



**City and County of San Francisco
PORT OF SAN FRANCISCO**

**AMADOR STREET INFRASTRUCTURE
IMPROVEMENTS**

CONTRACT No. 2852

**FEDERAL AID PROJECT NO.
MARAD FY 2022 PIDP Grant No. 693JF72344034**

PROJECT MANUAL

VOLUME 2 OF 3

(DIVISION 1)

July 2024

Each Bid shall be enclosed in an envelope bearing the description:
"BID FOR AMADOR STREET INFRASTRUCTURE IMPROVEMENTS
(Port of San Francisco Contract No. 000000002852)".

SECTION 00 01 10

TABLE OF CONTENTS

Section No. Section Title

SPECIFICATIONS GROUP

GENERAL REQUIREMENTS SUBGROUP

DIVISION 01 - GENERAL REQUIREMENTS

01 11 00	SUMMARY OF WORK
01 11 00.1	SUMMARY OF WORK FOR WATER MAIN WORK
01 20 00	PRICE AND PAYMENT PROCEDURES
01 21 00	ALLOWANCES
01 21 53	MOBILIZATION/DEMOBILIZATION
01 25 13	PRODUCT SUBSTITUTION PROCEDURES
01 26 00	CONTRACT MODIFICATION PROCEDURES
01 29 73	SCHEDULE OF VALUES
01 31 13	PROJECT COORDINATION
01 31 19	PROJECT MEETINGS
01 31 33	PARTNERING REQUIREMENTS
01 31 34	APPENDIX A THIRD-PARTY FACILITATOR AGREEMENT
01 32 16	CONSTRUCTION PROGRESS SCHEDULES-CPM
01 33 00	SUBMITTAL PROCEDURES
01 35 43	ENVIRONMENTAL PROCEDURES
01 35 45	HEALTH AND SAFETY
01 35 50	ADDITIONAL ENVIRONMENTAL PROCEDURES
01 41 00	REGULATORY REQUIRMENTS
01 42 00	REFERENCES
01 45 00	QUALITY CONTROL
01 50 00	TEMPORARY FACILITIES AND CONTROLS
01 55 26	TRAFFIC CONTROL
01 56 39	TEMPORARY TREE AND PLANT PROTECTION
01 57 19	ENVIRONMENTAL MITIGATION MEASURES
01 57 26	TEMPORARY PROTECTION OF CATCH BASINSAND STORM DRAIN INLETS
01 60 00	PRODUCT REQUIREMENTS
01 71 23	FIELD ENGINEERING
01 71 33	PROTECTION OF ADJACENT CONSTRUCTION
01 74 50	MATERIAL REDUCTION AND RECOVERY PLAN
01 77 00	CLOSEOUT PROCEDURES
01 78 23	OPERATION AND MAINTENANCE DATA
01 78 36	WARRANTIES
01 78 39	PROJECT RECORD DOCUMENTS

END OF SECTION

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A The work to be done under this contract is located at Amador Street, City and County of San Francisco. This project is to perform infrastructure improvements to replace gravity sewer and storm drains, roadway pavement, landscape, the existing defunct Amador Street sanitary pump station and associated discharge force main pipe, fittings and appurtenances that ended at Amador Street utility corridor. The new sanitary pump station shall be equipped with automated, redundant instrument controls with provisions for future system expansion. and all related and incidental work.

1.2 SCOPE OF WORK

- A Sewer Work includes, but is not limited to:

1. Mobilization and demobilization work.
2. Performing excavation and trench support work related to sewer work.
3. Constructing 6-inch diameter HDPE SDR 17 with fused joints force main and fittings on crushed rock encasement wrapped in geotextile fabric.
4. Constructing 6-inch diameter HDPE SDR 17 with fused joints force main in 10-inch diameter steel casing by pipe jacking method, and filling annular space with non-shrink grout.
5. Constructing manholes with new frame and cover.
6. Installing HDPE cleanouts.
7. Abandoning or removing existing sewers.
8. Removing existing railroad track facilities within sewer and storm drain trench.
9. Exploratory holes.
10. Modifying and reinstating existing laterals and culverts as necessary and as per City Representative to construct force main.
11. Saw cutting, removing and disposal of existing pavement.
12. Excavation, backfilling and compaction of sewer and force main trench.
13. Restoring pavement inside and outside of sewer and force main trench with 2-inch thick asphalt concrete wearing surface over 10-inch thick concrete base as necessary per excavation code.
14. Handling, transportation and disposal of hazardous excavated materials and contaminated soils, if necessary.
15. Supporting, working around and protecting certain San Francisco Water Department, Fire Department and other utility agency and company facilities in conjunction with the work under this contract; and all appurtenant work required in accordance with the Contract Documents and in accordance with San Francisco DPW Standard Specifications, latest edition.
16. Furnishing and placing of backfill material, if necessary.
17. Handling all drainage and ground water.
18. Performing incidental traffic routing and submitting Special Traffic Permit application and fee, if required.

- B. Mechanical Work includes, but is not limited to:

1. A temporary gravity sewer shall be installed to accomplish the continuous operation of sewage pump station. The existing pump station will remain

operation until the new pump station is successfully completed, start-up and commissioning. Subsequently, existing facilities can be demolished and removed.

2. Furnish and install four (4) sewage pumps (SP-1, SP-2, SP-3, & SP-4) as shown on the contract drawings. Furnish and install force main piping including but not limited to check valves, plug valves, valve boxes, air release valves, cleanout, vent pipe and necessary fittings for a complete operable sewage pump station. All piping shall be supported by stainless steel hardware.
3. Furnish and install one (1) dewatering pump (DW-1) and supply one (1) additional dewatering pump (DW-2) as spare pump as shown on contract drawings.
4. Furnish and install a permanent ladder inside the sewage sump for access per Port Plumbing Code requirements.
5. Furnish and install pump control to have two stage operation. Furnish and install all the necessary but not limited to pump control, float sensors and alarm for a complete pump control package.
6. Furnish and install gravity sewage main from existing manhole to the new sewage sump.
7. Partial or complete demolition of the existing pump station sump/sanitary collection structure and force main.

C. Structural Work includes, but is not limited to:

1. Temporary relocation of existing concrete blocks between the pump station and waste concrete dump station. Demolition of the existing concrete containment structure, slab on grade, and saw cut and demolish section of existing concrete screen wall for new opening.
2. Installation of dewatering system.
3. Installation of permanent sheet pile shoring system, and excavation within for new pump station structure.
4. Installation of torque-down piling.
5. Installation of reinforcing steel and placement of concrete for new pump station structure, and slabs on grade.
6. Installation of structural steel beams, checkered plate deck, chain link fence, and rolling gate.
7. Demolish top portion of existing wet well and backfill abandoned wet well.

D. Electrical Work includes, but is not limited to:

1. Furnishing, installing, testing, and commissioning all elements required to establish a new 240V, 3-phase utility power system, including underground service conduits, service pedestal with transfer switch and generator connection, metering hardware, system grounding and bonding, and other items as may be required to form a complete, functional, and code compliant system.
2. Relocation of existing fuel system devices, including coordination with owner, and furnishing all required conduit, wiring, and appurtenances as required to re-establish the fuel system functionality at another location.
3. Furnishing and installing all required conduit (both encased and surface mounted), conductors, cables, conduit seals, sump termination panel, and other hardware, as shown in the E-series drawings or as required to form a complete, functional, and code compliant system.

4. Fabrication, installation, testing, programming, calibrating, and commissioning of a free-standing pump station control panel, including Programmable Controller (PLC), Human-Machine Interface (HMI), "smart" motor controllers, radar-based level sensor, sump level switches, wireless communications module, network switches, interfaces, cables, terminals, protective devices, and other elements as shown in the drawings and as required for the system to function as intended.

E. Paving Work includes, but is not limited to:

1. Mobilization and demobilization work.
2. Incidental traffic control work.
3. Excavating, removing and disposing of existing pavement, concrete base, parking strip, curb and sidewalk.
4. Supporting and working around existing utilities.
5. Handling all drainage or ground water.
6. Removing surplus material.
7. Cleaning project site.
8. Furnishing and placing of backfill material.
9. Full depth planning per 2-inch depth of cut.
10. Constructing 2-inch thick asphalt concrete wearing surface over 10-inch thick concrete base, concrete roadway swale, 18-inch wide concrete swale, 6-inch thick concrete driveway pavement, and 6-inch wide concrete curb.
11. Removing railroad tracks.
12. Adjusting City-owned manhole frame and cover to grade.
13. Adjusting City-owned catch basin frame and casting to grade.
14. Adjusting City-owned hydrant and watermain valve box casting cover to grade.
15. Performing all related and incidental work, all where and as shown on the Drawings and in accordance with the Contract Documents.

F. Landscape Work includes, but is not limited to:

1. Excavating, removing and disposing of existing asphalt paving, baserock and soil to a depth of 18".
2. Sawcutting existing asphalt paving and removing and disposing of paving materials, baserock and soil to a depth of 36".
3. Sawcutting existing concrete gutter and removing and disposing of concrete, baserock and soil to a depth of 42".
4. Installing permeable unit pavers on top of 2" thick gravel leveling course, 6" thick gravel base and 28" thick gravel reservoir on top of compacted subgrade.
5. Picking up granite curbs at City of San Francisco salvage yard and delivering to the job site without any damage occurring during hauling, handling and unloading of the curbs.
6. Installing recycled, mortared granite curbs set in concrete footings around stormwater planters.
7. Installing mortared cobble at bioretention inlets at each stormwater planter.
8. Installing structural soil to a depth of 36" at each stormwater planter.
9. Rough grading and compacting soils to compaction levels per Contract Documents.
10. Preparing planting areas in accordance with the Contract Documents including importing soils, off-hauling soils, installing cardboard mulch and other mulches in planting areas.
11. Procuring and planting 24" box trees at each stormwater planter with cardboard sheet mulch, 3" layer of crushed rock mulch and tree stakes.
12. Procuring and planting 24" box trees at property at 701 Amador Street, behind property fence.
13. Procuring and planting stormwater planters with specified plant material.

14. Procuring and planting streetscape planting areas with specified plant material.
15. Applying 3" layer of crushed rock mulch in all planting areas.
16. Performing a landscape maintenance program for the 1095-day Maintenance Period and requesting Maintenance Observations by City Representative at every specified progress maintenance milestone through Final Acceptance in accordance with the Contract Documents.
17. Performing all related and incidental work, all where and as shown on the Drawings and in accordance with the Contract Documents.

1.2 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.

1.3 CONTRACTOR'S QUALIFICATIONS

- A Contractors shall have completed a minimum of 5 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.

1.4 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.

1.5 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 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.

- C An interim milestone has been set to complete the work involved related to Bid Item 34A and as described in Section 01 20 00 no later than July 31, 2025

1.6 WORK SCHEDULING

- A 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.
- B 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.
- C 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.
- D 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.

1.7 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.
- 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.

1.8 SPECIAL INSTRUCTIONS

- A. The Contractor shall submit a Port of San Francisco (Port) Application for Encroachment Permit prior to the start of the work. Permit application is available through the link:

http://sfport.com/sites/default/files/Business/Docs/Permit%20Services/Applications/Encroachment%20Permit%20Application_060917.pdf

The Contractor shall provide a Performance Deposit of \$25,000 with the Application for Encroachment Permit. The City will return the deposit fully, after the work is satisfactorily completed and approved by the City Representative.

- B. The Contractor shall perform exploratory hole or pothole work prior to installation of 24-inch diameter steel casing by trenchless method. The Contractor shall notify the City Representatives of any conflicts with existing utilities and other obstructions prior to trenchless work.
- C. The Contractor shall coordinate with the Port through the City Representative for requirements when working within the limits of active railroad tracks.

1.9 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.

1.10 ENVIRONMENTAL, HAZARDOUS OR CONTAMINATED MATERIALS WORK

- A. Work will involve working in contaminated soils and environments. The Contractor shall adhere to the following requirements as written in its specific section:
1. Available Project Information – Refer to Section 00 31 00

2. Environmental Procedures - Refer to Section 01 35 43
 3. Additional Environmental Procedures - Refer to Section 01 35 50.
 4. Regulatory Requirements - Refer to Section 01 41 00.
 5. Health & Safety Criteria - Refer to Section 01 35 45.
 5. For Stormwater, Erosion and Sediment Controls requirements - Refer to 01 35 43
 6. Excavation area limits (at any given time) that shall trigger additional requirements of the San Francisco Department of Public Health (SFDPH) Dust Control Ordinance - Article 22B, and the California Code of Regulations, Title 17, Section 93105 - Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations in areas of Serpentine containing Naturally Occurring Asbestos (NOA), and Cal/OSHA. Refer to Sections 02 81 05 and 02 81 10.
 7. For soil profiling, environmental training, manifest requirements, stockpiling, re-use of excavated soils, import fill criteria handling, transportation and disposal of excavated materials and contaminated soils - Refer to Section 02 81 10.
 8. The Contractor is alerted that soils containing Serpentine (Naturally Occurring Asbestos) shall be encountered at the site during the excavation phase of this Contract. Refer to Sections 02 81 05 and 02 81 10.
 9. For dewatering requirements during construction refer to Section 31 23 19.
 10. As per the Survey report: *Asbestos Survey Report, Reinforced Concrete Structure, Amador Pump House, Envirosurvey Inc., July 2016*, the Pump Station west perimeter wall was found to contain trace (<1%) asbestos, Refer to Section 02 41 00 Demolition to handle this concrete meeting regulatory compliance.
- B. The Contractor shall refer to the following environmental and geotechnical reports:
1. Geotechnical Investigation, Amador Street Sanitary Pump Station Improvements, T&R/RVCG, July 2011
 2. Geotechnical Investigation, Pier 94 Backlands Improvements, T&R/RVCG, July 2012
- C. The Contractor is strongly advised to familiarize itself as to the actual site conditions that may be encountered during construction by all means available to it including, but not limited to, the use of USGS geologic maps.
- D. If the Contractor by its means and methods disturbs, grades or excavates more than one half acre surface area (21780 sq ft) at any given time, then the Contractor shall submit a Site-Specific Dust Control Plan (including Air Monitoring Protocols) for the review and approval from the City Representative and the San Francisco Department of Public Health, prior to start of construction. The Contractor at its own cost shall then furnish all labor, equipment, and means required to conduct the ambient and perimeter air monitoring as required by the San Francisco Department of Public Health (SFDPH) Dust Control Ordinance - Article 22B, and the Air Quality Monitoring Guidelines for San Francisco Health Code (SFHC) Article 22B, Real Time Dust Monitoring and Reporting. Refer to Section 01 57 30.

- E. If the Contractor by its means and methods disturbs, grades or excavates more than one acre (43560 sq ft) of the site at any given time in an area containing Serpentine/Naturally Occurring Asbestos (NOA), then the Contractor at its own cost shall then furnish all labor, equipment, and means to comply with the BAAQMD's requirements, terms of approval of the Asbestos Dust Mitigation Plan (ADMP) and California Code of Regulations, Title 17, Section 93105. Refer to Section 02 81 05.
- F. Unforeseen hazardous/contaminated material work: In the event that unforeseen hazardous/contaminated material is discovered beyond the above referenced reports, the Contractor shall immediately notify the City Representative both verbally and in writing. In the event that unforeseen Hazardous material is discovered, all work in the affected area will stop pending further direction from the City Representative. Upon receipt of such notification, the City, at its sole option, may either
1. Stop all work in the affected area pending further direction from the City Representative
 2. The City Representative shall determine whether the remediation/abatement and hazard removal process requires suspension of all, none or any part of the work under this Contract.
 3. The City will perform the remediation/abatement work using its own forces or using an outside contractor specializing in remediation/abatement work or
 4. Direct the Contractor to perform all or any part of the remediation/abatement and hazardous materials removal work.
 5. If the City Representative directs the Contractor to perform the unforeseen remediation/abatement and removal of the hazardous materials, the City Representative will do so by change order, and the Contractor must promptly provide a properly licensed and insured subcontractor (with CSLB hazardous substance removal certification and C-22 license pertinent to the task as per applicable law) to perform remediation/abatement work.
 6. Refer to Section 00 73 16 – Insurance Requirements for a description of the Contractor's required insurance.
- G. All work that affects intact paint with any level of lead will be performed by the Contractor or its sub contractors under the Cal/OSHA Lead in Construction Standard 8 CCR 1532.1 as well as all Federal, State, and local regulations at no additional cost. If personal exposures to the workers exceed the 8-hr Permissible Exposure Level (PEL) of 50 micrograms/cubic meter, such worker(s) must have received training as a CDPH Certified Lead Worker (as per 17 CCR Division 1, Chapter 8).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 11 00.1**SUMMARY OF WORK FOR WATER MAIN WORK****PART 1 – GENERAL****1.01 INVESTIGATION PRIOR TO BIDDING**

- A. USGS geologic maps indicate that Artificial Fill (Qaf) is present within the project areas. The Contractor is strongly advised to familiarize him/herself as to the actual conditions that may be encountered by all means available to him/her including, but not limited to, the use of USGS geologic maps.
- B. The Contractor's attention is also directed to the information shown on the City map–1974 edition – prepared by the Department of Public Works entitled “Track Removal Program”, and identified as CDD–SFWD 12/1990, which is on file in the Engineering Office, City Distribution Division, 1990 Newcomb Avenue, San Francisco.

1.02 SCOPE OF WORK OR PROJECT DESCRIPTION

- A. The work to be performed under this contract includes installing approximately 200 linear feet of 4- and 6-inch ductile iron pipe, and 1,700 linear feet of 16–inch ductile iron pipe.
- B. The Contractor shall, unless otherwise specified herein, furnish all labor, tools, equipment and materials and perform all the work necessary to deliver the work complete, in place and ready for service. The work shall include the traffic routing; the removal of pavement; support and work around utility facilities; the excavation of trenches and pits; the loading and hauling of materials to the job site; the installation of the pipeline; the performing of the required hydrostatic tests; the furnishing and placing of backfill; the restoring of pavement; the milling and filling of asphalt; the installation of reinforced concrete bus pads; the cleaning up of the premises, and the performing of all other work as shown on the plans or as modified by orders of the City Representative and in accordance with the terms and conditions of the specifications.
- C. The Contractor shall coordinate his/her work with works to be done by San Francisco Water Department (SFWD). (Refer to Specification Section 01 31 13 – Project Coordination)

1.03 MISCELLANEOUS WORK COMMON TO THE ENTIRE CONTRACT

- A. The Work of this Contract shall be complete and all work, materials, equipment and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be provided by the Contractor as though originally indicated, at no additional cost to the City.

1.04 SERVICES TO BE PROVIDED BY THE CITY DURING THE COURSE OF CONSTRUCTION

- A. The City will provide drainage of pipeline one time only. The Contractor shall be responsible for all costs incurred for subsequent re–drainage. The City will provide field

inspection on all work to be performed by the Contractor, without any charge to the Contractor.

1.05 CONSTRUCTION SCHEDULING AND SEQUENCING

- A. Refer to Section 33 11 00 – Water Utility Distribution Piping for requirements that may affect Contractor’s schedule of operations. Contractor shall account for connection and chlorination activities by SFWD in their bid price.
- B. Refer to Section 01 55 26 – Traffic Control for instructions on traffic requirements that may affect Contractor’s schedule of operations. Contractor shall account for any street closures in their bid price.
- C. Contractor shall coordinate its operations with City and shall incorporate in their progress schedule activities for all special events that will require Contractor to suspend its operations at the work site.
- D. Refer to Section 01 31 13 – Project Coordination for coordination requirements that may affect Contractor’s schedule of operations.

1.06 MISCELLANEOUS INSTRUCTIONS TO THE CONTRACTOR

- A. The Contractor shall note that the Excavation Code, Article 2.4 amended February 6, 2018, and the Order No. 187,005: “Regulations for Excavating and Restoring Streets in San Francisco”, approved on November 8, 2010, takes precedence over the DPW Bureau of Engineering 1986 Standard Specifications and 1987 Standard Plans when differences arise. Otherwise, the Standard Specifications and Standard Plans shall govern the excavation and restoration of City streets.
- B. Unless otherwise directed or allowed by the City Representative, the Contractor shall perform all work required under this contract in sections approximately 1,200 feet in length and no more than two adjacent blocks at a time. All work in one section shall be completed before excavation in an adjacent section is allowed.
- C. All backfill shall be compacted as specified on the day it is placed. If the contractor elects to install temporary paving, temporary paving shall be a minimum of six inches and compiled with requirements list on Drawing H-G Detail 4.
- D. The use of Vermeer rock wheel cutter and/or similar types of equipment for cutting, trenching or excavating pavement is prohibited unless permitted by Special Orders of the Director of Public Works for specific locations.
- E. Inactive Services
 - 1. The Contractor’s attention is directed to the fact that there may exist inactive and/or obsolete services in the area of work to be done under this contract. Those services may not be marked, and cannot be readily located in the field because of the absence of meters or meter boxes.
 - 2. A complete list of all known services, including inactive or obsolete services, may be requested through the Engineering Office of the City Distribution Division at cddengineering@sfgwater.org.

3. Protecting, repairing and working around such services are considered as incidental work under the appropriate bid items, and no separate payment will be made therefore.
- F. Contractor is solely responsible for ensuring that any and all Contractor officers, employees, agents, subcontractors and suppliers on site fully comply at all times with any and all applicable regulations, regardless of whether Contractor chooses to conduct its compliance enforcement by assigning compliance enforcement duties to its on-site foreman or superintendent, or whether Contractor chooses to retain third party inspection services which shall be paid by the Contractor as incidental work with no additional cost to the City.
- G. Contractor shall be solely and fully liable for any and all sanctions, fines, penalties, incidental and consequential damages arising out of Contractor's failure to comply with all applicable requirements referenced in this Section. Contractor shall be solely and fully liable regardless of whether the City Representative is or is not present on site at the time of such violation, and regardless of whether the City Representative has or has not identified, noticed, and/or alerted the Contractor of the violation.
- H. In the event that the City Representative identifies and/or places the Contractor on notice of work activity that fails to comply with applicable specifications and/or with applicable regulations, the City Representative shall stop the work and shall require the Contractor to remove the violating equipment and operator(s) from the work site forthwith. Any equipment and operator(s) so removed shall be barred from performing any work in any capacity on the subject project for the duration of the project. The City Representative shall also report any such violation to Cal OSHA. The Contractor shall be barred from filing a claim arising from a work stoppage caused by the Contractor's failure to comply with applicable regulations referenced above and/or with this section.
- I. Supporting, working around and protecting of all utility facilities owned and operated by the City and County of San Francisco are considered as incidental work per provisions of the Contract Requirements Section 00 73 20 – Existing Utility Facilities and Section 00 73 21 – Utility Crossings Specifications.
- J. Prior to the start of construction, the Contractor shall furnish the City Representative with enough spray paint to make all markings needed for the project as incidental work at no additional cost to the City.
- K. The Contractor shall use proper equipment to prevent unnecessary damages for the facilities on the job site such as no heavy equipment on top of sidewalk.
- L. Surface-Accessible Sewer Assets
1. Contractor shall inspect all catch basins, manholes and other surface-accessible sewer assets within one block of the scope of work before and after construction.
 2. Sediment Barriers shall be installed, monitored and maintained over all catch basins which might receive runoff from the construction area.
 3. Contractor shall remove all construction-related debris from surface-accessible sewer assets at the Contractor's expense.

1.07 CONTRACTOR'S USE OF SITE

- A. Refer to Document 00 72 00 General Conditions – Article 3 Contractor's Responsibilities.

1.08 NIGHT AND WEEKEND WORK

- A. Contractor shall not perform night work (i.e., between the hours of 5:00 p.m. and 7:00 a.m.) or weekend work without prior written permission from the City Representative and all permitting agencies. Contractor shall provide a minimum of 3 working days advance written notice of such night or weekend work so that arrangements can be made for City inspectors to be present and local residents and businesses can be notified or required permits can be obtained.
- B. Night and weekend work if required for Contractor's convenience shall be at no additional cost to the City. Contractor will be compensated for night or weekend work as required and as directed by the City provided such work is not required to accelerate the Work because of delays due to Contractor's fault.
- C. Contractor shall comply with the requirements of Article 29 of the Police Code, Regulation of Noise.
- D. The Contractor shall include in his bid the cost for City overtime inspection services beyond normal work hours of 7am to 5pm weekdays and all day Saturday, Sunday and City holidays. An amount of one Hundred Fifty Dollars (\$150.00) per hour of City required inspection overtime per work area will be deducted from those monies due the Contractor under this Contract. The Contractor shall assume full time inspection at each work area.

1.09 HAULING OF MATERIAL

- A. All excavated and demolished material and construction debris shall be disposed off site, unless needed for fill or otherwise approved by the City Representative.
- B. The Contractor will be responsible for cleanup of soil or other debris spilled from trucks and the affected streets shall be cleaned daily with wet type sweepers. Flushing of soil or other debris into storm drains is prohibited.

1.10 ELECTRONIC CERTIFIED PAYROLL REQUIREMENTS

- A. Contractor shall fully comply with the submittal requirements for electronic certified payrolls as outlined in Article 9.03.M of the Document 00 72 00 General Conditions.

PART 2 – PRODUCTS**2.01 NOT USED.****PART 3 – EXECUTION****3.01 NOT USED.**

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Procedures for preparation and submittal of Progress Payment Requests.
- B. Related Sections:
 - 1. Section 00 41 00 – Bid Form.
 - 2. Section 00 72 00 – General Conditions, Article 9, Payments and Completion.
 - 3. Section 01 29 73 – Schedule of Values.
 - 4. 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 01 32 16 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 or 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. 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 01 20 00 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 – PAYMENT SCHEDULE

2.1 Bid Item No. 1: MOBILIZATION AND DEMOBILIZATION (Maximum 5% of the Sum of Bid Items No.-1 through No. 45 and WD-1 Through WD-12)

- A. Refer to Section 01 21 50 – Mobilization Item.
- B. Mobilization will be paid based on the entire contract, not individual locations.
- C. Under mobilization, when the City Representative is satisfied that the Contractor is diligently pursuing commencement of work as stipulated in Section 01 21 50 will be paid 100% of the amount set aside in the Schedule of Bid Price.
- D. Any extension of the Contract Time that may be granted will not of itself constitute grounds for a claim for additional payment under this Bid Item.

2.2 Bid Item No. 2: TRAFFIC CONTROL WORK

- A. The contract lump sum price paid for traffic control work includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals (including barricades, barriers, flaggers and other traffic control) and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control work as shown on the plans; and doing all other work as specified in this Section 01 55 26 and applicable standards as referenced therein as specified in the applicable portions of the SFPW Standard Specifications, and as directed by the City Representative. The traffic control work satisfactorily performed will be paid for at the lump sum price bid therefore prorated over the duration of field construction, proportionally to the percentage of field construction completed to date.

2.3 Bid Item No. 2A: FURNISH AND INSTALL TEMPORARY TRAFFIC STRIPING TAPE

- A. All temporary tape traffic stripes and pavement markings including arrows and word will be measured by linear feet as shown on the plans and/or as installed in the field. Four-inch (4") broken traffic stripes will be measured in linear feet including the gaps.
- B. The four-inch stripe will be the basis of measurement of wider temporary pavement markings such as 12-inch stop bars, 8-inch stripe, etc., and the total length will be measured as a four-inch stripe.
- C. Temporary overlay pavement markers will be measured by the unit from the actual count layout in the field or ordered by the City Representative.
- D. The contract unit price paid for temporary traffic stripe, pavement markings and overlay pavement markers shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in furnishing, installing, maintaining, replacing, and removing temporary traffic stripes, markings, and markers.
- E. Temporary stripe and temporary overlay markers furnished and satisfactorily installed will be paid for at the Contract unit prices for the computed quantities as determined by the

measurement method specified above. Quantities may vary by more than 25%. No additional compensation will be paid in maintaining all temporary traffic stripes and pavement markings.

2.4 Bid Item No. 3: TRENCH AND EXCAVATION SUPPORT FOR SEWER WORK ON H-DRAWINGS

- A. Trench and excavation support work, as specified, including adequate sheeting, shoring and bracing, dewatering (if necessary), etc., or equivalent method for the protection of life and limb, and conforming to applicable safety orders of OSHA and the State of California Division of Industrial Safety, will be paid for at the lump sum price bid therefore.

2.5 Bid Item No. 4: TRANSPORTATION OF SURPLUS CALIFORNIA CLASS I (NON-RCRA) HAZARDOUS WASTE (SOILS) TO A CLASS I DISPOSAL FACILITY

- A. This Bid Item shall include all work described as follows:

The transportation of surplus California Class I (non-RCRA) hazardous waste (soils) to a California Class I landfill or out-of-state equivalent for disposal. Any excavated and surplus existing soil or excavated and unsuitable existing soil for reuse as backfill or other hazardous materials, found to be California Class I (non-RCRA) hazardous waste shall be disposed of at a permitted a California Class I landfill or out-of-state equivalent.

Handling and transportation of existing soil within the project site or to the Contractor's intermediate staging area is incidental work and not covered by this bid item.

Transportation costs shall include all transportation, and other incidentals such as compliance with transportation regulations, scheduling, staging, loading and unloading times and fees, covering of trucks, preparation of hazardous waste manifests, multiple handling and loading, tractor and truck stand-by and idle times, transportation round trip times and rates, load charges, and delays or demurrage due to such scheduling.

Payment for this Bid Item will be made at the Contract Unit Price per US short ton as indicated in the Schedule of Bid Prices. For payment, the Contractor shall submit a copy of the fully signed hazardous waste manifests forms, as well as the weight tickets. If the final quantity varies by more or less than 25% of the estimated quantity specified, and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices shall apply to work under this bid item.

Asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be excavated separately from the soil layer, and shall not be include in this bid item. The Contractor shall remove such materials prior to the transportation and disposal of soils.

The removal, management, transportation, and disposal of asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound, or deleterious matter shall be incidental to its respective bid items.

Soils of different waste disposal classification shall be segregated when excavated, managed, transported, and disposed separately with no mixing of the different types of wastes.

2.6 Bid Item No. 5: DISPOSAL OF SURPLUS CALIFORNIA CLASS I (NON-RCRA) HAZARDOUS WASTE (SOILS) TO A CLASS I DISPOSAL FACILITY

A. This Bid Item shall include all work described as follows:

The disposal of surplus California Class I (non-RCRA) hazardous waste (soils) to a California Class I landfill or out-of-state equivalent. Any excavated and surplus existing soil or excavated and unsuitable existing soil for reuse as backfill or other hazardous materials, found to be California Class I (non-RCRA) hazardous waste shall be disposed of at a permitted a California Class I landfill or out-of-state equivalent.

Disposal costs shall include all disposal costs such as the waste approval process, preparation of waste acceptance forms, weighing of the material, loading and unloading times, dump fees and taxes, profiling costs, landfill fees, and other incidentals.

Dump fees and taxes shall include (as applicable) all tipping fees, gate fees, county and local taxes, landfill recovery fee, landfill environmental & surcharge fee, and the CA Board of Equalization (BOE) Hazardous Waste Land Disposal fee. The CA Board of Equalization (BOE) Hazardous Waste generator fee (if applicable) will be paid by the City, and is not to be included in this bid item.

Payment for this Bid Item will be made at the Contract Unit Price per US short ton as indicated in the Schedule of Bid Prices. For payment, the Contractor shall submit a copy of the fully signed hazardous waste manifests forms, as well as the weight tickets. If the final quantity varies by more or less than 25% of the estimated quantity specified, and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices shall apply to work under this bid item.

Asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be excavated separately from the soil layer, and shall not be include in this bid item. The Contractor shall remove such materials prior to the transportation and disposal of soils.

The removal, management, transportation, and disposal of asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound, or deleterious matter shall be incidental to its respective bid items.

Soils of different waste disposal classification shall be segregated when excavated, managed, transported, and disposed separately with no mixing of the different types of wastes.

2.7 Bid Item No. 6: TRANSPORTATION OF SURPLUS NON-HAZARDOUS SOILS (CLASS II & III) CALIFORNIA DESIGNATED WASTE (SOILS) TO A CLASS II & III DISPOSAL FACILITY

A. This Bid Item shall include all work described as follows:

Transportation of surplus non-hazardous soils (Class II & III) California Designated Waste (soils) at a permitted and certified landfill or an out-of-state equivalent. Any excavated and surplus existing soil or excavated and unsuitable existing soil for reuse as backfill or other hazardous materials, found to be non-hazardous soils (Class II & III) California Designated Waste shall be disposed of at a permitted a California Class II & II landfill or out-of-state equivalent.

Handling and transportation of existing soil within the project site or to a Contractor's intermediate staging area is incidental work and not covered by this bid item.

Transportation costs shall include all handling, transportation, and other incidentals such as compliance with transportation regulations, scheduling, staging, loading and unloading times and fees, covering of trucks, preparation of non-hazardous waste manifests, multiple handling and loading, tractor and truck stand-by and idle times, transportation round trip times and rates, load charges, and delays or demurrage due to such scheduling.

Payment for this Bid Item will be made at the Contract Unit Price per US short ton as indicated in the Schedule of Bid Prices. For payment, the Contractor shall submit a copy of the fully signed non-hazardous waste manifests forms, as well as the weight tickets. If the final quantity varies by more or less than 25% of the estimated quantity specified, and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices shall apply to work under this bid item.

Asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be excavated separately from the soil layer, and shall not be include in this bid item. The Contractor shall remove such materials prior to the transportation and disposal of soils.

The removal, management, transportation, and disposal of asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound, or deleterious matter shall be incidental to its respective bid items.

Soils of different waste disposal classification shall be segregated when excavated, managed, transported, and disposed separately with no mixing of the different types of wastes.

2.8 Bid Item No. 7: DISPOSAL OF SURPLUS NON-HAZARDOUS SOILS (CLASS II & III) CALIFORNIA DESIGNATED WASTE (SOILS) TO A CLASS II & III DISPOSAL FACILITY

A. This Bid Item shall include all work described as follows:

Disposal of surplus non-hazardous soils (Class II & III) California Designated Waste (soils) at a permitted landfill or an out-of-state equivalent. Any excavated and surplus existing soil or excavated and unsuitable existing soil for reuse as backfill or other materials, found to be non-hazardous soils (Class II & III) California Designated Waste shall be disposed of at a permitted a California Class II & III landfill or out-of-state equivalent.

Disposal costs shall include all disposal costs such as the waste approval process, preparation of waste acceptance forms, weighing of the material, loading and unloading times, dump fees and taxes, profiling costs, landfill fees, and other incidentals. Dump fees and taxes shall include (as applicable) all tipping fees, gate fees, county and local taxes, landfill recovery fee, and landfill environmental & surcharge fee.

Payment for this Bid Item will be made at the Contract Unit Price per US short ton as indicated in the Schedule of Bid Prices. For payment, the Contractor shall submit a copy of the fully signed non-hazardous waste manifests forms, as well as the weight tickets. If the final quantity varies by more or less than 25% of the estimated quantity specified, and

General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices shall apply to work under this bid item.

Asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be excavated separately from the soil layer, and shall not be include in this bid item. The Contractor shall remove such materials prior to the transportation and disposal of soils.

The removal, management, transportation, and disposal of asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound, or deleterious matter shall be incidental to its respective bid items.

Soils of different waste disposal classification shall be segregated when excavated, managed, transported, and disposed separately with no mixing of the different types of wastes.

2.9 Bid Item No. 8: 4-FOOT DIAMETER CONCRETE MANHOLE WITH 52-INCH DIAMETER FRAME AND COVER

- A. 4-foot diameter concrete manhole with new 52-inch diameter frame and cover will be measured for payment by the number of each manhole satisfactorily constructed, complete in place, as specified in Section 33 33 00 and will be paid for at the unit price bid therefore.

2.10 Bid Item No. 9: 5-FOOT DIAMETER CONCRETE MANHOLE WITH 52-INCH DIAMETER FRAME AND COVER

- A. 5-foot diameter concrete manhole with new 52-inch diameter frame and cover will be measured for payment by the number of each manhole satisfactorily constructed, complete in place, as specified in Section 33 33 00 and will be paid for at the unit price bid therefore.

2.11 Bid Item No. 10: STANDARD CONCRETE MANHOLE FOR 12-INCH TO 24-INCH DIAMETER SEWERS WITH FRAME AND COVER (PER SFDPW STANDARD PLAN 87,181)

- A. Concrete manhole with new frame and cover will be measured for payment by the number of each manhole satisfactorily constructed, complete in place, as specified in Section 33 33 00 and will be paid for at the unit price bid therefor.

2.12 Bid Item No. 11: CLEAN AND MORTAR EXISTING BRICK MANHOLE

- A. Cleaning and mortaring existing manhole with 1-inch thick Calcium Aluminate Cementitious (CAC) Structural Rehabilitation Coating by the number of each satisfactorily completed in place as specified in Section 33 33 00 and 33 01 30.63 will be paid for at the unit price bid therefor.

2.13 Bid Item No. 12: 8-INCH DIAMETER VCP ON CRUSHED ROCK WRAPPED IN GEOTEXTILE FABRIC

- A. 8-inch diameter VCP wrapped in geotextile fabric will be measured horizontally along the centerline for payment by the number of each linear foot satisfactorily installed, complete

in placed, as specified in Section 33 33 00 and will be paid for at the price bid per linear foot.

- B. Saw cutting and removal of existing pavement, excavating, backfilling, preparation of subgrade to proper grade, compacting, and temporary pavement restoration, shall be considered as incidental work.
- C. Furnishing and installing 10-inch thick concrete base and permanent pavement restoration within pipe trench is excluded, as they are included in other Bid Items.
- D. Excavation shall be as specified in Section 701 and Section 702 of SFDPW Standard Specifications and as indicated on the plans and shall be paid for as incidental work.

2.14 Bid Item No. 13: 10-INCH DIAMETER VCP CULVERT (CONTINGENCY BID ITEM)

- A. 10-inch diameter VCP culvert will be measured horizontally along the centerline for payment by the number of each linear foot satisfactorily installed, complete in placed, as specified in Section 33 33 00 and will be paid for at the price bid per linear foot.
- B. Saw cutting and removal of existing pavement, excavating, backfilling, preparation of subgrade to proper grade, compacting, and temporary pavement restoration, shall be considered as incidental work.
- C. Furnishing and installing 10-inch thick concrete base and permanent pavement restoration within pipe trench is excluded, as they are included in other Bid Items.
- D. Excavation shall be as specified in Section 701 and Section 702 of SFDPW Standard Specifications and as indicated on the plans and shall be paid for as incidental work.
- E. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.

2.15 Bid Item No. 14: 12-INCH DIAMETER RCP ON CRUSHED ROCK BEDDING WRAPPED IN GEOTEXTILE FABRIC

- A. 12-inch diameter RCP on crushed rock wrapped in geotextile fabric will be measured horizontally along the centerline for payment by the number of each linear foot satisfactorily installed, complete in placed, as specified in Section 33 33 00 and 33 41 00.10 and will be paid for at the price bid per linear foot.
- B. Saw cutting and removal of existing pavement, excavating, backfilling, preparation of subgrade to proper grade, compacting, and temporary pavement restoration, shall be considered as incidental work.
- C. Furnishing and installing 10-inch thick concrete base and permanent pavement restoration within pipe trench is excluded, as they are included in other Bid Items.
- D. Excavation shall be as specified in Section 701 and Section 702 of SFDPW Standard Specifications and as indicated on the plans and shall be paid for as incidental work.

2.16 Bid Item No. 15: 15-INCH DIAMETER RCP ON CRUSHED ROCK BEDDING WRAPPED IN GEOTEXTILE FABRIC

- A. 15-inch diameter RCP on crushed rock wrapped in geotextile fabric will be measured horizontally along the centerline for payment by the number of each linear foot satisfactorily installed, complete in placed, as specified in Section 33 33 00 and 33 41 00.10 and will be paid for at the price bid per linear foot.

- B. Saw cutting and removal of existing pavement, excavating, backfilling, preparation of subgrade to proper grade, compacting, and temporary pavement restoration, shall be considered as incidental work.
 - C. Furnishing and installing 10-inch thick concrete base and permanent pavement restoration within pipe trench is excluded, as they are included in other Bid Items.
 - D. Excavation shall be as specified in Section 701 and Section 702 of SFDPW Standard Specifications and as indicated on the plans and shall be paid for as incidental work.
- 2.17 Bid Item No. 16: FURNISH AND INSTALL 6-INCH DIAMETER NOMINAL SIZE SDR-17 HDPE FORCE MAIN AND FITTINGS ON CRUSHED ROCK ENCASEMENT AND WRAPPED IN GEOTEXTILE FABRIC
- A. 6-inch diameter nominal size SDR-17 HDPE and fittings with fused joints on crushed rock encasement and wrapped in geotextile fabric will be measured horizontally along the centerline for payment by the number of each linear foot satisfactorily installed, complete in placed, as specified in Section 33 33 00 and will be paid for at the price bid per linear foot.
 - B. Saw cutting and removal of existing pavement, excavating, backfilling, preparation of subgrade to proper grade, compacting, and temporary pavement restoration, shall be considered as incidental work.
 - C. Furnishing and installing 10-inch thick concrete base and permanent pavement restoration within pipe trench is excluded, as they are included in other Bid Items
 - D. Excavation shall be as specified in Section 701 and Section 702 of SFDPW Standard Specifications and as indicated on the plans and shall be paid for as incidental work.
- 2.18 Bid Item No. 17: FURNISH AND INSTALL 16-INCH DIAMETER NOMINAL SIZE SDR-17 HDPE ON CRUSHED ROCK ENCASEMENT AND WRAPPED IN GEOTEXTILE FABRIC
- A. 16-inch diameter nominal size SDR-17 HDPE with fused joints on crushed rock encasement and wrapped in geotextile fabric will be measured horizontally along the centerline for payment by the number of each linear foot satisfactorily installed, complete in placed, as specified in Section 33 33 00 and will be paid for at the price bid per linear foot.
 - B. Saw cutting and removal of existing pavement, excavating, backfilling, preparation of subgrade to proper grade, compacting, and temporary pavement restoration, shall be considered as incidental work.
 - C. Furnishing and installing 10-inch thick concrete base and permanent pavement restoration within pipe trench is excluded, as they are included in other Bid Items
 - D. Excavation shall be as specified in Section 701 and Section 702 of SFDPW Standard Specifications and as indicated on the plans and shall be paid for as incidental work.
- 2.19 Bid Item No. 18: FURNISH AND INSTALL 34 LF OF 10-INCH DIAMETER STEEL CASING UNDER RAILROAD TRACKS BY PIPE JACKING METHOD, AND FURNISH AND INSTALL 34 LF OF 6-INCH DIAMETER NOMINAL SIZE SDR 17 HDPE INSIDE STEEL CASING
- A. Under this bid item, the Contractor shall furnish and install 10-inch diameter steel casing by pipe jacking method, 6-inch nominal diameter HDPE pipe SDR 17 inside 10-inch diameter steel casing and fill annular space between steel casing and HDPE pipe with slurry grout. This bid item includes installing end seals (caps) at the end of each steel casing.

- B. All related work, satisfactorily performed, including all incidental work, will be paid for at the lump sum price bid under this bid item.

2.20 Bid Item No. 19: JACKING PIT FOR STEEL CASING INSTALLATION

- A. Jacking Pit for Steel Casing Installation shall be measured for payment by the number of pits satisfactorily constructed per specification Section 33 33 00, including all incidental work and will be paid for at the unit price bid therefore.

2.21 Bid Item No. 20: CLEANOUTS FOR 6-INCH DIAMETER NOMINAL SIZE SDR-17 HDPE INSIDE MANHOLE

- A. Cleanouts for 6-inch diameter nominal size SDR-17 HDPE inside manhole shall be measured for payment by the number of each cleanout satisfactorily installed per details and where indicated on the Contract Drawings, including all incidental work, and will be paid for at the Contract unit price each stated in the Schedule of Bid Prices.

2.22 Bid Item No. 20.A: CLEANOUTS FOR 6-INCH DIAMETER NOMINAL SIZE SDR-17 HDPE (CONDITIONAL BID ITEM)

- A. Cleanouts for 6-inch diameter nominal size SDR-17 HDPE shall be measured for payment by the number of each cleanout satisfactorily installed per details and as indicated on the Contract Drawings, including all incidental work, and will be paid for at the Contract unit price each stated in the Schedule of Bid Prices
- B. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.

2.23 Bid Item No. 21: FURNISH AND INSTALL 2-INCH AIR VALVE AND BLOW-OFF ASSEMBLY AND ACCESSORIES

- A. Furnish and install 2-inch air valve and blow-off assembly and accessories inside manhole shall be measured for payment by the number of each air valve and blow-off assembly satisfactorily installed per details and where indicated on the n H-drawings, including all incidental work, and will be paid for at the Contract unit price each stated in the Schedule of Bid Prices.

2.24 Bid Item No. 22: CONTROLLED DENSITY FILL INSIDE MANHOLE

- A. Controlled Density Fill (CDF) inside manhole, per the details shown on H-drawings, as directed by the City Representative, will be measured for payment by the number of each cubic yard, satisfactorily used, including all incidental wok, and shall be paid for under this bid item.

2.25 Bid Item No. 23: TELEVISION INSPECTION OF EXISTING 10-INCH DIAMETER VCP INDICATED ON H-DRAWINGS

- A. Television inspection of existing 10-inch diameter VCP indicated on the H-Drawings, satisfactorily performed, as specified in Section 33 33 00 including all incidental work will be paid for at the lump sum price bid therefore.
- 2.26 Bid Item No. 24: TELEVISION INSPECTION OF EXISTING 4-INCH OR 6-INCH DIAMETER CIP SIDE SEWERS (CONDITIONAL BID ITEM)
- A. Television inspection of existing side sewer and culverts located within the contract limits, but outside the limits of main sewer work will be measured for payment by the number of each side sewer and culvert satisfactorily televised, as specified in Section 33 33 00, including all incidental work and will be paid for at the unit price bid therefor.
- B. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.
- 2.27 Bid Item No. 25: 4-INCH OR 6-INCH DIAMETER CIP SIDE SEWER REPAIR, REPLACEMENT OR CONSTRUCTION AND CLEANOUTS, AS NECESSARY (CONDITIONAL BID ITEM)
- A. CIP side sewer repair or replacement will be paid for by the number of each side sewers satisfactorily repaired or replaced, complete in place, as specified in Section 7.07 of SFDPW Standard Specifications and in Section 33 33 00. This bid item includes constructing cleanouts, shown on the H-Drawings.
- B. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.
- 2.28 Bid Item No. 26: POST-CONSTRUCTION TELEVISION INSPECTION OF NEWLY CONSTRUCTED GRAVITY MAIN SEWERS, STORM DRAINS, CULVERTS, AND LATERALS
- A. Post construction television inspection of newly constructed gravity main sewers, storm drains, culverts, and laterals satisfactorily performed, as specified in Section 33 33 00 including all incidental work will be paid for at the lump sum price bid therefore.
- 2.29 Bid Item No. 27: EXPLORATORY HOLES (CONDITIONAL BID ITEM)
- A. Exploratory holes as instructed by the City Representative will be measured for payment by unit price in cubic yards (CY). Exploring test pit or pothole dimensions will vary in size and depths.
- B. This Bid Item includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, required for demolition, excavation, earthwork, importing of backfill material as required, testing, restoration of existing surfaces, including concrete pavement and asphalt wearing course, and all incidental work required for providing potholes.
- C. Payment for this Bid Item will be made at the contract unit price per individual unit satisfactorily completed.
- D. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Section 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.

2.30 Bid Item No. 28: PLUG AND FILL EXISTING 6-INCH DIAMETER FORCE MAIN WITH SLURRY GROUT AS INDICATED ON H-DRAWINGS

- A. Plug and fill existing 6-inch diameter force main, including cleanouts, with slurry grout shall be measured for payment by the number of each cubic yard satisfactorily used, as specified in Section 302.04 and 302.06 of SFDPW Standard Specifications and shall be paid for at the Contract Unit Price.

2.31 Bid Item No. 29: CAST IRON WATER TRAP FOR CATCH BASIN TO REMAIN INCLUDING CLEANOUT CAP (PER SFDPW STANDARD PLAN 87,194) (CONDITIONAL BID ITEM)

- A. Cast iron water trap will be measured for payment by the number of each cast iron water trap, satisfactorily furnished and installed, as specified in Section 33 33 00, including all Incidental Work will be paid for at the unit price bid therefor.
- B. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Document 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.

2.32 Bid Item No. 30: IMPORT BACKFILL MATERIAL FOR SEWER WORK (CONDITIONAL BID ITEM)

- A. The Contractor shall be paid for transporting imported backfill material to the work site related to the sewer work at locations where undisturbed native soil has not been encountered. Payment shall be made at the Contract Unit Price per unit cubic yard of backfill material.
- B. The final quantity may vary by more than 25% of the estimated quantity specified and General Conditions Section 00 72 00, Article 6.08 B & C with respect to adjustment of unit bid prices do not apply to work under this bid item.

2.33 Bid Item No. 31A: HIGH FLOW TRASH COLLECTION DEVICE – CROSSLINKED HIGH DENSITY POLYETHYLENE

- A. Furnish and install removable high flow trash collection device inside existing manhole at the locations shown on H-10 Drawing will be measured for payment by the number of each trash collection device and manhole satisfactorily constructed, complete in place, as specified in Section 33 33 00, as directed by the City Representative and will be paid for at the unit price bid therefor.

2.34 Bid Item No. 31B: HIGH FLOW TRASH COLLECTION DEVICE – DEFLECTIVE SEPARATOR

- A. Furnish and install removable high flow trash collection device inside new manhole with new frame and cover at the locations shown on H-10 Drawing, as directed by the City Representative will be measured for payment by the number of each trash collection device and manhole satisfactorily constructed, complete in place, as specified in Section 33 33 00, as directed by the City Representative and will be paid for at the unit price bid therefor.

2.35 Bid Item No. 32: MECHANICAL WORK

- A. This bid item is to replace the existing Amador Street sanitary pump station and associated discharge force main pipe, fittings and appurtenances that ended at Amador Street utility corridor. The pump station will have four (4) sewage pumps and one (1) dewatering pump. The new sanitary pump station shall be equipped with automated, redundant instrument controls with provisions for future system expansion. Temporary gravity sewage pipe shall be installed to maintain continuous sewage pumping station operation. Refer to Drawing M-1 to M-7 for detail.

2.36 Bid Item No. 33: STRUCTURAL WORK

- A. This bid item is to demolish the existing concrete pump station, saw cut and remove a portion of the existing concrete wall, install a dewatering system, install a sheet pile shoring system, excavation within the shoring, installation of torque-down piling, installation of reinforcing steel and placement of concrete for the new pump station structure and slabs on grade, installation of steel beams, checkered plate decking, bollards, and incidental work. Demolish top portion of existing wet well and backfill wet well. This work shall be done while the existing sump pump and transfer system remains operational. Contractor shall bear all expense for the repair or replacement of the existing sump pump and transfer system should it be damaged during construction. Refer to Drawings S-1 to S-10.

2.37 Bid Item No. 34: ELECTRICAL WORK

- A. Payment for electrical work, interim electrical work, and selective demolition electrical work shall include material, labor, and equipment for performing all demolition, removal, salvage, disposal of electrical equipment and to satisfactorily furnish, install, and test all electrical equipment and appurtenances as shown on E-series drawings and as specified in specifications including, but not limited to establishing new utility service including metering pedestal, electrical distribution within the station, grounding and bonding, custom-fabricated control and power distribution enclosure, motor controllers, non-automatic transfer switch, mobile generator receptacle, panelboards, lighting, lighting controls, uninterruptible power supply system (UPS), Programmable Logic Controller (PLC), antenna, pull boxes, junction boxes, conduits, wiring, and all incidental related electrical work necessary for a complete electrical system.

