REQUEST FOR BID

CITY OF LOS ANGELES
HARBOR DEPARTMENT

BID NO. 13092
(SHOW THIS NUMBER ON ENVELOPE)

LOS ANGELES HARBOR DEPARTMENT Office of the Purchasing Agent, Berth 161, Wilmington, CA 90744

DATE: August 19, 2025

FROM: Jacquelyn Estrada
Procurement Analyst

Email: jestrada@portla.org

NUMBER OF PAGES: 18

Deliver and Jobsite:
100 W. 5th Street
San Pedro, CA 90731
Or, as directed by Department Personnel

PLEASE REPLY NO LATER THAN, 2:00 P.M., SEPTEMBER 26, 2025
E-MAIL BID TO jestrada@portla.org

FIRM NAME: _____	
MAILING ADDRESS: _____	
PHONE NO.: _____	
QUOTED BY:	TITLE:
BIDDER'S SIGNATURE:	
E-MAIL:	DELIVERY TIME ARO:
DISCOUNT PAYMENT TERMS:	

FOB POINT:
☐ Destination (Delivery charges to be included in unit price unless quoted in lines 4-5.)
OR
☐ Origin: (Specify city and state) _____ Delivery Charge as quoted in lines 4-5.

The City of Los Angeles Harbor Department ("Department" or "City") would like to receive a price quote on the following parts, materials, equipment and services:

WORLD TOTS SCHOOL SECURITY FENCING AND INSTALLATION SERVICES

A Bid is requested for the one-time requirements of the Los Angeles Harbor Department ("Department" or "City") for materials and services needed to install security fencing at the World Tots YWCA Harbor Area Child Development Center per specifications (Attachment A) and Drawings (Attachment B).

PRICES TO INCLUDE ALL DELIVERY CHARGES AND FEES EXCLUDING SALES TAX UNLESS OTHERWISE QUOTED BELOW.

REQUEST FOR BID

CITY OF LOS ANGELES
HARBOR DEPARTMENT

BID NO. 13092
(SHOW THIS NUMBER ON ENVELOPE)

PRICING.

	DESCRIPTION	TAXABLE	UOM	QTY	UNIT PRICE	EXTENDED
1	MATERIALS	Y	LOT	1	$	$
2	LABOR	N	☐ HOUR ☐ LOT		$	$
3	EQUIPMENT RENTAL/USE FEES	☐Y ☐N	LOT	1	$	☐ N/A $
4	MATERIALS DELIVERY FEES BY VENDOR	Y	LOT	1	$	☐ N/A $
5	MATERIALS DELIVERY FEES BY THIRD-PARTY FREIGHT	N	LOT	1	$	☐ N/A $
6	WARRANTY COSTS	☐Y ☐N	LOT	1	$	☐ N/A $
					Total (Excluding Sales Tax)	$

PROJECT DESCRIPTION

Project: "Perimeter Security Fence at World Tots LA Preschool", Project Number: 65000054

The wall parallel to the World Tots outdoor play area contains an accessibility ramp. The area between the wall and the World Tots fence creates a space that is often subject to loitering, illegal activities and the accumulation of unsanitary waste and debris. The solicited security fencing would close off and secure this area to deter loitering.

BIDDERS' INSTRUCTIONS

REQUEST FOR QUOTATION BIDDER RESPONSIVENESS. In order to be responsive, Bidders ("Contractor", "Vendor", "Supplier") shall complete and return all Quotation documents requested by the Los Angeles Harbor Department, including addenda, specifications, drawings and all forms.

It shall be the bidder's responsibility to provide a complete and accurate copy of the completed Quotation documents. The original and all copies shall include all quotation documents requested by the Department, including addenda, specifications, drawings and all forms.

The Director of the Contracts and Purchasing Division ("Director") may deem a bidder non-responsive if the bidder fails to provide all Quotation documents requested by the Department at the Quotation closing date and time.

ADDENDA. From time to time, the Harbor Department may deem it necessary to issue an addendum(a) to modify or cancel a Bid Request. Such addendum(a) will be available on the Port of Los Angeles internet website – http://www.portoflosangeles.org/ and the Los Angeles Regional Alliance Marketplace for Procurement website – https://www.rampla.org/s/ . It is the responsibility of the bidder to be aware of, and respond to, any such addendum(a) before the deadline of the applicable bid request. Failure to do so may deem the bid non-responsive.

TECHNICAL CORRECTIONS. The Executive Director or his designee is authorized to make minor technical corrections or clarifications in order to effectuate the intent of this contract/bid.

BID SUBMITTAL TIMELINESS. Bidders solely are responsible for the timeliness of their submittals. As such, bidders are cautioned to budget adequate time to ensure that their bids are delivered at the location designated at or before the deadline set forth above. Bidders are cautioned that matters including, but not limited to, power and internet outages, email server delays, traffic congestion, security measures and/or events in or around the Port of Los Angeles, may lengthen the amount of time necessary to deliver the bid, whether the bid is submitted electronically, in person or by mail.

MANDATORY PRE-BID CONFERENCE. There will be a mandatory Pre-Bid Conference for all Bidders. VENDORS NOT IN ATTENDANCE WILL NOT BE ALLOWED TO BID ON THIS CONTRACT.

Date: **Wednesday, September 10, 2025**
Time: 10:00 AM
Location: 100 W 5th St, San Pedro, CA 90731 – Conference Room

The purpose of the Pre-Bid Conference is to answer any questions about the requirements contained within the bid and to provide any additional information, which may prove helpful to the prospective bidder, as well as to overcome any barriers to participation. Please forward any questions that require a follow-up response after the Conference to jestrada@portla.org for public posting.

MANDATORY JOB WALK. All bidders are required to attend a Job Walk scheduled on **Wednesday, September 10, 2025**, immediately following the Pre-Bid Conference referenced above; otherwise, your bid will be deemed non-responsive. The Job Walk location will be at **100 W. 5th Street, San Pedro, CA 90731**. Please forward any questions that require a follow-up response after the Job Walk to jestrada@portla.org for public posting.

PRE-AWARD CONFERENCE. Prior to award of contract, the vendor may be required to attend a pre-award conference to be scheduled at a later date. The intent of this meeting will be to discuss contract regulations, specifications, invoicing, delivery times, etc., in order to ensure successful administration of the contract.

SPECIFICATION CHANGES. If any provisions of the Specifications preclude bidder from submitting a bid, bidder may request in writing that the specifications be modified. Such request must be received by the Director of Contracts and Purchasing at least five (5) working days before the bid due date. All bidders will be notified by Addendum of any approved changes to the specifications.

MODIFICATION OF RFB DOCUMENTS PROHIBITED. The RFB documents, as issued by the Los Angeles Harbor Department, shall not be modified in any way by the Bidder. Any bid found to contain alterations, deletions, additions, or other changes to the original RFB documents—not originating from and authorized by the Department—including, but not limited to, modifications to the specifications, requirements, terms, or conditions, will be rejected as non-responsive.

Requests for modifications necessary for the clarification, correction, or successful execution of the RFB or resulting contract must be submitted in writing to the Buyer at the email address provided above no fewer than five (5) business days prior to the bid deadline.

CONFLICTING OR ADDITIONAL TERMS SUBMITTED BY BIDDERS. The submission of a Bid in response to this Request for Bids (RFB) shall constitute the Bidder's acknowledgment and agreement that the terms and conditions set forth by the Los Angeles Harbor Department are controlling. Any terms and conditions submitted by a Bidder that are additional to, supplemental to, or in conflict with the RFB shall be deemed excluded and shall have no force or effect unless expressly accepted in writing by the Los Angeles Harbor Department. The inclusion of such terms shall not be construed as a counteroffer or modification of the RFB. In the event of any inconsistency between the RFB terms and those proposed by the Bidder, the RFB shall govern.

AWARD OF CONTRACT. Bid shall be subject to acceptance by the Department for a period of three (3) months unless a lesser period is prescribed in the quotation by the bidder. The Department may make combined award of all items complete to one bidder or may award separate items to various bidders. Bidders may submit alternate prices, a lump sum or a discount conditional on receiving an award for two or more items. The right is reserved to reject any, or all, bids and to waive informality in bids.

AWARD. The Harbor Department reserves the right to reject any or all Bids, award Bid as a whole, split award or delete line items, as it may deem necessary, unless otherwise stated herein.

BID RECAPS. Bid recaps, with a summary of all bids received, will be posted to the following website within two weeks of the bid closing date: https://www.portoflosangeles.org/business/contracting-opportunities/purchasing-bids

CONTRACTUAL TERMS SECTION

SUPPLIER CONTACT INFORMATION FOR DELIVERY AND PAYMENT ISSUES.

Contact Person: _____

Title: _____

Telephone: _____

Email Address: _____

SUPPLIER CONTACT INFORMATION FOR WARRANTY AND REPAIR ISSUES.
(If Different from Above)

Contact Person: _____

Title: _____

Telephone: _____

Email Address: _____

NEW AND UNUSED. The equipment and materials furnished shall be new and unused, current model or offering.

WARRANTY. Terms of warranty on new equipment, materials, and services offered (if applicable). Free PARTS and SERVICE (LABOR) for defective parts and workmanship for the following time period after equipment and/or services have been accepted:

Parts: _____ Labor: _____

Vessel will be returned to vendor shipyard for any and all repairs under warranty. Please attach additional warranty terms to bid, if applicable.

BUSINESS HOURS.

Vendor to indicate business hours:

Monday-Friday: _____ A.M. to _____P.M.

Saturday: _____A.M. to _____P.M. ☐ Closed

Sunday: _____A.M. to _____P.M. ☐ Closed

DELIVERY

DELIVERY POINT. Unless otherwise quoted, prices to include all delivery charges, F.O.B. Jobsite as indicated above, or as directed by Department personnel, zip codes 90731 or 90744.

NOTIFICATION. The vendor shall notify Woo Sung Yoon of the Harbor Department at WYoon@portla.org not less than 10 days in advance that the fencing is ready for the following inspections: (1) Pre-installation inspection of completed work, (2) Final inspection after installation.

SHIPPING CHARGES. Please prepay and add shipping or delivery charges to your invoices. Ship cheapest way, unless otherwise specified herein, for goods to arrive within the time specified above. Please include copy of your freight bill with your invoice. AIR SHIPMENT MUST BE SPECIFICALLY AUTHORIZED BY STATEMENT ON THIS ORDER.

DELIVERY CHARGES – BY VENDOR. Delivery charges for parts and materials, delivered by vendor. Delivery charges are not subject to markup.

INDEMNIFICATION AND INSURANCE

Indemnification

Except for the sole negligence or willful misconduct of the City, or any of its Boards, Officers, Agents, Employees, Assigns and Successors in Interest, Contractor undertakes and agrees to defend, indemnify and hold harmless the City and any of its Boards, Officers, Agents, Employees, Assigns, and Successors in Interest from and against all suits and causes of action, claims, losses, demands and expenses, including, but not limited to, attorney's fees (both in house and outside counsel) and cost of litigation (including all actual litigation costs incurred by the City, including but not limited to, costs of experts and Vendors), damages or liability of any nature whatsoever, for death or injury to any person, including Contractor's employees and agents, or damage or destruction of any property of either party hereto or of third parties, arising in any manner by reason of the negligent acts, errors, omissions or willful misconduct incident to the performance of this Contract by Contractor or its subcontractors of any tier. Rights and remedies available to the City under this provision are cumulative of those provided for elsewhere in this Contract and those allowed under the laws of the United States, the State of California, and the City.

Acceptable Evidence and Approval of Insurance

Electronic submission is the required method of submitting Vendor's insurance documents. Vendor's insurance broker or agent shall register with the City's online insurance compliance system **KwikComply** at https://kwikcomply.org/ and submit the appropriate proof of insurance on Vendor's behalf.

POLICY COPIES

Upon request by City, Vendor shall furnish a copy of the binder of insurance and/or full certified policy for any insurance policy required herein. This requirement shall survive the termination or expiration of this Agreement.

PRIMARY COVERAGE

The coverages submitted must be primary with respect to any insurance or self insurance of the City of Los Angeles Harbor Department. The City of Los Angeles Harbor Department's program shall be excess of this insurance and non-contributing.

NOTICE OF CANCELLATION

For each insurance policy described above/below, the Vendor shall give to the 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 the City of Los Angeles Harbor Department, Attention: Risk Manager and the City Attorney's Office, 425 S. Palos Verdes Street, San Pedro, California 90731.

RENEWAL OF POLICIES

At least thirty (30) days prior to the expiration of any policy, Vendor shall direct their insurance broker or agent to submit to the City's online insurance compliance system **KwikComply** at http://kwikcomply.org a renewal certificate showing that the policy has been renewed or extended or, if new insurance has been obtained, evidence of insurance as specified below. If Vendor neglects or fails to secure or maintain the insurance required below, Executive Director may, at his or her own option but without any obligation, obtain such insurance to protect the City's interests. The cost of such insurance will be deducted from the next payment due Vendor.

For further clarification on Insurance procedures, coverage information and documentation please go to http://www.portoflosangeles.org/business/risk.asp.

Vendor will be required to furnish, at its own expense and within TEN (10) days of notification of pending award, proof of insurance, in accordance with the types and in the minimum limits shown below:

NOTE
FAILURE TO SUBMIT PROOF OF INSURANCE WITHIN (10) DAYS UPON RECEIPT OF NOTICE OF INTENT TO AWARD WILL DEEM THE BIDDER NON- RESPONSIVE AND THE PROSPECTIVE AWARD MAY BE CANCELLED.

General Liability Insurance

Vendor shall procure and maintain in effect throughout the term of this Agreement, without requiring additional compensation from the City, commercial general liability insurance covering personal and advertising injury, bodily injury, and property damage providing contractual liability, independent contractors, products and completed operations, and premises/operations coverage written by an insurance company authorized to do business in the State of California rated VII, A- or better in Best's Insurance Guide (or an alternate guide acceptable to City if Best's is not available) within Vendor's normal limits of liability but not less than one million Dollars ($1,000,000.00) combined single limit for injury or claim. Where Vendor provides or dispenses alcoholic beverages, Host Liquor Liability coverage shall be provided as above. Where Vendor provides pyrotechnics, Pyrotechnics Liability shall be provided as above. Said limits 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 judgment, such retention or self-insurance is justified by the net worth of Vendor. The retention or self-insurance provided shall provide that any other insurance maintained by Department shall be excess of Vendor 's insurance and shall not contribute to it. In all cases, regardless of any deductible or retention, said insurance shall contain a defense of suits provision and a severability of interest clause. Additionally, each policy shall include an additional insured endorsement (CG 2010 or equivalent) naming the City of Los Angeles Harbor Department, its officers, agents and employees as Primary additional insureds.

Auto Liability Insurance

Vendor shall procure and maintain at its expense and keep in force at all times during the term of this Agreement, automobile liability insurance written by an insurance company authorized to do business in the State of California rated VII, A- or better in Best's Insurance Guide (or an alternate guide acceptable to City if Best's is not available) within Vendor's normal limits of liability but not less than one million Dollars ($1,000,000.00) covering damages, injuries or death resulting from each accident or claim arising out of any one claim or accident. Said insurance shall protect against claims arising from actions or operations of the insured, or by its employees. Coverage shall contain a defense of suits provision. Additionally, each policy shall include an additional insured endorsement (CG 2010 or equivalent) naming the City of Los Angeles Harbor Department, its officers, agents and employees as Primary additional insureds.

Workers' Compensation and Employer's Liability

Vendor shall certify that it is aware of the provisions of Section 3700 of the California Labor code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and that the Vendor shall comply with such provisions before commencing the performance of the tasks under this Agreement. Coverage for claims under U.S. Longshore and Harbor Workers' Compensation Act, if required under applicable law, shall be included.

Vendor shall submit Workers' Compensation policies whether underwritten by the state insurance fund or private carrier, which provide that the public or private carrier waives it right of subrogation against the City in any circumstance in which it is alleged that actions or omissions of the City contributed to the accident. Such worker's compensation and occupational disease requirements shall include coverage for all employees of Vendor, and for all employees of any subcontractor or other vendor retained by Vendor.

INITIAL HERE ACKNOWLEDGING INSURANCE REQUIREMENTS:

_____ (initial)

Upon approval of insurance, contractor will receive written authorization to proceed.

NO WORK MAY BE PERFORMED WITHOUT SUCH WRITTEN AUTHORIZATION TO PROCEED

REQUEST FOR BID

CITY OF LOS ANGELES
HARBOR DEPARTMENT

BID NO. 13092
(SHOW THIS NUMBER ON ENVELOPE)

FINANCIAL CLAUSES

SALES TAXES. Do not include Sales Taxes in your Bid. Sales Taxes will be added at time of order.

SALES TAX PERMIT. A valid California State Board of Equalization Seller's Permit Number is required to collect California State Sales Tax.

Permit Number: _____. ☐ N/A (Sales Tax will not be Invoiced.)

FEDERAL EXCISE TAX. The City of Los Angeles Harbor Department is exempt from payment of Federal Excise Taxes, and will furnish vendor with a Tax Exemption Certificate. PRICING NOT TO INCLUDE ANY FEDERAL EXCISE TAX.

TAXPAYER IDENTIFICATION NUMBER. Contractor declares that it has an authorized Taxpayer Identification Number (TIN), which must be indicated on all invoices. No payments will be made under this agreement without a valid TIN number.

WITHHOLDING REQUIREMENTS. The State of California Franchise Tax Board (FTB) requires that the City of Los Angeles Harbor Department withhold income taxes from payments to out-of-state vendors for services performed within California unless the vendor submits one of the required forms listed below. The tax withholding rate is seven percent (7%) of payments subject to withholding.

This requirement applies to vendors whose legal address (as indicated on their IRS W-9 Form), or payment address (as indicated on this Request for Bid/Quote), is outside of California. Should either of these two situations apply to your company, please attach one of the following forms to your bid in order to help the Harbor Department clarify your nonresident tax withholding status:

- Form 590, *Withholding Exemption Certificate,* certifying exemption from the withholding requirement.
- Form 587, *Nonresident Income Allocation Worksheet,* which allocates the expected income under the City contract for work completed within and outside of California.
- Notice from the CA Franchise Tax Board (CAFTB) that a withholding waiver was authorized (you must first file CA Form 588, *Nonresident Withholding Waiver Request* to the CAFTB).
- Notice from CAFTB that a reduced withholding request was authorized (you must first file CA Form 589 *Nonresident Reduced Withholding Request* to CAFTB).

Further information regarding this requirement may be found here:
https://www.ftb.ca.gov/pay/withholding/withholding-on-nonresidents.html

Please Check One:

☐ **Both Bidder's Legal Address and Remittance Address are located within the State of California - Withholding Forms Not Required.**

☐ **Withholding Forms Attached**

BUSINESS TAX REGISTRATION CERTIFICATE (BTRC). In accordance with the City of Los Angeles Municipal Code, a Business Tax Registration Certificate may be required of persons engaged in business activity within the City. The Office of Finance, Tax and Permit Division, (213) 473-5901, has sole authority in determining a firm's tax requirements and in issuing Business Tax Registration Certificates or Business Tax Exemption Numbers. Accordingly, firm's current Business Tax Registration Certificate or Business Tax Exemption Number must be clearly shown on all invoices submitted for payment. Bidder, in submitting this bid, acknowledges and accepts the above requirements and recognizes that no invoice will be processed for payment without inclusion of the Business Tax Registration Certificate or Business Tax Exemption Number. New vendors will be required to supply their BTRC/VRN Number upon award and prior to payment.

BTRC Number: _____

VENDOR PAYMENT. Please note: Vendor name and address must be submitted exactly as they will appear on the invoice(s). Please provide a copy of your firm's IRS Form W-9 with your bid. If invoice remit to (remittance) name and address are different from the bid name and address, please indicate:

COMPANY: _____

REMIT TO: ADDRESS: _____

_____

AR EMAIL: _____

Invoices submitted for payment where the invoice name and address do not match the name and address as they appear on the Purchase Order, or as indicated in the space above, will not be processed and will be returned to the vendor.

GENERAL CLAUSES – LAW, CHARTER, ADMINISTRATIVE CODE

SMALL AND LOCAL BUSINESS (SLB) PROGRAM

Is your company Certified as an SLB by the **City of Los Angeles**? ☐ **Yes** ☐ **No**

Companies certified as a Small Local Business with the City of Los Angeles are given a preference applied to bid contracts of $100,000.00 or less. A 10% preference (discount) is given to the bids of SLB certified companies. The preference is determined by taking 10% of the lowest bid that is proposed by a non-certified SLB company, and subtracting that amount from the bid of the SLB certified company. If after the preference the SLB's bid is less than or equal to the lowest non-certified company's bid, the SLB will be awarded the contract.

In order to be given the bid preference as a certified SLB, your SLB application must be received at the Department of Public Works, Bureau of Contract Administration, Office of Contract Compliance,

Centralized Certification Section no later than five (5) calendar days prior to the last day for submission of the bid or proposal and approved prior to the award date as stated on the RFB.
The Department of Public Works, Bureau of Contract Administration, Office of Contract Compliance, Centralized Certification Section is located at:

Office of Contract Compliance, Centralized Certification:
1149 S. Broadway, Suite 300, Los Angeles, CA 90015
(213) 847-2684

Certification as a Small and Local Business is valid for one calendar year from the date of approval. Applicant firms must be recertified on an annual basis with the Office of Contract Compliance, Centralized Certification Section. For questions concerning the Small Local Business Program, contact the Office of Contract Compliance, Centralized Certification Section at (213) 847-2684 or at https://bca.lacity.org/certification

COMPLIANCE WITH LAWS. Vendor shall comply with all applicable Ordinances, laws, Rules and Regulations of the City and of any County, State or Federal Government, or subdivision thereof.

