SAN FRANCISCO BAY AREA WATER EMERGENCY TRANSPORTATION AUTHORITY

San Francisco Bay Ferry
A SERVICE OF WETA

REQUEST FOR PROPOSALS

VALLEJO FERRY TERMINAL RECONFIGURATION PROJECT



VOLUME 3

TECHNICAL REFERENCE DOCUMENTS

RFP 25-053

SEPTEMBER 28, 2026

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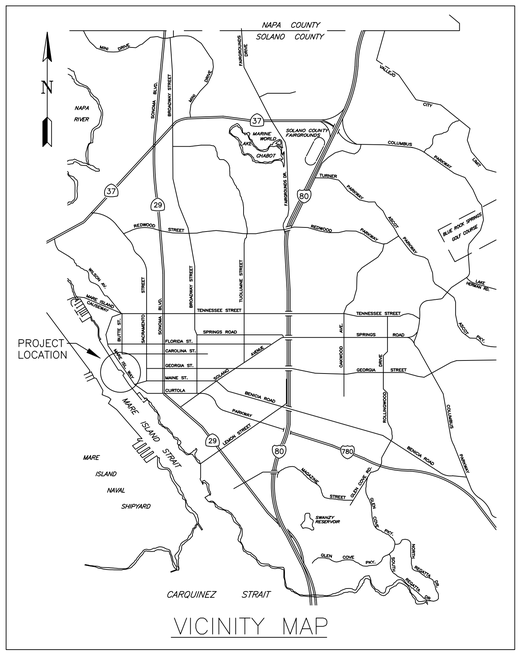
VOLUME 3 – Technical Reference Documents

1. **Vallejo Ferry Terminal Reference Plans, prepared by KPFF Consulting Engineers, dated 8/19/1997.**
2. **Preliminary Geotechnical Memorandum and Investigation Report, prepared by Miller Pacific Engineering Group, dated 4/24/2025 and 4/8/2025.**
3. **WETA Standard Float Reference Documents and Redlines**
    a. **Plans Entitled Water Emergency Transportation Authority Downtown SF Terminal Universal Charging Float Project – New Float (95% Submittal), prepared by Liftech Consultants Inc., dated 10/15/2024.**
4. **Gap Analysis Memorandum, prepared by Foth, dated 9/14/2026.**

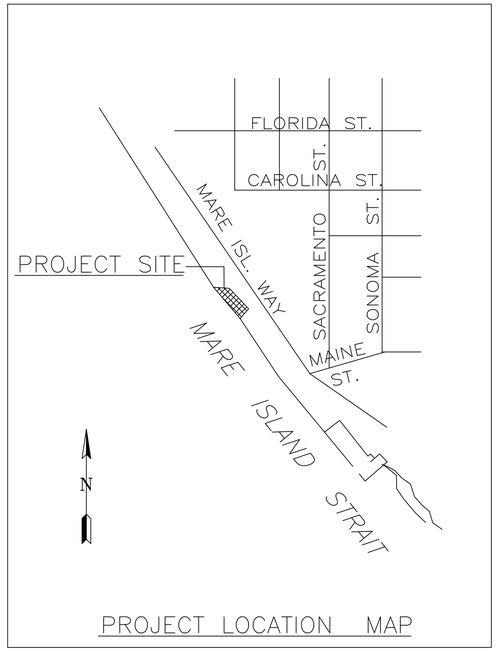
ALL DRAWINGS REQUIRE FIELD/SITE VERIFICATION - INFORMATIONAL USE ONLY

North Bay Ferry Demonstration Project

Vallejo Ferry Terminal Dock



VICINITY MAP



PROJECT LOCATION MAP

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C3 FLOAT STRUCTURE PLAN
C4 FLOAT STRUCTURE DETAILS
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E2 ELECTRICAL DETAILS
E3 ELECTRICAL DETAILS

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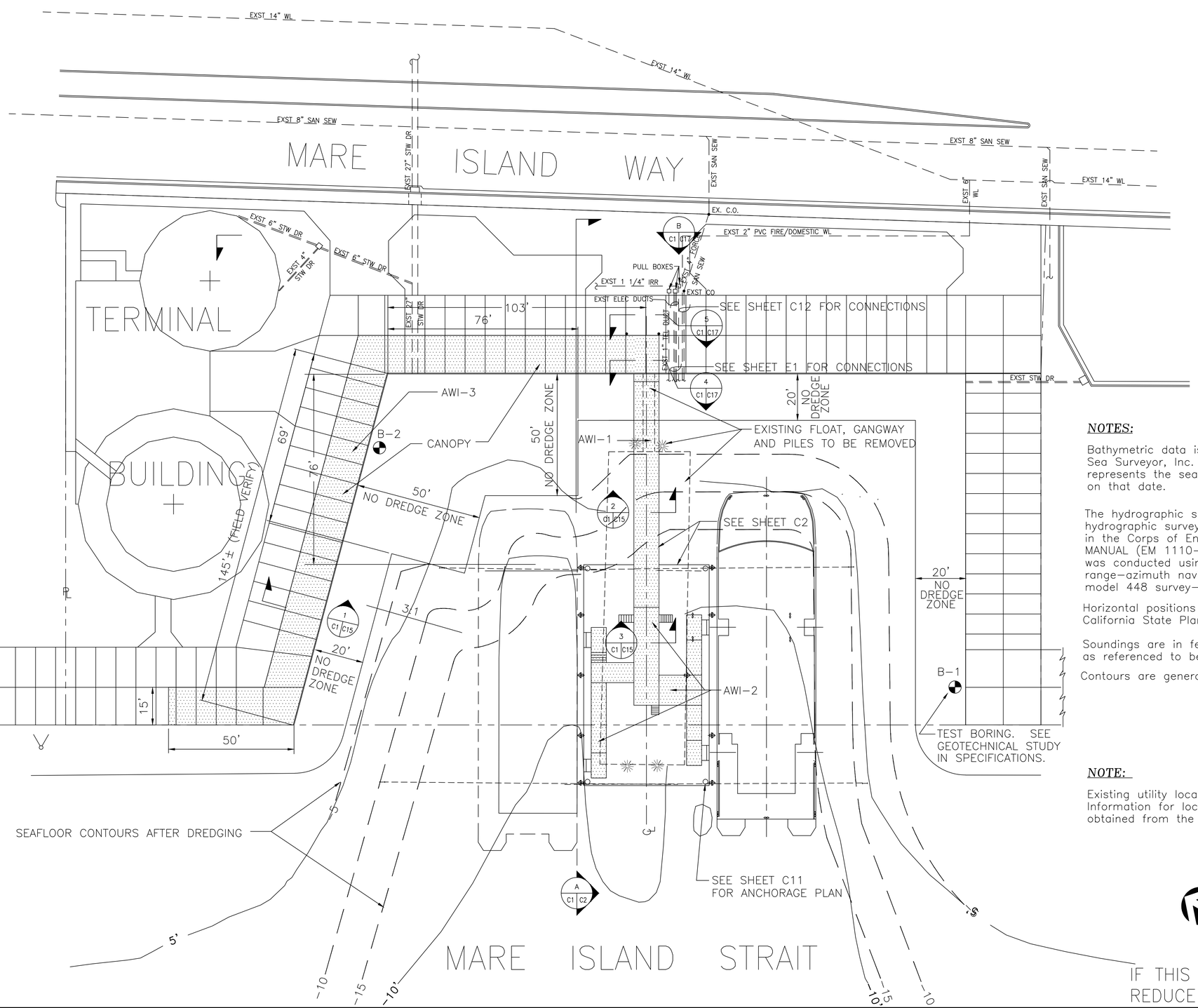
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

VICINITY MAP, LOCATION MAP, AND SHEET INDEX

DESIGNED	ELR
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	T1

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ABBREVIATIONS

EXST	EXISTING
ELEC	ELECTRICAL
STW	STORM WATER
DR	DRAIN
SAN SEW	SANITARY SEWER
IRR	IRRIGATION
WL	WATERLINE

TIDE ELEVATION

EXTREME HIGH WATER	+9.4
TIDE TABLE HIGH WATER	+7.0
MEAN HIGHER HIGH WATER	+6.2
MEAN SEA LEVEL	+2.0
MEAN LOWER LOW WATER	0.0
TIDE TABLE LOW WATER	−1.8
EXTREME LOW WATER	−2.7

GANGWAY ADA ACCESSIBLE BETWEEN +7.0 AND −1.8 TIDE ELEVATION.

NOTES:

Bathymetric data is from a survey conducted by Sea Surveyor, Inc. on 12 August 1996 and represents the seafloor conditions present on that date.

The hydrographic survey was conducted using Class 1 hydrographic survey methods and accuracies outlined in the Corps of Engineers' HYDROGRAPHIC SURVEYING MANUAL (EM 1110−2−1003, October 1994). The survey was conducted using a 26' survey boat, a laser range−azimuth navigation system, and an INNERSPACE model 448 survey−grade fathometer.

Horizontal positions are referenced to the (NAD 1927) California State Plane Coordinate System, Zone 3.

Soundings are in feet below Mean Lower Low Water (MLLW), as referenced to bench mark "Grotto" (El. 9.10' MLLW).

Contours are generated every 5 feet.

NOTE:

Existing utility locations on this drawing are approximate. Information for locations shown was gathered from drawings obtained from the City of Vallejo, Vallejo, California.

SITE PLAN

0 5' 10' 15' 20' 30' 40' 60'

SCALE: 1" = 20'

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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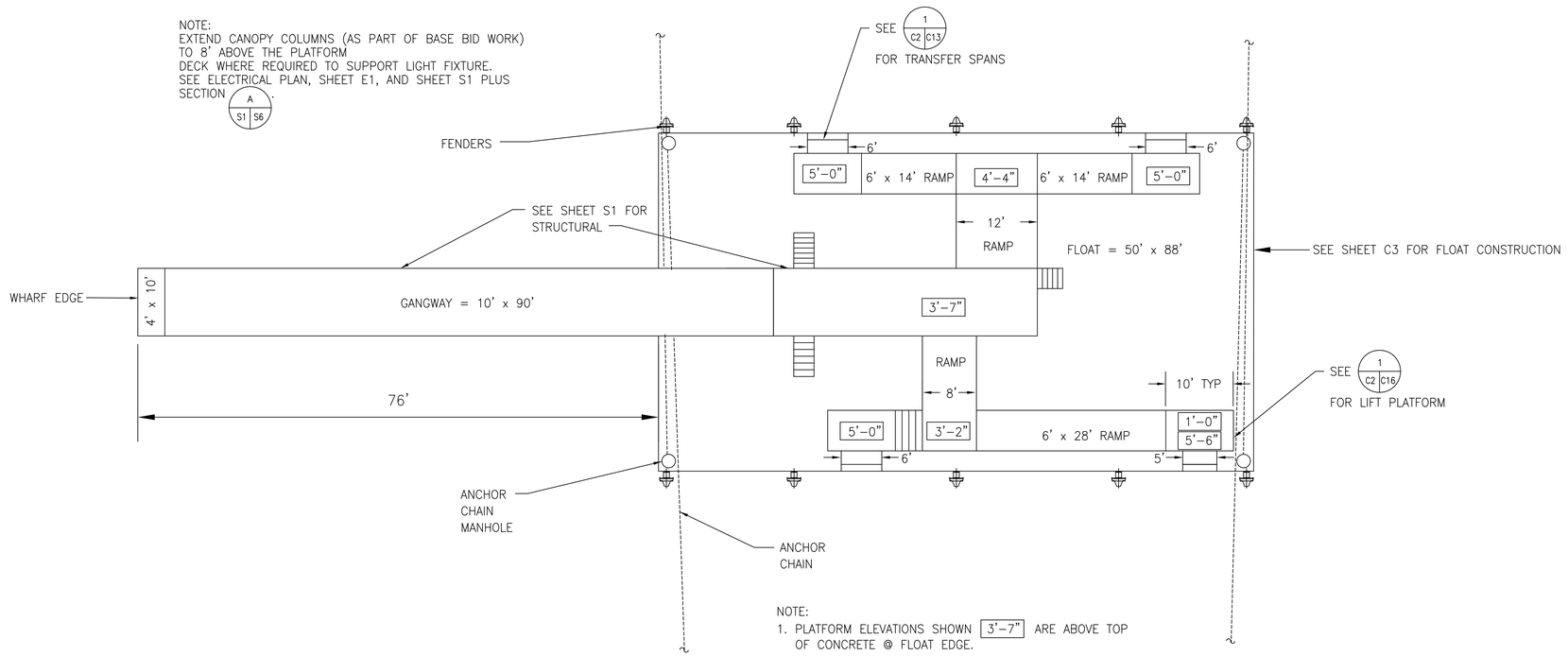
VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

SITE PLAN

DESIGNED	JRL
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8−19−97
JOB NO	FVL03
SHT NO	C1

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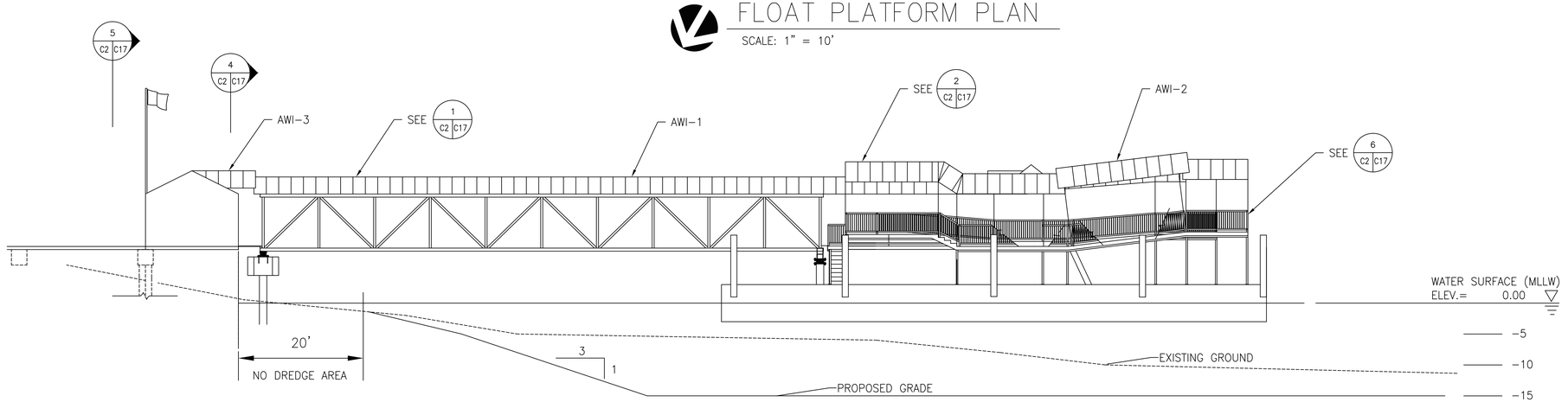
NOTE:
EXTEND CANOPY COLUMNS (AS PART OF BASE BID WORK) TO 8' ABOVE THE PLATFORM DECK WHERE REQUIRED TO SUPPORT LIGHT FIXTURE. SEE ELECTRICAL PLAN, SHEET E1, AND SHEET S1 PLUS SECTION A/S1|S6.



NOTE:
1. PLATFORM ELEVATIONS SHOWN [3'–7"] ARE ABOVE TOP OF CONCRETE @ FLOAT EDGE.
2. GANGWAY & PLATFORM DIMENSIONS SHOWN ARE NOMINAL CLEAR WIDTHS. SEE STRUCT DWGS FOR DETAILED INFORMATION.

FLOAT PLATFORM PLAN

SCALE: 1" = 10'



FLOAT PLATFORM ELEVATION

A/C1|C2

SCALE: 1" = 10'

0 5' 10' 15' 20' 30'
SCALE: 1" = 10'

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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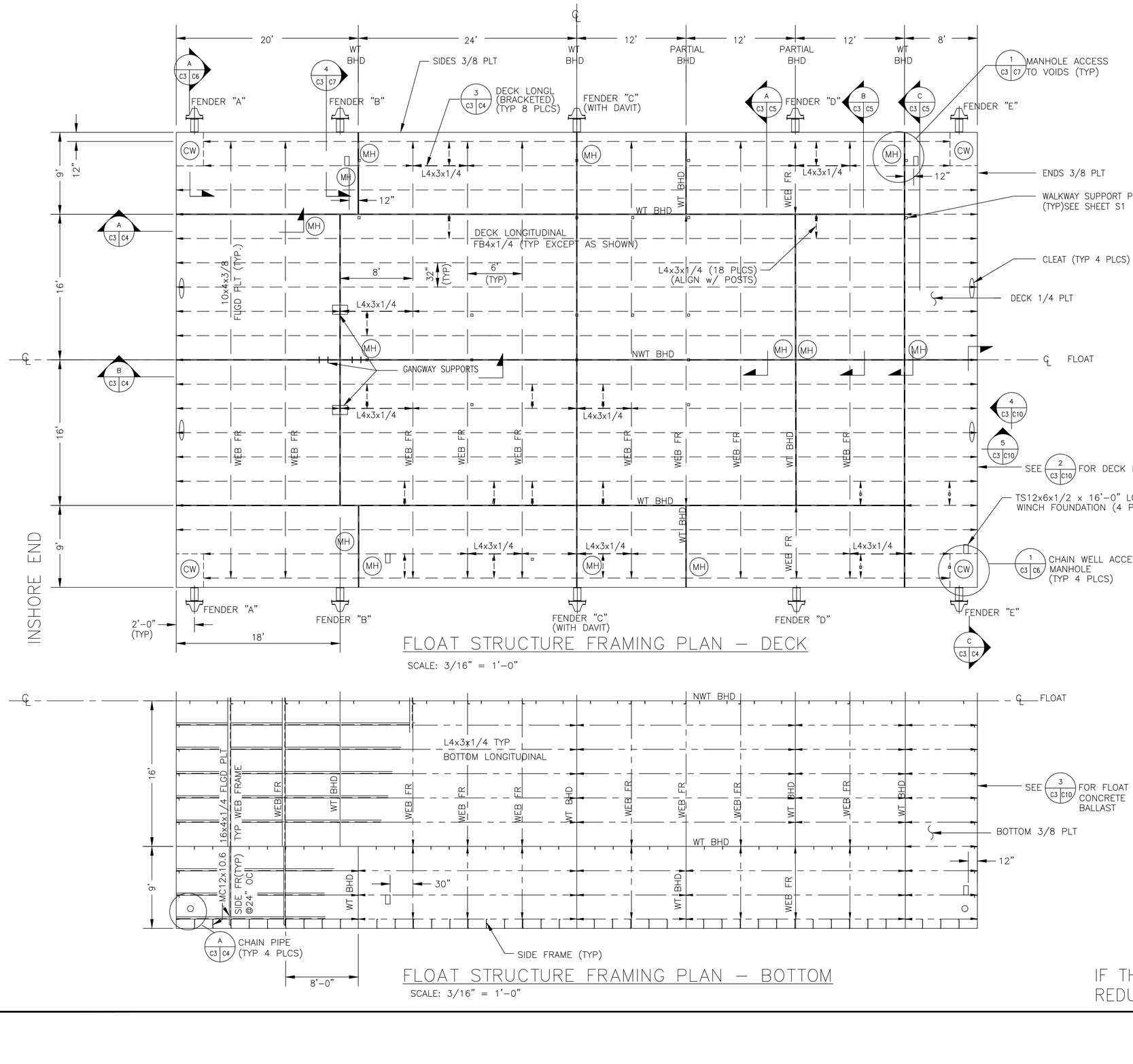
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FLOAT PLAN AND ELEVATION

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FLOAT STRUCTURE FRAMING PLAN – DECK

SCALE: 3/16" = 1'-0"

FLOAT STRUCTURE FRAMING PLAN – BOTTOM

SCALE: 3/16" = 1'-0"

PAD EYE LOCATIONS * & MOORING LINE LENGTH

FENDER	PADEYE LOCATION	LENGTH
FENDER "A"	OFFSHORE SIDE	22 FEET
FENDER "B"	OFFSHORE SIDE	26 FEET
FENDER "C"	INSHORE SIDE	16 FEET
FENDER "D"	NONE	
FENDER "E"	BOTH SIDES	22 FEET

* SEE 1/C9

NOTE

1. PROVIDE 22lb. ZINC ANODES MOUNTED 12" ABOVE THE BOTTOM OF THE FLOAT WITH (2) THREADED STUDS, NUTS AND WASHERS. PLACE (5) EQUALLY SPACED ON EACH SIDE AND (2) EQUALLY SPACED ON EACH END.
2. ALL SPLICED JOINTS IN PLATING SHALL BE PRE-QUALIFIED COMPLETE PENETRATION BUTT WELDS.
3. FAR SIDE WELD SIZES NOT NOTED SHALL MATCH NEAR SIDE WELD SIZES.

ABBREVIATIONS

WEB FRAME	WEB FR
PLATE	PLT
FLANGED	FLGD
BULKHEAD	BHD
WATERTIGHT	WT
NON-WATERTIGHT	NWT
CENTERLINE	℄
TYPICAL	TYP
JUNIOR CHANNEL	MC
LONGITUDINAL	LONGL
PLACES	PLCS
MANHOLE (TO VOID)	MH
MANHOLE TO CHAIN WELL	CW

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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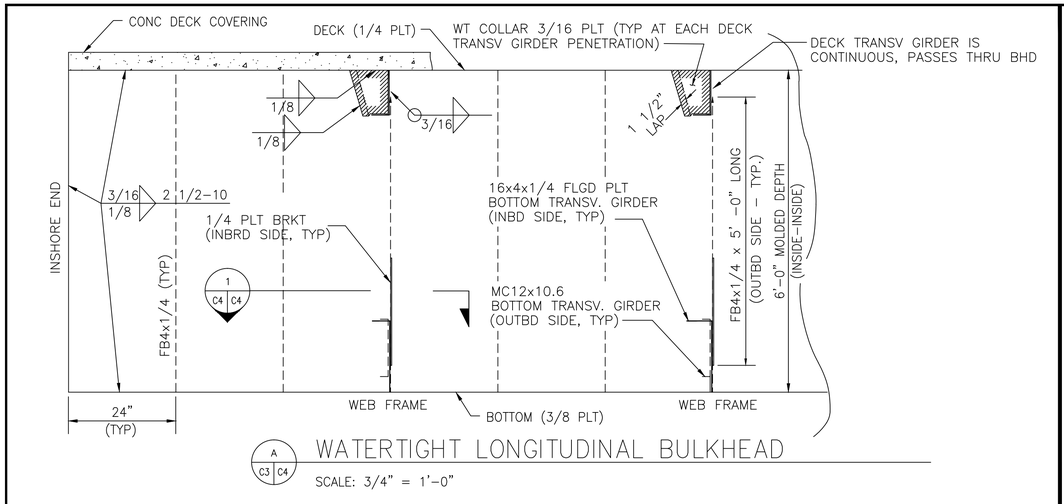
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FLOAT STRUCTURE PLAN

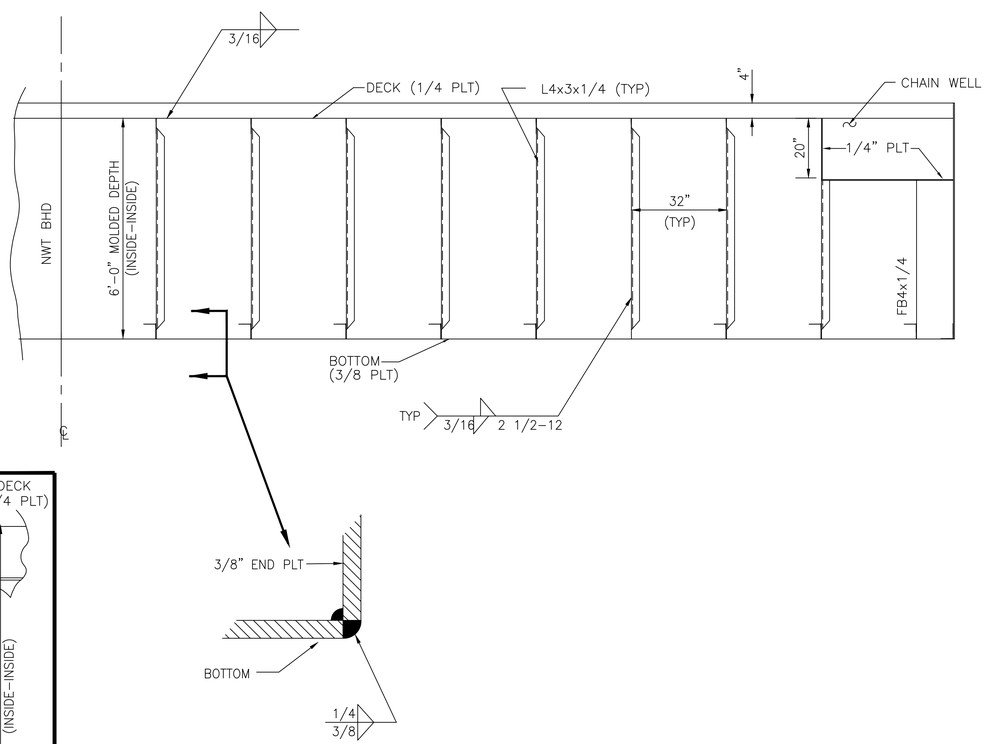
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A C3 C4 WATERTIGHT LONGITUDINAL BULKHEAD

SCALE: 3/4" = 1'-0"

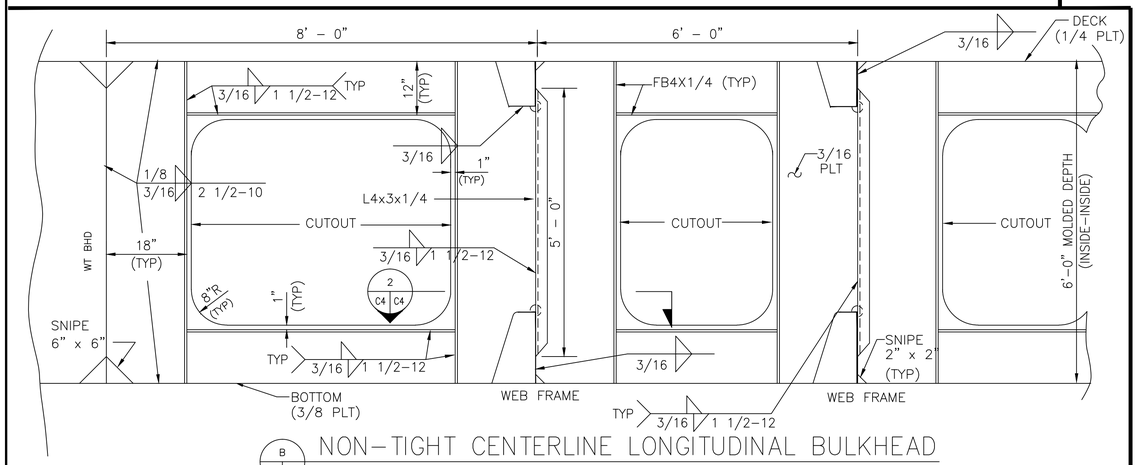


C C3 C4 END FRAMING (OFFSHORE END – VIEW FROM INSIDE)

SCALE: 1/2" = 1'-0" (FENDER NOT SHOWN)

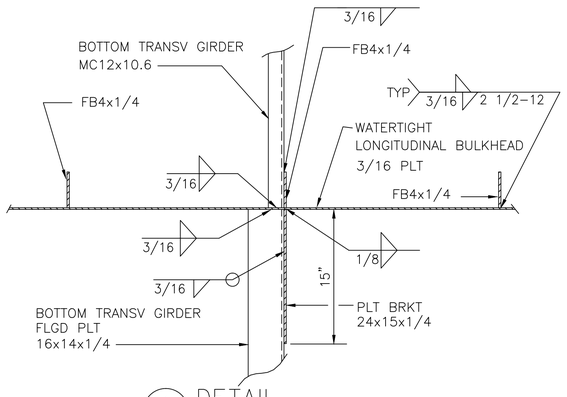
NOTE: INSHORE END SIM.

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.



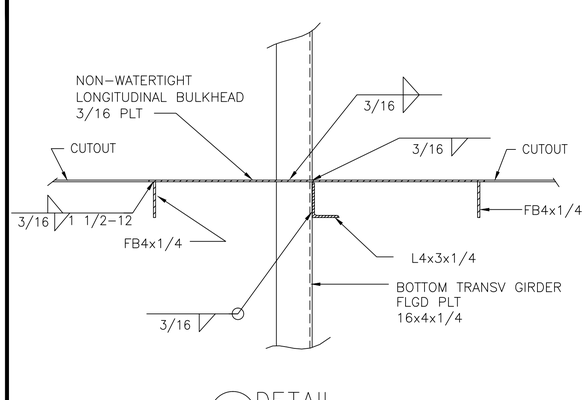
B C3 C4 NON–TIGHT CENTERLINE LONGITUDINAL BULKHEAD

SCALE: 3/4" = 1'–0"



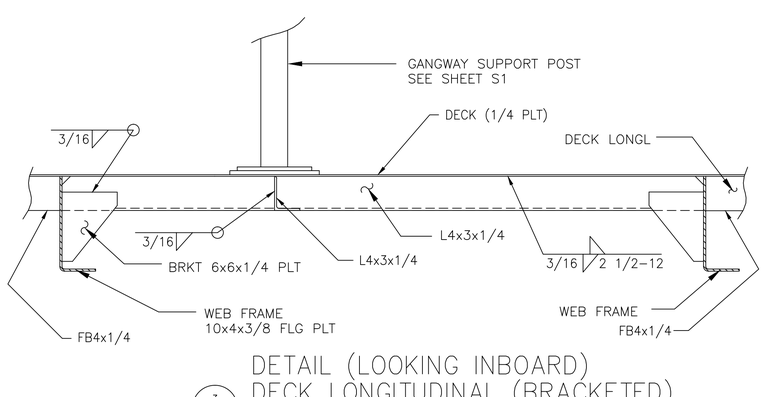
1 C4 C4 DETAIL

SCALE: 1 1/2" = 1' – 0"



2 C4 C4 DETAIL

SCALE: 1 1/2" = 1' – 0"



3 C3 C4 DETAIL (LOOKING INBOARD) DECK LONGITUDINAL (BRACKETED)

SCALE: 1 1/2" = 1'–0"

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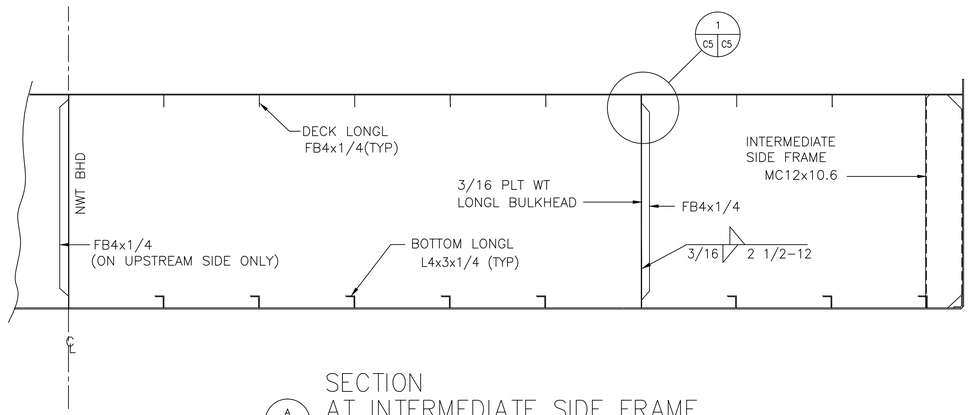
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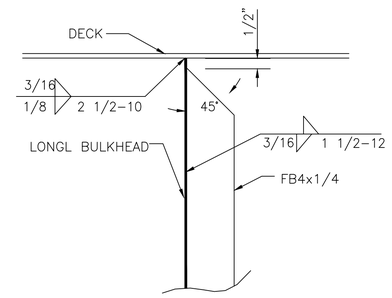
FLOAT STRUCTURE DETAILS

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DATE	8-19-97
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SHT NO	C4

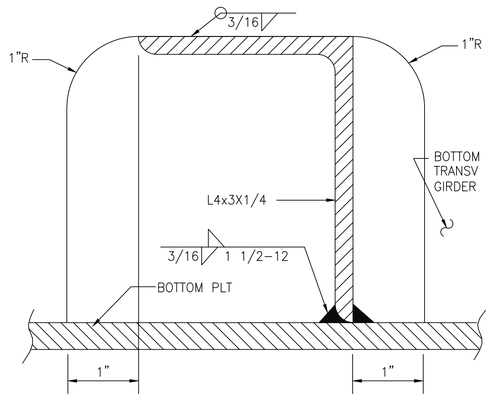
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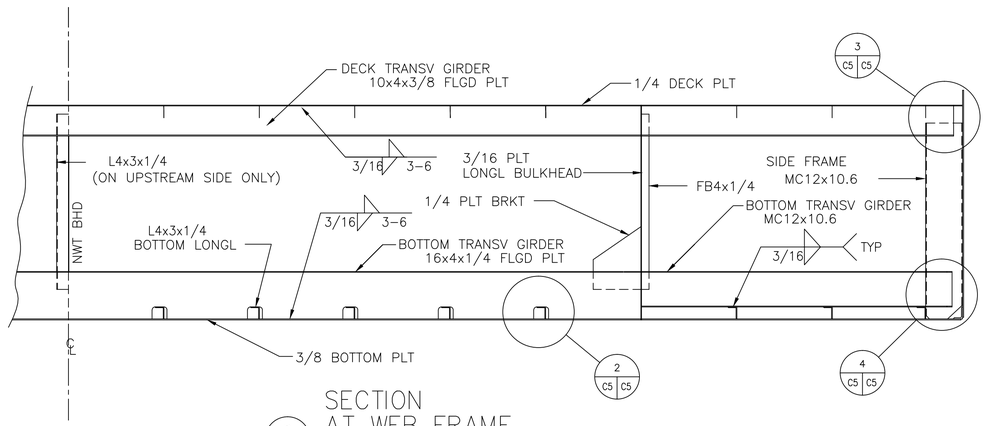
A
C3 C5
SECTION
AT INTERMEDIATE SIDE FRAME
SCALE: 1/2" = 1'-0"



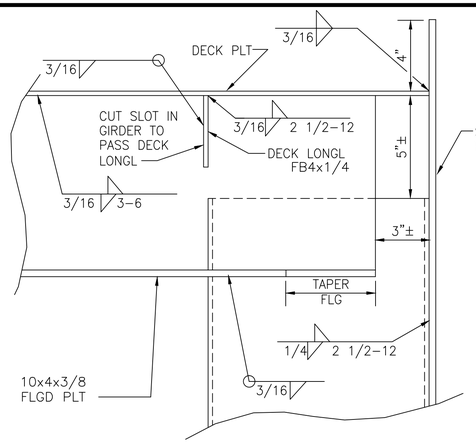
1
C5 C5
DETAIL
STIFFENER ON LONGITUDINAL
BHD – TOP END (TYPICAL)
SCALE: 3" = 1'-0"



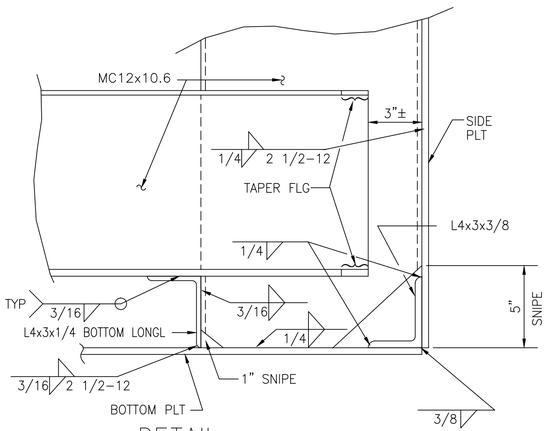
2
C5 C5
DETAIL – NOTCH
FOR BOTTOM LONGITUDINAL
SCALE: 12" = 1'-0"



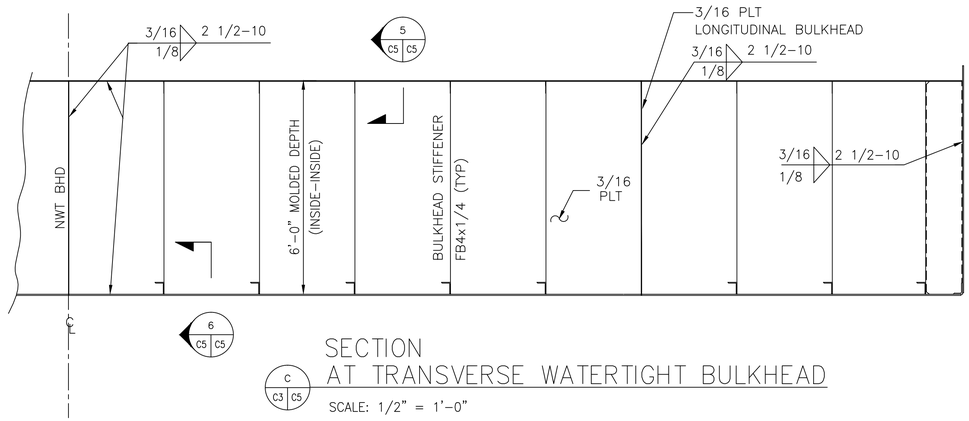
B
C3 C5
SECTION
AT WEB FRAME
SCALE: 1/2" = 1'-0"



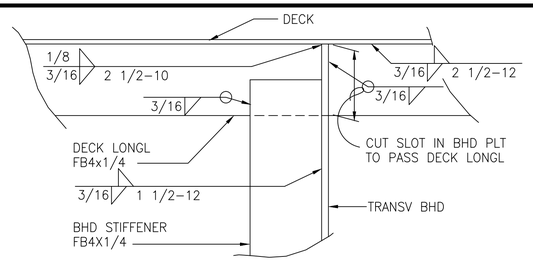
3
C5 C5
DETAIL
WEB FRAME – UPPER CORNER
SCALE: 3" = 1'-0"



4
C5 C5
DETAIL
WEB FRAME –LOWER CORNER
SCALE: 3" = 1'-0"

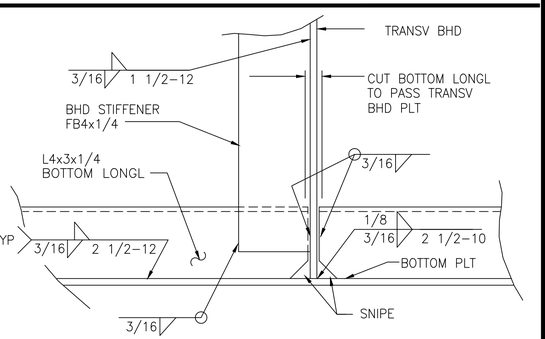


C
C3 C5
SECTION
AT TRANSVERSE WATERTIGHT BULKHEAD
SCALE: 1/2" = 1'-0"



5
C5 C5
DETAIL
STIFFENER ON TRANSV
BHD – TOP END CONN
SCALE: 3" = 1'-0"

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.



