

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A The work to be done under this contract is located in the vicinity of Islais Creek between 3rd St and Illinois Street, and Cargo Way & Marin Street, and consists of constructing a new park, improving an existing park, demolishing an existing wharf, constructing a new promenade/wharf structure, and constructing a prefabricated pedestrian bridge.
- B Work includes: site clearing & demolition, wharf structure demolition, grading & drainage, paving, landscaping, irrigation, site furnishings, wharf construction, pedestrian bridge construction, pedestrian railroad crossing, lighting, restoration of a small building, and other miscellaneous work.

1.2 SCOPE OF WORK

- A Site Clearing and Site Demolition Work includes, but not limited to:
1. Remove fencing;
 2. Demolish concrete and asphalt paving including aggregate base;
 3. Demolish decomposed granite paving and aggregate base;
 4. Demolish concrete curb & gutter;
 5. Clear & grub;
 6. Tree removal;
 7. Demolish concrete sub-slab;
 8. Remove tree stumps, shrubs, and prune existing trees;
 9. Remove and salvage large sculpture at corner of 3rd & Cargo (place in storage at Pier 50).
- B Structure Demolition Work includes, but is not limited to:
1. Demolition of a condemned timber wharf with asphalt covering;
 2. Removal of timber piles to a minimum of 3 feet below existing mudline or 6" below the surface of existing rip rap.
- C Grading and Drainage Work includes, but not limited to:
1. Rough and fine grading;
 2. Import soil;
 3. Trench & planter drains and piping;
 4. Drain board;
 5. Drain rock;
 6. Rip rap shoreline improvements;
- D Site Improvement Work includes, but not limited to:
1. Concrete paving and base – colored and exposed aggregate;
 2. Concrete paving and base – permeable;
 3. Concrete paving and base – CCSF standard;
 4. Concrete curb/gutter – CCSF standard;
 5. Concrete sidewalk – CCSF standard;
 6. Concrete curb ramp with detectable tile surface tiles;
 7. Cast-in-place concrete interpretive elements;
 8. Concrete walls, various, up to 3 feet high;
 9. Concrete header;
 10. Precast concrete park sign;

11. Stabilized decomposed granite paving;
 12. AC paving;
 13. Redwood header;
 14. Metal edging;
 15. Restoration of weigh station and small building structure to be a park feature.
 16. Construct prefabricated concrete panel railroad crossing, UPRR standards.
- E Fencing, Railing and Guardrail Work includes, but is not limited to:
1. 8-foot high chain link fence with gates;
 2. 42-inch high post and cable barrier;
 3. Custom painted steel guardrail with integral lighting;
 4. Standard painted steel guardrail;
 5. Stainless steel handrail;
 6. Metal picket gates.
- F Irrigation Work includes, but is not limited to:
1. Design/build irrigation system (water conserving);
 2. Backflow preventer, pad, and cage;
 3. Water meter service.
- G Landscape Planting Work includes, but is not limited to:
1. Amended topsoil preparation;
 2. Furnish and plant trees;
 3. Furnish and plant shrubs;
 4. Furnish and place mulch;
 5. Landscape maintenance for 12 months.
- H Site Furnishing Work includes, but is not limited to, furnish and install:
1. Wood and steel benches;
 2. Precast concrete picnic tables;
 3. Trash receptacles;
 4. Drinking fountain with dog bowl;
 5. Bike racks;
 6. Pipe barrier;
 7. Interpretive signs;
 8. Regulatory signs.
- I Structural Work includes, but is not limited to:
1. Construct concrete wharf supported on driven steel piling:
 - (a) Furnish and install 24-inch diameter coated steel pipe piling;
 - (b) Construct reinforced concrete pile head connections;
 - (c) Construct reinforced concrete bentcaps;
 - (d) Furnish and erect precast/prestressed concrete voided slabs;
 - (e) Construct unbounded, reinforced concrete topping slab;
 - (f) Construct reinforced concrete curb;
 2. Construct prefabricated pedestrian bridges supported by reinforced concrete abutments/bentcaps and driven steel piling:
 - (a) Furnish and install 24-inch diameter coated steel pipe piling;
 - (b) Construct reinforced concrete pile head connections;
 - (c) Construct reinforced concrete abutments and bentcaps;
 - (d) Engineer, furnish and erect prefabricated painted steel pedestrian bridges with fiberglass decking.
 3. Modify top of existing concrete seawall.

- J Electrical Work includes, but is not limited to:
 - 1. Furnish and install light poles, fixtures and foundations;
 - 2. Furnish and install lighting in railing/guardrail;
 - 3. Furnish and install electrical service panel;
 - 4. Furnish and install conduit, wiring and pullboxes;
 - 5. PG&E service connection.

1.3 CONTRACT

- A The Project will be governed by a single lump sum contract under direction of a single designated Prime Contractor as described in the Agreement Forms.
- B Responsibility for installation and completion of the work is upon the designated Prime Contractor with whom the City enters into a Contract for the work herein described.

1.4 CONTRACTOR'S QUALIFICATIONS

- A Contractors shall have completed a minimum of [3 projects](#) similar in scope and complexity or greater in the past [5 years](#). If bidder does not meet the experience requirements stated in this specification, the City may determine the bidder to be unqualified to perform the work under this contract.
- B Contractor or subcontractor, shall have completed a minimum of 3 marine demolition projects similar in scope and complexity or greater in the past 7 years.
- C Contractor or subcontractor shall have completed a minimum of 3 pile driving projects similar in scope and complexity or greater in the past 5 years, including at least 1 project where piles were driven through a rock fill seawall or dike.

1.5 COORDINATION WITH OTHER PROJECTS

- A [Port Contract No 2761 Blue Greenway Signage & Site Furnishings](#) includes constructing a sign near Illinois and Cargo within the Project limits. Contractor shall coordinate with Ken Chu, Port Project Manager, 415.274.0593, to determine schedule and allow access for construction in accordance with Paragraph 5.02 - Coordination of the General Conditions.

1.6 SUBMITTALS, PUBLIC NOTIFICATION, AND MEETINGS BEFORE NOTICE TO PROCEED (NTP)

- A. Contractor is encouraged to submit the required Traffic Control Plans as soon as possible after the date of the Award in order to ensure that the said plans get approved by the City prior to start of actual field work.
- B. In addition, Contractor is encouraged to send out the required 30-Day Public Notification letters as soon as possible after the date of the Award, provided that the said notices are sent out no more than 60 calendar days before the start of work. Refer to DPW Order No. 176,707, Regulations for Excavating and Restoring Streets in San Francisco, for more details.
- C. The City Representative will schedule a Pre-Construction meeting as soon as possible after the date of the Award in order to discuss schedules and sequence of operations with the Contractor.

1.7 SEQUENCING OF CONSTRUCTION

- A After award and certification of the contract, a pre-construction meeting will be scheduled with the Contractor to determine the official date for commencement of the work. No

fieldwork can begin prior to the Contractor's receipt of written permission from the City Representative. The City shall have full jurisdiction and responsibility of the property until the commencement date for fieldwork.

- B After notification of the commencement date, the Contractor shall be allowed one hundred and eighty (180) calendar days for shop drawings submittal and approval, procurement and delivery of the custom fabricated pedestrian bridge.
- C After notification of the commencement date, the Contractor shall be allowed one hundred and fifty (150) calendar days for shop drawings submittal and approval, procurement and delivery of the custom fabricated precast concrete voided slabs.
- D Contractor shall be familiar with the terms, conditions, and payment schedule required by suppliers prior to submitting bid. Any delays to the custom fabricated item procurement schedule caused by incomplete or inaccurate shop drawing submittals and/or failure to comply with these terms, conditions and payment schedule required by the material suppliers shall be the responsibility of the Contractor.

1.8 WORK SCHEDULING

- A Refer to schedule "Temporary Street Closures" appended to this Section for traffic lane requirements that may affect Contractor's schedule of operations.
- B Contractor shall coordinate its operations with the City and shall incorporate in its Progress Schedule activities for all special events that will require Contractor to suspend its operations at the project site.
- C The Contractor's working hours shall be as specified in Section 00 72 00 – General Conditions, subparagraph 1.01A.63, except as specified otherwise in these Specifications.
- D The Contractor shall not commence site work prior to receiving the Engineer's approval of the Construction Schedule. No Work shall commence prior to the approval of applicable traffic control plans, storage and parking plans, and flagger resumes and certificates. The Contractor will be levied damages, as specified in Section 00 73 03, Additional Liquidated Damages, of the Project Manual, for delay of Work.
- E The Contractor shall not commence any excavation in the public right-of-way without a valid excavation permit issued by the San Francisco Department of Public Works, Bureau of Street Use and Mapping. The Contractor shall submit a copy of the excavation permit.
- F In-water construction activities may only occur between March 1 and November 30.
- G In-water pile driving may only occur between June 1 and November 30 (see CEQA mitigation measure M-BI-1)
- H Western Gull nesting season, April 15 through August 30: It is anticipated that wharf demolition will occur during Western Gull nesting season. The Port will remove remains of nests prior to April 15 and install barriers or undertake hazing to prevent egg laying starting April 15. Upon NTP, Contractor is responsible to install barriers or undertake hazing (see CEQA mitigation measure M-BI-2: Western gulls).

1.9 TRAFFIC ROUTING WORK

- A The Contractor shall be responsible to provide incidental traffic routing work, such as described below, to ensure adequate protection of the general public and the Work.

- B The Contractor shall provide incidental traffic routing work in accordance with the requirements of the "Regulations for Working in San Francisco Streets (Blue Book)" by the San Francisco Municipal Transportation Agency (SFMTA), latest edition. Refer to the following website for the latest copy of the Blue Book:
<http://sfgov.org/site/frame.asp?u=http://www.sfmta.com/>
- C The Contractor shall obtain the approval of the SFMTA for any required prohibition of stopping from the Traffic Bureau (415) 554-9928, at least 72 hours in advance of the effective date and time. The Contractor shall post the signs at least 72 hours in advance of the effective date and time.
- D In the event the Contractor occupies parking areas within the Public Right of Way including the sidewalk, the Contractor shall obtain the approval of, and pay for any required permits for occupation of the sidewalk and parking spaces from the SFMTA and/or PORT.

1.10 CONTRACTOR USE OF SITE

- A Use of Site: Limit use of the site for construction operations necessary to perform the Work indicated on the Drawings. Obtain prior written approval from the City for access to areas of the site occupied by the City. Protect and repair or restore to the existing condition surrounding areas damaged by Contractor's operations.
- B Contractor's Work Area: The Contractor's work area is limited to the areas included within the limit of work as shown on the Contract Drawings and as adjusted by the temporary construction fencing.
 - 1. Refer to Section 01 50 00 – Temporary Facilities and Controls for work area maintenance requirements.
 - 2. Refer to Section 01 52 13 – Field Offices and Sheds for field office requirements.
- C Additional Staging and Storage:
 - 1. Provide additional staging and storage areas as necessary for Contractor's operations at no cost to the City.
 - 2. Do not utilize City streets for additional staging and storage areas.
 - 3. Do not enter upon or use any property not under control of the City until a written temporary construction easement agreement has been executed by the Contractor and the property owner, and a copy of said agreement furnished to the City Representative prior to said use. Neither the City nor the City Representative shall be liable for any claims or damages resulting from Contractor's unauthorized trespass or use of any such properties.
- D Maintenance of Work Area: Maintain the work areas in a safe condition at all times. Remove all graffiti and accumulated rubbish and debris material deposited within the construction site at the end of each work day. The Contractor is responsible to maintain the project area for the entire duration of the Contract. Clean and restore the work site at completion of the work to the condition that existed prior to the start of work.
- E Security Of Contractor's Work Areas: Security of Contractor's work areas and its property, equipment, construction materials and all other items contained in Contractor's staging areas or elsewhere on the construction site shall be Contractor's sole responsibility at all times.

1.11 CITY'S USE OF EQUIPMENT PRIOR TO COMPLETION OF CONTRACT

- A During the course of construction and before final acceptance of the work of the Contract, City personnel may be required to use various major systems and sub-systems installed under this Contract as provided in Paragraph 9.06 of the General Conditions.

- B Such use or occupancy by City personnel will be limited to the starting and stopping of such systems, and Contractor shall be solely responsible to provide all interim repair and maintenance of such equipment as recommended by the equipment manufacturers. Contractor's responsibility for repair and maintenance shall continue from the date of beneficial use by the City of any equipment or system installed under this Contract until the date of the City's acceptance of Contractor's Application for Final Payment.
1. Submit a Certificate of Guarantee secured by Contractor's Performance Bond binding the Contractor to perform all repair and routine maintenance tasks as described above. Refer to Section 01 78 36 - Warranties.
 2. Provide written endorsement from Contractor's insurance carrier and Surety to the City Representative permitting the operation of equipment by City personnel as described above.
- C Use and occupancy by the City shall not be deemed to constitute a waiver of claims on behalf of the City against the Contractor.
- D The City will not accept any materials, equipment, systems or sub-systems furnished under this Contract which have been used by Contractor for construction purposes during the course of the Work.

1.12 HAZARDOUS OR CONTAMINATED MATERIALS

- A The Contractor is alerted to the possibility that hazardous waste and/or contaminated material may be discovered in the site during the demolition phase of this Contract. In the event that such hazardous/contaminated material is discovered, the Contractor shall immediately notify the City Representative both verbally and in writing. Upon receipt of such notification, the City, at its sole option, may either (a) perform the abatement work using its own forces or using an outside contractor specializing in abatement work or (b) direct the Contractor to perform all or any part of the abatement and hazardous materials removal work.
- B If the City Representative directs the Contractor to perform the abatement and removal of the hazardous materials, the City Representative will do so by change order. The Contractor must promptly provide a properly licensed and insured subcontractor (with CSLB hazardous substance removal certification) to perform abatement work. Refer to Section 00 73 16 for a description of the Contractor's required insurance.
- C In the event that Hazardous/Contaminated material is discovered, then all work in the affected area will stop pending further direction from the City Representative. The City Representative shall determine whether the abatement and removal process requires suspension of all, none or any part of the work under this Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Procedures for preparation and submittal of Progress Payment Requests.
- B. Related Sections:
 - 1. Section 00 72 00 – General Conditions, Article 9, Payments and Completion.
 - 2. Section 00 41 00 – Bid Form.
 - 3. Section 01 29 73 – Schedule of Values.
 - 2. Section 01 32 16 – Construction Progress Schedule.

1.2 SCOPE

- A. Payment for the various items of the Schedule of Bid Prices, as further specified herein, shall include all compensation to be received by Contractor for furnishing all tools, equipment, supplies, and manufactured products, and for all labor, operations, overhead and profit, applicable taxes, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of work as specified and as shown on the Drawings. No separate payment will be made for any item that is not specifically set forth in the Schedule of Bid Prices, and all costs therefore shall be included in the prices named in the Schedule of Bid Prices for the various appurtenant items of Work.
- B. Contract Prices shall be deemed to include all bonds and insurance, all appurtenances necessary to complete the required Work, including all costs for compliance with the regulations of public agencies having jurisdiction, including Health and Safety Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA), and including all costs for loss or damage arising from the Work, or from action of the elements, for any unforeseen difficulties which may be encountered, and for all risks of every description connected with the prosecution of the Work until Project Completion, also for all expenses incurred in consequence of the suspension or discontinuance of the Work as provided in the Contract.
- C. Except as otherwise expressly stipulated in the Contract Documents, no payment shall be made for materials stored on or off site, and for materials not yet incorporated into the Work on site.
- D. Neither the payment of any estimate nor of any retained percentage shall relieve Contractor of its obligation to make good all defective work or material.

1.3 BASIS OF PAYMENT

- A. Unit Price Work
 - 1. The City shall determine the quantities of Work to be paid for any item for which a unit price is fixed in the Contract.
 - 2. Unless otherwise provided, determination of the number of units of Work so completed shall be based, as far as practicable, on the actual measurement or count made by the City Representative of the Work satisfactorily completed within the prescribed limits.

3. Measurement and computations shall be made by methods as the City may consider appropriate for the class of Work measured.
 4. Should the actual quantities of Work performed under any unit price be greater or less than the estimated quantity stipulated on the Schedule of Bid Prices, or if an item of Work is deleted, the final Contract cost shall be adjusted by Change Order to reflect the actual quantities and actual costs including fixed costs for unit price items.
- B. Lump Sum: When the estimated quantity for specific portions of Work is not indicated on the Schedule of Bid Prices and unit is designated as lump sum, payment will be on a lump sum basis for Work satisfactorily completed as set forth in the Specifications and shown on the Drawings.
- C. Monthly payment requests shall be based upon information developed at monthly Application for Payment meetings and shall be prepared by Contractor. The approved Schedule of Values will be the basis for Contractor's payment requests.
1. No partial progress payment shall be made to Contractor until all cost information requested by the City is submitted and reviewed.
 2. Submission of a progress schedule update in accordance with Section 013216 for the same period of the progress payment application shall be a condition precedent to making the progress payment application.

1.4 APPLICATION AND SCHEDULE PROCEDURES

- A. On the 25th of each month submit an itemized Application of Payment to the City Representative by email with all required supporting documents attached in PDF format or in other Windows file formats (except Certified Payrolls) covering the Work completed as of the date of the Application for Payment.
1. Submit a progress schedule update with each Application for Payment.
 2. List each authorized Change Order executed prior to date of submission by Change Order Number and description, as for original items of work.
 3. When the City requires substantiating data, Contractor shall submit suitable information with cover letter identifying Application of Payment number and date, line item by number and description.
 4. Submit Certified Payrolls through the City's internet-based Project Reporting System. Refer to Paragraph 9.03M of the General Conditions.
 5. Specify the desired Method of Payment, either by electronic funds transfer through Bank of America Paymode or by check.
- B. Progress payments for the work performed under this Contract will be made in the manner described in Paragraph 9.03 of the General Conditions.
1. Progress payments will be based upon progress estimates by Contractor and verified by the City of the actual physical progress of the work, utilizing the Schedule of Values approved by the City.
 2. Progress payments will be made on a monthly basis and no mid-monthly payments will be made regardless of the value of the work and material incorporated prior thereto.
 3. Contractor shall certify its estimate of the quantities of the work completed, contained in the monthly progress payment estimate, by signing each such estimate prior to its submission.
 4. Contractor shall submit Project Record Drawings as specified below under article "Project Record Drawings."
 5. The City will make final determination if agreement cannot be reached on Contractor's progress payment request.

- C. The City shall issue payments to Contractor through the City's electronic payment system called PayMode-X[®]. Contractor acknowledges and agrees to receive payment electronically through this system. Contractor shall not be entitled to any additional cost or charge under this Contract for using or failing to use the electronic payment system. Nor shall Contractor be entitled to any additional cost or charge for delays or failures of the electronic payment system to complete a payment transaction.
- D. Pursuant to California Public Contract Code Section 22300, Contractor may substitute securities for any money withheld by the City to insure performance under the Contract. Said securities shall be in a form and of a type acceptable to the City.
 - 1. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with City Controller or with a state or federally chartered bank as the escrow agent, who shall return such securities to Contractor upon satisfactory completion of the Contract.
 - 2. Securities eligible for investment under Public Contract Code Section 22300 shall be limited to those listed in Section 16420 of the Government Code and to bank or savings and loan certificates of deposit.
 - 3. Contractor shall enter into escrow agreement with City Controller for in-lieu construction payment retention provided by City, specifying amount of securities to be deposited, terms and conditions of conversion into cash in case of Contractor's default, and termination of escrow upon completion of Contract.
 - 4. Contractor shall be beneficial owner of securities substituted for monies withheld and shall receive any interest thereon.

1.5 PROGRESS ESTIMATES

- A. Upon receiving Contractor's monthly progress payment application, the City will review progress breakdown and make adjustments to percent of completion of each item of Work.
 - 1. Monthly progress payments will be made based on the total value of Work items completed or partially completed, as determined by the City with participation of Contractor.
 - 2. Accumulated retainage will be shown as separate item in payment summary.
- B. After approving the finalized Progress Payment Report, the City will commence payment processing electronically. The payments will be made in accordance with Contractor's specified Method of Payment.

1.6 PROJECT RECORD DRAWINGS

- A. Submit original and one (1) copy of the Project Record Drawings (As-Builts) with the monthly progress payments to the City Representative in the field for his/her review. The original Record Drawings will be returned to the Contractor within fourteen (14) calendar days of submittal. The Contractor shall update the Record Drawings based on the City Representative's comments and resubmit the drawings for record. If the Record Drawings are not kept current or not furnished when specified herein, Progress Payments and if necessary the Final Payment will be withheld.

1.7 ELECTRONIC CERTIFIED PAYROLLS

- A. In accordance with the requirements of Paragraph 9.03M of the General Conditions, Contractor shall submit certified payrolls to the City electronically via the City-selected Project Reporting System ("PRS"), an internet-based program. This submittal is required for Progress Payments as specified in this Section 012000 Price and Payment Procedures. In addition to data relating to weekly payroll information, the Contractor,

Subcontractors and Suppliers shall enter in appropriate fields of the PRS information regarding new hires, including name and date hired of each new employee.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Allowances and procedures for doing allowance work.

1.2 PROJECT CONDITIONS

- A. Allowances shall be done only when and as directed in writing by the City Representative.
- B. Allowances shall cover the actual direct cost to Contractor of labor, materials and equipment delivered and installed at the site, required taxes and fees, less applicable trade discounts.
- C. Contractor's costs for required on-site and off-site storage and security, loading and unloading, handling at the site, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in Contractor's Total Bid Price and not in the allowances unless indicated otherwise.
- D. The amount given on Schedule of Bid Prices under each allowance item shall be the amount of funds set aside for each allowance. Said amounts shall be included in Contractor's Total Bid Price on the Schedule of Bid Prices.
- E. Whenever costs are more than or less than allowances, the Contract cost will be adjusted by change order based on the difference between (1) actual costs and the allowances, and (2) changes in Contractor's costs. Contractor shall identify allowance item under which work is done on Contractor's progress schedule and application for payment.
- F. Contractor's mark up for overhead and profit on allowance work shall be limited to 5%.

1.3 SCHEDULE OF ALLOWANCES

Bid Item No. 20: ALLOWANCE FOR OFF HAUL AND DISPOSAL OF SOIL CLASSIFIED AS CALIFORNIA NON-RCRA HAZARDOUS WASTE

- A. This allowance shall be used to pay for off haul and disposal of soil classified as California non-RCRA hazardous waste.
- B. The Contractor shall provide cash allowance of \$50,000 for this work as shown in the Schedule of Bid Prices.

Bid Item No. 21: ALLOWANCE FOR REMOVING AND DISPOSING OF MISCELLANEOUS NON-RCRA HAZARDOUS WASTE ALONG THE ISLAIS CREEK SHORELINE.

- A. This allowance shall be used to pay for removing and disposing of miscellaneous debris classified as California non-RCRA hazardous waste from along the shoreline of Islais Creek, between Illinois Street and 3rd Street.
- B. The Contractor shall provide cash allowance of \$10,000 for this work as shown in the Schedule of Bid Prices.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 21 50
MOBILIZATION ITEM

PART 1 - GENERAL

1.1 SUMMARY OF WORK

- A. The work under this Bid Item consists of preparatory work including, but not limited to, work necessary for the mobilizing and furnishing at the site, equipment, materials, supplies and incidentals; for the establishment of all offices, buildings and other temporary facilities necessary for work on the project; cost for pre-paid bonds and insurances; and for all other work and operations which must be performed or costs incurred to begin work on the various Bid Items at the project site. Compensation for mobilization includes, but is not limited to, the following principal items:
1. Permits: Refer to Section 00 73 00 - Supplementary Conditions; including Bureau of Street Use and Mapping Excavation Permit and Pavement Damage Fee.
 2. Moving onto the site of all Contractors' equipment required for operations.
 3. Installing temporary construction power and wiring.
 4. Developing and installing construction water supply.
 5. Providing field offices for the Contractor and City Representative complete with all furnishings specified by Section 01 52 13 - Field Offices and Sheds.
 6. Providing all on-site communication facilities, including telephones.
 7. Providing on-site sanitary facilities and potable water facilities.
 8. Arranging for and erection of Contractor's work and storage yard(s), and installation of temporary construction fence.
 9. Obtaining and paying for all required bonds and insurances including the bond required by Article 2.4 of the Public Works Code.
 10. Posting all OSHA-required notices and establishing safety programs.
 11. Having the Contractor's superintendent at the job site full time, whenever construction is in progress.
 12. Submitting preconstruction submittals, including Construction Schedule as specified in Section 01 32 16 – Construction Progress Schedule.
 13. Fabrication and erection of Project Signs.
 14. Preparation of Site-Specific Health and Safety Plan required by Specification Section 01 35 45 – Health and Safety Criteria.
 15. Conducting the pre-construction property survey required by Section 01 71 33 – Protection of Adjacent Construction.
 16. Preparation of plan and schedule for work affected by operations and events as required by Section 01 31 13 – Project Coordination.
 17. Submitting a Schedule of Values in accordance with Section 01 29 73 – Schedule of Values.
 18. Photographic or video documentation of existing historic details prior to demolition.

1.2 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures
- B. Section 01 50 00 – Temporary Facilities and Controls
- C. Section 01 52 13 – Field Offices and Sheds

1.3 SUBMITTALS

- A. Contractor shall submit drawings to scale indicating materials, details, and calculations for all permits in a format as required by the Department of Building Inspection.

1.4 PAYMENT PROCEDURES

- A. A Bid Item "Mobilization" shall be included in the Contractor's Schedule of Values and will be paid as a lump sum payment over the course of the project based on a percentage of completion.

<u>Percentage Bid Item</u> <u>Mobilization</u>	<u>Percentage Project</u> <u>Completion</u>
25%	2%
50%	5%
75%	10%
100%	20%

- B. The retention of funds provisions in Paragraph 9.05 – Withholding Payment of the General Conditions apply to the sum of all the contract work done, including that under the Schedule of Values Bid Item "Mobilization."
- C. Any extension of the contract time that may be granted will not of itself constitute grounds for a claim for additional payment.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section identifies each alternate and describes the basic changes to be incorporated into the Work when each alternate is made a part of the Work by specific provisions in the Agreement between the City and the Contractor.
- B. Refer to the Drawings and Specifications for the full scope of Work in each Alternate.
- C. Coordinate related Work and modify surround Work as required to integrate the various elements of the alternates in the complete Work, when acceptance is designated in the Agreement or by Contract Modification.
- D. Prices for all alternate work include all incidental cost including but not limited to mobilization, storage, handling, transportation, submittals, record drawings, quality control inspections, permits, project administration, bonds, insurance, warranties, as-built data base and all other requirements.
 - 1. Cost or credit for each Alternate is net addition to or deduction from either Total Base Bid Price during award or Contract Sum when such Alternate is accepted by Contract Modification.

1.2 RELATED SECTIONS

- A. Section 00 41 00 – Bid Form.
- B. Divisions 02 - 48; Technical Specification Sections.

1.3 SCHEDULE OF ALTERNATES

Bid Alternate No. A1: Furnish Pre-fabricated Aluminum Truss Pedestrian Bridge

- A. This lump sum price shall be full compensation to Furnish Pre-fabricated Aluminum Truss Pedestrian Bridge in lieu of a pre-fabricated steel truss pedestrian bridge. If this alternate is awarded, Bid Item 18 "Furnish Pre-fabricated Steel Truss Pedestrian Bridge" will be eliminated and the sum for that item deducted from the bid/contract amount. This alternate item will not be selected without also selecting Alternate Bid Item A2 "Erect Pre-fabricated Aluminum Truss Pedestrian Bridge".
- B. Work to be performed under this alternate bid item includes, but is not limited to, the following: Engineering design, Shop drawings, Fabricating bridge, Bridge decking, Anchor bolts, baseplates and bearings, Handrail, Painting

Bid Alternate No. A2: Erect Pre-fabricated Aluminum Truss Pedestrian Bridge

- A. This lump sum price shall be full compensation to Erect Pre-fabricated Aluminum Truss Pedestrian Bridge in lieu of a pre-fabricated steel truss pedestrian bridge. If this alternate is awarded, Bid Item 19 "Erect Pre-fabricated Steel Truss Pedestrian Bridge" will be eliminated and the sum for that item deducted from the bid/contract amount. This alternate item will not be selected without also selecting Alternate Bid Item A1 "Furnish Pre-fabricated Aluminum Truss Pedestrian Bridge".

- B. Work to be performed under this alternate bid item includes, but is not limited to, the following: Engineering design for erection; erection work and safety plans; setting bridge in final position and installing all anchor bolts, bearings, decking, handrails and other miscellaneous items.

PART 1 - PRODUCTS (Not Used)

PART 2 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 25 13

PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for handling requests for substitutions.
- B. Related Sections:
 - 1. Section 00 49 18 - Request For Product Substitution Form
 - 2. Section 01 42 00 - References.

1.2 DEFINITIONS

- A. Substitution: The proposed change by Contractor of a product, equipment, or service required by the Contract Documents is considered to be a request for substitution. The following are not considered to be requests for substitution:
 - 1. Substitutions requested during the Bid period, and accepted by Addendum prior to opening of bids, are included in the Contract Documents and are not subject to the requirements specified in this Section.
 - 2. Revisions to the Contract Documents requested by the City.
 - 3. Specified options of products and construction methods included in the Contract Documents.
 - 4. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.3 REQUIREMENTS

- A. Contractor's Total Bid Price for the work of this Contract shall be based on products, equipment items, or services listed by manufacturer's or supplier's name in the Technical Specifications.
- B. For a product or manufacturer which is not specifically named, submit request for substitution. Where the terms "or equal", or "or approved equal," or similar references are used, submit request for substitution for product or manufacturer not specifically indicated or named in the Specifications.
- C. Deviations from the Plans or Specifications shall not be the basis for any extra charges above the original Bid Price for the work. Substitution requests shall not be the basis for extra charges above Contractor's Bid Price for the work.
- D. Contractor shall bear the cost of making all mechanical, electrical, structural, utility, or other changes required to accommodate the proposed substitution.
- E. Substitutions described in this Section shall not be construed as submittals as described in Section 01 33 00 - Submittal Procedures.

1.4 SUBSTITUTIONS BY CONTRACTOR

- A. Not later than 10 calendar days before the bid opening, or within 10 calendar days after the date of Award, the Contractor shall submit a complete typewritten list of proposed substitutions including the substituted manufacturer's name, trade name, and model

number (use Section 00 49 18). During the above time period, the City will consider formal requests for proposed substitutions only under the following conditions:

1. The burden of proof as to the type, function, and quality of proposed substitutions shall be upon the Contractor.
2. The City will determine the quality and utility of the Contractor's proposed substitutions. The City's decision shall be final.
3. The City may require the Contractor to furnish at the Contractor's expense, a special performance guarantee, or other surety with respect to any substituted product, equipment item, or service.
4. After the 10 calendar day period, requests will be considered only when a product becomes unavailable due to no fault of the Contractor. In such cases, all provisions of this Section shall continue to apply.
5. The City's costs for reviewing substitution requests submitted after the 10 calendar day period shall be deducted from progress payments due the Contractor. This charge will not apply in cases where the product, equipment item, or service has become unavailable due to no fault of the Contractor.
6. With respect to all cost savings afforded by Contractor's proposed substitution, if it should be necessary (due to product unavailability) to make a substitution of any product, equipment item or service after the 10 day limit described in Article 1.4, A, then fifty percent (50%) of such savings shall revert to the City and fifty percent (50%) shall revert to Contractor. All such savings shall be shown as a credit upon final negotiation of the actual Contract Lump Sum Price. Provide manufacturer's pricing information to document actual costs of the original and the substituted product(s).

B. Supporting Data: Provide complete data similar to that required for the product originally specified, including drawings, samples, literature, or detailed information sufficient to demonstrate that the proposed substitution is equal in quality and utility to the product or equipment originally specified.

1. Provide information regarding the effect of the substitution, if any, on the construction schedule.
2. Name and address of similar projects on which the substituted product or equipment has been used, and date of installation.
3. Complete breakdown of costs, indicating the amount to be deducted from the Contract Sum if the proposed substitution is accepted.
4. Signed statement that the proposed substitution is in full compliance with the Contract Documents and applicable regulatory requirements.
5. List of other work, if any, which may be affected by the substitution.
 - a. Contractor shall be responsible for the effect of a substitution upon related work, and pay the additional costs generated thereby, including the City design services associated therewith.
6. Information on availability of maintenance service and source of replacement materials.
7. Sample of manufacturer's standard form of warranty or guarantee for the proposed substitution.
8. Where required, itemize comparison of proposed substitution with product or equipment specified and list significant variations.
9. Submit data relating to changes in contract schedule.
10. Include accurate cost data comparing proposed substitution with product or equipment indicated or specified and amount of net change in Contract Sum.
 - a. Include costs to other Contractors and costs for revisions to Drawings, Details, or Specifications.
11. Provide complete details regarding changes in requirements for power or other support facilities, auxiliary equipment or structural modifications.

- C. Manufacturer's Product Modifications: Submit a request for substitution in accordance with the above if the specified product or equipment model has been modified or improved by the manufacturer. If approved, the substitution shall be at no additional cost to the City, and all cost savings shall be credited to the City.
- D. Substitutions will not be considered for acceptance when:
 - 1. They are indicated or implied on submittals without a formal request from Contractor.
 - 2. They are requested directly by a subcontractor or supplier.
 - 3. It is specifically stated: "No Substitutions".
- E. Substitutions required by inability to obtain products or equipment specified will not be acceptable grounds for increase in Contract Sum or time for completion of the Contract.
- F. Substitute products, equipment, or services shall not be ordered without written acceptance by the City.
- G. Notify the City at the time of request for substitution where use of substituted products, equipment, or services indicated or specified would delay completion of the Contract.

1.5 QUALITY ASSURANCE

- A. Certify with each substitution request that Contractor:
 - 1. Has investigated the proposed substitution and determined that it is equal to or superior in all respects to the product or equipment indicated or specified.
 - 2. Will furnish the same warranty/guarantee or bond for the proposed substitution as for the product or equipment indicated or specified.
 - 3. Will coordinate the installation of an accepted substitution into the Work and make such other changes as required to complete the work in accordance with the Contract Documents and applicable regulatory requirements.
 - 4. Waives claims for additional costs associated with the substitution which may subsequently become apparent.
 - 5. Will pay costs of changes to Contract Documents required by accepted substitutions.

1.6 PROJECT CONDITIONS

- A. The City will receive and consider Contractor's request for substitutions only under the following conditions as determined by the City. If the following conditions are not satisfied, the City will return the request without action except to record noncompliance with the requirements.
 - 1. The burden of proof as to the type, function, and quality of proposed substitutions shall be upon Contractor.
 - 2. The City will determine the quality and utility of Contractor's proposed substitutions. The City's decision shall be final.
 - 3. The City may require Contractor to furnish at Contractor's expense, a special performance guarantee, or other surety with respect to any substituted product, equipment, or service.
 - 4. Extensive revisions to the Contract Documents are not required.
 - 5. The substitution requested is consistent with the general intent of the Contract Documents.
 - 6. The request is timely, fully documented, and properly submitted.
 - 7. The specified product or equipment cannot be provided within the Contract Time as substantiated by written documentation from the supplier or vendor. The City will not consider the request if the product or equipment cannot be provided as a result of failure to execute the Work promptly or coordinate activities properly.

8. The specified product or equipment cannot receive necessary approval by a governing authority, and the requested substitution can be approved by the governing authority.
 9. The specified product or equipment cannot be coordinated with other specified products or materials, and where Contractor certifies that the proposed substitution can be coordinated.
- B. Failure of Contractor to provide substitution requests in a timely manner shall be sufficient cause for rejection by the City of any substitutions proposed.
- C. Contractor's submittal and the City's acceptance of shop drawings, product data, or samples for work not conforming to the requirements of the Contract Documents shall not constitute an acceptable or valid request for substitution, nor do they constitute approval.

