TRANSMITTAL 1

Specification No. 2842

CITY OF LOS ANGELES

HARBOR DEPARTMENT

SPECIFICATIONS FOR

2025-2027 MARINE IMPROVEMENTS

SPECIFICATION NO. 2842

APPL. PORT. PERMITS NO.

CONTRACT NO.

CONTRACTOR Vortex Marine Construction, Inc.

AMOUNT $ 45,878,375.00

TIME TO COMMENCE Notice to Proceed

TIME TO COMPLETE 900 Calendar Days

BOARD OF HARBOR COMMISSIONERS

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01 The HARBOR DEPARTMENT of the CITY OF LOS ANGELES, California, invites electronic bids in accordance with Specification No. 2842 for 2025-2027 MARINE IMPROVEMENTS.

02 Project consists of marine construction work and improvements to be performed on an on-call basis as needed and determined by the Department, including wharf demolition and removal work; furnishing concrete piles, concrete pile removals, concrete pile driving, and concrete wharf repair; dredging; riprap and quarry run work; timber pile removals, furnishing timber piles, timber pile driving, timber wharf repair, timber pile wraps; wharf slope repair; earthwork, including geotextiles and geomembranes; excavating, characterizing and disposing of contaminated and hazardous soil; trench excavation and backfill, asphalt concrete paving; and other improvements.

03 Contract Documents are available in Department's Web-based Bid Management System called "Construction Division Business Opportunity Network (CDBON)" utilizing an online bid management system at https://www.portoflosangeles.org/business/contracting-opportunities/construction-bids. Bidders shall be required to register to download Drawings, Specifications, Addenda, and other important documents. A plan holders list can be accessed without registering. For information concerning bids, call Department at (310) 732-3522.

04 A virtual pre-bid conference shall be held on June 26, 2025 at 9 a.m. via Microsoft Teams. Please RSVP to Anthony Mainez if you plan to attend. The agenda and related materials shall be posted to CDBON and shall be discussed in detail at the meeting.

05 Bids must be submitted online via Port of Los Angeles CDBON system on or before 2:45:00 p.m. (PST/PDT) on July 31~~24~~, 2025 at which time, bid results shall be available for viewing.

06 Each bid must be accompanied by a scanned copy of the following: a check certified by a responsible financial institution, or a cashier's check issued by a responsible financial institution, or by a satisfactory bid bond, payable to the order of City of Los Angeles Harbor Department, for an amount not less than 10 percent of the aggregate sum of the bid, as a guarantee that Bidder shall enter into Contract if awarded, and furnish the required bonds. Bid bond shall be placed with insurance carriers which are rated VII, A- or better in Best's Insurance Guide. If a Best's Insurance Guide rating is not available, then the proposed carrier must meet comparable standards in another rating service satisfactory to City.

07 The provisions of Sections 10.8 through 10.11 and 10.13 of Los Angeles Administrative Code pertaining to nondiscrimination and affirmative action shall be a part of said Contract. Portions of these provisions are summarized in Subsections 00030.03 and 00030.04 of BIDDING DOCUMENTS Section which set forth requirements Bidder must acknowledge.

Addendum No. 1

08 City of Los Angeles Harbor Department is committed to creating an environment that provides all individuals and businesses open access to the business opportunities available at Port of Los Angeles in a manner that reflects the diversity of City of Los Angeles. Port of Los Angeles Small Business Enterprise Program (SBEP or "Program") as defined in Subsection 00030.06 of BIDDING DOCUMENTS Section was created to provide additional opportunities for small businesses to participate in any and all contracts. It has been determined that based on Work to be performed in Contract, Small Business Enterprise participation shall be a minimum of 15%, of which 5% shall be Very Small Business Enterprise participation.

09 The first 3 apparent low Bidders shall submit the following documents with original signatures within 4 Business Days after bids are closed. Information from other Bidders shall be requested only if they are being considered for an Award of Contract. Other Bidders shall submit this information within 4 Business Days of receiving a written request from Engineer.

a Original of a check certified by a responsible financial institution, or a cashier's check, or bid bond in conformance with Subsection 06 above.

b Affidavit of Noncollusion.

c Contractor/Supplier Information Form, refer to Subsection 00660.01.

d Subcontractor/Supplier Ownership Affidavit for each subcontractor and supplier, refer to Subsection 00660.02.

e Electrical Safety Policy form.

f CEC Form 50, prime contractor's certification.

g CEC Form 55 with subcontractor's and principals of subcontractor's information (if subcontractor and principal of subcontractor information were not submitted at time of bid). Failure to submit the information within 4 Business Days after bids are closed or within 4 Business Days after receiving written request from Engineer shall be cause to deem bid nonresponsive. Refer to BIDDING DOCUMENTS Section, Subsection 00030.07, Contract Solicitations Charter Section 470 (c) (12) Subsection, Paragraph C.

10 At time of bid, Bidders must be registered on City's Contracts Management and Opportunities Database, Regional Alliance Marketplace for Procurement (RAMP) – a free service provided by the Mayor's Office of Economic Development and the Minority Business Opportunity Committee.

Bidders, subcontractors, and suppliers identified in the bid submittal as SBE or VSBE must be certified at time of bid, as applicable. Bidders, subcontractors, and suppliers must submit a copy of SBE certificate or VSBE certificate from the agency utilized to obtain certification as SBE or as VSBE to Engineer within 4 Business Days of close of bids in order to be acknowledged within the bid as SBE or VSBE. Refer to https://kentico.portoflosangeles.org/getmedia/aea536e1-5d48-440a-8857-c55907e3dc74/contracting-proprietary-sbe-cert-application for certification instructions.

Within 30 Calendar Days after close of bids, subcontractors and suppliers must be registered on RAMP. In addition, within 30 Calendar Days after close of bids, Bidders, subcontractors, and suppliers identified in the bid submittals as SBE or VSBE must be verified on RAMP as SBE (Proprietary) or VSBE (Harbor), as applicable.

RAMP is accessible at https://www.rampla.org/s/. Bidders, subcontractors, and suppliers are advised that there is an application process required to become certified as SBE (Proprietary) and as VSBE (Harbor), and that time is of the essence.

11 Contract may be awarded at any time during a period of 90 Calendar Days after date of close of bids. The right is reserved to reject any and all bids.

12 The successful Bidder shall possess an active Class A California Contractor's License at the time of Award.

13 The successful Bidder shall, within 14 Calendar Days after Notice of Award, provide acceptable bonds and insurance on the forms provided as required in CONTRACT Section and GENERAL CONDITIONS Section.

14 The successful Bidder shall, within 30 Calendar Days after Notice of Award, enter into the written Contract.

15 A performance bond in the amount of the full Contract price shall be provided. A payment bond in the amount of 100 percent of Contract price shall also be provided in case of an award in excess of $25,000. Performance bond and payment bond shall be placed with insurance carriers which are rated VII, A- or better in Best's Insurance Guide. If a Best's Insurance Guide rating is not available, then the proposed carrier must meet comparable standards in another rating service satisfactory to City. Bidders may be eligible for participation in City's Bond Assistance Program referenced in Subsection 00022.18.

16 The prevailing rate of per diem wages and rates for legal holidays and overtime work for each craft, classification or type of workers needed in the execution of any contract to let under Specifications has been determined by the Director of the Department of Industrial Relations of the State of California pursuant to the provisions of the Labor Code of the State of California. Copies of the applicable Determinations by the said Director are on file in Construction Division and are hereby incorporated and made a part hereof as though the same were fully set forth in this Section. The State of California has approved City's Labor Compliance Program of enforcement of State prevailing wage laws and shall allow City to retain all penalty assessments for violation of these laws.

17 Pursuant to notice requirements effective January 1, 2015, all contractors and subcontractors must register with and meet requirements of the State of California Department of Industrial Relations using the online application before bidding on public works contracts in California. For the online application, visit http://www.dir.ca.gov/Public-Works/PublicWorks.html.

a No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 (with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1[a]).

b No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

c Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

18 In accordance with Board of Harbor Commissioners' Resolution No. 6315, Electrical Safety Policy, adopted October 27, 2004, the successful Bidder shall comply with the required qualifications for jobsite workers, as specified in BASIC ELECTRICAL MATERIALS AND METHODS Section (PART 1, Quality Assurance Article, Paragraph B, Jobsite Workers and subparagraphs).

19 Board of Harbor Commissioners of City of Los Angeles adopted Resolution No. 6328 on January 12, 2005, agreeing to adopt the provisions of Los Angeles City Ordinance 172,908, as amended, relating to Equal Benefits (Section 10.8.2.1. et seq. of Los Angeles Administrative Code) as a policy of Harbor Department. Contractor shall comply with the policy detailed in Subsection 00030.05 Equal Benefits Ordinance Compliance Affidavit of BIDDING DOCUMENTS Section.

20 In accordance with Board of Harbor Commissioners' Resolution No. 17-8164, Approval of Port-Wide Project Labor Agreement (PLA), adopted September 7, 2017, and in accordance with Board of Harbor Commissioners' Resolution Nos. 18-8319 and 18-8320, approval of Construction Careers Policy, adopted July 17, 2018, included as Appendix "A" of Specifications, Contractor and all subcontractors, prior to start of Work, shall sign a Letter of Assent (Attachment A of Appendix "A") agreeing to the terms of PLA. Contractor shall further comply with the terms of Attachment "B" (Drug and Alcohol Testing Policy) and fill out Attachment "C" (Request/Verification for Craft Employees) during the course of Project.

21 Iran Contracting Act of 2010: Harbor Department shall enforce Iran Contracting Act of 2010 requirement provisions included as Subsection 00030.08 of BIDDING DOCUMENTS Section of Specifications. Bidder shall fill out and submit at time of bid Iran Contracting Act of 2010 Compliance Affidavit included as Subsection 00030.09 of BIDDING DOCUMENTS Section of Specifications.

22 Local Business Preference Program (LBPP) shall not apply to the Project.

23 Submit questions to https://www.portoflosangeles.org/business/contracting-opportunities/construction-bids. Questions submitted less than 2 Business Days before close of bids may or may not be answered as time permits. Responses to questions shall be posted on Construction Division Business Opportunity Network (CDBON) at https://www.portoflosangeles.org/business/contracting-opportunities/construction-bids. The responses to questions may be updated at any time prior to the day bids are due. This shall be the only means used to communicate with Bidders other than by addendum. Department assumes no liability for Bidder's failure to attend the pre-bid conference or to review Construction Division Business Opportunity Network to obtain responses to Bidder's questions.

EUGENE D. SEROKA
Executive Director

Dated June 4, 2025

01 GENERAL

a Information in this Section supplements or further explains information in NOTICE INVITING BIDS Section.

02 FORM OF PROPOSAL

a Bids shall be tendered online via CDBON, in conformance with Subsection 00012.03, of NOTICE INVITING BIDS Section.

b All required fields in Bid Proposal Line Items shall be filled in on the forms provided online.

c All documents listed in Subsection 00022.21, “Bidder’s Check List”, shall be submitted in conformance with the instructions provided in Subsection 00022.21.

03 PROPOSAL IRREGULARITIES AND ALTERATIONS

a Bidders are prohibited from altering BIDDING DOCUMENTS Section. Any alterations or changes made to BIDDING DOCUMENTS Section shall render the bid informal and subject to rejection.

04 PROPOSAL SIGNATURE(S)

a If the bid is made by an individual, the signature must be the full name of Bidder, whose address must be given.

b If the bid is made by a partnership, it must be signed by each partner or accompanied by proof that the persons signing the bid are authorized to bind the partnership. The name and address of the partnership and the address of the persons signing must be provided.

c If the bid is made by a corporation, it must be signed by a person authorized to do so by bylaw or resolution of that corporation.

d A corporation submitting a bid may be required, before Contract is finally awarded, to furnish a certificate as to its corporate existence, and satisfactory evidence as to the officers or officer authorized to execute the bid on behalf of the corporation.

05 PROPOSAL GUARANTY

a The bid shall be accompanied by a scanned copy of the following documents: A certified check or a cashier's check issued by a responsible financial institution, payable to the order of City of Los Angeles Harbor Department, or by a satisfactory bond, for an amount equal to at least 10 percent of the total amount of the bid, as a guaranty that the Bidder shall, within thirty (30) Calendar Days after Notice of Award, enter into Contract with City and furnish all required bonds for Work contemplated. The originals shall be submitted with the documents listed in Subsection 00012.09 of NOTICE INVITING BIDS Section.

b If a certified or cashier's check is tendered as a proposal guaranty, Bid Bond form may be disregarded. In all other instances, the bond form provided with BIDDING DOCUMENTS Section shall be signed by the Bidder and its surety(ies).

c Upon execution of Contract and provision of the necessary bond(s) and insurance by the successful Bidder, the check or the amounts thereof and the bonds of the unsuccessful Bidders shall be returned or released.

06 AFFIDAVIT OF NONCOLLUSION

a Affidavit of Noncollusion form provided with BIDDING DOCUMENTS Section, properly executed, a scanned copy must be submitted with the bid. The signature on the affidavit must be subscribed and sworn to before a notary public.

b Any bid made without such affidavit, shall not be considered. Any Bidder making a false affidavit may be excluded from future bidding on contracts with City.

c If at any time it is found that the person, firm, or corporation, to whom Award of Contract has been made, did, in submitting the bid, collude with any other party or parties, then Contract shall be voided. Work shall be re-advertised. Contractor and Contractor's bondspersons shall be held liable to City for all loss or damage which it may suffer thereby.

d The original shall be submitted with the documents listed in Specifications as Subsection 00012.09 of NOTICE INVITING BIDS Section.

07 FEDERAL EXCISE TAX

a Prices quoted by Bidder shall be exclusive of federal excise taxes pursuant to exemption of political subdivisions of a State under federal law.

b City, when requested, shall furnish Contractor a Certificate of Exemption from federal excise tax covering materials and equipment to be furnished pursuant to Specifications.

08 RETAIL SALES OR USE TAX

a Purchases under Specifications are subject to the full application of California State and Los Angeles City and County sales or use tax.

b Prices quoted in BIDDING DOCUMENTS Section shall be construed as including all applicable taxes regardless of whether or not sales or use tax is stated separately by Bidder.

09 DUTIES

a Prices quoted by Bidder shall include all applicable duties, including import duties.

10 WITHDRAWAL OF BID

a A Bidder may withdraw a bid, without prejudice, at any time prior to bid closing. The Withdraw button on CDBON online system shall become available from the time a bid is submitted to any time prior to the close of bids.

11 INTERPRETATIONS AND ADDENDA

a Should a prospective Bidder find discrepancies in or omissions from Specifications or other Contract Documents, or should there be doubt as to their intended meaning, Bidder may submit to Engineer a written request for an interpretation and clarification. Bidder submitting the request is responsible for the prompt delivery and timeliness of any such request.

b Any interpretation of or change in Contract Documents shall be made only by addendum issued to each person or entity to whom Specifications have been issued, and shall become a part of any contract awarded. City shall not be responsible for any oral or other explanations or interpretations. Receipt of any such addenda by Bidder must be acknowledged on Proposal form in the space provided.

12 BIDDERS TO INVESTIGATE

a Bidder's submittal of a bid constitutes its acknowledgement that Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and quantities of Work to be performed and materials to be furnished, and as to the requirements of Specifications. The submission of the bid shall constitute prima facie evidence that Bidder has made such examination.

13 EXISTING INFORMATION

a Engineer shall make available to all prospective Bidders, prior to the receipt of bids, all information in possession of Department as to subsoil conditions in the vicinity of Work, topographical maps, or other information that might assist Bidder in properly evaluating the amount and character of Work that may be required. Any additional subsurface exploration shall be done at Bidder's sole cost and expense.

14 SUBCONTRACTS

a Section 10.14 (as amended) of Los Angeles Administrative Code requires each Bidder to submit with the bid the names and addresses of subcontractors whose Work shall be in excess of one-half of 1 percent of Bidder's total bid or $10,000, whichever is greater, and shall indicate that portion of Work which shall be done by each subcontractor so listed. The successful Bidder shall make no substitutions of subcontractors so listed except as provided for in said ordinance. For the purpose of Article 15, the terms and definitions of Section 10.14 (as amended) of Los Angeles Administrative Code shall apply.

b Not more than 50 percent of the monetary value of Work shall be subcontracted. The listing of more than 50 percent may result in the rejection of the bid.

c Bidder shall be fully responsible to City for its acts and/or omissions and for the acts and/or omissions of persons directly employed by Bidder. Additionally, Bidder shall be fully responsible to City for the acts and/or omissions of subcontractors and of persons or entities either directly or indirectly employed by subcontractors. Nothing contained in Contract Documents shall create or be construed as creating a contractual relationship between any subcontractor of Bidder and City.

d Each Bidder must complete, sign, notarize, and submit as part of the bid Contractor Ownership / RAMP Outreach Affidavit included in Specifications as Subsection 00030.11 of BIDDING DOCUMENTS Section. Each Bidder shall also submit with the bid the subcontractor list entered online as provided on CDBON.

15 MANDATORY PROVISIONS PERTAINING TO NON-DISCRIMINATION IN EMPLOYMENT

Unless otherwise exempt, this Contract is subject to the applicable non-discrimination, equal benefits, equal employment practices, and affirmative action program provisions in Los Angeles Administrative Code (LACC) Section 10.8 et seq., as amended from time to time.

a Contractor shall comply with the applicable non-discrimination and affirmative action provisions of the laws of the United States of America, the State of California, and City. In performing this Contract, Contractor shall not discriminate in any of its hiring or employment practices against any employee or applicant for employment because of such person's race, color, religion, national origin, ancestry, sex, sexual orientation, gender, gender identity, age, disability, domestic partner status, marital status or medical condition.

b The requirements of Section 10.8.2.1 of LAAC, Equal Benefits Ordinance, and the provisions of Section 10.8.2.1(f) are incorporated and made a part of this Contract by reference.

c The provisions of Section 10.8.3 of LAAC are incorporated and made a part of this Contract by reference and shall be known as the "Equal Employment Practices" provisions of this Contract.

d The provisions of Section 10.8.4 of LAAC are incorporated and made a part of this Contract by reference and shall be known as the "Affirmative Action Program" provisions of this Contract.

16 SMALL, VERY SMALL, MINORITY, WOMEN, DISABLED VETERAN, AND OTHER BUSINESS ENTERPRISE (SBE/VSBE/MBE/WBE/DVBE/OBE)

a It is the policy of City of Los Angeles to provide Small Business Enterprises (SBE) and Very Small Business Enterprises (VSBE), including Minority Business Enterprises (MBEs), Women Business Enterprises (WBEs), Disabled Veteran Business Enterprise (DVBE), and Other Business Enterprises (OBEs) an equal opportunity to participate in the provision of goods and services under Contract. Department strongly encourages Contractor to include MBE, WBE, and DVBE participation to the fullest extent possible.

b To be eligible for an award of contract, each Bidder shall complete, sign, notarize, and submit as part of the bid Contractor Ownership / RAMP Outreach Affidavit included in Specifications as Subsection 00030.11 of BIDDING DOCUMENTS Section.

00022.16 Cont'd.

c As part of the bid, each Bidder shall complete and submit subcontractor list in CDBON. As part of the bid, each Bidder shall complete and upload into CDBON the Supplier List in Subsection 00660.03 of SBE/VSBE/MBE/WBE/DVBE/OBE/LBE INFORMATION Section listing suppliers necessary to meet SBE/VSBE participation requirements in conformance with Subsection 00030.06 of BIDDING DOCUMENTS Section.

d Within 4 Business Days after bids are closed, each Bidder shall submit Contractor/Supplier Information Form included in Specifications as Subsection 00660.01 of SBE/VSBE/MBE/WBE/DVBE/OBE/LBE INFORMATION Section.

e Contractor Ownership / RAMP Outreach Affidavit and Contractor/Supplier Information Form when signed, shall signify Bidder's intent to comply with Small Business Enterprise Program described in Specifications.

f In accordance with Section 4104 of the Public Contracting Code of the State of California, as amended, information is required to be entered in CDBON for each subcontractor who shall perform Work (including Contingency and Allowance Item Work) amounting to more than one half of one percent (0.5%) of the Total Base Bid or $10,000 (whichever is greater).

17 AWARD OF CONTRACT

a Award of Contract shall be in accordance with the provisions of this Subsection.

1 Award of Contract, if award is to be made, shall be to the lowest and best regular, responsible Bidder furnishing satisfactory security for its performance and complying with Small Business Requirement.

2 The right is reserved to reject any and all bids, or to reject any item or items therein and to waive any informality in the bid.

b Bidder to be awarded Contract must be capable of performing the various items of Work bid upon. Bidders may be required to submit, before Award of Contract, satisfactory evidence covering experience on similar Work, a list of machinery, plant and other equipment available for the proposed Work, and such statements of their financial resources as may be deemed necessary. If the available evidence of competency of any Bidder is not satisfactory, the bid of such Bidder shall be rejected.

00022.17 Cont'd.

c City may reject bids which have prices shown on Bid Proposal Line Items that are obviously unbalanced.

d The bid of any party who has been delinquent or unfaithful in the performance of any former contract with City may be rejected.

18 BOND ASSISTANCE PROGRAM

a Bond Assistance Program (BAP) is designed to assist small, local, minority, women, and disadvantaged businesses in removing potential barriers of surety bonding by providing technical, administrative assistance, and other resources to these companies. For information on BAP, please contact Tricia Carey at (310) 732-7656 or email tcarey@portla.org.

19 RELEASE OF PUBLIC RECORDS

a City seeks to conduct its business publicly. The law generally provides that information given to City is a public record. In limited circumstances, information such as trade secrets and certain financial data may be treated confidentially. Bidder should be aware that the information provided to City may be available for public review. Therefore, information which Bidder desires to retain as confidential should not be produced unless expressly requested by City. If City receives a request to produce such information, it shall notify Bidder of such request. If Bidder instructs that the information not be released, City shall withhold the information provided Bidder expeditiously seeks and successfully obtains a court protective order to prevent such a release.

20 BUSINESS TAX

a In accordance with City of Los Angeles Municipal Code, a Business Tax Registration Certificate (BTRC) must be obtained and a business tax must be paid by every person engaged in business as a contractor in City of Los Angeles. Contractor shall obtain a BTRC number and pay tax due to City of Los Angeles Office of Finance, (844) 663-4411. BTRC number must be clearly shown on all invoices submitted for payment.

21 BIDDERS CHECK LIST

a Bidders may use the following checklist to verify BIDDING DOCUMENTS Section has been completed.

b Please check under the appropriate column:
*Upload: Complete included document, attach supporting documents as indicated, scan, and upload to CDBON online system. Hard copies are to be submitted within 4 Business Days of bid closing.
**Online: Enter information directly into online form in CDBON online system.

		Upload*	Online**
1	PROPOSAL GUARANTY*		
(a)	Is the amount at least 10% of the total bid?	_____	
(b)	If surety bond, is it properly filled in and signed by surety?	_____	
(c)	If certified or cashier's check, is it enclosed with bid?	_____	
2	AFFIDAVIT OF NONCOLLUSION*		
(a)	Is affidavit properly filled in and signed?	_____	
(b)	Is affidavit notarized?	_____	
3	EQUAL BENEFITS ORDINANCE COMPLIANCE AFFIDAVIT*		
(a)	Is the affidavit completed and signed?	_____	
(b)	Are the forms enclosed with the bid?	_____	
4	CONTRACT SOLICITATIONS CHARTER SECTION 470 (c) (12)*		
(a)	Are City Ethics Commission (CEC) Forms 50 and 55 completed and signed? (If CEC Form 55 is submitted without subcontractor information, Bidder shall submit updated CEC Form 55 as stated in NOTICE INVITING BIDS Section.)	_____	
(b)	Are the forms enclosed with the bid?	_____	
5	IRAN CONTRACTING ACT OF 2010 COMPLIANCE AFFIDAVIT*		
(a)	Is the affidavit completed and signed?	_____	
(b)	Is the affidavit enclosed with the bid?	_____	

000022.21 Cont'd.

		Upload*	Online**
6	CONTRACTOR OWNERSHIP / RAMP OUTREACH AFFIDAVIT*		
	(a) Is affidavit properly filled in and signed?	_____	
	(b) Is affidavit notarized?	_____	
7	SUBCONTRACTOR/SUPPLIER INFORMATION*/**		
	(a) Has Bidder listed the name and business address of each applicable subcontractor?		_____
	(b) Has Bidder included the dollar amount in the appropriate column for each subcontractor?		_____
	(c) Has Bidder accurately described Work to be done by said subcontractor(s)?		_____
	(d) Has Bidder completed Supplier List in Subsection 00660.03?	_____	
8	PROPOSAL**/*		
	(a) Has Bidder acknowledged receipt of addendum/addenda?		_____
	(b) Is Bidder's contractor's license number and expiration date provided?	_____	
	(c) Is proposal properly signed and dated?	_____	
	(d) Has Bidder inserted its Tax Identification Number?	_____	
	(e) Has Bidder identified the type of business and named the Partners or Corporate Officers?	_____	
	(f) Has Bidder completed and signed the Headquarters Location Form?	_____	
9	BID PROPOSAL LINE ITEMS**		
	(a) Has Bidder filled in a price for each bid item?		_____

END OF SECTION

01 BID BOND

*Bond portion of form need not be executed when bid is accompanied by a certified check or a cashier's check issued by a responsible financial institution.

WE, the undersigned principal and surety Fidelity and Deposit Company of Maryland acknowledge ourselves jointly and severally bound to City of Los Angeles, in the sum of Ten percent of the total amount bid------ dollars ($ 10%------) to be paid to said City if the foregoing bid shall be accepted and the proposed contract awarded to said Bidder, and said Bidder shall fail to execute Contract and furnish and execute such bond(s) as are specified in the foregoing NOTICE INVITING BIDS Section; otherwise, this obligation be void.

Dated: July 18, 20 25.

Bidder's Name Vortex Marine Construction, Inc.

By _____

V. President

_____

(Surety) Fidelity and Deposit Company of Maryland

(Surety) _____

Elizabeth Collodi, Attorney-in-Fact

NOTE: Surety must be in the form of a certified check, cashier's check, or a corporate surety bond. A personal surety bond is not acceptable. Annual bidder's bonds are acceptable. Cash is acceptable although not recommended.

If a check is submitted, state number N/A

and amount $ N/A.

If an annual bid bond is used, state name of company N/A

bond number N/A

and unencumbered amount N/A.

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Contra Costa)

On July 28, 2025 before me, Terrie L. Thors, Notary Public
(insert name and title of the officer)

personally appeared Shannon Creson,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

TERRIE L. THORS
Notary Public - California
Contra Costa County
Commission # 2428766
My Comm. Expires Dec 2, 2026

Signature Terrie L Thors (Seal)

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Butte)

On July 18, 2025 before me, Sara Walliser, Notary Public
(insert name and title of the officer)

personally appeared Elizabeth Collodi,
who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

ARS3 SARA WALLISER ARS3
COMM. # 2449544
NOTARY PUBLIC · CALIFORNIA
COUNTY OF BUTTE
Comm. Expires JUL 5, 2027

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), Thomas O. McClellan, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Samantha Watkins, Steven L. Williams, Phil Watkins, Jennifer Lakmann, Brad Espinosa, Paula Senna, Pam Sey, Breanna Boatright, Kathleen Le, Cassandra Medina, John Hopkins, Sara Walliser, Renee Ramsey, Sharon Smith, Jessica Monlux, Elizabeth Collodi, John Weber, Deanna Quintero, Joseph H. Weber, Matthew Foster, all of Chico, California**, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: any and all bonds and undertakings, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICHAMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland, in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 3rd day of February, A.D. 2025.

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Thomas O. McClellan
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 3rd day of February A.D. 2025, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Thomas O. McClellan, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Genevieve M. Maison
Notary Public
My Commission Expire January 27, 2029

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 18th day of July, 2025.

M J Pethick

Mary Jean Pethick
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
reportsfclaims@zurichna.com
800-626-4577

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

EXTRACT FROM BY-LAWS OF THE COMPANIES

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RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 18th day of July, 2025.

Colonial American Casualty and Surety Company CORPORATE SEAL

ZURICH AMERICAN INSURANCE COMPANY CORPORATE SEAL 1977 NEW YORK

Fidelity and Deposit Company of Maryland CORPORATE SEAL 1890

MJ Pethick

Mary Jean Pethick
Vice President

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Zurich Surety Claims
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Schaumburg, IL 60196-1056
reportsfclaims@zurichna.com
800-626-4577

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

02 AFFIDAVIT OF NONCOLLUSION

STATE OF CALIFORNIA
COUNTY OF CONTRA COSTA

Blaise Fettig, being first duly sworn, composes and says that Bidder is

President

(insert "sole owner", "partner", "president", "secretary", or other proper title) of

Vortex Marine Construction, Inc.

(insert name of Bidder)

who submits herewith to City of Los Angeles the attached bid:

(1) That Bidder is the person whose name is signed to the hereto attached Proposal form; that said bid is genuine; that the same is not sham or collusive; that all statements of fact therein are true; that such proposal was not made in the interest of or behalf of any person, partnership, company, association, organization or corporation not therein named or disclosed.

(2) That Bidder has not directly or indirectly by agreement, communication, or conference with anyone attempted to induce action prejudicial to the interests of the public body which is to award Contract or any other bidder, or anyone else interested in the proposed Contract; that Bidder has not in any manner sought by collusion to secure an advantage over any other bidder.

(3) That prior to the date and time of deadline for bid submittal the said Bidder:

(a) did not, directly or indirectly, induce or solicit anyone else to submit a false or sham bid;

(b) did not, directly or indirectly, collude, conspire, connive or agree with anyone else that said Bidder or anyone else would submit a false or sham bid, or that anyone should refrain from bidding or withdraw bid;

(c) did not, directly or indirectly, submit the bid price entered on the attached Bid Proposal Line Items form or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporations, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any individual or group of individuals, except to the awarding authority or to any person or persons who have a partnership or other financial interest in the business of said Bidder.

Signed:

(Title) BLAISE FETTIG - PRESIDENT

Subscribed and sworn to before me

this ___ day of ___, 20___

(Seal of Notary)

Please See Attached State of California Notarization Form

Jurat

Signature of Notary

JURAT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

State of California

County of Contra Costa

Subscribed and ~~sworn to~~ (or affirmed) before me on this 31st day of July, 20 25, by Blaise Fettig,

proved to me on the basis of satisfactory evidence to be the person(~~s~~) who appeared before me.

BERNADETTE C. BROOKS
Notary Public - California
Contra Costa County
Commission # 2470143
My Comm. Expires Nov 6, 2027

(Seal)

Signature Bernadette Brooks

03 MANDATORY PROVISIONS PERTAINING TO NON-DISCRIMINATION IN EMPLOYMENT

Pursuant to Los Angeles Charter and Administrative Code, Division 10 Chapter 1, Article 1, Section 10.8 et seq. it is the policy of City of Los Angeles to require each person or entity contracting for goods or services to comply with the Non-discrimination, Equal Employment practices, and Affirmative Action Program provisions of City of Los Angeles.

Sec. 10.8 Mandatory Provisions Pertaining to Non-discrimination in Employment in the Performance of City Contracts.

The City of Los Angeles, in letting and awarding contracts for the provision to it or on its behalf of goods or services of any kind or nature, intends to contract only with those contractors that comply with the non-discrimination and affirmative action provisions of the laws of the United States of America, the State of California and the City of Los Angeles. The City and each of its awarding authorities shall therefore require that any person, firm, corporation, partnership or combination thereof that contracts with the City for services, materials or supplies, shall not discriminate in any of its hiring or employment practices, shall comply with all provisions pertaining to non-discrimination in hiring and employment, and shall require Affirmative Action Programs in contracts in accordance with the provisions of this Code. The awarding authority and/or Office of Contract Compliance of the Department of Public Works shall monitor and inspect the activities of each contractor to determine that they are in compliance with the provisions of this chapter.

Although in accordance with Section 22.359 of this Code, the Board of Public Works, Office of Contract Compliance, is responsible for the administration of the City's Contract Compliance Program, accomplishing the intent of the City in contract compliance and achieving non-discrimination in contractor employment shall be the continuing responsibility of each awarding authority. Each awarding authority shall use only the rules, regulations, and forms provided by the Office of Contract Compliance to monitor, inspect, or investigate contractor compliance with the provisions of this chapter.

00030.03 Cont'd.

Each awarding authority shall provide immediate notification upon award of each contract by that awarding authority to the Office of Contract Compliance. Each awarding authority shall call upon the Office of Contract Compliance to review, evaluate, and recommend on any contractual dispute or issue of noncompliance under the provisions of this chapter. The Office of Contract Compliance shall be notified by each awarding authority of any imminent announcement to bid, to allow the Office of Contract Compliance the opportunity to participate with the awarding authority in the monitoring, review, evaluation, investigation, audit and enforcement of the provisions of this chapter in accordance with the rules, regulations and forms promulgated to implement the City's Contract Compliance, Equal Employment Practices Program.

Sec. 10.8.1. Definitions.

Except for Section 10.8.2.1, the following definitions shall apply to the following terms used in this article:

"Awarding Authority" means any Board or Commission of the City of Los Angeles, or any authorized employee or officer of the City of Los Angeles, including the Purchasing Agent of the City of Los Angeles, who makes or enters into any contract or agreement for the provision of any goods or services of any kind or nature whatsoever for, or on behalf of, the City of Los Angeles.

"Contract" means any agreement, franchise, lease or concession, including agreements for any occasional professional or technical personal services, for the performance of any work or service, the provision of any materials or supplies, or the rendition of any service to the City of Los Angeles or to the public, which is let, awarded or entered into with, or on behalf of, the City of Los Angeles or any Awarding Authority thereof. Contracts where the provisions of this article would conflict with federal or state grant funded contracts, or conflict with the terms of the grant or subvention, as determined by the DAA, are exempt.

"Contractor" means any person, firm, corporation, partnership, or any combination thereof, who enters into a contract with any Awarding Authority of the City of Los Angeles.

"Designated Administrative Agency (DAA)" means the Department of Public Works, Office of Contract Compliance created by Article X of Chapter 13 of Division 22 of the Los Angeles Administrative Code. That office is also known as the Department of Public Works, Bureau of Contract Administration.

00030.03 Cont'd.

"Domestic Partners" means, for purposes of this article, any two adults, of the same or different sex, who have registered with a governmental entity pursuant to state or local law authorizing this registration or with an internal registry maintained by an employer of at least one of the domestic partners.

"Employment Practices" means any solicitation of, or advertisement for, employees, employment, change in grade or work assignment, assignment or change in place or location of work, layoff, suspension or termination of employees, rate of pay or other form of compensation including vacation, sick and compensatory time, selection for training, including apprenticeship programs, any and all employee benefits and activities, promotion and upgrading, and any and all actions taken to discipline employees for infractions of work rules or employer requirements.

"Minority" is defined to mean "minority person" as the phrase is defined in Subsection (f) of Section 2000 of the California Public Contract Code, as amended from time to time.

"Subcontractor" means any person, firm or corporation or partnership, or any combination thereof, who enters into a contract with a Contractor to perform or provide a portion or part of any Contract with the City.

Sec. 10.8.1.1. Summary of Thresholds.

The following thresholds will be used to determine the non-discrimination and affirmative action requirements set forth in this chapter for each type of contract.

Non-discrimination Practices as outlined in Section 10.8.2 of this Code apply to all contracts.

Equal Employment Practices as outlined in Section 10.8.3 of this Code apply to all construction contracts of $1,000 or more and all non-construction contracts of $1,000 or more.

Affirmative Action Program as outlined in Sections 10.8.4 and 10.13 of this Code applies to all Construction Contracts of $25,000 or more and all non-Construction Contracts of $25,000 or more.

00030.03 Cont'd.

Sec. 10.8.2. All Contracts: Non-discrimination Clause.

Notwithstanding any other provision of any ordinance of the City of Los Angeles to the contrary, every Contract which is let, awarded or entered into with or on behalf of the City of Los Angeles, shall contain by insertion therein a provision obligating the Contractor in the performance of such Contract not to discriminate in his or her Employment Practices against any employee or applicant for employment because of the applicant's race, color, religion, national origin, ancestry, sex, sexual orientation, age, disability, marital status, domestic partner status or medical condition. All Contractors who enter into such Contracts with the City shall include a like provision in all subcontracts awarded for work to be performed under the Contract with the City. Failure of the Contractor to comply with this requirement or to obtain the compliance of its Subcontractors with such obligations shall subject the Contractor to the imposition of any and all sanctions allowed by law, including, but not limited to, termination of the Contractor's Contract with the City. Nothing contained in this Contract shall be construed in any manner so as to require or permit any act which is prohibited by law.

Sec. 10.8.2.1. Equal Benefits Ordinance.

(a) Legislative Findings. The City awards many contracts to private firms to provide services to the public and to City government. Many City contractors and subcontractors perform services that affect the proprietary interests of City government in that their performance impacts the success of City operations. The City holds a proprietary interest in the work performed by many employees employed by City contractors and subcontractors. In a very real sense, the success or failure of City operations may turn on the success or failure of these enterprises, for the City has a genuine stake in how the public perceives the services rendered for them by these businesses.

Discrimination in the provision of employee benefits between employees with domestic partners and employees with spouses results in unequal pay for equal work. Los Angeles law prohibits entities doing business with the City from discriminating in employment practices based on marital status and/or sexual orientation. The City's departments and contracting agents are required to place in all City contracts a provision that the company choosing to do business with the City agrees to comply with the City's nondiscrimination laws.

00030.03 Cont'd.

It is the City's intent, through the contracting practices outlined in this Ordinance, to assure that those companies wanting to do business with the City will equalize the total compensation between similarly situated employees with spouses and with domestic partners. The provisions of this Ordinance are designed to ensure that the City's contractors will maintain a competitive advantage in recruiting and retaining capable employees, thereby improving the quality of the goods and services the City and its people receive, and ensuring protection of the City's property.

(b) Definitions. For purposes of the Equal Benefits Ordinance only, the following shall apply.

(1) Awarding Authority means any Board or Commission of the City, or any employee or officer of the City, that is authorized to award or enter into any Contract, as defined in this ordinance, on behalf of the City, and shall include departments having control of their own funds and which adopt policies consonant with the provisions of the Equal Benefits Ordinance.

(2) Benefits means any plan, program, or policy provided or offered by a Contractor to its employees as part of the employer's total compensation package. This includes but is not limited to the following types of benefits: bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits, and travel benefits.

(3) Cash Equivalent means the amount of money paid to an employee with a Domestic Partner (or spouse, if applicable) in lieu of providing Benefits to the employee's Domestic Partner (or spouse, if applicable). The Cash Equivalent is equal to the direct expense to the employer of providing Benefits to an employee for his or her Domestic Partner (or spouse, if applicable) or the direct expense to the employer of providing Benefits for the dependents and family members of an employee with a Domestic Partner (or spouse, if applicable).

(4) City means the City of Los Angeles.

(5) Contract means an agreement the value of which exceeds $25,000. It includes agreements for work or services to or for the City; for public works or improvements to be performed; agreements for the purchase of goods, equipment, materials, or supplies; or grants to be provided, at the expense of the City or to be paid out of monies under the control of the City. The term also includes a Lease or License, as defined in the Equal Benefits Ordinance.

00030.03 Cont'd.

(6) Contractor means any person or persons, firm, partnership, corporation, joint venture, or any combination of these, or any governmental entity acting in its proprietary capacity that enters into a Contract with any Awarding Authority of the City. The term does not include Subcontractors.

(7) Designated Administrative Agency (DAA) means the Department of Public Works, Bureau of Contract Administration.

(8) Domestic Partner means any two adults, of the same or different sex, who have registered as domestic partners with a governmental entity pursuant to state or local law authorizing this registration or with an internal registry maintained by the employer of at least one of the domestic partners.

(9) Equal Benefits Ordinance means Los Angeles Administrative Code Section 10.8.2.1, *et seq.*, as amended from time to time.

(10) Equal Benefits means the equality of benefits between employees with spouses and employees with Domestic Partners, between spouses of employees and Domestic Partners of employees, and between dependents and family members of spouses and dependents and family members of Domestic Partners.

(11) Lease or License means any agreement allowing others to use property owned or controlled by the City, any agreement allowing others the use of City property in order to provide services to or for the City, such as for concession agreements, and any agreement allowing the City to use property owned or controlled by others.

(12) Subcontractor means any person or persons, firm, partnership, corporation, joint venture, or any combination of these, and any governmental entity, that assists the Contractor in performing or fulfilling the terms of the Contract. Subcontractors are not subject to the requirements of the Equal Benefits Ordinance unless they otherwise have a Contract directly with the City.

(c) Equal Benefits Requirements.

(1) No Awarding Authority of the City shall execute or amend any Contract with any Contractor that discriminates in the provision of Benefits between employees with spouses and employees with Domestic Partners, between spouses of employees and Domestic Partners of employees, and between dependents and family members of spouses and dependents and family members of Domestic Partners.

00030.03 Cont'd.

(2) A Contractor must permit access to, and upon request, must provide certified copies of all of its records pertaining to its Benefits policies and its employment policies and practices to the DAA, for the purpose of investigation or to ascertain compliance with the Equal Benefits Ordinance.

(3) A Contractor must post a copy of the following statement in conspicuous places at its place of business available to employees and applicants for employment: "During the performance of a Contract with the City of Los Angeles, the Contractor will provide equal benefits to its employees with spouses and its employees with domestic partners." The posted statement must also include a City contact telephone number which will be provided each Contractor when the Contract is executed.

(4) A Contractor must not set up or use its contracting entity for the purpose of evading the requirements imposed by the Equal Benefits Ordinance.

(d) Other Options for Compliance. Provided that the Contractor does not discriminate in the provision of Benefits, a Contractor may also comply with the Equal Benefits Ordinance in the following ways:

(1) A Contractor may provide an employee with the Cash Equivalent only if the DAA determines that either:

a. The Contractor has made a reasonable, yet unsuccessful effort to provide Equal Benefits; or

b. Under the circumstances, it would be unreasonable to require the Contractor to provide Benefits to the Domestic Partner (or spouse, if applicable).

(2) Allow each employee to designate a legally domiciled member of the employee's household as being eligible for spousal equivalent Benefits.

(3) Provide Benefits neither to employees' spouses nor to employees' Domestic Partners.

(e) Applicability.

(1) Unless otherwise exempt, a Contractor is subject to and shall comply with all applicable provisions of the Equal Benefits Ordinance.

00030.03 Cont'd.

(2) The requirements of the Equal Benefits Ordinance shall apply to a Contractor's operations as follows:

a. A Contractor's operations located within the City limits, regardless of whether there are employees at those locations performing work on the Contract.

b. A Contractor's operations on real property located outside of the City limits if the property is owned by the City or the City has a right to occupy the property, and if the Contractor's presence at or on that property is connected to a Contract with the City.

c. The Contractor's employees located elsewhere in the United States but outside of the City limits if those employees are performing work on the City Contract.

(3) The requirements of the Equal Benefits Ordinance do not apply to collective bargaining agreements ("CBA") in effect prior to January 1, 2000. The Contractor must agree to propose to its union that the requirements of the Equal Benefits Ordinance be incorporated into its CBA upon amendment, extension, or other modification of a CBA occurring after January 1, 2000.

(f) Mandatory Contract Provisions Pertaining to Equal Benefits. Unless otherwise exempted, every Contract shall contain language that obligates the Contractor to comply with the applicable provisions of the Equal Benefits Ordinance. The language shall include provisions for the following:

(1) During the performance of the Contract, the Contractor certifies and represents that the Contractor will comply with the Equal Benefits Ordinance.

(2) The failure of the Contractor to comply with the Equal Benefits Ordinance will be deemed to be a material breach of the Contract by the Awarding Authority.

(3) If the Contractor fails to comply with the Equal Benefits Ordinance the Awarding Authority may cancel, terminate or suspend the Contract, in whole or in part, and all monies due or to become due under the Contract may be retained by the City. The City may also pursue any and all other remedies at law or in equity for any breach.

00030.03 Cont'd.

(4) Failure to comply with the Equal Benefits Ordinance may be used as evidence against the Contractor in actions taken pursuant to the provisions of Los Angeles Administrative Code Section 10.40, *et seq.*, Contractor Responsibility Ordinance.

(5) If the DAA determines that a Contractor has set up or used its Contracting entity for the purpose of evading the intent of the Equal Benefits Ordinance, the Awarding Authority may terminate the Contract on behalf of the City. Violation of this provision may be used as evidence against the Contractor in actions taken pursuant to the provisions of Los Angeles Administrative Code Section 10.40, *et seq.*, Contractor Responsibility Ordinance.

(g) Administration.

(1) The DAA is responsible for the enforcement of the Equal Benefits Ordinance for all City Contracts. Each Awarding Authority shall cooperate to the fullest extent with the DAA in its enforcement activities.

(2) In enforcing the requirements of the Equal Benefits Ordinance, the DAA may monitor, inspect, and investigate to ensure that the Contractor is acting in compliance with the Equal Benefits Ordinance. Contractor's failure to cooperate with the DAA may result in a determination by the DAA that the Contractor is not in compliance with the Equal Benefits Ordinance, which may subject the Contractor to enforcement measures set forth in Section 10.8.2.1(h).

(3) The DAA shall promulgate rules and regulations and forms for the implementation of the Equal Benefits Ordinance. No other rules, regulations, or forms may be used by an Awarding Authority of the City to accomplish this contract compliance program.

(h) Enforcement.

(1) If the Contractor fails to comply with the Equal Benefits Ordinance:

a. The failure to comply may be deemed to be a material breach of the Contract by the Awarding Authority; or

b. The Awarding Authority may cancel, terminate or suspend, in whole or in part, the contract; or

c. Monies due or to become due under the Contract may be retained by the City until compliance is achieved;

00030.03 Cont'd.

d. The City may also pursue any and all other remedies at law or in equity for any breach.

e. The City may use failure to comply with the Equal Benefits Ordinance as evidence against the Contractor in actions taken pursuant to the provisions of Los Angeles Administrative Code Section 10.40, et seq., Contractor Responsibility Ordinance.

(i) Non-applicability, Exceptions, and Waivers.

(1) Upon request of the Awarding Authority, the DAA may waive compliance with the Equal Benefits Ordinance under the following circumstances:

a. The Contract is for the use of City property, and there is only one prospective Contractor willing to enter into the Contract; or

b. The Contract is for needed goods, services, construction of a public work or improvement, or interest in or right to use real property that is available only from a single prospective Contractor, and that prospective Contractor is otherwise qualified and acceptable to the City; or

c. The Contract is necessary to respond to an emergency that endangers the public health or safety, and no entity which complies with the requirements of the Equal Benefits Ordinance capable of responding to the emergency is immediately available; or

d. The City Attorney certifies in writing that the Contract involves specialized litigation requirements such that it would be in the best interests of the City to waive the requirements of the Equal Benefits Ordinance; or

e. The Contract is (i) with a public entity; (ii) for goods, services, construction of a public work or improvement, or interest in or right to use real property; and (iii) that is either not available from another source, or is necessary to serve a substantial public interest. A Contract for interest in or the right to use real property shall not be considered as not being available from another source unless there is no other site of comparable quality or accessibility available from another source; or

00030.03 Cont'd.

f. The requirements of the Equal Benefits Ordinance will violate or are inconsistent with the terms or conditions of a grant, subvention or agreement with a public agency or the instructions of an authorized representative of the agency with respect to the grant, subvention or agreement, provided that the Awarding Authority has made a good faith attempt to change the terms or conditions of the grant, subvention or agreement to authorize application of the Equal Benefits Ordinance; or

g. The Contract is for goods, a service or a project that is essential to the City or City residents and there are no qualified responsive bidders or prospective Contractors who could be certified as being in compliance with the requirements of the Equal Benefits Ordinance; or

h. The Contract involves bulk purchasing arrangements through City, federal, state or regional entities that actually reduce the City's purchasing costs and would be in the best interests of the City.

(2) The Equal Benefits Ordinance does not apply to contracts which involve:

a. The investment of trust monies, bond proceeds or agreements relating to the management of these funds, indentures, security enhancement agreements (including, but not limited to, liquidity agreements, letters of credit, bond insurance) for City tax-exempt and taxable financings, deposits of City's surplus funds in financial institutions, the investment of City monies in competitively bid investment agreements, the investment of City monies in securities permitted under the California State Government Code and/or the City's investment policy, investment agreements, repurchase agreements, City monies invested in U.S. government securities or pre-existing investment agreements;

b. Contracts involving City monies in which the Treasurer or the City Administrative Officer finds that either:

(i) No person, entity or financial institution doing business in the City, which is in compliance with the Equal Benefits Ordinance, is capable of performing the desired transaction(s); or
(ii) The City will incur a financial loss or forego a financial benefit which in the opinion of the Treasurer or City Administrative Officer would violate his or her fiduciary duties.

00030.03 Cont'd.

(3) The Equal Benefits Ordinance does not apply to contracts for gifts to the City.

(4) Nothing in this Subsection shall limit the right of the City to waive the provisions of the Equal Benefits Ordinance.

(5) The provisions of this Subsection shall apply to the Equal Benefits Ordinance only. The Equal Benefits Ordinance is not subject to the exemptions provided in Section 10.9 of this Code.

(j) Consistency with Federal or State Law. The provisions of the Equal Benefits Ordinance do not apply where the application of these provisions would violate or be inconsistent with the laws, rules or regulations federal or state law, or where the application would violate or be inconsistent with the terms or conditions of a grant or contract with the United States of America, the State of California, or the instruction of an authorized representative of any of these agencies with respect to any grant or contract.

(k) Severability. If any provision of the Equal Benefits Ordinance is declared legally invalid by any court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

(l) Timing of Application.

(1) The requirements of the Equal Benefits Ordinance shall not apply to Contracts executed or amended prior to January 1, 2000, or to bid packages advertised and made available to the public, or any bids received by the City, prior to January 1, 2000, unless and until those Contracts are amended after January 1, 2000 and would otherwise be subject to the Equal Benefits Ordinance.

(2) The requirements of the Equal Benefits Ordinance shall apply to competitively bid Contracts that are amended after April 1, 2003, and to competitively bid Contracts that result from bid packages advertised and made available to the public after May 1, 2003.

(3) Unless otherwise exempt, the Equal Benefits Ordinance applies to any agreement executed or amended after January 1, 2000, that meets the definition of a Contract as defined within Subsection 10.8.2.1(b).

00030.03 Cont'd.

3. The Contractor shall post a copy of Paragraph A., hereof, in conspicuous places at its place of business available to employees and applicants for employment.

B. The Contractor shall, in all solicitations or advertisements for employees placed, by or on behalf of, the Contractor, state that all qualified applicants will receive consideration for employment without regard to their race, color, religion, national origin, ancestry, sex, sexual orientation, age, disability, marital status, domestic partner status or medical condition.

C. At the request of the Awarding Authority or the DAA, the Contractor shall certify on an electronic or hard copy form to be supplied, that the Contractor has not discriminated in the performance of City Contracts against any employee or applicant for employment on the basis or because of race, color, religion, national origin, ancestry, sex, sexual orientation, age, disability, marital status, domestic partner status or medical condition.

D. The Contractor shall permit access to, and may be required to provide certified copies of, all of its records pertaining to employment and to its employment practices by the Awarding Authority or the DAA for the purpose of investigation to ascertain compliance with the Affirmative Action Program provisions of City Contracts and, upon request, to provide evidence that it has or will comply therewith.

E. The failure of any Contractor to comply with the Affirmative Action Program provisions of City Contracts may be deemed to be a material breach of a City Contract. The failure shall only be established upon a finding to that effect by the Awarding Authority, on the basis of its own investigation or that of the DAA. No finding shall be made except upon a full and fair hearing after notice and an opportunity to be heard has been given to the Contractor.

F. Upon a finding duly made that the Contractor has breached the Affirmative Action Program provisions of a City Contract, the Contract may be forthwith cancelled, terminated or suspended, in whole or in part, by the Awarding Authority, and all monies due or to become due hereunder may be forwarded to and retained by the City of Los Angeles. In addition thereto, the breach may be the basis for a determination by the Awarding Authority or the Board of Public Works that the Contractor is a non-responsible bidder or proposer pursuant to the provisions of Section 10.40 of this Code. In the event of such determination, the Contractor shall be disqualified from being awarded a contract with the City of Los Angeles for a period of two years, or until he or she shall establish and carry out a program in conformance with the provisions hereof.

00030.03 Cont'd.

G. In the event of a finding by the Fair Employment and Housing Commission of the State of California, or the Board of Public Works of the City of Los Angeles, or any court of competent jurisdiction, that the Contractor has been guilty of a willful violation of the California Fair Employment and Housing Act, or the Affirmative Action Program provisions of a City Contract, there may be deducted from the amount payable to the Contractor by the City of Los Angeles under the contract, a penalty of ten dollars for each person for each calendar day on which the person was discriminated against in violation of the provisions of a City Contract.

H. Notwithstanding any other provisions of a City Contract, the City of Los Angeles shall have any and all other remedies at law or in equity for any breach hereof.

I. The Public Works Board of Commissioners shall promulgate rules and regulations through the DAA and provide to the Awarding Authorities electronic and hard copy forms for the implementation of the Affirmative Action Program provisions of City contracts, and rules and regulations and forms shall, so far as practicable, be similar to those adopted in applicable Federal Executive Orders. No other rules, regulations or forms may be used by an Awarding Authority of the City to accomplish this contract compliance program.

J. Nothing contained in City Contracts shall be construed in any manner so as to require or permit any act which is prohibited by law.

K. By affixing its signature to a Contract that is subject to this article, the Contractor shall agree to adhere to the provisions in this article for the duration of the Contract. The Awarding Authority may also require Contractors and suppliers to take part in a pre-registration, pre-bid, pre-proposal, or pre-award conference in order to develop, improve or implement a qualifying Affirmative Action Program.

1. The Contractor certifies and agrees to immediately implement good faith effort measures to recruit and employ minority, women, and other potential employees in a non-discriminatory manner including, but not limited to, the following actions as appropriate and available to the Contractor's field of work. The Contractor shall:

(a) Recruit and make efforts to obtain employees through:

(i) Advertising employment opportunities in minority and other community news media or other publications.

00030.03 Cont'd.

(ii) Notifying minority, women, and other community organizations of employment opportunities.

(iii) Maintaining contact with schools with diverse populations of students to notify them of employment opportunities.

(iv) Encouraging existing employees, including minorities and women, to refer their friends and relatives.

(v) Promoting after school and vacation employment opportunities for minority, women, and other youth.

(vi) Validating all job specifications, selection requirements, tests, etc.

(vii) Maintaining a file of the names and addresses of each worker referred to the Contractor and what action was taken concerning the worker.

(viii) Notifying the appropriate Awarding Authority and the DAA in writing when a union, with whom the Contractor has a collective bargaining agreement, has failed to refer a minority, woman, or other worker.

(b) Continually evaluate personnel practices to assure that hiring, upgrading, promotions, transfers, demotions and layoffs are made in a non-discriminatory manner so as to achieve and maintain a diverse work force.

(c) Utilize training programs and assist minority, women, and other employees in locating, qualifying for and engaging in the training programs to enhance their skills and advancement.

(d) Secure cooperation or compliance from the labor referral agency to the Contractor's contractual Affirmative Action Program obligations.

(e) Establish a person at the management level of the Contractor to be the Equal Employment Practices officer. Such individual shall have the authority to disseminate and enforce the Contractor's Equal Employment and Affirmative Action Program policies.

(f) Maintain records as are necessary to determine compliance with Equal Employment Practices and Affirmative Action Program obligations and make the records available to City, State and Federal authorities upon request.

00030.03 Cont'd.

(g) Establish written company policies, rules, and procedures which shall be encompassed in a company-wide Affirmative Action Program for all its operations and Contracts. The policies shall be provided to all employees, Subcontractors, vendors, unions and all others with whom the Contractor may become involved in fulfilling any of its Contracts.

(h) Document its good faith efforts to correct any deficiencies when problems are experienced by the Contractor in complying with its obligations pursuant to this article. The Contractor shall state:

(i) What steps were taken, how and on what date.

(ii) To whom those efforts were directed.

(iii) The responses received, from whom and when.

(iv) What other steps were taken or will be taken to comply and when.

(v) Why the Contractor has been or will be unable to comply.

2. Every contract of $25,000 or more which may provide construction, demolition, renovation, conservation, or major maintenance of any kind shall also comply with the requirements of Section 10.13 of the Los Angeles Administrative Code.

L. The Affirmative Action Program required to be submitted hereunder and the pre-registration, pre-bid, pre-proposal or pre-award conference which may be required by the Awarding Authority shall, without limitation as to the subject or nature of employment activity, be concerned with such employment practices as:

1. Apprenticeship where approved programs are functioning, and other on-the-job training for non-apprenticeable occupations;

2. Classroom preparation for the job when not apprenticeable;

3. Pre-apprenticeship education and preparation;

4. Upgrading training and opportunities;

00030.03 Cont'd.

5. Encouraging the use of Contractors, Subcontractors and suppliers of all racial and ethnic groups; provided, however, that any contract subject to this ordinance shall require the Contractor, Subcontractor or supplier to provide not less than the prevailing wage, working conditions and practices generally observed in private industries in the Contractor's, Subcontractor's or supplier's geographical area for such work;

6. The entry of qualified women, minority and all other journeymen into the industry; and

7. The provision of needed supplies or job conditions to permit persons with disabilities to be employed, and minimize the impact of any disability.

M. Any adjustments which may be made in the Contractor's work force to achieve the requirements of the City's Affirmative Action Program in purchasing and construction shall be accomplished by either an increase in the size of the work force or replacement of those employees who leave the work force by reason of resignation, retirement or death and not by termination, layoff, demotion or change in grade.

N. This ordinance shall not confer upon the City of Los Angeles or any Agency, Board or Commission thereof any power not otherwise provided by law to determine the legality of any existing collective bargaining agreement and shall have application only to discriminatory employment practices by Contractors engaged in the performance of City Contracts.

O. All Contractors subject to the provisions of this article shall include a similar provision in all subcontracts awarded for work to be performed under the Contract with the City and shall impose the same obligations including, but not limited to, filing and reporting obligations, on the Subcontractors as are applicable to the Contractor. Failure of the Contractor to comply with this requirement or to obtain the compliance of its Subcontractors with all such obligations shall subject the Contractor to the imposition of any and all sanctions allowed by law, including, but not limited to, termination of the Contractor's Contract with the City.

04 MANDATORY PROVISIONS PERTAINING TO NON-DISCRIMINATION IN EMPLOYMENT AND AFFIRMATIVE ACTION IN HIRING EMPLOYEES

Sec. 10.13. Mandatory Provisions Pertaining to Non-discrimination in Employment and Affirmative Action in Hiring Employees in the Performance of Work on Certain City Construction Contracts.

A. Notwithstanding any other provision of this division to the contrary, every construction Contract involving an expenditure of $25,000 or more of City funds, except in cases of urgent necessity, as provided in Section 371 of the Charter of the City of Los Angeles and except as provided in Section 10.9 of this Code, shall contain these provisions as part of the Contract. By affixing its signature on a Contract, the Contractor shall agree to adhere to these provisions for the duration of the Contract.

B. Anticipated Utilization. At the request of the Awarding Authority or DAA, the Contractor must set forth anticipated minority, women, and all other staffing utilization by the Contractor and all Subcontractors on each project constructed by the City using those trades within the area of jurisdiction of the Los Angeles Building and Construction Trades Council within the City of Los Angeles in each work class and at all levels in terms of staff hours. The anticipated levels of minority, women and other staffing utilization shall be the levels at which each of those groups are represented in the relevant work force in the Greater Los Angeles Area as determined by the U.S. Bureau of the Census and made available by the DAA. Attainment of the anticipated levels of utilization may only be used as an indicia of whether the Contractor has complied with the requirements of this section and has applied its Affirmative Action Program in good faith and in a non-discriminatory manner. Failure to attain the anticipated levels of utilization shall not, by itself, disqualify the Contractor for award of a Contract or subject the Contractor to any sanctions or penalties.

   In no event may a Contractor utilize the requirements of this section in such a manner as to cause or result in discrimination against any person on account of race, color, religion, national origin, ancestry, sex, sexual orientation, age, disability, marital status, domestic partner status or medical condition.

C. The Contractor shall make a good faith effort with respect to apprenticeship and training programs to:

   1. Recruit and refer minority, women and other employees to such programs;

   2. Establish training programs within the company and/or its affiliates that will prepare minority, women and other employees for advancement opportunities; and

00030.04 Cont'd.

3. Abide by the requirements of the Labor Code of the State of California with respect to the provision of apprenticeship job opportunities.

D. No contract shall be executed until the appropriate Awarding Authority of the City of Los Angeles, and the Federal funding agency (if Federal funds are involved), has determined in writing that the Contractor has executed and filed with the Awarding Authority and the DAA any federal or state requirements.

E. It shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for referral, exclusive or otherwise, failed to refer minority, women, or other employees.

F. Subject to this subsection, the Contractor shall execute further forms and documentation at times and as may be required by the appropriate Awarding Authority.

G. Where the Contractor has failed to comply with the requirements contained in this section, any and all sanctions allowed by law may be imposed upon the Contractor.

H. The DAA shall be responsible for administering the City's Contract Compliance Program in the manner described in Sections 22.359 through 22.359.2 of this Code.

I. All Contractors subject to the provisions of this section shall include a similar provision in all subcontracts awarded for work to be performed under the Contract with the City and shall impose the same obligations, including, but not limited to, filing and reporting obligations, on the Subcontractors as are applicable to the Contractor. Failure of the Contractor to comply with this requirement or to obtain the compliance of its Subcontractors with all such obligations shall subject the Contractor to the imposition of any and all sanctions allowed by law including, but not limited to, termination of the Contractor's Contract with the City.

05 EQUAL BENEFITS ORDINANCE COMPLIANCE AFFIDAVIT

A Administered by City of Los Angeles Department of Public Works, Bureau of Contract Administration, Office of Contract Compliance, located at 1149 S. Broadway, Suite 300, Los Angeles, CA 90015, Phone; (213) 847-2625, email address: bca.eeoe@lacity.org.

B Contractor must be certified as complying with Los Angeles Code Section 10.8.2.1, Equal Benefits Ordinance, prior to the execution of a City agreement. This form must be returned to City department awarding the agreement.

00030.05 Cont'd.

EBO COMPLIANCE

City of Los Angeles
Department of Public Works Bureau of
Contract Administration Office of Contract
Compliance
1149 S. Broadway, Suite 300, Los Angeles, CA 90015
Phone: (213) 847-2625 E-mail: bca.eeoe@lacity.org

EQUAL BENEFITS ORDINANCE COMPLIANCE AFFIDAVIT

Prime contractors must certify compliance with Los Angeles Administrative Code (LAAC) Section 10.8.2.1 et seq. prior to the execution of a City agreement subject to the Equal Benefits Ordinance (EBO).

SECTION 1. CONTACT INFORMATION

Company Name: Vortex Marine Construction, Inc. RAMP Company ID 24057

Company Address: 1 Maritime Way

City: Antioch State: CA Zip: 94509

Contact Person: Blaise Fettig Phone: (510) 261-2400 E-mail: bfettig@vortex-sfb.com

Approximate Number of Employees in the United States: 40

Approximate Number of Employees in the City of Los Angeles: 0

SECTION 2. EBO REQUIREMENTS

The EBO requires City Contractors who provide benefits to employees with spouses to provide the same benefits to employees with domestic partners. Domestic Partner means any two adults, of the same or different sex, who have registered as domestic partners with a governmental entity pursuant to state or local law authorizing this registration, or with an internal registry maintained by the employer of at least one of the domestic partners.

Unless otherwise exempt, the contractor is subject to and shall comply with the EBO as follows:

A. Contractor's operations located within City limits, regardless of whether there are employees at those locations performing Work on City Contract; and
B. Contractor's operations located outside of City limits if the property is owned by City or City has a right to occupy the property, and if Contractor's presence at or on the property is connected to a Contract with City; and
C. Contractor's employees located elsewhere in the United States, but outside of City Limits, if those employees are performing Work on City Contract.

Contractor must post a copy of the following statement in conspicuous places at its place of business available to employees and applicants for employment:

"During the performance of a Contract with City of Los Angeles, Contractor shall provide equal benefits to its employees with spouses and its employees with domestic partners."

Form OCC/EBO-Affidavit (Rev 6/21/12)

00030.05 Cont'd.

SECTION 3. COMPLIANCE OPTIONS

I have read and understand the provisions of Equal Benefits Ordinance and have determined that this company shall comply as indicated below:

☐..... I have no employees.

☐..... I provide no benefits.

☐..... I provide benefits to employees only. Employees are prohibited from enrolling their spouse or domestic partner.

☐..... I provide equal benefits as required by City of Los Angeles EBO.

☐..... I provide employees with a "Cash Equivalent." Note: The "Cash Equivalent" is the amount of money equivalent to what your company pays for spousal benefits that are unavailable for domestic partners, or vice versa.

☒..... All or some employees are covered by a collective bargaining agreement (CBA) or union trust fund. Consequently, I shall provide Equal Benefits to all non-union represented employees, subject to the EBO, and shall propose to the affected unions that they incorporate the requirements of the EBO into their CBA upon amendment, extension, or other modification of the CBA.

☐..... Health benefits currently provided do not comply with the EBO. However, I shall make the necessary changes to provide Equal Benefits upon my next Open Enrollment period which begins on (Date) _____.

☐..... Our current company policies, i.e., family leave, bereavement leave, etc., do not comply with the provisions of the EBO. However, I shall make the necessary modifications within three (3) months from the date of this affidavit.

SECTION 4. DECLARATION UNDER PENALTY OF PERJURY

I understand that I am required to permit City of Los Angeles access to and upon request, must provide certified copies of all company records pertaining to benefits, policies and practices for the purpose of investigation or to ascertain compliance with Equal Benefits Ordinance. Furthermore, I understand that failure to comply with LAAC Section 10.8.2.1 et seq., Equal Benefits Ordinance may be deemed a material breach of any City contract by Awarding Authority. Awarding Authority may cancel, terminate or suspend in whole or in part, the contract; monies due or to become due under a contract may be retained by City until compliance is achieved. City may also pursue any and all other remedies at law or in equity for any breach. City may use the failure to comply with Equal Benefits Ordinance as evidence against Contractor in actions taken pursuant to the provisions of the LAAC Section 10.40, et seq., Contractor Responsibility Ordinance.

Vortex Marine Construction, Inc. shall comply with Equal Benefits Ordinance requirements
Company Name
as indicated above prior to executing a contract with City of Los Angeles and shall comply for the entire duration of the contract(s).

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am authorized to bind this entity contractually.

Executed this 31 day of July, in the year 20 25, at Antioch (City), CA (State)

Signature

Blaise Fettig
Name of Signatory (please print)

President
Title

1 Maritime Way
Mailing Address

Antioch, CA 94509
City, State, Zip Code

94-3153632
EIN/TIN

Form OCC/EBO-Affidavit (Rev 6/21/12)

06 SMALL BUSINESS ENTERPRISE PROGRAM (SBEP)

A POLICY STATEMENT

City of Los Angeles Harbor Department is committed to creating an environment that provides all individuals and businesses open access to the business opportunities available at Port of Los Angeles in a manner that reflects the diversity of City of Los Angeles. Port of Los Angeles Small Business Enterprise Program (SBEP or the "Program") was created to provide additional opportunities for small businesses to participate in any and all contracts.

It is the policy of Harbor Department to solicit participation in the performance of all service contracts by all individuals and businesses, including but not limited to, small business enterprises (SBEs), very small business enterprises (VSBEs), women-owned businesses (WBEs), minority-owned businesses (MBEs), and disabled veterans business enterprises (DVBE). Program shall allow Department to target more effectively small and very small business participation (including MBEs, WBEs, and DVBEs). It is also the intent of Department to make it easier for small and very small businesses to participate in Department contracts by providing education and assistance on how to do business with City, including, but not limited to, ensuring that payments to small and very small businesses are processed in a timely manner.

City's Contracts Management and Opportunities Database, Regional Alliance Marketplace for Procurement (RAMP) is a free service provided by the Mayor's Office of Economic Development and the Minority Business Opportunity Committee. In order to ensure the highest participation of SBE/VSBE/MBE/WBE/DVBEs, all Bidders shall utilize RAMP, at https://www.rampla.org/s/, to outreach to potential subcontractors and suppliers. Bidders shall go on RAMP and notify subcontractors and suppliers that they shall be bidding and are looking for subcontractors and suppliers.

Bidders must be registered on RAMP at time of bid. Subcontractors and suppliers must be registered on RAMP within 30 Calendar Days after bids are closed.

00030.06 Cont'd.

Bidders, subcontractors, and suppliers identified in the bid submittal as SBE or VSBE must be certified at time of bid, as applicable. Bidders, subcontractors, and suppliers must submit a copy of SBE certificate or VSBE certificate from the agency utilized to obtain certification as SBE or VSBE to Engineer within 4 Business Days of close of bids in order to be acknowledged within the bid as SBE or VSBE. Refer to https://kentico.portoflosangeles.org/getmedia/aea536e1-5d48-440a-8857-c55907e3dc74/contracting-proprietary-sbe-cert-application for certification instructions.

Within 30 Calendar Days after close of bids, Bidders, subcontractors, and suppliers identified in the bid submittal as SBE or VSBE must be verified on RAMP as SBE (Proprietary) or VSBE (Harbor), as applicable.

B SMALL BUSINESS REQUIREMENT

SBEP, which has a very small business enterprise component, is a results-oriented program, requiring contractors who receive contracts from Department to perform outreach and utilize certified small and very small businesses.

Any bid submitted which fails to meet the small and very small business requirement as shown in NOTICE INVITING BIDS Section shall result in rejection of the bid. If no bids are submitted that meet the small and very small business participation identified above, all bids shall be rejected by Department.

For purposes of calculating small and very small business participation in order to meet the requirement, the following shall apply:

1 At the time of bid, SBE and VSBE participation levels shall be based on the percentage of total Contract amount (including Allowance Items) to be paid to SBE and VSBE subcontractors and suppliers.

2 If the prime contractor is an SBE, or VSBE, small or very small business participation is shown as 100%.

3 100% of payments to SBE or VSBE truckers and suppliers.

4 Final SBE and VSBE participation levels shall be based on the percentage of final Contract amount, including the utilized Allowance Item amounts.

00030.06 Cont'd.

Definitions:

Small Business Enterprise (SBE): Harbor Department, and other City of Los Angeles Proprietary Departments, defines an SBE as an independently owned and operated business that is not dominant in its field and meets criteria set forth by the Small Business Administration in Title 13, Code of Federal Regulations, Part 121, generally meeting SBA established size standards for most industries in the economy. Size standards can be accessed on the SBA Website at www.sba.gov/ca/la.

Very Small Business Enterprise (VSBE): Harbor Department, and other City of Los Angeles Proprietary Departments, defines a VSBE based on the State of California's micro-business definition which is (1) a small business that has average annual gross receipts of $5,000,000 or less within the previous 3 years, or (2) a small business manufacturer with 25 or fewer employees.

A Minority Business Enterprise (MBE) is defined as a business in which a minority owns and controls at least 51% of the business. A Woman Business Enterprise (WBE) is defined as a business in which a woman owns and controls at least 51% of the business. For the purpose of this Project, a minority includes:

(1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, The Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

A Disabled Veteran Business Enterprise (DVBE) is defined as a business in which a disabled veteran owns at least 51 percent of the business, and the daily business operations are managed and controlled by one or more disabled veterans.

00030.06 Cont'd.

An OBE (Other Business Enterprise) is any enterprise that is not a SBE, VSBE, DVBE, MBE, or WBE.

Bidder shall be responsible for determining SBE and VSBE status of its subcontractors and suppliers for purposes of meeting the small and very small business requirements. Bidders, subcontractors, and suppliers identified in the bid submittal as SBE or VSBE must be certified at time of bid, as applicable Bidders, subcontractors, and suppliers must submit a copy of SBE certificate or VSBE certificate from the agency utilized to obtain certification as SBE or VSBE to Engineer within 4 Business Days of close of bids in order to be acknowledged within the bid as SBE or VSBE. All business participation shall be determined by the percentage paid to SBEs and VSBEs of the total amount of compensation under Agreement.

Contract Requirements:

Bidder shall complete, sign, notarize, and submit as part of the bid Contractor Ownership/RAMP Outreach/Local Business Enterprise Affidavit form included in Specifications as Subsection 00030.11 with a complete description of Work or supplies to be provided by each and the dollar amount of each such transaction entered in the online subcontractor list provided on CDBON and on the Supplier List in Subsection 00660.03 of SBE/VSBE/MBE/WBE/DVBE/OBE/LBE INFORMATION Section. Subcontractors and suppliers shall complete, sign, notarize, and submit Subcontractor/Supplier Ownership and Local Business Enterprise Affidavit and Contractor/Supplier Information Form included in Subsection 00660.01 of SBE/VSBE/MBE/WBE/DVBE/OBE/LBE INFORMATION Section for each subcontractor and supplier by the time required in Subsection 00012.10 of NOTICE INVITING BIDS Section with a complete description of Work or supplies to be provided by each and the dollar amount of each such transaction. Contractor/Supplier Information Form, when signed, shall signify Contractor's intent to comply with SBE requirement. Within 30 Calendar Days after bids are closed, Harbor Department shall verify SBE and VSBE status of Bidders, subcontractors, and suppliers.

Contractor shall not substitute an SBE or VSBE firm without obtaining prior approval of City and amending its Contract. A request for substitution must be based upon demonstrated good cause. If substitution is permitted, Contractor shall endeavor to make an in-kind substitution for the substituted SBE or VSBE.

00030.06 Cont'd.

During the performance of Contract, Contractor shall complete and submit to Engineer, a Monthly Subcontractor/Supplier Monitoring Report included in Specifications as Subsection 00030.11A. Engineer shall make the report available to Contractor in electronic/digital format. The completed report shall be submitted to Engineer on the form provided in Subsection 00030.11A of this Section. Among other information, the completed form shall reflect payments made to all (SBE/VSBE/MBE/WBE/DVBE/OBE) subcontractors and suppliers to date. The subcontractors or suppliers listed in Monthly Subcontractor/Supplier Monitoring Report shall be the same as those entered in the online subcontractor list provided on CDBON and submitted as part of the bid. All subcontractors/ suppliers shall be listed on the report, regardless of level of activity to date (even if payment to date is zero). The correctly completed report shall be submitted by Contractor at the beginning of each month.

In the event of Contractor's noncompliance during the performance of Contract, Contractor shall be considered in material breach of Contract. In addition to any other remedy available to City under Contract or by operation of law, City may:

1 Withhold invoice payments to Contractor until noncompliance is corrected, and assess the costs of City's audit of books and records of Contractor and its subcontractors and suppliers.

2 Disqualify Contractor from participation in City contracts for a period of up to five (5) years in the event Contractor falsifies or misrepresents information contained in any form or other willful noncompliance as determined by City.

07 CONTRACT SOLICITATIONS CHARTER SECTION 470 (c) (12)

A Persons who submit a bid for this solicitation (Bidders) are subject to Charter Section 470 (c) (12) and related ordinances. As a result, Bidders may not make campaign contributions to and or engage in fundraising for certain elected City officials or candidates for elected City office from the time they submit the bid until either the contract is signed by City of Los Angeles, or the bid is withdrawn by Bidder, or City rejects all bids, whichever is earlier. The prohibitions continue for 12 months after Contract is signed by City for successful Bidder, and principals, subcontractors of at least $100,000, and principals of such subcontractors.

B Bidders must submit signed CEC Form 50 through CDBON at the time of bid. Bids submitted without signed CEC Form 50 shall be deemed nonresponsive. The original signature copy shall be submitted with the 4-day documents in conformance with NOTICE INVITING BIDS Section, Subsection 09.

C Bidders must submit signed CEC Form 55 (which requires bidders to identify their principals) through CDBON at the time of bid. The original signature copy shall be submitted with the 4-day documents in conformance with NOTICE INVITING BIDS Section, Subsection 09. Bidders shall notify their principals and subcontractors in writing of the restrictions and include the notice in contracts with subcontractors. Bidders shall also identify their subcontractors performing $100,000 or more in Work on Contract, and the principals of these subcontractors. Bidders are only required to identify vendors or suppliers who provide additional services and $100,000 or more in materials or equipment. Bidders are not required to identify vendors or suppliers if no services are provided. Bids submitted without signed CEC Form 55 that, at a minimum, contains required information for Bidder and its principals shall be deemed nonresponsive. If required information for any subcontractors and principals of subcontractors is not included on CEC Form 55 at the time of bid, updated CEC Form 55 containing all required information shall be submitted by apparent low Bidder, or other Bidders when requested by Engineer, within 4 Business Days of the date and time of deadline for bid submittal or the bid shall be deemed nonresponsive.

D Bidders who fail to comply with City law may be subject to penalties, termination of Contract, and debarment. Additional information regarding these restrictions and requirements may be obtained from City Ethics Commission at (213) 978-1960 or https://ethics.lacity.org/.

E CEC Forms 50 and 55 may be obtained from City Ethics Commission at https://ethics.lacity.org/contracts/bidders/.

08 IRAN CONTRACTING ACT OF 2010

A California Legislature adopted the Iran Contracting Act of 2010 to respond to policies of Iran in a uniform fashion (PCC § 2201(q)). Iran Contracting Act prohibits Bidders engaged in investment activities in Iran from submitting bids for, or entering into or renewing contracts with public entities for goods and services of one million dollars ($1,000,000) or more (PCC § 2203(a)). In accordance with California Public Contract Code Sections 2200-2208, Bidders submitting bids for, entering into, or renewing contracts with Harbor Department for goods and services estimated at $1,000,000 or more are required to complete, sign, and submit Iran Contracting Act of 2010 Compliance Affidavit included as Subsection 00030.09 of this Section.

09 IRAN CONTRACTING ACT OF 2010 COMPLIANCE AFFIDAVIT (California Public Contract Code Sections 2200-2208)

California Legislature adopted Iran Contracting Act of 2010 to respond to policies of Iran in a uniform fashion (PCC § 2201(q)). Iran Contracting Act prohibits Bidders engaged in investment activities in Iran from submitting bids for, or entering into or renewing contracts with public entities for goods and services of one million dollars ($1,000,000) or more (PCC § 2203(a)). A Bidder who "engages in investment activities in Iran" is defined as either:

- A Bidder providing goods or services of twenty million dollars ($20,000,000) or more in the energy sector of Iran, including provision of oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or
- A Bidder that is a financial institution (as that term is defined in 50 U.S.C. § 1701) that extends twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that person shall use the credit to provide goods or services in the energy sector in Iran and is identified on a list created by the California Department of General Services (DGS) pursuant to PCC § 2203(b) as a person engaging in the investment activities in Iran.

Bidder shall certify that at the time of submitting a bid for a new contract or for the renewal of an existing contract, he or she is not identified on the DGS list of ineligible businesses or persons and that Bidder is not engaged in investment activities in Iran in violation of Iran Contracting Act of 2010.

> California law establishes penalties for providing false certifications, including civil penalties equal to the greater of $250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts (PCC § 2205).

To comply with Iran Contracting Act of 2010, Bidder shall complete and sign ONE of the options shown below and submit with the bid.

OPTION #1: CERTIFICATION

I, the official named below, certify that I am duly authorized to execute this certification on behalf of Bidder or financial institution identified below, and that Bidder or financial institution identified below is not on the current DGS list of persons engaged in investment activities in Iran and is not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person or vendor, for 45 days or more, if that other person or vendor shall use the credit to provide goods or services in the energy sector in Iran and is identified on the current DGS list of persons engaged in investment activities in Iran.

Name of Bidder/Financial Institution (Printed): Vortex Marine Construction, Inc.

Signed by: _____
(Authorized Signature)

Blaise Fettig
(Printed Name)

President
(Title of Person Signing)

OPTION #2: EXEMPTION

Pursuant to PCC § 2203(c) and (d), a public entity may permit a Bidder or financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to submit a bid for, or enter into, or renew, a contract for services. If Bidder or financial institution identified below has obtained an exemption from the certification requirement under Iran Contracting Act of 2010, Bidder or financial institution shall complete and sign below and attach documentation demonstrating the exemption approval.

Name of Bidder/Financial Institution (Printed): _____

Signed by: _____ (Authorized Signature)

_____ (Printed Name)

_____ (Title of Person Signing)

10 LOCAL BUSINESS PREFERENCE PROGRAM (LBPP) **– 8 PERCENT LOCAL BUSINESS PREFERENCE SHALL NOT APPY TO THIS PROJECT**

A LBPP is based on findings that significant benefits are associated with local business preference programs. These benefits include an increase in local jobs and expenditures in the local private sector. Recognizing that (1) Harbor Department operations impact the five regional counties, especially the movement of goods throughout the southland; (2) Harbor Department conducts business with companies in all 5 counties; (3) having these businesses in close proximity to Port of Los Angeles, makes port operations more efficient; (4) these counties are currently experiencing high commercial real estate vacancy rates and high unemployment rates, LBPP aims to encourage businesses to compete for City contracting opportunities, to locate operations in the area, to encourage existing Local Business Enterprises (LBEs) to refrain from relocating to less expensive areas, and to increase local jobs and expenditures.

B Exemption:

1 Any contracts that involve an expenditure of state or federal grant funds, or contracts with any funds not entirely within the control of Harbor Department are exempt from LBPP, as well as any other contract when it is in the best interest of Harbor Department to exempt such contract prior to the date and time of deadline for bid submittal. Refer to NOTICE INVITING BIDS Section for information on whether LBPP applies to Project.

C Local Business Preference Program (LBPP): The following sets forth the specific requirements of LBPP:

1 Los Angeles Harbor Department defines an LBE as:

a A business headquartered within Los Angeles, Orange, Riverside, San Bernardino, or Ventura Counties. “Headquartered” shall mean that the business physically conducts and manages all of its operations from a location in the above-named counties; or

b A business that has at least 50 full-time employees, or 25 full-time employees for specialty marine contracting firms, working within the boundaries of Los Angeles, Orange, Riverside, San Bernardino, or Ventura Counties. A specialty marine contracting firm is a firm whose work is marine improvements, which is defined as work over, under or adjacent to water, such as dredging, installing wharves, piles, electrical above water, water systems above water, and the like.

00030.10 Cont'd.

2 Local Business Preference:

a LBPP allows LBE bidders to receive an 8 percent preference for any contract opportunity that is competitively awarded. The local preference is applicable to all construction contracts greater than $150,000. When applying the preference to construction contracts awarded based on low bid, the total price bid by an LBE shall be reduced by 8 percent. The reduced bid amount shall be deemed the amount bid by that bidder; however, the resulting contract price shall be the amount bid by the successful bidder prior to allocating the local preference percentage. The maximum preference shall not exceed $1,000,000.

b Below is an example of how the local preference is applied to contracts awarded on a low-bid basis:

	Non-local Firm	Local Firm A	Local Firm B	
Original Bid	$10,500,000	$11,000,000	$12,750,000	
8% Preference	N/A	($880,000)	($1,000,000)	*
Final Bid	$10,500,000	$10,120,000	$11,750,000	

*Maximum Preference

In the example above, Local Firm A was the lowest bidder after applying the local preference. Although the final bid amount is $10,120,000, Harbor Department would award a contract based on the original bid in the amount of $11,000,000. Harbor Department would have expended $500,000 more on the project as a result of the local preference, when compared to the bid submitted by the non-local firm.

3 Local Subcontractor/ Supplier Preference:

a LBPP allows non-local bidders to receive up to a maximum 5 percent preference if the bidder identifies local subcontractors or suppliers that shall perform Work under Contract. LBPP allows for 1 percent preference, up to a maximum of 5 percent, for every 10 percent of Work that is subcontracted to or supplied by LBEs. The maximum preference shall not exceed $1,000,000.

00030.10 Cont'd.

b LBPP applies only to first tier local subcontractors. LBPP applies also to local suppliers if they are first tier.

c The following is an example of non-local bidders with LBE subcontractors as applied to contracts awarded on a low bid basis.

00030.10 Cont'd.

	Non-Local Firm A	Non-Local Firm B	Non-Local Firm C	Local Firm D
Original Bid	$13,900,000	$13,600,000	$14,200,000	$14,500,000
Preference %	3%	0%	5%*	8%
Preference	($417,000)	$0	($710,000)	($1,000,000)*
Final Bid	$13,483,000	$13,600,000	$13,490,000	$13,500,000

*Maximum preference

		Sub-bid	Percent of bid	Percent Preference
Firm A's Subs	LBE Sub A1	$1,500,000	10.79%	
	LBE Sub A2	$2,000,000	14.39%	
	LBE Sub A3	$1,600,000	11.51%	
	Subtotal	$5,100,000	36.69%	3%
	Non LBE Sub A4	$1,150,000	8.27%	
	Non LBE Sub A5	$700,000	5.04%	
	Subtotal	$1,850,000	13.31%	
portion by prime		$6,950,000	50.00%	
	TOTAL	$13,900,000	100.00%	
	Adjusted Bid	$13,483,000		

		Sub-bid	Percent of bid	Percent Preference
Firm B's Subs	Non LBE Sub B1	$1,020,000	7.50%	
	Non LBE Sub B2	$1,110,000	8.16%	
	Non LBE Sub B3	$990,000	7.28%	
	Non LBE Sub B4	$3,680,000	27.06%	
	Subtotal	$6,800,000	50.00%	0%
portion by prime		$6,800,000	50.00%	
	TOTAL	$13,600,000	100.00%	
	Adjusted Bid	$13,600,000		

		Sub-bid	Percent of bid	Percent Preference
Firm C's Subs	LBE Sub C1	$900,000	6.34%	
	LBE Sub C2	$1,000,000	7.04%	
	LBE Sub C3	$2,390,000	16.83%	
	LBE Sub C4	$4,230,000	29.79%	
	Subtotal	$8,520,000	60.00%	5%
portion by prime		$5,680,000	40.00%	
	TOTAL	$14,200,000	100.00%	
	Adjusted Bid	$13,490,000		

00030.10 Cont'd.

d In the previous example, Non-Local Firm A was the lowest bidder after applying the preference for local subcontractors. Although the final bid amount is $13,483,000, Harbor Department would award a contract based on the original bid in the amount of $13,900,000. Harbor Department would have expended $300,000 more on the project as a result of the local preference, when compared to Non-Local Firm B. Note that fractions of a percent are rounded down when calculating percent preference.

D In order for Harbor Department staff to determine the appropriate LBE preference, Bidders shall complete, sign, notarize and submit Contractor Ownership/RAMP Outreach/Local Business Enterprise Affidavit in Subsection 00030.11 of BIDDING DOCUMENTS Section, fill out subcontractor list online provided on CDBON, fill out Contractor/Supplier Information Form in Subsection 00660.01 and complete, sign, notarize and submit Subcontractor/Supplier Ownership and Local Business Enterprise Affidavit in Subsection 00660.02.

In the event Contractor claims a Local Business or local subcontractor/supplier preference in its bid and is awarded Contract, if at any time during the term of Contract, Contractor fails to remain in compliance with the requirements of the claimed preference, Contractor shall be considered in material breach of Contract. In addition to any other remedy available to Department under Contract or by operation of law, Department may withhold payments to Contractor or recover previous payments in the amount of the preference claimed in Contractor's bid and assess the costs of Department's audit of books and records of Contractor and its subcontractors/suppliers. In the event Contractor falsifies or misrepresents information contained in any form or other willful noncompliance as determined by Department, Department may disqualify Contractor from participation in Department contracts for a period of up to five years.

11 CONTRACTOR OWNERSHIP / RAMP OUTREACH / LOCAL BUSINESS ENTERPRISE AFFIDAVIT

AFFIDAVIT

"The undersigned declares under penalty of perjury pursuant to the laws of the State of California that the following is true and correct and include all material information necessary to identify and explain the operations of

Vortex Marine Construction, Inc.

Name of Firm

as well as the ownership thereof. Further, the undersigned agrees to provide Harbor Department, upon request, complete and accurate information regarding ownership in the named firm, and all of its domestic and foreign affiliates, any proposed changes of the ownership and to permit the audit and examination of firm ownership documents, and the ownership documents of all of its domestic and foreign affiliates, in association with this Contract."

Furthermore, the undersigned certifies that it has utilized RAMP to outreach to potential SBE/VSBE/MBE/WBE/DVBEs for potential subcontracting opportunities associated with this bid.

Please indicate the ownership of your company as defined in Subsection 00030.06 of BIDDING DOCUMENTS Section:

| Small Business Enterprise (SBE) | Yes (No) | (Circle One)

| Very Small Business Enterprise (VSBE) | Yes (No) | (Circle One)

Is Your Firm an MBE Yes (No) WBE Yes (No) DVBE Yes (No) OBE (Yes) No (Circle as appropriate)

Local Business Preference Program: Please indicate the local business enterprise (LBE) status of your company as defined in Subsection 00030.10 of BIDDING DOCUMENTS Section:

(LBE) (Circle One)
(Non-LBE) (Circle One)

If you are a non-LBE, please indicate below whether you are claiming a Local Subcontractor Preference (as defined in Subsection 00030.10 of BIDDING DOCUMENTS Section) and, if so, the preference percentage claimed (maximum preference of 5 percent).

Local Subcontractor Preference: _____ percent preference (enter percent claimed)

X Not claiming Local Subcontractor Preference (check if not claiming preference)

Signature _____ Title President

Printed Name Blaise Fettig Date Signed 7/31/2025

NOTARY

(State of California)

County of _____)

Please See Attached State of California ~~Jurat~~ Acknowledgment Notarization Form

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of CONTRA COSTA)

On July 31, 2025 before me, Bernadette C. Brooks, Notary Public
(insert name and title of the officer)

personally appeared Blaise Feltig,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

BERNADETTE C. BROOKS
Notary Public - California
Contra Costa County
Commission # 2470143
My Comm. Expires Nov 6, 2027

Signature Bernadette Brooks (Seal)

00030.11 Cont'd.

On _____ before me, _____
Date Here insert Name and Title of the Officer

personally appeared _____
Name(s) of Signer(s)

_____

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal Above

Signature_____
Signature of Notary Public

11A MONTHLY SUBCONTRACTOR / SUPPLIER MONITORING REPORT

SAMPLE MONTHLY SUBCONTRACTOR/SUPPLIER MONITORING REPORT

Instructions: Please indicate the SBE/VSBE/MBE/WBE/OBE/DVBE participation levels achieved for the month of _____covered by the referenced contract number.

Contract No. Spec. No. Division Contract Administrator

Contractor Group* Contract Title/Project

Original Contract Amount $10,000,000.00 Contract Start Date Contract End Date

Total Earned Value to Date $ 6,000,000.00

Original Proposed Subcontractor Percentages SBE 22.00% VSBE 7.00% MBE 20.00% WBE 20.00% OBE 60.00% DVBE 0.00%

Contract-required minimum percentages (in parentheses) (21%) (6%)

The VSBE and Total SBE min-required percentages above, are not additive. The Total SBE percentage includes VSBE participation.

					PROPOSED		ACTUALS		
	Name of Subcontractor	Type of Work Performed	SBE/VSBE	MBE/WBE/OBE/DVBE	Original Proposed Amount	Original Proposed Percentage	Earned Value to Date	Earned Value to Date Percentage	Total Earned Value Percentage
1	Construction Firm A	Asphalt Paving	VSBE, SBE	MBE, WBE	$300,000.00	3.00%	$150,000.00	50.00%	2.50%
2	Construction Firm B	Demolition	VSBE, SBE	OBE	$200,000.00	2.00%	$25,000.00	12.50%	0.42%
3	Supplier No. 1	Concrete Piles	VSBE, SBE	OBE	$200,000.00	2.00%	$75,000.00	37.50%	1.25%
			VSBE Subtotal:		$700,000.00	7.00%	$250,000.00	35.71%	4.17%
1	Construction Firm C	Low Voltage Electrical	SBE	WBE, DVBE	$500,000.00	5.00%	$100,000.00	20.00%	1.67%
2	Supplier No. 2	Precast Concrete Pipe	SBE	MBE	$1,000,000.00	10.00%	$250,000.00	25.00%	4.17%
3			SBE			0.00%		#DIV/0!	0.00%
			SBE Subtotal (Exclusive of VSBE):		$1,500,000.00	15.00%	$350,000.00	23.33%	5.83%
			Total SBE (Inclusive of VSBE):		$2,200,000.00	22.00%	$600,000.00	27.27%	10.00%
1	Construction Firm D	Concrete Pumping	No	OBE	$500,000.00	5.00%	$400,000.00	80.00%	6.67%
2	Construction Firm F	Concrete Sawing	No	MBE	$500,000.00	5.00%	$500,000.00	100.00%	8.33%
3			No			0.00%		#DIV/0!	0.00%
4			No			0.00%		#DIV/0!	0.00%
5			No			0.00%		#DIV/0!	0.00%
			Non-SBE Total:		$1,000,000.00	10.00%	$900,000.00	90.00%	15.00%

Directions:

Original Proposed Percentage = Original Proposed Amount / Original Contract Amount

Earned Value to Date Percentage = Earned Value to Date / Original Proposed Amount

Total Earned Value Percentage = Earned Value to Date / Total Earned Value to Date

*Group = SBE / VSBE / MBE / WBE / OBE / DVBE

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00030.11A Cont'd.

MONTHLY SUBCONTRACTOR/SUPPLIER MONITORING REPORT

Instructions: Please indicate the SBE/VSBE/MBE/WBE/OBE/DVBE participation levels achieved for the month of _____covered by the referenced contract number.

Contract No. Spec. No. Division Contract Administrator

Contractor Group* Contract Title/Project

Original Contract Amount Contract Start Date Contract End Date

Total Earned Value to Date

Original Proposed Subcontractor Percentages SBE 0.00% VSBE 0.00% MBE 0.00% WBE 0.00% OBE 0.00% DVBE 0.00%

Contract-required minimum percentages (in parentheses) (0%) (0%)

The VSBE and Total SBE min-required percentages above, are not additive. The Total SBE percentage includes VSBE participation.

					PROPOSED		ACTUALS		
	Name of Subcontractor	Type of Work Performed	SBE/VSBE	MBE/WBE/OBE /DVBE	Original Proposed Amount	Original Proposed Percentage	Earned Value to Date	Earned Value to Date Percentage	Total Earned Value Percentage
1			VSBE, SBE						
2			VSBE, SBE						
3			VSBE, SBE						
			VSBE Subtotal:						
1			SBE						
2			SBE						
3			SBE						
			SBE Subtotal (Exclusive of VSBE):						
			Total SBE (Inclusive of VSBE):						
1			No						
2			No						
3			No						
4			No						
5			No						
			Non-SBE Total:						

Directions:

Original Proposed Percentage = Original Proposed Amount / Original Contract Amount

Earned Value to Date Percentage = Earned Value to Date / Original Proposed Amount

Total Earned Value Percentage = Earned Value to Date / Total Earned Value to Date

*Group = SBE / VSBE / MBE / WBE / OBE / DVBE

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12 PROPOSAL

Los Angeles, California

To Board of Harbor Commissioners:

The undersigned, having carefully examined Contract Documents for Specification No. 2842 at Port of Los Angeles, and having personally visited the site of Work and having become familiar with the conditions based upon the site visit and review of the reference materials, hereby proposes to furnish all materials and perform all Work required to complete Project in accordance with Contract Documents, within the time set forth in Contract for the Grand Total stated in CDBON's bid item online form.

The undersigned represents all Work indicated in Contract Documents is included within the scope of Work of Contract, is included in the Grand Total for the item(s) stated in the online form, and shall not be construed to be extra Work for which extra compensation can be claimed.

The undersigned has carefully checked all figures inserted in the online form and understands that Board shall not be responsible for any errors or omissions on the part of the undersigned in making the bid.

The undersigned agrees upon acceptance of the bid for all Work indicated on Contract Documents, to enter into and execute an agreement, of which the documents listed in the table of contents of said Specification No. 2842 shall be made a part, at the Grand Total stated in the online form, and to furnish and execute such bonds and insurance as required.

The undersigned furthermore agrees that in case of default in execution of such agreement, or in furnishing the required bonds, the security accompanying this Proposal and the money payable thereon shall be forfeited and remain the property of Department. Such forfeiture shall not preclude recovery of any sum over and above the amount posted or guaranteed to which Department sustains damage by reason of such default or failure to contract.

The undersigned agrees that Board reserves the right, in its sole discretion, to accept or reject the bid, without price escalation, at any time within ninety (90) days after date and time of deadline to submit bids.

00030.12 Cont'd.

The undersigned acknowledges receipt of all addenda and accepts all conditions contained therein.

Contractor's License No. 649452 Expiration Date 7/31/2026

By _____
Signature

Blaise Fettig, President
Signature

Address 1 Maritime Way, Antioch, CA 94509

Contractor declares that its authorized Taxpayer Identification Number (TIN) is 94-3153632. The above signed understands no payments shall be made under Contract without a valid TIN number.

Bidder Is* Corporation

If a partnership, state names of partners. If a corporation, state names of president and secretary.

Blaise Fettig, President

Blaise Fettig, Secretary

The representations made herein are made under penalty of perjury.

*Corporation, Partnership, Limited Partnership, Individual

*If Bidder is a corporation, bid must be signed by a person authorized to do so by bylaw or resolution of that corporation.

*If Bidder is a partnership, bid must be signed by all partners unless bid is accompanied by proof that signing partner(s) is (are) authorized to bind partnership.

00030.12 Cont'd.

LOS ANGELES HARBOR DEPARTMENT
HEADQUARTERS LOCATION FORM

AT THE REQUEST OF A LOS ANGELES CITY COUNCIL MOTION, ALL BIDDERS SHALL SUBMIT THE FOLLOWING INFORMATION AT THE TIME OF BID OR PROPOSAL SUBMITTAL. THIS IS FOR INFORMATION ONLY AND SHALL IN NO WAY AFFECT CONTRACT SELECTION PROCESS.

DATE: 7/31/2025 SPECIFICATION NO. 2842

PROJECT TITLE: 2025-2027 MARINE IMPROVEMENTS

COMPANY NAME: Vortex Marine Construction, Inc.

CONTACT PERSON: Blaise Fettig

COMPANY HEADQUARTERS ADDRESS: 1 Maritime Way

CITY: Antioch STATE: CA ZIP CODE: 94509

COMPANY LOCATION ADDRESS 1 Maritime Way

CITY: Antioch STATE: CA ZIP CODE: 94509

PHONE NUMBER: (510) 261-2400 NUMBER OF EMPLOYEES: 40

PERCENTAGE OF EMPLOYEES WHO RESIDE IN THE CITY OF LOS ANGELES 0%

Blaise Fettig, President
NAME/TITLE

13 BID PROPOSAL LINE ITEMS

The bid proposal line items are located on Construction Division Business Opportunities Network (CDBON) online system. Enter bidder's unit prices in the online form. The extended prices for each bid item are automatically calculated by CDBON's online system based on unit prices entered. The Grand Total is automatically summed from the extended prices. A printed version of the bid proposal line items is included at the end of this Subsection of BIDDING DOCUMENTS Section of Specifications for information only.

CONTINGENCY ITEM(S)

Work described in the contingency item(s) in the online form may or may not be necessary depending on conditions discovered in the field after Contract award. If Engineer determines that field conditions justify Work listed in the contingency items, the prices for the contingency items shall be used to adjust Contract amount for Work ordered by Engineer.

ALLOWANCE ITEM(S)

Work described in the allowance item(s) in the online form may or may not be necessary depending on conditions discovered in the field after Contract Award. If field conditions justify Work listed in the allowance items, Engineer shall issue a written authorization to proceed with Work item(s) described in the online form. Work under allowance items is exclusive of Work required elsewhere in Contract Documents unless specifically referenced. All Work performed under these allowance items shall be performed either on a negotiated cost basis prior to performing Work in accordance with the provisions of Subsection 01000.35 "Authority for Adjustments", or on a Time and Material basis in accordance with the provisions of Subsection 01000.34 "Cost-Plus Change Order Work (Change Orders)" of GENERAL CONDITIONS Section. Upon completion of Contract, any unused allowance remaining under each allowance bid item shall be credited back to Department.

Award: Award, if made, shall be made to a single Contractor. The lowest bidder shall be based on the sum of all the items for which a bid is requested, including all contingency items regardless of whether all of those items are actually awarded, and Local Business Preference indicated below. The awarded Contractor's bid results provided in CDBON online system shall be inserted at the end of Subsection 00030.13 and shall become part of any Contract awarded.

00030.13 Cont'd.

LOCAL BUSINESS PREFERENCE (Not to Exceed $1,000,000. Reduction amount shall be applied, if necessary, by Harbor Department)

Prime is Local Business (8 percent preference)

OR

Prime is not a Local Business but subcontractor(s) or supplier(s) is(are) Local Business(es) (up to 5 percent preference. Not to Exceed $1,000,000)

The subcontractor percent preference shall be applied by Department as described in Subsection 00030.10.

REDUCED BID AMOUNT (The reduced bid amount shall be used for Award purposes)

Section	ItemCode	ItemDesc	UnitOfMeasure	Quantity	UnitPrice
Main Bid	1	Timber Fender Pile Removal: For furnishing transportation, labor, materials, and equipment to extract, remove, and dispose of approximately or up to 65 foot long by 14-inch diameter timber fender piles, including additions to or deductions from the approximate stipulated quantity	Each	75	$ 4,800
Main Bid	2	Timber Bearing Pile Removal: For furnishing transportation, labor, materials, and equipment to extract, remove, and dispose of approximately or up to 80 foot by 14-inch diameter timber bearing piles, including additions to or deductions from the approximate stipulated quantity	Each	50	$ 5,000
Main Bid	3	24-Inch Concrete Pile Removal: For furnishing transportation, labor, materials, and equipment to extract, remove, and dispose of 100 foot by 24-inch octagonal concrete piles, including additions to or deductions from the approximate stipulated quantity	Each	25	$ 15,000
Main Bid	4	18-Inch Concrete Pile Removal: For furnishing transportation, labor, materials, and equipment to extract, remove, and dispose of 100 foot by 18-inch octagonal concrete piles, including additions to or deductions from the approximate stipulated quantity	Each	10	$ 13,000
Main Bid	5	Mobilization and Demobilization for Timber Pile Removal from Waterside: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each timber pile removal Project from waterside, including additions to or deductions from the approximate stipulated quantity	Mob and Demob	5	$ 100,000

Main Bid	6	Mobilization and Demobilization for Concrete Pile Removal from Waterside: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each concrete pile removal Project from waterside, including additions to or deductions from the approximate stipulated quantity	Mob and Demob	4	$	100,000
Main Bid	7	Furnish 24-Inch Octagonal 24A Concrete Piles: For furnishing transportation, labor, materials, and equipment to manufacture minimum 100 foot by 24-inch octagonal 24A concrete piles and deliver to Project Site(s), in conformance with Detail CP-24A included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity	Linear Feet	2,000	$	285
Main Bid	8	Install 24-Inch Octagonal 24A Concrete Piles from Waterside: For furnishing transportation, labor, materials, and equipment to install 24-inch octagonal 24A concrete piles, in conformance with Detail CP-24A included in Appendix “B” of Specifications, from waterside, including additions to or deductions from approximate stipulated quantity	Each	20	$	18,000
Main Bid	9	Furnish 24-Inch Octagonal 24B Concrete Piles: For furnishing transportation, labor, materials, and equipment to manufacture minimum 100 foot by 24-inch octagonal 24B concrete piles and deliver to Project Site(s), in conformance with Detail CP-24B included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity	Linear Feet	2,000	$	260
Main Bid	10	Install 24-Inch Octagonal 24B Concrete Piles from Landside: For furnishing transportation, labor, materials, and equipment to install 24-inch octagonal 24B concrete piles from landside, in conformance with Detail CP-24B included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity	Each	20	$	15,000

Main Bid	11	Install 24-Inch Octagonal Concrete Indicator Piles: For furnishing transportation, labor, materials, and equipment to transport by water from Pier 400 as indicated in Appendix "J" of Specifications existing, 24-inch, 130 foot long, octagonal concrete indicator piles, to within a 5 mile radius and install them from waterside with jetting, including additions to or deductions from the approximate stipulated quantity	Each	12	$	85,000
Main Bid	12	Mobilization and Demobilization for Concrete Pile Driving from Waterside: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each concrete pile driving Project, from waterside, including additions to or deductions from approximate stipulated quantity	Mob and Demob	5	$	200,000
Main Bid	13	Mobilization and Demobilization for Concrete Pile Driving from Landside: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each concrete pile driving Project from landside, including additions to or deductions from approximate stipulated quantity	Mob and Demob	5	$	330,000
Main Bid	14	Differential Costs to Drive Octagonal Concrete Piles Using a Pile Driving Analyzer (PDA): For paying differential costs to drive concrete piles using a pile driving analyzer (PDA), including additions to or deductions from approximate stipulated quantity	Each	5	$	4,000
Main Bid	15	Restrike Octagonal Concrete Piles: For furnishing transportation, labor, materials, and equipment to restrike octagonal concrete piles, including additions to or deductions from approximate stipulated quantity	Each	5	$	33,000
Main Bid	16	Differential Costs to Restrike Octagonal Concrete Piles Using a Pile Driving Analyzer (PDA): For paying differential costs to restrike concrete piles using a pile driving analyzer (PDA), including additions to or deductions from approximate stipulated quantity	Each	5	$	33,000

Main Bid	17	Furnish Timber Fender Piles: For furnishing transportation, labor, materials, and equipment to furnish 14-inch diameter by 65 foot timber fender piles, and deliver to Project Site(s), including additions to or deductions from approximate stipulated quantity	Linear Feet	29,250	$	60
Main Bid	18	Install Timber Fender Piles: For furnishing transportation, labor, materials, and equipment to install timber fender piles, and to wrap piles after installation, as shown on Detail TP-3.5 and TP-3.6 included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity	Each	450	$	8,000
Main Bid	19	Furnish Timber Bearing Piles: For furnishing transportation, labor, materials, and equipment to furnish 14-inch diameter by 65 foot timber bearing piles, and deliver to Project Site(s), including additions to or deductions from approximate stipulated quantity	Linear Feet	1,625	$	115
Main Bid	20	Install Timber Bearing Piles from Landside: For furnishing transportation, labor, materials, and equipment to install timber bearing piles from landside, and to wrap piles, as shown on Detail TP-2.1 included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity	Each	25	$	10,000
Main Bid	21	Install Timber Bearing Piles from Waterside: For furnishing transportation, labor, materials, and equipment to install timber bearing piles from waterside, and to wrap piles, as shown on Detail TP-2.1 included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity	Each	25	$	10,000

Main Bid	22	Timber Bearing Pile Repair: For furnishing transportation, labor, materials, and equipment to repair timber bearing piles as shown on Details TP-1.1 through TP-1.3 included in Appendix “B” of Specifications, to remove and reinstall decking and to wrap piles as shown on Details TP-3.1A, TP-3.1B, TP-3.1C, TP-3.2, TP-3.3, and TP-3.4 , including additions to or deductions from approximate stipulated quantity	Each	25	$ 23,000
Main Bid	23	Timber Bearing Pile Offset Installation: For furnishing transportation, labor, materials, and equipment to construct new timber bearing pile offset installation as shown on Details TP-2.1 and TP-2.2 included in Appendix “B” of Specifications, to remove and reinstall decking and to wrap piles as shown on Details TP-3.1A, TP-3.1B, TP-3.1C, TP-3.2, TP-3.3, and TP-3.4, including additions to or deductions from approximate stipulated quantity	Each	8	$ 20,000
Main Bid	24	Mobilization and Demobilization for Timber Pile Driving from Waterside: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each timber pile driving Project from waterside, including additions to or deductions from approximate stipulated quantity	Mob and Demob	5	$ 145,000
Main Bid	25	Mobilization and Demobilization for Timber Pile Driving from Landside: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each timber pile driving Project from landside, including additions to or deductions from approximate stipulated quantity	Mob and Demob	5	$ 50,000
Main Bid	26	Timber Pile Wrap: For furnishing transportation, labor, materials, and equipment to remove and replace existing timber pile wrapping extending from elevation +7.50 to mudline as shown on Details TP-3.1A, TP-3.1B, TP-3.1C, TP-3.2, TP-3.3 and TP-3.4 included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity, including diving	Each	50	$ 4,000

Main Bid	27	Timber Pile Tidal Wrap: For furnishing transportation, labor, materials, and equipment to remove and replace existing tidal pile wrapping as shown on Details TP-3.1A and TP-3.2, TP-3.3, and TP-3.4 included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity, including diving	Each	50	$	3,500
Main Bid	28	Timber Pile Submerged Wrap Termination: For furnishing transportation, labor, materials, and equipment to remove and replace existing submerged pile wrapping assumed 40 foot long down to mudline as shown on Details TP-3.1B and TP-3.2, TP-3.3, and TP-3.4 included in Appendix “B” of Specifications, including additions to or deductions from approximate stipulated quantity, including diving	Each	50	$	3,500
Main Bid	29	Timber Pile Rockline Crater Digging and Submerged Wrap Termination: For furnishing transportation, labor, materials, and equipment to remove and replace existing slope surrounding each pile and terminate submerged wrap as shown on Detail TP-3.1C included in Appendix “B” of Specifications, including additions to or deductions from the approximate stipulated quantity, including diving	Each	50	$	3,200
Main Bid	30	Timber Bullrail: For furnishing transportation, labor, materials, and equipment to furnish and install treated Douglas fir timber bullrail as shown on Detail MTC-1.1 included in Appendix “B” of Specifications, including additions to or deductions from the stipulated quantity	Linear Feet	800	$	160
Main Bid	31	Furnish and Place Quarry Run (2,000 Tons or Less per Order): For furnishing transportation, labor, materials, and equipment to furnish and install quarry run, 2,000 tons or less per order, including additions to or deductions from the approximate quantity stipulated	Tons	3,000	$	118

Main Bid	32	Furnish and Place Quarry Run (Greater Than 2,000 Tons per Order): For furnishing transportation, labor, materials, and equipment to furnish and install quarry run, greater than 2,000 tons per order, including additions to or deductions from the approximate quantity stipulated	Tons	5,000	$	112
Main Bid	33	Furnish and Place Riprap: For furnishing transportation, labor, materials, and equipment to furnish and install riprap, including additions to or deductions from approximate stipulated quantity	Tons	5,000	$	165
Main Bid	34	Mobilization and Demobilization for Placing Quarry Run and Riprap: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each quarry run and riprap placement Project, including additions to or deductions from approximate stipulated quantity	Mob and Demob	5	$	175,000
Main Bid	35	Dredging and Disposing of Materials at Berths 243-245 Confined Disposal Facility (2,500 Cubic Yards or Less per Order): For furnishing transportation, labor, materials, and equipment to dredge and remove soils materials in quantities less than 2,500 cubic yards or less per order; provide turbidity curtains and booms; barge and offload dredged materials to the Berths 243-245 Confined Disposal Facility (CDF), as shown on Appendix “C” of Specifications; as directed by Engineer, including additions to or deductions from the approximate stipulated quantity	Cubic Yards	13,000	$	105
Main Bid	36	Dredging And Disposing of Materials at Berths 243-245 Confined Disposal Facility (Greater Than 2,500 Cubic Yards per Order): For furnishing transportation, labor, materials, and equipment to dredge and remove soils materials in quantities greater than 2,500 cubic yards per order; provide turbidity curtains and booms; barge and offload dredged materials to the Berths 243-245 Confined Disposal Facility (CDF), as shown in Appendix “C” of Specifications; as directed by Engineer, including additions to or deductions from the approximate stipulated quantity	Cubic Yards	30,000	$	90

Main Bid	37	Dredging and Disposing of Materials at Sea (2,500 Cubic Yards or Less per Order): For furnishing transportation, labor, materials, and equipment to dredge and remove soil materials in quantities 2,500 cubic yards or less per order; provide turbidity curtains and booms; barge and dispose of dredged materials at approved ocean location LA-2 (as shown in Appendix “C” of Specifications), including additions to or deductions from the approximate stipulated quantity	Cubic Yards	10,000	$ 65
Main Mid	38	Dredging and Disposing of Materials at Sea (Greater Than 2,500 Cubic Yards per Order): For furnishing transportation, labor, materials, and equipment to dredge and remove soil materials in quantities greater than 2,500 cubic yards per order; provide turbidity curtains and booms; barge and dispose of dredged materials at approved ocean location LA-2 (as shown in Appendix “C” of Specifications), including additions to or deductions from the approximate stipulated quantity	Cubic Yards	75,000	$ 58
Main Bid	39	Mobilization and Demobilization for Dredging: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization for each dredging Project; including additions to or deductions from the approximate stipulated quantity	Mob and Demob	10	$ 400,000
Main Bid	40	Mobilization and Demobilization for Dredging in Shallow Waters: For furnishing transportation, labor, materials, and equipment for one mobilization and one demobilization for each shallow water dredging Project (in waters 10 feet or less in depth); including additions to or deductions from the approximate stipulated quantity	Mob and Demob	3	$ 700,000

Main Bid	41	Dredging in Shallow Waters and Disposing of Materials at Berths 243-245 Confined Disposal Facility: For furnishing transportation, labor, materials, and equipment to dredge in shallow waters (in waters 10 feet or less of depth) and remove soil materials, rocks, and rubble; provide turbidity curtains and booms; barge and offload dredged materials to the Berths 243-245 Confined Disposal Facility (as shown in Appendix "C" of Specifications), including additions to or deductions from the approximate stipulated quantity	Cubic Yards	3,000	$	350
Main Bid	42	Slurry to Repair Slopes in the Tidal Zone: For furnishing transportation, labor, materials, and equipment to furnish and install slurry for repairs to slopes in the tidal zone, including additions to or deductions from approximate stipulated quantity	Cubic Yards	1,000	$	440
Main Bid	43	Submerged Concrete-Filled Sandbags: For furnishing transportation, labor, materials, and equipment to provide and place submerged, concrete-filled sandbags (60 lbs per bag), including additions to or deductions from approximate stipulated quantity	Sandbags	500	$	210
Main Bid	44	Crane Rail Repairs: For furnishing transportation, labor, materials, and equipment to perform crane rail repairs using shielded metal arc welding, including additions to or deductions from approximate stipulated quantity	Each	4	$	45,000
Main Bid	45	Excavate, Stockpile, and Dispose of Resource Conservation and Recovery Act (RCRA) Hazardous Waste Soil: For furnishing transportation, labor, materials, and equipment to excavate, stockpile, characterize, haul away, and dispose of RCRA hazardous waste soil at a licensed Class I lined landfill acceptable to Department, including additions to or deductions from the approximate stipulated quantity	Tons	8300	$	260

Main Bid	46	Excavate, Stockpile, and Dispose of California Hazardous (Non-RCRA) Waste Soil: For furnishing transportation, labor, materials, and equipment to excavate, stockpile, characterize, haul away, and dispose of California hazardous waste soil non-RCRA at a licensed Class I lined landfill acceptable to Department, including additions to or deductions from the approximate stipulated quantity	Tons	8000	$	200
Main Bid	47	Excavate, Stockpile, and Dispose Contaminated Non-Hazardous Waste Soil: For furnishing transportation, labor, materials, and equipment to excavate, stockpile, characterize, haul away, and dispose of contaminated/nonhazardous waste soil (including but not limited to hydrocarbon impacted soil and VOC contaminated soil) at a licensed landfill or thermal desorption recycling facility acceptable to Department, including additions to or deductions from the approximate stipulated quantity	Tons	4600	$	150
Main Bid	48	Excavate, Stockpile, and Re-Use Clean Soil: For furnishing transportation, labor, materials, and equipment to excavate, stockpile, characterize, and re-use clean soil, including additions to or deductions from the approximate stipulated quantity	Cubic Yards	500	$	100
Main Bid	49	Light Non-Aqueous Phase Liquids (LNAPL)/Water Mix Skimming, Removal, and Disposal: For furnishing transportation, labor, materials, and equipment to skim, remove and dispose of light non-aqueous phase liquid (LNAPL) floating on the groundwater in excavation areas, and convey the recovered LNAPL/water mixture to LNAPL holding tank located onsite or vacuum truck, including additions to or deductions from the approximate quantity stipulated	Gallons	200	$	50
Main Bid	50	Safety and Health Plan: For furnishing transportation, labor, materials, and equipment to prepare and implement a site specific Safety and Health Plan, including additions to or deductions from the approximate quantity stipulated	Each	4	$	7,500

Main Bid	51	Geomembrane: For furnishing transportation, labor, materials, and equipment to furnish and install geomembrane, including additions to or deductions from the approximate quantity stipulated	Square Feet	5000	$	8
Main Bid	52	Geotextile: For furnishing transportation, labor, materials, and equipment to furnish and install geotextile, including additions to or deductions from the approximate quantity stipulated	Square Feet	20000	$	6
Main Bid	53	Trench Excavation and Backfill: For furnishing transportation, labor, materials, and equipment to perform trench excavation, cement-sand slurry backfill, and asphalt concrete resurfacing including additions to or deductions from the approximate quantity stipulated	Cubic Yards	10000	$	75
Main Bid	54	Placement of No. 2 Aggregate Subgrade Stabilization Material: For furnishing transportation, labor, materials, and equipment to furnish and place No. 2 Aggregate Subgrade Stabilization Material at excavation subgrades, as directed by Engineer, including additions to or deductions from the approximate quantity stipulated,	Tons	2000	$	75
Main Bid	55	Placement of No. 68 Aggregate Subgrade Stabilization Material: For furnishing transportation, labor, materials, and equipment to furnish and place No. 68 Aggregate Subgrade Stabilization Material at excavation subgrades, including additions to or deductions from the approximate quantity stipulated,	Tons	1000	$	75
Main Bid	56	Import Fill Soil: For furnishing transportation, labor, materials, and equipment to furnish, place, grade, and compact qualified Contractor-furnished fill soil, including additions to or deductions from the approximate quantity stipulated	Cubic Yards	15000	$	75
Main Bid	57	Mobilization and Demobilization for Excavation: For furnishing transportation, labor, materials, and equipment for 1 mobilization and 1 demobilization, for each excavation Project, including additions to or deductions from the approximate stipulated quantity	Mob and Demob	5	$	15,000

Main Bid	58	Clear and Grub: For furnishing transportation, labor, materials, and equipment to clear and grub in minimum quantities of 1,000 square feet per order, including additions to or deductions from the approximate quantity stipulated	Square Feet	5000	$	8
Main Bid	59	Temporary Fencing (10 Feet per Panel): For furnishing transportation, labor, materials, and equipment to furnish, install and remove after individual Project completion temporary chain link fencing 8 feet high, exclusive of windscreen, including additions to or deductions from the approximate quantity stipulated	Linear Feet	1000	$	10
Main Bid	60	Open Mesh Woven Windscreen (10 Feet per Panel): For furnishing transportation, labor, materials, and equipment to furnish and install open mesh woven windscreen 8 feet high, including additions to or deductions from the approximate quantity stipulated	Linear Feet	1000	$	10
Main Bid	61	Silt Fence (California Stormwater Best Management Practices Handbook, SE-1): For furnishing transportation, labor, materials, and equipment to furnish, install, and remove as directed by Engineer silt fence, including additions to or deductions from the approximate quantity stipulated	Linear Feet	1000	$	60
Main Bid	62	Sandbag Barrier (California Stormwater Best Management Practices Handbook, SE-8): For furnishing transportation, labor,materials, and equipment to furnish, install, and remove as directed by Engineer, sandbag barrier, including additions to or deductions from the approximate quantity stipulated	Each	1000	$	18
Main Bid	63	Fiber Rolls (California Stormwater Best Management Practices Handbook, SE-5) : For furnishing transportation, labor, materials, and equipment to furnish, install, and remove as directed by Engineer, fiber rolls, including additions to or deductions from the approximate quantity stipulated	Linear Feet	2000	$	18

Main Bid	64	Water Truck (and Operator) 4,000-Gallon Capacity: For furnishing transportation, labor, materials, and equipment to furnish and operate a 4,000-gallon capacity water truck for 4 hour shifts, including additions to and deductions from the approximate quantity stipulated	Shifts	50	$	2,000
Main Bid	65	Street Sweeping and Vacuuming (California Stormwater Best Management Practices Handbook, SE-7): For furnishing transportation, labor, materials, and equipment to furnish and operate street sweeping and vacuuming services for 4 hour shifts as directed by Engineer, including additions to or deductions from the approximate quantity stipulated	Shifts	50	$	2,000
Main Bid	66	Storm Drain Inlet Protection (California Stormwater Best Management Practices Handbook, SE-10): For furnishing transportation, labor, materials, and equipment to furnish and install as directed by Engineer storm drain inlet protection, including additions to or deductions from the approximate quantity stipulated	Each	10	$	1,000
Main Bid	67	Stormwater Pollution Prevention Plan: For furnishing transportation, labor, materials, and equipment to prepare stormwater pollution prevention plans, including additions to or deductions from the approximate quantity stipulated	Each	5	$	7,500
Allowance Item	68	Wharf Repairs, Renovations, and Improvements: Bidder shall include in the bid the listed allowance to perform wharf repairs, renovations, and improvements as directed by Engineer	Lump Sum	1	$	325,000
Allowance Item	69	Acceleration/Overtime: Bidder shall include in the bid the listed allowance for acceleration/overtime as directed by Engineer	Lump Sum	1	$	50,000
Allowance Item	70	Perform Work Associated with Regulatory Agency Regulation Changes and Additional Requirements: Bidder shall include in the bid the listed allowance to perform Work as required by agencies due to regulation changes and additional requirements as directed by Engineer	Lump Sum	1	$	75,000

Allowance Item	71	Seawall Repair, Shotcrete Repairs, and Polyurethane Pressure Grouting: Bidder shall include in the bid the listed allowance to perform seawall repair, shotcrete repairs, and polyurethane pressure grouting as directed by Engineer	Lump Sum	1	$	250,000
Allowance Item	72	Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal: Bidder shall include in the bid the listed allowance to perform miscellaneous demolition, removals, and disposal including hazardous waste disposal as directed by Engineer	Lump Sum	1	$	205,000
Allowance Item	73	Perform Miscellaneous Improvements and Structures Work: Bidder shall include in the bid the listed allowance to perform miscellaneous improvements and structures Work as directed by Engineer	Lump Sum	1	$	100,000
Allowance Item	74	Unforeseen Utility and Substructure Additions, Modifications, and Removals: Bidder shall include in the bid the listed allowance to perform unforeseen utility and substructure additions, modifications and removals as directed by Engineer	Lump Sum	1	$	200,000
Allowance Item	75	Remove and Dispose of Contaminated and Hazardous Soil and Groundwater: Bidder shall include in the bid the listed allowance to remove and dispose of contaminated and hazardous soil and groundwater not already covered in other bid items as directed by Engineer	Lump Sum	1	$	75,000
Allowance Item	76	Perform Diving and Underwater Construction Work: Bidder shall include in the bid the listed allowance to perform diving and underwater construction Work not already included in other bid items as directed by Enginner	Lump Sum	1	$	25,000
Allowance Item	77	Dredge, Remove, and Dispose of Concrete Rubble and Rock at an Upland Landfill: Bidder shall include in the bid the listed allowance to dredge, remove, and dispose of concrete rubble and rock at upland landfill as directed by Engineer	Lump Sum	1	$	100,000

Allowance Item	78	Cathodic Protection: Bidder shall include in the bid the listed allowance to furnish and install cathodic protection on sheet steel piles as directed by Engineer	Lump Sum	1	$ 25,000
Allowance Item	79	Sheet Steel Piles and Steel H Piles (King Piles): Bidder shall include in the bid the listed allowance to furnish, install, and cut off sheet steel piles and king piles, including pile driving templates and followers as directed by Engineer	Lump Sum	1	$ 150,000
Allowance Item	80	Water Quality Reports and Sampling for Dredging and Pile Driving: Bidder shall include in the bid the listed allowance to perform water quality sampling and generate reports for dredging and pile driving events as directed by Engineer	Lump Sum	1	$ 75,000
Allowance Item	81	Electrical System Improvements: Bidder shall include in the bid the listed allowance to perform electrical system improvements as approved by Engineer	Lump Sum	1	$ 1,000,000

END OF SECTION

THIS CONTRACT (hereinafter referred to as "Contract") is made and entered into by and between City of Los Angeles, a Municipal Corporation (herein called "City"), acting by and through its Board of Harbor Commissioners (hereinafter called "Board"), and Vortex Marine Construction, Inc. (hereinafter referred to as "Contractor"). The effective date of this Contract (hereinafter referred to as "Effective Date") is the date of execution by Executive Director upon authorization of Board, subject to the provisions of Charter Section 245 of City of Los Angeles. Unless terminated as herein provided, the term of this Contract shall not exceed three (3) years commencing on Effective Date.

WITNESSETH

In consideration of the covenants and conditions hereinafter contained, IT IS MUTUALLY AGREED BETWEEN CONTRACTOR AND CITY AS FOLLOWS:

ARTICLE 1. CONTRACTOR'S OBLIGATIONS

Section 1.1 CONTRACT DOCUMENTS

A This written agreement executed by Contractor and City together with the documents listed in Section 1.1B are Contract. Contractor has read and understands each and every provision of Contract Documents and its assent to and signature of this written agreement shall be deemed to constitute assent to and signature of all Contract Documents.

B Specification No. 2842, together with documents listed in Table of Contents and defined in GENERAL CONDITIONS Section of said Specifications shall constitute Contract Documents.

C Contract Documents are complementary and require complete and finished Work. Anything shown or required of Contractor, in any one or more of said documents, shall be as binding as if contained in all said documents.

Section 1.2 WORK TO BE DONE

Contractor, with full knowledge of the kind, quantity and quality of Work, materials, and services required, at Contractor's sole cost and expense, except as may be herein otherwise expressly specified, and in strict conformity with Specification No. 2842, for 2025-2027 MARINE IMPROVEMENTS shall carry out Contract as awarded. Contractor shall complete Work in accordance with Section 1.3 Contract Time of this Section.

Section 1.3 CONTRACT TIME

A Contract Time for performance of Work under Contract shall be 900 Calendar Days commencing on the date stated in the first Notice to Proceed (NTP) issued under Contract. Engineer shall issue a separate NTP for each item of Work assigned to Contractor. Each separate NTP shall define the scope, cost, and time for the item of Work. Work shall be completed within the times specified in the individual NTP. Notify Engineer when the time required for an item of Work shall exceed Contract Time. A mutually agreeable schedule shall be negotiated with Contractor for each NTP. If negotiations between Engineer and Contractor fail to reach agreement, Engineer shall set the schedule.

Section 1.4 LIQUIDATED DAMAGES

A Contractor and City agree that, in the event that Work contemplated hereunder is not completed within the time required, it shall be impracticable and extremely difficult to determine or fix City's actual damage and therefore City shall be entitled to liquidated damages in the amount of $ 1,600 for each and every Calendar Day the execution of said Work exceeds the time allowed for that purpose for each separate NTP. In the event of concurrent Work not completed within concurrent times required for multiple NTP, a maximum of 4 liquidated damages totaling $ 6,400 shall be assessed for each and every Calendar Day the execution of said concurrent Work may exceed the concurrent times allowed. Contractor agrees to all of the other terms of the liquidated damages provision set forth in GENERAL CONDITIONS Section of Specifications.

ARTICLE 2. COMPENSATION

Section 2.1 PAYMENTS TO CONTRACTOR

In consideration for all labor, materials, and equipment furnished hereunder, and subject to Contractor’s full compliance with the terms and conditions of Contract Documents, City shall pay Contractor the amount set forth in the "Bid Proposal Line Items," which is attached hereto and by this reference incorporated herein. Payments shall be made as set forth in GENERAL CONDITIONS Section.

ARTICLE 3. OPERATIONS

Section 3.1 QUALITY OF SERVICES

Work performed by Contractor shall be strictly in accordance with Drawings and Specifications, copies of which are on file in the office of Engineer. Said Work shall be performed in a manner which is consistent with Applicable Laws as defined in GENERAL CONDITIONS Section of Specifications in the construction industry.

Section 3.2 INDEMNIFICATION

A Except as may arise from the sole or active negligence or willful misconduct of City, Contractor shall at all times relieve, indemnify, defend, protect, and save harmless City and any and all of its boards, officers, agents, and employees from any and all claims and demands, actions, proceedings, losses, liens, costs and judgments of any kind and nature whatsoever, including cost of litigation (including all actual litigation costs incurred by City, including but not limited to costs of experts and consultants), for death of or injury to persons or damage to property including property owned by or under the care and custody of City, and for civil fines and penalties, that may arise from or be caused directly or indirectly by:

1 Any dangerous, hazardous, unsafe or defective condition of, in or on Project Site(s) and any Laydown Area(s), of any nature whatsoever, which may exist by reason of any act, omission, neglect, or any use or occupation of such premises by Contractor, its officers, agents, employees, subcontractors, or invitees;

2 Any undertaking of Work, or operation conducted upon or any use or occupation of Project Site(s) and any Laydown Area(s) by Contractor, its officers, agents, employees, subcontractors, or invitees under or pursuant to the provisions of Contract or otherwise;

3 Any act, error, omission, willful misconduct, or negligence of Contractor, its officers, agents, employees, subcontractors, or invitees, arising from the use, operation, or occupancy of Project Site(s) and any Laydown Area(s).

4 Any failure of Contractor, its officers, agents, employees, subcontractors, or invitees to comply with any of the terms or conditions of this Contract or any Applicable Laws; or

5 The conditions, operations, uses, occupations, acts, omissions or negligence referred to in Subdivisions (1), (2), (3), and (4) above, existing or conducted upon or arising from the undertaking of Work or use or occupation of Project Site(s) and any Laydown Area(s) by Contractor on any other area within the Harbor District, as defined in Charter of City, including the approaches, channels, turning basins, and other waters.

B Contractor also agrees to indemnify City and pay for all damage or loss suffered by City and Department, including but not limited to damage to or loss of property, to the extent not insured by City, and loss of City revenue from any source, caused by or arising out of the conditions, operations, uses, occupations, acts, omissions or negligence referred to in Section 3.2 of this Section. The term “persons” as used in this Section shall include, but not be limited to, officers and employees of Contractor.

C Contractor shall also indemnify, defend, and hold City harmless from any and all claims, judgments, damages, penalties, fines, costs, liabilities, or losses which arise during or after the term of this Contract as a result of Contamination for which Contractor is otherwise responsible for under the terms of this Contract. This indemnification of City by Contractor includes, without limitation, costs incurred in connection with any investigation of site conditions or any clean up, remedial, removal, or restoration work required by any federal, state, or local governmental agency because of Contamination present in the soil or groundwater on or under Project Site(s) and any Laydown Area(s).

D The indemnity obligations under Section 3.2 shall survive the expiration date of this Contract.

E Notwithstanding the provisions of Section 3.2, nothing contained herein shall be interpreted or enforced in violation of California Civil Code Section 2782.

Section 3.3 INSURANCE

A In addition to, and not as a substitute for, or limitation of, any of the indemnity obligations imposed by Section 3.2 of this Section, Contractor shall procure and maintain at its sole cost and expense and keep in force at all times during the term of this Contract the following insurance requirements of this Section.

B Commercial general liability or marine general liability insurance, including contractual liability and property damage insurance, written by an insurance company authorized to do business in the State of California, or approved by the California Department of Insurance as a surplus lines insurer eligible to do business in California, rated VII, A- or better in Best's Insurance Guide (or an alternate guide acceptable to City if a Best's Rating is not available) with Contractor's normal limits of liability but not less than Five Million Dollars ($5,000,000) for injury or death to one or more persons out of each accident or occurrence and Five Million Dollars ($5,000,000) for bodily injury and property damage for each occurrence / Five Million Dollars ($5,000,000) general aggregate. Additionally, each policy shall include an additional insured endorsement (CG 2010) naming City of Los Angeles Harbor Department, its officers, agents, and employees as Primary additional insureds. Contractor shall further procure and maintain, either by an endorsement thereto or by a separate policy, fire legal liability insurance with a minimum limit of Five Hundred Thousand Dollars ($500,000) covering legal liability of Contractor for damage or destruction to the works, buildings, and improvements owned by City provided that said minimum limits of liability shall be subject to adjustments by Executive Director to conform with the deductible amount of the fire insurance policy maintained by Board, with waiver of subrogation in favor of Contractor so long as permitted by Board's fire insurance policy, upon thirty (30) days' prior written notice thereof to Contractor at any time during the term of this Contract. Contractor shall delete railroad exclusion when Work is within 50 feet of railroad tracks.

C Contractor shall procure and maintain fire and extended coverage insurance covering One Hundred percent (100%) of the replacement value of the works, buildings, and improvements erected or owned by Contractor on Project Site(s) and any Laydown Area(s), with such provision in the policies issued to cover the same, or in riders attached thereto, as shall provide for all losses to be payable to Board to be held in trust for reconstruction. In the event of loss or damage by fire to any of such works, buildings, or improvements, Contractor shall undertake replacement or reconditioning of such items within ninety (90) days following any such loss. As Contractor undertakes such replacement or reconditioning, such proceeds shall be released by Board to Contractor as payments are required for said purpose. Upon the completion of such replacement or reconditioning to the reasonable satisfaction of Executive Director, any balance thereof remaining shall be paid to said Contractor forthwith.

D Where Contractor utilizes any vehicles, Contractor shall procure and maintain at its sole cost and expense, and keep in force at all times during the term of this Contract, automobile insurance with limits of liability not less than One Million Dollars ($1,000,000) covering injuries or death resulting from each accident or claim arising out of any one claim or accident. This insurance shall cover all owned, non- owned, and/or hired automobiles. Additionally, each policy shall include an additional insured endorsement (CG 2010) naming City of Los Angeles Harbor Department, its officers, agents, and employees as Primary additional insureds.

E Where Contractor operates watercraft, Contractor shall procure and maintain protection and indemnity coverage with limits of One Million Dollars ($1,000,000) per occurrence for bodily injury, illness, death, loss of or damage to the property of another including masters and members of the vessel crew, and Jones Act risks or equivalent thereto internationally. City shall be named as an additional insured. Additionally, each policy shall include an additional insured endorsement (CG 2010) naming City of Los Angeles Harbor Department, its officers, agents, and employees as Primary additional insureds.

F Where Contractor's operations involve the storage or use of any type of hazardous materials or pollutants, Contractor shall procure and maintain environmental impairment liability insurance which shall include coverage for bodily injury, property damage, including third-party claims for on-site and off-site bodily injury and property damage, clean-up, and defense of suits, with a limit of at least Two Million Dollars ($2,000,000) per occurrence, which is to remain in effect at least five (5) years after Termination Date. Additionally, each policy shall include an additional insured endorsement (CG 2010) naming City of Los Angeles Harbor Department, its officers, agents, and employees as Primary additional insureds.

G Contractor shall secure the payment of compensation to any employees injured while performing work or labor necessary for and incidental to performance under this Contract in conformance with Section 3700 of the California Labor Code. Contractor shall file with City one of the following:

1 A certificate of consent to self-insure issued by the Director of Industrial Relations, State of California;

2 A certificate of Workers' Compensation insurance issued by an admitted carrier; or

3 An exact copy or duplicate thereof of the policy certified by the Director of Industrial Relations or the insurer.

4 Prior to first NTP, such documents shall be filed prior to Contractor's occupancy of Project Site(s) and any Laydown Area(s). Where Contractor has employees who are covered by the United States Longshore and Harbor Workers' Compensation Act ("USLHWC Act"), Contractor shall furnish proof of such coverage to City. It is suggested that Contractor consult with its insurance professional of its choosing to determine whether its proposed operation methods shall render its employees subject to coverage under the USLHWC Act. All Workers' Compensation insurance submitted to City shall include an endorsement providing that any carrier paying benefits agrees to waive any right of subrogation it may have against City.

H Except as provided in Paragraph 1 below, Contractor shall, at Contractor's sole cost and expense, provide all risk builder's risk insurance covering loss, damage or destruction of property, including material in transit and stored on and off Project Site(s) and any Laydown Area(s), satisfactory to City, in an amount at least equal to the value of the construction and materials on hand. Contractor's insurance broker or agent shall submit for approval said insurance to City's online insurance compliance system KwikComply™ https://kwikcomply.org/. Acceptable evidence of coverage shall name City as an additional named insured and as loss payee as its interest may appear.

1 Contractor need not provide all risk builder's risk insurance for fills; excavations; rock work; concrete or masonry walls and bulkheads retaining earth; foundations entirely below ground or in earth fill; pipe, sewer systems, conduit, and electric light and power systems entirely below ground or submerged; ballast and grading for railroad tracks on or in earth; pavements, sidewalks and pits on solid earth or in fill outside of buildings; incombustible poles, area lighting and metal fencing not attached to exterior or interior of buildings. Contractor is not relieved of the obligation to rebuild these improvements when damaged.

2 An installation risk or "floater" policy, written to cover only specific types of equipment during construction, may be provided to cover damage to work or high valued equipment or materials.

I Limits for coverage required under Section 3.3 of this Section shall provide first dollar coverage except that Executive Director may permit a self-insured retention or self-insurance in those cases where, in his or her sole judgment, such retention or self-insurance is justified by the net worth of Contractor. The self-insured retention or self-insurance shall provide that any other insurance maintained by City's Harbor Department shall be excess of Contractor's insurance and shall not contribute to it. In all cases, regardless of any deductible, retention, or self-insurance, Contractor shall have all the obligations of an "insurer" under the California Insurance Code and said insurance shall be deemed to include a defense of suits provision and a severability of interest clause.

J If Contractor maintains higher limits than the minimums shown above, City requires and shall be entitled to coverage for the higher limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

K Policies submitted pursuant to Section 3.3 of this Section shall, in addition, provide the following coverage either in the original policy or by endorsement substantially as follows:

1 "Notwithstanding any inconsistent statement in the policy to which this endorsement is attached, or any endorsement or certificate now or hereafter attached hereto, it is agreed that City of Los Angeles, acting by and through its Harbor Department, Board of Harbor Commissioners, and its officers, agents, and employees, are additional insureds hereunder, except to the extent prohibited by Applicable Laws, and that coverage is provided for contractual obligations, operations, uses, occupations, acts, and activities of all the insureds under this Specification, and under any amendments, modifications, extensions, or renewals of said Contract regardless of whether such contractual obligations, operations, uses, occupations, acts, and activities occur on Project Site(s) and any Laydown Area(s) or elsewhere."

2 "The coverage provided by the policy to which this endorsement is attached is primary coverage and any other insurance carried by City is excess coverage."

3 "In the event of one of the named insureds incurring liability to any other of the named insureds, this policy shall provide protection for each named insured against whom claim is or may be made, including claims by other named insureds, in the same manner as if separate policies had been issued to each named insured. Nothing contained herein shall operate to increase the insurance company's limit of liability."

L All insurance procured by Contractor shall comply with the following:

1 For each insurance policy, Contractor shall give to Board of Harbor Commissioners a 10-days prior notice of cancellation or reduction in coverage for nonpayment of premium, and a 30-days prior notice of cancellation or reduction in coverage for any other reason, by written notice via registered mail and addressed to City of Los Angeles Harbor Department, Attn: Risk Manager and City Attorney's Office, 425 S. Palos Verdes Street, San Pedro, California 90731.

2 Electronic submission is the required method of submitting Contractor's insurance documents. KwikComply is City's online insurance compliance system which is designed to be used by insurance brokers and agents to submit client insurance certificates directly to City. Contractor's insurance broker or agent shall obtain access to KwikComply at http://kwikcomply.org and follow the instructions to register and submit the appropriate proof of insurance on Contractor's behalf.

3 Prior to the expiration of each policy, Contractor shall show through submitting to KwikComply that the policy has been renewed or extended or, if new insurance has been obtained, submit the appropriate proof of insurance to KwikComply. If Contractor neglects or fails to secure or maintain the required insurance, or if Contractor fails to submit proof of insurance as required above, City's Harbor Department may, at its option and at the sole cost and expense of Contractor, obtain such insurance for Contractor.

4 Executive Director, at his or her discretion, based upon recommendation of Risk Manager of City's Harbor Department, may request that Contractor increase or decrease amounts and types of insurance coverage required hereunder at any time during the term hereof by giving written notice to Contractor; provided that Contractor shall be entitled to an equitable adjustment under Contract to reimburse Contractor for any increase in the cost of such insurance to Contractor resulting from the requested changes.

5 Upon request by City, Contractor must furnish a copy of the binder of insurance and/or full certified copies of any or all polices of insurance required herein. Contractor's obligation to provide such copies shall survive the expiration of this Contract regardless of whether City's request is made prior to or after the expiration of this Contract.

6 The approval of insurance by Risk Manager shall be a condition precedent to the right of Contractor to demand or receive payment for Work under Contract requiring such insurance. No request for payment shall be processed until the required insurance has been approved by Risk Manager, and no Project Site(s) and any Laydown Area(s) access shall be permitted until such approval has been given.

7 All insurance policies and surety bonds which Contractor is required to provide pursuant to Specifications, including, but not limited to, workers' compensation, liability, protection and indemnity, and builder's risk policies shall be placed with insurance carriers which are rated VII, A-, or better in Best's Insurance Guide. If a Best's Insurance Guide rating is not available, then the proposed carrier must meet comparable standards in another rating services satisfactory to City.

M Contractor shall report to Engineer immediately and in writing to Executive Director within fifteen (15) days after it, its officers, or its managing agents have knowledge of any accident or occurrence involving death of or injury to any person or persons, or damage in excess of Ten Thousand Dollars ($10,000) to property, occurring upon Project Site(s) and any Laydown Area(s), or elsewhere within the Harbor District, if Contractor's officers, agents, or employees are involved in such an accident or occurrence. Such report shall contain to the extent available: (1) the name and address of the persons involved; (2) a general statement as to the nature and extent of injury or damage; (3) the date and hour of occurrence; (4) the names and addresses of known witnesses; and (5) such other relevant information as may be known to Contractor, its officers, or its managing agents.

Section 3.4 COMPLIANCE WITH LAWS

During the performance of Contract, Contractor shall comply with all Applicable Laws as defined in GENERAL CONDITIONS Section of Specifications. Contractor shall also comply with the provisions of all permits.

ARTICLE 4. MISCELLANEOUS

Section 4.1 BINDING EFFECT

Contract is to be binding on the heirs, successors and assigns of the parties hereto and is not to be assigned by either party without first obtaining the written consent of the other.

Section 4.2 NOTICES

Any notice, request, demand or other communication required or permitted hereunder shall be deemed to be properly given when deposited in the United States mail, postage prepaid, addressed as follows:

To City:	To Contractor:
Executive Director	_____
Port of Los Angeles	_____
425 South Palos Verdes Street	_____
San Pedro, California 90731	_____

Nothing contained herein shall preclude the giving of notice in any other manner allowed by law.

Section 4.3 RELATIONSHIP OF PARTIES

Nothing contained in Contract shall be construed as creating the relationship of employer and employee, master and servant, or principal and agent between the parties hereto. Contractor is an independent contractor and shall have no right or authority to assume or create any obligation, expressed or implied, on behalf of City.

Section 4.4 ENTIRE AGREEMENT

Contract, together with all other Contract Documents, constitutes the entire agreement between the parties hereto, and all other representations or statements heretofore made, verbal or written, are merged herein, and Contract may be amended only in writing and executed by duly authorized representatives of the parties hereto.

Section 4.5 LEGAL JUSTIFICATION AND RECOURSE

Contract shall be deemed entered into in Los Angeles, California, and shall be governed and construed in accordance with the laws of the State of California. In the event any provision hereof is held to violate any applicable law by a court of competent jurisdiction, such provision shall be deemed null and void to the extent thereof, without affecting the balance of Contract. If either party brings any action or proceeding to enforce, protect, or establish any right or remedy arising out of or based upon Contract, including but not limited to the recovery of damages for its breach, or based upon the claim that extra Work was performed, whether mandated by Contract or not, neither party in said action or proceeding shall be entitled to recover any attorney's fees. Each party hereby expressly waives the benefit of any California statute which would permit the award of any attorney's fees to a prevailing party in an action.

Section 4.6 TIME OF ESSENCE

Time is of the essence in Contract.

Section 4.7 LABOR CODE SECTION 1861

Contractor hereby certifies it is aware of the provisions of Section 3700 of the Labor Code which requires 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 that Contractor shall comply with such provisions before commencing the performance of Work of Contract.

Section 4.8 ASSIGNMENT OF CERTAIN CAUSES OF ACTION

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, Contractor or subcontractor/supplier offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to Contractor, without further acknowledgment by the parties.

Section 4.9 TERMINATION DUE TO NON-APPROPRIATION OF FUNDS

Contract is subject to the provisions of Los Angeles City Charter which, among other things, precludes City from making any expenditure of funds or incurring any liability, including contractual commitments, in excess of the amount appropriated therefor.

Board, in awarding Contract, is expected to appropriate sufficient funds to meet the estimated expenditures through June 30 of the current fiscal year and to make further appropriations in each succeeding fiscal year during the life of Contract. However, they are under no legal obligation to do so.

City of Los Angeles, its boards, officers, and employees are not bound by the terms of this Agreement or obligated to make any payment thereunder in any fiscal year in which Board does not appropriate funds therefor. Contractor is not entitled to any compensation in any fiscal year in which funds have not been appropriated in Contract by Board.

Although Contractor is not obligated to perform any Work under Contract in any fiscal year in which no appropriation for Contract has been made, Contractor agrees to resume performance of Work required by Contract on the same terms and conditions for a period of 60 days after the end of the fiscal year if an appropriation therefor is approved within that 60-day period. Contractor is responsible for maintaining all insurance and bonds during this 60 days period. The time for performance shall be extended during this period until the appropriation is made; however, such extension of time is not compensable.

If in any subsequent fiscal year funds are not appropriated for Work required by Contract, Contract shall be terminated. However, such termination shall not relieve the parties of liability for any obligation previously incurred.

Section 4.10 NO WAIVER

No waiver by either party at any time of any terms or conditions of this Contract shall be a waiver at any subsequent time of the same or any other term or condition. No breach of a covenant, term, or condition of this Contract shall be deemed to have waived by City unless the waiver is in writing and executed by City.

Section 4.11 JOINT AND SEVERAL OBLIGATIONS OF CONTRACTOR

If more than one individual or entity comprises Contractor, the obligations imposed on each individual or entity that comprises Contractor under this Contract shall be joint and several.

Section 5.1 SIGNATURES

IN WITNESS WHEREOF, the parties hereto have executed Contract on the day and year hereinbefore written.

(SEAL)

THE CITY OF LOS ANGELES,

by its Board of Harbor Commissioners

Contracting Corp.

By _____
Executive Director

Date _____

ATTEST:

_____, Secy.
Symala Senimanora

VORTEX MARINE CONSTRUCTION, INC
_____, Contractor
By _____
Place of Business 1 Maritime Way
Antioch, CA 94509
Contractor's License
No. 649452
Exp. Date 7/31/26
Los Angeles, California

Contract and bonds approved as to form.

HYDEE FELDSTEIN SOTO
City Attorney
By _____
Assistant/Deputy
Los Angeles, California

*Contract approved by Board of Harbor Commissioners at its meeting of _____, 20__.

_____
Secretary, Board of Harbor Commissioners

*Approval of contract by Board of Harbor Commissioners required for all contracts where the sum involved exceeds $150,000.

Date: October 14, 2025
Contractor/Vendor Name: Vortex Marine Construction, Inc.

Account#	161305	Project#	TBD
Division#	00000	Task#	TBD

Budget FY:	Amount:
2025-26	$ 5,500,000.00
2026-27	$20,000,000.00
2027-28	$22,466,213.00
TOTAL:	$47,966,213.00

For Acct/Budget Div. Use Only

Verified By: Digitally signed by Joanna Leack Date: 2025.10.16 09:31:28 -07'00'

Verified Funds Available: Digitally signed by Frank Liu Date: 2025.10.16 18:59:12 -07'00'

Date Approved: 10/16/25

Account#	541025	Project#	TBD
Division#	30900	Task#	TBD

Budget FY:	Amount:
2025-26	$ 347,442.00
2026-27	$1,152,558.00
2027-28	$1,000,000.00
TOTAL:	$2,500,000.00

For Acct/Budget Div. Use Only

Verified By: Digitally signed by Joanna Leack Date: 2025.10.16 09:31:51 -07'00'

Verified Funds Available: Digitally signed by Frank Liu Date: 2025.10.16 12:01:08 -07'00'

Date Approved: 10/16/25

KNOW ALL PERSONS BY THESE PRESENTS:

That we, Vortex Marine Construction, Inc.

as principal _____, and Fidelity and Deposit Co. of Maryland as surety(ies) are held and firmly bound unto THE CITY OF LOS ANGELES, CALIFORNIA, a municipal corporation, in the penal sum of Forty-Five Million, Eight Hundred Seventy-Eight Thousand, Three Hundred Seventy-Five and 00/100---------- dollars ($ 45,878,375) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH: that whereas the principal entered into a certain contract, hereto attached, with City, for 2025-2027 MARINE IMPROVEMENTS

NOW THEREFORE, if said principal(s) shall fail to faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said Contract during the original term of said Contract and any extensions thereof that may be granted by City, with or without notice to the surety(ies), and during the life of any guaranty required under Contract, or shall fail to faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the surety(ies) being hereby waived, said surety(ies) shall fully and faithfully carry out and perform all of the terms, covenants and conditions of said Contract upon its part to be performed and if surety(ies) does so, then this obligation to be null and void, otherwise to remain in full force and effect, and in addition thereto, in case suit is brought upon this bond, the judgment rendered against the principal or surety(ies), or both, a reasonable attorney's fee, to be fixed by the court, taxed as costs and included in the judgment rendered therein, otherwise this obligation to be void.

It is further agreed that this bond guarantees compliance with all applicable provisions of Section 17.00 et seq. and Section 62.105 through 62.118 of the Municipal Code of CITY OF LOS ANGELES.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several hands and seals this _____day of _____, 20__.

(Principal) _____

_____

ATTEST (Surety) _____

_____ _____

(Surety) _____

_____

(Corporate Seal)

KNOW ALL PERSONS BY THESE PRESENTS:

That we, Vortex Marine Construction, Inc.

as principal (s) and Fidelity and Deposit Company of Maryland as surety(ies) are held and firmly bound unto THE CITY OF LOS ANGELES, a municipal corporation, acting by and through its Board of Harbor Commissioners, and any person or party named below in the penal sum equal to: Forty-Five Million, Eight Hundred Seventy-Eight Thousand, Three Hundred Seventy-Five and 00/100---------- dollars ($ 45,878,375.00) in lawful money of the United States, and the payment of which shall and truly be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

THAT WHEREAS, the principal (s) entered into a certain contract attached hereto with City for 2025-2027 MARINE IMPROVEMENTS

NOW, THEREFORE, if said principal (s) as Contractor (s) or subcontractor (s) fail (s) to pay for any services provided by mechanics, material suppliers, contractors, subcontractors, lessors of equipment, artisans, architects, registered engineers, licensed land surveyors, machinists, builders, teamsters or dray, or fail (s) to pay all persons and laborers of every class performing labor upon or bestowing skill or other necessary service on, or furnishing materials or leasing equipment to be used or consumed in or furnishing materials or leasing equipment to be used or consumed in or furnishing appliances, teams or power contributing to a work or improvement or fail (s) to pay for the value of such labor done or materials furnished and for the value and use of such appliances, equipment, teams or power, whether done or furnished at the instance of City or of any person acting by its authority or under it as contractor or otherwise, or fail (s) to pay for amounts due under the Unemployment Insurance Code of the State of California with respect to work, or labor performed by any such claimant during the original term of said Contract and any extension thereof that may be granted by City with or without notice to the surety(ies) or during the life of any guarantee required under Contract, or fail (s) to pay for any amounts required to be deducted, withheld and paid over to the Franchise Tax Board from the wages of Contractor and subcontractors/suppliers pursuant to that portion of the Revenue and Taxation Code, imposing liability for failure to deduct, withhold, and pay employee taxes, with respect to such work and labor, then in such event said surety(ies) shall pay the same in an amount not exceeding the sum of Forty-Five Million, Eight Hundred Seventy-Eight Thousand, Three Hundred Seventy-Five and 00/100---------- dollars ($45,878,375.00) and, in addition thereto, in case suit is brought upon this bond and judgment rendered against the principal (s) or surety(ies), or both, a reasonable attorney's fee to be fixed by the court, taxed as costs and included in the judgment rendered therein; otherwise this obligation to be void.

It is understood and agreed by principal (s) and surety(ies) herein that by its terms, this payment bond shall insure to the benefit of any person named in Section 9100 of the California Civil Code so as to give a right of action such persons or their assigns in any suit brought upon this payment bond.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several hands and seals this ____ day of _____, 20__.

ATTEST

_____

(Principal)_____

_____

(Surety) _____

_____

(Surety) _____

_____

(Corporate Seal)

INDIVIDUAL FORM

AFFIDAVIT OF COMPLETION OF WORK
UNDER SPECIFICATION NO. 2842
CONTRACT NO. _____

(STATE OF CALIFORNIA)
(COUNTY OF LOS ANGELES)

_____, being first duly sworn, deposes
(Affiant)
and says:

Affiant is Contractor under Contract No. _____, and makes the following statements:

That, in accordance with the provisions under Subsection 01000.58 of GENERAL CONDITIONS Section of Specification No. 2842 which Specifications is a part of Contract No. _____, by and between City of Los Angeles and Affiant, to the best of my knowledge and belief, Work specified in said Specifications and said Contract has been completed in strict accordance with Drawings and Specifications therefor, that no lawful debts for labor or material are outstanding, and that no federal excise tax has been included in Contract price;

That all request for funds under Items of Contract, including Changes in Work, and under all billings of whatsoever nature are accurate, complete and final and that no additional compensation over and above the final payment now pending shall be requested or is due under Contract or under any adjustment issued thereunder;

That, in accordance with said Subsection 01000.58, upon receipt of said final payment now pending, Affiant acknowledges that City, Board thereof, Executive Director, Engineer and any and all authorized employees of City shall thereby be released from any and all claims or liability on account of Work performed under Contract or any additions thereof.

_____
(Affiant)

Subscribed and sworn to before me
this _____ day of _____, 20__.

Notary Public in and for said County of
Los Angeles, State of California
Form 298-E
11-12-73

CO-PARTNERSHIP FORM

AFFIDAVIT OF COMPLETION OF WORK
UNDER SPECIFICATION NO. 2842
CONTRACT NO. _____

(STATE OF CALIFORNIA)
(COUNTY OF LOS ANGELES)

_____, a co-partner in the firm of
(Affiant)
_____, a co-partnership, being first
(Contractor)
duly sworn, deposes and says:

Affiant is one of the co-partners of _____ and makes
(Contractor)
the following statements and has the authority to do so for and on behalf of _____
_____
(Contractor)
a co-partnership, and Affiant personally;

That in accordance with the provisions under Subsection 01000.58 of GENERAL CONDITIONS Section of Specification No. 2842, which Specifications is a part of Contract No. _____, by and between City of Los Angeles and _____
_____
(Contractor)
to the best of my knowledge and belief, Work specified in said Specifications and said Contract has been completed in strict accordance with Drawings and Specifications therefor, that no lawful debts for labor or materials are outstanding, and that no federal excise tax has been included in Contract price;

That all requests for funds under Items of Contract, including Changes in Work, and under all billings of whatsoever nature are accurate, complete and final and that no additional compensation over and above the final payment now pending shall be requested or is due under Contract or under any adjustment issued thereunder;

That, in accordance with said Subsection 01000.58, upon receipt of said final payment now pending, Affiant acknowledges for himself/herself and for the _____,
(Contractor)
that City, Board thereof, Executive Director, Engineer, and any and all authorized employees of City shall thereby be released from any and all claims or liability on account of Work performed under Contract or any additions thereof.

_____
(Affiant)

Subscribed and sworn to before me
this _____ day of _____, 20__.

Notary Public in and for said County of
Los Angeles, State of California
Form 297-E
11-12-73

CORPORATE FORM

AFFIDAVIT OF COMPLETION OF WORK
UNDER SPECIFICATION NO. 2842
CONTRACT NO. _____

(STATE OF CALIFORNIA)
(COUNTY OF LOS ANGELES)

_____, the _____ of _____,
(Affiant) (Title) (Contractor)
a corporation, being first duly sworn, deposes and says:

Affiant is the _____ of _____
(Title) (Contractor)
and makes the following statements for and on behalf of _____,
(Contractor)
a corporation.

That, in accordance with the provisions under Subsection 01000.58 of GENERAL CONDITIONS Section of Specification No. 2842, which Specifications is a part of Contract No. _____, by and between City of Los Angeles and _____
_____
(Contractor)
to the best of my knowledge and belief, Work specified in said Specifications and said Contract has been completed in strict accordance with Drawings and Specifications therefore, that no lawful debts for labor or materials are outstanding, and that no federal excise tax has been included in Contract price;

That all requests for funds under Items of Contract, including Changes in Work, and under all billings of whatsoever nature are accurate, complete and final and that no additional compensation over and above the final payment now pending shall be requested or is due under Contract or under any adjustment issued thereunder;

That, in accordance with said Subsection 01000.58, upon receipt of said final payment now pending, Affiant acknowledges for himself/herself and for _____,
(Contractor)
that City, Board thereof, Executive Director, Engineer, and any and all authorized employees of City shall thereby be released from any and all claims or liability on account of Work performed under Contract or any additions thereof.

_____
(Affiant)

Subscribed and sworn to before me
this _____ day of _____, 20__.

Notary Public in and for said County of
Los Angeles, State of California
Form 308-E
11/12/73

01 CONTRACTOR/SUPPLIER INFORMATION FORM

DEPARTMENT USE ONLY		
Contract No.:	Award Date:	Contract Term:
Contract Title:		Award Total:

PRIME CONTRACTOR

Business Name: Vortex Marine Construction, Inc. Award Total: $ 45,878,375.00
Owner's Ethnicity: N/A Gender: N/A Group: SBE VSBE MBE WBE DVBE (OBE)
(Circle all that apply)
Local Business Enterprise: YES ____ NO X (Check only one)
Primary NAICS Code: 237990
Address: 1 Maritime Way
City/State/Zip: Antioch, CA 94509
Telephone: (510) 261-2400 FAX: (510) 261-2444
Contact Person/Title: Blaise Fettig
Email Address: bfettig@vortex-sfb.com
State Contractor's I.D. 649452 DIR Registration No. 2000004391
RAMP Company ID 24057

(SUBCONTRACTOR)/SUPPLIER INFORMATION FORM (CIRCLE ONE)

Business Name: Connolly-Pacific Co. Award Total: $ 2,557,650.00
Owner's Ethnicity: ____ Gender: ____ Group: SBE VSBE MBE WBE DVBE (OBE)
(Circle all that apply)
Local Business Enterprise: YES X NO ____ (Check only one)
Primary NAICS Code: 23799
Address: 1925 Pier D Street
City/State/Zip: Long Beach, CA, 90802
Telephone: (562) 437-2831 FAX: (562) 435-2035
Contact Person/Title: Michelle Finegold
Email Address: michelle.finegold@conpaco.com
State Contractor's I.D. 424010 DIR Registration No. 1000007856
RAMP Company ID 14314
Description of Work to be Performed or Items Being Supplied: Rock placement

01 CONTRACTOR/SUPPLIER INFORMATION FORM

DEPARTMENT USE ONLY		
Contract No.:	Award Date:	Contract Term:
Contract Title:		Award Total:

PRIME CONTRACTOR

Business Name: Vortex Marine Construction, Inc. Award Total: $ 45,878,375.00
Owner's Ethnicity: N/A Gender: N/A Group: SBE VSBE MBE WBE DVBE (OBE)
(Circle all that apply)
Local Business Enterprise: YES NO X (Check only one)
Primary NAICS Code: 237990
Address: 1 Maritime Way
City/State/Zip: Antioch, CA 94509
Telephone: (510) 261-2400 FAX: (510) 261-2444
Contact Person/Title: Blaise Fettig
Email Address: bfettig@vortex-sfb.com
State Contractor's I.D. 649452 DIR Registration No. 2000004391
RAMP Company ID 24057

SUBCONTRACTOR/SUPPLIER INFORMATION FORM (CIRCLE ONE)

Business Name: Forefront Deep Foundations Award Total: $ $4,435,469.00
Owner's Ethnicity: Caucasian Gender: Female Group: (SBE) VSBE MBE WBE DVBE (OBE)
(Circle all that apply)
Local Business Enterprise: YES X NO (Check only one)
Primary NAICS Code: 238910
Address: 2618 San Miguel Drive, Ste. 196
City/State/Zip: Newport Beach, CA 92660
Telephone: (949) 264-1598 FAX: (949) 264-1599
Contact Person/Title: Jeff Bird / President
Email Address: jbird@ forefrontdeepfoundations.com
State Contractor's I.D. 1010819 DIR Registration No. 1000048820
RAMP Company ID 91728
Description of Work to be Performed or Items Being Supplied: Landside piledriving (partial), furnish concrete and timber piles (Partial)

02 SUBCONTRACTOR/SUPPLIER OWNERSHIP AND LOCAL BUSINESS ENTERPRISE AFFIDAVIT

AFFIDAVIT

"The undersigned declares under penalty of perjury pursuant to the laws of the State of California that the following information and information contained on the attached Contractor/Supplier Information Form is true and correct and includes all material information necessary to identify and explain the operations of

Name of Firm **Forefront Deep Foundations, Inc.**

as well as the ownership thereof. Further, the undersigned agrees to provide, upon request, either through the prime contractor or, directly to Harbor Department, complete and accurate information regarding ownership in the named firm, and all of its domestic and foreign affiliates, any proposed changes of the ownership and to permit the audit and examination of firm ownership documents, and the ownership documents of all of its domestic and foreign affiliates, in association with this Contract."

Please indicate the ownership of your company as defined in Subsection 00030.06 of BIDDING DOCUMENTS Section:

Small Business Enterprise (SBE)	(Yes) or No	(Circle One)
Very Small Business Enterprise (VSBE)	Yes or (No)	(Circle One)

Is your firm a DVBE MBE WBE (OBE) (Circle at least one)

Please indicate the local business enterprise (LBE) status of your company as defined in Subsection 00030.10 of BIDDING DOCUMENTS Section:

(LBE)	(Circle One)
Non-LBE	(Circle One)

Signature _____ Title President

Printed Name Jeff Bird Date Signed 8/1/25

NOTARY

State of California

County of Orange

On August 1, 2025 before me, Joyce Lee, Public Notary
Date Here insert Name and Title of the Officer

personally appeared Jeff Bird
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

ENC1 JOYCE LEE COMM. # 2500844 NOTARY PUBLIC • CALIFORNIA ORANGE COUNTY My Comm. Expires September 27, 2028 ENC1

WITNESS my hand and official seal.

Place Notary Seal Above Signature

Signature of Notary Public

See the attached CA.
☒ Acknowledgment or
☐ Jurat Form

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Orange)

On August 1, 2025 before me, Joyce Lee, Public Notary
(insert name and title of the officer)

personally appeared Jeff Bird,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

ENC1 JOYCE LEE COMM. # 2500844 NOTARY PUBLIC • CALIFORNIA ORANGE COUNTY My Comm. Expires September 27, 2028 ENC1

An Official Website of the City of Los Angeles (https://myla311.lacity.org/) (https://lacity.gov/directory)

Back to search Home > Business Profiles Search > Forefront Deep Foundations

Forefront Deep Foundations

Forefront Deep Foundations is a SBE/DBE certified heavy civil contractor that specializes in piling, shoring, and other deep foundations systems throughout the Western United States.

Information

ID
91728

Registered As
Sub

Email
info@forefrontdeepfoundations.com
(mailto:info@forefrontdeepfoundations.com)

Phone
9492641598

Fax
9492641599

Admin
Jeff Bird **jbird@forefrontdeepfoundations.com**
(mailto:jbird@forefrontdeepfoundations.com)

Addresses

Website
https://www.forefrontdeepfoundations.com (https://www.forefrontdeepfoundations.com)

Business/Billing
2618 San Miguel Drive, Ste. 196
Newport Beach, CA 92660
USA
(https://www.google.com/maps?q=2618%20San%20Miguel%20Drive%2C%20Ste.%20196%0ANewport%20Beach%2C%20CA%2092660%0AUSA)

Summary

NAICS Codes	23891 Site Preparation Contractors 23731 Highway, Street, and Bridge Construction 23622 Commercial and Institutional Building Construction 23621 Industrial Building Construction 23799 Other Heavy and Civil Engineering Construction 23899 All Other Specialty Trade Contractors 23819 Other Foundation, Structure, and Building Exterior Contractors 236220 Commercial and Institutional Building Construction 237990 Other Heavy and Civil Engineering Construction 237310 Highway, Street, and Bridge Construction
Certifications	DBE, WBE, SBE (LA), LBE (Harbor), SBE (Proprietary)
Non-Profit	No
Sole Proprietor	No

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Report

CITY OF LOS ANGELES

City of Los Angeles (https://www.lacity.org)

Mayor's Office of Karen Bass (http://www.lamayor.org)

Open Data (https://data.lacity.org/dataset/RAMP-Open-Bid-Opportunities/hf3r-utnq)

Bond Assistance Program

Building Permits (https://ladbs.org/services/core-services/plan-check-permit)

BUSINESS SERVICES

Business Source Centers (https://ewddlacity.com/index.php/local-business/businesssource-centers)

Business Tax Resources (https://finance.lacity.org/)

Minority Business Development Agency (https://www.mbda.gov/)

Office of Small Business (https://business.lacity.org/)

City of Los Angeles Green Business Program (https://www.lacitysan.org/san/faces/home/portal/s-lsh-es/s-lsh-es-si/s-lsh-es-si-gbc?_adf.ctrl-state=dwqhke9b2_4&_afrLoop=2836273538268

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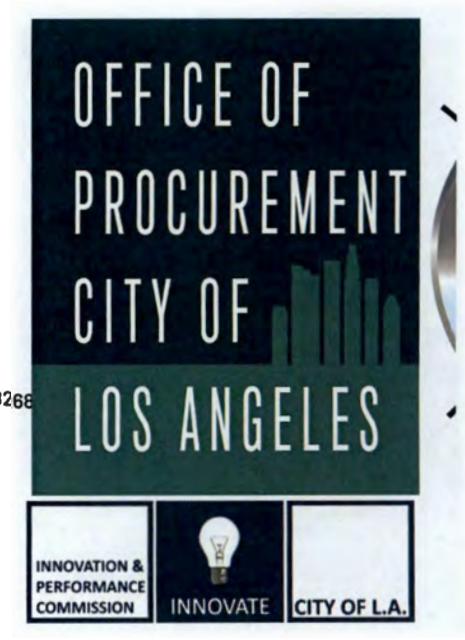

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01 CONTRACTOR/SUPPLIER INFORMATION FORM

DEPARTMENT USE ONLY		
Contract No.:	Award Date:	Contract Term:
Contract Title:		Award Total:

PRIME CONTRACTOR

Business Name: Vortex Marine Construction, Inc. Award Total: $ 45,878,375.00
Owner's Ethnicity: N/A Gender: N/A Group: SBE VSBE MBE WBE DVBE (OBE)
(Circle all that apply)
Local Business Enterprise: YES ____ NO X (Check only one)
Primary NAICS Code: 237990
Address: 1 Maritime Way
City/State/Zip: Antioch, CA 94509
Telephone: (510) 261-2400 FAX: (510) 261-2444
Contact Person/Title: Blaise Fettig
Email Address: bfettig@vortex-sfb.com
State Contractor's I.D. 649452 DIR Registration No. 2000004391
RAMP Company ID 24057

SUBCONTRACTOR/SUPPLIER INFORMATION FORM (CIRCLE ONE)

Business Name: T&M Projects Inc. dba T&M Construction Award Total: $ TBD 579,360
Owner's Ethnicity: Caucasian Gender: Female Group: SBE (VSBE) MBE (WBE) DVBE OBE
(Circle all that apply)
Local Business Enterprise: YES ✓ NO ____ (Check only one)
Primary NAICS Code: 238910, 484220
Address: 780 W. Channel St.
City/State/Zip: San Pedro, CA 90731
Telephone: (310) 833-3366 FAX: ( )
Contact Person/Title: Francine Accetta, President
Email Address: office.tmconstruction@gmail.com
State Contractor's I.D. 586380 DIR Registration No. 1000021658
RAMP Company ID 14215
Description of Work to be Performed or Items Being Supplied: Operated Equipment, Trucking/Hauling, Disposal, Material Delivery

02 SUBCONTRACTOR/SUPPLIER OWNERSHIP AND LOCAL BUSINESS ENTERPRISE AFFIDAVIT

AFFIDAVIT

"The undersigned declares under penalty of perjury pursuant to the laws of the State of California that the following information and information contained on the attached Contractor/Supplier Information Form is true and correct and includes all material information necessary to identify and explain the operations of

Name of Firm T&M Projects Inc. dba T&M Construction

as well as the ownership thereof. Further, the undersigned agrees to provide, upon request, either through the prime contractor or, directly to Harbor Department, complete and accurate information regarding ownership in the named firm, and all of its domestic and foreign affiliates, any proposed changes of the ownership and to permit the audit and examination of firm ownership documents, and the ownership documents of all of its domestic and foreign affiliates, in association with this Contract."

