



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

PIER 80 MOORING AND BERTHING IMPROVEMENTS

CONTRACT NO. 2871

PROJECT MANUAL

VOLUME 2 OF 3

(Division 01)

03/2025

Each Bid shall be enclosed in an envelope bearing the description:
"BID FOR PIER 80 MOORING AND BERTHING IMPROVEMENTS
(Port of San Francisco Contract No. 2871)".

SECTION 00 01 10

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SECTION 01 11 00**SUMMARY OF WORK****PART 1 GENERAL**

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Location:

1. Pier 90, San Francisco, California, 94124

B. Owner: Port of San Francisco.

C. SCOPE OF WORK: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specifications included herein, apply to this Contract.

1. The work includes demolition of the existing temporary fendering system, wooden piles, and utilities to provide space for the installation of new fenders and mooring bollards. 15 new fenders and 8 new bollards to be installed on the East berth and Alternative items include installation of 12 new fenders and 9 bollards..
2. Taking into full consideration the sequence of construction, the Contractor shall submit to the Port a preliminary work plan for Port's cursory review. Contractor shall make proper allowances in the schedule to complete the work within the allotted time, including incidental work not shown on the Plans as part of the scope of work. The final work plan is based on Contractor's means and methods.
3. For Alternate Bid Items refer to Section 00 41 00 and Section 00 42 00 or Division specs.

1.02 CONTRACTOR'S QUALIFICATIONS

- A. Contractor shall meet the qualifications specified under Advertisement for Bids (Section 00 11 13).
- B. For additional qualifications of the Contractor or subcontractor's installing various elements of the Work, see individual technical specifications.

1.03 COORDINATION WITH OTHER PROJECTS

- A. Contractor is hereby informed of the following projects that may be in conflict with this Contract in accordance with Paragraph 5.01- Coordination of the General Conditions:
 1. Amador Street Infrastructure Improvements
- B. Contractor shall coordinate and schedule its Work with the other Contractors prior to construction work in accordance with Section 00 72 00 – General Conditions, Paragraph 5.02 - Coordination.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION 01 11 00

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 01 11 00 – Summary of Work
 - 2. Section 01 21 50 – Mobilization Item
 - 3. Section 01 29 73 – Schedule of Values
 - 4. Section 01 31 19 – Project Meetings
 - 5. Section 01 33 00 – Submittal Procedures

1.2 REFERENCES

- A. California Public Contract Code

1.3 SCOPE OF WORK

- A. Work under Contract, or under any bid item, allowance or alternate, shall include all labor, materials, transport, handling, supervision, administration and all other items necessary for the satisfactory completion of work, whether or not expressly specified or shown.

1.4 SCOPE OF PAYMENT

- 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.
- E. Attach copies of all invoices from subcontractors supporting the pay application.
- F. Failure to submit all required information may lead to partial withholding of progress payment.

1.5 BASIS OF PAYMENT

- A. Unit Price Work
 - 1. The Port 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 Port of the Work satisfactorily completed within the prescribed limits.
 - 3. Measurement and computations shall be made by methods as the Port 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 Port 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.

1.6 APPLICATION AND SCHEDULE PROCEDURES

- A. On the 25th of each month submit an itemized Application of Payment to the City Representative by email with all required supporting documents attached in PDF format or in other Windows file formats (except Certified Payrolls) covering the Work completed as of the date of the Application for Payment.
 - 1. Submit a progress schedule update with each Application for Payment.
 - 2. List each authorized Change Order executed prior to date of submission by Change Order Number and description, as for original items of work.
 - 3. When the City requires substantiating data, Contractor shall submit suitable information with cover letter identifying Application of Payment number and date, line item by number and description.
 - 4. Submit Certified Payrolls through the City's internet-based Project Reporting System. Refer to Paragraph 9.03M of the General Conditions.
 - 5. Specify the desired Method of Payment, either by electronic funds transfer through [Bank of America Paymode](#) or by check.

- B. Progress payments for the work performed under this Contract will be made in the manner described in Paragraph 9.03 of the General Conditions.
1. Progress payments will be based upon progress estimates by Contractor and verified by the Port of the actual physical progress of the work, utilizing the Schedule of Values approved by the Port.
 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 Port will make final determination if agreement cannot be reached on Contractor's progress payment request.
- C. The Port shall issue payments to Contractor through the [City's electronic payment system called PayMode-X®](#). Contractor acknowledges and agrees to receive payment electronically through this system. Contractor shall not be entitled to any additional cost or charge under this Contract for using or failing to use the electronic payment system. Nor shall Contractor be entitled to any additional cost or charge for delays or failures of the electronic payment system to complete a payment transaction.

1.7 PROGRESS ESTIMATES

- A. Upon receiving Contractor's monthly progress payment application, the Port 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 Port 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 Port will commence payment processing electronically. The payments will be made in accordance with Contractor's specified Method of Payment.
- C. However, the issuance of approval for Progress Payments will not be a representation that the Port, its officers, agents and employees has determined the following:
1. Made exhaustive or continuous on-site inspections to check the quality or quantity of Work;
 2. Reviewed construction means, methods, techniques, sequences or procedures;
 3. Reviewed copies of requisitions received from subcontractors and material suppliers and other data requested by the Port to substantiate Contractor's right to payment; or
 4. Made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contact Sum.

1.8 RETENTION

- A. Refer to the General Conditions, Article 9.04 RETENTION.

1.9 FINAL PAYMENT

- A. As soon as practicable after all required Work is completed in accordance with Contract, including Contractor maintenance after Final Acceptance, Port will pay to Contractor, in manner provided by law, unpaid balance of contract price of Work, or whole contract prices of Work, if no progress payment has been made, determined in accordance with terms of Contract, less sums as may be lawfully retained under any provisions of Contract or by law.
- B. Prior progress payments shall be subject to correction in the final payment. Port's determination of amount due as final payment shall be final and conclusive evidence of amount of Work performed by Contractor under Contract, and shall be full measure of compensation to be received by Contractor.
- C. Contractor and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment and as a condition precedent to final payment, Agreement and Release of Any and All Claims discharging Port, its officers, agents and employees of and from liabilities, obligations, and claims arising under Contract.

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. Related Sections:
 - 1. Section 00 73 00 – Supplementary Conditions
 - 2. Section 00 41 00 – Bid Form
 - 3. Section 00 42 00 – Description of Bid Items

1.2 PROCEDURES

- A. Allowances under this Contract are contingency allowances; allowances shall be done only when and as directed in writing by the Resident Engineer.
- B. Allowances shall cover the actual direct cost to Contractor of labor, material 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, administrative paper work, planning, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Base Bid 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 include in the Contractor's Total Bid on the Schedule of Bid Prices.
- E. If the actual cost of work done under any Allowance item is less than the amount shown on the Schedule of Bid Prices under that Allowance item, the Contract Sum shall be reduced by the difference between the amount given in the Schedule of Bid Prices and the cost of the work actually done.
- F. Contractor's markup for overhead and profit on allowance items shall be limited to 5%, except as specified under Section 01 31 33 (Partnering Procedures), Article 1.5.B, which states, "No mark-up, overhead or other fees shall be added to the partnering costs."

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01 21 00

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SECTION 01 21 50**MOBILIZATION****PART 1 GENERAL**

1.01 SECTION INCLUDES:

- A. The work under this Bid Item consists of preparatory work including, but not limited to, work necessary for the mobilizing and furnishing at the site, equipment, materials, supplies and incidentals; for the establishment of all offices, buildings and other temporary facilities necessary for work on the project; cost for pre-paid bonds and insurances; 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; and for demobilization from the site once construction is complete. Compensation for mobilization includes, but is not limited to, the following principal items:
1. Permits: Refer to Section 00 73 00 - Supplementary Conditions and Section 01 11 00 - Summary of Work.
 2. Moving onto the site of all Contractors' equipment required for operations and arranging for and erection of Contractor's work and storage yard(s). This includes the differing scopes and task assignments, including staging and storage areas, as well as needed coordination with the Port.
 3. Providing on-site sanitary facilities and potable water facilities.
 4. Arranging for and erection of the Contractor's work and storage yards.
 5. Obtaining and paying for all required bonds and insurances.
 6. Posting all OSHA-required notices and establishing safety programs.
 7. Having the Contractor's superintendent at the job site full-time, whenever construction is in progress.
 8. Submitting preconstruction details, including:
 - a. Construction Schedule as specified in Section 01 32 16 – Progress Schedules.
 - b. Submit for approval the project sign as specified in Section 01 50 00, paragraph 1.16. In accordance with §2.4.50 of the Public Works Code, the sign shall be in place before commencement of construction.
 - c. Erosion Sediment Control Plan as required by Section 01 57 13 – Temporary Erosion and Sediment Control (BMP).
 - d. Construction Emissions Minimization Plan in accordance with Sec. 25.5 of the San Francisco Environment Code. See http://www.gsweventcenter.com/GSW_RTC_References/2015_0801_SFE_SFPDPH_SFPD.pdf
 9. Seven (7) calendar days after Notice to Proceed, submit a project specific Health and Safety Plan covering the entire demolition and disposal work including potential waste operations. No site work shall begin until the Health and Safety Plan is **approved**.

10. Seven (7) calendar days after Notice to Proceed, submit for approval a complete copy of the existing conditions survey for the Port's records prior to mobilization, as required by General Conditions Article 3.01F.
11. Submitting a Schedule of Values in accordance with Section Section 00 72 00, Article 9.02 within thirty (30) calendar days following Notice to Proceed.
12. The Contractor is alerted that the amount to be paid for mobilization Work of this Section is found in the Schedule of Bid Prices and is considered incidental.

1.02 RELATED SECTIONS

- A. Section 00 72 00 – General Conditions
- B. Section 00 73 00 – Supplementary Conditions
- C. Section 01 11 00 – Summary of Work
- D. Section 01 31 13– Project Coordination
- E. Section 01 41 00 – Regulatory Requirements
- F. Section 01 57 19 – Environmental Mitigation Measures
- G. Section 01 74 50 – Construction and Demolition Recovery Plan
- H. Section 01 35 45 – Health and Safety
- I. Section 01 50 00 – Construction Facility Controls
- J. Section 01 57 13 – Temporary Erosion and Sediment Control (BMP)

1.03 PAYMENT PROCEDURES

- A. The Bid Item "Mobilization" will be paid as a Lump Sum payment over the course of the Project based on percent completion of the work.

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

- B. Any extension of the contract time that may be granted will not of itself constitute grounds for a claim for additional payment under the Bid Item "Mobilization."

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)**

END OF SECTION 01 21 50

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SECTION 01 23 00**ALTERNATES****PART 1 - GENERAL****1.1 SUMMARY**

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

1.2 RELATED SECTIONS

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

PART 2 - SCHEDULE OF ALTERNATES

- A. Bid Item A1: Demolition of Existing Timber Fender Piles at North Berth

This item shall cover all costs, including labor, supervision, management, materials, and equipment for Work related to the demolition and removal of the existing timber piles as specified and shown on the drawings and in the project manual. Work to be performed includes, but is not limited to the following:

- Vibratory extraction of piles.

- B. Bid Item A2: Demolition Existing Timber Rubber Fendering System at North Berth

This item shall cover all costs, including labor, design, supervision, management, materials, and equipment for Work related to the demolition of the existing timber fendering system, as specified and shown on the drawings and in the project manual. Work to be performed includes, but is not limited to the following:

- Demolition and offhaul of existing timber and fendering system
- Salvage of materials and hardware identified by the City Representative during construction

C. Bid Item A3: Demo Existing Bull Rail at Battery Locations at North Berth

This item shall cover all costs, including labor, design, supervision, management, materials, and equipment for Work related to the demolition of the existing bull rail, as specified and shown on the drawings and in the project manual. Work to be performed includes, but is not limited to the following:

- Demolition and offhaul of bull rail

D. Bid Item A4: Relocation of Existing Water Meter

This lump sum item shall cover all costs, including labor, design, supervision, testing, management, materials, and equipment for Work related to the relocation of the existing water meter to the new location as shown in the contract documents.

E. Bid Item A5: Demo and Salvage of (E) Miscellaneous hardware and abandoned utilities at North Berth.

This lump sum price item shall cover all costs, including labor, design, supervision, management, materials, and equipment for Work related to the demolition of miscellaneous hardware and abandoned utilities required to clear the locations of new fenders, as specified and shown on the drawings and in the project manual. Work to be performed includes, but is not limited to the following:

- Demolition of abandoned hardware and utilities and cap as necessary
- Salvage of materials and hardware identified by the City Representative during construction

F. Bid Item A6: Form and Place New Concrete Pedestal at North Berth

This item shall cover all costs, including labor, supervision, management, materials, and equipment for Work related to the forming and placement of new concrete pedestals for mooring bollards, as specified and shown on the

drawings and in the project specifications. Work to be performed includes, but is not limited to the following:

- Site preparation of pedestal locations
- Furnish and install reinforcement, tying to existing reinforcement as required.
- Furnish and place concrete.

G. Bid Item A7: Procurement and Install of New Fenders and Associated Hardware at North Berth

This item shall cover all costs, including labor, supervision, management, materials, and equipment for Work related to the Procurement and Installation of new fenders at the East Berth, as specified and shown on the drawings and in the project specifications. Work to be performed includes, but is not limited to the following:

- Procurement and Installation of new foam fenders
- Procurement and installation of associated hardware to secure new fenders

H. Bid Item A8: Procurement and Installation of (N) 225MT Mooring Bollards at North Berth

This item shall cover all costs, including labor, supervision, management, materials, and equipment for Work related to the Procurement and Installation of 200MT Mooring Points, as specified and shown on the drawings and in the project specifications. Work to be performed includes, but is not limited to the following:

- Locate existing deck reinforcement to confirm the bars will not be damaged during the drilling of anchor bolt holes.
- Furnish and install mooring bollards and associated hardware.

PART 3 - EXECUTION (Not Used)

END OF SECTION

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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

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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. Section 01 20 00 – Price and Payment Procedures

1.2 SUBMITTAL REQUIREMENTS

- A. Submit within 30 calendar days after the Notice to Proceed date but in no event later than 14 calendar days before Contractor's initial application for payment, a schedule of values covering Lump Sum Work.
- 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 Port for estimating and evaluating progress payments, as follows:
 - 1. The sum of the individual costs listed in the schedule of values shall equal the lump sum price bid under the Bid Item in the Schedule of Bid Prices for the Work activity.
 - 2. Provide breakdown in sufficient detail to facilitate continued evaluation of progress payment applications.
 - 3. Show the total cost of each item of work including all labor, material, equipment, fixed cost elements, incidental expenses, and overhead and profit.
 - 4. Overhead and profit shall not be listed as separate items.
 - 5. Identify separate line items for temporary items, mobilization, final cleaning, operations and maintenance manuals, and start-up, adjusting and testing.
 - 6. Coordinate the preparation of the schedule of values with Contractor's progress schedule.

1.3 REVIEW AND ACCEPTANCE

- A. The Port will review and return Contractor's schedule of values with comments within 7 calendar days of its receipt. Contractor shall make corrections requested by the Port and resubmit for approval within 3 calendar days.
- B. Final acceptance by Port 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.
- C. Any attempt to increase the cost of early activities, i.e., "front loading," will be rejected by the Port resulting in a complete reallocation of monies until such "front loading" is corrected. Repeated attempts at "front loading" may result in suspension or termination of the Work or refusal to process progress payments, until such time as the Schedule of Values is acceptable to the Port.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Provisions of coordination of the Work of the Contract and requesting clarifications and interpretations of the Contract Documents.
- B. Related Sections:
 - 1. 01 31 19 – Project Meetings.
 - 2. 01 32 16 – Progress Schedule
 - 3. 01 33 00 – Submittal Procedures.

1.2 GENERAL COORDINATION

- A. Contractor shall be responsible for all project coordination.
- B. Coordinate scheduling, submittals, and work of various sections to assure efficient and orderly sequence of installation of interdependent construction elements.
- C. Coordinate the requirements for operation and maintenance data with suppliers and manufacturers of equipment and systems and the City to ensure timely delivery of required submittals in accordance with Section 01 33 00.

1.3 SUBCONTRACT COORDINATION

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

1.4 ADMINISTRATION

- A. General: Prepare a written memorandum on required coordination activities. Include such items as required notices, reports and attendance at meetings. Distribute this memorandum to each trade performing work at the project site. Prepare similar memorandum for separate contractors where interfacing of their work is required.
- B. Coordination Meetings: Conduct general project coordination meetings with Subcontractors at least weekly at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as regular project meetings and special preinstallation meetings. Request representation at each meeting by every party currently involved in coordination or planning for the work of the entire project. Keep the City informed about coordination

meetings. Conduct meetings in a manner which will resolve coordination problems. Record results and minutes of each meeting and distribute copies to everyone in attendance and to the City.

- C. Submittals shall be submitted to the City using the City provided Submittal Control Form using the City numbering system. Requests for Information (RFI) shall be submitted to the City using the City RFI Form and numbered sequentially. All other Contract deliverables shall be submitted via sequentially numbered and dated transmittal. After Notice to Proceed, all other Contract required written communication shall be provided to the City via sequentially numbered letter.

Examples of communication to be provided via sequentially numbered letter include but are not limited to: notice of unforeseen or differing conditions, change order requests, notification before proceeding with force account work, notice of potential, anticipated, and/or actual delay, notification that Contractor considers work substantially complete and request for inspection, notification that Contractor considers work complete and request for certificate of acceptance, designation of responsible competent person, notice of potential claims, and contract claims.

All written communications including but not limited to Submittals, RFIs, transmittals, and letters shall include the Contractor's wet signature. Such written communications may be transmitted as attachments via email to the City Representative, provided wet signature originals are received by the City immediately following and no later than 7 calendar days from date of email.

1.5 REQUEST FOR INFORMATION (RFI)

- A. Requirement: It is Contractor's responsibility to review Contract Documents a minimum of 30 days in advance of the work to be executed, and to request for information so that the City will have sufficient time to respond to Requests for Information prior to the start of actual construction of that part of the Work to which the RFI relates.
- B. Form:
1. When an interpretation or clarification of the Contract Documents is required from the City, make the request on Form obtained from the City Representative.
 2. Fill in all applicable information on the form.
 3. Use one form for each request; limit the subject to one design discipline to expedite reply. Attach supplementary information where necessary.
 4. The City will reply or give summary of reply on the same form and include supplementary information where necessary.
 5. The completed form shall be the written record of each RFI.
 6. Do not use any other RFI form on this Project.
- C. Uses:
1. The RFI form shall be used for interpretation or clarification of the Contract Documents only.
 2. Do not use the RFI form for the following; the City will not reply and will reject the RFI:
 - a. Product or material substitution.
 - b. Questions relating to construction means, methods, techniques, sequences, procedures or safety precautions. (These are Contractor's responsibilities exclusively.)
 - c. Questions relating to construction schedule, coordination between trades, or division of work among subcontractors. (These are also Contractor's responsibilities exclusively.)

- d. Questions on contract administration procedural matters, unless they require interpretation or clarification of the Contract Documents.
 - e. Dimensions or quantities which are shown on the Contract Documents, or which can be measured from the building, or calculated from the information contained in the Contract Documents.
 - f. Confirmation of interpretations or clarifications previously provided by the City.
 - g. The City will reject requests for interpretations or clarifications of the Contract Documents which can reasonably be derived from a review of the Contract Documents.
- D. Reply:
- 1. The City will endeavor to reply to all RFI's promptly, generally no later than 15 days from the day received.
 - 2. When an RFI involves a complex subject, extensive research or development, or substantial input from other governmental agency, the City will inform Contractor and request additional time to prepare the reply. Contractor shall cooperate and agree to a reasonable time extension.
 - 3. The reply shall be a clarification or an interpretation of the Contract Documents; the reply is not an authorization of change in the Contract Sum or Time.
 - 4. Such written interpretation or clarification will be binding on Contractor and City. If Contractor believes that a written interpretation or clarification justifies an adjustment in the Contract Sum or Time, then Contractor shall make a written claim therefore as provided in Paragraph 6.03, Change Order Requests and Proposed Change Orders, of the General Conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 01 31 19
PROJECT MEETINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Pre-Construction Conference.
 2. Progress Meetings.
 3. Pre-Installation Conferences.

1.2 GENERAL

- A. The Port's 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, including pre-construction, bi-weekly, and startups.
- C. The Port's Representative shall 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.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. Prior to commencement of Work, the Port's Representative will schedule and conduct a pre-construction conference.
- B. The Contractor shall be prepared to review and discuss the construction schedule and sequence of operations. The conference will be held by the Port's Representative at a time and location selected and arranged with Contractor after award of the Contract.

1.4 SITE MOBILIZATION CONFERENCE

- A. The Port's Representative will schedule a conference at the Project site prior to Contractor mobilization.
- B. Attendance Required: Port's Representative, Special Consultants, Contractor's Superintendent, and major subcontractors.
- C. Typical Agenda:
1. Use of premises by the Port and the Contractor
 2. Maintaining a dust-free environment – Security and housekeeping procedures
 3. Schedule constraints around Pier 31 events
 4. Construction facilities and controls provided by the Port and the Contractor
 5. Temporary utilities provided by the Contractor
 6. TWIC
 7. Examination & Testing of the elevators
 8. Procedures for maintaining Record Documents
 9. Inspection and acceptance of equipment put into service during construction

1.5 PROGRESS MEETINGS

- A. The Port's Representative will schedule, prepare agenda, and administer meetings throughout progress of the Work at weekly intervals or more frequently, if required by the Port's

Representative. Progress Meetings will be held at a location to be determined by the Resident Engineer, and the Contractor's attendance is mandatory.

- B. Attendance Required: Job superintendent, major Subcontractors and suppliers, as appropriate to agenda topics for each meeting.
- C. Typical Agenda:
 - 1. Review and approval of minutes of previous meeting.
 - 2. Review of work progress since previous meeting.
 - 3. Field observations, problems, and conflicts.
 - 4. Problems which impede Contractor's construction schedule.
 - 5. Corrective measures and procedures to regain projected schedule(if necessary)
 - 6. Revision to Contractor's construction schedule and contractor provide "Look Ahead" work schedule in writing.
 - 7. Coordination of schedules.
 - 8. Review submittal, RFI logs.
 - 9. Maintenance of quality standards and field corrections – Housekeeping and cleaning of site.
 - 10. Review proposed changes for the following:
 - a. Effect on Contractor's construction schedule and completion date.
 - b. Effect on other aspects of the project.
 - c. General status of proposed change.
 - 11. Other business."

1.6 PRE-INSTALLATION CONFERENCES

- A. When required in individual specification Sections, the Contractor will convene a Pre-Installation Conference at work site prior to commencing work of the Section.
- B. The Contractor will require attendance of parties directly affecting, or affected by, work of the specific Specification Section.
- C. The Contractor will notify the Port's Representative at least four (4) days in advance of the meeting date.
- D. The Port's Representative will prepare an agenda, preside at conference, record minutes, and distribute copies within two days after the conference to the participants.
- E. The Contractor will 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 01 31 19

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 1**.