6
C5 C5
DETAIL
STIFFENER ON TRANSVERSE
BHD – BOTTOM END CONNECTION
SCALE: 3" = 1'-0"

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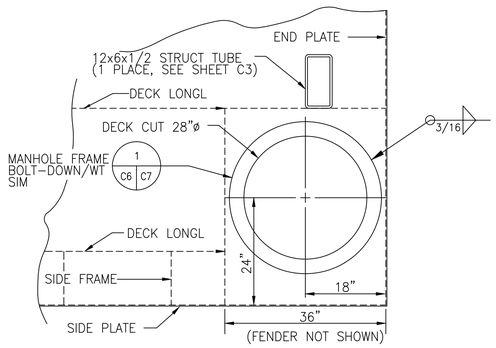
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FLOAT STRUCTURE DETAILS

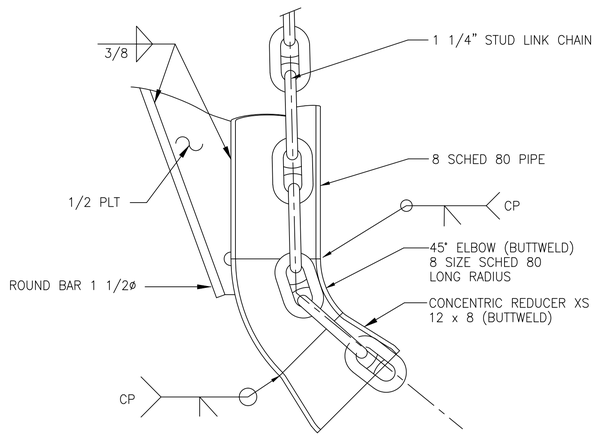
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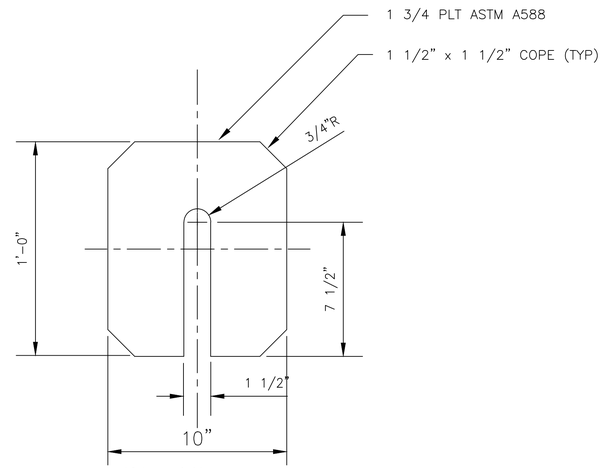
1 / C3 C6 DETAIL
CHAIN WELL ACCESS MANHOLE

SCALE: 3/4" = 1'-0"



2 / C6 C6 DETAIL
CHAIN PIPE

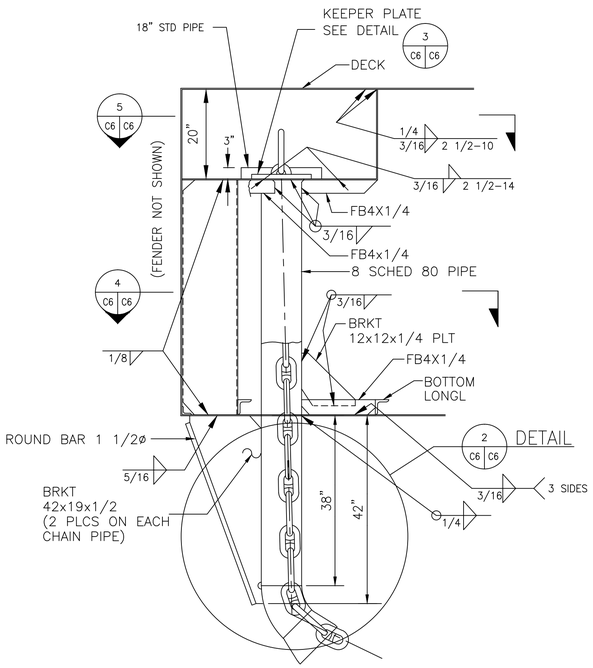
SCALE: 1 1/2" = 1'-0"



3 / C6 C6 DETAIL
KEEPER PLATE

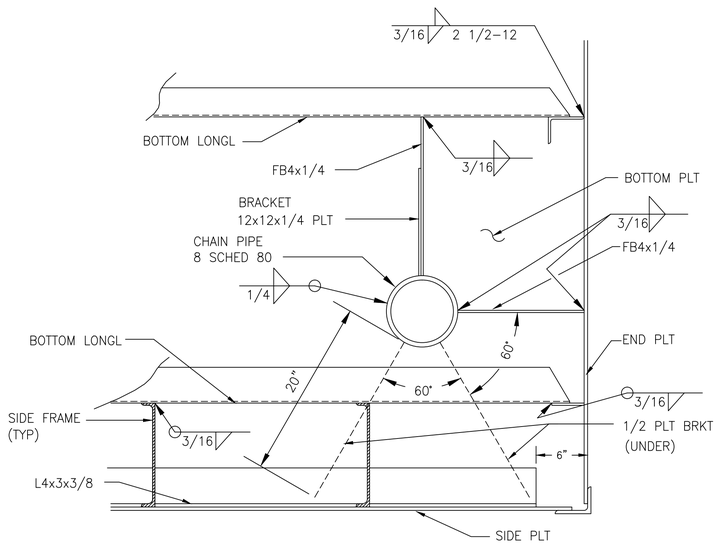
SCALE: 3" = 1'-0"

NOTE
PROVIDE 2 KEEPER PLATES
FOR EACH CHAIN WELL



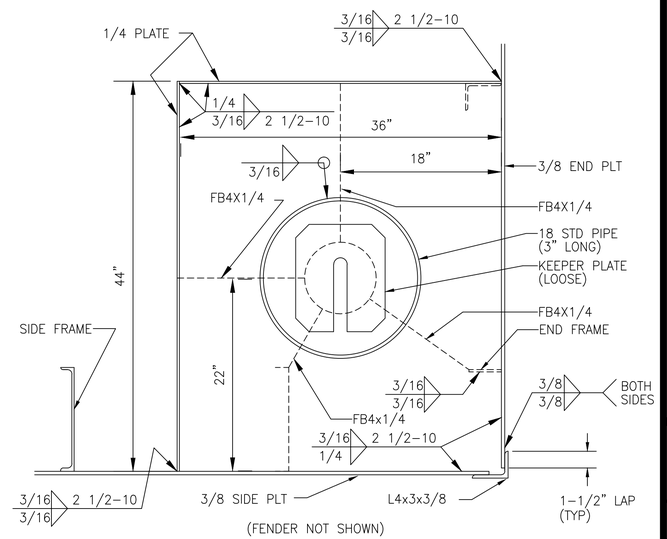
A / C3 C6 SECTION
CHAIN PIPE AND CHAIN WELL

SCALE: 3/4" = 1'-0"



4 / C6 C6 DETAIL – FRAMING IN
VICINITY OF CHAIN PIPE

SCALE: 1 1/2" = 1'-0"



5 / C6 C6 DETAIL
CHAIN WELL

SCALE: 1 1/2" = 1'-0"

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.

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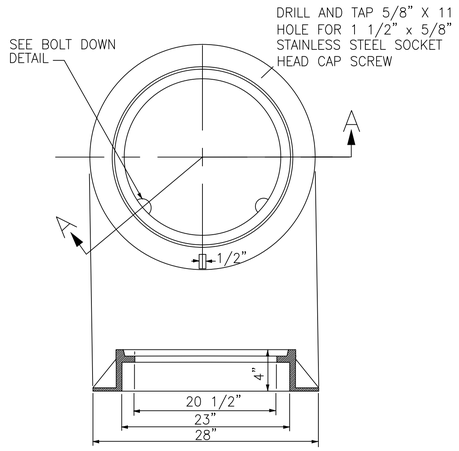
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

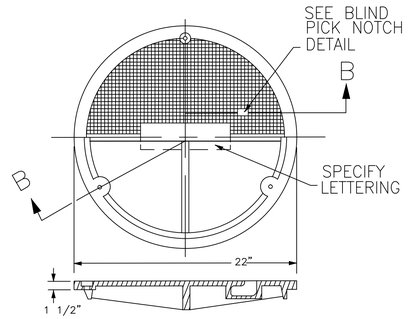
FLOAT STRUCTURE DETAILS

DESIGNED	JRL
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C6

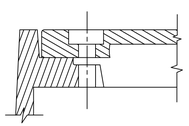
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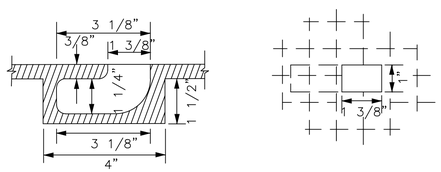
SECTION A–A



SECTION B–B



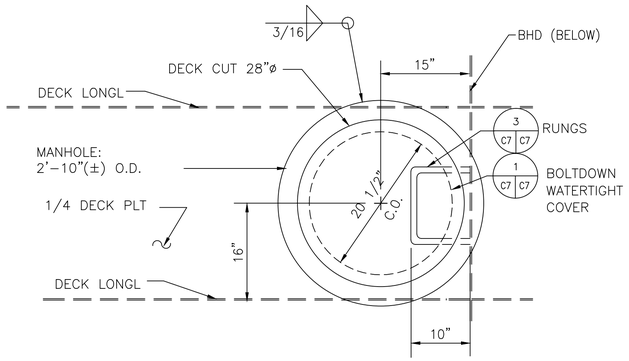
BOLT–DOWN DETAIL



BLIND PICK NOTCH DETAIL

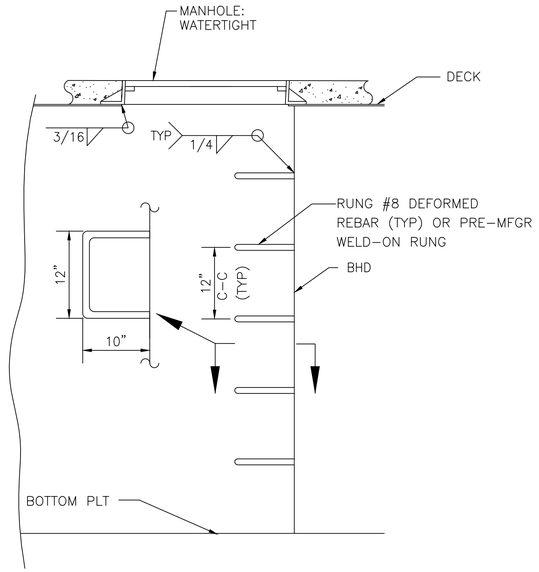
1 C7 C7 DETAIL
BOLT–DOWN/WATERTIGHT MANHOLE COVER

SCALE: NONE



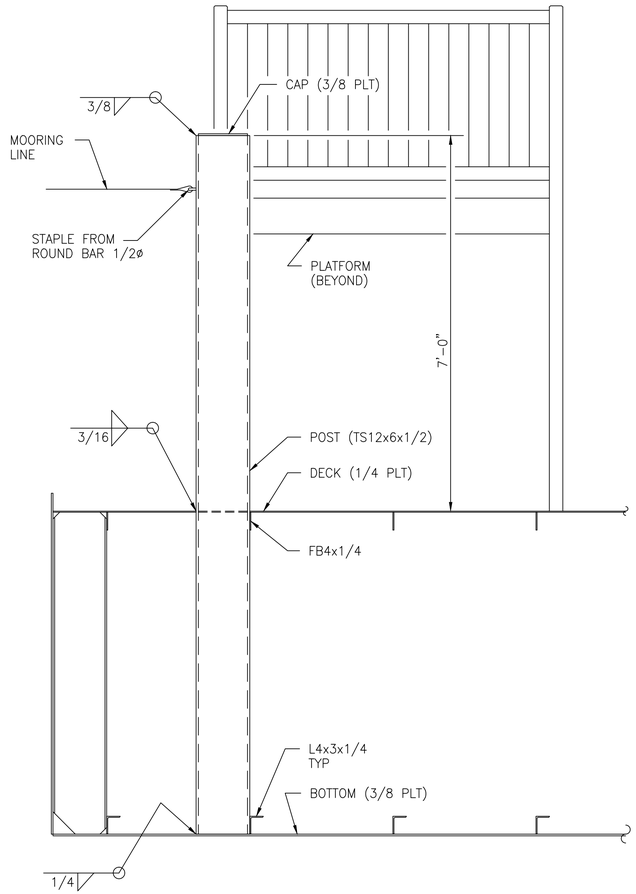
2 C3 C7 DETAIL
MANHOLE ACCESS TO VOIDS

SCALE: NONE



3 C7 C7 DETAIL
RUNGS

SCALE: 1" = 1'–0"



4 C3 C7 DETAIL
WINCH MOUNTING POST

SCALE: 3/4" = 1'–0"

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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65 MARION STREET, SEATTLE, WA 98104 (206) 622-6221

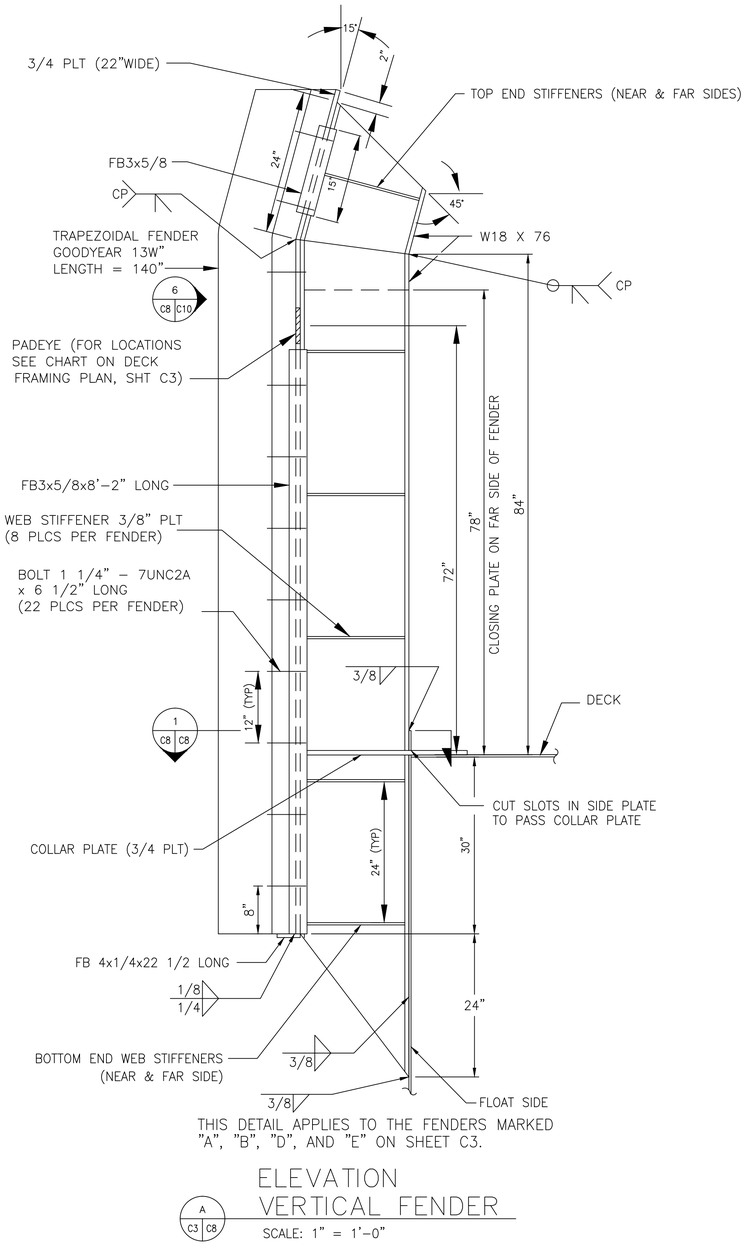
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

FLOAT STRUCTURE DETAILS

DESIGNED	AW
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8–19–97
JOB NO	FVL03
SHT NO	C7

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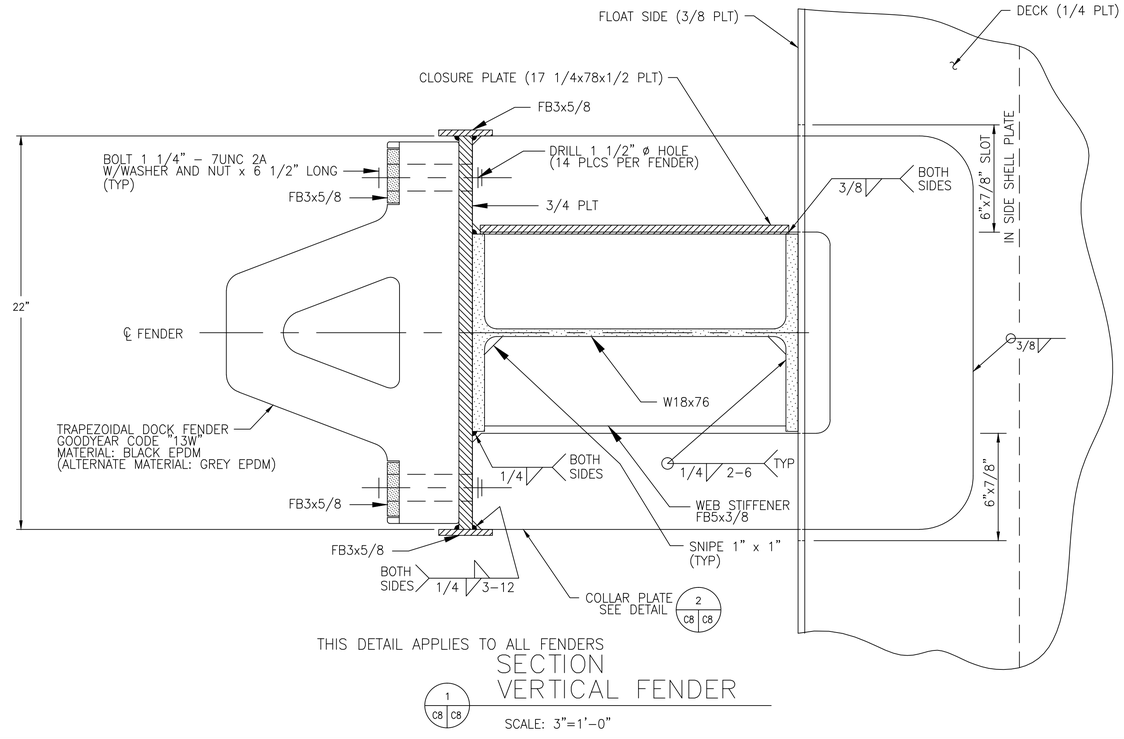


THIS DETAIL APPLIES TO THE FENDERS MARKED "A", "B", "D", AND "E" ON SHEET C3.

ELEVATION
VERTICAL FENDER

A
C3 C8

SCALE: 1" = 1'-0"

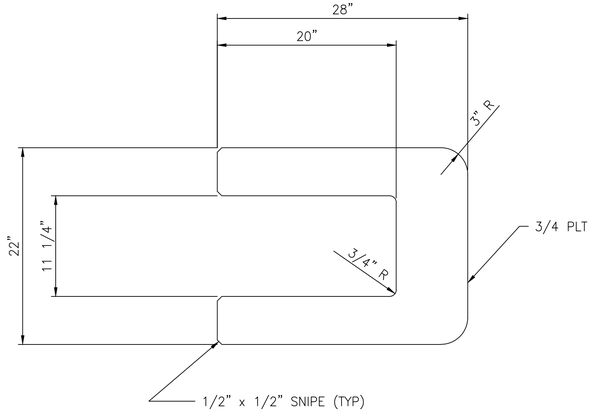


THIS DETAIL APPLIES TO ALL FENDERS

SECTION
VERTICAL FENDER

1
C8 C8

SCALE: 3"=1'-0"



DETAIL
COLLAR PLATE

2
C8 C8

SCALE: 1 1/2"=1'-0"

TYPICAL 10 PLACES

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.

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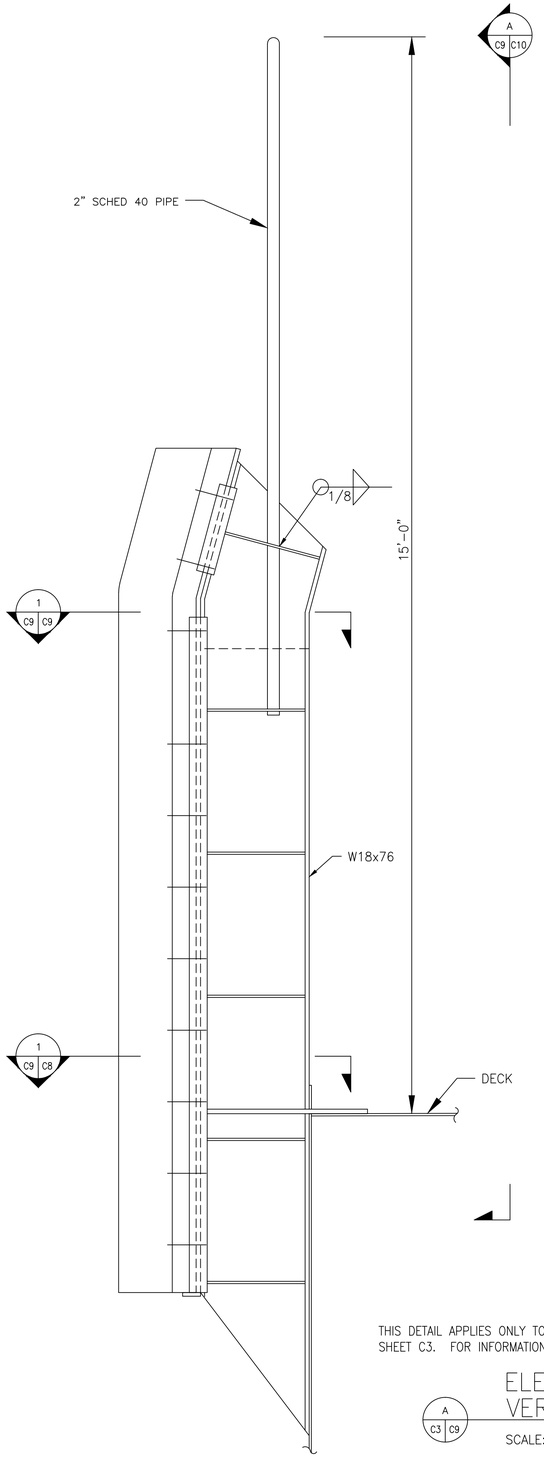
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VALLEJO FERRY TERMINAL DOCK
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FENDER DETAILS

DESIGNED	AW
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C8

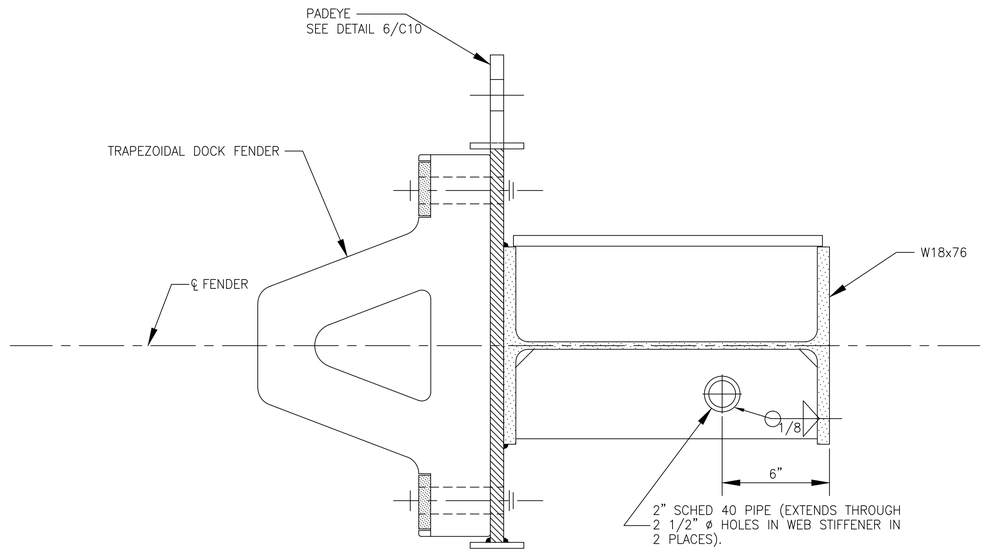
ALL DRAWINGS REQUIRE FIELD/SITE VERIFICATION - INFORMATIONAL USE ONLY



THIS DETAIL APPLIES ONLY TO FENDERS MARKED "C" ON SHEET C3. FOR INFORMATION NOT SHOWN SEE ELEVATION A/C8

A C3 C9 ELEVATION VERTICAL FENDER

SCALE: 1" = 1'-0"



1 C9 C9 DETAIL VERTICAL FENDER

SCALE: 3"=1'-0"

THIS DETAIL APPLIES ONLY TO FENDERS MARKED "C" ON SHEET C3. FOR INFORMATION NOT SHOWN SEE SECTION 1/C8

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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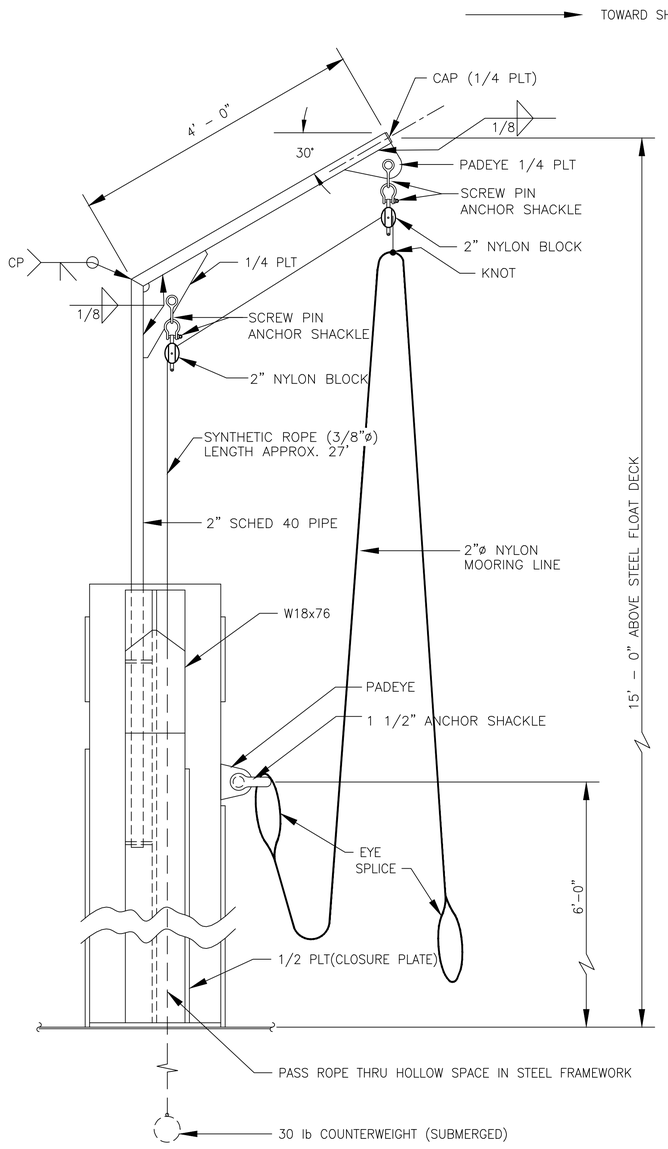
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

FENDER DETAILS

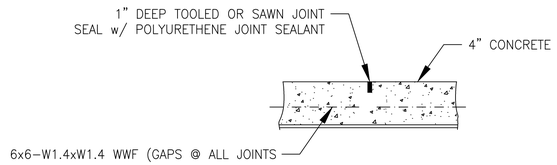
DESIGNED	AW
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C9

ALL DRAWINGS REQUIRE FIELD/SITE VERIFICATION - INFORMATIONAL USE ONLY

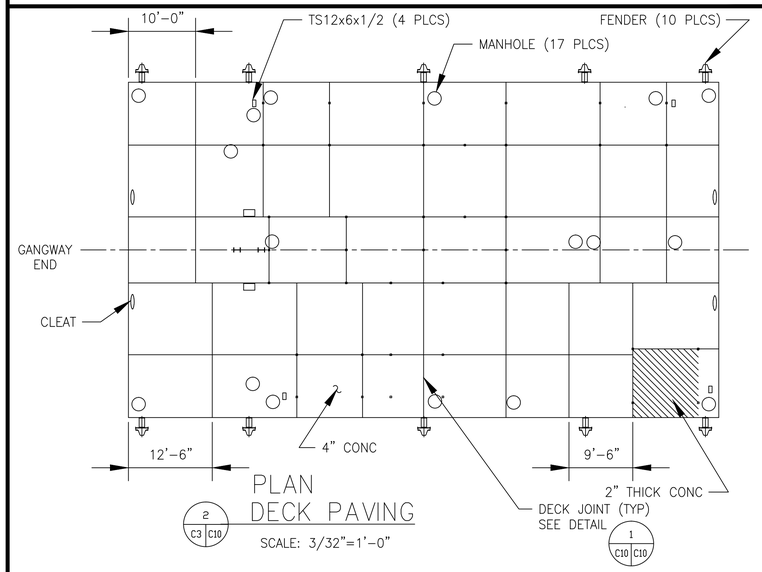


NOTE: FENDER "C" ON THE UPSTREAM SIDE IS SHOWN, (FENDER "C" ON THE DOWNSTREAM SIDE IS SIMILAR TO OPPOSITE HAND.)

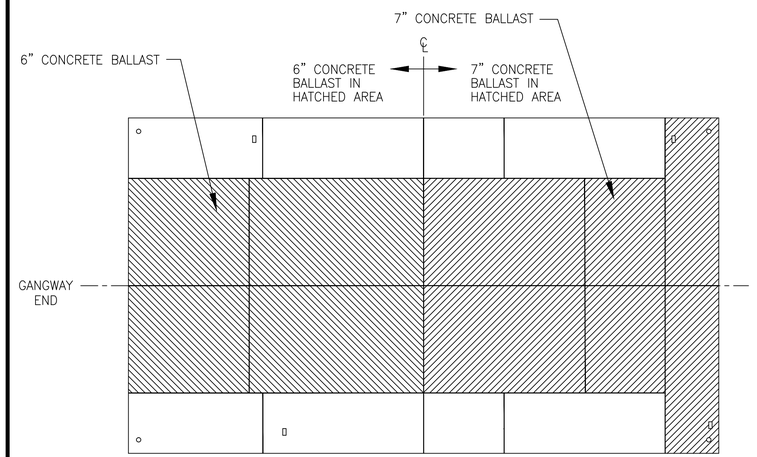
SECTION
DAVIT FOR MOORING LINE
A / C9 C10
SCALE: 1" = 1' - 0"



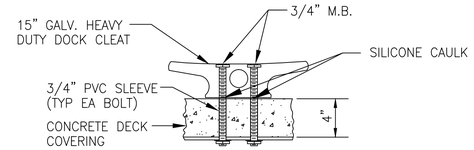
DETAIL
DECK PAVING JOINT
1 / C10 C10
SCALE: 1 1/2" = 1' - 0"



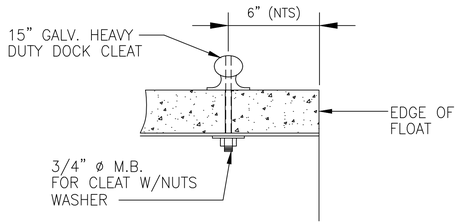
PLAN
DECK PAVING
2 / C3 C10
SCALE: 3/32"=1'-0"



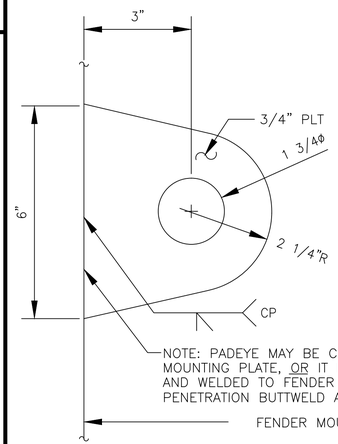
PLAN
BALLAST
3 / C3 C10
SCALE: 3/32"=1'-0"



DETAIL
SHIP DOCK CLEAT
4 / C3 C10
SCALE: 1 1/2" = 1' - 0"



DETAIL
SHIP DOCK CLEAT
5 / C3 C10
SCALE: 1 1/2" = 1'-0"



DETAIL
PADEYE FOR ALL FENDERS
6 / C8 C10
SCALE: 6"=1'-0"

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.