1.7 THE CITY'S ACTION

- A. All substitutions shall require written approval by the City.
- B. The City's approval of any substitution shall not relieve Contractor from compliance with all other requirements of the Contract Documents and for adequacy of the substituted items.
- C. It shall be understood that:
1. The City will determine whether or not a product, equipment, or service is equal for the purpose intended in quality and utility to that specified. The City's acceptance of substitutions shall not be construed as relieving Contractor of its responsibility to comply with the requirements of the Contract Documents.
 2. The decision of the City on all such questions of equality and acceptability of proposed substitutions shall be final.
 3. No claim of any sort shall be made or allowed against the City, its agents or sub-consultants as a result of any final decision to accept or reject any proposed substitute product, equipment, or service.
 4. Use the specified product or equipment if the proposed substitution is not accepted or if the City's decision is not received within the time specified above.
- D. If necessary, the City will request additional documentation for evaluation within one week of receipt of a substitution request. Promptly provide the additional documentation requested. The City will notify Contractor of acceptance or rejection of proposed substitutions within 2 weeks of receipt of the additional documentation.
- E. Contractor shall be responsible for all resultant changes and all additional costs which the accepted substitution requires in Contractor's work, the work of its subcontractors of all tiers and of other Contractors, and shall effect such changes without cost to the City.
- F. If a proposed substitution is not accepted, use the product, equipment, or service originally specified or indicated.

1.8 DESIGN INTENT

- A. In preparing these Specifications, the City has named those products which to his knowledge can meet the Specifications and are equivalent in construction, functional efficiency, and durability.
- B. The first-named manufacturer is the basis for the project design and the use of alternative named, second-named, or unnamed manufacturers' products may require modifications in the project design and construction. If such alternatives are proposed by the

Contractor and are favorably reviewed by the City, the cost of all modifications including utilities and support systems will be borne entirely by the Contractor.

1.9 CONTRACTOR'S REPRESENTATION

- A. Requests for substitution(s) constitute a representation that the Contractor:
1. Has investigated the proposed substitution and determined that it is equal to or superior in all respects to the product indicated or specified.
 2. Will furnish the same warranty/guarantee or bond for the proposed substitution as for the product indicated or specified.
 3. Will coordinate the installation of an accepted substitution into the Work and make such other changes as required to complete the work in accordance with the Contract Documents and applicable regulatory requirements.
 4. Waives claims for additional costs associated with the substitution which may subsequently become apparent.
 5. Will pay costs of changes to Contract Documents required by accepted substitutions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - General

1.1 SUMMARY

- A. Section Includes: General procedural requirements for changes, modifications, and extras.
- B. Related Sections:
 - 1. Section 00 72 00 – General Conditions, Article 6
 - 2. Section 01 20 00 – Price and Payment Procedures: Application Procedures
 - 3. Section 01 31 13 – Project Coordination: Requests for Information
 - 4. Section 01 33 00 – Submittal Procedures: Construction Schedule
 - 5. Section 01 78 39 – Project Record Documents

1.2 MINOR CHANGES

- A. Clarifications: The City will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract by issuing written interpretations or clarifications of the Contract Documents as the City deems necessary such as supplemental instructions on Request for Information (RFI) Form or by a written field order by the City Representative.
 - 1. Refer to Section 01 31 13– Coordination for procedures for requesting information or clarifications on Contract Documents.
 - 2. Pursuant to Paragraph 6.03, Change Order Requests and Proposed Change Orders, of the General Conditions, such written interpretations and clarifications shall be binding on the City and Contractor. Promptly execute the work required by the City's written interpretation or clarification.
- B. Notification: If Contractor believes that a written interpretation or clarification justifies an adjustment in the Contract Sum or Time, submit to the City Representative a request for Change Order therefore before beginning the work required by the written interpretation or clarification or within seven calendar days from the date of the City's response.

1.3 DOCUMENTATION

- A. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.
- B. On request and within a reasonable period of time, provide additional data to support computations:
 - 1. Quantities and type of products.
 - 2. Labor breakdown by trade classification, wage rates, and estimated hours.
 - 3. Equipment breakdown by type, size, rental rates, and equipment hours.
 - 4. Taxes, insurance and bonds.
 - 5. Mark-ups, including overhead and profit.
 - 6. Justification for any change in Contract Time, including a schedule analysis identifying critical progress schedule activities delayed by the PCO.
 - 7. Credit for deletions from Contract and work estimates of subcontractors, similarly documented.
- C. Support each claim for additional costs, and for work done on a force account basis, with additional information:
 - 1. Origin and date of claim.

2. Date of authorization for extra work by the City Representative as per Force Account Change Order issued to Contractor.
 3. Dates and times work was performed, and by whom.
 4. Time records and wage rates paid.
 5. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
- D. Failure to properly document or provide supporting documents related to additional work or credit of a claim shall invalidate such claims or upon decision of the City, proceed with the City's best cost estimate of disputed additional work or credits.
- E. Documentation, data preparation, and administration of change orders shall be considered as incidental work and no additional payment will be made therefore.

1.4 CHANGE PROCEDURES

- A. The City may issue a Proposed Change Order (PCO) Memorandum which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, and a change in Contract Time for executing the change if necessary.
1. Prepare and submit a cost proposal estimate to the City Representative for approval within 21 calendar days of receiving a PCO, furnishing a complete breakdown of costs of both credits and extras, itemizing materials, labor, taxes, and mark-up for overhead and profit. Subcontract work shall also be indicated on the same form as for Contractor's breakdown.
 2. Limit Contractor's and subcontractor's mark-ups to the maximum percentages as specified for force account work under Paragraph 6.06, Cost of the Change Order Work, of the General Conditions. Contractor's mark-up on work performed by a subcontractor shall be a maximum of 5 percent of the subcontractor's total cost. No additional payment will be made by reason of performance of additional work by a subcontractor.
 3. All requests for time extensions pursuant to Paragraph 7.02, Delays and Extensions of Time, of the General Conditions or claims for damages for delay caused by the City's processing of Change Orders will be reduced by the additional time in excess of that allowed for Contractor to submit a PCO cost proposal as provided herein, provided that the activity was shown on the critical path on the base line schedule.
 4. Submit additional data as specified under Article "Documentation" as requested by the City Representative.
 5. The City will review Contractor's cost proposal estimate and will negotiate the final terms of Change Order with Contractor.
 6. Upon approval of PCO by the City, the City will issue Change Order directing Contractor to proceed with the change in the work.
- B. Contractor may propose a change by submitting a request for a PCO number to the City, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on the Work schedule and operations.
1. Document any requested substitutions in accordance with Section 01 25 13.
 2. Contractor's RFI submittal shall not constitute a request for change.

1.5 UNILATERAL CHANGE ORDER

- A. When time does not allow for the Change Order to be negotiated through the PCO process, or when the City and Contractor are unable to agree on the cost or time required to complete the change in the Work described in a PCO, the City may issue a document instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order based on the City's estimate of costs, if any.

- B. The document will describe changes in the Work, and will indicate the City's determination of any change in cost.
- C. Promptly execute the change in Work.
- D. If Contractor disagrees with the City's estimate of cost and time or other conditions of a Unilateral Change Order, Contractor shall submit a written protest in accordance with Paragraph 6.05, Unilateral Change Orders, of the General Conditions within 15 calendar days of its receipt and before proceeding with the required work.
 - 1. After the written protest has been filed and within 7 calendar days of completing said disputed work, submit a notice of potential claim for the cost differential between Contractor's actual cost and the City's estimate included in the Unilateral Change Order.
 - 2. Within 30 calendar days of the date of said notice of potential claim submit to the City Representative a claim with written documentation as specified under Article "Documentation".

1.6 FORCE ACCOUNT WORK

- A. All Force Account work shall be documented and reported to the City Representative on the day that the work is performed. No Force Account work that is not so reported to the City Representative will be paid by the City. The Contractor shall notify the City Representative before the work begins or within 15 minutes of the shift of work.
- B. Force account charges, a definite price for which has not been agreed on in advance, shall be recorded daily upon a Daily Force Account Report Form obtained from the City Representative.
 - 1. Contractor or authorized representative shall complete and sign Form.
 - 2. The Form shall provide an itemized account and supporting data and shall be countersigned by the City Representative.

1.7 EXECUTION OF CHANGE ORDERS

- A. Execution of Change Orders: The City will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- B. The City shall have the right to audit all records in possession of Contractor relating to activities covered by Contractor.

1.8 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of work affected by the change, and resubmit.
- C. Promptly enter changes in Project Record Documents.

1.9 CONTINUING WORK DURING DISPUTES

- A. The Contractor shall carry on and prosecute the work and maintain the progress schedule during all disputes and disagreements with the City. Time is of the essence. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the City Representative and the Contractor may otherwise agree in writing.

- B. The Contractor shall notify the City Representative at the beginning of each single day, shift, or phase before performing the disputed work. Failure to notify the City Representative at the beginning of each day, shift or phases will result in no verification of any work performed under dispute or disagreement. The Contractor and the City Representative shall agree upon the size and number of manpower, equipment, and materials for documentation at the end of every day, shift or phase until resolution or completion of the disputed work.
- C. Submit a Disputed Work Report Form on the day that work is performed if the City and Contractor disagree as to the City's determination of said work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 29 73
SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Submittal requirements, coordination, review and acceptance of the schedule of values for evaluating progress payment applications.
- B. Related Sections:
 - 1. Section 00 72 00 – General Conditions, Article 9, Payments and Completion
 - 2. Section 01 20 00 – Price and Payment Procedures

1.2 SUBMITTAL REQUIREMENTS

- A. Submit within 15 calendar days after the Notice to Proceed date but in no event later than 7 days before Contractor's initial application for payment, a schedule of values covering the lump sum items.
- B. The schedule of values shall consist of a detailed cost breakdown of Contractor's Bid covering the Lump Sum Work and Lump Sum Items of Work by classification, in accordance with the Construction Specifications Institute's MasterFormat® (2010 Update) as represented by the Specifications Table of Contents.
- C. The specific format and detail shall be acceptable to the City Representative for estimating and evaluating progress payments, as follows:
 - 1. An unbalanced schedule of values providing for overpayment of Contractor on items of work that would be performed first will not be accepted.
 - 2. The sum of the individual costs listed in the schedule of values shall equal the lump sum price bid under the Bid Item in the Schedule of Bid Prices for the Work activity.
 - 2. Provide breakdown in sufficient detail to facilitate continued evaluation of progress payment applications.
 - 3. Show the total cost of each item of work including all labor, material, equipment, fixed cost elements, incidental expenses, and overhead and profit.
 - 4. Overhead and profit shall not be listed as separate items.
 - 5. Identify separate line items for temporary items, mobilization, final cleaning, operations and maintenance manuals, and start-up, adjusting and testing.
 - 6. Coordinate the preparation of the schedule of values with Contractor's progress schedule.
 - 7. Separate costs for Bayview Gateway and Tulare Park and provide a summary total for each park. This will also be required for progress payments.

1.3 REVIEW AND ACCEPTANCE

- A. The City Representative will review and return Contractor's schedule of values with comments within 7 days of its receipt. Contractor shall make corrections requested by the City Representative and resubmit for approval within 3 days.
- B. Final acceptance by City Representative shall indicate only consent to the schedule of values as a basis for preparation of applications for progress payments, and shall not constitute an agreement as to the value of each indicated item.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 13

COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Provisions of coordination of the Work of the Contract and requesting clarifications and interpretations of the Contract Documents.
- B. Related Sections:
 - 1. Section 01 31 19 – Project Meetings.
 - 2. Section 01 33 00 – Submittal Procedures.
 - 3. Section 02 23 27 – Force Main Monitoring

1.2 GENERAL COORDINATION

- A. Contractor shall be responsible for all project coordination.
- B. Coordinate scheduling, submittals, and work of various sections to assure efficient and orderly sequence of installation of interdependent construction elements.
- C. Coordinate the requirements for operation and maintenance data with suppliers and manufacturers of equipment and systems and the City to ensure timely delivery of required submittals in accordance with Section 01 33 00.
- D. Coordination with the Fire Department: The Project includes work adjacent to Fire Station No. 25, a fully functioning Fire Station, that will impact the parking area and main pedestrian entry. Work includes replacing and relocating the fencing around a secure parking area, grading and paving within the enlarged secure parking area, demolishing a wharf currently serving as parking for the station, and constructing a wharf and paving adjacent to the main pedestrian entrance to the station. Contractor must coordinate work, schedule, and security measures with the Fire Department to ensure the station remains operational and secure. Contractor shall contact fire department prior to bidding and fully satisfy him or herself as to requirements and restrictions. Specific coordination issues include, but are not limited to:
 - Closure of main pedestrian entry for a period of time, Contractor to furnish a remote doorbell
 - Security of the parking lot
 - Advance notification (2 weeks minimum) for noisy activities such as pile driving, jack hammering, etc.

Contract: San Francisco Fire Department
Ken Lombardi, Assistant Deputy Chief
415.674.5066 Direct
415.238.5271 Cell
ken.lombardi@sfgov.org

- E. Coordination with the Railroad: The Project includes work adjacent to and crossing a functioning freight railroad spur track owned by the Port. The track connects the Port's piers and railyard to the Main Line via the Quint Street Lead. Both Union Pacific Railroad and San Francisco Bay Railroad operate trains on the track. Rail traffic typically includes one (1) train per weekday, both into and out of the railyard, between the hours of 10am

and noon. Contractor's activities shall not impact typical railroad operations. Contractor shall coordinate with SF Bay Railroad as the primary contact for all railroad related issues.

Contract: San Francisco Bay Railroad
Jake Studer, Manager of Railroad Operations
Office: 415-642-7177
Cell: 831-331-7180
jake@sfbayrail.com

- F. Coordination with Port Maritime Division: The Project includes work in Islais Creek, between the Illinois Street and 3rd Street Movable Bridges. Movement of vessels and equipment along the Creek has the potential to disrupt Port maritime activities and must be coordinated.

Contract: Port Maritime Division
Aaron Golbus
Office: 415-274.0521
Cell:
aaron.golbus@sfport.com

- G. Coordination with SFPUC: The Project includes work in the vicinity of a 60-inch diameter sewer force main including pile driving activities. Contractor's attention is drawn to requirements of specification section 02 32 27 Force Main Monitoring.

- H. Coordination with Movable Bridges: The Project is located between two moveable bridges crossing Islais Creek. The Third Street Bridge (Nishkian) to the west is currently not operational. The Illinois Street Intermodal Bridge to the east is operational

Illinois Street Intermodal Bridge
72 hour notice required to open bridge
Contact Port of SF through Project Resident Engineer
Clearance: 64 feet horizontal, unlimited vertical (open)

1.3 SUBCONTRACT COORDINATION

- A. Coordinate the Work and do not delegate responsibility for coordination to any Subcontractor.
- B. Anticipate the interrelationship of all Subcontractors and their relationship with the Work.
- C. Resolve differences or disputes between Subcontractors, and other contractors concerning coordination, interference, or extent of work between sections of the specifications including assigned Contract work. Contractor's decisions, if consistent with the Contract Document requirements, shall be final.
- D. Coordinate the work of Subcontractors so that their portions of the work are performed in a manner that minimizes interference with the progress of the Work.

1.5 ADMINISTRATION

- A. General: Prepare a written memorandum on required coordination activities. Include such items as required notices, reports and attendance at meetings. Distribute this memorandum to each trade performing work at the project site. Prepare similar memorandum for separate contractors where interfacing of their work is required.

- B. Coordination Meetings: Conduct general project coordination meetings with Subcontractors at least weekly at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as regular project meetings and special preinstallation meetings. Request representation at each meeting by every party currently involved in coordination or planning for the work of the entire project. Keep the City informed about coordination meetings. Conduct meetings in a manner which will resolve coordination problems. Record results and minutes of each meeting and distribute copies to everyone in attendance and to the City.

1.6 REQUEST FOR INFORMATION (RFI)

- A. Requirement: It is Contractor's responsibility to review Contract Documents a minimum of 30 days in advance of the work to be executed, and to request for information so that the City will have sufficient time to respond to Requests for Information prior to the start of actual construction of that part of the Work to which the RFI relates.
- B. Form:
 - 1. When an interpretation or clarification of the Contract Documents is required from the City, make the request on Form obtained from the City Representative.
 - 2. Fill in all applicable information on the form.
 - 3. Use one form for each request; limit the subject to one design discipline to expedite reply. Attach supplementary information where necessary.
 - 4. The City will reply or give summary of reply on the same form and include supplementary information where necessary.
 - 5. The completed form shall be the written record of each RFI.
 - 6. Do not use any other RFI form on this Project.
- C. Uses:
 - 1. The RFI form shall be used for interpretation or clarification of the Contract Documents only.
 - 2. Do not use the RFI form for the following; the City will not reply and will reject the RFI:
 - a. Product or material substitution.
 - b. Questions relating to construction means, methods, techniques, sequences, procedures or safety precautions. (These are Contractor's responsibilities exclusively.)
 - c. Questions relating to construction schedule, coordination between trades, or division of work among subcontractors. (These are also Contractor's responsibilities exclusively.)
 - d. Questions on contract administration procedural matters, unless they require interpretation or clarification of the Contract Documents.
 - e. Dimensions or quantities which are shown on the Contract Documents, or which can be measured from the building, or calculated from the information contained in the Contract Documents.
 - f. Confirmation of interpretations or clarifications previously provided by the City.
 - g. The City will reject requests for interpretations or clarifications of the Contract Documents which can reasonably be derived from a review of the Contract Documents.
- D. Reply:
 - 1. The City will endeavor to reply to all RFI's promptly, generally no later than 15 days from the day received.
 - 2. When an RFI involves a complex subject, extensive research or development, or substantial input from other governmental agency, the City will inform Contractor

- and request additional time to prepare the reply. Contractor shall cooperate and agree to a reasonable time extension.
3. The reply shall be a clarification or an interpretation of the Contract Documents; the reply is not an authorization of change in the Contract Sum or Time.
 4. Such written interpretation or clarification will be binding on Contractor and City. If Contractor believes that a written interpretation or clarification justifies an adjustment in the Contract Sum or Time, then Contractor shall make a written claim therefore as provided in Paragraph 6.03, Change Order Requests and Proposed Change Orders, of the General Conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements and procedures for pre-construction and other project meetings to ensure quality of work.

1.2 GENERAL

- A. The City Representative will arrange project meetings after consultation with Contractor and will inform the Contractor of the meeting time and location.
- B. The Contractor's attendance is required at all meetings.
- C. The City Representative will be responsible for taking the meeting minutes and providing the Contractor with a copy. The Contractor shall duplicate them and distribute the meeting minutes to the other participants of the meeting. There will be a fifteen-day limit for protesting items recorded in the minutes.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. Prior to commencement of Work, the City Representative will schedule and conduct a preconstruction conference.
- B. Contractor shall be prepared to review and discuss the construction schedule and sequence of operations. The conference will be held at a time and location selected by the City Representative.

1.4 PROGRESS MEETINGS

- A. The City Representative will schedule, prepare agenda, and administer meetings throughout progress of the Work at weekly intervals or more frequently, as required by the City Representative.
- B. Attendance Required: Job superintendent, major Subcontractors and suppliers, as appropriate to agenda topics for each meeting.
- C. Location: Project field office, unless otherwise notified.
- D. Contractor shall provide a 3-Week Look Ahead Schedule.

1.5 PRE-INSTALLATION CONFERENCES

- A. When required in individual specification Sections, Contractor shall convene a pre-installation conference at work site prior to commencing work of the Section.
- B. Contractor shall require attendance of parties directly affecting, or affected by, work of the specific Specification Section.
- C. Contractor shall notify City Representative four days in advance of meeting date.

- D. City Representative will prepare agenda, preside at conference, record minutes, and distribute copies within two days after conference to participants, with two copies to Contractor.
- E. Contractor shall review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULES - CPM

PART 1 - GENERAL

1.1 SUMMARY

- A. Scheduling of Work under the Contract shall be performed by Contractor in accordance with requirements of this Section.
 - 1. Development of the Construction Schedule, resource loading of the Schedule, and Project status reporting requirements of the Contract shall employ computerized Critical Path Method (CPM) scheduling.

1.2 RELATED DOCUMENTS

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

1.3 GENERAL REQUIREMENTS

- A. Within 15 calendar days after the Notice To Proceed (NTP), Contractor shall furnish three (3) copies of a construction schedule showing in detail the proposed sequence of activities. The City will not process any progress payments until the required schedule is submitted.
- B. The CPM schedule shall represent Contractor's plan of operation performed within the specified contract completion time and within the contract bid price. It shall represent a practical plan to complete the work. A schedule extending beyond the contract completion date will not be accepted.
- C. Contractor is required to involve all subcontractors in the development, implementation, and updating process of its schedule.
- D. The CPM Schedule shall be submitted to the City's Representative for approval. After review and prior to acceptance, the Contractor shall revise the CPM schedules to incorporate the City's comments and shall submit final documents to the City's Representative for approval within five (5) working days.
- E. Acceptance or approval of the schedule is of general nature only. Failure by Contractor to include any element of work required for the performance of this contract shall not excuse him from completing all work required within any applicable completion date, notwithstanding the City approval of the CPM diagrams. Items missing from the schedule are assumed to be incidental work and not missing from the schedule after City approval, Contractor may submit a revised schedule to include these items. The revised schedule is subject to review and approval by the City as described in "Revised Schedule" clause. No extension of time will be granted because of errors or omissions on the schedule. It is Contractor's responsibility to incorporate all necessary activities to cover the work required by the Contract Documents.
- F. The CPM schedule and analysis when approved by the City shall constitute the official project work schedule throughout the construction period. No alteration of the logic, duration of activities, etc. will be allowed without the approval of the City.

1.4 CPM SCHEDULE CONTENT

- A. The progress schedule shall be calendar-based, using a precedence method network diagram in the CPM format indicating the critical path for the execution of the work utilizing the entire contract time.
- B. The network diagram(s) shall show the following activities:
 - 1. Required approvals, permits, notices, etc. necessary for Contractor's execution of the proposed work.
 - 2. Preparation of shop drawing and working drawing submittals.
 - 3. Administrative activities, procedures, and subsidiary actions that will affect the critical path:
 - a. Submittal to and review by the City of shop drawings within the time limits noted in Contract Documents.
 - b. Submittal to and review by the City of substitutions as noted in Contract Documents.
 - c. Submittal to and review by the City of alternative construction methods or alternative designs, including all supporting data relating thereto, and
 - d. Submittal to and review by the City and all utility companies involved, a schedule for coordination of all utility relocation work necessitated by Contractor's operations.
 - 4. Procurement of materials and equipment including ordering, fabrication, and delivery.
 - 5. Construction activities and sub activities tasks, including all activities shown on the Schedule of Values.
 - 6. Scheduled completion date shall be as specified within the time allowed.
 - 7. Project interim milestones shall be a maximum of two (2) events to be determined during submittal process.
- C. All CPM activity time duration shall be specified in five (5) day work weeks excluding holidays to be identified by Contractor.
- D. A maximum of fifteen (15) days duration shall be given to each CPM construction activity. Any activity in excess of the fifteen days shall be broken down in detail so that each detail activity will not exceed the fifteen days maximum.
- E. All constraints, dates, and lags will require the City's approval. All activities shall have succeeding activities except project completion. Contractor shall demonstrate the necessity of having any dummy activities.
- F. Negative float will not be allowed on the CPM schedule on the initial submittal. Initial CPM schedule with negative floats shall be rejected immediately. Contractor shall provide sufficient manpower (multiple crews) and maximize working hours (extended hours and /or weekend work) to perform the required work within the specified completion time and contract bid price.
- G. The CPM schedule's critical activities shall not exceed fifteen percent (15%) of the total number of activities. Critical activities are those which have the least float.

1.5 CPM SCHEDULE FORMAT

- A. The CPM schedule shall be prepared by Contractor using the precedence method of network diagramming.
 - 1. Time Scaled Graphic network diagram showing the critical path. The graphic network diagram shall not be larger than 24" x 48".
 - 2. Tabulated Schedule shall include the following information for each activity:

- a. Activity beginning and ending event numbers
 - b. Estimated duration in working days
 - c. Concise description of activity
 - d. Trade code (responsibility code including Contractor, all Subcontractors, Supplier, and Owner)
 - e. Early start date (ES) and early finish date (EF) (calendar dated).
 - f. Late start date (LS) and late finish date (LF) (calendar dated)
 - g. Actual start date and actual finish date (calendar dated)
 - h. Total float
 - i. Percent completed
3. CD-ROM - Contractor shall furnish information of the schedule CD-Rom with cover in a format using the Primavera Sure Track software with the following requirements.
- a. Sorting the activities as required.
 - b. Calculate the schedule as required in the updated schedule.
 - c. Include resource requirement as required.
 - d. Inputting actual start and completion dates of completed activities.
 - e. Inputting actual start dates and percent completion of activities in progress.
 - f. Print the total and free float for each activity.
4. Additional Information - The following computer- generated reports supplied with the project identification, schedule and run date, and type of sort on the first page.
- a. List of all activities sorted, by total float including ES, LS, EF, LF, and Total Float duration.
 - b. List of all activities sorted numerically including ES, LS, EF, LF, and Total Float duration.
 - c. List of all activities sorted numerically including ES, LS, EF, LF, Total Float duration and Predecessor/Successor information of precedence network.
 - d. List of all activities sorted by responsibility including ES, LS, EF, LF and Total Float duration.
 - e. List of activities on the critical path sorted numerically including ES, LS, EF, and LF.
 - f. List of near critical activities. (activities with total float less than ten (10) working days) sorted numerically including ES, LS, EF, and LF.

1.6 UPDATED SCHEDULE

- A. The CPM schedule shall be updated monthly by Contractor and submitted to the City for review.
- B. Computer calculations of the updated schedule will be made starting from the current data date to the end of the project. Work completed shall be shown with actual start and finish dates for each activity. Work in progress shall be shown with the actual start date and the percentage completed for each activity.
- C. The CPM network diagram shall, at all times, represent the actual history of accomplishment of all activities as well as Contractor's current projected plan for orderly Completion of the work. Contractor shall, at monthly intervals, evaluate work progress with the City by reviewing the actual accomplishments since the previous update.
- D. Contractor's monthly written evaluation of the critical path analysis shall show the following:
 1. Computer printout of the work completed with actual start and finish dates for each activity;
 2. Critical path;

3. Percentage of each activity completed;
 4. Anticipated completion time of entire work;
 5. Description of problem area;
 6. Current and anticipated delaying factors and their impacts
 7. Explanation of corrective action taken or proposed;
- E. This updated schedule shall not have any change in the logic of the network or in the duration of activities. The updated schedule shall be submitted with the monthly progress payment request showing all work completed as that date.
- F. If Contractor during the course of the construction desires to make changes in its method of operating and scheduling, it shall notify the City in writing stating the reasons for the change. Any change to the schedule in the logic, order, or sequence of work, duration activities, etc. shall constitute a revised schedule. A revised schedule will not be in effect until it is approved by the City.
- G. The updated schedule shall have the same format and content as the initial CPM schedule and analysis for review and approval.

1.7 ACTIVITY SCHEDULE

- A. Contractor shall prepare and submit at the weekly progress meeting, in sufficient quantities, on a bar chart format showing a three-week window of the following:
1. Completed activities for last week.
 2. Scheduled activities for the next two weeks.
 3. Correlation to appropriate CPM schedule node or activity identification.
 4. Detailed information including all minor elements, subjectivity, or work phases for the major activity.

1.8 REVISED SCHEDULE

- A. Contractor shall submit to the City a revised critical path schedule with its evaluation whenever a schedule revision is requested or any of the following occurs:
1. A change order affects the completion date or the sequence of the activities;
 2. Progress of any critical activity falls significantly behind schedule;
 3. Delay on a non critical activity changes the course of the critical path; or
 4. Contractor elects to change any sequence of activities affecting the critical path.
- B. All revisions to the Schedule shall be submitted in writing to the City Representative for review and approval. The submission of a revised schedule shall not relieve the Contractor of the responsibility for the notification required by Section 6.22H.2.d of the San Francisco Administrative Code and as required by subparagraph 7.02.D – Notice of Delay of the General Conditions.

1.9 SUBMITTALS

- A. The CPM schedule prepared by Contractor shall be used for planning, organizing, directing, controlling, and reporting all work required by the Contract Documents.
- B. Therefore, the timely submission of the following is required:
1. Three (3) copies of the CPM schedule 10 working days after the official date for Notice to Proceed;
 2. Updated schedule on a monthly basis within 3 working days after update date as established by the City.
 3. Activity schedule on a weekly basis at the progress meeting.
 4. Revised schedule within 10 working days when requested by the City.

- 5. Resubmittal of any rejected CPM schedule, updated schedule, or revised schedule within 5 working days after receipt of the returned schedule marked "RESUBMIT", if necessary.
- C. Failure to comply with timely submission of any one of the above schedules will be just cause to withhold the progress payment of any portions thereof by the City and will trigger liquidated damages listed in Section 00 73 02.

1.10 LIQUIDATED DAMAGES

- A. Failure to submit any one of the above schedules will result in an assessment of two hundred dollars (\$200) per calendar day as liquidated damages per schedule to be deducted from the contract until the required submittals are provided by Contractor.
- B. Liquidated damages are in addition to any remedies taken by the City under the Supplementary Conditions of this Contract.

1.11 APPROVED STANDARD

- A. CPM, as required by this section, shall be interpreted to be generally as outlined and defined in "CPM in Construction Management" by James O'Brien, McGraw-Hill Company, latest issue, Chapters 1 through 7.
- B. Free float is defined as the amount of time that any activity can be delayed without adversely affecting any succeeding activity for the project completion.
- C. Total float is defined as the amount of time that an activity can be delayed without adversely affecting the overall time for the project completion.

1.12 ADJUSTMENT OF THE CONTRACT TIME AND CHANGE ORDER

- A. Adjustments of the contract time due to delays, additional work, or any other cause will only be issued through a contract change order and only for causes specified in the Contract Documents.
 - 1. In the event Contractor requests an adjustment of the contract time, it shall furnish such justification, progress schedule data, and supporting evidence as the City may deem necessary, for a determination as to whether or not the Contractor is entitled to an adjustment of time under the provisions of the Contract.
 - a. Contractor shall submit proof based on revised activity logic, durations, and costs with each request.
 - 2. The progress schedule shall clearly indicate that Contractor has used, in full, all the float time available for work involved in the request.
 - 3. Total and free float are not for the exclusive use of benefit of either the City or Contractor, but is a resource available to both parties on a first needed basis. Contractor shall not be entitled to additional compensation due to schedule impacts for change order work that extends the contract beyond the scheduled completion date, but not beyond the contract completion date.
 - 4. The City determination as to the adjustment of the contract time will be based upon the latest version of the progress schedule accepted at the time of the alleged delay, and all other relevant information.
 - 5. Actual delays in activities which, according to the progress schedule, do not affect the critical path work will not be the basis for an adjustment to the Contract time.
 - 6. No contract time extensions will be allowed for contract change orders for which there are concurrent contract work delays, unless' the excusable delays affect the critical path in the schedule and after all available float has been used.

- B. Contractor shall include, as part of each change order request for which it is requesting an adjustment in the contract duration, a sub network showing logic revisions, duration changes, and cost changes for the work in question and its relationship to other activities on the Progress Schedule. Contractor shall incorporate each Change Order into the updated schedule.
- C. The City will, within 15 working days after receipt of such request and supporting evidence, review the facts and advise Contractor in writing therefor.
- D. The new progress schedule, if accepted by the City shall be in compliance with the requirements under "Revised Schedule" as defined within this section.
- E. Where the City has not yet made a final determination as to the adjustment of the contract time, and the parties are unable to agree to the amount of the adjustment to be reflected in the Progress Schedule, the current schedule will be in effect and be updated regularly every month until a revised schedule is agreed and approved by the City.

1.13 EARLY COMPLETION SCHEDULE

- A. Contractor may provide a progress schedule which contains a schedule completion date earlier than the time allowed for completion of work as specified in these Specifications.
- B. If Contractor submits an early completion schedule, it agrees to the following:
 - 1. The time difference between the Contractor's early scheduled completion date and the Contract completion date will be considered as absolute float.
 - 2. The absolute float is not for the exclusive use of benefit of either the City or Contractor, but is a resource available to both parties on a first needed basis.
 - 3. Contractor's original bid has included all cost for the full duration of the Project from the start date through the official Contract completion date. Specifically, Contractor has provided through its bid, the overhead cost including field office, home office, other off-site yard, and extended overhead cost for the duration of the absolute float between its early scheduled completion date and the Contract completion date in its bid items on the Schedule of Bid Prices or Bid Proposal as specified.
 - 4. If the city requires additional work through change order which will be done after the early schedule completion date and prior to the official Contract agrees that no additional monies will be paid beyond the direct cost related to those change orders.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: This section specifies the general procedures and requirements for submission of shop drawings, product data and samples by Contractor to the City for review. See Technical Specifications for specific submittals.

1.2 DEFINITIONS

- A. "Shop drawings" are drawings, diagrams, schedules and other data specially prepared for the Work by Contractor or a subcontractor, sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work. Shop drawings shall not be reformatted Contract Documents.
- B. "Product data" are illustrations, specifications, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by Contractor to illustrate materials or equipment for some portion of the Work.
- C. "Samples" are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.
- D. Shop drawings, product data, samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required the way Contractor proposes to conform to the requirements of the Contract Documents.
- E. The term "manufactured" applies to standard units usually mass-produced. The term "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements.
 - 1. Shop drawings shall establish the actual detail of manufactured or fabricated items, indicate proper relation to adjoining Work, and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
- F. "Manufacturer's instructions" shall mean the manufacturer's written instructions on the use or application of the product under conditions similar to those at the job site.
- G. "Work description" is a detailed description of the means, methods, tools, equipment, materials, sequence, and any other pertinent information about performance of work.
- H. "Subcontractor qualifications" is a detailed statement of the subcontracting entity or personnel scheduled to perform work including general description of qualifications, representative list of applicable projects, number of years experience, and references complete with telephone numbers and contact persons. Refer to Section 00 72 00 – General Conditions for requirements regarding Subcontractor qualifications prior to award of the contract.
- I. "Field sample" is a sample at the project site to demonstrate the final technique, finish, and construction quality by which the Work will be judged.

- J. A Submittal is defined as any drawing, calculation, specification, product data, samples, manuals, requests for substitutes, spare parts, photographs, survey data, demolition plans, record drawings, bonds, or similar items required to be submitted to the City Representative under the terms of the Contract.