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			
Level	Port of San Francisco	Contractor	Time to Elevate
IV	Chief Harbor Engineer	Owner	Up to 10 workdays
III	CM / PM	Owner/Project Manager	Up to 1 week
II	Resident Engineer	Project Manager	Up to 2 workdays

I	Construction Inspector	Superintendent	Up to 1 workday
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ISSUE RESOLUTION POLICIES:

- All problems are job problems.
- Issues will be resolved at the lowest practical level.
- Either party can decide it's time to elevate.
- Write down the agreed upon problem, your best ideas for solution, along with where you are stuck.
- Elevate ASAP when all relevant information is known, and a decision cannot be reached.
- Inaction is not an alternative.
- When elevating, identify when cost or schedule will be impacted.
- Once made, a decision is owned and known by all.

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

Level	Estimated Construction Amount	Complexity	Political Significance	Relationships	Partnering Process
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 D: 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 _____, (the "Contractor") _____, and the following individual: _____ (the "Facilitator").

Recitals

A. The City, by and through its Department, 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 shall be compensated for his/her individual services as Facilitator at a billing rate of \$_____ per day and \$_____ per Scorecard. Compensation shall 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 shall 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, shall 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 shall submit to the Contractor invoices for work completed (a) not more frequent than once per month; (b) based on the agreed upon 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 shall not divulge any information acquired during Partnering activities without obtaining prior written approval from the City and the Contractor.

6. **Recordkeeping.** The Facilitator shall maintain cost records pertaining to this Agreement for inspection by the City or the Contractor for a period of three years following the end or termination of this Agreement.

7. **Assignment.** No party to this Agreement shall 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 shall 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 shall 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 shall be brought in the California Superior Court, County of San Francisco. The Agreement shall 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 [CONTRACTOR]
DEPARTMENT PORT OF SAN
FRANCISCO

BY: _____
Name: Uday Prasad
Title: Acting Chief Harbor
Engineer

BY: _____
Name:
Title:

FACILITATOR

BY: _____
Name:
Title:

Approved as to form:
DENNIS J. HERRERA
City Attorney

BY: _____
Deputy City Attorney

END OF SECTION

SECTION 01 32 16**PROGRESS SCHEDULE****PART 1 - GENERAL****1.1 SUMMARY**

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

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.3 GENERAL REQUIREMENTS

- A. Within 15 calendar days after the Notice To Proceed (NTP), Contractor shall furnish three (3) copies of a construction schedule showing in detail the proposed sequence of activities. The Port will not process any progress payments until the required schedule is submitted.
- B. The CPM schedule shall represent Contractor's plan of operation performed within the specified contract completion time and within the contract bid price. It shall represent a practical plan to complete the work. A schedule extending beyond the contract completion date will not be accepted.
- C. Contractor is required to involve all subcontractors in the development, implementation, and updating process of its schedule.
- D. The CPM Schedule shall be submitted to the Port's Representative for approval. After review and prior to acceptance, the Contractor shall revise the CPM schedules to incorporate the Port's comments and shall submit final documents to the Port's Representative for approval within five (5) working days.
- E. Acceptance or approval of the schedule is of general nature only. Failure by Contractor to include any element of work required for the performance of this contract shall not excuse him from completing all work required within any applicable completion date, notwithstanding the Port approval of the CPM diagrams. Items missing from the schedule are assumed to be incidental work and not missing from the schedule after City approval, Contractor may submit a revised schedule to include these items. The revised schedule is subject to review and approval by the Port as described in "Revised Schedule" clause. No extension of time will be granted because of errors or omissions on the schedule. It is Contractor's responsibility to incorporate all necessary activities to cover the work required by the Contract Documents.
- F. The CPM schedule and analysis when approved by the Port 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 Port.

1.4 CPM SCHEDULE CONTENT

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

1.5 CPM SCHEDULE FORMAT

- A. The CPM schedule shall be prepared by Contractor using the precedence method of network diagramming.
 - 1. Time Scaled Graphic network diagram showing the critical path. The graphic network diagram shall not be larger than 24" x 48".

2. Tabulated Schedule shall include the following information for each activity:
 - a. Activity beginning and ending event numbers
 - b. Estimated duration in working days
 - c. Concise description of activity
 - d. Trade code (responsibility code including Contractor., all Subcontractors, Supplier, and Owner)
 - e. Early start date (ES) and early finish date (EF) (calendar dated).
 - f. Late start date (LS) and late finish date (LF) (calendar dated)
 - g. Actual start date and actual finish date (calendar dated)
 - h. Total float
 - i. Percent completed
3. Electronic File - Contractor shall furnish information of the schedule in pdf-format or a format using the Microsoft Office Project 2010 software with the following requirements.
 - a. Sorting the activities as required.
 - b. Calculate the schedule as required in the updated schedule.
 - c. Include resource requirement as required.
 - d. Inputting actual start and completion dates of completed activities.
 - e. Inputting actual start dates and percent completion of activities in progress.
 - f. Print the total and free float for each activity.
4. Additional Information - The following computer- generated reports supplied with the project identification, schedule and run date, and type of sort on the first page.
 - a. List of all activities sorted, by total float including ES, LS, EF, LF, and Total Float duration.
 - b. List of all activities sorted numerically including ES, LS, EF, LF, and Total Float duration.
 - c. List of all activities sorted numerically including ES, LS, EF, LF, Total Float duration and Predecessor/Successor information of precedence network.
 - d. List of all activities sorted by responsibility including ES, LS, EF, LF and Total Float duration.
 - e. List of activities on the critical path sorted numerically including ES, LS, EF and LF.
 - f. List of near critical activities. (activities with total float less than ten (10) working days) sorted numerically including ES, LS, EF, and LF.

1.6 UPDATED SCHEDULE

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

1. Computer printout of the work completed with actual start and finish dates for each activity;
 2. Critical path;
 3. Percentage of each activity completed;
 4. Anticipated completion time of entire work;
 5. Description of problem area;
 6. Current and anticipated delaying factors and their impacts
 7. Explanation of corrective action taken or proposed;
- E. This updated schedule shall not have any change in the logic of the network or in the duration of activities. The updated schedule shall be submitted with the monthly progress payment request showing all work completed as that date.
- F. If Contractor during the course of the construction desires to make changes in its method of operating and scheduling, it shall notify the Port 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 Port.
- G. The updated schedule shall have the same format and content as the initial CPM schedule and analysis for review and approval.

1.7 ACTIVITY SCHEDULE

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

1.8 REVISED SCHEDULE

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

1.9 SUBMITTALS

- A. The CPM schedule prepared by Contractor shall be used for planning, organizing, directing, controlling, and reporting all work required by the Contract Documents.
- B. Therefore, the timely submission of the following is required:
1. Electronic copy (PDF) of the CPM schedule 10 working days after the official date for Notice to Proceed;

2. Updated schedule on a monthly basis within 3 working days after update date as established by the Port.
 3. Activity schedule on a weekly basis at the progress meeting.
 4. Revised schedule within 10 working days when requested by the Port.
 5. Resubmittal of any rejected CPM schedule, updated schedule, or revised schedule within 5 working days after receipt of the returned schedule marked "RESUBMIT", if necessary.
- C. Failure to comply with timely submission of any one of the above schedules will be just cause to withhold the progress payment of any portions thereof by the Port and will trigger liquidated damages listed in § 1.10, LIQUIDATED DAMAGES.

1.10 LIQUIDATED DAMAGES

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

1.11 APPROVED STANDARD

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

1.12 ADJUSTMENT OF THE CONTRACT TIME AND CHANGE ORDER

- A. Adjustments of the contract time due to delays, additional work, or any other cause will only be issued through a contract change order and only for causes specified in the Contract Documents.
 1. In the event Contractor requests an adjustment of the contract time, it shall furnish such justification, progress schedule data, and supporting evidence as the Port may deem necessary, for a determination as to whether or not the Contractor is entitled to an adjustment of time under the provisions of the Contract.
 - a. Contractor shall submit proof based on revised activity logic, durations, and costs with each request.
 2. The progress schedule shall clearly indicate that Contractor has used, in full, all the float time available for work involved in the request.
 3. Total and free float are not for the exclusive use of benefit of either the Port 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 Port determination as to the adjustment of the contract time will be based upon the latest version of the progress schedule accepted at the time of the alleged delay, and all other relevant information.

5. Actual delays in activities which, according to the progress schedule, do not affect the critical path work, will not be the basis for an adjustment to the Contract time.
 6. No contract time extensions will be allowed for contract change orders for which there are concurrent contract work delays, unless' the excusable delays affect the critical path in the schedule and after all available float has been used.
- B. Contractor shall include, as part of each change order request for which it is requesting an adjustment in the contract duration, a sub network showing logic revisions, duration changes, and cost changes for the work in question and its relationship to other activities on the Progress Schedule. Contractor shall incorporate each Change Order into the updated schedule.
 - C. The Port will, within 15 working days after receipt of such request and supporting evidence, review the facts and advise Contractor in writing therefor.
 - D. The new progress schedule, if accepted by the Port shall be in compliance with the requirements under "Revised Schedule" as defined within this section.
 - E. Where the Port 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 Port.

1.13 EARLY COMPLETION SCHEDULE

- A. Contractor may provide a progress schedule which contains a schedule completion date earlier than the time allowed for completion of work as specified in these Specifications.
- B. If Contractor submits an early completion schedule, it agrees to the following:
 1. The time difference between 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 Port or Contractor, but is a resource available to both parties on a first needed basis.
 3. Contractor's original bid has included all cost for the full duration of the Project from the start date through the official Contract completion date. Specifically, Contractor has provided through its bid, the overhead cost including field office, home office, other off-site yard, and extended overhead cost for the duration of the absolute float between its early scheduled completion date and the Contract completion date in its bid items on the Schedule of Bid Prices or Bid Proposal as specified.
 4. If the Port requires additional work through change order which will be done after the early schedule completion date and prior to the official Contract agrees that no additional monies will be paid beyond the direct cost related to those change orders.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 32 16

SECTION 01 33 00**SUBMITTALS****PART 1 GENERAL****1.01 SUMMARY**

- A. Section Includes: Procedures and requirements to submit shop drawings, product data, samples and similar submittals by Contractor to the Port for review and approval. Specific requirements for submittals are included in the Contract Documents and individual Specifications.
- B. Related Documents:
 - 1. Section 00 72 00: General Conditions
- C. Related Sections:
 - 1. Section 01 32 16: Progress Schedules
 - 2. Section 01 35 45: Health and Safety

1.02 SUBMITTAL SCHEDULE

- A. Contractor's submittal schedule shall be integrated into the progress schedule for the Work. Refer to Section 00 72 00: General Conditions, Article 3.08 Progress and Submittal Schedules, and Section 01 32 16: Progress Schedules.
- B. Contractor shall provide a submittal schedule detailing each submittal activity and contain only submittal activities.
- C. Submittals will not be received from the Contractor for review by the Port before the submittal schedule has been reviewed and accepted by the Port.
- D. Allow 21 calendar days for submittal review.

1.03 SUBMITTAL PROCEDURES

- A. Refer to Section 00 72 00: General Conditions, Article 3.11 Shop Drawings, Product Data and Samples for General Conditions and Contractor's responsibilities.
- B. Contractor shall review, approve and stamp submittals prior to forwarding them for Port's review.
 - 1. By approving and submitting shop drawings, product data and samples or similar submittals, 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 Construction 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 Port could rely upon the accuracy and completeness of such calculations and certifications.
 3. Submittals not reviewed, approved and stamped by the Contractor prior to forwarding for Port review will be discarded and not reviewed.
- C. Format of submittals:
1. Submittal Control Form available on Port website:
<http://sfport.com/port-construction-management-forms>
 2. Identify submittals with the following information:
 - a. Submittal number (e.g., Submittal No. 1).
 - b. "Contract No. <Contract No.>"
 - c. Contractor's name, address, telephone number, fax number and e-mail address.
 3. Consecutively number the pages of the submittal (e.g., 1 of 5, 2 of 5, etc.), exclusive of any transmittal form.
 4. Shop drawings shall have a title and reference to where to product will be incorporated into the Work.
 5. Where product data contain more than one product, model, selection, etc., clearly mark and identify the information intended to be reviewed by Port.
 6. Reference to Contract Drawing or Specification Section as applicable.
 7. 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.
 8. 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 Construction Documents.
 9. Provide space for Port's review stamp. Space shall be minimum 4" x 6".
 10. Resubmitted shop drawings, product data, samples and other submittals shall:
 - a. Be identified by the original submittal number with a numbered suffix that indicates the number of times it has been resubmitted.
 - b. Be revised as required.
 - c. Identify all changes made since previous submittal with the use of "clouds".
- D. Packaging of Submittals:
1. Make submittals in groups containing all associated items as complete packages of information for review. The Port will reject partial submittals.
 2. Submittals shall be wrapped or packaged to prevent damage during delivery.
 3. Reproducible drawings shall be rolled and not folded.
 4. Submittal Control Form must be used for cover sheet of Submittal.
- E. Transmit each submittal to the Port's Representative at the following address:
- Port of San Francisco
Contract No. <Contract No.>
Pier 1
San Francisco, CA 94111

- F. The Port will review Contractor's submittals for conformance and compliance with the requirements of the Contract Documents, plans and specifications.
- G. The Port will return the submittals stamped:
1. "NO EXCEPTIONS TAKEN" – Contractor is advised that fabrication, manufacturer, or construction may proceed, providing it complies with the Construction Documents.
 2. "MAKE CORRECTIONS NOTED" – Contractor is advised that fabrication, manufacture, or construction may proceed, providing it complies with the Port's notations and the Construction Documents.
 3. "REVISE AND RESUBMIT" – Contractor is advised that no work shall be fabricated, manufactured, or constructed. Contractor shall revise the submittal and resubmit it with the requested changes.
 4. "REJECTED" – Submittal is rejected.
- H. No change shall be made by Contractor to any submittal after it has been accepted by the Port.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

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SECTION 01 35 45

HEALTH AND SAFETY CRITERIA

PART 1: GENERAL

1.1 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. In any action arising from a Site or Work safety claim, violation of law, or other action, Contractor shall fully assume the defense of, indemnify and hold harmless the City and its representatives, as provided in the General Conditions of this Contract.
- B. **The Contractor shall not start site work without the acceptance by the City Representative of its Health and Safety Plan (HASP).**
- C. Contractor shall bear all costs of implementing, maintaining, and enforcing safe Work and Site safety programs and plan, and all costs associated with compliance with federal, State, and local safety requirements, including but not limited to the impacts of meeting Site and Work safety requirements on the efficient production of the Work. All costs arising from Site and Work safety are Incidental Costs that are included Contractor's Bid (Contract Amount).
- D. Contractor's Responsibility: The Contractor and not the City, shall be solely and fully responsible for:
 - 1. Complying with the terms of this Section.
 - 2. Developing, submitting, implementing, maintaining, and enforcing a site-specific Health and Safety Plan (HASP).
 - 3. Posting all OSHA-required notices and establishing a safety program for the Work.
 - 4. Complying with all applicable Cal/OSHA training, safety device, reporting, Work performance requirements.
 - 5. Determining and complying with all applicable health and safety requirements, in accordance with applicable laws, rules, and regulations.
 - 6. The defense of, indemnity of and holding harmless the City and its representatives.
 - 7. Determination and implementation of construction means, methods, techniques, sequences, and procedures (except as otherwise specified in approved design documents), including all safety precautions, training and programs taken in connection with the Work, as well as coordinating all portions of the Work.
 - 8. The health and safety of Contractor's employees, Subcontractors, and visitors as set forth in applicable statutes, laws, and regulations
 - 9. Implementing, maintaining, and enforcing all safety precautions and programs concerning the Work.

10. Conducting air monitoring at the Site for its personnel and subcontractors' personnel, as required by federal, State and local laws. The City will conduct ambient air monitoring as it deems necessary.
 11. Any and all fines, penalties or damages which result from the Contractor's failure to so comply with applicable health and safety laws and regulations during performance of the Work.
- D. The health and safety requirements set forth in this Section is not a comprehensive or an all-inclusive list of safety requirements that may apply to Work under this Contract. In addition, some of the specified requirements may not apply to the Work under this Contract, depending on the type and scope of the Work.
- E. The City will neither assume the administration of nor direct, control or otherwise assume any responsibility for the implementation and enforcement of the Contractor's health and safety program.
- F. The Contractor shall be solely responsible and shall assume all liability for compliance with the safety orders, regulations, and requirements of:
1. Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.)
 2. Construction Safety Orders (8 CCR, subchapter 4 et seq.)
 3. Federal OSHA.
 4. Cal/OSHA.
 5. California Public Utilities Commission (CPUC).
 6. State of California Public Utilities Commission, General Order No. 172, Rules and Regulations Governing the Use of Personal Electronic Devices by Employees of Rail Transit Agencies and Fixed Guideway Systems.
 7. The State of California Wireless Communications Device Law (effective January 1, 2009) makes it an infraction to write, send, or read text-based communication on an electronic wireless communications device, such as a cell phone, while driving a motor vehicle.
 8. California Vehicle Code.
 9. Local regulations pertaining to Work practices, protection of workers and visitors to the site.
- G. Nothing contained in this Contract shall relieve Contractor, or any Subcontractor or Supplier, from the obligations set forth above and obligations as required by applicable laws, rules, or regulations. If a provision of this Document conflicts with any applicable provision of this Contract or any federal, state, or local safety regulations, the more stringent requirements that maintain a greater level of safety shall apply.
- H. The Contractor shall ensure that all tiers of its field personnel, employees, agents, visitors and subcontractors:
1. Are provided the proper notifications, training, and procedures as required by the Contractor's Health & Safety plan and procedures, including but not limited to the handling of unidentified hazardous waste.

2. Follow safe practices and minimize their exposure when dealing with unanticipated and unidentified hazardous wastes and contamination.
 3. Minimize potential risks during Project construction by having all construction personnel follow its Health & Safety procedures.
 4. Provide and maintain personnel safety training and medical examinations in accordance with all applicable Federal, State, and local safety and health standards, rules, regulations, and orders.
- I. The Contractor is obligated to conduct any required personal air monitoring of its workers, at its own expense. The Contractor shall be responsible for providing its employees and visitors with all levels of personal protective equipment (PPE). The Contractor shall be responsible, and the City will not pay any additional compensation to the Contractor for providing its employees and visitors with all levels of training and personal protective equipment (PPE), including personal air monitoring if required. This includes areas where hazardous and contaminated soils and waste is encountered.
 - J. For Work in this Contract, the Contractor shall have considered the productivity losses, if any, arising from the use of respirators and PPE.
 - K. All work in this Section shall be incidental work to mobilization (Bid Item 1), unless specified otherwise.

1.2 JOB CONDITIONS

- A. The Contractor is alerted to the fact and include in its bid that the work of this Contract will involve working in environments that may be hazardous, contaminated, and non-hazardous. Serpentinite and other ultramafic rocks that contain Naturally Occurring Asbestos may be present within on-site earthen materials. All work that disturbs on-site rock and soil will be performed under Cal/OSHA Class II procedures, as required by Cal/OSHA regulations (CCR Title 8 § 1529, asbestos in construction).
- B. Such hazardous, contaminated, and non-hazardous environments include, but are not limited to; hazardous and non-hazardous materials, soils, groundwater and storm water, heavy metals (including lead), asbestos, serpentinite and other ultramafic rock that contains naturally occurring asbestos (NOA), respirable crystalline silica, lead containing paint and building materials, petroleum hydrocarbons, polynuclear aromatic hydrocarbons, organic compounds, railroad ties, sewage, sludge, debris, grit, sewer gases, oxygen deficiency, bacterial/biological contamination, odors from petroleum hydrocarbons and other volatile/semi-volatile organic compounds and confined spaces.
- C. The Contractor shall construct/finish, and at all times maintain satisfactory and substantial ramping, guard rails, warning flags and signs at appropriate heights, temporary chain link fencing, solid fencing, railings, barricades, steel plates or bridging as applicable at all openings, obstructions, or other hazards in streets, sidewalks, pedestrian pathways affected by construction, and the like. All such barriers shall have adequate warning lights as necessary or required for public safety. The Contractor shall divert traffic by use of traffic cones, barriers, flagmen, flags, and signs adequate to the Site conditions and task at hand. All temporary and permanent safety features shall be installed before beginning commencing Work in the area.

- D. Lead Hazards: All work that affects intact paint with any level of lead will at a minimum be performed by the General Contractor or its subcontractors 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 to the City.
- E. The Contractor is advised that Work in this Contract may include, but is not limited to, the following activities that may pose safety and health hazards to Contractor and subcontractor personnel:
- a. Working around live, high voltage lines and wires, switches, moving vehicles and other potential hazards specific to a City yard, facility, or operating rail line.
 - b. Working around live utilities.
 - c. Entering or working in confined spaces.
 - d. Working around and inside shafts.
 - e. Working within an underground excavation and construction environment using mechanized equipment and structural temporary shoring support equipment.
 - f. Working within an underground tunnel environment using mechanized equipment.
 - g. Working with soils that may be hazardous or contaminated, or both.
 - h. Working around and in open trenches.
 - i. Working in spaces or areas where employees may be exposed to asbestos and lead.
 - j. Welding, painting, or other potentially hazardous Work, or working in the vicinity of such activities.
 - k. Working in a public right-of-way with vehicular traffic moving around or through the Site.
 - l. Working in rail right of way with light rail vehicles moving around and through the Site.
- F. The Contractor shall protect the public from hazards including surface irregularities, un-ramped grade changes in pedestrian sidewalks or walkways, and trenches or excavation in roadways. The Contractor shall ensure safe routing of vehicular and pedestrian traffic around the Site, in compliance with American's with Disabilities Act (ADA) requirements.

1.3 SUBMITTALS

- A. The Contractor shall submit the following Submittals as required by the Contract and no case later than ten (10) working days prior to commencement of Work at the Site. No construction Work shall start prior to Contractor's submission to the City's Representative and City's Representative acceptance of submittals listed below.

Each Submittal listed below shall be a separate document and shall not combined within one another.

1. Site-specific Health and Safety Plan (HASP) prepared, signed and stamped by a Certified Industrial Hygienist (CIH).
 2. Contractor and all subcontractor's Injury and Illness Prevention Programs (IIPP) and Code of Safe Practices (CSP), in accordance with the California Code of Regulations (CCR), Title 8.
 3. Templates for all safety forms and reports:
 - a. The Project Safety Representative's (PSR) daily inspection form shall accommodate twice daily inspections of their field work area(s) covering date, work area checked, employees present in the work area, PPE, work equipment being used in each area, workplace conditions, physical facility safety, and employee work practices. The form shall also accommodate any deficiencies and corrective actions.
 - b. The Safety Meeting Attendance sheet of the "toolbox" safety meetings conducted per CAL/OSHA standards.
 - c. Activity Hazard Analysis (AHA) or Job Hazard Analysis (JHA).
 - d. Incident or Near-Miss Incident Investigation Reports.
 - e. Corrective Actions Report.
 - f. Construction Site Visitor Policy Form
 4. Completed Activity Hazard Analysis (AHA) or Job Hazard Analysis (JHA) submitted with the HASP using the AHA/JHA template for all significant activities and tasks with a high-risk potential, describing the job steps, hazards associated with each job step, and the controls used to remove or minimize the associated hazards
 5. SDS (Safety Data Sheet) for all chemicals and other hazardous materials used in the Work.
 6. If Serpentine is present Contractor shall have Cal/OSHA 40-hour asbestos training for the Competent Person overseeing Serpentine/ Naturally Occurring Asbestos (NOA) disturbance activities and managing personal air monitoring for asbestos.
- B. Experience Statement. The apparent low Bidder and any other Bidder so requested shall submit to the Contract Administration Division within **seven (7) working days** after the date of the City's notification of the lowest Bidder sufficient information on completed Experience Statement forms (Section 00 49 12), and additional sheets as necessary, to demonstrate to the satisfaction of the City the qualifications and experience of the it's Project Safety Representative (PSR) as specified in this Section 01 35 45 – Health and Safety Criteria.
1. Documentation and Certification (current and valid) of the Project Safety Representative (PSR):
 - a. The name of the designated Project Safety Representative (PSR).