Please indicate the ownership of your company as defined in Subsection 00030.06 of BIDDING DOCUMENTS Section:

Small Business Enterprise (SBE)	(Yes) or No	(Circle One)
Very Small Business Enterprise (VSBE)	(Yes) or No	(Circle One)

Is your firm a DVBE MBE (WBE) OBE (Circle at least one)

Please indicate the local business enterprise (LBE) status of your company as defined in Subsection 00030.10 of BIDDING DOCUMENTS Section:

(LBE)	(Circle One)
Non-LBE	(Circle One)

Signature Francine Accetta Title President

Printed Name Francine Accetta Date Signed 08/02/2025

NOTARY

State of California

County of _____

On _____ before me, _____
Date Here insert Name and Title of the Officer

personally appeared _____
Name(s) of Signer(s)

_____

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal Above Signature SEE ATTACHED CERTIFICATE

_____
Signature of Notary Public

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of LOS ANGELES }

On 8/14/2025 before me, PATRICE OLIVE, NOTARY PUBLIC
Date *Here Insert Name and Title of the Officer*

personally appeared FRANCINE ACCETTA
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

PATRICE OLIVE
Notary Public - California
Los Angeles County
Commission # 2395473
My Comm. Expires Mar 2, 2026

Place Notary Seal and/or Stamp Above

Signature _____
Signature of Notary Public

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: AFFIDAVIT
Document Date: 8/14/2025 Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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RAMP LA # 14215 TFM Projects INC. dba TFM Construction
Francine Accetta

Company Details
User Management
Compliance Documents
Certification
NAICS Codes and Licenses
Bookmarks
BIP Management
Related Opportunities
RAMP Support

For any questions regarding certifications please contact the Bureau of Contract Administration, Office of Contract Compliance at bca.certifications@lacity.org

Certification

+ Add Certification

City of Los Angeles | Harbor | Expired Certifications

Name	Status	Expiration Date
VSBE: VERY SMALL BUSINESS ENTERPRISE (HARBOR)	Verified	7/31/2026
LBE: LOCAL BUSINESS ENTERPRISE (HARBOR)	Verified	

01 CONTRACTOR/SUPPLIER INFORMATION FORM

DEPARTMENT USE ONLY		
Contract No.:	Award Date:	Contract Term:
Contract Title:		Award Total:

PRIME CONTRACTOR

Business Name: Vortex Marine Construction, Inc. Award Total: $ 45,878,375.00
Owner's Ethnicity: N/A Gender: N/A Group: SBE VSBE MBE WBE DVBE (OBE)
(Circle all that apply)
Local Business Enterprise: YES ____ NO X (Check only one)
Primary NAICS Code: 237990
Address: 1 Maritime Way
City/State/Zip: Antioch, CA 94509
Telephone: (510) 261-2400 FAX: (510) 261-2444
Contact Person/Title: Blaise Fettig
Email Address: bfettig@vortex-sfb.com
State Contractor's I.D. 649452 DIR Registration No. 2000004391
RAMP Company ID 24057

SUBCONTRACTOR/SUPPLIER INFORMATION FORM (CIRCLE ONE)

Business Name: Aro Industries, Inc.,dba Summit Environmental Contractors Award Total: $ 3,092,600.00
Owner's Ethnicity: Hispanic Gender: Female Group: (SBE) (VSBE) MBE WBE DVBE OBE
(Circle all that apply)
Local Business Enterprise: YES ✓ NO ____ (Check only one)
Primary NAICS Code: 562000
Address: 33161 Camino Capistrano Suite F
City/State/Zip: San Juan Capistrano, CA 92675
Telephone: (949) 374-9470 FAX: (949) 542-4331
Contact Person/Title: Grace Aronne President/CEO
Email Address: grace@summitenvcon.com
State Contractor's I.D. 929061 DIR Registration No. 1000024682
RAMP Company ID 69188
Description of Work to be Performed or Items Being Supplied: Transportation and Disposal of Waste Soil.

SUBCONTRACTOR/SUPPLIER INFORMATION FORM (CIRCLE ONE)

Business Name: Aro Industries, Inc.,dba Summit Environmental Contractors Award Total: $ 3,092,600.00
Owner's Ethnicity: Hispanic Gender: Female Group: SBE VSBE MBE WBE DVBE OBE
(Circle all that apply)
Local Business Enterprise: YES ✓ NO _____ (Check only one)
Primary NAICS Code: 562000
Address: 33161 Camino Capistrano Suite F
City/State/Zip: San Juan Capistrano, CA 92675
Telephone: (949) 374-9470 FAX: (949) 542-4331
Contact Person/Title: Grace Aronne President/CEO
Email Address: grace@summitenvcon.com
State Contractor's I.D. 929061 DIR Registration No. 1000024682
RAMP Company ID 69188
Description of Work to be Performed or Items Being Supplied: Transportation and Disposal of Waste Soil.

SUBCONTRACTOR/SUPPLIER INFORMATION FORM (CIRCLE ONE)

Business Name: _____ Award Total: $ _____
Owner's Ethnicity: _____ Gender: _____ Group: SBE VSBE MBE WBE DVBE OBE
(Circle all that apply)
Local Business Enterprise: YES _____ NO _____ (Check only one)
Primary NAICS Code: _____
Address: _____
City/State/Zip: _____
Telephone: ( ) _____ FAX: ( ) _____
Contact Person/Title: _____
Email Address: _____
State Contractor's I.D. _____ DIR Registration No. _____
RAMP Company ID _____
Description of Work to be Performed or Items Being Supplied: _____

Blaise Fettig, President — 8/12/2025
Authorized signature — Date

Refer to Subsection 00030.06 for SBE, VSBE, DVBE, MBE, WBE, and OBE definitions and refer to Subsection 00030.10 for definition of Local Business Enterprise (LBE).

02 SUBCONTRACTOR/SUPPLIER OWNERSHIP AND LOCAL BUSINESS ENTERPRISE AFFIDAVIT

AFFIDAVIT

"The undersigned declares under penalty of perjury pursuant to the laws of the State of California that the following information and information contained on the attached Contractor/Supplier Information Form is true and correct and includes all material information necessary to identify and explain the operations of

Name of Firm Aro Industries, Inc.,dba Summit Environmental Contractors

as well as the ownership thereof. Further, the undersigned agrees to provide, upon request, either through the prime contractor or, directly to Harbor Department, complete and accurate information regarding ownership in the named firm, and all of its domestic and foreign affiliates, any proposed changes of the ownership and to permit the audit and examination of firm ownership documents, and the ownership documents of all of its domestic and foreign affiliates, in association with this Contract."

Please indicate the ownership of your company as defined in Subsection 00030.06 of BIDDING DOCUMENTS Section:

Small Business Enterprise (SBE)	Yes or No	(Circle One)
Very Small Business Enterprise (VSBE)	Yes or No	(Circle One)

Is your firm a DVBE MBE WBE OBE (Circle at least one)

Please indicate the local business enterprise (LBE) status of your company as defined in Subsection 00030.10 of BIDDING DOCUMENTS Section:

LBE	(Circle One)
Non-LBE	(Circle One)

Signature Grace Aronne Title President/ C.E.O.

Printed Name Grace Aronne Date Signed 08/12/2025

NOTARY

State of California

County of _____

CALIFORNIA ALL- PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }

County of Orange }

On 08/12/2025 before me, HEMANSHU P. BADANI, Notary Public
(Here insert name and title of the officer),

personally appeared GRACE ARONNE,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public Signature (Notary Public Seal)

HEMANSHU P. BADANI
COMM. # 2415414
NOTARY PUBLIC-CALIFORNIA
ORANGE COUNTY
MY COMM. EXP. OCT 7, 2026

ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

Affidavit
(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages ____ Document Date ____

CAPACITY CLAIMED BY THE SIGNER

- ☐ Individual (s)
- ☑ Corporate Officer
  (Title)
- ☐ Partner(s)
- ☐ Attorney-in-Fact
- ☐ Trustee(s)
- ☐ Other ____

INSTRUCTIONS FOR COMPLETING THIS FORM

This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he~~/she/~~they,~~ is /~~are~~) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - Indicate title or type of attached document, number of pages and date.
  - Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

Printed on: 11/8/2023 11:37:40 AM

To verify most current certification status go to: https://www.caleprocure.ca.gov

Office of Small Business & DVBE Services

Certification ID: 61973

Legal Business Name:
ARO INDUSTRIES INC

Doing Business As (DBA) Name 1:
SUMMIT ENVIRONMENTAL CONTRACTORS

Doing Business As (DBA) Name 2:

Address:
33161 CAMINO CAPISTRANO
SUITE F
SAN JUAN CAPISTRANO
CA 92675

Email Address:
heather@summitenvironmentalservices.com

Business Web Page:
http://www.summitenvironmentalservices.com

Business Phone Number:
949/542-4330

Business Fax Number:
949/542-4331

Business Types:
Construction , Service

Certification Type	Status	From	To
SB(Micro)	Approved	11/03/2023	11/30/2025
SB-PW	Approved	11/03/2023	11/30/2025

Stay informed! KEEP YOUR CERTIFICATION PROFILE UPDATED!
-LOG IN at CaleProcure.CA.GOV

Questions?
Email: OSDSHELP@DGS.CA.GOV
Call OSDS Main Number: 916-375-4940
707 3rd Street, 1-400, West Sacramento, CA 95605

02 SUBCONTRACTOR/SUPPLIER OWNERSHIP AND LOCAL BUSINESS ENTERPRISE AFFIDAVIT

AFFIDAVIT

"The undersigned declares under penalty of perjury pursuant to the laws of the State of California that the following information and information contained on the attached Contractor/Supplier Information Form is true and correct and includes all material information necessary to identify and explain the operations of

Name of Firm

Connolly-Pacific Co.

as well as the ownership thereof. Further, the undersigned agrees to provide, upon request, either through the prime contractor or, directly to Harbor Department, complete and accurate information regarding ownership in the named firm, and all of its domestic and foreign affiliates, any proposed changes of the ownership and to permit the audit and examination of firm ownership documents, and the ownership documents of all of its domestic and foreign affiliates, in association with this Contract."

Please indicate the ownership of your company as defined in Subsection 00030.06 of BIDDING DOCUMENTS Section:

Small Business Enterprise (SBE)	Yes or (No)	(Circle One)
Very Small Business Enterprise (VSBE)	Yes or (No)	(Circle One)

Is your firm a DVBE MBE WBE (OBE) (Circle at least one)

Please indicate the local business enterprise (LBE) status of your company as defined in Subsection 00030.10 of BIDDING DOCUMENTS Section:

(LBE)	(Circle One)
Non-LBE	(Circle One)

Signature Title Vice President / General Manager

Printed Name Michelle Finegold Date Signed 8/4/25

NOTARY

State of California

County of Los Angeles

On 8/4/25 (Date) before me, Joshua A. Vivian, Notary Public (Here insert Name and Title of the Officer)

personally appeared Michelle Finegold (Name(s) of Signer(s))

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

JOSHUA A. VIVIAN
Notary Public - California
Los Angeles County
Commission # 2525601
My Comm. Expires Jul 30, 2029

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal Above Signature

Signature of Notary Public

03 SUPPLIER LIST

Supplier information is required for calculation of SBE and VSBE participation. Photocopy this form for additional firms. Please list SBE and VSBE Suppliers that are being used to achieve the minimum required SBE and VSBE participation levels.

Supplier Name and Location		Amount	SBE Yes or No	VSBE Yes or No	Local Business Yes or No
Name	Forefront Deep Foundations	$4,435,469.00	X		X
Address	2618 San Miguel Drive, Ste. 196				
City, State, Zip	Newport Beach, CA 92660				
Phone	Phone (949) 264-1598				
Description of Items Being Supplied:	Landside piledriving (partial), furnish concrete and timber piles (Partial)				

Name	T&M Construction	$579,360	X	X	X
Address	780 W. Channel Street,				
City, State, Zip	San Pedro CA 90731				
Phone	(310) 833-3366				
Description of Items Being Supplied:	Equipment rental and trucking				

Name	CONNOLLY-PACIFIC CO.	$2,557,650.00			X
Address	1925 PIER D STREET				
City, State, Zip	LONG BEACH, CALIFORNIA 90802-1089				
Phone	(562) 437-2831				
Description of Items Being Supplied:	Furnish and install quarry rock and riprap.				

SUBTOTAL	**DEPARTMENT USE ONLY**				

END OF SECTION

03 SUPPLIER LIST

Supplier information is required for calculation of SBE and VSBE participation. Photocopy this form for additional firms. Please list SBE and VSBE Suppliers that are being used to achieve the minimum required SBE and VSBE participation levels.

Supplier Name and Location		Amount	SBE Yes or No	VSBE Yes or No	Local Business Yes or No
Name	Summit Environmental Contractors	$3,092,600	X	X	X
Address	33161 Camino Capistrano, Suite F				
City, State, Zip	San Juan Capistrano, CA 92675				
Phone	(949) 429-8269				
Description of Items Being Supplied:	Transportation and Disposal of Waste Soil				

Name					
Address					
City, State, Zip					
Phone					
Description of Items Being Supplied:					

Name					
Address					
City, State, Zip					
Phone					
Description of Items Being Supplied:					

SUBTOTAL	**DEPARTMENT USE ONLY**				

END OF SECTION

FORM 50

Bidder Certification

Los Angeles City ETHICS COMMISSION

This form must be submitted with your bid or proposal to the City department that is awarding the contract noted below. If you have questions about this form, please contact the Ethics Commission at (213) 978-1960.

[X] **Original Filing** [ ] **Amendment:** Date of Signed Original _____. Date of Last Amendment _____.

Reference Number (Bid, Contract, or RAMP)	Awarding Authority (Department awarding the contract)
Spec 2842	Harbor Department
Bidder Name: Vortex Marine Construction, Inc.	
Address: 1 Maritime Way, Antioch, CA 94509	
Email Address: bfettig@vortex-sfb.com	Phone Number: (510) 261-2400

Certification

I certify the following on my own behalf or on behalf of the entity named above, which I am authorized to represent:

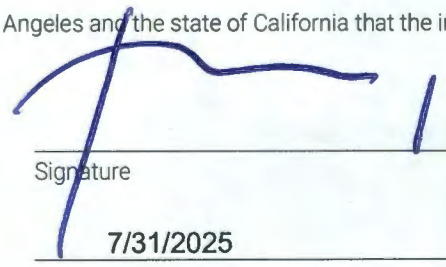
A. I am applying for one of the following types of contracts with the City of Los Angeles:

1. A goods or services contract with a value of more than $25,000 and a term of at least three months;
2. A construction contract with any value and duration;
3. A financial assistance contract, as defined in Los Angeles Administrative Code § 10.40.1(h), with a value of at least $100,000 and a term of any duration; or
4. A public lease or license, as defined in Los Angeles Administrative Code § 10.40.1(i), with any value and duration.

B. I acknowledge and agree to comply with the disclosure requirements and prohibitions established in the Los Angeles Municipal Lobbying Ordinance if I qualify as a lobbying entity under Los Angeles Municipal Code § 48.02.

I certify under penalty of perjury under the laws of the City of Los Angeles and the state of California that the information in this form is true and complete.

Blaise Fettig
Name


Signature

President
Title

7/31/2025
Date

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

This form must be completed in its entirety and submitted with your bid or proposal to the City department that is awarding the contract. Failure to submit a completed form may affect your bid or proposal. If you have questions about this form, please contact the Ethics Commission at (213) 978-1960.

☒ **Original Filing** ☐ **Amendment:** Date of Signed Original _____. Date of Last Amendment _____.

Reference Number (Bid, Contract, or RAMP): Spec 2842 Date Bid Submitted: 7/31/2025

Contract Description (Title of the RFP or City contract solicitation and description of the services to be provided):

2025-2027 MARINE IMPROVEMENTS

Awarding Authority (Department awarding the contract): Harbor Department

Bidder Name: Vortex Marine Construction, Inc.

Bidder Address: 1 Maritime Way, Antioch, CA 94509

Bidder Email Address: bfettig@vortex-sfb.com Bidder Phone Number: (510) 261-2400

Schedule Summary

Please complete all three of the following:

1. **SCHEDULE A — Bidder's Principals** *(check one)*
The bidder has one or more **PRINCIPALS,** as defined in LAMC § 49.7.35(A)(6).
At least one principal is required for entities. *(If you check "Yes", Schedule A is required.)*
Yes ☒ No ☐

2. **SCHEDULE B — Subcontractors and Their Principals** *(check one)*
The bidder has one or more **SUBCONTRACTORS** on this bid or proposal with subcontracts worth $100,000 or more. *(If you check "Yes", Schedule B is required.)*
Yes ☒ No ☐

3. **TOTAL NUMBER OF PAGES SUBMITTED** (including this cover page): 3

Certification

I certify the following under penalty of perjury under the laws of the City of Los Angeles and the state of California:
A) I understand, will comply with, and have notified my principals and subcontractors of the requirements and restrictions in Los Angeles City Charter § 470(c)(12) and any related ordinances; B) I understand that I must amend this form within ten business days if any information changes; C) I am the bidder named above or I am authorized to represent the bidder named above, and my name appears below; and D) The information provided in this form is true and complete to the best of my knowledge and belief.

Blaise Fettig
Name

Signature

President
Title

7/31/2025
Date

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule A - Bidder's Principals

Please identify the names and titles of all the bidder's principals (attach additional sheets if necessary). Principals include a bidder's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the bidder of at least 20 percent and employees of the bidder who are authorized by the bid or proposal to represent the bidder before the City.

Name: Blaise Fettig Title: President/ Secretary
Address: 1 Maritime Way, Antioch, CA 94509

Name: Shannon Creson Title: Vice President
Address: 1 Maritime Way, Antioch, CA 94509

Name: Dave Shupe Title: Stockholder
Address: 1 Maritime Way, Antioch, CA 94509

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

☐ **Check this box if additional Schedule A pages are attached.**

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth $100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name: **Forefront Deep Foundations, Inc.**

Subcontractor's Address: 2618 San Miguel Drive, Ste. 196
Newport Beach, CA 92660

Please check one of the following options:

This subcontractor has one or more principals. ✔ **Yes*** **No**

* *Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: Jackie Bird Title: CEO
Address: 2618 San Miguel Dr, Ste. 196, Newport Beach, CA 92660

Name: Jeff Bird Title: President
Address: 2618 San Miguel Dr, Ste. 196, Newport Beach, CA 92660

Name: Jeff Redman Title: Vice President
Address: 2618 San Miguel Dr, Ste. 196, Newport Beach, CA 92660

Name: Rosa Redman Title: CFO
Address: 2618 San Miguel Dr, Ste. 196, Newport Beach, CA 92660

Name: Title:
Address:

Name: Title:
Address:

☐ **Check this box if additional Schedule B pages are attached.**

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth $100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name

T&M Projects Inc. dba T&M Construction

Subcontractor's Address

780 W. Channel St. San Pedro, CA 90731

Please check one of the following options:

This subcontractor has one or more principals. ☑ Yes* ☐ No

* *Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: Francine Accetta Title: President
Address: 780 W. Channel St. San Pedro, CA 90731

Name: Gaetano Accetta Title: Vice President
Address: 780 W. Channel St. San Pedro, CA 90731

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

☐ **Check this box if additional Schedule B pages are attached.**

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth $100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name

Connolly-Pacific Co.

Subcontractor's Address

1925 Pier D St, Long Beach, CA 90802

Please check one of the following options:

This subcontractor has one or more principals. ☑ **Yes*** ☐ **No**

* *Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: Brian Gray Title: President & CEO
Address: 1150 West Century Ave, Bismark, ND 58503

Name: Stephen Essoyan Title: President
Address: 655 West Clay St, Stockton, CA 95206

Name: Michelle Finegold Title: Vice President / General Manager
Address: 1925 Pier D St, Long Beach, CA 90802

Name: Michael Fidler Title: Region Controller & Assistant Secretary
Address: 655 West Clay St, Stockton, CA 95206

Name: Nancy Christenson Title: CFO & Treasurer
Address: 1150 West Century Ave, Bismark, ND 58503

Name: Karl Liepitz Title: General Counsel & Secretary
Address: 1150 West Century Ave, Bismark, ND 58503

☐ **Check this box if additional Schedule B pages are attached.**

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth $100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name

Aro Industries, Inc.,dba Summit Environmental Contractors

Subcontractor's Address

33161 Camino Capistrano Suite F, San Juan Capistrano, CA 92675

Please check one of the following options:

This subcontractor has one or more principals. ☐ **Yes*** ☑ **No**

* *Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: Grace Aronne Title: President

Address: 33161 Camino Capistrano Suite F, San Juan Capistrano, CA 92675

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

☐ **Check this box if additional Schedule B pages are attached.**

01 ABBREVIATIONS AND DEFINITIONS

a ABBREVIATIONS:

AASHTO: American Association of State Highway and Transportation Officials

ACI: American Concrete Institute

ANSI: American National Standards Institute

AREMA: American Railroad Engineering and Maintenance of Way Association

ASTM: American Society for Testing and Materials

AWPA: American Wood Protection Association

AWPB: American Wood Preservers Bureau

AWS: American Welding Society

AWWA: American Water Works Association

CRSI: Concrete Reinforcing Steel Institute

DBE: Disadvantaged Business Enterprise

DWP: Department of Water and Power

ICEA: Insulated Cable Engineers Association

IES: Illumination Engineering Society

IEEE: Institute of Electrical and Electronics Engineers

LAHD: Los Angeles Harbor Department

LBE: Local Business Enterprise

MBE: Minority Business Enterprise

NEC: National Electrical Code

NEMA: National Electrical Manufacturers Association

NFPA: National Fire Protection Association

01000.01 Cont'd.

OBE:	Other Business Enterprise
OSHA:	Occupational, Safety, and Health Administration
POLA:	Port of Los Angeles
PVC:	Polyvinyl chloride
RS:	Reference Specifications
SBE	Small Business Enterprise
SSPC:	Society for Protective Coatings
UDBE:	Underutilized Disadvantaged Business Enterprise
UL:	Underwriters Laboratories, Inc.
VSBE:	Very Small Business Enterprise
WBE:	Women Business Enterprise

b DEFINITIONS:

Applicable Laws: Any and all federal, state, county, or governmental agency laws, statues, ordinances, standards, codes, rules, ordinances, resolutions, orders, or requirements adopted or implemented under color of law, in effect at any point during the term of Contract, pertaining to: Project, performance of Work by Contractor and/or those operating for or on behalf of Contractor, operation and occurrences on Project Site(s); use, occupancy, and/or condition of Laydown Area(s) and Contract Documents.

Award: The acceptance, by City, of the successful Bidder's proposal.

Backland: The area of a marine terminal’s property behind the wharf where cargo, containers, chassis and other equipment are stored and other non-water invasive equipment and facilities are located.

Bidder: The person, firm, or corporation submitting a bid for Work.

Board: Board of Harbor Commissioners; the body vested with the control and management of Harbor Department of City of Los Angeles, as created by and operating under City Charter.

01000.01 Cont'd.

Business Day: Monday, Tuesday, Wednesday, Thursday, and Friday during working hours (8 am to 5 pm with a non-paid 1-hour break), with the exception of City of Los Angeles holidays.

Calendar Day: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday. The term day(s) whether used on Drawings or Specifications are consecutive Calendar Days unless otherwise specified.

Changes in Work: A written order from City to Contractor covering changes in Drawings, Specifications, or Bid Proposal Line Items quantities and establishing the basis of payment and Contract Time adjustments, if any, for Work affected by such changes. Change Orders (COs) as defined in Cost-Plus Change Work Order (Change Orders) Subsection of this Section, and Authorities for Adjustment (AFAs) as defined in Authority for Adjustments Subsection of this Section, is considered to be Changes in Work.

City: City of Los Angeles, California.

Consultant: A firm under contract or agreement with Department to perform services.

Contamination: A spill, discharge, or release of any Environmentally Regulated Material.

Contract Documents: "Contract Documents" shall consist of Notice Inviting Bids, Information for Bidders, Bidding Documents, Contract, Performance Bond, Payment Bond, Affidavits of Completion, SBE/VSBE/MBE/WBE/DVBE/OBE/LBE Information, and Contract Documents Sections of this Specification No. 2842 together with Contractor supplied documents required by these sections, and Specifications, Drawings, standard plans, and reference specifications referenced in Specifications or on Drawings, the appendices, addenda, permits, and Changes in Work.

Contract: The written agreement executed by Contractor and City covering Work not to exceed three (3) years commencing on Effective Date.

Contractor: The individual, firm, or corporation with whom Contract is made, or its legal representative.

Contract Time: The number of Calendar Days, stated in Contract Time Article of CONTRACT Section, allowed for completion of Work including any maintenance or plant establishment period and authorized time extensions. The first Notice to Proceed (NTP) shall specify the date on which Contract Time begins.

days: See definition for Calendar Day.

01000.01 Cont'd.

Department: Harbor Department of City of Los Angeles.

Drawings: The official drawings or exact reproductions approved by Engineer, which show Project Site(s) and any Laydown Area(s), character, dimensions, and details of Work.

Effective Date: The date of execution of Contract by Executive Director upon authorization of Board, subject to the provisions of Charter Section 245 of City of Los Angeles.

Engineer: Chief Harbor Engineer of Construction Division of Department or designated representative.

Environmentally Regulated Material: Any material, pollutant, hazardous or toxic substance, material, or waste at any concentration, that is or becomes regulated by the United States, the State of California, or any local or governmental authority having jurisdiction over Project Site(s) and any Laydown Area(s) and/or Contractor's undertaking of Work. Environmentally Regulated Materials shall mean: (i) "hazardous substance" as defined by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); (ii) "hazardous waste" as defined in Resource Conservation and Recovery Act (RCRA); (iii) Any pollutant, contaminant, or hazardous, dangerous, or toxic chemical, material, or substance, within the meaning of any other applicable federal, state, or local law, regulation, ordinance, or requirement (including consent decrees and administrative orders imposing liability or standard of conduct concerning any hazardous, dangerous, or toxic waste, substance, or material, now or hereinafter in effect); (iv) Radioactive material, including any source, special nuclear, or byproduct material as defined in the Atomic Energy Act of 1954 (42 USCS §§ 2011 et seq.) in its present or successor form; (v) Asbestos in any form or condition; (vi) Polychlorinated biphenyls ("PCBs") and any substance or compound containing PCBs; and (vii) Petroleum products.

Executive Director: Executive Director of Department or designated representative.

Inspector: An authorized representative of Engineer assigned to make all necessary inspections and tests of Work performed and being performed, and of the materials furnished and being furnished by Contractor.

Landside: Project activity approach from land, for example, pile driving from landside.

01000.01 Cont'd.

Laydown Area(s): Specific area or real property, ground, pavement, or water access expressly identified either on Drawings if applicable or in writing by Executive Director, located near or at Project Site(s), designated for the following uses and no others: delivery, storage, and handling of the materials and equipment to be installed or constructed as part of Work, field offices, parking, and access.

Notice of Award: The letter informing Contractor that Award of Contract has been made. The date on the Notice of Award starts the 30-day period for execution of Contract and the 14-day period for submittal and approval of acceptable bonds and insurance.

Notice(s) to Proceed: The letter(s) from Engineer which notify(ies) Contractor of the effective date Contract Time shall begin, and authorizes Work or items of Work to be started.

Project: The structure or improvement to be constructed in whole or in part, through the performance of Contract.

Project Site: The entire area of real property on which Work is to be performed. Area or areas where Project materials and equipment, as described in NOTICE INVITING BIDS Section and SUMMARY OF WORK Section of Specifications are installed or constructed.

Proposal: The written offer of Bidder (when submitted on the approved proposal form) to furnish the necessary materials, and perform Work in accordance with Contract Documents.

Specifications: The portion of Contract Documents containing written technical descriptions, instructions, provisions, general conditions, supplementary conditions, and detailed requirements pertaining to materials, methods, and manner of performing Work and to the quality of Work to be furnished and installed under Contract. Standards for specifying materials and testing which are cited in Specifications by reference shall have the same force and effect as if included in Contract Documents.

Substantial Completion: Upon satisfactory completion of Work, Engineer shall issue a Substantial Completion letter to Contractor to indicate a stop in Contract Time and that Work is acceptable for its intended use. Such Substantial Completion letter may include a list of punch list items that must be completed by Contractor prior to final acceptance of Work by Department.

Superintendent: Contractor's executive representative who is present on Project Site(s) and any Laydown Area(s) during construction, authorized to receive and fulfill instructions from Engineer, and who shall supervise and direct the construction.

01000.01 Cont'd.

Waterside: Project activity approach from water, for example, pile driving from waterside.

Work: The furnishing of labor, materials, tools, equipment, and incidentals necessary and convenient to Contractor's performance of all duties and obligations imposed by Contract. Unless otherwise noted, Work shall be performed on Project Site(s) and any Laydown Area(s).

02 TIME FOR SUBMITTAL OF BONDS

a Within 14 days of Notice of Award, and prior to, or concurrently with execution of Contract, Contractor shall furnish City a performance bond and a payment bond.

03 PERFORMANCE BOND

a A satisfactory performance bond in a form approved by the City Attorney shall be furnished as a guarantee of the faithful performance of Contract in the sum of 100 percent of the total amount of Contract.

b The form of bond is included in Section 00070.

c No payment shall be made to Contractor until Contractor's performance bond has been approved by the City Attorney.

04 PAYMENT BOND

a If bid exceeds $25,000, a satisfactory payment bond in a form approved by the City Attorney shall be furnished in the sum of 100 percent of the total amount of Contract to secure payment of all claims, demands, liens or charges of the State of California, of material suppliers, mechanics, or laborers employed by Contractor or by any subcontractor.

b The form of bond is included in Section 00074.

c No payment shall be made to Contractor until Contractor's payment bond has been approved by the City Attorney.

05 RESPONSIBILITY FOR LOSS

a During use and occupancy of Project Site(s) and any Laydown Area(s) and progress of Work under Contract and until its final acceptance, Contractor shall have the charge and care thereof and shall take every necessary precaution against injury or damage to any part thereof by the action of the elements, or from any other cause whatsoever whether arising from the execution or from the non-execution of Work.

01000.05 Cont'd.

b Contractor shall, at Contractor's sole cost and expense, except as provided in Paragraph c of this Subsection, rebuild, repair, restore and make good all injuries or damages to any portion of Work from any and all causes before its completion and final acceptance, and shall deliver Work complete in accordance with the terms of Contract.

c Contractor shall not be required to pay more than 5% of the contracted amount to rebuild, repair, restore, and make good all injuries or damages to any portion of Work, built in accordance with accepted and applicable building standards, Drawings, and Specifications, that has been damaged by an earthquake in excess of a magnitude of 3.5 on the Richter scale or tidal wave.

06 PREVAILING WAGES

a Contractor shall pay the general prevailing rate of per diem wages and rates for legal holiday and overtime work currently being paid in the area where Work is being performed.

b Pursuant to the provisions of the Labor Code of the State of California, the general prevailing rate of wages for each craft, classification or type of workers needed in the execution of contracts under the jurisdiction of Board, shall be those rates as determined by the Director of the Department of Industrial Relations of the State of California. Copies of the applicable Determinations by the said Director are on file in Construction Division and are hereby incorporated and made a part hereof the same as though fully set forth herein. Copies of the applicable Determinations may be obtained at or by request to Department.

c When Contractor has been determined to be in violation of Section 377 of City Charter making applicable the provisions of the California Labor Code relating to the payment of not less than the prevailing per diem wages on public works, deductions may be made from moneys due or to become due Contractor in the amount of twice the difference between such stipulated prevailing rates, and the amount paid to each wage worker for each Calendar Day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate.

d Contractor shall also comply with Section 1775 of the Labor Code providing for a penalty per day as determined by the Labor Commissioner for each Calendar Day, or part thereof, for which each worker was paid less than the prevailing wage.

01000.06 Cont'd.

e Contractor and subcontractors shall keep an accurate record showing the names and occupations of all workers employed by them in connection with any Work done under Contract, and the per diem wages paid to each of such workers, and shall keep such record open at all reasonable hours to the inspection of Board and to the State Division of Labor Law Enforcement. Contractor in all other respects shall comply with Section 1776 of the Labor Code.

f No later than the end of the work day following the day on which Work was performed by Contractor, or any subcontractor, Contractor and applicable subcontractor(s) shall complete and furnish Contractor Daily Field Report, included as Subsection 67 of this Section, to Inspector. When Work has been performed, Contractor shall submit a form regarding all employees and equipment at Project Site(s) and any Laydown Area(s) on the work day, and Contractor shall submit a separate form for each subcontractor regarding each subcontractor's employees and equipment at Project Site(s) and any Laydown Area(s) on the work day. Each field report shall:

1 Identify Project title, Specification number, name of Contractor or subcontractor, and date on which Work was performed.

2 Show the names of the workers and identify their applicable company affiliation (Prime Contractor, subcontractor, supplier, or vendor).

3 Show the labor classification for each worker. If worker is an operating engineer or teamster, Contractor or subcontractor must indicate which piece of equipment was operated by the worker.

4 Show the Start Time and End Time for the worker listed, as well as the total hours worked by the worker on the work day.

5 Show the type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable, utilized on the work day.

6 Contain the printed name and title for Contractor or subcontractor representative, and shall be dated and signed by same.

g Contractor shall submit the original (wet signature by Contractor or subcontractor) to Inspector for review. If additional space is needed, a second form, with pages numbered accordingly, can be completed.

01000.06 Cont'd.

h Inspector shall compare Inspector's records with the report submitted by Contractor, discuss any apparent discrepancies with Contractor, and reconcile the report (and have it re-submitted, if necessary). Once the report is agreed upon by Contractor and Inspector, Inspector prints his/her name on the report and dates and signs the report. Each party shall retain a copy of the report, signed by both parties.

i Certified payrolls from Contractor and all subcontractors shall be submitted to City weekly through the Department of Public Works Bureau of Contract Administration's Online Certified Payroll System (OCPS) and shall be accompanied by a Statement of Compliance, signed electronically on OCPS by Contractor or Contractor's agent attesting that the payrolls are correct and complete and the wage rates contained therein are not less than those set by the applicable wage determinations incorporated into Contract. City reserves the right to reject incomplete payroll reports and request re-submittal of complete reports.

07 WAGE AND EARNING ASSIGNMENT ORDERS/NOTICES OF ASSIGNMENTS

a Contractor and its subcontractors shall comply with all applicable state and federal employment reporting requirements for Contractor's and/or subcontractor's employees.

b Contractor and/or subcontractor shall certify that the principal owner(s) are in compliance with any Wage and Earnings Assignment Orders and Notices of Assignment applicable to them personally. Contractor or subcontractor shall comply with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignments in accordance with California Family Code §§5230 et. seq. Contractor or subcontractor shall maintain such compliance throughout the term of Contract.

08 WORKING HOURS

a Work shall be accomplished during daylight hours. Night work shall only be allowed, if in the opinion of Engineer, Work does not:

1 conflict with noise laws, ordinances, regulations, City code, or
2 create unsafe working conditions or poor quality control provisions.

b Requests for night work shall be made 48 hours prior to the desired start of the night work.

09 APPRENTICE UTILIZATION ON PUBLIC WORKS

a Contractor shall comply with the Provisions of Labor Code, State of California, Section 1777.5 relating to apprentice employment and training. Contractor shall assume full responsibility for compliance with said Section with respect to all apprenticeable occupations upon Project.

b Section 1777.5 does not apply to prime contracts involving less than $30,000.

10 NON-DISCRIMINATION PROVISIONS

a Contractor shall agree to City of Los Angeles Non-discrimination provisions as provided in Subsections 00030.03 and 00030.04 of BIDDING DOCUMENTS Section.

11 BOARD RIGHT TO TERMINATE CONTRACT

a Board may terminate Contract at its own discretion without liability to Contractor for damages when conditions encountered during Work make it impossible or impracticable to proceed, or when City is prevented from proceeding with Contract by act of God, by law, or by official action of a public authority.

b Upon termination, Contractor may receive payment on the basis shown below in consideration of its irrevocable written agreement to release any and all claims and/or causes of action against City arising out of or related to such termination and to indemnify and hold City harmless from any and all liability, claims and/or causes of action arising from or related to such termination. City shall prepare such written agreement.

1 Termination occurs prior to the Notice to Proceed date
Subject to Contractor's full satisfaction of the requirements of Paragraph b of this Subsection, Contractor shall be entitled to payment as shown below.

Value of Contract	Payment Due to Contractor
$0 to $1,000,000	10% of Contract amount
$1,000,001 to $5,000,000	$100,000 plus 5% of Contract amount above $1,000,000
$5,000,001 to $10,000,000	$300,000 plus 2.5% of Contract amount above $5,000,000
$10,000,001 to $50,000,000	$425,000 plus 1% of Contract amount above $10,000,000
$50,000,001 to $100,000,000	$825,000 plus 0.5% of Contract amount above $50,000,000
Above $100,000,000	$1,075,000 regardless of Contract amount

01000.11 Cont'd.

2 Termination occurs after the Notice to Proceed date
Subject to Contractor's full satisfaction of the requirements of Paragraph b of this Subsection, Contractor shall be entitled to the estimates and payment for all Work done to the date of termination, if any, plus a percentage of the value of Work remaining (determined by subtracting payments made, or due, from Contract price), as shown below.

Value of Work Remaining	Payment Due to Contractor
$0 to $1,000,000	10% of value of Work remaining
$1,000,001 to $5,000,000	$100,000 plus 5% of value of Work remaining above $1,000,000
$5,000,001 to $10,000,000	$300,000 plus 2.5% of value of Work remaining above $5,000,000
$10,000,001 to $50,000,000	$425,000 plus 1% of value of Work remaining above $10,000,000
$50,000,001 to 100,000,000	$825,000 plus 0.5% of value of Work remaining above $50,000,000
Above $100,000,000	$1,075,000 regardless of value of Work remaining

12 ASSIGNMENTS

a Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of Contract, or rights, title or interest in or to the same or any part thereof, without the previous consent in writing of Executive Director endorsed upon or attached to the copies of Contract filed in Office of Board of Harbor Commissioners.

b Nothing herein contained shall be construed to hinder, prevent or affect an assignment by Contractor for the benefit of Contractor's creditors; and no right under Contract shall be asserted against City, in law or in equity, by reason of any so-called assignment of Contract, or any part thereof, unless authorized as aforesaid by the written consent of Executive Director.

c Any assignment of money shall be subject to all proper setoffs and withholdings in favor of City and to all deductions provided for in Contract. All money withheld whether assigned or not, shall be subject to being used by City for completion of Work, should Contractor be in default.

13 CANCELLATION FOR DEFAULT

a If Contractor fails to begin Work within the time stipulated, or if Work to be done under Contract is abandoned by Contractor, or if Contract is assigned or Work sublet by Contractor otherwise than as herein specified, or if at any time Engineer shall be of the opinion, and shall so certify in writing to Executive Director, that the performance of Contract is unnecessarily or unreasonably delayed, or that Contractor is willfully violating any of the conditions or covenants of Contract or is executing the same in bad faith, or not in accordance with the terms thereof, Executive Director may notify Contractor not to resume, or to discontinue, all Work, or any part thereof, under Contract, by a written notice served upon Contractor.

b Executive Director shall advise the bondsperson(s) or surety(ies) guaranteeing faithful performance of Contract, of the suspension and reasons therefor, and shall notify said bondsperson(s) or surety(ies) that they shall be given fourteen days within which to arrange for the completion of Work in accordance with the terms and provisions of Contract by another contractor or firm of contractors, satisfactory to Executive Director. If such bondsperson(s) or surety(ies) requests additional time in which to arrange for completion of Work, Executive Director may, in its sole and absolute discretion, extend such time period; however, Executive Director is under no obligation to do so.

c Should the bondsperson(s) or surety(ies) fail to effect satisfactory arrangements within the period hereinbefore stipulated, Executive Director shall thereupon have the right without further notice, to exclude Contractor, bondsperson(s) or surety(ies) and any subcontractor or employee upon the line of work from Project Site(s) and any Laydown Area(s) and take possession of all material and equipment, and complete Work by City forces or by letting the unfinished Work to another contractor, or by a combination of such methods.

01000.13 Cont'd.

d The cost of completing Work shall be charged against Contractor and the surety or bondspersons to the extent of their liability. If Department is required to complete Work or satisfy other Contract obligations because of the surety or bondspersons' failure to comply with the bond obligations, then bondspersons or surety shall, nevertheless, immediately reimburse City all costs in excess of Contract amount which City is obligated to pay in order to complete Work. If surety or bondspersons fail to pay such amount immediately upon City's demand, then City shall be entitled to collect interest from bondspersons or sureties on the amounts City is required to pay excess of Contract amount. The interest rate which surety or bondspersons shall pay shall be 2% in excess of the interest rate charged by Bank of America from time to time for prime commercial loans of ninety (90) day maturities. The interest rate shall accrue on all amounts City has had to pay excess of Contract amount from the date of City's payment. Engineer's certificate as to the amount of Work done, the cost, and the excess cost, if any, of completing Work specified by Contract shall be conclusive and binding upon Contractor's assignees and sureties.

e If the surety or bondspersons assumes any part of Work, it shall take Contractor's place in all respects for that part, and shall be paid by City for all work performed by it in accordance with Contract. If the surety or bondspersons assumes the entire Contract, all money due Contractor at the time of Contractor's default shall be payable to the surety as Work progresses, subject to the terms of Contract.

f In lieu of the provisions of this Subsection for setting aside Contract and completing Work for proper cause, City may pay Contractor for the parts already done according to the provisions of Contract and Specifications and may treat the parts remaining undone as if they had never been included or contemplated by Contract. No claim under this provision shall be allowed Contractor for prospective profits on work uncompleted by Contractor.

g The provisions of this Subsection shall be in addition to all other rights and remedies available to City under law.

14 OTHER CONTRACTS

a City reserves the right to have Work done in or about Project Site(s) and any Laydown Area(s) as provided for in Contract, by persons, firms, or corporations other than said Contractor, or to perform the same by force account under the direction and supervision of Engineer.

b Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their Work, and shall properly connect and coordinate Work with others.

c If any part of Contractor's Work depends upon the work of any other contractor for proper execution or results, Contractor shall inspect and promptly report to Engineer any defects in such work that render it unsuitable for such proper execution and results. Failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper.

15 CONTRACT DOCUMENTS COMPLEMENTARY

a Contract Documents are intended to be complementary and to describe and provide for a complete Project. Anything in Specifications and not on Drawings; or on Drawings and not in Specifications, shall be considered as though shown or mentioned in both.

b Information included by specific reference in any of Contract Documents shall be a part of Contract Documents as though reproduced in entirety in the document where the reference occurs.

c While it is believed that much of the information pertaining to conditions which may affect the cost of Work shall be shown on Drawings or indicated in Specifications, City does not warrant the completeness or accuracy of such information. It is Contractor's responsibility to ascertain the existence of any conditions affecting the cost of Work which would have been disclosed by reasonable examination of Project Site(s) and any Laydown Area(s) and Contract Documents.

d All contact information, website addresses, and related references are provided for convenience only, but it is Contractor’s responsibility to obtain the current applicable phone numbers, addresses, and websites in the event that those provided are no longer current.

16 PRECEDENCE OF DOCUMENTS

a If there is a conflict between Contract Documents, the document listed herein as higher in precedence shall control.

b The precedence shall be as follows (ranking 1 as highest):
1 Permits and Permit Documents
2 Specifications (in total)
3 Drawings
4 Standard Plans
5 Reference Specifications

c Authorizations for Adjustments, Cost-plus Change Orders, supplemental agreements, and approved revisions to Drawings and Specifications shall take precedence over documents listed.

d Detailed and large-scale Drawings shall have precedence over general and small-scale Drawings. Drawings shall have precedence over shop drawings.

e Reference drawings are included for information only. Such information is given as being the best factual information available without the assumption of responsibility for its accuracy or for any conclusions that Contractor might draw therefrom.

17 STANDARD SPECIFICATIONS

a Standard Specifications, such as ASTM, ACI, and ANSI, referenced herein shall be of the edition and supplements current as of the date of advertising for bids unless otherwise specified herein.

18 REFERENCE SPECIFICATIONS

a Whenever the words "Reference Specifications" (sometimes abbreviated RS) are used, either in Specifications, or on Drawings, it shall mean "GREEN BOOK - STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," edition and supplements current as of the date of advertising for bids unless otherwise specified herein.

19 ELECTRONIC COPIES OF CONTRACT DOCUMENTS FURNISHED

a Engineer shall furnish to Contractor, free of charge, electronic files in pdf format of Contract Documents reasonably necessary for the execution of Work.

b These Contract Documents are the property of Department, and shall not be reused on other work.

20 RESPONSIBILITY OF COSTS AND MATERIALS

a Unless otherwise specifically stipulated elsewhere in Contract Documents, Contractor shall provide at its sole cost and expense all materials, labor, water, tools, equipment, light, power, transportation, and other facilities, utilities, and incidentals necessary for the execution and completion of Work.

b Unless otherwise specifically stipulated elsewhere in Contract Documents, all materials, parts, and equipment incorporated in permanent Work shall be new and free from defects.

21 SHOP DRAWINGS AND MATERIALS SAMPLES

a Shop drawings shall consist of drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data prepared by Contractor or any subcontractor, manufacturer, supplier or distributor, to illustrate some portion of Work not covered in necessary detail by Drawings furnished by Department.

b Samples shall consist of physical examples required by Contract to be furnished by Contractor to illustrate materials, labor, and equipment to conform to Specifications, and to establish standards by which completed Work shall be judged for acceptability. These samples are distinguished from test samples obtained for laboratory analysis and destructive testing.

c Contractor shall review and stamp with approval and submit with reasonable promptness and in orderly sequence so as to cause no delay in Work or in the work of any other contractor, all shop drawings and samples required by Contract Documents and subsequently by the course of construction.

d By approving and submitting shop drawings and samples, Contractor thereby represents that it has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or shall do so, and that each shop drawings and samples has been checked and coordinated with the requirements of Work and of Contract Documents.

01000.21 Cont'd.

e Engineer shall review and approve shop drawings and samples only for conformance with the design concept of Project and with the information given in Contract Documents. Review time shall be 28 Calendar Days, unless otherwise stated in Specifications. The time for City to review items does not commence until Contractor's submittal (or re-submittal, addressing Engineer's corrections/comments resulting from Engineer's review of previous submittal) is complete. Engineer's approval of a separate item shall not indicate approval of an assembly in which the item functions. One copy of all submittals shall be returned to Contractor.

f At the time of submission, Contractor shall inform Engineer, in writing, of any deviation in the shop drawings and samples from the requirements of Contract Documents.

g Contractor shall make any corrections required by Engineer and shall resubmit the required number of corrected copies of shop drawings and samples until approved. Contractor shall direct specific attention in writing to revisions on resubmitted shop drawings other than the corrections requested by Engineer on previous submissions.

h Engineer's approval of shop drawings and samples shall not relieve Contractor of responsibility for any deviation from the requirements of Drawings and Specifications found in the shop drawings and samples unless Contractor has informed Engineer in writing of such deviation at the time of submission and Engineer has given written approval of the specific deviation in letter form separately from any notations on the shop drawings. Engineer's approval shall not relieve Contractor of any responsibility for errors or omissions in the shop drawings and samples.

i No portion of Work requiring shop drawing and sample submission shall commence until the submission has been approved by Engineer. All such portions of Work shall be in accordance with approved shop drawings and samples.

j The cost of furnishing shop drawings and samples shall be considered as included in the prices bid for Work and no addition to Contract price shall be made therefor.

22 SOURCE INSPECTIONS AND SAMPLES FOR TESTING

a Unless otherwise specified, inspection is required at the source for asphalt concrete paving mixtures, structural concrete, metal fabrication, metal casting, welding, concrete pipe manufacture, concrete piles, steel piles, steel pipes, sheet steel piling, protective coating application, and similar shop or plant operations. Steel pipe in sizes less than 18 inches in diameter and vitrified clay and cast iron pipe in all sizes are acceptable upon certification as to compliance with Specifications, subject to sampling and testing by Engineer. Standard items of equipment such as electrical motors, conveyors, elevators, plumbing fixtures, and other similar equipment, are subject to inspection at Project Site(s) and any Laydown Area(s). Special items of equipment such as designed electrical panel boards, large pumps, gangways, floating docks, marine fenders, and other similar equipment, are subject to inspection at the source.

b Before incorporation in Work, Contractor shall submit samples of materials required by Contract Documents. Contractor shall deliver the materials for testing to the place and at the time designated by Engineer.

c Contractor shall notify Engineer in writing at least 15 days in advance, of Contractor's intention to use materials for which tests may be necessary, to allow sufficient time to perform the tests. The notice shall name the proposed supplier and source of the materials.

d Unless otherwise specified, all testing and inspection within 75 miles of Department Administration Building shall be performed by Engineer, at no expense to Contractor.

e Unless otherwise specified, when Contractor intends to purchase materials, fabricate products, or equipment from sources located more than 75 miles from Department Administration Building, an independent inspector or accredited testing laboratory (approved by Engineer), shall be provided by Contractor at Contractor’s sole cost and expense, to inspect and test the materials, equipment, or process. Approval of the independent inspector or accredited testing laboratory shall be obtained before producing any material or equipment. The independent inspector or accredited testing laboratory shall evaluate the materials for conformance with the requirements of Drawings and Specifications. The independent inspector or accredited laboratory shall forward evaluation and test reports to Engineer, with copies provided to Contractor. No materials or equipment shall be shipped nor shall any processing, fabricating, or treating of materials be done without proper inspection by the independent inspector or accredited testing laboratory. Approval by the independent inspector or accredited testing laboratory shall not relieve Contractor of responsibility for complying with the requirements of Contract Documents.

01000.22 Cont'd.

f Testing of the materials furnished by Contractor shall be made by Engineer in accordance with commonly recognized standards or national organization and such special methods and tests as are in use by Engineer in accordance with provisions of Specifications. If materials should fail any tests, retesting shall be performed by Engineer and paid for by Contractor.

g Engineer may waive the materials testing and inspection requirements of Specifications and accept the manufacturer's written certificate of compliance that the materials to be supplied meet the requirements. Materials test data may be required by Engineer to be included with the submittal.

23 DEFECTIVE MATERIALS AND CONSTRUCTION

a Materials and labor not conforming to the requirements of Specifications shall be considered defective and shall be subject to rejection. Defective Work or materials, whether in place or not, shall be removed immediately from Project Site(s) and any Laydown Area(s) by Contractor, when so directed by Engineer.

b Contractor shall be required, at Contractor's sole cost and expense, to replace any inferior material, or correct any imperfect Work whenever discovered, as ordered by Engineer.

c If Contractor fails to replace any defective or damaged Work or material after reasonable notice, Engineer may withhold payments until the defective or damaged Work or material is replaced.

d No material furnished or Work to be done is to be considered as accepted which may be defective or deficient in any of the requirements of Specifications, whether or not due to any negligence of Inspector, or other authorized person, to point out such defect or deficiency during the execution of Contract.

24 PROTECTION OF MATERIALS

a Contractor shall provide and maintain storage facilities and employ such measures as shall preserve the specified quality and fitness of materials to be used in Work. Stored materials shall be reasonably accessible for inspection. Contractor shall also adequately protect new, existing Work and all items of equipment until completion of Contract and acceptance by Executive Director.

b Contractor shall be held responsible for all materials furnished by City after such are delivered at Project Site(s) and any Laydown Area(s) and deductions shall be made from any money due or to become due Contractor to make good any shortages and deficiencies from any cause whatsoever which may result after such delivery, or for any demurrage charges due to delinquency in unloading. In case of suspension of Work from any cause whatever, Contractor shall be responsible for all materials whether furnished by Contractor or by City, and shall properly store such if necessary.

25 AUTHORITY OF ENGINEER

a Board has the final authority in all matters affecting Work covered by Contract Documents. Within the scope of Contract, Engineer shall have the authority to enforce compliance with Contract Documents. Contractor shall promptly comply with instructions from Engineer and Engineer shall have the executive authority to enforce and make effective such decisions and orders.

b On all questions relating to quantities, the acceptability of material, equipment, or Work, the execution, progress or sequence of Work and the interpretation of Contract Documents, the decision of Engineer is final and binding, and shall be precedent to any payment under Contract, unless otherwise ordered by Board.

26 SUBSURFACE DATA AND PHYSICAL CONDITIONS

a Engineer shall make available all information in Department's possession on subsoil conditions in the vicinity of Work. Any additional subsurface exploration shall be done by Contractor at Contractor's sole cost and expense.

b All soil test hole data, water table elevations, and soil analyses apply only at the location of the test holes and to the depths indicated. The indicated elevation of the water table is that existing at the date the test hole data was determined. A difference in elevation between groundwater shown and groundwater actually encountered during construction shall not be considered as a basis for extra compensation.

01000.26 Cont'd.

c Contractor shall promptly, and before such conditions are disturbed, notify Engineer in writing of: 1) Subsurface or physical conditions at Project Site(s) and any Laydown Area(s) differing materially from those indicated in Contract Documents or as given by survey points and instructions, 2) Unknown physical conditions at Project Site(s) and any Laydown Area(s), of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in Contract, or 3) Material that Contractor has suspected to possibly be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law. Engineer shall promptly investigate the conditions, and if Engineer finds that such conditions do so materially differ, or do involve hazardous waste and cause an increase or decrease in the cost of, or the time required for, performance of Contract, an equitable adjustment shall be made in accordance with applicable Contract provisions. Any request by Contractor for adjustment hereunder shall not be allowed unless written notice as herein required has been given. In the event that a dispute arises between City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of Work, Contractor shall not be excused from any scheduled completion date provided for by Contract but shall proceed with all Work to be performed under Contract. Contractor shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

27 PROTECTION OF EXISTING UTILITIES

a Contractor is responsible for the protection of utilities and pipelines shown on Drawings, or otherwise made known to Contractor, which are designated to be protected or to remain in service. If service is interrupted, or utilities damaged by Contractor's operations, Contractor shall restore service and repair the utility to the satisfaction of the owner at Contractor's sole cost and expense.

28 HARBOR DATUM

a All depths and elevations given in Specifications or shown on Drawings are referenced to the plane of the National Geodetic Vertical Datum of 1929 (NGVD 29), Mean Lower Low Water (MLLW) which is assumed as elevation 0.00.

01000.28 Cont'd.

b The approximate range of tides, based on this datum is as follows:

Lowest Tide	-2.5 feet
Mean Lower Low Water	0.0 feet
Mean Sea Level	+2.8 feet
Mean Higher High Tide	+5.4 feet
Highest Tide	+7.5 feet

29 SURVEYING AND STAKING

a Unless otherwise specified, Engineer shall provide and be responsible for surveying needed to construct Project. Contractor shall be responsible for preserving construction survey stakes and marks for the duration of their usefulness. If any construction survey stakes are lost or disturbed and need to be replaced, such replacement shall be by Engineer at the sole cost and expense of Contractor.

b Contractor shall notify Engineer at least two working days before survey services shall be required in connection with the laying out of any portion of Work. Contractor shall dig all holes necessary for line and grade stakes.

c Unless otherwise specified, stakes shall be set and stationed by Engineer for curbs, headers, sewers, storm drains, rough grade, and a corresponding cut or fill to finished grade (or flow line) indicated on a grade sheet.

d Grades for underground piping and conduit shall be set at the surface of the ground. Contractor shall transfer them to the bottom of the trench.

e For all buildings and structures, including wharves, Engineer shall furnish land surveys, base lines, and stakes for locating the principal component parts of Work together with a suitable number of bench marks. Contractor shall develop and make all detail surveys, lines, and elevations as necessary.

f Contractor shall check all the dimensions as a whole and in detail, and shall layout and become responsible for the exact position and elevation of all part of the structures.

30 INSPECTION OF WORK

a All Work done and all material furnished shall be subject to the inspection and approval of Engineer, and Contractor shall perform Work only in the presence of Engineer.

b Work done without proper inspection shall be subject to rejection. Engineer shall at all times have access to Work during its preparation and construction. Contractor shall furnish to Engineer equipment and facilities required for inspection of Work in accordance with the requirements and intentions of Contract Documents.

c The inspection of Work shall not relieve Contractor of any obligation to fulfill all conditions of Contract as prescribed.

d If any Work should be covered up without approval or consent of Engineer, it must, if required by Engineer, be uncovered for examination and properly restored at Contractor's sole cost and expense.

e Re-examination of any Work may be ordered by Engineer, and, if so ordered, Work must be uncovered by Contractor. If such Work is found to be in accordance with Contract Documents, City shall pay the cost of the re-examination and replacement Work. If such Work is not in accordance with Contract Documents, Contractor shall pay such costs.

31 FIELD OFFICE TRAILER AND FIELD PERSONNEL

a Contractor shall be responsible for providing, maintaining, and paying all costs associated with administering and managing Contract, including field and home office personnel, materials, equipment, tools, construction trailers, and any other items necessary until the end of Contract Time including maintenance or plant establishment period.

b Contractor shall provide at all times during construction a competent Superintendent and necessary assistants satisfactory to Engineer. Superintendent shall represent Contractor and all direction given to Superintendent shall be binding as if given to Contractor.

c Contractor’s Superintendent shall be assigned solely to Project and be present on Project Site(s) and any Laydown Area(s) for the entire duration of Contract Time including maintenance or plant establishment period. Contractor’s Superintendent shall not be replaced without notifying and obtaining approval of Engineer in writing at least 14 Calendar Days in advance.

d All requests from Contractor for directions, clarifications, or field instructions and all response thereto shall be in writing.

32 CHARACTER OF WORKERS AND DISCIPLINE AMONG EMPLOYEES

a Contractor shall, at all times employ sufficient labor for completing Work in the manner and time required by Contract Documents.

b All workers shall have sufficient skill and experience to properly perform work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform such work satisfactorily.

c Contractor shall at all times enforce discipline and order among employees, and shall avoid employing on Work any person not skilled in the work assigned.

d Any person employed who is found to be incompetent, intemperate, troublesome, disorderly, or who fails or refuses to perform Work properly and acceptably, shall be immediately removed from Work by Contractor and not be reemployed on Work.

33 CHANGES IN WORK

a City reserves the right, without notice to the sureties, at any time during the life of Contract and without invalidating same, to change Drawings, Specifications, character of Work, quantity of Work, or time within which Contract is to be completed, provided the total arithmetic dollar value of all such changes, both additive and deductive, does not exceed 25 percent of the total Contract price. Should it become necessary to exceed this limitation, the change shall be by written supplemental agreement between Contractor and City, unless both parties agree to proceed with the change by Change Order.

b In giving instructions, Engineer shall have authority to make Changes in Work not involving extra cost when such changes are necessary or expedient to the satisfactory performance and completion of Work.

c Engineer, by written order to Contractor, approved by Executive Director, shall have authority to implement Changes in Work, and/or to grant extensions of time, provided that Changes in Work and/or extensions of time which increase or decrease Contract price by more than $150,000 in any one authorization, and all time extensions in excess of one year, shall become effective only after authority is granted by Board.

d Except in an emergency endangering life or property, no Changes in Work involving additions to Contract price shall be made unless in pursuance of such written order, and no claim for an addition to Contract price shall be valid unless the additional Work was so ordered.

34 COST-PLUS CHANGE ORDER WORK (CHANGE ORDERS)

a If it is impossible or impracticable to ascertain the total cost of Changes in Work to be done before such Work is begun, or if no agreement can be reached on Changes in Work and additions to Contract price, then Engineer may issue a Cost-Plus Change Order (Change Orders) instructing Contractor to do Work, indicating expressly and unmistakably the intention to treat the items as Changes in Work, setting forth the kind, character and limits of Work as far as can be ascertained, the terms under which changes to Contract price shall be determined and the estimated total change in Contract price anticipated thereunder. Change Order shall be fully executed by Department and accepted by Contractor before any Work is started on the items covered by the order. Such Change Order shall become the basis for a later Authority for Adjustment when the amount of adjustment to Contract price can be determined, and the prior approval of Change Order shall be considered necessary authority within the limits of the estimated change in Contract price. Without additional authority, no costs exceeding the estimated amount shall be paid.

b Contractor shall maintain records sufficient to distinguish the direct cost of Change Order Work from the cost of other operations.

c Costs in a Change Order shall be determined as follows:

1 Labor costs shall be based on the prevailing wage scale for each craft or type of worker. Cost of payroll taxes and insurance, health and welfare, pension and vacation are allowable, subject to Contractor's submitting adequate documentation to substantiate cost.

2 Material costs shall be the cost of all materials purchased by Contractor and used in Cost-Plus Change Order Work and shall be the actual cost of such materials, including sales taxes, freight and delivery charges. City reserves the right to approve materials and sources of supply of materials furnished by Contractor, or, if necessary, to facilitate the progress of Work, to furnish the materials to Contractor.

3 Contractor shall be allowed rental for the time that machinery or equipment is required based on the applicable Equipment Rental Rates published by the State of California, Department of Transportation, Division of Construction, current on date of performance of Work; when machinery and equipment not so listed is required, a reasonable rental shall be allowed. In addition, Contractor shall be allowed reasonable move-in and move-out charges on heavy equipment.

01000.34 Cont'd.

4 Equipment and tools having a replacement value of $500 or less, whether or not consumed by use, shall be considered small tools and no payment shall be made therefor.

d Contractor shall notify Inspector at the beginning of each day when Change Order Work is being performed. Contractor shall describe the personnel involved, whether by Contractor forces or by its subcontractors at any tier. Failure to notify Inspector prior to the start of Change Order Work serves as Contractor's waiver to claim for compensation on that day.

e At the end of each day when Change Order Work is performed, Contractor [not subcontractor(s)] shall furnish to Inspector, on Port of Los Angeles Construction Division Time and Material Form, reports of Cost-Plus Work for that day. Form is included at the end of this Section.

The reports shall:

1 Identify party (Contractor or subcontractors at any tier) performing Work.

2 Show names of workers, classifications, and hours worked.

3 Describe and list quantities of materials used.

4 Show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable.

5 Describe other services and expenditures in such detail as Engineer may require.

An attempt shall be made to reconcile the report daily, and it shall be signed by Inspector, the subcontractor performing Work (if applicable) and Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by subcontractors or others shall be submitted through Contractor.

In the event that more than one Change in Work is performed by Contractor in a Calendar Day, Contractor shall maintain separate records of labor, construction equipment, and materials for each such change. In the event any subcontractor of any tier shall provide or perform any portion of any changed work, Contractor shall require that each such subcontractor maintain records in accordance with this Subsection.

01000.34 Cont'd.

f All Change Order reports to be submitted on the day that Work is performed, shall be signed by the subcontractor (if applicable) and Contractor or authorized representative, and witnessed by Inspector. Engineer's signature on the report shall indicate agreement with the information reflected therein (except when disagreements remain and each party has placed notes as to the disagreement on the form), not that Contractor is entitled to payment of the costs in the report.

g A subsequent report, also on Port of Los Angeles Construction Division Time and Material Form, shall be submitted by Contractor to Engineer within 5 Business Days after the date that Work was performed. In addition to the information included in the report required on the day that Work is performed, this subsequent report shall itemize all costs for labor, materials, and equipment rental and give a total of costs to date for Change Order Work. This report shall be accompanied by all receipts, delivery tickets, and other documentation that verifies the identified costs.

h Engineer shall compare Engineer's records with Contractor's reports, make the necessary adjustments, and compile the costs of Change Order Work. When such corrected reports are agreed upon and signed by both parties, they shall become the basis of payment. The total cost to City for Work covered by Change Order directive shall under no circumstances exceed a price that is reasonable, competitive and fair to City given the amount of and type of Work involved and the circumstances under which the change is performed. In the event that Contractor shall fail or refuse, for any reason, to maintain or make available for inspection, review, and/or reproduction of such records, adjustments to Contract price or Contract Time, if any, on account of any change to Work may be deemed waived for that day. Contractor's obligation to maintain back-up records hereunder is in addition to, and not in lieu of, other Contractor obligations under Contract Documents with respect to Changes in Work.

i Contractor is responsible for tracking costs and for notifying Engineer in writing when costs approach 50% and 75% of the estimated total change in Contract price set forth in Change Order. In addition, if Changed/Extra Work cannot be completed within the estimated total change in Contract price set forth in Change Order, Contractor shall notify Engineer in writing, and in a timely manner, that the limit requires an increase. City shall only reimburse eligible costs up to the estimated total change in Contract price set forth in Cost-Plus Change Order.

j City may authorize and approve payment for necessary services and expenditures other than labor, materials, and equipment rentals.

01000.34 Cont'd.

k Materials, equipment rental, and other costs shall be substantiated by vendors' invoices submitted with the current reports; or, if not then available, shall be submitted with subsequent reports. If vendors' invoices are not submitted within 30 days after completion of the Cost-Plus Work or if in the opinion of Engineer the cost of materials is excessive, then the cost of such items shall be deemed to be the lowest current wholesale prices at which the items are available in the quantities required, delivered to Project Site(s) and any Laydown Area(s), less cash or trade discounts.

35 AUTHORITY FOR ADJUSTMENTS

a An Authority for Adjustment (AFA) is a document that changes Work and adjusts Contract price. An AFA may be utilized in one of the following manners:

1 A written order implementing Changes in Work for which a total cost has been negotiated prior to the issuance of the order. It is issued by Engineer and expressly indicates the intention to treat the items described therein as Changes in Work. It shall also contain the terms and amount of adjustment to Contract price. In this case, AFA shall be issued and executed before any work is started on the items covered by the order.

2 To finalize (or close-out) one or more Change Orders, or Work initially authorized by Change Order.

3 To adjust the estimated quantities of unit price bid items, and contingency items to agree with the actual quantities required. No mark-up fees shall be allowed for these adjustments.

b Mark-up fees in an Authority for Adjustment for paragraphs a, 1 (negotiated AFAs) and a, 2 (finalized Change Orders) above shall be determined as follows:

1 When extra Work is performed by one or more subcontractors other than Contractor, total mark-up fees shall be 15 percent, broken down as follows: 10 percent for the one or more subcontractors performing Work, and 5 percent for Contractor and all upper tier subcontractors, as shown in Example 1 below.

01000.35 Cont'd.

Example 1:

Value of extra Work:	$100,000
Mark-up fees shall be broken down as follows:	
10 percent of value of extra Work for one or more Subcontractors performing Work	$ 10,000
5 percent of value of extra Work for Contractor and all upper tier subcontractors	$ 5,000
Total AFA amount	$115,000

2 When Work is performed by Contractor only, mark-up fees shall be 10 percent, as shown in Example 2 below.

Example 2:

Value of extra Work:	$100,000
Mark-up fees shall be 10 percent of value of extra Work performed by Contractor	$ 10,000
Total AFA amount	$110,000

3 When part of Work is performed by Contractor and part of Work is performed by one or more subcontractors, mark-up fees shall be as shown in Example 3 below.

Example 3:

Value of extra Work:	$100,000
Assume $40,000 performed by Contractor and $60,000 performed by one or more subcontractors.	
For $40,000 performed by Contractor, mark-up shall be 10 percent of value of extra Work performed by Contractor	$ 4,000
For $60,000 performed by one or more subcontractors, mark-up fees shall be as follows:	
10 percent of value of extra Work for one or more subcontractors performing Work	$ 6,000
5 percent of value of extra Work for Contractor and all upper tier subcontractors	$ 3,000
Total AFA amount	$113,000

4 No percentage shall be paid to Contractor for any material furnished by Department. Where the portion of a change involves credit items for Contract Work not being performed by Contractor or subcontractor on any tier, Contract Work not being performed shall be deducted prior to adding the mark-up fee.

01000.35 Cont'd.

5 Mark-up fees shall apply to labor premium time for Change Order Work, when labor premium time is approved by Engineer.

6 Contractor's mark-up fee percentage shall be considered to include all costs over and above the direct cost of the changed Work, including, but not limited to, the cost of preparing and furnishing all required reports and records sufficient to distinguish the direct cost of Change Order Work from the cost of other operations, overhead, profit, bond premium adjustment, insurance, field and office supervision, preparation of estimates, engineering, scheduling, use of small tools, incidental job burdens, general home office expenses, any impact costs, and other miscellaneous costs.

c Should any lump sum bid item be eliminated in its entirety, or otherwise reduced in scope of Work, payment shall be made to Contractor for Contractor's actual costs incurred in connection with the elimination or reduction in scope of Work. Allowances for overhead and profit shall be based on the actual cost incurred and shall be determined pursuant to Cost-Plus Change Order Work (Change Orders) Subsection. Contractor shall not be entitled to retain any overhead or profit mark up for the reduced quantity of Work eliminated by Engineer.

d If material conforming to Drawings and Specifications is ordered by Contractor for use in the bid item prior to the date of notification of elimination or scope reduction by Engineer, and if the order for the material cannot be canceled or returned without charge, payment shall be made to Contractor for the actual cost or charges for the material. In this case, if the material cannot be returned and payment has been made, the material shall become the property of Department. Department shall also pay Contractor reasonable and necessary charges for handling said material.

36 FORCE ACCOUNT WORK

a If no agreement can be reached on Changes in Work and additions to Contract price, or Contractor refuses to accept an Authority for Adjustment or Cost-Plus Change Order, Executive Director shall have the right to have Work in question done by persons, firms or corporations other than Contractor, or to perform the same by utilizing either City's own forces or forces of Contractor on the basis specified in Authority for Adjustments Subsection and Cost-Plus Change Order Work (Change Orders) Subsection of this Section.

37 REQUEST FOR ADDITIONAL COMPENSATION

a If Contractor alleges that instructions issued after the date of Contract shall result in increases in Contract price, Contractor shall give Engineer written notice thereof within seven Calendar Days after the receipt of such instructions, and in any event before proceeding with Work, except in an emergency endangering life or property. The procedure for accounting for costs shall then be as provided in Cost-Plus Change Order Work (Change Orders) Subsection of this Section. No such notice or request for additional compensation resulting therefrom shall be considered unless Contractor complies with the requirements of this Subsection.

b If Contractor submits a request to Engineer, for additional compensation for any kind of extra Work, said request when filed shall include all necessary evidence to support it. Engineer shall have the right to audit Contractor's request, including the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to verify all costs incurred or which may be incurred and for which a request has been submitted. The right to audit shall include the right to inspect Contractor's plants, or such parts thereof as may be or have been engaged in the performance of Contract.

c Contractor further agrees that the right to audit encompasses all subcontracts and is binding upon all subcontractors. The rights to examine and inspect herein provided shall be exercisable through such representatives as Engineer chooses, during Contractor's normal business hours at the office of Contractor. Contractor shall make available to Engineer for auditing all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of records requested to Engineer. Contractor shall keep all such books and records locally.

38 EMERGENCY WORK

a In an emergency endangering life or posing clear and imminent danger of grievous property damage, Contractor, without special instructions or authorization from Engineer, shall act to prevent such loss or injury until such time as Engineer can be contacted for an assessment of the situation. Contractor shall also so act, without appeal, if so authorized or directed by Engineer. Any compensation requested by Contractor on account of such emergency work, shall be determined by negotiation and agreement between Contractor and City.

01000.38 Cont'd.

b Contractor shall maintain records sufficient to distinguish the direct cost of emergency work from the cost of other operations and shall itemize all costs for labor, material, and equipment rental in connection with emergency work.

39 TEMPORARY SUSPENSION OF WORK

a Engineer may at any time suspend Work, or any part thereof, by giving notice to Contractor in writing ordering suspension of Work for such period as deemed necessary when, in Engineer's opinion, the suspension is necessary to protect the interest of City for any reason whatsoever.

b Contractor shall comply immediately with any written order of Engineer suspending Work. Such suspension shall be without liability to Contractor on the part of City excepting only for such liability as specified in Extensions of Time and Compensable Delays Subsection of this Section.

40 UNAUTHORIZED WORK

a Construction or demolition beyond the lines given and grades shown on Drawings, or any extra Work done without written authority, shall be considered as unauthorized and at the sole cost and expense of Contractor, and shall not be measured or paid for. Construction so done may be ordered removed and demolition so done may be ordered restored at Contractor's sole cost and expense.

b Upon failure on the part of Contractor to comply with any order of Engineer made under the provisions of this Subsection, Engineer shall have authority to cause the order to be done by others, and to deduct the costs from any money due or to become due Contractor.

41 CONTRACTOR TO ABIDE BY APPLICABLE LAWS

a At all times in its performance of Contract, Contractor, at Contractor's sole cost and expense, shall comply with all Applicable Laws pertaining to Work, Project Site(s) and any Laydown Area(s). Contractor is presumed to know both the existence and applicability of such Applicable Laws.

b Contractor shall adhere to the provisions of the California Labor Code including but not limited to those provisions concerning minimum wages, the 8-hour day and 40-hour week, overtime, Saturday, Sunday, and holiday work. Contractor shall forfeit to City the penalties prescribed in the California Labor Code for violations.

01000.41 Cont'd.

c Contractor shall have at Project Site(s), copies, or suitable extracts of: Construction Safety Orders and General Industrial Safety Orders issued by the State Division of Industrial Safety. Contractor shall comply with provisions of these and all other applicable laws, ordinances, and regulations.

42 EXPLOSIVES

a Explosives may be used only when authorized in writing by Engineer, or as otherwise stated in Contract Documents. Explosives shall be handled, used, and stored in accordance with all applicable regulations.

b Engineer's approval of the use of explosives shall not relieve Contractor from the liability or responsibility for claims arising from the use, handling, transportation, or storage of explosives by Contractor or from blasting operations.

43 PROPRIETARY NAMES AND SUBSTITUTIONS

a Whenever any equipment, material, or process is indicated or specified by patent or proprietary name, or by name of manufacturer, such reference is used to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, such references shall be deemed to be preceded by the words "equal and similar to". Contractor may offer any equipment, material, or process for which Contractor submits data supporting that such are substantially equal to that indicated or specified. Final determination of the acceptability of such substitute items shall rest with Engineer. Engineer may consider the strength, appearance, durability, reliability, dimension, finish, efficiency, maintainability, service history, life cycle cost, and other characteristics of the proposed substitute in making that determination.

01000.43 Cont'd.

b A substitute item shall be a standard, catalogued product of a company regularly engaged in the manufacture of such items. No custom or prototype substitutes shall be accepted. Contractor shall certify that a substitute item shall perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance, and be suited to the same use as the specified item. Contractor shall identify all differences between the proposed substitute and that specified, and state whether or not acceptance of the proposed substitute shall require a change in Contract Documents to adapt the design to the proposed substitute. Any redesign or Changes in Work resulting from acceptance of a substitute shall be at the sole cost and expense of Contractor. Contractor shall furnish such data concerning and perform such testing of the proposed substitute as may be required by Engineer to evaluate the substitute item and determine if it is substantially equal. Additional information requested by Engineer shall be furnished by Contractor within 10 Calendar Days of such request.

c Offers of substitute items shall be made within the first 25 percent of Contract Time. Where CONTRACT Section requires multiple Contract Times, offers of substitute items shall be made within the first 25 percent of Contract Time for the items of Work in which the substituted items are proposed to be incorporated. Contractor shall allow Engineer 28 Calendar Days review time to evaluate substitute items unless otherwise stated in Specifications. No extension of Contract Time shall be authorized for any circumstance developing from the provisions of this Subsection. Failure to comply with the provisions of this Subsection shall be sufficient cause for rejection of a proposed substitute.

44 PATENT RIGHTS

a Contractor agrees to save, keep, hold harmless, and fully indemnify City and any of its officers or agents from all damages, cost, or expenses in law or equity that may at any time arise or to be set up for any infringement of the patent rights of any person or persons, or corporations in consequence of the use by City, or by any of its officers or agents, of articles supplied under Contract, and of which Contractor is not the patentee or assignee, or which Contractor is not lawfully entitled to sell.

b The patent fees or royalties on any patented article or process which may be furnished or used in Work shall be considered as included in the cost of the various items of Work and no separate or extra payment shall be made therefor, regardless of whether notice of patent has or has not been included in any of the documents.

45 HOUSEKEEPING AND MAINTENANCE OF SURFACE AREAS OF PROJECT SITE(S) AND ANY LAYDOWN AREA(S)

a Throughout all phases of construction, including suspension of Work, and until final acceptance of Project, Contractor shall keep the surface of Project Site(s) and any Laydown Area(s) clean and free from rubbish and debris. Contractor shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. The use of water resulting in mud on streets and paved areas shall not be permitted as a substitute for sweeping or other methods.

b Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately and the area shall be cleaned.

c Should conditions warrant, Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles as necessary to keep paved areas acceptably clean wherever construction, including restoration, is incomplete.

d Contractor shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as shall violate the regulations of any legally constituted authority.

e Prior to completion of Work, Contractor shall remove all plant, tools, equipment and materials, and shall thoroughly clean Project Site(s) and any Laydown Area(s) and leave it with a neat, clean appearance to the satisfaction of Engineer.

46 PROTECTION OF HARBOR WATERS

a Contractor shall keep materials away from drainage structures and the harbor. Contractor shall not allow lumber, blocking, chips, loose piles, rubbish, and all flotsam, jetsam, and contaminants of whatever nature to be deposited in harbor waters. If any of the above should be found floating near Project Site(s) and any Laydown Area(s) or submerged which might detrimentally affect navigation or water quality, it shall be immediately removed by Contractor.

47 PROJECT SITE(S) AND ANY LAYDOWN AREA(S) SECURITY

a Contractor shall keep Project Site(s) and any Laydown Area(s) secure at all times. Contractor shall provide the security fencing, either temporary or permanent to meet this requirement.

48 PUBLIC CONVENIENCE AND PROTECTION

a Contractor shall be responsible for protection of public and private property adjacent to Project Site(s) and any Laydown Area(s) and shall exercise due caution to avoid damage to such property.

b The access rights of the public and lessees of adjacent property shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to pass through Work or an approved detour shall be provided.

c Unless otherwise authorized, Work shall be performed in only one-half of a roadway at one time. One-half shall be kept open and unobstructed until the opposite side is ready for use. If one-half a street only is being improved, the other half shall be conditioned and maintained as a detour.

d Contractor shall provide and maintain all necessary barriers, guards, lights, signs, temporary crossings, flag persons and watchpersons, advise the public of detours and construction hazards and comply with all applicable State, County, and City requirements for closure of streets and Federal and State requirements for use of navigable waters. Contractor shall also be responsible for compliance with additional public safety requirements which may arise during construction. Contractor shall furnish and install, and upon completion of Work, promptly remove all signs and warning devices.

e Contractor shall not interfere with navigation.

49 TEMPORARY UTILITIES

a Contractor shall furnish, install, maintain, and remove all temporary light, power, and water, including piping, wiring, lamps, and other equipment, necessary for Work. Contractor shall not draw water from any fire hydrant, except to extinguish a fire, without first obtaining permission from the water agency concerned.

50 SANITATION

a Contractor shall provide and maintain enclosed toilets for the use of employees engaged in Work. These accommodations shall be maintained in a neat and sanitary condition. They shall also comply with all applicable laws, ordinances, and regulations pertaining to the public health and sanitation.

b Sewage flows shall not be interrupted. Should Contractor disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches, be covered by backfill, or flow into Harbor waters.

51 RAILROAD TRACKS

a City does not guarantee that railroad tracks shall be free from trains and standing cars. Contractor shall exercise such care as shall prevent the displacement, injury or obstruction of any railroad tracks encountered in Work. In case it shall be necessary to protect, raise, lower, displace, or remove railroad tracks for the proper construction of Work, Contractor shall notify the operating railroad and obtain all necessary permission to perform the track work, or have Work performed, as the case may require.

52 CONSTRUCTION SCHEDULE

a Unless otherwise specified, Contractor shall submit a proposed construction schedule to Engineer for review not later than 15 Calendar Days after Notice to Proceed. Failure to submit a schedule within the stated time may result in the withholding of the first progress payment.

b The schedule shall identify all major construction elements, their start date and duration and shall reflect completion of all Work under Contract within the specified time and in accordance with Specifications.

c Seven copies of the schedule shall be submitted on substantial paper of a reasonable and convenient size for handling and filing. Language, symbols, and notations shall be those commonly employed in construction scheduling.

d The time base for reporting construction tasks shall be a regular working day taking into consideration all non-working days.

e The time base for reporting milestones shall be Calendar Days.

f The schedule shall be revised and updated monthly to reflect adjusted event dates, activity completions, additions to Work and late completion time. The schedule shall be revised and resubmitted for Engineer's review whenever Contractor desires to make changes in methods of operation, and whenever the schedule fails to reflect the actual progress.

g Contractor shall include the cost of scheduling and updating the schedule in the prices bid for Work.

53 EXTENSIONS OF TIME AND COMPENSABLE DELAYS

a Contractor's obligations for the performance and completion of Contract within Contract Time are of the essence of Contract. Contractor shall complete the performance of Contract within the time stipulated or within such time as may be extended by City pursuant to Changes in Work Subsection of this Section. Contractor shall be responsible for providing, maintaining, and paying all costs associated with administering and managing Contract including field and home office personnel, materials, equipment, tools, construction trailers, and any other items necessary until the end of Contract Time including any maintenance or plant establishment period.

b Extension of time, when granted, shall be based upon the effect of delays to Project as a whole and shall not be granted unless it can be shown that such delays did, in fact, delay the progress of Project as a whole.

c The time of completion shall be extended only if, in the opinion of Engineer, Contractor is necessarily delayed in completing Contract by a cause that meets all of the following conditions:

1 Such cause is beyond Contractor's control and arises without Contractor's fault;

2 Such cause arises after the opening of bids and neither was nor could have been anticipated before bid opening. Tide conditions shall be conclusively deemed to have been anticipated before opening of bids.

3 The effect of such cause could not be anticipated and avoided or mitigated by the exercise of all reasonable precautions, efforts and measures by Contractor, including re-planning, scheduling, and rescheduling.

d Notwithstanding the provisions of Paragraph c.2 of this Subsection above, a time extension may also be granted for delays caused by precipitation or Stage II Smog Alerts (at the South Coast Air Quality Management District Source Receptor Area 4) subject to the other requirements of this Subsection. However, Contractor shall not be entitled to compensation or additional payment due to such delays.

e Requests for extension of time for Changes in Work shall be negotiated at the time of ordering such changes or after the effects of mitigating rescheduling have become known.

01000.53 Cont'd.

f An extension of time granted shall not release the sureties from their obligations. Work shall continue and be carried on in accordance with all the provisions of Contract and said Contract shall be and shall remain in full force and effect during the continuance and until the completion and final acceptance of Work covered by Contract unless formally suspended or annulled in accordance with the terms of Contract.

g Neither the granting of an extension of time beyond the date fixed for the completion of any part of Work nor the doing and acceptance of any part of Work or materials specified by Contract after the time specified for the completion of Work, shall be deemed to be a waiver by City of City's right to abrogate Contract for abandonment or failure to complete within the time specified, or to impose and deduct damages as may be provided.

h As between Contractor and City, Contractor assumes the risk of any and all costs, expenses and liabilities which Contractor may incur in connection with all suspensions of, or delays in, performance of Contract, regardless of the length thereof, arising from all causes whatsoever including impacts by third parties, except that Contractor may be compensated for delays caused solely by the failure of City to furnish necessary rights of way, failure to provide materials shown in Contract Documents to be furnished by City, for its own convenience or benefit. If Contractor sustains loss as a consequence thereof which could not have been avoided by the judicious handling of forces, equipment and plant, there may be paid to Contractor such amount as Engineer finds to be fair and reasonable compensation for such part of Contractor's actual loss as was unavoidable. In no case, however, shall any compensation be made to cover loss of anticipated profits or indirect losses of any kind. If delays are caused by reasons other than those mentioned specifically in this Subsection, an extension of time may be granted, but Contractor shall not be entitled to compensation or additional payment due to such delays.

i If Contractor desires an extension of time or compensation for a qualifying delay, Contractor shall, within 30 Calendar Days after the beginning of the delay, file with Engineer a written request and report as to the cause and extent of the delay. The request must be made at least 15 Calendar Days before the specified completion date. Failure by Contractor to file these items within the times specified shall be considered grounds for refusal by City to consider such request.

54 LIQUIDATED DAMAGES

a If Contractor fails to complete Work covered by Contract Documents, or any portion thereof, in accordance therewith, within the time for completion stipulated, or within the time for such completion as extended, Contractor shall pay to City the sum stipulated in Contract, for each and every Calendar Day the time consumed in the execution of said Work may exceed the time allowed for that purpose, which said sum is agreed upon, fixed and determined by the parties hereto, as the liquidated damages that City shall suffer by reason of said delay and default. It is expressly understood that it shall be impracticable and extremely difficult to determine or fix the actual loss that City shall suffer by reason of delay in the performance of Work hereunder. City may deduct and retain the amount of such liquidated damages out of any money which may be due or become due Contractor. Such liquidated damages shall be City's sole monetary remedy for delay unless a court of competent jurisdiction finds the liquidated damages provisions in Contract to be invalid or unenforceable, in which case City shall retain all other remedies in law or equity, including without limitation the right to prove and recover actual damages due to delay.

b In the computation of liquidated damages for delay in completion of Work, the time taken by City or allowed a new contractor to whom award may be made for the completion of Contract, as well as the time required for advertising and awarding such new contract, shall be added to the time consumed by the original Contractor up to the date that City shall have notified the original Contractor to suspend Work, and from such total there shall be deducted the time allowed to the original Contractor for completing Work under Contract.

c Contractor shall not be assessed liquidated damages for delay in completion of Project caused by the failure of City or the owner of existing public utilities encountered to relocate same in a timely manner if such utilities are not identified on Drawings or in Specifications.

55 PARTIAL ACCEPTANCE AND USE

a At any time prior to final acceptance, City reserves the right to take over and utilize all, or any portion of, the permanent construction which has been completed, if Engineer determines that such portion of the permanent construction is not required for the operations of Contractor or the use thereof is urgently needed by City. Engineer shall notify Contractor in writing identifying the specific portion or portions of the completed Work to be so utilized or otherwise placed into service. At Engineer's discretion, City may start the guarantee period on the portion of Work being utilized from the date of such acceptance.

01000.55 Cont'd.

b Such action by City shall relieve Contractor of responsibility for injury or damages to said completed portions of the improvement resulting from use or from the action of the elements or from any other cause, except injury or damage resulting from Contractor's operation or negligence. Contractor shall not be required to re-clean such portions of the improvement before final acceptance, except for cleanup made necessary by Contractor's operations.

c At Executive Director's discretion, City may, prior to final acceptance of Contract, upon issuance of substantial completion of Project, release a portion of the retention monies being held.

d Nothing in this Subsection shall be construed as relieving Contractor from full responsibility for correcting defective Work or materials.

e In the event City exercises its right to place into service and utilize all or part of any completed permanent construction, as between City and Contractor, Contractor shall be responsible for only those injuries to persons or property caused by any willful or negligent act or omission of Contractor, subcontractor, their officers, employees or agents or those injuries for which Contractor, subcontractor, their officer, employees or agents would be strictly liable or liable under a warranty.

56 PARTIAL PAYMENTS

a In the event of a lump sum bid on all or any portion of Work upon which partial payments are to be made, Contractor shall, before the first payment becomes due, submit to Engineer a detailed schedule of prices for such units of Work as may be specified by Contractor for permanent Work accomplished and material worked into permanent place. The schedule of prices submitted shall be checked by Engineer, and, if in Engineer's opinion such unit prices appear to be reasonable and properly balanced, they shall be approved and used in the preparation of the monthly estimates. The sum of all extensions, based upon the quantities of the various items for the entire Work covered by Contract and the unit prices as approved, shall be equal to the total amount of Contract.

01000.56 Cont'd.

b Contractor shall, within two weeks after issuance of Notice to Proceed, submit to Engineer a list of rates, without markup set forth in Authority for Adjustments Subsection Paragraph b of this Section, of pay for all labor classifications [for Contractor and subcontractors (listed and not listed) at every tier] as well as hourly equipment costs (rental rates or otherwise). The list of labor rates and equipment costs submitted shall be checked by Engineer, and, if in Engineer's opinion such rates and costs appear to be reasonable, they (along with Engineer's estimate of material costs, or latest verifiable information on material costs) shall be approved and used for reference when evaluating requests for monthly partial pay for Cost-Plus Change Order Work. It is the responsibility of Contractor to request any consideration for rates that represent an increase from those presented, and agreed upon prior to the first payment. This list shall not replace Contractor's obligation to provide backup records for Cost-Plus Work nor allow Contractor to receive compensation for Cost-Plus Work greater than Contractor's actual cost plus markup under Authority for Adjustments Subsection of this Section.

c On or about the first of each calendar month, Engineer shall make an estimate in writing of all permanent Work accomplished and material permanently installed and the total amount of Work done up to the time of such estimate, and the value thereof based upon the unit price stated in the Bid Proposal Line Items or upon the prices agreed in the breakdown of a lump sum or sums stated in the Bid Proposal Line Items. When provided for in Specifications, and subject to the limitations and conditions of Acceptance and Final Payment Subsection of this Section, the cost of materials and equipment delivered but not yet incorporated in Work shall be included in the progress estimate. Contractor shall submit receipts from suppliers identifying the materials and equipment as paid for prior to the item being included in the progress estimate. The progress estimate shall be submitted to Engineer as a payment request. Upon receipt of a properly presented payment request, Engineer shall process the payment in conformance with California Public Contract Code Section 20104.50 for on time and prompt payment to Contractor. The following is a summary of California Public Contract Code Section 20104.50. For the full text, refer to California Public Contract Code Section 20104.50.

1 If City fails to make any progress payment within 30 days after receipt of an undisputed and properly submitted payment request from Contractor for this Contract, City shall pay interest to Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

2 Upon receipt of a payment request, City shall act in conformance with both of the following:

01000.56 Cont'd.

a) Each payment request shall be reviewed by City as soon as practicable after receipt for the purpose of determining that the payment request is a proper payment request.

b) Any payment request determined not to be a proper payment request suitable for payment shall be returned to Contractor as soon as practicable, but not later than 7 days, after receipt. A request returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the payment request is not proper.

3 The number of days available to City to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which City exceeds the 7-day return requirement set forth in Subparagraph 2 of Paragraph c of this Article.

4 A progress payment includes all payments due to Contractor, except that portion of the final payment designated by Contract as retention earnings.

5 A payment request shall be considered properly executed if funds are available for payment of the payment request, and payment is not delayed due to an audit inquiry by the financial officer of City.

d From each progress estimate, 5 percent of the amount attributable to Work, including Changes in Work and/or Authorities for Adjustment issued after the original Contract Award, shall be deducted and retained by City, and the remainder less the amount of all previous payments shall be paid to Contractor.

e Contractor shall have the right to substitute approved securities equivalent to the amount retained or request that Department deposit the amount retained in an interest bearing account. The substitution of securities or the deposit of the amount retained shall be at the expense and request of Contractor.

1 If Contractor requests to substitute securities equivalent to the amount retained, City shall place the amount retained on deposit with a state or federally chartered bank as escrow agent after approved securities have been likewise deposited by Contractor. The escrow agent shall thereafter pay the amount retained to Contractor. Contractor shall be the beneficial owner of any securities deposited subject to Paragraph (f) of this Subsection.

01000.56 Cont'd.

2 If Contractor requests City to deposit the amount retained in an interest bearing account with a state or federally chartered bank as escrow agent, City shall do so and the escrow agent shall then pay all interest on said account to Contractor. Contractor shall be the beneficial owner of said account subject to Paragraph (f) of this Subsection.

f Thirty-five Calendar Days following acceptance of Work by Executive Director and upon receipt of written notification of such fact from City, escrow agent shall release to Contractor the securities which have been placed on deposit or the amounts deposited in the interest bearing account. City has the right to order escrow agent to continue to retain necessary securities or deposits sufficient to cover such amounts required by law to be withheld pursuant to properly executed and filed notices to stop payment or as may be authorized by Contract to be further retained.

g Securities eligible for substitution are those listed in Government Code Section 16430 and also bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and City.

h The escrow agent shall be authorized by Contractor to convert deposited securities or interest bearing accounts to cash in the event of default by Contractor and distribute the cash as instructed by City.

i Unless otherwise provided, no payment shall be made for materials delivered to Project Site(s) and any Laydown Area(s) but not incorporated in Work.

j Payment shall not be made for materials wasted or disposed of in a manner not called for under Contract. This includes rejected material not unloaded from vehicles, materials rejected after having been placed and material placed outside of the pay lines. Such quantities shall not be included in the pay quantities. No compensation shall be allowed for disposing of rejected or excess material.

k No estimate or payment shall be required to be made when, in the judgment of Engineer, Work has not proceeded in accordance with the provisions of Contract. The value of any material or Work included in partial estimates, which may subsequently become lost, damaged, or unsatisfactory, shall be deducted from succeeding partial estimates.

57 ACCEPTANCE AND FINAL PAYMENT

a When Work has been satisfactorily completed, Engineer shall determine the quantity of Work performed and prepare the final estimate of the value including all Changes in Work subject to Changes in Work Subsection Paragraphs a through d of this Section, for acceptance by Executive Director (or Board, if necessary).

b The quantities listed in Bid Proposal Line Items do not govern final payment. Payments to Contractor shall be made only for the actual quantities of Contract items constructed in accordance with Drawings and Specifications. All prior partial estimates and payments shall be subject to correction in the final estimate of payments.

c At the expiration of 35 Calendar Days from the date of acceptance of Work by Executive Director, the amount deducted from the estimates and retained by City shall be certified by Engineer as due and in the normal course of City business shall be paid to Contractor except such amounts as are required by law or as are authorized by Contract to be further retained.

d If a notice to stop payment is filed with City due to Contractor's failure to pay for labor or materials used in Work, money due for such labor or materials, plus 25 percent prescribed by law, shall be withheld from payment to Contractor. In accordance with Section 9364 of the California Civil Code, Executive Director may accept a bond by a corporate surety in lieu of withholding payment.

e It is mutually agreed between the parties to Contract that no certificate given or payment made under Contract, except the final certificate or final payment, shall be conclusive evidence of the performance of Contract, either wholly or in part, against any claim of City, and no payments shall be construed to be an acceptance of any defective Work or improper materials.

f When Contractor has exceeded Contract Time and has not yet received an extension of time to complete Contract so that liquidated damages may be assessed, Engineer may withhold an additional amount of money to cover the amount of liquidated damages that shall accrue based on Contractor's estimated Contract completion time as confirmed by Engineer.

58 AFFIDAVIT OF COMPLETION

a Contractor shall, upon completion of Work, including final clean up and demobilization, submit to Engineer (using Forms 298-E, 297-E, or 308-E in Section 00078) a sworn affidavit to the effect that: "to the best of Contractor's knowledge and belief, Work specified in said Specifications and said Contract has been completed in strict accordance with Drawings and Specifications therefor, that no lawful debts for labor or materials are outstanding, and that no federal excise tax has been included in Contract price; that all requests for funds for undisputed Work under Contract, including Changes in Work, and under all billings of whatsoever nature are accurate, complete and final and that no additional compensation over and above the final payment shall be requested or is due under Contract or under any adjustment issued thereunder for said undisputed Work; and that upon receipt of final payment, Contractor and subcontractors acknowledge that City, Board, Executive Director, Engineer, and any and all employees of City and their authorized representatives shall thereby be released from any and all claims or liability for additional sums on account of undisputed Work performed under Contract". Disputed Contract claims in stated amounts may be excluded by Contractor from the operation of the release.

59 GUARANTEE

a Unless provided elsewhere in Specifications, Contractor guarantees all equipment, materials, and work furnished on Project against defective workmanship, material, construction and labor for a period of one year from the date of acceptance of Project by Executive Director (following completion of Project). If the supplier or manufacturer of material or equipment provides a warranty or guarantee, Contractor's guarantee shall be in addition to any warranty or guarantee of the supplier or manufacturer and Contractor shall be a co-guarantor of such equipment and materials for a period of one year from the date of acceptance of Project by Executive Director. Contractor shall supply Department with all warranty and guarantee documents relevant to equipment and materials incorporated in Project and guaranteed by their suppliers or manufacturers.

b It shall be understood that the surety for the performance bond submitted in conformance with the terms of Contract by Contractor for Project is liable on its bond for all obligations of Contractor including guarantee provisions.

01000.59 Cont'd.

c Contractor further agrees, that within ten Calendar Days after being notified in writing by Engineer of any Work not in accordance with requirements of Contract or any defects in Work, Contractor shall commence and prosecute with due diligence all Work necessary to fulfill the terms of this guarantee, and to complete Work within a reasonable period of time, and in the event Contractor fails to so comply, Contractor does hereby authorize City to proceed to have such Work done at Contractor's sole cost and expense and Contractor shall pay the cost thereof upon demand. City shall be entitled to all costs, including reasonable attorney's fees, necessarily incurred upon Contractor's refusal to pay the above costs.

d Notwithstanding the foregoing subsections in the event of an emergency constituting an immediate hazard to the health or safety of City's employees, property or licenses, City may undertake at Contractor's sole cost and expense, without prior notice, all Work necessary to correct such hazardous condition when it was caused by Work of Contractor not being in accordance with the requirements of Contract.

60 NO PERSONAL LIABILITY

a No member of Board or Executive Director, Engineer, any other officer, agent, or authorized employee of City, shall be personally responsible for any liability arising under Contract.

61 NO ESTOPPEL

a City shall not, nor shall any department or officer thereof, be precluded or estopped by any return or certificate made or given by Engineer or other officer, agent, or employee of City under any provisions of Contract from at any time (either before or after the final completion and acceptance of Work and payment therefor) pursuant to any such return or certificate showing the true and correct amount and character of Work done, and materials furnished by Contractor or any person under Contract or from showing at any time that any such return or certificate is untrue and incorrect, or improperly made in any particular, or that Work and materials, or any part thereof, do not in fact conform to Specifications; and City shall not be precluded or estopped, notwithstanding any such return or certificate and payment in accordance therewith, from demanding and recovering from Contractor such damages as it may sustain by reason of Contractor's failure to comply with Specifications.

62 POTENTIALLY SIGNIFICANT CULTURAL MATERIAL

a If potentially significant cultural material is discovered while excavating, Contractor shall immediately cease excavation in the area of discovery and shall not resume excavation in the area until ordered to do so by Engineer. When Contractor is ordered to resume excavation operations, such operations shall be conducted as directed by Engineer.

b "Potentially significant cultural material" as used in this Subsection means artifactual material 50 years old or older.

c Any delays to Project as a whole, caused by compliance with this Subsection shall entitle Contractor to an extension of time equivalent to the period of that delay.

63 STATE TIDELANDS GRANT

a Contract is entered into in furtherance of and as a benefit to the State Tidelands Grant and the trust created thereby. Therefore, Contract is at all times subject to the limitations, conditions, restrictions, and reservations contained in and prescribed by the Act of the Legislature of the State of California entitled "An Act Granting to City of Los Angeles the Tidelands and Submerged Lands of the State Within the Boundaries of Said City," approved June 3, 1923, (Stats. 1929, Ch. 651), as amended, and provisions of Article VI of the Charter of City of Los Angeles relating to such lands. Contractor agrees that any interpretation of Contract and the terms contained herein must be consistent with such limitations, conditions, restrictions, and reservations.

64 RESPONSIBILITY FOR SUBCONTRACTORS

a Contractor shall be fully responsible to City for its acts and/or omissions and for the acts and/or omissions of persons directly employed by Contractor. Additionally, Contractor shall be fully responsible to City for the acts and/or omissions of subcontractors and of persons or entities either directly or indirectly employed by subcontractors. Nothing contained in Contract Documents shall create or be construed as creating a contractual relationship between any subcontractor of Contractor and City.

65 CONTRACTOR'S LIABILITY FOR HAZARDOUS WASTES OR HAZARDOUS SUBSTANCES

a As to Environmentally Regulated Materials whose existence on Project Site(s) and any Laydown Area(s) commenced prior to the effective date of Contract, City shall not seek to hold Contractor liable as an owner, operator, generator, or discharger of such Environmentally Regulated Material.

b Provided that it has complied with all provisions of Contract, including but not limited to Protection of Harbor Waters Subsection of this Section, after final completion and acceptance of Work in strict accordance with Contract Documents, subject to its continuing obligations under Contract Documents (including, without limitation, its obligations under any representations, warranties, and guaranties with respect to Work performed and under Protection of Harbor Waters Subsection of this Section), Contractor shall not be responsible to City for the performance of any further remedial action, removal actions, or cleanup of hazardous waste or hazardous substances at Project Site(s) and any Laydown Area(s) that City may be ordered, directed, or required to perform by any governmental authority after the date of final completion and acceptance of Work.

c Nothing in this Subsection shall limit or restrict the liability or responsibility of Contractor (or any of its subcontractors, consultants, employees, or agents) in the event of any failure to perform or comply with the terms of Contract, any negligence in the performance of Work, or any willful misconduct in connection with the performance of Work, nor shall this Subsection in any way limit or restrict Contractor's responsibilities under Contract and applicable law in connection with the handling, transporting, storing, or disposing of hazardous waste or hazardous substances and/or the arranging therefor.

66 TIME AND MATERIALS FORM

PORT OF LOS ANGELES
CONSTRUCTION DIVISION

CO No.: _____ Page _____ of _____

TIME AND MATERIAL FORM

Contractor: _____
Address: _____
License No.: _____ Phone: _____

Project Title: _____
Spec No: _____ Plan Ref: _____ RFI No.: _____
Contract No.: _____ Spec Ref: _____

Work Performed (Contractor Name): _____

Description of Work: _____

Date Performed: _____ Date of Report: _____

LABOR

Name	Classification	Hours (Reg)	Hours (OT)	Unit Rate	Amount

Labor Subtotal: _____

EQUIPMENT

Make and Model	Hours	Unit Rate	Amount

Equipment Subtotal: _____

MATERIAL

Description	Hours	Unit Rate	Amount

Material Subtotal: _____

Total Amount (Labor/Equipment/Material): _____

Signature acknowledges verification of labor and equipment quantities only. Costs and contract allowability are subject to audit verification in accordance with contract terms. Any costs determined not to be allowable for payment shall be deducted from the time sheet prior to final resolution of the change order.

PRIME CONTRACTOR (PRINT NAME) _____ SUBCONTRACTOR REPRESENTATIVE (PRINT NAME) _____ PORT OF LOS ANGELES INSPECTOR (PRINT NAME) _____

PRIME CONTRACTOR SIGNATURE _____ SUBCONTRACTOR REPRESENTATIVE SIGNATURE _____ PORT OF LOS ANGELES INSPECTOR SIGNATURE _____

67 DAILY FIELD REPORT

Contractor Daily Field Report

Page _____ of _____

PROJECT TITLE: _____ **SPEC NO.:** _____

CONTRACTOR/SUBCONTRACTOR: _____ **WORK DATE:** _____

TYPE [1]	EMPLOYEE NAME	CLASSIFICATION	EQUIP #[2]	START TIME	END TIME	TOTAL

#	QTY	EQUIPMENT DESCRIPTION	HRS	#	QTY	EQUIPMENT DESCRIPTION	HRS
2				12			
3				13			
4				14			
5				15			
6				16			
7				17			
8				18			
9				19			
10				20			

Contractor's Authorized Representative:

_____
PRINT NAME AND TITLE HERE

_____ _____
SIGNATURE DATE

Los Angeles Harbor Department - Construction Division
To be completed by the Project Inspector Only

INSPECTOR: _____ _____
PRINT NAME HERE SIGNATURE

_____
DATE RECEIVED

NOTE 1: TYPE: P- Prime; SC - Subcontractor; S-Supplier; V - Vendor

NOTE 2: EQUIP # - Required if labor classification is Operating Engineer or Teamster

68 PROJECT SITE(S) AND ANY LAYDOWN AREA(S)

a Contractor use and occupancy of Project Site(s) and any Laydown Area(s) shall be revocable during the duration of Contract and shall be identified in each separate NTP. Contractor shall not be provided any Laydown Area(s) for duration of Contract. Contractor shall not be required to provide payment or compensation for use and occupancy of any Laydown Area(s). Engineer reserves the right to revoke Contractor use and occupancy of Project Site(s) and any Laydown Area(s) at any time during Contract. Engineer shall provide Contractor with written notice and Contractor shall be required to vacate Project Site(s) and any Laydown Area(s) within 2 Calendar Days of such notice.

b For each separate NTP, Contractor acknowledges and agrees that Project Site(s) and any Laydown Area(s) is suitable for the use intended and accepts use and occupancy of Laydown Area(s) subject to each and every term and condition of the Port of Los Angeles Tariff No. 4 (Tariff) https://www.portoflosangeles.org/business/tariff, as applicable to Laydown Area(s), as if fully set forth herein. Contractor shall not alter or construct on Laydown Area(s) without first obtaining a Harbor Engineer Permit except for those alterations set forth in this Contract, and complying with Applicable Laws. Contractor shall not cause or permit any Environmentally Regulated Material to be generated, brought onto, handled, used, stored, transported from, received, or disposed of (hereinafter sometimes collectively referred to as “handle” or "handled") in or about Laydown Area(s) except for limited quantities of standard office and janitorial supplies containing chemicals categorized as Environmentally Regulated Material and except as permitted, required, or necessary in conformance with Contract Documents, if any. Contractor shall handle all such Environmentally Regulated Material in strict compliance with Applicable Laws in effect during Contractor’s occupancy.

c Contractor is aware that City’s Department of Water and Power, other utility, or other maintenance or service from or on behalf of City, may need to service or repair certain facilities on Project Site(s) and any Laydown Area(s). If such repair is necessary, Contractor agrees to relocate all of its equipment and other personal property to provide such personnel adequate access. Contractor agrees to complete such relocation within 24 hours of receiving notice from City except in case of emergency. Contractor shall be entitled to an equitable adjustment in Contract time and/or price for delays as a result of the need to relocate equipment to provide access for any repairs that are beyond the control and without the fault of Contractor and is for City's own convenience or benefit.

01000.68 Cont'd.

d Contractor shall remediate or cause the remediation of any Contamination that occurs in, on, under, or about Project Site(s) and any Laydown Area(s), whether caused by Contractor or any third-party acting for or on behalf of Contractor during Contractor's occupancy, including Contamination of improvements, adjacent harbor waters, soil, sediment, groundwater, or air, or of adjacent Project Site(s) and any Laydown Area(s) (including soil, sediment, groundwater, or air) and including Contamination that is considered a nuisance under Applicable Laws. Remediation shall be to the reasonable satisfaction of City, and the requirements of the applicable governmental agencies including the Regional Water Quality Control Board, by removing or effecting the removal of all Contamination including but not limited to contaminated soil, water, groundwater, sediment, or other material it may place or cause to be placed on site such that no encumbrances, such as deed or land use restrictions, be imposed on Project Site(s) and any Laydown Area(s) as a result of such Contamination. In fulfilling the obligations of this Article, Contractor shall also comply with any other conditions reasonably imposed by City. If Contractor knows or has reasonable cause to believe that Contamination has occurred in, on, under, or about Project Site(s) and any Laydown Area(s), Contractor shall immediately give written notice to City. Contractor shall not be responsible for any Contamination existing on, below, or about Project Site(s) and any Laydown Area(s) prior to the NTP, including contamination as depicted in the baseline report.

01000.68 Cont'd.

e Contractor bears responsibility for full compliance with any and all Applicable Laws regarding the use, storage, handling, distribution, processing, and/or disposal of Environmentally Regulated Material including Contamination, regardless of whether under Applicable Laws the obligation for such compliance or responsibility is placed on the owner of Laydown Area(s), on the owner of any improvements on Laydown Area(s), on the user of Laydown Area(s), or on the user of any improvements on Laydown Area(s). Contractor shall only be responsible for Contamination caused by Contractor, or any third party acting for or on behalf of Contractor and shall not be responsible for any preexisting Contamination on Laydown Area(s) prior to Contractor's first occupancy thereof. Contractor agrees that any claims, damages, fines, or other penalties asserted against or levied on City and/or Contractor as a result of noncompliance with any Applicable Laws by Contractor under this Contract shall be the sole responsibility of Contractor and that Contractor shall indemnify and hold City harmless from any and all such claims, damages, fines, penalties, and/or judgments, as well as any costs expended to defend against such claims, damages, fines, and penalties and/or judgments, including attorneys' and experts' fees. City, at its sole option, may, after providing Contractor with a reasonable opportunity to defend such claims, damages, fines, penalties, and/or judgments pay the claims, damages, fines, penalties, and/or judgments resulting from Contractor's noncompliance with any of the aforementioned authorities, and Contractor shall indemnify and reimburse City for any such payments.

f In discharging Contractor's obligations under this Subsection only, if Contractor disposes of any Contamination, within 30 days of Contractor's receipt of original documents, Contractor shall provide City copies of all records, including a copy of each uniform hazardous waste manifest indicating the quantity and type of material being disposed of, the method of transportation of the material to the disposal site, and the location of the disposal site. Neither City, Port of Los Angeles, nor Los Angeles Harbor Department shall appear on any manifest document as a generator of such material. Contractor shall not be responsible for preexisting contamination. Contractor shall only be responsible for contamination caused by Contractor, or any third-party acting for or on behalf of Contractor, and shall not be responsible for any preexisting contamination on Laydown Area(s) prior to Contractor's first use and occupancy thereof.

01000.68 Cont'd.

g In discharging Contractor's obligations under this Subsection, Contractor shall perform any tests using a State of California Department of Health Services certified testing laboratory or other similar laboratory upon City's written approval. By signing this Contract, Contractor hereby irrevocably directs any such laboratory to provide City, upon written request from City, copies of all of its reports, tests results, and data gathered. As used in this Subsection, "Contractor" includes agents, employees, contractors, subcontractors, and/or invitees of Contractor.

h Contractor shall implement City's Harbor Department's policies, known as Best Management Practices, in order to reduce the potential for pollutants to enter Harbor waters, as follows:

1 Facility Operations: Clean and maintain facility regularly. Use dry cleaning methods whenever possible; avoid washing areas down. Do not allow sweepings or sediment to enter the storm drain or the Harbor. Collect wash water for disposal or direct to a clarifier. Do not encourage scavengers. Do not feed birds, feral cats, sea lions, or other scavengers. Recycle whenever possible.

2 Maintenance Operations: Use drip pans to prevent any drips or leaks from contacting the ground during maintenance and fueling operations. Clean spills or drips immediately using dry methods. Use spill cleanup kits to confine or contain spills. Do not hose down equipment or allow process water to enter the storm drain or the Harbor. Place tarps beneath maintenance and repair operations to prevent materials such as paint chips and metals from contacting the ground.

3 Material and Waste Handling and Storage: Train employees responsible for waste management on handling and disposal procedures. Store all hazardous and universal waste in accordance with all federal, state, and local regulations. Store all materials and waste inside and in secondary containment. If stored outside, store only in designated, covered, and contained areas. Store waste in covered, leak proof, labeled containers. Keep lids closed on all outdoor containers including dumpsters. Store all oily products (e.g. engines), batteries, tires, and metal off the ground and under cover when stored outdoors.

4 Except as may be otherwise provided in this Contract, Contractor's obligations in this Article shall survive the Termination Date of this Contract.

01000.68 Cont'd.

i For each separate NTP, upon completion of Work, subject to Protection of Harbor Waters Subsection of Specifications, Contractor shall quit and surrender occupancy and use of Project Site(s) and any Laydown Area(s) to City and shall, without cost to City, remove any and all its property and restore Laydown Area(s) to the same or as good condition as the same were in at the time of the first occupancy thereof, allowing for normal wear and tear, by Contractor. Contractor may incur additional charges and/or withholding of payment if Contractor fails to fully restore Laydown Area(s) to the reasonable satisfaction of Executive Director prior to completion of Work.

j For each separate NTP, restoration of any Laydown Area(s) must be completed by completion of Work identified in each separate NTP.

END OF SECTION

I. The following language is being added as Subsection 01000.69 of GENERAL CONDITIONS Section pursuant to California Public Contract Code Section 9204.

69 CALIFORNIA PUBLIC CONTRACT CODE SECTION 9204

(a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

(c) For purposes of this section:

(1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3) (A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) "Public entity" shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.

(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.

(v) The Military Department as to any project under the jurisdiction of that department.

(vi) The Department of General Services as to all other projects.

(vii) The High-Speed Rail Authority.

(4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.

(5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

(d) (1) (A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.

(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2) (A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2027, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2027, deletes or extends that date.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Scope of Work: Contractor shall perform Work necessary to complete Contract in a satisfactory manner. Furnish transportation, labor, materials, equipment, mobilization, demobilization, and incidentals necessary to perform Work on an on-call basis including but not limited to the following:

1. Secure necessary permits, perform coordination Work, regulatory requirements, and site environmental requirements for Project.
2. Wharf demolition and removal Work.
3. Concrete and timber pile removals.
4. Furnish concrete and timber piles.
5. Concrete pile driving and concrete wharf repair.
6. Timber pile driving and timber wharf repair.
7. Timber pile wraps.
8. Dredging.
9. Furnish and install quarry run and riprap.
10. Wharf slope repair using slurry and sandbags.
11. Crane rail repair.
12. Earthwork, geotextiles, geomembranes, and asphalt concrete paving.
13. Excavation, characterization and disposal of contaminated and hazardous soils.
14. Trench excavation and backfill.
15. Concrete repair and incidental concrete Work.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Requirements concerning the following:

1. Existing surface conditions
2. Existing subsurface conditions
3. Restrictions upon Contractor's use of Project Site(s) and any Laydown Area(s)
4. On-site traffic control
5. Utility availability

B. Contractor shall review information provided and resource materials referred to in this Section, concerning geotechnical reports, existing surface and subsurface improvements and systems at Project Site(s) and any Laydown Area(s), and temporary utility points of connection.

C. Contractor shall visit Project Site(s) and any Laydown Area(s) and determine the conditions which may affect Work.

1.2 EXISTING SURFACE CONDITIONS

A. Project Site(s) contain various existing improvements and structures including asphalt concrete pavements, concrete wharves, timber wharves, railroad and crane rail tracks, rock slopes, and other improvements.

B. Streets around Project Site(s) and any Laydown Area(s) are usually heavily traveled.

1.3 EXISTING SUBSURFACE CONDITIONS

A. Project Site(s) and any Laydown Area(s) contain underground utilities and substructures that are either abandoned or still in service. Refer to BASIC SITE MATERIALS AND METHODS Section for additional requirements.

1.4 CONTRACTOR'S USE OF SITE

A. Contractor’s storage site shall be located within Project Site and any Laydown Area(s). Security of Project Site and any Laydown Area(s) shall be the responsibility of Contractor.

B. Upon completion of Work, remove temporary facilities and utility installations, equipment, tools, excess materials, and debris from Project Site(s) and any Laydown Area(s) and leave Project Site(s) and any Laydown Area(s) in clean condition. Clean grease and oil spills and concrete waste in conformance with REGULATORY REQUIREMENTS Section.

1.5 ON-SITE TRAFFIC CONTROL

A. Obtain approval from Engineer and terminal operator for Contractor's equipment and vehicle traffic routes within terminal limits.

B. Provide temporary traffic controls such as flag persons, signs, and barricades necessary to control traffic on Department property during the phases of construction, including traffic movements of adjacent Contractor's activities through Project Site(s) and any Laydown Area(s), in conformance with the California Manual of Uniform Traffic Control Devices (California MUTCD).

C. Regulate speed on Project Site(s) and any Laydown Area(s) to avoid generating dust or spillage.

D. Traffic speeds on unpaved roads shall be reduced to 15 miles per hour (mph) or less.

E. Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable.

1.6 UTILITY AVAILABILITY

A. For fire hydrants available for construction water points of connection located within Project Site(s), contact the Wharfinger's Office through Engineer to arrange temporary water points of connection and metering.

B. Where no facilities are available for temporary water connection within Project Site(s). Obtain Engineer's approval to obtain construction water via temporary pipe connections to fire hydrants outside Project Site(s). Contact the Department of Water and Power to arrange temporary water points of connection and metering. A water storage tank may be used.

C. Verify location of temporary electrical point of connection with Engineer.

D. Refer to BASIC SITE MATERIALS AND METHODS Section for additional information.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Notification and coordination requirements:

1. Marine coordination

2. Coordination with tenant

B. Project meetings

1.2 NOTIFICATION AND COORDINATION REQUIREMENTS

A. Coordinate Work with other Contractors, tenants, and City workers who may be working in or are adjacent to Project Site(s) and any Laydown Area(s).

B. Coordinate Work with Department tenants having utilities or pipelines on Project Site(s) and any Laydown Area(s) or occupying facilities adjacent to Project Site(s and any Laydown Area(s).

C. Coordinate installation and location of temporary utilities with Engineer and tenants.

D. Contractor shall furnish the tenants with a construction schedule for Work within the tenant's areas.

E. Instructions or orders received by Contractor from regulatory agencies, tenants, utility, or pipeline owners that are in conflict with this Section shall be brought to the immediate attention of Engineer.

F. Coordinate construction activities with adjacent Contractors and Department Construction and Maintenance (C&M) crews through Engineer as shown on Drawings and described in this Section.

G. For electrical power shut down, contact Department's C&M Division by contacting Engineer 2 working days before shut-down is needed.

H. Other Contractors, C&M crews, or tenants shall be working at irregular time intervals within Project Site(s) and any Laydown Area(s) limits concurrent with Contractor's Work.

1. There shall be no additional charge resulting solely from the presence of other entities authorized by Engineer to Work within Project Site(s) and any Laydown Area(s) limits.

I. Representatives of the following agencies, tenants, and companies shall be notified in writing, as applicable, 10 working days before Work is started in areas affecting them, unless Engineer directs otherwise:

Company or Agency	Contact	Telephone
South Coast Air Quality Management District (SCAQMD) Toxics Section		(909) 396-2327 fax (909) 396-3342
City of Los Angeles Fire Department	Battalion Chief	(310) 548-7516
Electrical Power - Los Angeles Department of Water and Power	Chris Rodriguez	(310) 522-1709
Electrical Service - Department Construction and Maintenance Division		through Engineer
Water Service - Los Angeles Department of Water and Power	Nikki Kiem Annika Tan	(213) 367-2096 (213) 367-3928
Water Service - Department Construction and Maintenance Division		through Engineer
Gas Service - Southern California Gas Company	Louie Flores	(310) 605-4172
Gas Service - Department Construction and Maintenance Division		through Engineer
Telephone Service - AT&T	Business Office	(800) 310-2355

Company or Agency	Contact	Telephone
AT&T building service cable, AT&T backbone cable and adjustment of phone company maintenance holes	Kosal Sieng	(310) 200-7228
Removal and installation of phone booths:		(800) 924-3666
CalTrans (Vincent Thomas Bridge painting and scaffold crew)	Bill Hansel	(310) 548-1271
11th US Coast Guard District Waterways Management	Waterways Aids to Navigation (W.A.N.) and	(310) 521-3860
	Notice to Mariners	
U.S. Coast Guard Sector Los Angeles - Long Beach	Captain of Port of Los Angeles Captain Ryan Manning	(310) 521-3606
Pacific Harbor Lines (PHL)	Monte Stokes	(310) 984-5780

J. Department Emergency Contacts:

Company or Agency	Contact	Telephone
Port Police	Watch Commander Emergencies	(310) 732-3491 (310) 732-3500
Port Pilots	Chief Pilot Dispatch (24 hours)	(310) 732-3808 (310) 732-3805

K. Emergency spill contacts-in the event of a spill in harbor waters:

Company or Agency	Contact	Telephone
U.S. Coast Guard National Response Center		(800) 424-8802
U.S. Coast Guard Command Duty Office		(310) 521-3805
Office of Emergency Service		(800) 852-7550 or (916) 845-8911
Department of Fish and Wildlife	24 hour contact number	(916) 445-0045
Los Angeles County Fire Department Hazardous Materials Unit	Emergency Response Coordinator	(323) 890-4317

L. Excavating and Digging:

1. Contractor shall provide 2 working days notice prior to excavation work.

Company or Agency	Contact	Telephone
Underground Service Alert (USA)		(800) 422-4133 or 811

1.3 PROJECT MEETINGS

A. Preconstruction Meeting: Attend preconstruction meeting scheduled by Engineer. Meeting activities:

1. Contractor shall introduce Project team and present a preliminary schedule, activity coding plan, and Work force requirements.

2. Engineer shall review administrative procedures with Contractor.

3. A representative of City of Los Angeles Office of Contract Compliance shall present labor compliance requirements.

4. Other Project stakeholders may also attend preconstruction conference, including tenant at Project Site(s) and any Laydown Area(s) and tenants adjacent to Project Site(s) and any Laydown Area(s).

B. Attend weekly Project meetings as scheduled by Engineer to discuss construction progress and other issues affecting Work.

1. At this meeting, present and explain a weekly schedule. The weekly schedule shall be in bar chart format and shall show the actual and planned Work, including changed Work, of the week before and the 2 weeks succeeding the date of the meeting. Bar chart shall also contain the following information:

a. Activity numbers and descriptions of Work shall be the same as in the baseline and monthly updates, although activities may be subdivided to more accurately monitor progress.

b. For activities completed during the period, show the actual start date, the actual finish date, and the percent complete.

c. For activities worked on during the period, show the actual start date, the forecast completion date, and the forecast percent complete.

d. For activities forecast to start during the period, show the forecast start date, the forecast finish date, and the percent complete.

1.4 MARINE COORDINATION

A. Notify the following in writing 10 working days prior to starting Work on water:

1. Port Pilots

2. United States Coast Guard (USCG), in conformance with REGULATORY REQUIREMENTS Section

3. Port Police Office

4. Wharfinger's Office through Engineer

5. Other terminals adjacent to Work

B. Coordinate with affected agencies, including USCG and Department Port Pilots, for navigation restrictions.

1. Verify with USCG whether partial or full channel closures shall be required, depending upon barge mooring alignment.

1.5 COORDINATION WITH TENANT

A. The terminal’s operations shall continue uninterrupted. Coordinate construction activities with the tenant to avoid interference with terminal operations.

1. In the event of a conflict, tenant requirements shall have priority over Contractor’s requirements in areas of active terminal operations.

2. Contractor’s personnel shall present valid photo identification at terminal entry gates upon demand. Vehicles shall have plaques or markings identifying company. Refer to REGULATORY REQUIREMENTS Section Marine Terminal Security Article for Transportation Worker Identification Credential (TWIC) program requirements.

3. Do not interfere with ship berthing, ship loading and unloading, and facility maintenance activities. Contractor shall obtain tenant's ship berthing schedule and moor floating plant outside of area required for tenant to moor vessels. Relocate interfering floating plant, materials and equipment on and under wharf as required prior to ship berthings.

B. Obtain weekly ship berthing schedule from tenant and re-confirm daily. Tenant shall provide 2-day advance confirmation of ship schedules. Work is allowed when no ship is berthed.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Computer system requirements to use an Internet-based Project management system.

1.2 INTERNET-BASED PROJECT MANAGEMENT SYSTEM

A. Project shall use an Internet-based Project management system, PMWeb, to submit and process for approval the following including, but not limited to:

1. Requests for Information (RFIs) and RFI responses.
2. Shop Drawings and shop Drawings responses.
3. Change Request Forms Time and Materials (T & M)
4. Contractor Daily Reports

B. Shop Drawings shall also be submitted in conformance with Subsection 01000.21 of GENERAL CONDITIONS Section.

C. Department shall provide Contractor access to the system at no charge.

D. Department shall provide Contractor training on how to use the system. Contractor's personnel shall have basic working knowledge of computers (i.e., mouse operation, using a browser) to effectively learn the system during the training session.

1.3 USER ACCESS

A. Department shall control Contractor’s access to the system and assign user profiles to a maximum of 4 authorized Contractor personnel. User profiles shall define levels of access, determine function-based authorizations, and determine user privileges. Contractor’s access to the system shall be sufficient to perform Work required in this Section.

B. Contractor shall generate (including the use of a scanner where electronic files are not available) and send electronic files for the correspondence listed in Paragraph A of Internet-Based Project Management System Article of this Section.

C. Subcontractors and suppliers shall not be given direct access to the system. Information exchanged between Contractor, subcontractors, and suppliers shall be the responsibility of Contractor. Direct communication through the system shall only occur between Engineer and Contractor.

D. Any correspondence or information entered into the system shall become an official document and shall be included in Project file.

E. Comments made by Engineer on Contractor-submitted correspondence shall not relieve Contractor from compliance with requirements of Contract Documents.

1.4 COMPUTER SYSTEM REQUIREMENTS

A. Contractor shall have access to the Internet, using the latest version of any of the following browsers:

1. Google Chrome
2. Apple Safari
3. Microsoft Edge

1.5 CONTRACTOR RESPONSIBILITY

A. Contractor shall be responsible for maintenance of Contractor's hardware, software, and connectivity to the Internet. Department shall not be responsible for any delays associated from the use of the system including, but not limited to, hardware or software problems, slow response times, downtime periods, connection problems or loss of information. Under no circumstances shall the use of the system be grounds for a time extension or cost adjustment to Contract.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Surveying and field engineering Work needed for Project under the direction of the professional land surveyor or registered civil Engineer licensed to practice surveying in State of California.

B. Survey Work scope in this Section supersedes Work scope in Survey and Staking Subsection of GENERAL CONDITIONS Section.

C. Work under this Section includes, but is not limited to the following:

1. Establish and maintain horizontal and vertical control points from Engineer-supplied bench marks and control points.

2. Layout of Improvements:

a. Control, staking, and grade checking for slope grading and rock placement above the maximum elevation shown on Drawings and stated in Specifications for dredging Work.

b. Control and survey for wharf and other marine structure construction.

c. Control and survey for pile driving.

1) Survey for pile driving, including locating pile positions and orientation before and immediately after driving, location recheck after driving adjacent piles, and after placement within staylath.

2) Control and survey for cutoff or buildup of concrete piles and record of broken piles.

3) Control and survey for sheet pile driving.

d. Additional construction staking for other improvements with specific coordinates or stationing shown on Drawings.

e. Surveys for progress payments.

f. Maintain as-constructed coordinates of improvements that were surveyed during the course of Project.

g. Refer to DREDGING Section for hydrographic surveying requirements.

1.2 WORK TO BE PERFORMED BY ENGINEER

A. Engineer shall provide permanent bench marks and horizontal control near Project Site(s), and temporary bench marks on Project Site(s). Engineer shall periodically check or re-establish temporary bench marks, but shall not be responsible for protection or ongoing maintenance of bench marks or control.

1. If Engineer must restore bench marks or control, it shall be at Contractor's sole cost and expense.

B. Engineer may conduct topographic and other surveys of site conditions at selected areas of Project prior to construction to establish a basis for subsequent quantity surveys for payment and acceptance.

1.3 PRICE AND PAYMENT PROCEDURES

A. Payment for surveying and field engineering shall be considered incidental to construction of applicable items on Bid Proposal Line Items. No separate payment shall be made.

1.4 SUBMITTALS

A. Survey submittals shall be identified as to time, area, and reason (e.g. progress survey for quarry run placement) and name of survey party.

B. Submittals shall be stamped and signed by a State of California-licensed professional land surveyor or a registered civil Engineer licensed to practice surveying in the State of California.

C. Submit Drawings in the current version of AutoCAD of substructure alignments showing as-built bearings, distances, elevations, and curve data for conduits and pipe alignments and as-built coordinates of vaults, pedestals, and other improvements .

1. Alignments in AutoCAD Drawings shall be based on survey of substructures prior to backfill.

2. Refer to PROJECT RECORD DOCUMENTS Section for additional requirements.

D. Submit scaled AutoCAD Drawings of above-ground and marine structure improvements entered on record documents Project set in conformance with PROJECT RECORD DOCUMENTS Section where improvements were not constructed according to Drawings. Include as-built coordinates, bearings, distances, curve data, and other relevant survey data.

E. Pile Submittals:

1. Submit after each day's pile driving:

a. Pile head location (bent and row number, northing, easting, and elevation) and pile inclination prior to driving.

b. Pile head location and pile inclination after driving, at cutoff elevation.

c. As-installed survey data compared against survey data prior to driving:

1) Show deviations from design locations with respect to horizontal location at cutoff, orientation, and inclination.

2) Indicate whether pile is within specified tolerances and, if not, the degree to which it is out of tolerance.

3) Propose installation procedure modifications to correct out-of-tolerance installations.

2. Submit after each week's pile driving:

a. Pile location re-check survey after driving adjacent piles.

b. 2 pile location re-check surveys after placing staylath but before placing deck reinforcement on the wharf deck soffit:

1) Show as-built pile locations and design locations (from Drawings) on a rectangular grid. Show misalignment distances in the x and y direction.

2) Submit record survey of final pile coordinates at cutoff elevation based on Engineer's original grid system in spreadsheet data file format for a spreadsheet application running under Windows operating system. Submit to Department Survey Section through Engineer. Enter data for the following column headings in the spreadsheet:

a) first column: Descriptor (bent and row numbers)

b) second column: N =Northing

c) third column: E = Easting

d) fourth column: Z = Elevation

e) fifth column: Inclination

f) sixth column: Remarks

3. Submittals made after pile driving is complete:

a. Submit pile surveys in a single report to Engineer no later than 10 Calendar Days after completion of pile driving.

b. Submit separately the electronic file coordinate data in spreadsheet format of pile location surveys after placing staylath and before placing deck reinforcement.

F. Submit method of underwater sheet pile survey. Method shall conform to accuracy requirements of SHEET STEEL PILES Section.

G. Submit results of underwater sheet pile survey in spreadsheet format showing pile number, northing, easting, elevation, and batter of piles.

H. Comply with requirements of REGULATORY REQUIREMENTS Section.

1.5 QUALITY ASSURANCE

A. Maintain at Project Site(s) a complete and accurate log of control and survey Work as it progresses and make log available for Engineer's review.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 SITE VERIFICATION OF CONDITIONS

A. Verify accuracy of survey control points prior to starting any Work on Project Site(s).

B. Notify Engineer of any discrepancies discovered.

3.2 SURVEYS AND RECORDS

A. Quantity Surveys:

1. Perform surveys for Engineer's progress payment requests and make computations based on these surveys and on topographic or other surveys performed by Engineer. Perform survey under the direction of Engineer, unless Engineer waives this requirement in writing.

B. Layout of Improvements:

1. Lay out improvements from Drawings based on Engineer's established control points and bench marks.

2. Furnish, at Contractor's sole cost and expense, stakes, templates, platforms, lighting, equipment, range markers, and labor as may be required to lay out any part of the improvements.

3. Lay out improvements to lines and grades established on Drawings.

3.3 SURVEY PROCEDURES

A. Verify original grid system used by Engineer for setting up benchmarks and Project control points and continue to use that system in surveying Work.

B. Verify alignments and elevations shown on Drawings, in relation to Engineer's bench marks and control before proceeding with layout of improvements.

C. Record deviations from design alignments of both constructed impromements and existing utilities exposed during construction and advise Engineer promptly upon detection of deviations exceeding tolerances identified in applicable Sections of Specifications. Record deviations which are accepted by Engineer (not corrected) on scaled AutoCAD Drawings.

D. Staking:

1. Stake the following improvements, including but not limited to:

a. Set stakes at 50-foot intervals for rock dike and dirt slope grading and at 25-foot intervals for rock placement in areas above the maximum elevation shown on Drawings and stated in Specifications for dredging Work.

b. Survey corners, angle points, and other coordinates and stations of wharf, dolphins, trestles, catwalks, and other marine structure construction from design coordinates and stations shown on Drawings. Survey also locations of bollards, stow pins, fenders, crane rails, embeds, and other marine structure improvements from design coordinates and stations shown on Drawings.

c. Stake striping at end points of lines and at 50 feet on center on line, at angle points, and at curves.

3.4 WHARF PILE SURVEY

A. Locate pile positions in the field prior to driving:

1. After each pile has been installed in the leads at its individual location for installation, record actual horizontal alignment, orientation, and inclination prior to driving. Note any deviation from design location and the reason for deviation.

B. After each day's pile driving Work is complete, and after piles have been released from restraints including templates, helmets, and hammer leads, survey the as-installed locations of the pile heads at cutoff elevation.

1. The next day's pile driving shall not proceed until Engineer has approved the current day's pile location survey.

2. Record each pile top's actual horizontal location (cut or uncut), orientation, and direction of inclination.

3. Record each calculated pile top location in the horizontal plane at cutoff elevation.

a. Horizontal location at cutoff may be calculated from the surveyed pile top location and inclination in order to comply with the 24 hour pile locations survey submittal requirement.

4. Record locations of abandoned piles and their replacements also on this survey.

C. Perform re-check survey of pile location after driving adjacent piles.

D. Provide control and staking for cutoff or buildup of piles. Record exact cutoff and buildup lengths in conformance with PRESTRESSED CONCRETE PILES Section.

E. Perform a final pile location survey after placement of staylath and prior to starting deck reinforcement placement on the wharf deck soffit.

1. Determine as-built pile locations, design locations (from Drawings) and misalignment distances for purposes of adjusting reinforcing bar lengths between piles.

2. In addition to piles' orientation relative to design alignment, determine coordinates of tops of piles in northings, eastings, elevations, and inclination based on the original grid system established on Drawings.

F. Perform record survey of center of piles where broken off at mudline. Position may be determined by taking shot on pile top prior to breakoff and calculating mudline coordinates based on pile angle.

3.5 SHEET PILE SURVEY

A. Locate and lay out sheet pile positions in the field from Engineer’s bench marks and control on shore.

3.6 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Furnish upon Inspector's request, use of fully equipped survey personnel, equipment, and materials as may be necessary to inspect Work and verify quantities.

2. Engineer reserves the right to check the accuracy of survey measurements and calculations.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Permit and fee requirements

B. Government agency notifications, fees, and license requirements required for Project

C. Submittal requirements for permits and notifications

D. Contractor shall pay costs of fines, including fines against Department, resulting from Contractor’s non-compliance with permit requirements or failure to procure appropriate permits.

1.2 CITY OF LOS ANGELES PERMITS

A. Contractor shall obtain and Department shall pay for City of Los Angeles permits required by Department of Building and Safety (LADBS), Fire Department, and Department of Public Works. Payment shall be made by an Interdepartmental Order (IDO) to these departments. Engineer shall obtain plan check unless specified otherwise.

1. City of Los Angeles Department of Building and Safety permit applicants are required to present the following prior to the issuance of permits:

a. Worker's Compensation Insurance Certificate.

b. Contractor's license.

c. City of Los Angeles Business Tax Identification Number.

B. Obtain City of Los Angeles Department of Public Works, Bureau of Street Services Overload permit where hauled material dimensions exceed overlength, overwidth, or overheight criteria, or materials are subject to other permit requirements.

C. On-site inspection approval from Department shall be required for hot Work. Secure a hot Work permit for welding, cutting, burning, pitch heating, riveting, grinding, drilling, and other fire and spark producing operations from Port Police Office at (310) 732-3973 or (310) 732-3500 at 330 South Centre Street, San Pedro, California 90731 two working days prior to start of hot Work. There is no fee for this permit.

1. Furnish safety devices, extinguisher, and fire watch as required by permit.

2. Exercise caution in welding and cutting operations to avoid fire.

1.3 CALIFORNIA AIR RESOURCES BOARD (CARB) REQUIREMENTS

A. On-road vehicles shall comply with CARB Clean Truck Check (Heavy Duty Inspection and Maintenance Regulation) and Advanced Clean Fleets Regulation

1. Prior to start of Work, submit to Engineer proof of compliance required by CARB for Contractor and subcontractors. Follow applicable regulatory requirements for retention of paperwork.

B. Off-road equipment shall comply with CARB off-road equipment regulations including but not limited to: In-Use Off-Road Diesel and Large Spark Ignition Regulations.

1. Prior to start of Work, submit to Engineer proof of compliance required by CARB for Contractor and subcontractors. Follow applicable regulatory requirements for retention of paperwork.

2. Prominently display appropriate signage in conformance with CARB In-Use Off-Road Diesel Regulation (https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation) on Project Site(s). Signage shall state the following:

Who does the In-Use Off-Road regulation apply to? The In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) applies to self-propelled off-road diesel vehicles 25 horsepower or greater and most two-engine vehicles (except onroad two-engine sweepers) owned or operated in California. This includes vehicles that are rented or leased (rental or leased fleets).

1.4 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) REQUIREMENTS

A. Obtain pertinent SCAQMD permits and comply with SCAQMD rules and permit requirements, including, but not limited to, the following:

1. Submit to South Coast Air Quality Management District (SCAQMD) a notification form (SCAQMD Rule 1403) 10 working days prior to start of chemically-impacted soil cleanup or abatement order soils remediation Work. Obtain forms from the SCAQMD Enforcement Division, Toxics Section.

2. Obtain and pay for SCAQMD permits under Rules 201, 203, 222, and/or 2202 for affected classes of equipment, including but not limited to, internal combustion engines greater than 50 brake horsepower which are not used as vehicle propulsion (air compressors, generators, winch motors, and the like).

    a. California Air Resources Board permits may be obtained for eligible portable engines in lieu of SCAQMD permits.

3. Comply with SCAQMD Rules 401, Visible Emissions and 402, Nuisance.

4. Abrasive Blasting: Select materials and methods that comply with SCAQMD Rule 1140 Abrasive Blasting.

1.5 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), FIRE, AND OTHER SAFETY REQUIREMENTS

A. Comply with State of California Construction Safety Orders and General Industry Safety Orders issued by Department of Industrial Relations, Division of Occupational Safety and Health; and Safety and Health Regulations for Construction administered by United States Department of Labor, Occupational Safety and Health Administration (OSHA).

B. Hazardous Substances: Also known as hazardous materials, are defined in California Health and Safety Code 25501 (n). Hazardous substances include those shown in Director’s List from Department of Industrial Relations pursuant to Hazardous Substances Information and Training Act, and those described in Part 172 of Title 49 of the Code of Federal Regulations (CFR), Department of Transportation Hazardous Materials List.

1. Examples of hazardous substances commonly used in construction projects include, but are not limited to, the following:

    a. Toxic materials (pesticides, herbicides, epoxies, curing compounds, and paints),

    b. Corrosive materials with pH of 2 or less (muriatic and other acids),

    c. Corrosive materials with pH of 12.5 or more (soda lye and lime),

    d. Ignitable materials (gasoline and diesel fuel, propane, and solvents),

    e. Reactive materials (chlorine), or

f. Any other material for which a Safety Data Sheet (SDS) has been prepared.

2. Handle hazardous substances in conformance with applicable federal, state, and local regulations.

3. Make current and accurate copies of SDS available at Project Site(s) for each hazardous substance to be used at Project Site(s).

   a. Train employees that handle hazardous substances and hazardous wastes in procedures for handling such materials. Refer also to Hazardous Waste Article of this Section.

4. Store hazardous substances in conformance with California Health and Safety Code and City of Los Angeles Fire Code requirements.

   a. Comply with California Health and Safety Code, Division 20, Chapter 6.95, Section 25500. Contractor shall file a Hazardous Materials Business Plan through California Environmental Reporting System (CERS) as implemented by City of Los Angeles Fire Department and associated Certified Unified Program Agency (CUPA) at http://fire.lacounty.gov/wp-content/uploads/2019/08/lacofd-CERS-User-Guide_Part3.pdf if on-site storage of hazardous substances exceeds the following quantities:

      1) Liquids: 55 gallons

      2) Gas: 200 cubic feet

      3) Solids: 55 pounds

   b. On-site storage refers to the uninterrupted presence of hazardous substances at Project Site(s) for 30 Calendar Days or more, including refills or replacement of stock.

5. Protect hazardous substance storage containers from wind and rain. Place secondary containment beneath containers or equipment to capture drips and spills.

6. Clean up spills immediately. Place absorbent material on residue from small spills and dispose of wastes in conformance with federal, state, and local regulations and with Hazardous Waste Article of this Section. Submit spill cleanup method to Engineer upon request.

7. Depending on the extent, volume, and discharge to surface or subsurface waters from the spill, Contractor shall comply with notification and reporting requirements.

1.6 HAZARDOUS WASTE

A. General: Hazardous waste is defined by Health and Safety Code 25117 and, California Code of Regulations, Title 22 Division 4.5, Chapter 11 Article 2, Section 66261.10 et. Seq. Notify Engineer of observances or occurrences of hazardous waste. Comply with federal, state, and local reporting requirements. Continued Work at the affected area of Project Site(s) shall require the approval of Engineer.

1. Prior to performing any Work in affected areas, prepare a Project Site(s)-specific Safety and Health Program pursuant to Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements in California Code of Regulations CCR Title 8 Section 5192. Upon generating hazardous waste, Contractor shall furnish Safety and Health Plan for Project Site(s) and submit to Engineer within 2 Calendar Days of generation.

2. Workers shall be trained in conformance with CCR Title 8 Section 5192.

3. Dispose of hazardous wastes at licensed facility that is permitted to receive hazardous waste (recycling and disposal) as approved by Engineer.

4. Submit copies of documents to Engineer, including hazardous waste manifests indicating the amount, nature, and disposition of the hazardous waste within 10 Calendar Days of disposal, as required by law and regulations.

B. Pre-Existing Hazardous Wastes: City shall retain title to pre-existing hazardous waste removed from Project.

1. Store and manage hazardous wastes discovered on-site during the course of construction and resulting from construction activities in conformance with California Health and Safety Code. Protect hazardous waste storage containers from wind and rain in conformance with applicable laws and regulations. Place secondary containment beneath receptacles to capture drips and spills.

2. In handling City's materials, City acknowledges that for the purposes of Contract, it retains generator status and shall be the primary or designated generator, shall obtain the necessary United States Environmental Protection Agency (U.S. EPA) identification number, and sign the transportation manifests as owner of the material.

3. Pay fees required for the disposal of hazardous waste.

C. Contractor-Generated Hazardous Wastes: Contractor shall retain title to hazardous waste generated from supplies and equipment brought on Project Site(s) and any Laydown Area(s).

1. Contractor shall bear costs, including disposal fees and taxes, for managing and disposing of hazardous waste generated from supplies and equipment brought on Project Site(s) and any Laydown Area(s).

1.7 CHEMICALLY IMPACTED SOIL AND WATER

A. Notify Engineer of observances or occurrences of soil and/or groundwater contamination. Engineer shall notify Port Police, Director of Environmental Management, and Risk Manager. Continued Work at the affected area of Project Site(s) shall require the approval of Engineer.

B. Remove chemically impacted soil and groundwater as directed by Engineer and in conformance with applicable federal, state, and local regulations, including, but not limited to, South Coast Air Quality Management District (SCAQMD); California Environmental Protection Agency (EPA), Department of Toxic Substances Control (DTSC); State Water Resources Control Board (SWRCB); Toxic Substances Control Act (TSCA) and City of Los Angeles Fire Department. Dispose of chemically impacted soil and groundwater as directed by Engineer.

C. Obtain permits for excavation and disposal of chemically impacted soil and water.

D. Refer to Hazardous Waste Article of this Section for further requirements if the contamination is determined to be hazardous.

E. For chemically-impacted soil and water, prepare a Project Site(s)-specific Safety and Health Plan in conformance with requirements of Hazardous Waste Article of this Section.

1.8 OFF-SITE TRAFFIC REQUIREMENTS

A. Minimize interference with the existing traffic patterns on surrounding publicly traveled streets and access roads.

1. Provide traffic control barriers, lights, detours, markings, and construction signage on publicly traveled streets advising of construction in conformance with California Manual of Uniform Traffic Control Devices (California MUTCD).

a. 7 Calendar Days prior to start of construction, provide advance construction signs in accordance with City of Los Angeles Standard Plan S-791-1.

2. Route vehicles hauling materials to minimize traffic conflicts and congestion.

3. Trucks hauling dirt, sand, or gravel shall comply with SCAQMD Rule 403 Best Available Control measures and the following additional requirements:

a. Maintain at least 6 inches of freeboard.

4. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads in conformance with Construction Stormwater Pollution Control Article of this Section.

5. Stabilize the materials while loading, unloading, and transporting to reduce fugitive dust emissions.

6. Belly-dump truck seals shall be checked regularly to remove trapped rocks to prevent spillage.

7. Comply with track-out regulations in conformance with SCAQMD Rule 403, regardless of Project size.

B. Rush Hour Construction Ban: Work in the public right-of-way on City of Los Angeles streets is prohibited during the morning and evening rush hours, from 6:00 a.m to 9:00 a.m. and from 3:30 p.m. to 7:00 p.m. The ban includes both actual construction on City streets as well as the staging of equipment and materials, even if construction is not in the public right-of-way.

1. Construction activities related to emergency maintenance and repair are exempted from the rush hour construction ban. Verify emergency status with Engineer.

C. Refer to SITE CONDITIONS Section for additional requirements.

1.9 CONSTRUCTION STORMWATER POLLUTION CONTROL

A. Minimum Water Quality Protection Requirements:

1. Comply with the following minimum standards of good housekeeping:

a. Earth, construction materials, sediments, trash, construction-related wastes, other potential pollutants, or stockpiles of these materials shall not be transported by wind or blower, storm or wash water from Project Site(s) and any Laydown Area(s) via sheetflow, swales, area drains, natural drainage, storm drains, or streets.

b. Handle hazardous materials in conformance with Occupational Safety and Health Administration (OSHA), Fire, And Other Safety Requirements Article of this Section, and applicable federal, state, and local regulations.

c. Retain concrete wastes on-site until concrete wastes can be appropriately disposed or recycled. Accumulated concrete wastes on Project Site(s) and any Laydown Area(s) shall become property of Contractor and shall be recycled in conformance with Contractor's Waste Management Plan (WMP) as described in CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT Section of Specifications. On-site washout shall be allowed only in designated areas away from drains, ditches, and streets.

d. Deposit trash and construction-related solid wastes in covered and labeled receptacles. Prevent dispersal of trash by wind and prevent rainwater percolation through trash.

e. Handle and dispose of hazardous wastes in conformance with Hazardous Waste Article of this Section and applicable federal, state, and local regulations.

f. Prevent tracking of sediments and other materials from Project Site(s) and any Laydown Area(s) by vehicle traffic. Stabilize construction entrance roadways to inhibit sediments from being deposited into the public ways. Comply with the provisions of Housekeeping And Maintenance of Surface Areas of Project Site(s) and any Laydown Area(s) Subsection of GENERAL CONDITIONS Section.

g. Non stormwater runoff from equipment and vehicle washing and any other activity shall be contained at Project Site(s) and any Laydown Area(s).

h. Best Management Practices (BMPs) Requirements: Installed BMPs shall be as defined by and in conformance with California Stormwater Best Management Practices Handbook and SWRCB. Contractor shall obtain a copy of California Stormwater Best Management Practices Handbook. Visit https://www.casqa.org/resources/bmp-handbooks/construction.

i. Inspect Project Site(s) and any Laydown Area(s) prior to storm event predictions to ensure that BMPs are properly installed. Conduct routine inspections of Project Site(s) and any Laydown Area(s) to ensure that Best Management Practices are adequate to prevent any debris, particulates or fluids from leaving the lay down area and/or entering Port waters.

j. Soil and debris piles shall be underlain with 2 layers of Visqueen and shall be covered with Visqueen weighted down with sandbags. Create temporary berms around piles to prevent stormwater infiltration of storage materials. Routinely observe the water surface to look for sheen, debris, or particulates from Project Site(s) and any Laydown Area(s). Immediately cease Work on piles should a pollutant enter the water and notify Engineer.

B. Small Project Erosion Control Measures:

1. Small Project description: Erosion prevention measures required for projects disturbing less than 1 acre of soil and are not otherwise permitted with LADBS nor covered under Construction General Permit (CGP).

2. Small Project BMPs requirements: Install the following BMPs as defined by and in conformance with California Stormwater Best Management Practices Handbook:

a. Sediment control practices: Street Sweeping, SE-7. Perimeter of disturbed soil area: Silt Fence, SE-1 for slopes up to 4:1 (H:V). For slopes exceeding 4:1, Sandbag Barrier, SE-8 and Fiber Rolls, SE-5.

b. Storm drain catch basin within drainage catchment of disturbed soil area: Storm Drain Inlet Protection, SE-10.

1) Provide inlet protection at catch basins within drainage catchment regardless of whether or not the catch basins are within Project Site(s) limits.

c. Waste management control practices: Material Delivery and Storage, WM-1; Material Use, WM-2; Stockpile Management, WM-3, Spill Prevention and Control, WM-4; Solid Waste Management, WM-5; and Concrete Waste Management, WM-8.

d. Tracking control practices: Stabilized Construction Entrance and Exit, TC-1; Stabilized Construction Roadway, TC-2, and Entrance Outlet Tire Wash, TC-3.

3. Contractor shall prepare and submit to Engineer a Best Management Practices Plan (BMPP). A sample BMPP is included in Appendix "D" of Specifications, which includes a BMP layout map and a list of BMPs to be used on-site during the duration of Project.

4. Inspect Project Site(s) and any Laydown Area(s) prior to storm event predictions to ensure that BMPs are properly installed. Inspect Project Site(s) and any Laydown Area(s) during and after each significant storm event where surface runoff is observed to maintain and repair damaged BMPs.

5. To purchase a copy of the California Stormwater Best Management Practices Handbook, visit https://www.casqa.org/resources/bmp-handbooks/construction.

C. Refer to Construction General Stormwater Permit and Stormwater Pollution Prevention Plan (SWPPP) Article of this Section for projects disturbing 1 acre or more of soil.

1.10 CONSTRUCTION GENERAL STORMWATER PERMIT AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. Project has 1 acre or more of disturbed soil and is subject to U.S. EPA National Pollution Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) (CGP) Order WQ 2022-0057-DWQ NPDES No. CAS000002 adopted on September 9, 2022 and any subsequent iterations for stormwater discharges associated with construction activity. Contractor shall comply with the requirements of CGP. CGP and attachments can be found at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/general_permit_reissuance.html

B. Project was determined by Engineer to be Risk Level 2.

C. Visual monitoring and reporting requirements shall be in conformance with Risk Level 2 included in Attachments D, D.1, and D.2 of CGP.

D. Effluent monitoring and sampling requirements shall be in conformance with Risk Level 2 included in Attachments D, D.1, and D.2 of CGP.

E. Stormwater discharges and authorized non-stormwater discharges shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117.3 and 40 CFR 302.4.

F. Comply with Total Maximum Daily Load (TMDL) Implementation Requirements in Attachment H of CGP.

G. Submit to Engineer the names and qualifications of Qualified SWPPP Developer (QSD) and Qualified SWPPP Practitioner (QSP) within 14 Calendar Days after issuance of Notice to Proceed date.

1. QSD shall write, amend, and certify SWPPP documents.

2. QSP shall perform visual observations of discharges, field BMP inspections, perform sampling and analysis, Pre-Qualifying Precipitation Event (QPE) inspections, and train employees on BMPs.

H. Stormwater Pollution Prevention Plan:

1. Plan Description:

a. Design, submit, implement, and document Project Site(s)-specific SWPPP plan in conformance with CGP to control stormwater pollution from sediments and construction materials leaving Project Site(s) and any Laydown Area(s). For additional information on plan preparation, visit SWRCB website at www.swrcb.ca.gov. Refer also to City of Los Angeles Bureau of Sanitation, Watershed Protection Division, at www.lastormwater.org and California Stormwater Quality Association (CASQA), California Stormwater Best Management Practice Handbooks, telephone number (650) 366-1042. Website address: www.casqa.org.

2. Plan Requirements:

a. Prepare SWPPP as follows:

1) Supply information required by SWRCB in SWPPP and submit to Engineer, for review and approval, 30 Calendar Days prior to grading or other soil disturbing construction activities. Refer to SWPPP Requirements and Qualifying Precipitation Events (QPE) Paragraph of this Article for additional requirements.

a) Include Project Site(s)-specific BMP layout map.

b) Failure to submit SWPPP to Engineer may be cause for withholding of payment.

b. Construction Project Site(s) and any Laydown Area(s) Monitoring Program:

1) Develop and implement Construction Site Monitoring Program (CSMP) as part of SWPPP in conformance with the requirements of Attachments D, D.1, and D.2 of CGP. CSMP shall be Project Site(s) and any Laydown Area(s)-specific and shall include monitoring procedures and instructions, pre-earthwork Drawings, construction and earthwork Drawings, location maps, forms, and checklists.

2) Perform required monitoring and inspections, including non-compliance reporting, conforming to Project’s Risk Level. Refer to Attachments D, D.1, and D.2 of CGP.

c. Maintain a copy of the reviewed SWPPP plan at Project Site(s).

3. Electronically submit other Permit Registration Documents (PRDs) to Engineer, including Site Map; Project Site(s) and any Laydown Area(s)-specific Stormwater Pollution Prevention Plan; and Signed Certification Statement.

   a. Include check payable to State Water Resources Control Board to cover fee due per Project, per year of construction activity starting at Notice to Proceed. Engineer shall file the completed PRDs (including fee) with State Water Resources Control Board, per Project per year of construction activity. Include in fee amount the base cost, per acre cost, and applicable surcharge. Allow Engineer at least 14 days prior to commencement of construction activities for filing PRDs and at least 7 days prior to commencement of construction activities to send the check.

   b. Contact Engineer to obtain Waste Discharge Identification (WDID) number.

   c. Electronic file of Notice of Intent (NOI) and listing of fees can be found at: https://www.waterboards.ca.gov/resources/fees/water_quality/#stormwater

4. Sampling, Testing, and Action Levels:

   a. For Risk Level 2 projects, perform sampling and testing in conformance with Attachments D, D.1, and D.2 of CGP.

   b. If numeric action levels (NALs) for Risk Levels 2 or 3 are exceeded, perform Project Site(s) and any Laydown Area(s) evaluation, implement additional BMPs, and revise SWPPP either to prevent pollutants and authorized non-stormwater discharges from contaminating stormwater, or to substantially reduce the pollutants to levels consistently below NALs. Submit NAL exceedance report electronically to Engineer within 2 days after conclusion of the storm event for Engineer to report to SWRCB.

   c. Comply with applicable TMDL Implementation Requirements in Attachment H of CGP, including TMDL-specific additional BMPs and site pollutant modeling, numeric action levels, and numeric effluent limitations.

5. Inspection, Maintenance, and Repair:

    a. Implement and maintain the reviewed SWPPP BMPs at Project Site(s) and any Laydown Area(s) year-round in conformance with SWRCB requirements.

    b. Perform self-inspection of BMPs prior to and during anticipated storm events.

    c. Complete self-inspection checklists and logs required by SWRCB for each inspection and maintain at Project Site(s) for Engineer's review for Contract duration.

        1) Adequate checklist and log maintenance, and approval of them, shall be a condition to approval of rain delay schedule extensions.

    d. QSD and QSP shall perform on-site inspections as listed in CGP.

6. Contractor shall show Waste Discharge Identification number (WDID) to LADBS as proof of submittal of NOI whenever Contractor is required to get a permit from LADBS.

7. Refer to Attachment B of CGP for definitions of Numeric Effluent Limitation and Numeric Effluent Limitation Exceedance.

I. Qualified Precipitation Event (QPE):

1. QSP shall conduct a pre-QPE inspection within 72 hours prior to any weather pattern that forecasts having a 50 percent or greater Probability of Precipitation (PoP) of 0.5 inches or more in a 24-hour period.

2. Obtain precipitation forecast information from National Weather Service of the National Oceanic and Atmospheric Administration (NOAA) Forecast Office.

3. Submit pre-QPE to Engineer for all phases of construction.

4. Refer to Attachments D, D.1, and D.2 of CGP for additional requirements.

J. Maintain a paper or electronic copy of CGP records at Project Site(s). Submit records on a monthly basis to Engineer during the course of construction and, for Annual Report, prior to September 1 of each year, the collection of the year's records since September 1 of the previous year and, upon Substantial Completion of Project, remaining un-submitted records for Project. Include:

1. A summary and evaluation of sampling and analysis results, including original laboratory reports.
2. The analytical methods, method reporting units and method detection limits of each analytical parameter (analytical results that are less than the method detection limit shall be reported as less than the method detection limit).
3. A summary of corrective actions taken during the reporting period.
4. Identification of any compliance activities or corrective actions that were not implemented.
5. A summary of violations of CGP.
6. The individuals who performed the facility inspections, sampling, visual observation (inspections), and measurements.
7. The date, place, time of facility inspections, sampling, visual observation (inspections), and measurements including precipitation (rain gage).
8. The visual observations and sample collection exception records and reports specified in Attachments D, D.1, and D.2 of CGP.
9. Training information consisting of:
    a. Documentation of training for individuals responsible for activities associated with compliance with CGP.
    b. Documentation of training for individuals responsible for BMP installation, inspection, maintenance, and repair.
    c. Documentation of training for individuals responsible for overseeing, revising, and amending SWPPP.
10. Photographs of BMPs before, during, and after storm events.
11. Chain of custody forms.

K. Terminating Permit Coverage:

1. To file Notice of Termination (NOT), notify Engineer upon completion of construction and land disturbing activities and provide the following documents to Engineer:
    a. Completed NOT

b. QSP-prepared final NOT inspection with QSP name and valid QSP certificate number

c. Final Project Site(s) and any Laydown Area(s)-specific map

d. Photos demonstrating final stabilization and implementation of post-construction BMPs and low impact development

L. Prohibited Discharges:

1. The following discharges are prohibited:

a. Debris and trash, in conformance with SWRCB Resolution 2015-0019 as applicable to construction stormwater discharges including the following:

1) Dischargers shall implement, operate, and maintain trash management, treatment, and institutional controls to eliminate debris and trash from stormwater discharges and authorized non-stormwater dischargers consistent with the prohibition of the discharge of debris and trash regulated by CGP.

b. Treatment chemicals except as authorized in Attachments F and G of CGP;

c. Wastewater from washout or cleanout of areas, structures or equipment with concrete, grout, stucco, paint, or other construction materials;

d. Form-release oils and curing compounds;

e. Fuels, oils, fluids, or other materials used in vehicle and equipment operation and maintenance;

f. Soaps, solvents, or detergents (used in vehicle equipment washing or external building wash down, and the like); and

g. Toxic or hazardous substances (asbestos, lead, mercury, or PCBs).

1.11 TREATED WOOD AND TREATED WOOD WASTE

A. Railroad ties, timber piles, timber wharf framing, and utility poles present within the facilities are considered, upon disposal, to be treated wood waste (TWW) containing creosote, pentachlorophenol, or waterborne preservative (such as Ammoniacal Copper Zinc Arsenate (ACZA)) which the State of California has determined to be potentially hazardous. Remove, manage, and dispose of TWW materials at California Regional Water Quality Control Board (CRWQCB) approved and licensed landfills in conformance with Alternative Management Standards (AMS). Contractors performing treated wood removal and TWW disposal shall have a HAZ certification from California Contractors State License Board.

1. Confirm with Engineer the latest Department of Toxic Substances Control (DTSC) requirements prior to starting demolition.

B. Submit 2 copies of the manifest from the transporter to Engineer including weigh tickets.

C. Refer also to Hazardous Waste Article of this Section.

1.12 CORPS OF ENGINEERS PERMIT

A. Department has obtained permit No. SPL-2022-0068-TS from Department of the Army, Corps of Engineers (Corps Permit), for general wharf and dike maintenance and maintenance dredging throughout the Port of Los Angeles. A copy of Corps Permit requirements is included in Specifications as Appendix "E". Comply with these requirements and furnish controls necessary to accomplish Work in conformance with the requirements. Make timely notifications and meet the Conditions of the Corps Permit.

B. Refer to United States Coast Guard Permits Article for additional marine construction requirements.

C. Refer to National Marine Fisheries Service/California Department of Fish and Game Requirements Article of this Section for Caulerpa taxifolia and eelgrass survey requirements.

D. Refer to Los Angeles Regional Water Quality Control Board (LARWQCB) Waste Discharge Requirements Permit Article of this Section for additional requirements.

1.13 UNITED STATES COAST GUARD PERMITS

A. Contact 11th Coast Guard District, Waterways Aids to Navigation Office to obtain temporary Aids to Navigation authorization and to issue Notice to Mariners. Refer to COORDINATION Section for contact information.

1. File Aids to Navigation application form immediately after Award of Contract or 30 Calendar Days prior to the start of construction, whichever is later. Comply with Aids to Navigation Office requirements.

2. File Notice to Mariners form at the Aids to Navigation Office 14 Calendar Days, minimum, prior to watercraft mobilization. Report changes to anticipated weekly Work schedule as soon as changes are known.

    a. Provide facsimile (fax) copy of Notice to Mariners to Coast Guard Captain of Ports of Los Angeles and Long Beach. Refer to COORDINATION Section for contact information.

3. Remove temporary aids to navigation connected with Contract upon completion of Project.

B. Display signal lights and conduct marine operations in conformance with General and Special Conditions of Corps Permit and U.S. Coast Guard.

C. Throughout the period of operation of Contractor's equipment, maintain lights between hours of sunset and sunrise upon floating plant and equipment connected with Work, and upon buoys or moorings of such size and locations that could endanger or obstruct navigation.

D. Furnish and set lights, buoys, and other required aids to navigation in conformance with United States Coast Guard regulations.

E. If night Work is permitted, illuminate floating plant from sunset to sunrise. Submit a sketch to Engineer showing the location of lights and buoys, and other floating equipment being used during Project 30 Calendar Days prior to start of Work.

1.14 LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD (LARWQCB) PERMIT

A. Clean Water Act Section 401 Water Quality Certification and Order:

1. Department shall obtain Los Angeles Regional Water Quality Control Board (LARWQCB) Clean Water Act Section 401 Water Quality Certification and Order. A copy of the order is included in Appendix "E" of Specifications.

2. Comply with the special conditions and requirements of LARWQCB Clean Water Act Section 401 Water Quality Certification and Order. Contractor shall perform the monitoring, sampling, testing, reporting, and other incidentals that are required to comply with LARWQCB Clean Water Act Section 401 Water Quality Certification and Order through an independent test laboratory. Results and reports shall be submitted by Department to LARWQCB. Contractor shall coordinate with Department to facilitate the performance of the monitoring, sampling, and reporting Work required by LARWQCB.

B. For pile driving, comply with the requirements and procedures outlined in Water Quality Monitoring Plan (WQMP) included in Appendix "F" of Specifications in addition to LARWQCB Clean Water Act Section 401 Water Quality Certification and Order. Reference Sample Monthly Water Quality Monitoring Report included in the bid package.

1.15 MARINE TERMINAL SECURITY

A. Comply with facility operator’s (tenant’s) security measures pursuant to 33 CFR, Chapter 1, Part 105, Maritime Security: Facilities, including, but not limited to, gate access, vehicle loading and unloading, maintaining fences, and access to restricted areas within the terminal.

1. Contractor shall comply with terminal’s approved Facility Security Plan with regards to Transportation Workers Identification Credential (TWIC) program. Provide sufficient number of TWIC-credentialed individuals such that Work can be performed without escorts provided by the terminal and be in compliance with U.S. Coast Guard Maritime Security Regulations.

1.16 NATIONAL MARINE FSWISHERIES SERVICE/CALIFORNIA DEPARTMENT OF FISH AND GAME REQUIREMENTS

A. Surveys for the presence of Caulerpa taxifolia and eelgrass is required prior to dredging and other significant ocean bottom-disturbing activities.

1. Department shall conduct the Caulerpa taxifolia surveys not more than 90 days and not less than 30 days prior to the activity. Notify Engineer when the 90-day period prior to the activity shall begin.

2. Department shall conduct the eelgrass surveys during the active growth period, March 1st to October 31st, and should be considered valid for a period of 60 days.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Procedures for ensuring optimal diversion of construction and demolition waste generated by Project and documentation procedures for tracking waste generation and diversion.

1. Project shall promote City's sustainable building efforts by creating a resource-efficient and environmentally sensitive Project and maintaining optimum control of Construction and Demolition (C&D) waste generated during Project.

2. Project shall use products with post-consumer recycled content to the greatest extent feasible. Refer to California Department of Resources Recycling and Recovery's (CalRecycle's) website for information about recycled content construction products.

1.2 ABBREVIATIONS

A. CalMAX: California Materials Exchange

B. CalRecycle: California Department of Resources Recycling and Recovery

C. C&D: Construction and Demolition

D. CCR: California Code of Regulations

E. CDRG: Construction and Demolition Recycling Guide

F. LEA: Local Enforcement Agency

G. SWDD Report: Solid Waste Diversion and Disposal Report

H. WMP: Waste Management Plan

1.3 DEFINITIONS

A. Certified C&D Waste Processing Facility or Certified C&D Waste Processor: A solid waste processing facility that accepts loads of C&D waste for the purpose of recovering re-usable and recyclable materials and disposing of the non-recyclable residual material. A Certified C&D Waste Processing Facility has been certified by City of Los Angeles (City) Bureau of Sanitation to have a facility specific recycling rate for C&D waste. For information on becoming a certified C&D waste processor, refer to: https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r/s-lsh-wwd-s-r-cdr?_adf.ctrl-state=1d5d9u35ny_1&_afrLoop=4798033367694392&_afrWindowMode=0&_afrWindowId=null#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D4798033367694392%26_afrWindowMode%3D0%26_adf.ctrl-state%3D1d5d9u35ny_5. See CDRG for information on the current list of certified processors and recycling facilities.

B. Class III Landfill: A landfill that accepts non-hazardous solid waste such as household, commercial, and industrial solid waste. A Class III landfill is regulated by LEA and shall have a CalRecycle solid waste facilities permit.

C. Construction and Demolition Recycling Guide (CDRG): A publication by City of Los Angeles Department of Public Works, Bureau of Sanitation, Solid Resources Citywide Recycling Division. CDRG can be found at: https://www.lacitysan.org/cs/groups/pressrelease/documents/document/y250/mdgy/~edisp/cnt082545.pdf.

D. C&D Waste or Mixed C&D Waste or C&D Debris or Mixed C&D Debris: Solid waste and recyclable materials, and building materials from construction, deconstruction, remodeling, repair, or demolition of buildings and other structures, do not contain hazardous waste (as defined in CCR Title 22, Section 66261.3, et seq.), and contain no more than 1 percent putrescible wastes by volume, calculated on a monthly basis. C&D waste includes, but is not limited to: asphalt, concrete, Portland cement, brick, lumber, drywall, roofing material, ceramic tile, pipe, glass, carpet, and associated packaging.

E. Deconstruction: The process of taking apart a structure with the primary goal of preserving the value of useful building materials, so that they may be reused or recycled.

F. Disposal: Acceptance of solid waste at a legally operating facility for the purpose of landfilling.

G. Diversion: Activities that result in reducing the amount of solid waste disposed at a landfill. This can include source reduction activities, composting, recycling, and reuse.

H. Inert Backfill Site: A location, other than inert fill or other disposal facility, to which inert debris is taken for the purpose of filling an excavation, shoring, or another soils engineering operation.

I. Inert Debris: Solid waste and recyclable materials that are source separated or separated for reuse and do not contain hazardous waste (as defined in CCR, Title 22, Section 66261.3 et seq.) or soluble pollutants at concentrations in excess of applicable water quality. Inert debris may not contain any putrescible wastes. Inert debris includes but is not limited to concrete, asphalt, crushed glass, fiberglass, asphalt or fiberglass roofing shingles, brick, slag, ceramics, plaster, clay, and clay products.

J. Inert Debris Engineered Fill Operation (IDEFO): An activity exceeding 1 year in duration in which only the following inert debris may be used: fully cured asphalt, uncontaminated concrete (including steel reinforcing rods embedded in the concrete), crushed glass, brick, ceramics, clay and clay products, which may be mixed with rock and soil. Those materials are spread on land in lifts and compacted under controlled conditions to achieve a uniform and dense mass which is capable of supporting structural loading, as necessary, or supporting other uses such as recreation, agriculture, and open space in order to provide land that is appropriate for an end use consistent with approved local general and specific plans (e.g. roads, building sites, or other improvements) where an engineered fill is required to facilitate productive use(s) of the land.

K. Non-Permitted Solid Waste Hauler: A company that does not possess a valid and current solid waste from individuals or businesses in City of Los Angeles.

L. Permitted Solid Waste Hauler: A company that possesses a valid and current solid waste hauler permit from City of Los Angeles to collect and transport solid waste from individuals or businesses in City of Los Angeles. Refer to: https://www.lacitysan.org/san/faces/wcnav_externalId/s-lsh-wwd-s-c-whp?_adf.ctrl-state=jir2v5wty_2037&_afrLoop=14808459037152891&_afrWindowMode=0&_afrWindowId=null#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D14808459037152891%26_afrWindowMode%3D0%26_adf.ctrl-state%3Djir2v5wty_2041.

M. Recycling: The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products that meet the quality standards necessary to be used in the marketplace.

1. On-site Recycling: Materials that are sorted and processed for use in an altered form in Project, (e.g. concrete is crushed for use as base for a parking lot on Project Site(s)).

2. Off-site Recycling: Source-separated materials hauled to another location and used in an altered form in the manufacture of a new product.

N. Recycling Facility: An operation that can legally accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product. Depending on the types of materials accepted and operating procedures, a recycling facility may or may not be required to have a Solid Waste Facilities permit from CalRecycle or be regulated by LEA.

O. Reuse: Materials that are recovered for use in the same form. This includes materials that are reused on-site or off-site.

P. Salvage: Materials recovered for reuse or sale or donation to a third party.

Q. Source Reduction: Any action causing a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, and reducing the amount of yard waste generated.

R. Source-Separated Materials (Construction and Demolition Waste): Material that is sorted at the site of generation by individual material type for the purpose of reuse or recycling, i.e., loads of concrete that are source-separated for delivery to an inert debris recycling facility to be crushed into road base material. Note: Contractor may be able to save money on collection fees for source-separated material. Source-separated material is not subject to City's 10 percent AB 939 fee.

S. Solid Waste: Shall mean waste that CalRecycle has deemed acceptable for disposal at a Class III Landfill and shall not include source-separated material.

T. Transfer Station: A facility that can legally accept solid waste for the purpose of temporarily storing the materials for re-loading onto other trucks and transporting them to a landfill for disposal or recovering some materials for reuse or recycling. Transfer stations shall be permitted by CalRecycle and regulated by LEA.

