



City Council Report

915 I Street, 1st Floor

Sacramento, CA 95814

www.cityofsacramento.org

File ID: 2019-01264

September 10, 2019

Consent Item 18

Title: Plans and Specifications and Contract Award: K Street Barge Landing Project (C13900000)

Location: District 4, 1000 Front Street,

Recommendation: Pass a Motion: 1) authorizing selection of a contractor for the K Street Barge Landing Project through informal price quotations because no valid bids were received; 2) approving the plans and specifications for the K Street Barge Landing Project; 3) awarding a construction contract to Stratus Construction Company in an amount not to exceed \$928,086 for the K Street Barge Landing Project; and 4) authorizing the City Manager or the City Manager's designee to execute the contract specified above.

Contact: Kirk Thompson, Senior Architect (916) 808-8431; James Christensen, Facilities Manager (916) 808-5863, Department of Public Works.

Presenter: None

Attachments:

1-Description/Analysis

2-Construction Contract with Stratus Construction Company

Description/Analysis

Issue Detail: The K Street Barge Landing Project is part of the Old Sacramento Infrastructure Project. The K Street Barge and other improvements that serve the Delta King and provide public access to the river docks have exceeded their useful life and are in need of repair. City staff in the Facilities and Real Property Management Division of Public Works are seeking City Council approval to execute a contract with Stratus Construction Company for repair of the K Street Barge. Construction is expected to begin in September of 2019.

The K Street Barge Landing Project was bid separately from the other barge improvements to minimize schedule impacts to the Delta King's hotel operation. The K Street Barge Elevator Modernization Project was previously bid, and a construction contract was awarded to John F. Otto, Inc. dba Otto Construction on March 12, 2019 through City Council Motion No. 2019-0071.

Policy Considerations: The recommendations in this report are in accordance with City Code Section 3.60.170(B) and City Public Projects Policy Section 2.2(a)(1), which state that the restrictions and provisions of Chapter 3.60 requiring the award of contracts by competitive bidding do not apply when no valid bids are received and City Council may approve a different procurement method in such situations.

Economic Impacts: The recommended contract is expected to create 3.71 jobs (2.13 direct jobs and 1.58 jobs through indirect and induced activities) and create \$573,033 in total economic output (\$361,187 of direct output and another \$211,846 of output in indirect and induced activities).

The indicated economic impacts are estimates calculated using a calculation tool developed by the Center for Strategic Economic Research (CSER). CSER utilized the IMPLAN input-output model (2009 coefficients) to quantify the economic impacts of a hypothetical \$1 million of spending in various construction categories within the City of Sacramento in an average one-year period. Actual impacts could differ significantly from the estimates and neither the City of Sacramento nor CSER shall be held responsible for consequences resulting from such differences.

Environmental Considerations:

California Environmental Quality Act (CEQA): On May 23, 2017, City Council adopted a Mitigated Negative Declaration (MND) and a Mitigation Monitoring Program for the Old Sacramento Infrastructure Project (Resolution No. 2017-0192). The K Street

Barge Landing Project described in this report constitutes the third phase of the Old Sacramento Infrastructure Project.

Sustainability: Not Applicable

Commission/Committee Action: None

Rationale for Recommendation: On April 17, 2019, the Department of Public Works, Facilities Division issued Invitation for Bid B19014541018 for the K Street Barge Landing Project. A pre-bid walk was held on April 25, 2019. Three contractors attended the pre-bid walk. When the bid closed on May 8, 2019, no bids were received.

Based on the outcome of Bid B19014541018 and conversations with prospective contractors, the project scope and engineer's estimate were verified to account for the complexity of the work involved with working over the environmentally sensitive Sacramento River. Contractors expressed concern for the unknown conditions that could exist on the 50-year-old barge under the decking. To help alleviate concerns of potentially unknown conditions, staff uncovered portions of the decking to allow prospective bidders an opportunity to review the barge below the deck.

Because City Code Section 3.60.170(B) allows dispensation of competitive bidding and use of an alternate procurement method when no valid bids are received, the contractors that originally attended the pre-bid walk were informally contacted and asked to prepare a price quotation for this K Street Barge Landing Project. Two of the contractors, Otto Construction and Lucky Dog Construction elected not to submit price quotations.

Stratus Construction Company submitted a price quotation for the project. Staff has reviewed this price quotation and recommends that City Council authorize awarding of the K Street Barge Landing Project construction contract to Stratus Construction Company for an amount not to exceed \$928,086.

Financial Considerations: Sufficient funds exist in the City Facility Reinvestment Program (C13900000) (General Fund, Fund 1001) to execute the recommended construction contract with Stratus Construction Company in an amount not to exceed \$928,086.

Local Business Enterprise (LBE): Stratus Construction Company is not an LBE but has partnered with five LBE suppliers to meet the minimum LBE participation requirement. Dunn Edwards Paint, ABC Supply Company, United Rentals and United Site Services will be providing supplies to Stratus Construction Company to complete this project.

CONTRACT ROUTING SHEET

Contract Cover/Routing Form: Must Accompany ALL Contracts; however, it is NOT part of the contract.

General Information (Required)

Original Contract # (supplements only): _____ Supplement/Addendum #: _____
Assessor's Parcel Number(s): _____
Contract Effective Date: _____ Contract Expiration Date (if applicable): _____
\$ Amount (Not to Exceed): \$ 928,086.00 Adjusted \$ Amount (+/-): _____
Other Party: Stratus Construction Company
Project Title: Old Sacramento K Street Barge Renovation Phase 2
Project #: _____ Bid/RFQ/RFP #: _____
City Council Approval: YES if YES, Council File ID#: 2019-01264

Contract Processing Contacts

Department: Public Works Project Manager: Kirk Thompson
Contract Coordinator: Kirsten Wise Email: kwise@cityofsacramento.org

Department Review and Routing

Contracts:

(Signature) _____ (Date) _____

Project Manager:

(Signature) _____ (Date) _____

Supervisor:

(Signature) _____ (Date) _____

Division Manager:

(Signature) _____ (Date) _____

Special Instruction/Comments (i.e. recording requested, other agency signatures required, etc.)



Construction Related



Other Party Signature Required

Maila Hansen- Bonds will be delivered after council award

-----FOR CLERK & IT DEPARTMENTS ONLY – DO NOT WRITE BELOW THIS LINE-----

AGREEMENT
(Construction Contract Over \$25,000)

THIS AGREEMENT, dated for identification _____, 20__, is made and entered into between the CITY OF SACRAMENTO, a municipal corporation ("City"), and **STRATUS CONSTRUCTION COMPANY, 4719 QUAIL LAKES DRIVE #G245, STOCKTON, CA 95207**("Contractor") IN AN AMOUNT NOT TO EXCEED **NINE HUNDRED TWENTY-EIGHT THOUSAND EIGHTY-SIX DOLLARS AND ZERO CENTS (\$928,086.00)**.

The City and Contractor hereby mutually agree as follows:

1. CONTRACT DOCUMENTS

The Contract Documents, sometimes also referred to as the "Contract," consist of the following items, which are hereby incorporated by reference as if set forth in full in this Agreement:

- Notice to Contractors
- Proposal Form submitted by the Contractor
- Instructions to Bidders
- Subcontractor and Local Business Enterprise Participation Form
- Drug-Free Workplace Policy and Affidavit
- Construction and Demolition (C&D) Debris Recycling Requirements
- Workers' Compensation Insurance Certification
- Federal or State funding requirements (if applicable)
- Local Business Enterprise (LBE) Requirements
- Requirements of the Non-Discrimination in Employee Benefits Code
- Ban-The-Box Requirements
- Notice Regarding Assembly Bill 626
- Addenda, if any
- This Agreement
- Standard Specifications
- Special Provisions
- Plans and Technical Specifications
- The drawings and other data and all developments thereof prepared by City pursuant to the Contract
- Any modifications of any of the foregoing made or approved by City, including but not limited to duly authorized change orders

Unless specifically noted otherwise, references to the "Standard Specifications" shall mean and refer to the Standard Specifications for Public Construction of the City of Sacramento approved by the Sacramento City Council on June 4, 2007 (Resolution No. 2007-350), and any subsequent amendments thereto approved by the Sacramento City Council or the Sacramento City Manager. Work called for in any one Contract Document and not mentioned in another is to be performed and executed as if mentioned in all Contract Documents. The table of contents, titles and headings contained in the Contract Documents are provided solely to facilitate reference to various provisions of the Contract

Documents and in no way affect or limit the interpretation of the provisions to which they refer.

2. DEFINITIONS

Unless otherwise specifically provided herein, all words and phrases defined in the Standard Specifications shall have the same meaning and intent in this Agreement.

3. AGREEMENT CONTROLS

In the event of a conflict between any of the terms and conditions set forth in this Agreement and the terms and conditions set forth in other Contract Documents, the terms and conditions set forth in this Agreement shall prevail, except that the provisions of any duly authorized change order shall prevail over any conflicting provisions of this Agreement.

4. SCOPE OF CONTRACT

Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, material and transportation necessary to perform and complete in a good and workmanlike manner to the satisfaction of City, all the Work called for in the Contract Documents entitled:

OLD SACRAMENTO K STREET BARGE RENOVATION PHASE 2

Including the Work called for in the following alternative bid items described in the Proposal Form: **NONE**

Contractor agrees to perform such Work in the manner designated in and in strict conformity with the Contract Documents.

5. CONTRACT AMOUNT AND PAYMENTS

City agrees to pay and Contractor agrees to accept, as complete payment for the above Work, in accordance with the schedule and procedures set forth in the Contract Documents and subject to deductions, withholdings and additions as specified in the Contract Documents, a total sum that shall not exceed the total bid amount set forth in Contractor's Proposal Form. In addition, subject to deductions, withholdings and additions as specified in the Contract Documents, payment for individual items of the Work shall be computed as follows:

- A. For items of the Work for which a lump sum price is specified in Contractor's Proposal Form, Contractor shall be paid the lump sum price(s) specified in Contractor's Proposal Form; and
- B. For items of the Work for which a unit price is specified in Contractor's Proposal Form, Contractor shall be paid the sum computed at such unit price, or computed at a different price if such different price is determined by City in accordance with the Standard Specifications, based on the actual amount of each such item performed

and/or furnished and incorporated in the Work; provided that in no event shall the total sum for a unit price item exceed the total bid amount set forth for such item in the Contractor's Proposal Form, unless authorized by Change Order.

6. PROGRESS PAYMENTS

Subject to the terms and conditions of the Contract, City shall cause payments to be made upon demand of Contractor as follows:

- A. On or about the first of the month, the Engineer shall present to the Contractor a statement showing the amount of labor and materials incorporated in the Work through the twentieth (20) calendar day of the preceding month. After both Contractor and Engineer approve the statement in writing, and the City's labor compliance officer provides written approval, the City shall issue a certificate for ninety-five (95) percent of the amount it shall find to be due, subject to any deductions or withholdings authorized or required under the Contract or any applicable Laws or Regulations.
- B. No inaccuracy or error in said monthly estimates shall operate to release Contractor from damages arising from such Work or from enforcement of each and every provision of the Contract Documents, and City shall have the right subsequently to correct any error made in any estimate for payment.
- C. Contractor shall not be paid for any defective or improper Work.
- D. The remaining five (5) percent of the value of the Work performed under the Contract, if unencumbered and subject to any deductions or withholdings authorized or required under the Contract or any applicable Laws or Regulations, shall be released not later than sixty (60) days after completion and final acceptance of the Work by City. Acceptance by Contractor of the final payment shall constitute a waiver of all claims against the City arising under the Contract Documents, except for disputed claims in stated amounts that the Contractor specifically reserves in writing, but only to the extent that the Contractor has complied with all procedures and requirements applicable to the presentation and processing of such claim(s) under the Contract Documents. Contractor shall be entitled to substitute securities for retention or to direct that payments of retention be made into escrow, as provided in Public Contract Code Section 22300, upon execution of the City's Escrow Agreement for Security Deposits in Lieu of Retention.
- E. The parties agree that, for purposes of the timely progress payment requirements specified in Public Contract Code Section 20104.50, the date that the City receives a statement jointly approved by the Contractor and the Engineer as provided above shall be deemed to constitute the date that City receives an undisputed and properly submitted payment request from the Contractor. Progress payments not made within 30 days after this date may be subject to payment of interest as provided in Public Contract Code Section 20104.50.

- F. This Contract is subject to compliance monitoring and enforcement by the California Department of Industrial Relations, as specified in California Labor Code section 1771.4.

7. RETENTION OF SUMS CHARGED AGAINST CONTRACTOR

When, under the provisions of this Contract or any applicable Laws or Regulations, City is authorized or required to withhold, deduct or charge any sum of money against Contractor, City may deduct and retain the amount of such charge from the amount of the next succeeding progress estimate(s), or from any other moneys due or that may become due Contractor from City. If, on completion or termination of the Contract, sums due Contractor are insufficient to pay City's charges, City shall have the right to recover the balance from Contractor or its Sureties.

8. COMMENCEMENT AND PROSECUTION OF WORK

Contractor shall commence the Work not later than fifteen (15) working days after the date of the written Notice to Proceed from City to Contractor and shall diligently prosecute the Work to final completion. The phrase "commence the Work" means to engage in a continuous program on-site including, but not limited to, site clearance, grading, dredging, land filling and the fabrications, erection, or installation of the Work. The Notice to Proceed shall be issued within fifteen (15) calendar days following execution of the Agreement by the City and the filing by Contractor of the required Bonds and proof of insurance, provided that the Engineer may delay issuance of the Notice to Proceed if the Engineer determines in the Engineer's sole discretion that conditions on the site of the Work are unsuitable for commencement of the Work. After the Notice to Proceed is issued, the continuous prosecution of Work by Contractor shall be subject only to Excusable Delays as defined in this Agreement.

9. TIME OF COMPLETION

The entire Work shall be brought to completion in the manner provided for in the Contract Documents on or before **SIXTY (60) WORKING** days from the date of the Notice to Proceed (hereinafter called the "Completion Date") unless extensions of time are granted in accordance with the Contract Documents.

Failure to complete the entire Work by the Completion Date and in the manner provided for in the Contract Documents shall subject Contractor to liquidated damages as provided in this Agreement. Time is and shall be of the essence in the performance of the Contract and the Work.

10. PAYMENTS DO NOT IMPLY ACCEPTANCE OF WORK

The payment of any progress payment, or the acceptance thereof by Contractor, shall not constitute acceptance of the Work or any portion thereof and shall in no way reduce the liability of Contractor to replace unsatisfactory work or material, whether or not the

unsatisfactory character of such work or material was apparent or detected at the time such payment was made.

11. ACCEPTANCE NOT RELEASE

Contractor shall correct immediately any defective or imperfect work or materials that may be discovered before final acceptance of the entire Work, whether or not such defect or imperfection was previously noticed or identified by the City. The inspection of the Work, or any part thereof, shall not relieve Contractor of any of its obligations to perform satisfactory work as herein specified.

Failure or neglect on the part of City or any of its officers, employees or authorized agents to discover, identify, condemn or reject defective or imperfect work or materials shall not be construed to imply an acceptance of such work or materials, if such defect or imperfection becomes evident at any time prior to final acceptance of the entire Work, nor shall such failure or neglect be construed as barring City from enforcing Contractor's warranty(ies) or otherwise recovering damages or such a sum of money as may be required to repair or rebuild the defective or imperfect work or materials whenever City may discover the same, subject only to any statutes of limitation that may apply to any such claim.

12. CITY'S RIGHT TO TAKE POSSESSION OF THE WORK IN WHOLE OR IN PART

The City shall have the right at any time to enter upon the Work and perform work not covered by this Contract, or to occupy and use a portion of the Work, prior to the date of the final acceptance of the Work as a whole, without in any way relieving Contractor of any obligations under this Contract.

13. NO WAIVER OF REMEDIES

Neither the inspection by City, its officers, employees or agents, nor any certificate or other approval for the payment of money, nor any payment for, nor acceptance of the whole or any part of the Work by City, nor any extensions of time, nor any position taken by City, its officers, employees or its agents shall operate as a waiver of any provision of the Contract Documents nor of any power herein reserved to City or any right to damages herein provided, nor shall any waiver of any breach of this Agreement be held to be a waiver of any other or subsequent breach. All remedies provided in the Contract Documents shall be taken and construed as cumulative; in addition to each and every other remedy herein provided, the City shall have any and all equitable and legal remedies that it would in any case have.

14. WARRANTY

Except as otherwise expressly provided in the Contract Documents, and excepting only items of routine maintenance, ordinary wear and tear and unusual abuse or neglect by City, Contractor warrants and guarantees all Work executed and all supplies, materials and devices of whatsoever nature incorporated in or attached to the Work, or otherwise

provided as a part of the Work pursuant to the Contract, to be absolutely free of all defects of workmanship and materials for a period of one year after final acceptance of the entire Work by the City. Contractor shall repair or replace all work or material, together with any other work or material that may be displaced or damaged in so doing, that may prove defective in workmanship or material within this one-year warranty period without expense or charge of any nature whatsoever to City.

In the event that Contractor shall fail to comply with the conditions of the foregoing warranty within ten (10) days after being notified of the defect in writing, City shall have the right, but shall not be obligated, to repair, or obtain the repair of, the defect and Contractor shall pay to City on demand all costs and expense of such repair. Notwithstanding anything herein to the contrary, in the event that any defect in workmanship or material covered by the foregoing warranty results in a condition that constitutes an immediate hazard to public health or safety, or any property interest, or any person, City shall have the right to immediately repair, or cause to be repaired, such defect, and Contractor shall pay to City on demand all costs and expense of such repair. The foregoing statement relating to hazards to health, safety or property shall be deemed to include both temporary and permanent repairs that may be required as determined in the sole discretion and judgment of City.

In addition to the above, the Contractor shall make a written assignment of all manufacturer's and other product warranties to the City, prior to completion and final acceptance of the Work by City.

The Contractor's Performance Bond shall secure the performance of the Contractor's obligations under this Section 14, and the Contractor and its Surety shall be jointly and severally liable for these obligations.

15. LIQUIDATED DAMAGES IF WORK NOT COMPLETED ON TIME

- A. The actual fact of the occurrence of damages and the actual amount of the damages that City would suffer if the entire Work, and/or any specified portion thereof, were not completed within the time(s) specified herein are dependent upon many circumstances and conditions that could prevail in various combinations, and for this reason, it is impracticable and extremely difficult to fix the actual damages. Damages that City would suffer in the event of such delay include: loss of the use of the project; expenses of prolonged assignment to the project of an architectural and/or engineering staff; prolonged costs of administration, inspection, and supervision; increased operational expenses and/or impaired operation of other facilities dependent upon completion of the project; and the loss and inconvenience suffered by the public within the City of Sacramento by reason of the delay in the completion of the project or portion thereof. Accordingly, the parties agree, and by execution of this Agreement, Contractor acknowledges that it understands and agrees, that the amount(s) set forth herein as liquidated damages reflect the parties' best efforts at the time of entering into the Contract to estimate the damages that may be incurred by City and the public due to the Contractor's delay in completion of the Work and/or any specified portion thereof, and shall be presumed to be the

amount of damages sustained by the failure of Contractor to complete the entire Work and/or any specified portion thereof within the time(s) specified herein.

- B. Contractor shall pay liquidated damages to City for failure to complete the entire Work by the Completion Date (as extended in accordance with the Contract Documents, if applicable) in the amount of **\$1000.00** for each calendar day after the Completion Date (as extended in accordance with the Contract Documents, if applicable), continuing to the time at which the entire Work is completed. Such amount is the actual cash value agreed upon by the City and Contractor as the loss to City and the public resulting from Contractor's default.

The parties agree, and by execution of this Agreement, Contractor acknowledges that it understands and agrees, that the foregoing provisions provide for the imposition of liquidated damages from the Completion Date (as extended in accordance with the Contract Documents, if applicable) until the date of completion of the entire Work as determined by the Engineer in accordance with Section 8-4 of the Standard Specifications, whether or not the Work or any portion thereof is claimed or determined to be substantially complete prior to such date of completion.

- C. In the event Contractor shall become liable for liquidated damages, City, in addition to all other remedies provided by law, shall have the right to withhold any and all payments that otherwise would be or become due Contractor until the liability of Contractor under this section is finally determined. City shall have the right to use and apply such payments, in whole or in part, to reimburse City for all liquidated damages due or to become due to City. Any remaining balance of such payments shall be paid to Contractor only after discharge in full of all liability incurred by Contractor under this section or otherwise under any provision of the Contract Documents or any applicable Law or Regulation. If the sum so retained by City is not sufficient to discharge all such liabilities of Contractor, Contractor shall continue to remain liable to City until all such liabilities are satisfied in full. No failure by City to withhold any payment as specified above shall in any manner be construed to constitute a release of any such liabilities nor a waiver of the City's right to withhold payment for such liabilities.

16. INDEMNITY AND HOLD HARMLESS

- A. Contractor shall defend, hold harmless and indemnify the City, its officers, employees, and agents, and each and every one of them, from and against any and all actions, damages, costs, liabilities, claims, demands, losses, judgments, penalties, costs and expenses of every type and description, whether arising on or off the site of the Work, including, but not limited to, any fees and/or costs reasonably incurred by City's staff attorneys or outside attorneys and any fees and expenses incurred in enforcing this provision (hereafter collectively referred to as "Liabilities"), including but not limited to Liabilities arising from personal

injury or death, damage to personal, real or intellectual property or the environment, contractual or other economic damages, or regulatory penalties, arising out of or in any way connected with performance of or failure to perform the Work by the Contractor, any subcontractor or agent, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, whether or not (i) such Liabilities are caused in part by a party indemnified hereunder, or (ii) such Liabilities are litigated, settled or reduced to judgment; provided that the foregoing indemnity does not apply to liability for damages for death or bodily injury to persons, injury to property, or other loss, damage or expense to the extent arising from (i) the sole negligence or willful misconduct of, or defects in design furnished by, City, its agents, servants, or independent contractors who are directly responsible to City, or (ii) the active negligence of City.

- B. The existence or acceptance by City of any of the insurance policies or coverages described in this Agreement shall not affect or limit any of City's rights under this Section 16, nor shall the limits of such insurance limit the liability of Contractor hereunder. The provisions of this Section 16 shall survive any expiration or termination of the Contract.

17. CONTRACTOR SHALL ASSUME RISKS

Until the completion and final acceptance by City of all Work under this Contract, the Work shall be under Contractor's responsible care and charge, and Contractor, at no cost to City, shall rebuild, repair, restore and make good all injuries, damages, re-erectments, and repairs occasioned or rendered necessary by accidental causes of any nature, to all or any portions of the Work.

18. GENERAL LIABILITY OF CONTRACTOR

Except as otherwise herein expressly stipulated, Contractor shall perform all the Work and furnish all the labor, materials, tools, equipment, apparatus, facilities, transportation, power and light, and appliances, necessary or proper for performing and completing the Work herein required in the manner and within the time herein specified. The mention of any specific duty or liability of Contractor shall not be construed as a limitation or restriction of any general liability or duty of Contractor, and any reference to any specific duty or liability shall be construed to be solely for the purpose of explanation.

19. INSURANCE

During the entire term of the Contract, Contractor shall maintain the insurance coverage described in this Section 19.

Full compensation for all premiums that Contractor is required to pay for the insurance coverage described herein shall be included in the compensation specified for the Work performed by Contractor under this Contract. No additional compensation will be

provided for Contractor's insurance premiums. Any available insurance proceeds in excess of the specified minimum limits and coverages shall be available to the City.

It is understood and agreed by the Contractor that its liability to the City shall not in any way be limited to or affected by the amount of insurance coverage required or carried by the Contractor in connection with this Contract.

A. Minimum Scope & Limits of Insurance Coverage

- (1) Commercial General Liability Insurance providing coverage at least as broad as ISO CGL Form 00 01 on an occurrence basis for bodily injury, including death, of one or more persons, property damage, and personal injury, arising out of activities performed by or on behalf of Contractor and its subcontractors, products and completed operations of Contractor and its subcontractors, and premises owned, leased, or used by Contractor and its subcontractors, with limits of not less than one million dollars (\$1,000,000) per occurrence. The policy shall provide contractual liability and products and completed operations coverage for the term of the policy.
- (2) Automobile Liability Insurance providing coverage at least as broad as ISO Form CA 00 01 for bodily injury, including death, of one or more persons, property damage, and personal injury, with limits of not less than one million dollars (\$1,000,000) per accident. The policy shall provide coverage for owned, non-owned, and/or hired autos as appropriate to the operations of the Contractor.

No automobile liability insurance shall be required if Contractor completes the following certification:

"I certify that a motor vehicle will not be used in the performance of any work or services under this agreement." _____
(Contractor initials)

- (3) Excess Insurance: The minimum limits of insurance required above may be satisfied by a combination of primary and umbrella or excess insurance coverage; provided that any umbrella or excess insurance shall contain, or be endorsed to contain, a provision that it shall apply on a primary basis for the benefit of the CITY, and any insurance or self-insurance maintained by CITY, its officials, employees, or volunteers shall be in excess of such umbrella or excess coverage and shall not contribute with it.

- (4) Workers' Compensation Insurance with statutory limits, and Employers' Liability Insurance with limits of not less than one million dollars (\$1,000,000). The Workers' Compensation policy shall include a waiver of subrogation in favor of the City.

No Workers' Compensation insurance shall be required if Contractor completes the following certification:

"I certify that my business has no employees, and that I do not employ anyone. I am exempt from the legal requirements to provide Workers' Compensation insurance." _____
(Contractor initials)

B. Additional Insured Coverage

- (1) Commercial General Liability Insurance: The City, its officials, employees, and volunteers shall be covered by policy terms or endorsement as additional insureds as respects general liability arising out of: activities performed by or on behalf of Contractor and its subcontractors; products and completed operations of Contractor and its subcontractors; and premises owned, leased, or used by Contractor and its subcontractors.
- (2) Automobile Liability Insurance: The City, its officials, employees, and volunteers shall be covered by policy terms or endorsement as additional insureds as respects auto liability.

C. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

- (1) Contractor's insurance coverage, including excess insurance, shall be primary insurance as respects City, its officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officials, employees, or volunteers shall be in excess of Contractor's insurance and shall not contribute with it.
- (2) Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officials, employees, or volunteers.
- (3) Coverage shall state that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- (4) City will be provided with thirty (30) days written notice of cancellation or material change in the policy language or terms.

D. Acceptability of Insurance

Insurance shall be placed with insurers with a Bests' rating of not less than A:VI. Self-insured retentions, policy terms or other variations that do not comply with the requirements of this Section 3 must be declared to and approved by the City in writing prior to execution of this Contract.

E. Verification of Coverage

- (1) Contractor shall furnish City with certificates and required endorsements evidencing the insurance required. Copies of policies shall be delivered to the City on demand. Certificates of insurance shall be signed by an authorized representative of the insurance carrier.
- (2) For all insurance policy renewals during the term of this Contract, Contractor shall send insurance certificates reflecting the policy renewals directly to:

City of Sacramento
c/o EXIGIS LLC
P.O. Box 4668 ECM- #35050
New York, NY 10168-4668

Insurance certificates also may be faxed to (888) 355-3599, or e-mailed to:

certificates-sacramento@riskworks.com

- (3) The City may withdraw its offer of contract or cancel this Contract if the certificates of insurance and endorsements required have not been provided prior to execution of this Contract. The City may withhold payments to Contractor or cancel the Contract if the insurance is canceled or Contractor otherwise ceases to be insured as required herein.

F. Subcontractors

Contractor shall require and verify that all subcontractors maintain insurance coverage that meets the minimum scope and limits of insurance coverage specified in subsection A, above.

20. FAILURE TO MAINTAIN BONDS OR INSURANCE

If, at any time during the performance of this Contract, Contractor fails to maintain any item of the bonds and/or insurance required under the Contract in full force and effect,

Contractor shall immediately suspend all work under the Contract and notify City in writing of such failure. After such notice is provided, or if City discovers such failure and notifies Contractor, the City thereafter may withhold all Contract payments due or that become due until notice is received by City that such bonds and/or insurance have been restored in full force and effect and that the premiums therefor have been paid for a period satisfactory to the Division of Risk Management. Contractor shall not resume work until notified by City to do so, and the City shall have no responsibility or liability for any costs incurred by Contractor as a result of such suspension of Work.

In addition to the foregoing, any failure to maintain any item of the required bonds and/or insurance at any time during the performance of this Contract will be sufficient cause for termination of the Contract by City.

The Contractor shall be solely responsible for, and shall defend, indemnify and hold harmless the City, its officers, employees and agents against and from, any and all damages, claims, losses, actions, costs or other expenses of any kind incurred by any party as a direct or indirect result of any suspension of Work or termination of the Contract under the provisions of this Section.

21. EXCUSABLE DELAYS

For the purpose of these Contract Documents, the term "Excusable Delay" shall mean, and is limited to, delay caused directly by: acts of God; acts of a public enemy; fires; inclement weather as determined by the Engineer; riots; insurrections; epidemics; quarantine restrictions; strikes; lockouts; sitdowns; acts of a governmental agency; priorities or privileges established for the manufacture, assemble, or allotment of materials necessary in the Work by order, decree or otherwise of the United States or by any department, bureau, commission, committee, agent, or administrator of any legally constituted public authority; changes in the Work ordered by City insofar as they necessarily require additional time in which to complete the Work; the prevention of Contractor from commencing or prosecuting the Work because of the acts of others, excepting Contractor's subcontractors or suppliers; or the prevention of Contractor from commencing or prosecuting the Work because of a Citywide failure of public utility service.

The term "Excusable Delay" shall specifically not include: (i) any delay that could have been avoided by the exercise of care, prudence, foresight and diligence on the part of Contractor; (ii) any delay in the prosecution of any part of the Work that does not constitute a Controlling Operation, whether or not such delay is unavoidable; (iii) any reasonable delay resulting from time required by City for review of any Contractor submittals and for the making of surveys, measurements and inspection; and, (iv) any delay arising from an interruption in the prosecution of the Work on account of reasonable interference by other Contractors employed by City that does not necessarily prevent the completion of the entire Work within the time specified. Excusable Delays, if any, shall operate only to extend the Completion Date (not in excess of the period of such delay as determined by City) and shall not under any circumstances increase the amount City is required to pay Contractor except as otherwise provided in these Contract Documents.

22. CONTRACTOR TO SERVE NOTICE OF DELAYS

Whenever Contractor foresees any delay in the prosecution of the Work, and in any event as soon as possible (not to exceed a period of ten (10) calendar days) after the initial occurrence of any delay that Contractor regards as or may later claim to be an Excusable Delay, the Contractor shall notify the Engineer in writing of such delay and its cause, in order that the Engineer: (i) may take immediate steps to prevent if possible the occurrence or continuance of the delay; or (ii) if this cannot be done, may determine whether the delay is to be considered excusable, how long it continues, and to what extent the prosecution and completion of the Work are delayed thereby. Said written notice shall constitute an application for an extension of time only if the notice requests such an extension and sets forth the Contractor's estimate of the additional time required together with a full description of the cause of the delay relied upon.

After the completion of any part or whole of the Work, the Engineer, in estimating the amount due Contractor, will assume that any and all delays that may have occurred in its prosecution and completion were not Excusable Delays, except for such delays for which the Contractor has provided timely written notice as required herein, and that the Engineer has found to be excusable. Contractor shall not be entitled to claim Excusable Delay for any delay for which the Contractor failed to provide such timely written notice.

23. EXTENSION OF TIME

If the Contractor complies with Section 22, above, and the Engineer finds a delay claimed by the Contractor to be an Excusable Delay, the Contractor shall be allowed an extension of time to complete the Work that is proportional to the period of Excusable Delay determined by the Engineer, subject to the approval by City of a change order granting such time extension. During a duly authorized extension for an Excusable Delay, City shall not charge liquidated damages against the Contractor for such delay.

If the City extends the time to complete the Work as provided herein, such extension shall in no way release any warranty or guarantee given by Contractor pursuant to the provisions of the Contract Documents, nor shall such extension of time relieve or release the sureties of the Bonds provided pursuant to the Contract Documents. By executing such Bonds, the Sureties shall be deemed to have expressly agreed to any such extension of time. The granting of any extension of time as provided herein shall in no way operate as a waiver on the part of City of its rights under this Contract, excepting only extension of the Completion Date for such period of Excusable Delay as may be determined by the Engineer and approved by a duly authorized change order.

24. NO PAYMENT FOR DELAYS

No damages or compensation of any kind shall be paid to Contractor or any subcontractor because of delays in the progress of the Work whether or not such delays qualify for extension of time under this Agreement; except that this provision shall not preclude the recovery of damages for a delay caused by the City that is unreasonable under the circumstances and that is not within the contemplation of the parties, provided that the

Contractor timely submits all such written notice(s) and fully complies with such other procedures as may be specified in the Contract Documents or any Laws or Regulations for Contractor to claim damages for such delay.

25. CHANGES IN THE WORK

Changes in the Work authorized or directed in accordance with the Contract Documents and extensions of time of completion made necessary by reason thereof shall not in any way release any warranty or guarantee given by Contractor pursuant to the provisions of the Contract Documents, nor shall such changes in the Work relieve or release the Sureties on Bonds provided pursuant to the Contract Documents. By executing such Bonds, the Sureties shall be deemed to have expressly agreed to any such change in Work and to any extension of time made by reason thereof.

26. TERMINATION AFTER COMPLETION DATE

In addition to any other rights City may have, if any services or work required under the Contract (including but not limited to punch list items) are not completed as of the Completion Date (as adjusted by any extensions of time for Excusable Delays granted pursuant to the Contract Documents), City may terminate the Contract at any time after the Completion Date (as adjusted by any extensions of time for Excusable Delays granted pursuant to the Contract Documents), by providing a written notice to Contractor specifying the date of termination. Such notice also may specify conditions or requirements that Contractor must meet to avoid termination of the Contract on such date. If Contractor fails to fulfill all such conditions and requirements by such termination date, or, if no such conditions or requirements are specified, Contractor shall cease rendering services and performing work on such termination date, and shall not be entitled to receive any compensation for services rendered or work performed after such termination date. In the event of such termination, Contractor shall remain liable to City for liquidated damages incurred for any period of time prior to the termination date.

In addition to any other charges, withholdings or deductions authorized under the Contract or any Laws or Regulations, if City terminates the Contract pursuant to this section, City may withhold and deduct from any payment and/or retention funds otherwise due Contractor any sum necessary to pay the City's cost of completing or correcting, or contracting for the completion or correction of, any services or work under the Contract that are not completed to the satisfaction of the City or that otherwise are deficient or require correction as of such termination date, including but not limited to incomplete punch list items. Such costs shall include all of the City's direct and indirect costs incurred to complete or correct such services or work, including the City's administrative and overhead costs. If the amount of payment(s) and/or retention funds otherwise due the Contractor are insufficient to pay such costs, City shall have the right to recover the balance of such costs from the Contractor and/or its Surety(ies).

27. TERMINATION FOR CONVENIENCE

Upon written notice to the Contractor, the City may at any time, without cause and without prejudice to any other right or remedy of the City, elect to terminate the Contract for the convenience of City. In such case, the Contractor shall be paid (without duplication of any items, and after deduction and/or withholding of any amounts authorized to be deducted or withheld by the Contract Documents or any Laws or Regulations):

- A. For Work executed in accordance with the Contract Documents prior to the effective date of termination and determined to be acceptable by the Engineer, including fair and reasonable sums for overhead and profit on such Work;
- B. For reasonable claims, costs, losses, and damages incurred in settlement of terminated contracts with subcontractors, suppliers, and others; and
- C. For reasonable expenses directly attributable to termination.

Contractor shall not be paid for any loss of anticipated profits or revenue for any Work not performed prior to termination, nor for any economic loss arising out of or resulting from such termination, except for the payments listed in this section. Contractor's warranty under Section 14 of this Agreement shall apply, and Contractor shall remain responsible for all obligations related to such warranty, with respect to all portions of the Work performed prior to the effective date of the termination for convenience pursuant to this section. The City shall be entitled to have any or all remaining Work performed by other contractors or by any other means at any time after the effective date of a termination for convenience pursuant to this section.

28. TERMINATION FOR BREACH OF CONTRACT

If Contractor abandons the Work under this Contract, or if the Contract or any portion of the Contract is sublet or assigned without the consent of the City, or if the Engineer determines in the Engineer's sole discretion that the conditions of the Contract in respect to the rate of progress of the Work are not being fulfilled or any part thereof is unnecessarily delayed, or if Contractor violates or breaches, or fails to execute in good faith, any of the terms or conditions of the Contract, or if Contractor refuses or fails to supply enough properly skilled labor or materials or refuses or fails to make prompt payment to subcontractors for material or labor, or if Contractor disregards any Laws or Regulations or proper instruction or orders of the Engineer, then, notwithstanding any provision to the contrary herein, the City may give Contractor and its Sureties written notification to immediately correct the situation or the Contract shall be terminated.

In the event that such notice is given, and, in the event such situation is not corrected, or arrangements for correction satisfactory to the City are not made, within ten (10) calendar days from the date of such notice or within such other period of time as may be specified by the City in the notice, the Contract shall upon the expiration of said period cease and terminate. In the event of any such termination, City may take over the Work and prosecute the Work to completion, or otherwise, and the Contractor and its Sureties shall be liable to City for any cost occasioned City thereby, as hereinafter set forth.

In the event City completes the Work, or causes the Work to be completed, no payment of any kind shall be made to Contractor until the Work is complete. The cost of completing the Work, including but not limited to, extra costs of project administration and management incurred by City, both direct or indirect, shall be deducted from any sum then due, or that becomes due, to Contractor from City. If sums due to Contractor from City are less than the cost of completing the Work, Contractor and its Sureties shall pay City a sum equal to this difference on demand. In the event City completes the Work, and there is a sum remaining due to Contractor after City deducts the costs of completing the Work, then City shall pay such sum to Contractor. The Contractor and Contractor's Sureties shall be jointly and severally liable for all obligations imposed on Contractor hereunder.

No act by City before the Work is finally accepted, including, but not limited to, exercise of other rights under the Contract, actions at law or in equity, extensions of time, payments, assessments of liquidated damages, occupation or acceptance of any part of the Work, waiver of any prior breach of the Contract or failure to take action pursuant to this section upon the happening of any prior default or breach of Contractor, shall be construed to be a waiver or estoppel of the City's right to act pursuant to this Section upon any subsequent event, occurrence or failure by Contractor to fulfill the terms and conditions of the Contract. The rights of City to terminate the Contract pursuant to this Section and pursuant to Sections 26 and 27 are cumulative and are in addition to all other rights of City pursuant to the Contract and at law or in equity.

29. CONTRACTOR BANKRUPT

If Contractor should commence any bankruptcy proceeding, or if Contractor is adjudged a bankrupt, or if Contractor makes any assignment for the benefit of creditors, or if a receiver is appointed on account of Contractor's insolvency, then the City may, without prejudice to any other right or remedy, terminate the Contract and complete the work by giving notice as provided in Section 28 above.

30. SURETIES' OBLIGATIONS UPON TERMINATION

If the City terminates the Contract pursuant to Section 28 or Section 29 above:

- A. The Surety under Contractor's performance bond shall be fully responsible for all of the Contractor's remaining obligations of performance under the Contract as if the Surety were a party to the Contract, including without limitation Contractor's obligations, as provided in the Contract Documents, to complete and provide a one-year warranty of the entire Work, pay liquidated damages and indemnify, defend and hold harmless City, up to the full amount of the performance bond.
- B. The Surety under Contractor's payment bond shall be fully responsible for the performance of all of the Contractor's remaining payment obligations for work, services, equipment or materials performed or provided in connection with the Work or any portion thereof, up to the full amount of the payment bond.

31. ACCOUNTING RECORDS OF CONTRACTOR

During performance of the Contract and for a period of three (3) years after completing the entire Work, Contractor shall maintain all accounting and financial records related to the Contract and performance of the Work in accordance with generally accepted accounting practices, and shall keep and make such records available for inspection and audit by representatives of the City upon reasonable written notice.

32. USE TAX REQUIREMENTS

During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest, agrees as follows:

- A. Use Tax Direct Payment Permit: For all leases and purchases of materials, equipment, supplies, or other tangible personal property used to perform the Agreement and shipped from outside California, the Contractor and any subcontractors leasing or purchasing such materials, equipment, supplies or other tangible personal property shall obtain a Use Tax Direct Payment Permit from the California State Board of Equalization ("SBE") in accordance with the applicable SBE criteria and requirements.
- B. Sellers Permit: For any construction contract and any construction subcontract in the amount of \$5,000,000 or more, Contractor and the subcontractor(s) shall obtain sellers permits from the SBE and shall register the jobsite as the place of business for the purpose of allocating local sales and use tax to the City. Contractor and its subcontractors shall remit the self-accrued use tax to the SBE, and shall provide a copy of each remittance to the City.
- C. The above provisions shall apply in all instances unless prohibited by the funding source for the Agreement.

33. NON-DISCRIMINATION IN EMPLOYEE BENEFITS

This Agreement may be subject to the requirements of Sacramento City Code Chapter 3.54, Non-Discrimination in Employee Benefits by City Contractors. The Contract Documents include a summary of the requirements of Sacramento City Code Chapter 3.54, entitled "Requirements of the Non-Discrimination in Employee Benefits Code." By signing this Agreement, Contractor acknowledges and represents that Contractor has read and understands these requirements and agrees to fully comply with all applicable requirements of Sacramento City Code Chapter 3.54. If requested by City, Contractor agrees to promptly provide such documents and information as may be required by City to verify Contractor's compliance. Any violation by Contractor of Sacramento City Code Chapter 3.54 constitutes a material breach of this Agreement, for which the City may terminate the Agreement and pursue all available legal and equitable remedies.

34. CONSIDERING CRIMINAL CONVICTION INFORMATION IN THE EMPLOYMENT APPLICATION PROCESS

This Agreement may be subject to the requirements of Sacramento City Code Chapter 3.62, Procedures for Considering Criminal Conviction Information in the Employment Application Process. The Contract Documents include a summary of the requirements of Sacramento City Code Chapter 3.62, entitled "Ban-The-Box Requirements." By signing this Agreement, Contractor acknowledges and represents that Contractor has read and


understands these requirements and agrees to fully comply with all applicable requirements of Sacramento City Code Chapter 3.62. If requested by City, Contractor agrees to promptly provide such documents and information as may be required by City to verify Contractor's compliance. Any violation by Contractor of Sacramento City Code Chapter 3.62 constitutes a material breach of this Agreement, for which the City may terminate the Agreement and pursue all available legal and equitable remedies. Contractor agrees to require its subcontractors to fully comply with all applicable requirements of Sacramento City Code Chapter 3.62, and include these requirements in all subcontracts covered by Sacramento City Code Chapter 3.62.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement on the date set for opposite their names.

CONTRACTOR

Under penalty of perjury, I certify that the taxpayer identification number and all other information provided here are correct.

DATE 8/20/2019

BY 
Randolph Pierson

Print Name

Owner

Title

BY _____

Print Name

Title

10000177747

DIR Registration #

47-3077259

Federal ID#

201502710202

State ID#

1036531

City of Sacramento Business Operation Tax Certificate No. (City will not award contract until Certificate Number is obtained)

Type of Business Entity (*check one*):

☒ Individual/Sole Proprietor
☐ Partnership
☐ Corporation
☐ Limited Liability Company
☐ Other (*please specify*: _____)

CITY OF SACRAMENTO

a municipal corporation

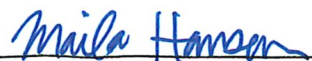
DATE _____

BY _____

For: Howard Chan, City Manager

Original Approved As To Form:

Attest:


City Attorney

City Clerk

STRATUS CONSTRUCTION CO.
4719 Quail Lakes Drive, Suite #245G
Stockton, CA 95207
(209) 406-1502, (209) 242-2279
License #973827 & #1015915
rp@stratusconstructioncompany.com DIR #1000,055,250

K Street Barge Proposal

Stratus Construction Co. will maintain and furnish:
Lead Renovation/Abatement Firm Certification #NAT-F174812-1
2,000,000/5,000,000 limited liability Accord insurance certificate naming the City of Sacramento as additional insured prior to the commencement of construction.

Stratus Construction Co. will maintain and furnish: \$5,000,000.00 Liability coverage on company vehicles and a \$15,000.00 Builder and Tradesman Bond, as well as Workers Compensation \$15,000,000.00 Insurance Certificate #XSL G27398595.

Loud, noisy work to be performed Monday through Friday during the hours of 8:00am to 5:00pm as requested by the Delta King Hotel.

Base Bid Carpentry:

1. Lower deck framing, S-103:

Remove all existing 2"x6" top decking and hardware. Remove all hardware and framework below: stringers, girders sleepers, 2"x12", 4"x12", 2"x6". Dispose in an approved manner.

Install: new framework complete using pressure treated 2"x12", 4"x12" all hardware, bracing and connections as needed to fasten together new framework and to existing barge deck. Install shims and sleepers as need to achieve desired elevation. Brush all pressure treated cut ends with wood preservative.

Install Bedford Technology FiberForce Composite deck net 1 1/2" x 5 1/2" x 20' lengths. Deck to be top screwed with stainless hardware.

Labor: \$132,374.00

Materials, lumber and hardware: \$18,335.00

Materials, tax and freight for plastic lumber: \$45,869.00

Materials and labor total: \$196,578.00

2. Mid ship stairs, 7/S-503, 9/S-503:

Square up and prep all treads to receive the (14) FRP Fibergrate

Composite closed tread covers with contrasting black nosing. Remove 48

sq. ft. of existing 2" x 6" wood decking on landing and replace with Bedford Technology FiberForce Composite deck.

Closed tread/riser covers are \$418.00 each with tax

Labor: \$14,200.00

Materials: \$6,380.00

Materials and labor total: \$20,580.00

Base Bid

Metal work:

3. Handrails, guardrails and panic bar ADA improvements, 6/S-104, 7/S-104, 6/S-503, 12a/S503:

Remove and abate all lead containing coatings in an approved manner pursuant to 40 CFR Part 745.89 at all repair areas needed for renovation.

Make all additions, modifications as described on the plan pages above.

Recoat all repair areas as described in specification 09 9000.

Labor: \$86,600.00

Materials: \$26,640.00

Materials and labor total: \$113,240.00

4. Ramps, Mid Ship and South ramp, 2/S-505, 3/S-505, 3/B-505, 6/S-505, 7/S-505, 8/S-505:

Furnish and install (2) new ramps as described in plan pages above.

All aluminum to have a mill finish with a nonslip surface as indicated.

Labor: \$ 31,094.00

Materials: \$13,000.00

Materials and labor total: \$44,094.00

5. Barge deck plate damage, 1/SR-103 @ \$232.00 per sq. ft.:

Remove and abate all existing lead containing coatings in an approved manner pursuant to 40 CFR Part 745.89 at all repair areas as needed for renovation.

Below deck: Provide make up air, air scrubbers, exhaust fans, fire watch, welding blankets, welding curtains as needed.

Furnish all materials as needed to make all (33) repairs as described in the plan page above. All 1/4" deck repair plates to be hot dip galvanized.

Recoat all weld/repair areas as outlined in project specifications 09 9000.

Labor: \$49,028.00

Materials: \$9,900.00

Materials and labor total: \$58,928.00

6. Cantilever stringer section, A/S-104:
Remove and abate all existing lead containing coatings in an approved manner pursuant to 40 CFR Part 745.89 at all repair areas as needed for renovation.

Furnish and install a total of (24) C8x13.7 posts with base plates. Weld base plates to barge metal deck. Furnish and install a total of (18) C8x13.7 cantilever stringers. Furnish and install (N) C8x18.7 edge beam and all hardware as needed. All above members to receive a hot dip galvanized corrosion resistant coating prior to delivery to the job site. All welds to be treated with a corrosion resistant coating following the welding inspections as outlined in specification 09 9000. All work described is located to the east and north sides of the barge.

Cover plates, 3/SR-501 and 5/SR-501:

Furnish and install (1) cover plate at existing hatch per 3/SR-501.

Furnish and install (7) cover plates at existing hull penetrations per 5/SR-501. Coat all welds after inspections as described in specification 09 900.

Labor: \$137,788.00

Materials: \$47,540.00

Materials and labor total: \$185,328.00

7. Provide all hard containment during all phases, install temporary walls as needed for jobsite safety for demo, construction, welding and lead abatement on the main deck and below deck. Provide all containment as required to prevent debris from entering into the water.

Materials and labor total: \$21,800.00

8. General Conditions, bonds, overhead and profit through the duration of the project. Provide all delivery storage and staging for all bulk materials, decking, lumber, stair treads and metal assemblies throughout the phasing and duration of the project. Working time is 8:00am-4:00pm as a Delta King hotel requirement.

Total: \$158,620.00

9. Install additional (13) C8x13.7 stringers at the Port side of the barge
Install additional (26) C8x13.7 post bases at the Port side of the barge
Install additional (N) C8x18.7 edge beam at the new additional stringers

Materials: \$13,309.00

Labor: \$21,000.00

Materials and labor total: \$34,309.00

10. Remove existing roof, underlayment and fascia from the elevator building. Replace all fascia with Kelleher, Advantage Plus pre primed hemlock fir. Install new underlayment and premium roof material. Roof material to be Owens Corning Woodmoor Extra-Thick wood shake appearance 40 year product. Paint all fascia. Provide all multi floor scaffolding and safety equipment as needed. Dispose of all materials in an approved manner and furnish required disposal documentation.
Scaffolding: \$6,600.00
Materials: \$2,458.00
Labor: \$5,800.00
Materials and labor total: \$14,858.00

11. Metal deck coating: Degrease and pressure wash all metal deck surfaces as outlined by SEM Products Inc manufacturers product submittal specifications. Remove all loose paint and feather all edges. Prime all bare metal surfaces as needed. Exercise all lead based renovation preparation standards as required by the EPA Lead Renovator Rule EPA/RRP 745. These operations include containment, surface preparation, disposal and final clean up of all prepared paint surfaces.
Materials:
SEM Products. Inc. Griptide Non-Skid Marine Deck Coating.
Kleen Strip Bull Dog adhesion promoter and abrasive cleaner.
Materials: \$7,751.00
Labor: \$72,000.00

Metal deck coating, continued:

Materials and labor total: \$79,751.00

Total for lines above #1- #11: \$928,086.00



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
08/21/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Contractors Brokerage Service, Inc 9940 Business Park Dr, Ste 150 Sacramento CA 95827	CONTACT NAME: Sarah Otto	
	PHONE (A/C, No, Ext): 800-750-2663	FAX (A/C, No): 916-914-1313
INSURED STRATUS CONSTRUCTION COMPANY 4719 QUAIL LAKES DR SUITE 245G STOCKTON CA 95207	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	INSURER A: Evanston Insurance Co.	
	INSURER B:	
	INSURER C:	
	INSURER D:	
INSURER E:		
INSURER F:		

COVERAGES

CERTIFICATE NUMBER: 20190821162400847

REVISION NUMBER:

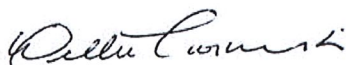
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	Y	Y	3AA323627	02/08/2019	02/08/2020	EACH OCCURRENCE \$ 1,000,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000
							MED EXP (Any one person) \$ 5,000
							PERSONAL & ADV INJURY \$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						PRODUCTS - COMP/OP AGG \$ 2,000,000
	OTHER:						Fire Legal Liability \$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS						\$
	<input type="checkbox"/> NON-OWNED AUTOS ONLY						
A	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR			EZXS005373	02/08/2019	02/08/2020	EACH OCCURRENCE \$ 4,000,000
	EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE						AGGREGATE \$ 4,000,000
	DED <input type="checkbox"/> RETENTION \$						\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/>
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A				E.L. EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$
							E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

City of Sacramento; its officials, agents and employees are named as additional insured with respect to all operations performed for the City of Sacramento by or on behalf of the named insured
RE: 1000 Front Street, Sacramento, CA 95814

CERTIFICATE HOLDER**CANCELLATION**

City of Sacramento Contracts and Labor Compliance 5730 24th Street, Building 4 Sacramento CA 95822	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

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EVANSTON INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BLANKET ADDITIONAL INSURED

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM
LIQUOR LIABILITY COVERAGE FORM
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE FORM
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE FORM

SCHEDULE

Additional Premium: \$ Included (Check box if fully earned. <input checked="" type="checkbox"/>)
--

- A. Who Is An Insured is amended to include as an additional insured any person or entity to whom you are obligated by valid written contract to provide such coverage, but only with respect to negligent acts or omissions of the Named Insured and only with respect to any coverage not otherwise excluded in the policy.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

Our agreement to accept an additional insured provision in a contract is not an acceptance of any other provisions of the contract or the contract in total.

When coverage does not apply for the Named Insured, no coverage or defense will apply for the additional insured.

No coverage applies to such additional insured for injury or damage of any type to any "employee" of the Named Insured or to any obligation of the additional insured to indemnify another because of damages arising out of such injury or damage.

- B. With respect to the insurance afforded to these additional insured, the following is added to limits of insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable limits of insurance shown in the Declarations.

All other terms and conditions remain unchanged.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

- (1) The additional insured is a Named Insured under such other insurance; and

- (2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.



EVANSTON INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BLANKET WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM

SCHEDULE

Name Of Person Or Organization:

Any person(s) or organization(s) with whom the Named Insured agrees, in a written contract executed prior to the "occurrence", to waive rights of recovery

Additional Premium: \$ Included

The following is added to Condition 8. Transfer Of Rights Of Recovery Against Others To Us under Section IV – Commercial General Liability Conditions:

We waive any right of recovery we may have against any person or organization shown in the Schedule of this endorsement. This waiver applies only to the person or organization shown in the Schedule of this endorsement.

All other terms and conditions remain unchanged.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

08/21/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER STATE FARM INSURANCE MICHAEL AFFHOLTER INSURANCE AGENCY 5246 PIRRONE COURT SUITE D SALIDA CA 95368	CONTACT NAME: ANGELA KORAKAS PHONE (A/C, No. Ext): (209)545-6044 FAX (A/C, No.): (209)545-6083 E-MAIL ADDRESS: ANGELA.KORAKAS.SBSE@STATEFARM.COM																					
INSURED PIERSON, RANDOLPH STRATUS CONSTRUCTION CO., LLC 4719 QUAIL LAKES DR STE G245 STOCKTON CA 95207-5267	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A:</td> <td>State Farm Mutual Automobile Insurance Company</td> <td>25178</td> </tr> <tr> <td>INSURER B:</td> <td></td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	State Farm Mutual Automobile Insurance Company	25178	INSURER B:			INSURER C:			INSURER D:			INSURER E:			INSURER F:		
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INSURER C:																						
INSURER D:																						
INSURER E:																						
INSURER F:																						

COVERAGES
CERTIFICATE NUMBER:
REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR VOYD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS								
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMPROP AGG \$ \$								
	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY	Y		351 9769-A13-55	07/13/2019	01/13/2020	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$								
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED \$ RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$								
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>PER STATUTE</th> <th>OTH-ER</th> </tr> <tr> <td>E.L. EACH ACCIDENT</td> <td>\$</td> </tr> <tr> <td>E.L. DISEASE - EA EMPLOYEE</td> <td>\$</td> </tr> <tr> <td>E.L. DISEASE - POLICY LIMIT</td> <td>\$</td> </tr> </table>	PER STATUTE	OTH-ER	E.L. EACH ACCIDENT	\$	E.L. DISEASE - EA EMPLOYEE	\$	E.L. DISEASE - POLICY LIMIT	\$
PER STATUTE	OTH-ER														
E.L. EACH ACCIDENT	\$														
E.L. DISEASE - EA EMPLOYEE	\$														
E.L. DISEASE - POLICY LIMIT	\$														

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER
CANCELLATION

City of Sacramento Contracts and Labor Compliance 5730 24th Street, Building 4 Sacramento CA 95822	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
---	--

GUARANTEE


We hereby guarantee the: **OLD SACRAMENTO K STREET BARGE RENOVATION PHASE 2
(C13000429)**

City of Sacramento for one (1) year in accordance with the guarantee required in the specifications. We agree to repair or replace any or all such work, together with all or any other work which may be displaced in so doing, that may be proven defective in workmanship or material within the one-year period from the date of acceptance without any expense whatsoever to the City, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above-mentioned conditions within five (5) days time after being notified in writing, we collectively or separately, do hereby authorize the City to proceed to have the defects repaired and made good at our expense and will pay the costs and damages, including but not limited to any related attorney fees and City staff and administrative expenses, therefore immediately upon demand.

Dated: 8/20/2019

Signed:



RANDOLPH PIERSON

Printed Name

STRATUS CONSTRUCTION Co.

Company

4719 QUAIL LAKES DR # G245

Address

STOCKTON, CA 95207

WORKER'S COMPENSATION CERTIFICATION

In accordance with Article 5 (commencing at Section 1860), Chapter 1, Part 7, Division 2 of the Labor Code, the below certificate must be signed and filed with the awarding body prior to performing any work under this contract. Labor Code Section 3700, inter alia, states the following:

"Every employer shall secure the payment of compensation in one or more of the following ways:

"(a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this State.

"(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees.

To be signed by authorized corporate officer or partner or individual submitting the Proposal. If Bidder is: (example)

1. An individual using a firm name, sign: "John Doe, an individual doing business as Blank Company."
2. An individual doing business under his own name, Sign: your name only.
3. A co-partnership, sign: "John Doe and Richard Doe, co-partners doing business as Blank Company, by, John Doe, co-partner.
4. A corporation, sign: "Blank Company, by John Doe, Secretary." (or other title)

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

DATE:

8/20/2019

Contractor

RANDOLPH PIERSON

By



Signature

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 SUMMARY OF WORK:

- A. Work comprises the Barge repair & renovation and access compliance corrections for the City of Sacramento as described in these documents.
- B. The Project is located in the City of Sacramento at:

1000 Front Street, Sacramento, Ca, on the waterfront west of K Street.
 - 1. The work consists of providing labor, materials, equipment, services, and administration required in conjunction with or incidental to the Project.
- C. The term "NIC" shall be construed to mean that construction work is not to be furnished, installed or performed by Contractor. The term shall mean "Not in this Contract"

1.03 CONSTRUCTION CONTRACT:

- A. Construct project under **single lump sum contract with Alternate and Unit Pricing.**

1.04 CONSTRUCTION SEQUENCE:

- A. Contractor shall be responsible for sequencing of construction as shown in their approved Project Schedule. Contractor shall notify Owner (7) days in advance of any operations that may affect the owner's use of adjacent property and (14) days in advance of any construction work that affects the utilities of adjacent buildings on the site.

1.05 WORK RESTRICTIONS / STAGING:

- A. Due to the sensitive nature of the existing use of the site, the Contractor shall have the full use of the contract area during the construction period, except the areas coordinated during the pre-construction conference.
 - 1. **J & Front Street is the primary entrance to the Project site**
 - 2. Use of premises for work, storage and vehicular parking is limited to areas designated by City.
- B. Contractor shall assume responsibility for protection and safekeeping of the products stored on the site under this contract.
- C. This Contractor shall move stored products which interfere with any Owner operations, other Owner Contractors, or Owner access.
- D. Contractor shall conduct operations to ensure least inconvenience to public and occupied areas of the site.
- E. This Contractor shall obtain and pay for the use of additional storage or staging areas needed for operations.
- F. Do not load structure with weight that would jeopardize its safety.
- G. Should it be necessary to use portions of existing streets, sidewalks or right of ways for operations, this Contractor shall obtain approval and pay for the use of such areas in accordance with requirements of the authorities having jurisdiction.

1.06 SURROUNDING SITE CONDITION SURVEY

- A. Prior to commencement of Work, Contractor and City shall jointly survey the site and existing buildings, paving, plant life, and other items, noting and recording existing damage such as cracks, sags, loose materials and other existing damage.

- B. This record shall serve as a basis for determination of subsequent damage to these items due to settlement or movement due to demolition and construction operations.
- C. Such damage, as noted, shall be suitably marked on the item, if possible, and the official record of existing damage shall be signed by the parties making the survey.
- D. Cracks, sags or other damage to the site and adjacent buildings, paving and other items not noted in the original survey but subsequently observed shall be reported immediately

1.07 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Drawings show all known existing above and below grade structures; drainage lines; storm drains; sewers; water, gas, electrical and hot water lines; and other similar installations which are known to exist in the area of the Work.
- B. Locate these known existing installations before proceeding with excavation or other operations which may damage same; maintain them in service unless directed otherwise by the City; and repair damage to them caused by the performance of the work, at no increase in the Agreement Price.
- C. In addition to reporting, if a structure or utility is damaged, Contractor shall take appropriate action as provided in the Contract Documents.

1.08 OCCUPANCY OF THE WORK PRIOR TO FINAL ACCEPTANCE

- A. The City may use and occupy the building portion of the Work before formal acceptance under the following conditions:
 - 1. A Certificate of Substantial Completion will be prepared and executed as provided in the Contract Documents. The Certificate of Substantial Completion shall be accompanied by a written endorsement of the Contractor's insurance carrier and surety permitting occupancy by City during the remaining period of the work.
 - 2. Occupancy by City shall not be construed as being an acceptance of that part of the work to be occupied.
 - 3. Contractor will not be held responsible for any damage to the occupied part of the Work resulting from the City's occupancy.

4. Occupancy by the City shall not be deemed to constitute a waiver of existing claims in behalf of the City or Contractor against each other.
5. If required by the City for areas it has beneficially occupied, the Contractor shall make available, on a 24-hour-a-day, 7-day-a-week basis, utility services, heating, and cooling as are in condition to be put in operation when such beneficial use and occupancy occurs. The Contractor shall be responsible for the operation and maintenance of such equipment while it is so operated until the Work is completed in the occupied areas, at which time operation and maintenance of such equipment shall be assumed by the City.
6. Make an itemized list of each piece of equipment operated during beneficial occupancy, with the date operation commences. This list shall be the basis for the commencement of guarantee periods on the equipment being operated for the benefit of the City's occupancy.
7. The City will pay for the utility costs associated with its occupancy of portions of the work during construction.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01010

SECTION 01025

PAYMENTS & MEASUREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 SCHEDULE OF VALUES

- A. Type Schedule on form contained in the Contract Documents. Contractor's standard forms and automated printout will be considered for approval upon request. Identify schedule with: Project name and location, Contractor's name and address, all subcontractor's name, address and type of Work along with Submission date.
 - 1. List the installed value of the component parts of the Work broken down into sufficient detail to serve as a basis for computing values for progress payments during the performance of the Work. For example, in the case of drywall Work, identify components such as wallboard, accessories, taping and finishing.
 - 2. Follow the Specifications table of contents as the format for listing component items; identify each line item with the number and title of the respective Specification Section.
 - 3. For each major line item, list sub-values of products or operations.
 - 4. For the various portions of the Work:
 - a. Include a separate line item for the amount of overhead and profit drawn.
 - b. For portions of Work in excess of ten thousand dollars (\$5,000) in cost, separately identify labor and material costs.
 - 5. The sum of values listed in the Schedule of Values shall equal the total Construction Contract Sum. Design costs are to be identified separately.

1.02 APPLICATIONS FOR PAYMENT

- A. General: Submit Applications for Payment to the Architect in accordance with the schedule established by the Contract Documents.
- B. Submit itemized applications on form contained in Contract Documents.
 - 1. Line items and dollar values shall be from the approved schedule of values.
 - 2. Include names, trades, and amounts for Subcontractors.
 - 3. Overhead and profit shall be a line item each month for Contractor and Sub-contractors.
- C. Preparation of Application for Each Progress Payment:
 - 1. On application form, fill in:
 - a. Required information, including Change Orders executed prior to application.
 - b. Summary of dollar values agreeing with the totals indicated on the Continuation Sheets.
 - c. Certify with the signature of an authorized agent of the Contractor's firm.
 - 2. Continuation Sheets:
 - a. Fill in total list of scheduled component items of Work with item number and the scheduled dollar value for each item.
 - b. Fill in the dollar value in each column for each scheduled line item when Work has been performed or products stored as approved. Round off values to nearest dollar, unless otherwise specified for the schedule of values.
 - c. List each Change Order executed prior to the date of submission at the end of the Continuation Sheets. List by Change Order Number, description, and breakdown of costs as for an original component item of Work.
- D. Substantiating Data for Progress Payments:
 - 1. When substantiating data are required, submit suitable information as specified in SECTION 01300 - SUBMITTALS with a cover letter identifying:
 - a. Project Name and Number.

- b. Application number and date.
- c. Detailed list of enclosures.
- d. For approved stored materials:
 - 1) Item number and identification as shown on application.
 - 2) Address of warehouse facility and copy of insurance documents for said facility.
 - 3) Description of specific material.

E. Preparation of Application for Final Payment:

- 1. Fill in application form as specified for progress payments.
- 2. Use Continuation Sheets for presenting the final statement of accounting.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01025

SECTION 01030

ALTERNATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 REQUIREMENTS:

- A. Definition: An Alternate is defined as a portion of the work, which is priced separately, to be included in the Work at the Owners option.
- B. This section defines each Alternate by number and describes the basic changes to be incorporated into the work, only when that alternate is made a part of the work by stipulated provisions in the owner Contractor agreement.
- C. Coordination:
 - 1. Include as a part of each alternate, devices, appurtenances, accessories and similar items incidental to or necessary for complete installation.
 - 2. Coordinate alternate with adjacent work and modify or adjust as necessary as approved by the architect, to ensure full integration.
- D. In addition to the Base Bid as provided on the Bid Form, the Contractor (Bidder) shall quote alternate prices in the blank spaces provided on the Bid Form under Alternate Bids.
- E. The Additive Alternate Bids increase the Scope of Work as defined by the Base Bid and represent additions to the amount of the Base Bid.
- F. The Deductive Alternate Bids decrease the Scope of Work as defined by the Base Bid and represent deductions to the amount of the Base Bid.

1.02 ALTERNATES:

- a. ALTERNATE 1 = FIBERGRATE DYNAPLANK DECKING – LUMP SUM
- b. ALTERNATE 2 = Metal Roof Under Stairs – LUMP SUM
- c. ALTERNATE 3 = GANGWAY- REPAIR TRANSITION AT FLOOD WALL, SERVICE ROLLERS AND HINGES, SERVICE HOIST ON NORTH GANGWAY
- d. ALTERANTE 4= Barge Keel Protective Coating – LUMP SUM
- e. ALTERNATE 5 = STEAMERS PLATFORM – LUMP SUM

1.03 ALTERNATES:

- a. UNIT PRICE 1 = ADD PRICE FOR PLASTIC LUMBER DECKING & INSTALL
- b. UNIT PRICE 2 = ADD PRICE FOR FIBERGRATE DYNAPLANK DECKING & INSTALL
- c. UNIT PRICE 3 = ADD PRICE FOR JOIST REPLACEMENT
- d. UNIT PRICE 4 = ADD PRICE FOR BEAM REPLACEMENT

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01030

SECTION 01035

MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
 - 1. Provide full written data required to evaluate changes.
 - 2. Maintain detailed records of work done on a time-and-material/force account basis, submitted to the City on a daily basis.
 - 3. Provide full documentation to City on request.
- B. Designate in writing the member of Contractor's organization:
 - 1. Who is authorized to accept changes in the Work.
 - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. City Project Manager is the person who is authorized to execute Change Orders.

1.02 RELATED REQUIREMENTS

- A. Agreement: The amounts of established unit prices.
- B. Section 01025: Payments & Measurements.
- C. Section 01311: Bar Chart.
- D. Section 01605: Substitution Request Form.

1.03 DEFINITIONS

- A. Construction Change Authorization: A written order to the Contractor, signed by City, which amends the Contract Documents as described, and authorizes Contractor to proceed with a change which affects the Agreement Sum and/or the Agreement Time, for inclusion in a subsequent Change Order.
- B. Supplemental Instructions: A written order, instructions, or interpretations, signed by City making minor changes in the Work not involving a change in Agreement Sum or Agreement Time.

1.04 PRELIMINARY PROCEDURES

- A. City may initiate changes by submitting a Proposed Change Order (PCO) to Contractor which may include:
 - 1. Detailed description of the Change, Products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. A specific statement as to whether overtime work is, or is not, authorized.
 - 4. A specific period of time during which the requested price will be considered valid.
 - 5. Such request(s) are for information only, and **are not an instruction to execute the changes**, nor to stop Work in progress.
- B. Contractor may initiate changes by submitting a written notice to City, containing:
 - 1. Description of the Request For Change (RFC).
 - 2. Statement of the reason for making the changes.
 - 3. Statement of the effect on the Agreement Sum and/or the Agreement Time.
 - 4. Statement of the effect on the work of separate contractors.

Documentation supporting any change in Agreement Sum or Agreement Time, as appropriate.

Copy of the Change Order Proposal Summary form.

1.05 CONSTRUCTION CHANGE AUTHORIZATION

- A. In lieu of a PCO, City may issue a construction change authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Agreement Sum and any change in Agreement Time.
- C. City will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor will sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow City to evaluate the quotation.
- B. On request provide additional data to support time and cost computations:
 - 1. Labor required.

2. Equipment required.
 3. Products required.
 - a. Recommended source of purchase and unit cost.
 - b. Quantities required.
 4. Taxes, insurance and bonds.
 5. Credit for work deleted from Agreement, similarly documented.
 6. Justification for any change in Agreement Time.
- C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information:
1. Name of the City's authorized agent who ordered the work, and date of the order.
 2. Dates and times work was performed, and by whom.
 3. Time record, summary of hours worked, and hourly rates paid.
 4. Receipts and invoices for:
 - a. Equipment used, listing dates and times of use.
 - b. Products used, listing of quantities.
 - c. Subcontracts.
- D. Document requests for substitutions for Products as specified in Section 01600.
- E. Include a copy of the Change Order Proposal Summary – EZ-PCO” for each separate proposal.

1.07 PREPARATION OF CHANGE ORDERS

- A. City will prepare each Change Order.
- B. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Agreement Sum and in the Agreement Time.

1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 1. PCO and Contractor's responsive Proposal as mutually agreed between City and Contractor.
 2. RFC as accepted by City.

3. Construction Change Authorization with supporting documentation.
- B. Contractor will sign and date the Change Order to indicate agreement with the terms therein.
- C. City will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

1.09 UNIT PRICE CHANGE ORDER

- A. The amounts of the unit prices to be:
 1. Those stated in the Agreement.
 2. Those mutually agreed upon between City and Contractor.
- B. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
 1. City will sign and date the Construction Change Authorization as authorization for Contractor to proceed with the changes.
 2. Contractor will sign and date the Construction Change Authroization to indicate agreement with the terms therein.
- C. When quantities of the items cannot be determined prior to start of the work:
 1. City will issue a Construction Change Authorization directing Contractor to proceed with the change on the basis of unit prices and will cite the applicable unit prices.
 2. At completion of the change, City will determine the cost of such work based on the unit prices and quantities used.
 - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Agreement Time.
 3. City and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.
 4. City will sign and date the Change Order to establish the change in Agreement Sum and in Agreement Time.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

- A. City will issue a Construction Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the "Documentation of Proposals and Claims" of this Section.
- C. City will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. City and Contractor will sign and date the Change Order to indicate their agreement therewith.

- E. City will sign and date the Change Order to establish the change in Agreement Sum and in Agreement Time.

1. 11 CORRELATION WITH CONTRACTOR' S SUBMITTALS

- A. Revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Agreement Sum.
- B. Revise the Construction Schedule to reflect each change in Agreement Time.
 - 1. Revise schedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

1.12 CHANGE ORDER PROPOSAL SUMMARY - EZ-PCO

- A. Whenever a change, modification or alteration is being evaluated by the City ,requiring a change in cost, the contractor shall prepare a copy of the "Change Order Proposal Summary – EZ-PCO" for each unique change, modification or alteration.
- B. Compensation for markups shall be limited to the application of percentages outlined in the "Instructions – Change Order Proposal Summary - EZ-PCO".

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

----- END OF SECTION ----



DEPARTMENT OF
GENERAL SERVICES

FACILITY DEVELOPMENT

CITY OF SACRAMENTO
CALIFORNIA

5730 – 24TH STREET
BUILDING ONE
SACRAMENTO, CA
95822-3699
PH: 916-808-1888

CHANGE ORDER REQUEST / PROPOSAL

TO: _____

ATTENTION:

SUBJECT:

**CHANGE ORDER
REQUESTED BY:**

- ☐ Owner
☐ Architect
☐ Engineer
☐ Contractor
☐ Inspector
☐

The following items, transmitted herewith, are subject to all provisions of the plans, specifications and addenda:

- ☐ Submit cost and time change date for approval prior to proceeding with the work.
- ☐ Your proposal is approved. A change order will be issued for the agreed to sum.
- ☐ Your proposal is rejected. Please proceed with the work on a Time and Material basis, and a change order will be issued upon verification of completed work.
- ☐ Your proposal is rejected.

DESCRIPTION: _____

COPIES	DATE	NO.	DESCRIPTION
cc: <input type="checkbox"/> Consultant			Initiated By: _____
<input type="checkbox"/> Inspector			Title: _____
<input type="checkbox"/> File			Date: _____

Is:

(Modification Procedures)

Change Order Proposal Summary - EZ-PCO

1.	Labor	_____	
2.	Materials	_____	
3.	Equipment	_____	
4.	Subtotal	_____	_____
5.	Subcontract Cost	a _____	
		b _____	
		c _____	
		d _____	
		e _____	
6.	Subtotal Subcontractors	_____	_____
7.	Markup on Proposer's Costs		
	If Line 4 is >0, enter (0.25 x Line 4)	_____	
	If Line 4 is <0, enter (0.15 x Line 4) as a credit	_____	
8.	Markup on Sub Cost (Prime Only)		
	If Line 6 is >0, enter (0.05 x Line 6)	_____	
	If Line 6 is <0, enter \$0		
	If subcontractor summary, enter \$0		
9.	Total Proposal		\$ _____
	Line 4 + line 6 + line 7 + line 8.		
10.	Proposed Time Extension (Prime Only)	_____	days
	(If schedule analysis and justification is not attached, enter zero.)		

Project Number _____ Date _____

Company _____ PCO# _____

Summary For: Contractor _____

Subcontractor _____

Is:

Attach supporting documents with detailed cost breakdowns. Attach this form to each subcontractor proposal.

Instructions - Change Order Proposal Summary - EZ-PCO

Contractor shall complete and attach this form as a cover sheet for each price proposal for the prime contractor and for subcontractor proposals at any tier forming a part of the prime proposal.

Lines 1, 2, and 3. Authorized allowable labor, materials, and equipment by the firm performing the work and proposing the costs, whether prime or subcontractor. Include only costs directly and solely attributable to work described in the PCO. Do not include the types of cost listed as "indirect/overhead" below. See GC Section 7.6 through 7.8.

Line 5. Authorized allowable costs proposed by subcontractors at the next lower tier. See GC Section 7.9.

Line 7. For added work, see GC Section 7.10.1 A credit of 15% for markup is applied to net credit costs at the contractor or subcontractor tier at which the costs occur, see GC Section 7.10.3.

Line 8. The aggregate of markups made at subcontract tiers shall not exceed 25%. See GC Section 7.9. No markup for intermediate subcontractors. See GC Section 7.10.2.

Do Not Include indirect and overhead costs in lines 1 through 4. The following list is not inclusive and serves only to present examples of the types of costs, which are included in allowable markups:

Salaries and Benefits

Principal Officer, Project Manager, Superintendent, General Foreman, Quality Control Representative, Estimator, Negotiator, Office Manager, Clerical, Receptionist.

Facilities

Office rental/depreciation: Storage trailer, Warehouse, Shops, Toilets, Washrooms, Yard, Temporary electric panel and circuits, Temporary lighting, Temporary plumbing & drainage, Transportation, connection, setup, installation, and removal charges, Cost of Facilities Capital.

Utility Expense

Electricity, gas, water, telephone, Janitorial, Trash removal and dump fees, Sanitary pump out.

Office Equipment & Vehicles

Personnel transport vehicle (car, pickup), General delivery vehicle, Company car, Yard equipment and machinery: Depreciation, Fuel, oil, filters, tires, maintenance, repairs; Storage Bins, Dumpsters Computer, Fax machine, Refrigerator, Coffee machine, Audio and video recorders, Cameras, Shoring.

Office Furnishings

Desks, tables, chairs, lamps, file cabinets, credenzas, bookcases, carpeting, draperies, dividers.

Small Tools

Shovels, pry bars, hammers, nail gun, screw gun, Hilti, skillsaw, cutoff saw, hacksaw, pliers, snips, torches, hand drills, come-alongs, wrenches, calk guns, tape measures, levels, chalk lines, conduit bender, fish tape, water hose, etc.

Consumables

Paper, pens, pencils, office supplies, reusable lumber and form materials, tarpaulins, drinking cups, and toilet paper.

Safety Equipment

Ear protection, goggles, respirators, safety belts, first aid supplies, fire extinguishers.

Material Delivery, Offloading, and Handling Expense

General Office Expense

Bid preparation, Payment and performance bonds, Estimating, Planning, Marketing, Public relations, Entertainment, Safety and Security, Professional, Business, Contractor's license fees, Employee recruitment, termination, transportation, and relocation, Professional service fees, legal fees, court costs, litigation, arbitration. Idle facilities and capacity, Losses on contracts, Security, Transportation costs, Contributions and donations, General coverage, liability Insurance, Project general coverage insurance, Corporate Income Taxes, Stock and Bond dividends, Debt principal and interest payments; Jobsite cleanup, Mobilization and demobilization.

Change Order Administrative Expense

Takeoff & estimate, Proposal preparation & transmittal, Negotiation, Distribution, General supervision, Billing, Quality Control, Schedule update, As-Built update, Bond and Insurance Adjustment.

SECTION 01040

COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Condition, and Division 1 Specification Sections apply to this Section.

1.02 SUMMARY

- A. Coordinate the Work; do not delegate the responsibility for coordination to any Subcontractor.
- B. This Contractor shall resolve differences or disputes concerning coordination, interference, or extent of Work of the various sections, and trades.

1.03 COORDINATION

- A. Coordinate scheduling, submittals and Work of the various Specification Sections to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Coordinate completion and clean up of all Work in preparation for Substantial Completion.
- C. Coordinate access to site for correction of defective Work and Work not in accordance with the Contract Documents to minimize disruption of Owner's activities.

1.04 ELECTRICAL AND MECHANICAL COORDINATION

- A. Verify that utility requirement characteristics of operating equipment are compatible with proposed building utilities. Coordinate work of all Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- B. Coordinate space requirements and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.
- C. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. This includes identified "Conduit or Pipe

Runs for Future Equipment". Coordinate locations of fixtures and outlets with finish elements.

1.04 COORDINATION DRAWINGS

- A. Prepare coordination drawings, if required, and submit prints of the drawings before beginning fabrication or delivery of materials to the Project site. The prints will not be reviewed or approved, but will be received as an indication that the Contractor has performed coordination functions.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01040

SECTION 01044

CONTRACTOR'S REQUESTS FOR INFORMATION / INTERPRETATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION

- A. Section Includes: Administrative requirements for requests for information / interpretation.

1.03 DEFINITIONS

- A. Request For Information / Interpretation (RFI):
 - 1. A document submitted through Construction Manager requesting clarification of a portion of the Contract Documents, hereinafter referred to as RFI.
 - 2. A properly prepared request for information / interpretation shall include a detailed written statement that indicates the specific Drawing(s) or Specification(s) in need of clarification and the nature of the clarification requested.
 - a. Drawings shall be identified by Drawing number and location on the Drawing sheet.
 - b. Specifications shall be identified by Section number, page and paragraph.
 - c. Requests for Information: Request made by Contractor concerning information not indicated on Drawings nor contained in Project Manual that is required to properly perform the work.
 - d. Requests for Interpretation: Request made by Contractor in accordance with the Contract for construction.
- B. Improper RFI's:
 - 1. RFI's that are not properly prepared.
 - 2. Improper RFI's will be rejected by the Architect. The Contractor will be notified by the Architect upon rejection of improper RFI's.

SECTION 01045

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 DESCRIPTION:

- A. Work Included: This Section establishes general requirements pertaining to cutting, fitting, and patching of the work required to:
 - 1. Make the several parts fit properly.
 - 2. Uncover work to provide for installation, inspection, or both of ill-timed work.
 - 3. Remove and replace work not conforming to requirements of the Contract Documents.
 - 4. Remove and replace defective work.

1.03 QUALITY ASSURANCE

- A. Perform all cutting and patching in accordance with pertinent requirements of the specifications and in the event no such requirements are determined, in conformance with the Architect's written direction.
- B. In all cases, exercise extreme care in cutting operations and perform such operations under adequate supervision by competent mechanics skilled in the applicable trade. Openings shall be neatly cut and shall be kept as small as possible to avoid unnecessary damage. Careless and/or avoidable cutting damage, etc., will not be tolerated, and the Contractor will be held responsible for such avoidable or willful damage.
- C. All replacing, patching, and repairing of materials and surfaces cut or damaged in the execution of the work shall be performed by experienced mechanics of the several trades involved. Such replacing, repairing, and/or patching shall be done with the applicable materials, in such a manner that all surfaces so replaced, etc., will upon completion of the work, match the surrounding similar surfaces.

1.04 SUBMITTALS

- A. Request for the Architect's Consent:
 - 1. Prior to cutting which affects structural safety, submit a written request to the Architect for permission to proceed with cutting.
 - 2. Should conditions of the work, or schedule, indicate a required change of materials or methods for cutting and patching, notify the Architect and secure his written permission prior to proceeding.
- B. Notices to the Architect:
 - 1. Submit written notice to the Architect designating the time the work will be uncovered, therefore providing a time for the Architect's observation.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. For replacement of work removed, use materials which comply with each pertinent Section of these specifications.

PART 3 - EXECUTION

3.01 CONDITIONS

- A. Inspect existing conditions, including elements subject to movement or damage during cutting and patching.
- B. After uncovering the work, inspect conditions affecting installation of new work.

3.02 DISCREPANCIES

- A. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions.
- B. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.
- C. Provide all required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the work.
- D. Beginning of cutting or patching means acceptance of existing conditions.

3.03 PREPARATION

- A. Provide temporary supports to ensure structural integrity of existing material. Provide devices and methods to protect other portions of Facility from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work.

3.04 PERFORMANCE

- A. Perform cutting and demolition by methods which will prevent damage to other portions of the work and will provide a proper surface to receive new installation or repair and new work. Perform fitting and adjustment of products to provide finished installation complying with the specified tolerance and finishes.

END OF SECTION 01045

SECTION 01048

ELECTRONIC DRAWINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including Conditions of the Contract and Division 1 Specifications, apply to this Section.

1.02 SUMMARY

- A. The Architect, if requested, will provide the Contractor with one electronic copy of the Contract Document Drawings for distribution to subcontractors and suppliers as a convenience in the preparation of Shop Drawings and Site Work. The electronic copy will be provided on a compact disk in AutoCad 2005 format.
- B. The Architect shall be paid a service fee of \$100.00 in accordance with the Agreement. This fee shall be paid by the Contractor immediately upon acceptance of the CD.
- C. A signed and fully completed agreement must be submitted to formally request any electronic files.
 - 1. No additional fee's are required if a contractor shares those files with sub-contractors/vendors, however signed agreements for the release of those files must be received by the architect prior to their release.

1.03 REFERENCES

- A. A copy of the Agreement is included at the end of this Section.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01048

**AN AGREEMENT BETWEEN ARCHITECT-ENGINEER OF RECORD AND
CONTRACTOR FOR TRANSFER OF COMPUTER AIDED DRAFTING (CAD) FILES
ON ELECTRONIC MEDIA**

Architect of Record _____ Contractor _____

City Project No. _____ Date: _____

Project Name: _____

Location: _____

The Architect will provide the following CAD files, dated _____, for the convenience of the contractor in preparing shop fabrication drawings:

Drawings were prepared on the following:

Computer Software: AutoCad Version: 2005 or later

Contractor shall pay Architect a service fee of _____ (\$ _____)

TERMS AND CONDITIONS:

1. Architect makes no representation as to the compatibility of the CAD files with any hardware or software.
2. Since the information set forth on the CAD files can be modified unintentionally or otherwise, the Architect reserves the right to remove all indicia of its ownership and/or involvement from each electronic display. This media should not be considered a certified document.
3. All information on the CAD files is considered instruments of service of the AER and shall not be used for other projects, for additions to this project, or completion of this project by others. CAD files shall remain the property of the Architect, and in no case shall the transfer of these files be considered a sale.

4. Architect makes no representation regarding the accuracy, completeness, or permanence of CAD files, nor for their merchantability or fitness for a particular purpose. Addenda information or revisions made after the date indicated on the CAD files may not have been incorporated. In the event of a conflict between the Architect's sealed Contract Drawings and CAD files, the sealed Contract Drawings shall govern. It is the Contractor's responsibility to determine if any conflicts exist. The CAD files shall not be considered to be Contract Documents as defined by the General Conditions of the Contract for Construction.
5. The use of CAD files prepared by the Architect shall not in any way obviate the Contractor's responsibility for the proper checking and coordination of dimensions, details, member sizes and gage, and quantities of materials as required to facilitate complete and accurate fabrication and erection.
6. The Contractor shall, to the fullest extent permitted by law, indemnify, defend and hold harmless the Architect, and its subconsultants from all claims, damages, losses, expenses, penalties and liabilities of any kind, including attorney's fees, arising out of or resulting from the use of the CAD files by the Contractor, or by third party recipients of the CAD files from the Contractor.
7. The Architect believes that no licensing or copyright fees are due to others on account of the transfer of the CAD files, but to the extent any are, the Contractor will pay the appropriate fees and hold the Architect harmless from such claims.
8. Any purchase order number provided by the Contractor is for Contractor's accounting purposes only. Purchase order terms and conditions are void and are not a part of this Agreement.
9. Payment of the service fee is due upon receipt of the CAD files.
10. This Agreement shall be governed by the laws of the principal place of business of the Architect.

AUTHORIZED ACCEPTANCE

by Architect of Record

by Contractor

Signature

Signature

Print Name and Title

Print Name and Title

Date

Date

SECTION 01049

SUPPORTING FROM STRUCTURE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 DESCRIPTION:

A. Work Included:

1. This section provides guidelines and limitations for supporting all mechanical, electrical, plumbing or architectural items from the building structure, and for seismic bracing for all such items.
2. Design and install all support and bracing systems except as noted. Provide for attachment to portions of the building structure capable of bearing the loads imposed. Designed systems shall not overstress the building structure.
3. All art supported from the structure shall be reviewed by the design structural engineer for loads applied to verify structure can sustain it. The structure shall be re-sized and re-calculated by the design structural engineer as required to provide the necessary support, and contractor shall be paid for impacts to project costs and schedule if required.

B. Work Not Included:

1. The Contractor is not required to design support and bracing for items for which the contract documents provide specific attachment, support, and bracing. Seismic bracing is not required for the following items:
 - a. Gas piping less than 1 inch inside diameter.
 - b. Piping for boilers and mechanical equipment less than 1.25 inches inside diameter.
 - c. All other piping less than 2.5 inches inside diameter, unless racked together.
 - d. All piping and duct suspended by individual hangers 12 inches or less in length.

- e. All rectangular air handling ducts less than 6 square feet in cross sectional area.
- f. All round air handling ducts less than 28 inches in diameter.
- g. All electrical conduits less than 2.5 inches inside diameter, unless racked together.

1.03 RELATED WORK (See also Table of Contents)

- A. Structural Steel: Section 05120.
- B. Metal Fabrications: Section 05500.
- C. Information relating solely to mechanical or electrical work is included under those divisions, except as specifically indicated herein.

1.04 QUALITY ASSURANCE

- A. General:
 - 1. Design and install all support systems to comply with the requirements of the 2001 California Building Code Chapter 16.
 - 2. For seismic bracing design engage the services of a structural engineer licensed in California.
 - 3. For guidelines regarding seismic bracing for mechanical, electrical and plumbing systems, refer to the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), "Guidelines for Seismic Restraints of Mechanical Systems and Plumbing Piping Systems".
- B. Standards and References: (Latest Edition unless specified otherwise)
 - 1. The General Conditions, Supplementary Conditions, and applicable portions of Division 1 apply to the work of this Section as if printed herein.
 - 2. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date of Notice to Proceed with the Work given.
- C. Submittals: (submit under provisions of Section 01300):
 - 1. Submit shop drawings for all substructures and attachment methods.

2. Submit proposed alternative methods of attachment for review by the Architect, prior to deviating from the requirements given below.
3. For all seismic bracing systems, submit structural calculations and details prepared and signed by the Contractor's licensed engineer which include all resultant forces applied to the building structure. Do not overstress building structure. Calculations will be reviewed for compliance with design criteria, not for arithmetic.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Furnish all substructures and fasteners required to comply with the limitations given below. Use materials as specified in the various sections and as appropriate to the use.
- B. All exterior materials: hot dipped galvanized or stainless steel.

PART 3 - EXECUTION

3.01 GUIDELINES AND LIMITATIONS

- A. The General Contractor shall coordinate the load requirements from all subcontractors so that no combination of loads exceeds the limitations given below without written approval.
- B. Maximum Loading: Attach no loads greater than the following without specific approval of the Structural Engineer.
 1. Metal deck without concrete fill - acoustical tile and gypsum board ceilings only; no piping, ducting or conduit. Maximum ceiling weight - 3.5 psf. Maximum wire hanger load = 60#.
 2. Metal deck with concrete fill - ceilings as indicated for metal deck without concrete fill above, plus electrical conduits, gas piping and ducting not exceeding 3.0 psf. Maximum point load from trapeze = 200 lbs. at 8'-0" cc each way. Mechanical units hung from concrete filled deck shall not exceed 500 lbs.
 3. Steel beams and girders: water and gas piping, electrical conduits, ducting and trapeze of same not to exceed 3.0 psf. Maximum load on a single span = 600#. Mechanical units hung from beams shall not exceed 1000# unless specifically indicated on structural plans.

4. Cast-In-Place concrete slabs - ceilings, piping, conduit and ducts shall not exceed 10 psf. Maximum hanger load 600#. Mechanical units hung from slabs shall not exceed 800#.
5. Wood sawn joists - loads from ceilings, piping, conduit and ducting shall not exceed 5.0 psf. Maximum concentrated load = 300 lbs. per joist.
6. Steel Joists - Loads from ceiling, piping, conduit and ducting shall not exceed 8 psf. Maximum concentrated load = 500 lbs. per joist.

3.02 SEISMIC BRACING

- A. In applying formulas from Chapter 16 of the 2001 CBC the value for I_p (importance factor) shall be assumed to be no less than 1.5. See structural drawings for other seismic factors.
- B. Design and install seismic bracing so as not to ground out vibration and sound isolation items.

END OF SECTION 01049

SECTION 01050

FIELD ENGINEERING

PART 1 - GENERAL

1.01 ENGINEERING REQUIREMENTS:

- A. Provide and pay for field engineering services required for the Project.
 - 1. Survey work required in execution of the Project.
 - 2. Civil, structural or other professional engineering services specified or required to execute Contractor's construction methods.

1.02 RELATED REQUIREMENTS DESCRIBED ON OTHER SECTIONS:

- A. Project Record Documents: Section 01700, Contract Closeout.

1.03 QUALIFICATIONS OF SURVEYOR OR ENGINEER:

- A. Qualified engineer or registered land surveyor, acceptable to Contractor and Architect.
- B. Registered professional engineer of the discipline required for the specific service on the Project, licensed in the state of California.

1.04 SURVEY REFERENCE POINTS:

- A. Existing basic horizontal and vertical control points for the Project are those designated on Drawings.
- B. Locate and protect control points prior to starting the work, and preserve all permanent reference points during construction.
 - 1. Make no changes or relocations without prior written notice to Architect.
 - 2. Report to Architect when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

3. Require surveyor to replace Project control points which may be lost or destroyed. Establish replacements based on original survey control.
4. Report errors in horizontal and vertical dimensions and grades prior to starting Work.

1.05 PROJECT SURVEY REQUIREMENTS:

- A. Establish a minimum of two permanent benchmarks on the site, referenced to data established by survey control points. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Establish lines and levels, locate and lay out, by instrumentation and similar appropriate means:
 1. Site improvements:
 - a. Stakes for grading, fill and topsoil placement.
 - b. Utility slopes and invert elevations.
 2. Batter boards for structures.
 3. Building foundation and column locations.
 4. Controlling lines and levels required for the mechanical and electrical trades.
- C. From time to time, verify layouts by the original methods used.
- D. Layout all Work and be responsible for all lines, elevations and measurements of buildings, utilities, and other Work executed under the Contract.
- E. Verify figures and elevations shown on the Drawings before laying out Work, and be responsible for any error resulting from failure to do so.