- b. OSHA Certified 30-Hour Construction Training.
 - c. The 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training Program.
 - d. First Aid/CPR certification/training within the past two years
 - e. Cal/OSHA 40-hour asbestos training for the Competent Person overseeing NOA disturbance activities and managing personal air monitoring for asbestos.
 - f. Documentation demonstrating a minimum of three (3) years recent experience in conducting and supervising safety and health programs on construction projects similar to the Work of this Contract.
- C. The Contractor shall submit the following throughout the course of construction as per specification.
1. Daily inspection reports (as per Part 1.7 of this Section) signed by the PSR documenting twice daily inspections of their field work area(s) covering date, time visited, work area checked, employees present in the work area, PPE, work equipment being used in each area, workplace conditions, physical facility safety, and employee work practices. Any deficiencies and corrective actions shall also be documented. The daily inspection reports shall be submitted by transmittal to the City Representative on a daily basis by the next day. If the daily inspection reports are not kept current, or are not furnished as specified above, then progress payments, and if necessary, final payment will be withheld. Furnishing of daily inspection reports shall be done as incidental work.
 2. Records of topics and Safety Meeting Attendance sheet of the “toolbox” safety meetings conducted per CAL/OSHA standards.
 3. Incident or Near-Miss Incident Investigation Reports and Corrective Action Reports – Submitted to the City Representative within 24 hours of the Project Incident or Near-Miss Incident.
 4. Final Incident or Near-Miss Incident Investigation Reports and Final Corrective Action Reports – Submitted to the City Representative within 48 hours of the Project Incident or Near-Miss Incident.
 5. HASP modification requests, and approved modifications to the appended HASP – Submitted to the City Representative for review (if applicable).
 6. Respiratory Protection Program, records and documentation (if applicable to the Work).
 7. Hot Work permit (if applicable to the Work).
 8. IIPP and CSP modification requests and approved modifications to the appended IIPP and CSP.
 9. OSHA’s Form 300A “Summary of Work-Related Injuries and Illnesses” annual form. (Contractor shall submit the Form 300A each year and whenever it is updated).

- D. Upon receiving a written request from the City Representative, the Contractor shall submit to the City any document relating to health and safety within five (5) Days from the date of such request.

1.4 REFERENCES

Work performed shall be consistent with the following guidelines and references and in compliance with all applicable regulations and standards, including those listed below. In the case that these requirements are conflicting, the one which offers the greatest level of safety shall be followed.

- A. California Code of Regulations (CCR), Title 8
2. Industrials Relations
 3. Construction Safety Orders
 4. General Industry Safety Orders
- B. Cal/OSHA Occupational Safety and Health Administration (OSHA) Regulations.
1. CCR Title 8 Standards (All)
 2. CCR Title 8 Tunnel Safety Orders (8403-8552)
- C. National Institute for Occupational Safety and Health (NIOSH) Publications.
- D. U.S. Environmental Protection Agency (USEPA) Publications.
- E. American Conference of Governmental Industrial Hygienists (ACGIH) Publications.
- F. Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.).
- G. Code of Federal Regulations (CFR), Title 29 – Labor.
- H. Federal Railroad Administration Roadway Protection Rule (49 CFR Part 214C).
- I. State of California, Health and Safety Code.
- J. California Department of Industrial Relations, DOSH Mining and Tunneling Unit, Underground Classification dated March 16, 2009.
- K. State of California, Public Utilities Commission, General Order No. 95, “Rules for Electric Line Construction”.
- L. State of California, Public Utilities Commission, General Order No. 128, “Construction of Underground Electric Supply and Communication System”.
- M. State of California, Public Utilities Commission, General Order No. 172, “Rules and Regulations Governing the Use of Personal Electronic Devices by Employees of Rail Transit Agencies and Fixed Guideway Systems”.
- N. State of California, Public Utilities Commission, General Order No. 175-A, “Rules and Regulations Governing Roadway Worker Protection Provided by Rail Transit Agencies and Fixed Guideway Systems”.

- O. Bay Area Air Quality Management District (BAAQMD) Regulations.
- P. California Air Quality Board (CARB) Regulations.
- Q. San Francisco Health Code.
- R. Project-specific reports listed in 00 31 00 Available Project Information

1.5 HEALTH AND SAFETY PLAN (HASP)

- A. The Contractor shall submit a Site-specific Health and Safety Plan (HASP) in accordance with this Specification, CFR Title 29, CCR Title 8 and other applicable regulations, which shall cover all aspects and scope of Work. The HASP shall remain in effect for the term of the Contract and a copy of the HASP must always be on-Site.
- B. The Contractor's Site-specific HASP shall set forth the policies and procedures to be followed by all Contractor personnel at the Site. The HASP shall describe the safety requirements for the Work, and the means and methods by which the Contractor will implement and enforce those safety requirements. The HASP shall describe, in detail, the protocols necessary for the identification, evaluation, mitigation and control of all hazards associated with the Work and each task performed by the Contractor and all subcontractors. The HASP shall identify the Contractor's Project Safety Representative (PSR) responsible for Site safety and enforcing safe practices in performing the Work. The Contractor's site-specific HASP shall describe the responsibility for employee and public safety of the Contractor's representatives who control each phase of the operations and shall set forth in writing the policies and procedures to be followed by all Contractor personnel. The Contractor HASP shall establish, in detail, the protocols necessary for the recognition, evaluation, and control of all hazards associated with each task performed by the Contractor and lower tier subcontractors.
- C. The HASP shall be prepared, signed, and stamped by a Certified Industrial Hygienist (CIH). The HASP shall also be reviewed and signed by the Project Safety Representative (PSR), whose review will be limited to general scope and completeness. The Contractor shall always be solely and entirely responsible for the safety of the Site and its personnel, subcontractors' personnel, persons working at or visiting the Site (including City representatives, employees and consultants), and persons passing through the Construction Area. The Contractor shall be solely responsible for the content, implementation and enforcement of its HASP. The Contractor shall not perform any Work at the Site until the HASP has been submitted to and accepted by the City.
- D. The City will not review the HASP for its content, nor will the City be liable for the Contractor's failure to have an adequate HASP or implement it. Submission to and receipt of the HASP to the City and regulatory agencies neither constitutes to the legality of the HASP nor does it incur liability. Submission, acceptance, and receipt of the HASP to the City, or any review of the HASP by the City, shall not be construed as approval of the adequacy of the Contractor's PSR, the Contractor's HASP or any safety measures taken in or near the construction site.
- E. Any changes or modifications to the Contractor's HASP must be signed by the Contractor's PSR and submitted to the City Representative. The modification shall be appended to the Contractor HASP. All personnel working on the Site shall be fully informed of the modifications of the HASP and any required actions arising from

those HASP modifications before performing any of the Work that may be impacted by those modifications.

- F. The HASP shall be divided into two parts. Part One shall address the Environmental Health aspect of safety. Part Two shall address Construction Safety.

Part One of HASP - Environmental Health:

1. Identification and description of the responsibility of those individuals who control each phase of operations and are responsible for employee and public safety. The HASP shall set forth in writing the policies and procedures to be followed by all personnel. The HASP shall include the designation and resume of an overall Project Safety Representative (also referenced as health/safety officer). The PSR shall have full authority to correct any unsafe conditions at the Site or unsafe means or methods of performing the Work. The PSR shall have the authority to stop any construction activity or modify Work practices, means or methods that do not accord with the HASP or that are necessary to protect workers, property, and the surrounding community. This requirement shall apply throughout the term of the Contract and is not limited to working hours.
2. Hazard Communication Plan: Information identifying and delineating all workplace hazards that has been identified or is generally associated with the proposed Work phases and how this information is communicated to employees (e.g., tailgate/toolbox safety meetings, monthly safety meetings, and daily job briefings). Hazardous material communication standards can be found in 29 CFR 1910.120 & 8 CCR 5194. Hazardous waste information can be found in 29 CFR 1910.1200 & 8 CCR 5192. Local hazardous material/waste information can be found in Articles 21, 21A, 22 and 22A of the San Francisco Health Code.
3. Mitigation measures to identify, monitor, and control worker and general public exposure to any identified hazard. The Contractor shall determine the need to conduct and monitor its personnel for contaminant exposure to maintain the proper level of personal protection, including the action level.
4. Personnel: Provision of enough personnel properly trained to handle, remove, excavate and dispose of hazardous waste and contaminated waste that may be encountered or generated by the Work. The HASP shall specify the general training required for all Contractor personnel, and any specialized training required for personnel identified to manage and/or handle hazardous materials, including but not limited to:
 - a. Asbestos training that meets the Cal/OSHA Work Activity Level for naturally occurring asbestos (NOA) as per the Cal/OSHA Construction Asbestos Standard, 8 CCR 1529, all applicable Sections and Section 1529.
 - b. Lead, petroleum hydrocarbons, volatile and semi-volatile organic compounds (VOC's and SVOC's) awareness training.
 - c. The 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training Program.
 - d. It's associated 8-hour refresher training in accordance with 29 CFR 1910.120, and 8 CCR 5192.

- e. Respiratory program in accordance with 29 CFR 1910.134 and 8 CCR 5144.
- f. Respirable Crystalline Silica OSHA Regulation in accordance with 29 CFR 1926.1153
- g. Other Site-specific or Project specific hazards requiring safety training.

This training shall be required for all Contractor and subcontractor personnel who will encounter or operate equipment that handles contaminated materials. The HASP shall include records establishing the subject matter, dates, times, and attendees of all safety trainings. The Contractor shall maintain training records as required by Cal-OSHA and applicable regulations.

- 5. NOTE: Cal/OSHA regulations are triggered when asbestos is present in any amount. The Contractor shall meet its obligations under CCR Title 8, Section 1529. The regulation requires monitoring to determine exposure levels, wet methods, respirators and protective clothing, controlled access to the work area, and similar precautions associated with asbestos work regardless of the origin of the asbestos. Use of a competent person to oversee the work may also be necessary. The Contractor shall utilize an experienced Certified Industrial Hygienist (CIH) and a Professional Geologist (PG) to assist it with this work.
- 6. Requirements of the Contractor and subcontractors for implementing the following:
 - a. Medical surveillance programs. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel.
 - b. Code of Safe Practices and Injury and Illness Prevention Programs (IIPP), i.e., SB 198, 8 CCR and CAL/OSHA, GISO 3203, Section 5192 and 1509.
 - c. Personnel air monitoring according to 29 CFR and 8 CCR.
 - d. The Construction Standard (29 CFR 1926).
 - e. Federal and California Lead Standards for the Construction Industry (29 CFR, Part 1926.62 and 8 CCR, Section 1532.1, respectively)
 - f. Asbestos OSHA Regulation 29 CFR Part 1926.1101 & 8 CCR 1529.
 - g. Workers' Right to Know (29 CFR 1910.120).
 - h. Section 6360-99 of the California Labor Code (Hazard Communication).
 - i. The American with Disabilities Act (ADA).
- 7. Engineering controls, specific Work practices, air monitoring for contaminants (e.g., dust, natural occurring asbestos (NOA), serpentine, lead, volatile organic, and hydrocarbons), and personal protective equipment (8 CCR 5144) to protect Contractor personnel, City personnel on the Site, and the public impacted by the Work.

8. Methods to be used to decontaminate equipment and personnel.
9. Sanitation facilities to be provided for personal hygiene. Portable toilets and discharge of their waste products into sanitary sewers shall comply with local codes.
10. Contingency /Emergency Response Plan procedures for emergencies including fire, spillage of hazardous/toxic wastes and liquids (with special emphasis to clean up of spillage due to fuel/oil from Contractor's equipment), traffic accident, personal accident, power failure, or any event that may require modification or abridgment of site control and decontamination procedures.

Part Two of HASP—Construction Safety:

1. The Contractor shall include an organizational structure in the HASP that sets forth lines of authority, responsibility, and communication, including a description of Contractor's organization and Project responsibilities of key personnel.
2. The Contractor shall inform its employees, supervisory personnel and visitors (invitees) to the Site of known Site hazards.
3. The Contractor shall take necessary precautions and implement mitigation measures to prevent or reduce the release of pollutants in the form of dust, fume, mists, excessive noise and vibration into the air and surrounding environments.
4. Contractor shall ensure at least one individual on each job site always has current CPR/First Aid/AED training.
5. The Contractor shall employ a Project-specific hard hat insignia (sticker) program which identifies workers that have successfully completed the Project safety training.
6. Information identifying and delineating all workplace safety hazards and how this information is communicated to employees (e.g., tailgate/toolbox safety meetings, monthly safety meetings, daily job briefing).
7. The Contractor shall at all time be responsible for providing its employees and visitors with the proper level of personal protective equipment (PPE), that shall be appropriate to the type of work being performed by the individual employee. At a minimum, the Contractor, subcontractor's personnel and visitor shall wear hardhats, ANSI class 2 vests, and safety glasses with side shields at the work site. Hardhats shall show company name.
5. Safety Action Measures: For Work requiring Cal/OSHA permits, special training and/or use of designated competent persons to oversee the Work, the Contractor shall prepare Safety Action Measures, to address these Work activities. The Safety Action Measures shall include detail information needed to perform the activity safely, verify that the persons involved in the Work are properly trained or certified, the equipment used is inspected and suitable for the Work, the proper permits have been obtained.
6. The format for all safety forms and reports shall be developed by the Contractor and submitted as part of the Contractor HASP.

7. Periodic safety performance reviews and procedures on safety inspections. A sample daily inspection form shall be provided in Contractor's HASP and shall include date, Work area checked, employees present in the Work area, PPE, Work equipment being used in each area, safety and health issues, notes.
8. Procedures in handling non-compliance/violations of safety requirements, e.g. deficiency correction reports, stop Work orders, disciplinary actions, etc.
9. Communication and reporting requirements, including the immediate reporting of injury accidents and submittal of corrective action reports.
10. Requirements concerning, distribution, and maintenance of personal protective equipment and safety tools.
11. Measures and procedures to be used to report, monitor and control exposure of Contractor personnel and public to any identified safety hazards. Contractor shall monitor Site personnel for contaminant exposure and ensure appropriate PPE is used.
12. Provision for all personnel to be properly and regularly trained in construction safety and emergency response. The level of training required for all or specified Contractor or Subcontractor personnel, including, but not limited to the following:
 - a. Heat stress
 - b. Fire prevention and protection plan
 - c. Fall protection and prevention program
 - d. Confined Space Entry
 - e. Special Equipment
 - f. Ergonomics
 - g. Contingency Plan for emergency including fire, earthquake, etc.
13. Site Access Control Plan covering Contractor and City Site personnel, consultants, representatives, the public, and Site visitors (see relevant subparagraph 1.14 CONSTRUCTION SITE VISITORS).
14. Construction site visitor guidelines, including the site-specific orientation and Construction Site Visitor Policy form (see relevant subparagraph 1.14 CONSTRUCTION SITE VISITORS).
15. The Contractor's alcohol and substance abuse program shall describe the measures that Contractor will implement to ensure that all Contractor personnel working on the Project comply with the drug and alcohol restrictions stated in the Contract and in the Contractor's Corporate Policy and Program. Contractor's and subcontractor's personnel shall not use any alcohol or controlled substance when performing the Work, and Contractor shall not allow any person on the Site who is under the influence of any alcohol or controlled substance, including any prescription the negatively affects alertness or performance.

16. Completed Activity Hazard Analysis (AHA) or Job Hazard Analysis (JHA) submitted with the HASP using the AHA/JHA template for all significant activities and tasks with a high-risk potential, describing the job steps, hazards associated with each job step, and the controls used to remove or minimize the associated hazards.

Activity Hazard Analysis (AHA):

https://www.navfac.navy.mil/content/dam/navfac/NAVFAC%20Atlantic/NAVFAC%20Southeast/PDFs/Safety/se_sf_activity_hw_trn.pdf

Job Hazard Analysis (JHA) Form:

<https://www.osha.gov/Publications/osh3071.pdf>

- G. Furnish copies of all records of all health and safety audits, inspections, and reviews to the City Representative
 - H. The City reserves the right to require that Contractor modify the HASP to address Site safety issues. However, the City's action or lack thereof on the HASP shall not be construed to mean approval, or acceptance of Contractor's responsibility for compliance with the applicable laws and regulations.
- 1.6 INJURY AND ILLNES PREVENTION PROGRAM (IIPP) AND CODE OF SAFE PRACTICES (CSP)
- A. The Contractor shall submit an Injury and Illness Prevention Programs (IIPP) and Code of Safe Practices (CSP) in accordance with this specification, CCR Title 8 and other applicable regulations. A copy of all applicable IIPP and CSPs must always be on-Site.
 - B. The City will not review IIPPs or CSPs for their content, nor will the City be liable for the Contractor's failure to have adequate IIPPs/CSPs or implement them. Submission to and receipt of IIPPs/CSPs to the City and regulatory agencies neither constitutes to the legality of the IIPPs/CSPs nor does it incur liability. Submission and receipt of IIPPs/CSPs to the City, or any review of the IIPPs/CSPs by the City, shall not be construed as approval of the Contractor's IIPPs/CSPs or any safety measures taken in or near the construction site.
 - C. Any changes or modifications to the Contractor's IIPP/CSP must be submitted to the City Representative. The modification shall be appended to the appropriate IIPP/CSP. All on-site personnel shall be fully informed of the modifications, changes, and required actions prior to conducting any additional work activities.
- 1.7 REQUIREMENTS OF THE CONTRACTOR'S PROJECT SAFETY REPRESENTATIVE
- A. The Contractor shall designate in writing a responsible competent person at the Site as Project Safety Representative (PSR) whose principal duties shall be the prevention of accidents and the maintenance and supervision of safety precautions and programs in accordance with the requirements of applicable laws and regulations. The PSR is also a qualified person having the necessary training to be knowledgeable in the identification, control, and management of the hazardous materials encountered onsite.
 - B. The Contractor's Project Safety Representative (PSR) shall:

1. Be readily available (within 30 minutes of City request) to consult with the City Representative at the site during all Project working hours and shall be available 24 hours a day, 7 days a week by telephone or other approved means. The PSR shall meet with the City Representative at least once per week.
2. Have completed a 30-hour OSHA Certified Construction Safety training session and must submit documentation of such training to the City Representative.
3. Have completed the 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training Program
4. If more than one Project site working shift is initiated, the Contractor will have to ensure that provisions are made to have a qualified PSR to cover all Work shifts
5. Be knowledgeable with the safety provisions of Federal OSHA, Cal/OSHA and the requirements of this section.
6. Be currently certified in First Aid/CPR and be able to use an automatic external defibrillator (AED).
7. Possess qualifications, which include a minimum of three (3) years recent experience in conducting and supervising safety and health programs on construction projects like this Contract.
8. Be capable of performing safety inspections and accident investigations.
9. Perform twice daily inspections of their active field Work area(s) covering workplace conditions, physical facility safety, and employee Work practices. Any deficiencies and corrective actions shall be documented. The daily inspection reports shall be submitted by transmittal to the City Representative daily, by the next day. If daily inspection reports are not kept current, or are not furnished as specified above, then progress payments, and if necessary, final payment will be withheld. Furnishing of daily inspection reports shall be done as incidental work. The PSR shall meet on-site with the City Representative at least once per week.
9. Administer and enforce the site-specific Health and Safety Plan, Injury and Illness Prevention Plan (IIPP), and Code of Safe Practices (CSP).
10. Administer and enforce the visitor site-specific safety orientation, the Construction Site Visitor Policy and its guidelines.
11. Advise subcontractors, vendors, and visitors to the job site of potential hazards and the requirements of Health and Safety practices and rules.
12. Coordinate subcontractor's Work regarding hazardous material procedures and controls (as required).
13. Establish and maintain restricted Work Areas.
14. Enforce proper use of personal protective equipment.
15. Communicate approved modified safety requirements to Site personnel as well as visitors to the site.

16. Notify to and coordinate with the City Representative for the immediate assessment and remediation Work for unforeseen hazardous materials conditions discovered in the course of the Work.
17. Have “Stop Work Authority” – the ability to stop Work without any adverse consequences when unsafe conditions are present.

1.8 REQUIREMENTS OF THE CONTRACTOR’S ASBESTOS COMPETENT PERSON

- A. The Contractor shall designate in writing a responsible Asbestos Competent Person (ACP) at the Site whose principal duties shall be overseeing asbestos soil disturbing activities, implementing engineering and administrative controls to prevent asbestos from becoming airborne, and general compliance with Cal/OSHA, CARB, and EPA regulations related to asbestos and naturally occurring asbestos (NOA) when impacted as part of the project. The asbestos CP is also a qualified person having the necessary training and experience to be knowledgeable in the identification, control, and management of asbestos and naturally occurring asbestos encountered onsite. The PSR and ACP may be the same person if all training and experience requirements for both positions are met.
- B. The Contractor’s Asbestos Competent Person (ACP) shall:
 1. Communicate all NOA-related issues to the PSR daily and as needed as required for the PSR to fully execute its duties.
 2. Have completed 40-hour Cal/OSHA-required asbestos Contractor Supervisor training and must submit documentation of such training to the City Representative.
 3. Possess qualifications, which include a minimum of three (3) years recent experience as an ACP on construction projects similar to this Contract.
 4. Implement the elements of Cal/OSHA asbestos in construction standard 8 CCR §1529 and other applicable regulations and standards, including but not limited to:
 - a. Demarcate the Regulated Areas and control the points of ingress and egress,
 - b. Conduct asbestos worker training to all workers in Cal/OSHA Regulated Areas, and NOA awareness training to all workers and visitors who enter the site and are outside of the Regulated Areas,
 - c. Assure that wet methods and other engineering controls are implemented to minimize asbestos emissions,
 - d. Conduct the Initial Exposure Assessment and select respiratory protection accordingly, as required,
 - e. Conduct daily personal monitoring and communicate exposure results to workers,
 - f. Based on monitoring results, continuously re-evaluate PPE requirements select the appropriate respiratory protection to prevent exposure above the PEL,
 - g. Assure that personal decontamination stations are adequate and located to allow workers to decon thoroughly prior to exiting the Regulated Areas. The decon stations shall include water and boot scrubs, HEPA-

vacuums, cleaning wipes for respirators, and facilities to dispose of used Tyvek.

5. Perform twice daily inspections of asbestos and NOA field work area(s) for compliance with all asbestos and NOA regulations and standards. Any deficiencies and corrective actions shall be documented. The daily inspection reports shall be submitted by transmittal to the City Representative on a daily basis.
6. Have "Stop Work Authority" – the ability to stop work without any adverse consequences when unsafe conditions are present.

1.9 TRENCHING AND SHORING

- A. Trench Safety: Contractor shall comply with all shoring and excavation requirements set out in Federal OSHA (29 CFR 1926.650-652), Cal/OSHA (Construction Safety Order 1539-1544), the California Labor Code, and the Contract Documents.
- B. Federal and State Safety regulations requires
 1. Safe Exits: A stairway, ladder, ramp or other safe means of egress shall be in trench excavations that are 4 feet or more in depth to require no more than 25 feet of lateral travel for employees.
 2. Shoring is required for trenches at 5 feet depth or greater, and must be designed to prevent cave-ins. Shoring may be required for trenches less than 5 feet in depth unless excavations are made entirely in stable rock or examination of the ground by a competent person provides no indication of a potential cave-in.
 3. Keep excavated materials at least 2 feet or greater from the side of the excavation.