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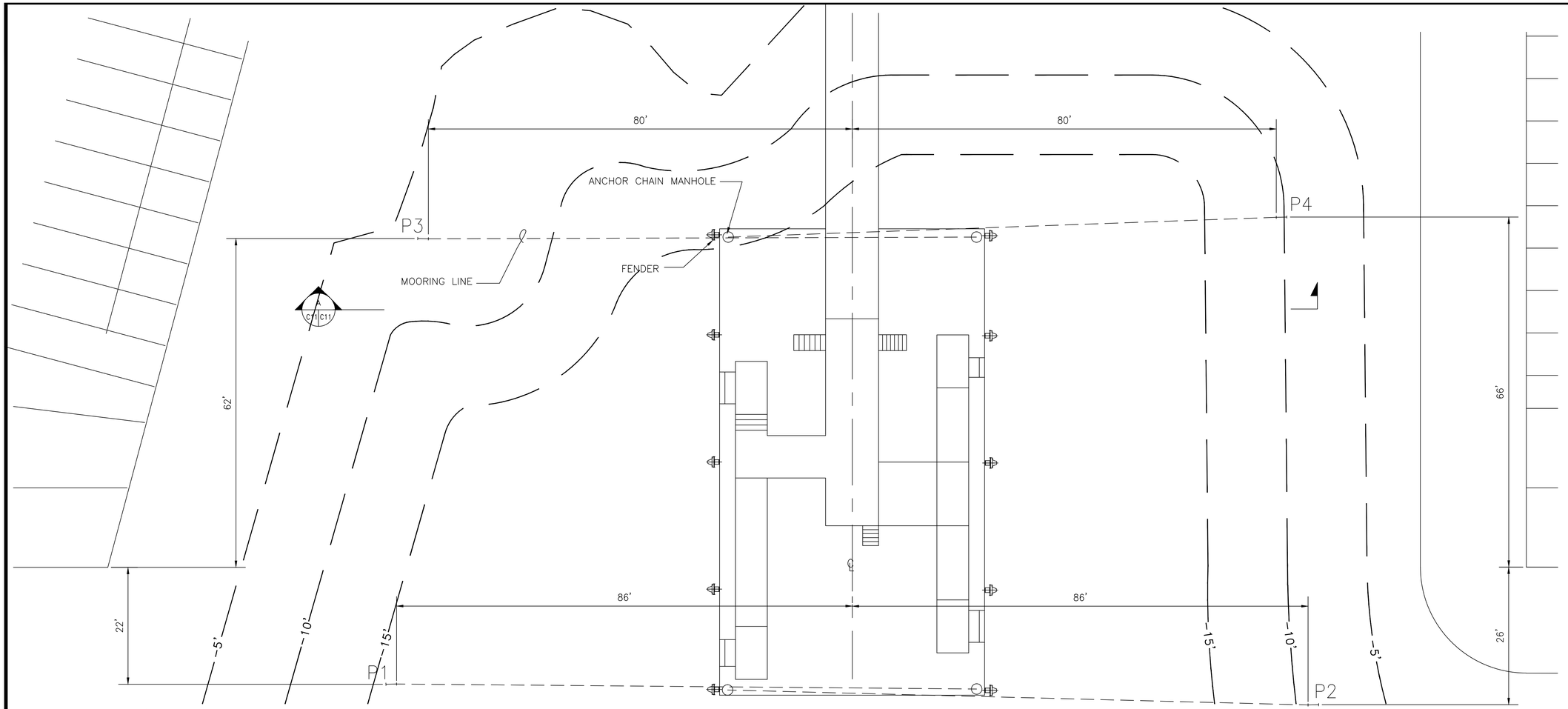
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

FENDER AND CLEAT DETAILS

DESIGNED	AW
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C10

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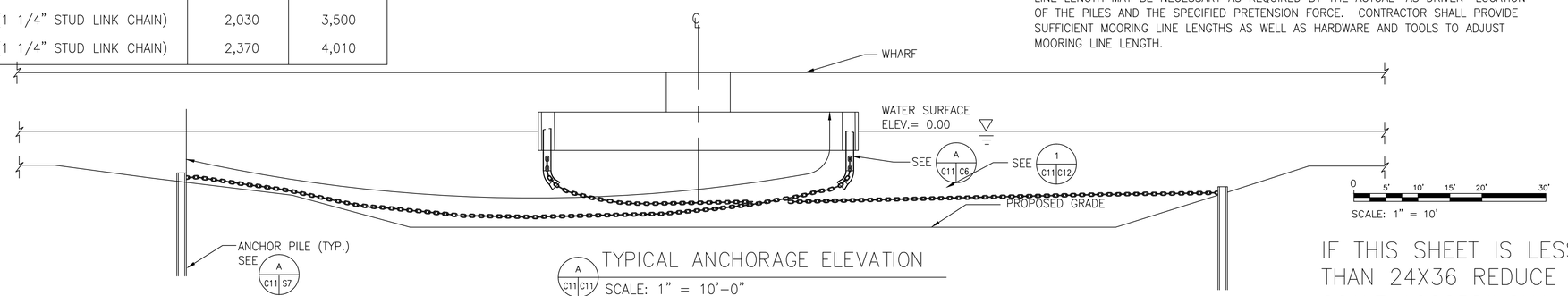
MOORING LINE SCHEDULE			
MOORING LINE NO.	LENGTH OF SEGMENTS (FT.)	PRETENSION (LBS.) * (−2.70 FT.)	PRETENSION (LBS.) * (+7.00 FT.)
1	126' (1 1/4" STUD LINK CHAIN)	2,370	4,010
2	126' (1 1/4" STUD LINK CHAIN)	2,370	4,010
3	120 (1 1/4" STUD LINK CHAIN)	2,030	3,500
4	120 (1 1/4" STUD LINK CHAIN)	2,370	4,010

* TIDE LEVEL

PLAN

SCALE: 1" = 10'−0"

1. THE NOMINAL MOORING LINE LENGTHS SHOWN INCLUDE LENGTH OF HARDWARE SUCH AS SHACKLES AND LINKS.
2. NOMINAL MOORING LINE LENGTHS HAVE BEEN DETERMINED USING THE BOTTOM ELEVATION AND HORIZONTAL PILE LOCATIONS. THE NOMINAL MOORING LINE LENGTH INCLUDES AN ADDITIONAL 10 FT. FOR MINOR ADJUSTMENTS. FIELD ADJUSTMENTS TO THE MOORING LINE LENGTH MAY BE NECESSARY AS REQUIRED BY THE ACTUAL "AS DRIVEN" LOCATION OF THE PILES AND THE SPECIFIED PRETENSION FORCE. CONTRACTOR SHALL PROVIDE SUFFICIENT MOORING LINE LENGTHS AS WELL AS HARDWARE AND TOOLS TO ADJUST MOORING LINE LENGTH.



TYPICAL ANCHORAGE ELEVATION

A C11 C11 SCALE: 1" = 10'−0"

IF THIS SHEET IS LESS THAN 24X36 REDUCE SCALE ACCORDINGLY.

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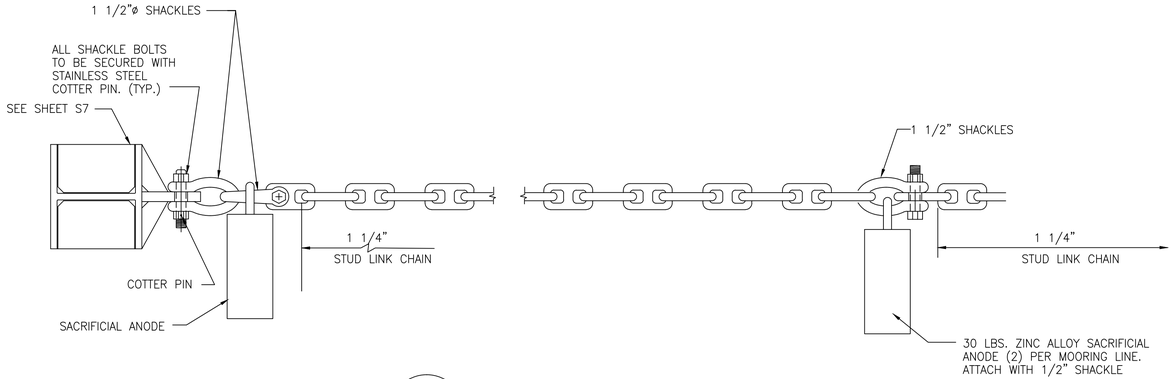
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

ANCHORAGE PLAN AND ELEVATION

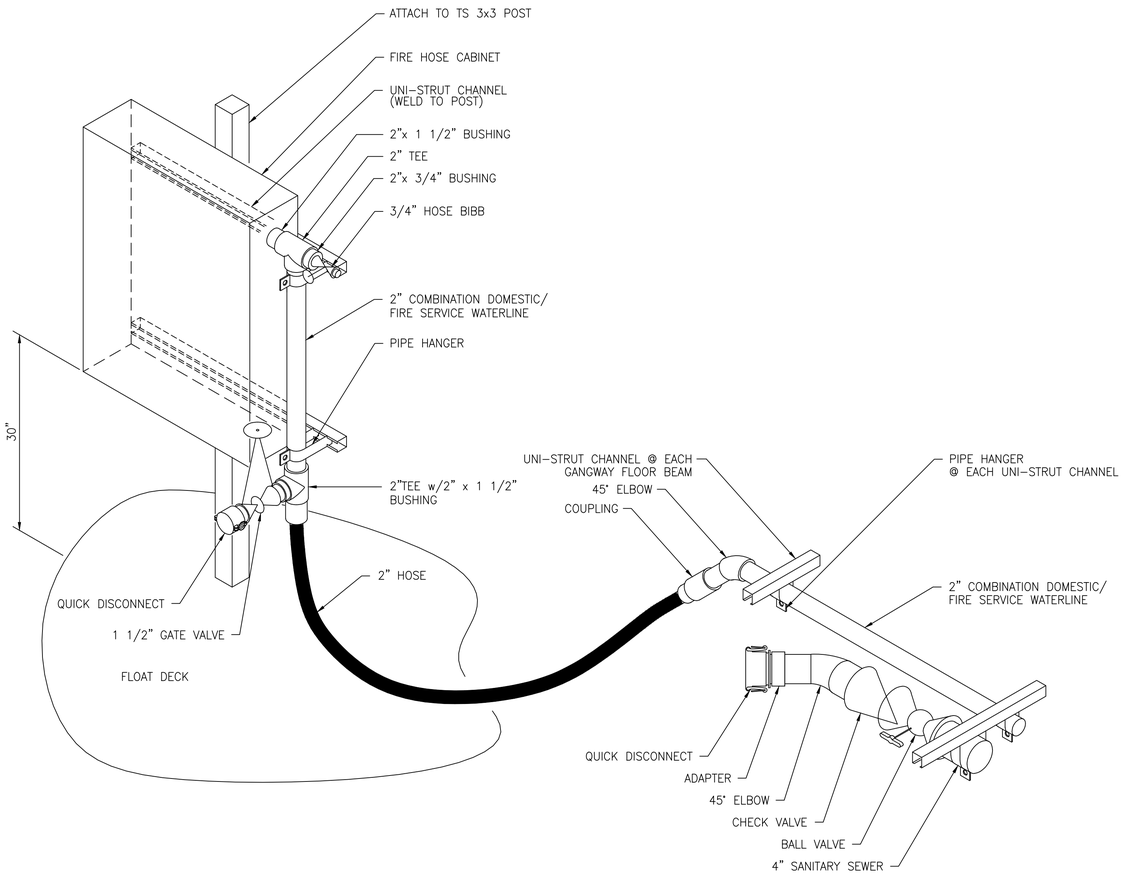
DESIGNED	JRL
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C11

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1 / C11 C12 — MOORING LINE CONNECTION

SCALE: 1" = 1'-0"

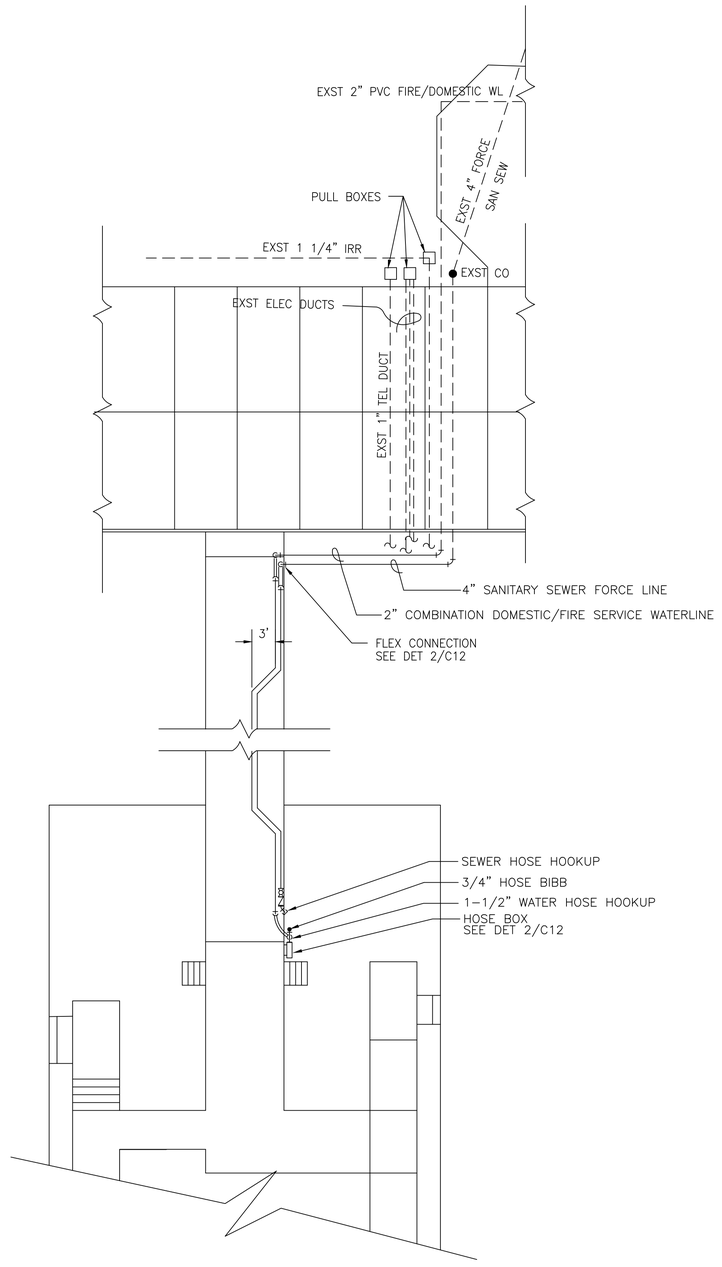


2 / C12 C12 — PIPE UTILITY CONNECTIONS

SCALE: NONE

NOTES:

1. PROVIDE 60 FEET OF 3" DIAMETER HOSE FOR SEWER SHORE CONNECTION AND ONE 3" END CAP. CONNECT TO SEWER HOOKUP.
2. PROVIDE 60 FEET OF 1-1/2" DIAMETER HOSE FOR WATER SHORE CONNECTION AND ONE 1-1/2" END CAP. CONNECT TO WATER HOOKUP.



UTILITIES PLAN

SCALE: 1" = 10'

0 5' 10' 15' 20' 30'

SCALE: 1" = 10'

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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65 MARION STREET SEATTLE, WA 98104 (206) 622-6221

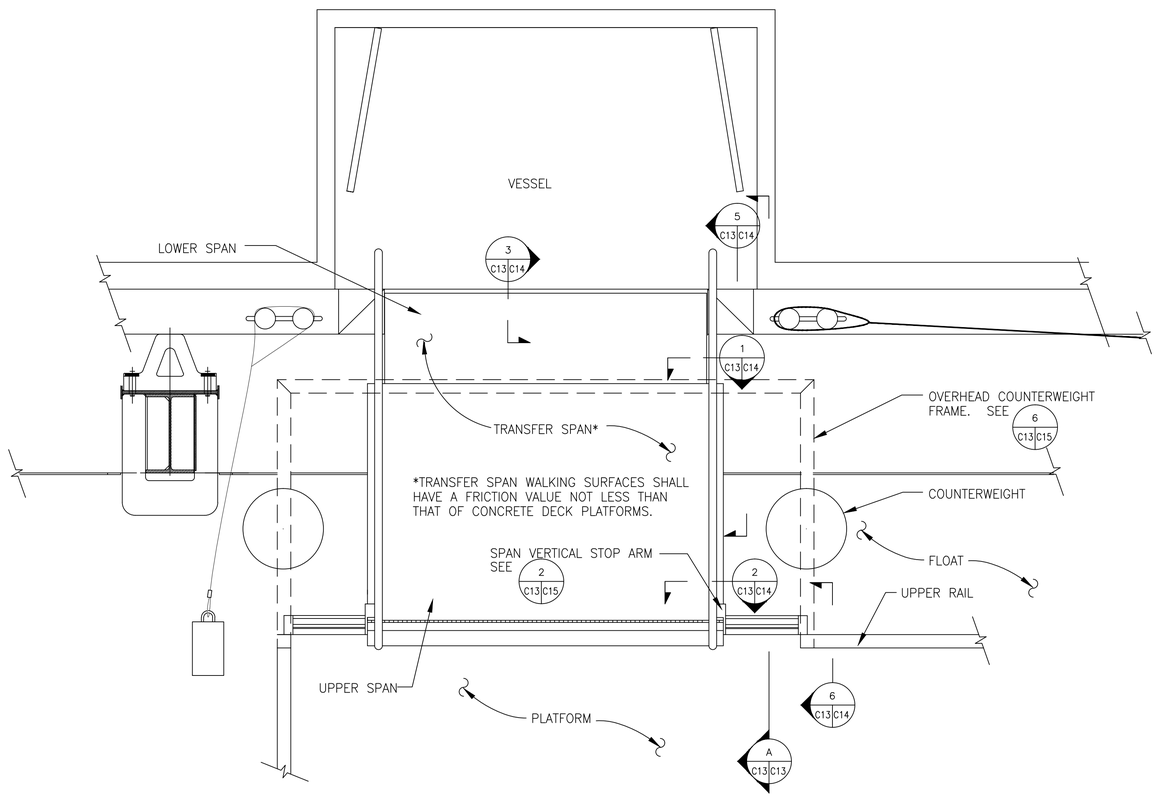
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VALLEJO FERRY TERMINAL DOCK
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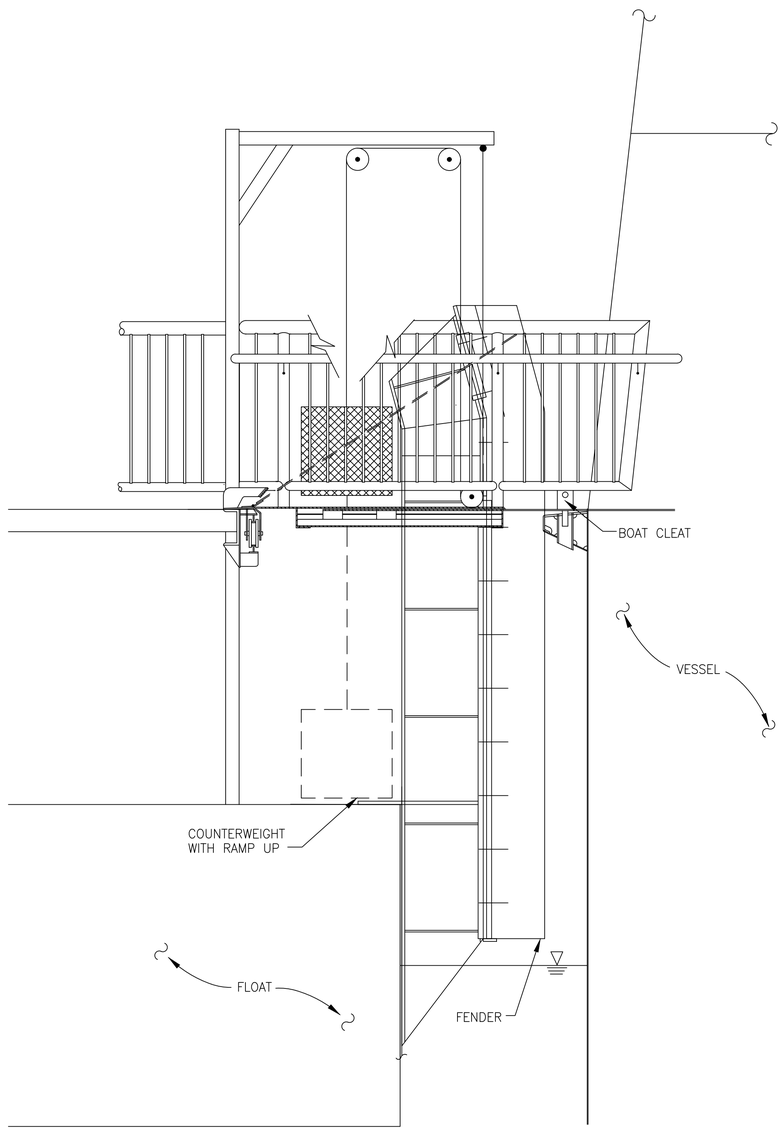
UTILITY PLAN AND ANCHORAGE DETAILS

DESIGNED	JRL
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C12

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1 C13 C13 TRANSFER SPAN PLAN
SCALE: 3/4" = 1'-0"



A C13 C13 TRANSFER SPAN ELEVATION
SCALE: 3/4" = 1'-0"

NOTE:
TRANSFER SPAN SCHEME MAY BE MODIFIED BY THE CONTRACTOR PROVIDED ALL SPECIFIED PERFORMANCE REQUIREMENTS ARE MET. DRAWING IS TO ILLUSTRATE PERFORMANCE REQUIREMENTS ONLY FOR THIS DESIGN-BUILD ITEM.

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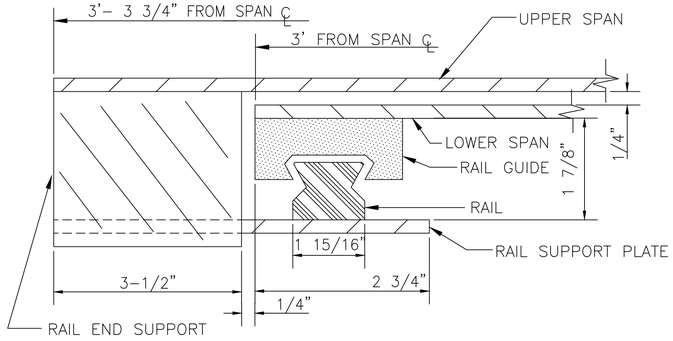
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

TRANSFER SPAN

DESIGNED	AKB
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C13

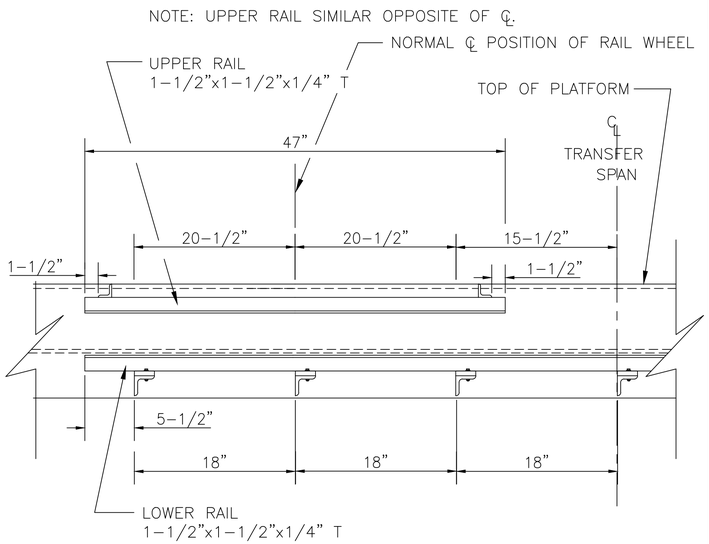
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SECTIONAL DETAIL OF TRANSFER SPAN SHOWING SPAN RAIL AND SUPPORT

1 / C13 C14

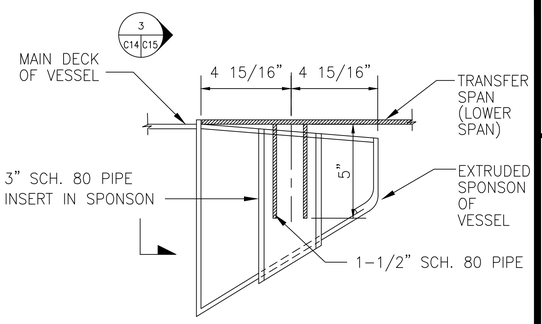
SCALE: NONE



ELEVATION OF PLATFORM SHOWING RAILS

2 / C13 C14

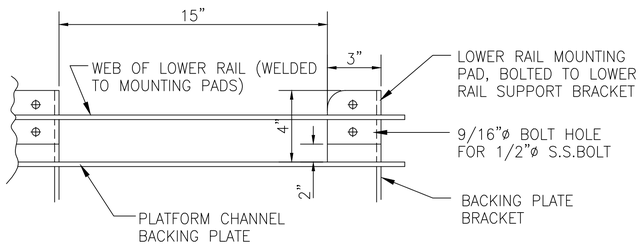
SCALE: NONE



DETAIL – VESSEL END TRANSFER SPAN

3 / C13 C14

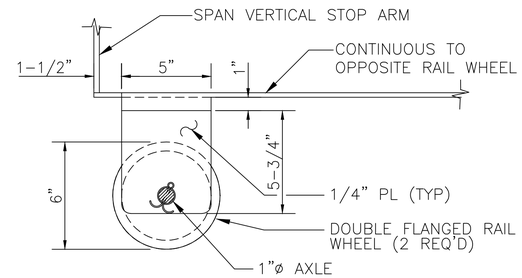
SCALE: NONE



LOWER RAIL SUPPORT BRACKETS SHOWING LOWER RAIL MOUNTING PADS

4 / C14 C14

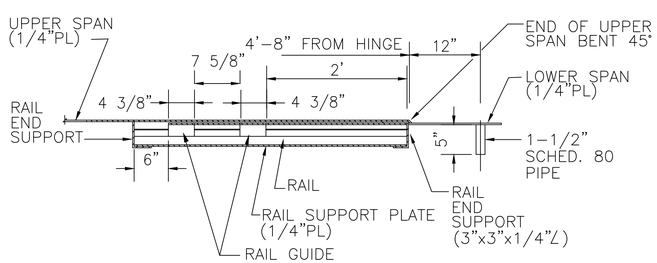
SCALE: NONE



DETAIL – RAIL WHEEL

7 / C14 C14

SCALE: NONE

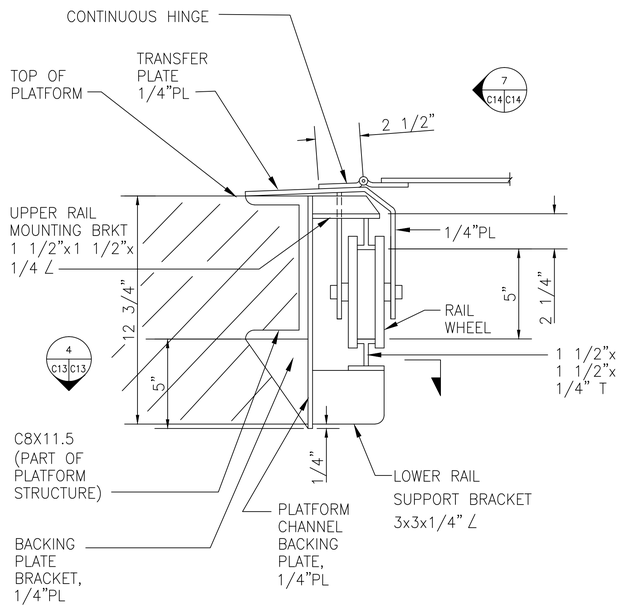


NOTE:
1/4" GAP EXISTS BETWEEN UPPER AND LOWER SPANS

SIDE VIEW OF TRANSFER SPAN SHOWING SPAN RAILS

5 / C13 C14

SCALE: NONE



SECTION OF PLATFORM END

6 / C13 C14

SCALE: NONE

NOTE:
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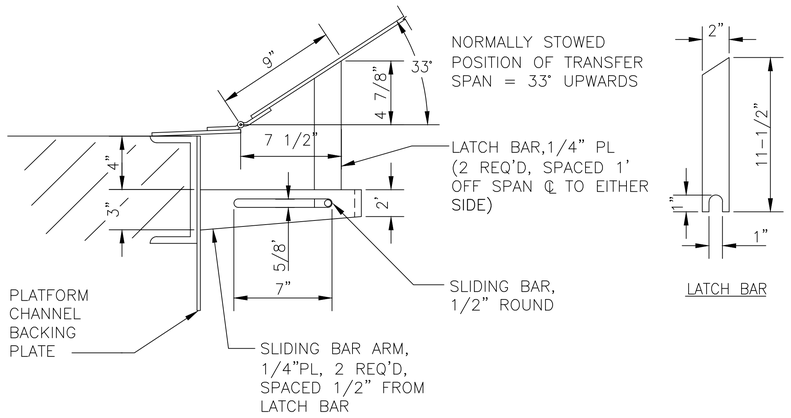
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1201 Third Avenue, Suite 900 Seattle, WA 98101
(206) 622-5822 Fax (206) 622-8130

VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

TRANSFER SPAN DETAILS

DESIGNED	WKV
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8–19–97
JOB NO	FVL03
SHT NO	C14

ALL DRAWINGS REQUIRE FIELD/SITE VERIFICATION - INFORMATIONAL USE ONLY

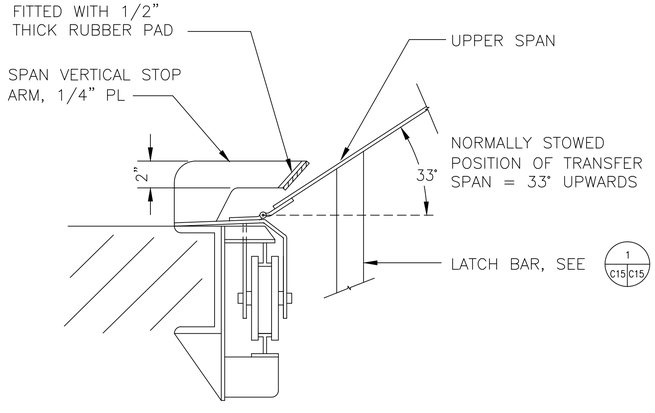


NOTE:
3 SPRINGS REQUIRED FOR ATTACHEMNT TO SLIDING BAR AND PLATFORM CHANNEL BACKING PLATE. SPRINGS SHALL BE SIZED SUCH THAT NO MORE THAN 20 LBS. PULL IS REQUIRED FOR FULL EXTENSION OF THE SLIDING BAR. LATCH BARS SHALL BE CAPABLE OF BEING ENGAGED AND DISENGAGED BY MEANS OF A HANDLE ATTACHED TO THE UNDERSIDE OF THE LOWER SPAN BY A PERSON STANDING ON THE VESSEL. SLIDING BAR TO BE ATTACHED TO HANDLE BY WAY OF SUITABLY SIZED WIRE.

SECTION SHOWING LATCH AND SLIDING BAR ARRANGEMENT

1 C15|C15

SCALE: NONE



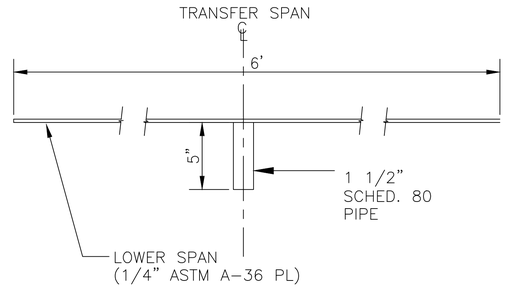
NOTES:

1. STOP ARMS TO BE FITTED TO RAIL WHEEL ASSEMBLY TOP PLATE AT OUTBOARD ENDS OF THE TRANSFER SPAN.
2. END OF STOP ARM TO BE ARRANGED SUCH THAT THE LATCH BAR MAY TRAVEL A FURTHER 1-1/2" IN THE PURELY VERTICAL DIRECTION BEFORE THE UPPER SPAN CONTACTS THE STOP ARM L-FLANGE.

