to implement dust control measures during each phase of project development to reduce the amount of particulate matter entrained in the ambient air. These measures include the following:

1. Application of soil stabilizers to inactive construction areas.

2. Quick replacement of ground cover in disturbed areas.

3. Watering of exposed surfaces three times daily.

4. Watering of all unpaved haul roads three times daily.

5. Covering all stockpiles with tarp.

6. Reduction of vehicle speed on unpaved roads.

7. Post signs on-site limiting traffic to 15 miles per hour or less.

8. Sweep streets adjacent to the project site at the end of the day or hourly per Section 01 14 27, 1.10 J if visible soil material is carried over to adjacent roads.

9. Cover or have water applied to the exposed surface of all trucks hauling dirt, sand, soil, or other loose materials prior to leaving the site to prevent dust from impacting the surrounding areas.

3.12 PREVENTION OF NOISE IMPACTS

A. Limit noise-producing activities to hours required by the local jurisdictions for construction activities.

B. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. Diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds shall be turned off when not in use for more than 5 minutes.

C. Contractor shall require by contract specifications that the following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels:

1. Ensure that construction equipment is properly muffled according to industry standards and be in good working condition.

2. Use electric air compressors and similar power tools rather than diesel equipment, where feasible.

3. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 10 minutes.

3.13 DISPOSAL OF REFUSE

The Contractor shall establish a construction management plan with Disposal Company to have a waste diversion minimum of 65 percent for construction, demolition, and site clearing waste. Contractor shall record and provide all disposal receipts to the Authority. Reference https://ocrecycleguide.com/RecycleGuide/15 and CALGreen Sections 4.408 and 5.408

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for the work of this section.

END OF SECTION

SECTION 01 20 10

MEASUREMENT AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. General requirements for the measurement of quantities.

2. Requirements for developing the Schedule of Values required to facilitate processing payment applications.

B. Related Sections:

1. Section 013300 – Submittal Procedures

2. Section 014600 – Quality Assurance and Quality Control

3. Section 017123 – Field Engineering

4. Section 017700 – Closeout Procedures

1.2 REFERENCES

A. Section 7 – Measurement and Payment of the SSPWC

1.3 SUBMITTALS

A. Submittals shall be in accordance with Section 013300, Submittal Procedures, except as modified herein.

1. Preliminary Schedule of Values.

2. Schedule of Values updates.

3. Quantity Verification Sheets.

4. Document evidence of commitment of funds, Contractor certificate, and agreement.

5. Equipment List, Equipment Rate Sheet, and Labor Rate Sheet.

6. Payrolls and other cost data documents for all force account work.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 MEASUREMENT OF QUANTITIES

A. Measurement Standards: Work to be paid for at a Contract price per unit of measurement will be measured by the Authority in accordance with United States Standard Measures.

B. Units of measure to be used to measure the Work of each Section are indicated in the Measurement Article appearing in PART 4 of the Section unless the Work of the Section will not be separately measured for payment.

C. Measurement by Weight:

1. Items to be paid for by weight, such as reinforcing steel, steel shapes, castings, miscellaneous metal, metal fabrications, and similar items, will be measured by scale weight for the type and quantity of Material actually furnished and installed.

2. Provide certified platform scales, sealed by the authority having jurisdiction, for measuring all Material to be measured and paid for by weight, except that shipped by rail.

    a. Provide platform scales of sufficient size and capacity to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed.

    b. Combination vehicles may be weighed as separate units, provided they are disconnected while being weighed

    c. Arrange to have all scales inspected and certified as often as the Authority may deem necessary to ascertain accuracy.

    d. Pay all costs incurred as a result of regulating, adjusting, testing, inspecting, and certifying scales

3. Have a licensed weighmaster weigh all Materials to be weighed on the scales provided.

    a. The Authority may be present to witness the weighing and to check and compile the daily record of such scale weights; however, in any case, furnish weight slips and daily summary weigh sheets.

    b. Furnish a duplicate weight slip or load slip for each vehicle weighed, and deliver the slip to the Authority at the point of delivery of the Material.

4. If the Material is shipped by rail, certified car weights will be accepted, provided that only actual weight of the Material will be paid for and not the minimum car weights used for assessing freight tariff.

    a. Car weights will not be acceptable for Material to be passed through mixing plants.

5. Weigh the Material to be measured by weight separately for each Bid Item in the Bid Schedule under which it is to be paid.

6. Weigh the empty trucks used to haul Material being paid for by weight on a daily basis, and at such additional times as the Authority may require.

    a. Provide a plainly legible identification mark on each truck.

    b. The Authority may require the weight of the Material to be verified by weighing empty and loaded trucks on such other scales as the Authority may designate.

D. Measurement by Volume

1. Items to be paid for by volume will be measured by the cubic dimension listed or indicated on the Bid Schedule.

2. When Material is to be measured and paid for on a volume basis and it is impractical to determine the volume by the specified method of measurement, or for partial payment purposes only when requested by the Contractor in writing and accepted by the Authority in writing, the Material can be measured by one of the following methods:

    a. Method 1: Volume measurement in place or removed will be by the unit of volume as indicated and as quantified on the Plans or as specified.

    b. Method 2: The Material will be weighed in accordance with the requirements specified for weight measurement and paid for by weight.

        1) Such weights will be converted to volume measurement for payment purposes.

        2) Factors for conversion from weight measurement to volume measurement will be determined by the Authority and must be agreed to by the Contractor before such method of measurement of pay quantities will be accepted.

E. Measurement by Area

1. Items to be paid for by area will be measured by the square dimension indicated on the Bid Schedule, Plans, or as specified.

2. Method of square measurement will be as specified.

F. Linear Measurement

1. Items to be paid for by linear measurement will be measured by the linear dimension listed or indicated on the Bid Schedule.

2. Unless otherwise indicated, measure items, components, or work at the centerline of the item in place.

G. Unit Measurement

1. Items to be paid for by unit measurement will be measured by each complete unit supplied and accepted, and the measurement will be for the entire item, unit of work, structure, or combination thereof, as specified and as listed or indicated in the Bid Schedule with pay limits for the item of work shown on the Plans.

2. If the Contractor requests progress payments for partial delivery of items or amounts on the Bid Schedule, such progress payments will be made in accordance with a well-balanced, detailed Schedule of Values, prepared by the Contractor and submitted to the Authority for approval.

   a. In such a Schedule of Values program, show fixed measurable quantities where possible and unit prices for each applicable item as allocated to the different features of the work.

   b. Ensure that the summation of extensions of quantities and unit prices and related costs equals the amount of the contract price or sum of pay item totals indicated in the Bid Schedule.

H. Lump-Sum Measurement

1. Items to be paid for by Lump-sum measurement will be for the entire item, unit of work, structure, or combination thereof, as specified and as listed or indicated in the Bid Schedule with pay limits for the item of work shown on the Plans.

2. If the Contractor requests progress payments for lump-sum contracts or lump-sum pay items or amounts on the Bid Schedule, such progress payments will be made in accordance with a well-balanced, detailed Schedule of Values, prepared by the Contractor and submitted to the Authority for approval.

   a. In such a Schedule of Values program, show fixed measurable quantities where possible and unit prices for each applicable lump-sum item as allocated to the different features of the work and major subdivisions.

   b. Ensure that the summation of extensions of quantities and unit prices and related costs equals the amount of the lump-sum contract price or lump-sum pay item indicated in the Bid Schedule.

3.2 FIELD MEASUREMENT FOR PAYMENT

A. Verification: The Authority will verify the computed quantities of work performed and submitted by the Contractor, and of Materials and equipment delivered to the site, for payment purposes.

B. Measurement:

1. Provide all equipment, workers, and survey crews to measure quantities, and perform all measurements as required in accordance with the provisions for measurement specified herein and in Section 017123, Field Engineering.

2. Notify the Engineer prior to taking all measurements so that they may witness the measurements being taken.

3. Where practical and agreed to by the Engineer, measure all quantities at the close of the pay period.

    a. Measure Work that will be covered, and that is therefore impractical to measure at the close of the pay period, before it is covered.

4. The Engineer's determination of measurements after reviewing the Contractor's measurements is final.

C. Unless otherwise specified, calculate all quantities using the dimensions shown on the Plans.

1. Cross sections recorded in the field books in accordance with Section 017123, Field Engineering, may serve as a quantity pay document for appropriate Work items performed.

D. No allowance will be made for specified tolerances.

E. Submit Quantity Verification Sheets (QVS) to the Engineer for all items of Work installed for approval and payment.

1. Attach appropriate Plans to the Quantity Verification Sheets showing stationing, locations, and similar information as they relate to the measured quantities.

2. Submit work sheets for quantities calculated from cross sections, Plans, and similar items with the Quantity Verification Sheets.

3. To verify that the Quantity Verification Sheets are correct and that the Work has been installed according to the Plans and Specifications, have a representative of the Contractor sign and the Contractor's Quality Control Manager, required by Section 014400, Quality Assurance and Quality Control, countersign the Quantity Verification Sheets.

3.3 REJECTED, EXCESS, OR WASTED MATERIALS

A. Rejected, excess, and wasted materials include the following:

1. Material wasted or disposed of in a manner not called for under the Contract.

2. Rejected loads of material, including material rejected after being placed in nonconformance to the provisions of the Contract.

3. Material not unloaded from the transporting vehicle.

4. Material placed outside the lines indicated on the Plans or established by the Authority.

5. Material remaining on hand after completion of the work.

B. Rejected, excess, and wasted materials will not be paid for.

C. Do not include rejected, excess, and wasted materials in the final total quantities.

D. No additional compensation will be permitted for loading, hauling, and disposing of rejected, excess, or wasted material.

3.4 PAYMENT PROCEDURES

A. Bid Items from the Bid Schedule under which payment for the Work of each Section is to be made are indicated in the Payment Article appearing in the Section unless the Work of the Section will not be paid for separately or is paid using force account procedures.

B. Where Work shown on the Plans or described in the Specifications is not directly indicated to be included in a specific bid item, include the costs in connection with such Work in the bid price for the appropriate Bid Item.

C. Schedule of Values

1. The Contractor shall obtain the Authority's acceptance for the use of a Schedule of Values for partial payment. If agreement cannot be reached on a Schedule of Values for a Bid Item, no partial payment shall be provided and the Bid Item will be paid for as units completed and in-place; the Contractor shall incorporate the undivided Bid Items into the Schedule of Values.

2. Develop the Schedule of Values by subdividing the Bid Schedule bid items into measurable and deliverable "Activities," that are included in the Preliminary 90-Day Schedule and subsequent Project Schedules.

a. For each bid item number and title include the same quantity, unit price and bid item price from the Bid Schedule and a breakdown of its specific activities. For each activity number provide a description of the activity, quantity of units, unit prices and specific scheduled value for the activity.

b. Each Schedule of Value item shall be a measurable unit that can have a quantity determined at each cut off date for each payment request period.

c. Each Schedule of Value item shall be a physical component of the final constructed facility that has value to the Authority should there be a sudden shutdown of the Project.

d. Each Schedule of Value item shall be a physical component that can be evaluated for compliance with the Contract at the time of progress payment. This will be determined by the overall requirements of the Contract, including quality requirements of Section 014500, Quality Assurance and Quality Control, and the Specification Sections associated with each Bid Item.

e. Each Schedule of Value item shall possess exclusive characteristics of physical attributes, including location, which will enable it to be specifically assigned a schedule duration with a start and end date that can be used as a schedule activity.

f. Costs for incremental design and submittal preparation along with procured contract material and equipment amounts shall be assigned to their respective procurement activities and shall be shown with a “one day” resource duration on the last work day of the procurement activity

g. No cost loading for Schedule of Value payment shall be applied to submittal preparation or review activities.

h. Costs for installation of the material/equipment, including labor, construction equipment, and temporary materials, shall be assigned to their respective construction/installation activities.

i. The value of inspection and testing activities shall not be less than 10 percent of the total costs for procurement and construction activities.

j. Subtotals of cost loaded activities organized by bid item shall subtotal to bid item amounts as shown on the submitted bid form. Do not exceed the quantities, values, or lump sum price in the Bid Schedule when preparing the Schedule of Values.

3. The Schedule of Values will be submitted and reviewed as follows:

a. The Contractor shall prepare a Preliminary Schedule of Values and submit it to the Engineer at the Pre-Construction Meeting as part of the Preliminary 90-Day Schedule covering the first 90 Days following receipt of the Notice to Proceed.

b. Within 10 Days, the Engineer will either accept this Preliminary Schedule of Values to be the cost-loaded activities used in the Preliminary 90-Day Schedule as the basis for progress payments under this Contract for the first 90-Calendar Days, or direct that the Preliminary Schedule of Values be amended and resubmitted.

4. Update and resubmit the Schedule of Values for acceptance when necessary to reflect changed, deleted, or additional Work.
5. Any attempt to increase the cost of early activities, i.e., "front loading," will be rejected by the Authority resulting in a complete rejection of the Schedule of Values and Project Schedule until such "front loading" is corrected.

D. A Monthly Update Report shall be prepared by the Contractor.. The Monthly Update report includes a Project Schedule Update, Schedule of Values and amounts earned as of the progress payment data date, , and serves as the Contractor's Payment Request.

1. Submit and review a draft Monthly Update Report with the Authority at the Monthly Schedule Update Meeting. The purpose of the meeting is the joint review and agreement on job progress and schedule of values quantities status as shown in the draft Monthly Update Report.

a. Field measurement for payment shall be performed and determined in accordance with Specification Section 012010-3.2. The Contractor shall provide completed Quantity Verification Sheets for review at the meeting.

b. The Authority will provide written comments and determinations on progress within 3 working days after the meeting. The Contractor shall incorporate the Authority's determination on progress into the Monthly Update Report.

c. The Authority's determination on progress for measurement and payment shall be final. The Contractor shall incorporate the Authority's accepted

progress into the payment request. No payment of quantities or percent complete will be provided beyond that accepted by the Authority.

2. After reviewing job progress status, submit the Monthly Update Report to the Authority within 5 working days after the date of the review with the Authority.

3. Within 7 Days after receipt of the Monthly Update Report, the Authority will either accept or reject it.

   a. If accepted, progress shown in the monthly update will be the basis for the Contractor's application for payment. The accepted monthly update report shall serve as the Contractor's Payment Request.

   b. If rejected, update shall be corrected and resubmitted by the Contractor with a corrected Payment Request.

   c. Should the Contractor request payment in an amount greater than that accepted by the Authority, the Authority will at its sole discretion correct the Contractor's Payment Request to the Authority accepted amount and provide payment on that basis. The Contractor shall reflect any such correction in the next Monthly Update Report.

E. Support payment requests with the following supporting documentation:

   1. Documentary evidence of commitment of funds such as firm orders, Contracts, invoices, records of expenditure;

   2. A certificate from the Contractor that the items for which payment is requested are acquired solely for the execution of this Contract and are free from all encumbrances;

   3. An agreement that the items will be adequately maintained, and will not be removed from the Work Site until all Work is complete;

   4. Quantity Verification Sheets in accordance with Section 012010-3.2; and

   5. The Monthly Update Report and Payment Request in accordance with Section 013250, Project Schedules and Reports.

F. Until the certified copy of the Engineer's final itemized Punch List of Work to be completed or corrected is received as described in Section 017700, Closeout Procedures, payment commensurate

with the outstanding Work remaining will be withheld.

1. Withheld payments for each incomplete Punch List item will be determined by subtracting progress payments made to date for the item from the Schedule of Values total.

2. A withheld payment may be withheld until the Punch List item is satisfactorily completed and approved by the Engineer.

3.5 ALLOWANCES

A. Furnish and perform the Work paid for by allowances for the specified sums acceptable to the Authority.

1. In some cases, Quantity Allowances may have been provided to account for Work the extent of which is unknown at the Bid date.

   a. Quantity Allowances allow Bidders to bid on the Work covered by the Quantity Allowance on the same basis as their competitors.

   b. Once the actual extent of the Work is determined, it will be measured and paid for on a unit price basis.

2. In some cases, Cash Allowances may have been provided to account for Work the extent of which is unknown at the Bid date.

   a. Cash Allowances allow Bidders to bid on the Work covered by the Cash Allowance on the same basis as their competitors.

   b. Once the actual extent of the Work is determined, the Contract price will be adjusted to reflect the actual quantity required by using a unit price based on a ratio of the quantity of items the Contractor allotted to the cash allowance divided by the cash allowance.

B. Allowances include the actual cost to the Contractor of Materials and equipment to be delivered and installed, and do not include additional monies to reimburse the Contractor for any applicable trade discounts.

C. Do not deduct from the Allowance the costs for unloading, handling, labor, installation, overhead, profit and other expenses contemplated, but include them in the Contract Price.

3.6 INCREASED OR DECREASED QUANTITIES AND QUANTITY VARIATIONS

A. Increased or Decreased Quantities.

For Items paid for on a unit price basis, increases or decreases in the quantity of an item of the Work will be determined by comparing the actual quantity of such item of the Work with the Quantity indicated for that item of the Work in the Bid Schedule.

B. Quantity Variation

If the actual quantity of any item of the Work paid for on a unit price basis varies from the Quantity for such item in the Bid Schedule by 25 percent or less, payment for the item of the Work will be made at the contract unit price.

If the actual quantity of such a contract item of the Work exceeds the Quantity for such item in the Bid Schedule by more than 25 percent, the compensation payable to the Contractor for the amount in excess of 125 percent of the Quantity will be reviewed by the Contractor and Authority, and an equitable adjustment may be made to the unit price for such excess amount by means of a Change Order to credit Authority with any reduction in cost or to compensate Contractor for any increase in cost resulting from the change in quantity. The amount of credit or compensation shall be determined in accordance with the Contract terms and Section 01 26 00, Contract Modifications Procedures. This review of the adjustment will be made at a time mutually acceptable to Authority and the Contractor. If the review results in a determination that no change in unit price is warranted, the record shall so state.

If the actual quantity of such a contract item of the Work is less than 75 percent of the Quantity for such item in the Bid Schedule, the compensation payable to the Contractor will be reviewed by the Contractor and Authority, and an equitable adjustment may be made to the unit price for the entire quantity by means of a Change Order to credit Authority with any reduction in cost or to compensate the Contractor for any increase in cost resulting from the change in quantity. The amount of credit or compensation shall be determined in accordance with the Contract terms and Section 01 26 00, Contract Modifications Procedures. This review of the adjustment will be made at a time mutually acceptable to Authority and the Contractor. If the review results in a determination that no change in unit price is warranted, the record shall so state.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.02 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements for requesting substitutions.

B. Definitions:

1. Substitutions: Requests by the Contractor to deviate from specified requirements for products, material, equipment, and methods, or to provide products other than those specified, shall be considered requests for substitutions, limited to the following conditions:

a. Substitutions requested during the bidding period and accepted prior to the execution of the Contract.

b. Substitutions requested after execution of the Contract.

C. Substitution Provisions: Refer to substitution provisions of the Instructions to Bidders, in addition to the following specific requirements.

D. Per Article 19. Assignments and Subcontracts: Contractor shall not have the right to make any substitutions of any subcontractor listed in Exhibit D, entitled "List of Subcontractors," except in accordance with the provisions of the Subletting and Subcontractors Fair Practices Act, Public Contract Code section 4100 et. seq. the Authority's consent shall not be deemed to relieve Contractor of its obligation to fully comply with the requirements of this Agreement.

E. Substitution Request Submittal Period:

1. Time Limit:

a. Substitutions requested during Bidding Period: The Authority will consider requests for substitutions if received during bidding. Request permission for substitutions from the Authority per provisions of the Instructions to Bidders. If approved, the Authority will issue an addendum allowing all bidders to incorporate the request substitution.

b. Substitutions requested after execution of Contract: Only within 14 calendar days of the Notice to Proceed will the Authority and the Engineer consider requests for substitutions, requests submitted after this will be denied.

2. Product Availability Waiver: Substitutions will be considered 21 calendar days of execution of the Agreement only when a product becomes unavailable due to no fault of the Contractor. Failure to place orders for specified products sufficiently in advance of required date for incorporation into the Work will not be considered as a valid reason for which Contractor may request a substitution or deviation from requirements of the Drawings and Specifications.

1.02 SUBMITTAL REQUIREMENTS

A. Substitution Requests: The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. No Substitutions shall be allowed as part of a bid unless formally accepted and issued within a formal bid addendum.

1. Submit three copies of each request for consideration to the Authority. Identify product or fabrication or installation method proposed for substitution. Include specification section number and title and drawing numbers and titles.

2. Substitution Request Form: Contractor shall formally submit any proposed substitutions for the Authority's approval outlined with Construction Specifications Institute (CSI) form "13.1a."

3. Documentation: Substitutions will not be considered when they are indicated or implied on shop drawings, product data or sample submittals without a separate written request, or when acceptance will require substantial revision of the Contract Documents. Show compliance with requirements and the following, as applicable:

a. Statement indicating why specified material or product cannot be provided.

b. Coordination information, including a list of changes or modifications needed to other parts of the work and to construction performed by the Authority and separate contractors, which will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated or specified.

d. Product data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated or specified.

h. Research/evaluation reports evidencing compliance with building code in effect for project, from a model code organization acceptable to Inspector and authorities having jurisdiction.

i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the work, including effect on the overall contract time. If specified product or method of construction cannot be provided within the contract time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

j. Cost information, including a proposal of change, if any, in the contract sum.

k. Contractor's certification that Contractor has investigated proposed substitution and that it complies with requirements in the contract documents and is appropriate for applications indicated. Contractor further certifies that Contractor will provide the same or better guarantee or warranty as for specified product or method of construction. Contractor shall also certify that Contractor will coordinate installation of accepted substitution into work, making any changes as may be required for work to be complete in all respects as specified.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

m. Only one request for substitution will be considered for each product.

n. If the proposed substitution is not accepted, provide the specified product.

4. The Authority's Action: If necessary, the Authority will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. The Authority will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

   a. Form of Acceptance: Change Order, if costs involved; otherwise, written approval.

b. Use product specified if the Authority is unable to accept the proposed substitution within time allocated.

1.03 COMPARABLE PRODUCTS

A. See Section 01 60 00, Product Requirements, for discussion of comparable products.

1.04 PRODUCT SUBSTITUTIONS

A. The Authority will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, the Authority will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution is submitted within the time frame stated herein above.

2. Requested substitution offers OCTA a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities OCTA must assume. OCTA's additional responsibilities may include compensation to consultants for redesign and evaluation services, increased cost of other construction by OCTA, and similar considerations.

3. Requested substitution does not require extensive redesign of the project or revisions to the contract documents.

4. Requested substitution is consistent with the contract documents and will produce indicated results.

5. Substitution request is fully documented and properly submitted.

6. Requested substitution will not adversely affect Contractor's Construction Schedule.

7. Requested substitution has received necessary approvals of authorities having jurisdiction.

8. Requested substitution is compatible with other portions of the work.

9. Requested substitution has been coordinated with other portions of the work.

10. Requested substitution provides specified warranty.

11. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions will not be considered if they are indicated or implied on shop drawings or project data submittals or Requests for Information without formal submittal request detailed in this section.

1.05 AVAILABILITY OF SPECIFIED ITEMS

A. Prior to execution of Contract, Contractor shall verify that all specified items will be available as required by the schedule for orderly and timely progress of the work. Notify the Authority if specified items will not be available.

B. Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, will deducted from amounts due or to become due the contractor, and will not be borne by OCTA.

C. Substitutions during construction for prior approved items will only be considered under the following circumstances:

1. Substitution is required for compliance with subsequent interpretation of code.

2. Specified item cannot be provided within the contract time or becomes unavailable through no fault of contractor.

3. Subsequent information discloses that specified item or system will not perform properly or fit in designated space, or manufacturer or supplier refuses to certify or warrant performance as required.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

Administrative and procedural requirements for handling and processing contract modifications.

B. Related Sections:

1. Reference Article 13. Changes as written within the Contract Agreement.
2. Exhibit A: SECTION V: GENERAL PROVISIONS
3. Section 01 60 00, Product Requirements, for procedures to approve comparable products.
4. Section 01 25 00, Substitution Procedures, for procedures to propose substitutions.
5. Section 01 26 13 Requests for Information, for procedures to clarify and interpret the contract documents.

1.02 MINOR CHANGES IN THE WORK / FIELD ORDERS

A. The Authority will issue supplemental instructions authorizing minor changes in the work, not involving adjustment to the Contract Price or the Contract Time, in written form.

1.03 DOCUMENTATION OF CHANGES IN AGREEMENT PRICE AND AGREEMENT TIME

A. Documentation of Changes in Contract Sum and Contract Time: Contractor shall provide full information required for evaluation of proposed changes and to substantiate costs of changes in the Work.

1. Maintain detailed records of Work completed on time and material basis. Contractor shall use “Daily Extra Work Report” provided by the Authority. All extra work reports shall be signed by the Authority and the Contractor verifying all extra materials and labor incorporated into the project at the end of each workday.

2. Document each quotation for a change in Contract Sum and Contract Time, with sufficient cost breakdown data for labor, materials, and equipment to allow evaluation of the quotation.

3. Provide details of cost of all material used for change in work. Provide detail of labor hours expended in change of work, and wage rate of worker. Provide total of hours equipment was used in the work, and hourly rate of the equipment.

B. Additional Data: Provide additional data to support computations:

1. Quantity of product, material, labor, and equipment.

2. Justification for change in Contract Time, if claimed.

3. Credit for deletions from Contract, similarly documented.

C. Overhead and profit added to the direct cost of performing changes in the work shall not exceed 20% and shall constitute full compensation for all overhead costs (including but not limited to general overhead, supervision, office expenses, field office facilities and staff, utilities, and transportation). The 20 percent overhead and profit shall be divided between Contractor and sub-contractor(s),

1.04 CHANGE PROCEDURES

A. Change Procedure – General: The following describe administrative procedures to be followed in complying with provisions of the Conditions of the Contract for changes in the Work.

B. The Engineer's Supplemental Instructions: Minor changes in the Work, not involving an adjustment in either the Contract Sum or Contract Time, as authorized by the Conditions of the Contract. The Contractor shall take prompt action on such instructions.

C. OCTA Initiated Proposal Requests: The Authority will issue a detailed description of proposed changes in the work that may require adjustment to the Contract Price or the Contract Time. If necessary, the description will include supplemental or revised drawings and specifications.

1. Proposal Requests issued by the Authority are not instructions either to stop work in progress or to execute the proposed change.

2. Proposal Request may include an estimate of additional or deductions in Contract Sum or Contract Time for executing the change and may include stipulations regarding overtime work and period of time the requested response from the Contractor shall be considered valid.

a. Within time specified in Proposal Request or five (5) calendar days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Price and the Contract Time (cost proposal) necessary to execute the change. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

c. Include costs of labor and supervision directly attributable to the change.

d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

e. Submit name of individual authorized to receive construction change documents and who is responsible for informing others in Contractor's employ or subcontractors of changes in the Work.

f. Quotation Form: Use forms acceptable to the Authority. Quotations shall include detailed unit-cost breakdowns and, if applicable, be in compliance with contractor's rate sheets.

g. All cost proposal preparation, field visits, submittals for change orders shall be included in contractor's cost proposal.

D. Upon the Authority's approval of a Proposal Request, the Authority will issue a Change Order for signatures of the Authority and Contractor. The Authority and Contractor will sign the Change Order indicating acceptance and approval of the change.

1.05 WORK CHANGE DIRECTIVE

A. Work Change Directive: In accordance with provisions of the Conditions of the Contract, the Authority may issue a Work Change Directive. A Work Change Directive instructs Contractor to proceed with a change in the work, for subsequent inclusion in a Change Order.

B. Work Change Directive contains a complete description of change in the work. It also designates method to be followed to determine change in the Contract Price or the Contract Time. Contractor shall promptly execute the change in the Work.

C. Changes Based on Stipulated Sum or Time: Construction Change Directive shall be based on stipulated adjustment in Contract Sum and Contract Time as mutually acceptable to the Authority and Contractor and the change shall be performed

immediately. A Change Order for this amount shall be executed at the earliest convenience of all parties. Contractor shall provide a cost estimate based on section 1.03 of this section.

D. Changes Based on Unit Costs or Quantities: When scope of change cannot be accurately determined in advance, a Construction Change Directive shall be executed based on mutually acceptable quantities and pre-determined unit prices. Actual costs shall be determined after completion of the Work and a Change Order for this amount shall be executed.

E. Changes Based on Time and Material Costs: If directed for changes for which amounts are not defined or are disputed, a Construction Change Directive will be issued by the Authority and Contractor shall execute the Work, keeping accurate records of time, both labor and calendar days, and cost of materials. See Section 1.03. A. 1.

F. Cost and Time Resolution: If amounts for changes in Agreement price and Agreement time cannot be agreed upon by the Authority and Contractor, amounts shall be resolved in accordance with requirements of the Conditions of the Contract for resolution of disputes.

G. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive. The total construction cost of the change shall not exceed the mutually agreed adjustment in Contract Sum and Contract time of the Change Order.

H. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the contract.

1.06 CHANGE ORDER

A. Change Orders, General:

1. In accordance with provisions of the Conditions of the Contract, the Engineer and Authority will review Contractor's response to a Proposal Request or a Construction Change Directive and determine with the Contractor the acceptable amount, if any, of the change in Contract Sum and Contract Time.

2. When agreement is reached on the change in Contract Time and Sum, the Engineer will prepare a Change Order, with supplementary documents (Contractor's cost estimate) as necessary to describe the change and the associated costs and schedule impacts, if any.

3. The Authority and Contractor will sign the Change Order indicating acceptance and approval of the change.

1.07 RECONCILIATION OF CHANGE ORDER

A. Schedule of Values: Promptly revise the Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjustment to the Contract Sum.

B. Schedules: Promptly revise progress schedules to reflect changes in Contract Time, revising sub-schedules to adjust time for other items of Work as may be affected by the change. Submit revised schedules at the next Application for Payment following approval and acceptance of the Change Order.

C. Change in work due to request for information, or any other reason shall not be reason for claims of delays by the contractor. The Authority shall endeavor to respond to request for information within seven (7) days, and an additional fourteen (14) days to make necessary changes to resolve changes in work and change orders. The Authority shall issue an official change order within 30 calendar days following OCTA's approval.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 26 13

REQUESTS FOR INFORMATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Section Includes:

1. The general requirements for Contractor's requests for information and pertains to all portions of the contract documents.

1.02 DEFINITION

A. A "Request for Information" is defined as a document submitted by the Contractor requesting clarification of a portion of the contract documents, hereinafter referred to as RFI.

B. All questions and requests for clarification of the Contract Documents from the contractor and subcontractors shall be submitted in writing as a "Request for Information".

1.03 CONTRACTOR'S REQUESTS FOR INFORMATION (RFI)

A. When the Contractor is unable to determine from the contract documents, the exact material, process or system to be installed, the Contractor shall request the Authority to make a clarification of the indeterminate item. Wherever possible, such clarification shall be requested at the next appropriate project meeting, with the response entered into the meeting minutes. When clarification at the meeting is not possible, either because of the urgency of the need or the complexity of the item, the Contractor shall prepare and submit an RFI to the Authority.

B. RFI's shall be submitted on a form provided by the Authority. The Contractor will be given the form electronically upon Notice to Proceed.

C. RFI forms shall be completely filled in, and if prepared by hand, shall be fully legible after photocopying. Each page of attachments to RFI's shall bear the contract number, project name, RFI number. Each RFI shall reference a drawing number and/or Specification Section. The Contractor shall include sketches, mark ups on the contract drawings, and/or photographs to clearly demonstrate its requests or questions in each RFI. Contractor shall indicate on the RFI the date by which response is required.

D. RFI's from Subcontractors or Material suppliers shall be submitted through, reviewed by, and signed by the Contractor prior to submittal to the Authority.

E. Prior to submitting an RFI, the Contractor shall carefully study the Contract Documents to assure that the requested information is not available therein. Contractor shall be responsible for insuring that RFI's are not frivolous or excessive.

F. Frivolous RFIs: Frivolous RFIs include requests for information shown in the contract documents or resulting from Contractor's failure to study and compare contract documents or to coordinate its own work; and RFIs that are incomplete, contain errors, or include unrelated items. The cost in time and materials on the part of the Authority and related design professionals to review unnecessary or frivolous RFIs will be assessed and deducted from the Contractor's final payment.

G. RFI's shall not be used for the following purposes:

1. To request approval of submittals.

2. To request approval of substitutions.

3. To request changes which entail additional cost or credit or changes in the contract time.

4. To request different methods of performing work than those shown or specified.

H. In the event the Contractor believes that a clarification by the Authority results in additional cost, the Contractor shall not proceed with the Work indicated by the RFI until a Change Order is prepared and approved. Answered RFI's shall not be construed as approval to perform extra work.

I. RFIs submitted to request clarification of issues related to means, methods, techniques, and sequencing of construction, or to establish scope of subcontractors' work will be returned without response.

J. Unanswered RFI's will be returned with a stamp or notation indicating: "Not Reviewed."

K. Assign each RFI a sequential number starting from 001. Contractor shall prepare and maintain a log of RFI's and, at any time requested by the Authority, Contractor shall furnish copies of the log showing all outstanding RFI's. Contractor shall also note all unanswered RFI's in the log.

L. Contractor shall allow for 14 calendar days review and response time for RFI's.

1.04 RESPONSE TO RFI'S

A. The Authority's response to RFIs will be in writing. RFIs received after 12:00 noon will be considered as received on the following working day for purposes of establishing the start of the 14-day response time. The Authority's response may include a request for additional information, in which case the Authority's time for response will date from time of receipt of additional information.

B. No extension of time will be granted because of Contractor's failure to submit RFIs in a timely manner or to allow a sufficient amount of time for review.

C. The Authority's response will confirm a stated interpretation or solution or otherwise interpret the design intent; this may include an alternative solution, consistent with the design intent of the Contract Documents. Where such a solution would result, in the contractor's opinion, in an extra cost or time extension to the project, contractor shall notify the Authority prior to implementing the response.

D. Each RFI and the Authority's response shall become a part of the Contract Documents. To the extent that the Authority's response changes, modifies, or amends any portion of the Contract Documents, the response shall be deemed sufficient. No revised Contract Documents will be issued unless the RFI response is insufficient in providing direction to the Contractor. Whenever possible, revised contract documents will be issued in 8-1/2x11 inch or 11x17 inch size, suitable for inclusion with the RFI response. Re-issuance of full size drawings or sets of drawings will be kept to an absolute minimum.

1.05 VERBAL COMMUNICATIONS

A. Any verbal instructions given to the Contractor on the job site by any person other than the Authority's personnel is subject to nullification by the Authority. Contractor shall obtain written documentation of any and all verbal instructions (especially if instructions may reflect an addition to or deduction from the contract sum) from the Authority prior to commencement of the work resulting from the verbal instructions.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this Section.

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

2. Administrative and procedural requirements for preparing and submitting a Schedule of Values.

B. Related Sections:

1. Article 6. Payment of the Contract Agreement

2. IFB Exhibit A, SECTION V: GENERAL PROVISIONS

3. Section 01 26 00, Contract Modification Procedures, for administrative procedures for handling changes to the contract.

4. Section 01 32 00, Construction Progress Documentation, for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

5. Section 01 33 00, Submittal Procedures, for administrative requirements governing the preparation and submittal of the Schedule of Values.

1.02 DEFINITIONS

A. Schedule of Values (Cost Breakdown): A document furnished by Contractor allocating portions of the Contract Price to various portions of the work and used as the basis for reviewing Contractor's Applications for Payment. The Contract Scope of Work including any and all required deliverables are considered by the Authority to be part of the Schedule of Values upon which progress payments will be made to the Contractor, and if not clearly identified in the Contractor’s Schedule of Values, 100% of progress payment will not be made until all required Scope of Work items are completed and received by the Authority.

1.03 SCHEDULE OF VALUES

A. Prepare and submit within 15 calendar days after the effective date in the Notice to Proceed, but in any event prior to the Contractor’s first Application for Payment, for

approval by the Authority, a Schedule of Values. If the schedules are affected by Change Orders, prepare and submit updated copies of the schedules under this Section.

B. Submit, under the provisions of Section 01 33 00, Submittals, and a Schedule of Values including the following information:

1. For purposes of calculating the progress payments, the Authority will use the cost breakdown submitted by the Contractor for each Bid Item at the start of this Agreement.

2. Additional clarification may be provided to identify items in the Schedule of Values with the title of Project and location, agreement number, name and address of the Contractor, date of submission, Specification Section/Subsection number, Specification Section/Sub-section title, and Bid item number as contained in the Bid Form submitted with the Contractor's bid.

3. Contractor shall indicate subcontracted work items the Schedule of Values including the related subcontractor name(s) and subcontracted amount(s).

4. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values as itemized in the Cost Breakdown for progress payments during construction. Percentage of completed items installed will be paid.

5. Schedule of Values line items that break down the value for a particular work item on the Bid Form shall be subtotalled to match the price of that Bid Form item.

6. Upon request by the Authority, support values given with data, which will substantiate the correctness of the values.

7. In addition to the requirements stated in the General Conditions, the Schedule of Values shall be provided in Excel and PDF file formats.

C. Each item shall include a directly proportional amount of Contractor's overhead and profit, which will not be paid separately.

D. Lump Sum bid payment based on Schedule of Values approved by the Authority based on percentage of work completed.

E. The sum of all values listed in the schedule shall equal the total contract Sum.

F. Cost loading of Schedule of Values is for fund management purposes only and will not be constructed to establish unit cost.

G. The Authority's Review: The Authority will review the Schedule of Values to assure that they are reasonable and balanced. When approved, they will be used in reviewing and approving the monthly partial payment requests. If review by the

Authority indicates that changes to the schedules are required, upon five (5) calendar days from receipt of notice from the Authority, the Contractor shall revise and resubmit schedules in the same manner as the original schedules were prepared and submitted.