2.38 Bid Item No. 34A: ELECTRICAL WORK - INTERIM

- A. Payment for interim electrical work shall include material, labor, and equipment to satisfactorily furnish, install, and test all electrical equipment and appurtenances as shown on E-series drawings and as specified in specifications including, but not limited to the following:
1. Establish new utility service for the existing and new pump station including metering pedestal, establish power to the existing pump station combination meter main, grounding and bonding, non-automatic transfer switch and connector for emergency power back-up use during construction, conduits, wiring, testing and commissioning, and all incidental related electrical work necessary for a complete and operable electrical system.
 2. Provide emergency power back-up for the interim electrical system in the event of an electrical power outage and/or equipment failure throughout the construction period. Responsibility to monitor power outage events and

establishing back up power within 1 hour of the outage reside with the Contractor.

2.39 Bid Item No. 35: FULL DEPTH PLANING PER 2-INCH DEPTH OF CUT

- A. Full Depth Planning Per 2-Inch Depth of Cut shall be measured for payment as followings:
 - a. Full depth planning per 2-inch depth of cut will be measured by square foot of roadway surface completed in place.
 - b. Areas will be determined by the limits shown on the drawings unless otherwise directed by the Engineer.
 - c. No deductions will be made from the Contractor's payment for the inlet or other casting area itself.
 - d. General Conditions Section 6.08, B & C shall not apply to Bid Item "Full Depth Planning Per 2-Inch Depth of Cut".
- B. Full depth planning per 2-inch depth of cut will be paid for at the Contract unit price stated in the bid schedule for the computed quantities as determined by the measurement method specified above.

2.40 Bid Item No. 36: ASPHALT CONCRETE (Type A ½-Inch Maximum with Medium Grading)

- A. Asphalt Concrete paving shall be measured for payment as follows:
 - 1. Furnish a certified daily summary weight sheet in addition to either a public weighmaster certificate or a private weighmaster's certificate showing the number of tons of asphalt concrete placed.
 - 2. Obtain the signature of the Resident Engineer on the load tag for each load dumped on the job site and incorporated into the work. Payment will be made only on duplicate load slips delivered to the Resident Engineer at the time of signature and delivery.
- B. Asphalt Concrete (Type A, ½ Inch Medium Grading) installed and all necessary and/or required equipment and labor to install including trucking will be paid for at the Contract unit price stated in the bid schedule for the computed quantities as determined by the measurement method specified above.

2.41 Bid Item No. 37: 10-INCH THICK CONCRETE BASE

- A. 10-Inch Thick Concrete Base will be measured for payment by the actual area in square feet measured to the limits indicated on the Drawings, and will be paid for at the Contract unit price per square foot stated in the Schedule of Bid Prices.
- B. Saw cutting, removal and disposal of existing roadway base (concrete/asphalt/other), excavating, backfilling, preparation of subgrade to proper grade, compacting, and adjustment of manhole and catch basin frames and castings to new grade will be considered as Incidental Work.

- C. The City Representative may determine exact locations of concrete base work and may increase or decrease measurements shown on the Drawings or establish new concrete base work in the field.
- D. When concrete base is to be thickened at an edge in order to match the depth of a thicker adjacent pavement section, the thickened portion of the pavement shall be considered as Incidental Work.

2.42 Bid Item No. 38A: CONCRETE ROADWAY SWALE

- A. Concrete Roadway Swale, will be measured for payment by the actual square feet of concrete roadway swale measured in the field, and will be paid for at the Contract unit price per square foot stated in the Schedule of Bid Prices.
- B. Saw cutting, removal, and disposal of existing concrete swale, excavating, backfilling, form work, preparation of subgrade to proper grade, and compacting will be considered as Incidental Work.
- C. The City Representative may determine exact locations of swale work, and may increase or decrease measurements shown on the Drawings or establish new swale work in the field.

2.43 Bid Item No. 38B: 18-INCH WIDE CONCRETE SWALE

- A. 18-Inch Wide Concrete Swale, will be measured for payment by the actual length in linear feet of concrete roadway swale measured in the field, and will be paid for at the Contract unit price per linear foot stated in the Schedule of Bid Prices.
- B. Saw cutting, removal, and disposal of existing concrete swale, excavating, backfilling, form work, preparation of subgrade to proper grade, and compacting will be considered as Incidental Work.
- C. The City Representative may determine exact locations of swale work, and may increase or decrease measurements shown on the Drawings or establish new swale work in the field.

2.44 Bid Item No. 39: 6-INCH WIDE CONCRETE CURB

- A. 6-Inch Wide Concrete Curb, including dropped curbs at driveways will be measured for payment by the actual length in linear feet of concrete curb measured along the face of curb indicated on the Drawings, and will be paid for at the Contract unit price per linear foot stated in the Schedule of Bid Prices.
- B. Saw cutting, removal, and disposal of existing concrete curb, excavating, backfilling, form work, preparation of subgrade to proper grade, and compacting will be considered as Incidental Work. This Bid Item will not include the curb in combined curb and gutter.
- C. The City Representative may determine exact locations of curb work, and may increase or decrease measurements shown on the Drawings or establish new curb work in the field.

2.45 Bid Item No. 40: 6-INCH THICK CONCRETE DRIVEWAY PAVEMENT

- A. 6-Inch Thick Concrete Driveway Pavement will be measured for payment by the square foot to the limits indicated on the plans will be paid for at the Contract unit price per square foot stated in the Schedule of Bid Prices.
- B. Saw cutting and removal of existing concrete sidewalk, excavating, backfilling, preparing of subgrade to proper grade, compacting, removing tree roots as directed by the Bureau of Urban Forestry (BUF), installing reinforced steel bars in accordance with SFPW Standard Plan 96,608 revision 1, adjusting utility boxes in the sidewalk to finish grade, salvaging and reinstalling sidewalk plaques, grouting under and around street light poles and/or traffic signal poles, and the moving and reinstalling of mail boxes shall be considered as Incidental Work. Waterproofing required for sub-sidewalk basements shall be installed as incidental work.
- C. Only concrete driveway shown on the Drawings will be measured for payment. Concrete driveway required for pavement work for trench restorations not shown on the Drawings shall be considered to be Incidental Work.

2.46 Bid Item No. 41: CLASS II AGGREGATE BASE

- A. Class II Aggregate Base will be measured for payment by the cubic yard to the limits measured in the field, and will be paid for at the contract unit price. Saw cutting and removal of existing concrete base, excavating, backfilling, preparation of subgrade to proper grade, and compacting shall be considered as Incidental Work.
- B. Removal, and disposal of existing soils, asphalt, concrete, excavating, backfilling, preparation of subgrade to proper grade, and compacting will be considered as Incidental Work.

2.47 Bid Item No. 42: RAIL ROAD TRACK REMOVAL

- A. Rail Road Track Removal will be measured for payment by the linear foot measured in the field, and will be paid for at the contract unit price. Cutting and removal of existing rail, removal of asphalt, concrete base, excavating, backfilling, preparation of subgrade to proper grade, and compacting shall be considered as Incidental Work.
- B. Removal, and disposal of track, ties, ballast, soils, asphalt, concrete, excavating, backfilling, preparation of subgrade to proper grade, and compacting will be considered as Incidental Work.

2.48 Bid Item No. 43: ADJUST CITY-OWNED MANHOLE AND CATCH BASIN FRAME AND CASTING TO GRADE (CONDITIONAL BID ITEM)

- A. At locations of street resurfacing, the number and locations of manhole frames and catchbasin and castings to be adjusted in the field will be as determined by a joint inspection of the Contractor and the City Representative before the start of milling operation.
- B. Adjustment of existing manhole frames and catchbasin and castings will be measured for each casting satisfactorily adjusted.

- C. At locations of street base, parking strip, gutter, sidewalk, catchbasin, manhole, and curb ramp construction/reconstruction, adjustment of manhole frames and catchbasin and castings to new grade will be considered to be Incidental Work, and the number of frames and castings to be adjusted will not be measured for payment.
- D. This Bid Item will be paid for at the Contract unit price each stated in the Schedule of Bid Prices for the computed quantities as determined by the measurement method specified above.

2.49 Bid Item No. 44: ADJUST CITY-OWNED HYDRANT AND WATER MAIN VALVE BOX CASTING COVER TO GRADE (CONDITIONAL BID ITEM)

- A. At locations of street resurfacing, the number and locations of hydrant and water main valve box castings to be adjusted in the field will be as determined by a joint inspection of the Contract and the City Representative before the start of milling operation.
- B. Adjustment of existing hydrant and water main valve box castings will be measured for each casting satisfactorily adjusted. Refer to Section 32 17 53 – Adjustment of Frames and Castings.
- C. At locations of street base, parking strip, gutter, sidewalk, and curb ramp construction/reconstruction, adjustment of hydrant and water main valve box casting to new grade will be considered to be Incidental Work, and the number of castings to be adjusted will not be measured for payment.
- D. This Bid Item will be paid at the Contract unit price each stated in the Schedule of Bid Prices for the computed quantities as determined by the measurement method specified above.

2.50 Bid Item No. 45: LANDSCAPE WORK

- A. Measurement and payment for the demolition, saw cutting, disposal, and excavation of all existing paving materials, base rock and soils to specified depths in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.
- B. Measurement and payment for the rough grading and compacting of soils, preparation of planting areas including importing soils, structural soils, and off-hauling soils in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.
- C. Measurement and payment for the installation of permeable unit pavers on specified gravel profile on compacted subgrade in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.
- D. Measurement and payment for the collection and transport of granite curbs from the City of San Francisco salvage yard on Treasure Island and delivering to the job site without any damage, and installing and mortaring curbs set in concrete footings around each stormwater planter in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.
- E. Measurement and payment for the installation of mortared cobbles at the bioretention inlets at each stormwater planter in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.

- F. Measurement and payment for the procurement and planting of 24" box trees as specified and all other shrub and plant material as specified in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.
- G. Measurement and payment for the installation of cardboard weed barrier, and mulches and soil amendments in all specified planting areas in accordance with the Contract Documents will be paid for at the lump sum price bid therefore.
- H. Measurement and payment for the design, approval and provision of a shop drawing, installation of chain link fence and manual rolling gate complete with security latching devices in accordance with the contract documents to be paid for at the lump sum price bid therefore.

2.51 Bid Item No. 45A: LANDSCAPE ESTABLISHMENT PERIOD (CONTINGENCY BID ITEM)

- A. The contract lump sum price paid for 36-month long-term plant establishment period. Work includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in maintaining the components of the landscape planting as shown on the plans, and doing all other work as specified in Section 32 01 90 and applicable standards as referenced therein as specified in the applicable portions of the SF Public Works Standard Specifications, and as directed by the Engineer. 36-Month Long-Term Plant Establishment Period for Third Year, satisfactorily performed, as specified, will be paid for the at the Lump Sum price bid therefore, prorated for a 36-month period on a monthly basis.

2.52 Bid Item No. 46: ALLOWANCE FOR ENVIRONMENTAL WORK

Refer to Section 01 21 00 – Allowances.

2.53 Bid Item No. 47: ALLOWANCE FOR REMOVAL OF RAILROAD TRACK FACILITIES FROM THE SEWER AND STORM DRAIN TRENCH IF ENCOUNTERED BENEATH THE PAVEMENT AND WHERE INDICATED ON H-DRAWINGS AND OUTSIDE OF RAILROAD TRACK REMOVAL LIMITS ON C-DRAWINGS

- A. Refer to Section 01 21 00 – Allowances.

2.53 Bid Item No. 48: ALLOWANCE TO PERFORM NECESSARY WORK DUE TO UNFORESEEN CONDITIONS RELATED TO SEWER WORK UNDER H-DRAWINGS

- A. Refer to Section 01 21 00 – Allowances.

2.54 Bid Item No. 49: ALLOWANCE FOR SAN FRANCISCO UNIFORMED OFFICERS

- A. Refer to Section 01 21 00 – Allowances.

2.55 Bid Item No. 50: PARTNERING ALLOWANCE

- A. Refer to Section 01 21 00 – Allowances.

2.56 Bid Item No. WD-1A: EXCAVATION AND BACKFILL FOR 4-, 6- AND 8-INCH PIPE TRENCH

- A. Under this Item, the Contractor shall saw cut, excavate pipe trench to the dimensions specified in SFPUC CDD Standard Plan CDD-LP-002 for 4-, 6-, and 8-inch ductile iron pipe; furnish and install buried warning and identification tape; support and work around City utility facilities; remove abandoned utilities in conflict with the installation of the new main; store suitable excavated material to be used for trench backfill; place backfill materials; compact backfill materials; remove and dispose of concrete street base, pavement and unsuitable excavated materials.
- B. Payment shall be made at the unit bid price per linear foot of trench excavated and backfilled and shall include all necessary, related and incidental work including but not limited to dewatering. Measurements shall be made along the longer side of the pipe trench with the deductions for intersecting trenches.
- C. Supporting, working around and protecting of all utility facilities owned and operated by the City and County of San Francisco are considered as incidental work per provisions of the Contract Requirements Section 00 73 20 – Existing Utility Facilities and Section 00 73 21 – Utility Crossings Specifications.

2.57 Bid Item No. WD-1B: EXCAVATION AND BACKFILL FOR 16-INCH PIPE TRENCH

- A. Under this Item, the Contractor shall saw cut, excavate pipe trench to the dimensions specified in SFPUC CDD Standard Plan CDD-LP-002 to install 16-inch ductile iron pipe; furnish and install buried warning and identification tape; support and work around City utility facilities; remove abandoned utilities in conflict with the installation of the new main; store suitable excavated material to be used for trench backfill; place backfill materials; compact backfill materials; remove and dispose of concrete street base, pavement and unsuitable excavated materials
- B. Payment shall be made at the unit bid price per linear foot of trench excavated and backfilled and shall include all necessary, related and incidental work including but not limited to dewatering. Measurements shall be made along the longer side of the pipe trench with the deductions for intersecting trenches.
- C. Supporting, working around and protecting of all utility facilities owned and operated by the City and County of San Francisco are considered as incidental work per provisions of the Contract Requirements Section 00 73 20 – Existing Utility Facilities and Section 00 73 21 – Utility Crossings Specifications.

2.58 Bid Item No. WD-1C: FURNISH AND INSTALL SAND BACKFILL (CONDITIONAL BID ITEM)

- A. This Bid Item shall include all work described as follows:
- B. This pay item shall include full compensation for all labor, material and equipment necessary to furnish and transport import sand for water work in the event that the excavated material is deemed to be unsuitable soil for reuse as backfill as specified in Section 31 23 36.

- C. Handling and transportation of existing soil within the project site or to the Contractor's intermediate staging area is incidental work and not covered by this bid item.
- D. Transportation costs shall include all transportation, and other incidentals such as compliance with transportation regulations, scheduling, staging, loading and unloading times and fees, covering of trucks, multiple handling and loading, tractor and truck stand-by and idle times, transportation round trip times and rates, load charges, and delays or demurrage due to such scheduling.
- E. Payment for this Bid Item will be made at the Contract Unit Price per US short ton as indicated in the Schedule of Bid Prices. For payment, the Contractor shall submit a copy of the weight tickets.

2.59 Bid Item No. **WD-2**: ADDITIONAL EXCAVATION AND BACKFILL

- A. Under this Item, the Contractor shall perform additional excavation, dispose of excavated soils that are unsuitable for backfill, excluding contaminated soils, place backfill and compact backfill material as specified in Section 31 23 36 – Excavation and Backfill or as required by the City Representative. Additional excavation and backfill is earthwork that is not covered by other excavation and backfill bid items in the bid schedule.
- B. The volume to be paid for will be measured as the number of cubic yards of material excavated at locations directed by the City Representative and will not include any excavation properly classified as trench excavation or excavation paid for by other bid items.
- C. Payment for additional excavation and backfill will be paid for at the bid price per cubic yard and shall include all necessary, related and incidental work including but not limited to dewatering.

2.60 Bid Item No. **WD-3**: REMOVAL AND INSTALLATION OF METER BOX

- A. Under this Item, the Contractor shall remove and install meter boxes, including excavation and disposal of existing meter-boxes, sidewalk pavement and other materials; setting of new meter boxes to grade; furnishing and placing backfill material; and all other work required to remove and install new meter boxes. Payment shall be made at the unit bid price for each meter box removed and installed and shall include all necessary, related and incidental work. The removal of sidewalk required for meter box removal and installation shall be measured and paid for under the Bid Item for Additional Excavation and Backfill.

2.61 Bid Item No. **WD-4A**: FURNISHING OF 4-, 6-, AND 8-INCH DUCTILE IRON TYTON JOINT AND FLANGE JOINT PIPE

- A. Under this Item, the Contractor shall furnish, store, load, and haul 4-, 6- and 8-inch Tyton joint pipe, flange joint pipe, gaskets, and joint restraints all as indicated in the specifications or as directly by the City Representative.
- B. Payment shall be made at the unit bid price per linear foot of pipe furnished, and shall include additional restraints as required, all necessary, related and incidental work. Only pipe installed as part of the project shall be eligible for payment. Any surplus materials are the property of the contractor.

- 2.62 Bid Item No. **WD-4B**: INSTALLATION OF 4-, 6- AND 8-INCH DUCTILE IRON TYTON JOINT AND FLANGE JOINT PIPE WITH POLYETHYLENE ENCASEMENT
- A. Under this Item, the Contractor shall load, haul and install 4-, 6- and 8-inch pipes; make restrained joints using restrained gaskets; place anchors; furnish and install polyethylene encasement tube over ductile iron pipeline installed by the Contractor and SFWD personnel including two layers where horizontal clear distance is less than 10 feet from the sewer main; perform satisfactory hydrostatic test as shown on the plans or as directed by the City Representative. Only pipe installed as part of the project shall be eligible for payment. Any surplus materials are the property of the contractor.
- B. Payment shall be made at the unit bid price per linear foot of pipe installed by the Contractor as measured along the crest of the pipes as laid and shall include all necessary incidental and related work. The length of fittings installed under the Bid Item for Installation of 4-, 6- and 8-Inch Ductile Iron Fittings with Polyethylene Encasement shall not be included in the payment under this item.
- 2.63 Bid Item No. **WD-4C**: FURNISHING OF 16-INCH DUCTILE IRON RESTRAINED PUSH-ON JOINT PIPE
- A. Under this Item, the Contractor shall furnish, store, load, and haul 16-inch restrained push-on joint pipe, gaskets, and joint restraints all as indicated in the specifications or as directly by the City Representative.
- B. Payment shall be made at the unit bid price per linear foot of pipe furnished, and shall include additional restraints as required, all necessary, related and incidental work. Only pipe installed as part of the project shall be eligible for payment. Any surplus materials are the property of the contractor.
- 2.64 Bid Item No. **WD-4D**: INSTALLATION OF 16-INCH DUCTILE IRON RESTRAINED PUSH-ON JOINT PIPE WITH POLYETHYLENE ENCASEMENT
- A. Under this Item, the Contractor shall load, haul and install 16-inch restrained push-on joint pipes; make restrained joints using split locking rings and restraining gaskets; place anchors; furnish and install polyethylene encasement tube over ductile iron pipeline installed by the Contractor and SFWD personnel including two layers where horizontal clear distance is less than 10 feet from the sewer main; perform satisfactory hydrostatic test as shown on the plans or as directed by the City Representative. Only pipe installed as part of the project shall be eligible for payment. Any surplus materials are the property of the contractor.
- B. Payment shall be made at the unit bid price per linear foot of pipe installed by the Contractor as measured along the crest of the pipes as laid and shall include all necessary incidental and related work. The length of fittings installed under the Bid Item for Installation of 16-Inch Ductile Iron Fittings with Polyethylene Encasement shall not be included in the payment under this item.
- 2.65 Bid Item No. **WD-5A**: FURNISHING OF 4-, 6- AND 8-INCH DUCTILE IRON FITTINGS

- A. Under this Item, the Contractor shall furnish, store, load and haul 4-, 6-, and 8-inch Tyton joint fittings, mechanical joint fittings, flange joint fittings, gaskets, and joint restraints all as indicated in the specifications or as directed by the City Representative.
- B. Payment shall be made at the unit bid price per pound of fittings furnished, and shall include additional restraints as required, all necessary, related and incidental work. The total to be paid for will be the number of pounds of fittings as computed from a table of standard weights for the class and make of the materials installed. Only fittings installed as part of the project shall be eligible for payment. Any surplus materials are the property of the Contractor.

2.66 Bid Item No. **WD-5B**: INSTALLATION OF 4-, 6- AND 8-INCH DUCTILE IRON FITTINGS WITH POLYETHYLENE ENCASUREMENT

- A. Under this Item, the Contractor shall load, haul, install, restrain, and protect Tyton joint fittings, joint restraints and all other appurtenances to be incorporated in the work; furnish and install polyethylene encasement tube over ductile iron pipe fittings installed by the Contractor and SFWD personnel shown on the plans or as directed by the City Representative. Only fittings installed as part of the project shall be eligible for payment. Any surplus materials are the property of the Contractor.
- B. Payment shall be made at the unit bid price per pound of fittings installed, and shall include additional restraints as required, all necessary, related and incidental work. The total to be paid for will be the number of pounds of fittings as computed from a table of standard weights for the class and make of the materials installed.

2.67 Bid Item No. **WD-5C**: FURNISHING OF 16-INCH DUCTILE IRON FITTINGS

- A. Under this Item, the Contractor shall furnish, store, load and haul 16-inch restrained push-on joint fittings, mechanical joint fittings, gaskets, and joint restraints all as indicated in the specifications or as directed by the City Representative.
- B. Payment shall be made at the unit bid price per pound of fittings furnished, and shall include additional restraints as required, all necessary, related and incidental work. The total to be paid for will be the number of pounds of fittings as computed from a table of standard weights for the class and make of the materials installed. Only fittings installed as part of the project shall be eligible for payment. Any surplus materials are the property of the Contractor.

2.68 Bid Item No. **WD-5D**: INSTALLATION OF 16-INCH DUCTILE IRON FITTINGS WITH POLYETHYLENE ENCASUREMENT

- A. Under this Item, the Contractor shall load, haul, install, restrain, and protect restrained push-on joint and mechanical joint fittings, joint restraints and all other appurtenances to be incorporated in the work; and furnish and install polyethylene encasement tube over ductile iron pipe fittings installed by the Contractor and SFWD personnel as shown on the plans or as directed by the City Representative. Only fittings installed as part of the project shall be eligible for payment. Any surplus materials are the property of the Contractor.
- B. Payment shall be made at the unit bid price per pound of fittings installed, and shall include all necessary, related and incidental work. The total to be paid for will be the

number of pounds of fittings as computed from a table of standard weights for the class and make of the materials installed.

2.69 Bid Item No. **WD-6A**: FURNISHING AND INSTALLATION OF 4- AND 6-INCH DUCTILE IRON GATE VALVES

- A. Under this Item, the Contractor shall install valve boxes and furnish, store, load, haul and install 4- and 6-inch ductile iron Tyton joint and mechanical joint gate valves with Field Lok gaskets, tie rods, EBAA Megalug mechanical joint restraints or other restraint devices at the locations as shown on the plans or as directed by the City Representative.
- B. Payment shall be made at the unit bid price per each gate valve installed including valve box and cover and shall include additional restraints as required, all necessary, related and incidental work.

2.70 Bid Item No. **WD-6B**: FURNISHING AND INSTALLATION OF 16-INCH DUCTILE IRON GATE VALVES

- A. Under this Item, the Contractor shall install valve boxes and furnish, store, load, haul and install 16-inch ductile iron mechanical joint gate valves with EBAA Megalug mechanical joint restraints at the locations as shown on the plans or as directed by the City Representative.
- B. Payment shall be made at the unit bid price per each gate valve installed including valve box and cover and shall include additional restraints as required, all necessary, related and incidental work.

2.71 Bid Item No. **WD-7**: FURNISHING AND INSTALLATION OF 2-INCH AIR VALVE/BLOW OFF ASSEMBLY

- A. Under this Item, the Contractor shall furnish, load, haul and install 2-inch air valve/blow off assemblies at the locations as shown on the plans or as directed by the City Representative.
- B. Payment shall be made at the unit bid price per each valve installed including valve box and cover and shall include all necessary, related and incidental work. The installation of screw taps for 2-inch air valve/blow off shall be paid under the Bid Item for Installation of Screw Taps.

2.72 Bid Item No. **WD-8**: TRENCH SHORING AND BRACING PER ALL APPLICABLE SAFETY ORDERS (CONDITIONAL BID ITEM)

- A. Under this Item, the Contractor shall furnish, install and maintain an approved shoring system for excavation of five (5) feet or more in depth, including all incidental and related work thereto.
- B. Installation and removal of shoring system in excavations less than 5 feet in depth required for Water Department crews to install connections will be considered as incidental work under the appropriate bid items for excavation and backfill of pipe trench.

- C. This is a conditional bid item. Since it is possible that none, some, or additional quantity specified in this item may be used, General Conditions Sections 6.08 B and C do not apply for work under this bid item.
- D. Payment will be paid for at the bid price per square foot of actual shoring material installed against the sides of the excavation and shall include all necessary, related and incidental work.

2.73 Bid Item No. **WD-9**: FURNISHING AND INSTALLATION OF SCREW TAPS

- A. Under this Item, the Contractor shall furnish, store, load, haul, drill, tap and install all screw taps with or without saddles per SFPUC CDD Standard Plans for 1-inch, 2-inch services and 2-inch air valves/blow offs as shown on drawings or as required by the City Representative.
- B. Payment shall be made at the unit bid price per each screw tap installed, and shall include all necessary, related and incidental work.
- C. The number and sizes of screw taps as shown on the Bid Sheet are approximate only. The City Representative will determine the actual amount and size in the field. The Contractor shall not make any claims for any extra payments due to these changes.

2.74 Bid Item No. **WD-10**: SUPPORT FOR INSTALLATION OF SERVICE PIPE – OPEN CUT

- A. Under this Item, the Contractor shall remove pavement, excavate 1-foot wide service trench, backfill, and compact to support SFWD installation of service pipe and fittings.
- B. Payment shall be made at the unit bid price per linear foot of service trench excavated and backfilled and shall include pavement restoration and all necessary, related and incidental work except milling and filling.
- C. The total length to be paid for will be the number of feet of service trench excavated and backfilled as measured horizontally between the screw tap in the main and the stop cock at the service meter inlet.
- D. The length and sizes of service pipes as shown on the Bid Sheet are approximate only. The City Representative will determine the actual length and size in the field. The Contractor shall not make any additional claims for extra payment due to these changes.

2.75 Bid Item No. **WD-11**: REMOVAL OF SFWD – OWNED VALVE BOXES AND COVERS

- A. Under this item, the Contractor shall remove all existing SFWD valve boxes and return all existing SFWD valve covers that are to be abandoned in this contract or as directed by the City Representative.
- B. Payment shall be made at the unit bid price per each valve box and cover removed, regardless of the size of each valve box and cover, and shall include the pavement saw cutting, backfilling, roadway restoration and all necessary, related and incidental work.

2.76 Bid Item No. **WD-12**: PIPE ABANDONMENT

- A. This Bid Item shall include full compensation for furnishing all labor, material, equipment, and incidental work necessary to remove and fill abandoned water mains larger than 8-inch in diameter with concrete slurry, and will be paid for at the Contract unit price per linear foot stated in the Schedule of Bid Prices.

2.77 Bid Item No. **WD-13**: ALLOWANCE FOR FURNISHING AND INSTALLING HYDRANT BOLLARDS FOR NEW LOW PRESSURE FIRE HYDRANTS

- A. Refer to Section 01 21 00 – Allowance.

2.78 Bid Item **WD-14**: CONDITIONAL ALLOWANCE FOR UNFORESEEN CONDITIONS RELATED TO WATER WORK

- A. Refer to Section 01 21 00 – Allowances.

2.79 Bid Item No. **WD-15**: CONDITIONAL ALLOWANCE FOR WORKING OUTSIDE NORMAL WORK HOURS

- A. Refer to Section 01 21 00 – Allowances.

2.80 Bid Item No. **WD-16**: CONTRACT SAFETY REQUIREMENTS

- A. Refer to Section 01 21 00 – Allowances.

THE FOLLOWING WORK SHALL BE DONE AS INCIDENTAL WORK:

1. Connections to and between sewers, structures and culverts.
2. Cleaning existing sewers by flushing with high velocity hydro-cleaning equipment prior to excavation and removal.
3. High velocity hydro-clean main sewers immediately prior to television inspection.
4. Removing and/or abandoning existing sewers, manholes and structures.
5. Cleaning and disposing of waste materials inside existing catch basins and storm water inlets located within the project limit and to remain.
6. Saw cutting, removing, and disposing of the existing pavement.
7. Street excavation, backfilling and compaction, satisfactorily performed.
8. Restoration of concrete base in T-trench, parking strip, concrete curb, concrete sidewalk, median islands, traffic islands, and landscaping within the sewer trench to pre-construction conditions.
9. Restoration of pavement, speed bump, parking strip, curb, sidewalk, landscaping and driveway damaged by the Contractor or caused to be damaged due to the Contractor's defective shoring system will be done by the Contractor at his/her own expense.

10. Filling of excess saw cut lines on the pavement with sealant.
11. Concrete thrust blocks.
12. All costs of work in the remaining portions of Section 31 23 33, 32 12 66, and 33 33 00 shall be included in the items of the bid schedule to which such work is appurtenant.
13. Preparation of subgrade for paving to proper grade, including excavation, backfilling, and compacting shall be considered incidental to the pavement restoration work.
14. Restoration of temporary pavement within sewer trench with hot patch ACWS, if required, and as directed by the City Representative.
15. Preserving Survey Monuments per City Order No. 178,940.
16. Reestablishing City Survey Monuments per City Order No. 178,940, if disturbed, and for which a bid item has not been provided.
17. Furnishing and installing AASHTO M288, Class 2, Non-Woven Geotextile Fabric.
18. Supporting and working around existing Governmental utilities, including but not limited to, San Francisco Water Department (SFWD), Auxiliary Water Supply System (AWSS), train tracks, etc., encountered within the limits of the sewer trench, unless otherwise noted in the Contract Documents.
19. Furnishing As-Built Drawings.
20. Furnishing of post-construction television inspection DVD and log for newly constructed main sewers.
21. Furnishing and installing eccentric reducers as needed.
22. Furnishing and installing pipe to pipe connections using mechanical shear band repair couplings.
23. Bond breaker for force main and cleanouts inside concrete manholes.

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%.
- G. Work under specific allowances in this Contract may be implemented or deleted partially or in its entirety. Upon bid submittal, the Contractor shall not claim credit for any Local Business Enterprise (LBE) subcontract work described as allowance work items. Since it is possible that some, all, or none of the amounts provided for in these Bid Items may be used, the provisions of Document 00 72 00 – General Conditions for deleting the Bid Item Work entirely shall not apply for these Bid Items. Claims for loss of anticipated profit due to the City's decision not to use some or all of allowance bid items will not be considered.

PART 2 - SCHEDULE OF ALLOWANCES

2.1 Bid Item No. 46: ALLOWANCE FOR ENVIRONMENTAL WORK

- A. A preset allowance of **\$100,000.00** as shown in the Schedule of Bid Prices will be paid as directed by the City Representative.
- B. This allowance is for work associated with the discovery unforeseen hazardous materials, environmental testing for waste characterization as per Section 02 81 10 Part 1.04 and other unforeseen environmental work that is not covered by the Contract, and as determined by the City Representative and transportation and disposal of surplus

contaminated soils and excavated materials beyond bid quantities (that is not covered by the Contract as determined by the City Representative only).

- C. It is possible that some or all the preset allowance amount may be used. Any unused portion of the allowance shall be credited back to the City. Mark up and profit for all tiers of sub-contracted work shall be limited to 5% each, with a maximum of two-tiers, and as approved by the City Representative.
 - D. Any unforeseen excavated and contaminated surplus existing soil or excavated and contaminated unsuitable existing soil for reuse as backfill shall be properly transported and disposed of at a permitted landfill or out-of-state equivalent, or a reuse facility and will be measured and paid based on the unit US ton.
 - E. Disposal costs shall include all disposal costs such as the waste approval process, preparation of waste acceptance forms, treatment of the material, weighing of the material, loading and unloading times, dump fees and taxes, profiling costs, landfill fees, and other incidentals. For payment, the Contractor shall submit copies of the fully signed non-hazardous or hazardous waste manifests forms, as well as the weight tickets.
 - F. Dump fees and taxes shall include (as applicable) all tipping fees, gate fees, county and local taxes, landfill recovery fee, landfill environmental & surcharge fee, and the CA Board of Equalization (BOE) Hazardous Waste disposal fee. The CA Board of Equalization (BOE) Hazardous Waste generator fee (if applicable) will be paid by the City, and is not to be included in this bid item.
 - G. Transportation costs shall include all handling, transportation, and other incidentals such as compliance with transportation regulations, scheduling, staging, loading and unloading times and fees, covering of trucks, preparation of hazardous or non-hazardous waste manifests, multiple handling and loading, tractor and truck stand-by and idle times, transportation round trip times and rates, load charges, and delays or demurrage due to such scheduling.
 - H. Handling, stockpiling, and transportation of excavated soil within the project site or to the Contractor's intermediate staging area is incidental work and not covered by this bid item.
 - I. Asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be excavated separately from the soil layer, and shall not be include in this bid item. The Contractor shall remove such materials prior to the transportation and disposal of soils.
 - J. The removal, management, transportation, and disposal of asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound, or deleterious matter shall be incidental to its respective bid items.
 - K. Soils of different waste disposal classification shall be segregated when excavated, managed, transported, and disposed separately with no mixing of the different types of wastes.
- 2.2 Bid Item No. 47: ALLOWANCE FOR REMOVAL OF RAILROAD TRACK FACILITIES FROM THE SEWER AND STORM DRAIN TRENCH IF ENCOUNTERED BENEATH THE PAVEMENT AND WHERE INDICATED ON H-DRAWINGS AND OUTSIDE OF RAILROAD TRACK REMOVAL LIMITS ON C-DRAWINGS
- A. An allowance as shown on the Schedule of Bid Prices will be paid as directed by the City Representative for removal of railroad track facilities from the sewer and force main trench if encountered beneath the pavement and where indicated on H-Drawings and

outside of railroad track removal limits indicated on C-drawings. No mark ups and administrative costs will be included in this allowance. It is possible that some or all the present allowance amount may be used.

- B. The Contractor shall provide a cash allowance in the amount of **\$ 10,000** for this work.
- C. This allowance includes pavement restoration made necessary due to the removal of railroad tracks facilities beyond the limit of the work area. All excavation and backfill shall be in accordance with the provisions of Specification Sections 31 23 33 and 31 23 34.
- D. Only the portion of railroad ties within the limit of required excavation shall be cut off and removed.
- E. The Contractor shall provide trained workers with appropriate protective equipment and tools to cut, handle the ties or to work in the vicinity of the ties, meeting the State and City regulations.
- F. Disposal of railroad ties and treated wood waste shall be as specified in Specification Section 02 81 00 and as directed by the City Representative.

2.3 Bid Item No. 48: ALLOWANCE TO PERFORM NECESSARY WORK DUE TO UNFORESEEN CONDITIONS RELATED TO SEWER WORK UNDER H-DRAWINGS

- A. An allowance as shown in the Schedule of Bid Prices will be paid as directed by the City Representative for performance of work necessary due to unforeseen conditions related to sewer work. No mark ups and administrative costs will be included in this allowance. It is possible that some or all of the preset allowance amount may be used.
- B. The Contractor shall provide a cash allowance in the amount of **\$ 50,000** for this work.

2.4 Bid Item No. 49: ALLOWANCE FOR SAN FRANCISCO UNIFORMED OFFICERS

- A. Allowance of **\$21,469** for off-duty San Francisco Police Department (SFPD) Officers or SFMTA Parking Control Officers (PCOs) to control traffic will be paid as directed by the City Representative. The Contractor shall be paid the actual invoice of the San Francisco Police Department plus 5% of the invoice for providing off-duty SFPD Officers as required by the Traffic Engineer. If SFMTA Enforcement bills the Contractor, the Contractor shall be paid the actual invoice of the SFMTA plus 5% of the invoice for providing PCOs as required by the Traffic Engineer. Refer to Section 01 55 26.

2.5 Bid Item No. 50: PARTNERING ALLOWANCE

- A. An allowance as shown in the Schedule of Bid prices will be paid as directed by the City Representative to reimburse the Contractor for costs associated with the partnering process, in accordance with SECTION 01 31 33 – Partnering Requirements.
- B. The Contractor shall provide a cash allowance in the amount of **\$20,000** for this work

2.6 Bid Item No. WD-13: ALLOWANCE FOR FURNISHING AND INSTALLING HYDRANT BOLLARDS FOR NEW LOW PRESSURE FIRE HYDRANTS

- A. Contingency Allowance of the listed amount in Section 00 41 10 – Schedule of Bid Prices will be paid to reimburse the Contractor for furnishing and installing bollards around new

hydrants as listed and directed in WD and S-9 drawings. Locations of each bollard shall be as directed by the City Representative during construction.

2.7 Bid Item No. **WD-14**: CONDITIONAL ALLOWANCE FOR UNFORESEEN CONDITIONS RELATED TO WATER WORK

- A. Contingency Allowance of the listed amount in Section 00 41 10 – Schedule of Bid Prices will be paid to reimburse the Contractor for the work associated with unforeseen conditions not covered by the Contract and as determined by the City Representative only.

2.8 Bid Item No. **WD-15**: CONDITIONAL ALLOWANCE FOR WORKING OUTSIDE NORMAL WORK HOURS

- A. Cash Allowance of the listed amount in Section 00 41 10 – Schedule of Bid Prices will be paid to reimburse the Contractor for the additional cost for support work associated with SFWD activities outside of normal working hours. The amount to be provided shall be the difference between standard and overtime support work.

2.9 Bid Item **WD-16**: CONTRACT SAFETY REQUIREMENTS

- A. Refer to Specifications Section 00 73 19 – Health and Safety Requirements and Section 01 11 00 – Summary of Work for safety requirements.
- B. Under this item the Contractor shall provide all related labor, trained labor (required by the Contract scope), safety tasks, and equipment as required to conform with Contract safety requirements. For Contracts at or above \$10,000,000 this item should cover the cost of a full time, dedicated Site Safety Representative(s), whose duties shall only constitute the safety of the site covered by this Contract.
- C. Under this item the Contractor shall provide all required plans and documentation as required in Section 00 73 19 and by the scope of this Contract. This includes work items related to COVID-19.

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 21 53

MOBILIZATION / DEMOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY OF WORK

- A. This Specification Section outlines the Contractor's responsibilities for both mobilization and demobilization.
- B. The work under the Mobilization 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 (BSM) Excavation Permit and Bureau of Urban Forestry (BUF) Tree Removal or Relocation Permit.
 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 a Schedule of Values in accordance with Section 01 29 73 - Schedule of Values.
 13. Preparation of plan and schedule for work affected by operations and events as required by Section 01 31 13 - Project Coordination.
 14. Submitting preconstruction submittals, including Construction Schedule as specified in Section 01 32 16 - Construction Progress Schedule.
 15. Photographic or video documentation of existing historic details prior to demolition as required by Section 01 32 33 - Photographic Documentation.
 16. Preparation of Site-Specific Health and Safety Plan as required by Section 01 35 45 - Health and Safety Criteria.
 17. Submittals as required by Section 01 35 43 - Environmental Procedures.
 18. Fabrication and erection of Project Signs as required by Section 01 50 00 - Temporary Facilities and Controls.
 19. Conducting the pre-construction property survey required by Section 01 71 33 - Protection of Adjacent Construction.
 20. Excavating, handling and management of site contaminated and hazardous soils, groundwater and storm water controls, environmental mitigation controls, imported backfill, and preparation of all submittals as required by Section 02 81 00 / 02 81 10 - Environmental Management of Excavated Materials. Preparation

of Dewatering as required by Section 31 23 19. Complying with Section 33 24 00 - Groundwater Wells and preparation of all submittals required in this Section.

- C. Demobilization work shall include, but not be limited to, the following principal items:
1. Demobilizing and removal of the Contractor's facilities and equipment.
 2. Removing all project signs from project site, and removing all construction area signs, traffic handling and detour signs, and temporary traffic control devices from project vicinity.
 3. Removing all temporary construction facilities including Contractor's and City Representative's field office and other equipment and utilities from the site as Contractor's property within fourteen (14) calendar days after Final Completion. Cleanup of all debris and restoring the site as specified.
 4. Furnishing all required equipment installation certification forms, warranty documents and Operations and Maintenance (O&M) data and manuals and spare parts, special tools and keys.
 5. Performing all required training sessions.
 6. Performing and submitting all manufacturer installation checkouts.
 7. Furnishing all information and completing all forms required by the San Francisco Contract Monitoring Division (CMD).
 8. Reconcile any outstanding payroll issues with the Office of Labor Standards Enforcement (OLSE).
 9. Reconcile any outstanding local hire issues with Office of Economic and Workforce Development (OEWD).
 10. Preparing and submitting all final documents, including certified payroll, and other records of payments to suppliers and subcontractors, and lien releases/claims waivers required to close the contract within the time requirements.
 11. Furnishing the Contractor's Final Updated Construction Drawings (Record Drawings).
 12. Finishing all punch list work within the time requirements.
 13. Furnishing all post-construction pipeline TV DVDs and logs.
 14. Performing final site cleanup and restoration as required.
 15. Providing signoffs from affected property owners and permitting agencies confirming that their requirements have been met.
 16. Completing all specified close-out requirements per Specification Section 01 77 00 – Closeout Procedures.
 17. Requesting final payment.

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
- D. Section 01 77 00 – Closeout Procedures

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 San Francisco Department of Public Works.

1.4 PAYMENT PROCEDURES

- A. Payment for “Mobilization” shall be the fixed amount shown in the Schedule of Bid Prices 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 9.06 – Withholding Payment of the General Conditions apply to the sum of all the contract work done, including that under the Schedule of Values Bid Items “Mobilization & Demobilization.”
- C. Any extension of the contract time that may be granted will not of itself constitute grounds for a claim for additional payment.
- D. Payment for “Demobilization” shall be the fixed amount shown in the Schedule of Bid Prices and will be paid upon completion of all items specified in section 1.1.C. No partial payments for demobilization will be made.

PART 2 - PRODUCTS (Not Used)

PART 3 - 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. 00 72 00 – General Conditions, Article 6
 - 2. 01 20 00 – Price and Payment Procedures: Application Procedures
 - 3. 01 31 13 – Project Coordination: Requests for Information
 - 4. 01 33 00 – Submittal Procedures: Construction Schedule
 - 5. 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 upon receiving a PCO within the number of calendar days per General Conditions Paragraph 6.03D, 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 in accordance with Paragraph 6.06C of the General Conditions. 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 witnessed, documented and approved in writing by the City 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 in writing at least 24 hours in advance of its schedule before proceeding with the Force Account work. See also Section 00 73 00 - 1.5.
- 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, obtained from the City Representative, on the day that work is performed if the City and Contractor disagree as to the City's determination of said work. See also Section 00 73 00 – 1.5.

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. 00 72 00 – General Conditions, Article 9, Payments and Completion
 - 2. 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.
 - 3. Provide breakdown in sufficient detail to facilitate continued evaluation of progress payment applications.
 - 4. Show the total cost of each item of work including all labor, material, equipment, fixed cost elements, incidental expenses, and overhead and profit.
 - 5. Overhead and profit shall not be listed as separate items.
 - 6. Identify separate line items for temporary items, mobilization, final cleaning, operations and maintenance manuals, and start-up, adjusting and testing.
 - 7. Coordinate the preparation of the schedule of values with Contractor's progress schedule.

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
PROJECT COORDINATION

PART 1 GENERAL

1.01 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 32 16 – Progress Schedule
 - 3. Section 01 32 17 – Construction Progress Schedules – Bar Chart

1.02 CONTRACTOR'S USE OF SITE

- A. Limit of Work: The limit of work of this Contract is as indicated on the Drawing and as specified herein.
- B. Use of Site: Limit use of the site for construction operations necessary to perform the Work indicated on the Drawings.
- C. Existing Pump Station: Maintain existing system in service until new system is accepted.
 - 1. Disable system only to make switchovers and connections.
 - 2. Notify Port Resident Engineer, at least 72 hours before partially or completely disabling the system.
 - 3. Minimize outage duration.
 - 4. Make temporary connections to maintain service in areas adjacent to work area.
 - 5. This Work is considered incidental to performing and completing the Work, and no additional compensation will be paid.

1.03 RAIL COORDINATION

- A. Contractor shall notify the Resident Engineer and the Rail representative before starting work adjacent to the active rail located at the intersection of Amador Street and Cargo Way. Contractor to provide notice at least two weeks prior to start of work.

1.04 TENANT COORDINATION

- A. Contractor shall provide written weekly project updates including work completed and work schedule to Port tenants at the work sites.
- B. Updates will be issued on Tuesdays will describe upcoming work starting the next Monday to the Port and all nearby tenants.

- C. Contractor shall give sufficient notification to the tenants, as required by the Port's Property Manager, to inform of any disruptions during construction.
- D. Contractor shall provide the Port's Property Manager with phone number(s) to address any active or upcoming tenant impacts.
- E. Contractor shall plan the Work so that tenants will not be adversely affected by the Work. The Contractor shall cooperate with the Port to minimize conflict.
- F. Cemex will continuously occupy and operate during the course of the pump station work scope. Contractor shall cooperate with tenants with respect to minimizing impacts during construction.
- G. Coordination is considered incidental, and no additional compensation will be paid for this coordination.

1.05 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.

1.06 MAINTENANCE OF THE WORK AREA AND DEBRIS CONTROL

- A. Maintain work areas and adjacent public right-of-ways in orderly and safe condition. Sweep all pedestrian walkways and dispose of debris around the site perimeter on a daily basis, and as often as determined by the Port.
- B. Control the accumulation of waste materials and debris; collect waste from construction areas and the project site, daily. Remove accumulations of debris surplus materials and trash from the site at the end of each working day, or at frequent intervals as directed by the Port. Burying or burning of trash and debris on the site is not permitted
- C. Perform the work in a manner to minimize the generation of dust and dirt, to prevent dust and dirt from interfering with the progress of the Work, and to keep dust and dirt from accumulating in work areas and adjacent areas.
- D. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose these types of materials in a lawful manner. Comply with requirements of NFPA 241 for removal of combustible waste material and debris.
- E. For storage areas, ensure that materials to be used for construction are stored in designated structures or areas by the appropriate trades. Maintain such areas or structures in a clean condition for the life of the Contract.
 - 1. Provide and maintain proper storage with secondary containment for lubrication oil, hydraulic fluids, waste oils, fuels, solvents and other hazardous or toxic materials and wastes.
 - 2. Immediately remove materials deposited outside of approved storage areas.

1.07 SUBCONTRACT COORDINATION

- A. Coordinate the Work and do not delegate responsibility for coordination to any other Subcontractor, and a foreman shall be available.

- B. Anticipate the interrelationship of all Subcontractors and their relationship with the Work and Safety Requirements.
- C. Resolve differences or disputes between Subcontractors concerning scheduling, interference, or extent of work between sections of the specifications including assigned Contract work. Contractor's decisions, if consistent with the Contract Section 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.

1.08 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 where interfacing of their work is required.
- B. Coordination Meetings: Conduct weekly general project coordination meetings with Subcontractors 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, safety meetings and special pre-installation meetings. Request representation at each meeting by every party currently involved in coordination or planning for the work of the entire project. Keep the Port 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 Port.

1.09 MECHANICAL AND ELECTRICAL COORDINATION

- A. Coordinate utility removal and disconnection with each separate utility company and affected tenants.
- B. Coordinate the requirements for new power service with the utility companies, permitting agencies and Authority Having Jurisdiction.
 - 1. Coordinate work with the oversight of the appropriate regulatory or permitting agencies to obtain the necessary approval such as green tag for energizing the service. Discuss coordination plans with the City Representative prior to execution to determine if coordination will be performed through the City Representative.
 - 2. Coordinate work with utility companies and other contractors on site and adjacent to site through the City Representative.
- C. Verify that utility requirements and characteristics of operational equipment are compatible with building utilities. Coordinate the work of various specification sections, subcontractors, suppliers, and trades having interdependent responsibilities for installing, connecting to, and placing such equipment in service.

1.10 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 Port 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. Form available on Port website: <http://sfport.com/port-construction-management-forms>
2. When an interpretation or clarification of the Contract Documents is required from the Port or Engineer, make a written request or electronic email, with a copy to all affected parties.
3. Fill in all applicable information on the form, reason for clarification request, and timing or schedule needed for a response.
4. Use one form for each request; limit the subject to one question to expedite reply. Attach supplementary information where necessary.
5. The Port will reply or give summary of reply on the same form and include supplementary information where necessary.
6. The completed form shall be the written record of each RFI.
7. 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; they will be rejected:
 - 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 in writing by the Port or the Engineer.
 - g. The Port 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 Port will endeavor to reply to all RFIs promptly as work schedule of the consultants allows; generally no later than seven calendar days from the day received.
2. When an RFI involves a complex subject, extensive research or development, or substantial input from another governmental agency, the Port 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 Port. If Contractor believes that a written interpretation or clarification justifies an adjustment in the Contract Sum or Time, then the Contractor shall make a written request for change order as provided in Section 103.03 of the General Conditions.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION Not Used

(This page intentionally left blank.)

	<p>PORT OF SAN FRANCISCO Pier 1, The Embarcadero, San Francisco Ca 94111 Phone: (415) 274-0566 Fax: (415) 274-0551</p>	<p>REQUEST FOR INFORMATION</p> <p>For Contractor Use</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">RFI No.</th> <th style="width: 50%;">Submitted Date</th> </tr> </thead> <tbody> <tr> <td style="height: 30px;"></td> <td style="background-color: #e0ffff;"></td> </tr> </tbody> </table>	RFI No.	Submitted Date							
RFI No.	Submitted Date										
<p>CONTRACT: _____ CONTRACTOR: _____</p>											
<p>SUBJECT OF REQUEST (Contractor to fill in)</p> <table style="width: 100%;"> <tr> <td style="width: 50%;"> <p>Correspondence: _____</p> <p>Gen/Special Provisions: _____</p> <p>Technical Specs: _____</p> <p>Drawing: _____</p> </td> <td style="width: 50%;"> <p>Submittal: _____</p> <p>Directive: _____</p> <p>Field Issue: _____</p> <p>Other: _____</p> </td> </tr> </table>			<p>Correspondence: _____</p> <p>Gen/Special Provisions: _____</p> <p>Technical Specs: _____</p> <p>Drawing: _____</p>	<p>Submittal: _____</p> <p>Directive: _____</p> <p>Field Issue: _____</p> <p>Other: _____</p>							
<p>Correspondence: _____</p> <p>Gen/Special Provisions: _____</p> <p>Technical Specs: _____</p> <p>Drawing: _____</p>	<p>Submittal: _____</p> <p>Directive: _____</p> <p>Field Issue: _____</p> <p>Other: _____</p>										
<p><u>INFORMATION REQUESTED:</u> <input type="radio"/> REQUESTED BY PHONE</p> <div style="background-color: #ffffcc; height: 200px; width: 100%;"></div>											
<p>DATE: _____</p>		<p>SIGNED: _____ COMPANY: _____</p>									
<p><u>REPLY</u> <input type="radio"/> RESPONDED BY PHONE</p> <div style="background-color: #ffffcc; height: 200px; width: 100%;"></div>											
<p>REVIEWER _____ Registered Design Professional In Responsible Charge (RDP): _____</p> <p>DATE _____ DATE: _____</p>		<p>Plan Review Engineer (PRE): _____ DATE: _____</p>									
<p>RE Distribution:</p> <table style="width: 100%;"> <tr> <td><input type="radio"/> Contractor</td> <td><input type="radio"/> PE</td> <td><input type="radio"/> _____</td> </tr> <tr> <td><input type="radio"/> RE/CM File</td> <td><input type="radio"/> PM</td> <td><input type="radio"/> _____</td> </tr> <tr> <td><input type="radio"/> Inspectors</td> <td><input type="radio"/></td> <td><input type="radio"/> _____</td> </tr> </table>			<input type="radio"/> Contractor	<input type="radio"/> PE	<input type="radio"/> _____	<input type="radio"/> RE/CM File	<input type="radio"/> PM	<input type="radio"/> _____	<input type="radio"/> Inspectors	<input type="radio"/>	<input type="radio"/> _____
<input type="radio"/> Contractor	<input type="radio"/> PE	<input type="radio"/> _____									
<input type="radio"/> RE/CM File	<input type="radio"/> PM	<input type="radio"/> _____									
<input type="radio"/> Inspectors	<input type="radio"/>	<input type="radio"/> _____									

END OF SECTION 01 31 13

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 31 33

PARTNERING PROCEDURES

PART 1 - GENERAL

1.1 PARTNERING LEVEL

- A. This Project shall incorporate the required partnering elements for **Partnering Level 2**.