1.10 CONFINED SPACE ENTRY

- A. Contractor shall provide all equipment and assistance to make the confined space safe for entry by Contractor's personnel, the City representatives, and its consultants in accordance with the California Code of Regulations, Title 8, General Industry Safety Orders, "Confined Spaces."
- B. If any activities associated with confined space entry become necessary, the Contractor shall be required to consult the City for guidance and prepare an appropriate Permit-Required Confined Space Entry Plan.

1.11 ELECTRICAL LOCKOUT/TAGOUT PROCEDURES

- A. Training of Contractor's employees in procedures for locking out and tagging out of electrical equipment that must be de-energized to accommodate the Work.
 1. The lockout/tag out of electrical energy sources shall occur at the circuit disconnect switch in all cases.

2. The Contractor shall furnish locks used for this purpose.
 3. Contractor shall furnish tags, locks, and lock box(s) that are compatible with electrical distribution equipment to be de-energized.
- B. Contractor shall attach white "DANGER" tags to locked switches to indicate that the circuit must not be energized.
- C. Red "DANGER" tags shall be used to indicate that Contractor personnel are actively working on equipment or lines connected to the locked switch. If the task that requires locking the switch has not been completed at the end of a shift or workday, the Contractor shall leave the switch lock in place, remove its Red Tag, but leave the White Tag in place on the locked circuit. When Contractor resumes that Work, the Contractor will again attach a Red Danger tag to the locked switch

1.12 CONSTRUCTION EQUIPMENT AND TOOLS

- A. Contractor shall only use construction equipment and tools designed and intended by the manufacturer for the Work. All Contractor equipment shall conform to Cal/OSHA requirements.
- B. Contractor shall not use and remove from the Site at its expenses any equipment that the City determines is unsafe, not intended for the Work, or that does not meet Cal-OSHA requirements.

1.13 PERSONAL PROTECTIVE EQUIPMENT (PPE)

- A. Contractor shall define task-specific PPE requirements for all personnel and visitors in compliance with applicable laws, rules, and regulations. PPE shall always be worn on the Site, including travel within the Site when starting or ending shifts. Minimum requirements include:
1. Hard hats are always required at the Site. Hardhats shall show company name.
 2. Appropriate eye and face protection that complies with ANSI Z87 shall always be worn.
 3. Safety glasses with side shields are required at the Site.
 4. Sensible and safe Work clothing and closed-toe shoes must be worn at the Site.
 5. No canvas/leather sneakers or sandals will be worn in the project work areas.
 6. Appropriate hearing protection shall be worn at the Site where sound levels exceed Cal/OSHA standards.
 7. Suitable gloves must be worn to protect the hands from injury as required by Cal/OSHA.
 8. High visibility warning vests (ANSI class 2 vests) or other suitable garments marked with or made of reflection or high-visibility material must always be worn at the Site.

9. Within a Cal/OSHA asbestos Regulated Areas, suitable protective clothing and respiratory protection in accordance with 8 CCR § 1529 as prescribed by the Asbestos Competent Person (ACP).
- B. The Contractor's PSR and/or ACP shall establish additional appropriate levels of protection for each Work task in accordance with Cal/OSHA standards.
- C. If respiratory protection is utilized, the Contractor shall implement a Respiratory Protection Program in accordance with Cal/OSHA requirements. The Contractor will also provide the following to the City Representative prior to beginning any portion of Work that requires respiratory protections:
 1. Copies of the Respiratory Program
 2. Respirator training records
 3. Fit-testing and medical approval documentation
 4. Annual documentation for training, fit testing and medical evaluations
- D. Contractor shall provide appropriate respiratory equipment to its personnel and visitors. Contractor shall inspect and maintain equipment in accordance with Cal-OSHA regulations.
- E. Where "Hot Work" is involved, a Hot Work permit must be submitted to the City Representative prior to commencing that Work. Personnel performing Hot Work must wear clothing that provides thermal protection. Contractor shall erect welding screens where welding operations may expose its personnel or the public to welding sparks, light and other hazards.
- F. Safety harnesses must be worn by personnel in manlifts and when working at heights, in accordance with OSHA requirements in manlifts.
- G. Workers must wear a safety harness with their safety lanyard secured to a separate lifeline while working from swing scaffolds, boatswain's chairs, or other suspended Work platforms that present a fall hazard.

1.14 CONSTRUCTION SITE VISITORS

- A. All construction site visitors upon arrival must check in with the Contractor's Project Safety Representative (PSR). Visitors are defined as persons who are not assigned as direct staff or employees of the Contract. The PSR will coordinate a site-specific safety orientation prior to jobsite entry. The site-specific safety orientation shall provide visitors with a review and understanding of safe jobsite procedures and practices, including any safety trainings if required. The Contractor's site-specific safety orientation, at a minimum, shall include discussion of:
 1. Required personal protective equipment (PPE)
 2. Site access/egress routes (Site Access Control Plan)
 3. Emergency contacts and procedures
 4. First-aid locations
 5. Potential known hazards

6. Required safety trainings and procedures
 7. Construction site operations and conditions
- B. Following the site-specific safety orientation, visitors must complete and sign a Construction Site Visitor Policy form provided by the Contractor. Failure to acknowledge and agree to all requirements of the Construction Site Visitor Policy form shall result in denied access to the construction work zone. The Visitors' Policy form, at a minimum, shall require visitors to accept and acknowledge that they:
1. Have received and understand the site-specific safety orientation
 2. Must not handle or utilize any job equipment, tools, or materials at any time
 3. Must always wear proper PPE (Contractor is responsible for providing any missing PPE to visitors)
 4. Must attend any required safety trainings
 5. Must observe and comply with construction signage, barricades, and operations
- C. All visitors re-visiting jobsites shall be identified with a visitor sticker provided by the Contractor. Contractor shall be responsible for providing and maintaining legible stickers. Visitor stickers shall indicate the visitor's name, the date of the site-specific safety orientation, and the project number. The Contractor's PSR is responsible for determining if any additional re-training is required to account for changing site conditions and procedures.
- D. The City Representative and Contractor shall reserve the right to remove any visitor from the jobsite at any time, if he or she feels that the visitor is failing to adhere with the on-site safety requirements. Areas open to public access (e.g. sidewalks/designated paths of travel) are exempt from the Construction Site Visitor Policy.

1.15 EMERGENCY EQUIPMENT

- A. The Contractor shall provide emergency and first aid equipment required by Cal-OSHA and other applicable regulations and necessary for the Project. The following items, at a minimum, shall be maintained at the Site and available for immediate use:
1. First aid equipment and supplies, including first aid kits and eyewash station per Cal/OSHA standards
 2. Spill control materials and equipment, including multi-purpose absorbent materials, poly bags, brooms and shovels and drums (if applicable)
 3. Fire extinguishers with a minimum rating of 2A-10B:C and as required by Cal/OSHA standards for scope of Work requirements
 4. Emergency rescue equipment including SCBA and tripod/extraction equipment for confined space rescue; backboard/basket for transport of injured personnel, air horns/bull horns for emergency signaling and communications (as applicable to the Work).

5. All Contractor's boats and vessels used on the project shall comply with the U.S. Coast Guard and Cal/OSHA and all applicable regulations for working in/around water and waterways.

1.16 HAZARDOUS MATERIALS ENCOUNTERED AT THE SITE

- A. Proposition 66 Warning: Many of the materials and items at the Site contain materials known to the State of California to be either carcinogenic, reproductive toxins, or that may be otherwise toxic or hazardous.
- B. The Contractor shall ensure that all personnel, including subcontractors' personnel, receive appropriate training and orientation concerning toxic and hazardous materials that will prevent inadvertent or unauthorized disturbance of hazardous materials present at the Site.
- C. The Contractor shall comply with all applicable requirements of the California Code of Regulations, Title 8, Section 1532.1, "Lead in Construction".
- D. The Contractor shall take necessary precautions to prevent the release of lead and/or asbestos in the form of dust, fumes or mists from lead-containing and asbestos-containing materials into the air or into surrounding environments.
- E. The Contractor shall inform all workers, supervisory personnel and authorized visitors to the Site of the potential hazards of lead and asbestos and of necessary precautions and housekeeping procedures to reduce the potential for exposure in areas where lead or asbestos is known to be present.

1.17 HAZARDOUS MATERIALS THAT MAY BE INCORPORATED INTO THE WORK

- A. The Contractor shall maintain copies of Safety Data Sheets (SDS) for all substances used at the Site or incorporated into the Work.
- B. The Contractor shall be responsible for coordinating the exchange of SDS or other hazard communication information that is required to be made available to or exchanged between subcontractors at the site.
- C. The Contractor shall notify the City if a specified product or piece of equipment, or the intended use of such product or equipment is unsafe, prior to ordering such items or incorporating such items into the Work.
- D. The Contractor shall be responsible for complying with all BAAQMD regulations regarding the use, documentation and notification procedures related to asbestos-related construction Work, use of aerosol products and products that are with the limits for Volatile Organic Compounds (VOC's) and other limits for compounds regulated by BAAQMD.

1.18 MEETINGS

- A. The Contractor shall conduct regular trainings for its personnel, including but not limited to "toolbox/tailgate" safety meetings, in accordance with Cal/OSHA requirements. Contractor shall document the date, time, subject addresses, and

names of persons who attended any training meetings using the Safety Meeting Attendance sheet, which Contractor shall submit to the City Representative.

- B. The Contractor's Project Manager, Superintendent(s), and PSR shall attend City Representative meetings (as required) to review the project's Immediately Dangerous to Life and Health (IDLH) activities, stop Work activities, incidents, and incident investigations.

1.19 LOGS, REPORTS, AND RECORDKEEPING

- A. Contractor shall maintain Project safety audits, employee training records and certifications, equipment safety inspection logs, incident reports, visitor logs and all reports covering the implementation of Contractor HASP at the Site for review upon request by the City Representative.
- B. Contractor shall submit Monthly project safety statistical report to City Representative, which shall include Project safety inspections, hours worked by Contractor, OSHA Recordable Incidents, Incident Rates, Lost Work Day Cases, Total Project Lost Work Days, Days Away from Work Rate, First Aid Cases, and Property Damage Incidents.
- C. Contractor shall provide the Engineer access to the Site, and to all logs and records concerning the Work. The City's review of Contractor's logs and records documenting its safety performance shall not be construed as approval or waiver of the adequacy of any safety measures taken in, on, or near the Site or Construction Area. The City's review of Contractor's logs and records shall not relieve the Contractor of its responsibilities of performing and enforcing health and safety inspections/audits, monitoring, or any other components of the Project safety requirements or Contractor's HASP, and any liability that may arise from Contractor's performance or failure to perform safety Work.

1.20 REMEDIAL ACTION

- A. The City Representative will issue a notice of non-compliance if City personnel observe any condition at the Site that poses an immediate and serious risk to the life or health of persons at the Site, or if City personnel observe that Contractor has failed to timely correct violations of health or safety standards. The notice will document the facts and circumstances of non-compliance and will require the Contractor to immediately remedy and correct the non-compliance and confirm in writing within 24 hours of receipt of the notice that the non-compliant conditions described in the notice have been corrected.
- B. If Contractor repeatedly fails to comply with applicable health and safety laws, rules, regulations, and orders, the City reserves the authority to have the necessary Work performed by others and deduct corresponding costs from Contractor's progress payment(s); suspend progress payments; or terminate the contract for cause.
- C. The Contractor's non-compliance with applicable health and safety laws, rules, regulations, orders, and contract safety requirements may be deemed breach of contract, for which the City Representative may suspend the Work, and dismiss from the Work any employee of the Contractor, Subcontractor, or Supplier responsible for the non-compliance, as provided in the General Provisions. The Contractor shall bear all costs arising from such suspension of Work or dismissal of employee(s).

- D. The Contractor shall not create any condition that endangers the safety of any person on the Site or in the Construction Area, including City employees, City subcontractors, City consultants, and the public. If City personnel observe such a condition, the Engineer is authorized to suspend the Work until the condition is corrected. Such order to suspend the Work shall not impose on the City any obligation, penalty, additional costs or assumption of liability of any kind. Contract Time shall not be extended by such suspension, and the Contractor shall be solely responsible for and the City shall not compensate Contractor for any delay caused by a suspension of the Work due to unsafe conditions. Any suspension of Work due to unsafe conditions shall not relieve the Contractor of its control of the Site or responsibility for safety on the Site during the period the Work is suspended.

1.21 INCIDENT REPORTING AND INVESTIGATION

- A. Contractor personnel who are involved in or witness an unsafe condition at the Site or a Reportable Incident (as defined by Cal-OSHA) shall immediately report the condition or incident to the Contractor's Site supervisor or foreman, who in turn shall immediately notify the City Representative.
- B. Contractor personnel who are involved in or witness a near-miss incident must report it to the responsible Site supervisor or foreman within a reasonable time frame, not to exceed 24 hours, who in turn shall immediately notify the City Representative.
- C. Contractor will allow City Representative to participate and review all Project incident or near-miss investigations.
- D. Contractor's foremen, superintendents, and managers shall not decline to accept or relay a report of injury or significant near-miss incident from any person.
- E. All incidents and significant near-miss incidents shall be investigated immediately by the Contractor's designated Project Safety Representative (PSR).
- F. For all incidents and near miss incidents ("near miss"), Contractor shall submit to the City Representative a Preliminary Incident/Near Miss Investigation Report (PIR) within 24 hours of the incident or near miss. Contractor shall submit a Final Incident/Near Miss Investigation Report (FIR) as soon as possible (generally within 48 hours) after incident or near miss. The Contractor shall not perform Work in the area or of a type that poses risks similar to those of the incident or near miss until a Corrective Action Report (CAR) is complete and submitted to the City Representative.
- G. The PIR and the FIR shall include at a minimum the following:
1. What happened? This should include interviews with injured workers and witnesses as well as examination of the workplace for factors associated with the incident or near miss.
 2. Why did the incident or near miss happen? The investigation must identify the root causes of the incident or near miss. Root causes are the underlying or systemic, rather than the generalized or immediate, causes of an incident/near miss. To identify root causes, the investigation must obtain all the facts surrounding the occurrence and then ask why. For example, what caused the situation to occur; who was involved; was/were the employee(s) qualified to perform the functions involved in the incident or near miss; were they properly

trained; were proper operating procedures established for the task involved; were procedures followed, and if not, why not; where else this or a similar situation might exist, and how it can be corrected.

3. What should be done? The investigation must determine all corrective actions required to eliminate the cause(s) of the incident or near miss.
 4. What action has been taken and what remains to be taken? Action already taken to reduce or eliminate the exposures being investigated should be noted. Any interim or temporary precautions should also be noted. Any pending corrective action and reason for delaying its implementation should be identified.
- H. The Contractor shall submit to the City Representative a Corrective Action Report (CAR) that documents that all corrective actions have been completed and fully implemented and all job site hazards and behaviors that caused the incident or near-miss incident have been corrected. The CAR shall include certification signed by an authorized Officer of the Contractor as to the completeness and accuracy of the FIR and the CAR.

1.22 ACCIDENT DOCUMENTATION AND REPORTING

- A. If an accident causes death, serious injury, or serious property damage, Contractor shall immediately report the accident to the City Representative by telephone, text message or email and to appropriate authorities (for example, Cal-OSHA).
- B. In addition, the Contractor shall promptly report in writing to the City Representative all accidents or near-miss incidents whatsoever arising out of or in connection with, the performance of the Work whether on occurring on or adjacent to the Site or the Construction Area. The Contractor shall give full details of the facts and circumstances of the cause and nature of the incident including statements of witnesses.
- C. Contractor shall make positive contact with City representative. Voicemail does not constitute "positive contact." Contractor shall escalate from inspector, to Assistant Resident Engineer (ARE), to Resident Engineer (RE), to Construction Manager (CM), to Section Manager, to Deputy Bureau Manager until positive contact is made immediately following an incident.
- D. The Contractor shall provide to the City Representative within five working days of an incident or accident or near-miss incident or accident, a written incident or accident; or near-miss incident or a near-miss accident report. A significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.
- E. If any person lodges a claim against the Contractor or any subcontractor alleging injury or property damage arising from the Work, the Contractor shall promptly report the claim and all relevant facts concerning the claim in writing to the City Representative.
- F. The Contractor is responsible for all documentation and reporting obligations of any accident and near-miss incidents in accordance with as per federal, State and local laws and regulations.

1.23 CITY SAFETY REPRESENTATIVE

- A. The City may at any time and without notice enter the Site and inspect the Site and the Work, observe Contractor's means and methods of performing the Work and maintenance of the Site, and review Contractor's compliance with applicable safety requirements, regulations and laws, including but not limited to the requirements of this Contract and Cal-OSHA regulations. The purpose of the City's inspections and observations is to confirm that Contractor is to safeguard City personnel and property.
- B. If the City's Representative observes an unsafe Site condition or unsafe means or methods of performing Work, the City's representative will so inform the Contractor's Site superintendent of safety manager, who shall take whatever actions Contractor deems necessary to immediately remedy the unsafe Site condition or unsafe work practice, or unsafe means or methods in which the Work is performed. Contractor shall within 24 hours of taking such remedial action submit a report to the Engineer describing the unsafe Site condition or work practice, and how Contractor remedied that unsafe condition, unsafe work practice, or unsafe means and methods of performing the Work.
- C. The City's inspection of the Site and the Work, the City's observation of Contractor's means and methods, and the City's requiring the Contractor remedy an unsafe Site condition, unsafe work practice, or unsafe means and methods of Work shall not in any way relieve Contractor of control of and responsibility for the Site, and does not relieve Contractor of its responsibility for the safety of all persons on the Site.

PART 2 – PRODUCTS
(Not used)

PART 3 - EXECUTION
(Not used)

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. Applicable Port permits and agency project approvals including the San Francisco City Planning, San Francisco Bay Conservation and Development Commission (BCDC), San Francisco Bay Regional Water Quality Control Board (RWQCB), and/or U.S. Army Corps of Engineers (USACE), will be provided to the Contractor.
- C. The Contractor shall keep a copy of each applicable permits, law, code and regulation in job site field office, and shall ensure that 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.
 - a. Regulations for Working in San Francisco Streets.
 - b. DPW Order 167,840 for the Placement of Barricades at Construction Site.
 - c. DPW Order 171,378 Dust Generation and Control Regulations.

- d. DPW Order 187,005 Regulations for Excavating and Restoring Streets in San Francisco.
 - e. Article 29, San Francisco Police Code, Regulation of Noise.
 - f. Article 2.4, San Francisco Public Works Code, Excavation in the Public right-of-way.
6. Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities.
 7. State of California Public Utilities Commission
 - a. General Order No. 95, Rules for Overhead Line Construction.
 - b. General Order No. 128, Rules for Construction of Underground Electric Supply and Communication Systems.
 - c. General Order No. 143-B, Safety Rules and Regulations Governing Light-Rail Transit.
 8. 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 Noise permits.
 3. State, County, and City Transportation permits (over width, over length, overweight, overload).
 4. Excavation Permits (as required by Article 2.4 of the Public Works Code), including Port, Muni Rail and SFPUC Encroachments.
 5. Rockwheel permit.
 6. Electrical Permit and PG&E Meter Change.
 7. San Francisco Department of Public Health Permit to Operate, Construct, or Destruct Monitoring Well or Soil Borings.
 8. San Francisco Department of Public Health Notification of Compliance with Article 22A of the Health Code (Maher Ordinance).
 9. San Francisco Department of Public Health Approval of a Dust Control Plan in compliance with Article 22B of the Health Code (Construction Dust Control Requirements)
 10. San Francisco Fire Department permits.
 11. Utility Service Alert (USA) permits and clearance.
 12. RWQCB National Pollutant Discharge Elimination System (NPDES) permit.
 13. San Francisco PUC/BERM Sewer Discharge permit.
 14. Bay Area Air Quality Management District (BAAQMD) permits and notifications, and the California Air Resources Board (CARB) permits, and notifications.
 15. 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. Environmental Health and Safety Plan. See Section 01 35 45.
 2. Construction & Demolition Debris Recovery Plan. See Section 01 74 50
 3. Erosion and Sediment Control Plan. See Section 01 57 13.
 4. Soil Management Plan. See Section 01 14 00.
 5. Dust Control Plan. See Section 01 14 00.
 6. Asbestos Dust Management Plan. See Section 01 14 00 and 01 42 00.
 7. Groundwater Management Plan. See Section 01 14 00.

1.4 SUBMITTALS

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

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

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 100 - Definitions and Terms.
- C. Related Sections: Refer to individual Technical 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

- A. Unless otherwise specified, reference in these Specifications to the "DPW Standard Specifications" or "Standard Specifications" shall mean the Standard Specifications of the Port and County of San Francisco, Department of Public Works, Bureau of Engineering, 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 shall be construed to mean references to the respective provisions of the General Conditions. (Refer to Section 00 72 00.)
- B. Copies of the Standard Specifications may be obtained at Contract Administration, Room 420, 875 Stevenson Street, San Francisco, CA 94103, telephone (415) 554-6229, on payment of the prescribed purchase price.
- C. 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 Port's or City's 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 referred to, except as modified in the Contract Documents, shall have full force and effect as though printed in these Specifications.
- D. 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.
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
BERM	Bureau of Environmental Regulation and Management, Department of Public Works
BHMA	Builders Hardware Manufacturers Association
BOA	Department of Public Works, Bureau of Architecture
BOE	Department of Public Works, Bureau of Engineering
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	City and County of San Francisco, Department of Public Works	
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	
IBC	International Building Code	
ICBO	International Conference of Building Officials	
ICEA	Insulated Cable Engineers Association	
IEEE	Institute of Electrical and Electronic Engineers	
IES	Illuminating Engineering Society	
ISA	Instrument Society of America	
ITE	Institute of Traffic Engineers	
JIC	Joint Industry Conferences of Hydraulic Manufacturers	
MCAA	Mechanical Contractors Association of America, Inc.	
MLMA	Metal Lath Manufacturers Association	
MMA	Monorail Manufacturers Association	
MTD	Metro Transit District	
NAAM	National Association of Architectural Metal Manufacturers	
NBFU	National Board of Fire Underwriters	
NBHA	National Builders' Hardware Association	
NECA	National Electrical Contractors Association	
NEC	National Electric Code	
NEMA	National Electrical Manufacturers Association	
NESC	National Electrical Safety Code	
NFC	National Fire Code	
NFPA	National Fire Protection Association	
NLMA	National Lumber Manufacturers Association	
NTMA	National Terrazzo and Mosaic Association, Inc.	
NWMA	National Woodwork Manufacturers Association	
OECI	Overhead Electrical Crane Institute	
OSHA	Occupational Safety and Health Administration - U.S. Department of Labor	
PacBell	Pacific Bell	
PEI	Porcelain Enamel Institute	
PG&E	Pacific Gas and Electric Company	
PS	Product Standards Section - U.S. Department of Commerce	Commerce
RCM	Registered Construction Management	
RCP	Reinforced Concrete Pipe	
RLM	RLM Standards Institute, Inc.	
RMA	Rubber Manufacturers Association, Inc.	