1.06 RECORDS:

- A. Maintain a complete, accurate log of all control and survey work as it progresses.
- B. On completion of foundation walls and major site improvements, prepare a certified survey of sufficient detail showing all pertinent dimensions, locations, angles, grades and elevations of construction.
- C. Record drawings shall be produced in AutoCad

1.07 SUBMITTALS:

- A. Submit name and address of surveyor and professional engineer to Architect.
- B. On request of Architect, submit documentation to verify accuracy of field engineering work.
- C. Submit certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance, or non-conformance, with Contract Documents.
 - 1. List non-conforming items separately and provide a detailed explanation or reason for non-conformance. Non-conforming items that have not been previously approved or otherwise waived by the Architect shall be corrected and brought into conformance with the Contract Documents with no additional cost to the Owner or the Contract Amount will be adjusted by Change Order to reflect the cost of correcting the non-conforming work that will be incurred by the Owner.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01050

SECTION 01090

DEFINITIONS AND REFERENCE STANDARDS

PART 1 GENERAL

1.01 DEFINITIONS

- A. General Requirements: The provisions or requirements of Division - 1. General Requirements apply to entire Work and to other elements that are included in the project.
- B. Indicated: The term "Indicated" is a cross-reference to details, notes or schedules on Drawings, to other paragraphs or schedules in the Specifications and to similar means of recording requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled" and "specified" are used in lieu of "indicated", it is for purpose of helping reader locate cross-reference and no limitation of location is intended except as specifically noted.
- C. Directed, Requested, etc.: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted" and "permitted" mean "directed by Architect or Owner", "requested by Architect or Owner ", etc. However, no such implied meaning will be interpreted to extend Architect or Owner's responsibility into Contractor's area of construction supervision.
- D. Approve: Where used in conjunction with Architect or Owner's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Architect or Owner's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect or Owner be interpreted as a release of Contractor from responsibilities to fulfill requirements of Contract Documents.
- E. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, as applicable in each instance.
- F. Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.
- G. Installer: The entity (person or firm) engaged by Contractor or its subcontractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar

required operations. It is a general requirement that such entities (installers) be expert in operations they are engaged to perform.

1.02 QUALITY ASSURANCE

- A. For products specified by association, trade or Federal Standards, comply with requirements of the standard, unless more rigid requirements are specified or required by applicable codes.
- B. The date of the standard is that which is in effect as of the Proposal date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.
- C. When required by individual Specifications section, obtain copy of standard. Maintain copy during submittals, planning and progress of the specific work, until substantial completion.

1.03 SCHEDULE OF REFERENCES

Abbreviations and Names: The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date:

AA	Aluminum Association 818 Connecticut Ave. NW; Washington DC 20006; 202/862-5100
AAMA	Architectural Aluminum Manufacturers Association Suite 18, 2700 River Road, Des Plaines, IL 60018; 312/699-7310
ACI	American Concrete Institute Box 19150 Redford Stat.; Detroit, MI 48219; 313/532-2600
ADC	Air Diffusion Council 435 N. Michigan Ave.; Chicago, IL 60611; 312/527-5494
AGA	American Gas Association 1515 Wilson Blvd.; Arlington, VA 22209; 703/841-8400
AI	Asphalt Institute Asphalt Inst. Bldg.; College Park, MD 20740; 301/277-4258
AISC	American Institute of Steel Construction 400 N. Michigan Ave. Chicago, IL 60611; 312/670-2400

AISI	American Iron and Steel Institute 1000 16th St., NW; Washington, DC 20036; 202/452-7100
AITC	American Institute of Timber Construction 333 W. Hampden Ave.; Englewood, CO 80110; 303/761-3212
AMCA	Air Movement and Control Association 30 W. University Dr.; Arlington Heights, IL 60004; 312/294-0150
ANSI	American National Standards Institute 1430 Broadway; New York, NY 10018; 212/354-3300
APA	American Plywood Association P.O. Box 11700; Tacoma, WA 98411; 206/565-6600
ARI	Air Conditioning and Refrigeration Institute 1815 N. Fort Myer Dr.; Arlington, VA 22209; 703/524-8800
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers; 1791 Tullie Circle NE; Atlanta, GA 30329; 404/636-8400
ASME	American Society of Mechanical Engineers 345 East 47th St.; New York, NY 10017; 212/644-7722
ASPE	American Society of Plumbing Engineers 15233 Ventura Blvd.; Sherman Oaks, CA 91403; 213/783-4845
ASTM	American Society for Testing and Materials 1916 Race St.; Philadelphia, CA 19103; 215/299-5400
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Rd.; Bethesda, MD 20014; 301/652-2109
AWPB	American Wood Preservers Bureau 2772 S. Randolph St.; Arlington, VA 22206; 703/931-8180
AWS	American Welding Society 550 LeJune Rd.; Miami, FL 33135; 304/642-7090
CBC	California Building Code or CRC-California Code of Regulations, Title 24 California Building Standards Commission 1130 K Street, suite 101; Sacramento, CA 95814
CISPI	Cast Iron Soil Pipe Institute 1499 Chain Bridge Rd.; McLean, VA 22101; 703/827-9177
CRSI	Concrete Reinforcing Steel Institute

180 North LaSalle St.; Chicago, IL 60601; 312/372-5059

CS	Commercial Standard of NBS (U.S. Dept. of Commerce) Government Printing Office; Washington, DC 20402
FGMA	Flat Glass Marketing Association 3310 Harrison; Topeka, KS 66611; 913/266-7013
FM	Factory Mutual Engineering Corp. 1151 Boston-Providence Turnpike; Norwood, MA 02062; 617/762-4300
FS	Federal Specification (General Services Admin.) Bldg. 197, Washington Navy Yard, SE; Washington DC 20407
GA	Gypsum Association 1603 Orrington Ave.; Evanston, IL 60201; 312/491-1744
HPMA	Hardwood Plywood Manufacturers Association P.O. Box 2789; Reston, VA 22090; 703/435-2900
MCAA	Mechanical Contractors Association of America 5530 Wisconsin Ave.; Washington, DC 20015; 202/654-7960
MLSFA	Metal Lath/Steel Framing Association 221 N. LaSalle St.; Chicago, IL 60601; 312/346-1600
NBS	National Bureau of Standards (U.S. Dept. of Commerce) Gaithersburg, MD 20234
NCMA	National concrete Masonry Association P.O. Box 781; Herndon, VA 22070; 703/435-4900
NEC	National Electrical Code (by NFPA)
NECA	National Electrical Contractors Association 7315 Wisconsin Ave.; Washington, DC 20014; 202/657-2110
NEMA	National Electrical Manufacturers Association 2101 L St. NW; Washington, DC 20037; 202/457-8400
NFPA	National Fire Protection Association Batterymarch Park; Quincy, MA 02269; 617/328-9230
NRCA	National Roofing Contractors Association 8600 Bryn Mawr Ave.; Chicago, IL 60631; 312/693-0700

NSF	National Sanitation Foundation 3475 Plymouth Rd; Ann Arbor, MI 48106; 313/769-8010
NWMA	National Woodwork Manufacturers Association 205 West Touhy Ave.; Park Ridge, IL 60068; 312/823-6747
OSHA	Occupational Safety Health Administration (U.S. Dept. of Labor) Government Printing Office; Washington, DC 20402
PDI	Plumbing and Drainage Institute 5342 Blvd. Pl.; Indianapolis, IN 46208; 317/251-5298
PS	Product Standard of NBS (U.S. Dept. of Commerce) Government Printing Office; Washington, DC 20402
SCPI	Southern California Plastering Institute 3127 Los Feliz Blvd.; Los Angeles, CA. 90039; 213/663-2213
SDI	Steel Door Institute 712 Lakewood Cnt. N.; Cleveland, OH 44107; 216/226-7700
SMACNA	Sheet Metal & Air Conditioning Contractors National Association; 8224 Old Courthouse Rd.; Vienna, VA 22180; 703/790-9890
TCA	Tile Council of America P.O. Box 326; Princeton, NJ 08540; 609/921-7050
UL	Underwriters Laboratories 333 Pfingsten Rd.; Northbrook, IL 60062; 312/272-8800
WCLIB	West Coast Lumber Inspection Bureau (Grading Rules); P.O. Box 2315; Portland, OR 97223; 503/639-0651
WIC	Woodwork Institute of California 1833 Broadway; Fresno, CA 93773; 209/233-9035
WRI	Wire Reinforcement Institute 7900 Westpark Drive; McLean, VA 22102; 703/790-9790

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01090

SECTION 01200

MEETINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 DESCRIPTION:

- A. Project Meetings are held to enable an orderly review of the work as it progresses on a periodic basis (weekly). It also provides an opportunity for systematic discussion of cost, schedule, problems and solutions. The Architect will conduct project meetings throughout the construction period.
- B. The Contractor's relationship with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and are not a part of project meetings content.
- C. Persons designated by the Contractor to attend and participate in the project meetings shall have all required authority to commit the Contractor to solutions agreed upon in the project meetings.

1.03 MEETING RESPONSIBILITIES:

- A. To the maximum extent practicable, advise the Architect at least three (3) working days in advance of project meetings regarding all items to be added to the agenda.
- B. The Architect will compile minutes of each project meeting and will furnish copies to the Contractor. The Contractor may make and distribute such other copies as he wishes.

PART - 2 EXECUTION:

2.01 MEETING SCHEDULE:

- A. Except as noted below the pre-construction meeting, project meetings will be held on a weekly basis or more frequently if required. Meeting dates and times will be coordinated in an effort to allow all parties whose participation is essential.

2.02 MEETING LOCATION:

- A. To the maximum extent practicable, meetings will be held at the job site.

2.03 PRECONSTRUCTION MEETING:

- A. The Architect will conduct the pre-construction meeting which shall be scheduled within ten (10) days after the Owner has issued the Notice to Proceed. It will be attended by authorized representatives of the Contractor, all major Subcontractors, the Architect, the Owner, and other interested parties.
- B. Minimum Agenda: Distribute data on, and discuss:
 - 1. Organizational arrangement of Contractor's forces and personnel, personnel of subcontractors, materials suppliers, Architect, and Owner.
 - 2. Channels and procedures for communications.
 - 3. Construction schedule, including sequence of critical work. A three week schedule will be prepared and updated for each project meeting and utilized by the Contractor as well as the overall project schedule.
 - 4. Contract Documents, including distribution of required copies of original Documents and revisions.
 - 5. Processing of Shop Drawings and other data submitted to the Architect for review. Contractor to provide list of major equipment deliveries and priorities.
 - 6. Project coordination
 - 7. Processing of field decisions and Change Orders.

8. Rules and regulations governing performance of the Work.
9. Procedures and responsibilities regarding Project Record Documents.
10. Procedures and responsibilities regarding operations and maintenance information and training Owner's personnel.
11. Procedures for safety and first aid, security, quality control, housekeeping, and other related matters.
12. Personnel Resumes.
13. Construction Phasing and Cash Flow.
14. Placement of Temporary Facilities and Utilities.
15. Security Procedures
16. Schedule of Major Equipment Suppliers.

2.04 BILLING MEETINGS:

- A. Contractor shall schedule and hold a billing meeting at least five days prior to the end of each pay period for the purpose of agreeing on the percentage of the Work completed up to that date and establishing the amount to be requested in the Application for Payment.
- B. Location: As arranged and agreed to by attendees.
- C. Attending shall be City's Project Manager, Architect, Inspector and Contractor's Superintendent.
- D. Following the billing meeting, prepare formal Application for Payment on City designated forms, and submit to City's Project Manager for certification and approval

2.05 PRE-INSTALLATION MEETINGS:

- A. The Contractor shall conduct a pre-installation meeting at the site before each construction activity that requires coordination with other construction. The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect-Engineer of scheduled meeting dates.

- B. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
 - 1. Contract Documents.
 - 2. Shop Drawings, Product Data and quality control Samples.
 - 3. Compatibility problems.
 - 4. Time schedules.
 - 5. Weather limitations.
 - 6. Manufacturers recommendations.
 - 7. Compatibility of materials.
 - 8. Acceptability of substrates.
 - 9. Governing regulations.
 - 10. Safety.
 - 11. Inspection and testing requirements.
 - 12. Required performance results.
 - 13. Recording requirements.
 - 14. Protection.

- C. The Contractor shall record significant discussions and agreements and disagreements of each meeting, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Architect-Engineer.

- D. Do not proceed if the meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the meeting at the earliest feasible date.

2.06 PROJECT MEETINGS

- A. The Architect-Engineer will conduct the weekly project meetings. To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspects of the Work are involved.
- B. Minimum Agenda:
 - 1. Review, revise as necessary, and approve minutes of previous meeting.
 - 2. Review progress of the Work since last meeting, including status of submittals for approval.
 - 3. Present and discuss Contractors updated three week schedule.
 - 4. Identify problems which impede planned progress.
 - 5. Develop corrective measures and procedures to regain planned schedule.
 - 6. Discuss changes in the work.
 - 7. Complete other current business.
 - 8. Review Progress Report.
 - 9. Review as-built drawings.
 - 10. Verify procurement activities and discuss associated lead times.

2.07 PRE-INSTALLATION MEETINGS

- A. Responsibilities:
 - 1. Contractor shall prepare and keep records of pre-installation meetings.

2. Architect shall prepare and keep records of all other meetings involving the Owner, Contractor and Architect.
3. The Contractor shall maintain on site a binder containing all the meeting minutes for this project, available for review by the Architect, Owner or Engineers.

2.08 GUARANTIES / WARRANTIES, SERVICE & MAINTENANCE CONTRACTS
REVIEW MEETING

- A. Eleven months following date of final acceptance, the City shall hold a meeting for the purpose of review of guaranties/warranties, bonds and service & maintenance contracts for materials and equipment. Contractor shall take action as appropriate to implement repair or replacement of defective items, and to extend service and maintenance contracts, as required.
- B. Attending shall be City's Project Manager, Architect, Project Inspector, Contractor, Contractor's Superintendent, Major Subcontractors, Suppliers and others as appropriate.

PART 3 EXECUTION

Not Used

END OF SECTION 01200

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and General Conditions of the Contract including General and Supplementary Conditions, and Division 1 Specification Sections apply to this Section.

1.02 SCOPE OF WORK:

- A. Submit construction schedule, shop drawings, submittal schedule, certificates, product data, samples, schedule of values, requests for information, requests for clarification, and products list as specified in this and other Sections.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

- A. Material & Equipment: Section 01600.
- B. Warranties: Section 01700.
- C. Record Drawings: Section 01700.
- D. Operating & Maintenance Manuals: Section 01700.
- E. Progress Schedules: Section 01310.
- F. Substitution Requests / Equals: Section 01630.

1.04 GENERAL REQUIREMENTS:

- A. The Contractor shall be solely responsible for submittal dates and delivery of the required number of submittals to the Architect. Delays in work occasioned by late submittals, necessity of re-submittal, or performing Work from submittals unfavorably reviewed shall not be cause for increase in Contract Amount or for time extension.
- B. Contractor shall review, stamp with his approval, and submit with reasonable promptness and in orderly sequence so as to cause no delay in work or in work of any other contractor, submittals required by Contract Docu-

ments or subsequently by Architect in order to evaluate substitutions. Shop drawings and samples shall be properly identified. At time of submission, Contractor shall inform Architect in writing of any deviation in submittals from requirements of Contract Documents.

1. Architect's review of submittals shall not relieve Contractor of responsibility for any deviation from requirements of Contract Documents unless Contractor has informed Architect in writing of such deviations at time of submission, and Architect has given approval to specified deviation. Architect's review shall not relieve Contractor from responsibility for errors or omissions in Submittals.
 2. Prior to submittal for City review, fully coordinate material as follows:
 - a. Determine and verify field dimensions, conditions, materials, catalog numbers and similar data.
 - b. Coordinate as required with the various types of Work and public agencies involved.
 - c. Secure necessary approvals from public agencies and others and signify by stamp or other means that approvals have been secured.
- B. By approving and submitting submittals, Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each submittal with requirements of work and of Contract Documents. Submittals shall be forwarded so as to allow Architect ample time for review. Failure on the part of the Contractor to submit timely for reviews to allow the work to continue shall not be grounds for time extensions or changes to the contract amount. Selected contractor may deliver submittals to Architect for review prior to receiving Notice to Proceed with Construction on items that would delay completion of project if contractor waited until the issuance of Notice to Proceed.
- C. Contractor shall resubmit unfavorably reviewed submittals after making any changes required so that submittals will comply with the Contract Documents. When resubmitting, Contractor shall direct specific attention to deficient areas.
1. If any proposed substitution or equal material, equipment or method is judged by the Architect to be unacceptable, the specified item shall be provided. Further proposals for substitutions or equals for that item will not be allowed unless specifically requested by the Architect.

- D. One set of each favorably reviewed submittal shall be kept on the job at all times, available for ready reference.
- E. No portion of work requiring a submittal shall begin until the submittal for the work has been favorably reviewed by Architect. All work shall be in accord with favorably reviewed submittals. If conflict arises between favorably reviewed submittals and Contract Documents, no work shall begin until such conflict is resolved in writing. Submittals shall as required in the sections of the specifications. See individual sections for samples etc., but submit numbers of submittals per this section.
- F. The Architect shall determine adequacy and completeness of all submittals. Where the Architect deems a submittal to be inadequate, incomplete, or otherwise unsuitable for proper review, the Contractor shall submit all additional information requested by the Architect. There shall be no change to the Contract Time or to the Contract Cost when such additional information is requested by the Architect.
 - 1. The Architect shall review the Shop Drawings; stamp and indicate the appropriate status, mark required revisions.
 - 2. The Contractor shall review the returned Drawings and take appropriate action as indicated. If resubmittal is required, make revisions and indicate them with a "cloud", stamp and date, and resubmit in the same manner and number as for the original submittal.
 - 3. Only those Shop Drawings which bear stamps showing final review of the Contractor, City and Architect, shall be used.
- G. Identification of the submittal shall be as follows:
 - 1. Identify each submittal and re-submittal with the following information:
 - a. Project name and address as they appear on the Contract Documents.
 - b. Contractor's name and address and Subcontractor's or supplier's name and address.
 - c. Contractor's stamp with initials or signature, certifying review and approval of submittal, compliance with Contract Documents and verification of field measurements.
 - d. Name and telephone number of contact for additional information regarding the submittal.

- e. Drawing and Specification Section numbers to which the submittal applies.
- f. Whether it is an original or a re-submittal.
- g. Date of submission.

1.05 CERTIFICATES OF COMPLIANCE

- A. Submit certificates of compliance with the associated Shop Drawings, Product Data and Samples required for the product.
- B. Submit two copies on 8-1/2 inch-x-11 inch white paper.
- C. The City will retain the certificates of compliance; no approval reply is intended.

PART 2 - DEFINITIONS

2.01 GENERAL:

- A. The term "submittal" is defined to include the product data, material list, shop drawings, and samples as herein described.
- B. The term "favorably reviewed" means submittals have been reviewed by the Architect and copies returned to the Contractor marked "No Exceptions Taken" or "Make Changes Noted".
- C. The term "Unfavorably reviewed" means submittals reviewed by Architect have been stamped "Revise & Resubmit", "Submit as Specified", or "Rejected".
- D. An "equal" is defined as material, equipment or method which is equivalent in every aspect to the material, equipment or method specified in the Contract Documents, as determined solely by the Architect. See Section 01630.
- E. A "substitution" is defined as a material, article, product or item offered in lieu of that specified in the Contract Documents, which may differ substantially from that specified. To be accepted, substitutions shall, in the opinion of the Architect, fully satisfy the intent of the Specifications. See Section 01630.

2.02 PRODUCT LIST:

- A. The product list is a complete listing of all materials and equipment to be furnished under this Contract. The list shall present the materials and equipment in the same sequence as they appear in the Specifications and shall include the manufacturer's name as well as catalog number, size, etc. The phrase "as specified" is not acceptable.
- B. Mechanical and Electrical submittals shall be submitted separately.
- C. Samples: Refer to Article 3.06.E above.

2.03 SHOP DRAWINGS:

- A. Shop drawings are drawings, illustrations, diagrams, schedules, performance charts, brochures and other data which are prepared by the Contractor or any subcontractor, manufacturer, supplier, or distributor, and which illustrate some portion of the work.

2.04 SAMPLES:

- A. Samples are physical examples furnished by the Contractor to illustrate materials, equipment, or workmanship, and to establish standards by which the work will be judged.

2.05 CONSTRUCTION SCHEDULE AND SUBMITTAL SCHEDULE:

- A. Construction Schedule:
 - 1. Content: Show product and installation dates for major products. Show dates for enclosing interior space, mechanical system completion, substantial completion, final completion, and Owner occupancy.
 - 2. Format:
 - a. Schedule format shall be Graphic Critical Path Method (CPM), (Microsoft Project), no substitutions allowed
 - b. The graphic schedule shall be revised and resubmitted monthly with the pay request for review and approval by Architect and Owner and be kept reasonably current.
 - c. Schedule: Schedule shall break down major trades, such as carpentry, millwork, concrete work, kitchen equipment, plumbing, electrical and heating and ventilating to indicate rough and finish work. List all subcontractors, show time of material and equipment submittals for Architect's review and

allow approximately seven (7) working days for review when the submittal is for the Architect alone, and fifteen (15) days each when consultants are involved.

- d. Monitoring: Schedule shall be monitored weekly to reflect changes, and revisions shall be incorporated and distributed monthly with the pay request.
- e. Scale and Spacing: To provide space for notations and revisions.
- f. Updating: Indicate progress of each activity, show revised completion dates. Provide listing of current and anticipated accelerations and delays. Describe proposed corrective action when required.
- g. Submit initial schedule within fifteen (15) working days after date of Owner-Contractor Agreement. After review, resubmit required revised data within ten (10) days. Two up-dated opaque reproductions shall be submitted every month with the pay request unless up-date revisions significantly impact the work and require coordination with the Architect for scheduling submittal review or construction observations.
- h. See Section 01311 for Project Schedule requirements

B. Submittal Schedule:

- 1. Provide separate schedule of submittal dates for shop drawings, product data, and samples, including Owner furnished products and dates reviewed submittals will be required from Architect. Show decision dates for selection of finishes.
- 2. Submit within thirty-five (35) days after date of Owner-Contractor Agreement.
- 3. Identify which products the Contractor proposes to submit by "Statement of Conformance".

2.06 PRODUCT DATA:

- A. Where the specific catalog number and manufacturer specified will be furnished, the Contractor may, when acceptable to the Architect, submit a statement of conformance with the Contract Documents in place of the product data. Such a statement shall contain a statement that the Contractor has determined and verified all field measurements, field construc-

tion criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated all related items with requirements of the work and of the Contract Documents and has determined them to be correct and adequate for proper execution and installation of the subject product.

1. In such cases, where a statement of conformance is not an acceptable alternative to a full submittal of product data the Contractor shall submit such information required by the Contract Documents and deemed adequate by the Architect to review the subject product. There shall be no change to the Contract Time or to the Contract Cost when such a full submittal is requested by the Architect.
 2. In such cases, health and safety related information shall still be submitted for posting, if appropriate and/or if requested by the Architect.
- B. Product data consists of manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other descriptive data on products and systems including health and safety related information.
1. Copies of favorably reviewed product data shall be kept at the job site available for review.
 2. Product data shall include all required and pertinent product information regarding safety, handling, storage, application, and health and environmental hazards, and shall include related protective, preventive, or medical treatment.
 - a. Such product information shall be kept at the job site available for review and shall be in both written and graphic forms using universal symbols.
 - b. The information shall be displayed in prominent locations in accordance with the appropriate regulations.

2.07 LIST OF SUBCONTRACTORS AND MATERIAL SUPPLIERS:

- A. Within (5) five calendar days after award of Contract, the Contractor shall submit to the Architect a list of the Subcontractors with their addresses and phone numbers, including the names of the manufacturers of the finish items and material suppliers. The list shall contain all materials where a selection of color, finish, or texture is required to be selected by the Architect as noted in the individual sections of the Specifications.

2.08 SUBSTITUTIONS:

- A. Substitution proposals will only be considered prior to Bidding, unless a substitution becomes required during the construction period due to circumstances beyond the control of the Contractor or their Sub-Contractors. See Section 01630 for substitution requirements.

2.09 EQUALS:

- A. Where the terms "or equal", "approved equal" or "or approved equal" occur, it shall be interpreted to mean pre-approval is required, prior to bid.
- B. The material or process considerations for being considered as an equal shall be as defined in Section 01630.
- C. Contractor shall certify that each product submitted as an equal is considered as asbestos free in accordance with all applicable regulations of Federal, State and Local Authorities and Regulatory Agencies.

2.10 PRE-APPROVAL OF EQUALS:

- A. Only those items, materials, equipment, methods or processes identified as "or equal", "approved equal" or "or approved equal" will be evaluated for pre-approval. See Section 01630.

2.11 REQUESTS FOR CLARIFICATION OR REQUESTS FOR INFORMATION:

- A. Definition: Contractor requests, in writing, Requests for Information or Requests for Clarification. Also known as an R.F.I. or R.F.C.
- B. RFI's or RFC's are issued by the General Contractor to the Architect. RFI's or RFC's shall not be issued directly from sub-contractors. Sub-contractors' requests in writing shall be communicated through the General Contractor. The RFI's or RFC's shall be numbered consecutively by the General Contractor, with date of issue.
- C. RFI's or RFC's can be issued in only one of the following conditions:
 - 1. The Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
 - 2. The Contractor discovers what appears to be a conflict or discrepancy between portions of the Contract Documents that appear inconsistent and not reasonably inferred in the intent of the Contract Documents.

3. The Contractor discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.
- D. RFI's or RFC's shall not be recognized or accepted if one of the following conditions exists in the opinion of the Architect:
1. The Contractor submits the RFI or RFC as a request for substitution (Refer to Section 01630).
 2. The Contractor submits the RFI or RFC as a submittal (Refer to Submittal Policy, above).
 3. The Contractor submits the RFI or RFC under the pretense of Contract Document discrepancy or omission without thorough review of the Documents.
 4. The Contractor submits the RFI or RFC in a manner that suggests that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.
 5. The Contractor submits an RFI or RFC in an untimely manner without proper coordination and scheduling of work or related trades.
 6. RFI's or RFC's will not be recognized as a change or modification of scope, cost or time to the Contract Documents.
- E. RFI's or RFC's time of issue and response: The Architect will endeavor to answer all requests as described in 2.11, C in a reasonable time frame. A period equal to the time that the sub-contractor and General Contractor use in developing the RFI could be recognized as an approximate, equal period of time for the Architect to respond back to the Contractor. In most cases, RFI's and RFC's will receive a response within seven (7) working days (excluding Saturdays and Sundays) if the RFI or RFC is related to architectural only. If the RFI or RFC relates to consultant drawings 15 days shall be required. In a small number of instances, this time may need to be lengthened, or shortened for emergency situations as mutually agreed by all parties. The Contractor is to submit RFI's or RFC's in a reasonable time frame so as not to interfere or impede the progress of work and coordination of related trades.
1. RFI's and RFC's received after 12:00 noon shall be considered as having been received on the following working day.

2. RFI's and RFC's received after 12:00 noon on a Friday shall be considered as having been received on the following Monday. When the following Monday is a holiday, the following Tuesday shall be considered as the next working day.
- F. RFI's or RFC's will be answered in writing by the Architect and may not, in themselves, initiate modifications to the Contract Documents.

PART 3 - EXECUTION

3.01 CONTRACTOR'S RESPONSIBILITIES, GENERAL:

- A. Review submittals prior to submission and provide stamp of approval signed or initialed by Contractor, indicating the Contractor has inspected the submittals, and certifying that they are complete, correct, in compliance with the Contract Documents and suitable for the Project.
- B. Make submittals minimum of thirty (30) days before needed return in accordance with Construction Schedule. Submission shall be by or through Contractor only.
- C. Submit submittals required by each Specification Section to Architect. Notify Architect in writing at time of submission of deviation in submittals from requirements of Contract Documents.
- D. Architect will require a minimum of seven (7) sets for each submittal for review and processing and a reproducible for copying by the Contractor at his expense after being favorably reviewed. Additional copies may be required for certain submittals ie: deferred submittals etc.. The Contractor shall coordinate number of individual submittal sets with the Architect.

3.02 PRODUCT LIST:

- A. The Contractor shall submit seven copies of the products list to Architect within thirty (30) calendar days following award of the Contract.
- B. Submit a complete list of major products proposed to be used, with the name of the manufacturer and the installing subcontractor. Refer to Section 01600.

3.03 SHOP DRAWINGS:

- A. Submit shop drawings showing connections, details, dimensions, finishes and fasteners.

1. Identify related shop drawings, which shall be submitted at a later date.
- B. Submit shop drawings where required by various sections of the Specifications and when requested by Architect to evaluate a proposed substitution or method. Unless otherwise specified or requested, submit specified number plus additional required by Contractor.
 1. Where testing laboratory or other special inspection is specified, requested, or required by local authority, submit two (2) additional copies.

3.04 SAMPLES:

- A. Submit samples of size and quantity specified, or of sufficient size and quantity to illustrate clearly the functional characteristics of product, material, or system with integrally related parts and attachment devices.
- B. Pay costs of samples and prepay deliver charges.
- C. Unless otherwise indicated, submit a minimum of two (2) samples.

3.05 PRODUCT DATA:

- A. Submit the amount of product data for each product or system to obtain acceptable review.
- B. Identify data sheets with the section and paragraph numbers where the product or system is specified.
- C. Bind product data submittals in indexed loose-leaf notebook binding system.
- D. Equipment and systems must meet performance data even when specified by manufacturer's name and catalog number.
- E. Provide list of product data which will be submitted after the original submittal of the notebook binding system.

3.06 ARCHITECT'S RESPONSIBILITIES FOR REVIEW:

- A. Architect will review submittals reasonably promptly so as to cause no delay, and will review only for conformance with design concepts of Project and with requirements of the Contract Documents.

1. The Architect shall require ten (10) working days for the review of adequate submittals for all items that involve the Architect only, and 15 days for items involving a consultant. The review period will not commence until the complete submittal is received by the Architect. The review period for deferred submittals shall be longer as they require approval from the City. The Contractor shall allow sufficient lead time, (a minimum of 45 days) for these reviews. The actual time may be shorter or longer.
 2. Large or complex submittals may require additional review time. In such cases the Architect shall notify the Contractor in writing, within the initial ten (10) working day review period, of the additional time for review of the submittal. There shall be no change to the Contract Time or to the Contract Amount when such additional review time is required.
 3. Special reviews or reviews requiring a shorter review time than that specified above may be granted by the Architect to facilitate the Construction Schedule. Such special review or reduced review time submittal reviews will be granted solely at the discretion of the Architect, who's decision will be final.
 4. Review and processing time required for Deferred Approval by Sacramento City will be excluded from time limitations, but will be processed as expeditiously as possible.
 - a. No change to the Contract Amount or the Contract Time will be permitted should the work be delayed due to the time required to obtain reviews of Deferred Approval items by Sacramento City.
 - b. The Owner may grant a time only extension when the work is delayed by the time required to obtain Deferred Approvals, when such delay is beyond the control of the Architect or the Contractor, and when such a delay is not caused by an inadequate, incomplete or otherwise unacceptable Deferred Approval submittal.
- B. Architect's review of a separate item shall not indicate acceptance of an assembly in which item functions.
- C. Submittals without Contractor's stamp will be returned without disposition. Delays resulting therefrom shall be Contractor's responsibility.

- D. Architect will return only two (2) copies of submittals marked "Revise & Resubmit," "Rejected" or "Submit Specified Item" to Contractor. Resubmittal shall be made in the number of copies as were originally submitted.
- E. One (1) favorably reviewed sample will be returned to the Contractor and shall be kept on the job site until completion, available for ready reference.
 - 1. Unfavorably reviewed samples will not be returned. Contractor shall be notified in writing by Architect of reason(s) for rejection of submitted sample.

3.07 SUBMITTALS AND SAMPLES AT THE SITE:

- A. One (1) copy of each favorably reviewed submittal shall be kept on the job site until completion, available for ready reference.
- B. No submittals reviewed and marked "Revise and Resubmit", "Rejected" or "Submit Specified Item" shall be kept at the job site.
- C. Samples: Refer to Article 3.06.E.

3.08 CORRECTIONS:

- A. Immediately incorporate all required corrections in the submittals and re-submit for further review, if required. Resubmit in number of copies as were originally submitted.

END OF SECTION 01300

SECTION 01311
SCHEDULES AND REPORTS

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. The Work under this Contract will be planned, scheduled, executed and reported using the Critical Path Method (after this called CPM).
- B. The Contractor is required to comply with all procedures specified herein and with any reasonable changes that may be necessary, in the opinion of the Architect, during the Contract duration.
- C. The system shall comprise network diagrams, summary bar charts, and accompanying mathematical analyses. The diagrams shall show elements of the project in detail and the entire project summary.
 - 1. Diagrams shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned by the Contractor. The basic concept of a network analysis diagram will be followed to show how the start of a given activity is dependent on the completion of preceding activities and how its completion restricts the start of following activities. Show similar activities which occur in separate areas or at different times as separate activities. The number of activities and the level of breakdown of the project into separate activities shall be acceptable to the City.
 - 2. Network activities shall include the following:
 - a. all construction activities.
 - b. submittals and approvals of materials and shop drawings.
 - c. the procurement , fabrication, and installation of critical materials and equipment.
 - d. all activities of the City or others that affect progress.
 - e. actions which must be complete prior to start of construction, for example, progress schedule approval, quality control program approval, and so forth.
 - f. activities for separate buildings and/or features shall be identified and grouped on the network and the interdependence of these groups shall be shown.
 - g. individual system startup and operation testing.

- h. Substantial Completion activity shall be shown comprising requirements specified in Division I to occur prior to the completion date.
 - i. contract required dates for completion of all or parts of the work
 - j. Final completion and acceptance activity late finish shall not exceed thirty days after substantial completion.
- 3. Show the following information on the diagrams for each activity: Preceding and following event numbers, description of the activity, and activity duration in calendar days. In calculating activity durations, Saturdays, Sundays, holidays, and normal inclement weather shall be considered. The network diagram shall conform to the standards demonstrated in the sample attached at the end of this Section.
- 4. The mathematical analysis of the network diagram shall include a tabulation of each activity. The following information will be furnished as a minimum for each activity.
 - a. preceding and following event numbers;
 - b. activity description;
 - c. estimated duration of activities;
 - d. earliest start date (by calendar days);
 - e. earliest finish date (by calendar days);
 - f. actual start date (by calendar days);
 - g. actual finish date (by calendar days);
 - h. latest start date (by calendar days);
 - i. latest finish date (by calendar days);
 - j. slack or float (in calendar days);
 - k. percentage of activity completed; and
 - l. Contractor's earnings based on portion of activity completed.
- 5. The mathematical computation shall compile the total value of completed and partially completed activities; and subtotals from separate buildings or features. The system shall also be capable of accepting revised completion dates as modified by approved time adjustments, shall re-compute all dates and float accordingly.
- 6. The analysis shall list the activities in sorts or groups as follows:

- a. by the preceding event number from lowest to highest and then by the order of the following event number;
 - b. by the amount of slack, then in order of preceding event number;
 - c. in order of latest allowable start dates, then in order of preceding event numbers, and then in order of succeeding event number; and
 - d. in order of latest allowable finish dates, then in order of preceding event numbers.
 - e. by responsibility in order of earliest allowable start dates;
- 7. Obtain information from subcontractors and others necessary to establish logic relationships, and durations. Resource loading is not required for activities other than those of the contractor and subcontractors.
- 8. Resource Loading: Each activity shall have a corresponding schedule of quantities of labor, materials, equipment, and other resources directly incorporated into the activity.
- D. All milestones or Specific Completion Dates listed in these specifications, or elsewhere in the Contract Documents, represent only the major items of construction/erection work or interface dates. The Completion Dates are considered essential to the satisfactory performance of this Contract and to the coordination of all work on the project.
 - 1. The Specific Dates listed represent the latest allowable completion dates. Earlier completion dates may be established as agreed by the Contractor, the Architect and the Owner.
- E. Should the Contractor plan to complete the Work earlier than any required Milestone or Completion date, the Owner or the Architect shall not be liable to the Contractor for any costs or other damages if the Contractor is unable to complete the Work before such Milestone or completion date.
- F. The Contractor shall provide and input all information required for development of the schedule for the work according to the requirements of this Section.
- G. The Contractor shall participate in a review and evaluation of the proposed network diagrams and analysis by the City. Resubmit any revisions necessary as a result of this review for approval by the City within fifteen (15) calendar days after the conference. The

approved schedule shall then be used by the contractor for planning, organizing and directing the work, for reporting progress, for requesting payment for work accomplished, and as the basis for any discussion or negotiation of time extensions. If changes in the method of operating or in scheduling are made, notify the City in writing stating the reasons for the change. The City may require revision and resubmittal for approval, without additional cost to the City, of all of the affected portion of the detailed diagrams and mathematical analysis showing the effect of any such change on the entire project. A change requiring resubmittal is one for which variation in estimated or actual activity duration, or variation in the logic sequence of activities creates a reasonable doubt, in the City's opinion, as to the contractor's ability to meet the contract completion date or dates; or which reflects a change in the logic relationships of activities on the critical path.

- H. The purpose of the project schedule and the planning meeting shall be to:
 - 1. Assure adequate planning, scheduling and reporting during execution of the contract;
 - 2. Assure coordination of the work of the Contractor and the various subcontractors and suppliers;
 - 3. Assist the Contractor in monitoring the progress of the work and evaluating proposed changes to the Contract;
 - 4. Assist the Contractor in the preparation and evaluation of the Contractor's monthly progress payments.
- I. Should the Contractor choose to have an outside scheduling consultant prepare the initial schedule, the Contractor understands and agrees to comply with all requirements of this Section.

1.02 POST AWARD ACTIVITIES

- A. Network Requirements
 - 1. Within fifteen (15) calendar days of the Notice to Proceed, the Contractor shall submit to the Architect for review and comment, a CPM Schedule in precedence form for the construction/erection work scope. The Contractor shall provide three hardcopies and one electronic copy. Each succeeding submittal of the schedule will have the same requirements for number and type of submittal as the first. **The scheduling program shall be Microsoft Project, no substitutions will be allowed.** The CPM Schedule shall provide a complete and detailed sequence of operations of the Work within the time limits specified in the Contract.

- a. The CPM Schedule diagram shall include:
- (1) The order and interdependencies of the Contractor's activities and the major points of the interface or interrelation with the activities of others, including Specific Dates for completion. The following criteria shall form the basis for assembly of the logic:
 - (a) What activity must be completed before a subsequent activity can be started?
 - (b) What activities can be done concurrently? This includes activities with Start-to-Start and Finish-to-Finish relationships with or without leads and lags.
 - (c) What activity must be started immediately following a completed activity?
 - (2) Activities should be linked between major area separations of the project so that the individual areas do not imply complete independence. The critical path should run through all major areas, since the entire project must be completed.
 - (3) Conformance with and identification of the Specific Dates specified in the Contract Documents.
 - (4) The description of work by activity.
 - (5) Off site activities: The Contractor shall include in the CPM Schedule all procurement activities, which lead to the delivery of materials to the site. Upon written approval from the Architect, these activities may be submitted as a separate Off-Site Activities Schedule, properly correlated to the CPM Schedule. The Schedule of Off-Site Activities shall include the following:
 - (a) Dates for submittals, ordering, manufacturing or fabricating, and delivery of equipment and materials. Long lead items requiring more than one month between ordering and delivery to the site shall be clearly noted;
 - (b) All significant Contractor activities during the fabrication and erection/installation in a Contractor's plant or on a job site,

- including materials / equipment purchasing, and delivery;
- (c) Contractor's drawings and submittals to be prepared and submitted to the Architect.

The Contractor shall be solely responsible for expediting the delivery of all material to be furnished by him so that construction progress is maintained according to the current Schedule for the Work.

Submittals, equipment orders and similar items are to be treated as Schedule activities, and shall be given appropriate activity numbers.

- (6) Delivery of Owner-furnished material and equipment.
- (7) Shop fabrication and delivery.
- (8) Critical Path (or Paths).
- (9) Testing of equipment and materials.

B. The identity, duration and logic of activities comprising the CPM Schedule shall meet the following criteria:

1. Activity boundaries shall be easily measurable and descriptions shall be clear and concise. Do not preface activity descriptions with "Begin" or "Complete." The beginning and end of each activity shall be readily verifiable, and progress should be quantifiable.
2. Responsibility for each activity shall be identified with a single performing organization.
3. The cost component for each activity shall be provided. The sum of the activity cost components shall equal the contract price. No costs, however, shall be assigned to manufacture or delivery activities.
4. Potential problems or constraints related to the implementation of the construction plan shall be identified in writing.
5. Seasonal weather conditions, utility coordination, no-work periods, expected job learning curves, and other foreseeable delays to activities shall be considered and included in the planning and scheduling of all work. Seasonal weather conditions shall be based upon the historic weather records published for the local Contractors by National Data Centers.
6. Maximize Start-To-Start and Finish-To-Finish activity relationships. Overlapping activities minimizes out-of-sequence problems that arise when most relationships are Finish-To-Start with zero lead or lag.

7. Imposed completion dates for events other than the Specified Completion Dates will not be permitted.
8. The level of detail of the CPM Schedule shall be such that activity durations over fifteen (15) working days shall be kept to a minimum except for non-construction activities such as shop drawing and sample submittals, fabrication and delivery of materials and equipment, delivery of equipment, concrete curing, and General Conditions activities, or with the approval of the Architect. The Architect has final approval of, and can request further breakdowns of activities, in order to facilitate tracking and accuracy of pay requests.
9. The CPM Schedule shall show an early completion date for the project that is not later than the project's required completion date. All activity durations shall be given in working days. The CPM Schedule also shall show the following for each activity:
 - a. Interfaces with the work of outside contractors, e.g., utilities, power, and with any separate contractor.
 - b. Description.
 - c. Estimated duration.
 - d. Early start (by calendar date).
 - e. Late start (by calendar date).
 - f. Early finish (by calendar date).
 - g. Late finish date (by calendar date).
 - h. Total float available in workdays.
 - i. Actual start date (by calendar date).
 - j. Actual finish date (by calendar date).
 - k. Activity code(s).
 - l. The Critical Path for the project, with said path of activities being clearly and easily recognizable on the time-scaled CPM Schedule Diagram. The relationship between all non-critical activities and activities on the Critical Path shall be clearly shown on the CPM Schedule Diagram.
 - m. The dollar value of each activity, not exceeding \$20,000.
 - n. The responsibility code for the Contractor or Subcontractor performing each activity or portion of the activity.
 - o. The percentage complete of each activity in progress or completed whether manually input or computer calculated.
 - p. An activity related to "Punchlist" will be incorporated into the schedule and schedule of values in an amount not less than 1% of total contract amount.

Payment for this activity will be made upon satisfactory completion of all punchlist work.

C. Submittals

1. Within fifteen (15) calendar days after Notice to Proceed, the Contractor shall submit to the Architect for review and comment, a CPM Schedule in precedence form for the construction/erection work scope. The submittal of the contract scheduling documents shall include:
 - a. A plotter-generated time-scaled network diagram showing activity descriptions, durations and relationships between activities. The critical path should be easily identifiable.

D. Approval Process

1. The Architect will review the Contractor's Schedule, and shall have five (5) working days to review and comment in writing.
2. The Contractor shall revise and resubmit the Schedule as soon as practical but in all cases within fourteen (14) calendar days. The Architect will have three (3) working days to review and comment on the revised Schedule.
3. Once the Schedule is approved, it will become the official Project Schedule and will be used to monitor progress of the Work, subject to such revisions made to the Schedule as provided for herein or in the Contract Documents, and to support requests for payment.
4. Acceptance by the Owner of the Contractor's CPM Schedule shall not relieve the Contractor of the responsibility for accomplishing the Work within every Contract-required Milestone and Completion date. The Owner disclaims any obligation or liability due to acceptance of the CPM Schedule.
5. If the Contractor fails to provide the schedules within the time prescribed, or revisions to the schedule within the requested time, the Owner may withhold approval of payment until the Contractor submits the required information.

1.03 UPDATES

- A. The Contractor understands and agrees that their schedule is intended to accurately reflect at all times the status of the Project construction. The Contractor also understands and agrees that updating the schedule is a key component of this requirement and will make every reasonable effort to provide current information.

- B. Throughout the progress of the Work, the Contractor shall prepare and maintain a two-week manual bar chart field schedule reflecting the schedule of work activities accomplished for the previous week and the work scheduled for the forthcoming two weeks. This manual field schedule shall be updated weekly.

1.04 PROGRESS PAYMENTS

- A. The submission and approval of progress updates and the calculations of the value of work done for any given pay period for each activity based on the percentage complete for that activity less the amount previously paid for past percentages complete and percent of retainage shall be an element of the evaluation of Progress Payments.
- B. No payment for work will be approved until the Contractor has complied with the provisions of this Section.
- C. An initial application for Payment for expenditures not directly related to Work accomplished at the project will be allowed before the acceptance of the Contractor's schedule. This payment will be limited to such items as Permits, Bonds, Mobilization, and Insurance. Requests for payment for work items not included above will be denied without an approved schedule.

1.05 RECOVERY SCHEDULE

- A. In the event that certain activities shown on the Contractor's CPM Schedule fall behind to the extent that any of the specific Dates are in jeopardy, the Contractor shall be required, at no extra cost to the Owner, to prepare and submit to the Architect a supplementary Recovery Schedule, in a form and detail appropriate to the need, to explain and display how he intends to reschedule those activities to regain compliance with the CPM Schedule during the immediate subsequent pay period.
- B. The Contractor shall do the following, after determination of the requirement for a Recovery Schedule:
 - 1. Within three (3) calendar days, the Contractor shall submit a Recovery Schedule for acceptance to the Architect. The Recovery Schedule shall be prepared to similar level of detail as the CPM Schedule and shall have a maximum duration of one (1) month.
 - 2. Any revisions necessary because of this review shall be resubmitted by the Contractor for acceptance within two (2) calendar days of the conference. The approved Recovery Schedule shall then be the Schedule that the Contractor shall use in planning, organizing, directing, coordinating, performing and executing the Work (including all activities of subcontractors, regain compliance with the CPM Schedule.

equipment vendors and suppliers) for its one (1) month duration.

1.06 REVISIONS REQUESTED BY CONTRACTOR

- A. The Contractor understands and agrees that their schedule is intended to accurately reflect at all times the status of the Project construction. The Contractor also understands and agrees that changes or revisions to the schedule are key components of this requirement and will make every reasonable effort to provide information as quickly as possible so that the CPM Schedule accurately reflects current conditions.
- B. Should the Contractor, after approval of the initial CPM Schedule want to change the plan of construction, he shall submit the requested revisions to the Architect including a description of the logic for rescheduling the work, methods of maintaining adherence to intermediate milestones and specific dates and the reasons for the revisions.
- C. The Contractor shall revise the schedule to include the effect of changes, acts of God or other conditions or events that have affected the CPM Schedule. The Architect will have three (3) working days to review and either approve the change or reject the change in writing to the Contractor. If the requested changes are approved by the Architect they will be incorporated by the Contractor into the CPM Schedule in the next reporting period.
- D. When the Owner orders changes by Change Order that have the potential to impact the Contract Milestones or Specific Dates stipulated, the Contractor shall provide (when owner requests) a revised schedule indicating possible impacts. Should the Owner accept the change, it will be incorporated into the CPM Schedule by the Contractor.
- E. Neither the updating or revision of Contractor's Detailed Construction Schedule nor the submission, updating, change or revision of any report or schedule for Owner's review or non-objection of any such report or schedule, have the effect of amending or modifying, in any way, the contract Time, any Contract Completion Date, or Contract Milestone Dates or of modifying or limiting in any way contractor's obligations under this Contract.
- F. If at any time during the construction, it appears to the Architect that the Contractor's schedule no longer represent the actual prosecution and progress of the work, the Architect will request in writing a revision to the schedule. Any "out of sequence progress" problems will be considered evidence that the schedule needs revising. The Contractor then has three (3) working days to respond to that written request. In the event the Contractor does

not agree with the conclusion of the Architect regarding the schedule status of the project, it shall be resolved in accordance with the disputes clause of the contract.

- G. Failure to furnish any required submittal or information specified herein shall constitute a cause for withholding any part of progress payments.

1.07 FLOAT TIME

- A. Float or slack time is the amount of time between the earliest start date and the latest start date, or between the earliest finish date and the latest finish date of a chain of activities on the CPM Schedule. Float or slack time is not for the exclusive use or benefit of either the Contractor or the Project. Contractor's work shall proceed according to start dates, and Architect shall have the right to reserve and apportion float time according to the needs of the project.

1.08 DELAYS AND TIME EXTENSIONS

- A. When the Contractor experiences change orders or delays and the Contractor requests an extension of time, the Contractor shall submit to the Architect a written Time Impact Analysis illustrating the impact of each change or delay on the current contract schedule completion date. The activity times used in the Time Impact Analysis shall be those included in the latest project schedule update.
- B. Extensions of time for performance as described in the Contract Documents will be granted only to the extent that time adjustments for the activity or activities affected by any condition or event that entitles the Contractor to a time extension exceed the total float or slack along the path of activities affected at the time of Notice to Proceed of a Change Order or the commencement of any delay or condition for which an adjustment is warranted under the Contract Documents.
- C. Each Time Impact Analysis shall be submitted within five (5) calendar days after a delay occurs or notice of direction for proceeding with a change order is given to the Contractor. If the contractor does not submit a Time Impact Analysis within the specified time period, the Contractor's rights to any additional time and cost are waived.
- D. Approval or rejection of each Time Impact Analysis shall be made within five (5) calendar days after receipt, unless subsequent meetings and negotiations are necessary. A copy of the approved Time Impact Analysis signed by the Owner and the Architect will be returned to the Contractor for incorporation into the schedule. The changes to the schedule will be incorporated into the Project

Schedule during the first update after agreement is reached on the Time Impact Analysis.

- E. In the event the Contractor does not agree with the decision of the Owner regarding the impact of a change or delay, it shall be resolved in accordance with the disputes clause of the contract.

1.09 COORDINATION

- A. The Contractor shall coordinate the work with that of the other contractors and shall cooperate fully with the Project Manager in maintaining orderly progress toward completion of the Work as scheduled.
- B. Failure of Owner-furnished equipment and materials to arrive as scheduled, or failure of other construction contracts to meet their schedule, shall not be justification for an extension of time, except where such failure causes, in the opinion of the Architect, an unreasonable delay in the Contractor's work, in which case the provisions of the General Conditions regarding extensions of time and extra work shall apply.
- C. The Contractor shall keep itself and subcontractors advised always while the work is progressing regarding delivery status of Owner-furnished equipment and material and of the progress of construction work being performed under separate contracts.
- D. The Contractor shall involve all applicable Subcontractors in the schedule development, updating, and revisions, if required.

1.10 DEFAULT

- A. Failure of the Contractor to comply with the requirements of this Section shall constitute reason that the Contractor is failing to prosecute the Work with such diligence as will insure its completion within the Contract items and may be considered as one of the grounds for termination by the Owner.

1.13 DAILY CONSTRUCTION REPORTS

- A. The Contractor shall prepare and submit to the Architect a daily construction report, recording the following information concerning events at the site. Keep a copy at the site in a separate binder and submit duplicate copies to the Architect:
 - a. List of subcontractors at the site.
 - b. Approximate count of personnel per trade at the site.
 - c. High and low temperatures, general weather conditions.
 - d. Accidents and unusual events.
 - e. Meetings and significant decisions.
 - f. Stoppages, delays, shortages, losses.
 - g. Meter readings and similar recordings.
 - h. Emergency procedures.

- i. Orders and requests of governing authorities.
- j. Change Orders received, implemented.
- k. Services connected, disconnected.
- l. Equipment or system tests and start-ups.
- m. Partial completions, occupancies.
- n. Substantial Completions authorized.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01311

SECTION 01313
CERTIFICATION OF COMPLIANCE

PART 1 GENERAL

1. No final payment shall be made until the Contractor files with the Owner, prior to acceptance of the Work, a notarized Certification of Compliance in the following form.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01313

SECTION 01313
CERTIFICATION OF COMPLIANCE

The Contractor does hereby certify that all work has been performed and materials supplied in accordance with the drawings, specifications and Contract Documents for the above Work, and that:

No less than the prevailing rates of wages as ascertained by the governing body of the Contracting agency has been paid to laborers, workmen and mechanics employed on this Work;

There have been no unauthorized substitutes of Subcontractors; nor have any subcontractors been entered into without the names of the Subcontractors having been submitted to the Owner prior to the start of such subcontracted work;

No subcontract was assigned or transferred or performed by any Subcontractor other than the original Subcontractor, without prior notice having been submitted to the Owner together with the names of all Subcontractors;

All claims for material and labor and other service performed in connection with these specifications have been paid;

In WITNESS WHEREOF, the undersigned has signed and sealed this instrument this day _____, 2____.

Firm Name_____

Signature_____

Title_____

(Attest) _____

(SEAL IF BIDDER IS A CORPORATION)

As determined necessary, evidence of compliance may be required to be submitted with and made a part of this Certificate of Compliance.

SECTION 01340
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 GENERAL

1.01 DESCRIPTION

- A. Submit, to the Architect shop drawings, product data and samples required by Specifications Sections or as specifically requested by Architect.
- B. Related requirements specified elsewhere:
 - 1. Section 01311: Project Schedule
 - 2. Section 01700: Contract Closeout:
 - 3. Section 01780: Record Documents
- C. The Contractor shall prepare and submit to Architect with Construction Schedule, a separate schedule listing dates for submission of all required shop drawings, product data and samples, tied into Construction Schedule with appropriate logic.

1.02 SHOP DRAWINGS

- A. Original drawings, prepared by Contractor, subcontractor, manufacturer, supplier or distributor, which illustrate some portion of the Work showing fabrication, layout, setting or erection details.
- B. Shop drawings shall be prepared for this particular project. Drawings prepared specifically for other projects and revised for this project will be rejected.
- C. When necessary, base shop and setting drawings upon actual measurements taken at site and other job conditions. Show any variations and revisions to Contract Documents that are necessary for proper installation of work. Fabrication or installation of work shall not be started until shop or setting drawings have been checked and returned with "furnish as submitted" or "furnish as corrected" indicated by Architect.
- D. Identify details by reference to sheet and detail numbers shown on Contract Drawings.
- E. Submit shop drawings, required by Contract Documents for execution of Work, to Architect not later than 15 days prior to contemplated or actual need in shop or at site, and earlier where more time may be required for review.
- F. Provide shop drawings with cross-reference to drawing and detail numbers on Contract Drawings to facilitate review.
- G. Provide shop drawings which demonstrate to Architect that:

1. Contractor understands design concept of certain portions of Work.
 2. Equipment and material to be provided meet design and technical requirements of Contract Documents.
 3. Methods of fabrication and installation.
- H. After review, reproduce and distribute in accordance with Section 01300.

1.03 PRODUCT DATA

- A. Manufacturer's standard schematic drawings:
1. Modify drawings to delete information that is not applicable to project.
 2. Supplement standard information to provide additional information applicable to project.
- B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance chart, illustrations and other standard descriptive data.
1. Clearly mark each copy and identify pertinent materials, products or models.
 2. Show dimensions and clearances required.
 3. Show performance characteristics and capacities.
 4. Show wiring diagrams and controls.
- C. Submit product data required by Contract Documents for execution of work, to Architect not later than 15 days prior to contemplated or actual need in shop or at site, and earlier where more time may be required for review. See Section 01300.
- D. Provide product data with cross-reference to Specifications Section of Project Manual to facilitate review.
- E. Submit number of copies per section 01300.
- F. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents.

1.04 SAMPLES

- A. Provide physical examples to illustrate materials, equipment or workmanship and to establish standards by which completed work is judged.
- B. Office Samples: Of sufficient size and quantity to clearly illustrate:
1. Functional characteristics of product or material, with integrally related parts and attachment devices.
 2. Full range of color samples.
 3. After review, samples may be used in construction of Project.

4. Include identification on each sample, with full Project information.
 5. Submit samples in ample time for review or selection, as applicable, so as to not delay Work.
 6. Take into account delivery time of all manufactured items when submitting samples.
- C. Submit samples of size and quantity specified, or, if not specified, of sufficient size and quantity to illustrate functional and aesthetic characteristics of Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Submit samples of finishes from full range of manufacturers' standard colors, or in specified custom colors, textures, and patterns, for Architect selection.
- E. Field Samples:
1. Construct each sample complete, including work of all trades required in finished Work.
 2. After acceptance, where appropriate and upon Architect written approval, field samples may be incorporated into Project.
 3. When directed, remove field samples not incorporated into Project from site.

1.05 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.06 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Architect for review, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect.

1.07 REQUIRED SUBMITTAL QUANTITIES TO ARCHITECT

Prints

- A. Construction Schedule:

- | | | |
|----|--|---|
| 1. | 8-1/2 x 11 inch size: | 7 |
| 2. | Larger than 8-1/2 x 11 inch: | 7 |
| B. | Survey Date: | |
| 1. | 8-1/2 x 11 inch: | 7 |
| 2. | Larger than 8-1/2 x 11 inch: | 7 |
| C. | Shop Drawings: | |
| | See specific section covering Shop Drawing submittal requirements. | |
| D. | Product Data: | |
| 1. | 8-1/2 x 11 inch: | 7 |
| 2. | Larger than 8-1/2 x 11 inch: | 7 |
| E. | Office Samples: | |
| | See specific section covering product or material. | |
| F. | Field Samples: | |
| | See section covering specific system. | |
| G. | Schedule of Values | 2 |

1.08 CONTRACTOR RESPONSIBILITIES

- A. Review shop drawings, product data and samples prior to submission.
- B. Verify:
 1. Field measurements.
 2. Field Construction criteria.
 3. Catalog numbers and similar data.
- C. Coordinate each submittal with requirements of Work and Contract Documents.
- D. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect's review.
- E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect's review of submittals.
- F. Notify the Architect, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
- G. Begin no work that requires submittals until return of submittals with Architect's stamp and initials or signature indicating review.
- H. After Architect's review, distribute copies.

1.09 SUBMITTAL REQUIREMENTS

- A. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for review, for securing necessary approvals, for possible revision and re-submittals and for placing orders and securing delivery. Submission of all shop drawings shall be through the General Contractor.
- B. Submit one (1) original and six (6) prints of shop drawings. These will be distributed as follows: Original plus (1) copy to remain with the Architect, (2) for the city, (1) which will be returned, and (3) copies of product data which Contractor requires for distribution. Should the contractor require more copies for his use, he shall provide additional copies at no cost to the owner.
- C. Submit number of samples specified in each specification section.
- D. Unless otherwise specifically permitted by the Architect, make all submittals in groups containing all associated items. Partial submittals may be rejected.
- E. Accompany submittals with transmittal letter, in duplicate, containing:
 - 1. Date
 - 2. Project title and number
 - 3. Contractor's name and address
 - 4. The number of each shop drawing, product data and sample submitted.
 - 5. Notification of deviations from Contract Documents.
 - 6. Specifications section it represents
- F. Submittals shall include:
 - 1. Date and revision dates
 - 2. Project title and number
 - 3. The name of:
 - a. Architect / Engineer
 - b. Contractor
 - c. Subcontractor
 - d. Supplier
 - e. Manufacturer
 - f. Separate detailer when pertinent
 - 4. Identification of product or material
 - 5. Relation to adjacent structure or materials
 - 6. Field dimensions, clearly identified as such
 - 7. Specifications section number
 - 8. Applicable standards, such as ASTM number or Federal Specification
 - 9. A blank space, for Architect review stamp

10. Identification of deviations form Contract Documents
11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract Documents.

1.10 RESUBMITTAL REQUIREMENTS

- A. Shop Drawings:
 1. Revise initial drawings as required and resubmit as specified for initial submittal.
 2. Indicate on drawings any changes that have been made other than those requested by Architect.
 3. Product data and samples: Submit new data and samples as required for initial submittal.

1.11 ARCHITECT'S DUTIES

- A. Review submittals with reasonable promptness as mutually agreeable among the various parties.
- B. Review for:
 1. Design concept of project.
 2. Information given in Contract Documents
- C. Review of separate item does not constitute review of an assembly in which item functions.
- D. Affix stamp and initials or signatures certifying the review of submittal.
- E. Return submittals to Contractor for distribution.
- F. The Architect may immediately reject any item without further review if it is not:
 1. Accompanied by a transmittal letter containing the required information.
 2. Submitted as a reproducible.
 3. Stamped "approved" by the Contractor.
- G. The review will be for conformance to the design concept and compliance with information given in the Contract Documents. The Architect will make notations directly on the reproducible.
- H. The review is intended to foresee unacceptable products and to avoid the possibility of their rejection at the site. The review shall not be construed as:
 1. Permitting a departure from the Contract Documents, unless specifically so noted.
 2. Relieving the Contractor of the responsibility for errors or omissions.

3. Acceptance of an assembly in which an approved item is a part.
 4. Approval of variations from previously approved items.
 5. Approval of dimensions.
- I. The Architect will review all samples. Such review will be for appearance only. Compliance with all other requirements is the responsibility of the Contractor.
- J. Where the Contract Documents require the design of structural, mechanical or electrical systems or components of systems by a supplier, or where a Contractor initiates a change in the design of a system or component thereof, such systems or components shall be designed by a registered professional Architect or Engineer and all calculations submitted to this Architect for his records, prior to starting fabrication or installation of the Work. This Architect will not be responsible for the designs of such other professional Architects or Engineers.

1.12 VARIATIONS FROM CONTRACT DOCUMENTS

- A. If the Architect determines a variation from the Contract Documents is in the best interest of the Owner, and it does not involve change in the Contract price or item, the Architect, with the Owner's concurrence, may permit such variation.
- B. Unless the Architect receives immediate written notification, he will assume the Contractor approves any variation shown.
- C. If the Contractor fails to mention variations from the Contract Documents, he will not be relieved of the responsibility for executing the Work in accordance with the Contract Documents.
- D. When a variation from the Contract Documents is permitted and such variation involves corresponding adjustments in an adjacent or related item, the responsibility for making and paying all costs for such adjustment rests with the Contractor requesting the original variation.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01340

SECTION 01370

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. See also the Schedule of Values Form in the Contract.

1.02 DESCRIPTION

- A. Work Included: Provide detailed Schedule of Value breakdowns, of the agreed Contract Sum, showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.
- B. Related Work
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Conditions of the Contract, and Sections in Division 1 of these Specifications.
 - 2. Schedule of Values is required by the Conditions of the Contract.
 - 3. Schedule of Values is required to be compatible with the "continuation sheet" accompanying applications for payment.

1.03 QUALITY ASSURANCE

- A. Use required means to assure arithmetical accuracy of the sums described.
- B. When so required by the Architect, provide copies of the subcontracts or other data acceptable to the Architect, substantiating the sums described.

1.04 SUBMITTALS

- C. Prior to first application for payment, submit a proposed Schedule of Values through the Architect to the Owner.
 - 1. Meet with the Architect and determine additional data, if any, required to be submitted.

2. Secure the Architect's approval of the Schedule of Values prior to submitting first application for payment.
3. Detail shall include, at a minimum, by site.
 - a. By building and/or site
 - b. By trade
 - c. By major activity
 - d. By activity
 - e. Equipment costs
 - f. Mobilization/submittal costs
 - g. Closeout services
4. Submit anticipated pay application draw (including Conditions of the Contract) for each month of the Project.

END OF SECTION 01370

SECTION 01400
QUALITY CONTROL

PART 1 GENERAL

1.01 DESCRIPTION:

A. Section Includes:

1. Quality assurance and control of installation.
2. References.
3. Field samples.
4. Mock-up.
5. Inspection and testing laboratory services.
6. Contractor's inspection and testing responsibilities.
7. Testing laboratory responsibility.
8. State's responsibility
9. Manufacturers' field services and reports.

B. Related Sections:

1. Section 01340 - Submittals: Submission of Manufacturers' Instructions and Certificates.
2. Section 01615 - Delivery, Storage and Handling.

1.02 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified

quality.

- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
- G. Codes and Standard: Testing, when and where required, will be in accordance with pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

1.03 REFERENCES

- A. Conform to reference standard by date of issue current on date of Contract Documents.
- B. Obtain copies of standards when required by Contract Documents.
- C. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Contractual relationship of parties to Contract shall not be altered from Contract Documents by mention or inference otherwise in any reference document.

1.04 FIELD SAMPLES

- A. Install field samples at site as required by individual specifications Sections for review.
- B. Acceptable samples represent acceptable quality level for Work.
- C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been accepted by Architect.
- D. Contractor shall be responsible for job site handling and curing of concrete, mortar and grout test specimens, in strict compliance with all applicable ASTM specifications.

1.05 MOCK-UP

- A. Tests will be performed under provisions identified in this section and individual product sections.
- B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by Architect unless directed otherwise.

1.06 INSPECTION AND TESTING LABORATORY SERVICES

- A. Owner will appoint, employ, and pay for services of independent firm to perform inspection and testing.
- B. Special inspection required by Specifications, code or ordinance, shall be

performed by a qualified inspector selected by Owner and approved by Architect.

1. The Special Inspector shall be a person qualified to inspect the particular type of construction or operation requiring special inspection. He shall demonstrate his competence to the satisfaction of the Sacramento City Building Official.
 2. Inspection by the Special Inspector shall in no way relieve the Contractor of his obligation to perform the Work in accordance with the requirements of the Contract Documents.
 3. Special Inspectors shall observe the work for conformance with the Drawings and Specifications and in accordance with the applicable provisions of California Building Code, latest edition, with any Sacramento City Amendments.
- C. Contractor shall cooperate and afford every opportunity for such inspections.

1.07 CONTRACTOR'S INSPECTION AND TESTING RESPONSIBILITIES

- A. Cooperate with independent firm:
1. Furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
 2. Provide access to work and manufacturer's operations.
 3. Notify Architect and independent firm 24 hours prior to expected time for operations requiring services.
 4. Contractor shall make arrangements with independent firm and pay for additional samples and tests required for Contractor's use not specified in the contract documents.
 5. Furnish copies of mill test reports.
 6. Furnish casual labor and facilities.
 - a. To provide access to work to be tested.
 - b. To obtain and handle samples at site.
 - c. To facilitate inspections and tests.
 - d. For laboratory's exclusive use for storage and curing of test samples.

7. Arrange with laboratory and pay for additional samples and tests required for Contractor's convenience.
 8. Should Contractor elect to exercise certain options in Specifications necessitating additional testing or inspection, or if tests and/or inspections result from work performed other than during approved regular hours of work, costs for such testing and inspections shall be Contractor's obligation and Owner will make payment thereon and will deduct such costs from contract price.
- B. Retesting:
1. Retesting required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Architect.
 2. Should initial tests indicate non-compliance with Contract Documents, costs for both initial tests and subsequent retesting occasioned by non-compliance, and all other related costs, including additional Architect's services made necessary by such failure will be charged to Contractor by deducting such costs from Contract Sum/Price.
- C. Notification: Contractor shall notify Testing Lab, Architect a minimum of 24 hours in advance of any operations scheduled for inspection and/or testing specified herein, to allow for laboratory assignment of personnel and scheduling of test. Work requiring inspections and testing by testing laboratory will not be performed without their qualified technician on the job site. If, after giving notice to the testing lab, the work requiring inspection and/or testing is not performed and the testing lab must make a second trip to the job site, the Contractor shall reimburse Owner for technicians time and travel expense. Where tests are required prior to Contractor starting work, Contractor shall arrange for testing far enough in advance so as not to delay the project or cause inconvenience to the testing lab.
- D. Contractor's Responsibility: The testing laboratory service provided by the Owner shall not relieve the Contractor of his responsibility for compliance with the requirements of the Contract Documents. Testing laboratory services are provided for the sole and exclusive benefit of the Owner in monitoring the quality and performance of the Contractor's work. Results of tests made by the Owner's testing laboratory will be made available to the Contractor and shall be a basis for rejection of non-conforming or defective work. Additional tests/inspections required by the Owner shall not be the basis for any claim by the Contractor for additional compensation.

1.08 TESTING LABORATORY RESPONSIBILITY

- A. General: Testing laboratory shall inspect, test and document work performed on this project as described hereinbefore.
- B. Test Reports: Promptly furnish test reports of materials and work tested to the Architect, Contractor, and Owner. Test reports shall include the name of the project, General Contractor, applicable Subcontractor, and Testing Laboratory, the locations, dates, and time samples were taken and tested, type of test, identification of sample, location in which the work sample was taken, record of weather conditions, evaluation of test results, conformance or non-conformance of test results with Contract Documents, name and signature of technician taking sample and performing tests, and any other information required by Architect.
- C. Inspection Reports: Furnish inspection reports for each site visit documenting activities, observations, and inspections of work; include observations on weather conditions, time and date, conditions and/or status of the work being inspected, actions taken, and recommendations or evaluation of the work. In addition to written reports, immediately notify Architect, Owner and Contractor of any portions of the work found to be in nonconformance with the Contract Documents.
 - 1. The testing lab will promptly process and distribute required copies of test reports and related instructions to ensure necessary retesting and replacement of materials with the least possible delay.
 - a. Re-tests of all work shall be specifically indicated by the term "Retest" and shall be sufficiently descriptive to designate the date, location, and original test information indicating why the original was not in compliance with documents.
 - 2. The Laboratory shall send all test reports to the Architect and the Contractor.
 - 3. Special Inspection Reports: Within twenty-four (24) hours after each special inspection, submit two (2) copies of inspection reports to the Contractor, Architect, and Sacramento City building official. Include the following:
 - Date Issued
 - Project Title and Number
 - Name of Inspector
 - Date and Time of Inspection
 - Identification of Specifications Section
 - Location in the Project
 - Type of Inspection or Test

Date of Test

Results of Tests and conformance with Contract Documents

- a. All Discrepancies shall be noted and brought to the attention of the Contractor for correction. If corrections are not made, notify the Architect and Sacramento City Building Official.
 - b. Final Special Inspection Reports shall be signed and submitted by the special inspector, and shall state whether the work requiring special inspection was, to the best of his knowledge, in conformance with the approved Drawings and Specifications and the applicable workmanship provisions of the the California Building Code, Title 24 (latest edition), with Sacramento City Amendments.
- D. Codes: Conform to the requirements of the California Building Code, Title 24 (latest edition), and other applicable sections and standards, and any special requirements of the local Building Official having jurisdiction.
- E. Limits of Authority: Testing laboratory is not authorized to:
1. Release, revoke, alter or enlarge on requirements of the Contract Documents.
 2. Approve or accept any portion of the work (as relates to the Contractor's obligation to conform to the Contract Documents.)
 3. Perform any duties of the Contractor.

1.09 OWNER'S RESPONSIBILITY:

The Owner shall not be held liable for the actions (or lack of action) of the testing laboratory(s). The commencement of work by the Contractor shall indicate his understanding and agreement that all disputes or claims which may develop between the Owner's testing laboratory(s) and the contractor will be resolved directly between those two parties without involvement or responsibility on the part of the Owner, unless prior agreement is made in writing. Contractor shall advise the Owner of faulty inspections or tests performed by the testing laboratory but Owner shall not be held responsible for problems, damages, delays, replacement of defective work, etc. which may occur as result of the testing laboratory(s) faulty work in which case the Contractor's sole recourse shall be against the testing laboratory or other party at fault, but not against the Owner. Nothing in these specifications shall be construed as preventing the Contractor from hiring a separate testing laboratory to perform testing laboratory services, however, the Owner's testing laboratory inspections and tests shall be the basis for acceptance or rejection of the work by the Owner unless such inspection or tests are proven to be in error.

1.10 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. Submit qualifications of observer to Architect 30 days in advance of required observations. Observer shall be subject to approval of Architect and Owner.
- B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.
- C. Observers shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Submit report in duplicate within 30 days of observation to Architect for review.

1.11 QUALITY CONTROL (QC) SYSTEM:

- A. The QC system shall perform the following minimum requirements:
- B. Inspection Procedures: The Contractor's inspection procedure shall be reported on the Contractor's Daily Quality Control Report and shall conform to the following:
 - 1. Preparatory Inspection: Shall be performed by the Contractor prior to beginning any definable feature of work or job feature and shall include a preparatory phase conference with the City, and Architect. Contractor shall submit a tentative schedule of upcoming preparatory conferences for approval with the quality control plan, and provide an outline of how the QC will implement the particular phase of work two (2) days prior to each scheduled preparatory conference, following the format indicated in the Preparatory Inspection Report Form provided by the City. The City will review this outline prior to the conference. The conference shall include:
 - a. A review of agreement requirements;
 - b. A check to assure that all materials and/or equipment have been tested, submitted, and approved;
 - c. A check to assure that provisions have been made to provide required testing;
 - d. Examination of the work area for completion of all preliminary work.

- e. A physical examination of required materials and equipment for conformance to approved shop drawings or submittal data.
 - 2. Initial Inspection: Shall be performed by Contractor as soon as a representative portion of the particular feature of work is complete and shall include examination of the quality of workmanship as well as a review of control testing for compliance with agreement requirements.
 - 3. Follow-Up Inspection: Shall be performed by Contractor daily to assure continuing compliance with agreement requirements until completion of the particular feature of work.
- B. In addition to the three-phase inspection procedure, the Contractor's Quality Control representatives shall perform the following:
- 1. Perform detailed review, prior to submittal, of all shop drawings, certificates of compliance, and material and equipment submittals called for under these specifications. Certify with each submittal that all items therein are correct and in strict accordance with the agreement drawings and specifications except as may be otherwise expressly stated. Furnish submittals only after review and certification.
 - 2. Establish and maintain an effective quality control and inspection system, which will assure and document that all supplies and services conform to agreement requirements whether constructed or processed by the Contractor, or procured from subcontractors or vendors. Document the system as specified herein. Make all documents available for review by the City prior to the start of construction and throughout the life of the agreement, and notify the City and Architect in writing of any proposed change to his inspection system.
 - 3. Implement the system by the establishment of a quality control organization headed on a full-time basis by the Contractor's quality control representative (CQC), who shall be physically on the project site for the duration of the project, and whose responsibility is to insure compliance with the agreement. The CQC shall be assisted by other personnel, industry-recognized testing laboratories, or manufacturer's representatives, who are qualified to perform the various inspections, tests, and equipment adjustments required.

4. Perform the number and type of tests required by the agreement specifications and by other publications referenced.
 5. Provide current records and documents as specified.
 6. Maintain an approved system for identifying the inspection status of supplies.
 7. Establish and maintain an effective system for controlling non-conforming material and removing materials and equipment which are not approved.
 8. Maintain full-size marked-up drawings with survey notes, sketches; nameplate data, pricing information, description, and serial numbers of all installed equipment; and other information depicting as-built conditions. Maintain this information in a current condition at all times until acceptance of the work and make it available for review by City personnel at all times. All variations from the agreement plans, for whatever reason, shall be indicated in the same general detail utilized in the agreement plans. This information shall be furnished to the City a minimum of two weeks prior to Contractor's Certification of Substantial Completion.
- C. After the agreement is awarded and before construction operations are started, the Contractor shall meet with the City and the Architect to discuss the QC system requirements. The meeting shall develop mutual understandings relative to system details , including the forms to be used for recording the inspections, administration of the system, and the interrelationship of Contractor and City inspection. Within five days after receipt of the Notice to Proceed the Contractor shall furnish to the City and Architect a QC system plan which shall include the procedures, instructions, and reports to be used. Construction shall not start until the Quality Control plan is approved. This document shall include as a minimum:
1. The inspection organization.
 2. Number and qualifications of inspection personnel to be used.
 3. Authority and responsibilities of inspection personnel.
 4. Methods of inspection, including subcontractor's work.

5. Schedule for use of inspection personnel by types and phase of work.
 6. Test methods including, as specified, name of qualified testing laboratory to be used, if applicable.
 7. Schedule for use of non-Contractor personnel and facilities, such as manufacturer's representatives and approved testing laboratories.
 8. Method of documenting inspection and testing.
 9. A copy of a letter of direction to the Contractor's quality control representative, outlining CQC duties and signed by a principal officer of the firm.
- D. Provide and maintain all measuring and testing devices, laboratory equipment, instruments, transportation, and supplies necessary to accomplish the required testing and inspection to be performed by the Contractor. Calibrate all measuring and testing devices at established intervals against certified standards which have known valid relationships to national standards. Make the Contractor's equipment available for use by the City for verification of their accuracy and condition as well as for any inspection or test desired.
- E. Assure that the latest approved drawings, including shop drawings, specifications, and instructions required by the agreement, as well as authorized changes thereto, are used for fabrication, inspection, and testing.

1.04 QUALITY ASSURANCE BY CITY

- A. The Contractor's Quality Control inspection system is subject to evaluation and verification inspection by the City to determine its effectiveness in supporting the quality requirements established in the agreement. The City may require joint City-Contractor inspections at any time and on a periodic basis to evaluate the effectiveness of the Contractor's Quality Control system.
- B. The City reserves the right to inspect supplies, services, materials, and equipment required by this agreement. City inspection will not constitute acceptance; nor will it in any way replace Contractor inspection or otherwise relieve the Contractor of his responsibility to monitor and control the quality of construction.

- C. The City may notify the Contractor of non-compliance with agreement provisions and the action to be taken. The Contractor shall immediately take corrective action. If the Contractor fails to comply promptly, the City may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

1.05 RECURRING DEFICIENCIES:

- A. In accordance with the General Conditions, the Contractor shall not build upon or conceal any feature of the work containing uncorrected defects. Payment on deficient items will be withheld until defects are satisfactorily corrected. The cost of additional City testing resulting from failure to comply with agreement requirements shall be deducted from the agreement amount.

IF RECURRING DEFICIENCIES INDICATE THAT THE QUALITY CONTROL SYSTEM IS NOT ADEQUATE, CORRECTIVE ACTION SHALL BE TAKEN AS DIRECTED AND PROGRESS PAYMENTS WILL BE WITHHELD UNTIL SUCH CORRECTIVE ACTION HAS BEEN COMPLETED.

1.06 DAILY RECORD

- A. The Contractor's Quality Control Inspectors shall maintain a daily record of all inspections and tests performed for each shift of Contractor or Subcontractor operations in the format directed. These records shall:
 - 1. Identify the project
 - 2. Include data on weather conditions
 - 3. Indicate the Contractor and/or Subcontractors working and their respective areas of responsibility
 - 4. List construction equipment, other than hand tools, at the job site and whether or not used on the report day.

5. Provide factual evidence that continuous quality control inspection and tests have been performed, including but not limited to the following:
 - a. maintenance of Shop Drawing and Submittal Register;
 - b. monitoring of equipment and materials upon arrival at the job site for compliance with approved shop drawings;
 - c. proper storage of equipment including documentation of this responsibility on the daily report;
 - d. type and number of inspections or tests involved; results of inspections or tests; nature of defects; causes for rejections; proposed remedial action; and corrective actions taken.
 6. Include a current record of all inspections.
 7. Include a signed statement that all supplies and materials incorporated in the work are in full compliance with the terms of the agreement.
- B. Furnish the City, on a daily basis, a legible copy of all inspection records for permanent retention. The daily record of inspections shall cover all work placement subsequent to the previous report and shall be verified by the Contractor's designated Quality Control representative. A sample of an acceptable Contractor Quality Control Report form shall be provided by the City. All specified tests or portions thereof, whether performed by the City or the Contractor, shall be recorded and attached to the daily report of the date upon which the test occurs. CQC shall record these tests on forms similar to the "Test Report" form provided by the City. The "Test Report" form shall be augmented as directed to include all of the test data required to provide a complete report.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01400

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 DESCRIPTION:

- A. Section Includes:
 - 1. Temporary Utilities: Electricity, lighting, heat, ventilation, telephone service, water and sanitary facilities.
 - 2. Temporary Controls: Barriers, enclosures and fencing, protection of the Work and water control.
 - 3. Construction Facilities: Access roads, parking, progress cleaning, and temporary buildings.
 - 4. Removal: Utilities, facilities, and controls.
- B. Related Sections:
 - 1. Section 01710: Cleaning.

1.02 TEMPORARY UTILITIES

- A. Temporary Electricity:
 - 1. Provide and pay for power service required from Utility source.
- B. Temporary Lighting:
 - 1. Provide and maintain lighting for construction operations to achieve minimum lighting level of 2 watts/sq ft. Provide additional lighting for finish work where and when needed, or as required by the Contract Documents.
 - 2. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails and lamps as required.
 - 3. Maintain lighting and provide routine repairs.
- C. Temporary Heat:
 - 1. Provide and pay for heat devices and heat as required to maintain specified conditions for construction operations. Comply with codes, agencies, and regulations regarding usage of temporary space heaters.
- D. Temporary Ventilation:

1. Ventilate enclosed areas to:
 - a. Assist cure of materials.
 - b. Dissipate humidity.
 - c. Prevent accumulation of dust, fumes, vapors, or gases.
 - d. Provide local exhaust ventilation to prevent harmful dispersal of hazardous substances into atmosphere at all times.
 - E. Temporary Telephone and Facsimile (FAX) Service:
 1. Provide, maintain and pay for telephone service and facsimile (Fax) on a dedicated line, to field office at time of project mobilization.
 - a. Toll calls shall be paid by party making call.
 - b. Equip phone with answering machine.
 2. Maintain services from start of work through building occupancy.
 - F. Temporary Water Service:
 1. Provide, maintain and pay for suitable quality water service required for construction operations.
 - G. Temporary Sanitary Facilities:
 1. Provide and maintain adequate number of required facilities and enclosures (see list below) for use of all persons and trades employed on Work during construction period.
 - a. Toilet facilities.
 - b. Washing facilities.
 - c. Other facilities as required.
 - H. Temporary First Aid Facilities: Provide adequate first aid facilities for construction personnel.
 - I. Temporary Fire Protection:
 1. Take all precautions to prevent possibility of fire resulting from construction operations. Particularly avoid hazardous accumulations of rubbish and unsecured flammable materials.
 2. Provide emergency fire extinguishing equipment of adequate type and quantity, readily available and properly maintained.
 3. Keep local Fire Department's telephone number prominently displayed near telephone.
- 1.03 TEMPORARY CONTROLS
- A. Barriers and Fencing
 1. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from

damage from construction operations.

2. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
3. Protect non-owned vehicular traffic, stored materials, site and structures from damage.
4. Provide temporary commercial grade chain link fencing at the limits of construction for the duration of the project, until Project has been accepted or occupied by Owner. Maintain site fencing as needed and equip with vehicular gates with locks.

B. Water Control:

1. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
2. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
3. Exercise care in cleaning out equipment, etc., so as to prevent materials from clogging catch basins and yard drains.
4. Leave all drainage items clean and in proper working condition.

C. Dust Control:

1. Utilize water application or other methods approved by the local jurisdiction to control dust on access roads and the project site to the satisfaction of the Architect. Maintain dust control operation to prevent flying dust from leaving the project site. Use power sweepers for street cleaning as necessary.
2. Vacuum clean interior surfaces of building prior to start of finish painting.
3. Continue vacuum cleaning on as-needed basis until building is ready for Substantial Completion or Occupancy.

D. Pollution Control:

1. Burning or burying of rubbish and waste materials on Site is prohibited. Provide dump box for collection of waste materials.
2. Disposal of volatile fluid wastes (such as mineral spirits, oil or paint thinner) in storm or sanitary sewer systems is prohibited.

4. Keep Site and surrounding areas clear of accumulations of waste material and rubbish resulting from operations under this Contract. Remove waste from Site immediately upon completion of Work.

E. Protection of Installed Work:

1. Do not remove temporary bracing and shoring until adequate permanent connections or structural elements are in final position and positively anchored.
2. Provide protective coverings at walls, projections, jambs, sills and soffits of opening.
3. Protect finished floors, stairs and other surfaces from traffic, dirt, wear, damage or movement of heavy objects, by protecting with durable sheet materials such as Tyvek.
4. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
5. Prohibit traffic from landscaped areas.

F. Vegetation Damage Control:

1. Protect all existing trees to remain on site from foliage, trunk, and root damage.
2. Provide barricades and maintain same around all trees, shrubs or other landscaped areas adjacent to work of this Contract to protect such areas from damage of any nature caused by construction operations.
3. Replace any plantings damaged or destroyed with plants of equivalent size, type and nature as approved by Architect.

G. Exterior Enclosures:

1. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection of Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification Sections, and to prevent entry of unauthorized persons.
2. Provide access doors with self-closing hardware and locks.

3. Provide temporary roofing as required.

H. Interior Enclosures:

1. Provide temporary partitions and ceilings as required to separate work areas from owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment.
2. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces in accordance with ASTM E90 (maximum Flame Spread Rating of 75) and in accordance with ASTM E84.

I. Security:

1. Provide security and facilities to protect Work from unauthorized entry, vandalism or theft.
2. Provide temporary locks at all exterior doors after building is enclosed.
3. Coordinate with Owner's Security program.

1.04 CONSTRUCTION FACILITIES

A. Access Roads

1. Construct and maintain temporary access to public thoroughfares to serve construction area.
2. Relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
3. Provide and maintain access to fire hydrants, free of obstructions.
4. Provide means of removing mud from vehicle wheels before entering streets. Any dirt, mud or other debris tracked onto streets must be removed immediately.
5. Provide barricades, warning signs, flagmen or other traffic regulators which may become necessary for protection of public, construction personnel and property.

B. Parking:

1. Arrange for temporary parking areas to accommodate construction personnel, project visitors and Owner's Employees.

2. When site space is not adequate, provide additional off-site parking as allowed by the local jurisdiction
3. Do not allow construction personnel vehicle or equipment parking on existing pavement.
4. Designate one parking space each for Owner, and Architect.

C. Progress Cleaning:

1. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces prior to enclosing the space.
3. Broom and vacuum clean interior areas prior to the start of surface finishing and continue cleaning to maintain a dust-free space during the finishing operations.
4. Remove waste materials, debris, and rubbish from site periodically and dispose off-site.

D. Project Identification:

1. Provide one 4 x 8 foot project sign of MDO exterior grade plywood and wood frame construction, painted with exhibit lettering by professional sign painter to Architect's design and colors. Design supports, framing and surfaces to resist a minimum of 50 mph wind velocity.
2. List title of project and logo, names of Owner, Architect, and Contractor as defined by the Architect's design.
3. Erect on the site at location established by the Architect, and Owner.
 - a. Comply with requirements of authorities having jurisdiction.
 - b. Obtain and pay for any required permits.
4. No other signs will be allowed without the Owner's permission except those signs required by law.

E. Field Offices and Sheds:

1. General: Furnish and install field office building(s) adequate in size and accommodation for all Contractor's offices, job site meetings, superintendent's office, supply room, tool room, and Architect. Provide a 12 x 40 trailer for the City's Project Manager. Contractor shall provide telephone and fax connection for City Manager's use.

2. The Contractor will provide the Architect with a space adequate in size and accommodation for job site meetings, and includes; a desk/chair, phone, phone line, computer connection access and use of facsimile and copy machines (when applicable).

1.05 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore Owner's property, and adjacent private and public property damages or used during construction, to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01500

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE:

- A. Warranty: Section 01700.
- B. Shop Drawings, Coordination Drawings and Schedules: Section 01300.
- C. Manufacturer's Data/Samples: Section 01300.

1.02 MATERIAL AND EQUIPMENT SELECTION:

- A. Comply with Standards and Specifications, including: size, make, type and quality specified.
- B. Manufactured and Fabricated Products:
 - 1. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - 2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - 3. Two or more items of the same kind shall be identical and by the same manufacturer.
 - 4. Provide products suitable for service conditions.
 - 5. Adhere to equipment capacities, sizes and dimensions shown or specified unless variations are specifically approved in writing.
- C. Use material or equipment only for purpose for which it is designed or is specified.
- D. Fabricate and install equipment to deliver its full rated capacity at the efficiency for which it was designed.
- E. Select and install equipment to operate at full capacity without excessive noise or vibration.
- F. Provide electrical products with Underwriters Laboratories label or as approved by the local inspection authority.

- G. All materials and products used in the construction of this project will be asbestos free in accordance with all applicable Federal, State and Local Authorities and Regulatory Agencies.

1.03 TRANSPORTATION AND HANDLING:

- A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately upon delivery, inspect shipments to assure compliance with requirements of Contract Documents and assure products are properly protected and undamaged.
 - 3. The Contractor shall promptly return all defective materials without waiting for their rejection by the Architect.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.04 STORAGE AND PROTECTION:

- A. Store products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 3. Protect equipment and systems from moisture, chemical or mechanical damage before and after installation.
 - 4. Protect shafts and bearing housings from rust.
- B. Exterior Storage:
 - 1. Store fabricated products above ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Inspection: Arrange in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

D. Protection After Installation:

1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
2. Plug or cap pipe and conduit openings to prevent the entrance of foreign matter.
3. Remove when no longer needed.

1.05 ALIGNING JOINTS IN FINISH MATERIALS:

- A. It shall be the responsibility of the Contractor to make certain in the installation of jointed floor, wall, and ceiling materials that:
1. The joints align through in a straight line and in both directions wherever possible.
 2. The joints shall be symmetrically placed wherever possible.
 3. If, because of the non-related sizes of the various materials and locations of openings, etc., it is not possible to accomplish the above, the Contractor shall meet the Architect at the site to determine the most satisfactory arrangement. The Contractor shall establish center lines for all trades.

1.06 SYSTEMS DEMONSTRATION:

- A. Prior to final inspection, demonstrate operation of each system to Architect and Owner.
- B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01600

SECTION 01615
DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. Provide for expeditious transportation and delivery of products to project site undamaged, on a schedule to avoid delay of the work.
- B. Provide equipment and personnel at the site to unload and handle products in a manner to avoid damage to products.
- C. Provide secure storage and protection for products to be incorporated into the work, and maintenance and protection for products after installation and until completion of the work.

1.02 DELIVERY

- A. Arrange deliveries of products in accord with construction schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with work and conditions at site.
 - 1. Work of other contractors, or Owner.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts and to facilitate assembly.
- E. Immediately upon delivery, inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Containers and packages are intact, labels are legible.
 - 4. Products are properly protected and undamaged. Minor damages may be repaired, with approval of the Architect, provided the finish items are equal in all respects to new

work.

1.03 PRODUCT HANDLING

- A. Provide equipment and personnel necessary to handle products, by methods to prevent soiling or damage to products or packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring, or otherwise damaging products or surrounding surfaces.
- C. Handle products by methods to prevent bending or overstressing.
- D. Lift heavy components only at designated lifting points.

1.04 STORAGE

- A. Store products immediately on delivery, and protect until installed in the work. Store in accord with manufacturer's instructions, with seals and labels intact and legible.
- B. Store products subject to damage by elements in substantial weather-tight enclosures.
 - 1. Maintain temperatures within ranges required by manufacturer's instructions.
 - 2. Provide humidity control for sensitive products, as required by manufacturer's instructions.
 - 3. Store unpacked products on shelves, in bins, or in neat piles, accessible for inspection.
- C. Exterior Storage:
 - 1. Provide substantial platforms blocking, or skids to support fabricated products 4" above ground, prevent soiling or staining.
 - 2. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Avoid use of nonvented plastic or canvas shelters that could create humidity chambers. Provide adequate ventilation to avoid condensation.
 - 3. Store loose granular materials on solid surfaces such as paved areas, or provide plywood or sheet materials to prevent mixing with foreign matter.
 - a. Provide surface drainage to prevent flow or ponding of rainwater.
 - b. Prevent mixing of refuse or chemically injurious materials or liquids.

- D. Arrange storage in manner to provide easy access for inspection.

1.05 MAINTENANCE OF STORAGE

- A. Maintain periodic system of inspection of stored products on schedules basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Surfaces of products exposed to elements are not adversely affected. Any weathering of products, coatings, and finishes is not acceptable under requirement of Contract Documents.

1.06 PROTECTION AFTER INSTALLATION

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of work.
- B. Control traffic to prevent damage to equipment and surfaces.
- C. Provide coverings to protect finished surfaces from damage.

1.07 DAMAGED PRODUCTS

- A. Damaged or deteriorated materials shall be removed from the premises. Replace materials that have been damaged.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01615

TO:

PROJECT:

SPECIFIED ITEM: _____

SECTION: _____ PAGE: _ PARAGRAPH: _____ DESCRIPTION: _____

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION:

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the requests; applicable portions of the data are clearly identified. Attached data also includes description of changes to Contract Documents which proposed substitution will require for its proper installation.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown on Drawings.
2. The undersigned will pay for changes to the building design, including engineering, design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance and quality of the proposed substitution are equivalent or superior to the specified item.

Submitted by: _____ Title: _____

Signature: _____ Date: _____

Firm: _____ Phone: _____

Address: _____

Attachments:

Accepted:	City_____NLA_____	Rejected:	City_____NLA_____
By:_____		Date:_____	(City)
By:_____		Date:_____	(NLA)

SECTION 01630

SUBSTITUTION REQUESTS / EQUALS

PART 1 - GENERAL

1.01 DESCRIPTION

A. General:

1. This Section describes procedures for submitting, processing, and handling of requests for substitution and product options. Any substitution or option shall be in accordance with provisions of Contract Documents.
2. See Instructions to Bidders and General Conditions for additional information.