1.04 APPLICATION FOR PAYMENT – GENERAL

A. Progress Payment Application Draft "Pencil Draw:" The Contractor, no later than 21st day of each month, shall prepare a draft of the official progress payment application based on the estimated percentage of completion of work in the approved Schedule of Values and on the Contractor's actually incurred allowable expenses on such work. The Authority and the Contractor shall meet at the jobsite and review the proposed completion percentages against the physical work in place. Any discrepancies in the percentages of work complete or what will reasonably be completed within one week of the jobwalk shall be adjusted and submitted as noted in the official monthly Progress Payment Application.

B. Progress Payment Application: The Contractor, no later than 25th day of each month, shall prepare an official progress payment application based on the estimated percentage of completion of work in the approved Schedule of Values and on the Contractor's actually incurred allowable expenses on such work. Each month's official Payment Application shall include all associated [Mechanics] Conditional Lien Releases by Contractor and Subcontractors, as well as associated Unconditional Lien Releases for payments received within the previous 30-days.

C. Fabricated materials, materials on site but not installed in construction, and work items not completed shall not be included in progress payment applications and shall not be paid by OCTA unless specifically pre-approved on a case by case basis for formal Stored Materials billings, and accompanied with all associated approval documents (proof of ownership, insurance, bonding, acceptance) and the Authority's inspection report. Any approved stored material billing does not relieve the contractor of their full responsibility for the materials prior to project completion and final turnover to OCTA. Any associated materials and/or equipment that is compromised by damage, theft, or otherwise shall be replaced by Contractor at Contractor's sole expense and in a timely manner to not impact the project's schedule.

D. OCTA will issue the progress payment, in the amount it deems appropriate, on approximately the same of the following month, net 30-days.

E. Application for progress payments and partial progress payments shall be in accordance with Contract General Provision and the approved Schedule of Values.

F. The Contractor shall submit the progress payment, signed by the Contractor's authorized representative, and furnish an invoice for further process based on a schedule to be established at the pre-construction meeting. Submit other

documentation such as certified payroll, monthly labor utilization form, and waivers as required by contract.

G. For the final payment, the Authority shall determine if all Work of the Contract has been performed by the Contractor according to the provisions of the Contract. The Authority shall make a final estimate and determine the amount remaining due the Contractor. This amount shall include any amounts withheld from previous estimates but exclude any and all deductions that have been or should be made at the time under other sections of these Specifications.

1.05 WORK AUTHORIZATION CHANGE NOTICE WORK

A. Measurement and payment of Work associated with a Work Authorization Change Notice (WACN) shall be as detailed in OCTA's Exhibit A.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Administrative provisions for coordinating construction operations on project including, but not limited to, the following:

   a. General project coordination procedures.

   b. Administrative and supervisory personnel.

   c. Project meetings.

B. Contractor is responsible for coordination with OCTA's selected material suppliers and contractors involved in the project.

C. Related Sections:

1. Section 01 32 00, Construction Progress Documentation, for preparing and submitting Contractor's construction schedule.

2. Section 01 43 01, Contractor Qualifications and Requirements, for required staff and qualifications.

3. Section 01 71 23, Field Engineering, for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

4. Section 01 77 00, Closeout Procedures, for coordinating closeout of the contract.

5. Individual specification sections for normal startup, testing, and adjusting procedures required.

1.02 COORDINATION

A. Coordination: Coordinate construction operations with those of other OCTA selected material suppliers and contractors. Coordinate construction operations included in different sections of the specifications to ensure efficient and orderly installation of

each part of the work. Coordinate construction operations, included in different sections, which depend on each other for proper installation, connection, and operation. Contractor is responsible for progress and performance of the work, and shall provide direction to others as required to properly coordinate trades and processes.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or after its own installation.

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

3. Make adequate provisions to accommodate items scheduled for later installation.

4. Coordinate equipment installation requirements with equipment contractors to prevent delays and facilitate proper installation. Acknowledge, accommodate, and respect equipment contractors' needs for access to the work for the periods required to complete equipment installation. Incorporate these periods into the construction progress schedule and work plan before commencing work.

B. Prepare memoranda for distribution to each party involved (including the Authority and separate contractors and suppliers) outlining special procedures required for coordination. Include such items as required notices, actions, reports, and list of attendees at meetings.

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

1. Preparation of Contractor's construction schedule.

2. Preparation of the schedule of values.

3. Installation and removal of temporary facilities and controls.

4. Delivery and processing of submittals.

5. Progress meetings.

6. Pre-installation conferences.

7. Commissioning, Startup and adjustment of systems.

8. Training activities.

9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.03 KEY PERSONNEL

A. Key Personnel Names: Within 5 days of date of Notice to Proceed, submit a list of key personnel assignments, including superintendent and other personnel in attendance at project site. Conform to requirement of Section 01 43 01 Contractor Qualifications and Requirements. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to project.

1. Post copies of list in project meeting room and in temporary field office. Keep list current at all times.

1.04 INITIAL CONSTRUCTION MEETING

A. The Authority will schedule the Initial Construction Meeting (Pre-construction meeting) after the Contractor has been provided the written Notice to Proceed.

B. The Authority will distribute a notice of this meeting, along with an agenda of the subjects to be addressed at least one (1) workday prior to the meeting.

C. Contractor's Construction Project Manager and key staff, as defined in Section 01 43 01, and as identified per the requirements of 1.03, shall attend the meeting.

D. The following is a minimum agenda for the Initial Construction Meeting:

1. The Authority will explain and discuss:

a. Insurance, laws, codes, maintenance of traffic, permits, quality assurance, quality control, inspection, and related items.

b. Preparation, submittal, and review of Site-Specific Work Plans (SSWP)

c. Procedures for processing RFI's and Submittals

d. Monthly estimate cutoff dates, and procedures for processing Applications for Payment.

e. Distribution of the contract documents.

f. Preparation of record documents.

g. Use of the premises.

h. Work restrictions and permitted working hours.

i. Owner's occupancy requirements.

j. Responsibility for temporary facilities and controls.

k. Procedures for disruptions and shutdowns.

l. Construction waste management and recycling.

m. Parking availability.

n. Areas available for Contractor's Office, work, and storage areas.

o. First aid.

p. Security.

q. Progress cleaning.

r. Level 3 Health, Safety and Environmental Specifications.

2. The Contractor shall introduce, explain, and discuss the following:

a. Contractor's representatives and personnel, briefly describing each person's responsibilities, and furnishing complete contact information for the Contractor's staff.

b. Arrangements for safety, first aid, emergency actions, and security.

c. A list of Subcontractors and suppliers.

d. Sequence of critical Work, the construction schedule, and the submittal schedule.

e. Plan for construction sequencing of entire Contract, general worksite layout, temporary facilities, erosion and sedimentation control plans, haul routes, noise, air and water pollution control and temporary closure plans.

f. Breakdown of lump sum items and Schedule of Values.

g. Locations and use of office, storage, parking and construction areas.

h. Construction methods and coordination of Work within the provisions of the Contract Documents.

i. Coordination with the Work of Subcontractors and procedures for sharing access to the Worksite.

1.05 PROGRESS MEETINGS

A. Progress meetings will be scheduled by the Authority on a weekly basis and more often as necessary. The Authority will make every effort to accommodate the Contractor's availability in establishing the meeting schedule.

B. Attendees: In addition to the Authority and representatives of the Contractor, subcontractors, suppliers, and other entities concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with project and authorized to conclude matters relating to the work.

C. Meetings will focus on the competent and timely execution of the Work under the Contract. The Authority will chair these meetings. Weekly site meetings will start when Contract Work commences. At the weekly meetings the Contractor shall present a review of the following topics:

1. Safety and incidents.

2. Contractor's Schedule status.

3. Progress according to the current approved schedule.

4. Presentation of new 28-day schedule.

5. Critical activities and any constraint issues on the 28-day schedule.

6. The Authority's requirements and coordination.

7. Specific late items of Work.

8. Overall Project schedule status.

9. Contract time.

10. Public impacts and contacts.

11. RFI, Submittal, Procurement, and Change Issue logs and statuses.

12. Contract Issues including:

    a. Status of proposal requests.

    b. Pending changes.

    c. Status of Change Orders.

    d. Pending claims and disputes.

    e. Documentation of information for payment requests.

1.06 PRE-INSTALLATION CONFERENCES:

A. Contractor shall conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction, as required in individual specification sections.

B. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Authority of scheduled meeting dates.

C. Suggested Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    1. Contract Documents.

    2. Options.

    3. Related RFIs.

    4. Purchases.

    5. Deliveries.

    6. Submittals.

7. Review of any required mockups.

8. Possible conflicts.

9. Compatibility problems.

10. Time schedules.

11. Weather limitations.

12. Manufacturer's written recommendations.

13. Warranty requirements.

14. Compatibility of materials.

15. Acceptability of substrates.

16. Installation procedures.

17. Coordination with other work.

18. Required performance results.

19. Protection of adjacent work.

D. Contractor shall record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

E. Reporting: Distribute minutes of the meeting to the Authority, each party present and to other parties requiring information.

F. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the work and reconvene the conference at earliest feasible date.

1.07 PROJECT CLOSEOUT MEETING:

A. Reference the IFB, Section V: General Provisions, C. Final Inspection and Acceptance for further clarification of "Closeout" and "Substantial Completion."

B. The Authority, in coordination with the Contractor, shall schedule and conduct a project closeout conference no later than 15 calendar days prior to the scheduled

date of Substantial Completion. The conference will review requirements and responsibilities related to project closeout.

C. Attendees: The Authority, Contractor's key personnel, major subcontractors and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with project and authorized to conclude matters relating to the work.

D. Agenda: The Authority will introduce and discuss items of significance that could affect or delay Project closeout, including the following:

1. Preparation of record documents.
2. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
3. Submittal of written warranties.
4. Requirements for preparing operations and maintenance data.
5. Requirements for demonstration and training.
6. Preparation of Contractor's punch list.
7. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
8. Final Submittal procedures.
9. Coordination of separate contracts.
10. The Authority r's partial occupancy requirements.
11. Installation of the Authority's fixtures, and equipment. [TBD]
12. Responsibility for removing temporary facilities and controls.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 REPORTING

A. Minutes: The Authority will record significant discussions and agreements achieved at all conference chaired by the Authority, including initial construction meeting, progress meetings and project closeout meeting. The Authority will distribute the meeting minutes to everyone concerned within five (5) working days of the meeting.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section specifies the requirements for preparation of the Contractor's Progress Schedule, related narratives, and progress reporting.

B. The reports and schedules shall be designed to:

1. Assure adequate planning and execution of the Work so that the Work is completed within the number of calendar days allowed in the Contract

2. Assist the Contractor and the Authority in appraising:

a. The attainability of the proposed schedule.

b. Conformance to contract requirements.

c. The progress of Work.

C. For all schedules and scheduling requirements/activities related to this Contract, the Contractor can utilize Primavera Project Planner, Microsoft Project software, or Excel worksheets to prepare time-scaled bar-chart schedules that are acceptable to the Authority.

1.02 SUBMITTALS

A. Submit the following information under the provisions of 01 33 00, Submittal Procedures. All electronic file submittals shall include the entire schedule, which is typically provided by utilizing the file backup routine in the software. Electronic submittals shall be provided in PDF format.

1. Construction Schedule (with narrative) in electronic format and upon acceptance by the Authority provide two full-size plots.

2. Contractor's Progress Schedule in electronic format.

3. Weekly Progress Reports (28 day schedule) in electronic format.

B. Milestones, as specified in the Contract Documents, shall be incorporated into all areas of the scheduling process.

1.03 CONTRACTOR'S CONSTRUCTION SCHEDULE (BASE SCHEDULE)

A. Within five (5) calendar days of the Notice to Proceed, the Contractor shall prepare and submit to the Engineer for approval a detailed schedule of work. This schedule shall indicate the areas in which the Contractor anticipates working and the dates during which construction operations will be performed. All submittals by the Contractor shall be listed as separate activities in the schedule. The Contractor shall submit three (3) hard copies and a PDF file of the schedule to the Engineer for approval.

B. The detailed schedules shall be of the bar chart or network diagram method, at the Contractor's option. The schedule shall be comprehensive, covering activities at the site of the work, procurement, and construction.

C. The schedule shall identify work items or Milestones that affect or are affected by the Authority, other utilities, and other third parties including Subcontractors.

D. The work activities making up the schedule shall be of sufficient detail to assure that adequate planning has been done for proper execution of the Work and such that, in the judgment of the Authority, it provides an appropriate basis for monitoring and evaluating the progress of the Work. A work activity is defined as any activity requiring time and resources (manpower, equipment and/or material) to accomplish. Activity durations will be in workdays. Typical construction activity durations should be between 3 and 14 workdays. Exceptions may be reviewed by the Authority where sub-schedules will be used to define critical portions of prime schedules, materials delivery, key submittals, etc. Activities shall include but not necessarily be limited to the following:

1. Project mobilization.
2. Submittal and review of plans and procedures.
3. Procurement of Materials.
4. Each item of Work.
5. Special Inspections.
6. Final cleanup.
7. Final Inspection.
8. All activities by Contractor, the Authority, and others, which affect progress or required dates for completion, or both, for each part of the Work.
9. Release of areas to the Authority according to Milestone Dates.

E. Other requirements that shall be incorporated into the Contractor's schedule include:

1. Division of Work into major work areas (i.e. Areas 1, 2, etc.).

2. All activities that require unusual shift work, such as two shifts, 6-day workweek, etc. shall be clearly identified in the schedule.

F. Each activity shall be labeled with an alphanumeric work breakdown structure/sorting/selection code.

G. The sequence, duration in workdays, and interdependence of activities required for the complete performance of all work shall be shown.

H. The schedule shall begin with the date of the Notice to Proceed and conclude with the date of Final Completion shown in the Contract.

I. If CPM scheduling software is employed by the Contractor, the network diagram shall include the following:

1. Time scaled network diagrams based on calendar days and shall be critical path method (CPM) precedence format showing the sequence/interdependence of activities required for complete accomplishment of all items of work.

2. Each activity shall be plotted so that the start/finish dates can be determined graphically (by comparison) with the calendar scale.

3. All network diagrams shall be drawn legibly and accurately on 22" x 34" size media, or other size acceptable to the Authority.

4. Each activity shall be labeled with complete description, planned duration in workdays, and total float time.

5. The schedules shall accurately indicate the sequence and interdependency of all work activities.

1.04 CONTRACTOR'S PROGRESS SCHEDULE

A. The Contractor shall update the Progress Schedule monthly (the "Schedule Update") and submit to the Authority for review concurrent by the 5th of the month following month for which the progress reflected on schedule.

B. Progress Payment to Contractor will not be made until a schedule conforming to the requirements stated herein is submitted each month to the Authority. A continued failure to supply such schedule data shall be grounds for declaring Contractor in default of the Contract.

C. Contractor's progress schedule shall:

1. Become an integral part of the Contract and will establish interim completion dates for the various activities under the Contract and shall reflect and be consistent with the Milestone Dates established by the Contract.

2. Be used to determine if any activity is not completed by the Milestone date.

3. Be combined with the Schedule of Values for use in the Contractor's submittal/application for and the Authority's review and approval of monthly partial payments.

1.05 PROGRESS REPORTING

A. Contractor shall provide regular progress reports monthly along with progress schedule submittal to include as described herein.

B. A statement that the approved Contractor's Progress Schedule has not changed or has been revised. Only the revisions described in this statement shall be made to the progress schedule.

C. A 28-day schedule covering the past week, current week and two weeks ahead at each scheduled weekly meeting. The schedule shall be a bar chart schedule, divided into 28 calendar days, listing all activities for the four-week period. Scheduled and actual start and finish dates shall be shown. Each activity shall be identified by its approved activity number and a brief description. The bar chart schedule shall have in the heading the Project Title, Contract Number, Contractor's Name, Date, Contract Day Number and Remaining Contract Days.

1.06 PROGRESS EVALUATION

A. If at any time during the Project, the Contractor fails to complete any activity by its latest scheduled completion date and which late completion of such activity will impact the end date of the work past the Contract Completion Date, Contractor shall within five (5) working days, submit to the Authority a written statement as to how and when Contractor will reorganize his work force to return to the current Contractor's construction schedule. Whenever it becomes apparent from progress evaluation and updated construction schedule data that any Milestone Date(s) or the Contract Completion Date will not be met, Contractor, at his sole cost, shall take some or all of the following actions:

1. Increase construction manpower in such quantities and crafts as shall substantially eliminate the backlog of work and meet the current Contract Completion Date.

2. Increase the number of working hours per shift, the number of shifts per day, the number of work days per week, the amount of construction equipment, or any

combination of the foregoing sufficient to substantially eliminate the backlog of work.

3. Reschedule work items to achieve concurrent accomplishment of work activities.

B. Under no circumstances will the addition of equipment or construction forces, increasing work hours, or any other method, manner, or procedure required to return to the contractually required completion date be considered justification for a change order or treated as an acceleration.

C. The Contractor's Progress Schedule shall begin with the date of issuance of the Notice to Proceed (NTP) and conclude with the date of final completion of the project. Float or slack time within the Progress Schedule is not for the exclusive use or benefit of either OCTA or the Contractor but is a jointly owned expiring project resource available to both parties as needed to meet contract milestones and the Contract completion date.

1.07 SUBMITTAL OF SCHEDULES

A. The Contractor shall submit to the Authority for review, two (2) copies of the construction schedule (base schedule) within time frame specified herein. The Authority shall have a minimum of 2 weeks to review the construction schedule. Contractor shall address the Authority 's comments on schedule and resubmit within five (5) workdays from receipt of the Authority's comments.

B. The Contractor shall submit to the Authority for review two (2) hard copies of the Contractor's Progress Schedule, one (1) copy of all schedule data, along with one electronic copy within the time frames specified herein. Updates of the Contractor's schedule shall be submitted monthly as part of the payment application submittal.

C. THE AUTHORITY will have five (5) workdays after receipt of the Contractor's Progress Schedule to respond. Upon receipt of the Authority's comments, the Contractor shall confer with the Authority on the appraisal and evaluation of the proposed Contractor's Progress Schedule. The Contractor shall make necessary changes resulting from this review, and the Contractor's Progress Schedule shall be resubmitted for review within three (3) workdays after the receipt of comments.

D. The Contractor's construction schedule (base schedule) when reviewed and recognized by the Authority shall stand until updated schedules are submitted to reflect actual completed work, reviewed changes, or recognized delays.

E. All updated or revised schedules submitted after the base schedule shall be in the same detail as the base submittal unless modified in writing by the Authority.

1.08 REVISIONS TO REVIEWED SCHEDULE

A. The Contractor shall accomplish the Work in accordance with Contractor's construction schedule recognized by the Authority. Changes made to Contractor's construction schedule for accomplishing the Work shall in all cases require prior approval by the Authority.

B. The Contractor shall reflect processed Change Orders that affect the schedule, and issuance of emergency change authorizations in the next schedule submittal.

C. If Contractor desires to make a major change to Contractor's construction schedule, the Contractor shall submit to the Authority a schedule change request in writing stating the reasons and justification for the change, for the Authority's review and acceptance. Major changes are defined as follows:

1. Those that affect the time estimate for the accomplishment of an activity.

2. Those that affect the sequence when varied from the original schedule to a degree that there is doubt that the agreed Contract Completion Date will be met.

3. Changes to activities having adequate float to absorb the change shall be considered as minor changes, except that an accumulation of minor changes may be considered a major change when the effect of such changes impact the Project Milestones or the Contract Completion date.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

A. No separate measurement or payment shall be made under this section. Contractor's Progress Schedule will be reviewed each month. The monthly progress payment will not be made until the Contractor's Progress Schedule is found by the Authority to be in conformance with the requirements of this Section.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section consists of requirements for Contractor submittals to the Authority, including plans, procedures, certificates, shop drawings, product data, samples, and miscellaneous Work-related submittals. Individual submittal requirements are specified in the applicable specification section for each unit of Work. No construction work shall be commenced prior to submittals and acceptance of all submittals and shop drawings required per contract documents.

1.02 DEFINITIONS

A. Submittals are categorized for convenience as follows:

1. Plans and Procedures: Include narrative descriptions, diagrams, equipment, procedures for excavation, demolition, site clearing, maintenance of traffic, etc.

2. Certificates: Include certified material test reports, certification of proper disposal of demolition materials, or tickets demonstrating compliance with materials, tests or specifications indicated.

3. Equipment: Include equipment specifications, manufacturer information and demonstration of suitability of equipment for intended use.

4. Product Data: Standard published information ("catalog cuts") and specially prepared data for the Work of the Contract, including standard illustrations, schedules, brochures, diagrams, performance charts, instructions and other information to illustrate a portion of the Work. Include standard printed information on materials, products and systems to be furnished by the Contractor for this Contract.

5. Shop Drawings: Include detailed manufacturing and layout information, drawings, diagrams, schedules, and illustrations, demonstrating the contractor's understanding and approach to meeting the intent of the plans and specifications. Shop drawings shall be submitted to the Authority for review and comment on the conformance of the submitted information to the general intent of the design.

6. Samples: Include physical examples of materials either for limited visual inspection or selection, or (where indicated) for confirmation, testing, and analysis by the Authority.

7. Miscellaneous Submittals: Such submittals shall be related directly to the Work, not administration related. Include but not be limited to asphalt concrete mix design, work schedule, phasing plans, warranties, guarantees, maintenance agreements, workmanship bonds, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock (and similar information) and, devices and materials applicable to the Work but not processed as shop drawings, product data or samples. Beside the shop drawings required in the project plans or specifications, the Authority may require additional shop drawings demonstrating the contractor's approach to meeting the intent of the plans and specifications as a part of Quality Control/Quality Assurance.

B. Product data, shop drawings, samples, and any other submittals are not contract documents.

1.03 SCHEDULE OF SUBMITTALS

A. It is the Contractor's responsibility to identify the submittals that will be required in each section of specifications and on the contract drawings and determine the date on which each submittal will be made. The submittal schedule, the timeline for which Contractor plans to deliver required submittals to the Authority shall be submitted by the Contractor at time of initial construction meeting to the Authority for review and acceptance. The Authority shall have a minimum of 14 calendar days to review Schedule of Submittals. After review and return by the Authority, resubmit Schedule of Submittals within 7 calendar days.

B. Throughout the duration of the Contract, Contractor shall, at the Authority's request, submit all product or procedure documentation for any activity in the Contract.

1.04 GENERAL SUBMITTAL REQUIREMENTS

A. Administrative Requirements for Submittal: Submittals shall be made in accordance with requirements specified herein and in Product Sections of the Specifications.

B. Transmission of Submittals: Transmit all submittals through the Authority unless otherwise directed. Include all information specified below for identification of submittals and for monitoring of review process.

C. Make submittal at time required per the contract documents and per the Submittal Schedule accepted by the Authority. Allow three (3) weeks for the Authority's Consultant to review and accept submittals.

D. The Authority and Contractor shall discuss at the initial construction meeting, the exact procedure to be adopted for the processing of submittals. Generally, submittals shall be made at the time indicated in Contractor's approved submittal schedule. The Authority will endeavor to process submittals within 21 calendar days after receipt of

each of submittals and within 14 calendar days after receipt of each of resubmittals from Contractor. After review and return by the Authority, resubmit the submittals within 7 calendar days.

E. Contractor shall be responsible for on time delivery and processing of submittals so as not to impede the progress of the Work. Contractor shall submit an electronic copy of each submittal in PDF format, plus up to three (3) hard copies of each submittal if requested by the Authority.

F. Contractor shall, before making submittals, ensure that products will be available in the quantities and in the time required by the Contract.

G. Contractor shall coordinate and sequence different categories of submittals for same work, and interface units of work, so that one will not be delayed for coordination with another.

H. Contractor shall maintain a file of all approved submittal documents on work site.

I. Where required by California law, or as specified in the Contract Documents, submittals shall be signed and sealed by a Professional Engineer licensed in the State of California, or Land Surveyor licensed in the State of California as applicable.

J. Submittals shall be consecutively and uniquely numbered using a document identifier including Contract number and the appropriate suffix, which will include specification section number and submittal number. Submittals under each specification section shall be in a separate package.

K. Submittals Identification: Identify each submittal by Specification Section and sub-section number's in order of submittal submitted to the Authority starting from 001 as the first submittal. Re-submittals shall use same number as original submittal, followed by a point number indicating sequential re-submittal. For example:

001	First submittal of the project
002	Second submittal of the project
002.1	First re-submittal of second submittal of the project
002.2	Second re-submittal of second submittal of the project

1. Title each submittal with Project name, the Contract number (C-3-2208), Submittal number, Contractor's Project number and submission date.

2. Identify each element on submittal by reference to Drawing sheet number, detail, schedule, number, assembly or equipment number, Specifications article and paragraph, and other pertinent information to clearly correlate submittal with Contract Drawings. Identify field dimensions clearly and relationships to adjacent or critical features of Work, any deviations from the contract documents and applicable standards, ASTM, ACI, OSHA, etc.

L. Contractor's review of submittals: Prior to submission to the Authority for review, Contractor shall review each submittal for completeness and conformance to specified requirements. Contractor shall stamp each submittal with a review action stamp and sign each copy certifying that:

1. Field measurements have been determined and verified.

2. Field construction criteria have been verified.

3. Catalog numbers and similar data are correct.

4. Conformance with requirements of Contract Drawings and Specifications is confirmed.

5. All deviations from requirements of Drawings and Specifications have been identified and noted, and product is available.

M. Submittals which are received from sources other than through Contractor's office or which have not undergone Contractor's review, will be returned marked "Without Action".

N. Contractor shall be responsible for timely delivery of submittals in the proper specified format for each submittal category.

O. Except as otherwise indicated in individual work sections, the Contractor shall comply with requirements specified herein for each indicated category of submittal.

P. The Contractor shall include an up-to-date log of submittals in each submittal package.

Q. Grouping of Submittals: Unless otherwise specifically permitted by the Authority, make all submittals in groups containing all associated items. The Authority may reject partial submittals as incomplete or hold them until related submittals are made. Submittals under a specification section shall be in one submittal package.

R. Unsolicited Submittals: Unsolicited submittals will be returned un-reviewed.

S. Record Submittals: When record submittals are specified, submit three hard copies or sets only. Record submittals will not be reviewed but will be retained for historical and maintenance purposes.

1.05 NOT USED

1.06 PRODUCT DATA

A. Contractor shall collect required data into one submittal for each unit of work or system and mark each copy to show which choices and options are applicable to the Project.

B. Contractor shall include the manufacturer's standard printed recommendations for application and use, certification of compliance with standards, notation of field measurements, which have been checked, and special coordination requirements. A Material Safety Data Sheet (MSDS) shall be submitted for each product.

1.07 CERTIFICATES OF COMPLIANCE

A. Certificates of Compliance shall be submitted by Contractor to the Authority for those materials and products for which no samples and test results are specified. The certificates shall:

1. State that the product complies with the respective contract specification and contract drawing requirements.

2. Be accompanied by a certified copy of test results pertaining to the product. All test equipment used shall be verified to be in calibration at the time of each test and test reports shall so indicate. No test shall be made without such verification. When required by the Contract Documents or by law, certified test results shall be sealed by a Professional Engineer licensed to practice in the State of California.

3. Show product represented and its location in the Contract, producer's name, product trade name and catalog number as applicable, place of product origin, test date, testing organization's name and address, quantity of the product to be furnished, and the related Contract Drawing and specification section numbers.

1.08 SAMPLES

A. Provide samples of each color, texture and pattern identical with final condition of proposed materials or products for the work. Include range of samples (not less than three units) where unavoidable variations may be expected. Submit one item only of actual assembly or product. Full-size and complete samples may be returned or may be incorporated into field mock-up and the Work.

B. Submit actual samples. Photographic or printed reproductions will not be accepted. For manufacturer’s products, the Contractor shall submit samples from manufacturer, with manufacturer’s finish.

C. Include information with each sample showing generic description, source or product name, manufacturer and compliance with standards and specifications.

D. Samples are submitted to the Authority for review and confirmation. The Authority will review and select material for Project only after all samples are received, so that materials may be probably coordinated. The Authority will not test samples (except as otherwise indicated) for compliance with specifications. Contractor shall have the exclusive responsibility of demonstrating material compliance.

1.09 SURVEY DATA

A. As required per contract documents and/or by the Authority, Contractor shall submit survey data, signed and sealed by a Land Surveyor licensed to practice in the State of California. Refer to Section 01 71 23, Field Engineering for requirements.

1.10 GENERAL DISTRIBUTION

A. Contractor shall provide distribution of the Authority's reviewed submittals (not included in foregoing copy submittal requirements) to subcontractors, suppliers, fabricators and installers, governing authorities, and others as necessary for proper performance of the Work.

B. Contractor shall include such additional copies of transmittal to the Authority, where required, to receive status marking before final distribution.

1.11 REVIEW OF SUBMITTALS

A. Submittals shall be a communication aid between Contractor and the Authority by which interpretation of Contract Documents requirements may be confirmed in advance of construction. The Authority will review submittals for general conformance with the design concept only. Such review by the Authority shall not relieve Contractor or any subcontractor of responsibility for full compliance with contract requirements, for proper design of details, for proper fabrication and construction techniques, for proper coordination with other trades, or for providing all devices required for safe and satisfactory construction and operation.

B. Changes shall only be authorized by separate written Change Order or Construction Change Authorization, in accordance with the Conditions of the Contract and Section 01 26 00 - Contract Modification Procedures.

1.12 SUBMITTAL STATUS

A. Submittals reviewed by the Authority and returned to Contractor will be marked with one of the following designations:

1. Conforms

2. Revise as Noted and Resubmit

3. Rejected. Resubmit

4. No Action Taken

B. Contractor shall not proceed with procurement, manufacture or fabrication of items submitted for review, until such submittals have been designated by the Authority as "Conforms". Until submittal items receive a conforming designation by the Authority, any costs associated with procurement for these items shall be at the Contractor's risk.

1.13 SUBMITTALS DESIGNATED AS "CONFORMS"

A. Each copy of the submittal so designated by the Authority will be identified accordingly by being so stamped and dated.

B. One reproducible copy will be returned to Contractor.

C. When a submittal has been designated as "Conforms" by the Authority, Contractor shall carry out construction in accordance therewith and no further changes shall be made therein except upon written approval and instructions from the Authority.

D. Contractor shall take responsibility for and bear all cost of damages, which may result from the ordering of any material or from proceeding with any part of the Work prior to submittal being marked "Conforms" by the Authority.

E. Submittals stamped "Conforms" do not relieve the contractor from the responsibility of performance of Work as intended in the plans and specifications. Refer to 1.11 of this Section.

1.14 SUBMITTALS DESIGNATED AS "REVISE AND RESUBMIT," OR "REJECTED. RESUBMIT"

A. Each copy of the submittal so designated by the Authority will be identified accordingly by being so stamped and dated.

B. One copy will be returned to Contractor.

C. If corrections to the submittals are required, copies returned to Contractor will be marked "Rejected. Resubmit", or "Revise and Resubmit", and the required corrections shall be made on the re-submittal copies.

D. Re-submittals will be handled in the same manner as first submittals. Direct specific attention in writing on re-submittals to revisions other than the corrections requested by the Authority on previous submittals. A resubmittal shall contain all information

required specifically for the submittal per contract documents including corrections requested and approved information in the previous submittals. A resubmittal will supersede the previous version of a submittal and/or resubmittal as applicable. Incomplete or missing information submittals/resubmittals will be returned without review.

E. Contractor shall notify the Authority prior to execution of any correction, which constitutes a change of the contract requirements indicated on the submittals.

1.15 SUBMITTALS DESIGNATED AS "NO ACTION TAKEN"

A. Each copy of the submittal so designated by the Authority will be identified accordingly by being so stamped and dated.

B. One reproducible copy will be returned to Contractor.

C. Submittals made by the Contractor that are not required by the contract documents or were not otherwise requested shall be designated "No Action Taken"

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this Section.

END OF SECTION

SECTION 01 35 13

SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Products and installation for patching and extending Work.

B. Transitions and adjustments.

C. Repair of damaged surfaces, finishes, and cleaning.

1.02 RELATED SECTIONS

A. Section 01 35 13 - Coordination with the Authority and Local Agencies: Authority occupancy and maintenance of utility services.

B. Section 01 73 29 - Cutting and Patching: General requirements for cutting and patching requirements.

C. Section 01 50 00 - Temporary Facilities and Controls: Temporary enclosures, protection installed Work, and cleaning during construction.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials: As specified in PART 2 - PRODUCTS of applicable product Specification Sections, provide suitable products and construction procedures for patching and extending Work.

B. Type and Quality of Existing Products: Determine by inspection and testing of Products where necessary, referring to existing construction as a standard.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that demolition is complete, and areas are ready for execution of Work.

B. Beginning of alteration Work will be interpreted to mean that Contractor has examined existing conditions and determined that they are acceptable.

3.02 PREPARATION

A. Coverings:

1. Provide weather- and dust-protection coverings as necessary to contain dust and debris. Protect property, equipment, utilities, landscaping, and accessories from dust. Provide appropriate covers and protect by spraying water over work area to control dust.

2. Close area of work with barricades to protect existing construction and new Work from traffic, weather, and extremes of temperature and humidity. At end of workday, provide enclosure around work area with flashing lights so that traffic is aware of construction excavations and new work.

3. See Section 01 50 00 - Temporary Facilities and Control for additional requirements.

B. Access for Work: Demolish, Cut, move or remove items as necessary for access for alterations, renovation and extension Work. Replace and restore at completion.

C. Disposal of Materials: Immediately remove unsuitable material not marked for salvage, such as decayed wood, insulation, asphalt concrete, corroded rebar, accessories and other materials as required to complete the work. Replace materials as specified for finished Work.

1. Do not allow debris to accumulate in work areas. Dispose debris daily off-site in a legal manner. Dispose all existing asphalt concrete and accessories that are to be removed, and legally dispose off-site.

2. Remove debris and abandoned items from work area and from parking spaces.

D. Surface Preparation: Remove surface finishes and prepare surfaces to provide for proper installation of new materials and finishes.

E. Protection: Protect vehicles, property, and equipment adjacent to construction area from damage.

3.03 INSTALLATION

A. Coordinate Work for alterations and renovations to expedite completion and to accommodate the Authority's concurrent occupancy and use of the facility.

B. Coordinate Work for alterations and renovations in a timely manner to expedite completion and minimize disruption to the NWSSB’s continued use occupied areas and spaces. Park all construction equipment and materials inside areas of construction and barricade construction area on all sides at end of workday. Provide flashing lights around work area from dusk to dawn.

C. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring products and finishes to original or specified new condition. Refer to Section 01 73 29 - Cutting and Patching.

D. Refinish visible existing surfaces to condition before start of construction. Match adjacent finish surface in color and material. Finish to specified condition for each material, with a near transition to adjacent finishes.

E. In addition to specified work, in case of breakdown of under or above ground utilities, plumbing, electrical power, signal systems, and lighting, restore to fully operational condition immediately as before construction commenced. All power, and other systems should be operational at end of workday. The plans are diagrammatic and do not show all utilities, ducting, equipment, and accessories on the site. Contractor will be required to repair immediately utilities, ducting, plumbing lines, power lines, signal and communication system, data lines, equipment, and accessories in case of breakdown or disruption due to construction work and as required to complete the work. Review record drawings of construction area before excavation.

F. Install products as specified in applicable product specification Sections.

3.04 TRANSITIONS

A. Where Work abuts or aligns with existing construction, perform a smooth and even transition. Patches shall match existing adjacent construction in texture and appearance.

B. When finished surfaces are cut so that a smooth transition is not possible, terminate existing surface along a straight line at a natural line of division. Refer to Section 01 73 29 - Cutting and Patching.

3.05 ADJUSTMENTS

A. Where removal of materials results in adjacent spaces becoming one, rework to a smooth plane without breaks, steps or bulkheads.

B. Where a change of plane of 1/4-inch or more occurs, submit recommendation for providing a smooth transition for the Engineer's review.

C. Fit Work at penetrations of surfaces as specified in Section 01 73 29 - Cutting and Patching.

3.06 REPAIR OF DAMAGED SURFACES

A. Replace portions of adjacent existing surfaces which are damaged, lifted, discolored, or showing other imperfections or require replacement or repairs during replacement work. Extent of replacement will be required to nearest construction joint, expansion joint, break line, natural break, or in a straight line. Provide a smooth transition between existing and new surface.

B. Repair substrate prior to patching finish.

C. Unless noted otherwise or directed by the Authority, all pavement striping, markings, and markers affected by the construction activities shall be reinstalled to match the existing conditions.

3.07 FINISHES

A. Finish surfaces as specified in applicable Sections.

B. Finish patches with material and paint to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections or joints.

3.08 CLEANING

A. In addition to cleaning specified in Section 01 74 23 - Cleaning, clean the Authority-occupied areas affected by construction activities. Clean areas around the site where asphalt concrete material has fallen during workday. Clean site of work daily before leaving site at end of each workday. Haul debris off-site daily. Secure the entire jobsite and notify the Authority before leaving the jobsite each workday.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 35 23

SAFETY REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Contractor shall comply with OCTA Level 3 Health, Safety and Environmental Specifications in the contract documents.

B. Work specified in this section consists of furnishing, operating, maintaining, and utilizing safety equipment; providing safety aids on construction equipment; and assuring safe operation. Compliance with requirements of this section shall not relieve Contractor from other obligations imposed elsewhere in contract, by law and by regulation.

1.02 OTHER SECTIONS WITH SAFETY REQUIREMENTS

A. OCTA Level 3 Health, Safety and Environmental Specifications

B. Section 01 14 22, Rules and Hours of Operation

C. Section 01 14 23, Coordination with OCTA and Local Agencies

D. Section 01 14 25, Procedures in Construction

E. Section 01 43 01, Contractor Qualifications and Requirements

1.03 REFERENCE STANDARDS

A. Comply with the provisions of all local, State and Federal codes, specifications, standards and recommended practices, and OCTA Policy, in particular:

1. Cal/OSHA: California State Occupational Safety and Health Administration

2. OSHA: Federal Occupational Safety and Health Administration

1.04 SAFETY AND HEALTH ADMINISTRATION

A. Contractor's selection and operation of construction equipment and tools shall meet requirements of California State and Federal Occupational Safety and Health Administration (Cal/OSHA, OSHA).