U. Solid Waste Hauler or Waste Hauler: Shall mean any person engaged in the business of providing or responsible for the collection, removal, or transportation of Solid Waste, Construction and Demolition Waste, Source-Separated Materials.

V. Solid Waste Hauler Permit, Waste Hauler Permit, or AB 939 Compliance Permit: Persons who collect, remove, or transport Solid Waste, including Construction and Demolition Waste, Source-Separated Materials or co-mingled recyclables, generated with City, shall obtain, in addition to other required permits, and AB 939 Compliance Permit from City of Los Angeles, Department of Public Works Bureau of Sanitation.

1.4 DIVERSION REQUIREMENTS

A. Each construction or demolition Project shall reuse or recycle a minimum of 80 percent of the inert debris and 65 percent of the remaining construction and demolition waste generated by Project.

B. Each construction or demolition Project shall dispose of construction and demolition waste generated from Project in conformance with City's C&D Waste Recycling Ordinance (Ordinance No. 181519). Los Angeles Municipal Code requires that mixed C&D waste generated within City of Los Angeles be taken to a City Certified C&D Waste Processing Facility and source separated C&D waste be taken to a recycling facility or City Certified C&D Waste Processing Facility. Further, C&D waste can only be legally collected, removed, or transported by City of Los Angeles Permitted Solid Waste Haulers. If Contractor plans on collecting, removing, or transporting its own waste, Contractor shall first apply for and obtain a Solid Waste Hauler Permit from Solid Resources Citywide Recycling Division (SRCRD) of the Bureau of Sanitation.

C. Failure to meet the C&D waste recycling requirements as detailed in Paragraphs 1.4 A and B of this Article shall result in the assessment of penalties up to $5,000 per each load of mixed C&D waste not taken to City Certified C&D Waste Processing Facility. Further, collecting, removing, or transporting C&D waste within City without a valid Solid Waste Hauler Permit is a criminal misdemeanor subject to fines and/or imprisonment.

1.5 SUBMITTALS

A. Waste Management Plan (WMP): Conduct a Project Site(s) assessment and estimate the types and quantities of materials, generated during Project, that are anticipated for on-site or off-site processing, recycling, or reuse.

1. Not more than 10 working days after Notice to Proceed, submit to Engineer a written WMP, Attachment A, based on forms in Appendix "G" of Specifications. The plan shall show a minimum 80 percent recycling for inert debris expected from Project and 65 percent recycling for the remaining C&D waste expected from Project. Submit the plan in the format as shown on Attachment A provided in Appendix "G" of Specifications. Instructions for filling out the form are in Attachment A, Instruction Sheet for Waste Management Plan included in Appendix "G" of Specifications. Work shall not begin until Engineer approves WMP for Project.

2. If Contractor expects a circumstance that Contractor believes makes it infeasible to comply with the Diversion Requirement, Contractor may submit a written request for an exemption at the time WMP is submitted. If the exemption request is not approved by Engineer, revise and resubmit a WMP.

3. if City determines that it is infeasible for Contractor to meet Diversion Requirement due to unique circumstances, City shall determine the maximum feasible diversion rate for each material and shall indicate this rate on WMP submitted by Contractor. City shall return a copy of WMP to Contractor marked Approved for Infeasible Exemption. Contractor shall be required to meet the maximum feasible diversion rates as approved by City. If Contractor fails to meet revised rates, Contractor shall be subject to the stipulated penalties. Exempt Projects are required to keep and submit documentation for Project. This includes receipts, WMP, SWDD Reports, and supporting documentation as required in this Section.

4. City's approval of Contractor's WMP shall not otherwise relieve Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.

B. Solid Waste Diversion and Disposal Report (SWDD Report): One week prior to the first of every month, and prior to Engineer's monthly progress estimate for payment, Contractor shall prepare and submit to Engineer a written SWDD Report quantifying material generated, diverted, and disposed in Project during the time period covered by SWDD Report and progress payment. Part 3 of each SWDD Report is a cumulative history of the diversion and disposal for Project. Submit the report in the format provided in Attachment B included in Appendix "G" of Specifications. Failure to submit the report and the supporting documentation shall render the application for progress payment incomplete and delay payment until the proper documentation is submitted. The supporting documentation includes manifests, weight tickets, receipts, reports, invoices, and other supporting documents specifically identifying the projects, the recyclables and solid waste generated by Project, and where the material was sent. Instructions for filling out the forms are in Attachment B, Instruction Sheet for Solid Waste Diversion & Disposal Report included in Appendix "G" of Specifications. Together, all of the SWDD Reports shall cover the complete time period of Project. The final SWDD Report and supporting documentation shall be submitted within 30 Calendar Days of substantial completion of Project but before Affidavits of Completion are submitted.

C. Substitutions: Should Contractor desire to use materials, equipment, or products that meet the requirements of these specifications but are more environmentally responsive, Contractor shall submit these substitutions in conformance with Proprietary Names and Substitutions Subsection of GENERAL CONDITIONS Section.

1.6 PENALTY

A. If the diversion requirement has not been met, a per ton penalty shall be applied to the disposed material over that allowed in approved WMP.

B. The penalty shall be calculated as follows: Tons over that allowed in the approved WMP times the per-ton penalty in effect at the time Contract was awarded. The penalty may not exceed the total payment retention for Project.

C. Tons of mixed C&D waste either not hauled to City Certified C&D Waste Processing Facilities or hauled by non-permitted waste haulers shall be assessed a per-ton penalty. The penalty may not exceed the total payment retention for Project.

D. The penalty is $100 per ton.

E. The recommended penalty shall be determined by Bureau of Contract Administration and Bureau of Sanitation and shall be considered by Board of Harbor Commissioners at the time of Project closeout.

1.7 WASTE MANAGEMENT PLAN SUBMITTAL MEETING

A. On or about 5 working days after Notice to Proceed, Engineer shall schedule and attend a meeting with Contractor to discuss the proposed WMP submittal. This meeting shall be held to allow Department and Contractor an opportunity to develop a mutual understanding regarding the recycling and reuse requirements and programs.

1.8 REUSE, SALVAGE, AND RECYCLING OPTIONS

A. Construction projects shall make use of as many reuse and salvage options as is feasible. One option is CalMAX, a free program sponsored by CalRecycle. The most recent issues of CDRG, contains contact information for non-profit organizations, salvage facilities, and other reuse organizations.

B. Recycling shall include both on-site and off-site recycling of source-separated materials, as well as mixed C&D waste recycling efforts.

C. On-site recycling programs shall produce a quality product to meet Specifications identified in Contract Documents, subject to approval. Estimate the amount of material to be used in Project and include a program for off-site recycling of any excess material that cannot be used in Project.

D. Develop and implement a program to include source separation of solid waste, to the greatest extent feasible, of the following types:

1. Asphalt

2. Concrete, concrete block, slump stone (decorative concrete block)

3. Rock

4. Wood (lumber)

5. Green material (i.e. tree trimmings)

6. Other materials, as appropriate, such as red clay brick, building fixtures, architectural details, drywall, carpet, carpet padding, and corrugated cardboard.

E. Mixed C&D Waste Recycling: Develop and implement a program to transport commingled construction and demolition materials that cannot be feasibly source-separated to Certified C&D Waste Processing Facility.

F. Certified C&D Waste Processing Facility: These facilities have facility recycling rates, established by City of Los Angeles for mixed C&D waste. Mixed C&D waste taken to these facilities are considered to have been recycled at the rate of the certified processing facility. For example, 100 tons of material taken to a facility with an 80 percent recycling rate results in 80 tons of recycling and 20 tons of disposal for Project. A list of these facilities and their recycling rates is in the most recent issue of CDRG.

G. Recycling, Reuse, Mixed C&D Waste Processing, and Salvage Facilities: CDRG is incorporated in this Section by reference and contains information about processing, recycling, reuse, and salvage facilities.

H. Revenue: Revenue or savings obtained from recycled, reused, or salvaged materials shall accrue to Contractor unless otherwise noted in Contract Documents. Note: Contractor may be able to save money on collection fees for source-separated material. Source-separated material is not subject to City's 10 percent AB 939 fee.

I. AB 939 Fee: AB 939 fee is assessed on solid waste hauled within City of Los Angeles in conformance with Section 66.32 of Los Angeles Municipal Code.

1. Solid waste haulers hauling material from City of Los Angeles locations must be permitted in conformance with Section 66.32 of City of Los Angeles Municipal Code.

2. Source-separated material is not assessed this fee.

1.9 HAULING AND DISPOSAL OPERATIONS

A. Hauling: Arrange the collection and hauling of C&D waste by a solid waste hauler that is permitted by City of Los Angeles in conformance with Section 66.32 of Los Angeles Municipal Code.

B. Recycling and Processing Facilities: Transport C&D waste to recycling or processing facilities. Contractor shall be familiar with the requirements for acceptance of C&D waste at the recycling and processing facilities before the material is delivered. The most recent issue of CDRG, includes a partial list of these facilities. Always call facilities in advance.

C. Disposal Facilities: Transport C&D waste that cannot be accepted at a recycling or processing facility, to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal. A load of C&D waste may be taken to a disposal facility only after it has been rejected by 2 different certified processing facilities and the driver is in possession of both rejection slips. The rejection slips and the weight ticket from the final destination shall be kept together and submitted to Contractor and copy furnished to Engineer.

D. Project Site(s) Disposal: Do not burn, bury, or otherwise dispose of solid waste on the Project Site(s).

PART 2 – PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Procedures and requirements for preparation and submittal of As-Built set of Record Documents including, but not limited to, Drawings and Specifications utilizing Bluebeam Revu Complete Annual Subscriptions and AutoCAD.

1.2 SUBMITTALS

A. Engineer's approval of the up-to-date status of Record Documents is a prerequisite for the approval of requests for progress payments.

B. Submit the final Record Documents, consisting of marked up Drawings, Specifications, and additional Drawings, to Engineer in digital and paper formats for approval upon completion of Project and prior to submitting Affidavit of Completion.

C. Project Record Documents shall be updated daily for review and approval and shall consist of marked up Drawings and Specifications utilizing Bluebeam. Submit the final Record Documents, consisting of marked up Drawings, Specifications, and additional Drawings to Engineer in Bluebeam and AutoCAD for approval upon completion of Project and prior to submitting Affidavit of Completion.

1.3 DESCRIPTION - PROJECT SET RECORD DOCUMENTS

A. Following Award of Contract, secure from Engineer (at no charge) 1 complete set of As Bid Drawings and conformed Specifications to be the basis of Project Set Record Documents.

B. Engineer shall create and manage a Bluebeam Revu Studio Session. Contractor shall make entries to Project Record Documents within the Bluebeam Revu Studio Session. Contractor shall coordinate with Engineer for a list of Revu attendees.

C. Following Award of Contract, Engineer shall provide a complete set of As Bid Drawings and conformed Specifications in digital portable document format (PDF) via Bluebeam Revu Studio Session and full size hard-copy format to be the basis of Project Set Project Record Documents.

D. Project Set Record Documents shall be identified with the title RECORD DOCUMENTS - PROJECT SET. Project Set shall be used for no purpose other than the entry of data and review by Engineer.

1.4 ENTRIES ON JOB SET

A. The following entries shall be made on Bluebeam:

1. Enter changes on Drawings and Specifications, as applicable.

2. Describe and date changes by note and graphic line. Emphasize entry by a cloud around the affected area or areas. In the event of overlapping changes, different colors may be used for each change.

3. Include changes clearly marked on Drawings from sources, including responses to Requests for Information (RFIs), product substitutions, and delta revision changes transmitted from Engineer.

4. Note authority and reason for each change.

5. Reference change on any other affected sheets.

6. Enter make and model of equipment installed in the Project.

7. Maintain record documents as-current continually and available for examination by Engineer, upon request.

B. The following entries shall be made on AutoCAD and shall include hard-copy and electronic AutoCAD files of As-Builts:

1. Note actual location (dimension, elevations, depths, stations) of substructures constructed (including pile tip elevation, sewer wyes and laterals, utility stubouts, and Work shown schematically) and existing substructures encountered during construction. Call for survey to determine as-built alignment and elevation as required before concealing Work.

1.5 CONVERSION OF SCHEMATIC LAYOUTS TO AS-BUILT DRAWINGS

A. Where Work is shown on Drawings by use of a schematic diagram, supplement the diagram or provide a new drawing, in a manner approved by Engineer, to show the actual dimensioned locations, elevations, and details of Work.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Specific measures and practices to protect the environment, be socially responsible, provide for the economic development of Port of Los Angeles and include air quality, materials management, energy use, health and safety, and labor sustainability measures.

1.2 REFERENCES

A. FGC Division 4 Part 2 Chapter 1 - Birds and Mammals.

1.3 SUBMITTALS

A. Provide a list of equipment prior to entering Project Site(s).

B. Submit backup documentation monthly demonstrating compliance with the environmental measures, including but not limited to Project conditions, as applicable and, in particular, as indicated in the Environmental Compliance Tracking (ECT) Form (refer to sample form in Appendix "H" of Specifications and fill in form in PMWeb), including the California Air Resources Board Executive Order, Engine Model Summary Template, vehicle registration card, photos of equipment with equipment identification number, and the like, and monitoring logs and reports.

C. Submit pre-construction survey for nesting birds to Engineer as required by Protection of Nesting Birds Article of this Section.

1.4 DEPARTMENT DIESEL FUEL REQUIREMENTS

A. Project shall require ocean-going vessels to use 0.1 percent sulfur fuel in main and auxiliary engines and boilers in conformance with California Air Resources Board (CARB) regulations.

B. Project shall require diesel-fueled harbor craft and off-road equipment to use renewable diesel in conformance with CARB regulations.

C. When possible, use renewable diesel instead of conventional diesel for on-road diesel vehicles.

1.5 DEPARTMENT DREDGING REQUIREMENTS

A. Electric dredging equipment may be used for dredging though it is not required. Connection of electrical dredging equipment shall be by connection to the landslide power grid.

1.6 DEPARTMENT EQUIPMENT REQUIREMENTS

A. Vessels:

1. Ships and barges delivering construction materials to Project Site(s) shall comply with the expanded Vessel Speed Reduction Program (VSRP) within 40 nautical miles of Point Fermin. Information about VSRP can be found here: https://www.portoflosangeles.org/environment/air-quality/vessel-speed-reduction-program.

B. Harbor Craft:

1. Harbor craft engines used during the construction phase of Project shall, at a minimum, meet or exceed California Air Resources Board (CARB) Commercial Harbor Craft (CHC) Regulation requirements, or cleaner.

2. Idling shall be restricted to a maximum of 15 minutes when not in use.

3. The above requirements (Paragraph A of Department Equipment Requirements and Paragraph B.1 of Department Equipment Requirements) shall be met, unless Contractor is able to provide proof of compliance with CARB CHC in the form of:

a. Approved Alternative Control of Emissions (ACE) plan from CARB for the vessel(s) used in Project.

b. Approved Compliance Extension (CE) from CARB for the vessel(s) used in Project. Vessel(s) with this extension can only be used up to the expiration of CARB CE. CARB CE shall be swapped out when replacement vessel(s) have been put in service.

C. On-Road Trucks:

1. On-road trucks, including import haulers, used during the construction phase of the proposed Project shall meet or exceed CARB on-road vehicle emission requirements unless Contractor is able to provide proof that any of these circumstances exist:

a. On-road truck used in the proposed Project has received an exemption from CARB.

b. On-road truck is not subject to current CARB regulatory requirements.

2. Trucks hauling materials such as debris or fill materials shall be fully covered to prevent unintentional discharge of materials onto roads, highways, streets, and the like while operating off Department property.

3. Idling shall be restricted to a maximum of 5 minutes when not in use.

4. A copy of each unit's certified EPA rating, BACT documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit and/or compliance certification to applicable regulations shall be provided at the time of mobilization of each applicable unit of equipment.

5. For duration of Project, report trucks subject to CARB truck reporting requirements as part of Contractor's fleet of vehicles, not as part of Department's fleet of vehicles.

D. Diesel Powered Off-Road Construction Equipment:

1. Diesel powered off-road construction equipment is defined as any self-propelled land vehicle used for construction purposes, including earth movers, using diesel fuel, having a manufacturer's maximum gross vehicle weight rating of 6,000 pounds (2,721.5 kg) or more, with a power rating greater than or equal to 25 horsepower (hp).

2. Shut down engines on construction equipment when not in use for more than 5 minutes.

3. Construction equipment shall incorporate, where feasible, emissions-savings technology such as alterntaive fuels, hybrid drives, and specific fuel economy standards.

4. Equipment Engine Specifications:

   a. Off-road diesel-powered construction equipment greater than or equal to 25 hp shall meet Tier-4 off-road emission standards and/or CARB requirements. Use the emission standard that has the least amount of allowable emissions for this type of equipment.

5. The above Equipment Engine Specifications measures shall be met, unless one of the following circumstances exists, and Contractor is able to provide proof that any of these circumstances exist:

   a. A piece of specialized equipment is unavailable within 200 miles of Port of Los Angeles, including through a leasing agreement.

1) If this circumstance exists, the equipment must comply with one of the options contained in the Step Down Schedule as shown in Table A of this Section. At no time shall equipment meet less than the current CARB requirements.

b. Reassess the availability of construction equipment on an annual basis. For example, if a piece of equipment is not available prior to December 31, 2018, Contractor shall reassess this availability on January 1, 2019.

Table A: Compliance Step Down Schedule

Compliance Alternative	Engine Standard	CARB-Verified DECS	PM Emissions* g/bhp-hr	NOx-Emissions g/bhp-hr
1	Tier 4	N/A	0.01	0.3
2	Tier 3	Level 3	0.02	2.9
3	Tier 2	Level 3	0.02	4.47
Equipment less than Tier 2 or lower than current CARB requirements is not permitted.				

*Stated emission levels are for engine horsepower ratings of 176 bhp and above. Emission levels for engine bhp ratings below 176 hp are marginally higher. (0.02-0.08 g/bhp-hr depending on hp, Tier and VDEC level)

6. Provide a copy of each unit's certified EPA rating, Verified Diesel Emission Control Strategy (VDECS), proof of use of renewable fuels, and CARB or SCAQMD operating permits and compliance certificates to applicable regulations at time of mobilization of each applicable unit of equipment.

7. Show proof of compliance with the In-Use Off-Road Diesel Regulation for Contractor and subcontractor off-road diesel-powered fleet prior to commencing Work.

8. For duration of Project, report off-road diesel-powered equipment subject to CARB reporting requirements as part of Contractor’s fleet of vehicles, not as part of Department’s fleet of vehicles.

E. Fugitive Dust Control:

1. Water active grading sites at a maximum of 2-hour intervals to control fugitive dust. Applies to sites when vehicles or equipment is in the process of ground disturbance activities. Maintain the soil in a moist condition when not actively working such as nights, weekends, and holidays to prevent fugitive dust from leaving Project Site(s). In the event a more restrictive site-specific fugitive dust control requirement is needed or regulated, the site-specific requirement shall govern.

2. Apply approved non-toxic chemical soil stabilizers to inactive construction areas or replace groundcover in disturbed areas.

3. Provide temporary wind fencing around sites being graded or cleared.

4. Suspend soil disturbance activities when winds exceed 25 miles per hour (mph) or when visible dust plumes emanate from a Project Site(s). Stabilize disturbed areas if construction is delayed.

5. Cover open storage piles (greater than 3 feet tall and a total surface area of 150 square feet) with a plastic tarp or chemical dust suppressant.

6. Haul waste materials off-site immediately.

7. Pave road and road shoulders where feasible.

8. Sweep streets at the end of each day if visible soil is carried onto paved roads on-site or roads adjacent to Project Site(s) to reduce fugitive dust emissions.

9. Appoint a construction relations officer to act as a community liaison concerning on-site construction activity, including resolution of issues related to PM 10 generation.

10. Refer to REGULATORY REQUIREMENTS and SITE CONDITIONS Sections for additional requirements.

1.7 PROTECTION OF NESTING BIRDS

A. To comply with state and federal laws protecting nesting birds, Contractor shall have a qualified biologist conduct pre-construction surveys for nesting birds before any construction activity that disturbs vegetation, trees, or soil is performed between February 1st and September 15th. Conduct pre-construction survey within 1 week prior to vegetation, tree, or soil disturbing activity.

1. The minimum professional qualifications for biologist are a graduate degree in ornithology, wildlife biology, vertebrate field biology, or a closely related field, in addition to:

    a. At least 3 years of professional experience studying birds and performing nest surveys;

    b. At least 1 year of experience in coastal Southern California, including sufficient local field experience in identification of flora or fauna, particularly rare, endangered, and threatened species, with knowledge of their local and range-wide population status and trends.

B. Contractor shall provide and pay for the services of the biologist as required for Project.

C. If a project includes a federal/state-listed endangered, threatened, or other special-status species, the qualified biologist shall also possess the applicable Endangered Species Act Section 10(a)(1)(A) recovery permit. If such a recovery permit does not exist for the species of concern, the qualified biologist's previous experience shall include at least 3 years documentable experience monitoring or managing projects that include this specific species.

D. Biologist shall determine during pre-construction survey if deterrents are necessary to prevent future nesting. Contractor shall install deterrents as directed by Engineer.

E. If nesting birds are detected, Contractor shall implement no-disturbance buffers until the nests have fledged. The size of the buffers shall be based on the judgment of a qualified biologist. The biologist shall determine the buffer based on the species ecology, its tolerance to disturbance, and the type of construction activity that is occurring. Conduct periodic monitoring to ensure the nest is not disturbed. The biologist shall recommend a monitoring schedule subject to approval by Engineer.

F. If a potentially active nest is encountered during construction, Contractor shall immediately cease Work in the area and immediately notify Engineer of the discovery. Contractor shall not resume Work in the area until after consultation with a qualified biologist and directed to do so by tEngineer. When Contractor is directed to resume construction, such operations shall be conducted as directed by Engineer.

G. Applicable laws include but are not limited to Federal Migratory Bird Treaty Act; Fish and Game Code (FGC) FGC Division 4 Part 2 Chapter 1 - 3503 and 3503.5.

1.8 TECHNICAL SPECIALIST QUALIFICATIONS

A. Biological and Marine Resources

1. Marine Mammal and Marine Reptile (Green Sea Turtle) Observers:

a. In order to perform monitoring to minimize impacts during pile driving activity, a qualified biologist shall be a National Oceanic and Atmospheric Administration (NOAA) approved Marine Mammal and Marine Reptile Observer with at least 3 years of experience monitoring for potential impacts from pile driving in harbor environments similar to the Port of Los Angeles. It is incumbent upon the qualified biologist to contact NOAA's National Marine Fisheries Service Southwest Regional Office and obtain approval for the specified Project.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Basic site materials, methods, and requirements to locate, protect, repair, remove, replace, and dispose of existing surface and subsurface conditions and improvements at Project Site(s), including existing utilities, structures, and substructures.

B. Basic materials and methods common to new Project Site(s) construction.

1.2 RELATED SECTIONS

A. Section 02 41 13 - Selective Site Demolition

B. Section 02 61 14 - Excavating, Stockpiling, and Disposing of Chemically Impacted Soil

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the corresponding bid items of Bid Proposal Line Items.

1.4 REFERENCES

A. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.

B. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).

C. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

D. Reference Specifications (RS):

Section 201 - Concrete, Mortar, and Related Materials

Section 306 - Open Trench Conduit Construction

Section 401 - Removal

1.5 EXISTING SUBSURFACE CONDITIONS

A. Locations of existing pipelines, utilities, and substructures shown on Drawings are approximate only.

B. Keep existing services and facilities in operation except when Engineer permits shutdown in writing, and then only after temporary services have been provided.

C. Refer to SITE CONDITIONS Section for additional requirements.

PART 2 - PRODUCTS

2.1 CEMENTITIOUS SLURRY MATERIAL

A. Cement-Sand Slurry: Class 100-E-100 in conformance with RS Subsection 201-1.1.2, Table 201-1.1.2.

B. Concrete for High Voltage (Greater than 600 volts) Encasement: Concrete shall be Class 450-C-2000 in conformance with RS Subsection 201-1.1.2, Table 201-1.1.2, red tinted with 5 pounds liquid equivalent of Mastercolor (formerly Rheocolor L) Liquid coloring admixture as manufactured by BASF or similar coloring product approved by Engineer.

PART 3 – EXECUTION

3.1 VERIFICATION OF SITE CONDITIONS

A. Notify Underground Service Alert 2 working days prior to commencing demolition, excavating, trenching, drilling, or similar underground Work.

B. Contact owners of existing lines and substructures that may interfere with Work.

C. Determine and mark locations of substructures not marked by owners. In addition to the substructure information shown on Drawings, maps and reference Drawings showing record locations of substructures are available for review in the office of Engineer. Department neither belongs to Underground Service Alert nor participates in its activities. Department does not mark substructures in the field.

D. Hand-dig excavations to design depths where alignments shown on Drawings occur within 5 feet radially of existing utilities. Hand-dig until the existing utility is located.

3.2 PROTECTION OF EXISTING FACILITIES

A. Protect existing facilities adjacent to Work to avoid damage. Repair or replace existing structures and improvements located above or below ground which are damaged or removed as a result of Contractor's operations wherever such existing improvements are not specifically designated to be permanently removed. Structures to protect and repair include, but are not limited to, asphalt concrete and concrete pavement, pipelines, wires, cables, electrical pull boxes, conduits, vaults, and maintenance holes. Repairs and replacements shall be made at Contractor's sole cost and expense and shall be equal to existing improvements and shall match existing in finish and dimension.

1. Replacement asphalt concrete pavement shall be 1 inch greater in thickness than the existing pavement that was removed.

2. Damaged Pipelines:

   a. Replace damaged pipeline section(s) up to and including the joints at the end of the damaged section(s).

   b. Replace damaged joint materials.

B. Place barricades and install warning lights around excavations.

C. Exercise extreme caution when working in the vicinity of existing power poles and light poles designated to remain. Support Department of Water and Power and other utilities' poles and guy wires as occur adjacent to excavations in conformance with the requirements of the utility owning the pole.

3.3 BASIC PAVEMENT REMOVAL METHODS

A. Perform asphalt concrete pavement removal in conformance with RS Subsection 401-2 and, where the removal line shall be a join line, saw cut line to full depth to provide a butt joint.

B. Concrete pavement removal shall conform to RS Subsections 401-3.1, except that the saw cut shall be made to a depth of 3 inches. Assume that concrete slabs are reinforced.

C. Removal Work performed beyond the lines and grades shown on Drawings, or beyond limits described in excavation and demolition submittal approved by Engineer, shall be considered to be unauthorized and at the sole cost and

expense of Contractor. Engineer may order Contractor to restore such removals in conformance with Protection of Existing Facilities Article of this Section.

3.4 BASIC BACKFILL AND COMPACTION METHODS

A. Earth soil compaction shall be 95 percent relative compaction for top 12-inches and 90 percent relative compaction below that unless indicated otherwise on Drawings or Specifications. Exceptions:

1. Compaction recommendations from Project geotechnical report.

2. Soil requiring 95 percent compaction throughout as required by City of Los Angeles Building Code, Chapter 70 Fills Section, as determined and directed by Engineer.

B. Jetting and flooding is not permitted for compaction of trench backfill. Mechanical compaction of soil is required.

C. Removal areas 5 feet by 5 feet or less and surrounded by pavement to remain in place on 3 or 4 sides shall be backfilled with cement sand slurry up to the bottom of proposed pavement.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Engineer shall take samples of the soil to be compacted to determine the optimum moisture content and maximum dry density of the soil in conformance with ASTM D1557.

2. Department shall perform field testing of compacted soil in conformance with American Society for Testing and Materials (ASTM International) standards, including ASTM D6938 (nuclear methods) or ASTM D1556/D1556M (sand-cone method). Department shall perform compaction tests, 1 time, at no expense to Contractor. Department shall perform retests required due to inadequate compaction at Contractor's sole cost and expense. Contractor shall allow 2 working days in construction schedule for tests to be run and results to be furnished.

a. Make requests for testing 24 hours in advance through Engineer.

3.6 INTERFERING SUBSTRUCTURES

A. Consult Engineer immediately for directions whenever substructures not shown on Drawings interfere with or affect Work. Contractor shall propose means and methods to Engineer to deal with the interferences. Engineer shall make final decision on method of correction or protection to be used.

1. If interfering substructures must be removed, the following shall be done before removing or cutting the substructures:

   a. Tap the line and determine if the line contains any kind of liquid or gaseous material.

   b. If storm drain or sewer lines are empty or filled with concrete or mud slurry, lines may be cut, removed, and capped or plugged, in conformance with RS Subsection 306-3.3.

   c. Test conductors in conduits appearing to be abandoned and verify that conductors are de-energized. Remove de-energized conductors. Report energized conductors to Engineer and cease removal Work until Engineer authorizes Work to resume.

   d. Consult Engineer for methods of handling other substructures.

   e. Notify Engineer to identify contents of unknown line if it is found to contain liquid or gaseous material. Remove contents and dispose in conformance with applicable regulations. Such Work shall be considered a Change in Work and payment shall be determined in conformance with GENERAL CONDITIONS Section.

   f. Test pipeline coatings for asbestos-containing materials (ACM) or other toxic substances. Remove, handle, and dispose of hazardous pipeline coatings in conformance with applicable regulations. Such Work shall be considered a Change in Work and payment shall be determined in conformance with GENERAL CONDITIONS Section. A description of Work shall be submitted to Engineer when Work is complete.

2. Evacuated lines or remaining portions of abandoned lines shall be capped or removed as described in this Article for empty lines.

3.7 OWNERSHIP AND DISPOSAL

A. Asphalt concrete and other bituminous pavement, concrete rubble, unreinforced concrete, rocks, concrete masonry, and reinforced concrete demolished at Project Site(s) shall become property of Contractor and shall be recycled in conformance with Contractor's Waste Management Plan (WMP) as described in CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT Section of Specifications.

1. The following materials shall be disposed of as specified in Paragraph 3.7B of this Article: Bricks; concrete-filled steel posts; heavily reinforced concrete items, such as concrete piles, concrete railroad ties, creosote-contaminated asphalt concrete cold millings from between railroad tracks with timber ties, and wire-mesh-reinforced concrete.

B. Materials to be removed other than those shown on Drawings to remain or be salvaged, or listed in Salvage Article of SELECTIVE SITE DEMOLITION Section, shall become the property of Contractor and shall be disposed of off Department property in conformance with Contractor’s Waste Management Plan.

3.8 MAINTENANCE AND REPAIR

A. Unpaved access roads servicing Project may become unstable during rainy weather. Maintain unpaved access roads to allow passage of Contractor’s as well as Department’s trucks and passenger vehicles at Contractor’s sole cost and expense.

B. Maintain continuity and integrity of permanent fences and temporary construction fences. Immediately replace fence sections damaged or missing during construction prior to close of the regular working day upon which damage occurred.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Selective demolition and removal Work including disposal but not limited to the following:

1. Timber wharves and dolphins
2. Concrete wharves and dolphins
3. Timber piles
4. Concrete piles

B. Develop waste management plan in conformance with CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT Section.

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 31 00 00 - Earthwork

C. Section 31 50 01 - Excavation Safety Requirements

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Timber Wharf Demolition: Timber wharf demolition shall be measured per square foot of wharf demolished, not including piles. Payment shall be made under the Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal Allowance bid item of Bid Proposal Line Items.
2. Concrete Wharf Demolition: Concrete wharf demolition shall be measured per square foot of wharf demolished, not including piles. Payment shall be made under the Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal Allowance bid item of Bid Proposal Line Items.
3. Timber Wharf Disposal: Timber wharf disposal shall be measured per ton of wharf removed, not including piles. Payment shall be made under the Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal Allowance bid item of Bid Proposal Line Items.

4. Concrete Wharf Disposal: Concrete wharf disposal shall be measured per ton of wharf removed, not including piles. Payment shall be made under the Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal Allowance bid item of Bid Proposal Line Items.

5. Timber Fender Pile Removal: Contractor shall make count of timber fender piles that are extracted, removed from Project Site(s), and disposed of as shown on Drawings and as specified in this Section and the REGULATORY REQUIREMENTS Section. Make count on an each basis in the presence of Engineer at the time Work is being performed. Count shall include timber piles broken off after satisfactory extraction attempts were made, as witnessed and approved by Engineer. Cost for containment boom deployment during timber fender pile removals shall be included. Payment shall be made under Timber Fender Pile Removal bid item of Bid Proposal Line Items. No payment shall be made for piles broken off, removed, and disposed without prior satisfactory extraction attempts approved by Engineer.

6. Timber Bearing Pile Removal: Measurement and payment for removed timber bearing piles shall be performed in the same manner and with the same restrictions as for Timber Fender Pile Removal bid item. Payment shall be made under the Timber Bearing Pile Removal bid item of Bid Proposal Line Items.

7. Concrete Pile Removal: Measurement and payment for removed concrete piles shall be performed in the same manner and with the same restrictions as for Timber Fender Pile Removal bid item. Payment for concrete pile removals, including 18 inch octagonal and 24 inch octagonal, shall be paid under corresponding concrete pile removal bid item of Bid Proposal Line Items.

8. Holes in Timber Wharf Deck for Pile Driving: Payable under Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal Allowance bid item of Bid Proposal Line Items.

9. Holes in Concrete Wharf Deck for Pile Driving: Payable under Miscellaneous Demolition, Removals, and Disposal Including Hazardous Waste Disposal Allowance bid item of Bid Proposal Line Items.

10. Refer to GENERAL CONCRETE REPAIR REQUIREMENTS Section for concrete repair size determination after demolition.

1.4 REFERENCES

A. 29 CFR 1926.200 - Accident prevention signs and tags.

B. ANSI Z535.5 - Safety Tags and Barricade Tapes (for Temporary Hazards).

1.5 SUBMITTALS

A. Procedures, equipment to be used, and operational sequences.

B. Submit prior to start of Work photographs of existing damage to structures adjacent to but not a part of Work where such damage could be misconstrued as caused by Contractor.

1.6 TRAFFIC MAINTENANCE

A. Refer to REGULATORY REQUIREMENTS Section.

1.7 SALVAGE

A. No on-site sale of salvage shall be allowed. No removals shall be made from Project Site(s) by any person other than Contractor or employees of Contractor.

B. Refer also to CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT Section for other requirements.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Refer to REGULATORY REQUIREMENTS and COORDINATION Sections for South Coast Air Quality Management District (SCAQMD) notification and permit requirements.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 DEMOLITION AND REMOVALS

A. Concrete Wharf Structure Demolition:

1. Sawcut permeter of demolition areas to a minimum depth of 1 inch. Remove deteriorated concrete and reinforcing to the limits indicated. Take extreme care not to damage existing reinforcing to remain in place.

2. Some of the principal types of concrete demolition are making holes in concrete deck to drive replacement piles and demolishing dolphin decks.

3. For additional tyes of concrete demolition, refer to GENERAL CONCRETE REPAIR REQUIREMENTS Section.

B. Timber Wharf Structure Demolition: As shown on Drawings.

C. Removal Work shall not exceed the limits shown on Drawings.

D. Control dust in conformance with REGULATORY REQUIREMENTS Section.

E. Items not shown on Drawings or mentioned in Specifications, which are encountered during Contractor's operations shall be brought to the attention of Engineer. Engineer shall determine the disposition of the items.

F. Obtain permission from Engineer and terminal manager, if need arises, to traverse adjacent portions of the terminal or other properties with outriggers, swinging cranes, or other heavy equipment. Refer to SITE CONDITIONS Section, Contractor’s Use of Site Article.

G. Should Contractor decide to move any large items intact off Project Site(s), Contractor shall make arrangements for permits, clearances, and utilities.

H. Remove vermin infested and harmful materials from Project Site(s). Dispose of materials in conformance with applicable health regulations to protect workers, tenants, and the public.

I. Perform demolition and removals under Engineer's inspection in conformance with applicable safety standards and requirements.

J. Burning of material on-site is prohibited.

K. No debris shall be allowed to enter harbor waters.

L. Perform pavement removals in conformance with BASIC SITE MATERIALS AND METHODS Section.

M. Repair or replace surface and subsurface improvements removed or damaged as a result of Contractor’s operations in conformance with BASIC SITE MATERIALS AND METHODS Section.

3.2 SAFETY AND PROTECTION

A. Protect existing buildings, substructures, and other improvements within and adjacent to Project Site(s) in conformance with BASIC SITE MATERIALS AND METHODS Section.

B. Provide, erect, and maintain barriers, barricades, lighting, and guard rails as required to protect general public, workers, and adjoining properties.

C. Cease operation and notify Engineer immediately if demolition appears to endanger life, facilities, or property. Do not resume operations until safe conditions have been restored.

D. Post hazard warning signage compliant with requirements of 29 CFR 1926.200 and recommendations of ANSI Z535.5 at perimeter fence. Promptly remove signage after Engineer verifies that demolition hazards no longer exist.

E. Refer to REGULATORY REQUIREMENTS Section for additional requirements in the event that hazardous wastes are discovered.

3.3 OWNERSHIP AND DISPOSAL

A. Refer to BASIC SITE MATERIALS AND METHODS Section for requirements concerning ownership and disposal criteria for demolished materials.

3.4 PILE REMOVAL

A. Remove concrete and timber piles as shown on Drawings. Remove pile stubs which extend 2 feet or more above the mudline or rock slope as directed by Engineer.

1. Use a vibratory extractor. Jetting of piles shall be permitted only with Engineer's prior approval and only for piles that could not be removed by dry vibratory extraction.

2. A minimum of 2 attempts to extract the pile shall be made, even if the first attempt results in the pile breaking.

3. If, in Engineer's judgement, Contractor has made 2-satisfactory extraction attempts and the pile still breaks, remove upper portion of pile completely and abandon stub in place if the stub extends no more than 2 feet above the mudline or rockline. Disconnection of upper portion of concrete piles may require the use of a diver where piles break underwater. If the stub extends more than 2 feet, make additional attempts to extract the pile.

4. Intentional snapping or breaking of concrete and timber piles is prohibited.

5. Retrieve timber pile debris after each extraction. Refer to Toxic Material Removals Article of this Section for creosote-containing materials disposal.

6. Dispose of concrete pile debris off of Department property.

B. Deploy containment boom during timber pile removal Work. Boom shall be of sufficient length to enclose work area and pile driving equipment including crane boom.

1. Clean floating debris from the water surface immediately upon discovery.

2. Remove debris from harbor waters.

C. Perform abandonment-in-place of existing piles in accordance with Drawings.

3.5 TOXIC MATERIAL REMOVALS

A. Dispose of creosote, pentachlorophenol, or ACZA-containing materials, including timber wharves, timber piles, timber power poles, and railroad ties, in conformance with REGULATORY REQUIREMENTS Section. Unless indicated otherwise on Drawings or reference Drawings, assume timber railroad tie spacing at 19 1/2 inches on center for existing track system embedded in asphalt concrete.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Design, qualifications, and permit requirements for staging areas and stockpiles, excavating and stockpiling potential chemically impacted soil (potential CIS) and chemically impacted soil (CIS) as directed by Engineer where unexpectedly encountered during performance of Work scope including but not limited to:

1. Personnel qualifications
2. South Coast Air Quality Management District (SCAQMD) permit requirements
3. Safety and health requirements
4. Soil excavation requirements
5. Soil staging and stockpiling requirements
6. Soil sampling, characterization, testing, and profiling requirements
7. Air emission monitoring requirements
8. Stormwater runoff control requirements
9. Leachate and stormwater collection and disposal requirements
10. Backfill requirements
11. Disposal or recycling facility acceptance and manifest requirements
12. Transportation requirements
13. CIS loading and unloading requirements

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 02 41 13 - Selective Site Demolition

C. Section 31 00 00 - Earthwork

1.3 PRICE AND PAYMENT PROCEDURES

A. The following shall be considered incidental to Work described in each bid item and no additional payment shall be made for the following Work:

1. Staging area construction including construction, inspection, and maintenance of soil cells and stockpiles.

2. Air quality monitoring and other CIS and potential CIS Work area maintenance.

3. Stormwater best management practices.

4. Sampling, characterizing, testing, and profiling associated with CIS and potential CIS disposal.

5. Sampling, characterizing, and disposing of Contractor’s waste materials and decontamination of Contractor’s equipment and disposal of decontamination wash water associated with CIS and potential CIS excavating, stockpiling, and disposal.

6. Loading, hauling, and unloading of soil to and from excavation and stockpile sites.

7. Disposing of Work and staging area materials.

8. Permits.

9. Documentation.

B. Measurement and Payment:

1. Quantities of disposed CIS shall be measured by the tonnage shown on weigh tickets from the disposal or recycling site. Quantities shall be paid for under 1 or more of the following bid items based upon Engineer’s characterization of CIS:

a. Excavate, Stockpile, and Dispose of Resource Conservation and Recovery Act (RCRA) Hazardous Waste Soil: The quantity of RCRA hazardous waste soil material excavated, stockpiled, characterized, hauled away, and disposed of off Project Site(s) at a Class I lined landfill facility that accepts RCRA hazardous waste soil. Payment shall be based on tonnage tickets from disposal facility accompanied by waste manifest signed by receiving disposal facility. Payment shall be made under the Excavate, Stockpile, and Dispose of Resource Conservation and Recovery Act (RCRA) Hazardous Waste Soil bid item of Bid Proposal Line Items.

b. Excavate, Stockpile, and Dispose of California Hazardous Waste Soil (Non-RCRA): The quantity of California hazardous waste soil material excavated, stockpiled, characterized, hauled away, and disposed of off Project Site(s) at a Class I lined landfill facility that accepts California hazardous waste in conformance with REGULATORY REQUIREMENTS Section shall be included in the bid item's unit price per ton for disposed material. Payment shall be based on tonnage tickets from disposal facility accompanied by waste manifest signed by receiving disposal facility. Payment shall be made under the Excavate, Stockpile, and Dispose of California Hazardous (Non-RCRA) Waste Soil bid item of Bid Proposal Line Items.

c. Excavate, Stockpile, and Dispose or Contaminated Non-Hazardous Waste Soil: The quantity of contaminated non-hazardous waste soil material excavated, stockpiled, characterized, hauled away, and recycled or disposed of off Project Site(s) at a Class III landfill or thermal desorption recycling facility in conformance with REGULATORY REQUIREMENTS Section. Payment shall be based on tonnage tickets from disposal facility accompanied by waste manifest signed by receiving disposal facility. Payment shall be made under the Excavate, Stockpile, and Dispose Contaminated Non-Hazardous Waste Soil bid item of Bid Proposal Line Items.

d. Excavate, Stockpile, and Re-Use Clean Soil: The quantity of clean soil material excavated, stockpiled, characterized, hauled and re-used on Project Site(s) shall be based on the count of truck loads converted to cubic yards. Payment shall be based on Engineer and Contractor's agreed-upon cubic yardage.

2. Cubic yard quantities of potential CIS approved by Engineer for use as fill shall be determined by Engineer prior to placing the material as fill.

3. If CIS or potential CIS is excavated beyond the limits set by Engineer, associated costs for excavation, stockpiling, loading, transporting, and disposing of such CIS or potential CIS shall be borne by Contractor.

4. CIS and potential CIS payable quantities are subject to reduction if improperly covered stockpiles are exposed to rainfall, wind erosion, and blowing wind which could result in a public health problem.

1.4 REFERENCES

A. 8 CCR 5192 - Hazardous Waste Operations and Emergency Response.

B. 22 CCR Division 4.5 - Environmental Health Standards for the Management of Hazardous Waste.

C. 29 CFR 1910 - Occupational Safety and Health Standards.

D. 40 CFR - Protection of Environment.

E. 40 CFR 761 - Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution In Commerce, And Use Prohibitions.

F. 49 CFR - Transportation.

1.5 ABBREVIATIONS

A. HAZWOPER: Hazardous Waste Operations and Emergency Response

B. PCB: Polychlorinated biphenyl

C. RCRA: Resource Conservation and Recovery Act

D. TSCA: Toxic Substances Control Act

1.6 SUBMITTALS

A. Submit the following to Engineer prior to starting Project excavation or earthwork:

1. Contractor’s qualifications for handling and disposing of CIS, environmental sampling, sample collection and handling, sample preservation and storage, decontamination, and chain of custody procedures including applicable certificates, licenses, personnel training records, and HAZWOPER training certificates (including current 8-hour annual refresher certificates, if applicable) for each person working on Project Site(s).

2. Credentials of Project manager and Project Site(s) superintendent or foreperson for excavating, stockpiling, and disposing of CIS.

3. Sketch of stockpile design including foundation material with method of protecting liner against liner equipment damage, liner thickness, berm materials and height, and spacing of toe of stockpile to berm, cover material and thickness, and sand bag layout. The design and construction of the containment area shall be in conformance with regulatory requirements.

B. Submit the following to Engineer prior to starting potential CIS excavating and stockpiling Work:

1. Sketch of proposed location(s) on Project Site(s) of temporary storage cells showing also distances to existing storm drain catch basins and the harbor pier head or shoreline. Show location of storage tanks for leachate and stormwater pumping.

2. Proposed Project Site(s) Specific Safety and Health Plan in conformance with REGULATORY REQUIREMENTS Section.

3. Method for equipment decontamination after completion of potential CIS and CIS Work. Include structural best management practices (BMPs) such as rumble plates and bermed wash down area. Refer to REGULATORY REQUIREMENTS Section, Construction General Stormwater Permit and Stormwater Pollution Prevention Plan (SWPPP) Article for more information. Include wheel washer locations at stockpile and excavation sites.

4. Method for equipment decontamination after completion of PCB Work in conformance with 40 CFR 761.

5. Sampling procedure, characterization, testing, and profiling plan for CIS and potential CIS.

6. Sampling procedure and characterization plan for leachate liquids and name of independent test laboratory.

7. Submit BMPs for containing CIS and wash water within staging area.

8. Method for maintenance of separate stockpile sites for each excavation site.

C. Submit to Engineer during excavating and stockpiling:

1. Documentation of daily potential CIS quantities excavated and CIS quantities stockpiled.

    a. Laboratory test reports associated with any samples collected at Project Site(s) within 48 hours of receipt of final copies from the laboratory.

    b. Records of daily calibration and direct readings for instrumentation maintained by Contractor. Submit daily to Engineer.

D. Submit to Engineer prior to loading and transporting CIS:

1. Name of proposed disposal or recycling facility.

    a. Depending upon the deposition location, approval from Los Angeles Regional Water Quality Control Board (LARWQCB) may be necessary.

2. Manifest forms prior to initiating transportation of CIS in conformance with Disposal, Acceptance, and Manifest Requirements Article of this Section.

3. Copies of information supplied to the disposal or recycling facility for the purpose of securing acceptance of the waste material.

    a. Provide final analytical characterization information. Draft data is not acceptable.

4. Waste acceptance pre-approval documentation received from the disposal or recycling facility(s).

5. Results of characterization of liquids collected from behind stockpile berms and from potential CIS excavation locations.

6. Results of characterization of waste material generated during decontamination of equipment.

E. Submit to Engineer during disposal or recycling of CIS:

1. Waste acceptance documentation received from the disposal or recycling facility (e.g., weight tickets, manifests, certificate of destruction or reuse).

F. Submit the following to Engineer after Work is complete:

1. Provide as-built Drawings of excavation areas including volume estimates and global positioning system (GPS) location information.

G. Submit upon Engineer's request:

1. Copy of State of California Contractor's license with hazardous substance removal certification required to excavate, stockpile, and dispose of CIS.

2. Copy of the disposal or recycling facility permit with applicable limits and conditions.

1.7 QUALIFICATIONS

A. Project Site(s) superintendent or foreperson overseeing Work of this Section shall have not less than 5 years experience in excavating, stockpiling, loading, transporting, and disposing of CIS.

B. Work associated with CIS shall be done under the direct supervision of a State of California registered geologist or professional Engineer who has at least 5 years of experience in overseeing CIS operation.

C. Contractor shall have and maintain plan, programs, training, and medical surveillance requirements under 29 CFR 1910 and 8 CCR 5192. Prepare and implement a Project Site(s) Specific Safety and Health Plan for Contractor employees.

D. Personnel performing Work at Project Site(s) under this Section shall be 40 hour Occupational Safety and Health Administration (OSHA) health and safety trained, complete with 8-hour annual refresher, supervisor training, respirator fit testing, and other training and certifications required under 29 CFR 1910.

1.8 SEQUENCE OF ACTIVITIES

A. Submit to Engineer stockpile design and credentials prior to earthwork and trenching Work.

B. Notify Engineer at least 2 working days before excavation, stockpile, and sampling activities.

C. Notify Engineer in conformance with this Section and REGULATORY REQUIREMENTS Section of unexpected discovery of potential CIS. Basis of identification:

1. Discolored soil

2. Odoriferous soil

D. Confirm existence of CIS or potential CIS with a photo ionization detector (PID) or other devices and tests and determine approximate limits of CIS or potential CIS excavation.

1. Notify Engineer and adjust limits during course of CIS or potential CIS excavation based on periodic Project Site(s) inspections.

E. Engineer authorizes Contractor to excavate, stockpile, and dispose of CIS. Contractor shall not start CIS or potential CIS excavation without Engineer’s written authorization.

F. Contractor excavates CIS or potential CIS and places in stockpiles conforming to this Section and located in storage cells within staging area location approved by Engineer.

G. After each storage cell is filled, Contractor samples, characterizes, tests, and profiles material in stockpiles and provides information to Engineer.

1. Contractor samples and characterizes leachates.

2. Sample frequency for potential re-use soil to be used as fill shall be in conformance with Paragraph 3.4 A.4 of EARTHWORK Section.

H. Contractor continues excavating and stockpiling CIS or potential CIS in accordance with Drawings until Engineer tells Contractor that CIS or potential CIS excavation is complete.

I. Contractor obtains Engineer's approval of disposal or recycling facility location.

J. Contractor disposes of CIS at approved off-site disposal location.

K. Contractor returns approved soil to Project Site(s) as fill or disposes as directed by Engineer.

1.9 WASTE DISPOSAL SERVICE PROVIDERS

A. The following disposal facilities are acceptable to Department at the time of bid. After Contract is awarded, Contractor may propose additional disposal facilities but Department reserves the exclusive right to reject any proposed facilities for any reason at its sole discretion.

1. RCRA Hazardous and TSCA Waste for Landfill or Treatment:

a. Chemical Waste Management - Kettleman Hills, Kettleman City, California

b. Clean Harbors Buttonwillow, LLC, Buttonwillow, California (very limited TSCA)

c. US Ecology Nevada, Beatty, Nevada

2. Non-RCRA Hazardous (California Haz) Waste for Landfill:

a. Chemical Waste Management - Kettleman Hills, Kettleman City, California

b. Clean Harbors Buttonwillow, LLC, Buttonwillow, California

c. US Ecology Nevada, Beatty, Nevada

3. Non-Hazardous Contaminated Waste for Landfill:

a. Simi Valley Landfill - Waste Management, Simi Valley, California

b. Sunshine Canyon Landfill - Republic Services, Sylmar, California

4. Non-Hazardous Contaminated Waste for Thermal Desorption Recycling (non-hazardous TPH contaminated soil):

a. Soil Safe, Inc., Adelanto, California

5. Treated Weathered Wood Waste (railroad ties, etc.)

a. Simi Valley Landfill - Waste Management, Simi Valley, California

b. Sunshine Canyon Landfill - Republic Services, Sylmar, California

6. RCRA Hazardous Waste Liquid, Non-RCRA (California Haz) Waste Liquid, and/or Non-Hazardous Waste Liquid:

    a. World Oil Recycling, Compton, California

    b. Clean Harbors, Wilmington, California

PART 2 - PRODUCTS

2.1 DESIGN REQUIREMENTS

A. Design staging area as follows:

1. Staging Area:

    a. Locate on Project Site(s) as far as possible from storm drain catch basins and from pierhead and harbor shoreline.

    b. Locate upon existing pavement if sufficient area is available.

2. Enclose staging area perimeter with 8 foot high temporary chain link fence. Locate storage cells within fenced area. Each cell shall be capable of containing 1 potential CIS or CIS stockpile.

3. Show location of storage tank for leachate and stormwater retained in CIS excavation.

4. Include perimeter berm surrounding entire staging area in addition to berms surrounding each stockpile.

B. Design stockpile system based on materials and equipment specified in PART 2 of this Section as minimum requirements. Adjust according to results of Engineer's characterization if required. Address the following additional considerations:

1. Foundation: Where staging area must be located on dirt grade, design protection against equipment damage to liners through protective layers inserted above liners.

2. Liners: Design to prevent cross-contamination of native soil beneath stockpile and to seal berm from migration of leachate and stormwater run off from covered stockpile.

3. Berm: Design to retain leachate from stockpile and stormwater.

    a. If soil from Project Site(s) are proposed for use in berm construction, do not use potential CIS or CIS.

4. Covers: Design to prevent volatile organic compound (VOC) emissions, rain infiltration, and to be resistant to both wind and VOC emissions damage.

2.2 MATERIALS

A. Sandbags:

1. Fabricate from woven, ultraviolet-resistant materials that are sufficiently close knit to prevent fines from migrating out through the bag, with bags tied tightly closed.

    a. Burlap bags, if used, shall be lined with plastic.

    b. Tires and lined paper bags shall not be used.

2. Sand shall be non-CIS, 100 percent passing No. 8 sieve.

3. Each bag shall weigh 40 to 60 pounds when filled.

B. Storage Cell Foundation:

1. Existing asphalt concrete or concrete pavement.

2. Bare dirt grade condition: Protection to liner shall be minimum, 2 inches sand on 8 ounce per square yard geotextile over liner.

C. Liners: 60 mil high density polyethylene (HDPE), minimum.

D. Berm: Minimum height: 12 inches.

E. Covers: 18 mil polyolefin minimum.

F. Truck Bed Liners: 3 mil polyethylene, minimum.

2.3 EQUIPMENT

A. Provide and maintain equipment, including health and safety monitoring equipment, dust monitoring equipment, and emission control equipment, necessary to complete this Work scope.

B. Leachate and stormwater collection and storage:

1. Minimum storage tank capacity shall be 550 gallons.

a. Tanks shall have sample ports and minimum 2-inch diameter drain valves to facilitate characterization and disposal of accumulated liquid.

PART 3 – EXECUTION

3.1 INSTALLATION - GENERAL

A. Contractor shall adequately protect its workers and subcontractors from exposure to CIS and potential CIS.

B. Use a water truck for dust control during CIS and potential CIS excavating, stockpiling, and loading activities.

C. Provide hazardous material identification information to personnel involved in equipment handling, shipping, and disposing of potential CIS and CIS.

D. Use excavating, handling, and loading methods and equipment that minimize disturbance to CIS and potential CIS and to areas beyond the limits of CIS and potential CIS excavation Work.

E. Obtain and comply with applicable SCAQMD Permits and Rules. Refer to REGULATORY REQUIREMENTS Section.

F. Material or soil that become contaminated as a result of Contractor's negligent operations shall be removed and recycled or disposed of at no additional cost to Department.

G. CIS and potential CIS excavating, loading, and hauling equipment shall be decontaminated prior to leaving immediate loading area or Project Site(s) for excavation of non-CIS in conformance with method approved by Engineer.

1. Waste materials generated during decontamination of equipment shall be recycled and disposed of off Department property in conformance with local, state, and federal regulations and guidelines.

2. Decontamination records shall be maintained for TSCA-regulated wastes in conformance with 40 CFR.

H. Handle PCB contaminated soil in conformance with 40 CFR 761.

3.2 SOIL EXCAVATION

A. Segregate potential CIS from non-CIS and place excavated potential CIS in storage cells.

1. Exercise caution during handling and transporting of materials so as not to cross-contaminate surrounding areas.

2. Coordinate with Engineer to obtain characterization and determination of appropriate recycling or disposal options in conformance with local, state, and federal regulations.

3. Place soil confirmed by Engineer to be CIS in different storage cell in staging area than potential CIS.

B. Notify Engineer immediately in the event that potential CIS is encountered outside the approximate limits previously identified. Segregate suspicious potential CIS in these areas from non-CIS.

C. Materials generated from the demolition of existing structures, i.e. concrete, asphalt, piping, steel or wood framing and the like, shall be decontaminated, if necessary, prior to recycling or disposal. Such material is not considered CIS and shall be segregated from potential CIS during performance of Work. Refer to SELECTIVE SITE DEMOLITION, STRUCTURE DEMOL and REGULATORY REQUIREMENTS Sections for additional information.

D. Stop Work and notify Engineer if free product liquids are encountered during excavation of potential CIS or if groundwater is encountered in a known CIS area.

3.3 SOIL STAGING AND STOCKPILING

A. Construct storage cell(s) for CIS or potential CIS at the staging area location(s) within Project Site(s) limits approved by Engineer.

1. Store excavated CIS or potential CIS in temporary storage cell(s) for 30 days, maximum, prior to transporting to disposal or recycling facility.

2. Create separate storage cells for each distinct area within Project Site(s) where CIS or potential CIS was discovered. Do not mix CIS or potential CIS from separate discovery areas or previously identified CIS areas.

B. The purpose of the temporary storage cell(s) shall be to:

1. Allow for Department characterization of potential CIS as well as to provide a mechanism to reduce or eliminate air and stormwater pollution from the stockpiles.

2. Prevent CIS or potential CIS from encountering non-CIS.

3. Prevent migration of liquid from surrounding areas into CIS or potential CIS and CIS.

4. Prevent migration of liquid and air emissions from CIS or potential CIS to the surrounding areas.

C. Storage Cell Construction:

1. Install temporary chain link fencing and entrance gates at the perimeter of staging area to prevent unauthorized entry. Install signs on fencing and entrance gate identifying the contents of the temporary storage cells and Contractor’s emergency telephone numbers.

2. Storage cell foundation shall consist of existing asphalt concrete or concrete pavement. Obtain Engineer's approval of foundation design for stockpile on exposed dirt grade prior to constructing foundation.

3. Construct perimeter barrier berm around entire staging area.

4. Install temporary plastic liner to ensure that CIS and potential CIS does not contact surrounding materials.

   a. For bare dirt conditions, remove rocks and other sharp objects greater than 3/4 inch in diameter from dirt prior to placing liners.

   b. For bare dirt conditions, install sand and geotextile or other membrane as approved by Engineer to protect liner from damage.

   c. Engineer reserves the right to take samples, beneath Contractor's proposed staging area location before and after creation of stockpiles to verify that adjacent grade has not been cross-contaminated.

5. Install a berm around each of the storage cell(s) sufficient to contain soil, sediment, and liquid, and to prevent stormwater runoff from flowing into or away from stockpiles.

    a. Extend liner up and over inside and outside faces of berm to prevent migration of liquids under the berm.

    b. Anchor berm and liner with sandbags.

6. Do not overfill cells with CIS and potential CIS. Maintain minimum of 18 inches from toe of stockpile to inside edge of berm.

7. Keep stockpiles covered with plastic to prevent odors and dust emissions in conformance with applicable local, state, and federal regulations and guidelines.

    a. Lap plastic to prevent entrance of stormwater into stockpile.

    b. Remove and replace stockpile covers to allow Engineer access upon request of Engineer.

    c. Remove stockpile covers to allow Engineer access for sampling upon request of Engineer. Replace covers after Engineer's sampling is complete.

8. Anchorage: Secure berm and liner with sandbags. Secure cover from wind uplift with sandbags regularly spaced from top to bottom of stockpile suspended by ropes or by other method approved by Engineer from top of stockpile. Secure edges of liner and cover. Remove and replace broken sandbags immediately.

D. Install BMPs approved by Engineer and use decontamination practices that prevent potential CIS from leaving the staging area.

1. Inspect vehicles prior to leaving the staging area to ensure that no potential CIS adheres to the wheels or undercarriage of equipment.

E. Inspect stockpiles on a daily basis to verify that stockpiles remain covered in order to prevent odorous and dust emissions in conformance with the terms of SCAQMD permits and other applicable local, state, and federal regulations. Verify emission levels by daily photo ionization detector (PID) monitoring. Replace covers whenever emissions exceed permit requirements or when VOC emission damage or other damage becomes evident.

F. Repair or replace perimeter controls, liners, or covers as needed, or as directed by Engineer to keep them functioning properly.

G. Remove sediment and soil coming from stockpile when accumulation reaches 1/3 of the perimeter berm height.

3.4 AIR EMISSION MONITORING

A. Air monitoring shall comply with local, state, and federal regulations and guidelines.

B. Monitor air quality continuously during excavation operations at potential CIS and CIS locations.

C. Provide field screening and monitoring equipment to monitor for:

1. Worker safety

2. Air monitoring permit requirements

D. In conformance with SCAQMD Rule 1166, use a PID, capable of detecting volatile organic vapors to a minimum of 1 part per million (ppm), to assess potential soil contamination levels. Soil with PID readings of 50 ppm or greater (measured at a distance of no more than 3 inches from the surface of the soil material) shall be deemed VOC-impacted soil and shall be excavated and managed in conformance with this Section.

E. Conform to requirements of SCAQMD Rule 1466. Refer also to REGULATORY REQUIREMENTS Section regarding Rule 1466.

3.5 STORMWATER CONTROL

A. Control perimeter of CIS and potential CIS excavations to prevent stormwater runoff from flowing into or out of excavated areas.

B. Implement structural stormwater best management practices (BMPs) to divert flows from exposed CIS and potential CIS, temporarily store flows, or otherwise prevent runoff and the discharge of pollutants from CIS and potential CIS excavation areas.

1. Refer to Construction Stormwater Pollution Control and Construction General Stormwater Permit and Stormwater Pollution Prevention Plan (SWPPP) Articles of REGULATORY REQUIREMENTS Section for additional BMP information.

2. Remove accumulated stormwater from potential CIS excavation areas in conformance with Leachate and Stormwater Handling Article of this Section.

3.6 LEACHATE AND STORMWATER HANDLING

A. Remove, store, sample, characterize, and recycle or dispose of stormwater that enters any excavation containing CIS and potential CIS as well as leachate and stormwater collected behind stockpile berms.

B. Construct collection sumps to facilitate removal of any accumulated stormwater and liquid leachate between toe of stockpile and inside edge of perimeter berms. Locate collection sumps at the low point between each berm and stockpile.

C. Construct collection sump at low point of CIS and potential CIS excavation locations.

D. Install transfer pumps in each of the collection sumps and connect piping to temporary storage tank(s) for transfer of accumulated liquid.

E. Use vacuum truck to collect leachate from stockpiles, stormwater accumulated behind stockpile berms, in potential CIS and CIS excavations, and from temporary storage tanks.

1. Pump accumulated leachate and stormwater weekly or as directed by Engineer.

F. Contractor shall obtain characterization of liquids.

G. Dispose or recycle liquids at location approved by Engineer.

3.7 BACKFILL

A. Soil determined by Engineer to be non-CIS may be considered for reuse within Project Site(s) limits where fill is required. Refer to EARTHWORK Section for information on import fill and excavated soil to be re-used as fill.

B. Potential CIS and CIS shall not be used as backfill and shall be properly recycled or disposed of at a disposal facility approved by Engineer.

C. Under no circumstances shall Contractor blend or mix excavated potential CIS or CIS with other soil or material. Do not add potential CIS or CIS to characterized stockpiles.

3.8 DISPOSAL, ACCEPTANCE, AND MANIFEST REQUIREMENTS

A. Classification of waste materials shall be in conformance with 40 CFR and 22 CCR Division 4.5.

B. Obtain written approval from Engineer on the acceptability of the proposed disposal or recycling facility prior to transporting CIS. Depending upon the facility, approval from LARWQCB may be necessary.

C. Upon receipt of written approval from Engineer and a minimum of 2 working days prior to initiation of soil loading, transporting, and disposing activities, prepare manifests designating the recycling or disposal facility and properly describe the waste in conformance with 49 CFR or 22 CCR Division 4.5 (whichever is applicable) for Engineer's review.

1. Engineer shall notify Contractor of errors or inadequacies, if any.

2. Engineer shall designate a representative to be present during soil loading and transporting activities in order to sign the manifests.

D. Department of Toxic Substances Control (DTSC) Form 8022A/Environmental Protection Agency Form 8700-22 (California Uniform Hazardous Waste Manifest) is required for manifesting of hazardous waste, unless the receiving state requires otherwise.

1. Non-hazardous wastes shall be manifested using a non-hazardous waste form. These are usually supplied by the receiving recycling or disposal facility.

E. Engineer shall supply Generator’s U.S.EPA ID Number required on the waste manifest. Refer to REGULATORY REQUIREMENTS Section for additional requirements.

F. Dispose of CIS in conformance with applicable bid item of Bid Proposal Line Items.

G. Dispose of soil transported to the temporary storage cell(s) that is determined by Engineer not to be CIS at facility approved by Engineer.

3.9 SOIL TRANSPORTATION REQUIREMENTS

A. Select transporter with a current DTSC registration certificate, current Certificate of Compliance for vehicles and containers, adequate insurance coverage, and applicable Department of Transportation and Public Utilities Commission licenses.

B. Comply with Department of Transportation requirements for packaging, labeling, and marking to ensure that the transport vehicles are correctly placarded.

C. Cover transported materials appropriately to minimize loss of material during transportation due to leaking, spilling, falling, or blowing in conformance with REGULATORY REQUIREMENTS Section.

D. Transport soil off-site with no free liquids to avoid spillage on roads. Beds of trucks transporting CIS shall be lined and covered.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Light non-aqueous phase liquid (LNAPL)/water mix skimming, removal, and disposal

1.2 RELATED SECTIONS

A. Section 02 41 13 - Selective Site Demolition

B. Section 02 61 14 - Excavating, Stockpiling, and Disposing of Chemically Impacted Soil

1.3 PRICE AND PAYMENT PROCEDURES:

A. Measurement and Payment:

1. LNAPL/Water Mix Skimming, Removal, and Disposal: Contractor shall furnish transportation, labor, materials, and equipment to skim, remove, and dispose of LNAPL/water mix floating on the groundwater in the excavation areas and convey the recovered LNAPL/water mixture to a vacuum truck and shall be paid under the Light Non-Aqueous Phase Liquid (LNAPL)/Water Mix Skimming, Removal, and Disposal bid item of Bid Proposal Line Items.

1.4 DEFINITIONS

A. LNAPL: Light Non-Aqueous Phase Liquid. A groundwater contaminate that is not soluble and has a lower density than water. Examples of LNAPLs are gasoline and other hydrocarbons.

B. RCRA: Resource Conservation and Recovery Act

C. TSDF: Treatment, Storage, and Disposal Facility

1.5 SUBMITTALS

A. Provide a skimming plan detailing LNAPL skimming equipment, LNAPL storage, and disposal to Engineer for approval prior to start of Work of this Section.

B. Prior to disposal, verify percentage of LNAPL and submit to Engineer. Submittal shall include the method used to determine LNAPL percentage.

C. Provide waste profiles for LNAPL/water mixture and any solid waste (e.g. contaminated personal protective equipment) for Engineer's review and approval prior to off-site transportation to a TSDF or recycling facility. Upon acceptance by TSDF and 48 hours prior to waste transportation, provide manifests for Engineer's review and approval.

D. Provide a detailed summary of waste collected and transported off-site, including the volumes of LNAPL/water mixture sent to each facility, on a weekly basis.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Oil skimmers: Suction skimmers and adhesion skimmers are the 2 main categories of skimmers. The final selection of skimmers and pumps shall be based on the magnitude, thickness, and physical properties of LNAPL/sheen accumulated in the recovery trench.

B. Vacuum trucks with a capacity of 1,000 gallons or greater, shall be used for removal of LNAPL from excavation areas.

PART 3 - EXECUTION

3.1 LNAPL SKIMMING

A. Recover LNAPL on the groundwater surface in the excavations by using a floating oil skimmer connected to a vacuum truck. LNAPL removal efficiency shall not be less than 80 percent LNAPLs and higher than 20 percent water content.

1. Contractor shall convey the recovered LNAPL/water mixture to a vacuum truck as specified in this Section.

B. Contractor shall dispose of recovered LNAPL/water mixture stored in vacuum trucks in conformance with waste regulations and as specified in this Section.

1. As an excavation area expands and a large open water surface is created, Contractor may use absorbent booms to collect and contain LNAPL in one or several manageable areas that are accessible to vacuum trucks.

C. Contractor may opt to reduce the frequency of LNAPL recovery events.

D. The selection of skimmers and the operation of the skimmers shall focus on maximizing LNAPL recovery and minimizing the content of water in the mixture.

E. Contractor shall characterize recovered LNAPL/water mixtures prior to transporting off-site for disposal, but shall assume for bidding purposes that the material shall be characterized RCRA D001 Ignitable.

3.2 LNAPL DISPOSAL

A. Dispose of LNAPL/water mix by transferring the contents of LNAPL storage tanks into a 1,000 gallons or greater capacity vacuum truck.

B. Transport LNAPL/water to a proper disposal facility, such as Crosby & Overton located at 1610 West 17th Street, Long Beach, California or Industrial Service Oil located at 1700 South Soto Street, Los Angeles, California, or other permitted and approved facility.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Removal of concrete for shotcrete and cast-in-place concrete repairs.

B. Cleaning of exposed steel reinforcing bars.

C. Addition and replacement of reinforcing bars.

D. Inspection and required testing of repair areas.

E. Slurry fill.

F. Submerged concrete-filled sandbags

G. The requirements of this Section apply to the basic methods of repair specified for Project. The basic methods of repair include the following:

1. Demolition
2. Shotcrete
3. Reinforcing splicing
4. Jacket encasement pile repairs

H. Additional or special requirements for each basic method of repair are described under each repair section.

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 02 41 13 - Selective Site Demolition

C. Section 03 37 14 - Shotcrete Repairs

D. Section 32 13 14 - Concrete for Exterior Improvements

E. Section 35 54 00 - Concrete Wharf Construction

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be included in each corresponding bid item of Bid Proposal Line Items.

2. Contractor shall measure length, width, and average depth dimensions, calculate and record, in the presence of Engineer, each defect's volume or length in the As-Repaired column of Drawings after demolition, preparation and acceptance of each defect and prior to completion of repair. Quantities shall not exceed those listed on Drawings without prior approval of Engineer. Volume and length measurements and calculations shall be reviewed and approved by Engineer for payment purposes. No payment shall be made for volumes or lengths that have not been reviewed and approved by Engineer.

3. Measurement for slurry to repair slopes in the tidal zone shall be by cubic yard in place. Payment shall be made under the Slurry to Repair Slopes in the Tidal Zone bid item of Bid Proposal Line Items.

4. Measurement for submerged concrete-filled sandbags shall be by the count of each bag in place. Payment shall be made under the Submerged Concrete-Filled Sandbags bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. API Spec 13A - Drilling Fluids Materials.

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

C. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.

D. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

E. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

F. ASTM C150/C150M - Standard Specification for Portland Cement.

G. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.

H. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.

I. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars.

J. SSPC-SP 6 - Commercial Blast Cleaning.

K. Reference Specifications (RS):

Section 201 - Concrete, Mortar, and Related Materials

1.5 SUBMITTALS

A. Equipment:

1. Submit description of mechanical or waterblasting equipment to be used for each basic method of repair prior to starting Work.

B. Reinforcing Steel for Additions and Replacement of Corroded Bars:

1. Submit 2 copies of mill test reports certifying that materials meet specified American Society for Testing and Materials (ASTM International) requirements.

2. Submit chemical analysis for determining carbon equivalent of steel reinforcement, which shall be welded in conformance with AWS D1.4/D1.4M.

C. Submit procedure to be used for capturing debris from concrete removal for shotcrete and cast-in-place concrete repairs.

D. Daily Records:

1. Submit daily records of which repairs were made, which method of repair was used, and volume/length of materials used. Records shall be signed by Inspector.

1.6 PROTECTION AND REMOVAL OF LOADS

A. Live loads directly over a component being repaired shall not exceed the allowable loads as specified on Drawings.

B. Work that shall impact vessel mooring operations and berth availability shall be coordinated with the tenant.

C. Exercise care in removing deteriorated concrete to prevent damage to the adjacent sound components. In case of damage inflicted to nearby or adjacent sound components, Contractor shall restore the damaged components to their original condition at no additional cost to Department.

D. Protect concrete surfaces beyond limits of surface receiving repairs against spillage or damage.

1.7 QUALITY ASSURANCE

A. Repair Material Manufacturer's Recommendations:

1. Comply with the manufacturer's written instructions, particularly regarding requirements for handling, storage, protective gear, environmental limitations, mixing, and applications process.

B. Personnel Qualifications:

1. Applicators of the injection, coating, mortar, concrete, or shotcrete shall be experienced in the application of the materials as recommended by the material manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Packaging and Labeling:

1. Materials shall be delivered to Project Site(s) in clearly labeled unopened containers or packages.

2. Labels shall be legible, intact, and indicate:

a. Name of manufacturer

b. Manufacturer's product identification

c. Manufacturer's lot number

d. Mix ratio

e. Hazardous material rating and appropriate warnings for handling

B. Product Handling and Storage:

1. Handle materials in a safe manner and in a way to avoid breaking container seals.

2. Store materials at temperatures recommended by the material manufacturer.

1.9 DESCRIPTION OF DEFECTS AND DEFECT LOCATIONS

A. Definition of Defects:

1. Breakage or Partial Breakage: Cracks and spalls of concrete, caused by overstressing that result in major structural distress.

2. Overstressing Cracks: Cracks resulting from external loads, which exceeded the strength of concrete.

3. Corrosion Cracks: Cracks that occurred in concrete due to expansion of chemical products generated by corrosion of steel reinforcement.

4. Closed Corrosion Spalls: Defects that occurred as a result of incomplete separation of concrete cover due to parallel-to-surface corrosion cracking.

5. Open Corrosion Spalls: Recess in concrete surface caused by complete separation of fragment of concrete cover due to parallel-to-surface corrosion cracking.

6. Mechanical Damage: Loss of a concrete fragment, usually resulting from an impact that results in minor structural damage.

7. Pile Build-Up Cracks: Cracks appearing at the interface between the precast pile and the cast-in-place concrete section built on top of the pile.

8. General Crack: All cracks other than overstressing and corrosion cracks that appear on concrete wharves.

9. Underwater Cracks: Underwater longitudinal pile cracks that are either continuous or intermittent.

10. Erosion: General reduction of a pile's cross-sectional area, caused by deterioration of the outer concrete layer.

B. Description of Defects:

1. Components to be repaired and their respective method of repair are shown on Drawings.

2. Drawings contain a table with the details of the defects that are to be repaired. This table contains the following information:

a. Component ID

b. Defect Type

c. Defect Number

d. Defect Location

e. Actual size of defect when it was inspected

f. Estimate of repair size when it is prepared for repair

g. Method of Repair

h. Comments recorded during the inspection and comments related to repair details

i. 2 columns shall also be previded for Contractor to document the As-Repaired method or size of the actual repair, and to provide any pertinent comments. Contractor is required to furnish the As-Repaired data to Department as further described in Specifications.

3. Drawings shall contain a plan view of a portion of the structure where defects on the list immediately to the left can be found. The sketch identifies defects by number, shows their relative position on the affected components, and also indicates the type of repair to be used. The sketches identify pile bents and rows and are intended to assist Contractor in locating the listed defects.

4. Details of how to read and understand the information provided on the sketches shall also be provided on Drawings.

1.10 METHOD OF REPAIR

A. Repairs shall be performed only for defects as indicated on Drawings. Repairs of any additional defects shall be authorized by Engineer prior to Work being performed.

B. The method of repair is specified on Drawings for each defect. Contractor may substitute a different method of repair only with prior approval of Engineer on an individual defect basis.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portland cement concrete shall conform to RS Subsection 201-1 unless shown otherwise on Drawings. Portland cement shall be Type II, low alkali (0.6 percent, maximum), in conformance with ASTM C150/C150M.

1. Only 1 brand of cement shall be used.

B. Ready-mix concrete shall conform to ASTM C94/C94M.

C. Additional or replacement reinforcing steel shall conform to ASTM A615/A615M, Grade 60, deformed bars. Reinforcing steel that is intended to be welded shall conform to ASTM A706/A706M, Grade 60.

D. Materials for filling of core holes shall be 1 of the following approved materials:

1. MasterEmaco S 488 Cl, as supplied by BASF Corporation, (800) 433-9517.

2. SikaTop 123 Plus, as supplied by Sika Corporation, (800) 933-7452.

E. The following product shall be used for sandblasting performed in conformance with SSPC-SP 6.

1. Silica sand (SiO2), no less than 99.0 percent by weight approved for use in commercial sandblasting of concrete and steel. Material shall conform to REGULATORY REQUIREMENTS Section and South Coast Air Quality Management District (SCAQMD) Rules.

2.2 SLURRY FILL

A. Grout:

1. Cement: ASTM C150/C150M, Type II, low alkali.

2. Water: ASTM C1602/C1602M, including optional requirements of Table 2.

3. Bentonite: Natural sodium-based montmorillonite, premium-grade powdered Wyoming bentonite, in conformance with API Spec 13A, Section 9.

a. Chemically treated bentonite not allowed.

b. Sodium montmorillonite clay purity, minimum: 85 percent.

c. Moisture content as packaged, maximum: 10 percent.

4. Plasticizer:

a. ASTM C494/C494M, Type F high range water reducing admixture (HRWRA).

5. Viscosity Modifiers:

a. Viscosity modifiers shall be a soluble, high molecular weight biopolymer, such as CP Kelco produce Diutan Gum, which enhances the stability of the cement-bentonite slurry mix.

6. Mix:

   a. Cement-Bentonite Slurry: Consists of ingredients in the proportions shown in Table 1 - Cement-Bentonite Slurry Mix.

      Table 1 - Cement-Bentonite Slurry Mix

Mix Component	Amount for 1 cubic yard of slurry
Water	375 pounds (6.0 cubic feet)
Cement	94 pounds (1 bag)
Bentonite	14 pounds
Plasticizer	0.5 pounds
Viscosity Modifier	As directed in the field by the manufacturer's representative but not to exceed 0.1% by weight of cement

   b. Cement-bentonite slurry mix may be adjusted in the field by Contractor.

2.3 CONCRETE FILLED SANDBAGS

A. The bag shall consist of porous burlap material and be capable of holding at least 60 lbs.

B. The concrete mix shall consist of the following:

Material	Mix Proportions (lbs / cu. yd)
Type 1 Portland Cement	643
Fly Ash	32
Silica Fume	65
Masonry Sand	2,340
Antiwashout Admixture	1.8
Air-Detraining Agent	0.4
Sodium Citrate	0.4

C. Concrete-filled bag shall consist of dry concrete mix material weighing 60 lbs. The material should fill 50-70% of the volume capacity of the bag.

D. Concrete shall be cast-in-place and shall have a minimum compressive strength of 3,000 psi at 28 days.

PART 3 - EXECUTION

3.1 CONCRETE REMOVAL FOR SHOTCRETE, TROWEL, CAST-IN-PLACE CONCRETE, AND JACKET ENCASEMENT PILE REPAIRS

A. General:

1. Concrete removal shall be executed using appropriate mechanical or waterblasting equipment including, but not limited to, jackhammers and bushing hammers. Contractor shall demonstrate that the equipment that is intended for use on Project is capable of executing concrete removal conforming to the requirements of this Section.

   a. Remove damaged concrete back to sound, parent material.

2. Concrete removal shall be initiated only at the defects listed on Drawings which have a specified repair method of shotcrete, trowel, cast-in-place concrete, or jacket encasement. Initiation of concrete removal at other locations requires prior authorization by Engineer. Unauthorized removal of concrete at locations other than indicated on Drawings shall be considered as damage inflicted to the structure. Contractor shall be responsible for repairing this damage at no additional cost to Department.

3. Concrete, steel, and related construction debris shall not be allowed to fall into the water or be deposited on the shoreline. Dispose of construction debris in conformance with BASIC SITE MATERIALS AND METHODS Section.

B. Reinforced Concrete Members:

1. The extent of concrete removal at a location shall be as required to remove deteriorated concrete and to expose corroded reinforcing bars beyond the limits of corrosion.

2. Concrete Removal at Corroded Main Reinforcing Bars:

   a. Concrete shall be removed around corroded main reinforcing bars. The minimum clearance between the reinforcing bars and the concrete shall be 1 inch as shown in Figure GRR-1. The shape of the prepared defect shall be such that feathered-out edges are avoided and the repair material shall be keyed-in to the repair area.

b. Concrete removal along the main reinforcing bars shall continue beyond the limit of loose corrosion products along a length of bar equal to a minimum of 10 times the bar size. The 1-inch clearance shown in Figure GRR-1 shall be maintained between the reinforcing bar and the concrete along the full length of the reinforcing bars, including the end sections free from corrosion.

c. If stirrups or ties are exposed in the process of removing concrete, remove concrete at the stirrups and ties as specified in Paragraph B.3 of this Article.

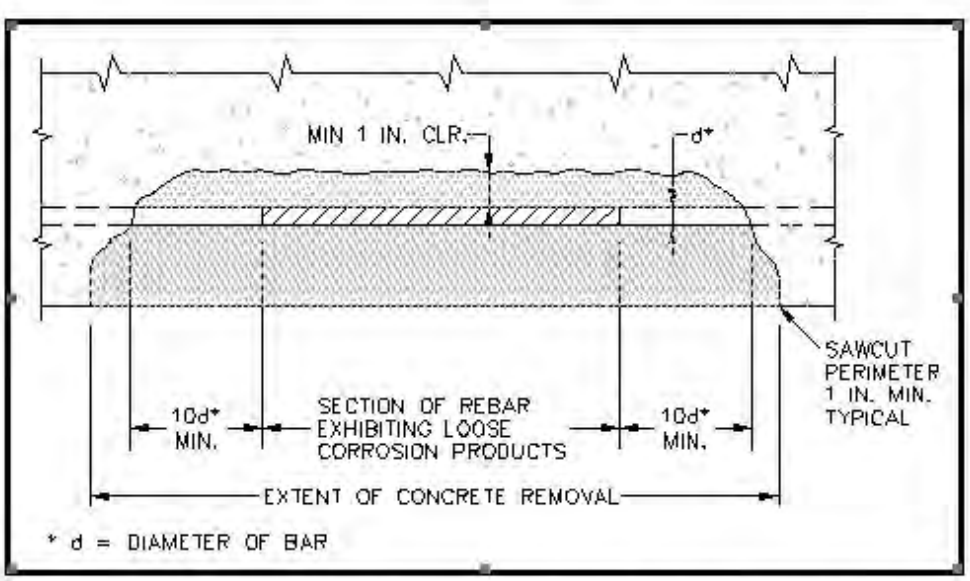


FIGURE GRR-1: CONCRETE REMOVAL AT CORRODED MAIN REINFORCING BAR

3. Concrete Removal at Corroded Stirrups or Ties:

a. Removal of concrete at corroded stirrups and ties shall be done to the back of the stirrups and ties only as shown in Figure GRR-2.

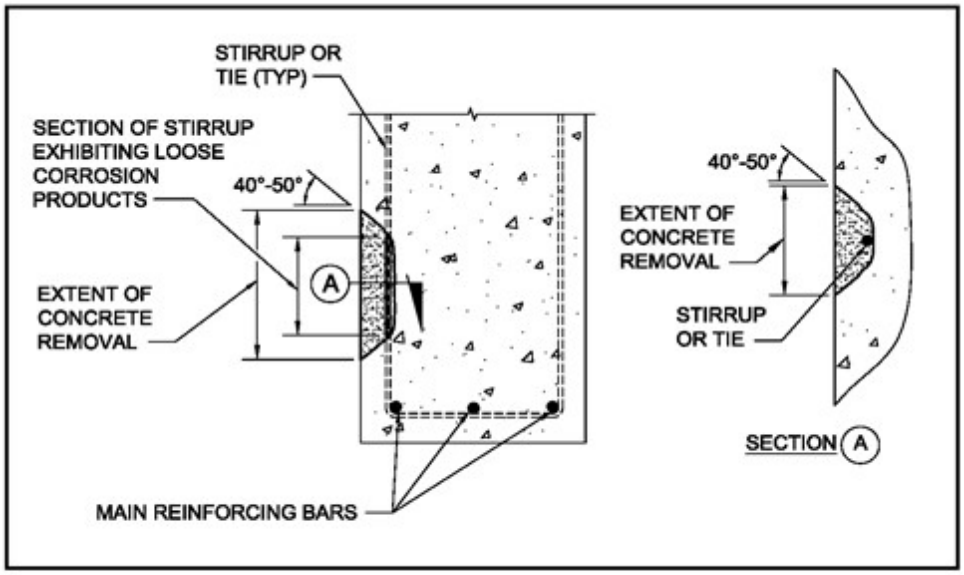


FIGURE GRR-2: CONCRETE REMOVAL AT CORRODED STIRRUP OR TIE

4. Removal of Corroded Conduits and Corroded Steel Other Than Reinforcing Bars:

   a. Unused, corroded conduits and corroded steel other than reinforcing bars may be present in some areas that are scheduled for repair. When such conduits or other steel are encountered, conduits or other steel shall be removed to a point where conduits or other steel do not interfere with the repair placement. Removed conduit or other steel sections shall be disposed of in conformance with BASIC SITE MATERIALS AND METHODS Section.

5. Bending-out of the reinforcing bars to provide clearance shall not be permitted and shall be considered as damage inflicted to the structure.

3.2 CLEANING OF CORRODED STEEL REINFORCING BARS AND STIRRUPS

A. Exposed reinforcing bars and stirrups shall be cleaned of corrosion products to a level of cleaning with silica sand conforming to SSPC-SP 6.

1. Perform abrasive blasting in conformance with REGULATORY REQUIREMENTS Section and SCAQMD Rules.

3.3 ADDITION AND REPLACEMENT OF REINFORCING BARS

A. Criteria:

1. Corroded portions of the main reinforcing bars with a loss in original diameter equal to or more than 30 percent require the placement of additional bars or replacement of corroded bars with new reinforcing bars. Contractor shall measure the remaining width and depth of the reinforcing bars by caliper after cleaning bars as specified in Cleaning of Corroded Steel Reinforcing Bars and Stirrups Article of this Section. The cross sectional area shall be based on the least value of 3 measurements taken along the length of the corroded bar. The locations for measurement shall be at the areas that exhibit the most extensive loss of section. The measurement results shall be reported to Engineer who shall make a determination on the necessity, extent, and method of providing additional reinforcement at the specific location.

2. Corroded stirrups shall not require additional or replacement reinforcing bars. Broken stirrups may be cut or bent back to their original position with the prior approval of Engineer. Stirrups shall be cleaned as specified in Cleaning of Corroded Steel Reinforcing Bars and Stirrups Article of this Section.

3. New reinforcing bars shall not contain rust, scale, oil, grease, clay, or other foreign substances that could reduce or destroy the bond. Minor rusting of uncoated reinforcement shall not be a basis of rejection, provided rusting has not reduced the effective cross sectional area of the reinforcement below the minimum standard diameter allowed by the applicable reinforcement standard, and that rust has been removed prior to placing the reinforcing bar.

B. Addition of Reinforcing Bars:

1. The corroded reinforcing bars to be lap spliced shall not be cut. New reinforcing bars of equivalent area shall be provided alongside of the corroded reinforcing bar and lapped as shown in Figure GRR-3. Lap lengths are based on a 50 percent loss of cross sectional area for corroded reinforcing bars.

2. Addition of the new reinforcing bars shall be in conformance with the following requirements:

a. The remaining existing corroded reinforcing bars shall be cleaned in conformance with the requirements of Cleaning of Corroded Steel Reinforcing Bars and Stirrups Article of this Section.

b. The new reinforcing steel shall be placed in a manner that shall allow unobstructed placement of the repair material.

c. The new reinforcing bars shall be secured or tied to prevent sagging beyond the plane of existing reinforcement.

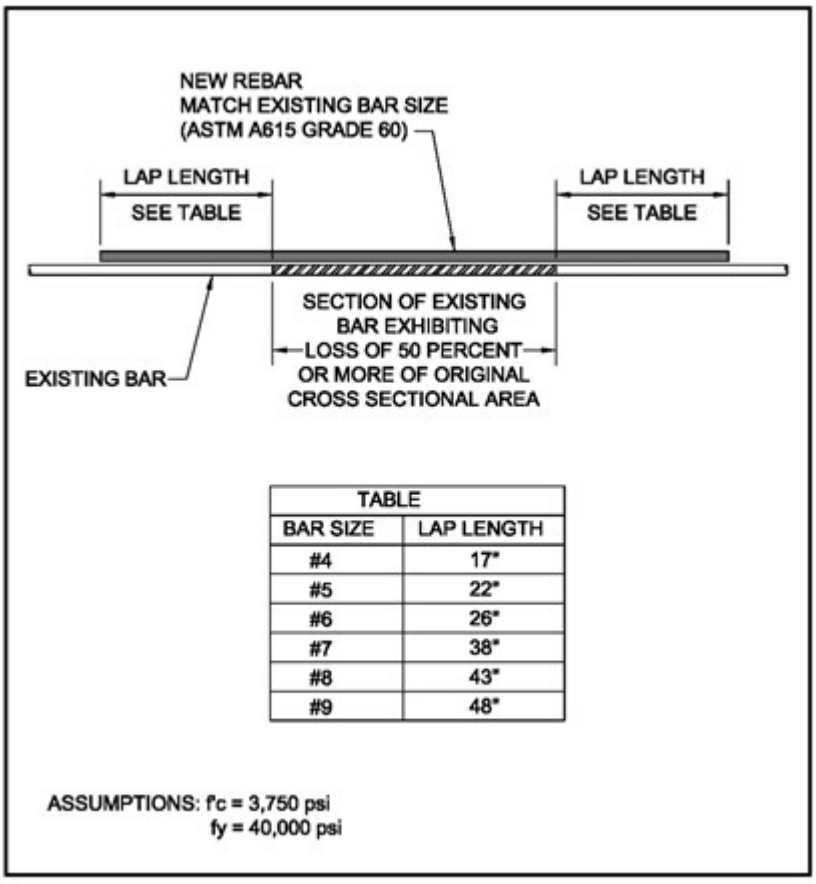


TABLE	
BAR SIZE	LAP LENGTH
#4	17"
#5	22"
#6	26"
#7	38"
#8	43"
#9	48"

FIGURE GRR-3: PLACEMENT OF ADDITIONAL REINFORCEMENT

C. Replacement of Reinforcing Bars:

1. If compliance with requirements of Addition of Reinforcing Bars Paragraph of Addition and Replacement of Reinforcing Bars Article of this Section cannot be ensured, remove and replace the corroded reinforcing bar. A typical reinforcing bar replacement shall be performed using the lap splice detail shown in Figure GRR-4 of this Section. The splices of 2 adjacent reinforcing bars shall be staggered as much as possible, without the removal of additional sound concrete. Lap lengths shown in the table of Figure GRR-4 are based on a 50 percent loss of cross sectional area for corroded reinforcing bars.

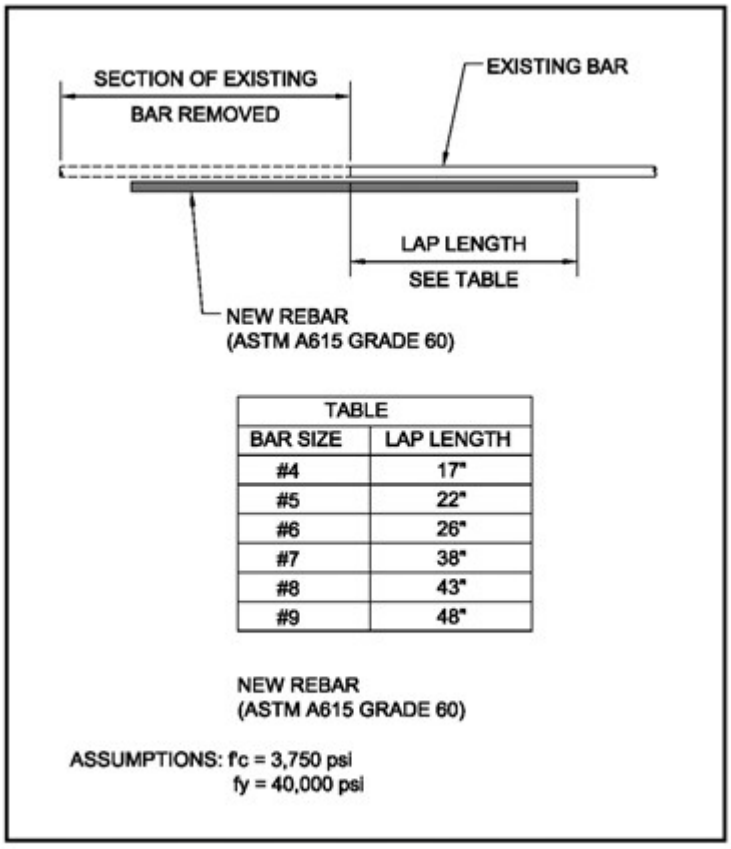


TABLE	
BAR SIZE	LAP LENGTH
#4	17"
#5	22"
#6	26"
#7	38"
#8	43"
#9	48"

NEW REBAR
(ASTM A615 GRADE 60)

ASSUMPTIONS: f'c = 3,750 psi
fy = 40,000 psi

FIGURE GRR-4: LAP SPLICING DETAIL FOR REPLACEMENT OF EXISTING STEEL

2. Cutting of existing reinforcing bars and splice arrangement, unless specifically called for in this Section, requires the prior approval of Engineer.

D. Reinforcing Couplers:

1. In lieu of lapping reinforcing bars, reinforcing couplers may be used provided couplers develop at least 125 percent of the specified yield strength of the bar and have a current ICC ES report and Los Angeles Research Report Number. Bar Splice Products, Inc., Zap Screwlok System.

3.4 SLURRY PLACEMENT

A. Cement slurry fill shall be placed in a uniform manner that shall prevent voids in, or segregation of, the backfill.

3.5 CONCRETE-FILLED SANDBAGS PLACEMENT

A. Place bags by hand to the required length, width, and thickness. Place bags in horizontal rows. Each bag shall be firmly embedded into the slope and securely butted against the adjacent bags. The tied end of the bag shall rest on and against the face of the slope.

B. Each row of bags shall overlap the preceding row of bags by at least 10 inches. Stagger joints in adjacent rows.

C. The repair shall have a minimum thickness of 6 inches measured perpendicular to the slope and its surface shall not vary from the theoretical surface y more than 4 inches at any point.

3.6 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Inspection of Prepared Surfaces:

a. After the completion of the full sequence of surface preparation procedures as specified for each method of repair, the repair location shall be inspected and approved by Engineer prior to the placement of repair material. Any condition, which may interfere with the execution of Work in conformance with Specifications, shall be reported to Engineer.

2. Coring Samples:

    a. Core samples to verify the quality of shotcrete and cast-in-place concrete may be required at times and locations as designated by Engineer. Contractor shall be responsible for providing the necessary equipment and for execution of coring operations in conformance with ASTM C42.

    b. Coring shall be through the repair and extend into the existing concrete a minimum of 2 inches. Core diameter shall be 3 inches or as requested by Engineer.

    c. Cores shall be visually inspected by Engineer for the quality of bonding and any additional testing requirements shall then be determined.

    d. Fill the core holes with materials as specified in Materials Article of this Section and finish the surface to blend with adjacent concrete.

3. Final Inspection of Repaired Area:

    a. After the completion of the repair, the repair location shall be inspected and approved by Engineer for final payment.

3.7 CLEANING

A. Construction and demolition debris shall be disposed of in conformance with BASIC SITE MATERIALS AND METHODS Section in a manner that complies with applicable laws and regulations.

B. Leave finished Work and Work area in a neat, clean condition without evidence of spillages onto adjacent areas or into the water. Repair materials and equipment may not be left on the structure without prior approval by the tenant.

C. Procedures for clean up or removal of excess repair material shall be in conformance with manufacturer’s written instructions.

D. During the progress of Work, should Contractor lose, dump, throw overboard, sink, or misplace any material into the water, the material shall be recovered and removed at no additional cost to Department.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Shotcrete repairs to deteriorated concrete at locations identified on Drawings.

1.2 RELATED SECTIONS

A. Section 03 01 31 - General Concrete Repair Requirements

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Seawall Repair, Shotcrete Repairs, and Polyurethane Pressure Grouting Allowance bid item of Bid Proposal Line Items.

2. Payment shall be paid on the basis of the calculated in-place volume (square foot-inch) of the shotcrete repair material. The volume of shotcrete repair at each repair location, to be used for payment purposes, shall be the volume determined as follows: Contractor shall measure length, width and average depth dimensions, calculate and record, in the presence of Engineer, each defect's volume or length in the As-Repaired column of of concrete crack and spall repair summary table on Drawings, after demolition, preparation and acceptance of each defect and prior to starting repair. Quantities shall not exceed those listed on Drawings without prior approval of Engineer. Volume and length measurements and calculations shall be reviewed and approved by Engineer for payment purposes. No payment shall be made for volumes or lengths that have not been reviewed and approved by Engineer.

3. As shown in Figure SR-1 included in this Section, the minimum shotcrete cover over the reinforcement bars shall be 3 inches, unless noted otherwise on Drawings. No payment shall be made for shotcrete cover exceeding 3 inches over the reinforcement bars or where shotcrete extends beyond 2 inches from the plane of the existing beam or deck, whichever measurement results in less volume.

4. Costs to be included in the price shall include surface preparation, cleaning the existing reinforcement, application of the shotcrete and necessary incidentals to complete shotcrete repairs and preconstruction testing.

1.4 REFERENCES

A. ACI PRC-506 - Shotcrete-Guide.

B. ACI SPEC-506.2 - Specification for Shotcrete.

C. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

D. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

E. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete.

F. SSPC-SP 6 - Commercial Blast Cleaning.

1.5 SUBMITTALS

A. Prior to starting Work, submit to Engineer for review the following information:

1. Name of independent testing laboratory to be hired and paid for by Contractor for approval by Engineer.

2. Method of shotcrete application, repair procedure, and data on the equipment to be used.

3. Proposed pre-packaged mortar characteristics, including supplier’s data sheets.

4. Results of the preconstruction testing.

B. Requirements as specified in GENERAL CONCRETE REPAIR REQUIREMENTS Section.

1.6 QUALITY ASSURANCE

A. Quality assurance shall conform to GENERAL CONCRETE REPAIR REQUIREMENTS Section.

B. Additional requirements for shotcrete repair shall be as follows:

1. Shotcrete applier shall be certified through a licensed testing laboratory, and shall have performed a minimum of 2 shotcrete applications during the last 3 years on projects of similar size and scope.

2. Preconstruction testing conforming to ACI SPEC-506.2 . Perform prior to execution of Work on the structure.

3. Construction testing is not specified, however, Engineer reserves the right to perform coring of the completed shotcrete Work in order to evaluate its quality.

C. Preconstruction Testing:

1. Preconstruction testing shall be performed on test panels conforming to the complete set of requirements described in Section 1.6.1 of ACI SPEC-506.2.

    a. One complete series of preconstruction tests shall be sufficient for shotcrete Work under Contract provided test results are satisfactory and crew members do not change.

2. The test panels shall be prepared in the following shooting positions:

    a. Front surface of pile caps or beams (marginal or intermediate).

    b. Soffit surface of deck, pile cap, or beams (marginal or intermediate).

3. Prepare 2 sets of panels:

    a. In each of the positions without reinforcement.

    b. With No. 6 reinforcing steel installed at 1 inch from the panel’s back surface and with variable spacing of 2 to 4 inches between reinforcing bars.

4. The panels without reinforcement shall be a minimum of 5 inches thick and shall be large enough to yield 3 cores for compressive strength test and for water absorption test. These panels shall be shotcreted over the roughened concrete surface. Precast concrete plates of the necessary minimum size shall be either acquired or specially made.

5. The compressive strength of the non-reinforced test panels shall be determined from the average of 3 cores obtained from a test panel and shall not be less than 5,000 pounds per square inch (psi) at 7 days when tested in conformance with ASTM C42.

6. The reinforced panels shall be a minimum of 30-inches by 30-inches and shall have a total thickness of a minimum of 5 inches with a minimum of 3-inch cover over the reinforcement.

7. Cores from the reinforced panel (3 cores per panel) shall be evaluated visually by Engineer. Samples shall be visually inspected and graded using the following grading system. Grades 1 and 2 represent acceptable shotcrete; other shotcrete shall be rejected and shall be repaired at sole cost and expense of Contractor.

    a. Grade 1: Sample shall have good paste content throughout, without laminations, sandy areas, or large hollows. Air bubbles shall have a maximum dimension of 0.050 inch. Air bubbles shall be dispersed at random without interconnection. There shall be no sand pockets, hollows, or shadows behind crossed reinforcing bar sections. Surface of sample shot against the form shall be sound with a good paste face, without a sandy texture, voids, or hollows where sandy overspray has pulled away or stuck to the form.

    b. Grade 2: Sample shall have good paste content of dense material meeting the same standards as Grade 1 except there may be 1 or 2 small tight (that is, the sand shall be bonded sufficiently by cement paste that it cannot be easily raked out) laminations or sandy areas having a maximum dimension perpendicular to the faces of the sample of 1/8 inch, and parallel to the faces of the sample, a maximum dimension of 1 inch in width. Height, width, or depth of a void shall not exceed 3/8 inch. Tight shadowing or slightly porous areas, lean in paste, behind reinforcing steel shall not exceed 1/2 inch in any dimension except along the length of the reinforcing bar.

    c. Samples with greater imperfections than Grades 1 and 2 shall be rejected.

D. Use of material or products other than those specified shall require documented proof that proposed substitute product has a 3 year proven record of performance in the marine environment confirmed by actual field tests, and 5 successful installations that Engineer can verify.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle materials to prevent contamination, segregation, corrosion, and damage. Store liquid admixtures in order to prevent evaporation.

B. Other requirements as specified in GENERAL CONCRETE REPAIR REQUIREMENTS Section.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Shotcrete repairs, at the wharf, shall be performed using 1 of the following approved materials:

1. MasterEmaco S 211SP, as supplied by BASF Corporation, (800) 433-9517.

2. Sikacem 103F with synthetic fibers, as supplied by Sika Corporation, (800) 933-7452.

B. Requirements for reinforcing steel and components of shotcrete mix other than cement shall be in conformance with ACI SPEC-506.2.

C. Materials for filling of core holes shall be as specified in GENERAL CONCRETE REPAIR REQUIREMENTS Section.

D. Synthetic reinforcing fibers shall be in conformance with ASTM C1116/C1116M, Type III. Fibers shall be 100 percent virgin polypropylene fibrillated fibers containing no reprocessed olefin materials. Fibers shall have a specific gravity of 0.9, a minimum tensile strength of 70 kips per square inch (ksi), graded in conformance with manufacturer's written instructions, and specifically manufactured to an optimum gradation for use as secondary reinforcement for shotcrete. Use a minimum of 1-1/2 pounds and a maximum of 2 pounds of fibers per cubic yard of concrete. Toughness indices shall meet requirements for performance Level I.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL

A. Basic operations for the installation of shotcrete shall be performed in full compliance with the detail descriptions and requirements contained in ACI PRC-506 and ACI SPEC-506.2.

3.2 CONCRETE REMOVAL

A. The extent of concrete removal shall conform to GENERAL CONCRETE REPAIR REQUIREMENTS Section.

3.3 ADDITION AND REPLACEMENT OF REINFORCING BARS

A. Addition and replacement of reinforcing bars shall conform to GENERAL CONCRETE REPAIR REQUIREMENTS.

3.4 SURFACE PREPARATION

A. Exposed reinforcing bars and other embedded steel components shall be cleaned of corrosion products to a SSPC-SP 6 cleaning.

B. Other surface preparation requirements including sequencing, techniques, and procedures for abrasive blasting, cleaning, washing, prewetting, and the like shall be as described in ACI PRC-506, Section 5.2.

C. Dampen surface with fresh water; substrate shall be saturated surface dry with no standing water during application.

D. Necessary precautions shall be taken to prevent abrasive blasting contaminants from entering harbor waters during the repair and removal phase of Project. Confined blasting shall be performed where feasible. Confined blasting includes, but is not limited to, enclosing the material/area to be blasted with structures such as metal shrouds or canvas.

E. Shotcrete placement shall commence only after the prepared repair locations have been inspected and approved by Engineer.

3.5 SHOTCRETE PLACEMENT

A. Shotcrete placement procedures shall be as described in Chapter 8 of ACI PRC-506, the manufacturer’s latest data sheet and written instructions, and with the following additional requirements as detailed in this Section.

B. Prior to the start of specific repair and application, Contractor shall call for inspection by Engineer, manufacturer, or manufacturer’s representative.

C. Apply shotcrete no later than 4 hours after the completion of the surface preparation. If this requirement cannot be satisfied, perform additional cleaning at the same repair location prior to application of shotcrete. After additional cleaning, the condition of the reinforcing steel and concrete surfaces shall meet the requirements of Surface Preparation Article of this Section.

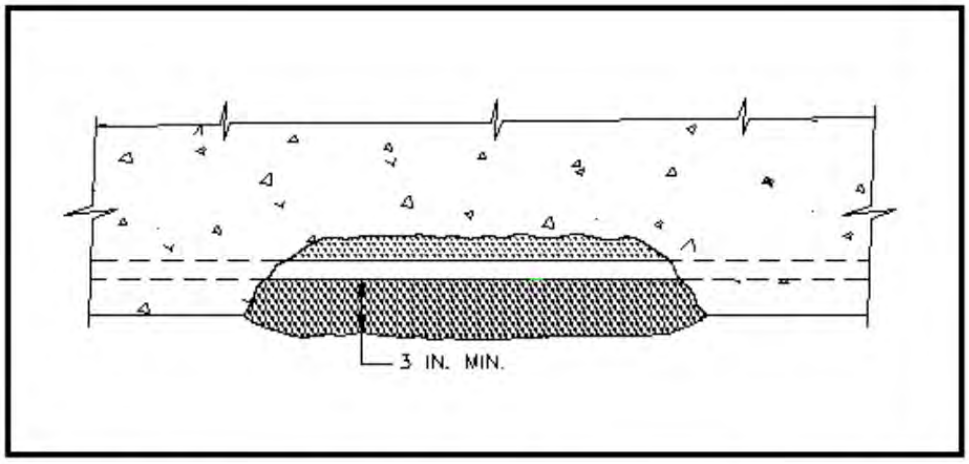


FIGURE SR-1: MINIMUM REQUIRED SHOTCRETE COVER OVER REINFORCEMENT

D. Reinforcement Cover: Unless otherwise indicated on Drawings, provide a minimum 3 inches of cover over reinforcement. This cover shall be ensured over the entire area of repair patch (only plus tolerances allowed) as shown in Figure SR-1 included in this Section.

E. Effort shall be made to complete the shotcrete build-up at specific locations without letting the lower layers harden completely. If this cannot be achieved, the succeeding layers may be placed over the hardened shotcrete. However, requirements for multiple layers described in Section 8.5.8 of ACI PRC-506 shall be strictly enforced. Inspection and approval by Engineer of the surface to receive the final layer of shotcrete is required.

F. The texture of the shotcrete surface may be as rough as the mix components and placement techniques allow. However, the general profile of the repair patch shall be sufficiently even to allow effective control of the thickness of the material in place. The out-of-line tolerances shall not exceed 1 inch for a 5-inch template set anywhere against the surface of the finished shotcrete, as shown in Figure SR-2 of this Section. These criteria for the degree of evenness of shotcrete in place shall not be extrapolated (e.g. 2-inch tolerance for 10-inch base).

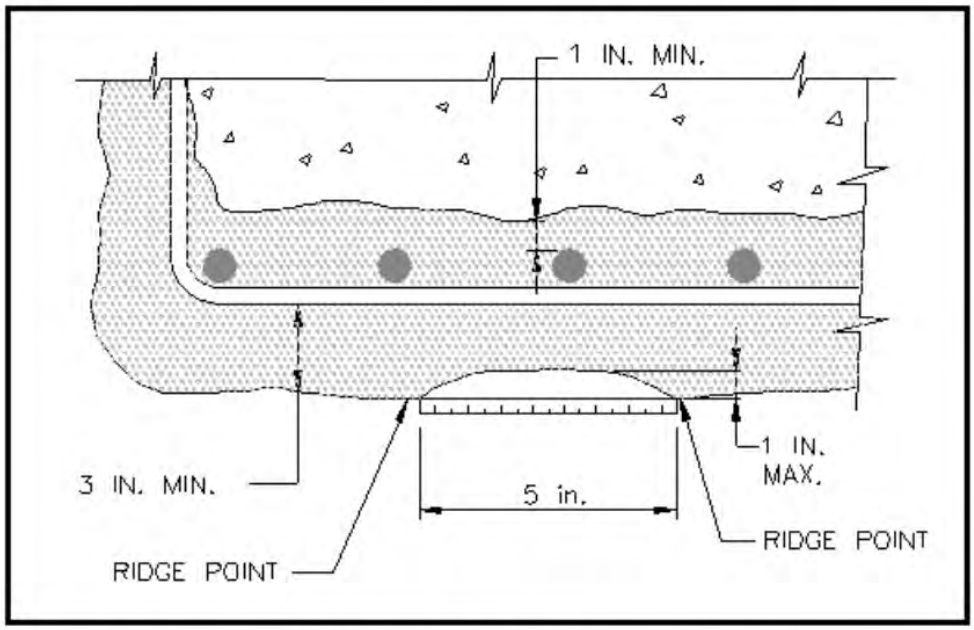


FIGURE SR-2: OUT-OF-LINE TOLERANCES FOR SHOTCRETE PLACEMENT

G. Remove shotcrete that lacks uniformity, contains secretion, honeycombing, laminations, dry patches, voids, sand pockets, sand lenses, sagging, or incomplete encasement of reinforcement.

H. For repairing large areas of the deck soffit, special considerations are required for layering and sequencing of material application. Contractor shall place the material in such a way as to minimize the shrinkage and forming of cracks after the material has hardened. Submit the repair procedure for the approval of Engineer as required by Submittals Article of this Section prior to starting Work.

3.6 FINISHING

A. Remove excess material outside forms and ground wires with a sharp edged cutting screed. Remove ground wires. Shotcrete a thin surface coat (flash coat) containing finer sand than normal. Finish with a steel trowel.

3.7 CURING

A. Two layers of curing compound, which meet the requirements of ASTM C309, or watering 2 times a day for 7 days, are required for curing of finished shotcrete.

3.8 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Engineer shall perform the following inspections and tests, as specified in GENERAL CONCRETE REPAIR REQUIREMENTS Section, as applicable:

   a. Inspection of prepared surface.

   b. Visual inspection of the final repaired area.

   c. Core samples may be required as directed by Engineer.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Repair materials for damaged galvanizing

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications

B. Section 09 90 01 - Painting for Exterior Improvements

C. Section 32 31 13 - Chain Link Fences and Gates

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires treatment of damaged galvanizing.

1.4 REFERENCES

A. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials shall be zinc-based alloys, zinc-rich paints, or sprayed zinc in conformance with ASTM A780/A780M.

B. The following product is acceptable: Carbozinc 859 VOC manufactured by Carboline Company, (314) 644-1000 or (800) 848-4645.

C. Products shall be in compliance with South Coast Air Quality Management District (SCAQMD) regulations.

D. Materials shall comply with City of Los Angeles Green Building Code requirements.

1. Enter product data in VOC Content Verification Checklist form and provide product specification sheets. Make checklist and specifications available to City of Los Angeles Department of Building and Safety inspector through Engineer upon request. VOC Content Verification Checklist can be found here: https://www.ladbs.org/docs/default-source/forms/green-building-2023/grn_2_voc_content_verification_checklist-01.17.23.pdf?sfvrsn=19f4c153_10

PART 3 - EXECUTION

3.1 REPAIR

A. Repairs shall be in conformance with ASTM A780/A780M and manufacturer's latest material safety data sheet instructions.

B. Coating thickness shall be a minimum of 3.0 mils in dry film thickness.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Shop fabricated miscellaneous metal fabrications, steel, and aluminum items

B. Access ladders

C. Fasteners

D. Metal bar gratings

E. Metal finishes

1.2 RELATED SECTIONS

A. Section 05 05 14 - Treating Damaged Galvanizing

B. Section 09 90 01 - Painting for Exterior Improvements

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires metal fabrications.

1.4 REFERENCES

A. 29 CFR 1910.27 - Scaffolds and Rope Descent Systems.

B. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements.

C. ASME B18.6.3 - Machine Screws, Tapping Screws, and Metallic Drive Screws (Inch Series).

D. ASME B18.21.1 - Washers: Helical Spring-Lock, Tooth Lock, and Plain Washers (Inch Series).

E. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

F. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

G. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

H. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

I. ASTM A193/A193M - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.

J. ASTM A194/A194M - Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.

K. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

L. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes.

M. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.

N. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

O. ASTM A435/A435M - Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates.

P. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

Q. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

R. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

S. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings.

T. ASTM B85/B85M - Standard Specification for Aluminum-Alloy Die Castings.

U. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

V. ASTM B210/B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.

W. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire.

X. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

Y. ASTM D962 - Standard Specification for Aluminum Powder and Paste Pigments for Paints.

Z. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.

AA. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.

BB. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength.

CC. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.

DD. AWS D1.1/D1.1M - Structural Welding Code - Steel.

EE. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel.

FF. AWS D1.2/D1.2M - Structural Welding Code - Aluminum.

GG. FS TT-V-81 - Varnish: Mixing, for Aluminum Paint.

HH. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172.

II. NAAMM MBG 531 - Metal Bar Grating Manual.

JJ. NAAMM MBG 532 - Heavy Duty Metal Bar Grating Manual.

KK. SSPC-PA 1 - Shop, Field, and Maintenance Coating of Metals.

LL. SSPC-SP 1 - Solvent Cleaning.

MM. SSPC-SP 2 - Hand Tool Cleaning.

NN. SSPC-SP 3 - Power Tool Cleaning.

OO. SSPC-SP 7 - Brush-Off Blast Cleaning.

1.5 SUBMITTALS

A. Submit mill test reports certifying that materials meet requirements of standards listed in References Article of this Section.

1. Heat and melt numbers and mill test report numbers.

2. Size

3. Type and grade of material, identified by ASTM Standard Specification number

4. Color coding for shop drawing requirements.

B. Submit the following to Engineer for review and approval:

1. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection Drawings, elevations, and details where applicable.

a. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

b. Design fabrications to meet actual installation conditions verified at Project Site(s).

c. Detail minor connections and fastenings not shown or specified to meet required conditions. Include detailed sequence plan for shop and field welding that minimizes locked-in stresses and distortions.

d. No change shall be made on shop Drawings after shop Drawings have been approved, except by written consent or direction of Engineer.

e. Detail Drawings shall show grade of steel, identification marks on members, dimensions, size, weight, orientation, and location of each member and setting elevation of base plates and bearing plates. Identify connections and welds, including welding sequences and types, sizes, and extent of weld.

f. The shop Drawings shall show details of permitted options proposed, details of connections, direction of rolling plates, sequence of field and shop assembly, welding sequence and procedures, location and details of welds, and the location of temporary support used for assembly.

2. Welders' Certificates: Submit certification for welders employed on Project, verifying AWS qualification within the previous 12 months.

3. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

C. Submit manufacturer's literature and certification that paints and coatings meet South Coast Air Quality Management District (SCAQMD) Volatile Organic Compounds (VOC) requirements.

1. Refer to PAINTING FOR EXTERIOR IMPROVEMENTS Section for priming and painting requirements.

D. Submit name of independent test laboratory to perform inspection and testing.

E. Submit results of independent test laboratory’s inspections and tests.

F. Submit fabricator's test results of materials prior to using materials for fabrication.

1.6 QUALITY ASSURANCE

A. Inspection: Engineer reserves the right to inspect the manufacture or fabrication. Engineer's inspection of Work does not relieve Contractor of the responsibility for Work. Errors or faults that are discovered during fabrication shall be corrected by Contractor prior to installation.

B. Welders: Welders shall be qualified in conformance with AWS D1.1/D1.1M and AWS D1.3/D1.3M shall be City of Los Angeles Department of Building and Safety certified.

C. Mill Tests: Prepare mill tests for specified material.

D. Field welding shall be performed in presence of a City of Los Angeles Registered Deputy Inspector.

E. Design metal fabrications under direct supervision of a professional structural Engineer experienced in design of this Work and licensed in the State of California.

F. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from damage during shipping, handling, and storage on Project Site(s). Steel showing dents, creases, deformations, weathering, or other defects is not acceptable.

B. Store metals above ground on platforms, skids, or other supports, and keep free from dirt, grease, and other foreign material. Protect metals from corrosion while stored.

1. Store materials in a location and in a manner to avoid damage. Stacking shall be done in a way which shall prevent bending. Store metal components and materials in a clean, dry location. Cover with waterproof paper, tarpaulin, or polyethylene sheeting in a manner that shall permit circulation of air inside the cover.

C. Deliver bolts, nuts, washers, and studs not part of an approved fabrication, to Project Site(s) in the original labeled containers and do not transfer into unlabeled containers.

D. Units weighing more than 5,000 pounds shall have the mass marked on the steel unit.

PART 2 - PRODUCTS

2.1 MATERIALS - STEEL

A. Steel Plates, Shapes, and Bars: ASTM A36/A36M, unless shown otherwise on approved shop Drawings or this Section. Plates shall be furnished to qualify for ultrasonic examination in conformance with ASTM A435/A435M.

B. Steel Tubing: ASTM A500/A500M, cold-formed, Grade B, Fy = 46 ksi or ASTM A501/A501M hot formed structural tubing. For exterior installations, provide tubing with hot-dip galvanized coating in conformance with ASTM A153/A153M or ASTM A123/A123M .

C. Low to intermediate grade steel plates shall conform to ASTM A283/A283M.

D. Steel Pipe: ASTM A53/A53M, Grade as directed by Engineer Schedule 40, unless shown otherwise on Drawings.

E. Slotted Channel Framing: ASTM A1011, Grade 33.

F. Slotted Channel Fittings: ASTM A1011/A1011M.

G. Fasteners:

1. Bolts and nuts:

a. Bolts and nuts shall be American National coarse-thread series.

b. Unfinished bolts shall conform to ASTM A307.

2. Washers and Load Indicator Devices:

a. Plain washers shall conform to ASME B18.21.1.

b. Beveled washers shall be square, smooth, and sloped so that contact surfaces of bolt head and nut are parallel.

c. The diameter of hole of square-beveled washer shall be 1/16 inch greater than the bolt size for bolts larger than 1 inch.

d. Install washers on nut side of bolt for torquing as required.

3. Anchor Bolts: ASTM F1554, Grade 36.

4. Machine Screws: ASME B18.6.3.

5. High Strength Bolts: ASTM F3125/F3125M.

2.2 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B221, 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209/B209M, 5052 alloy, H32 or H22 temper.

C. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.

D. Aluminum-Alloy Bars: ASTM B211/B211M, 6061 alloy, T6 temper.

E. Aluminum-Alloy Sand Castings: ASTM B26/B26M.

F. Aluminum-Alloy Die Castings: ASTM B85/B85M.

G. Bolts, Nuts, and Washers: Stainless steel, Type 304 or 316 in conformance with ASTM F593.

H. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

2.3 MATERIALS - STAINLESS STEEL

A. Stainless Steel Plates: ASTM A276/A276M, Type 304 or 316 (for exterior and highly corrosive environment).

B. Anchor Bolts and Nuts: ASTM A193/A193M and ASTM A194/A194M

C. Pipe: ASTM A269/A269M

D. Finish: As noted on Drawings.

2.4 FABRICATION

A. General:

1. Metal items shall be fabricated and finished in accordance with Drawings and approved shop Drawings. Verify measurements before fabrication.

2. Welding procedures and inspection shall be in conformance with AWS D1.1/D1.1M. Welding shall be continuous along the area of contact except where tack welding is called for on Drawings. Welds shall be ground smooth.

3. Galvanize fabricated ferrous items after fabrication.

4. Metal fabrications showing injurious defects, weak spots, imperfections in Work, or otherwise not conforming to Specifications or Drawings shall be rejected.

B. Fit and shop assemble items in largest practical sections, for delivery to Project Site(s).

C. Fabricate items with joints tightly fitted and secured.

D. Wire brush material, clean off loose mill scale and rust, and straighten by methods that shall not injure the steel prior to fabrication. Remove twists or bends after punching or working component parts of a member before the parts are assembled. Produce finished members free from twists, bends, or open joints when installed.

E. Shearing, flame cutting, and chipping shall be done accurately.

F. Assembled pieces shall be taken apart, if necessary, for the removal of burrs and shavings produced by the reaming operation.

G. Parts not completely bolted in the shop shall be secured by temporary bolts, insofar as practicable, to prevent damage in shipment and handling.

H. Use of gas or plasma cutting torch is allowed where the metal being cut is not stressed during the operation, and provided stresses are not transmitted through a flame-cut surface. Make cuts with smooth regular contour. Deduct 1/8 inch from width of cut edges to determine effective width of members that are cut. Make radius of reentrant cuts as large as possible, but 1 inch minimum.

I. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

J. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.5 ACCESS LADDERS

A. Fabricate ladders for the location shown, with dimensions, spacings, details, and anchorages as indicated on Drawings. Comply with requirements of ANSI A14.3 and 29 CFR 1910.27; where conflicts occur, comply with the more stringent requirements.

B. Siderails: Continuous steel flat bars, with eased edges.

C. Bar Rungs: As indicated on Drawings.

D. Fit rungs in centerline of side rails, through drilled holes, weld and grind smooth on outer rail faces.

E. Size brackets to support design dead and live loads indicated on Drawings and to hold centerline of ladder rungs clear of the wall surface by not less than 7 inches.

F. Extend side rails 42 inches above top rung, and return rails to wall or structure unless other secure handholds are provided. If the adjacent structure does not extend above the top rung, goose-neck the extended rails back to the structure to provide secure ladder access.

G. Provide non-slip surface on each rung, either by coating the rung with aluminum oxide granules set in epoxy resin adhesive, or by using a type of manufactured rung which is filled with aluminum oxide grout.

2.6 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required.

2.7 MISCELLANEOUS METAL ITEMS

A. Miscellaneous Framing and Supports: Provide steel framing and supports for applications indicated which are not a part of structural steel framework, as required to complete Work.

1. Fabricate units to sizes, shapes, and profiles indicated and required to receive adjacent other construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.

2. Equip units with integrally welded anchors for casting into concrete or building into masonry. If units are installed after concrete is placed, furnish inserts. Unless otherwise indicated on Drawings, space anchors 24 inches on center and provide minimum anchor units in the form of steel straps 1-1/4 inches wide by 1/4 inch by 8 inches long.

B. Miscellaneous Steel Trim: Provide shapes and sizes indicated for profiles shown on Drawings. Unless otherwise indicated on Drawings, fabricate units from structural steel shapes, plates, and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings, and anchorages as required for coordination for assembly and installation with other Work.

2.8 METAL BAR GRATINGS

A. General: Produce metal bar gratings of description indicated in conformance with National Association of Architectural Metal Manufacturers (NAAMM) marking system that complies with the following:

1. Metal Bar Grating Standard: Metal Bar Grating Manual published in NAAMM MBG 531.

2. Heavy Duty Metal Bar Grating Standard: Heavy Duty Metal Bar Grating Manual published in NAAMM MBG 532.

B. If gratings are located in walking surfaces, gratings shall have spaces no greater than 1/2 inch wide in one direction. If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

C. Fabricate steel gratings to comply with requirements as indicated on Drawings.

D. Traffic Surface for Steel and Aluminum Bar Gratings: Plain, unless otherwise indicated on Drawings.

E. Steel Finish: shop prime paint applied in conformance with manufacturer's standard practice.

F. Aluminum Finish: Mill (as fabricated), unless otherwise indicated on Drawings.

G. Fabricate removable gratings sections with banding bars attached by welding to entire perimeter of each section. Include anchors and fasteners of type indicated, or if not indicated, as recommended by manufacturer, for attachment to supports.

1. Heavy Duty Grating: Provide not less than 4 anchors blocks, 1/4 minimum thickness, for each section of grating composed of bearing bars over 3/16 inch in thickness, with each block shop-welded to 2 bearing bars.

2. Non-Heavy Duty Grating: Provide not less than 4 saddle clips for each grating section composed of rectangular bearing bars 3/16 inch or less in thickness and spaced not less than 15/16 inch on center, with each clip designed and fabricated to fit over 2 bearing bars. Furnish threaded bolts with nuts and washers for each clip required, unless otherwise indicated on Drawings.

H. Attach toe plates to grating by welding, unless otherwise indicated on Drawings. Toe plate height: 4 inches, unless a greater height indicated on Drawings.

I. Fabricate cutouts in grating sections for penetrations indicated. Arrange layout of cutouts to permit grating removal without disturbing items penetrating gratings.

1. Edge band openings in grating that interrupt 4 or more bearing bars with bars of same size and material as bearing bars.

2. Do not notch bearing bars at supports to maintain elevation.

J. Manufacturers: Alabama Metal Industries Corp., Barnett/Bates Corp., and IKG Industries.

2.9 STEEL AND IRON FINISHES

A. General:

1. Steel, painted, and unpainted iron materials furnished shall be cleaned of rust, scale, and grease.

2. Remove oil, grease, and similar contaminants in conformance with SSPC-SP 1.

3. Remove loose rust, scale, spatter, slag, and other deleterious materials in conformance with SSPC-SP 2, SSPC-SP 3, or SSPC-SP 7.

4. Apply primer to give a dry film thickness of 2.5 mils, except as specified for zinc-rich coating option.

5. Paint after shop Work has been completed. Paint with brushes, entire surface to be covered smoothly, with paint worked into joints.

6. No material shall be loaded for shipment until primer is fully dry.

7. Materials arriving at Project Site(s) with damaged primer or paint shall be cleaned and given an additional coat of paint before being assembled, except finish Work which shall be exposed to view shall be returned to shop for recleaning and repainting.

B. Painting: Immediately after surface preparation, apply structural steel primer paint in conformance with manufacturer’s written instructions and at a rate to provide dry film thickness of not less than 3.0 mils. Use painting methods that result in full coverage of joints, corners, edges, and exposed surfaces. Apply 2 coats of paint to surfaces that are inaccessible after assembly or erection.

C. Where steel is scheduled to be painted, apply paint in conformance with PAINTING FOR EXTERIOR IMPROVEMENTS Section.

D. Steel surfaces in contact with aluminum shall receive an additional coat of paint consisting of 2 pounds of aluminum paste pigment (ASTM D962 Type II, Class B) per gallon of varnish meeting FS TT-V-81, Type II.

E. Galvanizing: For those items indicated for galvanizing, apply zinc-coating in compliance with the following requirements:

1. Ferrous metal Work, both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forced shapes, plates, bars, and strip 0.0299 inch thick and heavier shall be galvanized by hot-dip process, with larger items galvanized in conformance with ASTM A123/A123M and smaller hardware (that can be centrifuged) galvanized in conformance with ASTM A153/A153M. Required hot-dip galvanizing shall be done after fabrication, in largest sections possible.

2. Items too large for available dip tanks shall be sprayed by approved methods, with molten zinc to coating thickness of 0.003 inch to 0.004 inch. Weight of the zinc coating per square foot of actual surface shall average not less than 2 ounces; no individual specimen shall show less than 1.8 ounces.

3. Bolts and screws for attachment of galvanized items shall be galvanized, or of non-corrodible material.

2.10 ALUMINUM FINISH

A. Mill finish (as fabricated), unless otherwise indicated on Drawings.

2.11 SOURCE QUALITY CONTROL

A. Tests are waived for steel identified by heat number, accompanied by mill analyses and mill test reports, and properly tagged with an Identification certificate so as to be readily identified for conformance with applicable ASTM Standards.

1. Unidentified materials to be tested by independent test laboratory:

a. Yield strength less than or equal to 36,000 psi: 1 set of tension tests and 1 set of bend tests for each 20 tons or part thereof of each heat.

b. Yield strength greater than 36,000 psi: 1 set of tension tests and 1 set of bend tests for each piece.

c. Additional tests may be required by Engineer or City of Los Angeles Department of Building and Safety.

B. Shop inspections may be waived for manufacturer fabricated assemblies delivered to Contractor for installation as preassembled units.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive Work.

B. Correct detrimental conditions before proceeding with installation.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal where Project Site(s) welding is required.

B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.3 INSTALLATION

A. Install metal fabrication items in accordance with Drawings and approved shop Drawings.

B. Coordinate and furnish anchorages, setting Drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project Site(s).

C. Install items plumb and level, accurately fitted, free from distortion or defects.

D. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

E. Field weld components as indicated on Drawings.

F. Perform field welding in conformance with AWS D1.1/D1.1M or appropriate AWS standard for procedures of manual shielded metal-arc welding, appearance and quality of welds made, methods used in correcting welding Work, and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surfaces matches those adjacent.

G. Obtain approval from Engineer prior to Project Site(s) cutting or making adjustments not scheduled.

3.4 ACCESS LADDERS

A. Support each ladder at top and bottom and at intermediate points spaced not more than 5 feet on centers by means of welded or bolted steel brackets.

1. Size brackets to hold centerline of ladder rungs clear of the wall surface.

3.5 INSTALLATION OF METAL BAR GRATINGS

A. General: Install gratings to comply with requirements of NAAMM grating standard that apply to grating.

B. Secure removable units to supporting members with type and size of clips and fasteners indicated, or, if not indicated, as recommended by grating manufacturer for type of installation conditions shown.

C. Secure non-removable units to supporting members by welding where both materials are the same, otherwise fasten by bolting.

D. Attach toe plates to gratings by weding, at location indicated.

3.6 HOLES

A. Prepare required holes in steel members for attachment or passage of Work of other trades.

B. Hole burning to make or enlarge holes is allowed only with prior approval of Engineer. Enlarge holes only by reaming.

C. Cut, drill, or punch holes at right angles to the surface of the metal.

D. Holes shall be clean-cut without torn or ragged edges.

E. Remove outside burrs resulting from drilling or reaming operations with a tool making a 1/16 inch bevel.

F. Punch, drill, or ream holes for anchor bolts in base and bearing plates. Do not make or enlarge the holes by burning except for grouting holes in column bases.

G. Where the steel thickness is equal to or less than diameter of the bolt plus 1/8 inch, holes may be punched 1/16 inch larger than the nominal diameter of the bolt.

H. Where the steel is thicker than the diameter of the bolt plus 1/8 inch, the holes shall be drilled or sub-punched and reamed. Diameter of sub-punched holes, and the drill for sub-punched holes, shall be 1/16 inch smaller than the nominal diameter of bolt to be installed.

I. Precisely locate finished holes to ensure passage of bolts through steel assemblies without drifting. Poor matching of holes is cause for rejection.

3.7 BOLTING

A. General (Not Including High-Strength):

1. Drive bolts into the holes without damaging the thread. Protect bolt heads from damage during driving.

2. Bolt heads and nuts shall rest squarely against the metal.

3. Where bolts are to be used on beveled surface having slopes greater than 1 to 20 with a plane normal to the bolt axis, beveled washers shall be provided to give full bearing to the head or nut.

4. Upset bolt threads to prevent the nuts from backing off.

B. Unfinished Bolts:

1. Unfinished bolts shall be of the length that shall extend through but no more than 1/4 inch beyond the nuts.

2. Bolt heads and nuts shall be drawn tight against Work.

3. Bolt heads shall be tapped with a hammer while the nut is being tightened. After having been finally tightened, bolt threads shall be upset to prevent the nuts from backing off.

C. Bolted Field Connections at Supports:

1. Standard bolts shall be of a length that shall extend not less than 1/4 inch beyond the nuts. Enter bolts into holes without damaging the threads and bolt heads

2. Bolt heads and nuts shall rest squarely against the metal.

3. Where bolts are to be used on beveled surface having slopes greater than 1 to 20 with a plane normal to the bolt axis, beveled washers shall be provided to give full bearing to the head or nut.

4. Upset bolt threads to prevent the nuts from backing off.

5. Correct poor matching of holes by drilling to next larger size and use of larger size bolt. Obtain written approval from Engineer before proceeding with corrective Work.

3.8 WELDED CONNECTIONS

A. Do not begin welding until joint elements are bolted or tacked in intimate contact and adjusted to dimensions shown on Drawings, with allowance for weld shrinkage that is expected. Weld heavy sections and those having a high degree of restraint with low hydrogen type electrodes. No members shall be spliced without prior approval by Engineer.

B. Weld in conformance with AWS D1.1/D1.1M.

1. Welds exposed to view shall have as-welded surfaces that are continuous, smooth, and uniform. Radii shall be true and consistent from weld to weld. Finishing or grinding may be required where clearances or fit of other items may require.

C. Perform intermittent welding, continuous welding, and straightening of built-up sections to minimize internal stresses. Built-up sections assembled by welding shall be free of warpage. Each axis shall have true alignment.

D. Welds not specified shall be continuous fillet welds. Use minimum fillet in conformance with AWS requirements.

E. Clean surfaces to be welded of paint, grease, loose scale, and foreign matter. Clean welds each time electrode is changed or a new pass started. Chip clean burned or flame cut edges before depositing welds.

F. Same electrode may be used with various thicknesses of plates, but change current used and number of passes made proportionately.

G. After being deposited, brush welds with wire brushes. Welds shall exhibit uniform section, smoothness of welded metal, feather edges without undercuts or overlays, and freedom from porosity and clinkers. Visual inspection at edges and ends of fillets and butt joint welds shall indicate good fusion with penetration into base metal.

H. During assembling and welding keep parts straight and in close contact. Take precautions to minimize lock-up stress and distortion due to heat. Do not weld during windy conditions unless wind protection is provided. Cut-out and replace welds found to be defective.

I. The maximum space between pieces or members to be butt welded shall not exceed 1/4 inch. Bevel pieces or members up to 3/8 inch thickness to form single or double Vee before being welded. Bevel pieces over 3/8 inch thickness to form a double Vee whenever possible. Lay and size fillet welds as shown on Drawings. Measure only effective portion of fillet welds. Maximum space between pieces or members to be fillet welded shall not exceed 1/16 inch.

3.9 CORRECTIVE WORK

A. Members or assemblages of Work having fabrication errors, or which exceed permissible tolerances, or which have errors or deformations preventing assembly and fitting of parts, shall be reported immediately to Engineer before incorporation in the finished Work.

B. Such members or assemblages shall be corrected if permitted by Engineer, otherwise, they shall be replaced at Contractor’s sole cost and expense.

C. Submit Drawings showing the corrections and obtain acceptance prior to performing any corrective Work.

3.10 REPAIR OF DAMAGED GALVANIZING

A. Repair damaged galvanizing in conformance with TREATING DAMAGED GALVANIZING Section.

3.11 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Tests and inspections by independent test laboratory shall include, but is not limited to, the following:

a. Shop and field welded connections shall be continuously visually inspected except for welding done in a City of Los Angeles Department of Building and Safety licensed shop.

b. Defects shall be corrected and a statement of final approval shall be received from Engineer before fabrications are installed.

3.12 CLEANING AND TOUCH-UP PAINTING

A. Touch-Up Painting of Steel Items: Immediately after erection, clean field welds, bolted connections, abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 requirements for touch-up of field painted surfaces. Apply by brush or spray to provide a minimum dry film thickness of 3.0 mils.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Exterior paint for:

1. Metal fabrications
2. Timber bullrails
3. Other elements shown on Drawings or listed in Specifications to receive painting or coating

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications

B. Section 35 59 40 - Marine Timber Construction

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires painting for exterior improvements.

1.4 REFERENCES

A. 29 CFR 1910.134 - Respiratory protection.

B. 29 CFR 1910.1000 - Air Contaminants.

C. SSPC PA Guide 10 - Guide to Safety and Health Requirements for Industrial Painting Projects.

D. SSPC-SP 6 - Commercial Blast Cleaning.

E. Reference Specifications (RS):

Section 210 - Paint and Protective Coatings

1.5 SUBMITTALS

A. Samples of Painting:

1. Color swatches 8 1/2 inches by 11 inches shall be required for each type of paint material and color. Submit swatches to Engineer for approval not less than 10 days prior to start of painting.

B. Extra Stock Materials:

1. Provide two 1-gallon paint, in original and sealed containers bearing manufacturer's label, for each type and color used for finish coats. Identify each container by color and type.

1.6 QUALITY ASSURANCE

A. Paint products and applications shall comply with South Coast Air Quality Management District (SCAQMD) regulations. The product label and/or Safety Data Sheet (SDS) shall state that the product meets requirements or manufacturer shall furnish certificate of compliance.

1.7 ENVIRONMENTAL AND HEALTH REQUIREMENTS

A. Coating Hazards:

1. Comply with the requirements of SSPC PA Guide 10.

2. Specified coatings may have potential health hazards if ingested or improperly handled. The coating manufacturer's written safety precautions shall be followed throughout mixing, applying, and curing of the coatings. During cleaning, cleanup, surface preparation, and coating application phases, ensure that employees are protected from toxic and hazardous chemical agents which exceed concentrations in 29 CFR 1910.1000. Comply with respiratory protection requirements as required in 29 CFR 1910.134 .

3. Take care to prevent fire; open containers or inflammable materials only as needed; keep rubbing cloths and oily rags in tightly closed metal container, or remove from Project Site(s) daily. Benzene, gasoline, and distillate shall not be permitted on Project Site(s).

4. Do not apply coatings in unheated space during foggy or rainy weather, or under the following surface temperature conditions:

a. Less than 5 degrees Fahrenheit (F) (4 degrees Celsius (C)) above the dew point; and

b. Below 40 degrees F (4 degrees C) for oil based paints, 10 degrees F (50 degrees C) for latex paints or over 95 degrees F (35 degrees C), unless approved in writing by manufacturer's representative and quality control manager.

c. Below 32 degrees F (0 degrees C) or over 120 degrees F (49 degrees C), unless approved in writing by manufacturer's representative and quality control manager.

5. Paints shall comply with City of Los Angeles Green Building Code requirements.

a. Enter pertinent product data in VOC Content Verification Checklist form and provide product specification sheets. Make checklist and specifications available to City of Los Angeles Department of Building and Safety inspector through Engineer upon request. VOC Content Verification Checklist form can be found here: https://www.ladbs.org/docs/default-source/forms/green-building-2023/grn_2_voc_content_verification_checklist-01.17.23.pdf?sfvrsn=19f4c153_10

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver in factory sealed containers with labels intact, in conformance with RS Subsection 210-1.

B. Store in conformance with manufacturer's written instructions for paint shelf life, including, but not limited to, protection from temperature extremes.

C. Obtain Engineer's approval of materials before containers are opened.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Paint products used in the coating systems shall be from the same manufacturer.

B. Paints shall comply with City of Los Angeles Green Building Code requirements.

C. The products listed are to be produced and supplied by Dunn-Edwards Paints.

1. Ungalvanized Ferrous Metals:

First Coat	BRPROO Bloc-Rust Primer
Second Coat	EVSH60 Evershield Gloss Enamel
Third Coat	EVSH60 Evershield Gloss Enamel

2. Galvanized Metals:

Pretreatment	Metal Clean & Etch by Krud Kutter/ Rust-Oleum
First Coat	ULGM00-WH Ultrashield Galvanized Metal Primer
Second Coat	EVSH60 Evershield Gloss Enamel
Third Coat	EVSH60 Evershield Gloss Enamel

3. Wood:

First Coat	EZPR00 EZ-Prime Premium
Second Coat	EVSH50 Evershield Semi-Gloss
Third Coat	EVSH50 Evershield Semi-Gloss

4. Concrete:

First Coat	ESSL00 EFF-STOP Select
Second Coat	ACHS10 ACRI-HUES Exterior Acrylic Flat
Third Coat	ACHS10 ACRI-HUES Exterior Acrylic Flat

PART 3 - EXECUTION

3.1 SURFACE PREPARATION-UNGALVANIZED METALS

A. Clean surfaces to be painted by No. 6 Commercial Blast Cleaning in conformance with SSPC-SP 6.

3.2 SURFACE PREPARATION-GALVANIZED METALS

A. Clean galvanized metals in conformance with written instructions of pretreatment wash manufacturer, then apply pretreatment wash.

B. Blast lightly with fine abrasive or organic media (walnut shells) at 45 degree angle (profile only, do not remove zinc coating).

3.3 APPLICATION

A. Surfaces to be painted shall be approved by Engineer prior to painting.

B. Do not use paints with coarse particles, skins, and indications of color instability.

C. Protect surfaces not designated to receive paint.

D. Apply paint in uniform thickness and Work into joints in conformance with manufacturer's written instructions.

E. Surfaces shall be dry during painting. No painting shall be done in damp weather unless surfaces to be painted are kept dry.

F. Paint shall be dry before applying succeeding coats.

G. Color schedule (if any) shall be in accordance with Drawings and applicable Specification Sections and shall be approved by Engineer prior to painting.

1. Refer to MARINE TIMBER CONSTRUCTION Sections for color selections for those improvements.

H. Paint showing signs of blistering, spotting, uneven coating, or sagging shall be rejected.

I. Steel items that are to be encased or partially encased in concrete shall be painted with complete coating system before being encased.

J. Do not apply second and third coats until previous coat has been approved by Engineer.

K. Electrical panels shall be touched-up in conformance with manufacturer's written instructions to match original color and type of paint.

3.4 COATING THICKNESSES

A. First Coat: (Prime coat): 1.5 to 2.5 mils in dry film thickness.

B. Second Coat: 1.5 to 2.0 mils in dry film thickness.

C. Third Coat: 1.5 to 2.0 mils in dry film thickness.

3.5 CLEANING AND PROTECTION

A. Cleaning: Remove from Project Site(s) discarded paint materials, rubbish, cans, and rags at end of each day.

B. Upon completion of painting Work, clean overspray off of adjacent surfaces. Remove overspray by proper methods of washing and scraping, taking care not to scratch or otherwise damage adjacent finished surfaces.

C. Protection: Protect Work of other trades and existing adjacent surfaces,whether to be painted or not, against damage by painting and finishing Work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Engineer.

1. Place Wet Paint signs as required to warn passersby of newly-painted finishes.

2. Touch-up and restore damaged or defaced painted surfaces before final inspection.

3. Remove temporary protective wrappings for protection of adjacent Work after completion of painting operations.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Surface preparation and application of corrosion protective coatings and coverings for:

1. Underground metal piping including joints, fittings, and adapters
2. Underground metallic electrical conduits
3. Steel mounting hardware for cathodic protection aluminum anodes, exposed ductile iron, steel pipes, and joints or fittings under the wharf

B. The following underground pipes and conduits need not be protected by corrosion control coatings or coverings:

1. Metal materials encased in at least a 3-inch cover of concrete having a 28-day compressive strength of 2,500 pounds per square inch (psi) or greater.
2. Metal piping and equipment in pits which shall be dry and above the water table.
3. Soil pipe for drainage and gravity sewer lines.
4. Corrugated metal piping.
5. Conduit having an approved factory applied 40 mil PVC coating.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications

B. Section 26 42 13 - Cathodic Protection

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires corrosion control.

1.4 REFERENCES

A. ASTM D1248 - Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable.

B. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems.

C. SSPC-SP 6 - Commercial Blast Cleaning.

D. Reference Specifications (RS):

Section 210 - Paint and Protective Coatings

1.5 SUBMITTALS

A. Submit list of materials to be used to Engineer. Submittal shall include descriptive literature from manufacturer.

1.6 REGULATORY REQUIREMENTS

A. Sandblasting shall meet South Coast Air Quality Management District (SCAQMD) requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver mastic in conformance with RS Subsection 210-1.1.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Butyl backed plastic tape wrap shall be factory laminated product consisting of butyl rubber backing and an outer layer of polyvinyl chloride or polyethylene plastic, with following physical characteristics:

Thickness in Inches (minimum)	Adhesion
Overall of tape 0.023	Grams per inch of
Plastic layer 0.008	tape with 0.800 minimum
Butyl layer 0.010	

B. Polyethylene encasement for ductile or cast iron pipe shall be polyethylene encasement (either tube or sheet form) to conform to AWWA C105/A21.5 except encasement shall be lapped 2 feet at encasement joints. Polyethylene material shall conform to ASTM D1248.

C. The corrosion control used for steel mounting hardware for cathodic protection aluminum anodes, exposed ductile iron, steel pipes, and joints or fittings under the wharf shall be modified aluminum epoxy mastic corrosion system applied at factory or in controlled shop conditions. Only touch up may be done in field. Modified aluminum epoxy mastic shall be Carbomastic 15 by Carboline as distributed by Dunn Edwards, (888) 337-2468. Modified aluminum epoxy mastic shall have minimum solids by volume of 90 percent.

D. Galvanized metals pretreatment shall be Krud Kutter Metal Clean and Etch by Rust-Oleum, (770) 888-8827.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Surfaces to be wrapped in butyl back plastic tape shall be cleaned of oil, grease, soil, dust, other foreign matter and rust. Clean rust by SSPC-SP 6 blasting, with a 2 to 3 mil blast profile.

B. Surfaces to be protected by polyethylene encasement shall be clean of dirt.

C. Ground smooth welds, burrs, sharp edges, and sharp surface projections.

D. Remove weld splatter.

E. Surface preparation for modified aluminum epoxy mastic shall conform to SSPC-SP 6 blasting and paint manufacturer's written instructions.

3.2 APPLICATION

A. General:

1. Tools, equipment, and materials shall be maintained in working order.

2. Paint shall be mixed by mechanical mixer.

3. Compressed air for blast cleaning or painting shall be free of foreign matter. Equipment shall have traps and separators to trap oil and water.

4. The corrosion control systems for underground conduits or pipes shall terminate not less than 12-inches above ground or 12-inches into concrete pits or pull boxes.

5. Plastic tape may be used for metal pipe, tubing, and electrical joints and fittings. Plastic tape shall not be used on ductile iron or cast iron pipe.

6. Modified aluminum epoxy mastic shall be used on cast or ductile iron pipe and fittings above ground or under the wharf, and on underground steel casings. Provide continuous protection.

B. Plastic Tape Wrap:

1. Use rapid drying primer for the substrate. Primer shall be compatible with the tape.

2. Apply adhesive primer to a 1 mil dry-film thickness (approximately 300 square feet per gallon) by brushing, spraying, or other method recommended by the manufacturer. Surface shall be completely covered with the primer without sags or runs. Thinning shall be done with product recommended by the primer manufacturer.

3. Over the dry or slightly tacky primer coat, wrap a single layer of tape maintaining 4 pounds tension per inch of width of tape. No folds or irregularities shall be permitted and overlaps shall be maintained as follows (Values given are minimum permitted for lap widths listed):

2-inch tape: 0.25 inch
4-inch tape: 0.375 inch
6-inch tape: 0.50 inch
9-inch tape: 0.50 inch

4. Repair damaged areas of wrap by repeating the priming and wrapping steps.

C. Apply modified aluminum epoxy mastic system in conformance with manufacturer's written instructions and in an enclosed SCAQMD approved spray booth.

1. Clean galvanized metals to receive modified aluminum epoxy mastic in conformance with pretreatment wash manufacturer’s written instructions and apply pretreatment wash.

2. Apply 2 coats of modified aluminum epoxy mastic. Minimum dry film thickness for a 2-coat system shall be 16 mils.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Basic electrical materials, methods, and requirements to perform electrical Work

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 26 42 13 - Cathodic Protection

C. Section 31 23 33 - Trenching and Backfilling

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Electrical System Improvements Allowance bid item of Bid Proposal Line Items.

1.4 SUBMITTALS

A. Complete list of materials and equipment proposed for use in Project prior to purchase and installation of materials or equipment.

1. Submittals shall include manufacturer's names and material descriptions or equipment identification such as styles, types, and catalog numbers. Submittal data shall show published ratings or capacity data, detailed equipment drawing for fabricated items, panel diagrams, wiring diagrams, installation instructions, and other pertinent data. Where literature is submitted covering a group or series of similar items, clearly indicate or identify the applicable items. Drawings shall be drawn to scale indicating exact dimensions.

B. Review of materials shall be based on the manufacturer's latest published data and such physical tests as may be performed by Department Testing Laboratory.

C. Prior to start of construction, submit to Engineer proposed equipment layout drawings for each equipment room or area containing items of equipment furnished under Division 26. Layout drawings shall consist of plan view of room, to scale, showing projected outlines of equipment, complete with dotted indication of required clearances including those needed for removal of service. Indicate location of conduit and pull boxes.

D. Operation and Maintenance Manuals: Provide 1 copy of indexed operation and maintenance manual which shall include test reports, service instructions, and renewal parts lists of equipment installed in Project. Submit in hard copy and electronic file or compact disc (CD) format.

1. Submit operation and maintenance manuals at least 30 Calendar Days before final inspection. Include the following information together with any pertinent data:

a. Renewal part numbers of replaceable items.

b. Manufacturer's specific product data.

c. Serial numbers of principal pieces of equipment.

d. Supplier's name, address, and phone number.

e. Final settings for breakers, relays, and control devices.

E. Submit resume of full-time quality assurance person.

F. Project Records:

1. In addition to the requirements of PROJECT RECORD DOCUMENTS Section, the make and model of equipment installed in Project shall be indicated on Project Record Drawings.

1.5 QUALITY ASSURANCE

A. Provide at Project Site, a full time quality assurance person with minimum 5 years of electrical construction experience. This person shall lay out on plans the installation of electrical equipment, conduit alignments, terminations, wiring, and Work pertaining to electrical construction, which shall be used by the electricians for field installations.

B. Jobsite Workers:

1. Apprentices and Journey Level Electricians:

a. Apprentices shall be registered in a State of California approved apprenticeship program.

b. The use of Journey level electricians shall comply with State of California labor laws.

2. Project Workforce for Compliance with Electrical Safety Policy:

    a. 70 percent of Journey Level electricians shall be graduates of a State of California Approved Electrical Apprenticeship Program.

    b. 20 percent of Project Site electrical workers shall be Occupational Safety and Health Administration (OSHA) 10-hour General Industry Safety And Health certified.

    c. At least 1 Project Site electrical worker shall be OSHA 30-hour General Industry Safety And Health Certified.

    d. The workforce ratios indicated in Quality Assurance Article, Jobsite Workers Paragraph, subparagraphs 2a through c shall be determined by verifying the workforce composition on a daily basis.

3. Contractor shall complete Electrical Safety Policy-Implementation Plan form, located in Appendix "O" of Specifications and submit at the time required in NOTICE INVITING BIDS Section.

4. Prior to start of electrical Work, Contractor or subcontractor shall provide proof of compliance to Inspector.

5. Contractor shall continue to monitor and comply with Jobsite Workers Paragraph of this Article requirements for the duration of Contract. Electrical Work may be terminated at any time Contractor is found to be out of compliance.

1.6 MAINTENANCE

A. Spare Parts: Deliver the following spare parts to Engineer and obtain receipts. Submit at same time as operating instructions.

1. Spare fuses: 2 sets for each size combination fused breaker.

2. Spare fuses for low voltage fused switch: 2 sets for each size used on Project.

3. Spare pilot light lamps of each type used on Project, in quantity of 10 percent, but not less than 2 percent.

4. Overload heater elements: 2 sets for each size used on Project.

5. Spare fuses for medium voltage switches: 2 sets for each size fuse used on Project.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials and equipment to be installed shall be standard cataloged products of companies regularly engaged in the manufacture of such products, Underwriters Laboratories, Incorporated (UL) listed, and meet the requirements of City of Los Angeles Electrical Code. The products shall be the latest standard designs in accordance with Drawings and unless otherwise noted.

B. Equipment and devices of the same rating shall be new, interchangeable, and of the same manufacturer. Fixtures and fittings of one classification shall be of the same manufacturer and model.

C. Materials and equipment shall have National Electrical Manufacturers Association (NEMA) NEMA 1 rating for indoor use and NEMA 3R rating for outdoor use.

2.2 NAMEPLATES

A. Furnish and install identifying and functional nameplates for the electrical fixtures and poles. Nameplates shall identify function and controlling circuits.

B. Engrave nameplates on filled metal or 2 ply laminated acrylic and hold in place by mechanical means. Galvanize mechanical fasteners with 2 ounces of hot-dipped zinc per square foot of surface. Characters shall have a minimum height of 4 millimeters for branch circuit identification and minimum of 51 millimeters for warning signs, unless a larger minimum dimension is required by Cal-OSHA or City of Los Angeles Electrical Code.

2.3 ENCLOSURES

A. Indoor: NEMA 1

B. Outdoor: NEMA 3R

C. Switch enclosures shall be clearly marked for maximum voltage, current, and horsepower rating.

PART 3 - EXECUTION

3.1 PREPARATION

A. Perform trench Work and vault excavations as shown on Drawings and in conformance with BASIC SITE MATERIALS AND METHODS and TRENCHING AND BACKFILLING Sections.

3.2 INSTALLATION

A. Perform Work in conformance with City of Los Angeles Electrical Code, American Insurance Association (AIA) regulations, regulations of Industrial Safety Commission of the State of California, and any other legally constituted regulating authority having jurisdiction.

B. Install Work in conformance with NEMA 3R rating for weather resistance.

C. Locate and route new electrical conduits without penetrating through new or existing roof decks or electrical equipment roofs.

D. Exposed conduit, fittings, and straps shall be PVC coated steel conduit unless noted otherwise.

3.3 EMPTY CONDUITS

A. Provide a nylon pull tape in each empty conduit for future use. Secure tape at both ends and provide a minimum 48 inches of slack.

B. Nylon pull tape shall be a 3/8 inch width nylon pull tape. Nylon pull tape shall be permanently printed with the rated tensile strength (1,250 pounds minimum) and sequential footage markings.

C. Nylon pull tape shall be in 1 continuous length without any cuts or ties.

D. Identify each tape at the end of each line with source and destination markers.

3.4 CAPPING EMPTY CONDUITS

A. Cap underground conduits, which are to remain empty, at both ends.

3.5 CONDUITS CROSSING RAILROAD TRACKS

A. Encase electrical, telephone, communications, and signal conduit duct banks crossing new railroad tracks in 3 inch concrete with minimum 2,000 pounds per square inch (psi) strength, extending a minimum of 10 feet on both sides of railroad tracks.

3.6 REPAIR AND RESTORATION

A. Perform trench resurfacing Work as shown on Drawings and in conformance with BASIC SITE MATERIALS AND METHODS and TRENCHING AND BACKFILLING Sections.

3.7 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Compliance Tests:

a. Conduct tests at portions of the installation as may be necessary to ensure full compliance with Drawings and Specifications. Perform tests in presence of Engineer. Costs of tests shall be at sole cost and expense of Contractor. Provide instruments, equipment, labor, and materials to complete tests. Tests may be required on any item between installation of Work and end of 1 year warranty period. Should tests detect defective materials, poor workmanship, or variance with requirements of Specifications, Contractor shall make changes necessary and remedy defects at no additional cost to Department.

2. System Acceptance:

a. Notify Engineer for final inspection prior to system acceptance upon:

1) Completion of installation of systems required under Contract Documents.

2) Submission and acceptance of operating and maintenance data.

3) Completion of identification markers, tags, nameplates, directory cards, and other identification mechanisms as specified in Specifications.

b. Acceptance is contingent upon the following:

1) Completion of final review and correction of deficiencies.

2) Satisfactory completion of acceptance tests which demonstrate compliance with performance and technical requirements of Contract Documents.

3) Satisfactory completion of training program and submission of Operation and Maintenance Manuals and As-Built Drawings required by Contract Documents.

3.8 CLEANING

A. Upon completion, and at other times during the progress of Work, remove surplus materials, trash, and debris resulting from Work.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Cathodic protection system for the sheet steel piles

B. Corrosion protection for the submerged surfaces of the sheet steel piles.

1.2 RELATED SECTIONS

A. Section 09 96 20 - Corrosion Control

B. Section 31 62 16.13 - Sheet Steel Piles

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Cathodic Protection Allowance bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. NACE SP0169 - Control of External Corrosion on Underground or Submerged Metallic Piping Systems.

B. SSPC-SP 10 - Near-White Metal Wet Abrasive Blast Cleaning.

1.5 SUBMITTALS

A. Detailed Drawings with design calculations for the cathodic protection system with complete installation details.

B. The following certifications of experience and qualifications to perform Work:

1. The name of the firm with a minimum of 5 years experience in the corrosion field.

2. Proof of a licensed Engineer registered in State of California as a professional corrosion Engineer and is accredited by National Association of Corrosion Engineers (NACE) as a corrosion specialist.

C. Mill certificates by the vendor to Engineer for each alloy melt used in the production of anodes produced. The certificate shall indicate:

1. Alloy chemical composition

2. Alloy closed circuit potential

3. Alloy efficiency

4. Number of anodes produced from each melt

5. Net weight of each anode

D. Written report of the testing with data tabulated and as-built Drawings as described in Field Quality Control Article of this Section to Engineer 14 days after the testing has been completed.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

A. This is a design/build performance specification.

B. Detailed Drawings with design calculations shall be prepared for the cathodic protection system with complete installation details and shall be submitted to Engineer for approval. Plans and calculation for the cathodic protection shall be prepared and signed by a State of California registered corrosion Engineer.

C. Cathodic protection system shall be of the sacrificial anode type utilizing aluminum anodes.

D. The design life of the cathodic protection system shall not be less than 15 years.

E. The current density for the cathodic protection system for the sheet steel piles shall be as follows:

1. In seawater: 5 milliamperes per square foot (mA/sq ft)

2. In mud zone: 3 mA/sq ft

F. The design seawater resistivity shall be based on 20 to 25 ohm centimeter (cm) resistivity for seawater.

2.2 ALUMINUM ANODES (GALVALUM III)

A. Aluminum anodes shall be high-purity aluminum-zinc-indium alloy and shall be Galvalum III. The current capacity of the anodes shall be a minimum 1,150 ampere-hours per pound. Normal consumption shall be 7.6 pounds per amp year. The voltage range shall be 1.11 volts to 1.17 volts (CU-CUS04 reference electrode). Conduct factory tests on samples poured from the same batch as production anodes.

B. Sandblast molds and cores to a near white metal in conformance with SPPC SP 10. The shift foreperson shall verify that the batch meets the chemical specifications before the pour begins. Pour alloy into molds as required to produce the quantity needed. Random anodes shall be checked to ensure that the weight is correct. During the pour, the sampling procedure shall be observed. When the metal has cooled and solidified, stamp each anode with the batch number.

C. Chemical Composition of Aluminum Anodes:

1. Galvalum III anodes shall be produced to the following specification:

% Zinc	2.8	- 6.5
% Indium	0.01	- 0.02
% Iron	0.12	- Maximum
% Silicon	0.08	- 0.20
% Copper	0.006	- Maximum
% Aluminum	Remainder	

2.3 FABRICATION TOLERANCES

A. Tolerances:

1. The average weight of anodes produced for a single Contract shall be no less than the nominal weight shown on the approved shop Drawings.

2. The weight of individual anodes shall be within plus or minus 3 percent of the weight shown on the approved shop Drawings.

3. Length shall be plus or minus 2 percent of the length shown on the approved shop Drawings.

4. Anode width and height shall be plus or minus 10 percent of dimensions shown on approved shop Drawings.

2.4 SOURCE QUALITY CONTROL

A. Furnish materials, equipment, and qualified personnel to perform the inspection and testing specified. Engineer reserves the right to inspect the anodes during manufacture, including witnessing of testing and review of the original laboratory records, but is in no way obligated to supervise Work. Inspection provided by Engineer shall not relieve Contractor of the responsibility to comply with provisions of Specifications.

B. Quality control samples for chemical analysis shall be taken at the start and at the finish of each melt from which more than 4 anodes are produced. One sample for chemical analysis, taken during the casting, shall be required for melts from which fewer than 4 anodes are produced.

1. One sample from each melt shall be tested for electro-mechanical efficiency and closed-circuit potential.

a. Closed-circuit potential tests shall be conducted on 1 sample taken from each batch. The sample shall be exposed to synthetic seawater and a current density of 4 milliamperes per square inch for a minimum of 3 hours before measurements of closed-circuit potential. The acceptance criteria shall be a mean closed-circuit potential of minus 1.17v CU-CUS04 with a minimum acceptable potential of minus 1.11v.

b. Short duration capacity tests, either impressed current or hydrogen evolution, shall be conducted on 1 sample taken from the batch. The acceptance criteria shall be a mean efficiency of 85 percent with a minimum acceptable of 80.2 percent. If a batch does not meet either of the test criteria, tests shall be conducted on 2 additional samples of the same batch. If the criteria in question is met, the batch shall then be accepted.

2.5 SACRIFICIAL ALUMINUM ANODE SUPPORT HARDWARE

A. Steel mounting hardware for the aluminum anodes shall be sandblasted to near white in conformance with SSPC-SP 10 and coated in conformance with CORROSION CONTROL Section, except at anode bracket connections to pile. To ensure proper grounding of anode to pile, provide a grounding set screw.

PART 3 - EXECUTION

3.1 INSTALLATION

A. After driving piles, install cathodic protection system in accordance with approved shop Drawings and design Engineer's specifications for the system.

1. Mount the sacrificial aluminum anodes on the pilings by mechanical means. Either clamp type mounting or threaded stud mounting shall be accepted.

3.2 FIELD QUALITY CONTROL

A. After the cathodic protection equipment is installed, Contractor shall have the system tested in conformance with accepted industry practice. The purpose of the testing shall be to determine if complete cathodic protection has been achieved and if the system complies with Specifications and the criteria for protection as defined in NACE SP0169. The system shall be tested under the direct supervision of a professional corrosion Engineer registered in the State of California and accredited by NACE as a corrosion specialist.

B. Upon completion of the cathodic protection system, structure-to-reference cell potential measurements shall be made, using a silver-silver chloride reference electrode and a direct current potentiometer-voltmeter, having an internal resistance (sensitivity) of not less than 100,000 ohms per volt and a full scale of 1 or 2 volts, or an electronic voltmeter with a minimum input resistance of 10 megohm and a full scale of 1 or 2 volts. At a minimum, structure-to-reference cell potential measurements shall be made at 3 locations down each pile.

C. Criteria for Protection:

1. The criteria for determining if complete cathodic protection has been achieved shall be a minimum potential of minus 900 millivolt (mV) to a silver-silver chloride reference electrode at test locations. Contractor shall correct, at no additional cost to Department, deficiencies in materials and installation observed by these tests and inspections. Contractor shall pay for retests made necessary by corrections.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Clearing and grubbing

B. Excavating, scarifying, grading, filling, and compacting earth to grades and elevations shown on Drawings

C. Testing, characterizing, furnishing, placing, and compacting import fill

D. Removing excess earth from Project Site(s)

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 02 41 13 - Selective Site Demolition

C. Section 02 61 14 - Excavating, Stockpiling, and Disposing of Chemically Impacted Soil

D. Section 31 23 33 - Trenching and Backfilling

E. Section 32 13 14 - Concrete for Exterior Improvements

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Clear and Grub: The area to be cleared and grubbed shall be measured by the square foot where approved by Engineer and paid under the Clear and Grub bid item of Bid Proposal Line Items.

2. Subgrade Stabilization:

a. The quantity of No. 2 Aggregate Subgrade Stabilization replacement material for soil that is determined by Engineer to be geotechnically unsuitable as a subgrade for fill or base material shall be measured by the ton of No. 2 Aggregate Subgrade Stabilization replacement material compacted in place at Project Site(s).

b. Payment shall be made under the Placement of No. 2 Aggregate Subgrade Stabilization bid item of Bid Proposal Line Items. Final payment for soil quantities shall be verified by Engineer before and after field survey topographies. Allow 2 days in Construction Schedule for surveyors to perform before and after field topography before starting new Work.

c. Costs for excavating, handling, stockpiling, loading, and transporting the unsuitable material and costs for filling and compacting the resultant void with native soil, in conformance with this Section, and BASIC SITE MATERIALS AND METHODS Section shall be included in the bid item's unit price per cubic yard for native replacement material compacted in place.

3. Measurement and payment for No. 68 Aggregate Subgrade Stabilization replacement material shall be the same as for No. 2 Aggregate Subgrade Stabillization replacement material.

4. Import and Place Fill Soil:

a. The quantity of tested and qualified import fill soil shall be measured by the cubic yard compacted in place at Project Site(s) and shall be paid under Import Fill Soil bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

B. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.

C. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

D. EPA SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

E. City of Los Angeles Department of Public Works Brown Book:

Subsection 300-3 - Structure Excavation and Backfill

F. Reference Specifications (RS):

Section 300 - Earthwork

Section 301 - Subgrade Preparation, Treated Materials, and Placement of Base Materials

1.5 SUBMITTALS

A. Submit to Engineer for review and approval written documentation to identify the proposed fill source, previous uses of the land from which the fill originated, proposed import fill volume from each source, and sampling plan with a map showing depth and location of soil sample collection. After approval of fill source and sampling plan with a map, submit results of soil characterization performed. Contractor personnel who sample stockpiles should be competent in their understanding of environmental sampling, including sample collection and handling, sample preservation and storage, decontamination, and chain of custody procedures.

1. For In-situ Characterization: Provide a proposed plan for characterization including a map of borrowed site boundaries, depths of proposed excavations, depth horizons that shall be used for fill, and proposed analyses.

B. After approval of fill source, submit the following to Engineer for review and approval 30 Calendar Days prior to the receipt of soil to Project Site(s) from Department property (re-use or borrowed soil from another area within Department property) or off Department property (import fill):

1. Completed Los Angeles Harbor Department Import Material Checklist form included in Appendix "I" of Specifications. Data from the characterization efforts shall be submitted with the completed form.

2. Sieve analysis conforming to ASTM C136/C136M.

3. Proposed trucking delivery schedule and haul route.

4. Analytical documentation submittals shall include FINAL analytical characterization information (Draft analytical data is not acceptable). Analytical documentation shall include the chain-of-custody noting the condition of soil samples upon arrival to the laboratory.

C. Submit the following during placement of import soil fill:

1. Documentation of daily volumes of fill material received and placement location within Project Site(s).

1.6 QUALITY ASSURANCE

A. Engineer reserves the right to approve materials to be used in construction. Approved materials that are no longer in conformance with this Section shall not be used.

B. Refer to BASIC SITE MATERIALS AND METHODS Section for sampling procedures for material to be compacted.

C. Analytical Laboratory Qualification: State of California Environmental Laboratory Accreditation Program (ELAP) accredited.

1.7 PERMITS

A. Comply with applicable South Coast Air Quality Management District (SCAQMD) permits and rules, and City of Los Angeles Department of Building and Safety permits. Obtain permits as required. Refer to REGULATORY REQUIREMENTS Section for additional requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Native Fill: Excavated materials may be re-used for fill as approved by Engineer, including backfill of voids left after removals in conformance with RS Subsection 300-4 exclusive of RS Subsection 300-4.9 and RS Subsection 300-4.10. Material shall not contain vegetation or other organics, rocks, broken concrete, debris, or other solid materials larger than 4 inches, or any other deleterious materials.

B. Import and Re-use Fill Geotechnical Requirements (from sites off and within Department property):

1. Fill, where required on Drawings or in Specifications, shall conform to RS Subsection 300-5, except for RS Subsection 300-5.4, and the following:

a. Fill shall consist of soil classified as SW, SM, SC, or SP in conformance with ASTM D2487. Soil shall have a minimum sand equivalent value of 20 percent in conformance with ASTM D2419.

b. Obtain Engineer's approval of material prior to transporting to Project Site(s).

C. Import Fill Environmental Requirements (from site(s off and within Department property): Import fill material shall conform to properties described in this Section. Refer to Appendix "I" of Specifications for Los Angeles Harbor Department Import Material Checklist.

1. Fill source area shall not be located in:

a. Industrial areas including airports.

b. Sites undergoing environmental cleanup.

c. Sites under regulatory oversight (Los Angeles Regional Water Quality Control Board (LARWQCB), Department of Toxic Substances Control (DTSC), and United States Environmental Protection Agency (US EPA))

d. Other sites where hazardous materials were used or hazardous wastes were generated (gasoline stations, dry cleaners, oil refineries, painting facilities, metal processing shops, and other similar site(s)).

2. Proposed import fill shall be tested by Contractor. Import fill material shall be sampled at the place of origin and tested by an ELAP accredited analytical laboratory and certified in conformance with this Section. Additional materials shall not be added to stockpile after samples have been collected. Department retains the right to refuse any potential fill material for use at any of its construction site(s).

3. Provide written documentation that identifies the proposed fill source, previous uses of the land from which the fill originated, proposed import fill volume from each source, and sampling plan with a map showing depth and location of soil sample collection. After approval of fill source and sampling plan with a map, submit results of soil characterization performed. Data shall be submitted to Engineer for review and approval 30 Calendar Days prior to the receipt of soil to Project Site(s). Upon approval by Engineer, Contractor shall deliver approved import fill to Project Site(s).

PART 3 – EXECUTION

3.1 SUBGRADE PREPARATION

A. Subgrade preparation shall be in conformance with RS Subsection 301-1 with the exception of compaction and payment requirements.

3.2 EXCAVATION

A. Excavation, including disposal of surplus material, shall be in conformance with RS Subsections 300-2 and 300-3 exclusive of RS Subsections 300-2.9 and 300-3.6. RS Subsection 300-3 shall be as modified by Brown Book Subsection 300-3.5.1.

3.3 FILL PLACEMENT, GENERAL

A. Fill placement shall be in conformance with RS Subsections 300-4 and 300-5 except for 300-5.4.

3.4 IMPORT FILL

A. Characterization and Testing Requirements:

1. Furnish labor, materials, laboratory analyses and reports, and equipment to characterize proposed import fill soil as defined in this Section. Data from the characterization efforts shall be submitted with the completed Los Angeles Harbor Department Import Material Checklist form included in Appendix "I" of Specifications.