B. Address submittals to Architect.

1.02 PRODUCT SELECTION - GENERAL

- A. Base all bids on materials, equipment and procedures specified.
- B. Certain types of equipment and kinds of material are described in Specifications by means of trade names, catalog numbers and/or manufacturer's names. This is not intended to exclude from consideration other items which may be capable of accomplishing the purpose indicated.
- C. Other types of equipment and kinds of material may be acceptable to Owner and Architect. (Prior approval required; see substitution request form at the end of this section).
- D. Listing of a manufacturer implies acceptance of them only as supplier of a product which complies with specified item.
- E. Equipment, materials and methods of construction, if not specifically indicated, must be approved in writing by Architect/Engineer and be agreed upon by Owner prior to letting of Contract.
- F. Architect/Engineer reserves the right to require substitute items to comply color- and pattern-wise with base specified items, if necessary to achieve "design intent."
- G. No substitution will be permitted after letting of Contract, except as indicated herein.
- H. Conditional bids and voluntary alternates will not be considered.

1.03 CONTRACTOR'S OPTIONS

- A. For products specified only by reference standards, any product meeting standards may be used.
- B. For products specified by naming several products or manufacturers, use any product or manufacturer named.
- C. For products specified by naming one manufacturer and product, and several optional manufacturers or products, select any named product and manufacturer which meets all specification criteria.
 - 1. Contract Documents are based upon use of primary manufacturer.
 - 2. By use of optional manufacturer or product, Contractor acknowledges that he will be responsible for all adjustments to fit product to the Work and for providing all additional work, equipment, and services required by use of product, at no additional cost to Owner.

1.04 REQUESTS FOR SUBSTITUTION / OR EQUALS

- A. Use form provided at the end of this section.
- B. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 - 2. Will provide the same warranty for substitution as for specified product.
 - 3. Will coordinate installation and make other changes which may be required for work to be complete in all respects.
 - 4. Waives claims for additional costs which may subsequently become apparent.
- C. Substitutions will not be considered when they are indicated or implied on Shop Drawings or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- D. Only one request for substitution will be considered for each product. When substitution is not accepted, specified product shall be provided.
- E. Failure of Contractor to submit proposed substitutions for review in the manner specified and within the time prescribed shall be sufficient cause for disapproval by Architect of any substitutions so proposed.
 - 1. Where proposed substitutions are unacceptable to the Architect and originally specified item is not available through no fault of the

Contractor, the Architect shall select an alternate product. When such a selection results in a change to the Contract Cost or the Contract Time, the Contract shall be adjusted in accordance with the "General Conditions of the Contract for Construction."

- F. Contractor shall certify that each product submitted as a substitution is considered asbestos free in accordance with all applicable regulations of Federal, State and Local Authorities and Regulatory Agencies.
- G. "Or Equals" must be pre-approved prior to bid date.
 - 1. Unless otherwise indicated, no item, material, or process will be reviewed later than 10 days prior to the Bid Date.
 - 2. All requests for pre-approval must be in writing.
 - 3. All items, materials or processes that are to be considered for pre-approval must be submitted in the manner described in the individual Specification Sections in which they appear, and must include all required and necessary support information, certificates, and product information needed for evaluation. Responsibility for assembling and providing adequate review material is solely that of the pre-approval applicant. Adequacy of the material submitted will be determined solely by the Architect, whose decision will be final.
 - 4. Inadequate applications will not be reviewed. Neither the Architect nor the Owner has an obligation to notify applicants of inadequate applications prior to the established cut-off dates for review.
 - 5. Neither the Architect nor the Owner has an obligation to review proposed equals prior to Bidding unless pre-approval of a particular material, method or item of equipment is expressly required in the Specifications.

1.05 SUBMITTAL DATA

- A. Complete data substantiating compliance of proposed substitution with Contract Documents. (Note: It is the responsibility of the submitter to supply the Architect with complete description and technical information so that the Architect can properly appraise the submittal. Lack of proper and sufficient information will be sufficient cause for rejection. Burden of proof of merit of requested substitution is on submitter.)
- B. For products:
 - 1. Products identification, including manufacturer's name.
 - 2. Manufacturer's literature, marked to indicate specific model, type, size, and options to be considered:
 - a. Product description.
 - b. Performance and test data.
 - c. Reference standards.

- d. Difference in power demand, air quantities, etc.
- e. Dimensional differences from specified unit.
- 3. Full size samples if requested. Architect reserves the right to retain the sample until physical units are installed on project for comparison purposes. Requester will pay all costs of furnishing and return of samples. Architect is not responsible for loss of, or damage to, samples.
- 4. Name and address of similar projects and name of Owner's Representative who can be contacted to discuss product, installation, and field performance data.
- 5. List other local projects for which the submitted product has been approved for use.
- 6. For construction methods:
 - a. Detailed description of proposed method.
 - b. Illustrate on drawings.
- 7. Itemized comparison of proposed substitute to specified item.
- 8. Data relating to changes in construction schedule.
- 9. Relation to separate contracts.
- 10. Cost of proposed substitution in comparison with product or method specified.

1.06 SUBSTITUTION AFTER BID DATE

- A. No substitutions will be considered after bid date except for: Non-availability of specified item due to strikes, lockouts, bankruptcy, discontinuance of production, proven shortage, or similar occurrences or when the contractor pays the owner a credit acceptable to the Owner and compensates the Architect for additional review time.
- B. Notify Architect, in writing (with a copy being sent to the Owner) with substantiating data as soon as non-availability becomes apparent, to avoid delay in construction.
- C. Forward submittal data as required for substitutions above.

1.07 REJECTION OF SUBSTITUTION OR "EQUALS"

- A. Substitutions and/or "Equals" will not be considered if:
 - 1. They are indicated or implied on shop drawings, or project data submittals, without formal request submitted in accordance with this Section.
 - 2. Acceptance will require substantial revision of Contract Documents or building spaces.
 - 3. Request for substitution does not indicate specific item for which request is submitted. Acceptance of a manufacturer only will not be made.

1.08 PRIOR APPROVALS

- A. Prior approval does not automatically mean equipment is approved. Final submittals and shop drawings shall be made as required by the Specifications for final approval of all equipment and materials. Any changes required due to substitution is the Contractor's responsibility.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01630

SECTION 01650

STARTING OF SYSTEMS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Starting systems.
- B. Demonstration and instructions.

1.02 RELATED SECTIONS

- A. Section 01700 - Contract Closeout.
- B. See also individual sections for start-up requirements

1.03 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect in writing, a minimum of 24 hrs prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence or other conditions, which may cause damage.
- D. Verify that tests, meter readings and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of responsible manufacturer's representative in accordance with manufacturers' instructions.
- G. Where specified in individual specifications sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation. Manufacturers rep shall oversee the startup of all systems. See individual sections for startup requirements.

1.04 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.

- B. Notify the City a minimum of 7 days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, control sequence, and other operating conditions.
- D. Verify that tests, meter readings and specific electrical characteristics agree with those required by the manufacturer.
- E. Verify wiring and appurtenant components are complete and tested.
- F. Demonstrate Project equipment and instruct in a classroom environment located at the site and instructed by a qualified representative who is knowledgeable about the Project.
- G. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail, to explain all aspects of operation and maintenance.
- H. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance and shutdown of each item of equipment at scheduled times, at designated location.
- I. All demonstrations and training sessions of equipment/products/systems shall be videotaped (by qualified personnel) by the Contractor. Two copies of the videotape shall be turned over to the Owner.
- J. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- K. The amount of time required for and the type of instruction on each item of equipment and system is to be as specified in individual sections, or as noted in Division 1 specifications.
- L. Submit a written report for each system detailing the steps performed, the results observed, and certifying that the equipment and system demonstrates proper installation and functioning under full-load conditions.

1.05 QUALITY CONTROL

- A Prior to startup of systems, Contractor Quality Control shall obtain approval of the following submittals :
 - 1. Certification that the system is installed in conformance with the contract.
 - 2. Manufacturer's written startup and operating test procedures.
 - 3. Manufacturer's written startup checklist and operating test forms.
 - 4. Name of manufacturer's representative responsible for conducting startup, operating test, and City instruction.
 - 5. Operation and Maintenance manuals.

6. Schedule of Startups, Operating Tests, and City Instruction. Unless permitted by the City in writing, no Startup, Operating test, or City instruction shall occur during the same time as any other Startup, Operating Test, or City Instruction.

1.06 OPERATING TEST

- A. Contractor shall notify the City in writing 7 days in advance of any Operating Test. Operating Test shall occur after Contractor Quality Control has assured that Startup procedures result in system readiness to conduct the test. Operating test shall be separate from any other system startup, operating test, or City instruction, and shall occur during normal business hours.
- B. Operating Test shall be conducted in the presence of the City, its designated witness, Contractor Quality Control Representative, and, as specified, the Architect, and the manufacturer's representative. Test data will be recorded during the test on the approved test report form. Upon failure of any component, procedure, or performance, the test report form will be annotated as to the time and suspected cause of failure. Test report forms for failed and successful tests shall be submitted within 7 days of test performance.
- C. System components and subsystems shall be tested and adjusted prior to full system testing. Upon component or subsystem failure during full system testing, Contractor Quality Control will halt testing, determine the cause of failure, rectify the condition, and reschedule the test. The Contractor is responsible for all City costs caused by test failure and rescheduling.
- D. The City may designate witnesses for Operating Tests. Upon notification from the City that the system operation, performance, or test procedure conflicts with contract requirements, Contractor Quality control will halt the test, correct the deficiency, and reschedule the test. The Contractor is responsible for all City costs caused by deficient operation or test procedure.
- E. Operating test shall demonstrate each component , subsystem, and total system performance under all operating modes.

1.07 DEMONSTRATION AND INSTRUCTIONS.

- A. Demonstrate operation and maintenance of equipment and systems to City personnel prior to the date of substantial completion.
- B. Demonstration to be presented by persons authorized in writing by the manufacturer, with experience in the starting, operating, trouble-shooting, and maintaining of the equipment.

- C. Demonstration shall include requirements caused by seasonal climate variations
- D. Demonstrate using Operation and Maintenance Manuals.
- E. Demonstrate starting, operation, controls, adjustments, trouble-shooting, normal service , and shutdown.
- F. Provide amendments to O&M Manuals for changes required as a result of the demonstration.
- G. Schedule instruction period with the City's designated representative.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION 01650

SECTION 01660

TESTING, ADJUSTING, AND BALANCING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Testing adjusting and balancing for this project will be provided by this contract. The Contractor shall furnish and install all equipment, (valves, sheaves, etc.) for the systems to operate as specified.
- B. This Section includes testing, adjusting, and balancing HVAC systems to produce design objectives, including the following:
 - 1. Balancing airflow within distribution systems, including submains, branches, and terminals, to indicated quantities according to specified tolerances.
 - 2. Adjusting total HVAC systems to provide indicated quantities.
 - 3. Measuring electrical performance of HVAC equipment.
 - 4. Setting quantitative performance of HVAC equipment.
 - 5. Verifying that automatic control devices are functioning properly.
 - 6. Reporting results of the activities and procedures specified in this Section.
- C. Related Sections include the following:
 - 1. Testing and adjusting requirements unique to particular systems and equipment are included in the Sections that specify those systems and equipment.
 - 2. Field quality-control testing to verify that workmanship quality for system and equipment installation is specified in system and equipment Sections.

- D. Other testing and balancing:
 - 1. Contractor shall test, adjust and balance all doors, frames and hardware as a part of this section.
 - 2. Contractor shall test all systems within the building to ensure proper operation of systems as described in the specifications prior to closeout of the project

1.01 DEFINITIONS

- A. Adjust: To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust a damper.
- B. Balance: To proportion flows within the distribution system, including submains, branches, and terminals, according to design quantities.
- C. Draft: A current of air, when referring to localized effect caused by one or more factors of high air velocity, low ambient temperature, or direction of airflow, whereby more heat is withdrawn from a person's skin than is normally dissipated.
- D. Procedure: An approach to and execution of a sequence of work operations to yield repeatable results.
- E. Report Forms: Test data sheets for recording test data in logical order.
- F. Static Head: The pressure due to the weight of the fluid above the point of measurement. In a closed system, static head is equal on both sides of the pump.
- G. Suction Head: The height of fluid surface above the centerline of the pump on the suction side.
- H. System Effect: A phenomenon that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.
- I. System Effect Factors: Allowances used to calculate a reduction of the performance ratings of a fan when installed under conditions different from those presented when the fan was performance tested.
- J. Terminal: A point where the controlled medium, such as fluid or energy, enters or leaves the distribution system.
- K. Test: A procedure to determine quantitative performance of a system or equipment.

- L. Testing, Adjusting, and Balancing Agent: The entity responsible for performing and reporting the testing, adjusting, and balancing procedures.
- M. AABC: Associated Air Balance Council.
- N. CTI: Cooling Tower Institute.
- O. SMACNA: Sheet Metal and Air Conditioning Contractors' National Association.

1.02 SUBMITTALS

- A. Quality-Assurance Submittals: Within 30 days from the Contractor's Notice to Proceed, submit 2 copies of evidence that the testing, adjusting, and balancing Agent and this Project's testing, adjusting, and balancing team members meet the qualifications specified in the "Quality Assurance" Article below.
- B. Certified Testing, Adjusting, and Balancing Reports: Submit 2 copies of reports prepared, as specified in this Section, on approved forms certified by the testing, adjusting, and balancing Agent.
- C. Sample Report Forms: Submit 2 sets of sample testing, adjusting, and balancing report forms.
- D. Warranty: Submit 2 copies of special warranty specified in the "Warranty" Article below.

1.03 QUALITY ASSURANCE

- A. Agent Qualifications: Engage a testing, adjusting, and balancing agent certified by AABC.
- B. Testing, Adjusting, and Balancing Conference: Meet with the Owner's and the Architect's representatives on approval of the testing, adjusting, and balancing strategies and procedures plan to develop a mutual understanding of the details. Ensure the participation of testing, adjusting, and balancing team members, equipment manufacturers' authorized service representatives, HVAC controls Installer, and other support personnel. Provide 7 days' advance notice of scheduled meeting time and location.
 - 1. Agenda Items: Include at least the following:
 - a. Submittal distribution requirements.
 - b. Contract Documents examination report.
 - c. Testing, adjusting, and balancing plan.
 - d. Work schedule and Project site access requirements.
 - e. Coordination and cooperation of trades and subcontractors.

- f. Coordination of documentation and communication flow.
- C. Certification of Testing, Adjusting, and Balancing Reports: Certify the testing, adjusting, and balancing field data reports. This certification includes the following:
 - 1. Review field data reports to validate accuracy of data and to prepare certified testing, adjusting, and balancing reports.
 - 2. Certify that the testing, adjusting, and balancing team complied with the approved testing, adjusting, and balancing plan and the procedures specified and referenced in this Specification.
- D. Testing, Adjusting, and Balancing Reports: Use standard forms from AABC's "National Standards for Testing, Adjusting, and Balancing."
- E. Instrumentation Type, Quantity, and Accuracy: As described in AABC national standards.
- F. Instrumentation Calibration: Calibrate instruments at least every 6 months or more frequently if required by the instrument manufacturer.

1.04 PROJECT CONDITIONS

- A. Full Owner Occupancy: The Owner may occupy the site and completed building during the entire testing, adjusting, and balancing period. Cooperate with the Owner during testing, adjusting, and balancing operations to minimize conflicts with the Owner's operations.

1.05 COORDINATION

- A. Coordinate the efforts of factory-authorized service representatives for systems and equipment, HVAC controls installers, and other mechanics to operate HVAC systems and equipment to support and assist testing, adjusting, and balancing activities.
- B. Notice: Provide 7 days' advance notice for each test. Include scheduled test dates and times.
- C. Perform testing, adjusting, and balancing after leakage and pressure tests on air and water distribution systems have been satisfactorily completed.

1.06 WARRANTY

- A. General Warranty: The national project performance guarantee specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. National Project Performance Guarantee: Provide a guarantee on AABC'S "National Standards" forms stating that AABC will assist in completing the requirements of the Contract Documents if the testing, adjusting, and balancing Agent fails to comply with the Contract Documents.

PART 2 - PRODUCTS Not used.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine Contract Documents to become familiar with project requirements and to discover conditions in systems' designs that may preclude proper testing, adjusting, and balancing of systems and equipment.
 - 1. Contract Documents are defined in the General Conditions of the Contract.
 - 2. Verify that balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are required by the Contract Documents. Verify that quantities and locations of these balancing devices are accessible and appropriate for effective balancing and for efficient system and equipment operation.
- B. Examine approved submittal data of HVAC systems and equipment.
- C. Examine project record documents described in Division 1 Section "Project Record Documents."
- D. Examine Architect's and Engineer's design data, including HVAC system descriptions, statements of design assumptions for environmental conditions and systems' output, and statements of philosophies and assumptions about HVAC system and equipment controls.
- E. Examine equipment performance data, including fan and pump curves. Relate performance data to project conditions and requirements, including system effects that can create undesired or unpredicted conditions that

cause reduced capacities in all or part of a system. Calculate system effect factors to reduce the performance ratings of HVAC equipment when installed under conditions different from those presented when the equipment was performance tested at the factory. To calculate system effects for air systems, use tables and charts found in AMCA 201, "Fans and Systems," Sections 7 through 10; or in SMACNA's "HVAC Systems--Duct Design," Sections 5 and 6. Compare this data with the design data and installed conditions.

- F. Examine system and equipment installations to verify that they are complete and that testing, cleaning, adjusting, and commissioning specified in individual Specification Sections have been performed.
- G. Examine system and equipment test reports.
- H. Examine HVAC system and equipment installations to verify that indicated balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are properly installed, and their locations are accessible and appropriate for effective balancing and for efficient system and equipment operation.
- I. Examine systems for functional deficiencies that cannot be corrected by adjusting and balancing.
- J. Examine air-handling equipment to ensure clean filters have been installed, bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- K. Examine terminal units, such as variable-air-volume boxes and mixing boxes, to verify that they are accessible and their controls are connected and functioning.
- L. Examine plenum ceilings, utilized for supply air, to verify that they are airtight. Verify that pipe penetrations and other holes are sealed.
- M. Examine strainers for clean screens and proper perforations.
- N. Examine 3-way valves for proper installation for their intended function of diverting or mixing fluid flows.
- O. Examine heat-transfer coils for correct piping connections and for clean and straight fins.
- P. Examine open-piping-system pumps to ensure absence of entrained air in the suction piping.
- Q. Examine equipment for installation and for properly operating safety interlocks and controls.
- R. Examine automatic temperature system components to verify the following:

1. Dampers, valves, and other controlled devices operate by the intended controller.
 2. Dampers and valves are in the position indicated by the controller.
 3. Integrity of valves and dampers for free and full operation and for tightness of fully closed and fully open positions. This includes dampers in multizone units, mixing boxes, and variable-air-volume terminals.
 4. Automatic modulating and shutoff valves, including 2-way valves and 3-way mixing and diverting valves, are properly connected.
 5. Thermostats and humidistats are located to avoid adverse effects of sunlight, drafts, and cold walls.
 6. Sensors are located to sense only the intended conditions.
 7. Sequence of operation for control modes is according to the Contract Documents.
 8. Controller set points are set at design values. Observe and record system reactions to changes in conditions. Record default set points if different from design values.
 9. Interlocked systems are operating.
 10. Changeover from heating to cooling mode occurs according to design values.
- S. Report deficiencies discovered before and during performance of testing, adjusting, and balancing procedures.

3.02 PREPARATION

- A. Prepare a testing, adjusting, and balancing plan that includes strategies and step-by-step procedures.
- B. Complete system readiness checks and prepare system readiness reports. Verify the following:
 1. Permanent electrical power wiring is complete.
 2. Automatic temperature-control systems are operational.
 3. Equipment and duct access doors are securely closed.

4. Balance, smoke, and fire dampers are open.
5. Isolating and balancing valves are open and control valves are operational.
6. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
7. Windows and doors can be closed so design conditions for system operations can be met.

3.03 GENERAL TESTING AND BALANCING PROCEDURES

- A. Perform testing and balancing procedures on each system according to the procedures contained in AABC national standards and this Section.
- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary to allow adequate performance of procedures. After testing and balancing, close probe holes and patch insulation with new materials identical to those removed. Restore vapor barrier and finish according to the insulation Specifications for this Project.
- C. Mark equipment settings with paint or other suitable, permanent identification material, including damper-control positions, valve indicators, fan-speed-control levers, and similar controls and devices, to show final settings.

3.04 FUNDAMENTAL AIR SYSTEMS' BALANCING PROCEDURES

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.
- B. Prepare schematic diagrams of systems' "as-built" duct layouts.
- C. For variable-air-volume systems, develop a plan to simulate diversity.
- D. Determine the best locations in main and branch ducts for accurate duct airflow measurements.
- E. Check the airflow patterns from the outside-air louvers and dampers and the return- and exhaust-air dampers, through the supply-fan discharge and mixing dampers.
- F. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- G. Verify that motor starters are equipped with properly sized thermal protection.

- H. Check dampers for proper position to achieve desired airflow path.
- I. Check for airflow blockages.
- J. Check condensate drains for proper connections and functioning.
- K. Check for proper sealing of air-handling unit components.

3.05 CONSTANT-VOLUME AIR SYSTEMS' BALANCING PROCEDURES

- A. The procedures in this Article apply to constant-volume supply-, return-, and exhaust-air systems. Additional procedures are required for variable-air-volume, multizone, dual-duct, induction-unit supply-air systems and process exhaust-air systems. These additional procedures are specified in other articles in this Section.
- B. Adjust fans to deliver total design airflows within the maximum allowable rpm listed by the fan manufacturer.
 - 1. Measure fan static pressures to determine actual static pressure as follows:
 - a. Measure outlet static pressure as far downstream from the fan as practicable and upstream from restrictions in ducts such as elbows and transitions.
 - b. Measure static pressure directly at the fan outlet or through the flexible connection.
 - c. Measure inlet static pressure of single-inlet fans in the inlet duct as near the fan as possible, upstream from flexible connection and downstream from duct restrictions.
 - d. Measure inlet static pressure of double-inlet fans through the wall of the plenum that houses the fan.
 - 2. Measure static pressure across each air-handling unit component.
 - a. Simulate dirty filter operation and record the point at which maintenance personnel must change filters.
 - 3. Measure static pressures entering and leaving other devices such as sound traps, heat recovery equipment, and air washers under final balanced conditions.
 - 4. Compare design data with installed conditions to determine variations in design static pressures versus actual static pressures. Compare actual system effect factors with calculated system effect factors to identify where variations occur. Recommend corrective action to align design and actual conditions.

5. Adjust fan speed higher or lower than design with the approval of the Architect. Make required adjustments to pulley sizes, motor sizes, and electrical connections to accommodate fan-speed changes.
 6. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure no overload will occur. Measure amperage in full cooling, full heating, and economizer modes to determine the maximum required brake horsepower.
- C. Adjust volume dampers for main duct, submain ducts, and major branch ducts to design airflows within specified tolerances.
1. Measure static pressure at a point downstream from the balancing damper and adjust volume dampers until the proper static pressure is achieved.
 - a. Where sufficient space in submains and branch ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow for that zone.
 2. Remeasure each submain and branch duct after all have been adjusted. Continue to adjust submains and branch ducts to design airflows within specified tolerances.
- D. Measure terminal outlets and inlets without making adjustments.
1. Measure terminal outlets using a direct-reading hood or the outlet manufacturer's written instructions and calculating factors.
- E. Adjust terminal outlets and inlets for each space to design airflows within specified tolerances of design values. Make adjustments using volume dampers rather than extractors and the dampers at the air terminals.
1. Adjust each outlet in the same room or space to within specified tolerances of design quantities without generating noise levels above the limitations prescribed by the Contract Documents.
 2. Adjust patterns of adjustable outlets for proper distribution without drafts.

3.06 MOTORS

- A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:

1. Manufacturer, model, and serial numbers.
2. Motor horsepower rating.
3. Motor rpm.
4. Efficiency rating if high-efficiency motor.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter thermal-protection-element rating.

3.06 TEMPERATURE TESTING

- A. During testing, adjusting, and balancing, report need for adjustment in temperature regulation within the automatic temperature-control system.
- B. Measure indoor wet- and dry-bulb temperatures every other hour for a period of 2 successive 8-hour days, in each separately controlled zone, to prove correctness of final temperature settings. Measure when the building or zone is occupied.
- C. Measure outside-air, wet- and dry-bulb temperatures.

3.07 TEMPERATURE-CONTROL VERIFICATION

- A. Verify that controllers are calibrated and commissioned.
- B. Check transmitter and controller locations and note conditions that would adversely affect control functions.
- C. Record controller settings and note variances between set points and actual measurements.
- D. Verify operation of limiting controllers (i.e., high- and low-temperature controllers).
- E. Verify free travel and proper operation of control devices such as damper and valve operators.
- F. Verify sequence of operation of control devices. Note air pressures and device positions and correlate with airflow and water-flow measurements. Note the speed of response to input changes.
- G. Confirm interaction of electrically operated switch transducers.

- H. Confirm interaction of interlock and lockout systems.
- I. Verify main control supply-air pressure and observe compressor and dryer operations.
- J. Record voltages of power supply and controller output. Determine if the system operates on a grounded or nongrounded power supply.
- K. Note operation of electric actuators using spring return for proper fail-safe operations.

3.08 TOLERANCES

- A. Set HVAC system airflow and water flow rates within the following tolerances:
 - 1. Supply, Return, and Exhaust Fans: Plus 5 to plus 10 percent.
 - 2. Air Outlets and Inlets: Plus 5 to minus 5 percent.
 - 3. Heating-Water Flow Rate: 0 to minus 5 percent.
 - 4. Cooling-Water Flow Rate: 0 to minus 5 percent.

3.9 REPORTING

- A. Initial Construction-Phase Report: Based on examination of the Contract Documents as specified in "Examination" Article above, prepare a report on the adequacy of design for systems' balancing devices. Recommend changes and additions to systems' balancing devices to facilitate proper performance measuring and balancing. Recommend changes and additions to HVAC systems and general construction to allow access for performance measuring and balancing devices.
- B. Status Reports: As Work progresses, prepare reports to describe completed procedures, procedures in progress, and scheduled procedures. Include a list of deficiencies and problems found in systems being tested and balanced. Prepare a separate report for each system and each building floor for systems serving multiple floors.

3.10 FINAL REPORT

- A. General: Typewritten, or computer printout in letter-quality font, on standard bond paper, in 3-ring binder, tabulated and divided into sections by tested and balanced systems.

- B. Include a certification sheet in front of binder signed and sealed by the certified testing and balancing engineer.
 - 1. Include a list of the instruments used for procedures, along with proof of calibration.
- C. Final Report Contents: In addition to the certified field report data, include the following:
 - 1. Fan curves.
 - 2. Manufacturers' test data.
 - 3. Field test reports prepared by system and equipment installers.
 - 4. Other information relative to equipment performance, but do not include approved Shop Drawings and Product Data.
- D. General Report Data: In addition to the form titles and entries, include the following data in the final report, as applicable:
 - 1. Title page.
 - 2. Name and address of testing, adjusting, and balancing Agent.
 - 3. Project name.
 - 4. Project location.
 - 5. Architect's name and address.
 - 6. Engineer's name and address.
 - 7. Contractor's name and address.
 - 8. Report date.
 - 9. Signature of testing, adjusting, and balancing Agent who certifies the report.
 - 10. Summary of contents, including the following:
 - a. Design versus final performance.
 - b. Notable characteristics of systems.
 - c. Description of system operation sequence if it varies from the Contract Documents.
 - 11. Nomenclature sheets for each item of equipment.

12. Data for terminal units, including manufacturer, type size, and fittings.
 13. Notes to explain why certain final data in the body of reports vary from design values.
 14. Test conditions for fans and pump performance forms, including the following:
 - a. Settings for outside-, return-, and exhaust-air dampers.
 - b. Conditions of filters.
 - c. Cooling coil, wet- and dry-bulb conditions.
 - d. Other system operating conditions that affect performance.
- E. System Diagrams: Include schematic layouts of air distribution systems. Present with single-line diagrams and include the following:
1. Quantities of outside, supply, return, and exhaust airflows.
 2. Duct, outlet, and inlet sizes.
 3. Terminal units.
 4. Balancing stations.
- F. Round, Flat-Oval, and Rectangular Duct Traverse Reports: Include a diagram with a grid representing the duct cross-section and record the following:
1. Report Data: Include the following:
 - a. System and air-handling unit number.
 - b. Location and zone.
 - c. Traverse air temperature in deg F (deg C).
 - d. Duct static pressure in inches wg (Pa).
 - e. Duct size in inches (mm).
 - f. Design airflow rate in cfm (L/s).
 - g. Design velocity in fpm (m/s).
 - h. Actual airflow rate in cfm (L/s).
 - i. Actual average velocity in fpm (m/s).
 - j. Barometric pressure in psig (Pa).
- G. Air-Terminal-Device Reports: For terminal units, include the following:
1. Unit Data: Include the following:
 - a. System and air-handling unit identification.
 - b. Location and zone.
 - c. Test apparatus used.
 - d. Area served.

- e. Air-terminal-device number from system diagram.
 - f. Air-terminal-device size.
2. Test Data: Include design and actual values for the following:
- a. Airflow rate in cfm (L/s).
 - b. Air velocity in fpm (m/s).
 - c. Preliminary airflow rate as needed in cfm (L/s).
 - d. Final airflow rate in cfm (L/s).
 - e. Space temperature in deg F (deg C).
- H. Instrument Calibration Reports: For instrument calibration, include the following:
1. Report Data: Include the following:
- a. Instrument type and make.
 - b. Serial number.
 - c. Application.
 - d. Dates of use.
 - e. Dates of calibration.

3.11 ADDITIONAL TESTS

- A. Within 90 days of completing testing, adjusting, and balancing, perform additional testing and balancing to verify that balanced conditions are being maintained throughout and to correct unusual conditions.
- B. Seasonal Periods: If initial testing, adjusting, and balancing procedures were not performed during near-peak summer and winter conditions, perform additional inspections, testing, and adjusting during near-peak summer and winter conditions.
- C. Schedule walk-through with Owner and Architect for random spot check of air balance. During this walk-through air distribution devices and hydronic devices will be selected at random. The Balance Contractor will be required to demonstrate that CFM's and water flows shown on Test and Balance Report match field data. Schedule walk-through with at least 7 days prior notice. The Test and Balance Contractor shall allow 8 hours of time for this process.

END OF SECTION 01660

SECTION 01700

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 DESCRIPTION:

- A. Section Includes:
 - 1. Description of Requirements.
 - 2. Closeout Procedures.
 - 3. **Record Document Submittals in Autocad.**
 - 4. Final Cleaning.
 - 5. System Start-Up.
 - 6. Testing.
 - 7. Training.
 - 8. Adjusting and Balancing.
 - 9. **Operation and Maintenance Data on CD.**
 - 10. Warranties and Bonds.
 - 11. Spare Parts and Maintenance Materials.
 - 12. Prerequisites to Substantial Completion.
 - 13. Prerequisites to Final Acceptance.
- B. Related Sections:
 - 1. Section 01010 - Summary of Work.

1.02 GENERAL REQUIREMENTS

- A. Definitions: Project Closeout is the terminology used to describe certain collective project requirements, indicating completion of Work, that shall be fulfilled near end of Contract time in preparation for Final Acceptance and occupancy of Work by the Owner, as well as final payment to Contractor and normal termination of Contract.
- B. Time of Contract Closeout is directly related to "Substantial Completion"; therefore, time of closeout may be either single time period for entire Work or series of time periods for individual elements of Work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to other provisions of this Section.

1.03 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Owner / architect's review.
- B. Provide submittals to Owner / architect that are required by governing or other authorities.

- C. Submit written request for final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.04 RECORD DOCUMENT SUBMITTALS

- A. General: Specific requirements for Record Documents are indicated in individual Sections of these Specifications. Other requirements are indicated in General Conditions. General submittal requirements are indicated in Section 01340 - Shop Drawings, Product Data, and Samples.
- B. Do not use Record Documents for construction purposes. Protect from deterioration and loss.
 - 1. Owner / architect will monitor Record Documents and compare to Contractor's payment application on monthly basis.
 - 2. Up-to-date Record Documents are prerequisite to Final Acceptance and approval of Final Payment Request.
- C. Record Drawings:
 - 1. Maintain record set of blue or black line prints of Contract Drawings and Shop Drawings in clean, undamaged condition. Accurately indicate depth of all concealed mechanical items, buried piping, locations of cleanouts, etc., from walls and centerlines utilizing standard industry practice. Provide to the Owner / architect prior to acceptance of the completed project one complete set of construction documents revised to show "As-Installed" conditions, including addenda and change order items.

Recording "As Built" Conditions:

- a. Record information carefully and neatly, with red ink on "Record Drawing" Set kept on site.
- b. Label each sheet "Record Drawing" in large, neat red letters. Label the record copy of other documents "Record".
- 3. Record the following information on the site "Record Drawings". Obtain verification of changes by Inspector's initialing of each change.
 - a. Changes made by Change Orders and other modifications.

- b. Locations of Work buried under and outside the building; such as plumbing and electrical lines and conduits. Establish locations of underground Work by dimensions to column lines or walls, locating turns, and by centerline or invert elevations and rates of fall.
- c. Locations of significant Work concealed inside the building whose general locations have been changed, as approved, from those shown on the Contract Documents. Give sufficient information to easily locate work concealed in the building.
- d. Locations of items, not necessarily concealed, which have been changed, as approved, from the locations shown on the Contract Documents.
- e. Nameplate data, description, and serial numbers of all equipment on equipment schedules.
- f. In addition to the previously specified requirements for Record Drawings:
 - 1. Keep up to date during the progress of the Work; make available to the City at any time.
 - 2. Furnish additional drawings as necessary for clarification.
 - 3. Record deviations from the sizes, locations and other features of installations shown in the Contract Documents.
 - 4. Drawing to scale:
 - a) Locate main runs of piping, conduit, ductwork and similar items by dimensions.
 - b) Locate other items either by dimensions or in relation to spaces within the building.
 - 5. Furnish clean Record Drawings, made from final Shop Drawings that have been updated to show actual conditions, as specified in the individual specification sections.
- D. Transmit to the City at time of acceptance of the Work and prior to final payment, using the site record drawings for reference, prepared final "Record As-Built Drawing" drawings on permanent, reproducible prints of original Construction Documents and all shop drawings.

In addition, provide one copy of all Record As-Built Drawings in AutoCad format (version 2005 or later) and one PDF copy of same drawings. AutoCad drawings shall be fully modifiable.

E. Specifications and Addenda:

1. Mark each Specification Section to record:
 - a. Manufacturer, trade name, catalog number and supplier of each product and item actually incorporated in the Work.
 - b. Changes made by Change Order and other modifications.

F. Large-scale layout drawings:

1. The preparation of large-scale, detailed layout drawings may be required for the work of Division's 15 and 16 of these Specifications. These layout drawings are not Shop Drawings as defined by the Contract Documents, but, together with Shop Drawings or layout drawings of other affected Work, are used to check, coordinate and integrate the various types of work.
2. If furnished, include the layout drawings as part of the Project Record Drawings.

G. Sign and date the completed Project Record Documents and submit them to the City for review and acceptance prior to any request for verification of Substantial Completion.

1. Mark-up set of Record Drawings to show actual installation where installed work varies substantially from work as originally shown.
2. Mark whichever Drawing (Contract Drawings or Shop Drawings), are most appropriate and most capable of showing actual "field" condition fully and accurately. Consolidate information on complete systems or units of work on minimum number of Drawing Sheets required to properly document changes.
3. Give particular attention to concealed work that would be difficult to measure and record at later date.

4. Mark record set with red erasable pencil and where feasible, use other color to distinguish between variations in separate categories of Work.
5. Show all backing material and other embedded or concealed items required for installation of future work by Owner.
6. Organize Record Drawing sheets into manageable sets, separated by construction discipline, and bind with durable cover sheet. Print suitable titles, dates and other identification on cover of each set.

D. Record Specifications:

1. Maintain one complete copy of Project Manual, including Specifications and Addenda, and one copy of other written Construction Documents such as change orders, supplemental instructions and similar modifications issued in printed form during construction.
2. Mark these documents to show substantial variations in actual Work performed in comparison with text of Specifications and modifications issued.
3. Note related Record Drawing information and Product Data, where applicable.
4. Upon completion of Work, submit Record Specifications to Architect for Owner's records. Provide one copy of Record Specifications in modifiable Microsoft Word (Version 2003 or later) and one PDF copy.

E. Record Product Data:

1. Maintain one copy of each Product Data submittal approved for Project.
2. Mark documents to show significant variations in actual work performed in comparison with submitted information.
3. Include both variations in products as delivered to Site and variations from manufacturer's instructions and recommendations for installation.
4. Give particular attention to concealed products and portions of Work that cannot otherwise be readily discerned at later date by direct observation.

5. Note related change orders and markup of Record Drawings and Record Specifications.
6. Upon completion of mark-up, and no later than Final Acceptance of the Project, provide written verification that all Record Product Data has been transmitted to Owner / architect for Owner's records. Provide one copy of all Record Product Data in PDF format.

F. Record Sample Submittal:

1. Immediately prior to date or dates of Substantial Completion, Contractor shall meet at Site with Architect and Owner's representative to determine which, if any, of submitted Samples that have been maintained by Contractor during progress of Work, shall be submitted to Owner for record purposes.
2. Comply with delivery to Owner's designated location.

G. Miscellaneous Record Submittals:

1. Refer to other Sections of these Specifications for requirements of miscellaneous record keeping and submittals in connection with actual performance of work.
2. Immediately prior to date or dates of Substantial Completion complete miscellaneous records and place in good order, properly identified and bound and filed, ready for continued use and reference.
3. Submit to Owner / architect for Owner's records.

1.05 FINAL CLEANING

- A. Cleaning: Provide final cleaning of Work prior to Final Inspection at time indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to condition expected from normal commercial building cleaning and maintenance program. Comply with manufacturer's recommendations. Complete following cleaning operations before requesting Owner / architect's review for Certification of Substantial Completion:
1. Clean equipment and fixtures to sanitary condition.
 2. Clean or replace filters of operating equipment.

3. Clean debris from roofs, gutters, downspouts, and drainage systems.
 4. Clean mechanical and electrical equipment and spaces, including tops of pipes, ducts, equipment, etc.
 5. Re-clean areas or equipment, after final inspection, if dirtied as result of Contractor's work in preparing for final inspection or completion of punchlist.
- B. Removal of protection: Except as otherwise indicated or requested by Owner / architect, remove temporary protection devices and facilities which were installed during course of Work to protect previously completed Work during remainder of construction period or to protect public.
- C. Compliance:
1. Comply with safety standards and governing regulations for cleaning operations.
 2. Do not burn waste materials at Site.
 3. Do not bury debris or excess materials on Owner's property.
 4. Do not discharge volatile or other harmful or dangerous materials into drainage systems.
 5. Remove waste materials from Site and dispose of in lawful manner. Recycle all potential recyclables at nearest recycling center.

1.06 WARRANTIES

- A. Submittal Form:
1. Issue copies of each warranty as indexed section of Operation and Maintenance Manual. **Provide electronic copy of O&M manual on CD.**
 2. Separate each warranty with index tab sheets keyed to Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier and manufacturer, with address and telephone number of responsible principal.
- B. Preparation of Submittals:
1. Obtain warranties executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item or work. Except for

items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Completion is determined.

2. Verify that documents are in proper form, and contain full information.
3. Provide one copy of all warranties and guarantees in PDF format.
4. Retain warranties and bonds until time specified for submittal. All warranties and bonds shall be notarized.

1.07 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Complete the following before requesting Owner / architect's review for certification of Substantial Completion, either for entire Work or for portions of Work. List known exceptions in request.
 1. In progress payment request that coincides with, or is first request following date Substantial Completion is claimed, show either 100% completion for portion of Work claimed as "substantially complete", or list incomplete items, value of incomplete Work, and reason for Work being incomplete.
 2. Include supporting documentation for completing as indicated in these Contract Documents.
 3. Submit statement showing accounting of changes to Contract Sum.
 4. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.
 5. Deliver tools, spare parts, extra stock of material and similar physical items to Owner.
 6. Complete start-up testing of systems, Performance Periods, and instruction of Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities and services from Project Site, along with construction tools and facilities mock-ups and similar elements.
 7. Complete final cleanup requirements, including touch-up painting of blemished surfaces.
 8. Test fire and life safety systems in presence of Owner's Representative, Architect and City officials.

9. Obtain other approvals as required.
 10. Complete major punchlist items.
 11. Contractor shall submit copy of Contractor's Punch list to Owner / architect, clearly stating that building is ready for review with exception of items noted in Contractor's Punchlist.
- B. Review procedure: Upon receipt of Contractor's request for review, Owner / architect will either proceed with review or advise Contractor of unfulfilled prerequisites.
- C. Following initial review, Owner / architect will either prepare Certificate of Substantial Completion or will advise Contractor of Work that must be performed before Certificate will be issued.
- D. Results of completed review will form initial "punchlist" for final acceptance.

1.08 FINAL INSPECTION

- A. When Contractor considers Work complete, he shall submit written certification that:
1. Contract Documents have been reviewed.
 2. Contractor has inspected Work for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. The Project, properties, and streets are finally cleaned of debris and dirt caused by Contractor operations.
 5. Work is complete and ready for final inspection.
- B. Owner / architect will inspect Work to verify completion status as soon as possible after receipt of Contractor's certification.
- C. Should Owner / architect consider Work incomplete or defective:
1. Owner / architect will promptly notify Contractor in writing listing incomplete or defective work.
 2. Contractor shall immediately remedy deficiencies, and send second written certification to Owner / architect that the Work is complete.
 3. Owner / architect will re-inspect the Work.
- D. When Owner / architect finds the Work acceptable under Contract Documents, the Contractor shall make closeout submittals.

1.09 REINSPECTION FEES

- A. Should Owner / architect be required to make more than two Substantial inspections or one Final inspection due to Contractor's failure to correct specified deficiencies, the Contractor shall bear all costs (including compensation for the Owner / architect's additional services) made necessary thereby.

1.10 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor shall submit to the Owner / architect the following:
 - 1. Contractor's Affidavit of Payment of Debt and Claims (AIA Documents G706, or similar form approved by the Architect and Owner).
 - 2. Contractor's Affidavit of Release of Liens (AIA Documents G706A or similar form approved by the Architect and Owner) including the following:
 - a. Contractor's Release or Waiver of Liens.
 - b. Separate releases or Waivers of Lien for each Subcontractor, supplier, and others with lien rights against Owner's property, together with list of those parties.
- B. Duly sign and execute all submittals, before delivery to Owner / architect.

1.11 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Owner / architect, including the following:
 - 1. Original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Deductions for uncompleted Work. (if any)
 - c. Deductions for Liquidated Damages. (if any)
 - d. Deductions for Re-inspection Payments (if any)
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous Payments
 - 5. Sum remaining due.
- B. The Owner / architect will prepare and issue final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

1.12 FINAL APPLICATION FOR PAYMENT

- A. Follow procedures specified in General and Supplementary
General Conditions.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01700

SECTION 01710
CLEANING

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Work included: Throughout the construction period, maintain the project site where work is carried out in a standard of cleanliness as described in this section.
- B. Related work described elsewhere: In addition to standards described in this Section, comply with all requirements for cleaning as described in other various Sections of these Specifications.

1.02 QUALITY ASSURANCE

- A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. Codes and Standards: In addition to the standard described in this section, comply with all pertinent requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

- A. Provide all required personnel, equipment, and materials needed to maintain specified standard of cleanliness.

PART 3 EXECUTION

3.01 PROGRESS CLEANING

- A. General:
 - 1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
 - 3. Provide adequate storage for all items, awaiting removal from the job site, observing all requirements for fire prevention and protection of the ecology.
- B. Site:
 - 1. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site; restack, tidy, or otherwise service. All arrangements to meet the

requirements of paragraph 3.01, A.1. above.

2. Maintain the site in a neat and orderly condition at all times to the satisfaction of the Architect.

3.02 DUST CONTROL

- A. Maintain continuous cleaning and wetting procedures to control dust pollution at project site and haul routes as required by governing authorities and the Contract Documents. Use power sweepers for street cleaning.
- B. Schedule cleaning so that resultant dust and contaminants will not fall on wet or newly coated surfaces.

3.03 FINAL/CLOSEOUT CLEANING

- A. Cleaning: Provide final cleaning of Work prior to Final Inspection at time indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to condition expected from normal commercial building cleaning and maintenance program. Comply with manufacturer's recommendations. Complete following cleaning operations before requesting Architect's review for Certification of Substantial Completion:
 1. Clean equipment and fixtures to sanitary condition.
 2. Clean or replace filters of operating equipment.
 3. Clean debris from roofs, gutters, downspouts, and drainage systems.
 4. Clean mechanical and electrical equipment and spaces, including tops of pipes, ducts, equipment, etc.
 5. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels and other foreign matter from sight exposed interior and exterior surfaces.
 6. Hose-clean exterior paved surfaces, rake clean other surfaces of grounds.
 7. Re-clean areas or equipment, after final inspection, if dirtied as result of Contractor's work in preparing for final inspection or completion of punchlist.
- B. Removal of protection: Except as otherwise indicated or requested by Architect, remove temporary protection devices and facilities which were installed during course of Work to protect previously

completed Work during remainder of construction period or to protect public.

C. Compliance:

1. Comply with safety standards and governing regulations for cleaning operations.
2. Do not burn waste materials at Site.
3. Do not bury debris or excess materials on Owner's property.
4. Do not discharge volatile or other harmful or dangerous materials into drainage systems.
5. Remove waste materials from Site and dispose of in lawful manner.

END OF SECTION 01710

SECTION 01730

OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract. Prepare operating and maintenance data as specified in this section and as referenced in other pertinent sections of specifications.
 - 1. Contractor shall submit videotaped instruction for selected procedures in addition to written/pictorial instruction specified herein. Consult with Architect to determine applicable procedure prior to beginning videotaping.
- B. Submit clear, clean and concise information as specified in this section and as referenced in other sections of specifications to the Architect for incorporation in an operating and maintenance manual.

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. Shop Drawings, Product Data and Samples: Section 01340
- B. Contract Closeout: Section 01700
- C. Project Record Documents: Section 01780
- D. Equipment Demonstration and Owner Personnel Instruction: Section 01735
- E. Warranties and Bonds: Section 01750

1.04 QUALITY ASSURANCE

- A. Operation and maintenance manuals will be for training of and use by the Owner's personnel in the operation and maintenance of the systems and related equipment, if applicable, as specified below. The manuals shall consist of instructions on systems and equipment. A separate manual or chapter shall be prepared for each class of equipment or system listed:

1. Electrical systems
2. Irrigation system
3. Lighting Controls - Site Lighting

Verify with all technical specifications the requirements for systems/products for O&M manuals.

1.05 INDEX

- A. Information shall be complete and specific to this Project application. All material must be neat and legible.
- B. Information shall be submitted on sheets measuring 8-½ inches by 11 inches except drawings which should not exceed 11 inches by 17 inches. Larger drawings may be provided in clear plastic protective type pockets.
- C. Text information shall be manufacturers' printed data or neatly typewritten.
- D. Clearly label each submittal for each piece of equipment or product separately called for in the specifications with the section number of the specifications and the applicable drawing sheet number.
- E. Each submittal shall include the following basic information for each piece of equipment, product or system:
 1. Introduction
 2. Table of Contents
 3. Description of system (including design intent and considerations)
 4. Operating sequence and procedures
 5. Maintenance instructions and requirements
 6. Diagrams
 7. Parts list
 8. Manufacturer
 9. Subcontractor or installer
 10. Maintenance contractor, if applicable
 11. Local source of supply for parts and replacement
- F. Product data to be provided by Contractor:
 1. Include only information that is applicable to the specific product.
 2. Annotate each sheet to:
 - a. Clearly identify the specific product or part installed.
 - b. Clearly identify the data applicable to the installation.
 - c. Delete references to inapplicable information.
 - d. Provide parts breakdown.
 - e. Provide assembly drawings

- G. Provide a copy of each warranty, bond or service contract issued. Submit with the foregoing an information sheet for Owner's personnel which includes:
1. Effective dates or period
 2. Proper procedures in the event of failure
 3. Instances which might affect the validity of warranties, bonds or service contracts.

1.06 PREPARATION

- A. The following subparagraphs are intended as a general guide in preparing the manuals. The manuals shall be prepared to provide for the optimum operation and maintenance of the various systems. The description of systems and general operation instructions for mechanical and electrical manuals shall cover in detail complicated, customized or unusual parts of these systems. Manufacturer's literature and data shall be that of the actual equipment installed under contract for the particular facility.
- B. Manuals shall be properly organized and professionally prepared. Literature, instructions, etc., shall all be typed. Drawings shall be professionally drafted. Manuals shall be completely customized to this specific project. Crossed out information and generic diagrams and information is not acceptable. Inapplicable data and reference to inapplicable data shall be deleted.
- C. Manuals shall be organized in tabbed 4" thick 3-Ring binders labeled and titled specific to this project, by CSI Section. (Approximately 8-10 Volumes).

1.07 MAINTENANCE AND OPERATION MANUALS

- A. Thirty (30) days prior to scheduled date of Substantial Completion, provide 3 copies of maintenance and operation instructions relating to all manufactured items of equipment and materials requiring maintenance (i.e., electrical devices, etc.).
- B. The manuals shall be contained in hard back binders properly identified on front cover with project name, subcontractor, and general content. The material shall be suitably tab-indexed for ready reference, include a Table of Contents, and contain, as available from the Manufacturer/Supplier, the following information:
1. Name of equipment, item and function.
 2. Manufacturer name and address.
 3. Model No. and Serial No., with option equipment identification.
 4. Rating in KW, HP, BTU, GPM, etc.
 5. Description of feature in model provided.

6. Drawings of part(s) or assembly(ies) - control diagrams, parts lists, etc.
7. Connection diagrams, mounting details, installation information, etc.
8. Operation and maintenance information for services by Owner.
9. Name, address, and telephone number of local supplier or service department.

1.08 SUGGESTED OUTLINE FOR OPERATING AND MAINTENANCE MANUALS

- A. This is a suggested outline with general requirements of O&M manuals. The outline is presented to indicate the extent and items required in manuals for major facilities. The outline may be modified to suit specific installations; however, the intent of the manual must be fulfilled. It is not intended to duplicate manufacturer's data, but proper references should be made in the text of the O&M manual to indicate that information is applicable and where it is located.

PART 2 - DESCRIPTION AND DESIGN INTENT

2.01 INTRODUCTION

- A. Scope: Brief description of project and purpose of manual. Provide a system description (written and diagrammatic). The following statements shall also be included; operation and maintenance of this equipment shall be performed in accordance with this manual and posted instructions, subject to compliance with applicable technical guides and standards issued by the Owner. It is recognized that minor changes in control points and settings will be required, based on actual operating experience, to correct varying conditions and improve operation. When such changes appear necessary, they shall be submitted to the Chief Operating Engineer for consideration. Upon approval of any changes, the applicable portions of all copies of the manual and proposed instructions shall be revised, reissued and any change in operating procedure brought to the attention of all operating personnel.

"This manual is specifically developed to assist the Owner's personnel in charge at the facility to operate and maintain the building systems and equipment. Manufacturers' recommendations set forth for certain components MUST be followed during the complete warranty period for that equipment."

- B. Contents of Manual: This portion of the introduction shall contain an explanation that the manual is presented in a number of volumes which contain complete operating, maintenance and safety instructions for all equipment listed any other appropriate references as required to outline an explanation of the manuals and major categories of reference materials required with the manuals.

2.02 TABLE OF CONTENTS

- A. The Table of Contents shall list numbers and titles of chapters, selections and main paragraphs with their page numbers. Each volume in a set of manuals shall contain its own Table of Contents. Following is a typical partial Table of Contents:

Electrical Systems

1. Electrical power distribution
2. Lighting

2.03 PART II - OPERATING SEQUENCE AND PROCEDURES

- A. Contents: The operating volume(s) shall contain a chapter for each item included in Part I. Each chapter shall describe the procedures necessary for Owner's personnel to operate the system and equipment covered in that chapter.
- B. Operating Procedures: The operating procedures shall be divided into four subsections: start-up, operation, emergency operation, and shutdown.
- C. Start-up: Give complete instructions for energizing the equipment and making initial settings and adjustments whenever applicable. If equipment is fully automatic, a statement to that effect is all that is required. If a specific sequence of steps must be performed, give step-by-step instructions in the proper sequence. If timing (such as warm-up between power-on and adjustment) is important, clearly state the specific minimum time required at the proper point in the procedure. Refer to controls and indicators by panel; make reference consistent with the nomenclatures used in illustrations and tables of controls and indicators. If preliminary settings differ for different modes of operations, give procedures for each mode.
- D. Operation: Give detailed instruction in proper sequence for each mode of operation. Where, for a given action on the part of the operator, alternate equipment responses are possible, give the appropriate reaction to each.
- E. Emergency Operation: If some functions of the equipment can be operated while other functions are disabled, give instructions for operations under these conditions. Include here only those alternate methods of operation (from normal) which the operator can follow when there is a partial failure or malfunctioning of components, or other unusual condition.
- F. Shutdown Procedure: Include instructions for stopping and securing the equipment after operation. If a particular sequence is required, give step-by-step instructions in that order.

2.04 PART III - MAINTENANCE INSTRUCTIONS AND REQUIREMENTS

- A. Contents: The maintenance volume(s) shall contain a chapter for each item included in Part I. Each chapter shall describe the procedures necessary for the Owner's personnel to perform the maintenance of the systems and equipment covered in that chapter. Emphasis should be made on the method of mechanical control of systems and equipment from a maintenance standpoint. Reference shall be made, as appropriate, to Drawings, schematics and sequences of operation included as part of the construction Contract Drawings and Specifications which show piping and equipment arrangements and items of control. Prints of these Drawings shall be reduced to 11 x 17 inches for insertion in the manuals. Drawings shall represent the "as-built" condition. In addition, provide one indexed copy of Operation & Maintenance Manual in PDF format.
- B. Maintenance Procedures: The maintenance procedures shall be divided into two categories: Preventative maintenance and corrective maintenance.

2.05 PART IV - DIAGRAMS

- A. Providing wiring diagrams of equipment. Provide complete control drawings for all systems & equipment. Provide color coded wiring diagrams of installed systems showing all power, control and communication wiring as applicable. All diagrams shall be customized for this project.
- B. Provide piping and flow diagrams and risers for applicable systems. Provide color coded piping diagrams of all mechanical and plumbing piping. Diagrams shall show flow direction and pipe sizes and identify all valves. Valves shall be labeled and numbered corresponding to actual valve tag. Valve labels shall be cross-referenced in operation and maintenance portion of the manual.
- C. For electrical equipment, provide circuit directories or zoning of the systems as applicable.

2.06 PARTS LIST

- A. Provide original manufacturer's parts list, current prices, illustrations, assembly drawings and diagrams required for maintenance.
- B. Provide a schedule of predicted life of parts subject to wear.
- C. Provide a schedule of items and quantity recommended to be stocked as spare parts. List spare parts initially supplied by manufacturer or provided under this contract.

- D. List names, addresses, phone numbers and contact person for supplier, alternative parts suppliers and factory parts department.
- E. Include copies of each warranty, bond or service agreement. Include name, address, telephone number of responsible organization and contact individual. List proper procedures to follow in the event of failure. List what actions by the Owner might affect validity of warranties, bonds, or service agreements.

2.07 POSTED OPERATING INSTRUCTIONS

- A. General: Operating instructions and diagrams shall be prepared for posting near the equipment. Posted operating instructions shall be photographic or equal nonfading reproductions framed under glass or encased in nondiscoloring plastic and shall be mounted in locations near the appropriate piece of equipment. Instructions and diagrams shall also be used with the operating and maintenance manuals as a basis in training Owners personnel in the operation and maintenance of systems and related equipment installed under Contract at the facility.
- B. Contents: Posted operating instructions shall consist of simplified, consolidated equipment, control and power diagrams graphically representing the entire system and actual equipment installed, including concise written instructions on how to start and stop systems, what settings and conditions are to be observed and what control adjustments are to be made or maintained by the operator.

2.08 SUBMITTALS

- A. Preliminary Submittal: Four draft copies of the complete manuscript for items as outlined herein and training programs in outline form shall be submitted to the Architect-Engineer for Architect review 60 calendar days after approval of equipment. One copy will be returned to the Construction Manager within 30 days after submittal, and, if required, will be revised and resubmitted within 30 calendar days.
- B. Second Submittal: Submit four draft copies of the final draft manual with all revision incorporated along with an agenda of the training programs to the Architect-Engineer for Architect review at least 120 days prior to the Construction Manager reaching Substantial Completion. One copy will be returned to the Construction Manager with comments.
- C. Third Submittal: Submit four copies of the final draft manual to the Architect for review at least 30 calendar days prior to substantial completion. Final review comments will be returned within 8 calendar days following final inspection or acceptance.

- D. Final Submittal: Submit 4 complete sets of manuals to the Architect within 6 calendar days of receipt of the final comments.
- E. Make necessary corrections and/or additions to the manuals after conducting training for the Owner's personal and throughout the warranty period should conditions so warrant.
- F. All submittals shall be bound in 3-ring notebooks, with adequate room for material and adequately labeled.

END OF SECTION 01730

SECTION 01735

EQUIPMENT DEMONSTRATION AND OWNER PERSONNEL INSTRUCTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION

- A. General:
 - 1. Furnish all labor, materials, tools, equipment, and services for all equipment demonstration and owner personnel instruction as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- B. Provide demonstrations and instructions for all equipment and systems for which operating and maintenance data is required. See individual sections.
- C. Demonstration, Instruction, and training audio-visual professional documentation for each trade.

1.03 QUALITY ASSURANCE

- A. Instructors. Member(s) of installers' staff and authorized representative(s) of component, assembly, or system manufacturer(s). See individual sections for additional requirements.

1.04 SUBMITTALS

- A. Schedule of Demonstrations: Submit for approval at least 4 weeks prior to first demonstration.
- B. List of Instructors and Schedule of Instruction: Submit for approval at least 2 weeks prior to first instruction period.
- C. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times,

length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

At completion of training, submit one complete training manual for Owner's use.

- D. Attendance Record: For each training module, submit list of participants and length of instruction time.
- E. Demonstration and Training Videotape: Submit two copies at end of each training module.

1.05 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

1.06 JOB CONDITIONS

- A. prior Complete demonstrations prior to Substantial Completion. Coordinate with procedures for Substantial Completion to provide separate demonstrations.
- B. Complete all instruction to Final Completion.

1.07 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.01 INSTRUCTION PROGRAM

- A. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.

- l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.01 REPARATION

- A. Do not begin demonstrations until the component, assembly or system being demonstrated has been tested as specified and is in satisfactory operating condition.
- B. Do not begin instruction until demonstration is complete.
- C. Assemble instructional aids.
 - 1. Have operating and maintenance data available for use during instruction (see Section 01730).

3.02 DEMONSTRATION

- A. Inspect and operate satisfactorily, in presence of Architect and Owner's Representative, each system and item of equipment, including accessories.

- B. Replace defective work or material.
- C. Repeat inspection and demonstration until defects are eliminated.

3.03 INSTRUCTION

- A. Instruct Owner's personnel in operation and maintenance of equipment and systems.
 - 1. Provide all necessary instruction to satisfaction of Owner.
- B. Explain use of operating and maintenance manuals.
- C. Tour building areas involved and identify:
 - 1. Maintenance points and access.
 - 2. Control locations and equipment.
- D. Explain operating sequences.
 - 1. Identify location and show operation of switches, valves, etc., used to start, stop and adjust systems.
 - 2. Explain use of flow diagrams, operating sequence diagrams.
 - 3. Demonstrate operation through complete control cycle and full range of operation in all modes, including testing and adjusting relevant to operation.
- E. Explain use of control equipment, including temperature settings, switch modes, available adjustments, ring of gages and functions that must be serviced only by authorized factory representatives.
- F. Explain troubleshooting procedures.
 - 1. Demonstrate commonly occurring problems.
 - 2. Note procedures which must be performed by factory personnel.
- G. Explain maintenance procedures and requirements.
 - 1. Point out items requiring periodic maintenance.
 - 2. Demonstrate typical preventive maintenance procedures and recommended typical maintenance intervals.
 - 3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
 - 4. Identify maintenance materials to be used.
- H. Furnish all tools required.

3.04 TRAINING

- A. The Contractor shall train Owner's designated representatives in the operation and maintenance of architectural, mechanical and electrical equipment. Coordination shall be maintained with systems designers for development of hours of instruction and scope of material to be covered. Training of Owner's designated representatives shall not commence until the Owner has received from the Contractor the final submittal copy of the operation and maintenance manual.
1. Videotape all training, and furnish Owner with 2 each copies of the videotape.
 2. Instruct Owner's personnel in operation and maintenance of all products, equipment and systems. Explain use of operating and maintenance manuals.
 3. Tour building areas involved and identify maintenance points and access and control locations and equipment.
 4. Explain operating sequences. Identify location and show operation of switches, valves, etc., used to start stop and adjust systems. Explain use of flow diagrams, operating sequence diagrams, etc. Demonstrate cooperation through complete control cycle and full range of operation in all modes, including testing, calibration and adjustment relevant to operation.
 5. Explain use of control equipment, including temperature setting, switch modes, available adjustments, reading gauges, and functions that must be serviced only by authorized factory representative.
 6. Explain troubleshooting procedures. Demonstrate commonly occurring problems. Note procedures which must be performed by factory personnel.
 7. Explain maintenance procedures and requirements. Point out items requiring periodic maintenance. Demonstrate typical preventive maintenance procedures and recommend typical maintenance intervals. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program. Identify maintenance materials to be used.
 8. Emphasize safety procedures to be observed in operating and maintaining products, equipment and systems.
 9. Furnish all tools and equipment required.
- B. Schedule Submittal: See paragraph 1.03 for submittal requirements. The proposed scope of training and materials and instruction schedule shall be submitted for review and approval approximately 30 calendar days before the scheduled completion of the building. Mutually agreeable dates for training shall be arranged with the Owner, coordinated through the Architect, but the training must be completed prior to final acceptance of the facility.
- C. Evaluation: At the conclusion of each training module, assess and document each participant's mastery of the module by use of a demonstration performance-based test.

- D. Time Period of Training: The minimum specific hours of training time required for each module of major equipment and systems shall be as stated below. Where additional time is required to completely cover material, provide at no additional cost. Past experience indicates a workable ratio in the vicinity of approximately 25 percent “classroom” and 75 percent application, except that the ratio may be reversed for control systems. The Owner shall have the option of reversed for control systems. The Owner shall have the total time specified. Training will be presented on an 8 hour per day, 5 day per week schedule, with all reading assignments and review to be within this period.

<u>MODULE</u>	<u>TIME (HRS)</u>
1. Food Service Equipment	8
2. Fire Protection Systems	10
3. Intrusion Detection System	10
4. Heating, Ventilation, and Air Conditioning	40
5. Energy Management Controls	80
6. Communication Systems	30
7. Doors and Hardware	10
8. Irrigation Controls Systems	8
9. Plumbing Systems	20
10. Power distribution and lighting controls	20
11. Miscellaneous: Includes all other equipment not specifically covered above.	20

END OF SECTION

SECTION 01750
WARRANTIES AND BONDS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Compile specified Warranties and Bonds.
- B. Compile specified Service and Maintenance Contracts.
- C. Review submittals to verify compliance with Contract Documents.

1.02 RELATED REQUIREMENTS

- A. Bid Bond: See General and Supplementary General Conditions.
- B. Performance Bond and Labor and Material Payment Bond: See General and Supplementary General Conditions.
- C. Warranty of Work After Final Payment: See General and Supplementary General Conditions.
- D. Contract Closeout: Section 01700.

1.03 SUBMITTAL REQUIREMENTS

- A. Assemble Warranties, Bonds, and Service and Maintenance Contracts, executed by each of the respective Manufacturer, Suppliers and Subcontractors.
- B. Number of original signed copies required: Four (4) each.
- C. Table of Contents: Neatly type in orderly sequence.
- D. Provide complete information for each item:
 - 1. Product or Work Item.
 - 2. Firm, with name of principal, address, and telephone number.
 - 3. Beginning date of Warranty, Bond, or Service and Maintenance Contract.
 - 4. Duration of Warranty, Bond, or Service and Maintenance Contract.
 - 5. Provide the following information for Owner's Personnel:
 - a. Procedure in case of failure or malfunction.
 - b. Instances which affect Warranty or Bond validity.

6. Contractor, name of responsible principal, address, and telephone number.

1.04 SUBMITTAL FORM

- A. Punch sheets for 3-ring binder.
- B. Size: 8-1/2 x 11 inches.
- C. Fold larger sheets to fit into binder.
- D. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS": List:
 1. Title of Project.
 2. Name of Contractor.

1.05 SUBMITTAL TIME

- A. See Section 01700

1.06 SUBMITTAL LOCATION

- A. Bind with Owner's Maintenance Manual specified in Section 01700.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01750

SECTION 01760

SPARE PARTS & MAINTENANCE MATERIALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION

A. General

1. Furnish all labor, materials, tools, equipment and services for all spare parts and maintenance materials as indicated, in accordance with the provisions of the Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, and complete installation.
4. See Specification Sections for items required.

1.03 SUBMITTALS (SEE SECTION 01300)

- A. Spare parts and tools.
- B. Maintenance.
- C. Extra materials (attic stock).
- D. Inventory of parts, tools, and materials.

PART 2 - PRODUCTS

2.01 SPARE PARTS AND TOOLS

- A. Package in clearly identified boxes.
 1. Indicate manufacturer's name, part name and stock number.
 2. Indicate what the piece of equipment part or tool is for.
 3. Indicate name, address, and phone number of closest supplier.
 4. Indicate quantity

2.02 MAINTENANCE MATERIALS

- A. Package in clearly identified boxes.
 - 1. Indicate trade name and stock number.
 - 2. Indicate which item material is to be used with.
 - 3. Indicate name, address, and phone number of closest supplier.
 - 4. Indicate Quantity.

2.03 EXTRA MATERIAL INVENTORY

- A. Upon Substantial Completion of the Contract Work, provide the Owner with extra materials (i.e., spare parts, etc.) as identified in respective sections of the Specifications. Deliver to the Owner when and as directed by the Architect on the basis of a written detailed inventory including a signed receipt from the designated Owner representative.

2.04 EXTRA MATERIALS (ATTIC STOCK)

- A. Package in clearly identified container, or install where indicated.
 - 1. Indicate trade name, stock number, size, color, etc
 - 2. Indicate where product is to be used.
 - 3. Indicate name, address, and phone number of closest supplier.
 - 4. Indicate quantity.

PART 3 - EXECUTION

3.01 DELIVERY

- A. Deliver to location designated by Owner at time of final completion, unless Owner requests earlier delivery.
- B. Maintain signed receipts of all material, tools, etc. until the completion of the project. Receipts must be very specific of the items received, signed by pre-designated City of Sacramento Personnel.

END OF SECTION 01760

SECTION 01780
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Shop Drawings, Product Data, and Samples: Section 01340

1.02 MAINTENANCE OF DOCUMENTS

- A. Maintain at job site, one copy of:
1. Contract Drawings
 2. Specifications
 3. Addenda
 4. Change Orders
 5. RFI's
 6. Requests for Proposal
 7. Other Modifications to Contract
 8. Field Test Records
 9. Truck tickets for all imported material
 10. Current Construction Schedule
- B. Store Documents in approved location, apart from documents used for construction.
- C. Maintain documents in clean, dry, legible condition.
- D. Do not use record documents for construction purposes.
- E. Make documents available at all times for inspection by Architect and Owner.
- F. Record documents must be updated with all required information prior to approval of application for payment.

1.03 RECORDING

- A. The Architect shall provide (1) complete copy of all Contract Documents to the Contractor. The Contractor and/or Subcontractors under the Architect's direction shall record on one set of clean, new prints each and every change that is made from

general drawings at the time it is made. This includes any changes that are made in partitions, doors, or otherwise in arrangement of construction of buildings as well as a complete record of exact manner in which electrical and mechanical work, piping, etc., are installed. Dimensions shall be included to accurately locate piping and other items that will be concealed underground or in finished building that may later be necessary to service or require future connection.

- B. Contract Drawings: Legibly mark to record actual construction:
 - 1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - 2. Field changes of dimensions and detail.
 - 3. Changes made by Change Order, RFI, and Shop Drawing variations
 - 4. Details not on original Contract Drawings
- C. Shop Drawings: Provide all shop drawings.
- D. Specifications and Addenda: Legibly mark up each section to record:
 - 1. Changes made by Change Order.
 - 2. Other matters not originally specified.
 - 3. Manufacturer, trade name, catalog number and supplier of each product and item actually incorporated in the Work.
- E. Label each document "PROJECT RECORD" in 1/2 in. high printed letters.
- F. Keep record documents current.
- G. Do not permanently conceal any work until required information has been recorded.
- H. Record equipment serial numbers and their locations on the drawings.

1.04 SUBMITTAL

- A. Upon completion of the Project, and prior to final payment, the Contractor shall submit Project Record Documents to Architect for approval.
- B. If documents are not approved by the Architect, records of changes shall be revised and resubmitted by the Contractor.
- C. Accompany submittal with transmittal letter to Architect containing:

1. Date
2. Project title and number
3. Contractor's name and address
4. Title and number of each record document
5. Certification that each document as submitted is complete and accurate.
6. Signature of Contractor, or his authorized representative.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01780

SECTION 01800

VALUE ENGINEERING

PART I GENERAL

1.01 DESCRIPTION

- A. The City encourages voluntary development, preparation, and submittal of Value Engineering proposals (VEP's). Proposals may be submitted to the City for modifying the plans, specifications, or other requirements of the contract for the purpose of reducing the total cost of construction without impairing in any manner the essential functions or characteristics of the project. All aspects of the proposed change will be evaluated in determining the value of the proposed change to the project, for example: construction cost, service life, economy of operations, ease of maintenance, appearance, and design and safety standards.
- B. Value Engineering Proposals may be initiated by the Contractor including subcontractors, the City, and the Architect including consultants.
- C. Upon receipt of a Value Engineering Proposal (VEP), the City will assemble a preliminary review team to evaluate all aspects of the VEP, for example: construction cost savings, contractor costs to develop and implement the VEP, City costs to develop and implement the VEP, required design changes, and functional considerations.
- D. If the preliminary review results in agreement on the merits of further action on the VEP, the review team will recommend full development of the VEP. The City will estimate development, life cycle, and redesign costs, and the contractor will estimate and propose construction costs savings.

1.02 VEP Format.

- A. The Contractor shall prepare a Value Engineering Proposal which shall contain the following:
 - 1. A description of the proposed change and of the existing contract requirements affected by the proposed change.
 - 2. A detailed estimate of the costs of performing the work as originally designed and of the costs of performing in accordance with the proposed change.
 - 3. In association with the Architect, the Contractor shall illustrate the advantages and disadvantages of the existing design in relation to the proposed change.
 - 4. A statement as to the effect that the proposed change will have on the time required for completion of the project.

- B. The City shall prepare the following:
1. A list of contract document changes required by acceptance of the proposed change, including any additional review fees, design costs, all public utility revisions, and all revised permit coordination fees.
 2. A detailed estimate of City development and redesign costs required by acceptance of the proposed change.
 3. In association with the Architect, an estimate of time duration for redesign effort required by acceptance of the proposed change.
 4. An estimate of the effect of the proposed change on life cycle costs.

1.03 Analysis for Acceptance

- A. The review team will analyze the fully developed proposal for functional equivalence, characteristics, development costs, construction cost savings, and life cycle costs, and recommend acceptance or rejection by the City.
- B. The City will be the sole judge of acceptability of the proposal. The City's decision will be final.

1.04 Modification of Contract for VEP.

- A. Upon acceptance of a VEP, the City, Architect and Contractor will agree on the scope and price adjustments required. The contract price will be reduced by the following amount:
- (Construction cost savings less contractor development costs less City development costs) multiplied by 0.50.
- B. Upon agreement as to changes in scope and price, the necessary change order will be issued, specifically stating that it is issued under the provision Section: VALUE ENGINEERING of this contract, and fully describing the required changes in the plans and specifications.
- C. During submittal, analysis, review, and negotiation of any VEP, the Contractor shall continue to perform the work in accordance with the original requirements of the contract unless otherwise directed in writing by the City.

END OF SECTION 01800

SECTION 01810

OWNER REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including Conditions of the Contract and All Divisions of these Specifications, apply to this Section.

1.02 SUMMARY

- B. This section shall be considered as Part 4 of all specifications Sections and shall be a supplement to all other division one specifications. If there are conflicts between this section and any other parts of these documents, the most stringent requirement shall govern. Conflicts must be brought to the attention of the Architect and Owner for determination of the best solution to the conflict. The Architect and Owners' decision shall be final.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

The Part 4 of all Sections of these specifications shall be amended or added and shall read as follows:

"PART 4 – OWNER REQUIREMENTS

4.01 DOCUMENTATION

- A The Vendor shall agree to furnish the City with service repair notes, and updates and revisions to system documentation, including software, on an automatic basis of a yearly minimum or as new updates become available, at no charge, with sufficient copies to cover all manuals and software originally supplied for all installations where required.

4.02 AS BUILT DRAWINGS

- A. 10 days prior to the start of acceptance tests, the Vendor shall provide five (5) sets of as-built drawings showing the location, mounting details, installation details, interconnections, cable labeling, block and level diagrams, and records

and results of tests performed and adjustments made. Vendor as-built drawings and test data shall also be provided in PDF format (one copy)

4.03 MANUALS

- A. 10 days prior to the start of acceptance tests, the Vendor shall provide, as a minimum, the following sets of manuals:
 - 1. One (1) operational manual for each piece of equipment, to include details of both hardware and software operation.
 - 2. Five (5) operational manual sets. Each set shall include one operational manual for each type of equipment, with the entire set bound together as a master manual. (In labeled volumes if necessary).
 - 3. Five (5) bound sets of all necessary installation and service manuals for each type of equipment installed.
 - 4. Five (5) sets of installation and service manuals for all other equipment, including, but not limited to the following: controllers, UPS, generators, logic controllers, alarms, CCTV ,access systems, chargers, power supplies, HVAC systems accessories, etc. One copy of all installation and service manuals shall be provided in PDF format.

- B All manuals shall adhere to the following standards:
 - 1. All manuals shall emphasize any notes of caution or warning that are intended to protect the operator, technician, or equipment from injury or damage.
 - 2. Operations manuals shall include procedures that maximize operator efficiency and insure optimum equipment life.
 - 3. Maintenance and service manuals shall show sufficient detail to allow a competent technician to perform all necessary troubleshooting procedures and repairs to the board and component level, to perform preventive maintenance, and to keep all adjustable equipment within acceptable operating tolerances. The manuals shall include:
 - a. Introductory material including equipment specification, special ordering information, detailed charts which list the kits and models that make up the equipment, and general safety information.
 - b. Procedures for unpacking, checking, installing, and adjusting the equipment.
 - c. Theory of operation, explaining the circuit-by circuit operation, including appropriate block diagrams.
 - d. Circuit schematics and descriptions, including annotations for theory of operation and maintenance information.
 - e. Procedures for preventive maintenance, service and repair, special disassembly, tests, and trouble-shooting.

- f. Wiring diagrams with symbols, symbol designations and component values, voltage levels, and termination block details. Components shall be clearly marked with symbol designations and values, such as R1, 100K; C4, 20 µf; U1, 8085; D3, IN222, etc. A parts list shall include each symbol component.
 - g. Parts lists, including part numbers for mechanical and electrical parts, and reference designations for all electrical parts. Each electrical part shall be identified by a reference designation on the schematic diagram, as well as on the parts list. Mechanical parts shall be described, and part numbers provided.
- 4. Maintenance and service manuals shall be factory printed, not photocopies. Foldout schematic diagram sheets or other pages that require folding shall be a continuous sheet of paper without splices.

4.04 SOFTWARE

- A The Vendor shall furnish and install the latest version of Operating System software for each piece of equipment supplied that requires software for operation. The software shall contain the manufacturer's full instructions for installation, setup and configuration. Any proprietary restrictions on software or documentation shall be identified and described. The software shall be licensed to the City for the life of the system. All software furnished shall be date compatible for a minimum of 90-years or the life of the system, which ever is longer. The vendor shall furnish the City with a licensed disk copy of all Operating Systems software and 2-copies of the user programmer's manual. The manual shall contain complete instructions on how to program all aspects of the system.
- B The vendor shall furnish and install Application software required for setup and operation of the system. The software shall be fully tested for all aspects of its intended purpose. The software shall be licensed to the City for the life of the system. All software furnished shall be date compatible for a minimum of 90-years or the life of the system, which ever is longer. The vendor shall furnish the City with a licensed disk copy of all Application software and 2-copies of the user programmer's manual. The manual shall contain complete instructions on how to program all aspects of the system.
- C If any of the software is stored on PROM, EPROM, EEPROM, flash or any other type of non volatile memory, the vendor shall provide the City with a means to reprogram it. If the data furnished is on disk, the Vendor shall provide the City with the operating program to apply to a PROM burner or other mechanism to load the program. Furnishing the City with a spare set of programmed IC chips that will become the property of the City will meet this requirement.

4.05 TRAINING

A. Training Program

The Contractor shall coordinate with City representatives to develop a training program for system users, and for system maintenance personnel. The training program shall be approved by the City before implementation.

Contractors may provide videotapes of their training classes. The City shall be authorized to videotape all training sessions for use in training additional City personnel.

B. Training Classes

Immediately prior to system start-up, the Contractor shall conduct training classes in accordance with the agreed-upon program.

1. The Contractor shall provide instructors who are highly skilled (with extensive training and experience on the equipment supplied under these specifications) as well as all necessary instructional materials.
2. A copy of a training manual shall be supplied to each trainee. The manual shall be written at a level appropriate to the trainee, and closely reflect the information imparted in the class. The listed classes are the minimum required training classes.

B. Notification Requirement

It shall be the Contractors responsibility to make these requirements for Documentation, Software and Training known to all subcontractors in writing prior to entering into any subcontracts. This requirement shall become a part of the subcontract. If the contractor fails to do so, the City will have the right to require the contractor to replace entire control systems that are not compliant with systems that are, at no additional cost to the City.

END OF SECTION

**OLD SACRAMENTO RIVERFRONT
K STREET BARGE
PROJECT**



**100% CONSTRUCTION DOCUMENTS
SPECIFICATIONS
April 2019**

**SECTION 00 0110
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END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of built site elements.
- B. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work
- B. Section 01500 - Construction Facilities and Temporary Controls

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01300 - Submittals
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
 - 2. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify demolition firm and submit qualifications.
 - 3. Include a summary of safety procedures.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Provide, erect, and maintain temporary barriers and security devices.
 - 4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 5. Do not close or obstruct roadways or sidewalks without permit.
 - 6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.

- C. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- D. Hazardous Materials/General: Comply with 29 CFR 1926 and state and local regulations.
- E. Hazardous Materials/Barge: Comply with findings of "Hazardous Material Survey - Final Report" dated Feb. 22, 2016 by Entek Consulting Group, Inc, and Condition Assessment Report Appendix D "Hazardous Materials Report" by GHD, Inc dated June 2013.
 - 1. Copies available to bidders from City of Sacramento.

3.02 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Engineer before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.

- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 05 1200
STRUCTURAL STEEL

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Requirements of Division 1 apply to all Work of this Section.

1.02 SCOPE

- A. Furnish and install all structural steel as shown and specified including, but not necessarily limited to the following:
1. Prime coat painting and touch up.
 2. All cast-in-place anchor bolts, nuts, plates, etc.
 3. 10 gauge steel or 3/4 inch plywood templates for column anchor bolts.

1.03 RELATED WORK (See also Table of Contents)

- A. Metal Decking: Section 05 30 00.
B. Metal Fabrications: Section 05 50 00.
C. Cast-In-Place Concrete: Section 03 30 00.

1.04 QUALITY ASSURANCE

- A. General:
1. Comply with the referenced ASTM standards for materials.
 2. Perform all welding only with AWS certified welders.
 3. Verification of accuracy:
 - a. Engage and pay for a registered civil engineer or licensed land surveyor to check the alignment, plumbness, elevation, and overall accuracy of the erected framing at appropriate stages during construction and at completion of erection. Prior to erection, a survey shall be made of the as-built locations of all anchor rods and other embedded items associated with the attachment of structural steel. The party providing the survey shall submit written verification that the entire installation is in accordance with the contract documents and meets the allowable erection tolerances as set forth in the AISC "Code of Standard Practice for Steel Buildings and Bridges".
 - b. Columns shall be verified at each lift. Column shim details and procedures shall be submitted for review.
 4. Paint:
 - a. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use thinners approved by paint manufacturer, and use within recommend limits.
 - b. Coordination of Work: Review other Sections in which prime paints are to be provided to ensure compatibility of coatings system for various substrates. Upon request, furnish information or characteristics of finish materials to be used.
 - c. Requirements of Regulatory Agencies: Comply with applicable rules and regulations of governing agencies for air quality control.
- B. Except where other requirements are specified, comply with the following standards by American Institute of Steel Construction (AISC) and American Welding Association (AWS):
1. AISC 360-16 "Specification for Structural Steel Buildings".
 2. AISC 303-16 "Code of Standard Practice for Steel Buildings and Bridges".
 3. AISC 341-16 "Seismic Provisions for Structural Steel Buildings"
 4. AISC 358-16 "Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications"

5. RCSC "Specifications for Structural Joints Using High Strength Bolts".
 6. AISC 303-16 Section 10, Architecturally Exposed Structural Steel, Code of Standard Practice for Steel Buildings and Bridges
 7. AWS D1.1 "Structural Welding Code - Steel" – latest edition
 8. AWS D1.8 "Structural Welding Code – Seismic Supplement" – latest edition
 9. ASTM A6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use".
 10. SSPC-Vis 1 Pictorial Surface Preparation Standards for Painting Steel Structures
 11. SSPC-SP2 Hand Tool Cleaning
 12. SSPC-SP3 Power Tool Cleaning
 13. SSPC-SP6 Commercial Blast Cleaning
 14. SSPC-PA2 Measurement of Dry Paint Thickness with Magnetic Gauges
 15. 2016 California Building Code (CBC).
- C. Submittals: (Submit under provisions of Section 01 30 00)
1. Product Data: Include laboratory test reports and other data to show compliance with specifications (include specified standards). Include certified copies of mill reports covering chemical and physical properties of each type of structural steel.
 2. Shop Drawings:
 - a. Shop drawings shall include complete details and schedules for fabrication and assembly of structural steel members, procedures, and diagrams.
 - b. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size, length, and type of each weld.
 - c. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed by others.
 - d. Dimensions required to locate structural steel for manufactured items such as mechanical equipment, electrical equipment, dock levelers, etc., shall be coordinated and provided by the General Contractor. General Contractor shall also coordinate and provide dimensions to locate structural steel for window washing supports such as davits, tie-backs, etc.
 3. Procedures:
 - a. Provide weld procedures for both prequalified welds and special welds to be submitted to the Owner's Testing Laboratory and the Architect.
 - b. Provide installation procedure and inspection for direct tension indicator washers detailed in supplemental specifications provided by the manufacturer for approval.
 - c. Procedures shall be submitted for both shop and field welds.
- D. Tests and Inspections:
1. A testing program is required prior to start of construction. Testing program to be done in Compliance with the CBC requirements and in collaboration with Testing Laboratory, Design team, contractor, owner and submitted for review by the agency in charge of building enforcement. Requirements below are minimum requirements; additional requirements may be required in final testing program.
 2. Testing Laboratory:
 - a. An inspection and testing laboratory will be selected by the Owner for testing and inspection as required by the Contract Documents. The selected laboratory shall conform to the requirements of ASTM E329 (Recommended Practice for Inspection and Testing Agencies used in Construction). Documentary evidence of such conformance shall be submitted to the Owner and the governing agency.

- b. All materials, work, methods and equipment shall be subject to inspection at the mill, fabricating plant and at the building site. Material or workmanship not complying fully with the Contract Documents will not be accepted. The Contractor shall give the Testing Laboratory reasonable notice when ready for inspection and shall supply samples and test pieces and all facilities for inspection without extra charge. The Owner will assume the expense of making the tests and inspection except as otherwise specified in Division 1.
- 3. Cost of Testing and Inspection: Costs of testing and inspection of structural steel, except as specified hereunder and in Division 1, will be paid for by the Owner.
 - a. All transportation costs and per diem living costs for inspection at fabricators' plant further than 75 miles from the job site will be back-charged to the Contractor.
 - b. It is assumed that all fabrication will take place in one shop location only. All additional inspection costs will be back-charged to the Contractor.
 - c. All mill tests and costs of re-test of plain materials shall be at the expense of the Contractor.
 - d. Costs of tests required due to Contractor's failure to provide steel identifiable in accordance with the indicated ASTM designation shall be at the expense of the Contractor.
- 4. Structural Steel Testing and Inspection:
 - a. Structural Steel: If structural steel tests are indicated as required on the structural drawings, one tension and one bend test shall be made for each size of structural shape, plate and for each tube and pipe size. Tests to be made in accordance with requirements of appropriate ASTM designations.
 - b. If structural steel tests are not indicated as required on the structural drawings, then for shapes, plates, bars, pipe and tubing, manufacturer's certified mill test reports and analysis for each heat will be acceptable for steel identifiable in accordance with indicated ASTM designation. Mill test reports shall indicate the physical and chemical properties of all structural steel used. Correlate individual heat numbers with each specified structural section.
 - c. Unidentifiable Steel:
 - 1) For F_y less than or equal to 36.0 ksi : Provide one tension and elongation test and one bend for each 5 tons or fraction thereof for each size.
 - 2) For F_y greater than 36.0 ksi : Provide one tension and elongation test and one bend or flattening for each piece.
 - d. Costs of retests and additional testing required by the use of unidentifiable steels shall be the Contractor's responsibility. Additional costs of testing incurred by the Owner shall be deducted from the Contract Final Payment.
- 5. Expansion Anchors: Load test as indicated on drawings.
- 6. Welding Inspection:
 - a. If shop or field welding inspection is indicated on the structural drawings or required by the applicable referenced standards, shop and field welded operations shall be inspected in accordance with AISC 360 Section N by a qualified welding inspector employed by the Testing Laboratory. Such inspector will be a person trained and thoroughly experienced in inspection of welds. The inspector's ability to distinguish between sound and unsound welding will be reliably established
 - b. The welding inspector will make a systematic record of all welds. This record shall include:
 - 1) Identification marks of welders.
 - 2) List of defective welds.
 - 3) Manner of correction of defects.

- c. The welding inspector will check the material, equipment and procedure, as well as the welds. He will also check the ability of the welder. He will furnish the Architect with a report, duly verified by him that the welding which is required to be inspected is proper, and has been done in conformity with the Contract Documents, and that he has used all means to determine the quality of the welds.
 - d. All full penetration groove welds will be subject to ultrasonic testing, as per AWS D1.1, Clause 6 "Inspection, Part "F", Ultrasonic Testing (UT) of Groove Welds. All defective welds shall be repaired and retested with ultrasonic equipment at the Contractor's expense.
 - e. Column Flanges: An area extending 6 inches above and below point where girder flanges are attached will be inspected. Column flange edges will be inspected visually and entire area ultrasonically for lamination, plate discontinuities, and non-metallic inclusions.
 - f. When ultrasonic indications arising from the weld root can be interpreted as either a weld defect or the backing strip itself, the Engineer will be notified. The Engineer may require the removal of backing strip. The backing strip will be removed at the expense of the Contractor, and if no root defect is visible the weld will be retested. If no defect is indicated on this retest, and no significant amount of base and weld metal have been removed, no further repair of welding is necessary. If a defect is indicated, it will be repaired and retested at Contractor's expense.
 - g. The ultrasonic instrumentation will be calibrated by the technician to evaluate the quality of the welds in accordance with AWS D1.1.
 - h. Other methods of inspection, for example, X-Ray, gamma ray, magnetic particle, or dye penetrant, may be used on welds if felt necessary by the inspection laboratory, and with the approval of the Engineer.
 - i. Base metal thicker than 1-1/2 inches, when subjected to through thickness weld shrinkage strains, shall be ultrasonically inspected for discontinuities directly behind such weld before and after joint completion.
 - j. End-welded studs shall be sampled, tested, and inspected per the requirements of AWS D1.1, Clause 7 Stud Welding.
 - k. At the discretion of the owner's testing agency, the ultrasonic testing frequency may be reduced but may not be less than the following:
 - l. Initially, all welds requiring ultrasonic testing will be tested at the rate of 100 percent in order to establish the qualifications of each individual welder. If the reject rate is demonstrated to be less than 5 percent of the welds tested for each welder, then the frequency of testing for that welder may be reduced to 25 percent. If the reject rate increases to 5 percent or more, 100 percent testing will be re-established until the rate is reduced to less than 5 percent. The percentage of rejects will be calculated for each welder independently.
 - m. A sampling of a least 40 completed welds will be made for such reduction evaluation. Reject rate is defined as the number of welds containing rejectable defects divided by the number of welds completed. For evaluating the reject rate of continuous welds over 3 ft in length where the effective throat is 1 inch or less, each 12 inch increment or fraction thereof shall be considered as one weld. For evaluating the reject rate of continuous welds over 3 ft in length where the effective throat is greater than 1 inch, each 6 inch of length or fraction thereof shall be considered one weld.
7. High Strength Bolting Tests and Inspection:
- a. Furnish certified test reports for each lot of bolts in accordance with Section 9 of ASTM A325 and A490. Install bolts under the supervision of a qualified inspector in accordance with Section 9, Research Council "Specifications for Structural Joints using ASTM A325 or A490 Bolts".

- b. If high strength bolting inspection is indicated on the structural drawings or required by the applicable referenced standards, the testing laboratory shall provide inspection in accordance with AISC 360 Section N.
- c. While the work is in progress, the Inspector shall determine that the requirements of this Specification are met in the work. The Inspector shall observe the calibration procedures and shall monitor the installation of bolts to determine that all plies of connected material have been drawn together and that the selected procedure is properly used to tighten all bolts.
 - 1) In addition to the requirement of the foregoing paragraph, for all connections specified to be slip critical (SC), the Inspector shall assure that the specified procedure was followed to achieve the pretension specified in the AISC. The pretension shall be verified by the inspector for these bolts.
 - 2) Bolts in connections identified as not being slip-critical nor subject to direct tension need not be inspected for bolt tension other than to ensure that the piles of the connected elements have been brought into snug contact.

1.05 PRODUCT HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off the ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.
- B. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.06 SEQUENCING/SCHEDULING

- A. Cooperate and coordinate this work with other trades for anchor bolts, and other required inserts, templates, etc. Align this work prior to installation of other materials.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Structural Steel: Except where indicated on drawings.
 - 1. W shapes: ASTM A572-50 or ASTM A992-50 unless indicated otherwise on drawings.
 - 2. Channels and other rolled shapes: ASTM A36 unless indicated otherwise on drawings.
 - 3. Angles, plates and bars: ASTM A36 unless indicated otherwise on drawings.
- B. AISC group 4 and 5 shapes and plates greater than 2 inches thick: ASTM A36 and/or ASTM A572 Grade 50 with supplementary requirements S91 Fine Austenitic Grain Size and S5 Charpy V-Notch Impact Test. For location of Charpy V-Notch test, see ASTM A6 Supplementary Requirement S30. Charpy V-Notch test shall be per ASTM A673, frequency P and shall meet a minimum average value of 20 ft-lbs absorbed energy at 70° F.
- C. Cold-Formed Steel Tubing: ASTM A500, Grade B.
- D. Steel Pipe: ASTM A53, Type E or S, Grade B.
- E. Anchor Bolts: All anchor bolts cast in concrete or masonry shall be headed bolts with cut threads conforming to ASTM F1554 grade 36, 55 (weldable per S1 Supplementary Requirements), or 105 as indicated on drawings.
- F. Machine Bolts: ASTM A307.
- G. High Strength Bolts, Nuts and Washers: Install in accordance with requirements for A325 and A490 slip critical and snug tight conditions as indicated on drawings. Install high strength bolts with snug tight type connections with threads included in shear plane except as otherwise noted. Install hardened washers in conformance with AISC Specifications.
 - 1. Bolt Specifications: Bolts shall conform to the requirements of the current edition of the Specifications of the American Society for Testing and Materials for High-Strength Bolts

- for Structural Steel Joints, ASTM A325, Heat Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength, ASTM A490 as indicated on drawings.
2. Bolt Geometry: Bolt dimensions shall conform to the current requirements of the American National Standards Institute for Heavy Hex Structural Bolts, ANSI Standard B18.2.1. The length of bolts shall be such that the end of the bolt will be flush with or outside the face of the nut when properly installed.
 3. Nut Specifications: Nuts shall conform to the current chemical and mechanical requirements of the American Society for Testing and Materials Standard Specification for Carbon and Alloy Steel Nuts, ASTM A563, Appendix Table X1.1. Provide Grade A Heavy Hex nuts for Grade 36 and 55 threaded rods. Provide Grade DH or ASTM A194-2H Heavy Hex nuts for Grade 105 threaded rod.
 4. Washers: Flat circular washers and square or rectangular beveled washers shall conform to the current requirements of the American Society for Testing and Materials Standard Specification for Hardened Steel Washers, ASTM F436. Washers for base plates shall conform to ASTM F844 and shall be placed top and bottom of plate.
 5. Tension Control Fastener System: Bolts shall conform to the requirements of the current edition of the Specifications of the American Society for Testing and Materials for Twist Off Type Tension Control Structural Bolt/Nut/Washer Assemblies, ASTM F1852, providing equivalent properties to ASTM A325 or A490 as indicated on drawings.
- H. Headed Stud-Type Shear Connectors: ASTM A108 Grade 1015 or 1020 Cold-finished carbon steel with dimensions complying with AISC Specifications.
1. Tensile strength, 60,000 psi.
 2. Elongation in 2 inches, 20 percent
 3. Reduction of area, 50 percent.
- I. Provide hexagonal heads and nuts for all connections per ASTM A563, Appendix Table X1.1.
- J. Electrodes for Welding: Comply with AWS Code, E70 Series minimum. Fabricator to select proper electrodes according to weld procedures as submitted.
- K. Shop Primer – See Section 3.4, Painting and Cleaning
- L. Powder Driven Fasteners: Tempered steel pins with special corrosive resistant plating or coating. Pins shall have guide washers to accurately control penetration. Fastening shall be accomplished by low-velocity piston-driven power activated tool. Pins and tool shall be as manufactured by Hilti Fastening Systems.