B. If there is a conflict between the above, the most stringent requirement will apply.

1.05 SUBMITTALS

A. Contractor shall submit, under provisions of Section 01 33 00, Submittals, the following information:

1. Information required by OCTA Level 3 Health, Safety and Environmental Specifications.

2. Safety Data Sheet, per Section 01 14 25, Procedures in Construction.

3. Notification to OCTA as soon as reasonably possible of any injury to Contractor's employee, subcontractor of any tier, supplier or other entity engaged in any portion of the work while on OCTA property. Contractor shall submit an injury report to the Authority within 24 hours of said injury.

4. Other records as required by agencies listed in Part 1.03.

B. Meetings between Contractor and its Site Safety Representative with the Authority will be required for safety submittals. Submittal preparation shall not be paid in as extra cost or part of progress payments.

1.06 SAFETY AND HEALTH PERSONNEL

A. Provide a Site Safety Representative, as described in Sections 01 43 01 Contractor Qualifications and Requirements, OCTA Level 3 Health, Safety and Environmental Specifications, and the General Provisions, who shall coordinate and supervise onsite safety and health, including training and testing Contractor's personnel.

1.07 CONSTRUCTION AND SAFETY EQUIPMENT

A. Contractor shall conform to requirements of OCTA, Cal/OSHA, and to applicable codes and regulations of Federal, State, and local authorities having jurisdiction over jobsite safety.

1.08 TESTING EQUIPMENT

A. Testing equipment as applicable to work site safety shall conform to requirements of California Code of Regulations, Title 8, Division of Industrial Safety, unless indicated otherwise.

1.09 IDENTIFICATION OF CONTRACTOR/SUBCONTRACTOR PERSONNEL

A. While performing work at worksite, Contractor personnel of any tier shall be identified with employee's company name or logo affixed to employee's hardhat and safety vest, and an identification badge or other visible identification unique to each individual worker (number or name) acceptable to the Authority.

B. Contractor personnel shall wear Cal/OSHA compliant Personal Protective Equipment (PPE) including but not limited to hard hats, orange safety vests or orange T-shirts with reflective strips, safety glasses, and safety shoes at all times while on the project.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this Section.

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Requirements associated with regulations, standards, and requirements of authorities having jurisdiction.

B. Related Sections:

1. Section 01 14 25, Procedures in Construction.

2. Section 01 14 27, Legal Relations and Responsibility.

1.02 SUBMITTALS

A. Submit in accordance with Section 01 33 00, Submittal Procedures.

B. Before starting the work, submit to the Authority copies of permit applications, permits, licenses, receipts for fee payments, judgments, and other similar documents, correspondence, and records obtained for performance of the work.

C. At Substantial Completion, submit certifications, releases, jurisdictional settlements, notices and other similar documents under Section 01 77 00, Closeout Procedures.

1.03 APPLICABILITY OF INDUSTRY STANDARDS

A. Construction Industry Standards referenced in the contract documents have the same force and effect as if published herein and are made a part of the contract documents. Refer to Section 01 42 00 References.

B. Reference standards (referenced in the contract documents or by governing regulations) have precedence over non-referenced standards that are recognized in the industry for applicability to the work.

1. Building Codes: Performance of the Work shall meet or exceed the minimum requirements of California Code of Regulations (CCR), Title 24, including the following:
2.
   a. CCR Title 24, Part 2: Uniform Building Code (UBC), latest edition, with State

of California amendments; referenced as California Building Code (CBC).

b. CCR Title 24, Part 3: National Fire Protection Association (NFPA) 13 - National Electrical Code (NEC), latest edition, with State of California Amendments, referenced as California Electrical Code (CEC).

c. CCR Title 24, Part 9: Uniform Fire Code (UFC), latest edition, with State of California Amendments, referenced as California Fire Code (CFC).

d. CCR Title 24, Part 12: Uniform Building Code Standards (UBC Standards), latest edition, with State of California Amendments; referenced as California Building Standards Code (CBSC).

3. Performance of the Work shall also comply with applicable requirements of California Code of Regulations (CCR), as follows:

a. Title 19 - Public Safety.

b. Title 22 - Social Security.

c. Title 24 - Building Standards, Parts 2 through 7, and Title 25 as applicable.

4. References on the Drawings or in the Specifications to "code", "Code" or "building code" similar terms, not otherwise identified, shall mean the codes specified above, together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction having authority over the Project.

5. The applicable edition of all codes shall be that adopted at the time of issuance of permits by the jurisdiction having authority and shall include all modifications and additions adopted by that jurisdiction(s).

C. Recognized industry standards shall be used where no specific standard is referenced in the contract documents. Obtain the Authority's approval before using any non-referenced standards.

1.04 GOVERNING REGULATIONS AND AUTHORITIES

A. Contact authorities having jurisdiction directly for necessary information and decisions having a bearing on performance of the work.

B. Utility location and protection shall conform to Section 5, Utilities, of the Standard Specifications for Public Works Construction (SSPWC). The contractor shall utilize an independent underground utility locating service, which uses standard locating techniques other than excavating, to identify the location of underground utilities in the areas of the work prior to excavating. The contractor shall determine the exact location of utilities identified in the work area by potholing using hand tools before

using any power operated excavating equipment. Utilities now shown on the plans which are in direct conflict with the work will be dealt with by change orders.

C. Comply with requirements under the National Pollutant Discharge Elimination System (NPDES).

1.05 OTHER APPLICABLE LAWS, ORDINANCES AND REGULATIONS

A. Work shall be accomplished in conformance with all applicable laws, ordinances, rules and regulations of Federal, State and local governmental agencies and jurisdictions, County of Orange, AQMD, CAL-OSHA, and all other agencies having authority over the Project.

B. Work shall be accomplished in conformance with all rules and regulations of public utilities, utility districts, and public agencies providing utility services.

C. Where such laws, ordinances, rules, and regulations require more care or greater time to accomplish Work, or require better quality, higher standards or greater size of products, Work shall be accomplished in conformance to such requirements with no change to the Contract Sum and Contract Time, except where changes in laws, ordinances, rules and regulations occur subsequent to the execution date of the Agreement.

D. Contractor shall pay for and obtain all permits required by all agencies having jurisdiction over the work. Contractor shall be required to pay for all temporary utility connections and use to the respective utility company during construction.

1.06 PERMITS

A. Obtain required permits from regulating agencies. Do not start work in areas requiring permits before issuance of permits from authorities having jurisdiction.

1. Coordinate with regulating agencies to obtain required permits.

2. Submit copies of permit applications and permits to the Authority.

3. Comply with permit requirements and assume responsibility for any violations.

B. Prepare permit applications and obtain permits as necessary for performance of the work, including but not limited to:

1. Maintenance and protection of vehicle traffic and traffic control, if necessary.

2. Disposal of debris and soils.

3. All other activities with potential to adversely affect the environment.

4. Utility connections.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 42 00

REFERENCES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Use of references in Drawings and Specifications, including requirements for copies of reference standards at Project site.

2. Abbreviations and acronyms.

3. General provisions regarding references.

1.02 USE OF REFERENCES

A. References: The Drawings and Specifications contain references to various standards, standard specifications, codes, practices and requirements for products, execution, tests and inspections. These reference standards are published and issued by the agencies, associations, organizations and societies listed in this Section or identified in individual product specification Sections.

B. Relationship to Drawings and Specifications: Such references are incorporated into and made a part of the Drawings and Specifications to the extent applicable.

C. Referenced Grades Classes and Types: Where an alternative or optional grade, class or type of product or execution is included in a reference but is not identified on the Drawings or in the Specifications, provide the highest, best, and greatest of the alternatives or options for the intended use and prevailing conditions.

D. Copies of Reference Standards:

1. Reference standards are not furnished with the Drawings and Specifications because it is presumed that the Contractor, subcontractors, manufacturers, suppliers, trades and crafts are familiar with these generally-recognized standards of the construction industry.

2. Copies of reference standards may be obtained from publishing sources.

E. Jobsite Copies:

1. Contractor shall obtain and maintain at the Project site copies of reference standards identified on the Drawings and/or in the Specifications in order to properly execute the Work.

2. At a minimum, the following shall be readily available at the site:

    a. Safety Codes: State of California, California Code of Regulations (CCR), Title 8 - Industrial Relations, Chapter 4, Subchapter 7, General Industry Safety Orders.

    b. Fire and Life Safety Standards: All referenced standards pertaining to fire rated construction and exiting.

    c. Common Materials Standards: American Concrete Institute (ACI), American Institute of Steel Construction (AISC), American Welding Society (AWS), Gypsum Association (GA), National Fire Protection Association (NFPA), Tile Council of America (TCA) and Woodwork Institute of California (WIC) standards to the extent referenced within the Contract Specifications.

    d. Product Listings: Approval documentation, indicating approval of authorities having jurisdiction for use of product with local agency.

F. Edition Date of References:

1. When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date indicated on the Drawings and Specifications.

2. All amendments, changes, errata and supplements as of the effective date shall be included.

G. ASTM and ANSI References: Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the Drawings and Specifications by abbreviation and number only and may not be further identified by title, date, revision or amendment. It is presumed that the Contractor is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.03 ABBREVIATIONS, ACRONYMS, NAMES AND TERMS, GENERAL

A. Abbreviations, Acronyms, Names and Terms: Where acronyms, abbreviations names and terms are used in the Drawings, Specifications or other Contract Documents, they shall mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable.

B. Abbreviations: The following are commonly-used abbreviations which may be found on the Drawings or in the Specifications:

AC or ac	Alternating current or air conditioning (depending upon context)
AMP or amp	Ampere
C	Celsius
CFM or cfm	Cubic feet per minute
CM or cm	Centimeter
CY or cy	Cubic yard
DC or dc	Direct current
DEG or deg	Degrees
F	Fahrenheit
FPM or fpm	Feet per minute
FPS or fps	Feet per second
FT or ft	Foot or feet
Gal or gal	Gallons
GPM or gpm	Gallons per minute
IN or in	Inch or inches
Kip or kip	Thousand pounds
KSI or ksi	Thousand pounds per square inch
KSF or ksf	Thousand pounds per square foot
KV or kv	Kilovolt
KVA or kva	Kilovolt amperes
KW or kw	Kilowatt
KWH or kwh	Kilowatt hour
LBF or lbf	Pounds force
LF or lf	Lineal foot
M or m	Meter
MPH or mph	Miles per hour
MM or mm	Millimeter
PCF or pcf	Pounds per cubic foot
PSF or psf	Pounds per square foot
PSI or psi	Pounds per square inch
PSY or psy	Per square yard
SF or sf	Square foot
SY or sy	Square yard
V or v	Volts

C. Undefined Abbreviations, Acronyms, Names and Terms: Words and terms not otherwise specifically defined in this Section, in the Instructions to Bidders, in the Conditions of the Contract, on the Drawings or elsewhere in the Specifications, shall be as customarily defined by trade or industry practice, by reference standard and by specialty dictionaries such as the following:

1. The American Institute of Architects (AIA) Document M101, "Glossary of Construction Industry Terms".

2. The Construction Specifications Institute (CSI) Technical Document TD 2-4, "Abbreviations".

3. Dictionary of Architecture and Construction, (Cyril M. Harris, McGraw-Hill Book Company, 1975).

4. Encyclopedia of Associations, published by Gale Research Co., available in most libraries.

1.04 ABBREVIATIONS FOR AGENCIES, ASSOCIATIONS, CODES AND STANDARDS

A. Abbreviations for Agencies, Associations, Codes and Standards: The following abbreviations and acronyms may be used in the Drawings and Specifications. When used, the abbreviation or acronym shall mean the full name of the applicable agency, association, organization, society or standard.

AAMA	American Architectural Manufacturers Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AGA	American Galvanizers Association
AGA	American Gas Association
AHRI	Air-Conditioning, Heating, and Refrigeration Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
APA	APA – The Engineered Wood Association (formerly American Plywood Association)
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	ASME International (formerly American Society of Mechanical Engineers)
ASSE	American Society of Safety Engineers
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (formerly American Society for Testing and Materials)
AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association (formerly American Wood-Preservers' Association)
AWS	American Welding Society
BHMA	Building Hardware Manufacturers Association
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
Caltrans	California Department of Transportation, Standard Plans & Specifications 2010

	Edition
CBC	California Building Code
CEC	California Electrical Code
CFR	Code of Federal Regulations
CMC	California Mechanical Code
CPA	Composite Panel Association
CPC	California Plumbing Code
CPUC	California Public Utilities Authority
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
DHI	Door and Hardware Institute
DOC	U.S. Department of Commerce
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FM	FM Approvals
FM	FM Global (formerly Factory Mutual)
FRA	Federal Railroad Administration
FS	Federal Specification
FSC	Forest Stewardship Council
FTA	Federal Transit Administration
GA	Gypsum Association
GANA	Glass Association of North America
HI	Hydraulics Institute
HMMA	Hollow Metal Manufacturers Association
ICC	International Code Council
IEEE	Institute of Electrical and Electronics Engineers
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ISO	International Organization for Standardization
LBTC	Laguna Beach Transportation Center
LEED	Leadership in Energy and Environmental Design
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (formerly National Association of Corrosion Engineers)
NEMA	National Electrical Manufacturers Association
NETA	International Electrical Testing Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NFRC	National Fenestration Rating Council
NHLA	National Hardwood Lumber Association
NSF	NSF International (formerly National Sanitation Foundation)
OSHA	Occupational Safety and Health Administration
PCI	Precast/Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PS	Product Standard (US Department of Commerce)
RCSC	Research Council on Structural Connections

RIS	Redwood Inspection Service
RTA	Railway Tie Association
SDI	Steel Deck Institute
SDI	Steel Door Institute
SCRRA	Southern California Regional Rail Authority
SCAQMD	South Coast Air Quality Management District
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPPWC	Standard Plans for Public Works Construction, 2015 Edition
SSPC	Society for Protective Coatings (formerly Steel Structures Painting Council)
SSPWC	Standard Specifications for Public Works Construction, 2015 Edition
TCNA	Tile Council of North America
UL	Underwriters Laboratories Inc.
USDOJ	U.S. Department of Justice
USDOT	U.S. Department of Transportation
USGBC	U.S. Green Building Council
WCLIB	West Coast Lumber Inspection Bureau (stamped WCLB)
WI	Woodwork Institute
WWPA	Western Wood Products Association

1.05 REFERENCE STANDARDS

A. General

1. Specifications, standards, and guidelines referenced in the text are incorporated by reference as if fully set forth. Where a referenced standard includes both administrative and technical provisions, and the administrative provisions conflict with the contract documents, only the technical provisions shall apply. If a referenced standard appears to conflict with the drawings and specifications, consult OCTA Project Manager for resolution.

2. The governing versions of reference standards and codes are those current at the time of contract execution, including errata, amendments, updates, etc., unless noted otherwise.

3. Contractor shall maintain the latest copy of applicable standards at jobsite during submittals, planning and progress of the work. Make standards available for use by OCTA Project Manager upon request.

4. Caltrans: Standard Plans and Specifications 2022 Edition.

5. Standard Plans for Public Works Construction (SPPWC) 2021 Edition, Standard Specifications for Public Works Construction (SSPWC) 2021 Edition.

6. NWSSB Rules and Regulations (Attachment E)

B. ADA Standards

1. References to ADAAG or the ADA Accessibility Guidelines refer to the ADA [Americans with Disabilities Act] Accessibility Guidelines for Buildings and Facilities, current amendments, available at https://www.access-board.gov/ada/.

2. References to USDOT ADA Standards refer to the U.S. Department of Transportation ADA Standards for Transportation Facilities, current standards are available at www.access-board.gov .

3. References to USDOJ ADA Standards are to the U.S. Department of Justice ADA Standards for Accessible Design, https://www.access-board.gov/ada/, or to new standards (currently pending) if in effect at the time of execution of the contract documents.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 42 16

DEFINITIONS

PART 1 - GENERAL

1.01 GENERAL

This Section provides definition of terms cited in the Contract Documents.

1.02 DEFINITION OF TERMS

A. Wherever in the specifications and other Contract Documents, the following terms and abbreviations or pronouns in place of them, are used, the intent and meaning shall be interpreted as provided in this section unless the context otherwise requires.

1. The Authority: Orange County Transportation Authority's (OCTA's) project representative. For the sake of the Naval Weapons Station Pavement Rehabilitation project, "the Authority" is the single point of contact to the Contractor. "The Authority" is OCTA's jobsite representative who will manage, coordinate, and otherwise facilitate jobsite requirements between the Contractor, OCTA's staff, and their consultants.

2. Quality Assurance (QA): The process by which the Authority elects to monitor and assure that it receives proper construction related documentation from the Contractor. QA procedures measure the setting of schedules for the receipt and review of documentation and the quality of the information contained within the documentation.

3. Quality Control (QC): The process by which the Authority receives documentation from the Contractor that proves that the Contractor is providing the contractually mandated services, such as training, testing and inspection. Contractor must show evidence of internal procedures demonstrating how he will perform these mandated functions and submit documentation that QC verifications have been completed. QC is the responsibility of the Contractor.

4. Salvage: To save any removed item. The salvaged item shall be reused in the contract or delivered and stockpiled for OCTA as specified in the Contract Documents.

5. Site Specific Work Plan (SSWP): A program, plan, and schedule prepared and submitted by the Contractor and approved by the Authority and NWSSB that accurately describes and illustrates the manner in which work within the operating envelope will be accomplished, the impacts on any elements of the Operating System and the manner in which work will be accomplished with the allotted work windows.

6. Project Applicant: all references made by City, local agencies, or other agencies to Project Applicant means the Contractor and not the Authority.

7. Provide: To furnish/supply and install equipment/materials by Contractor per Contract documents as a complete system, fully operational and useful as designed.

8. Substantial Completion: In the opinion of the Authority, the Work or portion thereof that is sufficiently complete and in accordance with the Contract, that it can be utilized by the Authority and NWSSB for the purpose for which it was intended. A determination of Substantial Completion does not waive but may not require the prior completion of minor items, which do not impair the Authority's and NWSSB's ability to safely occupy and utilize the Work for its intended purpose.

9. Final Acceptance: Acceptance of the Project by Authority as evidenced by issuance of an Engineer's Certification in accordance with Section 01 77 00.

10. Government and NWSSB: Naval Weapons Station Seal Beach.

11. Project: All the permanent facilities to be constructed by Contractor in accordance with the Contract Documents.

12. Work: All of the administrative, design, engineering, procurement, legal, professional, manufacturing, supply, installation, construction, environmental mitigation and management, supervision, management, testing, verification, labor, materials, equipment, maintenance, documentation and other duties, services and cost reimbursements to be furnished and provided by Contractor as required by the Contract Documents, including all efforts necessary or appropriate to achieve Final Acceptance of the Project and to fulfill the Warranties. In certain cases, depending on the context, the term is also used to mean the product of the Work.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 43 00

QUALITY ASSURANCE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Administrative and procedural requirements for quality assurance.

1. Specific quality assurance requirements for individual construction activities are specified in the sections that specify those activities. Requirements in those sections may also cover production of standard products.

2. Requirements for Contractor to provide quality assurance services required by the Authority, or authorities having jurisdiction are not limited by provisions of this section.

B. Related Sections:

1. Section 01 43 01, Contractor Qualifications and Requirements.

2. Section 01 45 00, Quality Control.

1.02 DEFINITIONS

A. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the work to evaluate that actual products incorporated into the work and completed construction comply with requirements. Refer to Section 01 45 00, Quality Control.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not samples. Approved mockups establish the standard by which the work will be judged.

D. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a

corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.

E. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this project; having a minimum of five years' experience in work similar to that required for this project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.03 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to the Authority for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to the Authority for a decision before proceeding.

1.04 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual specification sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced (as defined above) in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced (as defined above) in manufacturing products or systems similar to those indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced (as defined above) in producing products similar to those indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where project is located and who is experienced (as defined

above) in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product which are similar to those indicated for this project in material, design, and extent.

F. Specialists: Certain sections of the specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented and certified; and with additional qualifications specified in individual sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.

b. All mockups shall be provided as submittals and follow the same tracking, recording, and approval processes.

c. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the work.

d. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.

e. Build site-assembled test assemblies and mockups, where indicated, using installers who will perform same tasks for Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to the Authority, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the contract documents.

J. Mockups: Before installing portions of the work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by the Authority.

2. Notify the Authority seven days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Obtain the Authority's approval of mockups before starting work, fabrication, or construction.

5. Allow seven days for initial review and each re-review of each mockup.

6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed work.

7. Demolish and remove mockups when directed, unless otherwise indicated.

K. OCTA Quality Assurance Inspection and Testing:

1. The Authority will select and pay for an independent testing and inspection laboratory or agency, to conduct test and inspection for quality assurance purposes if and when it chooses. That testing and inspection, if performed, will be in addition to the quality control testing that is the responsibility of the Contractor.

2. Contractor is fully responsible for all quality control testing and inspection as required on contract drawings and/or specifications, required by AHJ, and as standard industry practice.

3. Contractor shall coordinate and notify the Authority when work is ready for its quality control testing and inspection so that the Authority, at its discretion may also perform quality assurance testing and inspection.

4. Contractor shall provide the Authority, independent testing and inspection personnel, and the Authority's Consultants with full access to the work and reasonable time for inspection for ascertaining whether or not the work is performed in accordance with the requirements and intent of the contract. No

work shall be covered and no materials shall be installed without making the work and materials available for inspection by the Authority. If the Authority so requests, Contractor shall, at any time before acceptance of the work, remove and uncover such portions of the finished work as may be directed for quality assurance testing and inspection.

5. After quality control and assurance testing and inspection, Contractor shall restore the work to the standard required by the contract documents.

6. Costs for additional tests, inspection and related services, due to the following, shall be reimbursed to the Authority by the Contractor and no change in Contract Time shall result.

    a. Failure to properly schedule or notify the Authority for testing and inspection.
    b. Changes in sources, lots or suppliers of products after original quality assurance tests or inspections.
    c. Changes in means, methods, techniques, sequences and procedures of constructions which necessitate additional testing, inspections, and additional services.
    d. Changes in materials after review and acceptance of submittals.

PART 2 - PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement will be made for the work of this section.

END OF SECTION

SECTION 01 43 01

CONTRACTOR QUALIFICATIONS AND REQUIREMENTS

PART 1 – GENERAL

1.01 CONTRACTOR DUTIES

A. Except as specifically noted otherwise, provide:

1. A Construction Project Manager, who shall serve as the Contractor's Representative for the Contract, at or beyond the requirements described in this section.

2. Other labor, supervision, and materials required for the work.

3. Other tools, equipment, and machinery required for the work.

4. Water, heat, and utilities required for the work.

5. Support facilities and services, including fully furnished field office facilities, necessary for the proper execution and completion of the work.

B. Pay legally required sales, consumer, and use taxes.

C. Secure and pay for fees, surcharges, taxes, permits, and licenses necessary for the proper execution of the work.

1.02 REFERENCE STANDARDS

A. OSHA: Occupational Safety and Health Administration regulations.

1.03 CONSTRUCTION PROJECT MANAGER

A. Provide and remain for the duration of the Project a Construction Project Manager who will manage and coordinate the overall aspects of the work.

B. The Construction Project Manager's qualifications and experience shall include:

1. A minimum of five years of progressing work responsible experience on public works construction projects that include coordination, and scopes, types, and characters of work directly related to the scope of work of this contract.

2. Demonstrated ability to work safely and supervise individuals in safe work.

3. Previous positions and experience supervising and planning work activities of construction superintendents, project engineers, and support personnel foreman and crews.

4. Ability to read and understand survey, grading, paving, striping, utility, and structural plans.

5. Ability to develop and work from construction schedules.

C. The Construction Project Manager shall:

1. Visit the site daily during the work to verify the work is proceeding per contract documents.

2. Be on the job during the work week to manage and coordinate all aspects of work for the full duration of the project.
3. Designate his/her authorized representative (acceptable to the Authority) who shall oversee work that may be performed at night, after normal working hours, or when the Construction Project Manager is not on site,

4. Be able to respond immediately to emergency or problem calls, 24 hours a day, 7 days a week.

D. The Construction Project Manager shall have the necessary authority to provide instructions and orders to his authorized representatives. The Construction Project Manager is a project key personnel and shall not be replaced without advance approval by the Authority; the Authority will have sole approval of the replacement. Construction Project Manager shall be prime contractor's employee and shall be on prime contractor's payroll.

E. The Contractor may propose supervisory personnel such as superintendent to serve as Construction Project Manager, given she/he meets all Construction Project Manager's qualifications and requirements.

1.04 ON-SITE SUPERINTENDENCY

A. Provide and remain for the duration of the Project an on-site superintendent.

B. On-site competent superintendent shall meet qualifications and experience herein below:

1. A minimum of three years of progressing work responsible experience on public works construction project that includes coordination, and scopes, types, and characters of work directly related to the scope of work of this contract.
2. Ability to work safety and supervise individuals in safe work.

3. Contractor's Construction Project Manager can serve as an on-site superintendent. On the workdays the on-site superintendent cannot be present at the job site during construction, the Contractor's Construction Project Manager shall be present at the job site during construction and serve as an on-site superintendent.

C. The on-site superintendent shall:
   1. Attend pre-construction meeting.
   2. Be present at the job site at all times during the work to verify the work is proceeding per contract documents. If there are multiple job sites in project scope and work is performed concurrently at multiple job sites, one on-site superintendent is required to be present at each job site during construction activities.
   3. Communicate and coordinate effectively with Contractor's Construction Project and the Authority in any project related matters.
   4. Prepare and sign contractor's daily reports.

D. The on-site superintendent is a project key personnel and shall not be replaced without advance approval by the Authority; the Authority will have sole approval of the replacement. On-site superintendent shall be prime contractor's employee and shall be on prime contractor's payrolls.

1.04 SITE SAFETY REPRESENTATIVE

A. Provide and maintain for the duration of Project an on-site Health, Safety and Environmental (HSE) representative who is key personnel of the Project.

B. On-site HSE representative qualifications and experience must include:

   1. Qualifications set forth in the General Provision and OCTA Level 3 Health, Safety and Environmental Requirements.

C. The on-site HSE representative must be headquartered for the duration of the project at Contractor's construction field office. If there are multiple job sites in project scope and work is performed concurrently at multiple job sites, one on-site HSE representative is required to be present at each job site during construction activities.

D. The on-site HSE representative will be required to train and test Contractor's employees as described in Section 01 35 23, Owner Safety Requirements.

1.05 SUBMITTALS

A. Contractor shall submit for the Authority's approval the name and professional history (resumes) of each of the key personnel positions identified in this specification section.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 PERSONNEL QUALIFICATION

A. Within five calendar days after Notice to Proceed, submit to the Authority resumes of personnel listed above in Part 1 above. Each resume shall provide sufficient detail to demonstrate compliance with requirements. Submit a schedule showing, for each employee classification, number of personnel to be assigned to the work and duration of their assignments.

B. The Authority will review resumes to determine acceptability of qualifications and experience. the Authority's decision is final. Do not resubmit resumes of personnel deemed unacceptable by the Authority.

C. Substitutions: To replace any personnel identified in Part 1, follow this section's procedures for obtaining approval of the original personnel. This qualification process shall be completed before the vacancy occurs. Provision for substitutions does not relieve Contractor of the responsibility to provide personnel as provided in Part 1.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for work of this section.

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Authority of “the Authority”.
2. Responsibilities of the Contractor.
3. Inspection and testing by the Authority’s Deputy Inspector.

B. Related Sections:

1. Section 01 14 23, Coordination with OCTA and Local Agencies.
2. Section 01 33 00, Submittal Procedures.
3. Section 01 41 00, Regulatory Requirements.
4. Section 01 43 00, Quality Assurance.
5. Section 01 60 00, Product Requirements.

1.02 AUTHORITY OF “THE AUTHORITY”

A. The Authority will determine whether the work is completed in accordance with the contract documents. The Authority will decide all questions that may arise as to the quality or acceptability of materials furnished and work performed, and interpretations of the contract documents.

B. The Authority may require the Contractor to finish a section on which work is in progress before work is started on any additional section. Refer to Section 01 14 22, Rules and Hours of Operation for requirements.

C. The Authority may require the Contractor to submit additional shop drawings or documents to demonstrate the Contractor's understanding the intents of contract plans and specifications as part of quality control.

1.03 REFERENCES

A. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection Used in Engineering Design and Construction.

1.04 REGULATORY REQUIREMENTS FOR TESTING AND INSPECTION

A. Regulatory Requirements for Testing and Inspection: Inspections, testing and approvals as required by authorities having jurisdiction. Refer to Section 01060 - Regulatory Requirements.

1. California Code of Regulations (CCR) - Title 24, State Building Code (Uniform Building Code with State of California Amendments), latest edition, as adopted and interpreted by authorities having jurisdiction.

2. California Code of Regulations (CCR) - Title 22, Sections 94065, 94067 and 94069.

1.05 RESPONSIBILITIES OF THE CONTRACTOR

A. Cooperate with the Authority and with other contractors as detailed in Section 01 14 24, Coordination with the Authority and Local Agencies.

B. Ensure that products, services, workmanship and site conditions comply with requirements of the Drawings and Specifications by coordinating, supervising, testing and inspecting the Work and by utilizing only suitably qualified personnel.

C. Perform the work to achieve the level of quality prescribed in the contract documents, including by reference, all Codes, laws, rules, regulations and standards. The no quality basic is prescribed, the quality shall be in accordance with the best accepted practices of the construction industry for the locale of the Project, for projects of this type.

D. Perform the work in the proper sequence in relation to the requirements of the the Authority and other contractors, all as may be directed by the Authority.

E. Employ and assign knowledgeable and skilled personnel as necessary to perform quality control functions to ensure that the Work is provided as required.

F. Be responsible for any damage done by it or its agents to the work performed by the OCTA, NWSSB, or another contractor.

1.06 SUPERVISION AND CONSTRUCTION PROCEDURES

A. Give the work the constant attention necessary to facilitate the progress of the work.

B. Be solely responsible for all construction means, methods, techniques, and procedures and for coordinating all portions of the work under the contract. Permission given by the Authority to use any particular methods, equipment, or appliances shall not be construed to relieve the Contractor from furnishing other equipment or other appliances or adopting other methods when those in use prove

unsatisfactory, or as to bind the Authority to accept work which does not comply with the contract.

C. Immediately remove from the work, when so ordered by the Authority, and do not re-employ on any of the work, without written permission from the Authority, any contractor or subcontractor employee doing unsafe, improper, or defective work; who, in the Authority's judgment, refuses or neglects the direction of the Authority given to the Contractor; who is deemed incompetent or disorderly; or who commits trespassing on public or private property in the vicinity of the work.

D. Be responsible for securing all work areas by barricade in accordance with local and State requirements as applicable at the end of each day.

1.07 QUALITY OF THE WORK

A. Quality of Products: Unless otherwise indicated or specified, all products shall be new, free of defects and fit for the intended use.

B. Quality of Installation: All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements. New material shall be installed so that drainage merges with existing flow patterns on the site towards the drains.

C. Protection of Existing and Completed Work: Take all measures necessary to preserve and protect existing and completed Work free from damage, deterioration, soiling and staining, until Acceptance by the Authority.

D. Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code research report requirements in preparing, fabricating, erecting, installing, applying, connecting and finishing Work.

E. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviations are acceptable and appropriate for the Project.

F. Verification of Quality: Work shall be subject to verification of quality by the Authority in accordance with provisions of the Conditions of the Contract.

1. Contractor shall cooperate by making Work available for inspection by the Authority.
2. Such verification may include mill, plant, shop, or field inspection as required. the Authority's designated Inspector/s shall access to material inspection.
3. Provide access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.
4. Provide all information and assistance as required, including that by and from

subcontractors, fabricators, materials suppliers and manufacturers, for verification of quality by the Authority.

5. Contract modifications, if any, resulting from such verification activities shall be governed by applicable provisions in the Conditions of the Contract.

G. Observations by the Engineer and Engineer's Consultants: Periodic and occasional observations of Work in progress may be made by the OCTA, the Engineer and Engineer's consultants as deemed necessary to review progress of Work and general conformance with design intent.

H. Limitations on Inspection, Test and Observations: Neither employment of an Inspector of Record, independent testing and inspection Authority, or observations by the OCTA, the Engineer and Engineer's consultants shall in no way relieve Contractor of obligation to perform Work in full conformance to all requirements of Contract Documents and applicable Building Code and other regulatory requirements.

I. The OCTA's and Engineer's Acceptance and Rejection of Work: The OCTA and the Engineer reserves the right to reject all Work not in conformance to the requirements of the Drawings and Specifications.

J. Correction of Non-Conforming Work: Non-conforming Work shall be modified, replaced, repaired or redone by the Contractor at no change in Contract Sum or Contract Time.

K. Acceptance of Non-Conforming Work: Acceptance of non-conforming Work, without specific written acknowledgement and approval of the Authority, shall not relieve the Contractor of the obligation to correct such Work.

L. Contract Adjustment for Non-conforming Work: Should the Authority determine that it is not feasible or in the Authority 's interest to require non-conforming Work to be repaired or replaced, an equitable reduction in Contract Sum shall be made by agreement between the Authority and Contractor. If equitable amount cannot be agreed upon, a Construction Change Directive will be issued and the amount in dispute resolved in accordance with the Conditions of the Contract.

M. Non-Responsibility for Non-Conforming Work: The Engineer and the Engineer's consultants disclaim any and all responsibility for Work produced not in conformance with the Drawings and Specifications.

1.08 INSPECTION AND TESTING

A. The work is to be completed in accordance with the specifications, the drawings, and such instructions or directions as the Authority may give to supplement drawings and specifications. Wherever the words "directed," "permitted," "approved," "acceptable," "satisfactory to," or similar words or phrases occur in the contract documents, they shall be understood to be functions of the Authority to be exercised at his discretion.

B. The Authority shall not be responsible for and shall not have control or charge over the acts or omissions of the Contractor, subcontractors, or any of their agents or employees, or any other persons performing any of the work.

C. Inspections and Tests by Authorities Having Jurisdiction: Contractor shall cause all tests and inspections required by authorities having jurisdiction to be made for Work under this Contract, NWSSB and similar agencies. Except as specifically noted, scheduling, conducting and paying for such inspections shall be solely the Contractor's responsibility.

D. Inspections and Tests by Serving Utilities: Contractor shall cause all tests and inspections required by serving utilities to be made for Work under this Contract. Scheduling, conducting and paying for such inspections shall be solely the Contractor's responsibility.

E. Inspections and Tests by Manufacturer's Representatives: Contractor shall cause all tests and inspections specified to be conducted by materials or systems manufacturers to be made. Additionally, all tests and inspections required by materials or systems manufacturers as conditions of warranty or certification of Work shall be made, the cost of which shall be included in the Contract Sum.

1. Test and Inspection Reports: After each inspection and test, one copy of report shall be promptly submitted to the Engineer, Engineer's consultant (as applicable), the Authority, Contractor, and to Authority having jurisdiction (if required by Code).

    a. Reports shall clearly identify the following:

        Date issued.
        Project name and number.
        Identification of product and Specifications Section in which Work is specified.
        Name of inspector.
        Date and time of sampling or inspection.
        Location in Project where sampling or inspection was conducted.
        Type of inspection or test.
        Date of test.
        Results of tests.

Comments of conformance with Contract Documents and other requirements.

b. Test reports shall indicate specified or required values and shall include statement whether test results indicate satisfactory performance of products.

c. Samples taken, but not tested, shall be reported.

d. Test reports shall confirm that methods used for sampling and testing conform to specified test procedures.

F. Contractor shall provide the Authority, independent testing and inspection Authority personnel, inspector of record and the Authority's representatives with full access to the work and reasonable time for inspection for ascertaining whether or not the work is performed in accordance with the requirements and intent of the contract.

G. No work shall be covered or materials used without making the work or materials available for inspection by the Authority. If the Authority so requests, the Contractor shall, at any time before acceptance of the work, remove or uncover such portions of the finished work as may be directed.

H. After examination, Contractor shall restore the work to the standard required by the contract documents. Inspection will not relieve the Contractor from the responsibility for the quality of this work and to perform the work in accordance with the requirements of the contract documents.

I. All materials and every process of manufacture and construction shall be subject to inspection at all times. The Authority and their designated representatives shall have free access to all operations. Contractor shall provide necessary materials and the Authority shall have the right to select suitable samples of materials for testing or examination which the contractor shall supply without charge. In case such samples must be shipped to some other point for inspection or testing, Contractor shall box or crate samples as necessary and shall deliver them at points designated for shipment without charge.

J. Omission of inspection shall not relieve the Contractor of its obligations to produce the work required by the contract documents. Materials not in compliance with contract requirements shall be removed promptly from the vicinity of the work, and the Contractor, at its expense, shall promptly remove, reconstruct, replace, and make good any defective work as directed in writing by the Authority. Oversight or error in judgment of inspectors, or previous acceptance of the work, shall not relieve Contractor from the obligation to correct defects whenever discovered.

K. If the Contractor does not correct nonconforming work or remove rejected materials within a reasonable time fixed by written notice, the Authority may direct that removals and corrections be performed by other contractors. Charges for such removals and corrections shall be deducted from the Contractor's payment due under this contract or may be paid for by the Contractor's bonds held for this contract.

L. All inspection by the Authority is for the protection of the Authority and its interest and

shall not relieve the Contractor of responsibility for providing work in accordance with the contract documents. After completion of the work, a final inspection will be made and any previous inspection or acceptance will not preclude rejection at the final inspection of any item that is not satisfactory to the Authority or is not in accordance with the contract documents.