SAE	Society of Automotive Engineers
SCPI	Structural Clay Products Institute
SDI	Steel Door Institute
SEWPCP	Southeast Water Pollution Control Plant
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc.
SJI	Steel Joist Institute
SFDPWSS	City and County of San Francisco, Department Of Public Works, Standard Specifications
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
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 Port's 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 Port's 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 Port's 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. Approved Equal: Approved in writing by the Port as being of equivalent quality, utility, and appearance in the opinion of the Port. The burden of proof of equality is the responsibility of Contractor.
- C. Port (Owner) Provided, Contractor Installed (Relocated): Items to be provided by the Port to be relocated or removed from storage and installed by Contractor at no additional cost to the Port under the Contract.
- D. Engineer: Refer to Section 00 72 00, General Conditions, Paragraph 100. References in these Specifications to "Engineer" shall be deemed to include the Port's Representative as the Port's authorized on-site representative.
- E. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Port's Representative, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
- F. Installer: The person engaged by Contractor, its subcontractor or sub-subcontractor for performance of a particular element of construction at the Work site, including

installation, erection, application and similar required operations. Installers are required to be experienced in the operations they are engaged to perform.

- G. Provide: Furnish and install or supply and install in place at the Work site.
- H. Remove and Dispose: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Port 's property.
- I. 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.
- J. Remove and Salvage: Items indicated to be removed and salvaged remain the Port's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to the Port 's designated storage area.
- K. City's Representative - Refer to Section 00 72 00, General Conditions, Paragraph 100.
- L. Technical Specifications - Division 1 through Division 31 Specification Sections.
- M. Work Site: The space available to Contractor for performance of construction activities, either exclusively of 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 01 42 00

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SECTION 01 45 00**QUALITY CONTROL****PART 1 GENERAL**

1.01 SUMMARY

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

1.02 CONTRACTOR'S QUALITY CONTROL SERVICES

- A. Contractor's Testing Agency: Provide the services of a qualified testing laboratory or agency selected and paid for by Contractor, as necessary to control the quality of materials and to fulfill the requirements of the Contract Documents.
- B. The Contractor shall verify all dimensions in the field and shall check all field conditions continuously during construction. The Contractor shall inspect related and appurtenant work and report in writing to the Port's Representative any conditions which will prevent proper completion of the work in accordance with the requirements of the Contract Documents.
- C. The Contractor shall be solely responsible for any inaccuracies built into the work due to failure to verify the existing conditions. Any required removal, repair, or replacement caused by unsuitable conditions shall be done by the Contractor at no cost to the Port. Such inaccurate or incomplete work will be considered as defective and payments will be withheld in accordance with Paragraphs 1.04F, 2.05, and 3.03F of the Section 00 72 00, General Conditions.
- D. The Contractor shall be responsible for recording all changes and modifications to the Contract work as required by site conditions and inspections in accordance with the requirements of Section 01 78 39, Project Records and Drawings.

1.03 INSPECTION OF THE WORK AND SITE ACCESS

- A. The work shall be conducted under the general observation of the Port and the Port's consultants and shall be subject to inspection by representatives of the Port and other government agencies having jurisdiction to assure compliance with all requirements of the Contract Documents and applicable codes and regulations.
- B. During the course of construction, inspections may be conducted by authorized representatives of the Port, various inspectors at the site, or independent agencies designated by the Port.
 - 1. The presence of inspectors or independent agencies shall not relieve Contractor of the responsibility for the proper execution of the work in accordance with the requirements of the Contract Documents. Compliance is a duty of Contractor, and said duty shall not be avoided by any act or omission on the part of the inspectors.

- C. All products, materials, and equipment furnished by Contractor may be subject to inspection by the Port both on-site and at the place of manufacture.
 - 1. Contractor shall at all times provide access to the work for representatives of the Port and other agencies designated by the Port wherever Contract work is in preparation, in progress or completed.
- D. All products, materials, and equipment furnished by the Contractor shall be subject to rigid inspection by the Port's Representative on-site and at the place of manufacture. No product, material, or equipment shall be used in the work until it has been reviewed and accepted by the Port's Representative, in accordance with the requirements of Paragraph 13.05 of Section 00 72 00. General Conditions.
- E. 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.
- F. Contractor shall be responsible for calling Code Enforcement Agencies such as the Port Building Permit Group, San Francisco Fire Department, Department of Public Health, etc.

1.04 MANUFACTURER'S FIELD SERVICES

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

1.05 REQUIREMENTS OF TESTS

- A. Review Specifications Sections for additional requirements for testing and inspection.
- B. Tests referenced shall not be a limitation on City's rights for testing and inspection to verify conformance with Contract Documents.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 50 00**CONSTRUCTION FACILITY CONTROLS****PART 1 -- GENERAL**

1.01 SUMMARY

- A. This Section includes special project conditions and requirements for construction including, water and air quality, providing for accessibility and controls, and controlling construction noise.
- B. Remove the temporary facilities at the completion of the work.
- C. The work of this Section shall be considered incidental and no separate payment will be made.

1.02 RELATED SECTIONS

- A. Section 01 41 00 – Regulatory Requirements

1.03 CONTRACTOR'S FACILITIES

- A. The location of sanitary facilities, storage and staging areas, parking and other Contractor facilities shall be subject to the prior approval of the Port's Representative.

1.04 TEMPORARY UTILITIES

- A. Provide temporary electrical power for construction purposes.
- B. Potable Water
 - 1. Arrange with the San Francisco Water Department to provide potable water obtained by connecting to Port water systems. Contact the Water Department at (415) 923-2520 for arranging such water service.
 - 2. Water may be available from fire hydrants located in the streets. Obtain permission from and fill out an application to use water from a hydrant with the San Francisco Water Department at (415) 923-2488.
 - 3. Pay the costs of permit fees, connection fees, meters, and all water usage furnished by the San Francisco Water Department under the water service account established above.
- C. The Contractor is advised that Ordinance # 175-91, Article 21, Sections 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 Ken Sato (415) 252-3942 of the Department of Public Health, Bureau of Environmental Health Services, 1390 Market St, Suite 210 San Francisco, CA 94102. Pursuant to Ordinance #175-91, Article 21, the General Manager of the Water Department may grant permission for such use.

- D. Recycled Water: Contact the SFPUC. Contractor is responsible for the handling and transportation of recycled water as well as any permit and discharge fees. Refer to <https://www.sfpuc.org/construction-contracts/design-guidelines-standards/recycled-water-use>.
- E. The Contractor is responsible for all connections, hoses, materials and equipment required to access the water and any damage to the systems as a result of making temporary connections.
- F. The Contractor is required to provide and maintain his/her own distribution piping, water tankers, hoses, and all appurtenances necessary to supply water at the job site.
- G. Hoses crossing traveled roadways shall be ramped over.

1.05 SURFACE WATER CONTROL

- A. Provide methods to control surface water to prevent damage to the work, and adjoining public and private property.
- B. Direct surface drainage away from crosswalks, sidewalks, excavations and construction areas. Direct drainage to storm drains. Prevent silt runoff to public roadways by installing sandbags or other controlled measures.
- C. Provide, operate and maintain pumping equipment of adequate capacity to control water to protect public and private property and allow the work to proceed as scheduled.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required toilet facilities and enclosures for all Contractors' personnel. The location of facilities is to be approved by the Port's Representative.

1.07 MAINTENANCE OF THE WORK AREA AND DEBRIS CONTROL

- A. The Contractor shall maintain work areas under his/her 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 working day. The Contractor shall restore it to a condition equal to that, which existed prior to the start of work. At completion of the Contract, the Contractor shall leave it in a clean and orderly fashion.
- B. Cleaning during Construction: Control the accumulation of waste materials and debris; collect waste from construction areas and the project site, daily. The Contractor shall also:
 - 1. Comply with requirements of NFPA 241 for removal of combustible waste material and debris.
 - 1. Maintain work areas and adjacent areas free of dust and other contaminants during construction.
 - 2. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose these types of materials in a lawful manner.
 - 4. Maintain the site and all adjacent public areas in a clean and orderly condition. Maintain the site, equipment, fences and signs free of graffiti. Remove all graffiti daily, using methods, which cause no damage to the work and existing facilities.
 - 5. Sweep all pedestrian walkways and dispose of debris around the site perimeter on a daily basis, and as often as determined by the Port's Representative.

6. Keep all debris, hazardous/contaminated material, surplus concrete and excavated materials, etc., off the roadway, sidewalks and sewers at all times in all areas under the Contractor's control and adjacent public right-of-ways.
 7. Remove trash (waste oil, oil rags, etc.) and debris from the site at frequent intervals or as directed by the Port's Representative, 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 life 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. Removed materials, trash, debris shall become the property of the Contractor and shall be removed from the site and disposed of in a legal manner.
- C. Initiate and maintain a specific daily program to prevent the accumulation of debris at the construction site, storage, and parking areas, and along streets, roads and haul routes. The Contractor shall:
1. Provide containers for the deposit of debris.
 2. Prohibit overloading of trucks to prevent spillage.
 3. Inspect traffic areas and haul routes to enforce requirements.
- D. Immediately remove materials deposited outside of approved storage areas.
- E. On a daily basis, remove all debris from all areas, including haul routes, caused directly or indirectly by the Contractor's operations.
- 1.08 SEWER POLLUTION CONTROL
- A. Prevent disposal of debris, sediments, wastes, effluent, chemicals, or other such substances adjacent to or into storm drains and sanitary sewers per Section 123 of Article 4.1 of the Public Works Code.
 - B. Control sewage and contain it within covered conduits. Dispose of it, properly.
- 1.09 AIR POLLUTION CONTROL
- A. Comply with all air pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the contract, including any air pollution control rules, regulations, ordinances and statutes specified in Section 11017 of the California Government Code.
 - B. In the absence of any applicable air pollution control rules, regulations, ordinance, or statutes governing solvents, 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. All containers of paint, thinner, curing compound or liquid asphalt shall be labeled to indicate that the contents fully comply with said requirements.
 - C. Control atmospheric pollutants 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 roads to 15 mph.

4. Prohibiting idling motors when equipment is not in use or when trucks are waiting in queues.

1.10 DUST CONTROL

- A. Prior to starting work at the site, and before commencement of soil moving activities, the Contractor shall submit an Air Pollution Control Plan (APCP) to the Port's Representative for his/her approval. The APCP is the Contractor's preventive program to minimize potential public health impacts associated with visible dust emissions, respirable nuisance dust (PM10) and air quality pollutants. The APCP shall include the following:
 1. Measures to minimize visible dust emissions.
 2. Product description and MSDSs of the chemical to be used to amend the water used for misting.
 3. Methods to prevent the accumulation of dirt or mud on adjacent streets.
 4. Watering resources to be used to provide continuous water misting during dust generating activities.
 5. Description of wheel washers or other engineering controls to be used to wash off tires, tracks and spoils trucks before they re-enter Port streets
 6. Sample form to log wet sweeper schedule for daily cleaning of streets, and sidewalks, during excavation and dirt moving activities.
 7. Additional engineering controls or other mitigation control measures to be implemented if air quality project action levels are exceeded.
 8. Copies of service records that construction equipment has been tuned and maintained in accordance with the manufacturer's specifications
 9. Mitigation and engineering controls to be used to prevent excessive emissions of diesel exhaust fumes.
 10. Administrative and engineering controls in the event the AAQPAL criteria (below) are exceeded.
- B. Practice care during construction to minimize dust generation. 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 property or cultivated vegetation, or causing a nuisance to local residents. The Contractor is responsible for any damage resulting from dust originating from his/her operations.
- C. Observe and adhere strictly to all of the following specific dust control measures so as to achieve a goal of "NO VISIBLE DUST EMISSIONS." This means that the Contractor shall not emit particles from any operation in sufficient number to cause annoyance to any other person, which particles are large enough to be visible as individual particles at the emission point or of such size and nature as to be visible individually as incandescent particles BAAQMD Regulation 6-305, Particulate Matter and Visible Emissions, (<http://www.baaqmd.gov/regs/rg0600.pdf>).
 1. Treat water for dust control with a biodegradable, non-polluting, non-toxic dust control chemical. The water so treated becomes "amended" water. As part of the APCP, the Contractor shall include the MSDSs and other related information on the dust control chemical(s) used.
 2. Provide continuous water misting using as fine a spray or mist as possible in any area of land clearing, earth movement, excavation, drillings and other dust generating activity. All active construction areas shall be watered at least three times per shift per day.
 3. Wheel washers shall be installed and used to clean all trucks and equipment leaving the construction site. If wheel washers cannot be installed, tires or tracks and spoils trucks shall be washed off before they re-enter Port streets to minimize deposition of dust-causing materials.
 4. Minimize the amount of excavated material or waste materials stored at the site.
 5. 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 per day.
6. During all excavation and dirt moving activities, wet sweep/vacuum the streets, sidewalks, paths and intersections where work is in progress at least three times per shift per day. Once at the end of the shift or as directed by the Port's Representative.
 7. For wet sweeping use a vacuum sweeper vehicle with sufficient suction to ensure that the vehicle does not blow dust towards neighboring businesses or residences. The Port's 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 vehicle.
 8. Use recycled water for dust control as described in City Ordinance # 175-91, Article 21, Sections 1100 to 1107 of the San Francisco Municipal Code (Public Works Code).
 9. Dust enclosures, curtains, and dust collectors shall be used as necessary to control dust in the excavation area.
 10. Any stockpile of excavated materials, backfill material, import material, gravel, sand, road base and soil shall be lined at the bottom and shall be covered with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp. It shall also be braced down to prevent from getting blown or disturbed by wind or rain. The Contractor shall maintain this cover throughout its use.
 11. Load haul trucks carrying excavated material and other non-excavated material so that the material does not extend above the walls or back of the truck bed. All trucks hauling soil, sand and any other loose materials shall be tightly covered with tarpaulins or other effective covers before the haul trucks leave the loading area. Wet prior to covering, if directed by the Port's Representative.
 12. Dust curtains, plastic tarps, windbreaks or tree windbreaks shall be installed /planted on windward and downwind sides of construction areas, as necessary.
 13. Vehicles entering or exiting construction areas shall travel at a speed, which minimizes dust emissions. This speed shall be no more than 15 mph.
 14. At the minimum, comply with:
 - a. The requirements of the California Air Resource Board and the Bay Area Air Quality Management District (BAAQMD) Regulation 6 (for particulate matter and visible emissions, <http://www.baaqmd.gov/regs/rg0600.pdf>); Regulation 7 (Odorous Substances); and Regulation 11 (Hazardous Pollutants, <http://www.baaqmd.gov/regs/rulereg.htm>).
 - b. The California Health and Safety Code, Division 26 (Air Resources), Chapter 3 (Emission Limitations) Section 41700 (Prohibited Conduct), Section 41701.5 (Diesel pile driving hammers) and related regulations.
 - c. The Dust Control Order No. 171,378 of the Regulation for Excavating and Restoring Streets in San Francisco, issued by The Department of Public Works, Bureau of Street-use and Mapping.
- D. 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:
1. Limit the hours of operation of heavy-duty equipment and/or amount of equipment in use to what is needed.
 2. Do not allow the idling of motors from the Contractor's and sub-contractors' equipment and vehicles for more than 5 minutes to reduce pollutant emissions.
 3. All equipment shall be properly tuned and maintained in accordance with the manufacturer's specifications.
 4. When feasible, alternative fuel or electrical construction equipment shall be used at the project site.
 5. Use the minimum practical engine size for construction equipment.
 6. Gasoline-powered equipment shall be equipped with catalytic converters, where

- feasible.
7. Implement specific maintenance programs to reduce emissions from equipment that would be in frequent use for much of the demolition and construction periods.
- E. The Contractor is responsible and shall pay for clean up of any spillage (including clean soils) on any City Street, directly or indirectly caused by actions of employees of the Contractor or his/her subcontractors.
- F. If the Contractor fails to provide adequate dust and other air pollutant control, as determined by the Port's Representative, the Port reserves the right to have the necessary work performed by others and to deduct or withhold all monies required therefore.

1.11 NOISE CONTROL

- A. San Francisco Noise Control Ordinance (Article 29 of the San Francisco Police Code, Ordinance # 274-72):
1. The Work of this contract is subject to requirements of Port and the Port 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, Construction Work at Night, Enforcement and Violations.
 3. The maximum noise level from any powered construction equipment shall not be greater than 80 dBA at 100 feet. This translates to 86 dBA at 50 feet (dual units not applicable, as these are specific field and instrument measurements).
 4. Pay all fines for violations pertaining to the San Francisco Noise Ordinance, at no cost to the Port.
- B. General: Conduct all operations, use appropriate construction methods and equipment in accordance with the San Francisco Noise Ordinance. Furnish and install acoustical barriers as necessary so that noise emanating from any equipment shall not exceed noise levels of the criteria specified in the San Francisco Noise Ordinance.
1. Prior to the start of work, the Contractor shall submit to the Port's Representative, a Noise Control Plan (NCP) to mitigate the construction noise impacts and to comply with the noise criteria specified herein. The NCP shall include but not be limited to:
 - a. The method(s) of construction.
 - b. The method(s) used by the Contractor to ensure that his/her equipment noise does not exceed the requirements of the San Francisco Noise Ordinance.
 - c. The equipment with attenuation devices to be used.
 - d. Administrative and engineering controls in the event noise exceeds the noise criteria, pursuant to the San Francisco Noise Ordinance.
 - e. Acoustical treatments employed.
 2. Provide equipment and trucks used for project construction equipped with the best available noise control techniques to minimize construction noise impacts. Prior to construction, the Contractor shall ensure that his/her equipment noise does not exceed the requirements of the San Francisco Noise Ordinance.
 3. Muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise will not exceed limits stated in the San Francisco Noise Ordinance.
 4. Enclose equipment such as large compressors, generators, and large de-watering pumps at a minimum in one-inch-thickness plywood sheds.

5. 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 dBA at the nearest property line.
6. Impact tools must be equipped with intake and exhaust mufflers. Pavement breakers and jackhammers must be equipped with acoustically attenuating shield or shrouds.
7. Perform construction in a manner that maintains noise levels at noise sensitive land uses below specific limits. Select haul routes that minimize intrusion to residential areas.
8. Minimize construction activities during evening, nighttime, weekend and holiday periods. A variance should be requested from the San Francisco Noise Ordinance if construction noise between 8 pm and 7 am is in excess of ambient plus 5 dBA.
9. Apply for a City noise permit at least three (3) working days in advance of night (between 8:00 pm and 7:00 am), weekend and holiday work. The requirements of the Contract documents, including safety requirements, shall apply for all night, weekend and holiday work to be performed. Refer to Special Provisions SP-8 for definition of work hours for this Contract.
10. The Port will monitor construction noise as part of the environmental monitoring process. When noise levels exceed the noise limits pursuant to the San Francisco Noise Ordinance, the Contractor shall place restrictions on construction operations to further limit the noise as directed by the Port's Representative.

1.12 FIRE PREVENTION

- A. Take all necessary precautions to prevent fires while performing the work.
- B. Be responsible for all damage from fire caused directly or indirectly by his own activities or those of his employees or subcontractors.
- C. Provide spark arresters for all internal combustion engines employed at the site.
- D. Maintain temporary fire protection equipment in accordance with CAL/OSHA Section 1910 and 1933, including but not limited to:
 1. Portable fire extinguishers within three (3) meters of welding and cutting operations.
 2. Portable fire extinguishers within three (3) meters of locations where flammable or combustible liquids are stored.
- E. Perform all work in compliance with Port and State fire safety laws and regulations.

1.13 PARKING RESTRICTIONS

- A. Employees of the Contractor, sub-contractors, and suppliers shall park their vehicles as allowed by the Resident Engineer.

1.14 REMOVAL OF TEMPORARY UTILITIES, FACILITIES, AND CONTROLS

- A. Remove 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 Port. Leave facilities to become the property of the Port as indicated on the Drawings in proper working order.
- 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.

1.15 STORAGE AND STOCKPILING

- A. Disposal of topsoil and organic matter shall be performed in a legal manner by the Contractor at his/her own expense and as his/her own property.
- B. Storage, stockpiling, or placement of any equipment, materials or supplies in any public street including the sidewalks or lawn areas thereof, will be allowed only if such storage, stockpiling or placement work is executed in accordance with the provisions of Paragraph 3.15 of Section 00 72 00, General Conditions and does not in any way obstruct any lane or passageway for vehicular or pedestrian traffic. The Contractor shall obtain prior approval of the Port's Representative for the use of public streets or sidewalks for storage or stockpiling.

1.16 PROJECT SIGNAGE

- A. In accordance with §2.4.50 of the Public Works Code, Contractor shall erect a project sign at the job site, facing traffic (if applicable), **in color**, completed and in-place before commencement of construction.
- B. The sign shall bear the name, address, and 24/7 telephone number of a contact person for the Contractor.
- C. Sign panel shall be 4-feet by 8-feet in size, and shall be 3/4-inch thick exterior grade plywood, good one side.
- D. Submit draft copy of sign to the Port for approval prior to fabricating sign.
- E. Obtain Engineer's approval of locations and mounting details of the project sign.
- F. Maintain the sign in good condition for the duration of the Contract. Promptly clean graffiti and other defacement from the project sign.
- G. Remove project sign from the site as Contractor's property at the completion of the Work.
- H. The sign shall include the following logos. More may be added during review.



END OF SECTION 01 50 00

SECTION 01 57 13
TEMPORARY EROSION AND SEDIMENT CONTROL (BMP)

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section specifies the general requirements for furnishing all labor, materials, equipment, and operations necessary for work related to storm water, Best Management Practices (BMP's), and erosion and sediment controls.
- B. Payment: All work in this Section is incidental to the work it pertains.

1.2 DESCRIPTION

- A. The Contractor shall comply with all applicable Federal, State, and local regulations in regards to Storm Water Pollution Prevention Controls. In accordance with Federal, State, and local regulations, it is unlawful to discharge pollutants from construction sites into the sewer and/or drainage to the bay.
- B. The Contractor shall comply with all applicable requirements of the San Francisco Public Works Code, Article 4.1 Sewer Use Ordinance and Article 4.2 Sewer System Management Ordinance and the Port of San Francisco storm water requirements. If the site is over 5,000 square feet and drains to the City's combined storm and sanitary sewer system Erosion and Sediment Control Plan must be approved by the Port, and the Contractor must obtain a Construction Site Runoff Control Permit from the Port.
- C. If the site is over an acre and storm water runoff eventually drains to the municipal separate storm sewer system (MS4) and/or a natural water body, the Contractor is required to obtain coverage under the Construction General Permit and submit a Notice of Intent and Termination, Stormwater Pollution Prevention Plan, and complete required stormwater sampling/inspections and reporting as required by the State Water Resources Control Board (SWRCB). This is not required if all storm water runoff eventually drains into the City's Combined Sewer System.
- D. The Contractor shall implement Best Management Practices (BMPs) at the construction site to minimize the discharge of pollutants into the sewer system. In addition, the Contractor must implement Erosion and Sediment Control Mitigation Measures (ESM) for wind and rain and if at all feasible use biodegradable, non-pollutant nontoxic materials.