DEFAULT BY SUPPLIER. In case of default by Vendor, the Department reserves the right to procure the articles or services from other sources and to hold the vendor responsible for any excess costs occasioned to the Department thereby.

SAFETY APPROVAL. Electrical items listed herein shall have UNDERWRITER'S LABORATORY OR LOS ANGELES CITY ELECTRICAL TESTING LABORATORY approval and meet all current OSHA and CAL-OSHA requirements, where applicable.

SMALL BUSINESS, MINORITY-OWNED, WOMEN-OWNED, DISABLED VETERAN-OWNED AND ALL OTHER BUSINESS ENTERPRISES. It is the policy of the Department to provide Small Business, Minority-Owned, Women-Owned, Disabled Veteran-Owned and all Other Business Enterprises (SBE/MBE/WBE/DVBE/OBE) an equal opportunity to participate in the performance of all Department contracts. Bidders are encouraged to continue assisting the Department in implementing this policy by taking all reasonable steps to ensure that all available business enterprises, including SBEs, MBEs, WBEs, DVBEs, and OBEs, have an equal opportunity to compete for and participate in Department contracts.

SWEAT-FREE PROCUREMENT POLICY
The Board of Harbor Commissioners of the City of Los Angeles adopted Resolution No. 6455 on October 19, 2006, agreeing to adopt provisions of Los Angeles City Ordinance 176,291, relating to Sweat-Free Procurement, Section 10.43 et seq. of the Los Angeles Administrative Code, as a policy of the Harbor Department. Contractor shall comply with the policy wherever applicable. Violation of the policy shall entitle the City to terminate any Agreement with Contractor and pursue any and all other legal remedies that may be available.

EQUAL BENEFITS POLICY. The Board of Harbor Commissioner of the 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 et seq. of the Los Angeles Administrative Code) as a policy of the Harbor Department. Bidder shall comply with the policy

whenever applicable. Violation of the policy shall entitle the City to terminate any agreement with Bidder and pursue any or all other legal remedies that may be available.

ETHICS.

Persons who submit a response to 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 response until either the contract is approved or, for successful bidders, 12 months after the contract is signed. The bidder's principals and subcontractors performing $25,000 or more and a term of at least three months in work on the contract, as well as the principals of those subcontractors, are also subject to the same limitations on campaign contributions and fundraising.

Bidders must submit CEC Form 50 (provided in Attachment) to the awarding authority at the same time the response is submitted. The form requires bidders to identify their principals, their subcontractors performing $25,000 or more and a term of at least three months in work on the contract, and the principals of those subcontractors. Bidders must also notify their principals and subcontractors in writing of the restrictions and include the notice in contracts with subcontractors. Responses submitted without a completed CEC Form 50 shall be deemed nonresponsive. 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 the City Ethics Commission at (213) 978-1960 or ethics.lacity.org.

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION.

ALL CONTRACTORS MUST HAVE A CONTRACT REGISTRATION NUMBER THROUGH THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS.

A CONTRACTOR AND SUBCONTRACTOR MAY NOT SUBMIT A BID PROPOSAL FOR A PUBLIC WORKS PROJECTS UNLESS REGISTERED WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS. BID PROPOSAL WILL BE DEEMED NON RESPONSIVE.

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 the Specifications has been determined by the Director of the Department of Industrial Relations (DIR) of the State of California pursuant to the provisions of the Labor Code of the State of California. The State of California has approved the City's Labor Compliance Program of enforcement of State prevailing wage laws and will allow the City to retain all penalty assessments for violation of these laws.

Pursuant to notice requirements effective January 1, 2015, all contractors and subcontractors must register with and meet requirements of the State of California DIR using the online application before bidding on the 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 projects unless registered with the DIR 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 DIR pursuant to Labor Code section 1725.5.

c. The Project is subject to compliance monitoring and enforcement by the DIR.

PREVAILING WAGES

a. The 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 the 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 the 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 may be obtained at or by request to the Department.

c. When the Contractor has been determined to be in violation of Section 377 of the 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 the 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 part thereof, for which each worker was paid less than the stipulated prevailing wage rate.

d. The 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.

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 the 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 the Board and to the State Division of Labor Law Enforcement. The Contractor in all other respects shall comply with Section 1776 of the Labor Code.

f. No later than the end of the workday following the day on which work was performed by the Contractor, or any subcontractor, the Contractor and applicable subcontractor(s) shall complete and furnish the Contractor Daily Field Report, included as Subsection 71 of this Section, to the Inspector. When work has been performed, the Contractor shall submit a form regarding all employees and equipment at the jobsite on the workday, and the Contractor shall submit a separate form for each subcontractor regarding each subcontractor's employees and equipment at the jobsite on the workday. Each field report shall:

    1. Identify the Project title, Specification number, name of the Contractor or subcontractor, and date on which the 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, the 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 workday.

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

6. Contain the printed name and title for the 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 the Inspector for review. If additional space is needed, a second form, with pages numbered accordingly, can be completed.

h. The Inspector will compare the Inspector's records with the report submitted by the Contractor, discuss any apparent discrepancies with the Contractor, and reconcile the report (and have it re-submitted, if necessary). Once the report is agreed upon by the Contractor and Inspector, the 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 the Contractor and all subcontractors shall by submitted to the 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 the Contractor or the 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 the Contract. The City reserves the right to reject incomplete payroll reports and request re-submittal of complete reports.

WAGE AND EARNING ASSIGNMENT ORDERS/NOTICES OF ASSIGNMENTS

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

b. The 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. The 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. The Contractor or subcontractor shall maintain such compliance throughout the term of the Contract.

Prime Contractor State of California DIR Registration No.:

_____

Subcontractor State of California DIR Registration No.:

_____

Subcontractor State of California DIR Registration No.:

_____
(Attach additional sheets if necessary)

PRIME:
Please indicate which Labor Classification(s) will be used for Payroll Reporting:

☐ Asbestos ☐ Boilermaker ☐ Bricklayers ☐ Carpenters ☐ Carpet/Linoleum
☐ Cement Masons ☐ Drywall Finisher ☐ Drywall/Lathers ☐ Electrician
☐ Elevator Mechanic ☐ Glaziers ☐ Iron Workers ☐ Laborers ☐ Millwrights
☐ Operating ENG ☐ Painters ☐ Pile Drivers ☐ Pipe Trades ☐ Plasterers ☐ Roofers
☐ Sheet Metal ☐ Sound/COMM ☐ Surveyors ☐ Teamster ☐ Tile Workers

SUBCONTRACTOR(s): ☐ N/A
Please indicate which Labor Classification(s) will be used for Payroll Reporting:

☐ Asbestos ☐ Boilermaker ☐ Bricklayers ☐ Carpenters ☐ Carpet/Linoleum
☐ Cement Masons ☐ Drywall Finisher ☐ Drywall/Lathers ☐ Electrician
☐ Elevator Mechanic ☐ Glaziers ☐ Iron Workers ☐ Laborers ☐ Millwrights
☐ Operating ENG ☐ Painters ☐ Pile Drivers ☐ Pipe Trades ☐ Plasterers ☐ Roofers
☐ Sheet Metal ☐ Sound/COMM ☐ Surveyors ☐ Teamster ☐ Tile Workers

Estimated Project Duration: _____

REGIONAL ALLIANCE MARKETPLACE FOR PROCUREMENT (RAMP). **PRIOR TO BEING AWARDED A CONTRACT** with the Harbor Department, all vendors must be registered on the City's Contracts Management and Opportunities Database, Regional Alliance Marketplace for Procurement (RAMP), at http://www.RAMPLA.org.

Respondents are advised, pursuant to Executive Directive 35, if a bidder is selected and awarded a contract, and if the vendor is a for-profit company or corporation, the vendor shall, within 30 days of the effective date of the contract and on an annual basis thereafter (i.e., within 30 days of the anniversary of the effective date of the contract), report the following information to City via the Regional Alliance Marketplace for Procurement ("RAMP") or via another method specified by City: vendor's and any

subcontractor's annual revenue, number of employees, location, industry, race/ethnicity and gender of majority owner ("contractor/subcontractor Information"). On an annual basis, the vendor shall further request that any subcontractor input or update its business profile, including the vendor/subcontractor information, on RAMP or via another method prescribed by City.

VENDOR'S RAMP ID Number(s): _____

REQUEST FOR BID

CITY OF LOS ANGELES
HARBOR DEPARTMENT

BID NO. 13092
(SHOW THIS NUMBER ON ENVELOPE)

GENERAL CONDITIONS
READ CAREFULLY

1. **FORM OF BID AND SIGNATURE**. The Bid must be made on this form only, and is limited to the Terms and Conditions contained herein, unless expressly agreed otherwise in writing by the City. **No telephonic, facsimile, or electronic bid is acceptable, unless otherwise indicated**. Bid should be enclosed in a sealed envelope, showing the Bid No. in the lower left corner, and addressed to the Port of Los Angeles Contracts and Purchasing Division, 500 Pier "A" Street, Wilmington, CA 90744. Bids must be signed with the firm's corporate name or DBA and by a responsible officer or authorized employee. In case of error in extension of prices, unit price will govern. All prices must be firm unless the specification provides for adjustment.

2. **TAXES**: Do not include any Sales or Federal Excise Tax in prices unless the specifications specifically require that they be included. Sales tax will be added by the City at time of award. The City will furnish Federal Excise Tax Exemption Certificate to Supplier. Any other taxes must be included in bid prices.

3. **SPECIFICATION CHANGES**. Contractor may request in writing that specifications be modified if its provisions restrict Contractor from bidding. Such request must be received by the Director of Purchasing at least five (5) working days before bid opening date. All Contractors will be notified by Addendum of any approved changes in the specifications.

4. **BRAND NAMES AND SPECIFICATIONS**. The detailed specifications and/or brand name references are descriptive and indicate quality, design, and construction of items required. Offers will be considered to supply articles substantially the same as those described therein but with minor variations. Contractor must describe variations in their Bid.

5. **AWARD OF CONTRAC**T. Bid shall be subject to acceptance by the City for a period of three (3) months unless a lesser period is prescribed in the quotation by the Contractor. The City may make combined award of all items complete to one Contractor or may award separate items to various Contractors. Contractors may submit alternate prices, a lump sum or a discount conditional on receiving an award for two or more items. The right is reserved to reject any, or all, bids and to waive informality in bids.

6. **PURCHASE AGREEMENT**. A copy of the Bid, Specifications and General Conditions will remain on file in the Purchasing Office. All material or services supplied by the Contractor shall conform to the applicable requirements of the City Charter, City Ordinances, and all applicable State and Federal Laws, as well as conforming to the Specifications, Terms and Conditions contained herein.

7. **PRICE GUARANTEE**. If during the term of any agreement awarded pursuant to this Bid, the supplier sells the same materials or services under similar quantity and delivery conditions, at prices below those stated herein, such lower prices are to immediately be extended to the City.

8. **DEFAULT BY SUPPLIER**. In case of default by supplier, the City reserves the right to procure the articles or services from other sources and to hold the supplier responsible for any excess costs incurred by the City.

9. **DELIVERY:** If delivery of the commodity or service cannot be made exactly as specified and at the price shown, notify the Director of Contracts and Purchasing immediately. Do not make delivery without his approval. Any correspondence, other than invoices, relating to this order must be sent to the Director of Contracts and Purchasing.

10. **INSPECTION:** All materials furnished on this order will be subject to test and inspection and, if rejected, will be held subject to order of shipper and subject to accrued charges.

11. **INVOICING:** The point of free delivery, terms, contract number, name and address of department must appear on all invoices.

    All materials must be marked and tagged with the Contract number and be accompanied by packing list in detail. Material must be packed and shipped in conformity with tariff or classification requirements.

    Prices on the contract include delivery to the division within building unless otherwise specified on the contract.

    Prepaid charges for transportation must be accompanied by original expense bill marked paid and is not subject to transportation tax, due to the exemption permitted municipalities as indicated.

    Materials shall be listed separately on invoices covering repairs or installation service.

    The Harbor Department will not be responsible for services, materials, or supplies furnished without prior authorization from the Director of Contracts and Purchasing.

    This contract must not be assigned or transferred to anyone without the written approval of the Director of Contracts and Purchasing.

    Discount period to be computed from date of receipt of invoice, or complete acceptance of goods or services, whichever is the later date.

    In case of delay of payment beyond 30 days after acceptance of goods or services or date of invoice, whichever is later, please write the Harbor Department Accounting Section giving the contract number, stating to which division and on what date delivery was made.

    Harbor Department may pay on partial deliveries, but right is reserved by the Director of Contracts and Purchasing to require complete delivery before payment.

12. **TIME AND MATERIALS WITH NO FIXED FEES:** ALL INVOICES WITH PAYMENTS FOR **TIME AND MATERIALS** MUST BE SUPPORTED / BACKED UP BY **TIME SHEETS.**

    NOTE: THOSE INVOICES WITH FIXED FEE RATES DO NOT REQUIRE **TIME SHEETS.**

13. **CITY OF LOS ANGELES MUNICIPAL CODE:** All items must meet the requirements of the City of Los Angeles Municipal Code.

14. **PAYMENTS**. Payment terms are NET 30 days unless Contractor quotes otherwise. Cash discounts allowing less than 20 days or 20th Proxima will not be considered by the City when evaluating Bids. All Cash Discounts are computed from the date of delivery in full or completion and acceptance of the work or material, or from date of receipt of invoice, whichever is latest. Partial payments may be made by the City on delivery and acceptance of goods and on receipt of Contractor's invoice. Invoices must be submitted as specified on the Purchase Order or Notice to Proceed.

15. **ASSIGNMENT**. The supplier shall not assign or transfer by operation of law any obligation without the prior written consent of the Director of Contracts and Purchasing.

16. **NONDISCRIMINATION**. During the performance of this con-tract, the Contractor shall not discriminate in employment practices against any employee or applicant for employment because of the employee's race, religion, national origin, ancestry, sex, sexual orientation, age, disability, marital status, domestic partner status or medical condition, in accordance with L.A. Admin. Code Sections 10.8 to 10.13, whose provisions are incorporated herein. All subcontracts awarded under any such contract shall contain a like nondiscrimination provision.

17. **SAFETY APPROVAL**. Articles supplied under this contract will not be accepted unless they comply with current safety regulations of the City Department of Building and Safety, U.L., the Safety Orders of the California Division of Occupation Safety and Health (CalOSHA) and OSHA requirements.

18. **PREVAILING WAGES**. Where labor is required for public work as a part of this contract, pursuant to the provisions of the Labor Code of the State of California, Contractor shall pay no less than the general prevailing wages for the area as determined by the Director of the Department of Industrial Relations, State of

California. Copy of wage schedule is obtainable from the Office of the Board of Public Works, City Hall, Los Angeles.

19. **CONTRACTOR'S LIABILITY**. The Contractor agrees to, at all times, relieve, protect, save harmless, and fully indemnify the City of Los Angeles, its officers, agents and employees from any and all liability whatsoever that may arise or be claimed by reason of any acts of said Contractor, Contractor's employees and agents, in connection with the work to be performed under the contract.

20. **PATENT RIGHTS**. The person, firm, or corporation, upon whom this order is drawn, does, in case the materials or supplies to be furnished are covered wholly or in part by U.S. Letters Patent, by the acceptance of this order agrees to indemnify and hold the City of Los Angeles harmless from any and all injuries or damage which the City may sustain by reason of the sale to or use by it of such materials or supplies and arising out of the alleged or actual infringement of said letters patent.

21. **LEGAL JUSTIFICATION**. This agreement 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.

22. **TERMINATION FOR NON-APPROPRIATION**. The Harbor Department of the City of Los Angeles' (City's) obligation to pay any amount hereunder, for any City fiscal year purpose. The City's fiscal year ends on June 30th of each calendar year. Accordingly, anything to the contrary notwithstanding, the City may terminate this contract and future monetary obligations hereunder as of the end of any fiscal year.

23. **CANCELLATION.** The contract may be terminated in whole or in part by the Harbor Department of the City of Los Angeles (City) for its convenience, without penalty, provided that the Contractor is given not less than 30 days written notice (delivered by certified mail, return receipt requested) of the intent to terminate. The City will pay for that portion of the orders fulfilled or work performed. The City has the right to cancel the contract for cause at any time.

THE END

No. 285 Rev. 07/15-116

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.

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

Reference Number (Bid, Contract, or RAMP)	Awarding Authority (Department awarding the contract)
13092 (REQ6556)	HARBOR
Bidder Name	
Address	
Email Address	Phone Number

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.

_____ Name

_____ Signature

_____ Title

_____ Date

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 the Project site, including existing utilities, structures, and substructures.

B. Basic materials and methods common to new site construction.

1.2 RELATED SECTIONS

A. EXISTING CONDITIONS	Division 02
B. MASONRY	Division 04
C. ELECTRICAL	Division 26
D. EARTHWORK	Division 31
E. CONCRETE FOR EXTERIOR IMPROVEMENTS	Section 32 13 14
F. UTILITIES	Division 33

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Removal and Disposal of Asbestos Cement Pipe: The quantity of asbestos-containing pipe will be that linear footage of pipe measured by Contractor in the presence of the Engineer. Costs for removal, transportation, and disposal will be paid under Removal and Disposal of Asbestos Cement Pipe bid item of the Bid Proposal Line Items.

1.4 REFERENCES

A. American Society for Testing and Materials (ASTM International):

ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

B. Reference Specifications (RS):

Section 201	Concrete, Mortar, and Related Materials
Section 306	Open Trench Conduit Construction
Subsection 306-3.3	Removal and Abandonment of Existing Conduits and Structures
Section 401	Removal
Subsection 401-2	Asphalt Concrete Pavement
Subsection 401-3.1	Concrete Pavement

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 the 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 the 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 the Engineer. Refer to CONTRACT DRAWINGS Section for reference drawing numbers. The Department neither belongs to Underground Service Alert nor participates in its activities. The 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 the 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 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 will 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 the Engineer, will be considered to be unauthorized and at the expense of the Contractor. Engineer may order Contractor to restore such removals in conformance with the 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 the 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. The Engineer will 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. The Department will perform field testing of compacted soil in conformance with ASTM standards, including ASTM D6938 (nuclear methods) or ASTM D1556 (sand-cone method). The Department will perform compaction tests, 1 time, at no expense to Contractor. The Department will perform retests required due to inadequate compaction at Contractor's 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 the Engineer.

3.6 INTERFERING SUBSTRUCTURES

A. Consult the Engineer immediately for directions whenever substructures not shown on Drawings interfere with or affect Work. Contractor shall propose means and methods to the Engineer to deal with the interferences. The Engineer will 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 the Engineer and cease removal work until Engineer authorizes work to resume.

d. Consult the Engineer for methods of handling other substructures.

e. Notify the 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 will be considered a Change in the Work and payment will be determined in conformance with the 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 will be considered a Change in the Work and payment will be determined in conformance with the GENERAL CONDITIONS Section.

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 the site shall remain the property of the Department and shall be delivered to the Department stockpile (refer to Appendix “__” of the Specifications for location map). There will be no charge for use of the site. Materials to be stockpiled shall meet the following conditions:

1. Material may be transported to stockpile site only with prior approval of the Engineer. Notify the Engineer at least 24 hours prior to delivering materials to the stockpile.

2. Break material into pieces not to exceed 4 cubic feet in volume and no greater than 1 foot in thickness. Projected area on any 1 face shall not exceed 4 square feet with the longest measurement in any direction across rubble piece no greater than 2'-10". Rebars in reinforced concrete rubble shall not protrude more than 3 inches beyond the face of concrete.

   a. Maximum dimensions also apply to concrete wheel stops.

3. Place materials as directed by the Engineer.

4. Materials shall be free from residual petroleum, tars, waste, debris, soil, loose scrap metal, and any toxic, hazardous, or other foreign substances.

5. The following materials will not be accepted at the Department stockpile and 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 the Salvage Article of the SELECTIVE SITE DEMOLITION and STRUCTURE DEMOLITION Sections, shall become the property of the Contractor and shall be disposed of off Department property in conformance with the Contractor's Waste Management Plan.

3.8 CHEMICALLY IMPACTED SOIL

A. Refer to EXCAVATING, STOCKPILING, AND DISPOSING OF CHEMICALLY IMPACTED SOIL Section.

3.9 MAINTENANCE AND REPAIR

A. Unpaved access roads servicing the 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 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. Hot-dip galvanizing of ferrous metal fabrications and structural steel.

1.2 RELATED SECTIONS

A. TREATING DAMAGED GALVANIZING	Section 05 05 14
B. STRUCTURAL STEEL	Section 05 12 02
C. METAL FABRICATIONS	Section 05 50 00

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. For Drawing Numbers from1-XXXX A-0.0 to 1-XXXX A-5.0, payment for work of this Section shall be included in each corresponding bid item of the Proposal Schedule that requires shop-applied coatings for metals.

2. For Drawing Number 1-XXXX, payment for work of this Section will be paid under the fence and gate bid item of the Proposal Schedule.

1.4 REFERENCES

A. American Galvanizers Association, Inc. (AGA):

Guide for Inspection of Hot-Dip Galvanized Products

B. American Society of Testing and Materials (ASTM International):

ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Product
ASTM A143	Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A384	Standard Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies

ASTM A385	Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
ASTM A563	Standard Specification for Carbon and Alloy Steel Nuts
ASTM B6	Standard Specification for Zinc

1.5 SUBMITTALS

A. The following shall be submitted to the Engineer:

1. Certification:

a. Each certificate shall be co-signed by Contractor and galvanizer certifying that steel materials, bolts, nuts, washers, and items of iron and steel hardware conform to the specified requirements.

b. Manufacturer's product data.