SECTION SHOWING SPAN VERTICAL STOP ARM

2 C13|C15

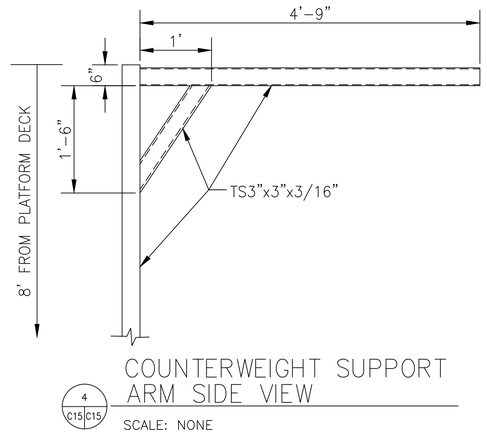
SCALE: NONE



SECTION SHOWING VESSEL END OF TRANSFER SPAN

3 C15|C15

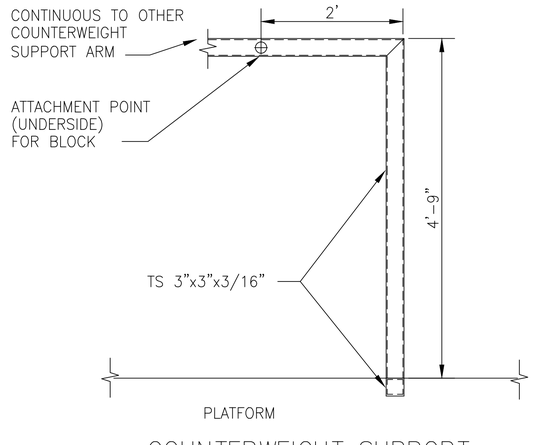
SCALE: NONE



COUNTERWEIGHT SUPPORT ARM SIDE VIEW

4 C15|C15

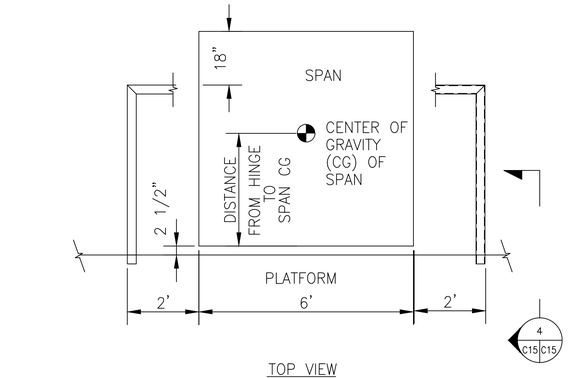
SCALE: NONE



COUNTERWEIGHT SUPPORT ARM TOP VIEW

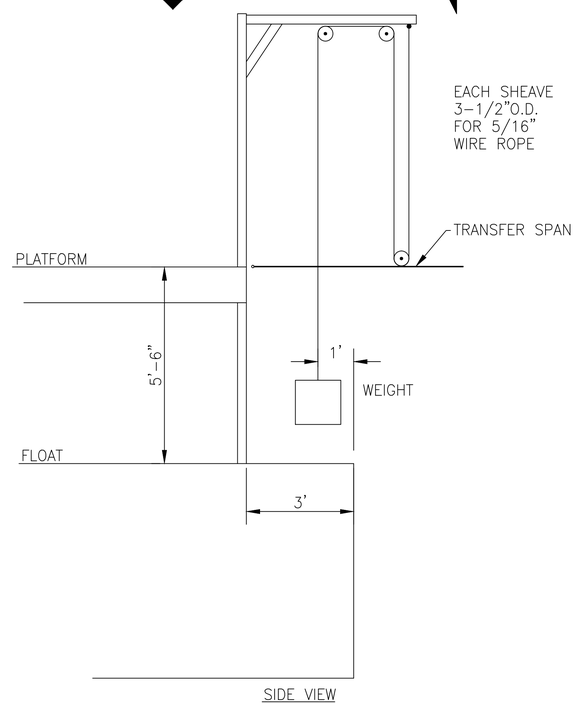
5 C15|C15

SCALE: NONE



TOP VIEW

5 C15|C15



SIDE VIEW

TRANSFER SPAN COUNTERBALANCE

6 C13|C15

SCALE: NONE

NOTE:
TRANSFER SPAN SCHEME MAY BE MODIFIED BY THE CONTRACTOR PROVIDED ALL SPECIFIED PERFORMANCE REQUIREMENTS ARE MET. DRAWING IS TO ILLUSTRATE PERFORMANCE REQUIREMENTS ONLY FOR THIS DESIGN-BUILD ITEM.

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

REGISTERED PROFESSIONAL ENGINEER
GARY E. GILL
36482
Exp.06/30/00
CIVIL
STATE OF CALIFORNIA

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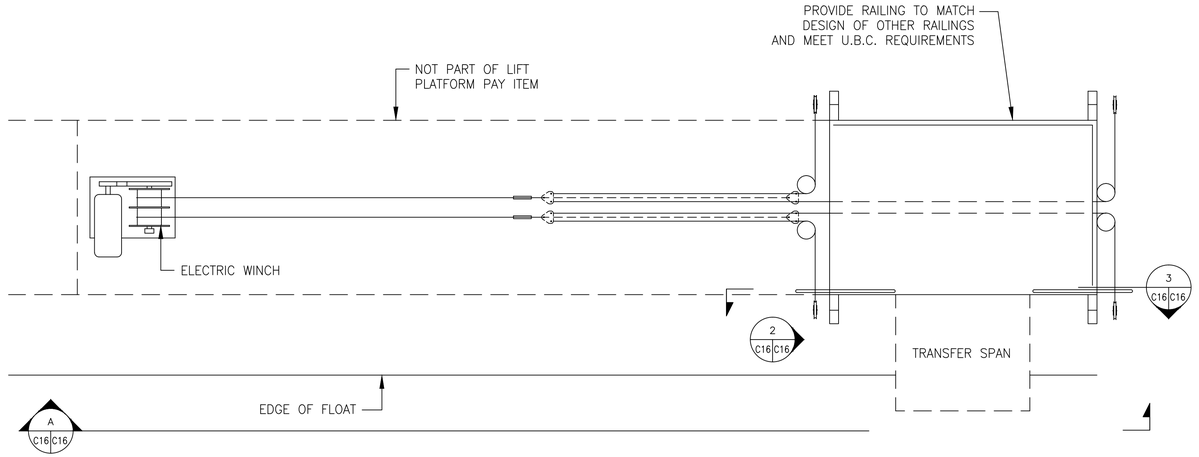
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

TRANSFER SPAN DETAILS

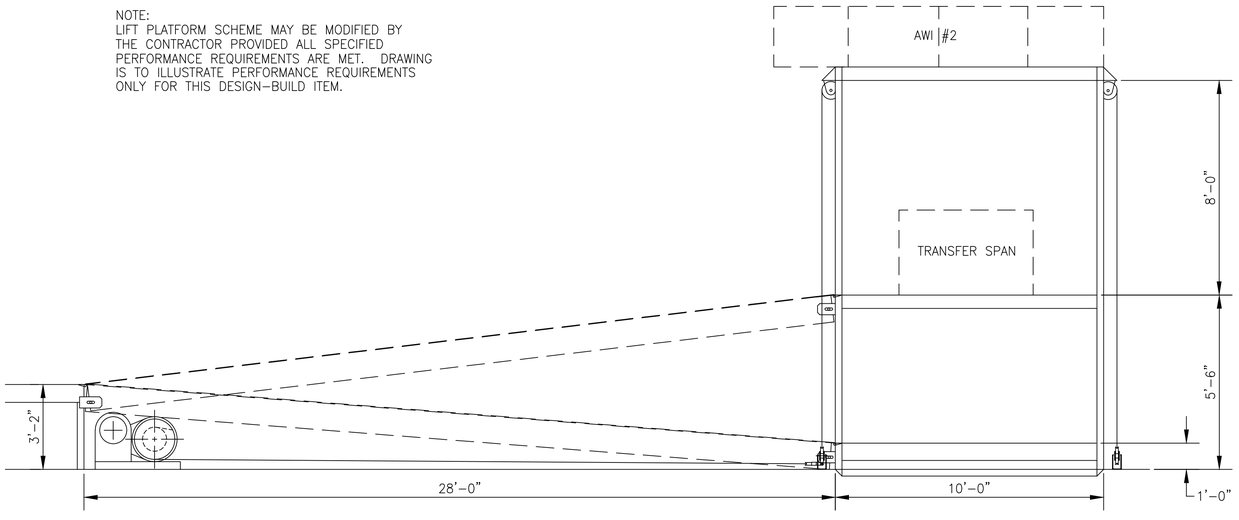
DESIGNED	WKV
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C15

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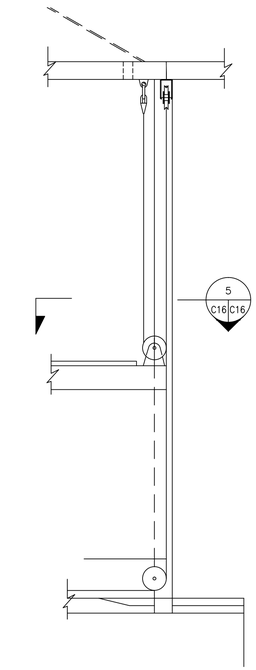


1 C2 C16 LIFT PLATFORM PLAN
SCALE: 3/8" = 1'-0"

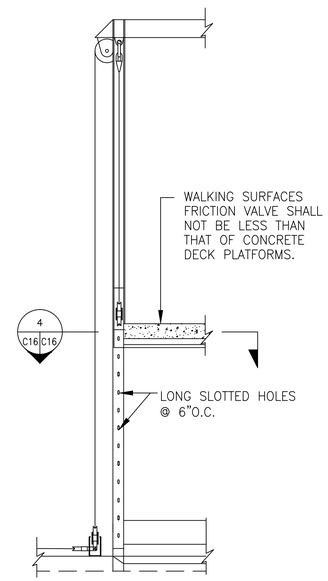
NOTE:
LIFT PLATFORM SCHEME MAY BE MODIFIED BY THE CONTRACTOR PROVIDED ALL SPECIFIED PERFORMANCE REQUIREMENTS ARE MET. DRAWING IS TO ILLUSTRATE PERFORMANCE REQUIREMENTS ONLY FOR THIS DESIGN-BUILD ITEM.



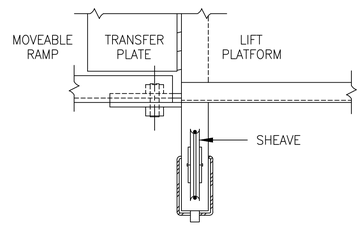
A C16 C16 LIFT PLATFORM ELEVATION
SCALE: 3/8" =1'-0"



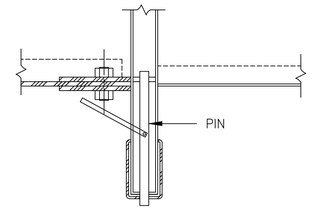
2 C16 C16 LIFT DETAIL
SCALE: 1/2" = 1'-0"



3 C16 C16 LIFT DETAIL
SCALE: 1/2" = 1'-0"



5 C16 C16 PLATFORM DETAIL
SCALE: 1-1/2" = 1'-0"



4 C16 C16 PIN DETAIL
SCALE: 1-1/2" = 1'-0"

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.

REGISTERED PROFESSIONAL ENGINEER
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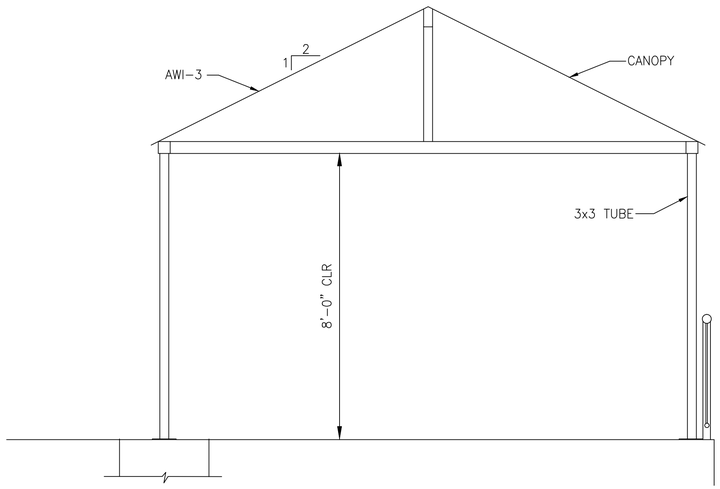
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

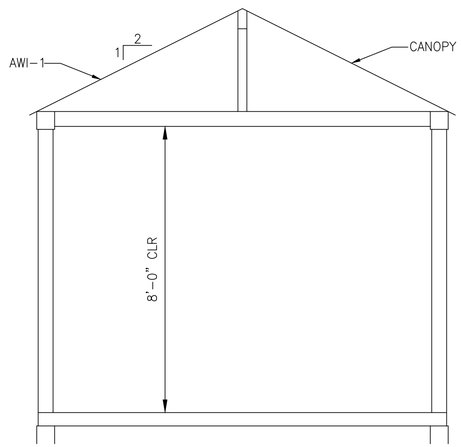
LIFT PLATFORM

DESIGNED	AKB
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	C16

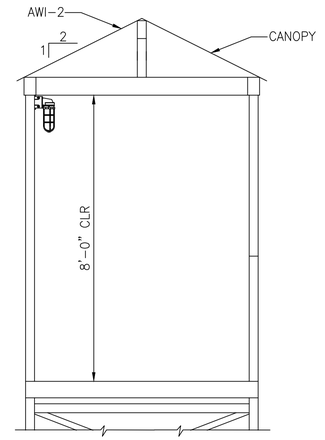
ALL DRAWINGS REQUIRE FIELD/SITE VERIFICATION - INFORMATIONAL USE ONLY



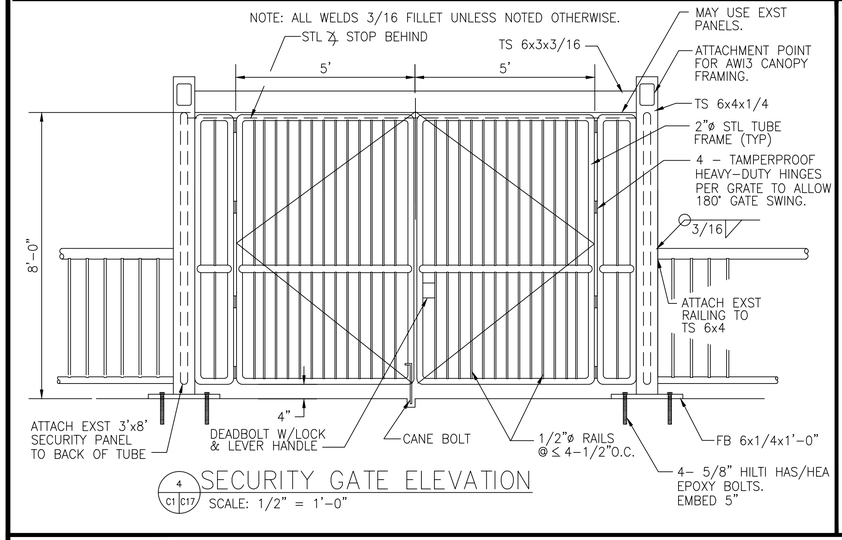
1 C1 C17 SECTION – SIDEWALK CANOPY
SCALE: 1/2" = 1'-0"



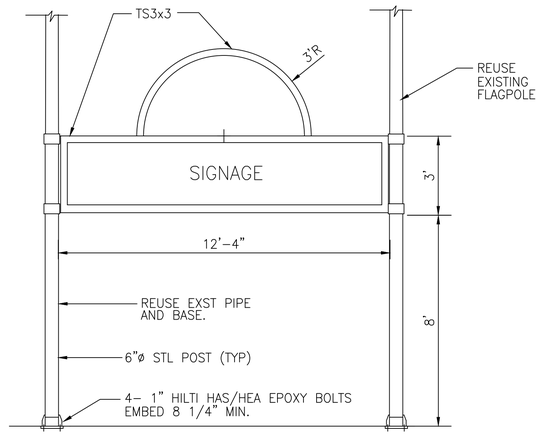
2 C1 C17 SECTION – GANGWAY CANOPY
SCALE: 1/2" = 1'-0"



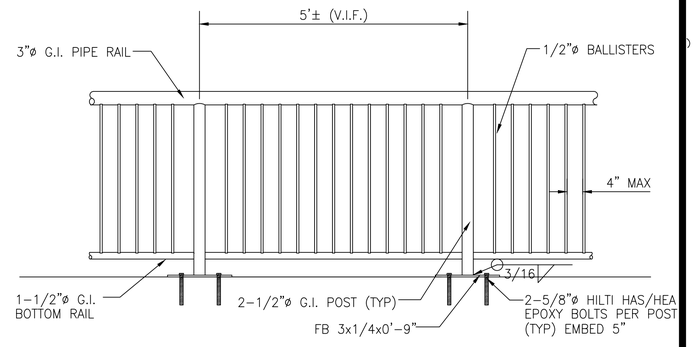
3 C1 C17 SECTION – RAMP CANOPY
SCALE: 1/2" = 1'-0"



4 C1 C17 SECURITY GATE ELEVATION
SCALE: 1/2" = 1'-0"



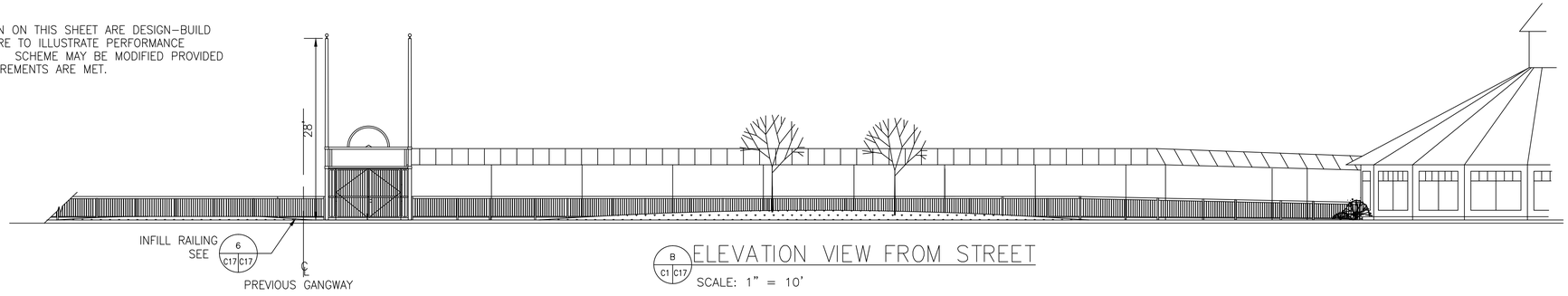
5 C1 C17 ENTRANCE ELEVATION
SCALE: 3/8" = 1'-0"



6 C17 C17 TYPICAL RAILING ELEVATION
SCALE: 3/4" = 1'-0"

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.

NOTE:
ALL CANOPIES SHOWN ON THIS SHEET ARE DESIGN–BUILD ITEMS. DRAWINGS ARE TO ILLUSTRATE PERFORMANCE REQUIREMENTS ONLY. SCHEME MAY BE MODIFIED PROVIDED ALL SPECIFIED REQUIREMENTS ARE MET.



B C1 C17 ELEVATION VIEW FROM STREET
SCALE: 1" = 10'

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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

CANOPY AND RAILING DETAILS

DESIGNED	JRL
DRAWN	ELR
CHECKED	JRL/GEG
DATE	8–19–97
JOB NO	FVL03
SHT NO	C17

STRUCTURAL NOTES:

CODE REQUIREMENTS: All design and construction shall conform to the requirements of the Uniform Building Code, 1994 Edition.

DESIGN LOADS: In addition to the dead loads, the following were used for design:

Vertical Loads		
Gangway and Platforms	100	psf
Lateral Loads		
Gangway Longitudinal	58	k
Foundation Piling		
Vertical Skin Friction	1,200	psf

Earthquake and wind forces at abutment are resisted by cantilever piles extending into rock.

SEISMIC LOADS:

Earthquake design is based on the following:

Building: V = F(Z I C,RW) W = Base Shear = 58 Kips

Where: Z = 0.40, Zone 4
I = 1.0
C = 0.73
RW = 5
W = total dead load

WIND LOADS:

Wind design is based on the following:

1994 UBC: Exposure D, 80 mph — P = CeCqQsI

Where: Ce = See UBC Table 16G
Cq = See UBC Table 16H
Qs = 16.4 psf
I = 1.0

SUBMITTALS: Shop drawings shall be submitted to the City prior to any fabrication or construction for all structural items including the following: concrete reinforcement, embedded steel items, structural steel, steel deck, shear stud layout, metal grating.

If the shop drawings differ from or add to the design of the structural drawings, they shall bear the seal and signature of the California State Registered Professional Engineer who is responsible for the design.
Design drawings and calculations or shop drawings, for the design and fabrication of items that are designed by others, such as the articulated platform and roof canopies shall bear the seal and signature of the California State Registered Professional Engineer who is responsible for the design and shall be submitted to the City for review prior to fabrication. Submitted calculations are for information only and will not be stamped or returned.

INSPECTION: Special inspection, per UBC Sections 1701 and 1703, shall be performed by an approved testing lab for reinforcement placement, concrete placement,pile placement, high strength bolt tightening, steel fabrication and erection, grouting, bolts installed in concrete, and welding. Augered pile holes shall be supervised by an approved testing lab or Soils Engineer.

SPECIAL CONDITIONS: Contractor shall verify all levels, dimensions and existing conditions in the field before proceeding. Contractor shall notify the Engineer of any discrepancies or field changes prior to installation or fabrication. In case of discrepancies between the existing conditions and the drawings, the Contractor shall obtain direction from the Engineer before proceeding. Dimensions noted as plus or minus () indicate unverified dimensions and are approximate. Notify Engineer immediately of conflicts or excessive variations from indicated dimensions. Noted dimensions take precedence over scaled dimensions – do not scale drawings.

Contractor shall be responsible for all safety precautions and the methods, techniques, sequences or procedures required to perform the work. Pile installation and drilling methods are to be determined by contractor.

SOILS: See the Soils Report by Jensen– Van Lienden Associates, Inc., dated June 28, 1996, for more complete information.

CONCRETE: Concrete work shall conform to all requirements of Chapter 19 of the Uniform Building Code. Concrete strengths shall be verified by standard 28–day cylinder tests, unless approved otherwise. Concrete mixes shall have a compressive strength of 4,000 psi at 28 days.

CONCRETE: The Contractor shall submit concrete mix designs for approval a minimum of two weeks prior to placing any concrete. The mix design shall be in conformance with UBC 1905. The submittal shall indicate where each concrete mix is to be used on the project, as well as the maximum aggregate size of each mix. Maximum aggregate size shall conform to the specifications.

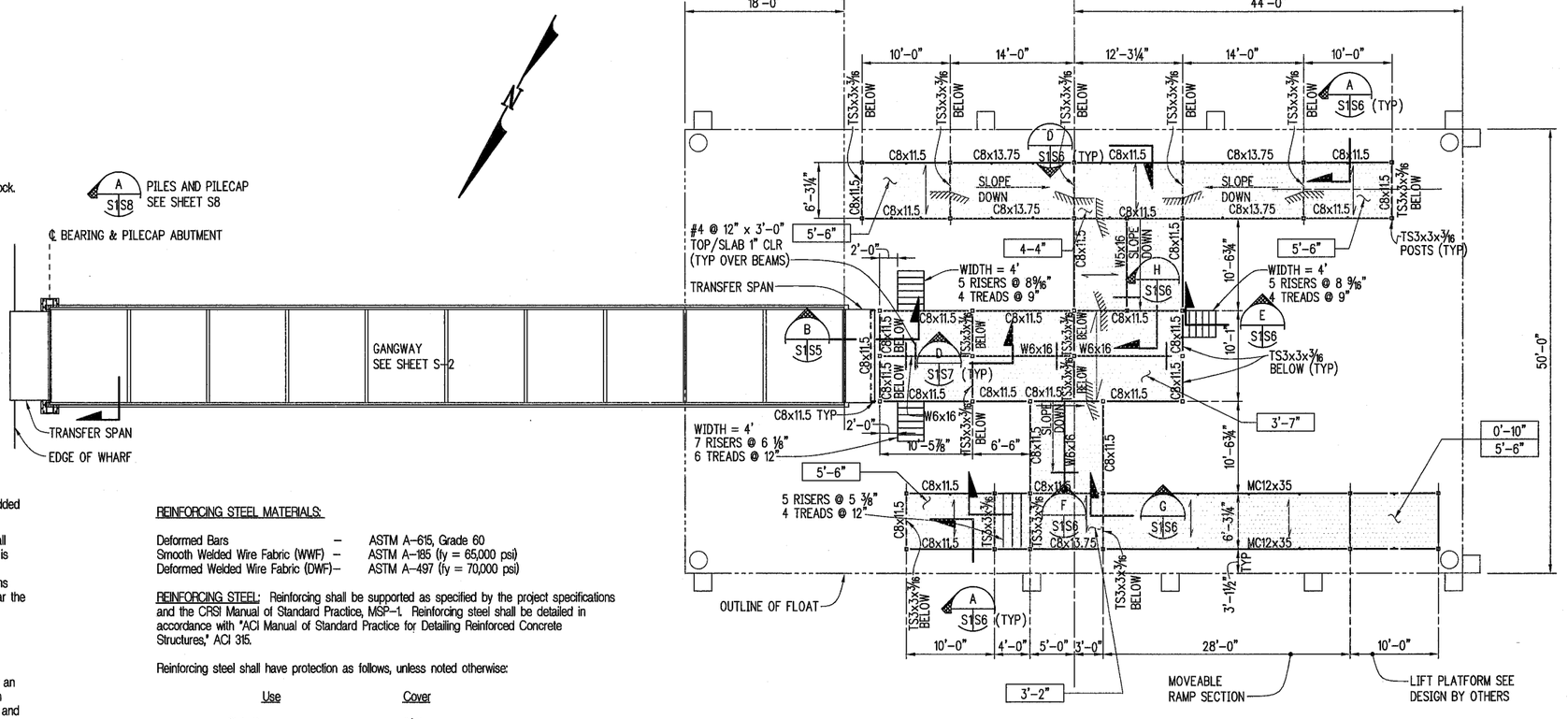
ADMIXTURES: Water–reducing admixtures may be incorporated in concrete mix designs, but shall conform to ASTM C–494, and be used in strict accordance with the manufacturer's recommendations. CaCl2 or other water–soluble chloride admixtures shall not be used.

WATER/CEMENT RATIO: Water/cement ratio shall be measured by weight and shall be based on the total cementitious material. Water/cement ratio shall be determined by the supplier based on strength requirements and shall not exceed the maximum water/cement ratio if shown above.

SLUMP: Field measured slump shall conform to the submitted concrete mix design. Tolerance of slump shall conform to ASTM C–94.

AIR CONTENT: An air–entraining agent conforming to ASTM C–260 shall be used in all concrete mixes for work which is exposed to weather. The amount of entrained air shall be 5% ± 1½% by volume. The amount of entrained air shall be measured in the field at the discharge end of the placing hose.

CURING: If the air temperature will exceed 75 degrees F. within 48 hours of placing concrete, a moist cure shall be applied to the concrete for a period of 36 hours after finishing concrete surfaces. Refer to the project specifications for curing requirements.



PLAN

SCALE: 1/8"=1'-0"

REINFORCING STEEL MATERIALS:

Deformed Bars – ASTM A–615, Grade 60
Smooth Welded Wire Fabric (WWF) – ASTM A–185 (fy = 65,000 psi)
Deformed Welded Wire Fabric (DWF)– ASTM A–497 (fy = 70,000 psi)

REINFORCING STEEL: Reinforcing shall be supported as specified by the project specifications and the CRSI Manual of Standard Practice, MSP–1. Reinforcing steel shall be detailed in accordance with "ACI Manual of Standard Practice for Detailing Reinforced Concrete Structures," ACI 315.

Reinforcing steel shall have protection as follows, unless noted otherwise:

Use	Cover
Slab Bars	3/4"
Pile Cap Bottom Bars	3"
Pile Cap Top Bars	1 1/2"
Pile Cap Side Bars	2"

NONSHRINK GROUT: Base plate grout shall be nonshrink type with minimum f'c = 8,000 psi. All other nonshrink grout shall have minimum f'c = 5,000 psi.

STEEL REFERENCE SPECIFICATIONS:

Structural Steel	–	AISC – Specification for Structural Steel for Buildings – 9th Edition
High Strength Bolts	–	Specification for Joints using ASTM A–325 or A–490 Bolts, 1988 Edition
Welding	–	AWS D1.1 AWS prequalified joint details
Welder Certification	–	American Welding Society (AWS)
Steel Decking	–	Steel Deck Institute, AISI–Specifications for the Design of Cold–Formed Steel Structural Members

STEEL MATERIALS:

Structural Steel, Piles	–	ASTM A–36
Connection material, embedded items channels, angles, base plates, and misc. steel	–	ASTM A–36
Structural Tubes	–	ASTM A–500, Grade B
Steel Pipe	–	ASTM A–53, Grade B
Structural Bolts	–	ASTM A–325–N
Machine Bolts	–	ASTM A–307
Anchor Bolts	–	ASTM A–325
Threaded Rods	–	ASTM A–36
Welding Electrodes	–	E70XX
Headed Shear Studs	–	ASTM A–108

STRUCTURAL STEEL: Structural steel design, fabrication and erection shall conform to the requirements of Chapter 22 of the Uniform Building Code. All members are to be erected with natural mill camber or induced camber up, unless otherwise noted on the plans. Substitution of member sizes or steel grade will not be allowed without prior approval of the engineer.

Bolted connections are to be of high strength ASTM A–325 or A–307 bolts as shown. A minimum of two bolts is required for all beam connections. The minimum weld size shall be 3/16 inch, unless noted otherwise. Connections are to be as shown on these drawings. Alternative connections will require prior approval of the Engineer.

All steel, connection plates, bolts, nuts, washers and railings shall be hot–dipped galvanized after fabrication in compliance with ASTM A–123. Gangway truss shall be flame–spray galvanized after complete fabrication. All field welds exposed to weather shall be coated with brush applied zinc–rich paint complying with ASTM A–780 (Galvacon or equivalent).

The Contractor shall be responsible for all erection aids and joint preparations that include, but are not limited to, erection angles, lift holes and other aids, welding procedures, required root openings, roof face dimensions, groove angles, backing bars, copes, surface roughness values and unequal parts.

WELDING: All welding shall be in conformance with AISC and AWS Standards and shall be performed by AWS certified welders using E70XX electrodes. Only prequalified welds, as defined by AWSI, shall be used. Shop drawings shall show all welding with AWS A24 symbols. Welds shown on the drawings are minimum sizes. Increase weld size to AWS minimum sizes based on plate thickness. Minimum welding shall be 3/16–inch. The welds shown are for the final connections. Field weld arrows are shown any where a field weld is required by the structural design. The Contractor is responsible for determining if a weld should be shop– or field–welded in order to facilitate the structural steel erection.

METAL DECK: Steel deck shall conform to ASTM A–446 Grade E minimum and have a minimum fy=38,000 psi. The galvanized coating shall conform to ASTM A–525, or G90.

Deck Supplier shall verify deck gages and capacities based on actual deck layout and span conditions. Deviations in deck gages from those shown shall be submitted to the architect along with a valid ICBO report for approval prior to shop detailing. Where spans exceed the manufacturers recommended limit, Temporary shoring will be required during construction.

Deck welding shall be in accordance with AWS D1.3, "Specification for Welding Sheet Steel in Structures." Welders shall be qualified by WABO Light Gauge Certification.

Contractor shall provide closure plates, flashing and all miscellaneous light gage metal shapes necessary to complete the work. The minimum end lap shall be 2 inches centered over supports. The minimum bearing required shall be 2 inches.

HEADED SHEAR STUDS AND DEFORMED BAR ANCHORS: All shear studs shall be 1/2–inch diameter headed studs. Stud lengths after weld shall be as shown on the drawings. Deformed bar anchors shall be of the size and length shown on the drawings. All studs and deformed bar anchors shall be automatically end welded in shop or field with equipment recommended by manufacturer.

LEGEND

– SURFACE – SLOPE DOWN
– SURFACE – SLOPE UP
A S–1 S–1 STANDARD SECTION CUTS (SEE SHEET S6)
DIRECTION OF SPAN
100'-0" TOP OF PLATFORM DIM ABOVE CONC – DECK OF FLOAT
INDICATES 3x3 TS POST

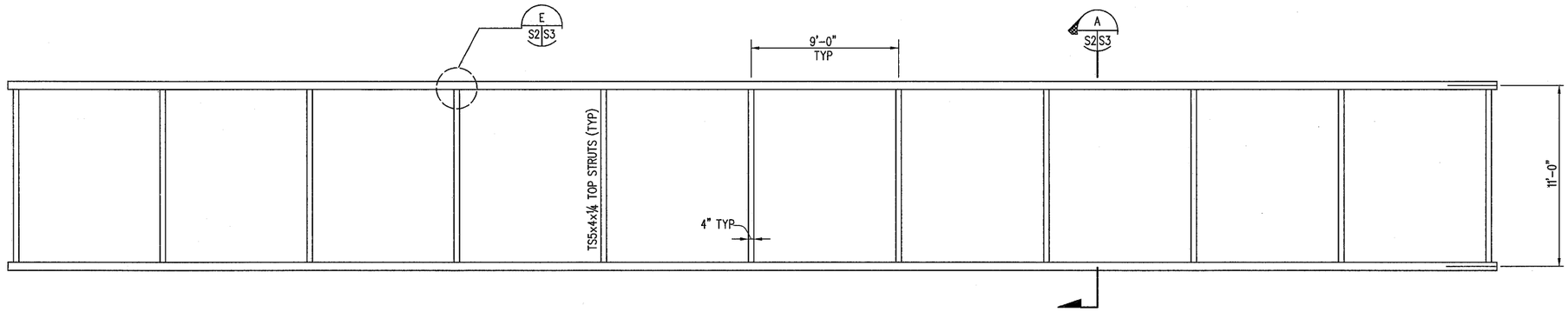
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85 MARION STREET SEATTLE, WA 98104 (206) 622-4221
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VALLEJO FERRY TERMINAL FINGER PIER
CITY OF VALLEJO, CA.