M. If, within the period of time prescribed by law or by the terms of any applicable special warranty required by the contract documents, whichever is longer, any of the work is found to be defective or not in accordance with the contract documents, the Contractor shall correct it promptly after receipt of a written notice from the Authority. This obligation shall survive acceptance of the work or termination of the contract. In the event the Authority prefers to accept or not require correction of defective or nonconforming work, the Authority may do so instead of requiring its removal and correction, in which case the Authority shall determine an appropriate sum to be deducted from the contract price or otherwise charged against the Contractor, which determination shall be final and binding upon the parties. Such adjustment shall be affected whether or not final payment has been made.

N. All defective work which has been rejected shall be remedied or removed and replaced by the Contractor at its own expense, in a manner acceptable to the Authority.

O. Whenever all of the work provided for in the contract or authorized as force account work has been completed and the final cleaning-up performed, the Authority will make the final inspection, and, if the work is found to be satisfactory, Contractor will be notified in writing of the acceptance. All portions of the work shall be maintained by the Contractor at the standards required by the contract documents until final acceptance.

P. At the Authority's discretion, portions of the work that are determined to be substantially complete may be accepted before all the project work is completed. After acceptance of substantially completed work, Contractor shall not use the finished product for any purpose without permission of the Authority.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 FIELD QUALITY CONTROL/QUALITY ASSURANCE

A. Give minimum of 48-hour advance notice of each test and inspection to the Authority when ready for testing, observation and inspection.

B. Should any compaction density/strength test or inspection fail to meet specification requirements, necessary corrective work shall be performed by the Contractor.

Additional testing shall be required to determine that corrective work provides compaction in the failed area meeting requirements of these Specifications.

C. Contractor shall provide a record of testing results including corrective actions taken if necessary, on the approved form to the Authority.

D. Contractor's corrective work to meet requirements and retesting resulting from failing tests shall be at no additional cost to OCTA.

E. Obtain all inspections required by the local regulatory agencies and provide the Authority with the final sign-off cards for the project from the local regulatory agencies.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Temporary facilities and controls used during construction.

B. Related Sections:

1. Section 01 14 25, Procedures in Construction.
2. Section 01 14 27, Legal Relations and Responsibility.
3. Section 01 14 43, Environmental Resource Protection.
4. Section 01 71 13, Mobilization and Demobilization
5. Section 01 74 19, Construction Waste Management and Disposal.

1.02 SUBMITTALS

A. Submit in accordance with Section 01 33 00, Submittal Procedures.

B. Site Plans: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

C. Moisture Protection Plan: Describe procedures and controls for: protecting materials and construction from water absorption and damage, including delivery, handling, and storage; discarding water-damage materials; protocols for mitigation of water into completed work; and replacing water-damaged work.

1.03 QUALITY ASSURANCE

A. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.01 TEMPORARY FACILITIES, PRODUCTS, AND CONTROL

A. Common-Use Field Office: not required.

B. Storage and Fabrication Sheds: No equipment or tools are allowed to be stored at the jobsite without the Authority's and NWSSB written permission. If on-site storage is permitted, provide access and orderly provision for maintenance and for inspection of products.

C. Telephone Service: Provide mobile telephone service for project superintendent.

D. Temporary Fire Protection:

1. Maintain temporary fire protection facilities of the types needed until permanent facilities are installed. Fire Extinguishers shall be portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

2. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations".

3. Fire safety during construction shall comply with CFC - California Fire Code (CCR) California Code of Regulations, Title 24, Part 9, Article 87.

4. Store combustible materials in containers in fire-safe locations.

5. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes.

6. Comply with NWSSB Fire & Emergency Contractors Fire Prevention Guide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

E. Barriers, enclosures, and fencing:

1. Provide traffic cones to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

2. Provide protection for plant life and trees designated to remain and for soft and hardscape areas adjacent to work, replace damaged materials in kind.

3. Protect non-owned vehicular traffic, stored materials (if allowed) site and structures from damage.

F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

G. Pollution Control:

1. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

2. Conform to Best Management Practices for waste management and material controls as defined in Section 4 of the Construction Activity Handbook published by the Storm Water Quality Association.

3. Coordinate construction activities with control procedures established in the Storm Water Pollution Prevention Plan (SWPPP).

H. Traffic Control:

1. Comply with requirements of authorities having jurisdiction.

2. Obtain all required permits, provide all materials and maintain controls as required of authorities having jurisdiction.

3. Maintain access for fire-fighting equipment and access to hydrants.

I. Progress Cleaning:

1. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

2. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.

3. Provide walk-off mats at each building entry affected by construction activities.

J. Waste Disposal:

1. Waste Management: In compliance with City regulations.

2. Maintain work areas free of waste materials, debris, and rubbish.

3. Remove waste materials, debris, and rubbish from site periodically during a workday and legally dispose of off-site at the end of each workday by 3:30 pm.

4. Maintain site area in a clean and orderly condition.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

A. Locate facilities where they will serve project adequately and result in minimum interference with performance of the work. Relocate and modify facilities as required by progress of the work.

1. Locate facilities to avoid protected areas as specified in Section 01 14 43, Environmental Resource Protection.

3.02 TEMPORARY UTILITIES

A. Provide and pay for temporary utility services and facilities such as sanitary facilities, telephone service and internet service adequate for construction and related activities.

3.03 TEMPORARY ROADS, PAVING, PARKING, AND SIMILAR IMPROVEMENTS, AND USE OF SITE

A. See Section 01 14 25, Procedures in Construction.

B. See Section 01 14 27, Legal Relations and Responsibility

3.04 PROTECTION OF AIR AND WATER RESOURCES AND OTHER ENVIRONMENTAL RESOURCES

A. See Section 01 14 25, Procedures in Construction.

B. See Section 01 14 27, Legal Relations and Responsibility.

C. See Section 01 14 43, Environmental Resource Protection.

3.05 CONSTRUCTION WASTE

A. See Section 01 74 19, Construction Waste Management and Disposal.

3.06 SECURITY AND FIRE PROTECTION

A. See Section 01 14 27, Legal Relations and Responsibility.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made under this section.

END OF SECTION

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Temporary erosion and sedimentation control.

2. Accessories required for a complete installation.

B. Related Sections:

1. Section 01 14 25, Procedures in Construction.

2. Section 01 50 00, Temporary Facilities and Controls.

3. Section 01 14 43, Environmental Resource Protection

1.02 REFERENCE STANDARDS

A. Caltrans: State of California Department of Transportation, Standard Specifications.

B. Standard Specifications for Public Works Construction (SSPWC).

C. California Stormwater Quality Association (CASQA)

1.03 SUBMITTALS

A. Submit in accordance with Section 01 33 00, Submittal Procedures.

B. Working drawings and data on proposed straw bales and fiber rolls, including physical properties of various products.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store materials in accordance with recommendations of manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Miscellaneous Materials:

1. Plastic sheeting: Clear polyethylene plastic sheeting at least 10 mils thick, secured with anchor restrainers (gravel filled bags) per the Construction Best Management Practices (BMP) handbook prepared by the California Stormwater Quality Association (CASQA), *www.cabmphandbooks.com*.

2. Temporary Fiber Rolls and Straw Bales: Provide fiber rolls and straw bales with staking per the Construction BMP handbook prepared by the CASQA, *www.cabmphandbooks.com* . If staking is not feasible, contractor shall develop other suitable methods of anchoring that will be acceptable to OCFCD.

3. Temporary concrete washout facility, per the Construction BMP handbook prepared by the CASQA, *www.cabmphandbooks.com.*

4. Gravel bags per the Construction BMP handbook prepared by the CASQA, www.cabmphandbooks.com

PART 3 - EXECUTION

3.01 GENERAL

A. Conform to all applicable local, state and Federal Regulations and laws pertaining to water pollution control and as specified in SSPWC section 7-8.6.

B. Accomplish erosion and sediment control through use of berms, dikes, swales, dams, fiber mats, plastic sheeting, netting, gravel, storm drain inlet protection, slope drains, sediment fences, and other sediment barriers; gravel construction entrances; and other erosion control devices or methods. Cover material stockpiles with plastic sheeting.

C. Coordinate temporary pollution control provisions with permanent erosion control features specified elsewhere in the contract documents to the extent practicable to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.

D. WQMP may limit surface area of erodible earth material exposed by clearing, grubbing, excavation, borrow, embankment, and fill operations.

1. Provide immediate, permanent, or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment.

2. Work may involve construction of temporary berms, dikes, dams, sediment basins, and slope drains; use of temporary mats; or other control devices or methods as necessary to control erosion.

E. Construct facilities required for clearing, grading, and land alteration activities, to ensure that sediment-laden water does not enter drainage systems or violate applicable water standards. Conform to requirements of Section 01 14 43, Environmental Resource Protection.

F. Permanent Features:

1. Incorporate permanent erosion control features at earliest practicable time. Use temporary pollution control measures to correct unforeseen conditions that develop during construction, to provide measures that are needed prior to installation of permanent pollution control features, or to temporarily control erosion that develops during normal construction.

2. Where erosion interferes with clearing and grubbing operations, schedule and perform work so that grading operations and permanent erosion control features can follow immediately; otherwise, provide temporary erosion control measures between successive construction stages.

G. Areas of Work:

1. Limit the area of clearing, grubbing, excavation, borrow, and embankment operations in progress commensurate with progress. Should seasonal limitations result in unrealistic coordination of operations, take temporary erosion control measures immediately.

2. Flag boundaries of clearing limits prior to construction.

   a. Do not disturb or permit disturbance of ground beyond flagged boundary. Reference Section 01 14 43, Environmental Resource Protection

   b. Maintain flagging for duration of work.

3. Temporary soil erosion and sediment control may include construction work outside right of way where work is necessary as a result of project construction such as borrow pit operations, haul roads, and equipment storage sites.

H. Maintenance:

1. Maintain erosion control features installed, including replacement, and upgrading of facilities when needed, until work is completed and notice of Final Acceptance issued.

2. Maintain catch basins (inlets with sumps or inverted siphons) so that not more than one foot depth of sediment is allowed to accumulate within a trap (or sump).

   a. Clean catch basins and storm drains prior to paving and Substantial Completion.

   b. Remove sediment. Do not flush sediment-laden water into downstream system.

3. Keep paved areas clean for the duration of the project.

4. Measures in addition to those indicated may be required.

5. Do not permit more than a one-foot depth of sediment to accumulate behind a silt fence.

    a. Remove sediment or regrade it into slopes, and repair and reestablish silt fences as needed.

6. Remove silt fences in entirety when no longer required. Fences are required until uphill area has been permanently stabilized.

7. Remove pipes, end sections, drainage curbs, silt fences, and other materials from temporary erosion control devices; those not incorporated into permanent work become property of Contractor.

3.02 STORM DRAIN INLET PROTECTION

A. Storm drain inlet protection must prevent sediment from entering storm drain systems prior to permanent stabilization of disturbed areas.

B. Use storm drain inlet protection per the Construction BMP handbook prepared by the CASQA, *www.cabmphandbooks.com*:

1. Where storm drain inlets are operational before permanent stabilization of disturbed drainage area.

2. Adjacent to and immediately downhill of utility type construction in existing paved areas with catch basin drainage.

3. When cleaning streets.

C. Use berms when required to direct drainage to flow through filters and prevent bypassing of inlets.

D. Do not permit more than one-foot depth of sediment to accumulate against storm drain inlet protection.

1. Remove sediment and restore inlet protection as needed to maintain sediment trapping and filtering capability.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for the work of this section.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes administrative and procedural requirements for selection of products for use in the project; product delivery, storage, and handling.

1.02 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

A. The Authority shall approve the source of supply of each of the materials supplied by the Contractor before the purchase or delivery of materials to the work site. Promptly after receiving the Contract award, the Contractor shall notify the Authority of all proposed material sources. If it is found after trial that sources of supply previously approved do not produce uniform and satisfactory products, or if the product from any source proves unacceptable at any time, the Contractor shall furnish materials from other sources as approved by the Authority.

B. Only materials conforming to Specifications and approved in advance by the Authority shall be used in the work. All material being used shall be subject to inspection or test at any time during their preparation or use. No material that after approval has in any way become unfit for use shall be used in the Work.

C. It is Contractor’s responsibility to verify material and product availability and compliance prior to submitting material and product submittals to the Authority for review and acceptance.

1.03 UNLOADING, HAULING AND STORING MATERIALS

A. The Contractor shall, at its expense, deliver, unload, store, handle, and be responsible for all materials whether furnished by the Authority or by the Contractor.

B. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible.

1. Periodically inspect to ensure products are undamaged, and are maintained under required conditions.

2. Products damaged by improper storage or protection shall be removed and replaced with new products at no change in Contract Sum or Contract Time.

C. Store products to facilitate inspection and measurement of quantities and units.

D. The unloading, storing and hauling of all the Authority’s or Contractor's material shall be considered as incidental to contract pricing.

E. When permission to do so is given in writing by the Authority, the Contractor may store materials on NWSSB's property provided such property is not required for NWSSB's use.

F. Store moisture-sensitive products in a weathertight enclosure or covered with an impervious sheet covering. Provide adequate ventilation to avoid condensation. Maintain product storage within temperature and humidity ranges required by manufacturer's instructions.

1. For exterior storage of fabricated products, place on sloped supports above ground.

2. Store loose granular materials on solid surfaces in a well-drained area. Prevent mixing with foreign matter. Prevent material from flowing or blowing away to other areas of the site. Provide covers for sand, aggregate base, and debris so that wind does not cause it to blow away.

3. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

G. All electrical and mechanical equipment shall be stored so as to be protected from rain, sun, wind, sand, dust, moisture, etc. The equipment shall be stored on supports off the ground or on concrete slabs with all factory provided dust and moisture protection left in place until equipment is installed.

H. Electrical and mechanical equipment shall be maintained in accordance with the manufacturer's operation and maintenance instructions until the Contractor is relieved of the responsibility by the Authority.

I. Store heavy materials away from the structure in a manner that will not endanger supporting construction.

J. Building materials shall be stored in a protected environment safe from sun, rain and excessive dust. Store cementitious products and materials on elevated platforms. Damaged or excessively dirty materials will not be permitted to be installed.

K. Protection:

1. Provide barriers, flashing lights, substantial coverings and notices to protect installed Work from traffic and subsequent construction operations.

2. Remove protective measures when no longer required and prior to Acceptance of the Work.

L. Delivery Requirements:

1. Schedule delivery to minimize long-term storage at project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Comply with manufacturer's instructions and recommendations for transportation, delivery and handling. Provide equipment and personnel to handle products by methods to prevent soiling, marring or other damage.

4. Deliver products to project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with manufacturer's labels and instructions for handling, storing, unpacking, protecting, and installing.

5. Contractor is responsible and shall be present at work side for receiving his material delivery at the work site. Promptly inspect products on delivery to ensure compliance with the contract documents and to ensure that products are undamaged and properly protected.

6. Contractor shall provide the Authority with 48 hours' notice prior to delivery of any products and materials.

1.04 PRODUCT SELECTION PROCEDURES

A. Products: Items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchase stock, and include material, equipment, assemblies, fabrications and systems.

B. General Product Requirements: Provide products that comply with the contract documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. It is OCTA's policy that all manufactured products and supplies be provided by United States manufacturing industries in agreement with related Union organizations. Therefore in the performance of the contract, Contractor shall give United States made products preference.

2. Named Product: Items identified by manufacturer's product name, including make or model designations indicated in the manufacturer's published product data.

3. Specific Product Requirements: Refer to requirements of Section 01 45 00 - Quality Control and individual product Specifications Sections in the project specifications for specific requirements for products.

4. Materials: Products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed or installed to form a part of the Work.

5. Product Completeness: Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

6. Minimum Requirements: Specified requirements for products are minimum requirements.

7. Standard Products: Where specific products are not specified, provide standard products of types that are suitable for the intended use in similar conditions and that have been produced and used successfully in similar situations on similar projects. Products shall be selected by the Contractor and subject to review and acceptance by the Engineer.

8. Code Compliance: All products, other than commodity products prescribed by Code, shall have a current ICBO Evaluation Service (ICBO ES) Research Report or CABO National Evaluation Report (NER).

9. Interchangeability: To the fullest extent possible, provide products of the same kind from a single source. Products required to be supplied in quantity shall be the same product and interchangeable throughout the Work. When options are specified for the selection of any of two or more products, the product selected shall be compatible with products previously selected.

10. Nameplates:

    a. Except for require labels and operating and safety instructions, do not attach manufacturer's identifying nameplates or trademarks on surfaces exposed to view in occupied spaces or to the exterior.

    b. Provide a permanent nameplate on each item of service-connected or power-operated equipment. Nameplates shall contain identifying information and essential operating data such as the following example:

        Name of manufacturer
        Name of product
        Model and serial number
        Capacity
        Power Characteristics
        Speed

11. the Authority reserves the right to limit selection to products with warranties not in conflict with requirements of the contract documents.

12. Where products are accompanied by the term "as selected" or similar, the Authority's Engineer will make selection.

13. Where products are accompanied by the term "match sample" or similar, sample to be matched is the Authority's sample.

14. Descriptive, performance, and reference standard requirements in the specifications establish salient characteristics of products.

C. General Product Selection Requirements:

1. Where products or manufacturers are identified in the specifications, the intent is not to limit competition or to restrict the work to only those products or manufacturers named. Rather, the intent is to establish the level of quality required and the product characteristics important to the success of the work. Subject to compliance with requirements, products of any manufacturer may be incorporated into the work, if shown to be equal to those listed to the satisfaction of the Authority.

2. "Or Equal" Provision: Where "or equal" is included after named manufacturer(s) and product(s), equivalent products of unnamed manufacturers will be considered in accordance with requirements specified in Section 01 25 00 Substitution Procedures.

    a. Prior to submitting "Or Equal" product(s) for consideration, Contractor shall review and determine that product(s) meet or exceed the minimum quality and warranty provisions of the specified product.

    b. Cost and time considerations will be waived for products and manufacturers submitted under the "Or Equal" provision, except no increase in Contract Sum or Contract Time shall result.

    c. Contractor's attention is called to the substitution provisions of the Conditions of the Contract.

3. Products Specified by Description: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with the specified requirements.

4. Products Specified by Performance Requirements: Where Specifications require compliance with performance requirements, provide product(s) that comply with performance requirements and are recommended by the manufacturer for the intended application. Verification of manufacturer's recommendations may be by product literature or by certification of performance from manufacturer.

5. Products Specified by Reference to Standards Only: Where Specifications require compliance with a standard, provided product shall fully comply with the standard specified.

6. Products Specified by Combination of Methods: Where products are specified by a combination of described characteristics, performance characteristics, reference standards and manufacturer identification, provide products conforming to all such characteristics.

7. Use of products or manufacturers, whether listed or not, is subject to demonstrated compliance with requirements of the contract documents.

D. Product Selection Procedures:

1. Basis of Design: Where products or manufacturers are identified as "basis of design" or where sizes, profiles, and dimensional requirements on drawings are based on a specific product or system, comply with provisions for comparable products to obtain approval for listed alternate products or manufacturers. Comply with provisions for substitutions to obtain approval for use of an equal unnamed product or manufacturer.

2. Specified Products: Where the specifications indicate that a product or manufacturer is to be selected from those listed, comply with the provisions for substitutions to obtain approval for use of an equal unnamed product.

3. Other Named Products: Where products or manufacturers are indicated without qualification, or with the words "or approved equal" or similar terms, comply with provisions for comparable products to obtain approval for use of an equal unnamed product.

4. Visual Matching Specification: Where specifications require matching an established sample, select a product that complies with requirements and matches Engineer's sample. the Authority's decision will be final on whether a proposed product matches.

5. Visual Selection Specification: Where specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, Contractor shall select a product that complies with other specified requirements.

6. Full Range: Where specifications include the phrase "to match existing colors, patterns, textures" or similar phrase, the Authority will select color, pattern, density, or texture from manufacturer's product line submitted by the Contractor, that includes both standard and premium items.

PART 2 - PRODUCTS

Not used.

PART 3 – EXECUTION

Not Used.

PART 4 - MEASURMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 71 13

MOBILIZATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. This section consists of the Contractor furnishing all transportation, labor, materials, and equipment necessary and incidental to mobilization and demobilization to perform the work of this contract. Work for mobilization and demobilization as specified in this section consists of preparatory work and operations at the start of the Contract Work and removal of those items at Contract completion. Mobilization includes installation of construction site perimeter fencing and regulatory signage. Jobsite shall be completely secured prior to delivery of any construction equipment and materials. Contractor shall coordinate with the Authority and NWSSB to ensure communication of intent to mobilize and that emergency responder's 24-hour access to the jobsite shall be maintained throughout the duration of the project.

1.02 DEFINITIONS

A. Mobilization is operations necessary for the movement and arrival at the worksite of personnel, equipment, supplies, and appurtenances, all in ready and satisfactory working and operational order, which the Contractor intends to use for the work; for the establishment of all temporary offices and Contractor-owned structures and other temporary facilities necessary to perform the work; proper security clearance and safety training of project personnel; and for incidental work and operations which must be performed prior to beginning work on the various contract items.

B. Demobilization is operations necessary for the removal of all personnel, equipment, supplies, appurtenances, Contractor-owned structures, temporary facilities, materials, and debris from the worksite and restoration of site and surrounding properties, affected by the Contractor's activities, to pre-construction conditions, as approved by the Authority.

1.03 SUBMITTALS

A. Shop Drawing showing the installation of any pollution control/BMP features required for the Project to be established on the site prior to initiating construction, maintained for the duration of construction, and removed upon completion of construction.

B. Copies of all required permits obtained prior to starting Work covered by the permit.

PART 2 - PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 GENERAL

A. The Contractor shall provide personnel, equipment, temporary facilities, construction materials, tools, and supplies at the worksite at the time they are scheduled to be required.

B. The Contractor shall locate plant or equipment appropriately close to the portion of the work for which it will be used.

C. The Contractor shall obtain all necessary permits required by the local jurisdictions to perform the work of this Contract. The Contractor shall provide the Authority copies of all permits obtained prior to starting work covered by the permit.

D. The Contractor shall install pollution control features required by permits for the construction. These features shall be maintained throughout the duration of construction and removed at the completion of construction.

E. Upon completion of the work, the Contractor shall remove all equipment, temporary facilities, construction tools, apparatus, equipment, unused materials and supplies, plant, and personnel from the worksite and shall leave the worksite in a clean and satisfactory condition as approved by the Authority.

PART 4 – MEASUREMENT AND PAYMENT

Compensation for mobilization tasks is included in the price indicated in the Bid Form for Mobilization, and shall not exceed 10% of the Contract Price. Progress payments for the bid item shall be determined by the OCTA based on the percentage of completion of mobilization and demobilization tasks performed by the Contractor. In addition to the mobilization and demobilization work described in this Section, the pay item shall include the following.

1. Submission of an acceptable Base Schedule in accordance with Section 01 32 00, Construction Progress Documentation.
2. Submission and acceptance of the Contractor's proposed Construction Project Manager and Superintendent.
3. Obtaining Security clearance from the NWSSB for all construction staff, independent testing service personnel, and construction workers that will be required to perform work on the NWSSB property.
4. Submission and acceptance of the name and professional history of the land surveying firm designated by the Contractor as its project surveyor.

Twenty (20%) percent of the value of the Mobilization pay item will not be paid until final completion of the Work of the Project, including the tasks described in SECTION 01 77 00, CLOSEOUT PROCEDURE, and in SECTION 01 78 00, CLOSEOUT SUBMITTALS.

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Includes:

1. Employ land surveyors and professional engineers, licensed in the State of California, to perform surveying and field engineering.

2. Establish and maintain baselines and field control points as required for construction layout survey.

3. Perform survey and measurement to establish design lines and grades.

4. Layout of the Work.

5. Other engineering services, as necessary, to accomplish the Work.

1.02 GENERAL

A. Contractor shall locate and protect all adjacent areas, utilities, equipment, and appurtenances.

B. Control area of work. Provide barricade and traffic signs around work area, excavations, and contractor's equipment.

C. Promptly report and repair to the Engineer's satisfaction disruption in utilities caused by construction work. Repair disruption of utilities immediately.

D. Make no changes without prior written notice to the Engineer.

1.03 SUBMITTALS

A. Submit for the Authority's approval the name and professional history of the land surveying firm designated by the Contractor as its project surveyor.

1. At a minimum the project surveyor must have five to ten years of verifiable experience performing field survey.

B. On request, submit to the Authority documentation that verifies accuracy of field engineering work and surveying work. Submit data certifying all dimensions, elevations, and locations of improvement are in conformance, or non-conformance, with Contract Documents at end of Project.

C. Prior to completion of project and when requested by the Authority, submit a copy of site drawing prepared by California registered engineer and signed by land surveyor verifying that the elevations and locations of the work are in conformance with contract documents.

D. Contractor shall submit a complete copy of the baseline survey field notes and final layout.

E. Contractor shall provide As-built redline drawings to the Authority at the completion of the Project.

1.04 REQUIREMENTS

A. Field Engineering: Provide field engineering services, as necessary. Utilize recognized engineering practices.

B. Verification: Verify all existing dimensions before starting work. Record all existing pavement striping and markings and submit this record to the Authority before commencing any demolition work.

C. Layout and Control of the Work: Establish elevations, lines, and grade for all Work under this Contract. Locate and lay out by instrumentation and similar appropriate means. Contractor is responsible for all construction field survey and setting of grades and slopes. New asphalt or concrete paving flow patterns should merge with existing flow patterns on the site so that flow of water is directed towards existing gutters, swales, and storm drains on site. Protect in place existing storm drain system, swales, gutters, concrete walk, storm drain inlets, channel wall, fencing, on-site storage, equipment, and property during construction.

1.05 QUALITY CONTROL

A. Contractor shall maintain a complete and accurate log of control and survey work as it progresses.

B. The Authority reserves the option to check Contractor's survey measurements and calculations. Whether the Authority' exercises this option or not, the requirement for accuracy will not be waived.

C. On completion of construction and major site improvements, Contractor shall prepare a final certified survey illustrating dimensions, locations, angles, and elevations of construction and work site.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify locations of survey control points prior to starting any work on the project site. Contractor shall field verify all existing dimensions, conditions, layout, grading that will affect the project before commencing any work.

B. Review OCTA record drawings for underground utilities and field verify all utilities that may affect construction activities before demolition work and excavation. Contractor shall utilize an independent utility locator company to survey and map any and all utilities that may affect construction activities and determine if there are any utility lines in conflict with construction of this project.

C. Contractor shall conduct survey (line and grade) of existing improvements such as top of curb, finished surface, flow lines etc. before any demolition or removal is undertaken. Areas where pavement has failed or settled shall be documented.

D. Immediately notify the Authority of any discrepancies discovered.

E. Finished grade shall match existing grade and ensure positive drainage is provided.

3.02 SURVEYS AND RECORDS

A. Working from lines and grades established by baseline survey as shown in relation to work, establish and maintain benchmarks and other dependable markers to set lines and levels for work on site as needed to locate each element of the project.

B. Contractor shall inform tradesmen performing the work of marked lines and grades provided for their use in layout work.

C. Contractor shall provide a complete copy of baseline survey field notes and final layout to the Authority prior to starting construction.

D. Certify all lines and grades and submit them to the Authority for project record.

3.03 SURVEY REFERENCE POINTS

A. Contractor shall locate and protect survey control and reference points. Preserve permanent reference points during construction.

B. Contractor shall establish appropriate control datum for construction survey.

C. Contractor shall report to the Authority the loss or destruction of any reference points or relocation required because of changes in grades or other reasons.

D. Contractor shall replace dislocated survey control points based on original survey control and shall make no changes without prior written notice to and approval by the Authority.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Requirements and limitations for cutting and patching of Work.

1.02 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work.

B. Individual Product Specification Sections:

1. Cutting and patching incidental to Work specified in the Section.

2. Coordination with Work specified in other Sections for openings required to accommodate Work specified in those other Sections.

C. Include:

1. Identification of Project.

2. Location and description of affected Work.

3. Explanation of necessity for irregular cutting and patching procedures.

4. Description of proposed special work and alternate products to be used.

5. Alternatives to cutting and patching.

6. Effect on existing construction and, if applicable, work being performed for the Authority under separate contracts.

7. Date and time Work will be executed.

8. Written permission of affected separate contractor.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Primary Products: As required for original installation and to match surrounding construction.

B. Product Substitution: For each proposed change in materials, submit request for substitution under provisions of Section 01 60 00 - Product Requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examination, General: Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

B. After uncovering existing Work, inspect conditions affecting proper accomplishment of Work.

C. Beginning of cutting or patching shall be interpreted to mean that existing conditions were found by Contractor to be acceptable.

3.02 PREPARATION

A. Temporary Supports: Provide devices and methods to protect other portions of Project from damage by providing temporary supports.

3.03 CUTTING AND PATCHING

A. Cutting and Patching:

1. Execute cutting, fitting, patching, excavation, and fill, to complete Work.

2. Coordinate installation or application of products for integrated Work.

B. Remedial Work: Remove and replace defective or non-conforming Work.

3.04 PERFORMANCE

A. Cutting and Patching:

1. Execute demolition, cutting and patching by methods to avoid damage to adjoining Work, and which will provide appropriate surfaces to receive final finishing.

2. Saw cut asphalt concrete or Portland cement concrete paving for smooth edges. Do not overcut corners.

3. Contractor is required to take all precautions during construction to prevent

damage to OCTA property. All precautions are to be taken per CAL-OSHA code to prevent accidents and injuries.

B. Restoration:

1. Restore Work with new products as specified in individual Sections.

2. Where affected or uncovered by construction work, finish adjacent surfaces and background to condition before construction. Match material, paint, and finish to nearest joint. Re-paint all curbs, traffic striping, legends, parking stalls, numbers, and paving as existed before construction. Damage to adjacent or NWSSB property shall be repaired, at the Contractor's expense, to a condition as existed before construction and to the Authority's satisfaction.

C. Finishing: Refinish (material and paint) surfaces to match adjacent and similar finishes as used for the Project (materials, textures, colors, sheens and finishes). For continuous surfaces, refinish with material and paint to nearest intersection or natural break or joint. Replace equipment or appurtenances damaged due to demolition, cutting or patching work during construction. Provide material quality to level equal to or better than that which existed before construction started.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Includes: Procedures for ensuring optimal diversion of construction and demolition waste generated by the Project, and documentation procedures for tracking waste generation and diversion.

1.02 DEFINITIONS

A. Certified Mixed Debris Processing Facility: A solid waste processing facility that accepts loads of mixed debris for the purpose of recovering re-usable and recyclable materials and disposing of the non-recyclable residual material.

B. Class III Landfill: A landfill that accepts non-hazardous solid waste such as household, commercial, and industrial solid waste. A Class III landfill shall have a California Integrated Waste Management Board (CIWMB) solid waste facilities permit and is regulated by the Local Enforcement Agency.

C. Construction and Demolition (C&D) Debris: Solid waste and recyclable materials that result directly from construction and demolition of buildings and other structures, do not contain hazardous waste (as defined in CCR Title 22, Section 66621.3, *et seq*.), and contain no more than 1 percent putrescible wastes by volume, calculated on a monthly basis. C&D debris includes, but is not limited to: asphalt, concrete, portland cement, brick, lumber, wallboard, roofing material, ceramic tile, pipe, glass and associated packaging.

D. Disposal: Acceptance of solid waste at a legally operating facility for the purpose of landfilling.

E. Diversion: Activities that result in reducing the amount of waste disposed at a landfill. This can include source reduction activities, composting, recycling, and reuse.

F. Inert Backfill Site: A location, other than inert fill or other disposal facility, to which inert waste is taken for the purpose of filling an excavation, shoring, or another soils engineering operation.

G. Inert Fill: A facility that can legally accept inert waste such as asphalt and concrete exclusively for the purpose of disposal.

H. Inert Debris/Inert Waste: Solid waste and recyclable materials that are source separated or separated for reuse, do not contain hazardous waste (as defined in

CCR, Title 22, section 66261.3 et. seq.) or soluble pollutants at concentrations in excess of applicable water quality objectives, and do not contain significant quantities of decomposable waste. Inert debris may not contain more than 1 percent putrescible wastes by volume calculated on a monthly basis. Gravel, rock, soil, sand and similar materials, whether processed or not, that have never been used in connection with any structure, development, or other human purpose are not inert debris.

I. Mixed Debris: Material that includes commingled recyclable and non-recyclable construction and demolition debris.

J. Mixed Debris Processing Facility: A solid waste processing facility that accepts loads of mixed debris for the purpose of recovering re-usable and recyclable materials and disposing of the non-recyclable residual materials. Refer also to Certified Mixed Debris Processing Facility.

K. Permitted Waste Hauler: A company that possesses a valid and current permit from the County of Riverside to collect and transport solid waste from individuals or businesses in the County of Riverside.

L. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating, or thermally destroying solid waste.

1. On-site recycling materials that are sorted and processed for use in an altered form in the Project, (e.g. concrete is crushed for use as base for a parking lot on the site).

2. Off-site recycling source-separated materials hauled to another location and used in an altered form in the manufacture of a new product.

M. Recycling Facility: An operation that can legally accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product. Depending on the types of materials accepted and operating procedures, a recycling facility may or may not be required to have a Solid Waste Facilities permit from the CIWMB or be regulated by the Local Enforcement Agency.

N. Reuse: Materials that are recovered for use in the same form. This includes materials that are reused on-site or off-site.

O. Salvage: Materials recovered for reuse or sale or donation to a third party.

P. Source Reduction: Any action causing a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, and reducing the amount of yard waste generated.

Q. Source-Separated Materials (Construction and Demolition Debris): Material that is

sorted at the site of generation by individual material type for the purpose of reuse or recycling, i.e., loads of concrete that are source-separated for delivery to a base course recycling facility to be crushed into road base material.

R. Solid Waste: Shall mean waste that the CIWMB has deemed acceptable for disposal at a Class III landfill and shall not include source-separated material.

S. Transfer Station: A facility that can legally accept solid waste for the purpose of temporarily storing the materials for re-loading onto other trucks and transporting materials to a landfill for disposal or recovering some materials for reuse or recycling. Transfer stations must be permitted by the CIWMB and regulated by the Local Enforcement Agency.

1.03 SUBMITTALS

A. Waste Management Plan (WMP): Conduct a site assessment and estimate the types and quantities of materials, under the Project, that are anticipated for on-site or off-site processing, recycling, reuse, or disposal.

1. Not more than 10 working days after Notice to Proceed, submit a written WMP to the Authority. The plan shall show the percentage of recycling for inert debris expected from the Project and the percentage recycling for the remaining C&D debris expected from the Project. While no minimum amounts of recycling have been established for this project, Contractor shall make every reasonable effort to achieve a minimum of 50% by weight of material that is recycled, re-used, salvaged or otherwise diverted from landfill.

2. The Authority's approval of the Contractor's WMP will not otherwise relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.

3. Dirt and excavation spoils, whether reused as fill or not, will not be counted in the calculation of diverted and disposed materials.

B. Solid Waste Diversion and Disposal Report (SWDD Report): One week prior to the first of every month, and prior to Contractor's monthly progress estimate for payment, Contractor shall prepare and submit a written SWDD report to the Authority quantifying all material generated in the Project which was either disposed or diverted from disposal through reuse or recycling during the time period covered by the SWDD report and progress payment. Include in the Report a cumulative history of the diversion and disposal for the Project. Attach supporting documentation including manifests, weigh tickets, receipts, reports, invoices, and other supporting documents specifically identifying the project, the recyclables and solid waste generated by the Project, and where the material was sent. The final SWDD report shall cover the complete time period of the Project and shall contain a list of the total waste disposed and/or diverted for each reporting period. The final SWDD report and supporting documentation shall be submitted within 30 Calendar Days of Project completion.

1.04 WASTE MANAGEMENT PLAN SUBMITTAL MEETING

A. On or about 5 working days after Notice to Proceed, to the Authority will schedule and attend a meeting with the Contractor to discuss the proposed WMP submittal. This meeting shall be held to allow to the Authority and the Contractor an opportunity to develop a mutual understanding regarding the recycling and reuse requirements and programs.

1.05 REUSE, SALVAGE, AND RECYCLING OPTIONS

A. Contractor shall make use of as many reuse and salvage options as is feasible. One option is the California Materials Exchange (CalMAX), a free program sponsored by the CIWMB.

B. Recycling shall include both on-site and off-site recycling of source-separated materials, as well as mixed debris recycling efforts.

C. On-site recycling program shall produce a quality product to meet the specifications identified in the Contract Documents, subject to approval. Estimate the amount of material to be used in the Project and include a program for off-site recycling of any excess material that cannot be used in the Project.

D. Develop and implement a program to include source separation of solid waste, to the greatest extent feasible, of the following types:

1. Asphalt
2. Concrete and concrete block
3. Rock
4. Wood (lumber)
5. Green material (i.e. tree trimmings)
6. Metals

E. Mixed Debris Recycling: Develop and implement a program to transport loads of commingled construction and demolition materials that cannot be feasibly source separated to a mixed debris recycling facility.

1.06 HAULING AND DISPOSAL OPERATIONS

A. Hauling: Arrange the collection and hauling of C&D debris by a waste hauler that is permitted by the County of Orange Waste Management Department and Agencies as applicable.

B. Recycling And Processing Facilities: Transport C&D debris to recycling or processing facilities. Contractor shall be familiar with the requirements for acceptance of C&D materials at the recycling and processing facilities before the material is delivered. Always call facilities in advance to verify requirements.

C. Disposal Facilities: Transport C&D debris that cannot be delivered to a recycling or processing facility, to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.

D. Site Disposal: Do not burn, bury, or otherwise dispose of solid waste on the Project job-site. All trash, debris, and removed materials shall be hauled away and legally disposed off-site on the same day they are removed.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 74 23

CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION.

A. Work Included:

1. Execute cleaning, during progress of the work, and at completion of the work.

B. Related Work Specified Elsewhere:

1. Cleaning for specific products or work; the respective specification section for that work.

2. Refer to Section 01 14 25, Procedures in Construction for requirements for restoration of project site(s), including but not limited to photographic documentation.

3. Refer to Section 01 71 13, Mobilization and Demobilization for requirements for removal of all of Contractor's facilities, equipment and tools.