1.2 SUMMARY

- A. This Document specifies the procedures for establishing a collaborative partnering process. The partnering process will assist the City and Contractor to develop a collaborative environment so that communication, coordination, and cooperation are the norm, and to encourage resolution of conflicts at the lowest responsible management level.
- B. The partnering process is not intended to have any legal significance or to be construed as denoting a legal relationship of agency, partnership, or joint venture between the City and Contractor.
- C. This specification **does not supersede or modify any other provisions of the Contract**, nor does it reduce or change the respective rights and duties of the City and Contractor under the Contract, or supersede contractual procedures for the resolution of disputes, including the submittal of a timely Notice of Potential Claim or Contract Claim.
- D. The "San Francisco Partnering Field Guide" is available to the project team as a recommended reference document. This guide provides structure, context and clarity to the partnering process. The guide is available at the City's partnering program website www.sfpartnering.com.

1.3 DEFINITIONS

- A. **Partnering Charter ("Charter")**: The Charter is the guiding focus for the project team. It documents the team's vision and commitment to work openly and cooperatively toward mutual success during the life of the project. The Charter helps to maintain accountability and clarity of agreements made and allows for broader communication of the team's distinct goals and partnering process. The Partnering Charter includes the following elements:
1. Mutual goals
 2. Partnering maintenance plan
 3. Dispute resolution plan with Issue Resolution Ladder
 4. Team commitment statement and signatures
- B. **City Partnering Fundamentals Training**: Training provided by the City to contractor and City staff on the fundamentals of partnering. Information may be found at www.sfpartnering.com.
- C. **Collaborative Partnering**: A structured and scalable process made up of elements that develop and grow a culture (value system) of trust among the parties of a construction contract. Together, the combination of elements, including the partnering charter, executive sponsorship, partnering meetings, accountability tools for the project team (Scorecards), and facilitator, if employed, create a collaborative atmosphere on each project.

- D. **Core Team Partnering:** The project team members who are a part of the project for its duration, including the following (not in order of hierarchy):

City:	Contractor:
Resident Engineer	Superintendent
Project Manager	Project Executive
Construction Manager	Jobsite Supervisor
Engineer, Architect	Project Manager
Division Manager	Project Engineer
Construction Engineer	Subcontractors
Inspectors	Key suppliers
Client Department Representative	Senior Management (e.g. Area Manager, Operations Manager, VP, President, Owner)
Critical third parties: stakeholders, other agencies, utilities, etc., or anyone who could potentially stop or delay the project.	

- E. **Executive Partnering Team:** The senior leaders of the City and Contractor who may form a project board of directors and are charged with steering the project to success.
- F. **Executive Sponsorship:** Commitment to, and support of, the partnering process from the most senior levels of the City and Contractor organizations.
- G. **External Facilitator:** The mutually agreed upon experienced professional neutral partnering facilitator whose profession is providing partnering services for construction projects.
- H. **Facilitated Issue Resolution (FIR):** An optional, mediation-like issue resolution process where the external facilitator (or a mutually selected professional neutral with knowledge of construction) can be used by the team to resolve specific construction disputes. The team may decide during the kick-off partnering workshop whether they will include a FIR process for that project. If the team elects to use FIR, FIR will become the last step of the Issue Resolution Ladder.
- I. **Internal Facilitator:** A trained employee or representative of the City who provides partnering facilitation services for Level 1, 2, or 3 projects.
- J. **Issue Resolution Ladder (IRL):** A stepped process that formalizes the negotiation between the parties of a construction project. While actual titles may differ, the intent of this ladder is to provide a process that elevates issues up the chain of command between the parties involved in an issue. The objective is to resolve issues at the lowest practical level and to not allow individual project issues to disrupt project momentum. When an issue is escalated one level, it is expected that a special meeting focusing on the negotiated settlement for that issue will be called with the goal of settling as quickly as possible. A sample issue resolution ladder (IRL) is shown below. The IRL will be developed during the kick-off partnering workshop or pre-construction meeting.

Sample Issue Resolution Ladder			
Team Level	Awarding City Department	Contractor	Time to Elevate
I	Inspector or Resident Engineer	Foreman/ Superintendent	1 day
II	Project Manager	Project Manager	1 week
III	Program Manager	Area Manager	1 week
IV	Division Manager	Operations Manager	2 weeks

V	Deputy Department Director	Owner; President	1 week
VI	*Optional Facilitated Issue Resolution		

- K. **Kick-off Partnering Workshop:** The initial partnering session where the team develops its partnering charter and officially starts the partnering process.
- L. **Multi-Tiered Partnering (Executive - Core Team - Stakeholder):** Partnering workshops can be divided into multiple sessions, including an executive session, core team session and stakeholder session. For very large projects, a best practice is to use the executive team as a project board of directors who provide vision and steer the project. The core team is the central group of key individuals who are on the project throughout the duration. The stakeholder team is made up of end users, operations and maintenance personnel or third parties who can influence the outcome of the project.
- M. **Partnering Level:** The desired level of engagement in the partnering process may vary depending on a contract's size, complexity, location or other risk factor. If a project encounters any of the following risk factors in the Matrix, the City may consider adjusting the partnering process to the appropriate level.

The Citywide Partnering Matrix

Level	Estimated Construction Amount	Complexity	Political Significance	Relationships	Partnering Process
5	\$100 million +	Highly technical and complex design & construction	High visibility/oversight; significant strategic project	New project relationships; high potential for conflict (strained relationship, previous litigation, or high probability of claims)	Recommended Elements: 12 Sessions/yr. and 12 Surveys/yr. External Facilitator
4	\$30 - \$100 million	High complexity with schedule constraints, uncommon materials, etc.	Probable stakeholder and community interest or involvement	New contractors or CM, new subs	Recommended Elements: 6 Sessions/yr. and 12 Surveys/yr. External Facilitator
3	\$10 - \$30 million	Increased complexity	Likely, depending on the location and other project characteristics	Established relationships; new CM, subs, or other key stakeholders	Elements: 4 Sessions/yr. and 4 Surveys/yr. Internal or External Facilitator
2	\$2 - \$10 million	Standard complexity	Unlikely, unless in a place of importance	Established relationships; new subs, new stakeholders	Elements: Minimum 2 Sessions Internal or External Facilitator
1	\$600,000 - \$2,000,000	Low level complexity	Unlikely, unless in a place of importance	Established relationships; new subs, new stakeholders	Elements: Create IRL Recommended: Minimum 2 Sessions (Level 2)

- N. **Partnering Maintenance Plan:** An element of the partnering charter, the partnering maintenance plan describes the frequency of follow-up partnering sessions (including the close-out/lessons learned session) and the use and frequency of project scorecards.
- O. **Partnering Sessions:** Formalized meetings (workshops) focused on developing a collaborative culture among the project team. Teams use these meetings to, among other tasks, set project goals, define project commitments and attend joint training sessions.

- P. **Project Scorecards:** An accountability tool that allows project teams to measure how well they are following through on commitments made to one another. Typically, the scorecard is a confidential survey prepared and submitted to the team by the partnering facilitator, if any. The facilitator then compiles the responses into a report which is then sent out to the project team for review.
- Q. **Project Stakeholders:** Any person or entity that has a stake in the outcome of a construction project. Examples include the end users, neighbors, vendors, special interest groups, those who must maintain the facility, those providing funding, and those who own one or more of the systems.
- R. **Project Team:** Key members from the City and Contractor organizations responsible for the management, implementation, and execution of the project, who will participate in the partnering process.
- S. **Self-Directed Partnering:** The project team leads itself through all of the collaborative partnering elements.
- T. **Stakeholder Team (in Multi-tiered Partnering):** Those individuals who have a stake in the outcome of a construction project.
- U. **Subcontractor on-boarding/off-boarding:** At the various stages of construction, key subcontractors (trades) determined by City and Contractor will participate in the partnering process as needed as their work begins and is completed.
- V. **Third-Party Facilitator Agreement:** An agreement, appended to this specification, to which the external facilitator and the City and the Contractor are parties, and which establishes a budget for fees and expenses of the facilitator, workshop site costs, if any, and the terms of the facilitator's role for the project consistent with the requirements of this specification.

1.4 PURPOSE/GOALS

- A. The goals of project partnering are to:
1. Use early and regular communication with involved parties;
 2. Establish and maintain a relationship of shared trust, equity and commitment;
 3. Identify, quantify, and support attainment of mutual goals;
 4. Develop strategies for using risk management concepts and identify potential project efficiencies;
 5. Implement timely communication and decision-making;
 6. Resolve potential problems at the lowest possible level to avoid negative impacts;
 7. Hold periodic partnering sessions and workshops throughout the life of the project to maintain the benefits of a partnered relationship;
 8. Establish periodic joint evaluations of the partnering process and attainment of mutual goals.

1.5 COSTS

- A. The fees and expenses of the facilitator, project scorecards, partnering training and workshop site costs, if any, shall be paid for by the City as set forth in the Third-Party Facilitator Agreement.
- B. Each project will include an allowance to cover the full partnering costs. The allowance will be determined by the City based on the project's partnering level. The Contractor shall pay the invoices of the facilitator and/or workshop site costs after approval by both parties. Upon receipt of satisfactory evidence of payment of facilitator invoices by the

Contractor, the City will then reimburse the Contractor for such invoices from a fixed cash allowance included as a bid item in the bid prices. No mark-up, overhead or other fees shall be added to the partnering costs. If the total cost of the partnering differs from the allowance amount, the contract sum shall be adjusted by change order for the difference between the actual cost and the amount included in the bid, as an additional amount due the Contractor or a credit to the City, as appropriate. If the Contractor fails or refuses to pay the facilitator invoices, the City may pay such invoices and deduct the Contractor's portion from any amount that is due or may become due under the contract.

1.6 PARTNERING TRAINING

- A. In accordance with the Citywide partnering program, at least one member of the City staff team and the Contractor shall attend the City Partnering Fundamentals Training and have received a Certificate of Completion from the training session. It is recommended that the key members of the project delivery team (i.e. the Contractor's project executive, project manager and superintendent, and the City project manager and construction manager) be trained. It is recommended that the prime contractor have at least two members of the team trained so that one is available on the project at all times. Training is free to participants and is offered regularly by the City. Attendance can be coordinated through the Partnering Coordinator and www.sfpartnering.com. Evidence of training (i.e. the Certificate of Completion) must be provided to the City project manager no later than 90 days after Notice of Award.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PARTNERING INITIATION

- A. The City Representative, after award of Contract but in no case longer than 30 days following Notice to Proceed (NTP), shall send the Contractor a written invitation to enter into a partnering relationship. If an external facilitator will be retained, the City and Contractor shall cooperatively and in good faith select the facilitator as specified in subparagraph 3.3 below.

3.2 PARTNERING ELEMENTS

The partnering levels are based on the Citywide Partnering Matrix listed in subparagraph 1.3M.

- A. For Level 1 Projects:
1. The team may self-direct partnering or retain an internal or an external facilitator.
 2. **Self-Directed Partnering:** Teams electing to self-direct the partnering process shall develop the Issue Resolution Ladder during the pre-construction meeting. During the pre-construction meeting, the team is encouraged to mutually develop the core project goals, including: schedule, budget, quality, and safety. The team is encouraged to create a team commitment statement with signatures.
 3. **Internal or External Facilitator.** If the City and Contractor elect to retain an internal or external facilitator, they will do so according to the process listed in subparagraph 3.3 of this document. They will follow the partnering elements listed for Level 2 Projects.
- B. For Level 2 Projects, the required partnering elements are:

1. **Internal or External Facilitator.** The City and Contractor shall retain either an internal or external facilitator according to the process listed in subparagraph 3.3 below for the partnering sessions or workshops. The facilitator shall be mutually agreed to by the City and Contractor.
 2. **Kick-off Partnering Workshop.** The City, Contractor, and facilitator, if any, shall meet to mutually develop a strategy for a successful partnering process and create their initial partnering charter.
 3. **Partnering Charter and/or mission statement.** The City and Contractor shall agree to create a partnering charter that includes:
 - (a) Mutual goals, including core project goals that relate to project schedule, budget, quality, and safety, and possibly project-specific goals and mutually-supported individual goals.
 - (b) Partnering maintenance and close-out plan, including partnering session attendees and frequency of meetings.
 - (c) Dispute resolution plan that includes an Issue Resolution Ladder.
 - (d) Team commitment statement and signatures.
 4. **Minimum Two Partnering Workshops or Sessions** (including kick-off workshop). The partnering team may participate in additional workshops or sessions during the life of the project that they mutually agree is necessary and appropriate.
 5. **Executive Sponsorship.** Commitment to, and support of, the partnering process from the most senior levels of the City and Contractor organizations.
 6. **Issue Resolution Ladder.** The City and Contractor shall mutually develop an IRL.
- C. For Level 3 Projects, add the following elements:
1. **Internal or External Facilitator.** City and Contractor shall retain either an internal facilitator or an external facilitator according to the process listed in subparagraph 3.3 below for the partnering meetings or workshops. The facilitator shall be mutually agreed to by the City and Contractor.
 2. **Quarterly Partnering Workshops or Sessions** (including kick-off workshop). The partnering team may participate in additional workshops or sessions during the life of the project as needed.
 3. **Quarterly Project Scorecards.** City and Contractor shall participate in periodic partnering evaluation surveys to measure progress on mutual goals and short-term key issues as they arise.
 4. **Key Subcontractor On-Boarding/Off-Boarding.** Key subcontractors will be invited to participate in the partnering sessions as necessary as determined by City and Contractor as their participation in the project work becomes relevant.
- D. For Level 4 Projects, recommend adding the following elements:
1. **External Facilitator for Kick-off and Bi-Monthly Partnering Sessions.** City and Contractor will retain an external facilitator according to the process listed in subparagraph 3.3 below for the kick-off partnering workshop and bi-monthly partnering meetings. Additional meetings, workshops, or sessions may be facilitated by mutual agreement.
 2. **Bi-Monthly Partnering Sessions.** The partnering team shall convene partnering sessions at least every two months throughout the duration of contract.
 3. **Monthly Project Scorecards.** City and Contractor shall participate in partnering evaluation surveys at least every month.
- E. For Level 5 Projects, recommend adding the following elements:
1. **Monthly Partnering Sessions.** The project team may hold professionally facilitated partnering sessions monthly throughout the duration of the project.

2. **Multi-tiered Partnering (Executive – Core Team – Stakeholder).** Partnering team will divide into smaller groups and convene multiple sessions including an executive Session, core team session and stakeholder session.
3. **Monthly Project Scorecards.** City and Contractor shall participate in monthly partnering evaluation surveys.

3.3 SELECTION OF A PROFESSIONAL NEUTRAL FACILITATOR

- A. If an external facilitator will be retained, the City and Contractor shall meet as soon as practicable after award of contract, but in no case later than 30 days after NTP, to mutually select a facilitator. The City and Contractor shall also schedule the kick-off workshop, determine the workshop site and duration, and agree to other administrative details.
- B. The City, Contractor, and selected facilitator shall execute a Third-Party Facilitator Agreement within 30 days of NTP.
- C. The facilitator shall lead the kick-off partnering workshop and other partnering sessions as necessary or required.

3.4 FACILITATOR QUALIFICATIONS AND REQUIREMENTS; EVALUATIONS

- A. The facilitator shall be trained in the recognized principles of partnering.
- B. The facilitator shall have the following professional experience and qualifications:
 1. At least 3 years' experience in partnering facilitation with a demonstrated track record, including public sector construction for a city or other municipal agency; and,
 2. Skill set that may include construction management, negotiations, labor-management mediation, and/or human relations.
- C. The facilitator shall be evaluated by the partnering team: (1) at the end of the kick-off partnering workshop; and (2) at the project close-out partnering session.

3.5 FACILITATED ISSUE RESOLUTION PROCESS

- A. In the event that a project team is unable to resolve an issue, the team may agree to call a Facilitated Issue Resolution (FIR) session.
- B. The FIR session will be held as part of the good faith effort to resolve the construction issue.
- C. The team shall document its intention to use FIR while developing the Partnering Charter. They will include FIR as the last step of the IRL.
- D. Submittal of an issue to the IRL or a FIR session does not toll, reduce, or change the respective rights and duties of the City and Contractor under the contract, or supersede contractual procedures for the resolution of disputes, including the submittal of a timely Notice of Potential Claim and/or a Certified Contract Claim.

END OF SECTION

SECTION 01 31 34**APPENDIX A: THIRD-PARTY FACILITATOR AGREEMENT**

THIS AGREEMENT, dated for convenience as of the _____ day of _____, 20____, is between the City and County of San Francisco (the "City"), acting by and through its Department of Public Works, _____ (the "Contractor"), and the following individual: _____, _____ (the "Facilitator").

Recitals

- A. The City, by and through its Department of Public Works, has awarded to the Contractor public work Contract No. _____ (the "Contract") for the construction of a public work known as _____ (the "Project").
- B. Included as part of the Contract is Section 01 31 33, Partnering Requirements, implementing a Partnering Facilitation procedure for the Project (the "Partnering Specification").
- C. The Partnering Facilitator has been selected in conformance with the Partnering Specification.

Agreement

NOW THEREFORE, the City, the Contractor, and the Facilitator hereby agree as follows:

1. **Compliance with Specification.** The Facilitator agrees to be bound by the terms of the Partnering Specification and to perform the required duties strictly as set forth in the Partnering Specification. The Partnering Specification is incorporated here by reference as if fully set forth.
2. **Compensation.** The City and the Contractor agree that the Facilitator must be compensated for his/her individual services as Facilitator at a billing rate of \$_____ per hour. Compensation must be paid at the stated billing rate, applied to travel time and reasonable study/consultation time and time spent in Partnering Workshops. Included in the billable rate must be routine office expenses, such as secretarial, administrative, report preparation, telephone, computer, and internet connections.
3. **Additional Compensation.** Not included in the billable rate, and considered additional compensation, must be any travel expenses, outside reproduction costs, and postage costs. Travel expenses must be approved in writing by both the City and the Contractor prior to being incurred. Outside reproduction and postage expenses may be billed at cost.
4. **Invoices.** The Facilitator must submit to the Contractor invoices for work completed (a) not more often than once per month; (b) based on the agreed billing rate and conditions and on the number of hours expended, together with direct, non-salary expenses including an itemized listing supported by copies of original bills, invoices, and expense accounts; and (c) accompanied by a description of activities performed daily during the invoice period.
5. **Confidentiality.** The Facilitator must not divulge any information acquired during Partnering activities without obtaining prior written approval from the City and the Contractor.

- 6. **Recordkeeping.** The Facilitator must maintain cost records pertaining to this Agreement for inspection by the City or the Contractor for a period of 3 years following the end or termination of this Agreement.
- 7. **Assignment.** No party to this Agreement must assign any duty established under this Agreement or the Partnering Specification.
- 8. **Termination.** This Agreement may be terminated only by mutual agreement of the City and the Contractor at any time upon not less than 10 days written notice to the Facilitator. If the Facilitator resigns, is unable to serve or is terminated, he/she will be replaced within four weeks in the same manner as he/she was originally selected under the Partnering Specification. This Agreement must be amended to indicate the member replacement.
- 9. **Legal Relations.** The parties to this Agreement expressly acknowledge that the Facilitator, in the performance of his or her duties under this Agreement and the Partnering Specification, is acting in the capacity of an independent agent and not as an employee of the City or the Contractor. The Facilitator must not participate in any dispute proceedings relating to the Contract or the Project. The City and Contractor release the Facilitator from any and all liability, claims, demands, actions and causes of action arising out of or resulting from partnering for the project. The release set forth above excludes any and all liability, claims, demands, actions and causes of action arising out of or resulting from fraud or willful misconduct by the Facilitator.
- 10. **Jurisdiction and Venue.** Disputes among the City, the Contractor, and the Facilitator arising out of this Agreement must be brought in the California Superior Court, County of San Francisco. The Agreement must be interpreted in accordance with the laws of the State of California. The Facilitator hereby consents to the personal jurisdiction of the California Superior Court, County of San Francisco.

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

[CONTRACTOR]

BY: _____
Name:
Title:

BY: _____
Name:
Title:

FACILITATOR

BY: _____

Approved as to form:
DAVID CHIU
City Attorney

BY: _____
Deputy City Attorney

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 Schedule Submittals shall employ computerized Critical Path Method (CPM) scheduling.
 - 2. The Baseline Schedule and Project Schedule Updates shall be cost and resource loaded based on the Schedule of Values as approved by the City.

1.2 RELATED SECTIONS

- 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. CPM Schedule Submittals: Contractor shall submit the digital file with a .XER or .XML extension for all reviews, including but not limited to, the Baseline Schedule, Progress Schedule, Recovery Schedule, Notices of Delay, Time Impact Analysis, and all Claims.
- B. Contractor is required to involve all subcontractors in the development, implementation, and updating process of its schedule.
- C. Acceptance or approval of the CPM Schedule Submittals is of general nature only. Failure by Contractor to include any element of work required for the performance of this contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the City approval of the CPM diagrams. Items missing from the schedule after City approval are assumed to be incidental work, and at not cost to the city the 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.
- D. The Baseline 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 SUBMITTALS

- A. The Baseline Schedule, Progress Schedule Update, Revised Schedule, Recovery Schedule, and reports prepared by Contractor shall be used for planning, organizing, directing, controlling, and reporting all work required by the Contract Documents.
- B. The CPM Schedule Submittals shall be at a minimum of three (3) hard copies and a CD-ROM in a case, or other acceptable digital format. Digital submittal shall be the original and editable file with a .xer or .xml file extension.

- C. The timely submission of the following is required:
1. Digital copy and three (3) hard copies of the Baseline Schedule fourteen (14) calendar days prior to commencing the Work of the Contract;
 2. Progress Schedule Update including written narrative as per specifications on a monthly basis;
 3. Activity Schedule on a weekly basis at the weekly progress meetings;
 4. Revised schedule within ten (10) working days when requested by the City;
 5. Resubmittal of any rejected Baseline Schedule, Progress Schedule Update, or revised schedule within five (5) working days after receipt of the returned schedule marked "RESUBMIT," if necessary;
 6. Daily Construction Reports, per section 1.11 of this specification.
- D. Failure to comply with timely submission of any schedule 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.
- E. Schedule Reviews: Unless otherwise stated, the City will review and respond to scheduling submittals within ten (10) working days after the submittal is received. If the schedule is not accepted, Contractor shall re-submit within five (5) working days after receipt of the City's response if changes or additional information is requested. This review and resubmittal cycle will repeat until the schedule has been accepted by the City.

1.5 PLAN OF OPERATION

- A. At the Pre-Construction Conference, the Contractor shall submit for the City's review a Plan of Operation for the first 60 days of the Contract commencing after the Notice to Proceed. This schedule shall serve the project schedule needs until the Baseline Schedule has been accepted. Sufficient detail shall be included for the identification of submittals, permits, equipment procurement, construction activities.

1.6 CPM SCHEDULE SUBMITTALS

- A. The CPM Schedule shall be prepared by Contractor using the precedence method of network diagramming.
- B. Time Scaled Graphic network diagram showing the critical path shall not be larger than 24" x 48".
- C. Activity Description: Each Activity shall have a unique narrative description consisting of a work function and location.
- D. All submittals that require City review and approval shall be incorporated in the CPM Schedules.
- E. All Activities shall have succeeding Activities except Work completion. At least one successor shall be a FF or FS relationship.
- F. Contractor shall disclose in detail how weather delays, as specified in the General Provisions of the Contract, will be incorporated into the Baseline Schedule. Contractor must keep a current "weather delay registry" that would be reviewed and agreed to by both parties during the Monthly Schedule Update submittal process.
- G. Contractor shall furnish the following computer-generated reports with the project identification, schedule and run date, and sort-type on the first page of each report.
1. List of all activities sorted by total float including ES, LS, EF, LF, and Total Float duration.

2. List of all activities sorted numerically including ES, LS, EF, LF, and Total Float duration.
 3. List of all activities sorted numerically including ES, LS, EF, LF, Total Float duration, and Predecessor/Successor information of precedence network.
 4. List of all activities sorted by responsibility including ES, LS, EF, LF and Total Float duration.
 5. List of activities on the critical path sorted numerically including ES, LS, EF, and LF.
 6. List of near critical activities (activities with total float less than ten (10) working days) sorted numerically including ES, LS, EF, and LF.
- H. All CPM activity time duration in working days shall be specified in five (5) day work weeks excluding holidays to be identified by Contractor, unless specifically allowed by the Contract.
- I. A maximum of fifteen (15) days duration shall be given to each CPM construction activity. Any activity in excess of the fifteen (15) days shall be broken down in detail so that each detail activity will not exceed the fifteen (15) days maximum.

1.7 BASELINE SCHEDULE

- A. Fourteen (14) calendar days prior to start of Work, Contractor shall furnish a Baseline Schedule showing in detail the proposed sequence of activities. The City will not process any progress payments until the required schedule is submitted and accepted by the City.
- B. The Baseline 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.
- C. Baseline Schedule shall include the following tabulated information for each Activity:
1. Activity beginning and ending event numbers
 2. Estimated duration in working days
 3. Trade code (responsibility code including Contractor, all Subcontractors, Supplier, and Owner)
 4. Early start date (ES) and early finish date (EF) (calendar dated).
 5. Late start date (LS) and late finish date (LF) (calendar dated).
 6. Print the total and free float for each activity.
- D. The network diagram(s) level of detail shall include but not be limited to:
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, such as submittal and review of shop drawings, substitutions, alternative construction methods or alternative designs, and submittal to and review by the City and all utility companies involved including 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. Order and delivery of long lead items.
 7. Approvals and permits required by regulatory agencies or other third parties.
 8. Schedules for Subcontractor's Work, including engineering and design services.
 9. Actual tests, submission of test reports and approval of test results.
 10. Testing, training and assistance required under the Contract.

11. Punchlist and final cleanup.
 12. Scheduled completion date shall be as specified within the time allowed.
- E. The Baseline Schedule shall provide a practical schedule of activities performed within the specified contract completion time and within the contract bid price to complete the Work. A schedule extending beyond the contract completion date will not be accepted.
- F. Contractor shall incorporate all Milestones into the Baseline Schedule. These include, but are not limited to Substantial Completion and Milestones. These are unique zero (0) duration Activities containing corresponding dates and logic ties. Designate these Activities as start or finish Milestones. If necessary, utilize constraints of “start on or after” or “finish on or before” for Contract requirements. The use of float suppressing date constraints including “start on,” “finish on,” “mandatory start,” and “mandatory finish” are not allowed.
- G. In preparing the Baseline Schedule, Contractor shall consider the nature and complexity of each submittal and shall allow ample time for review, revisions or corrections. Under no circumstances will an extension of time be given for any submittal for which a re-submittal is required and a re-submittal time was not included in the Baseline Schedule.
- H. Time impacts resulting from submittals and re-submittals of shop drawings are Contractor’s responsibility.
- I. 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.
- J. Negative float will not be allowed on the Baseline Schedule on the initial submittal. Initial Baseline 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.
- K. The Baseline 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.
- L. Submit a written narrative with the Baseline Schedule that discusses basic assumptions, productivity and installation rates, construction staging plans, maintenance of traffic quantities, manpower and crew development, construction equipment planned, and other element related to developing the schedule.
1. Explain Activity durations and describe Contractor’s approach for meeting Contract Milestone dates. Include as a minimum: basis and assumptions used in preparing the schedules, including crew sizes, equipment requirements, and anticipated delivery dates; restraints; critical path activities; production rates; Activities requiring overtime or additional shifts; holidays, City-specific events; potential problem areas; permits; coordination; required with SFMTA, railroads, utilities and other parties; and long lead delivery items requiring more than thirty (30) days from order to delivery. Identify Work items that may be expedited by use of overtime or additional shifts. Identify and explain sequencing and other constraints such as manpower, material and equipment.
 2. All constraints, dates, and lags will require City’s approval and shall be clearly identified and explained in the narrative.
 3. Description and analysis of the Critical Path.

1.8 PROGRESS SCHEDULE UPDATE

- A. The Baseline Schedule shall be updated monthly by Contractor and submitted to the City for review as a Progress Schedule Update. It shall not have any change in the logic of the network or in the duration of activities.
- B. Each Progress Schedule Update shall continue to show all work activities including those already completed. Computer calculations of the updated schedule will be made starting from the current 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. Progress Schedule Updates shall include the requirements stated above and the additional requirements:
 - 1. Include resource requirement as required.
 - 2. Actual start and completion dates of completed activities.
 - 3. Actual start dates and percent completion of activities in progress.
 - 4. Print the total and free float for each activity.
 - 5. Project percentage completed.
- D. The Progress Schedule Update 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.
- E. In conjunction with each monthly Progress Schedule Update, Contractor shall submit to the City a written narrative report of the status of the Project as specified herein.
- F. Contractor's monthly written narrative of the critical path analysis shall include the following:
 - 1. Description of critical path and progress on Contract Milestones with explanations for any lack of work on critical path activities planned to be performed during last month;
 - 2. Anticipated completion time of entire work;
 - 3. Description of problem area;
 - 4. Current and anticipated delaying factors and their impacts;
 - 5. Explanation of corrective action taken or proposed to bring project back on schedule if delays have occurred;
 - 6. Description of critical activities scheduled to be performed next month;
 - 7. Discuss the incorporation of any approved Change Orders. Identify a proposed schedule Change Orders submitted during the last reporting period.
 - 8. Status of major material and equipment procurement.
- G. Progress Schedule Update reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.
- H. Actual start and finish date and Work in progress shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual start and finish dates shall be updated manually and shall represent actual history and match daily reports. Work in progress shall be shown with the actual start date, the remaining duration will represent the current expected completion date, and the physical percent completed for each activity. The remaining Activities should represent Contractor's current projected plan for orderly completion of the Work.
- I. This Progress Schedule Update shall not have any change in the logic of the network or in the duration of activities.

- J. 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.
- K. If a COR for a schedule adjustment in the Contract duration is approved, the logic revisions and their relationship to other activities shall be reflected on the Progress Schedule Update.
- L. The Progress Schedule Update for the same period as the Application for Payment shall be submitted showing all work completed as of that date as a precedent to making progress payment Applications.

1.9 ACTIVITY SCHEDULE

- A. Contractor shall present and discuss the Activity Schedule at the progress meetings, or as directed by the City.
- B. The Activity schedule shall be in the bar chart format and include the following:
 - 1. Completed activities for last week.
 - 2. Scheduled activities for the succeeding two weeks.
 - 3. Correlation to appropriate Baseline Schedule including Activity ID, description, start and finish, duration, responsible party performing the Work and pertinent remarks on Activity status.

1.10 REVISED SCHEDULE

- A. Contractor shall submit to the City a revised critical path schedule with a description and justification of the changes within ten (10) working days 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. The revised 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.

1.11 DAILY CONSTRUCTION REPORTS

- A. On a daily basis, Contractor shall submit to the City a Daily Construction Report for each working day, including weekends and holidays, when worked. Include in report:
Project name and Contract number
 - 1. Contractor's name and address
 - 2. Weather, temperature, and any unusual site conditions.
 - 3. Brief description and location of the day's scheduled activities and any special problems and accidents, including Work of Subcontractors. Descriptions shall be referenced to CPM scheduled activities.
 - 4. Worker quantities, names, and labor classifications for its own Work force and for Subcontractors of any tier.

5. Equipment, other than hand tools, utilized by Contractor and Subcontractors by description and number.
- B. Failure to submit a copy of the Daily Construction Report by the end of the next working day will result in an assessment of \$100.00 for liquidated damages per report to be deducted from the Progress Payment.

1.12 LIQUIDATED DAMAGES

- A. Failure to submit any one of the above schedules will result in an assessment of two hundred dollars (\$200.00) 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.

1.13 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.

1.14 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 that the Contractor requests an adjustment of the contract time, it shall submit a Change Order Request (COR) with such justification 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.
 2. The latest version of the Progress Schedule Update 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 Update accepted at the time of the alleged delay, and all other relevant information.
 5. Actual delays in activities which, according to the Progress Schedule Update, 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 COR 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 Update. Contractor shall incorporate each Change Order into the revised schedule.
- C. The City will, within ten (10) working days after receipt of such request and supporting evidence, review the facts and issue to the Contractor a written merit determination accepting or rejecting the COR in whole or in part.
- D. The new revised 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.

1.15 EARLY COMPLETION SCHEDULE

- A. Contractor may submit a Monthly Schedule Update which contains a Milestone or Substantial Completion dates earlier than the dates specified in the Contract. Contractor 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 date of NTP through the official Contract completion date. Specifically, Contractor has provided through its bid the overhead, construction equipment and facilities cost including overhead, field office, home office, other off-site yard, and extended overhead cost for the duration of the Project in its Bid Items on the Schedule of Bid Prices or Bid Proposal as specified.
 - 4. If the City requires additional work through a Change Order, which shall be done after the early proposed Substantial Completion Date, but prior to the Contract Time Substantial Completion Date, then no additional money will be paid to the Contractor for extended overhead.
 - 5. Contractor waives any and all claims or right of action against the City for damages, loss of profit or other additional compensation based on the Engineer's rejection or approval of a proposed Early Completion Schedule.

1.16. RECOVERY SCHEDULE

- A. Submit a Recovery Schedule within seven (7) Days, if the Monthly Schedule Update, reflects negative float of minus fourteen (-14) Days or more for a Contract Milestone Activity.
- B. Use a fragnet showing Activities that delayed the Contract Milestones Date. Submit a similar fragnet showing Contractor's plan to mitigate delay or disruption and subsequent impacts to schedule. Provide the digital schedule files, as well as, hard copies of the analysis. Provide a written narrative describing circumstances, extent of delay or disruption, and the methodology used to determine extent of delay or disruption. Submission of such fragnet does not constitute permission to proceed with plan.
- C. Addition of equipment or construction forces, increasing Work hours or other methods, manner, or procedures to return to the Contract completion date shall not be justification

for a Change Order, nor shall it be treated as compensable acceleration where the need for a recovery schedule is due to or arises from any action of Contractor and/or its Subcontractors or Suppliers, at any tier.

- D. Contractor shall implement the Recovery Schedule after acceptance from the Engineer without additional cost to City and provide for completion of the Work in accordance with the remaining Milestone dates without a time extension. Should the logic and/or durations of the Recovery Schedule not receive acceptance of the Engineer, Contractor is responsible to use concurrent operations, additional manpower, additional shifts, overtime, etc., as required to put the Project back on schedule at no additional cost to the City.

1.17 TIME IMPACT ANALYSIS SCHEDULE (TIA)

- A. Prepare a Time Impact Analysis (TIA) Schedule: When unforeseen conditions or delays are experienced by Contractor and a time extension is requested. Contractor shall submit a written TIA illustrating the influence of each change or delay on the Contract Milestone completion date to the level of detail that the Engineer may require to determine whether Contractor is entitled to an extension of time.
- B. Actual delays in activities, which according to the Progress Schedule Update do not affect the Critical Path work, shall not be the basis for an adjustment to the contract time.
- C. To prepare the TIA, Contractor shall use the most recent version of the Progress Schedule Update that has been accepted by the City at the time of the alleged delay. Contractor shall use a sub network or fragnet of the Activities with the proposed delay. The impacted fragnet will show new Activities for the work in question and its relationship to other activities in the schedule. Provide the electronic schedule files as well as hard copies of the analysis. Provide a written narrative describing the time impact analysis and all other relevant information.
- D. After the City's review and acceptance of the TIA, Contractor shall incorporate it into the Progress Schedule Updates and Revised Baseline Schedules.
- E. Because float within Progress Schedule Updates is jointly owned, delays to the Work that are outside the control of Contractor may be offset by time savings realized.

1.18 AS-BUILT SCHEDULE

- A. The last Monthly Progress Schedule update with all dates actualized will be considered the As-Built Schedule. This schedule will have incorporated all actual start and finish dates and all the accepted Change Orders, Contract Modifications and TIAs. Schedule and approval of the Schedule will be a condition precedent to reduction/release of final Contract retention.

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.
- K. "Certificate of Compliance" is defined as a certificate signed by the manufacturer of materials stating that the materials involved comply in all respects with the requirements of the specifications.

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.
 - P. Contractor's submittal packages shall include a digital copy of each Submittal on CD-ROM.

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" x 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 CERTIFICATE OF COMPLIANCE

- A. The Contractor shall submit, to the City, Certificates of Compliance for all applicable materials as specified in the table of Materials Accepted by Certificate of Compliance of the current edition of the Construction Manual published by the California Department of Transportation (Caltrans) and available for download at http://www.dot.ca.gov/hq/construc/constmanual/construction_manual.pdf (Table 6-2.3 in September 2014 Edition).
- B. Certificates of Compliance shall contain the following information:
 - 1. Name of company.
 - 2. Lot number traceable to a specific lot.
 - 3. A statement naming the applicable type and brand, and that the materials meet the requirements of the Contract specifications.
 - 4. Contract number.
 - 5. Signature of responsible officer of the company.
 - 6. Any other information required by the table of Materials Accepted by Certificate of Compliance in the Construction Manual referenced in Part A.
- C. The City will retain certificates; no approval reply is intended.

1.12 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.

1.13 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 43
ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL**1.01 SUMMARY**

A. Section Includes:

- 3.01 General Construction Best Management Practices
- 3.02 Stockpile Management Best Management Practices
- 3.03 Dust Control Best Management Practices
- 3.04 Standard Stormwater Best Management Practices
- 3.05 Spill and Leak Control Best Management Practices
- 3.06 Emissions-Control Best Management Practices
- 3.07 Construction Noise Control Best Management Practices
- 3.08 Naturally Occurring Asbestos (NOA)
- 3.09 Asbestos Dust Mitigation Plan
- 3.10 Night Work
- 3.11 Environmentally Sensitive Area (ESA)
- 3.12 Bird Protection
- 3.13 Bat Protection(Not Applicable)
- 3.14 Tree Protection
- 3.15 Site Restoration
- 3.16 Paleontological Resources
- 3.17 Human Remains
- 3.18 Archeological Resource Protection
- 3.19 Historical Cultural Resource Protection
- 3.20 San Francisco Environmental Code Clean Construction Requirements for Work in an Air Pollutant Exposure Zone (APEZ)
- 3.21 Construction Site Runoff Control Permit(Not Applicable)
- 3.22 Storm Water Pollution Prevention Plan (Not Applicable)
- 3.23 City Water Quality Permitting

B. Plan Information Related to This Section

The following supplemental information is shown on the construction drawings:

- 1. Areas within an MS4 within the jurisdiction of the Port of San Francisco (see Article 3.04 of this section)

1.02 REFERENCES

- A. "Standard Construction Measures for all San Francisco Public Works Projects". San Francisco Public Works, July 1, 2017
- B. American National Standards Institute (ANSI). 2008. American National Standard for tree care operations – Tree Shrub and Other Woody Plant Maintenance – Standard Practices (A300 Part 1): Pruning. New York,
- C. American National Standards Institute (ANSI). 2006. Safety Requirements for arboricultural Operations (Z133). New York, NY

- D. Andrews, Jim, P.E., David Buehler, P.E., Harjodh Gill, Ph.D., Wesley L. Bender, Transportation and Construction Vibration Guidance Manual [CT-HWANP-RT-20-365.01.01]. California Department of Transportation, April 2020
- E. Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, And Surface Mining Operations (California Code of Regulations Title 17, Section 93105)
- F. Bald and Golden Eagle Protection Act, 16 USC § 668
- G. Bay Area Air Quality Management District, "Current Rules". Available at <http://www.baaqmd.gov/rules-and-compliance/current-rules>
- H. Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines. May 2017. Available at <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa>
- I. Berglund, B. Guidelines for Community Noise - A complete, authoritative guide on the effects of noise pollution on health. World Health Organization, Geneva, 1999
- J. California Code of Regulations, Title 8 Sec. 1592
- K. California Department of Transportation, "The Construction Site Best Management Practices (BMPs) Manual". Available at <https://dot.ca.gov/programs/construction/storm-water-and-water-pollution-control/manuals-a>
- L. California Fish and Game Code §§ 3503, 3513, and 3800
- M. California Register of Historical Resources. Available at https://ohp.parks.ca.gov/?page_id=21238
- N. California State Water Resources Control Board, Construction General Permit Order. See https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/general_permit_reissuance.html
- O. California Stormwater Quality Association (CASQA), Construction BMP Handbook. Available at: <https://www.casqa.org/resources/bmp-handbooks>
- P. Caltrans Storm Water Quality Handbooks Construction Site Best Management Practices Manual available for download at: <https://dot.ca.gov/programs/construction/storm-water-and-water-pollution-control/manuals-and-handbooks>
- Q. City and County of San Francisco Municipal Transportation Agency, 2012. Regulations for Working in San Francisco Streets, 8th ed. Available at: <https://www.sfmta.com/reports/construction-regulations-blue-book>
- R. City of San Francisco, June 27, 2006. "Pruning Standards for Trees". Available at http://sfpublicworks.org/sites/default/files/234-SF_Pruning_Std_6.27approved.pdf
- S. Federal Migratory Bird Treaty Act (16 USC § 703–711, 50 CFR 10)
- T. Geological Features & Special Permits (California Public Resources Code Section 4307 and Section 4309)
- U. National Historic Preservation Act of 1966, (16 U.S.C. 470)

- V. National Register of Historic Places. Available at <https://www.nps.gov/subjects/nationalregister/database-research.htm>.
- W. Native American Historic Resource Protection Act; Archaeological, Paleontological, and Historical sites; Native American Historical, Cultural, and Sacred sites (California Public Resources Code Section 5097-5097)
- X. San Francisco Department of Public Health, "Monitoring Guidelines for SFHC Article 22B". May be obtained by contacting SFDPH at EnvHealth.DPH@sfdph.org or:(415) 252-3800.
- Y. San Francisco Environment Code Chapter 19: Mandatory Recycling and Composting. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- Z. San Francisco Environment Code Chapter 25: Clean Construction Requirements for Public Works. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- AA. San Francisco Health Code Article 22B – Construction Dust Control Ordinance #176-08. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- BB. San Francisco Industrial Waste Ordinance #19-92
- CC. San Francisco Planning Code Article 10: Preservation of Historical Architectural and Aesthetic Landmarks. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview
- DD. San Francisco Planning Code Article 11: Preservation of Buildings and Districts of Architectural, Historical, and Aesthetic Importance in the C-3 Districts. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- EE. San Francisco Planning Department, "Environmental Review Resources". See: <http://sf-planning.org/consultant-sponsor-resources>.
- FF. San Francisco Police Code, Article 29, Ordinance #274-72 ("Noise Ordinance"). See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- GG. San Francisco Public Health Code, Article 22B: Construction Dust Control Requirements. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- HH. San Francisco Public Utilities Commission, Design Guidelines and Standards. Available at <https://www.sfpuc.org/construction-contracts/design-guidelines-standards>
- II. San Francisco Public Works Code, Article 4.1 Sewer Use Ordinance. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- JJ. San Francisco Public Works Code, Article 4.2 Sewer System Management Ordinance. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- KK. San Francisco Public Works Code, Ordinance No. 260-13, Construction site Runoff Ordinance. See https://codelibrary.amlegal.com/codes/san_francisco/latest/overview.
- LL. San Francisco Public Works Order 158,170, Wastewater discharges into the City sewerage system. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- MM. San Francisco Public Works Order 171,333, Dust Generation and Control Regulations. See <https://sfpublicworks.org/services/permits/public-works-orders>.

- NN. San Francisco Public Works Order 171,378 Dust Control Order. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- OO. San Francisco Public Works Order 171,442 Regulation for Excavating and Restoring Streets in San Francisco. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- PP. San Francisco Public Works Order 172,596, Guidelines for Processing and Issuance of Special Sidewalk Permits within the Downtown Streetscape Areas. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- QQ. San Francisco Public Works Order 174,878, Regulations and Slip Resistant Standards for Any Manhole, Vault, or Sub-Sidewalk Basement Cover, Grille, Grate on the Public Sidewalk. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- RR. San Francisco Public Works Order 178,940, Regulations for Excavating and Restoring Streets in San Francisco.01 41 00. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- SS. San Francisco Public Works Order 200,369, Standard Paving Materials in San Francisco's Public Right of Ways. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- TT. San Francisco Public Works Order 201,954, Recycling Cobblestones and Granite Curb. See <https://sfpublicworks.org/services/permits/public-works-orders>.
- UU. Swiecki, Tedmund J.; Bernhardt, Elizabeth A. 2013. A reference manual for managing sudden oak death in California. Gen. Tech. Rep. PSW-GTR-242. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Grove

1.03 DEFINITIONS

- A. Air Pollutant Exposure Zone: A zone having a substantially greater than average concentration of air pollutants as defined in San Francisco Health Code Section 3804.
- B. ALERT sheet: Single-page flyer produced by the San Francisco Planning Department and provided to the contractor by the City Representative, containing a notification that the project site may be located in an archaeologically sensitive area.
- C. Alternative Fuels: any transportation fuel that is less polluting than gasoline or petroleum diesel fuel, as determined by the California Air Resource Board and that is shown to have lower lifecycle carbon emissions than gasoline or petroleum diesel. Alternative Fuels may include but are not limited to natural gas; propane; biofuels from low carbon, sustainable and preferably local sources; hydrogen.
- D. Alternative Sources of Power: Utility-based electric power or other power sources other than diesel engines.
- E. ARB: The California Air Resources Board.
- F. Archaeological resources: Remains of past human activity, including historic and prehistoric material such as tools and tool fragments, hearth and food remains, structural remains, and human remains.
- G. Bridge: A structure that carries a utility or railroad or vehicle, pedestrian, or other traffic over, under, or around obstructions or waterways.

- H. Building: A building as defined in the San Francisco Planning Code Section 102, Definitions.
- I. CDFW: The California Department of Fish and Wildlife.
- J. City Representative: See 00 72 00 General Conditions.
- K. Clean Construction: The performance of all work required to be performed under a San Francisco Public Works contract meeting the requirements in Sections 2504, 2505 and 2506 of the Environment Code, as applicable.
- L. Construction Activities: the performance of all work involved in or required for Construction, except for the issuance or obtaining of a site permit for a project.
- M. Construction: building, demolition, excavation, grading or foundation work, whether or not the work requires a City permit.
- N. Construction Phase: A particular construction activity over a certain period of time. Construction phases may include, but are not limited to, demolition, site preparation, grading, building construction, architectural coatings, and paving. Multiple Construction Phases of a single project may take place at the same time.
- O. SFDPH: The San Francisco Department of Public Health.
- P. Environmentally sensitive area (ESA): Area within or near construction limits where access is prohibited or limited in order to protect environmental resources. An ESA – Biology is an ESA established to protect biological resources.
- Q. Equipment Type: A category of off-road equipment (movable equipment not approved for driving on highways). Types of off-road equipment include bore/drill rigs, cranes, crawler tractors, excavators, graders, off-highway tractors, off-highway trucks, other construction equipment, pavers, paving equipment, rollers, rough terrain forklifts, rubber-tired dozers, rubber-tired loaders, scrapers, skid steer loaders, surfacing equipment, tractors/loaders/backhoes, and trenchers.
- R. Erosion and Sediment Control Plan (ESCP): a site-specific plan that details the use, location and emplacement of sediment and erosion control devices.
- S. Feasible: When applied to an action required of the Contractor, that action, in the opinion of the City Representative, can be accomplished without resorting to extraordinary means and measures.
- T. Ground surface: The top of existing soil or the level of the finished grade of a facility, sidewalk, or roadway.
- U. Historic buildings, historic structures, and other historic resources: Buildings, structures, or other resources labeled as historic structures on project plans.
- V. Inactive nests: Nests that do not contain eggs, chicks, or raptors displaying reproductive behavior.
- W. In-Water Work: Work to be conducted below Mean Higher High Water (MHHW) lines as defined by the National Oceanic and Atmospheric Administration.
- X. Land disturbance: Any movement of earth or a change in the existing natural soil cover or existing topography that may result in soil erosion from wind, or water, and the moving of

sediments into or upon waters, lands or public rights-of-way within the City of County of San Francisco, including, but not limited to building demolition, clearing, grading, grubbing, filling, stockpiling, excavating and transporting over land.

- Y. Major Construction Project: A public work to be performed within the geographic limits of the City that uses off-road equipment and that is estimated to require 20 or more cumulative days of work, including non-consecutive days, to complete.
- Z. Most Effective Verified Diesel Emission Control Strategy (VDECS): a device, system or strategy that is verified, pursuant to Division 3, Chapter 14, of Title 13 of the California Code of Regulations, to achieve the highest available level of pollution control.
- AA. Nesting Season: The City anticipates nesting or attempted nesting by migratory and non-game birds from February 15 to August 31.
- BB. Off-Road Engine: A non-road engine as defined in Title 40 of the Code of Federal Regulations, Section 89.2.
- CC. Off-Road Equipment: Equipment with an off-road engine having greater than 25 horsepower and operating for more than 20 total hours over the entire duration of Construction Activities.
- DD. On-Road Equipment: A heavy-duty vehicle as defined in Title 40 of the Code of Federal Regulations, Section 86.1803-01.
- EE. Paleontological resources: Fossils and the deposits in which they are found. Fossils are evidence of ancient life preserved in sediments and rock. Examples of paleontological resources are the remains of (1) animals, (2) animal tracks, (3) plants, and (4) other organisms. Archaeological resources are not paleontological resources. Fossils found within an archaeological resource are generally considered archaeological not paleontological resources.
- FF. PAR: pedestrian access route as defined in the ADA and ABA Accessibility Guidelines for the Public Right-of-Way (An accessible, continuous, and unobstructed path of travel for use by pedestrians with disabilities within a pedestrian circulation path).
- GG. Plant species that may harbor *Phytophthora*: The City considers host species to include: Coast Live Oak (*Quercus agrifolia*), Canyon Live Oak (*Quercus chrysolepis*), California Black Oak (*Quercus kelloggii*), Shreve's Oak (*Quercus parvula* var. *shrevei*), Tanoak (*Notholithocarpus densiflorus*), California bay laurel (*Umbellularia californica*).
- HH. Portable Diesel Engine: A diesel engine that is portable as defined in 71 California Code of Regulations, Section 93116.2(bb).
- II. Property line: The line at the ground surface at which the public right-of-way adjoins a platted parcel.
- JJ. Rain event: A rain event is a forecast for the project area by the National Weather Service of a 50 percent chance of occurrence within the following 72 hours of an amount of precipitation of 0.50 inch or greater.
- KK. Regulated Species: Species protected by one or a combination of the following:
 - 1. Federal Endangered Species Act of 1973, 16 USC§ 1531 et seq.
 - 2. California Endangered Species Act, Fish & Game Code§§ 2050-2115.5
 - 3. Fish & Game Code§§ 1600-1616
 - 4. National Environmental Policy Act, 42 USC§ 4321 et seq.