1.3 RELATED SECTIONS

- A. Section 01 41 00 - Regulatory Requirements
- B. Section 01 50 00 - Temporary Facilities and Controls
- C. Section 01 57 19 - Environmental Mitigation Measures
- D. Section 01 21 50 – Mobilization
- E. Section 31 00 00 – EARTHWORK
- F. Section 31 23 19 – DEWATERING

1.4 SUBMITTALS

- A. Pursuant to the Submittal Procedures, the Contractor shall submit an Erosion and Sediment Control Plan (ESCP) for sites less than one acre as per Part 1.7 of this Section, or a Storm Water Pollution Prevention Plan (SWPPP) (including Best Management Practices, and

Erosion and Sediment Control Measures) as per Part 1.08 of this Section.

- B. The Contractor shall submit the ESCP or SWPPP to the City Representative for approval no later than (30) thirty days after the Notice to Proceed and before any commencement of earthwork activities. The ESCP or SWPPP shall remain in effect for life of the Contract regardless of the season. A copy of this plan must be on-site at all times.
- C. On approval of the above Plan, the Contractor shall provide a PDF copy to the Port Representative.
- D. The Contractor shall submit SWPPP inspection reports as per Part 1.8 of this Section.

1.5 GENERAL REQUIREMENTS

- A. Construction or demolition activities disturbing 5,000 square feet or more of the ground surface, measured cumulatively require an approved Erosion and Sediment Control Plan and Construction Site Runoff Control Permit from SFPUC or Port. Land disturbance is any movement of ground surface or a change in the existing 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.
- B. Water Control
 - 1. The Contractor is responsible for the continuous control of surface and ground water at all times during the course of the construction, including Saturdays, Sundays, holidays, work stoppages, during periods of labor strikes, and during periods of work stoppages.
 - 2. The Contractor is wholly responsible for obtaining the sewer discharge permit in a timely manner if required. The City will not honor any claims from the contractor arising from delays in obtaining the sewer discharge permit.
- C. Work Within Existing Sewers
 - 1. Comply with California Code of Regulations, General Industry Safety Orders, Article 108, Title 8, Sections 5156 through 5159 when entering and working in existing sewers.
 - 2. It is the responsibility of the Contractor to provide all equipment or assistance to make the confined space safe for entry by the City Representative or its representative per the California Code of Regulations, Title 8; General Industry Safety Orders entitled "Confined Spaces".
- D. Construction of Flow Diversion

The Contractor may construct open or close conduits, wholly within the excavation for flow diversions at places where sewers cross the excavation. Existing sewer flows shall be maintained at all times.
- E. Discharges to the sewer system shall meet the requirements
 - 1. The City's Industrial Waste Ordinance No. 116-97 (Chapter X (Public Works Code), Part II, San Francisco Municipal Code, Article 4.1 and Article 4.2).
 - 2. DPW Order No. 158170 for wastewater discharges into the City's sewerage system.
 - 3. Requirements for Batch Wastewater Discharges from the San Francisco Public Utilities Commission, Waste Water Enterprise (SFPUC-WWE).

4. The construction dewatering site discharge limits of the local Water Pollution Control Plant (WPCP).
 5. No discharges shall be allowed into a municipal separate storm sewer system (MS4) without a sewer discharge permit.
- F. The Contractor is permitted to discharge runoff and dewater into the City's combined sewer system after it submits and obtains approval of a sewer discharge permit and meets the above regulatory requirements.
- F. The Contractor is advised that the WPCP and the SFPUC/MWE has the authority to impose fines or order immediate ceasing of discharge(s) to the sewer system. The Contractor is solely responsible for all costs associated with ceasing discharges, and any and all costs for delay in operations.
- G. Should the existing wastewater be uncontaminated, and subsequently become contaminated due to the Contractor's operations, all costs related to satisfactory cleanup and disposal shall be the responsibility of the Contractor. Such costs shall include re-design, re-construction, pretreatment and, sewer service permit and usage fees or costs necessary to satisfy the above requirements.

1.6 MINIMUM BEST MANAGEMENT PRACTICE (BMP) REQUIREMENTS

- A. Regardless of the acreage of the project the Contractor shall implement BMPs at the project site recommended from the following
1. SFPUC's Construction Best Management Practices Handbook, available for download at:
<http://sfwater.org/modules/showdocument.aspx?documentid=4282>.
 2. California Storm water Quality Association's Construction Best Management Practice Handbook, available for download at:
<http://www.cabmphandbooks.com/Documents/Construction/Construction.pdf>.
- B. BMPs for Management of Construction Materials.
1. Cover and berm loose stockpiled construction materials that are not actively being used.
 2. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).
 3. Minimize exposure of construction materials to precipitation. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.)
 4. Implement BMPs such rumble plates installation or wheel wash stations to prevent the off-site tracking of loose construction and landscape materials.
- C. BMPs for Waste Management.
1. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the combined sewer system.
 2. Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the combined sewer system.
 3. Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.
 4. Cover waste disposal containers at the end of every business day and during a precipitation event.

5. Prevent discharges from waste disposal containers to the combined sewer system.
 6. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.
 7. Implement procedures that effectively address hazardous and non-hazardous spills.
 8. Utilize spill response procedures that include: providing equipment and materials for cleanup of spills on site, so that spills and leaks may be cleaned up immediately and properly disposed, and assigning and training appropriate spill response personnel.
 9. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.
- D. BMPs for Vehicle Storage and Maintenance
1. Prevent oil, grease, or fuel from leaking into the ground, storm drains, and catch basins.
 2. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.
 3. Clean leaks immediately and dispose of leaked materials properly.
- E. BMPs for Management of Landscaping Materials
1. Contain stockpiled materials such as mulches and topsoil when they are not actively being used.
 2. Contain fertilizers and other landscape materials when they are not actively being used.
 3. Discontinue the application of any erodible landscape material within two days before a forecasted precipitation event or during periods of precipitation.
 4. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.
 5. Stack erodible landscape material on pallets, and cover or store such materials when not being used or applied.
- F. The Contractor BMPs shall at a minimum also include:
1. Temporary sediment barriers such as silt fences, berms, dikes, fiber rolls, sandbags, gravel bags or straw bale barriers. These barriers shall be installed at the locations with potential erosion and as otherwise directed by the City Representative. They shall be relocated as necessary for construction operations, with prior approval from the City Representative. Remove the temporary barriers at the end of the project.
 2. Dust Control: Employ construction methods and means that will keep airborne dust to the minimum.
 3. Stockpile Management: Protection of Stockpiles is a year round requirement throughout the project duration. Locate stockpiles at minimum 50 yards away from concentrated flows of storm water, drainage courses and inlets. All stockpiles should be completely covered and secured. They should be protected with a temporary linear sediment barrier prior to the onset of precipitation. During the rainy season, all stockpiles shall be protected from storm water runoff by completely covering them and keeping the perimeter barriers around at all times.
 4. Provide for the continuous misting of water using hoses on the project, and on roads and other areas immediately adjacent to the project limits, wherever traffic or buildings that are occupied or in use, are affected by such dust caused by his hauling

or other operations. The materials and methods used for water laying shall be subject to the approval of the City Representative. Provide for prompt and proper removal from existing roadways of all dirt and other materials that have been spilled, washed, tracked, or otherwise deposited thereon by Contractor's hauling and other operations.

- G. The Contractor's Best Management Practices shall additionally include the following:
1. On-site vehicles, and operating equipment must be monitored for leaks; 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.
 2. Licensed waste material handlers must service portable sanitary facilities and trash dumpsters regularly.
 3. All hazardous material stored on-site shall be stored in secondary containment to prevent spills and leaks. The containment must be covered with temporary tarps to prevent storm water contact.
 4. A chain-link fence to prevent access by the public must enclose the site.
 5. Silt dams or hay bale barriers shall be installed and maintained to prevent sediments from flowing into storm drain inlets and public streets. Storm drain inlets shall be protected surrounding the inlets with BMPs such as fiber rolls or filters media appropriate to type of traffic and as approved by the City Representative.
 6. Minimize dust during demolition, grading, and construction by lightly spraying exposed soil on a regular basis.
 7. Minimize wind and water erosion on temporary stockpiles by spraying with water during dry season and covering during the wet season. Cover inactive piles.
 8. Minimize the area and length of time for clearing and grading.
 9. Prevent release of construction pollutants, cement, mortar, paints, solvents, fuel, etc.
 10. Install and maintain sediment traps in local storm water inlets.
 11. Implement a hazardous material spill prevention, control, and cleanup program for the construction period.
 12. Minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with storm water
 13. Properly specify designed centralized storage areas that would keep construction materials and maintenance supplies out of the rain. Keep spill cleanup materials (e.g., rags, absorbent materials, appropriate container) at the work site when handling chemicals.
 14. Educate on-site personnel and maintain awareness of the importance of protecting storm water quality. Site supervisors or the site safety representative shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meeting and the required personnel attendance list would be specified in the SWPPP. The Contractor shall furnish the City Representative with the attendance list and the subject notes of the meeting.
 15. Additional Erosion and Sediment Control Measures for the exposed soils and stockpiled soil are:
 - a. Erosion Control Blankets shall be used to stabilize disturbed and exposed soil, if weather warrants such blankets.
 - b. Silt fencing shall be installed at the foot of the slope around the entire perimeter of the hill where work is in progress.

- c. V-ditches and silt traps/sediment traps shall be installed at the perimeter of the stockpile to collect runoff where necessary to allow flow to continue to storm drain inlets.
- d. Soil stabilization measures, placement of hay bales, and sediment basins shall be constructed to reduce erosion of exposed soils.
- e. If grading must be conducted during the rainy season, prepare the primary BMPs on erosion control, by controlling the sources, that is by keeping sediments in place.
- f. End-of pipe sediment control measures (e.g., basins and traps shall be used only as secondary measures.
- g. Vehicle and equipment wash down facilities shall be designed to be accessible and functional during both dry and wet conditions.

1.7 EROSION AND SEDIMENT CONTROL PLAN (ESCP) or SWPPP REQUIREMENTS

- A. The ESCP or SWPPP shall include a site map that shows the site layout, construction site boundaries, discharge locations to the combined sewer system, and locations of erosion and sediment control BMPs.
- B. The ESCP or SWPPP shall provide a narrative description of the erosion and sediment control BMPs that will be implemented at the site.
- C. Erosion and Sediment Control Mitigation Measures (ESMM) at a minimum shall include:
 - 1. Stabilization Practices – Seeding, mulching, installation of geotextile fabric, hay bales on areas where construction activities have temporarily or permanently ceased.
 - 2. Structural Practices – Construction of silt fences, berms, dikes, sediment basins, sediment barriers, covered material, and waste storage areas, and other such devices to limit runoff and minimize the discharge of pollutants. Appropriate practices shall be incorporated for surface drainage.
 - 3. Operational Practices – Dust Control, housekeeping, non-hazardous regular waste collection and disposal, control of equipment fluids and lubricants, and similar practices to minimize pollutant generation.
 - 4. Vehicle Washing – All vehicle washing shall occur at a designated equipment decontamination wash pad.
 - 5. Wheel washing - Wheel washing will occur at areas designated wheel-washing area.
 - a. Concrete Washout – Concrete washout will neither be allowed on site nor into the sewerage.
 - b. Saw cutting operations: Provide a means to vacuum slurry, generated from saw cutting operations, thereby preventing it from going into the storm drain.
 - c. Inspection: The Contractor shall conduct routine inspections of all structural and non-structural pollution control measures. At the minimum, it should be conducted once every two weeks for the dry season, once a week during the rainy season and 24 hours prior to forecast of precipitation events of 13 mm (0.5 in) or greater, and immediately after precipitation events of 13 mm (0.5 in) or greater with daily inspections on prolonged rainfalls.
- D. ESCP or SWPPP Implementation:
 - 1. Exercise every reasonable precaution, including temporary and permanent measures, throughout the duration of the project to control erosion, and the

- discharge of sediment and other pollutants associated with construction activity into the sewer and drainage system.
2. Temporary measures shall be coordinated with contract work to the extent practical to ensure economical, effective, and continuous erosion and siltation control and pollution prevention. Permanent pollution control measures and facilities as identified in the contract documents shall be installed as the work progresses.
 3. Inspect erosion and siltation control devices and provide corrective measures for deficiencies 24 hours prior to a forecasted rain and immediately after each rainfall, and at least daily during prolonged rainfall. Deficiencies shall be corrected immediately. If the Contractor fails to correct or take appropriate actions to remedy the specified deficiencies, the City Representative will require Contractor to discontinue work in other areas and concentrate efforts toward rectifying the specified deficiencies. The City reserves the right to remedy the specified deficiencies and deduct the entire cost of such work from monies due to Contractor.
 4. The ESCMM may utilize plans, details, notes, and other information provided in the construction documents; however, such information shall not, in itself, be construed to meet the requirements of this section. Observe firsthand the conditions of the site and then provide additional detail to ensure that the ESCMM accurately reflects the Contractor's means and methods for construction, to include: construction sequencing, site layout, construction access, temporary facilities, specific sedimentation, erosion and runoff discharge controls, and project organization.
- C. Prohibited Discharge: Discharge of other materials other than storm water and approved non-storm water discharges to the sewer system is prohibited. Non-storm water discharges requiring a batch discharge permit include groundwater from excavations, water from truck washing activities, and water from the cleaning or testing of pipes or tanks.
- D. Spill Prevention and Response: The Contractor is responsible for minimizing the potential for spills of pollutants stored onsite. Leaks and spills shall be minimized and if observed, the Contractor shall clean it up immediately and institute preventive measures.
- a. Be aware of potential spill areas and drainage routes in their work areas.
 - b. Containers must remain closed at all times except when transferring contents.
 - c. Do not attempt to carry or move heavy containers of oil or hazardous material without assistance or the use of a drum dolly.
 - d. Use funnels; pumps with closed hose systems, or other means to prevent spills while transferring material from large containers to small ones. Pumps in operation shall not be left on, unattended.
 - e. Hazardous materials will be stored in a designated area that is away from vehicle/traffic areas.
 - f. Immediately notify the supervisor of any spill occurring in the work area. It is the responsibilities of the Contractor's designated Safety Officer to direct the cleanup activities and contact necessary regulatory agencies. All necessary emergency telephone numbers shall be posted at the construction site at a location accessible to all personnel.
 - g. The Contractor shall know the proper methods to clean up small spills in their work areas, and how spent cleanup material shall be managed.
 - h. The Contractor is responsible for recording all steps taken to control spills in the field notes/daily log.
 - i. Spill cleanup equipment must be readily available on site. Emergency response equipment includes absorbent socks, over pack drums, personal protective

equipment, shovel, labels, valves, valve charts, valve wrenches to shut off water supply, etc.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION

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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, discovery or archeological resources and bird and bat protection. See Section 10 57 20 for additional specifications for over water work and in water 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. The Contractor shall comply with all permit requirements and CEQA Mitigation Monitoring and Reporting Program requirements in Section 00 31 00- Available Project Information.
- 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 State-wide Construction General Permit.
- G. For Construction Over Water or In-Bay Work Controls, the Contractor shall comply with the applicable Port obtained permits in Section 01 41 00 – Regulatory Requirements and Section 01 57 20.
- 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. Bay Conservation and Development Commission (BCDC). See Section 00 31 00 Available Project Information.
- B. California Environmental Quality Act (CEQA). The project complies with CEQA through approval of a San Francisco Planning Department CEQA Categorical Exemption 2021-

003773ENV, issued April 2021 for the Port of San Francisco Engineering & Facilities Maintenance Directive 2021-01 and *Addendum #3 to Waterfront Plan Environmental Impact Report, Pier 90 Buildings and Grain Silo Demolition, 2019-023037ENV-02, issued December 13, 2024*. Contractor will comply with mitigation measures for the accidental discovery of archeological resources, clean construction equipment, worker environmental awareness program training, protection of birds and bats, and Best Management Practices BMP#5 Sediment Removal/Substrate Disturbance, BMP #6 Debris, BMP #7 Stormwater and BMP #8 Spill Prevention and Response as described in these documents. See Section 00 31 00 Available Project Information and Section 01 57 20.

- C. 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>
- D. California Code Regulations Article 4.8 Section 2449 General Requirements for In-Use off Road Diesel fueled fleets, ARB AB 1085. ([frooal](#))
- E. San Francisco, Building Code Section 106.3.2.6 and San Francisco Department of Public Health, Construction Dust Control Requirements (Article 22B): [ARTICLE 22B: CONSTRUCTION DUST CONTROL REQUIREMENTS](#)
- F. San Francisco Public Works Code Article 21: Restriction of Use of Potable Water for Soil Compaction and Dust Control Activities. [ARTICLE 21: RESTRICTION OF USE OF POTABLE WATER FOR SOIL COMPACTION AND DUST CONTROL ACTIVITIES](#)
- G. San Francisco Police Code, Article 29, (Ordinance # 274-72) Regulation of Noise: [ARTICLE 29: REGULATION OF NOISE](#)
- H. San Francisco Port – Construction Stormwater Permits and Procedures [Construction Storm Water Permits and Procedures | SF Port](#) the [Construction Stormwater Program | California State Water Resources Control Board](#)
- I. San Francisco Department of Public Health, Water Quality Control Program [Air and water quality | San Francisco](#)
- J. San Francisco Environment Code, Chapter 25, Clean Construction Requirements for Public Works [CHAPTER 25: CLEAN CONSTRUCTION REQUIREMENTS FOR PUBLIC WORKS](#)

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.

- D. 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.
1. 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
 2. 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.
- E. 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. Some of these documents require approval by other agencies such as the San Francisco Department of Public Health.
1. These plans shall be submitted 45 calendar days prior to abatement or demolition activities:
 - (a) Health and Safety Plan. See Section 01 35 45.
 - (b) Site-specific Dust Control Plan.
 - (c) Stormwater Pollution Prevention Plan or Erosion and Sediment Control Plan, as warranted. See Section 01 57 13.
 2. These plans shall be submitted 15 calendar days prior to excavation or ground disturbing activity.
 - (a) Emissions Plan
 - (b) Vibration Control Plan, as warranted
 - (c) Materials Reduction and Recovery Construction Emissions Minimization Plan. See in accordance with Section 01 74 50, as warranted.

PART 2

PRODUCTS (Not Used)

2.01 MATERIALS

- A. Contractor shall provide all labor and materials necessary to comply with 01 57 19.

PART 3

EXECUTION

3.01 MAINTENANCE OF THE WORK AREA AND DEBRIS CONTROL

- A. The Contractor shall maintain the Site and Work areas under its control and adjacent public rights-of-way 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. All waste containers must be properly labeled.
 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 approved by the Port, 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. Inspect waste bins at delivery prior to use to ensure there will be no leaks.
 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.

3.02 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.

3.03 ARCHEOLOGICAL DISCOVERY

- A. If potential archaeological resources are discovered at the site, the following procedures shall be instituted:
 - 1. Promptly report all subsurface archaeological finds to the City Representative.
 - 2. The City Representative shall 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 such potential cultural resources find.
 - 3. The City's archaeologist shall assess the significance of the find, and immediately report to the City Environmental Review Officer (ERO), who shall recommend specific additional avoidance and minimization measures as necessary to minimize potential effects on cultural resources, which may include additional site security, with which Contractor shall comply.
 - 4. If human remains are 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.
- B. Any soil disturbing activities shall 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 will provide City representative with a signed affidavit confirming that all field personnel have received copies of the "ALERT" sheet.
 - 2. The "Alert" sheet and affidavit are available for download at: <https://www.sfpublishworks.org/services/project-manual-and-reference-documents>
 - 3. The contractor shall submit the "ALERT" sheet affidavit to the City Representative within five business days of the start of construction activities.

3.04 WORKER ENVIRONMENTAL AWARENES PROGRAM TRAINING

- A. Work activities shall be preceded by a Worker Environmental Awareness Program training, to be provided by a Qualified Biologist supplied by the City Representative.
 - 1. Contractor shall be responsible for coordinating with the City Representative on schedule and confirming that all workers and any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm, and all field personnel, including machine operators, field crew, pile drivers, supervisory personnel have attended the Worker Environmental Awareness Program training.
 - 2. Contractor shall submit an affidavit and Woker Environmental Awareness Program training roster(s) to the City Representative within five days of each Worker Environmental Awareness Program training.

3.05 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 it 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 September 15), 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 16 to February 14), unless otherwise approved by the City Representative.
- C. Before undertaking any abatement or demolition activities during bird nesting season (between February 15 through September 15), a Qualified Biologist supplied by the City Representative must conduct a pre-construction survey for nesting bird(s) that may be affected during work activities.
1. Surveys must be conducted within 7 days before the proposed onset of this activity. If initiation of construction activity is delayed beyond the one-week timeframe, the survey will be repeated. If construction activities begin in different areas at different times or there are periods of more than one week when no work is being conducted, additional surveys will be conducted by the Qualified Biologist in each area before work accordingly.
 2. Contractor shall be responsible for coordinating with the City Representative on schedule and confirming that surveys have been completed prior to initiation of construction activities 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 providing inadequate time for a Qualified Biologist to perform a required survey.
 3. 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.
- D. If no active nests are detected during surveys, then no additional mitigation is required.
- E. 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.
- F. If active bird nests are identified by the Qualified Biologist, the Qualified Biologist shall establish a no-disturbance buffer and Contractor shall ensure no work occurs within that buffer until a Qualified Biologist determines the nest is no longer in use.
1. The Qualified Biologist may modify nest buffer distances and allow certain activities within the buffer at their discretion and in coordination with the City Representative.
 2. Any work that must occur within the no-disturbance buffer shall be monitored by a Qualified Biologist.
 3. Necessary actions to remove or relocate an active nest(s) shall be coordinated with the City Representative.

3.06 BAT PROTECTION

- A. Before undertaking any abatement or demolition activities a Qualified Biologist supplied by the City Representative must conduct a bat habitat assessment of the project area to identify bat habitat or signs of potentially active bat roosts.
 - 1. Contractor shall be responsible for coordinating with the City Representative on schedule and confirming that bat assessments have been completed prior to initiation of work activities 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 providing inadequate time for a Qualified Biologist to perform a required assessment.
- B. If no bat habitat or signs of potentially active roosts are identified by the Qualified Biologist, then no additional mitigation is required.
- C. If bat habitat or signs of potentially active roosts are identified by the Qualified Biologist, the Qualified Biologist shall conduct a survey of the demolition work areas no more than 14 days prior to demolition activities.
 - 1. Contractor shall be responsible for coordinating with the City Representative on schedule and confirming that bat surveys have been completed prior to initiation of work activities 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 providing inadequate time for a Qualified Biologist to perform a required survey.
 - 2. Demolition activities may proceed if no active bat roosts or evidence of roosting is identified by the Qualified Biologist.
 - 3. If active bat roosts or evidence of roosting is identified by the Qualified Biologist, the Qualified Biologist shall establish a no-disturbance buffer based on the species present, roost type, screening around the roost site, and activities occurring around the roost site.
 - a. The no-disturbance buffer shall be determined in coordination with the City Representative, and for special-status bat species, in coordination with the California Department of Fish and Wildlife.
 - 4. If special-status bat species or maternity or hibernation roosts are identified during bat surveys, additional avoidance and protection measures shall be implemented at the direction of the Qualified Biologist and in coordination with the City Representative and the California Department of Fish and Wildlife.
 - 5. Contractor shall ensure no work occurs within the established buffer until a Qualified Biologist determines work will not impact active bat roosts.
 - 6. Any work that must occur within the no-disturbance buffer shall be monitored by a Qualified Biologist and may only occur when precipitation is not forecast for three days and when daytime temperatures are at least 50 degrees Fahrenheit.
 - a. The Qualified Biologist may recommend partial building demolition to change roost conditions, causing bats to abandon the roost.
 - b. Under no circumstance shall active maternity roosts be disturbed until the roost disbands at the completion of the roosting season or becomes inactive, as determined by the Qualified Biologist.