1.02 DISPOSAL REQUIREMENTS.

A. Conduct cleaning and disposal operations to comply with all applicable codes, local codes, ordinances, regulations and laws, rules and practices.

B. Conform to requirements of 01 74 19, Construction Waste Management and Disposal.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

D. All cleaning materials to be submitted to the Authority with MSD sheets for review. Cleaning materials to be low VOC and as required levels under applicable codes. Approved MSD sheets and recommended safety items and PPE (e.g., eye wash, disposable gloves, respirators, eye protection, signage, etc.) associated with materials being utilized to be present at the location of the work being performed.

PART 3 - EXECUTION

3.01 CLEANING DURING CONSTRUCTION

A. Provide all labor and equipment required to remove trash and broom clean project sites as required, including surrounding areas affected by construction activities.

B. Provide all labor and equipment required to load, haul, and legally dispose of all construction trash and debris at the end of each workday throughout the duration of the project.

C. Pay all dump fees required to legally dispose of materials.

D. Clean streets adjacent to the project site as required to meet the requirements of all local, City, County and State authorities.

E. Clean up all excess concrete from site concrete work.

F. Wet down dry materials and rubbish to prevent blowing dust.

G. At reasonable intervals during progress of work and at the end of each workday, remove waste materials, debris and rubbish from site and dispose of legally away from site.

H. Handle waste materials and debris in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly painted surfaces.

J. Do not place in fills or backfills or bury at site any waste material, rubbish or debris. Remove such material from project to a lawful disposal area by the end of each workday; pay all associated hauling and dumping charges.

K. Perform any additional cleaning or cleaning at shorter intervals when instructed to do so by the Authority.

3.02 FINAL CLEANING

A. SUBSTANTIAL COMPLETION REVIEW CLEANING, GENERAL

1. Substantial Completion Review Cleaning, General: Execute a thorough cleaning prior to Substantial Completion review by the Authority.

    a. Clean surrounding areas affected by construction. Clean and repair all surrounding areas and appurtenances such as curbs, gutters, swales, storm drain, platforms, equipment, vents, Apex boxes, light concrete pedestal, landscaping, and driveways. Repair equipment, curbs, surrounding driveways, landscaping, and site affected by the construction work. Remove all oil, concrete, debris, and paint from the surfaces mentioned.

    b. Remove waste and surplus materials, rubbish and temporary construction facilities, utilities and controls from site.

2. Employ experienced workmen for final cleaning.

3. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

4. Water-jet clean paved surfaces; rake clean other surfaces of grounds. Comply with SWPPP BMP measures.

5. Contaminated Earth: Final clean-up operations shall include removal and lawful disposal of earth that is contaminated or unsuitable for support of plant life in planting areas, as well as filling of resulting excavations with suitable soil. Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry and similar materials; areas in which washing out of concrete and plaster mixes or washing of tools and other similar cleaning operations have been performed; and areas that have been oiled, paved or chemically treated. Do not dispose of waste oil, solvents, paints, solvents and similar material of a penetrating nature by depositing or burying on NWSSB's property.

6. Final cleaning shall be done to the satisfaction of the Authority.

B. FINAL COMPLETION SITE CLEANING

1. Site Cleaning: Broom clean exterior paved surfaces. Rake clean other surfaces of the grounds affected by construction material.

    a. Wash down and scrub where necessary all paving soiled as a result of construction activities. Thoroughly remove material droppings, asphalt splatters, stains, oil, and adhered soil.

    b. Remove from the site all construction waste, unused materials, excess soil and other debris resulting from the Work.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements for contract closeout, including, but not limited to, the following:

   a. Substantial Completion procedures.

   b. Final Acceptance procedures.

B. Related Sections:

1. INVITATION FOR BIDS (IFB) Exhibit A, SECTION V: GENERAL PROVISIONS, C. FINAL INSPECTION AND ACCEPTANCE

2. Section 01 74 23, Cleaning, for final cleaning of project site(s).

3. Section 01 78 00, Closeout Submittals, for operation and maintenance manual requirements.

4. Section 01 78 00, Closeout Submittals, for submitting record drawings, record specifications, and record product data.

5. Section 01 78 36, Warranties and Guarantees and Bonds, for submitting Warranties.

6. Divisions 02 through 48 sections for any specific closeout requirements for the work in those sections.

1.02 SUBSTANTIAL COMPLETION

A. Preliminary punch list review: At Contractor's request, the Authority will attend a preliminary Contract closeout review, not earlier than 14 days prior to anticipated Substantial Completion review day. The Authority, NWSSB and Contractor shall conduct a walk-though of Project to review scope, adequacy, and completeness of

the Work. Upon receipt of Contractor's proposed preliminary punch list, the Authority will prepare a list of items to be completed and corrected (preliminary punch list).

B. Before requesting review/inspection for determining date of Substantial Completion of the Project or designated portion thereof, the Contractor shall complete the following:

1. Execute cleaning and clear site of temporary facilities and controls, as specified in Section 01 50 00 Temporary Facilities and Controls and in Section 01 74 23 Cleaning.

2. Prior to Substantial Completion review, complete all testing, inspection, balancing, sterilization, and cleaning of the Work.

3. Advise the Authority of pending insurance changeover requirements.

4. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents. Refer to Section 01 78 00, Closeout Submittals for requirements.

5. Obtain and submit releases permitting the Authority and the NWSSB unrestricted use of the work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

6. Prepare and submit project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information. Refer to Section 01 78 00, Closeout Submittals for requirements.

7. Deliver tools, spare parts, extra materials, and similar items to location designated by the Authority. Label with manufacturer's name and model number where applicable.

8. Submit test/adjust/balance records.

9. Terminate and remove temporary facilities from project site, along with mockups, construction tools, and similar elements. Refer to Section 01 71 13, Mobilization and Demobilization for requirements.

10. Advise the Authority of changeover in utilities.

11. Submit changeover information related to NWSSB's occupancy, use, operation, and maintenance.

12. Complete final cleaning requirements, including touchup painting. Refer to Section 01 74 23, Cleaning for requirements.

13. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

C. Contractor's Certification: The Contractor shall submit to the Authority written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Substantial Completion review by the Authority. Provide in writing to the Authority, with one week's notice, that Work is substantially complete.

D. Punch List Review: The Authority, and their responsible design consultants, will attend a Contract closeout review and conduct a walk-thorough of Project to review the updated list of items to be completed and corrected (Punch List).

1. Contractor shall prepare a list and record additions, deletions, and revisions as noted by the Authority or the NWSSB for completion or correction.

2. The Contractor shall complete all items on the punch list and notify the Authority that the items are completed and ready for inspection. The Authority will update and distribute the revised Punch List after their next walk-through.

3. Costs of additional visits caused by incomplete scope of work or punch list items after the second site visit by the Authority and the design consultants, to review completion and correction of Work, shall be charged to the Contractor.

E. Inspection: Submit a written request for inspection for Substantial Completion of the Project or designated portion thereof. On receipt of request, the Authority will either proceed with inspection or notify Contractor of unfulfilled requirements. The Authority will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by the Authority, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for final completion.

1.03 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for determining final acceptance, complete the following:

1. A final Application for Payment according to Section 01 29 00, Payment Procedures and the General Provisions of the Contract.

2. Submit certified copy of the Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by the Authority. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Inspection: Submit a written request for final inspection for final acceptance. On receipt of request, the Authority will either proceed with inspection or notify Contractor of unfulfilled requirements.

1. Re-inspection: Request re-inspection when the work identified in previous inspections as incomplete is completed or corrected.

C. Engineer's Certification: The Authority's responsible engineers determine that the list of items to be completed and corrected (Punch List) is sufficiently complete for the Authority to occupy the Project area for the use to which it is intended.

D. Notice of Completion: The Authority will record an official Notice of Completion with the County Recorder's Office.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 - GENERAL

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1.01 SUMMARY

A. Section Includes:

1. Maintain at the site one record copy of Project record documents, including but not limited to the following items.

   a. Record drawings.

   b. Record specifications.

   c. Addenda.

   d. Change Orders and other Modifications to the Contract.

   e. OCTA's field orders and written instructions.

   f. Reviewed and Accepted Shop Drawings, Product Data and Samples.

   g. Field Test Reports.

   h. Referenced Documents.

B. Related Sections:

1. INVITATION FOR BIDS(IFB) Section V: General Provisions, C. Final Inspection and Acceptance

2. Section 01 77 00, Closeout Procedures.

3. Section 01 78 36, Warranties and Guarantees and Bonds.

4. Section 01 33 00, Submittal Procedures.

5. Sections in Division 02-49 for specific requirements related to work of those sections.

6. General Conditions for all financial and payment requirements.

1.02 SUBMITTALS

A. At Contract close-out, deliver Record Documents to the Authority.

B. Accompany submittal with transmittal letter in duplicate, containing:

1. Date;

2. Project title and contract number;

3. Contractor's name and address;

4. Title and number of each Record Document; and

5. Signature of Contractor or his authorized representative.

C. Submit in accordance with Section 01 33 00, Submittal Procedures.

D. Record Drawings: Submit one set of full size marked-up record prints. Submit also as pdf electronic file on electronic media acceptable to the Authority.

E. Record Specifications: Submit one set of contract specifications, including addenda and contract modifications. Submit also as pdf electronic file on electronic media acceptable to the Authority.

F. Record Product Data: Submit one marked-up copy of each product data submittal. Submit also as pdf electronic file on electronic media acceptable to the Authority.

1. Product data need not be submitted separately if included in operation and maintenance manuals.

G. Shop Drawings: Submit one hard copy of reviewed and accepted shop drawings. Also submit as PDF files and AutoCAD files on a thumb-drive and into the shared electronic filing system (example: Box.com).

H. Other Documents: Unless otherwise specified, submit one (1) hard copy and a PDF electronic file of each document required herein.

1.03 FINAL COMPLETION SUBMITTALS:

A. Final Submittals: Submit to the Authority all documents and products required by Specifications to be submitted, including the following which apply:

1. Project record drawings and specifications.

2. Guarantees, warranties and bonds.

3. Test reports and certificates of compliance.

4. Local Regulatory Jurisdiction(s) final Sign-off, including any and all documents required by governing authorities, utilities and other agencies, building permit cards, inspection cards signed-off as final by the inspectors, and certifications of inspections and tests.

B. Certificates of Compliance and Test Report Submittals: Submit to the Authority certificates and reports as specified, as required by manufacturers for warranty and guarantee purposes, and as required by authorities having jurisdiction.

C. Subcontractor List: Submit to the Authority copies of updated Subcontractor and Materials Supplier Lists within the Operation and Maintenance Manuals and PDF separate file copy.

D. Warranty Documents: Prepare and submit to the Authority warranties and bonds as specified in Section 01 78 36 Warranties and Guarantees and Bonds and PDF copies.

E. Final Payment: Contractor shall provide a final Application for Payment. The Authority will process the final payment per the General Provisions of the Contract.

1.04 PROJECT RECORD DOCUMENTS - GENERAL

A. Maintain on site, one set of the following record documents and record actual construction and all revisions to the Work:

1. Contract Drawings.

2. Project Manual, with Specifications, Addenda, Change Orders and other instruments modifying the Contract.

3. Reviewed shop drawings, product data and samples.

4. Store Record Documents separate from documents used for construction.

1.05 RECORD DRAWINGS:

A. Record Prints: Maintain one set of black-line white prints of the contract drawings and shop drawings for the sole purpose of recording all as-built changes to the work.

B. Preparation: Record information continuously as Work progresses. Do not conceal Work permanently until all required information is recorded. Require individual or entity who obtained record data, where individual or entity is installer, subcontractor, or similar entity, to prepare the marked-up record prints. Legibly and to scale, mark a

reproducible set of Contract Drawings to record actual construction where installation varies from that shown on contract drawings, including:

1. Measured dimensions and cross section of work.

2. Measured horizontal and vertical locations of underground utilities, ducts, and vents from specific wall locations, including all new utilities installed and utilities found, abandoned or left in place, referenced to permanent surface improvements and to visible and accessible features of the structure.

3. Field changes of dimensions and details.

4. Details not on original Contract Drawings and any other changes to the original Contract Drawings (Changes of location of utilities, equipment, and other accessories).

5. As-Built information shall be shown along with RFIs, Submittals, Change Orders, or other indicating source of changes. References to written changes such as RFI's of Field Directives should be clouded on the drawings with a copy of the written direction attached to the set of drawings.

6. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

7. Accurately record information in an understandable drawing technique.
8. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

C. Mark record sets in red ink. Use other colors as required to distinguish between changes for different categories of the work at same location.

1. Mark important additional information that was either shown schematically, such as conduit runs, or omitted from original drawings.

2. Note work change RFI numbers, directive numbers, alternate numbers, change order numbers, and similar identification, where applicable.

1.06 NOT USED

Not used.

1.07 SHOP DRAWINGS

A. Maintain as record documents.

1. Legibly annotate drawings to record changes made after review.

2. Record Shop Drawings:

a. Revise the shop drawings CAD files to reflect annotations made on record copy.

b. Submit hard copies, PDF files and CAD files compatible with AutoCAD 2018 and in accordance with paragraph 1.02.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE OF PROJECT RECORD DOCUMENTS

A. Recording: Post changes and modifications to project record documents as they occur; do not wait until the end of project.

B. Maintenance of Record Documents: Store record documents in the field office apart from the contract documents used for construction. Do not use project record documents for construction purposes. Maintain one copy of each submittal during the construction period for project record document purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for OCTA's reference during normal working hours.

C. Label each document “PROJECT RECORD” in two-inch high printed letters, or a height appropriate to document size.

PART 4 - MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

SECTION 01 78 36

WARRANTIES, GUARANTEES, AND BONDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

1. General administrative and procedural requirements for preparation and submission of warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special Project warranties. This section specifies the general requirements for written warranties and guarantees required by the Contract Documents.

   a. Refer to the Conditions of the Contract for terms of Contractor's special warranty of workmanship and materials.

   b. Certifications and other commitments and agreements for continuing services to the Authority are specified elsewhere in the Contract Documents.

1.02 RELATED DOCUMENTS AND SECTIONS

A. Section 01 33 00 – Submittal Procedures: General administrative requirements for submittals, applicable to warranties and bonds.

B. Section 01 77 00 – Closeout Procedures: General requirements for closeout of the Contract.

C. Section 01 78 00 – Closeout Submittals: Operating and Maintenance data binders to include copies of warranties and bonds documents.

D. Individual Product Specifications Sections: Special Project warranty requirements for specific products or elements of the Work; commitments and agreements for continuing services to Authority.

1.03 WARRANTIES AND GUARANTEES

A. General: Provide all warranties and manufacturer's guarantees with the Orange County Transportation Authority named as the beneficiary. For equipment, products, or components bearing a manufacturer's warranty of guarantee that extends for a period of time beyond the Contractor's warranty and guarantee, so state in the warranty or guarantee.

B. Warranty: Assurance to the Authority by the Contractor, installer, supplier, manufacturer, or other party responsible as warrantor, for the quantity, quality, performance and other representations of a product, system service of the Work, in whole or in part, for the duration of the specified period of time. Warranty shall be an agreement to repair to repair or replace, without cost and undue hardship to the Authority, work performed under the Contract which is found to be defective during the warranty or guaranty period (correction period).

C. Guaranty: Assurance to the Authority by the Contractor or product manufacturer or other specified party, as guarantor, that the specified warranty will be fulfilled by the guarantor in the event of default by the warrantor.

D. Standard Product Warranty: Preprinted, written warranty published by product manufacturer for particular products and specifically endorsed by the manufacturer to the Authority.

E. Special Project Warranty: Written warranty required by or incorporated into Contract Documents, to extend time limits provided by standard warranty or to provide greater rights for the Authority. For provisions for special warranties, refer to the Conditions of the Contract for terms of the Contractor's special warranty of the workmanship and materials.

F. Specific Warranty and Guarantee Requirements: Refer to Divisions 02 and higher.

G. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties shall not relieve the Contractor of warranty on the work that incorporates the products, nor shall they relieve suppliers, manufacturers and installers required to countersign special warranties with Contractor.

H. Related Damages and Losses: When correcting warranted work that has been found defective, remove and replace other work that has been damaged as a result of such defect or that must be removed and replaced to provide access for correction of warranted work.

I. Correction Period: The Correction Period shall be synonymous with warranty period and guaranty period used in the Contract Specifications. All defective work shall be initiated with 12 hours for critical system operations, as determined solely by the Authority, and within 3 calendar days for all other warranty work.

J. Reinstatement of Warranty: When work covered by a warranty has been found defective and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

K. Replacement Cost: Upon determination that work covered by a warranty has been found to be defective, replace or reconstruct the work to a condition acceptable to OCTA, complying with applicable requirements of the Contract Documents. Contractor shall be responsible for all costs for replacing or reconstructing defective

work regardless of whether OCTA has benefited from use of the work through a portion of its anticipated useful service life.

L. OCTA's Recourse: Written warranties made to OCTA are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under law nor shall warranty periods be interpreted as limitations on time in which the Authority can enforce such other duties, obligation, rights, or remedies.

M. Rejection of Warranties: The Authority reserves the right to reject warranties and disallow the use of products with warranties in conflict with contract document requirements.

N. Warranty as Condition of Acceptance: The Authority reserves the right to refuse to accept work for the project where a special warranty, certification or similar commitment is required until evidence is presented that those required to countersign such commitments are willing to do so.

1.04 PREPARATION OF WARRANTY AND GUARANTEE SUBMITTALS

A. Number of Copies: Two, unless otherwise specified or directed.

B. Special Project Warranty and Manufacturer's Guarantee Forms: Forms for Special Project Warranties and for Manufacturer's Guarantees are included in the Conditions of the Contract at the end of this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor or the Contractor and subcontractor, supplier, or manufacturer. Submit a draft to the Authority for approval prior to final execution.

1. Refer to Division 02 and higher for specific content requirements and particular requirements for submittal of special project warranties.

2. Prepare standard product warranties and product guarantees, excepting manufacturer's standard printed warranties and guarantees, on Contractor's, subcontractor's, material supplier, or manufacturer's own letterhead, addressed to the Authority.

3. Warranty and guarantee letters shall be signed by all responsible parties and by Contractor in every case, with modifications only as approved by the Authority to suit the conditions pertaining to the warranty or guarantee.

C. Manufacturer's Guarantee Forms: Manufacturer's guarantee forms may be used in lieu of special project forms included at the end of the Section. Manufacturer's guarantee forms shall contain appropriate terms and identification, ready for execution by the required parties.

1. If proposed terms and conditions restrict guarantee coverage or require actions by OCTA beyond those specified, submit draft of guarantee to the Authority for review and acceptance before performance of the work.

2. In other cases, submit draft of guarantee to the Authority for approval prior to final execution of guarantee.

D. Signatures: By persons authorized to sign warranties, guarantees, and bonds on behalf of entity provided the warranty, guarantee, and bonds. All signatures shall be notarized.

E. Co-Signature: the Contractor shall cosign all installer's warranties and bonds Manufacturer's printed guarantees will not require co signatures.

1.05 FORM OF WARRANTY SUBMITTALS

A. Form of warranty and bond submittals: At final completion, compile 2 copies of each required warranty and guaranty and bond, properly executed by the Contractor, or by the Contractor and subcontractor, supplier, or manufacturer. Collect and assemble all written warranties and guarantees into binders and deliver binders to the Authority for final review and acceptance.

B. Prior to submission, verify that documents are in proper form, contain all required information and are properly signed.

C. Organize the warranty documents into an orderly sequence based on the table of contents of the Specifications.

D. Include a table of contents for the binder, neatly typed, following order, section names, and numbers of the Specifications.

E. Bind warranties and guarantees in heavy-duty, commercial quality, 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, with clear front and spine to receive inserts, and sized for 8 ½" by 11" paper.

F. Provide heavy paper dividers with celluloid or plastic covered tabs for each separate warranty. Mark tabs to identify products or installation, and the name, address, telephone number and responsible person for applicable installer, supplier and manufacturer.

G. Include on a separate typed sheet, if information is not contained in warranty or guarantee form, a description of the product or installation, and the name, address, telephone number, and responsible person for applicable installer, supplier, and manufacturer.

H. Identify each binder on front and spine with typed or printed inserts with title, "WARRANTIES, GUARANTEES, AND BONDS", the project title, and the name of

the Contractor. If more than one volume of warranties and guarantees is produced, identify volume number of binder.

I. When operating and maintenance data manuals are required for warranted construction, include additional copies of each required warranty in each required manual. Coordinate with requirements specified in Section 01 78 00 Closeout Submittals.

1.06 TIME OF WARRANTY AND GUARANTEE SUBMITTALS

A. Preliminary Submittal: Unless otherwise specified, obtain preliminary copies of warranties and guarantees within ten (10) calendar days of completion of applicable item or work. Prepare and submit preliminary copies for review as specified herein.

B. Final Submittal: Submit fully executed copies of warranties and guarantees within ten (10) days of date of substantial completion but not later than three (3) days prior to date of application for final payment.

C. Date of Warranties and Guarantees: Unless otherwise directed, the commencement date for warranty and guarantee periods shall be the date of established in Certificate of Completion.

D. For warranties for work such as designated systems, equipment, component part or other portion of the Work is completed, accepted, and occupied or put to beneficial use by the Authority, by a separate agreement with Contractor, prior to Final Completion, submit properly executed warranties to the Authority within ten (10) calendar days of completion of that designated portion of the Work. List date of commencement of warranty, guaranty, or bond period as date of Acceptance.

E. For warranties for Work not accepted as of the date of substantial completion, submit documents within ten (10) calendar days after acceptance. List the commencement date as the date of acceptance of such Work and as beginning of warranty, guaranty, and bond period.

F. Duration of Warranties and Guarantees: Unless otherwise specified or prescribed by law, warranty, and guaranty periods (Correction Period) for all work shall not be less than one year from the filing date of notice of completion. See product specifications Sections in contract specifications for extended warranty and guaranty beyond the minimum duration.

PARTS 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

PART 4 – MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for work of this section.

END OF SECTION

WARRANTY/GUARANTEE

FOR WORK

We, the undersigned, do hereby warranty and guarantee that the parts of the Work described above which we have furnished and/or installed for the Orange County Transportation Authority (OCTA) is in accordance with the Contract Documents and that all said Work as installed will fulfill or exceed all of the Warranty and Guarantee requirements. We agree to repair or replace Work installed by us, together with any adjacent Work, which is displaced or damaged by doing so, that proves to be defective in Workmanship, material, or operation within a period of one (1) year from the date of final acceptance by OCTA or from the date of Certificate of Substantial Completion, whichever is the earlier. Ordinary wear and tear and unusual neglect or abuse is accepted.

In the event of our failure to comply with the above-mentioned conditions within a reasonable time period determined by OCTA, after notification in writing, we, the undersigned, all collectively and separately, hereby authorize OCTA to have said defective Work repaired and/or replaced and made good, and agree to pay to OCTA upon demand all moneys that the OCTA may expend in making good said defective Work, including all collection cost and reasonable attorney fees.

_____
(Subcontractor, Sub subcontractor, Manufacturer, or Supplier)

By_____

Title_____

State License No._____Date_____

_____
(Contractor)

By_____

State License No._____Date_____

Local Representative. For maintenance, repair, or replacement service, contact:

Name:_____

Address:_____

Phone Number:_____

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SECTION 03 63 00

CRACK TREATMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes specifications for applying high-molecular-weight methacrylate to partial-depth concrete pavement surface cracks.

1.2 DEFINITIONS

A. **Partial-depth crack:** Crack that does not extend the full concrete slab depth from one edge of the slab to the opposite or adjacent side of the slab.

1.3 REFERENCES

A. 2023 edition of Caltrans Standard Specifications.
B. Attachment H - Westminster Street Site Photos
Photos are representative of the existing concrete slab conditions and its approximate locations only and do not represent the entire limits of Westminster Street.

1.4 SUBMITTALS

General

A. Submit HMWM samples 20 days before use.

B. Submit the proposed removal method at least 7 days before sealant removal.

Public Safety and Application Plans

A. Before starting crack treatment, submit a public safety plan and an application plan for applying HMWM as shop drawings.
B. The public safety and application plans must identify the materials, equipment, and methods to be used. In the public safety plan, include the SDS for each component of HMWM and details for:
    1. Shipping
    2. Storage
    3. Handling
    4. Disposal of residual HMWM and containers

If the project is in an urban area adjacent to a school or residence, the public safety plan must also include an airborne emissions monitoring plan prepared by a CIH certified in comprehensive practice by the American Board of Industrial Hygiene. Submit a copy of the CIH's certification. The CIH must monitor the emissions at a minimum of 4 points including the mixing point, the application point, and the point of nearest public contact. At work completion, submit a report by the CIH with results of the airborne emissions

monitoring plan.

The application plan must include:

1. Crack treatment and coefficient of friction testing schedules
2. Methods and materials including:
   2.1. Description of equipment for applying HMWM
   2.2. Description of equipment for applying sand
   2.3. Gel time range and final cure time for resin

Revise and resubmit rejected plans. With each plan rejection, the Engineer gives revision directions including detailed comments.

1.5 QUALITY ASSURANCE

A. Use test tiles to evaluate the HMWM cure time. Coat at least one 4-by-4-inch smooth glazed tile for each batch of HMWM. Place the coated tile adjacent to the area being treated. Do not apply sand to the test tiles.

B. Use the same type of crack treatment equipment for testing and production.

TEST AREA

A. Before starting crack treatment, treat a test area of at least 500 square feet within the project limits at a location authorized by the Engineer. Use test areas outside the traveled way if available.

B. Treat the test area under weather and pavement conditions similar to those expected during crack treatment production.

C. The Engineer evaluates the test area based on the Department's acceptance criteria. Do not begin crack treatment until the Engineer authorizes the test area.

AUTHORITY ACCEPTANCE

The Engineer accepts a treated area if:

1. Corresponding test tiles are dry to the touch
2. Treated surface is tack-free and not oily
3. Sand cover adheres enough to resist hand brushing
4. Excess sand is removed
5. Coefficient of friction is at least 0.30 when tested under California Test 342

PART 2 - PRODUCTS

2.1 MATERIALS

A. HMWM consists of compatible resin, promoter, and initiator. HMWM resin may be

prepromoted by mixing promoter and resin together before filling containers. Identify prepromoted resin on the container label.

B. Adjust the gel time to compensate for temperature changes throughout the application.

C. The quality characteristics of HMWM resin must comply with the requirements shown in the following table:

High-Molecular-Weight Methacrylate Quality Characteristics

Quality characteristic	Test method	Requirement
Viscosity[a] (max, cP, Brookfield RVT with UL adapter, 50 RPM at 25 °C)	ASTM D2196	25
Specific gravity[a] (min, at 25 °C)	ASTM D1475	0.90
Flash point[a] (min, °C)	ASTM D3278	82.2
Vapor pressure[a] (max, mm Hg, at 25 °C)	ASTM D323	1.0
Tack-free time (max, minutes at 77 °F)	Specimen prepared under California Test 551	400
Volatile content[a] (max, %)	ASTM D2369	30
PCC saturated surface-dry bond strength (min, psi, at 24 hours and 77 ± 2 °F)	California Test 551	500

[a]Perform the test before adding initiator.

D. Sand must be commercial quality dry blast sand. At least 95 percent of the sand must pass the no. 8 sieve and at least 95 percent must be retained on the no. 20 sieve when tested under California Test 202.

PART 3 - EXECUTION

3.1 GENERAL

A. Before applying HMWM, clean the pavement surface by abrasive blasting and blow loose material from visible cracks with high-pressure air. Remove concrete curing seals from the pavement to be treated. The pavement must be dry when blast cleaning is performed. If the pavement surface becomes contaminated before applying the HMWM, clean the pavement surface by abrasive blasting.

B. Protect existing facilities from HMWM. During pavement treatment, protect pavement joints, working cracks, and surfaces not being treated. Repair or replace existing facilities contaminated with HMWM at your expense.

C. The equipment applying HMWM must combine the components by either static in-line mixers or by external intersecting spray fans. The pump pressure at the spray bars must not cause atomization. Do not use compressed air to produce the spray. Use a shroud to enclose the spray bar apparatus.

D. You may apply HMWM manually to prevent overspray onto adjacent traffic. If applying resin manually, limit the batch quantity of HMWM to 5 gallons.

E. Apply HMWM at a rate of 90 sq ft/gal. The prepared area must be dry and the surface temperature must be from 50 to 100 degrees F while applying HMWM. Do not apply

HMWM if the ambient relative humidity is more than 90 percent.

F. Flood the treatment area with HMWM to penetrate the pavement and cracks. Apply HMWM within 5 minutes after complete mixing. Mixed HMWM viscosity must not increase. Redistribute excess material with squeegees or brooms within 10 minutes of application. Remove excess material from tined grooves.

G. Wait at least 20 minutes after applying HMWM before applying sand. Apply sand at a rate of approximately 2 pounds per square yard or until refusal. Remove excess sand by vacuuming or sweeping.

H. Do not allow traffic on the treated surface until:

1. Treated surface is tack-free and not oily
2. Sand cover adheres enough to resist hand brushing
3. Excess sand is removed
4. Coefficient of friction is at least 0.30 determined under California Test 342

3.2 FIELD QUALITY CONTROL

Not used.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Crack Treatment of existing concrete slabs shall be measured by the lineal foot.

4.2 PAYMENT

A. The contract price paid for Crack Treatment as paid by lineal foot shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in crack treatment, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

B. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
8	Crack Treatment	LF

END OF SECTION

SECTION 03 63 50

SPALL REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes specifications for repairing spalls in concrete pavement.

1.2 DEFINITIONS

A. Not used.

1.3 REFERENCES

A. 2023 edition of Caltrans Standard Specifications.
B. Attachment H - Westminster Street Site Photos
Photos are representative of the existing concrete slab conditions and its approximate locations only and do not represent the entire limits of Westminster Street.

1.4 SUBMITTALS

Not used.

1.5 QUALITY ASSURANCE

A. The Engineer accepts spall repairs based on authorized saw cut dimensions and visual inspection.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Bonding agent must comply with the requirements for HMWM in section 41-3.02 except the tack-free time requirements do not apply and the HMWM must not contain wax.
B. Caulk must be at least 50 percent silicone, designated as a concrete sealant, and comply with ASTM C834.
C. Form board must be single-wall, double-face corrugated cardboard or paperboard covered with a bond breaker on each face. For existing joints or cracks less than 45 mils wide, use paperboard.

PART 3 - EXECUTION

3.1 GENERAL

A. Prepare spall repair areas by removing concrete and cleaning the underlying surface. Repair spalls using polyester concrete with a HMWM bonding agent.

B. After completing spall repairs do not allow traffic on the repairs for at least 2 hours after the time of final setting under ASTM C403/403M.

3.2 REMOVE PAVEMENT

A. The Engineer determines the rectangular limits of unsound concrete pavement. Before removing pavement, mark the saw cut lines and spall repair area on the pavement surface.

B. Do not remove pavement until the Engineer verbally authorizes the saw cut area. Use a power-driven saw with a diamond blade.

C. Remove pavement as shown and:

1. From the center of the repair area towards the saw cut
2. To the full saw cut depth
3. At least 2 inches beyond the saw cut edge to produce a rough angled surface

D. Produce a rough surface by chipping or other removal methods that do not damage the pavement remaining in-place. Completely remove any saw overcuts. Pneumatic hammers used for concrete removal must weigh 15 pounds or less.

E. If you damage concrete pavement outside the removal area, enlarge the area to remove the damaged pavement.

F. If dowel bars are exposed during removal, remove concrete from the exposed surface and cover with duct tape.

3.3 CLEANING

A. Clean the exposed faces of the concrete by:

1. Sand or water blasting. Water blasting equipment must be capable of producing a blast pressure from 3,000 to 6,000 psi.

2. Blowing the exposed concrete area with compressed air free of moisture and oil to remove debris. Air compressors must deliver air at a minimum of 120 cfm and develop 90 psi of nozzle pressure.

3.4 COMPRESSION RELIEF AT JOINTS AND CRACKS

A. Provide compression relief at joints and cracks by using a form board or saw cutting.

3.5 FORM BOARD INSTALLATION

A. Before placing concrete, place the form board to match the existing joint or crack alignment and width. Extend the form board at least 3 inches beyond each end of the repair and at least 1 inch deeper than the repair.

B. After placing concrete, remove the form board before sealing joints or cracks.

3.6 SAW CUT METHOD

A. After cleaning, seal exposed joints or cracks with caulk at the bottom and sides of the repair area. Any surface receiving caulk must be clean and dry. Place caulk a minimum of 1/2 inch beyond the edges of the repair area into the existing joint or crack.

B. Saw cut the polyester concrete to the full depth along the existing joint or crack alignment within 2 hours from time of final setting. Use a power-driven saw with a diamond blade.

3.7 FIELD QUALITY CONTROL

Not used.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Spall Repair of existing concrete slabs shall be measured by the square footage area.

4.2 PAYMENT

A. The contract price paid for Spall Repair as paid by square footage area shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in spall repair, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

B. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
9	Spall Repair	SF

END OF SECTION

SECTION 03 64 00

GRINDING CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes specifications for grinding concrete roadway surfaces.

1.2 REFERENCES

A. 2023 edition of Caltrans Standard Specifications
B. Attachment H - Westminster Street Site Photos
Photos are representative of the existing concrete slab conditions and its approximate locations only and do not represent the entire limits of Westminster Street.

1.3 QUALITY ASSURANCE

A. Test for pavement smoothness under sections 36 and 40 of Caltrans Standard Specifications except:

1. At the midpoint of a joint or crack, test smoothness with a straightedge.
2. Straightedge and inertial profiler requirements do not apply to areas abnormally depressed from subsidence or other localized causes. End smoothness testing 15 feet before and resume 15 feet after these areas.

B. After grinding, the existing pavement must comply with specifications for smoothness and coefficient of friction in section 40 except:

1. At the midpoint of a joint or crack, both sides must have uniform texture.
2. Cross-slope must be uniform and have positive drainage across the traveled way and shoulder.

C. The Authority accepts pavement for smoothness and coefficient of friction under section 40-1.01D of Caltrans Standard Specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

NOT USED

PART 3 - EXECUTION

3.1 GENERAL

Grind surfaces in the longitudinal direction of the traveled way and grind the full lane width. Begin and end grinding at lines perpendicular to the roadway centerline.

Grinding must result in a parallel corduroy texture with grooves from 0.08 to 0.12 inch wide and from 55 to 60 grooves per foot of width. Grooves must be from 0.06 to 0.08 inch from the top of the ridge to the bottom of the groove.

Grinding equipment must have diamond cutting blades mounted on a self-propelled machine designed for grinding and texturing concrete pavements.

At joints or cracks, both sides must have a uniform texture.

3.2 PAVEMENT

A. Grind existing concrete pavement that is adjacent to an individual slab replacement. Grind the replaced individual slab and all the existing slabs immediately surrounding it. Grind after the individual slab is replaced.

B. Grind existing concrete pavement that is adjacent to new lanes of concrete pavement before paving.

C. As an alternative to grinding existing concrete pavement, you may replace the existing pavement. The new concrete pavement must be the same thickness as the removed pavement. Replace existing pavement between longitudinal joints or pavement edges and transverse joints. Do not remove portions of slabs.

D. Replacement of existing concrete pavement must comply with specifications for individual slab replacement in section 41-9 of Caltrans Standard Specifications .

3.3 FIELD QUALITY CONTROL

NOT USED

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Grinding of existing concrete slabs shall be measured by the square footage area.

4.2 PAYMENT

A. The contract price paid for grinding concrete as paid by the square footage area shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in grinding of existing concrete slabs, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

B. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
2	Grinding Concrete	SQFT

END OF SECTION

SECTION 03 65 00

SUBSEALING AND JACKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Requirements for subsealing and jacking using grout to fill voids under existing concrete pavement.
2. Subsealing and jacking includes:
   A. Drilling holes through existing concrete pavement
   B. Injecting grout
   C. Cleaning
   D. Filling the drilled holes with mortar or concrete
3. Jacking includes raising pavement to grade using injected grout.

1.2 REFERENCES

A. Section 41-2 of 2023 edition of Caltrans Standard Specifications
B. Attachment H - Westminster Street Site Photos
Photos are representative of the existing concrete slab conditions and its approximate locations only and do not represent the entire limits of Westminster Street.
C. ASTM Standard Test Methods include C266,

1.3 SUBMITALS

A. Submit shipping invoices with packaged or bulk fly ash and cement.
B. Before grouting activities begin, submit a proposal for the materials to be used. Include authorized laboratory test data for the grout indicating:
   1) Time of initial setting under ASTM C266
   2) Compressive strength results at 1, 3, and 7 days for 10, 12, and 14-second grout efflux times
C. To request a substitution of grout materials, submit a proposal that includes test data.

1.4 QUALITY ASSURANCE

A. Test grout compressive strength under California Test 551, Part 1 at 7-days with 12 seconds efflux time. Follow the procedures for moist cure. The 7-day compressive strength must be at least 750 psi.

B. For Department acceptance, the final pavement elevation must be within 0.01

foot of the required grade.

PART 2 - PRODUCTS

2.2 MATERIALS

A. Grout must consist of Type II portland cement or Type IL cement, fly ash, and water. Use from 2.4 to 2.7 parts fly ash to 1 part portland cement or portland limestone cement by weight. Use enough water to produce the following grout efflux times determined under California Test 541, Part D:
   1. From 10 to 16 seconds for subsealing
   2. From 10 to 26 seconds for jacking

B. Cement for grout must comply with the specifications for Type II portland cement or Type IL cement in section 90-1.02B(2).

C. Fly ash must comply with AASHTO M 295, Class C or Class F. Fly ash sources must be on the Authorized Material List for cementitious materials for use in concrete.

D. You may use chemical admixtures and calcium chloride. Chemical admixtures must comply with section 90-1.02E(2) of the Caltrans Standard Specifications. Calcium chloride must comply with ASTM D98.