5. California Environmental Quality Act, Pub Res Code § 21000 et seq.
 6. Other law or regulation governing activities that affect species or their habitats.
- LL. Routine Biological Activities: Biological monitoring, surveying, or other activity that does not require a take permit from the US Fish and Wildlife Service or National Oceanic and Atmospheric Administration (NOAA) Fisheries or a take permit or memorandum of understanding from the California Department of Fish and Wildlife.
- MM. Sensitive receptor (air quality): Residence, school, childcare center, hospital or other health-care facility or group living quarters.
- NN. Sensitive Use: A category of building use identified as a Sensitive Use in Health Code Section 3804.
- OO. Sensitive receptor (noise): Any environment listed in Guidelines for Community Noise - A complete, authoritative guide on the effects of noise pollution on health (World Health Organization, Geneva, 1999). Table 4.1, for which the recommended noise levels are low, as low as possible, or a maximum LAeq[dB] <70. These include:
1. Outdoor living areas
 2. Dwellings, indoors
 3. Inside bedrooms
 4. Outside bedrooms (window open)
 5. School classrooms and pre-schools, indoors
 6. Pre-school bedrooms, indoors
 7. School, playground outdoor
 8. Hospital, ward rooms, indoors
 9. Hospitals, treatment rooms, indoors
 10. Outdoors in parkland and conservation areas
- PP. Service-Approved Biologist: Biologist whose activities must be approved by a state or federal agency as provided in applicable permit, license, agreement, certification, or any combination of these.
- QQ. Soil: Native fill or introduced earthen fill. It does not include materials that were previously introduced as part of roadway pavement section (including asphalt concrete wearing surface, roadway base, and subbase).
- RR. Stormwater Pollution Prevention Plan (SWPPP): A detailed plan that identifies potential sources of stormwater pollution, describes the practices that will be used to prevent stormwater pollution, and identifies procedures the operator will implement to comply with all requirements in the construction general permit.
- SS. Take: Legal definition regarding harm to protected species as defined in 16 USC § 1532 and California Fish & Game Code § 86.
- TT. Tier 2 Off-Road Emission Standards: The Tier 2 new engine emission standards in Title 13, California Code of Regulations, Section 2423(b)(1)(A) and/or Title 40, Code of Federal Regulations, Part 89.112(a).
- UU. Unique Archaeological Resource is as defined in the California Environmental Quality Act statute at § 21083.2.
- VV. VDECS: A verified diesel emission control strategy, designed primarily for the reduction of diesel particulate matter emissions, which has been verified by ARB pursuant to Verification Procedures, Warranty and In-Use Strategies to Control Emissions from Diesel Engines, Title

13, California Code of Regulations, Sections 270 0-2710. VDECS can be verified to achieve Level 1 diesel particulate matter reductions (at least 25 percent), Level 2 diesel particulate matter reductions (at least 50 percent), or Level 3 diesel particulate matter reductions (at least 85 percent).

WW. Visible dust: Dust comprising visible emissions as defined in Bay Area Air Quality Management Board Regulation 6 – Particulate Matter.

1.04 SUBMITTALS

- A. Contractor shall submit the following to the City Representative prior to mobilization:
 - 1. The following agency-approved plans and permits:
 - 2. The qualifications for the following firms and persons specified in this Section, to demonstrate their capabilities and experience:
- B. The Contractor shall submit the following to the City Representative during the course of construction:
 - 1. The Contractor shall submit the “ALERT” sheet affidavit within five business days of the start of construction activities. (see Article 3.18 of this section)
 - 2. ESCP inspection checklists transmitted on a monthly basis (see Article 3.21/3.22 of this section)
- C. Contractor shall submit within two weeks of achieving Substantial Completion:

1.05 VIOLATIONS

- A. The Contractor shall be responsible for all costs incurred or necessary to ensure compliance of its operations and their performance of the Work with all applicable Codes and the requirements of this section, including the following:
 - 1. If violations of the conditions of this section result in monetary fines, these will immediately be paid by the contractor.
 - 2. If the contractor finds the Specifications or Drawings are at variance with State or Federal environmental-regulatory requirements, the Contractor shall give the City Representative prompt written notice thereof and the City Representative will resolve the conflict in accordance with the General Conditions. Where regulatory permits issued by a State or Federal agency are required to complete the project as depicted on project specifications and drawings and the contractor has 1) not been provided by the City with, or otherwise obtained one or more required permits as specified in this section, or 2) if it can be reasonably determined that the Contractor was aware of the necessity for the permit(s) but did not give the City Representative prompt notice, the Contractor shall bear all responsibility and costs arising there from including all costs of demolition correction and completing the nonconforming Work.
 - 3. If violations of the conditions of this section result in fees charged by City, state, or federal agencies to defray the costs of document processing and review, consultation

- with applicants, and administration of the statutory requirement, the Contractor shall pay the fees.
4. The Contractor shall be responsible for all monetary compensation for physical damage resulting from violations of conditions of this section. If the damage is to an environmental resource including but not limited to vegetation, wildlife, natural communities, cultural resources, and water quality that is protected by Federal law (including resources subject to Federal permitting and/or subject to evaluation under the National Environmental Policy Act), state law (including resources subject to state permitting and/or to evaluation under the Environmental Quality Act), and/or City ordinance, the Contractor shall pay for all costs associated with environmental assessment of the damage and the costs of mitigation.
 5. The Contractor shall be responsible for all costs, including labor and material costs, for any site restoration or remediation necessary in the opinion of the City Representative to address the consequences of violations of this section.
 6. In the event that violations of this section result in civil action(s) against the City, the Contractor shall pay all consequent legal fees associated with the action(s) and damages assessed in the action(s) against the City.
 7. This City will provide no compensation to the Contractor for project delays or work stoppages resulting from failure by the Contractor to comply with the terms of this section.
 8. Any costs associated with requirements for additional environmental training imposed by the City Representative will be borne exclusively by the contractor.
- B. The City Representative reserves the right to require additional training, issue environmental non-compliance notices, have the necessary work performed by others at the contractor's expense, assess liquidated damages of one thousand dollars (\$1000.00) per non-compliance occurrence or per event, or to deduct or withhold all monies required therefore as permitted under the Contract Documents.
- C. The City will inspect and monitor Contractor's adherence to the requirements specified herein and will report on Contractor's compliance. Pursuant to California Assembly Bill 3180 (chapter 1232), the City at its own discretion will monitor Contractor's compliance with the requirements of this section. Said monitoring and reporting activities may include, but are not limited to, qualitative, quantitative and video observations and data collection on the impacts of noise, vibration air quality, traffic, street pavement damage, water quality, cultural resources, biological resources and hazardous materials.
1. Contractor shall cooperate with such inspection and monitoring activities, provide access to the Work site to establish and secure monitoring stations, and make its facilities and records available to the City for performing such monitoring.
 2. The City will issue a Non-Compliance Notice to Contractor for any detected non-compliance with the provisions herein or of any environmentally objectionable acts and the corrective action to be taken.
 3. The City will inspect and monitor Contractor's adherence to the requirements specified herein and will report on Contractor's compliance.
- D. If Contractor uses off-road equipment and/or off-road engines in violation of the Clean Construction requirements set forth in Administrative Code Section 6.25 and Chapter 25 of

the Environment Code, the City will suffer actual damages that will be impractical or extremely difficult to determine. Accordingly, Contractor and the City agree that Contractor shall pay the City the amount of \$100 per day per each piece of off-road equipment and each off-road engine used to complete Work on the Project in violation of the Ordinance. Such amount will not be considered a penalty, but rather agreed monetary damages sustained by City because of Contractor's failure to comply with the Clean Construction requirements.

1. False Representations: False representations by the Contractor, in connection with the bidding, execution or performance of any City contract, regarding the nature or character of the off-road equipment and/or off-road engines to be utilized, on the contract, or to the City about the nature or character of the off-road equipment and/or off-road engines actually used may subject the Contractor to the consequences of noncompliance specified in Section 2510 of the Environment Code, including but not limited to the penalties prescribed therein. The assessment of penalties for noncompliance will not preclude the City from exercising any other rights or remedies to which it is entitled.
- E. 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 will be compensated by the Contractor at no additional cost to the City.
1. Damage beyond repair that requires replacement will be determined by the City Representative.
 - 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 shall be penalized the sum of One Hundred dollars (\$100) for the first incident which causes minor damage to trees or shrubs.
 - 2) The Contractor shall be penalized the sum of Two Hundred dollars (\$200) for the second incident which causes minor damage to trees or shrubs.
 - 3) The Contractor shall 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 will determine the value of such replacement trees or shrubs. In addition to the Contractor's restoration approved by the City Representative, the Contractor shall 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.
 - c. 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.
 - d. 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.

2. Replacement will 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 will be determined by the City Representative.
 4. Replace shrubs, ground cover and turf with plants similar in species, size and shape.
 5. Replace trees with plants of same species, size and shape.
 6. Replacements for trees of 2"-8" caliper will be replaced with similar sized plants; trees over 8" caliper will be 60" box size.
 7. 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 will be compensated by the Contractor.
 8. Contractor shall fell trees to be removed so that trees to remain are not injured.
- F. Contractor is responsible for liquidated damages of \$1,600 for each day for which the presence of the Specialty Environmental Monitor – Archaeologist was requested but not cancelled within the prescribed timeframe.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.01 GENERAL CONSTRUCTION BEST-MANAGEMENT PRACTICES

- A. The Contractor shall maintain the Site and Work areas under its control and adjacent public rights-of-way in a clean and orderly state, a safe condition, and remove all accumulations of debris and surplus materials at the end of each workday. Waste materials, trash, and debris are the property of the Contractor.
1. The Contractor shall initiate and maintain a specific daily program to prevent the accumulation of debris at the construction site, storage and staging areas, parking areas, and along streets, roads, and haul routes in the immediate vicinity of the project site, to include, at a minimum:
 - a. Keep all debris, hazardous/contaminated material, surplus concrete and excavated materials off the roadway and sidewalks and out of catch basins at all times.
 - b. Damp-sweeping all pedestrian walkways and dispose of debris around the site perimeter on a daily basis and as often as determined by the City Representative

- c. Daily inspection of traffic areas and haul routes to enforce debris and clean up requirements and daily removal of all debris from the Site and Construction areas, including haul routes, caused directly or indirectly by the Contractor's operations.
 - d. Ensure that Materials to be used for construction are stored in designated structures or areas by the appropriate trades. Maintain such areas or structures in a clean condition daily for the term of the Contract.
 - e. Maintain hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly and dispose those types of materials in a lawful manner. The Contractor shall comply with requirements of NFPA 241 for removal of combustible waste material and debris.
 - f. Providing and maintaining covered containers for the deposit of debris and keep them covered.
 - g. Contractor shall dispose of all food-related trash items (e.g., wrappers, cans, bottles, food scraps) in closed trash containers which will be emptied daily. Separate containers will be provided for recyclables, compostables, and landfill-bound trash. Burying or burning of trash and debris on the Site is not permitted.
 - h. In the event that the contractor observes any rodent or insect infestation, the infestation will be effectively controlled by the use of such poisons, gas traps, or insecticidal sprays as meet the written approval of the Director of Public Health (San Francisco Public Works Code, Article 17: Control of Dumps Disposing of Materials from Construction or Demolition, Section 858: Rodent and Insect Control) as verified by the City Representative.
 - i. Licensed waste material handlers must service portable sanitary facilities and trash dumpsters weekly, or more often if needed or if directed by the City Representative.
 - j. Contractor shall control aerial deposition of site materials including but not limited to, metals, nutrients, organics, sediment, other particulates, and trash.
 - k. Oversee all cleaning of areas by trades using them and ensure that resulting accumulations are deposited in appropriate containers.
2. The contractor is specifically prohibited from disposing of paint, petroleum products, dirty water, soil sterilants, concrete slurry or any other deleterious materials to soil.
 3. Maintain the site, equipment, fences and signs free of graffiti. As warranted, remove all graffiti daily, using methods which cause no damage to the work and existing facilities.
 4. Contractor shall locate site construction staging areas away from public view and on paved or previously disturbed areas to the extent feasible.
 5. No firearms will be allowed within the construction limits.
 6. At completion of the project the Contractor shall leave the Site in clean and orderly condition.

3.02 STOCKPILE-MANAGEMENT BEST MANAGEMENT PRACTICES

- A. Contractor shall implement the following stockpile management best management practices to ensure no visible dust and to control stormwater discharges of stockpiled material, including all erodible stockpiled construction materials and landscape materials:
1. Locate stockpiles at minimum 50 yards away from concentrated flows of storm water, drainage courses and inlets.
 2. Stockpiles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.
 3. Any excavated soils should be removed from the site by the end of the day, if in the opinion of the City Representative, this can be accomplished without resorting to extraordinary means and measures.
 4. Stockpiles/storage piles greater than ten cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and/or soil that will remain inactive for more than seven (7) days will be covered with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp and braced it down, or use other equivalent soil stabilization techniques as approved by the City Representative.
 5. Contractor shall monitor the National Weather Service forecast daily for forecasts of a rain event. When a rain event is a forecast for the project area by the National Weather Service with at least a 50 percent chance of occurrence within the following 72 hours, Contractor shall cover stockpiles with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp and brace it down.
 6. During the rainy season, the Contractor shall also implement the following best management practices:
 - a. Stockpiles will be protected with a temporary linear sediment barrier berm prior to the onset of precipitation. Surround stockpiled material with fiber rolls, gravel sediment barrier, silt fence or other runoff controls as approved by the City Representative.
 - b. Use inlet controls such as block gravel sediment barriers when stockpiles are proximate to catchbasins. Silt fencing will be additionally installed at the foot of the slope around the entire perimeter of stockpiled soil.
 - c. Where necessary, V-ditches and silt traps/sediment traps will be installed at the perimeters of stockpiles to collect runoff to allow flow to continue to storm drain inlets.

3.03 DUST-CONTROL BEST MANAGEMENT PRACTICES

- A. The Contractor shall ensure no visible dust is generated through construction.
1. The Contractor is responsible to take all reasonable measures to furnish all labor, equipment, and means required to carry out effective measures whenever and as often as necessary to prevent its operation from producing dust in amounts damaging to surrounding properties or causing a nuisance to businesses and local residents.

2. Contractor shall post a publicly visible sign with the telephone number and person to contact at San Francisco Public Works regarding dust complaints. The BAAQMD's phone number will also be visible to ensure compliance with applicable regulations.
- B. The Contractor shall not engage in any construction or grading operation on property unless all the following dust mitigation measures are initiated at the start and maintained throughout the duration of the construction or grading activity:
1. Vehicle and equipment maintenance:
 - a. Contractor shall maintain tire inflation to the manufacturers' inflation specifications.
 - b. Contractor shall limit vehicle speed limit on unpaved roads to 15 miles per hour (mph), or less if required to minimize dust emissions.
 - c. Contractor shall ensure that equipment, trucks and tires are washed down before moving from the active areas on to a paved public road to minimize deposition of dust-causing materials.
 - d. Contractor shall load haul trucks, hauling debris, soils, sand or other such materials so that the material does not extend above the walls or back of the truck bed. Contractor shall wet each load before covering and tightly cover the surface of each load before the haul truck leaves the loading area.
 - 1) The Contractor shall cover and line the truck bed ("burrito wrap") with 10mil HDPE for all truckloads of soils containing naturally-occurring asbestos.
 2. Limitations on grinding, crushing, and ground disturbance:
 - a. Contractor shall plan and execute the work in such manner as to ensure that the total of soils-disturbing construction activities never amount to one half acre of area at any one time unless otherwise directed by the City Representative.
 - b. Contractor shall terminate surface excavation and grading activities when wind speeds exceed 25 miles per hour.
 - c. The Contractor cannot perform screening or crushing operations without the appropriate BAAQMD and Cal-EPA/DTSC permits for these activities.
 3. Borrow areas will be protected with appropriate erosion control measures to the satisfaction of the City Representative.
 4. Use of water for dust control:
 - a. Whenever feasible, Contractor shall use reclaimed water for dust control activities.
 - b. Contractor shall treat and amend all water for dust control with biodegradable, non-polluting, non-toxic dust control agent.
 - c. Mist or spraying will be conducted in such a way as to prevent puddling or generation of runoff.

- d. Prior to any ground disturbance, the Contractor shall apply enough water to the area to be disturbed to prevent visible emissions from crossing the site boundaries.
 - e. Contractor shall perform continuous water spraying during dust generating activities, including but not limited to demolition, excavation, and earthmoving.
 - f. The Contractor shall keep areas being graded or excavated wetted to the extent required to prevent visible emissions from crossing the work site and property line.
 - g. Wet all exposed soil surfaces at least three times daily during dry weather or more frequently if dust is blowing or if required by the City.
 - h. A water truck and/or water buffalo will always be readily available at the work site. Localized dust controls such as water hoses will be pre-connected to a water source or water canisters to immediately control visible dust emissions at each active work area.
 - i. Water trucks will be equipped with hand-held hoses. Hoses will be equipped with micro-misters and micro-foggers.
 - j. In wet areas, caution signs must be posted to prevent slipping hazards.
5. Dust control for disturbed surface areas to include one or more of the following:
 - a. Keeping the surface wetted so that no visible dust is produced.
 - b. Establishment and maintenance of surface crusting.
 - c. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations as needed.
 - d. Covering with tarp(s) or vegetative cover.
 - e. Installation of wind barriers across open areas.
 6. Contractor shall implement the following for management of excavated material and demolition debris:
 - a. Minimize to the extent feasible the amount of excavated material or demolition wastes stored at the site.
 - b. Minimize the amount of excavated materials stored at the site.
 - c. Remove all demolition debris from the site no later than the end of each workday.
 7. Contractor shall clean up spillage on City streets, whether directly or indirectly caused by Contractor's operations.
 8. Contractor shall eliminate track-out from the construction site.

- a. The Contractor shall immediately remove any visible track-out of asphalt, soil, gravel, debris and dirt from a paved public road at any location where vehicles enter and exit the Site.
 - b. All visible mud or dirt track-out from areas of land disturbance onto adjacent City streets will be removed using wet power vacuum street sweepers at least once per day.
 - c. The use of dry power sweeping is prohibited.
 - d. Installation of one or more of the following track-out prevention measures at all entry and exit points. These track-out controls are to be cleaned, maintained and replaced to keep their use effective for the project duration.
 - 1) A gravel pad designed using good engineering practices to clean the tires of exiting vehicles.
 - 2) A metal griddle (rumble plate) tire shaker.
 - 3) A wheel wash system.
 - 4) Pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road; or
 - 5) Any other measure as effective as the measures listed above as approved by the City Representative.
9. The Contractor shall implement the following regimen of sweeping:
- a. Keep the entire site of the work and adjacent areas (including sidewalks, 500 consecutive feet in all directions of intersections, walkways and roadways) continuously free of dirt and dust by wet sweeping at least three times per shift including at the end of the workday. Use a wet sweeping or a HEPA filter equipped vacuum device on at all entry and exit points more frequently if needed to keep free of dirt and dust.
 - b. Visible track-out on the paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.
 - c. Always maintain a regenerative air or high efficiency vacuum sweeper-vehicle on the Site. The City Representative will evaluate the effectiveness of the Contractor's vacuum sweeper-vehicle and, if necessary, will require the Contractor to provide a more powerful and effective sweeper.
10. When directed by the City Representative, Contractor shall use dust enclosures, curtains, and dust collectors to control dust.
- C. Prior to grading or excavating totaling more than one-half acre surface area at one time, the Contractor shall notify the City Representative. The Contractor shall not proceed with such grading or excavating without the permission of the City Representative.
1. The City Representative will confirm whether or not a Site-Specific Dust Control Plan (DCP) under the Dust Control Ordinance (San Francisco Health Code Article 22B) is required.
 - a. The Contractor shall incorporate in its schedule the time it will take for the SFDPH to review and approve the DCP application and the DCP. The Contractor shall take into account and incorporate in its schedule the time it will take to implement the provisions of the DCP.

2. If a DCP is not required, the contractor may proceed with the grading or excavation once the City Representative has given permission.
3. If a DCP is required, the Contractor shall submit a completed application and pay the associated fees to the SFDPH. Construction, demolition, excavation, grading, foundation work, or other permitted activities may not commence until Contractor has submitted to the City Representative a copy of SFDPH director's written approval of the dust control plan, the plan provisions have been implemented, and the City Representative has subsequently given the contractor permission to proceed. All provisions of the approved plan become the responsibility of the contractor.
 - a. The Contractor shall interpret as mandatory all guidance in the Department of Public Health's handout "Monitoring Guidelines for SFHC Article 22B" in the event that the Plan requires monitoring.

3.04 STANDARD STORMWATER BEST-MANAGEMENT PRACTICES

- A. Unless otherwise superseded by the terms of a project Stormwater Pollution Protection Plan or Erosion and Sediment Control Plan, Contractor shall design, install, and maintain effective project-specific project site sediment controls to minimize the discharge of pollutants utilizing site-specific BMPs. These BMPs include but are not limited to the following:
 1. Immediately initiate stabilization for disturbed areas whenever earth disturbance has permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
 2. Contractor may stabilize soil exposed soil using bonded-fiber matrices, hydromulches, spray tackifiers, or other land-applied products: Apply the product according to the manufacturer's instructions and guidance; and apply the product according to the manufacturer's guidance to allow for ample cure time and to prevent treatment chemicals from being transported by runoff.
 3. Erosion Control Blankets may also be used to control to stabilize disturbed and exposed soil if exposed soil generates visible runoff.
- B. Contractor shall install BMPs, including but not limited to temporary sediment barriers, soil stabilization measures, and sediment basins, sufficient to control erosion and subsequent sediment discharges from the site, at locations with potential for erosion and as otherwise directed by the City Representative. These include all exposed soils and construction site entrances and exits.
 1. Contractor shall design BMPs according to the California Stormwater Quality Association's (CASQA) current Construction BMP Guidance Handbook and utilize outlet structures that withdraw water from the surface, unless infeasible.
 2. Sandbags will be stockpiled on site and placed there at intervals as directed by the City Representative. After rain events, Contractor shall check for and remove sediment trapped by sandbags at staging area. Replace sandbags if deterioration is evident.
 3. These BMPs will be relocated as necessary for construction operations, with prior written approval from the City Representative.

4. BMPs will be installed so as not to compromise safety of vehicles operating in roadways adjacent to erosion control BMPs.
 5. Remove the temporary BMPs at the end of the project.
- C. Contractor shall contain packaged landscape materials (e.g., fertilizers) when they are not being actively used, and apply erodible landscape material at quantities and rates according to manufacturer recommendations or based on written specifications by knowledgeable and experienced field personnel. Contractor shall discontinue the application of any erodible landscape material at least 2 days before a forecasted precipitation event.
- D. During the rainy season, all erosion control measures will be inspected daily and after each storm. Any damaged BMP will be repaired at the close of each day and whenever rain is forecast. During the rainy season, Erosion control BMPs (with the exception of sprayed products) will be available on-site, or at a nearby location (e.g., common lay-down yard), year-round with trained persons able to deploy the product.
- E. The Contractor shall conduct a pre-rain-event inspection within 72 hours prior to any forecasted rain event. Precipitation forecast information will be obtained from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at <https://www.weather.gov/>) and will be included as part of the inspection checklist weather information. If extended forecast precipitation data (greater than three days) is available from the National Weather Service, the pre-precipitation event inspection may be done up to 120 hours in advance. During periods when storms are forecast, the Contractor shall:
1. Inspect all stormwater drainage areas to identify leaks, spills, or uncontrolled pollutant sources and when necessary, implement appropriate corrective actions to control pollutant sources.
 2. Excavated soils should not be placed in streets or on paved area, and all paved areas are to be kept clear of earth material and debris.
 3. Any excavated soils should be removed from the site by the end of the day if feasible.
 4. Clean and skim drainages and detention basins daily.
- F. Contractor shall divert run-on water flowing onto the construction site from off-site areas to prevent its contributing to the construction site's stormwater. Installation of run-on diversion will occur prior to entering an area affected by construction activity. Run-on flow diversion will be conveyed through or around the construction activity in plastic pipe or an engineered conveyance channel in a manner that will not cause erosion due to flow diversion.
- G. Contractor shall secure and contain concrete washout areas and other washout areas that may contain additional pollutants to prevent discharge into the underlying soil and onto the surrounding areas and into the sewerage system. Wash waters from equipment and vehicle washing, wheel wash water, masonry wash waters, and other wash waters will be captured and treated prior to discharge or disposed of at a permitted facility that can accept that waste. Washout areas will be covered prior to and during a precipitation event.
- H. Sediment and trash accumulated in drainages or detention basins will be removed as soon as possible. In addition, oil and material floating on water surface must be skimmed weekly and the debris properly disposed of. Cover waste disposal containers at the end of every business day and during a precipitation event.

- I. Contractor shall minimize soil compaction in areas other than where the intended function of a specific area dictates that it be compacted.
- J. Contractor shall implement the following materials selection and handling BMPs to the extent feasible:
 - 1. Minimize exposure of construction materials construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to precipitation.
 - 2. Identify and protect the products used and/or expected to be used and the end products that are produced and/or expected to be produced from exposure to stormwater. Products do not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (e.g., poles, equipment pads, cabinets, conductors, insulators, bricks, roofing, and siding).
 - 3. Implement BMPs to control the discharge of plastic materials and limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Contractor shall consider the use of plastic materials resistant to solar degradation where plastic materials are deemed necessary.
- K. All BMPs construction stormwater BMPs installed within MS4 areas within the jurisdiction of the Port of San Francisco as shown on project plans must be approved by the Port of San Francisco.
 - 1. The Contractor shall inform the City Representative when BMPs within the Port MS4s are ready for inspection; the City Representative will coordinate with the Port to schedule the inspection, and the contractor shall request and obtain a written approval of the BMP installation(s) from the Port of San Francisco.

3.05 SPILL AND LEAK CONTROL BEST MANAGEMENT PRACTICES

- A. Contractor shall assign and train spill-response personnel, who will address spills and leaks immediately and dispose of leaked materials properly in accordance with the law.
- B. Provide spill cleanup material on site to adsorb, remove and contain any spill or releases from leaving the active work area and entering into any storm drain or sewer inlet. Contractor shall maintain a fully stocked spill kit(s) at the project site for immediate deployment. Keep enough spill cleanup material with vehicles and equipment to handle potential spills. Spill cleanup equipment will include absorbent socks, over pack drums, personal protective equipment, shovel, labels, valves, valve charts, valve wrenches to shut off water supply, etc.
- C. On-site vehicles must be periodically monitored for leaks during the workday.
- D. Inactive equipment must be stored with drip pans to contain any fluid leaks. Drip pans containing oil must be drained into waste oil drums on a regular basis.
- E. All hazardous material stored on-site, including but not limited to lubrication oil, hydraulic fluids, waste oils, fuels, solvents and hazardous or toxic wastes, will be stored in watertight secondary containment or in a completely enclosed storage area. The containment must be covered with temporary tarps to prevent storm water contact.

- F. Provide containment (e.g., secondary containment) of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants.
- G. Dispose of spent cleanup materials at a California-permitted waste-disposal facility. Leaked materials that constitute hazardous waste will be disposed of in accordance with applicable hazardous materials specifications.
- H. Containers must remain closed at all times except when transferring contents. Heavy containers (in excess of 60 lb.) of oil or hazardous material will not be moved by a single unassisted worker unless the worker employs a drum dolly.
- I. Funnels, pumps with closed hose systems, or other means will be used to prevent spills while transferring material from large containers to small ones. Pumps in operation will not be left unattended.
- J. Place all equipment or vehicles which are to be fueled in a designated area away from catchbasins fitted with functional, appropriate leak-containment BMPs. Maintain clean fuel-dispensing area(s) using dry cleanup methods (sweeping for removal of litter and debris or use of rags and absorbents for leaks and spills). Place drip pans or other containment beneath each connection point to capture all spills and drips. Cover storm drains in the vicinity during transfer. Maintain ample spill clean-up equipment adjacent to the fueling area.
- K. Contractor shall conduct an end-of-day inspection of the work area for leaks, spills or other discharges.
- L. Contractor's designated Project Safety Officer shall immediately be alerted to any spill occurring in the work area. It is the responsibility of Project Safety Officer direct the cleanup activities and contact the City Representative immediately and provide information such as but not limited to source of spill, type of material(s) spilled, any sampling implemented, and clean-up measures. City Representative will notify any other applicable agencies in accordance with the California Office of Emergency Services and U.S. Environmental Protection Agency.
- M. Contractor is responsible for recording all steps taken to control spills in the field notes/daily log.

3.06 EMISSIONS-CONTROL BEST MANAGEMENT PRACTICES

- A. Contractor is hereby notified that diesel exhaust pollutants requirements under ARB 1085 for In-use off- road diesel fueled fleet are in effect to minimize diesel exhaust emissions. Contractor shall register and obtain an Equipment Identification Number (EIN) per vehicle/equipment over 25 horsepower with the California Air Resources Board.
- B. The Contractor shall use utilize only off-road (not highway legal) powered equipment and diesel engines fueled by biodiesel fuel grade B20 or higher and utilize only off-road equipment that either: (a) meets or exceeds Tier 2 standards for off-road engines, or (b) operates with the most effective verified diesel emission control strategy (VDECS) verified by ARB pursuant to "Verification Procedures, Warranty and In-Use Strategies to Control Emissions from Diesel Engines," Title 13, California Code of Regulations, Sections 2700-2710.
 - 1. This requirement may be waived at the request of the contractor by the City Representative if the project's duration is 19 days or less and/or there are no

Sensitive Uses within 1,000 feet of any portion of the construction site, and/or if the project requires a limited amount of Off- Road Equipment for a limited duration.

2. This is the minimum standard requirement and is superseded by any requirements in *San Francisco Environment Code Clean Construction Requirements for Work in an Air Pollutant Exposure Zone*.
- C. Contractor shall ensure that all equipment is tuned and maintained in accordance with the manufacturer's specifications. The Contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.
- D. Contractor shall limit the hours of operation of heavy-duty equipment and/or amount of equipment in use to what is needed.
- E. When feasible, alternative fuel or electrical construction equipment will be used at the project site. Use of portable diesel engines to perform work on the project is prohibited unless access to alternative sources of power is unavailable as determined by the City Representative.
- F. Contractor shall prohibit idling of motors when equipment is not in use or when trucks are waiting in queues. The idling time of all construction equipment used at the site will not exceed 5 minutes.
1. Diesel engines, whether for off-road or on-road equipment, will not be left idling for more than two minutes at any location, except as allowed for in applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). If within 100 feet of a school zone idling times will be limited to 30 consecutive seconds.
 2. The Contractor shall post legible and visible signs, in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the idling limit.

3.07 CONSTRUCTION NOISE CONTROL BEST MANAGEMENT PRACTICES

- A. Before the onset of construction activities, Contractor shall implement minimization controls to ensure that the maximum noise level from any individual article of powered construction equipment other than to impact tools and equipment will not be greater than 80 dB(A) at 100 feet.
1. Contractor shall notify neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of impact-related noise-generating activities about the expected noise levels and their estimated duration.
 2. The following controls apply to all use of impact equipment:
 - a. Noise from impact tools may not exceed 90 dBA 1-hour L_{eq} at the surface property line nearest to ongoing construction activities.
 - b. Impact tools and equipment will have intake and exhaust mufflers recommended by the manufacturers thereof and approved by the Director of

- San Francisco Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation.
- c. Pavement breakers, jackhammers, and similar impact equipment will be equipped with acoustically attenuating shields and shrouds and/or jackets as recommended by the manufacturers thereof and approved by the City Representative.
 - d. Use of impact tools will be restricted to the daytime construction hours of 8:00 a.m. to 3:30 p.m.
 - e. Contractor shall use sonic or vibratory sheet pile drivers, rather than impact pile drivers.
 - f. Contractor shall limit phases of construction that require daily use of impact equipment to periods of no more than 10 consecutive days.
3. If, before construction mobilization, the contractor determines that these standards and/ or one or more of these controls cannot be applied, Contractor shall immediately alert the City Representative. If directed by the City Representative, the contractor must submit a project-specific construction noise control plan ("noise-control plan") prepared and stamped by a Qualified Acoustical Consultant to the City Representative with measures to reduce the impacts of construction noise to the extent feasible. The plan must be approved by the City Representative and all its provisions enacted by the contractor before the onset of construction activities that will exceed the standards or omit the controls required above.
- a. If, as determined by the City Representative, the requirement for the noise-control plan arises during the course of construction, such as through the contractor's exceedances of these noise standards and/or by the contractor's inability to apply one or more of these controls, the Contractor shall be directed by the City Representative to cease the use of equipment that is responsible for exceedances. The contractor may resume the use of such equipment after the noise-control plan is approved and all its provisions are enacted. The City will not be responsible for any financial consequences to the contractor of such work slowdowns or stoppages.
- B. Contractor shall implement sufficient best-available control techniques to ensure that noise generated by each piece of powered construction equipment when in use is below the 80 dB(A) at 100 feet threshold. These may include but are not limited to any combination of the following:
1. The use of mufflers, intake silencers, ducts, engine enclosures and acoustic attenuating shields, barriers, or shrouds for construction equipment and trucks.
 2. The use of hydraulic or electric-powered in preference to diesel-powered construction equipment.
 3. The use of drilling equipment in preference to impact equipment whenever feasible.
 4. Installation of temporary improvements to the noise-reduction capability of adjacent buildings.

5. Erection of temporary plywood noise barriers around a construction sites, and construction of temporary or permanent noise barriers around staging areas, shafts, and flow-control construction areas.
 - a. Where temporary barrier units are joined together, the mating surfaces will be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, will be closed with material that completely closes the gaps, and dense enough to attenuate noise.
- C. Contractor shall locate stationary noise sources (e.g., ventilation fans, generators, dewatering pumps) as far away from the perimeter of the construction area as feasible and away from residential and commercial uses. Contractor shall enclose equipment such as large compressors, generators, and large dewatering pumps at a minimum in 1-inch-thick plywood sheds. Openings in these enclosures will face inwards towards the center of the project-construction area.
- D. Contractor shall direct all truck traffic to designated truck routes that avoid areas that are predominantly residential areas to the extent feasible.
- E. The City will periodically monitor the effectiveness of noise attenuation measures by taking noise measurements. In the event that noise exceedances are recorded, the Contractor shall modify existing or implement better attenuation controls for any construction equipment or activities that generated the excessive noise levels. Contractor shall subsequently perform further periodic inspections and monitoring to confirm that the modified noise control minimization measures are effective.
 1. When directed by the City Representative, the Contractor shall submit a noise-control plan for review and written approval if, in the sole determination of the City Representative, modified noise control minimization measures are not effective. In the event that a noise-control plan is required, the Contractor shall be directed by the City Representative to cease the use of equipment that is responsible for exceedances. The contractor may resume the use of such equipment after the noise-control plan is approved and all its provisions are enacted. The City will not be responsible for any financial consequences to the contractor of such work slowdowns or stoppages.
- F. Contractor shall post signs on-site pertaining to permitted construction days and hours and noise complaint procedures and who to notify in the event of a problem, with telephone numbers listed. Contractor shall provide to the City Representative photographic documentation that the signage has been posted.
 1. All noise complaints received will be documented in the Noise Complaint Log. At a minimum the following information will be documented in the log: date of complaint, contact information for person providing a noise complaint, reason for the complaint, action taken and/or resolution. Additionally, an email will be sent to the City Representative within 48 hours with an explanation of the corrective measures taken, if applicable.
 2. Complaint Logs will be maintained up to date and will be submitted to the City Representative monthly and upon request.
 3. In the event that noise complaints are reported, the Contractor in consultation with the City take all reasonable steps to resolve the complaint and the noise impact, including additional monitoring as required, and modify or implement better attenuation controls for any construction equipment or activities that generated the

excessive noise levels. Contractor shall subsequently perform further periodic inspections to confirm that the modified Noise Control Minimization measures are effective.

3.08 NATURALLY OCCURRING ASBESTOS (NOA)

- A. The Contractor is informed that any areas of serpentine, serpentinite, or other ultramafic rocks containing Naturally Occurring Asbestos (NOA), as known through USGS map, soil assessment, soil sampling or other information, are shown on the project drawings. For all work in these areas, the Contractor shall adhere to the provisions of California Code of Regulations § 93105, Title 17, California Code of Regulations - Asbestos Airborne Toxic Control Measure (ATCM) for Construction and Grading Operations and CCR Title 8, Section 1529, Asbestos.
- B. If the Contractor disturbs, grades or excavates more than one acre (43560 sq. ft.) of area mapped as containing NOA, such construction may not be implemented without first obtaining written approval by BAAQMD of Asbestos Dust Mitigation Plan and written approval of the City Representative.
 - 1. In the event that a project change order results in an exceedance of this threshold, no project ground disturbance, grading, or excavation may occur without first obtaining written approval by BAAQMD of Asbestos Dust Mitigation Plan (ADMP), implementation of the ADMP, and written approval of the City Representative.
- C. At no cost to the City, the Contractor shall hire an experienced Certified Industrial Hygienist (CIH) to serve as Cal/OSHA Asbestos Class II asbestos operations Asbestos Competent Person (ACP)
 - 1. The ACP shall train contractor's and subcontractors' workers and tradespeople who may come into contact with serpentine, serpentinite, or other ultramafic rocks containing Naturally Occurring Asbestos (NOA) for Class II work activity level as per the Cal/OSHA standard 8 CCR § 1529.
 - 2. The ACP shall be present at the work site in compliance with requirements specified in the Cal/OSHA standard 8 CCR § 1529, and whenever work is conducted where serpentine, serpentinite, or other ultramafic rocks containing Naturally Occurring Asbestos (NOA) is present.
 - 3. The ACP shall enforce the dust-control provisions of these specifications.
- D. Before work in areas of NOA shown on drawings which intersect with areas of roadway construction and maintenance which require the disturbance of soils by construction and grading, Contractor shall submit the Bay Area Air Quality Management District's (BAAMQD) "Notification Form for Road Construction and Maintenance Operations" to BAAMQD fourteen business days in advance of land disturbance of soils containing NOA.
- E. Unanticipated Discovery of Naturally Occurring Asbestos (NOA):
 - 1. If NOA is unexpectedly encountered after the project has started, the Contractor shall immediately notify the City Representative.
 - 2. The Contractor shall submit a notification to the BAAQMD no later than the next business day using the Asbestos Dust Mitigation Plan (ADMP) Discovery Notification Form found at the link below:

http://www.baaqmd.gov/~media/Files/Compliance%20and%20Enforcement/Asbestos/admp_discovery_application.ashx?la=en, and followed by email to the BAAQMD, and at the same time provide the City Representative with the project details.

3. The Contractor shall immediately implement the provisions of (3), above. The contractor may continue Work with the City Representative's written approval once these have been implemented.
4. Any measures imposed by the BAAQMD pursuant to the submittal of the ADMP Discovery Notification will be provided to the City Representative and implemented by the contractor within 24 hours of receipt.

3.09 ASBESTOS DUST MITIGATION PLAN

- A. If the Contractor by its means and methods disturbs, grades or excavates more than one acre (43560 sq. ft.) and the site is known through USGS map assessment, soil sampling or other information indicating that the project will be disturbing NOA, as shown on project plans, the following indicated control, administrative, reporting and submittal requirements will apply.
 1. Sixty days (60) days before commencement of grading, and excavation activities, the Contractor shall submit to the City Representative an Asbestos Dust Mitigation Plan (ADMP) for the City Representative's review.
 2. Upon City Representative written approval, the Contractor shall submit the ADMP, the ADMP application, and the BAAQMD Regulation 3 Fees to the APCO for its review and approval. The Contractor shall furnish all information required by the BAAQMD to amend and finalize the ADMP. The Contractor shall not be reimbursed for the BAAQMD Regulation 3 Fees.
 3. No soil disturbance, construction or grading will commence unless the ADMP and its amendments is approved by the BAAQMD. Prior to commencement of any grading and excavation activities, the Contractor shall implement the Asbestos Dust Mitigation Plan (ADMP), throughout the construction or grading activity. The Contractor shall implement the ADMP at the beginning and maintained throughout the duration of the project construction throughout the entire site.
 4. The Contractor at its own cost will furnish all labor, equipment, and means required to prepare and implement the ADMP, conduct the ambient and perimeter air monitoring as required by the BAAQMD's terms of approval of the ADMP and California Code of Regulations, Title 17, Section 93105. The Contractor shall incorporate in its schedule the time it will take for the BAAQMD to review and approve the ADMP application and the ADMP. The Contractor shall take into account and incorporate in its schedule the time it will take for the BAAQMD to review the storage and staging locations, etc., for the final approval of the ADMP. Any fines imposed on the City by the BAAQMD as a result of the Contractor's negligence will be passed on to the Contractor.
 5. The Contractor, at no cost to the City, will perform perimeter air monitoring for asbestos at the project site during its soil disturbance activities for the duration of the project. This will be in accordance with the approved ADMP. All record keeping and reporting will be submitted to the BAAQMD on a weekly basis or as per a reporting schedule requested by BAAQMD.

3.10 NIGHT WORK

- A. If Contractor is directed in the Contract Documents or by special written notice from the City Representative to perform any part of the work between the hours of 8 p.m. and 7 a.m. or on weekends or holidays, the Contractor shall comply with all of the following:
1. Lighting Controls
 - a. Lighting systems with flood, spot, or stadium type luminaires will be aimed downward at the work and rotated outward no greater than 30 degrees from nadir (straight down).
 - b. When, in the opinion of the City Representative, the lighting is disturbing adjoining property, Contractor shall modify the lighting arrangement or add hardware to shield the light trespass.
 - c. When working adjacent to marine environments (the Pacific Ocean, San Francisco Bay, tidal inlets of the Bay), artificial lighting of the construction area during nighttime hours will be minimized to the maximum extent practicable without substantial impairment of Workers' Safety and Working conditions. The Contractor shall at least two weeks in advance of the beginning of construction submit a lighting plan demonstrating that all lighting will be directed away from the marine environment and natural areas for written approval by the City Representative.
 2. Noise controls:
 - a. Contractor must obtain and comply with a City noise permit pursuant to Police Code Section 2908 prior to starting any work between the hours of 8 p.m. and 7 a.m. Contractor must apply for City noise permits through the City Representative at least 15 working days in advance of night (i.e., between 8:00 p.m. and 7:00 a.m.), weekend, and holiday work. The requirements of the Contract Documents, including safety requirements, will apply for all night, weekend, and holiday work performed. The noise permit will be obtained from and approved by Bureau of Street Use and Mapping, 49 South Van Ness Ave, Suite 1600, San Francisco, CA 94103.
 - b. The use of vehicles for night work that are legally required to be equipped with backing warning alarms will be reduced to the extent feasible for night work, and administrative controls as defined in the California Code of Regulations, Title 8 Sec. 1592 will be used for worker protection for backing movements by other vehicles.
 - c. Contractor shall not perform work between the hours of 8:00 p.m. and 7:00 a.m. of the following day if the noise level created thereby is in excess of the ambient noise level by 5 dBA at the nearest property line, unless approved by the City Representative and unless a noise permit for such work has been obtained pursuant to the Police Code Section 2908.

3.11 ENVIRONMENTALLY SENSITIVE AREA (ESA)

- A. Contractor is advised that area(s) within or near construction limits where access is prohibited or limited in order to protect environmental resources are noted in the contract drawings.

1. Contractor shall implement Caltrans temporary fence Type ESA at the entire perimeter of any ESA -- Biology as shown on plans.
2. Contractor shall prevent personnel and equipment from entering the ESA.
3. Contractor shall coordinate methods for avoidance intrusion into ESAs with the City Representative and provide written and photographic documentation of these methods.

3.12 BIRD PROTECTION

- A. Work will be performed in a manner that complies with the Migratory Bird Treaty Act (MBTA) and California Department of Fish and Game Code Section 3503, 3503.5, and 3513 (in addition to the Federal Endangered Species Act and California Endangered Species Act for listed birds).
 1. Contractor is advised that is unlawful under the California Fish and Game Code at §3503 to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by California Code. Contractor is advised that it is unlawful under the California Fish and Game Code at §3503.5 to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by California Code.
- B. Where construction work begins in advance of the bird-nesting season (February 15 through August 31), Contractor shall be responsible for passively deterring birds from establishing active nests within the work area during construction, including on equipment. Methods for doing so may include, but are not limited to, installing bird deterrents (e.g., flash tape, false eyes, and audio deterrents), covering equipment with bird netting when not in use, and minimizing onsite attractants like slash or debris piles. Deterrents will be installed during the non-nesting season (September to February 14), unless otherwise approved by the City Representative.
 1. Before trimming or removing trees, shrubs, and vegetation and/or performing structure alteration during bird nesting season (February 15 through August 31), a Qualified Biologist must be obtained by Contractor to provide a pre-construction survey for nesting bird that may be affected during construction work.
 2. Surveys must be conducted within the 14 days before the proposed onset of this activity. If initiation of construction is delayed beyond the two-week timeframe, the survey will be repeated. If construction activities begin in different areas at different times or there are periods of more than two weeks when no work is being conducted, additional surveys will be conducted by the Qualified Biologist in each area before work accordingly.
 3. Contractor shall be responsible for coordinating with City Representative on schedule and confirming that surveys have been completed prior to initiation tree, shrub, and vegetation removal during this time. There will be no cost to the City (time or schedule) if there is a delay in the start of work at any location due to Contractor's providing inadequate time for a City Specialty Biological Monitor to perform required survey.

4. Migratory bird surveys will be performed within 250 feet of the construction area boundaries for nesting passerines and 500 feet for nesting raptors, as allowed by landowner access.
 5. If no active nests are detected during surveys, then no additional mitigation is required.
 6. If inactive nests (do not contain eggs, chicks, or raptors appear to be establishing a nest) are identified and removal is authorized in writing by the City Representative, Contractor shall provide equipment and labor to remove the nest. Contractor shall assume the support of a man lift for 5 working days.
 7. If active bird nests are identified by the Qualified Biologist, no work may occur at that tree or structure and in the surrounding area:
 - a. For active nests found in trees, a 100-foot exclusion buffer of temporary fencing will be erected around the tree with the active nest,
 - b. For active nests found on bridges, a 100-foot exclusion buffer will be established around the nest site, and no work may occur within the 100-foot buffer until the Certified Biologist has verified that young birds have left the nest and that active nesting has been completed.
 - c. For any active nests containing raptor species, the exclusion buffer will be 300-feet.
 8. If Contractor shall immediately upon finding an injured or dead bird or discovering migratory or nongame bird nests within or adjacent to limits of project construction:
 - a. Stop all work within a 100-foot radius of the discovery.
 - b. Notify the City Representative.
 9. If active nests are detected, construction will not occur within 50 feet of any passerine nest or within 300 feet of any active raptor nest, unless otherwise allowed by the City biologist.
- C. Contractor shall perform one or a combination of the following protection measures as required to prevent further nesting by birds in trees or structures during project construction:
1. Install exclusion devices
 2. Use nesting-prevention measures
 3. Remove and dispose of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation.

3.13 BAT PROTECTION

(Not Applicable)

3.14 TREE PROTECTION

- A. 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 will 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. Adjustments to the type and extent of the protection will be addressed at the time of the meeting.
1. Contractor shall coordinate the meeting and inform all parties in writing (5) business days in advance of the scheduled meeting.

- B. Contractor's equipment will arrive on the project site clean of soil, seeds, and plant parts. Before tracked and heavy construction equipment leaves the project site, any accumulation of plant debris, soil and mud will be washed off the equipment or otherwise removed onsite, and air filters will be blown out. This will be done in a manner that allows for collection of any plant debris, soil and mud for off-site disposal to prevent the spread of weeds.
- C. The Contractor shall implement the following practices and measures to prevent damage to trees within the area of work:
1. Vehicles and equipment will be operated in such a manner as to avoid damage to tree and bush trunks, leaves and branches. Do not damage trees or landscaping by maneuvering of vehicles or equipment, stacking of materials and equipment, or storage of vehicles, equipment, or supplies.
 2. Pruning of trees will be performed in conformance with the City of San Francisco Pruning Standards for Trees (June 27, 2006) (available at [://sfpublishing.org/sites/default/files/234-SF_Pruning_Std_6.27approved.pdf](https://sfpublishing.org/sites/default/files/234-SF_Pruning_Std_6.27approved.pdf)), only as authorized by the City's Bureau of Urban Forestry, and under the supervision of the qualified arborist. Thinning will not remove more than thirty percent (30%) of the existing leaf surface.
 3. Do not place 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.
 4. Do not change site grades which cause drainage to flow into or to collect near protected trees.
 5. Do not use protected trees as support posts, power poles, crane stays, sign posts, or anchorage for ropes, guy wires, power lines, or other similar functions.
 6. Do not damage trees through exposure to excessive water or heat from equipment, utility line construction, or burning of trash under or near shrubs or trees.
- D. Contractor shall implement the following practices and measures to prevent damage to tree roots:
1. The Contractor's vehicles and equipment will not be driven off-road except along designated routes as far away as practical from tree root zones.
 2. Contractor is prohibited from stockpiling any excavation or construction materials within the canopy of trees, on lawn areas or near shrubs.
 3. Excavated material (fill and overlay) will not be deposited under the leaf/needle canopy of established trees. The excavated material will be placed in piles along one side of a paved surface. In no case will the Contractor place the excavated material closer than 6-feet from the base of a tree.
 4. Contractor shall immediately clean and remove any construction residue that falls within the canopy of a tree or near shrubs.
 5. Contractor shall exclude grading or placement of heavy equipment within the drip line of trees on or adjacent to the site, unless approved by the City Representative. If approved by the City Representative, Contractor's arborist will recommend and Contractor shall implement measures to protect the tree (e.g., protecting the roots

- from compaction). Contractor shall be responsible for replacing any damaged trees as directed by the City Representative.
6. The Contractor shall tunnel around roots where practical; otherwise, roots will be cut off approximately six inches (6") from construction.
 - a. Do not rip or tear roots. Prune injured roots cleanly and backfill as soon as possible.
 - b. If trimming of roots greater than 2-inches in diameter or fibrous root bundles of similar diameter is necessary during the course of construction, a Qualified Arborist provided by the Contractor shall supervise the trimming of such roots.
 - c. If immediate backfill is not possible, exposed roots will not be allowed to dry out before permanent backfill is placed. Temporary earth cover will be provided, or exposed roots will 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.
 7. Do not induce damage to tree root systems from flooding, erosion, excessive wetting or drying resulting from dewatering or other operations.
 8. The Contractor shall observe the following restrictions on underground trenching in the vicinity of trees:
 - a. The Contractor is prohibited from using powered (?) equipment for trench and excavation work within the tree drip line or where root intrusion exists on asphalt pathways to be reconstructed without written approval from the City Representative prior to start of such excavation work. A Certified Arborist will be retained as needed to provide written direction at the Contractor's expense.
 - b. When excavating or trenching within the canopy of trees to remain, the Owner will be given 48 hours' notice.
 - c. Trenching within the canopy of trees may not proceed without a professional arborist present to perform compensatory root and branch pruning.
 - d. 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 will 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.
 - e. 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 will 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.
 - f. The Contractor shall bend and/or transition underground conduit and piping so that the conduit or piping will thread between tree roots.

- g. When possible, trenches will not be run of the side of the tree exposed to prevailing winds as roots are primarily anchored on the windward side. Trenches will not be cut across more than one quadrant of the tree root zone.
 - h. 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.
 - i. In bidding the work, the Bid Items which include piping and conduit trenching work will include the use of machinery that will not extend above 10-feet vertically for 5% of the linear trenching performed.
 - j. Trenching to a maximum of 3-feet as measured horizontally may be executed without written approval at any for the placement of pipe fittings and quick couplers at any location outside the drip line of any tree.
9. Trees to be preserved within the work area will be protected as follows:
- a. 6-foot tall temporary tree protection composed of 2x4s will be constructed to surround the outer edge of the tree basin.
 - b. 2x4s will be mounted on 2-inch diameter galvanized iron posts will be anchored into the soil on opposite corners of the guard and driven into the ground to 2-foot depth, avoiding any roots greater than 2-inches in diameter.
 - c. 2x4s will be installed as a toe board surrounding the base of the tree protection for ADA compliance.
 - d. Orange snow fencing will be placed around the tree protection.
 - e. Refer to Appendix 'A' for additional information.
10. Contractor shall install on all trees within a band extending six feet past the limits of construction hay bales or rolls of erosion control wattling, secured around trunk to a height of 6 feet, or as otherwise directed by the City Representative.
- E. Contractor is in informed that San Francisco is a Quarantine County for the Sudden Oak Death pathogen *Phytophthora* and that where trees of the following species are known by the contractor to be removed, or marked on the plans as intended for removal, by grubbing or otherwise, or pruning -- Coast Live Oak (*Quercus agrifolia*), Canyon Live Oak (*Quercus chrysolepis*), California Black Oak (*Quercus kelloggii*), Shreve's Oak (*Quercus parvula* var. *shrevei*), Tanoak (*Notholithocarpus densiflorus*), California bay laurel (*Umbellularia californica*) -- the following precautionary measures against the spread of *Phytophthora* will apply.
- 1. Plants of species that may harbor *Phytophthora* will be chipped on site and the chips spread at the location of the same trees and/or shrubs that produced the debris. This plant debris may not be used for any purpose at any other location.
 - 2. If spreading on site is not possible, materials will be disposed of in landfill or at an industrial-scale composting facility. Contractor shall provide documentation of such disposal to the City Representative.