2. Test Reports.

3. Safety Data Sheets (MSDS): Manufacturer’s Safety Data Sheets for each type of material used in Work.

1.6 QUALITY ASSURANCE

A. Galvanizing Firm: Member of American Galvanizers Association Inc. (AGA).

B. Engage the services of a qualified galvanizer who has demonstrated a minimum of ten years’ experience in the successful application of hot-dip galvanized coatings.

C. Inspection and Tests:

1. Inspections, tests, and samples: Conform to ASTM Specifications and Standards.

2. Rights and privileges, procedures, and acceptance or rejection of galvanized steel materials shall be in conformance with ASTM A123.

3. Inspection and tests include the following:

a. Visual examination of samples and finished products.

b. Tests to determine weight or mass of zinc coating per square foot of steel surface.

c. Tests to determine distribution and uniformity of zinc coating.

d. Tests to determine thread fittings of units, washers, and bolts.

1.7 DEFINITIONS

A. Hot-Dip Galvanizing: Dipping steel members and assemblies into molten zinc for lasting, or long-term corrosion protection. Resultant zinc coating fuses permanently with base steel material.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Packaging - Prevent damage to galvanized surfaces and distortion of steel materials and components.

B. Handling and Storage:

1. Conform to ASTM A123.

2. Protect galvanized materials from damage to zinc coating.

3. To avoid humid storage stain, space surfaces of galvanized materials to permit free circulation of air.

C. Damaged Materials:

1. Repair material showing evidence of damage to zinc coating. Limit repair to minor, incidental assembly damage, as required for field welding, and as acceptable to the Engineer.

2. If not repairable, material with damaged coating will be rejected.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Materials:

1. Geometrically suitable for galvanizing as specified in ASTM A384 and ASTM A385.

2. Steel materials suitable for galvanizing include structural shapes, pipe, sheet, fabrications, and assemblies.

3. Material shall be chemically suitable for galvanizing. Verify with supplier or fabricator.

B. Iron and Steel Hardware:

1. Bolts, nuts, washers, and items of iron and steel hardware furnished for galvanizing shall be suitable for hot-dip galvanizing.

a. Threaded components (bolts and nuts) of a fastener assembly must be galvanized by the same process. Mixing bolts that are galvanized by one process with nuts that are galvanized by a second process may result in an unworkable assembly.

2. Inspection:

a. Inspect iron and steel hardware before galvanizing and verify suitability for galvanizing.

b. Replace items which are not suitable for galvanizing.

C. Zinc for Galvanizing:

1. Conform to ASTM B6, as specified in ASTM A123.

PART 3 - EXECUTION

3.1 GALVANIZING

A. Steel members, fabrications, and assemblies to be galvanized after fabrication:

1. Method: Hot-dip process in conformance with ASTM A123, except if modified by other sections with regard to weight of galvanized coating.

2. Weight of zinc coating: Conform to requirements of ASTM A153 unless specified in other sections. If items are not specified in ASTM A153 coat at 2.0 oz. per square foot.

3. Components: Smooth after galvanizing.

B. Safeguard against steel embrittlement in conformance with ASTM A143.

C. Safeguard against warping or distortion of steel members in conformance with ASTM A384. Notify the Engineer of potential warping problems which require modification in design before proceeding with steel fabrications.

D. Finish and uniformity of zinc coating and adherence of coating shall be in conformance with ASTM A153.

E. Bolts, nuts, and washers, and iron and steel hardware components: Galvanize in conformance with ASTM A153.

1. Weight of zinc coating: In conformance with ASTM A153.

2. Tap nuts after galvanizing to minimum diameter amounts in conformance with ASTM A563.

3. Coat nuts with waterproof lubricant: Clean and dry to touch.

3.2 TOUCH-UP AND REPAIR

A. Conform to TREATING DAMAGED GALVANIZING Section.

3.3 INSPECTION AND TESTING

A. Inspection and testing of hot-dip galvanized coatings to be under the guidelines provided in the AGA publication Inspection of product hot-dip galvanized after fabrication.

B. Visual examination and tests shall be performed as required in conformance with applicable standards to determine the thickness of zinc coating on the metal surface.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Repair materials for damaged galvanizing

1.2 RELATED SECTIONS

A. METAL FABRICATIONS	Section 05 50 00
B. DECORATIVE METAL FENCES AND GATES	Section 32 31 19

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 the Bid Proposal Line Items that requires treatment of damaged galvanizing.

1.4 REFERENCES

A. American Society for Testing and Materials (ASTM International):

ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

B. South Coast Air Quality Management District (SCAQMD)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials shall be zinc-based alloys, zinc-rich paints, or sprayed zinc in conformance with ASTM A780.

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 regulations.

D. Materials shall comply with City of Los Angeles Green Building Code requirements.
   1. Enter product data in VOC Content Verification Checklist form located in Appendix "A" of the Specifications and provide product specification sheets. Make checklist and specifications available to City of Los Angeles Department of Building and Safety inspector through the Engineer upon request.

PART 3 - EXECUTION

3.1 REPAIR

A. Repairs shall be in conformance with ASTM A780 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. Requirements and procedures for welding of structural items including but not limited to the following:

1. Structural steel pipe piles

2. Other structural steel

1.2 RELATED SECTIONS

A. STRUCTURAL STEEL Section 05 12 02

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 the Bid Proposal Line Items that requires structural welding.

1.4 REFERENCES

A. American Petroleum Institute (API):

API RP 2A-WSD	Planning, Designing, and Constructing Fixed Offshore Platforms-Working Stress Design
API SPEC 2B	Specification for the Fabrication of Structural Steel Pipe
API SPEC 5L	Line Pipe

B. American Society for Testing and Materials (ASTM International):

ASTM A370	Standard Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM E23	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials
ASTM E164	Standard Practice for Contact Ultrasonic Testing of Weldments
ASTM E165	Standard Practice for Liquid Penetrant Examination for General Industry
ASTM E709	Standard Guide for Magnetic Particle Testing

C. American Welding Society (AWS):

AWS D1.1 Structural Welding Code - Steel

AWS D1.4 Structural Welding Code - Steel Reinforcing Bars

1.5 SUBMITTALS

A. Submit welding procedures for review by the Engineer prior to the start of production welding for each particular joint to be used. Use only approved procedures. For weld procedure qualification, refer to Quality Assurance Article of this Section. The following information shall be included:

1. Scope of work performed under each procedure.
2. Base metals, applicable specifications, and relevant characteristics.
3. Welding process and equipment.
4. Types, size, classification, and composition of welding electrodes of filler metals (specify wire-flux combinations for submerged arc welding).
5. Type of current, current characteristics (pulse types, and the like) and current range.
6. Heat input and welding speed when applicable.
7. Joint preparation and cleaning procedures.
8. Tack welding procedure.
9. Applicable welding positions.
10. Preheat and interpass temperatures.
11. Weld types and sizes.
12. Root preparation prior to welding from second side.
13. Welding sequences employed to control warpage, distortion and excessive accumulations of residual joint stresses.
14. Removal methods for weld defects.
15. Repair welding procedure.
16. Postweld heat treatments.

1.6 QUALITY ASSURANCE

A. Welders, welding operators, and tackers shall be qualified by test as prescribed in AWS D1.1 and shall be City of Los Angeles Building and Safety

certified. Record of the test results and certificates of qualification of personnel shall be made available to the Engineer upon request.

B. Each qualified welder and welding operator shall be supplied with an identifying color crayon or chalk and number with which the welder can mark the steel to identify welds at intervals not more than 3 feet apart. Areas not clearly marked may be rejected by the Engineer.

C. Weld procedures shall be qualified in conformance with Section 5.2 of AWS D1.1. Before commencing production welding, submit a procedure qualification record to the Engineer for review. This document shall list the variables (essential and non-essential) employed to make the procedure qualification test weld and shall include the results of physical and mechanical testing. This shall be a factual document and shall not contain general statements and shall give the actual value of the variable used, not a specified range. Appropriate forms in Appendix E of AWS D1.1 may be used.

D. Testing required in the procedure qualification tests shall be carried out by an independent testing laboratory approved by the Engineer, at Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Items of equipment for welding, electrodes, welding wire, and fluxes shall be capable of producing satisfactory welds when used using qualified welding procedures. Welding materials shall comply with the applicable requirements of AWS D1.1 or AWS D1.4 and applicable requirements of AWS filler material specifications.

B. Electrodes:

1. Electrodes used shall be low hydrogen electrodes. E70XX for both fillet welds and full penetration groove welds, except electrodes of welding of reinforcing bars shall conform to the requirements of AWS D1.4.

2. When base metals of 2 different yield stresses are welded together, select filler metal based on the base metal which has the higher yield stress.

3. Notch toughness requirements: The as-deposited weld metal shall have a minimum impact strength of 20 foot-pounds of 0 degrees Fahrenheit (F) for welds joining structural steel with a yield joint above 40 kips per square inch. For testing, refer to Field Quality Control Article of this Section.

2.2 TYPES OF WELDING

A. Any type of structural welding specified in Section 4.1 of AWS D1.1 may be used except electroslag or electrogas welding. Fabrication of built-up beam

and girders shall be submerged arc welding where possible. For welding of shear studs, Section 4, Part "F" of AWS D1.1, shall apply.

PART 3 - EXECUTION

3.1 WELDING PROCEDURES

A. Welding shall be in conformance with AWS D1.1, AWS D1.4, and with this Section.

B. Prior to commencing production welding, establish detailed welding procedures for welding the various parts of the structure in accordance with connection details of Drawings and in conformance with the applicable requirements of AWS D1.1 and AWS D1.4.

C. The welding procedure may include preheating, interpass heating, post heating, block welding, back step methods, simultaneous deposition, and other planned methods of control. Provide for the necessary supervision to ensure strict adherence to the procedure. Appropriate forms in Appendix E of AWS D1.1 may be used.

3.2 DETAILS OF WELDED JOINTS

A. Full Penetration Groove Welds:

1. Full penetration groove welds shall be detailed in conformance with AWS prequalified welded joints. Select a suitable joint detail based on the thickness of the jointing base metals such that it will not cause lamellar tearing due to the shrinkage of the welds.

2. Structural Fillet Welds:

a. Size of structural fillet weld shall be as shown on Drawing but not less than the minimum size as required by AWS D1.1.

3. Partial Penetration Groove Welds:

a. Partial penetration groove welds are not allowed unless called out on Drawings.

4. Tubular Member Joints:

a. Tubular members shall have full penetration groove welds as detailed on Drawings or in conformance with AWS prequalified tubular joints.

5. Tack Welding:

a. Tack welds shall be carried out by qualified operators. Tack welds shall be subject to the same preheat requirements as structural welds.

6. Arc Strikes:

   a. There shall be no arc strikes on the base material outside the weld groove or weld area.

7. Temporary Attachments:

   a. Temporary and assembly attachments shall be kept to a minimum and shall be welded in conformance with the Specifications.

   b. Welded temporary attachments shall be removed by flame cutting or gouging a minimum of 1/4 inch above the surface of the base material and finished smooth and flush by grinding.

3.3 PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS

A. Preheat and interpass temperatures shall be sufficient to prevent crack formation. The minimum preheat and interpass temperatures shall be in conformance with Table 4.2 of AWS D1.1.

B. In joints involving combination of base metals, preheat shall be as specified for the higher strength steel being welded.

C. Preheating shall be performed in such a manner that the surfaces of the parts on which metal is being deposited are at or above the specific minimum temperature for a distance equal to the thickness of the part being welded, but not less than 3 inches, both laterally and in advance of the welding.

3.4 POSTWELD AND STRESS RELIEF HEAT TREATMENT

A. The necessity of postweld heat treatment depends on the Contractor proposal as included in the welding procedures.

B. If postweld heat treatment is required, weld assemblies shall be stress relieved by heat treating in conformance with AWS D1.1, Section 3.9.

3.5 ASSEMBLY

A. The parts to be joined by fillet welds shall be brought into as close contact as practicable. The separation between parts shall not exceed 3/16 inch. If the separation is 1/16 inch or greater, the leg of the fillet weld shall be increased by the amount of the separation.

B. No welding shall be done until as much of the structure as will be stiffened has been properly aligned.

C. Run-off tabs shall be used to complete the butt weld at the edge of two adjoining plates.

D. Tack welds shall be subject to the same quality requirements as the final welds.

E. Tack welds not incorporated into final welds shall be removed before applying the final structural welds.

3.6 CONTROL OF DISTORTION AND SHRINKAGE

A. Deposit welds in a sequence that will minimize distortion and shrinkage.

B. Submit a welding sequence and distortion control program to the Engineer for information and review before the start of welding on a member or structure in which shrinkage or distortion is likely to affect the adequacy of the member or structure.

3.7 WEATHER PROTECTION

A. Contractor shall establish sufficient shielding to protect each welding site from rain, sand, and wind.

3.8 IDENTIFICATION OF ELECTRODES, WIRE, AND FLUX

A. Manual type electrodes shall be properly identified up to the time of usage. Each electrode shall be distinguishable by color code marking. Each batch of flux shall be labelled with the information from the supply container.

3.9 PAINT REMOVAL

A. Any paint on surface adjacent to joints to be welded shall be thoroughly removed to expose clean steel within 2 inches of the joint.

3.10 PILE DRIVING

A. Pile driving shall not be allowed until the pile weld area is no more than warm to touch if the pile is spliced in field.

3.11 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. General:

a. Work is subject to inspection by the Engineer to ensure that materials and quality of work conform to the Drawings and Specifications. This inspection does not relieve the Contractor of the responsibility for errors or omissions.

b. Welding inspection and testing shall conform to Section 6 of AWS D1.1 and to the applicable portions of API RP 2A-WSD.

c. Pipe and heavy-wall tubular members manufactured and tested in conformance with API SPEC 2B and API SPEC 5L shall be considered acceptable without further testing in the assembly site. Welds connecting such members shall be inspected as specified in the following paragraphs of this Article.

2. Procedure, standards, and acceptance criteria are listed in Table 1, included in this Section.

3. Percentage of tests in welds are shown in Table 2, included in this Section, except for the percentage of tests in offshore welds, which are shown in Table 3, included in this Section. Offshore welds are defined as welds where the welding is performed above water.

4. Percentage of length of weld tested in a given type of connection shall be as shown in Table 2 and Table 3, but not less than 1 spot of 4 inches weld length for radiographic and ultrasonic testing. Testing shall be in random spot and in conformance with AWS D1.1. Location of the spot testing will be determined by the Engineer.

5. If ultrasonic or magnetic particle inspection of weld appears to indicate any defect, then such weld shall be thoroughly re-examined by any means including radiographic as described by the Engineer.

6. Welds shall also be examined for inadequate penetration, incomplete fusion, burned-through areas, slag inclusions, gas pockets, under cutting, and improper weld geometry. If these or any other defects are discovered which in the opinion of the Engineer are detrimental to the integrity of the structure, then such welds shall be repaired or replaced by the Contractor at no cost to the Department.

7. Contractor shall be solely responsible for the cost of testing, repairing or replacing, and retesting welds found to be defective.

8. Depending on the results of non-destructive examination called for above, the percentage of welding inspection may be adjusted accordingly by the Engineer.

9. To pass the visual examination and magnetic particle test or liquid penetrant test, welds shall present a uniform appearance and excessive undercut shall be held at a minimum.

10. Charpy V-notch impact test requirements of the as deposited weld metal 40 kips per square inch shall be tested. Charpy V-notch test specimen shall be tested conforming to ASTM A370 and ASTM E23.

3.12 CORRECTIONS AND REPAIRS

A. When inspection or test indicates defects in the weld joints, the weld shall be repaired at the cost of the Contractor. Corrections and repairs shall be in conformance with AWS D1.1.

B. Submit repair procedure for approval of Engineer prior to such operation.

C. Test the repaired weld for soundness. The method of testing, depending on the type of weld shall be as specified in this Section.

D. The Engineer has the right to reject any weld under the following conditions:

1. That welds do not conform to AWS D1.1 and this Section.

2. That welds do not conform to Drawings.

3. That welds cause excessive distortion and shrinkage of the adjoining members.

4. That any weld impairs the safety of the member or structure.

TABLE 1		
TESTING	PROCEDURE AND STANDARDS	ACCEPTANCE CRITERIA
Visual Inspection	To comply with the drawings and the requirements of AWS D.1	AWS D1.1 Section 8.15.1 for Non-Tubular Members AWS D1.1 Section 10.17.1 for Tubular Member
Radiographic Test	AWS D1.1 Section 6 Part B	AWS D1.1 Section 8.15.3 for Non-Tubular Members AWS D1.1 Section 10.17.3 for Tubular Member
Ultrasonic Test	1. Test method in conformance with ASTM E164 2. Procedure and standards in conformance with AWS D1.1 Section 6 Part C	AWS D1.1 Section 8.15.4 for Non-Tubular Members AWS D1.1 Section 10.17.4, Class R for Tubular Members
Magnetic Particle Test (1)	Test method in conformance with ASTM E709	AWS D1.1 Section 8.15.5 for Non-Tubular Members AWS D1.1 Section 10.17.5 for Tubular Members
Liquid Penetrant Test (1)	Test method in conformance with ASTM E165	AWS D1.1 Section 8.15.5 for Non-Tubular Members AWS D1.1 Section 10.17.5 for Tubular Members
(1) Either type of testing may be used.		

TABLE 2

PERCENTAGE OF TEST IN WELDS

ITEMS	MEMBERS	TYPES OF WELD	VISUAL INSPECTION	RADIOGRAPHIC TEST	ULTRASONIC TEST	MAGNETIC PARTICLE OR LIQUID PENETRANT
1.	Pipe Piles	Circumferential butt joints - groove welds (Girth weld)	W-100% L-100%	W-100% L-100%	---	---
2.	Padeye to Shape or to Tubular Member Connection.	T. Skewed T or Corner Joints of structural plates-Fillet or Groove welds	W-100% L-100%	---	W-100% L-100% where applicable	W-100% (1) L-100%(1)
3.	Flange Splice	Butt Joint-Groove Welds	W-100% L-100%	W-100% L-25%		
4.	Web Splice					
5.	All Connections & Splices	To check cracks in fillet welds	W-100% L-100%	--- ---	--- ---	W-100% L-25%
6.	Location to be Determined by the Engineer	Butt Weld	W-100% L-100%	W-25% L-25%	---	---

LEGENDS W - Percentage of number of weld (Subsection 3.1(b) 3).
L - Percentage of length of weld.

(1) Use when Ultrasonic Test is not applicable

TABLE 3

PERCENTAGE OF TESTING IN OFFSHORE WELDS

ITEMS	MEMBERS	TYPES OF WELD	VISUAL INSPECTION	RADIOGRAPHIC TEST	ULTRASONIC TEST	MAGNETIC PARTICLE OR LIQUID PENETRANT
1.	Pipe Pile	Circumferential Butt Joint (Girth Weld) - Groove Weld	W-100% L-100%	W-100% (1) L-100% (1)	W-100% (1) L-100% (1)	---
2.	Pilehead to Pile Connection					
3.	All Connections & Splices	To check cracks in fillet weld	W-100% L-100%	---	---	W-100% L-25%

LEGENDS W - Percentage of number of weld (Subsection 3.1(b) 3).
L - Percentage of length of weld

(1) Use either Radiographic Test or Ultrasonic Test

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Structural steel work

1.2 RELATED SECTIONS

A.	TREATING DAMAGED GALVANIZING	Section 05 05 14
B.	STRUCTURAL WELDING	Section 05 05 24
C.	STRUCTURAL STEEL TESTS AND INSPECTIONS	Section 05 12 24
D.	STEEL JOISTS	Section 05 21 00
E.	STEEL DECKING	Section 05 31 00
F.	METAL STAIRS	Section 05 51 00
G.	PAINTING FOR EXTERIOR IMPROVEMENTS	Section 09 90 01

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 the Bid Proposal Line Items that requires structural steel.

1.4 REFERENCES

A. American Institute of Steel Construction (AISC):

AISC 303	Code of Standard Practice for Steel Buildings and Bridges
AISC 348	Specification for Structural Joints Using High-Strength Bolts
AISC 360	Specification for Structural Steel Buildings

Manual of Steel Construction

B. American Society of Mechanical Engineers (ASME):

ASME B18.21.1	Washers: Helical Spring-Lock, Tooth Lock, and Plain Washers (Inch Series)

C. American Society for Testing and Materials (ASTM International):

ASTM A6	Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
ASTM A36	Standard Specification for Carbon Structural Steel
ASTM A53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A307	Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength
ASTM A435	Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates
ASTM A500	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A501	Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
ASTM D962	Standard Specification for Aluminum Powder and Paste Pigments for Paints
ASTM F3125	Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions

D. American Welding Society (AWS):

AWS B2.1	Specification for Welding Procedure and Performance Qualification
AWS D1.1	Structural Welding Code - Steel

E. California Code of Regulations (CCR):

8 CCR 1710	Structural Steel Erection

F. City of Los Angeles Building Code

G. Federal Specification (FS):

FS TT-V-81G	Varnish: Mixing, for Aluminum Paint

H. Food and Drug Administration (FDA)

I. Society for Protective Coatings (SSPC):

SSPC SP 3	Power Tool Cleaning

J. South Coast Air Quality Management District (SCAQMD)

1.5 QUALITY ASSURANCE

A. Welders' Qualifications:

1. Before assigning welders to work, provide Engineer with certification that each welder employed on the work has passed qualification tests using procedures covered in the AWS Standard B2.1, Part 11 and is certified by City of Los Angeles Department of Building and Safety.

2. Contractor shall require welder to retake the test when the work of the welder creates a reasonable doubt as to proficiency.

3. Tests, when required, shall be conducted at no additional expense to the Department. Recertification of the welder shall be made to Engineer only after the welder has taken and passed the required retest.