E. Mortar must be a prepackaged fast-setting mortar that complies with ASTM C928.

PART 3 - EXECUTION

3.1 GENERAL

Drill holes in the pavement, inject grout, plug the holes, and finish the holes with mortar.

Drill holes through the pavement and underlying base to a depth from 15 to 18 inches below the pavement surface. The hole diameter must match the fitting for the grout injecting equipment.

3.2 INJECTING GROUT GENERAL

A. Inject grout within 2 days of drilling holes.

B. Immediately before injecting grout, clean the drilled holes with water at a minimum pressure of 40 psi. The cleaning device must have at least 4 jets that direct water horizontally at the slab-base interface.

C. Do not inject grout whenever the atmospheric or subgrade temperature is below 40 degrees F or during inclement weather. If water is present in the holes, obtain authorization before injecting grout.

D. Do not inject grout until at least 2 consecutive slabs requiring subsealing are drilled ahead of the grouting activities.

E. The grout plant must have a positive displacement cement injection pump and a high-speed colloidal mixer capable of operating from 800 to 2,000 rpm. The injection pump must sustain 150 psi if pumping grout with a 12-second efflux time. A pressure gauge must be located immediately adjacent to the grout hose supply valve and positioned for easy monitoring.

F. If using bulk dry cement and fly ash, weigh each item before mixing them. If the materials are packaged, each container must weigh the same.

G. Introduce water to the mixer through a meter or scale.

H. Inject grout under pressure until the voids under the pavement slab are filled. The injection nozzle must not leak. Do not inject grout if the nozzle is below the bottom of the slab. Inject grout 1 hole at a time.

I. Stop injecting grout in a hole if either of the following occurs:
    i. Grout does not flow under a sustained pump gauge pressure of 150 psi after 7 seconds and there is no indication the slab is moving
    ii. Injected grout rises to the surface at a joint or crack or flows into an adjacent hole

Dispose of unused grout within 1 hour of mixing.

3.3 SUBSEALING

A. If a slab raises more than 1/16 inch due to grout injection during subsealing work, stop injecting grout in that hole.

3.4 JACKING

A. The positive displacement pump used for grout injection for jacking work must be able to provide a sustained gauge pressure of 200 psi. Gauge pressures may be from 200 to 600 psi for brief periods to start slab movement.
B. You may add additional water to initiate pressure injection of grout. Do not reduce the grout efflux time below 10 seconds.
C. Raise the slabs uniformly. Use string lines to monitor the pavement movement.

Do not move adjacent slabs not shown to be jacked. If you move adjacent slabs, correct the grade within the tolerances for final pavement elevation.

3.5 FINISHING

A. Immediately after removing the injection nozzle, plug the hole with a round, tapered wooden plug. Do not remove plugs until adjacent holes are injected

with grout and no grout surfaces through the previously injected holes.

B. After grouting, remove grout from drilled holes to at least 4 inches below the pavement surface. Clean the holes and fill with mortar. Finish filled holes flush with the pavement surface.

3.6 TOLERANCES

A. The final pavement elevation must be within 0.01 foot of the required grade. If the final pavement elevation is from 0.01 to 0.10 foot higher than the required grade, grind the noncompliant pavement surface under section 42 of Caltrans Standard Specifications to within 0.01 foot of the required grade.

B. If the final pavement elevation is higher than 0.10 foot from the required grade, remove and replace the noncompliant pavement under section 41-9 of Caltrans Standard Specifications.

3.7 FIELD QUALITY CONTROL

A. Testing shall be performed by an approved Independent Testing Laboratory retained by the Contractor that is approved by OCTA Engineer.

B. During construction, the appropriate level of inspections and tests shall be performed by a independent third-party testing firm (retained by the Contractor) to confirm soil and subsurface conditions within the site. Contractor is to coordinate with Authority and NWSSB to ensure soil is tested when subsealing and jacking begins.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Subsealing and jacking of existing concrete slabs shall be measured by the square footage area.

4.2 PAYMENT

A. The contract price paid for subsealing and jacking as paid by the square footage area shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in subsealing and jacking of existing concrete slabs, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

B. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
7	Subsealing and Jacking	SF

END OF SECTION

SECTION 03 66 00

JOINT SEALS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes specifications for sealing concrete pavement joints or replacing concrete pavement joint seals. Pavement joints include isolation joints.

1.2 REFERENCES

A. Section 41-5 of 2023 edition of Caltrans Standard Specifications
B. Attachment H - Westminster Street Site Photos
Photos are representative of the existing concrete slab conditions and its approximate locations only and do not represent the entire limits of Westminster Street.

1.3 SUBMITALS

A. At least 15 days before delivery to the job site, submit a certificate of compliance, SDS, manufacturer's recommendations, and instructions for storage and installation of:

1. Liquid joint sealant.
2. Backer rods. Include the manufacturer data sheet verifying compatibility with the liquid joint sealant.
3. Preformed compression joint seal. Include the manufacturer data sheet used to verify the seal for the joint dimensions shown.
4. Lubricant adhesive.

B. Upon delivery of asphalt rubber joint sealant to the job site, submit a certified test report for each lot based on testing performed within 1 year.

C. Submit a work plan for removing pavement and joint materials. Allow 10 days for review. Include descriptions of the equipment and methods for removal of existing pavement and joint material.

1.4 QUALITY ASSURANCE

A. Before sealing joints, arrange for a representative from the manufacturer to provide training on cleaning and preparing the joint and installing the liquid joint sealant or preformed compression joint seal. Do not seal joints until your personnel and the

Department's personnel have been trained.

B. The Engineer accepts joint seals based on constructed dimensions and visual inspection of completed seals for voids.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Joint seal materials must be either silicone joint sealant, asphalt rubber joint sealant, or preformed compression joint seal.
B. Silicone or asphalt rubber joint sealant must not bond or react with the backer rod.

2.2 SILICONE JOINT SEALANT

A. Silicone joint sealant must be on the Authorized Material List for silicone joint sealant.

2.3 ASPHALT RUBBER JOINT SEALANT

A. Asphalt rubber joint sealant must:
   1. Be asphalt binder mixed with not less than 10 percent ground rubber by weight. Ground rubber must be vulcanized or a combination of vulcanized and devulcanized materials that pass a no. 8 sieve.
   2. Comply with ASTM D6690 for Type II.
   3. Be capable of melting at a temperature below 400 degrees F and applied to cracks and joints.
   4. Be delivered in containers complying with ASTM D6690.

2.4 BACKER RODS

A. Backer rods must:
   a. Comply with ASTM D5249:
      i. Type 1 for asphalt rubber joint sealant
      ii. Type 1 or Type 3 for silicone joint sealant
   b. Be expanded, closed-cell polyethylene foam
   c. Have a diameter at least 25 percent greater than the saw cut joint width

2.5 PREFORMED COMPRESSION JOINT SEALS

A. Preformed compression joint seals must:
   1. Comply with ASTM D2628
   2. Have 5 or 6 cells, except seals 1/2-inch wide or less may have 4 cells
B. Lubricant adhesive used to install seals must comply with ASTM D2835.

PART 3 - EXECUTION

3.1 GENERAL

A. If joint seals are shown for new concrete pavement, seal new concrete pavement joints at least 7 days after the concrete pavement is placed.
B. Before sealing joints, complete pavement repairs and grinding and grooving.
C. Remove existing pavement and joint material by sawing, rectangular plowing, cutting, or manual labor. Saw cut the reservoir as shown before cleaning the joint. Use a power-driven saw with a diamond blade.

3.2 JOINT CLEANING

A. Clean the joint after removing existing pavement and before installing joint seal material.
B. Cleaning must be completed no more than 4 hours before installing backer rods, liquid joint seal, or preformed compression seals using the following sequence:

1. Removing debris
2. Drying
3. Sandblasting
4. Air blasting
5. Vacuuming

C. Clean in 1 direction to minimize contamination of surrounding areas.

3.3 REMOVING DEBRIS

Remove debris including dust, dirt, and visible traces of old sealant from the joint after sawing, plowing, cutting, or manual removal. Do not use chemical solvents to wash the joint.

3.4 DRYING

After removing debris, allow the reservoir surfaces to dry or remove moisture and dampness at the joint with compressed air that may be moderately hot.

3.5 SANDBLASTING

After the joint is dry, sandblast the reservoir to remove remaining residue using a 1/4-inch diameter nozzle and 90 psi minimum pressure. Do not sandblast straight into the reservoir. Angle the sandblasting nozzle between 1 to 2 inches from the concrete and make at least 1 pass to clean each reservoir face.

3.6 AIR BLASTING

After sandblasting, air blast the reservoir to remove sand, dirt, and dust 1 hour before sealing the joint. Use compressed air free of oil and moisture delivered at a minimum rate

of 120 cfm and 90 psi nozzle pressure.

3.7 VACUUMING

After air blasting, use a vacuum sweeper to remove debris and contaminants from the pavement surfaces surrounding the joint.

3.8 INSTALLING LIQUID JOINT SEALANT

Before installing liquid joint sealant, the pavement and reservoir surfaces must be dry and the ambient air temperature must be at least 40 degrees F and above the dew point. Before installing asphalt rubber joint sealant, the pavement surface temperature must be at least 50 degrees F.

Where backer rods are shown, place the rods before installing liquid joint sealant. Place backer rods under the manufacturer's instructions unless otherwise specified. The reservoir surface must be free of residue or film. Do not puncture the backer rod.

Immediately after placing the backer rod, install liquid joint sealant under the manufacturer's instructions unless otherwise specified. Before installing, demonstrate that fresh liquid sealant is ejected from the nozzle free of cooled or cured material.

Pump liquid joint sealant through a nozzle sized for the width of the reservoir so that liquid joint sealant is placed directly onto the backer rod. The installer must draw the nozzle towards their body and extrude liquid joint sealant evenly. Liquid joint sealant must maintain continuous contact with the reservoir walls during extrusion.

Within 10 minutes of placing liquid joint sealant, recess it to the depth shown before a skin begins to form.

After each joint is sealed, remove excess liquid joint sealant on the pavement surface. Do not allow traffic over the sealed joints until the liquid joint sealant is set, tack free, and firm enough to prevent embedment of roadway debris.

3.9 INSTALLING PREFORMED COMPRESSION JOINT SEALS

Install preformed compression joint seals as shown and under the manufacturer's instructions. Use lubricant adhesive.

Install longitudinal seals before transverse seals. Longitudinal seals must be continuous except splicing is allowed at intersections with transverse seals. Transverse seals must be continuous for the entire transverse length of concrete pavement except splices are allowed for widening and staged construction. With a sharp instrument, cut across the longitudinal seal at the intersection with transverse construction joints. If the longitudinal seal does not relax enough to properly install the transverse seal, trim the longitudinal seal to form a tight seal between the 2 joints.

Any authorized splicing must comply with the manufacturer's instructions.

Use a machine specifically designed for preformed compression joint seal installation. The machine must install the seal:

1. To the specified depth
2. To make continuous contact with the joint walls
3. Without cutting, nicking, or twisting the seal
4. Without stretching the seal more than 4 percent

Cut preformed compression joint seal material to the exact length of the pavement joint to be sealed. The Engineer measures this length. After you install the preformed compression joint seal, the Engineer measures the excess length of material at the joint end. The Engineer divides the excess length by the measured cut length to determine the stretch percentage.

Seals must be compressed from 30 to 50 percent of the joint width when complete in place.

3.10 FIELD QUALITY CONTROL

A. Testing shall be performed by an approved Independent Testing Laboratory retained by the Contractor that is approved by OCTA.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Joint Sealing of existing concrete slabs shall be measured by the lineal foot.

4.2 PAYMENT

A. The contract price paid for Clean and Seal Existing Joints in Concrete as paid by lineal foot shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in joint sealing, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

B. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
4	Clean and seal existing joints in concrete	LF

END OF SECTION

SECTION 31 00 00

EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Requirements for earthwork, including structure and roadway excavation, placement of backfill, trench excavation and backfill, subgrade preparation, and grading of roadways.

1.2 REFERENCES

A. Refer to Section 01 41 00 – Regulatory Requirements.

B. 2018 edition of Standard Specifications for Public Works Construction (SSPWC)

1. Section 300, “Earthwork”

C. 2012 edition of Standard Plans for Public Works Construction

D. ASTM Standard Test Methods include D1556, D1557, D2487, D2488, D3740, D6938.

1.3 DEFINITIONS

A. Degree of Compaction: A percentage of the maximum dry density obtained by the test procedure presented in ASTM D 1557, Method C.

B. Satisfactory Materials: Any material classified by ASTM D 2487 as GW, GP, SW, SP, GM, and SM, or combinations thereof. The maximum stone size shall be 3 inches.

C. Unsatisfactory Materials: Materials that do not comply with the requirements for satisfactory materials. Unsatisfactory materials include those materials containing organic matter, soft spongey earth, roots and other organic matter of similar nature, trash, debris, stones larger than 3 inches, and materials classified in ASTM D 2487 as PR, OH, OL, CH, CL, MH, and ML. Unsatisfactory material also includes refuse and other material.

D. Roadway Prism: Earthwork excavation with limits defined in accordance with Caltrans Standard Plan A62A.

1.4 SUBMITALS

A. Submit the following for approval in accordance with Section 01 33 00 - Submittal Procedures:

1. Copies of test reports for material properties and compaction as required

in these Specifications.

1.5 QUALITY ASSURANCE

A. Inspection and Independent Testing Agency retained for inspection and testing specified herein shall meet the requirements of ASTM D 3740.

B. Provide quality control in accordance with the requirements of Section 01 4 00, Quality Assurance and Quality Control, except as modified herein.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Imported fill shall consist of well-graded sand, gravel, crushed gravel, crushed stone or crushed slag composed of hard, tough and durable particles. The maximum allowable aggregate size shall be one inch. Gradation shall be determined in accordance with ASTM C 136 or D 422, as applicable.

B. Imported fill materials shall be naturally occurring free of wood, trash, construction debris, and organic, contaminated, or deleterious material. Fill materials shall, unless explicitly noted otherwise herein or as approved by the Engineer, meet the following requirements:

1. Imported fill material should not be received from industrial sites or sites undergoing an environmental clean-up.

2. Obtain documentation that the fill source is appropriate for the use as intended. If fill material analytical information is unavailable, ensure that the fill material was analyzed through a California Department of Health Services (DHS)-certified laboratory for appropriate contaminants based on the location of the source area. The documentation should consist of detailed information on previous land use from where the fill was obtained and results of any laboratory and physical testing performed. The report containing this information shall be signed by a California Licensed or Registered Professional (i.e., registered geologist or professional engineer).

3. Soil with concentrations of TPH-g carbon chain length C4 to C12, TPH-d carbon chain length C13-C22 above 100 milligrams per kilogram (mg/kg) and heavy end petroleum hydrocarbons with a carbon chain length of C23 to C32 above 1,000 mg/kg is unacceptable fill. This criteria is based on the RWQCB Interim Guidelines dated May 1996 as the maximum soil screening levels for drinking water aquifers using values for groundwater less than 20 feet.

4. Imported fill suitable for project use should not exceed the background concentration levels for heavy metals listed in the California EPA publication titled “Background Levels of Trace Elements in Southern California”, May 1996.

5. Except for chemicals defined in Sections 2.1.B3 and 2.1B4, above, imported fill with detectable concentrations of analytes outlined in this Section that is above the practical quantitation limit is unacceptable fill.

6. Imported fill shall comply with the requirements of the California Environmental Protection Agency-Department of Toxic Substances Control (DTSC) Information Advisory Clean Imported Fill Material Dated October 2001.

PART 3 - EXECUTION

3.1 GENERAL

A. Comply with Section 300, "Earthwork," of the SSPWC for excavation and backfill, except as noted below.

B. Comply with Section 306, "Open Trench Conduit Construction," of the SSPWC for trench excavation and backfill.

C. Comply with Section 01 57 13 – Temporary Erosion and Sedimentation Control for temporary and permanent erosion control features.

D. Remove or abandon in place unclaimed, abandoned utilities as shown on the Plans.

E. Protect exposed graded areas from wind and water erosion until stabilization is achieved.

3.2 EXCAVATION (GENERAL)

A. Excavate material encountered within the limits of the work, to the lines, grades, and elevations as shown on the Plans and as specified herein.

B. General construction excavation shall not exceed 1 vertical to 1 horizontal slope. If this cannot be accomplished, provide temporary shoring, sheeting, and bracing as necessary to retain excavation, maintain banks securely, withstand water pressure, and prevent cave-ins.

C. Perform excavation and placement of fill in a manner and sequence that will provide proper drainage at all times.

D. Surfaces shall be level, or sloped if required, clean, and clear of loose soil. Maintain in good condition until overlying materials are placed.

E. When backfill is placed, remove sheeting and bracing in stages so that the walls are supported by the shoring or newly placed backfill.

3.3 BACKFILL (GENERAL)

A. Place backfill in layers not to exceed 8 inches of loose material and compact

each layer to at least 95 percent laboratory maximum dry density, in such a manner as to prevent wedging action or eccentric loading.

B. Backfill excavations when installations have been completed, inspected, and approved. Ensure the following conditions are satisfied prior to proceeding with backfill operations:

1. Concrete shall have attained sufficient strength to withstand pressure of earth and compacting operation.

2. Excavations shall be free of forms, debris, and other foreign materials.

C. Do not place structure backfill until the structure footings or other portions of the structure or facility to be backfilled have been inspected and approved for backfilling by the Engineer.

D. Do not deposit backfill material against the back of concrete abutments, concrete retaining walls, or the outside walls of cast-in-place concrete box culverts until the concrete has developed a compressive strength of not less than 2500 psi.

3.4 TRENCH BEDDING AND BACKFILL

A. Backfill and compaction shall be in accordance with Section 306-3, "Trench Excavation," of the SSPWC.

3.5 GRADING

A. Grading shall conform to the Plans and the tolerances specified herein.

1. Transport satisfactory excavated materials to and place in fill or embankment within the limits of the work.

2. Excavate unsatisfactory materials encountered within the limits of the Work and replace with satisfactory materials.

3. Remove unsatisfactory or unsuitable materials to designated waste areas on-site or dispose of, as directed by the Engineer.

4. Immediately backfill behind curbs and along edges of the sidewalk upon completion of those items.

5. After compaction to 80 percent of maximum density is achieved, in accordance with Section 312313 – Subgrade Preparation, finished surfaces should be cleared of stones and all debris and be true to grade and cross section.

B. Finish the surface of all excavations, embankments, and subgrades to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown on the Plans. Finish grade to within 1/2-inch of the

grades and elevations shown on the Plans. Finish ditches in a manner that will result in effective drainage.

C. Preparation of Subgrade: Shape subgrade to line, grade, and cross section, and compact as specified. Shaping subgrade shall include plowing, disking, scarifying existing subgrade, and moistening or aerating required to obtain specified compaction. Remove soft or otherwise unsatisfactory material and replace with satisfactory excavated material or other approved material as directed by the Engineer. Bring low areas resulting from removal of unsatisfactory material up to required grade with satisfactory materials, shape entire subgrade to line, grade, and cross section, and compact as specified. After rolling, the surface of the subgrade shall not show deviation greater than 1/2-inch when tested with a 10-foot straightedge applied both parallel and at right angles to the centerline of the area.

D. Protection and Maintenance of Subgrade:

1. Maintain ditches and drains along subgrade at all times to as required to effectively drain the subgrade. The finished subgrade shall not be disturbed by traffic or other operations and shall be protected and maintained by the Contractor in a satisfactory condition until subbase, base, or pavement is placed. Do not store or stockpile materials on the finished subgrade.

2. Obtain Engineer's inspection and approval of subgrade prior to laying subbase, base, or pavement. Place no subbase, base, or pavement on a muddy, or spongy, subgrade.

E. Slopes:

1. Finish excavated slopes in conformance with lines and grades shown on the Plans.

2. Excavate slopes so that the average plane of completed slopes conforms to the slopes indicated on the Plans, and no point on the completed slopes varies from the designated plane by more than 3 inches measured at right angles to the slope.

3.6 COMPACTION

A. Do not compact fill or backfill until it has attained the required moisture content. Add an accurately determined and measured amount of water to the materials or surfaces that are too dry. Dry material containing an excess of moisture by manipulation, aeration, drainage, or other means before being compacted.

B. When subgrade has been prepared and has reached required grade, proof-roll surfaces to determine if soft or yielding spots exist in the material using a 50-ton pneumatic-tired roller or similar approved equipment. If wet or spongy areas are revealed, notify the Engineer so that corrective measures may be

determined. Remove soft spots and refill until they meet the required compaction. Proof-roll areas which support paving, utility structures, or other structures in the presence of the Engineer and obtain the Engineer's approval before further earthwork operations are performed.

C. In addition to proof-rolling, perform field density tests as specified under "Field Quality Control" specified herein.

D. Use power-operated or power-driven hand operated equipment wherever possible to compact to requirements specified herein. Do not operate mobile equipment closer to foundation than a horizontal distance equal to the height of backfill above bottom of wall. Accomplish compaction by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibrator compactors, or other approved equipment well suited to the type of material being compacted.

E. If the degree of compaction is unsatisfactory, make necessary adjustments until the Specifications are met. Remove material placed over layers not satisfactorily compacted and re-compact the unsatisfactory areas.

F. Unless otherwise noted, relative compaction of fill materials composing each layer of fill shall not be less than 95 percent as determined by ASTM D 1556.

3.7 FIELD QUALITY CONTROL

A. Testing shall be performed by an approved Independent Testing Laboratory retained by the Contractor that is approved by OCTA.

B. Unless otherwise noted, perform field in-place density tests in accordance with ASTM D D6938 Nuclear Density Test.

C. At the time of compacting, backfill material and the surface on which it is to be placed shall be within plus or minus 2 percent optimum moisture content and meet specified compaction requirements.

D. During construction, the appropriate level of inspections and tests shall be performed by a independent third-party testing firm (retained by the Contractor) to confirm soil and subsurface conditions within the site. Contractor is to coordinate with Authority and NWSSB to ensure soil is tested when digging begins.

E. Compaction testing shall be performed by the Contractor for every three (3) inch of dirt buildup prior to placement of pavement material.

PART 4 - MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 31 11 00

CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Requirements for clearing and grubbing. Perform site clearing in advance of grading operations.

1.2 REFERENCES

A. Refer to Section 014100 – Regulatory Requirements.

B. 2018 edition of Standard Specifications for Public Works Construction (SSPWC)

1. Section 300-1, “Clearing and Grubbing”

1.3 SUBMITTALS

A. Submit the following for approval in accordance with Section 01 33 00 - Submittal Procedures:

1. Site Clearing Plan: Indicate methods to be employed, equipment, procedures, and disposal sites.

2. Copies of manifests showing delivery of disposed materials in accordance with permit conditions within 24 hours from time of delivery.

PART 2 - PRODUCTS

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

PART 3 - EXECUTION

3.1 GENERAL

A. Clearing and grubbing shall conform to Section 300-1, “Clearing and Grubbing,” of the SSPWC.

B. Clear, grub, prune, remove, and dispose of materials, including bushes, brush, , logs, roots, signs, rubbish, refuse, trash and debris as shown on the Plans, specified herein, and as required to perform the Work of the Contract.

C. Provide barricades, coverings, or other types of protection necessary to

prevent damage to existing improvements indicated to remain in place. Protect improvements on adjacent properties as well as those on City property. Restore existing improvements damaged by the Work to original condition.

D. Upon completion of site clearing work, City property and adjacent areas shall be neat, clean, and in condition to receive subsequent work.

3.2 EXISTING STRUCTURES AND PROPERTY

A. Obtain permission from the Engineer prior to removing fencing, signs, posts, catch basin frames and grates, and manhole frames and covers not indicated on the Plans for removal.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Clearing and grubbing will be measured by lump sum.

4.2 PAYMENT

A. The contract lump sum price paid for clearing and grubbing shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in clearing and grubbing, complete in place, as shown on the plans, as specified in these specifications, and as directed by the Engineer.

B. Full compensation for any clearing and grubbing work, if necessary, shall be considered as included in the unit prices paid for other pay items and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 31 23 13

SUBGRADE PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requirements for preparation of natural or excavated areas prior to the placement of sub-base material, base material, pavement, or other structures.

a. Included are stripping and disposal of all unsuitable material.

B. Related Sections:

1. Section 013300 – Submittal Procedures

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials [AASHTO]

1. AASHTO T 99 Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop

2. AASHTO T 191 Density of Soil In-Place by the Sand-Cone Method

B. American Society for Testing and Materials [ASTM]

1. ASTM D 2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

2. ASTM D 3017 Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

C. Refer to Section 014100 – Regulatory Requirements

D. 2018 edition of Standard Specifications for Public Works Construction (SSPWC)

1. Section 301-1, “Subgrade Preparation”

1.3 DEFINITIONS

A. Unsuitable Material: Material that contains organic matter, soft spongy earth, or other matter of similar nature that compaction to the specified density is unobtainable.

1.4 SUBMITTALS

A. Submit the following information in accordance with the requirements of Section 013300 - Submittal Procedures, except as modified herein.

1. Test results for dry density testing.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 PREPARATION

A. With the exception of areas where compacted fills have been constructed in areas where new construction is required, bring the moisture content to that required for compaction by the addition of water, by the addition and blending of dry, suitable material, or by the drying of existing material.

B. If it is evident that the subgrade is pumping at any time prior to paving, the Engineer may require proof rolling with a pneumatic-tire roller or other approved equipment at no additional cost to the Authority in order to identify the limits of the unacceptable area.

3.2 RELATIVE COMPACTION

A. First scarify and loosen the subgrade to a depth of 8 inches, or as stated in the overexcavation requirements included in the Contract drawings.

B. When fill material is required, a layer of approximately 3 inches of the fill material may be spread and compacted with the subgrade material to provide a better bond.

C. Construct the cut and fill areas to achieve a uniform soil structure having at least the following minimum dry relative density when tested in accordance with AASHTO T 99 Method A and AASHTO T 191, or ASTM D 2922 and ASTM D 3017 as shown in Table 312313-1.

Table 312313-1. Minimum Dry Relative Density

Location	Minimum Dry Relative Density
All streets	95 percent
Curbs, gutters, and sidewalks	90 percent

1. Adjust the percent of density in accordance with the rock correction procedures for maximum density determination, to compensate for the rock content larger than that which will pass a Number 4 sieve.

2. Submit test results to the Engineer for approval.

3. Subgrade shall be compacted to 95% Minimum Dry Relative Density under all full- depth asphalt pavement sections.

4. Compaction testing shall be performed by the Contractor for every three (3) inch of dirt buildup prior to placement of pavement material.

3.3 SUBGRADE TOLERANCES

A. Subgrade upon which pavement, sidewalk, curb and gutter, driveways, or other structures are to be directly placed may not vary more than 1/4 inch from the specified grade and cross-section.

B. Subgrade upon which sub-base or base material is to be placed may not vary more than 3/4 inch from the specified grade and cross-section.

C. Variations within these specified tolerances must be compensating so that the average grade and cross-section specified are met.

3.4 GRADING AREAS NOT TO BE PAVED

A. Grade areas where grade only is called for on the Plans to meet the tolerances for the subgrade where sub-base or base material is to be placed.

B. Construct the surface to a straight grade from the finished pavement elevations shown on the Plans to the elevation of the existing ground at the extremities of the area to be graded.

3.5 PROTECTION OF EXISTING FACILITIES

A. Exercise extreme caution to prevent damaging other structures including existing improvements not shown on plans and notify the Engineer immediately if encountered during construction.

PART 4 - MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 31 23 17

ROADWAY EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requirements for excavation involved in the grading and construction of roadways.

a. Excluded are structure excavation and trench excavation as indicated below, and any other excavation separately designated within the Specifications or on the Plans.

B. Related Sections:

1. Section 310000 - Earthwork

1.2 REFERENCES

A. Section 014100 – Regulatory Requirements

B. 2018 edition of Standard Specifications for Public Works Construction (SSPWC)

C. Caltrans 2023 Standard Plan

1.3 DEFINITIONS

A. Unsuitable Material is defined, as material that contains organic matter, soft spongy earth, or other matter of similar nature that compaction to the specified density is unobtainable.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 UNSUITABLE MATERIAL

A. Do not use Unsuitable Material for fill, subgrade, shoulders, or other uses.

B. Excavate Unsuitable Material from the site or otherwise dispose of it as directed by the Engineer.

3.2 OVERSHOOTING AND OVEREXCAVATING

A. Backfill and compact all unauthorized excavated areas to the original ground

elevation of authorized section at no additional cost to the Agency.

B. Exercise care to prevent excavating below the grade for the bottom of ditches.

1. Fill and compact areas excavated below the proper grade with suitable material at no additional cost to the Agency.

C. In areas to receive fill, any existing remaining vegetation on existing ground should be stripped and loose, soft, dry, wet, or otherwise unsuitable materials should be removed from the site prior to fill placement.

3.3 SLIDES AND SLIPOUTS

A. Excavate, to designated lines or slopes, material that is outside planned roadway, or ditch slopes that in the opinion of the Engineer is unstable and constitutes potential slides; material that has come into the roadway, or ditch; and material that has slipped out of new or old embankments.

1. Excavation may be either by benching or in a manner as directed by the Engineer.

2. Use the excavated material in the construction of embankments or dispose of it as directed by the Engineer.

3.4 SLOPES

A. Finish excavated slopes in conformance with lines and grades shown on the Plans.

1. Remove all excavated debris and loose material.
2. Excavate slopes so that the average plane of completed slopes conforms to the slopes indicated on the Plans, and no point on the completed slopes varies from the designated plane by more than 6 inches measured at right angles to the slope except where excavation is in rock.

a. In rock excavation areas, no point may vary more than 2 feet from the designated plane of the slope.

b. In no case may any portion of the slope encroach on the roadbed.

3. Round the tops of excavated slopes and the ends of excavations as shown on the Plans.

B. Finish embankment slopes in conformance with the lines and grades shown on the Plans.

1. Construct embankment slopes so that the average plane of completed slopes conforms to the slopes indicated on the Plans, and no point on the completed slopes varies from the designated plane by more than 6 inches measured at right angles to the slope.

2. Material resulting from excavating ditches or channels may be used to

construct roadway embankments, dikes, or for other purposes, or it may be disposed of as directed by the Engineer.

3.5 SURPLUS EXCAVATED MATERIAL

A. Unless otherwise shown on the Plans, specified in the Specifications, or approved by the Engineer, the Authority and the NWSSB, do not dispose of surplus excavated material within the NWSSB property.

1. Make all arrangements for the disposal of surplus excavated material at off-site locations approved by the Engineer.

2. Submit the written consent of the owner of the property on which such material will be disposed to the Engineer upon request.

B. Any quantity of surplus excavated material shown on the Plans or specified in the Specifications is approximate only.

1. Verify that sufficient material is available for the completion of the embankments before disposing of any indicated surplus material inside or outside the right-of- way.

2. Any shortage of material caused by premature disposal of surplus material by the Contractor must be replaced at no additional cost to the Agency.

PART 4 - MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 32 01 16

COLD MILLING ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes

1. Requirements for milling existing asphalt pavement.

1.2 REFERENCES

A. Section 014100 – Regulatory Requirements

B. Section 015710 – Temporary Air Pollution Control

C. Section 013520 – Hazardous and Contaminated Substance Health and Safety Plan

D. Section 036400 – Grinding Concrete

E. 2018 edition of Standard Specifications for Public Works Construction (SSPWC)

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.01 GENERAL

A. Cold milling of asphalt pavement shall conform to Section 404 “Cold Milling” of the SSPWC.

3.02 CONSTRUCTION

B. Method

1. Hot Planing Methods are prohibited.

2. Milling depth is 1/4 inch

3. When milling is specified, the existing asphaltic concrete will be removed in accordance with the details shown on the Plans with equipment specifically designed to remove such material by means of grinding or chipping to a controlled line and grade. The equipment used will be capable of removing the existing asphaltic concrete to within one-half tolerance of the specified 1/4 inch of milling depth. The removal will be accomplished in a manner which does not destroy the integrity of the asphaltic concrete pavement that remains and

which does not result in a contamination of the milled asphaltic concrete with the underlying base material. The milled material will be removed and disposed of.

4. The Contractor will take appropriate steps to maintain drainage areas where the pavement surface has temporarily been removed.

5. Pavement striping that has been removed by the milling operation will be replaced with temporary pavement marking as required in order to provide proper guidance of traffic.

3.03 FIELD QUALITY CONTROL/QUALITY ASSURANCE

A. Give minimum of 48-hour advance notice of each inspection to the Authority when ready for observation and inspection.

B. Should any compaction density/strength test or inspection fail to meet specification requirements, necessary corrective work shall be performed by the Contractor. Additional testing shall be required to determine that corrective work provides compaction in the failed area meeting requirements of these Specifications.

C. Contractor shall provide a record of testing results including corrective actions taken if necessary, on the approved form to the Authority.

D. Contractor's corrective work to meet requirements and retesting resulting from failing tests shall be at no additional cost to OCTA.

E. Obtain all inspections required by the local regulatory agencies and provide the Authority with the final sign-off cards for the project from the local regulatory agencies.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

A. Asphalt Concrete (AC) Cold Milling shall be measured by the square footage area.

4.02 PAYMENT

B. The contract price paid for cold milling of asphalt as paid by the square footage area shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in milling of asphalt, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

C. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
3	AC Cold Milling	SF

END OF SECTION

SECTION 32 11 23

AGGREGATE BASE COURSES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for furnishing, placing, and compacting aggregate for aggregate base course as indicated.

1.2 RELATED DOCUMENTS

A. General:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

B. Related Sections:

1. Section 01 33 00, Submittal Procedures.

1.3 REFERENCED STANDARDS

A. General:

1. The following documents form part of the Specifications to the extent stated. Bring conflicts between Specifications, Drawings, and the referenced documents to the attention of OCTA, in writing, for resolution before taking any related action. Where differences exist between codes and standards, the most stringent shall apply.
2. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.

B. ASTM International (ASTM):

1. ASTM D1241, Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses.
2. ASTM D1557, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
3. ASTM D6913/D6913M, Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis.

4. ASTM D6938, Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

C. State of California, Department of Transportation (Caltrans), Standard Specifications, latest edition Note that references to section numbers herein are aligned with the 2018 edition of Caltrans Standard Specifications. Contractor must use the corresponding sections in the latest edition when preparing Final Design.

1. Caltrans Standard Specifications, Division IV, Section 26, Aggregate Bases.

1.4 SUBMITTALS

A. General:

1. Submittals shall be made in accordance with Section 01 33 00, Submittal Procedures and as specified herein.
2. Shaft submittals shall be coordinated with all relevant submittals identified in this Section, assembled and submitted as a single, comprehensive submittal.
3. Where calculations are required to be submitted, they shall be signed and sealed by the Contractor's Engineer.
4. Calculations shall clearly identify all parameters used, state all assumptions made in the calculation, and identify all sources of information.
5. All shop drawings shall be legible with dimensions accurately shown and clearly marked in English.

B. Product Data: Submit source, gradation, R-value, sand equivalent, and durability for the proposed base course material.

C. Test Reports: Submit plant and field test reports as specified in Article 2.2 and 3.4 herein.

1.5 CLASSIFICATION

A. Aggregate bases are designated as Class 2 or Class 3. The class of aggregate base must be as indicated in the Drawings.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Contractor’s Engineer: Professional Civil Engineer in the state of California.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aggregate Base Material:

1. Aggregates for the two classes of aggregate bases must conform to the requirements described in the materials section of the Caltrans Standard Specifications, Division IV, Section 26, Article 1.02, Materials.

2. Aggregate for the two classes of aggregate bases at the time the base material is deposited on the prepared subgrade or subbase must be free from vegetable matter and other deleterious substances and must conform with ASTM D1241.

2.2 SOURCE QUALITY CONTROL

A. Contractor must perform sampling and tests of the aggregate base material in accordance with ASTM D6913/D6913M and the tests required in the Caltrans Standard Specification, Division IV, Section 26 to determine compliance with the requirements herein. Contractor must submit test results reports to OCTA for acceptance prior to material delivery to the site.

B. Aggregate grading or sand equivalent tests must represent no more than 500 cubic yards of base course material or one day's production, whichever is less.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Aggregate base course must be applied over the prepared subgrade or subbase and compacted in accordance with the Caltrans Standard Specifications, Division IV, Section 26.

B. Aggregate base course must have a minimum uniform thickness, after compaction, of dimensions indicated in the Drawings. Where it is not indicated in the Drawings, the compacted thickness must be 6 inches for parking stalls and 8 inches for roads, driveways, and parking area aisles.

C. All compaction expressed in percentages in this section refers to the maximum dry density as determined by ASTM D1557.

D. Spreading of material:

1. Spreading of aggregate base material must be OCTA-accepted methods and must conform to the requirements as described in the Caltrans Standard Specifications, Division IV, Section 26.

E. Examination

1. Contractor must call for an inspection by OCTA and obtain their written acceptance of the prepared subgrade or subbase before placing the aggregate base course.
2. The subgrade or subbase that will receive the aggregate base course, immediately prior to spreading, must conform to the compaction and elevation tolerances indicated in the Final Design for the material and must be free of standing water and loose or extraneous material. If not indicated in Final Design compact to a minimum of 95% relative compaction.

3.2 FIELD QUALITY CONTROL

A. Contractor must perform field tests in accordance with ASTM D6938 to determine compliance with specified requirements for density and compaction of aggregate base material, and to determine moisture-content compliance of the installed base course.

B. Testing frequency must be no less than one test for every 2,000 square feet of base course material, per layer or lift. Test results must be reported to OCTA for acceptance.

3.3 INSPECTION, MAINTENANCE, AND REPAIR

A. Damage shall be immediately reported to OCTA, and repaired immediately at the Contractor's expense, in accordance with approved repair procedures.

3.4 COMPACTING

Compaction of aggregate base material must be tested by OCTA-accepted methods and must conform to the requirements as described in the Caltrans Standard Specifications, Division IV, Section 26.