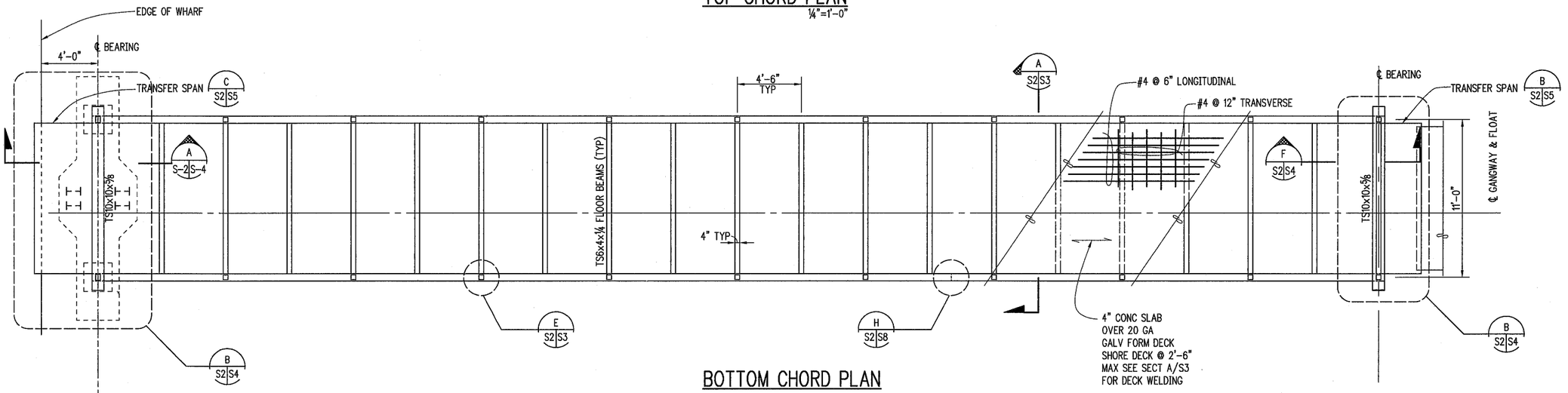
STRUCTURAL FRAMING PLAN & NOTES

DESIGNED	GN
DRAWN	DLR
CHECKED	GLS
DATE	8–19–97
JOB NO	96204
SHT NO	S1

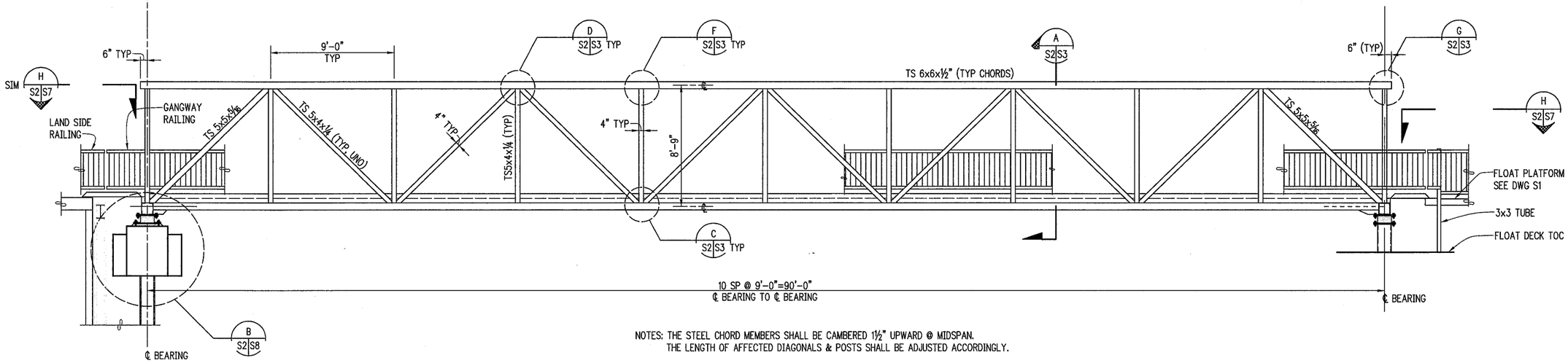
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VIEW: PLOT
UCS: WORLD
ORIGINAL TO: BR
DISCARD OLD: YES
PRINTS: 1
PRINT: BF
JOB #: 96204
XREFS: VALTB, VAL2X96,



TOP CHORD PLAN
¼"=1'-0"



BOTTOM CHORD PLAN
¼"=1'-0"



NOTES: THE STEEL CHORD MEMBERS SHALL BE CAMBERED 1½" UPWARD @ MIDSPAN.
THE LENGTH OF AFFECTED DIAGONALS & POSTS SHALL BE ADJUSTED ACCORDINGLY.

GANGWAY ELEVATION
¼"=1'-0"

ART ANDERSON ASSOCIATES
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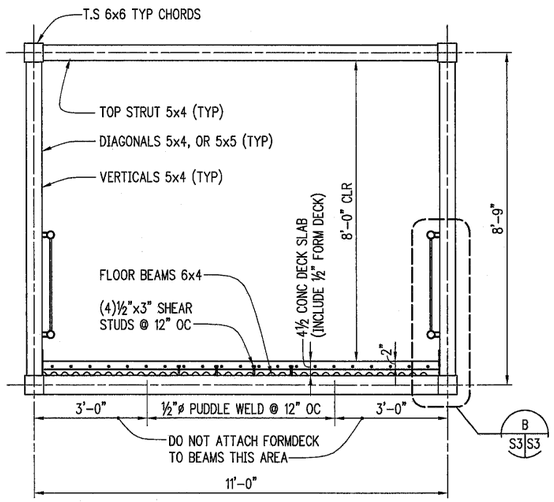
kpff Consulting Engineers
1201 Third Avenue, Suite 900 Seattle, WA 98101
(206) 622-5822 Fax (206) 622-8130

VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

DESIGNED	GN
DRAWN	DLR
CHECKED	GLS
DATE	8-19-97
JOB NO	96204
SHT NO	S2

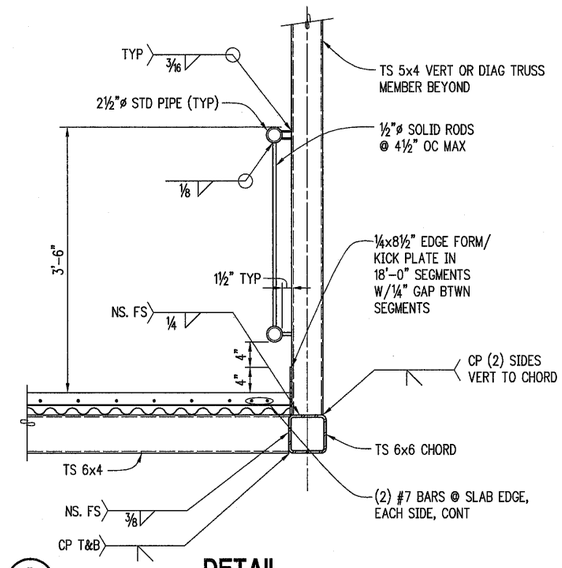
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JOB NAME: VALLEJO
JOB #: 96204
XREFS: VALTB,

	UPDATED BY	PLOT SCALE	PLOT SET UP	P SPACE	VIEW	UCS	ORIGINAL TO	DISCARD OLD	# PRINTS	PRINTS TO
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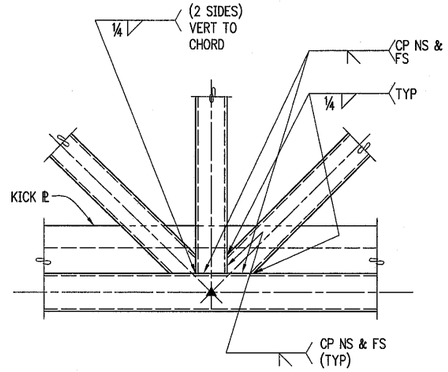
A S2|S3 **GANGWAY CROSSECTION**

SCALE: ½"=1'-0"



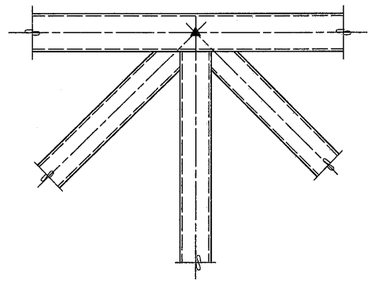
B S3|S3 **DETAIL**

SCALE: 1"=1'-0"



C S2|S3 **DETAIL**

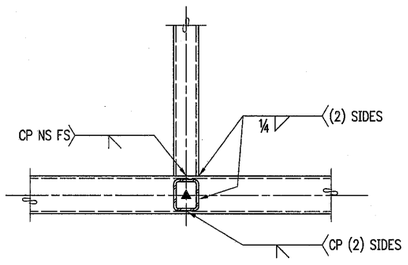
SCALE: 1"=1'-0"



NOTE: SEE DETAIL C FOR WELDING

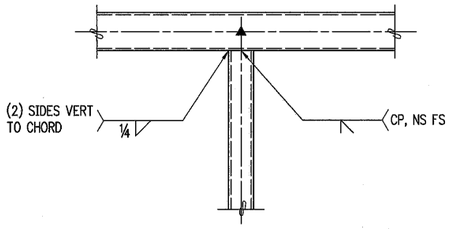
D S2|S3 **DETAIL**

SCALE: 1"=1'-0"



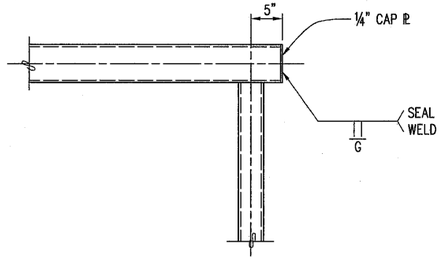
E S2|S3 **DETAIL**

SCALE: 1"=1'-0"



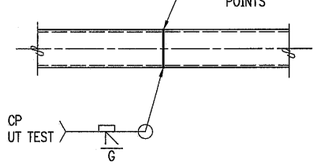
F S2|S3 **DETAIL**

SCALE: 1"=1'-0"



G S2|S3 **DETAIL**

SCALE: 1"=1'-0"



H S2|S3 **CHORD SPLICE DETAIL**

SCALE: 1"=1'-0"

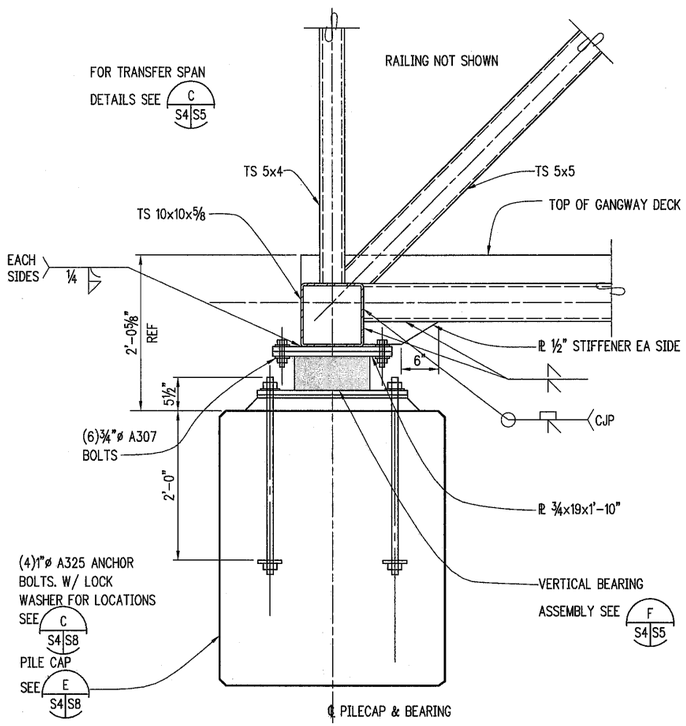
ART ANDERSON ASSOCIATES
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66 MARION STREET SEATTLE, WA 98104 (206) 622-4221
kpff Consulting Engineers
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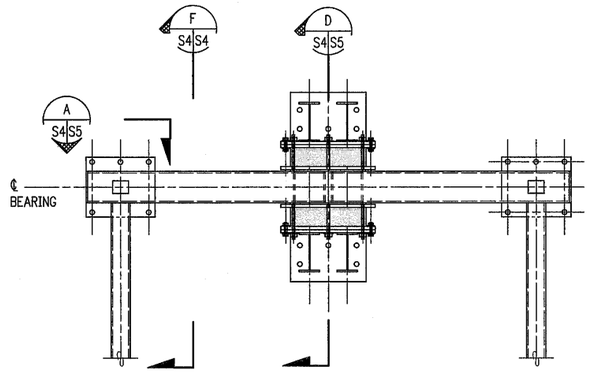
VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

GANGWAY DETAILS

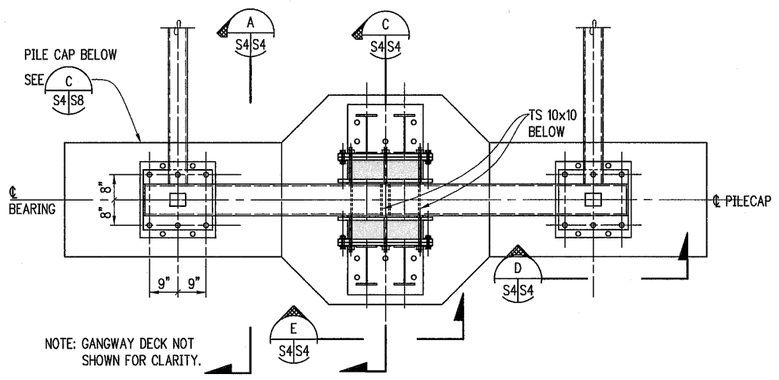
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DRAWN	DLR
CHECKED	GLS
DATE	8-19-97
JOB NO	96204
SHT NO	S3

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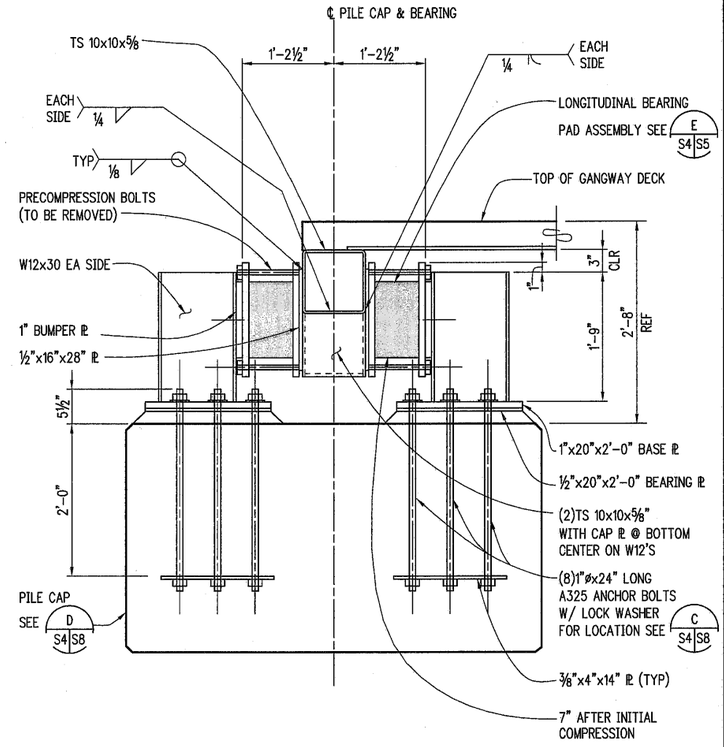




FLOAT END BEARING

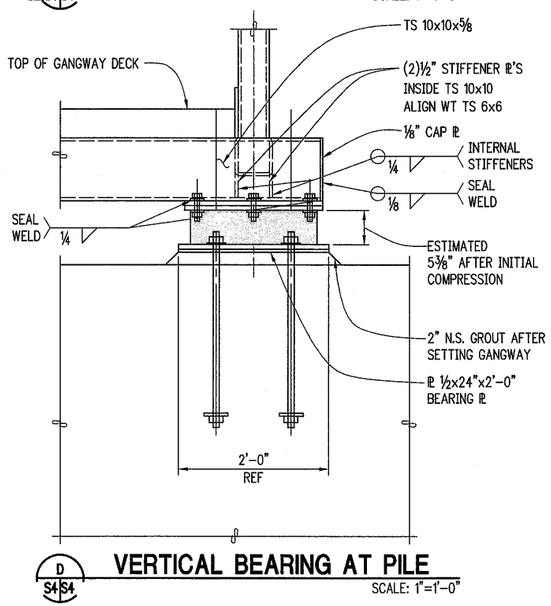


SHORE END BEARING



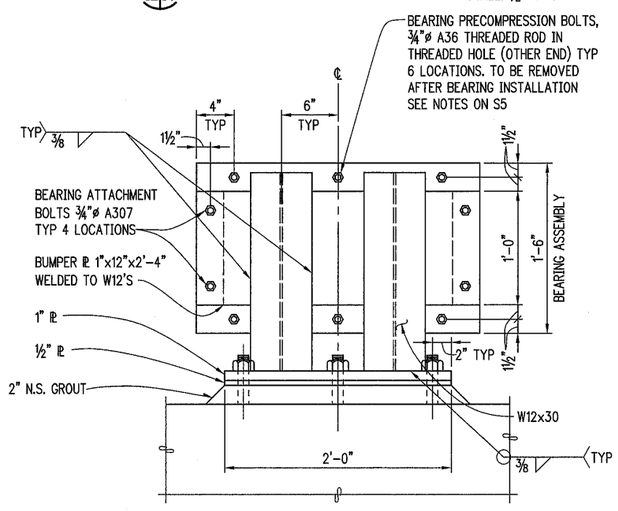
A S2|S4|S4 VERTICAL BEARING AT PILE

SCALE: 1"=1'-0"



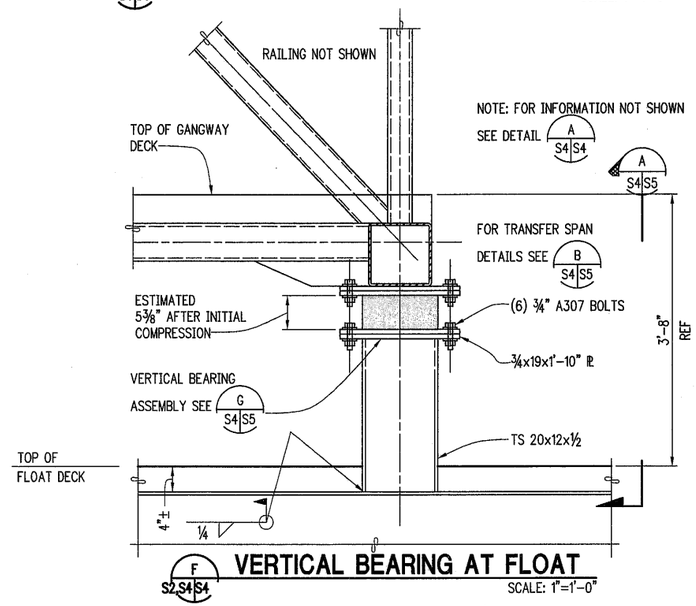
B S2|S4 LONGITUDINAL BEARING DETAILS

SCALE: 1/2"=1'-0"



C S4|S4 LONGITUDINAL BEARING DETAIL AT PILE

SCALE: 1"=1'-0"



D S4|S4 VERTICAL BEARING AT PILE

SCALE: 1"=1'-0"

E S4|S4 LONGITUDINAL BEARING DETAIL

SCALE: 1 1/2"=1'-0"

F S2|S4|S4 VERTICAL BEARING AT FLOAT

SCALE: 1"=1'-0"

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1201 Third Avenue, Suite 900 Seattle, WA 98101 (206) 622-3822 Fax (206) 622-9130

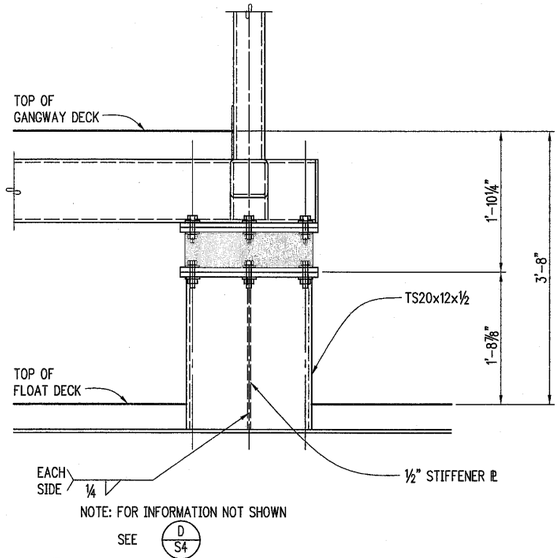
VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

GANGWAY SUPPORT DETAILS

DESIGNED	GN
DRAWN	DLR
CHECKED	GLS
DATE	8-19-97
JOB NO	96204
SHT NO	S4

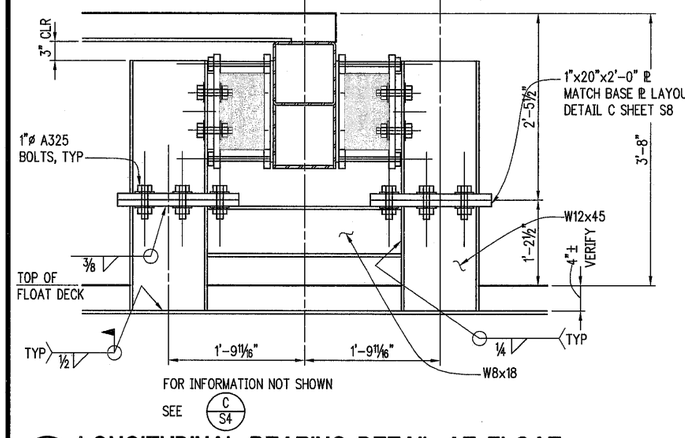
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JOB NAME	VALLEJO
JOB #	96204
XREFS:	VALTB.

UPDATED BY	BR	PLOT SCALE	1/2"=1'-0"	PLOT SET UP	6S-FULL	P SPACE	NO	VIEW	PLOT	UCS	
ORIGINAL TO	BR	DISCARD OLD	YES	# PRINTS	1	PRINT:	BR				



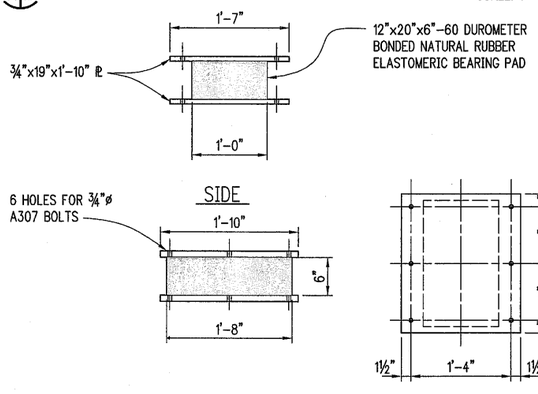
A S4|S5 VERTICAL BEARING DETAIL

SCALE: 1"=1'-0"



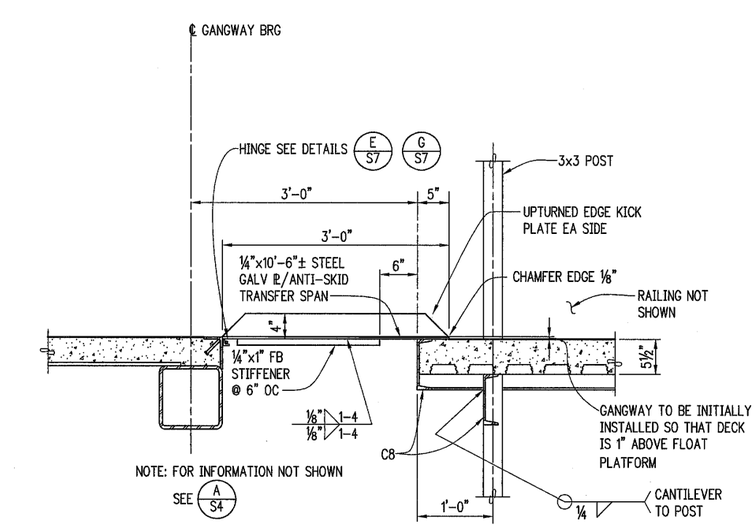
D S4|S5 LONGITUDINAL BEARING DETAIL AT FLOAT

SCALE: 1"=1'-0"



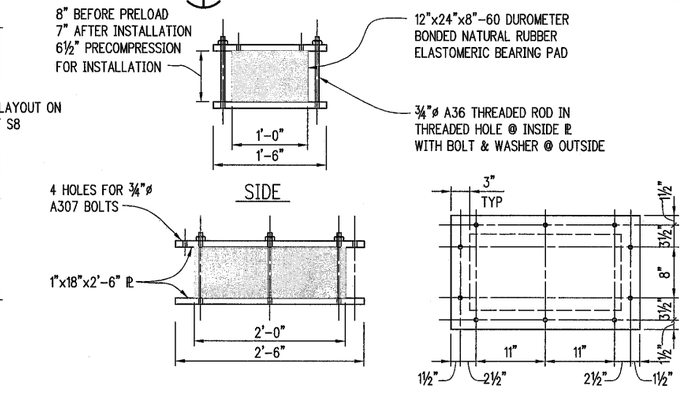
G S4|S5 VERTICAL ELASTOMERIC BEARING @ FLOAT

SCALE: 1"=1'-0"



B S5|S5 TRANSFER SPAN @ FLOAT END

SCALE: 1"=1'-0"

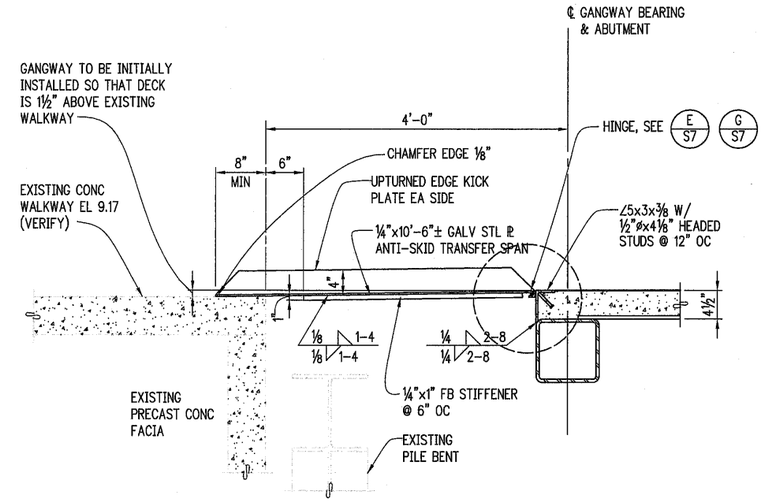


E S4|S5 LONGITUDINAL ELASTOMERIC BEARING

SCALE: 1"=1'-0"

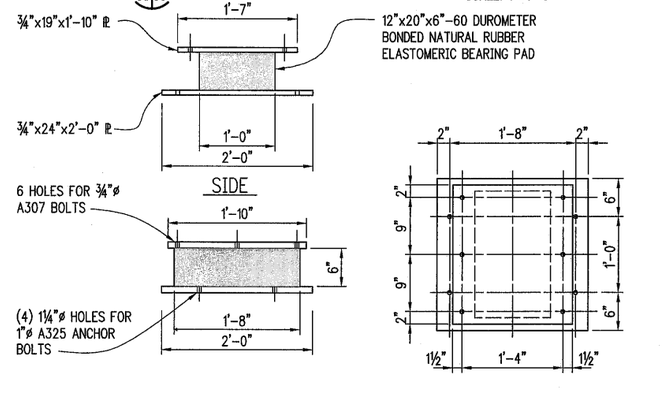
BEARING NOTES:

1. ALL ELASTOMERIC BEARINGS SHALL BE PLAIN (UNREINFORCED) 60 DUROMETER BONDED NATURAL RUBBER ELASTOMER OF TEMPERATURE GRADE 3, AND SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (15th ED) DIVISION II, SECTION 18.2.
2. ELASTOMERIC PADS SHALL BE VULCANIZED TO TOP AND BOTTOM PLATES.
3. LONGITUDINAL BEARING PADS SHALL BE PRECOMPRESSED FOR INSTALLATION BY TIGHTENING NUTS ON TEMPORARY THREADED RODS TO ACHIEVE COMPRESSED DIMENSIONS SHOWN ABOVE.
4. AFTER INSTALLATION OF BEARINGS AND GANGWAY, RELEASE COMPRESSION IN RUBBER BEARING TO ACHIEVE UNIFORM CONTACT BETWEEN GANGWAY BEAM AND BUMPER PLATES.
5. RUBBER BEARINGS TO REMAIN COMPRESSED TO 7"±.
6. AFTER RELEASE OF COMPRESSION REMOVE THREADED RODS AND NUTS, AND RETAIN FOR FUTURE MAINTENANCE AND ADJUSTMENT.



C S5|S5 TRANSFER SPAN @ SHORE END

SCALE: 1"=1'-0"



F S4|S5 VERTICAL ELASTOMERIC BEARING @ SHORE

SCALE: 1"=1'-0"

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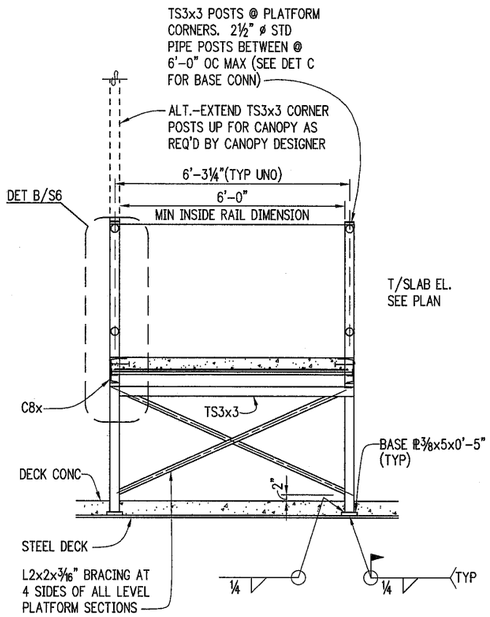
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

GANGWAY SUPPORT DETAILS

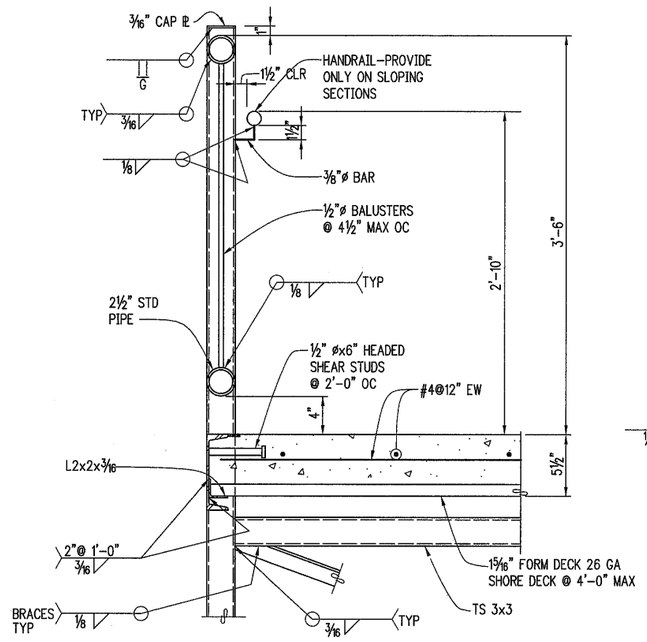
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DRAWN	DLR
CHECKED	GLS
DATE	8-19-97
JOB NO	96204
SHT NO	S5

JOB #	JOB NAME	FILE PATH & NAME	PLOTTED DATE & TIME	UPDATED BY	PLOT SCALE	PLOT SET UP	P SPACE	VIEW	UCS	ORIGINAL	TO	DISCARD	OLD	# PRINTS	PRINT
96204	VALLEJO	T:\STRUC\VALLEJO\V-GWDTL3.DWG	AUG. 15, 1997 10:46:14 AM	BR	1"=1'-0"	6S-FULL	NO	PLOT		BR		YES		1	BR
FS:	VALTB.														



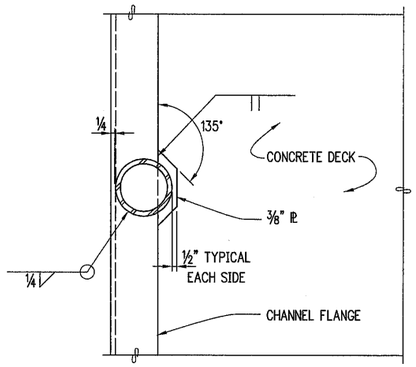
A S1|S6 WALKWAY CROSS SECTION

SCALE: ½"=1'-0"



B S6|S6 DETAIL

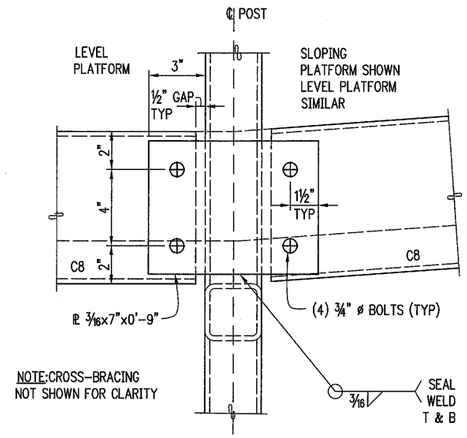
SCALE: 1½"=1'-0"



LOCATE WHERE INDICATED BY —•— ON PLAN

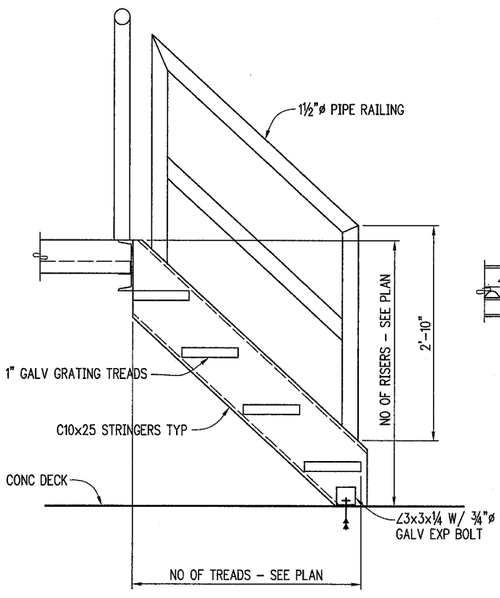
C S6|S6 GUARDRAIL PIPE POST BASE

SCALE: 3"=1'-0"



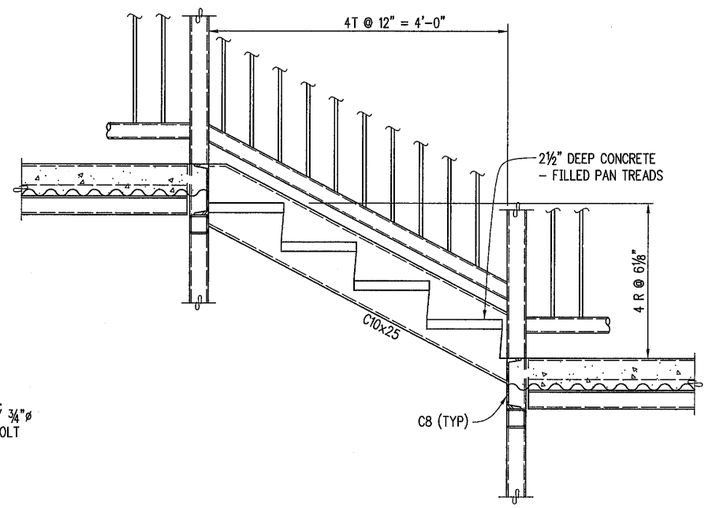
D S1|S6 CONNECTION DETAIL

SCALE: 3"=1'-0"



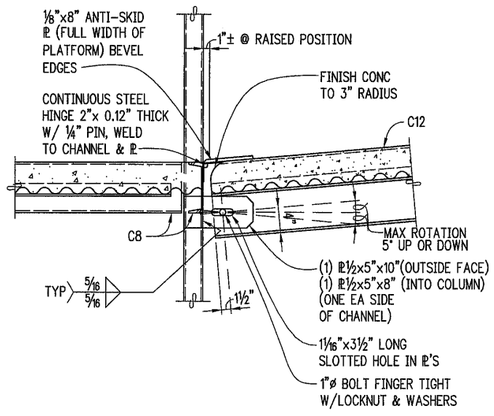
E S1|S6 TYP. SERVICE STAIR SECTION

SCALE: 1"=1'-0"



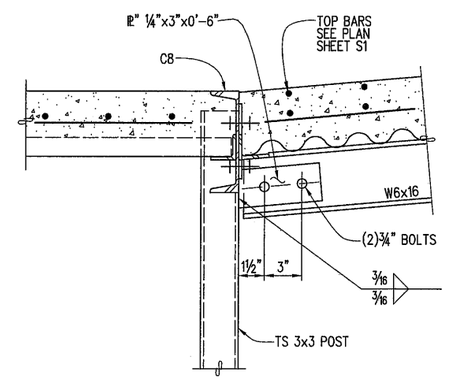
F S1|S6 STAIR DETAIL

SCALE: 1"=1'-0"



G S1|S6 HINGE DETAIL

SCALE: 1"=1'-0"



NOTE: CROSS-BRACING NOT SHOWN FOR CLARITY.