2. Notify Engineer at least 72 hours prior to start of proposed import fill soil characterization Work.

3. Characterize proposed import fill soil using procedures contained in EPA SW-846 and the following sampling requirements:

Fill Source	Target Compounds and Analyses
Land adjacent to or within 250 feet from existing freeway or major highway	- TPH (modified EPA Method 8015)
	- Lead (EPA Method 6010B)
	- PAHs (EPA Method 8310)
Mining area or rock quarry	- Heavy Metals (EPA Methods 6020 and 7471A)
	- Asbestos (polarized light microscopy)
Agricultural	- Pesticides and Herbicides (Organochlorine Pesticides: EPA Method 8081A or 8080A; Organophosphorus Pesticides: EPA Method 8141A; Chlorinated Herbicides: EPA Method 8151A)
	- Heavy metals (EPA Methods 6020 and 7471A), including hexavalent chromium (EPA Method 7199)
Acceptable commercial land	- VOCs (EPA Method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035)
	- Semi-VOCs (EPA Method 8270SIM)
	- TPH (modified EPA Method 8015B)
	- PCBs (EPA Method 8082 or 8080A)
	-Heavy metals including lead (EPA Methods 6020 and 7471A), including hexavalent chromium (EPA Method 7199)

a. Pre-approved quarries and import soil sources may be proposed to Department with supporting documentation including characterization and testing in conformance with this Section.

b. The analytical results shall be reviewed and accepted by Engineer prior to proceeding with importing of soil.

4. The required minimum sample frequency for each unique source of fill materials shall be as follows:

Volume of Borrow Area Stockpile	Required Number of Samples per Volume
Up to 1,000 CY	1 sample per 250 CY
1,000 to 5,000 CY	4 samples for first 1,000 CY +1 sample per each additional 500 CY
Greater than 5,000 CY	12 samples for first 5,000 CY +1 sample per each additional 1,000 CY

5. The required minimum sample frequency for each unique in-situ source of fill materials shall be based on approved documentation in conformance with Paragraph A.1 of Submittals Article of this Section. In-situ characterization typically requires approximately 2 to 3 times the number of samples required for stockpile characterization. The table in Paragraph 3.4 A.4 of this Section shows the required number of samples for stockpile characterization.

6. Proposed import fill material is considered to have a non-homogenous distribution of chemicals.

7. Composite sampling is not acceptable. Do not mix soil from different locations or different depths at 1 location into 1 sample. Do not add soil to a characterized stockpile.

    a. A borrow area or stockpile is defined as 1 contiguous source that is homogeneous in color and soil type.

B. Import Soil Transportation Requirements:

1. Select transporter with current insurance coverage, and applicable licenses as required by Department of Transportation and State of California.

2. Cover transported materials appropriately to minimize loss of material during transport.

C. Monitoring Requirements:

1. Air monitoring shall comply with local, state, and federal regulations and guidelines.

2. Provide field screening and monitoring equipment to monitor for:

    a. Worker safety.

    b. Air monitoring permit requirements.

3. Monitoring activities shall include, but are not limited to:

   a. Engineer shall evaluate the soil using a photoionization detector (PID), capable of detecting volatile organic vapors to a minimum of one part per million (ppm), to assess potential soil contamination levels. Soil with any PID readings greater than background (measured at a distance of no more than 3 inches from the surface of the soil material) shall be deemed suspect and considered potential chemical impacted soil (PCIS). Manage PCIS at Contractor's sole cost and expense in conformance with the following:

      1) PCIS shall be immediately removed from Project Site(s). No further import soil shall be brought in from contaminated import fill source location.

      2) Submit new fill material source location subject to characterization and testing requirements described in this Section.

      3) Resume importing fill material after Engineer approves Los Angeles Harbor Department Import Material Checklist from new import fill material source location and other submittals required prior to start of fill soil import Work.

   b. Engineer may at times monitor the import soil for discolorations, odors, debris, and other physical or chemical characteristics. Soil not in conformance with this Section (identified by Department) shall be considered PCIS and shall be managed in conformance with Paragraph 3.4 C.3.a of this Section.

3.5 COMPACTION

A. Perform compaction in conformance with BASIC SITE MATERIALS AND METHODS Section.

3.6 CHEMICAL ANALYSIS REQUIREMENTS FOR IMPORT FILL

A. Import fill material shall be considered unacceptable for use if laboratory analytical results indicate an exceedance of 1 or more of the following specified concentration limits:

Chemicals of Concern (COC) Industrial Land Use	Soil/Fill Material Concentration (mg/kg)*	Source
Total Petroleum Hydrocarbons (TPH) (EPA Method 8015M/8015B)		
TPH (Total Petroleum Hydrocarbons)	1,000	Cal-EPA SWRCB**
- Gasoline (if present)	180	Cal-EPA SWRCB/DTSC**
- Diesel (if present)	180	Cal-EPA SWRCB/DTSC**
Heavy Metals (EPA Method 6020/7471A)		
Antimony	150	10 X STLC***
Arsenic	8.7	Cal-EPA SWRCB/DTSC**
Barium	1,000	10 X STLC***
Beryllium	7.5	10 X STLC***
Cadmium	1.4	Cal-EPA SWRCB/DTSC**
Chromium VI (EPA Method 7199/3060A)	2.8	Cal-EPA SWRCB/DTSC**
Total Chromimum	100	20 X TCLP/STLC***
Cobalt	350	Cal-EPA SWRCB/DTSC**
Copper	69	Cal-EPA SWRCB/DTSC**
Lead	50	10 X STLC***
Mercury	0.69	Cal-EPA SWRCB/DTSC**
Molybdenum	4.4	Cal-EPA SWRCB/DTSC**
Nickel	200	10 X STLC***
Selenium	0.23	Cal-EPA SWRCB**
Silver	3.75	Cal-EPA SWRCB/DTSC**
Thallium	0.95	Cal-EPA SWRCB**
Vanadium	240	10 X STLC***
Zinc	680	Cal-EPA SWRCB/DTSC**
BTEX (EPA Method 8260)		
Benzene	0.055	Cal-EPA SWRCB/DTSC**
Toluene	56	Cal-EPA SWRCB**
Ethylbenzene	3.9	Cal-EPA SWRCB**
Xylene	7.2	Cal-EPA SWRCB**
Naphthalene	0.17	Cal-EPA SWRCB**
Asbestos (OSHA Method ID-191)	ND	Laboratory Reporting Limit****

Chemicals of Concern (COC) Industrial Land Use	Soil/Fill Material Concentration (mg/kg)*	Source
Polychlorinated Biphenyls (PCBs) (EPA 8082)	ND	Laboratory Reporting Limit****/US EPA
Chemicals of Concern*****		
Volatile Organic Compounds (VOCs) (EPA Method 8260)	ND	Laboratory Reporting Limit****
Polynuclear Aromatic Hydrocarbons (PAHs) (EPA Method 8310)	ND	Laboratory Reporting Limit****
Semi Volatile Organic Compounds (SVOCs) (EPA Method 8270)	ND	Laboratory Reporting Limit****
Organochlorine Pesticides (EPA Method 8081A)	ND	Laboratory Reporting Limit****
Organophosphorus Pesticides (EPA Method 8141A)	ND	Laboratory Reporting Limit****
Chlorinated Herbicides (EPA Method 8151A)	ND	Laboratory Reporting Limit****

NOTES:

* Acceptable Soil/Fill Material concentrations may vary between regulated sites. Consult Engineer prior to analysis of samples to ensure the correct Laboratory Reporting Limits are achieved.

** Cal-EPA State Water Resources Control Board & Department of Toxic Substances Control (DTSC) Action Goals for Industrial Land Use site(s) only. The listed concentrations/levels may not be applicable for former or active cleanup site(s), public land use, or worker health & safety.

*** Soluble Threshold Limit Concentration (STLC) and Toxicity Characteristic Leaching Procedure (TCLP), California Code of Regulations (CCR), Title 22, Section 66261.24. Characteristic of Toxicity.

**** Laboratory Reporting Limit is based on reporting limits commonly used by Southern California laboratories (DAF = 1). Note that for some regulated site(s) (to be determined by Department) target Laboratory Reporting Limits may need to be provided to the laboratory prior to sampling.

***** Any other suspected constituents or contaminants not shown on this table should be discussed with Engineer

B. Chemical analyses having a dilution factor greater than 1 or rendering the reporting limits greater than the concentration limits shown may be rejected by Department due to possible indication of elevated concentrations of one or more constituents.

3.7 GEOTECHNICALLY UNSUITABLE SOIL

A. Notify Engineer upon encountering what appears to be geotechnically unsuitable soil. Upon excavating to design subgrade elevations, obtain Engineer's decision on soil's suitability and authorization to excavate geotechnically unsuitable materials to limits determined by Engineer and in conformance with Excavation Article of this Section. Unsuitable soil shall become the property of Contractor. Dispose of unsuitable soil off Department property following proper waste characterization and profiling protocols.

1. Native Soil Backfill: Maintain stockpile of native excavation soil approved by Engineer for use as fill or backfill in conformance with RS Subsection 300-2.6 until subgrade excavation is complete and the extent of geotechnically unsuitable soil is known. Backfill geotechnically unsuitable soil removal excavations with approved fill material. Compact in conformance with BASIC SITE MATERIALS AND METHODS Section.

3.8 FIELD QUALITY CONTROL

A. Refer to BASIC SITE MATERIALS AND METHODS Section, Field Quality Control Article, for Engineer's determination of maximum dry density and optimum moisture content, and for field-testing of compacted soil.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Woven geotextiles

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 31 00 00 - Earthwork

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Geotextile bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. ASTM D4355/D4355M - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc-Type Apparatus.

B. ASTM D4491/D4491M - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

C. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles.

D. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

E. ASTM D4751 - Standard Test Methods for Determining Apparent Opening Size of a Geotextile.

F. ASTM D4884/D4884M - Standard Test Method for Strength of Sewn or Bonded Seams of Geotextiles.

G. ASTM D6193 - Standard Practice for Stitches and Seams.

H. ASTM D6241 - Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile- Related Products Using a 50-mm Probe.

1.5 SUBMITTALS

A. Action Submittals:

1. Shop Drawings:

a. Manufacturer material specifications and product literature.

b. Installation Drawings showing geotextile sheet layout, location of seams, direction of overlap, and sewn seams.

c. Description of proposed method of geotextile deployment, sewing equipment, sewing methods, and provisions for holding geotextile

d. Temporarily in place until permanently secured.

2. Samples:

a. Geotextile: One-piece, minimum 18 inches long, taken across full width of roll of each type and weight of geotextile furnished for Project. Label each with brand name and furnish documentation of lot and roll number from which each sample was obtained.

b. Field Sewn Seam: 5 foot length of seam, 12 inches wide with seam along center, for each type and weight of geotextile.

c. Securing Pin and Washer: One each.

B. Informational Submittals:

1. Certifications from each geotextile manufacturer that furnished products have specified property values. Certified property values shall be either minimum or maximum average roll values, as appropriate, for geotextiles furnished.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver each roll with sufficient information attached to identify it for inventory and quality control.

B. Handle products in manner that maintains undamaged condition.

C. Do not store products directly on ground. Ship and store geotextile with suitable wrapping for protection against moisture and ultraviolet exposure. Store geotextile in way that protects it from elements. If stored outdoors, elevate and protect geotextile with waterproof cover.

1.7 SCHEDULING AND SEQUENCING

A. Where geotextile is to be laid directly upon ground surface, prepare subgrade as specified in EARTHWORK Section.

B. Notify Engineer whenever geotextiles are to be placed. Do not place geotextile without Engineer's approval of underlying materials.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Woven Geotextile: Mirafi 600X, as manufactured by TenCate Geosynthetics America.

2.2 WOVEN GEOTEXTILE

A. The woven geotextile shall be manufactured with fibers consisting of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins or polyesters. They shall form a stable network such that the filaments or yarns retain their dimensional stability relative to each other, including selvages.

B. Manufacture and Product: TenGate Geosynthetics America, Mirafi 600X, as approved by Engineer.

C. The geotextile shall meet the requirements of Table 2. Numeric values in Table 2 except AOS represent minimum average roll value in the weakest principal direction. Values for AOS represent maximum average roll values.

Property	Requirement	Test Method
Water Permittivity	0.05 $sec.^{-1}$	ASTM D4491/D4491M
Apparent Opening Size (AOS)	40 U.S. Standard Sieve Size (0.43 mm)	ASTM D4751
Grab Tensile Strength, Machine Direction	315 lb/in	ASTM D4632/D4632M
Grab Elongation, Machine Direction	< 50 percent	ASTM D4632/D4632M
CBR Puncture Strength	900 pounds	ASTM D6241
Trapezoid Tear Strength	113 pounds	ASTM D4533/D4533M
Ultraviolet Radiation Resistance	70 percent strength retention after 500 hours	ASTM D4355/D4355M

2.3 SEWING THREAD

A. Polypropylene, polyester, or Kevlar thread.

B. Durability: Equal to or greater than durability of geotextile sewn.

PART 3 - EXECUTION

3.1 LAYING GEOTEXTILE

A. Lay and maintain geotextile smooth and free of tension, folds, wrinkles, or creases.

B. Contractor shall limit the time of ultraviolet exposure for geotextile after placement to a minimum of 30 days prior to covering in conformance with the manufacturer’s written instructions.

3.2 SHEET ORIENTATION ON SLOPES

A. Orient geotextile with long dimension of each sheet parallel to direction of slope.

B. Geotextile may be oriented with long dimension of sheet transverse to direction of slope only if sheet width, without unsewn seams, is sufficient to cover entire slope and anchor trench and to extend at least 18 inches beyond toe of slope.

3.3 JOINTS

A. Unseamed Joints:

1. Overlapped.

2. Overlap, unless otherwise shown on Drawings:

a. Minimum 12 inches, except overlap shall equal trench width if trench width is less than 12 inches.

B. Sewn Seams: Made wherever stress transfer from one geotextile sheet to another is necessary. Sewn seams, as approved by Engineer, also may be used instead of overlap at joints for applications that do not require stress transfer.

1. Seam Efficiency:

a. Minimum 70 percent.

b. Verified by preparing and testing minimum of one set of nondestructive Samples per acre of each type and weight of geotextile installed.

c. Tested conforming to ASTM D4884/D4884M.

2. Types:

a. Preferred: J type seams.

b. Acceptable: Flat or butterfly seams.

3. Stitch Count: Minimum 3 to maximum 7 stitches per inch.

4. Stitch Type: Double-thread chain stitch conforming to ASTM D6193.

5. Sewing Machines: Capable of penetrating four layers of geotextile.

6. Stitch Location: 2 inches from geotextile sheet edges, or more, if necessary to develop required seam strength.

3.4 SECURING GEOTEXTILE

A. Secure geotextile during installation as necessary with sandbags or other means approved by Engineer.

3.5 PLACING PRODUCTS OVER GEOTEXTILE

A. Before placing material over geotextile, notify Engineer. Do not cover installed geotextile until after Engineer provides authorization to proceed.

B. If tears, punctures, or other geotextile damage occurs during placement of overlying products, remove overlying products as necessary to expose damaged geotextile. Repair damage as specified in Repairing Geotextile Article of this Section.

3.6 REPAIRING GEOTEXTILE

A. Repair or replace torn, punctured, flawed, deteriorated, or otherwise damaged geotextile.

B. Repair Procedure:

1. Place patch of undamaged geotextile over damaged area and at least 18 inches in all directions beyond damaged area.

2. Remove interfering material as necessary to expose damaged geotextile for repair.

3. Sew patches or secure them with heat fusion tacking or with pins and washers, as specified above in Securing Geotextile Article of this Section, or by other means approved by Engineer.

3.7 REPLACING CONTAMINATED GEOTEXTILE

A. Protect geotextile from contamination that would interfere, in Engineer’s opinion, with its intended function. Remove and replace contaminated geotextile with clean geotextile.

END OF SECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Polyethylene geomembrane

1.2 RELATED SECTIONS

A. Section 31 00 00 - Earthwork

B. Section 31 23 33 - Trenching and Backfilling

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Geomembrane bid item of Bid Proposal Line Items. Geomembrane installation includes compaction of excavation sidewalls, placement of geomembrane on excavation sidewalls and over geotextile, placement of geotextile over geomembrane, installation of geomembrane anchor, backfilling, and compacting.

1.4 REFERENCES

A. ASTM D792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.

B. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.

C. ASTM D1238 - Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer.

D. ASTM D1505 - Standard Test Method for Density of Plastics by the Density-Gradient Technique.

E. ASTM D1603 - Standard Test Method for Carbon Black Content in Olefin Plastics.

F. ASTM D3895 - Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry.

G. ASTM D4833/D4833M - Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.

H. ASTM D4883 - Standard Test Method for Density of Polyethylene by the Ultrasound Technique.

I. ASTM D5199 - Standard Test Method for Measuring the Nominal Thickness of Geosynthetics.

J. ASTM D5323 - Standard Practice for Determination of 2 % Secant Modulus for Polyethylene Geomembranes.

K. ASTM D5397 - Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test.

L. ASTM D5596 - Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics.

M. ASTM D5617 - Standard Test Method for Multi-Axial Elongation of Geomembranes.

N. ASTM D5721 - Standard Practice for Air-Oven Aging of Polyolefin Geomembranes.

O. ASTM D5882 - Standard Test Method for Low Strain Impact Integrity Testing of Deep Foundations.

P. ASTM D5885/D5885M - Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High-Pressure Differential Scanning Calorimetry.

Q. ASTM D5994/D5994M - Standard Test Method for Measuring Core Thickness of Textured Geomembranes.

R. ASTM D6392 - Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods.

S. ASTM D6693/D6693M - Standard Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes.

T. ASTM D7238 - Standard Test Method for Effect of Exposure of Unreinforced Polyolefin Geomembrane Using Fluorescent UV Condensation Apparatus.

U. GRI GM10 - Standard Guide for The Stress Crack Resistance of HDPE Geomembrane Sheet.

1.5 SUBMITTALS

A. Provide the following manufacturing information:

1. Submittals 1 week after Notice to Proceed (NTP):

a. List of material properties.

b. Manufacturing quality control program.

2. Submittals 28 days Prior to Liner Installation:

a. Copy of quality control certificates issued by the resin supplier.

b. Copy of quality control certificates for the geomembranes in conformance with Quality Control Article of this Section.

c. Certificate of warranty.

B. Provide the following installation written information:

1. Submittals 1 week after NTP: A list of completed facilities, totaling a minimum of 50,000 square feet, for which Contractor has installed polyethylene geomembrane. For each installation, the following information shall be provided:

a. Name and purpose of facility, location, and date of installation.

b. Name of owner, Engineer, manufacturer, and name and telephone number of contact at the facility who can discuss Project.

c. Thickness and quantity of the installed geomembrane.

2. Submittals by 28 days Prior to Commencement of Installation:

a. Résumé of the field installation supervisor and master seamer.

1.6 QUALITY ASSURANCE

A. Manufacturing: The manufacturer shall have at least 3 years of continuous experience in manufacturing polyethylene geomembrane.

B. Installation:

1. Installer shall be the manufacturer or a dealer trained to install the manufacturer’s geomembrane.

2. Installation shall be performed in accordance with Drawings and under the direction of a field installation supervisor who shall remain on-site and be responsible, throughout the liner installation, for liner layout, seaming, testing, repairs, and other activities by Contractor. The field installation supervisor shall have installed or supervised the installation of a minimum of 20,000 square feet of polyethylene geomembrane. Seaming shall be performed under the direction of a master seamer (who may also be the field installation supervisor) who has seamed a minimum of 20,000 square feet of polyethylene geomembrane, using the same type of seaming apparatus specified for Project. The field installation supervisor or master seamer shall be present whenever seaming is performed.

1.7 MEETING

A. A daily meeting shall be held at Project Site(s) just prior to commencement of Work to discuss Work activities. Contractor, liner installer, and Engineer shall be present.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Transportation and On-Site Storage: The geomembrane rolls shall be shipped by flatbed trailer to Project Site(s). The geomembrane shall be stored so as to be protected from puncture, dirt, grease, moisture, and excessive heat. Damaged material shall be stored separately for repair or replacement. The rolls shall be stored on a prepared smooth surface (not wooden pallets) and shall not be stacked more than 2 rolls high.

1.9 WARRANTY

A. A written warranty shall be obtained from the material manufacturer and Contractor. These documents shall warrant both the quality of the material and workmanship for 5 years.

PART 2 – PRODUCTS

2.1 MATERIALS

A. The geomembrane shall be high density polyethylene (HDPE), 40 mil thickness.

B. Gasket material shall be neoprene, closed cell medium, 1/4-inch thick, 2-inches wide with adhesive on 1 side, or other compatible gasket materials as required.

C. Metal battens or banding and hardware shall be stainless steel.

2.2 GEOMEMBRANE RAW MATERIALS

A. The geomembrane shall be manufactured of polyethylene resins that consist of virgin material and that reclaimed polymer contains no more than 10 percent reworked material. The resin shall be compounded and manufactured specifically for the intended purpose. The resin manufacturer shall certify each lot for the following properties:

1. The natural polyethylene resin without the carbon black shall meet the following requirements:

Property	Test Method	HDPE Requirements
Density, g/cc	ASTM D4883, ASTM D1505, or ASTM D792	0.935 - 0.940
Melt Index, g/10 minute	ASTM D1238 Condition E	less than 0.4

2.3 ROLLS

A. The geomembrane shall be a minimum 23 feet seamless width, Poly-Flex Geomembrane Lining System, as manufactured by Poly-America, (888) 765-9359. Carbon black shall be added to the resin if the resin is not compounded for ultra-violet resistance.

B. The surface of the smooth geomembrane shall not have striations, roughness, pinholes, or bubbles.

C. The geomembrane shall be supplied in rolls. Labels on each roll shall identify the thickness of the material, the length and width of the roll, lot and roll numbers, and name of manufacturer.

D. The geomembrane rolls shall meet the following specifications:

-----SMOOTH HDPE MEMBRANE (ENGLISH UNITS)		
Property	Test Method	Minimum Average Values 40 mil
Thickness, mils minimum average lowest individual reading	ASTM D5199	 40 36
Sheet Density, g/cc	ASTM D1505 / ASTM D792	0.94
Tensile Properties1 1. Yield Strength, lb/in 2. Break Strength, lb/in 3. Yield Elongation, % 4. Break Elongation, %	ASTM D6693/D6693M	 84 152 12 700
Tear Resistance, lb	ASTM D1004	28
Puncture Resistance, lb	ASTM D4833/D4833M	72
Stress Crack Resistance, hrs	ASTM D5397 (App.)	300
Carbon Black Content, %	ASTM D1603	2.0 - 3.0
Carbon Black Dispersion	ASTM D5596	--Note 4--
Oxidative Induction Time (OIT) Standard OIT, minutes	ASTM D3895	100
Oven Aging at 85 degrees Celsius High Pressure OIT - % retained after 90 days	ASTM D5721 ASTM D5882	 80
UV Resistance5 High Pressure OIT6 - % retained after 1600 hrs	ASTM D7238 ASTM D5885/D5885M	 50
Seam Properties 1. Shear Strength, lb/in 2. Peel Strength, lb/in - Hot Wedge - Extrusion Fillet	ASTM D6392 (@ 2 in/min)	 80 60 52
Roll Dimensions 1. Width (feet): 2. Length (feet):		 23 750

3. Area (square feet): 4. Gross weight (pounds, approx.)		17,250 3,470

2.4 QUALITY CONTROL

A. Raw Materials:

1. Resin: Resins for use in geomembrane shall pass a candidate pre-approval process before being eligible for use. Each incoming shipment shall be sampled with the following testing performed and compared to manufacturer's written instructions:

   a. Density: ASTM D1505.

   b. Melt Index: ASTM D1238.

   c. Oxidative Induction Time (OIT): ASTM D3895.

2. Additives: Incoming materials shall be tested and approved prior to use with the following testing performed and compared to manufacturer's written instructions:

   a. Carbon Black Content: ASTM D1603.

   b. OIT: ASTM D3895.

B. Finished Product: During Production:

1. Inspection: Performed on each roll during manufacturing.

   a. Appearance: Sheet surface appearance shall be monitored for flaws.

   b. Thickness: A full width sample shall be cut from the end of each roll for thickness measurement.

2. Roll Identification: Use 4 tags per roll.

   a. Outside the core.

   b. On the core plug.

   c. On the roll surface.

   d. On the production roll sample.

3. Out-of-Specification Material: Any roll not meeting Specifications for any of the above inspections shall be separated from other rolls and placed on hold.

C. Quality Control and Quality Assurance Testing:

1. Sampling: Full width samples shall be taken as retains from the end of each roll to the manufacturer's laboratory.

2. Testing: The geomembrane quality control testing shall meet the following frequency requirements:

Property	Test Method	Testing Frequency (minimum)
Thickness (smooth sheet) (textured sheet)	ASTM D5199ASTM D5994/D5994M	per roll
Sheet Density	ASTM D1505/ ASTM D792	200,000 lbs
Tensile Properties 1. Yield Strength (HDPE only) 2. Break Strength 3. Yield Elongation (HDPE only) 4. Break Elongation	ASTM D6693/D6693M	20,000 lbs
2% Modulus (LLDPE only)	ASTM D5323	per each formulation
Tear Resistance	ASTM D1004	45,000 lbs
Puncture Resistance	ASTM D4833/D4833M	45,000 lbs
Axi-Symetric Break Strain (LLDPE only)	ASTM D5617	per each formulation
Stress Crack Resistance (HDPE only)	ASTM D5397 (App.)	per GRI GM10
Carbon Black Content	ASTM D1603	20,000 lbs
Carbon Black Dispersion	ASTM D5596	45,000 lbs
Oxidative Induction Time (OIT) Standard OIT	ASTM D3895	200,000 lbs
Oven Aging at 85 degrees C High Pressure OIT	ASTM D5721ASTM D5885/D5885M	per each formulation
UV Resistance High Pressure OIT	ASTM D7238ASTM D5885/D5885M	per each formulation

3. Welding Rod: Rod material shall consist of high density polyethylene. A sample of welding rod shall be tested at the frequency of once per 25 rolls of welding rod. The following tests shall be performed on the sample:

    a. Diameter: ASTM D5199

    b. Density: ASTM D1505

    c. Melt Index: ASTM D1238

    d. Carbon Black Content: ASTM D1603

4. Reporting: Results from the testing shall be reviewed by Engineer. Material that does not meet specifications shall be identified and placed on hold. The test data shall then be transferred to the product data file for roll certification.

PART 3 – EXECUTION

3.1 INSTALLATION - GENERAL

A. Geomembrane installation shall be performed in accordance with Drawings along side limits to stabilize the excavation areas during and after backfill.

3.2 EARTHWORK

A. General: Engineer shall approve the subgrade preparation prior to liner installation; the subgrade shall be compacted in conformance with the Specifications. Weak or compressible areas which cannot be satisfactorily compacted shall be removed and replaced with properly compacted fill. Surfaces to be lined shall be smooth, free of foreign and organic material, sharp objects, or debris of any kind. The liner subgrade soils shall be free of any particles or protrusions that exceeds 3/4 inch in diameter. The subgrade shall provide a firm, unyielding foundation with no sharp changes or abrupt breaks in grade. Standing water or excessive moisture shall not be allowed.

1. Contractor, on a daily basis, shall approve the surface on which the geomembrane shall be installed. After the supporting soil surface has been approved, it shall be Contractor’s responsibility to indicate to Engineer any changes to its condition that may require repair Work. Contractor shall be responsible for any repairs to the line subgrade caused by action of Contractor or because Contractor did not adequately protect Project Site(s) from the elements.

B. Anchor Trench: The anchor trench shall be excavated to the line, grade, and width shown on Drawings, prior to liner system placement. Slightly rounded corners shall be provided in the trench to avoid sharp bends in the geomembrane.

3.3 METHOD OF PLACEMENT

A. The rolls shall be deployed using a spreader bar assembly attached to a loader bucket or by other methods approved by Engineer.

1. Equipment or tools shall not damage the geomembrane during handling, transportation, and deployment.

2. Personnel working on the geomembrane shall not smoke or wear damaging shoes.

3. The method used to unroll the panels shall not cause scratches or crimps in the geomembrane and shall not damage the supporting soil.

4. Adequate loading (e.g., sand bags or similar items that shall not damage the geomembrane) shall be placed to prevent uplift by wind (in case of high winds, continuous loading is recommended along edges of panels to minimize risk of wind flow under the panels).

5. Weather Conditions: Geomembrane deployment shall proceed between ambient temperatures of 32 degrees Fahrenheit (F) and 104 degrees F. Placement can proceed below 32 degrees F only after it has been verified by Engineer that the material can be seamed in conformance with Specifications. Geomembrane placement shall not be conducted during any precipitation, in the presence of excessive moisture (e.g., fog, rain, dew), or in the presence of excessive winds, as determined by the installation supervisor. Contractor shall make reasonable efforts to deploy, install, and cover the liner in as narrow a temperature range as possible.

6. Prior to installation, Contractor shall visually inspect geomembrane for imperfections, faulty, or suspect areas and possible damage. Defective geomembrane shall be marked, repaired, and tested. Geomembrane that cannot be repaired shall be removed from Project Site(s) and replaced at no cost to Department.

7. Contractor shall verify that:

    a. There is no bridging or stresses in the geomembrane.

    b. There are no wrinkles in the geomembrane that shall fold over when cover with backfill material or crushed rock.

3.4 FIELD SEAMING AND TESTING

A. Approved seaming processes are fusion and extrusion welding. On side slopes, seams shall be oriented in the general direction of maximum slope, i.e., oriented down, not across the slope. In corners and odd-shaped geometric locations, the number of field seams shall be minimized.

1. No base T-seam shall be closer than 5 feet from the toe of the slope. Seams shall be aligned with the least possible number of wrinkles and fishmouths. If a fishmouth or wrinkle is found, it shall be relieved and cap-stripped.

B. Seam Overlap: Geomembrane panels shall have a finished minimum overlap of 4 inches for fusion welding and 6 inches for extrusion welding. Cleaning solvents shall not be used unless the product is approved by the liner manufacturer.

C. Test Seams: Field test seams shall be conducted on the liner to verify that seaming conditions are satisfactory. Test seams shall be conducted at the beginning of each seaming period and at least once every 4 hours, for each seaming apparatus and personnel used that day.

D. Test seams shall be made in contact with the subgrade. Welding rod used for extrusion welding shall have the same properties as the resin used to manufacture the geomembrane. The test seam samples shall be 10 feet long for fusion welding and 3 feet long for extrusion welding with the seam centered lengthwise. Three specimens shall be cut from each end of the test seams by Inspector. Inspector shall use a tensiometer to test 3 specimens for shear and 3 specimens for peel. Each specimen shall be 1 inch wide with a grip separation of 4 inches plus the width of the seam. The seam shall be centered between the clamps. The rate of grip separation shall be 2 inches per minute.

E. Assessment of Seam Test Results: For both smooth and textured seams the strength of 2 out of 3, 1.0 inch (25 mm) wide strip specimens shall meet or exceed values given in Specifications. The third shall meet or exceed 80 percent of the given values. The shear percent elongation shall exceed 50 percent. The assumed gage length is considered to be the unseamed sheet material on either side of the welded area. Elongation measurements shall be omitted for field testing. In addition, the peel separation shall not exceed 25 percent based on the proportion of area of separated bond to the area of the original bonding. Regarding the locus-of-break patterns of the different seaming methods in shear and peel, the following are unacceptable break codes per their description in ASTM D6392. In this regard, separation in the plane of sheet (SIP) is an acceptable break code.

1. Unacceptable Break Codes:

    a. Hot Wedge: AD and AD-BRK greater than 25 percent

    b. Extrusion Fillet: AD1, AD2 and AD-Weld (unless strength is achieved).

2. Non-Destructive Seam Testing: Contractor shall non-destructively test field seams over their full length.

    a. Vacuum Box Testing:

        1) Equipment for testing extrusion seams shall be comprised of the following:

            a) A vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft rubber gasket attached to the bottom, port hole or valve assembly, and a vacuum gage.

            b) Soapy solution in a plastic bucket with a mop.

F. The following procedures shall be followed:

1. Excess sheet overlap shall be trimmed away.

    a. Wet a strip of geomembrane approximately 12 inches wide by the length of box with the soapy solution.

    b. Place the box over the wetted area and compress.

        1) Create a vacuum of 3 to 5 pounds per square inch (psi).

        2) Ensure that a leak tight seal is created.

3) For a period of approximately 10 seconds, examine the geomembrane through the viewing window for the presence of animated soap bubbles.

4) If no animated bubbles appear after 10 seconds, close the vacuum valve and open the bleed valve, move the box over the next adjoining area with a minimum 3 inches overlap and repeat the process.

5) Areas where animated soap bubbles appear shall be marked, repaired, and then retested.

G. The following procedures shall apply to locations where seams cannot be non-destructively tested:

1. If the seam is accessible to testing equipment prior to final installation, the seam shall be non-destructively tested prior to final installation.

2. If the seam cannot be tested prior to final installation, the seams shall be spark tested conforming to the spark tester manufacturer’s written instructions.

3. Air Pressure Testing (For Double Fusion Seams Only).

H. Equipment for testing double fusion seams shall be comprised of the following:

1. An air pump equipped with pressure gage capable of generating and sustaining a pressure between 25 and 30 psi.

2. A pressure gage equipped with a sharp hollow needle.

I. The following procedures shall be followed:

1. Seal one end of the seam to be tested.

2. Insert needle or other approved pressure feed device through the sealed end of the channel created by the double wedge fusion weld.

3. Energize the air pump to verify the unobstructed passage of air through the channel.

4. Seal the other end of the channel.

5. Energize the air pump to a pressure between 25 and 30 psi, close valve, allow 2 minutes for the injected air to come to equilibrium in the channel, and sustain pressure for approximately 5 minutes.

6. If loss of pressure exceeds 4 psi, or pressure does not stabilize, locate faulty area, repair, and retest.

7. If pressure does not drop below the acceptable value after 5 minutes, cut the air channel open at the opposite end from the pressure gage. The air channel should deflate immediately indicating that the entire length of the seam has been tested.

J. Destructive Seam Testing: Destructive seam testing should be minimized to preserve the integrity of the liner. Provide Engineer with 1 destructive test sample as specified (usually once per 500 feet of seam length) from a location specified by Engineer.

1. Sampling Procedure: In order to obtain test results prior to completion of liner installation, samples shall be cut by the installer as the seaming progresses. The installer shall also record the date, location, and pass or fail description. Holes in the geomembrane resulting from obtaining the seam samples shall be immediately patched and vacuum tested.

2. Size and Disposition of Samples: The samples shall be 12 inches wide by 36 inches long with the seam centered lengthwise. The sample shall be cut into 3 equal-length pieces: 1 to be given to Inspector, 1 to be given to Engineer, and 1 to the installer.

3. Field Laboratory Testing: Engineer shall test ten 1-inch wide specimens from the sample, 5 specimens for shear strength, and 5 for peel strength.

4. Independent Laboratory Testing: Engineer, at Engineer’s discretion and expense, may send seam samples to a laboratory for testing. The test method and procedures to be used by the independent laboratory shall be the same as used in field testing.

5. Procedures for Destructive Test Failure:

a. The following procedures shall apply whenever a sample fails the field destructive test:

1) Cap strip the seam between the failed location and any passed test locations.

2) Retrace the welding path to an intermediate location (usually 10 feet from the location of the failed test), and take a sample for an additional field test. If this test passes, then the seam shall be cap stripped between that location and the original failed location. If the test fails, then repeat the process.

3) Over the length of seam failure, the installer shall either cut out the old seam, reposition the panel and reseam, or add a cap strip.

6. Defects and Repairs: Seams and non-seam areas of the geomembrane shall be inspected by Inspector for defects, holes, blisters, undispersed raw materials, and any sign of contamination by foreign matter. The surface of the geomembrane shall be clean at the time of inspection.

   a. Evaluation: Each suspect location in seam and non-seam areas shall be non-destructively tested as appropriate in the presence of Engineer. Each location that fails the non-destructive testing shall be marked by Engineer, and repaired accordingly by Contractor.

   b. Repair Procedures:

      1) Defective seams shall be cap stripped or replaced.

      2) Small holes shall be repaired by extrusion welding a bead of extrudate over the hole. If the hole is larger than 1/4 inch, it shall be patched.

      3) Tears shall be repaired by patching. If the tear is on a slope or an area susceptible to stress and has a sharp end, it shall be rounded prior to patching.

      4) Blisters, large cuts, and undispersed raw materials shall be repaired by patches.

      5) Patches shall be completed by extrusion welding. The weld area shall be ground no more than 10 minutes prior to welding. No more than 10 percent of the thickness shall be removed by grinding. Welding shall commence where the grinding started and shall overlap the previous seam by at least 2 inches. Reseaming over an existing seam without regrinding shall not be permitted. The welding shall restart by grinding the existing seam and rewelding a new seam.

6) Patches shall be round or oval in shape, made of the same geomembrane, and extend a minimum of 6 inches beyond the edge of defects.

c. Verification of Repairs: Each repair shall be non-destructively tested. Repairs that pass the non-destructive test shall be taken as an indication of an adequate repair. Failed tests indicate that the repair shall be repeated and retested until passing test results are achieved.

d. Engineer shall keep daily documentation of non-destructive and destructive testing. This documentation shall identify seams that initially failed the test and include evidence that these seams were repaired and successfully retested.

3.5 COVER MATERIAL AND BACKFILLING OF ANCHOR TRENCH

A. The geomembrane shall be covered as soon as possible. The covering operation shall not damage the geomembrane. The cover soil material shall be free of foreign and organic material, sharp objects, or debris of any kind, which could potentially damage the geomembrane. No construction equipment or machinery shall operate directly on the geomembrane. The use of lightweight machinery (i.e., generator, and the like) with low ground pressure is allowed. The anchor trench shall be backfilled by Contractor. Trench backfill material shall be placed and compacted in conformance with Specifications. Care shall be taken when backfilling the trenches to prevent any damage to the geomembrane. If damage occurs, it shall be repaire geomemebrane prior to backfilling.

3.6 GEOMEMBRANE ACCEPTANCE

A. Final acceptance is when the following conditions are met:

1. Installation is finished and approved by Engineer.

2. Verification of the adequacy of all field seams and repairs, including associated testing, is complete.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Filter fabric

1.2 RELATED SECTIONS

A. Section 35 42 37 - Rock

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires filter fabric.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Filter fabric for the rock dike shall be Mirafi 600X as manufactured by TenCate. Other areas shown on Drawings to receive filter fabric shall conform to Caltrans Standard Specifications Section 96-1.02B.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Protect the filter fabric against deterioration.

B. Install filter fabric in 2 layers in areas unless noted otherwise on Drawings. Overlap fabric 3 feet when joining pieces and extend 3 feet beyond ends of the new Work area. Overlap existing filter fabric by 3 feet. Replace or repair existing filter fabric that is damaged at Contractor's sole cost and expense.

C. Rock dike to receive filter fabric shall have the surfaced roughly leveled to accommodate the placement of the filter cloth. Place fabric loosely over the rock dike. Fabric shall not be stretched tight, but shall be allowed to deform to the shape of the rock slope.

D. Anchor filter fabric across the top every 3 feet by a shot in anchor. Anchors shall be used only to hold fabric in place until concrete is poured or material placed on filter fabric.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Trench excavation and backfill Work includes:

1. Sawcutting
2. Asphalt concrete and concrete pavement removals
3. Excavation
4. Slurry backfill
5. Trench resurfacing with concrete and asphalt concrete

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 02 61 14 - Excavating, Stockpiling, and Disposing of Chemically Impacted Soil

C. Section 31 50 01 - Excavation Safety Requirements

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Costs for trench excavating, backfilling, and surfacing including but not limited to sewer, storm drain, water, electrical, communications, gas, and oil pipeline trenches, shall include pavement sawcutting; asphalt concrete and concrete removals; excavation; soil backfill; cement-sand slurry backfill; removal and disposal of excavation spoils off of Department property; and asphalt concrete and concrete trench resurfacing, and shall be payable as follows:

a. Trenches in areas of existing pavement: Trench excavation, backfill, and surfacing shall be paid under the Trench Excavation and Backfill bid item of Bid Proposal Line Items.

2. The quantity of trench subgrade stabilization material in excess of trench depths required for Work where trench subgrade is saturated, and is unsuitable as substrate for trench bedding, as determined by Engineer, shall be measured as the volume of over-excavated native material. This quantity shall be paid for under either the Placement of No. 2 Aggregate Subgrade Stabilization Material bid item or the Placement of No. 68 Aggregate Subgrade Stabilization Material of Bid Proposal Line Items as Engineer directs. These bid items shall be paid at the unit price per ton of either the No. 2 aggregate trench subgrade stabilization material or the No. 68 aggregate trench subgrade stabilization material. Costs for excavating, handling, transporting, and disposing of the unsuitable material and purchasing, delivering, and placing the stabilization material shall be included in the bid item's unit price per ton for subgrade stabilization material.

1.4 REFERENCES

A. Reference Specifications (RS):

Section 200 - Rock Materials

Section 306 - Open Trench Conduit Construction

B. Standard Plan – City of Los Angeles Department of Public Works:

S-251-1 - Pipe Laying in Trenches

1.5 QUALITY ASSURANCE

A. Engineer reserves the right to approve each material to be used in construction. Do not use material which, after approval, in any way becomes unfit for use.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Slurry backfill shall be as specified in BASIC SITE MATERIALS AND METHODS Section.

B. Subgrade stabilization be as specified in BASIC SITE MATERIALS AND METHODS Section

1. Processed Aggregate Size No.2 (nominal 2-inch size): In conformance with RS Subsection 200-1.4(B) gradation.

2. Processed Aggregate Size No. 68 (nominal 3/4-inch size): In conformance with ASTM D4448 gradation.

C. Contractor may elect, at its option, to use slurry as stabilization material.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Pavement removals shall conform to BASIC SITE MATERIALS AND METHODS Section.

1. Except as noted otherwise on Drawings, existing asphalt concrete thickness varies throughout Project Site(s). Assume for bid purposes 12 inches for existing pavement thickness.

B. Excavation shall conform to RS Subsection 306-3 unless otherwise specified or shown on Drawings.

C. Perform excavations for pipe laying or conduit in accordance with Standard Plan S-251-1 unless otherwise detailed on Drawings.

D. Perform trench excavations in conformance with EXCAVATION SAFETY REQUIREMENTS Section.

E. Excavate to the depths shown on Drawings or as necessary for the installation. After the excavation is completed, notify Engineer for approval of excavation subgrade.

F. Remove interfering portions of abandoned substructures and abandon remaining substructures in place in conformance with BASIC SITE MATERIALS AND METHODS Section.

G. Positively determine the location and elevation of substructures containing hazardous or unstable substance installations prior to excavation in conformance with EXCAVATION SAFETY REQUIREMENTS Section.

H. Maintain excavation trench wall stability during construction in conformance with EXCAVATION SAFETY REQUIREMENTS Section. Remove material that slides into the excavation.

I. Trench excavation spoils not used as backfill shall become property of Contractor and shall be disposed of off Department property regardless of type of backfill material specified.

3.2 CHEMICALLY IMPACTED SOIL

A. Handle unexpectedly discovered chemically impacted soil in conformance with EXCAVATING, STOCKPILING, AND DISPOSING OF CHEMICALLY IMPACTED SOIL Section.

3.3 BACKFILL AND COMPACTION

A. Place slurry backfill in conformance with RS Subsection 306-12.2, except that trench width, bedding, and backfill depths shall be as shown on Drawings.

3.4 HIGH VOLTAGE CONCRETE ENCASEMENT

A. Refer to BASIC SITE MATERIALS AND METHODS Section.

3.5 TRENCH SUBGRADE STABILIZATION MATERIAL

A. Once the bottom of trench excavation has been reached, obtain Engineer’s analysis of soil that appear saturated or that may be unsuitable as a support for trench bedding.

1. Upon Engineer's authorization, perform trench subgrade stabilization in conformance with RS Section 306, to the depth directed by Engineer except that replacement bedding material shall conform to 1 of the 2 gradations specified in Paragraph 2.1C of this Section.

2. Dispose of unsuitable soil off Department property.

B. Measurement and payment shall be made in conformance with Price and Payment Procedures Article of this Section.

C. Refer to appropriate Section listed in Related Sections Article of this Section for trench bedding requirements.

3.6 REPAIR AND RESTORATION

A. Refer to BASIC SITE MATERIALS AND METHODS Section for surface improvements not designated to be permanently removed but which were removed or damaged as a result of Contractor's operations.

3.7 FIELD QUALITY CONTROL

A. Refer to BASIC SITE MATERIALS AND METHODS Section Field Quality Control Article, for Engineer's determination of maximum dry density and optimum moisture content, and for field-testing of compacted backfill.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Soil densification with high density polyurethane material for leveling concrete slabs and filling voids behind bulkheads at locations identified Drawings.

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Seawall Repair, Shotcrete Repairs, and Polyurethane Pressure Grouting Allowance bid item of Bid Proposal Line Items.

1.4 DEFINITIONS

A. Injection point: Depth of the injection tube termination for soil densification or void filling.

B. Soil densification: A process wherein a 2 part, hydro-insensitive, high density polyurethane material is injected under pressure through tubes into the ground at various elevations to displace and densify in-situ soils while elevations are monitored at the surface.

1.5 SUBMITTALS

A. Submit 1 electronic copy in PDF format of a Soil Densification / Void Fill Operations Work Plan for review at least 15 days before starting soil densification Work or void filling at Project Site(s). Change and resubmit a revised Soil Densification / Void Fill Operations Work Plan within 5 days of receiving Engineer's comments. Soil Densification / Void Fill Operations Work Plan shall include:

1. Specific field location for soil densification or void filling

2. A certificate of compliance for high density polyurethane material

3. Manufacturer's material specifications and safety data sheets (SDS) of high density polyurethane

4. Manufacturer's written instructions for application of high density polyurethanes
5. Sample forms of injection point, high density polyurethane injection, and monitoring logs
6. A list of personnel to be used and their experience with soil densification using high density polyurethane
7. Resumes of key personnel, including soil densification or void filling supervisor, detailing past Project experiences
8. Equipment and methods for measuring and recording high density polyurethane injection pumping rate and volume with calibration procedures and equipment certification
9. Complete description of the materials, equipment, including size and type, and methods to be used in soil densification or void filling operation, including inclination and depth of injection tubes
10. Detailed description of the proposed monitoring program for ground surface movement and distress to adjacent facilities such as pavement, storm drains, and utility conduits
11. Injection program for high density polyurethane, including proposed rate and amount of material to be injected to obtain proper densification of the base and sub-base soils or filling of voids

B. Submit a copy of recorded forms of injection point, polyurethane injection, and monitoring logs immediately upon completion of soil densification Work at each individual injection point.

1.6 QUALITY ASSURANCE

A. Perform soil densification or void filling with high density polyurethane material Work under the direct supervision of soil densification or void filling supervisor. Soil densification or void filling supervisor shall be present and supervise soil densification or void filling shifts of each densification or void filling operation.

B. The soil densification or void filling supervisor shall have a minimum of 5 years experience in planning and directing Work dealing with soil densification or void filling, in the actual placement of injection pipes, and in the mixing and injection of the polyurethane material. The supervisor shall have minimum 3 years of actual on-the-job supervisory experience in similar applications.

C. Have major equipment items available for inspection by Engineer. Correct deficiencies in quality, quantity, or types of equipment prior to commencing Work. This inspection and approval shall in no way relieve Contractor from the obligation to provide the equipment required to perform Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. High Density Polyurethane: Soil densification and void filling material shall be a closed cell, hydro-insensitive, high density polyurethane, as authorized by Engineer. Material shall be a polyurethane-forming mixture having water insoluble diluents, which permits the formation of polyurethane in excess water. Material shall have a minimum free rise density of 3.0 pounds per cubic foot with a minimum compressive strength of 38.0 pounds per square inch. The maximum free rise density shall be less than 3.2 pounds per cubic foot.

PART 3 - EXECUTION

3.1 EQUIPMENT

A. In addition to any other equipment necessary for soil densification Work, provide the following equipment:

1. A truck-mounted pumping unit capable of injecting the high density polyurethane material beneath the pavement through tubes to the depths required. The pumping unit shall be capable of controlling the rate of flow of material as required to densify soils and prevent pavement blowouts.

2. The pumping unit shall be equipped with a manufacturer's certified flow meter to measure the amount of high density polyurethane injected at each location. The certified flow meter shall have a digital output in both pounds and gallons.

3. Pressure and temperature control devices capable of maintaining proper temperature and proportionate mixing of the polyurethane component materials.

4. Pneumatic or electric drills capable of efficiently drilling 5/8 inch diameter injection holes through the pavement without damaging the structural integrity of the adjacent pavement.

5. Laser levels or dial indicator devices capable of monitoring movement at the surface of the pavement to verify that the injected high density polyurethane have been properly densified.

6. A portable dynamic cone penetrometer for on-site soil investigation to assist in location of weak sub-base soil and determination of injection pattern through tubes to densify weak soil.

7. Necessary equipment, such as electric generators, compressors, heaters, hoses, containers, valves, and gauges, to efficiently conduct and control Work.

3.2 INSTALLATION

A. Determine at finish grade, the vertical and horizontal projection of the exterior limits of existing, adjacent underground structures, conduits, storm drain pipes, and other utilities. Adjust locations of polyurethane injection holes to fit the field conditions. Adjustment shall be authorized by Engineer.

B. Determine the position on the ground of each injection point and the elevation.

C. Drill series of 5/8 inch to 3/4 inch holes (as required for injection tube placement) through the existing pavement as shown on Drawings. First inject high density polyurethane material until encountered voids are filled before starting soil densification operation. Inject high density polyurethane material through the injection tubes inserted into the drilled holes to the shown injection point depths. Any adjustment or change to the tube size, location, spacing, or depth must be authorized by Engineer. The rate and amount of high density polyurethane material injected at injection points shall comply with Injection Program of Soil Densification Operations Work Plan.

D. Record data of high density polyurethane injection and monitoring at each individual injection point.

E. If naturally acceptable soil conditions are encountered or should unacceptable soil densification results be obtained, such as performance criteria not being satisfied, Engineer may delete sections or locations of soil densification.

F. Protect and monitor the existing pavement, storm drains, and other facilities for indications of movement or distress during soil densification or void filling operation. Establish and monitor a minimum of 5 survey reference points on the existing pavement. Monitor high mast poles and other structures within 30 feet of injection points.

G. Record the interior of existing storm drains and other utilities for signs of distress such as deflection, heaving, or cracking. Stop soil densification or void filling operation immediately if the existing facilities show signs of distress.

H. Backfill tops of injection points with pea gravel and hydraulic cement grout, troweled smooth to match the pavement surface.

3.3 FIELD QUALITY CONTROL

A. Before and after completion of soil densification operation, test the base soil conditions with dynamic cone penetrometer.

B. Use continuous laser level or dial indicator micrometer readings during injection to monitor pavement movement.

3.4 CLEANING

A. Contain, remove, and dispose of material from pavement drilling.

B. Prevent residue from soil densification or void filling Work from flowing into existing drainage facilities or from being left on the surface of the pavement. Remove and dispose of residue and surplus materials generated from the soil densification or void filling Work.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Excavating and trenching requirements in conformance with State of California Construction Safety Orders issued by Division of Occupational Safety and Health during the course of excavating and trenching Work.

1.2 RELATED SECTIONS

A. Section 02 61 14 - Excavating, Stockpiling, and Disposing of Chemically Impacted Soil

B. Section 31 00 00 - Earthwork

C. Section 31 23 33 - Trenching and Backfilling

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires excavating and trenching requirements.

1.4 SUBMITTALS

A. Prior to excavating 5 feet or more in depth, submit to Engineer for review detailed Drawings showing the design of shoring, bracing, sloping, or other provisions for worker and property protection.

1. Indicate design criteria, limits of shored areas, sequence of placement and removal, and shoring system details.

PART 2 - PRODUCTS

2.1 DESIGN AND CONSTRUCTION REQUIREMENTS

A. If such Drawings vary from the shoring system standards established by Construction Safety Orders for State Division of Occupational Safety and Health, Drawings shall be prepared and signed by a State of California registered civil or structural Engineer.

B. The use of a protective system less effective than that provided by Construction Safety Orders shall not be permitted.

C. Contractor shall provide more extensive shoring or bracing systems than those required by Construction Safety Orders when required by conditions shown on Drawings, or in Specifications, or encountered in the field.

D. Refer to SITE CONDITIONS Section for geotechnical information required in the preparation of shoring design.

E. Where excavation alignments are within 10 feet of existing buildings, streets, tanks, or other structures requiring shoring, shoring design shall accommodate surcharge loads imposed on the structure or a minimum equivalent of 2 feet in height of earth added to the active earth pressure in the upper 10 feet of shoring, whichever is greater.

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not begin excavation Work until shoring Drawings are reviewed by Engineer.

3.2 PROTECTION

A. Exercise caution when excavating near flammable, high pressure, or high voltage substructures and conduits.

B. Prior to excavating adjacent to and within 6 feet of an existing subsurface installation carrying a hazardous or unstable substance, excavate potholes in conformance with Section 62.03.1 (Notification and Location Requirements) of Los Angeles Municipal Code and positively determine the location and elevation of the subsurface installation.

END OF SECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Prestressed concrete piles

B. Staylath

C. Permit requirements to transport prestressed concrete piles

D. Noise reduction requirements

1.2 RELATED SECTIONS

A. Section 01 32 24 - Surveying and Field Engineering

B. Section 02 41 13 - Selective Site Demolition

C. Section 31 62 14 - Concrete Indicator Pile Testing

D. Section 35 54 00 - Concrete Wharf Construction

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. General:

a. Engineer shall measure Work or review Contractor’s measurements of Work and decide upon the correct quantity. Contractor shall cooperate with Engineer in making measurements.

b. Payment shall constitute full compensation for transportation, labor, materials, permits, and equipment required or specified to complete Work of this Section.

c. Piles shall be paid for under appropriate bid items of Bid Proposal Line Items for piles.

d. Some Work in this Section shall be considered incidental to the completion of Work of this Section. Cost of such incidental Work shall be considered to be included in the appropriate bid items and no separate or additional compensation shall be allowed. Incidental Work shall include, but is not necessarily limited to:

1) Conferring between Engineer and Contractor.

2) Marking the piles.

3) Lifting off the hammer and helmet assembly during driving to observe deviations.

4) Work necessary for measurement of pile location and inclination.

5) Monitor and record pile driving data and provide specified data to Engineer.

6) Jetting.

7) Mobilization and demobilization of pile-driving equipment for or during the indicator pile program and as required to meet the restrike periods shown on Drawings.

8) Survey Work.

2. Furnish 24-Inch Octagonal 24A and 24B Concrete Piles:

a. Furnish 24-inch octagonal 24A concrete piles in conformance with Detail CP-24A included in Appendix "B" of Specifications.

b. Furnish 24-inch octagonal 24B concrete piles in conformance with Detail CP-24B included in Appendix "B" of Specifications.

c. Quantities of 24-inch octagonal 24A and 24B concrete piles furnished shall be measured as the cumulative number of linear feet of piles authorized by Engineer, supplied by Contractor and accepted by Engineer. No measurement shall be made for unused concrete piles (except for those specifically ordered as surplus), piles broken during handling, transporting, installing, or otherwise not requested by Department.

d. Progress payments shall be made based on pile when stockpiled on Project Site(s), ready for installation.

e. Items considered incidental in the cost of furnishing the piles include, but are not limited to:

1) Pile cushions.

2) For 24A concrete piles, jetting tubes and nozzles.

3) Other incidental items previously specified in this Section.

f. Contractor shall confirm in writing Engineer's order for surplus piles and shall be paid based on the unit price per foot of piles actually delivered to Project Site(s).

g. Payment shall include costs to manufacture, transport, store, and handle 24-inch octagonal prestressed concrete piles.

h. Payment shall include costs for City of Los Angeles Department of Public Works, Bureau of Street Services Overload permits, inspections, pilot vehicles, and other costs associated with transporting piles to Project Site(s).

i. Measurement and payment for furnishing 24-inch octagonal 24A concrete piles shall be made under the Furnish 24-inch Octagonal 24A Concrete Piles unit price bid item of Bid Proposal Line Items.

j. Measurement and payment for furnishing 24-inch octagonal 24B concrete piles shall be made under the Furnish 24-inch Octagonal 24B Concrete Piles unit price bid item of Bid Proposal Line Items.

3. Install 24-Inch Octagonal 24A and 24B Concrete Piles:

a. Quantities of 24-inch octagonal long concrete piles installed shall be measured as the number of piles installed by Contractor and accepted by Engineer. No measurement shall be made for concrete piles installed as replacements for damaged or misplaced piles, and piles broken during handling, installing, or otherwise not requested by Engineer, unless such problems occurred due to encountering an obstruction.

b. Payment for installation of 24-inch octagonal 24A concrete piles shall be made on the basis of the unit price per each stated in Install 24-Inch Octagonal 24A Concrete Piles from Waterside bid item of Bid Proposal Line Items. Payment shall include full compensation for materials, equipment, labor, transportation, handling, and associated services required to install and cut off the piles up to 6 feet.

c. Payment for installation of 24-inch octagonal 24B concrete piles shall be made on the basis of the unit price per each stated in Install 24-Inch Octagonal 24B Concrete Piles from Landside bid item of Bid Proposal Line Items. Payment shall include full compensation for materials, equipment, labor, transportation, handling, and associated services required to install and cut off the piles up to 6 feet.

d. No payment shall be made for installation when a pile is driven out of tolerance unless the deviation is due to an obvious obstruction. Engineer shall evaluate out of tolerance piles for acceptance.

1) If the pile is acceptable, and tolerance deviations are determined not to be due to Contractor's error, compensation shall be made if modifications to deck slab or additional reinforcing are required. Refer to CONCRETE WHARF CONSTRUCTION Section.

2) If the pile is acceptable, and tolerance deviations are due to Contractor's error, payment shall be made for the pile under the appropriate bid item but no compensation shall be made if modifications to deck slab (including redesign) are required or additional reinforcing is required.

3) If the pile is unacceptable, and tolerance deviations are not due to Contractor's error, remove and replace pile. The cost for removing and replacing the pile shall be paid under the appropriate bid items of Bid Proposal Line Items. Refer to CONCRETE WHARF CONSTRUCTION Section if forming modifications are required or additional reinforcing is required.

4) If the pile is unacceptable and tolerance deviations are due to Contractor's error, costs associated with modifying deck slab (including redesign Work), adding reinforcing, and removing and replacing piles that are out of tolerance shall be at Contractor's sole cost and expense.

5) Contractor may attempt to correct out-of-tolerance pile alignments, however, no compensation shall be made for such course of action for any production pile. Pulling of piles is prohibited.

e. Payment shall include costs for 3 attempts to drive, remove, realign, and re-drive piles if piles wander more than 6 inches during the first 10 to 20 feet of driving. No additional payment shall be made for this Work.

4. Differential Costs to Drive Octagonal Concrete Piles Using a Pile Driving Analyzer (PDA):

a. Drive octagonal concrete piles using a PDA as requested by the Engineer.

b. The measurement and payment for using a PDA for driving octagonal concrete piles shall be made under the Differential Costs to Drive Octagonal Concrete Piles Using a Pile Driving Analyzer (PDA) unit price bid item of Bid Proposal Line Items.

5. Restriking 24-Inch Octagonal Concrete Production Piles:

a. Restriking of any pile requested by Engineer shall be compensated as specified in this Section, regardless of the outcome of the restrike testing.

b. The quantity of piles restruck shall be measured as the number of restrike tests requested by Engineer and completed during production pile driving. One or more restrike tests shall be paid under the Restrike Octagonal Concrete Piles bid item of Bid Proposal Line Items.

c. Payment for restrikes shall be made based on either the unit price for restriking with PDA or the unit price without PDA. Costs shall include mobilization or remobilization of pile driving equipment to the pile to be restruck, setup of PDA instrumentation as required, performing the restrike, and remobilization of the pile driving equipment to the location of production pile driving.

d. Items considered incidental to restriking piles include, but are not limited to:

1) Moving pile driving rig to piles selected for restriking.

2) Providing correct alignment of pile hammer and pile.

3) Measuring location of pile and completion of restrike.

4) Performing CAPWAP analysis on pile restrike requiring PDA as directed by Engineer.

6. Payment for water quality sampling and water quality reports shall be made under the Water Quality Reports and Sampling for Dredging and Pile Driving Allowance bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. ACI PRC-347 - Guide to Formwork for Concrete.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

C. ASTM A416/A416M - Standard Specification for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete.

D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

F. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

G. ASTM C33/C33M - Standard Specification for Concrete Aggregates.

H. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

I. ASTM C88/C88M - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

J. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

K. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete.

L. ASTM C150/C150M - Standard Specification for Portland Cement.

M. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

N. ASTM C470/C470M - Standard Specification for Molds for Forming Concrete Test Cylinders Vertically.

O. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.

P. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.

Q. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.

R. PCI MNL-116 - Manual for Quality Control for Plants and Production of Structural Precast Concrete Products.

S. Reference Specifications (RS):

Section 200 - Rock Materials

Section 201 - Concrete, Mortar, and Related Materials

1.5 DEFINITIONS

A. General: Definitions apply to this Section as well as the pile driving criteria developed during execution of Contract.

B. CAPWAP (Case Pile Wave Analysis Program): A rigorous numerical analysis, which models the pile and soil behavior that allows full and accurate analysis of pile driving analyzer (PDA) field data.

C. Elevation: Measurement of vertical distance from mean lower low water (MLLW).

D. Fixed Leads: Leads that are pinned to or suspended from the crane boom at the top and equipped with a hydraulic spotter at the bottom capable of spotting the pile to its correct position and maintaining alignment during driving. The degree of the fixed leads' rigidity and strength shall be subject to Engineer's review. Contractor shall maintain operability and safety of this equipment, regardless of Engineer review.

E. Impact Stress: The stress transferred to the pile head at impact from the driving train, as determined from measurements using PDA.

F. Indicator Piles: Refer to CONCRETE INDICATOR PILE TESTING Section.

G. Obstruction: A solid object impenetrable by driven piles and not visibly or otherwise easily detectable, such as a buried boulder or other large object. A sudden increase in penetration resistance and deviation from tolerances result from piles hitting obstructions.

H. PDA (Pile Driving Analyzer): PDA measures pile vibration during driving for strength and resistance of pile in soil.

I. Pile Tip: Bottom end of pile. Synonymous with pile toe.

J. Pile Top: Top end of pile. Synonymous with pile head.

K. Practical Refusal Resistance: The point at which it is not reasonable to continue driving a particular pile. Practical refusal is defined as a penetration resistance of at least 150 blows per foot for 1 foot, a penetration resistance of at least 80 blows for 6 inches, or a penetration resistance of 25 blows for 1 inch, whichever comes first. The practical refusal penetration resistance shall apply only for hammer sizes approved by Engineer when the hammer is operating as specified.

L. Rated Hammer Energy:

1. For hydraulic hammers, the product of the maximum rated equivalent stroke times the ram weight. Units: kip-foot.

M. Restriking: Positioning the driving train and driving an already installed pile after some nominal waiting period (as specified) after initial installation. This definition applies to piles selected by Engineer for determining appropriate driving criteria requirements or for checking pile capacity or integrity. Restriking may require mobilizing the pile-driving rig from 1 pile to another at opposite end of the structure. Dynamic monitoring may be required by Engineer during pile restriking.

N. Set: Pile penetration in inches per blow.

O. Sweep: Deviation from straightness measured along each of 2 perpendicular faces of the pile while not subject to bending forces.

P. Termination Penetration Resistance: The penetration resistance (blow count) at which driving may be terminated, as established by Engineer. Termination criteria shall consider depth of embedment of the pile, energy of the hammer, resistance to penetration, and other factors.

Q. Test Cylinder: A cylindrical concrete test specimen representative of concrete from which piles are cast. To be representative of the pile’s concrete, test cylinders shall be cast from the same pour as the piles they represent and shall be cured initially with the piles under the same sun, wind, humidity, and temperature exposure at the same location.

R. Testing Laboratory: City of Los Angeles Harbor Department Testing Laboratory or a Department-approved laboratory. Tests performed by Department Testing Laboratory (Test Lab) shall be at no charge to Contractor.

S. Transferred Hammer Energy: The energy transferred to the pile head at impact from the driving train as determined from measurements using PDA.

1.6 ADMINISTRATIVE REQUIREMENTS

A. Scheduling: Schedule pile driving to occur between the hours of 7 am and 5 pm Monday through Saturday.

1.7 SUBMITTALS

A. Name of proposed independent test laboratory that can condcut sound level monitoring during pile driving.

B. Concrete Mix Design Submittals:

1. Proposed concrete design mixes including available test data for approval and required testing at least 30 Calendar Days before scheduled use in Project.

2. A trial batch of concrete shall be made, and test cylinders from the batch shall be submitted to Test Lab for each proposed concrete mix design. Each mix design shall be required to achieve a minimum compressive strength of 6,500 pounds per square inch (psi) at 28 days.

3. Certification that the aggregates meet the recommendations of ASTM C33/C33M, Appendix XI for reactivity.

4. Certification that the aggregates meet the soundness requirements of ASTM C33/C33M when tested in conformance with the requirements of ASTM C88/C88M using a sodium sulfate solution.

5. Certification that fly ash meets RS Subsection 201-1.2.5, Type F and ASTM C618.

6. Certification on admixtures to be used in Project.

7. Manufacturer’s certification for curing compound. Manufacturer’s certification shall state quantity or coverage required to meet or exceed tests, surface texture of concrete, and method of application and shall include tests for compliance performed by manufacturer. Certification shall further stipulate that product meets ASTM C309 and additional permeability requirement described in Materials Article of this Section. Manufacturer shall also specifically state the coverage required to meet these requirements.

C. Reinforcing Steel Submittals:

1. Mill test reports certifying that materials meet specified American Society for Testing and Materials (ASTM International) requirements.

2. Before fabricating materials, submit shop Drawings to Engineer for review showing bending diagrams, critical dimensions to ends of bars, including complete information for placing reinforcing and accessories, minimum concrete cover, lap splice length, and locations, and minimum spacing between bars. Do not scale dimensions from Drawings, or use Drawings for shop Drawings.

3. Two copies of the reviewed and corrected reinforcing steel shop Drawings including the list of the reinforcing steel before the placing of reinforcing steel is started.

D. Manufacturer’s certificate attesting that structural metals comply with Specifications.

E. Manufacturer’s certificate for each nonmetallic component to be included in Work attesting that materials comply with this Section.

F. Pile Manufacturing, Handling, and Installation Submittals:

1. Complete description of methodology of curing, transfer of prestress, and handling. This shall include a description of thermo couple probes and their placement procedure.

2. List of equipment, methods, and procedures for manufacturing, transporting, handling, lifting, driving, and cut off, if required, of piles.

3. Calculations and shop Drawings for piles showing placement of steel, the use of standard or special embedded lifting devices, the employment of pickup points, or other methods of pickup. Handling stresses shall include a minimum of 50 percent impact factor. The use of prestressing strand or cable loops projecting from the concrete shall not be allowed. If standard embedded lifting devices, like threaded inserts, interfere with the jet tube, and use special proprietary lifting devices that do not interfere with the jet tube location. At least 10 working days before casting piles, submit a lifting device designed and signed by a civil Engineer registered in the State of California to Engineer for approval. Under no circumstances shall handling be allowed to generate detrimental tensile stresses in the pile. Net tensile stresses resulting from handling shall not exceed 3 times square root of f'c. Deviation from Drawings pertaining to length of pile, design, internal jetting devices or other deviation, if any, shall be shown on shop Drawings. Calculations shall clearly demonstrate that such deviations shall not jeopardize the structural integrity of the pile. Shop Drawings shall show that the steel layout and details conform with that shown on the structural design Drawings and shall be signed by a civil Engineer registered in State of California with a minimum of 5 years of experience in pile handling.

4. Where templates are to be used for driving piles, submit shop Drawings detailing the proposed templates to Engineer for review. Regardless of review, Contractor shall maintain complete responsibility for operability and safety of the required equipment. Contractor shall not use templates unless approved by Engineer.

G. Staylath Submittals:

1. Detailed shop Drawings and calculations for the staylath system, including tie back system where required by Contractor, shall be prepared and signed by a qualified professional Engineer registered in State of California with 5 years of experience on waterfront projects and shall be furnished by Contractor to Engineer.

H. Quality Control Submittals:

1. Drawing showing an identification number for each pile with pile location prior to pile manufacture.

2. Completed Pile Hammer Data Sheet, attached at the end of this Section for the hammer proposed for use on Project. For hammers with variable rated hammer energy output, also supply manufacturers operating data and rated hammer energy at each fuel or energy setting.

3. Manufacturer's specifications of products and maintenance manuals for the pile hammer and auxiliary equipment.

4. Certificates of calibration of flowmeter and pressure gage used for measuring flow rates and water pressures at jetting pump. Certificates shall be traceable to National Institute of Standards and Technology (NIST).

5. Certificates of compliance, mill certificates, samples, and test results for prestressing steel, spirals, non-prestressed reinforcing steel, pile anchorage steel, void form material, and other embedded items.

6. Certificates of compliance, samples, and test results for cement, aggregates, and admixtures.

7. Certificates of jack calibration curves used in prestressing. Certificates shall be traceable to NIST.

8. Description of plant quality control procedures demonstrating substantial compliance with PCI MNL-116.

9. Complete and submit daily, logs of piles driven, including the following:

    a. Pile number, length, and casting date.

    b. Elevation of mudline before and after driving.

    c. Depths of penetration.

    d. Pile tip and cut off elevations.

    e. Penetration resistance, hammer fuel setting, average ram stroke or energy, and jetting pressure for each foot of driving over entire pile length.

f. Date driven, name of Contractor-supplied observer and Department Inspector.

g. Equipment used.

h. Installation Method: Description of method shall include, times, dates, jetting flows, jetting penetration rates, hammer operations during jetting, hammer fuel or energy settings, and hammer stroke.

i. Saximeter data and plots.

j. Other pertinent pile driving behavior or behavior after release from the leads.

I. Methods proposed to measure pile position and inclination after installation is complete and the piles are free from any restraint from driving template and the hammer and driving train leads. Submittals shall be made at least 30 Calendar Days prior to pile driving.

J. Submittals Made During Pile Driving: Submittals shall be made on a daily basis and within 24 hours of when data was obtained.

1. Required observations made during pile installation for each production pile.

2. Required information on pile location surveys for each production pile as required in SURVEYING AND FIELD ENGINEERING Section.

3. Procedures used to spud piles.

4. Locations of piles that were cut off and removed.

K. Submittals Made After Pile Driving:

1. Results of surveys in a report format no later than 10 Calendar Days after completion of pile driving.

L. Contract Closeout Submittals:

1. Original tracings or acceptable reproductions of final shop Drawings showing deviations of details for piles furnished in conformance with PROJECT RECORD DOCUMENTS Section.

1.8 QUALITY ASSURANCE

A. Quality assurance procedures shall conform to PCI MNL-116.

B. Pile fabricator shall have at least 5 years of experience in manufacturing precast, prestressed concrete piles.

C. Pile driving Contractor qualifications: Competent pile driving ontractor specializing in placement of marine concrete piles.

1. Experience: 5 years of experience driving concrete piles in a marine environment.

D. Tests:

1. Contractor shall provide and pay for testing and certification except that which is indicated in this Section to be provided by Test Lab.

2. Test Lab shall perform the following services:

a. Test fine and coarse aggregate for conformance with RS Subsections 200-1.4 and 200-1.5.3, respectively.

b. Review Contractor's proposed mix designs.

c. Perform concrete compressive strength tests.

3. Evaluation of strength tests of trial batches shall conform to RS Subsection 201-1.1.3, except that the minimum cement content required therein does not apply and trial batches shall not be placed in Work. Trial batches and related testing, if required, shall be provided by Contractor.

4. To facilitate testing, Contractor shall comply with the following:

a. Provide and deliver to Test Lab, representative samples of materials which require testing and are proposed to be used in Project.

b. Submit proposed concrete mix design to Engineer for review. Also submit a trial batch for testing.

c. Furnish the experienced technicians and equipment necessary to obtain and handle the samples at Project Site(s) or at other locations where materials are located.

d. Advise Test Lab 72 hours in advance of the beginning of operations to allow time for completion of quality tests and for assignment of laboratory personnel.

e. When requested, furnish copies of test reports of shipments of cement to Engineer and Test Lab.

f. Transit mixed concrete shall comply with RS Subsection 201-1.4.3 and ASTM C94/C94M.

5. Concrete Specimen Test Cylinders: Contractor shall make for Department, four 6-inch diameter by 12-inch test cylinders for each pile manufactured. A minimum of 8 test cylinders shall be made for each day's pour, regardless of cubic yardage, or for each change in mix design.

   a. Contractor shall also make test cylinders for testing the concrete strength at transfer of prestress. As a minimum, Contractor shall make 4 test cylinders from each end of the casting bed for this purpose.

   b. Test cylinders shall be produced by an American Concrete Institute (ACI) certified technician.

   c. Perform 24 hour initial cure of test cylinders in close proximity to and in the same manner as the pile. After 24 hours cure in conformance with ASTM C31/C31M subject to requirements for test cylinder transportation described in this Article. Safely store test cylinders at manufacturing site. Cylinder molds shall conform to ASTM C470/C470M.

   d. Label test cylinders with the date, pile number, and Drawing page number of the pile being manufactured. Identify cylinders with the same numerical identification system used on Drawings for the piles. Use same identification system for samples Contractor requires for its own use. Keep records of the date of sampling, the class and mix proportions of the concrete, and Work location from which the sets of samples were taken.

   e. Piles shall be considered acceptable when test cylinders tested by Test Lab achieve a minimum compressive strength of 6,500 psi at 28 days.

f. Engineer may increase the required number of test cylinders if the specified concrete strength is not being attained consistently or if, upon Engineer's approval, Contractor elects to drive piles less than 28 days after casting. Engineer may reduce the number of test cylinders upon determining that high concrete strengths are consistently produced and the concrete and curing processes are uniform.

g. If the test cylinders show compressive strengths below the minimum acceptable limit, Engineer may allow coring of the piles at Contractor's sole cost and expense. Cores shall conform to ASTM C42 and RS Subsection 201-1.1.5. Piles shall be considered acceptable only if cores tested by Test Lab attain a minimum compressive strength of 6,500 psi. Strength reduction to 85 percent of the required compressive strength shall not be accepted.

h. Schedule test cylinder deliveries to Test Lab with Engineer. Do not transport test cylinders until a minimum of 7 Calendar Days after they have been cast, but no later than 14 Calendar Days after casting. Avoid damage to test cylinders and loss of identifying labels during handling and transporting. Failure to comply with the provisions of this Section regarding cylinder handling may be cause for rejection of the pile. Prevent moisture loss during transportation by wrapping the specimens in plastic. Transportation time shall not exceed 4 hours.

E. Inspection:

1. Engineer reserves the right to inspect the manufacturing or fabrication facilities at any time during Work to ensure that the materials and workmanship are in conformance with Specifications. Inspection shall not relieve Contractor from full responsibility for the accuracy and quality of Work. Refer to Source Quality Control Article of this Section.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Exercise care to prevent impact and shock stresses in the piles while lifting or handling.

B. Piles may be removed from the casting beds for storage on-site after concrete has attained a compressive strength of 4,000 psi. Piles shall not be transported by truck, rail, or barge until 7 Calendar Days after removal from casting beds. Piles shall not be lifted into the driving leads or subjected to the force of the driving hammer until the concrete in the pile has attained a compressive strength of 6,500 psi minimum, nor sooner than 14 days after casting.

C. Equalizer bars, or equalizer slings, designed to suspend the piles at their designated pickup points shall be provided on lifting equipment. Calculate forces involved in pile handling operations using pile pickup points to limit deflection, avoid excessive bending stresses, cracking, spalling, or other injuries. Do not use chain slings around the piles. Wire rope slings, tongs or other lifting apparatus shall be so designed as to minimize jerking of the slings and abrasion of the pile in tipping or swinging.

D. Handle piles at pickup points located as shown on Drawings. If alternate pick up points are to be used, submit calculations signed by a civil or structural Engineer registered in the State of California with at least 5 years pile handling experience. Pickup points shall be marked on piles so Inspectors can determine if piles are being lifted properly.

E. Pile Storage:

1. Pile storage shall be on rigid unyielding foundations to prevent cracking of the piles from differential settlement of the foundations. Survey storage area before storing piles. Store piles true and on a straight plane such that the ends of 100 foot long piles are not out of a straight plane by more than 1-1/2 inches and longer piles or piles at intermediate supports do not deviate from a straight plane by a proportional measure, for example, not more than 1/2 inch in 33 feet.

2. Provide and install blocking to ensure that stored or stacked members are supported at the designated pickup points plus 1 intermediate row of supports between each pickup point. Blocking members shall be of uniform size within any tier of piles.

3. Tiered members shall have their bearing points located 1 above the other.

4. Stacking of piles in tiers more than 4 high, or storage of materials or equipment upon the piles shall not be permitted.

5. Members secured for shipping shall have hold-down ropes or bands to prevent movement or damage during transportation.

F. Replace piles damaged or overstressed by handling at no additional expense to Department.

1.10 EXISTING GEOTECHNICAL CONDITIONS

A. Department requires Contractor to review geotechnical information described in SITE CONDITIONS Section. These geotechnical reports are included as part of the electronic bid package.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

A. Staylath Design:

1. Assumptions and criteria used in design shall include but not be limited to the following:

a. The staylath system may be used as support for deck formwork.

b. Deflections under wet concrete loading shall not exceed L/240 and deflections under additional loads on hardening concrete shall not exceed L/480, where L is the span between supports.

c. The systems shall be designed to support loads to be placed; however, previously placed concrete shall not be considered as support for freshly placed concrete.

d. Staylath shall be designed to accommodate piles that are a minimum of 24 inches out of alignment measured from the centerline of pile with no modifications.

1) Friction collars shall cause no permanent alterations to piles.

e. The latest edition of City of Los Angeles Building Code shall be used for allowable stress criteria.

f. Comply with the requirements of ACI PRC-347.

B. Concrete Mix Design:

1. Concrete shall have a minimum 28 day compressive strength of 6,500 pounds per square inch (psi). Concrete shall contain the number of sacks and type of portland cement per cubic yard called for in the design submittal. Minimum cementitious material content used for performance and durability, regardless of design strength, shall be 752 pounds (8 sacks) per cubic yard of concrete. For a combined cement/fly ash content of 752 pounds per cubic yard, the weight of each shall be: cement 640 pounds and fly ash 112 pounds. Fly ash shall be Class F, conforming to RS Subsection 201-1.2.5.3. If mix design requires more cementitious material to achieve the design strength, fly ash shall be held at 15 percent of total cementitious material.

2. Water to cement materials ratio shall not exceed 0.38 including combined water in the aggregate.

3. Slump Range (ASTM C143/C143M): 3 to 4 inches. Design mix test results shall reflect the slumps to be used. If high range water reducers are used to increase slump, Contractor shall demonstrate that maximum water to cement ratio is not exceeded.

2.2 MATERIALS

A. Cement shall be Type II, low alkali portland cement conforming to ASTM C150/C150M and RS Subsection 201-1.2.1.

B. Aggregates shall conform to ASTM C33/C33M and RS Subsection 201-1.2.2 with a combined aggregate gradation C (1 inch maximum) as shown in RS Table 201-1.3.2. Aggregates shall weigh at least 140 pounds per cubic foot based on the minimum density of solid material in an oven-dry condition.

C. Mixing, curing, and washing water shall conform to RS Subsection 201-1.2.3.

D. Fly ash shall be Class F, conforming to RS Subsection 201-1.2.5.3 and ASTM C618.

E. Admixtures: No calcium chloride, thiocyanate, or other admixtures containing more than 0.05 percent chloride ions.

1. Water reducing admixtures shall conform to ASTM C494/C494M, Type A and shall be non-toxic after 30 days. Amount of admixture added to the concrete shall conform to manufacturer's written instructions.

2. The use of other admixtures is subject to approval by Engineer.

F. No component of concrete mix design shall contain calcium chloride.

G. Curing materials shall conform to RS Subsection 201-4 and to the requirements of ASTM C309 with the additional requirement that permeability not exceed 0.039 gm/cm^2/72 hours. Curing material shall be Super Aqua Cure VOX as manufactured by Euclid Chemical Co., Cleveland, Ohio, or other Engineer approved coatings. Tests for compliance shall be made by manufacturer with manufacturer's certification furnished by Contractor to Engineer. Manufacturer's certification shall state quantity or coverage required to meet or exceed tests, surface texture of concrete, and method of application. Submit manufacturer's certification that the product meets ASTM C309 and the additional permeability requirement; manufacturer shall also specifically state the coverage required to meet these requirements. Curing compound shall not be used where coatings shall later be applied to the concrete surface. In this case, use continuous water curing.

H. Hi-tensile Reinforcing:

1. Small diameter prestressing strands (nominal strand diameters from 0.25 inch through 0.60 inch) shall be of the uncoated 7 wire high tensile steel cold drawn type, stress relieved after being formed into strands. The strand shall conform to ASTM A416/A416M Grade 270, low relaxation. Nominal size of strand shall be as shown on Drawings.

2. A microscopic and metallographic examination shall be made by Engineer on representative sections of the wire previously stressed to 70 percent of its ultimate strength. The appearance of a laminated structure or metallurgical defects shall be grounds for rejection.

3. Strands shall be free of dirt, rust, oil, grease, or other deleterious materials, and in place before concrete is poured.

I. Spiral Reinforcing:

1. Spiral reinforcing shall meet the requirements of ASTM A1064/A1064M unless otherwise noted on Drawings.

J. Reinforcing Steel:

1. Reinforcing steel bars shall be deformed bars and conform to ASTM A615/A615M Grade 60.

2. Steel material for reinforcing bars with upstands (dowels) shall conform to CONCRETE WHARF CONSTRUCTION Section.

K. Corrugated metal tubes shall be minimum of 0.023 inch thick with a minimum inside diameter of 1-7/8 inch. The metal shall be mild steel.

L. Jetting Tubes:

1. Jetting tubes shall be PVC pipe, Schedule 80, in conformance with ASTM D1785.

M. Jetting Tube Tips and Other Appurtenances:

1. Furnish piles with steel jetting tips, steel elbows, tees, and inlet pipes as called out on Drawings.

N. Pile Buildup Materials:

1. Concrete shall conform to CONCRETE WHARF CONSTRUCTION Section.

2. Steel material for reinforcing bars with upstands (dowels) shall conform to CONCRETE WHARF CONSTRUCTION Section.

3. Steel spiral shall conform to ASTM A1064/A1064M.

4. Neat cement grout for dowel anchorage shall conform to CONCRETE WHARF CONSTRUCTION Section.

O. Staylath Material:

1. Staylath may be either timber or metal as approved by Engineer. In the event that individual timbers are less than 6 inches in thickness, Engineer may permit their use provided timbers are laminated and securely bolted together to result in staylath not less than 6 inches in thickness and 12 inches in depth.

2.3 MANUFACTURE AND MARKING OF PILES

A. General:

1. Manufactured piles shall be solid precast unit type, cast monolithically in a pile casting bed employing pre-loaded high-tensile steel reinforcing. Pile lengths, cross-sections, and pre-tensioning shall be in accordance with Drawings.

2. Quantity of Piles:

    a. The quantity of piles shall be as shown on Drawings.

3. Surplus Piles:

    a. Surplus piles shall be cast along with production piles in quantities and lengths determined by Engineer. In general, surplus piles may be used to replace piles broken during handling or installation, or piles driven in unacceptable locations. These piles shall be cast at the maximum length shown on Drawings as directed by Engineer.

    b. Store piles in such a manner as to avoid damage to the piles and at no additional expense to Department.

    c. At a minimum, after the second month of production pile installation, and 30 days prior to the end of the pile casting, Engineer shall review the inventory and breakage experience, and order additional or fewer surplus piles.

    d. Transport and store surplus piles remaining at the end of pile driving operations as directed by Engineer.

4. Furnish prestressed concrete piles as indicated on Drawings. Each pile shall be stamped or marked with the date of its manufacture, length, and casting number. Lifting points shall be designed and marked as indicated on the approved shop Drawings.

5. Except as specified in this Section, casting tolerances shall comply with requirements of Division 6, Section 6.4 of PCI MNL-116. Section 6.4.1 which states that the tolerances shown in Article 6.4 must be considered as guidelines for an acceptability range and not limits for rejection shall not apply. Dimensions that exceed the prescribed tolerances described in Paragraph 2.2 B.3 of this Section shall be cause for rejection of the pile. Such piles shall not be measured for payment. When tolerances are exceeded, grinding or patching shall not be permitted.

B. Pile Manufacture:

1. Impress numbers, at least 5 inches in height, in the concrete, consecutively indicating the sequence in which piles were manufactured. Place numbers on 1 face of the pile, approximately 3 feet from the pile head. Keep records of each pile’s manufacturing date.

2. Piles shall be delivered in sequence for driving in conformance with Contractor's pile driving sequence and schedule. Pile driving sequence shall start with landside piles and progress to waterside piles.

3. Manufacture piles to the following dimensional tolerances, which shall govern over PCI MNL-116 criteria cited in Quality Assurance Article of this Section:

    a. Length shall be within plus or minus 1 inch.

    b. Deviation from a straight line shall be not more than 1/8 inch within any 10 feet of pile length. The total deviation from true centerline (straight line drawn between centers of pile ends) of pile shall not exceed 1/2 inch at any point along the length of the pile when pile is in true plumb position.

    c. Cross sections shall be within minus 1/4 inch to plus 1/2 inch.

    d. Pile head surface shall be within plus or minus 1/2 degree from a true right angle plane. Surface irregularities, within plus or minus 1/8 inch.

    e. Location of reinforcing steel shall be within the following tolerances:

        1) Reinforcement cover, minus 0 inch, plus 1/4 inch.

        2) Spacing of spiral plus or minus 1/2 inch.

    f. Location of prestressing strands shall be within plus or minus 1/4 inch from that indicated throughout whole length of pile.

    g. Failure to maintain the pile dimension tolerances and the reinforcing location tolerances shall be cause for rejection of the pile.

    h. Location of jet tube shall not vary more than plus or minus 1/2 inch from that indicated throughout whole length of pile.

4. Forms:

    a. Forms shall be steel and shall be designed to prevent damage to piles upon removal.

    b. Forms shall be set up and arranged to provide adjacent working space and access for manufacturing.

    c. Forms shall permit longitudinal movement of pile without damage during transfer and release of prestressing force.

d. Forms shall be free of dents, creases, and other irregularities.

e. Forms shall be cleaned and oiled prior to each use.

f. Forms shall be designed to allow prestressing of the strands and allow access for placing and tying reinforcement and for positioning and anchoring embedded items.

g. Except for the top horizontal surface that may be hand finished, concrete surfaces of the pile shall be formed. Methods of forming that involve extruding any portion of the pile are acceptable if Work is performed by a fabricator with at least 5 years of experience in this type of pile manufacturing or if Work is accomplished under the direct and continuous supervision of a superintendent with at least 5 years of experience in the manufacturing of prestressed concrete piles with methods involving extrusion of any portion of the pile.

5. Placing Reinforcement:

a. The reinforcing steel shall be installed in the casting beds in the shape and dimensions shown on Drawings. Strands shall be held in position so that steel shall retain its shape after stressing and during placement of concrete.

b. Templates shall be used to accurately space reinforcing bars. Before assembling the steel, the bars shall be bent if required and the spiral hooping formed at the pitches indicated on Drawings.

c. Spiral wire reinforcing shall be tied with No. 16 annealed steel wire to prevent movement during the concrete placement with minimum ties placed as follows:

1) Tie every third spiral to the strand at the top half of the pile locations at 3 strand intersections. Contractor shall demonstrate to Engineer that method of securing spiral shall prevent longitudinal movement or bunching of spiral. On representative piles selected by Engineer, remove fresh concrete to the level of spiral so that spacing may be checked. If spiral movement is detected, take remedial measures as required by Engineer.

2) Ties shall have a full 360 degree twist and the ends shall be bent inward away from the concrete surface.

3) Minimum concrete cover over the spiral wire reinforcing shall be 3 inches unless shown otherwise on Drawings.

4) Lap splices in the spiral as shown on Drawings and wire together at 3 points.

5) Concrete spacer blocks if used, shall be same strength concrete as piles.

6. Prestress:

a. Initial prestress in strands shall not exceed 70 percent of the ultimate strength of the strands and the loss of prestress shall be taken into consideration in achieving the minimum effective prestress in the concrete section. Minimum effective prestress after losses shall be 1,000 pounds per square inch. Clear net spacing between wire strands or wire strands and mild steel reinforcing bars shall be not less than 1 1/2 inches. Prestress in the concrete section shall be as shown on Drawings.

b. Stress strands uniformly either singly or simultaneously, to the design load, before concrete is poured, by means of a hydraulic jack, or jacks, equipped with pressure gages permitting the stress to be computed at any time. Measure elongation of the strand at the completion of the tensioning operation. Elongation shall conform to elongation tables furnished by the manufacturer of the strand. If there is a difference of over 5 percent between the steel stress determined from adjusted elongation and from the gage reading, determine and correct cause of the discrepancy. When multiple strands are tensioned simultaneously, use a dynamometer approved by Engineer to ensure that the same initial stress is in each element prior to completing the full stressing operation.

7. Jet Tubes and Inspection Tube:

a. Jetting shall be done through jet pipes cast concentrically in the pile.

b. Jet tube shall be PVC Schedule 80 pipe in conformance with ASTM D1785. The jet tube extension, elbow or tee, and the pile inlet shall be steel in conformance with ASTM A53/A53M.

c. Attach jet tubes to reinforcing strands with centralizing spacers to concentrically locate the tubes and prevent deflection during concrete placement. Maximum deviation from a straight line in any plane shall be 1/2 inch in 10 feet.

d. Splice tube with outside couplings that ensure that the inside of the tube is smooth and straight across the splice. Note location of jet tube splices on pile shop Drawings.

e. At least 1 day before casting piles, notify Engineer of pile's readiness for inspection of jet tube arrangement in the forms. Failure of Contractor to notify Engineer is cause for rejection of the piles.

8. Placing and Finishing Concrete:

a. Deposit concrete continuously and as rapidly as practicable after each pile section pour has started and until the entire pile section pour has been completed in the casting bed.

b. Screed and brush pile top surface to a uniform, even texture similar to that produced by the forms.

c. Vibrating:

1) During and after depositing concrete for piles, completely consolidate mix with internal and external vibrators. Submit proposed vibration method for Engineer's review. Concrete shall be dense with a surface free from honeycombs or voids.

2) Vibrator frequency shall not be less than 3,600 cycles per minute. Intensity of vibration shall be sufficient to cause the concrete to flow and settle into place, and to make the effect on the concrete visible over a radius of at least 2 feet. Vibrators shall be applied at points not over 2 feet apart and there shall be an average of not less than 20 seconds of vibration per foot of pile.

9. Transfer of Prestress:

a. Transfer prestress only after concrete in the pile has attained compressive strength shown on Drawings. Transfer of prestress shall be accomplished by simultaneous gradual release of tension in strands using hydraulic jacks in cases where this is possible.

b. Where release by jacks is impracticable, burn each strand at exposed points between anchorages. Burn sequence shall follow a pattern calculated to equalize the forces being transferred throughout the cross-section of the member. Heat strands with a low-oxygen flame. Minimum 4 inch lengths of wire shall be uniformly heated to gradually reduce strand tensile strength and prevent shock to piles that otherwise occurs when strands are burned with a high oxygen flame at a single point.

10. Pile Curing:

a. Cure piles by 1 of the methods described in this Section or by a method approved by Engineer in writing.

b. Cure piles until 6 by 12 inch concrete test cylinders poured during the pile manufacture and cured in the same environment as the piles have attained the minimum compressive strength shown on Drawings. Thermal matching cylinder curing systems for determining the concrete strength, such as Sure Cure System, may be used only for determining the release strength.

c. Steam Curing:

1) Immediately after each pile has been cast and finished, place pile in a curing chamber, curing box, or under a tight enclosure which shall protect the pile from wind and drafts. Size chambers or enclosures to allow full circulation of steam around exposed surfaces of the pile.

2) Instrumentation:

   a) Install exterior recording thermometers and interior temperature probes with enclosures and power source along with wiring. Place either 1 exterior thermometer or 1 interior probe at each pile. Install exterior thermometers and interiors probes in an alternating sequence. Parallel casting beds shall have the instrumentation placed in a staggered and alternating pattern along the piles. Install the thermometer and the probe close to the middle of the pile, not closer than 5 feet and not farther than 10 feet from the orifice where the steam is introduced. Locate the exterior thermometer at the side where the steam is introduced. Locate the interior probe more than 8 inches and less than 10 inches from the surface of the piles. Under no circumstances are the interior probes permitted to touch the jet tube. Do not commence concrete placement until temperature recording devices have been checked to the satisfaction of Engineer. Maintain uniform curing temperature throughout the entire length of the piles. Submit prints of the automatic readout daily.

   b) For the purpose of checking Contractor's recording thermometer, Department may install its own recorders. In this case, Contractor shall furnish the power source and wires at locations designated by Engineer.

3) Commencing not earlier than 3 hours and not later than 5 hours after completion of concrete placement, subject the piles to the continuous action of steam. Introduce heat gradually to avoid thermal shock to the concrete. During the heating, temperature rise shall not exceed 25 to 35 degrees Fahrenheit (F) per hour. The interior temperature of the piles shall be held at a target temperature of 150 degrees F with an upward tolerance of 10 degrees F.

4) Cooling shall follow the steaming cycle. Protect piles from rapid drops in temperature, mechanical injury and other conditions likely to cause damage or loss of strength. During cooling, the temperature drop shall not exceed 30 to 35 degrees F per hour. The cool down procedures shall be as follows:

   a) Turn off steam following the steam cycle.

b) Fold sides of tarps to the top of the form.

c) Perform transfer breaks to confirm that required 4,000 psi compressive strength has been reached.

d) Remove tarps completely, open top doors, and release the strands.

5) After steam curing, apply moist curing using either water or membrane curing compound until a total steam and moist curing time of 7 days is achieved.

d. Water Curing:

1) If piles are to be water cured, cover piles with 2 layers of wet burlap or curing mats after the finishing operations are completed. Keep mats wet by a system of perforated pipes, mechanical sprinklers, porous hoses, or other Engineer approved methods for the entire curing period. Before and during placing of the curing mats, keep concrete moist by a fine fog spray of water commencing after finish operations have ceased.

2) Water for curing shall be clean fresh water conforming to the requirements for mixing water.

e. Membrane Curing:

1) Membrane curing shall consist of a liquid vapor barrier producing compound applied over the piles. The membrane shall be a watertight film over the entire exposed pile surface. This film shall be maintained watertight throughout the curing period.

2) The sealing compound used for membrane curing shall conform to ASTM C309. If the membrane is damaged, repair with additional compound at no cost to Department.

11. Surface Defects and Fissures:

a. General: Rock pockets and honeycombing are prohibited. Repair of such defects shall not be permitted. Such defects shall be cause to reject the pile.

b. Individual small surface defects such as air bubbles, voids, and fissures shall be accepted without repair, if the voids or air bubbles are less than 1/2-inch in diameter and 3/8-inch in depth and if fissures do not penetrate more than 3/8 of an inch in depth.

c. Surface defects between 3/8-inch and 3/4 inch in depth, and between 1/2-inch and 1-inch in diameter may be repaired.

d. Repairs may be made only to those piles having 5 or less voids and fissures in the top 20 feet of the pile. If the top 20 feet contains more than 5 such defects, the pile shall be rejected.

12. Repair of Surface Defects:

a. Grout and dry patching material shall consist of Type II Portland cement mortar mixed in the proportion of 1 part Portland cement to 2 parts of fine sand (passing a No. 14 to 20 mesh sieve) by volume. Use no more water than necessary for placing. Discard mortar which has been prepared for longer than 30 minutes or if stiffening should occur within this period. Do not re-temper mortar with water after it has first been prepared.

b. Preparation:

1) Ascertain depth and direction of fissures by probing with a 12-gage wire, followed by enlargement using a 3/8 to 1/2-inch drillbit to the depth and in the direction which was indicated by the probing. Remove bits broken off in concrete prior to dry packing.

2) Scrub concrete surfaces to be repaired with a coarse, stiff, short, bristle brush prior to applying dry pack. Expose concealed holes by cleaning thin film of laitance or mortar.

3) Hose brushed surfaces with a pressure nozzle to remove dirt and foreign objects.

c. Repair Methods:

1) While the concrete surface is still damp, apply patching material to indented, damp, concrete surfaces, followed by methods which shall provide a positive bond between the patching material and surfaces of the concrete.

a) Compact mortar grout into the predrilled fissures in a manner that prevents air voids and provides a bond between the concrete and the mortar at the interface. Following this step, dry pack surface voids by means approved by Engineer.

b) Keep patches moist for not less than 5 days after placement. Patches which show secondary fissures, or which are not bonded shall be rejected and shall be redone. In the event shrinkage occurs in the hardened patches, remove patches using key ways by drilling or other means, then re-patch. Failure to obtain a satisfactory patch shall be sufficient cause for rejecting the pile or piles in question.

13. Repair of Void Left by Embedded Lifting Device:

a. Patch the void left by the embedded lifting device with cement grout, provided the void has sufficient depth (greater than 3 inches) and roughness to provide a good bond and if the repair shall not suffer damage during lifting and installation. If the void does not meet this criteria, Contractor shall use an epoxy grout or a polymer modified cementitious grout to repair the void. This material and patching method shall be approved by Engineer.

b. Grout and dry patching material shall be as specified in Repair of Surface Defects Paragraph of this Article.

c. Preparation:

1) Scrub concrete surfaces to be patched with a coarse, stiff, short, bristle brush prior to applying dry packing. Remove any material from the lifting device void that would prohibit adequate bond.

a) Hose brushed surfaces with a pressure nozzle to remove dirt and foreign objects.

d. Patching Methods:

1) While the void is damp, apply dry patching material to the void, followed by methods which shall provide a positive bond between the patching material and surfaces of the concrete or lifting device.

a) Compact mortar grout into the lifting device void in a manner that prevents additional voids from forming and provides a bond between the device void and the mortar at the interface. Following this step, dry pack surface voids by means approved by Engineer.

e. Keep lifting device void patch moist for not less than 5 days after placement. The patch shall be rejected if it shows secondary fissures, or is not bonded and it shall be redone. In the event shrinkage occurs in the hardened patch, remove patch and re-patch. Contractor may repair shrinkage cracks with the use of epoxy injection materials and methods approved by Engineer. Failure to obtain a satisfactory patch shall be sufficient cause for rejecting the pile or piles in question.

2.4 SOURCE QUALITY CONTROL

A. Department shall provide pile-manufacturing inspection free of charge within a 75-mile radius of Department Administration Building. Contractor shall bear the costs for airfare and ground transportation, meals, and lodging for 1 Inspector for pile manufacturing site inspection beyond the specified radius. Transportation costs shall include returning Inspector to Department Administration Building at 5-day intervals. Inspection shall be considered to be full time and continuous for the period beginning 2 days prior to pile casting through 3 days following completion of casting. At Department's option, an independent testing laboratory may be assigned to provide pile-manufacturing inspection.

PART 3 – EXECUTION

3.1 PILE DRIVING EQUIPMENT

A. General:

1. Equipment proposed and supplied by Contractor may be rejected by Engineer if it has the appearance of being excessively worn or is in disrepair

2. Provide and maintain equipment for the handling and installing of piles. Barges and other floating equipment shall be of a size to be stable without excessive movements or tilting, under average sea conditions, during which pile installation shall be carried out. Equipment failing to meet these requirements shall be taken out of service. If 2 pile driving rigs are used, landside piles shall be driven prior to waterside piles. For landside rigs, Contractor shall be responsible to establish, without additional cost or time delay to Department, that the weight of the landside rig shall not jeopardize the stability of the embankment.

3. Contractor shall make equipment available for inspection by Engineer. Deficiencies in quality, quantity or type of equipment shall be corrected prior to commencing Work. This inspection and approval shall in no way relieve Contractor's ongoing obligation to provide equipment required to perform Work.

4. Equipment shall be maintained in good condition and shall be capable of supporting continuous pile hammer operation at full rated speed. Any equipment failing to meet these requirements shall be taken out of service and removed from Project Site(s).

B. Pile Driving Leads:

1. Use fixed leads with a hydraulic spotter at the bottom. Leads shall be of sufficient length so the use of a follower is not necessary. Leads shall be straight and parallel and shall not deviate from a straight line by more than 1/2 inch over any 15 foot length. Leads shall be easily adjustable to permit axial driving without interruption if piles deviate from attitude shown on Drawings.

2. Leads shall hold the pile in its proper position during initial driving and shall guide the hammer from the highest point to the lowest point to which it must travel. Leads shall maintain the hammer on a line of action which is coincident with and parallel to the longitudinal axis of the pile during driving.

3. The use of either swinging, hanging, or semi-fixed leads shall not be permitted without the prior written approval of Engineer. Such approval shall be based on successful prior experience and shall be conditional pending initial success in the production driving operation.

C. Hammers:

1. Pile driving hammers shall be of sizes and types to deliver consistently effective dynamic energy for the piles to be driven to the pile tip elevations as indicated on Drawings. Hydraulic hammers shall be used. Hammers shall be able to meet the performance requirements specified in this Section. Hydraulic hammers meeting these requirements include: Menck MH 195 (141 kip-ft); Junttan HHK 12A (104 kip-ft); Junttan HHK 14A (121 kip-ft); and IHC SC-150 (110 kip-ft) with sound insulation system. These or equivalent hammers shall be allowed.

2. Provide a hammer that shall deliver the required energy to install the piles without damage. Minimum manufacturer's rated hammer energy shall be 100 kip-feet for hydraulic hammers. Minimum ram weights shall be 20,000 pounds for hydraulic hammers.

3. Hammer shall be capable of low energy driving or tapping (short stroke) through soft soil strata to prevent tension in the pile from exceeding the net prestress. Reduce the energy setting on hydraulic hammers as directed by Engineer to provide low energy driving. Select a hammer that is capable of providing a reduced rated hammer energy not exceeding 40,000 foot-pounds for hydraulic hammers. Hammers incapable of low energy driving shall be rejected. PDA testing during indicator pile driving shall be used to verify that net tensile stress is not generated.

4. For hydraulic hammers, provide an instrument readout panel that records hammer stroke and energy (velocity at impact).

5. Provide hearing protection as required by Occupational Safety and Health Administration (OSHA).

6. Contractor shall bear costs and delays due to hammer equipment repair including associated retesting of hammers.

D. Hammer Capblock and Cushion:

1. Capblock material shall be made of a stable and predictable material such as aluminum or micarta, Conbest as manufactured by Penn State Fabricators or other as approved by Engineer. The helmet shall seat onto the pile and bear evenly and concentrically with minimum play upon the pile. The pile head shall be free to rotate in the helmet.

2. Helmet shall contain a cushion pad consisting of nominal 1-inch thick laminated plywood or Douglas fir material placed in the pile driving helmet. Thickness of the cushion shall be between 6 inches and 18 inches. Cushion thickness required during jetting and driving shall be thicker than during final driving. Actual thickness to be used shall be determined by Engineer during the indicator pile program.

3. Place new cushion(s) in the helmet at the start of driving of each pile. In addition, replace the cushion(s) in the helmet as soon as the cushion begins to smoke, burn, or otherwise deteriorate. Increase cushion thickness to reduce tensile or compressive stresses when requested by Engineer.

E. Jetting Equipment:

1. Pump Capacity: Sufficient to continuously deliver 800 gallons per minute (gpm) at 350 pounds per square inch (psi) pressure, measured at the pump. Pump shall be equipped with a throttle that allows flowrate adjustment for variable driving in soft or hard soil conditions. Contractor shall have duplicate spare pump on-site during pile driving.

2. Supply operating set and 1 spare set of jetting equipment. Jetting equipment for each pile rig shall include, but not be limited to:

   a. Jetting tips

   b. Pump with flowmeter (indicating flowrates) and pressure gage at the pile.

   c. Hose

   d. Supplemental equipment and supplies

3. Provide threaded cap to seal jet tube orifice at the side of the pile after driving.

4. Piles shall be manufactured with a jet nozzle as shown on Drawings.

F. Pile Spud:

1. A heavy steel spud may be required to install some of the piles through several feet of armor rock. Provide a fabricated steel spud before commencing pile driving. The length of the spud shall be adequate for installation of A row piles (outboard piles).

3.2 INSTALLATION

A. General:

1. Provide facilities for Engineer to inspect and record pile data.

B. Marking of Piles:

1. Mark each pile at 1-foot intervals for the purpose of recording the penetration resistance and depth of penetration of the pile. The marks shall be clearly visible. Provide additional marks at 1/10 foot intervals for selected feet, as requested by Engineer.

C. Installation of Piles and Tolerances:

1. Piles shall be installed only in the presence of Engineer.

2. It is anticipated that pile installation through the rock buttress and slope shall result in consolidation of the rock fill and lateral movement of piles during construction. It is intended that Contractor make necessary provisions to the driving procedure, initial spotting, and initial inclination of the piles in order to achieve installation to the indicated tolerances.

   a. Contractor shall make at least 3 attempts to drive piles if piles wander more than 6 inches in the first 10 to 20 feet of driving, including driving the piles, removing piles, realigning piles, and re-driving piles 3 times. If piles are still not in correct position after 3 attempts, notify Engineer.

3. Install piles without voluntary interruption by methods approved by Engineer and to the depths shown on Drawings.

4. Cushions, Jetting, Hammer Fuel Settings, or Energy Settings: Terminate jetting, change pile cushions, or change hammer fuel or energy settings when requested by Engineer. Carefully control jetting to prevent damage to the foundation materials around existing piles that may cause a reduction in the piles' bearing capacity.

5. Install piles such that their final positions are as shown on Drawings. Pulling piles into position during or after driving is prohibited. Refer to Price and Payment Procedures Article of this Section for compensation where allowed. Piles which do not meet the location requirements within the stated tolerances, may be rejected by Engineer. If a pile goes out of tolerance and has been driven more than 20 feet, Engineer may direct Contractor to take the following corrective measures:

a. Engineer may order the pile to be broken off 1 foot below the mudline and be replaced by a second pile at a nearby location.

b. Engineer may allow the pile to remain in place.

c. For replacement piles, Engineer shall require Contractor to provide a Work plan for corrective measures for Engineer's review. Work plan shall include modification to equipment or driving procedure to remediate the problem. No schedule time extension shall be allowed for the piles that were deemed unacceptable by Engineer due to Contractor's error.

6. Accuracy of Driving:

a. Piles shall be driven with an inclination of not more than 2 percent from the vertical and the pile tops shall not vary from the design position shown by more than the following dimensions:

1) Waterside Crane Girder Row: 9 inch in direction transverse to wharf, 12 inch in direction longitudinal to wharf;

2) Landside Crane Girder Row: 9 inch in direction transverse to wharf, 6 inch in direction longitudinal to wharf.

3) Row(s) for Seismic Piles: 9 inch in direction transverse to wharf, 12 inch in other directions; and

4) Rows which do not support crane girders or which are not seismic piles: 12 inch in any direction;

b. Piles shall not be pulled from their natural (freestanding) location. The natural (freestanding) location shall be determined without constraint, support, or movement of the leads against the piles.

c. Determine the appropriate starting inclination, if any, and drive the pile at that inclination to achieve alignment shown on Drawings.

7. Obstructions:

a. Where obstructions are encountered that result in a sudden, unexpected increase in penetration resistance and deviation from the specified tolerances, perform 1 or more of the following actions at the direction of Engineer:

1) Remove the obstruction and redrive.

2) Perform a jet tube inspection.

3) Extract, inspect, reposition, and redrive the pile.

b. Drive a driving ram, spud, or mandrel of a design approved by Engineer, in advance of driving the piles where rock or other obstructions are encountered and when directed by Engineer. This shall be done to provide a clean and unobstructed opening for the piles to reach the subsoil without damage.

c. Relocate or remove rocks or other obstruction which prevent the locating or driving of the piles except where Engineer permits spudding to break rocks.

d. If an obstruction is encountered above the required pile toe elevation, Contractor shall stop driving and immediately determine the nature and extent of the problem by any method, subject to the approval of Engineer. Engineer shall review the problem and determine the appropriate steps for resolution as specified in this Section.

e. If an obstruction which cannot be easily removed is encountered less than 15 feet below the ground surface, the object shall be spudded through. The procedure for spudding shall be as follows:

1) Remove pile and place safely on ground or barge using techniques that allow pile to be reused. Any damage which occurs to the pile during removal shall be the responsibility of Contractor. Engineer shall determine if any damage renders the pile unusable.

2) Use a spud of Contractor’s design, approved by Engineer, to break up the obstruction.

3) Pile shall then be redriven in the same location.

f. If the obstruction cannot be spudded through or occurs deeper than 15 feet below the ground surface, drive another pile at an adjacent location directed by Engineer.

8. Damage To Surroundings:

    a. The care and preservation from damage, due to pile driving operations, of contiguous and nearby features, whether such features are existing or constructed as a part of Contract or concurrent with it, shall be the responsibility of Contractor.

    b. Contractor shall repair, restore, replace, refit, and otherwise place in the same condition as existed prior to damage features that suffered damage during pile driving operations at Contractor's sole cost and expense.

9. Redrive piles that are raised during the process of driving adjacent piles or loosened as a result of the use of water jets, if required by Engineer. No allowance shall be made for cost to Contractor for redriving of raised or loosened piles.

10. Where pile cracking, spalling, or exposed reinforcement is identified in the diver inspection reports, Contractor shall, within 7 Calendar Days, repair the pile with Splash Zone A-788 as manufactured by Carboline (800-848-4645). The repair method shall be submitted and approved by Engineer before proceeding with repair Work. Repair Work shall be at Contractor’s sole cost and expense.

11. Surveying Pile Positions and Inclinations: Perform periodic pile survey Work during pile driving operations as described in SURVEYING AND FIELD ENGINEERING Section.

3.3 OBSERVATIONS AND RECORDING OF PILE BEHAVIOR

A. Observe and record the following data for each pile during both initial installation and restriking:

1. Pile number, length, depth of embedment, and mudline elevation at the start and completion of driving.

2. Type of hammer, jetting equipment, lead arrangement, use of template, or other similar information requested by Engineer.

3. Pile cushion information including type and thickness at the start and end of driving, any change in cushioning made during pile installation, and cushion conditions (used, new, and thickness) during restrikes.

4. Driving and jetting record for each foot of installation. Include the jetting pressures, the time periods required to start and stop jetting, pile toe elevations at the beginning and end of jetting operations, and the average rate of penetration (sec/foot) during jetting for the entire length of pile.

5. Number of hammer blows per foot of penetration for each foot of driving including periods when jetting and driving are combined.

6. For hydraulic hammers, a printed readout of the hammer stroke and net impact energy shall be provided to Engineer.

7. Resistance in blows per 1/10 of a foot for the last 12 to 36 inches of final driving as directed by Engineer.

8. Any unusual occurrence during installation, particularly running of pile during installation.

B. Provide a device that shall accurately indicate the penetration of the pile from a safe distance. Provide Engineer recorded pile driving information.

3.4 ANCHORAGE OF PILES

A. Anchor reinforcing bar dowels into drilled or preformed holes by neat cement grout.

B. Cut off top of piles to expose the spiral to be embedded in the deck concrete as shown on Drawings.

C. Dowel Holes:

1. Preformed dowel holes in production piles shall be deep enough to provide embedment for each reinforcing bar as shown on Drawings.

2. If the preformed hole is less than the required length, drill new holes at adjacent locations at least 25 percent greater than the nominal diameter of the reinforcing bar and deep enough to provide embedment for each reinforcing bar as shown on Drawings.

3.5 PILE RESTRIKING

A. Restrike piles as directed by and in the presence of Engineer. Engineer may request restriking on any pile at any time within 2 working days following receipt of the pile's installation records. Perform multiple restrikes on the same pile upon Engineer's request. Perform dynamic monitoring during restrikes as directed by Engineer and in conformance with CONCRETE INDICATOR PILE TESTING Section.

1. Equipment: Perform restrike of 24-inch concrete piles using specified equipment and in conformance with the driving criteria developed during the indicator pile program as modified during production pile driving. Restrike of a pile may entail movement of pile installation equipment from its current location to the pile restrike location. Restrike shall be performed with a warm hammer.

    a. Use compressed, previously-used cushion blocks.

2. Mark piles in 1/10th of a foot increments prior to restriking.

3. Restrike shall be considered complete when Engineer accepts that the continuation of the activity is unnecessary.

B. A no cost extension of time to complete restrike Work, equal to the total time required to actually conduct the equipment move and restrike the piles, may be granted. Extensions of time shall not be granted if, in the opinion of Engineer, the restrike is required due to a deficient pile driving operation.

3.6 PILE CUT OFF

A. Cut off pile heads horizontally for the entire pile section where piles have been driven to above cut off elevation.

B. Trim piles to cut off elevation by sawcutting horizontally at the required cut off elevation to a depth of not more than 1 inch then chipping down the remainder of the pile head flush with the sawcut. Cut surface shall be true to horizontal cut off plane(s) shown on Drawings.

C. Expose spiral for incorporation into deck pour in accordance with Drawings.

D. Remove pile cut off from Department property. Do not drop pile cut off into harbor waters.

3.7 PILE BUILDUP

A. In the majority of cases, the design intent is that extensions be constructed on piles which are installed below cut off elevation. However, since the reinforced concrete extension‘s load-carrying capacity is not equivalent to the pile itself, extensions shall not be allowed adjacent to one another as directed by Engineer (crane-girder rows and in rows of seismic piles). One or more of the adjacent piles below cut off elevation in these locations shall be rejected.

B. Concrete piles which have been driven or cut off less than 6 inches below the proper cut off elevation shall be built up monolithically with the concrete wharf deck structure above the pile by Contractor without extra compensation.

C. Concrete piles driven more than 6 inches but less than 4 feet below the proper cut off elevation indicated on Drawings, shall be built up to the planned cut off elevation. Required pile buildup shall be placed independently of the concrete deck structure.

D. Piles driven more than 4 feet below proper cut off elevation shall be built up only with Engineer’s approval. Submit details of the proposed buildup to Engineer. Piles not so approved shall be rejected and shall be broken off 1 foot below the mudline.

E. Piles driven more than 7 feet below proper cut off elevation shall be rejected. Rejected piles shall be broken off 1 foot below the mudline.

F. Pile buildups shall be constructed as shown on Drawings, or as otherwise directed by Engineer.

G. Insert reinforcement dowels into grout tubes. Dowels shall extend beyond the buildup sections without requiring rebar splices.

3.8 PLACING STAYLATH

A. Immediately prior to placing staylath, perform surveys of the pile head location and elevation in conformance with SURVEYING AND FIELD ENGINEERING Section. This information shall be compared to theoretical pile location.

B. After the piles are driven, install a network of structural members (staylath) to tie together piles and provide lateral stability of the pile network during later construction. Staylath shall maintain pile alignment and prevent shifting of the pile prior to and during deck construction until the piles are tied into the complete construction. Secure staylath in place by land anchorage as may be necessary to prevent lateral displacement of the system during construction.

C. Attach staylath to the piles with friction clamps which shall cause no permanent alterations to the pile. Drilling of holes in the pile or cutting the pile for the attachment of staylath is prohibited.

D. The use of staylath or any other method to pull piles into position shall not be permitted. Engineer reserves the right to require the gradual total release of the staylath anchorage of any pile to verify that detrimental bending stresses are not being caused by the staylath. If the pile movement occurring upon this release exceeds the amounts allowed, no additional payment for Work directly associated with the releasing and reinstalling the staylath shall be made. If the movement is so large that in Engineer's opinion the integrity of the pile may be jeopardized, the pile shall be inspected by a diver at Contractor's sole cost and expense. If the movement is equal to or less than the amount allowed, additional payment shall be allowed for Work directly associated with releasing and reinstalling the staylath for the pile in question. Such payment shall be made as extra Work in conformance with GENERAL CONDITIONS Section.

E. In cases where piles have been driven, cracked, spalled, or cut off below the proposed elevation of the top of the staylath as designated by Engineer, temporarily attach similar staylath below the lowest point of damage to the pile, and sufficiently low to attach to adjacent piles driven to low elevations. Such timbers shall be replaced by staylath located as specified above after the pile has been trimmed and built up to the cut off elevation.

F. Replace or realign staylath members that have been damaged or dislodged during the time the staylath system is in use.

G. The staylath system shall remain the property of Contractor after the purpose for which it was installed has been served. Dismantle and remove from Department property staylath system after concrete Work is completed.

3.9 PILE BREAK OFF

A. Break off 1 foot below mudline piles that are:

1. Cracked, bent, ruptured, or broken because of material defects.

2. Damaged by improper handling or driving, so as to impair them for their intended uses as judged by Engineer.

3. Out-of-tolerance piles not allowed by Engineer to remain in place.

B. Drive replacement piles adjacent to damaged or out-of-tolerance rejected piles as directed by Engineer.

C. Provide, after breaking off, a record survey on the location of the pile center at the mudline. Additional compensation shall not be made for multiple unsuccessful attempts to break off the pile. Except as provided in this Section for payment for Work caused by obstructions that, in Engineer's opinion, Contractor would not have reasonably anticipated, the cost of extracting or breaking off piles shall be at Contractor's sole cost and expense.

D. Refer to SELECTIVE SITE DEMOLITION Section or STRUCTURE DEMOLITION Section for extraction, break-off, and removal of existing piles.

3.10 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Department shall provide 1 inspection of the submerged portion of recently installed piles to check for the following problems:

a. Cracks, exposed reinforcement, spalls, and other damage.

b. Elevation and removal of steel at the top of remnant pile segments after pile removals.

2. Contractor shall cooperate in every manner to ensure diver safety.

3. Costs of additional inspections, required after pile repair or after driving replacements for rejected piles, shall be at sole cost and expense of Contractor.

PILE HAMMER DATA SHEET

DIESEL HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke Explosive Force _____
HYDRAULIC HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke
VALVES	Location of Valves with Respect to Top of Cap Block in Inches Intake _____ Cut-off _____
RAM	Ram Weight _____Ram Length _____ Ram Cross Sectional Area: _____(For diesel hammer)
ANVIL	(With diesel hammers) Anvil Weight _____
CAPBLOCK	Material _____ Area _____ Thickness_____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution – e _____
PILE CAP	Helmet Bonnet Weight _____ Anvil Block Drivehead
CUSHION	Cushion Material _____ Area _____ Thickness _____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution - e _____

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Concrete indicator piles and lost piles at locations shown on Drawings as modified by Engineer (Refer to Location of Indicator Piles Article in this Section). Indicator piles shall be cut-off and lost piles shall be broken off and removed as directed by Engineer. Indicator piles shall be dynamically monitored by Contractor with Case-Goble Pile-Driving Analyzer (PDA) during driving and restriking. Contractor shall also provide PDA monitoring and Case Pile Wave Analysis Program (CAPWAP) analysis.

B. The nature of Work requires flexibility in the selection of indicator pile locations and actual testing requirements. Preliminary locations for the indicator piles are shown on Drawings. The general details and testing requirements are shown on Drawings and specified in this Section. This Section describes a tentative indicator pile program since Engineer may modify locations shown on Drawings, as well as the specific testing requirements before the indicator pile testing program starts, or as it progresses. Cooperate with Engineer in performing required testing at locations indicated on Drawings and as selected by Engineer. Time is of the essence and the program may be modified at Contractor’s request to assist in meeting the schedule, as long as the primary purpose of the program, described in Paragraph C of Article is met.

1. Contractor shall establish timing of the indicator pile installation and testing. Timing of the production piles casting shall be based on Contractor’s requirements for expedient installation of production piles.

C. The primary purposes of the testing are to evaluate the performance of Contractor's proposed installation equipment and methods, determine required installation procedures, determine production pile order lengths, and establish tentative production pile driving criteria. The specific objectives of the testing are:

1. Evaluate stresses in the pile during installation relative to cushion material, cushion thickness, and hammer fuel or energy settings.

2. Evaluate:

a. Effects of jetting and impact driving procedures on rate of installation

b. Horizontal driving accuracy

c. Feasibility of reaching design tip elevations at required ultimate pile capacity.

3. Evaluate the ability of the hammer to transfer energy within the specified minimum and maximum values while not exceeding the specified maximum impact stress.

4. Evaluate the effectiveness of Contractor's pile driving equipment and adequacy of procedures to control pile position and alignment during pile installation without damaging the piles.

5. Develop data to aid in determining production pile toe elevations and manufacturing (order) lengths. Include the elevation of the top of the bearing stratum in this data.

6. Establish installation procedures and criteria including requirements for pile cushioning, changing cushions, jetting pressures, termination of jetting, hammer fuel or energy settings, and termination blow count criteria.

7. Establish design blow count and refusal criteria and assist in the determination of the ultimate capacity of piles that encounter premature refusal.

1.2 RELATED SECTIONS

A. Section 31 62 13.23 - Prestressed Concrete Piles

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. General:

a. Indicator piles judged by Engineer as adequate to serve as production piles shall be paid for under appropriate bid items for indicator piles, but shall not be paid for again under either furnish or install production pile bid items, nor any other bid item.

b. Some Work shall be considered incidental to Work of this Section. The cost of such incidental Work shall be included in the bid and no additional compensation shall be allowed. Incidental Work shall include, but is not necessarily limited to:

1) Conferring between Engineer and Contractor.

2) Work necessary for measurement of indicator pile location and inclination.

3) Providing specified data to Engineer.

4) Mobilization and demobilization of pile-driving equipment for or during the indicator pile programs.

5) Cutting off and disposing of indicator piles in lengths under 6 feet.

6) Delays caused by malfunctioning dynamic monitoring equipment (non-compensable time extension only allowed).

c. Contractor shall pay for standby charges for the dynamic monitoring equipment and operating personnel caused by Contractor's delays in pile driving and related equipment problems.

2. Indicator Pile Testing: Install 24-Inch Octagonal Concrete Indicator Piles:

a. Quantity shall consist of total number of indicator piles successfully installed with dynamic monitoring equipment attached and tested by Engineer plus CAPWAP analysis. This quantity shall include 1 restrike per pile after a minimum of 24 hours after initial installation. Payment shall be based on the unit price stated in Install 24-Inch Octagonal Concrete Indicator Piles bid item of Bid Proposal Line Items.

b. Items whose costs shall be considered incidental to the costs for installing indicator piles include, but are not limited to:

1) Marking piles.

2) Lifting off hammer and helmet assembly during driving to observe deviations.

3) Varying cushion material and thickness.

4) Varying jetting volume and pressure.

5) Varying hammer fuel settings.

6) Using alternative pile hammers if written permission is obtained from Engineer.

7) Jetting and driving to varying toe elevations.

8) Measuring pile locations on completion of driving.

c. Payment shall include full compensation for installing indicator piles with dynamic monitoring.

3. Indicator Pile Testing: Restriking 24-Inch Octagonal Concrete Indicator Piles:

a. Quantities shall be based on the total number of indicator piles restruck with required dynamic monitoring plus CAPWAP analysis.

b. Items whose costs shall be considered incidental to the costs for re-striking indicator piles include, but are not limited to:

1) Moving pile-driving rig to indicator piles selected for restriking.

2) Providing correct alignment of pile hammer and pile.

3) Measuring location of pile and completion of restrike.

4) Performing at least 1 CAPWAP analysis on each indicator pile restrike.

c. Payment shall be based on the unit price for each pile restrike stated in Bid Proposal Line Items. Payment shall include full compensation for Work required for restriking piles.

4. Miscellaneous Contingency Work:

a. Refer to PRESTRESSED CONCRETE PILES Section for measurement and payment for spudding obstructions, pile build-ups, pile cut-offs longer than 6 feet, and removal of installed piles.

5. Payment for water quality sampling and water quality reports shall be made under the Water Quality Reports and Sampling for Dredging and Pile Driving Allowance bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. PCI MNL-116 - Manual for Quality Control for Plants and Production of Structural Precast Concrete Products.

1.5 DEFINITIONS

A. General: Definitions in PRESTRESSED CONCRETE PILES Section also apply to this Section.

B. Definitions:

1. Indicator Piles: A small number of test piles driven in production pile locations and other locations prior to production driving to determine specific production pile installation requirements (driving criteria), driving behavior, hammer and equipment performance, pile stresses, order lengths for production piles, or other information.

2. Dynamic Monitoring: Monitoring performed with a pile driving analyzer (PDA) that includes gages attached approximately 4 feet from the pile head during the installation and driving. The gages shall be connected via a cable to a monitoring station on the ground at a specified distance away from the pile. PDA shall be located in the monitoring station. The gages connected to the pile consist of 2 accelerometers and 2 strain transducers. Dynamic monitoring is required during the initial installation and re-striking of indicator piles.

3. Case Pile Wave Analysis Program (CAPWAP): A computer program used to analyze data obtained during dynamic monitoring. The program estimates the distribution of resistance along the embedded length of pile.

4. Impact Stress: The stress transferred to the pile head at impact from the driving train, as determined from measurements using PDA.

5. Lost Pile: An indicator pile driven to maximum capacity with PDA and CAPWAP attachments in locations other than production pile locations. Engineer may allow lost piles to remain in place, or to be broken off and removed as directed by Engineer. Lost piles may be restruck.

1.6 SUBMITTALS

A. Submittals Prior To Indicator Pile Driving: Make submittals at least 30 Calendar Days prior to the scheduled start of driving unless otherwise specified. Certificates of calibration shall be traceable to National Bureau of Standards (NBS). Submit the following:

1. Qualification statement of PDA testing firm, operator, office personnel, and equipment to be used in pile testing. Qualification statement shall include:

a. Firm name and list of qualifying Project experience.

b. List of names of individuals to be used in specific roles (i.e., operator, office analysis (including CAPWAP), senior reviewers, and project manager). Also include specific related qualifying Project experience.

c. List type of PDA equipment to be used including the most recent transducer calibration dates.

2. Shop drawings for manufacturing, handling, and installing in conformance with PRESTRESSED CONCRETE PILES Section.

3. Quality control submittals in conformance with PRESTRESSED CONCRETE PILES Section with the exception of the production pile driving schedule and sequence.

4. Complete Pile Hammer Data Sheet at the end of this Section for proposed hammer. For hammers with variable Rated Hammer Energy Output, also supply manufacturer's operating data and Rated Hammer Energy at each fuel or energy setting.

5. Methods proposed to measure pile position and inclination after installation is complete and the piles are free from any restraint from driving template and/or the hammer and driving train leads. Refer also to SURVEY AND FIELD ENGINEERING Section for additional requirements.

B. Submittals During Indicator Pile Driving: Submittals shall be made on a daily basis.

1. Required observations during installation of each indicator pile.

2. Required pile location survey information after completion of each indicator pile installation.

a. Submit required information including the planned location (position at production pile cutoff elevation and pile inclination), as-installed location, and calculations indicating deviation from planned location including direction of pile inclination. Include a statement indicating if the pile was installed within specified tolerances, the degree the pile is out of tolerance, and how the installation procedures should be modified to correct out of tolerance installation.

b. Refer also to SURVEY AND FIELD ENGINEERING and PRESTRESSED CONCRETE PILES Sections for additional submittal requirements.

C. Submittals made after driving:

1. Submit the results of surveys in a formal report, to Engineer within 10 Calendar Days after pile driving.

1.7 QUALITY ASSURANCE

A. Quality assurance procedures shall conform to PCI MNL-116.

B. Piling Driving Contractor Qualifications: Competent pile driving Contractor specializing in placement of marine concrete piles.

1. Pile Driving Superintendent’s Experience: 5 years of experience driving concrete piles in a marine environment.

C. A pre-indicator pile testing meeting is required. The purpose of the meeting is to discuss Contractor's intended procedures, including equipment and methods; Engineer's requirements; the general sequence and overall approach; and to address any concerns that either Engineer or Contractor may have. The meeting shall occur at Engineer's office approximately 15 days after Contractor has issued the required pile driving methods and equipment submittals. This meeting shall be held at least 15 days prior to initiation of the indicator pile driving.

D. Tests shall be performed as specified in PRESTRESSED CONCRETE PILES Section.

E. Inspection shall be performed as specified in PRESTRESSED CONCRETE PILES Section.

1.8 EXISTING GEOTECHNICAL CONDITIONS

A. Contractor shall review geotechnical information described in SITE CONDITIONS Section. Dynamic monitoring equipment settings shall conform to the recommendations in the geotechnical report.

1.9 SEQUENCE OF CONSTRUCTION

A. The following is a brief required sequence of operations related to the indicator piles testing:

1. Pre-indicator pile testing meeting.

2. Concrete indicator pile driving and analysis:

a. Install indicator piles in the sequence directed by Engineer.

b. Engineer shall review the test-driving data, determine production piles lengths, and establish production pile driving criteria.

1) Engineer reserves the right to modify pile order lengths based on observations made during production driving.

c. Engineer shall establish production pile installation criteria within 14 Calendar Days after indicator pile testing has been completed and results have been received by Engineer.

d. Contractor shall include a 10 working day minimum duration activity in the progress schedule for indicator pile data analysis preceding production pile manufacture.

e. Restrike indicator piles prior to production pile driving. Restrike data shall be used to verify pile capacity.

PART 2 – PRODUCTS

2.1 INDICATOR PILES

A. Indicator piles shall be prototype production piles, manufactured as specified in PRESTRESSED CONCRETE PILES Section. Indicator piles shall be manufactured to lengths called out on Drawings.

B. Indicator piles shall be manufactured with a Contractor-designed jet nozzle. The nozzle design shall be the same as that used for production piles. Indicator piles shall have jet tubes (center tubes) extending to the pile head.

2.2 PILE DRIVING AND JETTING EQUIPMENT

A. Drive indicator piles with the same equipment and methods used for production piles. Refer to PRESTRESSED CONCRETE PILES Section for requirements. The same equipment shall include, but not be limited to, barge size and type, crane size and type, lead size and arrangement, templates, driving hammers and ancillary equipment, jetting equipment, and any other equipment used to install the piles. Engineer may reject equipment that fails to conform to approved equipment submittal, including equipment that appears to be excessively worn or in disrepair.

B. The number of indicator piles shown on Drawings shall be sufficient to test 1 equipment configuration. If Contractor elects to use more than 1 equipment configuration, 4 additional indicator piles shall be driven for each additional configuration as directed by Engineer. PDA and CAPWAP analysis shall be included with additional configurations at no additional cost to Department. Refer to Location of Indicator Piles Article of this Section for more information.

C. Contractor shall bear costs and time delays due to hammer equipment repair and associated re-testing of hammers.

D. Pile driving and jetting equipment shall conform to the requirements of PRESTRESSED CONCRETE PILES Section.

E. Provide a threaded cap to seal the jet tube in accordance with Drawings . Cap shall be capable of withstanding the jet pressures without leaking. Cap shall be designed for easy removal to allow inspection and probing down the jet tube at the request of Engineer.

2.3 DYNAMIC MONITORING EQUIPMENT

A. Dynamic monitoring equipment shall be provided by PDA testing firm hired by Contractor.

B. Provide equipment and labor required to perform Work.

C. PDA equipment shall, in general, consist of the following:

1. A pile driving analyzer (PDA) Model GCX, GCPC, or PAK.

2. A 7 channel tape recorder (with Model GCX analyzers).

3. An oscilloscope for observing wave traces (with Model GCX analyzers).

4. Transducers (accelerometers and strain gages) and cables.

5. Other miscellaneous electronic equipment and tools. (Junction box, and the like)

D. Dynamic monitoring support equipment provided by Contractor shall include:

1. A 9-foot by 9-foot (or equal) portable shelter to protect PDA equipment from the rain and wind located at least 50 feet but not more than 100 feet from each indicator pile being driven. Provide sufficient illumination in the shelter to study small specimens and review fine print in reports. Orient the shelter so that the pile driving operations are clearly visible to PDA operator. Move the shelter as required or requested by Engineer.

2. A power source to the shelter in conformance with the following requirements: 100 to 120 volt AC RMS, with a line frequency of 45 to 65 Hz. Direct current welders or other nonconstant power sources are not acceptable.

2.4 PILE CUSHIONS

A. Provide cushions of the type, thickness, and quantities requested by Engineer and as necessary to perform Work. Provide plywood and Douglas fir block cushions. The maximum expected thickness of uncompressed cushion is 18 inches. The minimum anticipated uncompressed thickness is 6 inches. The cushion thickness required during jetting and driving shall be thicker than during final driving.

2.5 MANUFACTURE, MARKING, AND HANDLING OF INDICATOR PILES

A. As specified in PRESTRESSED CONCRETE PILES Section.

PART 3 - EXECUTION

3.1 LOCATION OF INDICATOR PILES

A. Indicator pile locations occur in variable locations selected by Engineer in the event Contractor elects to use an additional equipment configuration.

B. Indicator piles shall be driven at designated locations as selected by Engineer. Drive piles to the specified local tolerance requirements.

1. Undamaged indicator piles, as determined by Engineer, that are driven within production pile tolerance limits at production pile locations shall remain in place for use as permanent piles. If, in the opinion of Contractor, indicator piles left in place shall interfere with subsequent production pile installation Work, notify Engineer in writing of the location of interfering piles prior to driving any indicator piles.

2. Cut-off damaged piles 1 foot below the mudline. Extraction by jetting or vibratory means shall not be permitted with the exception of piles not at production pile location, which may be removed by vibratory means. Dispose of cutoff off Department property. Undamaged piles driven at production pile locations but not meeting tolerance requirements for production piles shall be evaluated by Engineer as required by PRESTRESSED CONCRETE PILES Section.

3. Engineer reserves the right to modify the indicator pile locations and sequence of driving while indicator pile testing is underway without additional cost to Department.

3.2 PREPARING PILE FOR DYNAMIC MONITORING

A. Prior to lifting the pile, prepare the pile for PDA gage attachments as follows:

1. Drill holes (approximately 7 holes with 1/2 inch diameter by 1 inch deep) at locations directed by Engineer. Use carbide masonry bits. Engineer shall provide exact number of holes, diameter, and depth requirements after Award.

2. Install masonry wedge anchors into the drilled holes.

3. Check for proper gage fit of the gages.

B. With gages and cables removed, pick and spot the pile conforming to procedures described in PRESTRESSED CONCRETE PILES Section. Align and position the pile for installation. Strike pile by dry firing the hammer a limited number of blows with fuel pump off until the pile takes an initial set and it is safe for personnel to ascend to the head of the pile and attach PDA gages. Make the gage attachments and wave speed determination as follows:

1. Demonstrate proper gage and cable attachment on the first pile installed. With the gages and cable attached to the pile, cable shall hang freely down along the pile and to the monitoring station. A competent member of the pile driving crew shall ascend to the pile head to attach gages and cables

2. Provide access to the top of the pile in a cage that allows safe working conditions. The hammer leads shall not be used to access the pile head.

3. Once the gages are attached, strike the pile with a hand held hammer as directed by Engineer until the initial wave speed of the pile has been determined and PDA settings are properly adjusted.

3.3 INSTALLING INDICATOR PILES

A. General: Install indicator piles in the presence of Engineer and in conformance with the requirements of PRESTRESSED CONCRETE PILES Section. Refer to Installation Article of PRESTRESSED CONCRETE PILES Section, concerning the following procedures:

1. Marking of piles to record depth of penetration.

2. Protection against damage to surrounding improvements.

3. Installation methods.

4. Driving accuracy and tolerances.

5. Handling obstructions.

6. Correction of material and workmanship problems, and unexpected field conditions.

B. Initiation of Driving: Begin pile driving by striking the pile for a sequence of 5 to 10 blows. Temporarily stop driving so Engineer can check PDA settings. Engineer reserves the right to repeat the sequence of 5 to 10 blows until Engineer is satisfied that PDA settings are properly adjusted, the gages are properly attached, and the equipment is working properly.

C. Dynamic Monitoring During Pile Installation: Once PDA settings are properly adjusted, commence indicator pile installation. Before the level of the gages is within 1 foot of the water surface, driving shall be halted to remove gages from the pile and re-attach gages at a higher location. Gages shall not be driven below water. A new cushion block shall be used for each pile. Installation shall conform to PRESTRESSED CONCRETE PILES Section requirements except that Engineer may frequently stop driving to request changes in the hammer fuel setting, jetting pressure, or to check PDA gages and equipment. Upon Engineer's request, a qualified member of pile driving crew shall check gage and cable attachments, change gages, or perform similar Work.

D. Cushions, Jetting, And Hammer Fuel Settings: Combinations of hammer cushions and thicknesses, jet pressures, and hammer fuel settings shall be investigated during testing. Implement each combination selected by Engineer for each indicator pile installation. Terminate jetting, change pile cushions, or change hammer fuel settings when requested by Engineer. Carefully control jetting to prevent damage to foundation materials around existing piles that may cause a reduction in their bearing capacity.

E. Termination of Installation: Engineer shall determine when installation and driving shall be terminated, based on data submitted by Contractor, analyzed by Engineer, and observations during indicator pile driving.

F. Pile Restriking: Perform restriking as defined in PRESTRESSED CONCRETE PILES Section. Each indicator pile shall be restruck after a minimum of 24 hours after initial installation in conformance with Price and Payment Procedures Article of this Section, Additional restriking may be requested at any time during the indicator pile testing program. If requested, perform multiple restrikes on the same pile. Dynamic monitoring is required during restrikes. Restrikes shall be performed with a warm hammer. Use compressed, previously-used, cushion blocks for restriking piles. Mark piles in 1/10 of a foot increments prior to restriking.

G. Position and Inclination Survey:

1. Within 24 hours after completing the installation of each indicator pile and after the pile has been released from restraints including templates, helmets, and the hammer leads, survey the position and inclination of the pile in conformance with SURVEY AND FIELD ENGINEERING Section.

2. Calculate deviations from the planned position and inclination, and compare the deviations with the driving tolerances specified in PRESTRESSED CONCRETE PILES Section.

H. Replace indicator piles accepted by Engineer as production piles where they are damaged or lost before being incorporated into the deck.

3.4 OBSERVATIONS AND RECORDS OF PILE BEHAVIOR

A. Observe and record pile behavior by observing and recording the following for each indicator pile during both initial installation and restriking:

1. Indicator pile number, length, depth of embedment, and mudline elevation at the start and completion of driving.

2. Type of hammer, jetting equipment, lead arrangement, use of template, or other similar information requested by Engineer.

3. Pile cushion information including type and thickness at the start and end of driving, any change in cushioning made during pile installation, and cushion conditions (used, new, and thickness) during restrikes.

4. Driving and jetting record for each foot of installation. Include the jetting pressures, the time periods required to start and stop jetting, pile toe elevations at the beginning and end of jetting operations, and the average rate of penetration (sec/foot) during jetting for the entire length of pile.

5. Number of hammer blows per foot of penetration for each foot of driving including periods when jetting and driving are combined.

6. Average hammer stroke over every foot of driving. For open-ended diesel hammers, record with a saximeter capable of averaging and storing data over each foot of driving. The saximeter shall be provided by Contractor and shall conform to PRESTRESSED CONCRETE PILES Section. For hydraulic hammers, provide a printed readout of the hammer stroke and net impact energy shall be provided to Engineer.

7. Resistance in blows per 1/10 of a foot for the last 12 to 36 inches of final driving.

8. Any unusual occurrence during installation, particularly running of pile during installation.

B. Provide a device that shall accurately indicate the penetration of the pile from a safe distance. Provide Engineer with pile driving information recorded.

C. Refer to SURVEY AND FIELD ENGINEERING Section for information on bench marks and baselines and requirements for survey after each day's driving.

D. At the end of the indicator pile program, indicate preferred sequence and method for installing production piles to achieve pile design capacity. Engineer shall consider Contractor's recommendations after determining required production pile tip elevations and driving criteria.

3.5 INDICATOR PILE CUTOFF

A. Cut off indicator piles approved by Engineer for use as production piles in conformance with PRESTRESSED CONCRETE PILES Section.

B. Piles that Engineer determines to be inadequate for incorporation as production piles shall be broken off and removed in conformance with Indicator Pile Locations Article of this Section.

C. Cut off piles at the top as shown on Drawings. Expose 1-1/2 turns of the spiral for incorporation into the deck pour in conformance with Drawings.

D. Cut off pile heads horizontally for the entire pile section where piles have been driven to above cutoff elevation.

E. Trim piles to cut-off elevation by sawcutting horizontally at the required cutoff elevation to a depth of not more than 1 inch then chipping down the remainder of the pile head flush with the sawcut. Cut surface shall be true to horizontal cutoff plane(s) shown on Drawings.

F. Remove pile cutoff from Department property. Do not drop pile cut off into harbor waters.

G. Indicator Piles at Production Pile Locations:

1. Preformed dowel holes in indicator piles shall be deep enough to provide embedment for each reinforcing bar as shown on Drawings.

3.6 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Department shall provide 1 diving inspection of the submerged portion of recently installed piles to inspect the piles for cracks, exposed reinforcement, spalls, and other damage. Refer to PRESTRESSED CONCRETE PILES Section for pile repair requirements.

2. Costs of additional inspections required after pile repair or after driving replacements for rejected piles, shall be at sole cost and expense of Contractor.

PILE HAMMER DATA SHEET

DIESEL HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke Explosive Force _____
HYDRAULIC HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke
VALVES	Location of Valves with Respect to Top of Cap Block in Inches Intake _____ Cut-off _____
RAM	Ram Weight _____Ram Length _____ Ram Cross Sectional Area: _____(For diesel hammer)
ANVIL	(With diesel hammers) Anvil Weight _____
CAPBLOCK	Material _____ Area _____ Thickness_____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution – e _____
PILE CAP	Helmet Bonnet Weight _____ Anvil Block Drivehead
CUSHION	Cushion Material _____ Area _____ Thickness _____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution - e _____

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnishing and driving sheet steel piles and king piles

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications

B. Section 26 42 13 - Cathodic Protection

C. Section 31 00 00 - Earthwork

D. Section 31 62 16.16 - Steel H Piles

E. Section 35 24 00 - Dredging

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Sheet Steel Pile Wall:

a. Engineer shall measure Work or review Contractor’s measurements of the piles and decide upon the correct tonnage. Contractor shall cooperate with Engineer in making measurements. Sheet steel piles and king piles shall be measured from station to station as shown on Drawings.

b. Payment shall be made under the Sheet Steel Piles and Steel H Piles (King Piles) Allowance bid item of Bid Proposal Line Items. Payment shall constitute full compensation for labor, materials, permits, and equipment required or specified to complete Work in this Section.

c. Some Work in this Section shall be considered incidental to the completion of Work. The cost of such incidental Work shall be considered to be included in the Sheet Steel Piles and Steel H Piles (King Piles) Allowance bid item of Bid Proposal Line Items and no separate nor additional compensation shall be allowed. Incidental Work shall include, but is not necessarily limited to:

1) Conferring between Engineer and Contractor.

2) Marking the piles.

3) Lifting off the hammer and helmet assembly during driving to observe deviations.

4) Work necessary for measurement of pile location and inclination.

5) Providing specified data to Engineer.

6) Mobilization and demobilization of pile-driving equipment.

d. Progress payments shall be made based on piling when stockpiled on Project Site(s), ready for installation.

e. Items considered incidental in the cost of furnishing the piles include, but are not limited to:

1) Pile cushions

f. Payment shall include costs for City of Los Angeles Department of Public Works, Bureau of Street Services Overload permits, inspections, pilot vehicles, and other costs associated with transporting piles to Project Site(s).

2. Payment for water quality sampling and water quality reports shall be made under the Water Quality Reports and Sampling for Dredging and Pile Driving Allowance bid item of Bid Proposal Line Items.

3. No additional payment shall be made for rejected or misplaced piles; for any portion of a pile remaining above the cut-off elevation; for backdriving; for cutting off piles, or for any cut off length of piles.

1.4 REFERENCES

A. ASTM A6/A6M - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling.

B. ASTM A690/A690M - Standard Specification for High-Strength Low-Alloy Nickel, Copper, Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments.

C. AWS D1.1/D1.1M - Structural Welding Code - Steel.

D. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars.

E. NASSPA (BP) - NASSPA Best Practices Sheet Piling Installation Guide.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Scheduling: Schedule pile driving to occur between the hours of 7 am and 5 pm Monday through Saturday.

1.6 SUBMITTALS

A. Shop Drawings: Submit Drawings for approval of sheet steel piles prior to start of Work or ordering materials. Include details of top protection, special reinforcing tips, tip protection, lagging, splices, fabricated additions to plain piles and driving, cut-off method, and corrosion protection.

1. Include member locations, plans, elevations, dimensions, shapes, components of sheet steel pile configuration, and each weld.

2. Show complete dimensions on Drawings, including minimum section properties and details of piling and location of piling.

3. Submit template shop Drawings and calculations. Shop Drawings and calculations shall be stamped and signed by a civil Engineer registered in State of California who specializes in the design of marine structures. Include template design for:

    a. Sheet steel pile wall

4. Submit proposed driving procedures, including details of templates, how templates shall achieve required tolerances, and sequence of piles to be driven in template.

5. Provide details of the method of handling piling to prevent permanent deflection, distortion, or damage to piling interlocks.

6. Anchorages: Include locations, tolerances, and details of anchorage devices to be embedded in or attached to structure or other construction.

7. Detail of Connection and Design Loads at Connections: Include details of connections and magnitude of loads imposed on sheet steel pile at connections and by the sheet steel pile onto the structure.

B. Submit for review descriptions of pile-driving equipment to be employed in Work prior to start of pile installation for each equipment configuration to be used. Include details of the pile hammer, power plant, driving cap, leads, cushion material, and helmet. Use Pile Hammer Data Sheet included at end of this Section.

C. Delegated Design Data:

1. Submit the following:

a. Documentation of delegated design data stamped by a professional structural Engineer or civil engineer licensed in State of California who specializes in the design of marine structures.

b. Welded Connections: American Welding Society (AWS) standard symbols. Show size, length, and type of each weld.

D. Submit pile cutoff procedure.

E. Submit pile driving records including survey of sheet steel pile locations at the end of each work day covering piles driven during the day. Refer to Field Quality Control Article of this Section for instructions on visual inspection.

F. Submit results of independent diving company's video inspection after dredging is completed. Refer to Field Quality Control Article of this Section for instruction on visual inspection.

G. Test Reports:

1. Interlock tension strength test.

2. Conform to the piling manufacturer's standard test, including the testing of at least two 3 inch long coupons taken randomly from different as-produced pilings of each heat and approved by Engineer.

H. Certificates:

1. Submit certifications for the following:

a. Welder qualifications

I. Designer's Qualification Statement.

J. Project Record Documents:

1. Accurately record the following:

a. Sizes, lengths, and locations of piles.

b. Sequence of driving.

c. Number of blows per foot for entire length of piles and measured set for last 10 blows.

d. Identify piles requiring drilling and hole diameters.

e. Final base and top elevations.

f. Driving force of each hammer blow.

1.7 QUALITY ASSURANCE

A. Design and select pile components under direct supervision of a professional structural Engineer or civil Engineer experienced in design of marine structures and licensed in State of California.

B. Material Certificates: For each shipment, submit certificates identified with specific lots prior to installing piling. Identification data should include piling type, dimensions, chemical composition, mechanical properties, section properties, heat number, and mill identification mark. Mill tests shall conform to ASTM A6/A6M.

C. Employ only welders qualified in conformance with AWS requirements and are City of Los Angeles Department of Building and Safety certified. A welder producing unsatisfactory Work, even though certified, shall be immediately recertified or replaced with another qualified welder.

D. Shop and field welding, qualification of welding procedures, weldings, and welding operators shall conform to AWS D1.1/D1.1M, for the type of welding required.

E. Welder, Welding Operator, and Welding Procedure Qualifications: Qualified within previous 12 months in conformance with AWS D1.1/D1.1M and AWS D1.4/D1.4M.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Handle piling using handling holes or lifting devices.

B. Store and handle sheet steel piles in a manner recommended by manufacturer to prevent damage, distortion, or deflection to piles and damage to interlocks.

C. Support on level blocks or racks spaced not more than 10 feet apart and not more than 2 feet from the ends. Provide supports between multiple lifts in a vertical plane.

D. Protect piling to prevent damage to coatings and to prevent corrosion prior to installation.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Sheet Steel Piles:

1. Skyline Steel, LLC; www.skylinesteel.com.

2.2 SHEET STEEL PILES

A. Provide the following basis of design system:

1. Basis of Design: Sheet steel piling shall be AZ Steel Wall System by Skyline Steel, as shown on Drawings.

a. Sheet steel piles and king piles shall conform to ASTM A690/A690M unless noted otherwise on Drawings and shall have a minimum yield strength of 50 kips per square inch (ksi).

b. Pile interlocks shall be threaded and welded to king piles at the mill.

c. Pile interlocks shall have a swing angle of 5 degrees when interlocked, shall be free-sliding continuously, and shall remain interlocked throughout their entire length when installed.

d. Pile ends shall be square and blunt.

B. Assume for purposes of bid a Section Modulus of 48 in3/foot.

C. Performance Requirements:

1. Refer to Drawings for design loading diagrams.

2. Sheet steel pile wall and connections withstand design loads.

3. Maximum value for top of wall displacement shall not cause any damage to existing structures, utilities, or pavements.

4. Prevent damage to permanent structures by confirming the stability of excavations and constructed slopes.

D. Sheet steel piling, including special fabricated sections , including special fabricated sections: Provide full-length sections of the dimensions shown on Drawings.

1. Fabricated Sections: Conform to the requirements specified in this Section and the piling manufacturer's written instructions for fabricated sections.

2. Provide sheet steel piling with standard pulling holes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine Project Site(s) and the areas adjacent to Project Site(s).

B. Verify existing conditions, dimensions, elevations, and related details.

C. Field verify underground utility line locations. If verified location conflicts with Drawings, or undocumented underground utilities are discovered, do not proceed with Work until conflict is resolved. Notify Engineer immediately.

D. Do not start the excavation or purchase the materials required until the design calculations, plans, and details have been reviewed by Engineer.

E. Locate and lay out sheet pile positions in the field from Engineer's bench marks and control on shore.

3.2 PREPARATION

A. Prevent settlements or damage to existing structures, service lines, utilities, streets, walks, and other areas.

B. Provide temporary shoring, bracing, excavation slopes, or other required protections.

C. A driving cap covering the entire pile top shall be used when impact hammers are used.

3.3 INSTALLATION

A. Complete sheet steel pile installation prior to dredging.

B. Install sheet piles per NASSPA (BP).

C. Pile Hammer: Use a pile hammer having a delivered force or energy suitable for the total weight of the pile and the character of subsurface material to be encountered. Operate hammer at the rates recommended by the manufacturer throughout the entire driving period. Repair damage to piling caused by use of a pile hammer with excess delivered force or energy.

D. Pile:

1. Vibratory hammers or impact hammers may be used for driving sheet steel piles. Impact hammers shall be used for driving king piles.

2. Vibratory hammers may be used to position and align the sheet steel piles during the initial stage of driving but are not allowed during driving of the last 10 feet of sheet steel piles.

E. Templates:

1. Prior to driving, provide template or driving frame suitable for aligning, supporting, and maintaining sheet steel piles and king piles in the correct positions during setting and driving. Use a system of structural framing sufficiently rigid to resist lateral and driving forces and to adequately support the sheet steel piling until design tip elevation is achieved or until top of template interferes with driving. Provide at least 2 levels of support.

2. Do not allow templates to move when supporting sheet steel piling. Fit templates with wood blocking to bear against the web of each alternate sheet steel pile and hold the sheet steel pile at the design location alignment. Provide outer template straps or other restraints as necessary to prevent the sheets from warping or wandering from the alignment. Mark template for the location of the leading edge of each alternate sheet steel pile. If in view, also mark the second level to ensure that the piles are vertical or at the appropriate slope as shown on Drawings and in position. If 2 guide marks cannot be seen, other means shall be used to keep the sheet steel pile vertical or at appropriate slope along its leading edge.

3. Accurately place the piling using templates and guide frames unless otherwise reccommended in writing by the sheet steel piling manufacturer.

F. Pile Driving:

1. Continuously monitor vibrations, settlements, and movements to prevent damage to permanent structures and to ensure stability of excavations and constructed slopes.

2. Maintain piling vertical or at appropriate slope as shown on Drawings during driving. Drive piles in such a manner as to prevent damage to the piles and to provide a continuous closure.

3. Exercise care to install the piles as shown on Drawings. Piles driven to tolerances outside those shown on Drawings or as specified shall not be permitted. If piles are not per tolerances, piles shall be removed and replaced at Contractor's sole cost and expense.

4. Incrementally sequence driving of individual piles such that the tip of any sheet steel pile is not more than 4 feet below that of any adjacent sheet steel pile.

5. When the penetration resistance exceeds five blows per inch, the tip of any sheet steel pile shall not be more than 2 feet below any adjacent sheet steel pile.

6. Existing materials which may impede the installation such as riprap shall be removed as required.

7. Drive piles to tip elevations indicated on Drawings. Space piles in accordance with Drawings and drive to slopes indicated on Drawings.

8. Sheet steel piles shall be driven without damage to the piles and provide a continuous closure.

9. Pile splices shall not be driven below mudline.

G. Spudding of Obstructions:

1. Spudding of obstructions may be used where rock or other obstructions are encountered, as directed by Engineer.

H. Cutting and Splicing:

1. Cut off to the elevation as shown on Drawings any piles driven to refusal or to the point where additional penetration cannot be attained and the piles are extending above the required top elevation in excess of the specified tolerance.

2. Extend by splicing any piles driven below the required top elevation and piles damaged by driving and cut off to permit further driving. Splice as required to reach the top elevation when directed by Engineer.

3. Welding of splices: Square ends of piles to be spliced before splicing to eliminate dips or camber. Splice piles with concentric alignment of the interlocks so that there are no discontinuities, dips or camber at the abutting interlocks. Verify that spliced piles are free sliding and able to obtain the maximum swing with contiguous piles. Trim the tops of piles excessively battered during driving, when directed by Engineer.

4. Remove from Project Site(s) pile cut-offs, which are property of Contractor.

5. Use a straightedge in cutting by burning to avoid abrupt nicks.

6. Drill bolt holes or burn and ream by approved methods that shall not damage the surrounding metal. Make holes other than bolt holes reasonably smooth and the proper size for rods or other items to be inserted.

7. Make holes in piles on the wet side of cofferdams watertight by welding steel plates over the holes after the piling installation is completed.

8. Do not use explosives for cutting.

9. Cut tops of sheet steel piling to uniform elevation at top of wall as indicated on Drawings.

I. Welding: Comply with requirements of AWS D1.1/D1.1M for shop and field welding.

J. Tolerances in Driving:

1. Drive piles with a variation from the slope shown on Drawings of not more than 1 inch per 15 feet.

2. Place piles so the face shall not be more than 6 inches from vertical alignment at any point.

3. Top of pile at elevation of cut-off shall be within 1/2 inch horizontally and 2 inches vertically of the location indicated.

4. Manipulation of piles to force them into position shall not be permitted. Check piles for heave. Redrive heaved piles to the required tip elevation.

5. Align exposed faces of sheet steel piling to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment. If survey results indicate that any piece of sheet steel pile does not meet these requirements, it shall be removed and re-driven.

K. Post Excavation: Prepare inner surface of sheet steel pile walls for welding, joint sealant, and painting by sandblasting.

L. Corrosion Protection:

1. Provide cathodic protection in conformance with CATHODIC PROTECTION Section.

3.4 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Visual inspection shall be conducted by Engineer while the operators are welding and after Work is completed.

a. Penetration of the weld metal, fusion, and general ability of the operator shall be checked by Engineer.

b. Hand-or power-wire brush welds after welding is completed to thoroughly clean before inspection.

c. Welds shall be inspected for surface cracking, surface porosity, surface slag inclusions, undercut, overlap, gas pockets, and size of weld.

d. Correct defective welds in conformance with applicable requirements of AWS D1.1.

2. Maintain a pile driving record for each sheet steel pile. Indicate on the installation record installation dates and times, type and size of hammer, rate of operation, total driving time, dimensions of driving helmet and cap used, blows required per foot for each foot of penetration, final driving resistance in blows for final 6 inches, pile locations, tip elevations, ground elevations, cut-off elevations, and any reheading or cutting of piles. Record any unusual pile driving problems during driving. Submit complete records to Engineer.

3. Perform continuous inspection during pile driving. Inspect piles for compliance with tolerance requirements. Bring any unusual problems that may occur to the attention of Engineer. Out-of-tolerance sheet steel piles are subject to removal and replacement prior to driving additional piles at no additional cost to Department.

    a. Make measurements to an accuracy of at least 0.1 inch and make results available to Engineer immediately after the measurements are taken.

    b. If any of the measured changes in either vertical or horizontal movement exceed 0.5 inch, suspend pile driving and present remedial measures to minimize further movement to Engineer for approval.

4. Inspection of Driven Piling:

    a. Inspect the interlocks of the portion of driven piles that are exposed. Remove and replace piles found to be out of interlock.

    b. Perform visual underwater inspection by independent diving company before and immediately after driving sheet steel piles and after dredging.

        1) Record the visual inspection via video equipment.

        2) Prepare visual underwater inspection reports and submit to Engineer immediately following each inspection.

        3) Engineer may require Contractor to perform visual underwater inspection at any time during sheet steel pile driving, and may verify the result by divers hired by Engineer.

    c. Pulling and Redriving: Engineer may require Contractor to pull selected piles after driving to determine the condition of the underground portions of piles. The pile pulling method shall be approved by Engineer. Remove and replace at Contractor's sole cost and expense any pile pulled and found to be damaged to the extent that its usefulness in the structure is impaired. Redrive piles pulled and found to be in satisfactory condition at no additional cost to Department.

3.5 PROTECTION

A. Wherever side slopes in soil are required, but not indicated on Drawings, slope shall be cut on stable angles, but in no case be steeper than a ratio of 2 horizontal to 1 vertical.

B. Protect and repair excavation slopes as necessary to maintain stability.

C. Repair and replace any damage to existing structures that are to remain at no additional cost to Department.

D. Barricades and Work Protections: Comply with the requirements of Occupational Safety and Health Administration (OSHA) and other applicable ordinances and codes.

3.6 ATTACHMENTS

A. Pile Hammer Data Sheet included at the end of this Section.

PILE HAMMER DATA SHEET

DIESEL HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke Explosive Force _____
HYDRAULIC HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke
VALVES	Location of Valves with Respect to Top of Cap Block in Inches Intake _____ Cut-off _____
RAM	Ram Weight _____Ram Length _____ Ram Cross Sectional Area: _____(For diesel hammer)
ANVIL	(With diesel hammers) Anvil Weight _____
CAPBLOCK	Material _____ Area _____ Thickness_____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution – e _____
PILE CAP	Helmet Bonnet Weight _____ Anvil Block Drivehead
CUSHION	Cushion Material _____ Area _____ Thickness _____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution - e _____

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rolled steel section piles.

B. Dampening of underwater noise.

1.2 RELATED SECTIONS

A. 31 62 16.13 - Sheet Steel Piles

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Payment for Steel H Piles shall be made under Sheet Steel Piles and Steel H Piles (King Piles) Allowance bid item of Bid Proposal Line Items. Payment shall constitute full compensation for labor, materials, permits, and equipment required or specified to complete Work in this Section.

2. Payment for water quality sampling and water quality reports shall be made under the Water Quality Reports and Sampling for Dredging and Pile Driving Allowance bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. ASTM A690/A690M - Standard Specification for High-Strength Low-Alloy Nickel, Copper, Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments.

1.5 SUBMITTALS

A. Name of proposed independent test laboratory that can conduct sound level monitoring during pile driving.

B. Product Data: Provide details of collars.

C. Shop Drawings: Indicate details and schedule of pile installation sequence. Identify recommended pile length and shapes to suit design loads.

D. Certificate of compliance from authority having jurisdiction indicating approval.

E. Designer's qualification statement.

F. Installer's qualification statement.

G. Project Record Documents: Accurately record the following:

1. Sizes, lengths, and locations of piles.

2. Sequence of driving.

3. Number of blows per foot for entire length of piles and measured set for last 10 blows.

4. Final base and top elevations.

5. Driving force of each hammer blow.

1.6 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of Professional Structural Engineer experienced in design of this type of Work and licensed in California.

PART 2 PRODUCTS

2.1 MATERIALS

A. Piles: In conformance with ASTM A690/A690M; structural steel, rolled H sections, minimum 50 ksi yield strength; sizes and lengths indicated on Drawings.

B. Accessories: Points, driving cap; to suit pile shape.

PART 3 EXECUTION

3.1 PREPARATION

A. Obtain prior approval of hammer type to be used.

B. Use driving method that shall not cause damage to nearby structures.

C. Notify adjacent and affected land owners and building occupants with 90 days notice before proceeding with Work.

D. Protect structures near Work from damage.

3.2 INSTALLATION

A. Contractor shall have an independent, Engineer-approved test laboratory conduct in-water sound level monitoring during pile driving and pulling. If SPLs (instantaneous pile driving peak sound pressure levels) and SELs (accumlative sound exposure levels) exceed levels in the Fisheries Hydroacoustic Working Group (FHWG) Interim Criteria for Injury to Fish from Pile Driving Activities https://dot.ca.gov/programs/environmental-analysis/biology/hydroacoustics#:~:text=This%20is%20a%20dual%20criteria,fish%20smaller%20than%202%20grams., Contractor shall control underwater pile driving noise through use of noise dampening wooden block, air bubble curtains, and/or cofferdams.

B. Protect pile head during driving. Use cushion cap with full bearing on pile butt for even distribution of hammer blow.

C. Deliver hammer blows to central axis of pile.

D. If driving is interrupted before refusal, drive an additional 12 inches before resuming recording of performance data.

E. Re-drive piles that have lifted due to driving adjacent piles, or by soil uplift.

F. Do not damage piles during driving operations.

G. Cut off tops of piles to elevations indicated and prepare pile top to receive pile caps.

3.3 FIELD QUALITY CONTROL

A. Test Piles: Same diameter and type as specified for other piling, placed in same manner.

B. Accepted test piles may be used in Work.

3.4 UNACCEPTABLE PILES

A. Unacceptable Piles: Piles that fail tests, are placed out of position, are below cut-off elevations, or are damaged.

B. Provide additional piles or replace piles failing to comply with specified requirements.

PILE HAMMER DATA SHEET

DIESEL HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke Explosive Force _____
HYDRAULIC HAMMER	Manufacturer _____ Model _____ Type: _____ Serial No. _____ Rated Hammer Energy _____ at _____Length of Stroke
VALVES	Location of Valves with Respect to Top of Cap Block in Inches Intake _____ Cut-off _____
RAM	Ram Weight _____Ram Length _____ Ram Cross Sectional Area: _____(For diesel hammer)
ANVIL	(With diesel hammers) Anvil Weight _____
CAPBLOCK	Material _____ Area _____ Thickness_____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution – e _____
PILE CAP	Helmet Bonnet Weight _____ Anvil Block Drivehead
CUSHION	Cushion Material _____ Area _____ Thickness _____ Modulus of Elasticity-E _____ (P.S.I.) Coefficient of Restitution - e _____

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Removing and disposing of existing damaged timber piles at a landfill licensed to accept this material

B. Furnishing and installing new timber piles

C. Pile repairs

D. Wrapping new and existing piles

E. Dampening underwater noise from pile driving

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications

B. Section 35 59 40 - Marine Timber Construction

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Furnish Timber Fender Piles: Payment for furnishing new timber fender piles shall be paid under the Furnish Timber Fender Piles bid item of Bid Proposal Line Items as measured by linear feet of timber fender piles.

2. Install Timber Fender Piles: Payment for installing and wrapping new timber fender piles shall be paid under the Install Timber Fender Piles bid item of Bid Proposal Line Items as measured on an each basis.

3. Furnish Timber Bearing Piles Payment for furnishing new timber bearing piles shall be paid under the Furnish Timber Bearing Piles bid item of Bid Proposal Line Items as measured by linear feet of timber bearing and piles.

4. Install Timber Bearing Piles from Landside: Payment for installing from landside new timber bearing piles and wrapping piles shall be paid under the Install Timber Bearing Piles from Landside bid item of Bid Proposal Line Items as measured on an each basis.

5. Install Timber Bearing Piles from Waterside: Payment for installing new timber bearing piles using floating plant and wrapping piles shall be paid under the Install Timber Bearing Piles from Waterside bid item of Bid Proposal Line Items as measured on an each basis.

6. Timber Bearing Pile Repair: Payment for installing new timber bearing pile repairs, removing and reinstalling decking, and wrapping piles shall be paid under the Timber Bearing Pile Repair bid item of Bid Proposal Line Items as measured on an each basis.

7. Timber Bearing Pile Offset Installation: Payment for performing timber bearing pile offset installation, removing and reinstalling decking, and wrappng piles shall be paid under the Timber Bearing Pile Offset Installation bid item of Bid Proposal Line Items as measured on an each basis.

8. Timber Pile Wrap: Payment for removing and replacing existing timber pile wrapping shall be paid under the Timber Pile Wrap bid item of Bid Proposal Line Items as measured on an each basis.

9. Timber Pile Tidal Wrap: Payment for removing and replacing existing timber pile tidal wrapping shall be paid under the Timber Pile Tidal Wrap bid item of Bid Proposal Line Items as measured on an each basis.

10. Timber Pile Submerged Wrap Termination: Payment for removing and replacing existing submerged timber pile wrapping shall be paid under the Timber Pile Submerged Wrap Termination bid item of Bid Proposal Line Items as measured on an each basis.

11. Timber Pile Rockline Crater Digging and Submerged Wrap Termination: Payment for removing and replacing existing slope surrounding each pile and terminating submerged wrap shall be paid under the Timber Pile Rockline Crater Digging and Submerged Wrap Termination bid item of Bid Proposal Line Items as measured on an each basis.

12. Payment for water quality sampling and water quality reports shall be paid under the Water Quality Reports and Sampling for Dredging and Pile Driving Allowance bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. ASTM D25 - Standard Specification for Round Timber Piles.

B. ASTM D570 - Standard Test Method for Water Absorption of Plastics.

C. ASTM D638 - Standard Test Method for Tensile Properties of Plastics.

D. ASTM D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.

E. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

F. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.

G. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.

H. ASTM D1203 - Standard Test Methods for Volatile Loss from Plastics Using Activated Carbon Methods.

I. ASTM D1238 - Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer.

J. ASTM D1239 - Standard Test Method for Resistance of Plastic Films to Extraction by Chemicals.

K. ASTM D1505 - Standard Test Method for Density of Plastics by the Density-Gradient Technique.

L. ASTM D1693 - Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics.

M. ASTM D1894 - Standard Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting.

N. AWPA M4 - Standard for the Handling, Storage, Field Fabrication and Field Treatment of Preservative-Treated Wood Products.

O. Reference Specifications (RS):

Section 205 - Piles

1.5 SUBMITTALS

A. Submit name of proposed independent test laboratory that can conduct sound level monitoring during pile driving.

B. Submit certification to Engineer that the materials meet specified standards.

C. Submit shoring Drawings with calculations for existing wharf areas in vicinity of bearing piles to be removed, replaced, and spliced. Where shoring is assumed to be unnecessary, submit calculations that support that assumption. Shoring design shall be stamped by a California-licensed Engineer specializing in the design of marine structures.

D. Submit fata on pile driving hammer, floating equipment, and any equipment to be placed on wharf.

E. Submit a 1 foot 0 inch by 1 foot 0 inch sample of each type and thickness of wrapping material to Engineer for testing.

F. Submit a certificate of compliance issued and signed by an accredited, independent, treated wood inspection agency certifying that the material and its production was inspected in compliance with Western Wood Preservers Institute (WWPI) Best Management Practices. Submerged marine timber refers to timber either continously or periodically submerged in seawater including, but not limited to, timber piles. Best management practices (BMP) mark shall be shown on the certificate of compliance.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Timber Piles:

1. Timber piles shall conform with ASTM D25, Class B, and RS Subsection 205-1, except that the minimum pile circumference 3 feet from the butt shall be 44 inches.

2. Piles shall be preservative treated in conformance with American Wood Protection Association (AWPA) Standard U1 to the requirements of Use Category 5B (UC5B). Preservative shall be ACZA with minimum 2.50 pounds per cubic foot (pcf) retention.