PART 4 - MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for providing and placing Hot Mix Asphalt (HMA) including HMA Dike on a prepared base in accordance with the lines, grades, pavement section thicknesses, and typical cross-sections as shown on the Drawings.

1.2 RELATED DOCUMENTS

A. General:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

B. Related Sections:

1. Section 01 33 00, Submittal Procedures
2. Section 32 11 23, Aggregate Base Courses

1.3 REFERENCED STANDARDS

A. General:

1. The following documents form part of the Specifications to the extent stated. Bring conflicts between Specifications, Drawings, and the referenced documents to the attention of OCTA, in writing, for resolution before taking any related action. Where differences exist between codes and standards, the most stringent shall apply.
2. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.

B. State of California, Department of Transportation (Caltrans): Note that references to section numbers herein are aligned with the 2018 edition of Caltrans Standard Specifications. Contractor must use the corresponding sections in the latest edition.

1. Caltrans Standard Specifications, Division V, Section 37, Bituminous Seals.
2. Caltrans Standard Specifications, Division V, Section 39, Asphalt Concrete.
3. Caltrans Standard Specifications, Division XI, Section 92, Asphalt Binders.

4. Caltrans Standard Specifications, Division XI, Section 94, Asphaltic Emulsions.
5. Caltrans Standard Specifications, Division XI, Section 96, Geosynthetics.
6. Caltrans Standard Test Methods, California Test 202, Method of Tests for Sieve Analysis of Fine and Coarse Aggregates.
7. Caltrans Standard Test Methods, California Test 375, Determining the In-Place Density and Relative Compaction of Hot Mix Asphalt Pavement Using Nuclear Gages.
8. Caltrans Standard Test Methods, California Test 379, Method of Determining Asphalt Content of Bituminous Mixtures by Use of the Nuclear Gage.
9. Caltrans Standard Test Methods, California Test 382, Method of Test for Determination of Binder Content of Hot Mix Asphalt by the Ignition Method.
10. HMA Dike (Type A) per Caltrans Standard Plan A87B

1.4 SYSTEM DESCRIPTION

A. Regulatory Requirements:

1. Asphaltic products and solvents must comply with the latest regulations of the South Coast Air Quality Management District regarding regulations governing permissible content of volatile organic compounds.

1.5 SUBMITTALS

A. General:

1. Submittals shall be made in accordance with Section 01 33 00, Submittal Procedures and as specified herein.
2. Where calculations are required to be submitted, they shall be signed and sealed by the Contractor's Engineer.
3. Calculations shall clearly identify all parameters used, state all assumptions made in the calculation, and identify all sources of information.
4. All shop drawings shall be legible with dimensions accurately shown and clearly marked in English.

B. Mix Design: Submit the proposed mix design for each asphaltic concrete mixture and seal coat that will be used in the Work, covering the specific materials that will be used in the mixes. Include test data in support of each proposed mix design.

C. Quality Control Submittals:

1. Record Keeping: Submit sampling and testing results and inspection records within 24 hours of asphaltic concrete placement.

1.6 QUALITY ASSURANCE

A. Work must comply with the construction requirements listed in the Caltrans Standard Specifications, Division V, Section 39, Article 2.01C and must not be performed under the following conditions:

1. Ambient, base or pavement temperatures below 50 degrees Fahrenheit.
2. Over-saturated base and subbase material. The base and subbase must be wheel-rolled by a loaded water truck to determine any yielding. If deflection is observed, do not perform paving until the grade is stable and unyielding and conforms to compaction requirements.

B. Minimum Qualifications:

1. Contractor's Engineer: Professional Civil Engineer licensed in the state of California.

1.7 PROTECTION

A. Protect concrete pavements and walks, curbs and bases, and other improvements adjacent to the operations with suitable materials. Contractor is responsible for any damage caused by Contractor's employees or equipment and must make necessary repairs. Buildings and other surfaces must be covered with paper or other protection, where required. All damage caused by Contractor's operations must be repaired or replaced as required.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Base Course Material: Provide Class 2 aggregate base mineral aggregate as specified in Section 32 11 23, Aggregate Base Courses.

B. Tack Coat: Provide a diluted SS-1 or SS-1h emulsion in conformance with the Caltrans Standard Specifications, Division XI, Section 94.

C. Asphalt Paving Materials:

1. Hot Mix Asphalt: Provide Type A hot mix asphalt, with the gradation of the combined aggregate conforming to 1/2-inch maximum size as indicated in the Drawings, and as specified in the Caltrans Standard Specifications, Division V, Section 39.
2. Asphalt Binder: Provide performance-grade asphalt binder in accordance with the Caltrans Standard Specifications, Division XI, Section 92.
3. Mixing Facilities: Asphalt concrete surfacing material must be furnished from a OCTA-accepted commercial asphalt central mixing plant.

D. Bituminous Seals: Provide bituminous seals as shown in the Drawings, in conformance with the Caltrans Standard Specifications, Division V, Section 37.

E. Mix Design:

1. The design of asphaltic concrete mixes must be provided by Contractor, and must be obtained from a qualified independent testing laboratory or agency, properly equipped to design asphaltic concrete mixes. Contractor is responsible for the costs of obtaining mix designs.

2. The design of asphaltic concrete mixes, including aggregate quality and gradation, must conform with the quality requirements of the Caltrans Standard Specifications, Division V, Section 39.

2.2 SOURCE QUALITY CONTROL

A. Contractor must perform sampling and tests of materials in accordance with the following requirements:

1. Aggregate Grading: The combined aggregate, before adding the asphalt binder (paving asphalt), must conform with the operating range requirements specified in the Caltrans Standard Specifications, Division V, Section 39 for the type of aggregate specified herein. Conformance with grading requirements must be determined by California Test 202.

2. Frequency of Tests: Minimum testing frequency must be one test for every 500 tons, or fraction thereof, for each graded aggregate placed each Day.

3. Asphalt Content: Asphalt content must be within plus or minus 0.50 percent of the mix design content. Conformance with asphalt content requirements must be determined by California Test 382 or 379 from samples taken from the mat behind the paving machine. Minimum testing frequency must be one test for every 500 tons, or fraction thereof, for each asphaltic paving mix placed each day.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Placing of Base Course:

1. Contractor must call for an inspection by OCTA and obtain written acceptance of the subgrade before proceeding with the base course.

2. The base course must be placed over the finished subgrade with compacted thickness in accordance with Section 32 11 23, Aggregate Base Courses.

3. After the base course has been completed, Contractor must request an inspection by OCTA and obtain their written acceptance before proceeding with application of the asphalt-wearing surface.

B. Placing Asphalt Concrete including HMA Dike:

1. Areas that will be paved must be covered with a layer of hot asphalt concrete surfacing no less than the thickness indicated in the Drawings after compaction. Where not indicated in the Drawings, compacted thickness must be a minimum of 4 inches.
2. Paving asphaltic concrete must be delivered, laid, rolled, and finished in accordance with the Caltrans Standard Specifications, Division V, Section 39.
3. Before placing asphalt concrete on an untreated base, a liquid asphalt prime coat must be applied to the base course in the areas that will be surfaced in accordance with the Caltrans Standard Specifications, Division V, Section 39. The prime coat must be applied at the rate of 0.25 gallons per square yard.
4. Before placing asphalt concrete, a tack coat (paint binder) must be applied to all vertical surfaces against which asphalt concrete surfacing will be placed. Tack coat (paint binder) must be applied in accordance with the Caltrans Standard Specifications, Division IX, Section 39, Article 4 at a rate of 0.02 to 0.10 gallons per square yard.
5. Where cold joints are indicated in the Drawings, or as necessary, cut back the placed and compacted cold asphalt a minimum of 3 inches with a concrete or masonry power saw, so that a vertical face of compacted full thickness material is exposed. Treat this surface with a tack coat before proceeding with the placement of a new asphaltic concrete surface.
6. Finish paving must conform to finish elevations within plus or minus 0.01 feet and must be level to within plus or minus 1/4 inch in 10 feet when measured with a 10-foot straightedge in any direction.
7. Joints must be heated if laid more than 3 hours previously.
8. Initial compaction rolling must occur when the mix cools below 250 degrees Fahrenheit.
9. Provide and roll a 1/4-inch lip above adjoining Portland cement concrete surfaces.

C. Bituminous Seal

1. Apply bituminous seal over finished paving surfaces in conformance with the Caltrans Standard Specifications, Division V, Section 37.

3.2 FIELD QUALITY CONTROL

A. Contractor must control the quality of the Work and must provide adequate testing to ensure compliance with the requirements in this section.

B. After completion of paving Work, all pavement must be flooded with water, and any resulting ponds must be ringed with chalk. Such hollows must be corrected by adding asphalt paving materials and re-rolling until all pavement is completely level and free from hollows and high spots.

C. Contractor must perform in-place density and compaction tests of the completed pavement in accordance with California Test 375 to determine compliance with the requirements herein. Relative compaction must be 92 to 96 percent. Test the density core for each 250 tons of hot mix asphalt. The maximum area size must be 500 tons with a minimum of three tests per location, and one test for each 50 tons after. Each pavement area must be an independent lot. Compaction must be taken as the average for a pavement area. If compaction does not comply with the above requirements, Contractor may use hot mix asphalt and take a payment deduction as shown in the table for reduced payment factors as shown in the Caltrans Standard Specifications, Division V, Section 39, Article-2.01A(4)(i)(ii).

D. Hot mix asphalt arriving at the Jobsite below 260 degrees Fahrenheit shall be rejected.

3.3 INSPECTION, MAINTENANCE, AND REPAIR

A. Damage shall be immediately reported to OCTA, and repaired immediately at the Contractor's expense, in accordance with approved repair procedures.

B. Pavement Maintenance:

1. Upon completion of final rolling, traffic is not be permitted on the finished pavement for at least six hours, and until the asphalt concrete has cooled sufficiently to withstand traffic without being deformed.
2. Finished pavement must be maintained in finished clean condition until the Work is accepted by OCTA and NWSSB.

C. Repair of Asphalt Pavement:

1. Pavement repair must be as follows:
    a. Sawcut vertical edges of pavement in rectangular shapes at least 1 foot beyond the damaged material.
    b. Provide base material per the Drawings and the requirements of this section.
    c. Apply tack coat to the vertical faces of adjoining asphalt and concrete.
    d. Paving lifts must be a single lift if the depth is less than 3.5 inches. If the depth is 4 or more inches, place asphalt in lifts of 3 inches maximum, with a minimum of 2 inches for the top lift. Paving and compaction must comply with the requirements of this section. Heat cold joints of adjacent existing pavement if placed over 3 hours before placing them on new asphalt.

D. Grinding of Asphalt Pavement:

1. Do not use a heating device to soften the pavement.
2. The grinding machine must be:
    a. Equipped with a cutter head width that matches the grinding width unless a wider cutter head is authorized.

b. Equipped with automatic controls for the longitudinal grade and transverse slope of the cutter head and:

1) If a ski device is used, it must be at least 30 feet long, rigid, and a 1-piece unit. The entire length must be used in activating the sensor.

2) If referencing from existing pavement, the grinding machine must be controlled by a self-contained grade reference system. The system must be used at or near the centerline of the roadway. On the adjacent pass with the grinding machine, a joint-matching shoe may be used.

c. Equipped to effectively control dust generated by the grinding operation.

d. Operated such that no fumes or smoke is produced. Replace broken, missing, or worn machine teeth.

3. If you do not complete placing the hot mix asphalt surfacing before opening the area to traffic, you must:

a. Construct a temporary hot mix asphalt taper to the level of the existing pavement.

b. Place hot mix asphalt during the next work shift.

c. Submit a corrective action plan that shows you will complete grinding and placement of hot mix asphalt in the same work shift. Do not restart grinding activities until the corrective action plan is authorized.

PART 4 - MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 32 12 18

FULL DEPTH RECYCLING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for pulverizing existing asphalt concrete pavement and underlying material as shown on the Drawings.

1.2 DEFINITIONS

A. Lot: 2,000 sq yd of full depth recycling—no stabilizer.

1.3 RELATED DOCUMENTS

A. General:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

B. Related Sections:

1. Section 01 33 00, Submittal Procedures
2. Section 32 11 23, Aggregate Base Courses
3. Section 32 12 16, Asphalt Paving

1.4 SUBMITTAL

A. At least 10 days before starting full depth recycling—no stabilizer activities submit the QC plan.

B. The QC plan must include a pulverizing and paving plan outlining the sequence of work, including the maximum production rate for full depth recycling—no stabilizer activities.

C. Submit the test results for the quality characteristics within the times after sampling shown in the following table:

Quality characteristic	Maximum reporting time allowance
Gradation	24 hours
Depth of cut	
In-place wet density	
Relative compaction	

1.5 QUALITY CONTROL AND ASSURANCE

A. Meet with the Engineer 1 week before starting full depth recycling—no stabilizer activities to review the QC plan.

B. Perform sampling and testing for each test strip and production work at the specified frequency for the quality characteristics shown in the following table:

Full Depth Recycling - No Stabilizer Quality Characteristic Sampling Locations and Testing Frequencies

Quality characteristic	Test method	Minimum sampling and testing frequency	Sampling location
Gradation	California Test 202	Test strip and 1 per lot	Loose mix after pulverizing and mixing
Depth of cut	--	300 feet	Both sides of recycling machine along cut length
In-place wet density	California Test 231	The same locations as relative compaction tests	--
Relative compaction	California Test 231	One per test strip and 10 random locations per lot	Compacted mix

C. Allow 24 hours for authorization of the test strip.

D. The Department accepts full depth recycling—no stabilizer based on:

1. Visual inspection including:
   i. Segregation, tearing, and scarring of the finished surface
   ii. Variance of more than 0.05 foot measured from the lower edge of a 12-foot straightedge
   iii. Uniform surface texture throughout the work limits
   iv. Repaired areas
2. Compliance with the following table:

Full Depth Recycling—No Stabilizer Requirements for Acceptance

Quality characteristic	Test method	Requirement
Relative compaction (min, %)	California Test 231	95

Thickness (ft)	Field measurement	Not more than 0.05 ft less than the thickness shown

PART 2 - PRODUCTS

A. The quality characteristics of full depth recycling—no stabilizer must comply with the requirements shown in the following table:

Full Depth Recycling—No Stabilizer Quality Characteristic Requirements

Quality characteristic	Test method	Requirement
Gradation (%, passing) Sieve Size: 2" 1-1/2"	California Test 202	 100 90–100
Depth of cut(ft)	--	Not more than 0.05 ft less than the thickness shown
In-place wet density (lb/cu ft)	California Test 231	Report only
Relative compaction (min, %)	California Test 231	95

B. If supplementary aggregate is specified, supplementary aggregate must comply with the specifications for Class 2 aggregate base in section 26.

PART 3 - EXECUTION

A. Pulverizing equipment must:

1. Be a self-propelled recycling machine
2. Pulverize the existing pavement and underlying material to the required size
3. Mix the pulverized pavement, underlying material, and water into a homogeneous and uniform mixture
4. Be equipped with automatic depth controls capable of maintaining the cutting depth to within 0.05 foot of the depth shown
5. Have a minimum 8-foot-wide cutter that can remove the existing pavement to the specified depths

B. Compacting equipment must be a sheepsfoot roller, a vibratory steel-tired roller, and a pneumatic-tired roller. All compacting equipment must be self-propelled and reversible. The frequency of amplitude of vibrating rollers must be adjustable and exceed a static force of 15 tons in vibratory mode.

C. The finished surface must be free from segregation, tearing, and scarring, and have a uniform surface texture throughout the work limits.

D. Maintain the full depth recycling—no stabilizer surface free of ruts, bumps, indentations, raveling, and segregation. Repair damaged full depth recycling—no stabilizer with minor HMA.

PART 4 - MEASUREMENT AND PAYMENT

Work of this section is incidental to other work and no separate measurement or payment will be made.

END OF SECTION

SECTION 32 17 24

PAVEMENT STRIPES AND MARKINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Requirements for removal and installation of traffic stripes

1.2 DEFINITIONS

A. Not used.

1.3 REFERENCES

A. Section 01 33 00, Submittal Procedures
B. Standard Specifications for Public Works Constructions (SSPWC)
C. State of California, Department of Transportation (Caltrans), Standard Specifications, latest edition.

1.4 SUBMITTALS

A. General:
    a. Submittals shall be made in accordance with Section 01 33 00, Submittal Procedures and as specified herein.
B. Product Data: Submit manufacture's product data for materials.

1.5 QUALITY ASSURANCE

A. Not used

PART 2 - PRODUCTS

2.1 MATERIALS

A. Thermoplastic traffic stripe and pavement markings shall be in accordance with Section 84-2, "Traffic Stripes and Pavement Markings," of the Caltrans Standard Specifications.
    a. Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in Caltrans Specification PTH-02ALKYD.
    b. Retroreflectivity of the thermoplastic traffic stripes and pavement markings

shall conform to the requirements in ASTM D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m-2 lx-1. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m-2 lx-1.

c. Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide temporary striping and markings as required by Authority, to accommodate traffic demand for interim construction staging conditions to resemble existing pavement striping.

B. Thermoplastic traffic stripes shall be applied at the minimum thickness and application rate as specified below. The minimum application rate is based on a solid stripe of six (6) inches in width.

Minimum Stripe Thickness (inch)	Minimum Application Rate (lb/ft)
0.079	0.27

3.2 FIELD QUALITY CONTROL

Not used.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Removal of existing traffic stripe shall be measured by the lineal foot.

B. Installation of new yellow traffic stripe shall be measured by lineal foot.

4.2 PAYMENT

A. The contract price paid for removal of existing traffic stripe as paid by lineal foot shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in removal of existing traffic stripe, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

B. The contract price paid for installing new 6" yellow traffic stripe as paid by lineal foot shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installing new 6" yellow traffic stripe, complete in place, as shown on the plans, as specified in these Specifications, and as directed by the Engineer.

C. Payment will be made under the following pay items:

Pay Item	Description	Pay Unit
6	Remove Stripe	LF
5	Yellow Traffic Stripe	LF

END OF SECTION

INDEX OF PLANS

SHEET NO.	DRAWING NO.	DESCRIPTION
1	18375468	Title Sheet
2	18375469	Typical Sections
3	18375470	Westminster Street Improvement Plan (Kitts Way to Minor Rd)
4	18375471	Westminster Street Improvement Plan (Minor Rd to Westminster Dr)
5	18375472	Westminster Street Improvement Plan (Westminster dr to 14th St)
6	18375473	Westminster Street Improvement Plan (14th St to 18th St)
7	18375474	Magazine 824 & 825 Street Improvement Plan
8	18375475	Magazine 826 & 827 Street Improvement Plan

Construction Notes.

1. Grind 1/4" Concrete
2. Grind 1/4" AC
3. Construct 5" HMA-A over 12 1/2" Class II Aggregate Base
4. Construct 4" HMA-A over 2 1/2" Class II Aggregate Base over 6" Pulverised
5. Seal joints
6. Construct HMA Dike Type A per Caltrans Standard Plan A87B
7. Construction Yellow Stripe Detail 21 per Caltrans Standard Plan A20A
8. Saw cut
9. Remove traffic stripe
10. Remove railroad tracks and ballast
11. Pull Box. Adjust to Grade
12. Light Pole. Protect in Place
13. Concrete by Mudjacking

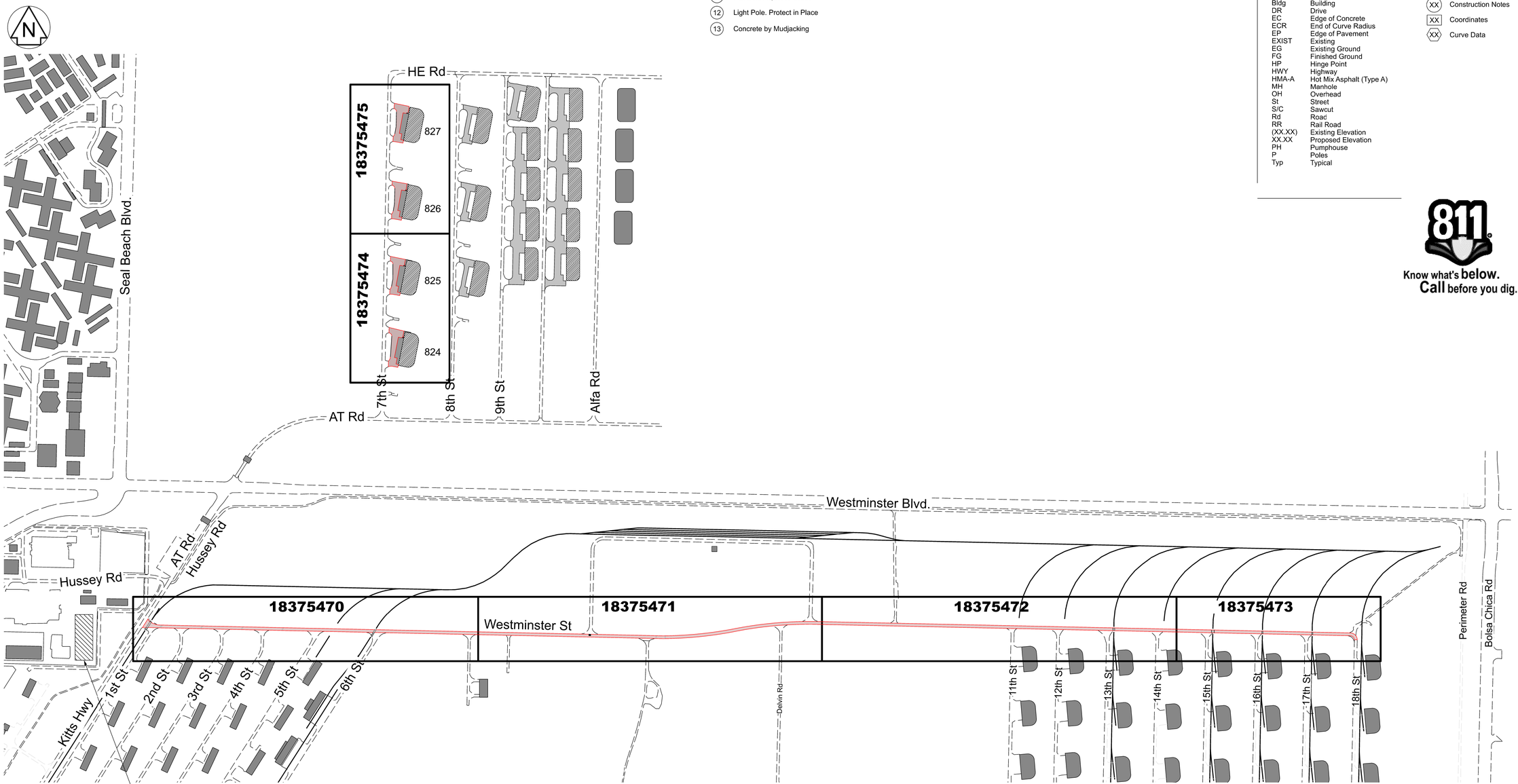
LEGEND:

- Existing Building
- Concrete Pavement
- Dirt Road
- Bunker
- Laydown Area
- Main Road AC
- Minor Road AC
- Proposed Work
- Mudjacking
- Imported Backfill
- Exist. Electrical Line
- Exist. Gas Line
- Exist. Underground High Voltage ELectrical Line
- Exist. Water Line
- Exist. Sanitary Sewer Line
- Exist. Overhead Power Line

ABBREVIATIONS:

AC	Asphalt Concrete
BC	Beginning of Curve Radius
Blvd.	Boulevard
Bldg	Building
DR	Drive
EC	Edge of Concrete
ECR	End of Curve Radius
EP	Edge of Pavement
EXIST	Existing
EG	Existing Ground
FG	Finished Ground
HP	Hinge Point
HWY	Highway
HMA-A	Hot Mix Asphalt (Type A)
MH	Manhole
OH	Overhead
St	Street
S/C	Sawcut
Rd	Road
RR	Rail Road
(XX.XX)	Existing Elevation
XX.XX	Proposed Elevation
PH	Pumphouse
P	Poles
Typ	Typical

(XX) Construction Notes
XX Coordinates
XX Curve Data



LOCATION AND INDEX MAP

1"=200'

Know what's below. Call before you dig.

							APPR
11/06/23	XX/XX/XX						DATE
DRAFT FOR REVIEW & COMMENT	100% SUBMITTAL FOR REVIEW & COMMENT						DESCRIPTION
0	1						SYM

NAVFAC

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA

SEAL

PREPARED BY:
OCTA
ORANGE COUNTY TRANSPORTATION AUTHORITY
550 SOUTH MAIN STREET
ORANGE, CA 92863

DESIGN CONSULTANT:
MOTT MACDONALD
MOTT MACDONALD
500 SOUTH MAIN STREET
SUITE 530
ORANGE, CA 92868

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE 12/22/23

DES - DRW - CHK

PM/DM -

BRANCH MANAGER -

CHIEF ENG/ARCH -

FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION
NWS SEAL BEACH

NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA
SEAL BEACH, CALIFORNIA

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

TITLE SHEET

SCALE: AS NOTED

EPROJECT NO.: 1754244

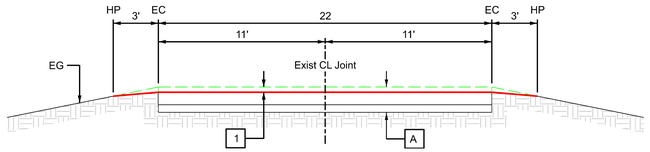
CONSTR. CONTR. NO. -

NAVFAC DRAWING NO. 18375468

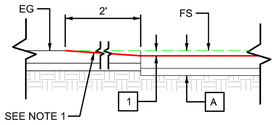
SHEET 1 OF 8

-

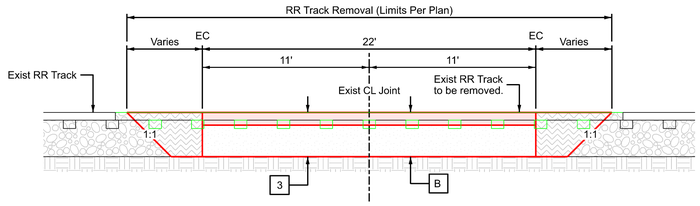
DRAWFORM REVISION: 31 JANUARY 2017



WESTMINSTER STREET A
NOT TO SCALE
XS-1



WESTMINSTER STREET AT SIDE STREETS B
NOT TO SCALE
XS-1



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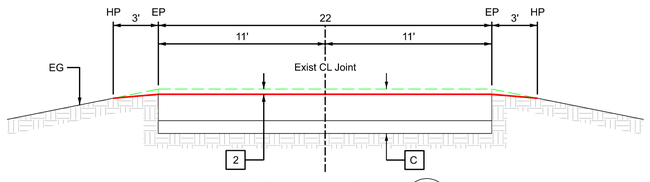
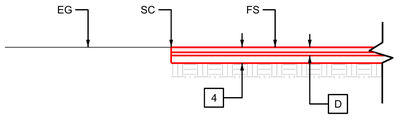
NOT TO SCALE
XS-1



WESTMINSTER STREET D
NOT TO SCALE
XS-1



MAGAZINE BUILDINGS E
NOT TO SCALE
XS-1

Typical Pavement Structure Sections

1	GRIND 1/4" CONCRETE SEE NOTE 2	A	Existing 7" PCC 3" Aggregate Base
2	GRIND 1/4" AC	B	Existing 17 1/2" Track, Ties, and Ballast
3	5" Hot Mix Asphalt (Type A) 12 1/2" Class II Aggregate Base	C	Existing 5" Hot Mix Asphalt (Type A) 12 1/2" Aggregate Base
4	4" Hot Mix Asphalt (Type A) 2 1/2" Class II Aggregate Base 6" Pulverized AC and Aggregate Base	D	Existing 6" AC and Aggregate Base

NOTES:

1. TIE-IN OF CONC PAVEMENT TO EXISTING A PVMT AT SIDE STREETS.
2. CRACK REPAIR, MUD JACKING, AND SPALL REPAIR TO BE COMPLETED BEFORE GRINDING CONCRETE.

Know what's **below.**
Call before you dig.

SYM	DESCRIPTION	DATE	APPR
0	DRAFT FOR REVIEW & COMMENT	11/06/23	
1	100% SUBMITTAL FOR REVIEW & COMMENT	XX/XX/XX	

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA

SEAL

PREPARED BY:
ORANGE COUNTY TRANSPORTATION AUTHORITY
550 SOUTH MAIN STREET
ORANGE, CA 92863

DESIGN CONSULTANT:
MOTT MACDONALD
500 SOUTH MAIN STREET
SUITE 530
ORANGE, CA 92868

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO — DATE 12/22/23

DES - | DRW - | CHK

PM/DM -

BRANCH MANAGER -

CHIEF ENG/ARCH -

FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION
NWS SEAL BEACH

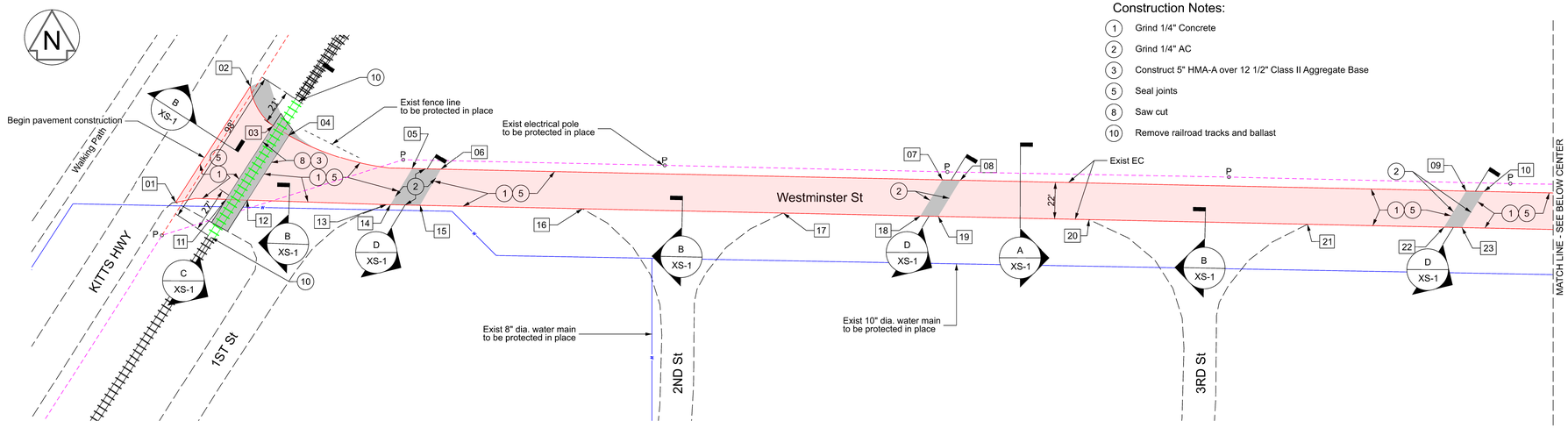
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA
SEAL BEACH, CALIFORNIA

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

TYPICAL SECTIONS

SCALE: AS NOTED
EPROJECT NO.: 1754244
CONSTR. CONTR. NO. -
NAVFAC DRAWING NO. 18375469
SHEET 2 OF 8
-

DRAWFORM REVISION: 31 JANUARY 2017



Construction Notes:

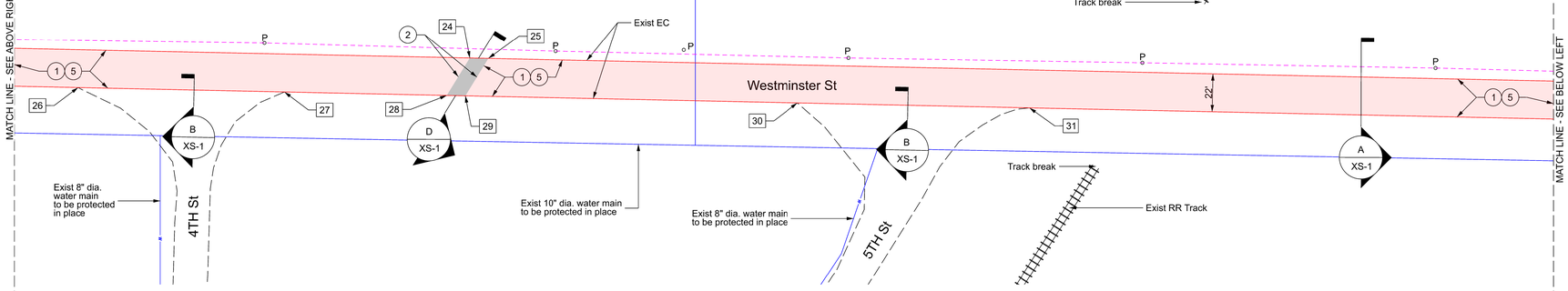
1. Grind 1/4" Concrete
2. Grind 1/4" AC
3. Construct 5" HMA-A over 12 1/2" Class II Aggregate Base
5. Seal joints
8. Saw cut
10. Remove railroad tracks and ballast

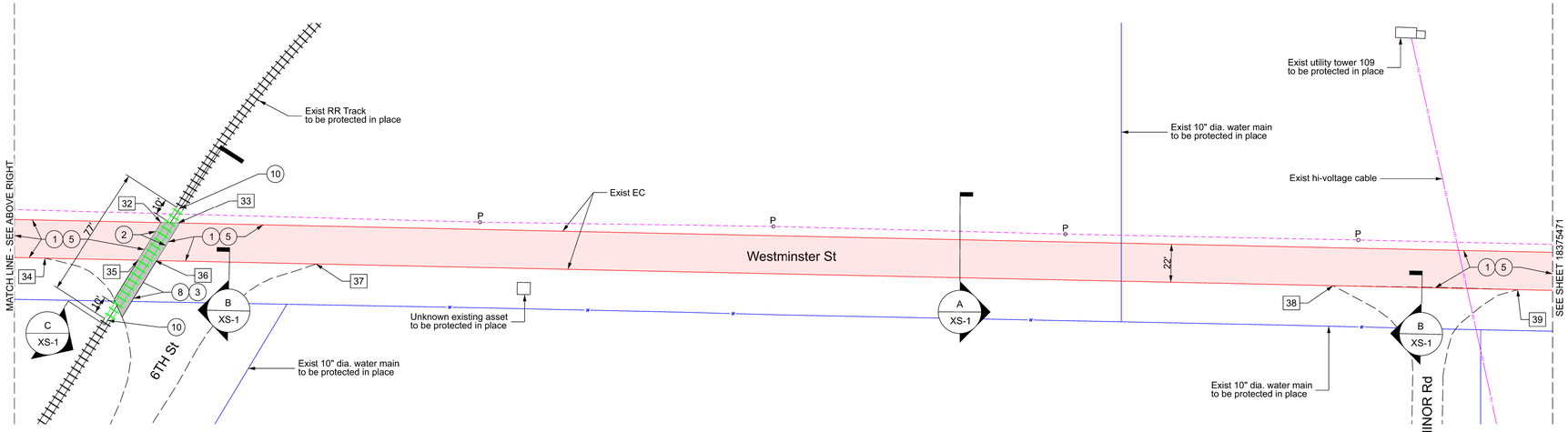
LOCATION

NO.	NORTHING	EASTING	NO.	NORTHING	EASTING
01	2223762.03	6006355.04	21	2223748.87	6007036.40
02	2223831.93	6006399.93	22	2223747.11	6007118.49
03	2223808.24	6006413.62	23	2223746.88	6007129.26
04	2223802.46	6006423.07	24	2223762.08	6007448.12
05	2223782.38	6006497.40	25	2223761.85	6007458.88
06	2223782.01	6006514.70	26	2223744.93	6007220.96
07	2223775.56	6006816.61	27	2223742.37	6007340.68
08	2223775.33	6006827.37	28	2223740.36	6007434.81
09	2223768.83	6007131.80	29	2223740.13	6007445.57
10	2223768.61	6007142.57	30	2223736.02	6007638.18
11	2223763.84	6006385.42	31	2223733.15	6007772.88
12	2223763.43	6006398.20	32	2223746.86	6008161.53
13	2223760.70	6006482.13	33	2223746.63	6008172.29
14	2223760.65	6006484.37	34	2223726.29	6008094.04
15	2223760.27	6006502.15	35	2223725.14	6008148.22
16	2223758.19	6006599.74	36	2223724.91	6008158.98
17	2223755.60	6006720.66	37	2223722.93	6008251.48
18	2223753.84	6006803.30	38	2223710.34	6008841.45
19	2223753.61	6006814.06	39	2223708.05	6008948.55
20	2223751.67	6006904.93	40	xx	xx

NOTE:

COORDINATES ARE APPROXIMATE. CONTRACTOR TO IDENTIFY POINTS IN FIELD.





Know what's below.
Call before you dig.