3.07 SAN FRANCISCO ENVIRONMENT CODE CLEAN CONSTRUCTION REQUIREMENTS FOR WORK IN AN AIR POLLUTANT EXPOSURE ZONE (APEZ) AND CEQA MITIGATION MONITORING AND REPORTING PROGRAM REQUIREMENT

- A. The contractor is informed that as the project will use off-road powered construction machinery that is projected to last longer than 19 days within an APEZ, the following additional requirements of San Francisco Environment Code Chapter 25 apply. The following additional requirements are also required by CEQA.

1. All off-road (not highway legal) equipment 25 horsepower or greater will be fueled by biodiesel fuel minimum grade B20 and have engines that meet or exceed United States Environmental Protection Agency Tier 4 Interim or Tier 4 Final off-road emission standards
 2. The Contractor is informed that where access to alternative sources of power is available, use of portable diesel engines to perform work on the project is prohibited and electric engines shall be used for concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, and cement and mortar mixers, pressure washers, and pumps. Diesel engines shall only be used if grid electricity is not available and propane or natural gas generators cannot meet the electrical demand.
 3. Diesel engines, whether for off-road or on-road equipment, shall 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). Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit
 4. All in-water marine equipment greater than 100 horsepower shall have engines that meet or exceed U.S. EPA or CARB Tier 3 Marine Engine emission standards.
 5. 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.
 6. 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 and the CEQA Mitigation Monitoring and Reporting Program. 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 equipment and must be accompanied by conclusive substantiating information. Waivers are granted at the sole discretion of the Port of San Francisco. If the Contractor is granted a specific equipment requirement waiver, the Contractor must use the next cleanest piece of equipment. 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 and the CEQA Mitigation Monitoring and Reporting Program.
1. Contractor shall submit its initial Construction Emissions Minimization Plan ("Emissions Plan") no less than 15 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 and the CEQA Mitigation Monitoring and Reporting Program.
 2. 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.
 3. 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.
 4. For Verified Deisel Emissions Control (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.
 5. For off-road equipment using alternative fuels, the description will also specify the type of alternative fuel.
 6. 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>.
- C. 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.sf.gov/sites/default/files/2024-03/Clean_Construction_Equipment_Inventory_Template.xlsx

- D. After City review and written approval, the Contractor shall make the Emissions Plan available to the public for review onsite during working hours.
- E. The Contractor shall post at the construction site a legible and visible sign summarizing the Emissions Plan and 2-minute idling limit requirement. Refer to the following link for the Clean Construction Sign Templates: https://www.sf.gov/sites/default/files/2024-03/Clean_Construction_Sign_Template.docx
 - 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.
- F. 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.
- G. 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.
- H. The Port of San Francisco Director may waive requirements of Chapter 25 of the Environment Code on the grounds set forth in Section 2507 of the Environment Code and the CEQA Mitigation Monitoring and Reporting Program 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 Port of San Francisco Director. The department will provide no compensation to the contractor for any consequences of the denial of a waiver request.
- I. The Contractor is informed of and shall comply with CCR Title 13, Section 2449.1. Section 2449.1 requires all engines not: off-road Tier 4 final, on road model year 2010 or newer or zero emissions vehicles to use R99 or R100 renewable diesel.

See: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-roaddiesel/froa-1.pdf>
- J. 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 BAAQMD. All containers of paint, thinner, curing compound or liquid asphalt shall be labeled to indicate that the contents fully comply with said requirements.

3.08 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 of 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 Port of San Francisco Building Code Section 106.3.2.3 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 building permit from the Chief Harbor Engineer, 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 – Environmental Health Branch. The Pier 90 Buildings and Wharf Demolition contract has been determined to be above one-half acre and a site-specific Dust Control Plan is required.
- 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.
- G. 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 vacuum sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.
- H. Mitigation Requirements for Dust Control. Irrespective of the size of the project, the Contractor shall implement dust control measures including but not limited to the following (See also 01 41 00 Regulatory Requirements):
 - 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 adjacent to the Site and construction areas especially along haul routes, at a 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.
 5. 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.
 6. 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.
 7. 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.
 8. 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).
 9. Use dust enclosures, curtains, and dust collectors as necessary to control dust at the Site to meet the goal of no visible dust.
 10. Dust curtains, plastic tarps, barriers, enclosures or windbreaks shall be installed on windward and downwind sides of the Site.
 11. 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.
 12. Surface excavation and grading activities shall be terminated when wind speeds exceed 25 miles per hour.
 13. Limit the area subject to excavation, grading, and other construction activities at any one time.
- I. Control for off-site transport. The Contractor shall ensure that no trucks hauling soils, sand, construction debris 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 :
 3. Covered with tarps; and
 4. 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.
- J. Stockpile Maintenance: No staging areas or soil stockpiling will be allowed at the Site without prior Port approval. 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 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 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) calendar 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.
- K. The Contractor is hereby notified that it cannot perform screening or crushing operations without the appropriate BAAQMD, and Cal-EPA/DTSC permits.
- L. 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, maintained 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.
- M. 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.
- N. Control for traffic on on-site unpaved roads, parking lots, and staging areas, which shall include:
- 1. A maximum vehicle speed limit of ten (10) 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.
- O. Control for Naturally Occurring Asbestos (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.
- P. 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.
- Q. 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.

3.09 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 (15-minute time-weighted average). 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 shall undertake construction activities between 7:00 am and 8:00 pm pursuant to Police Code Article 29, Section 2908. Construction noise between the hours of 8:00 p.m. and 7:00 a.m. that exceeds ambient plus 5 dB (A) shall be prohibited unless a nighttime construction permit has been applied for and granted by the Director of Public Works or the Director of Building Inspection. Contractor shall apply for a City nighttime noise permit at least 3 Working Days in advance of night (between 8:00 p.m. and 7:00

- a.m.) 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., 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 will monitor noise from 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 control 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 Site boundary 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 for 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 5 dB(A).

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 as 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.

3.10 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 not operate vibration generating equipment, such as a bulldozer or hoe ram, within 15 feet of the 696 Amador office building. If the contractor must operate vibration generating equipment within 15 feet of the 696 Amador office building, the contractor shall prepare and submit a Vibration Control Plan (VCP) to the City for review and approval at least 15 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:
- 1. 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
 - 2. 0.12 in/sec PPV (vibration perception threshold) at adjacent properties to the extent possible for nighttime construction activities. If vibration complaints are received 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 is responsible for the protection of vibration sensitive historic buildings and 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 vibration 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. Limit 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. Use 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 reschedule to slow 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 buildings has occurred, the Contractor shall restore the buildings to pre-construction conditions, and to the satisfaction of the City Representative.

3.11 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).

3.12 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.

3.13 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, 01 57 20, and 02 81 00, as related to or concerning the control of dust and air borne particles; construction emissions; the control, removal, transport, and

disposal of excavated materials; control of waste water and sediment; noise; construction vibration; archeological resource discovery, protection of nesting birds and bat protection.

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; and
 2. Sediment control, the protection of catch basins, and prevention of soil and sediment from falling or washing into storm drains and sewers; and
 3. The prevention and control of dust created by the Work; and
 4. Proper treatment and disposal of storm water and ground water prior to discharge; and
 5. Adherence to noise restrictions; and
 6. Adherence to equipment emissions requirements and restrictions; and
 7. Adherence to archeological resource requirements; and
 8. Adherence to protection measures for birds and bats; and
 9. Daily housekeeping and site maintenance to keep 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.

END OF SECTION

SECTION 01 57 20**ENVIRONMENTAL REQUIREMENTS FOR CONSTRUCTION IN WATER BODIES ADJACENT TO OR
IN SAN FRANCISCO BAY****PART 1 - GENERAL****1.1 GENERAL REQUIREMENTS**

- A. For projects including construction in-water or above water, the Contractor shall review and comply with environmental conditions authorized under the Port of San Francisco, Maintenance and Repair Program (Repair Program) and applicable regulatory agency maintenance and repair permits (Maintenance Permits) acquired by the Port, included in 00 31 00 Available Project Information and listed herein.
1. CEQA Categorical Exemption Determination filed by the SF Planning Department on June 4, 2021 (2021-003773ENV) and Port Engineering & Facilities Maintenance Directive 2021-01.
 2. Port of San Francisco, Portwide Maintenance Program Manual, updated January 2024.
 3. For projects involving work within the Bay or within 100 feet of the Bay, contractor shall comply with the San Francisco Bay Conservation and Development Commission (BCDC) Permit No. M1977.017.21 (Amendment 21) Extension of the Port General Maintenance Permit No. M1977.017.19.
 4. San Francisco Bay Regional Water Quality Control Board (RWQCB) Programmatic Section 401 Certification and Water Quality Certification Order R2-2016-0039 for the Port of San Francisco, Maintenance Program, San Francisco County, dated September 22, 2016, and the Administrative Extension of Order R2-2016-0039, dated April 12, 2024.
 5. US Army Corps of Engineers Regional General Permit (RGP22), Permit No. 2015-00016S, dated December 15, 2016. Contractor may not proceed with in-water work until Port obtains and provides renewed US Army Corps of Engineers in-water authorization.
 6. National Marine Fisheries Services, Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response, dated March 7, 2024.
 7. U.S. Fish and Wildlife Service (USFWS) Informal Section 7 Conference, File No. 2023-0060760-S7-001, dated March 11, 2024.

1.2 RELATED DOCUMENTS AND SECTIONS

- 00 31 00 - Available Project Information
- 01 33 00 - Submittals
- 01 41 00 - Regulatory Requirements
- 01 57 13 - Temporary Erosion and Sediment Controls
- 01 57 19 - Environmental Mitigation Measures
- 01 74 50 - Material Reduction and Recovery Plan

PART 2 - PRODUCTS

1.1 DEBRIS BOOMS

- A. Floating debris containment booms and floating debris screens will be placed around the perimeter and alongside in-water and over-water construction work areas as needed to capture any floating debris.
- B. Absorbent pads will be available for use in the event that petroleum sheen develops during sediment-disturbing activities.

2.2 PILES AND DECKING

- A. Any chemically treated wood material will be wrapped with an impact resistant biologically inert substance if subjected to seawater.
- B. Floating devices will be composed of materials that will not disintegrate, including concrete, steel, plastics or closed cell foam encapsulated sun resistant polyethylene.
- C. Most existing decking, and hence most replacement decking, will be composed of wood. The use of light-transmitting materials or measures will be used or considered whenever feasible.
- D. No pilings or other wood structures that have been pressure treated with creosote shall be used.

PART 3 - EXECUTION

1.1 TIMING AND SCHEDULE OF RESTRICTIONS

- A. Seasonal In-Water Work Restrictions. Under the Port's Maintenance Permits, the following in-water work actions are restricted to occur within the seasonal work window of June 15 to November 30:
 - 1. Repair and Stabilization of Existing Banks, including Armored and Unarmored Shorelines, Seawalls, Dikes, and Riprap.
 - 2. Repair of Bulkheads and Breakwaters.
 - 3. Removal, Repair and Replacement of Piles (concrete, steel, or wood).
 - 4. Permanent removal of Existing Dilapidated Piles and Associated Structures (Pier Decks, Stringers, Beams, Girders).
 - a) If Contractor proposes to perform any of the in-water construction work activities listed above outside the seasonal work window from June 15 to November 30, the Contractor is required to submit a request for project change to the City Representative at least 60 days in advance of the in-water work schedule change. The City Representative will review the change request and seek approvals from regulatory agencies as required. The Port makes no guarantee of obtaining agency approvals for Contractor request to perform in-water work activities outside the Port's RGP seasonal work window from June 15 to November 30.
 - b) Herring Restrictions. Should the Port obtain regulatory agency approvals and authorize the contractor's request to perform in-water construction work activities during the Pacific herring spawning or hatching season (December 1 – March 15), a contractor provided CDFW-approved herring monitor will be required to inspect the project site daily when the in-water activity is taking place. If the on-site monitor detects herring spawning at, or within 200 meters (656 feet) of in-water activity, the in-water activity will be shut down for a minimum of 14 days, or until the monitor determines that the hatch has been completed, and larval herring has left the site. The in-water or other activity may resume thereafter.

- B. Under the Port's Maintenance Permits, the following in-water or above-water work actions, which are minimal in nature and have low potential to result in adverse effects to biological resources, may be performed year-round:
1. Restoration of Navigation Aids and Regulatory Markers.
 2. Installation of Scientific Measurement Devices.
 3. Survey Activities.
 4. Repair of Piers, Wharves, Fenders, Dolphins, Whales, Aprons, and Minor Coring of Decks to install Related Structure.
 5. Repair or Replacement of Fencing and Related Structures.
 6. Replacement or Reconfiguration of Existing Docking Facilities (Docks, Piers, Gangways, Cap beams including Under Pier Structures such as Utilities)
 7. Repair or Replacement of Bollards, Cranes, Pier Canopies, and Equipment.

1.2 ENVIRONMENTAL IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

- A. Contractor will implement the Environmental Impact Avoidance, Minimization and Mitigation Measures (AMMs) established under the Port's CEQA CATEX and regulatory Maintenance Permits designed to protect water quality and biological resources. Contractor shall implement applicable in-water and over-water Best Management Practices (BMPs) provided in the Portwide Maintenance Manual and summarized below.
- B. Construction Documentation of AMMS and BMPs
1. Photographs at mobilization, during, and after construction, documenting site conditions and implementation of applicable AMMS and BMPs during construction.
 2. Documentation of marine demolition, disposal and recycling of marine structures including timber, concrete, metal piles and pier structures.
- C. WATER AND SEDIMENT QUALITY BMPS
1. Pile and Debris Removal and Substrate Disturbance
 - a) No dredging is permitted under the Port's RGP Permits.
 - b) When practicable and feasible, debris removal in the tidal zone will be done during low tides and equipment will pick up debris, not excavate, scrape, or grade the shoreline.
 - c) Pile Removal: will be conducted in accordance with the Port's Demolition specifications, the San Francisco Bay Subtidal Goals Project Report, and the majority of the 2024 Corps/NMFS NLAA Program criteria including:
 - i. Piles will be removed by direct pull or vibratory hammer, where possible;
 - ii. Piles that cannot be pulled will be cut two feet below the mudline, to the extent feasible;
 - iii. Piles will be removed at the lowest practicable tide condition; and
 - iv. No jetting will be performed.
 - d) Disturbance of sediment will be minimized during activities such as removal of piles and debris or minor excavation in conjunction with project work.
 - e) Absorbent pads will be available for use if petroleum sheen develops during sediment-disturbing activities.

- f) Existing sediment quality data available for areas planned for pile removal or sediment excavation will be reviewed prior to conducting work.
 - g) Existing piles in areas with known elevated contaminant levels will be cut instead of pulled.
2. Debris, Contaminants, and Hazardous Materials
- a) Where asphalt-paved decks are removed, as much asphalt as possible shall be removed from the pier deck prior to demolition of underlying wood structure to minimize potential for debris to fall into the water. To remove asphalt decking, the asphalt may be saw-cut to required depth. A jack hammer may be used as necessary to break up asphalt into manageable pieces. Asphalt will be removed and placed into a container (contained area on material barge is acceptable). The remaining deck shall be swept and/or vacuumed to remove fines and small pieces of asphalt debris and prevent their migration into water.
 - b) Asphalt (as well as concrete and metal) are used or recycled to the extent feasible. Material that is unsuitable for reuse or recycling will be disposed at an approved facility.
 - c) Debris containment booms, floating debris screens, and/or absorbent booms will be positioned beneath and alongside work areas when necessary.
 - d) Construction barges used to perform the work will be moored in a position to capture and contain the debris generated during any sub-structure or in-water work.
 - e) Care will be taken to minimize debris falling into the water. If debris falls into the bay, personnel in workboats will immediately retrieve the debris for proper handling and disposal.
 - f) Tarps, tubs and/or vacuums will be used as appropriate to catch sawdust, debris, and drips.
 - g) All construction material, waste, debris, sediment, rubbish, trash, fencing, etc., will be removed from the site on a regular basis during work and at project completion. Debris will be transported to an authorized disposal area.
 - h) Port projects must comply with the City's Construction & Demolition Debris Recovery Ordinance ([Construction & Demolition debris recovery law | San Francisco Environment Department \(SFE\)](#)).
 - i) Treated Wood Waste (TWW) resulting from the demolition of creosote timber piles and/or decking will be managed in accordance with Alternative Management Standards (AMS) developed by the Department of Toxic Substances Control (DTSC). TWW will be handled by the Contractor under the presumption that the material is a non-RCRA hazardous waste which will be disposed of at a solid waste facility specifically licensed to accept TWW. Contractor is responsible for maintaining, handling and storing the TWW in accordance with DTSC AMS requirements. These requirements include separating and preventing contact with other waste or materials. The Contractor will prevent ground contact of the TWW materials and prevent exposure to the public and managing proper documentation throughout the disposal process.
3. Stormwater
- a) Material that could wash or blow away will be covered every night and during rainfall events (if applicable).
 - b) Materials will be stored in an area that does not freely drain to the Bay, free from standing water and wet soil, and protected from rain.

- c) Adequate erosion control supplies (sandbags, wattles, shovels, etc.) shall be kept on site during all activities to ensure materials are kept out of the Bay.
4. Spill Prevention and Response
- a) Fueling and maintenance of vehicles and equipment, except for barge-mounted and fixed cranes, will be conducted offsite in designated areas away from the water. Fueling locations will be inspected after fueling to document that no spills have occurred.
 - b) Fueling cranes on barges or fixed to pier decks over water will be performed using proper fuel transfer procedures as specified by federal regulations for fuel transfer. Land-based equipment will be fueled by mobile trucks with secondary containment
 - c) Well-maintained equipment will be used to perform construction work, and, except in the case of failure or breakdown, equipment maintenance will be performed off-site. Repair crews will check heavy equipment daily for leaks, and if leaks are discovered, use of the equipment will be suspended until fixed. If leaks or spills are encountered, the source of the leak will be identified, material will be cleaned up, and the cleaning materials will be collected and properly disposed. All hazardous material will be stored upland in storage trailers and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use will be permitted with the same anti-spill precautions. Petroleum products, chemicals, fresh cement, saw-water, or concrete or water contaminated by the aforementioned shall not be allowed to enter the water.
 - d) Any spills will be cleaned up immediately and reported in accordance with Spill Prevention and Response procedures in 01 57 13. Significant or hazardous spills that cannot be controlled quickly by the first personnel to discover them, shall be reported immediately to City Representative and the following government organizations shall be notified:
 - i. USEPA National Response Center: (800) 424-8802
 - ii. United States Coast Guard (USCG) Sector San Francisco: (415) 399-3547
 - iii. CADFW Office of Spill Prevention and Response (OSPR): (800) 852-7550
5. Materials and Treated Wood Selection
- a) No replacement pilings or other wood structures that have been treated with creosote will be used.
 - b) Treated wood products will be visually inspected upon arrival at the work site. Materials with visible residues or bleeding will be rejected. Wood products treated with an ammoniacal preservative (e.g., AZCA) will be rejected if there is a noticeable odor.
 - c) Chemically treated wood material to be used (e.g., for pilings/decking/stringers) must be covered or wrapped with an impact resistant biologically inert substance.
 - d) Activities that can remove particles of treated wood (such as power washing, sanding, and aggressive scrubbing) will be avoided.
 - e) Cutting stations will be equipped with large tarps to capture debris and will be located well away from the water to minimize wind transport of sawdust.

- f) If preservative treatments, water repellents or other coatings are applied at the work site (e.g., on cuts and boreholes), the treatment will be applied at the cutting station and allowed to dry or cure before the structure is moved to the over-water area.
- g) If cutting or boring of treated wood or touch-up preservative applications must be performed over water, tarps, plastic tubs, or similar devices will be used to catch sawdust, debris, and drips. Preservatives will not be applied in the rain, and any excess preservative will be wiped off.

D. BIOLOGICAL RESOURCE

1. 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.
2. 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, who shall provide verbal notification to USFWS, NMFS, and/or CDFW within three working days of the incident. The City Representative will follow up with written notification to the relevant agencies within five working days of the incident. Contractor, in coordination with City Representative, shall also notify resource agencies 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 field sheets and sent to USFWS, NMFS, and/or CDFW.
3. Noise Impacts from Pile Installation
 - a) Whenever feasible, a vibratory hammer will be used. Vibratory installation may use steel, wood, or concrete piles; any size pile, any number.
 - b) Pile driving with impact hammer will only be conducted during the designated work windows from June 15 to November 30.
 - c) Impact driving of wood (any size), concrete (≤ 18 " diameter), or steel piles (≤ 12 " diameter) will be limited to one hammer, 3,000 pounds or smaller, and less than 20 piles per day.
 - d) If an impact hammer is used, a 12-inch-by-12-inch thick wood cushion block will be used during all impact pile driving operations.
 - e) A "soft start" or ramp-up technique to impact pile driving will be implemented at the start of each workday or after a break of 30 minutes or more to give fish and marine mammals an opportunity to vacate the area. Contractor to use ramp-up procedures for impact pile driving to slowly increase the intensity of sound produced prior to the start of each day, after a break of 30 minutes or more, and if any increase in pile installation or removal intensity is required. Ramp-up procedures require an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets prior to regular pile driving operations.
4. Invasive Species
 - a) The contractor shall prevent the introduction and/or movement of invasive species in the Bay during construction to the maximum extent practicable by implementing the following measures:
 - b) The contractor shall use boats that are registered and located in the Bay area, that have been cleaned in conformance with U.S. Coast Guard regulations for commercial vessels. Work barges greater than 300 gross tons, are regulated

under state law. The operators of these vessels are required to remove hull fouling organisms from the hull.

- c) The contractor shall inspect all work barges, boats and skiffs less than 300 gross tons prior to use during construction. If fouling organisms are present, the contractor shall clean the barges, boats, and skiffs of fouling organisms.
- d) Prior to the removal of pier pilings, and temporary floating docks, the contractor shall notify the City Representative and ensure that actions be taken to prevent the release and spread of marine invasive species.
- e) Immediately after removal, structures shall be placed in areas away from the Bay. To limit the spread of invasive species through run-off, these areas should not be near any water or storm drain that has the potential to flow back into the Bay.
- f) Storage of cleaned structures shall be in a dry, upland area away from the Bay.
- g) Removed infrastructure not being reused shall be stored in dry upland areas away from San Francisco Bay or disposed of at an appropriate disposal facility.
- h) Before any existing infrastructure (e.g., floating docks, moorings, mooring floats and anchor lines) from other parts of the Bay or elsewhere are installed within the San Francisco Bay, they shall be cleaned off site using high pressure washers or steam cleaners. The off-site cleaning location shall be located away from the San Francisco Bay to prevent material from reentering the Bay during cleaning. All material removed from the structures during cleaning shall be placed in secure receptacle and disposed appropriately.