1.3 REQUIREMENTS

- A. The Contractor shall be responsible for distributing approved submittals as required for constructions and for fabricating, furnishing, and constructing work in accordance with approved submittals. The Contractor shall keep one copy of reviewed submittals at the site at all times.
- B. The Contractor shall not use unacceptable submittals nor submitted materials without the City Representative's review stamp for reference in doing work. Submittals returned DISAPPROVED shall be revised by the Contractor and resubmitted to the City Representative for approval; the Contractor shall revise submittals returned APPROVED EXCEPT AS NOTED before proceeding with the subject work.
- C. Approval of submittals shall not relieve the Contractor of the responsibility for errors or omissions in the submittals or from deviations in the Contract Documents unless such deviations were specifically called to the attention of the City Representative in the Submittal Control Form for the submittal.
- D. The Contractor shall be responsible for the correctness of the submittals, for shop fits and field connections, and for the results obtained by use of such submittals. The City Representative will review submittals for conformance with the design concept of the project and for conformance with the requirements of the Contract Documents.
- E. Wherever submittals are required herein, all submittals shall be submitted by Contractor to the City through the City Representative for recording and reviewing by the City.
 - 1. Submittals received from sources other than Contractor will be returned to Contractor without the City's review.
- F. The Contractor shall schedule submittals, enough in advance of scheduled installation dates, to allow time for review or revision.
 - 1. Review and coordinate submittal with other submittals, the construction schedule, testing, procurement, fabrication, delivery and similar sequential activities.
 - 2. Contractor shall be responsible for changes made necessary by Contractor's failure to coordinate submittals in a complete and timely manner.
- G. Make submittals in groups containing all associated items as complete packages of information for review. The City will reject partial submittals.
 - 1. Provide submittal package in a three-ring binder, with table of contents and tab sheet for each system. Tab sheet shall include a list of material and equipment furnished and shall provide ample space for City's review stamp and comments.
 - 2. The City reserves the right to withhold action on submittals requiring coordination with other submittals until related submittals are furnished.
- H. Submittals shall be reviewed, stamped, and approved by Contractor prior to forwarding them for City's review.
 - 1. By approving and submitting shop drawings, product data, and samples, Contractor represents that it has determined and verified dimensions, materials, field measurements, and related field construction criteria, and that it has checked and coordinated the information contained within such submittals with the requirements of the work and of the Contract Documents.

2. When professional certification of performance criteria of materials, systems or equipment is submitted, submittal shall be stamped and signed by the responsible design professional with license number and expiration date representing that the City could rely upon the accuracy and completeness of such calculations and certifications.
- I. No portion of the Work requiring submission of a shop drawing, product data, or sample shall commence until the submittal has been reviewed and accepted by the City. All such portions of the Work shall be executed in accordance with accepted submittals.
 1. No portion of the Work requiring submission of work description, subcontractor qualification or field sample shall commence until the submittal has been reviewed and accepted by the City. All such portions of the Work shall be executed in accordance with accepted submittals.
- J. No change shall be made by Contractor in any submittal after it has been accepted by the City.
- K. If the submittal shows any variation from the Contract requirements because of standard shop practice or other reasons, Contractor shall make specific mention of each variation in its submittal.
- L. The City will review Contractor's submittals only for general conformance with the design concept of the Project and general compliance with the requirements of the Contract Documents. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of Contractor as required by the Contract Documents.
- M. The City's review of Contractor's submittals shall not relieve Contractor of the obligations to comply with the requirements of the Contract Documents. The City's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures. The City's acceptance of a specific item shall not indicate acceptance of an assembly of which the item is a component.
- N. If Contractor makes a submittal which is not required to be submitted, the City will not review such submittal. Contractor shall execute the Work in accordance with the Contract Documents.
- O. Adequate quantities submitted are required for review. No submittal will be processed unless the specified quantities are furnished.

1.4 SUBMITTAL SCHEDULE

- A. The time of submission of a shop drawings, product data, samples, work description, subcontractor qualifications and field samples by Contractor and their processing and returning by the City is a matter which shall be jointly agreed upon by both parties in order that the submittals will be available when needed by the construction process and so that each party can plan its workload in an orderly manner. Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmits.
 1. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The City Representative will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 2. If an intermediate submittal is necessary, process the same as the initial submittal.

3. Allow two weeks for reprocessing each submittal.
 4. No extension of Contract Time will be authorized because of failure to transmit submittals to the City Representative sufficiently in advance of the Work to permit processing.
- B. Prepare the Submittal Schedule in the format acceptable to the City, integrating it with or as a by-product of the Construction Schedule, and shall submit it to City 15 calendar days prior to the submission of the first such submittals or simultaneously with the CPM Schedule, whichever is earlier. No submittals will be processed before the Submittal Schedule has been reviewed and accepted by the City.
- C. In preparing the Submittal Schedule, the Contractor shall first determine from the Construction Schedule the date the particular item related to a particular system is needed for the Work. Working backwards, the Contractor shall add the required number of days for processing the submittal, shipment, fabrication, delivery of operation and maintenance manuals, and similar activities to determine the date of the submittal.
1. Contractor shall allow minimum 21 calendar days for the City's review of the submittal and shall anticipate that incomplete, inadequate, or incorrect submittal will require resubmission.
 2. Contractor shall include a minimum 21 calendar days of float in the construction schedule for each submittal activity to allow for resubmissions.
 3. If more than one resubmittal is required, the costs of reviewing the extra resubmittals will be deducted from progress payments due Contractor. Such costs shall include the City's costs and the City's consultant fees.
- D. Adjust the Submittal Schedule monthly with the Construction Schedule to produce an orderly, even workload, without peak loads if possible, and yet able to meet the needs of the review and construction processes. Submit two copies of the Submittal Schedule after it is completed and each time it is updated by Contractor.
- E. Contractor shall be solely responsible for scheduling of submittals. No extension of Contract Time will be granted for untimely submittals or required resubmittals.
- F. Delays caused by the need for resubmittal shall not constitute a basis for an extension of Contract Time.
- G. Delays in the work caused by an incorrect submission or insufficient data will not constitute reason for an extension of Contract Time.

1.5 PROCEDURES

- A. Submittal cover sheet will be provided by the City. The following information will be provided by the Contractor:
1. Identification of the project, Contractor, subcontractor, major supplier.
 2. Identify pertinent Drawing sheet and detail number, and Specification section number as appropriate.
 3. Identify deviations from Contract Documents.
 4. Submittals shall be sequentially numbered by the Contractor.
 5. Provide space for the Contractor's approval and City Representative's review stamps on submittals.
- B. Transmit each submittal to the City with a Submittal Control Form to be supplied by the City Representative. Deliver submittals to the City Representative at the address to be provided at the preconstruction meeting.

- C. Transmittal Form: Use Submittal Record forms available from the City at no cost to Contractor. Consecutively number the transmittal forms. Resubmittals shall have original number with a numbered suffix. Fill in information as applicable.
- D. Identification: Identify submittals with the following information:
 - 1. Project name and location.
 - 2. Contractor's, Subcontractor's, supplier's, or manufacturer's name, address, and telephone number.
 - 3. Submittal number.
 - 4. Product identification or shop drawing title, number, revision, and date as applicable. Where product data contain more than one product, model, selection, etc., clearly mark and identify the information intended to be reviewed by City.
 - 5. Reference to (Contract) Drawing or Specification Section as applicable.
 - 6. Apply Contractor's stamp, signed or initialed, certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accordance with the requirements of the Work and Contract Documents.
 - 7. Provide space for City's review stamp. Space shall be minimum 4" x 6".
 - 8. Where multiple Specification Sections govern any portion of the work or where multiple trades are involved in any portion of the work (e.g., steel, mechanical and electrical items embedded in concrete), indicate all pertinent Specification Sections in its submittal identification.
 - 9. Revise any resubmittals as required and identify all changes made since previous submittal.
- E. Packaging of Submittals:
 - 1. Submittals shall be wrapped or packaged to prevent damage during delivery.
 - 2. Reproducible drawings shall be rolled and not folded.

1.6 SHOP DRAWINGS

- A. Submit in the form of one reproducible and 6 copies. The reproducible of drawings greater than 11" by 17" shall be unbound white paper.
- B. Shop drawings shall be submitted only by Contractor. Submittal of incomplete or unchecked shop drawings will not be acceptable.
- C. When the shop drawings have been reviewed by the City, two copies and one marked-up reproducible will be returned to Contractor appropriately stamped.
- D. If the shop drawings are not accepted, five copies will be returned to Contractor with the City's review comments indicated.
- E. Resubmit shop drawings in the same manner and quantity as specified for the original submittal.
- F. Clearly identify and provide explanation of changes made by Contractor on the resubmitted shop drawings.
- G. Each shop drawing submitted shall be sized as follows:
 - 1. Maximum sheet size: 34"x 22" ("D"-size) with a 1" border and a 2" binding edge to the left of the border on the short side of the sheet.
 - 2. Minimum sheet size: 8-1/2" x 11" with 1/4" border on three sides and 1/2" binding edge on the long side.

- H. Catalog sheets meeting the specific requirements may be substituted for the required drawings.

1.7 PRODUCT DATA

- A. The submittal requirements shall be as follows:
 - 1. Submit six (6) copies of product data. After review, two will be returned to Contractor.
 - 2. Mark each copy to identify applicable products, models, options and other data. Supplement manufacturer's standard data to provide information unique to this project.
- B. Product data and manufacturers' standard drawings submitted for review shall show only the pertinent information.
 - 1. Identify the pertinent information by circling it with black ink pen or by crossing out the inapplicable information with black ink pen.
 - 2. Any submittal which contains information not clearly identified for review will be rejected and returned to Contractor for resubmission.

1.8 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes in custom colors selected, textures, and patterns for the City's selection.
- C. Include identification on each sample, with full Project information.
- D. Furnish three (3) samples in the following sizes, unless otherwise specified; after review one (1) sample will be returned to Contractor.
 - 1. Flat or Sheet Products: Minimum 6 inches square, maximum 12 inches square.
 - 2. Linear Products: Minimum 6 inches long, maximum 12 inches long.
 - 3. Bulk Products: Minimum one pint, maximum one gallon for liquids; minimum one pound, maximum three pounds or minimum one cubic foot, maximum one cubic yard, as applicable for solids.

1.9 MANUFACTURER'S INSTRUCTIONS

- A. When required by individual Specification Sections or by the City during submittal reviews, submit six (6) copies of manufacturers' printed instructions for delivery, storage, assembly, installation, start-up adjusting, field testing and finishing.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.
- C. Maintain copies of manufacturers' installation instructions and recommendations in Contractor's field office for review, regardless of whether such submittals are requested.

1.10 MANUFACTURER'S CERTIFICATES

- A. Submit certificates, in duplicate.
- B. Submit on 8-1/2" by 11" white paper.
- C. The City will retain certificates; no approval reply is intended.

- D. The certificate shall state that:
 - 1. The equipment or system has been:
 - a. installed in accordance with the manufacturer's recommendations,
 - b. inspected by a manufacturer's authorized representative, and
 - c. serviced with the proper initial lubricants.
 - 2. Applicable safety equipment has been properly installed.
 - 3. The proper electrical and mechanical connections have been made.
 - 4. The equipment is ready for startup.

1.11 ACTION AND DISTRIBUTION

- A. The City will return the submittals stamped "NO EXCEPTIONS TAKEN," "MAKE CORRECTIONS NOTED," "SUBMIT SPECIFIED ITEM(S)," "REVISE AND RESUBMIT" or "REJECTED."
 - 1. When "NO EXCEPTIONS TAKEN" is indicated, Contractor is advised that fabrication, manufacturer, or construction may proceed, providing it complies with the Contract Documents.
 - 2. When "MAKE CORRECTIONS NOTED" is indicated, Contractor is advised that fabrication, manufacture, or construction may proceed, providing it complies with the City's notations and the Contract Documents.
 - 3. Submittals returned with stamps as per Item 1 or 2 above shall be considered as acceptable submittals.
 - 4. When other notation is indicated, Contractor is advised that no work shall be fabricated, manufactured, or constructed. Contractor shall make a new submission in accordance with the procedures specified.
- B. Contractor shall make additional copies of the accepted submittals and shall within 3 calendar days from date of receipt distribute one copy to its subcontractors, vendors, or manufacturers as applicable. Copies shall be made from the accepted copy bearing the City's stamp of acceptance.
- C. Contractor shall be responsible for recording work completed in accordance with approved submittals on the Record Drawings in accordance with the requirements of Section 01 78 39, Project Record Drawings.

1.12 USE OF SUBMITTALS

- A. Work shall be fabricated, constructed, and furnished in accordance with the acceptable submittals. One copy of such acceptable submittals shall be kept at the job site.
- B. Contractor shall not use unacceptable submittals or submittal materials in the work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 35 45

HEALTH AND SAFETY CRITERIA

PART 1 - GENERAL

1.1 SUMMARY

- A. A Site Characterization Investigation for the Project identified several chemical constituents of concern in site soils and groundwater. The following is a summary of the results of this investigation:

Soil samples were analyzed for the Maher Ordinance list of constituents including: TPHg, TPHd, TPHmo, VOC, SVOC, Title 22 metals, PCB, pesticides, cyanide, sulfide, soil pH and asbestos. Groundwater samples were analyzed for TPHg, TPHd, TPHmo, gasoline constituents benzene, toluene, ethyl benzene and xylenes (BTEX) and methyl tert butyl ether (MTBE),SVOC and the LUFT list of five metals. The soil gas samples were analyzed for methane.

The maximum soil TPHg concentration detected was 2600 mg/kg in boring A-5 from 5 ft bgs (A-5-5). The maximum TPHd concentration detected was 9600 mg/kg in boring A-2 from 5 ft bgs (A-2-5). The maximum TPHmo concentration detected was 1600 mg/kg in the composite soil sample. Analytical results were compared to California Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESL). TPH values did not exceed the construction worker ESL. Benzene and toluene were not detected in any sample analyzed. Ethyl benzene and total xylenes were detected at maximum concentrations of 4.5 mg/kg and 9.9 mg/kg, respectively. BTEX concentrations did not exceed commercial or construction worker ESLs. Naphthalene was detected at a maximum concentration of 13 mg/kg in A-2-5. This value exceeds the commercial industrial ESL of 2.8 mg/kg. Other VOCs and SVOCs detected were chemicals associated with petroleum hydrocarbons, but that do not have ESL values.

Organic chlorine pesticides, PCB and sulfide were not detected or were detected at concentrations less than the construction worker ESLs. Asbestos was not detected above reporting limits.

Chromium, nickel and lead were detected above ESL or STLC in at least one sample. The maximum measured soil concentrations were chromium 750 mg/kg, lead 190 mg/kg and nickel 1700 mg/kg. Total chromium and nickel exceeded the ESL at the 3 or 5 ft bgs depth, but did not exceed STLC values.

The soluble lead concentration for the A-4-3 sample exceeded the California Soluble Threshold Limit Concentration (STLC) hazardous waste criterion of 5 mg/L. Cyanide was detected at a maximum value of 0.99 mg/kg, which exceeds the commercial ESL. The soil gas samples contained a maximum concentration of 0.034% methane. This maximum value is well below the California Regional Water Quality Control Board (RWQCB) concentration requiring mitigation of 1.25% methane.

- B. The Contractor and not the City, is responsible and liable for the health and safety of its employees and sub-contractors, as per Federal, State and local statutes, laws and regulations; consequently, the Contractor shall be solely responsible for any and all fines, penalties, or damages, which result from its failure to comply.
- C. Nothing contained in this Section shall relieve the Contractor or any subcontractor, supplier of the obligations assumed under the Contract and as required by law. The requirements contained herein for a Contractor Environmental Health and Safety Plan are by no means all-inclusive. It shall be the Contractor's sole responsibility to develop the

Plan, comprehensive and specific to the work of this Contract, and to implement the Plan throughout the life of the Contract. Where any portion of the requirements in this Section conflict with or are less stringent than any federal, state, or local statutory safety regulations, the more stringent requirements shall apply.

- D. All work in this Section is incidental work, unless specified otherwise.

1.2 SUBMITTALS

- A. The Contractor shall submit the following as per specification:
1. The Environmental Health and Safety Plan (EHASP). Upon approval of the EHASP the Contractor shall provide two copies in Compact Discs (CD - PDF format) with properly labeled cases.
 2. MSDS (Materials Safety Data Sheet) for all chemicals and other hazardous materials to be used. This submittal is only as warranted.

1.3 CONTRACTOR'S SAFETY PROGRAM

- A. The objective of the Contractor's safety program is to prevent accidents/injuries, preserve life and property and to ensure safe work practices so as to maintain a healthy environment for the construction workers, the City, and the public.
1. The Contractor shall assume full responsibility and liability for compliance with provisions of the Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.), the Construction Safety Orders (8 CCR, subchapter 4 et seq.), and regulations issued thereunder, including:
 - a. Federal OSHA.
 - b. Cal/OSHA.
 - c. Local regulations pertaining to work practices, protection of workers and visitors to the site.

2. The Contractor shall also comply with all applicable safety orders and other requirements of:
 - a. The Code of Federal Regulations (CFR) Title 29 - Labor (<http://www.access.gpo.gov/nara/cfr>).
 - b. The State of California, California Code of Regulations (CCR), Title 8, Industrial Relations (<http://ccr.oal.ca.gov>).
 - c. The State of California Health and Safety Code (<http://www.leginfo.ca.gov/calaw.html>).
 - d. The State of California, California Code of Regulations (CCR), Title 26 and 22.
 - e. Trade association safety standards; and
 - f. Equipment and materials instructions including material safety data sheet (MSDS), if any.
 3. The Contractor shall provide and maintain personnel safety training and medical examinations in accordance with all applicable federal, state, and local regulations.
 4. The Contractor shall not create any condition, which endangers the safety of City employees and its representatives. If the City observes such a condition, then the City has the authority to stop work until the Contractor corrects the condition. In such an event, the Contractor shall not be allowed to penalize the City, in any form. The construction schedule shall not be affected by such events.
 5. The Contractor shall take all precautions necessary to protect all persons and all property from injury or damage, including those special precautions designed to protect against risks, which are inherent in the type of work to be performed, and the particular conditions present.
- B. The Contractor shall at all times comply with and ensure that its employees, agents, and subcontractors comply with all applicable Federal, State and local safety and health standards, rules, regulations, and orders.
- C. The Contractor's non-compliance with the applicable safety and health standards, rules, regulations and orders shall be considered failure by the Contractor to perform a provision of the Contract, and may be cause for the suspension of work, pursuant to the General Provisions.
- D. If the City informs the Contractor of a hazardous condition or emergency situation, the Contractor shall be responsible for immediate corrective action, and shall respond in writing to describe the action or remedy within twenty-four (24) hours.
- E. The Contractor shall, at all times, be responsible for providing its employees with the proper level of personal protective equipment (PPE) appropriate to the type of work being performed by the individual employee at any given time. At a minimum, the Contractor and subcontractor's personnel shall wear hardhats and high visibility apparel. Hardhats shall show company name. For work in the public right of way, high visibility safety apparel shall meet the Performance Class 2 or 3 requirements of ANSI/ISEA 107-2004.
- F. The City will neither assume administration nor direct control and responsibility for maintaining the Contractor's health and safety program, and the site-specific Environmental Health and Safety Plan (EHASP). The City's review of the Contractor's Construction Safety performance shall not be construed as approval of the adequacy of the Contractor's Safety Supervisor, the Contractor's safety program, the EHASP or any safety measures taken in on or near the construction site.
- G. The Contractor shall do all work necessary to protect the general public from hazards including surface irregularities, un-ramped grade changes in pedestrian sidewalks or walkways, and trenches or excavations. In addition, the Contractor shall assure safe and

proper routing of vehicular and pedestrian traffic as well as compliance with the Americans with Disability Act (ADA).

- H. The performance of all work and all completed construction, particularly with respect to equipment, tools, machinery guards and the like, shall be in accordance with the Safety Orders issued by the State of California Division of Industrial Safety.
- I. The Contractor shall construct/ furnish, and at all times maintain satisfactory and substantial ramping, guard rails, warning flags and signs at appropriate heights, temporary chain link fencing, solid fencing, railing, barricades, steel plates or bridging as applicable at all openings, obstructions, or other hazards in streets, sidewalks and the like. All such barriers shall have adequate warning lights as necessary or required for public safety. The Contractor shall divert traffic by use of traffic cones, flagmen, flags, signs, etc. adequate to the site conditions and task at hand.
- J. All temporary and permanent safety features shall be installed before beginning startup of any portion of the Contractor's work.
- K. The Contractor shall not create any condition, which endangers the safety of the building occupants, City employees and its representatives. If such a condition should be observed, then the City is authorized to stop work without penalty of any kind to the City until the condition is corrected. The construction schedule shall not be affected by such events.
- L. If the Contractor should fail to provide adequate measures to assure, building occupants and public safety, the City reserves the authority to have the necessary work performed by others, assess corresponding liquidated damages, and/or deduct from the Contractor's progress payment all monies required therefore.
- M. The Contractor shall conduct safety meetings periodically and as often as needed.
- N. For work in this Contract, the Contractor shall have taken into account the productivity losses, if any, due to the use of respirators and personal protective equipment. The City will not pay any additional compensation to the Contractor due to his/her use of respirators, and personal protective equipment.
- O. Whenever the Contractor determines through workplace air monitoring that its employees' exposures to airborne chemicals and particulate contaminants would exceed regulated limits, the Contractor must reduce employee exposures below said limits, using the following progressive means, as appropriate:
 - 1. Site controls, which include ventilation, equipment design, and facility management, and
 - 2. Administrative controls, which include practices such as work scheduling and procedures,
 - 3. Personal Protective Equipment.
- P. The Contractor shall have taken into account the productivity losses, if any, due to the use of these means. The City will not pay any additional compensation to the Contractor due to their implementation.

1.4 ENVIRONMENTAL HEALTH AND SAFETY PLAN (EHASP)

- A. The Contractor shall submit a site-specific Environmental Health and Safety Plan (EHASP) in accordance with these specifications and 29 CFR 1910.120, 8 CCR 5192.

The EHASP shall remain in effect throughout the life of the Contract and a copy of the EHASP must be on-site at all times.

B. The EHASP shall identify measures to protect workers from exposure to chemicals identified in the Final Environmental Characterization Report (AEW, 2013) and the Site Mitigation Plan (AEW 2013) above the applicable federal and state Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PELs). Such protocols should include personal protective equipment requirements, worker decontamination procedures, air monitoring strategies to ensure that the workers are adequately protected.

- B. The Contractor's site-specific EHASP shall describe the responsibility for employee and public safety of the Contractor's representatives who control each phase of the operations and shall set forth in writing the policies and procedures to be followed by all Contractor personnel, including its subcontractors. The plan shall contain description on emergency response.
1. The EHASP shall be prepared, signed, stamped, and administered by a Certified Industrial Hygienist (CIH). No work at the site shall begin until the health and safety plan prepared and stamped and certified by a CIH is submitted to the City.
- C. The Contractor shall submit two (2) copies of the EHASP at least ten (10) working days before any demolition and/or any building materials disturbing activity, and no later than thirty (30) calendar days after the Notice to Proceed. The City will not review the EHASP for its content, nor will the City be liable for the Contractor's failure to have an adequate EHASP or implement it. Receipt of the EHASP by the City neither constitutes to the legality of the EHASP nor does incur liability with the Contractor. The Contractor's site-specific EHASP shall include, but not be limited to (the following list is by no means all-inclusive or near complete for an adequate EHASP. The Contractor shall be solely responsible to produce a complete EHASP in full compliance with the corresponding regulatory requirements):
- D. The EHASP shall be further divided into two parts. Part One shall be the portion of the EHASP on Environmental Health aspect of Safety. Part Two shall be the portion of the EHASP portion on Construction Safety.

Part One of EHASP—Environmental Health:

1. Identification and description of the responsibility of those individuals who control each phase of operations and are responsible for employee and public safety. The EHASP shall set forth in writing the policies and procedures to be followed by all personnel. The EHASP shall include the designation and resume of an overall project site safety representative (or referred to as health/safety officer). The site safety representative shall have full authority to correct any unsafe conditions, including with authority to stop any construction activity or modify work practices if the site safety plan is being violated, or if such action is necessary to protect workers, property, and the surrounding community during the contract period. This requirement shall apply continuously and not be limited to normal working hours.
2. Information identifying and delineating all workplace hazards that has been identified or is generally associated with the proposed work phases and how this information is communicated to employees (e.g., tailgate safety meetings, monthly safety meetings, daily job briefings). Hazardous material communication standards can be found in 29 CFR 1910.120 & 8 CCR 5194. Hazardous waste information can be found in 29 CFR 1910.1200 & 8 CCR 5192. Local hazardous

material/waste information can be found in Articles 21, 21A, 22 and 22A of the San Francisco Health Code.

3. Measures to be used to identify, monitor, and control worker and general public exposure to any identified hazard. The monitoring of site personnel for contaminant exposure shall be conducted so as to maintain the proper level of personal protection, including the action level.
4. Provision of sufficient personnel properly trained to handle, excavate and dispose of hazardous waste and other contaminated waste that is expected in this project. This training shall be required for all personnel who will come in contact with, or operate equipment, which handles, surface and subsurface contaminated materials when performing their work. The Contractor shall provide these training records to the Engineer. The Contractor shall maintain training records as per applicable regulations.
5. Engineering controls, specific work practices, air monitoring for contaminants (e.g., dust, asbestos, lead, volatile organic, and hydrocarbons), and personal protective equipment (8 CCR 5144) to protect workers and the general public.
6. Methods to be used to decontaminate equipment and personnel.
7. Sanitation facilities to be provided for personal hygiene. Portable toilets and discharge of their waste products into sanitary sewers shall comply with local codes.
8. The Contractor is alerted to, and shall comply with the regulations on occupational exposure to lead in the Construction Industry as per 29 CFR 1926.62 and 8 CCR 1532.1.

Part Two of EHASP—Construction Safety:

The Construction Safety portion of the EHASP shall include but not limited to the following (the following list is by no means all-inclusive or near complete for an adequate EHASP; the Contractor shall be solely responsible to produce a complete EHASP):

1. The EHASP shall set forth in writing the construction safety policies and procedures to be followed by all Contractor personnel while on the site.
2. The EHASP shall also explain how the Contractor will comply with all the requirements for construction safety, including but not limited to the following:
 - a. The provisions of the Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.), the Construction Safety Orders (8 CCR, subchapter 4 et seq.), and regulations issued there under.
 - b. Federal OSHA.
 - c. Cal/OSHA.
 - d. California Public Utilities Commission (CPUC) requirements on safety
 - e. Local regulations pertaining to work practices, protection of workers and visitors to the site.
 - f. The Code of Federal Regulations (CFR) Title 29 - Labor

- (<http://www.access.gpo.gov/nara/cfr>).
- g. The State of California, California Code of Regulations (CCR), Title 8, Industrial Relations & Title 26 (<http://ccr.oal.ca.gov>).
- h. The State of California Health and Safety Code
(<http://www.leginfo.ca.gov/calaw.html>).
3. Information identifying and delineating all workplace safety hazards that has been identified or is generally associated with the proposed phases, and how this information is communicated to employees (e.g., tailgate safety meetings, monthly safety meetings, daily job briefings)
 4. Measures and procedures to be used to report, monitor and control worker and general public exposure to any identified safety hazard. The monitoring of site personnel for contaminant exposure shall be conducted to maintain the proper level of personal protection, including the action level.
 5. Safety Action Plans: For work requiring Cal/OSHA permits, special training and/or use of designated competent persons to oversee the work, the Contractor shall prepare sub-plans, Safety Action Plans, to address these work activities. The Safety Action Plans shall contain detail information needed to perform the activity safely, verify that the persons involved in the work are properly trained or certified, the equipment used is inspected and suitable for the work, the proper permits have been obtained. The Safety Action Plans shall include, but are not limited to: Confined Space Entry, Specialized Welding, High Voltage Electrical, Scaffolding Installation, Cranes, 12KV Power Transmission and Distribution, etc.
 6. Periodic safety performance reviews.
 7. Procedures on Safety inspections.
 8. Procedures in handling non-compliance/violations of safety requirements, e.g. deficiency correction reports, stop work orders, disciplinary actions, etc.
 9. Communication and reporting requirements, including the immediate reporting of injury accidents and submittal of corrective action reports (also see Part 1.11).
 10. Requirement, distribution, and maintenance of personal protective equipment and safety tools.
 11. Provision for all personnel to be properly and continually trained in construction safety and emergency response. The level of training required for all or specified Contractor or Subcontractor personnel, including, but not limited to:
 - Cal/OSHA Construction Safety;
 - Federal Railroad Administration (FRA) Roadway Worker Protection Rule 49 CFR Part 214C;
 - California Public Utilities Commission (CPUC) requirements on safety;
 - Track Safety
 - High Voltage Electrical – including overhead catenary system;
 - lead and hazardous materials awareness training;
 - 40-hour Hazardous Waste Operations and Emergency Response Training Program, and the associated 8-hour refresher training in accordance with Title 29, Code of Federal Regulations 1910.120, and 8 CCR 5192
 - Other site-specific or project specific hazards requiring safety training.
 - Procedures for dealing with heat stress
 - Fire prevention and protection plan
 - Fall protection program for 100% fall protection for workplaces higher than 6 feet above grade

- Health and safety concerns described in these and other technical specifications and special provisions
12. Requirements of the Contractor and subcontractors for implementing the following:
- Medical surveillance programs and Injury and Illness Prevention Programs (IIPP), i.e., SB 198, 8 CCR and CAL/OSHA, GISO 3203, Section 5192 and 1509. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel in accordance with all applicable federal, state and local regulations.
 - mitigation measures under CEQA (AB 3180),
 - and the Construction Standard (29 CFR 1926)
 - Workers' Right to Know (29 CFR 1910.120).
 - Section 6360-99 of the California Labor Code (Hazard Communication).
 - The American with Disabilities Act (ADA).
13. Contingency Plan for emergency including fire, earthquake, etc.
14. Written Code of Safe Practices, posted at a conspicuous location at each jobsite office, or provided to each supervisory employee who shall have it readily available.
- E. Submit changes to the EHASP or to its implementation to the Engineer.
- F. Furnish copies of all records of all audits, inspections, and reviews to the Engineer.
- G. Only when the CIH certifies the EHASP, can work begin at the site.
- H. All employees of the Contractor shall attend required safety training prior to entering the site.
- I. The City reserves the right to require modification of the EHASP. However, the City's action or lack thereof on the EHASP shall not be construed to mean approval, or acceptance of Contractor's responsibility for compliance with the applicable laws and regulations.
- J. Should the Contractor or its Subcontractors be notified by the City of any unsafe or unhealthy conditions associated with the performance of this Work, the Contractor shall take remedial action to correct such conditions immediately or within 48 hours after receipt of notice of violation. Failure to do so will be subject to regulatory fines pertaining the violation.

1.5 REQUIREMENTS OF THE CONTRACTOR'S SITE SAFETY REPRESENTATIVE

- A. The Contractor shall designate a full time Site Safety Representative or health/safety officer/supervisor dedicated to this Contract. The SSR shall be physically present at the site during all working hours.
- B. The Contractor's SSR shall:
1. Be knowledgeable with the safety provisions of Federal OSHA, Cal/OSHA and the requirements of this section and those listed in Paragraph 1.7, A above.
 2. Possess qualifications, which include a minimum of three (3) years recent experience in conducting and supervising safety and health programs on construction projects similar to this Contract.
 3. Be capable of performing safety inspections and accident investigations.

1.6 TRENCHING

- A. Trench Safety: Comply with all requirements of Federal OSHA (29 CFR 1926.650-652), CAL/OSHA (Construction Safety Order 1539-1544), the California Labor Code, and these Contract Documents.
- B. Federal and State Safety regulations require
 - 1. Safe Exits, when trenches are more than 4 feet deep, and an exit (ladder), which must be within 25 feet from each worker.
 - 2. Shoring is required for trenches more than 5 feet deep, and designed to prevent cave-ins.

1.7 CONFINED SPACE ENTRY

- A. If needed, the Contractor shall provide all equipment and assistance to make the confined space safe for entry by the Contractor's employees, the City and his/her representatives in accordance with the code of Federal Regulation 29 CFR,1910.146 and the California Code of Regulations, Title 8, General Industry Safety Orders entitled "Confined Spaces."

1.8 LOCKOUT/TAG OUT PROCEDURES

- A. If needed, the Contractor shall provide training of Contractor's employees in procedures for locking out and tagging out of electrical mechanical, hydraulic, pneumatic, thermal and energy stored equipment, which has been de-energized during the course of construction.
 - 1. The lockout/tag out of electrical energy sources shall occur at the circuit disconnect switch in all cases.
 - 2. The Contractor shall furnish locks used for this purpose.
 - 3. Contractor shall furnish necessary tags and lock box(s) which are compatible with the electrical, mechanical, hydraulic, pneumatic, and thermal or energy stored distribution equipment.
- B. White "DANGER" tags shall be used to indicate that a particular switch shall not be used.
- C. Red "DANGER" tags shall be used to indicate the presence
 - 1. Of someone inside or working on the equipment.
 - 2. In the event that a job is incomplete at the end of a shift, the TAGGER will remove his personal Red DANGER tag and lock, leaving the OWNER'S White DANGER tag for protection of the equipment. When the work is resumed, the employee will again hang the Red DANGER tag and lock.

1.9 ACCIDENT DOCUMENTATION AND REPORTING

- A. If death or serious injuries or serious damages occur, the accident shall be reported at once by telephone or messenger to the City as well as to the proper governing authorities. In addition, the Contractor shall promptly report in writing to the City all accidents whatsoever arising out of or in connection with the performance of the work whether on or adjacent to the site, giving full details and statements of witnesses.
- B. Within five working days of occurrence, the Contractor shall provide the City with two (2) copies of the Contractor's accident and near-miss reports. A significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.
- C. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the City, giving full details of the claim.

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- D. The Contractor is responsible for all documentation and reporting obligations of any accident and near- miss incidents as per Federal, state and local laws and regulations.

1.10 TRAINING RECORDS

- A. The Contractor shall maintain on-site all training and medical records in accordance with federal, state, and local statutes, regulations, and policies, and provide copies of these records to the City upon request.

1.11 CONSTRUCTION EQUIPMENT AND TOOLS

- A. Selection and operation of all construction equipment and tools shall conform to CAL/OSHA and shall be appropriate for their intended uses.
- B. Equipment shall be subject to inspection and approval by the City. Any of the Contractor's equipment that is rejected as not conforming to the foregoing shall be promptly removed and replaced with equipment acceptable to the City without additional cost and without delaying the schedule for performance of the work by the Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 CODES

- A. All work of the Contract shall conform to or exceed the applicable requirements the 2014 editions of the Port of San Francisco Building Code and the California Building Standards Code (CCR Title 24).
- B. In addition, comply with the applicable laws, ordinances, rules and regulations, including but not limited to the following:
 - 1. CCR Title 8, Industrial Relations.
 - 2. CCR Title 17, Public Health.
 - 3. CCR Title 19, Fire Marshal.
 - 4. California Health and Safety Code.
 - 5. San Francisco Electrical Code.
 - 6. San Francisco Plumbing Code.
 - 7. San Francisco Fire Code.
 - 8. San Francisco Police Code, Article 29, Regulation of Noise.
 - 9. San Francisco Department of Public Works, Bureau of Engineering, Standard Specifications. (available for download at <http://www.sfdpw.org/index.aspx?page=294>)
 - 10. San Francisco Health Code, Article 21, Underground Tank Regulations.
 - 11. San Francisco Park Code.
 - 12. Americans with Disabilities Act Accessibility Guidelines (ADAAG) July 26, 1991.
 - 13. San Francisco Environment Code.
 - 14. San Francisco Public Works Code, Article 4.2, Sections 146 through 146.11, Construction Site Runoff Control Ordinance.
 - 15. San Francisco Stormwater Design Guidelines (2010).
 - 16. State Water Resources Control Board General Permit for Discharges of Storm Water Associated with Construction Activity, Construction General Permit Order 2012-0006-DWQ (amends 2009-0009 DWQ as amended by 2010-0014-DWQ) ("Construction General Permit").
 - 17. State Water Resources Control Board General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4), Order 2103-0001-DWQ.
- C. Other Applicable Laws and Regulations: All applicable Federal, State, and local laws, and the latest rules and regulations of governing utility districts and the various other authorities having jurisdiction over construction and completion of the Work, including but not limited to the State Fire Marshal, Cal-OSHA and the State Construction Safety Orders, and the California Labor Code, shall apply to the Contract throughout, and they shall be deemed to be included in the Contract Documents as though printed herein.
- D. Obtain copies of codes and reference standards when required by the Contract Documents.
- E. The codes referred to shall have full force and effect as though printed in these Specifications. Nothing in the Contract Documents shall be construed to permit work not conforming to the governing code requirements.

- F. The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the work is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the work under the Contract Documents.