3. Material that is continuously or periodically submerged in seawater shall be produced in compliance with WWPI Best Management Practices. To download a free copy of BMPs, visit https://preservedwood.org/portals/0/documents/BMP.pdf

4. Field cuts shall be preservative treated in conformance with AWPA M4.

B. Pile Wrapping:

1. Polyvinyl Chloride Flexible Sheet (PVC):

a. Sheets shall be of the flexible type, smooth, and free from foreign matter, cracks, tears, holes, and other defects.

b. PVC sheeting shall meet the following requirements:

Property	Value	Test Method
Thickness, mils	30	
Tensile Strength, psi		
Mill Direction	2500 minimum	ASTM D882
Transverse	2000 minimum	ASTM D882
Elongation, percent		
Mill Direction	300 minimum	ASTM D882
Transverse	300 minimum	ASTM D882
Graves Tear, pounds per mil		
Longitudinal and Transverse	0.300 minimum	ASTM D1004
Votality, percent	1.5 maximum	ASTM D1203
Water Extraction percent loss	0.5 maximum	ASTM D1239
Water Absorption percent in one week	1.0 maximum	ASTM D570
Ultraviolet Inhibitor Carbon Black, percent	2.0 minimum	
Specific Gravity	1.21	

2. Polyethylene Wrap:

    a. Sheets shall be smooth and free from foreign matter, cracks, tears, holes, and other defects.

    b. The polyethylene sheeting shall meet the following requirements:

Property	Value	Test Method
Thickness, mils	6	
Density	0.917-0.931	ASTM D1505
Ultraviolet Inhibitor Carbon Black, percent	2.0 minimum	
Heat sealing properties	Normal	
Coefficient of friction, Uk	0.4 to 0.6	ASTM D1894
Melt Index, grams/10 minutes	0.2 to 0.4	ASTM D1238
Tensile Strength, psi		ASTM D882
Elongation, percent		ASTM D882
Mill Direction Transverse Direction	300 minimum 300 minimum	
Roll width, feet	5.5 center folded	11.0 +/- 0.1 open

3. Polyethylene Wearing Surface:

    a. Extra high molecular weight polyethylene sheets in lengths shown on Drawings.

b. Polyethylene sheeting shall meet the following requirements:

Property	Value	Test Method
Thickness, mils	150	
Density	0.950	ASTM D1505
Melt Flow, Condition F	Less than 9 grams/ 10 minute	ASTM D1238
Environmental stress cracking resistance, condition B, 50 degrees Fahrenheit, hours	1,000	ASTM D1693
Tensile strength, psi 2 inch/minute	3,600	ASTM D638
Elongation, percent 2 inch/minute	650	ASTM D638
Brittleness (degrees Fahrenheit)	Temperature less than 180 degrees	ASTM D746
Flexural modulus, psi	175,000	ASTM D790

2.2 HARDWARE AND FASTENERS

A. Unless shown otherwise on Drawings, mechanical fasteners shall be 2-inch bronze or stainless steel nails, helically threaded and fitted with a neoprene washer, or nylon nails with pre-drilled holes approved by Department.

B. The bottom end of the wrap (end which shall penetrate the slope) shall be banded with a 1/2 inch wide by 0.03 inch thick galvanized sheet band to protect wrapping during driving. Band shall be as manufactured by Band-It, (800) 525-0758.

PART 3 - EXECUTION

3.1 GENERAL

A. Piles that are damaged during handling or driving are subject to rejection by Engineer.

B. Dogs, peavies, pike poles, and similar tools may be used to handle the piles only within 3 feet from either end.

C. Existing Pile Repairs:

1. Refer to Drawings for splice repair of timber piles.

2. Refer to Drawings and this Section for wrapping of piles.

3.2 EQUIPMENT

A. Provide and maintain equipment for the handling and installing of piles. Barges and other floating equipment shall be without excessive movement or tilting during pile installation.

B. Leads shall meet the following requirements:

1. Construct pile leads to allow freedom of movement to the hammer and hold in position by guys or stiff braces to support the pile during driving. The use of either swinging or hanging leads shall not be permitted without written approval of Engineer.

2. Leads shall guide the hammer from the highest point to the lowest point of travel. Leads shall maintain the hammer on a line of action concentric with and parallel to the longitudinal axis of the pile driving.

C. Hammers shall meet the following requirements:

1. Pile driving hammer shall consistently deliver dynamic energy to the piles to be driven. Provide hammers with driving helmets suited for the piles.

2. Drive piles using hydraulic hammer producing a minimum energy of 20 foot-kips. The maximum energy of the hammer shall not exceed 30 foot-kips.

3.3 PILE REMOVAL

A. Do not remove bearing piles until shoring submittal is approved by Engineer and shoring installed.

B. Remove timber piles as shown on Drawings. Remove pile stubs which extend 2 feet or more above the mudline or rock slope as directed by Engineer.

1. To reduce underwater noise during timber pile extractions, direct pull and vibratory methods shall be used.

2. A minimum of 2 attempts to extract the pile shall be made, even if the first attempt results in the pile breaking.

3. If, in Engineer's judgment, Contractor has made 2-satisfacotry extraction attempts and the pile still breaks, remove upper portion of pile completely and abandon stub in place if the stub extends no more than 2 feet above the mudline or rockline.

4. Intentional snapping or breaking of timber piles is prohibited.

5. Retrieve timber pile debris after each extraction. Refer to Removal and Disposal of Toxic Material Article of REGULATORY REQUIREMENTS Section for creosote-containing materials disposal.

C. Deploy containment boom during timber pile removal Work. Boom shall be of sufficient length to enclose Project Site(s) and pile driving equipment including crane boom.

1. Clean floating debris from the water surface immediately upon discovery.

2. Remove debris from harbor waters.

3.4 PREPARATION OF PILES FOR DRIVING

A. The butt end shall be sawed square across and the edge chamfered and fitted with a steel dished driving cap.

B. Fit piles with a pointed steel driving shoe.

3.5 SPOTTING PILES

A. Contractor shall be responsible for correctly locating piles in the field. Department shall establish bench marks and base lines on the shore for the use of Contractor in laying out Work. Contractor shall maintain these points and locate other lines and grades necessary from them.

B. Pile location shall not deviate more than 6 inches off center line. Pile locations deviating more than these limits may subject the pile to rejection by Engineer.

3.6 PILE JETTING

A. No jetting of piles shall be allowed.

3.7 BEARING PILES

A. Drive bearing piles at locations, angles, and to the embedment shown on Drawings.

B. Pile driving shall be continuous from start until required minimum penetration or bearing is obtained.

3.8 DAMAGED PILES

A. Piles that are broken, cracked, or splintered during pile driving operations shall be removed and replaced with a new timber pile. The location of replacement piles shall be approved by Engineer.

3.9 FIELD CUTS

A. Piles shall be cut to a true fit under caps. Cuts, daps, and bores shall be preservative treated in conformance with AWPA M4.

3.10 DRIVING RECORD

A. Engineer shall keep a detailed record of pile driving operations from the time the pile is picked up until it is completely driven. Contractor shall render assistance as may be required by Engineer in keeping records of piles driven.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Asphalt concrete

B. Tack coat

1.2 RELATED SECTIONS

A. Section 31 23 33 - Trenching and Backfilling

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Refer to TRENCHING AND BACKFILLING Section concerning costs for asphalt concrete trench resurfacing.

1.4 REFERENCES

A. AASHTO T 312 - Standard Method of Test for Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor.

B. ASTM C131/C131M - Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

C. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

D. ASTM D2726/D2726M - Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures.

E. ASTM D2950/D2950M - Standard Test Method for Density of Asphalt Mixtures in Place by Nuclear Methods.

F. ASTM D6307 - Standard Test Method for Asphalt Content of Asphalt Mixture by Ignition Method.

G. Reference Specifications (RS):

Section 200 - Rock Materials

Section 203 - Bituminous Materials

Section 302 - Roadway Surfacing

1.5 DEFINITIONS

A. Project Mix Design: Contractor's Project specific asphalt concrete formula, including individual gradation values and other data conforming to RS Subsection 203-6.3.

B. Project Aggregate Gradation Control Band: Percentage passing sieve ranges derived by adding and deducting tolerance range values to Contractor's approved Project Mix Design percentage passing sieve values. Tolerance range values are shown in the Production RS Mix Tolerances Table.

1.6 SUBMITTALS

A. Copies of the supplying vendor's asphalt test report required by RS Subsection 203-1.

B. List of equipment to be used for placing asphalt concrete prior to usage on Project.

C. Copies of the asphalt concrete Project Mix Design, including gradation and binder content required by RS Subsection 203-6.

1. Include coarse aggregate percentage wear test results from RS Subsection 200-1.2 and ASTM C131/C131M.

D. Gradation sample from mixing plant.

E. Submit proposed area(s) within cold mill limits shown on Drawings to place crack filler for approval prior to crack filler application.

1.7 QUALITY ASSURANCE

A. Have major equipment items available for inspection by Engineer. Correct deficiencies in quality, quantity, or types of equipment prior to commencing Work. This inspection and approval shall in no way relieve Contractor from the obligation to provide the equipment required to perform Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tack coat shall conform to RS Subsection 203-1, either PG 64 -10 or PG 64 -16, or SS-1 emulsified asphalt in conformance with RS Subsection 203-3.

B. Paving asphalt shall conform to RS Subsection 203-1 except reclaimed asphalt paving pavement (RAP) shall not be used.

C. Aggregates:

1. Crushed slag shall not be used for coarse or fine aggregates.

2. Coarse aggregates shall conform to the requirements for maximum percentage wear in RS Subsection 200-1, Table 200-1.2.1 (B) as tested under ASTM C131/C131M.

3. The minimum specific gravity of coarse aggregate shall be 2.58.

4. Material passing each aggregate sieve size shall be 100 percent by weight crushed rock with 2 or more fractured faces.

5. Fine aggregates shall be 100 percent by weight rock dust.

D. Asphalt concrete shall conform to RS Subsection 203-6 except that reclaimed asphalt pavement (RAP) shall not be used.

1. Asphalt concrete class and grade shall be as designated on Drawings.

E. Asphalt concrete for class and grade shown on Drawings shall conform to RS Subsection 203-6 and as follows:

1. Production Asphalt Concrete Mix Tolerances: Production RS Mix Tolerances Table establishes a Project Mix Design control band which applies to Contractor’s approved Project Mix Design submittal.

a. Production asphalt concrete mix tolerance percentage values for each sieve may be added to or deducted from the approved Project Mix Design percentage passing values for each sieve. The resulting values still apply if they result in Project Aggregate Gradation Control Band outside of Percentage Passing Sieves columns for the class of asphalt concrete shown on Drawings and shown in RS Subsection 203-6, Table 203-6.4.4.

b. Production asphalt concrete aggregate gradations, asphalt binder, and air voids shall not deviate from the approved Project Mix Design more than the tolerances shown in Production RS Mix Tolerances Table included in this Section.

Production RS Mix Tolerances Table	
Sieve Size	Tolerance Range
1-1/2 inches	±0
1 inch	±2
3/4 inch	±4
1/2 inch	±5
3/8 inch	±6
No. 4	±6
No. 8	±5
No. 30	±4
No. 50	±3
No. 200	±1
Air Binder Percent	±0.45
Air voids - lab samples	-1.5 to +0.5%*
Air voids - field samples	-2.0 to +1.0%**
* The average air void volume of lab-compacted samples from a day's production shall fall between 2.5 and 4.5 percent with a standard deviation less than 0.65.	
** The air void volume of each in place sample shall fall between 2.0 and 5.0 percent.	

2.2 SOURCE QUALITY CONTROL

A. Allow Engineer access to the mixing plant 30 Calendar Days prior to start of paving operations and at any time thereafter for verification of weights or proportions, character of materials used and determination of temperatures used in the preparation of asphalt concrete mix.

B. Engineer shall verify acceptability of asphalt concrete aggregate gradations from plant extractions tested in conformance with ASTM D6307. Aggregate gradations shall be determined in conformance with ASTM C136/C136M Sieve Analysis.

PART 3 – EXECUTION

3.1 PREPARATION

A. Clean base course and clean top of slu prior to paving operations. Clean surfaces to receive overlay prior to tack coating. Remove dirt, trash, oil, loose asphalt concrete debris, vegetation, and standing water.

B. Carefully lay joints between existing hard-surface pavements and new pavements; between hard-surface structures permanently embedded in the grade and new pavements; or between successive days' Work in such a manner as to ensure a continuous bond between existing and new sections.

1. Expose, clean, and cut edges of existing pavement or new asphalt concrete placed in the previous days asphalt concrete in place to straight, vertical surfaces.

2. Lay joints between same-day successive runs adjacent to new asphalt in conformance with RS Subsection 302-5.7.

C. At joint locations described in Paragraph E of this Article, or areas to be overlaid, apply tack coat to the existing surfaces to be joined in conformance with RS Subsection 302-5.4 prior to placing asphalt concrete.

D. Do not place asphalt concrete until Engineer approves batch plant gradation samples.

E. Do not place asphalt concrete until the base material has been approved by Engineer.

3.2 CONSTRUCTION

A. Perform paving during daylight hours.

B. Paving shall be continued uninterrupted and as expeditiously as possible once commenced.

C. Construct asphalt concrete paving in conformance with RS Subsection 302-5. Exceptions:

1. Mixes shown in RS Table 203-6.4.4 shall be compacted to 98 percent relative density unless indicated otherwise on Drawings.

D. Provide and maintain in good operating condition equipment, tools, and machines used for constructing asphalt concrete pavement.

3.3 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Testing and inspection of asphalt concrete paving mix and testing of placed asphalt concrete paving shall be performed by Engineer.

2. Engineer shall determine in-place densities and other specified material properties by nuclear methods in conformance with ASTM D2950/D2950M and by cores in conformance with ASTM D2726/D2726M and AASHTO T 312. Remove and replace materials not complying with specified material property requirements.

3. If compaction tests indicate that the asphalt concrete paving does not meet specified requirements, re-test costs shall be at sole cost and expense of Contractor.

4. Asphalt concrete pavement that Engineer determines to be out of conformance with the gradation and compaction requirements of this Section shall be subject to removal. If, after initial rejection, non-conformance continues, stop asphalt concrete material deliveries entirely until Engineer is satisfied that future deliveries shall conform to the requirements of this Section. Contractor shall be solely responsible for any delays to Project schedule resulting from rejected asphalt concrete material.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Site Work Concrete:

1. Curbs
2. Gutters
3. Concrete pavement
4. Reinforcement bars
5. Site furnishing footings

B. Slurry: Duct bank encasement.

C. Other non-wharf and non-building concrete structures as shown on Drawings.

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 31 00 00 - Earthwork

C. Section 32 31 13 - Chain Link Fences and Gates

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary.

B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide.

C. ACI PRC-347 - Guide to Formwork for Concrete.

D. ACI SPEC-301 - Specifications for Concrete Construction.

E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

F. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.

G. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

H. ASTM C33/C33M - Standard Specification for Concrete Aggregates.

I. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

J. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

K. ASTM C88/C88M - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

L. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

M. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

N. ASTM C150/C150M - Standard Specification for Portland Cement.

O. ASTM C470/C470M - Standard Specification for Molds for Forming Concrete Test Cylinders Vertically.

P. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.

Q. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).

R. Reference Specifications (RS):

Section 200 - Rock Materials

Section 201 - Concrete, Mortar, and Related Materials

Section 302 - Roadway Surfacing

Section 303 - Concrete and Masonry Construction

1.5 SUBMITTALS

A. Submit concrete mix design to Engineer for review.

B. Submit manufacturer’s data sheet, including the following items

1. Manufacturer’s printed batching and mixing instructions.

C. Submit shop Drawings for reinforcing steel in conformance with ACI CODE-318. Provide bending diagrams and assembly diagrams. Indicate splicing, laps of bars, shapes, dimensions, and details of bar reinforcing, accessories, and concrete cover. Do not scale dimensions from structural Drawings to determine lengths of reinforcing steel. Reproductions of Drawings are unacceptable.

D. Submit construction joint layout showing alternating pour areas and sequential pour schedule, including 7 day cure time, prior to fabricating reinforcement.

E. Submit delivery tickets from plant for each load of concrete placed. Each ticket shall state quantities by weight of each component of the load (cement, sand, water, and the like).

F. Submit certificate of compliance signed by the supplier of fly ash identifying the type of fly ash and certifying that fly ash complies with ASTM C618.

G. Submit certification that aggregates meet the requirements of ASTM C33/C33M Appendix XI for reactivity.

H. Submit certification that the aggregates meet the soundness requirements of ASTM C33/C33M when tested in conformance with the requirements of ASTM C88/C88M using a sodium sulfate solution.

I. Submit two 12 inch long samples of waterstops and construction joint devices.

1.6 QUALITY ASSURANCE

A. Department Testing Laboratory (Test Lab) shall perform tests in conformance with RS Subsection 201-1.7.

1. Test Lab shall perform sieve analysis of aggregates in conformance with ASTM C136/C136M.

2. Test Lab shall provide certificate of compliance for bottoms of footings and pads prior to placing reinforcing bar and concrete.

3. Advise Test Lab 72 hours in advance of the beginning of operations to allow time for completion of quality tests and for assignment of laboratory personnel.

4. Provide and deliver to Test Lab, representative samples of materials which require testing and are proposed to be used on Project (coarse and fine aggregate, cement, and the like).

5. When requested, furnish copies of test reports of shipments of concrete to Engineer and Test Lab.

B. Schedule Engineer's registered deputy building inspection prior to placing concrete and at other times as Drawings require.

C. In addition to test cylinders required by Contractor’s own testing and quality control, Contractor shall make for Department four 6 inch diameter by 12 inch long test cylinders for each light pole foundation, for every 5,000 square feet of slab area, and every 150 cubic yards of other types of concrete placement. A minimum of 4 cylinders shall be made for each day’s pour regardless of cubic yardage, or for each change in mix design. Upon notification, dispose of any cylinders not tested by Department.

1. Furnish certified technicians and equipment necessary to obtain and handle the samples at Project Site(s) or at other locations where materials are located.

2. Make and cure cylinders in conformance with ASTM C31/C31M, standard cured method. Cylinder molds shall conform to ASTM C470/C470M.

3. Label cylinders with the date of sampling, the class and mix proportions of the concrete, and Work location of the pour from which the sets of samples were taken. Identify parent concrete structure from which samples were taken, and Drawing page number. Identify cylinders with the same identification system used on Drawings for the parent concrete structure. Use same identification system for samples Contractor requires for its own use.

4. Coordinate with Engineer for pick up of cylinders from field curing location between 24 to 72 hours after being cast. Avoid damage to cylinders and loss of lids and identifying labels during handling. Failure to comply with the provisions of this Section regarding cylinder handling may be cause for rejection of the concrete structure. Engineer may further require performance of any and necessary alternative strength tests at sole cost and expense of Contractor.

5. Engineer may increase the required number of cylinders if the specified concrete strength is not being attained consistently or reduce the number if Engineer determines that high concrete strengths are consistently produced and the concrete and curing processes are uniform.

6. Contractor shall provide evidence that the concrete structures have met strength and other requirements as specified in Materials Article of this Section. High mast light pole foundations shall further meet strength requirements of Materials Article of HIGH MAST POLES Section. Strength shall be determined by cylinder breaks after 28 days as specified by ASTM C39/C39M.

7. If the cylinders show compressive strengths below the minimum acceptable limit, Engineer may require coring of the parent concrete structure at Contractor's sole cost and expense. Cores shall conform to ASTM C42 and RS Subsection 201-1.7.

    a. Coordinate with Test Lab through Engineer to perform additional, earlier cylinder breaks for purposes of scheduling.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store fly ash separately from other components of concrete until concrete is ready to be batched.

PART 2 – PRODUCTS

2.1 CONCRETE MIX DESIGN

A. Mix shall be designed to produce a concrete that has maximum density, minimum shrinkage, and maximum smoothness of surface.

B. Concrete mix designs shall conform to RS Subsection 201-1.3.3 where concrete class is shown on Drawings. Concrete mix design shall conform to RS Subsection 201-1.3.4 where compressive strength is shown on Drawings. Exception:

C. Proportion concrete in conformance with ACI SPEC-301, Section 4 - Concrete Mixtures, ACI PRC-211.1, and ACI CODE-318, Chapter 5, Concrete Quality, Mixing and Placing.

2.2 MATERIALS

A. Portland cement concrete shall conform to RS Subsection 201-1 unless shown otherwise on Drawings. Portland cement shall be Type II, low alkali (0.6 percent, maximum), in conformance with ASTM C150/C150M.

1. Only 1 brand of cement shall be used.

B. Ready-mix concrete shall conform to ASTM C94/C94M.

C. Mortar shall conform to RS Subsection 201-5.

D. Reinforcing bars shall be Grade 60 in conformance with ASTM A615/A615M, RS Subsection 201-2, and ACI CODE-318.

1. Exceptions: Reinforcing bars shall be Grade 60 in conformance with ASTM A706/A706Mand t:

a. Where bars are to be welded.

b. As called out on Drawings.

2. Reinforcement Accessories:

a. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.

b. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

E. Headed steel anchors shall be by Nelson Stud Welders.

F. Aggregate shall be normal weight in conformance with RS Subsection 200-1.4, and shall conform to ASTM C33/C33M, and ACI CODE-318, except where concrete is specified by class on Drawings in conformance with RS Subsection 201-1.3.3, or elsewhere in Specifications.

G. Fine aggregate shall conform to RS Subsection 200-1.5.

H. Non-shrink grout shall conform to ASTM C1107/C1107M and shall be Masterflow 713 as manufactured by Master Builders Solutions, (800) 433-9517. Other non-masonry grouts shall conform to RS Subsection 201-7 and as indicated on Drawings.

1. Grout for vault grade adjustment shall be high strength, non-shrink grout.
2. Grout for fence post cores into existing concrete or asphalt concrete shall be non-shrink grout.

I. Chemical admixtures shall conform to RS Subsection 201-1.2.6

1. Calcium chloride shall not be used.
2. Strength of concrete with admixture shall be, at 48 hours and more, not less than similar concrete without the admixture.

J. Fly ash shall conform to RS Subsection, 201-1.2.7.3, Class F and ASTM C618.

K. Forms shall conform to RS Subsection 303-1.3 and ACI PRC-347.

1. Anti-bonding agent shall be Duogard II, as manufactured by W.R. Meadows, (909) 469-2606.

L. Concrete curing shall be by water or membrane curing, Type 1-D, in conformance with RS Subsection 201-4.

M. Sealants for expansion and control joints shall be as specified on Drawings. Joint fillers shall conform to RS Subsection 201-3.2.

N. Epoxy adhesives shall be 2-component, 100 percent solids, 100 percent reactive suitable for use on dry or damp surfaces.

O. Materials shall comply with City of Los Angeles Green Building Code requirements.

1. Enter pertinent product data in VOC Content Verification Checklist form and provide product specification sheets. Make checklist and specifications available to City of Los Angeles Department of Building and Safety inspector through Engineer upon request. VOC Content Verification Checklist form can be found here: https://www.ladbs.org/docs/default-source/forms/green-building-2023/grn_2_voc_content_verification_checklist-01.17.23.pdf?sfvrsn=19f4c153_10

P. Slurry material shall be as specified in BASIC SITE MATERIALS AND METHODS Section.

PART 3 – EXECUTION

3.1 PREPARATION

A. Where concrete is to be cast against existing concrete older than 60 days, clean and roughen existing concrete by sandblasting, exposing the aggregate, and apply bonding agent.

3.2 CONSTRUCTION

A. General:

1. Construct exterior concrete equipment pads and high mast light pole foundation in conformance with City of Los Angeles Building Code and in conformance RS Subsection 303-1 except for RS Subsections 303-1.11 and 303-1.12.

2. Construct concrete curbs, walks, gutters, cross gutters, access ramps, and driveways in conformance with RS Subsection 303-5 except for RS Subsection 303-5.9.

3. Construct concrete paving in conformance with RS Subsection 302-6 except for RS Subsection 302-6.8. Vehicular traffic closure time period shall conform to RS Subsection 302-6.7 except where Drawings state specific closure time period.

4. Sequence formwork, reinforcement, concrete placement, and other concrete Work in conformance with joint layout and pour sequence approved by Engineer.

B. Formwork:

1. Construct formwork in conformance with RS Subsection 303-1.3.

2. Construct forms that can be removed without hammering or prying against the concrete.

3. Provide plywood sheathing for exposed concrete, whether to be painted or not.

4. Form exposed angles in concrete with neat 3/4 inch 45 degree chamfers and fillets.

5. Remove forms in conformance with RS Subsection 303-1.4.

6. Tolerances for deviation in lines, grades, and dimensions shown on Drawings shall conform to ACI PRC-347.

C. Reinforcement Placing:

1. Place reinforcing bars in conformance with RS Subsection 303-1.7, ACI SPEC-301, ACI CODE-318, and approved shop Drawings.

D. Embedded Materials:

1. Maintain 4/3 times maximum aggregate size clearance from pipes, conduits, and other embeds to reinforcing bars.

2. Place anchor bolts in templates to maintain position during concrete placement.

E. Placing Concrete:

1. Clear water from areas where concrete is to be placed prior to placing concrete.

2. Clean dirt, grease, rust, and the like from metalwork, including steel reinforcement, that shall be in contact with concrete immediately prior to placing concrete.

3. Place concrete in conformance with RS Subsection 303-1.8 and City of Los Angeles Building Code.

a. Discharge of ready-mix concrete shall be completed within 90 minutes after addition of the cement to the aggregates, or before 300 revolutions of the drum, whichever occurs first.

b. Use of non-agitating transport equipment for ready-mixed concrete is not permitted.

c. Maximum length of chutes shall be 50 feet.

4. Consolidation of Concrete:

a. Consolidate concrete in conformance with RS Subsection 303-1.8.4. Fill corners and angles, thoroughly embed reinforcement, eliminate rock pockets and bring only a slight excess of water to exposed surface of concrete during placement.

b. Screed to bring the concrete surfaces to required grades with straight edge screed and scrapers as necessary.

c. Float to compact the surfaces evenly. Remove excess surface water before floating. Do not use mortar to level surfaces.

3.3 SLURRY PLACEMENT

A. Cement slurry backfill shall be placed in a uniform manner that shall prevent voids in, or segregation of, the backfill.

3.4 TREMIE CONCRETE PLACEMENT

A. Tremie concrete shall be deposited under water. Tremie Work shall conform to RS Subsection 303-1.8.9 and this Article.

B. For placing tremie concrete, use a tremie pipe 6 to 10 inches in diameter, fitted with a suitable end sealing device. Provide the tremie pipe with a suitable sized funnel or hopper to facilitate transfer of sufficient concrete from the delivery device to the tremie pipe. Do not use aluminum tremies for pumping or placing concrete.

C. Place or pump the tremie concrete through the pipe, starting at the lowest point possible. The flow of concrete or grout may be induced by slightly raising the discharge end, always keeping it in the deposited concrete a sufficient distance to displace water without mixing or segregation. Eject the concrete from the lower end of the pipe, always discharging into fresh concrete.

D. Concrete with aggregates 3/8 inch or less may be placed by direct pumping. Because of the long drop down the pipe and the possibility of a vacuum forming with subsequent clogging, an air vent should be provided in the pipe near the water surface.

E. To start placement, the pipe shall have a steel plate closure with soft rubber gaskets in order to exclude water from the pipe. Take care to prevent unbalanced fluid heads and a sudden discharge of concrete.

F. Concrete placement shall be as continuous as possible.

3.5 CONCRETE FINISH

A. Exterior concrete slabs, ramps, and aprons shall be finished in conformance with RS Subsection 303-5.5.5 and shall have a non-slip light broom finish unless otherwise called for on Drawings.

B. Curbs, gutters, cross gutters, driveways, and walks shall be finished in conformance with RS Subsection 303-5.5 except for Subsection 303-5.9.

C. Finish concrete pavement in conformance with RS Subsection 302-6.4.

D. Finish other exterior concrete structures above and below grade, including high mast light pole foundations, in conformance with RS Subsection 303-1.9.

3.6 TREATMENT OF SURFACE DEFECTS

A. Immediately after forms are removed, rub or grind out irregularities.

B. Fill minor voids, holes, honeycombing, tie-rod cone impressions, and other depressions with non-shrink grout. Presence of extensive defects is cause for rejection of concrete.

1. Cut back defective areas a minimum of 1/2 inch depth

2. Wet surfaces prior to applying repair material.

3.7 CURING

A. Cure concrete in conformance with RS Subsection 303-1.10 using water cure where possible, otherwise membrane cure.

3.8 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Department shall provide City of Los Angeles registered deputy building inspector.

3.9 PROTECTION

A. Protect finished concrete surfaces from stains, abrasions, and other damage.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temporary chain link fences, gates, and accessories

B. Open mesh woven windscreen

C. K-rails

1.2 RELATED SECTIONS

A. Section 05 05 14 - Treating Damaged Galvanizing

B. Section 09 90 01 - Painting for Exterior Improvements

C. Section 32 12 17 - Asphalt Concrete Paving

D. Section 32 13 14 - Concrete for Exterior Improvements

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for temporary fencing shall be made under the Temporary Fencing (10 Feet per Panel) bid item of Bid Proposal Line Items as measured by the linear foot.

2. Payment for open mesh woven windscreen shall be made under the Open Mesh Woven Windscreen (10 feet per panel) bid item of Bid Proposal Line Items as measured by the linear foot.

1.4 REFERENCES

A. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

C. ASTM A90/A90M - Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.

D. ASTM A121 - Standard Specification for Metallic-Coated Carbon Steel Barbed Wire.

E. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

F. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

G. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.

H. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

I. ASTM A824 - Standard Specification for Metallic-Coated Steel Marcelled Tension Wire for Use With Chain Link Fence.

J. ASTM F626 - Standard Specification for Fence Fittings.

K. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC), Polyolefin and Other Polymer-Coated Steel Chain Link Fence Fabric.

L. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.

M. State of California Department of Transportation (Caltrans) Standard Plans:

T3 - Temporary Railing (Type K)

1.5 SUBMITTALS

A. Submit shop Drawings of typical fence elevations showing line post, corner post, gate post, and gates for review prior to fabrication. Shop Drawings shall include pipe sizes, gate sizes, bracing, locking devices, hinges or rollers, tensioning hardware, pipe embedment depths, and galvanizing.

B. Submit fence materials for galvanizing thickness testing. Materials to be tested shall comply with ASTM A90/A90M. Obtain Engineer’s review prior to installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General:

1. Construct chain link fencing and gates of hot-dipped galvanized materials as specified.

2. Steel materials shall have a minimum galvanized coating of 2 ounces per square foot of surface area, except barbed wire, tension wire, clips, ties and hog rings which shall have a Class 3 coating in conformance with ASTM A121, unless otherwise specified.

3. Fencing shall be 8 feet high plus 1 foot high (vertically), 45 degree barbed wire extension unless called out otherwise on Drawings.

B. Fabric:

1. Fabric shall conform to ASTM A392, be helically wound and interwoven; 2-inch mesh; 6 gage for fabric 108 inches or more in height; 9 gage for fabric less than 108 inches high; fabric less than 60 inches high shall be knuckled on top. Galvanize material in conformance with ASTM A392, Class 2, zinc coating after weaving (2 ounces per square foot).

2. Furnish fence fabric in 50 foot lengths.

C. Barbed Wire:

1. Barbed wire shall conform to ASTM A121. Wire shall consist of 3 strand pairs of 13 1/2 gage steel line wire with 0.08 inch, 4-point barbs spaced approximately 5 inches apart. Galvanize material in conformance with ASTM A121, Class 3 coating (0.70 ounces per square foot).

D. Tension Wire:

1. Tension wire shall conform to ASTM A824 and shall be 0.177 inch diameter hot-dipped galvanized marcelled steel, Type II, Class 2 zinc coating in conformance with ASTM A824 (2.0 ounces per square foot).

E. Hog Rings:

1. Hog rings shall conform to ASTM F626 and shall be 0.11 inch diameter, hot-dipped galvanized steel, Class 3 or A zinc coating in conformance with ASTM A641/A641M (0.8 ounces per square foot).

F. Wire Fabric Ties:

1. Ties shall conform to ASTM F626 and shall be 0.148 diameter, hot-dipped galvanized steel, zinc coating in conformance with ASTM A641/A641M, Class 3 or A (0.9 ounces per square foot).

G. Flat Band Fabric Ties:

1. Ties shall be 1/2 inch by 0.06 inch, hot-dipped galvanized steel, Class B3 coating in conformance with ASTM A153/A153M (1.3 ounces per square foot).

H. Tension Bars:

1. Tension bars shall conform to ASTM F626 and shall be 3/16 inch by 3/4 inch, high carbon steel, galvanized with 1.2 ounces per square foot coating.

I. Truss Rods:

1. Truss rods shall conform to ASTM F626 and be 3/8 inch, diameter, adjustable, threaded at one end hot-dipped galvanized steel, (1.2 ounces per square foot). Provide galvanized bracket for adjusting tension at threaded end.

J. Turnbuckles:

1. Turnbuckles shall be wrought iron in conformance with ASTM A47/A47M, galvanized drop forged steel, Class A in conformance with ASTM A153/A153M (2 ounces per square foot).

K. Posts and Gate Frames:

1. Posts and gate frames shall be cylindrical, welded at corners (no circumferential welds) or assembled with corner fittings. Gates with corner fitting connections shall have adjustable truss rods for gate panels 5 feet or wider. Pipe shall be hot-dipped galvanized steel conforming to ASTM A53/A53M, Schedule 40, zinc coated (1.8 ounces per square foot) or ASTM F1083, Schedule 40, zinc coated (1.8 ounces per square foot). Gate frames shall be covered with fabric to match fence.

L. Gate Hinges and Accessories:

1. Gate hinges and accessories shall be malleable iron in conformance with ASTM A47/A47M and galvanized in conformance with ASTM A153/A153M, Class A zinc coating (2 ounces per square foot). Hinges shall be structurally capable of supporting the gate leaf and allow the gate to open and close without binding. Hinges shall be designed to permit the gate to swing a full 180 degrees.

M. Latch Hardware:

1. Latches are required for double gates. Latch hardware shall be galvanized malleable iron in conformance with ASTM A47/A47M. Plunger bars may be tubular or bar steel and shall be capable of retaining the gate in a closed position. Latches shall have provisions for a padlock. Galvanize in conformance with ASTM A153/A153M, Class A (2 ounces per square foot).

N. Tension Bands:

1. Tension bands shall be steel and shall conform to ASTM F626, 1/8 inch by 1 inch with beveled edges, and hot-dipped galvanized (1.2 ounces per square foot).

O. Bolts:

1. Bolts shall be steel ASTM A307 with hot-dipped galvanized zinc coating in conformance with ASTM A153/A153M, Class C (1.25 ounces per square foot).

P. Nuts:

1. Nuts shall be steel ASTM A307 with hot-dipped galvanized zinc coating in conformance with ASTM A153/A153M, Class C (1.25 ounces per square foot).

Q. Sleeves:

1. Sleeves shall be 1.695-inch I.D. by 0.078-inch wall, drawn tube, 6 inches long. Sleeve shall be self centering type in conformance with ASTM A53/A53M; galvanized (1.8 ounces per square foot).

R. Top Rails and Brace Rails:

1. Rails shall be 1 1/4-inch American Standard Schedule 40 galvanized steel pipe in conformance with ASTM A53/A53M; hot-dipped galvanized (1.8 ounces per square foot).

S. Rail, Brace Ends, and Post Caps for Attaching Barbed Wire Extension Arm:

1. Rail, brace ends, and posts caps shall be permanent mold casting, sand casting, galvanized malleable iron in conformance with ASTM A47/A47M and galvanized in conformance with ASTM A153/A153M, Class A (2 ounces per square foot).

T. Post Tops:

1. Post tops shall be permanent mold, sand mold, die castings, malleable iron in conformance with ASTM A47/A47M and galvanized in conformance with ASTM A153/A153M, Class A (2 ounces per square foot). Tops shall be weather tight closure caps, 1 for each post.

U. Barbed Wire Supporting Arm:

1. Barbed wire supporting arms shall be 16 gage steel in conformance with ASTM F626 and with the arm at 45 degrees. The top wire of the 3 wires shall be 12 inches horizontally from the fence line and the other wires spaced uniformly between top of fence fabric and the outside strand. The vertical distance between the top wire and the height of the top of fence fabric shall be 12 inches.

V. Filler Strips (Slats):

1. Fabricate filler strips from durable, semi-rigid fiberglass reinforced plastic composed of fiberglass reinforcements, high quality polyester resins, pigments, and fillers. Dura Slatts as manufactured by FRP Systems, Supplier: Lady Fencer (770) 288-3330. For 9 gage 2 inch mesh fabric, width shall be 1 inch to 1-3/4 inch.

2. Physical Properties: Not less than: 12,000 pounds per square inch (psi) flexural strength, 1.0 x 106 psi flexural modulus, 8,000 psi tensile strength, 1.0 x 106 psi tensile modulus, and 2,000 psi compression strength. Flame spread: less than 200. Ignition point: 750 degrees to 800 degrees Fahrenheit (F).

3. Color: As selected by Engineer or as indicated on Drawings.

W. Windscreen: Polypropylene or high density polyethylene open mesh woven windscreen with finished edges and grommets. 80 percent blockage, color green or as selected by Engineer. Supplier: The Park Catalog (888) 447-2401.

X. K-rails:

1. K-rails shall be in accordance with State of California Department of Transportation (Caltrans) Standard Plans Plan No. T3A modified with scuppers.

2.2 PVC COATED FENCE

A. PVC coating for fabric, tension wire, and barbed wire shall conform to ASTM F668, class 2b, black, unless noted otherwise on Drawings.

B. Fabric:

1. Fabric shall conform to specification for non-PVC / powder coated fabric.

a. Wire shall be galvanized to a coating thickness of 2 ounces per square foot and given a Class 2b PVC coating prior to weaving.

C. PVC coated tension wire and barbed wire shall conform to the same requirements as non-PVC coated material.

D. The remaining metallic fence materials, except threaded items, shall conform to Specifications for non-PVC coated materials and shall have a 3 mil thick powder coat of the same color as the fabric.

E. Threaded items shall conform to Specifications for non-PVC coated items.

2.3 SIZES FOR POSTS, RAILS, BRACES, AND GATE FRAMES

	Use	Nominal Pipe Size* O.D. (Inches)	Actual O.D. (Inches)	Weight per Lbs/ft (Galv. Steel)
A.	End, corner, slope, and rolling gate posts for fences 6 feet or higher	3	2.875	5.79
B.	End, corner, slope, and rolling gate posts, fences less than 6 feet	2-1/2	2.375	3.65
C.	Line posts for fences 6 feet or higher	2-1/2	2.375	3.65
D.	Line posts for fences less than 6 feet high	2	1.90	2.72
E.	Top rail and braces	1-5/8	1.66	2.27

	Use	Nominal Pipe Size* O.D. (Inches)	Actual O.D. (Inches)	Weight per Lbs/ft (Galv. Steel)
F.	Swinging and sliding gate post for 3 feet, and 6 feet single or 12 feet double gates, 6 feet or higher; Under 72 inches	3 2-1/2	2.875 2.375	5.79 3.65
G.	Swinging and sliding gate posts for single gates from 6 feet to 13 feet and double gates over 12 feet but not over 26 feet	4	4.00	9.12
H.	Swinging gate posts for single gates 13 to 18 feet and double gates 26 to 36 feet	6-5/8	6.625	18.99
I.	Swinging gate posts over 18 feet single and 36 feet double	8-5/8	8.625	28.58
J.	Gate leaf 6 feet in width, frames and bracing	1-5/8	1.66	2.27
K.	Gates leaf greater than 6 feet in width Frame---	2	1.90	2.72
	Vertical Divisions---	2	1.90	2.72
	Bracing---	1-5/8	1.66	2.27
*Fence Industry Standard O.D.				

PART 3 - EXECUTION

3.1 FENCE CONSTRUCTION AND INSTALLATION

A. Post Spacing:

1. Space line posts equidistant on a maximum of 10 feet on center. Posts shall be plumb and the tops of the posts aligned.

B. Line Posts in Asphalt Concrete Pavement:

1. Line post holes in asphalt pavement shall be cored to a diameter no greater than 1/2 inch larger than outside diameter of post. Posts shall then be driven into ground to a 30 inch depth and plumbed true with wood wedges. Backfill remaining void with fine dry sand.

C. Barbed Wire Extension Arms:

1. Bolt extension arms to the post caps which are to be firmly seated on top of the posts perpendicular to the fence line.

D. Top Rail:

1. Top rails shall pass through the base of the extension arms and shall form a continuous brace from end to end of each stretch of fence. Top rail lengths shall be jointed with sleeves. Fasten top rail to terminal posts by means of rail ends and brace bands.

E. Horizontal Braces:

1. Provide horizontal braces at terminal posts midway between top rail and tension wire. Fasten braces to the line post by brace ends and brace bands, and to the terminal posts by rail ends and brace bands.

F. Diagonal Braces:

1. Install diagonal brace rods from the brace end on the line post back to the terminal post and fastened to it by a brace band. Securely fasten diagonal braces to the terminal post with brace ends and brace bands at the 2/3 point above adjacent grade (where top rails omitted) and attach other end to the adjacent line post at grade. There shall be no more than a 50 degree angle between the brace and the ground.

G. Fence Fabric:

1. Furnish fence fabric in 50-foot continuous lengths. The fabric may be either right-hand or left-hand weave, but not both. Install fabric 2 inches above ground level and fasten line post ties at a maximum of 24 inch intervals. Tighten fabric to provide a smooth uniform appearance. Install tension bars at end posts and gate posts. Install tension bands at a maximum of 15 inch intervals.

H. Tension Wire:

1. Stretch marcelled tension wire from post to post of each stretch of fence, at bottom. Attach tension wire to bottom of the chain link fabric by hog ring-type fasteners at 24 inch on center, maximum. Fasten wire within the bottom 6 inches of the fence fabric. Tension wire shall be taut and free of sag. Attach to terminal posts by means of brace bands.

I. Barbed Wire:

1. Tightly stretch barbed wire to remove sag. Install firmly in the slots of the extension arms and anchor to the terminal extension arms.

3.2 GATE CONSTRUCTION AND INSTALLATION

A. Provide each gate leaf over 8 feet in width with vertical stay members.

B. Brace each panel of the gates wider than 5 feet and containing corner fittings by means of 2 diagonal truss rods. Provide tension adjustment nut for tightening threaded rod end against bracket.

C. Do not fabricate gate leaves prior to Engineer’s review of detailed shop Drawings. Gate corners and tee junctions, where intermediate vertical or barbed wire extensions are required, shall be connected with electrically welded butt joints; welds shall be sound and watertight. Fit gate with the same type of fabric as the fence.

D. Perform galvanizing after welding.

E. Furnish fittings, including hinges and latches for each gate. One keeper or other device for holding gate open shall be furnished with each leaf 6 feet or wider. One drop bar locking assembly shall be furnished on double gates. Single gates shall have fork latch with provisions for padlock. Locking and catch fittings shall be furnished on double gates.

F. Install gates plumb to operate with freedom through an arc of a minimum 180 degrees.

G. Gates to be used with fencing having barbed wire extension arms shall have vertical members extended to carry the barbed wire across the gates. Barbed wires shall be in a vertical plane, above the gates, on approximately 4 inch centers. The top wire shall be approximately 12 inches above the top of the gate.

H. Rolling gates shall be equipped as follows:

1. Upper gate guides and track of Schedule 40 steel pipe.

2. Trolley wheels for track of malleable cast iron with hardened steel axles and permanently lubricated steel ball bearings.

3. A steel assembly mounted to the trolley wheel axle that prevents the wheel from lifting off the track.

4. A 2-wheel front carriage with at least 8 inches diameter solid rubber tired wheels.

5. Flared guide brackets.

6. Eye bolt and chain or other locking device.

7. Line posts shall be 5 feet on center in the length that supports the rolling gate.

I. Install safety posts for rolling gates at the terminal post and at approximately 1/3 the gate width measurement back along the fence line. Center safety posts 8 inches inside the fence line and the same dimensions as line posts. The safety posts shall prevent gates from falling if they come off track.

J. Equip swinging gates 8 feet or greater in width with double carriage wheels at the free swinging end. Carriage wheels shall be at least 8-inches in diameter with solid rubber tires and mounted in a tubular frame at the bottom of the gate.

3.3 BOLTED CONNECTIONS

A. Bolted connections shall be peened, double bolted, or secured by cotter pins to prevent nuts from working loose.

3.4 DAMAGED GALVANIZING

A. Repair damaged galvanizing on the materials in conformance with TREATING DAMAGED GALVANIZING Section.

3.5 CHAIN LINK FENCE WITH K-RAIL

A. Chain link fence with k-rail shall be constructed and installed as indicated on Drawings.

B. Paint k-rails in conformance with PAINTING FOR EXTERIOR IMPROVEMENTS Section.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. On-site repair of crack-damaged crane rail by Shielded Metal Arc Welding (SMAW).

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be made under the Crane Rail Repairs bid item of Bid Proposal Line Items. Measurement of crane rail repairs shall be on an each basis.

1.3 REFERENCES

A. ASNT SNT-TC-1A - Recommended Practice No. SNT-TC-1A: Personnel Qualification and Certification in Nondestructive Testing.

B. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.

C. Reference Specifications (RS):

Subsection 203 - Bituminous Materials

1.4 COORDINATION

A. Contractor shall plan and coordinate Work with the tenant’s operations manager for access, availability and working hours.

1.5 QUALITY ASSURANCE

A. Special inspection by a registered deputy inspector shall be required for field welding repair Work.

B. Ultrasonic Testing performer shall be certified in conformance with ASNT SNT-TC-1A specification as Level II or higher.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

A. Dimensions shall take precedence over scaled Drawings.

2.2 MATERIALS

A. Welding electrode rod: Allstate 275 Super 1/4 inch rod.

B. High strength epoxy grout: Hilti CB-G EG.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Contractor shall field verify Project Site(s) conditions prior to construction. Contractor shall notify Engineer of any discrepancies or inconsistencies.

3.2 CRANE RAIL INFRASTRUCTURE REMOVAL PROCEDURE

A. Remove Existing Asphalt Concrete (AC):

1. Remove 4 feet long minimum on each side of the cracked rail joint. Remove enough AC on both sides of the rail to allow adequate access for proper Work and inspection of the underlying Project Site(s) conditions.

B. Remove Existing Grout:

1. Remove damaged high-strength epoxy grout 24 inches minimum on each side of cracked rail.

2. Grout shall be completely removed and the top of existing concrete surface below shall be scarified.

3. Visually inspect concrete surfaces around the cracked rail joint for any surficial damage. Notify Engineer if additional damage is found.

3.3 CRANE RAIL WELDING PROCEDURE

A. This is a continuous welding procedure from the beginning of preheat stage to the completion of the post heat treatment process.

B. Welding procedure is performed outdoors (night and day) and close to the water. Build tent or shield to prevent cold and humid air from blowing over the weld and accidentally speeding up the cooling process

C. Clean the weld surface and vicinity (6 inches on both sides of crack).

D. Perform Ultrasonic Testing (UT) on raw material at 6 inches on both sides of the cracked weld (including top flange, web and bottom flange) to make sure no lamination is present.

E. Place weld material (rods) in the weld rod carrier (for storage purposes) at a temperature of 120 degrees Fahrenheit (F), and close the carrier door tight for more than 3 hours before using. There shall be at least two carriers: one for new rod storage and to prepare rods for use, and another to be welder's carrier. Note: Close carrier door every time after a weld rod is picked (one rod each time for welder's carrier, and 10 rods each time from the storage carrier to be transferred to the welder's carrier). Welder shall wear dry gloves when touching the welding rods.

F. Make the groove shape. Refer to detail Figure 1 and Figure 2 as shown at the end of this section.

G. Build-up and tack weld the backing bars.

H. Tack weld bracing strap. There shall be enough space between bracing strap and top flange for welding performance.

I. Tack weld the tongue on each side of the flange groove.

J. Pre-heat the base material up to 1,000 degrees F at 24 inches (min) on each side of the weld area from bottom flange to the top flange, and allow 2 to 3 hours before welding, to evaporate the moisture collected on the weld surface and vicinity. The heating temperature shall not be changed or interrupted for any reason at any time during the welding process. Any disturbance to temperature shall result in re-do of the whole welding process from the beginning.

K. Test weld on the coupon to adjust the welding machine voltage/current and traveling speed.

L. Welding processes shall be string or beading from beginning to the end of groove weld. No weave, sway or cross direction welding allowed.

M. Welding sequence shall begin with bottom flange, followed by the web, and the final is top flange.

N. Clean the weld surface after the completion of each weld path in preparation for the next weld deposit.

O. After the bottom flange weld is finished, the next step is to weld the web (vertically). Welder may select the welding path of either uphill or downhill. Once the path direction is selected, it shall not be changed during welding of the web.

P. Back gouge the root of web welding. Clean the gouging area by grinding and make sure no debris remains. Weld up to the final path by the same path direction selected previously.

Q. Clean the top flange groove and vicinity the same way the bottom flange was cleaned.

R. Set up the backing bar (web weld tip may be used as part of backing material) with tongue as the bottom flange.

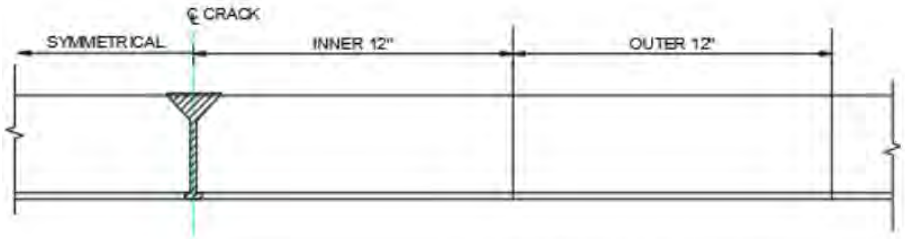
S. Perform same welding process as used on the bottom flange.

T. Do not stop or change the temperature condition after the welding process is completed.

U. Check the weld and heat effect zone (HEZ) temperatures constantly to make sure they are dropped to the same temperature as the vicinity base material temperature, about 1,000 degrees F.

V. When the temperatures of both weld and vicinity base material come to 1,000 degrees F, start the post heat-treat process. Wait 2 hours at 1,000 degrees F prior to starting.

W. Post heat treat chart:



POST HEAT TREATMENT PROCESS				
INNER 12 INCHES		OUTER 12 INCHES		
BEGINNING TEMPERATURE (°F)	ENDING TEMPERATURE (°F)	BEGINNING TEMPERATURE (°F)	ENDING TEMPERATURE (°F)	TIME DURATION (HOUR)
1000	1000	800	800	2
1000	900	800	700	2
900	800	700	600	2
800	700	600	500	2
700	600	500	400	2
600	500	400	300	2
500	400	300	200	2
400	300	200	200	2
300	200	200	200	2
200	200	200	200	2

3.4 POST WELD COOLING PROCESS

A. Check the weld and make sure no visible defects are present.

B. Reduce the temperature slowly, back to about 100 degrees F for another 2 hours.

C. Maintain the blanket in position, turn off the heating devices, and let material cool down to ambient temperature at natural speed. Then remove the bracing strip and clean the surface of weld and vicinity.

D. Perform UT test on the welds and HEZs.

E. Allow 24 hours minimum for post weld cooling process prior to crane service use.

3.5 GROUT INSTALLATION

A. Prior to grouting, level and align crane rail to original specified tolerances, and re-tighten rail clips.

B. Install Hilti CB-G-EG epoxy grout - high strength, non-shrink, self-leveling grout - per manufacturer’s instructions with 13,500 pounds per square inch (psi) compressive strength at 7 days per ASTM D695.

C. Prior to installing grout, the concrete surface shall be solid, clean and free from oil, grease, and other contaminants that may act as bond breakers. Remove loose material and laitance. Concrete surfaces shall be dry, sound and roughened to ensure proper bond. Follow manufacturer's installation instructions.

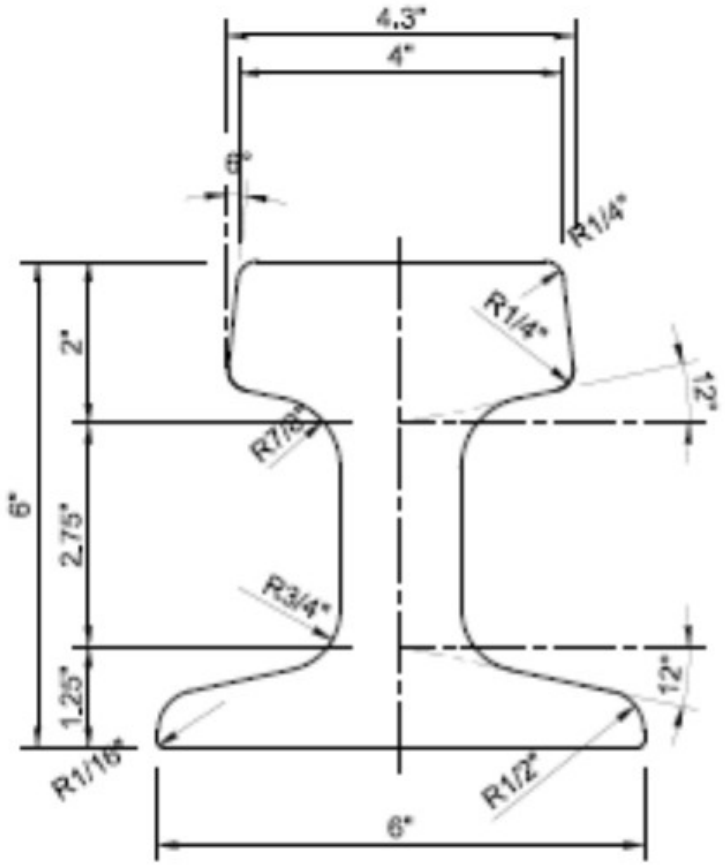
D. Perform continuous special inspection during grouting operation.

3.6 ASPHALT CONCRETE (AC) INSTALLATION

A. Install new AC as required to patch repair area.

1. Restore new AC patch area to original surface elevations. New AC surface shall have finish grades with relatively higher run-off elevations along each side of the rail with downward-sloped surfaces smoothly transitioned to existing AC.

B. The class and grade of AC shall be C2-PG 64-16. AC shall conform to RS Subsection 203-6.



171-lb CRANE RAIL SECTION

FIGURE 1

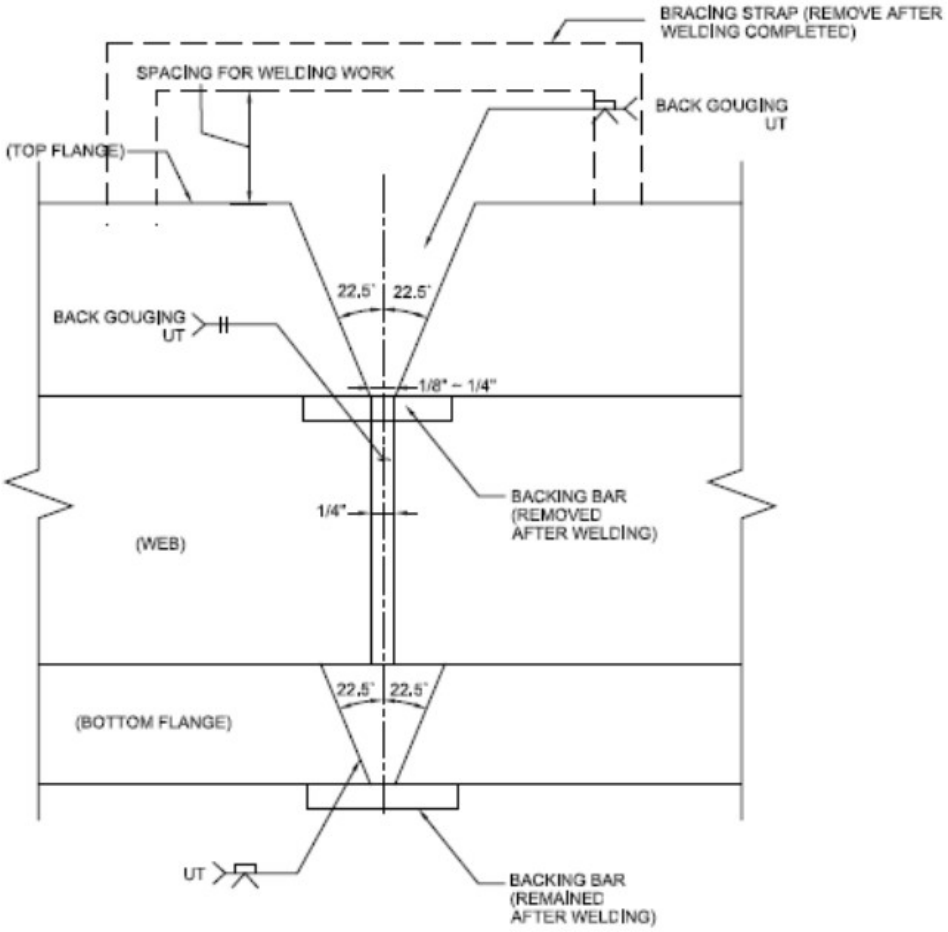


FIGURE 2

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Dredging requirements

B. Hydrographic surveying necessary to perform and measure dredging

C. Confined disposal facility disposal (direct disposal only) ~~Land disposal, including preparing and constructing containment dikes at the dredged material transfer area location~~

D. Ocean disposal

E. Upland landfill disposal

F. Water quality monitoring, sampling, testing, reporting and incidentals by an Engineer-approved and Contractor-paid independent testing laboratory

G. Equipment mobilizations and demobilizations required for change of construction phases as shown on Drawings

H. Conformance with U.S. Army Corps of Engineers and Los Angeles Regional Water Quality Control Board permit requirements for dredging

1.2 RELATED SECTIONS

A. Section 02 41 13 - Selective Site Demolition

B. Section 31 00 00 - Earthwork

C. Section 31 23 33 - Trenching and Backfilling

D. Section 35 42 37 - Rock

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Dredging and disposal of dredged material shall be paid for at the unit price per cubic yard of material removed and disposed under bid items "Dredging and Disposing of Materials at Berths 243-245 Confined Disposal Facility (2,500 Cubic Yards or Less per Order)", "Dredging and Disposing of Materials at Berths 243-245 Confined Disposal Facility (Greater Than 2,500 Cubic Yards per Order)", "Dredging and Disposing of Materials at Sea (2,500 Cubic Yards or Less per Order)", "Dredging and Disposing of Materials at Sea (Greater Than 2,500 Cubic Yards per Order)", and "Dredging in Shallow Waters and Disposing of Materials at Berths 243-245 Confined Disposal Facility" of Bid Proposal Line Items, at the unit cost per cubic yard of material removed. Costs shall include dredging Work, turbidity curtains, booms, and barge and offload dredged materials to the Berths 243-245 Confined Disposal Facility (CDF) and transporting dredged materials by barge and disposing materials at sea at LA-2 location as shown in Appendix "C" ~~transporting dredged materials by barge, offloading dredged materials at the transfer area, and placing materials in containment dikes until sufficiently dry to be trucked and stockpiled at the final disposal area location shown on Drawings, and water quality monitoring, sampling, testing, reporting and incidentals.~~ Contractor shall not transfer materials until approved by Engineer. Quantities of dredged material shall be determined by Department through sounding before and after dredging, and calculating the dredging volume by 1 of 2 methods.

a. Primary (preferred) Method: Calculate the volume between computer-generated triangulated irregular network (TIN) surfaces developed from the 2 sets of soundings.

b. Secondary Method (in the event Engineer agrees that the primary method cannot be used): Plot the soundings as cross sections at 50 foot stations, calculate the average end area of cross sections and multiply the average end area by the distance between cross sections.

2. Dredging in shallow waters and disposal of dredged material at Berths 243-245 Confined Disposal Facility shall be paid under the Dredging in Shallow Waters and Disposing of Materials at Berths 243-245 Confined Disposal Facility bid item of Bid Proposal Line Items. Refer to Appendix "K" of Specifications for bidding purposes.

3. Dredging and disposal of dredged material at Berths 243-245 Confined Disposal Facility shall be paid under the corresponding Dredging and Disposing of Materials at Berths 243-245 Confined Disposal Facility bid item of Bid Proposal Line Items. Refer to Appendix "L" of Specifications for bidding purposes.

4. Dredging and disposal of dredged material at Sea shall be paid under the corresponding Dredging and Disposal of Materials at Sea bid item of Bid Proposal Line Items. Refer to Appendix "M" of Specifications for bidding purposes.

5. Material dredged below the pay line for dredging as shown on Drawings shall not be included in dredge pay quantities. Side slope material dredged beyond slope shown on Drawings shall not be included in dredge pay quantities, regardless if actual slough slope is flatter than pay slope.

6. Department-conducted hydrographic surveys for dredging operations shall conform to Chapter 6 of U.S. Army Corps of Engineers (USACE) Engineering and Design-Manual EM 1110-2-1003 Hydrographic Surveying (Manual). For acceptance and quantity calculations, Department shall perform Conventional Method of Hydrographic Survey that includes tide, POSPac, TrueHeave, and Sound Velocity Corrections. Department shall also utilize Teledyne RESON SeaBat T20-R with a frequency of 400 kHZ, along with a Rack-mounted Sonar Processor (RSP) with fully integrated Inertial Navigation Systems. The software for data acquisition and processing shall by HYPACK and POSPac utilizing a 3 foot by 3 foot bin size with the average depth placed at bin center. The 3 foot by 3 foot bin size shall be used for both new and maintenance dredge projects. Smaller bin sizes, including a 1 foot by 1 foot bin, may be used when obstructions are discovered.

7. The existing conditions shall be the pre-dredge soundings done prior to dredging.

8. Notify Engineer 60 Calendar Days in advance of the date dredging is to start to allow Department time to perform any required Caulerpa taxifolia or eelgrass surveys, pre-dredge soundings for pay quantities and for submitting pre-dredge bathymetric condition survey to the U.S. Army Corps of Engineers to obtain a final Notice to Proceed to start dredging Work.

9. The stipulated quantities have been determined from the cross sections shown on Drawings and include the overdepth and the anticipated side slope sloughing shown on Drawings.

10. No remeasure or payment shall be made for dredge cleanup of materials displaced by pile driving, rock Work, or other construction operations.

11. Payment for mobilizations and demobilizations of equipment used in dredging operations shall be included in the appropriate dredging bid item of Bid Proposal Line Items.

12. Engineer may choose to use Contractor's work boat equipment and personnel in carrying out pre-dredge, post-dredge, fill, and placement surveys for payment and acceptance purposes, at no additional cost to Department.

13. Payment for water quality sampling and water quality reports shall be made under the Water Quality Reports and Sampling for Dredging and Pile Driving Allowance bid item of Bid Proposal Line Items.

1.4 DEFINITION

A. Dredging is defined as excavation of materials encountered below elevation plus 5.43 (MLLW) (mean lower low water datum). Grading or trenching above plus 5.43 MLLW is defined as earthwork and is covered in EARTHWORK Section or TRENCHING AND BACKFILLING Section. Structural earthwork or trenching below elevation plus 5.43 MLLW shall not be considered as dredging but shall be covered in EARTHWORK Section or TRENCHING AND BACKFILLING Section.

1.5 SUBMITTALS

A. Submit to Engineer the following:

1. The dredging plant and equipment to be used for Project prior to dredging (for review and information purposes).

2. Method of dredging for each site 5 Calendar Days after notice to dredge showing the order, sequence, and methods proposed for the dredging and disposal operations. No dredging operations shall start until the schedule has been approved.

3. Sketch showing the locations of lights, buoys, and other floating equipment to be used during Project 30 Calendar Days prior to start of Work on each site in conformance with REGULATORY REQUIREMENTS Section.

4. Submit the following information to Engineer no later than 14 Calendar Days after Notice of Award:

    a. Name, size and type of barges, tugboats, dump scows, and navigation equipment (GPS) to be used on Project.

    b. List of key personnel, daytime telephone numbers, and emergency telephone numbers.

B. Notify Engineer 45 Calendar Days prior to start of dredging to allow Department time to perform pre-dredge soundings for pay quantities and for submitting pre-dredging bathymetric condition survey to the U.S. Army Corps of Engineers to obtain a final Notice to Proceed.

C. Furnish to Engineer the following information 6 hours prior to departing for each disposal trip:

1. Time of departure from the dredging site.

2. Estimated time of arrival at the designated ocean disposal area and estimated time of departure from the designated ocean disposal area.

3. Estimated time of arrival at dredging site after the disposal operation is completed.

D. Should Contractor choose to submit cross-sections for informational purposes or to substantiate dredge volume calculations, submittals shall conform to the following format:

1. Plots shall be in profile format at a minimum of 50 foot cross section intervals.

2. Survey shall extend beyond the dredged area in every direction including slough slope areas.

3. Indicate dredged area by hatching.

4. Correlate area in square feet of each cross-section with corresponding cross section plot.

Format Change Only

E. Proposed procedures for dredging near submarine cables and pipelines.

F. Method of unloading dredged material from barges at the dredged material transfer area location prior to starting dredging Work.

G. Name of the proposed independent testing laboratory that shall perform water column monitoring prior to starting dredging Work. Include National Environmental Laboratory Accreditation Program (NELAP) certification number or Environmental Laboratory Accreditation Program (ELAP) certification number.

1. Required water quality monitoring reports to Los Angeles Regional Water Quality Control Board (LARWQCB) through Engineer using the format of the memorandum Water Column Monitoring Results located in Appendix "N" of Specifications.

H. Submit on a daily basis the following items:

1. Disposal vessel logs.

2. Plots showing path of disposal vessel and coordinates where bottom dump doors were opened and closed (for ocean disposal).

3. Daily dredge report listing date, dredge location(s), stations, vessels used, number of loads, number of cubic yards for each load and total amount dredged each day.

4. Refer to Army Corps of Engineers permit attached as Appendix "E" of Specifications for detailed requirements.

1.6 QUALITY ASSURANCE

A. Contractor's plant equipment shall be capable of doing Work within the time allowed by Contract.

B. Barges shall not leak material into harbor waters.

C. Repair leaks or breaks along pipelines promptly.

D. For a hydraulic dredging operation, a manned discharge barge with self-contained positioning capability is required to provide control of discharge location.

E. Dredging shall not be permitted unless approved by Army Corps of Engineers, LARWQCB, and Engineer prior to dredging.

Format Change Only

F. Compliance with Regulatory Requirements:

1. Refer to REGULATORY REQUIREMENTS Section for Army Corps of Engineers, LARWQCB, and U.S. Coast Guard permit requirements.

2. Immediately notify Engineer of any permit violations. Contractor shall be liable for fines and penalties assessed by the regulating agencies (Environmental Protection Agency (EPA), LARWQCB, and Army Corps of Engineers) as a result of dredging below the overdepth, dredging outside of the lateral boundaries of the permissible area for dredging, for exceeding the permit quantities, or for other permit violations caused by Contractor's actions (or inaction).

1.7 PROJECT CONDITIONS

A. Availability of Electricity:

1. Existing 6.6 kV Alternative Maritime Power (AMP) plugs are an available power source to Contractor for the electric barge at some locations.

2. Contractor shall use both AMP plugs simultaneously. No single AMP plug usage is allowed.

3. Contractor shall pay Department $0.20 per kilowatt hour usage when connected to the existing 6.6 kV AMP plugs.

4. Contractor shall install electronic metering device to measure kWH consumption of the electric dredging system.

5. After completion of construction, Contractor shall completely remove installed barge equipment, cables, supports, and the like, and repair any damaged surface to its original state.

6. Electric dredging equipment shall be connected to the landside power grid.

B. Salvaged Articles of Value:

1. Department at its option, may claim any or articles of value located by or recovered in dredging.

2. Should an article be claimed by Department, the cost of recovery shall be determined by Engineer and the amount thus established shall be paid to Contractor as Changes in Work in conformance with GENERAL CONDITIONS Section.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

A. Department shall make available to Contractor its record of submerged utilities but cannot guarantee the existing conditions. Contractor shall review records of submerged utilities in the area of operations and contact utility owner(s) to verify the utility location.

3.2 PREPARATION

A. Furnish, place, and maintain buoys, markers, and ranges necessary to control dredging operations. Engineer shall provide benchmarks and horizontal control for Contractor. Notify Engineer at least 2 working days before services of Engineer are required for locating buoys and ranges.

3.3 DREDGING AND DISPOSAL

A. Dredge to lines and depths indicated on Drawings. The required depth below the plane of mean lower low water shall be obtained over the level area to be dredged. Overdepth (tolerance) is allowed where shown on Drawings.

B. Do not dredge below the lowerpay line when dredging adjacent to existing wharf structures, marine channels and basins, dolphins, breakwaters, or riprapped slopes. Repair damage to existing slopes and adjacent structures where the slope material or other material outside of the limits for dredging is removed or disturbed by overdredging.

C. Return to Project Site(s) as often as required by Engineer to remove remaining dredge and slough material within the dredge template as indicated by the sounding rechecks described in Adjusting and Clean Up Dredging Article of this Section.

D. The capacity of the dredge bucket used within 15 feet of the pierhead line shall not exceed 4 cubic yards.

E. Dredge uniformly from top of bank to the toe of slope. Height of steps shall not exceed 2 feet. Step width shall be proportioned to achieve the overall slope at the theoretical slope location.

F. Use extreme caution when dredging near submarine cables and pipelines to avoid damage to the substructures. Submit proposed procedures for dredging near submarine cables and pipelines.

G. Tolerances shall be as shown on Drawings.

H. Do not dredge where ranges or range light controls cannot be seen from the dredge barge.

I. Disposal Sites:

1. Place dredged material designated for confined disposal at Berths 243-245 Confined Disposal Facility. No temporary storage of dredge, materials shall be allowed. Dredge spoils shall be directly from barge to Confined Disposal Facility (no staging).

2. Place dredged material designated for ocean disposal at LA-2 ocean disposal area. The location of LA-2 shall be found by bearings, ranges, and soundings. No marking buoys shall be allowed.

3. Place dredged rock and rubble materials at an upland landfill.

4. Do not use other disposal areas unless written approval is obtained from Engineer.

5. Marine disposal sites are included in Specifications as Appendix "C".

J. Ocean disposal at LA-2 of the dredged material shall be satisfactory to Engineer, EPA, District Engineer of the Army Corps of Engineers, and to United States Coast Guard. Inform Engineer of disposal schedule of dredged material prior to disposal at Project Site(s). In conformance with Corps Permit, provide Engineer with required reporting following disposal activities.

K. Remove and dispose of off Department property logs, snags, cables, auto parts, or any other debris encountered within the limits of dredging Work.

L. Riprapping which slides into the channel due to the dredging operations shall be removed or placed on bank in conformance with Engineer's instructions at no additional cost to Department.

1. Provide turbidity curtains required for containment of fine-grain soil plumes during removal of rock.

M. Dredging with Containment Booms Deployed: Contractor may be required to deploy containment booms in the area of dredging Work as directed by Engineer. Contractor shall maintain booms and shall have boat and personnel to maintain booms for 24 hours per day when boom is deployed. Containment booms and absorbent material spill kits shall be readily available on the dredge barge continually. Skimmers shall be readily available. Containment booms shall be of sufficient length to enclose Work area including dredge equipment and crane boom.

1. Spill kit absorbent materials, including but not limited to pads and soft booms, shall be oil-only, polypropylene, or other recyclable materials.

N. Marine Spills: If a spill occurs on harbor waters during dredging Work, immediately deploy containment boom, absorbent materials, and skimmers. Clean up and dispose of petroleum products in conformance with applicable regulations.

1. Contact the California State Office of Emergency Services and perform other notifications as required by COORDINATION and REGULATORY REQUIREMENTS Sections for spills of reportable quantities.

2. A minimum of 1 person with 24-hour Hazardous Waste Operations (HAZWOPER) training shall be present at Project Site(s) continually to direct spill removal operations.

3. Contractor’s entire floating plant shall be cleaned of spill residue prior to completion of spill cleanup operation.

O. Disposal Vessels: Do not allow any water or dredged material placed in a disposal vessel to spill over the sides of such vessels during dredging or disposal operations. Determine the maximum level that each disposal vessel can be filled to ensure that no dredged material or water spills over the sides. Submit the maximum level to Engineer for reporting to Corps of Engineers. Contractor shall strictly adhere to this predetermined level and shall be responsible for any fines incurred by Department as a result of water or material spilling over the sides of the vessel or for exceeding the predetermined limit lines.

P. Dredging and disposal shall be performed in conformance with Corps Permit included in Appendix "E" of Specifications.

Q. Waste discharge operations shall be in conformance with Los Angeles Regional Water Quality Control Board Waste Discharge Requirements included as Appendix "E" of Specifications.

3.4 MISPLACED MATERIAL AND PROJECTING ROCKS

A. Should Contractor, during the progress of dredging Work, lose, sink, or misplace equipment, construction material, or machinery that may interfere with uses of the waterway, or introduce liquid or solid wastes to the waters, Contractor shall recover the same items with the utmost dispatch, at no additional cost to Department.

B. Should Contractor encounter projecting rocks in the dredge footprint, Contractor shall immediately remove rocks and place on adjacent riprap slope at no additional cost to Department.

C. Contractor shall give immediate notice, with description and location of such items mentioned in this Article to Engineer, and when required, shall mark, boom, or buoy such items until they are removed.

D. Should Contractor refuse, neglect, or delay compliance with the requirements of this Article, such items may be removed by Department, and the cost of such removal shall be deducted from money due or to become due Contractor.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Furnish a lead line and fathometer (optional), boats, boat operators, laborers, and materials as required in laying out and monitoring dredging Work. Maintain daily lead line or fathometer reports. Reports shall show, at a minimum, date, time of survey, longitudinal and transverse stationing and elevations.

a. Perform hydrographic survey Work to determine dredge lines and depths in conformance with the standards for Contracted Construction Measurement and Payment Surveys, as specified by the latest edition of USACE Engineering and Design-Manual EM 1110-2-1003.

1) Furnish equipment of sufficient quality to perform surveys conforming to Contracted Construction Measurement and Payment Surveys in conformance with USACE Engineering and Design-Manual EM 1110-2-1003.

2. Provide to Engineer transportation to and from dredges at no additional cost to Department.

3. Furnish and maintain range-lights, stakes, tide-gages, buoys and anchors, including connecting ropes, and other material needed for the execution and inspection of dredging Work.

4. If night Work is permitted, Contractor shall maintain from sunset to sunrise lights on or above the plant and operation as in the opinion of Engineer, are necessary for the observance of Contractor's operations.

5. Allow for 1 interim survey at each site to be conducted by Department.

6. Engineer-approved testing laboratory shall perform water column monitoring before, during, and after dredging.

7. Record deviations in dredging Work in line and grade and advise Engineer promptly upon detection of deviations exceeding tolerances identified in applicable Articles of this Section. Record deviations which are accepted by Engineer (not corrected) in conformance with PROJECT RECORD DOCUMENTS Section.

3.6 ADJUSTING AND CLEANUP DREDGING

A. Department shall perform a final survey over the area dredged and contiguous areas occupied by Contractor's equipment within 7 Calendar Days after the completion of dredging Work at each site. Remove shoals, humps, sloughing, or other lack of Contract depth disclosed by the final survey, by methods approved by Engineer. Dredging and disposal of clean up dredge material shall be paid for at the unit price per cubic yard of material removed in conformance with the price and payment procedures of this section. No additional payment shall be paid for mobilization and demobilization.

B. Upon completion of dredging Work, remove plant and appliances, including but not limited to buoys, piles, gage piles, ranges, and pipelines used in dredging Work.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Rock dike, rock slope, and protect the dredge slope.

1.2 RELATED SECTIONS

A. Section 31 00 00 - Earthwork

B. Section 31 05 20 - Filter Fabric

C. Section 35 24 00 - Dredging

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. For purposes of measurement and payment, a ton is 2,000 pounds weight.

2. Rock shall be paid for at the unit price per ton for each type of rock under the Furnish and Place Quarry Run (2,000 Tons or Less per Order), Furnish and Place Quarry Run (Greater than 2,000 Tons per Order), and Furnish and Place Riprap unit price bid items of Bid Proposal Line Items. The unit price bid item for each type of rock includes costs for new rock, and for blends of new and reused rock.

a. Work required to manage unsuitable material generated during reuse of existing rock shall be considered incidental to Work of this Section. Unsuitable material includes rock rejected by Engineer, rock not conforming to gradations of this Section, trash, soil, and other materials deemed deleterious by Engineer. No additional compensation shall be paid for segregation of unsuitable material into debris pile, nor for removal, of disposal of unsuitable material.

3. Schedule soundings with Engineer before and after placing each type of rock. Deductions from the measured quantity of rock shall be made for rock occurring outside the tolerances of the design cross-sectional area (-0 ft / +1 ft) as shown on Drawings. Deductions shall be calculated from the disallowed cross-sectional area and converted to tonnage using the bulk specific gravity of the rock with an assumed void ratio of 30 percent.

a. Department-conducted hydrographic surveys for rock placement may be accomplished through the use of multi-beam sounding equipment. This equipment shall provide a continuous survey of the bottom.

b. Hydrographic surveying shall conform to Engineering and Design-Manual EM 1110-2-1003 Hydrographic Surveying, Chapter 6. In particular, a 3 foot by 3 foot bin size shall be used for hydrographic survey of rock Work including slope protection.

4. For purposes of soliciting bids and establishing rock cross-section tolerances, as shown on Drawings, Department's quantities are based on the assumption of a cubic yard of rock measured in place having a 2.6 bulk specific gravity and 30 percent voids. Tonnage shall vary based on the actual values.

5. Weight of rock for payment shall be measured as follows:

a. Rock Delivered by Land:

1) Weigh rock delivered by land on certificated public scales or on private scales which have been sealed by County Sealer of Weights and Measures within the latest 12-month period prior to time of bid. Obtain Engineer's approval of scales prior to shipping rock.

a) Railroad weights reported by authorized weighers approved by Engineer shall also be satisfactory to Department as a basis for measurement and payment.

2) Forward copies of weight tickets to Engineer in duplicate at time of each delivery. Provide tare weight for each ticket to determine the net weight of material delivered.

3) Establish tare weight of each truck every 2 weeks. During the rainy season or when the trucks operate in soft soil, establish the tare weight of each truck as often as requested by Engineer. The driver may be on the truck during the time vehicle is weighed, provided that the tare and gross weights are established with the same driver.

4) Engineer reserves the right to inspect and test the scales at any time. If the scales are found to be defective, rock deliveries shall cease until the scales have been placed in certified condition or Contractor obtains Engineer's approval of another scale.

5) If the scales are found to be defective in weight by 5 percent or more and if the weights so obtained are on the high side of the correct weight, the percentage defectiveness shall be deducted from tonnage of rock delivered between the time the scale was discovered to be defective and the last prior time it was verified to be accurate.

b. Rock Delivered by Water:

1) Place facilities for verifying displacement and for determining relation between draft tonnage, between depth of water in the hold and bilges, and net rock tonnages on the vessels carrying rock by Contractor in locations approved by Engineer.

2) Each vessel shall have a protected gage pad at each of the vessel corners.

3) Perform gaging and calibrating of the vessels in the presence of Engineer. Perform calibration at start of Work and re-calibrate whenever there are changes in the vessels and at intervals not exceeding 12 months on Projects of long duration.

4) Use certified displacement tables approved by Engineer for each vessel in determining rock weight.

5) Determine unloaded displacement in still water, as close to Work as practicable.

6) Fore and aft displacement, due to load, shall not differ more than one foot from the mean of the fore and aft gage readings.

7) Do not alter vessel loading by transfer of crew members or supplies, or pumping of bilges or hold, while rock is being discharged or between loaded and unloaded gage readings.

8) Seawater shall be assumed to have a buoyance of 63.9 pounds per cubic foot.

1.4 REFERENCES

A. ASTM C88/C88M - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

B. ASTM C97/C97M - Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.

C. ASTM C131/C131M - Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

D. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

E. ASTM C535 - Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

1.5 SUBMITTALS

A. Submit the following proposed methods and sequences to Engineer for review approval prior to shipment of rock and prior to starting rock removals:

1. Placing new rock.

2. Removing, stockpiling, re-grading, and reinstalling existing rock.

3. Protecting existing structures and substructures from damage during rock Work above existing pipelines, outfalls, or conduits and beneath existing overhead improvements designated to remain in place.

B. Submit test samples of rock to Department Testing Laboratory (Test Lab) for approval by Engineer prior to first shipment. These samples shall weigh not less than the following:

1. 1/2 inch filter rock: 150 pounds, minimum.

2. Riprap: 500 pounds of smallest diameter stones.

3. Others: 500 pounds, minimum.

C. Submit size and type of truck to be used to haul rock.

D. Designate in writing within 15 Calendar Days after date of Notice to Proceed the source(s) from which the rock is to be furnished.

E. Land deliveries and reused rock: Submit name and address of certified public scale, or of railroad weights, or certification information for private scales or portable scales.

F. Water deliveries: Submit certified displacement table for each vessel carrying rock to Project Site(s).

G. Submit quarry run placement method.

H. Submit proposed location on shore within Project Site(s) limits for stockpiling existing rock, including:

1. Load calculations for equipment or material on existing or new wharf.

2. Equipment and rock loading on existing dike where rock to be reused is to be stockpiled at top of dike.

1.6 QUALITY ASSURANCE

A. Rock may be subjected to the following tests: Sieve analysis (smaller gradations), specific gravity, abrasion, absorption and adsorption, sulfate soundness, wetting, and drying to determine acceptability.

B. Rock which does not conform in specific gravity, structure, and other characteristics shall be considered unsatisfactory. The presence of unsatisfactory rock or objectionable foreign material shall be reason for rejection of the whole load of rock. Such load of rock shall be removed from Work at Contractor's sole cost and expense.

C. Specific gravity shall conform with ASTM C97/C97M modified as follows:

1. Engineer shall select sample rocks for testing. If, in the judgment of Engineer, a sample rock is too large to be handled conveniently, it may be broken into 2 or more pieces and 1 or more of these selected for testing. Sample rocks shall be dried 24 hours or more at 220 degrees Fahrenheit to 230 degrees Fahrenheit. Soil or loose material shall be removed with a stiff brush. Immediately upon cooling, rock shall be weighed to an accuracy of plus or minus1 percent or better. After weighing, the specimens shall be completely submerged in clean tap water for a minimum period of 48 hours and then weighed in clean tap water to an accuracy of plus or minus 1 percent or better. Specimens shall then be surface dried with a towel to remove excess surface moisture, and immediately weighed in air to an accuracy of plus or minus 1 percent or better.

2. Bulk specific gravity shall be calculated (oven-dry basis) as follows:

Bulk specific gravity = $\frac{A}{(B-C)}$

Where: A = weight of oven-dry sample in air, B = weight of soaked and surface dried sample in air, C = weight of soaked sample in water.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Rock shall be quarried (not river run), close-grained, hard, sound, clean, and shall not disintegrate from the action of the atmosphere, sea, water, handling, or placing. Rock shall be free of seams and thin layers of soft, decomposed or water soluble material.

B. Each load of rock shall meet the following requirements:

1. Abrasion Resistance: Maximum abrasion loss shall not exceed percentages stated for the following rock gradings:

a. 1/2 inch filter rock: ASTM C131/C131M, Grading D. 15 percent after 100 revolutions and 52 percent after 500 revolutions.

b. 2 inch filter rock: ASTM C535, Grading 3. 45 percent after 1,000 revolutions.

c. Other gradations: ASTM C535, Grading 1. 45 percent after 1,000 revolutions.

2. Specific gravity: As determined by Engineer in conformance with ASTM C97/C97M with modifications stated in Quality Assurance Article of this Section:

a. The rock's average specific gravity (arithmetic mean) obtained from tests performed on any load of rock shall equal or exceed 2.5.

3. Rock shall be angular with the greatest dimension of each piece not greater than 3 times its least dimension.

C. Sulfate soundness, riprap: Soundness in 5 cycles shall be determined using magnesium sulfate solution in conformance with ASTM C88/C88M. Maximum loss on sulfate soundness testing shall be 18 percent after 5 cycles.

D. Rock failing to meet these requirements shall be rejected.

2.2 GRADATION OF FILTER ROCK

A. Filter rock shall conform to the following 2 gradations as verified by ASTM C136/C136M where gradation(s) is designated on Drawings:

2 Inch Filter Rock	
Sieve Size	Percent Passing
2 inches	100
1-1/2 inches	90 to 100
3/4 inch	50 to 70
No. 4	30 to 50
No. 10	20 to 40
No. 200	0 to 10

1/2 Inch Filter Rock	
Sieve Size	Percent Passing
1/2 inch	80 to 100
No. 4	70 to 90
No. 6	60 to 80
No. 10	25 to 50
No. 20	0 to 15

2.3 FILTER FABRIC

A. Filter fabric shall be Mirafi 600X filter cloth as manufactured by TenCate.

2.4 GRADATION OF PROCESSED QUARRY RUN ROCK

A. Each load of quarry run shall have uniform grading from fine to coarse particles to achieve the angle of repose shown on Drawings.

B. Quarry run shall have a maximum of 20 percent by weight of fines passing a No. 4 sieve in any one load. Deliveries of quarry run rock containing over 20 percent fines (material passing a No. 4 sieve) shall not be incorporated into Work.

C. The maximum size of individual pieces of rock shall not exceed 500 pounds.

D. As an alternate to Paragraphs 2.4 B and C of this Article, the quarry run rock may be processed and graded to conform to the following requirements:

Size	Percent Passing
12 inches	100
9 inches	70 to 100
6 inches	50 to 70
4 inches	40 to 60
2 inches	15 to 35
No. 4 Sieve	0 to 10
Maximum size of rock: 200 pounds	

2.5 GRADATION OF UNDERLAYER ROCK

A. Underlayer rock shall conform to the following gradation:

Size	Percent Passing
12 inches	100
9 inches	60 to 100
6 inches	20 to 40
No. 4 Sieve	0 to 10

2.6 GRADATION OF RIPRAP ROCK

A. Riprap rock shall conform to the following gradation (Department standard):

Weight of Individual Pieces Percent Smaller Than		
	Minimum	Maximum
1,000 pounds	90	100
500 pounds	40	60
200 pounds	0	10

B. The following gradation shall be used where piles are driven through rock:

Weight of Individual Pieces Percent Smaller Than		
	Minimum	Maximum
500 pounds	95	100
300 pounds	40	55
100 pounds	0	10

2.7 SOURCE QUALITY CONTROL

A. Engineer reserves the right to inspect quarry.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to placing each type of rock, verify that Engineer has sounded the underlying surface.

B. Rock dike shall not be used to support heavy construction equipment. The dike may be loaded a minimum of 20 feet from the edge of the dike with loads not exceeding 1,000 pounds per square foot.

3.2 PLACEMENT OF ROCK

A. Install rock to the thickness and within tolerances shown on Drawings

B. Place each type of rock in 1 layer starting at bottom of the slope progressing upwards.

C. Place rock in a well graded mass with a minimum of voids.

D. Assume slopes to be repaired are open slopes. Slope repair shall be performed with a skip box, clam backet, or 3-tooth grapple. Rock may be placed by land as well as water.

E. Placement of Quarry Run:

1. Place quarry run with the method approved by Engineer.

2. Exercise care when placing quarry run over existing substructures. Damage shall be repaired at Contractor's sole cost and expense.

3. Place quarry run on the slope of the underlying surface as soon as possible after it is dredged and sounded but no later than 2 working days nor more than 400 feet behind Department soundings.

F. Placement of Underlayer Rock and Rock Riprap:

1. Position stones to provide maximum surface contact between adjacent stones.

2. Discharge riprap and underlayer rock no higher than 3 feet above underlying rockline above water and 5 feet above the underlying rockline beneath water.

a. Riprap: Use clam bucket, 3-tooth grapple, or other method for installing riprap that provides maximum rock surface contact and that does not cause improper interlock or damage to existing concrete piles.

b. Dumping from other heights or using other placement methods that may cause segregation of rock sizes shall not be permitted.

G. Placement of Filter Materials:

1. Place filter fabric and filter rock at locations shown on Drawings where backfilling with soil material occurs.

2. Do not place filter rock until Engineer has inspected filter fabric.

3.3 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Department shall sound each rock-type layer.

a. Place additional rock where soundings indicate placed rock is below the lower tolerance line (-0 feet) as shown on Drawings. Such additional rock shall be paid for at the unit price bid.

b. Remove rock placed above the upper tolerances line (+ 1 foot) as shown on Drawings or otherwise misplaced unless otherwise permitted in writing by Engineer. The estimated weight of out of tolerance rock whether removed or not, shall be deducted from the quantity of rock placed unless the rock is incorporated in other locations approved by Engineer.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Concrete wharf

B. Crane rail girder

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications

B. Section 31 62 13.23 - Prestressed Concrete Piles

C. Section 32 12 17 - Asphalt Concrete Paving

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Concrete Wharf Repairs: Concrete wharf construction shall be paid on a negotiated cost basis or a time-and-materials basis under Wharf Repairs, Renovations, and Improvements Allowance bid item of Bid Proposal Line Items.

2. On or about the first of each month, Contractor shall provide an itemized cost statement for Work performed during the prior month under bid items listed above. The statement shall include a summary tabulation and a detailed itemization of changes. Original invoices for services and fees shall be included in the statement.

1.4 REFERENCES

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary.

B. ACI PRC-347 - Guide to Formwork for Concrete.

C. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.

D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

E. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.

F. ASTM A970/A970M - Standard Specification for Headed Steel Bars for Concrete Reinforcement.

G. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

H. ASTM C33/C33M - Standard Specification for Concrete Aggregates.

I. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

J. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

K. ASTM C88/C88M - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

L. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete.

M. ASTM C150/C150M - Standard Specification for Portland Cement.

N. ASTM C157/C157M - Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete.

O. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.

P. ASTM C203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.

Q. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

R. ASTM C470/C470M - Standard Specification for Molds for Forming Concrete Test Cylinders Vertically.

S. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.

T. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.

U. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.

V. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.

W. AWS C6.1 - Recommended Practices for Friction Welding.

X. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars.

Y. Reference Specifications (RS):

Section 200 - Rock Materials

Section 201 - Concrete, Mortar, and Related Materials

Subsection 201-4 - Concrete Curing Materials

Section 207 - Gravity Pipe

Section 302 - Roadway Surfacing

Section 303 - Concrete and Masonry Construction

Z. University of California, San Diego (UCSD), Department of Structural Engineering:

Report TR 98/14 - Seismic Testing of a Full Scale Pile Deck Connection Utilizing Headed Reinforcing, August 1998

1.5 SUBMITTALS

A. Concrete Mix Design:

1. Submit the proposed concrete design mixes to Engineer for review and provide required testing data at least 30 days before scheduled use on Project. Available test data for the proposed mix shall be included with the submittal.

2. Submit certification that the aggregates met the recommendations of ASTM C33/C33M, Appendix XI for reactivity.

3. Submit certification that the aggregates met the soundness requirements of ASTM C33/C33M when tested in conformance with the requirements of ASTM C88/C88M using a sodium sulfate solution.

4. Submit certification that fly ash meets RS Subsection 201-1.2.5.3, Class F.

5. Submit certification on admixtures to be used.

B. Reinforcing Steel:

1. Submit 2 copies of mill test reports certifying that materials meet requirements of ASTM A615/A615M, ASTM A706/A706M, and ASTM A970/A970M.

2. Submit chemical analysis for determining carbon equivalent of reinforcing steel which shall be welded in conformance with AWS D1.4/D1.4M.

3. Before fabricating materials, submit shop Drawings to Engineer for review showing bending diagrams, critical dimensions to ends of bars, including complete information for placing steel reinforcing and accessories, amount of concrete cover, and minimum spacing between bars. Do not scale dimensions from ; or use Drawings for shop Drawings.

4. Two copies of the reviewed and corrected reinforcing steel shop Drawings including the list of the reinforcing steel shall be furnished to Engineer at Project Site(s) before the placing of reinforcing steel is started.

C. Concrete Formwork:

1. Submit shop Drawings and complete calculations for concrete formwork, signed by a State of California registered civil Engineer in hard copy and electronic file format.

2. Formwork shop Drawings shall show surface finish, formwork materials, form ties, falsework, shoring, and incidental materials.

D. Submit a layout of locations with methods of construction joints and marked with unique identification numbers for each pour to Engineer for review prior to commencing fabrication of reinforcement.

E. Submit manufacturer’s certificate attesting that structural metals comply with Specifications. In the case of fabricated metal, certificates shall be supplied by the fabricator attesting that each element of the fabrication including welding electrodes and coatings comply with Specifications.

F. Submit manufacturer’s certificate for each nonmetallic component to be included in Work attesting that materials comply with Specifications.

G. Submit equipment to be used to mechanically roughen surface of existing concrete.

H. Concrete Coring Submittals:

1. Submit methods and equipment proposed for concrete coring.

2. Submit proposed procedures to repair rebar cut during coring Work and to prevent further cutting of reinforcement.

3. Submit description of concrete core locations for Engineer's inspection and review including locations, if any, where reinforcement was cut and how it was repaired.

I. Submit drill and bond dowels materials and methods.

J. Submit concrete removal procedures and exposed steel reinforcing protection method.

K. Crack Repair Report: Epoxy injection materials manufacturer certification that crack repair was performed by a licensed and certified applicator in conformance with manufacturer's written instructions.

1.6 QUALITY ASSURANCE

A. Tests:

1. Where a testing laboratory is referred to in this Section, it is understood to mean City of Los Angeles Harbor Department Testing Laboratory (Test Lab) or a Department approved laboratory. Tests performed by Test Lab shall be at no charge to Contractor. Contractor shall provide for sampling, testing and certification except that which is indicated in this Section to be provided by Test Lab. Contractor provided testing laboratory shall be referred to in this Section as independent testing laboratory. Costs of Contractor’s sampling, testing, and certification shall be provided at Contractor's sole cost and expense.

a. Test Lab shall perform the following tests and services:

1) Test fine and coarse aggregate for conformance with RS Subsections 200-1.4 and 200-1.5.3.

2) Review Contractor's proposed mix designs.

3) Perform concrete compressive strength tests.

2. Evaluation of strength tests of trial batches shall conform to RS Subsection 201-1.1.4, except that the minimum cement content required therein does not apply and trial batches shall not be placed in Work. Trial batches and related testing, if required, shall be provided by Contractor.

3. Comply with the following to facilitate testing:

    a. Provide and deliver to Test Lab, representative samples of materials which require testing and are proposed to be used on Project, including but not limited to, concrete mix and reinforcing steel.

    b. Furnish experienced technicians and equipment necessary to obtain and handle the samples at Project Site(s) or at other locations where materials are located.

    c. Advise Test Lab at least 72 hours in advance of the beginning of operations to allow time for completion of quality tests and for assignment of laboratory personnel.

    d. Provide and maintain facilities for safe storage and curing of concrete test cylinders at Project Site(s) as required by ASTM C31/C31M, standard cure method. Cylinder molds shall conform to ASTM C470/C470M . In addition to test cylinders required by Contractor's testing and quality control, Contractor shall also make for Department 4 concrete test cylinders per 50 cubic yards of concrete up to 150 cubic yards, then 4 test cylinders per 250 cubic yards of concrete poured for each day of Work. A minimum of 4 cylinders shall be made for each day’s pour, or upon change of mix design. Upon notification, dispose of any cylinders not tested by Department off Department property.

    e. When requested, furnish copies of test reports of shipments of concrete to Engineer and Test Lab.

    f. Maintain a complete record of specimens taken, giving detailed location of each pour represented.

    g. Label cylinders with the date of sampling, the class and mix proportions of the concrete, and Work location from which the sets of samples were taken based on features shown on Drawings.

h. Test cylinders shall not be transported until 24 hours after they have been cast. Cylinders shall be picked up by Test Lab within 72 hours after casting. Handle cylinders in a manner so as to prevent damage to samples and loss of lids. Failure to comply with the provisions of this Section regarding cylinder handling may be cause for rejection of the concrete for the part of the structure represented by the cylinders. Engineer may further require performance of any and necessary alternative strength tests at sole cost and expense of Contractor if cylinder tests are non-conclusive or cylinders are mishandled.

i. Engineer may increase the required number of cylinders if the specified concrete strength is not being attained consistently or reduce the number if Engineer determines that high concrete strengths are consistently produced and the concrete and curing processes are uniform.

j. Provide evidence that the casted concrete has met requirements as specified in Materials Article of this Section. Strength shall be determined by cylinder breaks after 28 days as specified by ASTM C39/C39M .

1) Coordinate with Test Lab through Engineer to perform additional, earlier cylinder breaks for purposes of scheduling.

2) If the cylinders show compressive strengths below the minimum acceptable limit, Engineer may require extraction of core samples from the parent concrete structure at Contractor’s sole cost and expense. Cores shall conform to ASTM C42 and RS Subsection 201-1.1.5. Cores shall be extracted by Contractor and shall be tested by Test Lab.

B. Inspection:

1. Engineer reserves the right to inspect the manufacturing or fabrication facilities at any time during Work to ensure that the materials and workmanship are in conformance with Specifications. Inspection shall not relieve Contractor from full responsibility for the accuracy and character of Work in conformance with Specifications.

C. Installers:

1. Personnel installing adhesive anchors and rebar dowels shall be trained and certified in the dowel system installation procedures.

PART 2 - PRODUCTS

2.1 DESIGN OF STRUCTURAL CONCRETE MIX

A. Before beginning any concrete Work, Contractor shall have the concrete mix designed and the ingredients selected and proportioned by an Engineer-approved independent testing laboratory meeting the requirements of ASTM E329 and signed by a State of California registered civil engineer. Certified copies of supporting laboratory trial mix reports shall be sent to Engineer from the independent testing laboratory. Do not place concrete prior to notification of completion of Engineer's review in writing. Unless the requirement is waived by Engineer, trial batch testing shall be provided in conformance with RS Subsection 201-1.1.4.

B. Design strength shall be 5,000 pounds per square inch (psi) at 28 days, unless otherwise shown on Drawings or specified in this Section. The combined aggregate grading shall conform to RS Subsection 201-1.3.2 Table 201-1.3.2 grading B 1 1/2 inch maximum except that grading D may be used where, in Engineer's opinion, placing conditions require it.

C. The water-cementitious material (cement plus fly ash) ratio (W/C ratio) shall not exceed 0.40 by weight.

D. Minimum cementitious material content used for performance and longevity, regardless of design strength, shall be 658 pounds (7 sacks) per cubic yard, consisting of 559 pounds of cement and 99 pounds of Class F fly ash. Contractor shall increase cementitious material content as required to meet strength requirements. The additional cementitious material shall have 15 percent Class F fly ash.

E. Slump Range (ASTM C143/C143M): 3 to 4 inches. Design mix test results shall reflect the slumps to be used. If high range water reducers are used to increase slump, Contractor shall demonstrate that maximum W/C ratio is not exceeded.

F. No calcium chloride, in any form, shall be used in the concrete mixture.

2.2 MATERIALS

A. Cement: Type II low-alkali conforming to RS Subsection 201-1.2.1 and ASTM C150/C150M.

B. Aggregates: Conform to RS Subsection 201-1.2.2.

C. Water: Conform to RS Subsection 201-1.2.3.

D. Reinforcing:

1. Except as noted on Drawings, reinforcing bars shall be deformed and shall be in conformance with ASTM A615/A615M, Grade 60, including the supplementary requirements. Bars to be welded shall conform to ASTM A706/A706M, Grade 60. Welding electrodes for reinforcing bars shall be in conformance with AWS D1.4/D1.4M. Welding of bars is not permitted except where shown on Drawings or approved by Engineer.

2. Pile dowels, pile dowel extensions, and shearhead reinforcing shall conform to ASTM A970/A970M. The bar material for the T-headed bars shall be ASTM A706/A706M. The head plate material shall be ASTM A572/A572M, Grade 50. The plate shall be welded to the bar by friction welding conforming to AWS C6.1 and AWS D1.4/D1.4M. T-heads (head plates) shall be equal to 3 times bar diameter, or 8 times bar area. Some T-headed bars called out on Drawings show an upset end. The upset bar ends shall be equal to 1 1/2 times the bar diameter. Ends of bars shall be upset at Project Site(s) or in a shop using an Xtender upsetting machine available through Headed Reinforcement Corporation (HRC) or a licensed distributor. The headed bars shall be capable of developing the full rupture strength of the reinforcing steel. The upset end shall also be capable of developing the full rupture strength of the reinforcing steel. T-headed bars with end plates or with upsets manufactured by HRC shall be deemed to meet Specifications.

a. Contractor may propose alternate headed bars for concrete reinforcement other than those manufactured by HRC, provided headed bars meet following requirements: Headed bars used for shearhead reinforcing shall meet ASTM A970/A970M specifications. Headed bars used for pile dowels and pile dowel extensions shall meet ASTM A970/A970M specifications and shall be certified by a full scale test of the pile/deck connection. The connection shall be detailed and the test procedure and material shall be the same as described in the paper by Sritharan and Priestly Seismic Testing of a Full Scale Pile/Deck Connection Utilizing Headed Reinforcing, Report TR 98/14, Department of Structural Engineering, UCSD, August 1998. The paper is posted at Department's website with Reference Documents. Before performing the test, the details, procedures, and material description shall be submitted to Engineer for review. Test results shall be submitted to Engineer and shall be essentially identical or better than the results described in the previously listed paper to be reviewed. Engineer's decision shall be final. Contractor shall allow minimum of 4 weeks review time by Engineer prior to ordering the headed reinforcement.

3. Details as shown on Drawings using the headed reinforcement shall be constructed as they were detailed without alteration. Alternative reinforcement other than headed reinforcement shall not be used without Engineer's approval. If Contractor were to propose alternative reinforcement system other than headed reinforcement, submittal shall be made to Engineer. Submittal shall include adequate calculations and testing data necessary to prove the alternative system shall offer equal or better structural performance than the headed reinforcement. Contractor shall also provide Engineer with an estimated cost differential between the option of using headed reinforcement and the alternative reinforcement. Engineer's decisions on the use of a reinforcement system shall be considered final.

E. Concrete Admixtures:

1. No admixtures shall be used except those specified or approved by Engineer.

2. Concrete shall contain a water-reducing admixture. The admixture shall conform to ASTM C494/C494M, Type A or Type D, except it shall contain no chlorides, and shall be non-toxic after 30 days. The amount of admixture added to the concrete shall be in conformance with the manufacturer's written recommendations. Furnish a compliance statement that the admixture used satisfies the requirements of Specifications.

3. Concrete shall contain Class F fly ash admixture conforming to RS Subsection 201-1.2.5.

4. Air-entraining admixtures shall not be used.

F. Forms shall be constructed of plywood, hard plastic-finished plywood, or steel and shall be in conformance with RS Subsection 303-1 and ACI PRC-347.

G. Form oil shall be nonstaining colorless mineral oil, free from kerosene; flash point shall not be less than 300 degrees Fahrenheit.

H. Screed chairs shall be metal or plastic. Wood shall not be permitted.

I. Expansion joint filler and joint sealants shall conform to Drawings and RS Subsection 201-3.

J. Concrete curing materials shall conform to RS Subsection 201-4 and to the requirements of ASTM C309 with the additional requirement that permeability not exceed 0.039 gm/cm2/72 hours. Curing compounds shall be compatible with required finishes and/or coatings. Tests for compliance shall be made in conformance with manufacturer’s recommendations with manufacturer's certification furnished by Contractor to Engineer. Manufacturer's certification shall state quantity or coverage required to meet or exceed tests, surface texture of concrete, and method of application. Contractor shall submit certification that the product meets ASTM C309 and the additional permeability requirement; Contractor shall also specifically state the coverage required to meet these requirements. Curing compound shall not be used where coatings shall later be applied to the concrete surface. In this case, use continuous water curing conforming to RS Subsection 303-1.10.

K. Curing plastic sheet shall be 6 mil polyethylene in conformance with ASTM C171.

L. Grout shall be non-shrink, non-metallic, cementitious grout and shall have a minimum 28-day compressive strength of 7,000 psi. Manufacturers: Five Star Products Inc. or BASF Corporation.

M. Spacer blocks to support reinforcing steel and maintain required bar clearance shall be made of concrete identical to that of the concrete being placed.

N. Spacers, chairs, bolsters, ties, and devices for placing, spacing, supporting, and fastening reinforcement in place shall conform to the requirements of Concrete Reinforcing Steel Institute (CRSI) Manual of Practice for Reinforced Concrete Construction.

O. Expansion joint fiber filler shall be Homex 300, manufactured by Homasote Company, (800) 257-9491. Thickness shall be as indicated on Drawings but not less than 1/2 inch.

P. Sealant for expansion and control joints shall be MasterSeal SL1 as manufactured by BASF with polyethylene backer rod (having a diameter 25 percent larger than joint) by Grainger.

Q. Anti-bonding agent shall be W.R. Meadows Duogard II Form Release. W.R. Meadows, (909) 469-2606.

R. Plastic control joint shall be Zip Cap Control Joints, by Sika Greenstreak, Saint Louis, Missouri. Joint material shall be T-shaped plastic strip 1/16 inch thick by at least 2 inches deep with suitable anchor to prevent vertical movement and with membrane 3/4-inch wide pull-top stiffener.

S. Area drain components shall be in conformance with the following requirements:

1. Metal components shall be as specified in METAL FABRICATIONS Section and STORM DRAINAGE Section.

2. Polyvinylchloride (PVC) Pipe: ASTM D1785.

3. Polyvinylchloride Fittings: ASTM D2467.

4. Expanded polystyrene shall be a commercially available polystyrene board. Expanded polystyrene shall have a minimum flexural strength of 35 pounds per square inch, minimum, determined in conformance with ASTM C203, and a compressive yield strength of between 16 and 40 pounds per square inch, at 5 percent compression. Fillers shall be held in place by waterproof adhesive, or other means subject to Engineer’s review.

T. Epoxy sealant for cut existing rebar and for rebar at control joints shall be Splash Zone A788 by Carboline.

U. Neat cement grout shall consist of cement, water, and superplasticizer conforming to RS Subsection 201-1.2.4, c. The water/cement ratio shall not exceed 0.4 (4.5 gallons per sack of cement). Grout shall be fluid so that no air voids are entrapped when dowels are inserted.

2.3 CRACK REPAIR EPOXY

A. Crack repair epoxy shall be 2 component epoxy injection, Sikadur 35, Hi-Mod LV by Sika Chemical Corp., Lyndhurst, NJ.

PART 3 - EXECUTION

3.1 PREPARATION

A. Concrete Surface Roughening: Perform roughening of concrete surfaces where shown on Drawings. Use mechanized, self-propelled equipment that produce a consistent roughness pattern at the amplitude shown on Drawings without cracking parent concrete.

1. Self-propelled concrete scarifier by Edco, Model CPU-12-35K. Edco, (800) 638-3326.

B. For removal work at A and B pile rows at wharf front face, sawcut existing concrete in conformance with RS Subsection 300-1.3.2, then carefully remove concrete back to limits shown on Drawings using techniques that do not damage bottom rebar mat designated to remain.

3.2 CONSTRUCTION

A. Construction shall be in accordance with Drawings, Specifications, and the standard practices and recommendations of American Concrete Institute (ACI) and CRSI.

B. A typical concrete wharf section is included in Appendix "B" (Detail CX-1) of Specifications.

3.3 FORMWORK

A. Formwork shall include forms, falsework, shoring, temporary supports, and other structural formwork required. Formwork shall be structurally designed by and signed by a State of California registered civil Engineer. Formwork, falsework, and staylath design shall accommodate piles up to 24 inches out of alignment measured from the center line of the pile with no modifications. Formwork shall comply with applicable safety regulations, current OSHA regulations, and other codes. Refer to Price and Payment Procedures Article of this Section for formwork, reinforcing, and concrete modifications. Comply with applicable portions of ACI PRC-347, ACI CODE-318, RS Subsection 303-1.3, and this Section. Design, supervision, and construction for safety of property and personnel shall be Contractor's full responsibility.

B. If appropriately designed, the staylath system may be used as support for the formwork during wharf deck construction.

1. Contractor shall not embed any devices in the column strips of wharf deck system for purposes of supporting formwork. Only friction collars (not embedded in deck) are allowed to support formwork.

2. Formwork system shall not alter or interfere with structural components design.

C. Forming system shall be designed to support loads from the entire deck section and crane girder as though placed at one time.

D. Reuse of forms shall be permitted only if a like new condition is maintained, unless otherwise approved in writing by Engineer. Engineer shall be notified at least 1 full working day prior to reinforcement placement so that the forms can be inspected. Contractor shall correct any defective formwork found in Engineer's inspection, prior to placement of any reinforcement. Formwork surfaces that were in good condition and accepted for use, but were damaged during removal and handling or other procedures, shall not be reused on additional pours.

E. Construct forms suitable for removal without hammering or prying against the concrete. Remove forms in conformance with RS Subsection 303-1.4.

F. Unless otherwise reviewed by Engineer, the forming systems shall be designed to suport all loads considering the entire deck section to be placed at one time.

G. Means for supporting staylath from piles shall be as described in PRESTRESSED CONCRETE PILES Section.

3.4 REINFORCEMENT PLACING

A. Place reinforcement in conformance with RS Subsection 303-1.7 unless otherwise specified in this Section or shown on Drawings.

B. Reinforcing steel shall have a minimum 3 inches of concrete cover unless otherwise noted on Drawings.

C. Additional reinforcing steel may be required due to mislocated piles. Refer to Price and Payment Procedures Article of this Section for reinforcing steel modifications.

D. Anchors and Dowels:

1. Adhesive anchors and rebar dowels into existing concrete shall be installed with an injectable 2-component epoxy adhesive Hilti HIT-RE 500-V3 as manufactured by Hilti, (800) 879-8000.

2. Adhesive anchors and rebar dowels shall be installed in conformance with the manufacturer’s published installation instructions and International Code Council Evaluation Service ICC-ES ESR 2322, Installation Instructions.

3. Avoid damaging or cutting the existing reinforcing bars. Locate existing rebar using non-hazardous, non-destructive methods with accurate location tolerances (1/4 inch, plus or minus).

4. Contact Engineer prior to drilling if the proposed hole location interferes with the existing rebar.

5. If reinforcement is encountered during drilling before the specified depth is attained, contact Engineer to verify if Engineer shall allow coring through the existing reinforcement. If not, drill a new hole in an area without interfering, existing reinforcement and adjacent to the rejected hole to the depth shown on Drawings. Contact Engineer to review final location of drilled holes.

a. Patch hole in conformance with Repair of Surface Defects and Fissures Article of this Section.

6. Coordinate with Engineer for inspection during installation in conformance with ICC-ES ESR 2322, Section 4.4.

3.5 CONCRETE CORING

A. Core holes by methods that do not shatter or damage concrete adjacent to holes.

B. Do not start coring Work until Engineer has reviewed coring methods and equipment submittal and until Engineer is present at Project Site(s) to observe start of coring Work.

C. Alignment of cored holes shall not deviate from dimensions shown on Drawings by more than 1/2 inch in every 10 feet of cored hole length.

D. Avoid damaging or cutting the existing reinforcing bars. Locate existing rebar using non-hazardous, non-destructive methods with accurate location tolerances (1/4 inch, plus or minus).

E. Terminate coring operations when reinforcement is cut. Propose a procedure to repair the cut reinforcement and to prevent further cutting of reinforcement. Obtain Engineer's review of procedure prior to resuming coring Work.

F. Immediately after coring, identify concrete cores with a description of the core locations for Engineer's inspection and approval. Include locations, if any, where reinforcement was cut and how it was repaired.

3.6 EXISTING REBAR

A. Where existing rebars are cut and for rebar at control joints, protect by applying Splash Zone A-788 as manufactured by Carboline.

3.7 CONCRETE MIXING

A. Concrete mixing shall conform to RS Subsection 201-1.4.

B. No water shall be added to concrete after trucks leave batch plant.

3.8 PLACING CONCRETE

A. Conform to RS Subsection 303-1 except for modifications shown on Drawings or specified in this Section. Wharf Deck shall be synonymous with and in lieu of Bridge Deck.

B. Allow 7 Calendar Days between adjacent pours. A pour shall be defined as a continuous placement of concrete between construction joints.

C. The wharf deck shall be finished in conformance with RS Subsection 302-6.4 and RS Subsection 303-1.9.1, except RS Subsection 302-6.4.4 shall not apply where the deck shall not be exposed.

D. Live loading on wharf deck during curing shall be limited to the following:

1. No loading for the first 7 days and before compressive strength of concrete equals 2,400 psi.

2. After 7 days and after compressive strength of concrete equals 2,400 psi or greater, the loads shall be limited to 150 pounds per square foot uniform live load, and 12,000 pounds concentrated live load on minimum spacing of 6-foot on centers.

3. Loading shall not exceed 150 pounds per square foot until concrete has attained a compressive strength of more than 3,000 psi.

3.9 CONSTRUCTION JOINTS

A. Location and details shall be as indicated on Drawings, as specified in Specifications, or as reviewed by Engineer. Where expansion joints are not shown or where they are spaced at larger spacings, intermediate construction joints shall be provided by Contractor. Construction joints shall be oriented transversely (perpendicular to face of wharf) and the spacing between joints shall not exceed 100 feet parallel to the wharf face unless approved by Engineer in writing. Construction joints shall be located and shown on Contractor's shop Drawings. Obtain approval of Engineer for final location of construction joints.

1. Locate construction joints within the middle half of the bent spacing (i.e., anywhere from 5 feet to 15 feet from the bent lines for a typical 20-foot bent) and show on shop Drawings.

B. Sandblast construction joints, while concrete is fresh, to clean and roughen the surface of the joint, exposing clean coarse aggregate solidly embedded in mortar matrix. High-pressure water wash is not acceptable. Clean forms and reinforcing by means of compressed air.

C. Bonding to recently placed concrete at horizontal construction joints: after preparing the surface thoroughly clean and saturate with water, remove standing and ponded water and immediately place concrete. Recently placed concrete is defined as less than 60 days old.

D. Use offset keyways at construction joints in slabs and vertical construction joints.

3.10 EXPANSION JOINTS

A. Location and details of expansion joints are indicated on Drawings.

3.11 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Concrete shrinkage shall be less than 0.030 percent at 28 days when tested in conformance with ASTM C157/C157M.

3.12 SURFACE DEFECTS AND FISSURES

A. No rock pockets or honeycombing shall be allowed.

B. Individual small surface defects such as air bubbles, voids, and fissures shall be accepted without repair, if the voids or air bubbles are less than 1/2 inch in diameter and 3/8 inch in depth and if fissures do not penetrate more than 3/8 inch in depth.

C. Surface defects and fissures not accepted shall be repaired as specified in Repair of Surface Defects and Fissures Article of this Section.

3.13 REPAIR OF SURFACE DEFECTS AND FISSURES

A. Grout and dry patching material shall consist of portland cement mortar mixed in the proportion of 1 part portland cement (Type II) to 2 parts of fine sand (passing a No. 14 to 20 mesh sieve) by volume with only enough water to make a heavy mortar. No mortar shall be used which has been prepared for longer than 30 minutes and if stiffening shall occur within this period, the mix shall be discarded. No water shall be added to the mortar after it has first been prepared.

B. Preparation:

1. The depth and direction of fissures shall be ascertained by probing with a 12-gage wire, after which a drill with a 3/8- to 1/2-inch bit shall be used to enlarge the fissure to the depth and in the direction which was indicated by the probing. In the event the bit is broken off in the concrete, it shall be removed.

2. Concrete surfaces to be repaired shall be scrubbed with a coarse, stiff, short, bristle brush prior to the application of the grout dry patching. The cleaning is to uncover holes which may be concealed by a thin film of laitance or mortar.

3. The brushed surfaces shall be hosed with a pressure nozzle to remove dirt and foreign objects.

C. Repair Methods:

1. While the concrete surface is still damp, dry patching material shall be applied to indented, damp, concrete surfaces to be repaired, followed by methods which shall provide a positive bond between the patching material and concrete surface being repaired.

a. Mortar grout shall be compacted into the predrilled fissures in such a manner as to permit no voids and provide a bond between the concrete and the mortar at interfaces. Following this step, surface voids shall be dry patched by means submitted to Engineer for review.

b. Mortar grout patches shall be kept moist for not less than 5 days after placement. Patches which show secondary fissures, or which are not bonded shall be rejected and redone. In the event shrinkage occurs in the hardened patches, patches shall be removed and re-patched, using key ways by drilling or other means.

D. An epoxy-based grout shall be used to fill holes or depressions resulting from the removal of form bolts. This shall be used in place of Class C mortar specified in RS Subsection 303-1.9.2.

3.14 FINISHING OF CONCRETE SURFACES

A. Finish wharf deck in conformance with RS Subsection 302-6.4 and RS Subsection 303-1.9, except RS Subsection 302-6.4.2 shall not apply and RS Subsection 302-6.4.3,c and d, shall not require the use of a 16 foot long wooden float. RS Subsection 302-6.4.4 also shall not apply where the deck shall not be exposed. Work shall further conform to the following:

1. Only exposed walking surfaces of the wharf deck shall be broom finished.

2. The bottom of the power trench and utility vaults shall be given a steel trowel finish.

B. Apply an ordinary surface finish to the underside of the wharf deck, outboard (waterside) face of the wharf deck continuous edge beam, unexposed surfaces of the wharf deck, and the cutoff wall in conformance with RS Subsection 303-1.9.2.

3.15 CURING

A. Cure concrete in conformance with RS Subsection 303-1.10. Earth or sand cover curing methods shall not be used.

3.16 PROTECTION

A. Protect finished concrete surfaces from stains, abrasions, and other damage.

B. Protect existing finished concrete surfaces during placement of concrete adjacent to or above such surfaces.

C. Apply Splash Zone A788 by Carboline to cut rebar ends exposed to the weather.

3.17 AREA DRAINS

A. Metal components shall be in conformance with the requirements specified in METAL FABRICATIONS Section.

B. Polystyrene filler shall be installed in place as shown on Drawings. Filler shall be held in place against the lower pipe by an adhesive approved by the polystyrene manufacturer. Polystyrene filler shall fit in and around pipes snugly.

C. Install pipe as shown on Drawings and in conformance with RS Subsection 207-17.

3.18 CRACK REPAIR

A. Cracks greater than 0.01 inch in width and less than 0.19 inch in width in the wharf structure, regardless of cause, shall be epoxy injected using 2-component epoxy as specified in this Section at Contractor's sole cost and expense. Applicators shall be certified by the epoxy manufacturer.

1. Report cracks 1/8 inch or greater in width to Engineer.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Construction and repair of timber wharf members including but not limited to the following:

1. Beams
2. Joists
3. Decking
4. Bracing
5. Blocking
6. Bullrails
7. Crane stop bumpers

1.2 RELATED SECTIONS

A. Section 02 00 01 - Basic Site Materials and Methods

B. Section 05 50 00 - Metal Fabrications

C. Section 09 90 01 - Painting for Exterior Improvements

D. Section 31 62 19 - Timber Piles

E. Section 35 54 00 - Concrete Wharf Construction

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under each corresponding bid item of Bid Proposal Line Items that requires construction and repair of timber wharf members.

1.4 REFERENCES

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

C. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

D. ASTM A563/A563M - Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric).

E. ASTM D570 - Standard Test Method for Water Absorption of Plastics.

F. ASTM D638 - Standard Test Method for Tensile Properties of Plastics.

G. ASTM D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.

H. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

I. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.

J. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.

K. ASTM D1203 - Standard Test Methods for Volatile Loss from Plastics Using Activated Carbon Methods.

L. ASTM D1238 - Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer.

M. ASTM D1239 - Standard Test Method for Resistance of Plastic Films to Extraction by Chemicals.

N. ASTM D1505 - Standard Test Method for Density of Plastics by the Density-Gradient Technique.

O. ASTM D1693 - Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics.

P. ASTM D1894 - Standard Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting.

Q. AWPA U1 - Use Category System: User Specification for Treated Wood.

R. WWPA G-5 - Western Lumber Grading Rules.

S. Reference Specifications (RS):

Section 204 - Lumber and Treatment with Preservatives

Section 305 - Pile Driving and Timber Construction

1.5 SUBMITTALS

A. Furnish Certificates of Inspection in conformance with Western Lumber Grading Rules.

B. Submit shoring plan for existing wharf areas in vicinity of pile cap, beams, and joists to be repaired. Shoring design shall be stamped by a State of California-registered civil Engineer specializing in the design of marine structures.

1. Contractor's Engineer shall not designate wharf members to be repaired to be part of shoring support system until such repairs have been completed.

C. Submit a certificate of compliance issued and signed by an accredited, independent, treated wood inspection agency certifying that submerged marine timber and its production was inspected in compliance with Western Wood Preservers' Institute (WWPI) Best Management Practices. Submerged marine timber refers to timber either continuously or periodically submerged in seawater including, but not limited to, cross bracing. Best management practices (BMP) mark shall be shown on the certificate of compliance.

1.6 QUALITY ASSURANCE

A. Timber shall be grade stamped by Western Wood Products Association (WWPA) in conformance with WWPA G-5.

B. Treated timber shall be certified by an accredited, independent treated wood inspection agency to have been produced in compliance with BMPs.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store and handle materials in conformance with RS Subsection 305-2.2.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Timber: Douglas fir, No. 1, S1S minimum, in conformance with RS Subsection 204-1 unless shown otherwise on Drawings. Exceptions:

1. Cap beam material shall be Select Structural.

2. Wharf deck material shall be Port Orford cedar or Alaskan yellow cedar, No. 1, S1S1E.

B. Hardware: Galvanized in conformance with ASTM A123/A123M and ASTM A153/A153M. Hardware shall conform to requirements of METAL FABRICATIONS Section and the following:

1. Bolts: ASTM A307
2. Nuts: ASTM A563/A563M
3. Washers: Malleable iron
4. Spikes: Square-shank, steel, wedge point, diamond head.
5. Nails: Smooth shank.

C. Beams, joists, blocking, bullrails, crane stop bumpers and other Douglas fir members subject to salt water spray, shall be treated in conformance with AWPA U1 to the requirements of Use Category 4B (UC4B). Timber shall also be treated in conformance with RS Subsection 204-2.

1. Exceptions to Subsection 204-2:
    a. Preservative shall be ammoniacal copper zinc arsenate (ACZA).
    b. Cedar wharf decking material shall be untreated.
2. Under-wharf bracing shall be treated with ACZA in conformance with AWPA U1 to the requirements of Use Category 5B (UC5B).
3. Material that is continuously or periodically submerged in seawater, including but not limited to cross bracing, shall be produced in compliance with WWPI Best Management Practices. To download a free copy of BMPs, visit https://preservedwood.org/portals/0/documents/BMP.pdf.

D. Cross Brace Wrapping:

1. Polyvinyl Chloride Flexible Sheet (PVC):

a. Sheets shall be of the flexible type, smooth, and free from foreign matter, cracks, tears, holes, and other defects.

b. PVC sheeting shall meet the following requirements:

Property	Value	Test Method
Thickness, mils	30	
Tensile Strength, psi		
Mill Direction	2500 minimum	ASTM D882
Transverse	2000 minimum	ASTM D882
Elongation, percent		
Mill Direction	300 minimum	ASTM D882
Transverse	300 minimum	ASTM D882
Graves Tear, pounds per mil		
Longitudinal and Transverse	0.300 minimum	ASTM D1004
Volatility, percent	1.5 maximum	ASTM D1203
Water Extraction percent loss	0.5 maximum	ASTM D1239
Water Absorption percent in one week	1.0 maximum	ASTM D570
Ultraviolet Inhibitor Carbon Black, percent	2.0 minimum	
Specific Gravity	1.21	

2. Polyethylene Wrap:

    a. Sheets shall be smooth and free from foreign matter, cracks, tears, holes, and other defects.

    b. The polyethylene sheeting shall meet the following requirements:

Property	Value	Test Method
Thickness, mils	6	
Density	0.917-0.931	ASTM D1505
Ultraviolet Inhibitor Carbon Black, percent	2.0 minimum	
Heat sealing properties	Normal	
Coefficient of friction, Uk	0.4 to 0.6	ASTM D1894
Melt Index, grams/10 minutes	0.2 to 0.4	ASTM D1238
Tensile Strength, psi		ASTM D882
Elongation, percent		ASTM D882
Mill Direction	300 minimum	
Transverse Direction	300 minimum	
Roll width, feet	5.5 center folded	11.0 +/- 0.1 open

3. Polyethylene Wearing Surface:

    a. Extra high molecular weight polyethylene sheets in lengths shown on Drawings.

b. Polyethylene sheeting shall meet the following requirements:

Property	Value	Test Method
Thickness, mils	150	
Density	0.950	ASTM D1505
Melt flow, Condition F	Less than 9 grams/10 minute	ASTM D1238
Environmental stress cracking resistance, condition B, 50 degrees Fahrenheit, hours	1,000	ASTM D1693
Tensile strength, psi 2 inch/minute	3,600	ASTM D638
Elongation, percent 2 inch/minute	650	ASTM D638
Brittleness (degrees Fahrenheit)	Temperature less than 180 degrees	ASTM D746
Flexural modulus, psi	175,000	ASTM D790

E. PVC and polyethylene wrapping material and accessories shall conform to TIMBER PILES Section.

PART 3 - EXECUTION

3.1 PREPARATION

A. Refer to BASIC SITE MATERIALS AND METHODS Section for requirements concerning protection of existing improvements.

B. Selection of timber pieces:

1. Select individual pieces so that knots and obvious defects shall not interfere with bolt placement.

2. Cut out and discard sections that contain defects that render a piece unable to serve its intended function.

3.2 INSTALLATION

A. Timber construction, including cuts and bores, shall conform to RS Subsection 305-2.3 and the following:

1. Cut timber with straight cuts to lengths indicated on Drawings.

2. Turn smooth side up for bullrails and deck material. Place smooth face outward on crane bumpers.

3. Bolt holes shall be counterbored where indicated on Drawings. Install and tighten bolts and fasteners in accordance with Drawings.

a. After installation of bolted connections, fill counterbored recesses to flush with non-shrink mastic filler. Plug unused bore holes in conformance with RS Subsection 305-2.2.

B. Treat field cuts, damaged surfaces, and drilled bolt holes in conformance with RS Subsection 204-2.3.

C. Timber wharf framing shall conform to RS Subsection 305-2.4.

3.3 REPAIRS

A. Perform cap beam and joist repairs without removing existing wharf deck wherever possible.

1. Under-wharf repairs shall be performed from beneath deck in areas where Drawings show existing structures on the deck that are not called out to be removed, including, but not limited to, product containment pans, sheds, piping, and the like.

2. There shall be no extra charge for removal and replacement of existing deck to allow access to under-wharf repairs.

B. Where cap beam repairs are shown on Drawings directly above pile repairs perform pile repairs first.

C. Perform removals associated with repairs as shown on Drawings.

1. Clean timber debris from harbor waters immediately upon discovery.

D. Wrap wharf braces in accordance with Drawings.

3.4 FINISHES

A. Cut crane bumper material to fit and prime entire surface. Apply finish coats after bumper installation.

B. Crane bumper shall be painted safety yellow in conformance with PAINTING FOR EXTERIOR IMPROVEMENTS Section.

C. Paint bullrails safety yellow in conformance with PAINTING FOR EXTERIOR IMPROVEMENTS Section and where required on Drawings.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Lumber may be rejected by Engineer for excessive warp, split, checks, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

END OF SECTION

APPENDIX "A"

PROJECT LABOR AGREEMENT (PLA) AND POLA CONSTRUCTION CAREERS POLICY

Harbor Department
Agreement 17-3526
City of Los Angeles

CITY OF LOS ANGELES

Harbor Department

THE PORT
OF LOS ANGELES

2017-2027

Project Labor Agreement (PLA)

WITH

LOS ANGELES/ORANGE COUNTIES
BUILDING AND CONSTRUCTION TRADES COUNCIL
Affiliated with the Building & Construction Trades Department (AFL/CIO)
Craft International Unions and any other craft labor Unions signatory to this Agreement

PROJECT LABOR AGREEMENT
CITY OF LOS ANGELES HARBOR DEPARTMENT

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Harbor Department
Agreement 17-3526
City of Los Angeles

PROJECT LABOR AGREEMENT
CITY OF LOS ANGELES

HARBOR DEPARTMENT

INTRODUCTION AND FINDINGS

The purpose of this Project Labor Agreement ("Agreement") is to promote efficiency of construction operations during the construction of various projects within the Harbor Department's Capital Improvement Program (CIP) and provide for the orderly settlement of labor disputes and grievances without strikes or lockouts, thereby promoting the public interest in assuring timely and economical completion of these Projects.

WHEREAS, the Port of Los Angeles is among the world's premier ports and is a critical hub for global trade; and

WHEREAS, the Port of Los Angeles is the nation's busiest container port, and the Port's 7,500 acres, 43 miles of waterfront, 270 berths and 26 cargo terminals represent a critical segment of the U.S. trade infrastructure and the global supply chain; and

WHEREAS, in addition to containerized cargo, the Port's diverse maritime operations handle bulk products, scrap metal, steel, and cruise passengers, with regularly scheduled vessel calls increasing the need for more terminal acreage and more efficient operations, as well as transforming the Port into a model environmental-friendly gateway through the implementation of the San Pedro Bay Ports Clean Air Action Plan; and

WHEREAS, the Harbor Department is responsible for construction, renovation, maintenance and operation of the facilities and infrastructure of the Port of Los Angeles, including capital improvement projects throughout the Port; and

WHEREAS, the safe, timely and successful completion of these projects with a trained workforce is of utmost importance to the Harbor Department and the general public in the City; and

WHEREAS, the work to be done will require maximum cooperation from the many Parties who will be involved; and

WHEREAS, it is recognized that projects of a certain magnitude with multiple contractors and bargaining units on the job site at the same time over an extended period of time create the potential for work disruption without there being an overriding commitment to maintain continuity of work; and

WHEREAS, the interests of the Harbor Department, the general public, the City, the Unions, contractors, subcontractors, employers and workers would be best served if the construction work proceeded in an orderly manner free of disruption because of strikes, sympathy strikes, work stoppages, picketing, lockout, slowdowns or other interferences with work; and

WHEREAS, large numbers of workers of various skills will be required in the performance of the construction work, including those to be represented by the Unions affiliated with the Los Angeles/Orange Counties Building and Construction Trades Council and any other craft labor organization which are signatory to this Agreement, employed by contractors and subcontractors who are signatory to agreements with said labor organizations; and

WHEREAS, the Contractor/Subcontractor/Employer(s) (C/S/E) and the Unions desire to mutually establish and stabilize wages, hours and working conditions for the workers employed on these Projects by the C/S/Es, and further, to encourage close cooperation among the C/S/Es, and the Unions to the end that a satisfactory, continuous and harmonious relationship will exist among the Parties to this Agreement; and

WHEREAS, this Agreement is not intended to replace, interfere with, abrogate, diminish, or modify existing local or national collective bargaining agreements in effect during the duration of this Agreement, insofar as a legally binding agreement exists between the C/S/Es and the affected Unions, except to the extent that the provisions of this Agreement are inconsistent with said collective bargaining agreements, in which event, the provisions of this Agreement shall prevail; and further, it is understood that C/S/Es are bound and shall remain bound, for the duration of this Agreement by the terms of this Agreement and applicable local and national collective bargaining agreements for the craft work performed, established between the signatory Unions and C/S/Es, in effect and covering the area of these Projects; and

WHEREAS, this Agreement is not intended to have an adverse impact on the policy of the City to maximize business opportunities for minority, women and other business enterprises in City contracts; and

WHEREAS, increasing access to employment opportunities with prevailing wages is one way for the Harbor Department to directly combat poverty and stimulate economic reinvestment; and

WHEREAS, the Harbor Department has adopted a departmental Agreement which will provide construction employment and training opportunities in ways calculated to mitigate the harms caused by poverty, unemployment and underemployment; and

WHEREAS, this Agreement reflects a commitment by all parties to the diversity in the workforce hiring that reflect levels of minority, women and other worker utilization at levels which are representative of the relevant workforce of these groups in the Greater Los Angeles Area as determined by the U.S. Census Bureau; and

WHEREAS, the contracts for the construction of Projects will be awarded in accordance with the applicable provisions of the Harbor Department's Administrative Policies and Procedures; and

WHEREAS, the Parties signatory to this Agreement pledge to work towards a mutually satisfactory completion of Projects;

NOW, THEREFORE, IT IS AGREED BETWEEN AND AMONG THE PARTIES HERETO, AS FOLLOWS:

ARTICLE I

DEFINITIONS

1.1 "Agreement" means this Project Labor Agreement and its applicability to all Projects.

1.2 "Apprentice" means any worker who is indentured in a bona fide Labor/Management construction apprenticeship program, registered and approved by the State of California Department of Industrial Relations (DIR) Division of Apprenticeship Standards (DAS) or in the case of Projects with federal funding,

indentured in a bona fide Labor/Management construction apprenticeship program, approved by the US Department of Labor (DOL) and California DAS.

1.3 "Apprenticeship Program" means any Labor/Management construction apprenticeship program certified and approved by the California Division of Apprenticeship Standards (DAS) or in the case of Projects with federal funding, approved by the US DOL and California DAS.

1.4 "Awarding Authority" means the City of Los Angeles, acting by and through the Board of Harbor Commissioners, or any employee or officer of the Board that is authorized to award or enter into any contract on behalf of the Board.

1.5 "Board" means the Los Angeles Board of Harbor Commissioners.

1.6 "Bureau of Contract Administration" (BCA) means the designated bureau within the City's Department of Public Works which may provide support services to the Harbor Department in administering this Agreement.

1.7 "City" means the City of Los Angeles, a municipal corporation, and all City awarding authorities.

1.8 "Committee" means the Joint Administrative Committee as described in Article XII of this Agreement.

1.9 "Construction contract" means a City contract which has been awarded by the Board, and is necessary to complete the Harbor Department Project.

1.10 "Contractor/Subcontractor/Employer(s)" (C/S/E) means any individual firm, partnership, owner operator, or corporation, or combination thereof, including joint ventures, which is an independent business enterprise and has entered into a contract with the Harbor Department or any of its contractors or subcontractors/owner operators

of any tier, with respect to the construction of any part of the Project(s) under contract terms and conditions approved by the Board and which incorporate this Agreement.

1.11 "Core Worker" means a verifiable member of a C/S/E's core workforce for the purpose of this Agreement if the worker's name appears on the C/S/E's active payroll for 60 of 100 working days immediately prior to the award of the construction contract and meets all standards required by applicable local, state or federal law or regulation.

1.12 "Covered Project(s)" or "Project" means a project or projects which have been included within the Ten-Year Capital Improvement Program ("CIP") Project List and covered by this Agreement or so designated by the Board. The Board may identify additional projects that are appropriate for coverage by the Agreement for inclusion under the CIP and include such projects by Board Resolution. The Board shall request an annual review of the Harbor Department Capital Improvement Program to identify any new projects appropriate for inclusion with in the CIP.

1.13 "Department" means the Harbor Department of the City of Los Angeles.

1.14 "Employment Hiring Plan" (EHP) means a C/S/E's detailed hiring plan as described in BCA's Targeted Hiring Guidelines for Contractors and the Policy or other applicable Department policy.

1.15 "Engineer" means the Chief Harbor Engineer of the City of Los Angeles Harbor Department, Construction Division, or its authorized representative.

1.16 "FHWA Project" means a Harbor Department Project that is funded in whole or in part by the Federal Highway Administration (FHWA).

1.17 "Ten year (10) Capital Improvement Program ("CIP") Project List" means the list of Harbor Department projects included as Attachment E hereto that will operate under

the Harbor Department PLA, as well as other projects that may be added in the sole discretion of the Department.

1.18 "Jobs Coordinator" means the Prime Contractor's designated person, agent or agency that will facilitate the local hire referral process with the C/S/E, Unions and other referral organization, as described in the Construction Careers Policy. The Jobs Coordinator must be able to demonstrate or document to the Department or its designee that it has the requisite qualification and/or experience to fulfill the duties and responsibilities as outlined in the Policy.

1.19 "LA/OCBTC" (Trades Council) means the Los Angeles/Orange Counties Building and Construction Trades Council.

1.20 "Letter of Assent" means the document that each C/S/E (of any tier) must sign and submit to the Engineer or designated administrator, which formally binds them to adherence to all the forms, requirements and conditions of this Agreement and Policy.

1.21 "Local Resident" means an individual whose primary residence is within the Tier 1 or 2 zip code areas.

1.22 "Long-Term Unemployment" as defined by the Bureau of Labor Statistics means being jobless for 21 weeks or more, or as defined.

1.23 "Plan" means the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry as referenced in Article XIV of this Agreement.

1.24 "Policy" means the Harbor Department Construction Careers Policy.

1.25 "Subscription Agreement" means the contract between a C/S/E and a Union's Labor/Management Trust Fund(s) that allows the C/S/E to make the appropriate fringe benefit contributions in accordance with the terms of the contract.

1.26 "Targeted Hiring Guidelines for Contractors" means the document provided by the Department to assist C/S/E's in implementing the targeted hiring procedures.

1.27 "Tier 1" means the zip codes identified in Article 7.4 of the PLA, which fall within an approximate ten mile radius of the Port and in which the rate of unemployment is in excess of 105% of the County of Los Angeles' unemployment rate at the time of application and/or are within the area of Port-related operations and activity and/or are within the area of Port-related operations and activity.

1.28 "Tier 2" means the zip codes within the City, identified in Article 7.5 of this Agreement, that includes at least 2 census tracts (or a portion thereof) in which the median annual household income is less than $62,627 per and/or where the rate of unemployment is in excess of 100% of the County of Los Angeles' unemployment rate at the time of application.

1.29 "Transitional Worker" means any individual whose primary place of residence is within a Tier 1 or Tier 2 zip code of the City of Los Angeles, and who prior to commencing work on a Project has been certified as satisfying at least one of the following criteria:

(1) having Veteran status; having a documented history of involvement with the criminal justice system; being homeless; or,

(2) is an individual facing two or more of the following barriers to employment: having a household income less than 50% of the Los Angeles County median annual household income, receiving public assistance, lacking a GED or high school diploma, being a custodial single parent, suffering from long term unemployment, being emancipated from the foster care system, or being an apprentice, in a program

described in Section 1.3 above, with less than 15% of the apprenticeship hours required to graduate to journey level.

(3) If the Jobs Coordinator or Employer is not able to identify anyone using criteria (1), criteria (2) may be used.

1.30 "Union(s)" or "Signatory Unions" means the Los Angeles/Orange Counties Building and Construction Trades Council affiliated with the Building & Construction Trades Department (AFL/CIO) Craft International Unions or any other craft labor organization signatory to this Agreement, acting in their own behalf and on behalf of their respective affiliates and member organizations whose names are subscribed hereto and who have through their officers executed this Agreement.

ARTICLE II

SCOPE OF AGREEMENT

2.1 Parties: The Agreement shall apply and is limited to all C/S/Es performing construction on a Harbor Department Project, the Board, and the Unions (signatory Unions or otherwise).

2.2 Project Description: The Agreement shall apply to all CIP construction contracts awarded by the Board. The Board has the absolute right to combine, consolidate or cancel contracts or portions of contracts identified as part of the Project. Should the Board remove any contract from the Project and thereafter authorize that construction work be commenced on the contract, the contract may, at the discretion of the Board, be performed under the terms of the Agreement.

2.3 Project Labor Disputes: The provisions of this Agreement, including the Schedule A Agreements, (which are the local collective bargaining agreements of the signatory

Unions having jurisdiction over the work on the Project, as such may be changed from time-to-time and which are incorporated herein by reference) shall apply to the work covered by this Agreement. It is understood that this is a self-contained, stand alone Agreement and that by virtue of having become bound to this Agreement, neither the Prime Contractor, Employer, nor the Subcontractor (of any tier) or owner-operator will be obligated to sign any other local, area, or national agreement, except as may be provided under Section 8.2, below. It is further agreed that, where there is conflict, the terms and conditions of this Agreement shall supersede and override terms and conditions of any and all other national, area, or local collective bargaining agreements (Schedule A Agreements) except for all work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, all instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and control systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exception of Article IV (Work Stoppages, Strikes, Sympathy Strikes and Lockouts), Article XIII (Grievance and Arbitration Procedure) and Article XIV (Jurisdictional Disputes) of this Agreement, which shall apply to such work. All disputes relating to the interpretation or application of this Agreement shall be subject to resolution by the grievance arbitration procedure set forth in Article XIII of this Agreement except for those disputes exempted from the grievance procedure pursuant to Article 13.1. Where a subject is covered by a provision in a Schedule A Agreement and not covered by this Agreement, the provision of the Schedule A Agreement shall prevail. Any dispute as to the applicable source between this Agreement and any

Schedule A Agreement for determining the wages, hours of working conditions of employees on a Project shall be resolved under the grievance procedures established in this Agreement.

2.4 Exclusions:

(1) This Agreement shall be limited to construction work on a Project which is approved by the Board, and is not intended to, and shall not apply to any construction work performed at any time prior to the effective date, or after the expiration or termination of the Agreement, or on other City projects.

(2) This Agreement is not intended to, and shall not, affect or govern the award of contracts by the Board, which are outside the approved scope of the Project.

(3) This Agreement is not intended to, and shall not, affect the operation or maintenance of any facilities whether related or not to Projects.

(4) This Agreement shall not apply to a C/S/E's executives, managerial employees, engineering employees, supervisors (except those covered by Schedule A collective bargaining agreements), office and clerical employees, or any other employee not performing construction craftwork.

(5) Notwithstanding the foregoing, it is understood and agreed that Building/Construction Inspector and Field Soils and Material Testers (inspectors) are a covered craft under this Agreement. This inclusion applies to the scope of work defined in the State of California Wage Determination for that Craft. This shall not cover quality assurance work or material testing performed by or on behalf of the Department. Every Inspector performing under the wage classification of Building/Construction Inspector and Field Soils and Material Tester under a professional services agreement or a

construction contract shall be bound to all applicable requirements of this Agreement. Notwithstanding the provisions of this sub-section, the Department may engage consultants for limited periods of time in the event of an urgent need for specialized inspection services. The Department must provide prior notice to the Trades Council that despite good faith efforts, it is unable to obtain qualified inspector(s) under the provisions of this Agreement. Such engagement shall be only to meet immediate and limited needs until such qualified inspectors working under this Agreement are available.

(6) This Agreement shall not apply to material suppliers or delivery by any means of material, supplies, or equipment required to any point of delivery.

(7) This Agreement shall not apply to City employees.

(8) This Agreement shall not apply to the work of persons, firms and other entities that perform consulting, planning, scheduling, management or other supervisory services on the Project, provided such entities do not perform craft employee construction work on the Project with their own employees or to customer service work performed post completion by an entity other than the C/S/E that performed the original construction work.

(9) This Agreement shall not apply to Harbor Department construction contracts or Projects, if the federal funding source has established provisions or rules that forbid the inclusion of a Project Labor Agreement.

(10) FHWA Projects: All provisions of this Agreement shall apply to the project, in accord with the policies and conditions under which the FHWA funds are received from the U.S. Department of Transportation.

(11) Out-of-State Workers: Hours worked by residents of states other than California shall not be included in calculation of total hours of Project work for purposes of the percentage requirements set forth by the Agreement.

(12) Notwithstanding the foregoing, demolition and asbestos abatement shall constitute work covered by the Project Labor Agreement when such work is part of a Covered Project.

2.5 The Harbor Department and/or the C/S/Es, as appropriate, have the absolute right to award contracts on this project to any C/S/E, notwithstanding the existence or non-existence of any agreements between such C/S/E and any Union parties, provided only that such C/S/E is ready, willing and able to execute and comply with this Agreement should such C/S/E be awarded work covered by this Agreement.

ARTICLE III

EFFECT OF AGREEMENT

3.1 By executing the Agreement, the Unions and the Board agree to be bound by each and all of the provisions of the Agreement.

3.2 By accepting the award of a construction contract for a Project, whether as a C/S/E, the C/S/E agrees to be bound by each and every provision of the Agreement.

3.3 At the time that any C/S/E enters into a subcontract with any subcontractor of any tier providing for the performance on the construction contract, the C/S/E shall provide a copy of this Agreement to said subcontractor and shall require the subcontractor as a part of accepting the award of a construction subcontract to agree in writing in the form of a Letter of Assent to be bound by each and every provision of this Agreement prior to the commencement of work. See Attachment "A" for a sample

Letter of Assent.

(1) Approval of any C/S/E to perform work on the Project will be contingent upon the submittal of its Letter of Assent and its Employment Hiring Plan to the Chief Harbor Engineer and the Council.

3.4 This Agreement shall only be binding on the signatory C/S/Es hereto and shall not apply to the parents, affiliates, subsidiaries, or other ventures of any construction contract prior to the execution of this Agreement.

ARTICLE IV

WORK STOPPAGES, STRIKES, SYMPATHY STRIKES AND LOCKOUTS

4.1 The Unions, Board and C/S/Es agree:

(1) During the existence of this Agreement, there shall be no strike, sympathy strike, picketing, hand billing, slowdown, withholding of work, refusal to work, lockout, sick-out, walk-off, sit-down, stand-in, wobble, boycott, or other work stoppage, disruption, advising the public that a labor dispute exists, or other impairment of any kind for any reason by the Unions or employees employed on the Project, at the job site of the Project, or at any other facility of the City because of a dispute on this Project.

(2) As to employees employed on the Project, there shall be no lockout of any kind by any C/S/E(s) covered by the Agreement. The C/S/E(s) may lay off employees for lack of work or delay of work on the Project.

(3) The Unions agree that they shall not sanction in any way any picket line or other impairment of the work on the Project and will affirmatively take all measures necessary to effectively induce their respective members to cross any and all picket lines and report for work as scheduled and that responsible representatives of the

Unions who are employed on the Project will also do so themselves.

(4) The Unions agree that they shall not sanction, aid or abet, encourage or continue any work stoppage, strike, picketing or other disruptive activity at the Project site or C/S/E's business site that will economically and/or materially affect the completion of the Project. Any such costs that economically and/or materially harm the City shall be borne by the affected Union and made payable to the City.

(5) Notwithstanding any provision of this Agreement to the contrary, it shall not be a violation of this Agreement for any Union to withhold the services of its members (but not the right to picket) from a particular C/S/E who:

(i) fails to timely pay its weekly payroll; or

(ii) fails to make timely payments to the Union's Labor/Management Trust Funds in accordance with the provisions of the applicable Schedule A Agreements. Prior to withholding its members services for the C/S/E's failure to make timely payments to the Union's Labor/Management Trust Funds, the Union shall give at least ten (10) days (unless a lesser period of time is provided in the Union's Schedule A Agreement, but in no event less than forty-eight (48) hours) written notice of such failure to pay by registered or certified mail, return receipt requested, and by facsimile transmission to the involved contractor, the prime contractor, and the BCA. Union will meet within the ten (10) day period to attempt to resolve the dispute.

(iii) Upon the payment of the delinquent C/S/E of all monies due and then owing for wages and/or fringe benefit contributions, the Union shall direct its members to return to work and the C/S/E shall return all such members back to work.

4.2 Expiration of Local Agreements: If the Schedule A Agreement, or any local,

regional, and other applicable collective bargaining agreements expire during the term of the Project, the Union(s) agree that there shall be no work disruption of any kind as described in Section 4.1 above as a result of the expiration of any such agreement(s) having application on this Project and/or failure of the involved Parties to that agreement to reach a new contract. Terms and conditions of employment established and set for purposes of prevailing wage requirements under this Agreement at the time of bid shall remain established and set. Otherwise to the extent that such agreement does expire and the Parties to that agreement have failed to reach concurrence on a new contract, work will continue on the Project on one of the following two (2) options, both of which will be offered by the Unions involved to the Contractors affected:

(1) Each of the Unions with a contract expiring must offer to continue working on the Project under interim agreements that retain all the terms of the expiring contract, except that the Unions involved in such expiring contract may each propose wage rates and employer contribution rates to employee benefit funds under the prior contract different from what those wage rates and employer contributions rates were under the expiring contracts. The terms of the Union's interim agreement offered to Contractors will be no less favorable than the terms offered by the Union to any other employer or group of employers covering the same type of construction work in Los Angeles County.

(2) Each of the Unions with a contract expiring must offer to continue working on the Project under all the terms of the expiring contract, including the wage rates and employer contribution rates to the employee benefit funds, if the C/S/E affected by that expiring contract agrees to the following retroactive provisions: if a new Schedule A Agreement, local, regional or other applicable labor agreement for the industry having

application at the Project is ratified and signed during the term of this Agreement and if such new labor agreement provides for retroactive wage increases, then each affected C/S/E shall pay to its employees who performed work covered by this Agreement at the Project during the hiatus between the effective dates of such expired and new labor agreements, an amount equal to any such retroactive wage increase established by such new labor agreement, retroactive to whatever date is provided by the new labor agreement for such increase to go into effect, for each employee's hours worked on the Project during the retroactive period. All Parties agree that such affected C/S/Es shall be solely responsible for any retroactive payment to its employees and that neither the Project, nor the Board, nor the Board's designee, nor any other C/S/E has any obligation, responsibility or liability whatsoever for any such retroactive payments or collection of any such retroactive payments, from any such C/S/E.

(3) Some C/S/Es may elect to continue to work on the Project under the terms of the interim agreement option offered under paragraph (1) above and other C/S/Es may elect to continue to work on the Project under the retroactivity option offered under paragraph (2) above. To decide between the two options, C/S/Es will be given one week after the particular labor agreement has expired or one week after the Union has personally delivered to the Contractors in writing its specific offer of terms of the interim agreement pursuant to paragraph (1) above, whichever is the later date. If the C/S/E fails to timely select one of the above options, the C/S/E will be deemed to have selected paragraphs 4.2(2), above.

4.3 Expedited Arbitration will be utilized for all work stoppages and lockouts. In lieu of

or in addition to any other action at law or equity, any party may institute the following procedure when a breach or violation of this Article IV is alleged to have occurred:

(1) The party invoking this procedure shall notify the permanent arbitrator next in sequence from the following list:

1. Joseph Gentile
2. Michael Rappaport
3. Walter Daugherty
4. Paul Greenberg
5. Lou Zigman

The Parties agree these shall be the five permanent Arbitrators under this procedure. In the event that none of the five permanent Arbitrators are available for a hearing within 24 hours, the party invoking the procedure shall have the option of delaying until one of the five permanent Arbitrators is available or of asking the permanent Arbitrator that would normally hear the matter to designate an arbitrator to sit as a substitute Arbitrator for this dispute. If any of the permanent Arbitrators ask to be relieved from their status as a permanent Arbitrator, the Parties shall mutually select a new permanent Arbitrator from the following list of arbitrators:

1. John Kagel
2. Fred Horowitz
3. Wayne Estes

Selection shall be made by each party alternately striking from the foregoing list until one name remains who shall be the replacement permanent Arbitrator. Expenses incurred in arbitration shall be borne equally by the Union and the Contractor involved

and the decision of the Arbitrator shall be final and binding on both Parties, provided, however, that the Arbitrator shall not have the authority to alter or amend or add to or delete from the provisions of this Agreement in any way. Notice to the Arbitrator shall be by the most expeditious means available, including by telephone and by facsimile or e-mail to the party alleged to be in violation and to the Trades Council and involved local Union if a Union is alleged to be in violation.

(2) Upon receipt of said notice, the Arbitrator shall convene a hearing within twenty-four (24) hours if it is contended that the violation still exists.

(3) The Arbitrator shall notify the Parties by telephone and by facsimile or telegram of the place and time for the hearing. Notice shall be given to the individual Unions alleged to be involved; however, notice to the Trades Council shall be sufficient to constitute notice to the Unions for purposes of the arbitration being heard by the Arbitrator. Said hearing shall be completed in one session, which, with appropriate recesses at the Arbitrator's discretion, shall not exceed twenty-four (24) hours unless otherwise agreed upon by all Parties. A failure of any party to attend said hearings shall not delay the hearing of evidence or the issuance of any decision by the Arbitrator.

(4) The sole issue at the hearing shall be whether or not a violation of Section 4.1 or 4.2 of this Article IV has in fact occurred. The Arbitrator shall have no authority to consider any matter of justification, explanation or mitigation of such violation or to award damages, which issue is reserved for court proceedings, if any. The decision shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with or

enforcement of the decision. The Arbitrator may order cessation of the violation of this Article and other appropriate relief and such decision shall be served on all Parties by hand or registered mail upon issuance.

(5) Such decision may be enforced by any Court of competent jurisdiction upon the filing of this Agreement and all other relevant documents referred to above in the following manner. Written notice of the filing of such enforcement proceedings shall be given to the other party. In the proceeding to obtain a temporary order enforcing the Arbitrator's decision as issued under Section 4.3 (4) of this Article, all Parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order of enforcement. The Court's order or orders enforcing the Arbitrator's decision shall be served on all Parties by hand or delivered by registered mail.

(6) Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance therewith are hereby waived by the Parties to whom they accrue.

(7) The fees and expenses incurred in arbitration shall be divided equally by the Parties to the arbitration, including Union(s) and the C/S/E(s) involved.

4.4 The procedures contained in Section 4.3 shall be applicable to alleged violations of Article IV to the extent any conduct described in Section 4.1 or 4.2 occurs on the Project. Disputes alleging violation of any other provision of this Agreement, including any underlying disputes alleged to be in justification, explanation, or mitigation of any violation of Section 4.1 or Article IV shall be resolved under the applicable grievance adjudication procedures for these other Articles.

ARTICLE V

NO DISCRIMINATION

5.1 The C/S/Es and Unions agree not to engage in any form of discrimination, including in the hiring and dispatching of workers, on the grounds of, or because of, race, religion, national origin, ancestry, sex, sexual orientation, age, physical handicap, domestic partner status, medical condition, political affiliation, membership in a labor organization, being a party to a collective bargaining agreement, color, or disability.

ARTICLE VI

UNION SECURITY

6.1 The C/S/Es recognize the Unions as comprising the respective sole bargaining representatives for all craft employees working within the scope of this Agreement.

6.2 No employee covered by this Agreement shall be required to join any Union as a condition of being employed, or remaining employed, for the completion of Project work; provided, however, that any employee who is a member of the referring Union at the time of referral shall maintain that membership in good standing while employed under this Agreement. All employees shall, however, be required to comply with the Union security provisions for the period during which they are performing on-site Project work to the extent, as permitted by law, of rendering payment of the applicable monthly and working dues.

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ARTICLE VII

REFERRAL

7.1 The Union(s) shall be the primary source of all craft labor employed on the Project(s) and will exert their best efforts to recruit and identify individuals, particularly residents residing in the Tier 1 or 2 zip code areas, as well as those referred by the Jobs Coordinator, for entrance into joining labor/management apprenticeship programs, and to assist individuals in qualifying and becoming eligible for such programs.

In the event that the C/S/E has his or her own Core Worker(s), and wishes to employ such workers to perform covered work, the C/S/E shall employ such workers in accord with the provisions of this Article VII. The following process shall govern the employment of workers at the Project:

(1) A worker shall be considered a member of a C/S/E's core workforce for the purposes of this Article if the worker meets the required definition of 1.11 above. The C/S/E shall identify Core Workers in their Employment Hiring Plan and shall provide payroll records evidencing the worker's qualification as a Core Worker upon request by the City. Prior to each C/S/E, which utilizes any core employees, performing any work on the Project, each such C/S/E shall provide a list of its core employees to the Department and the Trades Council. Failure to do so will prohibit the C/S/E from using any core employees. The number of Core Workers on this Project shall be governed by the following procedure: one Core Worker shall be selected and one worker from the hiring hall of the affected trade or craft and this process shall repeat until such C/S/E's requirements are met or until such C/S/E has hired five (5) such Core Workers for that craft, whichever occurs first. Thereafter, all additional employees in the affected trade

or craft shall first be requisitioned from the hiring hall in accordance with other provisions in Article VII.

(2) In the event of a reduction-in-force or layoff, such will take place in a manner to assure that the number of Core Workers in the affected craft does not exceed, at any time, the number of others working in that craft who were employed pursuant to other procedures available to the C/S/E under this Agreement. This provision applies only to employees who were not working under the terms of a Schedule A Agreement at the time of their transfer to the work covered under this Agreement and is not intended to limit transfer provisions of the Schedule A Agreements of any Union.

7.2 C/S/Es shall be bound by and utilize the registration facilities and referral systems established or authorized by the signatory Unions for all job site craft employee(s) before such employee(s) begin work, when such procedures are not in violation of Federal or State law or in conflict with provisions set forth in this Agreement.

7.3 In the event that referral facilities maintained by the Unions are unable to fill the requisition of a C/S/E for Local Residents and/or Transitional Workers within a forty-eight (48) hour period after such requisition is made by the C/S/E (Saturdays, Sundays, and holidays excepted), the C/S/E shall be free to obtain Local Residents and/or Transitional Workers from any source. However, for all other requisitions by a C/S/E for non-Local Residents or non-Transitional Workers, only after a forty-eight (48) hour period (Saturdays, Sundays and holidays excepted) after such requisition is made by the C/S/E shall the C/S/E be free to obtain work persons from any source if the Unions are unable to fill the requisition. However, the C/S/E is still responsible for complying

with conditions and requirements of the Targeted Hiring Guidelines for Contractors and the Policy.

(1) The C/S/E's must document, from the applicable Tiers, all efforts made to comply with the targeted hiring process to locate and hire Local Residents and/or Transitional Workers. The C/S/E may employ Local Residents and/or Transitional Workers referred by the Jobs Coordinator. However, in the event the Jobs Coordinator is unable to fill the requisition of a C/S/E for Local Residents and/or Transitional Workers, the C/S/E may utilize any organization, such as those listed in the Targeted Hiring Guidelines for Contractors, to assist them in satisfying the requirements of the Targeted Hiring Guidelines for Contractors and the Policy.

(2) The C/S/E shall inform the Unions, Job Coordinator and the BCA of the name, address, worker craft classification and social security number of any worker hired from other sources upon their employment on the Project(s).

(3) No Local Resident and/or Transitional Worker, having been pre-screened and/or pre-qualified by the Jobs Coordinator, and employed by the C/S/E to work on the Project, shall be required to participate in any Joint Labor/Management "boot camp" or pre-apprentice program that will unnecessarily delay the Local Resident and/or Transitional Worker's start of work or cause said worker's termination due to having to participate in such "boot camps" or pre-apprentice programs.

(4) Any work person hired under this Section 7.3, as well as all other workers hired under this Article VII, shall be obligated to register with the appropriate Union hiring hall within five (5) working days prior to their first day of employment on the project and comply with the Union Security provisions of this Agreement.

7.4 The Unions will exert their best efforts to refer/recruit sufficient numbers of skilled craft Local Residents and Transitional Workers to fulfill the requirements of the C/S/E(s). In recognition of the fact that the communities within the boundaries of the City and the Port's impact zone will be impacted by the construction of the Project, the Parties agree to support the development and graduation of transitional construction apprentices and workers from residents within Tiers 1 or 2 zip code areas. Towards that end, the Unions agree to encourage and provide referrals and utilization of qualified workers residing preferably within the Tier 1 zip code areas identified in the following:

Tier 1 Zip Codes

90001	90222	90501	90732	90804
90002	90242	90502	90744	90805
90003	90247	90503	90745	90806
90044	90249	90505	90746	90807
90059	90255	90710	90748	90808
90061	90262	90717	90755	90810
90220	90280	90723	90802	90813
90221	90303	90731	90803	90815

7.5 When the Unions cannot provide the C/S/Es, having documented their efforts in the attainment of Local Residents and/or Transitional Workers within the Tier 1 zip code areas as listed in Article 7.4 above, the Unions will exert their best efforts to recruit and identify Local Residents and/or Transitional Workers within Tier 2 zip code areas identified in the following and Transitional Workers in the remaining zip code areas of the City:

Tier 2 Zip Codes

90004	90023	90045	91042	91364
90005	90024	90046	91302	91367
90006	90026	90007	91303	91401
90007	90027	90048	91304	91402

90008	90028	90049	91306	91403
90010	90029	90057	91324	91405
	90031	90058	91325	91406
90012	90033	90062		91411
90013	90034	90063	91331	91423
90014	90035	90065	91335	91505
90015	90036	90066	91340	91601
90016	90037	90068	91342	91602
90017	90038	90071	91343	91604
		90073	91344	91605
90019		90089	91345	91606
90020	90042		91352	91607
90021	90043	91040	91356	

The Unions will exert their best efforts to recruit and identify Local Residents and/or Transitional Workers of the City and assist individuals in qualifying and becoming eligible for such apprenticeship programs.

7.6 The Prime Contractor is responsible for ensuring compliance with the targeted hiring process for the Project(s) to achieve the following anticipated levels of participation:

(1) The following percentages shall be the targeted hiring for the Project:

(a) At least 30% of total work hours shall be performed by Local Residents residing within Tier 1 described in Article 7.4. If the 30% local hire is not attained utilizing the Tier 1, the outreach shall expand to the Tier 2 as described in Article 7.5 of this Agreement.

(b) At least 10% of total work hours shall be performed by Transitional Workers residing within Tier 1 or Tier 2 zip code areas described in Articles 7.4 and 7.5 respectively and the remaining zip code areas within the City of Los Angeles. These hours shall be applied towards the 30% Local Resident targeted hiring.

(c) At least 20% of total work hours on each project will be performed by apprentices, but the hours performed by apprentices in each individual craft shall not exceed the ratio to journeymen established by the applicable craft union's DAS approved apprenticeship standards. The Parties agree that residents in the Tier 1 or 2 zip code areas will perform 50% of all apprenticeship hours worked on the Project.

An apprentice who begins his/her period of apprenticeship as a resident in the Tier 1 or 2 zip code areas will retain that status for the entire apprenticeship, regardless of any changes in the apprentice's residence provided the Unions submit to BCA the necessary identifying information to enable the tracking of such apprentices, if requested by BCA.

(d) The C/S/Es shall document their compliance efforts through the utilization of the Craft Request Form, hiring hall procedures, the resources of organizations listed in BCA's Targeted Hiring Guidelines for Contractors, Jobs Coordinator or any other organization/agency that can assist the C/S/E in meeting this requirement. The provisions to address the non-attainment of the targeted hiring participation and/or apprenticeship hiring participation levels on a Project are addressed in the Policy.

(2) The employer retains authority in making individual hiring decisions.

(3) Hours worked by residents of states other than California shall not be included in calculation of total hours of Project work for purposes of the percentage requirements set forth above.

(4) The above referenced targeted hiring shall apply to FHWA projects in accord with the policies and conditions under which the FHWA funds are received from the U.S. Department of Transportation.

7.7 The Transitional Workers, as also defined also in Section 1.29, above, may be referred to the Unions from the Jobs Coordinator qualified to perform construction jobs coordination and related services. The Jobs Coordinator shall pre-screen and/or pre-qualify any applicant prior to referral to the Unions. Drug screening will be a prerequisite to employment. The following criteria will be used to identify the Transitional Worker:

a. Being a Veteran;

b. Having a documented history of involvement with the justice system;

c. Being homeless; or

(2) Faces at least two of the following barriers to employment:

a. Having household income below 50% of the Los Angeles County's median annual household income;

b. Emancipated from the foster care system ;

Receiving public assistance;

Lacking a GED or high school diploma;

Being an apprentice with less than 15% of the apprenticeship hours

c required to graduate to journey level in a program described in Section 1.3;

d. Being a custodial single parent

e. Suffering from long-term unemployment

To qualify under this section, the Jobs Coordinator shall verify and certify that the

individual's primary place of residence is within the City and that such individual satisfies the criteria set forth above.

7.8 The C/S/Es and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The C/S/Es and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the Parties.

7.9 The Unions and C/S/Es agree to coordinate with the Center to create and maintain an integrated database of veterans interested in working on a Project and of apprenticeship and employment opportunities for a Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

7.10 C/S/Es agree to only use the Craft Request Form (See Attachment C) and the procedures written therein to request any and all workers from Unions with a concurrent transmittal of such request to the Jobs Coordinator, including workers qualified as Local Residents, Transitional Workers, and/or general dispatch.

(1) When Local Residents and/or Transitional Workers are requested by the C/S/Es, the Unions will refer such workers regardless of their place in the Unions' hiring halls' list and normal referral procedures.

(2) In the event that a C/S/E, having not achieved its targeted hiring participation levels, requests a Local Resident and/or Transitional Worker from the

Union hiring facility, and is referred a worker who is not a Local Resident and/or Transitional Worker, the C/S/E is under no obligation to hire the referred worker for the Project work and shall notify the Union hiring facility and the Jobs Coordinator.

(3) The C/S/Es, Unions and Jobs Coordinator agree to maintain copies of all Craft Request Forms used on the Project submitted or received including transmission verification reports that are date/time imprinted. All Craft Request Forms and transmission verification reports shall be available for inspection and copies provided, upon request by the Harbor Department representative as described in Article XI of this Agreement.

7.11 Apprentices

(a) The Parties recognize the need to maintain continuing support of the programs designed to develop adequate numbers of competent workers in the construction industry, the obligation to capitalize on the availability of the Harbor Department's and the City's local work force, and the opportunities to provide continuing work for Projects covered by this Agreement. To these ends, the Parties shall facilitate, encourage, and assist Local Residents and/or Transitional Workers within Tier 1 or 2 zip code areas to commence and progress in Labor/Management apprenticeship and/or training programs in the construction industry leading to participation in such apprenticeship programs. The Harbor Department, Jobs Coordinator, Work Source Centers, other non-profit entities, organizations and the Unions, will work cooperatively to identify, or establish and maintain effective programs and procedures for persons interested in entering the construction industry and which will help prepare them for the

formal joint Labor/Management apprenticeship programs maintained by the signatory unions.

(b) Unions shall track retention of Apprentices hired through this program for so long as those Apprentices participate in a joint labor/management apprenticeship program. The signatory unions shall collect and compile information on the retention of these Apprentices and submit this information to the Department and the BCA on a quarterly basis. The City will use the information provided to generate a quarterly report on the retention of Apprentices on the Department's PLA projects.

(c) All apprentices shall work under the direct supervision of a journeyman from the trade in which the apprentice is indentured. A journeyman shall be defined as set forth in the California Code of Regulations, Title 8 [apprenticeship] section 205, which defines a journeyman as a person who has either completed an accredited apprenticeship in his or her craft, or has completed the equivalent of an apprenticeship in length and content of work experience and all other requirements in the craft which has workers classified as journeyman in the apprenticeable occupation. Should a question arise as to a journeyman's qualification under this subsection, the C/S/E shall provide adequate proof evidencing the worker's qualification as a journeyman.

ARTICLE VIII

WAGES AND BENEFITS

8.1 Wages. All employees covered by this Agreement shall be classified in accordance with work performed and paid the hourly wage rates for those classifications in compliance with the applicable prevailing wage rate determination established pursuant to the California Labor Code by the Department of Industrial

Relations or as established by the US DOL if applicable. If a prevailing rate increases during the term of this Agreement under State law or Federal law, the Contractor shall pay the rate as of its effective date under the applicable law. C/S/Es directly signatory to one or more of the Schedule A Agreements are required to pay all wages set forth in those Schedule A Agreements without reference to the foregoing. If the prevailing wage laws are repealed during the term of this Agreement, the contractor shall pay the wage rates established under the Schedule A Agreements, except as otherwise provided in this Agreement.

8.2 Benefits.

(a) C/S/Es not signatory to the established Labor/Management Trust Fund agreements, as specified in the Schedule A Agreements for the craft workers in their employ, shall sign a "Subscription Agreement" with the appropriate Labor/Management Trust Fund covering the work performed under this agreement.

(b) C/S/Es shall pay contributions to the established employee benefit funds on behalf of all employees performing Project work under this Agreement in the amounts designated in the appropriate Schedule A Agreement and make all employee-authorized deductions in the amounts designated in the appropriate Schedule A Agreement; provided, however, that such contributions shall not exceed the contribution amounts set forth in the applicable prevailing wage determination. C/S/Es directly Signatory to one or more of the Schedule A Agreements are required to make all contributions set forth in those Schedule A Agreements without reference to the forgoing. Bona fide jointly-trusteed benefit plans or authorized employee deductions programs established or negotiated under the applicable Schedule A Agreement or by

the Parties to this Agreement during the life of this Agreement may be added, provided that the contributions do not exceed the amounts set forth in the applicable prevailing wage determination.

(c) The C/S/E adopts and agrees to be bound by the written terms of the applicable, legally established, trust agreement(s) specifying the detailed basis on which payments are to be made into, and benefits paid out of, such trust funds for its employees. The C/S/E authorizes the Parties to such trust funds to appoint trustees and successors' trustees to administer the trust funds and hereby ratifies and accepts the trustees so appointed as if made by the C/S/E.

ARTICLE IX

EMPLOYEE GRIEVANCE PROCEDURE

9.1 Should a grievance arise regarding the imposition of discipline of an employee, or the dismissal of an employee, working on Project work, all such grievance(s) shall be processed, exclusively, under the grievance procedure contained in the applicable Schedule A Agreement for the craft Union representing such employee(s) and not under the provisions of the Grievance Arbitration provisions of Article XIII. C/S/Es shall not discipline or dismiss its employees except for good cause.

ARTICLE X

DEPARTMENT POLICIES AND PROCEDURES

10.1 All construction contracts identified by the Harbor Department as part of the Project shall include the following provisions. Such provisions include, but are not limited to:

(1) All persons who perform labor in the execution of a construction contract shall be paid the prevailing rate of wages applicable to the classification as provided in Article III, Section 377 of the Los Angeles City Charter.

(2) All C/S/Es shall provide information concerning their experience, financial qualifications, including proof of a current State Contractor's License, Business Tax Registration Certificate, and ability to perform said contract or subcontract.

10.2 In addition to the above requirements, the C/S/Es and Unions understand and agree that all construction contracts shall be awarded in accordance with other applicable provisions of the Los Angeles City Charter ("Charter") (effective July 1, 2000), and the Los Angeles Administrative Code ("Administrative Code") (and any future amendments applicable thereto), including but not limited to:

(1) Los Angeles City Charter Article III, Section 371 (award of construction contracts to the lowest responsible bidder);

(2) Harbor Department policies providing Small Business Enterprises ("SBE"), Very Small Businesses ("VSBE"), and Minority-Owned, Women-Owned and all Other Business Enterprises ("MBE"/"WBE"/"OBE") an equal opportunity to participate in the performance of all City contracts in all areas where such contracts afford such participation opportunities.