4. Coupons cut from location in joint may be required for testing.

a. Sections of welds found defective shall be chipped or cut out to base metal and re-welded before proceeding with the work.

b. Should 2 coupons cut from the work of welder show strengths, under test, less than that of the base metal, it will be considered evidence of negligence or incompetence and such welder shall be permanently removed from the site.

c. When coupons are removed from part of a structure, the members cut shall be repaired, at no additional cost to the Department, in a manner with joints of type to develop the full strength of the member and joints cut, with peening as necessary or directed to relieve residual stress.

B. Erection and bracing plan and procedure shall be in conformance with Section 1710, Title 8, CCR, and City of Los Angeles Building Code. Employ and pay a State of California registered structural engineer to prepare an erection and bracing plan and erection procedure for structural steel, including columns,

beams, and girders. Contractor's structural engineer shall be solely responsible for Code compliance. Keep a copy at the job site as required by California Division of Industrial Safety. Submit 2 copies of stamped erection and bracing plan and procedure for record purposes only, not for review or approval.

C. Certifications:

1. Mill materials shall have heat and melt numbers with mill analyses and certified test reports.

2. Provide test specimens required by testing laboratory.

D. Conform to the requirements of the AISC Manual of Steel Construction as applicable.

E. Materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous materials.

F. Testing and inspections of structural steel are specified in STRUCTURAL STEEL TESTS AND INSPECTIONS Section.

1.6 SUBMITTALS

A. A complete set of approved shop and erection drawings.

B. Cutting lists, order sheet material bills, shipping bills, and mill test reports.

C. Information as to the shipment of material to the shop.

D. Representative sample pieces as requested by the testing agency.

E. Full and ample means and assistance for testing material.

F. Facilities, including scaffolding, temporary work platforms for inspection of the work in the shop and field.

G. Mill Test Reports:

1. Submit certified copies of mill test reports for steel and high strength bolts furnished. Include the following:

a. Names and locations of mills and shops.

b. Analysis of chemical and physical properties of steel.

c. City of Los Angeles Research Report (LARR) number.

2. In addition to the normal information, mill orders shall include ASTM specifications description, marking, and invoicing requirements. The mill

shall be instructed to include the following markings. Markings may be of any of the means permitted by ASTM A6:

a. Mill order number.

b. Heat number.

c. Size.

d. Type and grade of material.

e. Color coded as specified.

H. Shop Drawings:

1. Submit detailed drawings showing grade of steel, identification marks or members, dimensions, size, weight, orientation, and location of each member, setting elevation of base plates and bearing plates, location, types, sizes and extent of welds, welding sequences; identify and show connections.

2. Submit erection drawings and index sheets at same time as shop details. The use of Contract Drawings as erection drawings will not be allowed.

3. Show and identify temporary members and connections which may be required for erection.

4. Submit structural calculations for connections prepared by a State of California-registered professional engineer, for those connections not designed and detailed on Drawings.

5. Submit proposed erection procedure including loads and details of erection equipment and temporary bracing.

6. The details shall be prepared in such a way as to avoid having steel, connections, and bracing interfere with architectural features.

7. Submit manufacturer's literature and certification that shop paint meets South Coast Air Quality Management District VOC requirements.

I. 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.

J. Erection Survey: Provide set of reproducible transparencies of Erection Survey.

K. Fabricator's test results.

L. Manufacturer's certification of filler metal for welding.

1.7 DELIVERY, STORAGE, AND HANDLING

A. General: Protect materials from damage during shipping, handling and storage on the site. Steel showing dents, creases, deformations, weathering, or other defects is not acceptable.

B. Deliver welding electrodes to the site in unbroken packages bearing the manufacturer's name and label identifying the contents.

1.8 FIELD CONDITIONS

A. Take field measurements as required. Report to the Engineer discrepancy between Drawings and field dimensions.

B. Protect floor slab and adjacent work from damage. Do not overload floors. Use rubber tired equipment to handle and move steel. Do not place steel members directly on floor; use pads of timber or like material for cushioning.

C. Provide temporary scaffolding and flooring for erection of structural steel or support of erection machinery. Conform use of temporary floors or steel decking to City of Los Angeles Building Code.

D. Temporarily weld steel decking to supports where used as a working platform. Distribute concentrated loadings from welding machines to other heavy machinery with planking or equal. Replace decking damaged by use as a working platform at no additional cost to Department.

PART 2 - PRODUCTS

2.1 STRUCTURAL STEEL MATERIALS

A. Refer to Structural Drawings for designation of types of steel. Steel shall conform to ASTM A36, unless shown otherwise on Drawings. Plates shall be furnished to qualify for ultrasonic examination in conformance with ASTM A435.

B. Steel pipe shall be in conformance with ASTM A53, Grade B where used for structural purpose.

C. Structural Tubing:

1. Hot-formed shall be in conformance with ASTM A501.

2. Cold-formed shall be in conformance with ASTM A500, Grade B, Fy = 46 ksi.

D. Bolts and nuts shall be the American National coarse-thread series.

1. Unfinished bolts and nuts, anchors and fastening in conformance with ASTM A307.

2. High-strength bolts and nuts shall conform to Specifications for Structural Joints, using ASTM F3125 Bolts.

3. Shear Stud Connectors:

   a. Conform to AWS D1.1. Shear connectors shall develop a minimum design value of 9.5 kips per connector with a minimum safety factor of 2.5.

   b. Substitution of shear connectors with design shear capacity other than given above will be acceptable, provided total horizontal shear capacity in a span of a beam or girder is unaltered.

   c. The arrangement and spacing of shear connector shall be subject to Engineer's review.

4. Washers:

   a. Plain washers, other than those in contact with high-strength bolt heads and nuts shall conform to ASME B18.21.1.

   b. Beveled washers shall be square, smooth, and sloped so that contact surface 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. Washers in contact with high-strength bolt heads and nuts shall be hardened washers in conformance with Specifications for Structural Joints using ASTM F3125 bolts.

   e. Washers shall be installed on nut side of bolt for torqueing as required.

E. Filler metal arc-welding electrodes shall conform to requirements of AWS D1.1. Electrodes shall be as recommended by their manufacturers to suit the position of other conditions of actual use.

1. Shielded metal arc-welding use E70 XX series.

2. Submerged arc-welding use F7 series.

2.2 MISCELLANEOUS ITEMS

A. Provide miscellaneous structural steel items and their related components required to complete work. Provide in conformance with Drawings and Specifications. Such items include, but are not limited to, built-in items, leveling plates, anchors, bearing plates, base, reinforcing angles, straps, brackets, and hangers.

B. Primer:

1. Surfaces to be painted shall be primed as required in PAINTING FOR EXTERIOR IMPROVEMENTS Section.

2. Surfaces to receive sprayed-fireproofing shall be primed compatible with fireproofing; approved and tested by fireproofing manufacturer.

3. Other surfaces shall be primed as required in PAINTING FOR EXTERIOR IMPROVEMENTS Section.

2.3 GENERAL FABRICATION REQUIREMENTS

A. According to the approved submittals, reference standards as applicable. Fabricate and form the Work to meet actual installation conditions verified at the site.

B. Fabricate and assemble structural material in the shop to the greatest extent possible.

C. Wire brush material, clean off loose mill scale and rust, and straighten by methods that will 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 erected.

D. Shearing, flame cutting, and chipping shall be done accurately. Sole plates of beams and girders shall have full contact with the flanges. Stiffeners shall be fitted between the flanges or girders, and, where tight fits are required to transmit bearing, the ends of stiffeners shall be milled or ground to secure an even bearing against the flanges. Splice plates and fillers under stiffeners shall fit within 1/8 inch of the flanges.

E. Assembled pieces shall be taken apart, if necessary, for the removal of burrs and shavings produced by the reaming operation.

F. Parts not completely bolted in the shop shall be secured by temporary bolts, insofar as practicable, to prevent damage in shipment and handling.

G. Drilling, Punching, and Reaming of Holes: Hole burning to make or enlarge previous holes is allowed only with prior approval of Engineer. Prepare required holes in structural steel members for attachment or passage of work of other trades. Where allowed, steel may be punched 1/16 inch larger than the nominal diameter of the bolt when the steel thickness is equal to or less than diameter of the bolt plus 1/8 inch. 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-drilled holes, shall be 1/16 inch smaller than the nominal diameter of bolt to be installed. Precisely locate finished holes to ensure passage of bolts through

steel assemblies without drifting. Enlarge holes only by reaming. Poor matching of holes is cause for rejection.

H. Punch and 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.

I. Use of gas 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 gas cuts with smooth regular contour. Deduct 1/8 inch from width of gas cut edges to determine effective width of member that is gas cut. Make radius of reentrant gas cuts as large as possible, but 1 inch minimum.

J. Press or mill steel column base plates 4 inches thick or less for straight contact bearing between plate and column.

K. Mill column and compression truss members and bearing stiffeners to give full bearing over the cross section. Plane contact surfaces of grillages and bearing plates. It is not necessary to plane bottom surfaces of plates or grillages on grout beds.

2.4 CONNECTIONS

A. Whether shown on Drawings or not, the fabricator shall design required connections to safely resist shear, axial load, and moment given on Drawings.

B. Where moment connections are indicated on Drawings, but moment values are not given, the connections shall be designed for full moment capacities of members. Connections of beams with no reaction or axial loads given on Drawings shall be made to conform to Specifications for Design, Fabrication and erection of Structural Steel for Buildings. Composite beam reaction shall be modified in accordance with the Drawings.

C. Connections for beams at columns shall have capacity for bracing force (axial load) given on Drawings (or determined at 2 percent of allowable axial load on column for unbraced floor to floor height) in addition to beam reactions. Symmetrical connections will be required here, unless it can be shown by calculations that 1 sided or eccentric type connection is adequate.

D. Single shear plate type connections, may be permitted as an option at beam to beam connections resisting shear only.

E. Bolted connections shall be made with high-strength bolts unless shown otherwise. Friction type bolts will be required at lateral load resisting moment and braced frames. Unfinished bolts shall not be used except where indicated. Surface of joints for welded or high-strength bolted connections shall comply with the requirements of joint surfaces and contact surfaces within friction-type joints.

F. Unless otherwise shown on Drawings, grade of connection material shall be same as that of connecting member, unless it can be shown by calculations that lower grade steel can be used.

G. Where specific details are shown on Drawings, the alternate details proposed by the fabricator shall be accepted only at the discretion of Engineer.

H. Unless shown otherwise on Drawings, the splices in columns or beams shall be made with complete penetration welds to develop full capacity of member locations and shall be subject to Engineer's review.

I. Unless otherwise shown on Drawings, welds in built-up members shall be continuous and shall be designed to transfer stress caused by forces on members framing into the built-up members. Stiffeners inside box columns or at W shape columns may be required in conformance with AISC specifications section 1.15.5, unless specifically omitted on Drawings or if shown by calculations that stiffener can be omitted.

2.5 HOLES

A. Cut, drill, or punch holes at right angles to the surface of the metal. Do not make holes or enlarge existing holes by burning.

B. Holes in base or bearing plate shall be drilled.

C. Provide holes in members to permit connecting the work of other trades.

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.

2.6 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 will extend through but no more than 1/4 inch beyond the nuts.

2. Bolt heads and nuts shall be drawing tight against the 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. High Strength Bolting:

1. Assemble joints in conformance with Specifications for Assembly of Structural Joints Using High Strength Steel Bolts, as approved by Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

2. Tighten bolts with impact wrenches to a torque not less than recommended for size of bolt.

3. Contact surface of joints shall be free of paint, lacquer, or other friction reducing coatings.

2.7 MISCELLANEOUS

A. Load indicator washers as manufactured and licensed by Cooper and Turner or Bethlehem Steel may be used for the field installation of the high-strength bolts, as approved by City of Los Angeles Department of Building and Safety. Load indicator washers may not be substituted for required washer, but may be used in conjunction with the required washers. After bolts in a joint are snugged to bring the members into close contact, tightening shall progress from the most rigid part to the free edges until the load indicators on bolts are closed to the required gap of 0.015 inch under bolt heads or 0.010 inch under the nuts. Do not completely close the gap to prevent overtightening and damage to the bolts.

B. Tension set or load indicator bolts, nuts, and washers as manufactured by Cold Form Specialties or Bethlehem Steel may be used for field installation of the high-strength bolts. In multi-bolt joints, the nuts shall be tightened in stages without breaking the spline in them until the final stage, to minimize slackening of the installed bolts.

2.8 WELDED CONNECTIONS

A. Do not begin structural welding until joint elements are bolted or tacked in intimate contact and adjusted to dimensions shown, 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 are to be spliced without prior review by Engineer.

B. Weld in conformance with AWS D1.1.

1. Welds exposed to view shall have as-welded surfaces that are continuous, smooth, and uniform. Radii will be true, and consistent from weld to weld. Finishing or grinding may be required where clearances or fit of other items may so necessitate.

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.

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 thickness 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 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. Measure only effective portion of fillet welds. Maximum space between pieces or member to be fillet welded shall not exceed 1/16 inch.

J. At groove welds between thick plates or between plates and thick members (generally greater than 3 inches plates), preheating temperatures higher than AWS minimums may be required to prevent lamellar tearing or weld cracking. Peening of weld passes, except the root pass and last pass, may be required to prevent lamellar tear or weld cracking.

2.9 FINISHING

A. General:

1. Steel, painted, and unpainted iron materials furnished shall be cleaned of rust, scale, and grease.

2. Structural steel not to receive galvanized coating or spray-on fireproofing, shall be given 1 shop coat of an approved rust inhibitive metal primer. Cleaning method for painted steel shall conform to SSPC SP 3.

   a. Where steel is scheduled to be painted, paint in conformance with PAINTING FOR EXTERIOR IMPROVEMENTS Section.

3. Apply primer to give a dry film thickness of 2.5 mils, except as specified for zinc-rich coating option.

4. Paint after shop work has been completed. Paint with brushes, entire surface to be covered smoothly, with paint worked into joints.

5. No material shall be loaded for shipment until primer is fully dry.

6. Work arriving at site which has been carelessly primed or painted shall be cleaned and given an additional coat of paint before being erected, except finish work which will be exposed to view shall be returned to shop for recleaning and repainting.

B. 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-81G, Type II or equivalent.

C. Galvanizing:

1. Fabricated ferrous metal work so specified shall be galvanized by hot-dip process, conforming to ASTM A123. 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. Shop galvanized metal work necessitating field soldering or welding which removed original galvanizing shall be restored by field cold galvanizing with "Ferraloy", "Tim Easy Fluid", or "Galvaloy".

4. Bolts and screws for attachment of galvanized items shall be galvanized, or of non-corrodible material.

D. Finish painting in conformance with PAINTING FOR EXTERIOR IMPROVEMENTS Section.

PART 3 - EXECUTION

3.1 FIELD MEASUREMENTS AND TEMPLATES

A. Secure field measurements required for fabrication and installation of Work.

B. Furnish templates for exact location of items to be embedded under other Work, with setting instructions required for installation of embedded item.

C. Verify conditions and measurements affecting the Work at site. Make sure that detrimental conditions are corrected before proceeding with installation.

3.2 ERECTION

A. Contractor shall be responsible for the design, strength, safety, and adequacy of temporary bracing and methods of handling, erection, and sequencing of erection of Work.

B. During construction:

1. The stability of the frame during erection shall be Contractor's responsibility.

2. Vertical and horizontal temporary bracing may be required to diaphragm lateral forces to the lateral force resisting structural elements. Deviation from this recommended procedure is subject to Engineer's review.

C. Temporary erection facilities:

1. Provide temporary braces, guys, connections, supports, flooring, planking, work platforms, scaffolding and other facilities necessary for the safe erection of the Work, and the support and bracing of erection equipment.

2. As erection progresses, the Work shall be connected to safely resist dead load, wind, and erection forces.

3. Temporary bracing shall be introduced wherever necessary to safely resist loads to which the structure may be subjected, including loads of erection equipment and its operation. Such bracing shall be left in place as long as may be required until, as a minimum, after the permanent structure is capable of resisting imposed loads.

D. Set base plates and bearing plates level to correct elevations and support temporarily on steel wedges, shims, leveling devices, or as shown on Drawings, until corresponding supported member has been positioned, plumbed and anchor-bolted. Do not grout column base plates until beams, girders, and trusses are permanently anchored to column.

E. Erect and install structural steel in conformance with the approved shop drawings.

F. Align, level, and adjust members prior to final fastening. Bearing surfaces and surfaces that will be in permanent contact shall be cleaned prior to final assembly of members.

G. Fasten compression member splices only after abutting surfaces have been brought completely into contact. Clean bearing surfaces prior to final assembly of members.

H. Oxygen cutting in the field shall be done only with prior written permission of Engineer.

I. Bolted Field Connections at Supports:

1. Standard bolts shall be of a length that will extend not less than 1/4 inch beyond the nuts. Enter bolts into holes without damaging the threads.

2. Correct poor matching of holes by drilling to next larger size and use of larger size bolt. Obtain written approval before proceeding with corrective work.

3. For high-strength bolts, use specified pre-calibrated bolts or bolts with direct tension indicators; install bolts in conformance with manufacturer's written instructions, engaging both the bolt and the nut and driven until the torque control groove of the bolt shears off, or until the indicator element yields. Tensioning of group of bolts shall be done first to snug tight condition and subsequently in proper sequence to obtain required tension.

J. Field Welding:

1. Welding operations and the welds shall conform to the applicable provisions of the AWS Code, as modified by UBC Standard 27-6, Structural Welding.

2. Each welder working on the Project shall be assigned an identification symbol or mark. Each welder shall make or stamp his or her identification symbol at each completed make.

3. Allow for weld shrinkage so that welded connected members will be aligned and level after completion of the welding work.

K. Weld shear connectors to supports through decking units in conformance with manufacturer's written instructions. Do not weld shear connectors through 2 layers (lapped ends) of decking units. Weld only on clean dry deck surfaces. Space and align shear connectors as shown on Drawings.

L. Erection tolerances:

1. Dimensional tolerances as stated by the AISC Code of Standard Practice Paragraph 6.4 and Frame tolerances as stated by AISC Code of Standard Practice Paragraph 11, shall be considered the minimum acceptable standard for structural framing members except that at elevator shafts, the cumulative tolerances of columns and beams around the shafts shall not exceed 1 inch toward the shaft.

2. On shop drawings submitted for review for architectural metal work, exposed structural framing members or framing members designed to receive exposed architectural metal work, Engineer may indicate closer tolerances, which shall be acceptable and binding upon the Contractor.

M. After erection, clean exposed surfaces of field connections, unpainted areas adjacent to field connections and damaged areas in shop coat to the same standards as required for the shop coat and paint with the same primer used in the shop coat.

N. Survey:

1. Make a survey of actual column locations immediately upon the completion of every third tier of steel and promptly submit same to Engineer.

2. Survey shall include tier below.

3. Should column locations carry beyond the allowable tolerances, take necessary corrective measures and modify details or procedures as required and approved.

O. Corrective work:

1. 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.

2. Such members or assemblages shall be corrected if permitted by Engineer, or otherwise shall be replaced.

3. Submit drawings showing the errors and obtain Engineer's acceptance prior to performing any corrective work.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Testing and inspecting structural steel work.

1.2 RELATED SECTIONS

A. TREATING DAMAGED GALVANIZING	Section 05 05 14
B. STRUCTURAL STEEL	Section 05 12 02
C. STEEL JOISTS	Section 05 21 00
D. STEEL DECKING	Section 05 31 00
E. METAL STAIRS	Section 05 51 00

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 the Bid Proposal Line Items that requires testing and inspection of structural steel work.

1.4 REFERENCES

A. American Institute of Steel Construction (AISC):

AISC 348	Specification for Structural Joints Using High-Strength Bolts

B. American Society for Testing and Materials (ASTM International):

ASTM A435	Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates
ASTM F3125	Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions

C. American Welding Society (AWS):

AWS D1.1	Structural Welding Code - Steel

D. City of Los Angeles Building Code

E. International Code Council (ICC):

International Building Code Chapter 17 Special Inspections and Tests

PART 2 - PRODUCTS

2.1 SOURCE QUALITY CONTROL

A. Source Quality Control:

1. 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.

2. Unidentified Materials:

a. Yield strength up through 36,000 pounds per square inch (psi): Make 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: Make 1 set of tension tests and 1 set of bend tests for each piece.

c. Additional tests may be required when deemed necessary by the Engineer or City of Los Angeles Department of Building and Safety and shall be performed at no additional cost to the Department.

3. Furnish certified copy of manufacturer's test reports stating that high strength bolts and heat-treated steel structural bolts meet the requirements of ASTM F3125.

a. Test Lab will take samples and test not less than 3 samples including nuts, bolts, and washers from each lot and each size of each lot.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Tests and inspections of structural steel work performed by the fabricator will be verified by the Department Testing Laboratory (Test Lab) in conformance with requirements of Chapter 17 Special Inspections and Tests of the ICC and City of Los Angeles Building Code. Provide the Test Lab with the submittals under the STRUCTURAL STEEL Section. Allow Test Lab free access to places whether on or off the job site where materials are stored or services are performed, and to job site during times of fabrication and erection.

2. Each person installing connections shall be assigned an identifying symbol or mark and shop and field connections shall be so identified so that the Inspector can refer to the person making the connection.

3. Testing and inspection by Test Lab will include, but is not limited to, the following:

    a. High strength bolts shall be continuously visually inspected. At least 10 percent of high-strength bolted connection shall be tested at random for bolt tightness using procedure described in AISC 348.

    b. 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. In addition, field and shop testing using ultrasonic or magnetic particle method shall be done as noted on Drawings.

4. Ultrasonic Shop Welding Inspection:

    a. Material in the designated location shall be checked at the shop for internal imperfections by ultrasonic testing prior to fabrication, in conformance with ASTM A435. Defects found may be repaired by welding subject to Engineer's approval.

    b. Complete penetration and partial penetrations shop welds in designated locations shall be ultrasonically tested.

    c. The Test Lab test reports will include types and locations of defects found during inspections, and the measure required and performed to correct such defects, and statements of final approval of welding shop connections.