1.2 SEISMIC LOADING DESIGN PROVISIONS

- A. Contractor shall be responsible for the design of all supports and anchorages for all nonstructural components including mechanical and electrical equipment, pumps, and piping to be constructed or installed by Contractor.
- B. The Contractor shall provide the services of a civil or structural engineer registered in the State of California for preparing such designs, which shall be in accordance with the seismic loading provisions of the current edition of the San Francisco Building Code, using an importance factor of 1.0 or greater.
- C. Shop drawings and supporting calculations of all supports and anchorages shall bear the seal, signature and license expiration date of the engineer hired by the Contractor.

1.3 TRENCH SUPPORT DESIGN PROVISIONS

- A. Shoring of excavations during construction shall be in accordance with the requirements of Paragraph 12.02, Persons and Property, of the General Conditions; shall include adequate sheeting, shoring, and bracing, or equivalent method for the protection of life and limb; and shall conform to the applicable Safety Orders of OSHA and Cal/OSHA.
- B. As required by Section 6705 of the California Labor Code, whenever the work involves trench excavation 5 feet or more in depth, plans and calculations for the shoring system shall be submitted for review and approval prior to trench excavation. If such plans vary from the shoring standards established by the State Construction Safety Orders, the plans shall be prepared by a civil or structural engineer registered in the State of California. Approval shall not relieve Contractor of its responsibility to provide a satisfactory and safe shoring system.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 42 00

REFERENCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Applicable Publications
 - 2. Standard Specifications
 - 3. Reference Specifications, Codes, and Standards
 - 4. Abbreviations
 - 5. Definitions
- B. Related Documents: Section 00 72 00 - General Conditions, Paragraph 1.01, Definitions.
- C. Related Sections: Refer to individual Specification sections for definitions of terms, which may be used uniquely in the Work covered, by each section.

1.2 APPLICABLE PUBLICATIONS

- A. Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that whenever no date is specified only the latest specifications, standards, or requirements of the respective issuing agencies in effect on the date of the Contract Documents, except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes.

1.3 STANDARD SPECIFICATIONS AND PLANS

- A. Unless otherwise specified, reference in these Specifications to the "DPW Standard Specifications" or "Standard Specifications" shall mean the Standard Specifications of the Department of Public Works, Bureau of Engineering, revised November 2000, except that the provisions for measurement and payment shall not apply. References in Parts 2 through 10 of the Standard Specifications to Sections of Part 1 of the Standard Specifications shall be construed to mean references to the respective provisions of the General Conditions (refer to Section 00 72 00).
- B. Unless otherwise specified, reference in these Specifications to the "DPW Standard Plans" or "Standard Plans" shall mean the Standard Plans of the Department of Public Works, Bureau of Engineering, revised April 2007.
- C. Digital copies of the Standard Specifications and Plans may be obtained from DPW's Standard Specifications and Plans website at: <http://www.sfdpw.org/> (select "Projects" then "Contracts & Bids")
- D. Caltrans Standard Specifications (CTSS) is a reference specification written by the California Department of Transportation and shall be referenced in these Specifications as "CTSS" or "CalTrans Standard Specifications."

1.4 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Upon written request, the City Representative will furnish information as to how to obtain copies of the referenced standards.

- B. In case of conflict between codes, reference standards, Drawings, and the other Contract Documents, the most stringent requirements shall apply.
- C. The Standard Specifications is applicable only when referred to in these specifications. Only the specific sections referred to shall apply to this Contract.
- D. The standard referred to, except as modified in the Contract Documents, shall have full force and effect as though printed in these Specifications.
- E. Maintain copies of the codes and reference standards with the Contract Documents at the job site at all times.

1.5 ABBREVIATIONS

- A. Abbreviations: Whenever in these Contract Documents the following abbreviations are used, the intent and meaning shall be interpreted as follows:

AA	Aluminum Association, Inc.
AAMA	Architectural Aluminum Manufacturers' Association
AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACWS	Asphalt Concrete Wearing Surface
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers' Association
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute for Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ARI	American Refrigeration Institute
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AT&T	American Telephone and Telegraph
AWG	American Wire Gage
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
AWSS	Auxiliary Water Supply System
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association

BOA	Bureau of Architecture, Department of Public Works
BOE	Bureau of Engineering, Department of Public Works
BWPC	Bureau of Water Pollution Control, Department of Public Works
Caltrans	California Department of Transportation
Cal/OSHA	California Occupational Safety and Health Administration
CBMA	Certified Ballast Manufacturers Association
CCR	California Code of Regulations
CDA	The Copper Development Association, Inc.
CFR	Code of Federal Regulations
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CRSI	Concrete Reinforcing Steel Institute, Inc.
CS	Commercial Standards - U.S. Department of Commerce
CSI	Construction Specifications Institute
CTSS	Caltrans Standard Specifications
CWP	Clean Water Project
DOT	United States Department of Transportation
DPW	Department of Public Works - City and County of San Francisco
EIA	Electronic Industries Association
EPA	Environmental Protection Agency
FGNA	Flat Glass Marketing Association
FHWA	Federal Highway Administration
FM	Factory Mutual
FS	Federal Specification
HI	Hydraulic Institute
HMI	Hoist Manufacturer's Institute
IAMPO	International Association of Mechanical and Plumbing Officials
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
ISA	Instrument Society of America
ITE	Institute of Traffic Engineers
JIC	Joint Industry Conferences of Hydraulic Manufacturers
MCAA	Mechanical Contractors Association of America, Inc.
MLMA	Metal Lath Manufacturers Association
MMA	Monorail Manufacturers Association
MTD	Metro Transit District
NAAM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBHA	National Builders' Hardware Association
NECA	National Electrical Contractors Association
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFC	National Fire Code
NFPA	National Fire Protection Association
NLMA	National Lumber Manufacturers Association
NTMA	National Terrazzo and Mosaic Association, Inc.
NWMA	National Woodwork Manufacturers Association
OECI	Overhead Electrical Crane Institute
OSHA	Occupational Safety and Health Administration - U.S. Department of Labor
PEI	Porcelain Enamel Institute
PG&E	Pacific Gas and Electric Company
PS	Product Standards Section - U.S. Department of Commerce

RCM	Registered Construction Management
RCP	Reinforced Concrete Pipe
RLM	RLM Standards Institute, Inc.
RMA	Rubber Manufacturers Association, Inc.
SAE	Society of Automotive Engineers
SCPI	Structural Clay Products Institute
SDI	Steel Door Institute
SEWPCP	Southeast Water Pollution Control Plant
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc.
SJI	Steel Joist Institute
SSDPWSF	Standard Specifications, Department Of Public Works, City & County Of San Francisco
SSPC	Steel Structures Painting Council
STLC	Soluble Threshold Limit Concentration
TCA	Tile Council of America
TEMA	Tubular Exchanger Manufacturers' Association
TMA	Tile Manufacturers Association
TTLC	Total Threshold Limit Concentration
UBC	Uniform Building Code
UL	Underwriters Laboratories Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
VCP	Vitrified Clay Pipe
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California
WWPA	Western Wood Products Association

1.6 DEFINITIONS

- A. As directed, As required, As permitted: Interpretation of Phrases - Wherever the words "as directed," "as required," "as permitted," or words of like effect are used, it shall be understood that the direction, requirement, or permission of the City Representative or governmental regulatory agency having jurisdiction is intended. The words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary, or proper in the judgment of the City Representative. Wherever the words "inspect," "approved," "acceptable," "satisfactory," or words of like import are used to describe a requirement, direction, review, or judgment of the City Representative as to the work, it is intended that such requirement, direction, review, or judgment will be solely to observe and evaluate, in general, the completed work for compliance with the requirements of the Contract Documents, unless otherwise specifically stated.
- B. Engineer, Landscape Architect, or City Representative: References in these Specifications to "Engineer, Landscape Architect, or City Representative" shall be deemed to mean the City Representative.
- C. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the City Representative, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
- D. Remove and Dispose: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the City's property.

- E. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- F. Remove and Salvage: Items indicated to be removed and salvaged remain the City's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to City's designated storage area.
- G. Work Site: The space available to Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Work. The extent of the Work site is shown on the Drawings and may or may not be identical with the geographical description of the site upon which the Work is to be constructed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Maintenance of quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Failure of Materials and Equipment Tested or Inspected:
 - 1. Previous acceptance may be withdrawn and material may be subject to removal and replacement with material meeting Specification requirements, at no cost to the City.
 - 2. The City may refuse consideration of further sample of same item for testing.

1.2 CONTRACTOR'S QUALITY CONTROL SERVICES

- A. Contractor's Testing Agency: Provide the services of a qualified testing laboratory or agency selected and paid for by Contractor, as necessary to control the quality of materials and to fulfill the requirements of the Contract Documents.

1.3 INSPECTION OF THE WORK AND SITE ACCESS

- A. The work shall be conducted under the general observation of the City and the City's consultants and shall be subject to inspection by representatives of the City and other government agencies having jurisdiction to assure compliance with all requirements of the Contract Documents and applicable codes and regulations.
- B. During the course of construction, inspections may be conducted by authorized representatives of the City, various inspectors at the site, or independent agencies designated by the City.
 - 1. The presence of inspectors or independent agencies shall not relieve Contractor of the responsibility for the proper execution of the work in accordance with the requirements of the Contract Documents. Compliance is a duty of Contractor, and said duty shall not be avoided by any act or omission on the part of the inspectors.
- C. All products, materials, and equipment furnished by Contractor may be subject to inspection by the City both on-site and at the place of manufacture.
 - 1. Contractor shall at all times provide access to the work for representatives of the City and other agencies designated by the City wherever Contract work is in preparation, in progress or completed.
- D. Inspection items include, but are not limited to, construction quality, deficiencies, and corrections thereof; technical data on materials, tests, and laboratory analysis; contract change orders, claims, and other contract administration matters; and daily logs.
- E. Contractor shall be responsible for calling Code Enforcement Agencies such as the Port Building Permit Inspection, Port Encroachment Permit Inspection, San Francisco Fire Department, Department of Public Health, etc.

1.4 MANUFACTURER'S FIELD SERVICES

- A. When specified in the respective Specification Sections, require manufacturer or supplier to have qualified representative(s) perform on-site observations and make recommendations.
 - 1. Observe field conditions, including conditions of surfaces and installation.
 - 2. Observe quality of workmanship.
 - 3. Furnish recommendations to assure acceptable installation and workmanship.
 - 4. Where required, start, test, and adjust equipment as applicable.
 - 5. Where required, certify that work is installed, adjusted, tested, and satisfactorily performs in accordance with the requirements of the Contract Documents.
- B. Representative shall submit written report to City listing observations and recommendations.

1.5 TESTING AGENCY SERVICES

- A. Testing Agency: An independent commercial testing organization contracted by the City, or the City's own testing laboratory employed and paid by the City, will perform tests and inspections required by various Specification Sections and by applicable building codes or other regulations of public agencies having jurisdiction.
 - 1. City employment of Testing Agency shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
 - 2. City provided testing shall be limited to Project-specific testing and shall not include general tests or approvals of materials, equipment, or systems.
- B. Testing Agency will furnish sufficient personnel to perform testing and inspection in a reasonable manner so the Contractor is not caused undue delays and expense.
- C. Testing Agency services will be performed in accordance with requirements of governing authorities and with specified standards.
- D. Reports will be submitted to the City and Contractor giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
 - 1. Where required, Testing Agency will submit copy of test results directly to enforcing agency.
 - 2. When test or inspection reveals nonconformance with Contract Documents, Testing Agency will orally notify City and Contractor immediately and subsequently by written report.
- E. Re-inspection and Re-testing: Where inspections or tests prove that Work is unsatisfactory or not in compliance with Contract Documents, Contractor shall be responsible for reimbursing City for costs for further inspection and re-testing.
 - 1. Re-testing and inspections of Work revised or replaced by Contractor shall be paid by Contractor where tests were performed on original Work.
 - 2. Contractor shall repair and replace at no cost to the City damage to Work made necessary by re-testing in accordance with the requirements of the Contract Documents.
 - 3. Contractor shall reimburse City for City's inspection or Testing Agency fees for travel and per diem expenses, when shops or plants of fabrication are located more than 50 miles from Project site.
 - 4. If City has reasonable doubt that materials comply with specified requirements, additional inspections or tests will be required as directed by City.
 - a. If additional inspections or tests establish that materials comply with specified requirements, costs for such tests will be paid by City.

- b. If additional inspections or tests establish that materials do not comply with specified requirements, costs for such tests shall be paid by Contractor.
 - F. Testing Agency is not authorized to:
 - 1. Release, revoke, alter, or enlarge requirements of Contract Documents.
 - 2. Accept any portion of Work.
 - 3. Stop Work, except as may be required to perform testing or inspection operations.
 - G. Contractor's Responsibilities:
 - 1. Cooperate with Testing Agency personnel.
 - 2. Provide access to the Work.
 - 3. Obtain and handle samples of materials and equipment.
 - 4. Furnish storage and assistance as requested.
 - 5. Facilitate inspections and tests.
 - 6. Notify City Testing Agency, and special inspectors in writing a minimum of 48 hours, excluding weekends and holidays, nor more than 72 hours prior to expected time for operations requiring testing or inspection services.
 - 7. Schedule Work to be tested or inspected to allow tests to be performed within reasonable time period.
 - 8. Where required, deliver samples to Testing Agency.
 - 9. When a specified test or inspection is not performed due to Contractor's failure to notify the City as specified or when material or workmanship is not ready at the time specified, the City will establish remedial Work and Contractor shall bear cost of remedy.
 - 10. Take steps necessary to ensure no portion of the Work requiring testing or inspection is covered prior to written acceptance by authorized parties.
 - 11. Ensure that no testing or inspection is scheduled until such times as they are assured that all approvals for the work have been received. This includes welder's certifications, submittals, design/build engineering stamp, and certification.
 - H. Completed Work: Should the City require tests and inspections for completed work that has not been tested or inspected, furnish necessary facilities, labor, and material to uncover or remove Work in question to extent necessary. Contractor shall reconstruct the work after the test or inspection in accordance with the requirements of the Contract Documents.
 - 1. The cost of reconstructing non-conforming work or defective materials shall be at Contractor's expense.
- 1.6 REQUIREMENTS OF TESTS
- A. Review Specifications Sections for additional requirements for testing and inspection.
 - B. Tests referenced shall not be a limitation on City's rights for testing and inspection to verify conformance with Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Provide and maintain construction facilities and temporary controls as required to perform the Work; relocate as required by the progress of the Work.
 - 2. Unless otherwise required by the City, materials for construction facilities and temporary controls may be new or used, and shall be suitable for the purposes intended.
 - 3. Materials, installation and maintenance of construction facilities and temporary controls shall be in compliance with applicable regulatory requirements.
 - 4. Maintain construction facilities in sound, neat and clean condition. Remove any graffiti and repair any vandalism to the satisfaction of the City.
 - 5. Remove construction facilities and controls, including associated utilities and equipment, when their use is no longer required.
- B. Related Sections:
 - 1. Section 01 71 33 - Protection of Adjacent Construction.
 - 2. Section 01 77 00 - Closeout Procedures.

1.2 OPERATION HOURS FOR TEMPORARY CONTROLS

- A. Provide and maintain temporary pumping, piping, power, lighting, controls, instrumentation, alarms, security devices, and all required safety devices at all times. Such items shall be made available for immediate use when Contractor's operations impact existing systems.

1.3 TEMPORARY ELECTRICITY

- A. Provide and pay for electrical service and weatherproof, grounded distribution system of sufficient size, capacity, and power characteristics during the construction period. Existing on-site City electrical facilities are not available for contractor's use.

1.4 TEMPORARY LIGHTING

- A. Provide and maintain lighting for construction operations, including power to distribution boxes. Required illumination may be provided by approved cord sets with lamp guards. Provide and maintain temporary lighting whenever new permanent lighting fixtures are switched over from existing lighting.

1.5 TELEPHONE SERVICE

- A. The Contractor shall provide, maintain and pay for telephone service to Contractor's field office from the time of project mobilization.
- B. Provide and pay for telephone service for the City Representative's use as specified in Section 01 52 13 – Field Offices and Sheds.

1.6 TEMPORARY WATER SERVICE

- A. Potable Water: Arrange with the San Francisco Water Department to provide potable water obtained by connecting to City water systems.
 - 1. Contact the Water Department at 923-2400 for arranging such water service.
 - 2. Water is available from fire hydrants located in the streets. Obtain permission from the San Francisco Fire Department to use hydrants.
 - 3. Pay the costs of connection fees, meters, and all water furnished by the San Francisco Water Department under the water service account established above.
- B. The Contractor is advised that Ordinance # 175-91, Article 21, Section 1100 to 1107 of the San Francisco Municipal Code (Public Works Code), restricts the use of potable water for soil compaction or dust control activities, to the extent not directly in conflict with any applicable federal, state and local law.
 - 1. In consideration for potential health concerns, an exemption may be allowed for the use of potable water for soil compaction or dust control activities when human contact and exposure exists. Such exemption will be considered and may be granted on a case by case basis.
 - 2. Should the Contractor seek to use potable water for soil compaction or dust control activities, the Contractor, shall apply for, and obtain an exemption pursuant to Ordinance #175-91, Article 21, prior to its use. The application for such use of potable water is to be sent to the Department of Public Health, Environmental Health Section, 1390 Market St., Room 910, San Francisco, CA 94102, Telephone 415-252-3945. Permission for such use may be granted by the General Manager of the Water Department, pursuant to Ordinance #175-91, Article 21.
- C. Reclaimed Water: Arrange with the SEWPCP to provide reclaimed water for soil compaction and dust control which is available at no cost to Contractor at the SEWPCP from 8:00 A.M. to 5:00 P.M. on weekdays and Saturdays.
 - 1. Arrangements can be made for access to reclaimed water at other times.
 - 2. A permit is required to obtain reclaimed water from the City. Contact Herb Dang at (415) 648-6882 ext. 1322 three (3) days prior to the date that reclaimed water is required.
- D. The Contractor shall be required to provide his own water tanker and hoses. Contractor's hoses crossing traveled roadways shall be buried beneath the roadway or ramped over.
- E. Provide and maintain distribution piping, water tankers, hoses, and all appurtenances necessary to supply water at the job site.
 - 1. Bury pipe crossing traveled roadways beneath the roadway. Use hose or ramp over temporary piping on roadway surfaces.

1.7 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required toilet facilities and enclosures. Location of facilities to be approved by the City Representative in the field.
- B. The Contractor shall be responsible to provide and maintain all construction facilities, temporary controls, and temporary utilities as required to perform the work of this Contract. The Contractor shall arrange with the utility agencies to provide and pay for such utility services required, including furnishing, installing and removing on completion of all work all temporary connections to said utilities.
- C. The Contractor shall provide and maintain temporary toilet facilities and enclosures as required at no cost to the City.

1.8 TEMPORARY CONSTRUCTION FENCE

- A. The Contractor shall furnish and install a temporary 8'-0" chain link construction fence with lockable gates at the limit of work and at areas to isolate and protect the public from hazardous conditions during construction.
- B. Provide fencing as needed to prevent unsafe entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations. Security at the fire station and associated parking area is to be maintained at all times.
- C. Protect vehicular traffic, stored materials, site and structures from damage.

1.9 TEMPORARY ENCLOSURES

- A. Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
 - 1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 - 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials.
 - 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.

1.10 MAINTENANCE OF THE WORK AREA

- A. Maintain the work areas in a safe condition, remove all accumulations of rubbish (Contractor's waste and public refuse) and surplus materials at the end of each working day, restore them to a condition equal to that which existed prior to the start of work, and leave them at completion of the contract in a clean, orderly fashion.
- B. Demolished concrete, deteriorated masonry, cleared vegetation, and excavated material not indicated for reuse shall be removed from the site at the end of each working day without delay and disposed of in a legal manner.
- C. Cleaning During Construction: Control accumulation of waste materials and rubbish; collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly.
 - 1. Clean interior spaces prior to the start of finish work; maintain areas free of dust and other contaminants during finishing operations.
 - 2. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material off-site in a lawful manner.
 - 3. Maintain the site and all adjacent public areas in a clean and orderly condition. Maintain the site, equipment, fences and signs free of graffiti. Remove all graffiti daily using methods which cause no damage to the work or existing facilities.
 - 4. Sweep all pedestrian walkways and dispose of debris around the site perimeter on a daily basis.

1.11 DRAINAGE CONTROL

- A. Grade site to drain. Maintain excavations free of standing water.

- B. Provide, operate, and maintain pumping equipment as needed to control water at the site.
- C. Protect site from erosion caused by flowing water.

1.12 CONFINED SPACE ENTRY

- A. It is the responsibility of the Contractor to provide all equipment or assistance to make the confined space safe for entry by the Engineer or his representative per The California Administration Code, Title 8, and General Industry Safety Orders Entitled "Confined Spaces".

1.13 TEMPORARY PROJECT SIGN

- A. Project sign image and layout shall conform to the graphical layout and color approved by the City. Refer to the draft project sign appended to this Section 01 50 00 for sample layout and image. The City will provide the final graphical image of the project sign in digital format to the Contractor prior to Notice to Proceed.
- B. The Contractor shall install 2 project sign(s) at the limits of work facing traffic or as directed by the City Representative.
- C. For paving and utility construction projects, project signs shall not obstruct or interfere with the operation of all traffic control devices. Project signs shall be placed as directed by the City Representative and shall follow these general guidelines:
 - 1. At each location of the Work not exceeding 5 adjacent blocks, place one sign at either end of the block facing oncoming traffic, or facing away from the limit of work on one-way streets.
 - 2. At each location of the Work exceeding 5 adjacent blocks, place one sign at either end of the limit of work facing oncoming traffic, and at intermediate locations not to exceed 5 block intervals with one sign placed on either side of the street facing oncoming traffic, or at opposite directions on one-way streets.
- D. The Contractor shall obtain the City Representative's approval of the proposed locations, height, and mounting details for each project sign. The project signs may be mounted on construction fence, face of wall, or on posts.
- E. Project Sign Fabrication:
 - 1. Size: Project sign shall be 4-feet by 6-feet.
 - 2. Digital File: Project sign shall match the final graphical layout provided by the City, including the colors and fonts. For more information, refer to the latest Sign Guidelines available from the following website: <http://onesanfrancisco.org/> (Click on "Staff Resources / Signage and Style Guide")
 - 3. Mounting Material: Project sign shall be mounted on Medium Density Overlay board (MDO), at least 3/4-inch thick.
 - 4. Printing: Project sign shall be printed on a 4-color CMYK printer.
 - 5. Coating: Use UV and Anti-Graffiti coatings.
 - 6. Quality: Project sign shall last the entire construction duration.

- F. Contractor shall submit a mock-up of the project sign in color, electronic pdf format, to the City Representative for approval prior to fabrication.
- G. After approval of the mock-up sign by the City, the Contractor shall install the required project sign(s) within 14 days, or as directed by the City Representative.
- H. The Contractor shall maintain project sign(s) in good condition for the duration of the contract.
- I. After substantial completion, Contractor shall remove each project sign from the site as its property, and restore area per plans or as directed by the City Representative at no additional cost to the City.
- J. Damaged project sign that cannot be repaired on site shall be replaced at no additional cost to the City.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade or buried utilities, construction equipment, temporary structures and facilities, unused materials, rubbish and debris prior to Final Inspection. Restore facilities to conditions prior to construction, to the satisfaction of the City.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.
- D. Remove field offices and temporary utility services from the Site.

1.15 STORAGE AND STOCKPILING

- A. The Contractor shall make its own arrangements for off-site storage or shop areas and off-site construction parking facilities. On-site storage shall be limited to materials and equipment currently being installed or utilized.
- B. If necessary, the Contractor shall arrange for temporary off-site storage of equipment and materials at his discretion. No additional compensation shall be provided from the City.
- C. Contractor may contact Port Real Estate Division for information on Port land or space available for lease.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 52 13
FIELD OFFICES AND SHEDS

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes general field office requirements, temporary facilities, the City Representative's field office, and office services, supplies and equipment.

1.2 RELATED SECTIONS

- A. Section 01 31 13 – Project Coordination.
- B. Section 01 31 19 – Project Meetings.
- C. Section 01 50 00 – Temporary Facilities and Controls.
- D. Section 01 77 00 – Closeout Procedures.

1.3 GENERAL FIELD OFFICE REQUIREMENTS

- A. The Contractor shall provide and maintain its own field offices, equipment and services specified herein at the site during the entire period of construction.
- B. The Contractor shall provide sewer and water connections as approved by the City, and arrange and pay for all necessary water and telephone services in connection with the City Representative's field office specified herein, for the duration of the Work.
- C. The Contractor is responsible for paying utilities and services required for the Contractor's own construction facilities in accordance with Section 01 50 00 –Temporary Facilities and Controls.
- D. Materials, installation and maintenance of field offices shall comply with all applicable regulatory requirements.
- E. The Contractor shall remove field offices and temporary construction facilities from the site prior to Final Payment. The Contractor shall restore the site occupied by said field offices to the original condition.

1.4 CONTRACTOR CONSTRUCTION FACILITIES

- A. The Contractor shall provide and maintain temporary offices and storage sheds, including all utilities and maintenance services, as required for proper execution of the Work.
- B. Such construction facilities shall be located in close proximity to the Work subject to acceptance by the City.
- C. Layout plans for temporary construction facilities shall be based on other subsidiary plans, such as approved safety plan, hazardous materials management plan, site drainage plan, security and theft prevention, the Construction Schedule and other elements of the Contractor's project execution plan.

1.5 CITY REPRESENTATIVE'S FIELD OFFICE

A. Not Required.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 55 26

TRAFFIC CONTROL

PART I - GENERAL

1.1 SUMMARY

- A. This Section sets forth the minimum requirements for traffic routing and traffic control during construction.
- B. Related Sections:
 - 1. Section 01 41 00 – Regulatory Requirements
 - 2. Section 01 50 00 – Temporary Facilities and Controls
- C. All traffic signs, barricades, delineators, flashing arrow signs, and other traffic control devices shall conform to the requirements of the latest edition of California Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD) and the requirements of the Caltrans Standard Specifications (CTSS), except as specified herein.

1.2 SCOPE OF WORK

- A. The Contractor shall prepare Traffic Control Plans, and install, operate, maintain and remove traffic control in conformance with the requirements in this section. The required traffic control work shall be in place prior to the start of the construction work of the Contractor and/or any of the subcontractors. The Traffic Control Plans shall clearly depict the exact sequence of the construction operation(s), the construction to be performed and the traveled way that will be utilized by all movement of traffic during each phase of construction. Multiple phases of construction will require a separate traffic control plan for each different construction phase or operation. No typical Traffic Control Plans will be permitted except as approved by the Traffic Engineer.
- B. The Prime Contractor (having Contractor's Type A license issued by the State of California Contractors State License Board) may perform the traffic routing work utilizing its own forces, or may engage a subcontractor to perform the traffic routing work. The Contractor shall provide sufficient traffic crews as required by the City Representative to implement and maintain the traffic control work. The Contractor shall provide flag persons as required by the City Representative and/or as shown on the approved Traffic Control Plans to control the vehicular traffic and to guide the pedestrians through the Construction area. The Traffic Crew shall be comprised of at least two (2) persons.
 - 1. Traffic Crew
 - a. Assist in re-striping and setting up all traffic signs and other traffic control devices in accordance with the approved Traffic Control Plans and Traffic Detour Plans. The required traffic control work shall be in place prior to the start of the construction work of the General Contractor and/or any of the subcontractors.
 - b. Be on site especially during nights, weekends, and holidays, if and as required by the City Representative in setting up and/or correcting the

traffic control devices, during the Contractor's actual working hours or as directed by the City Representative.

- C. The Contractor shall so conduct the operations as to cause the least possible obstruction and inconvenience to the public and area residents, and shall have under construction no greater length or amount of work, than set forth in the specifications, and that the Contractor can prosecute properly with due regard to the rights of the public and area residents. The Contractor shall ensure all streets and intersections remain open to traffic and maintain access to public and private properties to the greatest extent possible by constructing the work in stages.
- D. The Contractor shall provide for the protection of the traveling public, pedestrians, and workers within the area covered by the limits of construction, at all times when the area is affected by the Contractor's construction facilities or activities.
- E. The Contractor shall furnish, install, relocate to provide for lane shifting, remove, store, maintain (including covering and uncovering as required), move to new locations, replace when damaged or missing and dispose of all traffic signs and traffic control devices and features necessary for the safety and convenience of the general public and area residents. All workers and work shall be safeguarded, where and as required by conditions at the site of the work, and in addition to the requirements specified herein, including but not limited to the following:
 - 1. Traffic signs and parking prohibition signs
 - 2. Barricades with flashers
 - 3. Delineators
 - 4. High level warning devices
 - 5. Solar Powered Flashing arrow signs
 - 6. Pedestrian barricades
 - 7. Removal of conflicting existing striping and pavement markings in traffic lanes and in parking areas and re-installation of the original striping and pavement markings after construction is completed.
 - 8. Temporary striping and reflective markers, overlay markers, for both construction and interim re-alignments of traffic lanes, cross-walks prior to final striping
 - 9. Excavation plating/bridging, including any temporary plating and bridging required by the Contractor's operations.
 - 10. Temporary paving
 - 11. Providing flag persons
 - 12. Changeable Message Signs (CMS)
- F. The Contractor shall provide traffic lanes and routing of vehicles, bicycles, and pedestrian traffic, as specified herein, in a manner that will be safe and will minimize traffic congestion and delays.

G. Temporary Pavement Markings

1. Temporary traffic delineation and pavement markings (lane lines, STOP Bars, etc.) shall be furnished, installed, maintained, and removed by the Contractor. The Contractor shall furnish and install temporary pavement markings according to striping drawing(s) prior to opening the roadway to public traffic and/or instructed by the City Representative through the Traffic Engineer. The location of the temporary pavement lane lines shall be within 3 inches of the lines shown on the existing striping drawings.
2. Whenever the work causes obliteration of pavement markings (i.e., after removing the existing markings, grinding, paving, etc.), temporary pavement markings delineation shall be in place prior to opening the roadway to public traffic.
3. All work necessary, including any required lines or marks, to establish the alignment of temporary pavement markings shall be performed by the Contractor. When temporary pavement markings are required to be removed, all lines and marks used to establish the alignment of the temporary pavement markings shall be removed.
4. Surfaces to receive temporary pavement markings shall be dry and free of dirt and loose material. Temporary pavement markings shall not be applied over existing pavement markings or other temporary markings.
5. Temporary pavement markings shall be maintained at no additional cost until superseded or replaced with permanent pavement markings. Temporary pavement markings shall be removed when, as determined by the Traffic Engineer through the City Representative, the temporary pavement markings conflict with the permanent pavement markings or with a new traffic pattern for the area and is no longer required for the direction of public traffic.

1.3 APPLICABLE CODES AND STANDARDS

- A. In addition to compliance with this specification, the Contractor shall comply with all applicable requirements of the latest editions of the following:

1. California Vehicle Code.
2. California Manual on Uniform Traffic Control Devices (MUTCD)
3. Caltrans Standard Specifications (CTSS) and Plans, Department of Transportation, State of California.
4. City & County of San Francisco Municipal Transportation Code.
5. Regulations for Working in San Francisco Streets ("Blue Book"), San Francisco Municipal Transportation Agency (SFMTA), City and County of San Francisco.

Free copies of the "Blue Book" can be obtained from the SFMTA at 1 South Van Ness Avenue, 7th Floor, San Francisco, California 94103 or online at:

<http://www.sfmta.com/cms/vcons/bluebook.htm>

6. Regulations for Excavating and Restoring Streets in San Francisco, Department of Public Works, City and County of San Francisco.
7. Standard Specifications and Plans, Department of Public Works (DPW), City and County of San Francisco.
8. Other Applicable Government Regulations.

1.4 SUBMITTALS

- A. The Contractor shall prepare and submit the following to the Traffic Engineer through the City Representative for review and approval before any major work is allowed in the streets:
 1. Traffic Control Plans
 2. Parking and Storage Plans
 3. Material Specifications
 4. Resume and Certification of four Flag Persons.
 5. Sign Inventory Form(s)
- B. Traffic Control Plans
 1. Complete Traffic Control and Detour Plans shall be submitted to the Traffic Engineer through the City Representative for approval within fifteen (15) calendar days following the issuance of the Notice to Proceed (NTP) to the Contractor. No work shall be allowed on the streets without the approved Traffic Control Plans. The Contractor shall allow in the schedule twenty-one (21) calendar days for the City to review and respond to the Traffic Control Plans. The Traffic Control Plans shall be prepared, signed and stamped by a Civil Engineer or a Traffic Engineer (Registered in the State of California) with the assistance and input of the Traffic Supervisor and the Contractor's Superintendent.
 2. A submittal shall consist of six (6) copies on white paper or blue prints of each drawing. The Contractor shall use the existing striping plan(s), T-1, T-2,..., as a base to prepare the Traffic Control Plans. If existing striping plan is not available, the Contractor shall use the Street Reconstruction or paving plans as base plans to prepare the Traffic Control Plans. Maximum drawing size shall be 36" X 24". The Traffic Control Plans shall be drawn to a scale of 1 inch = 50 feet (1:600).
 3. A separate set of Traffic Control Plans shall be required for both working and non-working hours. The licensed Engineer who prepared the Traffic Control Plans shall have personal knowledge of the traffic conditions in the work areas, understands the impacts the work will have on vehicular, pedestrian, and other modes of transportation, and shall ensure Traffic Control Plans comply fully with all Americans with Disabilities Act (ADA) requirements and all City requirements related to providing path of travel through construction zones.
 4. If the alignment of the main changes after pot holing and the Contractor cannot follow the approved Traffic Control Plans, the Contractor shall submit four (4) copies of the proposed new alignment and Traffic Plan to the Traffic Engineer through the City Representative for review and approval. The Contractor shall prepare the Traffic Control Plans for grinding and paving, based on the Excavation Permit issued by the Bureau of Streets and Mapping (BSM) of the Department of Public Works (DPW) for each street.

5. The Contractor shall submit Traffic Control Plans for the following work as applicable:
 - a. Sewer Main Work
 - b. Sewer Lateral Work
 - c. Water Main Work
 - d. Water Lateral Work
 - e. Any Connection Work by the San Francisco Water Department
 - f. Traffic Signal Work
 - g. Base Repair Work
 - h. Concrete Street Restoration
 - i. Concrete Street Curing
 - j. Grinding
 - k. Paving
 - l. Curb Ramps
 - m. Concrete Islands
 - n. Curb and Sidewalk Work
6. Each Traffic Control Plan shall show the following minimum applicable information, as required by the Traffic Engineer through the City Representative:
 - a. Roadway and traffic lane layout (width of sidewalk, street and lanes, etc.); outline and dimensions of the work under construction (i.e., limits of excavation), location of construction barricades, location of trench protection devices, location of major construction equipment, and the ingress and egress routes of trucks hauling materials to and from the construction site.
 - b. Sequence of construction and traffic lane transitions.
 - c. Taper lengths shall be called out and dimensioned.
 - d. Crosswalk and sidewalk closures.
 - e. Existing striping, pavement markings and traffic signs, and description of what is to be removed prior to installation of temporary striping and signage, and what will be restored after the construction is completed.
 - f. Location and spacing of "Tow-Away, No Stopping" signs.
 - g. Location and description of temporary striping, pavement markings, signs, and other traffic control devices necessary to provide and maintain the adequate number and width of traffic lanes specified herein, and to provide and maintain passage and protection for pedestrians.
 - h. Location and description of traffic control devices proposed for the protection of the work area, excavation, etc.
 - i. Other proposed changes and provisions for removal, relocation, or temporary installation of:
 - i. Traffic signs
 - ii. Transit stops

- iii. Barricades
 - iv. Solar operated flashing arrow signs
 - v. Traffic Signals
 - j. Safe path of travel for passengers using public transit, from/to loading platform to/from the sidewalk.
 - k. Location of detour signs for vehicular, truck, bicycle and pedestrian traffic.
7. Sign Inventory Form(s) is/are to be submitted to the Traffic Engineer through the City Representative as part of the Traffic Control Plan prior to the start of any contract field work. This form is included at the end of this Section. Sign Inventory Forms are required for each intersection corner or other location that includes any sign relocation, sign removal, curb ramp work, pole or traffic signal work. Sign Inventory Forms shall accurately reflect all existing traffic control, street name, and other City signs at the required location(s).