3. For sites identified as potentially harboring *Phytophthora*, Contractor shall ensure that the following actions are performed:
 - a. All workers scrape, brush, and/or hose off accumulated soil and mud from clothing, gloves, boots, and shoes before leaving the site.
 - b. Mud and plant debris are removed by blowing out or power washing chipper trucks, chippers, bucket trucks, fertilization and soil aeration equipment, cranes, and other vehicles before leaving the site.
 - c. Soil and mud are removed or washed off from on vehicle tires, boots, shovels, stump grinders, trenchers, etc., before use at another site.
 - d. Tools used in tree removal/pruning are disinfected with Lysol® spray, a 70% or greater solution of alcohol, or a solution consisting of 1 part household bleach to 9 parts water before leaving the site.

3.15 SITE RESTORATION

- A. Contractor shall furnish all material, labor, equipment, and service necessary to revegetate disturbed areas whose surface is not otherwise converted to gravel, pavement, new landscaping as indicated on plans, or new facilities.
- B. Contractor shall strip and dispose of at an offsite location the top three inches of soil from work areas where soil will be left exposed after the conclusion of construction. Any remaining topsoil below this depth up to 12 inches deep generated during site grading and/or excavation will be stockpiled separately onsite for reuse during revegetation. All topsoil stockpiles will be covered with plastic and labeled while stored onsite to avoid improper use or disposal.
- C. Any imported fill material, soil amendments, gravel etc., required for construction and/or restoration activities that would be placed in the upper 12 inches of the ground surface will be free of vegetation and plant material. Certified, weed-free, imported erosion-control materials (or sterile rice straw in upland areas) will be used exclusively.
- D. Revegetation
 1. All seed will comply with the California Seed Law of the Department and Agriculture. Seed materials will meet all applicable inspections required by law. No non-native or invasive species will be used in any restoration seeding.
 2. Seeding will occur between September 15 and December 15 unless otherwise approved by the City Representative.
 3. Prior to hydroseeding, Contractor shall prepare disturbed areas whose surface is not otherwise converted to gravel, pavement, or new facilities as seed beds, including:
 - a. Scarifying and decompacting soils to a depth of no less than 12 inches;
 - b. Removing rocks greater than ½ inch and removing weeds;
 - c. Restoring stockpiled topsoil; and

- d. Incorporating sufficient compost to restore the area to original grade after having been trackwalked. Compost producers must be permitted by the Department of Resources Recycling and Recovery, Local Enforcement Agencies, and any other State and local agencies that regulate solid waste plants. If exempt from State permitting provisions, the composting plant must certify it complies with the guidelines and procedures for production of compost under 14 CA Code of Regs § 17868. Compost producers must be participants in the United States Composting Council's seal of testing assurance program.
- e. Commercially obtained seed will be labeled according to state and federal laws, under the California Food and Agricultural Code, and by the vendors supplying the seed. Seed will be delivered to the project site in unopened supplier's sealed containers bearing original certification labels and the seed tag attached. Containers opened prior to inspection or without a label or tag will not be accepted. Each seed bag will be delivered to project site sealed and clearly marked as to the species, purity, percent germination, weed seed, inert material, dealer's guarantee, and date of test.
- f. Contractor shall store seed in a cool dry location away from moisture and contaminants. Seed materials will be stored on site for no longer than two weeks. All storage locations will be subject to City Representative's written approval.
- g. Seed will be state-certified of the latest season's crop. Seed will be delivered in original sealed packages bearing producer's guaranteed analysis for purity, germination, weed seed content, and inert material. Seed bags will include manufacturer's tags in conformance with AMS Seed Act and applicable state laws. Wet, moldy, or otherwise damaged seed will be rejected by the City Representative.
- h. Seed will have been tested for purity and germination not more than (15) fifteen months prior to the application of the seed.
- i. Seed shall be of stock origination from within the San Francisco Bay Area Counties (San Francisco, San Mateo, Santa Cruz, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, Marin). Seed suppliers include Pacific Coast Seed, Livermore, CA (925) 373 4417; Larner Seed, Bolinas, CA(415) 868 9407; Hedgerow Farms, Winters, CA (530) 662-6847; and others.
- j. The minimum quantity of seed to be applied shall be the quantities for each species (in pounds per acre) recommended by the seed supplier, mixed proportionally, which must be stated on the supplier's original label(s) on the original sealed packages.
- k. Seed mix shall be as specified in column A "SEED MIX", below. If one or more species of grass, wildflower, and/or subshrub is not readily available, contractor may substitute a species of grass, wildflower, and/or subshrub from column B "SUBSTITUTIONS" below. For linear areas of restoration, such as may be required to restore areas following trenching, less than 4' in width, subshrub species may be omitted. Other modifications to the seed mix may be made if approved by the City Representative. Contractor shall allow at least 14 working days for written approvals to modifications to the seed mix.

- I. Seed shall be a minimum of 70 percent Pure Live Seed and 80 percent Germination unless otherwise approved by the City Representative.

4. SEED MIX

A: SEED MIX

Achillea millefolium (Yarrow, wildflower)
Acmispon glaber (deerweed, subshrub)
Artemisia californica (California sagebrush, subshrub)
Bromus carinatus (California brome, grass)
Elymus glaucus (Blue wildrye, grass)
Eschscholzia californica (California poppy, wildflower)
Festuca microstachys (Small fescue, grass)
Hordeum brachyantherum (California meadow barley, grass)
Lupinus bicolor (annual lupine, wildflower)
Stipa pulchra (Purple needlegrass, grass)

B: SUBSTITUTIONS

Chlorogalum pomeridianum (amole, soap plant, wildflower)
Diplacus aurantiaca (sticky monkeyflower, wildflower)
Eriogonum nudum (Naked buckwheat, subshrub)
Grindelia stricta var. *platyphylla*, (beach gum daisy, wildflower)
Hordeum brachyantherum (California meadow barley, grass)
Iris douglasiana (Douglas iris, wildflower)
Lupinus microcarpus (chick lupine, wildflower)
Phacelia californica (California phacelia, wildflower)
Scrophularia californica (California bee plant, wildflower)
Trifolium ciliolatum (foothill clover, wildflower)
Trifolium wormskioldii (cow clover, wildflower)

5. Tackifier shall be applied as part of the hydroseed slurry if hydroseed method is employed. If broadcast seeding method is employed, tackifier or sterile straw may be applied after seeding.
 - a. Mixing shall be performed in a tank with a built-in, continuous agitation and recirculation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system that will apply the slurry at continuous and uniform rate. The tank shall have a minimum working capacity of 700 gallons. The City Representative may authorize in writing the use of equipment of smaller capacity if it is demonstrated that such equipment is capable of performing all the operations satisfactorily. Mixing shall be performed in the presence of the Contractor's QC Manager and City Representative. Bags of materials used in the mix shall be submitted to the City Representative.
 - b. Water, fiber, stabilizing emulsion and other ingredients except seed shall be added to the tank simultaneously so that the finished load is a homogeneous mix of the specified ingredients. Seed shall be added last and shall be discharged within 1 hour. If mixture remains in tank for more than 1 hour, it shall be removed from the job site and replaced at the seeding contractor's expense. Once fully loaded, the slurry shall be agitated for 5 minutes to allow for uniform and thorough mixing. The slurry shall have the proper consistency to adhere to the soil even on slopes without clumping or running. Slurry shall be uniformly applied in a sweeping motion under pressure over

the entire designated area to form a mat. The hydroseeded area shall not be rolled.

- c. Seed and tackifier shall be applied to the disturbed areas in one operation at rates of 50 pounds per acre and 90-120 pounds per acre, respectively. At all times, materials shall be kept uniformly mixed in the hydromulcher tank during the application operation.
6. For areas greater than 2,500 sq feet, hydroseeding shall be utilized, but for areas under 2,500 sq feet, Contractor shall broadcast seed, rake in the seed in two directions and cover with 1 inch layer of compost.

3.16 PALEONTOLOGICAL RESOURCES

- A. If unanticipated paleontological resources are discovered at the job site, do not disturb the resources and immediately:
 1. Stop all work within a 50-foot radius of the discovery.
 2. Secure the area.
 3. Notify the City Representative. The City Representative will investigate the discovery and modify the dimensions of the secured area if needed. The Contractor shall not move paleontological resources or take them from the job site. The Contractor shall not resume work within the radius of discovery until authorized in writing.
 4. For Work suspensions as a result of a suspension under this subsection there will be no compensation to Contractor for any delays up to a total of 20 working days due to the City's order to suspend Work. Cost or time impacts as a result of a suspension under this subsection longer than a total of 20 days, or for additional avoidance and minimization measures, will be resolved as provided in the General Conditions. Refer to Article 6 for Changes and Article 13 for Claims.

3.17 HUMAN REMAINS

- A. If the body of a deceased human being in any stage of decomposition or completeness is encountered, all work in the area must halt and the San Francisco County Coroner must be contacted, pursuant to California Public Resources Code Sections 5097.98, and 5097.99. For Work suspensions as a result of a suspension under this subsection there will be no compensation to Contractor for any delays up to a total of 20 working days due to the City's order to suspend Work. Cost or time impacts as a result of a suspension under this subsection longer than a total of 20 days, or for additional avoidance and minimization measures, will be resolved as provided in the General Conditions. Refer to Article 6 for Changes and Article 13 for Claims.

3.18 ARCHAEOLOGICAL RESOURCE PROTECTION

- A. Any soil disturbing activities below a depth of two feet below ground surface will be preceded by the distribution by Contractor of the San Francisco Planning Department archeological resource "ALERT" sheet to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soil

disturbing activities within the project site, and all field personnel, including machine operators, field crew, pile drivers, supervisory personnel, etc..

1. Following the distribution of the "ALERT" sheet, Contractor shall provide City Representative with a signed affidavit confirming that all field personnel have received copies of the "ALERT" sheet.
 - a. The "Alert" sheet and affidavit are available for download at:
<https://www.sfpublishworks.org/services/project-manual-and-reference-documents>
 2. If potential subsurface archaeological resources are discovered at the site, the contractor promptly report their discovery to the City Representative. Subsurface archaeological finds may include any of the following:
 - a. Concentrations of shellfish remains
 - b. Evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks)
 - c. Concentrations of bones
 - d. Recognizable Native American artifacts (arrowheads, shell beads, stone mortars (bowls), humanly shaped rock)
 - e. Building foundation remains
 - f. Trash pits
 - g. Privies (Out-house holes)
 - h. Floor remains
 - i. Wells
 - j. Concentration of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.
 - k. Debris from the Great 1906 Earthquake and Fire (thick layers of burned building debris, charcoal, nails, fused glass, burned plaster, burned dishes, etc.)
 - l. Wood structural remains (building, ship, wharf, etc.)
 - m. Clay roof/floor tiles
 - n. Stone walls or footings
 - o. Gravestones
 3. The City Representative will issue a written order to suspend work in accordance with Paragraph 14.02 of the General Conditions directing Contractor to cease all construction operations only at the location of the potential cultural resources find to allow the City Representative to assess the significance of the find.
 4. The Contractor shall comply with any additional avoidance and minimization measures specified by the City Representative to minimize potential effects on cultural resources, which may include additional site security.
 5. For Work suspensions as a result of a suspension under this subsection there will be no compensation to Contractor for any delays up to a total of 20 working days due to the City's order to suspend Work. Cost or time impacts as a result of a suspension under this subsection longer than a total of 20 days, or for additional avoidance and minimization measures, will be resolved as provided in the General Conditions. Refer to Article 6 for Changes and Article 13 for Claims.
- B. Where any soil-disturbing activity below the depth specified in a. below is to occur within an area noted and depicted on project drawings as an area of particular archaeological sensitivity for which monitoring is required, a Specialty Environmental Monitor – Archaeologist, provided by the City, will be present to conduct monitoring for the presence of potential archaeological resources.

1. Archaeological monitoring is required for any ground disturbance below [2 feet] of the existing ground (paved or unpaved) surface.
2. Contractor shall be responsible for confirming that the required Specialty Environmental Monitor – Archaeologist is on-site as required prior to performing said work.
3. Contractor shall inform the City Representative a minimum of ten business days in advance of the required presence of the Specialty Environmental Monitor – Archaeologist.
4. In the event that the ground disturbance for which the presence of the Specialty Environmental Monitor – Archaeologist is required is rescheduled, Contractor shall inform the City Representative a minimum of 72 hours in advance.
5. The Specialty Environmental Monitor – Archaeologist may order the contractor to cease work if a potential archaeological resource is detected. The City Representative will subsequently issue a written order to suspend work in accordance with Paragraph 14.02 of the General Conditions directing Contractor to cease all construction operations only at the location of the potential cultural resources find to allow the City Representative to assess the significance of the find.
6. The Contractor shall comply with any additional avoidance and minimization measures specified by the City Representative to minimize potential effects on cultural resources, which may include additional site security. The contractor is advised that the discovery of unique archaeological resources may entail extended periods of work suspension.
7. For Work suspensions as a result of a suspension under this subsection there will be no compensation to Contractor for any delays up to a total of 20 working days due to the City's order to suspend Work. Cost or time impacts as a result of a suspension under this subsection longer than a total of 20 days, or for additional avoidance and minimization measures, will be resolved as provided in the General Conditions. Refer to Article 6 for Changes and Article 13 for Claims.

3.19 HISTORIC CULTURAL RESOURCE PROTECTION

- A. Contractor shall protect historic buildings, structures, and other historic resources shown and labeled on drawings that are adjacent to, or in the right-of-way adjacent to or occupied by, the project.
 1. Unless otherwise specified in the drawings, the Contractor shall place barriers, such as sheets of plywood, at the facades of historic buildings, historic structures, and other historic resources to insulate them from possible damage from construction activities.
 2. Barriers must be sufficient to prevent accidental damage to the historic building or structure. Suitability of barriers will be determined by the City Representative.
 3. All distinctive sidewalk elements such as brick surfacing, brick gutters, granite curbs, cobblestones, non-standard sidewalk scoring and streetscape elements such as terrazzo finishes, sidewalk lights, and special sidewalk finishes that appear to be 45 years or older are potential historic resources and will be protected in place, salvaged and re-installed, or replaced in kind to match the character of the existing condition

as shown on the drawings and/or found in place. Contractor shall avoid damaging and protect in place any features described above and will notify the City Representative of any feature not identified on the drawings that is in conflict with the proposed work.

- B. The Contractor shall comply with San Francisco Public Works Orders for the restoration of granite (granodiorite) curb in historic districts and the preservation of existing granite curb and existing surficial bricks and cobblestones.
1. Compliance information shown on project drawings:
 - a. All existing granite curb, and existing surficial bricks and cobblestones, within the area of proposed curb-and-gutter work is shown on project construction drawings
 - b. The areal extent of All National Register of Historic Places historic districts, California Register of Historical Resources historic districts, and historic districts as identified by San Francisco Planning Code Articles 10 and 11 districts, for which the period of historic significance is coeval with the period of use of granite as a curb material by the City of San Francisco is shown on the project construction drawings.
 - c. The Contractor is hereby informed that the following limits of work are located within a historic district as shown on plans:
 - 1) [List applicable historic districts]
 2. Except as noted below, all linear sections of curb, including driveways, within the project limits within the limits of a historic district, regardless of existing condition, will be restored using granite salvaged during demolition of the existing curb, supplemented with replacement granite sections, regardless of whether the curb line has moved.
 - a. Granite curb within the boundaries of a historic district will only be replaced with concrete curb for new curb ramp radius construction, or as part of new linear and radius curb sections of new curb corner extensions installed for traffic calming ("bulb-outs").
 - b. A corner extension that extends for longer than the minimum distance required for the installation of corner ADA curb ramps is considered sidewalk widening; such sections will require the installation of granite curb.
 - c. No granite, cobblestones, or brick gutter will be restored within a pedestrian accessible route (PAR) (see San Francisco Public Works Order No: 200369).
 3. Any granite curb section not within a historic district will be salvaged and reset in the location from which it was salvaged. If the curb line is moved as a result of the project, the salvaged granite curb will be reset parallel to its previous location. Salvaged granite curb is not required to be used on new linear and radius curb sections of new curb corner extensions ("bulb-outs") and may not be reused within a PAR.
 4. Granite curb will be installed in sections a minimum of 4-feet in length. If a section of granite to be replaced or restored is less than 4' long, then the scope of work must be expanded so that the minimum length of any single length of granite installed by the Contractor or extant and retained in position is a minimum of 4' long.

5. Department stockpiles of salvaged granite curb, when available, are made available to the contractor upon application to the Department.
6. Specifications for new granite curb are as follows:
 - a. Material: Stone curb will be made from granite, free from defects or flaws that might impair its usefulness as curb.
 - b. Dimensions: Each piece of curb will be at least 4 feet long, 6 inches thick at top and bottom, and 16 inches deep.
 - c. Dressing: The top of the curb and its face for a depth of 6 inches will have a first-class peen-hammered finish. These surfaces will be true and properly squared and have no holes. A tolerance of 1/4 inch will be allowed in width of top of curb. The back of the curb, for a depth of 2 inches, will be pointed to a fair surface, free from inequalities exceeding 1/2 inch, when measured from a straight edge. The joints of the curb will show an even edge for a depth of 8 inches and will be kept full. The joints below the dressed portion will not be pitched more than 1/4 inch under square. The joints throughout the dressed portion of the ends will not exceed 1/4 inch. All edges bordering dressed surfaces will be sharply defined.
 - d. Where gutters are deeper than 6 inches, the face of the granite curb will be peen-hammered to the full depth of the gutter. The lower part of each stone will be roughly squared and will have an average thickness of not less than 6 inches at the bottom and at no point will the thickness be less than 4 inches.
 - e. The curb for corners will be cut to the prescribed curved lines, with joints on true radial lines. The joints between the several blocks of stones will not exceed 1/8 inch.
 - f. Previously salvaged granite curb that meets these specification is acceptable.
7. Except as noted above (PAR, bulb-outs), existing brick gutter shown on drawings will be salvaged and reset in its original location, and existing surficial cobblestones will be salvaged and reset in their original location.
 - a. Department stockpiles of salvaged brick will be made available to the contractor if available upon application to the Department. New replacement gutter brick will be brick of approximately the same dimensions and approximate color of the existing brick and will conform to ASTM standard specification C1272 – 17 for Heavy Vehicular Paving Brick Type R as well as meet criteria set forth in San Francisco Public Works guidance for slip resistance.
 - b. Other than brick gutter to be replaced/restored, no brick or cobblestone surfacing may be removed from the surface of the travel way without written approval by the City Representative.
8. The Contractor shall exercise care to minimize damage in transporting salvaged granite curb, brick, and cobblestones to be returned to the Department.
 - a. Minimum size of cobblestone to be returned will be 4 inches square (16 square inches). Bricks to be returned will be whole.

- b. The Contractor shall neatly and securely place the granite curb on pallets so it can be moved about safely after delivery. The cobblestones and/or brick will be neatly and securely placed on pallets so they can be moved about safely after the delivery.
 - c. The salvaged granite curb, bricks, and cobblestones that will not be reset will be delivered, including off loading, to a storage site within the City as directed by the City Representative within the City. Contact Maura Wayne at (415) 695-6672 and Jacob Nicol at (415) 725-1506, contractor needs to provide minimum forty-eight (48) hours prior notice, and delivery is limited to Monday through Friday 8:00 a.m. to 2:00 p.m. Contractor shall bring their own forklift for unloading.
 - d. During the course of the excavation, the brick and/or cobblestones will be cleaned of dirt, grout and/or concrete prior to transporting. Care will be taken during the transporting of the brick and cobblestones to minimize damage before delivery to City.
- C. Where historic buildings, structures or other historic resources are shown on the project drawings and labeled as requiring a vibration-monitoring program, Contractor shall submit a Vibration Control Plan to the City for review and written approval, to be fully implemented upon approval.
1. Contractor's vibration-monitoring personnel will include a Qualified Vibration Instrumentation Engineer. The Qualified Vibration Instrumentation Engineer may be on the staff of the Contractor or may be on the staff of a specialist subcontractor; however, the Qualified Vibration Instrumentation Engineer will not be employed nor compensated by subcontractors, or by persons or entities hired by subcontractors, who will provide other services or material for the project. The Qualified Vibration Instrumentation Engineer will:
 - a. Be on site and supervise the initial installation of each vibration-monitoring instrument.
 - b. Supervise interpretations of vibration-monitoring data.
 - c. Be subject to the review of the City Representative.
 2. The Contractor shall engage a Qualified Historic Architect or Historic Preservation Professional to document and photograph the properties that are the subject of the Vibration Monitoring Plan to ensure structural damage does not result from construction activities that could cause ground vibration.
 3. The vibration control plan will comprise the following activities, at a minimum:
 - a. The plan will establish peak particle velocity Threshold and Limiting Values to be implemented after written approval by the City Representative.
 - b. Contractor shall collect seismograph data prior to any vibration-producing demolition or construction activities to document background vibrations at each monitoring location. The background monitoring will be performed for a minimum of two non-consecutive workdays, spanning the hours during which demolition and construction activities will take place. Monitoring will consist of a continuous recording of the maximum single-component peak particle velocities for one-minute intervals, which will be printed on a strip chart.

- c. Contractor shall have seismographs in place and functioning at least 24 hours prior to any such activity as described in (c) within 200 feet of the monitoring locations. No significant vibration-producing activity will occur within this zone unless the monitoring equipment is functioning properly, as determined by the City Representative.
 - d. Contractor shall monitor vibration during demolition and other significant vibration-producing construction activities as set forth in the Vibration Control Plan. This monitoring will consist of a continuous recording of the maximum single-component peak particle velocities for one-minute intervals, which will be printed on a strip chart. During the monitoring, Contractor shall document all events that are responsible for the measured vibration levels and submit the documentation to the City Representative with the data.
 - e. All vibration monitoring data will be recorded contemporaneously and plotted continuously on a graph by the data acquisition equipment. Each graph will show time-domain wave traces (particle velocity versus time) for each transducer with the same vertical and horizontal axes scale.
 - f. The Contractor shall interpret the data collected, including making correlations between seismograph data and specific construction activities. The data will be evaluated to determine whether the measured vibrations can be reasonably attributed to construction activities.
 - g. The equipment will be set up in a manner such that an immediate warning is given when the peak particle velocity in any direction exceeds the Threshold Value in the previously submitted Vibration Monitoring Plan. The warning emitted by the vibration-monitoring equipment will be instantaneously transmitted to the responsible person designated by Contractor by means of warning lights, audible sounds or electronic transmission.
4. If the plan's Threshold Value is reached, Contractor shall:
 - a. Immediately notify the City Representative.
 - b. Meet with the City Representative to discuss the need for response action(s).
 - c. If directed by the City Representative during the above meeting that a response action is needed, submit within 24 hours a detailed specific plan of action based as appropriate on the generalized plan of action submitted previously as part of the vibration-monitoring plan.
 - d. If directed by the City Representative, implement response action(s) within 24 hours of submitting a detailed specific plan of action, so that the Limiting Value is not exceeded.
 5. If the plan's Limiting Value is reached, the Contractor shall:
 - a. Immediately notify the City Representative and suspend activities in the affected area, with the exception of those actions necessary to avoid exceeding the Limiting Value.
 - b. Meet with the City Representative to discuss the need for response action(s).

- c. If directed by the City Representative during the above meeting that a response action is needed, submit within 24 hours a detailed specific plan of action based as appropriate on the generalized plan of action submitted previously as part of the vibration-monitoring plan specified in Article 1.17B.
 - d. If directed by the City Representative, implement response action(s) within 24 hours of submitting a detailed specific plan of action, so that the Limiting Value is not exceeded.
6. The post-construction survey and monitoring results will be evaluated to determine whether the new structural and/or architectural damage was caused by vibration due to Contractor's performance of this Work. If, following completion of construction, changes in the architectural or structural conditions the properties that are the subject of the Vibration Monitoring Plan have occurred, Contractor shall restore the buildings to pre-construction conditions under the supervision of the Qualified Historic Architect or Historic Preservation Professional, and to the satisfaction of the City Representative.

3.20 SAN FRANCISCO ENVIRONMENT CODE CLEAN CONSTRUCTION REQUIREMENTS FOR WORK IN AN AIR POLLUTANT EXPOSURE ZONE (APEZ)

- A. The contractor is informed that as the project will use off-road powered construction equipment and is projected to last longer than 19 days, the following additional requirements of San Francisco Environment Code Chapter 25 apply. These requirements may be waived by the City Representative at the contractor's request if the City Representative determines the absence of sensitive uses as defined by the Environment Code within 1,000-feet of the project construction limits as shown on the project drawings and/or if the project requires a limited amount of Off- Road Equipment for a limited duration.
 1. All off-road (not highway legal) equipment will be fueled by biodiesel fuel grade B20 and have engines that (a) meet or exceed either United States Environmental Protection Agency or ARB Tier 2 off-road emission standards, and (b) have been retrofitted with an ARB Level 3 VDECS. Equipment with engines meeting Tier 4 Interim or Tier 4 Final off- road emission standards automatically meet this requirement.
 2. The Contractor may request through the City Representative to waive specific equipment requirements and/or the alternative source of power requirement under the conditions specified in the Environment Code. Requests for such waivers must be provided to the City Representative no fewer than two weeks prior to the planned use of a specific piece of off-road equipment and must be accompanied by conclusive substantiating information. Waivers are granted at the sole discretion of the San Francisco Public Works Director. If the contractor is granted a specific equipment requirement waiver, the Contractor must use the next piece of off-road equipment as specified by the step-down schedule in the Environment Code. The department will provide no compensation to the contractor for any consequences of the denial of a waiver request.
- B. Contractor shall submit a Construction Emissions Minimization Plan ("Emissions Plan") to the City Representative for review and written approval for compliance with Chapter 25 of the San Francisco Environment Code.
- C. Contractor shall submit its initial Construction Emissions Minimization Plan ("Emissions Plan") no less than 28 days prior to mobilization. The Emissions Plan will state, in

reasonable detail, how the Contractor shall meet the requirements of Section 2505 of the Environment Code.

1. The Emissions Plan will include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for each Construction Phase.
 2. The description shall include, but is not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.
 3. For the VDECS installed, the description may include, but is not limited to technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date.
 4. For off-road equipment using alternative fuels, the description will also specify the type of alternative fuel.
 5. Contractor may use the Clean Construction Equipment Inventory Template to satisfy the Emissions Plan requirements. Refer to the following link for that template: <https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>.
- D. The Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan will constitute a material breach of the Agreement. Contractor must submit a signed Clean Construction Emissions Plan Certification Statement to the City Representative. Refer to the following link for the Emissions Plan Certification Statement Template: <https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>.
- E. After City review and written approval, the Contractor shall make the Emissions Plan available to the public for review onsite during working hours.
- F. The Contractor shall post at the construction site a legible and visible sign summarizing the Emissions Plan. Refer to the following link for the Clean Construction Sign Template: <https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>.
1. The sign shall also state that the public may ask to inspect the Emissions Plan for the project at any time during working hours and will explain how to request to inspect the Emissions Plan.
 2. The Contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.
- G. Contractor shall submit an updated Construction Emissions Plan on a quarterly basis documenting changes from the original plan and demonstrating compliance with the Emissions Plan, and submit each quarterly report within seven business days of the end of each quarter.
- H. Contractor shall submit a final Construction Emissions Minimization Plan report within two weeks of achieving Substantial Completion summarizing compliance of construction activities with the Emissions Plan, including the start and end dates and duration of each Construction Phase

- I. The San Francisco Public Works Director may waive requirements of Chapter 25 of the Environment Code on the grounds set forth in Section 2507 of the Environment Code at the request of the contractor, submitted to the City Representative.
 1. For any waiver granted, the City Representative will within two business days prepare a written notice of the waiver and a written memorandum explaining the basis for the waiver and the steps that will be taken to safeguard public and City employee health during the noncomplying work. The memorandum will also state the requirements subsequently imposed upon the contractor to minimize the use of noncomplying equipment or engines during the noncomplying work.
 2. Requests for such waivers must be provided to the City Representative no fewer than two weeks prior to the planned implementation of the waiver and must be accompanied by conclusive substantiating information. Waivers are granted at the sole discretion of the San Francisco Public Works Director. The department will provide no compensation to the contractor for any consequences of the denial of a waiver request.

3.21 CONSTRUCTION SITE RUNOFF CONTROL PERMIT

(Not Applicable)

3.22 STORM WATER POLLUTION PREVENTION PLAN

(Not Applicable)

3.23 CITY WATER-QUALITY PERMITTING

- A. Well Construction/Decommissioning or Soil Borings Permit: Before conducting soil boring or constructing a well, contractor must obtain and provide to the City Representative a permit issued by SFDPH construct or operate an environmental or geotechnical well or soil boring.
 1. These wells include, but are not limited to, cone penetrometers, inclinometers, piezometers, cathodic wells, exploratory wells, extraction wells, recovery wells, monitoring wells, temporary wells, irrigation wells, industrial wells, dewatering wells, wick drains, hydropunch soil borings ,and soil borings drilled for geotechnical or environmental purposes (whether or not groundwater is encountered). This information is not intended as a substitute for familiarity with applicable laws and regulations.
 2. The Contractor shall use a driller with a C-57 state license.
 3. Contact the SFDPH Environmental Health Branch, Monitoring Well Section at least 15 Working Days in advance of drilling at (415) 252-3800.
- B. Underground Storage Tank (UST) Permit: Before modification, repair, removal and/or installation of fuel or chemical storage tanks, the contract will obtain the written approval of the SFDPH, in compliance with Articles 21, 21A and 22 of the San Francisco Public Health Code, and its implementing regulations, compliance with applicable provisions of Chapters 6.7 and 6.75 of the California Health and Safety Code, Section 25280 et al. Contact the SFDPH Environmental Health Branch, HMUPA at (415) 252-3800.
 1. If UST(s) are unexpectedly encountered during the course of construction, the Contractor shall stop work at the site of the UST and alert the City Representative.

END OF SECTION

SECTION 01 35 45
HEALTH AND SAFETY

PART 1 -- GENERAL

1.01 SUMMARY

- A. The Contractor shall be solely and fully responsible for compliance with regulatory requirements applicable to the health and safety of persons during the performance of the Work, and shall fully assume the defense of, indemnify and hold harmless those entities and persons stipulated in the Section 00 72 00, General Conditions.
1. Before commencement of the Work of this Contract, or in an emergency, as soon thereafter as possible, Contractor shall submit to the Port an E-copy of the Contractor's site-specific Health and Safety Plan ("HASP"). Refer to Paragraph 1.05 of this Section for specific requirements. Contractor will be allowed a maximum of 10 working days, after the date on which the Contract is awarded, or after the emergency work is commenced, in which to deliver appropriate bond and insurance certificates and endorsements.
 2. At the same time, Contractor shall submit to the Port E-copies of the following items:
 - a. List of hazardous materials to be used by the Contractor or Subcontractors on the Project.
 - b. SDS documents for each one of the listed hazardous materials, and
 - c. Records of training of all the Contractor's, including Subcontractor's, personnel handling or contacting such materials.
 3. Included with the HASP, submit to the Port an E-copy of the Cal/OSHA approved Written Compliance Plan, which shall be subsequently updated every six (6) months thereafter throughout the duration of the Project.
 4. The Contractor shall be responsible for all costs associated with compliance with applicable hazardous materials regulations or requirements incurred by Contractor or its subcontractors' in the demolition or construction Work.
- B. Related Sections
1. Not used.

1.02 REGULATORY REQUIREMENTS

- A. OSHA's Lead Exposure in Construction, Interim Final (29 CFR Part 1926.62) requires certain actions on the part of an employer when there is any possibility that an employee could be exposed to lead as a result of his/her activities. The level of engineering control and medical monitoring which may be required will be based on the governing regulations of Cal/OSHA (Title 8 CCR Section 1532.1), which are effective throughout the project duration for the level, and extent of lead exposure at the site. As applicable, the Contractor shall designate a qualified person to identify potential lead hazards at the site and oversee implementation of appropriate protective measures to comply with all Cal/OSHA requirements applicable for lead-based paints.

1.03 HAZARDOUS MATERIALS

- A. Certain materials and items of equipment present at or used to construct the Project contain materials known to the State of California to be either carcinogenic or reproductive toxins. These materials may include:

1. Known or suspected building materials that contain lead and other hazardous materials.
 2. These materials include, but are not limited to soil, painted or coated surfaces (including walls, ceilings, moldings, windows, door components stairwell components, and floors), and plumbing components (including piping, fittings, and solders).
- B. Contractor shall ensure that all site personnel, including Subcontractors' personnel, receive appropriate and required awareness training and orientation that will prevent inadvertent or unauthorized disturbance of hazardous materials that maybe present in soil and/or structures at the site. The Port reserves the right to request proof of the training.
- C. Contractor and Subcontractor employees performing work in the Project shall implement all safety precautions, training, and monitoring related to hazardous materials required by Cal/OSHA CCR Title 8.

1.04 REMEDIAL ACTION

- A. Should the Contractor or its Subcontractors be notified by the Port of any unsafe or unhealthy condition associated with the performance of the Work and be required to take remedial action to correct same, such action shall be taken immediately, if so directed, or within 48 hours after receipt of a notice of violation.

1.05 HEALTH AND SAFETY PLAN

- A. Contractor's site-specific Health and Safety Plan, shall include, but not be limited to, the following:
1. General Health and Safety per Title 8 Subchapter 4 of the Cal-OSHA Construction Safety Orders.
 2. Completion of site-specific individual worker training related to health and safety issues prior to start of worker employment on site.
 3. Personnel protective measures including proper respiratory protective equipment; proper protective clothing; head, eye, hand, and foot protection; and fall protection.
 4. Procedures for working around wall space, and other ceiling openings.
 5. Methods for demarcating and guarding wall space, and other ceiling openings.
 6. Procedures for lock out/tag out of electrical and mechanical systems.
 7. Electrical safety issues.
 8. Air monitoring strategy to evaluate Contractor employees' personal exposures to lead, and, as applicable, any other chemical materials that are used.
 9. Procedures for dealing with heat stress.
 10. Fire prevention and protection plan.
 11. Emergency procedures including, but not limited to, medical, fire, toxic atmospheres, electrical hazards, evacuation, cleanup of unintended releases, and power outages.
 12. Schedule of regular tool box meetings to discuss safety health issues for each subcontractor and tradesperson.
 13. Lead hazard health and safety issues.
 14. Other hazardous materials health and safety issues.

- B. Infectious Disease Preparedness and Response Plan (IDPRP)
1. Contractor shall include with the HASP or as separate submittal, an Infectious Disease Preparedness and Response Plan ("IDPRP") to protect workers from any and all infectious diseases.
 2. IDPRP must provide specific controls, measures, and steps to protect workers from coronavirus, specifically COVID-19; conform with OSHA laws and guidance, Cal/OSHA laws and guidance, all local and San Francisco City and County Orders and guidance, and San Francisco Department of Public Health Orders; and the IDPRP shall be updated should Orders and guidelines change.
 3. A copy of the most current Orders and guidelines may be obtained from the following link: <https://www.sfdph.org/dph/alerts/coronavirus-healthorders.asp>
- C. The Health and Safety Plan shall incorporate Contractor's schedule of work and discuss the applicability of health and safety planning to each work phase.
- D. The Port reserves the right to reject or require modification of Contractor's Health and Safety Plan. However, the Port's action or lack thereof on Contractor's Health and Safety Plan shall not be construed to mean approval or acceptance of Contractor's responsibility for compliance with the applicable laws and regulations.
- E. No site work shall begin until the Health and Safety Plan is submitted for Port review and approval.
- F. All site work shall be conducted in compliance with the Health and Safety Plan as well as all applicable laws and regulations.
- 1.06 HAZARDOUS MATERIALS IN THE WORK
- A. General: Materials which contain hazardous substances or mixtures may be required on the Work. Material usage shall be in strict adherence to Cal-OSHA safety requirements and all manufacturer's warnings and application instructions listed on the Safety Data Sheet ("SDS") provided by the product manufacturer and on the product container label.
1. Be responsible for coordinating the exchange of SDS or other hazard communication information required to be made available to or exchanged between subcontractors at the site.
 2. Notify the Port if the Contractor considers a specified product or equipment, or their intended usage to be unsafe prior to ordering the product or equipment or prior to the product or equipment being incorporated in the Work.
- B. Prohibited Materials: The following materials and chemicals are specifically prohibited from use on this Project unless otherwise accepted in writing by the Port.
1. All material with a stated American Conference of Governmental Industrial Hygienists ("ACGIH") threshold limit value of less than 25 parts per million.
 2. Ethylene glycol monomethyl ether.
 3. Dipropylene glycol methyl ether.
 4. Ethylene glycol.
 5. Formaldehyde.
 6. Methylene chloride.
 7. Isocyanates.
 8. All chemicals with a flash point of less than 140 degrees Fahrenheit.
- C. Prohibited Equipment: The following tools and equipment are specifically prohibited for use on this Project unless otherwise accepted in writing by the Port:

1. High- or low-pressure water-blasting equipment for hosing of ductwork or Work areas inside the building. If approval is granted by the Port, keep adjoining Work areas dry and protect existing surfaces and finishes from damage or deterioration and from contamination by hazardous materials removed by the water-blasting.
 2. Vacuum-powered removal or collection such as Vacu-loads.
 3. Gasoline-, propane-, diesel- or other fuel-powered equipment inside a building.
 4. Equipment which creates noise or vibration that would affect the safety of the building.
 5. Powder-activated fasteners except at locations specifically required by the Contract Documents or approved in writing by the Port. If approval is granted by the Port, the powder-activated gun shall be the low-velocity piston-operated type with a charge such that the velocity of the fastener is 300 feet per second or less measured 78 inches from the nozzle.
- D. Prohibited Methods: The following methods are specifically prohibited for surfaces known to contain lead-based paint on this Project unless otherwise accepted in writing by the Port:
1. Open-flame burning or torching.
 2. Machine sanding or grinding without a high-efficiency particulate air (HEPA) vacuum exhaust tool.
 3. Uncontained hydroblasting or high-pressure washing.
 4. Abrasive blasting or sandblasting without HEPA vacuum exhaust tools.
 5. Heat guns that operate above 1,100° F.
 6. On-site use of methylene chloride chemical strippers.

PART 2 -- PRODUCTS

Not Used

PART 3 -- EXECUTION

Not Used

END OF SECTION 01 35 45

SECTION 01 35 50
ADDITIONAL ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes additional environmental procedures and environmental mitigation measures derived from project specific regulatory permits and/or CEQA and/or NEPA compliance that the Contractor shall follow during construction.
- B. This Section (along with the Sections 01 35 43 Environmental Procedures 01 35 45 Health and Safety Criteria, 01 74 50 Material Reduction and Recovery Plan, 02 81 10 – Environmental Management of Excavated Materials), 33 23 19 Dewatering, and 33 24 00 Groundwater Wells fulfills the Environmental Site Mitigation Plan (SMP) of Article 22A of the San Francisco Health Code.
- C. The requirements in this Section are incidental work to mobilization, unless noted otherwise.

1.2 DAMAGES FOR FAILURE TO MEET ENVIRONMENTAL REQUIREMENTS

- A. The Contractor shall be liable for all fines, penalties, liquidated damages and costs arising from any failure to implement mitigation measures to control environmental impacts are subject to Federal, State, and local regulatory fines.
- B.

1.3 **SITE SPECIFIC PROJECT CONDITIONS**

- A. Herring Spawning Schedule Restrictions: If work occurs in the water during the herring spawning or hatching season (December through March,) a professional biologist or other individual competent to identify herring spawning activity, shall inspect the project site three times a week during the construction operations occurring between December 1 and March 1 of any year. If Herring Spawning is detected by the on –site biologist, or qualified individual, Department of Fish and Game (DFG) personnel or the Commission Staff, all construction in the water shall cease for a minimum of 14 days and shall continue suspended until it can be determined by the on-site biologist, or qualified individual, DFG personnel, or the BCDC staff, that the herring hatch has been completed and larval herring concentrations have left the site. To facilitate rapid and efficient communication under these circumstances, the contractor and the Port shall provide the BCDC staff and DFG personnel with all the necessary telephone, FAX and page numbers. Construction in the water may be resumed thereafter at the sole discretion of the Port and the Commission staff, but shall be terminated if further spawning takes place at the site.
- B. Bay Water Protection and Mitigation Controls
 - 1. The contractor shall exercise every reasonable precaution to prevent the discharge of pollutants into the Bay such as demolition debris, construction chemicals, fresh cement, saw-water, potable water, or other deleterious materials. Construction will be conducted from both land and water, and

care will be used by equipment operators to control debris so that it does not enter the Bay waters. The contractor shall prevent any debris from falling into the Bay during construction to the maximum extent practicable. In order to minimize any environmental impacts related to construction activities, the contractor shall implement the BMPS outlined in the SWPPP and the following BMPs as identified in the EPP:

2. All construction operations shall be performed to prevent construction materials from falling, washing or blowing into the Bay. In the event that such material escapes or is placed in an area subject to tidal action of the Bay, contractor shall immediately retrieve and remove such material at its expense.
3. During demolition and construction, if barges are used, the barges performing the work shall be moored in a position to capture and contain the debris generated during the dismantling of buildings and wharves or conducting any sub-structure or in-water work. In the event that debris does reach the Bay, personnel in workboats within the work area shall immediately retrieve the debris for proper handling and disposal.
4. The Contractor is hereby notified of the requirements established by The Corps of Engineers "Proposed Procedures for Permitting Projects that will Not Adversely Affect Selected Listed Species in California" to minimize impacts to natural resources associated with projects in or adjacent to jurisdictional waters.
5. During demolition care shall be used by equipment operators to control debris so that it does not enter the Bay. As appropriate, the work area shall be isolated by using a debris containment boom. Floats with debris screens shall be used to catch any falling concrete or debris during cutting and removal operations. In the event that debris does reach the Bay, personnel in workboats within the work area shall immediately retrieve the debris for proper handling and disposal.
6. As required and feasible silt curtains may be installed around the waterside perimeter of over and on-water work areas to limit the extent of potential turbidity.
7. Well-maintained equipment shall be used to perform the work, and except in the case of a failure or breakdown, equipment maintenance shall be performed off site. Equipment shall be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak shall be identified, the leak cleaned up, and the cleaning materials collected and properly disposed. Drip pans shall be placed under equipment and vehicles when they are stationary for more than 30 minutes.
8. Appropriate cover will be provided for materials stored in this area, and materials for containing and cleaning spills or leaks will be readily available. If leaks or spills are encountered, the source of the leak will be identified, the leak cleaned up, and the cleaning materials collected and properly disposed.
9. Contractors shall cover construction material that could wash or blow away every night and during any rainfall event.
10. Construction crews shall reduce the amount of disturbance within the project site to the minimum necessary to accomplish the project.
11. Contractors shall check heavy equipment daily for leaks, and not use equipment until leak is fixed.
12. Petroleum products, chemicals, fresh cement, or concrete or water contaminated by the aforementioned shall not be allowed to enter flowing waters as described in the SWPPP.
13. Contractor shall not allow projects to contribute sand and smaller particles or sediment-water slurry to Bay waters

14. Adequate erosion control supplies (sand bags, wattles, shovels, etc.) shall be kept on site and during all construction activities to ensure materials are kept out of water bodies.
15. All hazardous material shall be stored upland in storage trailers and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use shall be permitted with the same anti-spill precautions.
16. All construction material, wastes, debris, sediment, rubbish, trash, fencing, etc., shall be removed from the site on a regular basis and once the proposed project is completed and transported to an authorized disposal area, as appropriate, in compliance with applicable federal, state, and local laws and regulations.
17. Any building, wharf, or pier demolition debris or excavated soil from land above mean high water ("MHW") that is stockpiled onshore prior to offsite disposal shall be stored in a manner that utilizes BMPs for construction operations and is in compliance with the NPDES Stormwater Construction General Permit. No runoff of non-stormwater origin shall be allowed to enter the Bay. All such non-stormwater material shall be disposed of at an appropriate, permitted facility.
18. Fueling of marine-based equipment at a properly licensed marine fueling station. Fueling of land-based equipment shall occur off site.

C. Biological Resources Restrictions and Guidelines: Contractor is responsible for ensuring that Contractor and subcontractor personnel adhere to the following:

1. Contractor adheres to designated in-water work windows as defined in resources agency permits.
2. Contractor shall provide closed garbage containers for the disposal of all food-related trash items (e.g., wrappers, cans, bottles, food scraps). All garbage shall be removed daily from the project site. Construction personnel shall not feed or otherwise attract wildlife to the project area.
3. No pets or firearms shall be allowed in the construction limits.
4. To prevent possible resource damage from hazardous materials, such as motor oil or gasoline, construction personnel shall not service vehicles or construction equipment outside designated staging areas.
5. Any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped shall immediately report the incident to the City Representative. The City Representative shall immediately notify the Port, which shall provide verbal notification to the USFWS Endangered Species Office in Sacramento, California, and to the local CDFG warden or biologist within three working days of the incident. Port will follow up with written notification to USFWS and CDFG within five working days of the incident. In the City Representative coordination with the Port Representative, shall also notify USFWS of any unanticipated harm to any federally listed endangered species associated with the project. All such observations of special-status species shall be recorded on CNDDDB field sheets and sent to CDFG.

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

- A. All materials, demolition, installation and construction shall comply with the applicable provisions of current laws, codes, safety rules and regulations of the Port of San Francisco, the City and County of San Francisco, the State of California, and the Federal Government, and any other applicable authority or agency.
- B. The Contractor shall obtain and comply with all permits required for the work or for temporary facilities, including indemnification and insurance requirements, and shall pay all fees and furnish any deposits and bonds required, therefore.
- C. Contractor shall review and comply with the regulatory agency conditions detailed in referenced environmental compliance documents available to Bidders as described in Section 00 31 00 Available Project Information, including applicable regulatory agency authorizations, permits and mitigation plans. The referenced documents contain Avoidance and Minimization Measures (AMMs) and Best Management Practices (BMP) requirements. Contractor shall be responsible for fully complying with requirements applicable to the Project scope.
- C. The Contractor shall keep a copy of each applicable permit, law, code and regulation in his/her job site field office and shall ensure that his/her and his/her subcontractors' superintendents and foremen are thoroughly familiar with applicable permits, project conditions, codes, laws, safety rules and regulations.
- D. Any delays caused by permitting agencies in issuance of permits shall not be cause for unavoidable delay. However, the Port may at their discretion recommend an extension of time provided that the Contractor waives any additional compensation caused by that delay and the Contractor can show that he/she has aggressively pursued obtaining such permits.
- 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.

1.2 CODES AND REGULATIONS

- A. Laws, Codes, Safety Rules and Regulations referenced in the General Provisions, Article 61, include, but are not limited to the following:
 - 1. California Division of Industrial Safety.
 - 2. California Occupational Safety and Health Administration (CAL/OSHA).
 - 3. California Labor Code.
 - 4. California State Vehicle Code.
 - 5. San Francisco Municipal Code, including San Francisco Building Code, San Francisco Electrical Code, San Francisco Mechanical Code, San Francisco Plumbing Code, San Francisco Police Code, San Francisco Public Works Code, San Francisco Health Code, San Francisco Fire Code, and San Francisco Traffic Code and any department orders adopted pursuant thereto.
 - d. DPW Order 167,840 for the Placement of Barricades at Construction Site.

- e. DPW Order 171,333 Dust Generation and Control Regulations.
- g. Article 29, San Francisco Police Code, Regulation of Noise.
- 6. Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities.
- 7. California Code of Regulations (California Administrative Code), Title 8 - Industrial Relations, Part 1 - Department of Industrial Relations, Chapter 4 - Division of Industrial Safety:
 - a. Subchapter 4 - Construction Safety Orders (CSO),
 - b. Subchapter 5 - Electric Safety Orders (ESO),
 - c. Subchapter 7 - General Industry Safety Orders (GISO).

The Contractor's attention is directed to sections of above Safety Orders, which cover some of the most frequently encountered safety concerns, as follows:

- d. CSO #1540 - Excavations
- e. CSO #1541 - Shoring, Sloping and Benching Systems
- f. CSO #1598 - Traffic Control for Public Streets and Highways
- g. CSO #1599 - Flaggers
- h. GISO #3380 - Personal Protective Devices
- i. GISO #3381- Head Protection
- j. ESO #2940.2 - Clearances
- k. ESO #2941 - Work On or In Proximity of Overhead High Voltage Lines
- l. ESO #2946 - Provisions for Preventing Accidents due to Proximity of Overhead Lines

The Contractor's attention is also directed to all other applicable Safety Orders, including:

- m. GISO #5003, #5006, #5021, #5022, #5024, #5025 - Cranes
- n. GISO #3646- Operating Instructions Elevated Work Platforms
- o. GISO #3648 - Operating Instructions Aerial Devices
- p. ESO #2940.7 - Mechanical Equipment
- 9. California Health and Safety Code.
- 10. National Electric Code, National Fire Protection Codes, including NFPA 70.
- 11. California Code of Regulations (CCR) Title 17, Public Health.
- 12. California Code of Regulations (CCR) Title 22, Division 4, Environmental Health and Division 4.5, Environmental Health Standards for the Management of Hazardous Waste and Title 26 - Toxics.
- 13. California Code of Regulations (CCR) 19, Fire Marshal.
- 14. Code of Federal Regulations (CFR) Titles 29 and 40.

1.3 PERMITS AND APPROVALS

- A. Contractor obtained permits may include, but are not limited to:
 - 1. CAL/OSHA permits.

2. Night Work is PROHIBITED.
 3. State, County, and City Transportation permits (over width, over length, overweight, overload).
 4. San Francisco Department of Public Health Notification of Compliance with Article 22A of the Health Code (Maher Ordinance).
 5. San Francisco Department of Public Health Article 22B, Construction Dust Control
 6. San Francisco Fire Department permits.
 7. Utility Service Alert (USA) permits and clearance.
 8. San Francisco PUC/BERM Sewer Discharge permit.
 9. Port of San Francisco Encroachment and/or Building Permit.
- B. Contractor to provide the following project specific plans which may include, but are not limited to:
1. 01 35 45 HEALTH AND SAFETY PLAN
 2. 01 74 50 MATERIALS REDUCTION AND RECOVERY PLAN
 3. 01 57 13 EROSION AND SEDIMENT CONTROL PLAN
 4. 01 57 19 ENVIRONMENTAL MITIGATION MEASURES

1.4 SUBMITTALS

- A. A copy of each permit that the Contractor obtains or project-specific plan that the Contractor prepares shall be provided to the Port prior to beginning of any work covered by such permit or plan.

1.5 RESOLUTION OF CONFLICTS

- A. If the Contractor observes that the Specifications or Drawings are at variance with any permits, laws or regulations, the Contractor shall give the Port prompt written notice.
- B. If the Contractor performs any work knowing or having reasons to know that it is contrary to such permits, laws, codes, safety rules or regulations, and without such notice to the Port, the Contractor shall bear full responsibility and costs arising there from.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION 01 41 00

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, including latest revisions.
- C. Digital copies of the Standard Specifications and Plans may be obtained from DPW's Standard Specifications and Plans website at: <http://www.sfpublishworks.org/> (select "Services" then "Contractor Resources")
- 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
BDC	Building Design and Construction, San Francisco Public Works
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
IDC	Infrastructure Design and Construction, San Francisco Public Works
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
SEWPCCP	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, Architect, Landscape Architect, or City Representative: References in these Specifications to "Engineer, Architect, 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 SECTION INCLUDES

- 1.2. Contractor's Quality Control Plan and Services
- 1.3. Quality Control and Control of Installation
- 1.4. Tolerances
- 1.5. References
- 1.6. Observation by the Owner
- 1.7. Manufacturer's Field Services
- 1.8. Testing Agency Services
- 1.9. Requirements of Tests
- 3.1 Examination

1.2 CONTRACTOR'S QUALITY CONTROL PLAN AND SERVICES

- A. The Contractor shall develop and submit to the City, a Quality Control Plan (QCP) for all materials, equipment, and services. The QCP shall be submitted to the City for review and approval prior to the start of Contract Work.
 - 1. The QCP shall include listing of the Contractor's Testing Agency and approved personnel with certifications.
 - 2. The QCP shall include type and frequency of testing for all Work completed under the Contract. It shall also include the identification of all offsite and factory test inspections.
 - 3. Work covered by the Quality Control Plan shall not commence until approval of the QCP.
- B. Testing Services: Per General Conditions - 8.02 Tests and Inspections, all testing and inspection of the Work required by the Contract Documents shall be arranged and paid for by the Contractor. The Contractor shall provide the services of a qualified independent testing laboratory(s) or agency(s) to control the quality of Work and materials to fulfill the requirements of the Contract. No separate payment will be made for quality control, and all costs therefore shall be included in the prices named in the Schedule of Bid Prices for the various appurtenant items of Work.