END OF SECTION

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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. Section 01 71 33, Protection of Adjacent Construction
- B. Section 01 57 13, Temporary Erosion and Sediment Control
- C. Section 01 57 20, Over Water-In Bay Construction Requirements
- D. Section 02 41 13, Selective Site Demolition
- E. Section 31 23 00, Excavation and Fill

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 Port of any clogged catch basin or storm water inlet immediately upon discovery.
 - 1. Call SFPUC Sewer Operations at 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

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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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 01 71 23

FIELD ENGINEERING

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Requirements for survey, project record keeping, and other field engineering.
- B. The work of this Section shall be considered incidental work.
- C. Related Documents:
 - 1. Port record documents.
 - 2. Document 00 72 00 – General Conditions
 - 3. Document 00 73 00 – Supplementary Conditions

1.02 DATUM

- A. Elevation Control: Primary elevation control consists of the vertical distance above or below 0' MLLW = City Datum – 11.67' = Mission Bay Vertical Datum +98.33'

1.03 QUALITY CONTROL

- A. The Contractor shall employ a civil engineer or land surveyor registered in the State of California and acceptable to the Port 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.

1.04 SUBMITTALS FOR FIELD ENGINEERING

- 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.
- C. Copy of correspondence with the Department of Public Works, Bureau of Street Use and Mapping Survey Division (BSM) for potential monuments within the Contract boundary. Refer to paragraph 1.06, C below.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as the work is in progress until its completion.
- B. On completion of major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

1.06 EXAMINATION

- A. Verify locations of survey control points prior to starting work.

- B. Promptly notify the Engineer of all discrepancies discovered in Contract Documents.
- C. Review the site for survey monuments. It is the responsibility of the Contractor to preserve all survey monuments, whether found or not, during the duration of this Contract. As due diligence, the Contractor shall also contact the Department of Public Works, Bureau of Street Use and Mapping Survey Division (BSM) for potential monuments within **10-feet** of the Contract boundary. A copy of the correspondence shall be transmitted to the Resident Engineer for record, but does not relieve the Contractor from the protection and preservation of survey monuments within 10 feet of the Contract boundary.

1.07 SURVEY REFERENCE POINTS

- A. Control datum for survey is that established by Port survey. All other lines and grades required for the completion of the Work shall be the Contractor's responsibility.
- B. Contractor to locate and protect survey control points prior to starting site work; preserve permanent reference points during construction. Where construction proceeded prior to standard monument referencing through BSM, Contractor shall pay for all fees and costs to reestablish the monument position. **Survey monuments shall not be reset or relocated by the Contractor unless under the direct supervision of a licensed land surveyor.**
- C. Some monuments are located beneath the ground surface and surrounded by well casings, refer to Figure 1. When a well casing and lid is reset in the course of construction, it shall be centered with respect to the monument.
- D. Promptly report to the Resident Engineer any loss or destruction of a reference point or relocation required because of changes in grades, or for any other reason.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to the Resident Engineer.

1.08 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 lay out by instrumentation and similar appropriate means:
 - 1. Gridlines and gridline intersections based on dimensions provided in the Contract Drawings shall be clearly and durably marked on the top surface of the pier structure to enable the contractor to locate pile caps and seawall upon which to support above pier shoring.
 - a. Marking material shall be durable enough to resist construction traffic.
 - b. Faded, worn or illegible marks shall be renewed or replaced.
 - c. Remove all marks as directed by the Engineer after removal of above pier shoring.
 - 2. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.

D. Periodically verify layouts by same means.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

Figure 1

Typical Monuments with Well Casings



Figure 2
Typical Surface Monuments



END OF SECTION

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SECTION 01 71 33**PROTECTION OF PROPERTY****PART 1 GENERAL**

1.01 SECTION INCLUDES, BUT IS NOT LIMITED TO:

- A. Safeguarding of Existing Facilities.
- B. Protection of adjacent building and property.
- C. Restoration of pavement and roadways.
- D. Emergency work.
- E. Joint Survey to Section Possible Damage Claim Conditions.

1.02 RELATED SECTIONS

- A. Section 01 50 00 - Construction Facilities Controls

1.03 SAFEGUARDING OF EXISTING FACILITIES

- A. The Contractor shall perform all work, in such a manner as to avoid damage to existing to remain buildings, sidewalks, utilities, 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. Any damage to existing to remain buildings, structures and sidewalks shall be repaired to original condition at no cost to the Port.
- B. The Contractor shall exercise due care to avoid damage to all existing cables, conduits, utilities, and communications. Should the Contractor damage or displace any of the above, the Contractor shall repair same to the satisfaction of the Port's Representative and all expenses in connection therewith shall be borne solely by the Contractor.
- C. The Contractor shall exercise due care to avoid damage to existing pipes, coatings, wrappings, sewers, mains, conduits, or other existing facilities and structures. Should the Contractor damage or displace any of the above, the Contractor shall repair same to the satisfaction of the Port's Representative and all expenses in connection therewith shall be borne solely by the Contractor.
- D. 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.
- E. Do not allow debris to enter the sewer system or fall into the Bay, so cleanup immediately.

1.04 RESTORATION OF PAVEMENT

- A. General: All paved areas cut or damaged 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 removal shall be neatly saw cut in straight lines. All pavement shall conform to the requirements of Section 200 and Section 700 of the Standard Specifications.

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

1.05 EMERGENCY WORK

- A. If during the progress of the Contract, the Contractor's construction crews should be absent from the location of the work at a time when any failure or faulty condition of the Contractor's work required emergency action in the public or Port's interest, the Port shall have the right to make repairs and corrections as required with its own forces at the Contractor's expense.
- B. The Contractor shall furnish the Port's Representative with names and telephone numbers of at least three (3) persons to contact in case of emergencies and these persons shall be authorized to perform such work as deemed necessary by the Port's Representative.

1.06 JOINT SURVEY TO ESTABLISH AUTHENTICITY OF POSSIBLE CLAIMS

- A. The Contractor shall use such methods and shall take adequate precautions to prevent damage to adjacent buildings, sidewalks, utilities and other improvements during the prosecution of the work.
- B. The survey shall be recorded with the use of digital photographs and camcorder media.
- C. After the Contract is awarded and before the commencement of work, the Port's 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. Two (2) records of all observations will be prepared. One copy shall be delivered to the Contractor and one copy will be retained by the Port.
- E. 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 Port, and will be a means of determining whether and to what extent damage, resulting from the Contractor operations, occurred during the Contract Work.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION 01 71 33

SECTION 01 73 29**CUTTING AND PATCHING****PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Requirements and limitations for cutting and patching of Work.
- B. Cut, fit and patch, including attendant excavation and backfill, as required to complete the work, and to:
 - 1. Make parts fit together properly.
 - 2. Uncover portions of work to provide installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to the requirements of the Contract Documents.
 - 5. Remove samples of installed work as required for testing.
 - 6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

1.2 RELATED SECTIONS

- A. Section 01 11 00 - Summary of Work
- B. Section 01 31 13 - Coordination

1.3 DEFINITION

- A. "Cutting and Patching" is defined to include the cutting and patching of nominally completed and previously existing concrete, steel, wood and miscellaneous metal structures; piping; and pavement in order to accommodate the installation and coordination of work required under the Contract Documents, to uncover facilities and structures for access or inspection, or to obtain samples for testing or similar purposes.

1.4 REQUIREMENTS OF STRUCTURAL WORK

- A. Do not cut and patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.
- B. Prior to cutting and patching the following categories of work, obtain the Engineer's approval to proceed:
 - 1. Structural concrete
 - 2. Structural steel
 - 3. Foundation construction
 - 4. Bearing and retaining walls
 - 5. Structural decking
 - 6. Timber and primary wood framing

7. Miscellaneous structural metals, including equipment supports, stair systems, and similar categories of work
8. Pressurized piping, tanks and vessels

1.5 OPERATIONAL AND SAFETY REQUIREMENTS

- A. Do not cut and patch operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.
- B. Obtain the Engineer's approval to proceed prior to cutting and patching the following categories of work:
 1. Sheeting, shoring, and cross bracing
 2. Operating systems and equipment
 3. Water, moisture, vapor, air, smoke barriers, membranes and flashings
 4. Noise and vibration control elements and systems
 5. Control, communication, conveying and electrical wiring systems

1.6 SUBMITTALS

- A. Submit written request in accordance with Section 01 31 13 in advance of cutting or alteration which affects:
 1. Structural integrity of any element of project work or retained adjoining structure.
 2. Integrity of weather-exposed or moisture-resistant element.
 3. Efficiency, maintenance, or safety of any operational element.
 4. Work of City or separate contractor.
 5. Visual qualities of sight exposed elements.
- B. Request shall include the following:
 1. Identification of project work.
 2. Location and description of affected work.
 3. Necessity for cutting or alteration.
 4. Description of proposed work, and products to be used including:
 - a. Scope of cutting, patching, alteration or excavation.
 - b. Trades to execute work.
 - c. Products proposed to be used.
 - d. Extent of refinishing to be included.
 - e. How structural elements will be reinforced.
 5. Cost proposal, when applicable.
 6. Alternatives to cutting and patching.
 7. Effect on work of City or separate contractor, or on structural or weatherproof integrity of retained structures or work.
 8. Written permission of affected separate contractor.
 9. Date and time work will be uncovered or executed.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Except as otherwise indicated, provide materials for cutting and patching which will result in equal or better work than the work being cut and patched in terms of performance characteristics and including visual effects where applicable. Use material identical with the original materials where feasible.
- B. Primary Products: Materials shall comply with the requirements of the Technical Specifications and Drawings or those required for original installation where applicable.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing work, inspect conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.
- D. Report unsatisfactory or questionable conditions to the Engineer in writing; do not proceed with work until Engineer has provided further instructions.

3.2 PREPARATION

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

3.3 INSTALLATION

- A. Employ skilled tradesmen to perform cutting and patching. Except as otherwise indicated, proceed with cutting and patching at the earliest feasible time and perform the work promptly.

- B. Use methods least likely to damage work to be retained and work adjoining.
 - 1. In general, where physical cutting action is required, use sawing and grinding tools and not hammering and chopping tools. Openings through concrete work shall be core drilled.
 - 2. Comply with the requirements of the Technical Specifications and Drawings wherever applicable.
 - 3. Comply with requirements of the applicable sections of Division 2 where cutting and patching requires excavating and backfilling.
- C. Patch with seams which are not visible and comply with specified tolerances for the work.
- D. Restore exposed seams of patched area; and, where necessary, extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.

END OF SECTION 01 73 29

SECTION 01 74 50**MATERIAL REDUCTION AND RECOVERY PLAN**

(Rev. 2/5/2021)

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: [2022 California Green Building Standards Code, Title 24, Part 11 \(CALGreen\)](#)

- D. [California Integrated Waste Management Act of 1989](#) (California Public Resources Code 40000 et. seq.) - Assembly Bill 939.
- E. Universal Waste information from the following website: [Universal Waste | Department of Toxic Substances Control](#)
- F. Treated Wood Waste Fact Sheet from the following website: <https://dtsc.ca.gov/toxics-in-products/treated-wood-waste-information-and-fact-sheets/>
- G. San Francisco Board Of Supervisors Resolution Nos. 530-04 and 679-02 establishing a zero waste goal.
- H. Food Service Waste Reduction Ordinance as set forth in San Francisco Environment Code Chapter 16.
- I. 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 65% 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 Port of San Francisco will issue a building 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><i>TREATED WOOD WASTE – Do not burn or scavenge.</i></p> <p><i>TWW Handler</i> <i>Name:</i> _____ <i>Address:</i> _____ <i>Accumulation Date:</i> _____</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 Contractor's 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 MATERIAL REDUCTION AND RECOVERY MONTHLY SUMMARY OF RECOVERY

- A. Contractor shall provide monthly Material Reduction and Recovery reports, quantifying the construction and demolition debris generated and reused, or recycled through the Green Halo Platform.
- B. The Summary shall show actual construction and demolition debris material diversion coinciding with the time period of the Progress Payment. The Contractor shall compile data from all subcontractors into one report; all weights are reported in tons and documentation supporting the reported tons shall be attached. Documentation shall include weight tags or other similar proof the hauler received from a facility where material was transported. The documentation issued by the facility shall include the commodity or material type that was delivered to the facility and shall include evidence that the material was from the contracted job; such evidence may include the project address or project/job number provided by the facility on the weight tags or receipts it creates. Recovery reports prepared by vendors, work orders or invoices for services shall not be acceptable unless accompanied by requirements noted above.

- C. Failure to submit the Summary of Recovery and supporting documents shall render the application for progress payment incomplete and 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**CONTRACT CLOSEOUT****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, Construction Facilities 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 Records and Drawings.

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.

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

1.04 FINAL COMPLETION (ACCEPTANCE)

- A. Prerequisites for Final Completion (Acceptance):
 1. At no additional cost to the Port, perform all remedial work noted on the punch list before requesting final inspection and acceptance.
 2. Coordinate the performance of remedial work with the Port to cause minimal inconvenience and interruption of the Port's and the tenant's operations.
 3. Perform final cleaning as specified in this Section. Remove protective coverings and similar items.
 4. Remove all temporary controls, utilities, facilities, field offices and sheds.
 5. Submit the final payment request with releases and an updated final statement with supporting documentation, accounting for final additional charges for extras and liquidated damages for delays.
 6. Submit consent of surety to final payment.
 7. Submit a copy of the Port's Representative's punch list of remedial items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance by the Port.
 8. Submit the Final Recovery Report as specified in Section 01 74 50.
 9. Evidence of payment and release of liens.
 10. Submit all relevant CMD closeout forms.

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, Construction Facilities and Temporary 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 Drawings.

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><u>\$0</u></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

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SECTION INCLUDES

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

1.2 RELATED SECTIONS

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

1.3 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.

1.4 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.

1.5 ELECTRONIC FORMAT

- A. O & M Manual Text and Manufacturers Data
 - 1. Prepare data in the form of an instructional manual.
 - 2. Scan material as required into a PDF file format, to a minimum of 400 DPI and save to CD or DVD.
 - 3. Organize data on a disk, 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.
 - 4. The CD shall be placed in a jewel case with a label indicating Project Name, Contract Number, "Operations and Data Manual 1 OF X", and Date.
 - 5. The Contractor shall submit (6) copies of the CD/DVD and originals as part of Closeout procedures as specified in Section 01 77 00.
- B. O & M Manual drawings and/or diagrams
 - 1. Each drawing shall be color scanned, 400 DPI, and saved to a CD.
 - 2. Each pdf file shall be numbered with prefix "SHT-01-" followed by the drawing number.
 - 3. The CD shall be placed in a jewel case with a label indicating Project Name, Contract Number, "Operations and Data Manual 2 OF X", and Date.
 - 4. The Contractor shall submit (6) copies of the CD and original drawings as part of Closeout procedures as specified in Section 01 77 00.

1.6 HARD COPY FORMAT

- A. O & M Manual Text and Manufacturers Data
 - 1. Prepare data in the form of an instructional manual.
 - 2. 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.
 - 3. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project; identify subject matter of contents.
 - 4. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
 - 5. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
 - 6. Text: Manufacturer's printed data, or typewritten data on white bond paper.
 - 7. The Contractor shall submit (6) copies of the binders and originals as part of Closeout procedures as specified in Section 01 77 00.
- B. O & M Manual Text As built drawings and/or diagrams
 - 1. Submit copies of each drawing.
 - 2. Drawings shall be printed on bond paper, in full color to scale and shall be folded and included with sleeved folder in binder.
 - 3. The Contractor shall submit (6) copies of the binders and originals as part of Closeout procedures as specified in Section 01 77 00.

1.7 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.

1.8 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.

1.9 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

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SECTION 01 78 36**WARRANTIES****PART 1 - GENERAL****1.1 SUMMARY**

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

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

1.3 SUBMITTAL REQUIREMENTS

- A. For equipment or components of equipment put into service for the Port's benefit during the progress of the Work, submit within ten (10) days after completion of the applicable item or Work.
- B. Otherwise, submit within 10 days after the date of the Notice Substantial Completion and prior to requesting final payment.
- C. Submit an electronic copy (PDF) of each guarantee/warranty on Contractor's letterhead in the sample form included at the end of this Section, or in other form approved by the Port.
- D. Label the cover page title WARRANTIES, with title of Project; name, address, and telephone number of Contractor and equipment supplier; and name of responsible

principal.

- E. Table of Contents: In the sequence of the Table of Contents of the Specifications, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- F. Separate each warranty with cover sheets to the Table of Contents listing. Provide full information including but not limited to: subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.4 QUALITY ASSURANCE

- A. Obtain guarantees/warranties, 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 Port shall not be construed to limit the Port's recourse to Contractor for correction of defects under the law and in accordance with the General Conditions.

1.5 WARRANTY CONDITIONS

- A. Contractor shall warrant that Work performed under this Contract conforms to the Contract Documents and is free of any defect of equipment, material, installation, design furnished, or workmanship furnished by Contractor, or any of its subcontractors or suppliers. SUCH WARRANTY SHALL CONTINUE IN EFFECT FOR 24 MONTHS FROM THE DATE OF APPROVAL OF THE CONTRACTOR'S APPLICATION FOR SUBSTANTIAL COMPLETION BY THE PORT except where detailed specifications for certain materials, equipment or systems require longer warranty periods.
- B. Warranties are not intended to cover failures which result from the following:
 - 1. Unusual or abnormal phenomena of the elements.
 - 2. The Port's misuse, maltreatment, or improper maintenance of the Work.
 - 3. Insurrection or acts of aggression including war.
- C. Promptly after receipt of written notice from the Port, remove, replace, or correct Work, or portion thereof, which is damaged or found to be defective and not in accordance with the Contract.
 - 1. The Port may proceed with the correction work at Contractor's expense if Contractor does not proceed with the corrective work within a reasonable time fixed by written notice from the Port, the Port may proceed with the work at the expense of the Contractor.
 - 2. The Port 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 (10) days thereafter, the Port may, upon ten (10) 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 Port, including compensation for Port Representative's additional services.
 - 4. If the proceeds from the sale are insufficient to cover all amounts chargeable to Contractor, Contractor shall pay the difference to the Port.

1.6 FORM OF GUARANTEE/WARRANTY

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

(Letterhead of Company)

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

Owner: Port of San Francisco.

Location of Equipment: <Address>, Port, City and County of San Francisco, California.

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

Signed: _____(Name of Contractor)

By: _____

Contractor's Telephone No. _____

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

GUARANTEE/WARRANTY FORM
for
<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 24 MONTHS from the date of Substantial Completion of the above
named Project; and we also agree to repair any and all damages resulting from such defects,
all without any expense to the Port, 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 Port, we collectively or separately do hereby authorize the
Port 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 _____
(Port Representative)

Substantial Completion was granted by the Port on _____.
(Date)

- C. Electronic versions of forms are available on Port website:
<http://sfport.com/port-construction-management-forms>

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 78 39**PROJECT RECORDS AND DRAWINGS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Requirements.
 - 2. Quality Assurance.
 - 3. Record Documents.
 - 4. Maintenance of Record Drawings.
 - 5. Final Record Drawings.
 - 6. Review and Submittal.
 - 7. Production of Electronic Files by Contractor.
- B. Related Sections:
 - 1. Section 01 77 00 - Contract Closeout.

1.2 REQUIREMENTS

- A. Keep an accurately marked, up-to-date set of Drawings for the work actually performed. 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 Port's Representative. The Contractor shall keep the Record Drawings current as the work is performed.
 - 1. Record Drawings shall be subject to inspection and approval by the Port's Representative at any time within the duration of the Contract.
 - 2. Such review by the Port's Representative shall not relieve the Contractor of his/her responsibility for keeping the Record Drawings current and complete.
- B. If the Record Drawings are not kept current, or are not furnished when specified herein, 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 Port's Representative the final Record Drawings showing all changes in the Contract Drawings neatly in red ink and certified by the Port inspector.
- D. Record, as the work progresses, changes to the original Contract Drawings including, but not limited to, the following information relative to the Work:
 - 1. Field changes or adjustments in the final location or in the final dimensions or details of the Contract work relative to actual existing site conditions.
 - 2. Changes resulting from requests for information.
 - 3. Changes made by Change Order work.
 - 4. Locations of underground and internal utilities and appurtenances referenced to permanent, accessible features of the Work.
 - 5. Details not included on the original Contract Drawings but incorporated into the work by reference to approved shop drawings, product data, samples, calculations or other submittal.
 - 6. Record Drawings shall include the location of items embedded in concrete such as conduit, cable, junction boxes, piping, re-bar, etc.
 - 7. Measured depths of foundations in relation to finish main floor datum.

1.3 QUALITY ASSURANCE

- A. The Port's Representative will provide Contractor with a set of conformed prints with "Record Drawing" stamp for the Port inspector's certification of corrections.
- B. Delegate responsibility for maintenance, coordination, and accuracy of the Record Drawings to one person on Contractor's staff.
- C. Record all changes on the stamped Record Drawings which will be inspected monthly by the Port's Representative.
- D. Accuracy of Record Drawings shall be such that future searches for items shown on the Contract Documents may rely on information obtained from the approved Record Drawings.
- E. The Port's inspector will check, initial, and date the Record Drawings at various times during the progress of the Work to verify the accuracy and completeness of the recorded changes.
- F. The Port's Representative will sign the corrected Record Drawings to indicate that he/she has reviewed the corrections for completeness.

PART 2 PRODUCTS

2.1 RECORD DOCUMENTS

- A. Job set: Promptly following receipt of the Notice to Proceed, secure from the Port's Representative one complete (or conformed, if available) set of all Contract Documents.
- B. When the Contract is complete, Contractor shall submit the Record Documents in pdf format on a flash drive.

PART 3 EXECUTION

3.1 MAINTENANCE OF RECORD DRAWINGS

- A. Store Record Drawings apart from documents used for performing the work; keep in a dry, legible condition, and in good order. Label each document "RECORD DRAWINGS - JOB SET" in large, neatly printed letters. Do not use Record Drawings for construction at the job site.
- B. Record neatly on the Record Drawings all changes made by clarifications, Change Orders, and other Modifications to the Contract Documents.
 - 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 reproducible photocopy on vellum made from final shop drawings which have been updated to show actual conditions. Furnish additional vellum 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 the Contractor, subject to the Port's Representative's approval.
 - 1. The Port's Representative will issue a written waiver of the requirements for conversion of schematic layouts where, in the Port's Representative's judgment, such conversion serves no useful purpose.
- E. Keep Record Drawings up to date during the entire progress of the work, and make available to the Port at any time. Updates not more than five (5) working days after changes in the work are made.

3.2 CHANGE ORDER DRAWINGS

- A. The Port will issue electronic files for drawings. The Contractor shall be responsible for reproducing sufficient copies of the drawings for its subcontractors.
- B. The Contractor shall also update and include the revised or newly issued drawings as part of the Record Drawings. The work of reproducing and issuing change order drawings and updating of Record Drawings shall be done as incidental work.

3.3 FINAL RECORD DRAWINGS

- A. Prior to start of transfer of recorded data thereto, secure the Port's Representative's approval of all recorded data. Refer to Record Drawings in paragraph 2.1B of this Section.
- B. Make changes neatly, consistently, and with the proper media to assure longevity and clear reproduction.

3.4 REVIEW AND SUBMITTAL

- A. Sign and date the completed Project Record Drawings and submit them to the Port's Representative for review prior to final payment as specified in Section 01 77 00, Contract Closeout.
- B. Participate in review meetings as required. Make required changes and promptly deliver the final Record Drawings to the Port's Representative.
- C. If a Record Drawing is not approved by the Port's Representative, secure a new copy of that drawing from the Port's Representative at the Port's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the satisfaction of the Port's Representative.
- D. Provide final record drawings scanned and in a flash drive.

END OF SECTION 01 78 39

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