PART 3 EXECUTION

3.01 FABRICATION

- A. Shop Fabrication and Assembly: Fabricate and assembly structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings. Provide camber in structural members where indicated to provide the flattest floor possible. The contractor shall coordinate member tolerances with finishes.

Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

- B. Connections: Weld or bolt shop connections, as indicated. Bolt field connections, except where welded connections or other connections are indicated.
- C. Unless noted otherwise, make holes 1/16 inches larger than the nominal bolt diameter.
- D. Welding, Shop and Field: Weld by shielded arc method, submerged arc method, flux cored arc method, or other method approved by AWS. Perform welding in accordance with AWS Code. All welders, both manual and automatic, shall be certified in accordance with AWS "Standard Qualification Procedure" for the Work to be performed. See paragraph "welding" herein, for detailed requirements. If sizes of fillet welds are not shown on drawings, use AWS minimum weld size but not less than 3/16 inch fillet welds.

- E. Bolt Holes for Other Work: Provide holes required for securing other work to structural steel framing.

Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.

Cut, drill, or punch holes perpendicular to metal surfaces and remove all burrs. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

- F. AISC Group 4 and 5 shapes and built up members shall meet the requirements for joints in AISC Sections J1.5, J1.6, J2.7 and M2.2.

- G. High Strength Bolts:

1. Installation and Tightening:

- a. Handling and Storage of Fasteners: Fasteners shall be protected from dirt and moisture at the job site. Only as many fasteners as are anticipated to be installed and tightened during a work shift shall be taken from protected storage. Fasteners not used shall be returned to protected storage at the end of the shift. Fasteners shall not be cleaned of lubricant that is present in as-delivered condition.
- b. Tension Calibrator: A tension measuring device shall be required at all job sites where bolts in slip-critical joints are being installed and tightened. The tension measuring device shall be used to confirm: (1) the suitability to satisfy the requirements of AISC for the complete fastener assembly, including lubrication if required to be used in the work, (2) calibration of wrenches, if applicable, and (3) the understanding and proper use by the bolting crew of the method to be used. The frequency of confirmation testing, the number of tests to be performed and the test procedure shall be as specified in 1.d. below, as applicable. The accuracy of the tension measuring device shall be confirmed through calibration by an approved testing agency at least annually.
- c. Joint Assembly and Tightening of Shear/Bearing Connections: Bolts in connections not within the slip-critical category shall be installed in properly aligned holes, but need only be tightened to the snug tight condition. The snug tight condition is defined as the tightness that exists when all plies in a joint are in firm contact. This may be attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench. If a slotted hole occurs in an outer ply, a flat hardened washer or common plate washer shall be installed over the slot.
- d. Joint Assembly and Tightening of Connections Requiring Full Pre-tensioning. Slip-critical connections shall be installed in properly aligned holes and tightened by one of the following methods.
 - 1) Turn-of-nut Tightening: When turn-of-nut tightening is used, hardened washers are not required except as specified in the AISC. A representative sample of not less than three bolts and nuts of each diameter, length and grade to be used in the work shall be checked at the start of work in a device capable of indicating bolt tension. The test shall demonstrate that the method of estimating the snug-tight condition and controlling turns from snug tight to be used by the bolting crews develops a tension not less than five percent greater than the tension required for slip-critical connections.

- 2) Installation of Alternate Design Bolts: A representative sample of not less than three bolts of each diameter, length and grade shall be checked at the job site in a device capable of indicating bolt tension. The test assembly shall include flat hardened washers, if required in the actual connection, arranged as in the actual connections to be tensioned. The calibration test shall demonstrate that each bolt develops a tension not less than five percent greater than the tension required by AISC. Manufacturer's installation procedure shall be followed for installation of bolts in the calibration device and in all connections. When alternate design features of the fasteners involve an irreversible mechanism such as yield or twist-off of an element, bolts shall be installed in all holes of the connection and initially brought to a snug tight condition. All fasteners shall then be tightened, progressing systematically from the most rigid part of the connection to the free edges in a manner that will minimize relaxation of previously tightened fasteners prior to final twist-off or yielding of the control or indicator element of the individual fasteners. In some cases, proper tensioning of the bolts may require more than a single cycle of systematic tightening.

e. Mark bolts that have been completely tightened with an identifying symbol.

3.02 WELDING

- A. General: Quality of materials and design and fabrication of all welded connections shall conform to AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Building," "AWS Code for Welding in Building Construction," and requirements of this section.

Location and type of all welds shall be as shown. Make no other welded splices, except those shown on drawings, without prior approval of the architect.

- B. Automatic Welding: Use electrode wire and flux for automatic and semi-automatic welding acceptable to Structural Engineer. All methods, sequences, qualification and procedures, including preheating, and post heating if necessary, shall be detailed in writing and submitted to the Structural Engineer for review.
- C. Qualification of Welders:
1. Structural steel welding: Manual and automatic welds for structural steel construction shall be made only by operators who have been previously qualified by tests, as prescribed in AWS D1.1 to perform type of work required.
 2. Welders shall be checked by welding inspector. Those not doing satisfactory work may be removed, and may be required to pass qualification tests again. All qualification testing shall be at the Contractor's expense.
 3. Only welders whose weld procedures and pre-qualification by testing that have passed shall be considered qualified for such welds.
- D. Control cooling process after weld is completed by either step down post heat or thermal blankets as determined by procedures and prequalification.
- E. Box columns and built-up members shall have ultrasonic testing before and after welding.
- F. Flame cut surfaces shall be ground to remove contaminated steel layer to provide welds proper fusion without impurities.
- G. Preparation of surface: Surfaces to be welded shall be free of loose scale, slag, rust, grease, paint, and any other foreign material.
- H. Welding equipment: Welding equipment to be used in each case shall be acceptable to welding inspector. Use equipment with suitable devices to regulate speed, and manually adjust operating amperage and voltage. The amperage capacity shall be sufficient to overcome line drop, and to give adequate welding heat.
- I. Remove runoff tabs and grind surfaces smooth where the tabs would interfere with fireproofing and architectural finishes.

- J. End-welded studs:
1. Automatic end-welded studs: Automatically end-weld in accordance with the manufacturer's recommendations in such a manner as to provide complete fusion between the end of the stud and the plates. There shall be no porosity or evidence of lack of fusion between the welded end of the stud and the plate. The stud shall decrease in length during welding approximately 1/8 inch for 5/8 inch, and 3/16 inch for 3/4 inch diameter. Stud sizes indicated on drawings represent the finish stud height.
 2. Fillet-end welded studs: Studs may be welded using prequalified FCAW, GMAW, or SMAW processes provided the requirements of the AWS D1.1 Chapter 7 Section 7.5.5 are met as well as any other pertinent requirements of D1.1.
- K. Provide mill camber as shown on the construction documents within AISC tolerance. Place mill tolerance upward for all beams specified no camber.

3.03 ERECTION

- A. Structural steel erection: Comply with AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Building", latest edition.
- B. Erection Sequence: Erect steel in accordance with special erection sequences where special erection sequences are indicated on the contract documents.
- C. Before and during erection, keep all structural steel clean. Ship, handle and store steel in manner to avoid injury to members. Steel members showing evidence to rough handling or injury will be rejected.
- D. Mark each member with erection identification corresponding to mark shown on erection drawings. Carefully plan erection of structural steel so that no cutting and removal of material will be necessary. Do not torch burn in the field, unless specifically permitted by Engineer.
- E. Provide sufficient bracing, shoring and guys to effect safe and satisfactory erection. Provide bracing and shoring capable of holding steel work plumb and properly aligned while field connections are being made, and until lateral force resisting elements are deemed by Architect capable of bracing structure. Temporary bracing shall be adequate to resist lateral forces from wind or seismic prior to the completion of the lateral resisting system.
- F. Set bearing and base plates with extreme care. Bring level, to line and grade with leveling plates or by leveling nuts and bolts. Grout solid under plates with a flowable non-shrink grout per Section 03 30 00 prior to applying vertical load.
- G. Field Assembly: Set structural framing accurately to the lines and elevations indicated. Align and adjust the various members forming a part of a complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces which will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- Shimming or other adjustments not indicated on drawings shall be approved by the Engineer prior to installation. Level and plumb individual members of the structure within specified AISC tolerances except as noted herein. Column shimming shall be 1/4 inch.
- H. All welds shall be full and clean, and conform to AISC and AWS specifications.
- I. Erection Tolerances: Individual pieces shall be erected so that the deviation from plumb, level and alignment shall not exceed 1 to 500 plus:
1. The maximum displacement of the center line of columns adjacent to elevator shafts, from the established column line, shall not be more than 1 inch at any point.
 2. In order to provide a true, flat plane for the exterior elevations, install all steel framing at the exterior walls of the building, so that the center lines of such framing does not vary by more than 1 inch for the length of the building. Also install each vertical member on such grids so that its vertical center line does not vary by more than 1/2 inch from a vertical line for each story and 1 inch for its full height.

3. All columns and beams shall adhere to Section M2.7 of the referenced "Specification for Structural Steel for Buildings" which states that completed members shall be free of twists, bends, and open joints. Take special care that column base plates are parallel and perpendicular to faces of columns and that bolt holes are accurately placed.
- J. Temporary Flooring:
1. Provide planking and scaffolding necessary in connection with erection of structural steel, support of erection machinery, and construction materials. Temporary floors and use of steel shall be as required by applicable regulatory requirements.
 2. If steel decking is used as a working platform, it shall be temporarily tack-welded to supports to extent necessary for such use in accordance with applicable regulatory requirements. The concentrated loading from welding machines and other heavy machinery required for steel erection shall be distributed by planking or other approved means. Metal decking that becomes damaged as the result of being used as a working platform shall be replaced at no additional cost to the Owner.

3.04 PAINTING AND CLEANING

- A. Prior to prime coat application, clean all loose rust, mill scale, oil, dirt, and all other materials from all steel to be left exposed. Use hand tool, power tool, sandblasting, chemical cleaning, and any other method necessary to provide a smooth, sound surface for painting.
- B. Shop prime all steel except the following:
1. Steel encased in concrete.
 2. Contact surfaces for slip-critical (sc) high strength bolts.
 3. Areas within 4 inches of field welds.
 4. Tops of members to receive metal decking.
 5. Steel to be fireproofed.
 6. Surfaces to be galvanized.
- C. Use the following Type A shop painting systems on all normal environment interior steelwork:
1. Surface Preparation: SSPC-SP2 Hand Tool Cleaning or SSPC-SP3 Power Tool Cleaning. Where jobsite exposure is expected to exceed 6 months, SSPC-SP6 Commercial Blast Cleaning is required.
 2. Application: Follow coating manufacturer's printed directions.
 3. Material: Type A Tnemec Company, Inc., Series V10; Sherwin Williams Steel Spec Universal; Metal Case 94-231 Series or approved equal
 4. Number of Coats: One
 5. Dry Film Thickness: 2.0 mils minimum.
 6. Volume Solids: 56.0 +/- 2.0% minimum
 7. Generic Description: Modified Alkyd.
- D. Unless noted otherwise in subsection H, use the following Type B shop painting systems on all exterior steelwork and interior steelwork subjected to wet conditions or fumes (see subsection H for additional requirements)
1. Surface Preparation: SSPC-SP6 Commercial Blast Cleaning
 2. Application: Follow coating manufacturer's printed directions.
 3. Material: Type B Tnemec 90-97 Tnemec-Zinc primer or approved equal
 4. Number of Coats: One
 5. Dry Film Thickness: 2.5 to 3.5 mils
 6. Volume Solids: 63% +/- 2%
 7. Generic Description: Zinc-Rich Urethane

- E. Unless noted otherwise in subsection H, use the following finish painting systems on all exterior steelwork and interior steel work subjected to wet conditions or fumes (see subsection H for additional requirements):
 - 1. Application: Follow coating manufacturer's printed directions. Apply over Type B primer system above.
 - 2. Material: Tnemec Series 750 UVX paint or approved equal
 - 3. Number of Coats: One
 - 4. Dry Film Thickness: 2.5 to 5 mils
 - 5. Volume Solids: 72% +/- 2%
 - 6. Generic Description: Polyfunctional Hybrid Polyurethane
- F. Primers and paints shall meet all federal and state environmental and air quality requirements.
- G. Apply two shop prime coats to areas which will be inaccessible after erection.
- H. All exterior steelwork and all interior steelwork subjected to wet conditions or fumes, including all welds, bolts, washers and other connection components, shall be primed and painted or hot-dip galvanized, as specified by the Architectural finish specifications. In the absence of Architectural finish specifications, all exterior steelwork and all interior steelwork subjected to wet conditions and fumes, including all welds, bolts, washers and other connection components, shall be hot-dip galvanized, conforming to the requirements set forth in ASTM A123/A123M and ASTM A153/A153M.
- I. Clean contact surfaces of high strength bolts of all burrs and material which might prevent solid seating of the parts. Steel to receive bolts shall be primer painted except beneath the contact area of slip-critical bolts.
- J. After erection, field touch up all welded areas, high strength bolts and damaged areas. For all steel to remain exposed, remove all blemishes, paint drips, and touch up prime coat.

3.05 HOISTING AND BRACING

- A. Provide all hoisting and erecting equipment and power.
- B. Provide and maintain any and all safety railings, toe boards, etc., required for the erection of steel framing and metal decking.
- C. Brace the erected frame in a manner which will assure safety and proper alignment to receive the metal decking and until the concrete slabs have been poured and have set.
- D. Erect building frame true and level. Erect columns in a manner to allow for movement due to welding shrinkage and thermal expansion and contraction of framing. Check plumbness after erection of each level. Maintain structural stability of frame during erection. Provide temporary bracing where necessary to maintain frame stability and to support required loads, including equipment and its operation.

END OF SECTION

SECTION 05 5000
METAL FABRICATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The work consists of miscellaneous steel structure maintenance repairs as indicated on the project drawings including, but not limited to, the following:
 - 1. Damaged or leaking deck plate repair
 - 2. Damaged deck stiffener reinforcement.
 - 3. Weather tightness for hull penetrations.

1.02 RELATED REQUIREMENTS

- A. Section 09 9900, Protective Coatings

1.03 REFERENCE STANDARDS

- A. California Building Code, 2016 Edition (CBC).
- B. Except wherein provisions of these specifications are more exacting, the work of this section shall comply with all applicable provisions of the latest editions (except as noted) of the following standard specifications:
 - 1. "Specification for Structural Steel Buildings," American Institute of Steel Construction (AISC), Latest Edition.
 - 2. "Structural Welding Code," American Welding Society (AWS) D1.1.
 - 3. "Steel Structures Painting Council," (SSPC).
 - 4. "American Iron and Steel Institute," (AISI).
- C. The appropriate specifications as enumerated herein, of the American Society for Testing and Materials (ASTM).

1.04 SUBMITTALS

- A. Prepare complete Shop Drawings showing all details of layout, fabrication, and erection, and submit to Owner's Representative for review prior to start of fabrication. Shop Drawings shall indicate type and location of shop and field connections; type, size, extent and sequence of welds; and, Contractor shall be responsible for correctness of same. Shop Drawings shall not be reproductions of the Contract Documents, nor shall they use or incorporate reproductions of parts of the Contract Documents. Fabricate only from reviewed drawings.
- B. Review of Shop Drawings will cover only the general scheme, design, and character of the details, but not the checking of dimensions; nor will such review relieve the Contractor from the responsibility for executing the work in accordance with the Contract Drawings.
- C. Submit to the Owner's Representative and the Owner's Testing Agency for their review:
 - 1. Written documentation of current AISC certification for erector(s) and fabricator(s).
 - 2. Written Welding Procedure Specifications (WPSs) in accordance with AWS D1.1 requirements for each different type of welded joint proposed for use whether prequalified or qualified by testing.
 - a. The specific electrode to be used, and its manufacturer, shall be stated in each WP.
 - 3. Procedure Qualification Record (PQR) in accordance with AWS D1.1 for all procedures qualified by testing.

- 4. Electrode manufacturer's date.
- D. Submit mill certification of physical and chemical properties for steel.

PART 2 - PRODUCTS

2.01 METALS

- A. Steel Plates, Shapes, and Bars: ASTM A36/A 36M. B. Welding Electrodes: E70XX, 70 KSI, Low Hydrogen.

PART 3 - EXECUTION

3.01 FABRICATION

- A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.
- B. Welding: Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. At exposed connections, finish welds and surfaces smooth with contour of welded surface matching those adjacent. Welding and weld tests shall comply with AWS.

3.02 INSTALLATION

- A. Perform cutting, drilling, and filling required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation, with edges and surfaces level, plumb, true, and free of rack.

3.03 WORKMANSHIP

- A. The American Welding Society's GUIDE FOR STEEL HULL WELDING will be used as the standards for welder qualification, inspecting welding, and fabrication workmanship.

3.04 MATERIAL

- A. All steel shall be new and of ASTM A-36 material or approved equal, unless otherwise noted. Mill certification of physical and chemical properties that meet ASTM A-36 criteria will be required and shall be submitted to the Owner Representative. In order to keep track of the certified steel, each plate and shape shall be marked with the certification number. This certification number shall be kept visible on the unused portion of the plate or shape until used.
- B. Plates and shapes shall be wheelabrated or sandblasted to near white, SSPC SP10, and coated with pre-construction primer prior to fabrication.
- C. All welding shall conform to AISC and AWS standards and shall be performed by AWS certified welders using E70XX electrodes. Only prequalified welds shall be used. Shop drawings shall show all welding with AWS A24 symbols. Minimum welding shall be 3/16". The contractor is responsible for determining if a weld should be shop- or field-welded in order to facilitate structural steel erection.

END OF SECTION

SECTION 05 6000
ALUMINUM STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION

The Work of this section consists of designing, furnishing and installing aluminum structures and related elements for the K Street Barge Repairs Project (Project). Structures include access ramps to accommodate users with handicaps and disabilities.

1.02 REFERENCES AND STANDARDS

- A. American Welding Society (AWS) D1.2 – 2008 Structural Welding Code – Aluminum.
- B. 2016 California Building Code (CBC).

1.03 SUBMITTALS

- A. Design: The Contractor shall employ the services of a professional Licensed Engineer registered in the State of California to prepare stamped design drawings and calculations for the ramps and other structures attesting that the structures, attachments, and related components, including handrails, conforms to all specification and regulatory agency requirements.
- B. Shop Drawings: Submit Shop Drawings for the complete ramp and handrail assembly, showing all materials, member shapes and sizes, dimensions, quantities, connecting details accessories and calculations. Shop Drawings shall also be provided for all gate and fence fabrication and all other specially fabricated items and catalog sheets for standard manufactured items.
- C. Testing and Inspection Program: Submit a testing and inspection program for all aluminum fabrication welding to assure the welds and fabricated items meet all AWS and CBC and other applicable codes and requirements. The cost of the welding testing and inspection shall be borne by the Contractor and no separate payment will be made by the City for compliance with this requirement.
- D. Certification: Submit certification from manufacturers, suppliers, fabricators, etc., attesting that the following materials conform with the Design-Build Contract requirements:
 - 1. Aluminum.
 - 2. Fasteners.
 - 3. Certifications of welders.
 - 4. Certification that all aspects of the aluminum ramp materials, supply, fabrication, testing, inspection and installation meet all specified requirements, codes and standards.

E. Samples: Submit samples for the non-skid decking.

1.04 DESIGN REQUIREMENTS

Information presented in these Specifications is based upon the best estimate of those environmental and physical factors that reasonably can be expected to affect the design, performance and durability of the ramps. These criteria shall be considered as minimum requirements; however, mere conformance to the minimum sizes, strengths and design parameters given herein will not automatically ensure approval. Final calculations shall be the responsibility of the Contractor and shall furnish proof that the ramp structure, using the criteria specified herein as a minimum standard, is designed to withstand the loading without damage throughout the design life of the system. Final design calculations shall be prepared and submitted to the City Representative for review before starting fabrication.

- A. Span Length and Width: The clear span length shall be determined based on the specific location and existing site conditions.
- B. Vertical Loads: The vertical design load shall be the combination of the dead weight of the structure, including attached utilities and either live load Case A or Case B, whichever governs.
 - 1. Case A shall be a uniformly distributed load of 100 pounds per square foot of deck surface area.
 - 2. Case B shall be a concentrated load of 400 pounds applied on a six (6) inch by six (6) inch area located anywhere on the deck surface.
- C. Horizontal Loads: The horizontal design load shall be either a uniformly distributed wind load of twenty (20) pounds per square foot of profile area, or a seismic load of 0.3 times the dead weight, whichever governs. The horizontal design load shall be applied in combination with the dead weight.
- D. Deflection: The maximum deflection under the combination of dead and live loads shall equal the span divided by (360).
- E. Safety Factors: The deck and structural components shall be designed with a minimum safety factor on working stress as specified in Aluminum Association - "Specifications for Aluminum Structures" for bridge type structures. For non-aluminum structural components, similar safety factors shall apply.
- F. Beam Design: The hollow aluminum box beam may be designed with uniform tapers at each end to conserve materials and improve aesthetics.
- G. Skid Resistance: The walking surface shall be provided with an aggressively non-skid surface.
- H. Handrails: The fixed ramps shall be fitted with a handrail on each side of the

walking surface having the same length as the walking surface. The handrail shall be fabricated of aluminum pipe or tubing with a 1-1/2 inch outside diameter and a smooth gripping surface. Handrail height shall be forty-two (42) inches from the top of the deck and the spacing of horizontal rails shall be such that a four (4) inch sphere cannot pass through the railing at any point.

Handrails shall extend a minimum of one (1) foot beyond the top and bottom ends of the ramp, and the ends shall be returned. An additional handrail that can be gripped by persons in wheel chairs shall also be provided at a height of thirty-two (32) inches. Each rail shall be designed to support a uniformly distributed lateral load of twenty (20) pounds per linear foot, applied perpendicular to the rail; posts shall be designed to support the above load from the portion of all rails that transfer load to the post. The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least two-hundred (200) pounds applied in any direction at any point on the rail.

- I. Toe Ramp: The toe ramp plate shall make a smooth, gap-free transition between the ramp and the landing. The ramp plate shall be minimum 1/4 inch material. The ramp shall be the full width of the ramp deck and have a maximum slope not in excess of one (1) inch in twelve (12) inches at any tide elevation. The lower edge shall be fitted with a continuous UHMW polyethylene wear block of 1/2 inch thick.

Deck protective plates shall be placed under the toe ramp. The plates shall be aluminum, a minimum of three (3) inches wide and of such length to underlie the toe ramp wear block at all stages of tide. The deck plate shall be minimum 3/16 inch material. Both the wheel guides and the deck plates shall be fastened in a manner that does not present a trip hazard to users.

- J. Handling and Installation: The ramp design shall include calculations that address loads resulting from handling and installation.
- K. Safety and Disability Access: Design shall conform with Disability Access Requirements of Title 24 of the California Administrative Code, and Regulations of California OSHA, California Building Code, Federal ADA Codes and Guidelines, and City of Sacramento requirements where applicable.
- L. Compatibility: The design shall be compatible with the existing site access and land side amenities and as approved by the City Representative.
- M. Experience of Fabricator: Fixed ramps shall be fabricated by a firm having a minimum of five (5) years experience in design and fabrication of bridge-type aluminum structures.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Aluminum: All aluminum used in the fabrication shall be Alloy 6061-T6 or 6063-T6. All welding of aluminum shall comply with Aluminum Association - Specifications for Aluminum Structures.
- B. Fasteners: All fasteners shall be 316 Series Stainless Steel. Welding Filler Wire: All welds shall be made with a filler metal alloy that will produce a weld that is compatible in corrosion resistance with the base metal.
- C. Steel Accessories: All approved mild steel components shall conform to ASTM A-36 and be galvanized after fabrication in accordance with ASTM A-123. All welding of steel shall comply with AWS D 1.1.
- D. Non-Skid Surface: Walking surface shall have a permanent aggressively non-skid finish.
- E. Dissimilar Materials: Where dissimilar materials are in contact, or where aluminum is in contact with concrete, masonry, wet or pressure-treated wood, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of bituminous paint conforming to Federal Specification TT-V-51 to prevent corrosive action.

PART 3 - EXECUTION

3.01 FABRICATION

A. Workmanship:

All Work shall conform to the reviewed shop drawings, project drawings and this specification. Construction details, finishing details and colors shall be consistent throughout. Work shall be accurately set to establish lines and elevations, and securely fastened in place. Cutting, drilling and punching shall produce clean, true lines and surfaces. Exposed surfaces of work shall have a smooth finish.

B. Welding:

1. Preparation: Parts to be welded shall be free of dirt, grease and other contaminants, and shall fit up properly for sound welding. Surfaces to be welded shall not be cut with oxygen. Sawing, shearing or machining may be used.
2. Welding Procedure: All welding shall be with an inert gas shielded arc process. Machine settings shall be developed by making test welds of the same material alloy and geometry as the work pieces and testing the sample welds destructively. All welds shall be full circumference for either round or square material.
3. Finishing: All exposed surfaces of the ramps, except handrails, shall be

sandblasted in accordance with Commercial Sand Blast SSPC-SP 6-63, which provides a coarse matte finish. The handrails, guardrails and security gates shall have a rubbed or light brush finish.

4. All aluminum structure welding, welding procedures, testing and inspection shall be done in accordance with the requirements of the Structural Welding Code.

Aluminum ANSI - AWS D1.2
(latest edition)
An American National Standard

The aluminum fabrications in this section shall be subject to testing according to the above specifications. The City Representative has the right to test the ramp or any part of the structure she/he determines necessary to ensure that it meets the requirements of the specifications.

All welding procedures shall be submitted to the City Representative and approved by him/her in writing prior to use on the ramp. The ramps shall fabricated only by certified welders, and welder certifications shall be submitted to the City Representative prior to start of fabrication.

All inspection and testing required on the ramps, the costs of welding procedures and welder certifications will be considered as included in the payment for this item and no additional compensation will be allowed.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The work consists repairs and replacement of timber decking on the K Street Barge structure maintenance repairs as indicated on the project drawings, including, but not limited to, the following:
 - 1. Structural decking.
 - 2. Preservative treatment of wood.
 - 3. Wood blocking for support of wood stringers and decking.

1.02 REFERENCE STANDARDS

- A. California Building Code, 2016 Edition (CBC).
- B. American Wood Preservers Association (AWPA).

1.03 SUBMITTALS

- A. Product Data.

PART 2 - PRODUCTS

2.01 LUMBER MATERIALS

- A. Douglas fir, pressure treated, Coast Region, S4S, Dense No. 1. Lumber Moisture Content: 19 percent maximum moisture content.

2.02 PRESSURE TREATMENT

- A. Where called for on the drawings or specified herein, exposed lumber to receive preservative-type pressure treatment shall have a minimum moisture content of 19 percent after pressure treatment and shall be pressure treated using Ammoniacal copper quaternary compound (ACQ). Preservative shall penetrate a minimum of 3/8-inch (9.5 mm) deep into wood. Materials shall be compatible with stain coatings when specified in Division 09 Section "Painting". Fasteners and connectors used with preservative pressure treated lumber shall be G185 hot dip galvanized, Type 304 stainless steel or Type 316 stainless steel.
 - 1. Dimensioned Lumber Posts: AWPA C-2, retention of 0.4 lbs/c.f. per quality standard for LP-22 for in-ground contact.
 - 2. Dimensioned Lumber (all other): AWPA C-2, retention of 0.25 lbs/c.f. per quality standard LP-2 for above ground use.
 - 3. Pre-treated lumber shall be preserved with ACQ Preserve, Chemical Specialties Inc.
 - 4. Field treatment shall be Boracol or Impel Rods, Chemical Specialties Inc. applied in accordance with the manufacturer's instructions, or approved equal.
- B. All interior wood and plywood used for blocking and built into roofing, or otherwise shown, shall receive fire retardant pressure treatment in accordance with American Wood Preservers Association (AWPA). Treat wood with Kopper's "Non-Com", or Baxter fire retardant treatment, or equal, and provide UL label. Plywood shall have flame spread rating after treatment of 25 or less.
- C. Subcontractor shall furnish to the Project Manager, upon delivery of the members to the job, a certificate certifying that the material has been pressure treated as specified.

2.03 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Fasteners: stainless steel for treated wood locations.
- B. Die Stamped Connectors: hot-dip galvanized steel.

- C. Structural Framing Connectors: Epoxy coated steel, unless noted otherwise.

PART 3 - EXECUTION

3.01 DECKING

- A. Set barge decking and support members level and in correct position.
- B. Fasten all support framing and decking in accordance with California Building Code, latest edition.

3.02 WORKMANSHIP

- A. General: Rough carpentry shall produce joints true, tight, and well nailed with members assembled in accordance with the Drawings and with pertinent codes and regulations.
- B. Selection of lumber pieces: Carefully select members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making proper connections.

3.03 WOOD PRESERVATIVE

- A. All exterior framing and wood trims coming in contact with concrete or masonry, whether or not Redwood, and not specified or otherwise shown to be pressure treated shall be treated with ACQ Preserve or approved equal.

3.04 SITE APPLIED WOOD TREATMENT

- A. Brush apply two coats of preservative treatment on site cut ends and site cut wood in contact with other wood surfaces.
- B. Apply preservative treatment in accordance with manufacturer's instructions.
- C. Allow preservative to cure prior to erecting members.

3.05 INSTALLATION LUMBER AND DECKING

- A. Secure decking perpendicular to framing members with ends staggered over firm bearing where possible.
- B. Maintain deck joints of 1/16 inch (1.6 mm).
- C. Surface Flatness: +/- 1/4 inch (6 mm) in 10 feet (3 m) maximum.

3.06 FRAMING

- A. Install framing in strict accordance with the requirements of CBC Chapter 23 unless more stringent requirements are specified herein or shown on the Drawings.
- B. Optimum Value Engineering: Where indicated on drawings or, with prior approval by the Project Manager, the following framing techniques may be employed. Nothing in this Section shall supercede requirements of CBC Chapter 23 or other requirements in the Drawings or Specifications.
 - 1. Wall studs spaced at 24 inches (600 mm) on center (Verify with Project Manager and ensure that wall finish materials can meet spans)
 - 2. On non-bearing walls, or where upper level framing aligns with lower floor, a single continuous top plate may be used.
 - 3. Built up headers may be used in lieu of solid lumber.
 - 4. Frame corners with two studs and framing clips.
 - 5. Use blocking for attachments in lieu of continuous stud.
 - 6. Delete headers at non-load bearing walls.
 - 7. Layout framing to take advantage of sheathing or siding dimensions.

3.07 CLEANUP

- A. At the end of each shift and upon completion of the work, remove debris, rubbish and surplus materials from the site which resulted from work under this section. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill. Take positive measures to ensure that saw dust and wood shavings do not enter the storm drainage system.

3.08 WASTE MANAGEMENT

- A. Conform with Division 01 Section "Construction Waste Management."
- B. Separate wood waste in accordance with the Waste Management Plan.
- C. Separate stained, painted and treated lumber from clean lumber and place in designated area for hazardous materials.

- D. Separate and store separately in a clean and dry location the following categories for salvage or re-use on site:
 - 1. Sheet materials larger than 2 square feet (1.19 m).
 - 2. Framing members larger than 16 inches (400 mm).
 - 3. Multiple offcuts of sizes larger than 12 inches (300 mm).
- E. The following categories may be re-used in the manufacture of particle board or MDF.
 - 1. Composite wood, (for example, plywood, OSB, LVL, I-Joist, parallel strand, MDF, particleboard).
 - 2. Clean dimensional lumber.
- F. Set aside damaged wood for acceptable alternative uses, for example use as bracing, blocking, cripples, or ties.
- G. Do not burn in an open fire, wood stove, fireplace or other non-industrial incinerator lumber that is less than a year old or wood treated with creosote, pentachlorophenol, CCA, ACA, or other pressure treatment.
- H. Separate the following categories for disposal and place in designated areas for hazardous materials: treated, stained, painted, or contaminated wood.

END OF SECTION

SECTION 06 5113

PLASTIC LUMBER

PART 1 - GENERAL

1.1 SCOPE

- A. Provide and install decking as shown on Project Drawings. Recycled plastic lumber shall be used.

1.2 STANDARDS

- A. The following codes and standards are hereby made a part of this section and miscellaneous metal work shall conform to the applicable requirements therein except as otherwise specified herein or shown on the drawings. Nothing contained herein shall be construed as permitting work that is contrary to code requirements or governing rules and regulations.

1.3 SUBMITTALS

- A. Shop Drawings: Submit shop drawings where required by the technical specifications or on the drawings for:
 - 1. Decking and related.

Shop drawings shall show material types, dimensions, sizes, thicknesses, gauges, finishes, joining, weldments, attachments, and relationship of work to adjoining construction. Where concrete, masonry, or other materials must be set to exact locations to receive work, furnish assistance and direction necessary to permit other trades to properly locate their work. Catalog work sheets showing illustrated cuts of item to be furnished, scale details and dimensions may be submitted for standard manufactured items.

- B. Product Data: Contractor shall submit manufacturer's data showing engineering and physical properties of the plastic lumber.
- C. Catalog Cuts: Submit for each pre-manufactured item.

1.4 DECKING PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide deck planks capable of withstanding the effects of the following loads and stresses within limits and under conditions indicated:
 - 1. Dead Load: Self-imposed
 - 2. Live Load: 100 psf
 - 3. Deflection: L/240 maximum

PART 2 - MATERIALS

2.1 FASTENINGS

- A. Intent of Drawings: The Project Drawings are intended to show the basic geometry and type of components. If any particular joint is not shown on the drawings, it shall be provided with bolts, screws, and/or welds, as required to be consistent with the fully detailed joints, and shall be subject to the approval of the Owner's Representative.
- B. Furnish all hardware required for fastenings, as shown on the drawings, and as specified herein, and as required to complete the work. All fasteners shall be hot-dip galvanized unless fastening at aluminum elements. Fasteners shall include, but not be limited to, the following:
 - 1. Bolts: Shall be machine bolts, lag bolts, or carriage bolts of structural grade steel conforming to ASTM A-153, of sizes indicated on the drawings. Anchor bolts shall have cut threads.

2. Washers: Shall be of standard malleable iron, ASTM 153.
3. Galvanizing:
 - a. All ferrous metal fabrications shall be hot dipped galvanized per ASTM A153. Fabrications to be painted shall be acid etched prior to powder coating. Galvanizing for iron and steel hardware shall be in accordance with ASTM 153.
 - b. If necessary, the threads of nuts shall be retapped after galvanizing. Any damaged zinc coatings shall be repaired with galvanizing repair compound.

2.2 MATERIALS

- A. Plastic Lumber Fasteners
 1. Fasteners: Use fasteners made of the same basic metal as the fastened metal, unless otherwise indicated. Do not use metals which are corrosive or incompatible with materials joined. Provide exposed fasteners, if any, which match finish of fastened metal, unless otherwise indicated.
- B. FINISH
 1. All walking surfaces shall include a texture with embossed simulated wood grain.
- C. MANUFACTURER
 1. Bedford Technology, Fiberforce HDPE, www.plasticboards.com 800-721-9037

PART 3 - EXECUTION

3.1 GENERAL

- A. Verify all measurements at site prior to ordering materials.
- B. Coordinate all metal work with adjoining work for details of attachment, fitting, etc. Do all cutting, shearing, drilling, punching, threading, tapping, etc., required for miscellaneous metal or for attachment of adjacent work. Drill or punch holes; do not use cutting torch. Shearing and punching shall leave true lines and surfaces.
- C. Conceal all fastenings where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Form joints exposed to weather to exclude water.
- D. Make all permanent connections in ferrous metal surfaces using welds where at all possible. Do not use bolts or screws where they can be avoided. Re-galvanize all welds.
- E. Provide all lugs, clips, anchors and miscellaneous fastenings necessary for the complete assembly and installation.
- F. Set all work plumb, true, rigid, and neatly trimmed out.
- G. Where items must be incorporated or built into adjacent work, deliver to trade responsible for proper location of such items.

3.2 CLEAN UP

- A. Protection and Cleaning: Remove all soiled and foreign matter from finished surfaces and apply such protective measures as required to prevent damage or discoloration of any kind until acceptance of project.
- B. During construction, keep premises as clear as possible of materials and debris, and at the completion of work remove all tools, appliances, materials, and debris from the premises.

3.3 Acceptance of Work:

- A. Final acceptance of the work will be provided following review by the Owner's Representative.

END OF SECTION

SECTION 06 7313

FIBERGLASS REINFORCED PLASTICS (FRP)

PULTRUDED PLANK

PART 1 - GENERAL

1.1 REFERENCES

- A. ASTM D-638: Tensile Properties of Plastics
- B. ASTM D-790: Flexural Properties of Unreinforced and Reinforced Plastics
- C. ASTM D-2344: Apparent Interlaminar Shear Strength of Parallel Fiber Composites by Short Beam Method
- D. ASTM D-696: Coefficient of Linear Thermal Expansion for Plastics
- E. ASTM E-84: Surface Burning Characteristics of Building Materials

1.2 SUBMITTALS

- A. Shop Drawings: Submit shop drawings of all fabricated structural systems and accessories for the following:
 - 1. Decking and related.
 - 2. Closed stair risers.

Shop drawings shall show material types, dimensions, sizes, thicknesses, gauges, finishes, joining, weldments, attachments, and relationship of work to adjoining construction. Catalog work sheets showing illustrated cuts of item to be furnished, scale details and dimensions may be submitted for standard manufactured items.
- B. Product Data: Contractor shall submit manufacturer's data showing engineering and physical properties, corrosion resistance tables, certificates of compliance, test reports as applicable, and design calculations, sealed by a Professional Engineer.
- C. Samples: Contractor may be requested to submit sample pieces of each item specified herein for acceptance by the Engineer to confirm quality and color. Sample pieces shall match the materials to be used for the Work.

1.3 FRP PULTRUDED PLANK AND CLOSED RISER PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide deck planks capable of withstanding the effects of the following loads and stresses within limits and under conditions indicated:
 - 1. Dead Load: Self-imposed
 - 2. Live Load: 100 psf
 - 3. Deflection: L/240 maximum
- B. Manufacturer shall be:
 - 1. Fibergrate Composite Structures, Dynaplane Boardwalk Plank, www.fibergrate.com, 800-527-4043
 - 2. Strongwell, Strongdek fiberglass decking, www.strongwell.com
 - 3. Or approved equal.

1.4 QUALITY ASSURANCE

- C. All items to be provided under this Section shall be furnished only by manufacturers having a minimum of ten (10) years' experience in the design and manufacture of

similar products and systems. Additionally, if requested, a record of at least five (5) previous, separate, similar successful installations in the last five (5) years shall be provided.

- D. Manufacturer shall offer a 3-year limited warranty on all FRP products against defects in materials and workmanship.
- E. Manufacturer shall be certified to the ISO 9001-2008 standard.
- F. Manufacturer shall provide proof of certification from at least two other quality assurance programs for its facilities or products (DNV, ABS, USCG, AARR).

1.5 PRODUCT DELIVERY AND STORAGE

- G. Delivery of Materials: Manufactured materials shall be delivered in original, unbroken pallets, packages, containers, or bundles bearing the label of the manufacturer. Adhesives, resins and their catalysts and hardeners shall be crated or boxed separately and noted as such to facilitate their movement to a dry indoor storage facility.
- H. Storage of Products: All materials shall be carefully handled to prevent them from abrasion, cracking, chipping, twisting, and other types of damage. Store adhesives, resins and their catalysts and hardeners in dry indoor storage facilities between 70 and 85 degrees Fahrenheit (21 to 29 degrees Celsius) until they are required.

PART 2 - MATERIALS

2.1 FASTENINGS

- A. Intent of Drawings: The Project Drawings are intended to show the basic geometry and type of components. If any particular joint is not shown on the drawings, it shall be provided with bolts, screws, and/or welds, as required to be consistent with the fully detailed joints, and shall be subject to the approval of the Owner's Representative.
- B. Furnish all hardware required for fastenings, as shown on the drawings, and as specified herein, and as required to complete the work. All fasteners shall be hot-dip galvanized unless fastening at aluminum elements. Fasteners shall include, but not be limited to, the following:
 - 1. Bolts: Shall be self tapping screws in steel and wood, lag bolts, or carriage bolts of structural grade steel conforming to ASTM A-153, of sizes indicated on the drawings. Anchor bolts shall have cut threads.
 - 2. Washers: By manufacturer
 - 3. Hold-down clips: WLP-4 or approved equal
 - 4. Galvanizing:
 - a. All ferrous metal fabrications shall be hot dipped galvanized per ASTM A153. Fabrications to be painted shall be acid etched prior to powder coating. Galvanizing for iron and steel hardware shall be in accordance with ASTM 153.
 - b. If necessary, the threads of nuts shall be retapped after galvanizing. Any damaged zinc coatings shall be repaired with galvanizing repair compound.

2.2 MATERIALS

- A. Floor planks and riser covers to be manufactured by the pultrusion process with a glass content minimum of 45%, maximum of 55% by weight. The planks shall be composed of fiberglass reinforcement and resin in qualities, quantities, properties, arrangements and dimensions as necessary to meet the design requirements and dimensions as specified in the Contract Documents and herein.
- B. Fiberglass reinforcement shall be a combination of continuous roving, continuous strand mat, and surfacing veil in sufficient quantities as needed by the application and/or physical

properties required.

- C. Resins shall be ISOFR or VEFR, fire retardant isophthalic polyester with chemical formulation necessary to provide the corrosion resistance, strength and other physical properties as required.
- D. Non-slip surfacing: Walking surface of planks shall be provided with a non-skid quartz grit bonded and baked to the top surface of the finished product and sealed with a compatible resin system to provide full encapsulation of the grit particles. Grit shall be 16/30 grit for general purpose use.
- E. All finished surfaces of FRP items and fabrications shall be smooth, resin rich, free of voids and without dry spots, cracks, crazes or unreinforced areas. All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.
- F. All pultruded plank flooring shall be further protected from ultraviolet (UV) attack with integral UV inhibitors in the resin and a synthetic surfacing veil to help produce a resin rich surface.
- G. All fire retardant FRP products shall have a tested flame spread rating of 25 or less per ASTM E 84 Tunnel Test.
- H. Pultruded planks to have the minimum longitudinal mechanical properties listed below:
 - 1. Tensile Strength (ASTM D-638): 30,000 psi
 - 2. Tensile Modulus (ASTM D-638): 2.5×10^6 psi
 - 3. Flexural Strength (ASTM D-790): 30,000 psi
 - 4. Flexural Modulus (ASTM D-790): 1.8×10^6 psi
 - 5. Flexural Modulus, Full Section: 2.8×10^6 psi
 - 6. Short Beam Shear, Transverse (ASTM D-2344): 4,500 psi
 - 7. Shear Modulus, Transverse (ASTM D-8069): 4.5×10^5 psi
 - 8. Coefficient of Thermal Expansion (ASTM D-696) 8.0×10^{-6} in/in/°F
 - 9. Flame Spread (ASTM E-84): 25 or less
- I. Color: Dark gray or beige. Provide samples to City for verification prior to ordering.
- J. Depth: 1-7/8 inches (47.6 mm) with a tolerance of plus or minus 1/16 inch (1.5 mm).
- K. Width: 10-1/4 inches (260.3 mm) with a tolerance of plus or minus 1/16 inch (1.5 mm).
- L. Substitutions: Other products of equal strength, stiffness, corrosion resistance and overall quality may be submitted with the proper supporting data to the engineer for approval.
- M. Planks weakened by cuts or penetrations shall be reinforced or supported as required to meet the above listed design criteria.

PART 3 - EXECUTION

3.1 FABRICATION

- A. Measurements: Plank flooring shall meet the minimum dimensional requirements as shown or specified. The Contractor shall verify measurements in field for work fabricated to fit field conditions as required by manufacturer to complete the work. Determine correct size and locations of required holes or coping from field dimensions before fabrication. Additionally, the Contractor shall determine location and dimensions of all strike plates such that transition plates do not rest and rub on deck planks.
- B. Sealing: All shop fabricated cuts or drilling shall be coated with a manufacturer recommended sealant to provide maximum corrosion resistance. All field fabricated cuts or drilling shall be coated similarly by the contractor in accordance with the manufacturer's instructions.

- C. Attachment: Floor planks shall be firmly fastened to their supports using fasteners with sizes and spacings as recommended by the manufacturer.
- D. Conceal all fastenings where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Form joints exposed to weather to exclude water.
- E. Set all work plumb, true, rigid, and neatly trimmed out.
- F. Where items must be incorporated or built into adjacent work, deliver to trade responsible for proper location of such items.

3.2 CLEAN UP

- A. Protection and Cleaning: Remove all soiled and foreign matter from finished surfaces and apply such protective measures as required to prevent damage or discoloration of any kind until acceptance of project.
- B. During construction, keep premises as clear as possible of materials and debris, and at the completion of work remove all tools, appliances, materials, and debris from the premises.

3.3 Acceptance of Work:

- A. Final acceptance of the work will be provided following review by the Owner's Representative.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including pier caps, flashings, counterflashings, and all other sheet metal items detailed on the drawings or scheduled.
- B. Sealants for joints within sheet metal fabrications.
- C. Precast concrete splash pads.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
- B. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012)e1.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 3 (three) years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage (0.0239 inch) (0.61 mm) thick base metal.

2.02 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Protective Backing Paint: Zinc molybdate alkyd.
- D. Sealant to be Concealed in Completed Work: Non-curing butyl sealant.
- E. Sealant to be Exposed in Completed Work: ASTM C920; elastomeric sealant, 100 percent silicone with minimum movement capability of plus/minus 25 percent and recommended by manufacturer for substrates to be sealed; clear.
- F. Solder: ASTM B32; Sn50 (50/50) type.

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of galvanized steel type sheet metal, minimum 2 inches (50 mm) wide, interlocking with sheet.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.
- E. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- F. Fabricate corners from one piece with minimum 18 inch (450 mm) long legs; seam for rigidity, seal with sealant.

PART 3 EXECUTION

3.01 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil (0.4 mm).

3.02 INSTALLATION

- A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- B. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- C. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

END OF SECTION

SECTION 07 8443

FIRE RESISTIVE JOINT SEALANT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Fire-resistive joints systems in and between fire-resistance-rated construction assemblies.
2. Joints in smoke barriers and smoke partition systems.
3. Joints in and between a fire-rated horizontal assembly and an exterior non-rated vertical assembly (perimeter joint).

1.2 REFERENCES

A. American National Standards Institute (ANSI):

1. ANSI/UL 263 - Fire Tests of Building Construction and Materials.
2. ANSI/UL 723 - Surface Burning Characteristics of Building Materials.
3. ANSI/UL 2079 - Tests for Fire Resistance of Building Joint Systems.

B. American Society for Testing and Materials (ASTM):

1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
3. ASTM E 1399 - Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems.
4. ASTM E 1966 - Standard Test Method for Fire Resistive Joint Systems.
5. ASTM E 2307 - Fire Tests of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-Story Test Apparatus.
6. ASTM E 2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers.

C. Factory Mutual (FM) - FM4991 - Standard for Approval of Firestop Contractors.

D. International Code Council (ICC):

1. International Building Code (IBC).
2. International Residential Code (IRC).

E. National Fire Protection Association (NFPA):

1. NFPA 70 - National Electrical Code.
2. NFPA 101 - Life Safety Code.
3. NFPA 5000 – Building Construction and Safety Code.

F. Underwriters Laboratories (UL) - UL Building Materials Directory:

1. Joint Systems (XHBN).
2. Forming Materials (XHCU).

3. Fill, Void or Cavity Materials (XHHW).
- G. American Society of Sanitary Engineering (ASSE):
 1. ASSE Series 9000 – Professional Qualification Standard for Firestop Systems and Device Installers, Inspectors and Surveyors..
- H. International Association of Plumbing and Mechanical Officials (IAPMO):
 1. Uniform Plumbing Code (UPC).
 2. Uniform Mechanical Code (UMC).
- I. International Standards Organization (ISO):
 1. ISO 10295-2: 2009.

1.3 PERFORMANCEL REQUIREMENTS

- A. Provide systems that are listed by at least one of the following:
 1. Underwriters Laboratories Inc. (UL), in "Fire Resistance Directory".
 2. Intertek Testing Service (Formerly known as Omega Point Laboratories), in "Directory of Listed Products."
 3. Factory Mutual (FM), in "FMRC Approval Guide".
 4. Any other qualified independent testing and inspection agency that conducts periodic follow-up inspections and is acceptable to authorities having jurisdiction.
- B. Provide fire-resistive sealants and sprays for construction joint applications that are flexible enough to satisfy the movement criteria per the test standards ASTM E 1399, ASTM E 1966 or ANSI/UL 2079.
- C. Provide products with the appropriate flame spread index and smoke develop index, when tested in accordance with ASTM E 84.
- D. Where applicable provide systems that meet the intent of the L rating classification for the movement of smoke per ANSI/UL 2079 for construction joints.
- E. Provide products identical to those tested and listed for classification by UL, Intertek or any other qualified independent testing agency.
- F. Provide products that bear classification marking of qualified independent testing agency.
- G. Where fire-resistive construction gap systems not listed by any listing agency are required due to project conditions, submit a substitution proposal with evidence specified.
- H. Use only products specifically listed for use in listed systems.
- I. Provide products that are compatible with each other, with the substrates forming openings, and with the items, if any, penetrating the fire-resistive system, under the conditions represented by this project, based on testing and field performance demonstrated by manufacturer.
- J. Fire-resistive materials must meet and be acceptable for use by all applicable codes cited in this section.
- K. Provide products that meet the intent of the state or local and LEED ® guidelines on volatile organic compounds (VOC).

1.4 SUBMITTALS

- A. Shop Drawings: For each fire-resistive construction gap system, provide the following:
 1. Listing agency's detailed drawing showing opening and fire-resistive materials, identified with listing agency's name and number or designation and fire rating achieved.
 2. For proposed systems that do not conform strictly to the listing, submit written

instructions showing modifications and approved by manufacturer.

3. Submit under provisions of the International Building Code (IBC) section 703 requiring a submittal package for fire-resistance ratings and fire tests.
- B. Product Certificates: Submit certificates of conformance signed by manufacturer certifying that materials furnished comply with requirements.
- C. Product Data: Furnish manufacturer's product data sheets on each material to be used in fire-resistive systems. Information on manufacturer's product data sheet should include:
 1. Product characteristics including compliance with appropriate ASTM/UL/ANSI test standards.
 2. Storage and handling requirements and recommendations.
- D. Installation Instruction: Furnish manufacturer's installation instructions.
- E. Sustainable or LEED Submittals:
 1. VOC Content: For fire-resistant joint and gap systems, furnish documentation of VOC content.

1.5 QUALITY ASSURANCE

- A. General: All construction gap fire-resistive systems shall be installed with approved methods using materials that have been tested and classified to produce an approved assembly.
- B. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years' experience in passive fire protection.
 1. Products shall be manufactured in a facility that follows ISO 9001 best practices.
 2. Products shall have undergone a formal lifecycle assessment evaluating environmental impact.
- C. Installer Qualifications: Firm must be qualified by having experience, staff, and be properly trained to install the specified products, and meets the following criteria:
 1. Contractor is acceptable to manufacturer.
 2. Contractor has completed the manufacturer's certified product installation training.
 3. Certificate: Contractor should provide certificate of qualification.
- D. Codes: Where manufacturer's application procedures are in conflict with those of the local codes, the more strict guidelines will prevail.

1.6 PRODUCT DELIVERY AND STORAGE

- E. Deliver and store products until ready for installation in manufacturer's original unopened packaging, legibly marked with manufacturer's name and product identification, date of manufacture, lot number, listing agency's classification marking, curing/dry time, mixing instructions (if applicable) and MSDS reference number.
- F. Store and handle in such a manner as to prevent deterioration or damage due to moisture, temperature changes, contaminants, and other causes; follow manufacturer's instructions.

1.7 Project conditions

- G. Coordinate construction so that each particular construction gap fire-resistive system may be installed in accordance with its listing, including assembly rating, movement capabilities, L rating and manufacturer's published STC rating.
- H. Maintain environmental conditions (temperature, humidity, and ventilation) within limits

recommended by manufacturer for optimum results. Do not install fire-resistive materials under environmental conditions outside manufacturer's absolute limits.

- I. Provide ventilation as required by manufacturer, including mechanical ventilation if required.

1.8 WARRANTY

- J. At project closeout, provide to Owner or Owner's Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 - MATERIALS

2.1 SCOPE/APPLICATION

- A. Provide installed fire-resistive products that limit the spread of fire, heat, smoke, and gasses through otherwise unprotected openings in rated assemblies, including walls, partitions, floors, roof/ceilings, and similar locations, restoring the integrity of the fire-rated construction to its original fire rating.
- B. Provide fire-resistive systems listed for construction gaps per the specific combination of fire-rated construction type, configuration, gap dimensions, and fire rating, and the following criteria:
 - 1. Fire-resistance rating must be equal to or greater than that of the assembly in which it is to be installed.
 - 2. Movement capability must be appropriate to the potential movement of the gap, demonstrated by testing in accordance with ASTM E 1399 for minimum of 500 cycles at 10 cycles per minute.
 - 3. L-Rating: L-rating of 1 cfm per linear foot (5.5 cu m/h/m) maximum.
 - 4. Determine ratings in accordance with UL 2079.

2.2 PRODUCTS

- A. 3M Fire Barrier Sealant, DAP Fire Stop, Dow Corning 500 Fire Rated Sealant, or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Conduct tests according to manufacturer's written recommendations to verify that substrates are free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt and other foreign substances capable of impairing bond of fire-resistive materials.
- C. Verify that openings and adjacent areas are not obstructed by construction that would interfere with installation of fire-resistive materials, including ducts, piping, equipment, and other suspended construction.
- D. Verify that environmental conditions are safe and suitable for installation of fire-resistive materials.

3.2 PREPARATION

- A. Prepare substrates in accordance with manufacturer's instructions and recommendations.
- B. Install masking and temporary coverings as required to prevent contamination or defacement of adjacent surfaces due to fire-resistive material installation.

3.3 INSTALLATION

- A. Install in strict accordance with manufacturer's detailed installation instructions and procedures.
- B. Install so that openings are completely filled and material is securely adhered.
- C. Where fire-resistive materials will be exposed to view, finish to a smooth, uniform surface flush with adjacent surfaces.
- D. After installation is complete, remove combustible forming materials and accessories that are not part of the listed system.
- E. Repair or replace defective installations in accordance with manufacturer's recommendations and listed system details to comply with requirements.
- F. Clean fire-resistive materials off surfaces adjacent to openings as work progresses, using methods and cleaning materials approved in writing by manufacturer and which will not damage the surfaces being cleaned.
- G. Do not cover installed fire resistive systems/materials with other construction until it has been inspected and approved.

3.4 CLEANING AND PROTECTION

- A. Remove left over material and debris from Work area. Use necessary means to protect fire protection product(s) before, during, and after installation.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 9200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015.
- B. ASTM C834 - Standard Specification for Latex Sealants; 2017.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- F. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2002 (Reapproved 2013).
- H. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Nonsag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Dow Corning Corporation: www.dowcorning.com/construction.
 - 2. Pecora Corporation: www.pecora.com.

3. Sika Corporation: www.usa-sika.com.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Self-leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
1. Pecora Corporation: www.pecora.com.
 2. Sherwin-Williams Company: www.sherwin-williams.com.
 3. Sika Corporation: www.usa-sika.com.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Concrete walk expansion and control joints.
 - b. Joints between elevator door jamb trim and adjacent construction.
 - c. Joints between different exposed materials.
 2. Do not seal the following types of joints.
 - a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - c. Joints where installation of sealant is specified in another section.
- B. Exterior Joints: Use nonsag non-staining silicone sealant, unless otherwise indicated.
1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.
 2. Lap Joints between Manufactured Metal Panels: Butyl rubber, non-curing.
 3. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane "traffic-grade" sealant.
 4. Wiring Slots in Concrete Paving: Self-leveling epoxy sealant.

2.03 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in South Coast Air Quality Management District (SCAQMD); Rule 1168.
- B. Colors: To be selected by Owner from manufacturer's standard range.

2.04 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 50 percent, minimum.
 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 4. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
 5. Color: To be selected by Owner from manufacturer's standard range.
 6. Cure Type: Single-component, neutral moisture curing.
 7. Service Temperature Range: Minus 65 to 180 degrees F (Minus 54 to 82 degrees C).
- B. Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.

2.05 SELF-LEVELING SEALANTS

- A. Type S or M - Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.

3. Color: To be selected by Owner from manufacturer's standard range.
4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
5. Products:
 - a. Substitutions: See Section 01 6000 - Product Requirements.

2.06 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 1. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
 2. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

- A. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

3.05 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at the low temperature in the thermal cycle. Report failures immediately and repair.

END OF SECTION

SECTION 09 9000
PROTECTIVE COATINGS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The work performed under this section includes partial removal of existing coatings where necessary, surface preparation and coating of the K Street Barge new and existing interior and exterior steel surfaces, furnishing all coating and paint, labor, equipment, materials, removal of residue, touch-up paint, and performing all operations including, but not limited to, removal of existing coatings, containment, surface preparation, waste disposal, coating application, touch-up, protection of uncoated surfaces and clean up, required for satisfactory completion of the work specified herein.
- B. The work consists of miscellaneous steel structure maintenance repairs as indicated on the project drawings including, but not limited to, the following:
 - 1. Damaged or leaking deck plate repair
 - 2. Damaged deck stiffener reinforcement.
 - 3. Weather tightness for hull penetrations.

1.02 RELATED REQUIREMENTS

- A. Section 05 5500, Metal Fabrications

1.03 REFERENCE STANDARDS

- A. 29 CFR, Code of Federal Regulations
 - 4. Title 29 Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
 - 5. Title 40 Environmental Protection Agency
- B. ASTM, American Society for Testing and Materials International
 - 1. D16 Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products
- C. SSPC, Steel Structures Painting Council, the Society for Protective Coatings
 - 1. SP1 Solvent Cleaning
 - 2. SP6 Commercial Blast Cleaning
 - 3. SP10 Near-White Blast Cleaning
- D. NACE, NACE International, the Corrosion Society

1.04 SUBMITTALS

- A. Product Data: Provide data on all finishing products.
 - 1. Technical data sheet for each product used, including statements of the suitability of the material for the intended use.
 - 2. Instructions and recommendations for surface preparation, thinning, mixing, handling, application and proper storage. This shall include minimum time requirements for coating, recoating and surface patches.
 - 3. Material safety data sheet for each product used.
- B. Samples: Submit two samples, 6 x 6 inch in size illustrating selected colors and textures for each color selected.
- C. Manufacturer's Instructions: Indicate special surface preparation procedures, substrate conditions requiring special attention.
- D. Qualifications of Coating Contractor.
 - 1. Written certification from the CONTRACTOR that they are qualified to apply the coating system specified.

1.05 PERMITS, CERTIFICATES, LAWS AND ORDINANCES

- A. The Contractor shall, at his own expense, procure all permits, certificates, and licenses required of him by law for the execution of the work. He shall comply with all Federal, State, Air Quality District, County, City or District laws, ordinances, or rules and regulations relating to the performance of the work.
- B. Without limiting the general aspects or other requirements of this specification, all surface preparation, coating and painting of surfaces shall conform to applicable standards and practices as set forth by the National Association of Corrosion Engineers (NACE), Steel Structures Painting Council (SSPC), and coating manufacturer's printed instructions.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer, or as specified herein.
- B. Do not apply exterior coatings during rain or snow.

1.08 SAFETY AND HEALTH

- A. The Contractor shall provide and require use of personal protective life saving equipment for persons working in or about project site in accordance with requirements set forth in the latest revisions of OSHA Regulations for Construction, or other regulatory agencies applicable to the construction industry. The manufacturer's printed instructions, appropriate technical bulletins and manuals, including SSPC-Paint Application Guide No. 3, shall apply.
- B. Head and Face protection and Respiratory Devices: When paints or coatings are applied in confined areas, all persons exposed to toxic vapors or atomized coatings shall wear air-supplied masks. Equipment shall also include protective helmets that shall be worn by all persons while in the vicinity of the work area. In addition, workers engaged in or near work during abrasive blasting, shall wear eye and face protection devices and air purifying respirators with appropriate filters. Barrier creams shall be used on any exposed skin.
- C. Ventilation: All solvent vapors shall be completely removed by suction type, explosion-proof exhaust fans and blowers, as described in AWWA Section 7-Safety precautions. Air shall not be forced from the outside into the enclosure. Care should be taken to remove toxic vapors and atomized particles with special attention given to the lowest and coolest areas.
- D. Ventilation systems shall remain in service during coating application and for a minimum of seven days after completion of final coating application or coating repair, or until coating has fully cured, whichever is longer. Fuel or electricity costs, general maintenance and operations, shall be the responsibility of the Contractor unless specified otherwise.
- E. Sound Levels: Whenever occupational noise exposure exceeds maximum allowable sound levels, Contractor shall provide and require the use of approved ear protection devices.
- F. Illumination: Adequate illumination shall be provided while work is in progress, including explosion-proof lights and electrical equipment. Whenever required by the Engineer, Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected.

- G. Temporary Ladders and Scaffolding: All temporary ladders and scaffolding shall conform to applicable safety standards. They shall be erected where requested by the Engineer to facilitate inspection and be moved by the Contractor to locations requested by the Engineer.
- H. Grounding: Blasting and painting hoses shall be grounded to prevent accumulation of a charge of static electricity.
- I. Fire Hazard: Flammable, volatile solvents in paint and coating constitute a major hazard with regard to fire and explosions wherever flame or spark exposure is possible. All flames, smoking, and welding, etc., are strictly prohibited. Fire abatement devices shall be readily available and in operating condition. All paints and coatings shall be stored in conformance with applicable State, County and/or Local Fire Codes pertaining to flammable materials.
- J. The Contractor shall take necessary precautions to keep fire hazard to a minimum, removing from the area daily all oily rags, waste, and other combustibles not in covered containers.
- K. The Contractor shall take all necessary measures and provide full containment so as to prevent any debris or materials from entering the Sacramento River.

PART 2 – PRODUCTS

2.01 COATING MATERIALS

- A. Products manufactured by Sherwin Williams, Tnemec, Devoe and Carboline will be consider acceptable. This is an open specification based solely on performance.
- B. Materials by other manufacturers are acceptable provided that they are established as being of equal or better quality and performance to the coatings specified. Proposed substitution will be evaluated based on the performance of the entire system and published performance data. The Contractor shall provide satisfactory documentation from the firm manufacturing the proposed substitute or “or-equal” certification that said material meets the requirements and is equivalent or better than the coatings specified.
- C. To be considered as an equivalent to the coating materials listed hereinafter for the barge interior surfaces, a material shall be of the generic classification specified and shall meet or exceed the performance criteria as determined by the Engineer:
 - 1. Interior Primer: Generic Classification: Reinforced Inorganic Zinc Silicate or Zinc-Rich, Aromatic Urethane, applied to a DFT of 2.5 to 4 mils in one coat.
 - 2. Interior Intermediate: Generic Classification: Polyamidoamine Epoxy or Cycloaliphatic Amine Epoxy, applied to a DFT of 4 to 6 mils in one coat.
 - 3. Interior Finish: Generic Classification: Polyamidoamine Epoxy or Cycloaliphatic Amine Epoxy, applied to a DFT of 4 to 6 mils in one coat.
- D. To be considered as an equivalent to the coating materials listed hereinafter for the barge deck exterior, a material shall be of the generic classification specified and shall meet or exceed the coating performance criteria as determined by the Engineer:
 - 1. Sherwin Williams Dura-Plate UHS Epoxy System
 - 2. International Environline 376
 - 3. PPG Novaguard 840
 - 4. Carboline Carboguard 695
 - 5. Alternate product as approved by Engineer.

2.02 ABRASIVES

- A. The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendations. All abrasives shall be new, clean, and delivered to the project in unopened, weather resistant containers. Abrasive materials shall not be recycled for further use on this project unless approved by the Inspector.

- B. All abrasives shall meet the requirements of the Sacramento Metropolitan Air Quality Management District. At no time will abrasives containing more than 1% free silica be allowed on the job site.
- C. All abrasives shall be disposed of in accordance with all federal, state, and local laws at no cost to the City.
- D. Abrasive material used for interior ballast tank areas shall be silica free sand. Abrasive material used for areas other than tank interiors shall be Kleen-Blast, or approved equal. Abrasive shall produce a profile as recommended by the paint manufacturer.
- E. The abrasive to be used shall be sharp, angular, properly graded and brought to the job site in moisture-proof bags or airtight bulk containers, and shall be capable of producing the depth of profile specified by the paint manufacturer. Copper slag abrasives are not suitable.
- F. All surfaces in the ceiling, rafters, beams and columns shall be blown down with high pressure air until all surfaces are deemed dust free by the Engineer. No coatings shall be applied until the surfaces have been inspected and approved.
- G. The entire deck surface to be coated shall be vacuumed clean prior to the deck coating application.

PART 3 – EXECUTION

3.01 INSTALLERS AND WORKMANSHIP

- A. Skilled craftsmen and experienced supervision shall be used on all work.
- B. All coatings shall be applied under dry and dust-free conditions. Coating shall be done in a workmanlike manner so as to produce an even film of uniform thickness. Edges, corners, crevices and joints shall receive special attention to insure that they have been thoroughly cleaned and that they receive an adequate thickness of coating material. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks and variations in color, texture, and finish. The hiding shall be so complete that the addition of another coat would not increase the hiding.
- C. All damage to surfaces resulting from work shall be cleaned, repaired and refinished to original condition.

3.02 PROTECTION OF SURFACES NOT TO BE COATED AND ENVIRONMENT

- A. Remove, mask or otherwise protect all surfaces not intended to be coated. Provide drop cloths to prevent coating materials from falling on or marring adjacent surfaces.
- B. Contractor shall provide measures to contain all abrasive material and existing coating to prevent material from entering waters of the Sacramento River.

3.03 PREPARATION

- A. Contractor shall note that relocation of stored equipment and materials within barge interior shall be required prior to preparation and application of coatings.
- B. All surfaces to receive protective coatings shall be cleaned as specified herein prior to application of coatings. The Contractor shall examine all surfaces to be coated, and shall correct all surface defects before application of any coating material. All marred or abraded spots on shop-primed and on factory-finished surfaces shall receive touch-up restoration prior to any coating application.
- C. Surfaces that are not to receive protective coatings shall be protected during surface preparation, cleaning and coating operations.
- D. The minimum abrasive blasting surface preparation shall be as specified in the coating system schedules included at the end of this Section.
- E. Surface preparation for ferrous metal:
 - 1. Workmanship for metal surface preparation shall be in conformance with the current SSPC Standards and this Section. Blast cleaned surfaces shall match the standard samples available from the National Association of Corrosion Engineers, NACE Standard TM-01-70.

2. All oil, grease, welding fluxes and other surface contaminants shall be removed by solvent cleaning per SSPC-SP1 prior to blast cleaning.
 3. All sharp edges shall be rounded or chamfered and all burrs, and surface defects and weld splatter shall be ground smooth prior to blast cleaning.
 4. The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendation for the particular coating and service conditions. Abrasives for submerged and severe service coating systems shall be clean, hard, sharp cutting crushed slag or abrasive approved by Engineer.
 5. The abrasive shall not be reused unless otherwise approved by the Engineer. For automated shop blasting systems, clean oil-free abrasives shall be maintained.
 6. The Contractor shall comply with the applicable federal, state and local air pollution control regulations for blast cleaning.
 7. Compressed air for air blast cleaning shall be supplied at adequate pressure from well-maintained compressors equipped with oil/moisture separators that remove at least 95 percent of the contaminants.
 8. Surfaces shall be cleaned of all dust and residual particles of the cleaning operation by dry air blast cleaning, vacuuming or another approved method prior to painting.
 9. Enclosed areas and other areas where dust settling is a problem shall be vacuum cleaned and wiped with a tack cloth.
 10. Damaged or defective coating shall be removed by the specified blast cleaning to meet the clean surface requirements before recoating.
- F. Surface preparation of ferrous surfaces with existing coatings:
1. General: All grease, oil, heavy chalk, dirt, or other contaminants shall be removed by solvent or detergent cleaning per SSPC-SP1 prior to abrasive blast cleaning. The generic type of the existing coatings shall be determined by laboratory testing.
 2. Abrasive Blast Cleaning: The Contractor shall provide the degree of cleaning specified in the coating system schedule for the entire surface to be coated. If the degree of cleaning is not indicated in the schedule, deteriorated exterior coatings shall be removed by abrasive blast cleaning to SSPC-SP6 - Commercial Blast Cleaning. Areas of tightly adhering coatings shall be cleaned to SSPC-SP7 - Brush-off Blast Cleaning, with the remaining thickness of existing coating not to exceed 3 mils.
 3. Water Abrasive or Wet Abrasive Blast Cleaning: Where specified or where job site conditions do not permit dry abrasive blasting for industrial coating systems due to dust or air pollution considerations, water abrasive blasting or wet abrasive blasting may be used. In both methods, paint-compatible corrosion inhibitors shall be used, and coating application shall begin as soon as the surfaces are dry. Water abrasive blasting shall be done using high pressure water with sand injection. In both methods, the equipment used shall be commercially produced equipment with a successful service record. Wet blasting methods shall not be used for submerged and severe service coating systems unless indicated. Manufacturer's recommended surface profile must be achieved prior to the application of paint.

3.04 MIXING, AND THINNING OF MATERIALS

- A. Unless otherwise specified herein, the coating manufacturer's printed recommendations and instructions for thinning, mixing and handling its coating materials shall be strictly observed. Prepare multiple component coatings using all of the contents of the container for each component as packaged by the manufacturer. Do not use partial batches. Do not use multiple component products that have exceeded their shelf life. Provide four kits for touch-up and small area work. Mix only the components specified and furnished by the manufacturer. Do not intermix additional components for reasons of color or otherwise.

3.05 APPLICATION

- A. The application of protective coatings to steel substrates shall be in accordance with "Paint Application Specification No. 1, (SSPC-PA1)," The Society of Protective Coatings.
- B. Cleaned surfaces and all coats shall be inspected prior to each succeeding coat. The Contractor shall schedule such inspection with the Inspector in advance.
- C. Blast cleaned ferrous metal surfaces shall be painted before any rusting or other deterioration of the surface occurs. Blast cleaning shall be limited to only those surfaces that can be coated in the same working day except where environmental controls are used and approved in writing by Inspector.
- D. Coatings shall be applied in accordance with the manufacturer's instructions and recommendations, and this Section, whichever has the most stringent requirements.
- E. Special attention shall be given to edges, angles, weld seams, flanges, nuts and bolts and other places where insufficient film thicknesses are likely to be present. Use stripe painting for these areas with the same primer material specified for the particular service or as recommended by manufacturer.
- F. Special attention shall be given to materials that will be joined so closely that proper surface preparation and application are not possible. Such contact surfaces shall be coated prior to assembly or installation.
- G. Finish coats, including touch-up and damage repair coats shall be applied in a manner that will present a uniform texture and color-matched appearance.
- H. Coatings shall not be applied under the following conditions:
 - 1. Temperature exceeding the manufacturer's recommended maximum and minimum allowable.
 - 2. Dust or smoke laden atmosphere.
 - 3. Damp or humid weather exceeding the manufacturer's recommended maximum and minimum allowable.
 - 4. When the substrate or air temperature is less than 5 degrees F above the dew point.
 - 5. When air temperature is expected to be less than 5 degrees F above the dew point within 6 hours after application of coating.
 - 6. Dew point shall be determined by use of a sling psychrometer in conjunction with U.S. Dept. of Commerce, Weather Bureau psychrometric tables.

3.06 CURING OF COATINGS

- A. The Contractor shall provide curing conditions in accordance with the conditions recommended by the coating material manufacturer or by this Section, whichever is the highest requirement, prior to placing the completed coating system into service.
- B. In the case of enclosed areas, forced air ventilation, using heated air if necessary, may be required until the coatings have fully cured.
- C. Forced air ventilation is required for the application and curing of coatings on the interior surfaces of enclosed structures. During curing periods continuously exhaust air from the lowest level of the structure using portable ducting. After all interior coating operations have been completed provide a final curing period as required by the manufacturer during which the forced ventilation system shall operate continuously.

3.07 APPROVAL

- A. Inspection and Testing
 - 1. Surface preparation and priming operations will be monitored at the discretion of the Engineer.
 - 2. At the completion of all coating work, a final inspection shall be conducted. The Contractor, a representative of the coating manufacturer, and the Engineer shall conduct a final inspection to establish that all work has been completed per the Contract Documents. Any deficiencies found shall be documented and corrected before final acceptance of the Work will be granted. The Contractor shall thoroughly

document the conditions of each area of work at the time of inspection using video and still photography. A copy of the photographs and video shall be provided to the City, and the Contractor shall keep the originals. The photographs and video shall be the basis of evaluation of the condition of the coating systems at the warranty inspection.

3. Scaffolding or ladders shall be erected or moved to locations where requested by the Inspector to facilitate inspection.
4. Whenever required by the Inspector, the Contractor shall provide additional illumination required for inspections. Adequate illumination shall include explosion proof lights and electrical equipment where required to meet safety standards. The Inspector shall determine the level of illumination for inspection purposes.
5. Inspection Devices: The items listed below, or approved equals, shall be provided to the Inspector, by the Contractor, in good working condition and with calibration data prior to beginning any work and shall remain available until final acceptance of the coating applications:
 - a. Film Thickness: Non-destructive measurement devices.
 - b. Magnetic dry film thickness gauge: Magnetic-type dry film thickness gauge
 - 1) Mikrotest model FM, Elcometer model 111/1EZ
 - c. Pinhole and Holiday Detection: High voltage holiday detectors
 - 1) Tinker & Rasor Model AP-W/6,000
 - 2) D.E. Stearns Model 14/20.
 - 3) Or equal
 - d. Pinhole and Holiday Detection: Low voltage holiday detectors
 - 1) Tinker & Rasor Model M1
 - 2) K-D Bird Dog
 - 3) Or equal
 - e. Psychrometer: Sling, mechanized or digital.
 - f. Surface Temperature: Magnetic surface temperature gauge. g.

Coating Adhesion Testing:

 - 1) Elcometer Model 106- 6. Surfaces prepared as described in this Specification and per the manufacturer's recommendations shall be observed by the Inspector prior to application of coatings to verify compliance.
- 7. Thickness: Prepared surfaces and all coating system component applications shall be inspected prior to each succeeding application. The procedure for collecting representative thickness data shall be as follows:
 - a. On ferrous metals, the dry film coating thickness shall be measured in accordance with the SSPC "Paint Application Specification No. 2" using a magnetic-type dry film thickness gauge. No measurements shall be made until at least 8 hours after application of the coating.
 - b. On non-ferrous metals and other substrates, the coating thicknesses shall be measured at the time of application using a wet film gauge.
 - c. Inspector shall determine where and how often to test for film thicknesses, and as a minimum the requirements of SSPC-PA-2 will be followed.
 - d. At each inspection point, a minimum of three gauge readings shall be taken, moving the gauge 1 to 3 inches for each new gauge reading.

- e. Discard any unusually high or low gauge reading that cannot be repeated consistently. Take the average (mean) of the three gauge readings as the spot measurement. The average spot measurement shall meet or exceed the specified dry film thickness for each application.
- 8. Coating Pinhole and Holiday Detection: The Contractor shall test the completed coating application for pinholes and holidays using a low or high voltage spark tester as recommended by coating manufacturer and witnessed by the Inspector. The required test voltage shall be established by the manufacturer's recommendations and testing of induced holidays. Pinhole and holiday testing shall be conducted on completed coating sections within 48 hours of final application. The electrode movement over the coating surface shall be continuous and shall proceed in a systematic manner, which ensures 100 percent coverage of the coating surface. All defects shall be clearly marked by the Inspector followed by repair and retesting by the Contractor. Holiday detectors shall be of the following type:
 - a. For surfaces having a total dry film coating thickness exceeding 20 mils a pulse-type high voltage holiday detector shall be used. The unit shall be adjusted to operate at the voltage required to cause a spark jump across an air gap equal to twice the specified coating thickness.
 - b. For surfaces having a total dry film coating thickness of 20 mils or less a low voltage holiday detector shall be used. The unit shall operate at less than 75-volts. For thicknesses between 10 and 20 mils, a non-sudsing type wetting agent, such as Kodak Photo-Flo, or equal, shall be added to the water prior to wetting the detector sponge.
- 9. Acceptance
 - a. Acceptance by the City of the completed work as herein specified is subject to a guarantee by the Contractor against any repairs, leaks or damage caused by defective workmanship or materials furnished by the Contractor for a period of one year after Notice of Completion has been issued.
 - b. Warranty Inspection: A warranty inspection shall be conducted within eleven (11) months following completion and acceptance of all coating and painting work. The City shall establish a date for the inspection and notify the Contractor thirty days in advance. Any work found to be defective shall be repaired in accordance with the manufacturer's recommendations, this specification and to the satisfaction of the Engineer. Repair shall be at the City's convenience and shall be performed within such stated date as the City designates.

3.08 REPAIRS

- A. If an area is found to have an improper finish, insufficient film thickness or other deficiencies; clean, prepare and topcoat the coating surface per the manufacturer's recommendations to obtain the specified finish and coverage. Work shall be free of runs, bridges, shiners, laps or other imperfections.
- B. Damaged or defective coating shall be removed by the specified blast cleaning to meet the clean surface requirements before recoating.
- C. If the total dry film thickness exceeds the approved thickness for the coating applied, the Contractor shall be responsible to remove any excess coating. Areas of repair shall be of the same quality of the original application. The Contractor shall bare all costs for the removal and reapplication of the coating.

END OF SECTION

SECTION 09 9113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints and stains.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 05 5000 - Metal Fabrications

1.03 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2016.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2016.
- D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; current edition, www.paintinfo.com.
- E. SSPC-SP 1 - Solvent Cleaning; latest edition.
- F. SSPC-SP 2 - Hand Tool Cleaning; latest edition.
- G. SSPC-SP 6 - Commercial Blast Cleaning; Society for Protective Coatings; latest edition.
- H. SSPC-SP 10 - Near-White Blast Cleaning; Society for Protective Coatings; latest edition.

1.05 SUBMITTALS

- A. See Section 01300 - Submittals
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 4. Manufacturer's installation instructions.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, submit each color in each sheen available.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 6000 - Product Requirements, for additional provisions.
2. Extra Paint and Finish Materials: 1 gallon (4 L) of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
 1. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
- B. Paints:
 1. Behr Process Corporation: www.behr.com.
 2. Pratt & Lambert Paints: www.prattandlambert.com.
 3. Rodda Paint Company: www.rodmapaint.com.
 4. Valspar Corporation: www.valsparpaint.com.
 5. Sherwin-Williams Company: www.sherwin-williams.com.
- C. Transparent Finishes:
 1. Behr Process Corporation: www.behr.com.
 2. Sherwin-Williams Company: www.sherwin-williams.com.
- D. Primer Sealers: Same manufacturer as top coats.
- E. Substitutions: See Section 01630 - Substitution Request/Equals

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.
 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 2. Supply each paint material in quantity required to complete entire project's work from a single production run.
 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

- B. Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Flammability: Comply with applicable code for surface burning characteristics.
- D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Owner from the manufacturer's full line.
- E. Colors: To be selected from manufacturer's full range of available colors.
 - 1. Selection to be made by Owner after award of contract.
 - 2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
 - 3. Extend colors to surface edges; colors may change at any edge as directed by Owner.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint E-OP - Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including fiber cement siding, primed wood, and primed metal.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Exterior Latex.
 - a. Products:
 - 1) Behr Marquee Exterior Semi-Gloss Enamel [No. 5450]. (MPI #11)
 - 2) Pratt & Lambert Pro-Hide Gold Exterior Latex, Semi-Gloss. (MPI #11)
 - 3) Rodda Unique II Semi-Gloss, 542001. (MPI #11)
 - 4) Valspar Professional Exterior, No. 12900 Series, Semi-Gloss.
 - 5) Substitutions: Section 01630 - Substitution Request/Equals
- B. Paint E-TR-W - Stain on Wood:
 - 1. 2 coats stain.
 - 2. Stain: Exterior Semi-Transparent Stain for Wood, Water Based; MPI #156.
 - a. Products:
 - 1) Behr Premium Semi-Transparent Weatherproofing Wood Stain No. 5077 Tint Base.
 - 2) Rodda WeatherOne Exterior Semi-Transparent Stain, 06680. (MPI #156)
 - 3) Substitutions: Section 01630 - Substitution Request/Equals
- C. Paint ME-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
 - 1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
 - 2. Semi-gloss: Two coats of alkyd enamel; ____.
- D. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
 - 1. One coat galvanize primer.
 - 2. Semi-gloss: Two coats of alkyd enamel.
- E. Paint E-Pav - Pavement Marking Paint:
 - 1. Yellow: One coat, with reflective particles.
 - 2. White: One coat, with reflective particles.

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
 - 1. Anti-Corrosive Alkyd Primer for Metal; MPI #79.
 - a. Products:
 - 1) Pratt & Lambert Universal HP Alkyd Metal Primer.
 - 2) Rodda Barrier III HS Metal Primer, 708295. (MPI #79)
 - 3) Valspar Armor Anti-Rust Oil Metal Primer, No. 21852. (MPI #79)
 - 4) Substitutions: Section 01630 - Substitution Request/Equals

2. Alkyd Primer for Galvanized Metal. a. Products:
 - 1) Valspar Armor Anti-Rust Oil Galvanized Primer, No. 21850.
 - 2) Substitutions: Section 01630 - Substitution Request/Equals
3. Latex Primer for Exterior Wood; MPI #6. a. Products:
 - 1) Pratt & Lambert Pro-Hide Gold Exterior Latex Primer. (MPI #6)
 - 2) Rodda First Coat Interior Exterior Latex Primer, 501601. (MPI #6)
 - 3) Valspar Latex Exterior Primer, No. 165219. (MPI #6)
 - 4) Substitutions: Section 01630 - Substitution Request/Equals

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 1. Fiber Cement Siding: 12 percent.
 2. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Fiber Cement Siding: Remove dirt, dust and other foreign matter with a stiff fiber brush. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
- G. Galvanized Surfaces:
 1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
 2. Prepare surface according to SSPC-SP 6.
- H. Ferrous Metal:
 1. Solvent clean according to SSPC-SP1.
 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
 3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

- I. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.
- G. Sand wood and metal surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

3.06 SCHEDULE - PAINT SYSTEMS

- A. Fiber Cement siding and trim; wood fascia and soffit boards: Finish surfaces exposed to view.
 - 1. Exterior trim and frames: E-OP.
 - 2. Exterior siding: E-OP.
- B. Wood: Finish surfaces exposed to view.
 - 1. Exterior rough and surfaced cedar: E-TR-W.
 - 2. Exterior surfaced douglas fir: E-TR-W
- C. Galvanized Steel: Finish surfaces exposed to view.
 - 1. Finish the following items:
 - a. Exposed surfaces of metal stairs and landings surrounding elevator at the Barge and lower level deck, including tread cradle, gates, guardrails, railings, stringers and all supports.
 - b. Exposed surfaces of metal gangways including guardrail, floor beams, structural frames, and all supporting metal structure.
 - c. Exposed surfaces of metal platform at Steamer's Building including gate, guardrail, and platform and all supporting metal structure.
 - 2. Exterior: Paint MgE-OP-3A, semi-gloss.
- D. Shop-Primed Metal Items: Finish surfaces exposed to view.
 - 1. Finish the following items:
 - a.
 - b. Hollow core door and frame at Barge
 - 2. Exterior: Paint-ME-OP-2A, semi-gloss.

END OF SECTION

SECTION 22 0518
ESCUTCHEONS FOR PLUMBING PIPING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Escutcheons.
 - 2. Floor plates.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 PRODUCTS

2.1 ESCUTCHEONS

- A. One-Piece, Cast-Brass Type: With polished, chrome-plated finish and setscrew fastener.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with chrome-plated finish and spring-clip fasteners.
- C. One-Piece, Stamped-Steel Type: With chrome-plated finish and spring-clip fasteners.

2.2 FLOOR PLATES

- A. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install escutcheons for piping penetrations of walls, ceilings, and finished floors.
- B. Install escutcheons with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
 - 1. Escutcheons for New Piping:
 - a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
 - b. Chrome-Plated Piping: One-piece, cast-brass type with polished, chrome-plated finish.
 - c. Insulated Piping: One-piece, stamped-steel type.
 - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.

- e. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - f. Bare Piping in Unfinished Service Spaces: One-piece, stamped-steel type.
 - g. Bare Piping in Equipment Rooms: One-piece, stamped-steel type.
 - C. Install floor plates for piping penetrations of equipment-room floors.
 - D. Install floor plates with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
 - 1. New Piping: One-piece, floor-plate type.
- 3.2 FIELD QUALITY CONTROL
- A. Replace broken and damaged escutcheons and floor plates using new materials.

END OF SECTION

SECTION 23 0518
ESCUTCHEONS FOR HVAC PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Escutcheons.
 - 2. Floor plates.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 PRODUCTS

2.1 ESCUTCHEONS

- A. One-Piece, Cast-Brass Type: With polished, chrome-plated finish and setscrew fastener.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with chrome-plated finish and spring-clip fasteners.
- C. One-Piece, Stamped-Steel Type: With chrome-plated finish and spring-clip fasteners.
- D. Split-Casting Brass Type: With polished, chrome-plated finish and with concealed hinge and setscrew.
- E. Split-Plate, Stamped-Steel Type: With chrome-plated finish, hinge, and spring-clip fasteners.

2.2 FLOOR PLATES

- A. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.
- B. Split-Casting Floor Plates: Cast brass with concealed hinge.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install escutcheons for piping penetrations of walls, ceilings, and finished floors.
- B. Install escutcheons with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
 - 1. Escutcheons for New Piping:
 - a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
 - b. Chrome-Plated Piping: One-piece, cast-brass type with polished, chrome-plated finish.
 - c. Insulated Piping: One-piece, stamped-steel type.
 - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - e. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, stamped-steel type.
 - f. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - g. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, stamped-steel type.
 - h. Bare Piping in Unfinished Service Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - i. Bare Piping in Unfinished Service Spaces: One-piece, stamped-steel type.
 - j. Bare Piping in Equipment Rooms: One-piece, cast-brass type with polished, chrome-plated finish.
 - k. Bare Piping in Equipment Rooms: One-piece, stamped-steel type.
 - 2. Escutcheons for Existing Piping:
 - a. Chrome-Plated Piping: Split-casting brass type with polished, chrome-plated finish.
 - b. Insulated Piping: Split-plate, stamped-steel type with hinge.
 - c. Bare Piping at Wall and Floor Penetrations in Finished Spaces: Split-casting brass type with polished, chrome-plated finish.
 - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: Split-plate, stamped-steel type with hinge.
 - e. Bare Piping at Ceiling Penetrations in Finished Spaces: Split-casting brass type with polished, chrome-plated finish.
 - f. Bare Piping at Ceiling Penetrations in Finished Spaces: Split-plate, stamped-steel type with hinge.
 - g. Bare Piping in Unfinished Service Spaces: Split-casting brass type with polished, chrome-plated finish.
 - h. Bare Piping in Unfinished Service Spaces: Split-plate, stamped-steel type with hinge.
 - i. Bare Piping in Equipment Rooms: Split-casting brass type with polished, chrome-plated finish.
 - j. Bare Piping in Equipment Rooms: Split-plate, stamped-steel type with hinge.
- C. Install floor plates for piping penetrations of equipment-room floors.

- D. Install floor plates with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
 - 1. New Piping: One-piece, floor-plate type.
 - 2. Existing Piping: Split-casting, floor-plate type.

3.2 FIELD QUALITY CONTROL

- A. Replace broken and damaged escutcheons and floor plates using new materials.