1.3 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Maintain and monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.

- C. When manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer and/or the City before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- G. 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 require submittal and approval of a Remediation Plan, when requested, for failed materials, equipment, products, services, site conditions, and/or workmanship.

1.4 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from the City and/or Owner's Agent before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.
- C. Obtain copies of standards where required by product and specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from the City and/or Owner's Agent before proceeding.
- E. See Construction Manual, latest edition, published by the California Department of Transportation (Caltrans) and available for download at http://www.dot.ca.gov/hq/construc/constmanual/construction_manual.pdf for Materials Accepted on the Basis of a Certificate of Compliance (Section 6-203C of Caltrans Construction Manual).

1.6 DOCUMENTATION

- A. The Contractor shall maintain current quality records to provide factual evidence that all activities, including quality control activities such as inspections and tests have been performed, accepted, and comply with the Contract Documents and the Quality Control

Plan (QCP). These quality records shall include the work of the Contractor, Subcontractors, Suppliers, inspection services and testing laboratories, and shall be on an acceptable form.

- B. Quality records shall include but are not limited to Certificates of Compliance checklist, QCP, Subcontractor and Supplier Quality Programs, inspection reports, receiving inspection reports, calibration test reports, material test reports, Construction Non-Conformance Report (CNCR), personnel information (qualifications, certifications, resumes, and approvals), minutes of the Preparatory Phase, Initial Phase, and Follow up Phase meetings, procedures, Submittals and RFI logs, Punch Lists, and training records.
- C. Contractor Inspector (CI) Daily Inspection Report shall include, as a minimum, the following information provided by the Contractor's Inspectors (CI):
 - 1. Contractor/Subcontractor and their area of responsibility.
 - 2. Description of the weather conditions encountered and the work performed each day, giving location, description, and by whom. Identify each phase of work performed each day by CPM schedule activity number or Work Break Structure (WBS), as applicable.
 - 3. Test, inspections and control activities performed with results and references to specifications/drawing requirements. List of deficiencies noted, along with the required corrective actions.
 - 4. Material and equipment received at the Site with statement as to acceptability (including verification/validation of required material identification, certifications, and quantities), storage and maintenance thereof, as required by the QCP.
 - 5. Surveillance and audit activities, both on- and off-site, performed and documented as required by the QCP.
 - 6. Documentation generated from the Preparatory Phase, Initial Phase, and Follow up Phase work.
 - 7. Each Contractor/Inspector's (CI) daily report shall clearly indicated that the work performed and material and or equipment incorporated into the Contract, is acceptable or unacceptable. Unacceptable work that is considered by the QCP to be in-process, which will be brought into conformance with the Contract Documents; both within one (1) working day, or at a time deemed to be reasonable by the QCP, and subject to approval of the Engineer, shall be clearly indicated on the CI Daily Report as requiring follow –up acceptance inspection. Work that is found to be non-conforming, that can't be brought into conformance with the Contract Documents, shall be documented and processed as required by the QCP with the Contractor's Non-Conformance Report number indicated on the Daily Contractor Inspection Report.
 - 8. Daily Inspection Reports: completed Quality Control inspection checklists or forms as described in the QCP, and related laboratory test report results for the work performed for the activities described within the Report shall be attached to the Daily Inspection Report and shall be furnished daily to the Engineer within 24 hours after the date covered by the Report. Reports need to be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 Days of no work shall be for that Day only.
 - 9. Daily Inspection Reports shall be signed and dated by the Contractor's representative.

1.7 OBSERVATIONS BY THE OWNER

- A. All work (which includes but is not restricted to materials, workmanship, and manufacture and fabrication of components) shall be subject to inspection and/or tests by the owner and by others authorized by the Owner. Any such inspection and/or test is for the sole benefit of the Owner and shall not relieve the Contractor of the responsibility of providing quality control measures to assure that the work strictly complies with the Contract

requirement. No inspector or test by the Owner shall be construed as constituting or implying acceptance. Inspections or tests shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Owner after acceptance of the completed work.

The contractor shall make available all offsite fabrication facilities for inspection of fabricated items by the Owner.

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.
- B. 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.
- If the Contractor does not promptly replace rejected material or correct rejected workmanship, the Owner may, by Contractor or otherwise, replace such material or correct such workmanship and deduct the cost thereof from subsequent progress payments.
- C. 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.
- D. The Contractor shall be held responsible for delay of inspection or test due to material or work not being acceptable or ready at the time specified by the Contractor for such inspection or test, and due to re-inspection or retest necessitated by prior rejection.
- E. The Contractor shall not cover, or allow to be covered, any of the work installed under this Contract without the Owner's Agent's approval. Should any of the work be covered prior to such approval, the Owner's Agent shall have the authority to require the work to be uncovered for inspection and approval, re-covered, and all resultant damage repaired, all at the Contractor's expense.
- F. Should it be necessary or advisable by the owner, at any time before acceptance of the entire work, to make examination of work already completed, the Contractor shall, on request, promptly furnish all necessary facilities, labor, and material requested. If such work is found to be defective or nonconforming, the Contractor shall be responsible for all the expenses of such examination and for satisfactory reconstruction. If, however, the Owner's Agent was allowed ample opportunity to inspect said work and the work is found to meet the requirements of the Contract, the Contractor will be compensated for the additional services involved in such examination and reconstruction under force account, and if completion of the work has been delayed thereby, he shall, in addition, be granted a suitable extension of time.
- G. Neither inspections nor approvals by the Owner's Agent or by others shall relieve the Contractor from the obligation to perform the work in accordance with the Contract. Contractor shall be responsible for calling Code Enforcement Agencies such as the Bureau of Building Inspection, San Francisco Fire Department, Department of Public Health, etc.

1.8 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.
- C. Maintain a complete set of manufacturer's instructions at the jobsite during installation and provide to the City and/or City's Agent prior to performing the work described in the instructions and again at the completion of the work as Project Record Documents.
- D. Unless otherwise indicated or specified, perform work including, handling, installing, connecting, cleaning, conditioning, and adjusting products in strict accordance with such instructions.

1.9 TESTING AGENCY SERVICES

- A. Contractor shall employ and pay for specified services of an independent firm to perform testing and inspection.
- B. The independent firm shall perform tests, inspections, and other services specified in individual specification sections and as required by the City and/or Owner's Agent.
 - 1. Laboratory: Authorized to operate in State of California.
 - 2. Laboratory Staff: Minimum full time registered Engineer on staff to review services. 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.
 - 3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.
 - 4. Testing Agency services will be performed in accordance with requirements of governing authorities and with specified standards.
- C. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing as required by the City and/or Owner's Agent.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify the City and/or City's Agent and independent firm 48 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- E. Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- F. 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. Test results and reports shall be submitted to the City upon their

- completion within 24 hours.
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.
- G. Re-testing or re-inspection required because of unsatisfactory or non-conformance to specified requirements shall be performed by same independent firm on instructions by the City and/or Owner's Agent. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
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 separate Quality Assurance inspection 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.
- H. Testing Agency is **not** authorized to:
1. Release, revoke, alter, or enlarge requirements of Contract Documents.
 2. Accept any portion of Work.
 3. Assume duties of Contractor.
 4. Stop Work, except as may be required to perform testing or inspection operations.
- I. Contractor's Responsibilities:
1. Prepare a Quality Control Plan (QCP) for all materials and equipment installed under the Contract. The QCP shall be submitted to the City for review and approval prior to the start of Contract Work.
 2. Furnish a Testing Agency to provide testing and personnel necessary to comply with the Contractor's Quality Control Plan.
 3. Provide access to the Work.
 4. Obtain and handle samples of materials and equipment.
 5. Furnish storage and assistance as requested.
 6. Facilitate inspections and tests.
 7. Notify the City to coordinate for City furnished special inspectors (if required) or Quality Assurance inspection (at the discretion of the City) 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.
 8. Schedule Work to be tested or inspected to allow tests to be performed within reasonable time period.
 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.
 12. Contractor shall submit a Certificate of Compliance for all materials incorporated into the Work (as per Section 01 33 00 – Submittal Procedures, subsection 1.11).
- J. 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.

1.10 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.
- C. The Contractor shall provide certified copies of the reports of all tests required in various sections of the Specifications or by Reference Standards. Test results on previously tested products or materials shall be accompanied by notarized certificates from the manufacturer certifying that previously tested products or materials are of the same type, quality, make, and manufacture as those proposed for use on this Contract.
- D. Test reports shall clearly state if the item is in compliance or is not in compliance with the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions and substrate surface are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify utility services are available, of correct characteristics, and in correct locations.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section Includes:
 - 1. Work restrictions and specific project requirements.
 - 2. Construction sequencing
 - 3. Construction access and staging plan.
 - 4. Temporary enclosures.
 - 5. Maintenance of the work area.
 - 6. Storage and stockpiling.
 - 7. Temporary controls and utilities.
 - 8. Project signage

- B. Related Sections:
 - 1. Section 00 73 27 – Specific Project Requirements.
 - 2. Section 01 11 00 – Summary of Work.
 - 3. Section 01 71 33 - Protection of Adjacent Construction.
 - 4. Section 01 77 00 - Closeout Procedures.

1.2 WORK RESTRICTIONS

- A. If at any time during construction, access is limited, the Contractor shall notify the City Representative in writing and obtain approval prior to closing vehicular or pedestrian access.

- B. Construction Notice and Vibration Control
 - 1. See Section 01 35 49 – Minimum Environmental Procedures, Article 3.4 Noise Control for additional requirements.

- C. Work Scheduling
 - 1. The Contractor shall coordinate its operations with the City and shall incorporate in its Progress Schedule activities for all special events that will require the Contractor to suspend its operations at the project site.

 - 2. The Contractor's working hours shall be as specified in Section 00 72 00 - General Conditions, subparagraph 1.01A.67, except as specified otherwise in these Specifications.

 - 3. The Contractor shall not commence work in the public right-of-way 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.

 - 4. 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.

1.3 SECURITY AND PROTECTION OF THE PROJECT SITE

- A. Project Site Security:

Security of the project site and the Contractor's work area(s) including the Contractor's property, equipment, construction materials and all other items contained in the Contractor's staging areas or elsewhere on the construction site shall be always the Contractor's sole responsibility. The Contractor shall address any theft or vandalism that occurs during construction throughout the entire project site.

- B. Temporary Construction Barricades:
 - 1. For vehicular and pedestrian street barricades, see Section 00 73 27 – Specific Project Requirements, Article 1.5.
 - 2. For vehicular traffic control requirements, see Section 01 55 26 – Traffic Control.
- C. Temporary Construction Fencing:
 - 1. The Contractor shall furnish and install a temporary 6'-0" minimum chain link construction fence with lockable gates at the limit of work or as indicated on the drawings to:
 - a. Isolate and protect the public from hazardous conditions during construction.
 - b. Prevent unsafe entry to construction areas.
 - c. Protect existing facilities and adjacent properties from damage from construction operations.
 - d. Protect vehicular traffic, stored materials, site and structures from damage.
 - e. Provide secured access to construction areas with lockable gates or doors.
 - f. Install tarpaulins securely with incombustible wood framing and other materials. Close openings with 25 square feet or less with plywood or similar materials.
 - g. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
 - 2. Remove all construction fencing and associated materials project site when construction is finished.

1.4 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.
 - 1. No dumping or littering within or around the project site.
- 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.
 - 1. See Section 01 74 50 – Material Reduction and Recovery Plan for proper management of construction debris.
- C. Cleaning During Construction: Maintain the site and all adjacent public areas in a clean and orderly condition. Control accumulation of waste materials and rubbish; collect waste from construction areas and elsewhere daily. See Section 01 35 50 – Additional Environmental Mitigation Measures, Article 1.05 for requirements.
 - 1. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly.
 - 2. Clean interior spaces prior to the start of finish work; maintain areas free of dust and other contaminants during finishing operations.

3. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material off-site in a lawful manner.
4. 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.
5. Sweep all pedestrian walkways and dispose of trash, litter and debris around the site perimeter on a daily basis.
6. Contractor shall take all reasonable measures to ensure that pedestrian and vehicular entrances to buildings and property in the public right-of-way immediately in front of or adjacent to the project site or directly impacted by the construction work are to be kept, clean, orderly, and accessible to the public, tenants or users.

1.5 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.

1.6 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.

1.7 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".

1.8 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.

1.9 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.

1.10 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.

1.11 TELEPHONE AND INTERNET SERVICE

- A. The Contractor shall provide, maintain and pay for telephone and/or high speed internet service to Contractor's field office from the time of project mobilization if such services is required.

1.12 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 415-923-2400 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 mfisher@sfgwater.org and/or (415) 695-7378 at least three (3) days prior to the date that reclaimed water is required. See <http://sfgwater.org/modules/showdocument.aspx?documentid=7234> for more information.
- 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.

1.13 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required toilet facilities and enclosures. Location of facilities shall 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.

1.14 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 installed by the project.

1.15 TEMPORARY PROJECT SIGN

- A. The Contractor shall install a total of **2 Caltrans SB-1** project sign(s) at the limits of work facing traffic.
- B. The Contractor shall install a total of **2 ONESF** project sign(s) at the limits of work facing traffic.
- C. 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.
 3. If signs are placed on traffic signal or street light poles, the bottom of the sign shall be at least 8 feet clear above finish grade over sidewalks. If the sign is over a median, traffic lane, or parking lane, then the bottom of the sign shall be at least 15 feet clear above finish grade.
- D. 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.

- E. Contractor shall submit a mock-up of the project sign in color, on bond paper, 11x17 size, to the City Representative for approval prior to fabrication.
1. 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.
- F. 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. Project signs shall not obstruct or interfere with the operation of all traffic control devices.
- G. The Contractor shall maintain project sign(s) in good condition for the duration of the contract. Damaged project sign that cannot be repaired on site shall be replaced at no additional cost to the City.
- H. 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.
- I. **ONESF 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 "Data + Resources > Signage and Style Guide")
 - a. The design of the Contractor furnished project signs shall be in strict accordance with the 'ONESF' Guidelines established by the City.
 - b. For further assistance, contact Heather Green of the Office of Resilience and Capital Planning at (415) 554-5162 or heather.green@sfgov.org.
 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.
- J. **Caltrans SB-1 Project Sign Fabrication**
1. Size: Project sign shall be 48-inch by 30-inch for Local Roadways and 2-Lane Conventional Highways. <https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/sign-specifications/c/c48-ca-a11y.pdf>
 2. Printing Specifications and Digital File: Project sign(s) shall match the final graphical layout provided by the Caltrans, including the colors and fonts. For more information, refer to the latest Sign Guidelines available from the following website: <https://dot.ca.gov/programs/traffic-operations/pfi>
 - a. The design of the Contractor furnished project sign(s) shall be in strict accordance with the 'SB-1' Guidelines established by the Caltrans.
 - b. For further assistance, contact Sarah Horn, Senior Transportation Engineer, Traffic Sign Branch of Caltrans by phone at (916) 656-9288 or email at Sarah.Horn@dot.ca.gov.
 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.

1.16 TEMPORARY TOW AWAY/NO-PARKING SIGNAGE

- A. On January 1, 2017, temporary occupancy permits and all other permits that include tow-away signage, aside from excavation permits activated through 311, will not be activated and permittees will not have tow away rights unless and until time and date stamped photos evidencing that signage was posted in the correct location a minimum of 72 hours prior to the time at which the parking restrictions are to become effective under the permit have been uploaded to the San Francisco Public Works, Bureau of Street Use and Mapping (SFPW/BSM) Tow-Away Sign Database. See Appendix B – Tow-Away Sign Activation and Photo Upload Process.
- B. The Contractor is advised that Sign Ordinance PWC Article 15, Section 724 which will require the applicant (Contractor) to input the amount of right of way they will occupy during construction activities for a specific permit, to be issued by SFPW/BSM for all work in the Public Right-of-Way. The Contractor shall enter times of operation during construction with the proposed start and end times and specific calendar days. This information will be printed on the tow-away signs. Refer to Tow Away Manual at <http://www.sfpw.org/sites/default/files/4506-Tow-Away%20User%20Guide.pdf>.
1. The location of the Construction Zone will be entered as part of the excavation permit, which will include the length of occupancy (distance in linear feet). This information and date. Once a permit has been approved, the applicant is informed of the approval via email and will be provided a hyperlink to create/modify the tow/away signs prior to printing.
 2. The information required at time of permit will update the database and will validate that the total linear footage of construction occupancy does not exceed 1,200 linear feet. Upon completion of any adjustment to the tow-away signs, the applicant can determine which street segment to print out and may choose to either print one of two general tow-away sign template or request the Department of Public Works to print the tow-away signs. The Contractor shall pay for the printing of each sign.
 3. Size: Tow-Away/No-Parking Signs shall be 11' wide x 17' tall.
 4. Digital File: Project sign shall match the final graphical layout provided by the City, including the colors and fonts. The design of the Contractor furnished project signs shall be in strict accordance with the DPW Order for Towaway Signs located at: <http://sfpw.org/sites/default/files/4508-TowAway-2015-Template.pdf>.
 - a. Contract shall use only paper types which shall be waterproof durable; tear resistant' with laser paper labels type and templates: 11 x 17 10 PT CV, 215 grams/m₂
 5. Printing: Project sign can be printed on a Xerox Phaser 7800, or equivalent that can print 11x17 120-130 lb paper. All Tow-Away/No-Parking Signs shall be secured and paid for by the Contractor.
 6. The Contractor shall maintain Tow-Away/No-Parking Sign (s) in good condition as needed throughout the duration of the Contract.
 7. After substantial completion, Contractor shall remove each Tow-Away/No-Parking Sign from the site as its property.
 8. Damaged Tow-Away/No-Parking Sign that cannot be repaired on site shall be replaced at no additional cost to the City.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION



ONESF

Building Our Future

onesanfrancisco.org

[PROJECT TITLE]

[Contract No.]

BEGINS: [MONTH / YEAR]

COMPLETION: [MONTH / YEAR]

Funded by [Name of Program]

MORE INFORMATION:

Please visit us at
www.sfpUBLICWORKS.org

CONTACT:

San Francisco Public Works
415-XXXX-XXXX
email address

AFTER HOURS:

[Contractor's Name]
XXX-XXX-XXXX

A PROJECT OF THE CITY'S TEN-YEAR CAPITAL PLAN

There is only one San Francisco and we're taking care of it.

This project is brought to you by:



- MAYOR
Honorable London N. Breed
- BOARD OF SUPERVISORS
Shamann Walton, Board Chair
Connie Chan
Matt Dorsey
- Rafael Mandelman
Gordon Mar
Myrna Melgar
Aaron Peskin
Dean Preston
Hillary Ronen
Anisha Saha
Catherine Stefani



Tow-Away Sign Activation and Photo Upload Process



Beginning on January 1, 2017, temporary occupancy permits and all other permits that include tow-away signage, aside from excavation permits activated through 311, will not be activated and permittees will not have tow-away rights unless and until time and date stamped photos evidencing that signage was posted in the correct location a minimum of 72-hours prior to the time at which the parking restrictions are to become effective under the permit have been uploaded to the Bureau of Street-Use and Mapping Tow-Away Sign Database.



San Francisco Public Works

1155 Market Street, 3rd Floor
San Francisco CA, 94103
Phone: (415) 554-5810
Fax: (415) 554-6161

Processing Hours: 7:30 AM-4:00 PM
Monday through Friday, except official holidays



Contact 311 for complaints



www.sfpublicworks.org

Public Works Tow-Away Sign Activation and Photo Upload Process

EFFECTIVE

DATE: January 1,
2017

PERMITS AFFECTED:

The tow-away sign activation and photo upload process change is applicable to all temporary occupancy permits and all other permits that include tow-away signage.

Excavation permits activated through 311 will not be impacted.

ACTIVATION AND PHOTO UPLOAD PROCESS:

- STEP 1:** Request a street space permit from Public Works.
- STEP 2:** Once permit is approved a link for tow-away signs will be provided via email along with a link to the Bureau of Street-Use and Mapping tow-away sign database.
- STEP 3:** Print signs and post them at the permitted location every 20 feet no less than 72 hours in advance of the time the parking restrictions are to become effective.
- STEP 4:** Click on the link provided in the confirmation email and take photos showing the placement of the signs.
- STEP 5:** Click submit and the photos will be submitted to Bureau of Street-Use and Mapping for review.
- STEP 6:** A confirmation email will be sent stating the photos were accepted, the permit is active, and tow-away rights are reserved.

NOTE: If photos are inadequate, you will receive a rejection email identifying the deficiencies to be corrected.

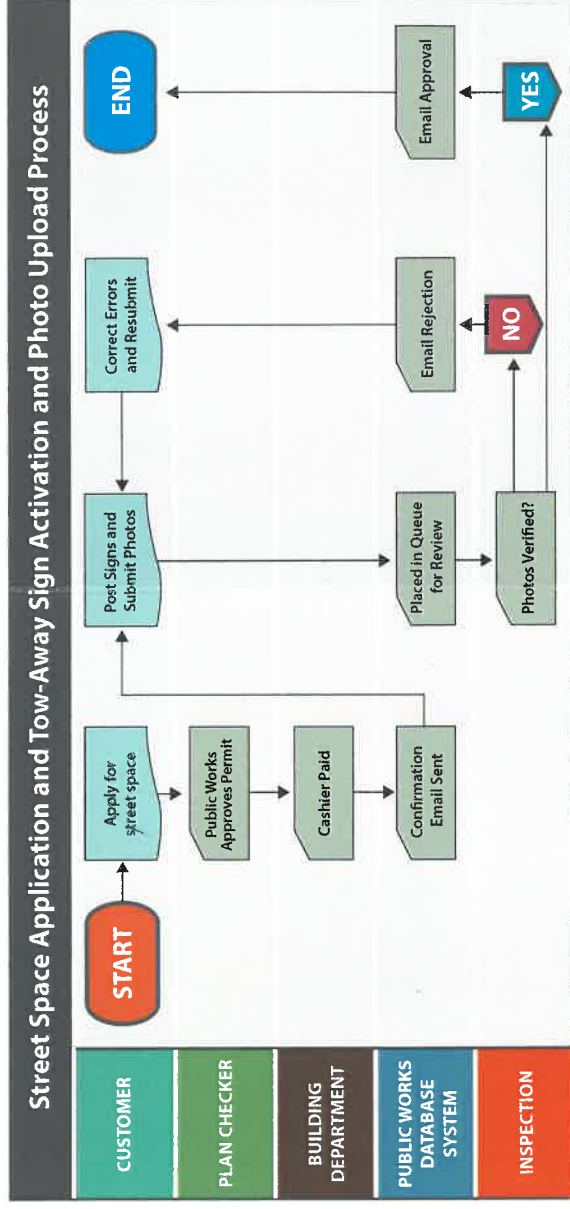


PHOTO REQUIREMENT 1:

A scene-setting photo clearly showing the signs are posted in the permitted location every 20 feet.



PHOTO REQUIREMENT 2:

A close-up photo of a tow-away sign that enables essential information on the sign to be confirmed.



NOTE: If photos are inadequate, you will receive a rejection email identifying the deficiencies to be corrected.

SECTION 01 55 26

TRAFFIC CONTROL

PART I – GENERAL

1.1 SUMMARY

- A. This Section sets forth the minimum requirements for 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.
- D. When the roadway geometry, striping, and/or cross-section of the street changes from what is illustrated on existing and proposed T-drawings, the Contractor shall be responsible for interim traffic control as described herein (see Subsection 1.4.B Traffic Control Plans for more information).

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 and pedestrians during each phase of construction. Multiple phases of construction will require a separate traffic control plan for each different construction phase or operation for working and non-working hours. No typical Traffic Control Plans will be permitted except as approved by the Traffic Engineer.
- B. The Contractor or subcontractor (having Contractor's Class A or Class C license issued by the State of California Contractors State License Board) may perform the Traffic Control work utilizing its own forces. If the Contractor chooses to hire a subcontractor solely to perform the Traffic Control work, subcontractor shall possess a current C-31 Construction Zone Traffic Control license issued by the California Contractors State License Board. If the Contractor hires a subcontractor to perform other work, the subcontractor may perform traffic control incidental to that work.

The Contractor or Subcontractor shall provide sufficient traffic crews as required by the City Representative to implement and maintain the traffic control work. The Contractor or Subcontractor shall provide flaggers 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. Flaggers shall not perform non-traffic related duties. There shall be at least one (1) or more flaggers as required by the Traffic Engineer. The Traffic Crew shall be comprised of at least two (2) dedicated 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. 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, crosswalks 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 flaggers
 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 Traffic Engineer through the City Representative. 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 during the duration of the project 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/services/streets-sidewalks/construction-regulations>
6. Regulations for Excavating and Restoring Streets in San Francisco, San Francisco Public Works, City and County of San Francisco
7. Standard Specifications and Plans, San Francisco Public Works, 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. Certification and Resume of Flaggers
- B. Traffic Control Plans
 1. No work shall be allowed on City streets without SFMTA approved Traffic Control Plans. A separate set of Traffic Control Plans shall be required for both working and non-working hours. Traffic Control Plans shall be prepared by a licensed Engineer who has 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 CAMUTCD, Americans with Disabilities Act (ADA) requirements and all City requirements related to providing path of travel through construction zones.
 2. Complete Traffic Control Plans shall be submitted to the Traffic Engineer through the City Representative for review and approval thirty (30) calendar days before embarking on any scope of work.
 - a. The Contractor shall allow in the schedule twenty-one (21) calendar days for the City to review and respond to the Traffic Control Plans.
 - b. If Traffic Engineer returns Traffic Control Plans with instructions to resubmit, the Contractor shall make corrections and revisions as necessary. The Contractor shall schedule fourteen (14) calendar days for the City to review and respond to the resubmitted plans starting from date of receipt.
 - c. The Traffic Engineer may require additional days for the review of Traffic Control Plans at complex intersections and/or when contractor submits multiple Traffic Control Plan sets within the same review period. Examples of complex intersections include near Caltrans right-of-way, freeway ramps and state highways, unusual intersection geometry, active rail, etc.

3. A submittal shall consist of six (6) copies on white paper or blue prints of each drawing.
 - a. The Contractor shall use the approved striping plans provided with the contract (T-drawings) or official striping drawings (STR) as a base to prepare the Traffic Control Plans.
 - b. If approved striping plans or official striping drawings are not available, the Contractor shall use the Street Reconstruction or paving plans as base plans to prepare the Traffic Control Plans.
 - c. Drawing size shall be 17" X 11". The Traffic Control Plans shall be drawn to a scale of 1 inch = 50 feet (1:600).
 - d. Upon approval of the Traffic Engineer electronic submittals may be made in place of paper copies.
 - e. 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 Contractor's Superintendent. The Traffic Engineer may elect to reject and not review the submitted Traffic Control Plans if they are not signed and stamped.
 - f. The Traffic Control Plan submittal shall have a cover sheet and each Traffic Control Plan is to be itemized on its own line on the cover sheet.
4. If the alignment of the main changes and the Contractor cannot follow the approved Traffic Control Plans, the Contractor shall submit four (4) copies of the proposed new alignment and Traffic Control 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 of SF Public Works 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. Concrete Swale Work
 - g. Concrete Base Repair Work
 - h. Grinding
 - i. Paving
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. Traffic detour plan, when applicable, should be included with Traffic Control Plan.
 - c. Sequence of construction and traffic lane transitions.

- d. Taper lengths shall be called out and dimensioned.
 - e. Crosswalk and sidewalk closures.
 - f. 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.
 - g. Location and spacing of "Tow-Away, No Stopping" signs.
 - h. 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.
 - i. Location and description of traffic control devices proposed for the protection of the work area, excavation, etc.
 - j. 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
 - k. Accessible, safe path of travel for passengers using public transit, from/to loading platform to/from the sidewalk.
 - l. Location of detour signs for vehicular, truck, bicycle and pedestrian traffic.
 - m. Truck routes.
 - n. Parklets and Shared Spaces with dimensions.
- 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 storage and parking plans approved by the Traffic Engineer through the City Representative.
 2. It is recommended that the Contractor use the T-drawings provided as a basemap to prepare parking and storage plans.

3. A storage area that does not comply with City housekeeping, occupancy, and other specifications and standards may be revoked.
4. No construction equipment or materials shall be allowed to be stored on any sidewalk, street or property, except as shown on the approved parking and storage plans for various phases of construction. A maximum storage area of 100 feet in length may be allowed per block. Only equipment and materials to be used within the next seven (7) days of work may be stored in this area. See Public Works Order 187005 for additional information.
5. Storage areas or office trailers may not be allowed within 25 feet of any intersection unless approved by the Traffic Engineer. It shall not block traffic control devices (STOP signs, signals, etc.), hydrants, bus stops, or driveways.
6. Storage, stockpiling, or placement shall not in any way obstruct any lane or passageway intended for vehicular or pedestrian traffic. Parallel parking strips are typically 7 to 8 feet wide.
7. Metered parking spaces may be occupied for equipment or material storage in the vicinity of the active construction area with the approval of the Traffic Engineer. A Special Traffic Permit and fees may apply.
8. 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.
9. 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.
10. 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.
11. 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.
12. The Contractor is not allowed to store construction equipment or materials on the sidewalk and roadway of the following streets:
 - a. Cargo Way
 - b. Illinois St

D. Material Specifications

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

equal, etc. Marketing materials and other non-responsive documents that do not contain material specifications may be rejected.

E. Certification and Resume of Flaggers

1. The flaggers shall have passed a Flagger Training Course conducted by the American Traffic Safety Services Association (herein after called ATSSA) or other Caltrans approved organizations. Refer to web page <https://www.atssa.com/> or <https://dot.ca.gov/programs/construction/safety-traffic/safety-training-courses> for flagger training courses. Training courses shall meet the following requirements:
 - a. Covers flagging requirements described in the California Manual on Uniform Traffic Control Devices (CA MUTCD), Part 6, "Temporary Traffic Control" and the Caltrans Flagger Instruction Handbook (PDF).
 - b. Demonstrate proper flagging equipment, signals, procedures and standard skills of a good flagger.
 - c. Covers standard flagger practices for various situations.
 - d. Discusses flagger station requirements and required temporary traffic control devices.
 - e. Be a minimum of 4 hours of in-person training (online not accepted).
 - f. Require that students demonstrate proper flagging procedures to become certified.
 - g. Include a written multiple-choice test and to successfully become certified, students must answer questions correctly with a passing score of 80% or better.
2. The flaggers shall have a minimum of one year experience utilizing manual traffic controls on similar construction projects within the last three years or have received their flagger certification within the last six months. Resumes shall be provided to document work experience as part of the flagger submittal.
3. The Contractor shall submit certificates and resumes (when required per above) of all flaggers for review and approval of the Traffic Engineer. The certificates of the flaggers shall be valid, current and show the expiration date. Both the contractor and flaggers are responsible for maintaining certification which shall be renewed as necessary to ensure validity for the duration of the contract.

1.5 QUALIFICATIONS

- A. In addition to the license(s) requirement in Subsection 1.2.B above, the Contractor or subcontractor performing traffic control shall have a minimum of 5 years' experience in traffic control as a firm/company and shall be licensed by the California Contractors State License Board. Refer to Section 00 21 13 – Instructions to Bidders, "Bidder Qualifications" for bidding requirements.
- B. The Contractor and/or subcontractor shall employ individuals with the following qualifications to perform the traffic control work:
 1. Each Traffic Crew member shall have a minimum of one-year experience in Traffic Control on similar scale projects.

2. Each flagger shall have passed a Flagger Training Course given by ATSSA or other approved institution's course that meets the requirements in Subsection 1.4.E and is approved by the Traffic Engineer.

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/engineering/mutcd/>
- 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 Traffic Engineer through the City Representative. Any changes on any signs shall be made with appropriate decals.
- C. All barricades shall have flashers. For night time work when lanes are closed, 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 Caltrans, CAMUTCD, or FHWA approved traffic control devices to separate traffic lanes and construction areas.
- F. The Contractor shall provide ADA compliant accessible, safe paths of travel for pedestrians.
- G. When circumstances require use of a barrier system refer to Subsection 2.6 BARRIERS.

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.
- B. Delineators used during non-working hours shall be double-based or secured to the pavement.

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 (NOT USED)

2.5 BARRICADES

- A. The Contractor shall furnish, install and maintain barricades to separate pedestrian areas and traffic areas as shown on the approved Traffic Control Plans.
- B. Devices meeting CAMUTCD, Caltrans, and FHWA requirements for barricades and designed specifically to be used as barricades may be used as barricades. Neither barriers nor barrier systems shall be used as barricades in the San Francisco public right-of-way. Barricades used in the public right-of-way shall be deployed in conjunction with traffic control devices as established by CAMUTCD.

2.6 BARRIERS

- A. All plastic barrier systems including, but not limited to Triton barrier systems, that are deployed as barriers shall be filled, connected/inter-locked and arrayed in unit quantities that comply with manufacturer's standards for use of these devices as barrier systems. Only devices meeting CAMUTCD, Caltrans, and FHWA requirements for use as barrier systems may be used as barrier systems. Minimum requirements for plastic barrier systems are:
 - 1. Filling units with water or sand in accordance with manufacturer's requirements.
 - 2. Physical connection systems and correct alignment in accordance with manufacturer requirements.
 - 3. Meet or exceed manufacturer's established number of devices for posted speed limit where deployed.
 - 4. Installation of end treatments (array) as required by manufacturer.
- B. The installation layout of water filled barriers (or approved equal) shall be in accordance with the manufacturer's specifications. The water filled barriers (or approved equal) shall be filled with water or sand in accordance with the manufacturer's specifications. The water filled barriers (or approved equal) shall be inter-locked per manufacturers 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.
- D. If K-rails are required for the work by Caltrans or the project the Contractor shall furnish, install, and maintain the Caltrans Standard K-rails used in the project, and shall follow CAMUTCD, Caltrans, FHWA, and manufacturer's requirements for their installation and use.

2.7 TAPE AND MARKERS FOR TEMPORARY STRIPING

- A. Temporary Retroreflective Painted Pavement Striping and Markings

The Contractor shall use painted traffic striping and pavement markings on exposed concrete base as instructed by the Traffic Engineer through the City Representative. Painted traffic striping and pavement markings shall be installed immediately after grinding and before fully opening the required lanes to traffic at the end of the work day. 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.

B. Temporary Removable Pavement Tape

The Contractor shall use pavement tape as instructed by the Traffic Engineer through the City Representative. The Contractor shall use any one of the following removable foil-backed tapes or approved equal:

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

C. Temporary Reflective Overlay Pavement Markers

The Contractor shall use overlay pavement markers on microsurfaced streets and may use them on finished concrete streets as instructed by the Traffic Engineer through the City Representative. The Contractor shall use any one of the following or approved equal:

1. PEXCO, Davidson Traffic Control Products Model TOM Temporary Overlay Marker with retroreflective sheeting; Model TRPM Chip Seal Markers
2. Apex Model 932 Chip Seal/Overlay Markers
3. Hi-Way Safety Inc. Model Chip Seal Markers with retroreflective sheeting

2.8 TRAFFIC SIGNAL LOOPS (NOT USED)

2.9 CONDUCTORS (NOT USED)

PART 3 – EXECUTION

3.1 VEHICULAR AND PEDESTRIAN TRAFFIC

A. Traffic Lane and Parking Requirements

1. The Contractor shall comply with all traffic lanes specified in the Traffic Lane Requirements table.
2. The Contractor shall maintain the required travelway for vehicles in any public street or way and a minimum width of 4 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 seven (7) days of work. Refer to 1.4.C Parking and Storage Plans for more requirements.

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. Exceptions are as noted below:
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.
8. Tow-Away signs can have the posted hours shown as 0.5 (half) hour prior to the start of work with the exception that it shall not be earlier than 8:00 a.m.

Traffic Lane Requirements
Number and Width of Lanes

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
SEWER MAIN, SEWER LATERAL, WATER MAIN, WATER LATERAL, CONCRETE SWALE, LANDSCAPING, GRINDING, AND PAVING WORK					
<u>AMADOR STREET</u>					
Cargo Way	9AM-4PM (M-F) 8AM-6PM (Sa-Su) At Other Times	-	-	1@14' Reversible ↓ 1@14' Reversible ↓ Full Roadway	
<u>Cross Streets for Amador Street</u>					
Cargo Way β *(MC)	At All Times	-	-	Full Roadway	Full Roadway
Illinois Street β	At All Times	Full Roadway	Full Roadway	-	-

* The Contractor shall not prevent or delay the operation of mass transit vehicles at any time. MC = Motor Coach. See Subsection 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 where 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:

<https://www.sfmta.com/maps/san-francisco-bike-network-map>

The Contractor shall install “Bicyclists Allowed Use of Full Lane” signs, or other approved equal, on streets with bicycle lanes during construction.

↓ The Contractor shall designate the lane for two-way traffic with a flagger at each end of the two-way road segment to control the flow of traffic. This operation shall be restricted to one block at a time.

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 Plans, parking and storage plans, and flagger certificates. **The Contractor shall possess a copy of the latest, approved Traffic Control 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 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. Refer to SF Public Works Excavation Code for requirements.

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 within a 5 block length at the same time unless permitted by the Traffic Engineer.
5. The Contractor shall plate over trenches after working hours. See Subsection 2.3 NON-SKID METAL PLATING for more information.
6. The Contractor shall provide flaggers 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 flaggers required shall depend on the phase of work, traffic conditions, etc. The flaggers 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. The Contractor shall also separate the construction area and staging areas from the walkways in accordance with SF Public Works barricade regulations.
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 Paint Shop at (415) 401-3164 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 VEHICULAR AND PEDESTRIAN TRAFFIC.
 - 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 TEMPORARY STREET CLOSURES FOR 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 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. For locations where work must be halted for Holiday Moratorium or special events, all plates shall be removed at least one day before the Holiday Moratorium or special events mentioned above within the project area. All openings in the street and sidewalk must be closed by backfilling and paving, providing safe and adequate passage for vehicles and pedestrians.
EXCEPTION: if the work is allowed at night per the traffic lane requirements in this specification and under the Holiday Moratorium guidelines of the Blue Book, plates may be left in place.
13. The pedestrian path shall be clear of any debris and meet all ADA requirements. Refer to drawing STR 7696 Rev. 3 Pedestrian Crosswalks through Construction Zones for details.
14. The Contractor shall not perform any operation to relocate, adjust, or otherwise disturb bicycle facilities installed in the work area. The contractor shall be responsible for coordinating with the Traffic Engineer and the SFMTA Bicycle Facility Managers to request the removal of these bicycle facilities that might be affected by work in the area. See Subsection 3.20 BICYCLE FACILITIES IN THE WORK AREA for more information.
15. The Contractor shall be responsible for coordinating with SF Public Works – Bureau of Street Use and Mapping to request the removal of any temporary sidewalk extensions that might be affected by work in the area. See Subsection 3.29 TEMPORARY SIDEWALK EXTENSIONS – PARKLETS for more information.
16. **While providing a reversible lane around the work area as required under the Traffic Lane Requirements table, the Contractor shall limit any reversible lane setup to 200 feet or less during construction.**

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 1000 feet at any one time. No further grinding of additional blocks or intersections may be started within the five (5) block radius until the previously impacted blocks are paved unless approved by the Traffic Engineer. All blocks and intersections must be paved within 120 hours from the start of grinding work, without exception.

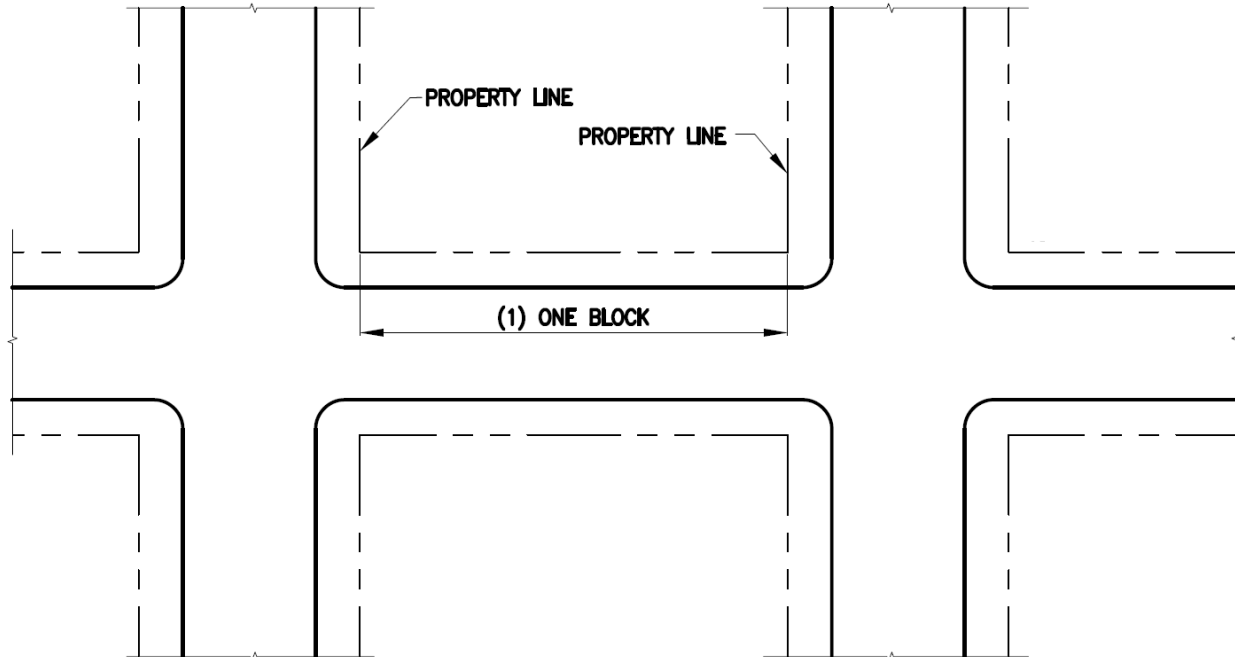


Figure 3.2B.1 – Length of one (1) block

2. Grinding is not permitted on Thursday or Friday unless paving will be satisfactorily completed before the end of the Saturday workday of the same week.
3. Cross streets shall not be closed at any time unless as specified in this specification.
4. Refer to Traffic Lane Requirements table for grinding and paving through intersections. For locations not addressed in the table, the cross street may be closed for up to a maximum of ten (10) minutes for residential streets and alleys. For streets and alleys that are neither residential nor listed in the table, the intersection work shall be phased. Following each closure, the roadway shall be kept open long enough to dissipate traffic.
 - a. When temporarily closing the cross street as stated above, the Contractor shall set up “ROAD CLOSED TO THRU TRAFFIC” (R11-4) signs and post flaggers one (1) block in advance of work.
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.
7. The Contractor shall finish any water work, sewer work, and concrete base repair work in the blocks before proceeding to grinding and paving operations on said blocks.

C. Concrete Base Repair Work

1. The Contractor shall be allowed to work on two (2) blocks and/or two (2) intersections on any one day not to exceed 1,200 linear feet for concrete base repair work.

D. Sewer Work

1. Sewer related work is allowed up to 500 feet 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) flagger 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. If an existing accessible, safe path of travel is obstructed by a flexible hose for sewer diversion, the Contractor shall provide temporary pedestrian ramps over the hoses. If the flexible hose is located within a bike path, bike lane or a street designated as an official bike route, the Contractor shall provide longitudinal and/or transverse transitions with a slope of 1:18 between the hose and existing pavement (whenever the difference in the grade of the pavement and the hose exceeds 3/4 inch) before opening the lanes to traffic.

E. Water Work

1. Water main related work is limited to 500 feet 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) flagger 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 transit routes 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 submit a bus stop relocation request at least ten (10) working days in advance of doing any work in existing passenger loading zones or transit layover hubs, where such work would interfere with passenger loading and unloading operations or operator layovers. 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 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. A bus stop relocation request may be submitted at the link below:

<https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>

5. The Contractor shall provide trained flaggers 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.
7. The Contractor shall obtain a clearance permit from the SFMTA prior to performing any work within 72 inches of the outside edge of SFMTA rail (the "Track Zone"). To acquire clearance to work, the Contractor must attend the clearance meeting for project review which is held at 10:00 AM every Tuesday. The Contractor will be required to submit a clearance permit to the Transit Management Center (TMC) no less than 72 hours in advance of any planned work via email to CentralManagers@sfmta.com. If the project requires electrical de-energization as well, an Electrical Work Plan must be completed and filed before filing for a clearance. A copy of the clearance permit shall be provided to the City Representative. For more information on how to obtain clearance and how to file, please visit the link below:

<https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>

If workers or equipment are within the Track Zone, or have the potential to swing or move into the Track Zone, the Contractor and its workers shall comply with the requirements of the SFMTA Roadway Worker Protection Program. With respect to requesting Roadway Worker Protection (RWP) training, the Contractor should email RoadwayWorkerProtection@sfmta.com for questions and to schedule training. Additional information regarding training requirements can be found at the link below:

<https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>

8. The following streets have mass transit operations (MC = Motor Coach):
 1. Cargo Way: # 91 – 3rd Street/19th Avenue Owl (MC)
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 applicable

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.

2. If Contractor is to perform de-energization and/or de-pole/re-pole operations, Contractor shall refer to Section 01 11 00 Summary of Work for additional information.
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 \$8,006. The estimated cost for overhead wire de-energization is \$8,006 per day. The cost for a Muni inspector is approximately \$186 per hour with a minimum of four (4) hours per site. Multiple Muni inspectors may be required when de-energizing any trolley wires. All fees subject to change.
 - b. Any requests for de-energizing of overhead wires are subject to Muni's approval and availability of resources.
 - c. 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 submit a request 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, using the link below:

<https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>

After submitting a request for support a unique case number will be assigned. The Contractor must have an "Approved" case and/or a valid clearance permit to proceed with any work near Muni operations.
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.

C. TRANSIT SHELTER IN THE WORK AREA

1. If a transit shelter is located within the work area and could be subject to damage by construction, the Contractor shall contact through e-mail, Lisa Ising at

Lisa.Ising@sfmta.com (415-530-3638), Margeaux Casillas at MargeauxCasillas@clearchannel.com (510-446-7200 extension 67259) and Ashley Kirchner at ashleykirchner.ncs@comcast.net (707-207-5209). Contractor must make request:

- a. At least 10 business days in advance of any sidewalk/roadway excavation under and/or around transit shelter such that Clear Channel's contractor can restore or add power infrastructure for the transit shelter;
 - b. At least 10 business days prior to the date an existing shelter is requested to be removed; and
 - c. At least 10 business days prior to the date a transit shelter is requested to be installed.
2. All transit shelter removals, modifications and installations MUST be performed by Clear Channel.
 3. If the bus zone at the transit shelter needs to be relocated, Contractor can make a bus stop relocation request at the link below:

<https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>

3.4 TRAFFIC CONTROL BY SAN FRANCISCO UNIFORMED OFFICERS

- A. The Contractor shall provide Uniformed Off-Duty San Francisco Police Department (SFPD) 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. The Contractor shall provide officers at locations, during different phases of work for the specified time, as requested by the Traffic Engineer through the City Representative.
 3. The Traffic Engineer through the City Representative shall make the final determination whether any officers are required and at which locations, in addition to the flaggers provided by the Contractor as part of the traffic control.
 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 scheduled 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.
- B. The Traffic Engineer may require parking control officers in lieu of uniformed police officers for certain work scope depending on type of work, transit and traffic requirements and availability.
1. The Contractor shall notify the Traffic Engineer through the City Representative regarding the schedule and number of officers required at least 14 calendar days in advance of the scheduled date. The minimum time required to cancel the scheduled officers is 24 hours prior to the work. The fee for cancellation less than 24 hours prior to the work is four hours of officer time.
 2. The officers shall be paid a minimum of four hours per day. One hour shall be allocated for travel time.
 3. If SFMTA Enforcement bills the Contractor, the Contractor shall be paid for actual time spent on controlling traffic by the PCOs 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 table (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. Fees for the Special Traffic Permit are subject to change. The application for the Special Traffic Permit and current fees can be found here:

<http://www.sfmta.com/services/streets-sidewalks/construction-regulations>

SFMTA reserves the right to deny any request.

- B. In case of an emergency, the Contractor shall declare emergency by contacting the City Representative and other relevant City agencies according to Section 12 "Emergency Procedure". Refer to "Regulations for Working in San Francisco Streets" (Blue Book).
- C. Working on City streets beyond the terms set forth in the specifications, without a Special Traffic Permit and without emergency declaration, is in violation of the San Francisco Transportation Code Section 903. Violation of the Special Traffic Permit Ordinance shall result in fines of at least \$500 in addition to possible liquidated damages.
- D. Violation of the San Francisco Transportation Code Section 7.3.30 constitutes a misdemeanor. It reads as follows:

To obstruct traffic four or more times within one year without a Special Traffic Permit, or violate the terms of a Special Traffic Permit or the regulations set forth in Division II, Section 903. Each hour during which the obstruction continues shall constitute a separate offense. Any person and/or business entity violating this section may be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of at least \$1,000, or imprisonment in the county jail not exceeding six months, or both.
- 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 project 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.
 - 1. Temporary pavement markings shall be maintained by the Contractor until the permanent markings are installed.
 - 2. The Contractor shall not install temporary pavement markings that deviate from the approved striping plans (T-drawings) or official striping drawings (STR).
- 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 bars, 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.

- F. The Contractor shall install temporary pavement markings, as specified below, after concrete base repair, after grinding, after paving, after water main, after sewer 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 backed tapes.
- G. The Contractor shall maintain all temporary pavement markings for 30 calendar days after the acceptance of the paving of any street. The SFMTA Paint Division will install permanent markings within 30 calendar days of the acceptance of the paving by the City Representative or will maintain the temporary pavement markings 30 days after pavement is accepted by the City Representative.
- H. Temporary pavement tape dimensions and spacing shall be as follows:
1. Stop bar: One 4 inch wide stripe to mark 12 inch 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. Crosswalks:
 - a. Unless specified otherwise on the contract drawings, crosswalks shall be aligned with the projections of the near side property lines and face of curb and shall be extended from curb to curb.
 - b. Contractor shall use 4 inch wide stripes to mark transverse crosswalks.
 - c. For continental crosswalks, if Contractor removes less than half of a crosswalk, Contractor shall use two 4 inch wide stripes every 5 feet on center for the width of the crosswalk. If Contractor removes half or more of a crosswalk, Contractor shall use 4 inch wide stripes to mark as transverse crosswalk.
 3. Striping across intersections and guidelines: for left and/or right turn lanes shall be two 4 inch wide stripes to mark 8 inch wide guidelines, unless otherwise specified by the Traffic Engineer.
 4. Double yellow stripe centerline: shall be two 4 inch wide stripes, 3 inches apart, 2 feet long strips spaced at 24 feet center to center.
 5. Lane lines: shall be 4 inch wide stripe, 2 feet long strip spaced at 24 feet center to center.
- I. Temporary reflective overlay pavement markings: may be used for short durations to provide markings on uneven, temporary pavement, exposed base and low volume streets with approval from the Traffic Engineer. Dimensions and spacing shall be as follows:
1. Double yellow stripe centerline shall be two markers, 3 inches apart, spaced at 24 feet center to center.
 2. Lane line markers shall be spaced 24 feet 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. R9-3 and R9-3bP, "NO PED CROSSING" 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 SFMTA Paint Division will furnish and install all the permanent thermoplastic stripes and pavement markings (traffic stripes, crosswalk stripes, stop bars, 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 via email 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 SFMTA Paint Division can install permanent pavement markings.