5. Ultrasonic Field Test Procedures:

    a. Ultrasonic testing shall be performed conforming to AWS D1.1 by a specifically trained, qualified technician, who shall operate the equipment, examine the weld and maintain a record of welds examined, defects found, and disposition of each defect. Defective welds shall be repaired and costs, including retesting of defective welds, shall be borne by Contractor.

    b. Ultrasonic testing shall also be done in the vicinity of groove weld in moment connections and other weldments as designated on Drawings to detect lamellar tearing.

    c. The ultrasonic instrumentation shall be calibrated by the technician to evaluate the quality of the weld in accordance with AWS D1.1.

d. When ultrasonic indications arising from the weld root can be interpreted as either a weld defect or the backing strip, the backing strip shall be removed at the expense of Contractor and the weld retested. If no root defect is indicated on this retest and no significant amount of the base and weld metal has been removed, no further repair or welding will be required. If a defect is indicated, it shall be repaired and retested as specified.

6. Testing by the Fabricator:

   a. When mill reports identifying heat or melt numbers and analysis are not available, tension and bed tests of the materials may be required by the Testing Laboratory.

   b. Test specimens shall be taken by the fabricator under the direction of the Testing Laboratory and shall be machined by the Testing Laboratory to dimension as required by the related applicable standard ASTM specifications.

7. Field welding shall be performed in the presence of a City of Los Angeles Deputy Inspector.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Shop fabricated miscellaneous metal fabrications, steel and aluminum items

B. Fasteners

C. Loose bearing and leveling plates

D. Miscellaneous framing and supports

E. Metal bar gratings

F. Loose steel lintels

G. Floor plates

H. Metal finishes

1.2 RELATED SECTIONS

A. TREATING DAMAGED GALVANIZING	Section 05 05 14
B. DECORATIVE METAL FENCES AND GATES	Section 32 31 19

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Lump Sum Construction bid item of Bid Proposal Line Items.

1.4 REFERENCES

A. American Society of Mechanical Engineers (ASME):

ASME B18.6.3	Machine Screws, Tapping Screws, and Metallic Drive Screws (Inch Series)
ASME B18.21.1	Washers: Helical Spring-Lock, Tooth Lock, and Plain Washers (Inch Series)

B. American Society for Testing and Materials (ASTM International):

ASTM A36	Standard Specification for Carbon Structural Steel

ASTM A53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized Coatings on Iron and Steel Products
ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
ASTM A194	Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM A269	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
ASTM A276	Standard Specification for Stainless Steel Bars and Shapes
ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A307	Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A435	Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates
ASTM A500	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A501	Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing

ASTM A786	Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates
ASTM A1011	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
ASTM B26	Standard Specification for Aluminum-Alloy Sand Castings
ASTM B85	Standard Specification for Aluminum-Alloy Die Castings
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B210	Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes
ASTM B211	Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire
ASTM B221	Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D962	Standard Specification for Aluminum Powder and Paste Pigments for Paints
ASTM F593	Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F1554	Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
ASTM F3125	Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions

C. American Welding Society (AWS):

AWS A2.4	Standard Symbols for Welding, Brazing, and Nondestructive Examination

AWS D1.1	Structural Welding Code - Steel
AWS D1.2	Structural Welding Code - Aluminum

D. City of Los Angeles Department of Building and Safety (LADBS)

E. Code of Federal Regulations (CFR):

29 CFR 1910.27	Fixed Ladders

F. Federal Specification (FS):

FS TT-V 81G	Varnish: Mixing, for Aluminum Paint

G. International Accreditation Service, Inc. (IAS):

IAS AC172	Accreditation Criteria for Fabricator Inspection Programs for Structural Steel

H. National Association of Architectural Metal Manufacturers (NAAMM)

NAAMM MBG 531	Metal Bar Grating Manual

I. Society for Protective Coatings (SSPC):

SSPC PA 1	Shop, Field, and Maintenance Coating of Metals
SSPC SP 1	Solvent Cleaning
SSPC SP 1	Hand Tool Cleaning
SSPC SP 3	Power Tool Cleaning
SSPC SP 7	Brush-off Blast Cleaning

J. South Coast Air Quality Management District (SCAQMD)

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 the 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 the site.

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 the 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 the 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 Volatile Organic Compounds (VOC) requirements.

1. Paint is not in scope. Only requires hot-dip galvanized finish.

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: The Engineer reserves the right to inspect the manufacture or fabrication. The Engineer's inspection of the work does not relieve the Contractor of the responsibility for the work. Errors or faults that are discovered during fabrication shall be corrected by the Contractor prior to installation.

B. Welders: Welders shall be qualified in conformance with AWS D1.1 and AWS D1.3 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 _____ 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 and shall be City of Los Angeles approved fabricator.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from damage during shipping, handling and storage on the site. 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 will prevent bending. Store metal components and materials in a clean, dry location. Cover with waterproof paper, tarpaulin or polyethylene sheeting in a manner that will permit circulation of air inside the cover.

C. Deliver bolts, nuts, washers, and studs not part of an approved fabrication, to the site 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, unless shown otherwise on approved shop drawings or this Section. Plates shall be furnished to qualify for ultrasonic examination in conformance with ASTM A435.

B. Steel Tubing: ASTM A500, cold-formed, Grade B, Fy = 46 ksi or ASTM A501, hot formed structural tubing. For exterior installations, provide tubing with hot-dip galvanized coating in conformance with ASTM A153.

C. Low to intermediate grade steel plates shall conform to ASTM A283.

D. Fasteners:

1. Bolts and nuts:

a. Bolts and nuts shall be the 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.

2.2 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B221, 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209, 5052 alloy, H32 or H22 temper.

C. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210, 6063 alloy, T6 temper.

D. Aluminum-Alloy Bars: ASTM B211, 6061 alloy, T6 temper.

E. Aluminum-Alloy Sand Castings: ASTM B26.

F. Aluminum-Alloy Die Castings: ASTM B85.

G. Bolts, Nuts, and Washers: Stainless steel, Type 304 or 316 in conformance with ASTM F593.

H. Welding Materials: AWS D1.2; type required for materials being welded.

2.3 MATERIALS - STAINLESS STEEL

A. Stainless Steel Plates: ASTM A276, Type 316 (for exterior and highly corrosive environment).

B. Anchor Bolts and Nuts: ASTM A193 and ASTM A194

C. Pipe: ASTM A269

D. Finish: As noted on Drawings.

2.4 FABRICATION

A. General:

1. Metal items shall be fabricated and finished in accordance with the Drawings and approved shop drawings. Verify measurements before fabrication.

2. Welding procedures and inspection shall be in conformance with AWS D1.1. Welding shall be continuous along the area of contact expect 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 the Specifications or Drawings will be rejected.

B. Fit and shop assemble items in largest practical sections, for delivery to site.

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 will 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. Supply 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 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.

2.6 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.

2.7 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 site with damaged primer or paint shall be cleaned and given an additional coat of paint before being assembled, except finish work which will be exposed to view shall be returned to shop for recleaning and repainting.

B. Painting: Not in scope. Material to be galvanized as final step.

C. 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 81G, Type II.

D. 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 and smaller hardware (that can be centrifuged) galvanized in conformance with ASTM A153. 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.

2.8 ALUMINUM FINISH

A. Mill finish (as fabricated), unless otherwise indicated on Drawings.

2.9 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 the Engineer or City of Los Angeles Department of Building and Safety.

B. Shop inspections may be waived for manufacturer fabricated assemblies delivered to the 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 site welding is required.

B. Supply 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.

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 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 the Engineer prior to site cutting or making adjustments not scheduled.

3.4 SETTING LOOSE PLATES

A. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.

B. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.5 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 the 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.

3.6 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 will extend through but no more than 1/4 inch beyond the nuts.

2. Bolt heads and nuts shall be drawn tight against the 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 will 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 the Engineer before proceeding with corrective work.

3.7 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 the Engineer.

B. Weld in conformance with AWS D1.1.

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.

3.8 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 the Engineer before incorporation in the finished work.

B. Such members or assemblages shall be corrected if permitted by the Engineer, otherwise, they shall be replaced at Contractor's expense.

C. Submit drawings showing the corrections and obtain acceptance prior to performing any corrective work.

3.9 REPAIR OF DAMAGED GALVANIZING

A. Repair damaged galvanizing in conformance with TREATING DAMAGED GALVANIZING Section.

3.10 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 the Engineer before fabrications are installed.

3.11 CLEANING AND TOUCH-UP PAINTING

A. No painting required, only galvanized.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Exterior paint for:

1. Above ground water distribution systems
2. High mast poles
3. Metal fabrications
4. Guard posts
5. Crane stop bumpers
6. Timber bullrails
7. Electrical backboards
8. Other elements shown on Drawings or listed in Specifications to receive paint or coating

1.2 RELATED SECTIONS

A. METAL FABRICATIONS	Section 05 50 00
B. GUARD POSTS	Section 05 50 01
C. ELECTRICAL BACKBOARD	Section 26 05 75
D. HIGH MAST POLES	Section 26 56 13
E. WATER DISTRIBUTION	Section 33 10 01
F. CRANE RAIL AND CRANE STOP BUMPERS	Section 34 11 18
G. MARINE TIMBER CONSTRUCTION	Section 35 59 40

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 the Bid Proposal Line Items that requires painting for exterior improvements.

1.4 REFERENCES

A. Code of Federal Regulations (CFR):

29 CFR 1910.134 Respiratory Protection

29 CFR 1910.1000	Air Contaminants

B. Reference Specifications (RS):

Subsection 210-1	Paint

C. Society for Protective Coatings (SSPC):

SSPC PA Guide 10	Guide to Safety and Health Requirements for Industrial Painting Projects
SSPC SP 3	Power Tool Cleaning
SSPC SP 6	Commercial Blast Cleaning

D. South Coast Air Quality Management District (SCAQMD)

1.5 SUBMITTALS

A. Samples of Painting:

1. Color swatches 8 1/2 inches by 11 inches will be required for each type of paint material and color. Submit swatches to the 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 the 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 the site daily. Benzene, gasoline, and distillate shall not be permitted on the job site.

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 the manufacturer's representative and the quality control manager.

   c. Below 32 degrees F (0 degrees C) or over 120 degrees F (49 degrees C), unless approved in writing by the manufacturer's representative and the 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 located in Appendix "_" of the Specifications and provide product specification sheets. Make checklist and specifications available to City of Los Angeles Department of Building and Safety inspector through the Engineer upon request.

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	EZPR00-1 EZ-Prime
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 (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 the 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 GUARD POSTS, WATER DISTRIBUTION, MARINE TIMBER CONSTRUCTION, CRANE RAIL AND CRANE STOP BUMPERS, and ELECTRICAL BACKBOARD Sections for color selections for those improvements.

H. Paint showing signs of blistering, spotting, uneven coating, or sagging will 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 the 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 site 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 the 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. Decorative fences, gates, and accessories

1.2 RELATED SECTIONS

A. Section 05 05 14 - TREATING DAMAGED GALVANIZING

B. Section 05 50 00 - METAL FABRICATIONS

1.3 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:

1. Payment for Work of this Section shall be paid under the Lump Sum Construction bid item of Bid Proposal Line Items.

1.4 SUBMITTALS

A. Submit manufacturer's literature and samples prior to fabrication.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt at Project Site, materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Steel Fencing, Gate, Hinges and Hardwares for swing

2.2 FENCE MATERIALS

A. The material for fence framework shall be high-tensile steel, double drawn wire, and rod.

B. Mesh: Match Existing Corrugated Wiring to be 0.125 inches diameter thickness, welded. Mesh openings shall be 1 inch by 1 inch. Mesh shall fill in each typical panel section.

C. Posts: Consists of rectangular tube 2 inches by 2 inches with welded anchor plate 9 inches by 9 inches. Infilled with mesh, size typical for panel.

D. Bolts: Consists of stainless steel one-way vandal resistant Type V2A stainless steel bolts, refer to structural drawing for sizes.

E. Fabric and Post Assembly: Posts shall be spaced per drawing dimension. Mesh to end in slotted channel on the surface of post. Bolts to be passed through backing plate.

F. Corrosion Protection: Material, unless otherwise indicated on Drawings, shall be hot-dip galvanized after fabrication with minimum zinc layer of 1.8 ounces per square foot (oz./sq. ft.), stainless steel sandblasted for optimum coating adhesion, and polyester powdercoated in non-lead, UV stable, thermally set RAL Tiger Drylac powder paints, or equivalent.

G. Color: Finish paint is not in scope. Only requires hot-dip galvanized finish.

2.3 SWING GATE MATERIAL

A. Steel Gate Post: Consists of rectangular tube 2 inches by 2 inches by 0.25 inches thickness. Where gate post abuts fence, gate post shall receive welded mesh wire at 1 inch by 1 inch opening by 0.25 inch diameter thickness, mesh sizes per drawing dimension, clamping strips to accept and hold mesh, welded to post.

B. Gate Wings: Frames shall be welded rectangular steel tube 2 inches by 2 inches by 0.25 inches thickness or larger to be infilled with mesh to match fence, clamping strips to accept and hold mesh, welded to post.

C. Mesh: Consists of corrugated steel wire. Refer to architectural drawing for panel size. Mesh openings shall be 1 inch by 1 inch, 0.125 inches diameter thickness.

D. Corrosion Protection: Material, unless otherwise indicated on Drawings, shall be hot-dip galvanized after fabrication with minimum zinc layer of 1.8 oz./sq. ft., stainless steel sandblasted for optimum coating adhesion, polyester powdercoated in non-lead, UV stable, thermally set RAL Tiger powder paints, or equivalent.

E. Color: Finish paint is not in scope. Only requires hot-dip galvanized finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install fence in accordance with Drawings and manufacturer's written instructions.

END OF SECTION

THE PORT
OF LOS ANGELES

ENGINEERING DIVISION

WORLD TOTS SECURITY FENCE & GATE

1-XXXX

NO.	DATE	DRAWN	REVISIONS –	CHK'D	APP'D

CONSTRUCTION DIVISION		TRANS	R/W	ARCH	SPECS	CHIEF OF DESIGN
INSPECTION	SURVEY		CIVIL	ELEC	PR MNGR	ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER – CONST DIV.			STRUCT	MECH	CAD MNGR	CHIEF HARBOR ENGINEER ____ DATE

WORLD TOTS SECURITY FENCE & GATE

COVER SHEET

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER 1-XXXX T-1.0

REQ6556 Attachment B

PROJECT INFORMATION

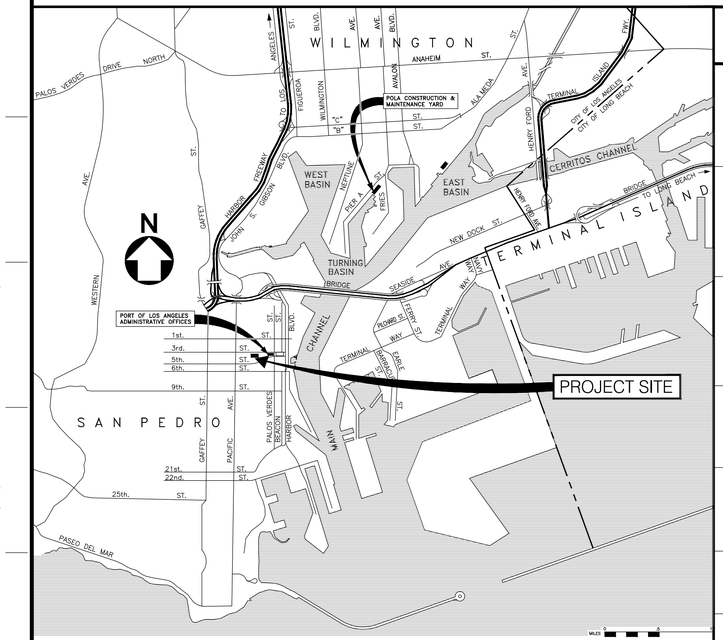
1. WORLD TOTS LA

BUILDING ADDRESS:	100 W 5TH ST. SAN PEDRO, CA 90731
PIN:	018B 201 822
LOT/PARCEL AREA:	54,672.0 SF
APN:	7455027934
MAP REFERENCE:	M B 873-73/74
ZONING:	PF-2D-CPIO
SCOPE OF WORK:	SECURITY FENCE AND GATES

SCOPE OF WORK

WORLD TOTS LA PERIMETER ENHANCEMENT

1. TWO MAINTENANCE GATES
2. SECURITY FENCE



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 / 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.

INDEX TO DRAWINGS

DRAWING NUMBER	GENERAL NOTE TITLE	DRAWING NUMBER	TITLE
	TITLE SHEETS		
1-XXXX T-1.0	COVER SHEET		
1-XXXX T-2.0	VICINITY MAP AND INDEX TO DRAWINGS		
	GENERAL		
1-XXXX G-1.0	ABBREVIATIONS		
1-XXXX G-2.0	ACCESSIBILITY REQUIREMENT		
1-XXXX G-3.0	ACCESSIBILITY REQUIREMENT		
	ARCHITECTURE		
1-XXXX A-0.0	SITE PLAN		
1-XXXX A-1.0	ENLARGED PLAN & ELEVATION A		
1-XXXX A-2.0	ELEVATION B		
1-XXXX A-3.0	GATE - ELEVATION C		
1-XXXX A-4.0	REFERENCE DETAIL DRAWING A-8.12		
1-XXXX A-5.0	REFERENCE DETAIL DRAWING A-11.2		

*REFERENCE DRAWINGS

1-1942

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE:	AS SHOWN
DRAWN:	W. YOON
CHECKED:	
DESIGNED:	W. YOON
ENGINEER / ARCHITECT	

CHIEF OF DESIGN

ASSISTANT CHIEF HARBOR ENGINEER

CHIEF HARBOR ENGINEER DATE

WORLD TOTS SECURITY GATE & FENCE

VICINITY MAP AND INDEX TO DRAWINGS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER 1-XXXX | SHEET NUMBER T-2.0

DWG: M:\users\ENGINEERING DIVISION\ARCHITECTURAL\Woosung\Project\World tots fence\Cad\Arch\1-xxxx T-2.0.dwg USER: YoonW
DATE: Aug 05, 2024 - 3:26pm