H S1|S6 DETAIL

NO SCALE

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1201 Third Avenue, Suite 900 Seattle, WA 98101 (206) 622-5822 Fax (206) 622-8130

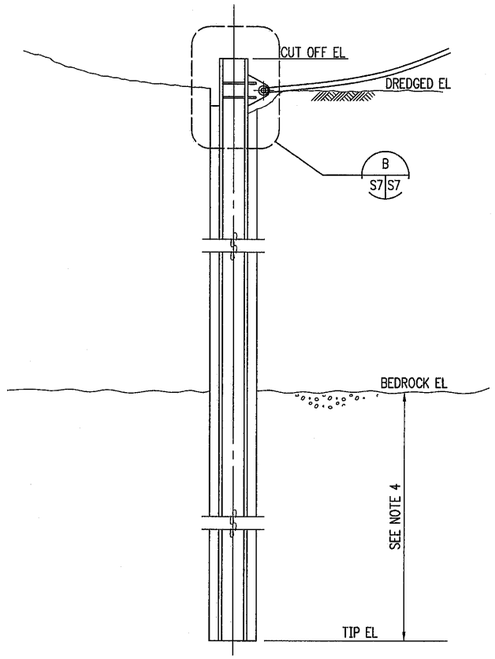
VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

WALKWAY DETAILS

DESIGNED	GN
DRAWN	DLR
CHECKED	GLS
DATE	8-19-97
JOB NO	96204
SHT NO	S6

PLOTTED DATE & TIME: AUG. 15, 1997 10:52:14 AM
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JOB NAME: VALLEJO
JOB #: 96204
FS: VALTB.

PRINT:	BR
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ORIGINAL TO	BR
UCS	
VIEW	PLOT
P SPACE	NO
PLOT SET UP	6S-FULL
PLOT SCALE	1"=1'-0"
UPDATED BY	BR
DATE & TIME	

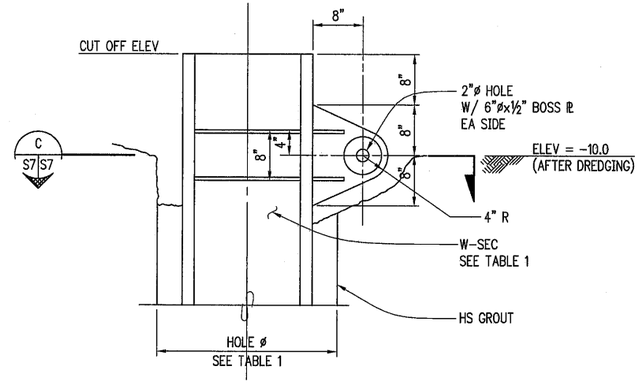


A S7|S7 STAKEPILE ELEVATION

NO SCALE

TABLE 1							
PILE MARK	SECTION	HOLE DIA. (IN)	FLOOR ELEV. (FT)	BEDROCK ELEV (FT)	TIP ELEV. (FT)	CUT OFF ELEV. (FT)	PILE LENGTH (FT)
P1	W18x211	30	–10	–24	–44	–8.67	35.3
P2	W18x211	30	–10	–24	–44	–8.67	35.3
P3	W16X77	24	–10	–15	–35	–8.67	26.3
P4	W16X77	24	–10	–15	–35	–8.67	26.3
P5	HP14x117	24	–1	–15	–35	6.38	41.4
P6	HP14x117	24	–1	–15	–35	6.38	41.4
P7	HP14x117	24	–1	–15	–35	6.38	41.4
P8	HP14x117	24	–1	–15	–35	6.38	41.4

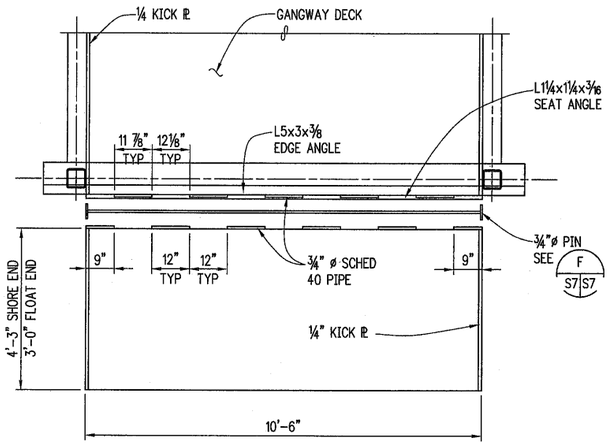
1. PILE MARK INDICATES PILE LOCATION – SEE DWG C11 FOR PILES P1–P4
   – SEE DWG A/58 FOR PILES P5–P8
2. ELEVATIONS LISTED ABOVE ARE ESTIMATES BASED ON THE SOILS REPORT.
3. PILE LENGTHS SHOULD BE ADJUSTED TO ACCOUNT FOR ACTUAL FIELD CONDITIONS.
4. ALL PILES ARE TO BE EMBEDDED A MINIMUM OF 20' INTO THE BEDROCK LAYER.
5. SEE ARCHITECTS SHEET C1 FOR PILE LOCATIONS.
6. FOR ABUTMENT PILE DETAILS (PILES P5–P8) SEE SHEET S8.



STAKEPILE DETAIL (P1–P4)

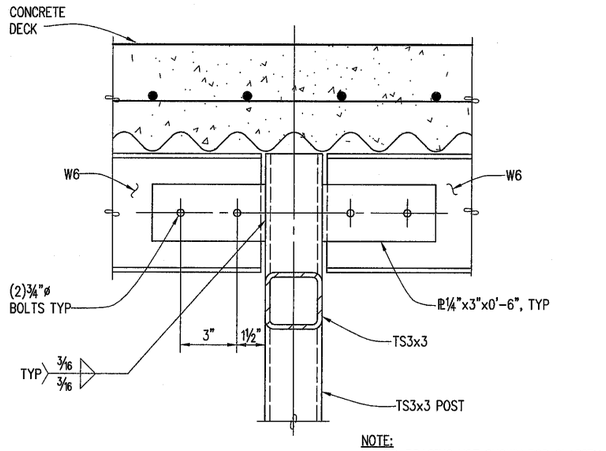
B S7|S7 SECTION

SCALE: 1"=1'–0"



E S5|S7 TRANSFER SPAN HINGE

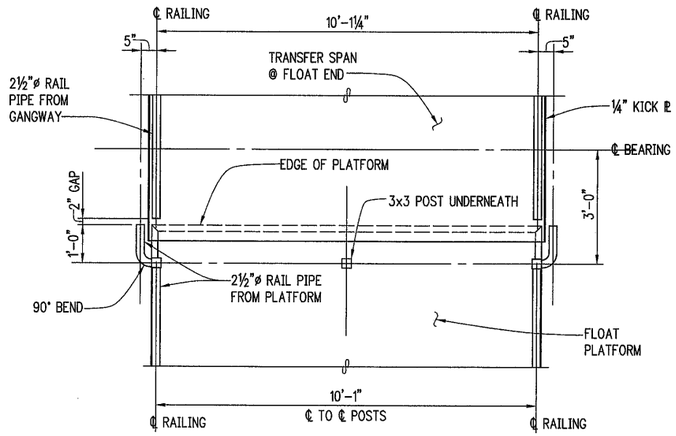
NO SCALE



NOTE:
CROSS–BRACING NOT SHOWN FOR CLARITY

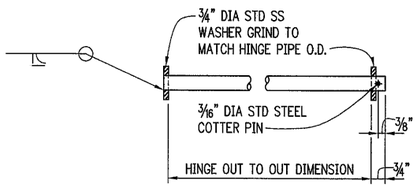
D S1|S7 SECTION

NO SCALE



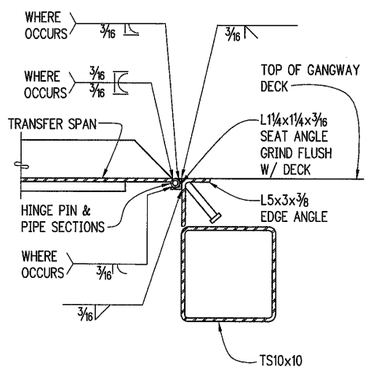
H S1|S7 SECTION

NO SCALE



F S7|S7 HINGE PIN DETAIL

SCALE: 3"=1'–0"



G S5|S7 HINGE DETAIL

NO SCALE

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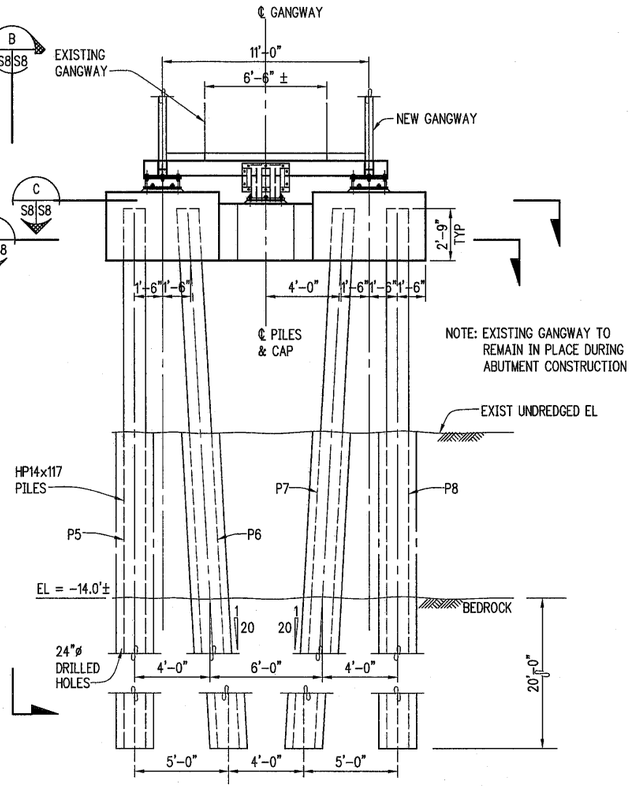
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

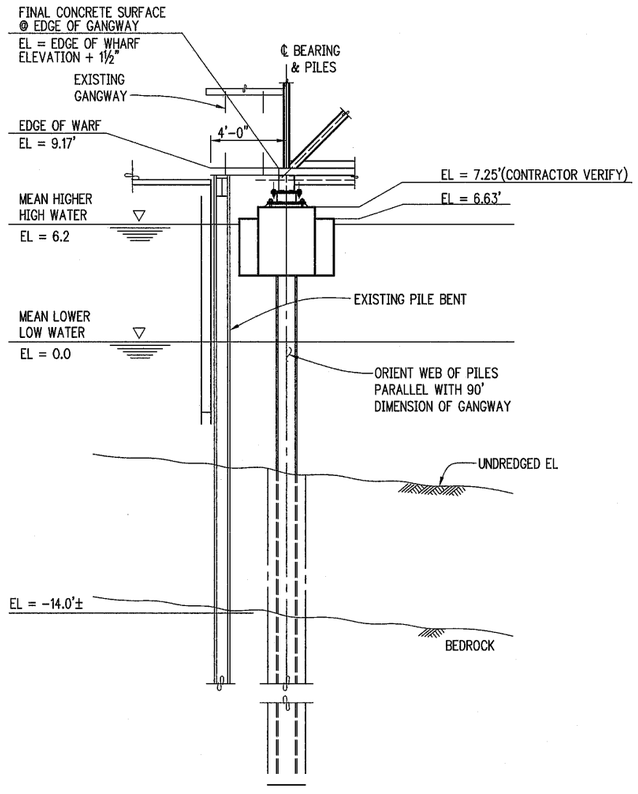
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DRAWN	DLR
CHECKED	GLS
DATE	8–19–97
JOB NO	96204
SHT NO	S7

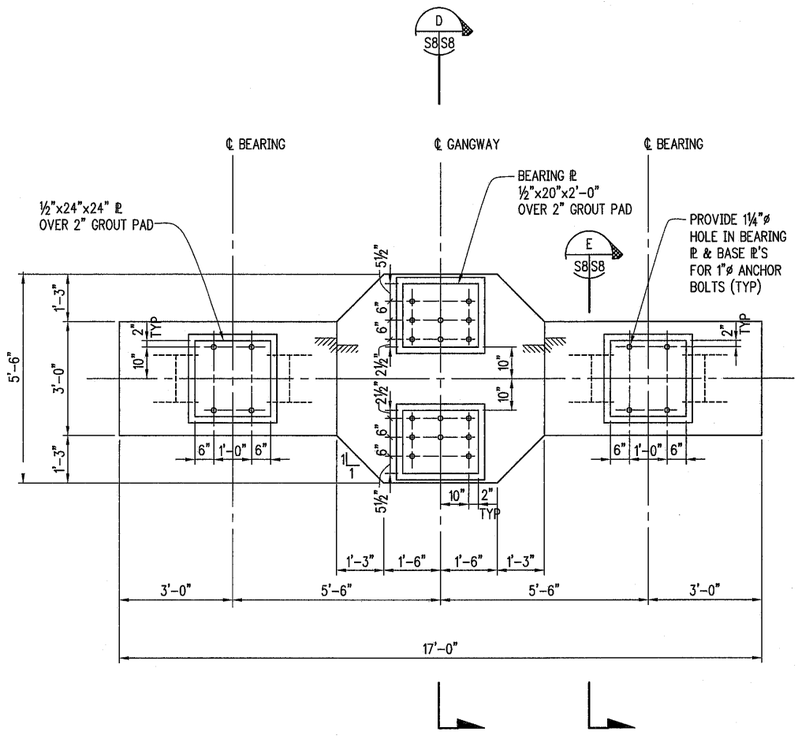
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JOB #	96204
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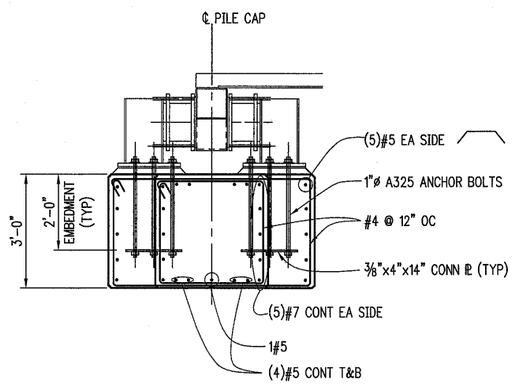
A S1S8 **NEW SHORE END ABUTMENT**
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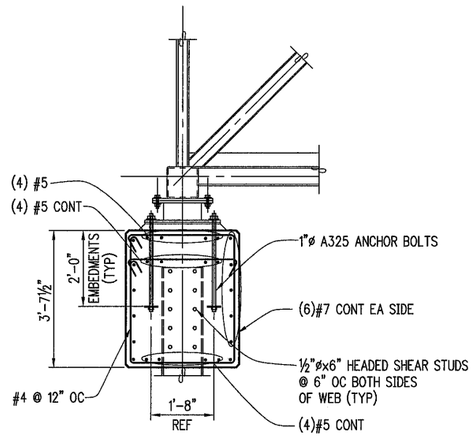
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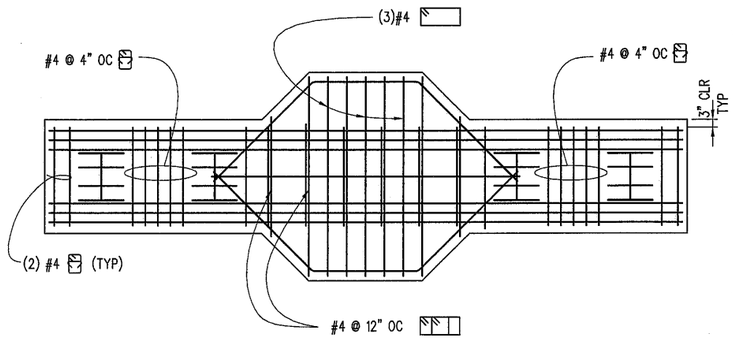
C S8S8 **PLAN**
SCALE: ½"=1'-0"



D S8S8 **SECTION**
SCALE: ½"=1'-0"



E S8S8 **SECTION**
SCALE: ½"=1'-0"



F S8S8 **SECTION**
SCALE: ½"=1'-0"

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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

GANGWAY SUPPORT DETAILS

DESIGNED	GN
DRAWN	DLR
CHECKED	GLS
DATE	8-19-97
JOB NO	96204
SHT NO	S8

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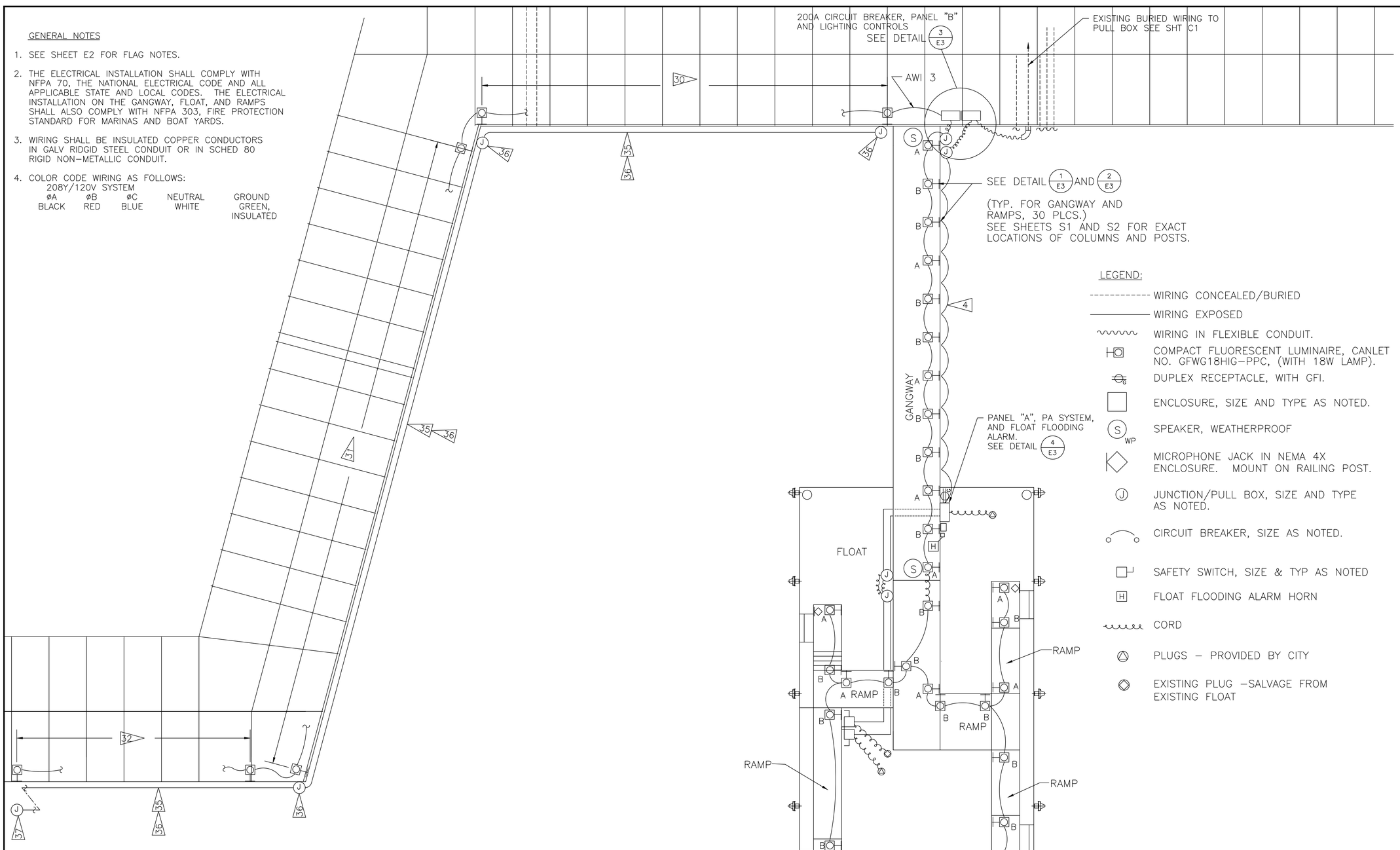
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LES: VALTB, FS:

ALL DRAWINGS REQUIRE FIELD/SITE VERIFICATION - INFORMATIONAL USE ONLY

GENERAL NOTES

1. SEE SHEET E2 FOR FLAG NOTES.
2. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH NFPA 70, THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE STATE AND LOCAL CODES. THE ELECTRICAL INSTALLATION ON THE GANGWAY, FLOAT, AND RAMPS SHALL ALSO COMPLY WITH NFPA 303, FIRE PROTECTION STANDARD FOR MARINAS AND BOAT YARDS.
3. WIRING SHALL BE INSULATED COPPER CONDUCTORS IN GALV RIDGID STEEL CONDUIT OR IN SCHED 80 RIGID NON-METALLIC CONDUIT.
4. COLOR CODE WIRING AS FOLLOWS:
   208Y/120V SYSTEM

øA	øB	øC	NEUTRAL	GROUND
BLACK	RED	BLUE	WHITE	GREEN, INSULATED



LEGEND:

- WIRING CONCEALED/BURIED
- WIRING EXPOSED
- WIRING IN FLEXIBLE CONDUIT.
- COMPACT FLUORESCENT LUMINAIRE, CANLET NO. GFWG18HIG-PPC, (WITH 18W LAMP).
- DUPLEX RECEPTACLE, WITH GFI.
- ENCLOSURE, SIZE AND TYPE AS NOTED.
- (S)WP SPEAKER, WEATHERPROOF
- MICROPHONE JACK IN NEMA 4X ENCLOSURE. MOUNT ON RAILING POST.
- (J) JUNCTION/PULL BOX, SIZE AND TYPE AS NOTED.
- CIRCUIT BREAKER, SIZE AS NOTED.
- SAFETY SWITCH, SIZE & TYP AS NOTED
- [H] FLOAT FLOODING ALARM HORN
- CORD
- PLUGS - PROVIDED BY CITY
- EXISTING PLUG -SALVAGE FROM EXISTING FLOAT

ELECTRICAL PLAN

0 5' 10' 15' 20' 30' 40' 60'

SCALE: 1" = 20'

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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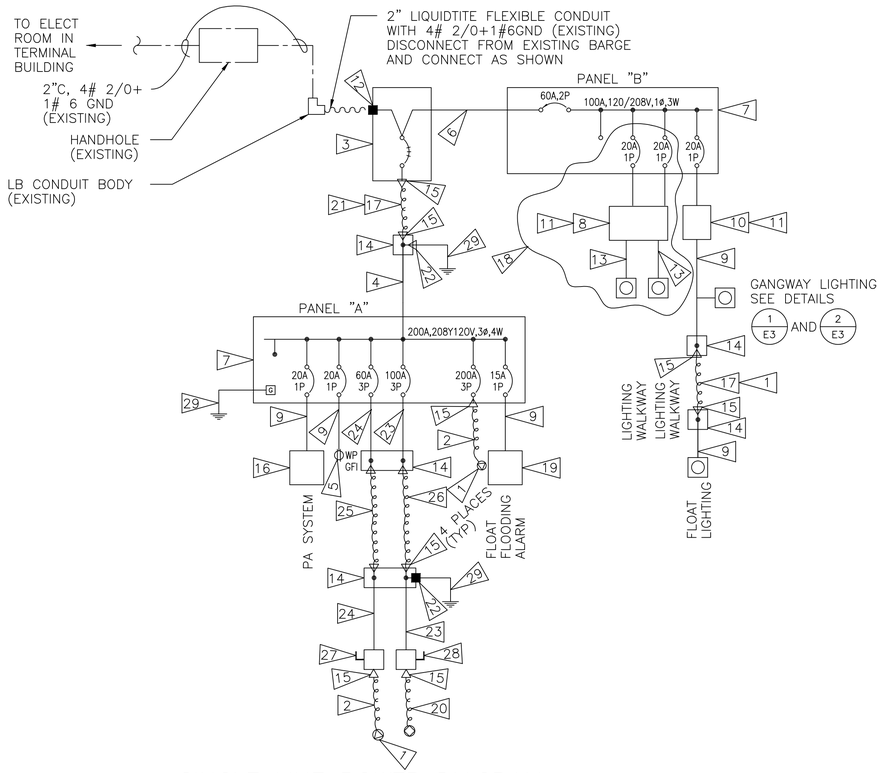
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VALLEJO FERRY DOCK TERMINAL
CITY OF VALLEJO, CA.

ELECTRICAL PLAN

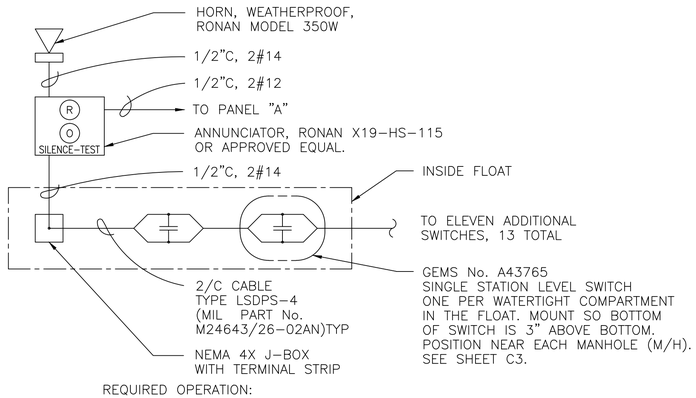
DESIGNED	WHH
DRAWN	ELR
CHECKED	MYK/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	E1

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SINGLE LINE POWER DIAGRAM

SCALE: NONE



REQUIRED OPERATION:

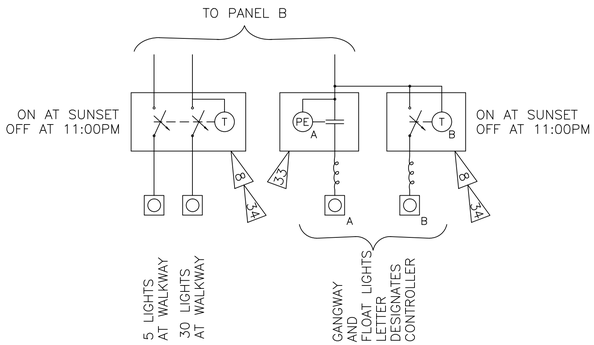
1. ON ALARM CONDITION, I.E. ANY LEVEL SWITCH DETECTS WATER, HORN SOUNDS, RED LIGHT ON ANNUNCIATOR FLASHES CONTINUOUSLY.
2. WHEN SILENCE BUTTON IS PUSHED, HORN IS SILENCED, RED LIGHT IS CONTINUOUSLY ILLUMINATED. THIS ALARM STATE REMAINS UNTIL THE PROBLEM IS CORRECTED, AT WHICH TIME THE REDLIGHT IS "OFF".
3. THE RED LIGHT (BUT NOT THE HORN) IS MOMENTARILY ILLUMINATED WHILE THE SILENCE/TEST BUTTON IS PRESSED TO TEST THE RED LIGHT.

FLOAT FLOODING ALARM SCHEMATIC

SCALE: NONE

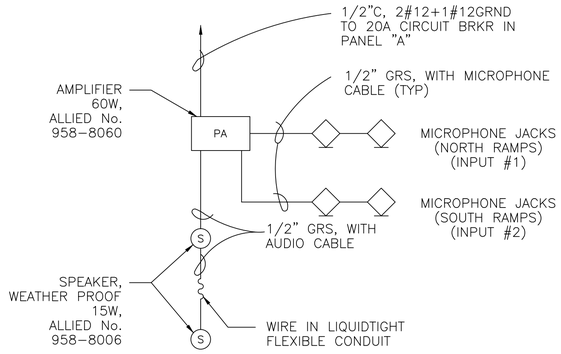
FLAG NOTES

1. INSTALL PLUG ON CORD. PLUG FURNISHED BY BOAT MFG. MATCH PHASE ROTATION TO BOAT AS REQUIRED.
2. POWER CORD, 100' LONG, 3/C#2 (ROUND). COIL ADJACENT TO CIRCUIT BREAKER.
3. ENCLOSED CIRCUIT BREAKER, 200AT, 3 POLE, 240V, IN NEMA 4X ENCLOSURE. FOR MOUNTING, SEE DETAILS 3 E2 & 4 E2
4. 2"C, 3#3/0, 1#4 NEUTRAL + 1#6 GND.
5. DUPLEX RECEPTACLE, WEATHERPROOF GFI TYPE.
6. 1"C, 3#6+1#10 GND
7. PANELBOARD, SIZE AND TYPE AS NOTED, NEMA 1 BOX. MOUNT INSIDE A NEMA 4X ENCLOSURE. ENCLOSURE SHALL HAVE A HINGED DOOR WITH QUICK RELEASE CLAMPS AND DEVICE FOR PADLOCKING.
8. ASTRONOMIC TIME SWITCH, TORK NO. 7000ZL DPDT, 40A, DPDT, 40A, 120VAC, WITH 16 HR SPRING POWER RESERVE.
9. 1/2"C, 2#12 +1#12 GND, ROUTE ALONG BOTTOM SIDE OF GANGWAY AND FLOAT PLATFORM.
10. LIGHTING CONTROLS – SEE LIGHTING CONTROL SCHEMATIC DESIGN
11. MOUNT IN NEMA 4X ENCLOSURE.
12. 2" LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTOR.
13. 1/2"C, 2#12 + 1#12 GROUND. ROUTE ALONG TOP CORD OF CANOPY STRUCTURE.
14. JUNCTION BOX, NEMA 4X, WITH TERMINAL STRIP. SIZE PER THE NEC.
15. LIQUIDTIGHT STRAIN RELIEF CONNECTOR WITH WIRE MESH GRIP. SIZE TO FIT CORD.
16. PUBLIC ADDRESS SYSTEM MOUNTED IN ENCLOSURE, FIBERGLASS NEMA 4X NOMINAL 20"x16"x12" WITH QUICK RELEASE LATCHES HOFFMAN NO. A20H1612GQRLP + A-20P16. AMPLIFIER IS 60W, ALLIED NO. 958-8006 OR APPROVED EQUAL. MOUNT ON BACK SIDE OF SUPPORT WELDMENT.
17. PROVIDE 4FT LENGTH OF CORD TO SPAN FROM EDGE OF WHARF TO TRANSFER SPAN AND FROM TRANSFER SPAN TO FLOAT. INSTALL SO FLEXIBLE CONDUIT WILL ACCOMMODATE DIFFERENTIAL MOVEMENTS.
18. PART OF AWI-3, SEE SHEET C1.
19. SEE FLOAT FLOODING ALARM SCHEMATIC FOR EQUIPMENT AND WIRING CONNECTIONS
20. EXISTING CORD AND PLUG. CONNECT AS SHOWN. MAINTAIN EXISTING PHASE CONNECTION
21. PORTABLE POWER CABLE, SALVAGE FROM EXISTING BARGE, TYPE G, ROUND 4/C #2/0 WITH #6 GND (ANIXTER NO 5E-2024C)
22. CABLE CONNECTORS, LIQUIDTIGHT
23. 1-1/4"C, 4 #2 + 1 #2 GND
24. 1"C, 4 #6 + 1 #8 GND
25. 5/C #6 TYPE W CORD
26. 5/C #2 TYPE W CORD
27. SAFETY SWITCH, 60A, 3P, 240V NON FUSIBLE, NEMA 4X
28. SAFETY SWITCH, 100A 3P, 240V NON FUSIBLE, NEMA 4X
29. 1/C #6 WELDING CABLE, EXOTHERMIC WELD TO GANGWAY OR FLOAT STEEL
30. INSTALL AND CONNECT 12 LUMINAIRES. MOUNT ON COLUMN SIMILAR TO DETAIL 1 E3 (ROUTE WIRE ON CANOPY STRUCTURE.) (AWI-3)
31. INSTALL AND CONNECT 18 LUMINAIRES. MOUNT ON COLUMN SIMILAR TO DETAIL 1 E3 (ROUTE WIRE ON CANOPY STRUCTURE.) (AWI-3)
32. INSTALL AND CONNECT 5 LUMINAIRES. MOUNT ON COLUMN SIMILAR TO DETAIL 1 E3 (ROUTE WIRE ON CANOPY STRUCTURE.) (AWI-3)
33. PHOTOELECTRIC CONTROL, TORK MODEL 2001 MOUNT IN CANOPY
34. MOUNT ASTRONOMICAL TIME SWITCH IN PADLOCKABLE NEMA 4X ENCLOSURE
35. REMOVE EXISTING 3/4" PLASTIC CONDUIT, CONDUIT CLAMPS, AND TELEPHONE CABLE BETWEEN EXISTING WALKWAY AND WATERFRONT RESTAURANT
36. INSTALL 3/4" GALV. RIGID STEEL CONDUIT COMPLETE, INCLUDING NEMA 4X PULL BOXES, FROM RESTAURANT TO GANGWAY. INSTALL PULL WIRE IN RACEWAY (FOR FUTURE TELEPHONE) MOUNT CONDUIT WITHIN 6" OF TOP OF WALKWAY
37. FIELD VERIFY LOCATION OF J-BOX AT RESTAURANT



LIGHTING CONTROL SCHEMATIC

SCALE: NONE



NOTE:

1. PROVIDE 3 HAND HELD MICROPHONES & CORD
2. INSTALL AMPLIFIER IN NEMA 4X PADLOCKABLE ENCLOSURE
3. INSTALL MICROPHONE JACK IN NEMA 4X PADLOCKABLE ENCLOSURE. ENCLOSURE SHALL HAVE SUFFICIENT VOLUME TO ACCOMODATE A HAND HELD MICROPHONE

PUBLIC ADDRESS SYSTEM SINGLE LINE DIAGRAM

SCALE: NONE

IF THIS SHEET IS LESS THAN 24X36 REDUCE SHOWN SCALE ACCORDINGLY.