END OF SECTION

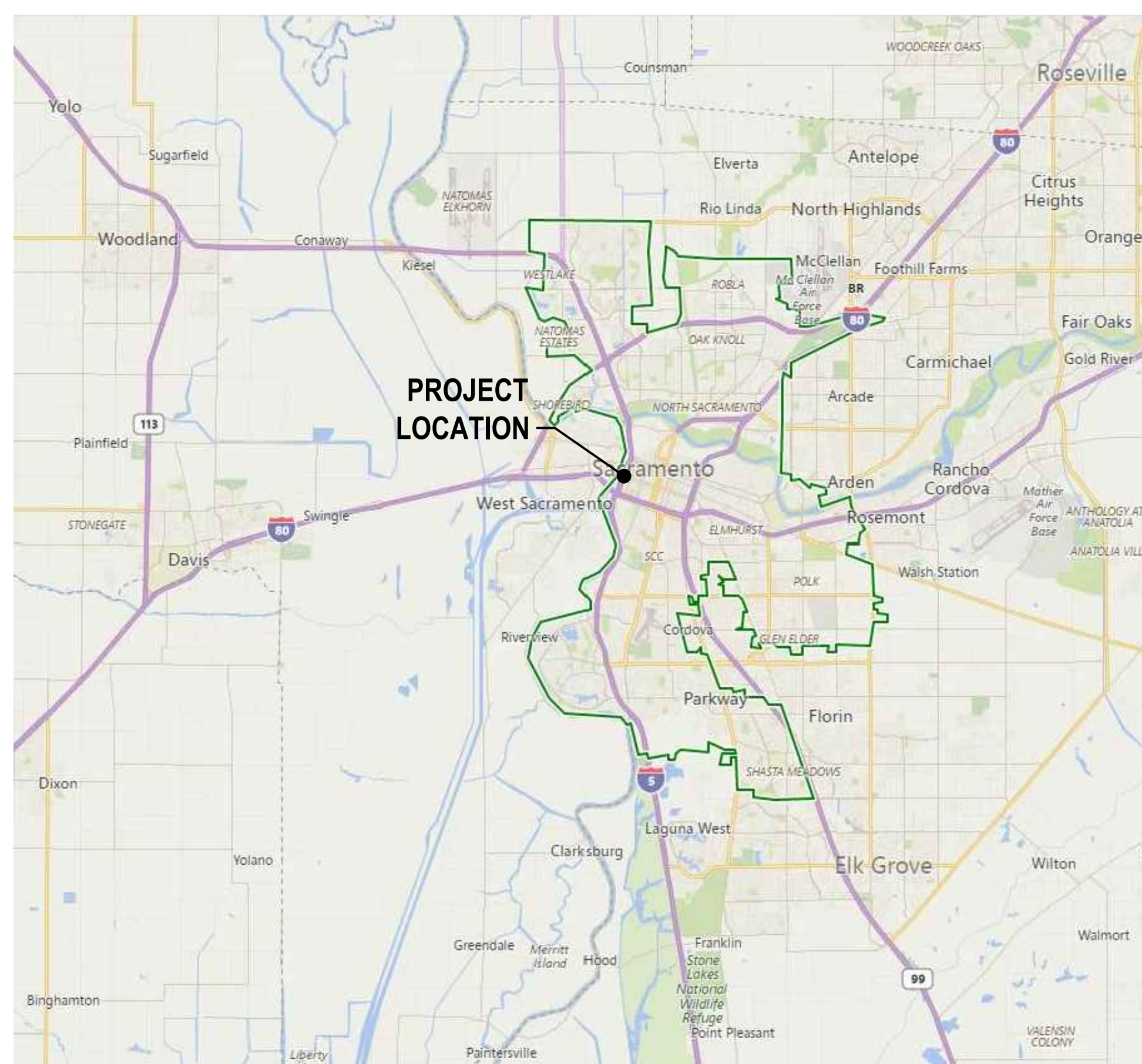
CITY OF SACRAMENTO

OLD SACRAMENTO RIVERFRONT EMBARCADERO AND K STREET BARGE PROJECT BARGE IMPROVEMENTS AND REPAIRS

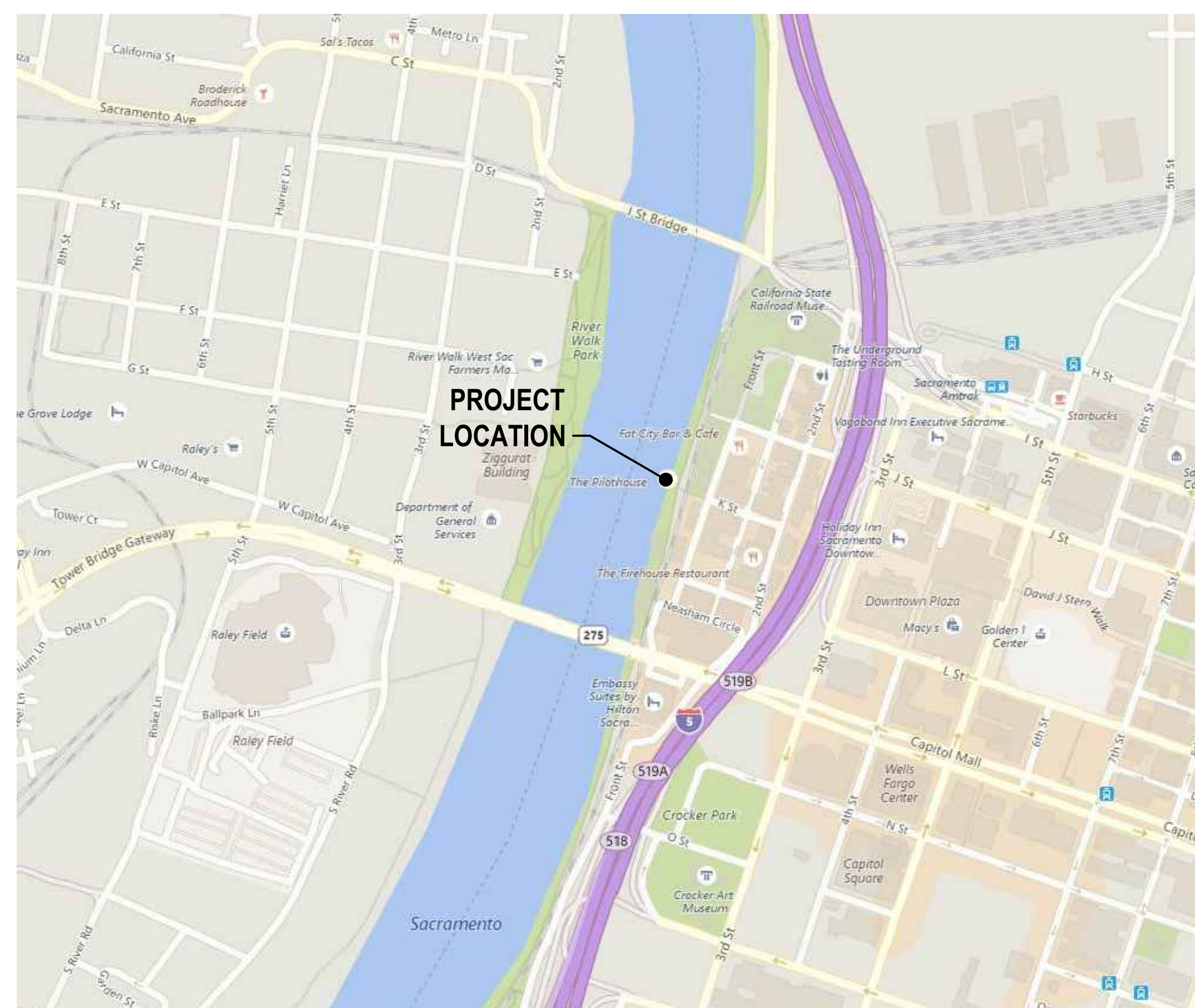
April 2019
CITY CONTRACT NO. 2016-1176



ALTERNATIVES		
ALTERNATIVE	DESCRIPTION	SHEET NUMBER
1	FIBERGRATE DYNAPLANK LOWER DECK & INSTALLATION	S-101
2	PLASTIC LUMBER DECKING & INSTALLATION	S-103
UNIT PRICE	DESCRIPTION	SHEET NUMBER

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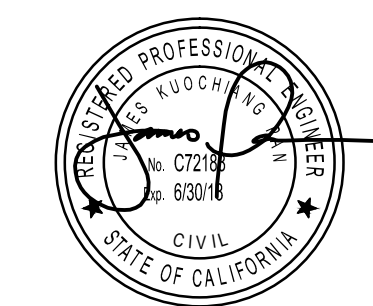
AREA MAP



LOCATION MAP



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Client **CITY OF SACRAMENTO**

Project
**OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT**

No.	Issue	Drawn	Approved	Date
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Drawn	PS	Designer	JP
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Drafting Check	LH	Design Check	CL
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Project Manager	C LEWIS	Date	MAY 2018
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This document shall not be used for construction unless signed and sealed for	Scale AS SHOWN
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Original Size	Bar is one inch on original size sheet
Arch E1	0 1"

Project No. 11151187

**COVER SHEET, SHEET INDEX,
AREA MAP,
AND LOCATION MAP**

Sheet No. _____

G-001

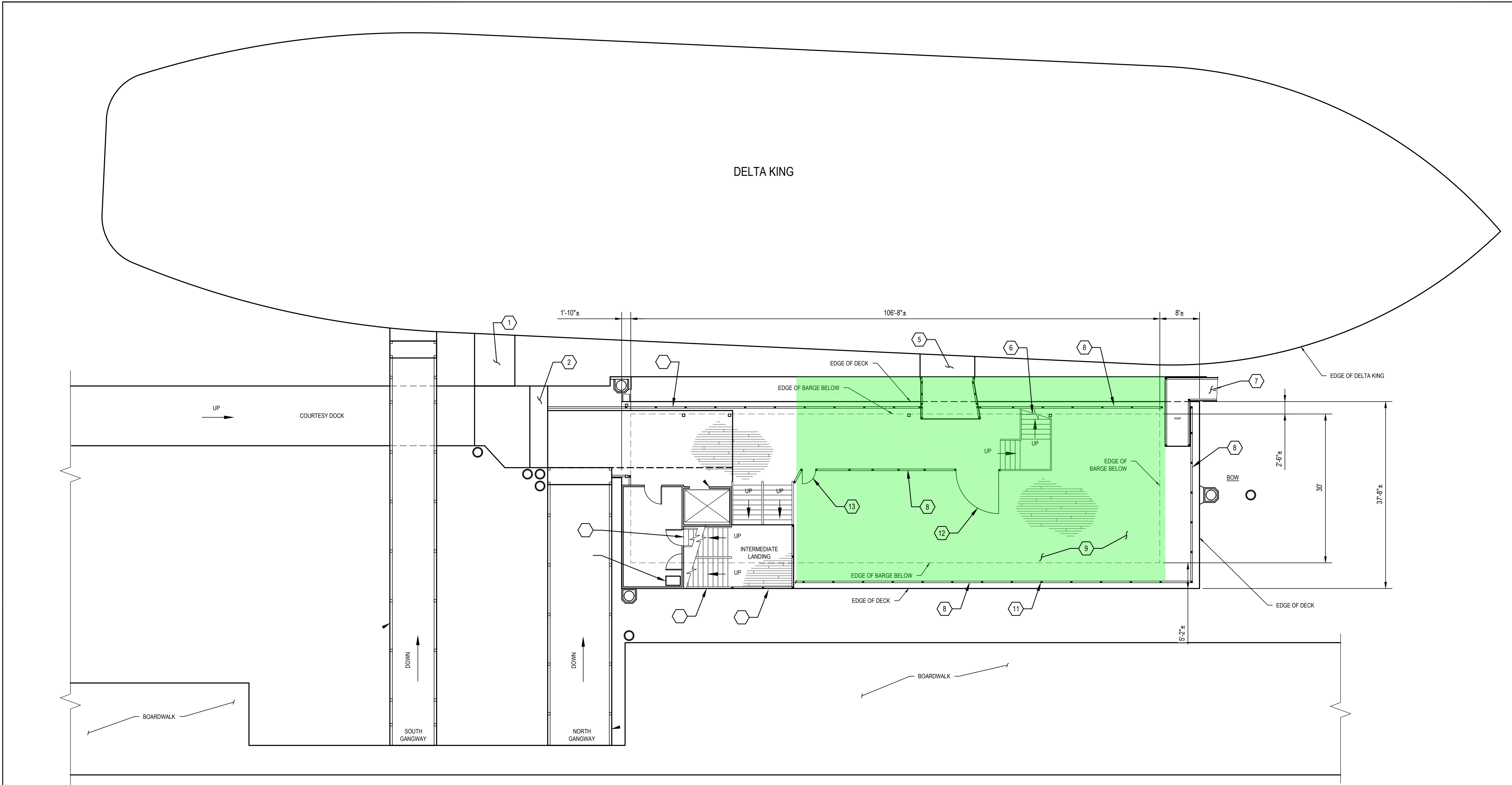
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GENERAL NOTES		ABBREVIATIONS		SYMBOLS LEGEND		SHEET ANNOTATION												
<p>1. GENERAL</p> <p>1.1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.</p> <p>1.2. THE CONTRACTOR SHALL HAVE A SUPERINTENDENT OR REPRESENTATIVE ON SITE AT ALL TIMES DURING CONSTRUCTION.</p> <p>1.3. THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLYING WITH ALL CONDITIONS CONTAINED IN PROJECT RELATED PERMITS AND IN OBTAINING ANY OTHER PERMITS THAT MAY BE REQUIRED.</p> <p>1.4. CONTRACTOR SHALL CONDUCT FIELD REVIEW AND VERIFY ALL LINES, LEVELS AND CONDITIONS PRIOR TO BEGINNING OF ANY WORK. SUBMIT TO CITY OF SACRAMENTO A LIST OF IDENTIFIED PROBLEM AREAS. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AND COORDINATE WITH CITY OF SACRAMENTO REGARDING THE RELOCATION OF EXISTING UTILITIES AS NEEDED.</p> <p>1.5. ALL MATERIALS, REQUIRED FOR THE COMPLETE EXECUTION OF THE PROJECT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.</p> <p>1.6. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.</p> <p>1.7. EXISTING FACILITIES INCLUDING, BUT NOT LIMITED TO, K STREET BARGE, ROADS, WALLS, FENCES AND STRUCTURES DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO MATCH ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY OF SACRAMENTO WITHOUT ADDITIONAL COST TO THE CITY OF SACRAMENTO.</p> <p>1.8. CITY OF SACRAMENTO CONTACTS</p> <p>PROJECT ENGINEER: NAME: COMM:</p> <p>2. CONSTRUCTION</p> <p>2.1. HOURS OF WORK</p> <p>2.1.1. THE CONTRACTOR SHALL CONDUCT ALL WORK BETWEEN THE HOURS OF 0700 AND 1600, MONDAY THROUGH FRIDAY, UNLESS AUTHORIZED BY CITY OF SACRAMENTO. CONTRACTOR AND CREW SHALL NOT ENTER SITE PRIOR TO 0630 AM OR LEAVE THE SITE AFTER 1630 PM, MONDAY THROUGH FRIDAY. NO EQUIPMENT ENGINES OR OTHER NOISE GENERATING ACTIVITIES SHALL BE STARTED PRIOR TO 0730 OR CONTINUE PAST 1800, MONDAY THROUGH FRIDAY. WEEKEND AND HOLIDAY WORK WILL ONLY BE CONDUCTED AFTER PRIOR AUTHORIZATION FROM THE CITY OF SACRAMENTO.</p> <p>2.2. HOURS FOR EQUIPMENT DELIVERY</p> <p>2.2.1. EQUIPMENT DELIVERY, SUPPLY DELIVERY AND SERVICE/FUELING VEHICLES SHALL ONLY ENTER AND EXIT SITE WORK AREAS BY THE APPROVED ACCESS ROADS DURING NORMAL WORKING HOURS. EQUIPMENT DELIVERY, SUPPLY DELIVERY OR SERVICE/FUELING VEHICLES SHALL ONLY OCCUR BETWEEN 0800 AND 1600, MONDAY THROUGH FRIDAY.</p> <p>2.3. DAILY COMMUNICATIONS</p> <p>2.3.1. CONTRACTOR SHALL MAINTAIN FREQUENT COMMUNICATIONS, AT LEAST DAILY, WITH THE ON-SITE CITY OF SACRAMENTO OR HIS/HER AUTHORIZED REPRESENTATIVE TO DISCUSS DETAILS OF IMPLEMENTATION, ORDER OF WORK, METHODS OF MINIMIZING ENVIRONMENTAL IMPACTS AND OTHER RELEVANT COMPONENTS OF CONSTRUCTION. THERE WILL BE COMMUNICATION WITH THE ENVIRONMENTAL MONITOR AT LEAST ONCE PER WEEK EITHER IN A MEETING WITH THE CITY OF SACRAMENTO AND CONTRACTOR REPRESENTATIVE OR INDIRECTLY THROUGH THE CITY OF SACRAMENTO.</p> <p>2.4. OFF-SITE TRAFFIC RESTRICTIONS AND SITE ACCESS</p> <p>2.4.1. THE CITY OF SACRAMENTO WILL DOCUMENT DESIGNATED ROUTES AND ENTRY POINTS FOR ACCESS TO THE SITE BY PERSONNEL AND EQUIPMENT. NO OTHER ROUTE MAY BE USED WITHOUT PRIOR APPROVAL OF THE CITY OF SACRAMENTO. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY SIGNS, BARRICADES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVEYANCE, AND SAFETY OF THE PUBLIC.</p> <p>2.5. CLEANING, TRASH, DEBRIS, AND STORAGE</p> <p>2.5.1. THE SITE WILL BE KEPT FREE OF TRASH AT ALL TIMES. ALL ITEMS USED FOR CONSTRUCTION PURPOSES WILL BE REMOVED FROM THE SITE AT THE COMPLETION OF CONSTRUCTION.</p> <p>2.5.2. STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT ON STREETS WILL NOT BE PERMITTED.</p> <p>2.5.3. CONSTRUCTION EQUIPMENT, TOOLS, ETC. SHALL NOT BE CLEANED OR RINSED INTO A STREET, GUTTER OR STORM DRAIN.</p> <p>2.5.4. A CONTAINED AND COVERED AREA ON-SITE SHALL BE USED FOR STORAGE OF CEMENT BAGS, PAINTS, FLAMMABLE, OILS, FERTILIZERS, PESTICIDES, OR ANY OTHER MATERIALS THAT HAVE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM BY WIND OR IN THE EVENT OF A MATERIAL SPILL.</p> <p>2.5.5. ALL TEMPORARY ON-SITE CONSTRUCTION PILES SHALL BE SECURELY COVERED WITH A TARP OR OTHER DEVICE TO CONTAIN DEBRIS.</p> <p>2.5.6. CONCRETE TRUCKS AND CONCRETE FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO THE STREET GUTTERS OR DRAINS.</p> <p>2.6. UTILITY LOCATION</p> <p>2.6.1. LOCATIONS OF ALL EXISTING UTILITIES MAY NOT BE SHOWN OR ARE SHOWN AS APPROXIMATE ONLY. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR THE UTILITIES. ANY AND ALL DAMAGE SHALL BE IMMEDIATELY REPAIRED AND/OR RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT HIS/HER EXPENSE. UTILITIES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, SEWER, WATER, AND COMMUNICATION.</p> <p>2.6.2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATION, DEPTH AND HEIGHT. THEIR VERIFICATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY OWNER(S). THE CONTRACTOR SHALL COOPERATE WITH UTILITY OWNER(S) TO EXPEDITE THE RELOCATION OR ADJUSTMENT OF THEIR UTILITIES TO MINIMIZE INTERRUPTION OF SERVICE AND DUPLICATION OF WORK. THE CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ALL DAMAGE, BREAKS AND/OR LEAKS. IF DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR UTILITY AT NO ADDITIONAL EXPENSE TO THE OWNER(S).</p> <p>2.7. PROPOSED MODIFICATIONS TO PLANS OR SPECIFICATIONS</p> <p>2.7.1. ANY DEVIATIONS FROM PLANS AND SPECIFICATIONS NEED TO BE COMPLETED AND/OR APPROVED BY DESIGN ENGINEER AND CITY OF SACRAMENTO PRIOR TO IMPLEMENTATION. NO CHANGE IS ALLOWED WITHOUT CITY OF SACRAMENTO APPROVAL.</p> <p>2.7.2. SHOULD DISCREPANCIES EXIST BETWEEN ANY ACTUAL ELEVATIONS OR HORIZONTAL POSITIONS AND THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY OF SACRAMENTO.</p> <p>3. PERMITTING</p> <p>3.1. COMPLIANCE WITH REGULATORY PERMITS</p> <p>3.1.1. THE CONTRACTOR SHALL COMPLETELY REVIEW, BE FAMILIAR WITH AND ADHERE TO THE TERMS OF ALL PERMITS AND AGENCY APPROVALS FOR THIS PROJECT. THE CITY OF SACRAMENTO WILL BE RESPONSIBLE FOR SECURING ALL PERMITS WHICH WILL BE AVAILABLE FROM THE CITY OF SACRAMENTO AND WILL REMAIN AT THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION.</p> <p>3.2. COMPLIANCE WITH COUNTY AND STATE PERMITS</p> <p>3.2.1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROCURING PERMIT FOR ELEVATOR MODERNIZATION.</p> <p>3.2.2. CONTRACTOR IS RESPONSIBLE FOR ASSISTING WITH ACQUISITION OF AND COMPLIANCE WITH ANY RELEVANT CITY, COUNTY OR STATE PERMITS NEEDED FOR THE PROPOSED CONSTRUCTION ACTIVITIES INCLUDING, BUT NOT LIMITED TO, ELEVATOR TRAFFIC AND ENCROACHMENT PERMITS RELATED TO THE DELIVERY AND HAULING OF CONSTRUCTION EQUIPMENT AND MATERIALS, AND TRAFFIC CONTROL MEASURES (TRAFFIC SAFETY PLAN). THE CONTRACTOR MUST FOLLOW ALL PERTINENT REQUIREMENTS FOR HAULING LARGE VEHICLES OR EQUIPMENT TO THE PROJECT SITE. IF A COUNTY, STATE, OR CITY ROAD IS USED FOR HEAVY EQUIPMENT TRANSPORT OR WIDE LOADS, PERTINENT CLEARANCES MUST BE OBTAINED.</p> <p>4. ENVIRONMENTAL</p> <p>4.1. AIR QUALITY AND CONSTRUCTION NOISE RESTRICTIONS</p> <p>4.1.1. THE CONTRACTOR AT HIS/HER OWN EXPENSE SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF HEALTH. THE STATE SHALL INDICATE SUPPLEMENTARY MEASURES IF REQUIRED.</p> <p>4.1.2. THE CONTRACTOR SHALL IMPLEMENT MEASURES TO REDUCE CONSTRUCTION NOISE INCLUDING: ENSURING THAT ALL CONSTRUCTION EQUIPMENT HAS SOUND CONTROL DEVICES AT LEAST AS EFFECTIVE AS THOSE ORIGINALLY SUPPLIED BY THE MANUFACTURER AND THAT NO EQUIPMENT WITH AN UNRESTRICTED EXHAUST IS OPERATED; LIMITING CONSTRUCTION ACTIVITIES TO SPECIFIED TIMES; AND PROHIBITING UNNECESSARY WARNING LIPS, IDLING, OR ENGINE REVVING OF GAS OR DIESEL POWERED EQUIPMENT OR VEHICLES.</p> <p>4.2. CONTAMINATION PREVENTION RESTRICTIONS</p> <p>4.2.1. THE CONTRACTOR SHALL TAKE PREVENTATIVE MEASURES TO AVOID ANY SPILLS OR LEAKS ON THE SITE FROM PETROLEUM PRODUCTS. THE CONTRACTOR SHALL PREPARE A SPILL PREVENTION AND RESPONSE PLAN THAT WILL BE APPROVED BY THE CITY OF SACRAMENTO AND ENVIRONMENTAL MONITOR, AS WELL AS LEAD AGENCIES. THIS SHALL BE IMPLEMENTED AND ADHERED TO BY THE CONTRACTOR. AT A MINIMUM, THIS PLAN SHALL REQUIRE THAT STAGING, STORAGE, AND REFUELING AREAS AND ANY EQUIPMENT REPAIR OR SIMILAR ACTIVITY TAKE PLACE WHEN EQUIPMENT IS AT LEAST 100 FEET FROM ANY WETLAND, DITCH, POND, OR FENCED SENSITIVE AREA. REFUELING SHALL ONLY OCCUR IN AREAS APPROVED BY THE CITY OF SACRAMENTO OR ENVIRONMENTAL MONITOR. STAGING AND STORAGE AREAS SHALL OCCUR ONLY IN DESIGNATED AREAS. ANY STAGING OR STORAGE IN WETLANDS OR OTHER SENSITIVE HABITATS WILL REQUIRE PRIOR APPROVAL FROM THE CITY OF SACRAMENTO OR ENVIRONMENTAL MONITOR. PROTECTIVE TARPS SHALL BE USED DURING REFUELING OR EQUIPMENT REPAIR. THE CONTRACTOR SHALL INSPECT AND FULLY CLEAN UP ANY SUCH LEAKS OR SPILLS THAT OCCUR ON THE SITE.</p> <p>4.2.2. THE CONTRACTOR SHALL ERECT TENTS DURING ABOVE WATER WORK TO ENSURE OVERSPRAY OR DEBRIS DOES NOT ENTER WATERWAY. THE CONTRACTOR SHALL SUBMIT PROTECTION PLAN FOR APPROVAL PRIOR TO STARTING WORK.</p> <p>4.3. CULTURAL RESOURCE RESTRICTIONS</p> <p>4.3.1. IF ANY ITEMS OF POTENTIAL CULTURAL OR ARCHEOLOGICAL SIGNIFICANCE ARE ENCOUNTERED DURING EXCAVATION OPERATIONS, CONSTRUCTION WITHIN THIS AREA SHALL BE HALTED IMMEDIATELY, AND THE CONTRACTOR SHALL NOTIFY THE CITY OF SACRAMENTO.</p>		<p>Ø DIAMETER</p> <p>AB AGGREGATE BASE</p> <p>ABDN ABANDONED</p> <p>AC ACRE, ASPHALT CONCRETE</p> <p>ACP ASBESTOS CEMENT PIPE</p> <p>ACM ASBESTOS CONTAINING MATERIAL</p> <p>AD AREA DRAIN</p> <p>ADA AMERICANS WITH DISABILITIES ACT</p> <p>ALGN ALIGNMENT</p> <p>ARV AIR RELEASE VALVE</p> <p>ASB AGGREGATE SUBBASE</p> <p>ASPH ASPHALT</p> <p>BC BEGIN CURVE</p> <p>BEG BEGIN</p> <p>BVC BEGIN VERTICAL CURVE</p> <p>BLDC BUILDING CORNER</p> <p>BLDG BUILDING</p> <p>BMP BEST MANAGEMENT PRACTICES</p> <p>BOD BOTTOM OF DOCK</p> <p>BOL BOLLARD</p> <p>BSW BACK OF SIDEWALK</p> <p>BVC BEGIN VERTICAL CURVE</p> <p>BW FINISHED GRADE AT BOTTOM OF WALL</p> <p>C CONCRETE OR CIVIL</p> <p>CB CATCH BASIN</p> <p>C&G CURB AND GUTTER</p> <p>CG&S/W CURB, GUTTER & SIDEWALK</p> <p>CI CAST IRON OR CURB INLET</p> <p>CIP CAST IRON PIPE</p> <p>CL CENTERLINE</p> <p>CLR CLEAR</p> <p>CMN COMMUNICATION</p> <p>CMP CORRUGATED METAL PIPE</p> <p>CO CLEAN OUT</p> <p>CONC CONCRETE</p> <p>CONST CONSTRUCTION OR CONSTRUCT</p> <p>CONF CONFORM TO EXISTING</p> <p>CNF CONDENSATE RETURN</p> <p>CU CUBIC</p> <p>CWSC CALIFORNIA WATER SERVICE COMPANY</p> <p>CY CUBIC YARD</p> <p>D DELTA (CURVE)</p> <p>DCA DOUBLE CHECK DETECTOR ASSEMBLY</p> <p>DEMO DEMOLISH</p> <p>DEPT DEPARTMENT</p> <p>DET DETAIL</p> <p>DI DROP INLET, DUCTILE IRON</p> <p>DIA DIAMETER</p> <p>DIP DUCTILE IRON PIPE</p> <p>DOM DOMESTIC</p> <p>DW DOMESTIC WATER</p> <p>DWG DRAWING</p> <p>E EASTING COORDINATE, ELECTRIC</p> <p>EC END CURVE</p> <p>EG EXISTING GRADE</p> <p>EL ELEV</p> <p>ELEV ELEVATION</p> <p>ELEC ELECTRICAL</p> <p>EP EDGE OF PAVEMENT</p> <p>EVA EMERGENCY VEHICLE ACCESS</p> <p>EX EXIST.</p> <p>(E) EXISTING</p> <p>(F) FUTURE</p> <p>FA FIRE ALARM</p> <p>FC FC FACE OF CURB</p> <p>FD FOUND</p> <p>FDC FIRE DEPARTMENT CONNECTION</p> <p>FF, FFE FINISHED FLOOR ELEVATION</p> <p>FG FINISH GRADE</p> <p>FH FIRE HYDRANT</p> <p>FL FLOW LINE, FLANGE</p> <p>FOUND FOUNDATION</p> <p>FS FINISHED SURFACE</p> <p>FT FOOT, FEET</p> <p>FW FIRE WATER</p> <p>G GAS, GROUND ELEVATION</p> <p>GB GRADE BREAK</p> <p>GCS GROUND CONTROL STATION</p> <p>GDT GROUND DATA TERMINAL</p> <p>GI GALVANIZED IRON</p> <p>GI GREASE INTERCEPTOR</p> <p>GRD, G GROUND</p> <p>GV GATE VALVE</p> <p>H HANDICAP</p> <p>HCR HANDICAP ACCESSIBLE RAMP</p> <p>HMA HOT MIX ASPHALT</p> <p>HORIZ HORIZONTAL</p> <p>HT HEIGHT</p> <p>HP HIGH POINT</p> <p>INV INVERT</p> <p>INST INSTALL</p> <p>IRR IRRIGATION</p> <p>JP JOINT POLE</p> <p>JT JOINT TRENCH</p> <p>L LEFT</p> <p>LF LENGTH (CURVE)</p> <p>LF LINEAR FEET</p> <p>LAT LATERAL</p> <p>LIP LIP OF GUTTER</p> <p>LP LIGHT POLE, LOW POINT</p> <p>LPFH FIRE HYDRANT</p> <p>LS LANDSCAPE</p> <p>LSA LANDSCAPE ARCHITECT</p> <p>MA MEDICAL AIR</p> <p>MAX MAXIMUM</p> <p>MEP MECHANICAL/ELECTRICAL/PLUMBING</p> <p>MF MEDIA FILTER</p> <p>MH MANHOLE</p> <p>MIN MINIMUM</p> <p>MPVC MIDPOINT OF VERTICAL CURVE</p> <p>MON MONUMENT</p> <p>N NORTHING COORDINATE</p> <p>(N) NEW</p> <p>NIC NOT IN CONTRACT</p> <p>NO NUMBER</p> <p>NTS NOT TO SCALE</p> <p>OHE OVERHEAD ELECTRIC</p> <p>O.R. OFFICIAL RECORDS</p> <p>(P) PROPOSED</p> <p>P PAVEMENT ELEVATION</p> <p>PA PLANTER AREA</p> <p>PB PULL BOX</p> <p>PCC POINT OF COMPOUND CURVATURE</p> <p>PE PORTLAND CEMENT CONCRETE</p> <p>PEF PEDESTRIAN</p> <p>PERF PERFORATED</p> <p>PH POTHOLE</p> <p>PID POINT ID</p> <p>PIV POST INDICATOR VALVE</p> <p>PL PROPERTY LINE</p> <p>PM PARKING METER</p> <p>PMH POWER MANHOLE</p> <p>POC POINT ON CURVE</p> <p>POI POINT OF INTERSECTION</p> <p>PP POWER POLE</p> <p>PRC POINT OF REVERSE CURVATURE</p> <p>PRU PRIVATE UTILITY EASEMENT</p> <p>PT POINT OF TANGENCY</p> <p>PUE PUBLIC UTILITY EASEMENT</p> <p>PVC POLYVINYL CHLORIDE PIPE</p> <p>R RIGHT</p> <p>Rc RADIUS (CURVE)</p> <p>RC RELATIVE COMPACTION</p> <p>RCM REINFORCED CONCRETE PIPE</p> <p>RM ELEVATION</p> <p>RJ RESTRAINED JOINT</p> <p>RP RADIUS POINT</p> <p>RPBFP REDUCED PRESSURE BACKFLOW PREVENTER</p> <p>RPPA REDUCED PRESSURE PRINCIPLE ASSEMBLY</p> <p>RSC RECEIVING AND SUPPORT CENTER</p> <p>R/W, ROW RIGHT OF WAY</p>	<p>S SOUTH, SLOPE</p> <p>SB SEDIMENT BASIN</p> <p>SD STORM DRAIN</p> <p>SDCB STORM DRAIN CATCH BASIN</p> <p>SDI STORM DRAIN INLET</p> <p>SDMH STORM DRAIN MANHOLE</p> <p>SDCO STORM DRAIN CLEANOUT</p> <p>SF SILT FENCE</p> <p>SG SUBGRADE</p> <p>SHLDR SHOULDER</p> <p>SHT SHEET</p> <p>SL STREETLIGHT</p> <p>SMH SIGNAL, MANHOLE</p> <p>SS SANITARY SEWER</p> <p>SSCO SANITARY SEWER CLEANOUT</p> <p>SSFM SANITARY SEWER FORCE MAIN</p> <p>SSMH SANITARY SEWER MANHOLE</p> <p>SSPS SANITARY SEWER PUMP STATION</p> <p>STA STATION</p> <p>STD STANDARD</p> <p>SW SIDEWALK</p> <p>T TELEPHONE</p> <p>TC TOP OF CURB</p> <p>TD TRENCH DRAIN</p> <p>TEL TELEPHONE</p> <p>TEMP TEMPORARY</p> <p>TCF TOP FACE OF CURB</p> <p>TG TOP OF GRATE ELEVATION</p> <p>THK THICK</p> <p>TD TOP OF DOCK</p> <p>TOE TOE OF SLOPE</p> <p>TRC TOP OF ROLLED CURB</p> <p>TW TOP OF WALL</p> <p>TS TOP OF SLAB</p> <p>TYP TYPICAL</p> <p>UON UNLESS OTHERWISE NOTED</p> <p>UG UNDERGROUND</p> <p>VC VERTICAL CURVE</p> <p>W WEST, WATER</p> <p>WM WATER METER</p> <p>WWF WATER VALVE</p> <p>W WELDED WIRE FABRIC</p> <p>W WITH</p> <p>YDS YARDS</p> <p>NEW</p> <p>EXISTING</p> <p>6" CURB & GUTTER</p> <p>EDGE OF AC PAVEMENT</p> <p>6" VERTICAL CURB</p> <p>DOMESTIC WATER MAIN</p> <p>ELECTRIC LINE</p> <p>FIRE WATER MAIN</p> <p>FUEL LINE & FLOW</p> <p>GAS LINE</p> <p>IRRIGATION LINE</p> <p>OVERHEAD WIRES</p> <p>OVERHEAD ELECTRIC</p> <p>OVERHEAD TELEPHONE</p> <p>RECYCLED WATER</p> <p>SANITARY SEWER LINE</p> <p>SANITARY SEWER FORCE MAIN</p> <p>STEAM PIPE</p> <p>STORM DRAIN LINE</p> <p>STREET LIGHT CONDUIT</p> <p>TELECOMMUNICATIONS</p> <p>TELEPHONE LINE</p> <p>TELEVISION LINE</p> <p>WATER LINE</p> <p>UNDERGROUND ELECTRIC</p> <p>JET FUEL PIPE</p> <p>TRENCH DRAIN</p> <p>WOOD FENCE</p> <p>SILT FENCE</p> <p>CHAIN LINK FENCE</p> <p>FLOW LINE</p> <p>CONTOUR ELEVATION LINE</p> <p>CENTER LINE</p> <p>PROPERTY LINE</p> <p>MONUMENT LINE</p> <p>EASEMENT LINE</p> <p>FINISH GRADE</p> <p>SURFACE DRAINAGE SLOPE</p> <p>SPOT ELEVATION</p> <p>GRADE BREAK</p> <p>LIMIT OF WORK/GRADING</p> <p>STATION LINE</p> <p>IRRIGATION BOX</p> <p>GAS METER</p> <p>GAS VALVE</p> <p>WATER METER</p> <p>WATER VALVE</p> <p>FIRE HYDRANT</p> <p>FIRE DEPARTMENT CONNECTION</p> <p>WATER TAPPING SADDLE</p> <p>SEWER MANHOLE</p> <p>SEWER CLEANOUT</p> <p>SEWER LAMP HOLE</p> <p>SEWER VENT</p> <p>STORM DRAIN MANHOLE</p> <p>CATCH BASIN</p> <p>CURB INLET</p> <p>DRAINAGE INLET</p> <p>STORM DRAIN CLEANOUT</p> <p>ELECTRIC VAULT COVER</p> <p>PULL BOX</p> <p>HIGH VOLTAGE ELECTRIC</p> <p>TELEPHONE MANHOLE</p> <p>POWER POLE</p> <p>GUY WIRE & ANCHOR</p> <p>JOINT POLE</p> <p>STREET LIGHT</p> <p>ELECTROLIER</p> <p>TRAFFIC SIGNAL</p> <p>TRAFFIC SIGNAL</p> <p>PEDESTRIAN LIGHT</p> <p>PEDESTRIAN PUSH BUTTON</p> <p>CROSSWALK DETECTOR</p> <p>STREET LIGHT PULLBOX</p> <p>SIGN (AS NOTED)</p> <p>WHEELCHAIR RAMP</p> <p>POTHOLE LOCATION AND NUMBER</p> <p>BUILDING FACE</p> <p>AIR RELEASE VALVE</p> <p>BOLLARD</p> <p>BUTTERFLY VALVE</p> <p>SURVEY CONTROL POINT</p>	<p>1 KEYNOTE</p> <p>DETAIL NUMBER</p> <p>1 X-501 DETAIL INDICATOR</p> <p>SHEET NUMBER ON WHICH DETAIL APPEARS</p> <p>SECTION LETTER</p> <p>A X-301 SECTION INDICATOR</p> <p>SHEET NUMBER ON WHICH SECTION APPEARS</p> <p>DRAWING DESIGNATION</p> <p>S-101 DISCIPLINE</p> <p>101 INDIVIDUAL DRAWING NUMBER</p> <p>SHEET TYPE</p> <table><thead><tr><th>LETTER</th><th>DISCIPLINE</th></tr></thead><tbody><tr><td>G</td><td>GENERAL</td></tr><tr><td>S</td><td>STRUCTURAL</td></tr><tr><td>SR</td><td>BARGE STRUCTURAL</td></tr><tr><td>M</td><td>MECHANICAL</td></tr><tr><td>E</td><td>ELECTRICAL</td></tr><tr><td>CP</td><td>CATHODIC PROTECTION</td></tr></tbody></table>	LETTER	DISCIPLINE	G	GENERAL	S	STRUCTURAL	SR	BARGE STRUCTURAL	M	MECHANICAL	E	ELECTRICAL	CP	CATHODIC PROTECTION
LETTER	DISCIPLINE																	
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Reuse of Documents		<p>This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD and shall not be reused in whole or in part for any other project without GHD's written authorization. © 2019 GHD</p>																
Client		CITY OF SACRAMENTO																
Project		OLD SACRAMENTO RIVERFRONT EMBARCADERO AND K STREET BARGE PROJECT																
No.		Issue																
Drawn		PS																
Designer		JP																
Drafting Check		LH																
Design Check		CL																
Project Manager		C LEWIS																
Date		MAY 2018																
This document shall not be used for construction unless signed and sealed for construction.		Scale																
Original Size		AS SHOWN																
Arch E1		Bar is one inch on original size sheet																
Project No.		11151187																
Title		GENERAL NOTES, ABBREVIATIONS, SYMBOLS LEGEND																
Sheet No.		G-002																
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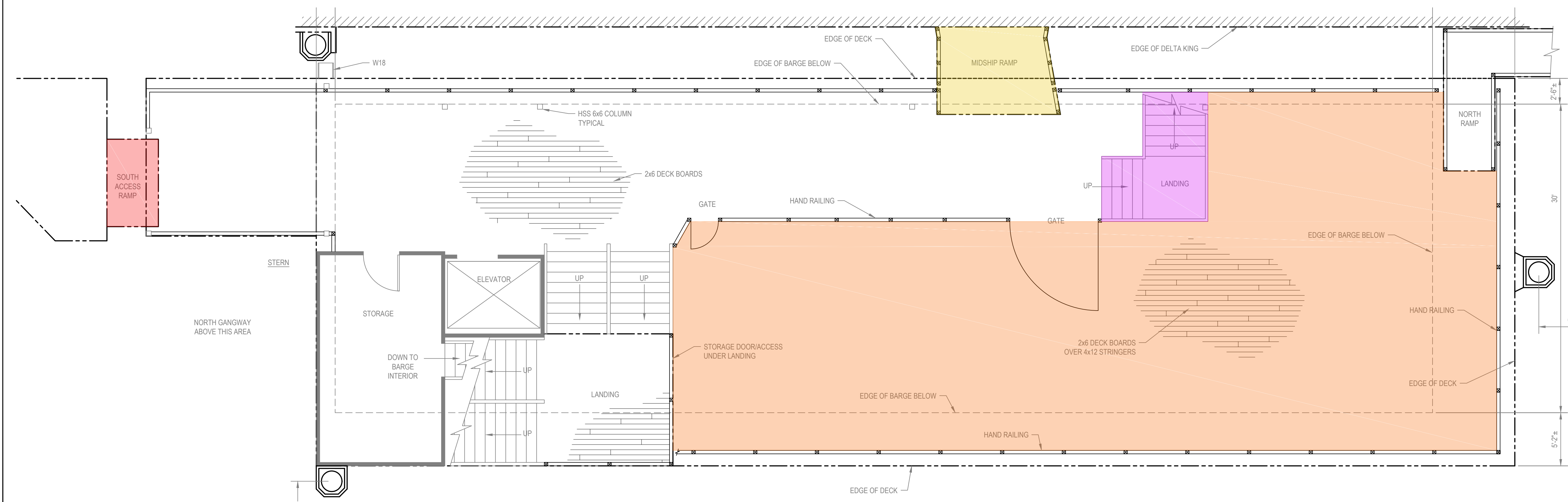
Plot Date: 5 April 2019 - 3:43 PM

Plotted By: Carlos Martinez II

Filename: lghdnet\ghd\US\San Francisco\Projects\1111111187 C05 K St Barge Maintenance\06-CAD\Sheets\111111187 G002.dwg



1 OVERALL BARGE PLAN
3/32"=1'-0"
0 8' 16' 24'
3/32"=1'-0"
PLAN NORTH



2 BARGE LOWER DECK PLAN
3/16"=1'-0"
0 4' 8' 12'
3/16"=1'-0"
PLAN NORTH

NOTE: ALL DIMENSIONS ARE APPROXIMATE FIELD MEASUREMENTS.

SHEET GENERAL NOTES

- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
- SEE SR SHEETS FOR BARGE STRUCTURAL WORK.

SHEET KEYNOTES

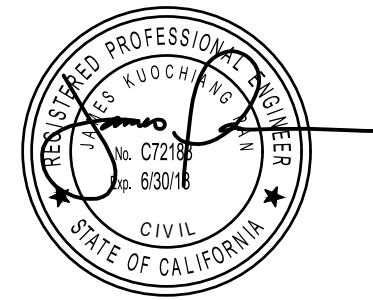
- SOUTH RAMP, NOT IN CONTRACT.
- REMOVE (E) SOUTH TRANSITION RAMP AND INSTALL (N) ALUMINUM RAMP. SEE DETAIL 2/ S-505.
- REPLACE UPPER DECK AND ADD SUPPORT JOISTS. SEE DETAIL 1/S-102.
- NOT USED.
- REMOVE (E) MIDSHIP RAMP AND INSTALL (N) ALUMINUM RAMP. SEE DETAIL 6/S-505.
- CLOSE OFF RISERS AT MIDSHIP STAIRS AND ADD HANDRAILS. SEE DETAIL 9/S-503.
- NORTH RAMP, TEMPORARILY RAISE RAMP TO ACCESS STRINGERS AND DECK BOARDS.
- REMOVE AND REINSTALL EXISTING HANDRAILING. SEE DETAIL 6/S-104.
- REPLACE LOWER DECK AND ADD NEW STRINGERS. SEE DETAIL 1/S-103.
- NOT USED.
- NEW CANTILEVER STEEL STRINGERS AND EDGE BEAM. SEE DETAIL A/S-104.
- REMOVE AND REINSTALL EXISTING GATE. SEE DETAIL 5/S-104.
- REVERSE AND REINSTALL GATE. ADD PANIC BAR FOR EMERGENCY EXIT. SEE DETAIL 7/2-104.

LEGEND

- AREA OF SHADE FABRIC AND CABLES BETWEEN DELTA KING AND STEEL TUBES ATTACHED TO HANDRAIL. THESE ELEMENTS WILL BE REMOVED BY DELTA KING PRIOR TO START OF WORK.
- ASSEMBLY 301 OCCUPANTS WITH CHAIRS ONLY, 141 OCCUPANT WITH TABLES AND CHAIRS.
- PER R CONSENT DECREE. MAKE SOUTH ACCESS RAMP ACCESSIBLE. SEE DETAIL 2/S-505.
- PER CONSENT DECREE. MAKE MIDSHIP RAMP ACCESSIBLE. SEE DETAIL 6/S-505.
- PER CONSENT DECREE. MAKE MIDSHIP STAIRS AND LANDING ACCESSIBLE BY CLOSING STAIRS RISERS AND ADDING HANDRAILS. SEE DETAIL 9/S-503.



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Project
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AND K STREET BARGE PROJECT**

No.	Issue	Drawn	Approved	Date

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Original Size Arch E1		Bar is one inch on original size sheet 0  1"		

Project No. 11151187

Title
BARGE PLAN

Sheet No.

G-102

Sheet - of -

STATEMENT OF SPECIAL INSPECTIONS

STATEMENT OF SPECIAL INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS A CONDITION FOR PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION AND STRUCTURAL TESTING REQUIREMENTS OF THE BUILDING CODE SECTIONS 1704 AND 1705.

THIS STATEMENT OF SPECIAL INSPECTIONS ENCOMPASS THE FOLLOWING DISCIPLINES:

☒ STRUCTURAL SPECIAL INSPECTIONS PER 1704
☐ STRUCTURAL SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE
☐ STRUCTURAL SPECIAL INSPECTIONS FOR WIND RESISTANCE

THE SCHEDULE OF SPECIAL INSPECTIONS SUMMARIZES THE SPECIAL INSPECTIONS AND TESTS REQUIRED. SPECIAL INSPECTORS WILL REFER TO THE APPROVED PLANS AND SPECIFICATIONS FOR DETAILED SPECIAL INSPECTION REQUIREMENTS. ANY ADDITIONAL TESTS AND INSPECTIONS REQUIRED BY THE APPROVED PLANS AND SPECIFICATIONS WILL ALSO BE PERFORMED.

THE SPECIAL INSPECTIONS IDENTIFIED ARE IN ADDITION TO THOSE REQUIRED BY OTHER SECTIONS OF THE BUILDING CODE. SPECIAL INSPECTION IS NOT A SUBSTITUTE FOR INSPECTION BY THE BUILDING OFFICIAL

THE SPECIAL INSPECTION COORDINATOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL/CONTRACTING OFFICER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITIES.

INTERIM REPORTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 1704.1.2.

A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS, TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY PER SECTION 1704.1.2. THE FINAL REPORT WILL DOCUMENT THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF DISCREPANCIES NOTED IN INSPECTIONS.

JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR IS REQUIRED TO COORDINATE ALL INSPECTIONS. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY SPECIAL INSPECTIONS THAT ARE REQUIRED. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY CONCRETE TO BE POURED.

THE INSPECTORS AND TESTING AGENCIES SHALL BE ENGAGED BY THE OWNER OR THE OWNER'S AGENT, AND NOT BY THE CONTRACTOR OR SUBCONTRACTOR WHOSE WORK IS TO BE INSPECTED OR TESTED PER SECTION 1704.1. ANY CONFLICT OF INTEREST MUST BE DISCLOSED TO THE BUILDING OFFICIAL/CONTRACTING OFFICER, PRIOR TO COMMENCING WORK. IF APPROPRIATE AGENTS ARE NOTED AS "TO BE DETERMINED (TBD)", THE OWNER IS RESPONSIBLE TO COORDINATE THE ASSEMBLY OF A SPECIAL INSPECTION TEAM. ALL SPECIAL INSPECTORS AND QUALIFICATIONS SHALL BE SUBMITTED TO GHD INC. AND THE BUILDING OFFICIAL FOR REVIEW.

SPECIALLY INSPECTED WORK THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL IS SUBJECT TO REMOVAL OR EXPOSURE.

CONTINUOUS INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS OTHERWISE SPECIFIED. WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED, IT IS THE AGENT'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL THE WORK IS INSPECTED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE.

CONTRACTOR STATEMENT OF RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OR FABRICATION OF A SYSTEM OR COMPONENT DESIGNATED ABOVE AS PART OF THE MAIN WIND FORCE OR MAIN SEISMIC FORCE RESISTING SYSTEMS ABOVE MUST SUBMIT A STATEMENT OF RESPONSIBILITY PER SECTION 1706.

QUALIFICATIONS OF INSPECTORS AND TESTING TECHNICIANS

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION AND TESTING ACTIVITIES ARE SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED.

KEY FOR MINIMUM QUALIFICATIONS OF INSPECTION AGENTS:

WHEN THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DEEMS IT APPROPRIATE THAT THE INDIVIDUAL PERFORMING A STIPULATED TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION OR LICENSE AS INDICATED BELOW, SUCH DESIGNATION SHALL APPEAR BELOW THE AGENCY NUMBER ON THE SCHEDULE.

PE/SESTRUCTURAL ENGINEER - A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURES

PE/GEGEOTECHNICAL ENGINEER - A LICENSED GE OR PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS

EITENGINEER-IN-TRAINING - A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTALS OF ENGINEERING EXAMINATION

AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION

ACI-CFTTCONCRETE FIELD TESTING TECHNICIAN - GRADE 1

ACI-CCICONCRETE CONSTRUCTION INSPECTOR

ACI-LTTLABORATORY TESTING TECHNICIAN - GRADE 1&2

ACI-STTSTRENGTH TESTING TECHNICIAN

AMERICAN WELDING SOCIETY (AWS) CERTIFICATION

AWS-CWICERTIFIED WELDING INSPECTOR

AWS/AISC-SSICERTIFIED STRUCTURAL STEEL INSPECTOR

INTERNATIONAL CODE COUNCIL (ICC) CERTIFICATION

ICC-SMSISTRUCTURAL MASONRY SPECIAL INSPECTOR

ICC-SWSISTRUCTURAL STEEL AND WELDING SPECIAL INSPECTOR

ICC-SFSISPRAY-APPLIED FIREPROOFING SPECIAL INSPECTOR

ICC-PCSIPRESTRESSED CONCRETE SPECIAL INSPECTOR

ICC-RCSIREINFORCED CONCRETE SPECIAL INSPECTOR

SCHEDULE OF INSPECTION AND TESTING AGENCIES

THIS STATEMENT OF SPECIAL INSPECTIONS / QUALITY ASSURANCE PLAN INCLUDES THE FOLLOWING BUILDING SYSTEMS:

☐ SOILS AND FOUNDATIONS☐ WOOD CONSTRUCTION
☐ CAST-IN-PLACE CONCRETE☒ MECHANICAL & ELECTRICAL SYSTEMS
☐ PRECAST CONCRETE☐ ARCHITECTURAL SYSTEMS
☐ MASONRY LEVEL 1☒ STRUCTURAL STEEL
☐ MASONRY LEVEL 2☐ COLD-FORMED STEEL FRAMING

SPECIAL INSPECTION AGENCIES	FIRM AND CONTACT INFO.
1. SPECIAL INSPECTION COORDINATOR	TBD
2. INSPECTOR	TBD
3. INSPECTOR	TBD
4. TESTING AGENCY	TBD
5. TESTING AGENCY	TBD
6. OTHER	TBD

TABLE 1704.3 - STEEL

ITEM 1: MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS.

AGENCY # (QUALIF.): AWS/AISC-SSI, ICC-SWSI

SCOPE:

A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.

☒ PERIODIC☐ CONTINUOUS

B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.

☒ PERIODIC☐ CONTINUOUS

ITEM 2: INSPECTION OF HIGH-STRENGTH BOLTING:

AGENCY # (QUALIF.): AWS/AISC-SSI, ICC-SWSI

SCOPE:

A. BEARING-TYPE CONNECTIONS.

☒ PERIODIC☐ CONTINUOUS

B. SLIP-CRITICAL CONNECTIONS

☐ PERIODIC☒ CONTINUOUS

ITEM 3: MATERIAL VERIFICATION OF STRUCTURAL STEEL

AGENCY # (QUALIF.): PE/SE

SCOPE:

A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED DOCUMENTS

☒ PERIODIC☐ CONTINUOUS

B. MANUFACTURER'S MILL TEST REPORTS

☒ PERIODIC☐ CONTINUOUS

ITEM 4: MATERIAL VERIFICATION OF WELD FILLER MATERIALS.

AGENCY # (QUALIF.): AWS-CWI, ASNT

SCOPE:

A. IDENTIFICATION MARKINGS TO CONFORM TO AWS DESIGNATION LISTED IN THE WPS.

☒ PERIODIC☐ CONTINUOUS

B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.

☒ PERIODIC☐ CONTINUOUS

ITEM 5: INSPECTION OF WELDING:

AGENCY # (QUALIF.): AWS-CWI, ASNT

SCOPE:

A. STRUCTURAL STEEL

1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.

☐ PERIODIC☒ CONTINUOUS

2) MULTIPASS FILLET WELDS.

☐ PERIODIC☒ CONTINUOUS

3) SINGLE-PASS FILLET WELDS > 5/16".

☐ PERIODIC☒ CONTINUOUS

4) SINGLE-PASS FILLET WELDS <= 5/16".

☒ PERIODIC☐ CONTINUOUS

5) FLOOR AND ROOF DECK WELDS.

☒ PERIODIC☐ CONTINUOUS

B. REINFORCING STEEL

1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.

☒ PERIODIC☐ CONTINUOUS

2) REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES; AND BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT.

☐ PERIODIC☐ CONTINUOUS

3) SHEAR REINFORCEMENT

☐ PERIODIC☐ CONTINUOUS

4) OTHER REINFORCING STEEL

☒ PERIODIC☐ CONTINUOUS

ITEM 6: INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS:

AGENCY # (QUALIF.): PE/SE

SCOPE:

INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS:

A) DETAILS SUCH AS BRACING AND STIFFENING.

☒ PERIODIC☐ CONTINUOUS

B) MEMBER LOCATIONS.

☒ PERIODIC☐ CONTINUOUS

C) APPLICATION OF JOINT DETAILS AT EACH CONNECTION.

☒ PERIODIC☐ CONTINUOUS

ITEM 7: WELDED STUDS WHEN USED FOR STRUCTURAL DIAPHRAGMS:

AGENCY # (QUALIF.): AWS-CWI, ASNT

☒ PERIODIC☐ CONTINUOUS

ITEM 8: WELDING OF COLD-FORMED SHEET STEEL FRAMING MEMBERS:

AGENCY # (QUALIF.): AWS-CWI, ASNT

☒ PERIODIC☐ CONTINUOUS

ITEM 9: WELDING OF STAIRS AND RAILING SYSTEMS:

AGENCY # (QUALIF.): AWS-CWI, ASNT

☒ PERIODIC☐ CONTINUOUS

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CITY OF SACRAMENTO

Project

OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT

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Project Manager	C LEWIS	Date	MAY 2018	
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Arch E1				

Project No. 11151187

Title

SPECIAL INSPECTIONS

Sheet No.

S-002

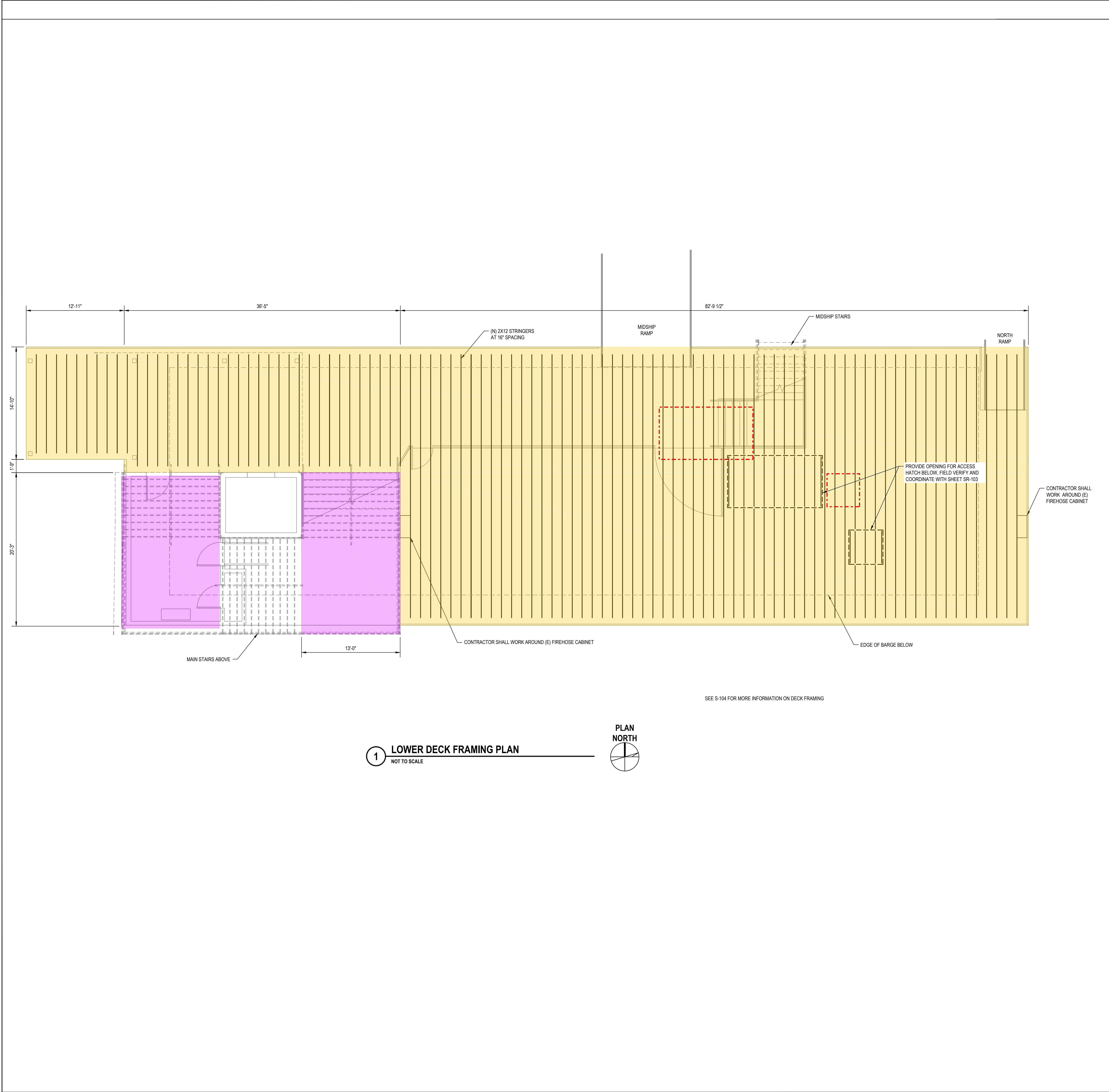
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Plot Date: 5 April 2019 - 3:44 PM

Plotted By: Carlos Martinez II

Filename: \\ghdnet\ghd\US\San Francisco\Projects\1111\1151187 COS K St Barge Maintenance\06-CAD\Sheets\11151187 S002.dwg

Page 277 of 378



- SHEET GENERAL NOTES**
1. FIELD VERIFY ALL MEASUREMENTS.
 2. DECK SHALL BE RATED FOR 100PSF LIVE LOAD. ALL DECK BOARD CONNECTORS SHALL BE STAINLESS STEEL.
 3. BASE BID: REPLACE TIMBER DECK WITH 1.5" PLASTIC LUMBER DECK. ASSUME ALL EXISTING STRINGERS AT 3'-4" SPACING ARE TO BE REPLACED. INSTALL NEW STRINGERS AT 16" SPACING MAXIMUM SPACING. INSTALL 2X12 BLOCKING AT PERIMETER OF EDGE OF DECK BARGE AND AT 6'-0" SPACING.
 4. **ALTERNATE** BID #2: REPLACE TIMBER DECK WITH FIBERGRATE DYNAPLANK OR APPROVED EQUAL. ASSUME ALL EXISTING STRINGERS AT 3'-4" TO BE REPLACED. INSTALL NEW STRINGERS AT 36" MAXIMUM SPACING. INSTALL 2X12 BLOCKING AT PERIMETER OF EDGE OF DECK BARGE AND AT 6'-0" SPACING.
 5. WORK THIS SHEET WITH S-104 FOR DECK LEVEL IMPROVEMENTS AND STEEL STRINGER RETROFIT AT NORTH & EAST SIDE OF BARGE.

LEGEND

BASE BID (ALTERNATE 1) AREA OF LOWER DECK REPLACEMENT

ALTERNATE 2 - PROVIDE UNIT PRICE TO REPLACE STRINGERS AND DECK UNDER STAIRS AND INTERMEDIATE LANDING.

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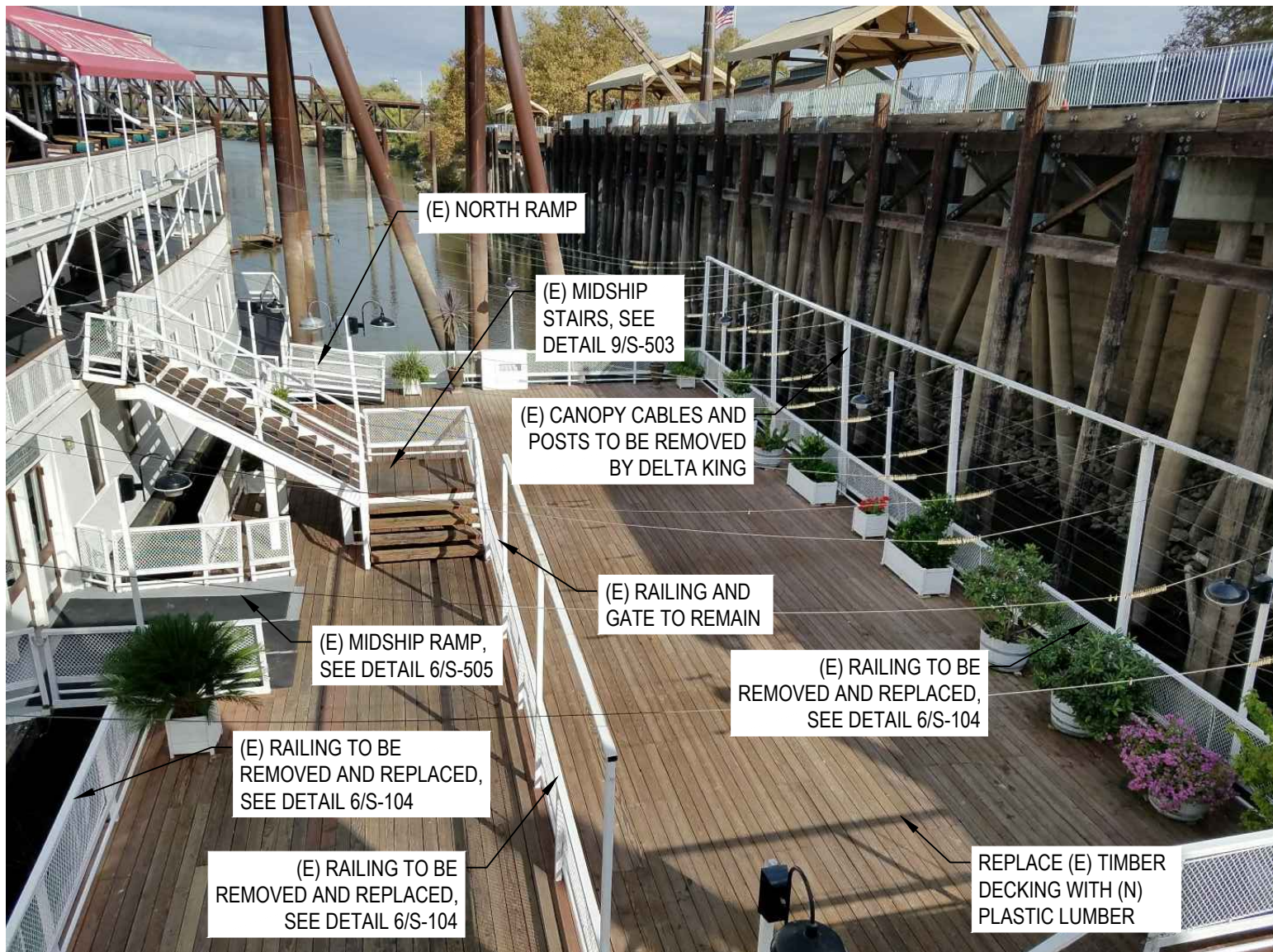
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LOWER DECK FRAMING PLAN

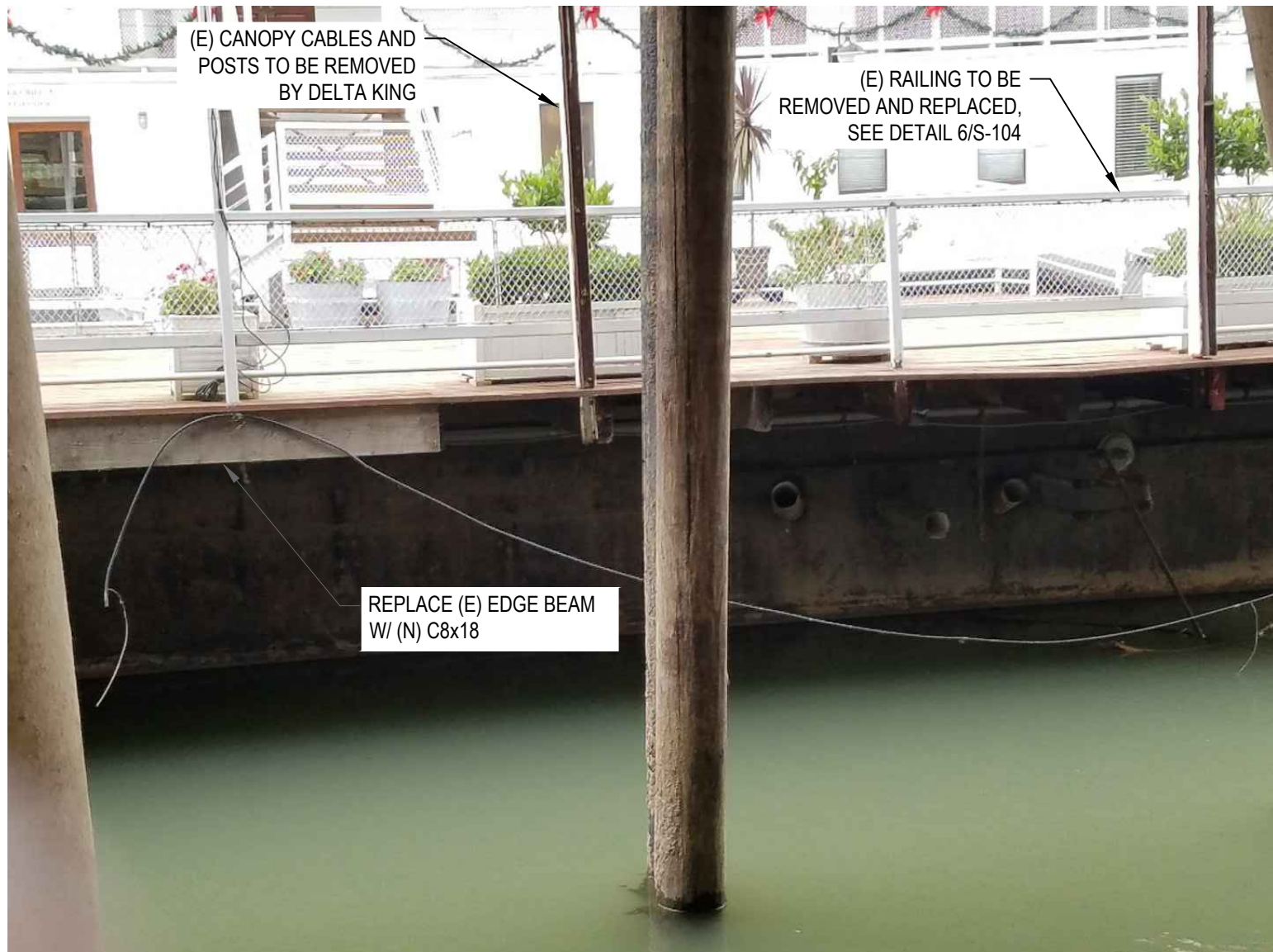
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S-103

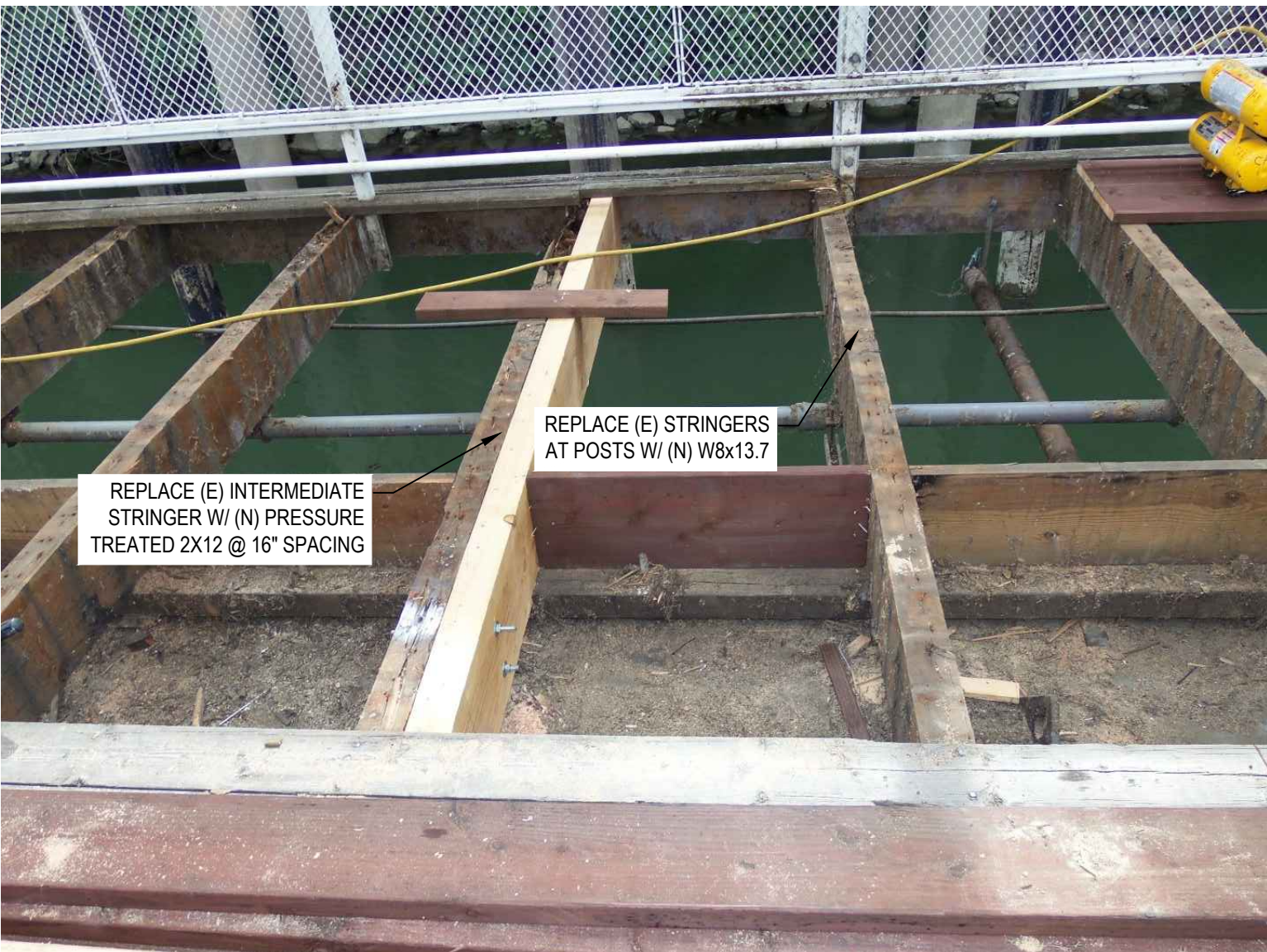
Sheet - of -



1 DECK (FACING NORTH)



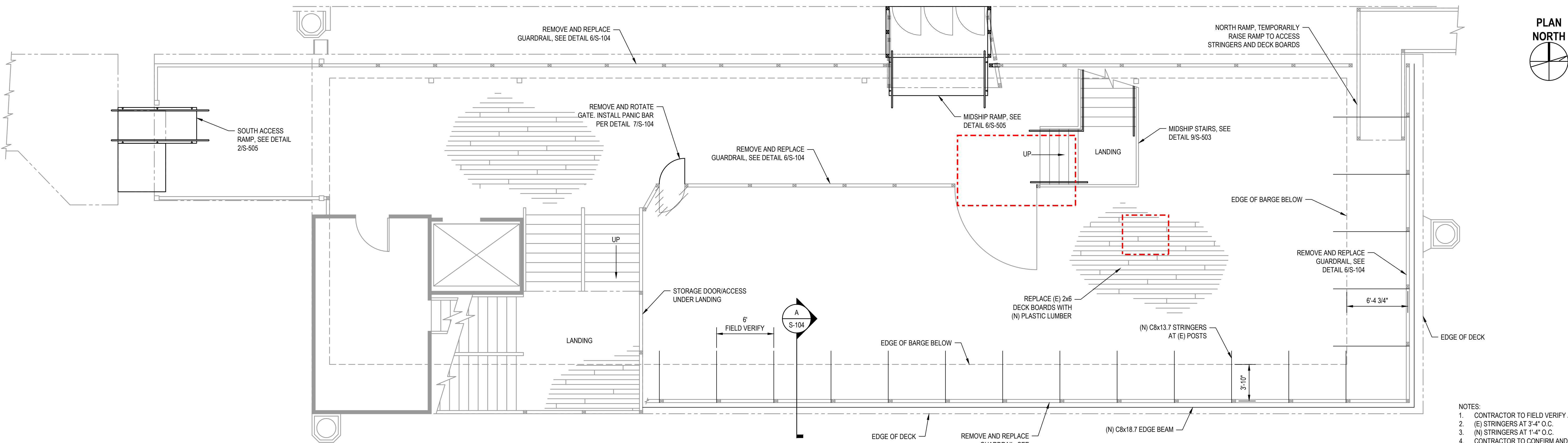
2 DECK (FACING WEST)



3 DECK REPLACEMENT (JUNE 2013)

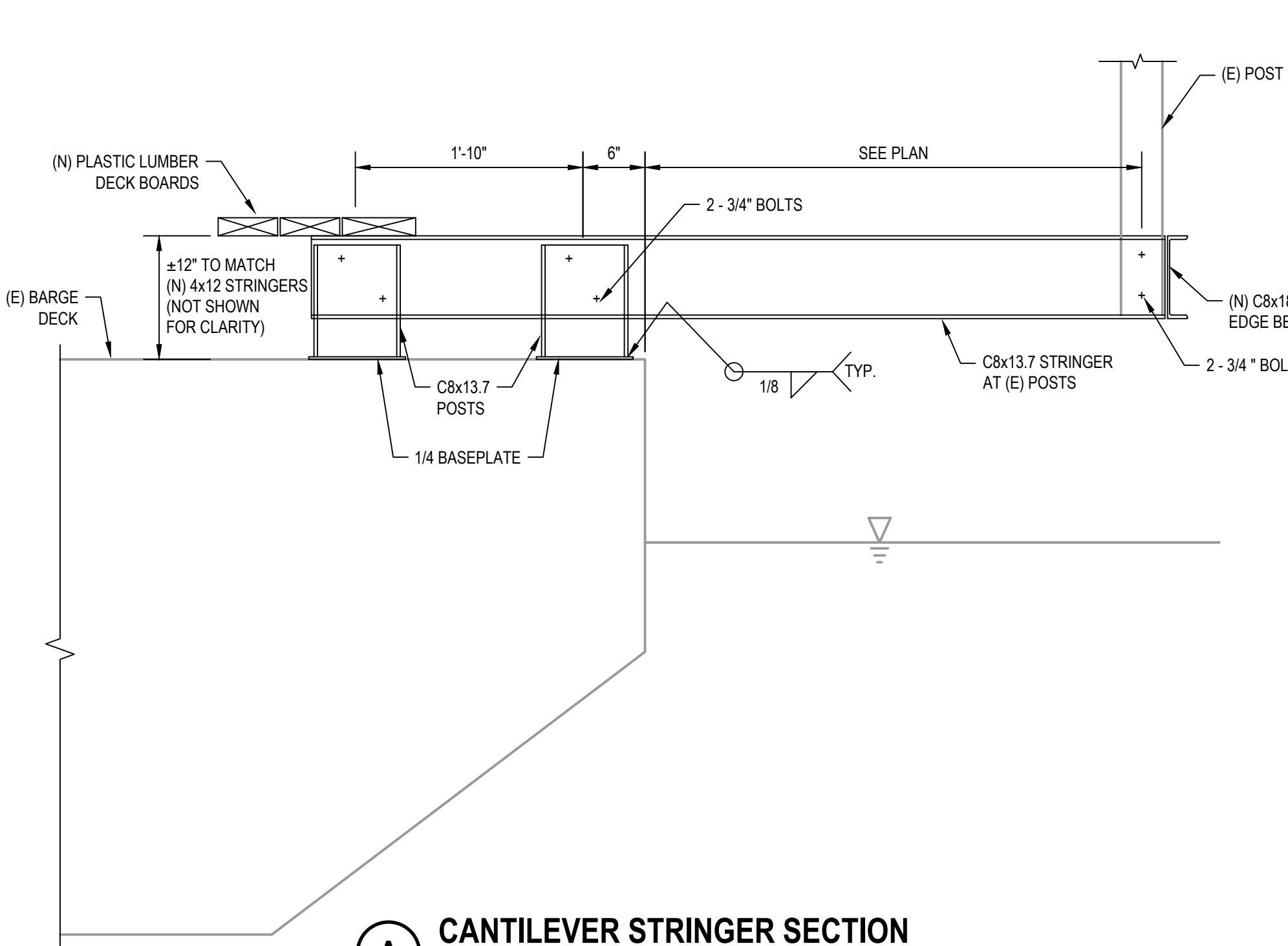


4 DECK REPLACEMENT (JUNE 2013)

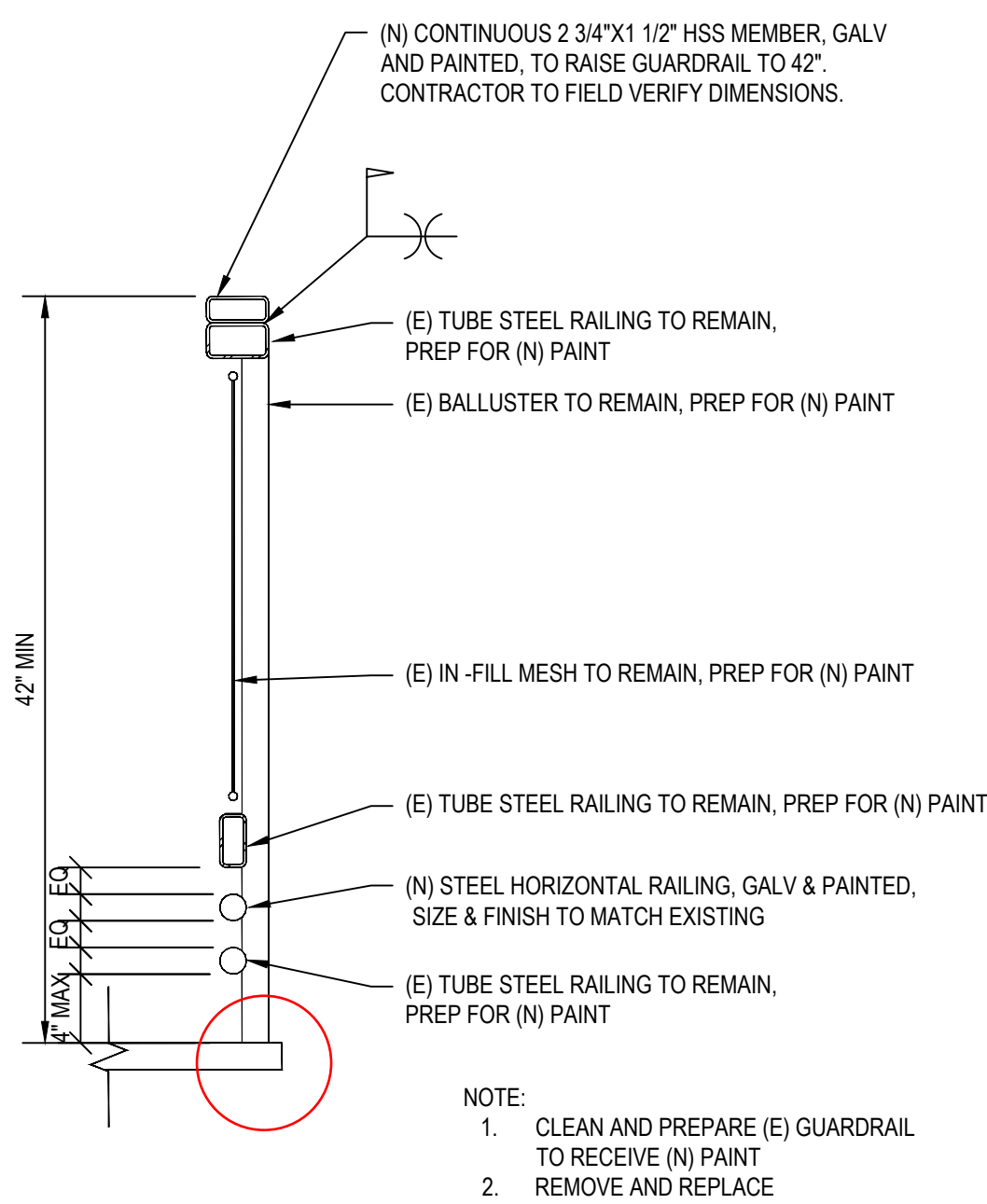


- NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.
 2. (E) STRINGERS AT 3'-4" O.C.
 3. (N) STRINGERS AT 1'-4" O.C.
 4. CONTRACTOR TO CONFIRM AND RETAIN ALL EXISTING DECK OPENINGS WITH NEW DECKING.

5 BARGE LOWER DECK PLAN
SCALE: 3/16" = 1'-0"



A CANTILEVER STRINGER SECTION
SCALE: 1" = 1'-0"



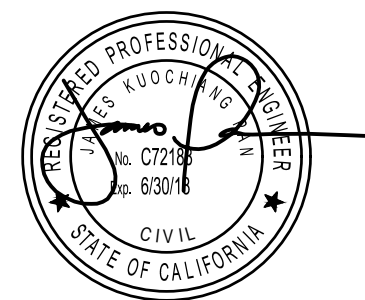
6 GUARDRAIL DETAILS
SCALE: 1 1/2" = 1'-0"



7 PANIC BAR
NOT TO SCALE



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Project No. 11151187

Title
**BARGE LOWER DECK
REPAIR DETAILS**

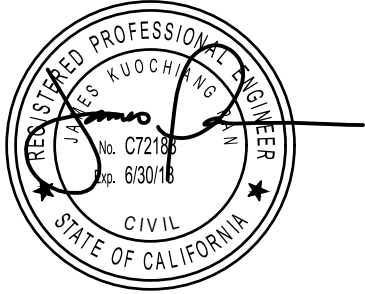
Sheet No.

S-104

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Project No. 11151187

Title
STAIR AND RAILING DETAILS

Sheet No.