C. Parking and Storage Plans

- 1. The Contractor shall submit plans for materials storage and equipment parking, for each area of the work along with the respective Traffic Control Plans. The City has the option to reject the storage and equipment parking plans. Storage, stockpiling or placement of any equipment, materials or supplies within the area of any public street or alley, including the sidewalks thereof, will be allowed only with approved storage and parking plans approved by the Traffic Engineer through the City Representative.
- 2. No construction equipment and material storage, including but not limited to pipes, pipe-fittings, steel bars, shoring, backfill, asphalt mix etc. shall be allowed on any sidewalk, street or property, except as shown on the approved Traffic Control Plans for various phases of construction. A maximum storage area of 100 feet in length may be allowed per block.
- 3. Office/storage trailers shall be at least 100 feet from any intersection. It shall not block traffic control devices (STOP signs, signals, etc.), hydrants, bus stops, or driveways.
- 4. Storage, stockpiling, or placement shall not in any way obstruct any lane or passageway intended for vehicular or pedestrian traffic.
- 5. If parking meters are to be occupied for equipment/material storage in the vicinity of the active construction area, the Contractor shall apply for a Special Traffic Permit and pay for all applicable fees. See Article 3.5 Special Traffic Permit for more information.
- 6. If the Traffic Engineer through the City Representative determines that such storage, stockpiling, or placement causes a violation of the foregoing, of any law or order of any regulatory body having jurisdiction, and/or public complaint, the Contractor shall cease or modify the storage, stockpiling, or placement as necessary to comply with the specifications, laws, and orders. Any work

performed to remove, relocate or modify the storage, stockpiling or placement of any equipment, materials or supplies shall be done at the Contractor's expense.

7. The Contractor shall provide its own yard for the storage of pipes, pipe fittings, steel bars, shoring, etc. The proposed areas for storage of materials or equipment shall be noted in the Traffic Control Plans.
8. The Contractor shall be responsible for ensuring that only Contractor's vehicles clearly identified with the name on each side of each vehicle, may be parked in the construction area.
9. Employees of the Contractor, subcontractors, and suppliers shall not park their vehicles within the active construction area when and where they are currently working and where public access is prohibited. The Contractor shall provide parking for its employees at a site which will not impact local public parking and transport employees between the parking area and the work.
10. The Contractor is not allowed to store construction equipment or materials on the sidewalk and roadway of the following streets:
 - a. Third Street
 - b. Illinois Avenue

D. Material Specifications

1. The Contractor shall submit the manufacturer's specification and data for the specific traffic control devices and materials, e.g., solar operated flashing arrow boards, temporary traffic detour tape, traffic water-filled barriers or approved equal, etc.

E. Resume and Certification of Flag Persons

1. The flag persons shall have a minimum of one year experience utilizing manual Traffic Controls on similar construction projects. The flag persons shall have passed "The Flagger Training Course" offered by the American Traffic Safety Services Association (herein after called ATSSA) or other institutions acceptable by the Traffic Engineer through the City Representative. Refer to web page www.atssa.com for training classes for Flaggers. The Contractor shall submit resume and certificate of at least four (4) Flag persons for review and approval of the Traffic Engineer. The certificates of the Flag persons shall show the expiration date which shall be valid up to the end of the contract.

1.5 QUALIFICATIONS

- A. The Contractor performing traffic control shall have a minimum of 5 years experience in traffic control. The Contractor performing the traffic control work shall possess a current C-31 Construction Zone Traffic Control license issued by the California Contractor State License Board.
- B. Each crewmember shall have a minimum of one year experience in Traffic Control on similar scale projects, and shall have passed a Flagger Training Course given by ATSSA or another institution acceptable to the Traffic Engineer.
- C. If the Contractor's subcontract with the C-31 licensed Subcontractor does not meet the requirement for listing at the time of bid (see Section 00 43 36 – Proposed

Subcontractors Form), then Contractor shall identify such Subcontractor using the Experience Statement form (Section 00 49 12) and submit that form after bid opening in conformance with the bidding instructions. Please refer to Section 00 21 13 – Instructions to Bidders for requirements in meeting the qualifications specified herein.

PART 2 – PRODUCTS

2.1 GENERAL

- A. All traffic signs, barricades, delineators, flashing arrow signs, and other traffic control devices shall conform to the requirements of the latest edition of the California MUTCD. The California MUTCD is available online at:

<http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp>

- B. All special construction traffic signs shall be reflectorized with black messages/symbols having 6" and/or 8" high series D letters on orange colored aluminum plate. The message and size of the letters shall be determined by the City Representative through the Traffic Engineer. Any changes on any signs shall be made with appropriate decals.
- C. All barricades shall have flashers. The flashers shall be maintained in good operating condition at all times by the Contractor.
- D. Any equipment that does not operate properly or any device that is not in good operating condition shall be removed from the job site immediately at the Contractor's expense.
- E. The Contractor shall use water filled barriers, (or approved equal) to separate traffic lanes and Pedestrian walkways and to separate traffic lanes and construction areas.

2.2 DELINEATORS

- A. Delineators for lane taper areas for the separation of traffic from other work shall be either reflectorized traffic cones minimum 28 inches high or reflectorized portable tubular delineators minimum 36 inches high, with orange posts and yellow/white reflectors. Reflector units shall be 3"x 12" minimum.

2.3 NON-SKID METAL PLATING

- A. Metal plating and any metal bridging shall be with non-skid and rust-inhibitive product and shall be Intergard 750HS (formerly 7300 Magna-Prime) Epoxy or equal, manufactured by Courtaulds Coatings (Division of International), 400 South 13th Street, Louisville, KY 40201-1439; Tel: (800) 332-6270; Fax: (800) 283-0508. This material shall be applied as directed by the manufacturer. Plating shall be installed and maintained in such a manner as to provide a non-skid surface with no edges or corners sticking up and with no bouncing or shifting. All non-skid plates shall have a friction factor of 0.35 or greater as measured by the California Department of Transportation Test 342.

2.4 CHANGEABLE MESSAGE SIGNS

- A. The Contractor shall furnish and maintain temporary Changeable Message Signs (CMS) if required by the Traffic Engineer through the City Representative. The sign shall use light emitting diodes (LED). A photocell shall control the brightness of LED display panel. Message panel size shall be approximately 61" high x 83" wide and able to display three text lines with up to 8 characters per line. The CMS will be able to operate by both solar

panel and batteries. ADDCO Model DH500-FM, manufactured by ADDCO Manufacturing Co. Inc., St. Paul, MINN, (651) 488-8600, meets these requirements. The Contractor may supply any other model of any other manufacturer meeting these requirements.

2.5 TRAFFIC WATER FILLED BARRIERS

- A. The Contractor shall furnish, install and maintain water filled barriers (or approved equal) to separate pedestrian areas and construction areas as shown on the approved Traffic Control Plans.
- B. The installation layout of the water filled barriers (or approved equal) shall be in accordance with the manufacturer's specifications.
- C. The Contractor shall not substitute K-rails for water filled barriers (or approved equal). The use of water filled barriers (or approved equal) used in conjunction with K-rails is not permitted under any circumstance.

2.6 TAPE AND MARKERS FOR TEMPORARY STRIPING

- A. Temporary Retroreflective Painted Pavement Striping

Painted traffic stripes and pavement markings shall be installed after grinding. The materials and application shall comply with Section 84-3 of Caltrans Standard Specifications. The Traffic Engineer, through the City Representative, may request samples of materials. Painted markings are not acceptable after paving.

- B. Temporary Removable Pavement Tape

The Contractor shall use temporary removable tape to demarcate traffic lane lines in high traffic volume, commercial, and/or Downtown core areas, crosswalks, and STOP lines after paving and/or as instructed by the City Representative through the Traffic Engineer. The Contractor shall use any one of the following removable tapes furnished with a foil backing:

- | | |
|---------------|------------|
| 1. Swarco | Visa-Line |
| 2. Brite-Line | Series 100 |
| 3. ATM | Series 200 |

- C. Temporary Reflective Overlay Pavement Markers

The Contractor shall use temporary overlay markers to demarcate traffic lane lines in low traffic volume, non-commercial, and/or non-Downtown core areas and/or as instructed by the City Representative through the Traffic Engineer after paving and concrete street work. The Contractor shall use any one of the following:

- | | |
|-----------------------|--|
| 1. Davidson Plastic | Model TOM (Standard) with Reflexite PC-1000 or WZ with Reflexite AC-1,000 sheeting |
| 2. Stimsonite | Model 300 "Temporary Overlay Markers" |
| 3. Hi-way Safety Inc. | Model 1280 / 1281 with Reflexite PC 1,000 |

PART 3 - EXECUTION

3.1 VEHICULAR AND PEDESTRIAN TRAFFIC

A. Traffic Lane and Parking Requirements

1. In addition to the lanes specified lanes for through traffic, the Contractor shall provide an additional left/right turn lane of 11 foot width at the intersection, if there is already an existing separate right/left turn lane.
2. The Contractor shall maintain the required travelway for vehicles in any public street or way and a minimum width of 5 feet of clear sidewalk for pedestrians at all times.
3. The Contractor may be allowed to store materials and/or equipment for a limited time in the parking strip and/or portion of the sidewalk with written permission of the City Representative and SFMTA for use of the public right of way. The Contractor shall maintain adequate signing, barricades, lights, etc. at all times. Permission to store the materials shall be limited to unused materials during working hours or materials needed to resume the next day's work.
4. No work shall interfere with the access of emergency vehicles including those of Police and Fire Departments and ambulances. Local access shall be maintained at all times, by providing a 12 foot wide lane on all roadways.
5. All existing traffic movements at the intersections shall be maintained by bridging and/or phasing.
6. Full Roadway is defined as the street from property line to property line, including sidewalks, parking strip and travel lanes. EXCEPT when performing the following work.
 - a. Curb Ramps – Contractor may barricade off this area for up to 4 days to allow for necessary curing time and to provide safe pedestrian paths of travel;
7. The Contractor shall provide the following tabulated lanes to satisfactorily accommodate vehicular and bicycle traffic. Vehicular/pedestrian access to properties along the project site shall be maintained at all times.

Traffic Lane Requirements
Number and Width of Lanes for Through Traffic

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
<u>THIRD STREET</u>					
Burke Ave to Marin St β, *(MM), °°	9AM – 3PM (M-F) 8AM – 5PM (S/S) At Other Times	1@12' 1@12' Full Rdwy	1@12' 1@12' Full Rdwy	- - -	- - -
<u>Cross Streets for Third Street</u>					
Marin St	At All Times	-	-	Full Rdwy	Full Rdwy
Cargo Way △	9AM – 3PM (M-F) 8AM – 5PM (S/S) At Other Times	- - -	- - -	Full Rdwy Full Rdwy Full Rdwy	2@11' △ 2@11' △ Full Rdwy
Arthur Ave	9AM – 3PM (M-F) 8AM – 5PM (S/S) At Other Times	- - -	- - -	1@12' 1@12' Full Rdwy	1@12' 1@12' Full Rdwy
Burke Ave	At All Times	-	-	Full Rdwy	Full Rdwy
<u>ILLINOIS STREET</u>					
Cargo Way to Marin St β	At All Times	Full Rdwy	Full Rdwy	-	-

- * The Contractor shall not prevent or delay the operation of mass transit vehicles at any time. MM = SFMTA Metro. See Article 3.3 MASS TRANSIT VEHICLES for more information.
- β The Contractor shall perform the appropriate measures to ensure the safety of bicyclists on ALL streets on which there is construction. Contractors shall pay special attention to streets that are on the Bicycle Route Network. See Blue Book Section 9: Bicycle Routes or on the internet at:
[www.sfmta.com/cms/vcons/Section 9BicycleRoutes.htm](http://www.sfmta.com/cms/vcons/Section%209BicycleRoutes.htm)
 The Contractor shall install "Bicyclists Allowed Use of Full Lane" signs, or other approved equal, on streets with bicycle lanes during construction.
- °° Two rollers are required to accelerate work at the designated major cross streets.
- △ Includes 11-foot left turn lane. No additional turn lanes are required to be maintained on the westbound Cargo Way approach to Third St.

3.2 SPECIAL INSTRUCTIONS

A. General

1. The Contractor shall not commence site work prior to receiving the City Representative's approval of the construction schedule. No work shall commence prior to the approval of applicable traffic control plan(s), parking and storage plan(s), sign inventory, and flagger resumes and certificates. **The Contractor shall possess a copy of the latest, approved Traffic Control and Detour Plans at the construction site, available for review by a City Representative at all times.** The Contractor will be levied damages, as specified in Section 00 73 03 – Additional Liquidated Damages for non-compliance.
2. The Contractor shall use hot asphalt concrete to provide longitudinal and/or transverse transitions with a slope of 1:18 between the newly constructed concrete base, manhole, etc. and existing pavement (whenever the difference in the grade of the pavement and the concrete base, manhole, etc. exceeds 3/4 inch) by the end of the work shift or before opening the lanes to traffic.
3. The Contractor shall be responsible for coordinating with SFMTA to keep trolley and coach buses in operation at all times during construction. See Subsection 3.3 MASS TRANSIT VEHICLES for more information.
4. The Contractor shall not close any cross streets at any time unless specified in this specification. If cross streets are permitted to close, Contractor shall not close more than one cross street at the same time.
5. The Contractor shall plate over trenches after working hours.
6. The Contractor shall provide flag persons to control the traffic, as specified in the approved traffic control plan and/or directed by the Traffic Engineer through the City Representative. The number of flag persons required shall depend on the phase of work, traffic conditions, etc. The flag persons shall be provided as an incidental to the Traffic Control bid item.
7. The Contractor shall separate the construction area and staging areas from the traffic lanes by barricades, delineators, etc.
8. Contractor is responsible for taking inventory of SFMTA markings in the work area prior to working. These markings include yellow "Coach Stop" bars, yellow circular markings, etc. Contractor shall notify the SFMTA Superintendent of Special Operations at (415) 923-6058 two weeks prior to paving on each block so that Muni can restore the markings immediately after paving.
9. COORDINATION WITH OTHER CONTRACTORS
 - a. There may be other Contractors working in this area. The Contractor shall coordinate the work with other Contractors working in the area. The required number of lanes must still be provided, as specified in the Tables of Subsection 3.1.
 - b. The Contractor shall ensure that the traffic detours for this project do not conflict with other construction work and/or other traffic detours.

10. No work is allowed in the streets or sidewalks in the area outlined in the "Holiday Season Restrictions" map in the blue book (downtown) or on any "business block" in the City of San Francisco from the day after Thanksgiving through January 1, between the hours of 7am to 10pm. A "business block" is defined as a block in which at least 50% of the linear frontage is devoted to business. Establishments in this category are retail stores, bars, restaurants, banks, service type businesses, non-residence type hotels, wholesale businesses or others as determined by the SFMTA.
11. Before commencing construction, it is the Contractor's responsibility to request for the latest copy of the list of Special Events in the City from the Traffic Engineer on a monthly basis through the duration of the project. The Contractor must get prior approval from the Traffic Engineer through the City Representative for weekend work during San Francisco events and parades within the vicinity of project, such as, but not limited to, Chinese New Year's Parade, St. Patrick's Day Parade, Bay to Breakers, Cinco de Mayo Carnival, SF Marathon, SF Grand Prix, Fourth of July, Haight Street Fair, Fillmore Street Fair, Fleet Week, Oracle Week, and days in which similar events will take place as determined by the City Representative.
12. All plates shall be removed at least one day before the Holiday Moratorium and any weekend events mentioned above within the project area. No plates are allowed during the specified periods above. All openings in the street and sidewalk must be closed by backfilling and paving, providing safe and adequate passage for vehicles and pedestrians.

B. Grinding and Paving Work

The Contractor shall stage grinding and paving operation so that the following minimum requirements are met:

1. Grinding and/or paving work will be allowed up to two (2) consecutive blocks and two (2) consecutive intersections maximum at a time and all two (2) consecutive blocks and two (2) consecutive intersections must be paved within 72 hours from the start of grinding work, without exception.
2. Grinding is not permitted on Thursday or Friday unless paving will be satisfactorily completed before the end of the Friday workday of the same week.
3. Cross streets shall not be closed at any time unless as specified in this specification.
4. During intersection grinding and paving work, the cross street may be interrupted for up to a maximum of ten (10) minutes for residential areas and five (5) minutes for commercial areas.
5. The Contractor shall grind or pave the full width of the roadway within a block by the end of a work shift.
6. The parking shall be restored in a particular section, as soon as the grinding/paving/concrete reconstruction work is completed.

C. Concrete Street Restoration Work

NOT USED

D. Concrete Sub-base Work

1. The Contractor shall finish any water work, sewer work, sidewalks, curb ramps, and base repair work in the blocks before proceeding to grinding and paving operations on said blocks. The Contractor shall work on (1) block and/or (1) intersection at a time on any one day for base repair work.

E. Curb Ramp and Sidewalk Work

1. The Contractor shall be allowed to work at a maximum of three (3) intersections at any time if there are multiple curb ramps to be constructed along a street, except as otherwise noted in these specifications.
2. No crosswalk shall be allowed to be closed during curb ramp work except during demolition of curb ramps in which Contractor may close only one crosswalk at a time and provide one flagger to guide pedestrians to the open crosswalk.
3. The Contractor shall separate the safe path of travel for pedestrians from traffic and the construction area of the curb ramps with traffic water-filled barriers as shown on drawing STR 7696 Rev. 2, Detail 6 Pedestrian Crosswalks through Construction Zones.
4. If the safe path of travel for pedestrians is provided on the sidewalk, the Contractor shall separate the construction area of the ramps from the safe path of travel with chain link fence, and construction area of the ramps from the traffic area with chain link fence and /or plastic orange colored fence with 2 x 4 inch boards to guide visually impaired persons.
5. The Contractor shall not construct the curb ramps on two (2) adjacent corners of the same street unless otherwise instructed by the Traffic Engineer through the City Representative.
6. The Contractor may work on curb ramps at diagonally located corners at the same time.
7. The Contractor shall provide temporary curb ramps during construction and clearly mark the temporary crosswalks.
8. The pedestrian path shall be clear of any debris and meet all ADA requirements. Refer to drawing STR 7696 Rev. 2 Pedestrian Crosswalks through Construction Zones for details.
9. The Contractor shall submit a "Construction Schedule" showing a proposed sequence of operations, starting date, duration and work limit for each intersection where curb ramps are to be constructed.
10. The Contractor shall be allowed a maximum of ten (10) working days to complete all the required curb ramps at any intersection.
11. When working on curb ramps at mid-block, Contractor shall completely finish curb ramps on one side of the street prior to starting work on the other side of the street.
12. The Contractor shall maintain all crosswalks and STOP lines at all times while constructing the curb ramps, using temporary traffic tape if necessary.

F. Sewer Work

1. Sewer related work is allowed up to one (1) block and one (1) adjacent intersection at any one time. The Contractor is allowed to close one (1) crosswalk at any one time during the working hours of sewer main replacement work and/or sewer lining work as long as one (1) flagperson is provided to direct pedestrians to the open crosswalks.
2. Sewer lining and mortaring is allowed up to one (1) block and the two (2) adjacent intersections at any one time.
3. See Subsection 3.3 MASS TRANSIT VEHICLES regarding overhead line relocation and de-energization during sewer main replacement work and/or sewer lateral work.

G. Water Work

1. Water main related work is limited to one (1) block and one (1) adjacent intersection at any one time. The Contractor is allowed to close one (1) crosswalk at any one time during the working hours of water main replacement work as long as one (1) flagperson is provided to direct pedestrians to the open crosswalks.
2. The Contractor shall prepare the Traffic Control Plans for water main installation using the alignment shown on the Water Main Plans. The Traffic Control Plans shall show details for intersection work for water main and for shifting from the water main to the new water main.

3.3 MASS TRANSIT VEHICLES

A. General

1. The City has a transit first policy. The Contractor shall not impede the operation of mass transit vehicles at any time.
2. The Contractor shall be familiar with the routes of the coach lines that operate within the limits of the work.
3. The lanes made available for traffic shall be located so as to include an adequate and allowable travel path for the coach lines. The extreme touring range of the centerline of a trolley coach is 10 feet (3.1 m) from the centerline of the trolley wires. The Contractor shall provide a 45 foot (13.7 m) turning radius for SFMTA Transit vehicles.
4. The Contractor shall notify the SFMTA Superintendent of Special Operations at (415) 923-6058, through the City Representative, at least ten (10) working days in advance of doing any work in existing passenger loading zones for buses on each street, where such work would interfere with passenger loading and unloading operations. The SFMTA may temporarily authorize the relocation of these zones. The Contractor shall provide and continuously maintain at least one sign at any bus stop that SFMTA has authorized to be closed or relocated. The SFMTA Superintendent will supply the exact wording, size, and location of these signs. Unauthorized bus zone relocations or any other unauthorized use of the temporary bus stop signs will result in liquidated damages per Section 00 73 03.

5. The Contractor shall provide flag personnel as required to assist SFMTA Transit lines operating around the construction area.
6. The SFMTA overhead electric wires carry a minimum of 600 volts DC and have a 17 feet +/- vertical clearance from the roadway. The Contractor's attention is directed to Article 37 of General Order 95 of the Public Utilities Commission State of California. CAL OSHA regulations require that any equipment that moves vertically must maintain a 10 feet radial clearance, and any other equipment must maintain a 6 feet clearance from Muni overhead electric wires. The Contractor shall observe these regulations during the entire duration of the construction work including base repair, grinding and paving.
7. The Contractor shall obtain a clearance permit from SFMTA Central Control at (415) 759-4396 before performing any work within 48 inches of the outside edge of SFMTA rail (the "Safety Envelope"). If workers will be working within the Safety Envelope, the Contractor shall comply with and train its workers per the SFMTA On Track Safety Program, in addition to obtaining a clearance permit which a copy shall be provided to the City Representative. Contact the SFMTA Health and Safety Manager at (415) 701-4500 for training requirements.
8. The following streets have mass transit operations (MM = Muni Metro):
 - a. Third Street: # T – Third Street (MM)
9. It is the Contractor's responsibility to verify SFMTA bus routes and to inform the transit agencies at least ten (10) working days in advance if the work is expected to interfere with their operations.

B. Maintaining Transit Service

1. The Muni Overhead wires shall not be relocated or de-energized. Contractor shall use appropriate construction means and methods to meet all CAL OSHA rules and regulations. If the Contractor requests or requires the relocation and/or de-energization, the Contractor shall pay for all costs for de-energization and Muni Inspectors without reimbursement from the city. Muni may deny the request of the Contractor for overhead wire relocation and/or de-energization.

Location	Muni Action Required	Muni Inspectors Needed
Intersection of Third St, Arthur Ave, and Cargo Way	Muni will remain in service during this work and no inspectors or Muni overhead wires isolation will be allowed. Contractor shall obtain Muni clearance permit and on-track safety training before performing any work near the tracks along Third St.	None.

2. All Muni services as specified above under "Muni Action Required" will be provided by the City at no cost to the Contractor. Any additional services requested by the Contractor, above and/or beyond the scope of this contract, shall be the responsibility of the Contractor.

3. Payments to Muni for additional services above and/or beyond the scope of this contract shall be as follows:
 - a. The estimated cost for overhead wire relocation is SEVEN Thousand FIVE HUNDRED Dollars (\$7,500.00). The estimated cost for overhead wire de-energization is SEVEN Thousand FIVE HUNDRED Dollars (\$7,500.00) per weekend day. The cost for a Muni inspector is approximately \$120/hr with a minimum of four (4) hours per site. Multiple Muni inspectors may be required when de-energizing any trolley wires. All fee's subject to change.
 - b. Any requests for de-energizing of overhead wires are subject to Muni's approval and availability of resources. De-energization is only permitted on weekends.
 - c. Moreover, if de-energization is requested, the Contractor shall pay for Muni Inspectors if required by Muni, bus substitution if required by Muni, as well as the cost for de-energization, without reimbursement from the city.
4. The Contractor shall notify the Superintendent of Special Operations of the Municipal Railway at (415) 923-6058, through the Engineer, to schedule the overhead wires relocation/overhead wires de-energization and/or any Muni Inspectors and services, at least ten (10) working days in advance of the work.
5. Upon notification as required for the work, Muni will relocate/de-energize the affected overhead wires.
6. For cancellation of any scheduled overhead wires relocation/overhead wires de-energization and any other services, the Contractor shall provide Muni with at least five (5) working days notice in advance of the scheduled work. Contractor shall pay Muni all required amounts for cancellations with less than five (5) working days advance notice. This cancellation cost will be borne by the Contractor and the city shall not reimburse the Contractor.
7. If Muni cannot provide the overhead wires relocation/overhead wires de-energization and/or other Muni services when the Contractor has scheduled the work, the City will give time extension only. No monetary compensation shall be made.

3.4 TRAFFIC CONTROL BY UNIFORMED OFF-DUTY SAN FRANCISCO POLICE OFFICERS

- A. The Contractor shall provide Uniformed Off-Duty San Francisco Police Officers (hereinafter referred to as officers) as required by the Traffic Engineer through the City Representative to supplement the Contractor's traffic control work. Traffic control duty by officers is not a substitute for the overall traffic control responsibility of the Contractor.
 1. Officers may be required during any approved road closures at each end of the road closure and also at various locations for pedestrian and traffic control, as required by the Traffic Engineer through the City Representative.
 2. Additionally, the Contractor shall provide officers at other locations, during different phases of work for the specified time, as requested by the Traffic Engineer through the City Representative.

3. The City Representative through the Traffic Engineer shall make the final determination whether any officers are required and at which locations, in addition to the flag persons provided by the Contractor as part of the traffic routing.
4. The officers may perform the following duties:
 - a. Direct vehicular traffic.
 - b. Direct pedestrian traffic.
 - c. Cite motorists or pedestrians violating traffic regulations.
 - d. Other traffic control duties as directed by the Traffic Engineer through the City Representative.
5. The Contractor shall prepare Instruction Sheet(s) for use by the officers. These Instruction Sheet(s) will be for specific duties the officers will be required to perform, at specific locations. The Contractor shall submit the Instruction Sheet(s) to the City Representative for review and transmittal to the Traffic Engineer, at least five (5) working days in advance of the need for officers. The Contractor shall also give a copy of the Instruction Sheet(s) to each officer and the 10B Coordinator of the SFPD. The Traffic Engineer through the City Representative shall review and make any required changes and transmit the same to the 10B Coordinator of the SFPD. The City Representative will furnish a copy of the revised Instruction Sheet(s) to the Contractor and the 10B Coordinator of the SFPD. The Contractor shall conduct a review of the Instruction Sheet(s) with the officers assigned for traffic control. The format of the Instruction Sheet is given at the end of this Section.
6. The Contractor should contact the 10B Coordinator of the SFPD at (415) 553-7900 to obtain the services of officers. The Contractor shall enter into an agreement with the SFPD to provide officers, within 30 days of the official date for commencement of the work. The Contractor shall make a deposit to the SFPD. The deposit will be a minimum of \$2,000 or equal to the amount required for providing officers for a period of 2 weeks, whichever is more. The Contractor shall pay the SFPD the amount of each invoice within 30 calendar days of the date of the invoice.
7. The Contractor shall notify the 10B Coordinator regarding the schedule and number of officers required at least 4 calendar days in advance of the scheduled date. The minimum time required to cancel the need of the officers is 24 hours prior to the work.
8. The officers shall be paid a minimum of four hours per day. If the number of work hours exceeds four hours, the officers shall be paid for one additional hour for travel time. For a twelve-hour shift, the officers shall be paid thirteen hours per ordinance.
9. The Contractor shall be paid for actual time spent on controlling traffic by San Francisco off-duty Police Officers in accordance with this specification, plus five percent (5%) for administrative overhead.

3.5 SPECIAL TRAFFIC PERMIT

- A. The Contractor shall apply for a Special Traffic Permit from the SFMTA, if any deviation from the traffic lane requirements (time, width, etc.) of this Specification is requested. If SFMTA approves the issue of the Special Traffic Permit, the Contractor shall pay the required fee to SFMTA and obtain the necessary permit. The Special Traffic Permit fee is \$179.25 per permit plus \$37.00 per working day for the duration of the permit, and SFMTA reserves the right to deny any request. Fees for the Special Traffic Permit are subject to change. The Contractor will not be reimbursed.
- B. The Contractor shall apply for a Special Traffic Permit from SFMTA if the Contractor wants to occupy parking meter(s) for equipment/materials storage or materials loading at \$5.00 per parking meter per day.
 - 1. The Contractor shall maintain the cleanliness of the area surrounding the occupied meters for the duration of the permit. Failure to maintain the cleanliness of the area as determined by the City Representative or the Traffic Engineer shall be grounds for revocation of the permit. Fees are nonrefundable.
- C. In case of an emergency, the Contractor shall declare emergency by contacting the City Representative and other relevant City agencies according to the "Regulations for Working in San Francisco Streets" (Blue Book) set forth by the SFMTA.
- D. Violation of the Special Traffic Permit Ordinance shall result in fines up to \$5000 in addition to possible liquidated damages. Working on City streets beyond the terms set forth in the specifications, without Special Traffic Permit and without emergency declaration will suffice to consider the Contractor as violator of the Special Traffic Permit Ordinance of the City and County of San Francisco.
- E. The Contractor shall NOT be compensated for the cost of a Special Traffic Permit and/or any fine levied for any violations and/or shut down due to violations of Traffic Routing Specifications and/or violations of the conditions of the Special Traffic Permit.

3.6 TEMPORARY PAVEMENT MARKINGS

- A. After each day's work the Contractor shall furnish and install temporary pavement delineation, which shall be maintained by the Contractor until the permanent markings are installed.
- B. Prior to construction the Contractor shall survey each street and inventory all existing pavement markings including marking type and material used. The pavement markings shall include, but not be limited to traffic striping, crosswalks, stop lines, messages and raised pavement markers.
- C. The temporary pavement markers shall be the same color as the markings they replace.
- D. Surfaces on which temporary pavement delineation is to be applied shall be cleaned of all dirt and loose material and shall be dry when the pavement markers are applied.
- E. Temporary pavement delineation shall be applied in accordance with the manufacturer's instructions.

Cutting and spacing of tape for temporary striping shall be as follows:

1. Crosswalk and STOP line: One stripe 4 inches wide to mark 12 inches wide crosswalk or limit lines. Unless specified otherwise on the contract drawings, stop bars shall be aligned with the projections of the near side property lines and shall be extended from the curb to the yellow striping or center of the roadway.
 2. Striping across intersections and guide lines for left and/or right turn lanes shall be one stripe of 4 inches wide to mark 8 inches wide guidelines.
 3. Double yellow stripe centerline shall be two 4 inch wide lines, 3 inches apart; 2 ft long strips at 24ft center to center.
 4. Lane lines shall be one 4 inch stripe of 24-inch segments, spaced 24 feet apart.
- F. Cutting and spacing of temporary overlay markers shall be as follows:
1. Double yellow stripe centerline shall be two markers, 3 inches apart; spaced at 24ft center to center.
 2. Lane lines shall be spaced 24ft center to center.

3.7 CROSSWALKS AND SIDEWALKS

- A. All crosswalks shall be kept open at all times, unless a substitute temporary crosswalk is provided, or otherwise approved by the Traffic Engineer through the City Representative.
- B. R9-3A and R9-3B, "NO PED CROSSING, USE CROSSWALK" and "USE CROSSWALK (L/R)" signs shall be placed at each end of a temporarily closed crosswalk.
- C. Whenever a temporary crosswalk is provided outside of the existing crosswalk, such temporary crosswalks shall be clearly defined by signs, striping, pedestrian bridges or plates. The minimum width of the temporary crosswalk shall be 10 feet measured between the outside edges of the striping tape. The Contractor shall provide access to mobility and visually impaired persons at all temporary and/or permanent crosswalks at all times by providing accessible temporary curb ramps.
- D. No obstruction or openings of any kind shall be allowed in portions of sidewalks accessible to pedestrians.
- E. Portions of sidewalk closed to pedestrians shall be delineated by a continuous line of pedestrian barriers. Barriers shall not have legs or other parts projecting into pedestrian ways and shall meet the requirements for visually impaired persons.

3.8 PERMANENT THERMOPLASTIC PAVEMENT MARKINGS

- A. The Paint Division of the SFMTA will furnish and install all the permanent thermoplastic stripes and pavement markings (traffic stripes, crosswalk stripes, stop lines, messages and raised pavement markers) at the locations shown on the traffic plans and in accordance with the latest edition of Caltrans Standard Specifications and Plans.
- B. The Contractor shall notify the Traffic Engineer through the City Representative, of the proposed schedule for repaving of each block at least seven (7) calendar days in advance and again once the paving is completed and accepted, so that Painting Division of SFMTA can install permanent pavement markings.

- C. The Contractor shall install temporary pavement markings, as specified herein below, after base reconstruction, after grinding, after paving, after water main work, and before opening the street to public traffic. Any existing traffic striping and lane lines that are removed or damaged by the work activity shall be restored with temporary foil back tapes.
- D. The Paint Division of the SFMTA will install the permanent pavement markings within 30 days of the City Representative's acceptance of the paving work for the entire street. The Contractor shall maintain all temporary pavement markings until 14 calendar days after the acceptance of the paving of any street. The Painting Division will maintain the temporary pavement markings after 14 calendar days of the acceptance of the paving by the City Representative.

3.9 PROHIBITION OF STOPPING

- A. The Contractor may prohibit stopping in parking lanes where and when necessary to gain access to the work or to provide the required lanes, unless specified otherwise in this Section.
- B. The Contractor shall use "Tow Away" signs in all construction zones as shown in the Blue Book.
- C. The Contractor shall obtain the approval of the SFMTA for the required prohibition of stopping from the Traffic Bureau (415) 701-2311, at least 72 hours in advance of the effective date and time. The Contractor shall post the signs at least 72 hours in advance of the effective date and time.
- D. The Contractor shall furnish and place, spaced every 100 feet, where approved by the SFMTA Enforcement Division, City Representative, and/or according to the approved traffic control plans, "Tow-Away - No Stopping" signs in accordance with DPW Standard Plan 32,400 Ch. 2, on wood posts at least 7 feet above the sidewalk. The signs shall be metal and shall be placed and attached to the post so that they are easily readable by motorists.
- E. If "Tow-Away, No Stopping" signs are to remain in place for less than 5 days, such signs may be attached to Type II barricades, placed at 25 feet centers. The Contractor shall post the signs only in the area where actual work is being done. Parking shall not be prohibited in the area where there is no construction activity. The name and contact telephone number of the Contractor shall be shown on the signs.
- F. The Contractor shall post the following signs at the beginning of the block or at the point from where the parking of the vehicles is to be prohibited and/or at a spacing of 500 feet, or as directed by Traffic Engineer through the City Representative, where the block length is more than 800 feet:

"THIS BLOCK HAS
TOW AWAY NO STOPPING
FROM --- (TIME) TO --- (TIME)
FROM --- (DATE) TO --- (DATE)"
4 INCH SERIES D BLACK LETTERS ON ORANGE PLATE.
- G. These signs shall be placed on Type III barricades. If the street is two-way, these signs shall be placed at the beginning of the block, approaching the traffic. If the street is one-

way, and the parking is prohibited on both sides. These signs shall be placed on both sides of the street, facing the direction of the traffic.