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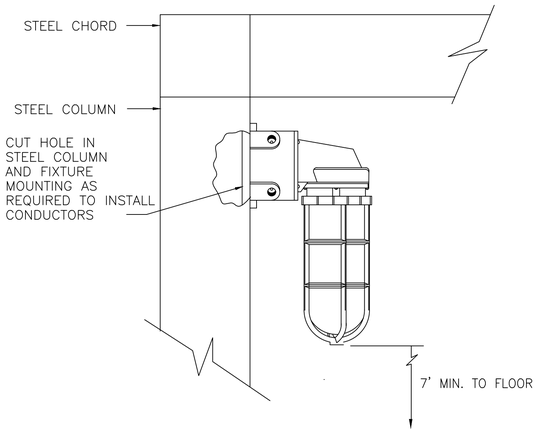
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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

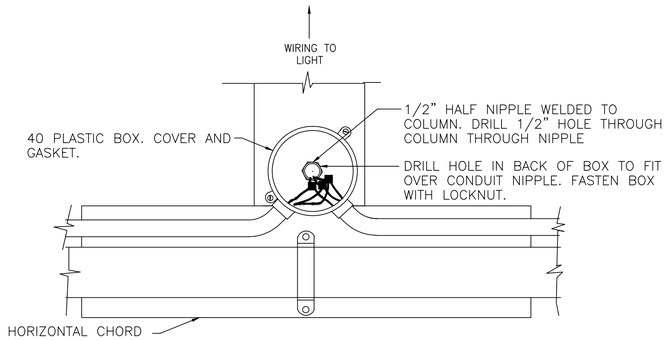
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DRAWN	ELR
CHECKED	MYK/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	E2

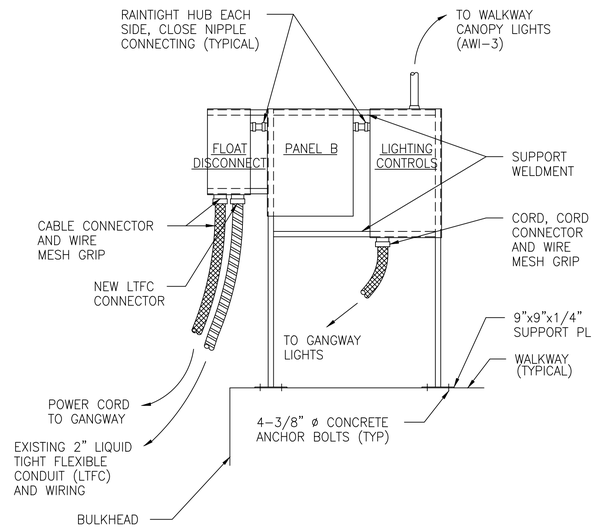
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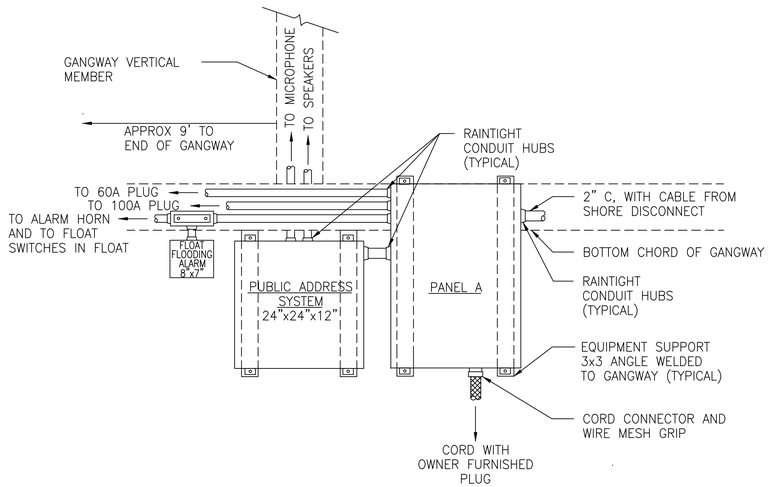
1 E1 E3 DETAIL – LUMINAIRE INSTALLATION
SCALE: NONE



2 E1 E3 DETAIL
SCALE: NONE



3 E1 E3 DETAIL
SCALE: NONE



4 E1 E3 DETAIL
SCALE: NONE

IF THIS SHEET IS LESS THAN 24X36
REDUCE SHOWN SCALE ACCORDINGLY.

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VALLEJO FERRY TERMINAL DOCK
CITY OF VALLEJO, CA.

ELECTRICAL DETAILS

DESIGNED	WHH
DRAWN	PS
CHECKED	JRL/GEG
DATE	8-19-97
JOB NO	FVL03
SHT NO	E3

MILLER PACIFIC ENGINEERING GROUP

Geotechnical Memorandum 01

To:	Foth Attn: Carrie Marshall, Alex Mora	Project:	Vallejo Ferry Terminal Relocation
From:	Nathan Klemin, GE	cc:	
Date:	April 24, 2025	Job No.:	2332.012
Subject:	Preliminary Geotechnical Recommendations for Lateral Capacity Soil Parameters		

This memorandum provides Miller Pacific Engineering Group's (MPEG) preliminary geotechnical recommendations for lateral capacity soil parameters for the Vallejo Ferry Terminal Relocation project in Vallejo, California. We understand that new steel pipe piles will be required to support the relocated ferry dock. These recommendations are intended to augment our existing preliminary recommendations outlined in our preliminary report for the project dated April 8, 2025. For recommendations not included in this memo, refer to the original preliminary report.

Preliminary Lateral Capacity Soil Parameters

The capacity of a deep foundation system to resist lateral loading is primarily a function of the soil type, foundation diameter, lateral stiffness of the soil-foundation system, allowable displacement and other factors. Preliminary parameters for input into LPILE computer software are summarized in Table 4 below. These values should be verified as part of a design-level investigation once soil borings and laboratory testing has been completed.

Table 1 – Parameters for Lateral Pile Analysis

Depth (feet)	LPILE Soil Type	Eff. Unit Weight (pcf)	Friction Angle (deg)	Undrained Shear Strength (psf)	Soil Modulus (pci)	Strain at 50% Deflec
0 to 10	Water	62.4	-	-	-	-
10 to 35	Soft Clay	95	0	150	10	2.5
35 to 85	Sand	120	25	1,000	100	1.0
85+	Bedrock*	120	30	2,000	200	1.0

(*) Bedrock not verified during subsurface exploration. Updated values should be provided as part of design-level investigation.

Supplemental Geotechnical Services

We should confirm our preliminary values as part of a design-level investigation for the project which should include additional subsurface exploration including soil borings to further identify and evaluate subsurface conditions with laboratory data. We should review structural drawings as they are developed to verify our recommendations have been incorporated. During construction, we would be able to consult regarding any unexpected geotechnical conditions. We should observe any site grading operations to confirm conditions are as anticipated.

We hope this provides you with the information you require at this time. Please do not hesitate to contact us with any questions or concerns.

Sincerely,

MILLER PACIFIC ENGINEERING GROUP



Nathan Klemin
Geotechnical Engineer No. 3168
(Expires 3/31/27)

REVIEWED BY:



Scott Stephens
Geotechnical Engineer No. 2398
(Expires 6/30/2025)

PRELIMINARY GEOTECHNICAL INVESTIGATION
VALLEJO FERRY TERMINAL RECONFIGURATION
289 MARE ISLAND WAY
VALLEJO, CALIFORNIA

April 8, 2025

Job No. 2332.012

Prepared for:
Foth
P.O. Box 5095
De Pere, Wisconsin 54115
Attn: Cody Flynn, P.E., Project Engineer

CERTIFICATION

This document is an instrument of service, prepared by or under the direction of the undersigned professionals, in accordance with the current ordinary standard of care. The service specifically excludes the investigation of environmental contamination, radon, asbestos, or any other hazardous material. The document is for the sole use of the client and consultants on this project. No other use is authorized. If the project changes, or more than two years have passed since issuance of this report, the findings and recommendations must be updated.

MILLER PACIFIC ENGINEERING GROUP
(a California corporation)



Nathan Klemin
Geotechnical Engineer No. 3168
(Expires 3/31/27)

REVIEWED BY:



Scott Stephens
Geotechnical Engineer No. 2398
(Expires 6/30/25)

MILLER PACIFIC ENGINEERING GROUP

PRELIMINARY GEOTECHNICAL INVESTIGATION
VALLEJO FERRY TERMINAL RECONFIGURATION
289 MARE ISLAND WAY
VALLEJO, CALIFORNIA

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TABLE 1: DETERMINISTIC PEAK GROUND ACCELRATIONS FOR ACTIVE FAULTS
TABLE 2: PROBABILISTIC PEAK GROUND ACCELRATIONS FOR ACTIVE FAULTS
TABLE 3: PRELIMINARY 2022 CALIFORNIA BUILDING CODE SEISMIC DESIGN CRITERIA

APPENDIX A: SUBSURFACE EXPLORATION
CPT Soil Interpretation Chart..... Figure A-1
CPT Logs .....A-2 through A-3

APPENDIX B: REFERENCE SUBSURFACE EXPLORATION

MILLER PACIFIC ENGINEERING GROUP

PRELIMINARY GEOTECHNICAL INVESTIGATION
VALLEJO FERRY TERMINAL RECONFIGURATION
289 MARE ISLAND WAY
VALLEJO, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of our Preliminary Geotechnical Investigation for the proposed Vallejo Ferry Terminal Reconfiguration located at 289 Mare Island Way in Vallejo, California. As shown on Figure 1, the project site is located within Mare Island Strait between the City of Vallejo and Mare Island.

Our work was performed in accordance with our Master Agreement and Purchase Order FV-P00000096, dated January 9, 2025. The purpose of our investigation was to explore the subsurface conditions and to develop preliminary geotechnical criteria for design and construction of the proposed improvements. The scope of our services includes:

- Review of available, published geologic mapping and geotechnical background information from our files, and any geologic/geotechnical background information supplied by you.
- Coordinate with Underground Service Alert (USA) to mark underground utilities in areas where we plan to conduct subsurface exploration.
- Subsurface exploration consisting of one half-day of Cone Penetration Tests (CPTs). We completed two CPTs that extended through the near-surface soils to a depth of about 26- to 56-feet below the ground surface or to refusal in firm soil or bedrock.
- Evaluation of relevant geologic hazards including seismic shaking, liquefaction, settlement, and other hazards.
- Preparing preliminary geotechnical recommendations and design criteria related to building foundations, site grading, temporary shoring, seismic design, and other geotechnical-related items.
- Preparing a Preliminary Geotechnical Investigation report which summarizes the referenced subsurface exploration, evaluation of relevant geologic hazards, and preliminary geotechnical recommendations and design criteria.

This report completes our Phase 1 scope of services for the project. Subsequent phases of work should include supplemental subsurface exploration and laboratory testing as part of a design level geotechnical investigation, design consultation/geotechnical plan review, and observation and testing of geotechnical-related work items during construction.

2.0 PROJECT DESCRIPTION

We understand the project generally consists of relocating the existing Vallejo Ferry Terminal dock to a location further out in Mare Island Strait. The project is in the early phase of design and trying to determine anticipated subsurface information for foundation design. A site plan showing the existing conditions and the approximate CPT locations is presented on Figure 2.

3.0 SITE CONDITIONS

3.1 Regional Geology

The project site is located within the Coast Ranges geomorphic province of California. It is typified by generally northwest-trending ridges and intervening valleys that formed as a result of movement along a group of northwest-trending fault systems, including the San Andreas Fault. Bedrock geology within the San Francisco Bay area is dominated by sedimentary, igneous, and metamorphic rocks of the Jurassic-Cretaceous age Franciscan Complex. Most of Franciscan rock types are composed of sandstone and pervasively sheared shale. It also includes less common rocks such as chert, serpentinite, basalt, greenstone, and exotic low- to high-grade metamorphic rocks, including phyllite, schist, and eclogite.

Regional geologic mapping (Dibblee, 1981) indicates that the project site is underlain Bay Mud (Geologic unit Qbm). Bay Mud typically consists of thick deposits of unconsolidated, highly compressible silty clay. A regional geologic map of the site and vicinity is presented on Figure 3.

3.2 Seismicity

The project site is located within the seismically active San Francisco Bay Area and will therefore experience the effects of future earthquakes. Earthquakes are the product of the build-up and sudden release of strain along a “fault” or zone of weakness in the earth's crust. Stored energy may be released as soon as it is generated, or it may be accumulated and stored for long periods of time. Individual releases may be so small that they are detected only by sensitive instruments, or they may be violent enough to cause destruction over vast areas.

Faults are seldom single cracks in the earth's crust but are typically composed of localized shear zones which link together to form larger fault zones. Within the Bay Area, faults are concentrated along the San Andreas Fault zone. The movement between rock formations along either side of a fault may be horizontal, vertical, or a combination, and is radiated outward in the form of energy waves. The amplitude and frequency of earthquake ground motions partially depends on the material through which it is moving. The earthquake force is transmitted through hard rock in short, rapid vibrations, while this energy becomes a long, high-amplitude motion when moving through soft ground materials, such as Bay Mud.

3.2.1 Regional Active Faults

An “active” fault is one that shows displacement within the last 11,000 years (i.e., Holocene) and has a reported average slip rate greater than 0.1 mm per year. The California Division of Mines and Geology has mapped various active and inactive faults in the region. These faults are shown in relation to the project site on the attached Active Fault Map, Figure 4. The nearest known active faults are the West Napa, Hayward, and the Green Valley Faults which are located roughly 6.6 kilometers northeast, 13.3 kilometers southwest, and 12.7 kilometers northeast of the site, respectively.

3.2.2 Historic Fault Activity

Numerous earthquakes have occurred in the region within historic times. Earthquakes (magnitude 2.0 and greater) that have occurred in the San Francisco Bay Area since 1985 have been plotted on a map shown on Figure 5.

3.2.3 Probability of Future Earthquakes

The site will likely experience moderate to strong ground shaking from future earthquakes originating on any of several active faults in the San Francisco Bay region. The historical records do not directly indicate either the maximum credible earthquake or the probability of such a future event. To evaluate earthquake probabilities in California, the USGS has assembled a group of researchers into the "Working Group on California Earthquake Probabilities" (USGS 2003, 2008, 2013) to estimate the probabilities of earthquakes on active faults. These studies have been published cooperatively by the USGS, CGS, and Southern California Earthquake Center (SCEC) as the Uniform California Earthquake Rupture Forecast, Versions 1, 2, and 3. In these studies, potential seismic sources were analyzed considering fault geometry, geologic slip rates, geodetic strain rates, historic activity, micro-seismicity, and other factors to arrive at estimates of earthquakes of various magnitudes on a variety of faults in California.

Conclusions from the most recent UCERF3 and USGS indicate the highest probability of an earthquake with a magnitude greater than 6.7 originating on any of the active faults in the San Francisco Bay region by 2043 is assigned to the Hayward/Rodgers Creek Fault system. The Hayward Fault is located approximately 26.4 kilometers (16.4 miles) northeast of the site and is assigned a probability of 33 percent. The San Andreas Fault, located approximately 3.5 kilometers (2.2 miles) southwest of the site, is assigned a 22 percent probability of an earthquake with a magnitude greater than 6.7 by 2043. Additional studies by the USGS regarding the probability of large earthquakes in the Bay Area are ongoing. These current evaluations include data from additional active faults and updated geological data.

3.3 Surface Conditions

The project site is located on the City of Vallejo side of Mare Island Strait. The proposed new terminal dock location is located approximately 320-feet from the inboard edge of the existing ferry terminal bulkhead/seawall. The areas around the ferry terminal consist of a seawall-supported suspended concrete slab promenade that wraps around the ferry terminal cove. Existing structures are located north and south of the terminal with additional concrete flatwork, landscaping, and asphalt parking areas. Existing site topography is relatively flat with elevations of approximately +7 to +11 feet MSL (mean sea level) based on Google Earth elevations.

3.4 Field Exploration

We explored the subsurface conditions near the proposed improvements on March 13, 2025 with two cone penetration tests (CPTs) at the approximate locations shown on Figure 2. The CPTs were advanced using an International Paystar 5000 by Middle Earth Geo Testing to depths ranging from 26- to 56-feet below the ground surface. An additional attempt and three additional attempts were performed at the CPT-01 and CPT-02 locations, respectively, with CPTs

encountering refusal between 15- and 22-feet below the ground surface before final attempts reaching the maximum depths previously noted. The interpreted soil types, densities, strengths, and liquefaction potential are presented in Appendix A. Additional geotechnical exploration with borings, additional cone penetration testing, and laboratory testing of soil samples should be performed at a later date as part of a Phase 2 design level geotechnical investigation.

3.5 Reference Subsurface Exploration

We reviewed field and laboratory data from the following reports:

- Kleinfelder, "Draft Supplemental Geotechnical Report, Vallejo Ferry Maintenance Facility, Phases 1 and 2, Mare Island, California," File No. 110410, Dated January 7, 2011.

The locations of reference borings/CPTs are shown on Figure 6 and relevant exploratory data are presented for reference in Appendix B.

3.6 Subsurface Soil Conditions

The subsurface exploration at the exploration locations generally corresponds with the regionally mapped geologic conditions. However, on the land side of the bulkhead, subsurface exploration encountered some fill materials over the Bay Mud. The site is overlain by approximately 6- to 7-feet of medium dense, clayey sand (SC) to stiff, sandy clay (CL) fill overlying about 10- to 25-feet of soft, compressible, silty clay (Bay Mud). Very dense/stiff alluvium was encountered below the Bay Mud with the CPTs reaching refusal at depths ranging from 26- to 55-feet. During subsurface exploration, we performed one CPT within the pedestrian walkway along Mare Island Strait, coring through a 5-inch thick slab with a large void space (approx. 10-feet) below before encountering soil, suggesting the walkway is a structural slab and pile supported.

3.7 Groundwater

Groundwater was encountered in the CPTs at depths between 5- and 7-feet below the ground surface. Groundwater should generally be expected in on-site excavations deeper than about 5 feet below grade and may be shallower during the winter months or following periods of heavy rain or high tides.

3.8 Anticipated Conditions within Mare Island Strait

Available online data indicates that Mare Island Strait (NOAA, 2011) has historically been dredged to a depth of approximately 30-feet below the water level, with the channel located on the western portion of the straight. The data also suggests that the depth of the channel is on the order of 15- to 20-feet in the area of the planned new terminal. Bathometric data of the channel bottom elevations are shown on Figure 2. Based on the previous subsurface exploration and available depth data within Mare Island Strait, we have prepared a preliminary cross section of anticipated conditions, as shown on Figure 6.

4.0 GEOLOGIC HAZARDS

This section summarizes our review of commonly considered geologic hazards and discusses their potential impacts on the planned improvements. The primary geologic hazards which could affect the proposed development include strong seismic ground shaking, liquefaction, settlement, and flooding. Other geologic hazards are judged less than significant regarding the proposed project. Geologic hazards, potential impacts and mitigation measures are discussed in further detail in the following sections.

4.1 Fault Surface Rupture

Under the Alquist-Priolo Earthquake Fault Zoning Act, the California Division of Mines and Geology (now known as the California Geological Survey) produced 1:24,000 scale maps showing known active and potentially active faults and defining zones within which special fault studies are required. The nearest known active fault to the site is the San Andreas Fault located approximately 3.5 kilometers to the southwest. The site is not located within an Alquist-Priolo Special Studies Zone. We therefore judge the potential for fault surface rupture in the development area to be low.

Evaluation: *Less than significant.*
Recommendation: *No special engineering measures are required.*

4.2 Seismic Shaking

The site will likely experience seismic ground shaking similar to other areas in the seismically active Bay Area. The intensity of ground shaking will depend on the characteristics of the causative fault, distance from the fault, the earthquake magnitude and duration, and site-specific geologic conditions. Estimates of peak ground accelerations are based on either deterministic or probabilistic methods.

Deterministic methods use empirical attenuation relations that provide approximate estimates of median peak ground accelerations. A summary of the active faults that could most significantly affect the planning area, their maximum credible magnitude, closest distance to the center of the planning area, probable peak ground accelerations, and 84th percentile peak ground accelerations are summarized in Table 1. The calculated accelerations should only be considered as reasonable estimates. Many factors (e.g., soil conditions, orientation to the fault, etc.) can influence the actual ground surface accelerations.

Table 1 – Deterministic Peak Ground Accelerations for Active Faults

Fault	Moment Magnitude for Characteristic Earthquake	Closest Estimated Distance (km)	Median Peak Ground Acceleration (g)	84% Peak Ground Acceleration (g)
West Napa	7.0	6.6	0.33	0.53
Hayward	7.6	13.3	0.28	0.46
Rodgers Creek	7.6	17.5	0.26	0.42
Green Valley	6.3	12.7	0.21	0.35
Concord	6.5	14.7	0.21	0.35

Reference: Abrahamson, Silva & Kamai, Boore, Stewart, Seyhan & Atkinson, Campbell & Bozorgnia, and Chiou & Youngs 2014 NGA models using V_{s30} = 180 m/s.

Probabilistic Seismic Hazard Analysis analyzes all possible earthquake scenarios while incorporating the probability of each individual event to occur. The probability is determined in the form of the recurrence interval, which is the average time for a specific earthquake acceleration to be exceeded. The design earthquake is not solely dependent on the fault with the closest distance to the site and/or the largest magnitude, but rather the probability of given seismic events occurring on both known and unknown faults.

We calculated the peak ground acceleration for two separate probabilistic conditions; the 2 percent chance of exceedance in 50 years (2,475-year statistical return period) and the 10 percent chance of exceedance in 50 years (475-year statistical return period). The peak ground acceleration values were calculated utilizing the USGS Unified Hazard Tool (USGS, 2020). The results of the probabilistic analyses are presented below in Table 2.

Table 2 – Probabilistic Peak Ground Accelerations for Active Faults

Probability of Exceedance	Statistical Return Period	Magnitude	Peak Ground Acceleration (g)
2% in 50 years	2,475 years	6.74	0.79
10% in 50 years	475 years	6.74	0.51

Reference: USGS Unified Hazard Tool accessed on March 20, 2025. Site Class E= 180 (ft/sec)

Ground shaking can result in structural failure and collapse of structures or cause non-structural building elements (such as light fixtures, shelves, cornices, etc.) to fall, presenting a hazard to building occupants and contents. Compliance with provisions of the most recent version of the California Building Code (2022 CBC) should result in structures that do not collapse in an earthquake. Damage may still occur, and hazards associated with falling objects or non-structural building elements will remain.

The potential for strong seismic shaking at the project site is high. Due to their proximity and historic rates of activity, the West Napa, Hayward, and Rodgers Creek Faults present the highest potential for severe ground shaking. The significant adverse impact associated with strong seismic shaking is potential damage to structures and improvements.

Evaluation: *Less than significant with mitigation.*
Recommendation: *Measures include design of new structures in accordance with the provisions of the 2022 California Building Code or subsequent codes in effect when final design occurs. Preliminary seismic design coefficients are presented in Section 5.1 of this report.*

4.3 Liquefaction and Related Effects

Liquefaction refers to the sudden, temporary loss of soil shear strength during strong ground shaking. Liquefaction-related phenomena include liquefaction-induced settlement, flow failure, and lateral spreading. These phenomena can occur where there are saturated, loose, granular deposits. Recent advances in liquefaction studies indicate that liquefaction can occur in granular materials with a high, 35 to 50%, fines content (soil particles that pass the #200 sieve), provided the fines exhibit a plasticity less than 7. Saturated granular layers were observed during our subsurface exploration of the site. Additionally, the site is mapped by the Association of Bay Area Governments (ABAG) as being very highly susceptible to liquefaction as shown on Figure 7.

To evaluate soil liquefaction, the seismic energy from an earthquake is compared with the ability of the soil to resist pore pressure generation. The earthquake energy is termed the cyclic stress ratio (CSR) and is a function of the maximum considered earthquake peak ground acceleration (PGA) and depth. Soil resistance to liquefaction is based on its relative density, and the amount and plasticity of the fines (silts and clays). The relative density of cohesionless soil is correlated with CPT data measured in the field and corrected for overburden and percent fines.

We analyzed the potential for liquefaction utilizing the procedures outlined by Idriss and Boulanger (2014) within the liquefaction interpretation program, CLiq (Geologismiki, CLiq). The seismic event input into the model consisted of a magnitude 7.0 earthquake producing a PGA of 0.68 g, which corresponds to the PGA_M defined in ASCE 7-16. The results of our analyses indicate there are several liquefiable sandy soil layers of various thicknesses within the Bay Mud layer. Some small, isolated lenses within the deeper sands in CPT-01 show marginal signs of liquefaction. Given the new ferry terminal dock will likely be supported on pile foundations, and likely densification during foundation installation, we judge the risk of liquefaction impacting the improvements is low.

Evaluation: *Less than significant with mitigation.*
Recommendation: *Deep foundations should be utilized that extend through the Bay Mud soils and sufficiently into the underlying dense/stiff alluvium. Preliminary foundation design criteria is provided in Section 5.3.*

4.4 Settlement

Significant settlement can occur when loads (fill or structures) are placed at sites that are located over Bay Mud. The project site is located over an approximately 10- to 20-foot-thick deposit of Bay Mud based on our subsurface exploration. Bay Mud thicknesses may be greater within Mare Island Strait. The amount and rate of settlements are dependent on the amount of previous loads, additional (new) loads, previous loading history, thickness of compressible material, and inherent compressibility properties of the Bay Mud.

Our subsurface exploration indicates that 10- to 25-feet of Bay Mud underlies portions of the site with additional mud thicknesses likely within Mare Island Strait. However, we understand that the new ferry terminal dock will be located within Mare Island Strait and that deep foundations are likely. Considering the bulkhead and near shoreline improvements appear supported on piles, we judge the risk of damage to improvements from settlement is low. Some minor differential movement should be expected between the new docks/ramps and the ground surface along the shores of Mare Island Strait.

Evaluation: *Less than significant with mitigation.*
Recommendation: *Utilization of deep foundations would reduce expected total and differential settlements of new and old structures to less than 1-inch. Additional discussion and preliminary recommendations for site grading and new foundations are presented in Section 5 of this report.*

4.5 Seismic Densification

Seismic ground shaking can induce settlement in unsaturated, loose, granular soils. Settlement occurs as the loose soil particles rearrange into a denser configuration when subjected to seismic ground shaking. Varying degrees of settlement can occur throughout a deposit, resulting in differential settlement of structures founded on such deposits. Based on our subsurface exploration, the risk of seismic densification at the planned project area impacting the new structures is low.

Evaluation: *Less than significant.*
Recommendation: *Utilization of deep foundations would reduce any impacts for seismic densification.*

4.6 Expansive Soils

Soil expansion occurs when clay particles interact with water causing seasonal volume changes in the soil matrix. The clay soil swells when saturated and then contracts when dried. This phenomenon generally decreases in magnitude with increasing confinement pressures at increasing depths. These volume changes may damage lightly loaded foundations, concrete slabs, pavements, retaining walls and other improvements. Expansive soils also cause soil creep on sloping ground.

The project includes relocation of the existing ferry terminal dock further out into Mare Island Strait and do not anticipate any significant work to occur on land. Therefore, the risk of damage to improvements from expansive soils is low.

Evaluation: *Less than significant.*
Recommendation: *No special engineering measures are required. Although, if significant site grading or flatwork is planned on land, additional subsurface exploration should be performed to evaluate the site for expansive soils as part of a design-level investigation.*

4.7 Lurching and Ground Cracking

Lurching and associated ground cracking can occur during strong ground shaking. The ground cracking generally occurs along the tops of slopes where stiff soils are underlain by soft deposits or along steep slopes or channel banks. Slopes adjacent to the site are currently supported by sheet pile bulkheads. Provided new fills are not placed at the site, the risk of lurching and ground cracking impacting the new structures is low.

Evaluation: *Less than significant.*
Recommendation: *No special engineering measures are required.*

4.8 Erosion and Scour

Sandy soils on moderately steep slopes or clayey soils on steep slopes are susceptible to erosion when exposed to concentrated surface water flow. The potential for erosion is increased when established vegetation is disturbed or removed during normal construction activity. Within the channel, scour can occur due to new improvements.

Evaluation: *Less than significant with mitigation.*
Recommendation: *For new improvements at the site, careful attention should be paid to finished grades and the project Civil Engineer should design the site drainage system to collect surface water into a storm drain system that discharges water at appropriate locations. Re-establishment of vegetation on disturbed areas will also minimize erosion. Erosion control measures during and after construction should be in accordance with a prepared Storm Water Pollution Prevention Plan and should conform to the most recent version of the California Stormwater Quality Association, Stormwater Best Management Practice Handbook.*

The potential for scour around new piles should be evaluated to determine future embedment depth that can affect vertical and lateral pile capacities. A scour evaluation should be performed by a qualified consultant.

4.9 Slope Instability/Landsliding

Slope instability generally occurs on relatively steep slopes and/or on slopes underlain by weak materials. The project site lies within Mare Island Strait which has variable elevations along the bottom of the channel, specifically a dredged section along the western portion of the strait. Future dredging of the strait may create steep conditions along the edge of the dredged section, causing instability within the soft Bay Mud adjacent to new pile foundations. Therefore, slope instability/landsliding is considered a moderate geologic hazard at the project site.

Evaluation: *No significant impact.*
Recommendation: *The potential for dredge instability around new piles should be evaluated to determine future embedment depth that can affect vertical and lateral pile capacities. On a preliminary basis, the depth of potential instability should correlate with the maximum dredge depth in the vicinity.*

4.10 Flooding

Where the terminal dock connects to land, the project site is located at about elevation +11 feet and is mapped as being within a 100-year flood zone (ABAG, 2025) as shown on Figure 8. Therefore, large scale flooding is considered a moderate hazard at the project site.

Evaluation: *Less than significant with mitigation.*
Recommendations: *Measures include designing terminal docks that will be above the local permitting agency minimums.*

4.11 Tsunami and Seiche

Seiche and tsunamis are short duration, earthquake-generated water waves in large, enclosed bodies of water and the open ocean, respectively. The extent and severity of a seiche or tsunami would be dependent upon ground motions and fault offset from nearby active faults.

There have been eight credible local seiche events observed in San Francisco Bay between 1854 and 1906, six of which are attributed to earthquake activity and two to landslides. The Mare Island earthquake caused the largest seiche with 0.6-meter amplitude waves near Benicia and is attributed to slip on the Rodgers Creek fault. No confirmed seiche have been recorded in San Francisco Bay since 1906.

The project site is located along Mare Island Strait, which is directly connected to San Pablo Bay and is not mapped as being within an inundation area (ABAG, 2025). Therefore, the risk of inundation is low at the project site.

Evaluation: *Less than significant.*
Recommendations: *No special engineering measures are required. However, the design of the terminal structure should take into account potential for high water elevations during a tsunami/seiche event and potential impacts from waves generated.*

4.12 Sea Level Rise

Globally, sea levels are rising due to thermal expansion caused by the ocean warming and the melting of land-based ice such as glaciers and polar ice caps. Regionally and locally, sea level rise has the potential to influence the impact of coastal, riverine, and localized nuisance flooding. These may result in permanent inundation, more frequent and longer duration floods, shoreline erosion and overtopping, elevated groundwater and increased salinity intrusion. The National Oceanic and Atmospheric Administration (NOAA) predicts that the sea level may rise as much as 1- to 3-feet within the next 30-years and even greater levels by 2100. The project site is located along/within Mare Island Strait at an elevation of between +7 and +11 feet above sea level. Therefore, the risk of sea level rise inundation is moderate at the project site. A detailed analysis of Sea Level Rise was beyond the scope of our evaluation but could be considered by a Civil Engineer and consultation with the Planning Department.

Evaluation: *Less than significant.*
Recommendations: *We anticipate the new dock structure will float and accommodate potential sea level rise.*

5.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our preliminary investigation, we conclude the site conditions are suitable for the proposed improvements. The primary geotechnical issues to address in design of the project are strong seismic shaking due to the close proximity of the San Andreas Fault, liquefaction induced settlement, consolidation settlement of soft clay deposits (Bay Mud), and potential scour and instability in the bay mud layer.

5.1 Seismic Design

The project site is located in a seismically active area. Therefore, structures should be designed in conformance to the seismic provisions of the California Building Code (CBC). However, since the goal of the building code is protection of life safety, some structural damage may still occur during strong ground shaking. We recommend minimum mitigation of ground shaking include seismic design per the 2022 California Building Code/ASCE 7-16.

The magnitude and character of these ground motions will depend on the particular earthquake and the site response characteristics. Based on the interpreted subsurface conditions and close proximity to the West Napa, Hayward, and Green Valley Faults, we recommend the CBC coefficients and site values shown in Table 4 below for use to calculate the design base shear of the new construction.

Per ASCE 7-16 Section. 11.4.8, a Site-Specific Ground Motion Hazard Analysis shall be performed in accordance with ASCE 7-16 Section 21.2 on sites classified as a “Site Class E” if the S_S value is greater than or equal to 1.0 g or S_1 values greater than 0.2 g. The S_s and S_1 for the site conditions and location are 1.50 g and 0.60 g, respectively. However, per ASCE 7-16; Supplement 3; Section 11.4.8, a Site-Specific Ground Motion Hazard Analysis is not required if the equivalent lateral force procedure is used and the value of Cs is determined by Eq. 12.8-2 for

all values of T, and the value of Sai is determined by Eq. 15.7-7 for all values of Ti and the value of the parameter SD1 is replaced with 1.5SD1 in Eq. 15.7-10 & Eq. 15.7-11. If the Project Structural Engineer utilizes this exception the seismic design values summarized on Table B below can be utilized.

Table 4 – Preliminary 2022 California Building Code Seismic Design Criteria

Parameter	Design Value
Site Latitude	38.0999°N
Site Longitude	-122.2630°W
Site Class	E
Spectral Response (short), S_S	1.50 g
Spectral Response (1-sec), S_1	0.60 g
Spectral Response (short), S_{MS}	1.80 g
Spectral Response (1-sec), S_{M1}	1.80 g*
Design Spectral Response (short), S_{DS}	1.20 g
Design Spectral Response (1-sec), S_{D1}	1.20 g
MCE_G PGA Adjusted, PGA_M	0.676 g

(*) SM1 values already increased by 50%.

The effects of earthquake shaking (i.e., protection of life safety) can be mitigated by close adherence to the seismic provisions of the current edition of the CBC. However, some building damage may still occur during strong ground shaking.

5.2 Preliminary Site Grading Considerations

We do not anticipate that any grading will be required for this project. If any fills are planned on the land side, placement of new fills may induce additional future settlements that could damage improvements or add new loads to the existing bulk heads. Additional analysis should be performed if new fills are planned as part of a design-level investigation.

Any required site excavations on the land will generally encounter 6- to 7-feet of variable fill material over soft Bay Mud. Where excavations cross the pedestrian pathways adjacent to the bulkheads that are parallel to Mare Island Strait, void spaces should be expected below the pile-supported slab. Any required cutting through these slabs will require structural analyses to develop a repair plan that maintains the structural integrity of the slab. Based on our previous experience, the majority of site excavations can probably be performed with “traditional” grading equipment, such as medium-size dozers and excavators. Subsurface exploration and laboratory testing should be performed as part of a future design-level Investigation to confirm fill thicknesses, excavation conditions, and soil-type classifications. On a preliminary basis, onsite fill and Bay Mud soils should be considered “Type C” and will likely be prone to caving or collapse in open excavations.

5.3 Probable Foundation Types

Given the location of the structure over the water, a deep foundation system bearing on firm materials below the compressible Bay Mud should be considered for the new gangway and dock structures. We understand that 36-inch diameter steel pipe piles are proposed for this project. Based on the subsurface conditions, we judge that these foundations are likely suitable. Suitable deep foundation options at the site could include torque-down piles, driven or vibratory piles. Traditional drilled piers are also not recommended due to the water conditions and "squeezing" Bay Mud soils which require casing the drilled holes or using slurry support, and also the collection and disposal of saturated drilling spoils.