S-503

Sheet - of -

1 UPPER DECK - UNDERSIDE

2 INTERMEDIATE LANDING, UNDERSIDE

3 STAIRS FROM UPPER DECK TO INTERMEDIATE LANDING

4 STAIRS FROM INTERMEDIATE LANDING TO LOWER DECK

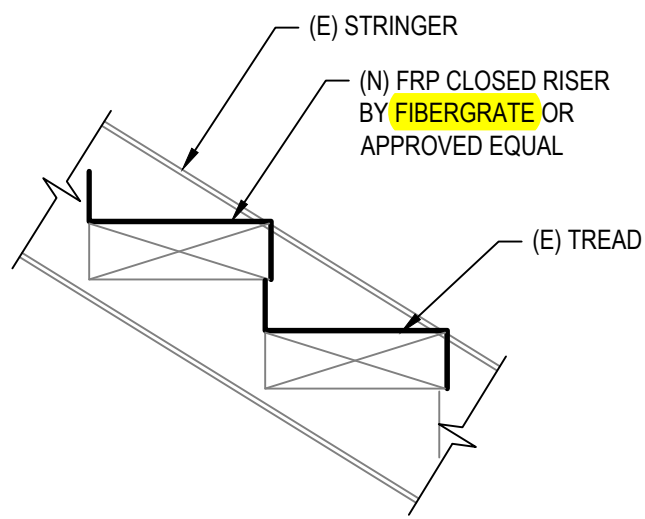


5 MIDSHIP STAIRS



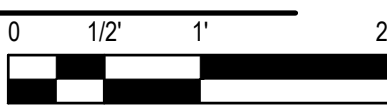
6 BARGE GUARDRAIL

SCALE: 1 1/2"=1'-0"



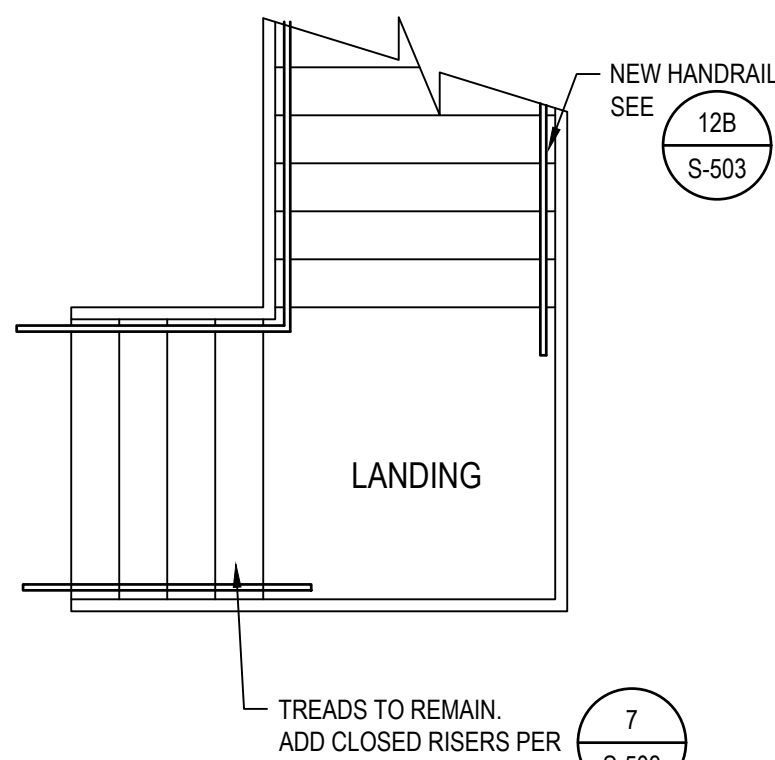
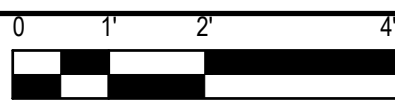
7 DETAIL

SCALE: 1"=1'-0"



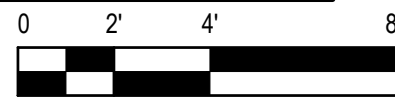
8 HANDRAIL DETAIL

SCALE: 1 1/2"=1'-0"



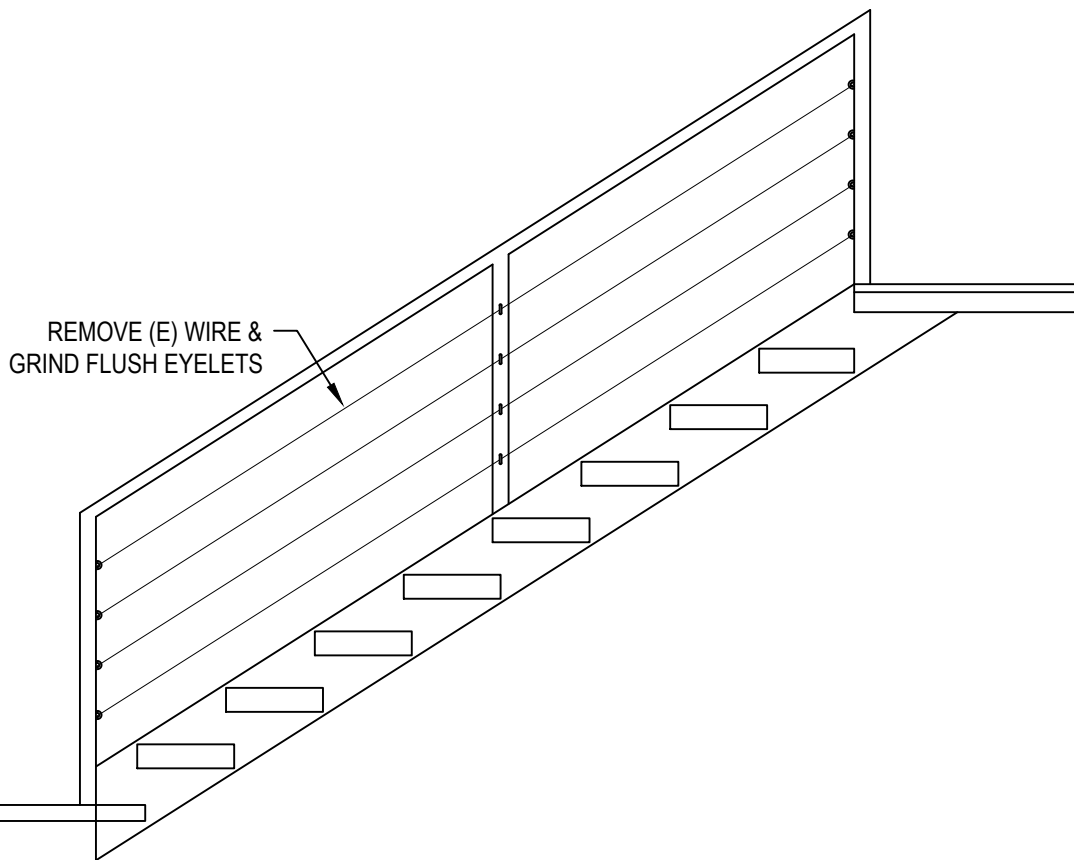
9 MIDSHIP STAIRS

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



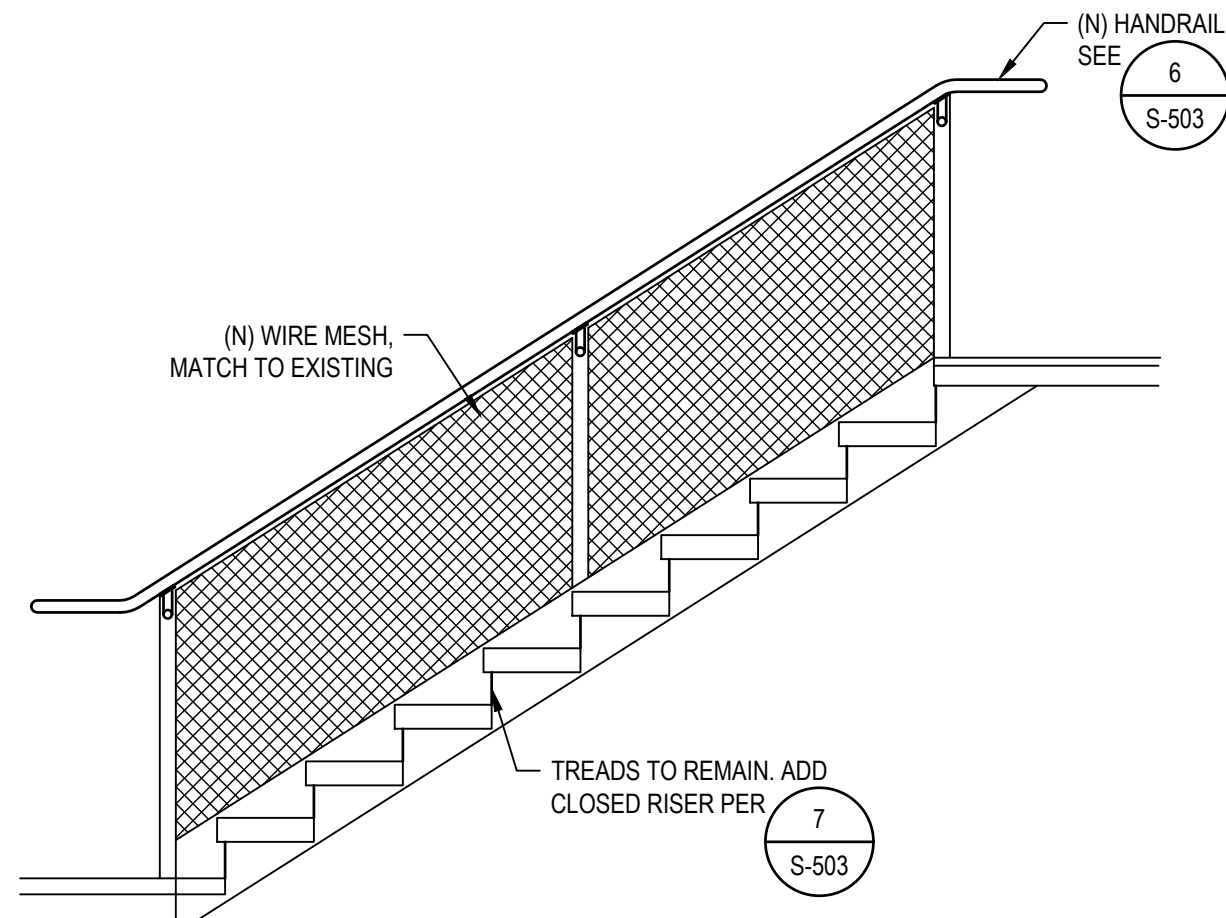
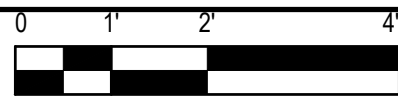
10 WALL MOUNTED HANDRAIL

SCALE: 1/2"=1'-0"



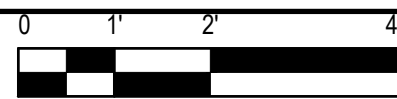
12A STAIR RAIL DETAIL - EXISTING

SCALE: 1 1/2"=1'-0"



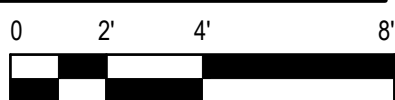
12B STAIR RAIL DETAIL - MODIFIED

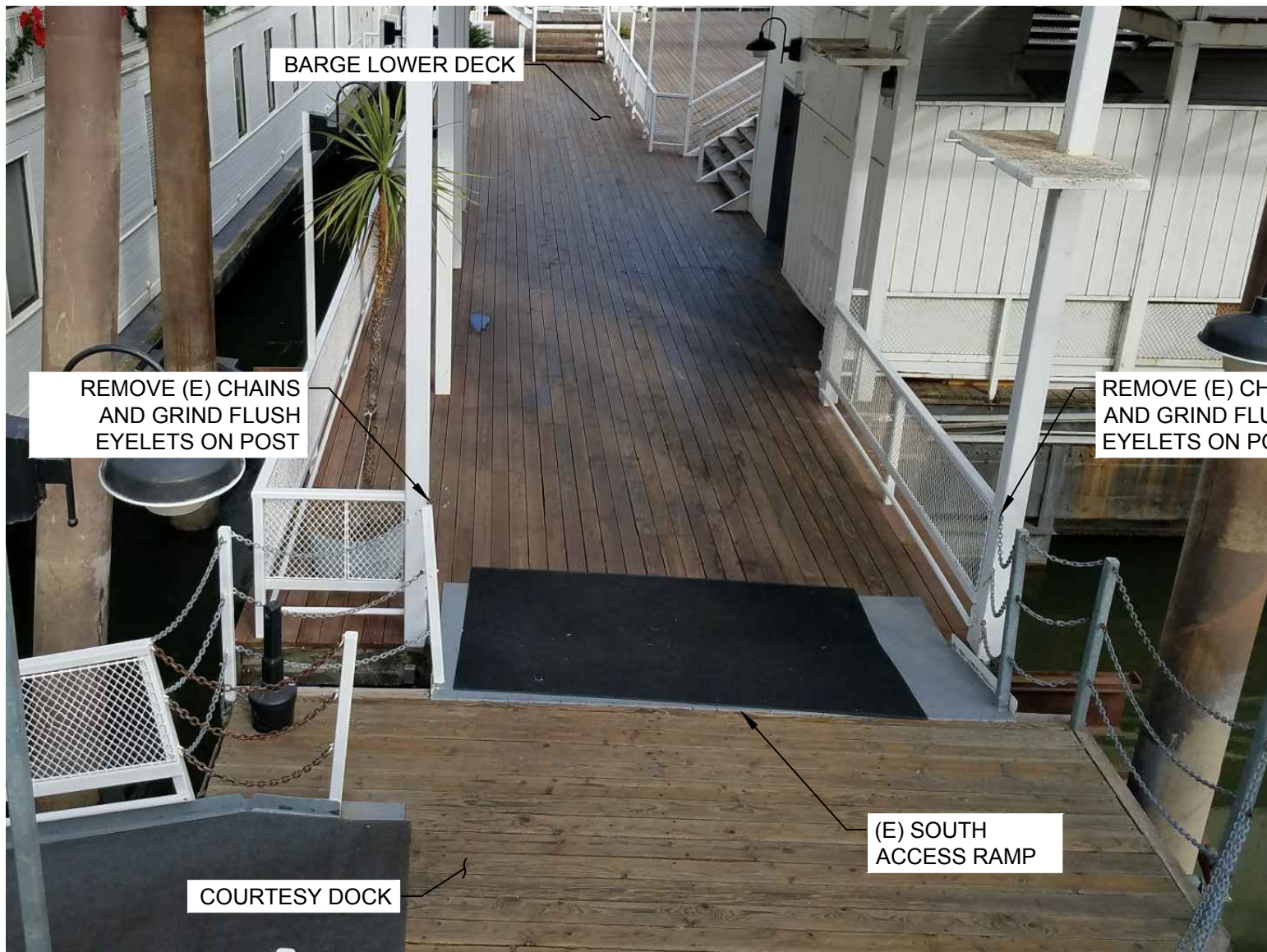
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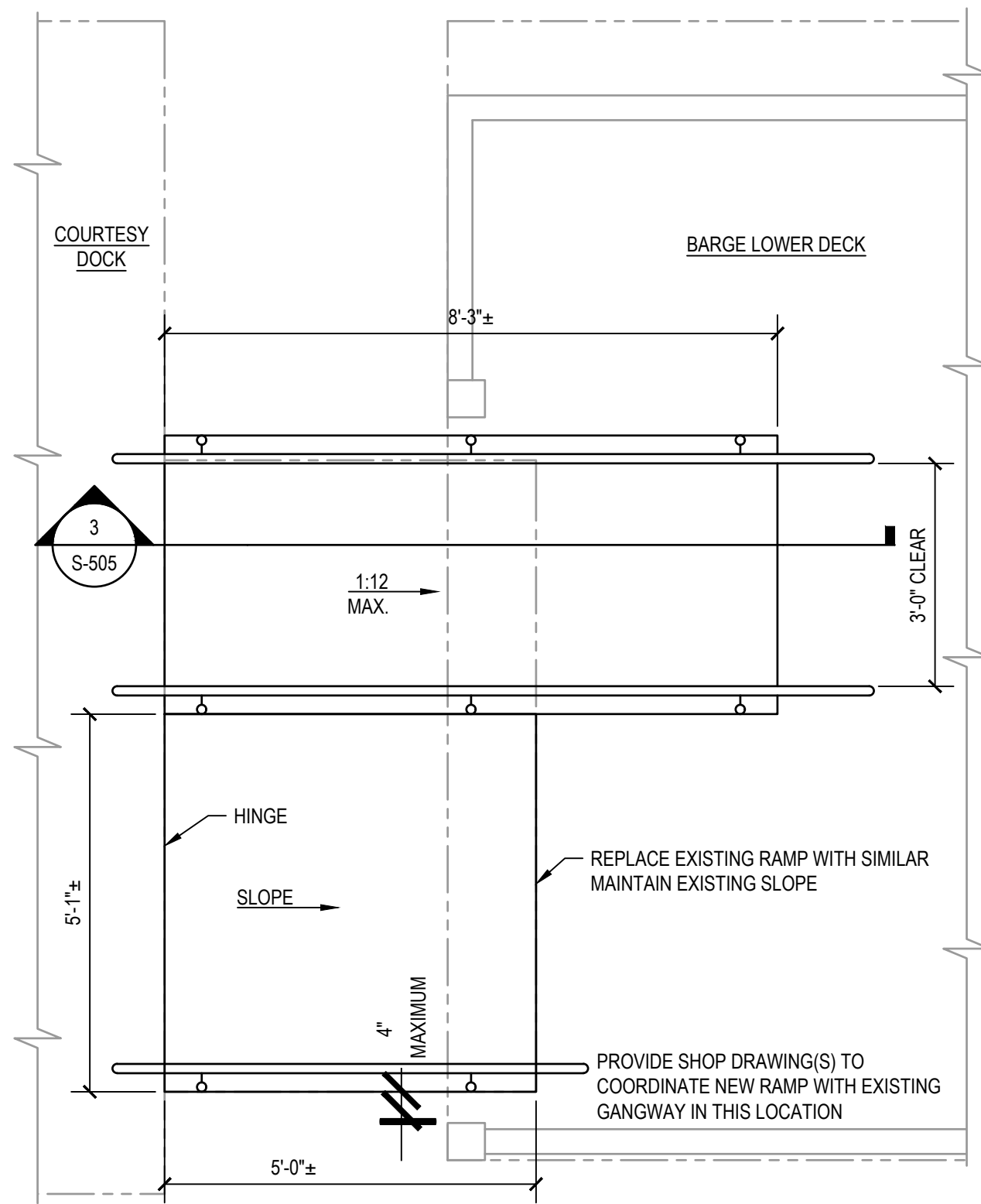
11 STAIR HANDRAIL PLAN

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

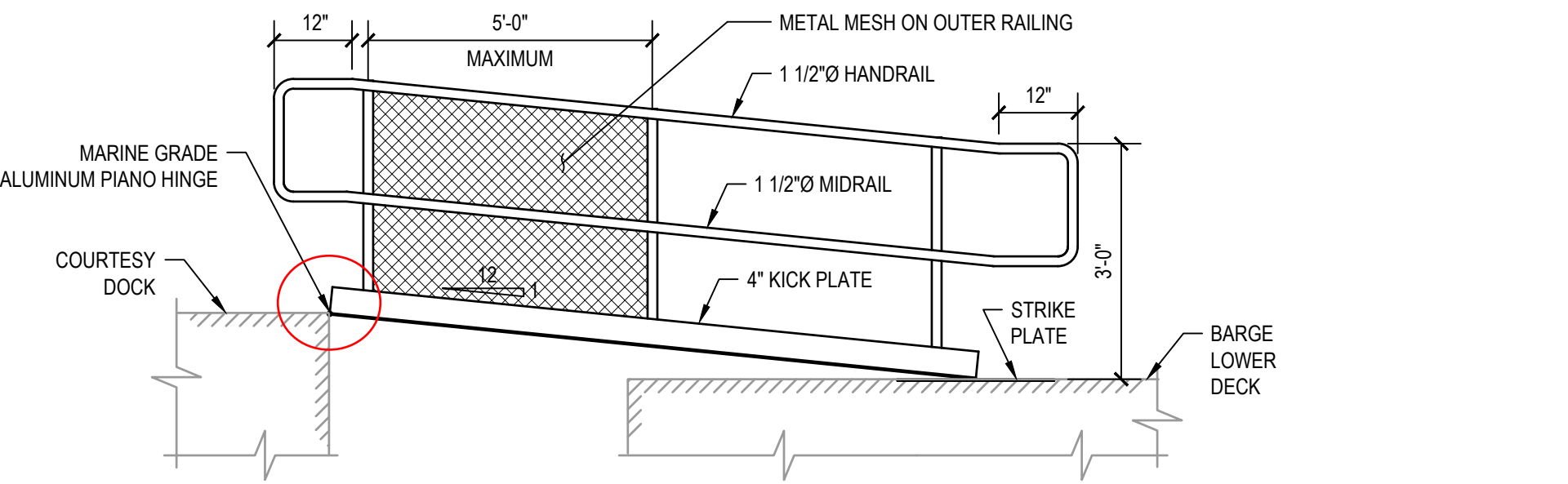




1 SOUTH ACCESS RAMP
NOT TO SCALE



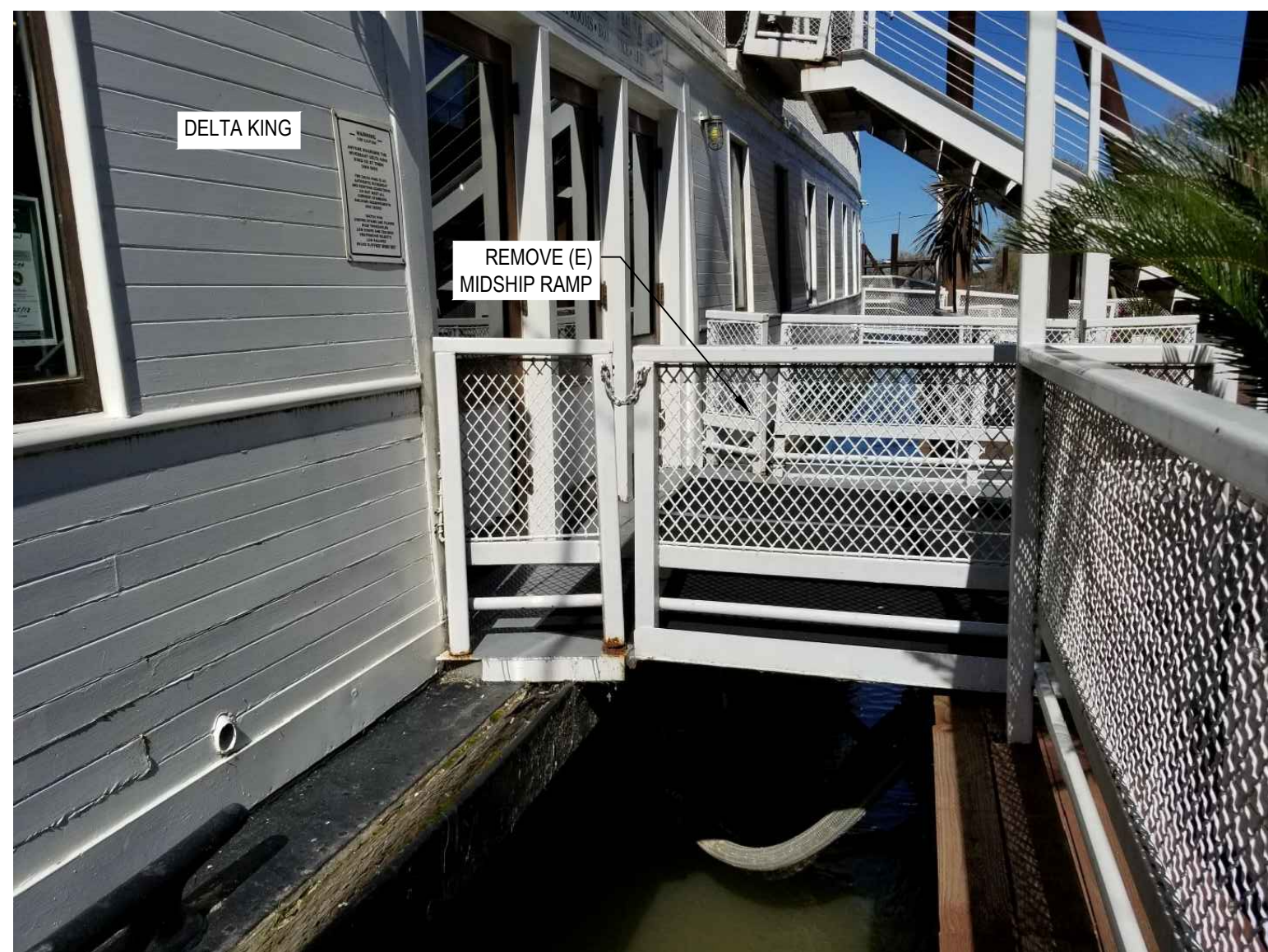
2 NEW SOUTH ACCESS RAMP AND ADA RAMP
SCALE: 1/2" = 1'-0"



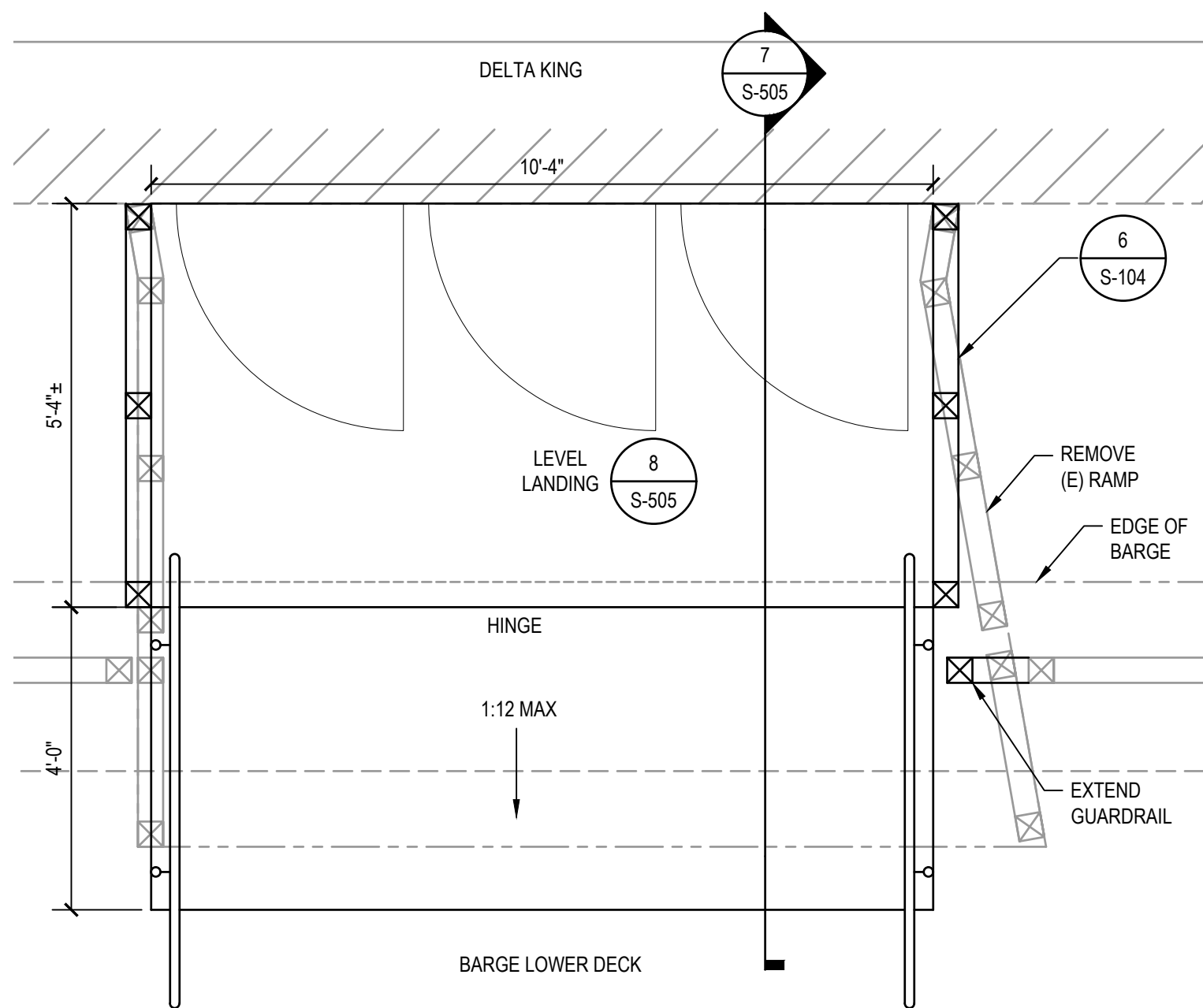
3 ALUMINUM ADA RAMP SECTION
NOT TO SCALE



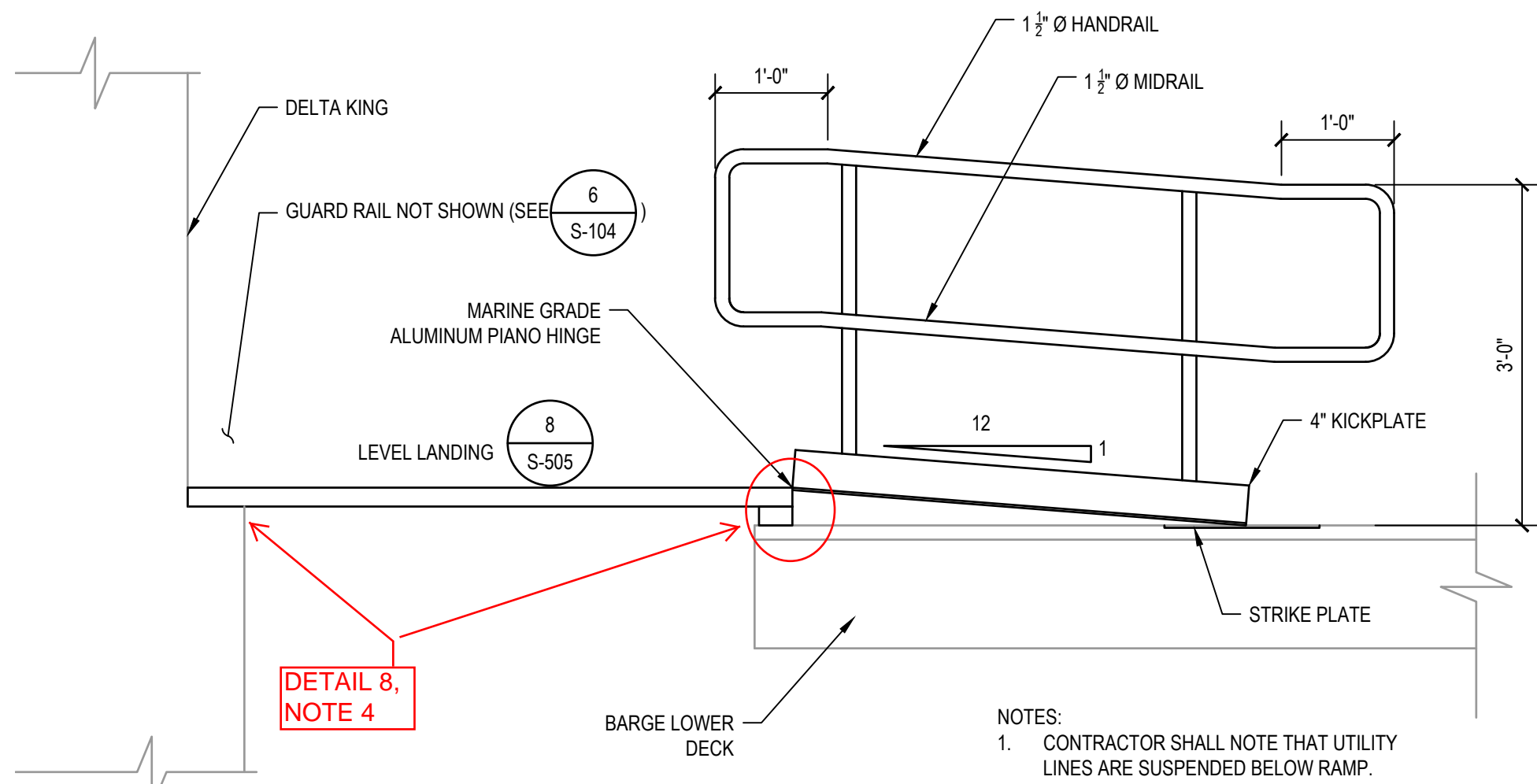
4 MIDSHIP RAMP
NOT TO SCALE



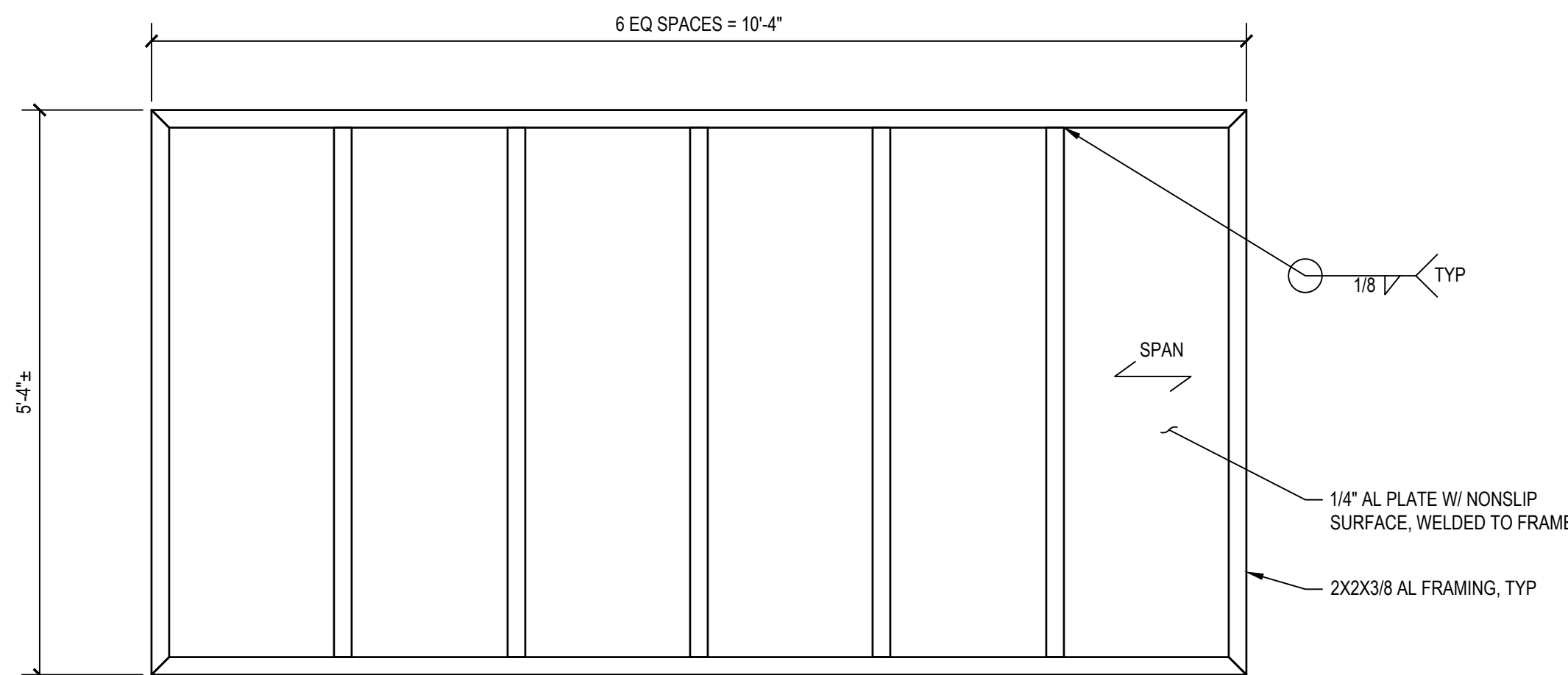
5 MIDSHIP RAMP
NOT TO SCALE



6 NEW MIDSHIP RAMP PLAN VIEW
1/2" = 1'-0"



7 ALUMINUM MIDSHIP RAMP SECTION
3/4" = 1'-0"

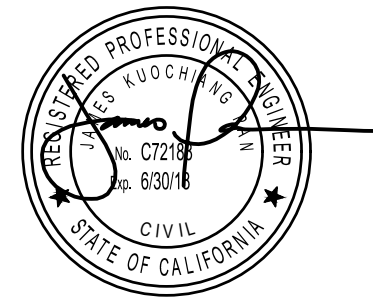


8 MIDSHIP RAMP LEVEL LANDING PLAN VIEW
3/4" = 1'-0"

- NOTES:
1. LIVE LOAD = 100 PSF
 2. TOP OF LANDING SHALL MATCH EXISTING ELEVATION, LEVEL WITH BOTTOM OF DOOR FRAMING
 3. DEFLECTION SHALL NOT EXCEED L/180
 4. ANCHOR LANDING WITH 8-1/2" SS LAG BOLTS ON DELTA KING AND BARGE LOWER DECK



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Client
CITY OF SACRAMENTO

Project
**OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT**

No.	Issue	Drawn	Approved	Date
Drawn	PS	Designer	JP	
Drafting	LH	Design	CL	
Project	C LEWIS	Date	MAY 2018	
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Original Size		Bar is one inch on original size sheet 0 1"		
Arch E1				

Project No. 11151187

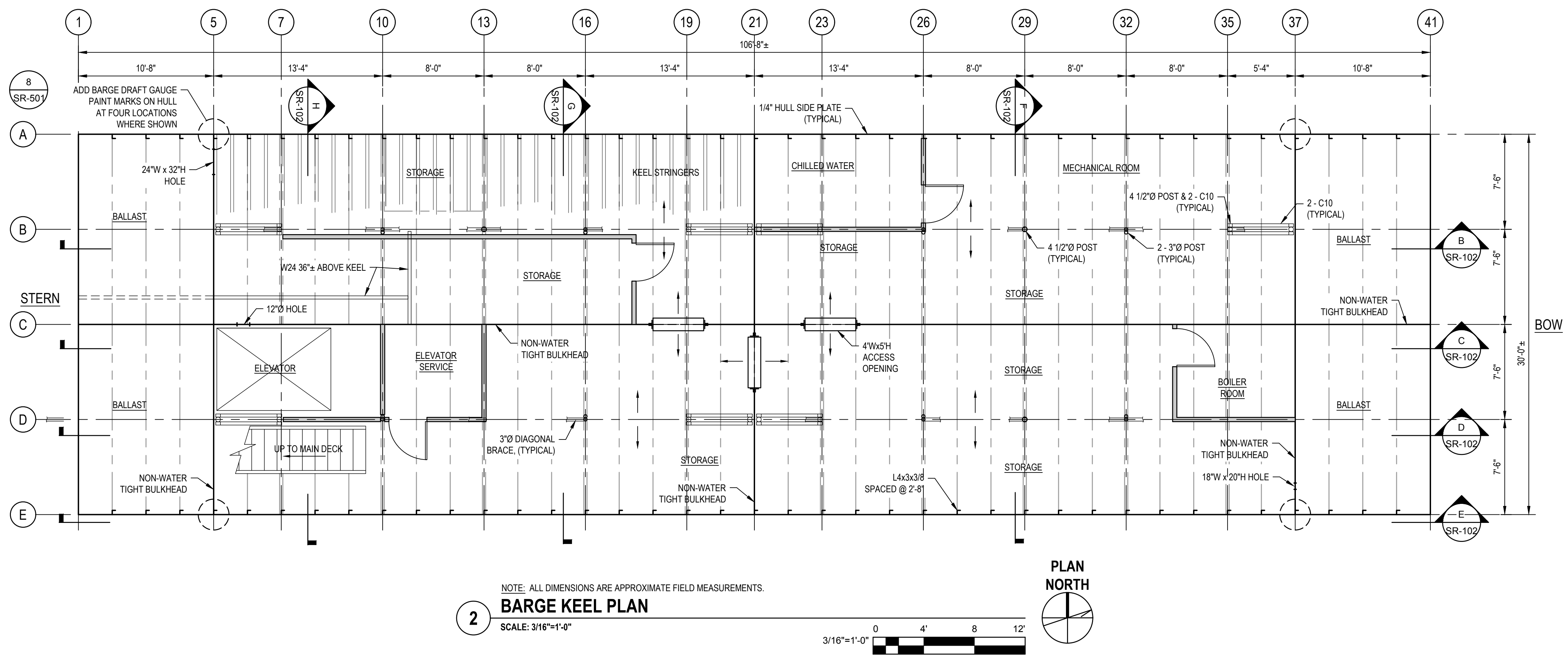
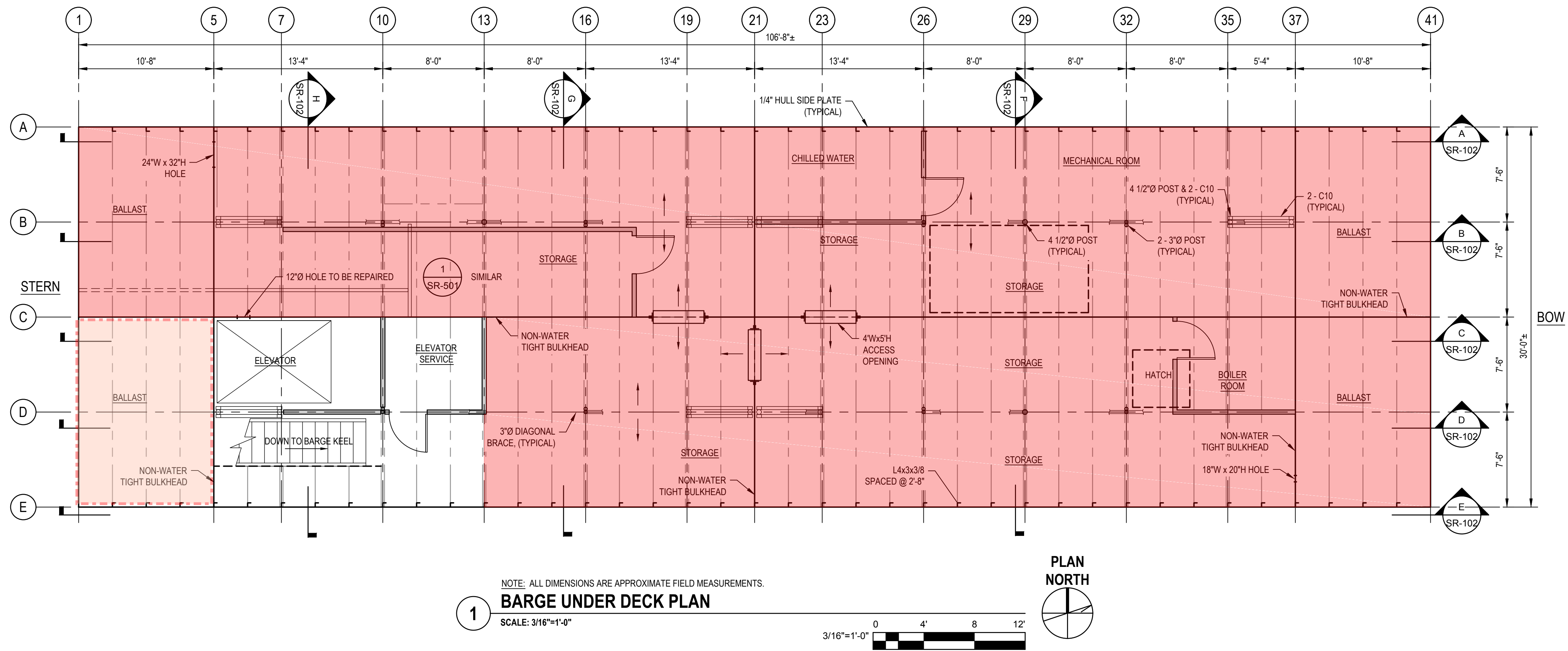
Title
**SOUTH ACCESS RAMP
AND MIDSHIP RAMP
DETAILS**

Sheet No.

S-505

Sheet - of -

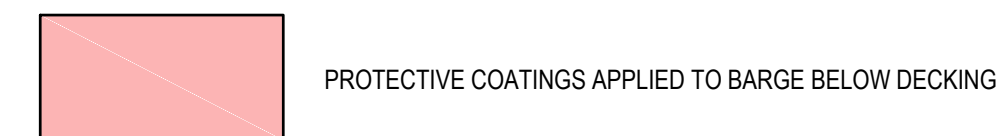
GENERAL NOTES		ABBREVIATIONS		SYMBOLS LEGEND	
<div>1. ABBREVIATIONS ON THIS SHEET APPLY ONLY TO THE STRUCTURAL DRAWINGS, REFER TO OTHER DISCIPLINES FOR APPLICABLE SYMBOLS NOT PROVIDED HERE.</div> <div>2. THIS IS A STANDARD ABBREVIATION AND LEGEND SHEET, THEREFORE, SOME ABBREVIATIONS AND LEGEND SYMBOLS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT.</div> <div>3. DO NOT SCALE DRAWINGS.</div>		<div>ABANCHOR BOLT</div> <div>ABVABOVE</div> <div>ACAGGREGATE COURSE</div> <div>ADDLADDITIONAL</div> <div>AISCAMERICAN INSTITUTE OF STEEL CONSTRUCTION</div> <div>AITCAMERICAN INSTITUTE OF TIMBER CONSTRUCTION</div> <div>ALITALTERNATE</div> <div>ALUMALUMINUM</div> <div>ANSIAMERICAN NATIONAL STANDARDS INSTITUTE</div> <div>APAAPERICAN PLYWOOD ASSOCIATION</div> <div>ASTMAMERICAN SOCIETY FOR TESTING AND MATERIALS</div> <div>AWSAMERICAN WELDING SOCIETY</div> <div>BBOTTOM</div> <div>B/BOTTOM OF</div> <div>BLDGBUILDING</div> <div>BMBEAM</div> <div>BNBOUNDARY NAIL</div> <div>BRGBEARING</div> <div>BSBOTH SIDES</div> <div>BTWNBETWEEN</div> <div>CCHANNEL</div> <div>C/CCENTER TO CENTER</div> <div>CANTCANTILEVER</div> <div>CAPCAPACITY</div> <div>CBCCALIFORNIA BUILDING CODE</div> <div>CFCUBIC FEET</div> <div>CHKDCHECKED</div> <div>CICONTRACTOR INSTALLED</div> <div>CLJCENTERLINE</div> <div>CLGCCILING</div> <div>CLRCLEAR</div> <div>COLCOLUMN</div> <div>CONNCONNECTION</div> <div>CONSTRCONSTRUCTION</div> <div>CONTCONTINUOUS</div> <div>COORDCOORDINATE</div> <div>CTR/CTRDCENTER/CENTERED</div> <div>dPENNY (NAIL SIZE)</div> <div>DBLDOUBLE</div> <div>DEGDEGREES</div> <div>DETDDETAIL</div> <div>DFDOUGLAS FIR</div> <div>DADIAMETER</div> <div>DIAGDIAGONAL</div> <div>DIMDIMENSION</div> <div>DISCONTDISCONTINUE</div> <div>DLDEAD LOAD</div> <div>DNDOWN</div> <div>DO DITTO</div> <div>DPDEEP</div> <div>DWGDRAWING</div> <div>DWLDOWEL</div> <div>(E)EXISTING</div> <div>EAEACH</div> <div>EFEACH FACE</div> <div>EGFOR EXAMPLE</div> <div>EL/ELEV ELEVATION</div> <div>ENEDGE NAIL</div> <div>ENGRENGINEER</div> <div>EQUEQUAL</div> <div>EQUIPEQUIPMENT</div> <div>ETCET CETERA</div> <div>EW EACH WAY</div> <div>EWEF EACH WAY EACH FACE</div> <div>(E)EXISTEXISTING</div> <div>EXT EXTERIOR</div> <div>FFFINISHED FLOOR</div> <div>FGFINISHED GRADE</div> <div>FHFULL HEIGHT</div> <div>FINFINISH</div> <div>FLFLOOR</div> <div>FLGF LANGE</div> <div>FNFACE NAIL</div> <div>FOFACE OF</div> <div>FOFWFACE OF WALL</div> <div>FRMGFRAMING</div> <div>FSFAR SIDE</div> <div>GA GAUGE</div> <div>GALVGALVANIZED</div> <div>GRGRADE</div> <div>GSNGENERAL STRUCTURAL NOTES</div> <div>HDHAND</div> <div>HEFHORIZONTAL EACH FACE</div> <div>HIFHORIZONTAL INSIDE FACE</div> <div>HOFHORIZONTAL OUTSIDE FACE</div> <div>HORIZHORIZONTAL</div> <div>HPHIGH POINT</div> <div>HSS TUBE STEEL</div> <div>HTHEIGHT</div> <div>IBCINTERNATIONAL BUILDING CODE</div> <div>IDINSIDE DIAMETER</div> <div>IE THAT IS</div> <div>INFOINFORMATION</div> <div>INTINTERIOR</div> <div>INTERMEDINTERMEDIATE</div> <div>INTERSECTINTERSECTION</div> <div>INVINVERT</div> <div>JSTJOIST</div> <div>JTJOINT</div> <div>LANGLE</div> <div>LBSPOUNDS</div> <div>LG LONG</div> <div>LLLIVE LOAD</div> <div>LLHLONG LEG HORIZONTAL</div> <div>LLVLONG LEG VERTICAL</div> <div>LOCLOCATION</div> <div>LONGIT/LONGL LONGITUDINAL</div> <div>LPLOW POINT</div> <div>LTLEFT</div> <div>LWRLOWER</div> <div>MACHMACHINE</div> <div>MAINTMAINTENANCE</div> <div>MASMASONRY</div> <div>MAXMAXIMUM</div> <div>MBMACHINE BOLT</div> <div>MCCHANNEL</div> <div>MECHMECHANICAL</div> <div>MFRMANUFACTURER</div> <div>MHHWMEAN HIGHER HIGH WATER</div> <div>MINMINIMUM</div> <div>MISC MISCELLANEOUS</div> <div>MLLWMEAN LOWER LOW WATER</div> <div>MNTGMOUNTING</div> <div>MODMODIFIED</div> <div>MTLMETAL</div> <div>(N)NEW</div> <div>NICNOT IN CONTRACT</div> <div>NO,NUMBER</div> <div>NOMNOMINAL</div> <div>NSNEAR SIDE</div> <div>NTSNOT TO SCALE</div> <div>OC ON CENTER</div> <div>ODOUTSIDE DIAMETER</div> <div>OFOUTSIDE FACE</div> <div>OPGOPENING</div> <div>OPP OPPOSITE</div> <div>PLP LATE</div> <div>PLCSPLACES</div> <div>PLYWDPLYWOOD</div> <div>PNLPANEL</div> <div>PREFABPREFABRICATED</div> <div>PTPOINT, PRESSURE TREATED</div> <div>PVMTPAVEMENT</div> <div>QTYQUANTITY</div> <div>R/RAD RADIUS</div> <div>REFREFERENCE</div> <div>REQDREQUIRED</div> <div>ROOFROOF</div> <div>RMROOM</div> <div>SCHED/SCH SCHEDULE</div> <div>SECSECTION</div> <div>SFSQUARE FEET</div> <div>SHTSHEET</div> <div>SIMSIMILAR</div> <div>SPSPACE/SPACES</div> <div>SPSPACING</div> <div>SPECSPECIFICATIONS</div> <div>SSTSTAINLESS STEEL</div> <div>STDSTANDARD</div> <div>STIFFSTIFFENER</div> <div>STLSTEEL</div> <div>STRUCTRUCTURAL</div> <div>SYMSYMMETRICAL</div> <div>TTOP</div> <div>T/TITOP OF</div> <div>T&BTOP AND BOTTOM</div> <div>TBTOP OF BAR</div> <div>THKTHICK</div> <div>TOSTOP OF STEEL</div> <div>TYP TYPICAL</div> <div>UNO UNLESS NOTED OTHERWISE</div> <div>UJON UNLESS OTHERWISE NOTED</div> <div>UPRUPPER</div> <div>UTULTRASONIC TESTING</div> <div>VEFVERTICAL EACH FACE</div> <div>VERTVERTICAL</div> <div>VIFVERTICAL INSIDE FACE</div> <div>VOFVERTICAL OUTSIDE FACE</div> <div>W/ WITH</div> <div>W OR WFWIDE FLANGE (BEAM)</div> <div>WGTWEIGHT</div> <div>W/O WITHOUT</div> <div>WPWORK POINT</div> <div>WTTEE</div> <div>&AND</div> <div>@AT</div> <div>DEGREE</div> <div>DIA DIAMETER</div> <div>' FEET</div> <div>" INCHES</div> <div>#NUMBER</div> <div>±PLUS OR MINUS</div> <div>W/CONCRETE IN SECTION</div> <div>EARTH IN SECTION</div> <div>GROUT IN SECTION</div> <div>STEEL IN SECTION</div> <div>VOID FORM IN SECTION</div> <div>FOOTING</div> <div>SLAB CONSTRUCTION JOINT</div> <div>SLAB CONTROL JOINT</div>			
STRUCTURAL GENERAL NOTES					
<div>1. CONTRACTOR SHALL BE RESPONSIBLE TO CONSULT WITH OWNER'S AUTHORIZED REPRESENTATIVE, SITE SUPERINTENDENT, APPROPRIATE AGENCIES AND CONSTRUCTION DOCUMENTATION FOR THE LOCATIONS OF ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF UTILITIES.</div> <div>2. CONTRACTOR IS RESPONSIBLE TO CONFIRM ALL EXISTING CONDITIONS OF THE SITE AND SHOULD CONFIRM SURVEY INFORMATION BEFORE COMMENCING WORK.</div> <div>3. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS, AREA DISCREPANCIES AND/OR ELEVATION DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATIONS.</div> <div>4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS.</div> <div>5. WRITTEN SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENTATION PACKAGE. CONTRACTOR IS RESPONSIBLE FOR BEING FAMILIAR WITH WRITTEN SPECIFICATIONS AND THE DRAWING PACKAGE. CONTRACTOR IS RESPONSIBLE FOR BRINGING TO OWNER'S AUTHORIZED REPRESENTATIVE'S ATTENTION ANY DISCREPANCIES OR CONFLICTS THAT MIGHT EXIST IN THE DOCUMENTS FOR CLARIFICATION BEFORE PROCEEDING WITH WORK. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY COSTS, CONSTRUCTION DELAYS, OR REVISION DUE TO FAILURE TO GIVE SUCH NOTIFICATIONS.</div> <div>6. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS AND UNSUITABLE MATERIAL GENERATED BY THE CONTRACTORS OPERATIONS. CONSTRUCTION SITE SHALL BE MAINTAINED AT ALL TIMES SO THAT NO OBSTRUCTION, CONSTRUCTION EQUIPMENT OR CONSTRUCTION PROCESS CAUSES POTENTIAL HARM OR DANGER TO PUBLIC OR CONSTRUCTION SITE WORKERS. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR NEGLIGENCE.</div> <div>7. CONTRACTOR IS RESPONSIBLE TO CONFIRM LOCATIONS FOR ALL EXISTING UTILITIES AND ELEVATIONS BEFORE COMMENCING WORK.</div> <div>8. DESIGN CRITERIA: ALL STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING DESIGN CODES AND STANDARDS: CALIFORNIA BUILDING CODE, 2013. AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES," ASCE/SEI 7-10, 2010. STRUCTURES SHALL BE DESIGNED ACCORDING TO THE FOLLOWING DESIGN CRITERIA: BARGE DECK LIVE LOADS: 100 PSF UNIFORM LIVE LOAD</div> <div>9. LUMBER: ALL LUMBER SHALL BE PRESSURE TREATED (PT) PER PROJECT SPECIFICATIONS - 06 10 00. ALL MEMBERS ARE TO BE DOUGLAS FIR LARCH, S4S, WITH A MINIMUM ALLOWABLE FLEXURAL STRESS RATING OF 1300 PSI. ALL DECKING SCREWS SHALL BE COUNTERSUNK IN DECKING. ALL CONNECTOR BOLTS SHALL BE HOT-DIP GALVANIZED AND CONFORM TO ASTM F1554, GRADE 36. BOLT SPACING, EDGE AND END DISTANCES IN WOOD MEMBERS SHALL CONFORM WITH CBC REQUIREMENTS. ALL BOLTS AND LAG SCREWS SHALL BE PROVIDED WITH STANDARD CUT STEEL WASHERS UNDER HEADS AND NUTS BEARING ON WOOD. ALL BOLTS OR STEEL HARDWARE EXPOSED TO MOISTURE SHALL BE HOT-DIP GALVANIZED. ALL NAILS AND FASTENERS DRIVEN INTO PRESSURE-TREATED LUMBER SHALL BE HOT-DIP GALVANIZED. BRUSH CUT TREATED LUMBER SURFACES WITH COPPER NAPHTHENATE PRIOR TO INSTALLATION.</div> <div>10. STRUCTURAL STEEL: WHERE INDICATED, EXPOSED STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED CONFORMING TO ASTM A123/A123M GRADE 100 FOR SHAPES, PLATES, AND FABRICATIONS OR ASTM A153/A153M CLASS C FOR HARDWARE. WELDING SHALL CONFORM TO "STRUCTURAL WELDING CODE - STEEL (AWS D1.1) OR TO "STRUCTURAL WELDING CODE - STAINLESS STEEL (AWS D1.6), AS APPLICABLE.</div> <div>11. RIVER DESIGN DATA: MAXIMUM WATER LEVEL = +34.0 FEET NGVD29 MINIMUM WATER LEVEL = -3.0 FEET NGVD29 • RIVER OPERATING CONDITION: MAXIMUM WATER LEVEL = +26.0 FEET NGVD29 MAXIMUM RIVER WIDTH AT PROJECT SITE = 450 FEET APPROXIMATELY MAXIMUM FLOW = 90,000 CUBIC FEET PER SECOND MAXIMUM CURRENT SPEED = 6.0 FEET PER SECOND • RIVER EXTREME (100-YEAR) CONDITION: MAXIMUM WATER LEVEL = +34.0 FEET NGVD29 MAXIMUM RIVER WIDTH AT PROJECT SITE = 450 FEET (APPROXIMATE) MAXIMUM FLOW = 110,000 CUBIC FEET PER SECOND MAXIMUM CURRENT SPEED = 6.0 FEET PER SECOND • RIVER LEVEE HEIGHT LIMITING CONDITION: MAXIMUM WATER LEVEL ELEVATION (WEST SHORE EXISTING LEVEE) = +39.0 FEET NGVD29 MAXIMUM WATER LEVEL ELEVATION (EAST SHORE EXISTING BOARDWALK) = +30.6 FEET NGVD29 MAXIMUM RIVER WIDTH AT PROJECT SITE = 710 FEET</div>					



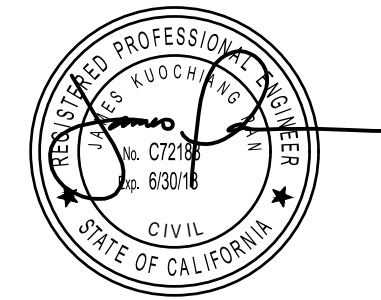
SHEET NOTES

1. REFER TO MECHANICAL DRAWINGS BY OTHERS FOR MECHANICAL EQUIPMENT WEIGHTS AND LOCATIONS NOT SHOWN. COORDINATE ANY NECESSARY EQUIPMENT ATTACHMENT, ANCHORAGE, AND SUPPORT REQUIREMENTS.
2. BARGE DECK BOARDS SHALL BE REMOVED. COORDINATE REMOVAL OF DECK BOARDS WITH CITY.
3. FOLLOWING DECK BOARD REMOVAL, REVIEW DAMAGED DECK PLATE LOCATIONS TO SEE IF DECK PLATE REPAIR DETAIL 3SR-501 MAY BE REQUIRED.
4. EXISTING BARGE DECK COATING SHALL BE REMOVED AND SURFACE RECOATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS 09 9000.

LEGEND



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Client
CITY OF SACRAMENTO

Project
**OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT**

No.	Issue	Drawn	Approved	Date
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Drawn	PS	Designer	JP
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Drafting Check	LH	Design Check	CL
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Project Manager	C LEWIS	Date	MAY 2018
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Original Size	Arch E1
Bar is one inch on original size sheet	0 1"

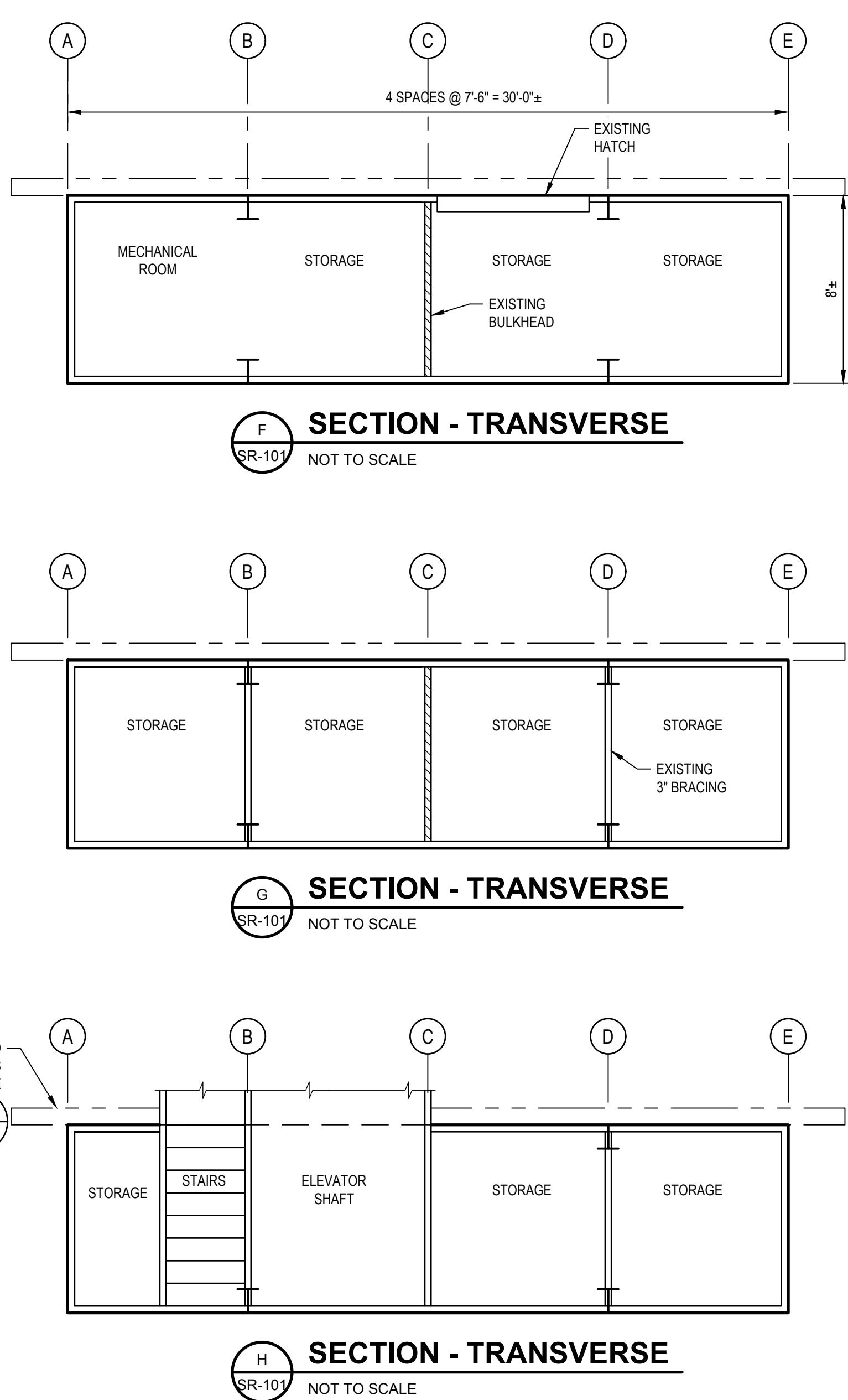
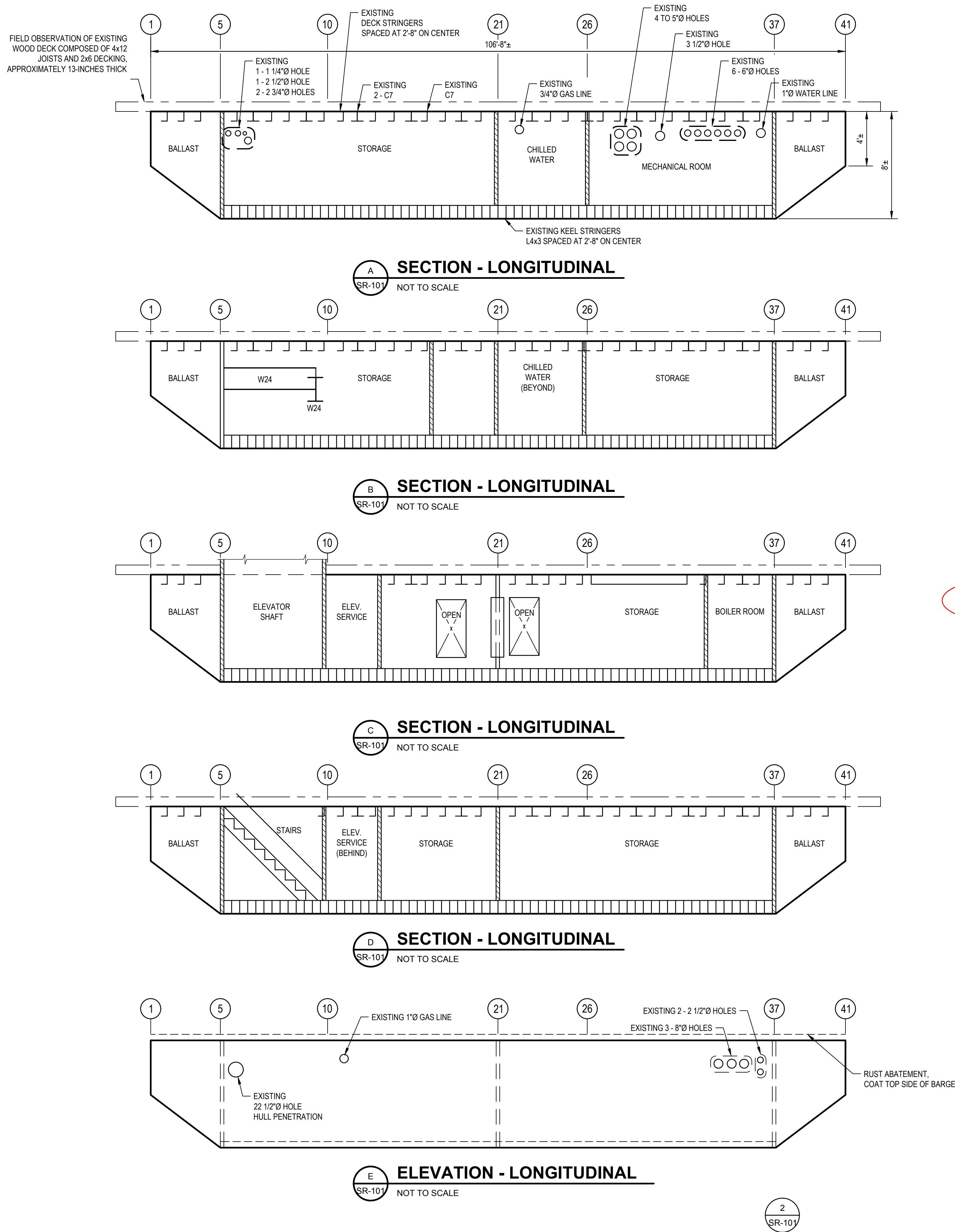
Project No. 11151187

Title
BARGE DECK PLANS

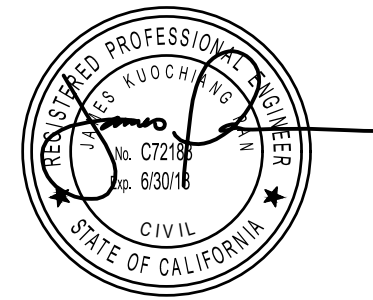
Sheet No.

SR-101

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Project
**OLD SACRAMENTO RIVERFRONT EMBARCADERO
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No.	Issue	Drawn	Approved	Date
Drawn	PS	Designer	JP	
Drafting	LH	Design	CL	
Check		Check		
Project	C LEWIS	Date	MAY 2018	
Manager		Scale	AS SHOWN	
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Arch E1		Bar is one inch on original size sheet 0 1"		

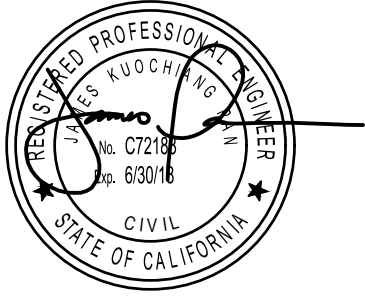
Project No. 11151187

Title
**EXISTING CONDITION
BARGE SECTIONS**

Sheet No.
SR-102



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Project
**OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT**

No.	Issue	Drawn	Approved	Date
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Drawn	PS	Designer	JP
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Drafting Check	LH	Design Check	CL
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Project Manager	C LEWIS	Date	MAY 2018
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Original Size	Arch E1	Bar is one inch on original size sheet 0 1"
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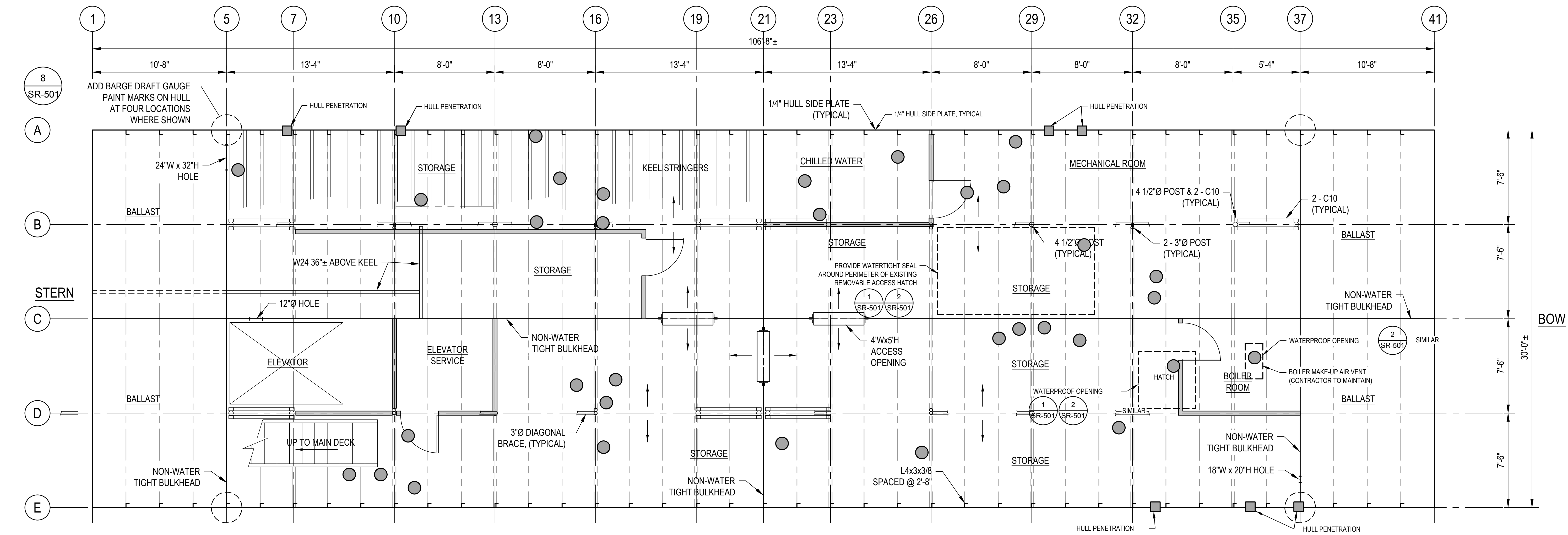
Project No. 11151187

Title
**BARGE HULL AND DECK PLATE
REPAIR PLAN
AND SCHEDULE**

Sheet No.

SR-103

Sheet - of -



1 BARGE DECK PLATE DAMAGE PLAN
SCALE: 3/16"=1'-0"

1/4"=1'-0" 0 2' 4' 8'



DECK PLATE

HULL SIDE

DAMAGE REPAIR SCHEDULE				
LOCATION	QUANTITY	AREA (SF)	REPAIR DETAIL	NOTES
A-B / 5-6	1	4	1/SR-501	
A-B / 10-11	1	8	1/SR-501	
A-B / 14-15	3	8	1/SR-501	
A-B / 16-17	2	7	1/SR-501	
A-B / 22-23	2	7	1/SR-501	
A-B / 25	1	5	1/SR-501	
A-B / 27	1	4	1/SR-501	
A-B / 28-29	2	8	1/SR-501	
B-C / 26-31	1	100	2/SR-501 OR 3/SR-501	SEAL HATCH OPENING
B-C / 30-31	1	4	1/SR-501	
B-C / 32-33	2	8	1/SR-501	
C-D / 15-16	1	4	1/SR-501	
C-D / 16-17	2	8	1/SR-501	
C-D / 28-29	2	8	1/SR-501	
C-D / 29-30	1	4	1/SR-501	
C-D / 30-31	1	4	1/SR-501	
C-D / 32-34	1	25	2/SR-501 OR 3/SR-501	SEAL HATCH OPENING
C-D / 35-36	1	6	2/SR-501	SEAL HATCH OPENING
D-E / 8-9	1	4	1/SR-501	
D-E / 9-10	1	5	1/SR-501	
D-E / 10-11	2	8	1/SR-501	
D-E / 16-17	1	5	1/SR-501	
D-E / 21-22	1	5	1/SR-501	
D-E / 25-26	1	5	1/SR-501	

DAMAGE REPAIR SCHEDULE	
LOCATION	REPAIR DETAIL
A7	5/SR-501
A10	5/SR-501
A29	5/SR-501
A30	5/SR-501
E32	5/SR-501
E35	5/SR-501
E37	5/SR-501

SHEET NOTES

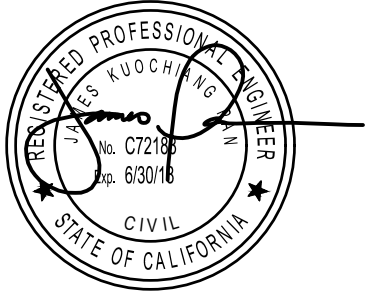
- REFER TO MECHANICAL DRAWINGS BY OTHERS FOR MECHANICAL EQUIPMENT WEIGHTS AND LOCATIONS NOT SHOWN. COORDINATE ANY NECESSARY EQUIPMENT ATTACHMENT, ANCHORAGE, AND SUPPORT REQUIREMENTS.
- BARGE DECK BOARDS SHALL BE REMOVED. COORDINATE SEQUENCING OF REMOVAL OF DECK BOARDS WITH CITY.
- FOLLOWING DECK BOARD REMOVAL, REVIEW DAMAGED DECK PLATE LOCATIONS TO SEE IF DECK PLATE REPAIR DETAIL 3/SR-501 MAY BE REQUIRED.
- EXISTING BARGE DECK COATING SHALL BE REMOVED AND SURFACE RECOATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS 09 900.
- OWNER/OPERATOR SHALL REMOVE ALL ITEMS FROM BARGE25 TO ALLOW COATING OF STEEL.
- NOT USED

LEGEND

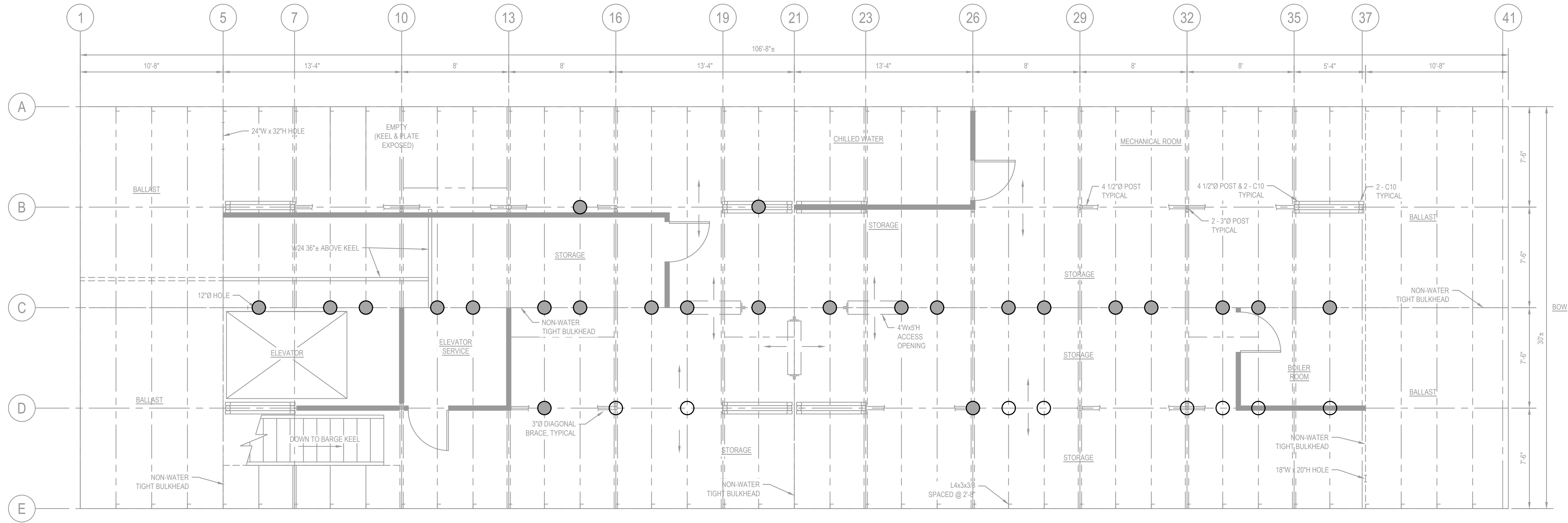
- 1 - C 7 x 2 x 3/16
- 2 - C 7 x 2 x 3/16
- HATCH FRAMING VARIES
- DECK PLATE DAMAGE LOCATION
- HULL PENETRATION



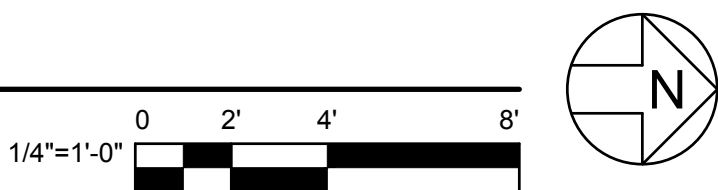
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BARGE DECK CONNECTION DAMAGE PLAN



REFER TO SHEET SR-501, DETAILS 6 & 7

Client
CITY OF SACRAMENTO

Project
**OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT**

No.	Issue	Drawn	Approved	Date
Drawn	PS	Designer	JP	
Drafting Check	LH	Design Check	CL	
Project Manager	C LEWIS	Date	MAY 2018	
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Arch E1				

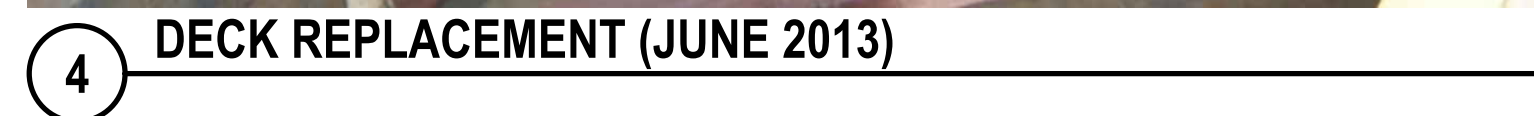
Project No. 11151187

Title
**BARGE DECK CONNECTION
REPAIR PLAN
AND SCHEDULE**

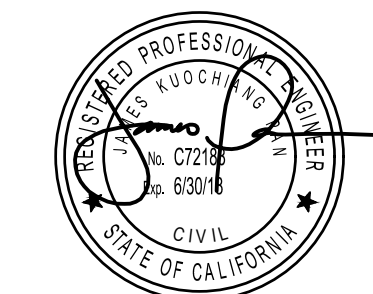
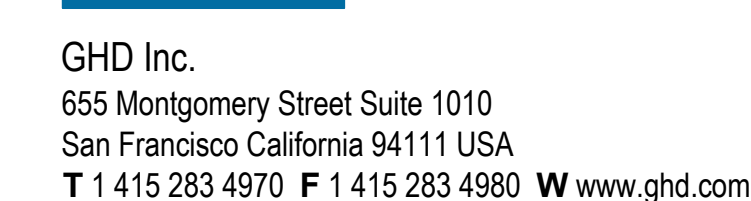
Sheet No.
SR-104



Sheet - of -



SEE S-104 FOR ADDITIONAL INFORMATION IN THIS AREA




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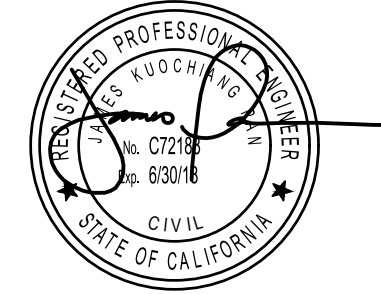
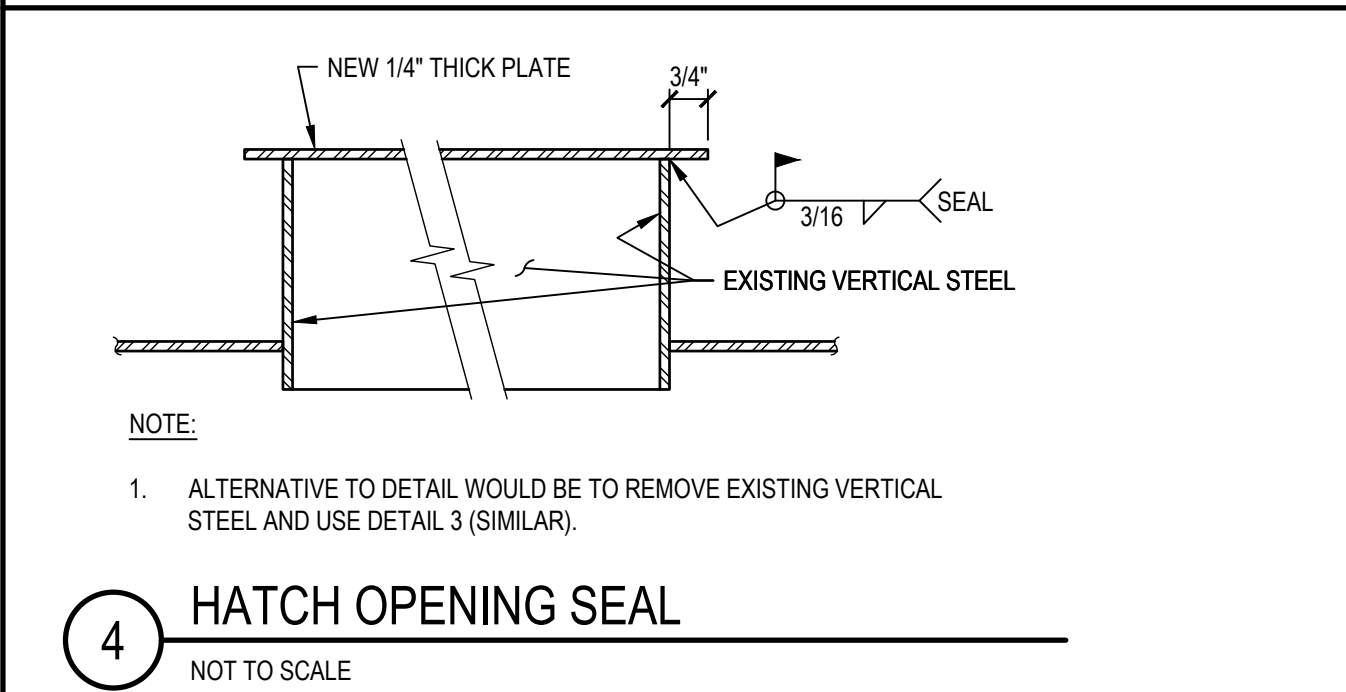
Title

BARGE PATIO DECK REPAIR

Sheet No.

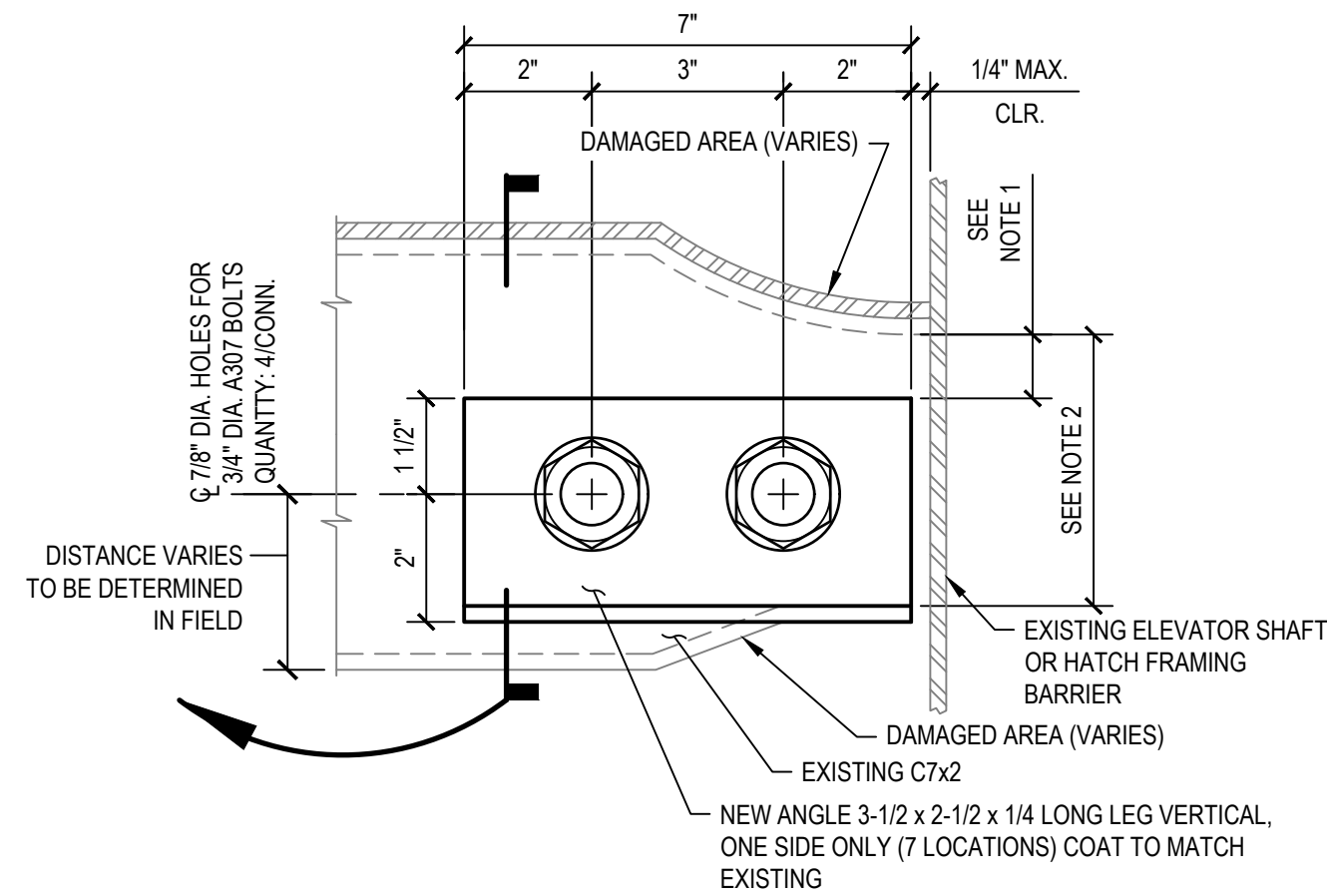
SR-106

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1 DECK PLATE DAMAGE NEAR D15



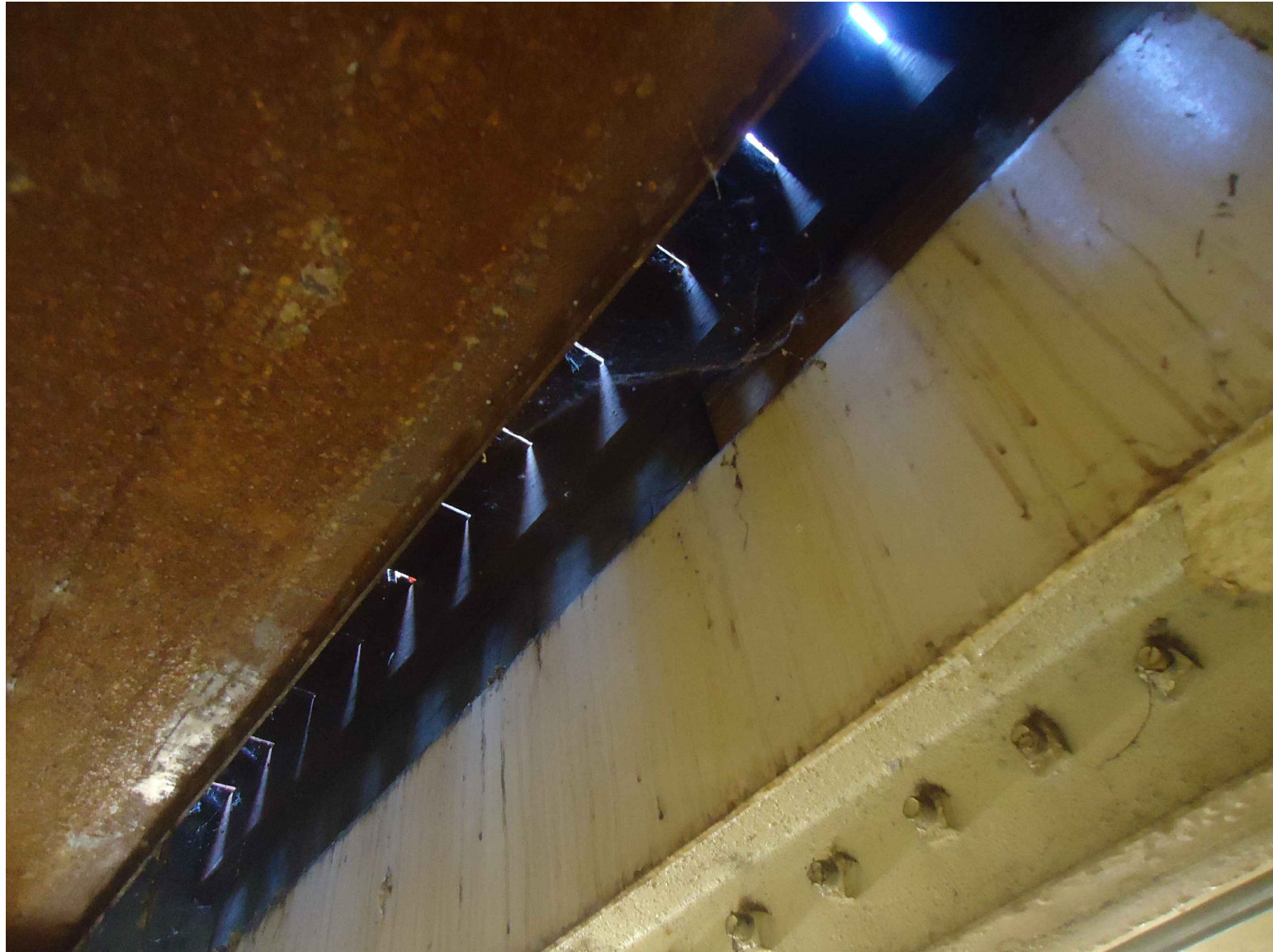
2 DECK PLATE DAMAGE NEAR A14



3 DECK PLATE DAMAGE NEAR D15



4 BOILER MAKE-UP AIR OPENING NEAR D36



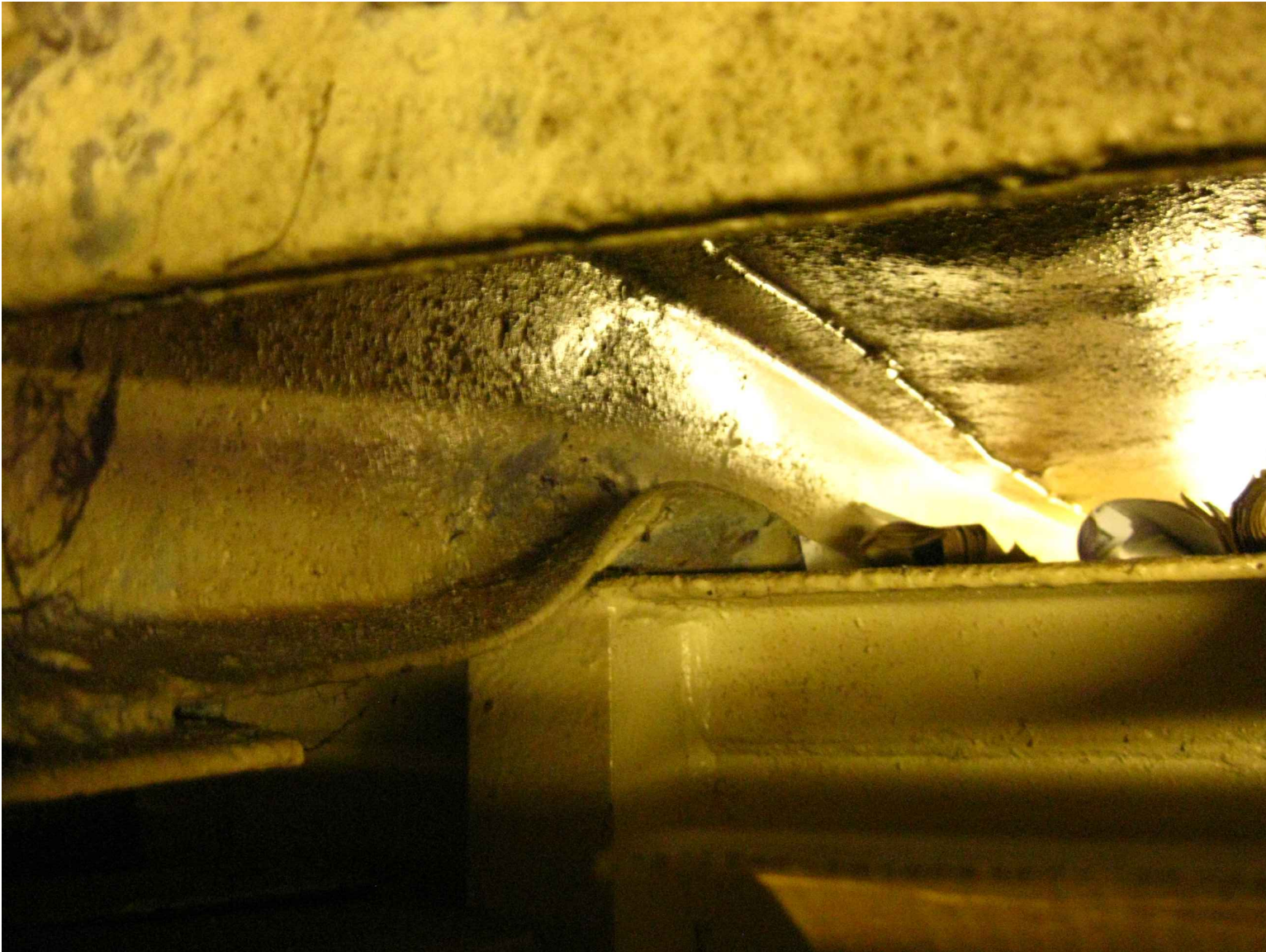
5 DECK AT D33



6 HULL OPENINGS AT A30 / A31



7 CONNECTION DAMAGE AT C8 THROUGH C10



8 CONNECTION DAMAGE AT C7



9 CONNECTION DAMAGE AT C18



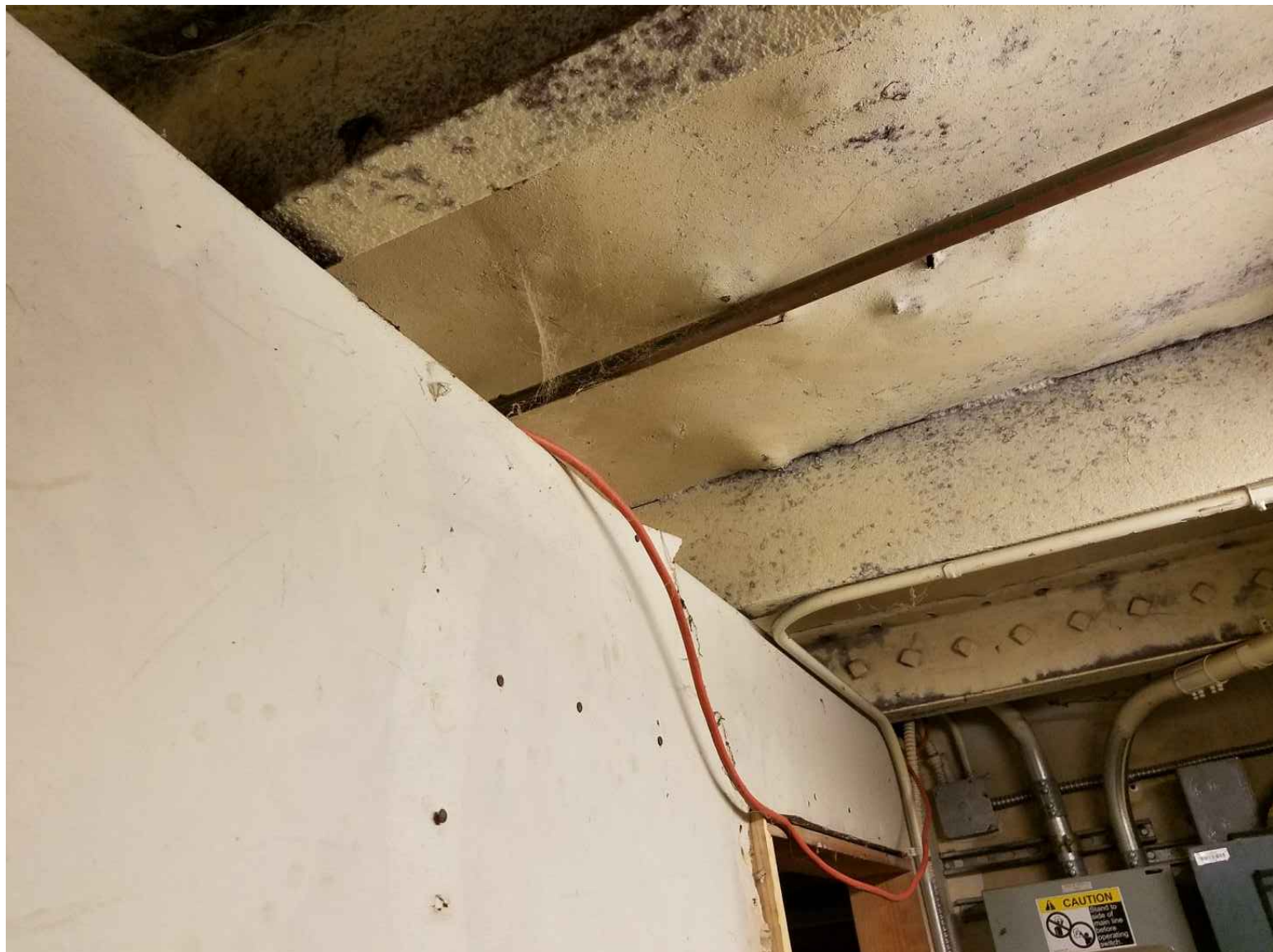
10 CONNECTION DAMAGE AT C21



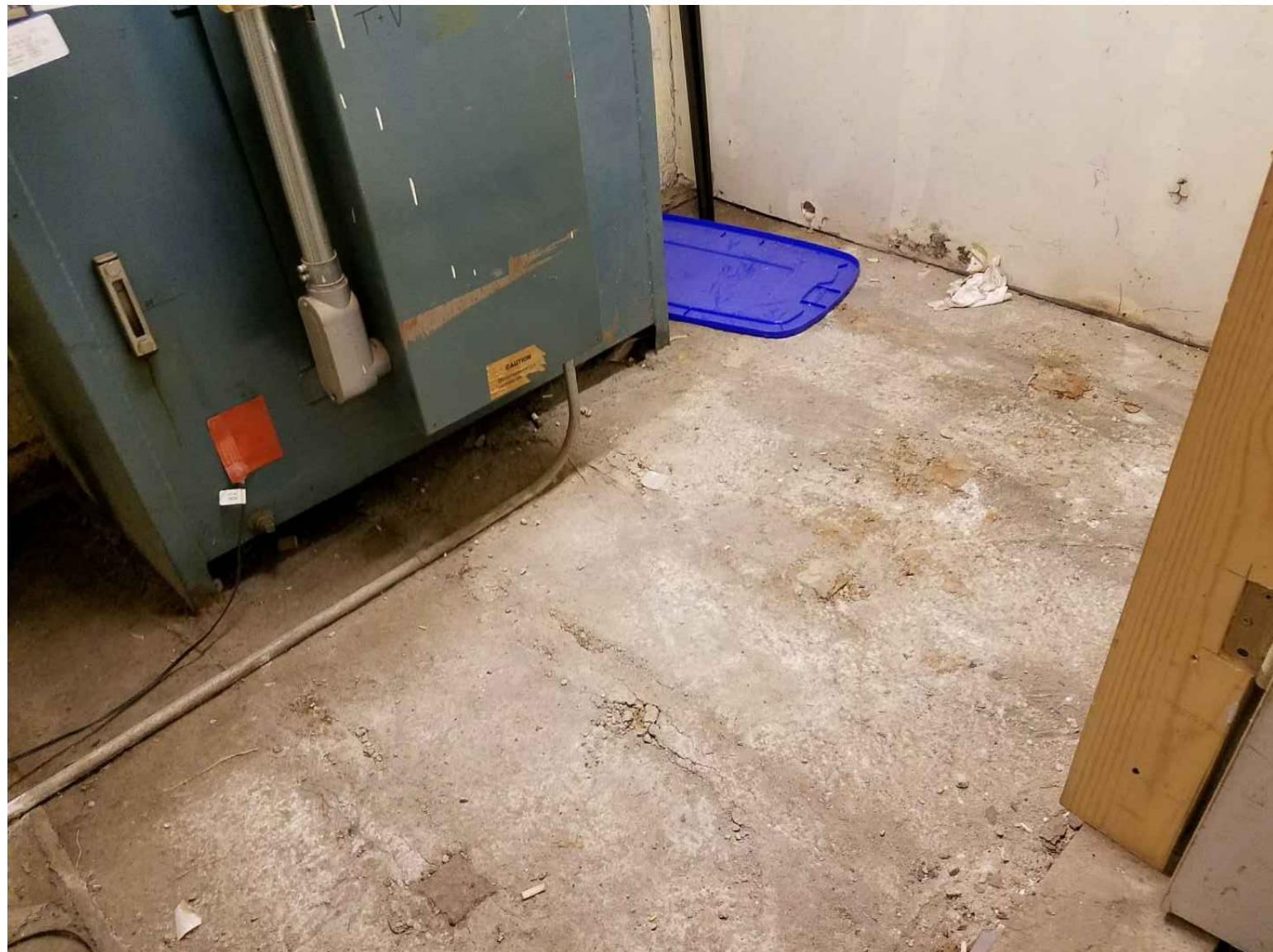
11 CONNECTION DAMAGE AT C28



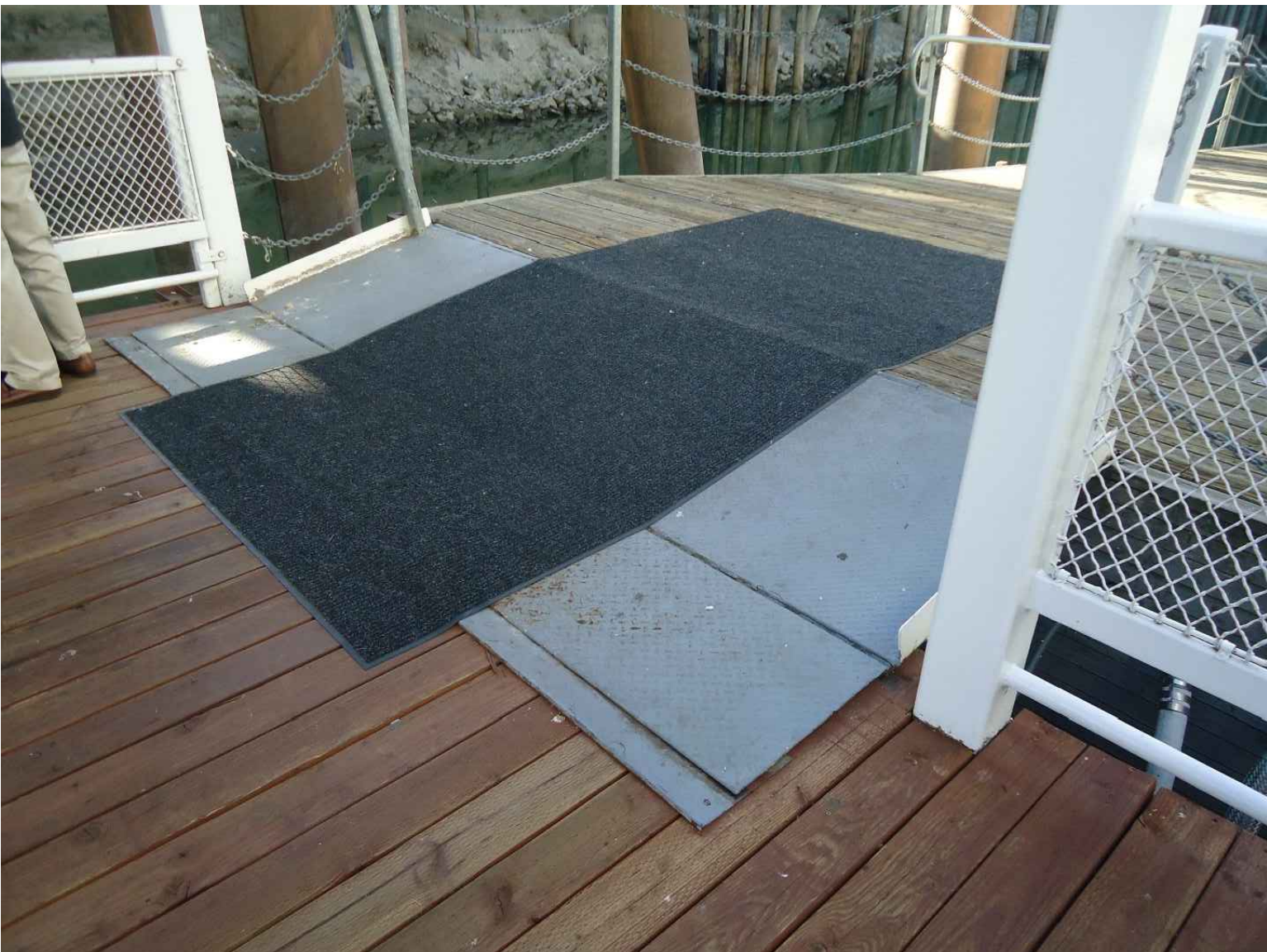
12 CONNECTION DAMAGE AT D14



13 MECHINICAL ROOM INTERIOR CEILING



14 MECHANICAL ROOM INTERIOR FLOOR

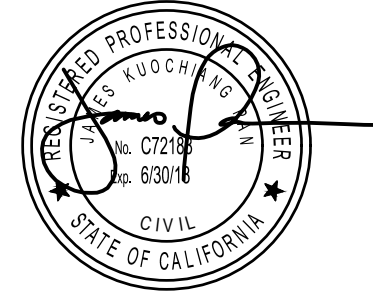


15 RAMP TO COURTESY DOCK

NOTE:
1. ADD GALV SHEET METAL DUCTING AT BOILER
MAKE-UP AIR OPENING (SEE PHOTO 4).