POLAPRO1_10/2012_RJB

REQ6556 Attachment B

@	AT
A	AMPERE
AB	ANCHOR BOLT
ABAND	ABANDONED
ABV	ABOVE
AC	ASPHALT CONCRETE, ALTERNATING CURRENT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AIC	AMPS INTERRUPTING CAPACITY
AL/ALUM	ALUMINUM
ALIGN	ALIGNMENT
ALT	ALTERNATE
ANCH	ANCHOR
APPD	APPROVED
APPROX	APPROXIMATE/APPROXIMATELY
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH	ARCHITECTURAL
AS	ADDRESSABLE SIGNS
ASSOC	ASSOCIATION
ASPH	ASPHALT
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B	BERTH
B/BOT	BOTTOM
BAL	BALANCE
BD	BOARD
BDRY	BOUNDARY
BEG	BEGINNING
BEL	BELOW
BET	BETWEEN
BIL	BASIC INSULATION LEVEL
BF	BRACE FRAME, BACKFLOW
BKHD	BULKHEAD
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BS	BOTTOM STEP
BTWN	BETWEEN
BU	BUILT-UP
BUB	BACK-UP BAR
C	CONDUIT
C/B	CIRCUIT BREAKER
C/CL/℄	CENTERLINE
C-C	CENTER TO CENTER
CAB	CRUSHED AGGREGATE BASE
CAL	CALIFORNIA
CAMB(C)	CAMBER(ED)
CANT	CANTILEVER
CB	CATCH BASIN
CG	CENTER OF GRAVITY
CI/CIP	CAST IRON PIPE
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT, CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CKT	CIRCUIT
CL	CONTINUOUS LOAD, CEMENT LINED
CLG	CEILING
CLR	CLEAR
CMB	CRUSHED MISCELLANEOUS BASE
CMC	CEMENT MORTAR COATING
CML	CEMENT MORTAR LINING
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT, CONDUIT ONLY W/ NYLON PULL CORD
COL	COLUMN
COMM	COMMUNICATIONS
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTION
CONST	CONSTRUCT
CONT	CONTINUE, CONTINUOUS
CORR	CORRUGATED
COTG	CLEANOUT TO GRADE
CP	CONTROL POWER
CRC	COLD ROLLED CHANNEL
CS	COLUMN STRIP
CT	CONTAINER TERMINAL
CTR	CENTER
CTRSK	COUNTERSINK
CU	COPPER
℄	CENTERLINE
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DEPT	DEPARTMENT
DEMO	DEMOLISH
DET	DETAIL
DIA	DIAMETER, DIAGONAL
DI, DIP	DUCTILE IRON PIPE
DIM	DIMENSION
DIMJ	DUCTILE IRON MECHANICAL JOINT
DF	DRINKING FOUNTAIN
DG	DECOMPOSED GRANITE
DN	DOWN
DO	DITTO (REPEAT)
DP	DEEP, DEPTH
DWG	DRAWING
DWL	DOWELS
DWP	DEPARTMENT OF WATER AND POWER
DWPWS	DEPARTMENT OF WATER AND POWER WATER SERVICE
E/ELEC/(E)	EAST, ELECTRICAL
E/T	ELECTRICAL AND TELEPHONE
EA	EACH
EBF	ECCENTRIC BRACE FRAME
EC	END CURVE
EF	EACH FACE
EG	EXISTING GRADE
EJ	EXPANSION JOINT
EL/ELEV	ELEVATION
ELT	EVER LOW TIDE
EMB/EMBED	EMBEDMENT
EMH	ELECTRICAL MANHOLE
ENCSD	ENCASED
ENGR	ENGINEER
EP, EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ERJ	EARTHQUAKE RESISTANT EXPANSION JOINT
ES	EACH SIDE
EST	ESTIMATE
EV	ELECTRIC VEHICLE
EW	EACH WAY
EX/EXIST/(E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FA	FIRE ALARM
FDC	FIRE DEPARTMENT CONNECTION
FDR	FEEDER
FDN	FOUNDATION
FIG	FIGURE
FIP OP	FIBER OPTIC
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIN	FINISH(ED)
FIXT	FIXTURE
FL	FLOW LINE, FIRE LANE, FLOOR
FLEX	FLEXIBLE
FLG	FLANGE
FLL	FLOW LINE
FM/FW	FORCE MAIN
FMG	FRAMING
FOB	FACE OF BLOCK OR BRICK
FOC	FACE OF CONCRETE
FOS	FACE OF STUDS
FP	FULL PENETRATION GROOVE WELD
FS	FINISHED SURFACE, FAR SIDE, FIRE SERVICE
FT	FEET, FOOT
FTG	FOOTING
FW	FIRE WATER
G	GAS
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BEAM, GRADE BREAK
GD	GUARD
GL	GRID LINE, GROUND LINE
GND	GROUND, GROUNDING
GPM	GALLONS PER MINUTE
GR	GROUND, GRADE
GV	GATE VALVE
GVL	GRAVEL
HCA	HEADED CONCRETE ANCHOR
HD	HOLD DOWN
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HGR	HANGER
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HIGH STRENGTH
HSB	HIGH STRENGTH BOLT
HT	HEIGHT
HV	HIGH VOLTAGE
ICV	IRRIGATION CONTROL VALVE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IMF	INTERMEDIATE MOMENT FRAME
IN	INCH
INFO	INFORMATION
INT	INTERRUPTER, INTERIOR
INV	INVERT
IP	INDICATOR PILE
IR/IRRIG	IRRIGATION
IZ	IMPEDANCE
JB	JUNCTION BOX
JS	JUNCTION STRUCTURE
JST	JOIST
JT	JOINT
KSI	KIPS PER SQUARE INCH
KO	KNOCKOUT
KV	KILOVOLTS
KV-A	KILOVOLT-AMPERE
L	LENGTH, LEG
LA	LOS ANGELES
LADWP	LOS ANGELES DEPARTMENT OF WATER AND POWER
LABOE	LOS ANGELES BUREAU OF ENGINEERING
LAHD	LOS ANGELES HARBOR DEPARTMENT
LB/FT	POUNDS PER FOOT
LBS	POUNDS
LCL	LONG CONTINUOUS LOAD
LF	LINEAR FOOT
LG	LONG
LLBB	LONG LEG BACK-BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LP	LOW POINT, LIGHT POLE
LR	LONG RADIUS
LS	LAND SIDE
LST	IVORY LEFT STRIP
LT	LEFT
LT WT	LIGHT WEIGHT
LV	LOW VOLTAGE
MAINT	MAINTENANCE
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MF	MOMENT FRAME
MFG	MANUFACTURER OF FEATURE (WATER DIST. SYSTEM)
MFR	MANUFACTURER
MH	MAINTENANCE HOLE
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MUD LINE
MLLW	MEAN LOWER LOW WATER
MLW	MEAN LOW WATER
MMF	MULTI-MODE FIBER
MPOE	MINIMUM POINT OF ENTRY
MS	MAIN SUBSTATION, MIDDLE STRIP, MEAN SEA LEVEL
MTL	METAL, MATERIAL
MVA	MEGA VOLT AMPERE
N/(N)	NEW
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO.	NUMBER
NORM WT	NORMAL WEIGHT
NS	NEAR SIDE
NTP	NOTICE TO PROCEED
NTS	NOT TO SCALE
OC	ON CENTER
OCT	OCTAGONAL
OD	OUTSIDE DIAMETER
O FLOW	OVERFLOW
OF	OUTSIDE FACE
OG	ORIGINAL GRADE
OH	OPPOSITE HAND
OMF	ORDINARY MOMENT FRAME
O-O	OUT TO OUT
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSP	OUTSIDE PLANT
OVK	OVERLOOK
P	PHASE, POLE
PARA	PARALLEL
PB	PULL BOX
P/C	PRECAST
PC	POINT OF CURVE
PDA	PILE DRIVING ANALYZER
PE	PLAIN END
PERF	PERFORATED
PERP	PERPENDICULAR
PF	PLANT FACTOR
PHL	PIER HEAD LINE
(PIP)	PROTECT IN PLACE
PJP	PARTIAL JOINT PENTRATION
PL	PROJECT LIMIT, POWERLOGIC, PROPERTY LINE, PLATE
PLC	POWERLOGIC CONTROLLER
PLK	POWERLINK
PLR	PIPE LOCATION REPORT
PLS	PLACES
PNL	PANEL
POC	POINT OF CONNECTION
POLA	PORT OF LOS ANGELES
PP	POWER POLE
PR	PIER
PRI	PRIMARY
PROP	PROPOSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P/T	POST TENSIONED (PRESTRESSED)
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE WATER/DOMESTIC WATER, POLYETHYLENE WRAPPED
PWR	POWER
R/RAD	RADIUS
RBS	REDUCED BEAM SECTION
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
RED	REDUCING
REF	REFERENCE
REG	REGULAR
REINF	REINFORCE, REINFORCEMENT
REQD/REQ'D	REQUIRED
RG	RUBBER GASKET
RGS	RIGID GALVANIZED STEEL
RMB	REAR MARGINAL BEAM
RMP	RAMP
RMS	ROOT MEAN SQUARE
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RS	REFERENCE STANDARD
RST	COPPER RIGHT STRIP
R/W	RIGHT OF WAY
RW	REWRAP
S	SLOPE, SOUTH
SC	SLIP CRITICAL
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCG	SOUTHERN CALIFORNIA GAS
SCH/SCHED	SCHEDULE
SD/SDR	STORM DRAIN
SDWK	SIDEWALK
SEC	SECONDARY
SECT	SECTION
SEP	SEPARATION
SF	SURFACE
SFR	SURFACE REBAR
SGL	SINGLE
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEG BACK-BACK
SLB	SHORE LEG VERTICAL
SMF	SINGLE MODE FIBER, SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREWS
SO	SOUTHERN
SOG	SLAB ON GRADE
SP/SPA	SPARE, SPACE
SPC'G	SPACING
SPECS	SPECIFICATIONS
SPLY	SUPPLY
SPPM	SAN PEDRO PUBLIC MARKET
SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SPW	SAN PEDRO WATERFRONT
SQ	SQUARE
SQ FT	SQUARE FOOT/FEET
SQ IN	SQUARE INCH
SS	SANITARY SEWER, SECURITY SYSTEM, STAINLESS STEEL
SSC	SINGLE SHEAR CONNECTION
SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
SST	BROWN SIDE STRIP
ST	STREET
STA	STATION
STAGG	STAGGER (ED)
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STP	STIRRUP
STRUC/STRUCT	STRUCTURAL
SUBSTA	SUBSTATION
SW	SWITCH
SWBD	SWITCHBOARD
SYM/SYMM	SYMMETRICAL, SYMBOL
T/TEL	TELEPHONE, TANGENT DISTANCE
T&B	TOP AND BOTTOM
TC	TOP OF CURB
TCB	TOP OF CATCH BASIN
TEMP	TEMPORARY, TEMPERATURE
THK	THICKNESS, THICK
THRD	THREAD
THRU	THROUGH
TG	TOP OF GRATE
TOC	TOP OF CONCRETE
TOCC	TOP OF CONCRETE CAP
TOD	TOP OF DECK
TOF	TOP OF FOOTING
TOG	TOP OF GRADE
TOR	TOP OF RAIL
TOS	TOP OF STEEL
TOT	TOTAL
TOW	TOP OF WALL
TP	TOP OF PARAPET
TRANS	TRANSITION, TRASVERSE
TS	TOP OF STAIRS, TRANSITION STRUCTURE
TSG	TAPERED STEEL GIRDER
TW	TOP OF WALL
TYP	TYPICAL
U/G/UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
UP	UNION PACIFIC
UPS	UNINTERRUPTIBLE POWER SUPPLY
USGS	UNITED STATES GEODETIC SURVEY
V	VOLTS
VA	VOLT-AMPERE
VAC	VOLTAGE ALTERNATING CURRENT
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VD	VOLTAGE DROP
VDC	VOLTAGE DIRECT CURRENT
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/WTR	WATER
W/	WITH
WBS	WELDED BEAM SEAT
WD	WOOD
WHB	WELDED HEADED REINF BARS
WM	WATER METER
WP	WEATHER PROOF, WORK POINT
WPJ	WEAKENED PLANE JOINT
WS	WATER SERVICE, WELDED STUDS, WATER SIDE
WSM	WATER SERVICE MAP
WT	WEIGHT
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER
YD	YARD

NOTES:

1. THIS LIST MAY NOT BE COMPREHENSIVE. REFER TO DISCIPLINE SHEETS FOR ADDITIONAL CLARIFICATION.

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

WORLD TOTS SECURITY GATE & FENCE

ABBREVIATIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: 1-XXXX
SHEET NUMBER: G-1.0

CITY LA DBS DEPARTMENT OF BUILDING AND SAFETY

INFORMATION BULLETIN / PUBLIC - BUILDING CODE
REFERENCE NO.: LABC Sec.11B-703 Effective: 01/01/2020
DOCUMENT NO.: **P/BC 2020-091** Revised:
Previously Issued As: P/BC 2017-091

ACCESSIBILITY DETAILS FOR SIGNS

FIGURE 11B-703.7.2.1 INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA)

The International Symbol of Accessibility shall comply with Figure 11B-703.7.2.1. The symbol shall consist of a white figure on a blue background. The blue shall be FS 15090 in Federal Standard 595C

FIGURE 11B-703.7.2.2 INTERNATIONAL SYMBOL OF TTY

11B-703.7.2.2 International Symbol of TTY. The International Symbol of TTY shall comply with Figure 11B-703.7.2.2

Volume control telephones. Telephones with a volume control shall be identified by a pictogram of a telephone handset with radiating sound waves on a square field such as show in Figure 11B-703.7.2.3

FIGURE 11B-703.7.2.3 VOLUME CONTROL TELEPHONE

Assistive listening systems. Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure 11B-703.7.2.4

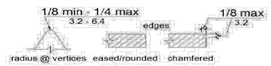


FIGURE 11B-703.7.2.6.4
EDGES AND VERTICES ON GEOMETRIC SYMBOLS

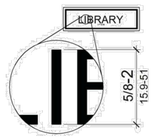


FIGURE *11B-703.2.5*
HEIGHT OF RAISED CHARACTERS

11B-703 Signs

11B-703.1 General. Signs shall comply with Section 11B- 703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.

11B-703.1.1 Plan review and inspection. Signs as specified in Section 11B-703, or in other sections of this code, when included in the construction of new buildings or facilities, or when included, altered or replaced due to additions, alterations or renovations to existing buildings or facilities, and when a permit is required, shall comply with Sections 11B-703.1.1.1 and 11B-703.1.1.2.

11B-703.1.1.1 Plan review. Plans, specifications or other information indicating compliance with these regulations shall be submitted to the enforcing agency for review and approval.

11B-703.1.1.2 Inspection. Signs and identification devices shall be field inspected after installation and approved by the enforcing agency prior to the issuance of a final certificate of occupancy per Chapter 1, Division II, Section 111, or final approval where no certificate of occupancy is issued. The inspection shall include, but not be limited to, verification that Braille dots and cells are properly spaced and the size, proportion and type of raised characters are in compliance with these regulations.

TABLE 11B-703.3.1
BRAILLE DIMENSIONS

MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
Dot base diameter	0.059 – 0.063
Distance between two dots in the same cell	0.100
Distance between corresponding dots in adjacent cells	0.300
Dot height	0.025 – 0.037
Distance between corresponding dots from one cell directly below	0.395 – 0.400

FIGURE 11B-703.3.1
BRAILLE MEASUREMENT

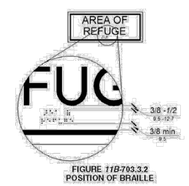


FIGURE *11B-703.3.2*
POSITION OF BRAILLE

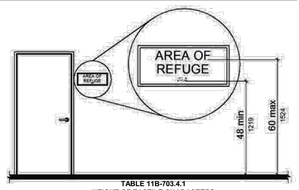


TABLE 11B-703.4.1
HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR OR GROUND

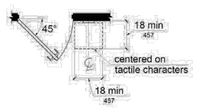
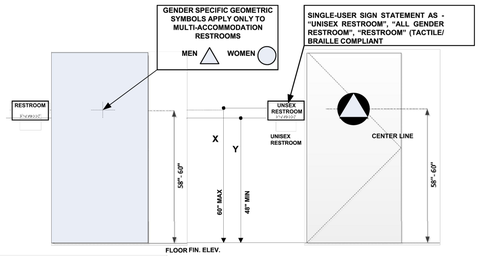


FIGURE 11B-703.4.2
LOCATION OF TACTILE SIGNS AT DOORS

TOILETS AND BATHING FACILITIES GEOMETRIC SYMBOLS



NOTE: PICTOGRAMS NOT REQUIRED

The provisions of CBC Chapter 11B require that a sanitary facility that is not specifically identified as for "men" or "women" (referred to in Chapter 11B as a "unisex" facility) have a geometric symbol on the door that is an equilateral triangle superimposed onto a circle. The "unisex" symbol is the only specific indicator required to be provided by Chapter 11B for a toilet facility that is available for use by all individuals. No pictogram, text, or braille is required on the symbol. (See attachment, Exhibit A.)

BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS — X
Y — BASELINE OF LOWEST BRAILLE CELL

UNISEX RESTROOM

TACTILE / RAISED CHARACTER & GD-II BRAILLE SIGN

11B-703.4.1 Height above finish floor or ground.

Tactile characters on signs shall be located 48 inches (1219 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest Braille cells and 60 inches (1524 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest line of raised characters. Exception: Tactile characters for elevator car controls shall not be required to comply with Section 11B- 703.4.1. 1

IDENTIFICATION OF ALL GENDER SINGLE-USER TOILET FACILITIES
Compliant with the California Building Code (CBC) Chapter 11B

EXHIBIT A - Door Symbol (required by the CBC)

This image represents the door symbol that is required by CBC 11B-216.8 to identify an all-gender/unisex single-user toilet facility. The symbol must comply with the requirements of CBC 11B-703.7.2.6.3. No pictogram, text, or braille is required on the symbol.

EXHIBIT B - Designation sign on wall

Designation signs are not required to be provided by the CBC or the 2010 ADAS. If provided, a designation sign adjacent to the door must comply with the scoping requirements of CBC 11B-216.2, and the technical requirements for raised characters (CBC 11B-703.2), braille (CBC 11B-703.3), visual characters (CBC 11B-703.5), and requirements for installation height and location (CBC 11B-703.4). No pictogram is required. The following signs illustrate acceptable examples for designation sign text:

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

WORLD TOTS SECURITY GATE & FENCE

ACCESSIBILITY REQUIREMENT

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: 1-XXXX
SHEET NUMBER: G-2.0

DWG: M:\users\ENGINEERING DIVISION\ARCHITECTURAL\Woosung\Project\World tots fence\Cad\Arch\1-xxxx G-2.0.dwg USER: YoonW
DATE: Aug 05, 2024 4:36pm

POLAPRDY_10/2012_RJL

REQ6556 Attachment B

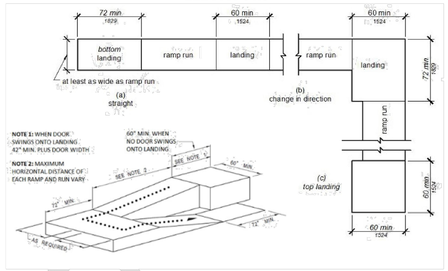
INFORMATION BULLETIN / PUBLIC - BUILDING CODE

REFERENCE NO.: LABC Sec.11B-403,404,405, 408,504,505,802 — Effective: 01/01/2020

DOCUMENT NO.: **P/BC 2020-085** — Revised: 12/02/2019

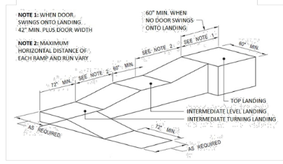
Previously Issued As: P/BC 2017-085

ACCESSIBILITY DETAILS FOR RAMPS, STAIRS & ELEVATORS

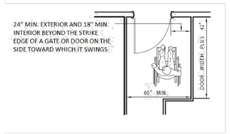


RAMP WITH INTERMEDIATE SWITCH BACK PLATFORM

FIGURE 11B-405.7 RAMP LANDING

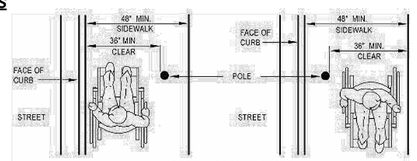


RAMP WITH TURNING PLATFORM



RAMP LANDING AND DOORWAY

RAMPS



SIDEWALK OBSTRUCTIONS

11B-505.10.1 TOP AND BOTTOM EXTENSION AT RAMPS. Ramp handrails shall extend horizontally above the landing for 12 inches beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or landing surface, or shall be continuous to the handrail of an adjacent ramp run.

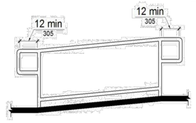


FIGURE *11B*-505.10.1
TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS

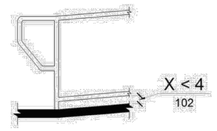
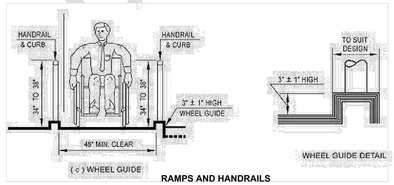
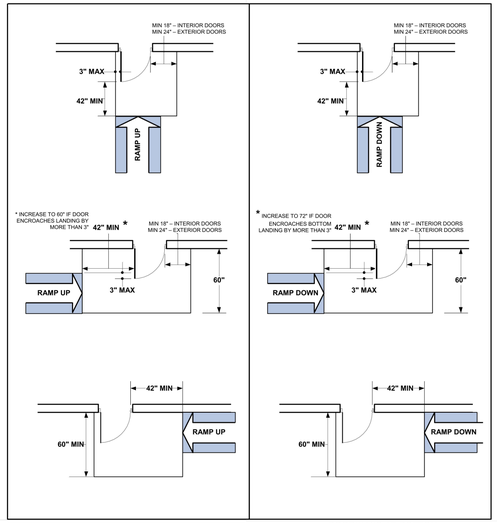


FIGURE *11B*-405.9.2
CURB OR BARRIER EDGE PROTECTION



RAMPS AND HANDRAILS

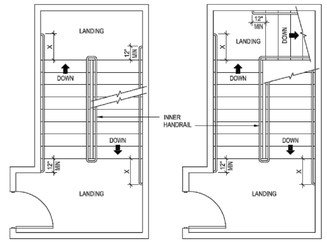
DOORWAYS AT RAMP LANDINGS



DOORWAYS AT TOP LANDING SPACE OF A RAMP

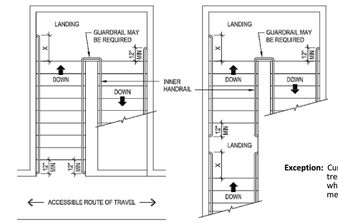
DOORWAYS AT BOTTOM LANDING SPACE OF A RAMP

STAIRWAYS



NOTE: INNER HANDRAIL AT LANDINGS OF STAIRS THAT DOUBLE BACK OR IMMEDIATELY TURN SHALL BE CONTINUOUS AND SHALL NOT EXTEND INTO LANDING OR ACCESSIBLE ROUTE OF TRAVEL.

X = EXTENSION OF HANDRAIL SHALL BE EQUAL TO THE TREAD WIDTH PLUS 12 INCHES MINIMUM



Exception: Curved stairways with winder treads are permitted at stairs which are not part of a required means of egress.

11B-504 STAIRWAYS

STAIRS

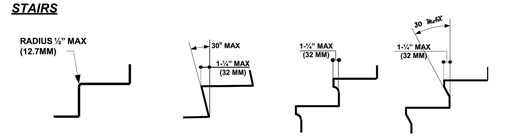


FIGURE 11B-504.5
STAIR NOSINGS

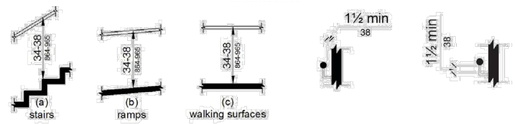


FIGURE 11B-505.4
HANDRAIL HEIGHT

FIGURE 11B-505.5
HANDRAIL CLEARANCE

FIGURE 11B-505.6
HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE

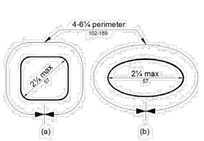


FIGURE 11B-505.7.2
HANDRAIL NON-CIRCULAR CROSS SECTION

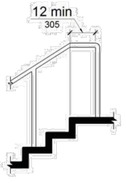


FIGURE 11B-505.10.2
TOP HANDRAIL EXTENSION AT STAIRS

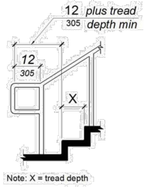


FIGURE 11B-505.10.3
BOTTOM HANDRAIL EXTENSION AT STAIRS

ELEVATORS

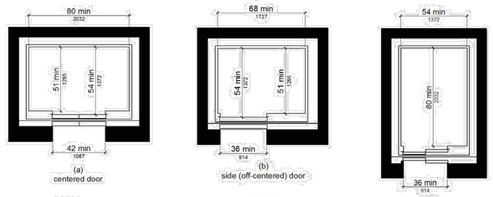


FIGURE 11B-407.4.1
ELEVATOR CAR DIMENSIONS

TABLE 11B-407.4.1
ELEVATOR CAR DIMENSIONS

MINIMUM DIMENSIONS				
DOOR LOCATION	DOOR CLEAR WIDTH	INSIDE CAR, SIDE TO SIDE	INSIDE CAR, BACK WALL TO FRONT RETURN	INSIDE CAR, BACK WALL TO INSIDE FACE OF DOOR
Centered	42 inches	80 inches	51 inches	54 inches
Side (off-centered)	36 inches	68 inches	51 inches	54 inches
Any	36 inches	54 inches	80 inches	80 inches
Any	36 inches	60 inches	60 inches	60 inches

1. A tolerance of minus 5/8 inch (15.9 mm) is permitted.
2. Other car configurations that provide a turning space complying with *Section 11B*-304 with the door closed shall be permitted.