ARTICLE XI

COMPLIANCE

11.1 It shall be the responsibility of the C/S/Es and Unions to investigate and monitor compliance with the provisions of the Agreement contained in Article VIII (Wages and Benefits). The Board shall appoint the BCA or its designee to investigate and monitor

compliance with Article VIII, the applicable provisions of the Charter and the Administrative Code, including, but not limited to, the prevailing wage requirements of the Charter, Local Residents, and Disadvantaged Worker hiring compliance and the Policy, and the affirmative action provisions of the Administrative Code, and to recommend to the Board or designee enforcement measures to ensure the C/S/E's compliance with the general conditions of a construction contract and the Policy. At the conclusion of any six-month period, the Parties to the Agreement shall report to the Board with a status update on the Agreement with regard to that Project, including a description of any obstacles or barriers faced. The provisions of this Article shall not substitute for or preclude any employee or Union from filing a grievance for any violation of Article VIII under the provisions of the Grievance Arbitration Procedure provisions of Article XIII.

11.2 Each C/S/E shall cooperate fully and promptly with any inquiry or investigation the City or its designated representatives deems necessary in order to monitor compliance with the provisions in this Agreement and the Policy.

ARTICLE XII

JOINT ADMINISTRATIVE COMMITTEE

12.1 The Parties to this Agreement may establish an eight (8) person Joint Administrative Committee (JAC). This JAC shall be comprised of three (3) representatives selected by the Department and one (1) representative of the prime contractor, and four (4) representatives of the signatory Unions to be appointed by the Trades Council to be chaired jointly by a representative of the Department and the Council.

Each representative shall designate an alternate who shall serve in his or her absence.

12.2 The JAC shall meet at the call of either of the joint chairs to discuss the implementation and administration of this Agreement, the progress of the Project, general labor management problems that may arise, and any other matters consistent with this Agreement. A unanimous decision of the JAC shall be final and binding upon all Parties. However, the JAC shall have no authority to make determinations upon or to decide grievances arising under this Agreement.

12.3 A quorum will consist of at least two (2) City and two (2) signatory union representatives. For voting purposes, only an equal number of City and signatory union representatives present may constitute a voting quorum.

ARTICLE XIII

GRIEVANCE ARBITRATION PROCEDURE

13.1 The Parties hereby agree that all grievances and disputes that may arise concerning the meaning, application or the interpretation of the terms of this Agreement, other than disputes arising from conduct described in Article IV (Work Stoppages, Strikes, Sympathy Strikes and Lockouts), Article IX (Employee Grievance Procedure) and Article XIV (Jurisdictional Disputes), shall be settled in accordance with the following procedures set out herein. Grieving parties are encouraged to meet as soon as possible and try to resolve the dispute. However, if a resolution cannot be reached, the following procedure shall be used.

13.2 Grievances and disputes shall be settled according to the following procedures:

Step 1: The business representative of the local Union involved shall first attempt to settle the matter by oral discussion with the particular C/S/E's representative no later than five (5) working days after the Union submitting the grievance first became aware of, or by the use of reasonable diligence should have been aware of, the occurrence first giving rise to the dispute or grievance. If the matter is not resolved with the C/S/E's representative within five (5) working days after the oral discussion with said C/S/E's representative, the dispute or grievance shall be reduced to writing by the grieving Union.

Step 2: In the event that the representatives (C/S/E and Union) are unable to resolve the grievance after its referral to Step 1, either involved party may submit the grievance, within five (5) business days of the Step 1 meeting of the parties to the grievance, to the Joint Administrative Committee (JAC), which shall meet within five (5) business days after such referral (or such longer time as is mutually agreed upon by all representatives of the JAC), to confer in an attempt to resolve the grievance. If the grievance is not resolved by the parties to the grievance within five (5) business days after its referral (or such longer time as is mutually agreed on by all representatives of the JAC) to the JAC, it may be referred within five (5) business days by either party to Step 3 by written notice of the submittal of the grievance to arbitration in accordance with the provisions set forth below.

Step 3: After notice by any party of intent to submit a grievance to arbitration, the Parties shall have five (5) working days to attempt, by mutual agreement, to

select as the Arbitrator to hear the dispute, one of the Arbitrators listed under the Expedited Arbitration provisions of Article 4.3 of this Agreement. If the Parties are unable to reach such agreement, the first arbitrator from the list, on a rotational basis, shall be the arbitrator to hear the dispute. The decision of the Arbitrator shall not have the authority to alter, amend, add to or delete from the provisions of this Agreement in any way. A failure of any party to attend said hearing shall not delay the hearing of evidence or the issuance of any decision by the Arbitrator. Should any party seek confirmation of the award made by the Arbitrator, the prevailing party shall be entitled to receive its reasonable attorney fees and costs.

13.3 The time limits specified in any step of the Grievance Arbitration Procedure set forth in Section 13.2 may be extended by mutual agreement of the Parties. However, failure to process a grievance, or failure to respond in writing within the time limits provided above, without a request for an extension of time, shall be deemed a waiver of such grievance without prejudice, or without precedent to the processing and/or resolution of like or similar grievances.

13.4 Grievances which are settled directly by the Parties to such grievance shall not be precedent setting.

13.5 The Harbor Department or its designated representative shall be given advance notification of all proceedings of all actions at Steps 2 and 3 and may observe such proceedings upon request.

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ARTICLE XIV

JURISDICTIONAL DISPUTES

14.1 The assignment of work will be solely the responsibility of the C/S/E performing the work involved; and such work assignments will be in accordance with the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor plan.

14.2 All jurisdictional disputes on this Project, between or among Building and Construction Trades Unions and employers shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the C/S/Es and Unions. A decision shall not award back pay or any other damages for a misassignment of work, nor may any party bring an independent action for back pay or any other damages based upon a decision.

(1) If a dispute arising under this Article involves the Southwest Regional Council of Carpenters or any of its subordinate bodies, an Arbitrator shall be chosen by the procedures specified in Article V, Section 5 of the Plan from a list composed of John Kagel, Thomas Angelo, Robert Hirsch and Thomas Pagan. The Arbitrator's hearing on the dispute shall be held at the offices of the Council within fourteen (14) days of the selection of the Arbitrator. All other procedures shall be as specified in the Plan.

14.3 No Work Disruption Over Jurisdiction. All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, disruption, or slow down of any nature and the C/S/E's assignments shall be adhered to until the dispute is resolved.

Individuals violating this section shall be subject to immediate discharge.

14.4 Pre-Job Conference. A pre-job conference shall be held with all parties prior to the start of work by the prime contractor for the Project covered by this Agreement. The purpose of the conference will be to, among other things, determine craft manpower needs, schedule of work for the contract and Project work rules/owner rules. The subcontractors/owner operators of any tier will be advised in advance of all such conferences and shall participate. The Trades Council and the BCA's Office of Contract Compliance shall be advised in advance of all such conferences and may participate if they wish. All work assignments shall be disclosed by the C/S/E at a pre-job conference. Any formal jurisdictional dispute raised under Article XIV must be raised at the pre-job conference upon disclosure of the work assignments. If the C/S/E intends to change the work assignment after the pre-job conference or to make an assignment of work not previously known, the C/S/E must notify the appropriate affected craft union(s) prior to the commencement of work. The C/S/E performing all project work that was not previously assigned at the pre-job conference will conduct a separate pre-job conference for such newly assigned work prior to commencing such work.

ARTICLE XV

MANAGEMENT RIGHTS

15.1 The C/S/Es shall retain full and exclusive authority for the management of their operations including, but is not limited to, the right to direct their working force and to establish coordinated working hours and starting times, which shall not be in conflict with the Schedule A Agreements of the Unions.

15.2 There shall be no limit on production by workers or restrictions on the full use of tools or equipment. Craftsmen using tools shall perform any of the work of the trades and shall work under the direction of the craft foremen. There shall be no restrictions on efficient use of manpower other than as may be required by safety regulations. The C/S/Es may utilize the most efficient methods or techniques of construction, tools or other labor-saving devices to accomplish the work. Restrictive practices not a part of the terms and conditions of this Agreement will not be recognized.

15.3 The C/S/Es shall be the sole judge of the number and classifications of employees required to perform work subject to this Agreement and shall have the absolute right to hire, promote, suspend, discharge or lay off employees at their discretion and to reject any applicant for employment, subject to the provisions of the respective craft collective bargaining agreement between the particular C/S/E and Union and pursuant to this Agreement.

15.4 Nothing in this Agreement shall be construed to limit the right of any of the C/S/Es' to select the lowest bidder they deem qualified for the award of contracts or subcontracts or material, supplies, or equipment purchase orders on the Project. The right of ultimate selection remains solely with the C/S/E in accordance with the construction contract.

15.5 It is recognized that certain materials, equipment and systems of a highly technical and specialized nature will have to be installed at the Project. The nature of the materials or the nature of the equipment and systems, together with requirements of manufacturer's warranty, dictate that it will be pre-fabricated, pre-piped, pre-wired and/or installed under the supervision and direction of the Harbor Department, City

and/or manufacturer's personnel. The Unions agree that such materials, equipment and systems shall be installed without the occurrence of any conduct described in Section 4.1 or 4.2.

ARTICLE XVI

SAFETY, PROTECTION OF PERSON AND PROPERTY

16.1 It shall be the responsibility of each C/S/E to ensure safe working conditions and employee compliance with any safety rules contained herein or established by the Harbor Department, City, the state and the C/S/E. It is understood that the employees have an individual obligation to use diligent care to perform their work in safe manner and to protect themselves and the property of the C/S/E and the Harbor Department.

16.2 Employees shall be bound by the safety, security and visitor rules established by the C/S/E and the Harbor Department. These rules will be published and posted in conspicuous places throughout the work site. An employee's failure to satisfy his/her obligations under this Section will subject him/her to discipline, including discharge.

16.3 The Parties acknowledge that the Harbor Department and the C/S/E have a policy, which prohibits the use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms while on the Harbor Department's premises. Additionally, the C/S/E has a "drug free" work place policy, which prohibits those working on the Harbor Department's premises from having a level of alcohol in their system, which could indicate impairment, and/or any level of controlled substances (i.e., illegal drugs) in their system.

16.4 To that end, the Parties agree to adopt the Los Angeles/Orange Counties Building and Construction Trades Council Approved Drug and Alcohol Testing Policy, a

copy of which is attached hereto as Attachment "B" which shall be the policy and procedure utilized under this Agreement.

ARTICLE XVII

SAVINGS CLAUSE

17.1 The Parties agree that in the event any article, provision, clause, sentence or work of the Agreement is determined to be illegal or void as being in contravention of any applicable law, by a court of competent jurisdiction, the remainder of the Agreement shall remain in full force and effect. The Parties further agree that if any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void, by a court of competent jurisdiction, the Parties shall substitute, by mutual agreement, in its place and stead, an article, provision, sentence or word which will meet the objections to its validity and which will be in accordance with the intent and purpose of the article, provision, clause, sentence or word in question.

17.2 The Parties also agree that in the event that a decision of a court of competent jurisdiction materially alters the terms of the Agreement such that the intent of the Parties is defeated, then the entire Agreement shall be null and void.

17.3 If a court of competent jurisdiction determines that all or part of the Agreement is invalid and/or enjoins the City or the Harbor Department from complying with all or part of its provisions and the Board accordingly determines that the Agreement will not be required as part of an award to a C/S/E, the Unions will no longer be bound by the provisions of Article IV to the extent that such C/S/E is no longer bound. The Unions and their members shall remain bound to Article IV with respect to all other C/S/Es who remain bound to this Agreement, and no action taken by the Unions or their members

shall disrupt the work of such C/S/Es.

17.4 The provisions of this Agreement shall not be applicable where prohibited by Presidential Executive Order, Federal or State law, or where the application would be inconsistent with terms and conditions of a grant or a contract with the agency of the United States, State of California, or the instruction of an authorized representative of any of these agencies with respect to any grant or contract.

ARTICLE XVIII

STEWARD

18.1 Each Union shall have the right to designate a working craft employee as steward for each C/S/E employing such craft on the Project. Such designated steward shall be a qualified workman assigned to a crew and shall perform the work of the craft. The steward shall not perform supervisory duties. Under no circumstances shall there be nonworking stewards. Stewards shall be permitted a reasonable amount of time during working hours to perform applicable Union duties related to the work being performed by the craft employees of his/her C/S/E and not to the work being performed by other C/S/Es or their employees.

18.2 Authorized representatives of the Union(s) shall have access to the Covered Project, provided that such representatives fully comply with posted visitor, security, and safety rules and the environmental compliance requirements of the Covered Project, provided that they do not unnecessarily interfere with the employees or cause them to neglect their work. The Contractor recognizes the right of access set forth in this Section and such access will not be unreasonably withheld from an authorized representative of the Union.

ARTICLE XIX

TERM

19.1 This Agreement shall commence upon execution by all Parties (the City of Los Angeles Harbor Department and the Los Angeles/Orange Counties Building and Construction Trades Council and the Craft Unions signatory to this Agreement) and shall continue in full force and effect from the date of execution by all Parties for a period of ten (10) years. During the term of this Agreement, upon request by either Party or by mutual consent, the Parties will meet to discuss the application of and their experience with this Agreement. As a result of any such meeting, the Parties may, but shall not be obligated to, mutually agree to amendments or modification of this Agreement.

19.2 The Agreement shall continue in full force and effect for each covered Project until project acceptance by the Board. Either party desiring to renew, extend or to negotiate changes to this Agreement upon expiration, shall make such intention known to the other party by written notice thereof not less than six (6) months prior to the expiration of this Agreement.

19.3 Any covered Project awarded during the term of this Agreement shall continue to be covered hereunder, until completion of the Project, notwithstanding the expiration date of this Agreement.

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IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year written below.

THE UNION OFFICIALS signing this Agreement warrant and represent that they are authorized to collectively bargain on behalf of the organizations whom they represent and the members of such organizations.

THE CITY OF LOS ANGELES HARBOR DEPARTMENT

By: _____ Date: 12-11-17
Eugene D. Seroka
Executive Director

By: _____ Date: 12-11-17
Amber Klesges
Commission Secretary

LOS ANGELES/ORANGE COUNTY BUILDING AND CONSTRUCTION TRADES COUNCIL

By: _____ Date: 5-17-17
Ron Miller
Executive Secretary
Los Angeles/Orange County Building
And Construction Trades Council

APPROVED AS TO FORM:

Michael N. Feuer, City Attorney

By: _____ Date: 5/17/2017
Hugo S. Rossitter
Deputy City Attorney

Union Signatory Page

Asbestos Heat & Frost Insulators (Local 5)

Boilermakers (Local 92)

Bricklayers & Allied Craftworkers (Local 4)

Cement Masons (Local 500)

District Council of Laborers

Electricians (Local 11)

Elevator Constructors (Local 18)

Gunite Workers (Local 345)

Iron Workers (Reinforced – Local 416)

Iron Workers (Structural – Local 433)

Laborers (Local 1309)

Laborers (Local 300) (Remediation)

Operating Engineers (Local 12)

Operating Engineers (Local 12)

Operating Engineers (Local 12)

Painters & Allied Trades DC 36

Pipe Trades (Local 250)

Pipe Trades (Local 345)

Pipe Trades (Plumbers Local 78)

Pipe Trades (Sprinkler Fitters Local 709)

Plasterers (Local 200)

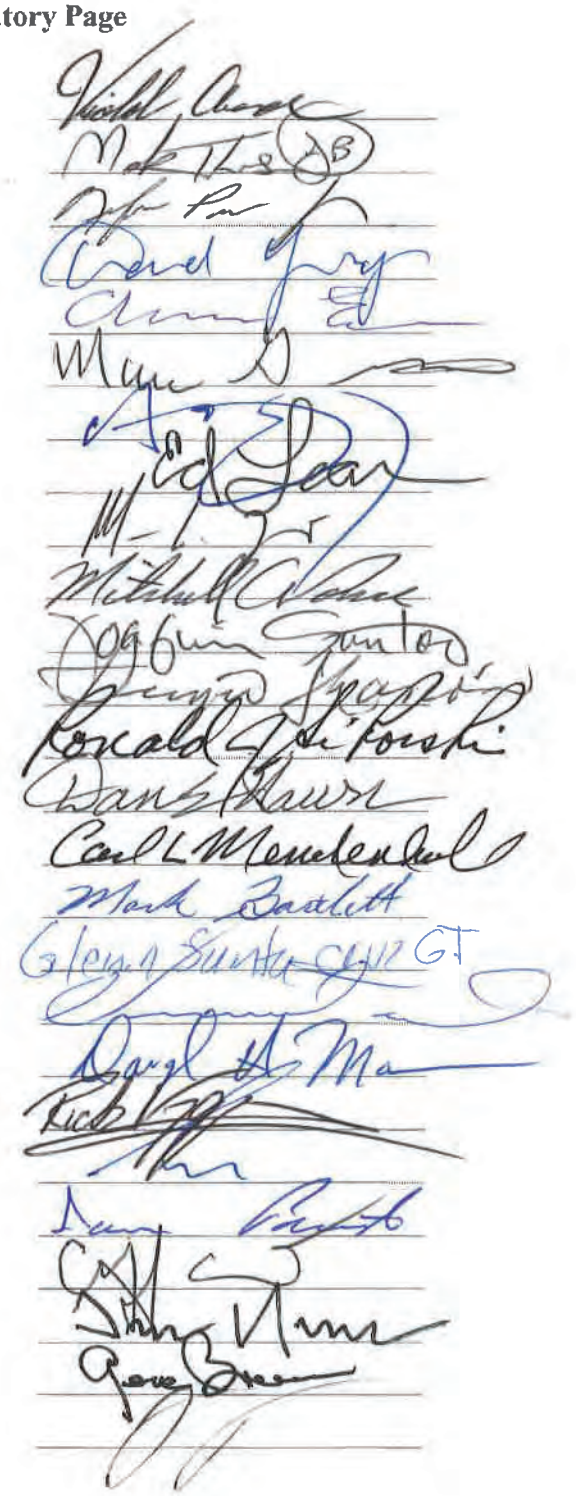
Plaster Tenders (Local 1414)

Roofers & Waterproofers (Local 36)

Sheet Metal Workers (Local 105)

Teamsters (Local 986)

Southwest Regional Council of Carpenters



ATTACHMENT "A"

COMPANY LETTERHEAD

Date: _____

Mr. Shaun Shahrestani
Chief Harbor Engineer
Construction Division
Port of Los Angeles
425 S. Palos Verdes Street
San Pedro, CA. 90731

SUBJECT: LETTER OF ASSENT

Dear Mr. Shahrestani:

This is to certify that the undersigned Contractor/Employer has examined a copy of the subject Project Labor Agreement entered into by and between the City of Los Angeles Harbor Department and Los Angeles/Orange Counties Building and Construction Trades Council and the signatory Unions dated _____. The undersigned Contractor/Employer hereby agrees to comply with all of the terms and conditions of the aforementioned Project Labor Agreement as such labor Agreement may, from time to time, be amended by the parties or interpreted pursuant to its terms.

It is understood that the signing of the letter of Assent shall be as binding on the undersigned Contractor/Employer as though the Contractor/Employer had signed the above referred Agreement and shall require all its subcontractors, of whatever tier, to become similarly bound for all work within the scope of this Agreement.

This Letter of Assent shall become effective and binding upon the undersigned Contractor/Employer the _____ day of _____, _____, and shall remain in full force and effect until the completion of the above stated project.

Sincerely,

(Name of Construction Company)

By:_____
(Name and Title of Authorized Executive)

Contractor's State License No.: _____

cc:

ATTACHMENT B

LOS ANGELES/ORANGE COUNTIES

BUILDING AND CONSTRUCTION TRADES COUNCIL

APPROVED

DRUG AND ALCOHOL TESTING POLICY

The Parties recognize the problems which drug and alcohol abuse have created in the construction industry and the need to develop drug and alcohol abuse prevention programs. Accordingly, the Parties agree that in order to enhance the safety of the work place and to maintain a drug and alcohol free work environment, individual Employers may require applicants or employees to undergo drug and alcohol testing.

1. It is understood that the use, possession, transfer or sale of illegal drugs, narcotics, or other unlawful substances, as well as being under the influence of alcohol and the possession or consuming alcohol is absolutely prohibited while employees are on the Employer's job premises or while working on any jobsite in connection with work performed under the Project Labor Agreement ("PLA").

2. No Employer may implement a drug testing program which does not conform in all respects to the provisions of this Policy.

3. No Employer may implement drug testing at any jobsite unless written notice is given to the Union setting forth the location of the jobsite, a description of the project under construction, and the name and telephone number of the Project Supervisor. Said notice shall be addressed to the office of each Union signing the PLA. Said notice shall be delivered in person or by registered mail before the implementation of drug testing. Failure to give such notice shall make any drug testing engaged in by

the Employer a violation of the PLA, and the Employer may not implement any form of drug testing at such jobsite for the following six months.

4. An employer who elects to implement drug testing pursuant to this Agreement shall require all employees on the Project to be tested. With respect to individuals who become employed on the Project subsequent to the proper implementation of this drug testing program, such test shall be administered upon the commencement of employment on the project, whether by referral from a Union Dispatch Office, transfer from another project, or another method. Individuals who were employed on the project prior to the proper implementation of this drug testing program may only be subjected to testing for the reasons set forth in Paragraph 5(f) (1) through 5(f) (3) of this Policy. Refusal to undergo such testing shall be considered sufficient grounds to deny employment on the project.

5. The following procedure shall apply to all drug testing:

a. The Employer may request urine samples only. The applicant or employee shall not be observed when the urine specimen is given. An applicant or employee, at his or her sole option, shall, upon request, receive a blood test in lieu of a urine test. No employee of the Employer shall draw blood from a bargaining unit employee, touch or handle urine specimens, or in any way become involved in the chain of custody of urine or blood specimens. A Union Business Representative, subject to the approval of the individual applicant or employee, shall be permitted to accompany the applicant or employee to the collection facility to observe the collection, bottling, and sealing of the specimen.

b. The testing shall be done by a laboratory approved by the Substance Abuse & Mental Health Services Administration (SAMHSA), which is chosen by the Employer and the Union.

c. An initial test shall be performed using the Enzyme Multiplied Immunoassay Technique (EMZT). In the event a question or positive result arises from the initial test, a confirmation test must be utilized before action can be taken against the applicant or employee. The confirmation test will be by Gas Chromatography Mass Spectrometry (GC/MS). Cutoff levels for both the initial test and confirmation test will be those established by the SAMHSA. Should these SAMHSA levels be changed during the course of this agreement or new testing procedures are approved, then these new regulations will be deemed as part of this existing agreement. Confirmed positive samples will be retained by the testing laboratory in secured long-term frozen storage for a minimum of one year. Handling and transportation of each sample must be documented through strict chain of custody procedures.

d. In the event of a confirmed positive test result the applicant or employee may request, within forty-eight (48) hours, a sample of his/her specimen from the testing laboratory for purposes of a second test to be performed at a second laboratory, designated by the Union and approved by SAMHSA. The retest must be performed within ten (10) days of the request. Chain of custody for this sample shall be maintained by the Employer between the original testing laboratory and the Union's designated laboratory. Retesting shall be performed at the applicant's or employee's expense. In the event of conflicting test results the Employer may require a third test.

e. If, as a result of the above testing procedure, it is determined that an applicant or employee has tested positive, this shall be considered sufficient grounds to deny the applicant or employee his/her employment on the Project.

f. No individual who tests negative for drugs or alcohol pursuant to the above procedure and becomes employed on the Project shall again be subjected to drug testing with the following exceptions:

1. Employees who are involved in industrial accidents resulting in damage to plant, property or equipment or injury to him/herself or others may be tested pursuant to the procedures stated hereinabove.

2. The Employer may test employees following thirty (30) days advance written notice to the employee(s) to be tested and to the applicable Union. Notice to the applicable Union shall be as set forth in Paragraph 3 above and such testing shall be pursuant to the procedures stated hereinabove.

3. The Employer may test an employee where the Employer has reasonable cause to believe that the employee is impaired from performing his/her job. Reasonable cause shall be defined as exhibiting aberrant or unusual behavior, the type of which is a recognized and accepted symptom of impairment (i.e., slurred speech, unusua1 lack of muscular coordination, etc.). Such behavior must be actually observed by at least two persons, one of whom shall be a Supervisor who has been trained to recognize the symptoms of drug abuse or impairment and the other of whom shall be the job steward. If the job steward is unavailable or there is no job steward on the project the other person shall be a member of the applicable Union's bargaining unit. Testing shall be pursuant to the procedures stated hereinabove. Employees who

are tested pursuant to the exceptions set forth in this paragraph and who test positive will be removed from the Employer's payroll.

g. Applicants or employees who do not test positive shall be paid for all time lost while undergoing drug testing. Payment shall be at the applicable wage and benefit rates set forth in the applicable Union's Master Labor Agreement. Applicants who have been dispatched from the Union and who are not put to work pending the results of a test will be paid waiting time until such time as they are put to work. It is understood that an applicant must pass the test as a condition of employment. Applicants who are put to work pending the results of a test will be considered probationary employees.

6. The employers will be allowed to conduct periodic job site drug testing on the Project under the following conditions:

a. The entire jobsite must be tested, including any employee or subcontractor's employee who worked on that project three (3) working days before or after the date of the test;

b. Jobsite testing cannot commence sooner than thirty (30) days after start of the work on the Project;

c. Prior to start of periodic testing, a business representative will be allowed to conduct an educational period on company time to explain periodic jobsite testing program to affected employees;

d. Testing shall be conducted by a SAMHSA certified laboratory, pursuant to the provisions set forth in Paragraph 5 hereinabove.

e. Only two periodic tests may be performed in a twelve month period.

7. It is understood that the unsafe use of prescribed medication, or where the use of prescribed medication impairs the employee's ability to perform work, is a basis for the Employer to remove the employee from the jobsite.

8. Any grievance or dispute which may arise out of the application of this Agreement shall be subject to the grievance and arbitration procedures set forth in the PLA.

9. The establishment or operation of this Policy shall not curtail any right of any employee found in any law, rule or regulation. Should any part of this Agreement be found unlawful by a court of competent jurisdiction or a public agency having jurisdiction over the parties, the remaining portions of the Agreement shall be unaffected and the parties shall enter negotiations to replace the affected provision.

10. Present employees, if tested positive, shall have the prerogative for rehabilitation program at the employee's expense. When such program has been successfully completed the Employer shall not discriminate in any way against the employee. If work for which the employee is qualified exists he/she shall be reinstated.

11. The Employer agrees that results of urine and blood tests performed hereunder will be considered medical records held confidential to the extent permitted or required by law. Such records shall not be released to any persons or entities other than designated Employer representatives and the applicable Union. Such release to the applicable Union shall only be allowed upon the signing of a written release and the information contained therein shall not be used to discourage the employment of the individual applicant or employee on any subsequent occasion.

12. The Employer shall indemnify and hold the Union harmless against any and all claims, demands, suits, or liabilities that may arise out of the application of this Agreement and/or any program permitted hereunder.

13. Employees who seek voluntary assistance for substance abuse may not be disciplined for seeking such assistance. Requests from employees for such assistance shall remain confidential and shall not be revealed to other employees or management personnel without the employee's consent. Employees enrolled in substance abuse programs shall be subject to all Employer rules, regulations and job performance standards with the understanding that an employee enrolled in such a program is receiving treatment for an illness.

14. This Memorandum, of Understanding shall constitute the only Agreement in effect between the parties concerning drug and alcohol abuse, prevention and testing. Any modifications thereto must be accomplished pursuant to collective bargaining negotiations between the parties.

DRUG ABUSE PREVENTION AND DETECTION

APPENDIX A

CUTOFF LEVELS

DRUG	SCREENING METHOD	SCREENING LEVEL **	CONFIRMATION METHOD	CONFIRMATION LEVEL
Alcohol	EMIT	0.02%	CG/MS	0.02%
Amphetamines	EMIT	1000 ng/m*	CG/MS	500 ng/ml*
Barbiturates	EMIT	300 ng/ml	CG/MS	200 ng/ml
Benzodiazepines	EMIT	300 ng/ml	CG/MS	300 ng/ml
Cocaine	EMIT	300 ng/ml*	CG/MS	150 ng/ml*
Methadone	EMIT	300 ng/ml	CG/MS	100 ng/ml
Methaqualone	EMIT	300 ng/ml	CG/MS	300 ng/ml
Opiates	EMIT	2000 ng/ml*	CG/MS	2000 ng/ml*
PCP (Phencyclidine)	EMIT	25 ng/ml*	CG/MS	25 ng/ml*
THC (Marijuana)	EMIT	50 ng/ml*	CG/MS	15 ng/ml*
Propoxyphene	EMIT	300 ng/ml	CG/MS	100 ng/ml

* SAMHSA specified threshold

** A sample reported positive contains the Indicated drug at or above the cutoff level for that drug. A negative sample either contains no drug or contains a drug below the cutoff level.

EMIT - Enzyme Immunoassay

CC/MS - Gas Chromatography/Mass Spectrometry

SIDE LETTER OF AGREEMENT

TESTING POLICY FOR DRUG ABUSE

It is hereby agreed between the parties hereto that an Employer who has otherwise properly implemented drug testing, as set forth in the Testing Policy for Drug Abuse, shall have the right to offer an applicant or employee a "quick" drug screening test. This “quick” screen test shall consist either of the “ICUP” urine screen or similar test or an oral screen test. The applicant or employee shall have the absolute right to select either of the two “quick” screen tests, or to reject both and request a full drug test.

An applicant or employee who selects one of the quick screen tests, and who passes the test, shall be put to work immediately. An applicant or employee who fails the “quick” screen test, or who rejects the quick screen tests, shall be tested pursuant to the procedures set forth in the Testing Policy for Drug Abuse. The sample used for the "quick" screen test shall be discarded immediately upon conclusion of the test. An applicant or employee shall not be deprived of any rights granted to them by the Testing Policy for Drug Abuse as a result of any occurrence related to the “quick” screen test.

Attachment C

CITY OF LOS ANGELES HARBOR DEPARTMENT
REQUEST/VERIFICATION FOR CRAFT EMPLOYEES
(*INSERT NAME OF PROJECT*)

INSTRUCTIONS

To the Contractor:

Please complete and fax this form to the applicable union to request craft workers that fulfill all hiring requirements for the City of Los Angeles project. After faxing your request, call the Local to verify receipt and substantiate their capacity to furnish local, at-risk or general dispatch as requested. Contact information for Locals is listed on back of form. Please print your Fax Transmission Verification Report and keep a copy of this request for your records.

To the Union:

Please complete the "Union Use Only" section and fax form back to the requesting contractor. Retain form for your records.

To:	Local	Fax# ( )	Date:
From – Company Name			
Person Sending:		Contact Phone: ( )	

Please provide me with union craft workers per the City of Los Angeles PLA that fulfills the requirements for this project as defined below:

30% Local Requirement (Union craft employees, including apprentices, who reside in the local metropolitan area zip codes listed below. If unavailable, can be dispatched from any one of the Citywide zip codes listed in Attachment).

SEE ATTACHED TIER 1 AND TIER 2 ZIP CODES

10% "Transitional Worker" Requirement (Union craft employees, including apprentices, who live in one of the Citywide zip codes listed in Attachment, and are certified to fulfill the "Transitional worker" hiring requirement).

General Dispatch (Union craft employees dispatched per normal dispatch procedures, not including the 30% Local or 10% Transitional Worker requirements)

Employee Name	Address	Zip Code

Craft Employees Requested						
Job/Craft Description	Journeyman / Apprenticeship Level	Number(s) Requested			Report Date	Report Time
		30% Local	10% Transitional	General Dispatch		

Total Workers Requested_____

Please have worker(s) report to the following address indicated below:

Site Address: _____ Report to (On-Site Contact): _____

On-Site Tel.#: ( ) _____ Fax: ( ) _____

Comments or special requirements:

Union Use Only

(Fax the Completed Form Back to Contractor)

Reception Date: Dispatch Date: Received By:

Requested Dispatch	Available for Dispatch	Unavailable for Dispatch
30% Local	☐	☐
10% Transitional	☐	☐
General Dispatch	☐	☐

Comments:

ATTACHMENT D

Harbor Department PLA Construction Trade Unions Contact Numbers

Asbestos Heat & Frost Insulators (Local 5)
670 E. Foothill Blvd.
Azusa, CA 91702
Tel: (626) 815-9794
Fax: (626) 815-0165

Boilermakers (Local 92)
2260 S. Riverside Avenue
Bloomington, CA 92316
Tel: (909) 877-9382
Fax: (909) 877-8318

Bricklayers & Allied Craftworkers (Loc. 4)
11818 Clark St., Suite A
Arcadia, CA 91706
Tel: (626) 739-5600
Fax: (626) 739-5610

Drywall Finishers Local 1136
Corporate Center Drive
Monterey Park, CA 91754
Tel: (626) 296-8003
Fax: (626) 296-8076

Electricians (Local 11)
297 N. Marengo Avenue
Pasadena, CA 91101
Tel: (626) 243-9700
Fax: (626) 793-9743

Elevator Constructors (Local 18)
100 S. Mentor Avenue
Pasadena, CA 91106
Tel: (626) 449-1869
Fax: (626) 577-1055

Operating Engineers (Local 12)
150 E. Corson
Pasadena, CA 91103
Tel: (626) 792-8900
Fax: (626) 792-9039

Glaziers (Local 636)
1155 Corporate Center Dr.
Monterey Park, CA 91754
Tel: (626) 448-1565
Fax: (626) 797-8395

Gunite Workers (Local 345)
P.O. Box 3345
Burbank, CA 91508
Tel: (818) 846-1303
Fax: (818) 846-1226

Iron Workers (Reinforced – Local 416)
13830 San Antonio Dr.
Norwalk, CA 90650
Tel: (562) 868-1251
Fax: (562) 868-1429

Iron Workers (Structural – Local 433)
17495 Hurley St. East
City of Industry, CA 91744
Tel: (626) 964-2500
Fax: (626) 964-1754

Laborers Local 1309
3971 Pixie Ave.
Lakewood, CA 90712
Tel: (562) 421-9346
Fax: (562) 421-5964

Laborers Local 300
2005 W. Pico Blvd.
Los Angeles, CA 90006
Tel: (213) 385-3550
Fax: (213) 385-6985

Painters & Allied Trades DC 36
1155 Corporate Center Drive
Monterey Park, CA 91754
Tel: (626) 584-9925
Fax: (626) 584-1949

Plaster Tenders
1055 W. Second Street
Pomona, CA
Tel.: (909) 622-8500
Fax: (909) 623-5244

Plumbers (Local 78)
1111 West James Wood Boulevard
Los Angeles, CA 90015
(213) 688-9000
(213) 627-4624

Pipe Trades (Local 250)
Steamfitters/Air Conditioning/ Refrigeration / Industrial Pipefitters
18355 S. Figueroa St.
Gardena, CA 90248
Steamfitters: Tel: (310) 660-0035
Fax: (310) 329-2465
AC/Refrig. Tel: (310) 660-0045
FAX: (310) 329-2465

Pipe Trades (Local 345)
Landscape, Irrigation, Underground & Specialty Piping
1430 Huntington Dr.
Duarte, CA 91010
Tel: (626) 357-9345
Fax: (626) 359-0359

Pipe Trades (Sprinkler Fitters – Local 709)
12140 Rivera Road
Whittier, CA 90606
Tel: (562) 698-9909
Fax: (562) 698-7255

Plasterers (Local 200)
1610 W. Holt Ave.
Pomona, CA 91768
Tel: (909) 865-2240
Fax: (909) 865-9392

Cement Masons #500
1605 N. Susan St.
Santa Ana, CA 92703
Tel.: (714) 554-0730
Fax: (714) 265-0780

Resilient Floor & Dec. Cov. (Local 1247)
8051 Pioneer Blvd.
Whittier, CA 90606
Tel: (562) 695-7402
Fax: (562) 695-6337

Roofers & Waterproofers (Local 36)
5380 Poplar Blvd.
Los Angeles, CA 90032
Tel: (323) 222-0251
Fax: (323) 222-3585

Sheet Metal Workers (Local 105)
2120 Auto Centre Dr., Suite 105
Glendora, CA 91740
Tel: (909) 305-2800
Fax: (909) 305-2822

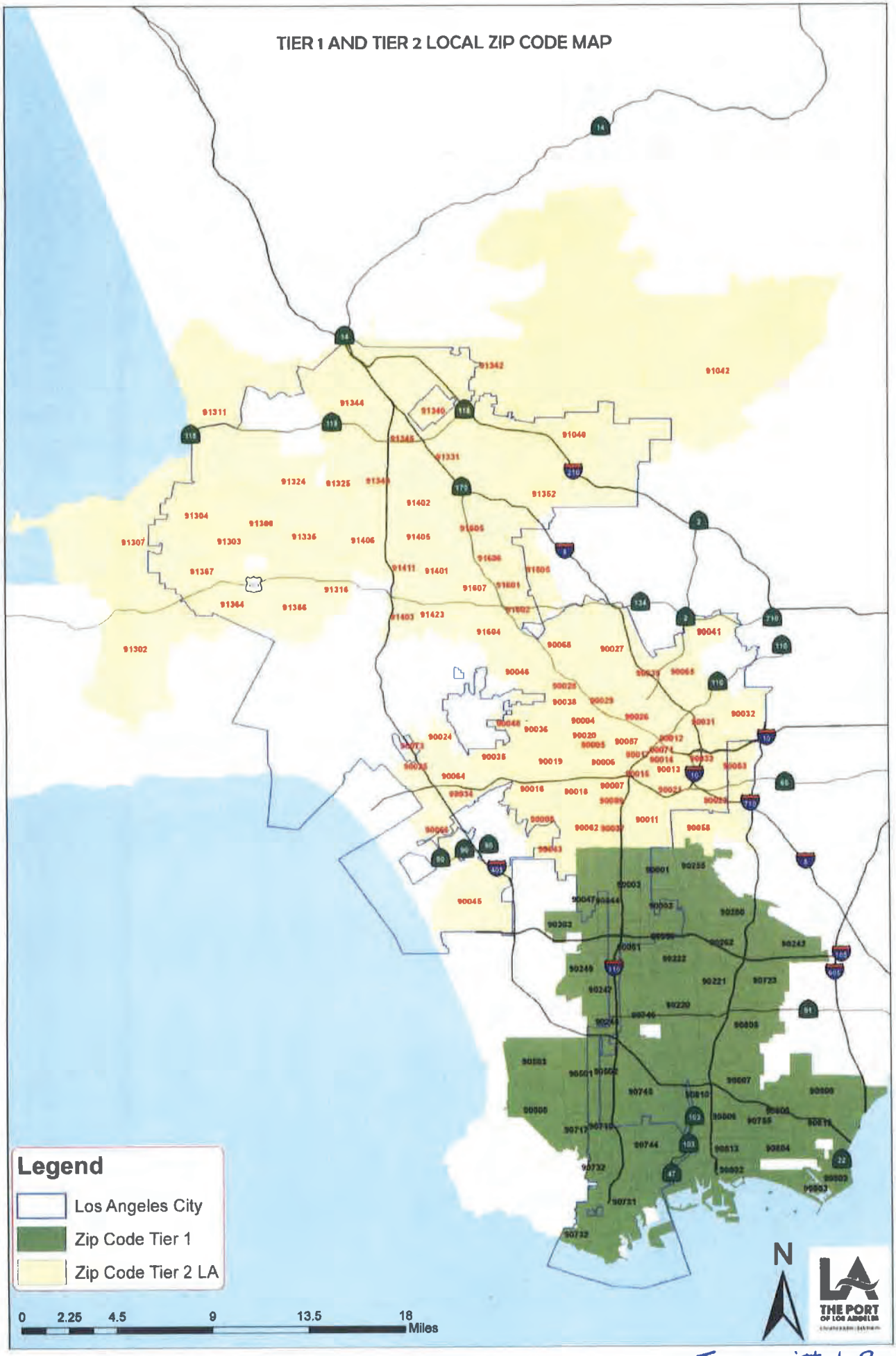
Teamsters (Local 986)
1198 Durfee Avenue
So. El Monte, CA 91733
Tel: (626) 350-9860
Fax: (626) 448-0986

Tradeshow and Sign Crafts
1155 Corporate Center Drive
Monterey Park, CA 91754
Tel: (626) 296-8086
Fax: (626) 584-1949

ATTACHMENT E
Harbor Department Calendar Years 2017 Thru 2027
Capital Improvement Program (CIP) Project List

Project Title	Anticipated Start
2017 - 2019 Site Improvements	2017/2018
B. 196-199 & 200A - Wharf Rehabilitation (2516600)	2017/2018
B. 212-224 - Intermodal Container Transfer Facility (ICTF) Expansion (2533300)	2017/2018
B. 93 - Cruise Terminal - Customs and Border Protection Improvements (2525300)	2017/2018
B.187-190 - MOTEMS Repairs (2524600)	2017/2018
Front Street Beautification (2504700)	2017/2018
North Gaffey Street Beautification -Phase II (7934500)	2017/2018
B. 240 A, B, & C - Seawall Improvements - ExxonMobil (2537600)	2017/2018
San Pedro Waterfront - Ports O' Call Promenade and Town Square (2532100)	2017/2018
B. 200 - Rail Yard and Track Connections Enhancements (2540800)	2017/2018
B. 214 - 220 - Concrete Wharf Improvements (2537800)	2018/2019
B. 167-169 - MOTEMS- Shell (2493600)	2018/2019
B. 226-236 Terminal Improvements - Wharf and Backlands (2531200)	2018/2019
B. 228-230 - Alternative Maritime Power (AMP) Upgrade and Retrofit (2529400)	2018/2019
Wilmington Waterfront Pedestrian Bridge (2537700)	2018/2019
Wilmington Waterfront Promenade (2533000)	2018/2019
San Pedro Waterfront - Sampson Way (7th St. to 22nd St.) Roadway Improvements (2488200)	2018/2019
2018 - 2020 Marine Improvements	2018/2019
B. 148-151 - MOTEMS- Phillips 66 (2493800)	2018/2019
B. 238 - MOTEMS- ExxonMobil (2489900)	2018/2019
West Basin Lead Track Gap Closure (2536600)	2018/2019
B. 226-236- Terminal Infrastructure Reconstruction (2539400)	2018/2019
San Pedro Waterfront - Harbor Boulevard From Miner Street to SP Slip (2543000)	2018/2019
San Pedro Waterfront - B. 57 - Wharf Retrofit and Signal Street Improvements (2500600)	2019/2020
San Pedro Waterfront - B. 80-83 - Waterside Improvements (2539000)	2019/2020
2019 - 2021 Site Improvements	2019/2020
B. 164 - MOTEMS - Valero (2493900)	2019/2020
B. 100-102 Marine Operations Building (2454300)	TBD
B. 100-102 Crane Maintenance Building (2502600)	TBD
B. 121-131 Wharf Upgrades (2449000)	TBD
B. 121-131 West Basin Intemodal Container Transfer Facility (WBICTF)(24810000)	TBD
RB 301-305 Buildings, Gates and Backland Development(2489000)	TBD
B. 306 Wharf and Backland Development (2489100)	TBD
B. 306 Alternative Maritime Power (AMP) (2506800)	TBD
B. 163 MOTEMS-NuStar (2493700)	TBD
B. 187-191 MOTEMS-Vopak (2494000)	TBD
B. 161 Marine Ways Modifications (2486100)	TBD
Harbor Administration Building-HVAC Replacement (2509600)	TBD

All Projects on this list are subject to change. The anticipated starts are the best estimate at the time this document was prepared.



Transmittal 2

CONSTRUCTION CAREERS POLICY

(Revision 1)

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SECTION I. DEFINITIONS

1. “Apprentice” means any worker who is indentured in a bona fide Labor/Management construction apprenticeship program, registered and approved by the State of California Department of Industrial Relations, Division of Apprenticeship Standards (DAS) or in the case of Projects with federal funding, indentured in a bona fide Labor/Management apprenticeship program approved by the US Department of Labor (DOL) and California DAS.

2. “Apprenticeship Program” means any Labor/Management construction apprenticeship program certified and approved by the California DAS or in the case of Projects with federal funding, approved by the US DOL and California DAS.

3. “Awarding Authority” means the City of Los Angeles, acting by and through the Board of Harbor Commissioners, or any employee or officer of the Board that is authorized to award or enter into any contract on behalf of the Board.

4 “Board” means the Los Angeles Board of Harbor Commissioners.

5. “Bureau of Contract Administration” (BCA) means the designated bureau within the City’s Department of Public Works which may provide support services to the Harbor Department in administering the Policy and the PLA.

6. “City” means the City of Los Angeles, a municipal corporation, and all City awarding authorities.

7. “Construction Contract” means a City contract which has been awarded by the Board, and is necessary to complete the Project.

8. “Contractor/Subcontractor/Employer (C/S/E)” means any individual firm, partnership, owner operator, or corporation, or combination thereof, including joint ventures, which is an independent business enterprise and has entered into a contract with the Harbor Department or any of its contractors or subcontractors/owner operators of any tier, with respect to the construction of any part of the Project(s) under contract terms and conditions approved by the Board.

9. “Core Worker” means a verifiable member of a C/S/E’s core workforce for the purpose of the PLA and this Policy if the worker’s name appears on the C/S/E’s active payroll for 60 of 100 working days immediately prior to award of the construction contract and meets all standards required by applicable local, state or federal law or regulation.

10. “Covered Project(s)” or “Project” means a project or projects that have been included in the Ten-Year “Capital Improvement Program (CIP) Project List” included as Attachment “E” to the PLA, or so designated by the Board. The Board may identify additional projects that are appropriate for coverage by the Agreement for

inclusion under the CIP and include such projects by Board Resolution. The Board shall request an annual review of the Harbor Department Capital Improvement Program to identify any new projects appropriate for coverage by the Agreement.

11. “Craft Request Form” means the document through which a C/S/E shall request workers from the Union and/or Jobs Coordinator, in the form set forth in the PLA and/or Policy.

12. “Employment Hiring Plan” (EHP) means a C/S/E’s detailed hiring plan as described in BCA’s Targeted Hiring Guidelines for Contractors and the Policy or other applicable Department policy.

13. “Engineer” means the Chief Harbor Engineer of the City of Los Angeles Harbor Department, Construction Division, or its authorized representative.

14. “Executive Director” shall mean the Executive Director of the City of Los Angeles Harbor Department, or his or her designee.

15. “FHWA Project” means a Harbor Department Project that is funded in whole or in part by the Federal Highway Administration (FHWA).

16. “Harbor Department” means the city of Los Angeles Harbor Department.

17. “Jobs Coordinator” means the Prime Contractor’s designated person, agent or agency that will facilitate the local hire referral process with the C/S/E, Unions and other referral organizations, such as those listed in the BCA’s Targeted Hiring Guidelines for Contractors. The Jobs Coordinator must be able to demonstrate or document to the BCA that it has the requisite qualification and/or experience to fulfill the duties and responsibilities as outlined in the Policy.

18. “LA/OCBTC” (Trades Council) means the Los Angeles /Orange Counties Building and Construction Trades Council.

19. “Letter of Assent” means the document that each C/S/E (of any tier) must sign and submit to the Engineer or designated administrator, which formally binds them to adherence to all the forms, requirements and conditions of the PLA and this Policy.

20. “Liquidated Damages” means disputed funds withheld from the Prime Contractor until they are found to be in compliance, the contract is terminated, or the Covered Project is completed.

21. “Local Resident” means an individual whose primary residence is within the Tier 1 or Tier 2 zip code areas.

22. “Long-Term Unemployment” as defined by the Bureau of Labor Statistics means being jobless for 21 weeks or more, as defined.

24. “PLA” means the Project Labor Agreement entered into between the Harbor Department of the City of Los Angeles and Unions, applicable to Covered Projects.

25. “Policy” means this Harbor Department Construction Careers Policy.

26. “Port” means the Port of Los Angeles.

27. “Project Work” means construction work performed as part of a Covered Project.

28. “Prime Contractor” means any individual firm, partnership, owner-operator, or corporation, or combination thereof, including joint-ventures, that is an independent business enterprise and that has entered into a Construction Contract with the Harbor Department.

29. “Reporting Period” means the Harbor Department’s indicated reporting period for measuring the targeted hiring efforts of the C/S/Es. These reporting periods shall be at the Harbor Department’s determination of 10%, 30%, 50%, 70% and 90% construction completion phases.

30. “Targeted Hiring Guidelines for Contractors” means the document provided by the Department to assist C/S/E’s in implementing the targeted hiring procedures.

31. “Tier 1” means the zip codes identified in Article 7.4 of the PLA, which fall within an approximate ten mile radius of the Port and in which the rate of unemployment is in excess of 105% of the County of Los Angeles’ unemployment rate at the time of application and/or are within the area of Port-related operations and activity.

32. “Tier 2” means the zip codes within the City, identified in Article 7.5 of the PLA, that includes at least 2 census tracts (or a portion thereof) in which the median annual household income is less than $62,627 per and/or where the rate of unemployment is in excess of 100% of the County of Los Angeles’ unemployment rate at the time of application.

33. “Transitional Worker” means any individual whose primary place of residence is within a Tier 1 or Tier 2 zip code of the City of Los Angeles, and who prior to commencing work on a project has been certified as satisfying at least one of the following criteria:

    (1) having a Veteran status; having a documented history of involvement with the criminal justice system; being homeless; or

    (2) is an individual facing two or more of the following barriers to employment: having a household income less than 50% of the Los Angeles County median annual household income, receiving public assistance, lacking a GED or high school diploma, being a custodial single parent, suffering from long term unemployment, being emancipated from the foster care system, or being an

apprentice, in a program described in Section I Number 1 above , with less than 15% of the apprenticeship hours required to graduate to journey level.

34. “Underemployment” means a situation in which a worker (i) is employed only part-time when one needs and desires full-time employment, and/or (ii) is inadequately employed at a low-paying job that requires less skill or training than one possesses.

35. “Unemployment” means, in accordance with the Bureau of Labor Statistics definition, a situation in which a person does not have a job, has actively looked for work in the prior4 weeks, and is currently available for work and chronic Unemployment means unemployment lasting 27 weeks or longer.

36. “Union(s)” or “Signatory Unions” means the Los Angeles/Orange Counties Building and Construction Trades Council affiliated with the Building & Construction Trades Department (AFL/CIO) Craft International Unions or any other craft labor organization signatory to the PLA, acting in their own behalf and on behalf of their respective affiliates and member organizations whose names are subscribed hereto and who have through their officers executed the PLA.

SECTION II. COVERAGE OF PROJECTS

1. Covered Projects:

   (a) Except as provided otherwise herein, this Policy applies to all Covered Projects contained in the 10-Year CIP list, and awarded by the Board.

   (b) The Board may identify additional projects that are appropriate for coverage by the Policy and the PLA and include such projects by Board Resolution based on specific findings that such coverage will advance the Harbor Department’s legitimate proprietary and policy interests and promote the public interest in assuring completion of the project in question in a safe and cost-effective manner while minimizing or negating any adverse impact to the public welfare.

2. FHWA Projects: In the event that the Harbor Department determines that a project to which this Policy applies is an FHWA Project or other grant-funded project, the Department shall modify or not enforce any aspect of the Policy or PLA in accordance with a valid and binding instruction from the U.S. Department of Transportation or applicable funding authority.

SECTION III. IMPLEMENTATION

Prior to bid, Harbor Department staff shall review each Covered Project's bid specifications to ensure the following provisions are incorporated:

1. That the Request for Bid Package Authorization from the Executive Director specifies that the Covered Project contains the PLA and this Policy;

2. That the Bid specifications require all contractors submitting bids or proposals agree to the terms of the PLA and this Policy;

3. That a provision exists in the prime contract obligating the Prime Contractor and all its C/S/Es (of any tier) to comply with the terms of the PLA and this Policy and require compliance with PLA and Policy terms through a Letter of Assent or any other form or legally enforceable obligation to the City.

4. That the Construction Contract shall include provisions establishing liquidated damages amounts as described in Section VIII of this Policy.

SECTION IV. EXCLUSIONS AND/OR MODIFICATIONS

1. Funding Source: this Policy shall not apply to construction contracts or projects where the funding source has established provisions or rules that forbid the inclusion of a PLA and/or Local Hire provision. If the project is listed as part of the CIP, Harbor Department staff must present the reason(s) to the Board prior to final determination to exclude the Covered Project.

2. This Policy shall not apply to work performed by a C/S/E's executives, managerial employees, engineering employees, supervisors (except those covered by Schedule A collective bargaining agreements), office and clerical employees, or any other employee not performing construction craftwork.

3. Out-of-State Workers: hours worked by residents of states other than California shall not be included in calculation of total hours of project work for purposes of determining compliance with the Section 5 below.

SECTION V. TARGETED HIRING

1. Requirements for Covered Projects:

   The Prime Contractor shall ensure that the following targeted hiring requirements are met for each Covered Project:

(a) At least 30% of total work hours on each project shall be performed by Local Residents residing within Tier 1 as described in Article 7.4 of the PLA. If the 30% local hire is not attained utilizing Tier 1, the outreach shall expand to the Tier 2 as described in Article 7.5 of the PLA.

(b) At least 20% of total work hours on each project will be performed by apprentices, but the hours performed by apprentices in each individual craft shall not exceed the ratio to journeymen established by the applicable craft union's DAS approved apprenticeship standards. The parties agree that residents in the Tier 1 or 2 zip code areas will perform 50% of all apprenticeship hours worked on the Project.

(c) At least 10% of total hours worked on each project shall be performed by Transitional Workers residing within Tier 1 or Tier 2 zip code areas described in Articles 7.4 and 7.5 of the PLA respectively and the remaining zip code areas within the City of Los Angeles. These hours shall be applied towards the 30% Local Resident targeted hiring.

SECTION VI. RESPONSIBILITIES OF HARBOR DEPARTMENT, C/S/Es, UNIONS, and JOBS COORDINATOR

1. Harbor Department Responsibilities:

(a) Work with BCA or the Harbor Department's designated PLA administrator to monitor and enforce the targeted hiring measures of the PLA and Policy and issue Notices of Non-Compliance where appropriate.

(b) Review, approve or disapprove submitted Employment Hiring Plans prior to a C/S/E's estimated start of work. Approval of a C/S/E to work on a Covered Project is contingent on the C/S/E's submittal of an approved EHP.

(c) Ensure, prior to a C/S/E's approval to work on a Covered Project, its submittal of a duly signed Letter of Assent.

(d) Work with BCA or the Harbor Department's designated PLA administrator to post local hire status reports on the BCA website (http://bca.lacity.org) for Covered Projects.

(e) Inform the Board on a quarterly basis regarding the status of all Covered Projects.

(f) Determine any withholding from payments as disputed funds and make recommendations for assessment of Liquidated Damages.

2. Prime Contractor and C/S/Es:

(a) Employment Hiring Plan (EHP): Prime Contractor shall ensure that its C/S/Es (of any tier), at least 20 business days prior to starting their work on the Covered Project, shall submit their plan(s) to the Harbor Department for approval by the Executive Director or his/her designee. Each C/S/E shall include in its EHP a description of how it will meet the targeted hiring requirements set forth in the PLA and Policy. No C/S/E (of any tier) shall be approved to work on a Covered Project without an approved EHP.

(b) PLA and Policy: Prime Contractor shall ensure that its C/S/Es (of any tier), prior to start of work, (i) read and understand the requirements of the PLA and Policy; (ii) submit their Employment Hiring Plans at least 20 business days prior to their subcontractors' start of work and (iii) sign and submit their Letters of Assent prior to start of work. No C/S/E (of any tier) shall be approved to work on a Covered Project without having submitted a signed Letter of Assent.

(c) Prior to start of work on the project, the Prime Contractor shall:

(i) Recommend a Jobs Coordinator for approval by the Harbor Department.

(ii) Upon Department's approval of its Jobs Coordinator, notify its subcontractor (of any tier) who the Jobs Coordinator is.

(iii) Provide within 10-calendar days upon request by the Department or its designated representative, documentation of their Jobs Coordinator's qualifications.

(d) The Prime Contractor and its C/S/Es (of any tier) shall coordinate with the Jobs Coordinator for services to support their efforts in meeting the targeted hiring percentages as described in Article 7 of the PLA and Section 5 of the Policy.

(e) Pre-Job Conference: The Prime Contractor and its C/S/Es (of any tier), prior to start of work, shall hold a pre-job conference. The purpose of the pre-job conference is to determine craft personnel needs, schedule of work for the contract and all other matters as described in the PLA and the Policy. All work assignments shall be disclosed by the Prime Contractor and/or C/S/Es (of any tier) at the pre-job conference. Any formal jurisdictional dispute(s) raised under Article 14 of the PLA must be raised at the pre-job conference upon disclosure of the work assignments. If the Prime Contractor and/or C/S/Es intend to change the work assignment after the pre-job conference or to make an assignment of work not previously known, the Prime Contractor and/or C/S/Es must notify the appropriate affected craft union(s) prior to the commencement of work.

(f) Craft Request Form: The Prime Contractor and its C/S/Es (of any tier) shall only use the Craft Request Form (Attachment “C” of the PLA) and the procedures written therein to request workers from the affected Union(s). All C/S/Es must transmit a concurrent Craft Request transmittal of such request to the Jobs Coordinator.

(g) The Prime Contractor and its C/S/Es (of any tier) must satisfactorily document their contact with the Jobs Coordinator when the Unions have not been able to refer a Local Resident and/or Transitional Worker within the 48-hour window of referral.

(h) The Prime Contractor and its C/S/Es (of any tier) shall maintain proof of transmittal of the Craft Request forms to the Union hiring halls and Jobs Coordinator. Upon request by the Harbor Department or its designated representative, copies shall be provided within 10-calendar days of request.

(i) The Prime Contractor and its C/S/Es (of any tier) shall make available to the Harbor Department, BCA, or designated representatives, records and information that are deemed relevant to monitoring and enforcement of the provisions of the PLA and the Policy.

(j) The Prime Contractor and its C/S/Es (of any tier) shall cooperate fully and promptly with any inquiry or investigation the Harbor Department, BCA or designated representatives deem necessary in order to monitor compliance with the provisions of the PLA and the Policy.

(k) The Prime Contractor and its C/S/Es (of any tier), within 60 calendar days after concluding work on the Covered Project, shall submit to the Harbor Department a verified statement of the number of journeypersons and apprentices who worked on the project, their classifications and the hours worked (per California Labor Code 1777.5(e)).

Upon request of the BCA, or the Harbor Department, the Prime Contractor and its C/S/Es (of any tier) must provide documentation of their Local Resident, Apprentice and Transitional Workers targeted hiring participation level efforts within 10-calendar days of the request for documentation.

3. Union Responsibilities:

(a) Ensure that its dispatchers properly adhere to the use of the Craft Request Form and the procedures written therein.

(b) Refer Local Residents and/or Transitional Workers requested through the Craft Request Form regardless of their place on the hiring hall list and normal referral procedures.

(c) Exert their best efforts to recruit and identify Local Residents residing in Tier 1, and then Tier 2 zip code areas, as well as those referred by the Jobs Coordinator for entrance, indentureship into a union apprenticeship program, and assisting such individuals in graduating into eligible journeypersons.

(d) Upon receiving a request from a C/S/E for a Local Resident, exhaust the available list of individuals residing the Tier 1 zip codes before referring an individual residing in the Tier 2 zip codes.

(e) Track retention of Local Residents and/or Transitional Worker apprentices participating in joint Labor/Management apprenticeship programs and provide the Harbor Department with the necessary information as requested.

4. Jobs Coordinator:

(a) Criteria for Selecting a Jobs Coordinator: The Jobs Coordinator plays an integral part in the success of its partners in obtaining the targeted hiring percentages. It is the responsibility of the Prime Contractor to designate a Jobs Coordinator possessing, but not limited to, the following demonstrable experience and qualifications:

(i) Developing, creating, designing and marketing specific programs targeting Local Residents and/or Transitional Workers for construction opportunities at the Covered Project (e.g. handouts and fliers for “walk-ins” demonstrating program entrance procedures).

(ii) Coordinating services for contractors to assist in their local worker, transitional worker and apprentice utilization.

(iii) Educating and assisting contractors on incentives provided by State or federal programs for On-the-Job Training and employer tax credits.

(iv) Conducting orientations, job fairs and community outreach meetings to the local community.

(v) Providing supportive services such as skills training, child care, transportation, education remediation, assistance with union fees and tools.

(vi) Screening and certifying the Transitional Worker status of workers.

(vii) Establishing a referral and retention tracking mechanism for placed local and/or transitional workers and apprentices.

(viii) Networking with the various Work Source Centers, community and faith based organizations and other non-profit entities that provide qualified local workers and/or transitional workers.

(ix) Liaising with the various building trades crafts for referral and placement of local hire and/or transitional workers.

(b) Jobs Coordinator Responsibilities. The Jobs Coordinator shall:

(i) Coordinate the local hire referral process with the C/S/Es, Unions, City Work Source Centers, Faith and Community Based Organizations, and other organizations that can provide qualified local hire referrals.

(ii) Certify the Transitional Worker status.

(iii) Maintain a database of pre-qualified Local Residents for referral to work on a Covered Project and/or indentureship into a bona fide Labor/Management apprenticeship program.

(iv) Facilitate relationships among approved apprenticeship programs and the C/S/Es to enable prompt referral.

(v) Be the point of contact to provide information about available job opportunities on Covered Projects.

(vi) Educate and provide financial incentives information to the C/S/Es whom hire eligible workers under Work Opportunity Tax Credit (WOTC) and On-the-Job Training (OJT) and other benefits for which a C/S/E may be eligible based on their implementation of the Local Hire requirements.

(vii) Assist the C/S/Es with their local hire effort documentations and other reports as it relates to their Local Resident and/or Transitional Worker targeted hiring requirements.

(viii) Work closely with Harbor Department staff, the building trades and C/S/Es in achieving the targeted hiring.

Parties with responsibilities under the PLA and/or Policy, shall maintain those responsibilities regardless of the performance of the Jobs Coordinator at the tasks described in the PLA and the Policy.

SECTION VII. COMPLIANCE

The Harbor Department or its authorized representatives shall determine whether a Prime Contractor and its C/S/Es have complied with the requirements of the PLA and the Policy. The Prime Contractor is ultimately responsible for its and its C/S/Es (of any tier) compliance with the PLA and Policy requirements.

In determining compliance with the Apprentice Targeted Hiring, project hours performed by trades who do not have approved training under Chief of the Division of apprenticeship standards, and/or do not have written apprentice agreements under Chapter 4(commencing with Section 3070) will be excluded in calculations determining compliance with the Targeted Hiring requirements as applicable.

1. If, after the Harbor Department or its authorized representatives takes into account all applicable hours of Project Work performed up to that point in time of the Reporting Period, the targeted hiring requirements of the PLA and Policy have been satisfied for a Project, then the Prime Contractor and its subcontractors (of any tier) working on that Project shall be deemed to be in compliance.

2. If the targeted hiring requirements of the PLA and the Policy have not been satisfied for a Project, the Prime Contractor nonetheless may be deemed to be in compliance if it demonstrates both (a) that it and each of its C/S/Es (of any tier) have complied with all other requirements of the PLA and the Policy, and (b) that it and each C/S/E (of any tier) have either (i) satisfied the targeted hiring requirements of the PLA and this Policy with regard to the Project Work that it has performed or (ii) satisfactorily demonstrated the following:

    (a) Adherence to procedures contained in its Employment Hiring Plan as approved by the Harbor Department.

    (b) Requests to Unions, through Craft Request Forms, of sufficient numbers of Local Residents and Transitional Workers to meet the targeted hiring percentages set forth in Section 5 of the Policy for that C/S/E's Project Work.

    (c) Documented contact with the Jobs Coordinator in each instance when the relevant Union did not refer qualified Local Residents or Transitional Workers within the 48 hours following the C/S/E's request and the C/S/E's fair consideration of any Local Resident or Transitional Worker subsequently referred by the Jobs Coordinator.

    (d) Accurate records documenting the C/S/E's compliance efforts that include (but are not limited to):

        (i) A listing by name and address of all local recruitment sources contacted by the C/S/E;

        (ii) The date of the local recruitment contact and the identity of the person contacted, the trade and classification and number of hire referrals requested;

        (iii) The number of Local Residents and/or Transitional Workers hires made as a result of the contact;

(iv) The identity and address of the worker(s) hired pursuant to the contact;

(v) (v) Documentation when a referral was not hired (reason for non-hire) and/or premature termination.

SECTION VIII. ENFORCEMENT

The Prime Contractor for every Project agrees:

1. To be liable to the Harbor Department for Liquidated Damages as provided in this section;

2. That the Prime Contractor and its C/S/Es (of any tier) commitment to comply with the targeted hiring requirements of PLA and Policy is a material element of the Covered Project;

3. That the failure of the Prime Contractor and its C/S/Es (of any tier) to comply with the targeted hiring requirements in accordance with Section VII of this Policy will cause harm to the Harbor Department and the public which is significant and substantial but extremely difficult to quantify. The harm to the City includes the difficult-to-quantify harm that the community and its families suffer as a result of high unemployment and concentrated poverty;

4. Liquidated Damages: Due to the difficulty of estimation of damages for violation(s) of requirements of this Policy, Construction Contracts shall have provisions establishing liquidated damage to be assessed as follows:

   (a) The Prime Contractor shall pay liquidated damages equal to the average journeyperson project wage for each applicable work hour the Project fell short of the targeted hiring, or $200 per day, whichever is greater. When more than one targeted hiring requirement is not in compliance, the liquidated damages will not be assessed cumulatively; however, the highest violation will govern.

   (b) If the Covered Project's targeted hiring requirements are out of compliance during any Reporting Period, the Prime Contractor shall meet with the Harbor Department or their designated representative to develop a recovery plan for compliance. The Prime Contractor has until the next Reporting Period to effectuate the recovery compliance plan or Liquidated Damages shall be withheld.

   (c) Before Liquidated Damages are sought, the Prime Contractor shall be notified of the proposed Liquidated Damages and served with a summary of the information upon which the Liquidated Damages are based.

   (d) Liquidated Damages shall be withheld from all subsequent monthly progress payment request(s) as disputed funds until such time as Prime Contractor is

found to be in compliance, the Covered Project contract is terminated, or the Covered Project is completed.

(e) Should the Covered Project be terminated or completed before the Prime Contractor is found to be in compliance, the Engineer will evaluate the data and determine if Liquidated Damages are recommended. If the Engineer recommends assessment of Liquidated Damages, then the amount of the Liquidated Damages shall be returned to the fund from whence they came.

5. Liquidated Damages Appeal:

(a) A Prime Contractor that has received a Liquidated Damages assessment letter, which includes the targeted hiring data and Liquidated Damages calculations, may send a written appeal to the Engineer, within fourteen(14) calendar days. The Prime Contractor shall provide documentation supporting the appeal of the assessment.

(b) A meeting with the Engineer, Harbor Department staff, and the Prime Contractor will be held to present any relevant information. The Prime Contractor will be allowed to provide evidence that it has made all of the showings required under Section 7 of the Policy during the meeting. The decision of the Engineer on the Liquidated Damages assessment shall be final when rendered. The Contractor shall be notified of the final decision in writing by the Engineer.

(c) Failure to submit a written request for an appeal within the time frame stipulated in this Section will be deemed a waiver of the right to appeal and the recommendation for assessment of Liquidated Damages will be implemented.

6. Termination of Contract(s): Consistent, substantial violations of the PLA and/or this Policy by any Prime Contractor and/or C/S/E may result in a recommendation to the Board that the contract of the offending Prime Contractor and/or C/S/E be terminated per Section 00405 of the Master General Conditions.

SECTION IX. APPLICABLE LAW AND SEVERABILITY

The provisions of this Policy shall not be applicable where prohibited by federal or state law, or where the application would violate or be inconsistent with the terms and conditions of a grant or a contract with an agency of the United States or the State of California, or the valid instructions of an authorized representative of any of these agencies with respect to any grant or contract. If enforcement of any provision of this Policy is enjoined by an court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

APPENDIX "B"

CONCRETE PILE, TIMBER REPAIR, AND TYPICAL CONCRETE WHARF SECTION DETAILS

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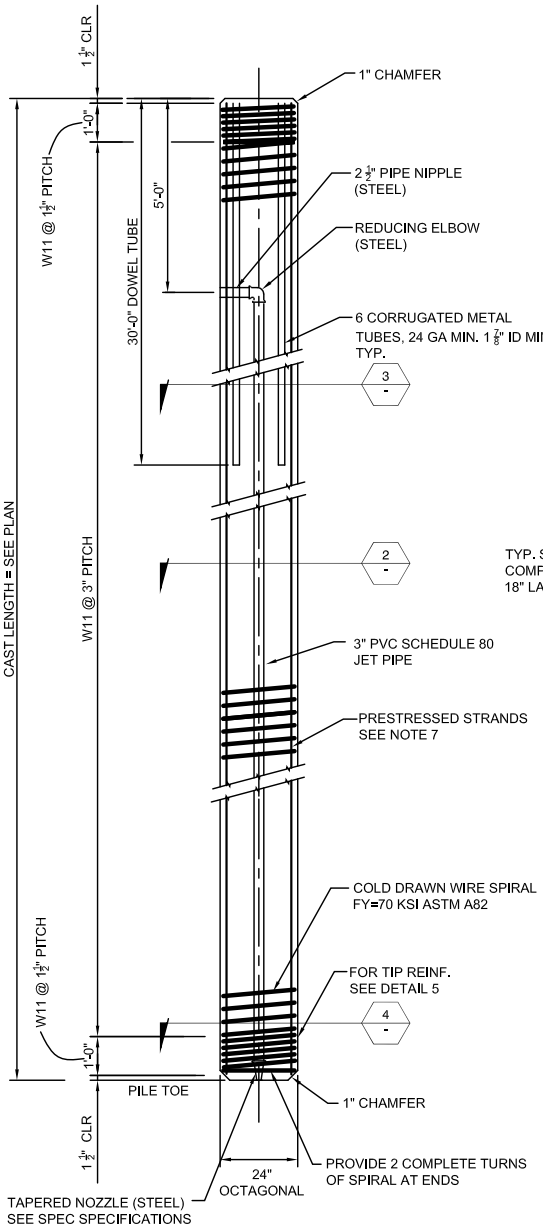
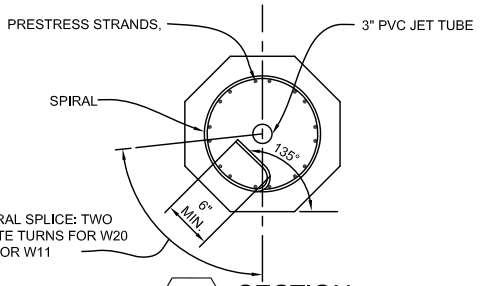
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

CP-24A



1 - TYPICAL PILE TYPE 24A
NTS



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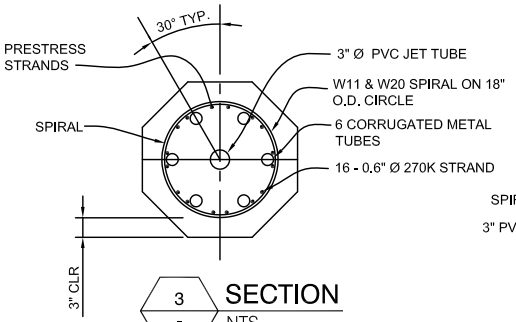

3 - SECTION
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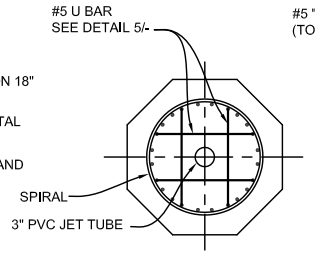

4 - SECTION
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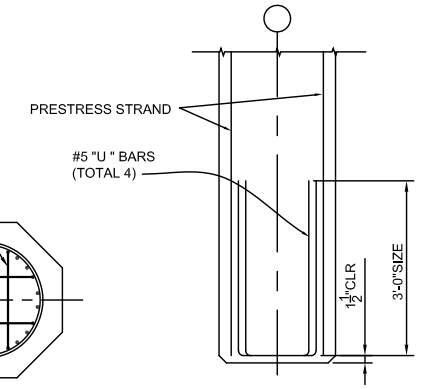
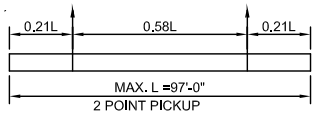
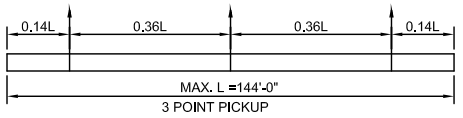


5 - DETAIL
NTS





NOTES:
1. PICKUP POINTS BASED ON EQUAL VERTICAL PICK POINTS WITH PILE IN HORIZONTAL POSITION.
2. BEFORE INSTALLING, THE CONTRACTOR SHALL SUBMIT PICKUP DETAILS AND SUPPORTING CALCULATIONS PREPARED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER FOR HANDLING PILE DURING DRIVING PROCEDURE.

6 - TYPICAL PILE PICK POINTS
NTS

NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR HANDLING OF PILES BOTH AT PRECAST PLANT AND IN THE FIELD.
2. THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 6,500 PSI.
3. THE MINIMUM CONCRETE STRENGTH AT TRANSFER OF PRESTRESS SHALL BE 4,000 PSI.
4. ALL PILES SHALL BE CAST WITH JET TUBES.
5. DOWEL TUBES SHALL BE FILLED WITHIN 2 FT. FROM TOP WITH A FLUID GROUT MADE OF NEAT CEMENT, WATER AND SUPERPLASTICIZER. MAXIMUM WATER CEMENT RATIO TO BE 0.4, PLACE DOWELS IMMEDIATELY AFTER GROUTING.
6. JACKING FORCE PER STRAND SHALL BE 70% ULTIMATE=40.67 KIPS
   ASSUMED LOSSES 35,000 PSI=7.525 KIPS
   WORKING FORCE PER STRAND=33.145 KIPS
   TOTAL PRESTRESS FORCE=530.32 KIPS
   EFFECTIVE PRESTRESS=1,112 PSI
7. 16-0.600" DIA. PRESTRESSING STRANDS SPACED AS SHOWN, 270 KSI LOLAX-A416.
8. CLEAR SPACING BETWEEN WIRE STRANDS SHALL NOT BE LESS THAN 1 1/2".
9. JET TUBE SHALL BE PVC SCHEDULE 80 PIPE. NIPPLE, ELBOW, AND NOZZLE SHALL BE SCHEDULE 40 STEEL.

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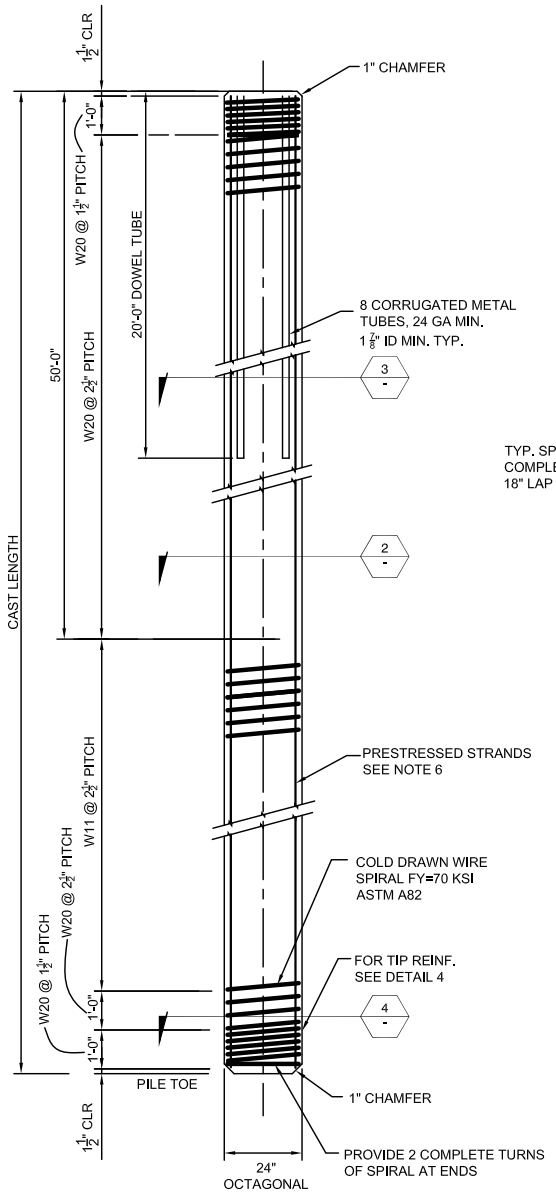
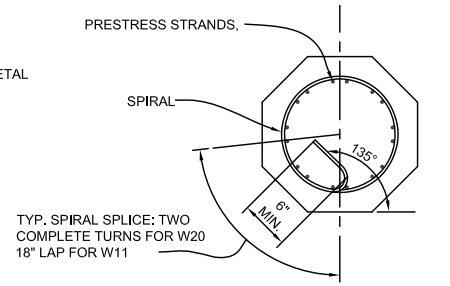
DATE: Aug 30, 2018 4:27pm XREFS:title IMAGES:

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

CP-24B



1 - TYPICAL PILE TYPE 24B
NTS



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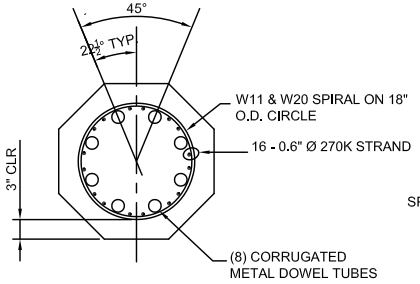

3 - SECTION
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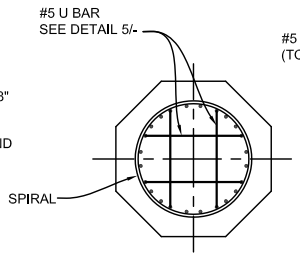
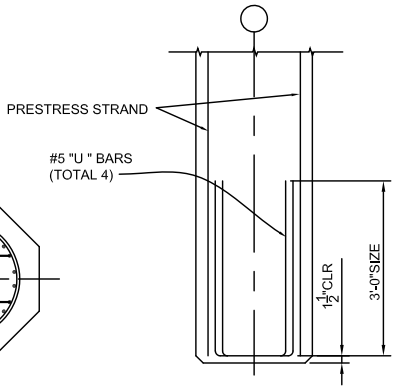
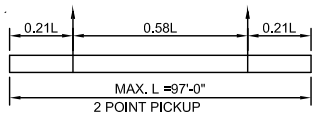
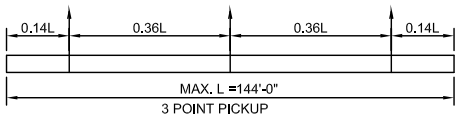


4 - SECTION
NTS



5 - DETAIL
NTS





NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR HANDLING OF PILES BOTH AT PRECAST PLANT AND IN THE FIELD.
2. THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 6,500 PSI.
3. THE MINIMUM CONCRETE STRENGTH AT TRANSFER OF PRESTRESS SHALL BE 4,000 PSI.
4. DOWEL TUBES SHALL BE FILLED WITHIN 2 FT. FROM TOP WITH A FLUID GROUT MADE OF NEAT CEMENT, WATER AND SUPERPLASTICIZER. MAXIMUM WATER CEMENT RATIO TO BE 0.4, PLACE DOWELS IMMEDIATELY AFTER GROUTING.
5. JACKING FORCE PER STRAND SHALL BE 70% ULTIMATE=40.67 KIPS
   ASSUMED LOSSES 35,000 PSI=7.525 KIPS
   WORKING FORCE PER STRAND=33.145 KIPS
   TOTAL PRESTRESS FORCE=530.32 KIPS
   EFFECTIVE PRESTRESS=1,112 PSI
6. 16-0.600" DIA. PRESTRESSING STRANDS SPACED AS SHOWN, 270 KSI LOLAX-A416.
7. CLEAR SPACING BETWEEN WIRE STRANDS SHALL NOT BE LESS THAN 1 1/2".

NOTES:

1. PICKUP POINTS BASED ON EQUAL VERTICAL PICK POINTS WITH PILE IN HORIZONTAL POSITION.
2. BEFORE INSTALLING, THE CONTRACTOR SHALL SUBMIT PICKUP DETAILS AND SUPPORTING CALCULATIONS PREPARED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER FOR HANDLING PILE DURING DRIVING PROCEDURE.

6 - TYPICAL PILE PICK POINTS
NTS

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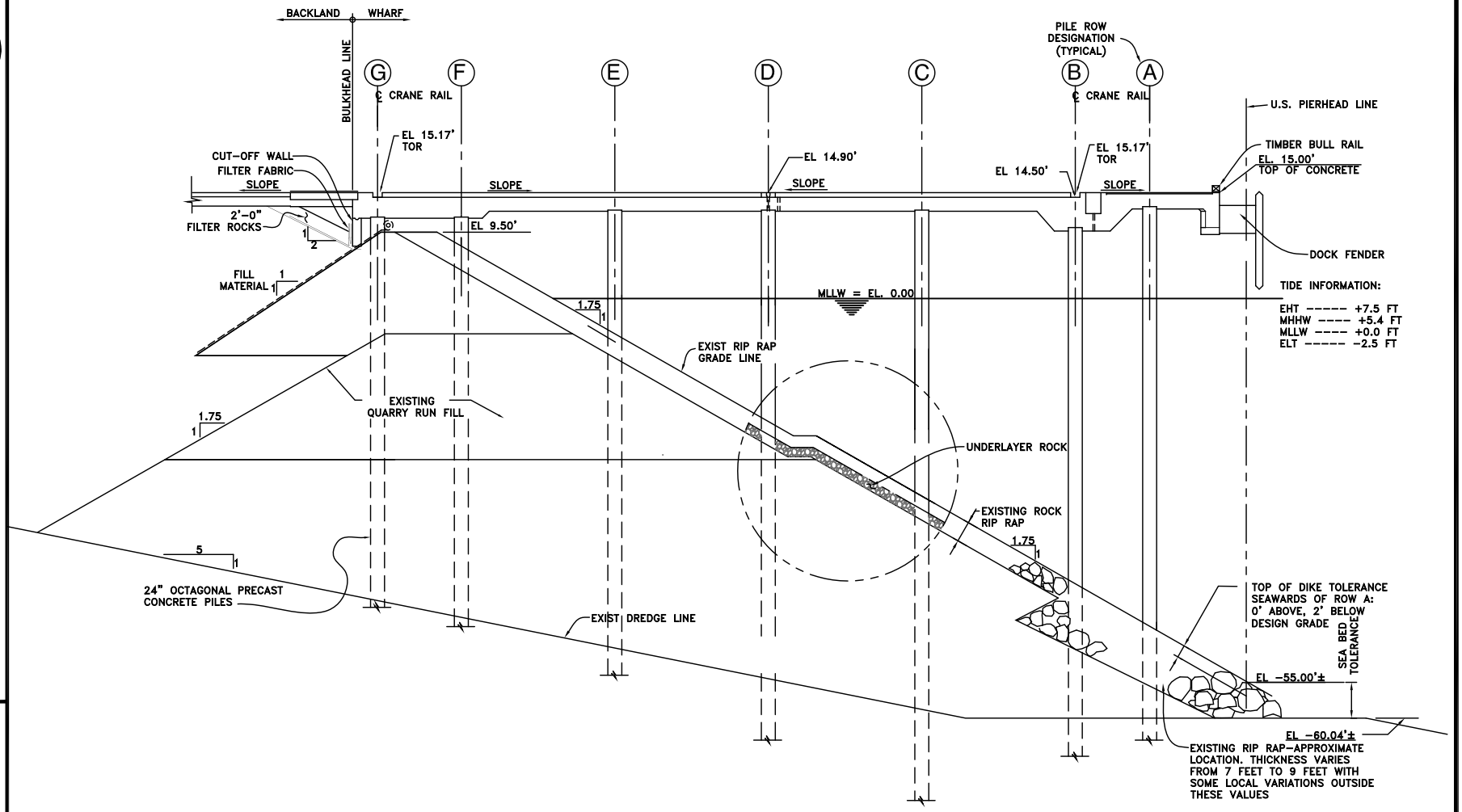
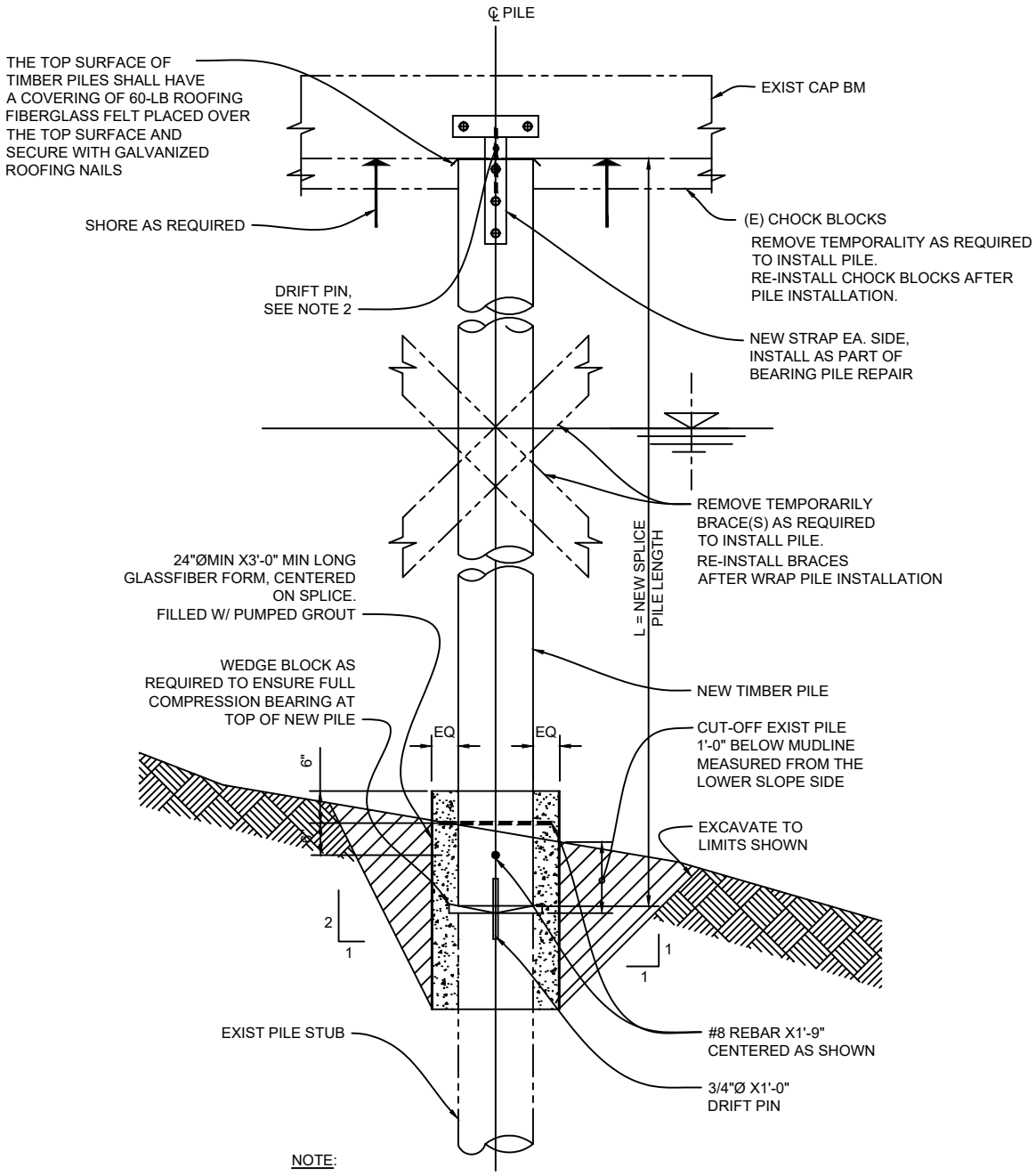
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

CX-1



1 TYPICAL CONCRETE WHARF SECTION-FOR REFERENCE ONLY
NTS



NOTE:

1. ALL NEW BEARING PILES SHALL BE WRAPPED PER TP-3.1(A), TP-3.1(B), AND TP-3.1(C).
2. DRIFT PINS MAY BE ENCOUNTERED. REMOVE PIN WHERE OCCURS.
3. SHIMS MAY BE ALLOWED ON TOP OF PILE TO ENSURE FULL CONT. BEARING. TOE NAIL TO CAP BEAM & PILE. SHIMS ARE LIMITED TO MAX 1/2" THICK & SHALL BE USED WHEN THEY ARE ALSOLUTELY NECESSARY. SHIMS MATERIAL SHALL BE TREATED DOUGLAS FIR, NO 1 OR BETTER.

1.1 BEARING PILE REPAIR DETAIL

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH			
	CHIEF HARBOR ENGINEER DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-1.1

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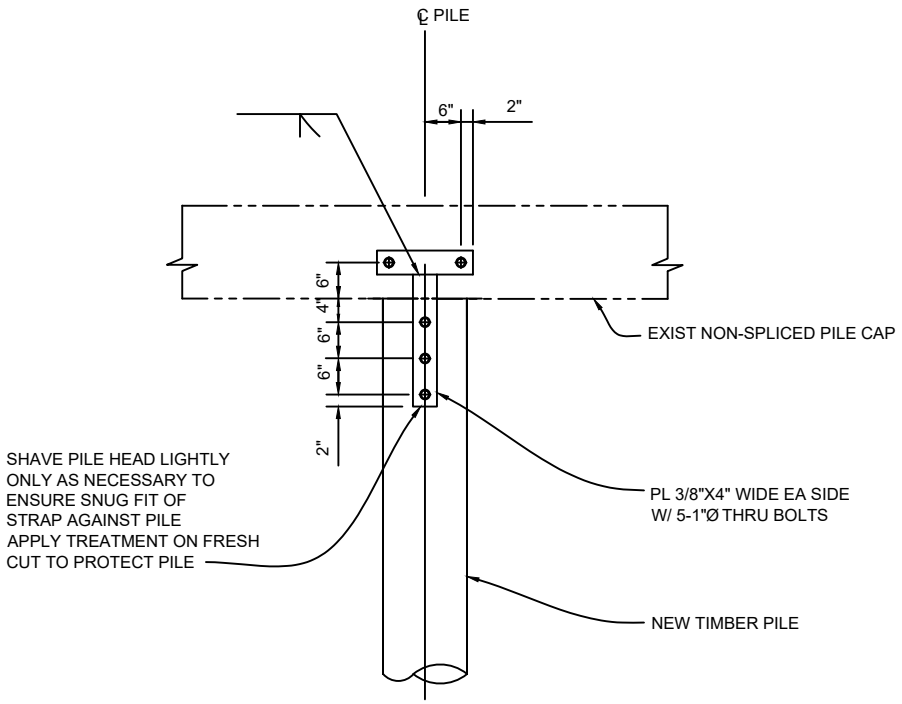
DATE: May 08, 2023 1:36pm XREFS title IMAGES 1-138-11_0001
POLAPR01_01/2022



NOTES:

1. DRIFT PINS MAY BE ENCOUNTERED.

1.2

NON-SPLICED CAP TO PILE STRAP CONN DETAIL

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER ____ DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP 1.2

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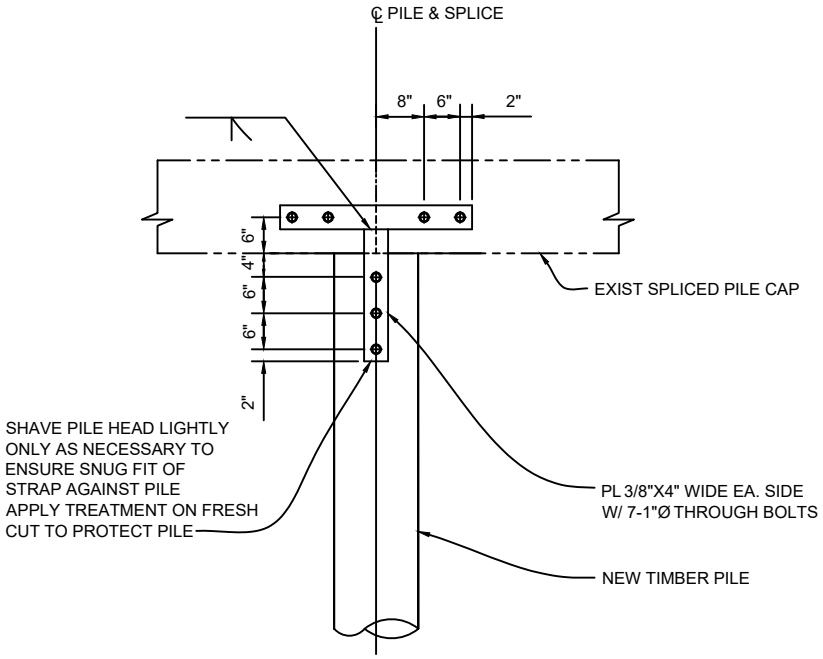

NOTES:

1. DRIFT PINS MAY BE ENCOUNTERED.
2. REMOVE 4X12 SPLICE PLATES AS NECESSARY TO INSTALL SPLICE BAR.

1.3

SPLICED CAP TO PILE STRAP CONN DETAIL

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER ____ DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-1.3

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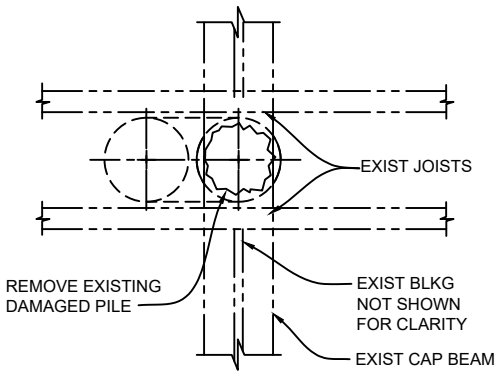
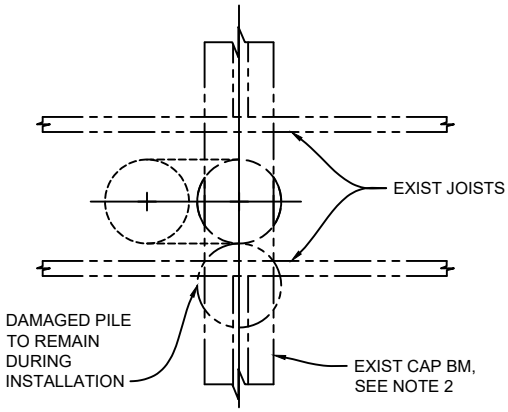


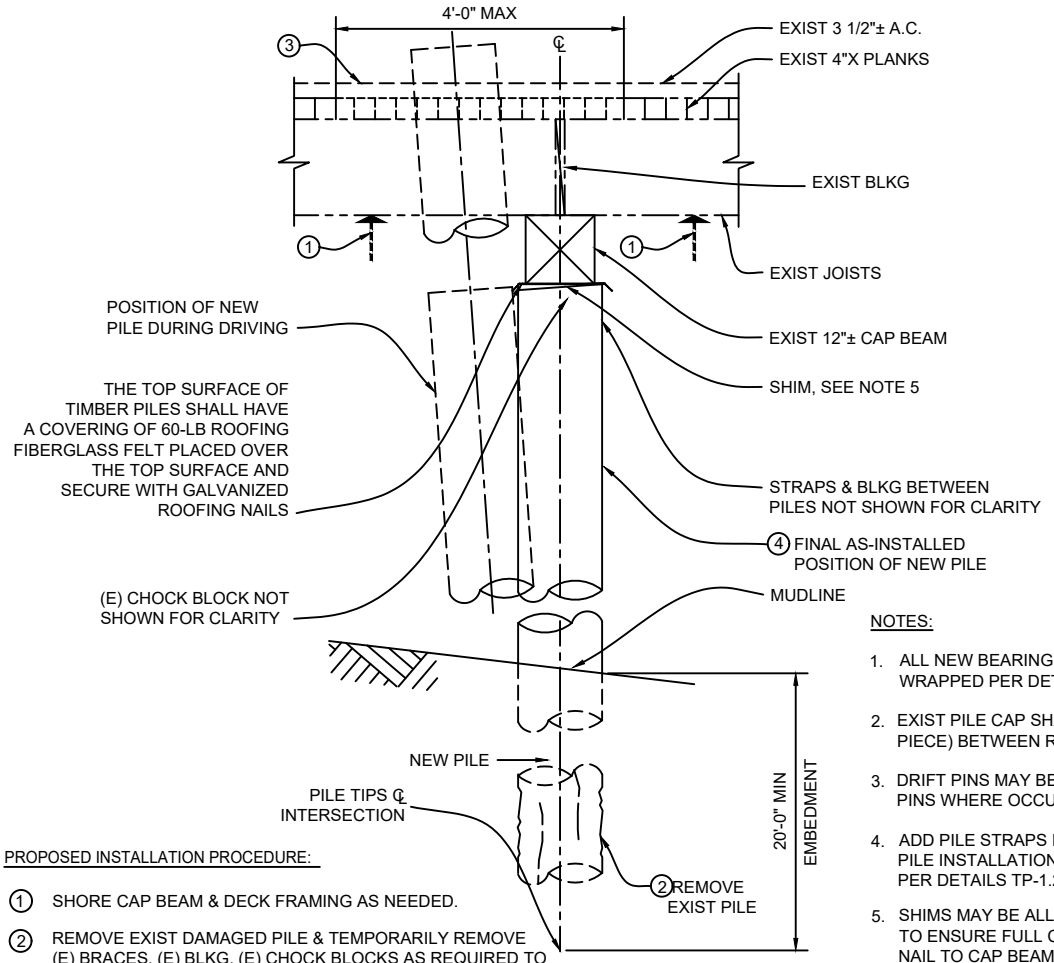
PLAN

NTS



PLAN W/OFFSET INSTALLATION

SCALE: NTS



PROPOSED INSTALLATION PROCEDURE:

1. SHORE CAP BEAM & DECK FRAMING AS NEEDED.
2. REMOVE EXIST DAMAGED PILE & TEMPORARILY REMOVE (E) BRACES, (E) BLKG, (E) CHOCK BLOCKS AS REQUIRED TO INSTALL PILE.
3. REMOVE (E) A.C. DECK PLANKS, 4' MAX. TO ALLOW NEW PILE INSTALLATION PER TP-2.2
4. INSTALL NEW PILE. RE-INSTALL BRACES, CHOCK BLOCKS AFTER WRAPPED PILE INSTALLATION IS COMPLETED. RE-INSTALL BLKG AND INSTALL NEW DECK PLANKS PER TP-2.2
5. INSTALL NEW A.C. OVER THE NEW DECK PLANKS, 5' MAX.

NOTES:

1. ALL NEW BEARING PILES SHALL BE WRAPPED PER DETAIL TP-3.2.
2. EXIST PILE CAP SHALL BE CONTINUOUS (SINGLE PIECE) BETWEEN ROWS 1 TO 3
3. DRIFT PINS MAY BE ENCOUNTERED. REMOVE PINS WHERE OCCURS.
4. ADD PILE STRAPS FOR ALL NEW PILE INSTALLATIONS & BEARING PILE REPAIRS PER DETAILS TP-1.2 OR TP-1.3.
5. SHIMS MAY BE ALLOWED ON TOP OF PILE TO ENSURE FULL CONT. BEARING. TOE NAIL TO CAP BEAM & PILE. SHIMS ARE LIMITED TO MAX ½" THICK & SHALL BE USED WHEN THEY ARE ABSOLUTELY NECESSARY. SHIMS MATERIAL SHALL BE TREATED DOUGLAS FIR, NO 1 OR BETTER.
6. THE CONTRACTOR SHALL SUBMIT ENTIRE PROCEDURE FOR ENGINEERING REVIEW AND APPROVAL.

SCALE: AS SHOWN	CHIEF OF DESIGN	
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER	
CHECKED:		
DESIGNED:		
ENGR/ARCH	CHIEF HARBOR ENGINEER ____ DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
		DRAWING NUMBER TP-2.1

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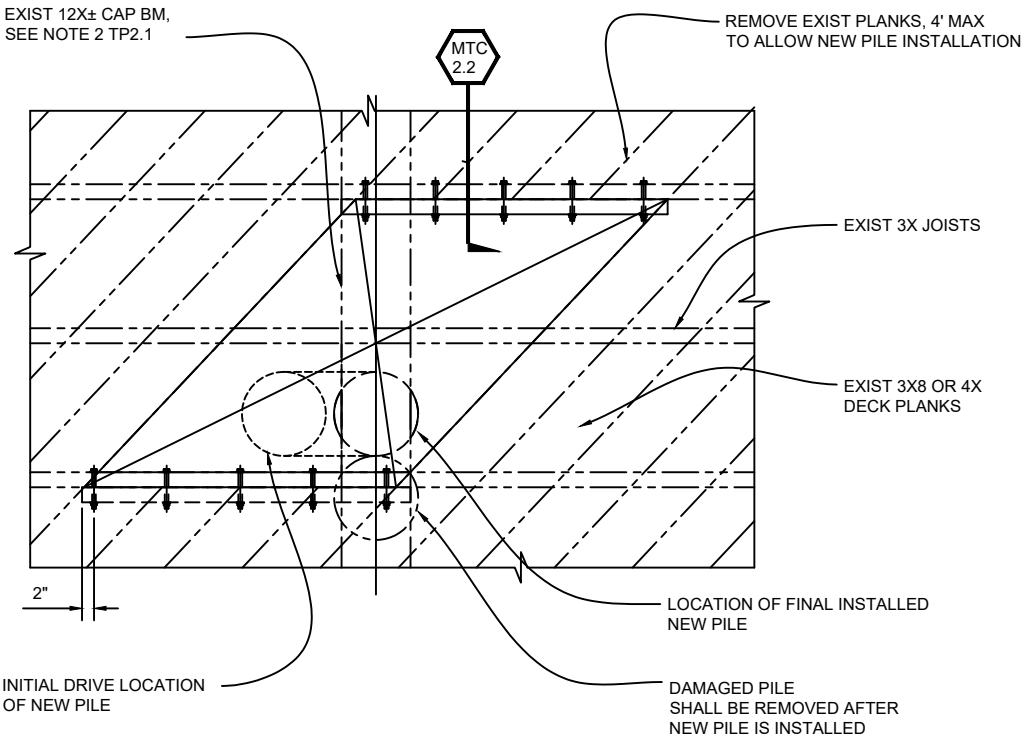

NOTE:

1. ALL PLANKS REMOVED SHALL BE REPLACED TO MATCH EXISTING. NAILING PATTERN SHALL MATCH EXISTING WITH ADDITIONAL NAILS AT ENDS

2.2 DECK REPAIR PLAN AT NEW PILE REPLACEMENT

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-2.2

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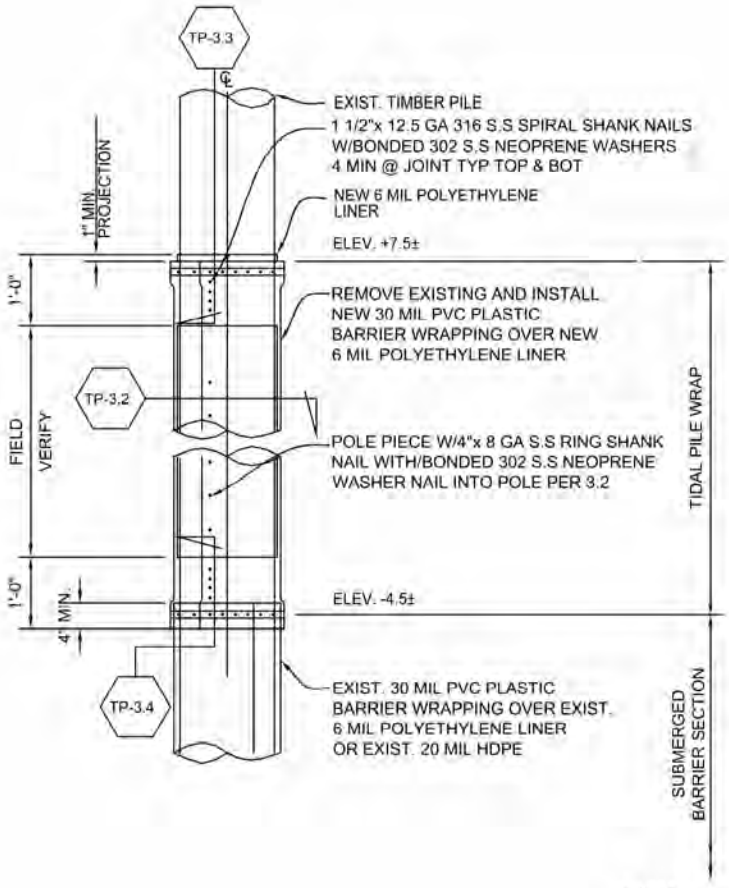


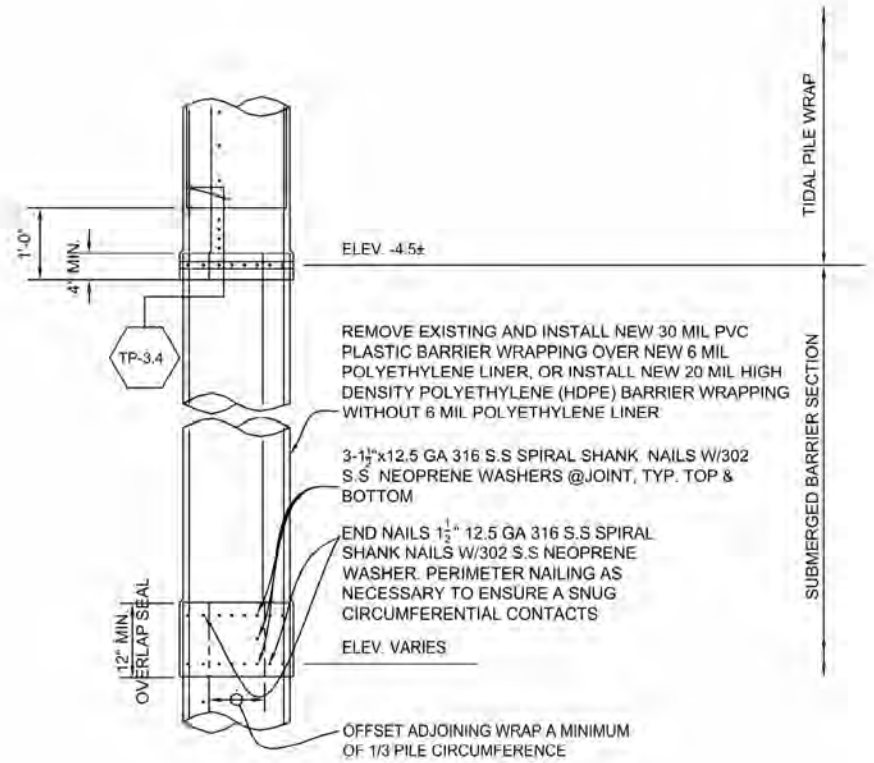
NOTES:
1. DETAILS TP-3.1 TO TP-3.4 SHOWN FOR EITHER REPAIR OR REPLACEMENT OF EXIST WRAPPING.

3.1A TIDAL WRAP ELEVATION - RECONSTRUCTION OF EXISTING PILE WRAPPING

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-3.1 (A)

POLAPR01_01/2022



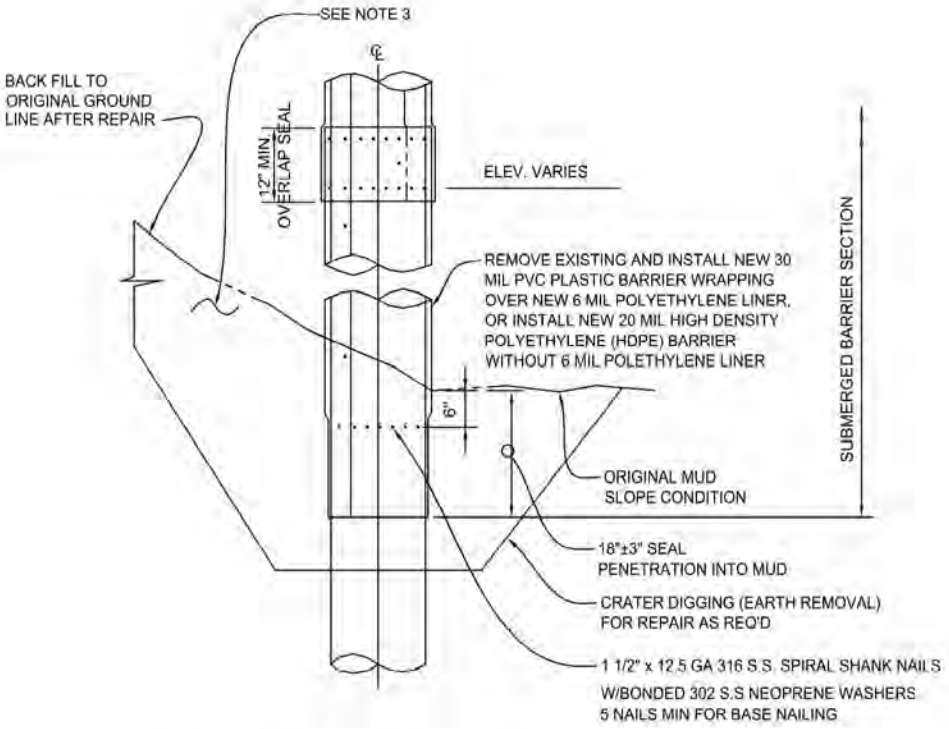
SUBMERGED WRAP ELEVATION - RECONSTRUCTION OF EXISTING PILE WRAPPING

3.1B

SCALE: NTS

SCALE:	CHIEF OF DESIGN		
DRAWN:			
CHECKED:	ASSISTANT CHIEF OF HARBOR ENGINEER		
DESIGNED:			
ENGR/ARCH		THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-3.1 (B)
	CHIEF HARBOR ENGINEER DATE		

POLAPR01_01/2022



MUD SEAL REPAIR NOTES:

1. CRATER DIGGING SHALL BE DONE MANUALLY.
2. AFTER WRAPPING, BACK FILL CRATER WITH MUD TO ORIGINAL ELEVATION.
3. REMOVE ROCK PRIOR TO PILE WRAPPING. REMOVAL OF ROCK UP TO 500 LBS MAY BE REQUIRED.

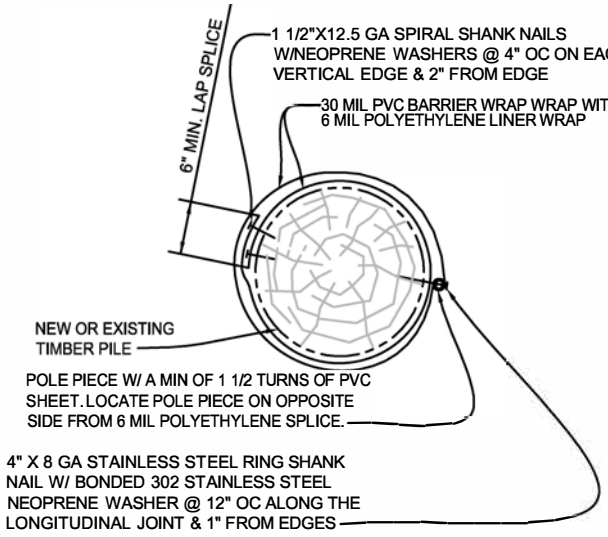
3.1C

ROCKLINE WRAP ELEVATION - RECONSTRUCTION OF EXISTING PILE WRAPPING

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH		THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-3.1(C)
	CHIEF HARBOR ENGINEER DATE		

POLAPR01_01/2022

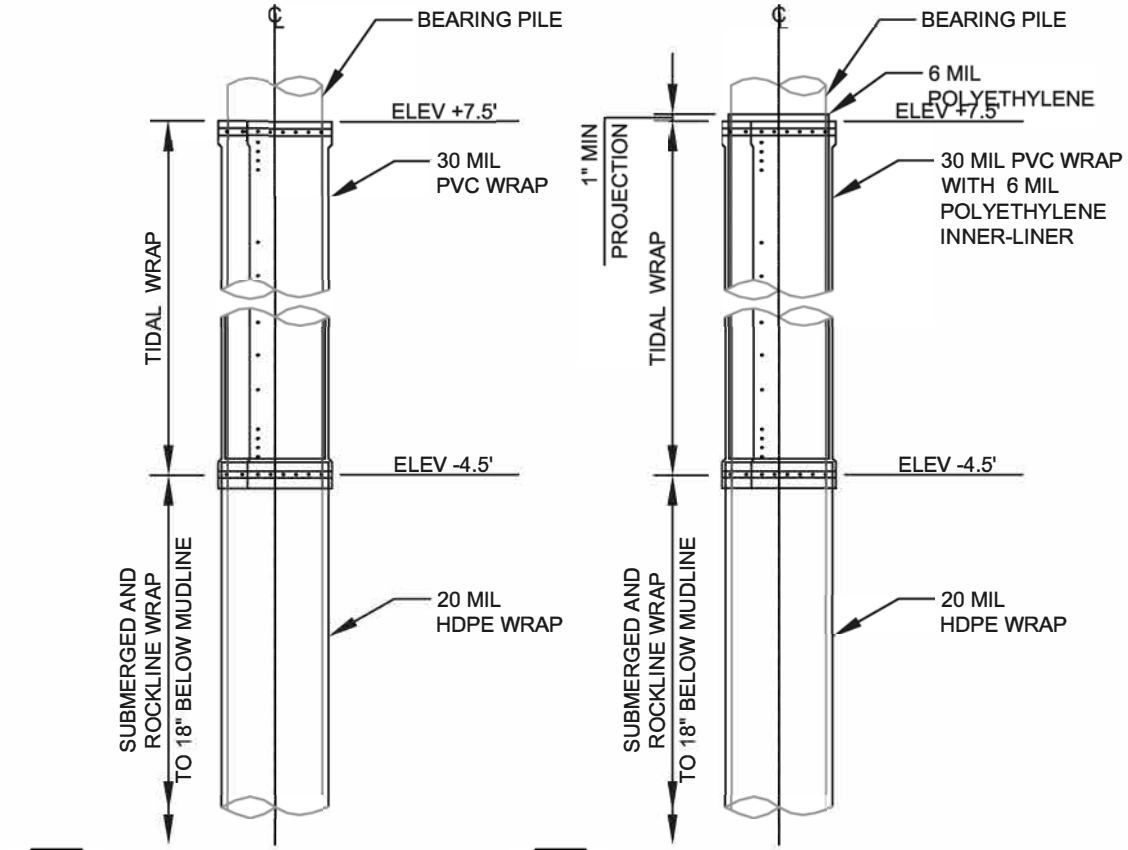


NOTE:

1. USE EITHER 20 MIL WRAP OR 30 MIL WITH 6 MIL WRAP, PER DETAILS TP-3.1(A), TP-3.1(B) AND TP-3.1(C). INSTALL WRAP PER DETAILS A-A AND B-B BELOW. BOTH WRAPS ARE SHOWN FOR REFERENCE.
2. WRAP PILE AS TIGHTLY AS POSSIBLE.
3. THE WRAPPING SHALL BE UNIFORM AND CONTINUOUS THROUGHOUT THE RECONSTRUCTION LENGTH OF PILE RESULTING IN A SMOOTH, WRINKLE FREE, AIRTIGHT FIT.
4. DO NOT EMBED HEAD OF 4" NAIL INTO PLASTIC WRAPPING.
5. EXISTING WRAPS IN THE FIELD VARY.
6. A-A AND B-B ARE TYPICAL FOR NEW PILES.

3.2 SECTION - 30 MIL PVC PILE WRAP

SCALE: NTS



A-A ACZA TREATED PILE

SCALE: NTS

B-B CREOSOTE TREATED PILE

SCALE: NTS

SCALE: AS-SHOWN	DATE:	RECOMMENDED FOR APPROVAL	
DRAWN:		CHIEF OF DESIGN	
CHECKED:			
DESIGNED:			
ENGR/ARCH		ASSISTANT CHIEF HARBOR ENGINEER	APPROVED CHIEF HARBOR ENGINEER

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
TP-3.2

DWG: N:\cadd\project\Marine Improvements Contract SPEC DWGS\MIC_2829_2023-2025\Spec 2829- Timber&Square Conc Pile Details 2023-04-06.dwg USER: CISNEROSH
DATE: Aug 12, 2024 2:08pm XREFS:title IMAGES:1-138-11_0001
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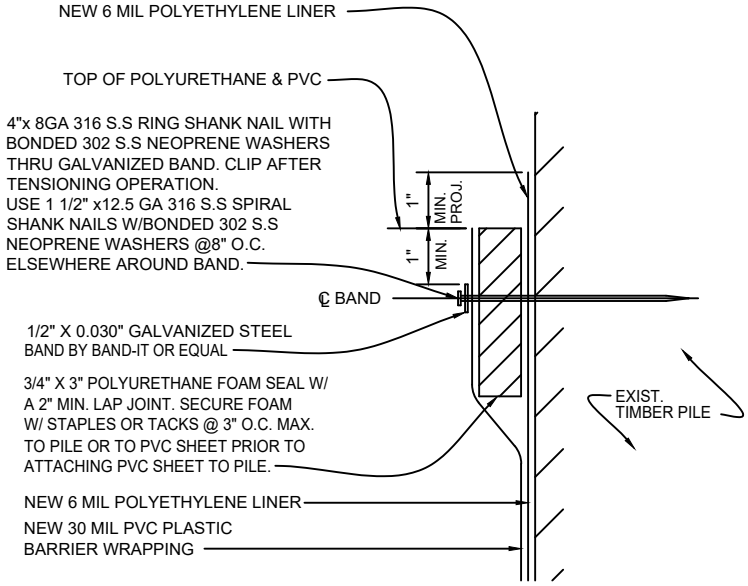

NOTE:

BANDING:

BANDS SHALL BE INSTALLED USING A "SIGNADE" STRETCHER OR EQUIVALENT TOOL TO PROVIDE ADEQUATE BAND TENSION FOR MAXIMUM COMPRESSION OF FOAM.

3.3 SECTION - UPPER BAND INTERTIDAL WRAPPING

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN	
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER	
CHECKED:		
DESIGNED:		
ENGR/ARCH	CHIEF HARBOR ENGINEER DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
		DRAWING NUMBER TP-3.3

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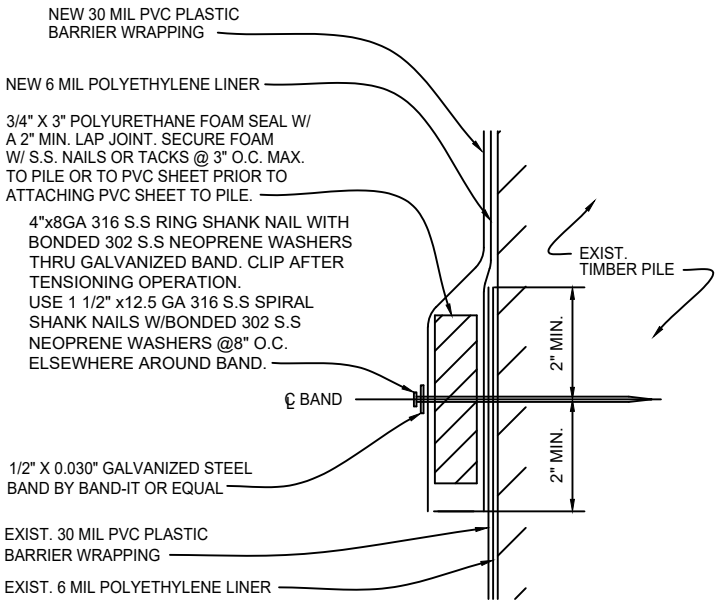
DATE: May 08, 2023 1:36pm XREFS:title IMAGES:1-138-11_0001
POLAPRO1_01/2022



3.4 SECTION - LOWER BAND INTERTIDAL WRAPPING

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-3.4

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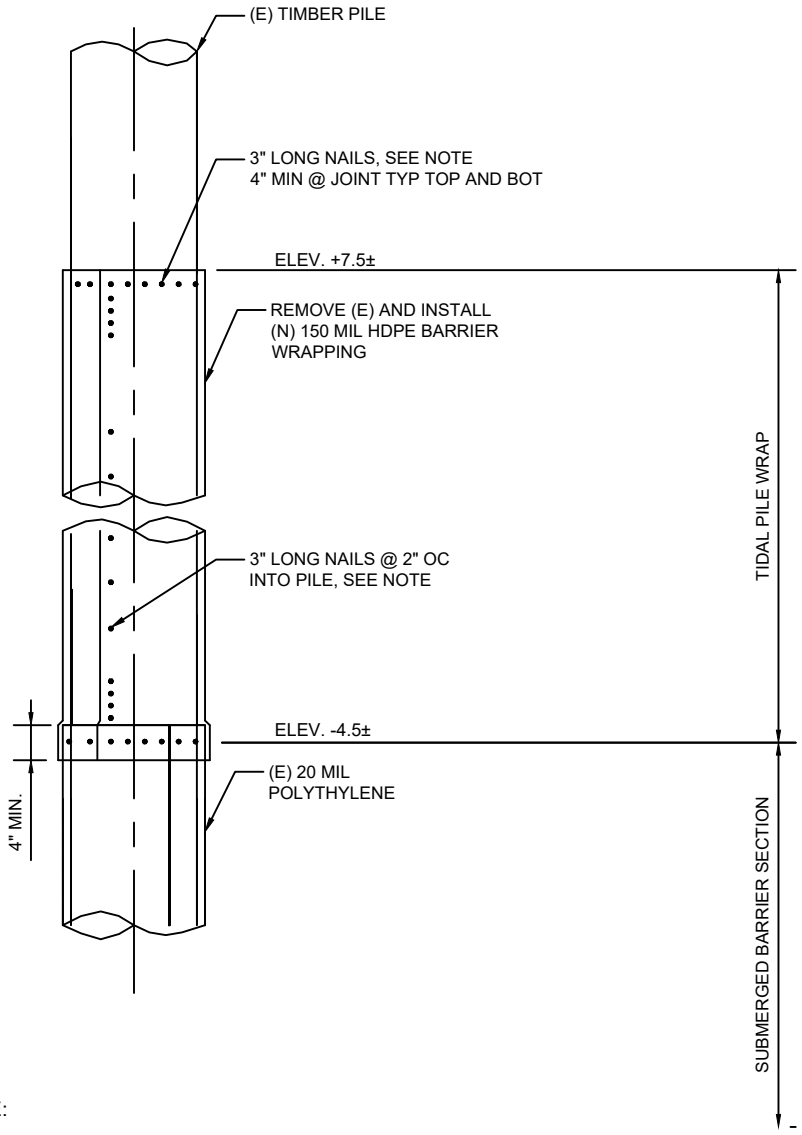
DATE: May 08, 2023 1:36pm XREFS:title IMAGES:1-138-11_0001
POLAPR01_01/2022



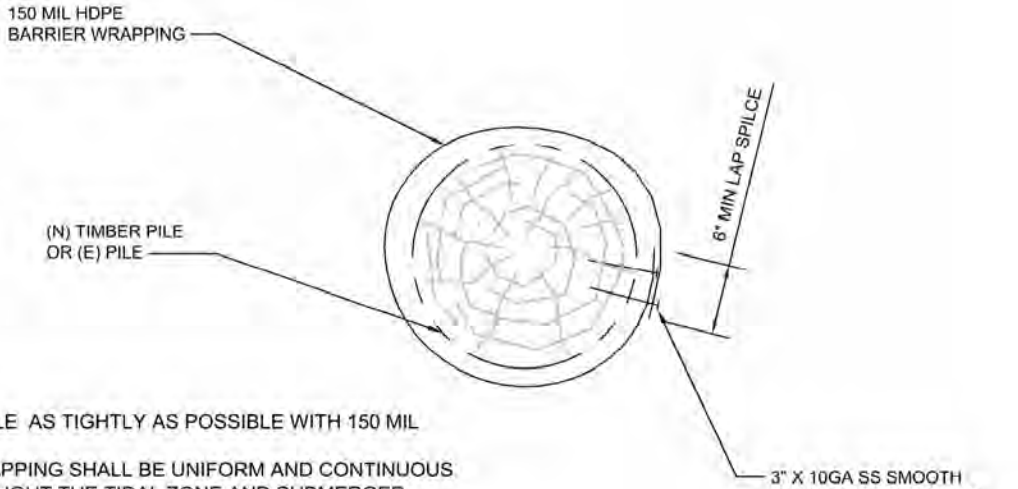
NOTE:

3" x 10 GA SS SMOOTH SHANK NAIL, OR
3" 316SS NAIL HAVING 1" OF RING SHANK APPLIED TO THE TIP OF THE NAIL,
WITH BONDED 302 SS NEOPRENE WASHER.

3.5 TIDAL WRAP ELEVATION
RECONSTRUCTION OF FENDER PILE
SCALE: NTS

SCALE:	CHIEF OF DESIGN		
DRAWN:			
CHECKED:	ASSISTANT CHIEF OF HARBOR ENGINEER		
DESIGNED:			
ENGR/ARCH		THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-3.5
	CHIEF HARBOR ENGINEER DATE		

DWG: N:\caddproject\Marine Improvements Contract SPEC DWGS\MIC_2829_2023-2025\SPEC 2829 FENDER PILE_TP-3.5 & TP-3.6.dwg USER: renterias
DATE: May 08, 2023 1:37pm XREFS: IMAGES:
POLAPR01_01/2022



NOTES:

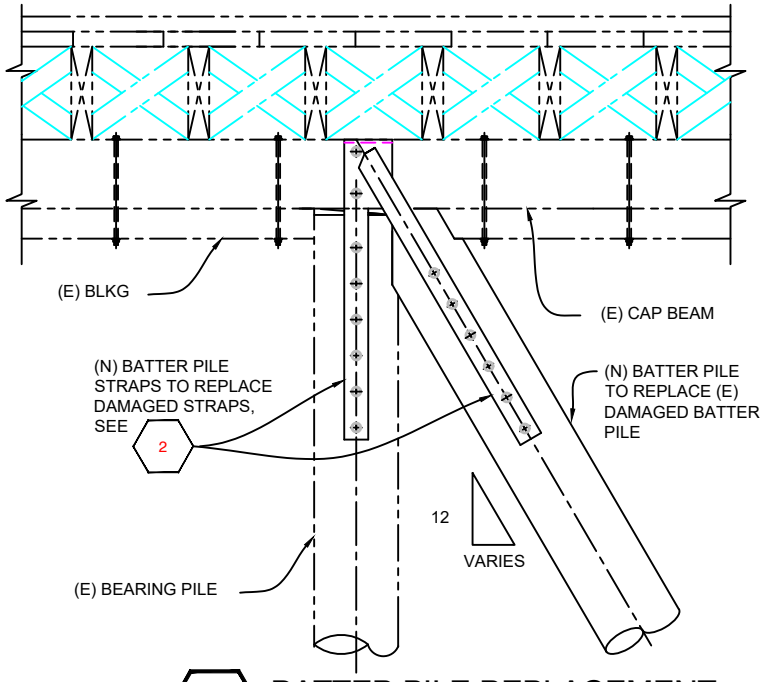
1) WRAP PILE AS TIGHTLY AS POSSIBLE WITH 150 MIL HDPE.
2) THE WRAPPING SHALL BE UNIFORM AND CONTINUOUS THROUGHOUT THE TIDAL ZONE AND SUBMERGED ZONE OF PILE RESULTING IN A SMOOTH, WRINKLE FREE, AIRTIGHT FIT.
3) THE SUBMERGED WRAP SHALL PENETRATE 18± INTO MUD.
4) DO NOT EMBED HEAD OF 3" NAIL INTO PLASTIC WRAPPING.

3.6 SECTION - 150 MIL PILE WRAP

SCALE: NTS

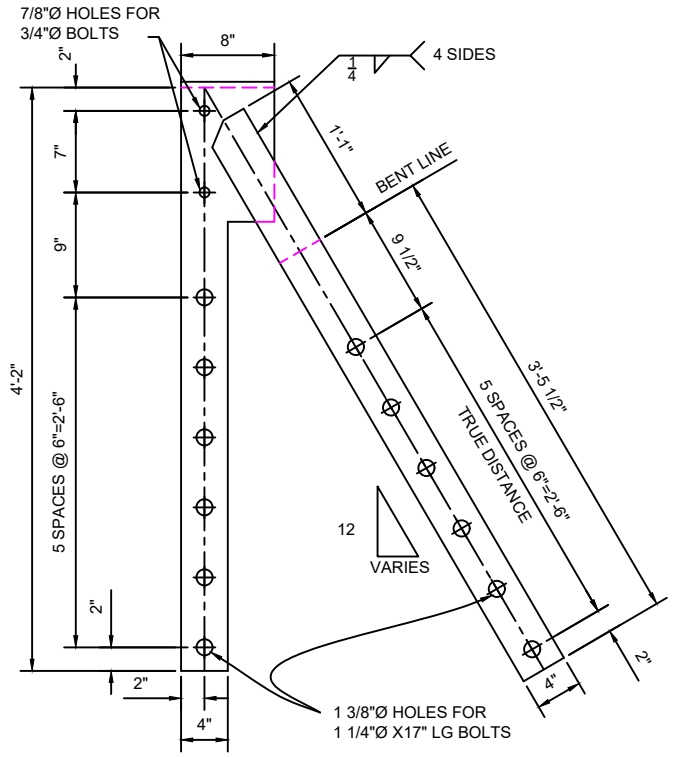
SCALE:	CHIEF OF DESIGN		
DRAWN:			
CHECKED:	ASSISTANT CHIEF OF HARBOR ENGINEER		
DESIGNED:			
ENGR/ARCH		THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TP-3.6
	CHIEF HARBOR ENGINEER DATE		

POLAPR01_01/2022

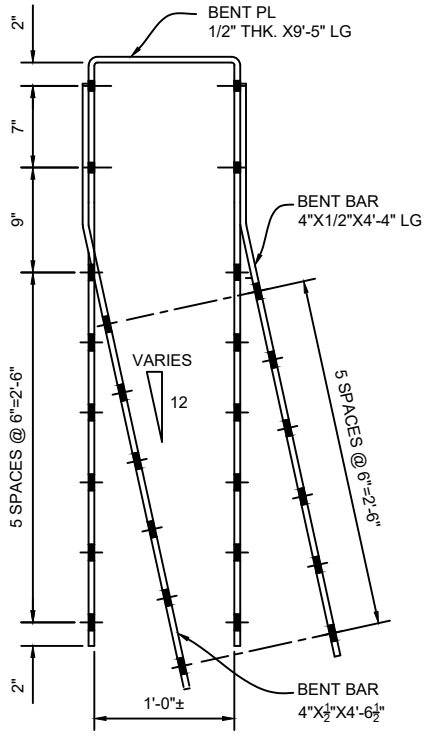


NOTES:
1. SEE TP-2.1 FOR PROPOSED INSTALLATION PROCEDURE WHICH SHALL BE SIMILAR FOR BATTER PILES,
2. ALL DIMENSIONS SHOWN ON STRAPS ARE FOR REFERENCE ONLY. THE (N) STRAPS SHOULD BE THE SAME AS THE (E) STRAPS SO THAT THE (E) HOLES AT CAP BEAM & PILE CAN BE USED.

1 BATTER PILE REPLACEMENT
SCALE: NTS



2 DETAIL OF BATTER PILE STRAP
SCALE: NTS



3 SIDE VIEW
SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER TB-1

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DATE: May 08, 2023 1:37pm XREFS:title IMAGES:1-138-11_0001
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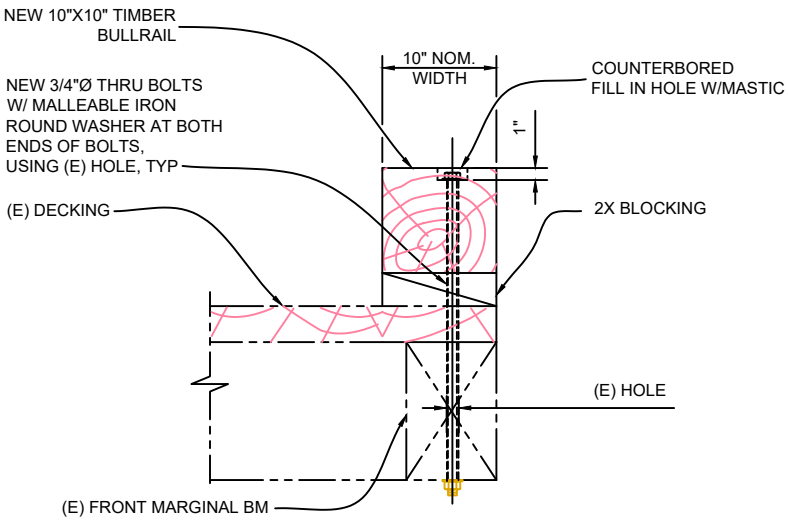

1.1 TIMBER BULLRAIL REPLACEMENT

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN	
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER	
CHECKED:		
DESIGNED:		
ENGR/ARCH	CHIEF HARBOR ENGINEER ____ DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
		DRAWING NUMBER MTC 1.1

POLAPRO1_01/2022

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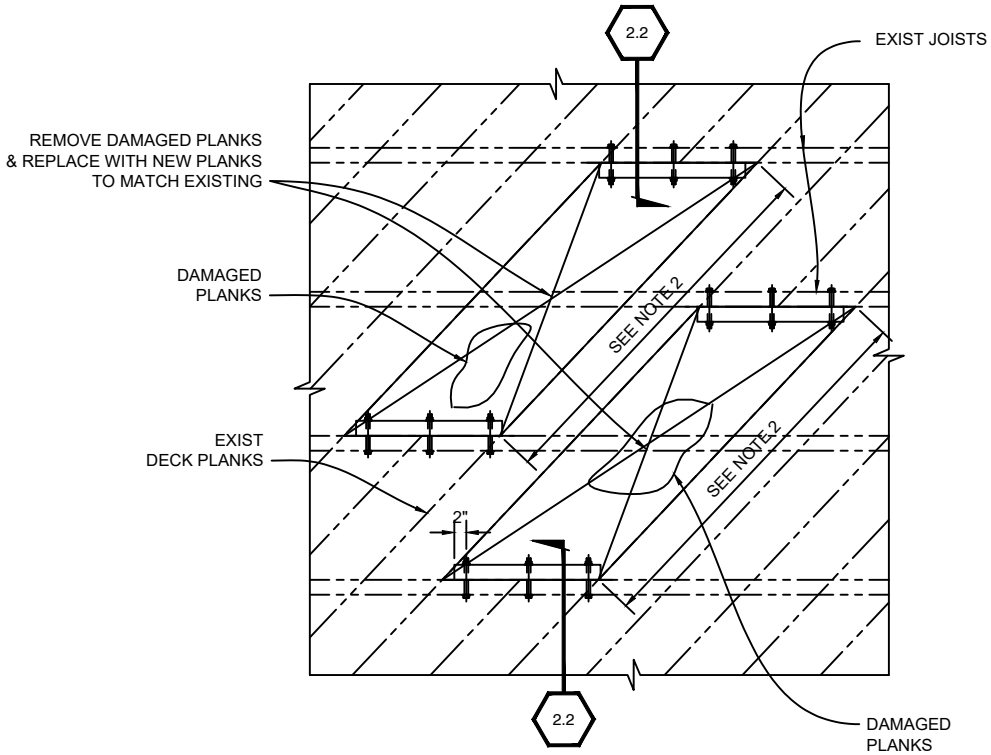

NOTES:

1. IF MORE THAN 40% OF PLANK PIECE LENGTH IS DAMAGED WITHIN THE AREAS AS SHOWN ON PLAN, REPLACE WITH NEW PLANK.

2. REPLACEMENT PLANK SHALL BE SUPPORTED BY AT LEAST 3 JOISTS (I.E. 2-SPAN SUPPORT)

3. NAILING SHALL BE PROVIDED AT EVERY JOIST.

2.1 DECK REPAIR PLAN AT DAMAGED DECKING

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN	
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER	
CHECKED:		
DESIGNED:		
ENGR/ARCH	CHIEF HARBOR ENGINEER ____ DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
		DRAWING NUMBER MTC-2.1

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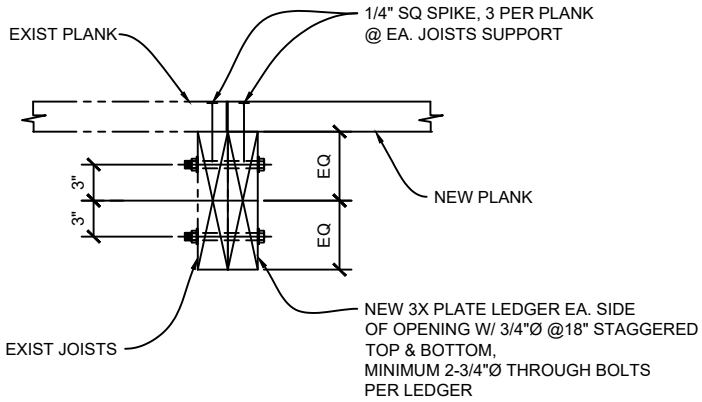

2.2 PLANK REPAIR DETAIL

SCALE: NTS

SCALE: AS SHOWN	CHIEF OF DESIGN		
DRAWN:	ASSISTANT CHIEF OF HARBOR ENGINEER		
CHECKED:			
DESIGNED:			
ENGR/ARCH	CHIEF HARBOR ENGINEER ____ DATE	THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER MCT-2.2

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DATE: May 08, 2023 1:37pm XREFS:title IMAGES:1-138-11_0001

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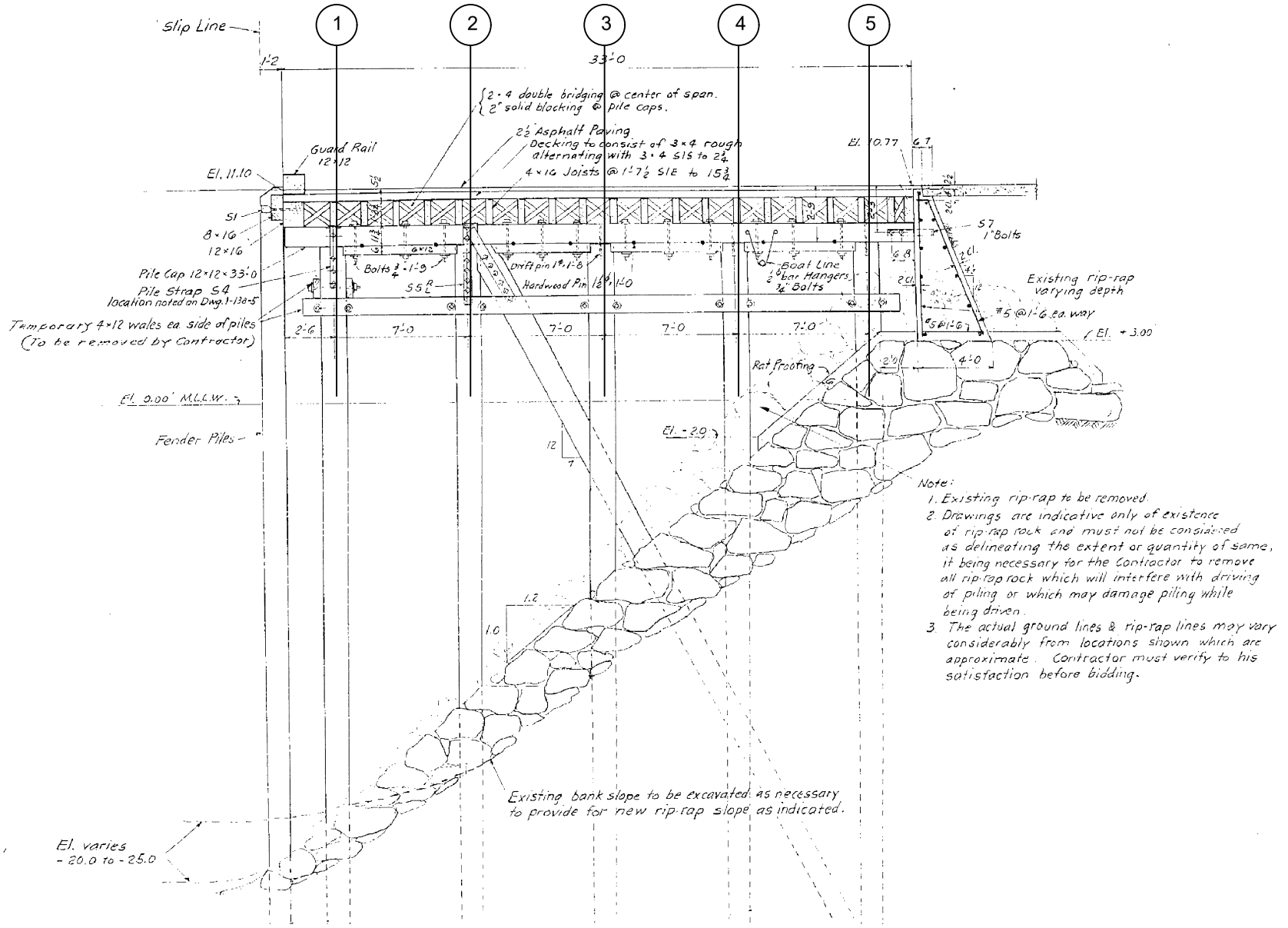


Note:
1. Existing rip-rap to be removed.
2. Drawings are indicative only of existence of rip-rap rock and must not be considered as delineating the extent or quantity of same, it being necessary for the Contractor to remove all rip-rap rock which will interfere with driving of piling or which may damage piling while being driven.
3. The actual ground lines & rip-rap lines may vary considerably from locations shown which are approximate. Contractor must verify to his satisfaction before bidding.

1 TYPICAL TIMBER WHARF SECTION-FOR REFERENCE ONLY

SCALE: NTS

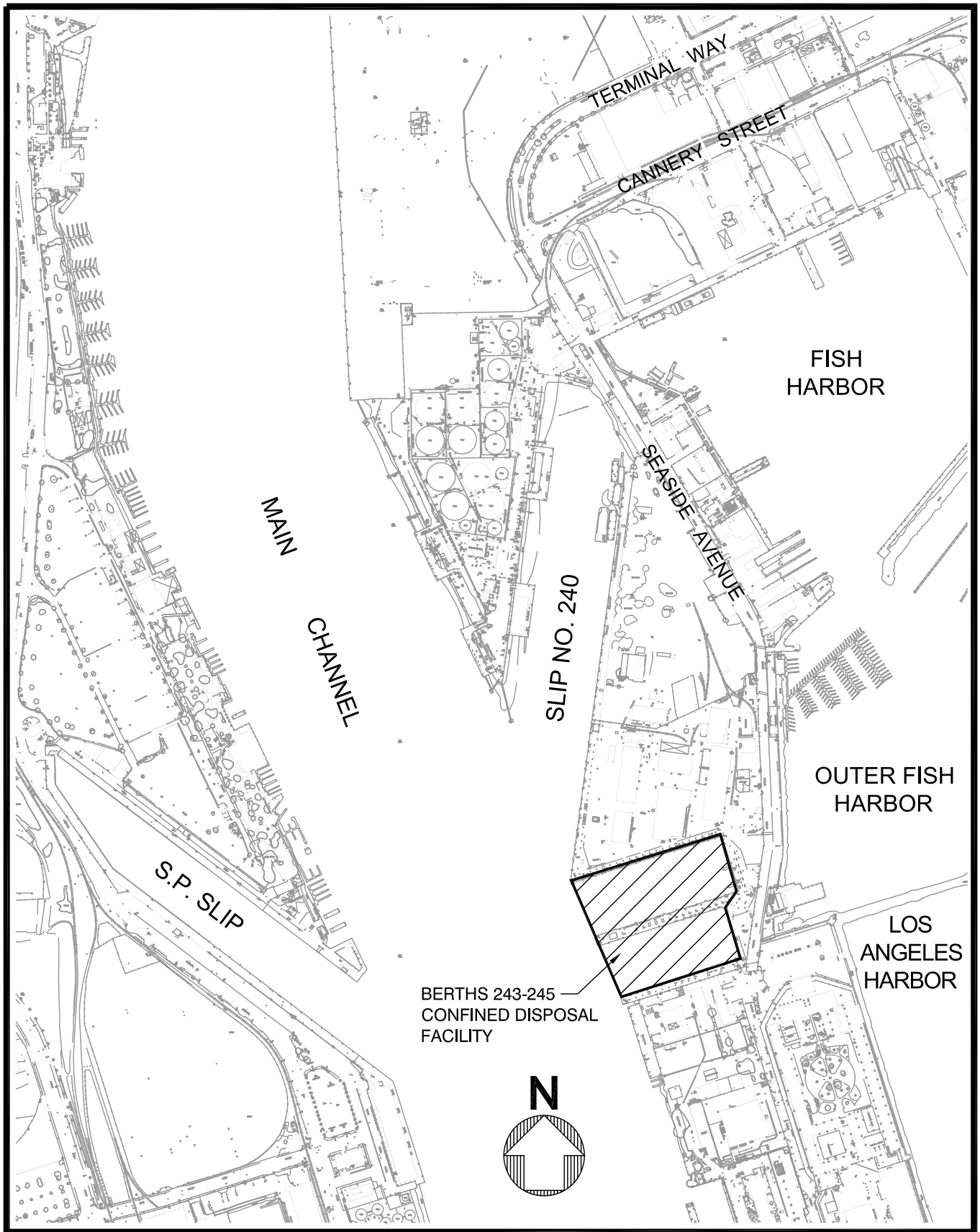
SCALE:
DRAWN:
CHECKED:
DESIGNED:
ENGR/ARCH
CHIEF OF DESIGN
ASSISTANT CHIEF OF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
TX-1

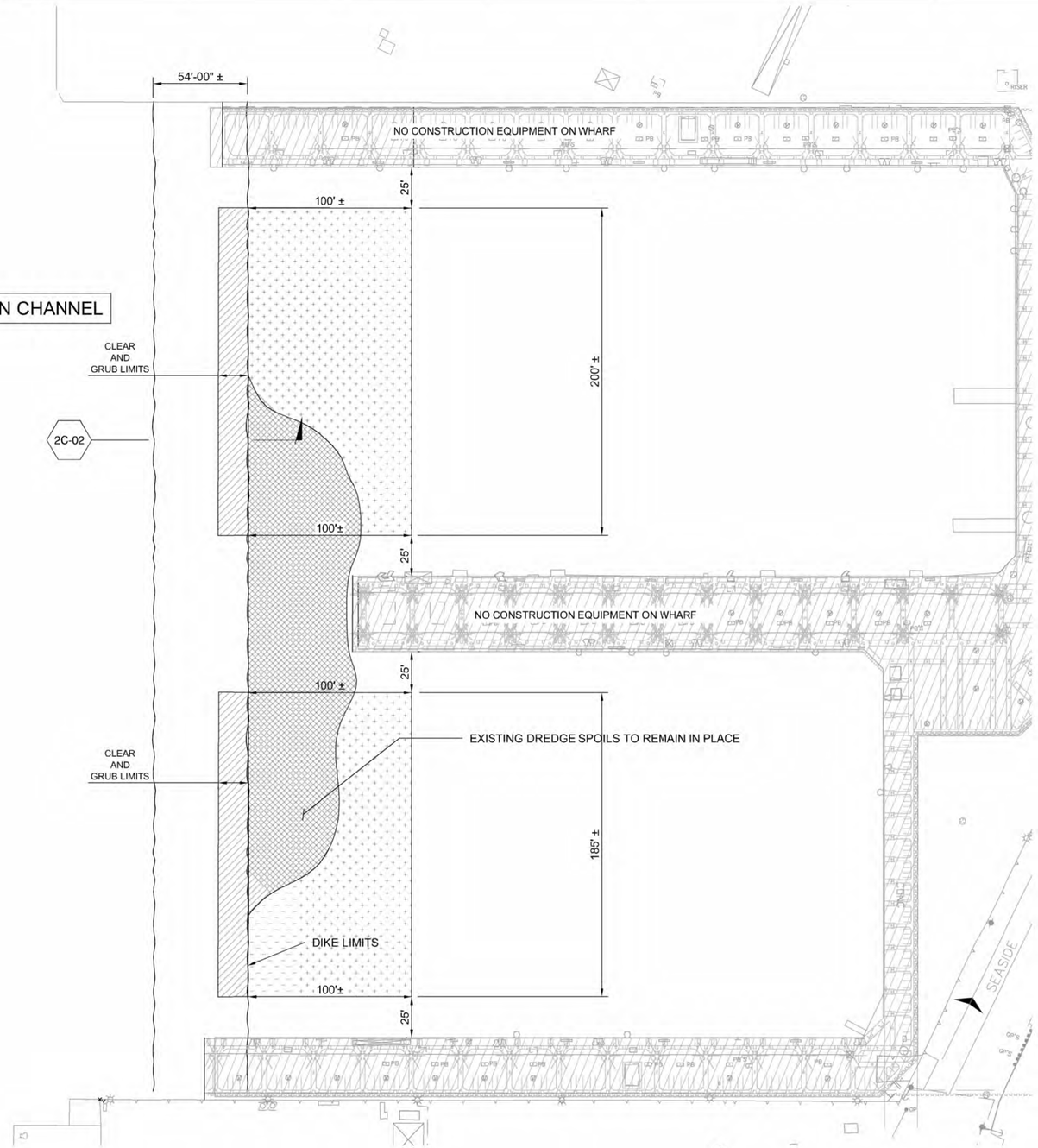
APPENDIX "C"

BERTHS 243-245 CONFINED DISPOSAL FACILITY (CDF) AND OCEAN DREDGE DISPOSAL SITE LA-2

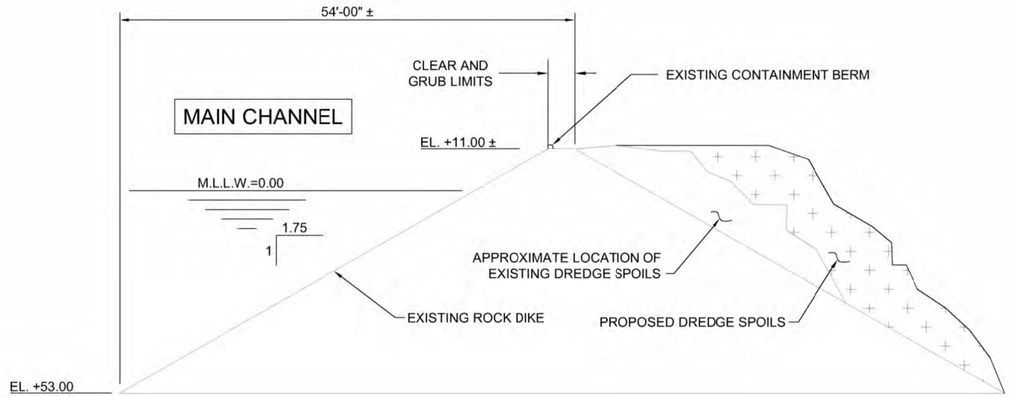


SCALE:	CHIEF OF DESIGN	PORT OF LOS ANGELES
DRAWN: A. RAGUSA		BERTHS 243-245 CONFINED DISPOSAL FACILITY (CDF)
CHECKED: E. HAN	ASSISTANT CHIEF OF HARBOR ENGINEER	
DESIGNED: A. RAGUSA		
ENGR/ARCH		THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
	CHIEF HARBOR ENGINEER DATE	DRAWING NUMBER CDF-1

DWG: M:\users\ENGINEERING DIVISION\SPECS & SPECIAL PROJS\Appendices\CDF Disposal Site\CDF Site Appendix.dwg USER: ragusaa
DATE: May 10, 2023 3:44pm XREFS:CDF Site IMAGES:
POLAPR05_VER.1_12/96



1C-02
C-02 EXISTING BERTHS 243-245 CDF SITE PLAN
SCALE: 1"=40'



2C-02
1C-02 EXISTING DIKE CROSS SECTION
SCALE: 1"=20'

LEGEND

- EXISTING DREDGE SPOILS TO REMAIN IN PLACE
- DREDGE DISPOSAL AREA
- CLEAR AND GRUB AREA

NOTES

1. CONTRACTOR SHALL CLEAR AND GRUB VEGETATION, REMOVE DEBRIS, AS NEEDED, TO PERFORM DREDGE DISPOSAL OPERATION.
2. CONTRACTOR SHALL MAINTAIN MINIMUM 25 FEET CLEARANCE FROM EXISTING WHARF STRUCTURES FOR DREDGE DISPOSAL.
3. CONTRACTOR SHALL DISPOSE DREDGE SPOILS FROM WATERSIDE. GRADE AS NECESSARY TO MATCH EXISTING ELEVATION.

DRAFT 03/03/2025

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

CDF - DREDGE DISPOSAL PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDIS STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER CDF-2

DWG: N:\cadd\projects II (small projects)\STRUCTURAL\Marina Improvements Contract SPEC DWGS\CDF\CDF Disposal Site 2025.dwg USER: CISNEROSH
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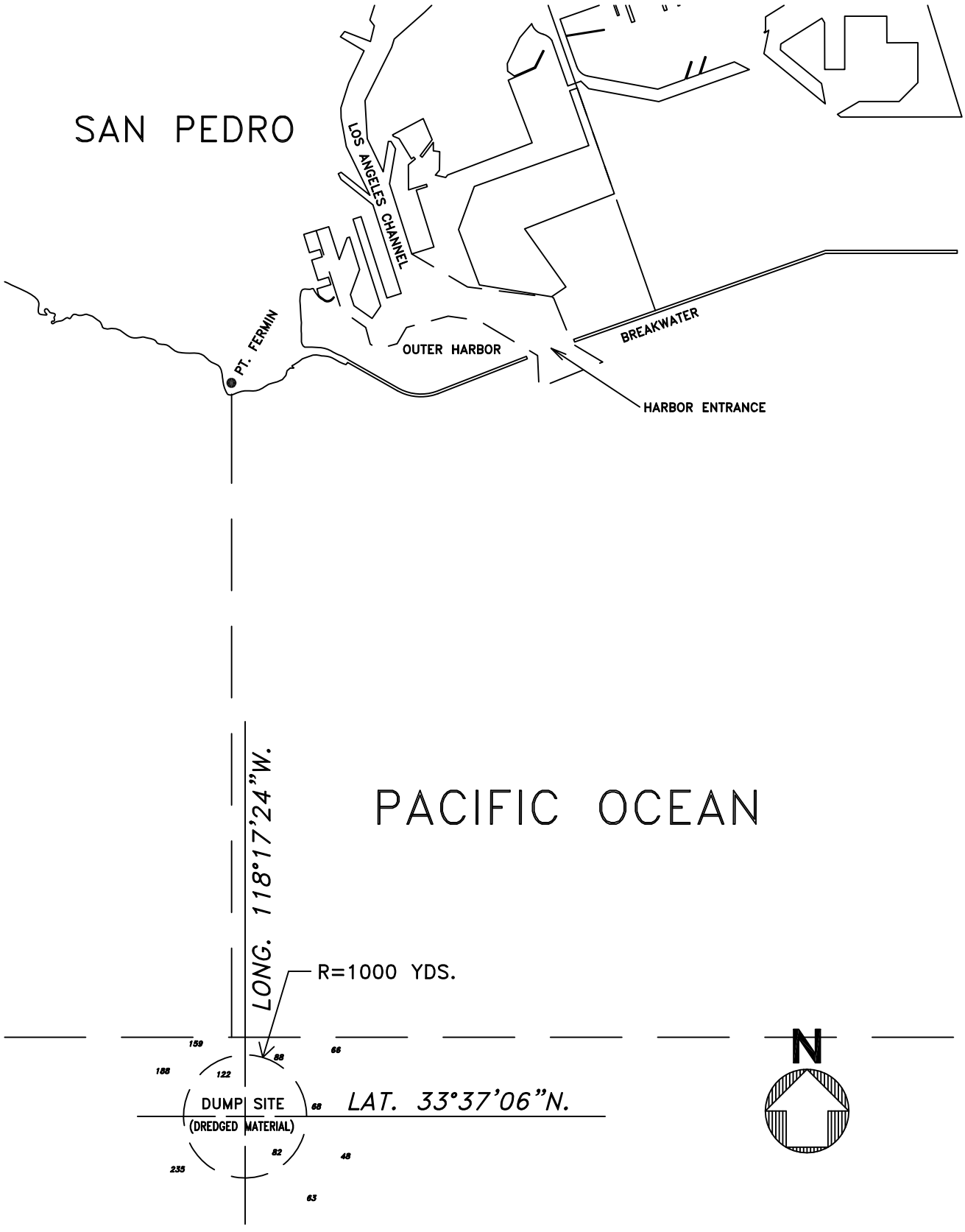
POLA PRO1, 19/2012, KB



REF. DWG. 5-7075-5

SCALE: NONE	DATE:	RECOMMENDED FOR APPROVAL	FIVE YEAR US ARMY CORPS MAINTENANCE DREDGING PERMIT		
DRAWN: CCB	08/02	CHIEF OF DESIGN	OCEAN DREDGE DISPOSAL SITE LA-2		
CHECKED: DMW	08/02				
DESIGNED: CCB					
ENGR/ARCH DAVID M. WALSH		ASSISTANT CHIEF HARBOR ENGINEER	APPROVED CHIEF HARBOR ENGINEER	THE PORT OF LOS ANGELES ENGINEERING DIVISION P.O. BOX 151 SAN PEDRO, CA. 90733-0151	DRAWING NUMBER

POLAPR05_VER.1_12/96
M:\USERS\CIVIL PLANNING\CCBALDENEGRO\FIVE YEAR ARMY CORPS MAINTENANCE DREDGING PERMIT\

APPENDIX "D"

SAMPLE BEST MANAGEMENT PRACTICES PLAN FOR SMALL PROJECTS

BEST MANAGEMENT PRACTICES PLAN

[Project Name]

[CONTRACTOR's NAME]

[SPECIFICATION No.]

1. Provide BMP Implementation Schedule for Construction Activities: Examples of activites include but not limited to :Dewatering Operations, Paving Operations, Structure Construction, Painting, Utility Trenches, Concrete, Curb and Gutter work, Demolition, Removals, Storm Drain, Sewer, Materials Delivery and Storage, Material Use, Solid Waste, Hazardous Waste, Concrete Waste, Sanitary/Septic Waste, Vehicle/Equipment Fueling, Vehicle/Equipment Maintenance.

BMP Implementation Schedule

	BMP	Implementation	Duration
Erosion Control	EC-1, Scheduling	Prior to Construction	Entirety of Project
Sediment Controls	TC-1, Stabilized Construction Entrance		
Waste Management	WM-1 , Material Delivery and Storage		
	WM-8 , Concrete Waste Management		
Non-Storm Water Management Non-Storm Water	NS-10, Vehicle and Equipment Maintenance		

SAMPLE

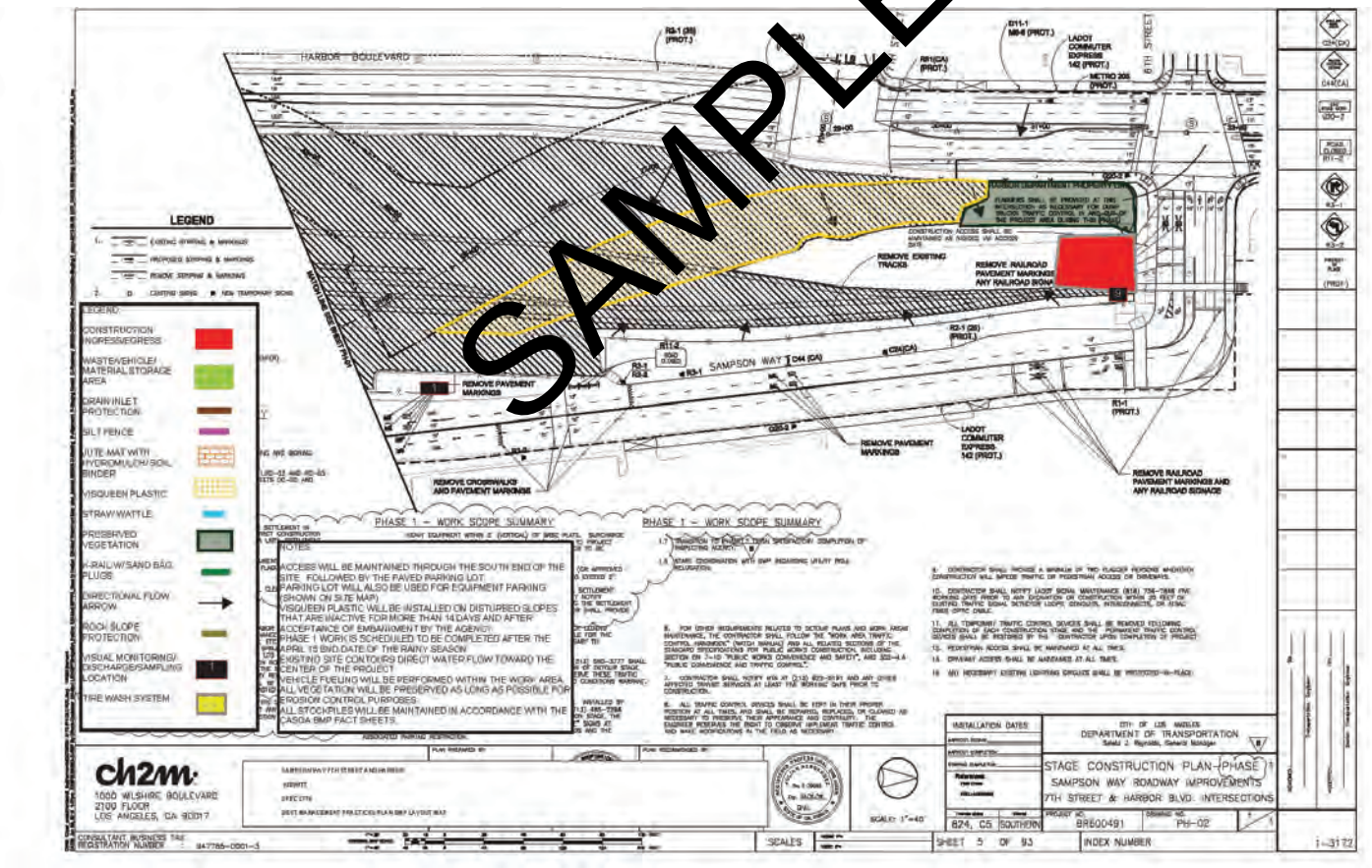
Please fill out the BMP Implementation form completely and add to the list as needed.

2. Provide BMP Layout Map

Required BMP Map Information

Included on Map/Plan Sheet No.	Required Element
	The project's surrounding area(Vicinty)
	Site Layout
	Construction site boundaries
	Active Areas
	Locations of erosion control BMPs
	Locations of sediment control BMPs
	Locations of runoff and storm drain inlet BMPs
	Location of all post construction BMPs
	Waste storage areas
	Vehicle storage areas
	Material storage areas
	Entrance and Exits
	Fueling Locations

BMP LAYOUT MAP(Minimum Size (11X17)



APPENDIX "E"

U.S. ARMY CORPS OF ENGINEERS PERMIT FOR WHARF AND DIKE MAINTENANCE AND MAINTENANCE DREDGING

DEPARTMENT OF THE ARMY PERMIT

Permittee: Los Angeles Harbor Department, Port of Los Angeles, Chief Harbor Engineer; Dina Aryan-Zahlan, P.E.

Project Name: Los Angeles Harbor Department Maintenance Permit

Permit Number: SPL-2022-00686-TS

Issuing Office: Los Angeles District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Section 10: To construct structures and/or conduct work in or affecting "navigable waters of the United States", as needed for repairs and maintenance, pursuant to Section 10 of the Rivers and Harbors Act of 1899,

Section 404: To discharge fill into waters of the U.S., as needed for repairs and maintenance, pursuant to Section 404 of the Clean Water Act of 1972,

Section 103: To transport dredged or fill material by vessel or other vehicle for the purpose of dumping suitable material into ocean waters pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972,

in association with the Los Angeles Harbor Department Maintenance Permit Project as shown on the attached drawings.

Specifically, you are authorized to:

Conduct routine maintenance on approximately 80,000 linear feet of existing wharves, structures, existing revetment fills, seawalls, bulkheads and other existing structures, and to conduct maintenance dredging at berths to address navigation safety and vessel access associated with routine Port operations and maritime shipping activity. The

applicant has requested this maintenance permit for a 10-year period. Maintenance activities may be conducted by anchored barges or support vessels, as well as crews staged on top of existing structures.

Wharf and Dike Maintenance: This includes scheduled maintenance and emergency repair, and would address maintenance of existing timber and concrete wharves. Repair and maintenance includes in-kind replacement of bearing piles, fender piles, decking, joists, pile caps, marginal beams, bull rails, and other wharf structural members. In addition, part of the wharf maintenance program consists of repairing damaged seawalls to their original condition and/or placing additional rock riprap on an existing eroded dike in order to stabilize or protect the dike. The slope of any additional fill will match the original design slope and footprint. The cubic yards of rock needed to repair dikes will vary, and in some cases rock that has sloughed off an existing slope will be recovered and replaced onto the slope.

Maintenance Dredging: This includes maintenance dredging, as needed, at berths throughout the Los Angeles Harbor to restore approved design depths which have been reduced by sediment shoaling, plus an additional 2-foot overdredge allowance. The applicant proposes an annual estimated amount of dredging and disposal of 150,000 cubic yards. On occasion, some of the work may involve maintenance of existing rock riprap slopes along channels and under wharves, as described above. Dredging would be accomplished by means of side casting, barge mounted clamshell dredge, a dredged bucket operated from the shore or adjacent wharf, or knockdown dredging. Knockdown dredging involves the leveling or spreading of shoaled or mounded material to maintain waterway depths, rather than the direct removal of material from the waterway. The disposal location would be dictated by the quality of the dredged sediment following a sediment characterization study and/or bioassay testing, and suitability determination by the interagency Southern California Dredged Material Management Team. If after sediment characterization, the sediment is found suitable for unconfined ocean disposal per the U.S. Environmental Protection Agency's (EPA) ocean disposal requirements, the designated EPA ocean dump site (LA-2) may be used for ocean disposal. Following sediment sampling and characterization, if dredged sediment is found to be unsuitable for ocean disposal, an upland/terrestrial disposal site, landfill, or the Corps-approved Berths 243-245 Confined Disposal Facility (CDF) would be used for disposal. The applicant proposes an annual estimated amount of dredging and disposal of 150,000 cubic yards.

Project Location: Maintenance activities would occur in the Los Angeles Harbor, Port of Los Angeles (Port,) within the city and county of Los Angeles, CA (approximate center point of the Port of Los Angeles near Berth 94 at latitude: 33.74861 / longitude: -118.27444).

Permit Conditions:

General Conditions:

1. **The time limit for completing the authorized activity ends September 30, 2033**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

7. You must notify this office as to the dates of commencement (within 10 days prior to the start of construction) and completion of the activity (within 10 days following the end of construction) using the enclosed forms.

Special Conditions:

1. The Permittee shall comply with the terms and conditions of the Clean Water Act Section 401 Water Quality Certification (WQC) (WDID No. 4WQC40123078, WQC No.

23-078, dated September 19, 2023), incorporated by reference.

2. SEDIMENT TESTING FOR PHASED PROJECTS
The Permittee is prohibited from conducting dredging operations and disposing material in navigable waters of the United States that has not been tested and determined by the Corps Regulatory Division, in consultation with the U.S. Environmental Protection Agency (EPA), to be suitable for disposal in ocean waters. Sampling and testing of previously tested sediment or previously dredged areas is required after three years from the date of initial sediment sampling and testing unless the Corps deems that conditions warrant another testing duration be formulated with EPA consultation. This time limit is subject to change at the discretion of the Corps Regulatory Division if any event causes previously determined suitable material to become potentially unsuitable. The applicant must demonstrate the proposed dredged materials are chemically and physically suitable for disposal in ocean waters according to the provisions of the Inland Testing Manual (ITM) or Ocean Disposal Manual (ODM) and the Corps Regional Guidance Letter (RGL) 06-02, as appropriate. If the material does not meet the physical and chemical criteria for unconfined disposal in ocean waters, the dredged material shall be disposed at a Corps approved upland disposal location. The applicant shall submit to the Corps Regulatory Division and EPA a draft Sampling and Analysis Plan (SAP); the SAP must be completed in accordance with the joint EPA/Corps SAPR Guidelines (July 2021). Sampling may not commence until the final SAP is approved, in writing, by the Corps Regulatory Division, in consultation with EPA. Further the SAP Results (SAPR) must also be reviewed and approved and the Permittee must receive a written authorization to proceed.

3. OPERATIONS PLAN
At least 15 calendar days before initiation of any dredging operations authorized by this permit, the Permittee shall submit a dredging and disposal Operations Plan to the Corps Regulatory Division and EPA, with the following information:

A) A list of the names, addresses and telephone numbers of the Permittee's project manager, the contractor's project manager, the dredging operations inspector, the disposal operations inspector and the captain of each tug boat, hopper dredge or other form of vehicle used to transport dredged material to the designated disposal site.

B) A list of all vessels, dredging equipment and electronic positioning systems or navigation equipment to be used for dredging and disposal operations, including: the capacity, load level and acceptable operating sea conditions for each hopper dredge or disposal barge or scow.

C) A schedule describing when the dredging project is planned to begin and end.