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**OLD SACRAMENTO RIVERFRONT EMBARCADERO
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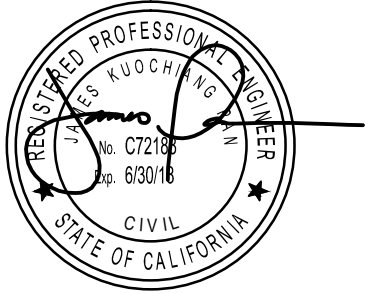
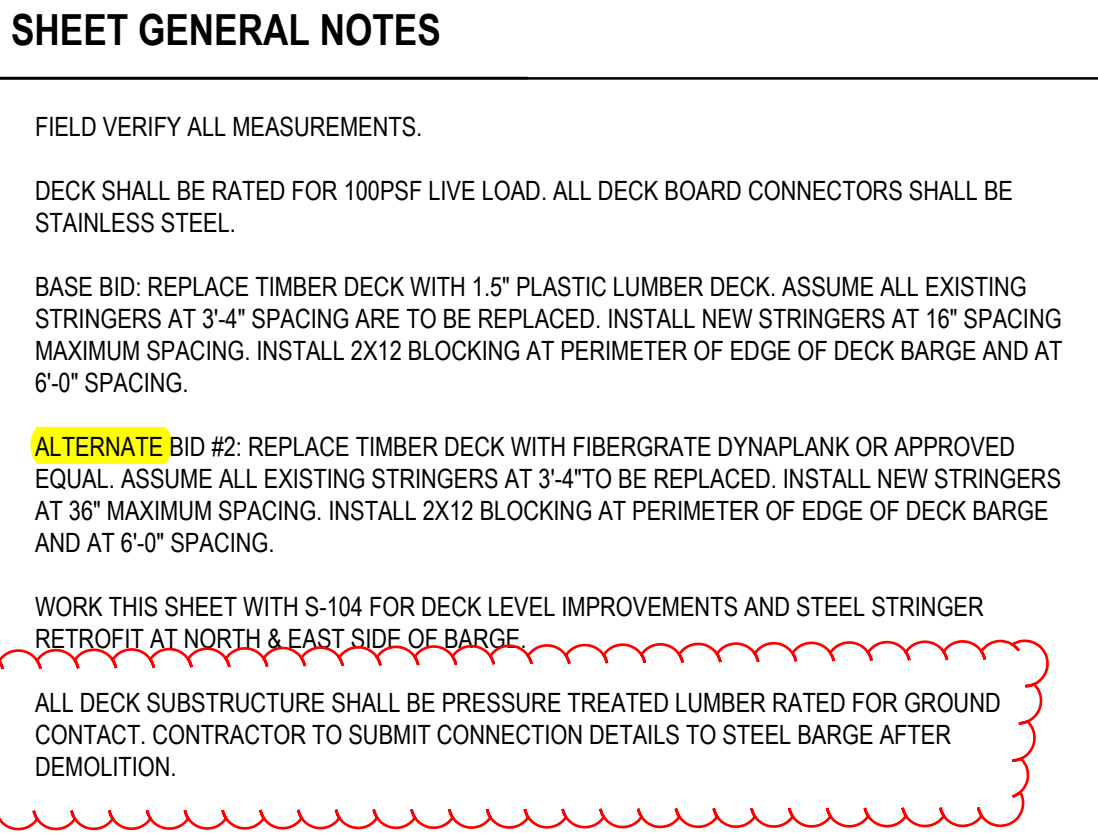
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Drafting	LH	Design	CL	
Check		Check		
Project	C LEWIS	Date	MAY 2018	
Manager		Scale	AS SHOWN	
Original Size	Arch E1			
		Bar is one inch on original size sheet 0 1"		

Project No. 11151187

Title
**EXISTING CONDITION,
BARGE DECK
TYPICAL DAMAGE PHOTOS**

Sheet No.

SR-801



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AND K STREET BARGE PROJECT**

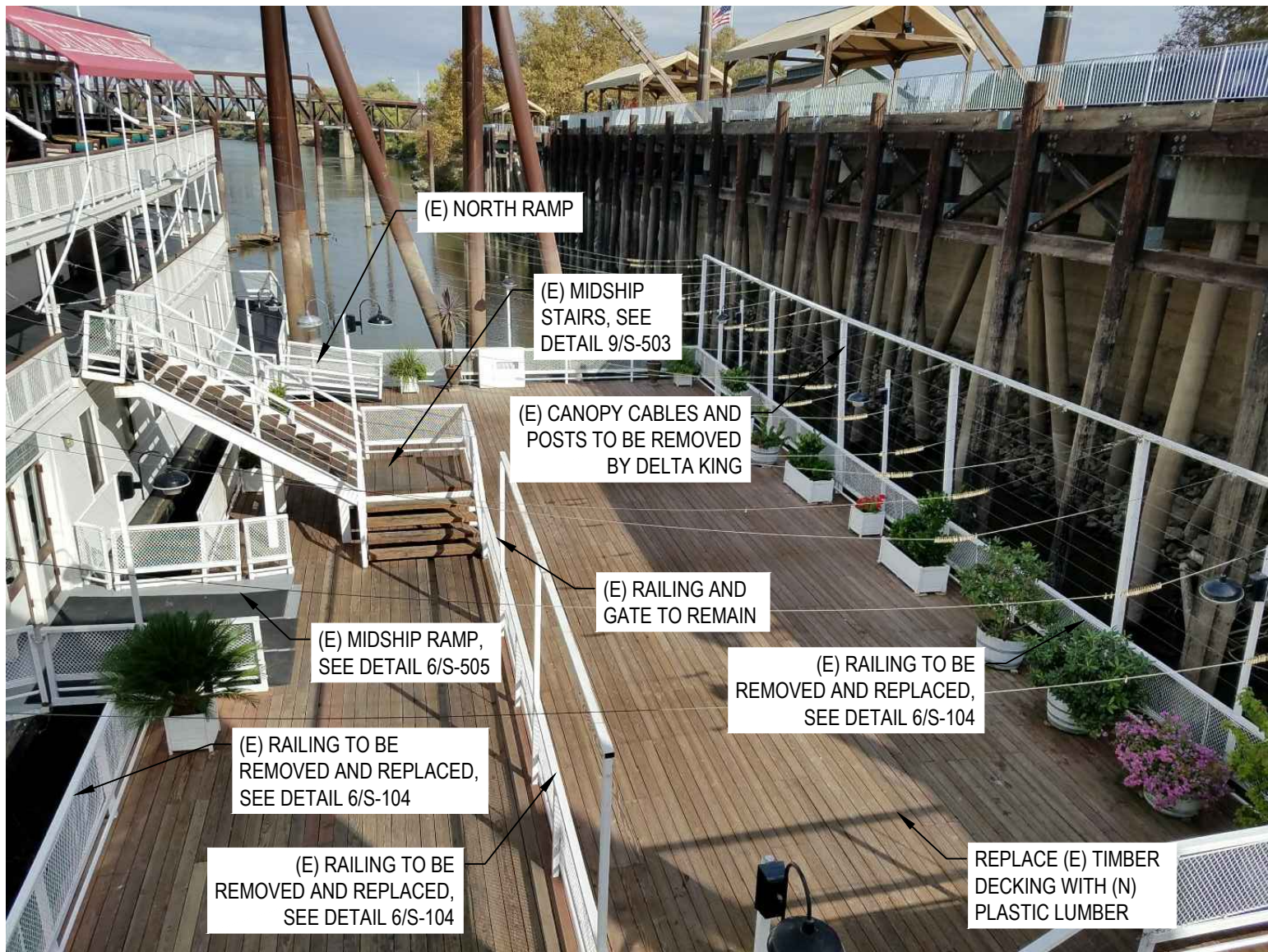
[illegible]

Project No. 11151187

LOWER DECK FRAMING PLAN

Sheet No.

S-103



1 DECK (FACING NORTH)



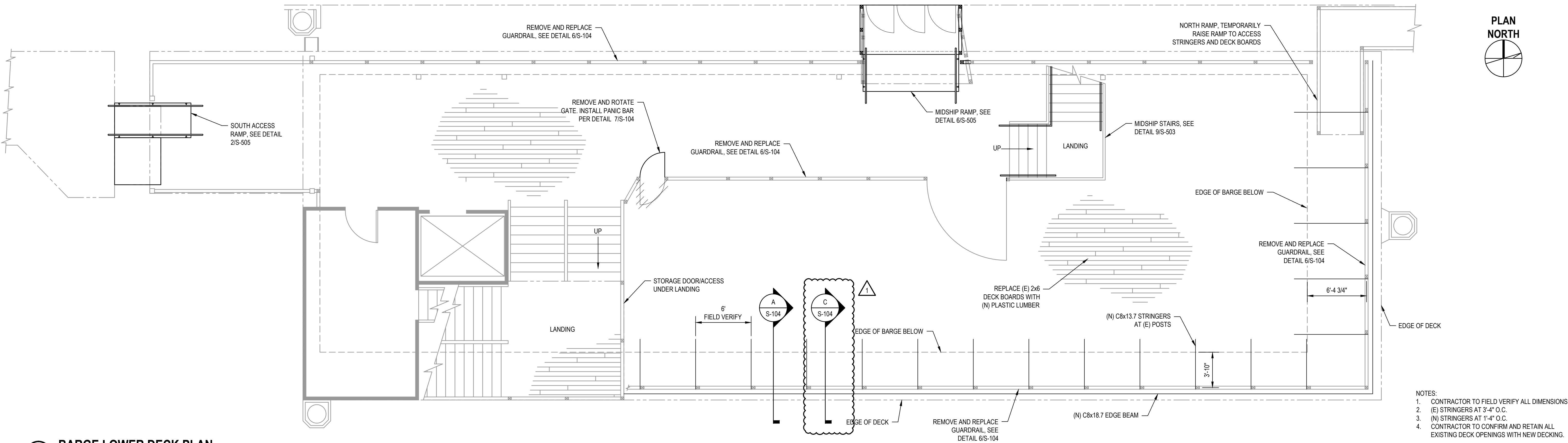
2 DECK (FACING WEST)



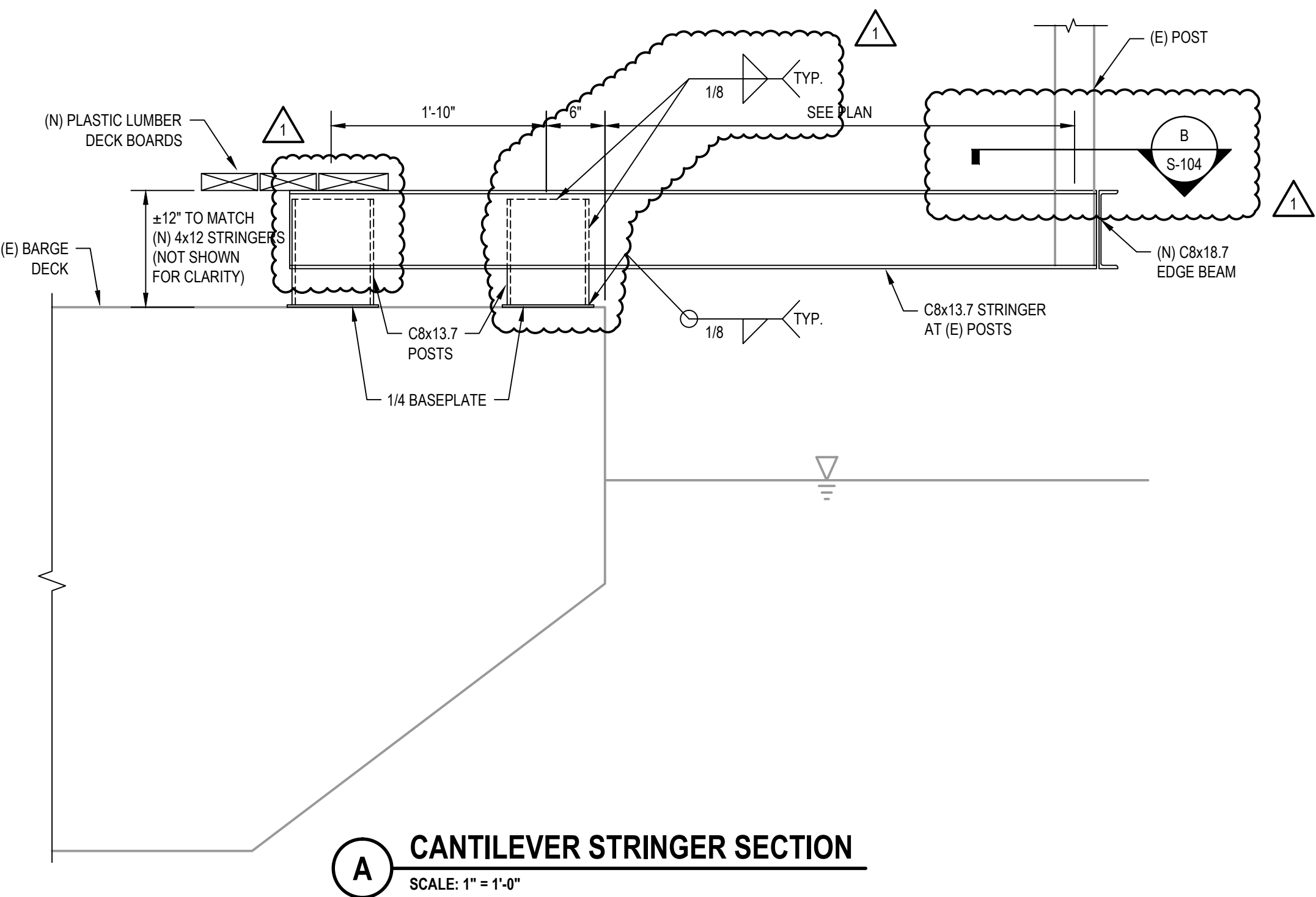
3 DECK REPLACEMENT (JUNE 2013)



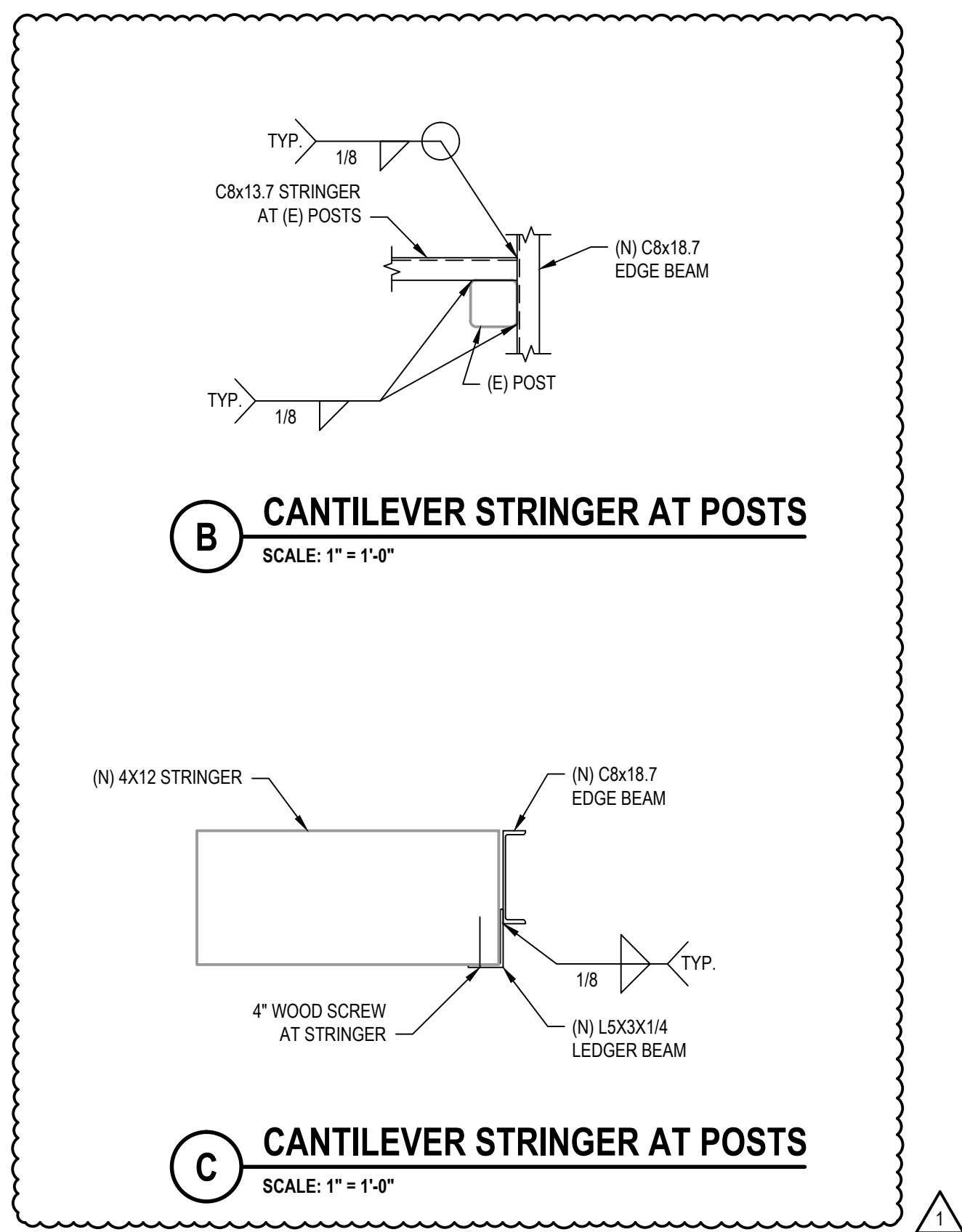
4 DECK REPLACEMENT (JUNE 2013)



5 BARGE LOWER DECK PLAN
SCALE: 3/16" = 1'-0"

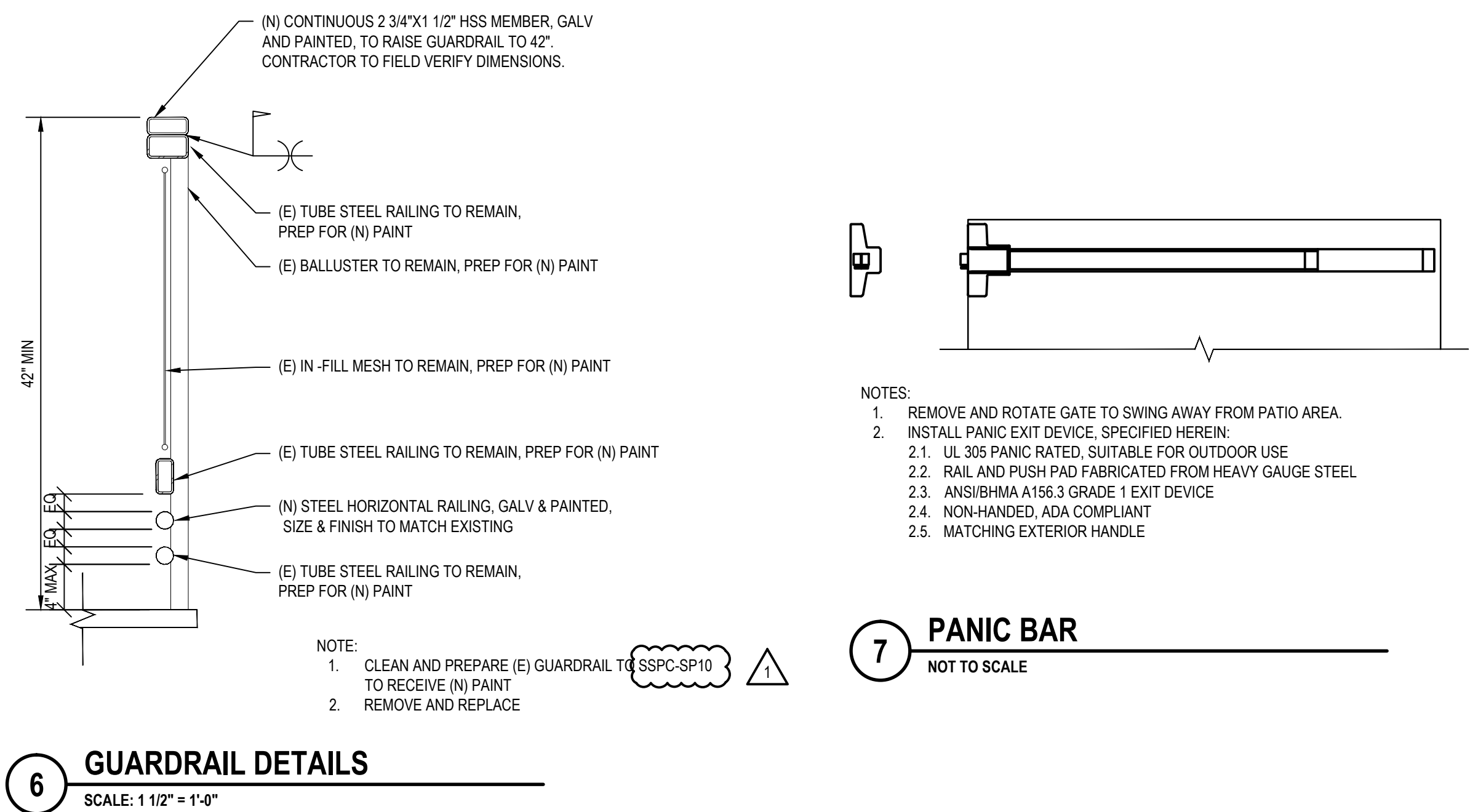


A CANTILEVER STRINGER SECTION
SCALE: 1" = 1'-0"



B CANTILEVER STRINGER AT POSTS
SCALE: 1" = 1'-0"

C CANTILEVER STRINGER AT POSTS
SCALE: 1" = 1'-0"

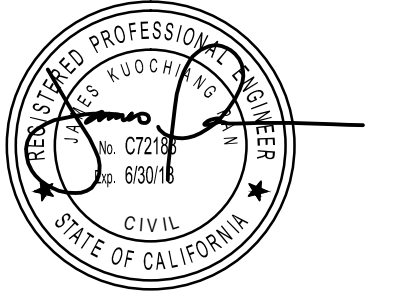


6 GUARDRAIL DETAILS
SCALE: 1 1/2" = 1'-0"

7 PANIC BAR
NOT TO SCALE



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**OLD SACRAMENTO RIVERFRONT EMBARCADERO
AND K STREET BARGE PROJECT**

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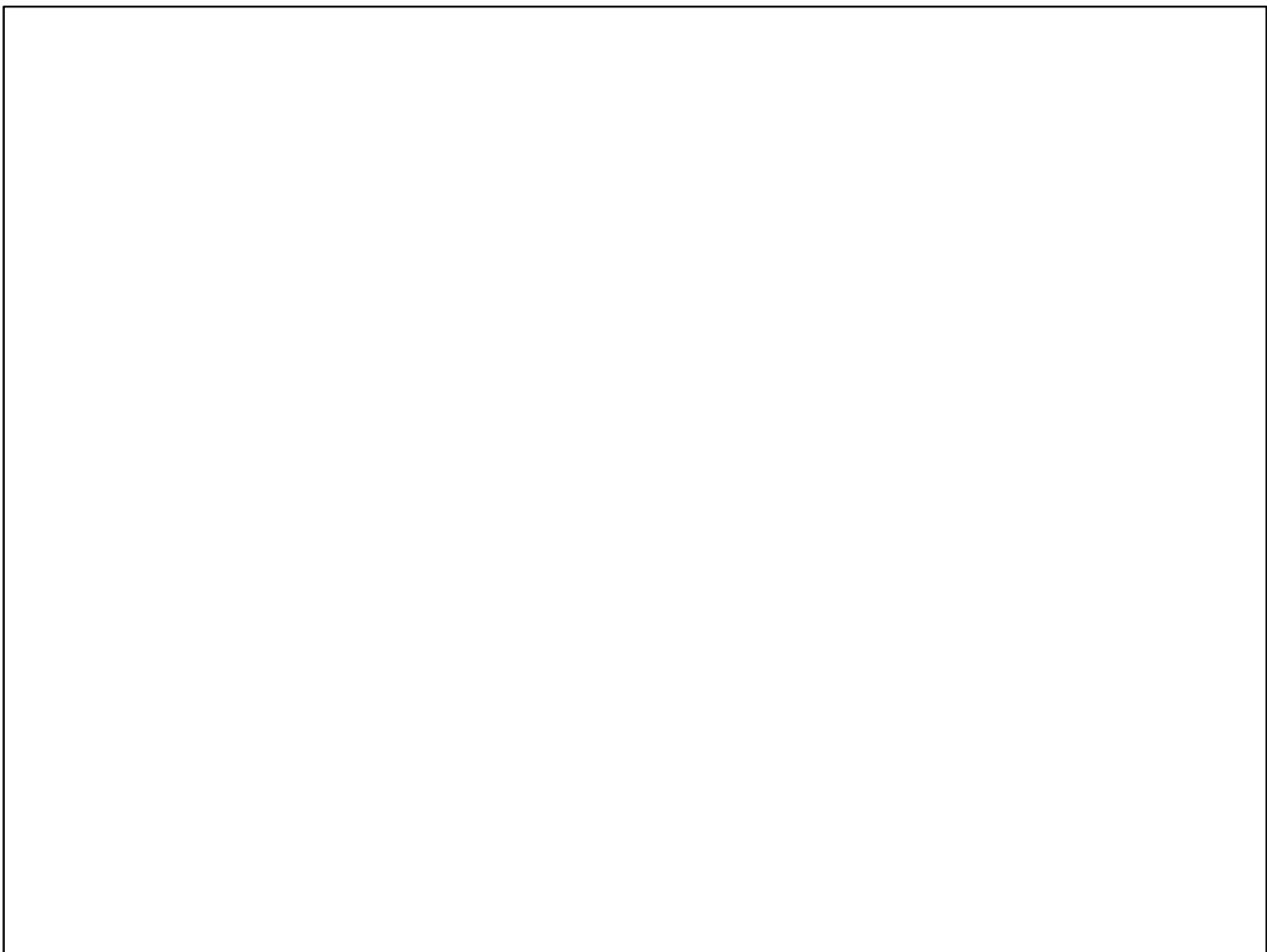
Project No. 11151187

Title
**BARGE LOWER DECK
REPAIR DETAILS**

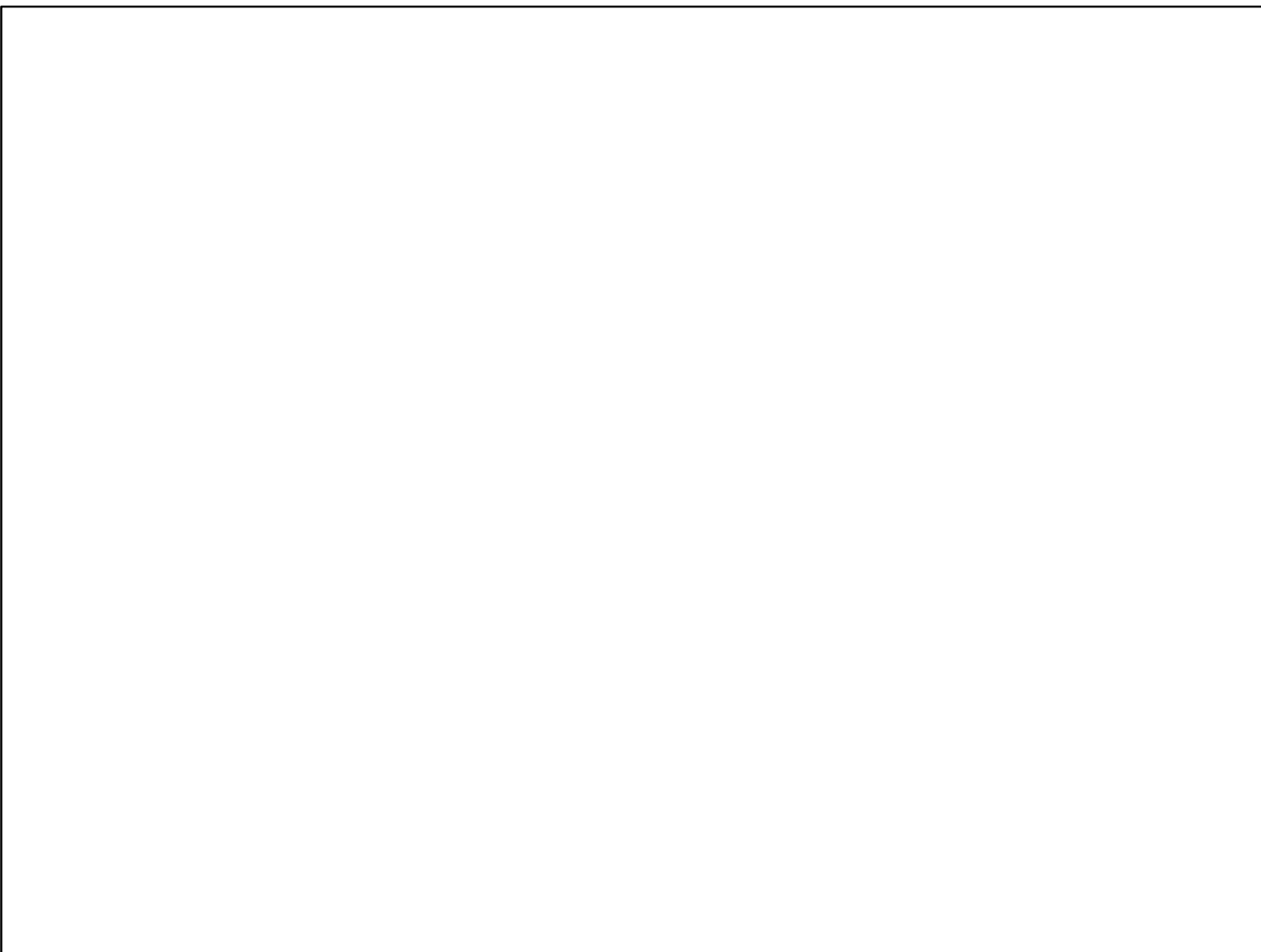
Sheet No.

S-104

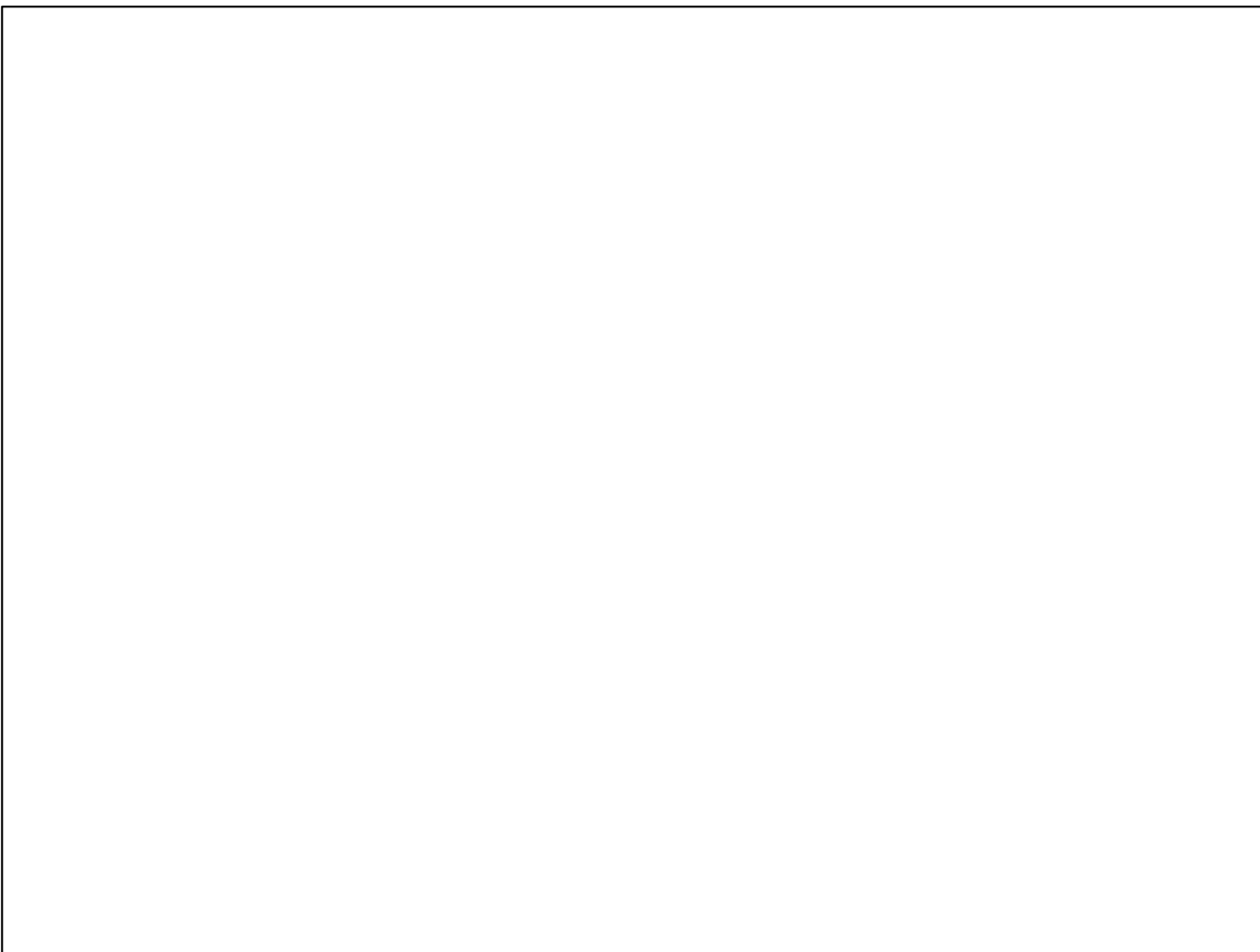
Sheet - of -



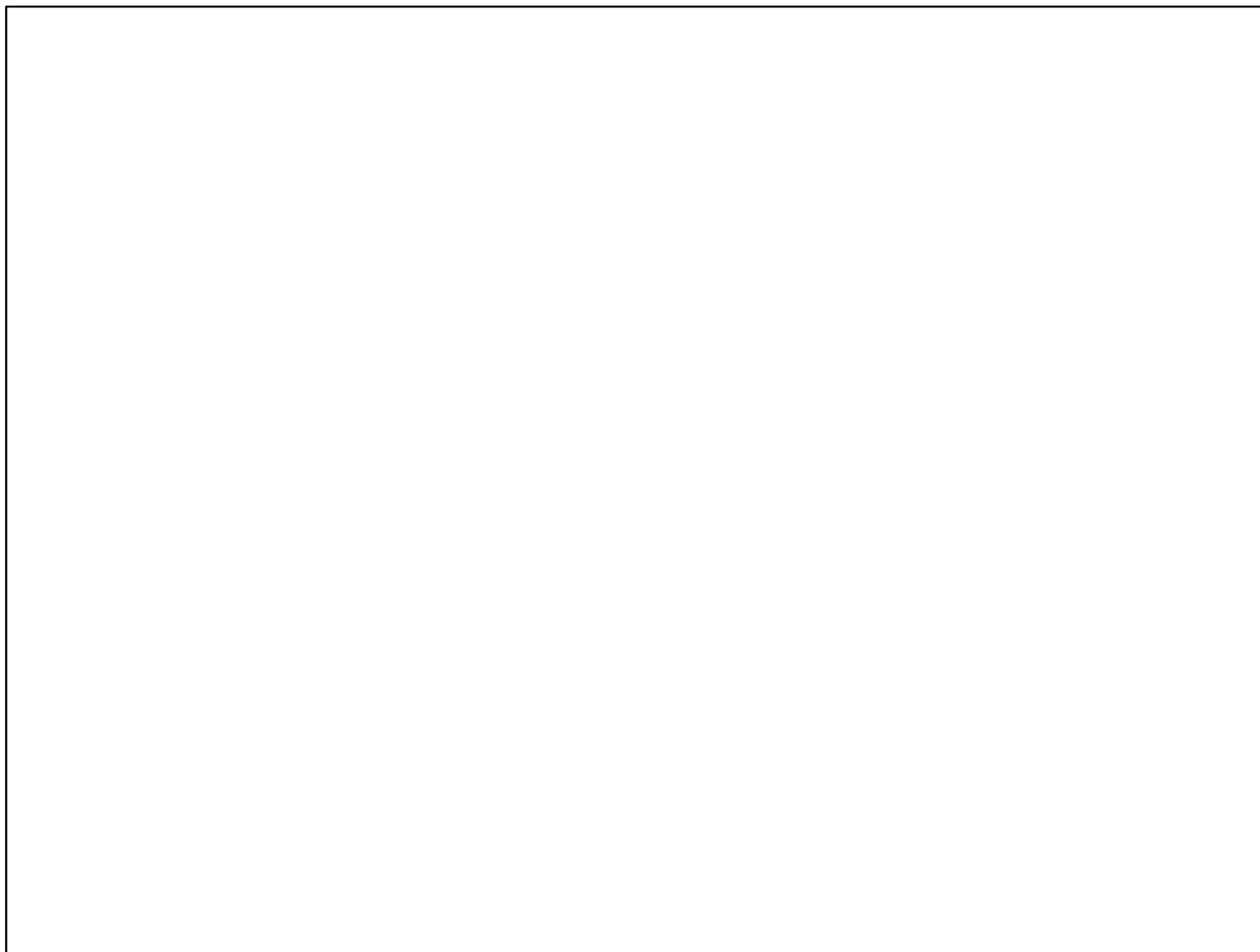
1 UPPER DECK - UNDERSIDE



2 INTERMEDIATE LANDING, UNDERSIDE



3 STAIRS FROM UPPER DECK TO INTERMEDIATE LANDING



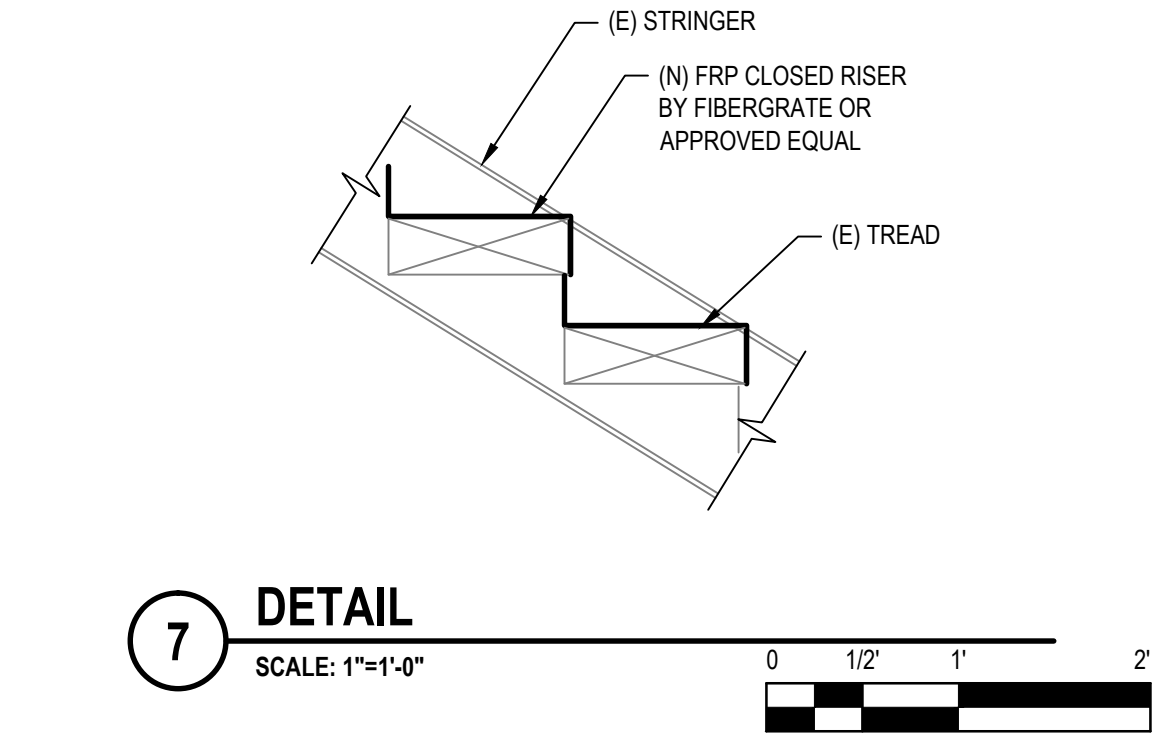
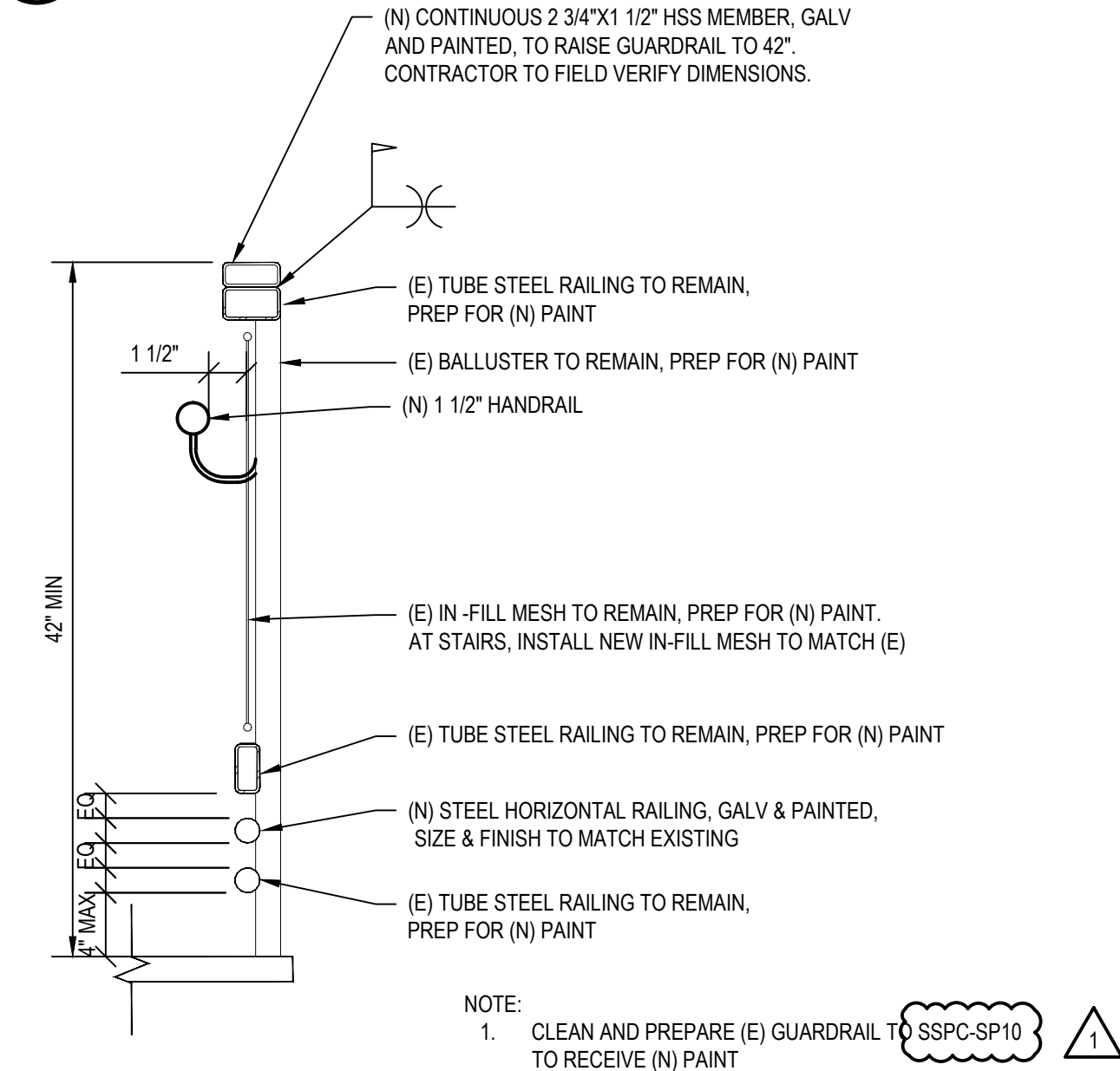
4 STAIRS FROM INTERMEDIATE LANDING TO LOWER DECK



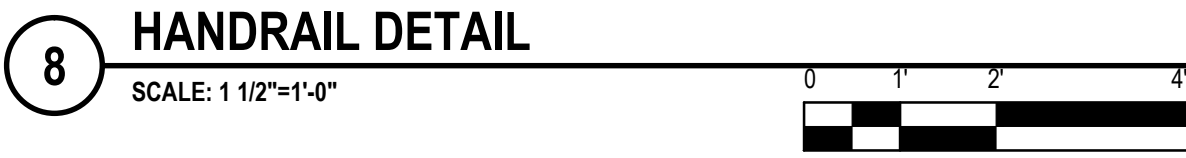
5 MIDSHIP STAIRS



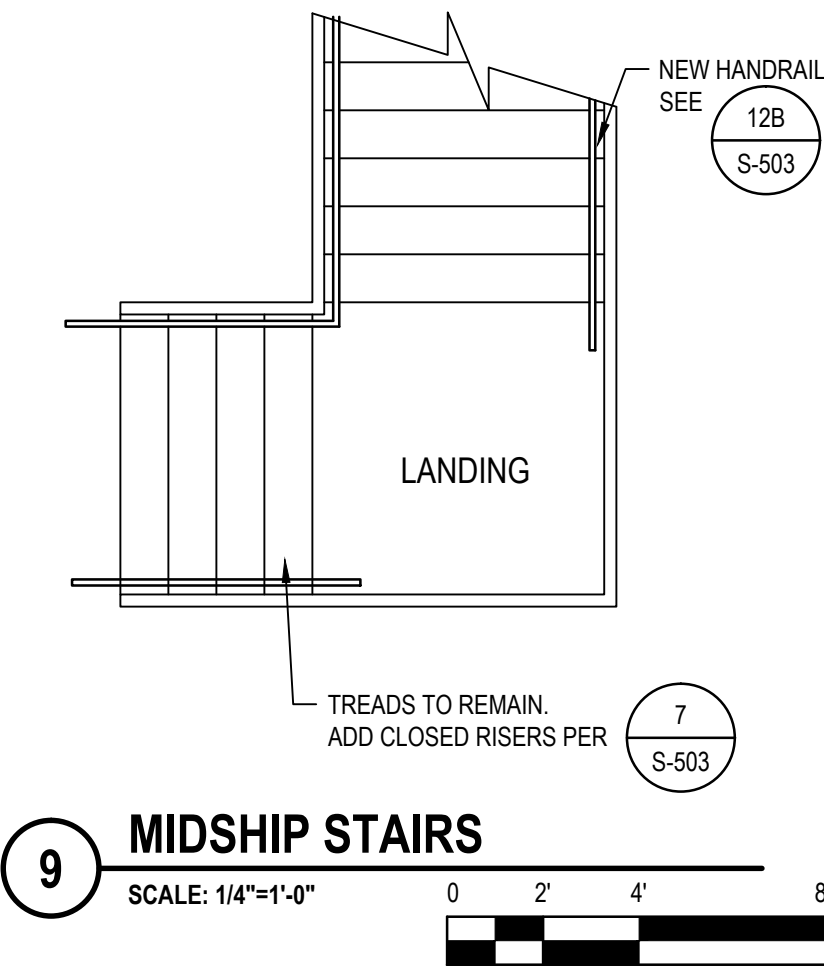
6 BARGE GUARDRAIL
SCALE: 1 1/2"=1'-0"



7
SCALE: 1"=1'-0"

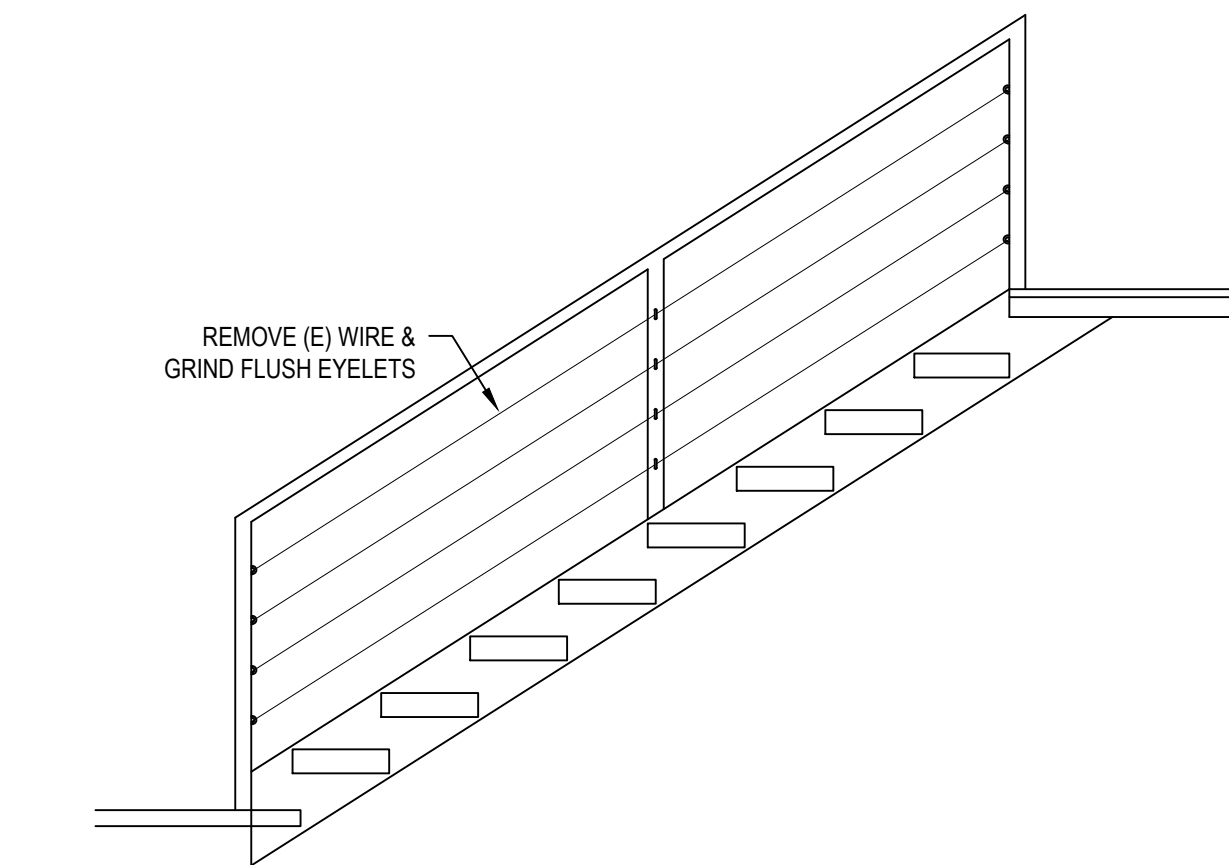


8
SCALE: 1 1/2"=1'-0"

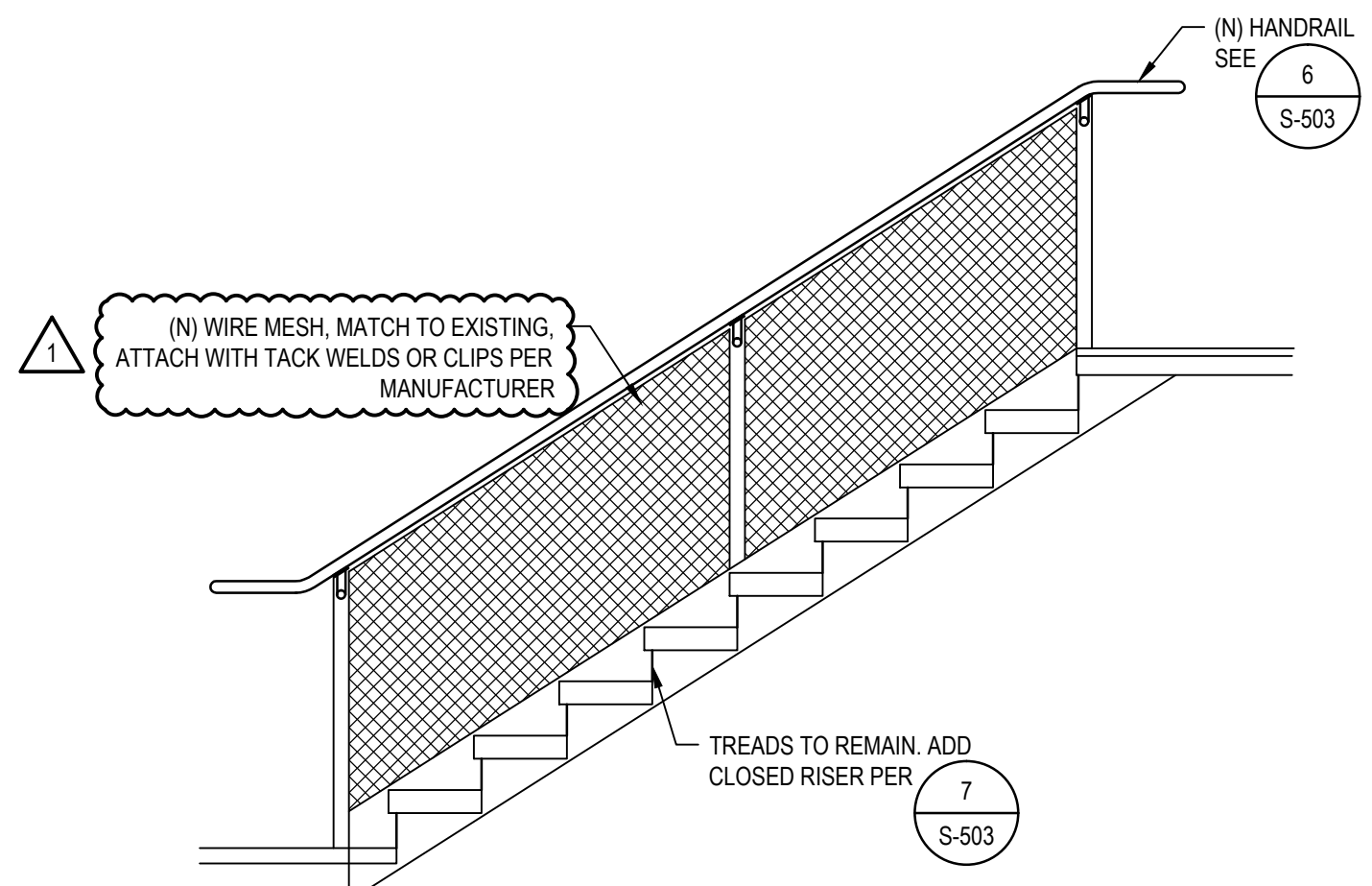


9
SCALE: 1/4"=1'-0"

10 WALL MOUNTED HANDRAIL
SCALE: 1/2"=1'-0"



12A STAIR RAIL DETAIL - EXISTING
SCALE: 1 1/2"=1'-0"

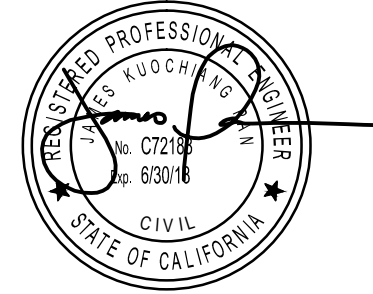


12B STAIR RAIL DETAIL - MODIFIED
SCALE: 1 1/2"=1'-0"

11 STAIR HANDRAIL PLAN
SCALE: 1/4"=1'-0"



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**OLD SACRAMENTO RIVERFRONT EMBARCADERO
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Arch E1				

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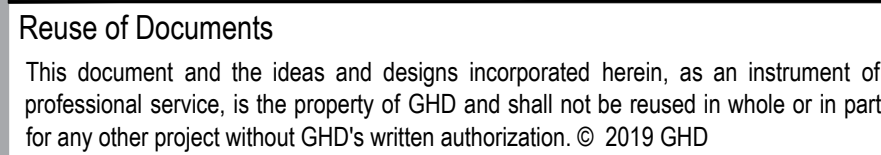
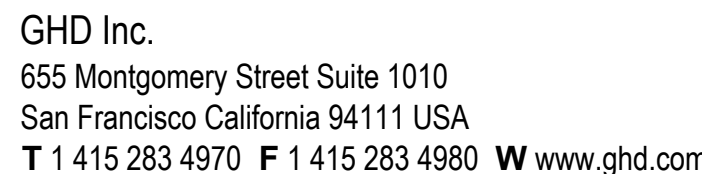
Title
**STAIR AND RAILING
DETAILS**

Sheet No.

S-503



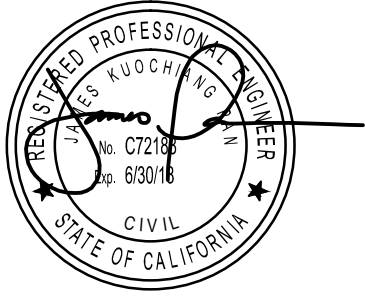
1. DETAILS SHOWN ARE FOR BIDDING PURPOSES ONLY. RAMP FABRICATOR TO SUBMIT SIGNED RAMP DESIGN PRIOR TO FABRICATION.
2. RAMPS SHALL BE RATED FOR 100PSF LIVE LOAD AND DEFLECTIONS LIMITED TO L/180.



Project No.	11151187
Title	SOUTH ACCESS RAMP AND MIDSHIP RAMP DETAILS



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Project Manager	C LEWIS	Date	MAY 2018

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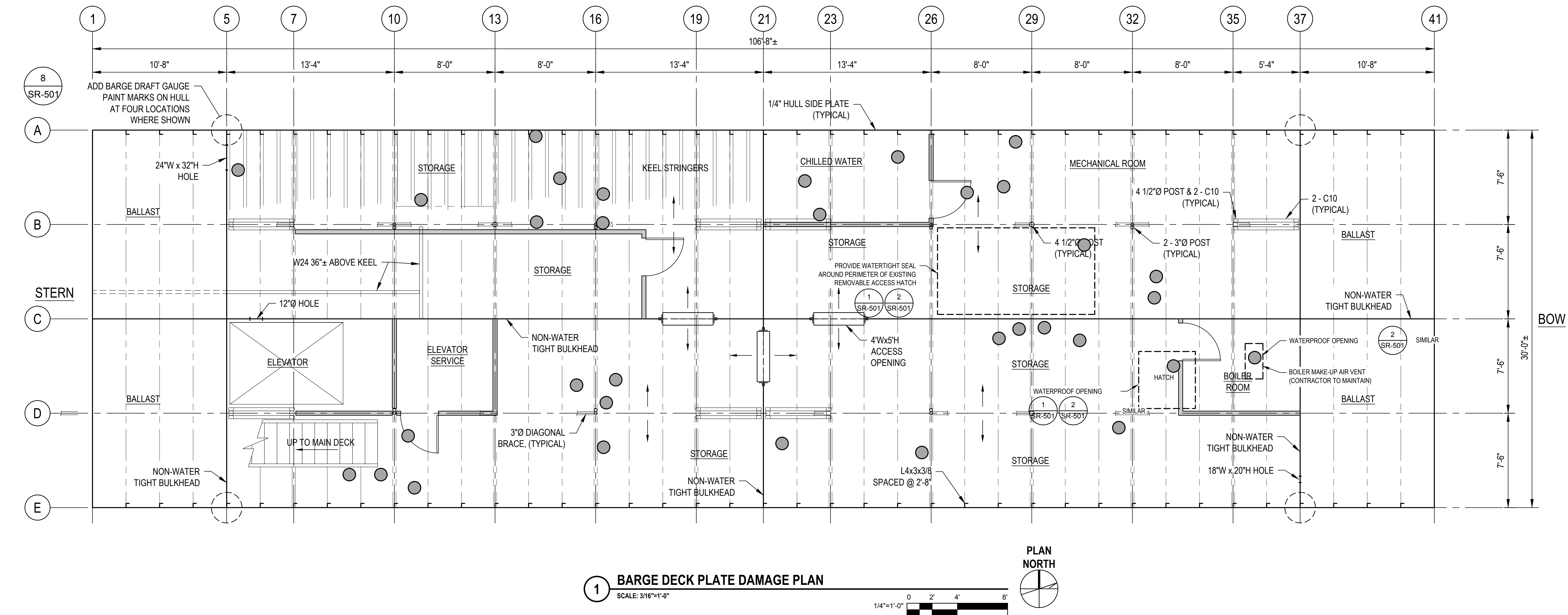
Project No. 11151187

Title
**BARGE HULL AND DECK PLATE
REPAIR PLAN
AND SCHEDULE**

Sheet No.

SR-103

Sheet - of -

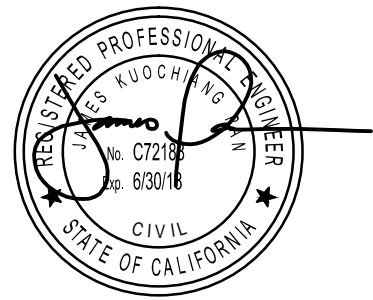


DAMAGE REPAIR SCHEDULE				
LOCATION	QUANTITY	AREA (SF)	REPAIR DETAIL	NOTES
A-B / 5-6	1	4	1/SR-501	
A-B / 10-11	1	8	1/SR-501	
A-B / 14-15	3	8	1/SR-501	
A-B / 16-17	2	7	1/SR-501	
A-B / 22-23	2	7	1/SR-501	
A-B / 25	1	5	1/SR-501	
A-B / 27	1	4	1/SR-501	
A-B / 28-29	2	8	1/SR-501	
B-C / 26-31	1	100	2/SR-501 OR 3/SR-501	SEAL HATCH OPENING
B-C / 30-31	1	4	1/SR-501	
B-C / 32-33	2	8	1/SR-501	
C-D / 15-16	1	4	1/SR-501	
C-D / 16-17	2	8	1/SR-501	
C-D / 28-29	2	8	1/SR-501	
C-D / 29-30	1	4	1/SR-501	
C-D / 30-31	1	4	1/SR-501	
C-D / 32-34	1	25	2/SR-501 OR 3/SR-501	SEAL HATCH OPENING
C-D / 35-36	1	6	2/SR-501	SEAL HATCH OPENING
D-E / 8-9	1	4	1/SR-501	
D-E / 9-10	1	5	1/SR-501	
D-E / 10-11	2	8	1/SR-501	
D-E / 16-17	1	5	1/SR-501	
D-E / 21-22	1	5	1/SR-501	
D-E / 25-26	1	5	1/SR-501	

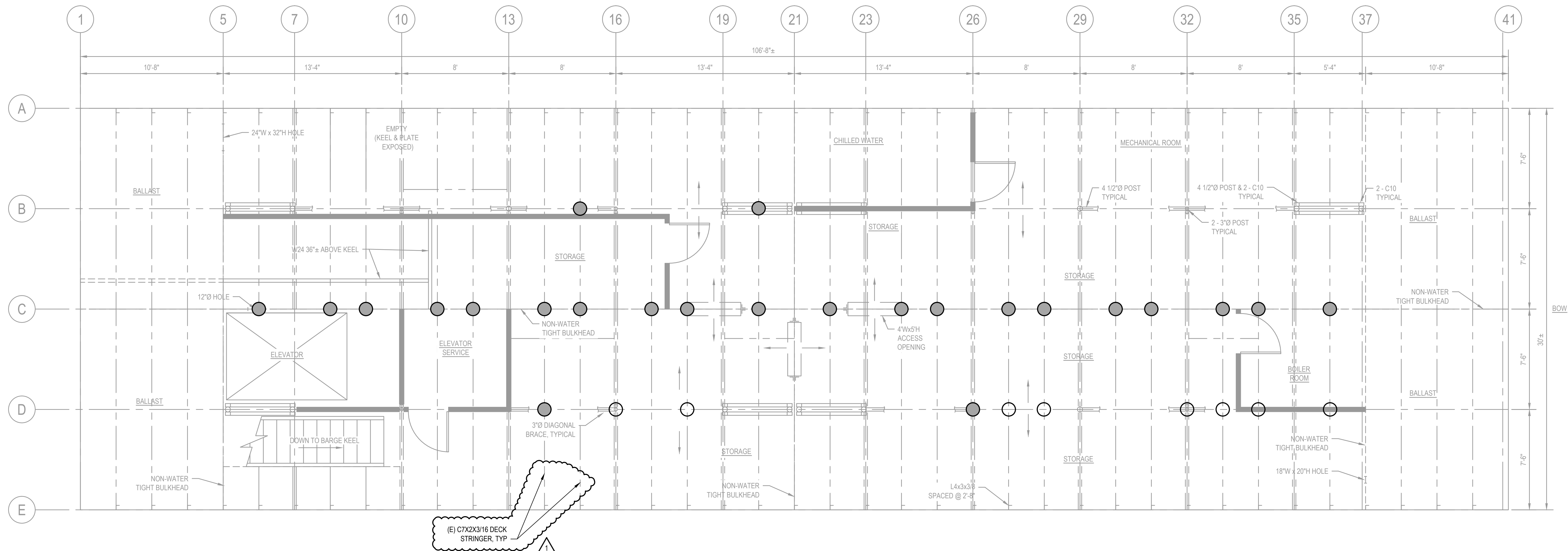
DAMAGE REPAIR SCHEDULE	
LOCATION	REPAIR DETAIL
A7	5/SR-501
A10	5/SR-501
A29	5/SR-501
A30	5/SR-501
E32	5/SR-501
E35	5/SR-501
E37	5/SR-501



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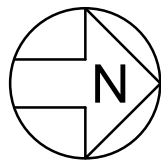
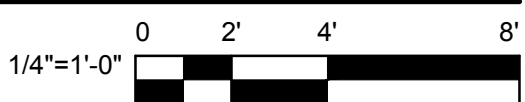


DAMAGED LOCATIONS

CONNECTION DAMAGE LOCATION

FLANGE DAMAGE, DO NOT REPAIR

BARGE DECK CONNECTION DAMAGE PLAN



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**OLD SACRAMENTO RIVERFRONT EMBARCADERO
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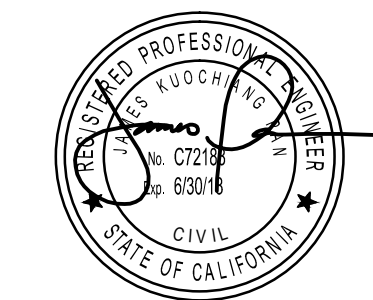
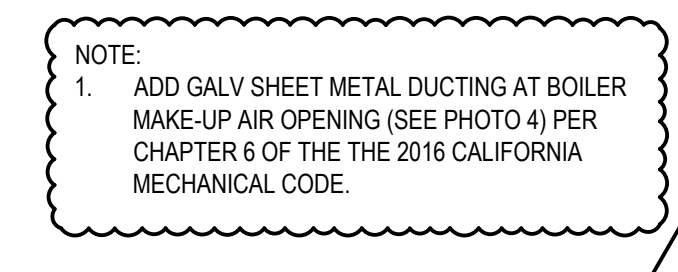
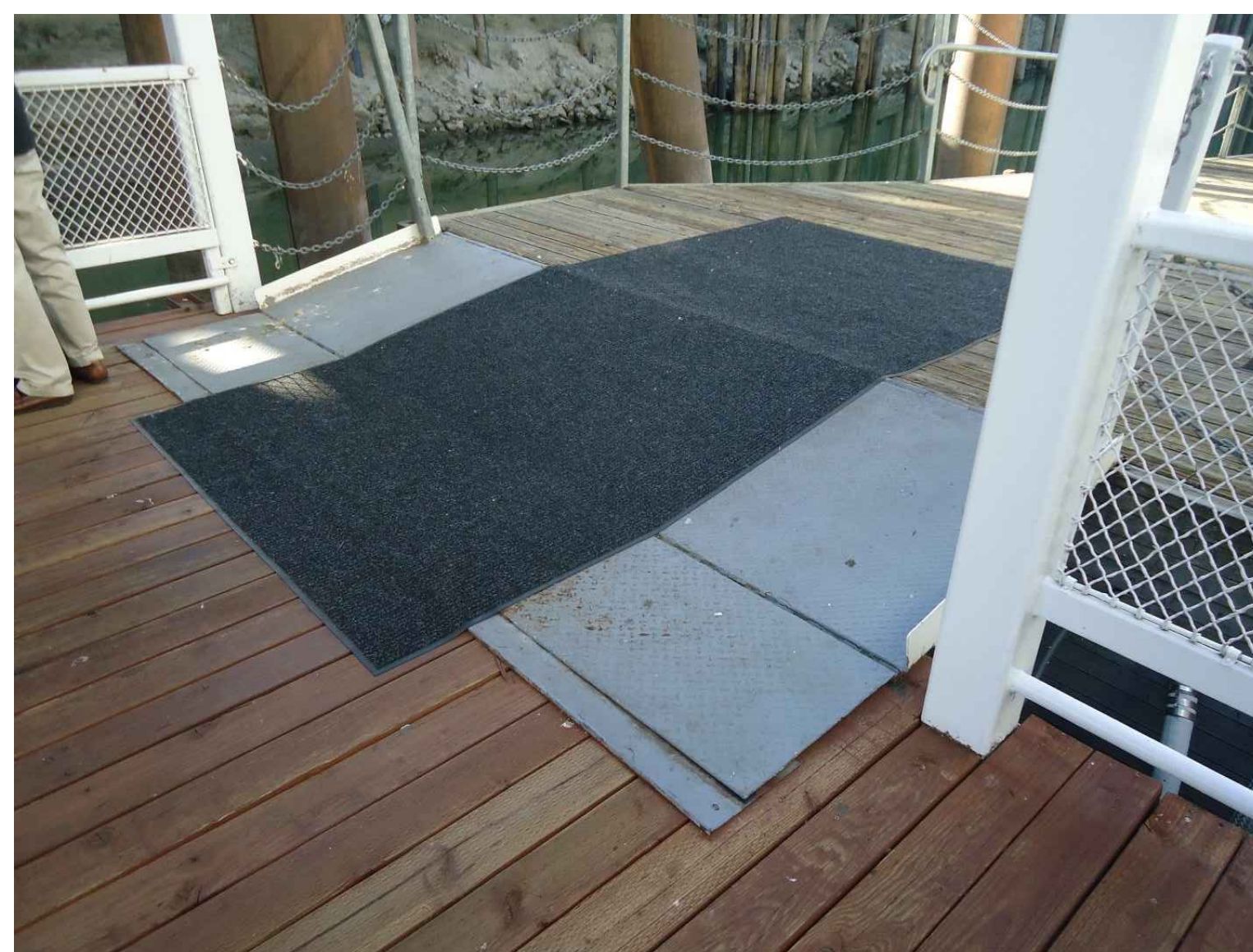
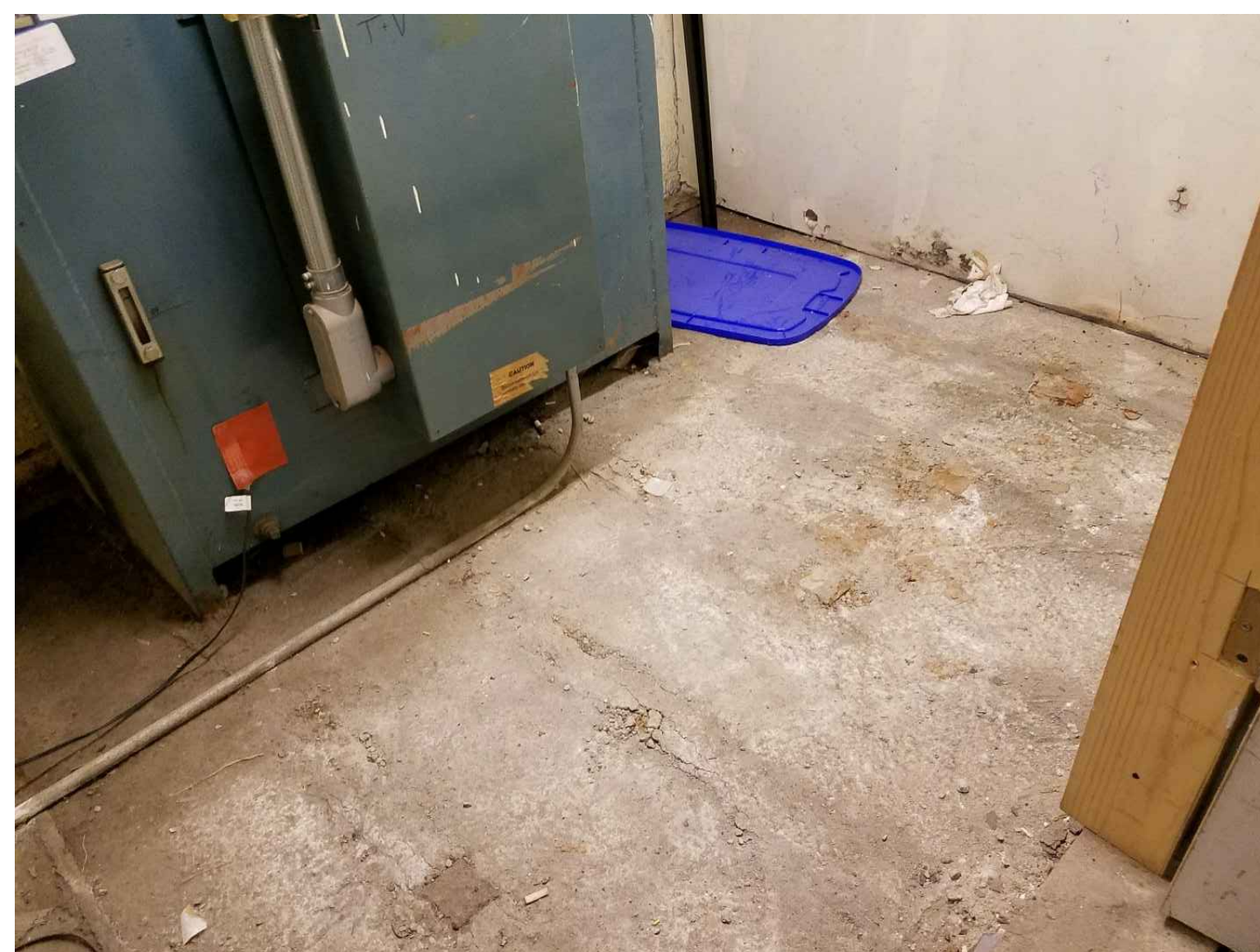
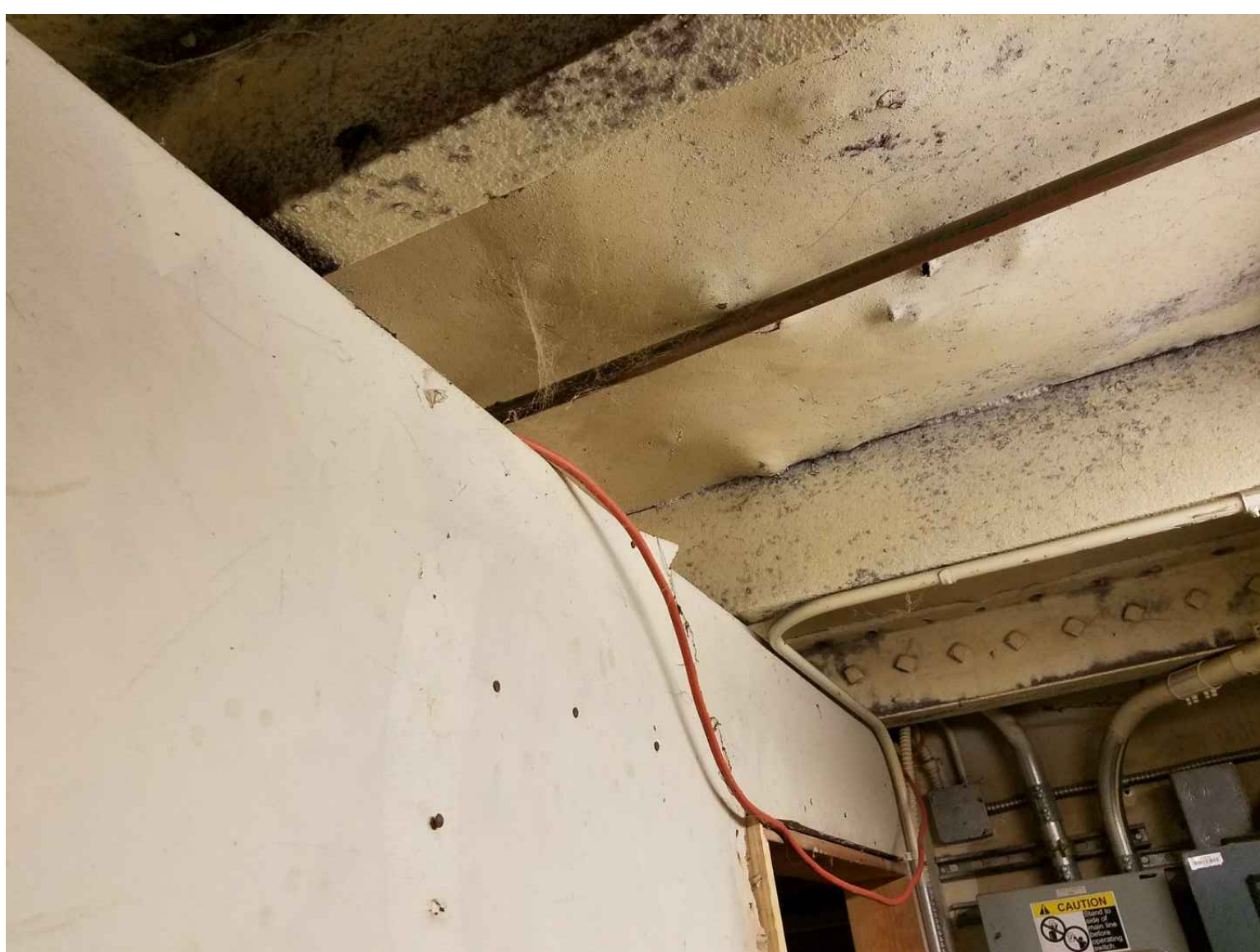
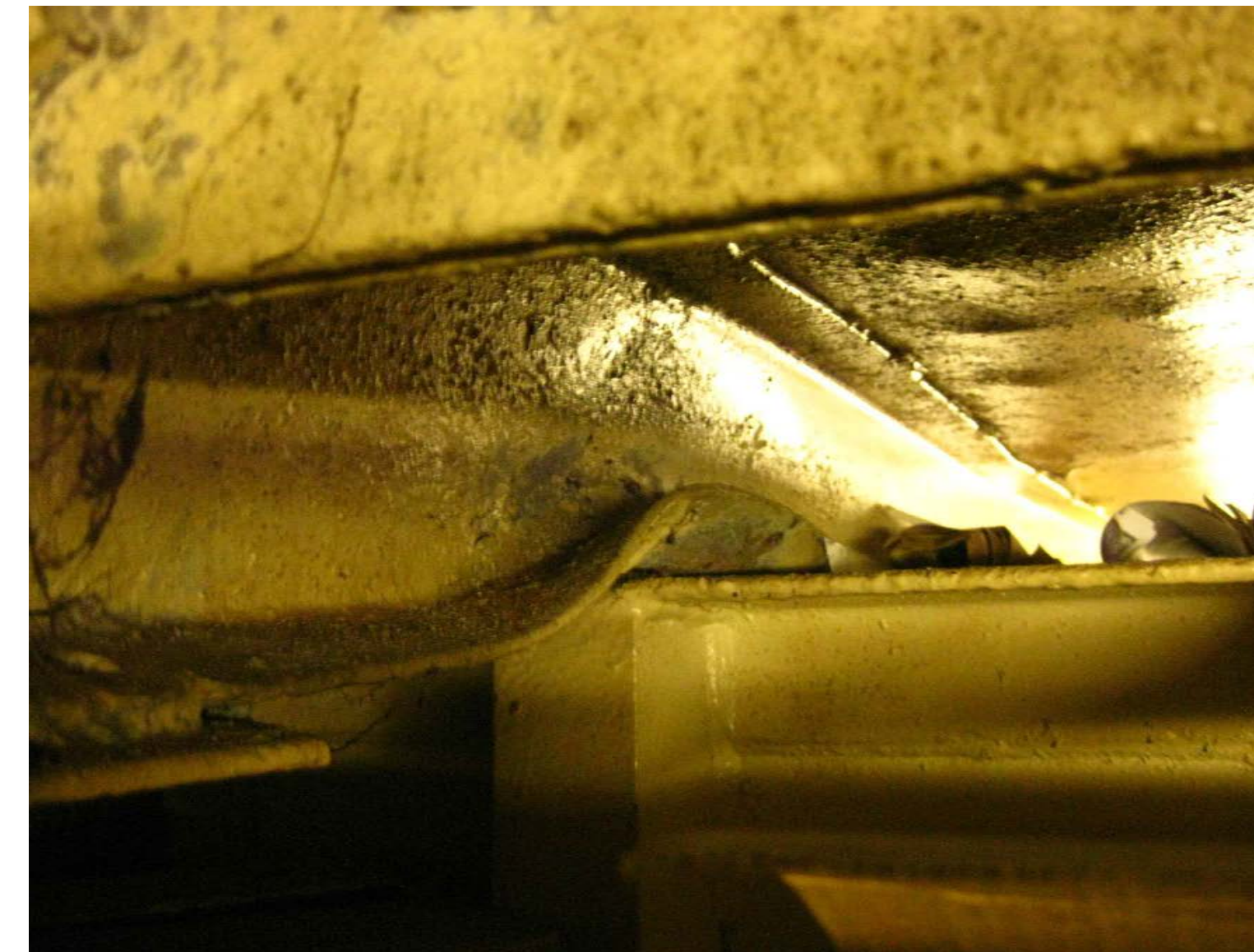
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Arch E1				

Project No. 11151187

Title
**BARGE DECK CONNECTION
REPAIR PLAN
AND SCHEDULE**

Sheet No.

SR-104




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Project No.	11151187
Title	<p>EXISTING CONDITION, BARGE DECK TYPICAL DAMAGE PHOTOS</p>

Sheet No.

SR-801



California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



April 8, 2019

Kirk Thompson
City of Sacramento, Department of Public Works
5730 24th Street, Bldg. 4
Sacramento, CA 95822

Dear Mr. Thompson:

**Final Lake or Streambed Alteration Agreement, Notification No. 1600-2016-0270-R3,
Sacramento River; Old Sacramento Riverfront Embarcadero and K Street Barge
Project (Phase 2)**

Enclosed is the final Streambed Alteration Agreement (Agreement) for the Old Sacramento Riverfront Embarcadero and K Street Barge Project (Phase 2) (Project). Before the California Department of Fish and Wildlife (CDFW) may issue an Agreement, it must comply with the California Environmental Quality Act (CEQA). In this case, CDFW acting as a responsible agency filed a Notice of Determination (NOD) within five working days of signing the Agreement. The NOD was based on information contained in the Mitigated Negative Declaration prepared by the lead agency.

Under CEQA, the filing of an NOD triggers a 30-day statute of limitations period during which an interested party may challenge the filing agency's approval of the Project. You may begin the Project before the statute of limitations expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this letter, please contact Andrea Boertien, Environmental Scientist at (209) 234-3449 or by email at andrea.boertien@wildlife.ca.gov.

Sincerely,

James Starr, Environmental Program Manager

cc: Cardno
Elizabeth Sheppard
Elizabeth.sheppard@cardno.com

California Department of Fish and Wildlife
Lieutenant Longwell
Warden Mills

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
BAY DELTA REGION
2825 CORDELIA ROAD, SUITE 100
FAIRFIELD, CA 94534



STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2016-0270-R3
Sacramento River

KIRK THOMPSON
OLD SACRAMENTO RIVERFRONT EMBARCADERO AND K STREET BARGE PROJECT
(PHASE 2)

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and City of Sacramento Department of Public Works (Permittee) as represented by Kirk Thompson.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified CDFW on August 4, 2016 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located at the Sacramento River, in the County of Sacramento, State of California; Latitude 38.582142 degrees, Longitude -121.506724 degrees; Section 35, Township 9N, Range 4E, U.S. Geological Survey (USGS) map Sacramento West; Assessor's Parcel Number 006-0075-003-000.

PROJECT DESCRIPTION

The project is limited to the repair of the existing K Street barge, dock, stairs, and elevator located adjacent to the Delta King, as well as the installation of a maintenance platform on the west side (river side) of the Steamer's Building, adjacent to the river, and approximately 40 feet north of Rio City Café on the Embarcadero of Old Sacramento.

The Delta King is moored to a dock that is mounted on the hull of the K Street barge. On top of the barge is also an elevator, gangway, and stairs that provide a path of travel from the street level to the Delta King. The barge is in need of interior repairs to address leakage, rust, and proper closure elements. These repairs will be conducted on the interior of the barge and will not involve alterations that will modify the obstruction to flow resulting from the current barge.

The existing steel framed stairs on the barge will be modified, as well as the existing riser height and gaps between the risers, in order to meet current building code requirements. The hoist way of the barge elevator will be repaired, as well as some of the exterior siding and roof of the enclosure to address areas of wood decay.

The purpose of the proposed maintenance platform is to allow safe, OSHA compliant access to maintain the western building façade of the Steamer's Building. The platform will be 40 feet long by 4 feet wide. It will consist of 2-inch thick galvanized open metal grating with a galvanized steel guardrail. The platform will extend over the river and will be attached to the existing concrete beams under the building using steel channel ledgers. Construction scaffolding will be temporarily installed and affixed to the existing wall/piles and suspended in the air.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: Delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), Chinook salmon – spring-run and winter-run (*Oncorhynchus tshawytscha*), Pacific pond turtle (*Actinemys marmorata*), and Swainson's hawk (*Buteo swainsoni*).

The adverse effects the project could have on the fish or wildlife resources identified above include: short-term release of contaminants incidental to construction of the barge repair and maintenance platform; and temporary disruption to nesting birds and other wildlife from project activity.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify CDFW if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement. CDFW staff shall comply with all safety

regulations on-site and wear the appropriate safety gear provided by the on-site contractor.

- 1.5 Notify CDFW of Project Modifications. All work shall be done according to the Notification and supporting materials received by CDFW (plans developed by Unger Construction Company, HR Group Architects; and Buehler and Buehler Structural Engineers, dated June 28 and June 29, 2016; and by GHD, dated May 2018), unless otherwise noted in this Agreement. The Permittee shall notify CDFW of any modifications made to the plans submitted to CDFW. Modifications to the project description may require an amendment to this Agreement, and the Permittee shall not implement the proposed changes until CDFW has responded to the submitted changes.
- 1.6 Day-to-Day/Weekly Extension. If Permittee needs more time to complete project activities, work may be authorized outside of the work period and extended on a day-by-day or week-by-week basis. Permittee shall submit a written request for a work period extension to Andrea Boertien at Andrea.Boertien@wildlife.ca.gov, or if unavailable, to CDFW at R31600Program@wildlife.ca.gov. The written work extension request shall: 1) describe the extent of the work already completed; 2) detail the activities that remain to be completed; 3) detail the time required to complete the remaining activities, and 4) provide photographs of both the current work completed and the proposed site for continued work. The work period extension request should consider the effects of increased stream flows, rain delays, and increased erosion control measures. Work period extensions are issued at the discretion of CDFW. CDFW reserves the right to require additional measures to protect fish and wildlife resources as a condition for granting the extension.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

- 2.1 Work Period. All maintenance platform work on the water-side of the Steamer's Building and above the Sacramento River shall be limited to the period between July 1 and November 30. **Work on the barge shall be limited to the period between May 1 and November 30.**
- 2.2 Pre-Construction Surveys for Raptors and Nesting Birds. If project activities are required prior to the work period and during the nesting season, a survey for raptors and nesting birds shall be conducted by a Designated Biologist (see Measure 2.3). The pre-construction surveys shall be conducted within 15 days prior to the beginning of project-related activities (see Reporting Measure 3.2). If a lapse in project-related work of 15 days or longer occurs, another survey shall be performed and the results sent to CDFW prior to resuming work.

Surveys shall be conducted in proposed work areas, staging areas, and storage areas. Surveys shall be conducted within trees located adjacent to the river between Tower Bridge and I Street Bridge. Nest surveys for Swainson's hawks shall be conducted in a manner consistent with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. For more information see

<https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>. If any active Swainson's hawk nests are found within survey area, CDFW shall immediately be contacted and additional measures may be required for project activities.