ELEVATORS

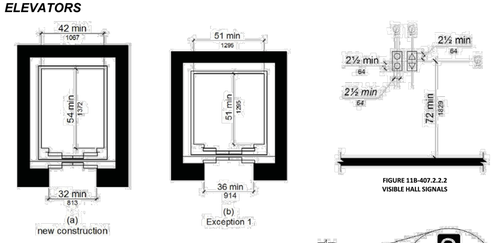


FIGURE 11B-407.2.2.2
VISIBLE HALL SIGNALS

FIGURE *11B*-408.4.1
LIMITED-USE/LIMITED-APPLICATION (LULA) ELEVATOR CAR DIMENSIONS

Door and signal timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation:

$T = D/(1.5 \text{ ft/s})$ or $T = D/(455 \text{ mm/s})$ = 5 seconds minimum where *T* equals the total time in seconds and *D* equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (*1524* mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door. (11B-407.3.4)

Exceptions:
1. For cars with in-car lanterns, T shall be permitted to begin when the signal is visible from the point 60 inches (*1524* mm) directly in front of the farthest hall call button and the audible signal is sounded.
2. Destination-oriented elevators shall not be required to comply with *Section 11B*-407.3.4.

Door delay. Elevator doors shall remain fully open in response to a car call for 5 seconds minimum. (11B-407.3.5)

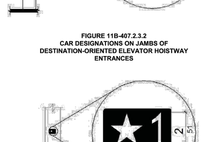


FIGURE 11B-407.2.3.2
CAR DESIGNATIONS ON JAMBS OF DESTINATION-ORIENTED ELEVATOR HOISTWAY ENTRANCES

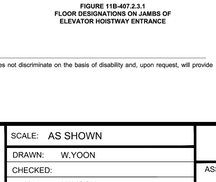


FIGURE 11B-407.2.3.1
FLOOR DESIGNATIONS ON JAMBS OF ELEVATOR HOISTWAY ENTRANCE

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER — DATE

WORLD TOTS SECURITY GATE & FENCE

ACCESSIBILITY REQUIREMENT

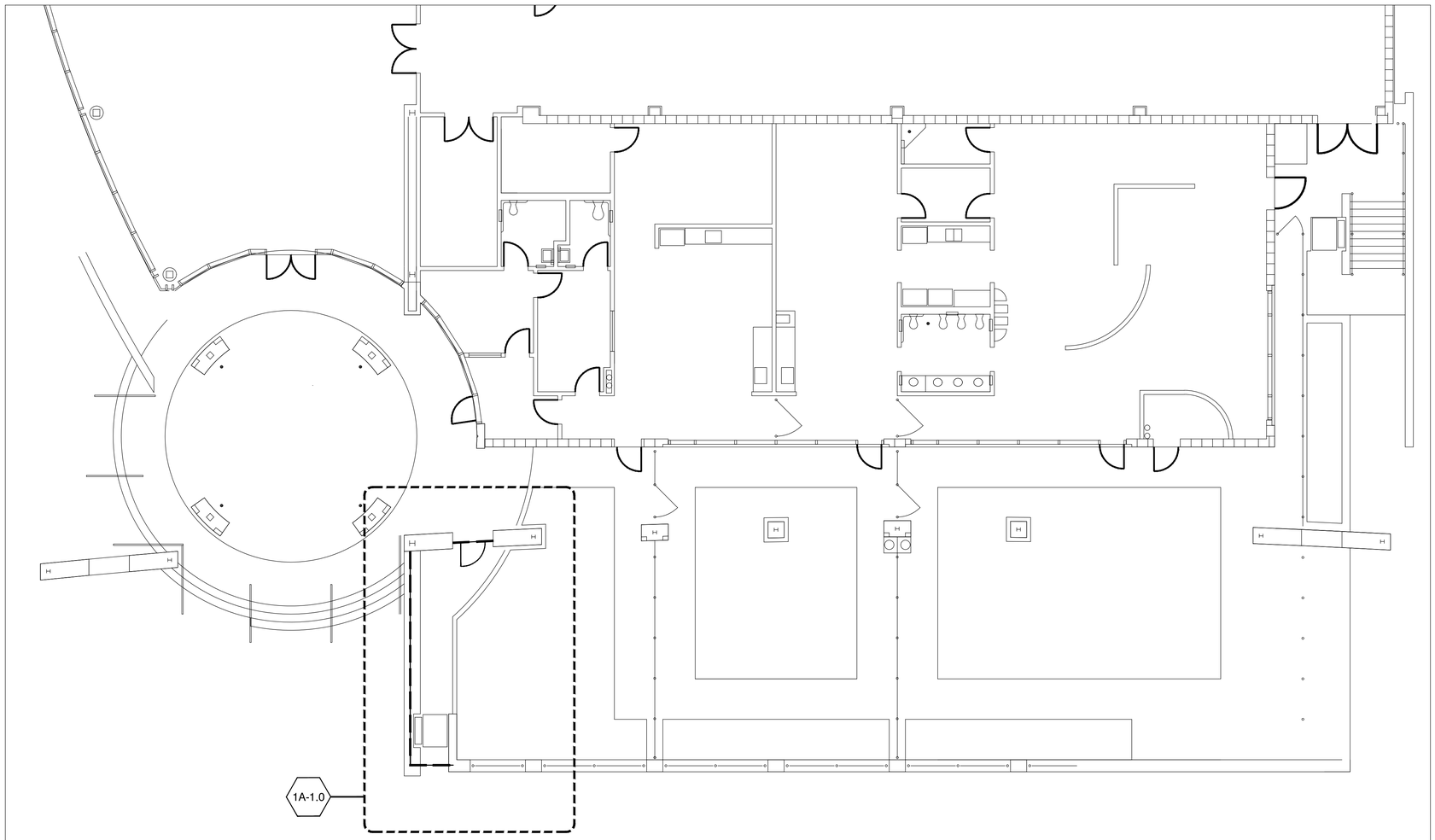
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: 1-XXXX
SHEET NUMBER: G-3.0

DWG: M:\users\ENGINEERING DIVISION\ARCHITECTURAL\Woosung\Project\World tots fence\Cad\Cad\Arch\1-xxxx G-3.0.dwg USER: YoonW
DATE: Aug 05, 2024 4:31pm

POLAR/01_10/2012_ILB_

REQ6556 Attachment B



1A-0.0 / A-0.0 SITE PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD (VIF)
2. CONTRACTOR SHALL SUBMIT PERFORATED METAL PANEL PATTERN FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
3. CONTRACTOR SHALL SUBMIT PAINT FINISH AND COLOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
4. ALL DOOR AND GATE HINGES SHALL BE HOT DIPPED GALVANIZED
5. ALL FENCE RAILS, POSTS, MESH, AND CONNECTIONS SHALL BE HOT DIPPED GALVANIZED
6. REFER TO THE SHEET A-4.0 AND A-5.0 REGARDING STEEL TUBE DETAIL, ANGLE DETAIL, WALL SECTION, DETAIL AT CONCRETE SLAB, PARTIAL ELEVATION AND ALUMINIUM FINISH DETAILS.
7. SCREEN OFF CONSTRUCTION AREA
8. MAINTAIN ACCESS TO ALL FACILITIES

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

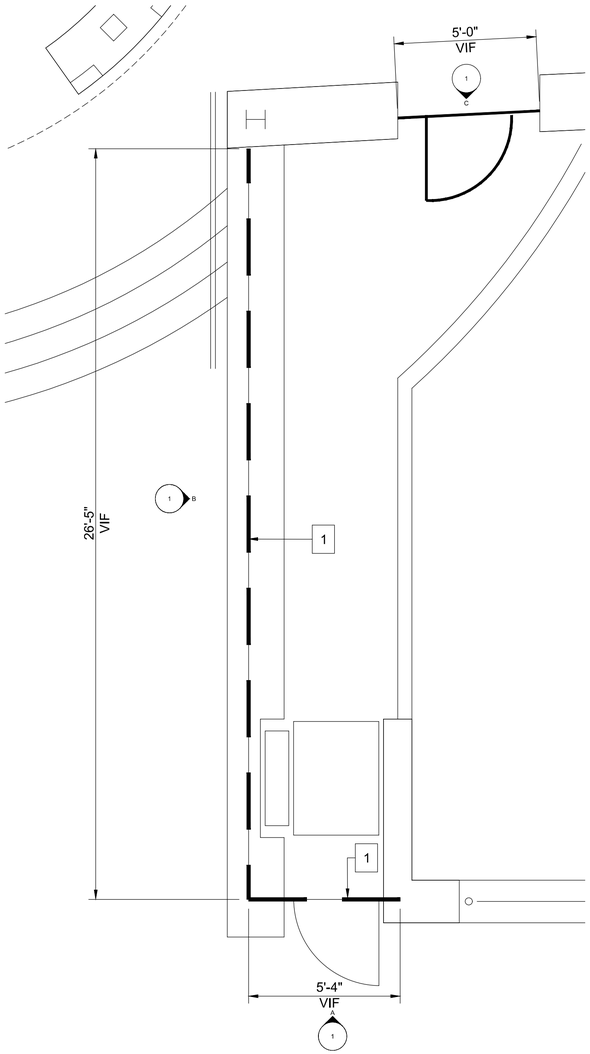
WORLD TOTS SECURITY GATE & FENCE

SITE PLAN

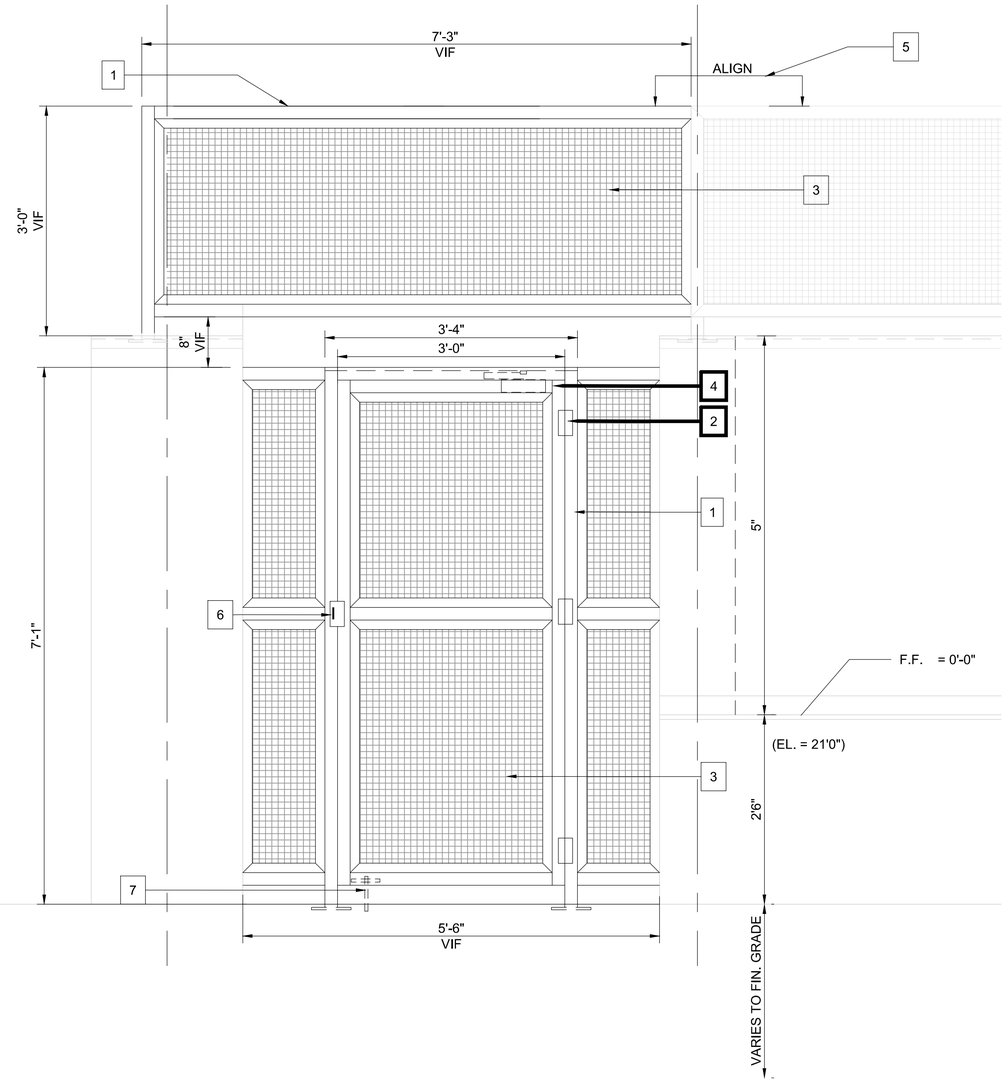
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: 1-XXXX
SHEET NUMBER: A-0.0

REQ6556 Attachment B



1A-1.0 / A-1.0 ENLARGED PLAN
SCALE: 3/8"=1'-0"



2A-1.0 / A-1.0 ELEVATION A
SCALE: 1"=1'-0"

KEYNOTES - FLOOR PLAN

#	KEYNOTE
01	GALV ORNAMENTAL METAL FENCING WITH PAINTED FINISH, TYP
02	TYP HINGES PROVIDED BY GATE MANUFACTURER
03	GALV 1/2" SQUARE WEAVE .25" Ø WIRE MESH WITH STEEL ANGLE FRAME EA SIDE. PAINTED FINISH
04	GATE CLOSER
05	ALIGN TOP OF SURFACE AT THE NEW FENCE WITH TOP OF SURFACE AT THE EXISTING ONE TO ENSURE A SEAMLESS TRANSITION
06	INSTALL NEW WELDED CLASP LOCK LATCH
07	INSTALL HEAVY DUTY CANE BOLT GATE DROP ROD

NOTE:

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD (VIF)
2. CONTRACTOR SHALL SUBMIT PERFORATED METAL PANEL PATTERN FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
3. CONTRACTOR SHALL SUBMIT PAINT FINISH AND COLOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
4. ALL DOOR AND GATE HINGES SHALL BE HOT DIPPED GALVANIZED
5. ALL FENCE RAILS, POSTS, MESH, AND CONNECTIONS SHALL BE HOT DIPPED GALVANIZED
6. REFER TO THE SHEET A-4.0 AND A-5.0 REGARDING STEEL TUBE DETAIL, ANGLE DETAIL, WALL SECTION, DETAIL AT CONCRETE SLAB, PARTIAL ELEVATION AND ALUMINIUM FINISH DETAILS.

PAINTING OF GALVANIZED METALS:

A. PRETREATMENT - METAL CLEAN ETCH BY KRUD KUTTER/RUST-OLEUM
B. FIRST COAT - ULGM00-WH ULTRASHIELD GALVANIZED METAL PRIMER
C. SECOND COAT - EVSH60 EVERSHIELD GLOSS ENAMEL
D. THIRD COAT - EVSH60 EVERSHIELD GLOSS ENAMEL

PAINT: VERIFY WITH ENGINEER ON SITE

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

WORLD TOTS SECURITY FENCE & GATE

ENLARGED PLAN & ELEVATION A

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

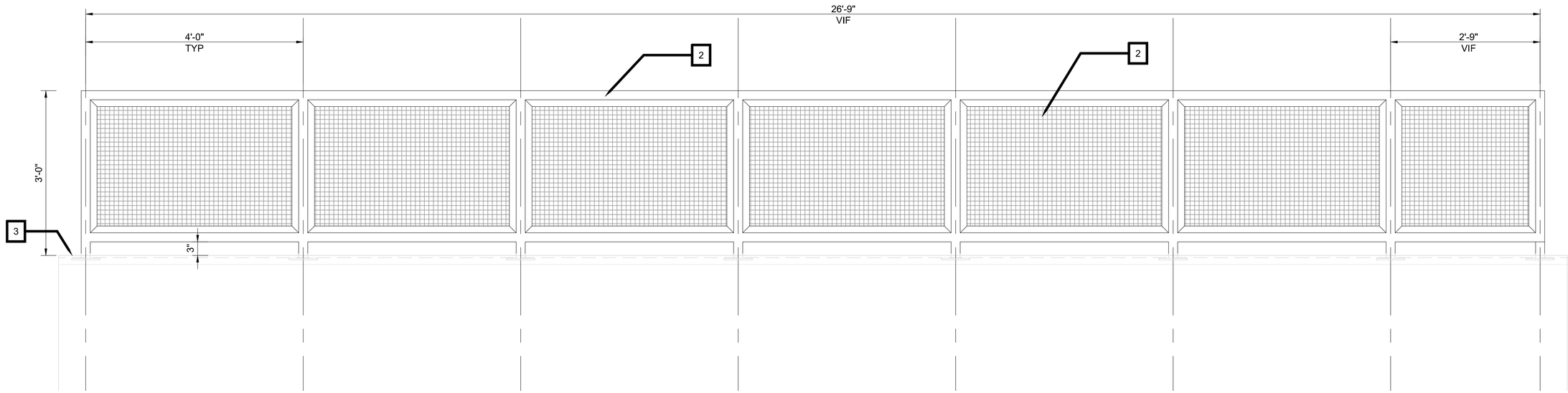
DRAWING NUMBER: 1-XXXX
SHEET NUMBER: A-1.0

DWG: M:\users\ENGINEERING DIVISION\ARCHITECTURAL\Woosung\ProjectWorld tots fence\Cad\Arch1-xxxx A-1.0.dwg USER: YoonW
DATE: Aug 05, 2024 4:16pm

POLAPRD1_10/2012_RJL

REQ6556 Attachment B

KEYNOTES - FLOOR PLAN	
#	KEYNOTE
01	GALV ORNAMENTAL METAL FENCING WITH PAINTED FINISH, TYP
02	GALV 1/2" SQUARE WEAVE .25" Ø WIRE MESH WITH STEEL ANGLE FRAME EA SIDE. PAINTED FINISH
03	TOP OF CONCRETE



1A-2.0 / A-2.0 ELEVATION B

SCALE: 1"=1'-0"

NOTE:

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD (VIF)
2. CONTRACTOR SHALL SUBMIT PERFORATED METAL PANEL PATTERN FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
3. CONTRACTOR SHALL SUBMIT PAINT FINISH AND COLOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
4. ALL DOOR AND GATE HINGES SHALL BE HOT DIPPED GALVANIZED
5. ALL FENCE RAILS, POSTS, MESH, AND CONNECTIONS SHALL BE HOT DIPPED GALVANIZED
6. REFER TO THE SHEET A-4.0 AND A-5.0 REGARDING STEEL TUBE DETAIL, ANGLE DETAIL, WALL SECTION, DETAIL AT CONCRETE SLAB, PARTIAL ELEVATION AND ALUMINIUM FINISH DETAILS.

PAINTING OF GALVANIZED METALS:

A. PRETREATMENT - METAL CLEAN ETCH BY KRUD KUTTER/RUST-OLEUM
B. FIRST COAT - ULGM00-WH ULTRASHIELD GALVANIZED METAL PRIMER
C. SECOND COAT - EVSH60 EVERSHIELD GLOSS ENAMEL
D. THIRD COAT - EVSH60 EVERSHIELD GLOSS ENAMEL

PAINT: VERIFY WITH ENGINEER ON SITE

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

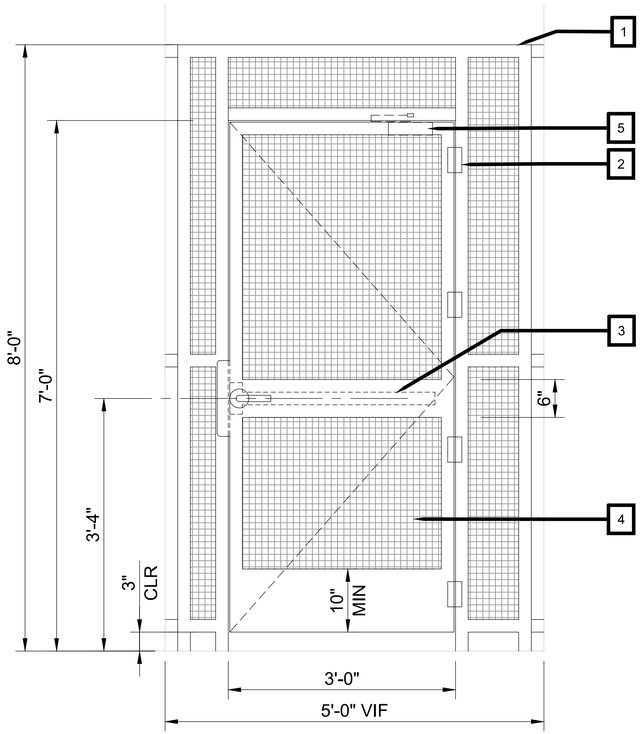
CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER DATE

WORLD TOTS FENCE

ELEVATION B

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER 1-XXXX
SHEET NUMBER A-2.0



1A-3.0 / A-3.0 GATE - ELEVATION C
SCALE: 1"=1'-0"

KEYNOTES - FLOOR PLAN

#	KEYNOTE
01	GALV ORNAMENTAL METAL FENCING WITH PAINTED FINISH, LINE POST, TYP
02	TYP HINGES PROVIDED BY GATE MANUFACTURER
03	PANIC HARDWARE ON APPROACH SIDE OF GATE
04	GALV 1/2" SQUARE WEAVE .25" Ø WIRE MESH WITH STEEL ANGLE FRAME EA SIDE. PAINTED FINISH
05	GATE CLOSER

NOTE:

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD (VIF)
2. CONTRACTOR SHALL SUBMIT PERFORATED METAL PANEL PATTERN FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
3. CONTRACTOR SHALL SUBMIT PAINT FINISH AND COLOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION
4. ALL DOOR AND GATE HINGES SHALL BE HOT DIPPED GALVANIZED
5. ALL FENCE RAILS, POSTS, MESH, AND CONNECTIONS SHALL BE HOT DIPPED GALVANIZED
6. REFER TO THE SHEET A-4.0 AND A-5.0 REGARDING STEEL TUBE DETAIL, ANGLE DETAIL, WALL SECTION, DETAIL AT CONCRETE SLAB, PARTIAL ELEVATION AND ALUMINIUM FINISH DETAILS.