40 20 0 40 80

SCALE: 1" = 40'

0	DRAFT FOR REVIEW & COMMENT	11/06/23					APPR
1	100% SUBMITTAL FOR REVIEW & COMMENT	XX/XX/XX					DATE
							DESCRIPTION
							SYM

NAVFAC

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA

SEAL

PREPARED BY:

OCTA — ORANGE COUNTY TRANSPORTATION AUTHORITY, 550 SOUTH MAIN STREET, ORANGE, CA 92863

DESIGN CONSULTANT:

MOTT MACDONALD, 500 SOUTH MAIN STREET SUITE 530, ORANGE, CA 92868

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO — DATE 12/22/23

DES - | DRW - | CHK

PM/DM -

BRANCH MANAGER -

CHIEF ENG/ARCH -

FIRE PROTECTION N/A

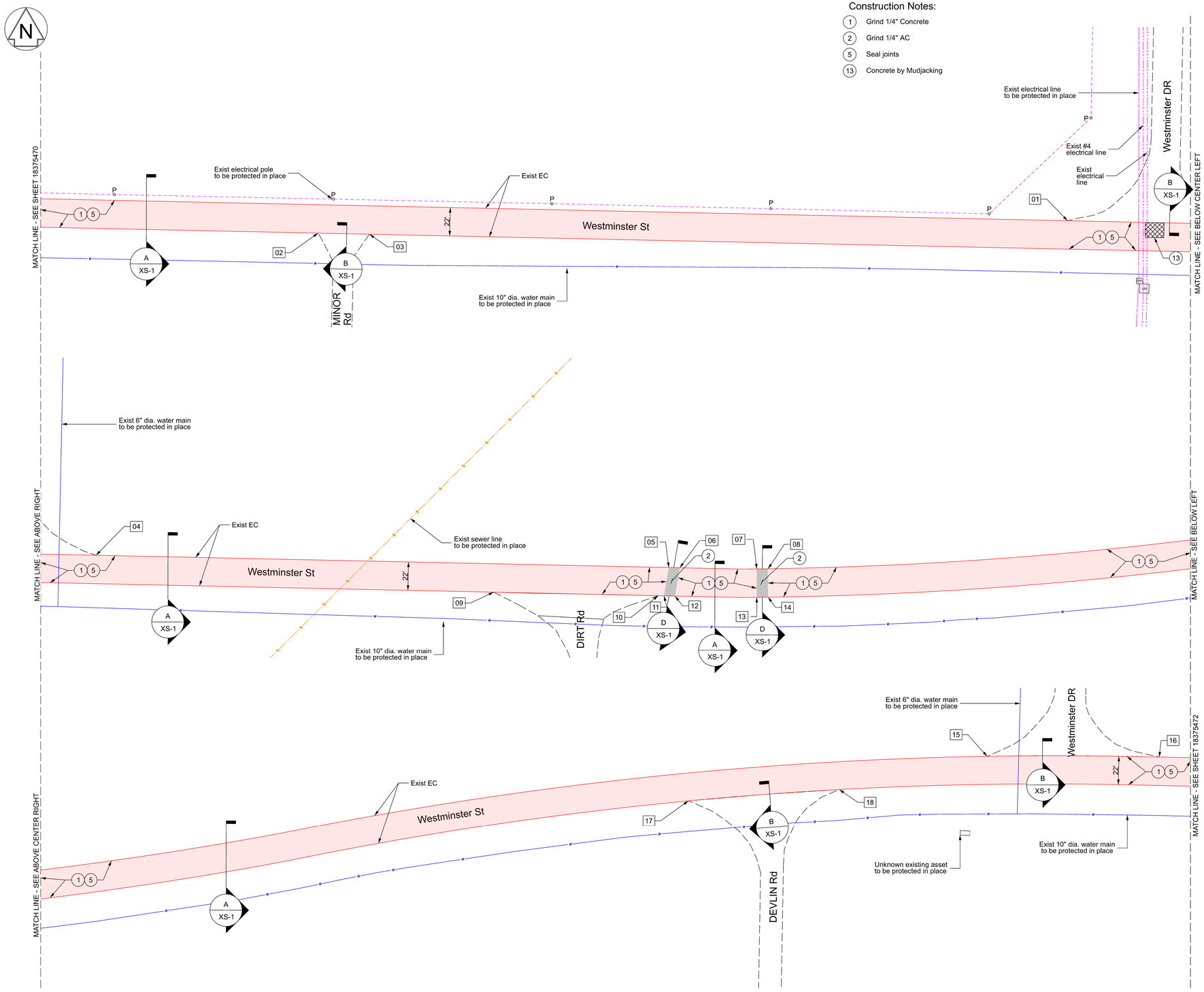
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION
SEAL BEACH, CALIFORNIA
NWS SEAL BEACH

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

WESTMINSTER STREET IMPROVEMENT PLAN (KITTS WAY TO MINOR RD)

SCALE: AS NOTED
EPROJECT NO.: 1754244
CONSTR. CONTR. NO. -
NAVFAC DRAWING NO. 18375470
SHEET 3 OF 8
-

DRAWFORM REVISION: 31 JANUARY 2017



LOCATION					
NO.	NORTHING	EASTING	NO.	NORTHING	EASTING
01	2223712.62	6009765.59	11	2223678.25	6010344.77
02	2223703.03	6009184.07	12	2223678.07	6010353.26
03	2223702.18	6009223.74	13	2223677.10	6010416.72
04	2223709.67	6009903.98	14	2223677.21	6010425.45
05	2223700.18	6010348.54	15	2223809.90	6011487.89
06	2223700.00	6010357.03	16	2223809.31	6011621.51
07	2223699.10	6010416.72	17	2223775.37	6011255.98
08	2223699.10	6010425.45	18	2223784.15	6011373.08
09	2223681.08	6010212.49	19		
10	2223678.35	6010340.31	20		

NOTE:

COORDINATES ARE APPROXIMATE. CONTRACTOR TO IDENTIFY POINTS IN FIELD.

Know what's **below.**
Call before you dig.

40 20 0 40 80
SCALE: 1" = 40'

APPR	DATE	DESCRIPTION	SYM
	11/06/23	DRAFT FOR REVIEW & COMMENT	0
	XX/XX/XX	100% SUBMITTAL FOR REVIEW & COMMENT	1

NAVFAC

REGISTERED PROFESSIONAL ENGINEER
LEONARD TAN
No. 83892
Exp 09/30/25
CIVIL
STATE OF CALIFORNIA
SEAL

PREPARED BY:
OCTA
ORANGE COUNTY TRANSPORTATION AUTHORITY
550 SOUTH MAIN STREET
ORANGE, CA 92863

DESIGN CONSULTANT:
MOTT MACDONALD
MOTT MACDONALD
500 SOUTH MAIN STREET
SUITE 530
ORANGE, CA 92868
A/E INFO

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 12/22/23
DES - DRW - CHK
PM/DM -
BRANCH MANAGER -
CHIEF ENG/ARCH -
FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION
NWS SEAL BEACH
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA
SEAL BEACH, CALIFORNIA

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

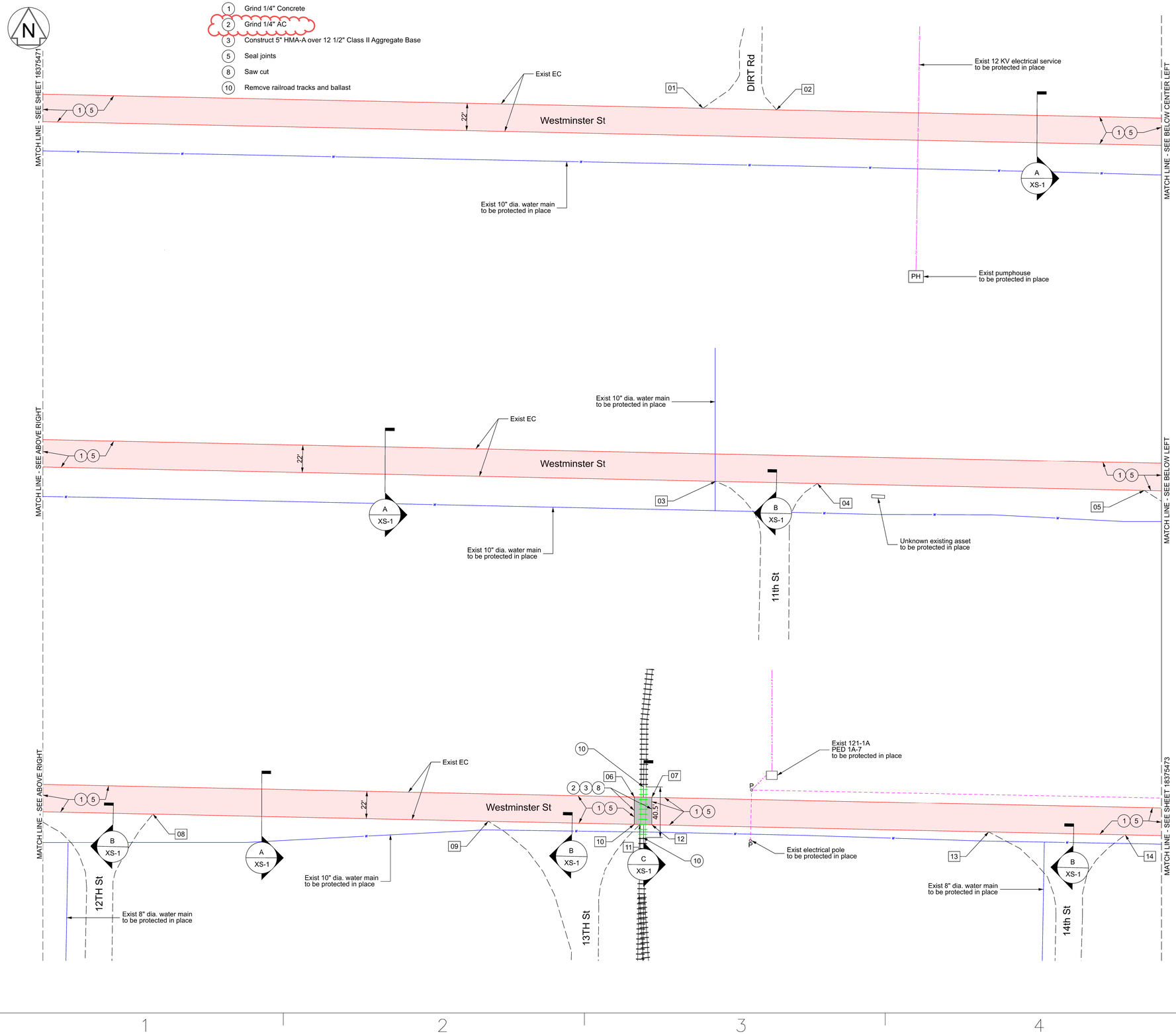
WESTMINSTER STREET IMPROVEMENT PLAN (MINOR RD to WESMINSTER DR)

SCALE: AS NOTED
EPROJECT NO.: 1754244
CONSTR. CONTR. NO.: -
NAVFAC DRAWING NO.: 18375471
SHEET 4 OF 8
-

DRAWFORM REVISION: 31 JANUARY 2017

Construction Notes:

1. Grind 1/4" Concrete
2. Grind 1/4" AC
3. Construct 5" HMA-A over 12 1/2" Class II Aggregate Base
5. Seal joints
8. Saw cut
10. Remove railroad tracks and ballast



LOCATION

NO.	NORTHING	EASTING	NO.	NORTHING	EASTING
01	2223797.60	6012172.08	11	2223738.69	6013906.30
02	2223796.35	6012230.84	12	2223738.49	6013915.82
03	2223756.39	6013074.60	13	2223732.77	6014184.54
04	2223754.67	6013155.65	14	2223730.46	6014293.55
05	2223749.12	6013416.48	15		
06	2223760.79	6013901.84	16		
07	2223760.50	6013915.82	17		
08	2223746.96	6013517.84	18		
09	2223741.27	6013785.24	19		
10	2223738.79	6013901.84	20		

NOTE:

COORDINATES ARE APPROXIMATE. CONTRACTOR TO IDENTIFY POINTS IN FIELD.

SYM	DESCRIPTION	DATE	APPR
0	DRAFT FOR REVIEW & COMMENT	11/06/23	
1	100% SUBMITTAL FOR REVIEW & COMMENT	XXXX/XX	

NAVFAC

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA

SEAL

PREPARED BY:
OCTA — ORANGE COUNTY TRANSPORTATION AUTHORITY, 550 SOUTH MAIN STREET, ORANGE, CA 92863

DESIGN CONSULTANT:
MOTT MACDONALD, 500 SOUTH MAIN STREET SUITE 530, ORANGE, CA 92868
A/E INFO

APPROVED
FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO — DATE 12/22/23
DES - | DRW - | CHK
PM/DM -
BRANCH MANAGER -
CHIEF ENG/ARCH -
FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION
NWS SEAL BEACH
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA
SEAL BEACH, CALIFORNIA

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

WESTMINSTER STREET IMPROVEMENT PLAN (WESTMINSTER DR TO 14TH ST)

SCALE: AS NOTED
EPROJECT NO.: 1754244
CONSTR. CONTR. NO. -
NAVFAC DRAWING NO. 18375472
SHEET 5 OF 8
-

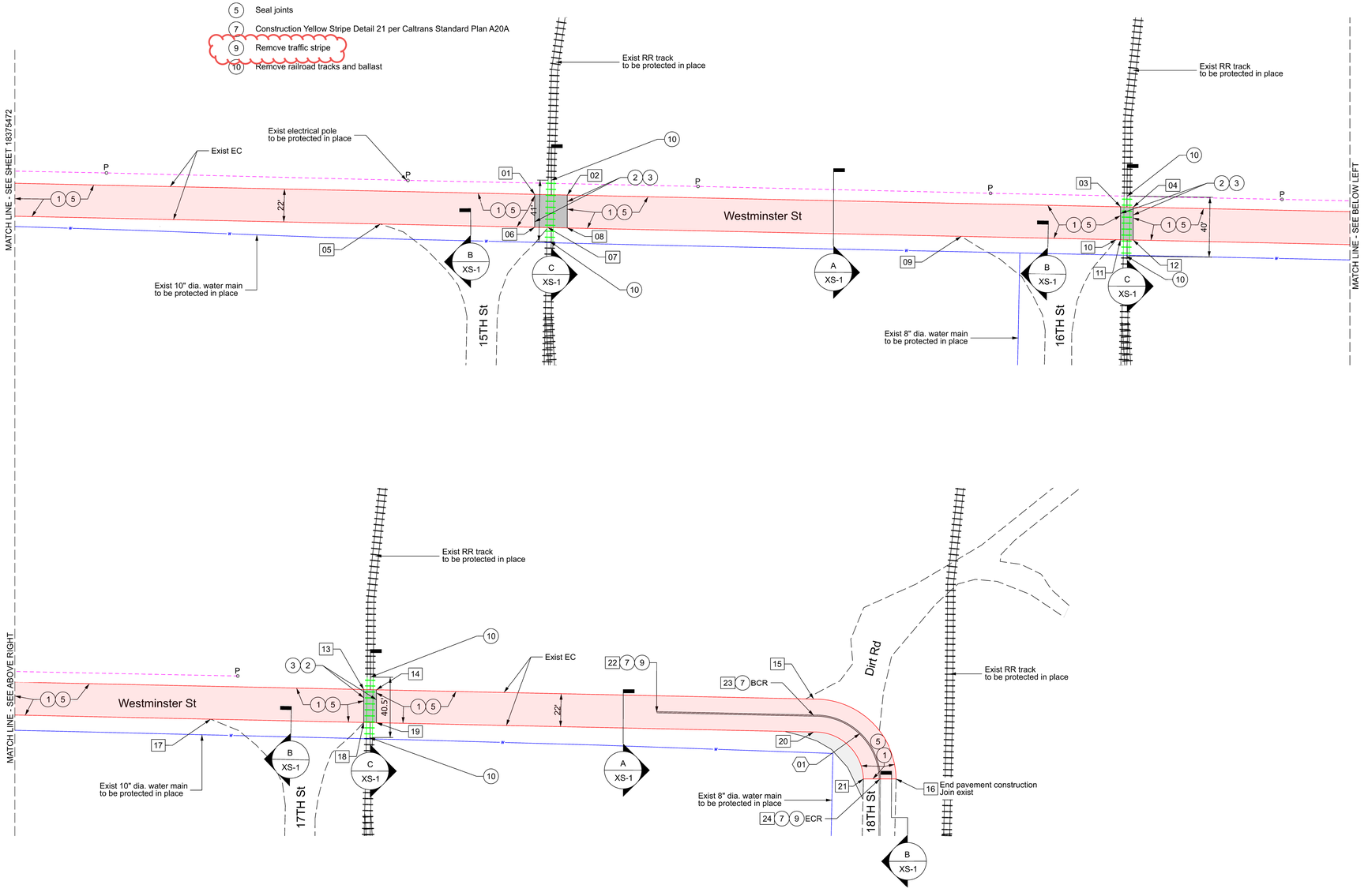
811 — Know what's below. Call before you dig.

40 20 0 40 80
SCALE: 1" = 40'

DRAWFORM REVISION: 31 JANUARY 2017

Construction Notes:

1. Grind 1/4" Concrete
2. Grind 1/4" AC
3. Construct 5" HMA-A over 12 1/2" Class II Aggregate Base
5. Seal joints
7. Construction Yellow Stripe Detail 21 per Caltrans Standard Plan A20A
9. Remove traffic stripe
10. Remove railroad tracks and ballast



CURVE DATA TABLE

NO.	R	Δ	T	L
01	43.24'	90.10°	43.32'	68.00'

LOCATION

NO.	NORTHING	EASTING	NO.	NORTHING	EASTING	DESCRIPTION
01	2223744.46	6014669.69	13	2223727.90	6015447.73	
02	2223743.99	6014691.46	14	2223727.72	6015456.19	
03	2223736.12	6015061.34	15	2223721.50	6015748.47	BCR
04	2223735.94	6015069.80	16	2223668.17	6015803.72	ECR
05	2223724.65	6014566.58	17	2223708.07	6015345.39	
06	2223722.45	6014669.69	18	2223705.90	6015447.73	
07	2223722.26	6014678.51	19	2223705.72	6015456.19	
08	2223721.99	6014691.46	20	2223699.50	6015748.71	BCR
09	2223716.38	6014954.90	21	2223668.17	6015781.66	ECR
10	2223714.18	6015058.48	22	2223712.73	6015643.49	
11	2223714.12	6015061.34	23	2223710.50	6015748.46	
12	2223713.94	6015069.80	24	2223668.17	6015792.66	

NOTE:

COORDINATES ARE APPROXIMATE. CONTRACTOR TO IDENTIFY POINTS IN FIELD.

Know what's below.
Call before you dig.

40 20 0 40 80

SCALE: 1" = 40'

APPR	DATE	DESCRIPTION	SYM
	XX/XX/XX		
	11/06/23	DRAFT FOR REVIEW & COMMENT	0
		100% SUBMITTAL FOR REVIEW & COMMENT	1

NAVFAC

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA

SEAL

PREPARED BY:

OCTA — ORANGE COUNTY TRANSPORTATION AUTHORITY, 550 SOUTH MAIN STREET, ORANGE, CA 92863

DESIGN CONSULTANT:

MOTT MACDONALD, 500 SOUTH MAIN STREET SUITE 330, ORANGE, CA 92868

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO — DATE 12/22/23

DES - | DRW - | CHK

PM/DM -

BRANCH MANAGER -

CHIEF ENG/ARCH -

FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION

NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

NWS SEAL BEACH
SEAL BEACH, CALIFORNIA

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

WESTMINSTER STREET IMPROVEMENT PLAN (14TH ST TO 18TH ST)

SCALE: AS NOTED

EPROJECT NO.: 1754244

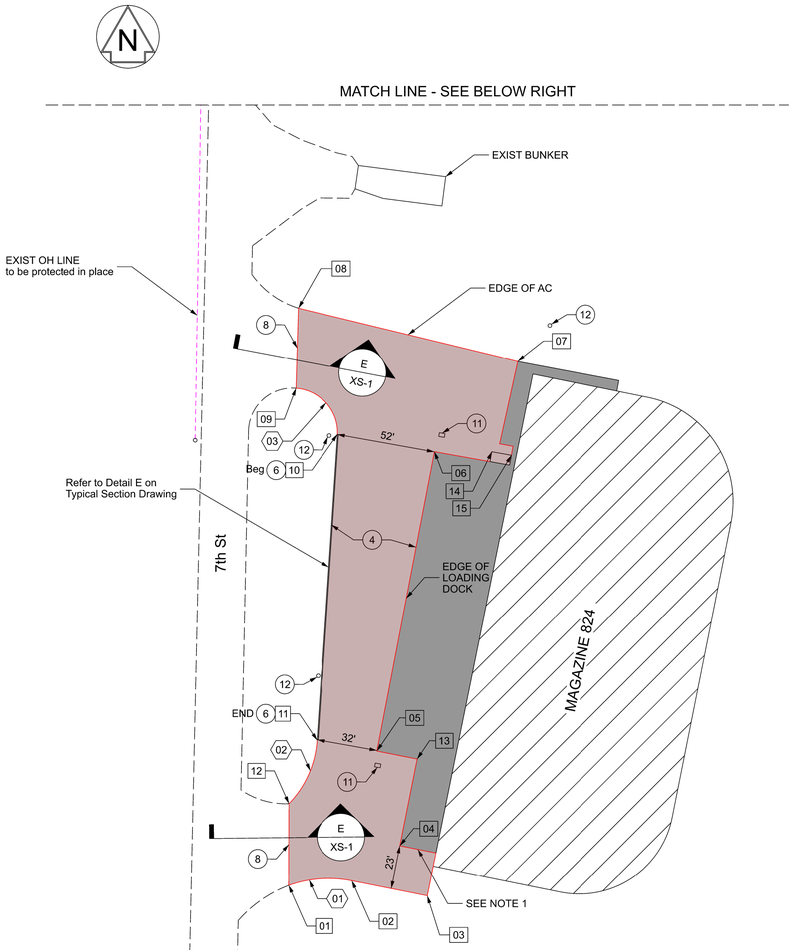
CONSTR. CONTR. NO. -

NAVFAC DRAWING NO. 18375473

SHEET 6 OF 8

-

DRAWFORM REVISION: 31 JANUARY 2017

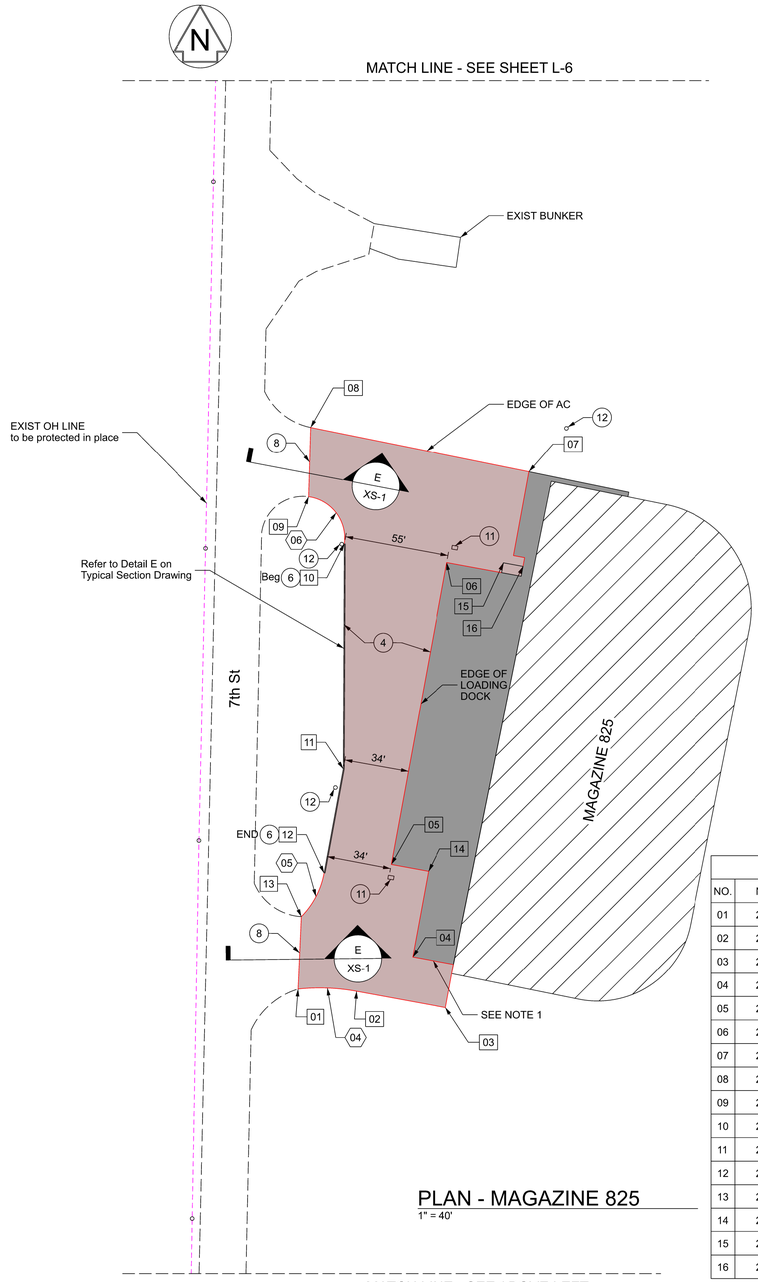


PLAN - MAGAZINE 824

1" = 40'

LOCATION 824

NO.	NORTHING	EASTING	DESCRIPTION	DOCK HEIGHT	BOTTOM STEP HEIGHT
01	2225793.95	6008267.51	BCR		
02	2225796.40	6008300.85	ECR		
03	2225788.41	6008340.65			
04	2225814.81	6008326.17			
05	2225864.86	6008314.07		42.25"	
06	2226022.83	6008344.42		43.25"	
07	2226070.49	6008388.36			
08	2226098.57	6008272.68			
09	2226056.31	6008271.42	BCR		
10	2226032.01	6008293.23	ECR		
11	2225870.51	6008282.57	BCR		
12	2225837.04	6008267.66	ECR		
13	2225860.63	6008335.30		39.25"	
14	2226022.79	6008374.64			5.75"
15	2226020.93	6008384.99			5.75"



PLAN - MAGAZINE 825

1" = 40'

CURVE DATA TABLE

NO.	R	Δ	T	L
01	62.59'	30.98°	17.34'	33.84'
02	52.97'	40.47°	19.52'	37.41'
03	23.48'	88.10°	22.72'	36.11'
04	107.34'	16.52°	15.58'	30.95'
05	44.09'	34.20°	13.56'	26.31'
06	21.96'	90.10°	22.00'	34.54'

NOTES:

1. NEW PAVEMENT TO JOIN EXISTING BOTTOM OF DOCK RAMP
2. COORDINATES ARE APPROXIMATE. CONTRACTOR TO IDENTIFY POINTS IN FIELD.

Construction Notes:

(4) Construct 4" HMA-A over 2 1/2" Class II Aggregate Base over 6" Pulverised
(6) Construct HMA Dike Type A per Caltrans Standard Plan A87B
(8) Saw cut
(11) Pull Box. Adjust to Grade
(12) Light Pole. Protect in Place

LOCATION 825

NO.	NORTHING	EASTING	DESCRIPTION	DOCK HEIGHT	BOTTOM STEP HEIGHT
01	2226356.11	6008277.36	BCR		
02	2226354.94	6008308.18	ECR		
03	2226346.29	6008355.13			
04	2226373.08	6008337.80			
05	2226421.95	6008326.47		42"	
06	2226581.27	6008355.80		42.75"	
07	2226629.22	6008399.20			
08	2226652.53	6008283.99			
09	2226615.98	6008282.90	BCR		
10	2226591.23	6008301.71	ECR		
11	2226472.36	6008301.18			
12	2226417.38	6008291.05	BCR		
13	2226394.39	6008279.07	ECR		
14	2226418.32	6008346.14		42.25"	
15	2226581.13	6008385.75			5.25"
16	2226579.22	6008396.10			5"

Know what's below.
Call before you dig.

40 20 0 40 80

SCALE: 1" = 40'

0	DRAFT FOR REVIEW & COMMENT	11/06/23	APPR
1	100% SUBMITTAL FOR REVIEW & COMMENT	XX/XX/XX	DATE
			DESCRIPTION
			SYM

NAVFAC

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA

SEAL

PREPARED BY:
OCTA — ORANGE COUNTY TRANSPORTATION AUTHORITY, 550 SOUTH MAIN STREET, ORANGE, CA 92863

DESIGN CONSULTANT:
MOTT MACDONALD, 500 SOUTH MAIN STREET, SUITE 530, ORANGE, CA 92868
A/E INFO

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY

SATISFACTORY TO — DATE 12/22/23
DES - | DRW - | CHK
PM/DM -
BRANCH MANAGER -
CHIEF ENG/ARCH -
FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PAVEMENT REHABILITATION
NWS SEAL BEACH

NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA
SEAL BEACH, CALIFORNIA

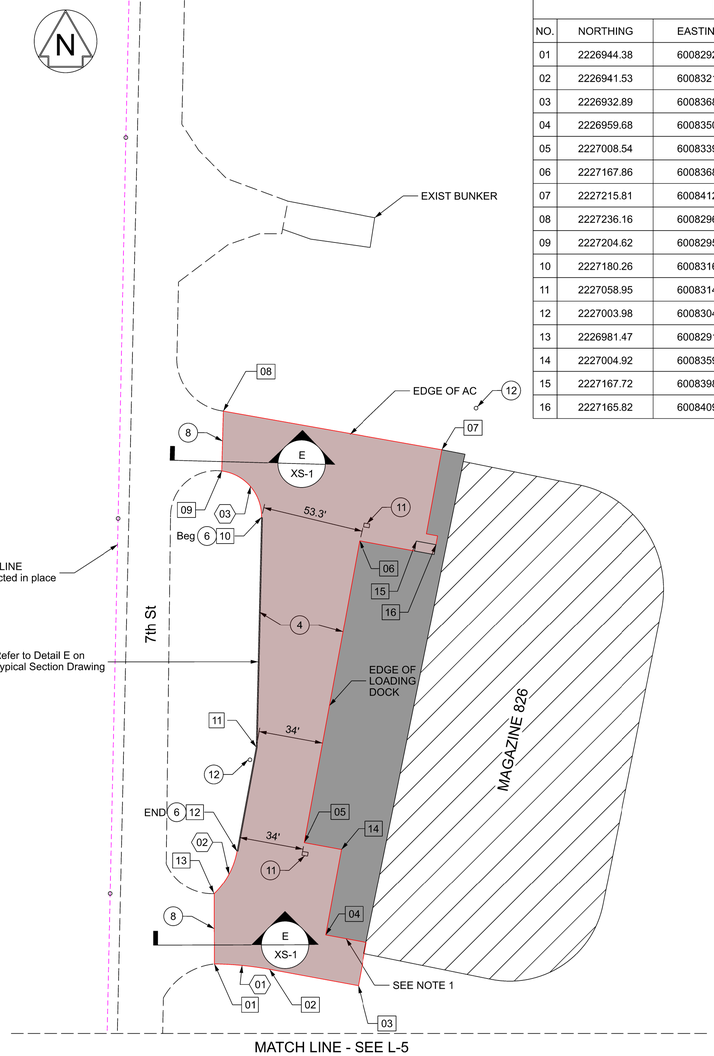
PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

MAGAZINES 824 & 825

SCALE: AS NOTED
EPROJECT NO.: 1754244
CONSTR. CONTR. NO. -
NAVFAC DRAWING NO. 18375474
SHEET 7 OF 8
-

DRAWFORM REVISION: 31 JANUARY 2017

MATCH LINE - SEE BELOW RIGHT

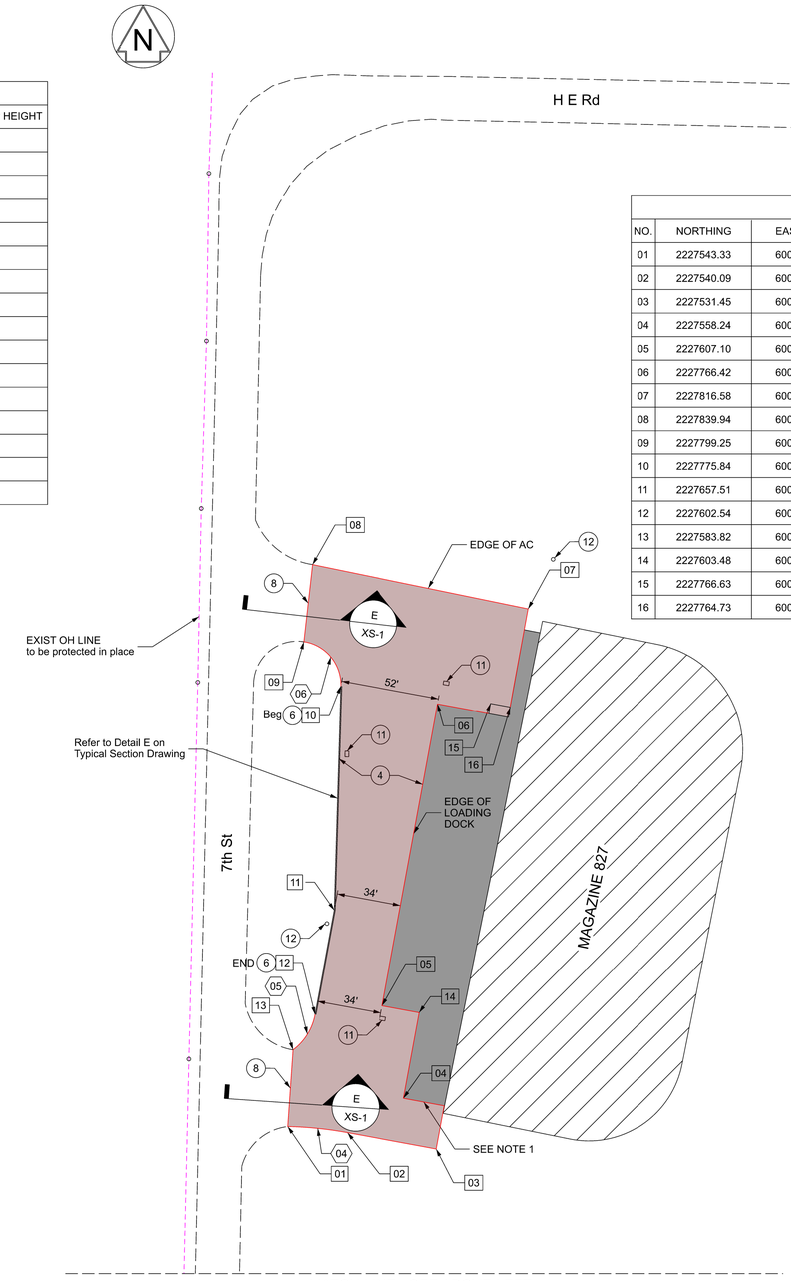


MATCH LINE - SEE L-5

PLAN - MAGAZINE 826
1" = 40'

LOCATION 826					
NO.	NORTHING	EASTING	DESCRIPTION	DOCK HEIGHT	BOTTOM STEP HEIGHT
01	2226944.38	6008292.03	BCR		
02	2226941.53	6008321.13	ECR		
03	2226932.89	6008368.08			
04	2226959.68	6008350.75			
05	2227008.54	6008339.41		42"	
06	2227167.86	6008368.75		43"	
07	2227215.81	6008412.15			
08	2227236.16	6008296.76			
09	2227204.62	6008295.91	BCR		
10	2227180.26	6008316.90	ECR		
11	2227058.95	6008314.12			
12	2227003.98	6008304.00	BCR		
13	2226981.47	6008291.94	ECR		
14	2227004.92	6008359.08		41.5"	
15	2227167.72	6008398.70			4"
16	2227165.82	6008409.05			4"

CURVE DATA TABLE				
NO.	R	Δ	T	L
01	172.85'	9.70°	14.67'	29.27'
02	41.86'	35.52°	13.40'	25.95'
03	24.00'	84.12°	21.65'	35.23'
04	198.64'	9.15°	15.89'	31.71'
05	30.26'	42.66°	11.82'	22.53'
06	23.00'	82.91°	20.32'	33.28'



MATCH LINE - SEE ABOVE LEFT

PLAN - MAGAZINE 827
1" = 40'

LOCATION 827					
NO.	NORTHING	EASTING	DESCRIPTION	DOCK HEIGHT	BOTTOM STEP HEIGHT
01	2227543.33	6008301.92	BCR		
02	2227540.09	6008333.43	ECR		
03	2227531.45	6008380.39			
04	2227558.24	6008363.06			
05	2227607.10	6008351.72		43.5"	
06	2227766.42	6008381.06		43.5"	
07	2227816.58	6008428.93			
08	2227839.94	6008315.02			
09	2227799.25	6008310.44	BCR		
10	2227775.84	6008329.92	ECR		
11	2227657.51	6008326.43			
12	2227602.54	6008316.31	BCR		
13	2227583.82	6008304.72	ECR		
14	2227603.48	6008371.39		42"	
15	2227766.63	6008409.10			5"
16	2227764.73	6008419.44			5"

NOTES:

1. NEW PAVEMENT TO JOIN EXISTING BOTTOM OF DOCK RAMP
2. COORDINATES ARE APPROXIMATE. CONTRACTOR TO IDENTIFY POINTS IN FIELD.

Construction Notes:

(4) Construct 4" HMA-A over 2 1/2" Class II Aggregate Base over 6" Pulverised
(6) Construct HMA Dike Type A per Caltrans Standard Plan A87B
(8) Saw cut
(11) Pull Box. Adjust to Grade
(12) Light Pole. Protect in Place

811 Know what's below. Call before you dig.

40 20 0 40 80

SCALE: 1" = 40'

0	DRAFT FOR REVIEW & COMMENT	11/06/23	APPR
1	100% SUBMITTAL FOR REVIEW & COMMENT	XX/XX/XX	DATE
SYM	DESCRIPTION		

REGISTERED PROFESSIONAL ENGINEER — LEONARD TAN — No. 83892 — Exp 09/30/25 — CIVIL — STATE OF CALIFORNIA
SEAL

PREPARED BY:
OCTA — ORANGE COUNTY TRANSPORTATION AUTHORITY, 550 SOUTH MAIN STREET, ORANGE, CA 92863

DESIGN CONSULTANT:
MOTT MACDONALD, 500 SOUTH MAIN STREET SUITE 330, ORANGE, CA 92868
A/E INFO

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY

SATISFACTORY TO — DATE 12/22/23
DES - | DRW - | CHK
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CHIEF ENG/ARCH -
FIRE PROTECTION N/A

DEPARTMENT OF THE NAVY
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SEAL BEACH, CALIFORNIA

PAVEMENT REHABILITATION AT THE NAVAL WEAPONS STATION SEAL BEACH

MAGAZINES 826 & 827

SCALE: AS NOTED
EPROJECT NO.: 1754244
CONSTR. CONTR. NO. -
NAVFAC DRAWING NO. 18375475
SHEET 8 OF 8
-

DRAWFORM REVISION: 31 JANUARY 2017