- 2.3 Designated Biologist. Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of a Designated Biologist at least 30 days before starting project activities (see Reporting Measure 3.3). A Designated Biologist is defined as an individual who shall have academic training and a minimum of four years of professional experience in biological sciences and related resource management activities with a minimum of two years conducting surveys for species that may be present within the project area and possess appropriate State and federal permits for handling listed species. The Designated Biologist shall be responsible for monitoring project activities to help minimize and or avoid disturbance to special status species and to minimize disturbance of the species' habitat. The Designated Biologist shall oversee the Biological Monitors (see Measure 2.4) who shall be responsible for monitoring project activities to help minimize or avoid disturbance to species named in this Agreement and to minimize disturbance of the species' habitat. The Designated Biologist shall be onsite or within immediate contact with the Qualified Biological Monitors when they are onsite.
- 2.4 Biological Monitors. A Biological Monitor is defined as an individual who is experienced with construction level biological monitoring and who is able to recognize species in the project area and who is familiar with the habits and behavior of those species. Biological Monitors shall have academic and professional experience in biological sciences and related resource management activities as it pertains to this project. The Biological Monitor shall be appointed by the Designated Biologist who is responsible for ensuring that the measures of this Agreement are properly performed to protect against take when the Designated Biologist is not present. The appointed Biological Monitor(s) are required to have completed the pre-construction training and must be familiar with the avoidance and minimization measures of this Agreement. The Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information for all Biological Monitors working on the project at least 15 days before any Biological Monitor may work on the project or perform pre-construction surveys and as staffing changes occur (see Reporting Measure 3.4).
- 2.5 Education Program. Permittee shall conduct a **worker environmental awareness training** for all persons employed or otherwise working on the project site prior to training for all persons employed or otherwise performing any work at the project site. The program shall consist of a presentation made by the Designated Biologist that includes a discussion of the biology of the species and habitat identified in this Agreement. The Designated Biologist shall also include as part of the education program information about the distribution and habitat needs of any special status species that may be present, legal protections for those species, penalties for violations, and project-specific protective measures included in this Agreement. Interpretation shall be provided for non-English speaking workers. Upon completion of the education program, employees shall sign a form stating they attended the program and understand all protection measures.
- 2.6 Designated Biologist and Biological Monitor Authority. To ensure compliance with the measures of this Agreement, the Designated Biologist and Biological Monitors shall have authority to immediately stop any activity that does not comply with this Agreement, and/or

to order implementation of any reasonable conditions in this Agreement to avoid disturbance of special status species in the project area.

- 2.7 **Equipment Maintenance and Storage.** When not in use, construction equipment shall be stored, refueled, and otherwise maintained in the construction staging areas. Stationary equipment such as motors, pumps, generators, and compressors located within 30 feet of the river shall be positioned over drip pans.
- 2.8 **Erosion Control.** Erosion control shall be implemented for the project. Erosion control materials such as silt fences, rolled erosion control products, and sediment traps shall be used. Erosion control measures shall be monitored during and after each storm event for effectiveness. Modifications, repairs, and improvement to erosion control measures shall be made as needed to protect water quality. At no time shall runoff with materials such as soil, silt, debris, bark, rubbish, creosote-treated wood, oil or other petroleum products, rust, paint, or any other substances that could be hazardous to aquatic life or wildlife be allowed to enter the water or directed to where it may enter the water.
- 2.9 **Hazardous Materials.** Debris, bark, slash, sawdust, rubbish, creosote-treated wood, oil and other petroleum products, or any other substances which could be hazardous to aquatic life, wildlife, or riparian habitat resulting from project-related activities shall not contaminate the soil or the waters of the State. Any such materials placed within or where they may enter water shall be removed immediately.
- 2.10 **Trash Abatement.** The Permittee shall not dump any litter or debris within the river. All debris, materials, and waste shall be removed from the work site and properly disposed of at an appropriate location upon project completion.
- 2.11 **Best Management Practices (BMPs).** BMPs shall be used to avoid the introduction of sawdust, debris, wash water, and construction materials into the river. A water containment system shall be used to catch and divert contaminated water (per Measure 2.7 (Erosion Control)) away from the river or prevent it from entering the river. A barrier (e.g. tarp, plastic sheeting) of appropriate strength and size shall be used to catch any falling construction debris to prevent it from entering the river during work on the maintenance platform and/or the barge. Recovery systems for sawdust and drill dust shall be available for use, if needed.
- 2.12 **Work during Daylight.** To prevent predation on special status species fish and interference with fish migration, project activities shall occur during daylight hours, which are defined as 30 minutes after dawn and 30 minutes before dusk. Permittee shall use sunrise and sunset times established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area (http://aa.usno.navy.mil/data/docs/RS_OneYear.php).

3. Reporting Measures

Permittee shall meet each reporting requirement described below.

- 3.1 **Notification of Work Initiation and Completion.** The Permittee shall notify CDFW via e-mail at the contact information below at least 48 hours prior to the initiation, and following completion, of work.

- 3.2 Biological Pre-Construction Surveys. The results of all biological surveys shall be submitted to CDFW within five business days of each survey and prior to commencement of work. Permittee is encouraged to combine survey results for multiple sites and multiple species into a single document.
- 3.3 Designated Biologist. Permittee shall submit to CDFW for approval the name resume, and contact information of the Designated Biologist monitoring the project activities 30 days prior to commencement of project activities.
- 3.4 Qualified Biological Monitor. Permittee shall submit to CDFW for approval the name, resume, business address, and contact information of the Qualified Biological Monitor(s) working on the project at least 15 days before any Qualified Biological Monitor(s) may work under this Agreement.
- 3.5 Special Status Species Documentation. If any special status species are observed in project monitoring, the Permittee shall immediately contact CDFW. Permittee shall also submit California Natural Diversity Data Base (CNDDDB) forms to the CNDDDB for all survey data within 15 working days of the sightings, and provide CDFW with copies of the CNDDDB forms and survey maps. See <https://www.wildlife.ca.gov/Data/CNDDDB> for additional information.
- 3.6 Notification of Spill. In the event of a spill into the waters of the State, the Permittee shall immediately notify the California Emergency Management Agency at 1-800-852-7550 and immediately initiate the cleanup activities. CDFW shall be notified by the Permittee at the contact information below and consulted regarding cleanup procedures. Project operations shall not resume until the situation is remedied.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or CDFW specifies by written notice to the other.

To Permittee:

Kirk Thompson
City of Sacramento, Department of Public Works
5730 24th Street, Bldg. 4
Sacramento, CA 95822
Email: kthompson@cityofsacramento.org
Telephone: (916) 808-8431

CC:

Brian Bacciarini
GHD
2235 Mercury Way, Suite 150
Santa Rosa, CA 95407

Email: brian.bacciarini@ghd.com

Telephone:
(707) 236-1532

To CDFW:

Department of Fish and Wildlife
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
Attn: Lake and Streambed Alteration Program – Andrea Boertien
Notification #1600-2016-0270-R3
Email: Andrea.Boertien@wildlife.ca.gov
Phone: (209) 234-3449

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq.* (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and Permittee. To request an amendment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the

extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (FGC section 1605(f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after Permittee's signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at <https://www.wildlife.ca.gov/Conservation/CEQA/Fees>.

TERM

This Agreement shall expire on **December 31, 2023**, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

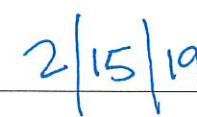
This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

**FOR CITY OF SACRAMENTO, DEPARTMENT OF
PUBLIC WORKS**


Kirk Thompson
Associate Architect


Date

FOR DEPARTMENT OF FISH AND WILDLIFE

ja 

James Starr
Environmental Program Manager

4/8/19
Date

Prepared by: Andrea Boertien
Environmental Scientist
January 18, 2019

FOR DEPARTMENT USE ONLY				
Date Received	Amount Received	Amount Due	Date Complete	Notification No.
8/4/16	\$ 921.00	\$ 0		1600-2016-0270-R-3



1#511835
Copy of Sacramento

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

Boertien
LT Longwell
wdr Mills



NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Kirk Thompson	Fish & Wildlife		
Business/Agency	City of Sacramento, Department of Public Works			
Street Address	5730 24th Street, Bldg. 4	AUG 11 2016		
City, State, Zip	Sacramento, CA 95822	Napa		
Telephone	916-808-8431	Fax		
Email	KThompson@cityofsacramento.org			

2. CONTACT PERSON (Complete only if different from applicant)

Name	Elizabeth Sheppard			
Street Address	701 University Avenue, Suite 200			
City, State, Zip	Sacramento, CA 95825			
Telephone	916-386-3862	Fax		
Email	elizabeth.sheppard@cardno.com			

3. PROPERTY OWNER (Complete only if different from applicant)

Name				
Street Address				
City, State, Zip				
Telephone		Fax		
Email				

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name		Old Sacramento Riverfront Embarcadero and K Street Barge Project (Phase 2)		
B. Agreement Term Requested		<input checked="" type="checkbox"/> Regular (5 years or less) <input type="checkbox"/> Long-term (greater than 5 years)		
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (year)	Ending (year)	Start Date (month/day)	End Date (month/day)	
2016	2016	July 15	August 31	34

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.

A.	<input checked="" type="checkbox"/> Standard (Most construction projects, excluding the categories listed below)	
B.	<input type="checkbox"/> Gravel/Sand/Rock Extraction (Attachment A)	Mine I.D. Number: _____
C.	<input type="checkbox"/> Timber Harvesting (Attachment B)	THP Number: _____
D.	<input type="checkbox"/> Water Diversion/Extraction/Impoundment (Attachment C)	SWRCB Number: _____
E.	<input type="checkbox"/> Routine Maintenance (Attachment D)	
F.	<input type="checkbox"/> CDFW Fisheries Restoration Grant Program (FRGP)	FRGP Contract Number: _____
G.	<input type="checkbox"/> Master	
H.	<input type="checkbox"/> Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. **Note: The Department may not process this notification until the correct fee has been received.**

A. Project		B. Project Cost	C. Project Fee
1	Maintenance Platform	\$50,000	\$921.00
2			
3			
4			
5			
		D. Base Fee (if applicable)	N/A
		E. TOTAL FEE ENCLOSED	\$921.00

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes (Provide the information below) ☒ No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

☒ No ☐ Yes (Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.)

☐ Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

8. PROJECT LOCATION

A. Address or description of project location. <i>(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)</i>				
Project Address: 1100 Front Street, Sacramento, CA, 95814 Directions: From Rancho Cordova, take US 50 West toward Sacramento. Take exit I-5 North towards Redding and keep to the right and take the J Street exit towards downtown. From the J Street exit, make a sharp right onto 3rd Street and turn right onto Capitol Mall. From Capitol Mall, turn right onto Front Street and turn left to stay on Front Street and find parking. The Project site is along the west, adjacent to the river, and about 40 feet north of Rio City Cafe on the Embarcadero (see Site and Vicinity Map in Attachment A).				
<input type="checkbox"/> Continued on additional page(s)				
B. River, stream, or lake affected by the project.		Sacramento River		
C. What water body is the river, stream, or lake tributary to?		California Delta and San Francisco Bay		
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown		
E. County	Sacramento			
F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Sacramento West	9N	4E	35	
<input type="checkbox"/> Continued on additional page(s)				
K. Meridian (check one)	<input type="checkbox"/> Humboldt <input checked="" type="checkbox"/> Mt. Diablo <input type="checkbox"/> San Bernardino			
L. Assessor's Parcel Number(s)				
006-0075-003-0000				
<input type="checkbox"/> Continued on additional page(s)				
M. Coordinates (If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)				
Latitude/Longitude	Latitude: 38.582142°		Longitude: -121.506724°	
	<input type="checkbox"/> Degrees/Minutes/Seconds		<input checked="" type="checkbox"/> Decimal Degrees <input type="checkbox"/> Decimal Minutes	
UTM	Easting:	Northing:	<input type="checkbox"/> Zone 10 <input type="checkbox"/> Zone 11	
Datum used for Latitude/Longitude or UTM		<input type="checkbox"/> NAD 27 <input checked="" type="checkbox"/> NAD 83 or WGS 84		

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bank stabilization – rip-rap/retaining wall/gabion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat dock/pier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat ramp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bridge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Channel clearing/vegetation management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debris basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diversion structure – weir or pump intake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filling of wetland, river, stream, or lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Habitat enhancement – revegetation/mitigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low water crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Road/trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sediment removal – pond, stream, or marina	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storm drain outfall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temporary stream crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility crossing : Horizontal Directional Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/bore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open trench	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify): Maintenance Platform	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

The Project involves the construction of a 40 foot long x 4 foot wide platform along the west side of the Steamers Building to allow maintenance access. The maintenance platform will consist of a 2-inch thick galvanized open metal grate with a galvanized steel guardrail. The platform will extend over the river and will be attached to the existing concrete beams under the building using steel channel ledgers and will have a total area of 0.005 acre (see Impact Map in Attachment A and Engineering Details in Attachment B).

To install the maintenance platform the top 3 to 4 feet of existing wood pilings will be removed and construction scaffolding will be temporarily installed and affixed to the existing wall/piles and suspended in the air (see Photos in Attachment C showing existing wood pilings). Neither the platform or scaffolding will be submerged in the river.

☐ Continued on additional page(s)

B. Specify the equipment and machinery that will be used to complete the project.

Scaffolding, hand-held power and hand tools.

☐ Continued on additional page(s)

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).

☒ Yes ☐ No (Skip to box 11)

D. Will the proposed project require work in the wetted portion of the channel?

☐ Yes (Enclose a plan to divert water around work site)
☒ No

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

The Project will not result in impacts to the river bed, channel, or bank. All Project work will occur over the river.

☐ Continued on additional page(s)

B. Will the project affect any vegetation?

☐ Yes (Complete the tables below) ☒ No

Vegetation Type	Temporary Impact	Permanent Impact
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)

☐ Continued on additional page(s)

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☐ Yes (List each species and/or describe the habitat below) ☒ No ☐ Unknown

☐ Continued on additional page(s)

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

No natural habitat will be affected by the project.

☐ Continued on additional page(s)

E. Has a biological study been completed for the project site?

☒ Yes (Enclose the biological study) ☐ No

A biological resource evaluation is included in Attachment D.

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☐ Yes (Enclose the hydrological study) ☒ No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

12. MEASURES TO PROTECT FISH, WILDLIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

The Project will not result in any soil disturbance, therefore, there is no potential for sediment to enter the river.

☐ Continued on additional page(s)

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

See Avoidance and Minimization Statement in Attachment E.

☒ Continued on additional page(s)

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

The Project will not result in impacts to the river, therefore, no mitigation/compensation is proposed.

☐ Continued on additional page(s)

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. USACE Section 10 RHA Permit ☒ Applied ☐ Issued

B. CVFPB Section (6)e Authorization ☒ Applied ☐ Issued

C. _____ ☐ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (Check each box that applies)

☐ Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

14. ENVIRONMENTAL REVIEW

<p>A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?</p> <p><input checked="" type="checkbox"/> Yes (Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each)</p> <p><input type="checkbox"/> No (Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared)</p>			
<input type="checkbox"/> Notice of Exemption <input checked="" type="checkbox"/> Initial Study <input type="checkbox"/> Negative Declaration <input type="checkbox"/> THP/ NTMP	<input checked="" type="checkbox"/> Mitigated Negative Declaration <input type="checkbox"/> Environmental Impact Report <input type="checkbox"/> Notice of Determination (Enclose) <input type="checkbox"/> Mitigation, Monitoring, Reporting Plan	<input type="checkbox"/> NEPA document (type): _____ <input type="checkbox"/> CESA document (type): _____ <input type="checkbox"/> ESA document (type): _____	
<p>B. State Clearinghouse Number (if applicable)</p>		<p>2016012005</p>	
<p>C. Has a CEQA lead agency been determined?</p>		<p><input checked="" type="checkbox"/> Yes (Complete boxes D, E, and F) <input type="checkbox"/> No (Skip to box 14.G)</p>	
<p>D. CEQA Lead Agency</p>		<p>City of Sacramento</p>	
<p>E. Contact Person</p>		<p>Scott Johnson</p>	
		<p>F. Telephone Number</p>	<p>916-808-5842</p>
<p>G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.</p> <p>This Project is the second phase of a bigger project to correct deficiencies and deferred maintenance at the Riverfront Embarcadero and K Street Barge. The first phase does not contain components that would require work in, directly over, or within CDFW waters and is not dependent upon activities conducted for this Project. The overall project was evaluated in an Initial Study/Mitigated Negative Declaration (see Attachment F).</p> <p style="text-align: right;"><input type="checkbox"/> Continued on additional page(s)</p>			
<p>H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?</p> <p><input type="checkbox"/> Yes (Enclose proof of payment) <input checked="" type="checkbox"/> No (Briefly explain below the reason a filing fee has not been paid)</p> <p>The CEQA document has not yet been approved and therefore, the filing fee has not yet been paid. A copy of the CEQA Notice of Determination and environmental filing fee receipt will be submitted, at a later date.</p> <p><i>Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.</i></p>			

15. SITE INSPECTION

<p>Check one box only.</p> <p><input checked="" type="checkbox"/> In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.</p> <p><input type="checkbox"/> I request the Department to first contact (insert name) _____ at (insert telephone number) _____ to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.</p>
--

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

16. DIGITAL FORMAT

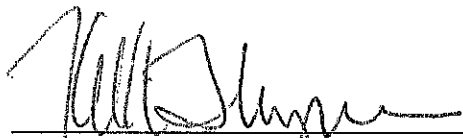
Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☒ Yes (Please enclose the information via digital media with the completed notification form)

☐ No

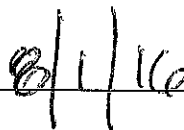
17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.



Signature of Applicant or Applicant's Authorized Representative

Date



Print Name

Notice of Determination

- 1 -

To:
Office of Planning and Research
For U.S. Mail:
P.O. Box 3044
Sacramento, CA 95812-3044

Street Address:
1400 Tenth Street
Sacramento, CA 95814

From:
Department of Fish and Wildlife
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 95434
Contact: Andrea Boertien
Phone: (209) 234-3449



Lead Agency
City of Sacramento
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811
Contact: Scott Johnson
Phone: (916) 808-5842

SUBJECT: Filing of Notice of Determination pursuant to Public Resources Code section 21108

State Clearinghouse Number: 2016012005

Project Title: Old Sacramento Riverfront Embarcadero and K Street Barge Project (Phase 2) (Lake or Streambed Alteration Agreement No. 1600-2016-0270-R3)

Project Location (include county): The project is located at the Sacramento River, in the County of Sacramento, State of California; Latitude 38.582142 degrees, Longitude -121.5061724 degrees; section 35, Township 9N, Range 4E, U.S. Geological Survey (USGS) map Sacramento West; Assessor's Parcel Number 006-0075-003-0000

Project Description: The California Department of Fish and Wildlife (CDFW) has executed Lake and Streambed Alteration Agreement number 1600-2016-0270-R3, pursuant to section 1602 of the Fish and Game Code to the project Applicant, City of Sacramento.

The project is limited to the repair of the existing K Street barge, dock, stairs, and elevator located adjacent to the Delta King, as well as the installation of a maintenance platform on the west side (river side) of the Steamer's Building, adjacent to the river, and approximately 40 feet north of Rio City Café on the Embarcadero of Old Sacramento.

This is to advise that CDFW, acting as a Responsible Agency, approved the above described project on April 8, 2019 and has made the following determinations regarding the project pursuant to California Code of Regulations section 15096, subdivision (i):

1. The project will not have a significant effect on the environment. This determination is limited to effects within CDFW's permitting jurisdiction as a Responsible Agency.
2. CDFW considered the ☒ mitigated negative declaration / ☐ negative declaration prepared by the Lead Agency for this project pursuant to California Code of Regulations section 15096, subdivision (f).
3. Mitigation measures ☒ were / ☐ were not made a condition of CDFW's approval of the project.
4. A mitigation reporting or monitoring plan ☒ was / ☐ was not adopted by CDFW for this project.
5. A statement of overriding considerations was not adopted by CDFW for this project.
6. Findings were not made by CDFW pursuant to California Code of Regulations section 15091.

The ☒ mitigated negative declaration / ☐ negative declaration prepared for the project is available to the general public at the office location listed above for the Lead Agency. CDFW's record of project approval as Responsible Agency is available at CDFW's regional office.

Signature  Date: April 8, 2019

 James Starr, Environmental Program Manager

Date Received for filing at OPR: _____



**ENTEK
CONSULTING GROUP, INC.**

4200 Rocklin Road, Suite 7, Rocklin, CA 95677 Phone (916) 632-6800 Fax (916) 632-6812 www.entekgroup.com

**HAZARDOUS MATERIALS SURVEY
FINAL REPORT**

OWNER/CLIENT

**City of Sacramento
Department of Public Works
5730 24th Street, Bldg. 4
Sacramento, CA 95822**

CONTACT

**Mr. Kirk Thompson
Architect**

SURVEY ADDRESS

**Old Sacramento - K Street Delta King River Boat
1000 Front Street
Sacramento, CA 95814**

BUILDING AREAS SURVEYED

**Access Elevator Building
Access Elevator Building Renovation Project**

PREPARED BY

**Blake Howes
CAC #13-5015 & CDPH #I/A-23951
Entek Consulting Group, Inc.
4200 Rocklin Road, Suite 7
Rocklin, CA 95677**

Entek Project #16-3857

February 22, 2016

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C. Backup Documentation	

Executive Summary

The United States Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (US EPA NESHAP), 40 CFR Part 61, requires an owner or operator of a demolition or renovation project to thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos-containing materials (ACM) prior to the commencement of that project.

This inspection report was requested by Mr. Kirk Thompson, Architect with the City of Sacramento Department of Public Works, Facilities & Real Property Management.

The purpose of the inspection was to comply with US EPA NESHAP requirements and the Sacramento Metropolitan Air Quality Management District (SMAQMD) which has jurisdiction for this project site to determine if asbestos or lead containing materials are present which may be impacted during an upcoming renovation project, which will include general interior and exterior renovations of the K Street Delta King River Boat Elevator Access Building, which was originally constructed in the 1980's.

The attached drawing(s) show approximate sample locations and also identify those bulk sample materials analyzed and found to contain asbestos greater than 1% with a (+) after the sample number. Materials analyzed and found to contain less than 1% asbestos or reported as none detected have a (-) after each sample number.

Materials are classified in the tables of this report as regulated asbestos containing material (RACM), Category I (CAT-I) or Category II (CAT-II) ACM, or asbestos containing construction material (ACCM), which included collecting multiple samples of some materials. Contractors and other individuals who view the sample locations and associated results indicated with either a (-) or a (+) on the drawing to make determinations take the risk of misidentifying a material and may arrive at determinations which are in direct conflict with the written findings of this report. This use of the drawing and the information provided on it relating to individual sample results in determining if a material does or does not contain asbestos is not recommended.

This is a summary of the report. The report must be read in its entirety, and the reader must review all the detailed information provided in the body of the report prior to making any interpretations, or conclusions pertaining to the information. Any conclusions made by the reader about the information provided in the body of this report which are contradictory or not included in this report are the responsibility of the reader.

Asbestos

On February 17, 2016, Entek conducted a survey specific to areas designated by Mr. Kirk Thompson that will be included in the upcoming renovation work. These areas included all interior and exterior components of the access elevator building. Laboratory analysis determined that none of the sampled materials contain asbestos. Specifics can be found in later sections of the report.

Materials found or assumed to contain asbestos:

- NONE

Materials that do not contain asbestos:

- Wood Shingle Roof Vapor Barrier - Roof of Building
- White Sealant - Exterior of Building on Wood Siding & Trim
- Drywall - Interior Elevator Shaft
- Drywall & Joint Compound - Interior Mechanical Room
- Brown/White Paint Coating - Interior Mechanical Room
- White Adhesive - Interior Mechanical Room
- Concrete - Interior Mechanical Room

Lead

Entek investigated existing interior and exterior paints on walls, frames, hand rails, and interior elevator shaft components that may be disturbed during this project in an effort to determine if lead is present in these materials.

The white colored exterior wood siding paint and the textured paint/coating on the ceiling of the mechanical room were determined to contain lead in amounts less than 5,000 parts per million (ppm) and are classified as lead containing paint (LCP). Any work designated by California Occupational Safety Health Administration (Cal/OSHA) as a “trigger task” which will impact these paints, coatings, or materials must be done by properly trained personnel, in compliance with all lead related Cal/OSHA regulations and requirements.

All other paints were found not to contain lead above the method detection limit of 50 ppm.

Introduction

This report presents results of an asbestos and lead survey performed by Entek which included specific interior and exterior designated areas included in an upcoming project on the access elevator building associated with the K Street Delta King River Boat located at 1000 Front Street in Old Sacramento.

I conducted this survey on February 17, 2016. I am a US EPA Asbestos Hazard Emergency Response Act (AHERA)-accredited building inspector, a Cal/OSHA Certified Asbestos Consultant (CAC), and a State of California Department of Public Health (CDPH) certified Lead Inspector/Assessor.

Building Description

The elevator access building contains a single two story elevator shaft and has a basement mechanical room with elevator and electrical equipment. It is a wood framed building with a wood shingle roof and painted wood siding. The interior of the elevator shaft is finished in untaped drywall and the mechanical room is finished in taped drywall with a concrete floor. The elevator car has a rubber, metal, and wood floor with formica wall panels and

metal ceiling. Various stair cases with metal railing and wood stairs are located around the building. Black painted light fixtures are present on each side of the structure.

Asbestos Inspection and Sample Collection Protocols

Entek included all designated interior and exterior areas included in this report, but did not use any demolition methods to look within enclosed wall or ceiling cavities or plenum spaces during this investigation. Entek did include all suspect materials observed in, on, or associated with the areas included in this report.

Bulk samples were collected of various materials suspected to contain asbestos by utilizing a power drill and coring tube, cutting the materials with a razor knife, or use of other appropriate hand tools.

Miscellaneous and surfacing materials were collected from each homogenous area in a manner sufficient to determine whether the material is or is not ACM as required in 40 CFR Part 763, Asbestos-Containing Materials in Schools; Final Rule and Notice, published October 30, 1987.

Approximate locations of all samples collected during this inspection are indicated on the "Bulk Asbestos Material Analysis Request Form for Entek", which served as the chain of custody for the samples, and on the building diagrams attached to this report.

Asbestos Bulk Sample Results

There were several materials observed which are considered "suspect" under US EPA guidelines. Under current US EPA guidelines for conducting building inspections for ACM, all "suspect" materials must be assumed to contain asbestos until otherwise determined by laboratory testing.

The samples of materials suspected of containing asbestos were submitted to Asbestech, a laboratory located in Carmichael, California. These samples were subsequently analyzed by polarized light microscopy (PLM) with dispersion staining. Asbestech is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for this analysis.

US EPA NESHAP uses the terms RACM, CAT-I, & CAT-II when identifying materials which contain asbestos in amounts greater than 1%. Cal/OSHA uses the term ACCM which indicates a manufactured construction material contains greater than 0.1% asbestos by weight by the PLM method. This definition can be found in 8 CCR Part 1529.

A total of seven (7) bulk samples were collected of all the materials considered to be "suspect", which were observed during this investigation. Results of the analysis are listed in the following table:

Suspect Materials Found NOT TO Contain Asbestos or Considered Non-Suspect				
Sample ID#'s	Suspect Material	EPA AHERA "Suspected" ACM	Asbestos Content	Location
01A	Shingle Roof Black Vapor Barrier	Miscellaneous	NONE DETECTED	Roof of Access Elevator Building
02A	White Exterior Wood Sealant	Miscellaneous	NONE DETECTED	Exterior of Access Elevator Building
03A	White Drywall	Miscellaneous	NONE DETECTED	Interior Shaft of Access Elevator Building
04A	White Drywall, Joint Compound	Miscellaneous	NONE DETECTED	Mechanical Room of Access Elevator Building
05A	Brown/White Paint Coating	Miscellaneous	NONE DETECTED	Mechanical Room of Access Elevator Building
06A	White Adhesive	Miscellaneous	NONE DETECTED	Mechanical Room of Access Elevator Building
07A	Concrete	Miscellaneous	NONE DETECTED	Mechanical Room of Access Elevator Building

NOTE: All sample numbers are preceded by ECG-16-3857-

US EPA AHERA uses three terms when determining the classification of a material for the purpose of sampling. These terms include miscellaneous, surfacing, and thermal system insulation (TSI).

Miscellaneous materials are building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or TSI.

Surfacing materials are materials that are sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceiling and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

TSI is material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain, water condensation, or for other purposes.

The information provided in the tables of this report are for use by the Owner in determining where asbestos containing materials are located, and whether or not any future work may impact those materials. The information is also provided for use by any contractor who may perform work in areas impacting the materials listed in this report.

Any building materials which are considered "suspect" for containing asbestos which have not been identified in this report must be assumed to contain asbestos in amounts >1% until properly investigated and/or tested.

Materials commonly excluded from being suspected for containing asbestos include, but are not limited to: unwrapped pink and yellow fiberglass insulating materials or products,

foam insulation, wood, metal, plastic, rubber, or glass. All other types of building materials or coatings on the materials listed above are commonly listed as “suspect” and must be tested prior to impact. Work impacting these untested or newly discovered materials must cease until an investigation can be completed.

Asbestos Regulatory Requirements

US EPA

The property included in this survey report is located in Sacramento County. Sacramento Metropolitan Air Quality Management District (SMAQMD) has been given authority for enforcement of the NESHAP regulations in Sacramento County through the use of their own rules (Rule 902).

Ten day advance written notification to the SMAQMD is required prior to the performance of any demolition project regardless of asbestos being present or not. A demolition is the wrecking, taking out, or burning of any load supporting structural member. A renovation is everything else.

Ten day advance written notification is also required when >160 square feet of RACM will be disturbed. Since none of the materials sampled during this survey were found to contain asbestos, prior notice to SMAQMD will not be required for asbestos purposes. Advance notification would still be required in the event of a demolition activity.

Cal/OSHA

Disturbance of any ACM or ACCM could generate airborne asbestos fibers and would be regulated by Cal/OSHA. Cal/OSHA worker health and safety regulations in 8 CCR Part 1529 apply during any disturbance of asbestos, regardless of the percentage, by a person while in the employ of another. These requirements apply even for materials found to contain <1% asbestos.

Since none of the materials sampled during this survey were found to contain asbestos, prior notice to the local office for the State of California, Department of Occupational Safety and Health will not be required.

Lead Inspection, Sampling, & Results

A total of six (6) bulk samples of interior and exterior paints were collected and submitted to Asbestech laboratory. These samples were subsequently analyzed by atomic absorption spectrometry (AAS). Asbestech is accredited by the California Department of Public Health’s Environmental Laboratory Accreditation Program Branch to perform this analysis. Results are listed in the following tables:

Paints/Coatings/ Materials Determined to be Lead Containing Paint (LCP)		
Paint/Coating Color or Material	Lead Content	Component/Location
White Colored Paint	53 ppm	Exterior Wood Siding of Access Elevator Building
White/Brown Colored Coating	98 ppm	Mechanical Room Ceiling of Access Elevator Building

Paints/Coatings/Materials Determined NOT TO Contain Lead (\leq Reporting Limit, 50 ppm)	
Paint/Coating Color or Material	Building Component
Gray Colored Paint	Exterior Metal Elevator Doors & Frames
White Colored Paint	Exterior Metal Hand Rails
Blue Colored Paint	Interior Elevator Shaft Metal
Black Colored Paint	Exterior Metal Light Fixtures

LBP - Materials/coatings/paints meeting the definition of lead-based paint as defined by the CDPH and the US EPA, currently defined as containing lead in concentrations equal to or greater than 1.0 mg/cm², 5,000 parts per million (ppm), or 0.5% by weight.

LCP - Materials/coatings/paints which contain measurable amounts of lead. The disturbance of these materials/coatings/paints is regulated by Cal/OSHA.

Lead Regulatory Compliance

Any upcoming project which may result in the disturbance of lead containing products or surfaces, but is not intended to remediate a lead hazard or specifically designed to remove LBP to reduce or eliminate a known hazard, would be considered “lead related construction work”.

Lead related construction work does not fit the classification of a “lead abatement project” under CDPH Title 17 regulations. “*Abatement*” is defined in 17 CCR, Division 1, Chapter 8, Article 1 as “any set of measures designed to reduce or eliminate lead hazards or LBP for public and residential buildings, but does not include containment or cleaning.” A *lead hazard* is defined in 17 CCR, Division 1, Chapter 8, Article 1 as “deteriorated LBP, lead contaminated dust, lead contaminated soil, disturbing LBP or presumed LBP without containment, or any other nuisance which may result in persistent and quantifiable lead exposure.”

Lead related construction work means any “construction, alteration, painting, demolition, salvage, renovation, repair, or maintenance of any residential or public building, including preparation and cleanup, that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead”. (17 CCR, Division 1, Chapter 8, Article 1).

Currently, Cal/OSHA has not established a definition for LBP, nor have they established minimum concentrations where their regulations do not apply. Cal/OSHA regulates all construction activities involving materials containing lead, including LBP. These regulations are found in 8 CCR, Part 1532.1, Lead in Construction.

Since Cal/OSHA has not established a concentration of lead in a product where their regulations do not apply, any disturbance to products containing lead come under the jurisdiction of Cal/OSHA and their regulations. Disturbance of paints/coatings or materials determined to be LBP may trigger a pre-work notification to Cal/OSHA if “trigger tasks” disturb 100 square feet or more of those paints/coatings or materials. Trigger tasks are described in 8 CCR Part 1532.1 and include: manual demolition, power tool cleaning without dust collection systems, abrasive blasting, welding, cutting, and torch burning.

Limitations

Entek inspected only the specific areas designated by Mr. Kirk Thompson that will be included in the upcoming project. This survey is specific to all interior and exterior areas of the Delta King River Boat access elevator building. As a result, the information provided in this inspection report may not be used to extend the inspection results to areas not included in this report without additional review and sampling as necessary.


Entek did not perform any destructive sampling to look into wall, ceiling, or plenum spaces. As a result, it may be possible for materials to be hidden in these areas which are not included in this report. If any new materials not listed as having been sampled, the new material must be assumed to contain asbestos until properly inspected and tested for asbestos content.

Entek’s policy is to retain a full copy of these written documents for three (3) years once the file is closed and final billed. At the end of the three (3) year period the written files will be destroyed without further notice. It is suggested copies of the file(s) are maintained as per the policy of the City of Sacramento.

Entek will be providing only this electronic copy of the report and its attachments for your use. However, if you would like a hard copy of this report please do not hesitate to ask. Entek will be happy to mail the report upon receipt of your request.

Thank you for choosing Entek for your environmental needs. Please call me at (916) 632-6800 if you have any questions regarding this report.

Prepared by:


Blake Howes
Project Manager
Cal/OSHA CAC #13-5015
CDPH I/A/M Certification #23951



Appendices

- A. Asbestos Related Documents
- B. Lead Related Documents
- C. Backup Documentation

Z:\Clients\City of Sacramento\16-3857 Old Sacramento K St Barge - HazMat\Project Letters & Reports\Final Haz Mat Insp Rpt 2-22-16.wpd

APPENDIX A

ASBESTOS RELATED DOCUMENTS

- Bulk Asbestos Material Analysis Report Form for Entek
- Bulk Asbestos Analysis Report From Asbestech
- Bulk Asbestos Material Analysis Request Form for Entek
- Asbestos Bulk Sample Location Drawing
- SMAQMD Asbestos Survey Form
- SMAQMD Renovation/Demolition & Survey Notification Form



BULK ASBESTOS MATERIAL *Analysis Report*

ENTEK CONSULTING GROUP, INC.

4200 ROCKLIN ROAD, SUITE 7

ROCKLIN, CA 95677

(916) 632-6800

(916) 632-6812 FAX

mainoffice@entekgroup.com

Date of Sampling: February 17, 2016

Lab: Asbestech

Job Number: 16-3857

Turnaround Time: Day: Friday, Feb 17 2013 5pm

Client Name: City of Sacramento

Collected by: Blake Howes

Site Address: Old Sacramento K Street Barge
Sacramento, CA

ANALYSIS REQUESTED: Asbestos by PLM with
Dispersion Staining

SAMPLE #	RESULTS	MATERIAL DESCRIPTION/LOCATION
ECG-16-3857-01A	NONE DETECTED	Exterior; Roof; Vapor Barrier
ECG-16-3857-02A	NONE DETECTED	Exterior; Wood Sealant
ECG-16-3857-03A	NONE DETECTED	Interior; Upper Shaft; Drywall
ECG-16-3857-04A	NONE DETECTED	Mechanical Room; Drywall & Joint Compound
ECG-16-3857-05A	NONE DETECTED	Mechanical Room; Paint / Coating
ECG-16-3857-06A	NONE DETECTED	Mechanical Room; Adhesive on Ceiling
ECG-16-3857-07A	NONE DETECTED	Mechanical Room; Concrete

Z:\Clients\City of Sacramento\16-3857 Old Sacramento K St Barge - HazMat\Bulk Sample Asb\Bulk Report 02-17-16.wpd

ASBESTECH
6825 Fair Oaks Blvd., Suite 103
Carmichael, California 95608
Tel.(916) 481-8902 Fax (916) 481-3975

Client:

Entek Consulting Group, Inc.
4200 Rocklin Rd., Suite 7
Rocklin, CA 95677

Job:

16-3857 City of Sacramento
Old Sacramento K Street Barge
Sacramento, Ca

BULK ASBESTOS ANALYSIS REPORT

LAB JOB # 62758

Date/Time Collected: 2/17/16

Date Received: 2/17/16

NVLAP Lab Code 101442-0

CDPH # 1153

Date Analyzed: 2/18/16

<i>Sample No.</i>	<i>Color/Description</i>	<i>% Type Asbestos</i>	<i>Other Materials</i>
ECG-16-3857-01A	Black exterior roof vapor barrier	NONE DETECTED	Tar Binder Cellulose
02A	White exterior wood sealant	NONE DETECTED	Calcite Opagues
03A	White drywall, upper shaft	NONE DETECTED	Gypsum Fibrous Glass
04A	White drywall, mechanical room	NONE DETECTED	Gypsum Fibrous Glass
	White joint compound	NONE DETECTED	Calcite
05A	Brown/ white paint/ coating, mechanical room	NONE DETECTED	Opagues
06A	White adhesive on ceiling, mechanical room	NONE DETECTED	Synthetics Calcite
07A	Gray concrete, mechanical room	NONE DETECTED	Granular Mins.

THE ANALYSIS USES POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING FOLLOWING E.P.A. METHOD 600/R-93/116. NON-FRIABLE MATERIALS WERE ANALYZED APPLYING THE SAME METHOD. THE LOWER DETECTION LIMIT IS <1 % WITH THE PROviso THAT PLM MAY NOT DETECT FIBERS <0.25 MICRONS IN DIAMETER THAT MAY BE PRESENT IN SAMPLES SUCH AS FLOOR TILES. IN ACCORDANCE WITH TITLE 22, CCR, SECTION 66261.24(a)(2)(A), THE MCL IS 1 %. SAMPLES WERE NOT COLLECTED BY ASBESTECH. THIS REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF ASBESTECH. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT MUST NOT BE USED TO CLAIM PRODUCT ENDORSEMENT BY N.V.L.A.P. OR ANY AGENCY OF THE U.S. GOVERNMENT. ASBESTECH ACCEPTS TECHNICAL RESPONSIBILITY FOR THIS REPORT AND DATE OF ISSUE.



62758

BULK ASBESTOS MATERIAL *Analysis Request Form for***ENTEK CONSULTING GROUP, INC.**

4200 ROCKLIN ROAD, SUITE 7
ROCKLIN, CA 95677
(916) 632-6800
(916) 632-6812 FAX
mainoffice@entekgroup.com

Date of Sampling: February 17, 2016**Lab:** Asbestech**Job Number:** 16-3857**Turnaround Time:** Day: Friday, Feb 17 2013 5pm**Client Name:** City of Sacramento**Collected by:** Blake Howes**Site Address:** Old Sacramento K Street Barge
Sacramento, CA**ANALYSIS REQUESTED:** Asbestos by PLM with
Dispersion Staining**Special Instruction:**

Stop Analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.

Please e-mail results as soon as available and include copy of submittal with those results.

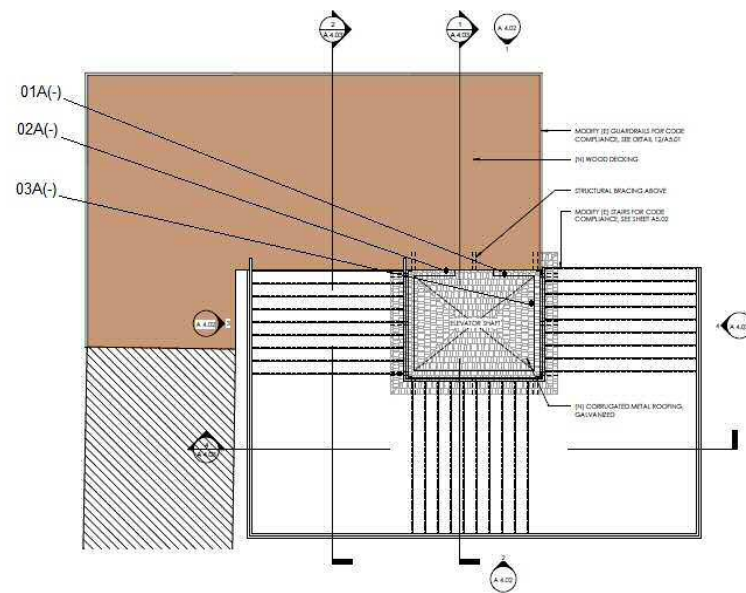
SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-16-3857-01A	Exterior; Roof; Vapor Barrier
ECG-16-3857-02A	Exterior; Wood Sealant
ECG-16-3857-03A	Upper Shaft; Drywall
ECG-16-3857-04A	Mechanical Room; Drywall & Joint Compound
ECG-16-3857-05A	Mechanical Room; Paint / Coating
ECG-16-3857-06A	Mechanical Room; Adhesive on Ceiling
ECG-16-3857-07A	Mechanical Room; Concrete

Z:\Clients\City of Sacramento\16-3857 Old Sacramento K St Barge - HazMat\Bulk Sample Asb\Bulk Request 02-17-16.wpd

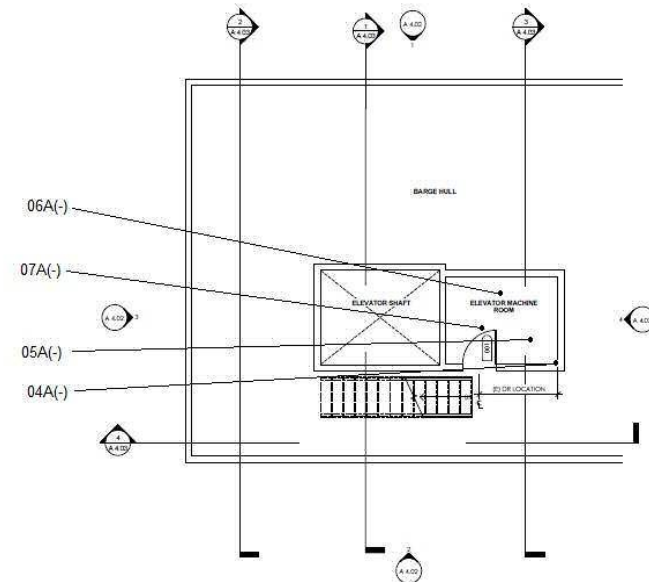
Delivered by:**Date:** 2/17/16 **Time:** 1615 **AM/PM****Received by:****Date:** 2/17/16 **Time:** 1630 **AM/PM**



Upper Floor



Basement



Sample Numbers are Preceded by ECG-16-3857-

City of Sacramento
Old Sacramento - K Street Delta King
1000 Front Street
Sacramento, CA 95814


Entek Consulting Group, Inc
4200 Rocklin Road, Suite 7
Rocklin, California 95677
Map Not to Scale

Asbestos Sampling Locations
Samples Collected by Blake Howes
on February 17, 2016
Project Number 16-3857

Asbestos Survey Form

(See Instructions)

777 12th Street, 3rd Floor
Sacramento, CA 95814
Office (916) 874-4800
Fax (916) 874-4899
Email: asbestos@airquality.org

1. Purpose of Survey			<input checked="" type="checkbox"/> Renovation			<input type="checkbox"/> Demolition		
2. Facility Information								
Project Area(s) Description								
Old Sacramento K Street Barge Access Elevator								
Address					City		# of Structures	
1000 Front Street					Sacramento		1	
3. Owner Information								
Name								
City of Sacramento - Department of Public Works Facilities & Real Property Management								
Address					City/State		Zip	
5730 24 th Street					Sacramento, California		95822	
Contact		Phone		Fax		Email		
Mr. Kirk Thompson		916-808-8431				kthompson@cityofsacramento.org		
4. Consultant Information			Survey Date(s): 2/17/16					
Company Name								
Entek Consulting Group, Inc.								
Name						DOSH #		
Blake Howes						13-5015		
Address				City/State			Zip	
4200 Rocklin Road, Suite 7				Rocklin, California			95677	
Phone		Fax		Email			Signature	
(916) 632-6800		(916) 623-6812		bhowes@entekgroup.com				
5. Client Information (If different than owner)			<input type="checkbox"/> General Contractor			<input type="checkbox"/> Insurance Company		
<input type="checkbox"/> Architect			<input type="checkbox"/> Property Manager			<input type="checkbox"/> Other _____		
Name								
Address				City/State			Zip	
Contact		Phone		Fax		Email		
6. Have all of the suspect materials that will be disturbed been sampled?							<input checked="" type="checkbox"/> Yes	
							<input type="checkbox"/> No	
If no, explain why:								
7. Summary of Total Asbestos Containing Material (ACM) Findings								
Regulated Asbestos Containing Material (RACM) (Includes materials subject to known mechanical removal and fire damaged materials)				Category II		Category I		
Square Ft.	Linear Ft.	Cubic Ft.	Square Ft.	Linear Ft.	Square Ft.	Linear Ft.		
0	0	0	0	0	0	0	0	
To receive future SMAQMD Rule updates and changes affecting your industry (check one box):								
<input type="checkbox"/> Please send e-mail notices to				<input type="checkbox"/> I will sign up myself at www.airquality.org/listserve/ to receive emailed notices.				
<input type="checkbox"/> I am already subscribed.		<input type="checkbox"/> I want the District to mail notices to the address on this application:				<input type="checkbox"/> Owner		<input type="checkbox"/> Consultant

Asbestos Renovation/Demolition Notification Form

777 12th Street, 3rd Floor
Sacramento, CA 95814
Office (916) 874-4800
Fax (916) 874-4899
Asbestos@airquality.org

1	<input type="checkbox"/> Renovation (Do not complete items 5 or 6)	<input type="checkbox"/> Ordered Demolition (Complete all sections)
	<input type="checkbox"/> Demolition (Complete all sections)	<input type="checkbox"/> Emergency Demolition (Complete all sections)

2	Contractor	Owner City of Sacramento
	Address	Address 5730 24th Street
	City State/ Zip	City State/ Zip Sacramento, CA 95822
	Email	Email kthompson@cityofsacramento.org
	Telephone	Telephone 916-808-8431

3	Structure Name Delta King Access Elevator	Renovation Area Shaft, Exterior, & Mechanical Rooms	# of Floors 3
	Address 1000 Front Street	City/ Zip Sacramento, 95814	Year Built 1980's

4	Preference for return of form	<input type="checkbox"/> E-mail (see instructions)	US Mail : <input type="checkbox"/> Contractor <input type="checkbox"/> Owner	<input type="checkbox"/> Pick up (after two working days)

SECTIONS 5&6 - DEMOLITIONS ONLY-NOTE: Start date must be at least 10 working days from the day of your postmark or hand delivery of this form to SMAQMD

5	Start Date: _____/_____/_____	Completion Date: _____/_____/_____	Emergency Demo # _____

6	Revision # 1 2 3 4 5 6 7 8 9 (circle)	
	Old Start Date _____/_____/_____	New Start Date _____/_____/_____
	Old Completion Date _____/_____/_____	New Completion Date _____/_____/_____
	Method of Demo:	
	Procedure to be followed if RACM is found or Category II material becomes friable:	

SECTION 7 - Attach completed Asbestos Survey Form and Consultant's report or have DOSH Consultant complete section 7

7	Company Name Entek Consulting Group, Inc.		Telephone 916-632-6800	
	Surveyor's Name Blake Howes		DOSH # 13-5015	
	Analytical Procedure PLM with Dispersion Staining		Survey Date 2-17-16	
	Amount of RACM	Square Feet 0	Linear Feet 0	Cubic Feet 0
	Amount of Category I 0		Amount of Category II 0	
	Project Address 1000 Front Street		City Sacramento	Zip 95814
	Suspect Materials Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Consultant's Signature <i>Blake Howes</i>	

I have read and understand the directions. The information on this form is true and accurate.

8	I certify that the asbestos survey conducted on _____ (date) represents the facility as built. _____ (initial)		
	Applicant Name (Print)	<input type="checkbox"/> Owner <input type="checkbox"/> Rep / Agent <input type="checkbox"/> Contractor	Permit shall not be issued prior to:
	Phone Number		
	Applicant's Signature	Date	

SMAQMD USE ONLY:

Project # _____ Received Date/ Postmark _____ Date Form Returned _____ Initial _____
Check # _____ Receipt # _____ Amount Paid _____ Staff _____ Date Approved _____

APPENDIX B

LEAD RELATED DOCUMENTS

- Bulk Lead Material Analysis Report Forms for Entek
- Lead in Paint Samples Analysis Reports From Asbestech
- Bulk Lead Material Analysis Request Forms for Entek
- Lead Bulk Sample Location Drawing
- Lead Hazard Evaluation Report (CDPH 8552)



BULK LEAD MATERIAL *Analysis Report Form for*

ENTEK CONSULTING GROUP, INC.

4200 ROCKLIN ROAD, SUITE 7

ROCKLIN, CA 95677

(916) 632-6800

(916) 632-6812 FAX

mainoffice@entekgroup.com

Date of Sampling: February 17, 2016

Lab: Asbestech

Job Number: 16-3857

Turnaround Time:

Client Name: City of Sacramento

Collected by: Blake Howes

Site Address: Old Sacramento K Street Barge
Sacramento, CA

SAMPLE #	LEAD RESULT (PPM)	RESULT IN WT%	MATERIAL DESCRIPTION/LOCATION
ECG-16- 3857-01Pb	53	0.0053	Exterior; White Paint; Wood
ECG-16- 3857-02Pb	<50	<0.0050	Exterior; Gray Elevator Door Paint; Metal
ECG-16- 3857-03Pb	<50	<0.0050	Exterior; White Handrail; Metal
ECG-16- 3857-04Pb	<50	<0.0050	Interior; Blue Paint on Motor; Metal
ECG-16- 3857-05Pb	98	0.0098	Mechanical Room; Paint / Coating; Metal
ECG-16- 3857-06Pb	50	<0.0050	Exterior; Black Paint on Light Fixture; Metal

Z:\Clients\City of Sacramento\16-3857 Old Sacramento K St Barge - HazMat\Bulk Sample Pb\Bulk Report Pb 02-17-16.wpd

ASBESTECH
6825 Fair Oaks Blvd., Suite 103
Carmichael, California 95608
Tel (916) 481-8902
Fax (916) 481-3975

FLAME ATOMIC ABSORPTION SPECTROMETRY
LEAD (Pb) IN PAINT SAMPLES
METHOD SW846-3050B-7420

CLIENT:
Entek Consulting Group, Inc.
4200 Rocklin Rd., Suite 7
Rocklin, CA 95677

CDPH ELAP#1153
ELPAT#101801

JOB I.D: 16-3857, City of Sacramento,
Old Sacramento K Street Barge,
Sacramento, Ca

DATE RECEIVED: 2/17/16

DATE ANALYZED: 2/19/16

LAB JOB NO: 10657

DATE REPORTED: 2/19/16

SAMPLE DATE	SAMPLE NUMBER	DESCRIPTION	PPM	RESULT IN WT%	RL	Q.C. BATCH
2/17/16	ECG-16-3857-01Pb	Exterior white paint, wood	53	0.0053	0.0050%	23
2/17/16	ECG-16-3857-012Pb	Exterior gray elevator door paint, metal	<50	<0.0050	0.0050%	23
2/17/16	ECG-16-3857-03Pb	Exterior white handrail paint, metal	<50	<0.0050	0.0050%	23
2/17/16	ECG-16-3857-04Pb	Interior blue paint on motor, metal	<50	<0.0050	0.0050%	23
2/17/16	ECG-16-3857-05Pb	Mechanical room paint/ coating, metal	98	0.0098	0.0050%	23
2/17/16	ECG-16-3857-06Pb	Exterior black paint on light fixture, metal	<50	<0.0050	0.0050%	23

Analytical results and reports are generated at the request and for the exclusive use of the client. This report applies only to the items tested. Samples were not collected by ASBESTECH. This report must not be reproduced except in full, and only with the express permission of ASBESTECH. This report must not be used to claim product endorsement by any agency of the U.S. Government.





10657

BULK LEAD MATERIAL Analysis Request Form for

ENTEK CONSULTING GROUP, INC.

4200 ROCKLIN ROAD, SUITE 7

ROCKLIN, CA 95677

(916) 632-6800

(916) 632-6812 FAX

mainoffice@entekgroup.com

Date of Sampling: February 17, 2016

Lab: Asbestech

Job Number: 16-3857

Turnaround Time: Day: Friday, Feb 17 2013 5pm

Collected by: Blake Howes

Site Address: Old Sacramento K Street Barge
Sacramento, CAANALYSIS REQUESTED: Lead by Atomic
Absorption Spectrometry

Special Instruction: Please report result in PPM and % by weight. Please email results as soon as possible.

B23

SAMPLE #	MATERIAL DESCRIPTION/LOCATION	
ECG-16-3857-01Pb	Exterior; White Paint; Wood	531.0053
ECG-16-3857-02Pb	Exterior; Gray Elevator Door Paint; Metal	<
ECG-16-3857-03Pb	Exterior; White Handrail; Metal	<
ECG-16-3857-04Pb	Interior; Blue Paint on Motor; Metal	<
ECG-16-3857-05Pb	Mechanical Room; Paint / Coating; Metal	981.0098
ECG-16-3857-06Pb	Exterior; Black Paint on Light Fixture; Metal	<

Z:\Clients\City of Sacramento\16-3857 Old Sacramento K St Barge - HazMat\Bulk Sample Pb\Bulk Request Pb 02-17-16.wpd

Delivered by:

Date:

2/17/16

Time:

1615

AM/PM

Received by:

Date:

2/17/16

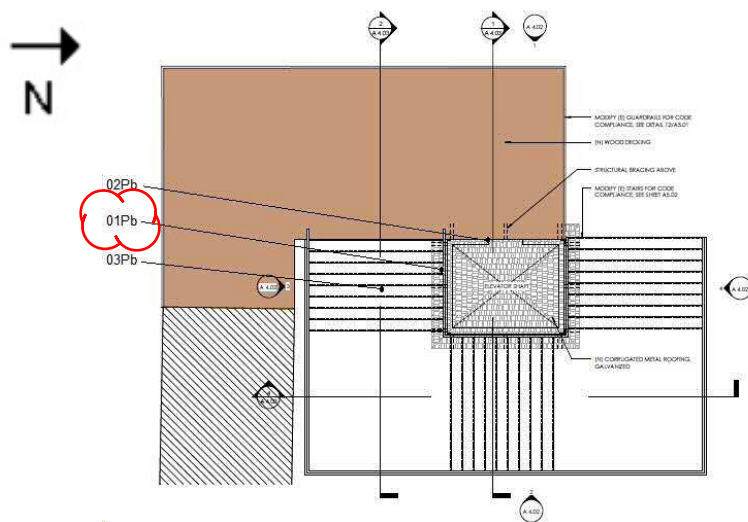
Time:

1630

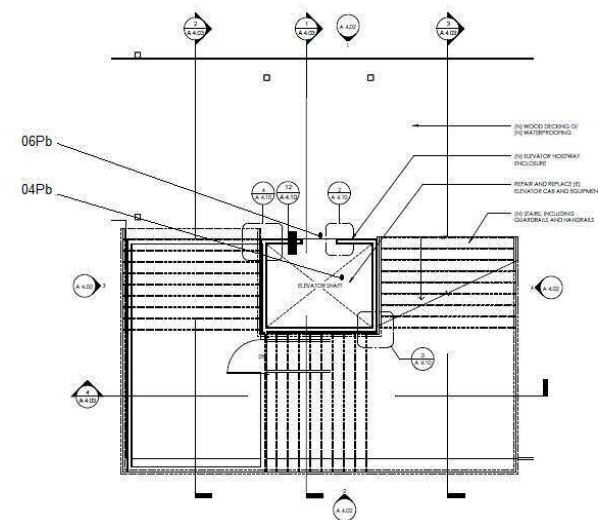
AM/PM

Page 1 of 1

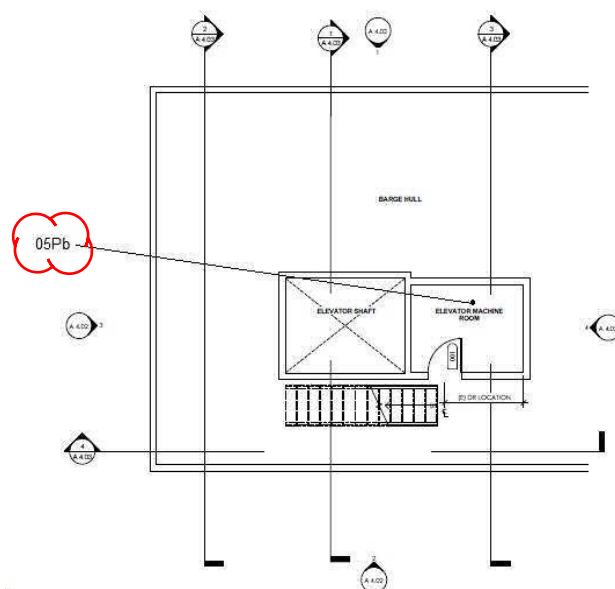
Upper Floor



Lower Floor



Basement



Sample Numbers are Preceded by ECG-16-3857-

City of Sacramento
Old Sacramento - K Street Delta King
1000 Front Street
Sacramento, CA 95814

Entek Consulting Group, Inc
4200 Rocklin Road, Suite 7
Rocklin, California 95677
Map Not to Scale

Lead Sampling Locations
Samples Collected by Blake Howes
on February 17, 2016
Project Number 16-3857

LEAD HAZARD EVALUATION REPORT

Section 1 – Date of Lead Hazard Evaluation 2-17-16
Section 2 – Type of Lead Hazard Evaluation (Check one box only)

☐ Lead Inspection
 ☐ Risk Assessment
 ☐ Clearance Inspection
 ☒ Other (specify) See Attached Letter dated April 21, 2015

Section 3—Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)] 1000 Front Street		City Sacramento	County Sacramento	Zip Code 95814
Construction date (year) of structure 1980's	Type of structure <input type="checkbox"/> Multi-unit building <input type="checkbox"/> School or daycare <input type="checkbox"/> Single family dwelling <input checked="" type="checkbox"/> Other (specify) <u>Elevator</u>		Children living in structure? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Don't Know	


Section 4—Owner of Structure (If business/agency, list contact person)

Name City of Sacramento, Mr. Kirk Thompson - Architect		Telephone Number (916) 808-8431	
Address [number, street, apartment (if applicable)] 5730 24 th Street	City Sacramento	State California	Zip Code 95822

Section 5—Results of Lead Hazard Evaluation (Check all that apply)

☒ No lead-based paint detected
 ☐ Intact lead-based paint detected.
 ☐ Deteriorated lead-based paint detected
☐ No lead hazards detected
 ☐ Lead-contaminated dust found
 ☐ Lead contaminated soil found
 ☐ Other _____

Section 6—Individual Conducting Lead Hazard Evaluation

Name Entek Consulting Group, Inc. - Blake Howes		Telephone Number (916) 632-6800	
Address [number, street, apartment (if applicable)] 4200 Rocklin Road, Suite 7	City Rocklin	State CA	Zip Code 95677
CDPH certification number 23951	Signature 		Date 2-22-16

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)
N/A

Section 7—Attachments

- A. A foundation diagram or sketch of the structure indicating the specific locations of each lead hazard or presence of lead-based paint;
- B. Each testing method, device, and sampling procedure used;
- C. All data collected, including quality control data, laboratory results, indicating laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
 Childhood Lead Poisoning Prevention Branch Reports
 850 Marina Bay Parkway, Building P, Third Floor
 Richmond, CA 94804-6403
 Fax: (510) 620-5656



ENTEK CONSULTING GROUP, INC.

4200 Rocklin Road, Suite 7, Rocklin, CA 95677 Telephone (916) 632-6800 Fax (916) 632-6812 www.entekgroup.com

April 21, 2015

State of California
Health and Human Services Agency
California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Parkway, Building P, Third Floor
Richmond, CA 94804-6403

RE: Lead Hazard Evaluation Report (CDPH 8552 - 6/07)

To Whom it May Concern:

In a memorandum issued to all "California Department of Health Services Certified Inspector/Assessors and Project Monitors", by the State of California - Health and Human Services Agency, Department of Health Services (CDPH), dated June 5, 2006, and signed by Mr. Paul Fitzmaurice, Chief, Lead Hazard Reduction Section, Childhood Lead Poisoning Prevention Branch, it was made clear that "... the on-site investigation, for compensation, of lead-based paint or lead hazards..." includes "... conducting testing and/or sampling activities as part of a non-'abatement' project (e.g. painting remodeling, etc.)."

As a result of this directive, Entek Consulting Group, Inc. (Entek) is providing you with the current CDPH Form 8552 (06/07) documenting an inspection/assessment performed by Entek.

The investigation results being reported on the attached CDPH Form 8552 do not reflect a "Lead Inspection/Assessment" as defined in Title 17. As a result the "Other" box, in "Section 2 - Type of Lead Hazard Evaluation", is checked. This is being done to make it clear this investigation does not meet the definition of a "Lead Inspection/Assessment", and submission of the attached CDPH Form 8552 is not meant to reflect that it does.

CDPH Form 8552, Section 5 - Results of Lead Hazard Evaluation, does not allow for an appropriate option pertaining to the results of the investigation/assessment performed and being reported (i.e. for the purpose of compliance with Cal/OSHA, Title 8 1532.1 Lead), or an assessment being performed in an unregulated structure. While one of or more of the four boxes is checked to reflect the results of the inspection/assessment. The lead inspection/assessment was not required under Title 17.

This letter is not intended to disagree whether a CDPH Form 8552 must be submitted, but is for clarification as to the information included on the CDPH Form 8552, and its intended purpose, namely to reflect the goal of the services performed by Entek.

Sincerely,

Richard A. Beall, CIH, CSP
President

Z:\Lead\Lead Hazard Evaluation Report CDPH 8552 Ltr 4-21-15.wpd

APPENDIX C

BACK UP DOCUMENTATION

- Inspector Accreditations and Certifications
- Laboratory Accreditations for Asbestos and Lead Analysis

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Blake W Howes

Name



Certification No. **13-5015**

Expires on **04/17/16**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101442-0

ASBESTECH
Carmichael, CA

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

BULK ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2015-07-01 through 2016-06-30

Effective dates



A handwritten signature in black ink, appearing to read "William R. Mule".

For the National Institute of Standards and Technology

Page 346 of 379



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ASBESTECH

6825 Fair Oaks Blvd., Suite 103

Carmichael, CA 95608

Mr. Tommy Conlon

Phone: 916-481-8902 Fax: 916-481-3975

E-Mail: asbestech@sbcglobal.net

URL: <http://www.asbestechlab.com>

BULK ASBESTOS FIBER ANALYSIS (PLM)

NVLAP LAB CODE 101442-0

NVLAP Code Designation / Description

18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2015-07-01 through 2016-06-30

Effective dates

For the National Institute of Standards and Technology



CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH

CERTIFICATE OF ENVIRONMENTAL LABORATORY ACCREDITATION

Is hereby granted to

Asbestech

6825 Fair Oaks Boulevard, Suite 103

Carmichael, CA 95608

Scope of the certificate is limited to the
"Fields of Testing"
which accompany this Certificate.

Continued accredited status depends on successful completion of on-site,
proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **1153**

Expiration Date: **03/31/2016**

Effective Date: **04/01/2014**

Richmond, California
subject to forfeiture or revocation


David Mazzer, Ph.D., Assistant Division Chief
Division of Drinking Water and Environmental Management



CALIFORNIA DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM
Accredited Fields of Testing



Asbestech

6825 Fair Oaks Boulevard, Suite 103
Carmichael, CA 95608
Phone: (916) 481-8902

Certificate No.: 1153
Renew Date: 3/31/2014

Field of Testing: 114 - Inorganic Chemistry of Hazardous Waste

114.130 001 Lead EPA 7420

Field of Testing: 115 - Extraction Test of Hazardous Waste

115.021 001 TCLP Inorganics EPA 1311

115.030 001 Waste Extraction Test (WET) CCR Chapter 11, Article 5, Appendix II

Field of Testing: 121 - Bulk Asbestos Analysis of Hazardous Waste

121.010 001 Bulk Asbestos EPA 600/M4-82-020



April 24, 2013

Mr. Todd Rhoads
Vice President
Stantec Architecture
1201 J Street Studio 100
Sacramento CA 95814
todd.rhoads@stantec.com

Job number: 8410529 - 10

RE: Report for Hazardous Materials at K Street Barge in Old Sacramento

Dear Mr. Rhoads,

GHD performed a pre-renovation hazardous materials survey at the K Street Barge in Old Sacramento, Sacramento, California. The purpose of this survey was to test for asbestos and lead hazardous materials present in support of the Condition Assessment of K Street Barge Project.

GHD's on-site hazardous materials survey was conducted by Ms. Erica Sattar on April 12, 2013. Ms. Sattar is a Cal/OSHA Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) Certified Lead Sampling Technician. The project was planned and overseen by Chris Smith, a Certified Asbestos Consultant (CAC) and CDPH Certified Lead Inspector/Risk Assessor.

This project consists of the K Street barge currently supporting an elevator, patio and various ramps that serve the Delta King anchored outside the barge along with several interior compartments serving as material and equipment storage areas. It is anticipated that the exterior wood components and painted interior and exterior steel beams, columns, ceilings and walls, sheetrock walls, and concrete and wood floors will be impacted.

The survey included sampling of suspect asbestos-containing materials (ACM) identified during a visual survey of the barge exterior and interior compartments and a screening survey of representative painted surfaces and coatings for lead-based paint (LBP). Suspect ACM identified during this survey was bulk sampled using sampling guidelines established by the Environmental Protection Agency (EPA) and by generally following the methods described in Appendix K of title 8, CCR, Section 1529 of the California Code of Regulations for sample collection.

SURVEY AND ANALYTICAL METHODOLOGY

ASBESTOS

Bulk samples of suspect ACM were sent to Forensic Analytical in Hayward, California. Forensic Analytical is laboratory accredited under the National Institute of Standards and Technology (NIST)/National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP) for bulk asbestos sample analysis. The samples were submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" U.S. EPA/600/R-93/116, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.



LEAD

LBP is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%), as set forth in the Department of Housing and Urban Development (HUD) guidelines and California Department of Public Health (CDPH) regulations. Lead-Containing Paints (LCPs) are paints and coatings that contain detectable lead as defined by Cal/OSHA. Most paint and coatings on pre-1978 buildings/structures contain some detectable lead subject to Cal/OSHA regulation. Therefore the exhaustive testing required to prove painted coatings do not contain lead is not practical or cost effective. Consequently, all paints and architectural coatings must be considered to contain some detectable levels of lead unless proven otherwise by laboratory analysis.

This survey included screening level LBP testing and paint chip sampling for the purpose of characterizing the general presence of lead in existing paints and coatings. As such, this survey included paint testing using a NITON XLp 300 XRF direct read lead testing instrument. The results presented herein are representative of typical conditions but are not inclusive of all painted/coated surfaces present at this site. A limited number of paint chip samples were collected to supplement the XRF test results. The results of this survey should assist with compliance to the California Occupational Safety and Health Administration (Cal/OSHA) lead construction standard and preliminary evaluation of potential construction waste streams. All painted/coated surfaces including untested surfaces, must be assumed to contain some detectable level of lead in the absence of representative paint chip analytical results demonstrating that lead levels are below analytical detection limits. This is because the XRF instrument, while providing a cost effective, non-destructive test method, the instrument is calibrated to detect LBP and cannot detect lead at the lowest levels regulated Cal/OSHA and Cal/EPA.

SURVEY RESULTS

ASBESTOS CONTAINING MATERIALS

GHD collected 13 bulk samples of suspect ACM with 22 layers. Of all the suspect asbestos-containing materials (ACMs) collected during this survey only one (1) gasket sample was reported to contain asbestos. All other sample results were 'ND' (no asbestos detected). The laboratory analytical results for sampled suspect ACMs are attached.

Suspect Materials Sampled With Asbestos Detected

- Gasket, off-white (60% asbestos) located throughout the interior compartments at pipe flange, approximately 45.

Suspect Materials Sampled With No Asbestos Detected

- Sheetrock, various finishes, located throughout the interior barge compartments
- Paint, white, located on the exterior wood walls
- Concrete flooring, located at the interior barge compartment A1

LEAD CONTAINING PAINTS, COATINGS AND MATERIALS

GHD performed a total of 59 XRF lead tests at the barge including interior barge compartments and the barge exterior. Components tested included: interior structural steel, interior metal ceilings, and exterior wood components. None of the representative painted surfaces tested, including the paint chips sample



collected, contained lead at LBP levels of lead above the threshold 1.0 mg/cm^2 , however, all painted/coated surfaces must be assumed to contain some detectable level of lead. All XRF tests ranged from $0.0 - 0.008 \text{ mg/cm}^2$ and the paint chip sample collected reported $<0.006 \text{ wt\%}$. Laboratory reports are attached.

OTHER POTENTIAL HAZARDOUS MATERIALS

GHD visually inspected readily assessable areas of the interior and exterior barge compartments for other hazardous materials including potential Universal Wastes (such as mercury containing lighting tubes, thermostats, coolant gases and batteries), and other suspect hazardous waste and contamination. Because manufacture and use of PCBs were banned by 1979 and the structure was constructed prior to 1797, PCBs are suspected to be present in light ballasts or other electrical equipment in this facility. The following is a summary of our findings.

- Fluorescent lighting tubes throughout the barge interior compartments with approximately 33 mercury light tubes;
- PCB ballasts throughout the barge interior compartments, approximately 35 each; and
- Exterior high intensity discharge (HID) lamps, approximately 50 each.

CONCLUSIONS & RECOMMENDATIONS

ASBESTOS CONTAINING MATERIALS

Prior to demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities, must be removed and disposed of in accordance all applicable regulations including federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS) and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation.

At minimum, the contractor's abatement sub-contractor should also remove all category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class II removal requirements and dispose of removed materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal.

The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:

- All asbestos-containing wastes shall be manifested as either hazardous or non-hazardous based on asbestos content, friability, and actual waste stream classification.
- All asbestos removal should be overseen by a qualified independent third party retained by the building/structure owner or manager of the site to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation.
- Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos.

LEAD CONTAINING PAINTS AND COATINGS

The painted components tested at the subject structure had detectable levels of lead and should be considered LCP or coatings. All paints and coatings should be considered LCP or coatings in the absence



of exhaustive sampling and laboratory analysis. The disturbance of these components during demolition activities will require use of personnel trained in lead hazards for construction and will require compliance with applicable Cal/OSHA and Cal/EPA regulation.

At present there is no state or federal regulation requiring mandatory lead removal or abatement prior to disturbance, demolition or renovation of structures with identified lead materials. However, prior to hot work on painted metal, the paint either needs to be removed or supplied air respirators worn during welding or cutting operation. In addition, there are applicable lead specific Cal/OSHA worker protection requirements and Cal/EPA waste disposal requirements that do apply to lead-related construction activities and associated wastes:

- ◆ Cal/OSHA: The Cal/OSHA regulation, Title 8 CCR Section 1532.1 Lead governs occupation exposure to lead. This regulation requires that any task that may potentially expose workers to any concentration of lead, be monitored to determine workers eight-hour time weighted average (TWA) exposure to lead. Prior to initiation of certain activities, referred to as “trigger tasks”, that are believed to have the ability of creating an excessive lead exposure, such workers must be properly fitted with respiratory protection and protective clothing until personal eight-hour TWA results reveal exposures within acceptable levels. Pertinent examples of trigger tasks are manual demolition, manual paint scraping and power tool removal, and hot work involving lead-containing coatings or materials. Cal/OSHA also has agency pre-start notification requirements and worker training and certification depending on exposure levels. Clearly these requirements will apply to demolition, patch and repair, paint removal, and surface preparation work at this site.
- ◆ Cal/EPA: Cal/EPA regulates disposal of lead hazardous waste (22 CCR Division 4.5 Chapter 30, Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes). The Cal/EPA Department of Toxic Substance Control (DTSC) has issued guidance indicating that architectural debris with intact lead paint is normally anticipated to be handled as general construction waste. Since detected LCP was in good to fair condition and all paint coatings tested had low lead content, it is unlikely that demolition debris will be hazardous as a composite sample. However, all paint containing waste streams should be considered potentially lead hazardous pending waste testing. Further, all surface preparation and paint removal wastes must be considered hazardous wastes due to the likelihood of paint chip lead levels exceeding 1,000 total lead or 5 ppm soluble lead.

All construction activities impacting LCP must be performed in compliance with the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of lead containing/contaminated materials. Selective and general demolition activities will involve disturbing lead and possibly creating lead hazardous wastes. These construction activities must be controlled to prevent uncontrolled release of lead contamination and for environmental protection.

OTHER HAZARDOUS MATERIALS

PCB Lighting Ballasts

GHD recommends that all light fixtures be visually inspected after electrical isolation and fixture removal to determine if they are PCB containing ballasts or electronic ballasts. Ballasts marked “No PCB’s” or “PCB Free” that can be considered non-hazardous and recycled or disposed of accordingly. However, ballasts that cannot be thus identified as non-PCB should be considered PCB-containing and properly handled, collected, stored, transported and recycled or disposed of by an approved recycling or disposal facility in accordance with the requirements of 22 CCR, Section 67426.1 and the contract.



Universal Wastes

All potential and identified mercury-containing light tubes and other universal wastes such as exterior HID lamps should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.

CLOSING

GHD performed these hazardous materials survey services in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

Conclusions and recommendations made regarding hazardous materials were based upon information obtained from samples and tests collected at specific locations and professional judgment. Recommendations in this report were made based on conditions that we reasonably infer to exist between sampling points.

This report is intended as an informational resource for Stantec Architecture. Any contractor using this document assumes all responsibility for reviewing all available information and for verifying existing site conditions including location and extent of hazardous materials present at the site.

Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately.

If you have any questions or concerns regarding this document please do not hesitate to call GHD at (916) 372-6606.



SIGNATURES AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Report prepared for Stantec Architecture by:

A handwritten signature in blue ink that reads "Erica E. Sattar". The signature is fluid and cursive, with the first name "Erica" being more prominent.

Erica Sattar, CSST CDPH
Industrial Hygiene & Hazardous Material Specialist
Certified Site Surveillance Technician #08-4327
CDPH Lead Sampling Technician #20425

Report prepared and reviewed for Stantec Architecture by:

A handwritten signature in blue ink that reads "Chris Smith". The signature is cursive and somewhat stylized, with the first name "Chris" being more prominent.

Chris Smith, CAC CDPH
Service Line Coordinator, HSE & Audits
Certified Asbestos Consultant #05-3823
CDPH Lead Inspector-Assessor/Project Designer #12430

Attachments:

Table 1 – Suspect Asbestos Containing Materials

Table 2 – Hazardous Containing Materials

Analytical Laboratory Data

Sample Locations

TABLE 1
SUSPECT ASBESTOS CONTAINING MATERIALS

SAMPLE ID	SUSPECT MATERIAL	DESCRIPTION	ADDITIONAL MATERIALS/LAYERS	SAMPLE LOCATION	RESULTS
A2-01	SHEETROCK WITH JOINT COMPOUND & PAINT	PAINTED	JOINT COMPOUND & PAINT	A1	ND
A1-02	SHEETROCK	NAILED	NO ASSOCIATED MATERIALS	B2	ND
A2-03	SHEETROCK WITH JOINT COMPOUND & PAINT	PAINTED	JOINT COMPOUND & PAINT	C1	ND
A3-04	SHEETROCK WITH JOINT COMPOUND	NO PAINT	JOINT COMPOUND	D1	ND
A3-05	SHEETROCK WITH JOINT COMPOUND	NO PAINT	JOINT COMPOUND	D1	ND
A2-06	SHEETROCK WITH JOINT COMPOUND & PAINT	PAINTED	JOINT COMPOUND & PAINT	D2	ND
P1-07	PAINT	OFF-WHITE	NO ASSOCIATED MATERIALS	A2	ND
Z1-08	GASKETS	BLACK	NO ASSOCIATED MATERIALS	D2	ND
Z2-09	GASKETS	OFF-WHITE	NO ASSOCIATED MATERIALS	D2	60%
Z3-10	GASKETS	BLACK	NO ASSOCIATED MATERIALS	D2	ND
AA1-11	CONCRETE FLOORING	GREY CEMENTITIOUS MATERIAL	NO ASSOCIATED MATERIALS	A1	ND
AA1-12	CONCRETE FLOORING	GREY CEMENTITIOUS MATERIAL	NO ASSOCIATED MATERIALS	A1	ND
AA1-13	CONCRETE FLOORING	GREY CEMENTITIOUS MATERIAL	NO ASSOCIATED MATERIALS	A1	ND

Notes:

1. All asbestos detected is chrysotile unless otherwise noted.
2. ND = no asbestos detected
3. Red highlight denotes asbestos-containing materials (ACMs)
4. Sample locations correspond with field personnel numbering system. Please refer to Sample Location Drawing.

TABLE 2
IDENTIFIED HAZARDOUS MATERIALS

MATERIAL	HAZARD	LOCATION	CONTENT	EPA CATEGORY	QUANTITY	UNIT
GASKETS	ASBESTOS	THROUGHOUT INTERIOR COMPARTMENTS	60%	NON-FRIABLE CATEGORY I	45	EA
EXTERIOR LIGHTS	MERCURY	THROUGHOUT SITE	NA	NA	50	EA
LIGHT TUBES	MERCURY	THROUGHOUT INTERIOR COMPARTMENTS	NA	NA	15 - (8') 18 - (4')	EA
LIGHT BALLASTS	PCBs	THROUGHOUT INTERIOR COMPARTMENTS	NA	NA	35	EA
PAINT	LEAD	SCRAPE ALL LOOSE AND PEELING	INTERIOR & EXTERIOR	NA	ESTIMATED LESS THAN 10% OF PAINTED SURFACE HAS LOOSE PAINT	

Notes:

1. These quantities are approximate and provided for reference only. Contractor to field verify location and extent.
2. All asbestos is reported at chrysotile unless noted otherwise.
3. SF = square feet; NA = not applicable; EA = each



Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

GHD, Inc.
Chris Smith
3831 North Freeway Blvd.
Suite 220
Sacramento, CA 95834

Client ID: A31524
Report Number: B176112
Date Received: 04/16/13
Date Analyzed: 04/19/13
Date Printed: 04/19/13
First Reported: 04/19/13

Job ID/Site: 8410529 - Stantec - K Street Barge**FALI Job ID:** A31524-211**Date(s) Collected:** 04/12/2013**Total Samples Submitted:** 13**Total Samples Analyzed:** 13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
A2-01	11369198						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %)	Fibrous Glass (10 %)						
A1-02	11369199						
Layer: White Drywall			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %)	Fibrous Glass (10 %)						
A2-03	11369200						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %)	Fibrous Glass (10 %)						
A3-04	11369201						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %)	Fibrous Glass (10 %)						
A3-05	11369202						
Layer: White Joint Compound			ND				
Layer: White Tape			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)							
A2-06	11369203						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %)	Fibrous Glass (10 %)						

Client Name: GHD, Inc.

Report Number: B176112

Date Printed: 04/19/13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
P1-07	11369204						
Layer: Off-White Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Z1-08	11369205						
Layer: Black Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Z2-09	11369206						
Layer: Off-White Semi-Fibrous Material		Chrysotile	60 %				
Total Composite Values of Fibrous Components:		Asbestos (60%)					
Cellulose (Trace)							
Z3-10	11369207						
Layer: Black Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AA1-11	11369208						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AA1-12	11369209						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AA1-13	11369210						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							



Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Date: 04-12-13
Project #: 8410529
Collected By: C. Smith / E. Sattar

Analytical Method: PLM
Turnaround Time: 24 hour Std

Chris Smith chris.smith@ghd.com
Erica Sattar erica.sattar@ghd.com

Signature _____

Date & Time



Metals Analysis of Paints

GHD, Inc.
Chris Smith
3831 North Freeway Blvd.
Suite 220
Sacramento, CA 95834

Client ID: A31524
Report Number: M138198
Date Received: 04/16/13
Date Analyzed: 04/23/13
Date Printed: 04/23/13
First Reported: 04/23/13

Job ID / Site: 8410529 - Stantec - K Street Barge
Date(s) Collected: 04/12/13

FALI Job ID: A31524-211
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
P1	30462266	Pb	< 0.006	wt%	0.006	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

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Date: 04-12-13
Project #: 8410529
Collected By: C. Smith / E. Sattar

Turnaround Time: ~~24 hour~~ Std

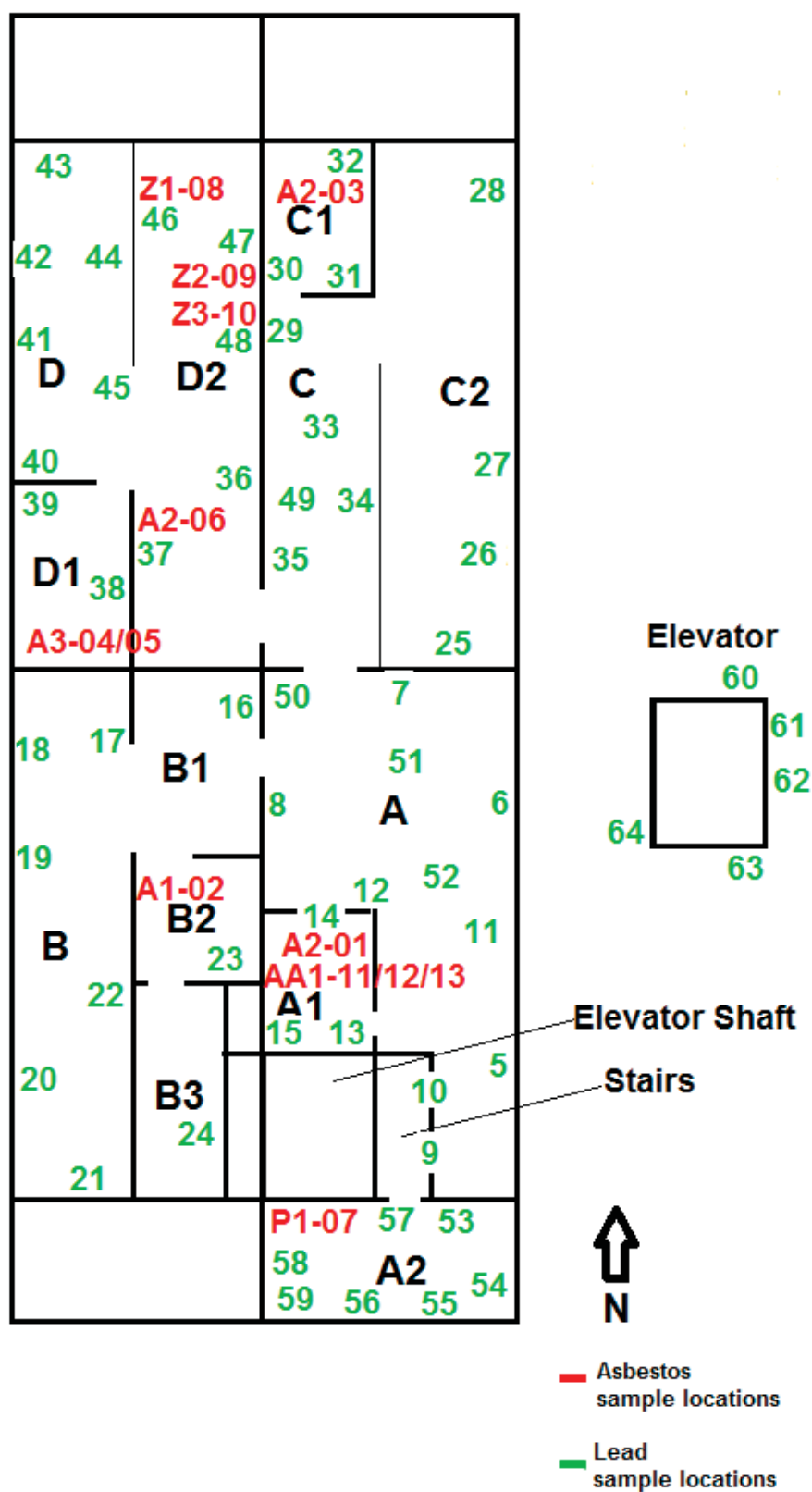
***Report all Layers**

04-15-13/11:00
Date & Time

4/16/15 12pm (C)
Date & Time

Date & Time

Page 362 of 379



June 25, 2015
Twining Job No.: 150160.5

Mr. Kevin Love
City of Sacramento, Department of Public Works
Engineering Services Division
915 I Street, Room 2000
Sacramento, CA 95814



OFFICE
916.649.9000

FAX
916.921.8532

WEB
twininginc.com

Reference: City of Sacramento - Old Sac Promenade, Embarcadero/Boardwalk Project

Subject: Barge Topside and Hull Investigation

Dear Kevin,

At your request and based on your email, we dispatched two inspectors to the above referenced project with the intent of assisting the design and construction teams in gathering information concerning the condition of the barge hull from the topside. Our inspector's comments are contained in the following paragraphs.

Based on comments from the design and construction team, prior inspection of the hull took place from the underside of the barge deck, where old punctures and rust issues were observed in numerous locations. The task was to attempt to locate these same puncture locations from the topside of the barge. Topside observations were made by removing wood planks from the deck of the barge.

*The decking appeared to be in good condition. Below the **decking planks**, we noticed considerable debris and areas where water could not properly run off (observed along C line), ponding and causing areas of rust. We were not able to locate any punctures observed on the inside of the barge from the topside underneath the planking. It appears the barge received an overlay of metal sheeting at some point prior to the **porch** being installed at the Delta King.*

*The area on D32 and D35 line has a **sliding** hatch door. This door is above the boiler room and was open during our observations. The joists in numerous areas had wood blocks, probably lumber remnants from the construction of the decking, that were used to support the joists against the top of the hull. E37 line has **welded plates** and a threaded 6 inch diameter screw cap. This appears to be another area where water cannot properly run off.*

On the east side of the barge underneath the decking, the joists rest on a wood ledger beam, attached to an I beam which is welded to the hull of the barge. The top flange of the I beam is attached in such a way as to leave a gap between the upper flange and the top of the barge, another area where water can accumulate and potentially develop rust. The connector holding the joists to the wood ledger appear to be a light duty metal Simpson-style tie.

Photos of these areas discussed are included for your reference and use.

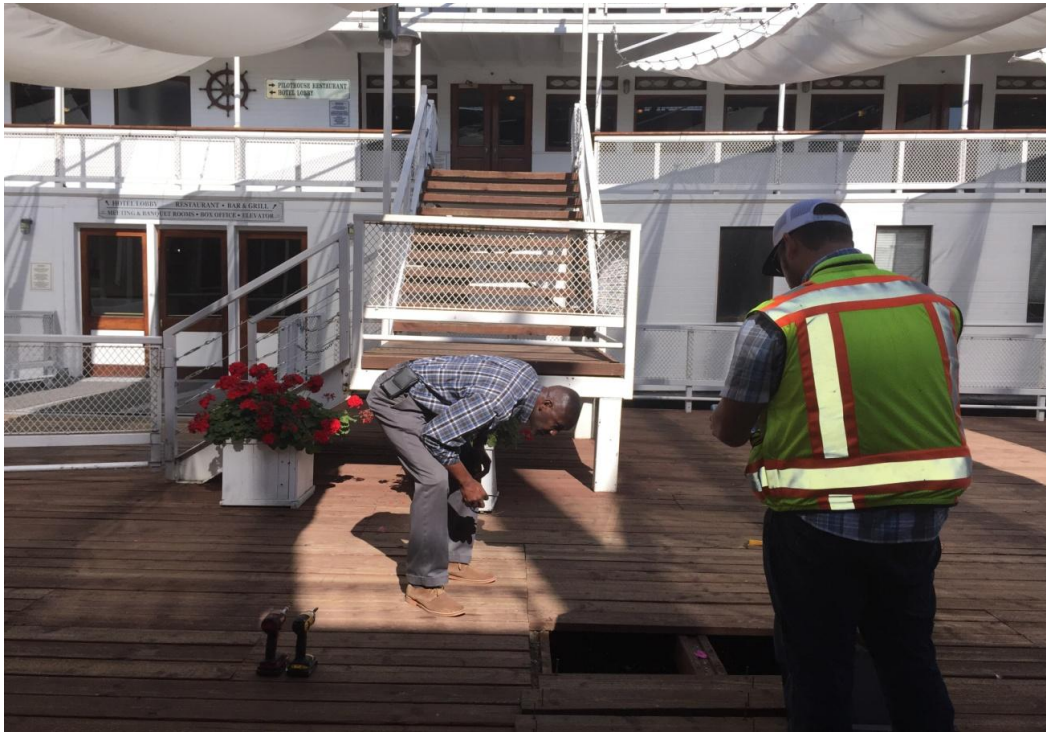
Sincerely,

TWINING, INC.

A handwritten signature in blue ink, appearing to read 'J. Noegel', with a stylized flourish extending to the right.

Joshua Noegel
Senior Project Manager

Accessing sliding hatch door above boiler room along D32 and D35 line.



Sliding hatch door at D line



Sliding hatch door at D line



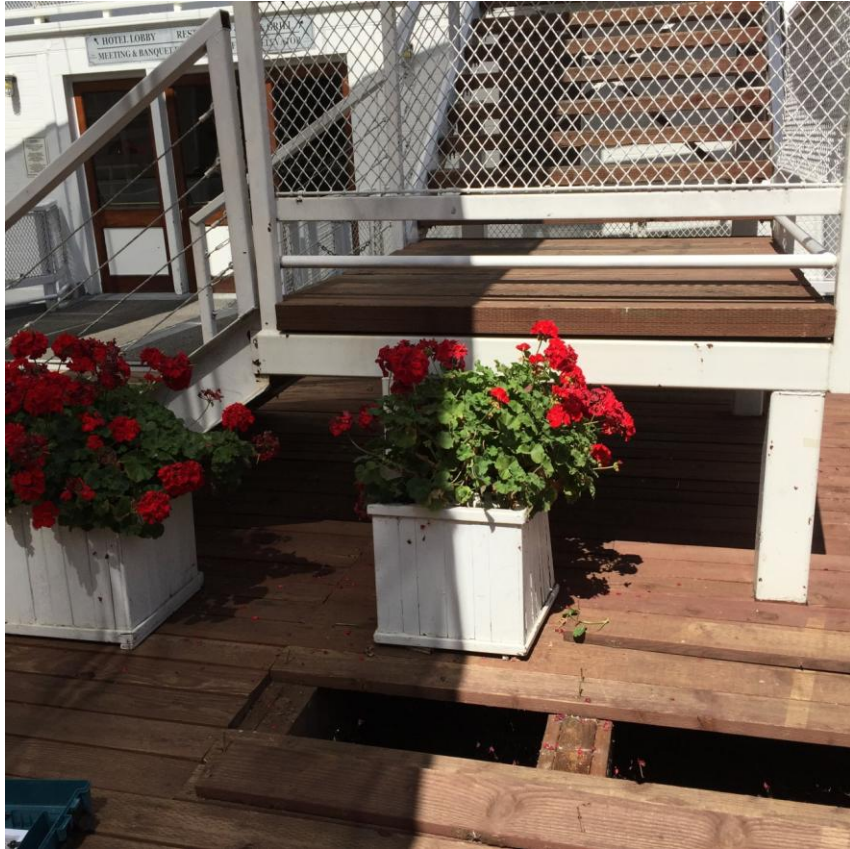
Close up of sliding hatch door at D line



Welded sheet plate with no channel for water runoff along E26 line.



Exposed spliced joists on B line



Close up of joists showing blocking intended to support joist



C line exposed spliced joists with blocking underneath.



Removed decking at E 37 line



Close up of E 37 line opening showing threaded plug



Close up of E 38 line area showing condition of joists.



Exposed area along C line



Close up of exposed area along C line



Underside of decking along E line



Underside of decking along E line showing I beam connection to ballast tank