- H. The Contractor shall maintain the signs on a continual basis and shall replace damaged or missing signs daily, and shall remove the signs immediately after they are no longer needed.
- I. When existing posted sign(s) need(s) to be revised (i.e., later start date, duration extension, etc.), the Contractor shall make new sign(s) to reflect the change(s) and replace the existing posted sign(s) at least 72 hours in advance of the proposed change(s).
- J. When a vehicle is removed from a street at the request of the Contractor and a post-storage hearing determines that as a result of the Contractor's improper posting of the required signs, reasonable grounds did not exist for removal, the Contractor shall reimburse the City and County of San Francisco for the cost incurred in storage and towing. The failure of the Contractor to provide reimbursement or to agree to assume all liability for any improper posting shall result in the SFMTA Parking Enforcement Divisions denial of any future requests by that Contractor for removal of vehicles in violation.

3.10 NIGHT TIME WORK

- A. Contractor shall obtain a night noise permit for any work between the hours of 8:00 PM and 7:00 AM, as specified in Section 2908 of the Police Code. Contact Rassendyll Dennis of the Department of Public Works (DPW), 1155 Market St, 3rd Floor at (415) 554-5810 for details of the requirements for obtaining the permit.
- B. Contractor shall provide suitable temporary lighting to illuminate the construction area for safety and security purposes, as required by the City Representative. The Contractor shall submit the details of the temporary lighting to the City Representative for approval.

3.11 TREE TRIMMING

- A. The Contractor shall contact the Bureau of Street Environmental Services (BSES) of DPW at (415) 701-2311, two (2) weeks prior to start of work if trees are in the City right-of-way and will be in conflict with the construction work, equipment, and/or with the traveling public during construction. The Contractor shall not detour any traffic onto the parking lane until all the tree branches are properly trimmed or the Contractor has made sure that these branches will not interfere with the traveling public.
- B. The Contractor will not be allowed to trim any trees without the written approval and supervision from BSES. The Contractor will do all necessary tree trimming as directed, at no additional cost to the City.
- C. If the trees are maintained by Property Owners, the Contractor shall send notices to the Property Owners, at least thirty (30) calendar days in advance to trim the trees. If the trees are not trimmed by the Property Owners, the Contractor shall trim the trees, at no cost to the City, as per directions of BSES.

3.12 TEMPORARY CONSTRUCTION AND TRAFFIC SIGNS

- A. The signs and equipment shall conform to the requirements of the latest edition of California Department of Transportation's MUTCD. Unless otherwise shown on the plans or specified in this specification, the color of construction area warning and guide signs shall have black legend and border on orange background, except W10-1 or W47(CA)

(Highway-Rail Grade Crossing Advance Warning) sign shall have black legend and border on yellow background.

- B. The Contractor shall be familiar with the California MUTCD.
- C. Before starting any work which will affect the normal flow of traffic, The Contractor shall furnish, install where and as necessary or directed, and maintain temporary signs mounted on barricades or other suitable supports.
- D. The Contractor shall as a minimum, furnish and make available to the site the following signs and equipment in sufficient quantities to maintain required traffic control, per the approved Traffic Control Plans and/or as directed by the Traffic Engineer through the City Representative:
 - 1. Barricades, as required by Section 21,400 of the State of California Vehicle Code and as specified in the Latest Edition of the State of California's Department of Transportation's MUTCD, in sufficient amount to safeguard the public and the workers.
 - 2. "TOW-AWAY, NO STOPPING" signs as herein specified.
 - 3. Traffic cones and/or delineators and/or temporary reflectorized removable tape to delineate traffic lanes as required to guide and separate traffic movements.
 - 4. High level warning flag units, in advance of traffic approaching the work, each displaying three (3) flags mounted at a height of 7 feet.
 - 5. "ROAD WORK AHEAD" signs, Code W20-1, size 48"x48" placed in conspicuous locations, in advance of the work, facing approaching traffic.
 - 6. "ROAD CLOSED" signs, Code R11-2, size 48"x30."
 - 7. "ROAD CLOSED TO THRU TRAFFIC" signs, Code R11-4, 60"x30".
 - 8. "ROAD CLOSED AHEAD" signs, Code W20-3, 48"x48".
 - 9. "RIGHT/LEFT LANE CLOSED AHEAD" signs Code W20-5 (RT/LT), size 48" x 48".
 - 10. "FLAGGER SYMBOL" signs, code C9A (CA), size 48"x48".
 - 11. "TWO WAY TRAFFIC SYMBOL" signs, Code W6-3, size 48"x48".
 - 12. "ROUGH ROAD" signs, Code W8-8, size 36"x36".
 - 13. "REVERSE TURN SYMBOL", signs, Code W1-3, size standard 36"x36".
 - 14. "DETOUR AHEAD" signs, Code W20-2, size 48"x48".
 - 15. "DETOUR" signs, Code M4-10 (RT/LT) and/or SC3 (CA), size 48" x 18".
 - 16. "Street Name" signs, with 6" Upper Case series "D" black letters on orange plate, size 48" x 18".
 - 17. "NO PED CROSSING SYMBOL" signs, Code R9-3a, size 18" x 18".

18. "USE CROSSWALK (RIGHT OR LEFT ARROW)" signs, R9-3b (RT/LT), size 18" x 12", (used with R9-3a signs).
19. "SIDEWALK CLOSED" signs, R9-9.
20. "SIDEWALK CLOSED / Left or Right Arrow / USE OTHER SIDE" signs, R9-10.
21. "SIDEWALK CLOSED AHEAD / Left or Right Arrow / CROSS HERE" signs, R9-11.
22. "SIDEWALK CLOSED / Left or Right Arrow / CROSS HERE" signs, R9-11a.
23. "BICYCLISTS ALLOWED USE OF FULL LANE" signs, with 4" Upper Case series "D" black letters on orange plate, size 36"x36".
24. "SAN FRANCISCO BIKE LOGO ROUTE SIGNS with bike route number and "BIKE LANE", Code Ca-SG45 (modified), 12" x 24", black and reflective orange.
25. "SAN FRANCISCO BIKE LOGO ROUTE SIGNS with bike route number and "DETOUR", or "DETOUR", or "DETOUR" Code Ca-SG45 (modified), 12" x 26" black and reflective orange.
26. Flashing arrow signs, Type II conforming to Section 12-3.03 of Caltrans Standard Specifications dated May 2006, except as modified herein, placed as shown on the approved Traffic Control Plan. The Contractor shall use solar operated flashing arrow signs.
27. "THIS BLOCK HAS
TOW-AWAY, NO STOPPING
FROM --- (TIME) TO --- (TIME)
FROM --- (DATE) TO --- (DATE)"

4 Inch Series D black letters on orange plate.
28. Miscellaneous signs, size 48" x 48" or larger, with 6" and/or 8" series "D" black letters on orange plate.
29. CMS, if specified in the bid schedule, shall be portable. The sign shall be capable of 24-hour operation via solar power to minimize complaints of odor and noise, etc. from local residents and businesses.
30. SFMTA temporary Bus Stop Signs, 12" x 24", shall be placed as directed by the SFMTA Superintendent of Special Operations through the City Representative. The SFMTA Superintendent will determine the exact wording and location of these signs through the City Representative. Unauthorized bus zone relocations or any other unauthorized use of the temporary bus stop signs will result in liquidated damages per Section 00 73 03.

- E. All signs installed by the Contractor shall employ the use of Type III Graffiti proof sheeting on aluminum signs and Type IV for roll-up signs. This sheeting can be obtained from the following sources approved by Caltrans:

TYPE III	3M High Intensity
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3M Center, Building 42-6E-37
Saint Paul, Minnesota 55144-1000
1-888-364-3577

TYPE IV Reflexite Vinyl Microprism
Reflexite
P.O. Box 1200
315 South Street
New Britain, Connecticut 06050
1-800-654-7570

- F. The actual number and type of signs to be placed shall be as shown on the approved traffic control plans or as directed by the Traffic Engineer through the City Representative.
- G. All signs and/or temporary striping shall be reflectorized. Signs shall be installed so that the bottom of the sign is at least 7 feet above the sidewalk or pavement or as directed by the Traffic Engineer through the City Representative.

3.13 TRAFFIC CONTROL

A. Traffic Coordination with Others

- 1. In order to maintain a continuous flow of traffic, the Contractor shall coordinate the traffic routing work with subcontractors and other contractors, working in the same adjacent area. This includes truck traffic hauling materials, equipment, etc.
- 2. All proposed traffic control changes shall be subject to approval of the Traffic Engineer through the City Representative.

B. Traffic Control Flag Persons

- 1. Flaggers, flagging procedures (signaling), flagger stations, and flagger control, shall conform to latest edition of the MUTCD.
- 2. The Contractor shall ensure that flaggers are trained in the proper fundamentals of flagging traffic before being assigned as flaggers.
- 3. The flaggers shall be used in each situation when the Contractor's equipment and/or vehicle backs up into a travel lane, intermittently occupies a traffic lane, enters from the work area into a traffic lane, and/or where required for traffic control, as directed by the City Representative.

3.14 MAINTENANCE OF TRAFFIC

- A. The Contractor shall cause the least possible interference with traffic. The Contractor shall not obstruct nor close any roadway to vehicular or pedestrian traffic, except in the immediate vicinity of the work, and then only to the extent allowed by the City & County of San Francisco Municipal Transportation Code and any Department Orders adopted pursuant thereto by the Director of the San Francisco Municipal Transportation Agency or the Director of the Department of Public Works.

- B. Those parts of public streets, ways, and sidewalks that are occupied by the Contractor shall be immediately vacated and returned to public use when use thereof is no longer necessary for the prosecution of the work.
- C. The Contractor, except as hereinafter provided, shall not impede at any time, free access for vehicles, bicycles, and pedestrians to warehouses, stores, service stations, dwellings, garages, and other properties in the vicinity of the work and on adjacent streets, including those properties fronting on streets allowed or stipulated by the Specifications to be closed to through vehicular traffic. The Contractor shall provide for such local access by phasing operations, bridging, or employing other procedures approved by the City Representative. The Contractor shall coordinate and work with each affected property or business owner, or responsible building or business manager, for any proposed period of prohibition or impediment of such access.
- D. Access to fire hydrants, to assure their immediate and unhampered use at all times, shall not be impaired by the Contractor. No debris, materials, or equipment shall be placed within ten (10) feet of any fire hydrant.

3.15 DIVERTING OF VEHICULAR TRAFFIC

- A. When closing one or more lanes to vehicular traffic or to otherwise divert such traffic from its normal paths, the Contractor shall clearly delineate temporary centerlines separating two-way traffic and dividing lines for other temporary traffic lanes by employing cones, barricades, flags, reflectors, or other approved methods or devices.
- B. Placing of devices shall commence sufficiently in advance of the obstruction or other cause of the diverting of traffic to minimize congestion and shall enable traffic to enter, traverse, and leave the site of the work without abrupt or unwarranted changes in direction. Unless otherwise specified or approved, each temporary traffic lane shall be not less than ten (10) feet clear width.
- C. When a detour is necessary for full or partial roadway closure, all detour signs needed for the required traffic routing must be in place before the roadway can be closed for construction. Failure to comply with this requirement shall result in liquidated damages associated with improper lane closure.
- D. High rise warning flag units, each displaying three flags mounted at the height of (7) feet, to provide advance warning for traffic approaching the work, will be required in all cases where motorists' visibility of the work is limited or obscured.

3.16 RELOCATION AND REMOVAL OF EXISTING PERMANENT TRAFFIC CONTROL AND SIGNS

- A. The Contractor shall be familiar with all existing permanent traffic signs and other traffic control devices within and adjacent to the project limit. The Contractor shall survey the site thoroughly to get all pertinent information of the signs in the construction area, including, but not limited to sign type, message, location, orientation, number of faces (double sided or single sided), and reflectivity. The Contractor shall pay particular attention to the signs that will likely be damaged, removed, or relocated during construction. The Contractor shall submit a Sign Inventory Form for each affected intersection, block, or location. This form is included at the end of this Section.
- B. The Contractor shall temporarily relocate all traffic control, street name, and other City signs, as required for the prosecution of the work and to prevent interference with traffic signal installations, and shall satisfactorily maintain such signs in place at all times. The Contractor shall similarly relocate or remove and salvage as City property, the standards

for such signs. The Contractor shall salvage standards in their entirety and shall remove any concrete therefrom.

- C. The temporary relocation of each arterial "STOP" or other traffic regulatory sign shall be done immediately upon its removal and to a location as close as possible to the original position of such sign or where directed by the City Representative.
- D. The Contractor shall remove and salvage as City property existing arterial "STOP" or other signs superseded by installed traffic signals immediately upon being notified by the City Representative that such signals will remain in operation.
- E. The Contractor shall permanently relocate traffic control and other signs and standards to the locations shown on the plan or as directed by the Traffic Engineer through the City Representative. Signs to be removed or salvaged are to be delivered by the Contractor, with a copy of the Sign Inventory Form(s), to the SFMTA Sign Shop at 1508 Bancroft Avenue, telephone (415) 554-9785. Each sign shall be tagged and labeled providing such information as location and the direction sign was facing prior to its removal.
- F. The Contractor shall notify the Traffic Engineer through the City Representative at least five (5) working days before the Contractor reinstalls the permanent signs which were temporarily removed due to construction. The reinstalled signs will be inspected by the Sign Shop personnel at no cost to the Contractor. The Contractor shall provide the Sign Shop with a copy of the approved sign inventory form along with a contact name, and phone number.
- G. If new materials (sign, pole, frame, mounting equipment, etc.) and adjustments are needed during the Sign Shop personnel's inspection, the associated cost shall be borne by the Contractor. The Sign Shop shall bill the Contractor to recover all costs incurred.

3.17 WORKING AROUND PARKING METERS

- A. The Contractor shall notify Joseph Bonilla of MTA at (415) 701-4585, through the City Representative, at least two (2) working days before starting any work that may impact parking meters so that arrangements may be made by the City to have the meters removed at no cost to the Contractor.
- B. Parking meters and parking meter standards damaged or loosened by the Contractor's operations will be repaired or replaced as necessary by the City; however, all expenses in connection therewith shall be borne by the Contractor.

3.18 WORKING AROUND PARKING STALL OR ROADWAY SENSORS

NOT USED

3.19 TRAFFIC SIGNAL WIRELESS OR WIRED LOOP DETECTORS IN THE WORK AREAS

- A. The Contractor is responsible for making sure the vehicle detection systems (wireless or wired loop detectors and their related components) are not damaged. If the vehicle detection systems are within the work area and could be damaged or affected, the Contractor shall obtain a copy of the wireless or wired loop detector plan from the Traffic Engineer and notify the SFMTA Signal Shop through the Traffic Engineer, five (5) working days before starting work to have them removed or disconnected, as applicable. There are currently vehicle detection systems at the following intersections:

1. VETAG Detector – Third Street at Arthur St and Cargo Way (IB/OB)

- B. In the event the Contractor removes or damages the existing vehicle detection system during construction, the Contractor shall immediately contact the Traffic Engineer through the City Representative. The Traffic Engineer will coordinate the installation of the new vehicle detection system to be installed by the SFMTA Signal Shop to current standards at the Contractor's sole expense if damaged.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify the SFMTA Signal Shop thru the Traffic Engineer and the detectors will be re-installed.
- D. Wireless detectors shall never be punctured, cut, ground, or removed from solid core. These actions may result in leakage or release of battery contents, explosion, or fire. Additional safety information can be found at www.able-battery.com/products.

3.20 BICYCLE CORRAL IN THE WORK AREA

NOT USED

3.21 BICYCLE LOOP DETECTORS IN THE WORK AREA

NOT USED

3.22 EXISTING TRAFFIC SIGNAL SHUTDOWN AND MAINTENANCE

- A. Where it is necessary to shut down existing traffic signals at any intersection, the Contractor shall notify the Traffic Engineer through the City Representative at (Fax # 415-701-4737), SFMTA Signal Shop (Fax # 415-550-2930), and SFPD Traffic Bureau forty-eight (48) hours in advance of the start of each such shutdown, so that arrangements may be made to have a police officer on duty to control traffic. Notification shall be written and shall also include a contact name and number to be used in case of emergency. If the Contractor fails to provide notice as detailed above, liquidated damages shall be assessed per Section 00 73 03.
- B. The Contractor shall similarly notify the Bureau of Light, Heat, and Power at (415) 227-8513 a minimum of two (2) working days in advance of any work on existing street light equipment. Disconnection of any existing or temporary streetlights will not be permitted until the new equipment has been tested and properly adjusted.
- C. The operation and interconnected functioning of such existing traffic signals shall not be disturbed before 9:00 a.m. and the traffic signals shall be returned to normal working conditions before 3:00 p.m. of the same day.
- D. All work and expenses for maintenance of existing traffic signal and streetlights in operation shall be done as incidental work to this contract.
- E. Many traffic signals are interconnected via 12-conductor cable, twisted wire pairs, or fiber optic cable to provide signal coordination. Coordination of the traffic signals shall be maintained every day between the hours of 7-9 AM and 3-7 PM. During all other times, the Contractor shall make every effort to maintain the existing coordination. Failure to ensure traffic signal interconnect is operational between the peak periods of 7-9 AM or 3-7 PM will result in liquidated damages being assessed per Section 00 73 03.

3.23 TRAFFIC SIGNAL LOOPS INSTALLATION

NOT USED

3.24 INSTALLATION OF CONDUCTORS

NOT USED

3.25 RED LIGHT CAMERA DETECTOR LOOPS AND SENSORS IN THE WORK AREA

- A. The Contractor is responsible for making sure the red light camera detector loops or sensors are not damaged. Prior to construction work (such as grinding or excavation) near or at the intersection of the red light camera loops or sensors, the Contractor shall notify Leanne Nhan of SFMTA at (415) 701-4591 and Todd Redmond of ACS Inc. at (213) 439-6219 thru the Traffic Engineer at least five (5) working days in advance. Work at the intersection may require the cameras to be deactivated. Work near the detector may require loops to be disconnected at the hand-hole or sensors to be removed. ACS Inc. will perform all work involving the red light camera loops and sensors.
- B. In the event that the Contractor removes or damages the existing red light camera detection system hardware or infrastructure, the Contractor shall immediately contact the Traffic Engineer through the City Representative. The Traffic Engineer will provide a construction schedule or estimated date of completion to ACS Inc. The new red light camera detection system will be installed by ACS Inc. to current standards at the Contractor's sole expense if damaged.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify Leanne Nhan of SFMTA and Todd Redmond of ACS Inc. through the Traffic Engineer to have the detector loops or sensors re-installed.
- D. Wireless detectors shall never be punctured, cut, ground, or removed from solid core. These actions may result in leakage or release of battery contents, explosion, or fire.

3.26 TRUCK ROUTES

- A. The Contractor shall ensure that all trucks and equipment associated with the project travel only on the truck routes designated by the local agencies. The Contractor shall not permit any trucks, or equipment associated with this project to be driven on non-truck route local streets except to use the shortest route to and from the project sites. In the event truck routes are not designated by a local agency, the Contractors shall use the local arterials to the project sites.
- B. The Contractor is solely responsible for all permits and costs required to operate extralegal size, weight, or load vehicles associated with this project.

3.27 PEDESTRIAN MONITORS

NOT USED

PART 4 - MEASUREMENT, PAYMENT, AND LIQUIDATED DAMAGES

See Section 01 20 00 - Price & Payment Procedures
See Section 00 73 03 - Additional Liquidated Damages

END OF SECTION 01 55 26

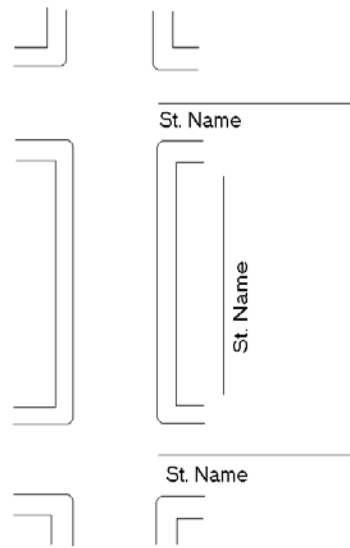
Appendix

Sign Inventory Form

Date: _____

Contract: _____

Location: _____



Sign Type	Location x' from property line of Cross St.	Side of St.	Double sided Single sided	Sign Description	Comments

Contractor's Signature _____

Sign Type: R-1 (Stop Sign), R-17 (No Left Turn), and etc.
 Location: Sign R-24: Park Parallel is 23' south from the property line of 9th Street.
 Side of Street: ES – east side, WS – west side, NS – north side, SS – south side
 Double sided/Single sided: DS or SS
 Sign Description: No Left Turn, One Way (L or R), Tow Away No Stopping Anytime (TANSAT), etc.
 For street name signs specify name (i.e. Main St) & color (B/W - black /white or G/W - green/white)

SECTION 01 56 39

TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section includes the requirements for the protection of existing trees and shrubs, including entire structure of plant material above and below ground impacted by all demolition and construction work under this contract.
- B. Contractor is prohibited from stockpiling any excavation or construction materials within the canopy of trees, on lawn areas or near shrubs.
- C. Contractor shall immediately clean and remove any construction residue that falls within the canopy of a tree or near shrubs.

1.2 RELATED SECTIONS

- A. Section 01 11 00 - Summary of Work.
- B. Section 01 71 33 - Protection of Adjacent Construction

1.3 JOB CONDITIONS

- A. Pre-construction Meeting:
 - 1. Prior to commencement of work, the Contractor shall arrange a meeting on the site with the City Representative, General Contractor, and such others as the City Representative shall direct to review the proposed schedule, the "Trees of Concern", the tree and landscape protection, submittals for this Section, the coordination with work of other trades, and the selective thinning and clearing requirements.
 - 2. Adjustments to the type and extent of the protection shall be addressed at the time of the meeting.
 - 3. Contractor shall coordinate the meeting and inform all parties in writing (5) business days in advance of the scheduled meeting.
- B. Environmental Requirements: Perform work only during suitable weather conditions. Do not disc, rototill, or work soil when frozen, excessively wet, or in otherwise unsatisfactory condition.
- C. Sequencing and Scheduling: Adjust, relate together, and otherwise coordinate work of this Section with work of Project and all other Sections of Project Specifications.

1.5 QUALITY ASSURANCE

- A. Contractor shall employ a certified Arborist who is a member of the American Society of Consulting Arborists, Inc. (ASCA). The name and qualifications of the Arborist shall be submitted for approval by the City Representative.
 - 1. Arboricultural work including tree removal, pruning and care for trees to remain shall be performed by personnel familiar with arboricultural work, under the supervision of an experienced professional Arborist and foreman at all times.
 - 2. Work in this Section shall be by a firm which has successfully completed landscape work similar in quality and extent to that indicated for this project for a

period of not less than five (5) years. Supervisory personnel with experience on projects of similar size and extent shall supervise the work.

1.6 APPROVAL OF TRENCHING AND EXCAVATION

- A. The contractor shall obtain written approval from the City Representative and a certified Arborist prior to start of excavation work within the drip line of trees. A Certified Arborist shall be retained as needed to provide written direction at the Contractor's expense.
- B. The Contractor is prohibited from using equipment for trench and excavation work within the tree drip line or where root intrusion exists on asphalt pathways to be reconstructed.
- C. In the event pruning is required for roots greater than 2" in diameter the Contractor shall receive written direction from the City Representative in coordination with Arborist prior to continuation of work.

1.7 NON-APPROVED TRENCHING

- A. In the event trenching or excavation is performed by the Contractor without the approval or not as shown on the Contract Drawings; the Contractor shall be subject to a fine equal to one half (½) day liquidated damages for every 50-feet.
- B. The only exception to paragraph 1.07A above is for trenching to a maximum of 3-feet as measured horizontally without approval at any particular location for the placement of pipe fittings and quick couplers outside the drip line of any tree.

1.8 DAMAGE TO TREES AND PAYMENT FOR DAMAGE

- A. If the Contractor should cause minor damage as defined by nicked tree trunks, limbs and branches or broken branches to trees or shrubs during the course of construction, the Contractor shall pay the following penalties at the beginning of each billing period:
 - 1. The Contractor will be penalized the sum of One Hundred dollars (\$100) for the first incident which causes minor damage to trees or shrubs.
 - 2. The Contractor will be penalized the sum of Two Hundred dollars (\$200) for the second incident which causes minor damage to trees or shrubs.
 - 3. The Contractor will be penalized the sum of Five Hundred dollars (\$500) for the third and subsequent incidents which cause minor damage to trees or shrubs.
- B. The Contractor shall replace any trees or shrubs that suffer more serious damage, including damage to roots 2-inches in diameter or larger, during construction at no additional cost to the City. The City Representative shall determine the value of such replacement trees or shrubs. In addition to the Contractor's restoration approved by the City Representative, the Contractor will be assessed damages for the difference in the dollar value of the damaged tree or other plant material, and the dollar value of the replacement.
 - 1. The dollar value will be determined by the City Representative from the "Guide for Establishing Values of Trees and Other Plants," prepared by the Council of Tree and Landscape Appraisers, current edition. Damages assessed will be deducted from moneys due or that may become due to the Contractor.
- C. The Contractor shall in addition be liable for the cost to the City for removing the damaged tree(s). This cost will cover 1.5 times the hourly wage of all person(s) at the site for the required hours to remove the tree(s) and haul offsite as directed by the City Representative.

1.9 EXCAVATION WORK UNDER LOW HANGING BRANCHES

- A. In areas where trenching is required under low hanging tree branches (8 to 12-feet off the ground), the Contractor shall operate equipment to a maximum height of 10-feet to avoid contact and possible damage to the tree branches.
- B. In bidding the work, the Bid Items which include piping and conduit trenching work shall include the use of machinery that will not extend above 10-feet vertically for 5% of the linear trenching performed.

1.10 MANUAL EXCAVATION

- A. In areas where tree branches hang below 12-feet over the area to be excavated, adjacent to elderly trees or as directed by the City Representative, the Contractor shall manually excavate the trench. No machinery shall be used in the areas so designated for manual excavation.

1.11 DAMAGE TO LAWNS, PLANTED AREAS, AND EXISTING IRRIGATION SYSTEMS

- A. Refer to the DPW Standard Specifications, Section 1009 – Restoration of Existing Lawn and Other Planting.

1.12 EXCAVATION FOR CONCRETE PATHWAYS

- A. The Contractor's vehicles and equipment shall not be driven off-road except along designated routes as far away as practical from tree root zones.
- B. Vehicles and equipment shall be operated in such a manner as to avoid damage to tree and bush trunks, leaves and branches.

1.10 ASPHALT PAVING AND TRENCHING AND INSTALLATION OF UNDERGROUND UTILITIES
NEAR TREE ROOTS

- A. The Contractor shall place all piping 3 ½-inches and smaller and all conduits a minimum of 18-inch below the existing finished grade. New conduits shall be located at least 25-feet away from all tree trunks, 20-feet away from all buildings, 10-feet away from any pathway lighting, and 5 feet away from and parallel to any asphalt or concrete paths.
- B. The Contractor shall place all piping 4-inches and larger a minimum of 3-feet below the existing finished grade except when approved by the City Representative to clear root systems. In no case shall the 4-inch and larger pipe placed less than 2-feet below the finished grade. Refer to the drawings for additional information when pipes cross over or under other pipes or conduit.
- C. The Contractor shall not cut any tree roots over 2-inch in diameter unless an approved arborist is consulted. The Contractor shall bend and/or transition underground conduit and piping so that the conduit or piping will thread between tree roots. This 2-inch diameter tree root guideline is dependent of the species of tree or bush. Various trees and bushes have a more fibrous root system, consequently, severing a large number of these roots can be as detrimental to certain species of trees as severing a fewer number of larger tree roots.
- D. When possible, trenches shall not be run of the side of the tree exposed to prevailing winds as roots are primarily anchored on the windward side. Trenches shall not be cut across more than on quadrant of the tree root zone.
- E. Excavated material (fill and overlay) shall not be deposited under the leaf/needle canopy of established trees. The excavated material shall be placed in piles along one side of a paved

surface. In no case shall the Contractor place the excavated material closer than 6-feet from the base of a tree.

- F. The Contractor shall be responsible for identifying all underground lighting, electrical control, and irrigation utilities within the project site area. The Department of Parks and Recreation is not a party to or a participant in the Underground Service Alert (USA). Rec/Park will not be providing any field marking service, protecting, and warning the Contractor of the underground facilities. As-built drawings and reference drawings of Rec/Park facilities are not available. As part of the contract work, the Contractor shall be required to locate, probe, determine, and flag or mark all underground facilities including, but not limited to, metal and plastic conduits and pipelines, sprinkler heads, quick couplers, valves boxes, controller boxes, pull boxes, prior to excavation.
- G. The Contractor shall replace all affected areas with new sod grass, decomposed granite, new concrete, or asphalt paving within 10 calendar days after beginning trench excavation. All trenches in pathways and planting areas shall be temporarily covered for immediate use. The Contractor shall not accumulate affected areas for group planting of sod or group paving of trench.
- H. The Contractor shall locate quick couplers and lateral lines. The Contractor shall cap tees as shown on the drawings unless located in the field directly under the tree drip line. In these cases, obtain the City Representatives approval for relocating the fitting(s).

PART 2 - PRODUCTS

2.1 TEMPORARY PROTECTION OF EXISTING TREES AND LANDSCAPE PLANTING

- A. Tree Protection fencing shall be composed of 6' tall chain link fence and posts, refer to drawings for additional information.
- D. Temporary materials, new or used, that are adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable Laws and Regulations, and shall be approved by the City Representative.
- E. Protection bedding mulch: Recycled wood chips to conform to the following:
 - 1. Mulch pieces should typically be heavy toothpick-like, 2-inch dimension.

PART 3 - EXECUTION

3.1 GENERAL

- A. Provide protection for existing landscape planting to remain including, but not limited to, trees, shrubs, and ground cover.
- B. Contractor shall provide Temporary Protection suitable for the protection of the landscape planting immediately adjacent to the construction limit of work line, and as directed by the City Representative.
- C. The Contractor shall coordinate all other trades and work.
- D. All trees to be retained shall be enclosed by fencing on the work side when Tree Protection Zone is located inside, adjacent to, or within 10 feet of the limit of work, prior to demolition, grubbing, or grading.

- E. Trees to be retained shall be pruned for clearance as required under supervision of a certified Arborist.
- F. Temporary Protection shall be kept in place for the duration of the Project, maintained during construction, and temporarily relocated as required by the progress of the construction at no additional cost to the City.

3.2 PREPARATION

- A. Stake the location of Temporary Protection barriers and fencing as noted above for the approval of the City Representative prior to installation of Temporary Protection fencing. Place location stakes at corners and ends and 30 feet on center maximum.
- B. Notify the City Representative at least two weeks in advance of the date for on-site review of the staking.
- C. Place six inches (6") of organic mulch over existing grade within Temporary Protection fencing for existing trees to remain.

3.3 INSTALLATION

- A. Install Temporary Protection for tree and landscape planting, as specified herein and as approved in the field by the City Representative and Landscape Architect. Install all other Temporary Protection in locations approved in the field by the City Representative and Landscape Architect.
 - 1. Install posts at 10-foot intervals maximum, at corners, and at other changes in direction. Posts shall be set firmly in undisturbed soil, plumb and with a minimum of exposed height as specified. Securely attach fencing at a minimum of three points.
 - 2. On pavement, provide self-supporting chain link fencing that does not require anchorage into the pavement.
 - 3. Install hay bales or rolls of erosion control wattling, secured around trunk to a height of 6 feet.
- B. Fencing to be relocated closer to trees to remain to accommodate the sequence of construction shall be reviewed by the City Representative and Arborist prior to relocation. No removals or construction shall occur without the City Representative's and Arborist's approval of the new fence location.
- C. Completely remove Temporary Protection, including foundations, associate materials and equipment at the completion of the Project or as directed by the City Representative.
- D. Restore and recondition areas of site damaged or disturbed by barrier installation and removal.

3.4 PROHIBITED ACTIVITIES:

- A. The following are activities prohibited under existing tree canopies and within protected landscape planting areas:
 - 1. Excavating or trenching under tree canopies is prohibited and shall be permitted only under the following conditions:
 - 2. When excavating or trenching within the canopy of trees to remain, the Owner shall be given 48 hours notice. Exercise extreme care during excavation to prevent damage to roots and in a manner that will cause minimum damage to the root system. Such work shall not occur without a professional arborist to perform compensatory root and branch pruning.

3. Prune injured roots cleanly. Backfill as soon as possible.
 4. Where tunneling around roots is not practical, roots shall be cut off approximately six inches (6") from construction.
 5. Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or exposed roots shall be packed with wet peat moss or four (4) layers of wet untreated burlap and temporarily supported and protected from damage until permanently covered with backfill.
 6. Thinning shall not remove more than thirty percent (30%) of the existing leaf surface.
 7. Ripping or tearing of roots will not be allowed.
- B. Placing backfill under protected trees unless indicated otherwise. Where fill is required for grading, and as indicated on the Drawings, do not fill above existing grade line at trunks. Fill soil must percolate at a rate of 1" per hour minimum.
- C. Damage to trunk, canopy, or limbs caused by maneuvering of vehicles or equipment, or stacking of materials and equipment.
- D. Driving or parking vehicles; storage of vehicles, equipment, or supplies.
- E. Disposing of paint, petroleum products, dirty water, soil sterilants, concrete slurry or other deleterious materials on or around roots or on any landscape areas.
- F. Changing site grades which cause drainage to flow into or to collect near protected trees.
- G. Using protected trees as support posts, power poles, crane stays, sign posts, or anchorage for ropes, guy wires, power lines, or other similar functions.
- H. Damage to root system from flooding, erosion, excessive wetting or drying resulting from dewatering or other operations.
- I. Excessive water or heat from equipment, utility line construction, or burning of trash under or near shrubs or trees.

3.5 REPLACEMENT OF DAMAGED LANDSCAPE PLANTING

- A. Trees and plants destroyed or damaged beyond repair due to Contractor's negligence, failure to provide adequate protection, or failure to perform recommended selective pruning shall be compensated by the Contractor at no additional cost to the City.
1. Damage beyond repair that requires replacement shall be determined by the City Representative.
 2. Replacement shall include the replacement plant material, transportation, installation, a 30-day maintenance period, and a one year warranty.
 3. Planting location for replacements may be different from the original location and shall be determined by the City Representative.
- B. Replace shrubs, ground cover and turf with plants similar in species, size and shape.
- C. Replace trees with plants of same species, size and shape.
- D. Replacements for trees of 2"-8" caliper shall be replaced with similar sized plants; trees over 8" caliper shall be 60" box size.
- E. Since age and size of existing tree may prohibit replacement with same size tree, the difference in caliper between size of damaged tree and replacement of tree shall be compensated by the Contractor.

- F. Contractor shall fell trees to be removed so that trees to remain are not injured.

END OF SECTION

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for storm water pollution prevention, erosion, and sediment control.

1.2 RELATED SECTIONS

- A. Section 01 11 00 – Summary of Work
- B. Section 01 41 00 – Regulatory Requirements
- C. Section 01 33 00 – Submittal Procedures
- D. Section 01 50 00 – Temporary Facilities and Controls
- E. **Section 01062 – Environmental Conditions**
- F. Section 31 10 11 – Site Clearing
- G. Section 31 25 00 – Erosion Control

1.3 REQUIREMENTS

- A. Contractor shall comply with all Federal, State, and local regulations and permit conditions, including, but not limited to the State Water Resources Control Board Construction General Permit Order 2012-0006-DWQ ("Construction General Permit"), the Construction Site Runoff Control Ordinance, Article 4.2, Sections 146 through 146.11 of the San Francisco Public Works Code, and the Port of San Francisco Building Code.