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 SFPW Order No. 183160. The ordinance can be found at:
<https://www.sfpublicworks.org/services/permits/public-works-orders>
- C. The Contractor shall register Tow-Zone at least 72 hours in advance of the effective date and time on the following website:
<https://www.sfmta.com/permits/construction-tow-away-zones>

The Contractor shall post the signs at least 72 hours in advance of the effective date and time. There is a Tow-Away sign fee per sign, which is subject to change.
- D. "Tow-Away, No Stopping" signs may be attached to Type II barricades, placed at 20 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 information posted on the sign shall be in compliance with SFPW Order No. 183160.

- E. 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.
- F. When existing posted sign(s) need(s) to be revised (i.e., later start date, duration extension, etc.), the Contractor shall obtain 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). Refer to SFPW Order No. 183160.
- G. 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. For more information on and how to apply to for a night noise permit, please visit the link below:
<https://www.sfpw.org/services/permits/night-noise>
For any additional questions, please email bsmpermitdivision@sfpw.org or call (628) 271-2000.
- 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 Urban Forestry (BUF) of SF Public Works at (628) 652-8733, as per specification Section 01 11 00 Summary of Work 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.

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, and maintain temporary signs.
- 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"x48".
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"x18".
16. "Street Name" signs, with 6" Upper Case series "D" black letters on orange plate, size 48"x18".
17. "NO PED CROSSING SYMBOL" signs, Code R9-3a, size 18"x18".
18. "USE CROSSWALK (RIGHT OR LEFT ARROW)" signs, R9-3b (RT/LT), size 18"x12", (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. "MAY USE FULL LANE" signs, R4-11.
 24. "SAN FRANCISCO BIKE LOGO ROUTE" signs with bike route number and "←BIKE LANE", Code Ca-SG45 (modified), 12"x24", 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"x26" black and reflective orange.
 26. Flashing arrow signs, Type II conforming to the latest Caltrans Standard Specifications, except as modified herein, placed as shown on the approved Traffic Control Plan. The Contractor shall use solar powered flashing arrow signs.
 27. Miscellaneous signs, size 48"x48" or larger, with 6" and/or 8" series "D" black letters on orange plate.
 28. Changeable Message Signs (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.
 29. SFMTA temporary Bus Stop Signs, 12"x24", shall be placed as directed by the SFMTA through the City Representative. The SFMTA Superintendent at (415) 701-5376 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 shall meet the latest Caltrans requirements.
- 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 control 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 Flaggers
1. Flaggers, flagging procedures, 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 or close any roadway to vehicular or pedestrian traffic, except in the immediate vicinity of the work, and then only to the extent allowed by project specifications, approved traffic control plan and/or Special Traffic Permit.
- B. Those parts of streets, access roads, 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 shall not impede free access to public and private properties, including those properties fronting streets allowed or stipulated by this specification and approved Traffic Control Plans. The Contractor shall provide for such local access by phasing operations, bridging, or employing other procedures approved by the City Representative.

Exception: For work that will require impeding access, the Contractor shall coordinate and work with each affected property, business owner, or responsible building or business manager in the presence of the City Representative. Agreement shall be made in writing.

- D. Access to fire hydrants 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 diverting such traffic from its normal path, 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 control 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 TRAFFIC SIGNS

- A. The Contractor shall be familiar with all existing permanent traffic signs and other traffic control devices within and adjacent to the project limits.
- B. The Contractor shall be responsible for maintaining and/or temporarily relocating existing traffic control, street name and other City signs that are to remain and/or installing temporary signs that are necessary for the prosecution of the work for any interim conditions (as reflected on the Traffic Control Plans).
1. When performing sidewalk work that will affect a STOP sign, the Contractor is to remove the existing STOP sign pole and pour a new sidewalk flag at the same location and temporarily mount the STOP sign on a type III barricade until the Sign Shop can install the new STOP sign and pole on the completed sidewalk.
 2. If the Contractor relocates a sign, they must use City approved hardware for attaching the sign to a pole with 3/4 inch type 201 stainless steel 0.03 inch thick straps with an average breaking strength of 2,250 pounds and 201 stainless steel buckles.
 3. The Contractor shall maintain signs either until the City installs new signs or until the Contractor installs signs required by Contract (see 3.16.F below).
- C. The City shall be responsible for furnishing and installing all new, final signs except as noted in 3.16.F below.
- D. For traffic signal work, the Contractor shall temporarily relocate any traffic control, street name or other City signs, as required for the prosecution of the work and to prevent interference with traffic signal or pole installations, and shall satisfactorily maintain such signs at all times. The temporary relocation of each "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 Traffic Engineer through the City Representative.
- Upon activation of a traffic signal, the Contractor shall remove and salvage as City property existing "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. For signs that are to be permanently removed, the Contractor shall remove and dispose of any posts and foundations. Signs that are to be permanently removed shall be salvaged as City property and delivered by the Contractor, with a copy of the Sign Inventory Form, to the SFMTA Sign Shop at 1508 Bancroft Avenue, San Francisco by calling (415) 401-3765. Each sign shall be tagged and labeled correlating to the information on the Sign Inventory Form.
- F. The Contractor shall permanently install or relocate traffic control and other City owned signs and poles where shown on the contract plans. 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. Note: street name and/or "STOP" signs and poles that are affected by curb ramp, bulb-out or

sidewalk work may be reused and reinstalled in their original location or close proximity depending on their condition with the approval of the Traffic Engineer through the City Representative.

- G. 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.
- H. If any 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 the Traffic Engineer through the City Representative, at least 10 working days before starting any work that may impact parking meters so that arrangements may be made by the City to have the meter heads or multi-space meters removed at no cost to the Contractor. Meter head and multi-space meters removal shall only be done by the SFMTA Meter Shop, unless otherwise authorized by the Traffic Engineer. It is the Contractor's responsibility to remove and dispose of meter posts after meter heads have been removed.
- B. Parking meters and related infrastructure 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

- A. If parking stall or roadway sensors are located within the work area and could be damaged or affected, the Contractor is responsible for the removal and safe handling of these decommissioned sensors. The Contractor shall contact Steve Counts (Stephen.Counts@sfmta.com, 415-550-2779) to coordinate the drop-off of the sensors at the SFMTA Meter Shop at 1508 Bancroft Avenue, San Francisco, CA 94124.
- B. 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.

3.19 TRAFFIC SIGNAL WIRELESS OR WIRED LOOP DETECTORS IN THE WORK AREAS (NOT USED)

3.20 BICYCLE FACILITIES IN THE WORK AREA

- A. Bicycle facilities may refer to but is not limited to any of the following:
 1. Bicycle Racks – Usually but not always constructed of round or square metal tubing in the shape of a hoop or inverted U.
 2. Bicycle Sharing Stations – Automated electronic bicycle parking facility that dispenses bicycles for public hire. Comprised of multiple components including a group of bicycle docks, a payment kiosk with solar mast, and map panel/display case.
 3. Bicycle Lockers – Enclosed, secure individual bicycle storage lockers accessed by key or cardkey.
 4. Bicycle Counters – Loops or other bicycle detection devices installed in the pavement. “Bicycle barometers” are a type of bicycle counter that is connected to a power source and includes a display which is mounted onto the sidewalk.

- B. If bicycle racks are located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the SFMTA Bicycle Parking Manager at bikeparking@sfmta.com through the City Representative, twenty-one (21) working days before starting work.
- C. If bicycle sharing stations or bicycle lockers are located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the SFMTA Bicycle Sharing Manager at bikeshare@sfmta.com through the City Representative at least thirty (30) working days before starting work.
- D. If bicycle counters are located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the SFMTA Bicycle Counter Manager at bikecounters@sfmta.com through the City Representative, thirty (30) working days before starting work.
- E. In the event the Contractor removes or damages the existing bicycle facilities during construction, the Contractor shall immediately contact the Traffic Engineer and the SFMTA Bicycle Facility Managers through the City Representative, to coordinate the re-installation of the bicycle facility at the Contractor's sole expense.
- F. 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 Traffic Engineer and the SFMTA Bicycle Facility Managers through the City Representative, and the bicycle facility will be re-installed.

3.21 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, SFMTA Signal Shop (Fax # 415-282-7681), and SFPD Traffic Bureau ten (10) working days in advance of the start of each shutdown. It is the responsibility of the Contractor to make arrangements to have police officer(s) 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 (BLHP) at (415) 227-8513 a minimum of ten (10) 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 approved, tested, and properly adjusted by BLHP.
- C. The operation and interconnected functioning of existing traffic signals shall not be disturbed before 9:00 a.m. 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.

3.22 TRAFFIC SIGNAL LOOPS INSTALLATION

- A. The Contractors shall lay out the loop installation, with paint, and notify the Traffic Engineer through the City Representative at least two (2) working days in advance, before the scheduled date of slot cutting. The slots for the loops shall be cut only after the approval of the Traffic Engineer.
- B. Residue material resulting from slot cutting operations shall not be allowed to flow across sidewalk or traffic lanes, and shall be removed from the pavement surface.
- C. The depth of the cut shall be 4.0 to 4.5 inches except when noted otherwise on the contract plans and drawings. The width of the saw cut shall be minimum 1/2 inch. Each corner shall be core drilled. The Contractor shall core drill the point where the curb line and road surface meet. The Contractor is advised that City streets are generally 2 to 4 inch asphalt concrete wearing surface on an 8 to 12 inch concrete base.
- D. The Contractor shall submit for approval a schedule of installation, for all phases of saw cutting. The City Representative shall verify the following:
 - 1. Layout of loops and home runs prior to saw cut.
 - 2. Depth and width of the saw cut for the loop.
- E. Contractor shall notify the City Representative not less than 24 hours prior to cleaning of pavement cuts, installation of loop wires and installation of loop sealant. Failure to notify the City Representative will result in this work being rejected.

3.23 INSTALLATION OF CONDUCTORS

- A. General
 - 1. Each conduit that contains traffic signal conductors shall include one bare #6 AWG copper stranded conductor that is bonded at each end.
 - 2. The installation of any conductors in conduits shall not take place until the Contractor has demonstrated to the City Representative's satisfaction and approval that the Contractor has employed all means necessary, or required, to clean and prepare the conduits for the installation of conductors therein.
 - 3. If the existing grouping, taping, or lacing of conductors is disturbed in the course of work, the Contractor shall regroup, tape, or lace as applicable.
 - 4. All conductors terminating in a metallic enclosure shall terminate on a terminal board equipped with screw-type or box-type terminals fabricated from copper or copper-alloy material.
 - 5. Conductors terminating in screw type termination shall be equipped with self-insulated self-locking spade-type terminals.
 - 6. Conductors terminating on box-type terminals shall be connected directly without using spade-type pressure terminals attached to the conductor ends.
 - 7. Ends of all unused conductors shall be individually taped prior to intersection turn-on or switchover.
- B. Conductor Color Codes, Labels, and Grouping

1. Conductor labeling material shall be Panduit Write-on, Self Laminating Labels (Catalog #PLD-2) or equal. Labeling and grouping requirements apply to all new and all existing conductors to remain at a given intersection. Old nylon tags shall be removed from all existing conductors to remain.
2. Wires shall be sized, color-coded and labeled in accordance with the following schedule:

CIRCUIT	AWG	PHASE	BASE COLOR	STRIPE	LABEL
Spare Signal Wire	#14	N/A	Black	None	None
12-Conductor Cable	#14	N/A	Black (jacket)	None	*see below
Detector Cable	#14	all	Black (jacket)	None	Per plans
Service (AC+)	#8	N/A	Black	None	None
Service (AC neutral)	#8	N/A	White	None	None

* Install labels on 12-Conductor Cable near each conduit end. For example, a single cable in a pull box requires two labels – one label near each conduit end. 12-Conductor Cable labels shall identify where cable is headed, i.e., north, south, east, west, controller, etc.

3. In all pull boxes and controller cabinets, all traffic signal conductors shall be grouped by signal head with electrical tape and labeled by signal head number as designated on plan sheets.
4. In all pull boxes, all conductors running between the same two conduits shall be further grouped and wrapped in at least one location with electrical tape near the center of the slack.
5. In the controller cabinet, all conductors shall be further grouped and labeled by phase in an orderly manner.

C. Splicing

1. Not Applicable.

D. 12 Conductor Interconnect

1. Not Applicable.

E. Red Light Camera

1. Not Applicable.

3.24 AUTOMATED ENFORCEMENT SYSTEMS IN THE WORK AREA (NOT USED)

3.25 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.

3.26 PEDESTRIAN MONITORS (NOT USED)

3.27 COMMUTER SHUTTLE BUS STOP IN THE WORK AREA

- A. If a Commuter Shuttle Bus Stop space is located within the work area and could be subjected to damage by construction, the Contractor is responsible for coordinating its removal with the Commuter Shuttle Bus Stop Manager at Samantha.Rebelos@sfmta.com through the Traffic Engineer ten (10) working days before starting work.
- B. In the event the Contractor removes or damages the existing Commuter Shuttle Bus Stop during construction, the Contractor shall immediately contact the Commuter Shuttle Bus Stop Manager at Samantha.Rebelos@sfmta.com through the Traffic Engineer, to coordinate the re-installation of the Commuter Shuttle Bus Stop at the Contractor's sole expense.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the Traffic Engineer, the Contractor shall notify the Commuter Shuttle Bus Stop Manager at Samantha.Rebelos@sfmta.com through the Traffic Engineer, and the Commuter Shuttle Bus Stop will be re-installed.

3.28 CAR SHARE IN THE WORK AREA

- A. If a car share space is located within the work area and could be subjected to damage by construction, the Contractor is responsible for coordinating its removal with the Car Share Manager at 415-646-2162 through the Traffic Engineer ten (10) working days before starting work.
- B. In the event the Contractor removes or damages the existing car share space during construction, the Contractor shall immediately contact the Car Share Manager at 415-646-2162 through the Traffic Engineer, to coordinate the re-installation of the car share space at the Contractor's sole expense.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the Traffic Engineer, the Contractor shall notify the Car Share Manager at 415-646-2162 through the Traffic Engineer, and the car share space will be re-installed.

3.29 TEMPORARY SIDEWALK EXTENSIONS – PARKLETS

- A. If a temporary sidewalk extension, parklet, is located within the work area and could be impacted by construction or may need to be re-located for traffic control, the Contractor is responsible for coordinating its removal with the San Francisco's Parklet Program Manager at parklets@sfdpw.org through the City Representative at least thirty (30) working days before starting work.
- B. In the event the Contractor removes or damages the existing parklet during construction, the Contractor shall immediately contact the Traffic Engineer and the Parklet Program Manager through the City Representative, to coordinate the repair or re-installation of the parklet at the Contractor's sole expense.

- 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 Traffic Engineer and the Parklet Program Manager through the City Representative, and the parklet will be re-installed.

3.30 SHARED SPACES AND SLOW STREETS

- A. Prior to beginning construction, the Contractor shall identify all locations of pending and approved Shared Spaces outdoor dining structures within the project limits. Shared Spaces locations can be viewed on the Shared Spaces Dashboard website:

<https://sfgov.maps.arcgis.com/apps/opsdashboard/index.html#/b1e37820230a4017ae53d645a96c774b>
- B. If a Shared Spaces outdoor dining structure is located within the work area and could be impacted by construction or may need to be re-located for traffic control, the Contractor is responsible for coordinating with the permittee and the Shared Spaces permitting group at SharedSpacesPermit@sfdpw.org.
- C. Prior to beginning construction, the Contractor shall identify all locations of Slow Streets within the project limits. Slow Streets are closed to thru vehicular traffic and local access must be maintained at all times. The Contractor is strongly discouraged from using a Slow Street as a detour route, and it should only be considered when there are no other feasible options. Slow Streets can be viewed on the website below:

<https://www.sfmta.com/projects/slow-streets-program>
- D. Slow Streets have devices (signs, barricades, delineators, etc.) that close the street to all but local traffic, pedestrians and bicycles. When working on a Slow Street with movable devices, the Contractor shall temporarily remove the existing devices, install construction zone traffic control per the approved Traffic Control Plan and restore Slow Street devices at the end of the work day. When devices are affixed to the roadway, Contractor shall notify the Traffic Engineer through the City Representative at least 10 Days prior to start of work to coordinate the removal of the devices. The Contractor is responsible for safeguarding the Slow Streets devices.

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

INSTRUCTION SHEET FOR OFF-DUTY POLICE OFFICERS

PROJECT:

SPEC. NO. :

INTERSECTION: _____

OFFICER # 1

A) FACILITATE TRAFFIC FLOW OF VEHICULAR TRAFFIC:
N/B____ S/B_____ E/B_____ W/B_____

B) FACILITATE PEDESTRIAN TRAFFIC CROSSING:

STREET_____ SIDE_____

OFFICER # 2

A) FACILITATE TRAFFIC FLOW OF VEHICULAR TRAFFIC:
N/B____ S/B_____ E/B_____ W/B_____

B) FACILITATE PEDESTRIAN TRAFFIC CROSSING:

STREET_____ SIDE_____

ADDITIONAL INSTRUCTIONS:

Signature of Traffic Supervisor _____

Officers shall direct vehicular and pedestrian traffic, cite motorists and pedestrians violating traffic regulations and perform other duties concerning traffic.

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.

1.4 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.

1.5 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.

1.6 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 1.6.A 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.

1.7 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.

1.8 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.

1.9 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.

1.10 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.

1.11 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.

1.12 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 one 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 shall be composed of the following:
 - 1. 6-foot tall temporary tree protection composed of 2x4s that surround the outer edge of the tree basin.
 - 2. 2x4s shall be mounted on 2-inch diameter galvanized iron posts, anchored into the soil on opposite corners of the guard, and driven into the ground to 2-foot depth (shift stakes if root is greater than 2-inch diameter).
 - 3. 2x4s shall be used as a toe board surrounding the base of the tree protection for ADA compliance.
 - 4. Place orange snow fencing around the tree protection.
 - 5. Refer to Appendix 'A' for additional information.
- B. 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.
- C. 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.

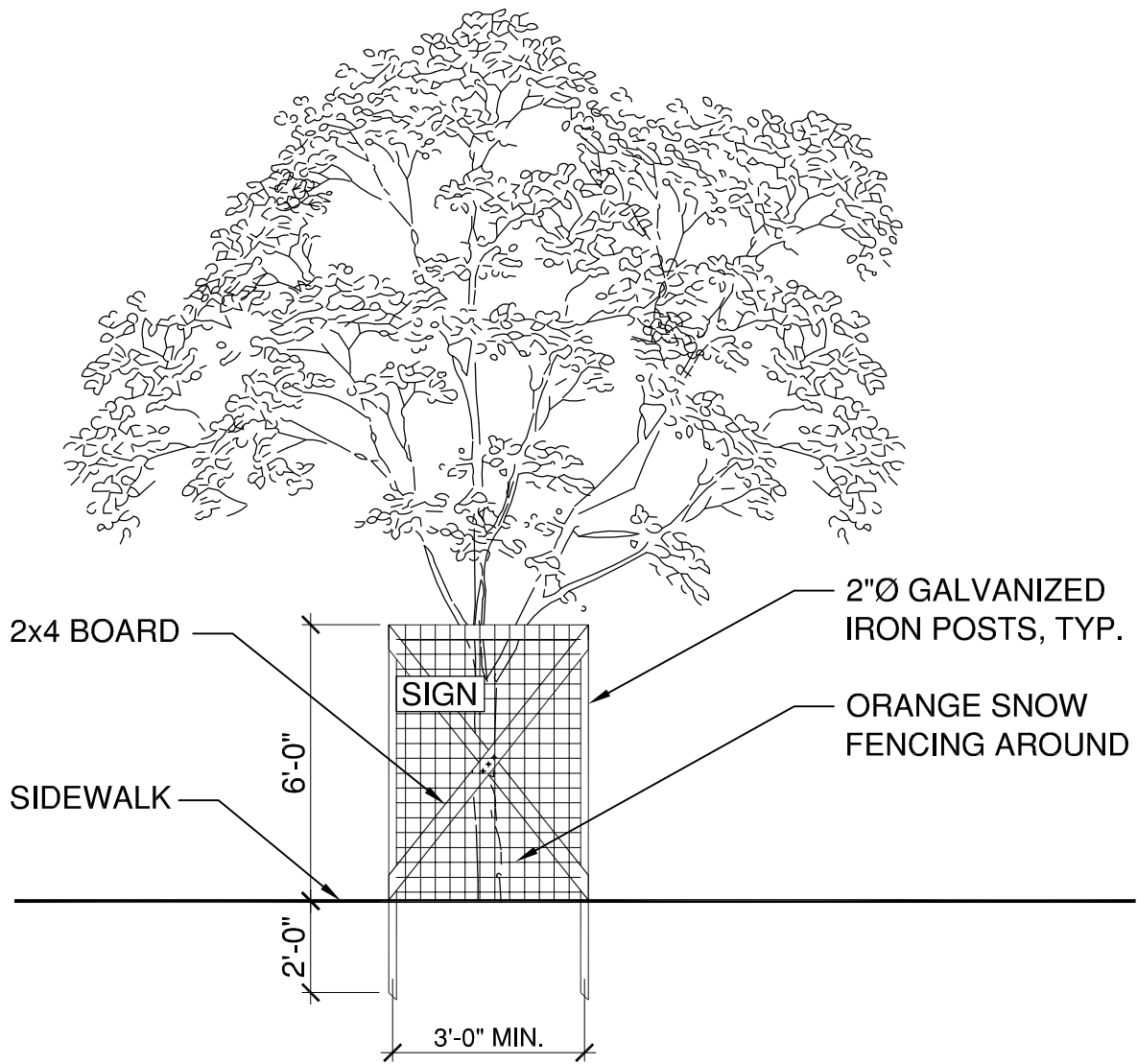
END OF SECTION

ORANGE SNOW FENCING AROUND

2"Ø GALVANIZED IRON POSTS, TYP.

3'-0" MIN.

PLAN VIEW



STREET TREE PROTECTIVE FENCE

SCALE: 1/4" = 1'-0"



Urban Forestry

urbanforestry@sfdpw.org | T. 628.652.8733 | 49 South Van Ness Ave. Suite 1000, San Francisco, CA 94103

Tree Protection Plan Cover Sheet & Planting Checklist

1. Applicant Information

Contact Name: _____

Address: _____

E-Mail Address: _____ Phone #: _____

2. Site Information

Address: _____

Building Permit Number _____	New Garage/ Curb Cut	ADU, legalization or new
BSM Permit _____	Net Addition over 500 sq. ft.	New Dwelling Unit (not ADU)
	New Building	Size of ADU _____

3. Disclosure of Existing Trees

Only the following specific types of trees require protection under the Public Works Code. These trees are collectively known as "Protected Trees." Please indicate the presence or lack thereof of such on, over, or adjacent to the parcel containing the proposed construction. Review all categories of trees below and provide the quantity of each type of tree, if appropriate.

A) Street Trees: A tree growing within the public right of way (i.e., sidewalk) that is not also a Landmark Tree.

Regardless of size, all trees in the public right of way are protected under Article 16 of the Public Works Code.

QTY: _____

B) Significant Trees: A tree that is planted on the subject property (i.e., outside the public right of way) with any portion of its trunk within 10 feet of the public right of way that has (a) diameter at breast height (DBH)

in excess of twelve inches **OR** (b) a height in excess of twenty feet **OR** (c) a canopy in excess of fifteen feet. *If you are unsure of the boundary of the public right of way, contact San Francisco Public Works' Bureau of Street Use and Mapping. Please note that the public right of way may be wider than the sidewalk*

QTY: _____

C) Significant Trees: A tree designated as such by the Board of Supervisors owing to particular age, size, shape, species, location, historical association, visual quality, or other contribution to the City's character. *If you have questions about the presence of Landmark Trees, please consult with San Francisco Public Works at urbanforestrypermits@sfdpw.org.*

QTY: _____

Total Number of Protected Trees

Add QTY : A, B, C _____

If there are one or more protected trees total, you MUST submit a Tree Protection Site Plan along with the \$151 processing fee payable to CCSF-DPW-BUF. An Arborist Report shall be required for any excavation or construction within the critical root zone. With Certified Arborist, fill out page 2.

If no existing trees, proceed to Page 3.

Pursuant to Public Works Code Article 16, many construction projects trigger requirements for the protection of existing trees. Construction activities include, but are not limited to the following:

- Grading or excavation within the dripline of any Significant Tree or Street Tree
- Construction staging and/or storage of materials and/or equipment within the dripline of any Significant Tree or Street Tree
- Any activity that might necessitate pruning of a Significant Tree or Street Tree
- Any construction-related activity, no matter how minor, is planned or is reasonably foreseeable to occur within the dripline of a Significant Tree or a Street Tree, or regardless of the location of construction activity, the property contains a Landmark Tree.

Dumping of trash and/or liquids (such as project waste water) within the basin or dripline of any Significant Tree or Street Tree is strictly prohibited.

A site plan for existing and proposed conditions (Sheet Title: Trees & Landscape) must clearly indicate the street, curb, sidewalk, driveway, structure(s), and the locations of all Protected Trees and non-protected trees. Protected Trees must also be shown to include accurate tree height, accurate canopy dripline and trunk and canopy diameters. The plans must graphically depict implementation of all measures called for in the Tree Protection Plan. A standard specification is provided on website as a pdf. With this coversheet submit the site plan, report (if required), and review fee of \$151.00.

4. Arborist Information

Contact Name: _____

Certified Arborist or Consulting Arborist #: _____

E-Mail Address: _____ Phone Number: _____

Tree Protection Summary Table

Total number of trees inventoried	
Number of protected trees	
Total appraised value of protected trees*	
Number of protected trees proposed for removal	

* Please submit a copy of the Tree Appraisal report provided by your consulting arborist. Appraisal must be completed following the guidelines provided in the "Guide for Plant Appraisal, 10th edition" by the Council of Tree and Landscape Appraisers. If the tree(s) appraise for less than the city's standard in-lieu fee, please state on the Summary Table "Standard Value."

Arborist Report should include inventory and condition of each protected tree and an evaluation of impacts of construction, including grading, excavation for utility installation, compaction, or any other aspect of project. **Report should outline tree protection measures identified by ANSI A300 and the ISA best management practices.**

5. Calculation of Required Number of Street Trees

One street tree is required for each 20 feet of street frontage of the subject property, any additional 10 feet of frontage will be rounded up, however credit is given for existing street trees. Please complete the table below to determine the number of street trees required for your project.

Combined Length of All Street Frontages	Divided by Tree Spacing Requirement	Gross Number of Trees Required	Minus Number of Existing Trees	Net Street Tree Requirement
	÷20'	= <small>(rounded)</small>	-	=

Unless site conditions physically prevent the planting of a street tree, a waiver or modification of street tree requirements is available only under extremely limited circumstances and only outside of Residential Districts (i.e. RH, RM, RTO, RED). Be aware that even when available, an in-kind improvement or in-lieu payment is required for every such waiver.

6. Applicant’s Affidavit

I hereby attest under penalty of perjury that the information I have entered on this document is true and correct to the best of my knowledge, and that I have read and understand this form, and that I am the property owner or authorized agent of the property owner, familiar with the property, and able to provide accurate and complete information herein.

The undersigned agrees to the conditions of this form. I understand that knowingly or negligently providing false or misleading information in response to this disclosure requirement may lead to denial or rescission of my permit or other authorization and may constitute a violation of the San Francisco Municipal Code, which can lead to criminal and/or civil legal action and the imposition of administrative fines. The owner, contractor, and architect are all responsible for knowing the information included in the arborist report and this form and for adhering to the conditions provided.

I understand that should my project be subject to a required Tree Protection Plan, that any tree on site protected by City Code will require replacement according to its appraised value if it is damaged beyond repair as a result of construction. Construction projects with protected trees require a final inspection by a City Arborist at the end of the project.

Signature

Date

Print Name

Owner

Authorized Agent

Phone

Email

Submit via e-mail to urbanforestrypermits@sfdpw.org.

Contact Urban Forestry at 628-652-TREE(8733) with questions.

SECTION 01 57 19
ENVIRONMENTAL MITIGATION MEASURES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes special project conditions and environmental mitigation measures the Contractor shall follow during demolition and construction, including but not limited to debris and dust controls, asbestos airborne dust from serpentine, soil vapor and gases, air pollution, water usage, noise, vibration controls, over water work and in bay work. The environmental mitigation measures are aimed to minimize disruptions to surrounding neighborhoods, resources and land uses, particularly air quality and noise during construction.
- B. The Contractor shall comply with the applicable provisions of current laws, codes, and regulations of the Federal Government, the State of California, and the City and County of San Francisco, and specifically the City's Administrative Code, Environment Code, Fire Code, Health Code, Planning Code, Port Code, Public Works Code, Transportation Code and the Police Code. <http://www.amlegal.com/library/ca/sfrancisco.shtml>
- C. This Section, along with sections in 01-41-00 - Regulatory Requirements, 01-35-45 – Health and Safety Criteria, 01 57 13 - Temporary Erosion and Sediment Controls, shall be considered the Environmental Site Mitigation Plan (SMP) in fulfillment of Article 22A of the San Francisco Health Code.
<https://www.sfdph.org/dph/EH/HazWaste/hazWasteSiteMitigation.asp>
- D. For Construction Dust Control, the Contractor shall comply with the Port Building Code, Section 106A.3.2.3 Construction Dust Control; the San Francisco Building Code Section 106.3.2.6 (Ordinance #176-08); the San Francisco Health Code Construction Dust Control Requirements (Article 22B); the Public Works Dust Control Order No. 171,378 and the California Code of Regulations, Title 17, Section 93105 - Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.
- E. For Noise Control, the Contractor shall comply with Article 29 of the Police Code, Regulation of Noise Ordinance.
- F. For Construction Stormwater Runoff and Discharge Control, the Contractor shall comply with the applicable provisions of the San Francisco Stormwater Management and Design Guidelines, the State-wide Construction General Permit, and the San Francisco Stormwater Management and Design Guidelines.
- G. For Construction Over Water or In-Bay Work Controls, the Contractor shall comply with environmental conditions detailed in referenced environmental compliance documents available to Bidders as described in Section 01 41 00 – Regulatory Requirements.
- H. For Operation of Groundwater or Production Well or Construction or Destruction of groundwater monitoring well or soil boring, the Contractor shall obtain a Permit to Operate, Construct, or Destruct from the San Francisco Department of Public Health.
- I. The requirements in this Section are incidental work to mobilization, unless noted otherwise.

1.02 REFERENCES

- A. California Environmental Quality Act (CEQA). <http://sf-planning.org/sites/default/files/FileCenter/Documents/8631-Environmental%20Process%20Summary.pdf>
- B. California Air Resources Board Final Regulation Order of 07/22/2002, in Section 93105, on Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations : <http://www.arb.ca.gov/toxics/atcm/asb2atcm.htm>
- C. California Code Regulations Article 4.8 Section 2449 General Requirements for In-Use off Road Diesel fueled fleets, ARB AB 1085. (<http://www.arb.ca.gov/msprog/ordiesel/knowcenter.htm>)
- D. San Francisco, Building Code Section 106.3.2.6 and San Francisco Department of Public Health, Construction Dust Control Requirements (Article 22B): <http://library.amlegal.com/nxt/gateway.dll/California/health/article22bconstructiondustcontrolrequire>
- E. San Francisco Public Works Code Article 21: Restriction of Use of Potable Water for Soil Compaction and Dust Control Activities. <http://library.amlegal.com/nxt/gateway.dll/California/publicworks/article21restrictionofuseofpotablewaterf>
- F. San Francisco Police Code, Article 29, (Ordinance # 274-72) Regulation of Noise: [http://library.amlegal.com/nxt/gateway.dll/California/police/policecode?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco_ca\\$sync=1](http://library.amlegal.com/nxt/gateway.dll/California/police/policecode?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$sync=1)
- G. San Francisco Port – Construction Stormwater Permits and Procedures <http://sfport.com/construction-storm-water-permits-and-procedures>
- H. San Francisco Department of Public Health, Water Quality Control Program <https://www.sfdph.org/dph/EH/Wells/default.asp>

1.03 PROJECT CONDITIONS

- A. The Contractor shall be responsible for all costs incurred or necessary to ensure compliance of its operations and its performance of the Work with all applicable Codes and contract requirements.
- B. The Contractor shall make provisions to ensure that mitigation controls are consistently implemented for the project duration. The Contractor is responsible and shall pay for cleanup of spillage (including clean soils) on City streets, to the extent caused by actions of employees of the Contractor or its Subcontractors.
- C. If the Contractor fails to provide adequate dust and other pollutant control as required or promptly take all required remedial actions to the City's satisfaction herein, the Engineer reserves the right to issue environmental non-compliance notices, have the necessary work performed by others, assess fines as per DPW Ordinances of one thousand dollars (\$1000.00) per non-compliance occurrence or event or to deduct or withhold all monies required therefore as permitted under the Contract Documents.
 - 1. The City at its own discretion will monitor Contractor's compliance with Code and Contract requirements, including required mitigation actions for construction impacts and will report on Contractor's compliance with required mitigation controls. Said monitoring and reporting activities may include, but are not limited to, qualitative, quantitative and video observations and data collection on the

impacts of noise, vibration air quality, traffic, street pavement damage, water quality, cultural resources, biological resources and hazardous materials.

2. The Contractor shall cooperate with such monitoring activities, provide access to the Work Site to establish and secure monitoring stations, and make its facilities and records available to the City for performing such monitoring
 3. The City will issue a Non-Compliance Notice to the Contractor for any detected non-compliance with the provisions herein or of any environmentally objectionable acts and the corrective action to be taken
- D. Failure to implement mitigation measures to control environmental impacts is subject to Federal, State, and local fines

1.04 SUBMITTALS

- A. The Contractor shall submit the Plans listed below and have the Plans approved by the Port Representative at least 15 working days before any mobilization.
1. Construction Emissions Minimization Plan in accordance with Article 1.08 of this Section.

1.05 MAINTENANCE OF THE WORK AREA AND DEBRIS CONTROL

- A. The Contractor shall maintain the Site and Work areas under its control and adjacent public right-of-ways in a safe condition, and remove all accumulations of debris and surplus materials at the end of each workday. At completion of the Contract the Contractor shall leave the Site in clean and orderly condition.
- B. Cleaning during Construction: The Contractor shall control the accumulation of waste materials and debris. The contractor shall collect waste from construction areas and the site daily. The Contractor shall also:
1. Comply with requirements of NFPA 241 for removal of combustible waste material and debris.
 2. Maintain the Site and construction areas free of dust and accumulation of dirt during earthwork and other contaminants during construction as needed daily.
 3. Maintain hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly and dispose those types of materials in a lawful manner.
 4. Maintain the Site and the Construction daily in a clean and orderly condition. Maintain the site, equipment, fences and signs free of graffiti. As warranted, remove all graffiti daily, using methods, which cause no damage to the work and existing facilities.
 5. Damp-sweep all pedestrian walkways and dispose of debris around the site perimeter on a daily basis and as often as determined by the Engineer.
 6. Keep all debris, hazardous/contaminated material, surplus concrete and excavated materials off the roadway, sidewalks and sewers at all times.
 7. Remove trash (waste oil and oil rags) and debris from the Site and Construction areas daily or at frequent intervals or as directed by the Engineer, so that its presence will not delay the progress of the work or cause a nuisance.

8. Storage areas: Ensure that Materials to be used for construction are stored in designated structures or areas by the appropriate trades. Maintain such areas or structures in a clean condition for the term of the Contract.
 9. Provide and maintain proper storage with secondary containment for lubrication oil, hydraulic fluids, waste oils, fuels, solvents and other hazardous or toxic materials and wastes.
 10. Supervision: Oversee all cleaning of areas by trades using them and ensure that resulting accumulations are deposited in appropriate containers.
 11. Burying or burning of trash and debris on the Site is not permitted.
 12. Materials, trash, and debris are the property of the Contractor and shall be removed from the Site and Construction areas and disposed of in a legal manner.
- C. Initiate and maintain a specific daily program to prevent the accumulation of debris at the Site storage, parking areas, and along streets, roads, and haul routes in the Construction areas. The Contractor shall:
1. Provide and maintain containers for the deposit of debris And keep them covered.
 2. Prohibit overloading of trucks to prevent spillage.
 3. Inspect traffic areas and haul routes to enforce debris and clean up requirements.
- D. On a daily basis, remove all debris from the Site and Construction areas, including haul routes, caused directly or indirectly by the Contractor's operations.

1.06 SEWER POLLUTION CONTROL

- A. Section 123 of Article 4.1 of the Public Works Code prohibits the discharge of solids into the City's sewerage system. Do not dispose of construction material, concrete, debris, sediments, wastes, effluent, chemicals, or other such substances into sanitary sewers, catch basins, manholes, and storm drains.
- B. The washing out of concrete trucks into the sewerage system or into the excavation is not permitted.
- C. Control sewage and contain it within covered conduits. Dispose of it, properly.
- D. Refer to Section 01 57 13 for specific requirements.

1.07 CLEAN CONSTRUCTION ORDINANCE (AIR POLLUTION CONTROLS)

- A. The Contractor shall comply with the Clean Construction Ordinance under the SF Administrative Code, Chapter 6, Section 6.25 and Section 6.67, SF Environment Code, Chapter 4: Section 426 Clean Construction Assistance and Reporting, City Ordinance # 70-07, and City Ordinance # 28-15.

http://www.gsweventcenter.com/GSW_RTC_References/2015_0801_SFE_SFDPH_SFP_D.pdf
- B. Comply with all air pollution control rules, regulations, ordinances and statutes which apply to the Work and Contractor's activities performed pursuant to the Contract,

including air pollution control rules, regulations, ordinances and statutes specified in Section 11017 of the California Government Code.

<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=10001-11000&file=11000-11019.11>

- C. Comply with the California Air Resources Board (CARB) Off-Road Diesel Vehicle Regulation to reduce diesel particulate matter (PM) and oxides of nitrogen (NOx) emissions. The link for the Knowledge Center for the Off-Road Diesel Vehicle Regulation is:
- <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm> .
- The link for the idling fact sheet is
<http://www.arb.ca.gov/msprog/ordiesel/faq/idlepolicyfaq.pdf>.
- The link for the Knowledge Center for the Off-Road Diesel Vehicle Regulation is
<http://www.arb.ca.gov/msprog/ordiesel/knowcenter.htm>.
- D. The contractor shall provide a list of vehicle registered with CARB with their corresponding EIN upon request.
- E. Implement the specific air pollution controls to reduce exhaust emissions of particulate matter and other pollutants from construction and related equipment, to a less significant level, by:
1. Preventing the accumulation of toxic concentrations of chemicals.
 2. Preventing harmful or obnoxious dispersal of pollutants into the atmosphere.
 3. Limiting vehicle speed limit on unpaved roads to 15 miles per hour (mph).
- F. Idling Limits prohibit idling motors when equipment is not in use or when truck are waiting in queues. The idling time of all construction equipment (self propelled diesel fueled or alternative diesel fuel vehicles 25 horsepower and up that are not designed to be driven on-road) used at the site shall not exceed 5 consecutive minutes. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. The idling limit does not apply to:
1. Idling to verify that the vehicle is in safe operating condition
 2. Idling for testing, servicing, repairing or diagnostic purposes
 3. Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane).
 4. Idling required to bring the machine system to a desired operating temperature
- G. Limit the hours of operation of heavy-duty equipment and/or amount of equipment in use to what is needed.
- H. All equipment shall be properly tuned and maintained in accordance with the manufacturer's specifications. Copies of service records will be made available to the Engineer upon request.
- I. When feasible, alternative fuel or electrical construction equipment shall be used at the project site.

- J. Use the minimum practical engine size for construction equipment.
- K. Gasoline-powered equipment shall be equipped with catalytic converters, where feasible.
- L. Implementing specific maintenance programs to reduce emissions from equipment that would be in frequent use for much of the demolition and construction periods.
- M. Construction Emissions Minimization Plan: If the project is located in the air pollutant exposure zone and use off-road equipment that is estimated to require 20 or more cumulative days of work, including nonconsecutive days to complete and is within a 1000 feet of hospitals, medical facilities, schools or residences (sensitive receptors) the Contractor shall submit and implement a Construction Emissions Minimization Plan demonstrating that the self propelled off-road equipment (more than 25 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent ARB fleet average (as specified in California Code of Regulations Article 4.8, Section 2449 General Requirements for In-Use Off-Road Diesel-Fueled Fleets).

http://www.gsweventcenter.com/GSW_RTC_References/2015_0801_SFE_SFDPH_SFPD.pdf.

Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. The plan components shall include:

1. Equipment inventory
 2. Signage
 3. Certification statement
 4. Copy of quarterly report spreadsheet documenting compliance.
- N. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM;
 - O. Use of Interim Tier 4 or equivalent equipment for all uses where such equipment is available;
 - P. Use of Tier 3 equipment with Best Available Control Technology (BACT) or alternative fuel vehicles for applications where Tier 4 Interim engines are not available; and
 - Q. Liquidated damages shall be assessed in the amount of \$100.00 per day per each piece of off-road equipment and each off-road engine utilized to complete work on the project in violation of the Clean Construction requirements.
 - R. If the project is not located in the Air Pollutant Exposure Zone, it must utilize only off-road equipment and off-road engines fueled by biodiesel fuel grade B20 and utilize only off-road equipment that either meets the tier 2 standards for off-road engines or operates with the most effective VDECS as certified by ARB.
 - S. All solvents, including but not limited to the solvent portion of paints, thinners, curing compounds, and liquid asphalt used on the project shall comply with the applicable material requirements of the Bay Area Air Quality Management District (BAAQMD). All containers of paint, thinner, curing compound or liquid asphalt shall be labeled to indicate that the contents fully comply with said requirements.

1.08 CONSTRUCTION DUST CONTROL

- A. The Contractor shall comply with the requirements of the Port Building Code, section 106A.3.2.3, Construction Dust Control, the San Francisco Building Code Section 106.3.2.6 (Ordinance #176-08), the San Francisco Health Code, Construction Dust Control Requirements – Article 22B; the Public Works Dust Control Order No. 171,378 and the California Code of Regulations, Title 17, Section 93105 - Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.
- B. The Contractor shall be responsible for paying the fees charged by the above listed agencies to defray the costs of document processing and review, consultation with applicants, and administration if its regulation.
- C. Under the DPW Dust Control Order 171,378, liquidated damages shall be assessed in the amount of \$1,000.00 per day for each day any violation is not corrected.
- D. The San Francisco Building Code Section 106.3.2.6 requires that all site preparation work, demolition, or other construction activities within the City and County of San Francisco that have the potential to create dust or will expose or disturb more than 10 cubic yards or 500 square feet of soil must comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection, with provision for waiver by the Director of Public Health for activities on sites less than one half acre that are unlikely to result in any visible windblown dust.
- E. Projects that are over one half acre must also comply with Article 22B of the San Francisco Health Code, which requires a site-specific Dust Control Plan that is approved by the SFDPH – EH.
- F. The Contractor shall take all reasonable measures to furnish all labor, equipment, and means required to carry out effective measures whenever and as often as necessary to prevent its operation from producing dust in amounts damaging to surrounding properties, or causing a nuisance to businesses and local residents.
- I. The Contractor is responsible and shall pay for cleanup of spillage (including clean soils) on City streets, to the extent caused by actions of employees of the Contractor or its Subcontractors. Visible track-out on the paved public road shall be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.
- J. Mitigation Requirements for Dust Control. Irrespective of the size of the project, the Contractor shall comply with the following mitigation requirements for dust control:
 - 1. Plan and execute the work in such manner as to minimize the area of excavations open at any time. Minimize the amount of excavated materials or waste materials stored at the site.
 - 2. Maintain a regenerative air or high efficiency sweeper on the Site at all times and wet sweep/vacuum sidewalks, intersections, site access and street pavement within the Site and Construction areas especially along haul routes, at the minimum three times (3) per shift including at the end of the shift or more and at the end of the workday as required to minimize track out and dust emissions. The City Representative will evaluate the effectiveness of the Contractor's vacuum sweeper vehicle and, if necessary, will require the Contractor to provide a more powerful and effective sweeper. Soil, gravel, and cutback residuals shall be wet swept immediately.
 - 3. Maintain a water truck and/or water buffalos at the jobsite at all times when dust-

- generating conditions exist. Water truck shall be equipped with hand-held hoses. Hoses shall be equipped with micro-misters and micro-foggers. All water for dust control shall be treated with biodegradable, non-polluting, non-toxic dust control agent. Water or water-miscible binders shall be continuously used to control dust during dust generating activities, including demolition, excavation, and earthmoving, among others
4. Provide localized dust controls such as water hoses connected to a water source or water canisters to immediately control visible dust emissions at each active work area. Wet areas shall be barricaded to prevent slipping hazards.
- K. The Contractor shall not engage in any construction or grading operation on property less unless all of the following dust mitigation measures are initiated at the start and maintained throughout the duration of the construction or grading activity. The Contractor shall comply and implement all the mitigation measures consistently stated in the above regulation and as stated below.
1. Treat water for dust control with a City and/or EPA approved biodegradable, non-polluting, non-toxic dust control chemical. The water so treated becomes "amended" water.
 2. Provide continuous water misting using as fine a spray or mist as possible (without creating run-off) in any area of land clearing, earth movement, excavation, drillings, demolition, concrete crushing and grinding and other dust generating activity. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour.
 3. Prior to any ground disturbance, sufficient water shall be applied. Keep the entire site of the work and adjacent areas, including walkways and roadways, continuously free of dirt and dust by wet sweeping at least three times a day and at the end of each shift, and by consistently misting the active work areas at each step of soil handling activities. Tires or tracks and spoils trucks shall be washed off before they re-enter City streets to minimize deposition of dust-causing materials.
 4. Wet down areas around soil improvement operations, visibly dry disturbed soil surface areas, and visibly dry disturbed unpaved driveways, at least three times per shift. All unpaved access roads, parking areas, and staging areas at the Site shall be paved. Water or non-toxic soil stabilizers shall be applied as requested by the Engineer.
 5. Use reclaimed water for dust control as described in City Ordinance # 175-91, Article 21, and Section 1100 to 1107 of the San Francisco Municipal Code (Public Works Code).
 6. Use dust enclosures, curtains, and dust collectors as necessary to control dust at the Site
 7. Dust curtains, plastic tarps, barriers, enclosures or windbreaks shall be installed on windward and downwind sides of the Site.
 8. Chemical binders, soil amendments, stabilizers, or emulsions to inactive construction areas shall be applied, including previously graded areas that are inactive for no more than 10 days.
 9. Surface excavation and grading activities shall be terminated when wind speeds exceed 25 miles per hour.

10. Limit the area subject to excavation, grading, and other construction activities at any one time.
- L. Control for off-site transport. The Contractor shall ensure that no trucks hauling soils, sand and any excavated material leave the loading area off-site unless:
1. Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; and
 2. Loads are adequately wetted and :
 - a. Covered with tarps; and
 - b. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.
- M. Stockpile Maintenance: No staging areas or stockpiling will be allowed at the Site. The Contractor may use a temporary soil staging area as approved by the City Representative. The Contractor shall maintain the stockpile and staging areas with consistent dust and erosion and sedimentation mitigation controls as follows:
1. Keep active stockpiles are adequately wetted as work is in progress;
 2. Any stockpile greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base and soil shall be placed on, and covered with a 10-mil polyethylene plastic or equivalent tarp and braced it down. All stockpiles shall be covered and protected at the end of the day. The Contractor shall maintain this cover and brace throughout its use, including during periods of work stoppages, overnight, weekends and holidays.
 3. Control for disturbed surface areas, and storage piles that will remain inactive for more than seven (7) days, shall include one or more of the following:
 - a. Keep the surface adequately wetted.
 - b. Establishment and maintenance of surface crusting.
 - c. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations as needed.
 - d. Covering with tarp(s) or vegetative cover.
 - e. Installation of wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile.
 - f. Installation of wind barriers across open areas,
 - g. Any other measure as effective as the measures listed above.
- N. The Contractor is hereby notified that it cannot perform screening or crushing operations without the appropriate BAAQMD, and Cal-EPA/DTSC permits.
- O. Track-out prevention and control measures shall include:

1. The Contractor shall remove any visible track-out from a paved public road at any location where vehicles exit the Site; using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.
 2. Equipment shall be washed down before moving from the active areas onto a paved public road.
 3. Installation of one or more of the following track-out prevention measures. These track out controls are to be cleaned, maintain and replaced to keep their use effective for the project duration. :
 - a. A gravel pad designed using good engineering practices to clean the tires of exiting vehicles;
 - b. A tire shaker;
 - c. A wheel wash system;
 - d. Pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road; or
 - e. Any other measure as effective as the measures listed above.
- P. Control for disturbed surface areas, and storage piles that will remain inactive for more than seven (7) days, shall include one or more of the following:
1. Keep the surface adequately wetted.
 2. Establishment and maintenance of surface crusting.
 3. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations as needed.
 4. Covering with tarp(s) or vegetative cover.
 5. Installation of wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile.
 6. Installation of wind barriers across open areas, or
 7. Any other measure as effective as the measures listed above.
- Q. Control for traffic on on-site unpaved roads, parking lots, and staging areas, which shall include:
1. A maximum vehicle speed limit of fifteen (15) miles per hour or less, and
 2. One or more of the following:
 - a. Watering every two hours of active operations or sufficiently often to keep the area adequately wetted.
 - b. Applying chemical dust suppressants consistent with manufacturer's directions.
 - c. Maintaining a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used for travel, or

- d. Any other measure as effective as the measures listed above.
- R. Control for NOA earthmoving activities, shall include one or more of the following:
 - 1. Pre-wetting the ground to the depth of anticipated cuts;
 - 2. Set up a containment with a continuous misting system to prevent the release of asbestos fibers when screening of serpentine, or ultramafic rock
 - 3. Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures;
 - 4. Application of water prior to any land clearing; or
 - 5. Any other measure as effective as the measures listed above.
- S. Post construction stabilization of disturbed areas. Upon completion of the project, disturbed surfaces shall be stabilized using one or more of the following methods:
 - 1. Establishment of a vegetative cover.
 - 2. Placement of at least three (3.0) inches of non-asbestos containing material.
 - 3. Paving.
 - 4. Any other measure deemed sufficient to prevent wind speeds of ten (10) miles per hour or greater from causing visible dust emissions.
- T. Criminal and/or civil penalties may be imposed on any person who violates any rule, regulation, permit or Order of the State Air Resources Board or a district that is adopted to control and contain air emissions.

1.09 CONSTRUCTION NOISE CONTROLS

- A. San Francisco Noise Control Ordinance Compliance:
 - 1. The Work of this Contract is subject to requirements of City and County of San Francisco, Article 29 of the Police Code, Ordinance #274-72, and Regulation of Noise (herein after referred to as the "San Francisco Noise Ordinance").
 - 2. The San Francisco Noise Ordinance includes (but is not limited to) regulations on Ambient Noise, Non Stationary Sources, Fixed Source, Zoning Districts, Noise Level Measurements, Construction Equipment, and Construction Work at Night, Enforcement and Violations.
 - 3. The Noise Ordinance limits noise from powered construction equipment to be no greater than 80 dB(A) at 100 feet. This is equivalent to 74 dB(A) at 200 feet or 86 dB(A) at 50 feet from the source of emission. Exceptions to this requirement include impact tools and equipment, pavement breakers and jackhammers. However, these shall be equipped with acoustically attenuating shields, or shrouds to best accomplish maximum noise attenuation.
 - 4. The Contractor shall ensure that construction activities are in conformance with construction requirements of the City and County of San Francisco Police Code, Article 29, specifically sections 2901, 2907, and 2908 and any successor provisions.