D) A pre-construction dredging bathymetric survey (presented as a large format plan view drawing), taken within thirty (30) days before the dredging begins, accurate to 0.5-

foot with the exact location of all soundings clearly defined on the survey chart. The pre-dredge survey chart shall be prepared showing the following information:
i) The entire dredging area, including the toe and top of all side-slopes, and typical cross sections of the dredging areas. To ensure that the entire area is surveyed, the pre-dredge condition survey should cover an area at least 50 feet outside the top of the side-slope or the boundary of the dredging area.
ii) Areas shallower than the dredging design depth shall be shaded green, areas between the dredging design depth and overdredge depth shall be shaded yellow, and areas below overdredge depth that will not be dredged shall be shaded blue.
iii) The pre-dredging survey chart shall be signed by the Permittee to certify that the data are accurate and that the survey was completed within thirty (30) days before the proposed dredging start date.

E) A debris management plan to prevent unauthorized disposal of large debris or other unsuitable materials. The debris management plan shall include: sources and expected types of debris if known, debris separation and retrieval methods and equipment to be used, debris disposal location(s), and debris disposal methods (e.g., recycling, landfill, hazardous/toxic/radioactive materials/munitions disposal sites, etc.).

F) Dredging and dredged material disposal and monitoring of dredging projects using the National Dredging Quality Management (DQM) system shall be implemented for this permit. The permittee's DQM system must have been certified by the DQM Support Center within one calendar year prior to the initiation of the dredging/disposal. Questions regarding certification should be addressed to the DQM Support Center at 1-877-840-8024. Additional information about the DQM System can be found at https://dqm.usace.army.mil. The permittee is responsible for insuring that the DQM system is operational throughout the dredging and disposal project and that project data are submitted to the DQM Support Center in accordance with the specifications provided at the aforementioned website. The data collected by the DQM system shall, upon request, be made available to the Regulatory Division project manager of the U.S. Army Corps of Engineers, Los Angeles District.

4. NOTICE TO PROCEED
The Permittee shall not commence dredging or disposal operations unless and until the Permittee receives a Notice to Proceed (NTP), in writing (letter or email), from the Corps Regulatory Division.

5. MAINTAIN PRINTED COPY OF PERMIT ON-BOARD
The Permittee and its contractors and subcontractors shall maintain a copy of this permit at the work site, and on all vessels used to dredge, transport and dispose of dredged material authorized under this permit.

6. CAPTAIN LICENSING
The Permittee shall ensure that the captain of any hopper dredge, tug or other vessel

used in the dredging and disposal operations, is a licensed operator under U.S. Coast Guard regulations and follows the Inland and Ocean Rules of Navigation or the U.S. Coast Guard Vessel Traffic Control Service. All such vessels, hopper dredges or disposal barges or scows, shall have the proper day shapes (mast head signals which indicate vessel operational status), operating marine band radio, and other appropriate navigational aids.

7. RADIO CHANNEL MONITORING
The Permittee's contractor(s) and the captain of any vessel covered by this permit shall monitor VHF-FM channels 13 and 16 while conducting dredging operations.

8. INSPECTIONS
Upon request, the Permittee and its contractor(s) shall allow inspectors from the Corps Regulatory Division (may include other Corps Divisions), EPA, and(or) the U.S. Coast Guard to inspect all phases of the dredging and disposal operations. Upon request, the Permittee and its contractor(s) retained to perform work authorized by the permit or to monitor compliance with this permit shall make available to inspectors from the Corps EPA, and(or) the U.S. Coast Guard the following: dredging and disposal operations inspectors' logs, the vessel track plots and all disposal vessel logs or records, any analyses of the characteristics of dredged material, or any other documents related to dredging and disposal operations.

9. INTERFERENCE WITH NAVIGATION
During disposal and dredging operations the permitted activity shall not interfere with the public's right to free navigation on all navigable waters of the United States.

10. NON-COMPLIANCE NOTIFICATION
If non-compliance of the permit occurs, the Permittee shall report the details of the permit non-compliance to the Corps Regulatory Division within twenty-four (24) hours. If the Permittee retains any contractors to perform any activity authorized by this permit, the Permittee shall instruct all such contractors that any permit non-compliance of any permit condition must be reported to the Permittee immediately who must then report to the Corps Regulatory Division.

11. HOPPER DREDGE OPERATION
When using a hopper dredge, water/slurry flowing through the weirs shall not exceed 10 minutes during dredging operations (to prevent overflow/overload). When using a hopper dredge, the fill level of the hopper dredge shall not exceed the load line to prevent any dredged material or water from spilling over the sides at the dredging site or during transit from the dredging site to the disposal site. No hopper dredge shall be filled above this predetermined level. Before each hopper dredge is transported to the disposal site, the dredging site inspector shall certify that it is filled correctly. If a dredging or disposal operation does not require a hopper dredge than disregard this special condition.

12. BARGE OR SCOW OPERATIONS
When using a disposal barge or scow, no water shall be allowed to flow over the sides throughout the dredging and disposal operations. The fill level of the disposal barge or scow shall not exceed the load line to prevent any dredged material or water from spilling over the sides during all operations. No disposal barge or scow shall be filled above this predetermined level or load line (vessel frame/plating). Before each disposal barge or scow is transported to the disposal site, the Permittees dredging site inspector shall certify that it is filled correctly.

13. ELECTRONIC POSITIONING SYSTEM NAVIGATION
The Permittee shall use an electronic positioning system to navigate throughout all dredging, hauling, disposal, and discharge operations. The electronic positioning system shall have a minimum accuracy and precision of +/- 10 feet (or 3 meters). If the electronic positioning system fails or navigation problems are detected, all dredging operations shall cease until the failure or navigation problems are corrected.

14. POST-CONSTRUCTION REPORTING
The Permittee shall submit a post-construction/project completion report to the Corps Regulatory Division within 30 calendar days after completion of each dredging event to document compliance with all general and special conditions in this permit. The report shall include all information collected by the Permittee, the dredging operations inspector and the disposal operations inspector or the disposal vessel captain. One post-construction report (instead of separate reports) should be submitted for all activities conducted under the permit. The report must describe whether or not all general and special conditions were met. The report shall include:
A) Project Name and Corps file number (Corps File No. is SPL-2022-00686).
B) Start date (month/day/year) and completion date of dredging and disposal operations.
C) The disposition and total cubic yards of all material disposed or discharged at each site or location.
D) Dredging method (e.g., hopper dredge, suction dredge, clamshell, dragline, etc.).
E) Mode of transportation.
F) Frequency of disposal and plots of all trips to the disposal or discharge site(s).
G) Tug boat or other disposal vessel logs documenting contact with the U.S. Coast Guard before each trip to the disposal or discharge site(s).
H) A detailed post-dredging bathymetry survey drawing of the dredging area. The survey drawing shall show areas above the dredging design depth shaded green, areas between the dredging design depth and overdredge depth shaded yellow, areas below overdredged depth that were not dredged or areas that were deeper than the overdredge depth before the project began as indicated on the pre-dredging survey shaded blue, and areas dredged below the overdredge depth or outside the project boundaries shaded red. The methods used to record the post-construction dredging survey drawing shall be the same methods used in the pre-construction dredging survey

drawing. The survey drawing shall be signed by the Permittee certifying that the data are accurate.
I) A description of any navigation problems and corrective measures implemented.
J) Copies of all completed Scow Certification Checklists for ocean disposal.

Section 103 Special Conditions (Ocean Disposal at EPA approved site):

15. This permit does not authorize ocean disposal. Based on the results of the Sampling and Analysis Plan Report (see Special Condition No. 2 above), if the EPA concurs that sediment is suitable for ocean disposal, EPA site use conditions and the Corps NTP (see Special Condition No. 3 above) shall be obtained prior to initiating dredging and disposal at an EPA-approved ocean disposal site.

Endangered Species Special Conditions:

1. This Corps permit does not authorize you to take any threatened or endangered species, in particular the California least tern (*Sterna antillarum browni*) or green sea turtle (*Chelonia mydas*) or adversely modify designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply).

2. No maintenance activity shall be performed within 500 feet of the California least tern nest site on Pier 400 during the nesting season. The Permittee shall provide one week advance notice of proposed pile-driving, including measures to minimize impacts on least terns to both the Corps and U.S. Fish and Wildlife Service that would occur during the nesting season, including a description of any concurrent work occurring in the same time frame within a one mile radius of the Pier 400 nest site. Structure maintenance and replacement or repair of fenders and bollards within the aforementioned distances from the nest site is not required.

3. In the unlikely event that any individuals of fish, whale, abalone, sea turtle, coral, or marine plant species listed by NOAA Fisheries under the Endangered Species Act appear to be entangled, injured, or killed as a result of the structures or work in [navigable] waters of the United States authorized by this permit, the permittee or designated representative shall immediately report the event to the Regulatory Office of the Los Angeles District of the U.S. Army Corps of Engineers at 805-585-2146 AND NOAAs Entanglement hotline 1-877-767-9425 or NOAAs West Coast Region Stranding hotline 1-866-767-6114. If you have any trouble contacting these hotlines, please immediately NOAAs Regional Stranding Coordinator, Justin Viezbicke, at 562-506-4315 or NOAAs Assistant Stranding Network Coordinator,

Justin Greenman, at 707-496-7230. The finder should leave the plant or animal alone, make note of any circumstances likely causing the death or injury, note the location and number of individuals involved and, if possible, take photographs. Adult animals should not be disturbed unless circumstances arise where they are obviously injured or killed by discharge exposure, or some unnatural cause. The finder may be asked to carry out instructions provided by NOAA Fisheries to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.

Historic Properties Special Conditions:

1. In each case involving a repair or replacement activity subject to this permit proposes to 1) repair or replace more than 20% of viewable wharf, and 2) at a wharf that is at least 50 years old, unless the proposed activity would be limited to wharf components that have been replaced in the previous 50 years, the Permittee shall notify the Corps Regulatory Division in writing at least one month prior to commencing the proposed activity to determine whether consultation with the State Historic Preservation Officer (SHPO) is necessary pursuant to section 106 of the National Historic Preservation Act. The Permittee shall not commence with the proposed activity until the Corps Regulatory Division issues a Notice to Proceed.

2. Pursuant to 36 C.F.R. section 800.13, in the event of any discoveries during construction within waters within the Corps Permit Area (the permit area is defined as waters of the U.S. below the plane of the high tide elevation of approximately +7.3 feet mean lower low water) and 100 feet landward of the pierhead line; the vertical permit area includes the previously approved design depth of berthing areas to be dredged and the depth of existing piles) of either human remains, archaeological deposits, or any other type of historic property, the Permittee shall notify the Corps Regulatory Project Manager (Theresa Stevens at 805-585-2146) and the Corps' Regulatory Archaeology Staff (Danielle Storey 213-452-3855) within 24 hours. The Permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The Permittee shall not resume construction in the area surrounding the potential cultural resources until the Corps Regulatory Division re-authorizes project construction, per 36 C.F.R. Section 800.13.

Section 10 Special Conditions (Work and Structures in Navigable Waters of the United States):

1. ANNUAL REPORT OF STRUCTURAL AND ROCK DIKE MAINTENANCE: The Permittee shall submit an annual report of maintenance activities on structures and rock dikes; this report shall include the berth number(s), the number of piles repaired

or replaced, an estimate of the area and cubic yards of rock dike affected by the maintenance activity. The annual report shall be submitted in January of each year.

2. INTERFERENCE WITH NAVIGATION: The permitted activity shall not interfere with the right of the public to free navigation on all navigable waters of the United States as defined by 33 C.F.R. Part 329.

3. PILES: Creosote treated pilings shall not be placed in navigable waters unless conditions A-E are met. Condition F is required to reduce adverse effects of noise and vibration. Condition G is required to reduce adverse effects on water quality.

A) The project involves the repair of existing structures that were originally constructed using wood products;

B) The creosote treated pilings are wrapped in plastic;

C) Measures are taken to prevent damage to plastic wrapping from boat use. Such measures may include installation of rub strips or bumpers;

D) The plastic wrapping is sealed at all joints to prevent leakage; and

E) The plastic material is expected to maintain its integrity for at least ten years, and plastic wrappings that develop holes or leaks must be repaired or replaced in a timely manner by the Permittee.

F) A soft-start or ramp-up method shall be used during pile driving. Alternative noise-reduction measures (bubble curtain, pipe-in-pipe, or equivalent) may also be used during pile driving to further reduce noise.

G) Turbidity reduction measures shall be implemented when installing or removing piles with a jet device.

4. LIMITATIONS: No other modifications or work shall occur to the structure permitted herein.

5. CLEAN CONSTRUCTION PRACTICES: The Permittee shall discharge only clean construction materials suitable for use in the oceanic environment. The Permittee shall ensure no debris, soil, silt, sand, sawdust, rubbish, cement or concrete washings thereof, oil or petroleum products, hazardous/toxic/radioactive/munitions from construction or dredging or disposal shall be allowed to enter into or placed where it may be washed by rainfall or runoff into waters of the United States. Upon completion of the project authorized herein, any and all excess material or debris shall be completely removed from the work area and disposed of in an appropriate upland site.

6. OBSTRUCTIONS: The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers Regulatory Division, to remove, relocate, or alter the

structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

7. U.S. COAST GUARD NOTIFICATION: To ensure navigational safety, the Permittee shall provide appropriate notifications to the U.S. Coast Guard as described below:

Local Notice to Mariners, 11th Coast Guard District
TEL: (510) 437-2980
Email: d11LNM@uscg.mil
Website: https://www.pacificarea.uscg.mil/Our-Organization/District-11/Prevention-Division/LnmRequest/

U.S. Coast Guard, District 11, LA-LB Sector
Captain of the Port (COTP)
Email: d11-SMB-SectorLALB-WWM@uscg.mil

A) The Permittee shall notify the U.S. Coast Guard, Commander, 11th Coast Guard District (dpw) and the U.S. Coast Guard, Sector LA-LB (COTP) (contact information shown above), not less than 14 calendar days prior to commencing work and as project information changes. The notification shall be provided by email with at least the following information, transmitted as an attached Word or PDF file:

1) Project description including the type of operation (i.e. dredging, diving, construction, etc).
2) Location of operation, including Latitude / Longitude (NAD 83).
3) Work start and completion dates and the expected duration of operations. The U.S. Coast Guard needs to be notified if these dates change.
4) Vessels involved in the operation (name, size and type).
5) VHF-FM radio frequencies monitored by vessels on scene.
6) Point of contact and 24 -hour phone number.
7) Potential hazards to navigation.
8) Chart number for the area of operation.
9) Recommend the following language be used in the Local Notice to Mariners: "Mariners are urged to transit at their slowest safe speed to minimize wake, and proceed with caution after passing arrangements have been made."

B) The Permittee and its contractor(s) shall not remove, relocate, obstruct, willfully damage, make fast to, or interfere with any aids to navigation defined at 33 C.F.R. chapter I, subchapter C, part 66. Not less than 30 calendar days in advance of operating any equipment adjacent to any aids to navigation that require relocation or removal, the Permittee shall notify, in writing, the Eleventh U.S. Coast Guard District and the Corps Regulatory Division. The Permittee and its contractor(s) are prohibited from relocating or removing any aids to navigation until authorized to do so by the Corps

Regulatory Division and the U.S. Coast Guard.

C) The Permittee is prohibited from establishing private aids to navigation in navigable waters of the United States until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard. Should the Permittee determine the work requires the temporary placement and use of private aids to navigation in navigable waters of the United States, the Permittee shall submit a request in writing to the Corps Regulatory Division and the U.S. Coast Guard.

D) The COTP may modify the deployment of marine construction equipment or mooring systems to safeguard navigation during project construction. The Permittee shall direct questions concerning lighting, equipment placement, and mooring to the appropriate COTP.

8. COMMENCEMENT AND COMPLETION NOTIFICATION: The Permittee shall notify the Corps Regulatory Division of the date of commencement of work in navigable waters of the United States (within 10 calendar days prior to the start of construction) and completion of the activity (within 10 calendar days following the end of construction); electronic mail notification is preferred.

9. CAULERPA PRE-CONSTRUCTION SURVEY: For maintenance dredging activities, a pre-construction survey of the project area for Caulerpa sp. (Caulerpa) shall be conducted by a certified Caulerpa surveyor in accordance with the Caulerpa Control Protocol (see https://media.fisheries.noaa.gov/2021-12/caulerpa-control-protocol-v5.pdf) not earlier than 90 calendar days prior to planned construction and not later than 30 calendar days prior to construction. The results of this survey shall be furnished to the Corps Regulatory Division, NOAA Fisheries, and the California Department of Fish and Wildlife (CDFW) at least 15 calendar days prior to initiation of dredging in navigable waters. In the event that Caulerpa is detected within the project area, the Permittee shall not commence work until such time as the infestation has been isolated, treated, and the risk of spread is eliminated as confirmed in writing by the Corps Regulatory Division, in consultation with NOAA Fisheries and CDFW.

10. EELGRASS SURVEYS: Prior to each qualifying maintenance event, a pre-construction eelgrass survey should be conducted in accordance with the California Eelgrass Mitigation Policy (CEMP, 2014) (https://www.fisheries.noaa.gov/resource/document/california-eelgrass-mitigation-policy-and-implementing-guidelines). Qualifying maintenance events are those involving maintenance dredging or repair or replacement of more than 10 piles, where the activity is in water shallower than -20 feet Mean Lower Low Water, and occurring on the water-side half of a wharf where light conditions would allow for eelgrass growth. Pre-construction survey results must be submitted to the Corps and NOAA Fisheries at least 15 calendar days prior to the scheduled start date for work in waters of the United States. If the pre-construction survey

demonstrates eelgrass presence within 25 feet of the construction footprint, a post-construction survey should be conducted within 30 days of project completion. Should this survey determine impacts, up to two additional annual post-construction surveys may be conducted in accordance with the mapping guidelines in the CEMP. All required post-construction surveys shall be submitted by the Permittee to the Corps and NOAA Fisheries within 30 calendar days of each survey completion date. Based upon the post-construction survey results and in accordance with current regulations and policy, the Corps will determine the need and/or amount of Essential Fish Habitat (EFH) mitigation required to offset adverse impacts to such habitat. The Corps will transmit its determination to the Permittee in writing. Within 60 calendar days of receiving the Corps' determination specifying the need and amount of mitigation, the Permittee shall submit a draft EFH mitigation plan to the Corps for review and approval. The EFH mitigation plan shall be prepared in accordance with current Corps regulations and policy. The Permittee shall fully implement the final EFH mitigation plan as approved by the Corps.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

(x) Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).

(x) Section 404 of the Clean Water Act (33 U.S.C. 1344).

(x) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest

decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

PERMITTEE

9/29/23
DATE

Dina Aryan-Zahlan, P.E.
Chief Harbor Engineer

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

2023.10.10 12:43:33
-07'00'

AARON O. ALLEN, PHD
CHIEF NORTH COAST BRANCH
REGULATORY DIVISION

DATE

ON BEHALF OF:

ANDREW J. BAKER
District Engineer
Colonel, U.S. Army

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

TRANSFEREE

DATE

LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

NOTIFICATION OF COMMENCEMENT OF WORK
DEPARTMENT OF THE ARMY PERMIT

Permit Number: *SPL-2022-00686-TS*

Name of Permittee: *Los Angeles Harbor Department, Port of Los Angeles, Chief Harbor Engineer, Dina Aryan-Zahlan, P.E.*

Date of Issuance: *September 29, 2023*

Date work in waters of the U.S. will commence: _____

Estimated construction period (in weeks): _____

Name & phone of contractor (if any): _____

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that I, and the contractor (if applicable), have read and agree to comply with the terms and conditions of the above referenced permit.

_____

Signature of Permittee Date

At least ten (10) days prior to the commencement of the activity authorized by this permit, sign this certification and email it to theresa.stevens@usace.army.mil or.

LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

NOTIFICATION OF COMPLETION OF WORK AND CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: *SPL-2022-00686-TS*

Name of Permittee: *Los Angeles Harbor Department, Port of Los Angeles, Chief Harbor Engineer, Dina Aryan-Zahlan, P.E.*

Date of Issuance: *September 29, 2023*

Date work in waters of the U.S. completed: _____

Construction period (in weeks): _____

Name & phone of contractor (if any): _____

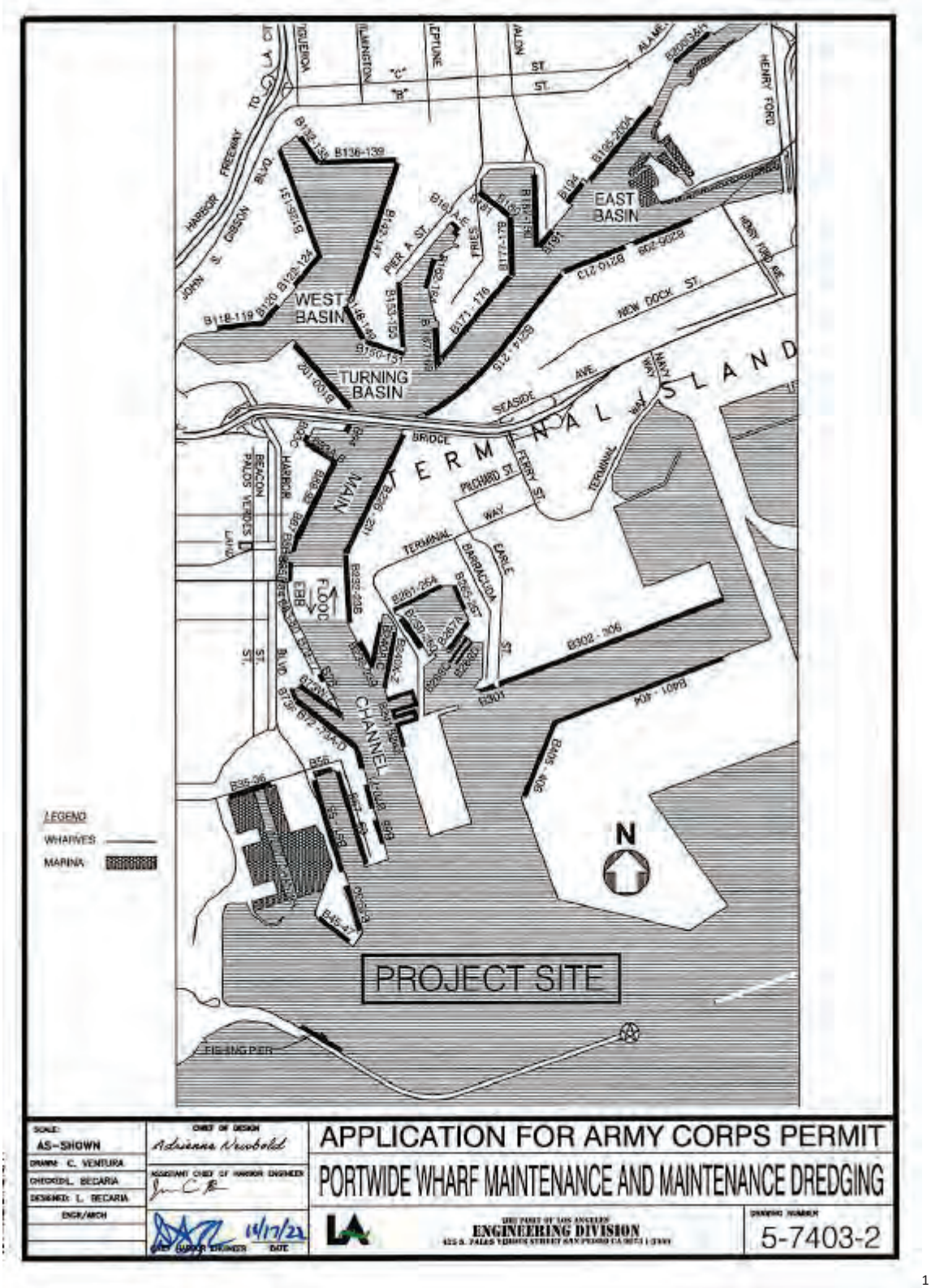
Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of said permit.

_____

Signature of Permittee Date

Upon completion of the activity authorized by this permit, sign this certification and email it to theresa.stevens@usace.army.mil or.



[1]

[1] Port of Los Angeles Vicinity Map with Wharves and Marinas

SCOPE OF WORK:

WHARF AND DIKE MAINTENANCE

1. PERFORM REPAIRS AND MAINTENANCE OF EXISTING TIMBER AND CONCRETE WHARVES AS SHOWN ON DRAWING 5-7403-2 THROUGH 5-7403-7.
2. REPAIR AND MAINTENANCE TO INCLUDE DECKING, JOISTS, PILE CAPS, MARGINAL BEAMS, FENDER & BEARING PILES, BULLRAILS, AND OTHER WHARF STRUCTURAL MEMBERS.
3. REPAIR CRACKED AND SPALLED SEAWALLS TO ITS ORIGINAL CONDITION.
4. PLACE NEW RIPRAP OVER EXISTING ERODED DIKE TO STABILIZE OR PROTECT EXISTING DIKE. NEW FILLED SLOPE SHALL MATCH ORIGINAL DESIGN SLOPE.
5. NO CONSTRUCTION MATERIAL SHALL BE ALLOWED TO BE DEPOSITED INTO THE WATER OR ONTO THE EXISTING ROCK SLOPE.
6. ALL WORK TO BE COORDINATED WITH TERMINAL OPERATOR AND ADJACENT TENANTS.

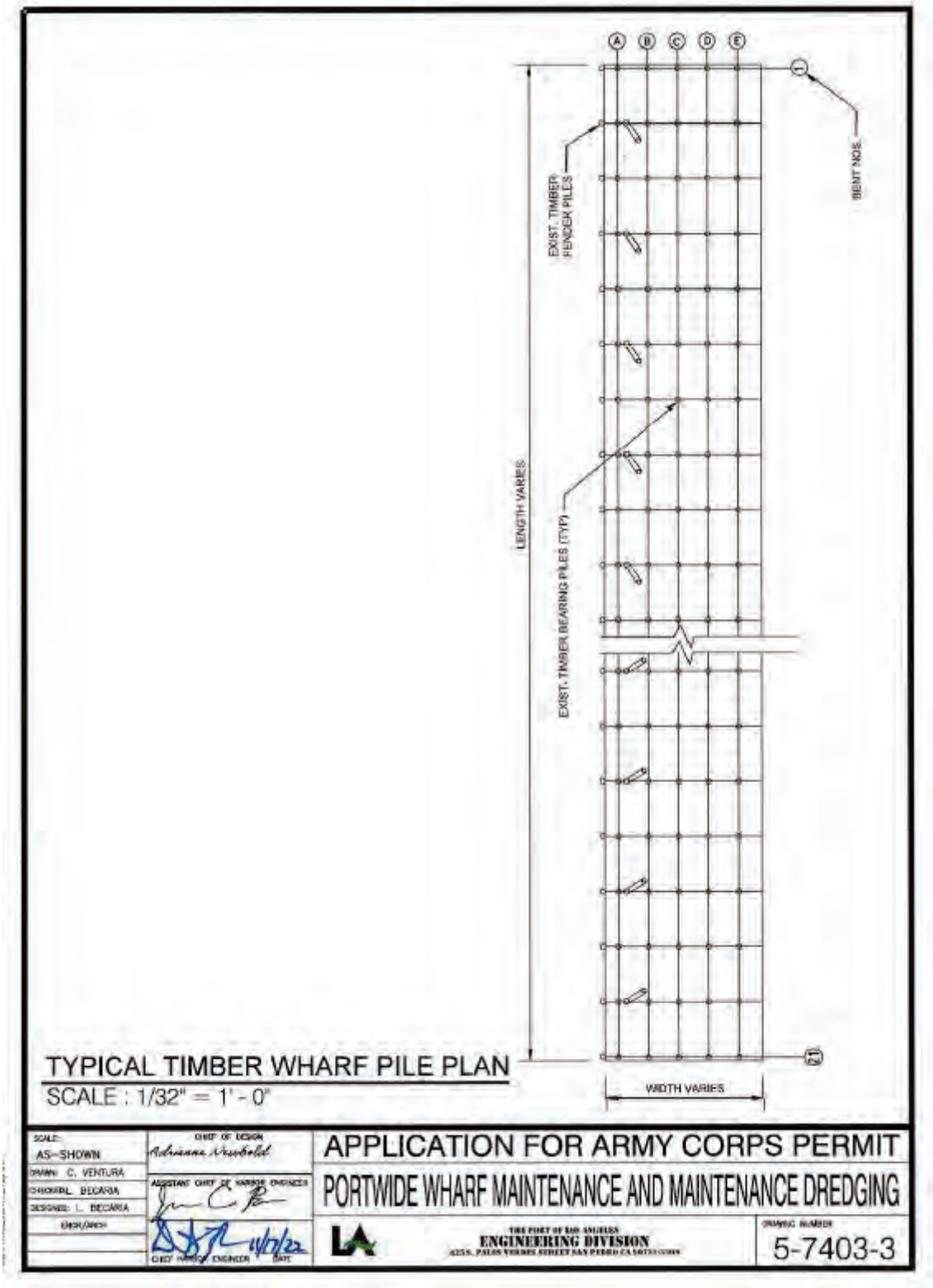
MAINTENANCE DREDGING

1. MAINTENANCE DREDGING WILL TAKE PLACE AS NEEDED.
2. PERFORM MAINTENANCE DREDGING AT SITES THROUGHOUT THE LOS ANGELES HARBOR TO RESTORE APPROVED DESIGN DEPTHS REDUCED BY SHOALING WITH SEDIMENT.
3. DREDGING WILL BE ACCOMPLISHED BY MEANS OF SIDECASTING, BARGE MOUNTED CLAMSHELL DREDGE, AND/OR BY BUCKET FROM SHORE/WHARF AND KNOCKDOWN DREDGING. THE DISPOSAL LOCATION WILL BE DICTATED BY THE QUALITY OF THE MATERIAL AS INDICATED IN A SEDIMENT CHARACTERIZATION STUDY AND/OR BIOASSAY TESTING. IF THE SEDIMENT IS FOUND TO MEET ENVIRONMENTAL PROTECTION AGENCY'S (EPA) OCEAN DISPOSAL REQUIREMENTS, THE DESIGNATED EPA DUMP SITE "LA-2" OR THE OTHER APPROVED SITE, WILL BE USED FOR OCEAN DISPOSAL. IF EXCAVATED DREDGE SEDIMENTS ARE UNACCEPTABLE FOR OCEAN DISPOSAL, A SUITABLE LAND DISPOSAL SITE WILL BE USED, SUCH AS BERTH 243-245, CONFINED DISPOSAL FACILITY (CDF).
   KNOCKDOWN DREDGING INVOLVES THE LEVELING OR SPREADING OF SHOALED OR MOUNDED MATERIAL TO MAINTAIN WATERWAY DEPTHS, RATHER THAN THE DIRECT REMOVAL OF MATERIAL FROM THE WATERWAY.

SCALE: AS-SHOWN DRAWN: C. VENTURA CHECKED: L. BECARIA DESIGNED: L. BECARIA ENGR/ARCH	CHIEF OF DESIGN: Adrienne Newbold ASSISTANT CHIEF OF HARBOR ENGINEER CHIEF HARBOR ENGINEER — DATE	APPLICATION FOR ARMY CORPS PERMIT PORTWIDE WHARF MAINTENANCE AND MAINTENANCE DREDGING LA — THE PORT OF LOS ANGELES ENGINEERING DIVISION DRAWING NUMBER: 5-7403-10

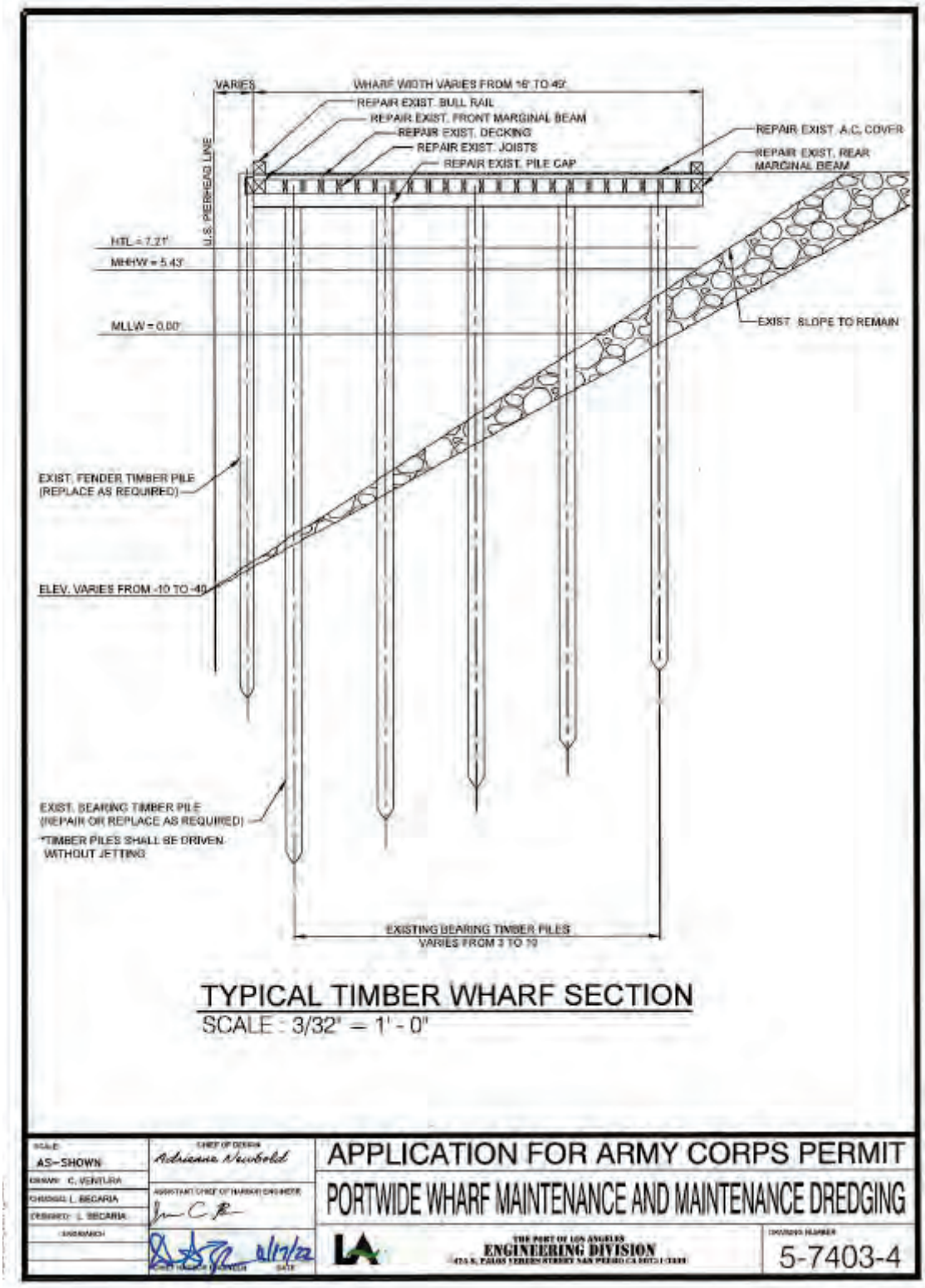
[1]

[1] Port of Los Angeles Wharf Maintenance and Maintenance Dredging Scope of Work for Army Corps Permit Application



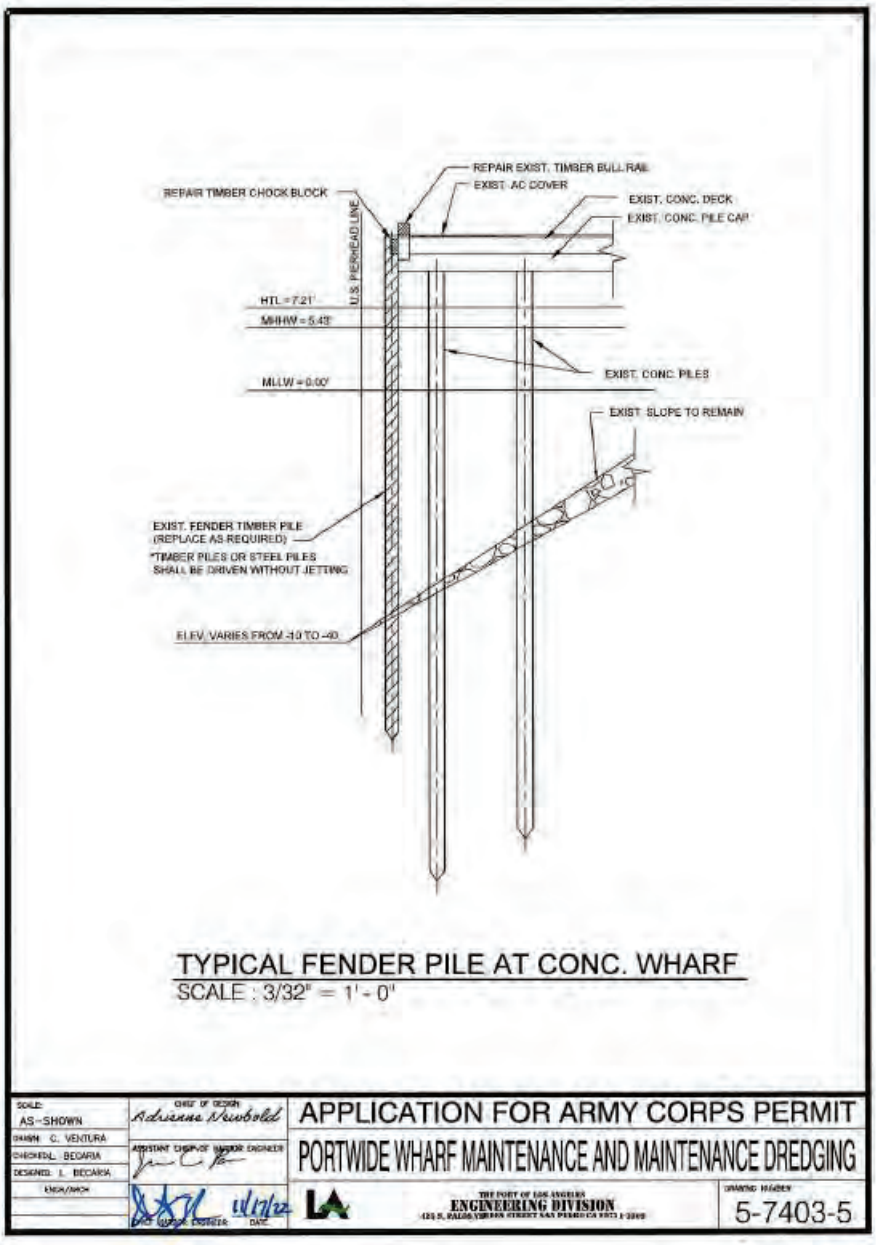
[1]

[1] Port of Los Angeles Typical Timber Wharf Pile Plan View



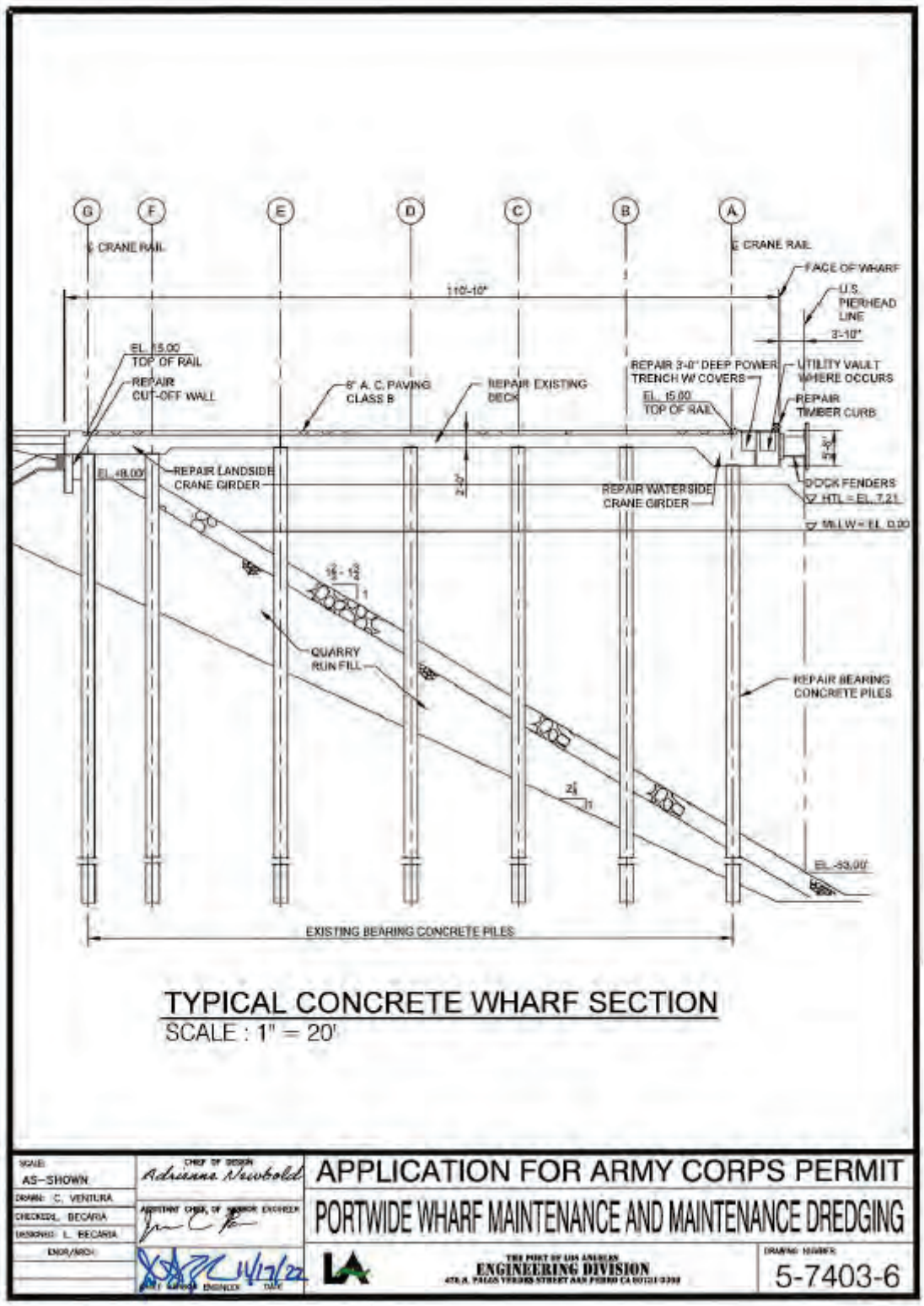
[1]

[1] Port of Los Angeles Typical Timber Wharf Cross Section



[1]

[1] Port of Los Angeles Typical Fender Pile at Concrete Wharf Cross Section



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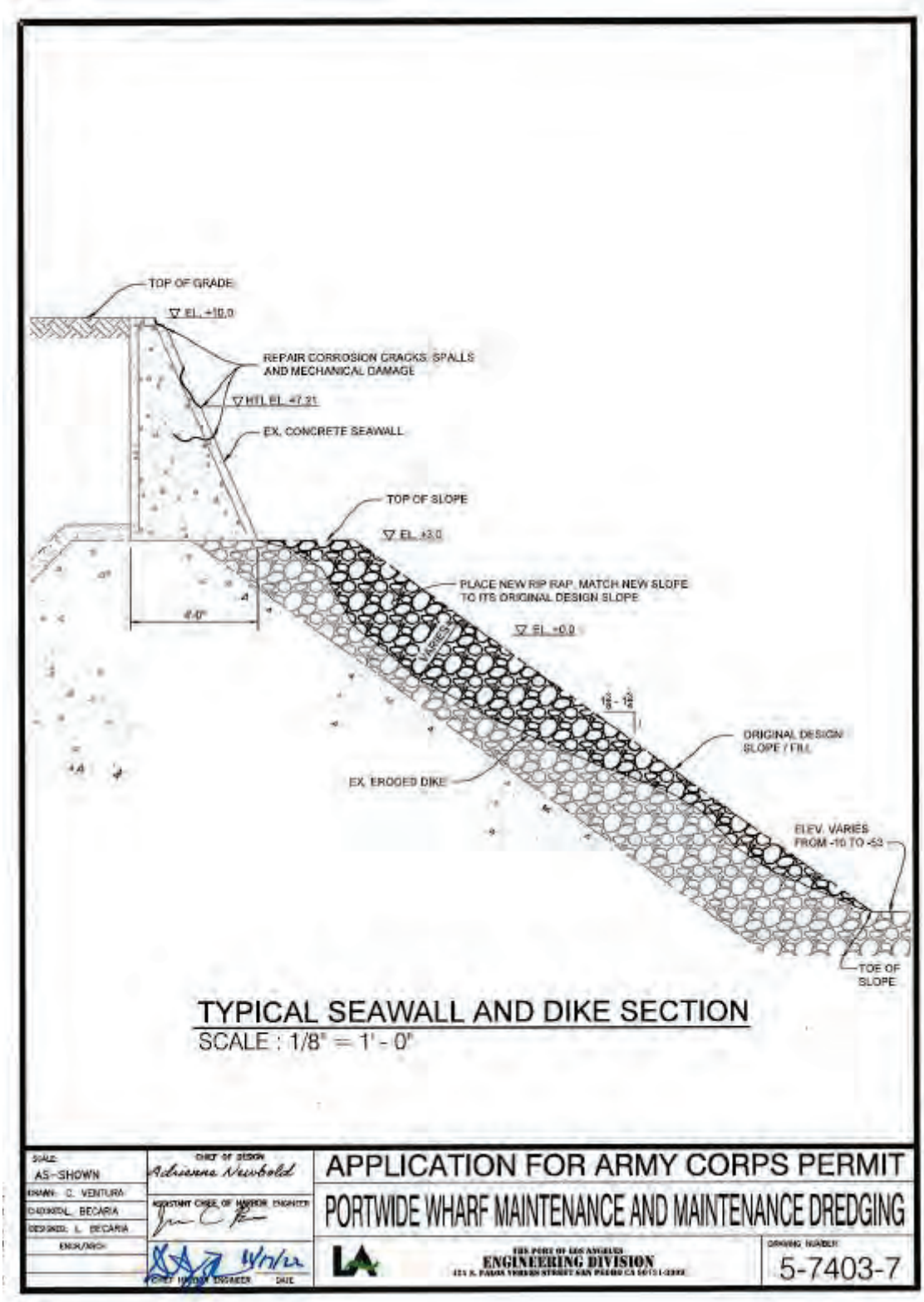
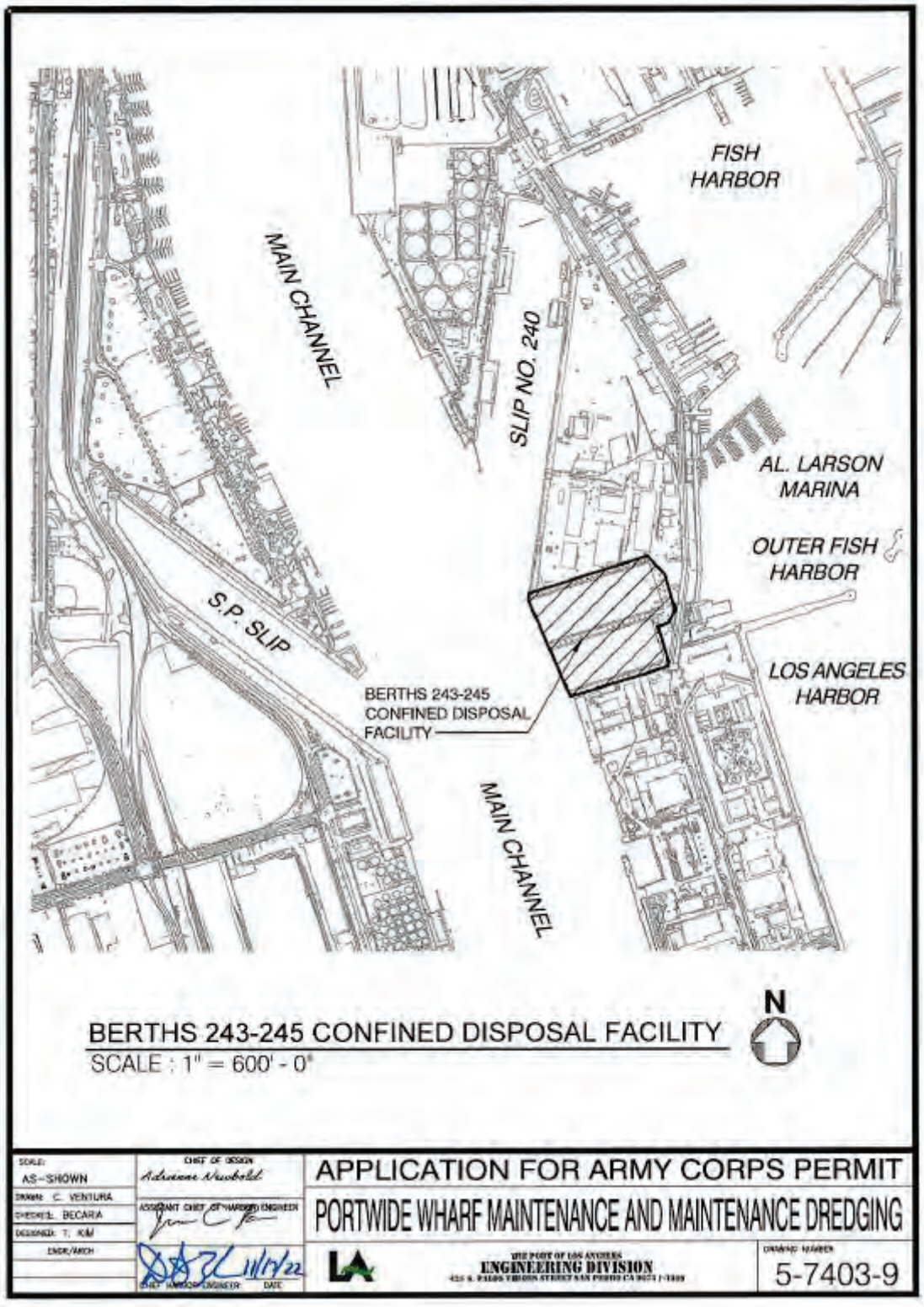
[1] Port of Los Angeles Typical Concrete Wharf Cross Section



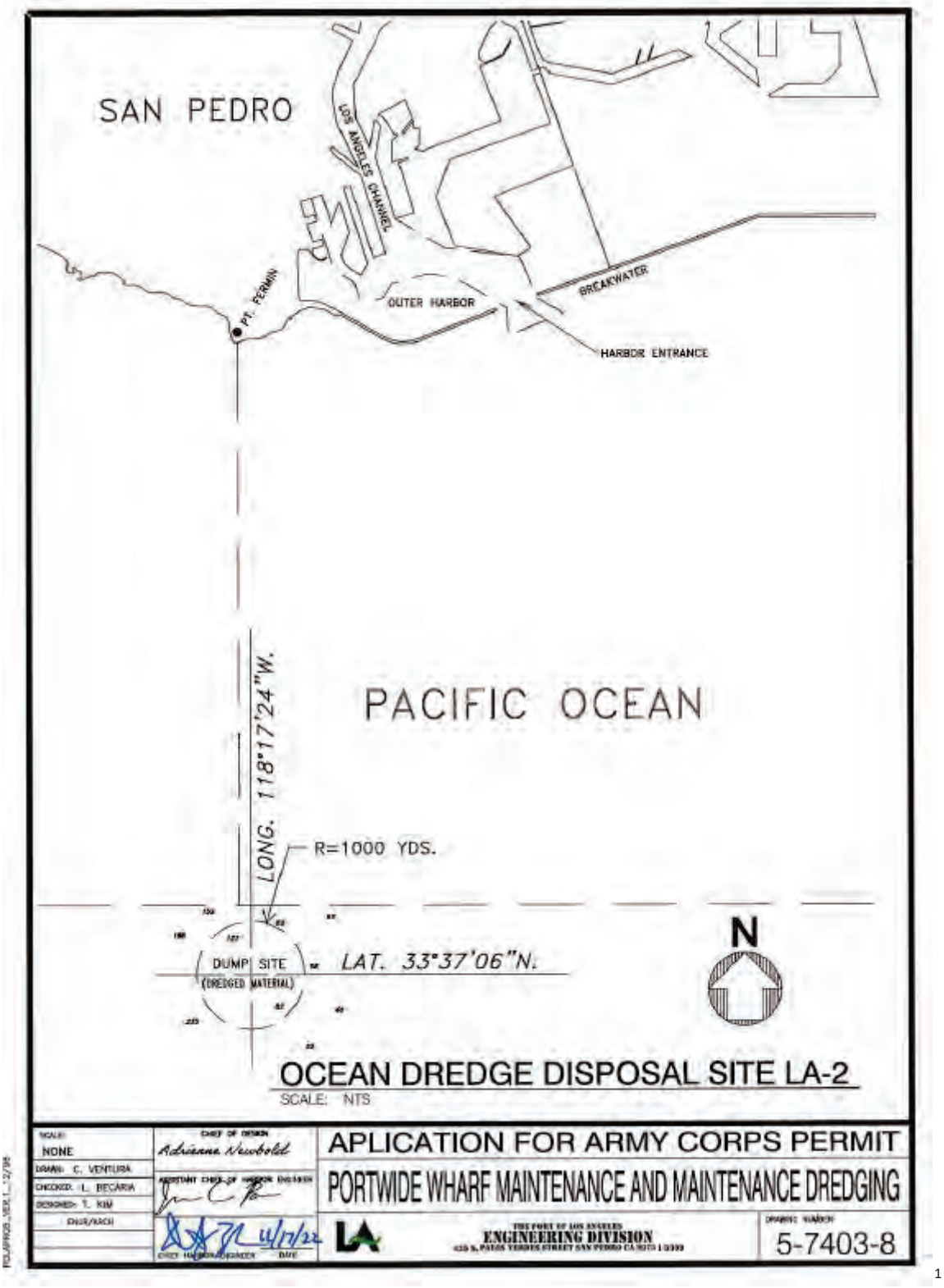
[1]

[1] Port of Los Angeles Typical Seawall and Dike Cross Section



[1]

[1] Port of Los Angeles Berths 243-245 Confined Disposal Facility



[1]

[1] U.S. EPA Ocean Dredge Material Disposal Site LA-2 Location Map (latitude: 33 degrees 37 minutes 06 seconds North / longitude: -118 degrees 17 minutes 24 seconds West)

Los Angeles Regional Water Quality Control Board

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER

Effective Date: September 19, 2023

Program Type: Dredging and Fill/Excavation

Regulatory Measure ID:	452165
Place ID:	887519
WDID:	4WQC40123078
USACOE#:	SPL-2022-00686
R4 File No:	23-078

Project Type: Boating and Navigation

Project: Port of Los Angeles Wharf Maintenance and Maintenance Dredging (Project)

Applicant: Port of Los Angeles

Applicant Contact:
Dina Aryan-Zahlan
Chief Harbor Engineer
Port of Los Angeles
425 S. Palos Verdes Street
San Pedro CA 90731
Phone: (310) 732-3804
Email: Daryan-zahlan@portla.org

Applicant's Agent:
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Civil Engineer
425 S. Palos Verdes Street
San Pedro CA 90731
Phone: (310) 732-3669
Email: lbecaria@portla.org

Water Board Staff:
Emily Duncan
Senior Environmental Scientist
320 W. 4th Street, Suite 200
Los Angeles, CA 90013
Phone: 213-576-6679
Email: Emily.Duncan@waterboards.ca.gov

Water Board Contact Person:
If you have any questions, please call the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) Staff listed above or (213) 576-6600 and ask to speak with the Water Quality Certification and Wetlands Unit Program Manager. When corresponding via email, please include our general email: RB4-401Certification@waterboards.ca.gov.

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Attachment B Signatory Requirements
Attachment C Report and Notification Requirements
Attachment D 40 CFR Part 121.7 Compliance
Attachment E Locations where maintenance repair activities may be conducted

I. Order

This Clean Water Act (CWA) section 401 Water Quality Certification action and Order (Order) is issued at the request of Dina Aryan-Zahlan and the Port of Los Angeles (hereinafter Permittee) for the Project. This Order is for the purpose described in the application and supplemental information submitted by the Permittee. The application was received on April 5, 2023. The application was deemed complete on June 21, 2023.

The Applicant submitted a certification request as defined by 40 CFR section 121.5 concurrently to the Los Angeles Water Board and the U.S. Army Corps of Engineers (Corps) on April 5, 2023. In response to the certification request, the Corps provided a reasonable period of time as defined by 40 CFR 121.6 for the Water Board to act on the request by September 19, 2023.

II. Public Notice

The Los Angeles Water Board provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 from April 7, 2023 to the effective date of the Order. The Los Angeles Water Board did not receive any comments during the comment period.

III. Project Purpose

The purpose of the Project is threefold 1) to maintain the navigable capacity of waterways within the Port; 2) to facilitate routine, in-kind maintenance of marine structures (e.g. wharves, dikes, and bulkheads); and 3) to beneficially reuse dredged sediment when appropriate.

IV. Project Description

The Port of Los Angeles has previously been authorized maintenance dredging under Order No. R4-2018-0139 (File No. 16-135) and maintenance wharf repairs under CWA section 401 Water Quality Certification, 4WQC40117135 (File No. 17-135). The maintenance dredging permit allowed for up to 150,000 cubic yards (cy) of sediment annually, not to exceed 750,000 cy over the 5-year period. The wharf repairs permit allowed for structural maintenance and repair activities within the harbor for all berths and areas listed in the certification. This certification will authorize POLA to conduct both activities (dredging and wharf repairs) in one 10-year certification.

Maintenance Dredging

The Port of Los Angeles will dredge up to a maximum of 150,000 cubic yards per calendar year for a total maximum volume of 1,500,000 cubic yards over a 10-year period from all the berth areas in the Los Angeles Harbor that may require maintenance. Dredging will be accomplished through use of a clamshell dredge (barge mounted, or by bucket from the shore or wharf) and knockdown dredging.

The disposal options for each dredging project will be dictated by the quality of the dredged material as indicated by a sediment characterization study and will be determined by the Southern California Dredged Material Management Team (SCDMMT), which includes, but is not limited to, the Los Angeles Water Board, the California Coastal Commission, the USEPA and the Corps. A sediment characterization study typically consists of sediment sample collection, grain size analysis, chemical analysis (including sediment chemistry, tissue chemistry and elutriate testing), and biological testing (including solid and suspended particulate phase toxicity testing, and bioaccumulation potential analysis) as outlined in regulatory guidance documents, such as *Evaluation of Dredged Material Proposed for Ocean disposal,* also known as the “Green Book” (USEPA and USACE, 1991) and the *Inland Testing Manual* (USEPA and USACE, 1998). However, the requirements for specific analysis or testing are usually driven by the proposed disposal option. For example, biological testing is

normally required when the dredged material is proposed to be disposed of at an ocean disposal site, a temporary aquatic storage site, or a confined aquatic disposal (CAD) site. If the dredged material is deemed suitable for ocean disposal, the material will be disposed of at the offshore LA-2 ocean disposal site. The LA-2 ocean disposal site is a USEPA designated site that is currently managed at an annual disposal capacity of 1 million cubic yards for the ocean disposal of dredged material from the Los Angeles County and Orange County regions. The site is located approximately 6.8 miles offshore from the entrance to the Port of Los Angeles in federal waters. If the dredged material is deemed unsuitable for ocean disposal, the material will be disposed of within the Berths 243-245 Confirmed Disposal Facility (CDF) located within Los Angeles Harbor, or at another suitable land disposal site deemed appropriate by the SCDMMT. Maintenance dredge materials in the Los Angeles Harbor are typically composed of fine silts and clays, with generally no more than 25% sand. However, should testing indicate that the dredged material is composed of at least 80% sand and deemed suitable to beach nourishment, the material will be disposed of at Outer Cabrillo Beach as another disposal option.

The Port of Los Angeles will conduct a sediment characterization study prior to proposed maintenance dredging operations for evaluation of the suitability of the material for beneficial re-use and selection of a suitable disposal alternative. A sampling and Analysis Plan (SAP) for each sediment characterization study will be submitted to the SCDMMT for approval. A Sampling and Analysis Report (SAR) for each sediment characterization study will be presented to and discussed at the SCDMMT meetings, where the disposal options of the dredged material will be determined. The Port of Los Angeles shall submit all documents to the Los Angeles Water Board for staff review prior to each dredging event.

The Port of Los Angeles may use ‘knockdown’ dredging to supplement routine maintenance dredging. Within the port, there are times when the prop wash from the large propellers of commercial vessels creates isolated high spots near the berths. These localized high spots usually consist of less than one to two feet of accumulated sediment, often very close to the edge of the wharf and spread over a wide area. To address these localized high spots, “knockdown” dredging is a commonly used. It involves the leveling or spreading of shoaled or mounded material to maintain waterway depths, rather than the direct removal of material from the waterway. This activity typically involves employing an I-beam or other similar equipment which is towed by a boat across a shoal or mound in order to redistribute the sediment into adjacent deeper areas within the project area. This equipment can be mobilized more quickly and much more inexpensively than normal dredging equipment. The option to use “knockdown” dredging or grading of underwater shoals to supplement routine maintenance dredging activities would provide the Port of Los Angeles with a more efficient, cost-effective means to deal with localized shoaling events while maintaining the safe navigation and berthing of vessels.

In addition to using a drag beam- an I-beam, rake, cutting edge, or similar fixed object, the Port of Los Angeles may use another “knockdown” dredging technique using a clamshell bucket or excavator to sweep the bottom surface to knock down high spots. This method would be used to remove high spots near piles or other wharf structures where the use of a drag beam is not feasible. A clamshell bucket, excavator or similar equipment also may be used to collect and move shoaled material near the bottom (without lifting out of the water column) for placement in a lower nearby area within the approved project boundary.

Small knockdowns can reduce the need for and frequency of maintenance dredging and may have fewer environmental effects than traditional dredging (less turbidity is produced by knockdowns,

since sediments remain localized near the bottom, rather than being raised through the water column and removed at the surface as is the cased with dredging, which can generate large turbidity plumes). In addition, since the knockdown process simply redistributes shoaled or mounded material within the normal dredging footprint of a berth, the material would be removed in the future when full dredging is required.

The Port of Los Angeles will also conduct a pre-knockdown study prior to each knockdown dredging operation to assess the quality of the sediments. A SAP for each pre-knockdown study will be submitted to the SCDMMT for approval. For each pre-knockdown study, the Port of Los Angeles proposes to collect one sample per 500 linear feet of knockdown area along a wharf face and per 250 feet offshore. Elutriate testing will be performed for each sample. A SAR for each pre-knockdown study will also be presented to and discussed at the SCDMMT monthly meetings, where the scope of the knockdown operation will be approved. No receiving water monitoring will be required during knockdown dredging since the limited magnitude (less than 2000 cubic yards) and short duration of the activity is not expected to produce adverse water quality impacts. The Port of Los Angeles has proposed several criteria and guidelines that must be met to use “knockdown” dredging: 1) limited to a maximum of 15,000 cubic yards of material per year; 2) total volume for each event limited to a maximum of 2,000 cubic yards; and 3) cannot be performed in the same area more than once per year. POLA shall submit documents to the Los Angeles Water Board for staff review and written approval for each knockdown dredging project.

Wharf Maintenance

Wharf maintenance includes scheduled repair, emergency repair, and routine maintenance of existing timber and concrete wharves. Specifically, it includes in-kind replacement of decking, joists, pile caps, marginal beams, bull rails, pile wraps, deteriorated bearing piles made of concrete, timber or steel, fender piles, and other wharf structural members that are damaged and require repair or replacement. Creosote piles will typically be replaced with Ammoniacal Coper Zinc Arsenate (ACZA) treated timber piles. Creosote-treated pilings shall not be placed within the Port of Los Angeles unless all of the following conditions are met: 1) the project involves the repair of existing structures that were originally constructed using wood products; 2) the creosote-treated pilings are wrapped in plastic; 3) measures are taken to prevent damage to plastic wrapping from boat use. Such measures may include installation of rub strips or bumpers; 4) the plastic wrapping is sealed at all joints to prevent leakage; and 5) the plastic material is expected to maintain its integrity for at least ten years, and plastic wrappings that develop holes or leaks must be repaired or replaced in a timely manner by the permittee.

Also, the wharf maintenance program includes the repair of damaged seawalls to the original condition and restoration of eroded revetment or rock dike by placing new, clean riprap over existing eroded dike in order to stabilize or protect existing dike. The slope of the new fill will match the original design slope and elevations.

Repairs will be conducted as the need arises. Based on previous wharf maintenance, it is estimated that the maximum cumulative project area will be approximately 14.96 acres. This area was calculated by calculating the average in-water work area next to the wharf (0.17 acres) and multiplying that by the number of projects in 10 years (88 projects). The area also includes the project area of possible dike and seawall repairs that may be performed over the water.

V. Project Location

The project is located in the Port of Los Angeles. Maps and Figures showing the Project location are found in Attachment A of this Order. Specific locations within the Port of Los Angeles where maintenance may be conducted are listed in Attachment E of this Order.

VI. Project Impact and Receiving Waters Information

The Project is located within the jurisdiction of the Los Angeles Water Board. Receiving waters and groundwater potentially impacted by this Project are protected in accordance with the applicable water quality control plan (Basin Plan) for the region and other plans and policies which may be accessed online at: http://www.waterboards.ca.gov/plans_policies/. The Basin Plan includes water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies.

It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet contaminant levels designed to protect human health and ensure that water is safe for domestic use.

Receiving Water:	Los Angeles – Long Beach Harbors: Outer Harbor and All Other Inner Areas (Hydrologic Unit Code: 180701060703)
Designated Beneficial Uses:	IND, NAV, POW, REC-1, REC-2, COMM, MAR, RARE, SHELL

VII. Description of Direct Impacts to Waters of the State

Total Project dredge and fill/excavation quantities for all impacts are summarized in Tables 1 and 2. Permanent impacts are categorized as those resulting in a physical loss in area and also those degrading ecological condition only.

Table 1: Total Project Dredge Quantity

Aquatic Resource Type	Temporary Impact[1]			Permanent Impact					
				Physical Loss of Area			Degradation of Ecological Condition Only		
	Acres	CY[2]	LF	Acres	CY	LF	Acres	CY	LF
Ocean/bay/ estuary		150,000 per year							

Table 2: Total Project Fill/Excavation Quantity

Aquatic	Temporary Impact[3]	Permanent Impact

[1] Includes only temporary direct impacts to waters of the state and does not include upland areas of temporary disturbance which could result in a discharge to waters of the state. Temporary impacts, by definition, are restored to pre-project conditions and therefore do not include a physical loss of area or degradation of ecological condition.

[2] Cubic Yards (CY); Linear Feet (LF)

Table 2: Total Project Fill/Excavation Quantity									
Resource Type				Physical Loss of Area			Degradation of Ecological Condition Only		
	Acres	CY[4]	LF	Acres	CY	LF	Acres	CY	LF
Ocean/bay/ estuary	14.96								

VIII. Avoidance and Minimization

No alternatives analysis is required because the Project has no permanent impacts to aquatic resources and no impacts to rare, threatened or endangered species habitat in waters of the state, wetlands, eelgrass beds, Outstanding National Resources Waters or Areas of Special Biological Significance.

IX. Compensatory Mitigation

No compensatory mitigation was required for impacts because all impacts are temporary in nature and are for routine maintenance activities.

If eelgrass is detected in a survey conducted prior to dredging and/or maintenance activities impacts to eelgrass shall be mitigated in accordance with the California Eelgrass Mitigation Policy (CEMP).

X. California Environmental Quality Act (CEQA)

The Los Angeles Water Board has determined that the Project is exempt from review under CEQA pursuant to California Water Code of Regulations, title 14, section 15061. Specifically, the issuance of this Order and the activities described herein meet the exemption criteria under California Code of Regulations title 14, section(s) 15301 existing facilities, 15302 replacement or reconstruction, or 15304, minor alterations to land. Additionally, the Los Angeles Water Board concludes that no exceptions to the CEQA exemption apply to the activities approved by this Order.

XI. Petitions for Reconsideration

Any person aggrieved by this action may petition the State Water Board to reconsider this Order in accordance with California Code of Regulations, title 23, section 3867. A petition for reconsideration must be submitted in writing and received within 30 calendar days of the issuance of this Order.

XII. Fees Received

The fee amount for the proposed project has been determined as required by California Code of Regulations, title 23, sections 3833(b)(3) and 2200(a)(3), and was calculated as Fill and Excavation Discharges and Dredging Discharges, with the dredge and fill fee calculator.

(footnote continued from previous page)

[3] Includes only temporary direct impacts to waters of the state and does not include upland areas of temporary disturbance which could result in a discharge to waters of the state.

[4] Cubic Yards (CY); Linear Feet (LF)

Table 3: Record of Fees Received		
Date Received	**Check No.**	**Amount**
June 2, 2023	**0301283094**	**$2,734.00**
		$234,456 (not received at time of Order issuance)
	Total	

XIII. Findings

1. This Order is adopted pursuant to section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (Cal. Water Code § § 13000, et seq.). Discharges to waters of the state are prohibited except when in accordance with Water Code section 13264. Notwithstanding any determinations made by the U.S. Army Corps or other federal agency pursuant to 40 C.F.R. section 121.9, dischargers must comply with the entirety of this Order because the Order also serves as waste discharge requirements in accordance with State Water Board Water Quality General Order No. 2003-0017-DWQ.

2. Failure to comply with any condition of this Order shall constitute a violation of the Porter-Cologne Water Quality Control and the Clean Water Act. The Permittee and/or discharger may then be subject to administrative and/or civil liability pursuant to Water Code section 13385.

3. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law.

4. In response to a suspected violation of any condition of this Order, the Water Board may require the holder of this Order to furnish, under penalty of perjury, any technical or monitoring reports the Water Boards deem appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The additional monitoring requirements ensure that permitted discharges and activities comport with any applicable effluent limitations, water quality standards, and/or other appropriate requirement of state law.

5. This Order and all of its conditions contained herein continue to have full force and effect regardless of the expiration or revocation of any federal license or permit issued for the Project.

6. This Order does not provide coverage under the Construction General Permit. As applicable, dischargers shall maintain compliance with conditions described in, and required by, the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-009-DWQ; NPDES No. CAS000002 as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, and any amendments thereto) (General Construction Permit). Enrollment in the Construction General Permit may be required for construction activity resulting in a land disturbance of one acre or more, or less than one acre but part of a larger common plan of development or sale. For projects with ground disturbing activities that require enrollment in the Construction General Permit, dischargers shall maintain compliance with conditions described in, and required by the Permit. For ground disturbing activities that do

not require enrollment in Order No. 2009-0009-DWQ, project plans included with the application shall include appropriate erosion and sediment control measures as described in the *Best Management Practices* Section (Stormwater subsection) below.

7. This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & Wildlife Code, sections 2050-2097) or the federal Endangered Species Act (16 U.S.C. sections 1531-1544). If a "take" will result from any act authorized under this Order held by the discharger, the discharger must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The discharger is responsible for meeting all requirements of the applicable endangered species act for the Project authorized under this Order.

8. This Order includes monitoring and reporting requirements pursuant to Water Code section 13267. The burden of preparing these reports, including costs, are reasonable to the need and benefits of obtaining the reports. The reports confirm that the best management practices required under this Order are sufficient to protect beneficial uses and water quality objectives. The reports related to accidental discharges also ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges can be taken as soon as possible. The anticipated costs are minimal as the reporting obligations require only visual monitoring, in-field measurements, and notification reporting.

XIV. Conditions

The Los Angeles Water Board has independently reviewed the record of the Project to analyze impacts to water quality and designated beneficial uses within the watershed of the Project. In accordance with this Order, the Permittee may proceed with the Project under the following terms and conditions. This Order provides reasonable assurance that the Project authorized under this Order will comply with state and federally approved water quality requirements, provided that the following conditions are adhered to.

A. Authorization

Impacts to waters of the state shall not exceed quantities shown in Tables 1 and 2.

B. Reporting and Notification Requirements

Requirements for the content of these reporting and notification types are detailed in Attachment C, including specifications for photo and map documentation during the Project. Written reports and notifications must be submitted using the Reporting and Notification Cover Sheet located in Attachment C, which must be signed by the Permittee or an authorized representative.

1. Project Reporting

a. Annual Reporting: The Permittee shall submit an Annual Report each year by December 31st. Annual Reporting requirements are detailed in Attachment C. Annual reporting shall continue until a Notice of Project Complete Letter is issued to the Permittee.

2. Project Status Notifications

a. Commencement of Construction: The Permittee shall submit a Commencement of Construction Report at least seven (7) days prior to start of initial ground disturbance activities.

b. Notice of Completion of an Eelgrass Survey: The Permittee shall submit an eelgrass survey per the California Eelgrass Mitigation Policy (CEMP) that will be conducted at a maximum of sixty (60) days prior to the commencement of in water construction activities. The survey will be reviewed by Los Angeles Water Board staff within two weeks following submission. The Permittee shall not begin construction before approval of the eelgrass survey by the Los Angeles Regional Water Board.

c. Request for Notice of Completion of Discharges Letter: The Permittee shall submit a Request for Notice of Completion of Discharges Letter following completion of active Project construction activities, including any required restoration and permittee-responsible mitigation. This request shall be submitted to Los Angeles Water Board staff within thirty (30) days following completion of all Project construction activities. Upon acceptance of the request, Los Angeles Water Board staff shall issue a Notice of Completion of Discharges Letter to the Permittee, which will end the active discharge period and associated annual fees.

d. Request for Notice of Project Complete Letter: The Permittee shall submit a Request for Notice of Project Complete Letter when construction and/or any post-construction monitoring is complete,[5] and no further Project activities will occur. This request shall be submitted to Los Angeles Water Board staff within thirty (30) days following completion of all Project activities. Upon approval of the request, Los Angeles Water Board staff shall issue a Notice of Project Complete Letter to the Permittee which will end the post discharge monitoring period and associated annual fees.

3. Conditional Notifications and Reports: The following notifications and reports are required as appropriate.

a. Accidental Discharges of Hazardous Materials[6]

Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Wat. Code, § 13271):

i. As soon as (A) the Permittee has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:
- first call – 911 (to notify local response agency)
- then call – Office of Emergency Services (OES) State Warning Center at:

[5] Completion of post-construction monitoring shall be determined by Los Angeles Water Board staff and shall be contingent on successful attainment of restoration and mitigation performance criteria.

[6] "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (Health & Saf. Code, § 25501.)

(800) 852-7550 or (916) 845-8911
Lastly, follow the required OES procedures as set forth in the Office of Emergency Services' Accidental Discharge Notification Web Page (https://www.caloes.ca.gov/office-of-the-director/operations/response-operations/fire-rescue/hazardous-materials/spill-release-reporting/)

ii. Following notification to OES, the Permittee shall notify the Los Angeles Water Board, as soon as practicable (ideally within 24 hours). Notification may be via telephone, e-mail, or delivered written notice.

iii. Within five (5) working days of notification to the Los Angeles Water Board, the Permittee must submit an Accidental Discharge of Hazardous Material Report.

b. Violation of Compliance with Water Quality Standards: The Permittee shall notify the Los Angeles Water Board of any event causing a violation of compliance with water quality standards. Notification may be via telephone, e-mail, or delivered written notice.

i. Examples of noncompliance events include: lack of any reporting in a timely manner, lack of storm water treatment following a rain event, discharges causing a visible plume in a water of the state, water contact with uncured concrete, and exceedances of limits for the analytes for *In-Water Work or Diversions* listed below.

ii. This notification must be followed within three (3) working days by submission of a Violation of Compliance with Water Quality Standards Report.

c. In-Water Work or Diversion

i. During in-water work, water quality monitoring shall be conducted. Requirements for water quality monitoring are below.

d. Modifications to Project: Project modifications may require an amendment of this Order. The Permittee shall give advance notice to Los Angeles Water Board staff if Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority by submitting a Modifications to Project Report. The Permittee shall inform Los Angeles Water Board staff of any Project modifications that will interfere with the Permittee's compliance with this Order.

e. Transfer of Property Ownership: This Order is not transferable in its entirety or in part to any person or organization except after receiving certification for the Project from the Los Angeles Water Board. In addition:

i. The Permittee must notify the Los Angeles Water Board of any change in ownership or interest in ownership of the Project area by submitting a Transfer of Property Ownership Report. The Permittee and purchaser must sign and date the notification and provide such notification to the Los Angeles Water Board at least 30 days prior to the transfer of ownership.

ii. Until such time as a new Order has been issued, the Permittee shall continue to be responsible for all requirements set forth in this Order.

f. Transfer of Long-Term BMP Maintenance: If maintenance responsibility for post-construction BMPs such as debris basins is legally transferred, the Permittee must submit to the Los Angeles Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer or designer specifications. The Permittee must provide such notification to the Los Angeles Water Board with a Transfer of Long-Term BMP Maintenance Report at least 10 days prior to the transfer of BMP maintenance responsibility.

C. Water Quality Monitoring

1. **General:** If surface water is present, continuous visual surface water monitoring shall be conducted to detect accidental discharge of construction related pollutants (e.g., oil and grease, turbidity plume, or uncured concrete).

2. **Accidental Discharges/Noncompliance:** Upon occurrence of an accidental discharge of hazardous materials or a violation of compliance with a water quality standard, Los Angeles Water Board staff may require water quality monitoring based on the discharge constituents and/or related water quality objectives and beneficial uses.

3. **In-Water Work or Diversions:**

   During planned work in water, any discharge(s) to waters of the state shall conform to the following water quality standards:

   a. Oil and Grease. Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

   b. Dissolved Oxygen. At a minimum, the mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5.0 mg/L, except when natural conditions cause lesser concentrations.

   For that area known as the Outer Harbor area of Los Angeles-Long Beach Harbors, the mean annual dissolved oxygen concentrations shall be 6.0 mg/L or greater, provided that no single determination shall be less than 5.0 mg/L

   c. pH. The pH of bays or estuaries shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.2 units from natural conditions as a result of waste discharge.

   d. Turbidity. Downstream TSS shall be maintained at ambient levels. Where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 20%. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.

Water quality monitoring is required for all maintenance dredging projects and wharf maintenance projects involving the removal or replacement of 10 or more piles. Sampling shall be conducted in accordance with Table 4 sampling parameters.[7]

Table 4: Sample Type and Frequency Requirements

Parameter	Unit of Measurement	Type of Sample	Minimum Frequency
Oil and Grease	N/A	Visual	Continuous
Dissolved Oxygen	mg/L	Grab or CTD	Daily for the first week, weekly, thereafter
pH	Standard Units	Grab or CTD	Daily for the first week, weekly, thereafter
Turbidity	% light transmittance	Grab or CTD	Daily for the first week, weekly, thereafter
Temperature	°F (or as °C)	Grab or CTD	Daily for the first week, weekly, thereafter

A reference station shall be established outside of the project influence, at least 300 feet from the Project Boundary. The Reference station is to be monitored concurrently with project station monitoring. Project station sampling shall take place at a minimum of two locations. Project station data will be compared to reference station data to determine compliance for water quality parameters (4 locations total). Results of the analyses shall be submitted to this Regional Board by the 15th day of each subsequent sampling month. A map or drawing indicating the locations of sampling points shall be included with each submittal. A summary of results shall discuss the analysis and compliance. Every measurement not meeting the compliance limits shall be accompanied by an explanation, the actions taken to correct the degradation to waters, and addressed in *Violation of Compliance with Water Quality Standards* report described above.

D. Standard Conditions

1. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330, and California Code of Regulations, title 23, chapter 28, Article 6 commencing with sections 3867-3869, inclusive. Additionally, the Los Angeles Water Board reserves the right to suspend, cancel, or modify and reissue this Order, after providing notice to the Permittee, if the Los Angeles Water Board determines that: the Project fails to comply with any of the conditions of this Order; or, when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, §

[7] Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant, the method shall be approved by Los Angeles Water Board staff. Grab samples shall be taken between the surface and mid-depth and not be collected at the same time each day to get a complete representation of variations in the receiving water. Measurements with a Conductivity, Temperature and Depth (CTD) tool shall be taken throughout the water column, at a minimum of 2-meter increments An average of surface to mid-depth readings shall be reported. A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring shall be maintained onsite.

13000 et seq.) or federal Clean Water Act section 303 (33 U.S.C. § 1313). For purposes of Clean Water Act section 401(d), the condition constitutes a limitation necessary to assure compliance with water quality standards and appropriate requirements of state law.

2. This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to subsection 3855(b) of chapter 28, title 23 of the California Code of Regulations, and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. This Order is conditioned upon total payment of any fee required under title 23 of the California Code of Regulations and owed by the Permittee.

E. General Compliance

1. Permitted actions must not cause a violation of any applicable water quality standards, including impairment of designated beneficial uses for receiving waters as adopted in the Basin Plans by any applicable Los Angeles Water Board or any applicable State Water Board (collectively Water Boards) water quality control plan or policy. The source of any such discharge must be eliminated as soon as practicable.

2. Authorization under this Order is granted based on the application information submitted, including engineering plans, specifications, and technical reports. Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order.

F. Administrative

1. Signatory requirements for all document submittals required by this Order are presented in Attachment B of this Order.

2. The Permittee shall grant Los Angeles Water Board staff, or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:

    1. Enter upon the Project or compensatory mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records are kept.
    2. Have access to and copy any records that are kept and are relevant to the Project or the requirements of this Order.
    3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.
    4. Sample or monitor for the purposes of assuring Order compliance.

3. A copy of this Order shall be provided to any consultants, contractors, and subcontractors working on the Project. Copies of this Order shall remain at the Project site for the duration of this Order. The Permittee shall be responsible for work conducted by its consultants, contractors, and any subcontractors.

4. A copy of this Order must be available at the Project site(s) during construction for review by site personnel and agencies. All personnel performing work on the Project shall be familiar with the content of this Order and its posted location at the Project site.

5. This Order shall expire ten (10) years from date of this Order. The Applicant shall submit a complete application at least 90 days prior to termination of this Order if renewal is requested.

G. Best Management Practices

1. Dredging

a. BMPs shall be implemented to minimize the suspension of sediments and disturbance of the substrate when performing maintenance dredging and structure maintenance. Appropriate BMPs shall be implemented for individual maintenance projects and could include measures such as use of silt curtains and floating booms, adjustment of dredge bucket cycle time, preventing overflow of sediment from barges, avoiding overdredging, and containing and removing construction debris from the project area promptly.

b. Sediments shall be sampled and analyzed prior to dredging activities and presented to the Southern California Dredged Material Management Team to determine the suitability of the proposed placement site.

2. Site Management

a. Earth, construction materials, sediments, trash, construction-related wastes, other potential pollutants, or stockpiles of these materials shall not be transported by wind or blower.

b. Concrete waste shall be retained on-site until they can be appropriately disposed or recycled.

c. On-site washout shall be allowed only in designated areas away from drains, ditches, and streets.

d. Trash and construction-related solid waste shall be deposited in covered receptacles.

e. Tracking of sediment and other materials from the site by vehicle traffic shall be prevented.

f. Construction entrance roadways shall be stabilized to inhibit sediments from being deposited into the public ways.

g. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the Project site.

h. Containment booms shall be installed within the construction area during removal of existing decking, piles and other structural members.

3. Hazardous Materials

a. BMPs shall be implemented for the placement of creosote treated piles, including wrapping them in plastic.

4. In-Water Work

a. In water sound level monitoring shall be conducted during pile driving of steel piles.

b. A vibratory hammer shall be used to the maximum extent feasible with impact hammers used only if required for final pile driving.

c. Hydrojet installation of piles shall only be used in specific situations, these situations may include repairs of damaged concrete piles over water.

d. To reduce underwater noise during timber pile extractions, direct pull and vibratory methods shall be used.

e. Underwater noise dampening measures for pile driving, such as noise dampening wooden blocks, air bubble curtains, or coffer dams shall be used as applicable.

5. Wildlife and Special Status Species

a. For all projects in water shallower than -15 feet Mean Lower Low Water, and wharf maintenance projects involving the repair, removal, or replacement of 10 or more piles in the front waterside half of the wharf where light conditions allow for eelgrass growth, a pre-project eelgrass survey shall be conducted in accordance with the CEMP. If eelgrass is found within the project vicinity, a post-project survey shall be conducted and impacts to eelgrass shall be mitigated per the CEMP.

b. If work is performed within 500 feet of a California least tern nesting site, the Port shall provide notification to the appropriate agencies.

6. Stormwater

a. The project shall comply with the local regulations associated with the Los Angeles Water Board's Municipal Stormwater Permit issued to Los Angeles and Ventura County and co-permittees under NPDES No. CAS004004 and Waste Discharge Requirements Order No. R4-2021-0105 or subsequent order or subsequent order.

b. If not enrolled in the General Construction Permit, the Permittee shall develop and implement a site-specific Storm Water Pollution Prevention Plan (SWPPP) and a Rain Event Action Plan (REAP) as described in the General Construction Permit.

H. On-site Mitigation for Temporary Impacts

1. The Permittee shall restore all areas of temporary impacts to waters of the state.

XV. Water Quality Certification

I hereby issue the Order for the Port of Los Angeles Wharf Maintenance and Maintenance Dredging Project, 4WQC40123078 certifying that as long as all of the conditions listed in this Order are met, any discharge from the referenced Project will comply with the applicable provisions of Clean Water Act sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards).

This discharge is also regulated pursuant to State Water Board Water Quality Order No. 2003-0017-DWQ which authorizes this Order to serve as Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.).

Except insofar as may be modified by any preceding conditions, all Order actions are contingent on: (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the conditions of this Order and the attachments to this Order; and, (b) compliance with all applicable requirements of Statewide Water Quality Control Plans and Policies, the Regional Water Boards' Water Quality Control Plans and Policies.

Jenny Newman Digitally signed by Jenny Newman
Date: 2023.09.18 15:47:17 -07'00'
Water Boards

for Susana Arredondo
Executive Officer
Los Angeles Water Quality Control Board

Date

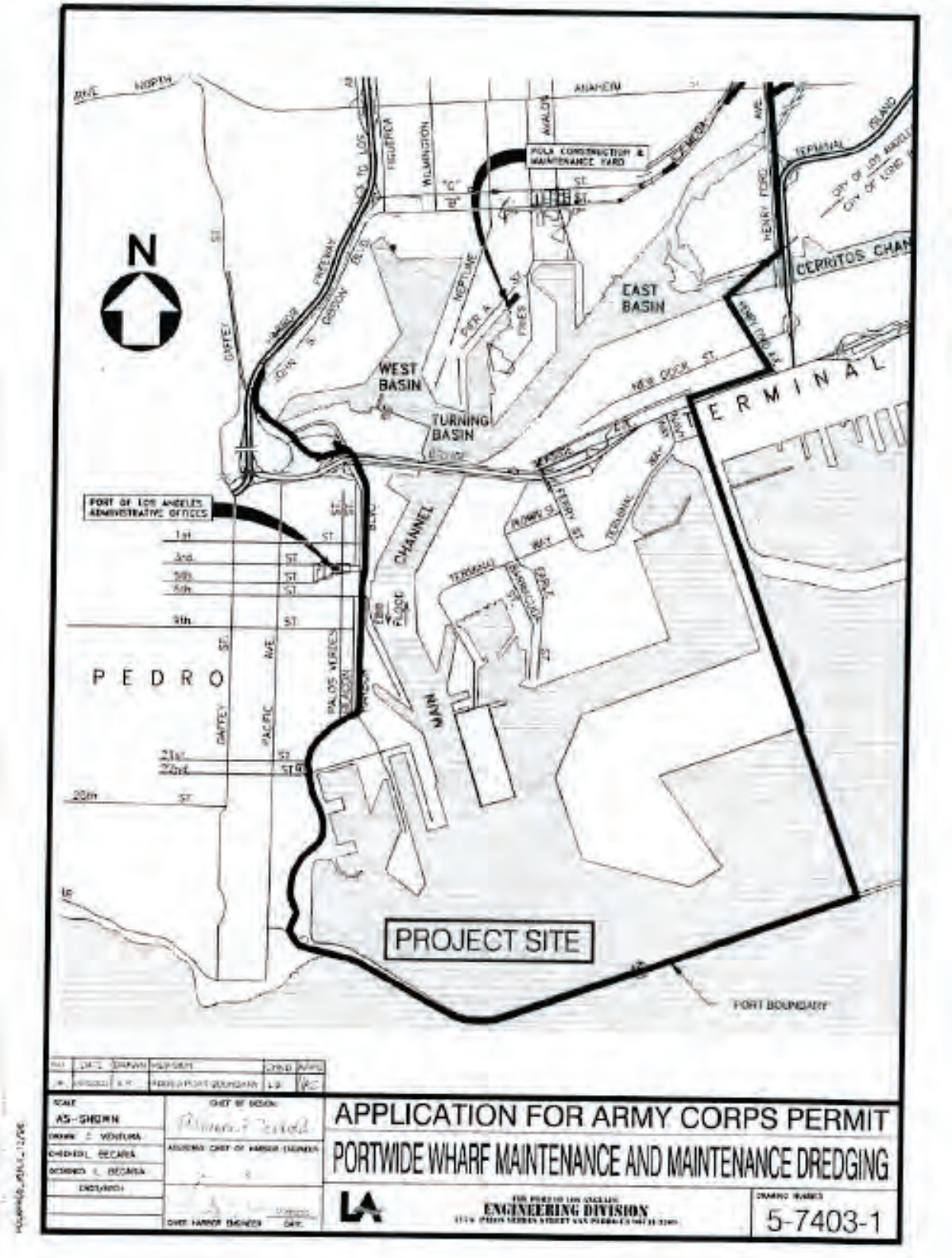


Figure 1: Project site location, Port of Los Angeles, dredging locations.

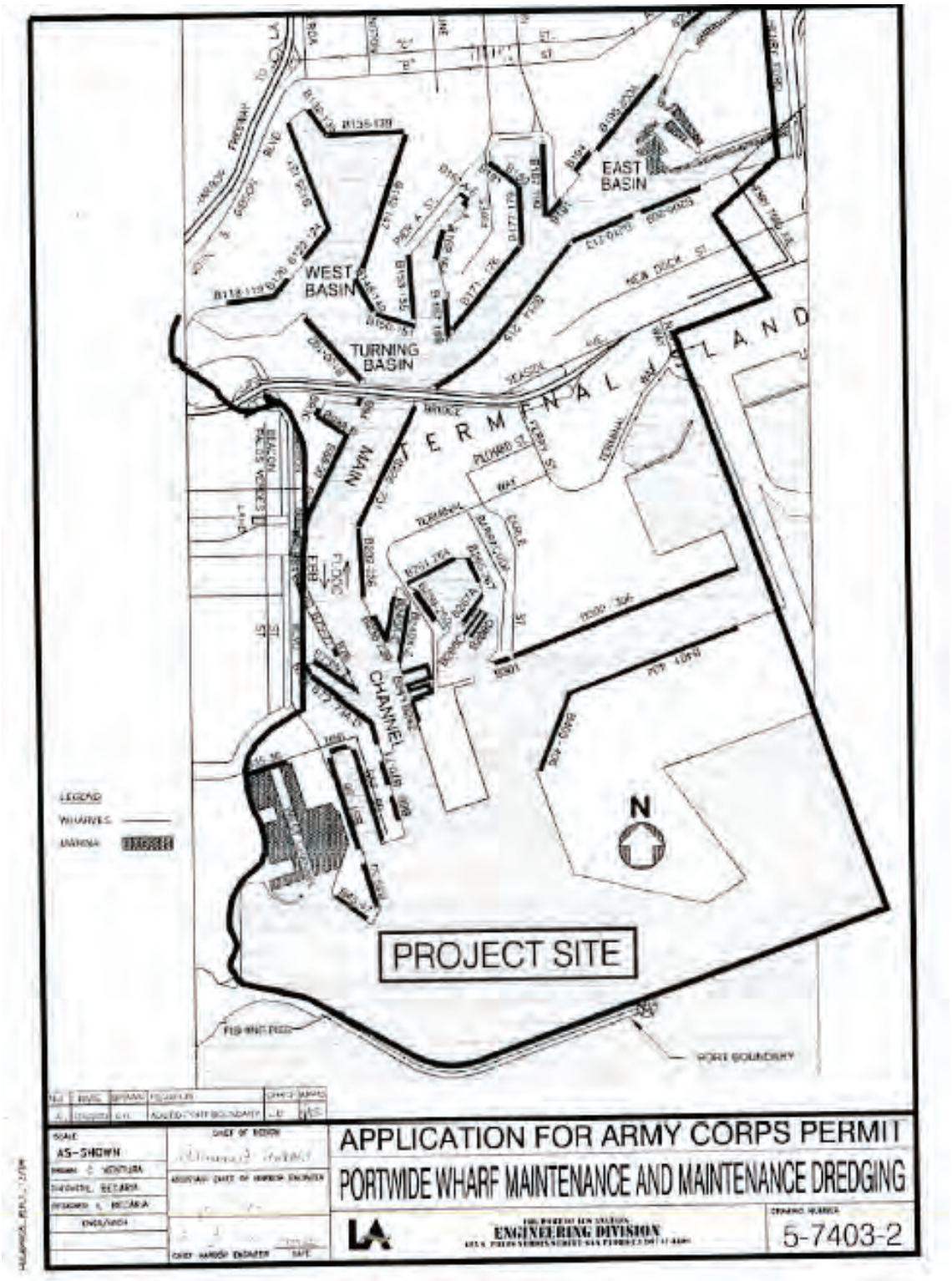


Figure 2. Port Of Los Angeles maintenance project Berth locations.

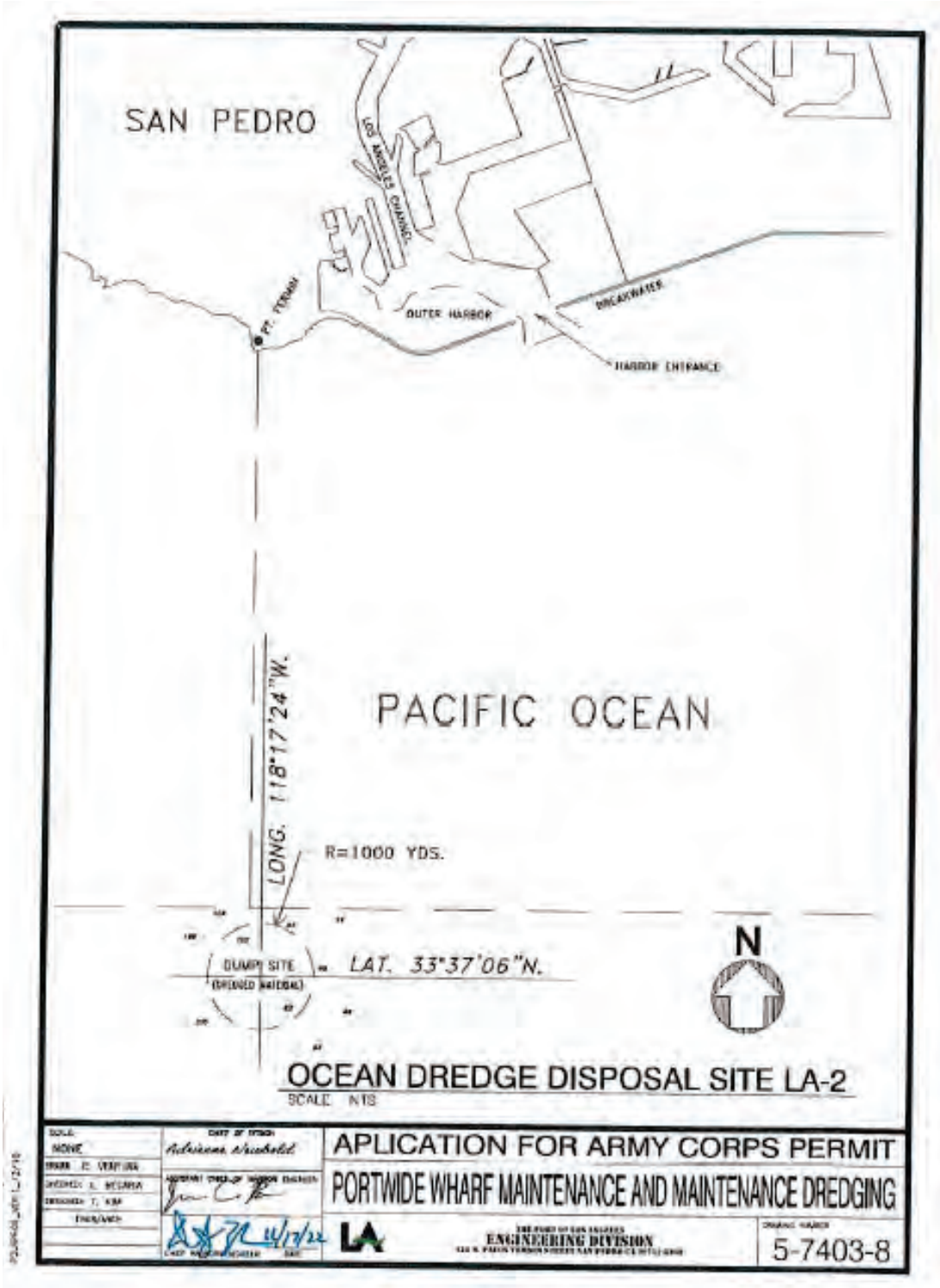


Figure 3. LA-2, ocean dredge disposal site for qualified dredging projects.

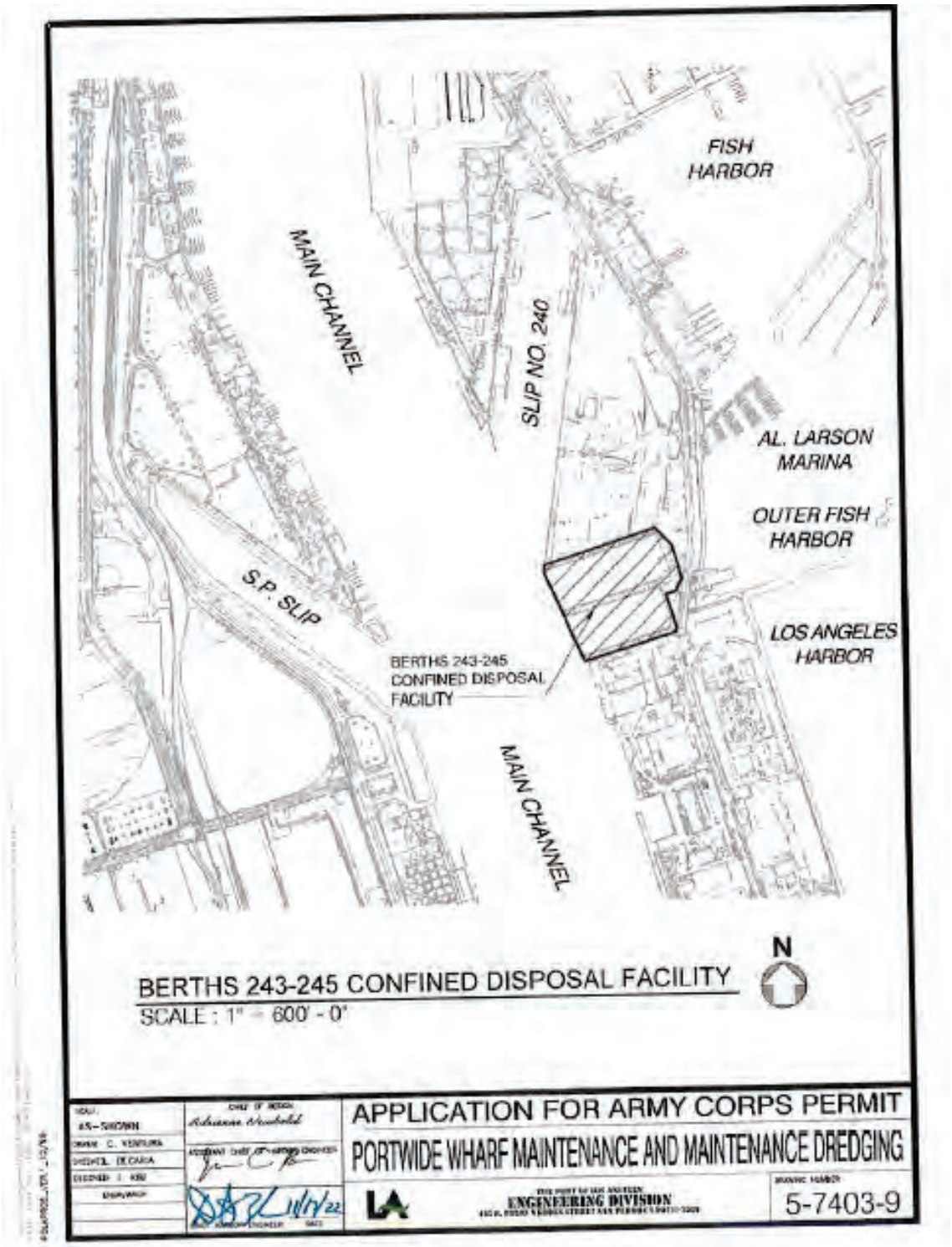


Figure 4. Berths 243-245 Confined Disposal Facility (CDF) dredged material disposal facility.

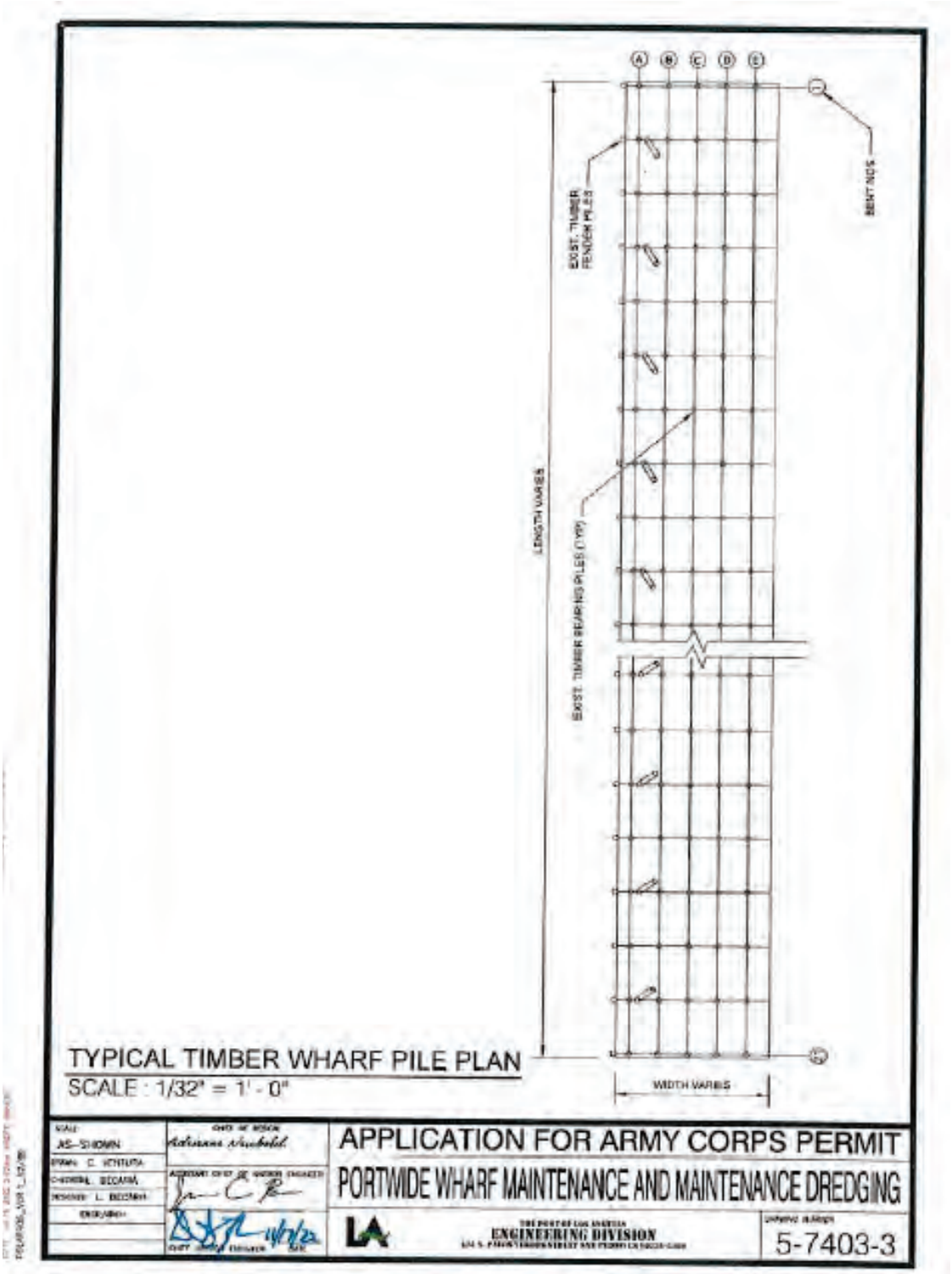


Figure 5. An example of a timber wharf pile that could be replaced under maintenance activities.

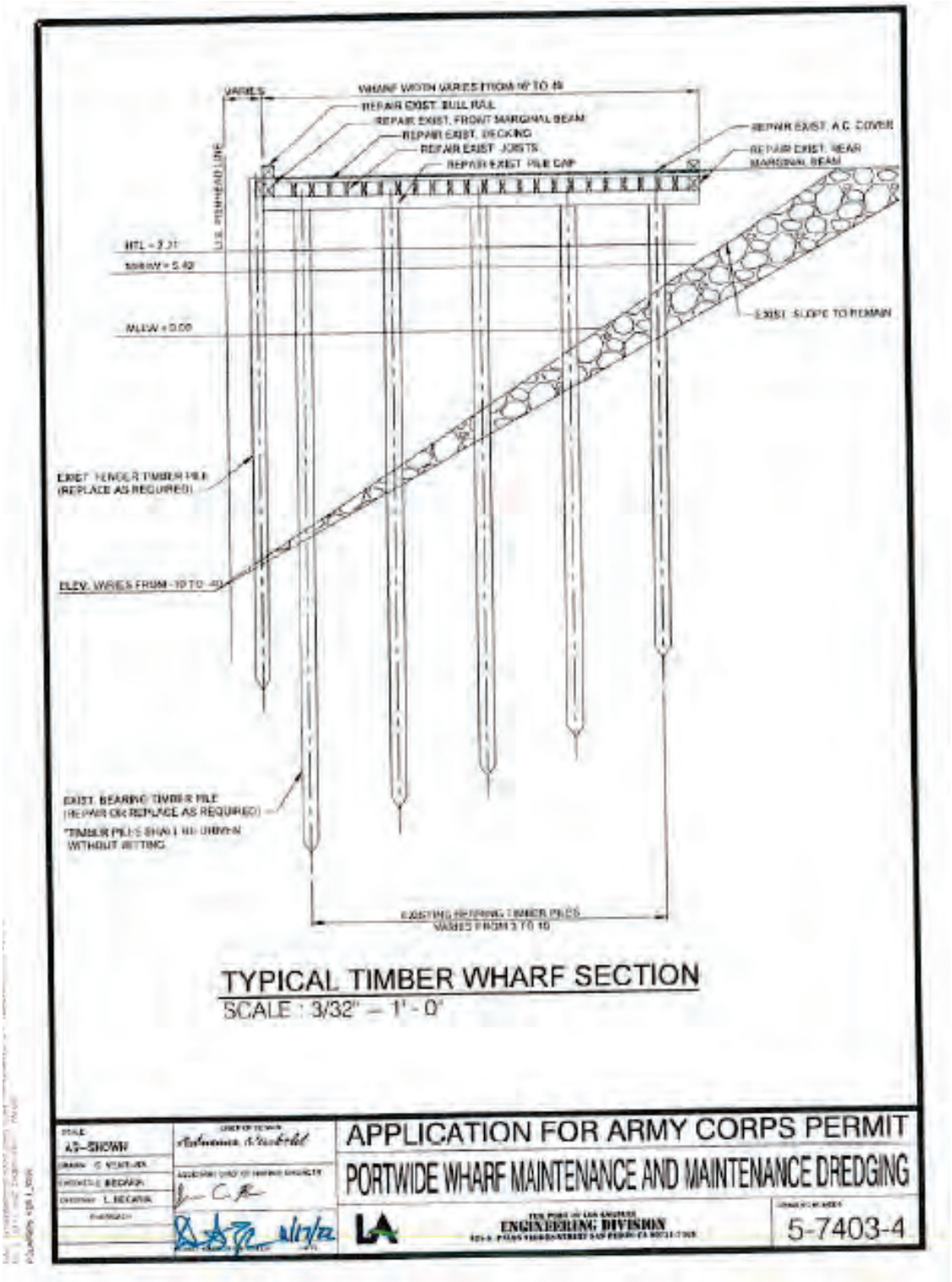


Figure 6. An example of a timber wharf cross section that could be replaced or repaired under maintenance activities.

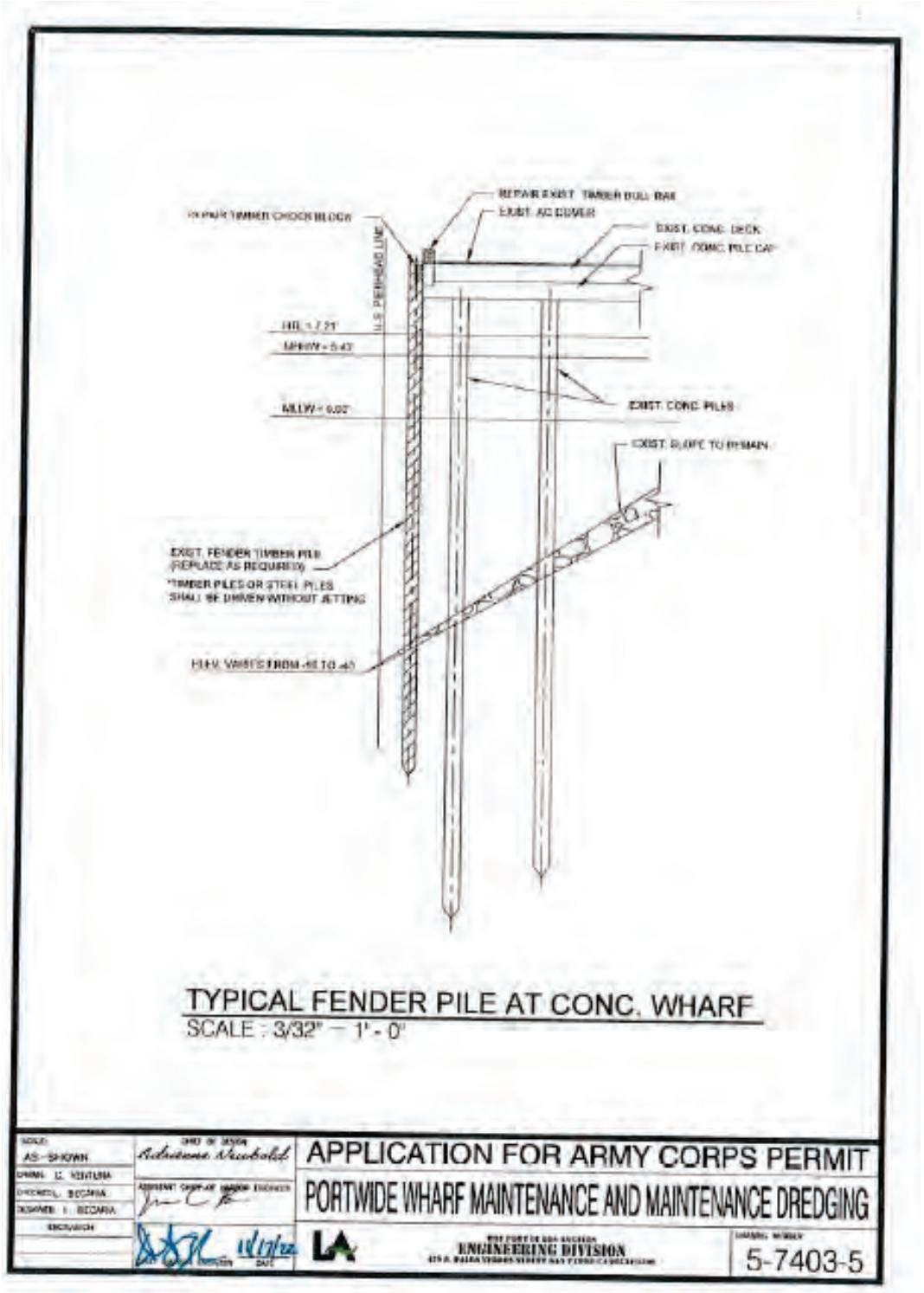


Figure 7. An example of a typical fender pile at a concrete wharf, which could be repaired under maintenance activities.

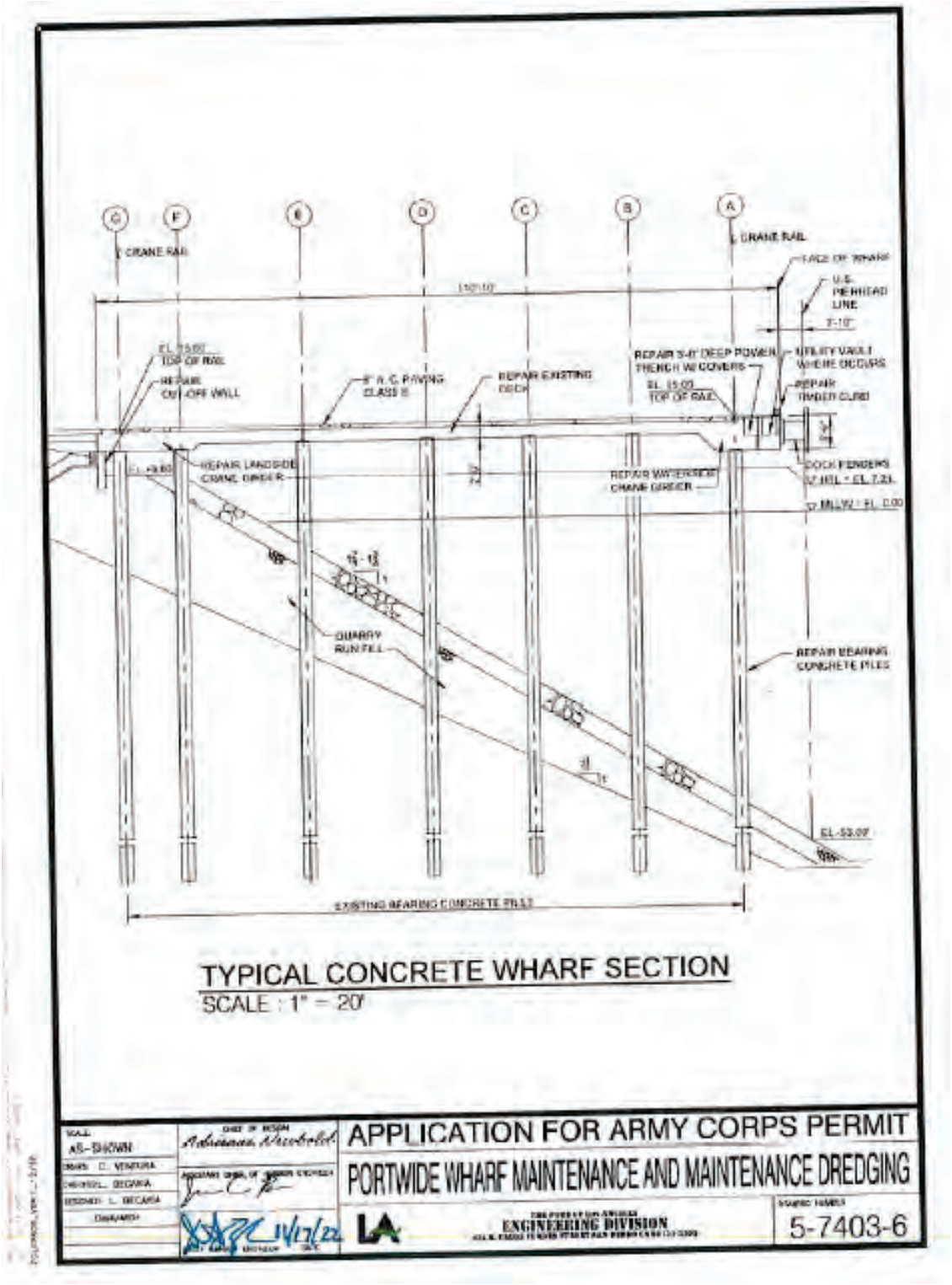


Figure 8. An example of a concrete wharf section, which could be repaired under maintenance activities.

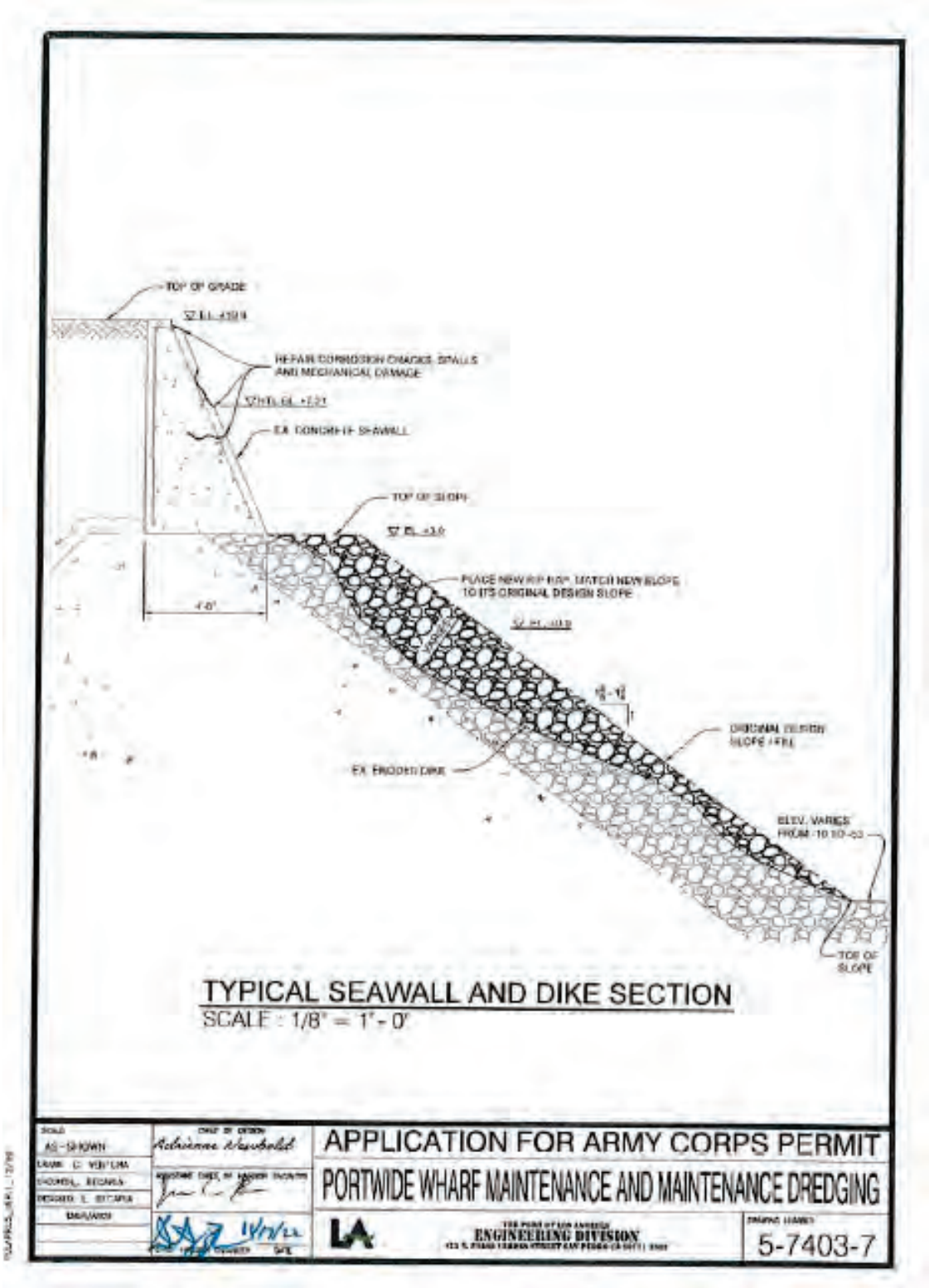


Figure 9. An example of a seawall and dike section, which could be repaired under maintenance activities.

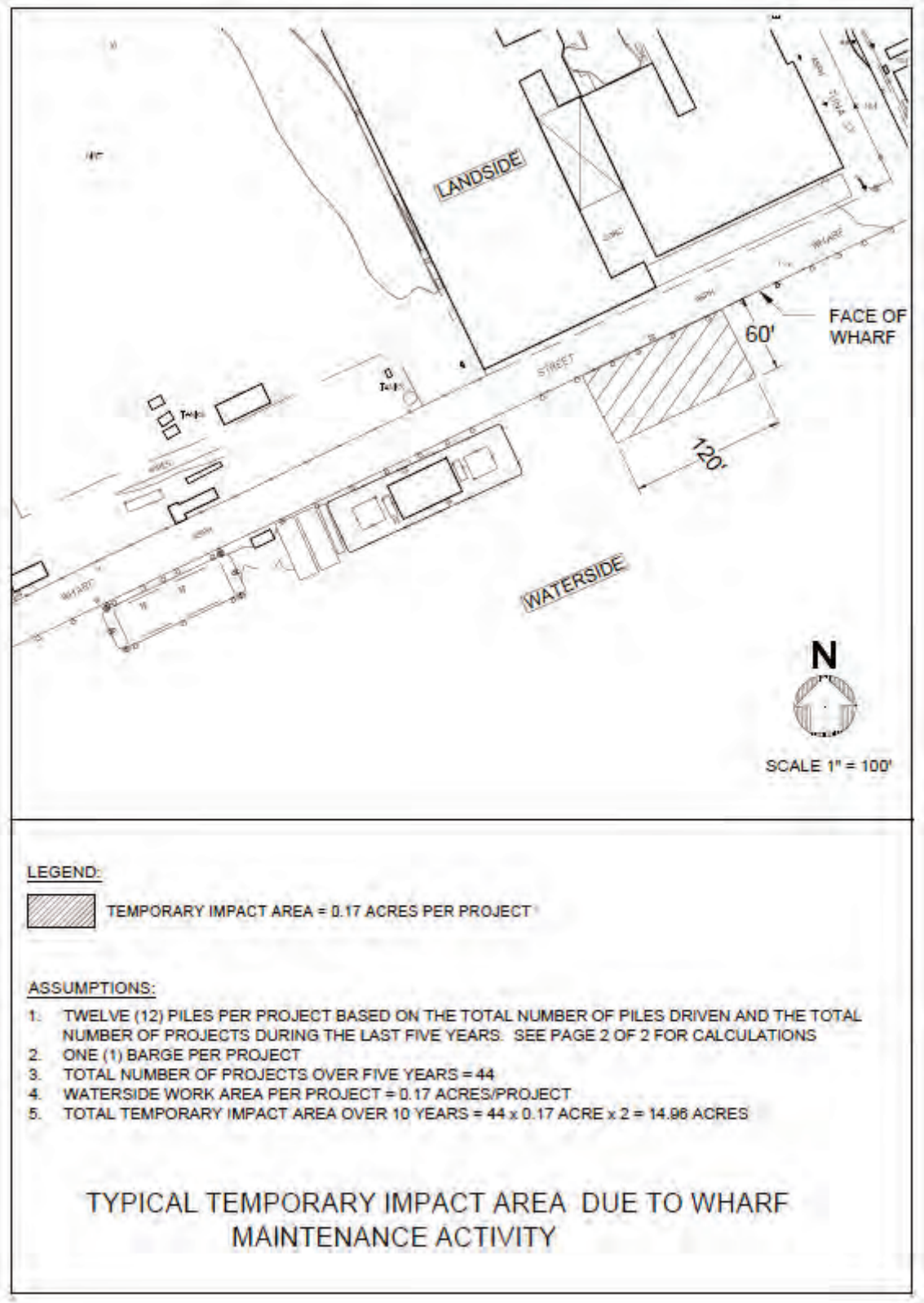


Figure 10. An example of the typical temporary impact area due to wharf maintenance activities.

SIGNATORY REQUIREMENTS

All Documents Submitted In Compliance With This Order
Shall Meet The Following Signatory Requirements:

1. All applications, reports, or information submitted to the Los Angeles Water Quality Control Board (Los Angeles Water Board) must be signed and certified as follows:

   a) For a corporation, by a responsible corporate officer of at least the level of vice-president.
   b) For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
   c) For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.

2. A duly authorized representative of a person designated in items 1.a through 1.c above may sign documents if:

   a) The authorization is made in writing by a person described in items 1.a through 1.c above.
   b) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
   c) The written authorization is submitted to the Los Angeles Water Board Staff Contact prior to submitting any documents listed in item 1 above.

3. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Copies of this Form

Include a copy of the Project specific Cover Sheet below with your report: please retain a copy for your records.

Report Submittal Instructions

1. Check the box on the Report and Notification Cover Sheet next to the report or notification you are submitting.
   - **Part A (Annual Report):** This report will be submitted annually from the anniversary of Project effective date until a Notice of Project Complete Letter is issued.
   - **Part B (Project Status Notifications):** Used to notify the Los Angeles Water Board of the status of the Project schedule that may affect Project billing.
   - **Part C (Conditional Notifications and Reports):** Required on a case by case basis for accidental discharges of hazardous materials, violation of compliance with water quality standards, notification of in-water work, or other reports.
2. Sign the Report and Notification Cover Sheet and attach all information requested for the Report Type.
3. **Electronic Report Submittal Instructions:**
   - Submit signed Report and Notification Cover Sheet and required information via email to: RB4-401Certification@Waterboards.ca.gov
   - Include in the subject line of the email: Subject: ATTN: Emily Duncan; File No: 23-078, Reg. Measure ID: 452165 Report

Definition of Reporting Terms

1. **Active Discharge Period:** The active discharge period begins with the effective date of this Order and ends on the date that the Permittee receives a Notice of Completion of Discharges Letter or, if no post-construction monitoring is required, a Notice of Project Complete Letter. The Active Discharge Period includes all elements of the Project including site construction and restoration, and any Permittee responsible compensatory mitigation construction.
2. **Request for Notice of Completion of Discharges Letter:** This request by the Permittee to the Los Angeles Water Board staff pertains to projects that have post construction monitoring requirements, e.g. if site restoration was required to be monitored for 5 years following construction. Los Angeles Water Board staff will review the request and send a Completion of Discharges Letter to the Permittee upon approval. This letter will initiate the post-discharge monitoring period and a change in fees from the annual active discharge fee to the annual post-discharge monitoring fee.

3. **Request for Notice of Project Complete Letter:** This request by the Permittee to the Los Angeles Water Board staff pertains to projects that either have completed post-construction monitoring and achieved performance standards or have no post-construction monitoring requirements, and no further Project activities are planned. Los Angeles Water Board staff will review the request and send a Project Complete Letter to the Permittee upon approval. Termination of annual invoicing of fees will correspond with the date of this letter.
4. **Post-Discharge Monitoring Period:** The post-discharge monitoring period begins on the date of the Notice of Completion of Discharges Letter and ends on the date of the Notice of Project Complete Letter issued by the Los Angeles Water Board staff. The Post-Discharge Monitoring Period includes continued water quality monitoring or compensatory mitigation monitoring.
5. **Effective Date:** Date of Order issuance.

Map/Photo Documentation Information

When submitting maps or photos, please use the following formats.

1. **Map Format Information:**
   Preferred map formats of at least 1:24000 (1" = 2000') detail (listed in order of preference):
   - **GIS shapefiles**: The shapefiles must depict the boundaries of all project areas and extent of aquatic resources impacted. Each shape should be attributed with the extent/type of aquatic resources impacted. Features and boundaries should be accurate to within 33 feet (10 meters). Identify datum/projection used and if possible, provide map with a North American Datum of 1983 (NAD38) in the California Teale Albers projection in feet.
   - **Google KML files** saved from Google Maps: My Maps or Google Earth Pro. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. Include URL(s) of maps. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - **Other electronic format** (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - Aquatic resource maps marked on paper **USGS 7.5 minute topographic maps** or **Digital Orthophoto Quarter Quads (DOQQ)** printouts. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
2. **Photo-Documentation:** Include a unique identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions.

REPORT AND NOTIFICATION COVER SHEET

Project:	Port of Los Angeles Wharf Maintenance and Maintenance Dredging Project				
Permittee:	Port of Los Angeles				
Reg. Meas. ID:	452165	**Place ID:**	887519	**File No:**	23-078

Report Type Submitted

Part A – Project Reporting	
Report Type	☐ **Annual Report**
Part B - Project Status Notifications	
Report Type	☐ **Request for Completion of Eelgrass survey**
Report Type	☐ **Commencement of Construction**
Report Type	☐ **Request for Notice of Project Complete Letter**
Part C - Conditional Notifications and Reports	
Report Type	☐ **Accidental Discharge of Hazardous Material Report**
Report Type	☐ **Violation of Compliance with Water Quality Standards Report**
Report Type	☐ **In-Water Work/Diversions Water Quality Monitoring Report**
Report Type	☐ **Modifications to Project Report**
Report Type	☐ **Transfer of Property Ownership Report**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name [1]	**Affiliation and Job Title**
Signature	**Date**

[1]STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request, supplemental information in support of this submittal.

Permittee's Signature

Date

***This Report and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

Part A – Project Reporting

Report Type	**Annual Report**
Report Purpose	Notify the Los Angeles Water Board staff of Project status during both the active discharge and post-discharge monitoring periods.
When to Submit	Annual reports shall be submitted each year on the anniversary of Project effective date. Annual reports shall continue until a Notice of Project Complete Letter is issued to the Permittee.
Report Contents	The contents of the annual report shall include the topics indicated below for each project period. Report contents are outlined in Annual Report Topics below. **<u>During the Active Discharge Period</u>** • **Topic 1: Construction Summary** • **Topic 2: Mitigation for Temporary Impacts Status** • **Topic 3: Compensatory Mitigation for Permanent Impacts Status** **<u>During the Post-Discharge Monitoring Period</u>** • **Topic 2: Mitigation for Temporary Impacts Status** • **Topic 3: Compensatory Mitigation for Permanent Impacts Status**
Annual Report Topics (1-3)	
Annual Report Topic 1	**Construction Summary**
When to Submit	With the annual report during the Active Discharge Period.
Report Contents	**1.** Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water best management practices (BMPs). If construction has not started, provide estimated start date and reasons for delay. **2.** Color photos, pre-project and current. **3.** Map showing general Project progress. **4.** If applicable: **a.** Summary of any conditional reports sent during the year such as "Accidental Discharge of Hazardous Material Report" or "Accidental Discharge of Hazardous Material Report" **b.** Copies of revised permits from other agencies **c.** Compilation of all water quality monitoring results for the year in a spreadsheet format.
Annual Report Topic 2	**Mitigation for Temporary Impacts Status**
When to Submit	With the annual report during both the Active Discharge Period and Post-Discharge Monitoring Period.

Report Contents	***If not applicable report N/A.** **1.** Planned date of initiation and map showing locations of mitigation for temporary impacts to waters of the state and all upland areas of temporary disturbance which could result in a discharge to waters of the state**.** **2.** If mitigation for temporary impacts has already commenced, provide a map and information concerning attainment of mitigation success.
Annual Report Topic 3	**Compensatory Mitigation for Permanent Impacts Status**
When to Submit	With the annual report during both the Active Discharge Period and Post-Discharge Monitoring Period.
Report Contents	***If not applicable report N/A.** **Part A. Permittee Responsible** **1.** Planned date of initiation of compensatory mitigation site installation**.** **2.** If installation is in progress, a map of what has been completed to date. **3.** If the compensatory mitigation site has been installed, provide a final map and information concerning attainment of performance standards contained in the compensatory mitigation plan. **Part B. Mitigation Bank or In-Lieu Fee** **1.** Status or proof of purchase of credit types and quantities. **2.** Include the name of bank/ILF Program and contact information. **3.** If ILF, location of project and type if known.

Part B – Project Status Notifications

Report Type	**Notice of Completion of an Eelgrass survey**
Report Purpose	Notify Los Angeles Water Board staff of the completion of an Eelgrass survey.
When to Submit	Construction shall not begin before approval of the survey by the Los Angeles Regional Water Board.
Report Contents	**1.** An eelgrass survey conducted following the California Eelgrass Mitigation Policy (CEMP) instructions. **2.** As stated in CEMP, a survey must be conducted during the active growth period for eelgrass (typically March through October for southern California) no more than 60 days prior to construction activities.

Report Type	**Commencement of Construction**
Report Purpose	Notify Los Angeles Water Board staff prior to the start of construction.
When to Submit	Must be received at least seven (7) days prior to start of initial ground disturbance activities.
Report Contents	**3.** Date of commencement of construction. **4.** Anticipated date when discharges to waters of the state will occur. **5.** Project schedule milestones including a schedule for onsite compensatory mitigation, if applicable.

Report Type	Request for Notice of Completion of Discharges Letter
Report Purpose	Notify Los Angeles Water Board staff that post-construction monitoring is required and that active Project construction, including any mitigation and permittee responsible compensatory mitigation, is complete.
When to Submit	Must be received by Los Angeles Water Board staff within thirty (30) days following completion of all Project construction activities.
Report Contents	**1.** Pre- and post-photo documentation of all Project activity sites where the discharge of dredge and/or fill/excavation was authorized. **2.** An updated monitoring schedule for mitigation for temporary impacts to waters of the state and permittee responsible compensatory mitigation during the post-discharge monitoring period, if applicable.

Report Type	Request for Notice of Project Complete Letter
Report Purpose	Notify Los Angeles Water Board staff that construction and/or any post-construction monitoring is complete, or is not required, and no further Project activity is planned.
When to Submit	Must be received by Los Angeles Water Board staff within thirty (30) days following completion of all Project activities.
Report Contents	**Part A: Mitigation for Temporary Impacts** **1.** A report establishing that areas of temporary impacts to waters of the state, and upland areas of temporary disturbance which could result in a discharge to waters of the state, have been successfully restored and all identified success criteria have been met. Pre- and post-photo documentation of all restoration sites. **Part B: Permittee Responsible Compensatory Mitigation** **2.** A report establishing that the performance standards outlined in the compensatory mitigation plan have been met. **3.** Status on the implementation of the long-term maintenance and management plan and funding of endowment. **4.** Pre- and post-photo documentation of all compensatory mitigation sites. **5.** Final maps of all compensatory mitigation areas (including buffers). **Part C: Post-Construction Storm Water BMPs** **6.** Date of storm water permit Notice of Termination(s), if applicable. **7.** Report status and functionality of all post-construction BMPs.

Part C – Conditional Notifications and Reports

Report Type	Accidental Discharge of Hazardous Material Report
Report Purpose	Notifies Los Angeles Water Board staff that an accidental discharge of hazardous material has occurred.

When to Submit	Within five (5) working days following the date of an accidental discharge. Continue reporting as required by Los Angeles Water Board staff.
Report Contents	**1.** The report shall include the OES Incident/Assessment Form, a full description and map of the accidental discharge incident (i.e. location, time and date, source, discharge constituent and quantity, aerial extent, and photo documentation). If applicable, the OES Written Follow-Up Report may be substituted. **2.** If applicable, any required sampling data, a full description of the sampling methods including frequency/dates and times of sampling, equipment, locations of sampling sites. **3.** Locations and construction specifications of any barriers, including silt curtains or diverting structures, and any associated trenching or anchoring.

Report Type	**Violation of Compliance with Water Quality Standards Report**
Report Purpose	Notifies Los Angeles Water Board staff that a violation of compliance with water quality standards has occurred.
When to Submit	The Permittee shall report any event that causes a violation of water quality standards within three (3) working days of the noncompliance event notification to Los Angeles Water Board staff.
Report Contents	The report shall include: the cause; the location shown on a map; and the period of the noncompliance including exact dates and times. If the noncompliance has not been corrected, include: the anticipated time it is expected to continue; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and any monitoring results if required by Los Angeles Water Board staff.

Report Type	**In-Water Work and Diversions Water Quality Monitoring Report**
Report Purpose	Notifies Los Angeles Water Board staff of the completion of in-water work.
When to Submit	Within three (3) working days following the completion of in-water work. Continue reporting in accordance with the approved water quality monitoring plan.
Report Contents	As required by the approved water quality monitoring plan.

Report Type	**Modifications to Project Report**
Report Purpose	Notifies Los Angeles Water Board staff if the Project, as described in the application materials, is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority.
When to Submit	Prior to any alteration or modification of Project activities.
Report Contents	A description and location of any alterations of Project activities. Identify any Project modifications that will interfere with the Permittee's compliance with the Order. Any alteration may require an Amendment, to be determined by Los Angeles Water Board staff.

Report Type	Transfer of Property Ownership Report
Report Purpose	Notifies Los Angeles Water Board staff of change in ownership of the Project or Permittee-responsible mitigation area.
When to Submit	At least 10 working days prior to the transfer of ownership.
Report Contents	**1.** A statement that the Permittee has provided the purchaser with a copy of this Order and that the purchaser understands and accepts: **a.** the Order's requirements and the obligation to implement them or be subject to administrative and/or civil liability for failure to do so; and **b.** responsibility for compliance with any long-term BMP[1] maintenance plan requirements in this Order. **2.** A statement that the Permittee has informed the purchaser to submit a written request to the Los Angeles Water Board to be named as the permittee in a revised order.

[1] Best Management Practices (BMPs) is a term used to describe a type of water pollution or environmental control.

Compliance with Code of Federal Regulations, title 40, section 121.7, subdivision (d).

The purpose of this attachment is to comply with Title 40, Code of Federal Regulations (CFR) Part 121.7(d)(1), which requires an explanation of why a condition is necessary to assure that the authorized discharge will comply with water quality requirements, and a citation to federal, state, or tribal law that authorizes the condition.

This Attachment uses the same organizational structure as the *Conditions* Section, and the statements below correspond with the conditions set forth in the *Conditions* Section. The Sections preceding the *Conditions* Section are not "conditions" as used in 40 CFR section 121.7.(A).

The following three sources of authority are applicable to almost all conditions. Because these authorities are relevant to so many conditions, they are described in greater detail here and then cross-referenced below.

The state's Statement of Policy with respect to Maintaining High Quality of Waters in California ("Antidegradation Policy", State Board Resolution No. 68-16), requires that any "activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained." All Regional Board Water Quality Control Plans incorporate the state's Antidegradation Policy by reference. The state Antidegradation Policy incorporates the federal Antidegradation Policy (40 CFR Part 131.12), which requires "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." According to U.S. EPA, for dischargers of dredged or fill material comply with the federal Antidegradation Policy by complying with U.S. EPA's section 404(b)(1) Guidelines. The State Water Board adopted a modified version of U.S. EPA's section 404(b)(1) Guidelines in the Dredge or Fill Procedures (also referred as State Supplemental Guidelines).

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Dredge or Fill Procedures) were adopted on April 2, 2019 and went into effect on May 28, 2020. The Dredge or Fill Procedures were adopted pursuant to the State Water Board's authority under Water Code section 13140 (state policy for water quality control) and 13170 (water quality control plan), and accordingly have regulatory effect. Consistent with Government Code, section 11353, a clear and concise summary of the Dredge or Fill Procedures is available in California Code of Regulations, section 3013. Per the Dredge or Fill Procedures, the permitting authority may only approve a project if the demonstrations set forth in Section IV.B.1 have been made. The information required by Section IV.A is necessary to ensure compliance with Section IV.B.1.

In addition, the conditions within the Order are generally required pursuant to the Los Angeles Water Board's Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan). The Basin Plan includes water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies. For instance, the Basin Plan

includes water quality objectives for chemical constituents, oil and grease, pH, dissolved oxygen, temperature, , toxicity, pesticides, solid, suspended or settleable materials, floating material, turbidity, exotic vegetation, color, and taste and odor which ensure protection of beneficial uses.

Furthermore, the conditions within the Order are also required, where applicable, pursuant to statewide water quality control plans and policies which were adopted and are periodically revised pursuant to Water Code section 13240, including, but not limited to, the following:

- California Ocean Plan (Ocean Plan),
- California Thermal Plan (Thermal Plan),
- Enclosed Bays and Estuaries Plan,
- Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE) Plan,
- Plan for California's Nonpoint Source (NPS) Pollution Control Program,
- Water Quality Control Policy for the Enclosed Bays and Estuaries of California,
- Policy for the Implementation and Enforcement of the Nonpoint Source (NPS) Pollution Control Program,
- State of California Executive Order W-59-93 (Wetlands "No Net Loss" Policy), and

Furthermore, California Code of Regulations, title 23, Chapter 28 also sets forth regulations pertaining to water quality certifications. Section 3856 sets forth information that must be included in water quality certification requests, includes a description of steps that have or will be taken to avoid, minimize, and compensate for impacts to waters of the state.

Conditions

Authorization

Authorization under this Order is granted based on the application information submitted. Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order.

Reporting and Notification Requirements

The reports confirm that the best management practices required under this Order are sufficient to protect beneficial uses and water quality objectives. The reports related to accidental discharges also ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges are taken as soon as possible. These monitoring and reporting conditions are authorized because the Water Boards have the authority to investigate the quality of any waters of the state within its region under Water Code sections 13383 and 13267. The burden of preparing these reports, including costs, bears a reasonably relationship to the benefits to be obtained from the reports. Specifically, the reports are necessary to demonstrate protection of beneficial uses and compliance with the requirements of the Order and relevant laws (including the Clean Water Act and other authorities). The anticipated costs are minimal as the reporting obligations require only visual monitoring, in-field measurements, and notification reporting.

Authorization under this Order is granted based on the application information submitted, including identification of the legally responsible party. Conditions regarding transfers are necessary to confirm whether the new owner wishes to assume legal responsibility for compliance with this Order. If not, the original discharger remains responsible for compliance with this Order. Confirmation is also necessary to confirm whether liability for long-term best management practices maintenance is accepted by another entity. If not, the original discharger remains responsible for compliance with this Order. Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order.

Water Quality Monitoring

General

This monitoring condition is authorized because the Water Boards have the authority to investigate the quality of any waters of the state within its region under Water Code sections 13383 and 13267. The burden of monitoring, including costs, bears a reasonable relationship to the need for the monitoring, and the benefits to be obtained from the monitoring. The anticipated costs are minimal as only visual monitoring and in-field measurements are required. Specifically, the reports are necessary to demonstrate protection of beneficial uses and compliance with the requirements of the Order and relevant laws (including the Clean Water Act and other authorities

Accidental Discharges/Noncompliance

See explanation for the *Reporting and Notification Requirements* Section

In-Water Work or Diversions

Consistent with the Dredge or Fill Procedures, section IV.A.2.c, water quality monitoring plans are required for any in-water work, including temporary dewatering or diversions. These conditions are required to assure that 1) the discharge shall not adversely affect the beneficial uses of the receiving water or cause a condition of nuisance; 2) the discharge shall comply with all applicable water quality objectives; and 3) treatment and control of the discharge shall be implemented to assure that pollution and nuisance will not occur and the highest water quality is maintained. A water quality monitoring plan is necessary to conform to water quality standards for oil and grease, dissolved oxygen, pH, turbidity, and temperature. The Regional Water Board's Basin Plan and/or applicable statewide plans and policies contains provisions related to all these constituents.

These monitoring and reporting conditions are authorized because the Water Boards have the authority to investigate the quality of any waters of the state within its region under Water Code sections 13383 and 13267. The burden of preparing these reports, including costs, bears a reasonable relationship to the need for, and benefits of, the reports. The anticipated costs are minimal as the sampling requirements are either visual or only require a grab sample on a daily and/or weekly basis. Specifically, the reports are necessary to demonstrate protection of beneficial uses and compliance with the requirements of the Order and relevant laws (including the Clean Water Act and other authorities

Post-Construction

The reports confirm that the best management practices required under this order are sufficient to protect beneficial uses and water quality objectives. The reports related to accidental

discharges ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges are taken as soon as possible. These monitoring and reporting conditions are authorized because the Water Boards have the authority to investigate the quality of any waters of the state within its region under Water Code sections 13383 and 13267. The burden of preparing these reports, including costs, bears a reasonable relationship to the need for, and benefits of, the reports. The anticipated costs are minimal as the reporting obligations require only visual monitoring, in-field measurements, and notification reporting.

Standard Conditions

"This Order is subject to modification or revocation …"

"This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility …"

"This Order is conditioned upon total payment of any fee …"

These Conditions are standard conditions that "shall be included as conditions of all water quality certification actions." (Cal. Code of Regs., section 3860.)

General Compliance

"Permitted actions must not cause a violation of any applicable water quality standards …"

By the plain language of section 401 of the Clean Water Act, permitted actions may not cause a violation of applicable water quality standards. This condition related to compliance with water quality objectives and designated beneficial uses is required pursuant to the Los Angeles Water Board's Basin Plan and/or other applicable statewide plans and policies. The Basin Plan's water quality standards consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies. The Antidegradation Policy requires that the quality of existing high-quality water be maintained unless any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present or anticipated future beneficial uses of such water, and will not result in water quality less than that prescribed in water quality control plans or policies. The Antidegradation Policy further requires best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the state will be maintained. Applicable beneficial uses and water quality objectives to protect those uses include the designated beneficial uses (Basin Plan, Chapter 2, Tables 2-1, 2-1a, 2-3, 2-3a, 2-4, and 2-4a; Ocean Plan, Page 4), and water quality objectives for chemical constituents (Basin Plan, page 3-29), color (Basin Plan, page 3-32), exotic vegetation (Basin Plan, page 3-32), floating material (Basin Plan, page 3-33), oil and grease (Basin Plan, page 3-34), dissolved oxygen (Basin Plan, page 3-39), pesticides (Basin Plan, page 3-40), pH (Basin Plan, page 3-40), solid, suspended and settleable material (Basin Plan, page 3-44), taste and odor (Basin Plan, page 3-44), temperature (Basin Plan, page 3-44), toxicity (Basin Plan, page 3-45), and turbidity (Basin Plan, page 3-46), and in ocean waters for physical (Ocean Plan, page 7), chemical (Ocean Plan, page 7), and biological characteristics (Ocean Plan, page 8).

"The Permittee must, at all times, fully comply with engineering plans, specifications, and technical reports…"

Authorization under this Order is granted based on the application information submitted, including engineering plans, specifications, and technical reports. Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order.

Administrative

"Signatory requirements for all document submittals…"

Conditions related to signatory requirements are also authorized by Water Code sections 13383 and 13267, which requires any person discharging waste that could affects the quality of waters to provide to the Water Boards, under penalty of perjury, any technical or monitoring program reports as required by the Water Boards. The signatory requirements are consistent with 40 C.F.R. section 122.22.

"The Permittee shall grant Los Angeles Water Board staff …"

Conditions related to site access requirements are authorized pursuant to the Water Boards' authority to investigate the quality of any waters of the state within its region under Water Code sections 13383 and 13267. Water Code section 13267(c) provides that "the regional board may inspect the facilities of any person to ascertain whether the purposes of this division are being met and waste discharge requirements are being complied with."

"A copy of this Order shall be provided to any consultants, contractors, and subcontractors …"

"A copy of this Order must be available at the Project site(s) during construction…"

These conditions require site personnel (agents of the applicant) and agencies to be familiar with the content of the Order and mandate availability of the document at the project site. These conditions are required to assure that any authorized discharge will comply with the terms and conditions of the Order and is inherently tied to the signature requirements required by Water Code section 13267.

Best Management Practices

All the conditions related to best management practices are consistent with the Water Board's authority to establish, "[w]ater quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area" pursuant to Water Code section 13241(c). Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order. The activities authorized under this Order have the potential to result in a discharge that exceeds water quality objectives, which is prohibited by the Clean Water Act, Antidegradation Policy and Water Code section 13263. As required by Water Code section 13369, all Water Quality Control Plans incentivize the use of best management practices to prevent prohibited discharges into waters of the state.

Dredging

Dischargers of dredged or fill material comply with the federal Antidegradation Policy by complying with U.S. EPA's section 404(b)(1) Guidelines. The State Water Boards adopted a modified version of U.S. EPA's section 404(b)(1) Guidelines in the Dredge or Fill Procedures

(State Supplemental Guidelines). In addition, this condition is required to assure that dredging operations will comply with water quality objectives established for surface waters, including solid, suspended and settleable material, toxicity and turbidity (Basin Plan, page 3-44, 3-45, 3-46), and in ocean waters physical (Ocean Plan, page 7), chemical (Ocean Plan, page 7), and biological characteristics (Ocean Plan, page 8), Ocean Plan, Thermal Plan, Enclosed Bays and Estuaries Plan, ISWEBE Plan, NPS Pollution Control Program, Water Quality Control Policy for the Enclosed Bays and Estuaries of California, Policy for the Implementation and Enforcement of the NPS Pollution Control Program, Wetlands “No Net Loss” Policy.

Site Management

This condition is necessary to prevent violation of state discharge prohibitions that protect water quality objectives. For instance, fuels and lubricants associated with the use of mechanized equipment have the potential to result in toxic discharges to waters of the state in violation of water quality standards, including the floating material and toxicity and floating material water quality objectives (Basin Plan, pages 3-33 & 3-45), and in ocean waters the physical (Ocean Plan, page 7), chemical (Ocean Plan, page 7), and biological characteristics objectives (Ocean Plan, page 8). Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order. Failure to appropriately manage site conditions has the potential to result in a discharge that exceeds water quality objectives, which is prohibited by the Clean Water Act, Antidegradation Policy and Water Code section 13263, Ocean Plan, Thermal Plan, Enclosed Bays and Estuaries Plan, ISWEBE Plan, NPS Pollution Control Program, Water Quality Control Policy for the Enclosed Bays and Estuaries of California, Policy for the Implementation and Enforcement of the NPS Pollution Control Program, Wetlands “No Net Loss” Policy.

Hazardous Materials

These conditions are required pursuant to the Los Angeles Basin Plan (toxicity objective, page 3-40), and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP), which prohibit the discharge of substances in concentrations toxic to human, plant, animal, or aquatic life. Toxic compounds can impair the beneficial uses of cold freshwater habitat, estuarine habitat, marine habitat, preservation of rare and endangered species, fish migration, fish spawning, warm freshwater habitat, and wildlife habitat. Conditions related to toxic and hazardous materials are necessary to assure that discharges comply with any water quality objectives adopted or approved under sections 13170 or 13245 of the Water Code.

Conditions related to concrete/cement are required pursuant to the Los Angeles Basin Plan, which require discharges to waters do not adversely raise or lower pH levels (Basin Plan, page 3-40). Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order. The release of hazardous materials has the potential to result in a discharge that exceeds water quality objectives, which is prohibited by the Clean Water Act, the Antidegradation Policy, the Los Angeles Basin Plan, the Dredge or Fill Procedures and Water Code section 13263, Ocean Plan, Thermal Plan, Enclosed Bays and Estuaries Plan, ISWEBE Plan, NPS Pollution Control Program, Water Quality Control Policy for the Enclosed Bays and Estuaries of California, Policy for the Implementation and Enforcement of the NPS Pollution Control Program, Wetlands “No Net Loss” Policy.

In-Water Work

These conditions are required to assure that 1) the discharge shall not adversely affect the beneficial uses of the receiving water or cause a condition of nuisance; 2) the discharge shall comply with all applicable water quality objectives; and 3) treatment and control of the discharge shall be implemented to assure that pollution and nuisance will not occur and the highest water quality is maintained. Accordingly, these conditions require implementation of best practicable treatments and controls to prevent pollution and nuisance, and to maintain water quality. Water Code section 13264 prohibits any discharge that is not specifically authorized in this Order. In-water work has the potential to result in a discharge that exceeds water quality objectives, which is prohibited by the Clean Water Act, the Antidegradation Policy, the Los Angeles Basin Plan, the Dredge or Fill Procedures and Water Code section 13263, Ocean Plan, Thermal Plan, Enclosed Bays and Estuaries Plan, ISWEBE Plan, NPS Pollution Control Program, Water Quality Control Policy for the Enclosed Bays and Estuaries of California, Policy for the Implementation and Enforcement of the NPS Pollution Control Program, Wetlands “No Net Loss” Policy.

Wildlife and Special Status Species

Prior to each qualifying maintenance event, a pre-project eelgrass survey shall be conducted in accordance with the CEMP. If eelgrass is found within the project vicinity, a post-project survey shall be conducted and impacts to eelgrass shall be mitigated.

If work is performed within 500 feet of a California least tern nesting site, the Port shall provide notification to the appropriate agencies.

Pursuant to the California Endangered Species Act (Fish & Wildlife Code, sections 2050 et seq.) and federal Endangered Species Act (16 U.S.C. sections 1531 et set.), the Order does not authorize any act which results in the taking of a threatened, endangered, or candidate species. In the event a Permittee requires authorization from the state or federal authorities, California Code of Regulations, title 23, section 3856(e), requires that copies be provided to the Los Angeles Water Board of “any final and signed federal, state, and local licenses, permits, and agreements (or copies of the draft documents, if not finalized) that will be required for any construction, operation, maintenance, or other actions associated with the activity. If no final or draft document is available, a list of all remaining agency regulatory approvals being sought shall be included.”

Stormwater

Conditions related to stormwater management are required to comply with the Los Angeles Region’s Basin Plan and the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 20090009-DWQ; NPDES No. CAS000002 as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, and any amendments thereto) (General Construction Permit). Post-rain erosion and sedimentation problems can contribute to significant degradation of the waters of the state; therefore, it is necessary to take corrective action to eliminate such discharges to avoid or minimize such degradation. Implementation of control measures and best management practices (BMPs) described in the condition will assure compliance with water quality objectives including floating material, temperature, suspended and settleable material, and turbidity. (Basin Plan, pages 3-33, 3-44, 3-44, 3-46) Water Code section 13264 prohibits any discharge that is not specifically

authorized in this Order. Rain events have the potential to result in a discharge that exceeds water quality objectives, which is prohibited by the Clean Water Act, the Antidegradation Policy, the Los Angeles Basin Plan, the Dredge or Fill Procedures and Water Code section 13263, Ocean Plan, Thermal Plan, Enclosed Bays and Estuaries Plan, ISWEBE Plan, NPS Pollution Control Program, Water Quality Control Policy for the Enclosed Bays and Estuaries of California, Policy for the Implementation and Enforcement of the NPS Pollution Control Program, Wetlands “No Net Loss” Policy.

On-site Mitigation for Temporary Impacts

Conditions in this section related to restoration and/or mitigation of temporary impacts are required by the Dredge or Fill Procedures, which requires "in all cases where temporary impacts are proposed, a draft restoration plan that outlines design, implementation, assessment, and maintenance for restoring areas of temporary impacts to pre-project conditions." (Dredge or Fill Procedures section IV. A.2(d) & B.4.)

Additional authorities applying to this condition include:

- Clean Water Act Section 401 (a discharge shall comply with water quality standards, which are established in Water Quality Control Plans)
- California Water Code section 13263 (discharges must implement water quality control plans and water quality objectives)
- California Code of Regulations, Title 23, section 3859 (conditions shall be added to ensure compliance with water quality standards and other appropriate requirements)
- 40 CFR 230.10 (a) (no discharge permitted if there is a practicable alternative with less impacts)
- 40 CFR 230.10 (b) (discharges may not cause or contribute to violations of water quality standards)
- 40 CFR 230.10 (c) (discharges may not cause degradation)
- 40 CFR 230.12 (conditions shall be included to minimize adverse effects to aquatic ecosystems)
- 40 CFR 230.70 (minimize effects of discharge through various actions)
- 40 CFR 230.71 (minimize effects of discharge through treatment of or limitations on the material)
- 40 CFR 230.72 (effects of discharge may be controlled by containment areas and other best management practices)
- 40 CFR 230.73 (minimize effects of discharged by controlling dispersion)
- 40 CFR 230.74 (minimize effects through use of appropriate equipment and techniques)
- 40 CFR 230.75 (minimize adverse effects on plant and animal populations)
- 40 CFR 230.76 (minimize adverse effects on human use, including timing of discharge)
- 40 CFR 230.77 (control runoff, maintain desired water quality, consider ecological changes)
- 40 CFR 230.91 (take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States)
- 40 CFR Part 230, Subpart J (sections 230.92 *et seq*.) (compensatory mitigation for losses of aquatic resources)
- The National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) (require identifying alternatives to avoid and minimize effects (40 CFR 1500.2 and California Code of Regulations, Title 144, section 15021))

- Dredge or Fill Procedures section IV. A.2(c) (water quality monitoring plan to monitor compliance with water quality objectives)
- Dredge or Fill Procedures, Subpart H (actions to minimize adverse effects)

Table 1. Locations where maintenance repair activities may be conducted:

Berths	Latitude	Longitude	Berths	Latitude	Longitude
36	33.72500	-118.28083	162	33.76167	-118.26611
41	33.72278	-118.2775	163-164	33.76028	-118.26722
44	33.71639	-118.27694	165-166	33.75778	-118.26778
44	33.71611	-118.27694	167-169	33.75472	-118.26778
45-47	33.71472	-118.27556	171-173	33.75472	-118.26528
49-50	33.71722	-118.27333	174-176	33.75806	-118.2625
51-53	33.72028	-118.27417	177-179	33.76111	-118.26139
54-55	33.72444	-118.27611	180-181	33.76417	-118.26278
56	33.72611	-118.27694	183	33.76583	-118.26333
57	33.72528	-118.27528	184	33.76611	-118.2625
58-60	33.72222	-118.27389	185	33.76611	-118.26167
60	33.72000	-118.27278	186	33.76611	-118.26083
67	33.72028	-118.27111	186-187	33.76528	-118.26035
68	33.72139	-118.27111	188-189	33.76257	118.259617
70-71	33.72500	-118.2725	190	33.76194	-118.25972
72	33.72722	-118.27389	191	33.76500	-118.25889
73A-E	33.72917	-118.27694	194	33.76500	-118.25611
73W-X	33.73028	-118.27722	194	33.76556	-118.25556
74	33.73000	-118.27528	195-199	33.76806	-118.25306
75-77	33.73167	-118.27611	200A	33.77149	-118.25009
78	33.73361	-118.27722	200G-H	33.77611	-118.24444
79-82	33.73611	-118.27833	206-209	33.76306	-118.24861
84	33.73806	-118.27861	210-211	33.76167	-118.25306
84	33.73889	-118.27861	212-221	33.75694	-118.26056
86	33.74083	-118.27838	222-225	33.75028	-118.26806
86	33.74028	-118.27861	227-226	33.74083	-118.27472
87-89	33.74167	-118.27806	238-239	33.73417	-118.27361
90-92	33.74528	-118.27694	240A-B	33.73361	-118.27222
93A-C	33.74778	-118.27694	240X-Z	33.73222	-118.27111
94	33.74861	-118.27444	241	33.729578	-118.27095
95	33.76056	-118.27417	256	33.73056	-118.26833
96	33.75000	-118.27361	258	33.73444	-118.26861
100-102	33.75303	-118.27522	259-260	33.73611	-118.26972
117	33.75683	-118.28333	261-263	33.73778	-118.26861
118-119	22.75611	-118.28056	264	33.73833	-118.26667
120	33.76667	-118.27917	265-267	33.73722	-118.25111
120-121	33.76056	-118.27556	267A	33.73500	-118.25056
127-128	33.76444	-118.27833	268A	33.73492	-118.26592
134-135	33.76778	-118.27778	268B	33.73447	-118.26568
136-139	33.76667	-118.27389	269	33.73500	-118.26389
142-143	33.76333	-118.27194	270-271	33.73194	-118.26361
144-146	33.76056	-118.27306	302-305	33.73278	-118.25583
147	33.75778	-118.27417	401-404	33.73096	-118.25062
148-149	33.75611	-118.27361	405-406	33.72642	-118.25922
150-151	33.75417	-118.27139	Cabrillo Marina	33.71883	-118.27880

153-155	33.75694	-118.27028	Inner Cabrillo Beach	33.71052	-118.28139
161	33.76249	-118.26563			

APPENDIX "F"

WATER QUALITY MONITORING PLAN (WQMP)

Water Quality Monitoring Plan for In-Water Wharf Structure Projects in the Port of Los Angeles

Purpose

This water quality monitoring plan (WQMP) outlines activities required for in-water wharf structure projects (typically pile driving activities) in the Port of Los Angeles (POLA). Procedures within this plan generally follow recent monitoring and reporting requirements found in Waste Discharge Requirements (WDR) and Water Quality Certifications (WQC) granted by the Los Angeles Regional Water Quality Control Board as well as their amendments. To remain in agreement with Port water quality permits and provide more appropriate metrics for water quality compliance, the Port requests that contractors adhere to the following guidance in addition to following the requirements provided in any other project-specific permits.

Monitoring Procedures

Water quality monitoring events will first and foremost follow the monitoring parameters, frequency, and standards criteria according to the project specific permit. In addition to procedures outlined in the permit, the contractor should also perform the following protocols.

1) Water quality monitoring events will follow the monitoring parameters, frequency, and standards criteria according to the project specific permit. If not listed in the permit, the monitoring should also incorporate parameters and standards outlined in Table 1, which include:
    a. Dissolved oxygen (in milligrams per liter [mg/L])
    b. Temperature (degrees [°] Fahrenheit [F] or Celsius [C])
    c. pH (standard units)
    d. Light Transmittance (percent) as a measure of turbidity, and
    e. Oil and grease (visual observations only)

Table 1. Monitoring Parameters and Standards

Parameter	Unit of measure	Type of Sample	Water quality Standards
Oil and Grease	N/A	Visual	Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water.
Dissolved Oxygen (DO)	mg/L	CTD	Mean annual DO should be greater than 6.0 mg/L provided that no single determination be less than 5.0 mg/L.
pH	Standard Units	CTD	Between 6.5 and 8.5, and within 0.2 of the Reference Station.
Light Transmittance	% Transmittance	CTD	Surface to mid-depth average shall not be reduced by more than 30% from the Reference Station.
Temperature	°F or °C	CTD	N/A

2) Water quality monitoring will be performed with equipment capable of sampling the parameters in Table 1 continuously throughout the entire water column (from surface to approximately 1-meter above the mudline). Water Quality measurements at each station will be taken at the depth increments required in the project specific permit (typically every 0.5 to 2 meters) for all surveys. Suggested equipment would ideally be equivalent to a conductivity, temperature, and depth (CTD) instrument[1] equipped with:

[1] Suggested equipment: *Seabird Scientific SBE 19plus V2 SeaCAT Profiler CTD* and equipped with the sensors listed under Monitoring Procedures #2.

a. Dissolved oxygen sensor
b. transmissometer to measure light transmittance,
c. pH probe to measure pH,
d. thermometer or thermistor to measure temperature,
e. pressure sensor to measure depth, and
f. conductivity sensor to measure salinity.

3) Whenever possible, data collection and compliance determinations should be performed in real-time and processing of data take place in the field to determine potential exceedances of water quality criteria.

Monitoring Stations

1) On the first day of the project and prior to the start of in-water work, a **Reference Station** should be established at a location at least 300 feet from the in-water work area and outside of project influence (Figure 1).
2) During in-water work on the first day, and during daily or weekly water quality surveys thereafter (as defined by the permit), water quality monitoring will be performed at **Monitoring Station(s)** (as required by the permit) within the vicinity of in-water work and at the established **Reference Station**.

Data Processing and Exceedance Criteria

1) Water quality parameters (dissolved oxygen, pH, light transmittance, and temperature) measured at depth increments specified in the project specific permit (typically between 0.5 to 2-meters) will be used to calculate a surface to mid-depth average for each water quality parameter for **Reference Station**, **Monitoring Station(s)**, and any additional stations required in the project-specific permit.
2) Monitoring station(s) data (surface to mid-depth average) for the parameters in Table 1 will be compared to the **Reference Station** and any additional stations required in the project-specific permit to determine compliance as follows:
    a. pH ($\pm$0.2 of reference), and pH values must fall between 6.5 and 8.5 Standard Units
    b. Percent light transmittance ($\leq$30% reduction compared to reference stations), and
    c. Mean annual dissolved oxygen - must be greater than 6.0 milligrams per liter (mg/L), provided that no single determination is less than 5.0 mg/L (Table 1).

Interpreting and Reporting Exceedances

1) If the monitoring station exceedance in the project-specific permit is based on comparison to data collected at a Baseline station[2] on a previous day, the contractor should compare the monitoring station data to the daily **Reference Station** to determine compliance.
2) If there is an exceedance for nephelometric turbidity units (NTU)[3] based on project specific permit criteria, the contractor should reevaluate the exceedance using percent light transmittance and consider turbidity to be in compliance when percent light transmittance at the project monitoring station is no more than 30% reduced from the **Reference Station**.

---

[2] Due to the natural spatial and temporal variability of water quality in the Port, the use of a Baseline station (established days to weeks prior to in-water work monitoring) as the criteria for compliance is not considered an ecologically significant metric to determine potential impacts of in-water work on water quality; however, Baseline stations have historically been included in WDR & WQC.

[3] Measuring turbidity in percent light transmittance, rather than in NTU, provides a better contextual background as percent light transmittance is directly correlated to water clarity and thus a more appropriate unit of measure for compliance determination.

3) If a water quality exceedance occurs that may be attributed to in-water work activities, the contractor may:
    a. Wait at least 15 minutes or until the next round of activities begin (if applicable) and perform an additional survey to confirm the exceedance.
    b. If the exceedance is still present, the contractor may notify their designated POLA contact who should then make appropriate adjustments to project activities or best management practices before continuing work.
    c. Once in-water work continues, the contractor may re-perform the survey at the same locations to confirm that the exceedance is remedied. If not, the contractor would notify POLA that further actions may be needed to reduce the project impacts to water quality.
4) If ***no*** exceedance in water quality criteria is noted that may be attributed to in-water work activities, the survey is complete.

Reporting Requirements

1) Any parameter not meeting the compliance limits should be accompanied by an explanation, and the actions taken to correct degradation to the waters.
2) A summary of monitoring results should be included in the report with a discussion of the analysis and compliance.
3) A map or drawing showing the locations of sampling points should be included with each report submittal and will use Geographic Information System (GIS) shapefiles so that they may be provided to the POLA and agencies, if requested.
4) A table should be prepared which displays each day of the month, any associated in-water work, the location of in-water work, the days in which monitoring occurred, and if applicable the installed pile number, location of the pile/piles (within the project area), installed pile type (fender, bearing, or guide pile), and/or the type of pile removed (creosote, etc.).
5) The appendix of the report should include tables displaying each of the water quality parameters at depth increments required in the project specific permit (typically every 0.5 to 2 meters) for all depths (surface to bottom) at each of the reference and monitoring locations for each day of monitoring.
6) The report with results for all monitoring that occurred in a calendar month should be submitted by the POLA to the Regional Board by the deadline stated in the project specific Clean Water Act Section 401 Water Quality Certification. A draft report should be prepared by the contractor and submitted to POLA at least 5 business days prior to the deadline to provide ample time for review before submittal to the Regional Board.

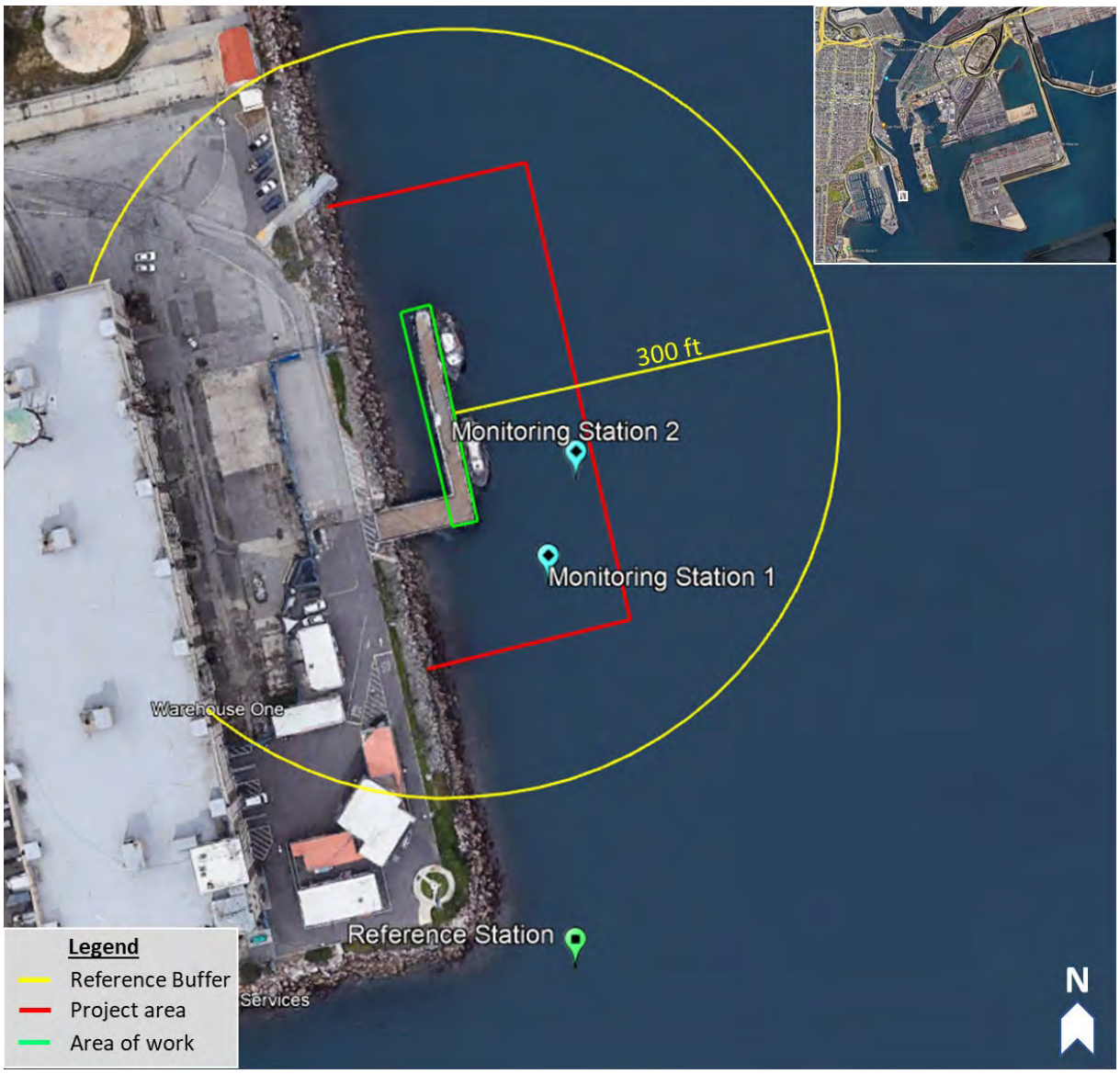


Figure 1. The **Reference Station** is designated at least 300 ft from the in-water work area, away from project influence, and is to be monitored prior at the start of the project and concurrently with station monitoring according to the monitoring schedule outlined in the project specific permit. The **Monitoring Station(s)** should be located within the project area but at a safe distance from the area of work.