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- B. The Contractor shall prepare and submit for approval an Erosion and Sediment Control Plan for land-disturbing activities less than one (1) acre or a Storm Water Pollution Prevention Plan (SWPPP) for land-disturbing activity greater than or equal to one (1) acre in accordance with Federal, State, and local regulations. The Contractor shall provide for temporary erosion and sediment control and general storm water pollution controls in accordance with the Contractor's approved Sediment and Erosion Control Plan or Storm Water Pollution Prevention Plan (SWPPP) and industry best management practices (BMPs). Control measures generally include, but are not limited to, furnishing, installing and removal of silt fence, filter boxes, stabilized construction entrances, and sediment traps; providing dust control; and implementing other measures during construction to prevent contamination of storm water from construction activities (i.e., temporary fuel storage, fueling operations, equipment maintenance, hazardous material and waste handling, etc).

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- C. The Contractor will receive no additional compensation for preparing plans and

submittals, obtaining permits, and / or for implementing erosion and sediment control and storm water pollution control measures throughout the contract duration. Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items or work and no separate measurement or payment will be made for such work which is considered incidental to the contract.

- D. The Contractor shall be solely responsible for complying with the soil erosion and sedimentation control requirements of this Contract and for otherwise preventing contamination of stormwater from the general construction activities.
- E. The Contractor shall be solely responsible for any and all fines, penalties, remedial actions, or damages which result from failure to comply with the requirements of this Section.

1.4 PRESERVATION

- A. The Contractor shall not remove, cut, deface, injure, or destroy trees or shrubs without the City's permission except in areas to be cleared.

1.5 SUBMITTALS

- A. Prior to the commencement of land-disturbing activities and within thirty (30) days of receipt of Notice to Proceed, the Contractor shall prepare and submit for approval an Erosion and Sediment Control Plan pursuant to the San Francisco Public Works Code Construction Site Runoff Control Ordinance and Port Building Code for land-disturbing activities less than one (1) acre or a Storm Water Pollution Prevention Plan (SWPPP) pursuant to the State Water Resources Control Board Construction General Permit for land-disturbing activities greater than or equal to one (1) acre.
- B. The Contractor's Erosion and Sediment Control Plan or SWPPP shall include the following elements, as applicable:
 - 1. Site Description
 - a. A description of the nature of the construction activity.
 - b. A description of the intended sequence of major activities which disturb soils for major portions of the site.
 - c. Estimate of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other land-disturbing activities.
 - d. An estimate of the runoff coefficient of the site after construction activities are completed and existing data describing the soil or the quality of any discharge from the site.
 - e. A site map indicating drainage patterns and approximate slopes. anticipated after major grading activities, areas of soil disturbance, location of structural and non-structural controls identified in the plan, location of areas where stabilization practices are expected to occur, and locations of points of discharge to existing storm runoff conveyance systems.
 - 2. Pollution Sources: The plan shall identify all potential sources of storm water pollution in addition to land-disturbing activities, such as:
 - a. Temporary fuel storage and handling - All fuel storage tanks shall be placed within a secondary containment of sufficient size and strength as to contain 150 percent of the volume stored. Refueling of equipment within the contaminated areas shall be addressed in the plan.

- b. Material storage and hazardous material storage.
 - c. Equipment maintenance areas.
 - d. Solid waste and hazardous waste disposal activities.
 - 3. Controls: The plan shall include a description and timing of appropriate controls and measures that will be implemented for each major activity and for each potential pollution source identified above.
 - a. Stabilization Practices - Seeding, mulching, installation of geotextile fabric, etc. on areas where construction activities have temporarily or permanently ceased.
 - b. Structural Practices - Construction of silt fences, berms, dikes, sediment basins, covered materials, and waste storage areas and other such devices to limit runoff and minimize the discharge of pollutants. Appropriate practices shall be incorporated for surface drainage.
 - c. Operational Practices - Dust control, housekeeping, non-hazardous regular waste collection, and disposal, control of equipment fluids and lubricants, and similar practices to minimize pollutant generation.
 - d. Vehicle Washing - All vehicle washing shall occur at the designated equipment decontamination wash pad.
 - 4. Maintenance: A description of procedures to maintain protective measures in good and effective operating conditions.
 - 5. Inspection: A description of inspection procedures and schedules, to include, at a minimum, inspections of all structural and non-structural pollution control measures at least once a week and within 24 hours of precipitation event of 0.5 inches or greater or as otherwise directed by project permits.
 - 6. Contractor Identification: Clearly identify the contractor or subcontractor responsible for implementation of each control measure.
- C. The Erosion and Sediment Control Plan or SWPPP may utilize plans, details, notes, and other information provided in the construction documents; however, such information shall not, in itself, be construed to meet the requirements of this section.

PART 2 - PRODUCTS

2.1 GEOTEXTILE FABRIC (SILT FENCE AND FILTER FABRIC)

- A. The physical properties of the geotextile for silt fence and filter fabric shall be as follows: weight 3 oz/yds, thickness 15 mils, grab tensile strength 100 lb, grab elongation 20%, mullen burst 235 min, trapezoidal tear 50 min, ultra-violet stability >90 % strength retained, permeability-k 0.01 cm/sec, and apparent opening size -50 test value.

2.2 STRAW HAY BALES

- A. The straw hay bales shall be dry and compacted, and tied in rectangular box shape. It shall be free from any pest and rodent infestation.

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall exercise every reasonable precaution, including temporary and permanent measures, throughout the duration of the project to control erosion and prevent or minimize pollution of rivers, streams, lakes, ponds, and other receiving waters. Siltation control measures shall be applied to erodible materials exposed by any activity associated with the non-hazardous waste removal construction including, but not limited

to local material sources and haul roads.

- B. Temporary measures shall be coordinated with contract work to the extent practicable to ensure economical, effective, and continuous erosion and siltation control and storm water pollution prevention. Permanent pollution control measures and facilities shall be installed as the work progresses in accordance with the Erosion and Sediment Control Plan or SWPPP.
- C. Contractor shall inspect erosion and siltation control devices and other storm water pollution controls for deficiencies immediately after each rainfall and at least daily during prolonged rainfall. Deficiencies shall be corrected immediately. Failure on the part of Contractor to maintain erosion and siltation control devices or other storm water pollution controls in a functioning condition may result in the City Representative notifying the Contractor in writing of specific deficiencies. If Contractor fails to correct or take appropriate actions to remedy the specified deficiencies within 25 hours after receipt of such notification, the City Representative may require Contractor to discontinue work in other areas and concentrate efforts toward rectifying the specified deficiencies, or the City Representative may proceed to remedy specified deficiencies and deduct the entire cost of such work from monies due Contractor.
- D. Contractor is directed to best management practices (BMPs) such as those described in San Francisco Public Utilities Commission Construction Best Practices Handbook (August 2013).

3.2 SILT FENCE

- A. Silt fence shall be installed at the locations and to the limits shown on the approved Erosion and Sediment Control Plan or SWPPP, as appropriate, and as otherwise directed by the City.
- B. The Contractor shall maintain the alignment and condition of the silt fence, as necessary, throughout its use on the project. Upon completion and/or as directed by City, the Contractor shall remove the silt fence from the project.
- C. If required by construction operations and as approved by City, silt fence shall be relocated as necessary.

3.3 CONSTRUCTION ENTRANCE

- A. Contractor shall construct an equipment decontamination pad in accordance with the Erosion and Sediment Plan or SWPPP as approved by the City. The pad shall be in place prior to any excavation or earthmoving operations. In the event that the pad becomes clogged with soil, it shall be cleaned. At the completion of construction, the pad shall be removed, a minimum 6" layer of top soil applied, and the area shall be seeded per these specifications.

3.4 DIVERSION DIKES

- A. Contractor shall install minimum 18-inch high and 24-inch wide diversion dikes to exclude storm water runoff from entering the work areas, as necessary. Diversion dikes shall also be constructed within each phased work area to capture all rain water which falls within the contaminated work areas.

3.5 TEMPORARY AND PERMANENT SEEDING

- A. All areas that have been cleared of vegetation longer than 30 days, including diversion

dikes upon installation, shall be hydroseeded with City-approved seed at an application rate of 100 pounds/acre. These areas shall then be mulched using straw or similar materials.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 INCLUDED WORK

- A. Section includes procedures and requirements for material and equipment.

1.2 PRODUCTS

- A. Material and equipment incorporated in the Work shall be new, unless otherwise specified or indicated; in a condition acceptable to the City; and suitable for the use intended.
 - 1. Products may also include existing materials or components required for reuse.
- B. No material or equipment shall be used for any purpose other than that for which it is designed, specified, or indicated.

1.3 QUALITY ASSURANCE

- A. Include within Contractor's quality assurance program procedures for full protection of work and materials.

1.4 MANUFACTURER'S SERVICES

- A. Require material suppliers and product manufacturers to provide site representation on the request of the City for qualifying and verifying the use of their materials for the project purpose and conditions. Refer to Section 01 33 00 - Submittal Procedures for submittal requirements regarding manufacturer's instructions and certificates of satisfactory installation.

1.5 MANUFACTURERS' RECOMMENDATIONS

- A. Except as otherwise approved by the City, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

1.6 DELIVERY

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Transport and deliver manufactured products, undamaged, in manufacturer's original, unbroken containers or packaging, clearly identified with manufacturer's name, product name, and instructions.
- C. Handle products to avoid soiling and damaging the products and their packaging.
- D. Immediately upon delivery, inspect shipments to assure compliance with the Contract Documents and reviewed submittals, and to verify that products are undamaged and properly protected from potential damage.
 - 1. Undamaged products shall be delivered to the project site in manufacturer's sealed containers or wrappings with legends and labels intact. Maintain packaged materials with seals unbroken and labels intact until time of use.
 - 2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements at no increase

- in Contract Sum.
- 3. Unsuitable materials and products not removed promptly from the job site by Contractor may be removed by the City. Removal costs shall be paid by Contractor.
- 4. Identify materials and equipment delivered to the site to permit checking against Submittals and Shop Drawings.
- E. The City may reject as non-complying such material and products that do not bear identification satisfactory to the City as to manufacturer, grade, quality, and other pertinent information.

1.7 STORAGE

- A. Store materials and equipment at the site at Contractor's own risk. Because of location and visibility, on site storage shall be limited to materials and equipment currently being utilized or installed.
- B. Provide off-site storage and protection when site does not permit on-site storage or protection.
- C. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled enclosures.
- E. Store fabricated products above the ground, on blocking or skids, to prevent soiling and staining of the products.
- F. Provide off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.
- H. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- I. Arrange storage to facilitate inspection of products. Periodically inspect stored products to assure that products are maintained under specified conditions and free from damage and deterioration.
- J. Store products subject to damage from the elements in weather tight enclosures, maintaining temperature and humidity within the ranges specified by the manufacturers.
- K. Provide coverings as necessary to protect installed products from damage from traffic and construction operations; remove coverings when no longer needed.
 - 1. Take care to use protective covering and blocking materials which do not soil, stain, or damage materials being protected.

1.8 HANDLING

- A. Use means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of other trades.
 - 1. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.
 - 2. Provide protection for finished floor surfaces in traffic areas prior to allowing

- 3. equipment or material to be moved over such surfaces
Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the City.

- B. Clean exposed materials at the time of acceptance of the installation for Substantial Completion.

1.9 REPAIRS AND REPLACEMENTS

- A. Promptly replace lost or damaged materials and equipment with replacements of like kind and quality or repair them at no additional cost to the City.
- B. Damage to any of the work and premises prior to acceptance by the City is the responsibility of Contractor. Should any new equipment become damaged, restore it to its original condition, and finish before final acceptance. Replace or repair damage to City property and to the work of other Divisions, caused by the work of this Division at the expense of, Contractor and to the City's satisfaction.
- C. Additional time required to secure replacements and to make repairs will not justify an extension in the contract time of completion.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 71 23
FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements and procedures for field engineering services to establish elevations and slopes required to layout the proposed design.

1.2 RELATED SECTIONS

- A. Section 01 77 00 - Closeout Procedures: Project Record Documents.

1.3 QUALITY CONTROL

- A. The Contractor shall employ a civil engineer or land surveyor registered in the State of California and acceptable to the City Representative to perform site surveying under the Contract Documents.
- B. The Contractor shall submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

1.4 SUBMITTALS

- A. Submit name, address, and telephone number and state registration number of the Surveyor before starting survey work.
- B. Submit a copy of site drawing, and a certificate that the elevations and locations of the Work are in conformance with Contract Documents, all prepared, stamped and signed by the surveyor.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. Submit Record Documents under provisions of Section 01 77 00 - Closeout Procedures.

1.6 EXAMINATION

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify the City Representative in writing of any discrepancies discovered.

1.7 SURVEY REFERENCE POINTS

- A. Control datum for survey is that established by City provided survey. The Contractor shall use the City of San Francisco benchmarks. Benchmark information is available at 875 Stevenson, Room 460, Telephone (415) 554-5827.
- B. Contractor to locate and protect survey control points prior to starting site work; preserve permanent reference points during construction.

- C. Promptly report to City Representative the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- D. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to City Representative.

1.8 SURVEY REQUIREMENTS

- A. Provide field-engineering services, using recognized engineering survey practices.
- B. Establish a minimum of one permanent benchmark on site, referenced to established control points. Record locations with horizontal and vertical data on Project Record Documents.
- C. Establish elevations, lines and levels. Locate and layout by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations, pile locations, wharf deck, and bridges.
 - 2. Grid or axis for irrigation work.
- D. Periodically verify layouts by same means.

1.9 FIELD LAYOUT

- A. Dimensions, radii, etc., shown on the Drawings for field layout are approximate and are subject to adjustments to accommodate field conditions; smoothness of alignment and profiles supersede dimensions shown. Layout shall be done by the Contractor at its own expense and shall be approved by the City Representative prior to the start of any construction.

1.10 ELEVATION CONTROL

- A. Comply with ADAAG's 5% or less grade requirement for landscape work and pathways.

1.11 LINE AND GRADE FOR THE WORK

- A. The City will furnish the Contractor information on Monuments that will be used for line control and on Benchmarks, including City Datum elevations, which will be used for elevation control. All other lines and grades required for the completion of the work according to the plans shall be the responsibility of the Contractor and shall be obtained by him as Incidental Work. The City reserves the right to make minor line and grade changes of uncompleted work at any time before or after start of construction without claim by the Contractor for extra payment.
- B. A copy of the Contractor's survey notes shall be given to the City Representative weekly.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 71 33

PROTECTION OF ADJACENT CONSTRUCTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes requirements for protection of existing facilities and improvements.

1.2 RELATED SECTIONS

- A. Section 00 73 20 – Existing Utility Facilities
- B. Section 01 50 00 – Temporary Facilities and Controls
- C. Section 02 32 27 – Force Main Monitoring

1.3 EXISTING UTILITIES AND IMPROVEMENTS

- A. Notify Underground Service Alert (USA) prior to excavating in the public right of way areas so that utility companies may be advised of the work and may field mark or otherwise protect and warn the Contractor of their existing utility lines. Contact USA, 4090 Nelson Avenue, Suite A, Concord, CA 94520, telephone (800) 227-2600, or refer to USA website for more information at: <http://www.usanorth.org/>.
 - 1. Provide reasonable access and do not hinder or otherwise interfere with any company or agency having underground facilities in removing, relocating, or protecting such facilities.
- B. Verify the actual locations and depths of all utilities indicated or field marked. Make a sufficient number of exploratory excavations up to a maximum of eight potholes at Contractor's expense of all utilities that may interfere with the work sufficiently in advance of construction to avoid possible delays to Contractor's work.
 - 1. Notify the City if such exploratory excavations show the utility location as shown or as marked to be in error.
 - 2. When utility lines are encountered within the area of Contractor's operations, notify the City Representative and the owner(s) of the utility lines sufficiently in advance for the necessary protection measures to be taken to prevent interruption of service or delay to Contractor's operations.
 - 3. Do not excavate near the Force Main at Tulare Park without approval of PUC.
- C. The Contractor shall protect all existing utilities, facilities, and structures, public or private, and will be held responsible for all damage caused by the Contractor not exercising due care to avoid such damage.
- D. Overhead Contact System: Work on or under the overhead contact system shall be performed with lines and feeders energized unless shutdown of the system is granted. Notify the City Representative at least 10 days prior to performing work on energized overhead trolley wires, feeder circuits, or at substations, so that the City Representative may arrange for any necessary clearances and inspections.
 - 1. Contractor is alerted to the condition that overhead trolley wires and feeder cables distribute electrical energy at up to 700 Volts dc. Comply with the "High Voltage" provisions of the California Code of Regulations (Title 8, Division 1, Chapter 4, and Subchapter 5).
 - 2. Take precautions to avoid accidents and damage to the overhead contact wires, and riser and feeder cables.

- E. Survey Monuments and Bench Marks: Contractor shall bring to the attention of the City Representative all survey monuments, bench marks, property line marks and the like, encountered on the work. Survey monuments, bench marks, or other survey marks or points shall not be removed or disturbed until referenced or relocated by the City Representative or other agency or party having an interest therein, and then removed only at the time and in the manner specifically approved by the City Representative. The contractor shall bring all City monument frames within the limits of the work to grade, with the express provision that any and all work associated with the removal and relocation of such frames, with their covers, shall be under the direct supervision of the City Representative, and all such work shall be considered Incidental Work. The cost of re-establishing and resetting survey monuments, bench marks or other survey marks or points lost or destroyed through the carelessness or negligence of, or inadvertently by, the Contractor or his employees, shall be at the sole expense of the Contractor.
- F. Force Main at Tulare Park: An SFPUC 60-inch sewer force main runs through the Tulare Park site. See Section 02 32 27 Force Main Monitoring for requirements for monitoring and safeguarding this existing facility which is critical to the functioning of the South East Treatment Plant.
- G. Fire Station No. 25 at Bayview Gateway: San Francisco Fire Station No. 25, 3305 3rd Street, a fully functioning fire station, is located within the Project area. Special attention is needed to document existing conditions and plan for construction that will not impact the structure condition nor impact the functioning of the fire station (see 01 31 13 Coordination). Contractor shall develop and submit for approval, a plan for monitoring the structure during pile driving. The monitoring plan shall include active monitoring such that pile driving may be stopped if damage is imminent. Monitoring may include survey, crack gages, accelerometers, visual, and/or other means acceptable to the Port.

1.4 SAFEGUARDING OF EXISTING FACILITIES

- A. The Contractor shall perform all work, including dewatering operations, in such a manner as to avoid damage to existing fire hydrants, power poles, lighting standards, and all other existing utilities, facilities, trees and vegetation, and structures. The Contractor will be held responsible for any damage due to its failure to exercise due care.
- B. Broken concrete, debris, etc., shall be immediately removed from the property site as the Contractor's property and shall be disposed of in a legal manner.
- C. The Contractor shall take adequate measures to prevent the impairment of the sewer system and to prevent construction material, pavement concrete, earth or other debris from entering a sewer, sewer structures, catch basin, or storm water inlet. The Contractor shall restore damaged utilities and facilities to a condition equal to or better than they were prior to such damage.

1.5 RESTORATION OF PAVEMENT

- A. General: All paved areas cut or damage during construction shall be replaced with similar materials and of equal thickness to match the existing undisturbed areas, except where specific resurfacing requirements are called for in the Contract Documents or in the permit requirements of the agency issuing the permit. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.

- B. Temporary Resurfacing: Whenever required by the public authorities having jurisdiction, place temporary surfacing promptly after backfilling and maintain such surfacing in a satisfactory condition for the period of time before proceeding with the final restoration.
- C. Permanent Resurfacing: Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in neat straight lines. All pavement restoration shall be constructed to finished grades compatible with undisturbed adjacent pavement.
- D. Restoration of Sidewalks or Driveways: Wherever sidewalks, curbs and gutters, or driveways have been removed for construction purposes, place suitable temporary sidewalks, curbs and gutters, or driveways promptly after backfilling and maintain them in satisfactory condition for the period of time before the final restoration is been made.

1.6 JOINT SURVEY TO ESTABLISH AUTHENTICITY OF POSSIBLE CLAIMS

- A. The Contractor shall use such methods and shall take adequate precautions to prevent damage to existing buildings, structures, and other improvements during the prosecution of the work.
- B. The Contractor shall retain an experienced photographer to perform preconstruction examination and, if necessary, post-construction survey of all nearby structures. The survey shall be made using still photographs. The survey shall be considered incidental work and no separate payment will be made therefore.
- C. After the Contract is awarded and before the commencement of work, the City Representative will arrange for a joint examination of existing buildings, structures and other improvements in the vicinity of the work, as applicable, which might be damaged by the Contractor's operations.
- D. The examination of the exterior of existing buildings, structures, and other improvements located within twenty-five (25) feet of the construction excavation will be made jointly by authorized representatives of the Contractor, the City, and property owners under the supervision of the City Representative. The scope of each examination shall include, but is not limited to, recording of cracks in structures, settlement, leakage and the like.
- E. Records in duplicate of all observations will be prepared by the photographer, including photographs when deemed necessary or prudent. One copy shall be delivered to the Contractor, and one copy will be kept on file at the office of the City Representative. The photographer may be required to attest to the fact that he took the pictures; however, in no case, will he determine the cause cracks, settlement, leakage, or like condition nor is he being retained for the purpose of engineering evaluation.
- F. The above records and photographs are intended for use as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations and are for the protection of the adjacent property owners, the Contractor, and the City, and will be a means of determining whether and to what extent damage, resulting from the Contractor operations, occurred during the Contract Work.

1.7 UNFORESEEN EXISTING UTILITIES

- A. Refer to Section 00 73 20 – Existing Utility Facilities, Paragraph 1.3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 74 50

CONSTRUCTION & DEMOLITION DEBRIS RECOVERY PLAN

PART 1 - GENERAL

1.1 SUMMARY

- A. In October 16, 2006, the San Francisco Mayor issued Executive Directive 06-05 requiring all Construction Contracts to divert 75% of construction and demolition debris from landfill disposal sites. This directive is supported by existing policies that require reuse, recycling, and management of construction and demolition debris. Some of these policies are described below.
- B. The City and County of San Francisco adopted an ordinance (No. 27-06) that creates a mandatory program to maximize the recycling of all construction and demolition debris.
 - 1. The Ordinance requires that mixed construction and demolition debris be transported off-site by a Registered Transporter and taken to a Registered Facility that can process and divert from landfill a minimum of 65% of the material generated from construction, demolition or remodeling projects.
 - 2. Material source separated at the job site should be taken to a facility that recycles such material.
 - 3. This ordinance applies to all construction projects within the City and County of San Francisco, such as new construction, remodels, tenant improvements, additions, repairs, and full and partial demolitions.
 - 4. This ordinance prohibits any construction and demolition debris from being placed in trash or sent to a landfill.
- C. Chapter 7 of the San Francisco Environment Code requires the Contractor to prepare and submit a Construction and Demolition Debris Management Plan, Construction and Demolition Debris Recovery Monthly Summary Reports, and Construction and Demolition Debris Recovery Final Report in accordance with the submittal requirement specified below. This requirement applies to Construction Contracts for City facilities, regardless of location, with construction cost estimate of \$90,000 or more.
- D. Chapter 5 of the San Francisco Environment Code requires the Contractor to reduce wastes by maximizing the use of recycled content materials, recycling, and reuse.
- E. The Mandatory Recycling and Composting Ordinance, Chapter 19 of the San Francisco Environment Code, requires that all persons in San Francisco must source separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse. No person may mix recyclables, compostables or trash, or deposit refuse of one type in a collection container designated for another type of refuse.
- F. California Integrated Waste Management Act of 1989 (AB 939) established the procedures for the Highest and Best Use practices to reduce, recycle, and reuse construction and demolition debris to the maximum extent feasible in an efficient and cost-effective manner.
- G. State regulations require that Universal Wastes and Treated Wood Wastes be handled and disposed of in accordance with the requirements of the California Department of Toxic Substances Control and all applicable laws.

- H. This Section describes in further detail the requirements of the above ordinances, regulations, and policies applicable to this contract.

1.2 REFERENCES

- A. Mayor's Executive Directive 06-05, Recycling and Resource Conservation, October 16, 2006.
- B. San Francisco Ordinance No. 27-06 (Construction and Demolition Debris Recovery Ordinance) with effective date on July 1, 2006.
- C. San Francisco Environment Code, Chapter 5, Resource Conservation Ordinance.
- D. San Francisco Environment Code, Chapter 7, Construction and Demolition Debris Management.
- E. San Francisco Environment Code, Chapter 19, Mandatory Recycling and Composting.
- F. California Integrated Waste Management Act of 1989 (California Public Resources Code 40000 et. seq.) - Assembly Bill 939.
- G. Leadership in Energy and Environmental Design (LEED) for New Construction, Version 2.2, October 2005, US Green Building Council.
- H. Universal Waste information from the following website:
<http://www.ciwmb.ca.gov/HHW/Uwaste/>
- I. Treated Wood Waste Fact Sheet from the following website:
http://www.dtsc.ca.gov/HazardousWaste/Treated_Wood_Waste.cfm
- J. San Francisco Board Of Supervisors Resolution Nos. 530-04 and 679-02 establishing 75% diversion goal.
- K. Food Service Waste Reduction Ordinance as set forth in San Francisco Environment Code Chapter 16.
- L. Refuse Collection and Disposal Ordinance, adopted November 8, 1932.

1.3 DEFINITIONS

- A. Class III Landfill are landfills sited pursuant to Title 27 (Environmental Protection), Division 2 (Solid Waste), Chapter 3, Subchapter 2, Article 3, Section 20260. SWRCB - Class III: Landfills for Nonhazardous Solid Waste.): this type of landfill that accept non-hazardous waste such as household, commercial, and industrial waste resulting from construction, remodeling, repair and demolition operations. A Class III Landfill must have a solid waste facilities permit from the California Integrated Waste Management Board (CIWMB), and is regulated by the Local Enforcement Agency (LEA).
- B. Compostable: Any material that can be broken down into, or otherwise become part of, usable compost (e.g., soil-conditioning material) in a safe and timely manner as accepted in San Francisco's compostables collection program, such as food scraps, soiled paper and plant trimmings. Compostable materials can also include disposable plastic food service ware and bags if labeled "Compostable", in accordance with the Food Service Waste Reduction Ordinance (No. 295-06) and Department of the Environment regulations for easy identification, meeting the ASTM Standard Specification (D6400) for compostable plastics, and consistent with State labeling law (California Public Resources

Code Section 42359) that any plastic bag or food container labeled "Compostable" must meet the ASTM Standard Specification for compostable plastics.

- C. Construction and Demolition Debris: Building materials and solid waste generated from construction and demolition activities, including, but not limited to, fully cured asphalt, concrete, brick, rock, soil, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, fixtures, plastic pipe, metals, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction, deconstruction, demolition or land developments. This term does not include refuse regulated under the 1932 Refuse Collection and Disposal Initiative Ordinance or sections of the Municipal Code that implement the provisions of that ordinance; materials from the public right-of-way; or, unless specified in Chapter 14 of the Environment Code, materials source separated for reuse and recycling. Hazardous waste, as defined in California Health and Safety Code section 25100, et seq., as amended, is not Construction and Demolition Debris.
- D. Disposal: Acceptance of solid waste at a legally operating facility for the purpose of land filling. This includes Class III Landfills and Inert Fills. State regulations do not consider the disposal of inert materials at Inert Fills or Inert Backfill Sites, as recycling.
- E. Hazardous Waste: Hazardous waste is a waste with properties that make it potentially dangerous or harmful to human health or the environment. The universe of hazardous wastes is large and diverse. Hazardous wastes can be liquids, solids, or contained gases. They can be the by-products of manufacturing processes, discarded used materials, or discarded unused commercial products, such as cleaning fluids (solvents) or pesticides. In regulatory terms, a hazardous waste is a waste that appears on one of the four RCRA1 hazardous wastes lists (the F-list, K-list, P-list, or U-list) or that exhibits one of the four characteristics of a hazardous waste - ignitability, corrosivity, reactivity, or toxicity. However, materials can be hazardous wastes even if they are not specifically listed or don't exhibit any characteristic of a hazardous waste. For example, "used oil", products which contain materials on California's M-list, materials regulated pursuant to the mixture or derived-from rules, and contaminated soil generated from a "clean up" can also be hazardous wastes.
- F. Highest and Best Use: Highest and best use practices require performing both of the following: (a) Promote the following waste management practices in order of priority: (1) Source reduction. (2) Recycling and composting. (3) Environmentally safe transformation and environmentally safe land disposal, at the discretion of the city or county. (b) Maximize the use of all feasible source reduction, recycling, and composting options in order to reduce the amount of solid waste that must be disposed of by transformation and land disposal. For wastes that cannot feasibly be reduced at their source, recycled, or composted, the local agency may use environmentally safe transformation or environmentally safe land disposal, or both of those practices.
- G. Inert Fill Facility: A facility that can legally accept inert waste such as asphalt and concrete exclusively for the purpose of disposal.
- H. Recover or Recovery: Any activity, including source reduction, deconstruction and salvaging, reuse, recycling and composting, which causes materials to be recovered for use as a resource and diverted from disposal.
- I. Recyclable Material: Any material or product separated or capable of being separated at its point of discard or from the solid waste stream for utilization as a raw material in the manufacture of a new product.

- J. Recycling: (PRC section 40180) is defined as the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste. Recycling does not include burning, incinerating, or thermally destroying solid waste.
- K. Recycling Facility: A recycling facility is an operation that collects and does any one or combination of the following: sorting, cleaning, treating, reusing, and reconstituting materials that would otherwise become solid waste.
- L. Registered Transporter: Anyone who is hired to remove mixed construction and demolition debris from a construction and/or demolition site, who uses a vehicle with more than two axles or two tires per axle (such as a large pickup truck with four tires on the rear axle or three-axle dump trucks) and is hauling at least one (1) cubic yard of mixed construction and demolition debris, must be a Registered Transporter. The Registered Transporter must have applied for and received a registration from the San Francisco Department of the Environment. The Registered Transporter is obligated to take this mixed material only to a Registered Facility.
- M. Registered Facility: Any facility that accepts mixed construction and demolition debris for processing and recycling must be registered with the City and must demonstrate an overall minimum recycling rate of 65% for mixed construction and demolition debris. A Registered Facility must have applied for and received a registration from the San Francisco Department of the Environment.
- N. Reuse: Making new use of a material without altering its form.
- O. Source-Separated Materials: Materials that are sorted at the site of generation by individual material type for the purpose of reuse or recycling, e.g. demolished concrete that is separated at the Site for delivery to a base course recycling facility.
- P. Solid Waste: Materials designated as non-recyclable and discarded for the purposes of disposal.
- Q. Universal Waste: (CCR Title 22, Division 4.5, Chapter 34) Hazardous wastes that are more common and pose a lower risk to people and the environment than other hazardous wastes. Universal wastes are handled with reduced management requirements. Examples of universal waste: batteries, fluorescent tubes (lamps), electronic devices (cell phones, computers, televisions), cathode ray tubes (CRTs), mercury wastes (thermometers and toys), and non-empty aerosol cans.

1.4 GENERAL REQUIREMENTS

- A. Diversion Goal: In order to meet the City's goal of 75% diversion from landfill by 2010, the goal for this contract is to divert 75% of the construction and demolition debris from landfill disposal through waste prevention, re-use, and recycling. If a construction site contains hazardous wastes and/or universal wastes, the 75% diversion requirement should pertain to all non-hazardous or non-universal waste material. No construction and demolition debris shall be disposed in garbage or taken to landfill.
- B. All Hazardous and Universal Wastes shall be documented separately, and a summary of all manifests, including material description and weights, shall be provided to the City Representative.
- C. Requirements only for Construction Contracts within the legal and geographical boundaries of the City and County of San Francisco:

1. Registered Transporters And Registered Facilities: Only Registered Transporters can remove mixed construction and demolition debris from the construction site, and they must take this material to a Registered Facility. Materials source separated at the job site should be taken to the appropriate recycling facility.
 - a. For a list of registered facilities and registered transporters refer to the website: www.SFEnvironment.org/c&d
 2. Full Demolition Requirements: Contractor conducting full demolition of an existing structure must submit a Demolition Debris Recovery Plan (DDRP) to the San Francisco Department of the Environment (SFE).
 - a. The DDRP must demonstrate a minimum of 65% diversion from landfill of demolition debris, including materials source separated for reuse or recycling.
 - b. The DDRP must be submitted to and approved by SFE before the Department of Building Inspection will issue a Full Demolition Permit.
 - c. This requirement does not apply to City construction contracts outside of the legal and geographical boundaries of the City and County of San Francisco.
 - d. The DDRP is available at the following website: www.SFEnvironment.org/c&d
- D. EcoFINDERRRR: Use the EcoFINDERRRR at www.SFEnvironment.org to find out how to recycle, re-use and safely dispose of construction and demolition debris and other materials.
- E. Universal Wastes: Contractor shall handle and dispose "Universal Wastes" in accordance with the requirements of the California Department of Toxic Substances Control (DTSC). Refer to DTSC website: www.dtsc.ca.gov. In general, universal waste may not be discarded in solid waste landfills. Contractor shall comply with all hazardous waste regulations, including, but not limited to, the following:
1. Universal wastes shall be stored in containers so that they do not spill, leak, break, or are released into the environment.
 2. Label or mark universal wastes, or their containers, to identify their types.
 3. Send all universal waste to a facility authorized to collect, recycle or dispose of universal waste.
 4. Do not dispose of universal waste in the trash.
 5. Do not accumulate more than 5,000 kilograms of universal waste at any one time.
 6. Train employees in proper universal waste management including handling, packaging, storing and labeling the universal waste, as well as how to respond to releases. This training may be accomplished by simply giving employees written instructions about universal waste.
 7. Keep record of all shipments and receipts of universal waste for three years.
- F. Treated Wood Waste: For complete information on handling and disposal of Treated Wood Waste (TWW), refer to the fact sheet available from the DTSC website. For incidental TWW wastes generated during construction, the Contractor shall comply with the following minimum requirements:
1. Keeping TWW segregated from other materials.
 2. Storing no more than 1,000 pounds of TWW for no longer than 30 days. In the event that Contractor stores more than 1,000 pounds of TWW or stores TWW for more than 30 days, Contractor shall comply with additional requirements for routine generators of TWW. Refer to DTSC fact sheet.
 3. Labeling all TWW bundle/shipments with the following information:

***TREATED WOOD WASTE – Do not burn
or scavenge.***

TWW Handler

Name: _____

Address: _____

Accumulation Date: _____

4. Taking TWW to an authorized TWW facility. See the listings at the end of the factsheet for information on facilities who have been authorized to accept TWW in California.
- G. Waste Reduction: Contractor shall implement waste reduction measures, including, but not limited to, the following:
 1. Eliminating the procurement of unneeded supplies;
 2. Reduce waste by printing and copying double-sided;
 3. Submit all submittals, reports, and forms in electronic format (PDF);
 4. Fully participate in available and required recycling and composting programs; and
 5. Purchase products made with recycled content such as paper and recycled aggregate.
- H. LEED Credit: Compliance with the 75% diversion goal meets the requirements of LEED MR Credit 2.2 and earns the Project 2 points.

1.5 SUBMITTALS

- A. Pursuant to the provisions of Paragraph 3.10 – Shop Drawings, Product Data and Submittals of the General Conditions and Specifications Section 01 33 00 – Submittal Procedures, the Contractor shall submit:
 1. Construction and Demolition Debris Management Plan;
 2. Construction and Demolition Debris Recovery Monthly Summary Report and supporting documentation.
 3. Construction and Demolition Debris Recovery Final Report.
- B. Contractor shall submit the above items in electronic format (PDF) to the City Representative.