PAINTING OF GALVANIZED METALS:

A. PRETREATMENT - METAL CLEAN ETCH BY KRUD KUTTER/RUST-OLEUM
B. FIRST COAT - ULGM00-WH ULTRASHIELD GALVANIZED METAL PRIMER
C. SECOND COAT - EVSH60 EVERSHIELD GLOSS ENAMEL
D. THIRD COAT - EVSH60 EVERSHIELD GLOSS ENAMEL

PAINT: VERIFY WITH ENGINEER ON SITE

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D
NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

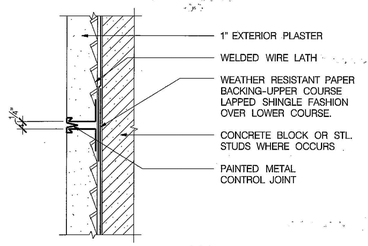
CHIEF OF DESIGN
ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER ____ DATE

WORLD TOTS FENCE

GATE - ELEVATION C

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

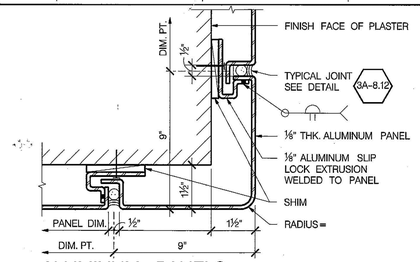
DRAWING NUMBER 1-XXXX
SHEET NUMBER A-3.0



CONTROL JOINT (VERT. JOINT TYP.)

SCALE: HALF FULL SIZE

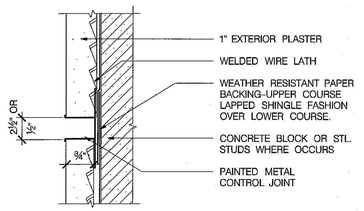
6A-8.12 | A-7.3,2&4A-8.3,A-8.6,1&2A-8.8,6&13A-8.12



ALUMINUM PANELS AT OUTSIDE CORNER

SCALE: HALF FULL SIZE

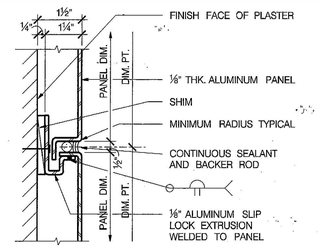
6A-8.12 | 2A-7.2



REVEAL /CONTROL JOINT (CONT. HORIZ.. JOINT TYP.)

SCALE: HALF FULL SIZE

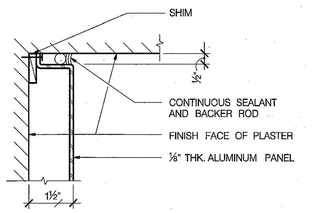
2A-8.12 | A-7.3,3A-8.4,A-8.6,2A-8.7,4A-8.7,3A-8.8



TYPICAL VERT. JOINT AT ALUMINUM PANEL

SCALE: HALF FULL SIZE

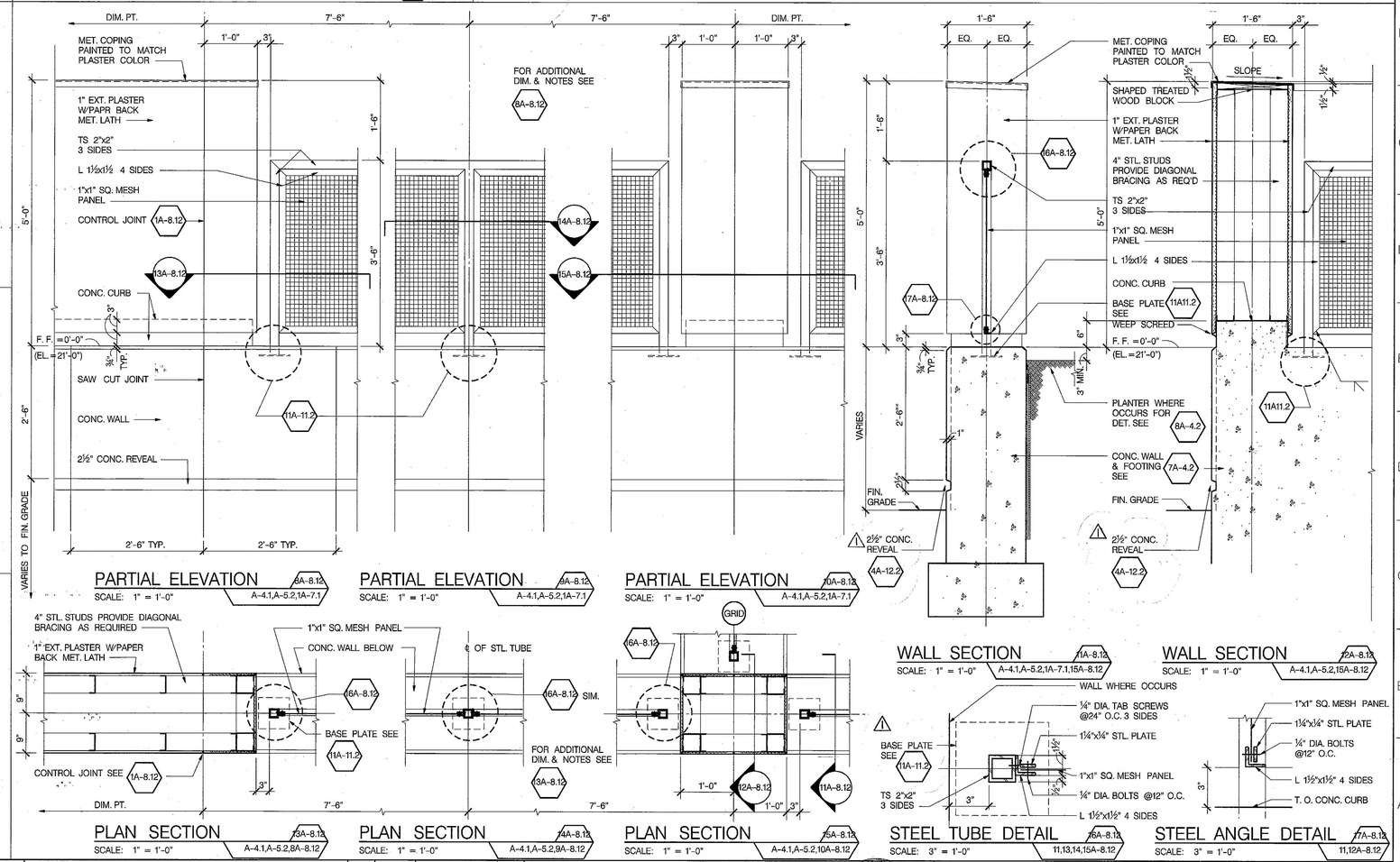
6A-8.12 | 2A-7.2,2A-8.4,4A-8.4



ALUMINUM PANELS AT INSIDE CORNER

SCALE: HALF FULL SIZE

4A-8.12 | 1A-7.2



PARTIAL ELEVATION

SCALE: 1" = 1'-0"

6A-8.12 | A-4.1,A-5.2,1A-7.1

PARTIAL ELEVATION

SCALE: 1" = 1'-0"

6A-8.12 | A-4.1,A-5.2,1A-7.1

PARTIAL ELEVATION

SCALE: 1" = 1'-0"

10A-8.12 | A-4.1,A-5.2,1A-7.1

PLAN SECTION

SCALE: 1" = 1'-0"

13A-8.12 | A-4.1,A-5.2,8A-8.12

PLAN SECTION

SCALE: 1" = 1'-0"

14A-8.12 | A-4.1,A-5.2,9A-8.12

PLAN SECTION

SCALE: 1" = 1'-0"

15A-8.12 | A-4.1,A-5.2,10A-8.12

WALL SECTION

SCALE: 1" = 1'-0"

1A-8.12 | A-4.1,A-5.2,1A-7.1,15A-8.12

STEEL TUBE DETAIL

SCALE: 3" = 1'-0"

16A-8.12 | 11,13,14,15A-8.12

WALL SECTION

SCALE: 1" = 1'-0"

2A-8.12 | A-4.1,A-5.2,15A-8.12

STEEL ANGLE DETAIL

SCALE: 3" = 1'-0"

17A-8.12 | 11,12A-8.12

NO.	DATE	REVISIONS-	APP'D	POLA
1	10-13-92	CLIENT'S REVISIONS	SCM	AMF
2	1-20-95	AS BUILT		

NO.	DATE	REVISIONS-	APP'D	POLA

SCALE	DATE
DRAWN	9-16-92
CHECKED	
DESIGNED D. MARTIN JR. FRINK	
PROJ. MGR. JOHN JOHNSON	

ALBERT C. MARTIN & ASSOCIATES
PLANNING I ARCHITECTURE I ENGINEERING I INTERIORS
811 West Seventh Street Los Angeles, CA 90017-3419
18500 Von Karman Avenue Irvine, CA 92715-0509

REGISTERED PROFESSIONAL ARCHITECT C-11185 EXP 10/31/93 STATE OF CALIFORNIA

PARCELS J1 & J2 – BEACON STREET REDEVELOPMENT PROJECT JOB NO. 1622

EXTERIOR DETAILS

WORLDPORT LA
ENGINEERING DIVISION P.O. BOX 151 SAN PEDRO CALIF.

DRAWING NUMBER 1-1942 A–8.12

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE:	AS SHOWN
DRAWN:	W.YOON
CHECKED:	
DESIGNED:	W.YOON
	ENGINEER / ARCHITECT

CHIEF OF DESIGN

ASSISTANT CHIEF HARBOR ENGINEER

CHIEF HARBOR ENGINEER DATE

WORLD TOTS SECURITY FENCE & GATE

REFERENCE DETAIL DRAWING A-8.12

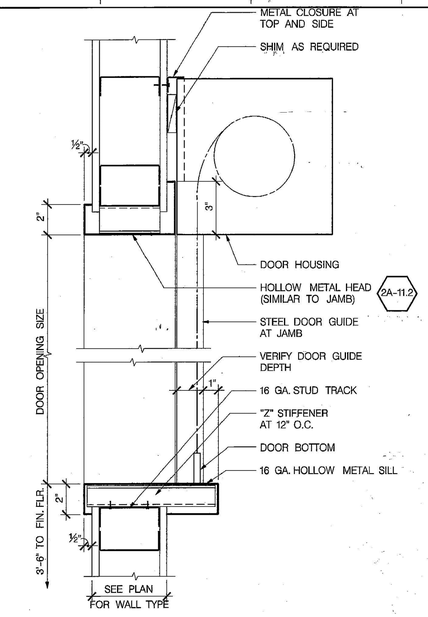
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER	SHEET NUMBER
1-XXXX	A-4.0

DWG: M:\users\ENGINEERING DIVISION\ARCHITECTURAL\Woosung\Project\World tots fence\CadArch\1-xxxx A-4.0.dwg USER: YoonW
DATE: Aug 05, 2024 4:15pm

POLAPR01_10/2012_RJL

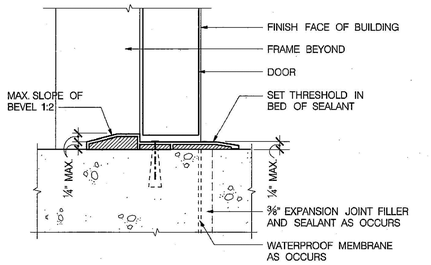
REQ6556 Attachment B



HEAD AND SILL AT COUNTER DOOR

SCALE: 3" = 1'-0"

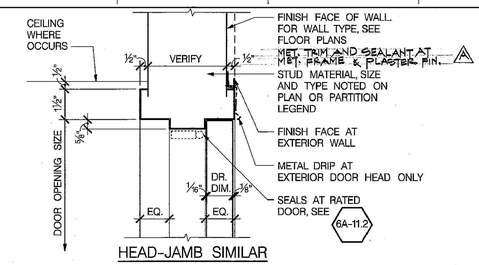
1A–11.2, 6A–13.2



THRESHOLD DETAIL AT CONCRETE

SCALE: HALF FULL SIZE

4A–11.2, A–11.1

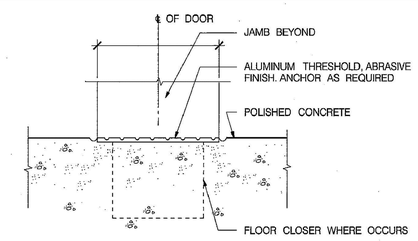


HEAD–JAMB SIMILAR

HOLLOW METAL DOOR FRAME IN STUD WALL

SCALE: 3" = 1'-0"

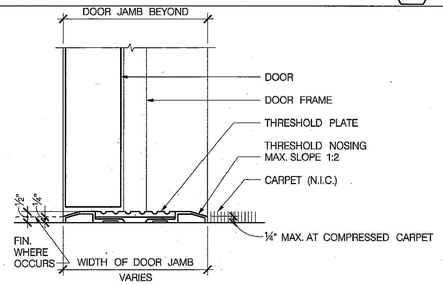
9A–11.2, 1A–8.7,A–11.1



THRESHOLD DETAIL AT POLISHED CONCRETE

SCALE: 3" = 1'-0"

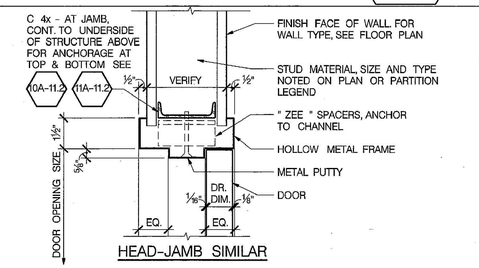
12A–11.2, A–11.1



THRESHOLD DETAIL

SCALE: HALF FULL SIZE

5A–11.2, A–11.1

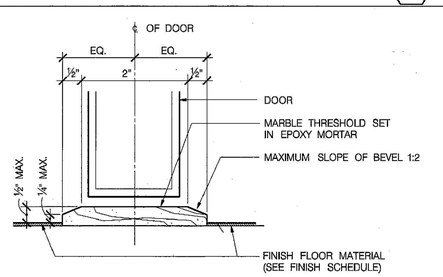


HEAD–JAMB SIMILAR

HOLLOW METAL DOOR FRAME IN STUD WALL

SCALE: 3" = 1'-0"

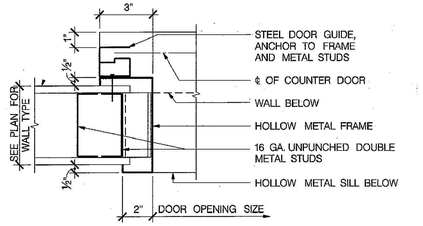
9A–11.2, 4A–8.3,A–11.1



MARBLE THRESHOLD DETAIL

SCALE: HALF FULL SIZE

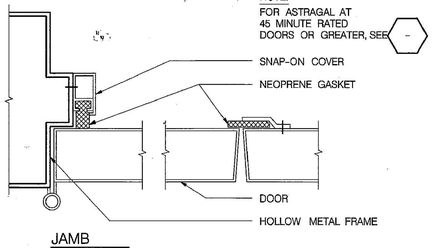
13A–11.2, A–5.1,A–5.2,A–11.1



JAMB AT COUNTER DOOR

SCALE: 3" = 1'-0"

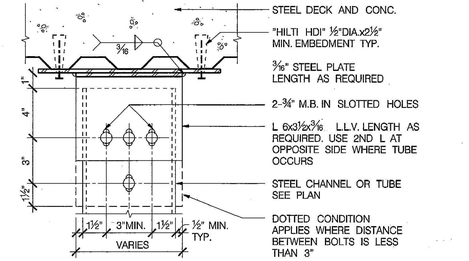
5A–11.2, A–5.1,A–11.1,1A–11.2,6A–13.2



DOOR SEALS

SCALE: HALF FULL SIZE

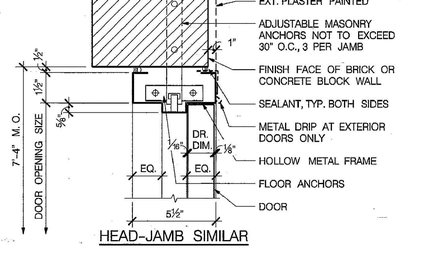
6A–11.2, A–11.1,8A–11.2



CONNECTION DETAIL AT STEEL DECK

SCALE: 3" = 1'-0"

9A–11.2, 9A–11.2

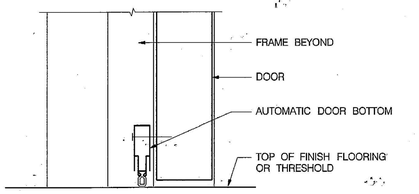


HEAD–JAMB SIMILAR

HOLLOW METAL DOOR FRAME IN MASONRY WALL

SCALE: 3" = 1'-0"

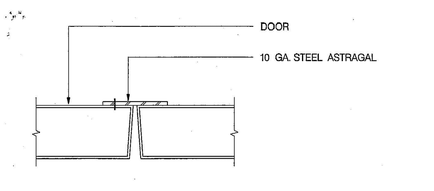
14A–11.2, 7A–8.3,1A–8.6,A–11.1



SURFACE TYPE AUTOMATIC DOOR BOTTOM

SCALE: HALF FULL SIZE

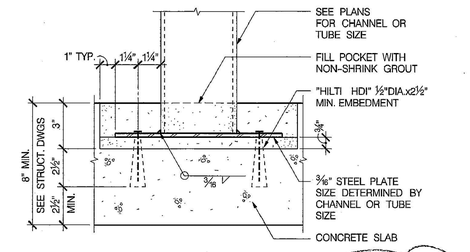
9A–11.2, A–11.1



DOOR ASTRAGAL

SCALE: HALF FULL SIZE

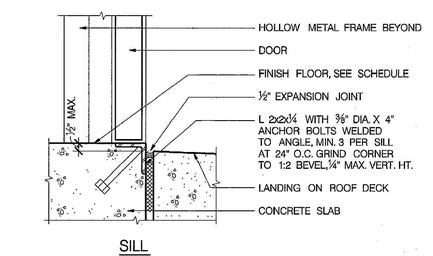
7A–11.2, A–11.1



DETAIL AT CONCRETE SLAB

SCALE: 3" = 1'-0"

11A–11.2, 8,9,11,12,13&16A–8.12,9A–11.2



SILL

DOOR THRESHOLD AT ROOF

SCALE: 3" =1'-0"

6A–11.2, A–11.1

NO.	DATE	REVISIONS-	APP'D	POLA
1	10-13-92	CLIENT'S REVISIONS	DOW	ATM
2	1-20-95	AS BUILT		

NO.	DATE	REVISIONS-	APP'D	POLA

SCALE	DATE
DRAWN	9-18-92
CHECKED	
DESIGNED D. MARTIN /R. FRINK	
PROJ. MGR. JOHN JOHNSON	

ALBERT C. MARTIN & ASSOCIATES
PLANNING | ARCHITECTURE | ENGINEERING | INTERIORS
811 West Seventh Street Los Angeles, CA 90017-3419
18500 Von Karman Avenue Irvine, CA 92715-0509

REGISTERED PROFESSIONAL ARCHITECT CHRISTOPHER R. CHAMBERS C 24693 CIVIL ENGINEER U.S.A.

PARCELS J1 & J2 – BEACON STREET REDEVELOPMENT PROJECT JOB NO. 1622

DOOR DETAILS

WORLDPORT LA
ENGINEERING DIVISION P.O. BOX 151 SAN PEDRO CALIF.

DRAWING NUMBER 1–1942 A–11.2

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

NO.	DATE	DRAWN	REVISIONS -	CHK'D	APP'D

SCALE: AS SHOWN
DRAWN: W.YOON
CHECKED:
DESIGNED: W.YOON
ENGINEER / ARCHITECT

CHIEF OF DESIGN

ASSISTANT CHIEF HARBOR ENGINEER

CHIEF HARBOR ENGINEER DATE

HAB 5TH FLOOR COMMISSIONER'S CONFERENCE ROOM

REFERENCE DETAIL DRAWING A-11.2

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER 1-xxxx SHEET NUMBER A-5.0

DWG: M:\users\ENGINEERING DIVISION\ARCHITECTURAL\Woosung\ProjectWorld tots fenceICadArch\1-xxxx A-5.0.dwg USER: YoonW
DATE: Aug 05, 2024 4:19pm

POLAPRD1_10/2012_RJB

REQ6556 Attachment B