5. Contractor may request a variance from the requirements of the San Francisco Noise Ordinance, if construction noise between 8:00 p.m. and 7:00 a.m. exceeds ambient plus 5 dB (A). Apply for a City noise permit at least 3 Working Days in advance of night (between 8:00 p.m. and 7:00 a.m.), weekend and holiday Work. The requirements of the Contract Documents, including safety requirements, shall apply for all night, weekend and holiday Work.
 6. If the Contractor is directed by special written notice from the City to perform any part of the Work between the hours of 8 p.m. and 7 a.m., or on weekends or holidays, the Contractor must obtain and comply with a City noise permit prior to starting that Work.
 7. Pay all fines for Contractor's violations of the San Francisco Noise Ordinance, at no additional cost to the City
- B. The City, as part of the Mitigation Monitoring and Reporting Program, will monitor noise construction activities. The Contractor shall cooperate with the City's designated Compliance Coordinator to respond to noise complaints and to ensure that noise levels specified in this Contract are not exceeded during construction activities.
- C. Noise Mitigation Measures:
1. The Contractor shall implement mitigation controls to ensure compliance with the construction noise levels allowed. The maximum noise level from any powered construction equipment shall not be greater than 80 dB(A) at 100 feet. This translates to 86 dB(A) at 50 feet (dual units not applicable, as these are specific field and instrument measurements).
 2. The Contractor shall monitor noise levels at the Site boundary or at the nearest sensitive receptor. If noise thresholds are exceeded, the Contractor shall stop the Work that violates noise restrictions and identify alternate methods and equipment or place restrictions on construction operations to comply with noise thresholds.
 3. The Contractor shall not resume the Work before correcting the conditions that cause excessive noise as deemed acceptable by the Engineer.
 4. The Contractor shall use appropriate construction methods and equipment and install acoustical barriers so that noise emanating from the construction will not exceed noise levels pursuant to the City's Noise Control Ordinance.
 5. The Contractor shall implement the following noise control measures, as necessary, if activities are expected to exceed the above noise restrictions.
 - a. The Contractor shall use best available controls techniques including mufflers, intake silencers, ducts, engine enclosures and acoustic attenuating shields or shrouds for all construction-noise equipment and trucks; and use electric-powered rather than diesel-powered construction equipment, as feasible.
 - b. The Contractor shall muffle and shield intakes and exhausts, shroud or shield impact tools.
 - c. The Contractor shall enclose equipment such as large compressors, generators, and large dewatering pumps at a minimum in 1-inch-thick plywood sheds.

6. The Contractor shall provide and use acoustically attenuating shields to limit the noise level created by work performed between 8 p.m. and 7 a.m. to no more than the allowable ambient noise level plus 5 dB(A) at the nearest the Site or affected part of the Construction Area.
7. Impact tools must be equipped with intake and exhaust mufflers. Pavement breakers and jackhammers shall be equipped with acoustically attenuating shields or shrouds. Use of impact tools shall be restricted to the daytime construction hours of 8:00 a.m. to 3:30 p.m unless approved otherwise.
8. Perform construction in a manner that maintains noise levels at noise sensitive land uses below specific limits. Select construction processes and techniques that create the lowest noise levels. Quieter procedures shall be used such as drilling rather than impact equipment whenever feasible.
9. The Contractor shall use quieter procedures, such as sonic or vibratory pile drivers drilling rather than impact equipment whenever feasible. If impact equipment is required, whenever practicable, the Contractor shall use hydraulic- or electric- powered impact equipment (e.g., jackhammers, pavement breakers and rock drills) instead of pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used (a muffler can lower noise levels from the exhaust by up to about 10 dB(A). External jackets on the tools themselves shall be used, where feasible to achieve a reduction of 5dBA.
10. Drill holes will be pre-drilled wherever feasible to reduce potential noise and vibration impacts.
11. The Contractor shall locate stationary noise sources as far from sensitive receptors as feasible. If they must be located near receptors, adequate muffling, (such enclosures) shall be installed to ensure noise thresholds specified herein are not exceeded. Enclosure openings shall be faced away from sensitive receptors. If any stationary equipment (e.g., ventilation fans, generators, dewatering pumps) is required, such equipment shall comply with daytime and nighttime noise limits specified in pertinent noise ordinances to the extent feasible.
12. The Contractor shall locate materials and other stockpiles as well as staging and parking areas as far as feasible from sensitive receptors, residential, and school receptors.
13. Proposed jack-and-bore pits shall be located as far from sensitive receptors as technically feasible. If ventilation fans, dewatering pumps, or generators are required as part of this type of pipeline crossing, such equipment shall comply with daytime and nighttime noise limits specified in pertinent noise ordinances to the extent feasible.
14. Unless approved by the Engineer Construction activities shall be prohibited during the nighttime hours (8 p.m. to 7 a. m).
15. The Contractor shall provide advance notice to residents and affected businesses in the area of the site, of times, dates and location of construction activities.
16. The Contractor shall follow designated truck routes to the extent feasible.
17. Contractor shall direct all truck traffic to designated truck routes that avoid areas that are predominantly residential areas.
18. In the event that noise complaints are reported, the Contractor with the City, shall take all reasonable steps to resolve the complaint and the noise impact, including additional

monitoring as required, and modify or implement better attenuation controls for any construction equipment or activities that generated the excessive noise levels.

1.10 VIBRATION CONTROL

- A. Depending on the construction vibration concerns on adjoining buildings and properties, the Contractor shall monitor vibration at the Site using equipment and methods as deemed appropriate by the City to measure potential building damage and effect on occupants, property, and sensitive equipment.
- B. The Contractor shall prepare and submit a Vibration Control Plan (VCP) to the City for review and approval at least 30 days prior to commencing construction. The VCP shall be prepared and implemented by a qualified acoustical consultant to include identification of vibration control measures, monitoring protocol, notification procedures, and other information. A qualified acoustical consultant is defined as a Board Certified Institute of Noise Control Engineering (INCE) member or other qualified consultant or engineer approved by the City Representative; The VCP shall include but not be limited to:
1. The method(s) of construction that will minimize vibration.
 2. Alternate methods to be used to minimize vibration impacts.
 3. Administrative and engineering controls in the event that vibration exceed the vibration criteria.
 4. Construction vibration monitoring protocol to be implemented that will include but not limited to:
 - a. Type of instrument employed to record data.
 - b. Sample copy of the vibration report showing instrument set up for histograms and velocity data.
 - c. Monitoring methodology, (with weather considerations) Monitoring on three vibration directions.
 - d. Monitoring locations.
 - e. Exposure times duration, monitoring frequency at least weekly or more often if needed, in response to complaints.
 - f. Criteria for compliance.
 - g. Reporting procedures for vibration concerns when complaints are received and documentation of corrective actions.
 - h. Recordkeeping and instrument maintenance/
- C. Vibration Project Action Levels (VPAL): Unless otherwise directed by the Engineer, vibration during construction shall not exceed the following thresholds:
- 0.2 inches per second, peak particle velocity (in/sec PPV) for continuous vibration (e.g., vibratory equipment and impact pile drivers) at the closest receptors to ensure that cosmetic or structural damage does not occur; and
- 0.12 in/sec PPV (vibration perception threshold) at adjacent properties (or in accordance to local ordinances) to the extent possible for nighttime construction activities. If vibration complaints are received during facility construction,

operational adjustments shall be made (e.g., restricting use of equipment causing vibration disturbance during nighttime hours or slowing the pace of its operation), as necessary, to reduce vibration annoyance effects.

- D. The Contractor would be responsible for the protection of vibration sensitive historic buildings structures that are within 200 feet of any construction activity. The maximum peak particle velocity level in any direction at any of these historic structures should not exceed 0.12 inches/second PPV for any length of time.
- E. The Contractor shall suspend operations that cause excessive vibrations or exceed the above Vibration Project Action Levels (VPAL). The Contractor shall implement better engineering or mitigation controls when:
1. Vibration complaints are received.
 2. Vibration exceeds the above-specified VPAL limits.
 3. The Contractor fails to comply with vibration mitigation controls specified herein or fails to follow its own Vibration Control Plan.
 4. Damage or disturbance to adjoining property or occupants has been reported.
- F. If at any time during construction vibration activities exceed the Vibration project levels, the activity will be immediately halted until such time where alternative methods that would result on lower vibration levels.. are implemented. The Contractor shall not resume operations before correcting conditions that cause excessive and not be entitled to additional compensation or extension of Contract Time for delays arising from suspension of Work due to Contractor's failure to perform vibration controls as specified.
- G. Vibration Mitigation Measures: The Contractor shall implement the following mitigation measures to reduce vibration from construction-related equipment:
1. Limiting the use of construction techniques that create high vibration levels. Pile driving will be prohibited at distances less than 250 feet from buildings and residences. If piles must be set near residential areas, the Contractor shall use pre-drilled piles or other measures that minimize the impact of pile driving.
 2. Using alternative procedures in vibration sensitive areas by using techniques with lower vibration levels.
 3. If feasible, restricting the hours of vibration intensive activities, such as pile driving, to weekdays during daytime hours.
 4. Pile holes shall be pre-drilled wherever feasible to reduce potential noise and vibration impacts. If feasible, use sonic or vibratory pile drivers instead of impact pile drivers.
 5. Restricting the use of equipment causing vibration disturbance during nighttime hours or rescheduling slowing the pace of operation to reduce vibration annoyance effects at nighttime.
- H. The Contractor shall perform pre- and post-construction video or photographic documentation/surveys of structures and evaluation of the facades of buildings on all sides of the project alignment to ensure structural damage does not result from construction activities that could cause ground vibration. The post-construction survey and monitoring results will be evaluated to determine whether the new structural and/or architectural damage was caused by vibration due to the Contractor's performance of this Work.

- I. Vibration levels equal to or exceeding 0.2 inch/second, peak particle velocity (in/sec PPV) for continuous vibration could result in architectural damage. If, following completion of construction, changes in the architectural or structural conditions of residential and/or commercial building has occurred, the Contractor shall restore the buildings to pre-construction conditions, and to the satisfaction of the City Representative.

1.12 NON-PVC PLASTICS

- A. The Contractor shall comply with the SF Ordinance 171-03 and the SF Environment Code, Chapter 5 Resource Conservation Ordinance, Section 509 – Non PVC Plastics. <https://sfenvironment.org/article/policy/other-policies>
- B. The Contractor shall obtain non-PVC plastics where appropriate alternative products composed of non-chlorinated materials are available. The Contractor shall procure non-chlorinated products in any of the following circumstances: (i) the product is not available in a reasonable period of time; (ii) the product would fail to meet reasonable performance standards; or (iii) the product is only available at an unreasonable price.
- C. The Contractor shall use alternative plastics such as high-density polyethylene (HDPE), and ABS (acrylonitrile-butadiene styrene).

1.13 INTEGRATED PEST MANAGEMENT PROGRAM

- A. The Contractor shall comply with the SF Environment Code, Chapter 3: Integrated Pest Management Program, and City Ordinance # 7-11. [http://www.amlegal.com/nxt/gateway.dll/California/environment/chapter3integratedpestmanagementprogram?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco_ca](http://www.amlegal.com/nxt/gateway.dll/California/environment/chapter3integratedpestmanagementprogram?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca)
<http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances11/o0007-11.pdf>
- B. This Chapter 3 and Ordinance concerns the application of pesticides to property owned by the City and County of San Francisco only.

1.14 OPERATING A MONITORING OR PRODUCTION WELL OR CONSTRUCTING OR DESTROYING AN ENVIRONMENTAL OR GEOTECHICAL WELL OR SOIL BORING

- A. If project involves operating a groundwater monitoring well or constructing/destroying a groundwater monitoring well or soil boring, Contractor to obtain a Permit to Operate, Construct, or Destroy from the SFDPH-EH.
- B. If project will be discharging groundwater, may need to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the San Francisco Bay Regional Water Quality Control Board for discharge to the Bay or San Francisco Public Utility Commission permit to discharge to the sanitary sewer.

1.1.6 DAMAGES FOR FAILURE TO MEET ENVIRONMENTAL REQUIREMENTS

- A. The Contractor shall be liable for all fines, penalties, liquidated damages and costs arising from any violation of the environmental mitigation measures, and City Ordinances, and Sections 01 57 13, 01 57 19, and 02 81 00, as related to or concerning the control of dust and air borne particles; the control, removal, transport, and disposal of excavated materials; control of waste water and sediment; and noise. Contractor shall pay particular attention to:
 1. The prevention of accumulation and prompt clean-up of spills of excavated materials onto streets, sidewalks, and roadways;
 2. Sediment control, the protection of catch basins, and prevention of soil and sediment from falling or washing into storm drains and sewers;

3. The prevention and control of dust created by the Work;
 4. Proper treatment and disposal of storm water and ground water prior to discharge;
 5. Adherence to noise restrictions; and
 6. Adherence to equipment emissions requirements and restrictions
 7. Each Project work location in clean and orderly condition.
- B. Under the DPW Dust Control Order 171,378, liquidated damages shall be assessed in the amount of \$1000.00 per day for each day any violation is not corrected.

PART 2**PRODUCTS (Not Used)****PART 3****EXECUTION (Not Used)****END OF SECTION**

(This page intentionally left blank.)

SECTION 01 57 26

TEMPORARY PROTECTION OF CATCH BASINS AND STORM DRAIN INLETS

PART 1—GENERAL

1.01 DESCRIPTION

- A. Documenting and protecting catch basins and storm drain inlets as incidental work.

1.02 RELATED SECTIONS

- A. 01 71 33 - Protection of Adjacent Construction
- B. 02 41 00 - Demolition
- C. 31 23 19 - Dewatering
- D. 31 23 33 - Trenching and Backfilling
- E. 32 01 16.71 - Cold-Milling Asphalt Paving
- F. 32 12 16 - Asphalt Paving

PART 2—PRODUCTS

2.01 MATERIALS

- A. Contractor shall provide all labor and materials necessary to protect debris from entering the sewer system.

PART 3—EXECUTION

3.01 PREPARATION

- A. The Contractor shall photograph all catch basins within the limits of work. Each catch basin shall have at least two photos, one from the top view and one from the side view along the flow line. Refer to Section 01 71 33-1.6B.
- B. Contractor shall notify the City Representative of any clogged catch basin or storm water inlet immediately upon discovery.
 - 1. Call SFPUC Sewer Operations at 415-695-2096 to report catch basins or storm water inlets containing debris in the barrels and/or cast iron traps.

3.02 DRAINAGE PROTECTION

- A. Contractor shall be responsible for protecting and keeping in operation all storm water inlets and catch basins throughout the entire project site for the duration of the project until Final Acceptance.
- B. Contractor shall take adequate measures to prevent the impairment of the operation of the sewer system. Contractor shall prevent construction material, pavement, concrete, earth, paints, thinner, solvents, and other debris or toxic material from entering a sewer or sewer structure including surface flow collection system, such as catch basins and culverts.
- C. Prior to the final inspection and acceptance, the Contractor shall check all storm water inlets and catch basins within the project limits for debris.

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 equipment or material to be moved over such surfaces
 - 3. 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.

1.10 CERTIFICATE OF COMPLIANCE FOR STEEL AND IRON (BUY AMERICA REQUIREMENTS)

- A. A Certificate of Compliance shall be furnished prior to the use of steel and iron, in accordance with the Buy America Requirements on Federally funded projects.
- B. The Certificate shall be signed by the manufacturer of the material and shall state that the materials involved comply with the Buy America Requirements.
- C. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.
- D. Materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the work which confirms to the requirements of the plans and specifications, and any material not conforming to the requirements will be subject to rejection whether in place or not.
- E. The City reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance.
- F. In the event that Contractor incorporates steel or iron material that do not conform to the Buy America Requirements, Contractor shall remove such material and replace with properly certified material at no additional cost to the City.
- G. The form of the Certificate of Compliance and its disposition shall be as directed by the City Representative.

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 from the Bureau of Street Use & Mapping at 49 S. Van Ness Avenue, Suite 300, Telephone (628) 271-2000.

- 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.
 - 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

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, telephone 1-800-227-2600, 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.
- 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.

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. Conserving Distinctive Sidewalk Elements: For work located within Landmark and/or Conservation Historic Districts, all distinctive sidewalk elements (edit list per project conditions such as brick surfacing, brick gutters, granite curbs, cobblestones, non-standard sidewalk scoring and streetscape elements that appear to be 45 years or older) will be treated as potentially character defining features of their respective historic districts.
1. Contractor shall avoid damaging and protect in place any features described above and shall notify the City Representative of any feature not identified on the plans that is in conflict with the proposed work.
 2. Granite curb shall only be replaced with concrete curb on curved sections and as part of the curb ramp construction.
- C. 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.

- D. 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.
- E. 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, including **photographs of all catch basins within the limit of work and nearby intersections. Each catch basin shall have at least two photos, one from the top view, and one from the side view along the gutter line.** The survey shall be made using digital still photographs or digital videos saved to compact discs. The survey shall be considered incidental work and no separate payment will be made therefor.
- 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 on compact discs as required. 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**MATERIAL REDUCTION AND RECOVERY PLAN**

(Rev. 3/23/2021)

PART 1 - GENERAL

1.1 SUMMARY

- A. This section governs the recovery of construction and demolition debris.
- B. 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.
- C. The City and County of San Francisco adopted an ordinance (No. 27-06) that creates a mandatory program to maximize the recovery of all construction and demolition debris.
 - 1. The Ordinance requires that mixed construction and demolition debris material be transported off-site by a Registered Transporter and taken to a Registered Facility.
 - 2. Material source separated at the job site should be taken to a facility that reuses or 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 directly to a landfill.
- D. Contractor shall perform all work and meet all requirements in this Section at no additional cost to the City.
- E. Related Requirements:
 - 1. Section 01 50 00 -Temporary Facilities and Controls
 - 2. Section 01 77 00 - Closeout Procedures

1.2 REFERENCES

- A. Mayor's Executive Directive 06-05, Recycling and Resource Conservation, October 16, 2006.
- B. [San Francisco Environment Code](#)
 - 1. Chapter 5, Resource Conservation Ordinance for City Departments.
 - 2. Chapter 7, Green Building Requirements for City Buildings.
 - 3. Chapter 14, Construction and Demolition Debris Recovery Ordinance.
 - 4. Chapter 16, Food Service and Packaging Waste Reduction Ordinance.
 - 5. Chapter 19, Mandatory Recycling and Compositing Ordinance.
- C. Title 24 California Building Code Standard part 11, CALGreen:
<https://law.resource.org/pub/us/code/bsc.ca.gov/>

- D. [California Integrated Waste Management Act of 1989](#) (California Public Resources Code 40000 et. seq.) - Assembly Bill 939.
- E. United States Green Building Council Leadership in Energy and Environmental Design
- F. Universal Waste information from the following website:
<https://www.calrecycle.ca.gov/HomeHazWaste/uwaste>
- G. Treated Wood Waste Fact Sheet from the following website:
<https://dtsc.ca.gov/toxics-in-products/treated-wood-waste-information-and-fact-sheets/>
- H. San Francisco Board Of Supervisors Resolution Nos. 530-04 and 679-02 establishing a zero waste goal.
- I. Food Service Waste Reduction Ordinance as set forth in San Francisco Environment Code Chapter 16.
- J. Refuse Collection and Disposal Ordinance, adopted November 8, 1932.

1.3 DEFINITIONS

- A. Alternative Daily Cover (ADC): Materials, other than soil, that have been approved by the California Department of Resources Recycling and Recovery ("CalRecycle") or a successor agency for use as a temporary overlay on an exposed landfill face.
- B. Beneficial Reuse: The reuse of material at a landfill that does not include ADC but does include use of materials for the following purposes: alternative intermediate cover; final cover foundation layer; liner operations layer; leachate and landfill gas collection system; construction fill; road base; wet weather operations pads and access roads; and, soil amendments for erosion control and landscaping. "Beneficial reuse" shall not include disposal of material at a landfill.
- C. City-owned Facility: Any building owned by the City and County of San Francisco. "City-owned Facility" includes City-owned facilities or portions thereof that the City leases to non-City entities.
- D. City Leasehold: A building or portion thereof owned by others where the City and County of San Francisco is a tenant.
- E. City Representative: The employee of San Francisco who oversees the construction and/or demolition process for a City construction and/or demolition project and is responsible for ensuring that the contractor complies with all aspects of the contract documents.
- F. 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.
- G. Construction and Demolition Debris or C&D 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 or materials from the public right-of-way. Hazardous material, as defined in California Health and Safety Code section 25100, et seq., as amended, is not construction and demolition debris.

- H. Construction Project: Any building, planning or construction activity, including demolition, new construction, major alteration, or building additions by a City department at a City-owned Facility or a City Leasehold.
- I. Contractor: The company or person to whom the City awards a contract for a construction and/or demolition project. The Contractor is responsible for complying with all aspects of this Specifications Section and for ensuring that all subcontractors, lower-tier subcontractors and suppliers also comply.
- J. Disposal: The final deposition of material at a legally operating permitted landfill that does not include beneficial reuse or at a permitted transformation facility. A legally operating, permitted landfill includes Class III landfills and inert fills. Disposal of inert materials at inert fills or inert backfill sites does not constitute recycling.
- K. Diversion: Use of material for any purpose other than disposal in a landfill or transformation facility, such as source reduction, reuse, recycling, and composting activities that do not result in material being disposed at permitted landfills and transformation facilities.
- L. Hazardous Material: Hazardous material is a waste with properties that make it potentially dangerous or harmful to human health or the environment. The universe of hazardous materials is large and diverse. Hazardous materials 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 material is a waste that appears on one of the four RCRA hazardous materials lists (the F-list, K-list, P-list, or U-list) or that exhibits one of the four characteristics of a hazardous material - ignitability, corrosivity, reactivity, or toxicity. However, materials can be hazardous materials even if they are not specifically listed or don't exhibit any characteristic of a hazardous material. 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 materials. The State Department of Toxic Substances Control offers assistance on this complex topic through its Regulatory Assistance Office. Call 1-800-728-6942 (from within California) or (916) 255-3618 (from out-of-state) or email RAO@dtsc.ca.gov.
- M. Landfill: A facility that (i) accepts for disposal in or on land non-hazardous material such as household, commercial, and industrial waste, and waste generated during construction, remodeling, repair and demolition operations, and (ii) has a valid current solid waste facilities permit from the California Department of Resources Recycling and Recovery (CalRecycle).
- N. Mixed Construction and Demolition Debris Material or Mixed C&D Debris Material: Construction and demolition (C&D) debris or C&D debris that are combined on the project site and hauled away for sorting.
- O. Person: A natural person, a firm, joint stock company, business concern, association, partnership or corporation or, to the extent permitted by law, governmental entity, including the City and County of San Francisco and its departments, boards and

commissions for projects within the nine counties surrounding the San Francisco Bay, and its or their successors or assigns.

- P. Recover or Recovery: Any activity, including source reduction, deconstruction and salvaging, reuse, recycling, composting, or anaerobic digestion which causes materials to be recovered for use as a resource and diverted from disposal. Recovery shall not include engineered municipal solid waste conversion.
- Q. Recyclable Material: Any material or product that can be sorted and reconstituted, for the purpose of using the altered form in the manufacture of a new product, as accepted in San Francisco's recycling collection program, such as paper, bottles and cans. Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.
- R. Recycling: The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. Recycling does not include burning, incinerating, or thermally destroying solid waste, nor shall it include disposal.
- S. Recycling Facility: An operation or person that collects and processes materials for recycling.
- T. Registered Transporter: Anyone who is hired to remove Mixed Construction and Demolition Debris Material from a construction and/or demolition site in San Francisco, using 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 Material and holds a valid registration from the City and County of San Francisco pursuant to Chapter 14 of the Environment Code. A Registered Transporter is obligated to take all mixed material only to a Registered Facility.
- U. Registered Facility: Any facility that accepts Mixed Construction and Demolition Debris Material for processing and recycling and holds a valid registration issued by the City and County of San Francisco pursuant to Chapter 14 of the Environment Code.
- V. Reuse: Using an object or material again either for its original purpose or for a similar purpose without significantly altering the physical form of the object or material.
- W. Source Reduction: Any action which causes a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce waste tonnage generated, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials.
- X. Source Separated Materials: Materials that have been separated or kept separate from the solid waste stream, at the point of generation, for the purpose of reuse, recycling or composting in order to return them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.
- Y. Solid Waste: Materials designated as non-recyclable and discarded for the purposes of disposal.

- Z. Universal Waste (CCR Title 22, Division 4.5, Chapter 23): Certain specified hazardous materials that are more common and pose a lower risk to people and the environment than other hazardous materials. 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.
- AA. Treated Wood Waste (CCR Title 22, Division 4.5, Chapter 34): Dimensional lumber and other wood products which have been removed from service and were treated with preserving chemicals that protect the wood from insect attack and fungal decay during its use. Examples include fence posts, sill plates, landscape timbers, pilings, railroad ties, guardrails, and decking. Treated Wood Waste is a hazardous material in California and must be managed according to specific regulations.
- BB. Waste Diversion: a management activity that disposes of waste through methods other than incineration or landfilling. Examples include reuse and recycling.

1.4 GENERAL REQUIREMENTS

- A. Recovery Goal: In order to meet the City's zero waste goal, the goal for this contract is to recover no less than 75% of the construction and demolition debris material from landfill disposal through waste prevention, reuse, and recycling. If a construction site contains hazardous materials and/or universal wastes, the 75% minimum recovery requirement should pertain to all non-hazardous material. No construction and demolition debris material shall be disposed in garbage or taken directly to landfill.
- B. In order for construction and/or demolition debris to be considered hazardous, such as containing asbestos or lead, it shall be evaluated and determined to be hazardous by an independent professional such as a Cal/OSHA Certified Asbestos Consultant. The waste determination and other verification shall be included with the C&D Debris Management Plan (refer to Paragraph 1.5 below), together with a list of hazardous materials found at the project site and plans for proper disposal.
- C. All Hazardous Materials, including Universal Wastes and Treated Wood Waste, shall be documented separately, and a summary of all manifests or other disposal documentation, including material description and weights, shall be provided to the City Representative.
- D. Highest and Best Use: The Contractor shall employ the following hierarchy of highest and best use for handling construction and demolition debris as follows:
1. Implement reduced material usage or reuse of materials before any recycling;
 2. Implement recycling or reuse of source separated material before any recycling of mixed construction and demolition debris material;
 3. Implement recycling of mixed construction and demolition debris material before all other forms of disposal.
- E. Recycling Requirements:
1. 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:
 - a. Asphalt.
 - b. Acoustical ceiling tiles.
 - c. Bricks, stone(s), granite, and other finished stone-type materials.
 - d. Carpet and padding.
 - e. Concrete, concrete block, slump stone (decorative concrete block).

- f. Corrugated cardboard.
 - g. Dimensional lumber and beams.
 - h. Fixtures, hardware, doors, and windows.
 - i. Metal, ferrous and non-ferrous.
 - j. Mixed Inerts.
 - k. Rigid plastic.
 - l. Soil/dirt/rock.
 - m. Trees, Landscape Debris, cleared vegetation and cut-off or other wood scraps.
 - n. Wall board, gypsum sheetrock.
2. Mixed Construction & Demolition Debris Material:
- a. For projects within the legal and geographical boundaries of the City and County of San Francisco, mixed C&D debris material must be taken to a Registered Facility by a Registered Transporter, per Environment Code 14. Registered Facilities Recovery (Diversion) Rates are listed at: <https://sfenvironment.org/construction-demolition-resources>
 - b. For projects outside San Francisco, if mixed C&D debris material is taken to a non-registered facility the diversion rate approved by the local jurisdiction will be used, and official documentation of the diversion rate approved by the local jurisdiction must be provided by the Contractor. If a facility does not have a locally approved recovery/recycling rate, the recovery (diversion) rate is calculated as zero.
3. Handling Of Recyclable Materials:
- a. 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.
 - b. The Contractor shall arrange for collection of reusable and recyclable materials by or delivery to the appropriate reuse and/or recycling centers for purposes of reuse and/or recycling.
 - c. All mixed C&D debris material from projects in San Francisco must be taken to a Registered Facility authorized to process the material, and it must be hauled by a Registered Transporter. For the lists of Registered Facilities and Registered Transporters refer to the website: <https://sfenvironment.org/construction-demolition-resources>
4. No Construction and Demolition Debris shall be burned, buried or otherwise disposed of on the project site.
- F. The Contractor is prohibited from sending any Construction and Demolition Debris directly to landfill or to any facility that would incinerate or otherwise process such debris using high temperature technology without submitting a written request to and receiving approval from the San Francisco Department of the Environment; see Form A and Form B.
- G. 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 C&D debris material and they must take this material to a Registered Facility. Source separated material at the job site should be taken to the appropriate recycling or reuse facility.
 - a. For a list of Registered Facilities and Registered Transporters refer to the website: <https://sfenvironment.org/construction-demolition-resources>

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 75% recovery 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:
<https://sfenvironment.org/construction-demolition-resources>

- H. Mixed C&D debris material from projects outside the legal and geographical boundaries of the City and County of San Francisco must be taken to a Recycling Facility that processes the material to achieve maximum recycling. If the material is taken to a facility not registered with San Francisco, the local jurisdiction's recycling rate for that facility shall be used provided official documentation from the local jurisdiction is attached to all submittals as required in Paragraphs 1.5, 1.6 and 1.7. If a facility does not have a local approved recycling rate, the diversion rate is calculated as zero.

- I. Universal Wastes: Contractor shall handle and dispose of all hazardous material, including "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 or with non-hazardous materials collected for recycling or composting. Contractor shall comply with all hazardous material 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.

- J. 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. Keep TWW segregated from other materials.
 2. Store 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. Label all TWW bundle/shipments with the following information:

<p>TREATED WOOD WASTE – Do not burn or scavenge.</p> <p>TWW Handler Name: _____</p> <p>Address: _____</p> <p>Accumulation Date: _____</p>

4. Take 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.
5. Keep records of all shipments of TWW for three years.
- K. 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.
- L. Contractor shall submit the following items in electronic format (Green Halo Systems Platform: <http://sfgov.wastetracking.com/>) to the City Representative and in accordance with Paragraphs 1.5, 1.6, and 1.7 below:
1. Material Reduction and Recovery Plan.
 2. Material Reduction and Recovery Monthly Summary of Recovery (Diversion) and supporting documentation.
 3. Material Reduction and Recovery Final Report.

1.5 MATERIAL REDUCTION AND RECOVERY PLAN

- A. The requirements under this Paragraph 1.5 apply to all City construction contracts for City-owned Facilities or City leaseholds located within the nine counties surrounding the San Francisco Bay, regardless of size of the project.
- 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/or demolition at the site and which materials are anticipated to be feasible and practical for reuse and recycling. Contractor shall complete a Material Reduction and Recovery Plan (MRRP) to be discussed with the City Representative.
- C. Contractor shall schedule a meeting with the City Representative to discuss its proposed MRRP to develop a mutual understanding regarding the City's reuse and recycling policies and goals and their application to this project. The contractor must manage all project Construction and Demolition Debris to meet a minimum recovery rate of 75%.
- D. Contractor shall obtain tonnage estimates for all construction and demolition debris from all subcontractors and compile data from all subcontractors into the MRRP. 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 or recycled.
 4. The names, locations, and permit or license, as applicable, of recycling and reuse facilities and Registered Facilities (for mixed C&D debris material) that the Contractor plans to use for this project.
 5. Procedures for source separation for the materials listed in subparagraph 1.4F "Recycling Requirements" 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 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. Contractor shall use the Green Halo System to provide all Material Reduction and Recovery Plans and Reports for the Project. The City Representative will create a Green Halo project account for use by the Contractor. The Contractor shall then use this account to prepare and submit the following:
1. **Material Reduction and Recovery Plan (MRRP).** Develop and submit a project specific MRRP for the Project:
 - a) Register the project and create a project tracking number
 - b) Provide the Plan (<http://sfgov.wastetracking.com/>).
 - c) Coordinate the MRRP with the LEED Construction and Demolition Debris Management Plan (if the project is pursuing a LEED certification) requirements.
 - d) Comply with the City and County of San Francisco's requirement for a minimum 75% recovery rate from landfill.
 - e) Describe the Contractors approach to managing the Project's Construction and Demolition Debris.
 - f) When complete, click "Submit" for review and approval.
- F. The MRRP is subject to approval by the City Representative. Contractor shall revise and resubmit the MRRP as required by the City Representative.
- G. Review of the Contractor's MRRP will not relieve Contractor of responsibility for compliance with applicable laws and regulations governing control and disposal of solid waste or other pollutants.

1.6 MONTHLY UPDATES OF MATERIAL RECOVERY

- A. Contractor shall provide monthly updates through the Green Halo Platform by uploading new information, quantifying the construction and demolition debris generated and reused, or recycled. Contractor should upload information regarding transporter method, recovered materials, facilities used, and weight tickets generated as well as any other applicable supporting files and additional requirements.
1. Failure provide monthly updates shall render the application for progress payment incomplete and may delay progress payment.

1.7 MATERIAL REDUCTION AND RECOVERY FINAL REPORT

- A. Upon final completion of the Project, the Contractor shall submit a Final Recovery Report, on the Green Halo Platform, showing weight of all construction and demolition debris material recovered for the entire project and the overall recovery rate achieved.

- B. The Final Recovery Report shall be prepared into one plan/report by the Contractor with data from all subcontractors and submitted to the City Representative.

1.8 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 communicate the presence of demolition debris which is hazardous material to all workers on the job site and shall establish and clearly identify hazardous material storage areas. The Contractor shall discuss practices and alternatives to minimize worker exposure to potentially harmful substances expected to be encountered on the job site.
- C. For Construction Contracts within the legal and geographical boundaries of the City and County of San Francisco the Contractor shall provide green, blue and black refuse bins and appropriate signs for field offices to separate recyclable and compostable materials from the trash and subscribe to adequate collection services. To subscribe to these services, contact Recology San Francisco at 415-330-1300
- D. For projects outside the legal and geographical boundaries of the City and County of San Francisco, Contractor shall abide by local jurisdiction's refuse.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION

SECTION 01 77 00**CLOSEOUT PROCEDURES****PART 1 GENERAL**

1.01 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 74 50, Material Reduction and Recovery Plan.
 - 5. Section 01 78 23, Operation and Maintenance Data.
 - 6. Section 01 78 36, Warranties.
 - 7. Section 01 78 39, Project Record Documents.

1.02 PROCEDURES

- A. Close-out Meeting:
 - 1. The Contractor shall submit all change orders, claims, and time extension requests by the final date as required by the Port's Representative before the Work is 95% complete.
 - 2. Prior to Substantial Completion, the Port's Representative will schedule a closeout meeting with the Contractor, Port representatives, and consultants to determine the status of completion.
 - 3. The Contractor shall attend the Close-out meeting scheduled by the Port's Representative to discuss the close-out procedure and responsibilities of the Contractor and Port's Representative.
 - 4. The Port's 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.

1.03 SUBSTANTIAL COMPLETION

- A. Prerequisites to Substantial Completion:
 - 1. Submit to the Port's 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 Port:
 - a. Warranties as specified in Section 01 78 36.
 - b. Project Record Drawings and approved shop drawings, product data, and samples as specified in Section 01 78 39.
 - c. Keys and keying schedule, if applicable.
 - d. Operation and maintenance data, including manuals and instruction of Port personnel, if applicable.
 - e. Spare parts and materials extra stock, if applicable.
 - f. Applicable permit closure sign-offs including Certificates of Final Inspection and Occupancy as evidence of compliance with the requirements of governmental agencies having jurisdiction (i.e. Building Permits, Encroachment Permits etc.), where such sign-off is needed in order for the City to have beneficial use of the Work, as determined by the Engineer.
 - g. Relevant Test Reports.

11. Failure to complete all remedial work and prerequisites for final inspection within the time allowed after the date of Substantial Completion as specified in Section 00 73 02, Contract Time and Liquidated Damages, will result in liquidated damages being assessed.
- B. Final Inspection:
1. Notify the Port in writing that all punch list items of remedial work have been completed and the Work is ready for final inspection.
 2. The Port's Representative will make an inspection to verify the status of completion.
 3. Should the Port's Representative determine that the Work is not complete or is defective, the Port's Representative will so notify the Contractor, in writing, listing remaining incomplete or defective work.
 - a. Promptly complete the remaining deficiencies and notify the Port's Representative, in writing, when ready for reinspection.
 - b. If the Port's Representative finds the Work is still not complete, the Contractor shall be responsible for all subsequent reinspection and meeting costs incurred by the Port to resolve the remaining issues. Such costs will be deducted from progress payments owed to the Contractor.
 4. When the Port's Representative determines that the Work is acceptable under the Contract Documents and the Contractor has made all required closeout submittals, the Port's Representative will initiate the final payment recommendation and prepare the Certificate of Final Completion.
- C. Submittals for final adjustment of accounts shall include, but not necessarily be limited to:
1. Request for Final Payment.
 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.
- D. All prior estimates and payments shall be subject to correction in the final estimate and payment.

1.05 FINAL CLEANING

- A. Final Completion (Acceptance) of the work by the Port will be withheld until the Contractor has satisfactorily complied with the requirements herein for final cleanup of the Project site.
- B. Should the Port 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. See additional cleaning requirements specified in Section 01 50 00, Temporary Facilities and Controls.

1.06 PROJECT RECORD DOCUMENTS

- A. The following record documents shall be maintained on site and shall be signed and dated by the Contractor and submitted to the Port's Representative prior to Final Completion (Acceptance). Refer to Section 01 78 39 – Project Record Documents.

1.07 RELEASE OF LIENS OR CLAIMS

- A. Before the Port issues final payment to Contractor for the Work, Contractor shall sign and deliver to the Port a release of liens or claims sworn to under oath and duly notarized. The release shall

state that the 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 the Contractor have been made, the Contractor shall refund to the Port 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.

1.08 OPERATING MANUALS AND MAINTENANCE DATA

- A. Submit operation manuals and maintenance data for installed equipment and systems.

1.09 EQUIPMENT TESTING

- A. Refer to individual Specification Sections for specific requirements for equipment and systems verifications.

1.10 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 Port's operating and maintenance personnel.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

**EXHIBIT A: FINAL SETTLEMENT AND RELEASE OF CLAIMS
CONTRACT NO. <Insert Contract No.>**

<Insert Project Title>

This agreement and release of claims (“Agreement and Release”) is made and entered on the last date of the signatures below, in the City and County of San Francisco, State of California, by and between _____, (hereinafter referred to as “Contractor”), whose principal place of business is _____, and the City and County of San Francisco, a municipal corporation, (hereinafter referred to as “City”), acting by and through the Port of San Francisco.

RECITALS

WHEREAS, City and Contractor entered into Contract No. <Contract No.>, <Project Title>, (hereinafter referred to as “Contract”); and

WHEREAS, The Work under the Contract has been completed and the City has issued a Certificate of Final Completion for the Work, per Administrative Code Section 6.22(k), commencement to Date of (Final Completion Date); and

WHEREAS, Contractor has submitted its final application for payment.

Now, therefore, it is mutually agreed as follows:

AGREEMENT

1. Contractor and Port agree that Contractor is due payment as follows:

Original Contract Sum:	\$ _____
Change Orders (1 through ____ and Final Quantity Adjustment):	\$ _____
Modified Contract Sum:	\$ _____
Payments to Date (direct payments to Contractor and releases of retention)	\$ _____
Retention Remaining:	\$ _____
Amount Due before Adjustments for Offsets & Stop Notices:	\$ _____
Offsets (e.g., OLSE forfeiture, non-conforming work, liquidated damages, etc.):	(\$ _____)
Outstanding Stop Notices (withheld @ 125% of Stop Notice amounts):	(\$ _____)
Retention Release to Contractor from Escrow:	\$ _____
Return of Funds to City from Escrow:	\$ _____
FINAL PAYMENT DUE CONTRACTOR:	<u>\$0</u>

- 2. Subject to the provisions of this Agreement and Release, City shall forthwith pay to Contractor the sum of \$ _____ under the Contract, less any amounts represented by Notices to Withhold Funds on file with the Controller as of the date of such payment.
- 3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against the City arising from the performance of Work under the Contract, except for (i) the Disputed Claims described in Paragraph 4, below, and (ii) continuing obligations described in Paragraph 4, below. It is the intention of the parties in executing this Agreement and Release that, upon Contractor’s receipt of the final payment and retention release amounts identified in Paragraph 1, above, this Agreement and Release shall be effective as a final accord and satisfaction and a full, final and release of all claims as set forth in the paragraphs below.
- 4. The following claims are disputed (the “Disputed Claims”) and are specifically excluded from the operation of this Agreement and Release:

Contract Claim No.	Date Submitted	Description of Claim	Amount of Claim

Nothing herein shall operate to toll, waive, or excuse Contractor’s compliance with the Government Code Claim requirements under California Government Code Section 900, et seq., and San Francisco Administrative Code Chapter 10 as to the Disputed Claims. Refer to Article 13 of Contract Section 00 72 00 (General Conditions).

- 5. Consistent with California Public Contract Code Section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2, above, Contractor hereby releases and forever discharges the City, its boards and commissions, and all of its officers, agents, members, employees, authorized representatives, assignees and transferees from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract, about which the Contract knows or should have known, except for the Disputed Claims.
- 6. Guarantees and warranties for Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
- 7. Contractor shall indemnify, hold harmless and defend City, its boards and commissions, and all of its officers, agents, members, employees, authorized representatives, assignees and transferees from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor’s Suppliers and/or Subcontractors of any tier and/or suppliers to them for any and all labor, materials, supplies, and equipment used, or contemplated to be used, in the performance of the Contract.
- 8. The provisions of this Agreement are contractual in nature and not mere recitals and shall be considered independent and severable, and if any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal or other law, ruling or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.
- 9. All rights of City shall survive completion of the Work or termination of Contract, and execution of this Release.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement and Release on the day first mentioned above.

*****CAUTION: THIS IS A RELEASE – READ BEFORE EXECUTING*****

<CONTRACTOR>

PORT OF SAN FRANCISCO

By: _____
<Name> Date
<Title>

By: _____
<Name> Date
Deputy Director, Engineering

APPROVED AS TO FORM:
David Chiu, City Attorney

PORT OF SAN FRANCISCO

By: _____
<Name> Date
Deputy City Attorney

By: _____
<Name> Date
Executive Director

PORT COMMISSION
CITY AND COUNTY OF
SAN FRANCISCO

[Resolution / Award Memorandum] dated

END OF SECTION 01 77 00

SECTION 01 78 23**OPERATION AND MAINTENANCE DATA****PART 1 - GENERAL****1.01 SUMMARY**

- A. Section Includes:
 - 1. Requirements and formats for Operation and Maintenance Data Manual (O&M).
- B. Related Requirements:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 77 00 – Closeout Procedures
 - 3. Section 01 78 36 – Warranties
 - 4. Section 01 78 39 – Project Record Documents

1.02 OPERATION AND MAINTENANCE DATA REQUIREMENTS

- A. The Contractor shall submit in the format specified herein, a complete package for Operation and Maintenance Data (O&M Manual), to include instruction manuals for installation, operation, maintenance, and lubrication requirements for each component of mechanical, electrical, irrigation equipment, or other equipment and systems.
- B. The Contractor shall inform all equipment manufacturers and subcontractors of these requirements and ensure that all associated costs are included in the costs for furnishing the equipment or system.
- C. The Contractor shall submit plan view drawings to scale to show the as-built layout of work for irrigation work, mechanical, work, electrical work and/or as required by specifications.

1.03 SUBMITTAL AND SCHEDULING REQUIREMENTS

- A. **Schedule Requirements:** The Contractor shall include in the submittal schedule each submittal listed herein in accordance with Section 01 33 00, paragraph 1.4.
- B. **Preliminary Submittal:** The Contractor shall 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, in accordance with Section 01 33 00.
- C. **Substantial Completion Submittal:** The Contractor shall submit two copies of final O&M manual of the hard copy and the electronic copy as described herein. City Representative will review draft and return one copy with comments, in accordance with Section 01 33 00.
- D. **Final Completion Submittal:** As a requirement of the project closeout and prior to request for final payment, the Contractor shall submit approved 6 copies of the O & M manual 15 days prior to Final Completion, as described herein.

1.04 O & M MANUAL – HARD COPY FORMAT

- A. Prepare all manufacturer and product data in the form of an instructional manual including operating and maintenance instructions.
- 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. The Contractor shall submit two (2) sets of the binders and originals as part of Closeout procedures as specified in Section 01 77 00.

1.05 O & M MANUAL - ELECTRONIC FORMAT

- A. Prepare all manufacturer and product data in the form of an instructional manual including operating and maintenance instructions.
 - 1. Organize data on in a manner similar to the hard copy of a binder, using a table of contents and folders for each component of mechanical, electrical, irrigation equipment, or other equipment and systems. Organize information related to each component within that folder.
- B. A complete set of electronic O & M Manual shall be included with the electronic as-built drawings via the same storage medium used to distribute the as-built drawings – see Section 01 78 39 – Project Record Documents.

1.06 AS BUILT DRAWINGS

- A. See Section 01 78 39 – Project Record Documents.

1.07 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 hard copy of each and scan a pdf for the electronic format, refer to Section 01 78 36.
- 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.

1.08 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 part 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.

1.09 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.

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 9.07, 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 Substantial Completion.
- 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. Refer to Section 01 78 23 for submittal requirements regarding quantity and format.
- B. Warranties will be included with Operations and Maintenance manuals associated with the specific construction components, in both hard copy and electronic copy formats.

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 ACTUAL SUBSTANTIAL COMPLETION ESTABLISHED except where detailed specifications for certain materials, equipment or systems require longer warranty periods.** Refer to technical specification sections to confirm specific warranty needed for such construction material and components.
 - 1. The following list of materials and equipment have warranties that differ than the typical 24 months outlined above, including but not limited to:
 - (a) 32 17 34 - Concrete Detectable Warning Tiles
 - (b) 33 33 00 - Sanitary Sewerage Utilities
- 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 the 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 within 10 calendar days.
 - 1. The City may proceed with the correction work at Contractor's expense if Contractor does not proceed with the corrective work within a within 10 calendar days 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.

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:

<p>(Letterhead of Company)</p> <p>We <u>(name of Contractor)</u>, 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.</p> <p>Owner: <Department>, City and County of San Francisco.</p> <p>Location of Equipment: <Address>, San Francisco, California.</p> <p>This guarantee is effective this _____ day of _____, 20____ until the date of City Approval of Contractor's Application for Final Payment.</p> <p>Signed: _____(Name of Contractor)</p> <p>By: _____</p> <p>Contractor's Telephone No. _____</p>

- 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. Refer to Section 1.5 - Warranty Conditions, for a list of materials and equipment that have warranties that differ from the typical 24 months.

GUARANTEE/WARRANTY FORM
for
<PROJECT NAME>
<CONTRACT NO.>

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 _____ 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

1.01 SUMMARY

- A. Section includes requirements for maintenance and submittal of Project Record Drawings and As-Builts.
- B. Related Requirements:
 - 1. Section 01 20 00 – Price and Payment Procedures
 - 2. Section 01 33 00 – Submittal Procedures
 - 3. Section 01 77 00 – Closeout Procedures
 - 4. Section 01 78 23 – Operations and Maintenance Data

1.02 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 As-Builts showing the final completed work based on the Record Drawings and certified by the City Representative.

1.03 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.
 - 1. Delegate responsibility for maintenance, coordination, and accuracy of the Record Drawings to one person on Contractor's staff.
 - 2. Record all changes and work progress on the stamped Record Drawings which will be inspected monthly by the City Representative.

3. 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.
4. 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.
5. The City Representative will sign the corrected Record Drawings to indicate that he or she has reviewed the corrections for completeness.

PART 2 - PRODUCTS

2.01 RECORD DOCUMENTS

- A. Promptly following receipt of the Notice to Proceed, secure from the City Representative Contract Documents to be used as the Project Record Drawings including but not limited to:
 1. Drawings, Specifications, Addenda, Change Orders, Requests For Information (“RFIs”), Equipment Data Sheets, clarifications, Field Orders, approved shop drawings, Operations and Maintenance Data, samples, warranties and other submittals, clearly marked to record accurately the Work as actually constructed (“record documents”), including changes, adjustments, and other information relative to the Work.
- B. PDF Distribution
 1. The goal is to enable more efficient methods for navigating PDF drawings/documents for construction and operations. The Project Team, Contractor and City, shall convene a kick-off meeting to determine the method for distribution of documents throughout the project and comply with the following:
 2. Either a single file, or multiple files shall be agreed upon and adhered to throughout the project;
 3. The Contractor and City shall each identify the lead document manager who will be responsible for their Team Members maintaining consistency across the project;
 4. Each sheet shall have bookmark with the sheet name and number (e.g., WW-11234, Engine Room Floor Plan);
 5. If and when possible, Hyperlinks created within the native application will be maintained within and between PDF sheet output;
 6. Each sheet set to have a fully hyperlinked index of drawings.
- C. Maintaining Integrity of PDF Drawings
 1. To provide Real-time document changes to all Project Team Members, Contractor, Subcontractor, and City, full sheet revisions should be provided when possible.
 2. Separate “sketch” documents can be incorporated into digital sets but may increase chance of misinterpretation or missed information (e.g., if a bathroom wall dimension changes, the entire sheet should be re-issued to reflect bathroom change). Therefore, “sketches” shall require agreement between the Contractor and City prior to including them in the Record Documents.
 3. Major changes to the documents should be made in the original authoring application

4. New output from the authoring application shall follow the original format
 5. Record drawings should keep all dimensions true to scale throughout (i.e., avoid overriding dimensions with text values).
- D. Metadata
1. If available from source software, document and element metadata can be used to produce a data-rich PDF, which allow for better navigation and searching of the document, as well as reduces the need for manual data input.
 2. Each sheet should contain the following metadata:
 - a. Page # or Spec #
 - b. Project Title Name
 - c. Sheet Title
 - d. Revision
 - e. Date Issued
 - f. Author
 - g. Discipline
 - h. Document Type (i.e. elevation, detail, floor plan, spec)
 - i. Location and Object Information should be included on the sheet when possible for the following:
 - 1) Building Zone
 - 2) Level (if applicable to one level)
 - 3) Systems
 - 4) Area
 - 5) Room
 - 6) Object Information breakdown
 - 7) Maintain hyperlinks
 - 8)

PART 3 - EXECUTION

3.01 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.

3.02 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.

3.03 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 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. Upon receiving approval of as-built drawings and prior to final payment, the Contractor shall have delivered the final set as follows:
 - 1. Electronic:
 - a. Each drawing shall be in a separate PDF file named after the sheet number followed by a space and the name of the drawing.
 - b. Any physical drawing shall be color scanned into PDF file format at 1:1 full (original) size at no less than 300 DPI resolution in 24-bit color or greater.

- c. All digital files shall be delivered on a USB 3.0 or greater flash drive or external SSD (Solid State Drive) of sufficient capacity to contain all files or via other means or medium as acceptable to the City Representative.
 - d. The flash drives or external SSDs shall be formatted with the FAT32 file system unless otherwise directed by the City Representative.
 - e. The flash drives or external SSDs shall be physically labeled indicating project name, contract number, "As-Built Drawings", and the date.
 - f. The Contractor shall submit (4) sets of flash drives or external SSDs as part of Closeout procedures as specified in Section 01 77 00.
2. Hard Copy:
- a. Full-size: The Contractor shall provide one (1) full-sized size set of drawings printed single sided on full-sized sheets of drawings, three-hole punched and bound with Chicago screws into sets with no more than 200 sheets per set, rolled and stored in plastic or metal drawing tube labeled with Project Title and description of drawings included.
 - b. Half-size: Provide one (1) half-size set of drawings reduced by exactly 50% from the original full-size drawings. Drawings shall be printed single-sided, with no more than 200 sheets per set. Sets that have 50 sheets or less may be staple bound. Sets that have over 50 sheets shall be three-hole punched and bound with Chicago screws.
 - c. Reduced-size: Provide one (1) reduced set of drawings scaled to fit on 11x17 sheets. Drawings shall be printed single-sided, with no more than 200 sheets per set. Sets that have 50 sheets or less may be staple bound. Sets that have over 50 sheets shall be three-hole punched and bound with Chicago screws.
- G. Furnishing of the final approved Project Record Drawings, including required revisions and resubmittal, shall be done as Incidental Work.
- H. If the As-Built Drawings are not furnished when specified, the final payment will be withheld.

END OF SECTION