1.6 CONSTRUCTION AND DEMOLITION DEBRIS MANAGEMENT PLAN

- A. The requirements under this Article 1.6 apply to all City construction contracts, regardless of location, with construction cost estimate of \$90,000 or more.
- B. After Award of Contract and before commencement of the Work at the site, the Contractor shall conduct a site assessment to estimate the types and quantities of materials that will be generated by construction and demolition at the site and which materials are anticipated to be feasible and practical for reuse and recycling. Contractor shall complete a construction and demolition debris management plan to be discussed with the City Representatives.
- C. Contractor shall schedule a meeting with the City Representative to discuss its proposed construction and demolition debris management plan so as to develop a mutual understanding regarding the City's recycling and reuse policies and goals and their application to this project.
- D. Contractor shall prepare and submit a written construction and demolition debris management plan in a format prescribed by the City. The plan shall include, but not be limited to, the following:
 1. The Contractor's information and Project identification.
 2. Procedures to be used for debris management.
 3. A list of the materials and estimated quantities to be reused, recycled, or transported to a registered facility.

4. The names, locations, and permit or license, as applicable, of recycling and reuse facilities and Registered Facilities (for mixed debris) that the Contractor plans to use for this project.
 5. Procedures for source separation for the materials listed in Article "Recycling Requirements" (Section 1.7) of this Section.
 6. Source Reduction: Describe any project practices for this project which will reduce waste at the source, such as requiring vendors to deliver materials in reusable packaging.
 7. On-site Processing: Describe procedures in which materials are recycled and/or reused on-site, such as grinding materials for use on-site, or reuse of lumber for concrete frames, etc.
 8. Procedures to educate and train all employees and subcontractors on recycling and reuse procedures to be used at the jobsite.
- E. The construction and demolition debris management plan is subject to approval by the City Representative. Contractor shall revise and resubmit the construction and demolition debris management plan as required by the City Representative.
- F. Review of the Contractor's construction and demolition debris management plan will not relieve Contractor of responsibility for compliance with applicable laws and regulations governing control and disposal of solid waste or other pollutants.
- G. In accordance with the Mayor's Directive 06-05, Contractor shall achieve a diversion rate of 75%.

1.7 RECYCLING REQUIREMENTS

- A. Source Separated Materials: The Contractor shall develop and implement procedures for source-separation, to the greatest extent feasible, of the following types of recyclable or reusable materials:
1. Asphalt.
 2. Concrete, concrete block, slump stone (decorative concrete block), and rock.
 3. Soil.
 4. Bricks, stone(s), granite, and other finished stone-type materials.
 5. Wall board (gypsum sheetrock)
 6. Dimensional lumber and beams.
 7. Fixtures, hardware, doors, and windows.
 8. Ferrous and non-ferrous metal.
 9. Corrugated cardboard.
 10. Trees, cleared vegetation and cut-off or other wood scraps.
 11. Carpet and pads.
 12. Rigid plastic.
 13. Acoustical ceiling tiles.
 14. Other: describe.
- B. Mixed Construction and Demolition Debris: All mixed construction and demolition debris shall be handled in accordance with the requirements of the San Francisco Ordinance No. 27-06 and as described in this Section.
- C. Handling Of Recyclable Materials:
1. The Contractor shall assure that recyclable or reusable materials be free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process. The Contractor shall clean materials that are contaminated before placing it in collection containers.
 2. The Contractor shall arrange for collection of recyclable materials by or delivery to the appropriate recycling center for purposes of recycling.

3. All mixed construction and demolition debris must be taken to a Registered Facility.

1.8 CONSTRUCTION AND DEMOLITION DEBRIS RECOVERY MONTHLY SUMMARY AND FINAL REPORT

- A. Contractor shall submit a Construction and Demolition Debris Recovery Monthly Summary Report, quantifying the construction and demolition debris generated and recycled, reused or transported to a Registered Facility. Refer to Appendix A (Section 017451) of this Section for the form to be used for this report. The Contractor shall include manifests, weight tickets, receipts, and invoices specifically identifying the Project and waste material.
- B. Contractor shall submit this report with each application for progress payment. This report is a condition of progress payment and failure to submit this information shall render the Application for Payment incomplete.
- C. Contractor shall be responsible for transporting all mixed construction and demolition debris to a Registered Facility by using a Registered Transporter. No construction and demolition debris shall be burned, buried or otherwise disposed of on the project site.
- D. As a requirement for Final Completion, Contractor shall submit a Construction and Demolition Debris Final Report to City Representative.

1.9 JOB SITE ADMINISTRATION

- A. The Contractor shall review the environmental goals of this project with all subcontractors and sub-subcontractors. The Contractor shall make a proactive effort to increase awareness of these goals and ensure full compliance to the Construction and Demolition Debris Management Plan among the Contractor's job site workers and all subcontractors and other workers.
- B. The Contractor shall review MSDS (material safety data sheet) with workers on the job site. The Contractor shall discuss alternatives to minimize exposure to potentially harmful substances.
- C. The Contractor shall provide recycling containers for field office wastes to separate recyclable and compostable materials from trash using the City's blue, green, and black recycling system. To subscribe to these services, contact Recology Sunset Scavenger (415.330.1300) or Recology Golden Gate (415.626.4000). For assistance in setting up recycling and composting programs in field offices, contact:
SFGovRecycling@SFEnvironment.org

1.10 PAYMENT

- A. There will not be a separate payment for work within this Section. All costs shall be incidental to other work and be included in the Total Bid Price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 74 51

APPENDIX A: C&D DEBRIS RECOVERY WORKSHEET
To be filled out by Contractor & submitted to City Representative.
Please complete both pages of this form.

Section 1: Project Information			
1. Project Name:		2. Project/Job Number:	3. Reporting Period:
4. Project Street Address:		5. City (if not in SF):	
6. Contractor Name:			
7. Contractor Address:			
8. City, State, Zip Code:			
9. Office Phone:	10. Cell Phone:	11. Fax:	12. e-mail:
13. Preparer's Name:			14. Date Prepared:
15. Preparer's Signature:			16. Date Submitted:

☐ **Original C&D Debris Management Plan (OMP)***

Estimated Start Date: _____ Estimated End Date: _____

*Attach a brief description of how this project will comply with the requirements identified in Section 01750, paragraph 1.6D. Review Article 1.9 of Section 01750 for other requirements to be conducted at the job site.

☐ **Progress Payment Report (Monthly Summary Report – Compile Diversion Data from all Subcontractors)**

Reporting Period (mm/yy): _____ Progress Payment No.: _____

☐ **Final Report (Compile Diversion Data for Entire Project)**

Date Project Completed: _____

City Representative Review:

City Representative Signature:	Date:
--------------------------------	-------

Instructions for Completion of Section 2 on Page 2 - Debris Recovery Worksheet: (refer to Section 01750 for all definitions)

- Contractor is responsible for preparing and submitting all C&D management plans & reports.
- Contractor shall compile data from all subcontractors into one plan/report.
- Column (a): Enter the appropriate Diversion Activity Code associated with the kind of material being handled and how the material is being processed.
- Column (b): Enter Total Tons of material for each type of material being diverted.
- Column (c): Enter Tons Recycled for each type of material being diverted.
- Column (d): Enter Tons Reused for each type of material being diverted.
- Column (e): Enter name of facility where material will be taken. If project is located in San Francisco, Mixed Debris must be taken to a Registered Facility authorized to process the material.
- Column (f): Enter name of Transporter hauling the material. If project is located in San Francisco, only Registered Transporters are authorized to haul Mixed Debris.
- Line (g) below worksheet: Calculate Diversion Rate per formulas provided.
- Submit completed form to City Representative.

Project/Job Number: _____

Reporting Period: _____

Progress Pmt. Number: _____

Section 2: Debris Recovery Worksheet

IMPORTANT: HAZARDOUS MATERIAL OR U-WASTE MUST BE SUMMARIZED SEPARATELY FROM THIS REPORT. DO NOT INCLUDE ANY HAZARDOUS MATERIALS AND UNIVERSAL WASTE IN THIS REPORT.

Diversion Activity Codes:

- | | |
|--|--|
| 1 - Recycling of source-separated materials at a recycling facility. | 4 - Reuse of salvageable items. |
| 2 - On-site concrete or asphalt crushing for use on site. | 5 - Reuse of soil or dirt on site. |
| 3 - Recycling of mixed C&D debris. | 6 - Reuse of dirt or mixed inerts for landfill construction. |
| | 7 - Other diversion - please describe: |

WORKSHEET

Type of Material	Diversion Activity Code	Total Tons	Tons Recycled	Tons Reused	Facility Used*	Transporter*	Balance from OMP
	(a)	(b)	(c)	(d)	(e)	(f)	
MIXED C&D DEBRIS*	3	(A)					
SOURCE SEPARATED MATERIALS							
Asphalt							
Acoustical Ceiling Tiles							
Bricks, Granite, Finished Stone							
Carpet & Padding							
Concrete							
Corrugated Cardboard							
Dimensional Lumber & Beams							
Fixtures, Hardware, Doors, Windows							
Metal							
Mixed Inerts							
Rigid Plastic							
Soil/dirt/rock							
Trees, Landscape Debris, Wood Scraps							
Wallboard, Gypsum Sheet Rock							
Other:							
Sub-Totals (source separated)		(B)	(C)	(D)			
Total (E = A + B)		(E)					

Diversion Rate Calculation Formulas:

Projects in SF: $[C+D+(A \times 0.65^*)] \div E \times 100$

Outside SF: $[C+D+(A \times ______^*)] \div E \times 100$

$$(g) \left[\frac{\text{(C)}}{\text{(C)}} + \frac{\text{(D)}}{\text{(D)}} + \left(\frac{\text{(A)}}{\text{(A)}} \times \frac{\text{(Rate)*}}{\text{(Rate)*}} \right) \right] \div \frac{\text{(E)}}{\text{(E)}} \times 100 = \text{DIVERSION RATE} \quad \boxed{\text{\%}}$$

* For projects located in San Francisco, Mixed C&D Debris must be taken to a Registered Facility authorized to process the material, and it must be hauled by a Registered Transporter (lists available at sfenvironment.org/c&d); diversion rate for Registered Facilities is 65%. For projects outside SF the diversion rate is 65% if taken to one of our Registered Facilities; if taken to a non-registered facility check with local jurisdiction for that facility's recycling rate. If a facility does not have a local approved recycling rate, the diversion rate is calculated as zero.

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes procedures and requirements for Contract Closeout.
- B. Related Sections:
 - 1. Section 00 73 02 – Contract Time and Liquidated Damages
 - 2. Section 01 45 00 – Quality Control
 - 3. Section 01 50 00 – Temporary Facilities and Controls
 - 4. Section 01 78 23 – Operation and Maintenance Data
 - 5. Section 01 78 36 - Warranties
 - 6. Section 01 78 39 – Project Record Documents

1.2 PROCEDURES

- A. Close-out Meeting:
 - 1. The Contractor shall submit all outstanding change orders, claims, and time extension requests by the final date as required by the City Representative before the Work is 95% complete.
 - 2. Prior to Substantial Completion, the City Representative will schedule a closeout meeting with the Contractor, Architects or City Representatives and consultants to determine the status of completion.
 - 3. The Contractor shall attend the Close-out meeting scheduled by the City Representative to discuss the close-out procedure and responsibilities of the Contractor and the City.
 - 4. The City Representative will prepare a list of actions which are still open or pending that need to be resolved during the close-out period. Such actions may include, but are not necessarily limited to, equipment testing, operator training, record documents, final inspection, administrative activities, and documentation of final quantities and force account work.

1.3 SUBSTANTIAL COMPLETION

- A. Prerequisites to Substantial Completion:
 - 1. Submit to the City Representative with the application for payment just before Substantial Completion, a statement of all Change Orders, Modifications, claims, and time extension requests.
 - 2. Verify that the following administrative closeout submittals have been received by the City, if applicable:
 - a. Project Record Documents and approved shop drawings, product data, and samples as specified in Section 01 78 39.
 - b. Warranties as specified in Section 01 78 36.
 - c. Keys and keying schedule.
 - d. Spare parts and materials extra stock.
 - e. Certificates of Final Inspection and Occupancy as evidence of compliance with the requirements of governmental agencies having jurisdiction.
 - f. Comply with requirements listed in Section 00 73 00, amendments to definitions of Substantial Completion and/or Final Completion, as applicable.

3. Advise the City Representative of pending insurance change-over requirements.
 4. Submit to the City Representative written certification that the Contract Documents have been reviewed, Work has been inspected, the Work is complete, including start-up, testing, adjusting, and balancing of equipment and systems, and conforms to the requirements of the Contract Documents.
 5. At no additional cost to the City, restore and replace, as specified and as determined by the City, material and finishes damaged due to the performance of the Work.
 6. Restoration or replacement shall be equal quality and match the appearance of the existing Work.
- B. Substantial Completion Inspection:
1. Notify the City Representative in writing that the Work is substantially complete and ready for inspection.
 2. Upon receipt of Contractor's written notice, the City Representative will make an inspection to determine the status of completion.
 3. Should the City Representative determine that the Work is not substantially complete; the City Representative will so notify Contractor with a deficiency list of all items that shall be completed before the City considers the Work substantially complete.
 - a. Remedy all deficiencies as identified and notify the City Representative, in writing, when the Work is ready for re-inspection.
 - b. Failure to complete this requirement within the time allowed for substantial completion will result in liquidated damages being assessed.
 4. The Contractor shall verify that the work is complete, including but not necessarily limited to, the items required for Substantial Completion.
 5. If the City Representative concurs that the Work is substantially complete, the City Representative will prepare a Notice of Substantial Completion, accompanied by a punch list of remedial work items to be completed or corrected, as verified by the City Representative.
 - a. If the Work is not substantially complete, the City Representative will follow the same procedure as for the first inspection, and Contractor shall reimburse the City for all additional re-inspection costs.
- C. Partial Use or Occupancy of Work: When partial utilization of the Work is required and substantial completion is a condition of such partial utilization, the applicable requirements specified in this Section shall apply to the part of Work to be utilized.

1.4 FINAL ACCEPTANCE

- A. Prerequisites for Final Acceptance:
1. At no additional cost to the City, perform all remedial work noted on the punch list before requesting a final inspection and acceptance.
 2. Coordinate the performance of remedial work with the City to cause minimal inconvenience and interruption of the City's operations.
 3. Perform final cleaning as specified in this Section. Remove protective coverings and similar items.
 4. Remove all temporary controls, utilities, facilities, field offices and sheds.
 5. Submit the final payment request with releases and an updated final statement with supporting documentation, accounting for final additional charges for extras and liquidated damages for delays.
 6. Submit consent of surety to final payment.
 7. Submit a certified copy of the City Representative's punch list of remedial items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance by the City.

8. Failure to complete all remedial work and prerequisites for final inspection within the time allowed after the date of Substantial Completion as specified in the Supplementary Conditions will result in liquidated damages being assessed.
- B. Final Inspection:
 1. Notify the City in writing that all punch list items of remedial work have been completed and the Work is ready for final inspection.
 2. The City Representative will make an inspection to verify the status of completion.
 3. Should the City Representative determine that the Work is not complete or is defective, the City Representative will so notify Contractor, in writing, listing remaining incomplete or defective work.
 - a. Promptly complete the remaining deficiencies and notify the City Representative, in writing, when ready for re-inspection.
 - b. If the City Representative finds the Work is still not complete, Contractor shall be responsible for all subsequent re-inspection and meeting costs incurred by the City to resolve the remaining issues. Such costs will be deducted from progress payments owed to Contractor.
 4. When the City Representative determines that the Work is acceptable under the Contract Documents and Contractor has made all required closeout submittals, the City Representative will initiate the final payment recommendation and prepare the Certificate of Completion.
- D. Prior to the final payment recommendation, the City Representative shall be furnished with the following administrative close-out submittals:
 1. Project Record Documents;
 2. Warranties;
 3. Keys and keying schedule;
 4. Spare parts and materials extra stock;
 5. Certificates of Final Inspection and Occupancy as evidence of compliance with the requirements of governmental agencies having jurisdiction; and
 6. Evidence of payment and release of liens.
- E. Submittals for final adjustment of accounts shall include, but not necessarily be limited to:
 1. Request for Final Payment; and
 2. Final statement of accounting, payroll records, and final change orders showing adjustments to the Contract Price for all force account work and extra payments.
- F. All prior estimates and payments shall be subject to correction in the final estimate and payment.

1.5 FINAL CLEANING

- A. Final acceptance of the work by the City will be withheld until the Contractor has satisfactorily complied with the requirements herein for final cleanup of the project site.
- B. Should the City elect to partially occupy or use portions of the Work prior to Completion, perform final cleaning for those portions of the Work prior to their being so occupied or used.
- C. Comply with applicable regulatory requirements during cleaning and disposal operations. Use cleaning materials which will not create hazards to health or property or cause damage to products or work.
- D. Use only cleaning materials and methods which are compatible with the surface being cleaned, as recommended by the manufacturer of the products to be cleaned.

- E. Completely clean the work site including the adjacent sidewalks and street to curb.
- F. Schedule final cleaning operations to prevent resulting dust and other contaminants from adhering to wet or newly finished surfaces and to enable the City Representative to accept a completely clean work.
- G. See additional cleaning requirements specified in Section 01 50 00 - Temporary Facilities and Controls.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit the final approved Project Record Drawings to the City Representative prior to final payment. Refer to Section 01 78 39 - Project Record Documents.

1.7 OPERATOR INSTRUCTION

- A. Refer to individual Specification Sections for specific requirements for equipment and systems demonstration and safety, operations, and maintenance training.
- B. Where specified in the individual Specification Sections, furnish qualified personnel and coordinate scheduling for on-site instruction of the City's operating and maintenance personnel.

1.8 RELEASE OF LIENS OR CLAIMS

- A. Before the City issues final payment to Contractor for the Work, Contractor shall sign and deliver to the City a release of liens or claims sworn to under oath and duly notarized. The release shall state that Contractor has satisfied all claims and indebtedness of every nature in any way connected with the Work, including, but not limited to, the foregoing, all payrolls, amounts due to the subcontractors, accounts for labor performed and materials furnished, incidental services, liens, and judgments.
- B. If any liens or claims remain unsatisfied after all payments to Contractor have been made, Contractor shall refund to the City all moneys that the latter may be compelled to pay in discharging such a lien or claim, including all costs and a reasonable attorney's fee.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements and formats for Operation and Maintenance Data Manual (O&M).

1.2 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures
- B. Section 01 77 00 – Closeout Procedures
- C. Section 01 78 36 – Warranties

1.3 CONTRACTOR'S RESPONSIBILITY

- A. The Contractor shall furnish six hard copies and two copies in electronic form of complete instruction manuals for installation, operation, maintenance, and lubrication requirements for each component of mechanical, electrical, irrigation equipment, or other systems. The Contractor shall inform all equipment manufacturers of these requirements and ensure that all associated costs are included in the costs for furnishing the equipment or system.
- B. Contractor shall also furnish two sets of as built drawings and two disks of O&M Manuals' text material and all available AutoCAD Drawings.
 - 1. All O & M manual text material which has been created for the O&M Manual shall be written in the latest version of Microsoft Word.
 - 2. Drawings which have been generated by the Contractor for this project's O & M manual shall be in the latest version of AutoCAD. Two copies of computer disks with the final approved AutoCAD Drawings shall be transmitted to the City.

1.4 FORMAT

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8-1/2 x 11 inch three-ring binders with hardback, cleanable, plastic covers; one inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project; identify subject matter of contents.
- D. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data on white bond paper.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.5 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Engineer, sub consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet clearly to identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- E. Type Text: As required to supplement product data.
- F. Warranties: Bind in a copy of each.
- G. Each instruction manual shall include, but not be limited to, the following:
 - 1. Detailed description of the function of each principal component of the system
 - 2. Performance and nameplate data
 - 3. Installation instructions
 - 4. Procedure for start-up and break-in
 - 5. Proper adjustment
 - 6. Test procedures
 - 7. Procedure for operating
 - 8. Shutdown instructions
 - 9. Emergency operating instructions and troubleshooting guide
 - 10. Safety precautions
 - 11. Complete nomenclature and commercial number of replaceable parts.
 - 12. Panel board Circuit Directories: Provide electrical service characteristics, controls and communications.
 - 13. Include color coded wiring diagrams as installed.
 - 14. Maintenance Requirements: Include routine procedures and guide for disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - 15. Provide servicing and lubrication schedule, and list of lubricants required.
 - 16. Include written sequence of operation by controls manufacturer.
 - 17. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - 18. Provide control diagrams by controls manufacturer as installed.
 - 19. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
 - 20. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - 21. Include test and balancing reports as specified in Technical Sections.
 - 22. Additional Requirements: As specified in individual product specification Sections.
 - 23. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.6 INSTRUCTION OF CITY PERSONNEL

- A. Before final inspection, provide detailed instructions to the City's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
- B. Sales representatives shall not conduct the training sessions. Submit a brief description of the qualifications of the manufacturer's representative designated to conduct this training. The manufacturer's representative shall be a factory trained or manufacturer's certified individual with substantial experience in the repair and servicing of the equipment to be covered during the training session.
- C. The City shall receive a six hundred (\$600.00) dollar per day credit from the Contractor for any training that is not conducted in accordance with the requirements of Paragraph A above or as required in the individual technical specification sections. The Contractor and the City Representative will jointly verify that the required training is conducted.
- D. For equipment requiring seasonal operation, perform instructions for other seasons within six months.
- E. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- F. The training shall cover a thorough discussion of the O&M manual. The training shall include but not be limited to, operation and maintenance of the specific equipment and systems installed, telltale signs of equipment malfunctioning and their solutions, other pertinent topics that relate to optimum system operation and energy conservation.
- G. Prepare and insert additional data in Operation and Maintenance manual when need for such data becomes apparent during instruction.
- H. System Familiarization Training shall follow the outline below:
 - 1. Show location of catalogs, parts lists, drawings and other pertinent material in the park files and O&M manuals.
 - 2. Check out the installation of the specific equipment items.
 - 3. Demonstrate the unit and show that all parts of the Specifications are met.
 - 4. Answer questions.
- I. Safety Training shall cover the following:
 - 1. Point out safety references.
 - 2. Discuss proper precautions around equipment.
- J. Operational Training shall cover the following:
 - 1. Point out reference literature.
 - 2. Explain all modes of operation, including emergency.
 - 3. Check out operators in proper use of the equipment.
- K. Preventive Maintenance (PM) Training shall cover the following items:
 - 1. Pass out PM list including:
 - a. Reference material.
 - b. Daily, weekly, monthly, quarterly, semi-annual and annual maintenance and inspection procedures.
 - 2. Show how to perform PM jobs.
 - 3. Show operators what to look for as indicators of equipment problems.

- L. Corrective Maintenance Training shall cover the following items:
 - 1. List possible problems.
 - 2. Discuss repairs--point out special problems.
 - 3. Open up equipment and demonstrate procedures, where practical.
- M. Availability of Parts, Outside Service and Manufacturer's Representative
 - 1. Show how to use parts list and order parts.
 - 2. Where to order parts: Name, address, telephone.
 - 3. Check over spare parts on hand. Make recommendations for additional spare parts needed. Sign off their acceptance of the spare parts in the presence of the City's representative.
 - 4. How to get emergency service help.

1.7 TRAINING SCHEDULES AND PROCEDURE

- A. The Contractor shall designate and provide one or more persons to be responsible for coordinating and expediting Contractor's training duties. The person or persons shall be present at all training coordination meetings with the City.
- B. The Contractor shall submit to the City a Training Schedule, to be used by the City for scheduling the training of City operating personnel by equipment manufacturers. This schedule shall list the estimated completion dates for the installation of all equipment and systems requiring the services of manufacturers' representatives, as stated in the Technical Specifications.
- C. The Contractor shall coordinate the pre-startup training periods with City operating personnel and manufacturers' representatives. All pre-startup training shall be completed 14 days prior to actual Startup. Training services shall be at such times as requested by the City.
- D. The City reserves the right to make video recordings of any of the manufacturer's training sessions for use in ongoing training programs.
- E. Where post-startup training is called for in the Technical Specifications, the Contractor shall supply and coordinate the specified manufacturers' services and Contractor personnel for post-startup training of the City's operating personnel.

1.8 SUBMITTALS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. City Representative will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment, put into service during construction and operated by the City, submit documents within ten days after completion of the work.
- C. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with City Representative's comments. Revise content of documents as required prior to final submittal.
- D. Submit two copies of revised volumes of data in final form within ten days after final inspection.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 78 36

WARRANTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Requirements.
 - 2. Submittal Requirements.
 - 3. Quality Assurance.
 - 4. Warranty conditions.
 - 5. Form of Guarantee/Warranty.
- B. Related Sections:
 - 1. Section 00 72 00 – General Conditions:
 - (a) Paragraph 8.03, Correction of Non-Conforming Work;
 - (b) Paragraph 8.04, Correction Period;
 - (c) Paragraph 8.05, Acceptance of Non-Conforming Work;
 - (d) Paragraph 9.06, Partial Utilization.
 - 2. Section 01 77 00 – Contract Closeout.
 - 3. Individual Specifications Sections: Warranties required for specific products or Work.

1.2 REQUIREMENTS

- A. Except as otherwise specified in the individual Specification sections, guarantee/warranty the Work against defects in materials and workmanship for 24 months from the date of the Substantial Completion Certificate issued by the City.
 - 1. Upon receipt of written notification by the City Representative, guarantee/warranty the Work, or portions thereof, which are used or occupied by the City before final acceptance from the date of beneficial use or occupancy.
- B. Comply with the guarantee/warranty requirements as specified in the individual Specification sections.
- C. Submit executed guarantees/warranties to the City for review. Deliver them to the City upon Substantial Completion.
- D. These warranties shall be in addition to and not a limitation of other rights the City may have under the Contract and which may be prescribed by law, regardless of the wording of manufacturer's standard warranty.

1.3 SUBMITTAL REQUIREMENTS

- A. For equipment or components of equipment put into service for the City's benefit during the progress of the Work, submit within 10 days after completion of the applicable item or work.
- B. Otherwise, submit within 10 days after the date of the Notice Substantial Completion and prior to requesting final payment.
- C. Submit three copies of each guarantee/warranty on Contractor's letterhead in the sample form included at the end of this Section, or in other form approved by the City.

- D. Bind in commercial quality, 8-1/2 x 11 inch three-ring side binders with hardback, cleanable, plastic covers.
- E. Label cover of each binder with typed or printed title WARRANTIES, with title of Project; name, address, and telephone number of Contractor and equipment supplier; and name of responsible principal.
- F. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Specifications, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- G. Separate each warranty with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.4 QUALITY ASSURANCE

- A. Obtain guarantees/warranties, in duplicate, executed by Contractor and subcontractor or installer responsible for that portion of the Work and countersigned by the manufacturer.
- B. Verify that documents are in proper form, contain complete information, and are notarized if warranties are extended beyond the Manufacturers normal warranty period of TWO years.
- C. Co-execute submittals when required. Acceptance of manufacturer's guarantees/warranties by the City shall not be construed to limit the City's recourse to Contractor for correction of defects under the law and in accordance with the General Conditions.

1.5 WARRANTY CONDITIONS

- A. Contractor shall warrant that work performed under this Contract conforms to the Contract Documents and is free of any defect of equipment, material, installation, design furnished, or workmanship furnished by Contractor, or any of its subcontractors or suppliers. SUCH WARRANTY SHALL CONTINUE IN EFFECT FOR 24 MONTHS FROM THE DATE OF APPROVAL OF THE CONTRACTOR'S APPLICATION FOR SUBSTANTIAL COMPLETION BY THE CITY except where detailed specifications for certain materials, equipment or systems require longer warranty periods.
- B. Warranties are not intended to cover failures which result from the following:
 - 1. Unusual or abnormal phenomena of the elements.
 - 2. The City's misuse, maltreatment, or improper maintenance of the Work.
 - 3. Insurrection or acts of aggression including war.
- C. Promptly after receipt of written notice from the City, remove, replace, or correct Work, or portion thereof, which is damaged or found to be defective and not in accordance with the Contract.
 - 1. The City may proceed with the correction work at Contractor's expense if Contractor does not proceed with the corrective work within a reasonable time fixed by written notice from the City, the City may proceed with the work at the expense of the Contractor.
 - 2. The City reserves the right to remove and store or dispose of defective equipment or material at Contractor's expense.
 - 3. If Contractor does not pay the costs of such removal and storage within ten days thereafter, the City may, upon ten additional days written notice, sell such defective items and shall account for the net proceeds after deducting all the

- costs that should have been borne by the City, including compensation for City Representative's additional services.
4. If the proceeds from the sale are insufficient to cover all amounts chargeable to Contractor, Contractor shall pay the difference to the City.

1.6 FORM OF GUARANTEE/WARRANTY

- A. For equipment or components of equipment put into service for the City's benefit during the progress of the Work:

(Letterhead of Company)

We (name of Contractor), agree to maintain and repair as recommended by equipment and system manufacturers, any such equipment and systems which have been beneficially used by San Francisco City personnel prior to the approval of Contractor's Application For Substantial Completion.

Owner: <Department>, City and County of San Francisco.

Location of Equipment: <Address>, San Francisco, California.

This guarantee is effective this _____ day of _____, 20____ until the date of City Approval of Contractor's Application for Final Payment.

Signed: _____(Name of Contractor)

By: _____

Contractor's Telephone No. _____

- B. For guarantee/warranty of the entire Work against defects in materials and workmanship for the period of warranty after the Notice of Substantial Completion:

GUARANTEE/WARRANTY FORM for <u><PROJECT NAME></u> <u><CONTRACT NO.></u> GUARANTEE/WARRANTY for _____ We hereby guarantee/warrant that the _____ which we have provided in the _____ has been completed in accordance with the requirements of Specification Section _____ and the other Contract Documents. We agree to repair or replace any or all of our Work, together with any other adjacent Work which may be displaced by so doing, that may prove to be defective in its workmanship or material within a period of 24 months from the date of Substantial Completion of the above named Project; and we also agree to repair any and all damages resulting from such defects, all without any expense to the City, ordinary wear and tear and unusual abuse or neglect excepted. In the event of our failure to comply with the above mentioned conditions within ten (10) days after being notified in writing by the City, we collectively or separately do hereby authorize the City to proceed to have such defective Work repaired or replaced and made good at our expense, and we will honor and pay the costs and charges therefor upon demand. Signed _____ Date _____ (Include Contractor's name, address, and license number) Countersigned _____ Date _____ (City Representative) Substantial Completion was granted by the City on _____.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for maintenance and submittal of Project Record Drawings and As-Builts.
- B. Related Sections:
 - 1. Section 01 20 00 – Price and Payment Procedures
 - 2. Section 01 33 00 – Submittal Procedures
 - 3. Section 01 77 00 – Closeout Procedures

1.2 REQUIREMENTS

- A. Keep an accurately marked, up-to-date set Record Drawings for the work actually installed. Accurately indicate on Record Drawings all site conditions, locations of utilities, work scope changes, changes in dimensions, locations, and elevations of the work, and changes in details as specified herein and as approved by the City Representative. Contractor shall keep the Record Drawings current as the work is performed.
 - 1. Record Drawings shall be subject to inspection and approval by the City Representative at any time within the duration of the Contract.
 - 2. Such review by the City Representative shall not relieve Contractor of its responsibility for keeping the Record Drawings current and complete.
- B. If the Record Drawings are not kept current, or are not furnished as specified in Price and Payment Procedures Section, then progress payments, and if necessary, final payment will be withheld. Furnishing of Record Drawings shall be done as incidental work.
- C. Prior to acceptance of the work, furnish to the City Representative the Final Record Drawings, or As-Builts, showing all changes in the Contract Drawings neatly in red ink and certified by the City Representative.

1.3 QUALITY ASSURANCE

- A. The City Representative will provide Contractor with a set of base drawings, or conformed prints, if any, with "Record Drawings" stamp for the City inspector's certification of corrections.
- B. Delegate responsibility for maintenance, coordination, and accuracy of the Record Drawings to one person on Contractor's staff.
- C. Record all changes and work progress on the stamped Record Drawings which will be inspected monthly by the City Representative.
- D. Accuracy of Record Drawings shall be such that future searches for items shown on the Contract Documents may rely on information obtained from the approved Record Drawings.
- E. The City Representative will check, initial, and date the Record Drawings upon submittal with Progress Payments to verify the accuracy and completeness of the recorded changes.

- F. The City Representative will sign the corrected Record Drawings to indicate that he or she has reviewed the corrections for completeness.

PART 2 - PRODUCTS

2.1 RECORD DOCUMENTS

- A. Promptly following receipt of the Notice to Proceed, secure from the City Representative the number of copies of Contract Documents as specified in Section 00 73 00, including a full-size set of the Base Contract Drawings to be used as Project Record Drawings or As-Built Drawings.

PART 3 - EXECUTION

3.1 MAINTENANCE OF RECORD DRAWINGS

- A. Store Record Drawings apart from documents used for performing the work; keep in a dry, legible condition, and in good order. Label each document "RECORD DRAWINGS - JOB SET" in large, neatly printed letters. Do not use Record Drawings for construction at the job site.
- B. Record neatly on the Record Drawings all changes made by clarifications, Change Orders, Requests for Information, and other Modifications to the Contract Documents; and changes to reflect the actual existing conditions and utility locations references to permanent accessible features of work
 1. Clearly describe changes on Record Drawings by note as required.
 2. Date all entries, calling attention to the entry by a "cloud" drawn around the area or areas affected.
 3. Record in each Specification Section the manufacturer, trade name, catalog number, and supplier of each product and equipment item incorporated into the Work.
- C. Furnish a copy of the final shop drawings which have been updated to show actual conditions. Furnish additional drawings as necessary to record deviations from the sizes, locations, and other features of the work and to locate piping, conduit, ductwork, and similar elements of utility installations by dimensions referenced to permanent accessible features of the work.
- D. Show on the job set of Record Drawings, by dimension accurate to within one inch, the centerline of each run of conduits, circuits, piping, ducts, and similar items which are shown schematically on the Contract Drawings but where the final physical arrangement is determined by Contractor, subject to the City Representative's approval.
 1. The City Representative will issue a written waiver of the requirements for conversion of schematic layouts where, in the City Representative's judgment, such conversion serves no useful purpose.
- E. Keep Record Drawings up to date during the entire progress of the work, and submit to the City with Progress Payments as specified in Application for Payments Section. Updates shall be accurate and current and be done at the time work is performed.

3.2 CHANGE ORDER DRAWINGS

- A. The City will issue to the Contractor one set of drawings, if any, associated with change orders issued. The Contractor shall be responsible for reproducing sufficient copies of the drawings for its subcontractors.
- B. The Contractor shall also update and include the revised or newly issued drawings as part of the Record Drawings. The work of reproducing and issuing change order drawings and updating of Record Drawings shall be done as incidental work.

3.3 AS-BUILT DRAWINGS

- A. Contractor shall prepare a separate set of As-Built drawings that will show the final completed work based on the Record Drawings. Prior to start of transfer of recorded data thereto, secure the City Representative's approval of the Record Drawings.
- B. Carefully transfer changed data shown on the job set of Record Drawings to the corresponding drawings, coordinating the changes as required.
- C. Make changes in red pencil neatly, legibly, correctly and consistently.
- D. Sign and date the completed As-Built Drawings and submit them to the City Representative for review prior to final payment as specified in Section 01 77 00 – Closeout Procedures.
- E. If the As-Built Drawings are not approved by the City Representative, Contractor shall make necessary revisions and submit a revised set of As-Built Drawings to the City Representative.
- F. Furnishing of the final approved Project Record Drawings, including required revisions and resubmittal, shall be done as Incidental Work.
- G. If the As-Built Drawings are not furnished when specified, the final payment will be withheld.

END OF SECTION