APPENDIX "G"

WASTE MANAGEMENT PLAN (WMP) AND SOLID WASTE DIVERSION AND DISPOSAL (SWDD) REPORT FORMS

ATTACHMENT A - INSTRUCTION SHEET FOR WASTE MANAGEMENT PLAN

1. For assistance, contact the Solid Resources Citywide Recycling Division of LA Sanitation & Environment at (213) 485-3460 or sansrcrd_cdrecycling@lacity.org.
2. Please print very clearly or type.
3. Waste Management Plan (WMP) is to be completed and approved prior to start of construction. Along with the WMP, the Contractor is to include a copy of the waste hauler's waste hauler permit.
4. Attachment A includes**:** **Part 1-**Inert Debris and **Part 2**-Metal, Wood, C&D waste, and all other materials.
5. Must meet ≥80% recycling rate in **Part 1** – Inert Debris such as concrete, asphalt, dirt, rock, and brick.
6. Must meet ≥65% recycling rate in **Part 2** – Metal, wood, green waste, C&D waste, and all other materials.
7. The information required includes but is not limited to, the following:
    a. Contractor and project work order number.
    b. Permitted solid waste hauler(s) and permit number(s).
    c. Facility names and addresses that are to process the C&D materials.
    d. Estimated quantities of **all** C&D materials listed in **tons**.
    e. Verify whether the Waste Management Plan meets the minimum recycling requirement of 80% for inert debris in Part 1. Verify whether the Waste Management Plan meets the minimum recycling requirement of and 65% for other C&D waste.
8. **Calculating recycling and disposal for mixed C&D waste taken to a certified processing facility: the total tons taken to certified processing facility times the recycling rate = amount to be recycled. Total tons taken to facility minus amount to be recycled = amount for disposal. E.g. 100 tons x 0.80 (80% recycling rate) = 80 tons diverted and 20 tons disposed.

ATTACHMENT A

WASTE MANAGEMENT PLAN (PART 1-INERT DEBRIS)

Project Title:	W. O. Number:	Date Submitted:
Name & Title of Responsible Person:	Signature:	
Permitted Waste Hauler Name(s) and Permit No(s):		

Material	Facility Name and Address	Tons Diverted	Tons Disposed
RECYCLING/REUSE			
Asphalt			
Concrete			
Brick			
Dirt			
Mixed Inerts			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Other (Describe)			
Other (Describe)			
Other (Describe)			
DIVERSION AND DISPOSAL TOTALS =			

Percent Recycling = $\frac{\text{Total diversion}}{\text{Total diversion + Total disposed}}$ X 100 =

Percent Recycling = $\frac{\quad}{+}$ X 100 = %

Does Part 1 (Inert Debris) of this Waste Management Plan meet the minimum recycling requirement of 80% for Inert Debris?

YES ☐ NO ☐

ATTACHMENT A

WASTE MANAGEMENT PLAN (PART 2-ALL OTHER C&D WASTE)

W. O. No.:	Date Submitted:

Contractors Name:

Street address:

City, State, Zip:

Phone: Fax: Email:

Permitted Waste Hauler Name(s) and Permit No(s):

Material	Facility Name and Address	Tons Diverted	Tons Disposed
RECYCLING/REUSE			
Glass			
Wood/Greenwaste			
Metal			
Cardboard			
Other (Describe)			
DISPOSAL			
Other (Describe)			
Other (Describe)			
CERTIFIED PROCESSING**			
Mixed C&D Waste			
Mixed C&D Waste			
	DIVERSION AND DISPOSAL TOTALS =		

$$\text{Percent Recycling} = \frac{\text{Total Diversion}}{\text{Total Diversion} + \text{Total Disposed}} \times 100 =$$

$$\text{Percent Recycling} = \frac{\quad}{+} \times 100 = \quad \%$$

Does Part 2 (All Other C&D Waste) of this Waste Management Plan meet the minimum recycling requirement of 65% for all other C&D Waste? YES ☐ NO ☐

**Recycling tonnages for mixed C&D waste taken to a certified processing facility = total tonnage x recycling rate. Remaining tonnage counts as disposal. Example: 200 tons x 0.80 = 160 tons diverted and 40 tons disposed.

EXAMPLE WASTE MANAGEMENT PLAN
ATTACHMENT A
WASTE MANAGEMENT PLAN (PART 1-INERT DEBRIS)

Project Title: *Big Street Overcrossing*	W. O. Number: *XYZ12345*	Date Submitted: *01/01/2020*
Name & Title of Responsible Person: *Bobby Lee, Project Manager*	Signature: *Bobby Lee*	
Permitted Waste Hauler Name(s) and Permit No(s): *Grava Gravel Haulers, PER-22-333*		

Material	Facility Name and Address	Tons Diverted	Tons Disposed
RECYCLING/REUSE			
Asphalt	*Inert Recycling Facility A,888 Valle Valley, CA 12345*	*600*	
Concrete	*Inert Recycling Facility A,888 Valle Valley, CA 12345*	*55*	
Brick	*Inert Recycling Facility B, 777 Valle Valley,CA 12345*	*6*	
Dirt	*The Landscaping Co., 222 Valle Valley, CA 12345*	*200*	
Mixed Inerts			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Other (Describe)			
Other (Describe)			
Other (Describe)			
	DIVERSION AND DISPOSAL TOTALS =	*861*	

Percent Recycling = $\frac{\text{Total diversion}}{\text{Total diversion + Total disposed}}$ X 100 =

Percent Recycling = $\frac{861}{861 + 0}$ X 100 = *100.00 %*

Does Part 1 (Inert Debris) of this Waste Management Plan meet the minimum recycling requirement of 80% for Inert Debris?

YES ☒ NO ☐

ATTACHMENT A

WASTE MANAGEMENT PLAN (PART 2-ALL OTHER C&D WASTE)

W. O. No.: XYZ12345	Date Submitted: 01/01/2020

Contractors Name: Awesome Engineering Contractors

Street address: Circular Drive

City, State, Zip: *Ciudad City, CA 12345*

Phone: (123) 456-7891 Fax: (321) 123-4567 Email: AEC@zmail.com

Permitted Waste Hauler Name(s) and Permit No(s):

Material	Facility Name and Address	Tons Diverted	Tons Disposed
RECYCLING/REUSE			
Glass			
Wood/Greenwaste	*The Landscaping Co., 222 Valle Valley, CA 12345*	*50*	
Metal	*Kim Loai Metal Recycling, 333 Camino St, CA 12345*	*6*	
Cardboard			
Other (Describe)			
DISPOSAL			
Other (Describe)	*Municipal Landfill, 456 Montana Mountains, CA 12345*		*15*
Other (Describe)			
CERTIFIED PROCESSING**			
Mixed C&D Waste	*Certified Processor A (Recycling Rate = 75% = 0.75)*	*18.75*	*6.25*
Mixed C&D Waste	*25 tons x 0.75 = 18.75 tons recycled and 6.25 tons disposed*		
	DIVERSION AND DISPOSAL TOTALS =	*74.75*	*21.25*

$$\text{Percent Recycling} = \frac{\text{Total Diversion}}{\text{Total Diversion} + \text{Total Disposed}} \times 100 =$$

$$\text{Percent Recycling} = \frac{74.75}{74.75 + 21.25} \times 100 = 77.86\ \%$$

Does Part 2 (All Other C&D Waste) of this Waste Management Plan meet the minimum recycling requirement of 65% for all other C&D Waste? YES ☒ NO ☐

**Recycling tonnages for mixed C&D waste taken to a certified processing facility = total tonnage x recycling rate. Remaining tonnage counts as disposal. Example: 200 tons x 0.80 = 160 tons diverted and 40 tons disposed.

ATTACHMENT B - INSTRUCTION SHEET FOR SOLID WASTE DIVERSION & DISPOSAL REPORT

1. For assistance, contact the Solid Resources Citywide Recycling Division of LA Sanitation & Environment at (213) 485-3460 or sansrcrd_cdrecycling@lacity.org.
2. Please print very clearly or type.
3. All **three (3) pages** of Attachment B and **all** manifests, weight tickets, receipts, reports, invoices, and other supporting documents specifically identifying the projects, the recyclables and solid waste generated by the project, and where the material was sent must be submitted to the inspector with each application for progress payment.
4. Attachment B includes**: Part 1** - Inert Debris, **Part 2** - All Other C&D Waste, **Part 3** - Project Cumulative Total.
5. Must meet ≥80% recycling rate for Inert Debris by end of construction.
6. Must meet ≥65% recycling rate in Metal, wood, green waste, C&D waste, and all other materials by end of construction.
7. In **Part 1 and Part 2,** record:
    a. Material type generated.
    b. Permitted solid waste hauler(s) and permit number(s).
    c. Facility names and addresses where materials were delivered.
    d. Tons diverted/disposed for a particular pay period.
    e. Verify whether Part 1 meets the minimum recycling requirement of 80% for Inert Debris. Verify whether Part 2 meets the minimum recycling requirement of 65% for other C&D Waste. Contractor is to meet the minimum recycling requirements by the end of construction.
8. In **Part 3**, record:
    a. Pay period beginning and period ending
    b. Diversion and disposal for the pay period and cumulative diversion and disposal for the project
    c. Cumulative waste generated (diversion + disposal) for the project
    d. Cumulative recycling rate for the project (diverted/generated)*100
9. The information required includes but is not limited to, the following:
    a. Contractor and project identification information
    b. Actual quantities of **all** materials listed in tons
10. Source-separated material taken to a recycling facility or certified processing facility is 100% recycled.
11. **Calculating recycling and disposal for mixed material taken to a certified processing facility: the total tons taken to certified processing facility times the recycling rate = amount to be recycled. Total taken to facility minus amount to be recycled = amount for disposal. E.g. 100 tons x 0.80 (80% recycling rate) = 80 tons diverted and 20 tons disposed.

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT
PART 1 OF 3 - INERT DEBRIS

Project Title:	W. O. Number:	Date Submitted:	Progress Payment #
Company Name:	Daytime Phone Number:		
Period Covered In This Report: From:	To:		
Permitted Waste Hauler Name(s) and Permit No(s):			

Material	Facility Name and Address	Tons diverted	Tons Disposed
RECYCLING/REUSE			
Asphalt			
Concrete			
Brick			
Dirt			
Mixed Inerts			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Other (Describe)			
Other (Describe)			
Other (Describe)			
DIVERSION AND DISPOSAL TOTALS * =			

*Copy the Tons Diverted and Tons Disposed totals to Part 3 Project Cumulative Total. Each Report needs to have the totals from every previous Diversion and Disposal Report documented on it, as well as the totals from this Report.

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT
PART 2 OF 3 - ALL OTHER C&D WASTE

W. O. Number:	Date Submitted:

Permitted Waste Hauler Name(s) and Permit No(s):

Material	Facility Name and Address	Tons Recycled	Tons Disposed
RECYCLING/REUSE			
Metal			
Wood / Lumber			
Greenwaste / Landscaping			
Glass			
Cardboard			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Mixed Solid Waste			
Other (Describe)			
Other (Describe)			
CERTIFIED PROCESSING**			
Mixed C&D Waste			
Mixed C&D Waste			
Mixed C&D Waste			
DIVERSION AND DISPOSAL TOTALS* =			

*Copy the Tons Diverted and Tons Disposed totals to Part 3 Project Cumulative Total. Each Report needs to have the totals from every previous Diversion and Disposal Report documented on it, as well as the totals from this Report.

**Recycling tonnages for mixed C&D waste taken to a certified facility = total tonnage x recycling rate. Remaining tonnage counts as disposal. Example: 200 tons x 0.80 = 160 tons diverted and 40 tons disposed.

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT

PART 3 OF 3 - PROJECT CUMULATIVE TOTAL

W. O. Number:				Date Submitted:			
Period Beginning	Period Ending	*Period Diversion	Cumulative Project Diversion, R	*Period Disposal	Cumulative Project Disposal, D	Cumulative Waste Generated R + D	Cumulative Recycling % (R/G)100
INERT DEBRIS CUMULATIVE PROJECT HISTORY, REFER TO ATTACHMENT B PART 1 OF 3							
ALL OTHER C&D WASTE CUMULATIVE PROJECT HISTORY, REFER TO ATTACHMENT B PART 2 OF 3							
Does this Report meet the minimum recycling requirement of 80% for Inert Debris and 65% for All Other C&D Waste? Contractor is to meet the minimum recycling requirements of 80% for Inert Debris and 65% for All Other C&D Waste by the end of construction. YES ☐ NO ☐							
Name & title of person responsible for the information in this form:				Signature:			

*From appropriate Part 1 or 2 during each period.

Each Attachment B Part III Report needs to have the Tons Diverted and Tons Disposed from every previous Diversion and Disposal Report documented in it, as well as the totals from this Report. Attach another Part III form and continue information if more rows are needed.

EXAMPLE SOLID WASTE DIVERSION AND DISPOSAL REPORT FOR PROGRESS PAYMENT #1

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT
PART 1 OF 3 - INERT DEBRIS

Project Title: *Big Street Overcrossing*	W. O. Number: *XYZ12345*	Date Submitted: *03/15/2020*	Progress Payment # *1*
Company Name: *Awesome Engineering Contractors*		Daytime Phone Number: *(123)456-7891*	
Period Covered In This Report: From: *2/1/2020*		To: *2/28/2020*	
Permitted Waste Hauler Name(s) and Permit No(s): *Grava Gravel Haulers, PER-22-333*			

Material	Facility Name and Address	Tons diverted	Tons Disposed
RECYCLING/REUSE			
Asphalt	*Inert Recycling Facility A,888 Valle Valley, CA 12345*	*45*	
Concrete	*Inert Recycling Facility A,888 Valle Valley, CA 12345*	*10*	
Brick	*Inert Recycling Facility B, 777 Valle Valley, CA 12345*	*6*	
Dirt	*The Landscaping Co., 222 Valle Valley, CA 12345*	*150*	
Mixed Inerts			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Other (Describe)			
Other (Describe)			
Other (Describe)			
DIVERSION AND DISPOSAL TOTALS * =		*211*	

*Copy the Tons Diverted and Tons Disposed totals to Part 3 Project Cumulative Total. Each Report needs to have the totals from every previous Diversion and Disposal Report documented on it, as well as the totals from this Report.

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT
PART 2 OF 3 - ALL OTHER C&D WASTE

W. O. Number: *XYZ12345*	Date Submitted: *03/15/2020*

Permitted Waste Hauler Name(s) and Permit No(s): *Grava Gravel Haulers, PER-22-333*

Material	Facility Name and Address	Tons Recycled	Tons Disposed
RECYCLING/REUSE			
Metal	*Kim Loai Metal Recycling, 333 Camino St, CA 12345*	*2*	
Wood / Lumber	*The Landscaping Co., 222 Valle Valley, CA 12345*	*15*	
Greenwaste / Landscaping			
Glass			
Cardboard			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Mixed Solid Waste	*Municipal Landfill, 456 Montana Mountains, CA 12345*		*1*
Other (Describe)			
Other (Describe)			
CERTIFIED PROCESSING**			
Mixed C&D Waste	*Certified Facility A (Recycling Rate = 75% = 0.75)*	*9*	*3*
Mixed C&D Waste	*12 tons x 0.75 = 9.00 tons recycled and 3.00 tons disposed*		
Mixed C&D Waste			
Mixed C&D Waste			
DIVERSION AND DISPOSAL TOTALS* =		*26*	*4*

*Copy the Tons Diverted and Tons Disposed totals to Part 3 Project Cumulative Total. Each Report needs to have the totals from every previous Diversion and Disposal Report documented on it, as well as the totals from this Report.

**Recycling tonnages for mixed C&D waste taken to a certified facility = total tonnage x recycling rate. Remaining tonnage counts as disposal. Example: 200 tons x 0.80 = 160 tons diverted and 40 tons disposed.

ATTACHMENT B

INERT SOLID WASTE DIVERSION AND DISPOSAL REPORT

PART 3 OF 3 - PROJECT CUMULATIVE TOTAL

W. O. Number: *XYZ12345*	Date Submitted: *03/15/2020*

Period Beginning	Period Ending	*Period Diversion	Cumulative Project Diversion, R	*Period Disposal	Cumulative Project Disposal, D	Cumulative Waste Generated R + D	Cumulative Recycling % (R/G)100
INERT DEBRIS CUMULATIVE PROJECT HISTORY, REFER TO ATTACHMENT B PART 1 OF 3							
2/1/2020	*2/28/2020*	*211*	*211*	*0*	*0*	*211*	*100(211/211)= 100.00*
ALL C&D OTHER WASTE CUMULATIVE PROJECT HISTORY, REFER TO ATTACHMENT B PART 2 OF 3							
2/1/2020	*2/28/2020*	*26*	*26*	*4*	*4*	*26+4=30*	*100(26/30)= 86.67*

Does this Report meet the minimum recycling requirement of 80% for Inert Debris and 65% for All Other C&D Waste? Contractor is to meet the minimum recycling requirements of 80% for Inert Debris and 65% for All Other C&D Waste by the end of construction.

YES ☒ NO ☐

Name & title of person responsible for the information in this form: *Bobby Lee, Project Manager*	Signature: *Bobby Lee*

*From appropriate Part 1 or 2 during each period.

Each Attachment B Part III Report needs to have the Tons Diverted and Tons Disposed from every previous Diversion and Disposal Report documented in it, as well as the totals from this Report.

Attach another Part III form and continue information if more rows are needed.

EXAMPLE SOLID WASTE DIVERSION AND DISPOSAL REPORT FOR PROGRESS PAYMENT #2

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT
PART 1 OF 3 - INERT DEBRIS

Project Title: *Big Street Overcrossing*	W. O. Number: *XYZ12345*	Date Submitted: *04/15/2020*	Progress Payment # *2*

Company Name: *Awesome Engineering Contractors* Daytime Phone Number*: (123)456-7891*

Period Covered In This Report:
From: *3/1/2020* To: *3/31/2020*

Permitted Waste Hauler Name(s) and Permit No(s): *Grava Gravel Haulers, PER-22-333*

Material	Facility and Location	Tons diverted	Tons Disposed
RECYCLING/REUSE			
Asphalt	*Inert Recycling Facility A,888 Valle Valley, CA 12345*		
Concrete	*Inert Recycling Facility A,888 Valle Valley, CA 12345*	*300*	
Brick	*Inert Recycling Facility B, 777 Valle Valley, CA 12345*		
Dirt	*The Landscaping Co., 222 Valle Valley, CA 12345*	*100*	
Other (Describe)			
Other (Describe)			
DISPOSAL			
Other (Describe)			
Other (Describe)			
Other (Describe)			
DIVERSION AND DISPOSAL TOTALS * =		*400*	

*Copy the Tons Diverted and Tons Disposed totals to Part 3 Project Cumulative Total. Each Report needs to have the totals from every previous Diversion and Disposal Report documented on it, as well as the totals from this Report.

ATTACHMENT B

SOLID WASTE DIVERSION AND DISPOSAL REPORT
PART 2 OF 3 - ALL OTHER C&D WASTE

W. O. Number: *XYZ12345*	Date Submitted: *04/15/2020*

Permitted Waste Hauler Name(s) and Permit No(s): *Grava Gravel Haulers, PER-22-333*

Material	Facility and Location	Tons Recycled	Tons Disposed
RECYCLING/REUSE			
Metal	*Kim Loai Metal Recycling, 333 Camino St, CA 12345*	*1*	
Wood / Lumber	*The Landscaping Co., 222 Valle Valley, CA 12345*	*16*	
Greenwaste / Landscaping			
Glass			
Cardboard			
Other (Describe)			
Other (Describe)			
DISPOSAL			
Mixed Solid Waste	*Municipal Landfill, 456 Montana Mountains, CA 12345*		*1*
Other (Describe)			
Other (Describe)			
Other (Describe)			
CERTIFIED PROCESSING**			
Mixed C&D Waste	*Certified Processor A (Recycling Rate = 75% = 0.75)*	*7.5*	*3.5*
Mixed C&D Waste	*10 tons x 0.75 = 7.5 tons recycled and 2.5 tons disposed*		
Mixed C&D Waste			
Mixed C&D Waste			
	DIVERSION AND DISPOSAL TOTALS* =	*24.5*	*4.5*

*Copy the Tons Diverted and Tons Disposed totals to Part 3 Project Cumulative Total. Each Report needs to have the totals from every previous Diversion and Disposal Report documented on it, as well as the totals from this Report.

**Recycling tonnages for mixed C&D waste taken to a certified facility = total tonnage x recycling rate. Remaining tonnage counts as disposal. Example: 200 tons x 0.80 = 160 tons diverted and 40 tons disposed.

ATTACHMENT B

INERT SOLID WASTE DIVERSION AND DISPOSAL REPORT

PART 3 OF 3 - PROJECT CUMULATIVE TOTAL

W. O. Number: *XYZ12345*	Date Submitted: *04/15/2020*

Period Beginning	Period Ending	*Period Diversion	Cumulative Project Diversion, R	*Period Disposal	Cumulative Project Disposal, D	Cumulative Waste Generated R + D	Cumulative Recycling % (R/G)100
INERT DEBRIS CUMULATIVE PROJECT HISTORY, REFER TO ATTACHMENT B PART 1 OF 3							
2/1/2020	*2/28/2020*	*211*	*211*	*0*	*0*	*211*	*100(211/211)= 100.00*
3/1/2020	*3/31/2020*	*400*	*211+400=611*	*0*	*0*	*211+400=611*	*100(611/611)= 100.00*
ALL OTHER C&D WASTE CUMULATIVE PROJECT HISTORY, REFER TO ATTACHMENT B PART 2 OF 3							
2/1/2020	*2/28/2020*	*26*	*26*	*4*	*4*	*26+4=30*	*100(26/30)= 86.67*
3/1/2020	*3/31/2020*	*24.5*	*26+24.5=50.5*	*4.5*	*4+4.5=8.5*	*50.5+8.5=59*	*100(50.5/59)= 85.59*

Does this Report meet the minimum recycling requirement of 80% for Inert Debris and 65% for All Other C&D Waste? Contractor is to meet the minimum recycling requirements of 80% for Inert Debris and 65% for All Other C&D Waste by the end of construction.

YES ☒ NO ☐

Name & title of person responsible for the information in this form: *Bobby Lee, Project Manager*	Signature: *Bobby Lee*

*From appropriate Part I or II during each period.
Each Attachment B Part III Report needs to have the Tons Diverted and Tons Disposed from every previous Diversion and Disposal Report documented in it, as well as the totals from this Report.
Attach another Part III form and continue information if more rows are needed.

APPENDIX "H"

ENVIRONMENTAL COMPLIANCE TRACKING (ECT) FORM

Environmental Compliance Tracking (ECT) Form

PORT OF LOS ANGELES CONSTRUCTION DIVISION

2025-2027 MARINE IMPROVEMENTS

SPECIFICATION No. 2842 **CONTRACT No. ####**

Contractor			ECT No.:	

Section I: Equipment Information

Equipment Description	Equipment Make and Model No.	Est. Hours on Project

On-Road Equipment ☐	Engine Model Year	License Plate No.	

Non-Road Construction Equipment ☐	Tier Level	CARB EIN	Engine Family Name	Executive Order No. (Attach Form)	
Harbor Craft Equipment ☐	Tier Level	CARB UVI	Engine Family Name	Fleet Operator	

Section II: Compliance Status

Does the above piece of equipment comply with the environmental measures, including but not limited to regulatory compliance certifications, mitigation measures and project conditions, set forth in the contract? ***If no, please state circumstance in Section III.***

Yes ☐ No ☐

Section III: Non-Compliance Circumstance

☐	A piece of specialized equipment is unavailable, in a controlled form, or within the required Tier level, within the state of California, including through a leasing agreement.
☐	Contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available.
☐	Contractor has ordered a control device for a piece of equipment planned for use on the Project, or Contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the Contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the Project has the controlled equipment available for lease.

Section IV: Steps Taken (Explain Below)

I certify to the best of my knowledge that the above information is true and in accordance with the contract requirements.

Signature _____ Date _____

SUBMIT FORM ONLINE

APPENDIX "I"

LOS ANGELES HARBOR DEPARTMENT
IMPORT MATERIAL CHECKLIST

LOS ANGELES HARBOR DEPARTMENT
IMPORT MATERIAL CHECKLIST

GENERAL INFORMATION

POLA Project Name: _____ **Contract Spec No.**: _____

POLA Project Address: _____

Source of Import Material*
Name/Address of Source: _____Unique Identifier (if any): _____
*For stockpiled materials, enter information for the source and staging of the stockpiles.

Origin of Import Material: Quarry:____ Industrial/Commercial: _____ Other: _____

Current/Historical Operations of the Source: _____

SAMPLING INFORMATION

Sampling Firm Name: _____

Firm Address:_____

Sampler's Name(s): _____
Sample Type: Grab from within stockpile(s): ___ In-Situ (Contractor should have a Port-Approved sampling plan): ____

Analytical Laboratory Name/Address: _____

Laboratory Report Number (s): _____

_____

CERTIFICATION

I certify that all information, sampling, and analytical laboratory data and results provided regarding the subject material are representative, accurate, correct, and complete to the best of my knowledge and belief.

_____ Date: _____
Contractor Signature – Licensed Professional

_____ Title: _____
Print Contractor Name – Licensed Professional

Note: Contractor must attach copies of all pertinent information, including approved sampling plan (if applicable), sample location map, laboratory reports, and photographs for checklist verification.

POLA ACCEPTANCE

_____Approved _____Reject (Explain): _____

_____ _____ _____
POLA Authorization Signature Print Name Date

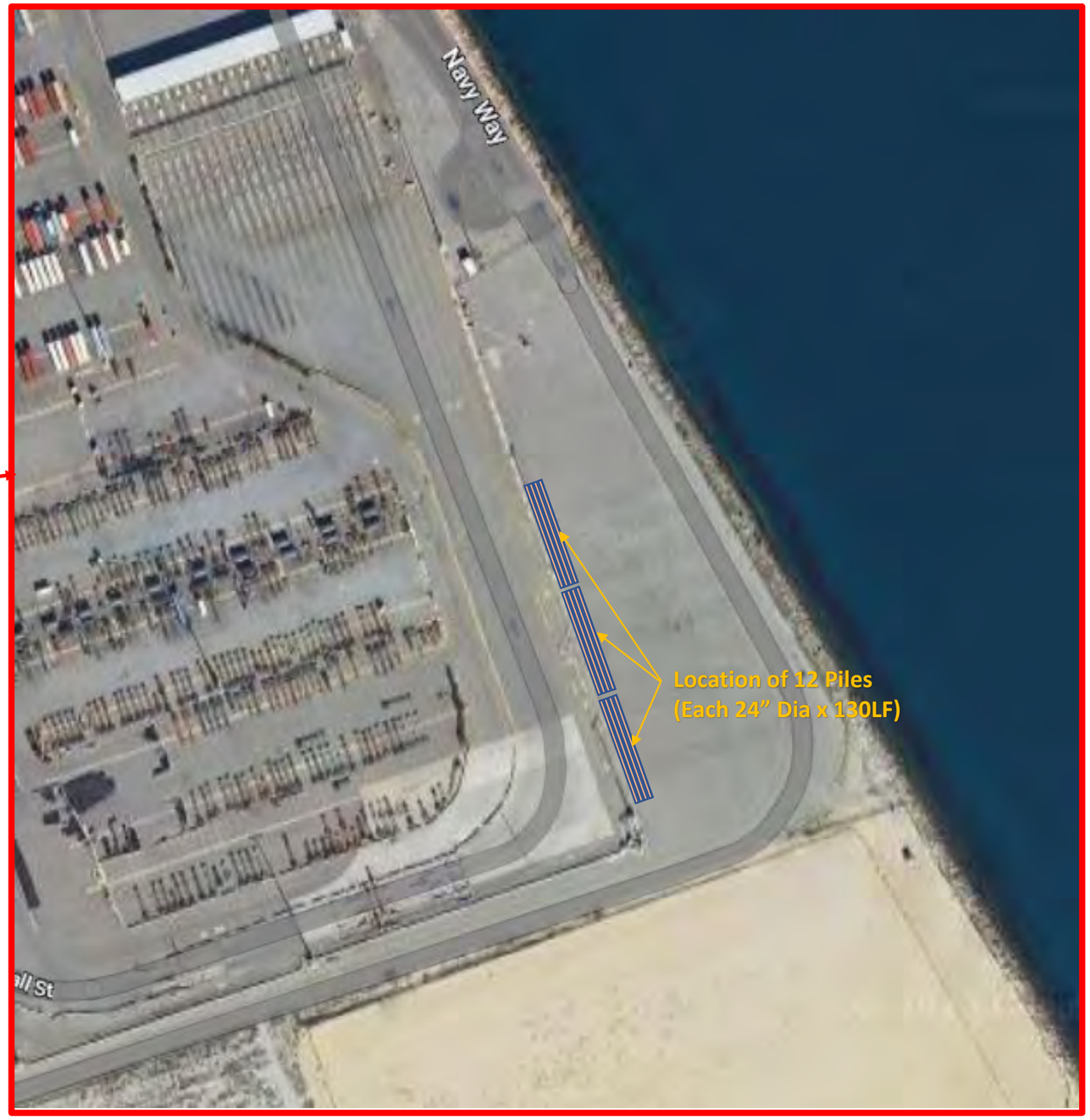
APPENDIX "J"

INDICATOR PILES STORAGE LOCATION MAP

Pier 400 Map

Not To Scale

1. Transport and delivery of indicator piles shall be through waterside.
2. Coordinate access with Engineer.
3. Delivery of indicator piles shall be within 5 mile radius of pick-up location.



Location of 12 Piles

Not To Scale

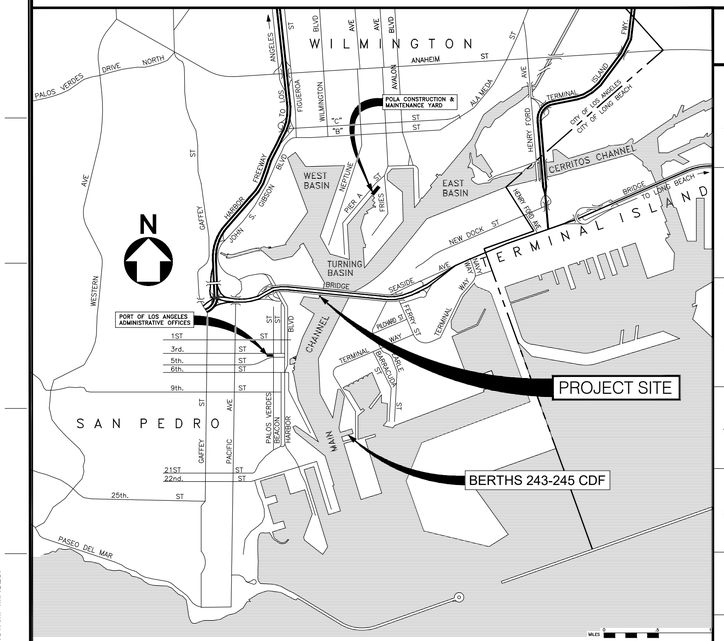
Date: August 1, 2024

APPENDIX "K"

BERTH 95 BARGE LANDING RAMP UPGRADE

ABBREVIATIONS

@	AT
AC	ASPHALT CONCRETE
APPD, APP'D	APPROVED
APPROX	APPROXIMATE/APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVE	AVENUE
BOT	BOTTOM
CHK'D	CHECKED
CLR	CLEAR, CLEARANCE
CDF	CONFINED DISPOSAL FACILITY
CONC	CONCRETE
(E)	EXISTING
E	EAST
EG	EXISTING GRADE, GROUND
EW	EACH WAY
FD	FOUND
FG	FINISH GRADE
LMC	LATEX MODIFIED CONCRETE
LG	LONG, LENGTH
MG	MAGNETIC
(N)	NEW
N	NORTH
NIC	NOT IN CONTRACT
OC	ON CENTER
(PIP)	PROTECT IN PLACE
REINF	REINFORCED, REINFORCEMENT
SHT	SHEET
THK	THICK, THICKNESS
TYP	TYPICAL, TYPICALLY
Z	ELEVATION TO MLLW



VICINITY MAP

REFERENCING SYSTEM

MAIN PLAN & ELEVATIONS

1A-01 / A-01
- DETAIL NUMBER OF PLAN OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.
- SHEET NUMBER WHERE PLAN OR ELEVATION IS DRAWN.

MAIN DETAIL, FLAG-SECTIONS & DETAILS

2A-03 / 1A-01
- DETAIL NUMBER OF SECTION OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.
- SHEET NUMBER WHERE SECTION OR ELEVATION IS DRAWN.
- DETAIL & SHEET NUMBER WHERE SECTION OR DETAIL REFERENCE ORIGINATED.

SUB-DETAIL, FLAG-INTERIOR, ELEVATIONS & DETAILS

A / 2A-04
- SUB-DETAIL NUMBER OF INTERIOR ELEVATION OR DETAIL CONSECUTIVELY LISTED ALPHABETICALLY.
- DETAIL & SHEET NUMBER WHERE SUB-DETAIL REFERENCE ORIGINATED.

REFERENCE FLAG

2A-05
- DETAIL & SHEET NUMBER WHERE DETAIL, SECTION DETAIL OR ELEVATION IS DRAWN.

SECTION FLAG

2A-05
- ARROW INDICATES DIRECTION OF CUT-VIEW.
- DETAIL & SHEET NUMBER WHERE SECTION OR DETAIL IS DRAWN.

A, B, C, D, X
- INTERIOR ELEVATION CALLOUT.
- DRAWN ELEVATION CALLOUT WHERE MULTI ELEVATION OCCURS.

REVISION SYMBOL

A
- REVISION NUMBER (ALPHABETIC DESIGNATION-PRIOR TO BID OPENING. NUMERIC DESIGNATION APPROVED DURING CONSTRUCTION).
- CLOUDED AREA DESIGNATES REVISED AREA.

INDEX TO DRAWINGS

DRAWING NUMBER	TITLE	DRAWING NUMBER	TITLE
T-02	INDEX TO DRAWINGS, VICINITY MAP, AND ABBREVIATIONS		
GC-01	PROJECT LIMITS, ACCESS AND NOTES		
GC-02	ENLARGED PROJECT LIMITS		
CC-01	HORIZONTAL COORDINATE CONTROL PLAN		
R-01	SOUTH RAMP REPAIR AND REMOVAL PLAN		
C-01	DREDGE AND FILL PLANS		
C-02	MINIMUM CLEARANCE AROUND BARGE		
S-01	DREDGING AND REVETMENT LONGITUDINAL CROSS SECTIONS		
S-02	DREDGING AND REVETMENT TRANSVERSE CROSS SECTIONS		

APPENDIX "K"
FOR INFORMATION ONLY

*REFERENCE DRAWINGS ARE AVAILABLE FOR REVIEW IN THE L.A.H.D. : CONSTRUCTION DIVISION WILL PROVIDE TO THE CONTRACTOR AS NEEDED VIA EMAIL.

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

INDEX TO DRAWING, VICINITY MAP, AND ABBREVIATIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: T-02
SHEET NUMBER:

DWG: N:\caddproject\1-3404 B95 Barge Landing Ramp\01 Production\01 Drawings\01_Working Files\SIDELTA B1-3404 T-02.dwg USER: LEC
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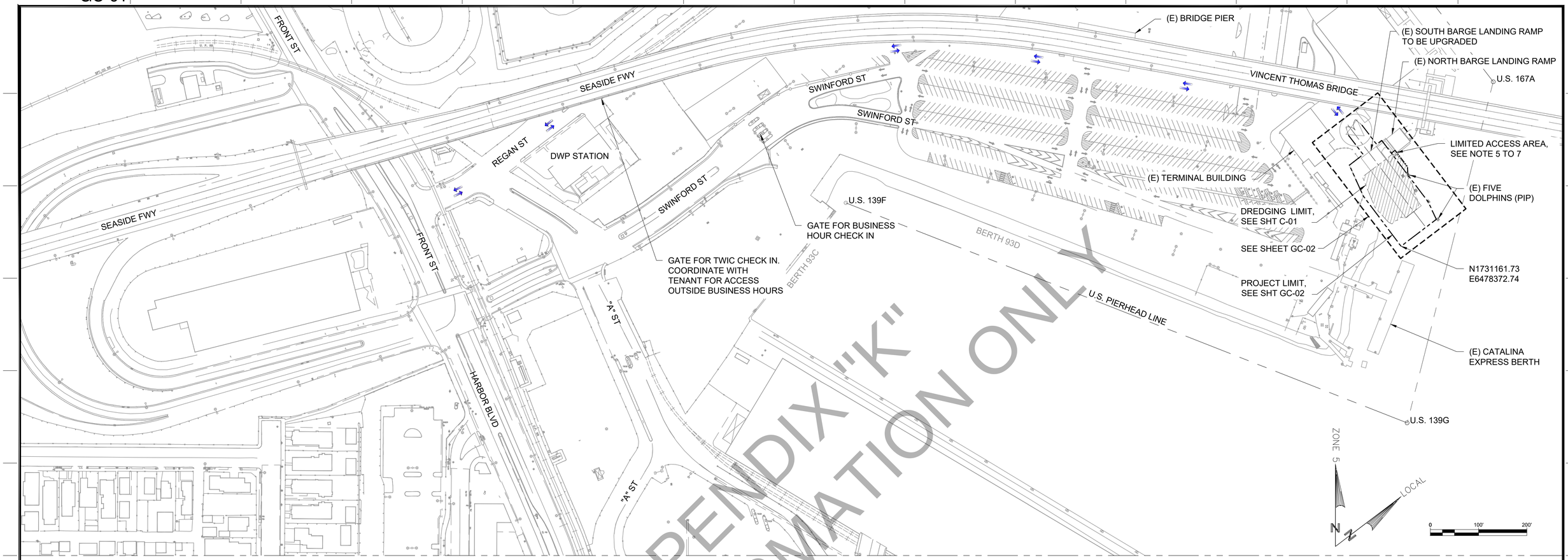
POLAPRO1_102012_R.B.



APPENDIX "K"
FOR INFORMATION ONLY

GENERAL SITE NOTES:

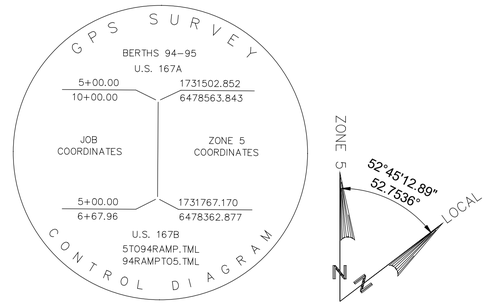
1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK AND NOTIFY ENGINEER OF ANY DISCREPANCIES
2. PRIMARY LANDSIDE ACCESS: PRIMARY LANDSIDE ACCESS TO THE SITE WILL BE FROM REGAN ST. ALL CONTRACTOR PERSONNEL MUST STOP AND PRESENT A TWIC CARD TO TENANT SECURITY PERSONEL AT THE SECURITY OFFICE PRIOR TO ENTERING THE FACILITY. CONTRACTOR SHALL AT NO TIME BLOCK ACCESS TO THE TERMINAL GATE. CONTRACTOR SHALL USE ONLY THE AREA SHOWN TO ACCESS LANDSIDE WORK AREA.
3. ANY CONSTRUCTION ACTIVITIES SHALL NOT IMPACT NAVIGATION OR OPERATION IN THE CHANNEL AND CATALINA EXPRESS BERTH.
4. CONTRACTOR SHALL STOP WORK AND YIELD ACCESS TO VESSELS AS NEEDED, AT NO ADDITIONAL COST TO THE DEPARTMENT.
5. BARGE LOADING AND UNLOADING OPERATION AT THE NORTH BARGE LANDING RAMP SHALL BE UNINTERRUPTED DURING CONSTRUCTION AT SOUTH BARGE LANDING.
6. CONTRACTOR SHALL PROVIDE NOTICE TO GREG BOMBARD WITH CATALINA EXPRESS - (310) 519-1212, TWO WEEKS IN ADVANCE OF ANY WORK WITHIN THE LIMITED ACCESS WORK LIMITS.
7. CONTRACTOR SHALL WORK PER WORK WINDOW SCHEDULE PROVIDED BY THE TENANT. GENERAL WORK WINDOWS SHALL BE FROM OCTOBER TO APRIL AND FROM 4:00 PM TO MIDNIGHT.
8. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A CONSTRUCTION FENCE ALONG THE LANDSIDE PROJECT LIMITS DURING CONSTRUCTION.
9. CONTRACTOR SHALL DEPLOY HARBOR CONTAINMENT BOOM AND HEAVY WEIGHT SILT CURTAIN WITHIN THE PROJECT LIMIT DURING WATERSIDE WORK, WITH NO ANCHORS OR PROTRUSIONS BEYOND THE SHOWN LIMIT ON THE GC-02 SHEET. ACTUAL BOOM LAYOUT MAY VARY BASED ON FIELD CONDITIONS DURING CONSTRUCTION AND SHALL BE COORDINATED WITH OPERATIONS OF ADJACENT TENANT.
10. CONTRACTOR SHALL REMOVE THE TEMPORARY CONSTRUCTION FENCING AND BOOM UPON COMPLETION OF THE PROJECT.

LEGEND:

- DREDGING AREA
- ACCESS ROUTE
- (E) FENCE
- PROJECT LIMIT

1GC-01 / GC-01 SOUTH BARGE LANDING RAMP IMPROVEMENT SITE PLAN

SCALE: 1" = 100'-0"



2GC-01 / GC-01 SURVEY CONTROL DIAGRAM

NTS

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

PROJECT LIMITS, ACCESS AND NOTES

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER GC-01

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DATE: Mar 26, 2025 8:48am

POLAPRO1_102012_R.B

NORTH BARGE LANDING RAMP

SOUTH BARGE LANDING RAMP

USPH LINE

50'-0"

36'-0"±

39'-7"±

14'-4"±

108'-10"±

9'-7"±

13'-4"±

35'-0"±

12'-0"±

92'-0"±

LIMITED ACCESS AREA:
BOOM LINE TO BE ADJUSTED TO
YIELD THE RIGHT-OF-OPERATION
TO THE NORTH BARGE LANDING

DREDGE DAYLIGHT LINE

(E) ALL DOLPHINS (PIP), TYP

N1731352.48
E6478354.43

(N) TEMPORARY GATE
AND WIRE MESH FENCE

N1731344.67
E6478284.68

(E) GATE AND FENCE

(E) TERMINAL BUILDING

DEPLOY A SILT CURTAIN
DURING WATERSIDE WORK

N1731265.77
E6478294.58

130'-0"±

N1731161.86
E6478372.72

(E) FENCE (PIP)

LEGEND:

- (E) FENCE
- BOOM AND HEAVY SILK CURTAIN
- CONSTRUCTION FENCE

PROJECT LIMIT

ZONE 5 52 45 12.69 LOCAL

N2+75
N2+50
N2+25
N2+06
N2+00
N1+75
N1+50
N1+25

E9+00 E9+10 E9+40 E9+60 E9+70 E10+00 E10+30 E10+60 E10+90 E11+20 E11+50

APPENDIX "K"
FOR INFORMATION ONLY

1GC-02
1GC-01

ENLARGED PROJECT LIMITS

SCALE: 1" = 10'-0"

0 10' 20'

N

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

B95 BARGE LANDING RAMP UPGRADE

ENLARGED PROJECT LIMITS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
GC-02

DWG: N:\cad\projects\1-3404 B95 Barge Landing Ramp\01 Production\01 Drawings\01_Working Files\SIDELTA B11-3404 GC-02.dwg USER: LEC
DATE: Mar 26, 2025 8:48am

POLAPRO1_102012_R.B.

1 2 3 4 5 6 7 8 9 10 11 12 13 14

A B C D E F G H I J

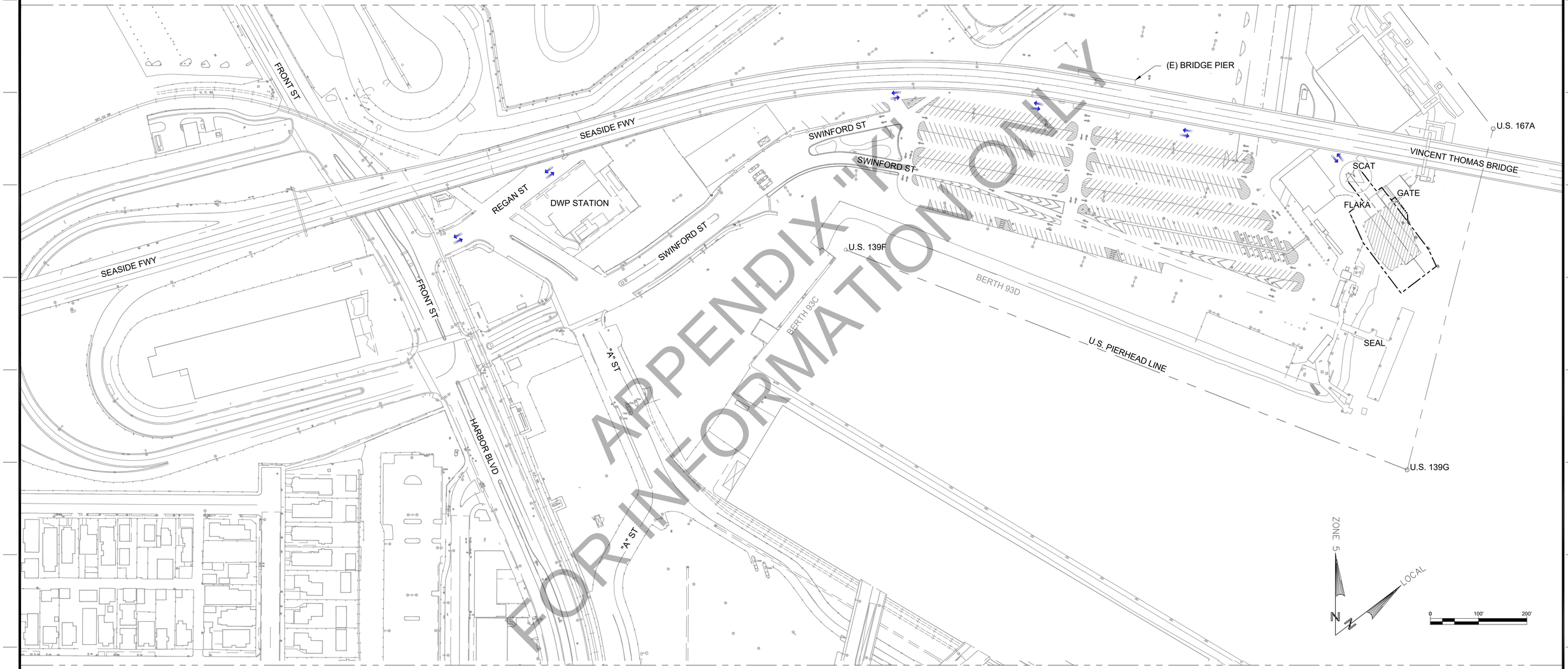
POINT TABLE				
NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
SCAT	1731444.82	6478295.19	11.45	FD MAG NAIL AND WASHER IN AC PAVEMENT
FLAKA	1731362.05	6478278.76	10.11	FD MAG NAIL AND WASHER IN AC PAVEMENT NEAR GATE
GATE	1731389.36	6478388.94	10.06	FD MAG NAIL AND WASHER IN CONC PAD NEAR DOCK
SEAL	1731078.14	6478317.70	14.58	FD MAG NAIL AND WASHER IN CONC PLATFORM
NOTE: COORDINATES LISTED ARE GRID. FOR GROUND DIDTANCES, USE SCALE FACTOR OF 1.00008				

LEGEND:

- DREDGING AREA
- ACCESS ROUTE
- (E) FENCE
- PROJECT LIMIT
- SURVEY NODE

NOTES:

1. ALL COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83), CALIFORNIA COORDINATE SYSTEM, ZONE 5, U.S. FEET, 1995 EPOCH (1991.35).
2. ALL ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29), MEAN LOWER LOW WATER (MLLW). USC&GS BM #DY1083 941 0660 TIDAL 8 EL=13.929
3. SURVEY FILE NAME IS R5435_C.



APPENDIX "K"
FOR INFORMATION ONLY

1CC-01 / CC-01 COORDINATE CONTROL PLAN
SCALE: 1" = 100'-0"

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

HORIZONTAL COORDINATE CONTROL PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER CC-01

DWG: N:\cad\projects\11-3404 B95 Barge Landing Ramp\01 Production\01 Drawings\01_Working Files\SIDELTA B11-3404 CC-01.dwg USER: LEC
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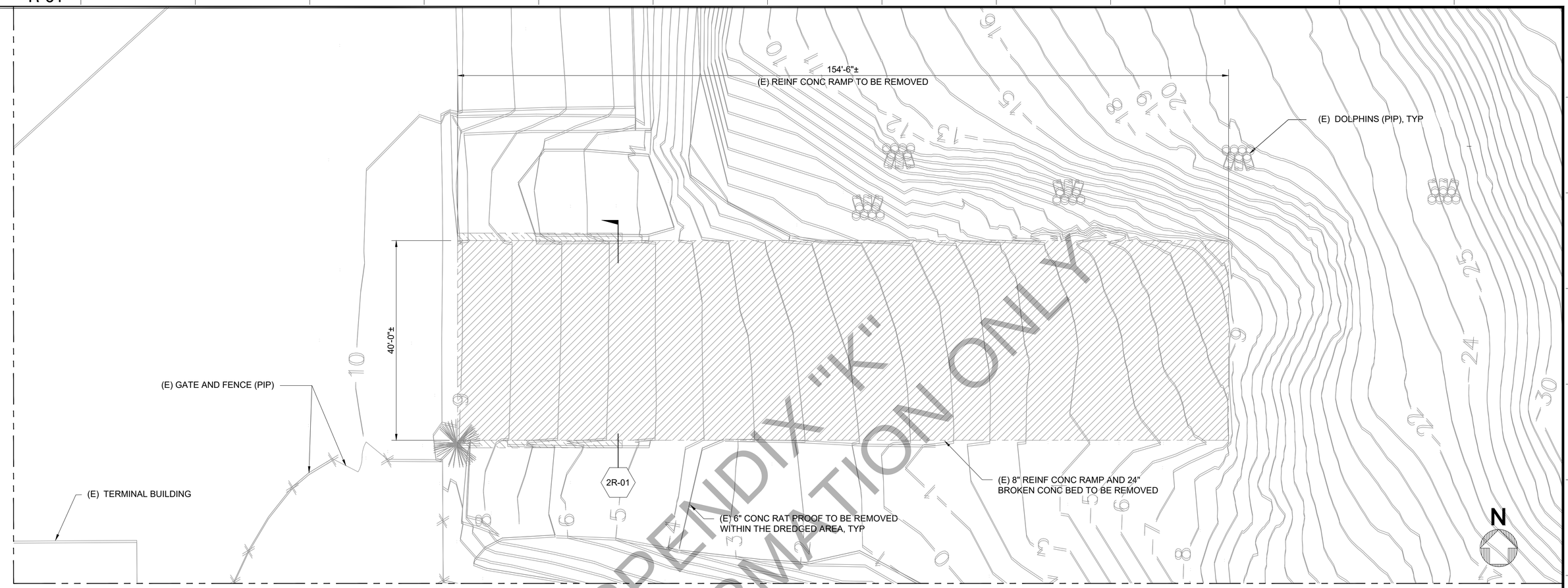
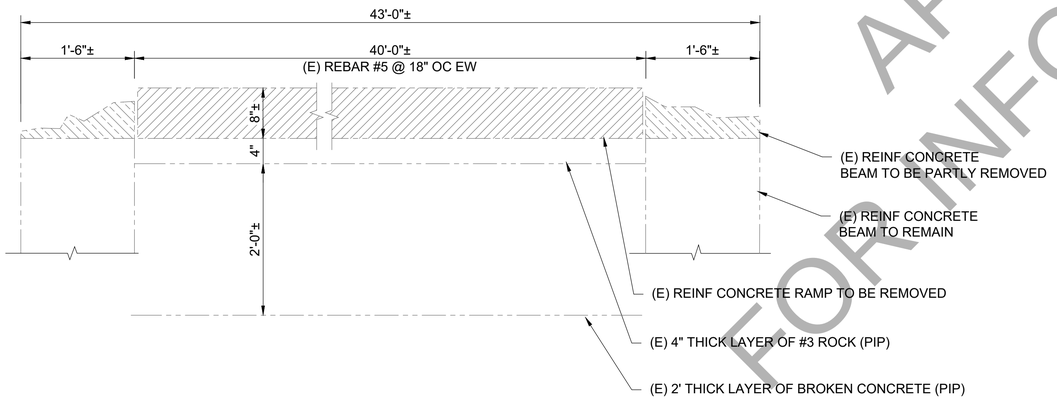
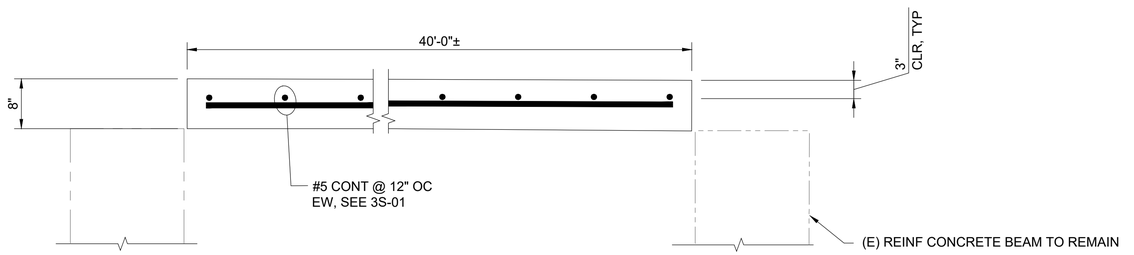


1R-01 / R-01 RAMP REPAIR AND REMOVAL PLAN
SCALE: 1" = 10'-0"

0 10' 20'

LEGEND:
- (E) REINF CONC SLAB TO BE REMOVED
- (E) REINF CONC BEAM TO BE REMOVED





2R-01 / 1R-01 REMOVAL CROSS SECTION
SCALE: 1" = 1'-0"

3R-01 / 3S-01 REPAIR CROSS SECTION
SCALE: 1" = 1'-0"

APPENDIX "K"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

SOUTH RAMP REPAIR AND REMOVAL PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER R-01

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POLAPRO1_102012_R.B

1 2 3 4 5 6 7 8 9 10 11 12 13 14

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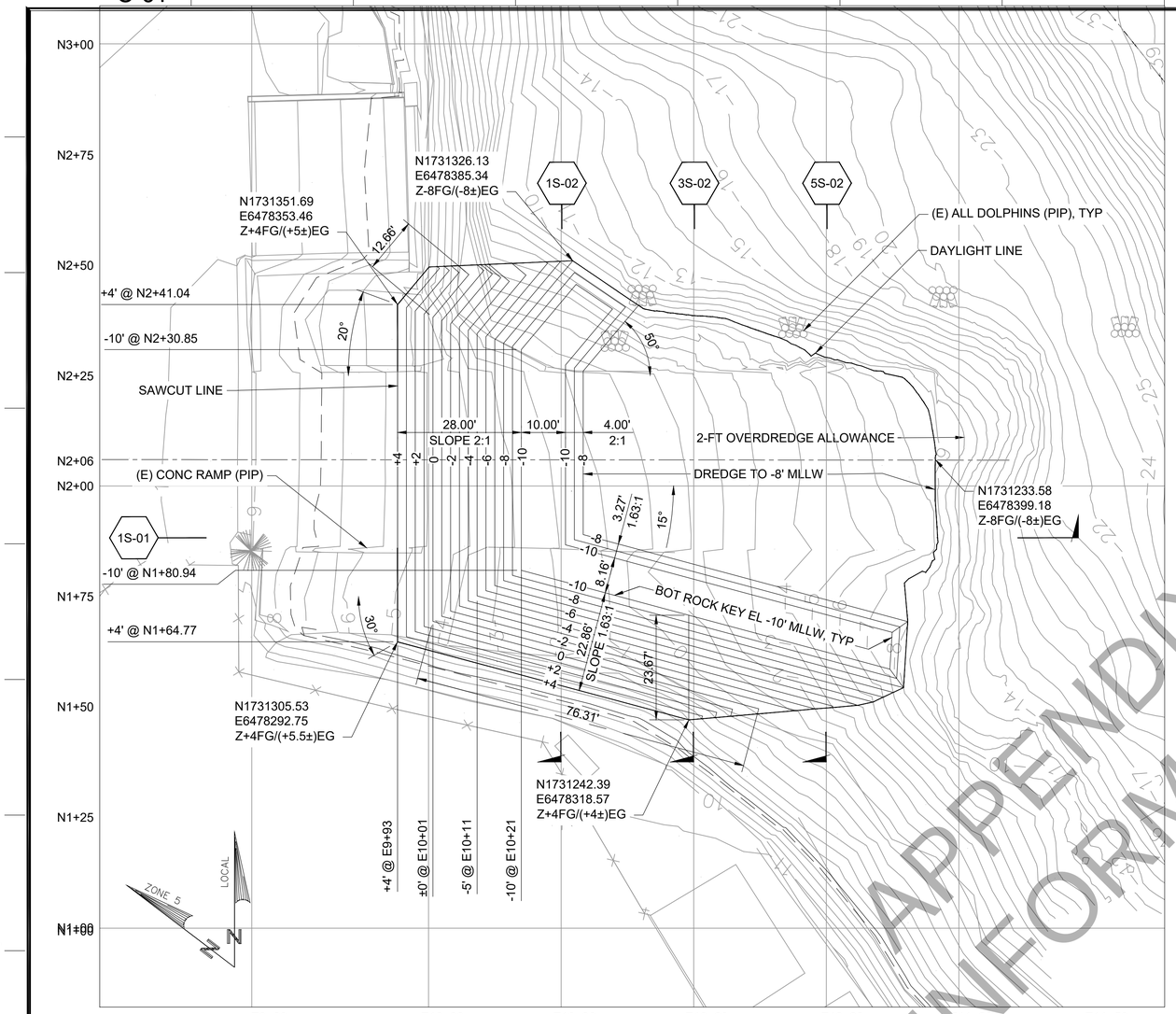
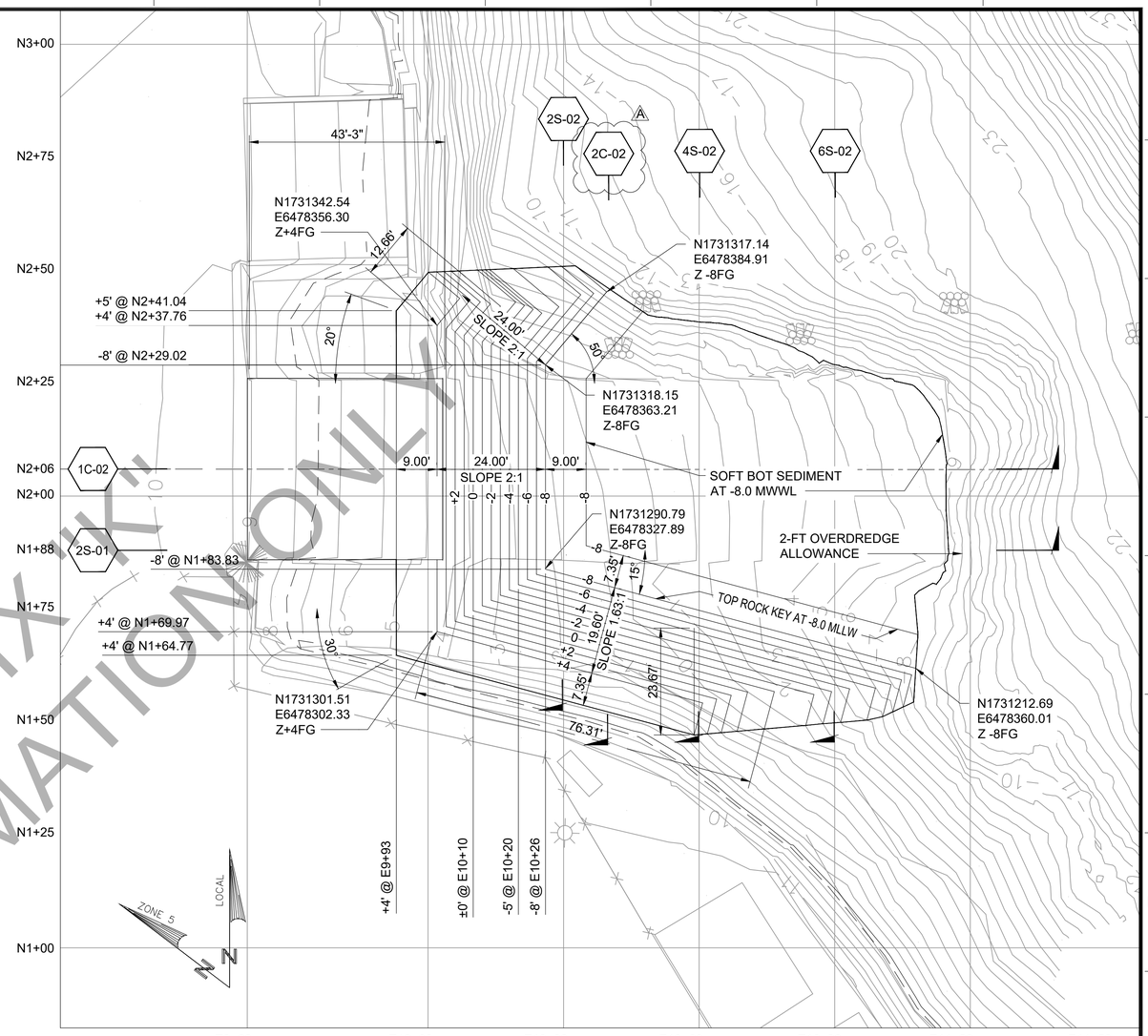


1C-01 / C-01 **DREDGE PLAN**
SCALE: 1" = 16'-0"
0 16' 32'



2C-01 / C-01 **FILL PLAN**
SCALE: 1" = 16'-0"
0 16' 32'

APPENDIX "K"
FOR INFORMATION ONLY

CONSTRUCTION PLAN NOTES:

1. UPON REMOVAL OF THE SLAB, BROKEN CONC BED, RAT PROOFING, AND RIP-RAP WITHIN THE DREDGE LIMITS, THE CONTRACTOR SHALL DREDGE THE AREA TO A DESIGN DEPTH OF -8 FEET MEAN LOWER LOW WATER (MLLW), PLUS 2 ADDITIONAL FEET OF OVERDREDGE ALLOWANCE.
2. CONTRACTOR SHALL DREDGE FROM TOP DOWN AND DISPOSE OF SEDIMENT TO THE CDF AT BERTHS 243-245 AS SHOWN ON SHEET T-02. ACCESS TO THE SITE SHALL BE COORDINATED WITH ENGINEER.
3. CONTRACTOR SHALL FURNISH AND PLACE QUARRY RUN AND RIP RAP FROM BOTTOM UP IMMEDIATELY AFTER DREDGING.
4. CONTRACTOR SHALL CONSTRUCT 12" THK CONCRETE APPROACH SLAB PER DETAIL 3S-01.

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER ____ DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

DREDGE AND FILL PLANS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER C-01

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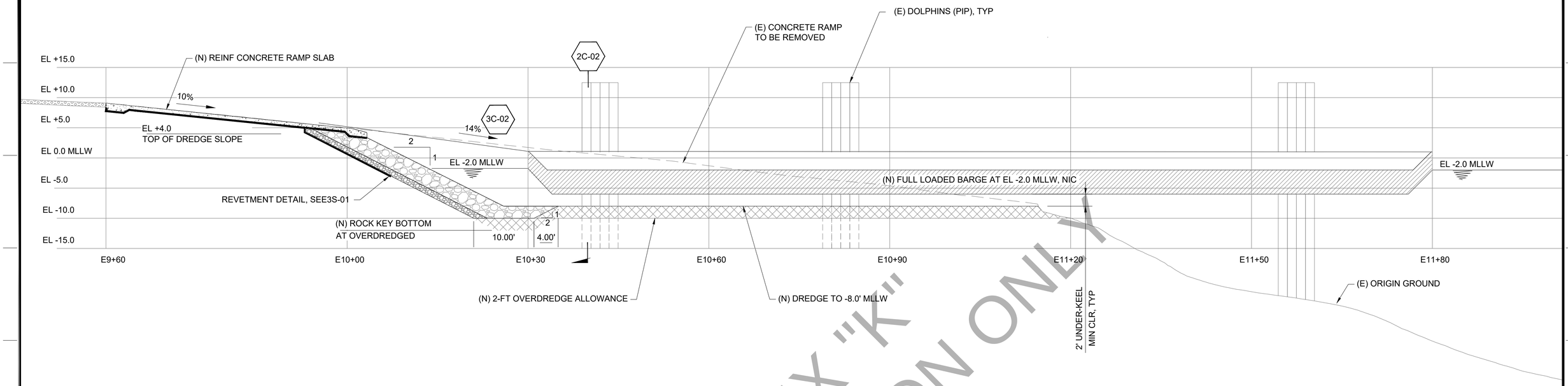
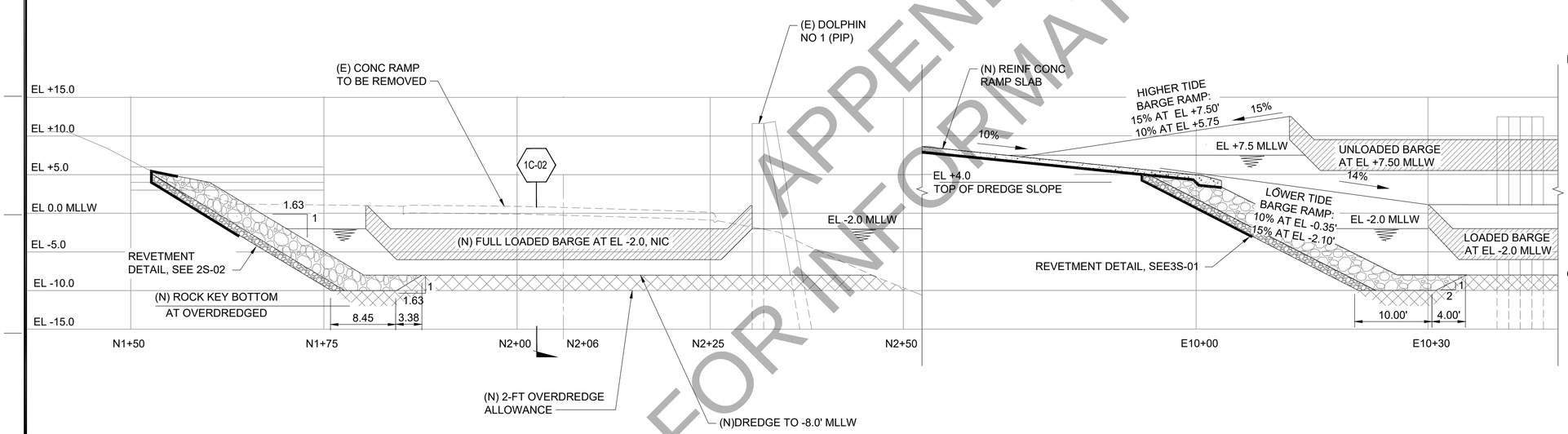


1C-02 / 2C-02, 2C-01 LONGITUDINAL CROSS SECTION AT STA N2+06

SCALE: 1/8" = 1'-0"



2C-02 / 1C-02, 2C-01 TRANSVERSE CROSS SECTION AT STA E10+40

SCALE: 1/8" = 1'-0"

3C-02 / 1C-02 BARGE RAMP SLOPE VS TIDAL RANGE

SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. EXISTING RAMP INFORMATION:

1. CROSS SECTIONS BY SURVEY DRAWING E7027_A, JULY 07, 2019.
2. TOPO BY SURVEY DRAWING E7028_B, DATED 11/26/2019.

B. BARGE INFORMATION:

1. BARGE DIMENSIONS:
   - 1.1 50' WIDTH
   - 1.2 150' LENGTH
   - 1.3 7' SIDE SHELL
2. FULLY LOADED: 4' OF DRAFT AND 3' OF FREEBOARD AT FORE AND AFT
3. UNLOADED: 2' OF DRAFT AND 5' OF FREEBOARD AT FORE AND AFT
4. BARGE BRIDGE RAMP: 35' LENGTH, 24' WIDTH, 55,000 LBS SELF WEIGHT
5. BRIDGE RAMP CAPACITY: MAXIMUM WEIGHT TO BE UNLOADED FROM BOW IS 150,000 LBS.

C. TIDE CHART:

+7.50	EHW - EXTREME HIGH WATER
+5.43	MHHW - MEAN HIGHER HIGH WATER
+4.71	MHW - MEAN HIGH WATER
+2.80	MSL - MEAN SEA LEVEL
+0.95	MLW - MEAN LOW WATER
+0.00	MLLW - MEAN LOWER LOW WATER
-2.50	ELW - EXTREME LOW WATER

D. TIDAL RANGE FOR BARGE LOADING AND UNLOADING OPERATION:

THE TIDAL RANGE FOR BARGE LOADING AND UNLOADING CARGOS FROM THE BARGE VIA THE BARGE RAMP SHOULD BE BETWEEN -2.0 FT AND +7.5FT.

APPENDIX "K"
FOR INFORMATION ONLY

NO.		DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

MINIMUM CLEARANCE AROUND BARGE

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: C-02
SHEET NUMBER

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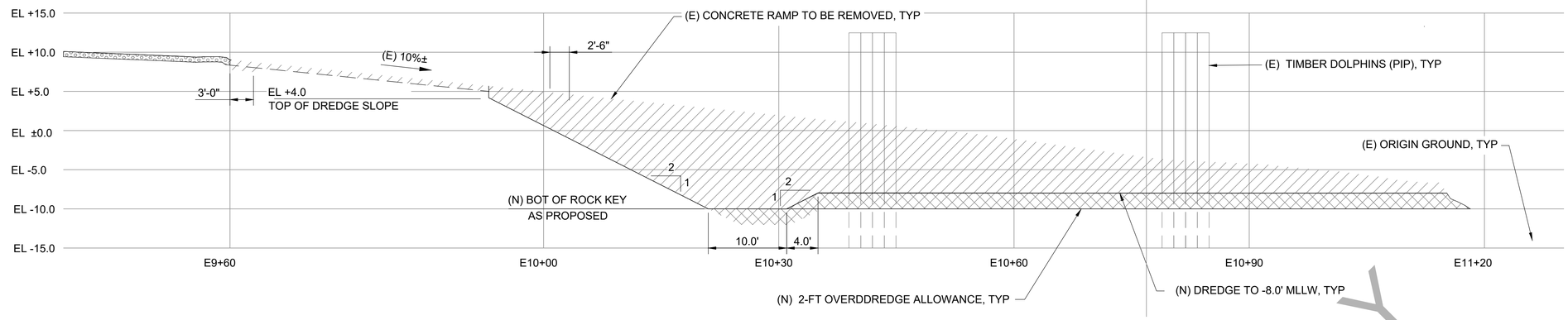
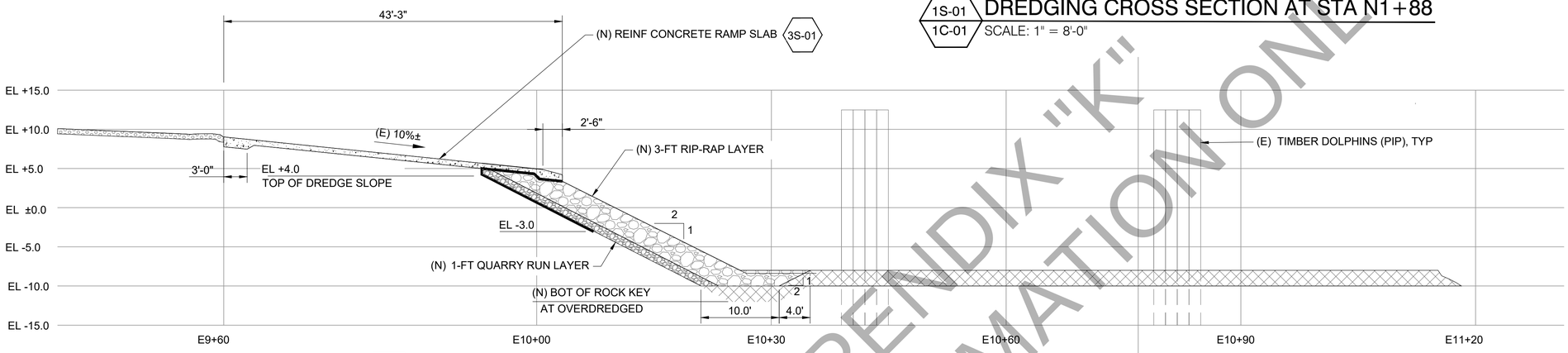


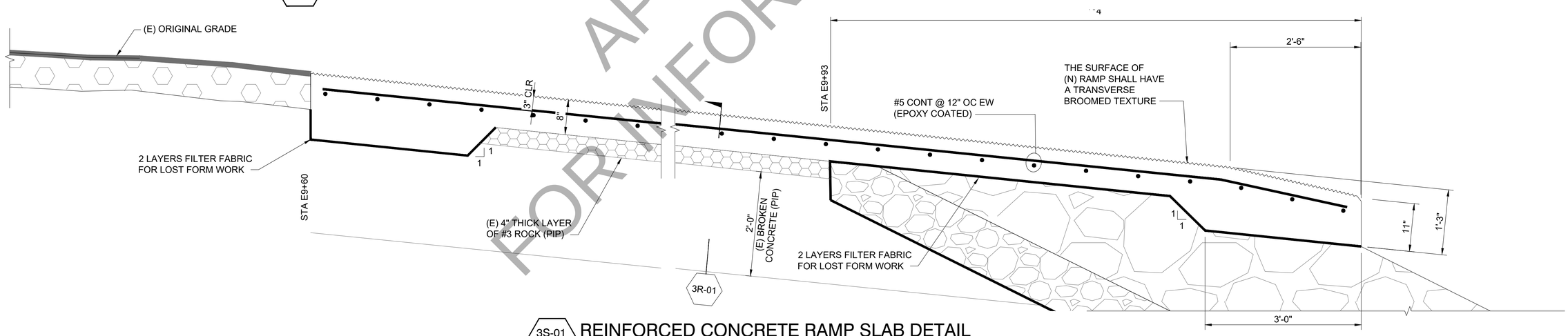
1S-01 / 1C-01 DREDGING CROSS SECTION AT STA N1+88

SCALE: 1" = 8'-0"



2S-01 / 2C-01 REVETMENT CROSS SECTION AT STA N1+88

SCALE: 1" = 8'-0"



3S-01 / 2S-01,3C-02 REINFORCED CONCRETE RAMP SLAB DETAIL

SCALE: 1" = 1'-0"

GENERAL NOTES:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI IN 28 DAYS, AND HAVE WATER-CEMENT (W/C) NO GREATER THAN 40%.

2A. REINFORCING BARS SHALL BE EPOXY COATED, DEFORMED AND SHALL CONFORM TO ASTM A706, GRADE 60.
2B. EPOXY COATING SHALL CONFORM TO ASTM A934/A934M.
2C. LAP SPLICES IN REINF ARE NOT PREFERRED. IF USED, SPLICES IN #5 REINF SHALL BE STAGGERED BY 36 INCHES MINIMUM. THE MINIMUM LENGTH OF LAP SPLICE FOR #5 SHALL BE 48 INCHES.

2. FILTER FABRIC SHALL BE MIRAFI 600X FILTER CLOTH AS MANUFACTURED BY TENCATE OR EQUIVALENT.

3. WHEN BONDING FRESH CONCRETE TO EXISTING CONCRETE, CONTRACTOR SHALL USE FIVE STAR BONDING ADHESIVE.

4. ROCK GRADATION FOR QUARRY RUN LAYER. SEE SPECS 2808, SECTION 35 42 37_2.4D WITH D50 = 5 INCHES.

5. ROCK GRADATION FOR RIPRAP LAYER. SEE SPECS 2808, SECTION 35 42 37_2.6A WITH W50 = 400 LBS.

APPENDIX "K"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN	CHIEF OF DESIGN
DRAWN:	
CHECKED:	ASSISTANT CHIEF HARBOR ENGINEER
DESIGNED: ENGINEER / ARCHITECT	CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

DREDGING AND REVETMENT LONGITUDINAL CROSS SECTIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER S-01

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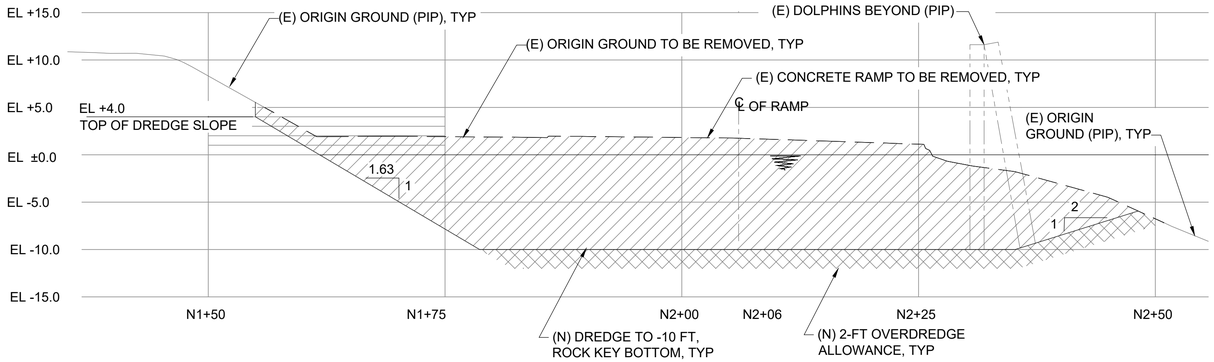

1S-02 / 1C-01 DREDGING CROSS SECTION AT STA E10+30

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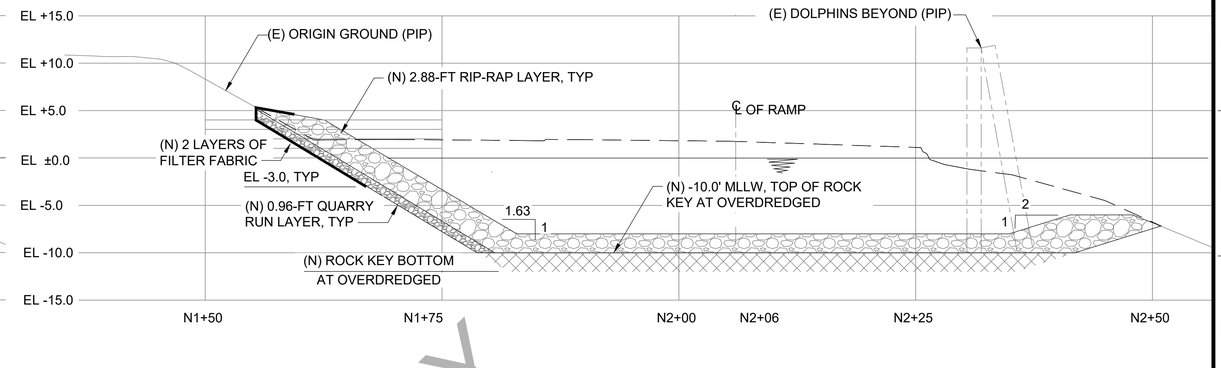

2S-02 / 2C-01, 2C-02 REVETMENT CROSS SECTION AT STA E10+30

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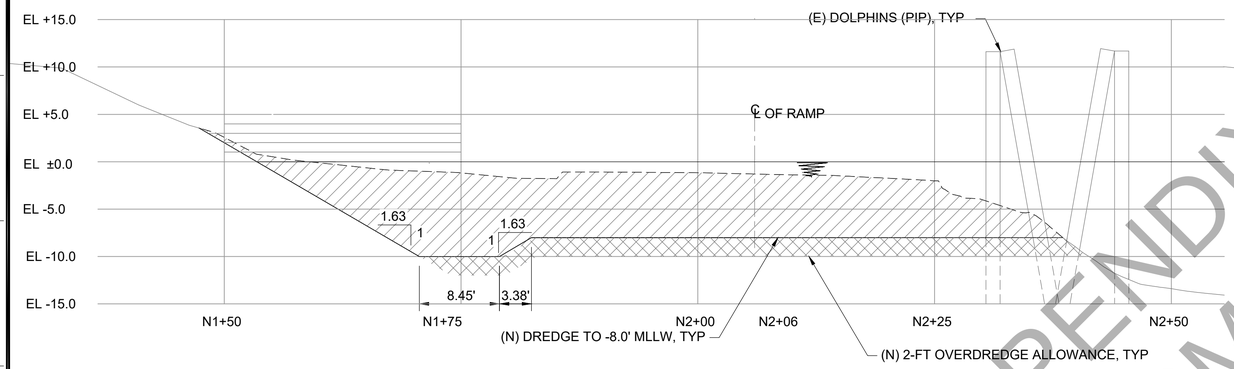

3S-02 / 1C-01 DREDGING CROSS SECTION AT STA E10+60

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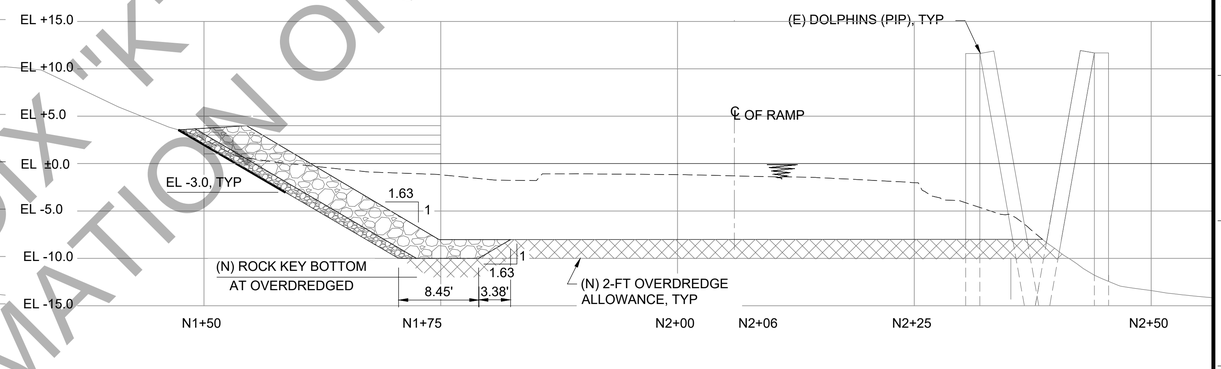
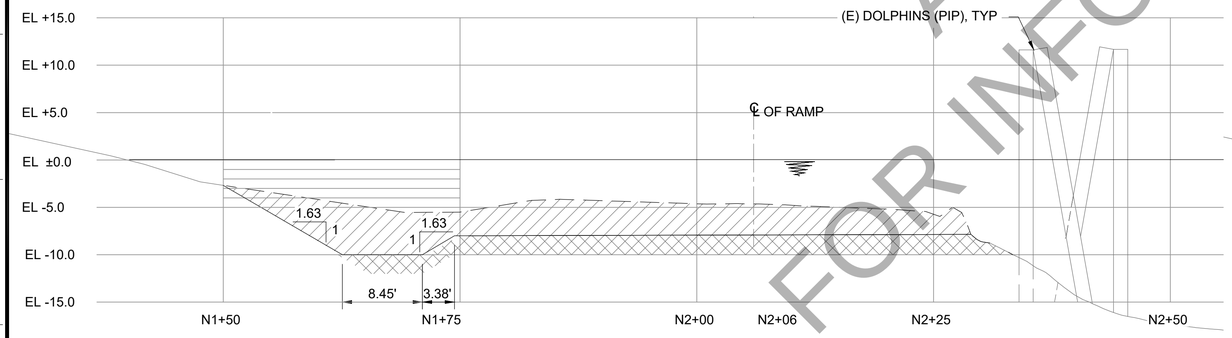


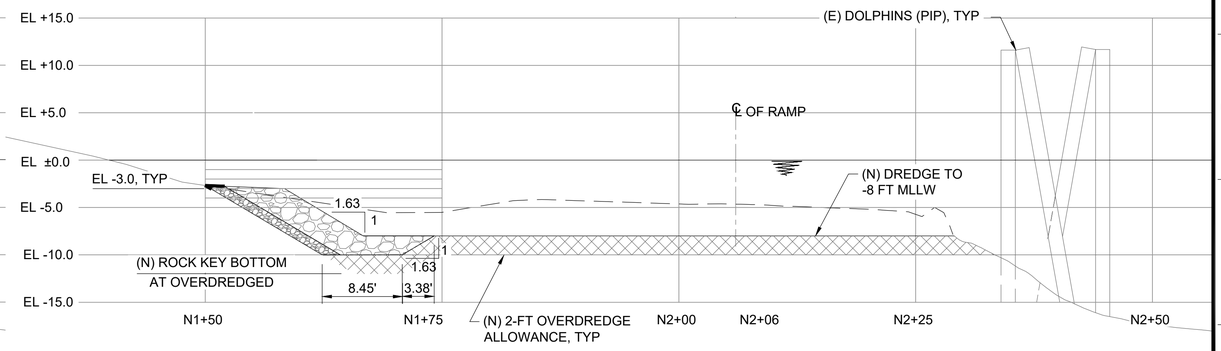
4S-02 / 2C-01 REVETMENT CROSS SECTION AT STA E10+60

SCALE: 1" = 8'-0"



5S-02 / 1C-01 DREDGING CROSS SECTION AT STA E10+90

SCALE: 1" = 8'-0"



6S-02 / 2C-01 REVETMENT CROSS SECTION AT STA E10+90

SCALE: 1" = 8'-0"

APPENDIX "K"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
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CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 95 BARGE LANDING RAMP UPGRADE

DREDGING AND REVETMENT TRANSVERSE CROSS SECTIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
S-02

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DATE: Mar 26, 2025 8:49am

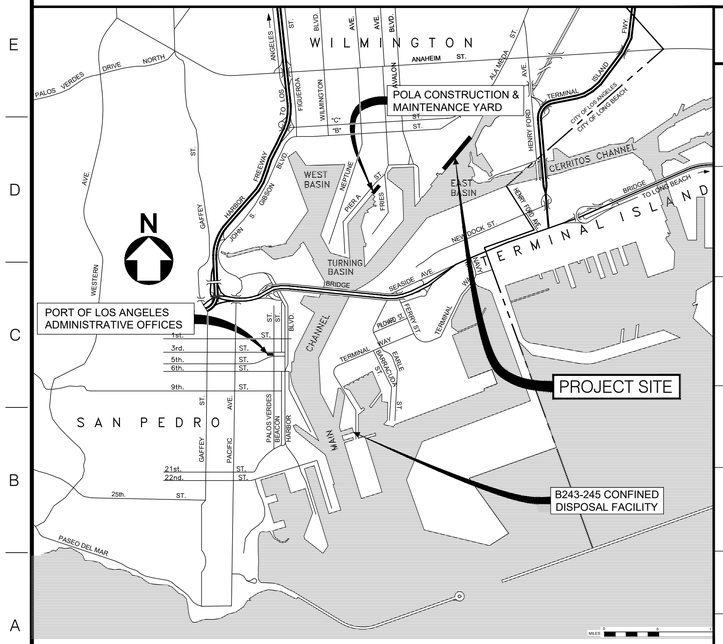
POLAR/D1_10/2012_R.B.

APPENDIX "L"

BERTHS 196-199 MAINTENANCE DREDGING

INDEX TO DRAWINGS

DRAWING NUMBER	TITLE	DRAWING NUMBER	TITLE
T-02	INDEX TO DRAWINGS AND VICINITY MAP		
GC-01	SITE PLAN AND DREDGE NOTES		
DR-01	DREDGE PLAN		
X-01	BERTHS 196-199 TYPICAL DREDGE CROSS SECTIONS		



VICINITY MAP

REFERENCING SYSTEM

MAIN PLAN & ELEVATIONS

1A-01 / A-01

- DETAIL NUMBER OF PLAN OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.
- SHEET NUMBER WHERE PLAN OR ELEVATION IS DRAWN.

MAIN DETAIL, FLAG-SECTIONS & DETAILS

2A-03 / 1A-01

- DETAIL NUMBER OF SECTION OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.
- SHEET NUMBER WHERE SECTION OR ELEVATION IS DRAWN.
- DETAIL & SHEET NUMBER WHERE SECTION OR DETAIL REFERENCE ORIGINATED.

SUB-DETAIL, FLAG-INTERIOR, ELEVATIONS & DETAILS

A / 2A-04

- SUB-DETAIL NUMBER OF INTERIOR ELEVATION OR DETAIL CONSECUTIVELY LISTED ALPHABETICALLY.
- DETAIL & SHEET NUMBER WHERE SUB-DETAIL REFERENCE ORIGINATED.

REFERENCE FLAG

2A-05

- DETAIL & SHEET NUMBER WHERE DETAIL, SECTION DETAIL OR ELEVATION IS DRAWN.

SECTION FLAG

2A-05 / A

- ARROW INDICATES DIRECTION OF CUT-VIEW.
- DETAIL & SHEET NUMBER WHERE SECTION OR DETAIL IS DRAWN.

A / D / X / B / C

- INTERIOR ELEVATION CALLOUT.
- DRAWN ELEVATION CALLOUT WHERE MULTI ELEVATION OCCURS.

REVISION SYMBOL

A

- REVISION NUMBER (ALPHABETIC DESIGNATION-PRIOR TO BID OPENING. NUMERIC DESIGNATION APPROVED DURING CONSTRUCTION).
- CLOUDED AREA DESIGNATES REVISED AREA.

*REFERENCE DRAWINGS ARE AVAILABLE FOR REVIEW IN THE DEPARTMENTS WEB-BASED BID MANAGEMENT SYSTEM SEE SPECIFICATIONS FOR DETAILS

FOR APPENDIX "L" INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
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DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 196-199 MAINTENANCE DREDGING

INDEX TO DRAWINGS AND VICINITY MAP

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER T-02

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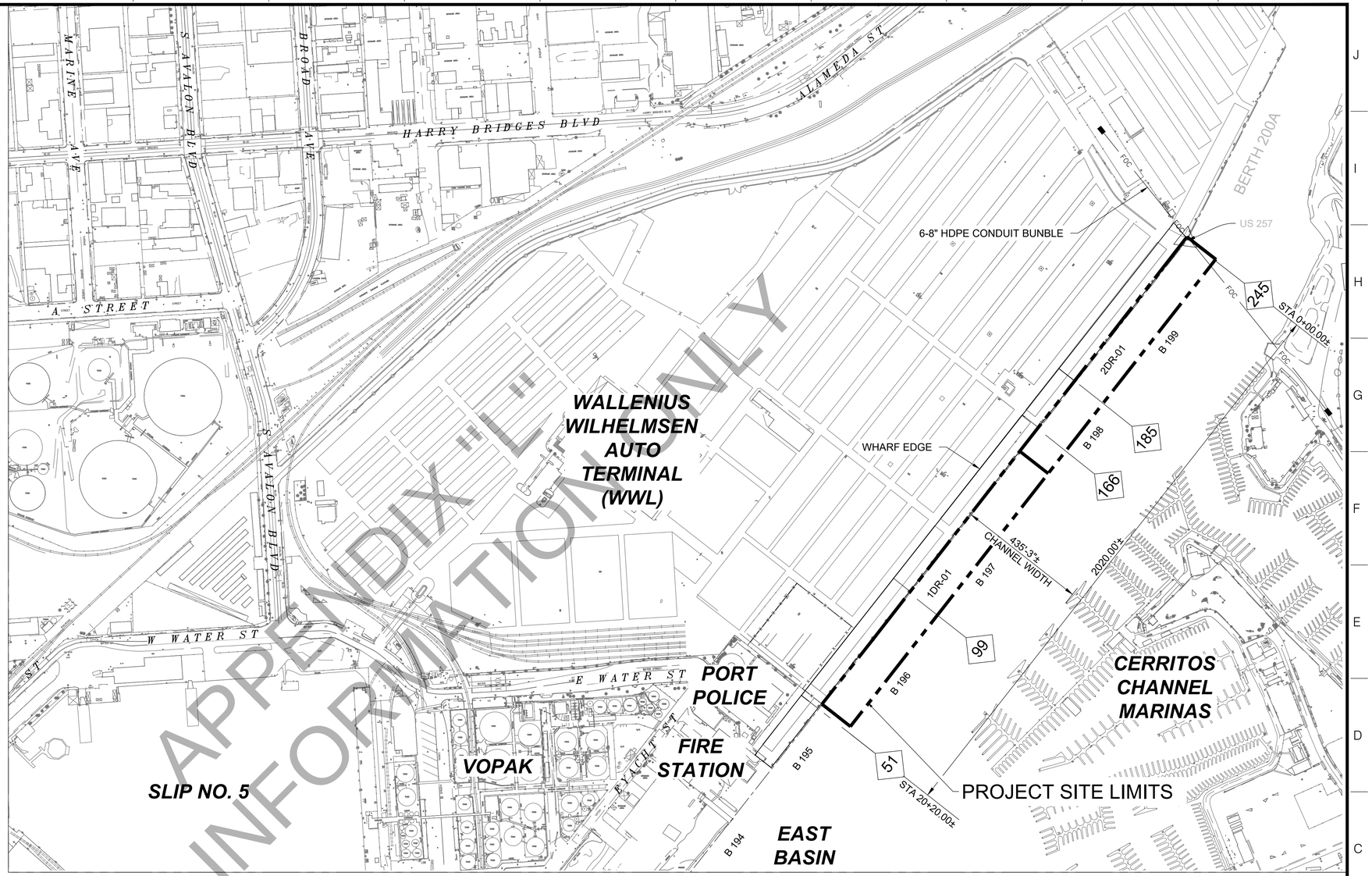
DATE: Mar 21, 2025 10:45am XREFS: I-3516_ReviewSTAMP IMAGES:
POLAPR01_043023_BWD

DREDGING NOTES:

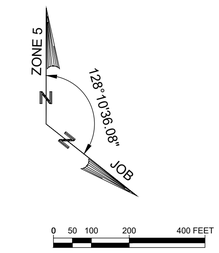
1. VERIFY DIMENSIONS AND CONDITIONS AT PROJECT SITE PRIOR TO DREDGING.
2. SCHEDULE AND COORDINATE THE DREDGING OPERATIONS WITH THE HARBOR DEPARTMENT'S TENANTS TO AVOID CONFLICT WITH SHIPPING SCHEDULES AND CARGO MOVEMENTS. TENANT WILL PROVIDE A 7 CALENDAR DAY WORK WINDOW TO COMPLETE DREDGING WORK.
3. NO EQUIPMENT SHALL BE ALLOWED ON WHARVES FOR HANDLING DREDGING MATERIAL.
4. WORK SHALL BE COORDINATED THROUGH ENGINEER TO ASSURE PERFORMANCE IN ACCORDANCE WITH THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION AND THE US ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICTS.
5. DREDGE MATERIAL SHALL BE DISPOSED OF AT THE CONFINED DISPOSAL FACILITY AT BERTHS 243-245.
6. ALL ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29), MEAN LOWER LOW WATER (MLLW).
   USC&GS BM # DY1083 941 0660 TIDAL 8 EL = 13.929
7. THE DREDGE AREAS CALLED OUT ON THE CROSS-SECTIONS INDICATES BOTH THE REQUIRED AND OVER DEPTH CUT IN SQUARE FEET AT EACH CROSS SECTION.
8. THE QUANTITY OF MATERIAL REMOVED SHALL BE COMPUTED BASED UPON THE DEPARTMENT SURVEYS PER SPECIFICATION TAKEN BEFORE AND AFTER DREDGING.
9. WORK SHALL REMAIN WITHIN THE PERMITTED LIMITS. COORDINATE WITH ENGINEER IF ANY PERMIT ISSUES ARISE.
10. NOTIFY ENGINEER 48 HOURS IN ADVANCE OF ANY ACTIVITY WHICH MAY RESTRICT NAVIGATION WITH ANY CHANNEL OR BRIDGE.
11. DISPOSE OF DREDGED WATER AND MATERIAL TO THE CDF AT BERTHS 243-245. DREDGED WATER SHALL NOT ENTER THE OCEAN.

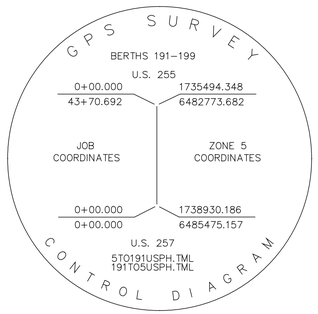


APPENDIX "L"
FOR INFORMATION ONLY

B. ABBREVIATIONS

B	BERTH
CDF	CONFINED DISPOSAL FACILITY
(E)	EXISTING
EL	ELEVATION
MLLW	MEAN LOWER LOW WATER
NAD	NORTH AMERICA DATUM
NGVD	NATIONAL GEODECTIC VERTICAL DATUM
STA	STATION
USPH	UNITED STATES PIERHEAD
FT	FEET





1GC-01 / GC-01 SITE PLAN
SCALE: 1" = 200'-0"

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 196-199 MAINTENANCE DREDGING

SITE PLAN AND DREDGE NOTES

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER GC-01

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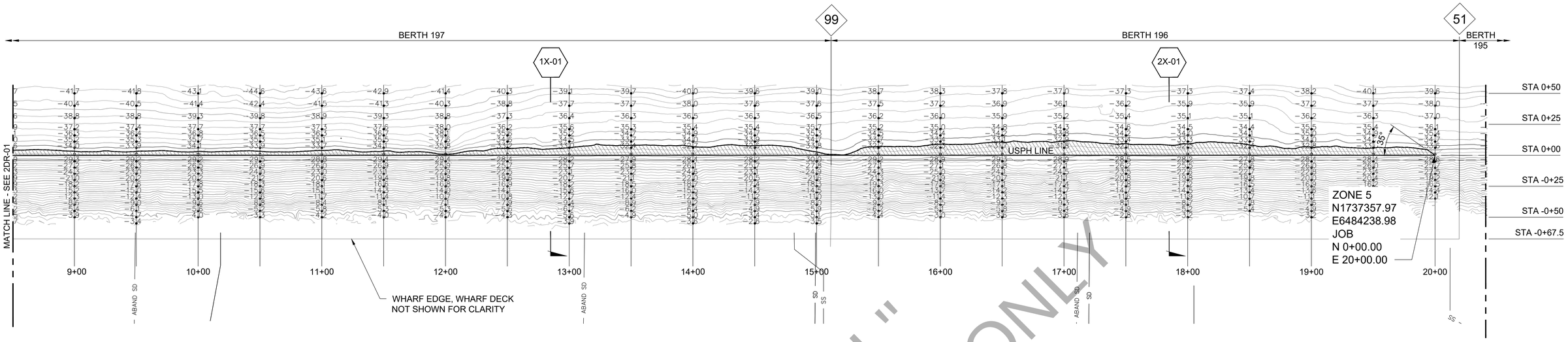
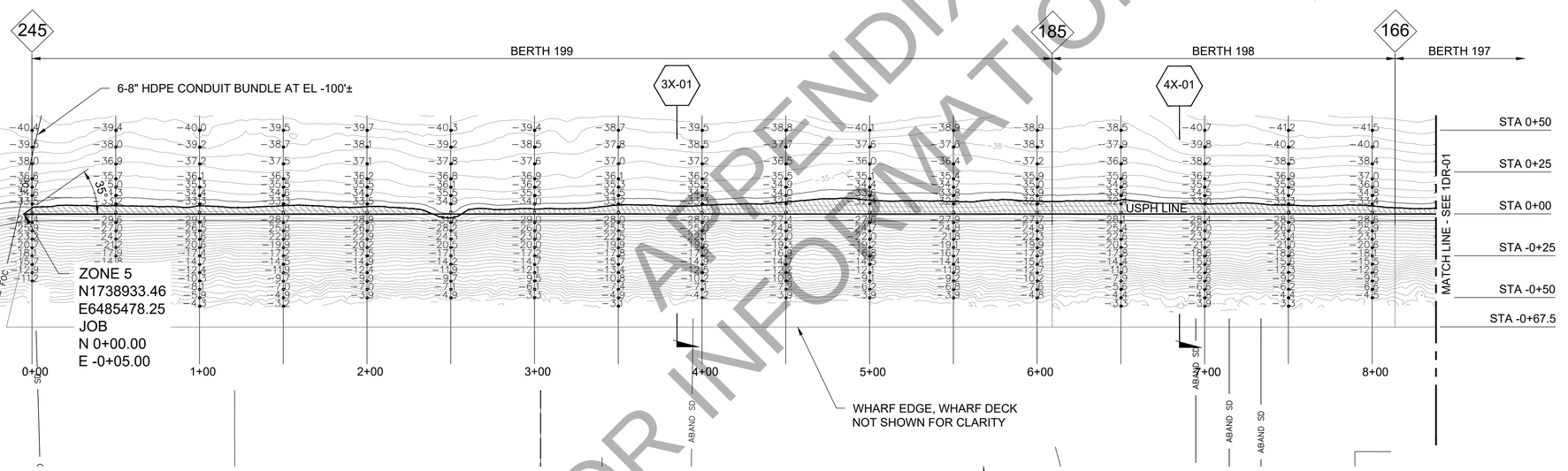
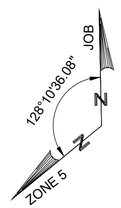


1DR-01
1GC-01
BERTHS 196-197 DREDGE PLAN
SCALE: 1" = 40'-0"



2DR-01
1GC-01
BERTHS 198-199 DREDGE PLAN
SCALE: 1" = 40'-0"

0 40 80 FEET



LEGEND:

- DREDGE AREA
- BENT NUMBER SYSTEM FOR OVERALL WHARF
- ACTIVE - FIBER OPTIC CABLE (FOC — FOC)
- ACTIVE - STORM DRAIN (SD — SD)
- ABANDONED - STORM DRAIN (ABAND SD)
- ACTIVE - SEWER LINE (SS — SS)

TOTAL DREDGE VOLUMES	
DREDGE	572 CY
1-FOOT OVERDREDGE	688 CY
SLOUGH	2,350 CY

APPENDIX "L"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
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ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 196-199 MAINTENANCE DREDGING

DREDGE PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
DR-01

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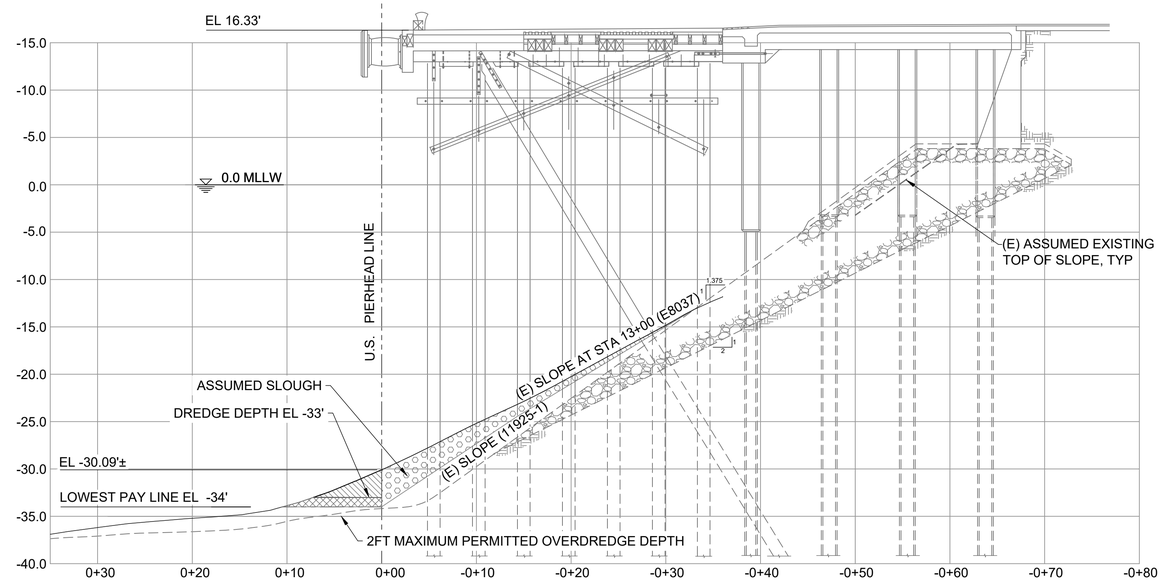
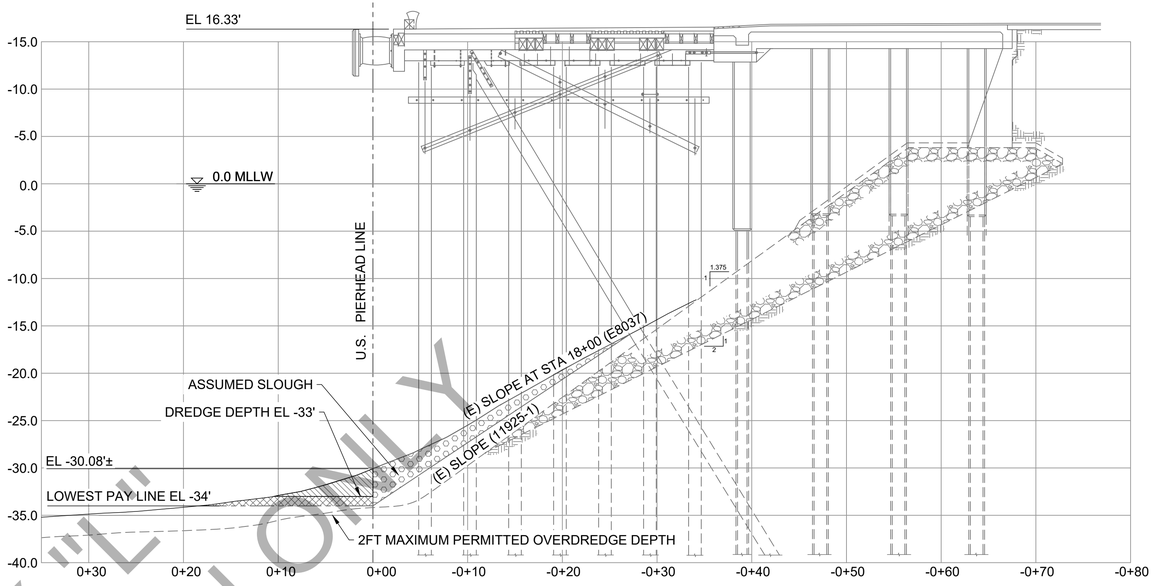
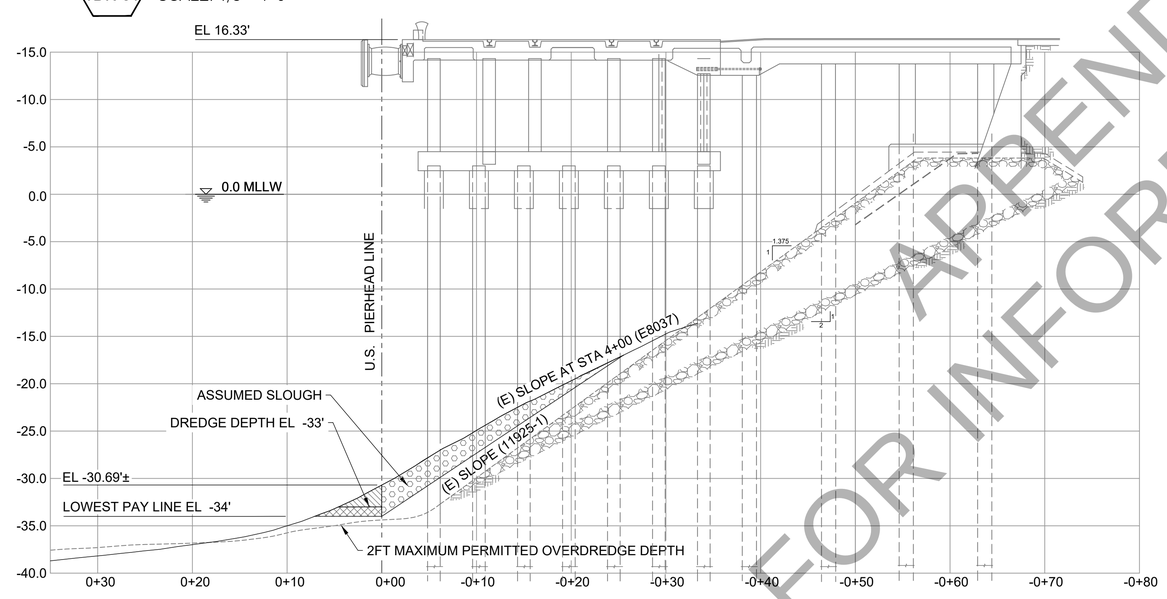


BERTH 197
1X-01 / 1DR-01
CROSS SECTION AT STA 13+00
SCALE: 1/8"=1'-0"

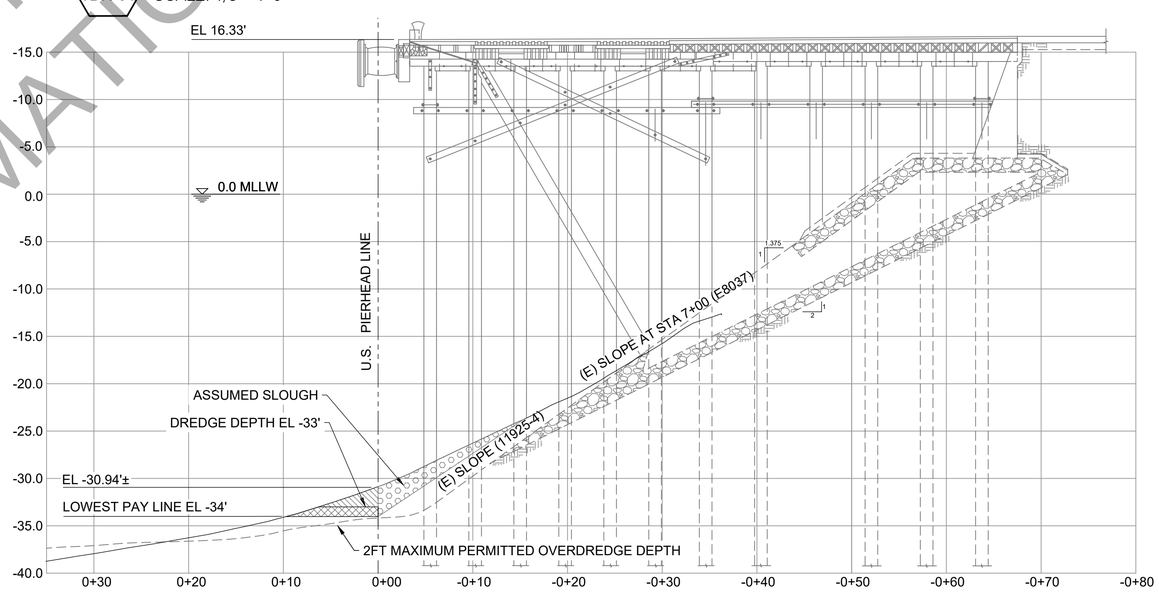


BERTH 196
2X-01 / 1DR-01
CROSS SECTION AT STA 18+00
SCALE: 1/8"=1'-0"



BERTH 199
3X-01 / 2DR-01
CROSS SECTION AT STA 4+00
SCALE: 1/8"=1'-0"

DREDGE AREA (SQFT)				
AREA NAME	STA 4+00	STA 7+00	STA 13+00	STA 18+00
DREDGE	5.10	6.54	10.05	13.20
OVERDREDGE	5.78	7.74	8.76	14.26
SLOUGH	49.46	23.52	47.67	45.66



BERTH 198
4X-01 / 2DR-01
CROSS SECTION AT STA 7+00
SCALE: 1/8"=1'-0"

NOTES:

1. THE LOWEST PAY LINE IS THE ONE-FOOT OVERDEPTH TOLERANCE LINE. THE MAXIMUM PERMITTED OVERDEPTH TOLERANCE OF TWO FEET IS SHOWN FOR REFERENCE ONLY AND IS NOT THE LOWEST PAY LINE.
2. SEE GC-01 FOR DREDGE NOTES.

LEGEND:

- DREDGE
- OVER DREDGE
- ASSUMED SLOUGH
- (E) ROCK

APPENDIX "E"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN	CHIEF OF DESIGN
DRAWN:	
CHECKED:	ASSISTANT CHIEF HARBOR ENGINEER
DESIGNED:	
ENGINEER / ARCHITECT	CHIEF HARBOR ENGINEER DATE

BERTHS 196-199 MAINTENANCE DREDGING

BERTHS 196-199 TYPICAL DREDGE CROSS SECTIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER:

SHEET NUMBER: X-01

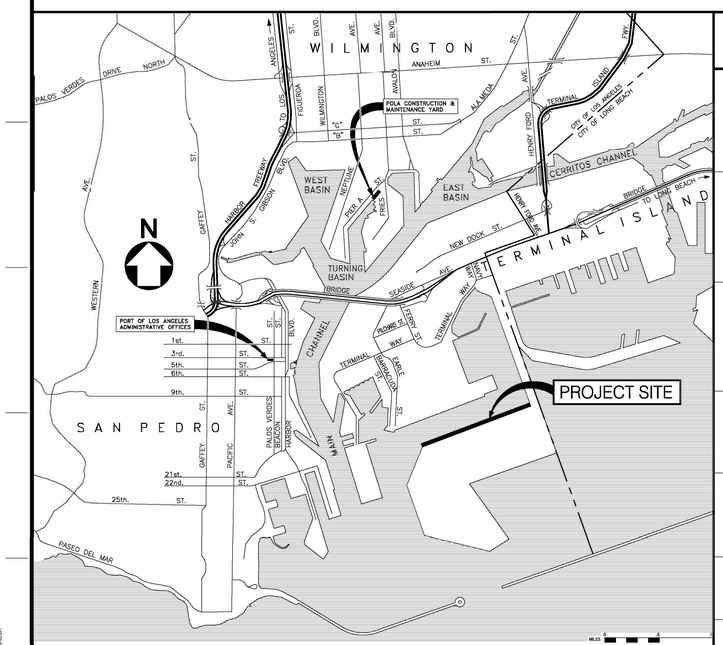
DWG: N:\cad\projects\1-3516 B195-199_Maintenance Dredging\01 Production\01 Drawings\01_Working Files\S1\1-3516 X-01.dwg USER: LEC
DATE: Mar 21, 2025 10:45am
Xref: \XREF\1-3516_ReviewSTAMP.dwg
POLAPRO1_03/2022_BWD

APPENDIX "M"

BERTHS 401-404 MAINTENANCE DREDGING

INDEX TO DRAWINGS

DRAWING NUMBER	TITLE	DRAWING NUMBER	TITLE
T-02	INDEX TO DRAWINGS & VICINITY MAP		
C-00	SITE PLAN & DREDGING NOTES		
C-01	BERTH 401 DREDGING PLAN		
C-02	BERTH 402 DREDGING PLAN		
C-03	BERTH 403 DREDGING PLAN		
C-04	BERTH 404 DREDGING PLAN		
XX-01	DREDGING CROSS SECTIONS - STA 5+00 TO STA 10+00		
XX-02	DREDGING CROSS SECTIONS - STA 15+00 TO STA 20+00		
XX-03	DREDGING CROSS SECTIONS - STA 25+00 TO STA 30+00		
XX-04	DREDGING CROSS SECTIONS - STA 35+00		



VICINITY MAP

REFERENCING SYSTEM

MAIN PLAN & ELEVATIONS

1A-01 / A-01

DETAIL NUMBER OF PLAN OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.

SHEET NUMBER WHERE PLAN OR ELEVATION IS DRAWN.

MAIN DETAIL, FLAG-SECTIONS & DETAILS

2A-03 / 1A-01

DETAIL NUMBER OF SECTION OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.

SHEET NUMBER WHERE SECTION OR ELEVATION IS DRAWN.

DETAIL & SHEET NUMBER WHERE SECTION OR DETAIL REFERENCE ORIGINATED.

SUB-DETAIL, FLAG-INTERIOR, ELEVATIONS & DETAILS

A / 2A-04

SUB-DETAIL NUMBER OF INTERIOR ELEVATION OR DETAIL CONSECUTIVELY LISTED ALPHABETICALLY.

DETAIL & SHEET NUMBER WHERE SUB-DETAIL REFERENCE ORIGINATED.

REFERENCE FLAG

2A-05

DETAIL & SHEET NUMBER WHERE DETAIL, SECTION DETAIL OR ELEVATION IS DRAWN.

SECTION FLAG

2A-05

ARROW INDICATES DIRECTION OF CUT-VIEW.

DETAIL & SHEET NUMBER WHERE SECTION OR DETAIL IS DRAWN.

A / B / C / D / X

INTERIOR ELEVATION CALLOUT.

DRAWN ELEVATION CALLOUT WHERE MULTI ELEVATION OCCURS.

REVISION SYMBOL

A

REVISION NUMBER (ALPHABETIC DESIGNATION-PRIOR TO BID OPENING. NUMERIC DESIGNATION APPROVED DURING CONSTRUCTION).

CLOUDED AREA DESIGNATES REVISED AREA.

*REFERENCE DRAWINGS ARE AVAILABLE FOR REVIEW IN THE L.A.H.D. CHIEF HARBOR ENGINEER'S OFFICE 425 SOUTH PALOS VERDES STREET SAN PEDRO, CALIFORNIA 90731

APPENDIX "M"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 401-404 MAINTENANCE DREDGING

INDEX TO DRAWINGS & VICINITY MAP

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: T-02
SHEET NUMBER:

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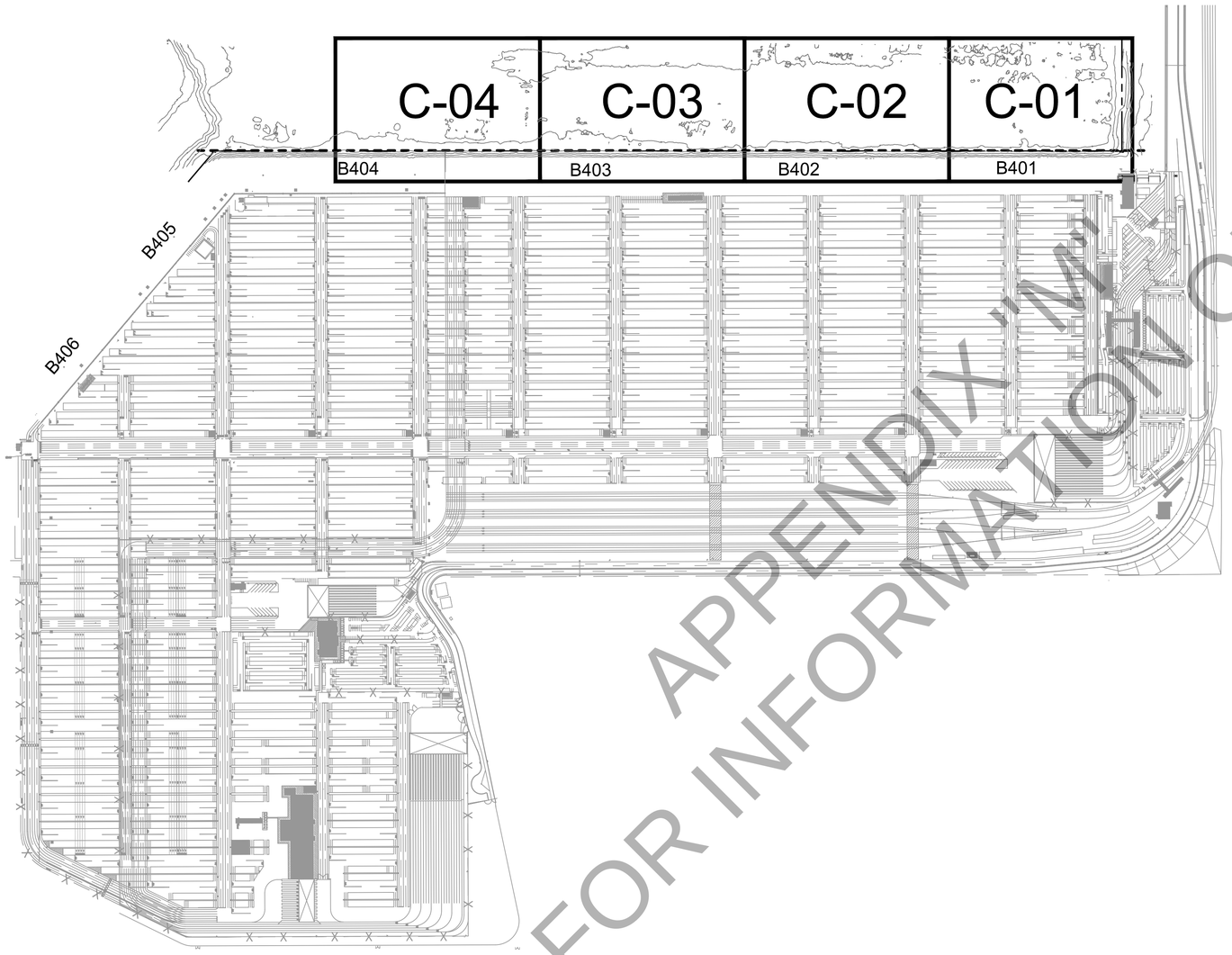
DATE: Mar 13, 2025 10:38am XREFS: IMAGES:

POLAPRO1_100312_R.B.



1C-00 / C-00 SITE PLAN
SCALE: 1"=400'

N

DREDGING NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE PRIOR TO DREDGING.
2. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE THE DREDGING OPERATIONS WITH THE HARBOR DEPARTMENT'S TENANTS TO AVOID CONFLICT WITH SHIPPING SCHEDULES AND CARGO MOVEMENTS. SEE SPECIFICATIONS FOR DETAILS.
3. NO EQUIPMENT WILL BE ALLOWED ON WHARVES FOR HANDLING DREDGING MATERIAL.
4. ALL WORK SHALL BE COORDINATED THROUGH THE L.A.H.D. TO ASSURE PERFORMANCE IN ACCORDANCE WITH THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGLES REGION AND THE U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT.
5. ALL DREDGE AND BANK EXCAVATION MATERIAL SHALL BE DISPOSED OF AT THE OCEAN DISPOSAL SITE AT LA-2.
6. ELEVATION DATUM FOR SOUNDINGS ARE REFERENCED TO MEAN LOWER LOW WATER (M.L.L.W.) AS ELEVATION 0.00.
7. THE QUANTITY OF MATERIAL REMOVED WILL BE COMPUTED BASED UPON THE SURVEYS TAKEN BEFORE AND AFTER DREDGING.
8. EXTREME CAUTION SHALL BE EXERCISED IN EXCAVATING ADJACENT TO THE PIERHEAD LINE TO AVOID UNDERMINING THE WHARF SLOPES. THE ASSUMED SLOUGH LINES AND DESIGN SLOPE SHOWN ON THE CROSS SECTIONS ARE SHOWN TO DEFINE THE LIMITS OF PAY FOR MATERIAL. THE SLOUGH LINES AND DESIGN SLOPE HAVE A SLOPE OF 1.75:1 WATERSIDE OF THE PIERHEAD LINE.
9. DREDGING TOLERANCE:
   HORIZONTAL DREDGE LINES: TOLERANCE SHALL BE ZERO(0) FEET ABOVE AND TWO (2) FOOT BELOW HORIZONTAL DREDGE LINES. CONTRACTOR SHALL BE ELIGIBLE FOR OVERDREDGE PAYMENT OF UP TWO (2) FOOT ON ALL HORIZONTAL DREDGE LINES. ASSUMED SLOUGH LINES: TOLERANCE SHALL BE ONE (1) FOOT ABOVE AND ZERO (0) FEET BELOW ASSUMED SLOUGH LINES. NO OVERDREDGE PAYMENT SHALL BE MADE FOR ASSUMED SLOUGH LINES.
10. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY PERMIT VIOLATIONS.
11. CONTRACTOR SHALL NOTIFY THE ENGINEER (48) HOURS IN ADVANCE OF ANY ACTIVITY WHICH MAY RESTRICT NAVIGATION WITH ANY CHANNEL OR BRIDGE.
12. CONTRACTOR SHALL CONTAIN ALL DREDGED WATER AND MATERIAL AT THE TRANSFER SITE. DREDGED WATER SHALL NOT RUN BACK INTO OCEAN.
13. HORIZONTAL AND VERTICAL DATUMS
    A. ALL COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83), CALIFORNIA COORDINATE SYSTEM, ZONE 5, U.S. FEET, 1995 EPOCH.
    B. ALL ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29), MEAN LOWER LOW WATER (MLLW).
    USC&GS BM # DY1083 941 0660 TIDAL 8 EL= 13.929

APPENDIX "M"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 401-404 MAINTENANCE DREDGING

SITE PLAN & DREDGING NOTES

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SHEET NUMBER C-00

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DATE: Mar 13, 2025 10:40am XREFS:XREF-3166 base 2007 E6909 E6911 E7920 IMAGES:
POLAR01_10/2012_RJL

DAYLIGHT LINE

DREDGE TO -55 FT

MATCH LINE SEE 1C-02

E200

E0

BERTH 401

PIERHEAD LINE

FENDER LINE

CAPTIVE SITE

FENDER LINE

PIERHEAD LINE

STA. 10+00

STA. 9+00

STA. 8+00

STA. 7+00

STA. 6+00

STA. 5+00

STA. 4+00

STA. 3+00

STA. 2+00

STA. 1+00

STA. 0+00

STA. -1+00

2XX-01

1XX-01

APPENDIX "M"
FOR INFORMATION ONLY

SURVEY CONTROL DIAGRAM

L.A. 311

53+23.929 | 1723827.774
0+00.000 | 6483135.862

PIER 400 COORDINATES

ZONE 5 COORDINATES

0+00.000 | 1725565.658
0+00.000 | 6488168.156

L.A. 310

1C-01 / C-01 BERTH 401 DREDGING PLAN

SCALE: 1"=40'

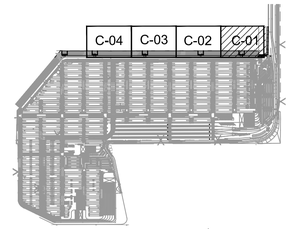
N

LEGEND:

DREDGING TO -55 FT MLLW

DATE OF SOUNDINGS: JAN. 31, 2024 (FILE NO. E7920)
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

DREDGING DEPTH
PROPOSED DREDGE DEPTH: -55 FEET MLLW
PROPOSED OVERDEPTH DEPTH: -2 FEET MLLW



KEY MAP N

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 401-404 MAINTENANCE DREDGING

BERTH 401 DREDGING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER C-01

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POLAPRO1_10/2012_RJB

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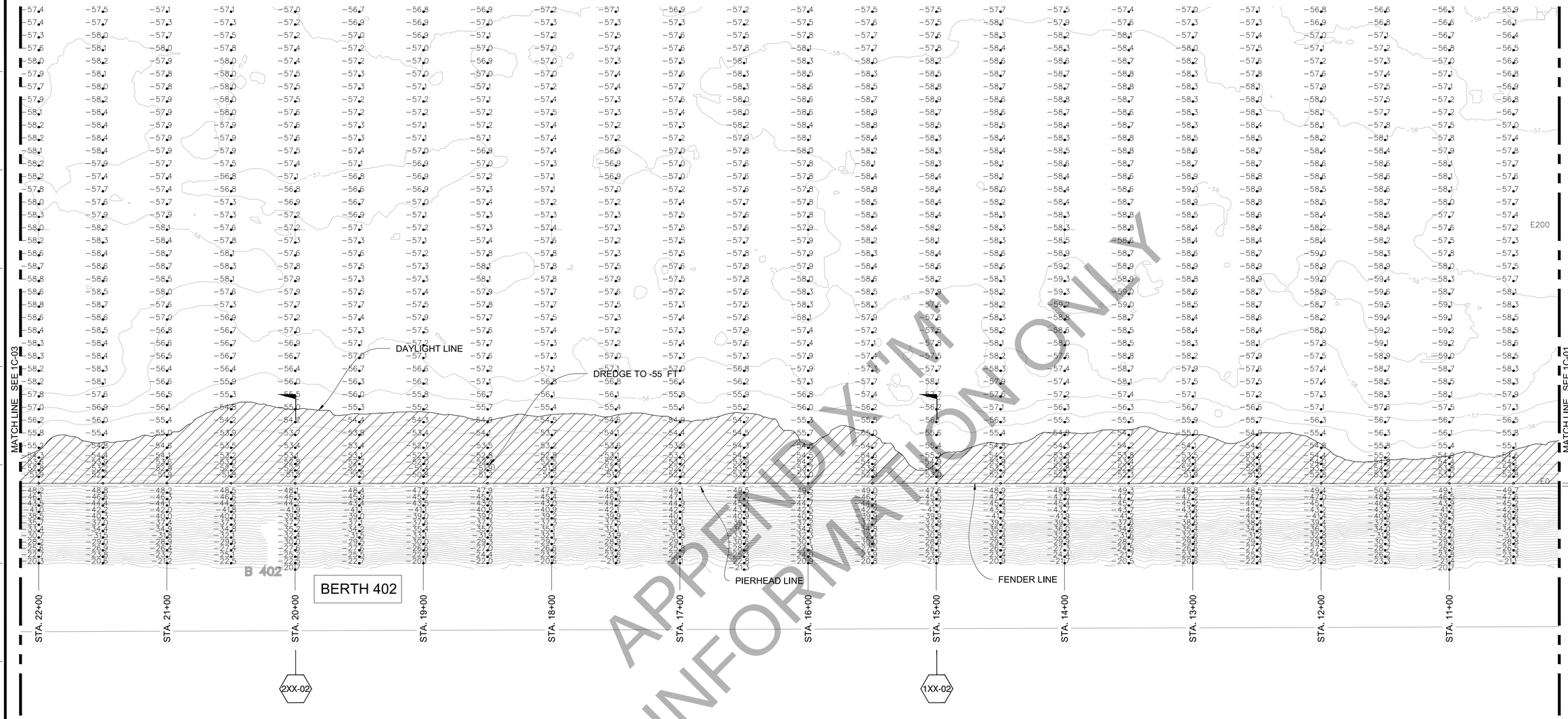
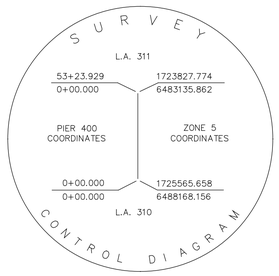
J I H G F E D C B A





1C-02
C-02

BERTH 402 DREDGING PLAN

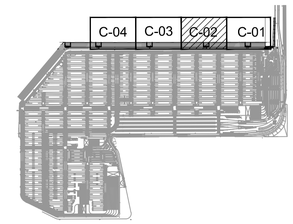
SCALE: 1"=40'

LEGEND:

DREDGING TO -55 FT MLLW

DATE OF SOUNDINGS: JAN. 31, 2024 (FILE NO. E7920)
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

DREDGING DEPTH
PROPOSED DREDGE DEPTH: -55 FEET MLLW
PROPOSED OVERDEPTH DEPTH: -2 FEET MLLW



KEY MAP

APPENDIX I
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 401-404 MAINTENANCE DREDGING

BERTH 402 DREDGING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER C-02

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DATE: Mar 18, 2025 11:29am XREFS:E6911 XREF-3166 base 2007 E6911-LINE_-55 E7920 IMAGES:
POLAPRO1_10/2012_RJB_

MATCH LINE SEE 1C-04

MATCH LINE SEE 1C-02

DAYLIGHT LINE

DREDGE TO -55 FT

FENDER LINE

PIERHEAD LINE

PIERHEAD LINE

FENDER LINE

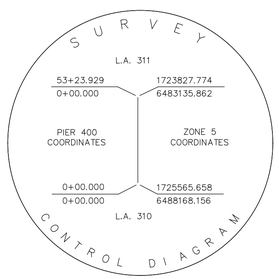
BERTH 403

B 403

STA. 34+00 | STA. 33+00 | STA. 32+00 | STA. 31+00 | STA. 30+00 | STA. 29+00 | STA. 28+00 | STA. 27+00 | STA. 26+00 | STA. 25+00 | STA. 24+00 | STA. 23+00

2XX-03

1XX-03



LEGEND:

DREDGING TO -55 FT MLLW

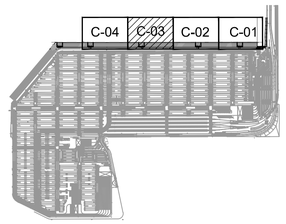
DATE OF SOUNDINGS: JAN. 31, 2024 (FILE NO. E7920)
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

DREDGING DEPTH
PROPOSED DREDGE DEPTH: -55 FEET MLLW
PROPOSED OVERDEPTH DEPTH: -2 FEET MLLW

1C-03
C-03

BERTH 403 DREDGING PLAN

SCALE: 1"=40'



KEY MAP

APPENDIX "M"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 401-404 MAINTENANCE DREDGING

BERTH 403 DREDGING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
C-03

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DATE: Mar 13, 2025 10:46am XREFS:E6911 XREF-3166 base 2007 E6909-LINE_-55 E7920 IMAGES:
POLAPR21_102212_RJL

MATCH LINE SEE 1C-05

MATCH LINE SEE 1C-03

DAYLIGHT LINE

DREDGE TO -55 FT

FENDER LINE

PIERHEAD LINE

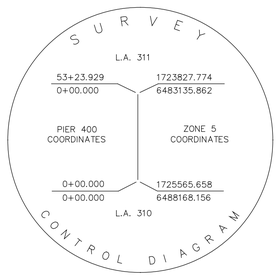
PIERHEAD LINE

FENDER LINE

BERTH 404

STA. 46+00 STA. 45+00 STA. 44+00 STA. 43+00 STA. 42+00 STA. 41+00 STA. 40+00 STA. 39+00 STA. 38+00 STA. 37+50 STA. 37+00 STA. 36+00 STA. 35+00

1XX-04



1C-04 / C-04 BERTH 404 DREDGING PLAN

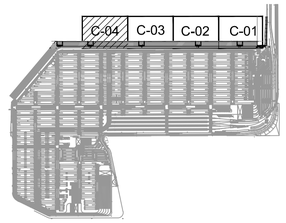
SCALE: 1"=40'

LEGEND:

DREDGING TO -55 FT MLLW

DATE OF SOUNDINGS: JAN. 31, 2024 (FILE NO. E7920)
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

DREDGING DEPTH
PROPOSED DREDGE DEPTH: -55 FEET MLLW
PROPOSED OVERDEPTH DEPTH: -2 FEET MLLW



KEY MAP

APPENDIX M
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTHS 401-404 MAINTENANCE DREDGING

BERTH 404 DREDGING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER C-04

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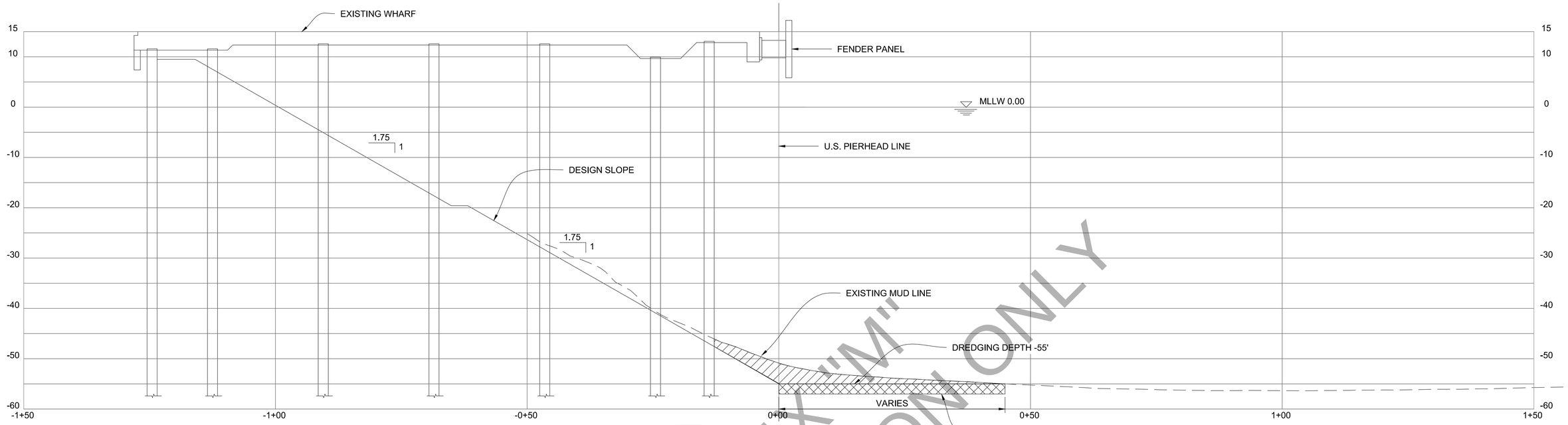
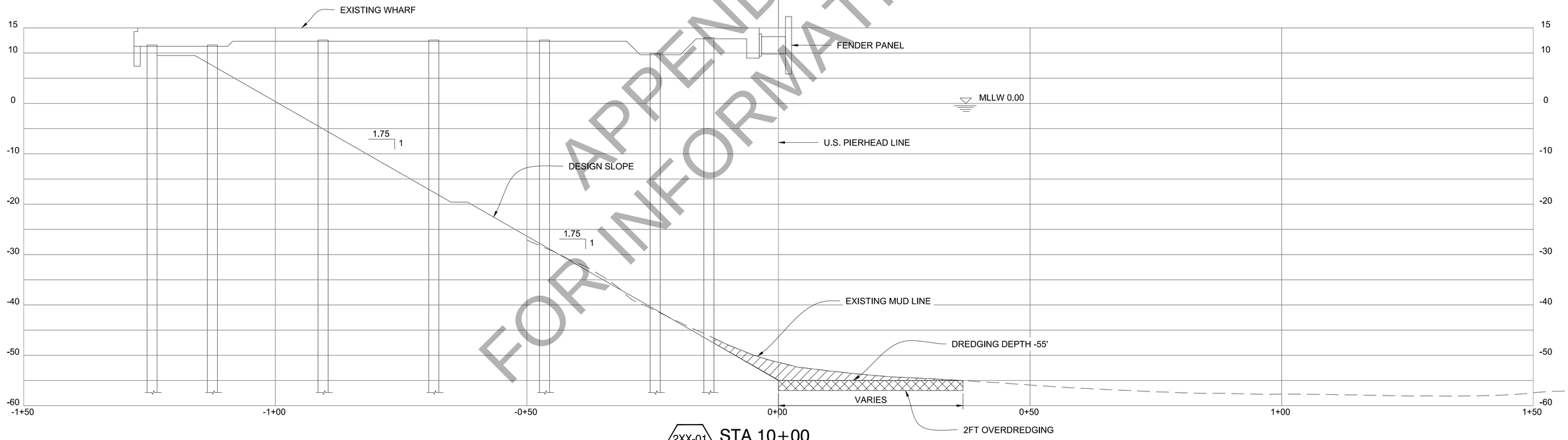


1XX-01 / 1C-01 **STA 5+00**

SCALE: 1:10



2XX-01 / 1C-01 **STA 10+00**

SCALE: 1:10

APPENDIX "M"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 401-404 MAINTENANCE DREDGING

DREDGING CROSS SECTIONS - STA 5+00 TO 10+00

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
XX-01

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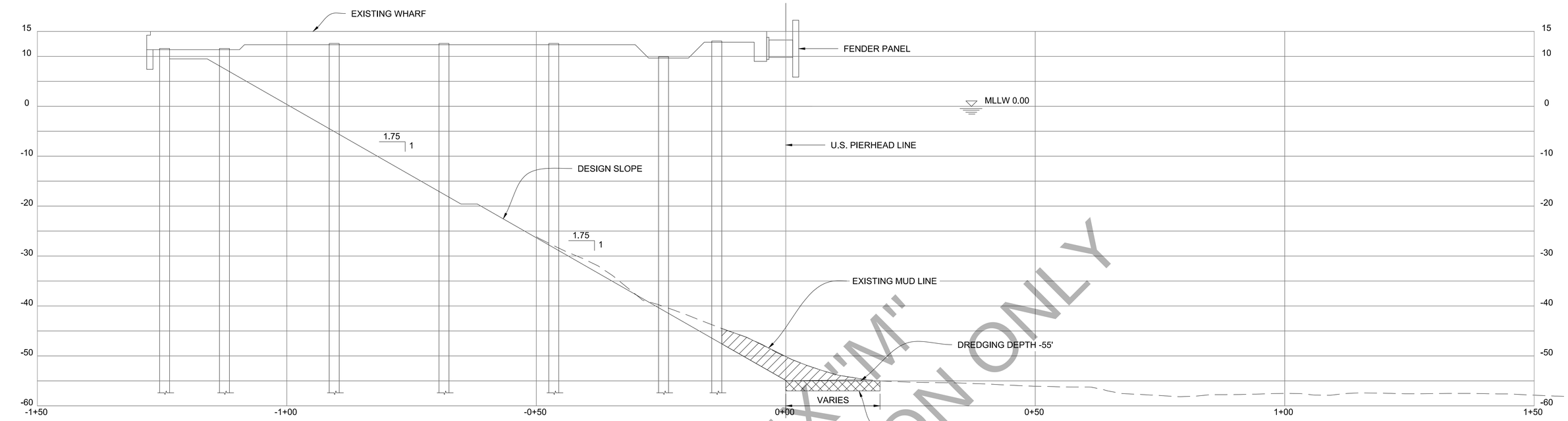

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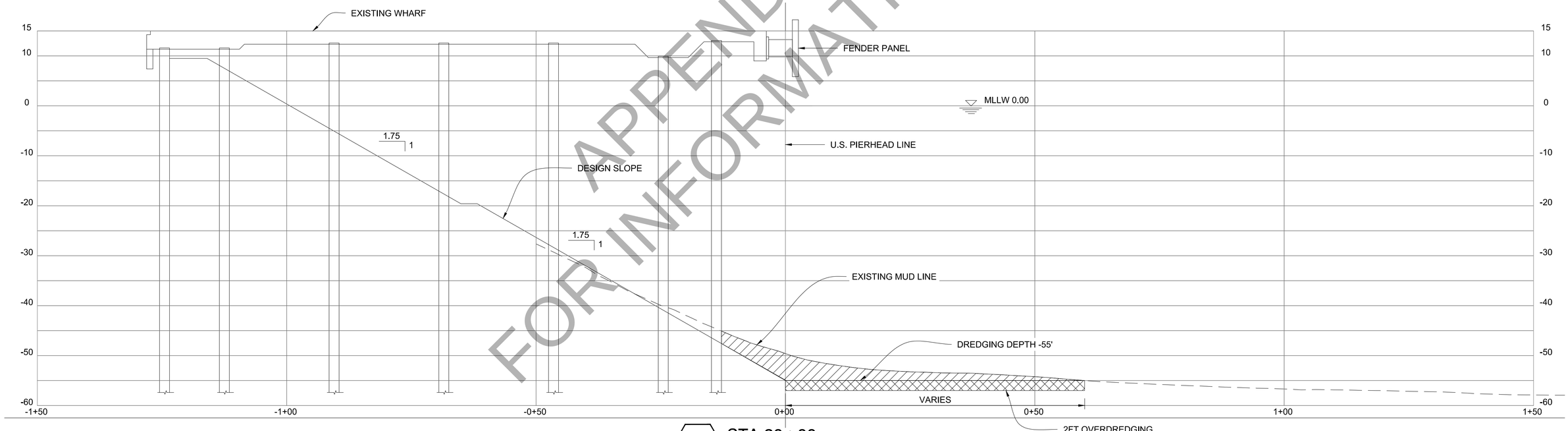

2XX-02 / 1C-02 **STA 20+00**
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APPENDIX "M"
FOR INFORMATION ONLY

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 401-404 MAINTENANCE DREDGING

DREDGING CROSS SECTIONS - STA 15+00 TO 20+00

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
XX-02

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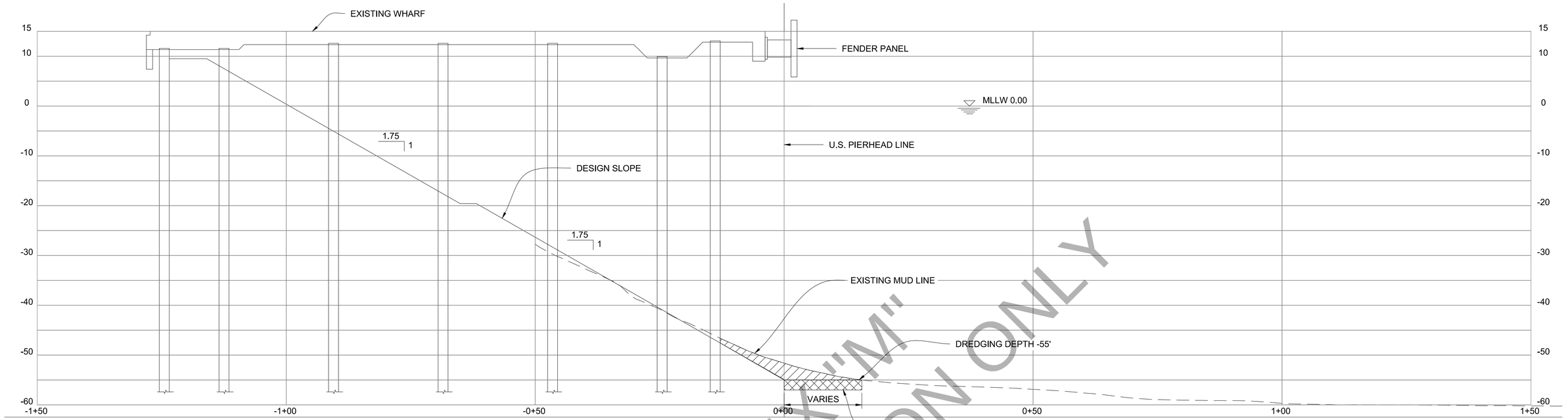

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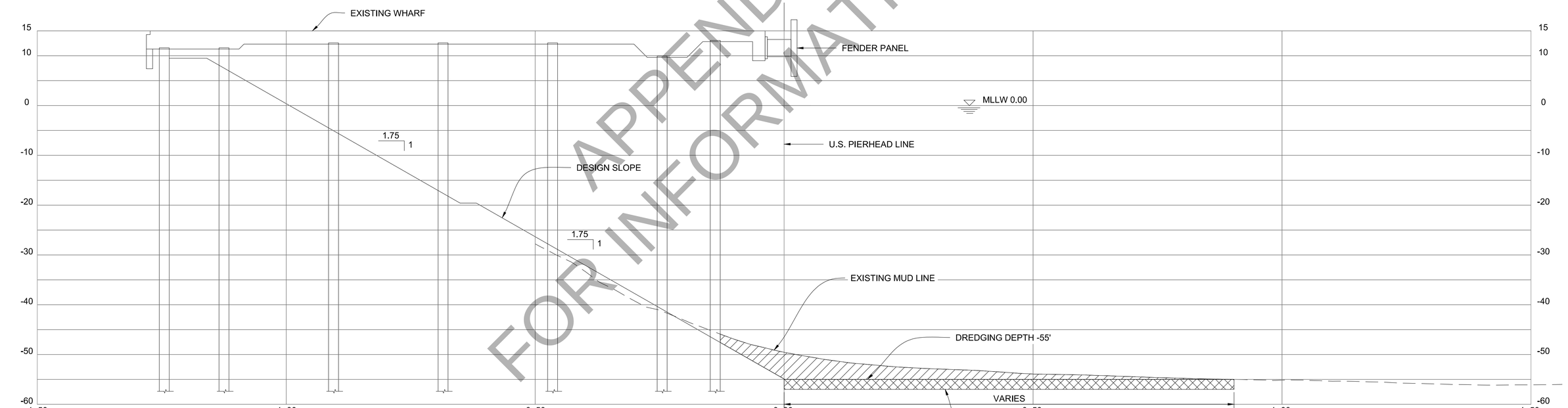

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FOR INFORMATION ONLY

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SCALE: AS SHOWN
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DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

BERTH 401-404 MAINTENANCE DREDGING

DREDGING CROSS SECTIONS - STA 25+00 TO 30+00

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER XX-03

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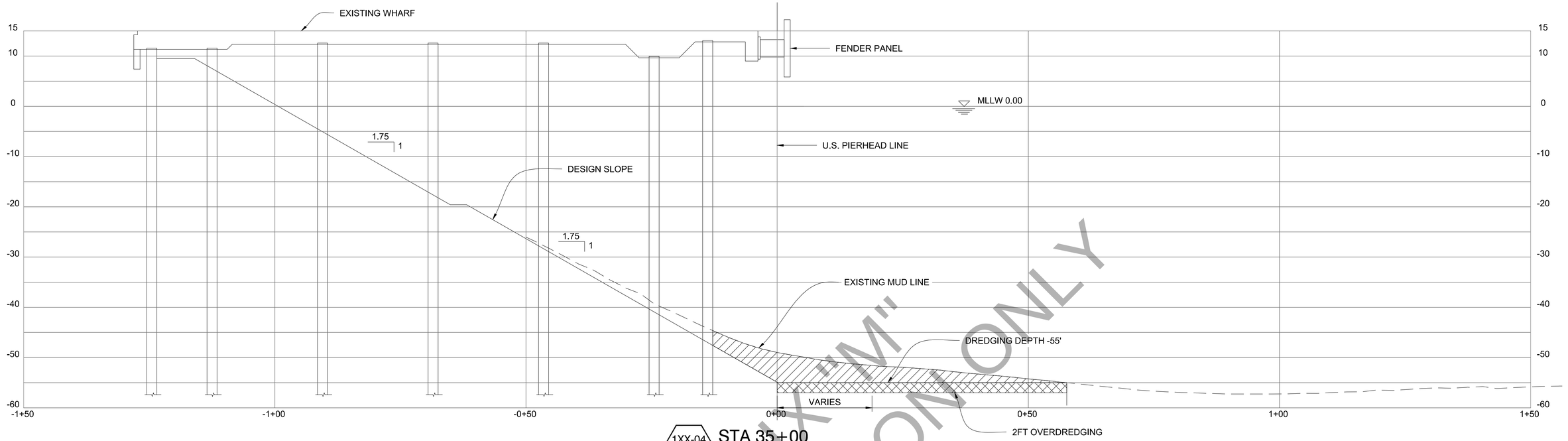

1XX-04 / 1C-04 STA 35+00
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APPENDIX "M"
FOR INFORMATION ONLY

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NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN:
CHECKED:
DESIGNED:
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER ____ DATE

BERTH 401-404 MAINTENANCE DREDGING

DREDGING CROSS SECTIONS - STA 35+00

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

SHEET NUMBER
XX-04

PDLAPRD1_04/2023_BW3

APPENDIX "N"

EXAMPLE WATER QUALITY MONITORING REPORT

Port of Los Angeles
Cabrillo Beach
Habitat Restoration
Post Dredge Water Quality
Monitoring Report
April 17, 2016

Prepared for:

Manson Construction Co.
340 Golden Shore
Long Beach, CA 90802

For Submittal to:

320 West Fourth Street
Suite 200
Los Angeles, CA 90013

Prepared by:

Pi Environmental, LLC
1029 Capistrano Drive
Oceanside, CA 92058

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Attachment A Field Observation Logs and Photos

1.0 Introduction

This report describes the methods, materials, and findings of post dredge water quality monitoring surveys completed in support of the Port of Los Angeles (Port) habitat restoration effort at Cabrillo Beach (site) (Figure 1). Under an existing maintenance dredging contract with the Port, Manson Construction Co. (Manson) was employed to perform maintenance and restoration activities. Manson has contracted Pi Environmental, LLC (Pi) to perform water quality surveys to satisfy monitoring requirements stipulated by the Los Angeles Regional Water Quality Control Board (RWQCB) maintenance dredging permit Order No. R4-2014-0203. Receiving water monitoring parameters are listed in Table 1.

Table 1. Cabrillo Beach Habitat Restoration Monitoring Parameters

Parameter	Units	Station	Analytical Method	Frequency
Dissolved Oxygen[1]	mg/l	A thru C	-	Weekly
Light Transmission[1]	% Transmission	A thru C	-	Weekly
pH[1]	-	A thru C	-	Weekly
Total Suspended Solids (TSS)[2]	mg/l	A thru C	SM 2540	Weekly

[1] Measurements shall be taken near the surface (1 meter below the water surface), near the bottom (1 meter above the sediment surface) and mid-water throughout the water column.
[2] Representative samples will be collected at mid-depth.

2.0 Post dredge Water Quality Monitoring Data

The current surveys are intended to fulfill post dredge monitoring requirements described in the maintenance dredging permit. Post dredge water quality monitoring included three monitoring stations adjacent to the project area (Table 2). Monitoring methods and stations were consistent with methods promulgated under the aforementioned permit, however, in lieu of active dredging, post dredge monitoring locations were spaced according to the project area, as opposed to a specific dredge point of dredging. The post dredge monitoring event was performed on 02 April 2016 (Figure 2).

Monitoring was performed from approximately 1300 to 1430 hours. The tidal cycle during the time of sampling was rising to a high of 3.98 feet (-ft) at 1926. During the survey, the tide ranged from +.2 ft to +.4 ft. Clear conditions prevailed during the field event, with a wind blowing from the southwest at approximately 5 knots, and a small rain event predicted for the afternoon.

Table 2. Post Dredge Water Quality Monitoring Locations

Station ID	Type	Latitude (WGS84)	Longitude (WGS84)	Water Depth (ft)
A	Post Dredge	33.71066	-118.27897	18.7
B	Post Dredge	33.71167	-118.27898	19.5
C	Post Dredge	33.71341	-118.27918	18.2

All water quality surveys were surveyed using a water quality profiler (CTD). The YSI Exo 2 is equipped with conductivity, temperature, and pressure sensors. The instrument is further interfaced with additional sensors to measure Dissolved Oxygen (DO), pH, and lowered concurrently with a light transmissometer. Water quality data was collected in real-time, allowing infield quality control. Field location was determined using the vessel Wide Area Augmentation System (WAAS) Global Positioning System (GPS), scanning at 10 Hz allowing for accurate geographic position information while surveying. Data was post processed and imported into Microsoft® Excel® and Esri® ArcGIS® for mapping, averaging, and comparative purposes.

Figure 1. Cabrillo Beach Habitat Restoration Project Area Overview Map

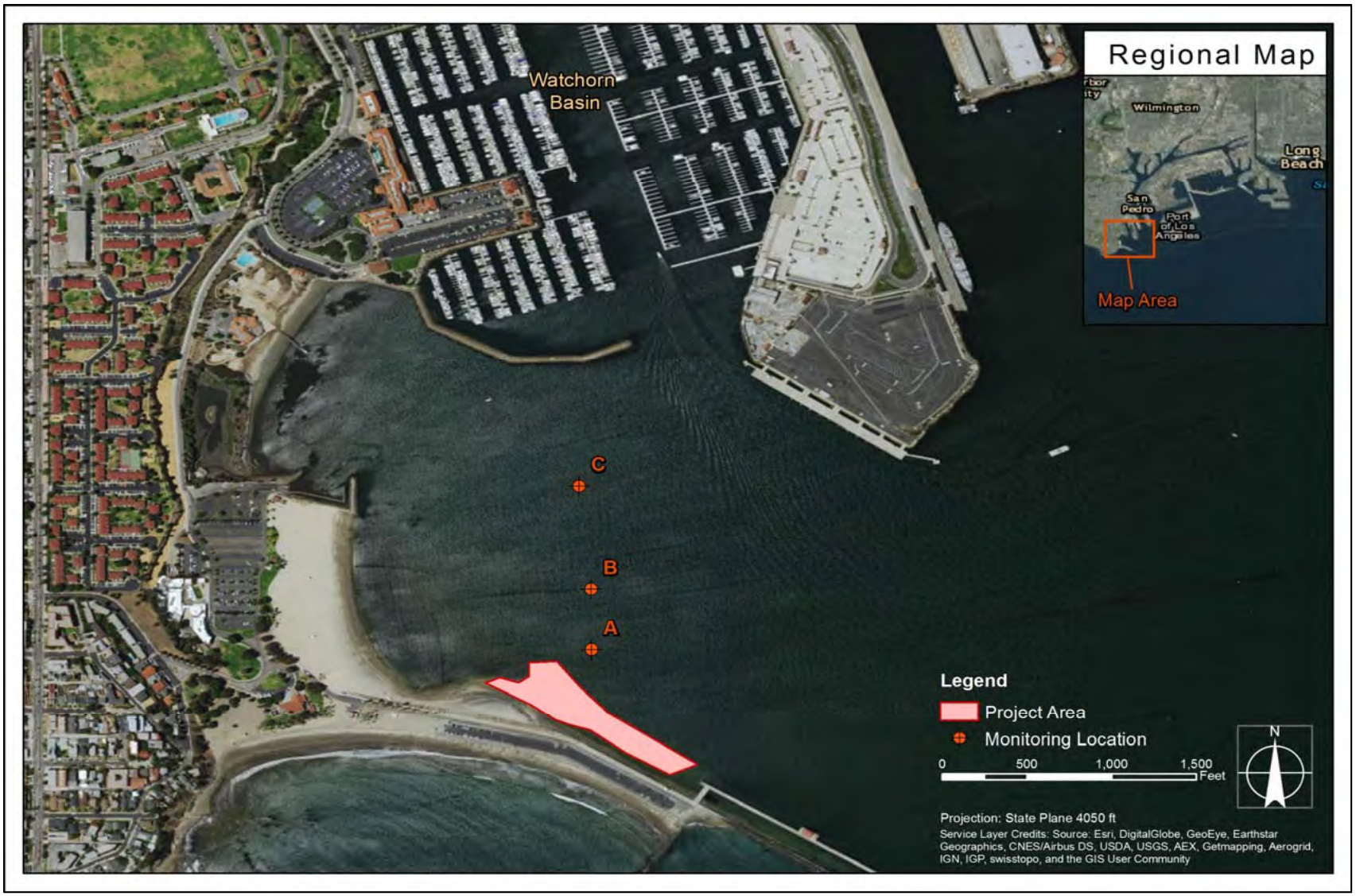

Figure 2. Cabrillo Beach Habitat Restoration Post Dredge Monitoring Locations

2.1 Post Dredge Monitoring Results

Station averaged monitoring data for the post dredge survey is included in Table 3, which provides binned averaged data from throughout the water column. Figure 3 presents light transmission data for post dredge survey locations. Similarly, Figure 4 displays the concentrations of dissolved oxygen (mg/L) at stations monitored as part of the post dredge event.

Table 3. Water Quality Summary Data

Station ID	Depth (M)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	pH	Light Transmissivity (%)
A	1	16.15	33.42	7.64	7.72	47.83
A	2	16.13	33.12	7.82	7.72	39.27
A	3	16.10	33.04	7.36	7.72	35.65
A	4	15.91	33.04	7.37	7.71	34.99
A	5	15.90	32.97	7.34	7.71	39.90
B	1	16.15	33.35	7.77	7.85	47.10
B	2	16.25	33.36	7.71	7.86	44.64
B	3	16.27	33.33	7.70	7.85	42.78
B	4	16.03	33.31	7.78	7.86	43.62
B	5	15.83	33.34	7.71	7.86	42.20
C	1	16.43	33.38	7.68	7.89	55.47
C	2	16.46	33.39	7.56	7.87	47.82
C	3	16.45	33.31	7.56	7.86	48.47
C	4	16.25	33.34	7.58	7.86	48.55
C	5	16.09	33.35	7.55	7.85	41.05

Light transmission was similar between stations, ranging from a low of 34.99 percent near the bottom 200-ft beyond the project construction boundary (station A), to a high of 55.47 percent at station C (Reference). Dissolved Oxygen (DO) data indicates that all stations and depths were above 7 mg/L. Values for pH ranged from 7.71 to 7.86.

Figure 3. Post Dredge Light Transmission Comparisons

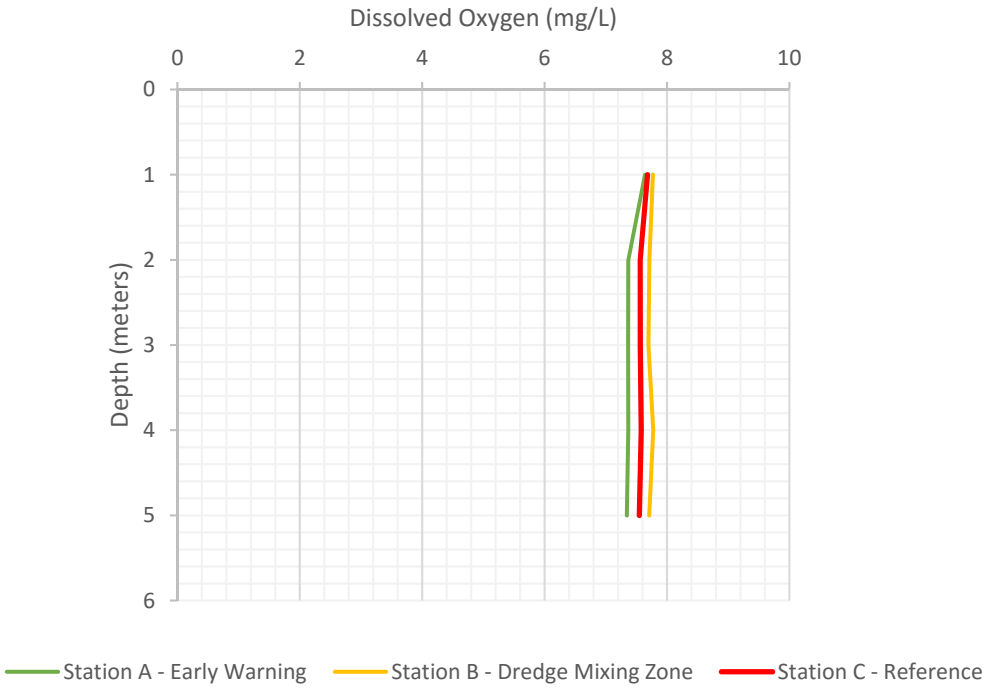

Figure 4. Post Dredge Dissolved Oxygen Concentrations

3.0 Discussion

Post dredge survey data was collected the week after to the completion of in water activities. Monitoring data collected from three stations adjacent to the project area suggest the receiving waters adjacent to the site do not show any signs of residual impairments with respect to light transmission, DO, or pH. Post dredge monitoring data suggest the receiving waters of the Cabrillo Beach habitat restoration project are within expected ranges for a southern California harbor type environment during the spring time of year.

4.0 Declaration

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 17 day of April, 2016.

Signed

Brent Mardian
Senior Marine Scientist
Pi Environmental, LLC
www. Pienivironmental.com

Attachment A- Field Observation Logs and Photos

Water Quality Monitoring Log

Date of Survey 04/02/2016

Time 13:10

Station ID: A- Early Warning

Latitude (WGS84) 33.710669 Longitude (WGS84) 118.278975

Water Depth (ft) 18.7 Tide (ft) .32 ☑ Rising ☐ Falling

Sea State (BSS) 0- Calm and clear

Current Direction N Current Speed (kts) 1

General Weather ☑ Clear ☐ Partly Cloudy ☐ Foggy ☐ Overcast ☐ Rainy

CTD Cast ID: 1 Water Surface Temp: 62.20

Observations	Yes	No	If Yes, please describe:
Visible Turbidity		✓	
Distinguishable Odors		✓	
Oil and Grease		✓	
Discoloration		✓	

Sample Collection

Water Sample ☐ Yes ☑ No

Depth of Collection (ft) _____

Check all that Apply

☐ TSS ☐ Metals ☐ Other

☐ PCBs ☐ Pesticides (DDX)

☐ PAHs ☐ Oil & Grease

Sample ID _____

Station Photo

Comments

post survey

Water Quality Monitoring Log

Date of Survey 04/02/2016

Time 13:22

Station ID: B- Dredge Mixing Zone

Latitude (WGS84) 33.7116787 Longitude (WGS84) 118.27945

Water Depth (ft) 19.5 Tide (ft) .40 ☑ Rising ☐ Falling

Sea State (BSS) 0- Calm and clear

Current Direction N Current Speed (kts) 1

General Weather ☑ Clear ☐ Partly Cloudy ☐ Foggy ☐ Overcast ☐ Rainy

CTD Cast ID: 2 Water Surface Temp: 64.20

Observations	Yes	No	If Yes, please describe:
Visible Turbidity		✓	
Distinguishable Odors		✓	
Oil and Grease		✓	
Discoloration		✓	

Sample Collection

Water Sample ☐ Yes ☑ No

Depth of Collection (ft) _____

Check all that Apply

☐ TSS ☐ Metals ☐ Other

☐ PCBs ☐ Pesticides (DDX)

☐ PAHs ☐ Oil & Grease

Sample ID _____

Station Photo

Comments

post survey

Water Quality Monitoring Log

Date of Survey 04/02/2016

Time 13:40

Station ID: C- Reference/Background

Latitude (WGS84) 33.713411 Longitude (WGS84) 118.27918

Water Depth (ft) 18.2 Tide (ft) .45 ☑ Rising ☐ Falling

Sea State (BSS) 0- Calm and clear

Current Direction N Current Speed (kts) 1

General Weather ☑ Clear ☐ Partly Cloudy ☐ Foggy ☐ Overcast ☐ Rainy

CTD Cast ID: 3 Water Surface Temp: 64.10

Observations	Yes	No	If Yes, please describe:
Visible Turbidity		✓	
Distinguishable Odors		✓	
Oil and Grease		✓	
Discoloration		✓	

Sample Collection

Water Sample ☐ Yes ☑ No

Depth of Collection (ft) _____

Check all that Apply

☐ TSS ☐ Metals ☐ Other

☐ PCBs ☐ Pesticides (DDX)

☐ PAHs ☐ Oil & Grease

Sample ID _____

Station Photo

Comments

post survey

APPENDIX "O"

ELECTRICAL SAFETY POLICY – IMPLEMENTATION PLAN

LOS ANGELES HARBOR DEPARTMENT

CONSTRUCTION DIVISION

ELECTRICAL SAFETY POLICY – IMPLEMENTATION PLAN

PROJECT: 2025-2027 MARINE IMPROVEMENTS SPECIFICATION NO: 2842

INSPECTOR: TBD DATE: TBD

THE CONTRACTOR SHALL:

IMPLEMENT THE ELECTRICAL SAFETY POLICY IN ACCORDANCE WITH THE BOARD OF HARBOR COMMISSIONERS' RESOLUTION NO. 6315, ADOPTED OCTOBER 27, 2004.

APPRENTICES AND JOURNEYMEN:

	All apprentices will be registered in a State of California Approved Apprenticeship Program.
	The use of "Journeymen" will comply with all State of California labor laws.

THE WORKFORCE OF PROJECTS DESIGNATED AS REQUIRING "ELECTRICAL SAFETY CRITERIA" SHALL COMPLY WITH THE FOLLOWING:

	70% of all "Journeymen Wiremen" will be graduates of a State of California Approved Electrical Apprenticeship Program.
	20% of the jobsite electrical workers will be OSHA 10-hour General Industry Safety and Health Certified.
	At least one jobsite electrical worker will be OSHA 30-hour General Industry Safety and Health Certified.

	The required workforce ratios will be determined by verifying the workforce composition on a daily basis.

FAILURE TO FULLY IMPLEMENT AND MONITOR THE ELECTRICAL SAFETY POLICY MAY RESULT IN AN ASSESSMENT OF PENALTIES AND/OR POSSIBLE SANCTIONS AGAINST THE CONTRACTOR.

Distribution:

Contractor
Job File
Inspector

As the contractor's representative, I understand and agree to comply with the above Electrical Safety Policy.

Signature 8/4/25
Date

Blaise Fettig, President