With adequately embedded piles, total and differential settlements should be negligible across the structure. However, some minor differential settlement between the structure and land grades should be expected if deep foundations are used as some minor consolidation settlement and secondary compression from the original fill placement occurs. Flexible connections are recommended to reduce the likelihood of damage at the interface with structures supported on deep foundations. Preliminary pile capacities using 12-, 24, and 36-inch diameter pipe piles with a wall thickness of 0.75-inches are provided on Figure 9 for the interpreted soil conditions at the location of the new dock. These values should be confirmed as part of a design-level investigation.

We anticipate that lateral passive resistance would need to be provided by lateral pressure against the outside of the piles. It may be difficult to get adequate lateral capacity due to the thickness of the underlying Bay Mud and water depth. Battered piles may be required to provide necessary lateral support. Specific design criteria for deep foundation systems and pile analysis can be provided in a future design level geotechnical report.

5.4 Exterior Concrete Slabs

Exterior concrete walkway slabs and other concrete slabs that are not subjected to vehicle loads should be a minimum of 5 inches thick and underlain with 4 inches or more of Class 2 aggregate baserock. The aggregate baserock should be moisture conditioned to near optimum and compacted to at least 95 percent relative compaction. The upper 8 inches of subgrade on which aggregate baserock is placed should be prepared as previously discussed under Section 5.2. It should be noted, the existing pedestrian walkway along Mare Island Strait adjacent to the existing ferry terminal consists of a 5-inch-thick pile-supported slab.

Where improved performance is desired (i.e., reduced risks of cracking or small movements), exterior slabs can be thickened to 6 inches and reinforced with steel reinforcing bars (not welded wire mesh). We recommend crack control joints no farther than 6 feet apart in both directions and that the reinforcing bars extend through the control joints. Some movement or offset at sidewalk joints should be expected as the underlying soils expand and shrink from seasonal moisture changes or experience differential settlement due to static or seismic loading.

6.0 SUPPLEMENTAL GEOTECHNICAL SERVICES

Following review and consideration of this report, we should consult with the project team regarding the "preferred" foundation type for the new structures. Supplemental exploration and laboratory testing will be required once project details are better defined (e.g., bridge layouts and structural loads, extent of excavation, etc.) to prepare design level geotechnical recommendations. We will also be available to provide consultation throughout the design process on other geotechnical-related items.

As project plans near completion, we should review them to ensure that the intent of our recommendations has been sufficiently incorporated in the design. During construction, we should be present intermittently to observe and test the geotechnical portions of the work. The purpose of our observation and testing is to confirm that site conditions are as anticipated, to adjust our recommendations and design criteria if needed, and to confirm that the Contractor's work is performed in accordance with the project plans and specifications.

7.0 LIMITATIONS

We believe this report has been prepared in accordance with generally accepted geotechnical engineering practices in the San Francisco Bay Area at the time the report was prepared. This report has been prepared for the exclusive use of WETA and/or their assignees specifically for this project. No other warranty, expressed or implied, is made. Our evaluations and recommendations are based on the data obtained during our subsurface exploration program and our experience with soil conditions in this geographic area.

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Youd, T.L. "Liquefaction-Induced Lateral Ground Displacement" (April 2, 1995). *International Conferences on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics.* Paper 3.



SITE COORDINATES
LAT. 38.100097°
LON. -122.262720°

SITE LOCATION

N.T.S.

NORTH

REFERENCE: Google Earth, 2025

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FILENAME: 2332.012 SF.dwg

SITE LOCATION MAP

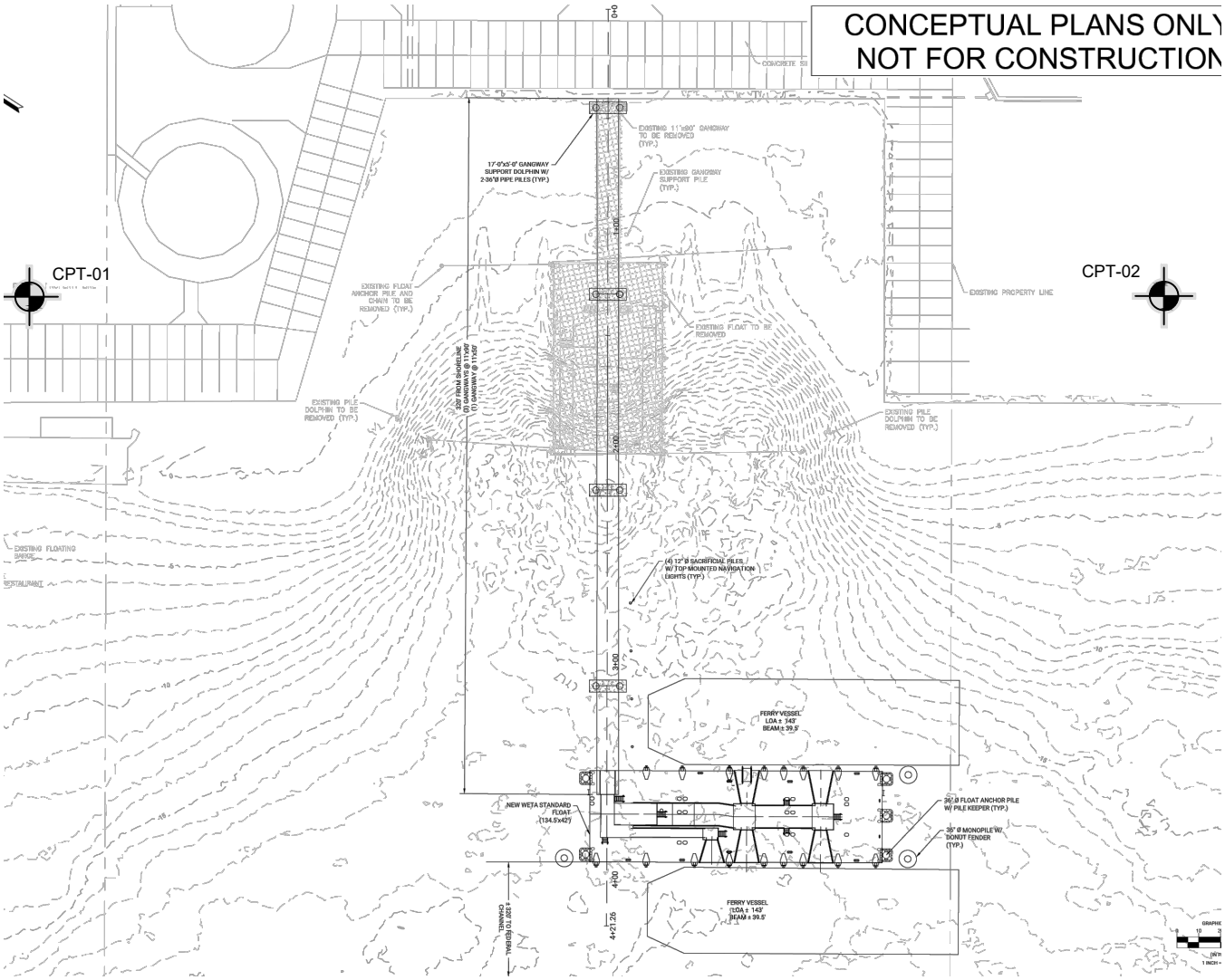
FOTH
Vallejo Ferry Terminal Expansion
Vallejo, California

Project No. 2332.012 Date: 4/8/2025

Drawn CMS
Checked

1
FIGURE

CONCEPTUAL PLANS ONLY
NOT FOR CONSTRUCTION



SITE PLAN

SCALE

0 40 80 160 FEET

NORTH

Approximate location of CPT by MPEG, March 2025

REFERENCE: Foth, San Francisco Bay Area WETA, Vallejo Ferry Terminal Reconfiguration Options, "Option 3: Site Plan", 1/13/23.

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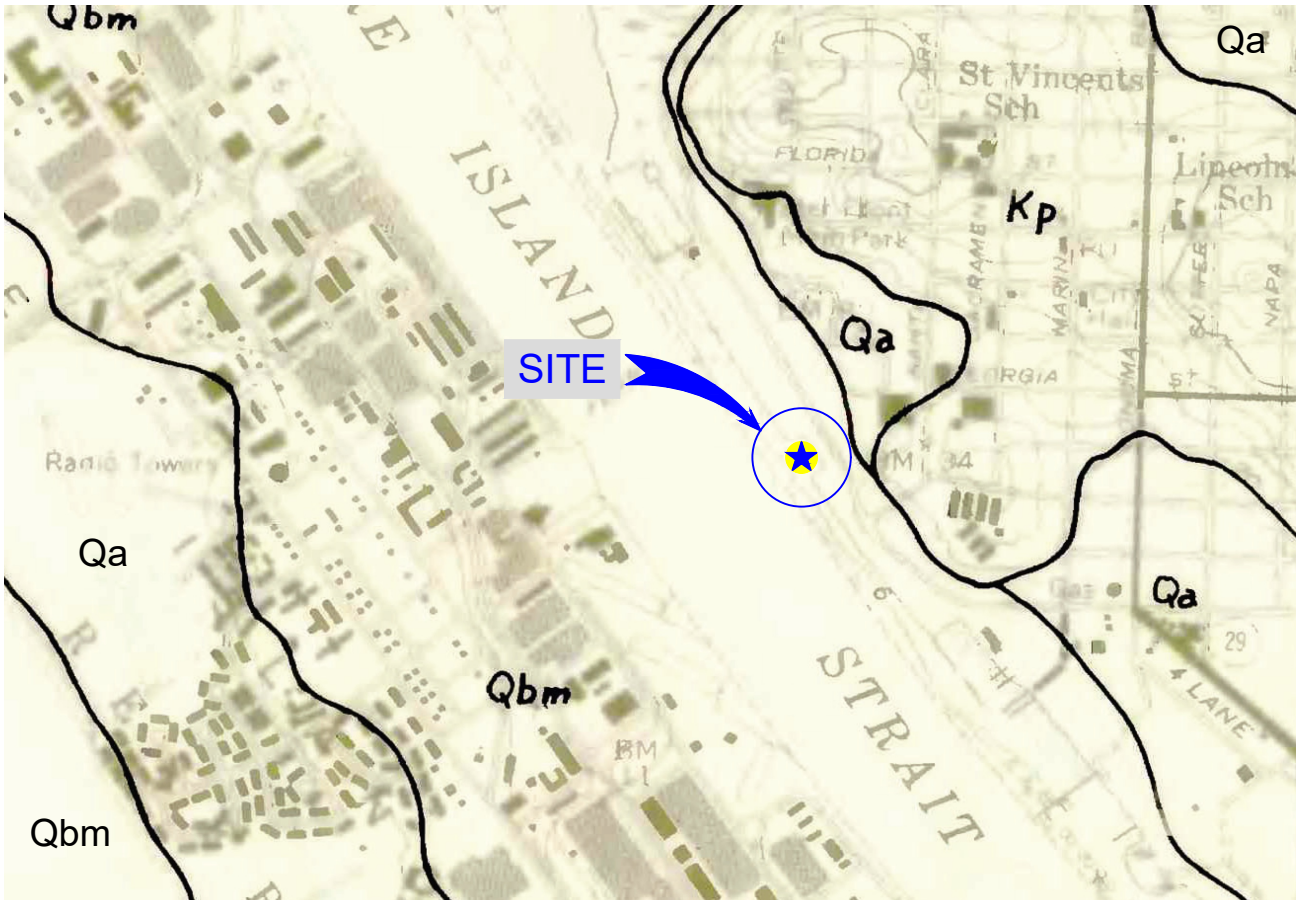
SITE PLAN

FOTH
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Vallejo, California

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2
FIGURE



REGIONAL GEOLOGIC MAP

NORTH

LEGEND

Qa **Alluvium:** Unconsolidated deposits of clay, silt, sand, and gravel underlying valley bottoms, consisting of materials transported and deposited by streams.

Qbm **Bay Mud:** Thick deposits of unconsolidated, low-density, semi-fluid, highly compressible, highly impermeable silty clay.

Kp **Panoche Formation:** Micaceous Shale, minor thin sandstone beds.

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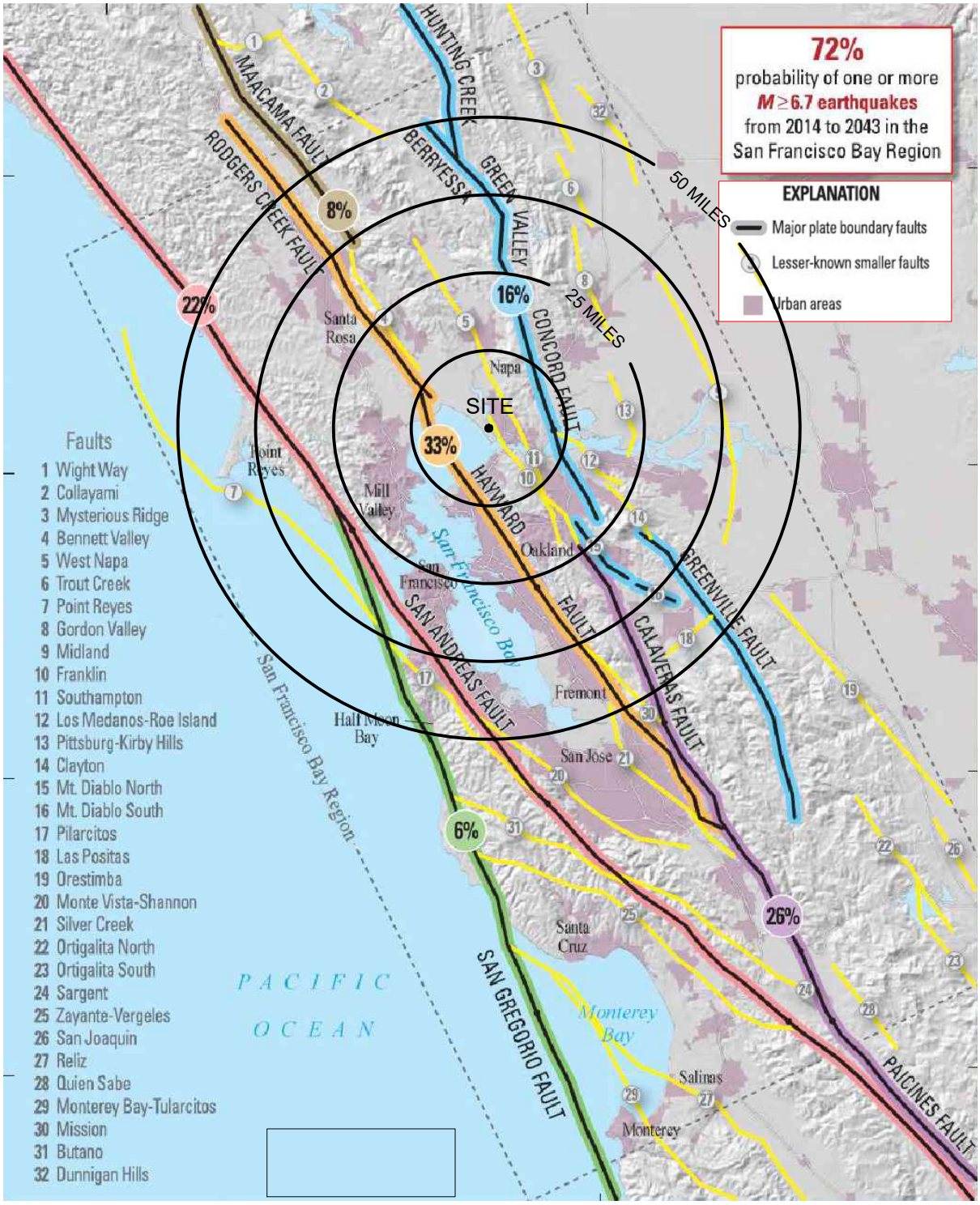
REGIONAL GEOLOGIC MAP

FOTH
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Vallejo, California

Project No. 2332.012 Date: 4/8/2025

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Checked

3
FIGURE



SITE COORDINATES
LAT. 37.100097°
LON. -122.262720°

SCALE
0 12.5 25 50 MILES

NORTH

DATA SOURCE:
1) U.S. Geological Survey, U.S. Department of the Interior, "Earthquake Outlook for the San Francisco Bay Region 2014-2043", Map of Known Active Faults in the San Francisco Bay Region, Fact Sheet 2016-3020, Revised August 2016 (ver. 1.1).

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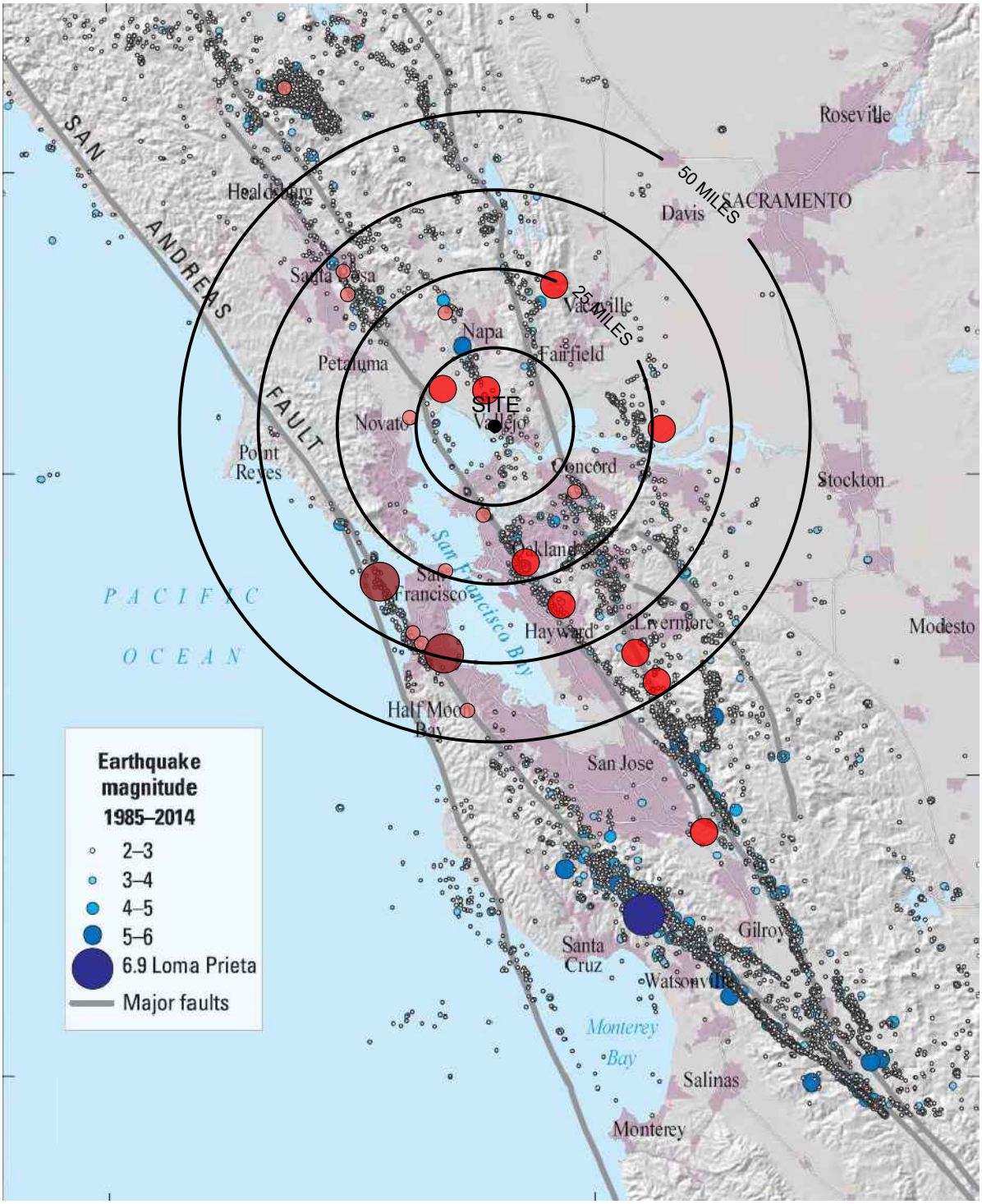
ACTIVE FAULT MAP

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Vallejo, California

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Drawn CMS
Checked

4
FIGURE



SITE COORDINATES
LAT. 37.100097°
LON. -122.262720°

SCALE
0 12.5 25 50 MILES

NORTH

LEGEND & DATA SOURCE:

See legend above. U.S. Geological Survey, U.S. Department of the Interior, "Earthquake Outlook for the San Francisco Bay Region 2014-2043", Map of Known Active Faults in the San Francisco Bay Region, Fact Sheet 2016-3020, Revised August 2016 (ver. 1.1). Large circles indicate earthquakes M>7.0, medium circles indicate 6.0<M<7.0 and small circles indicate 5.0<M<6.0 .U.S. Geological Survey, Earthquake Catalog Search, https://earthquake.usgs.gov/earthquakes/search/. Earthquakes between 1830 and 2021.

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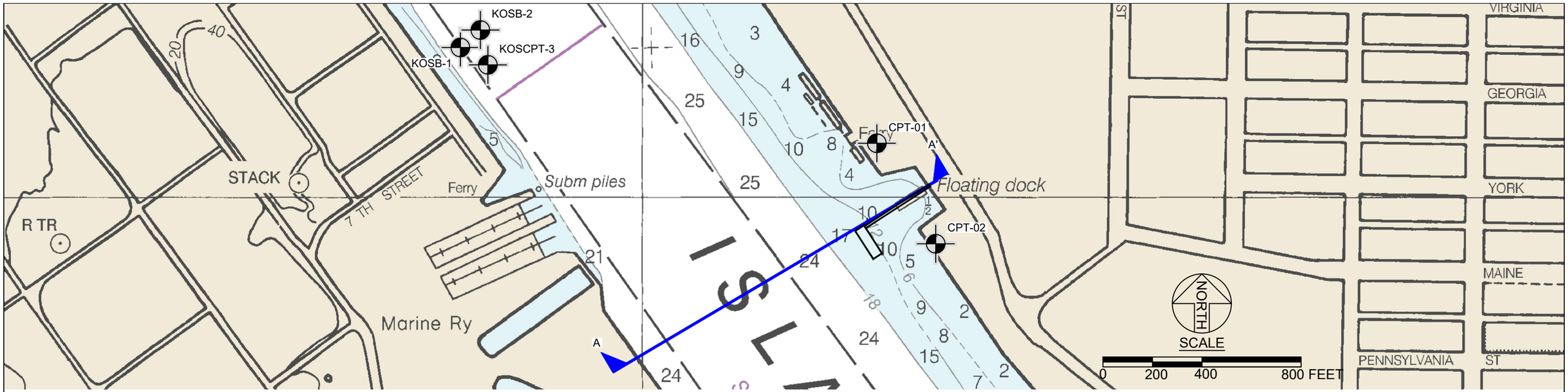
HISTORIC EARTHQUAKE ACTIVTY MAP

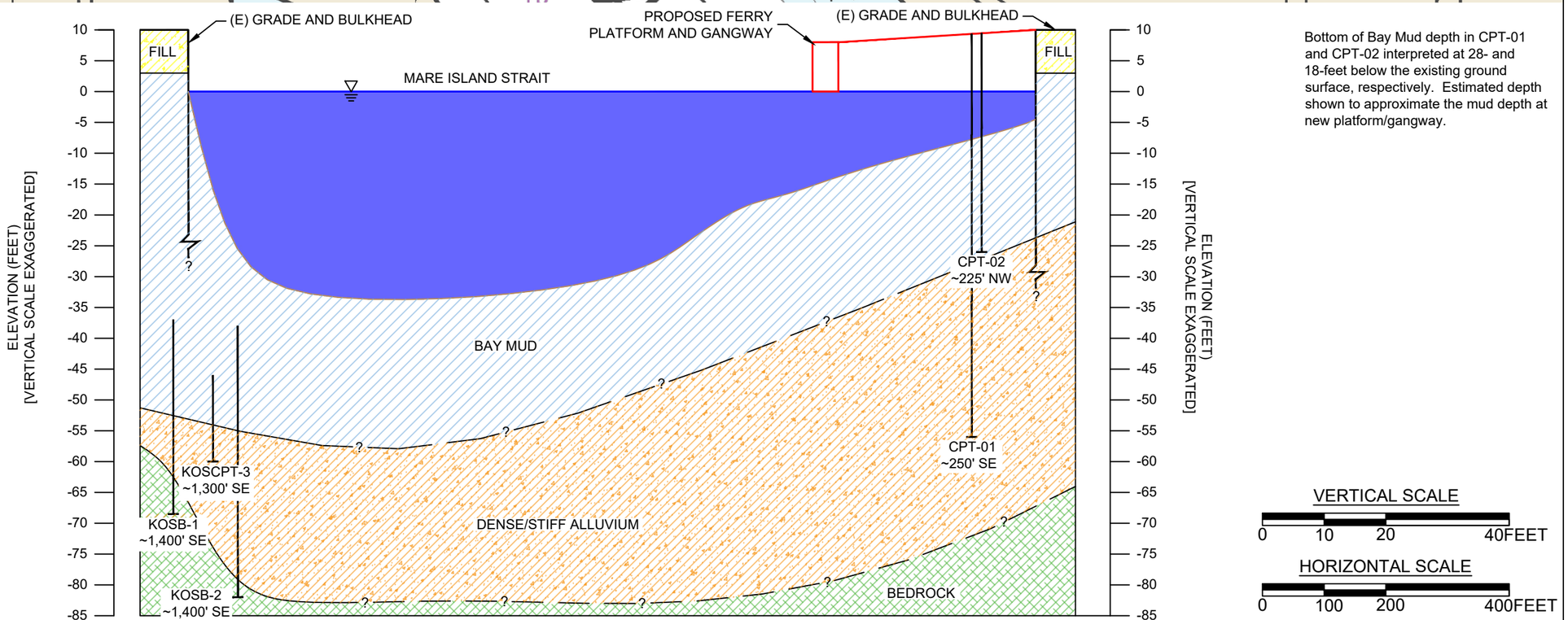
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Project No. 2332.012 Date: 4/8/2025

Drawn CMS
Checked

FIGURE 5





Bottom of Bay Mud depth in CPT-01 and CPT-02 interpreted at 28- and 18-feet below the existing ground surface, respectively. Estimated depth shown to approximate the mud depth at new platform/gangway.

VERTICAL SCALE
0 10 20 40FEET

HORIZONTAL SCALE
0 100 200 400FEET

REFERENCE: NOAA Mare Island Strait Soundings

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PRELIMINARY CROSS-SECTION

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Designed NGK
Drawn NGK
Checked NGK

6
FIGURE



REFERENCE: ABAG Hazard Viewer Map, 2025

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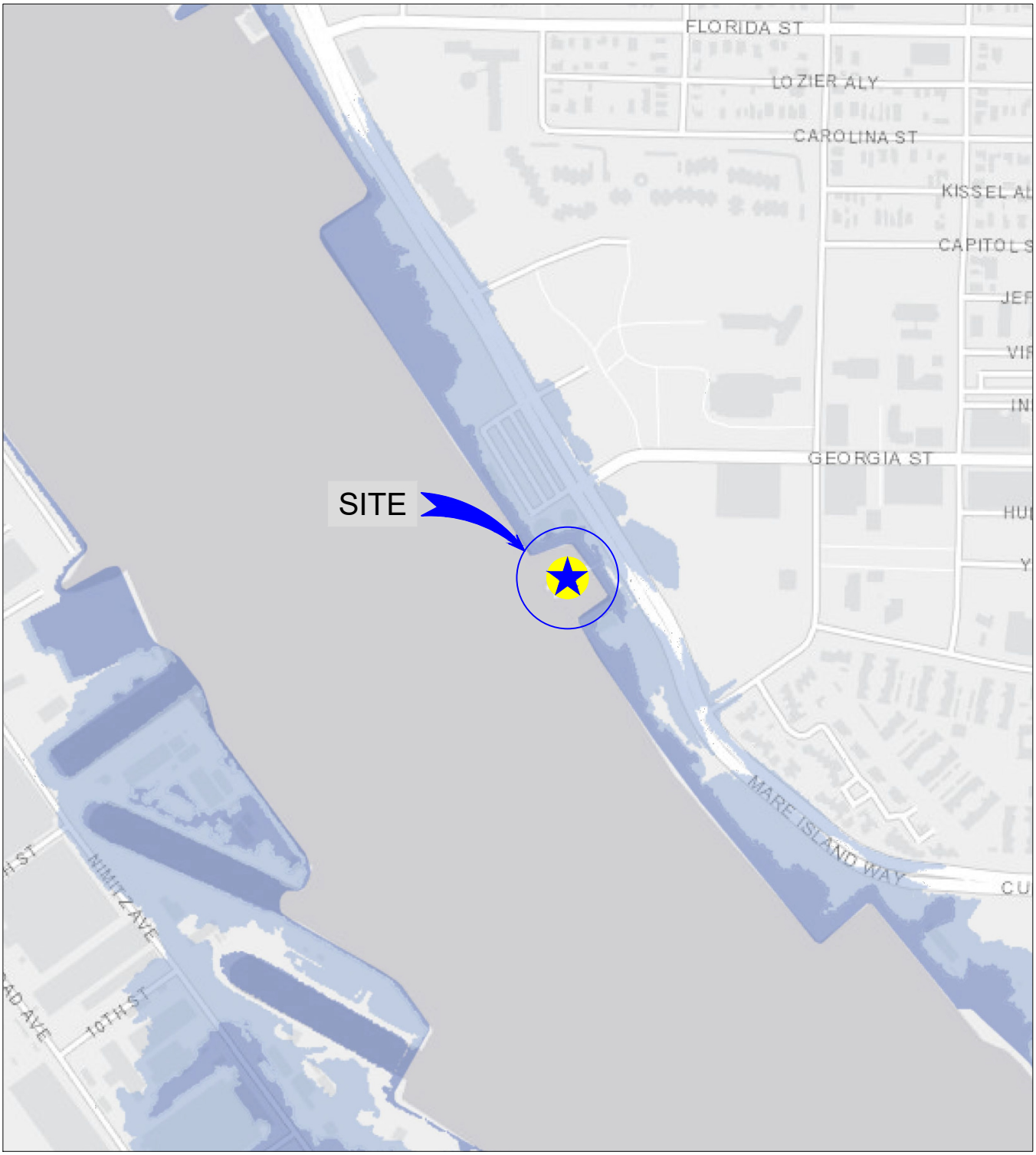
LIQUEFACTION SUSCEPTIBILITY MAP

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Project No. 2332.012 Date: 4/8/2025

Drawn CMS
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7
FIGURE



LEGEND

- 100 yr. (Zones A, V)
- 500 yr. (Zone X)
- Levee Protected
- Urbanized Area

Zone V (100 yr): This code identifies an area inundated by 1% annual chance flooding with velocity hazard (wave action).
Zone A (100 yr): This code identifies an area inundated by 1% annual chance flooding.

Zone X (500 yr): This code identifies an area inundated by .02% annual chance flooding and area inundated by 1% annual chance of flooding with average depth of less than 1 foot of with drainage areas less than 1 square mile or an area protected by levees form 1% annual chance flooding.

NORTH

REFERENCE: ABAG Hazard Viewer Map, 2025

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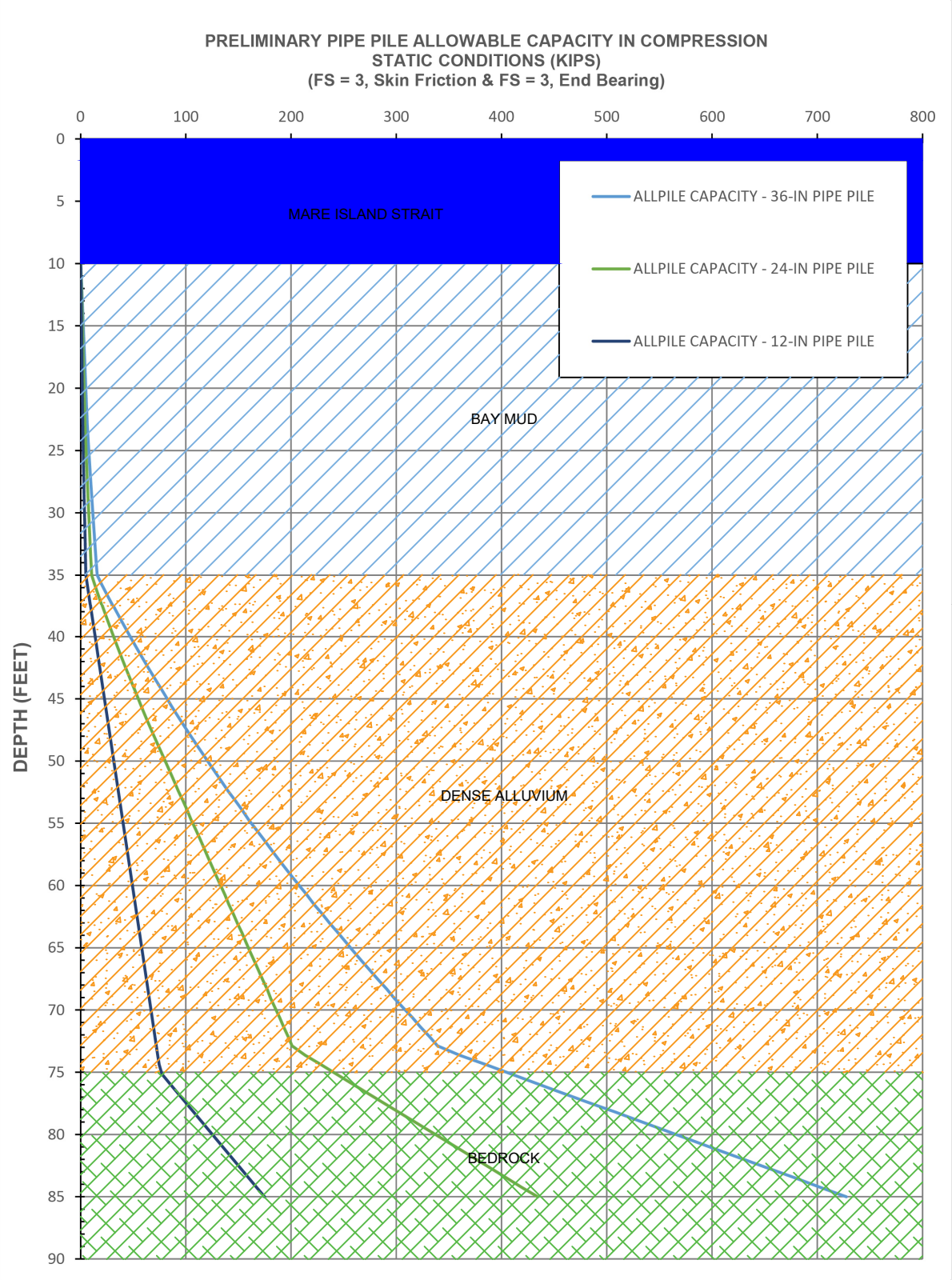
FEMA FLOOD MAP

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Project No. 2332.012 Date: 4/8/2025

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8
FIGURE



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PRELIMINARY PILE CAPACITY VS. DEPTH

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Vallejo, California

Project No. 2332.012 Date: 4/8/2025

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Checked

9
FIGURE

APPENDIX A
SUBSURFACE EXPLORATION

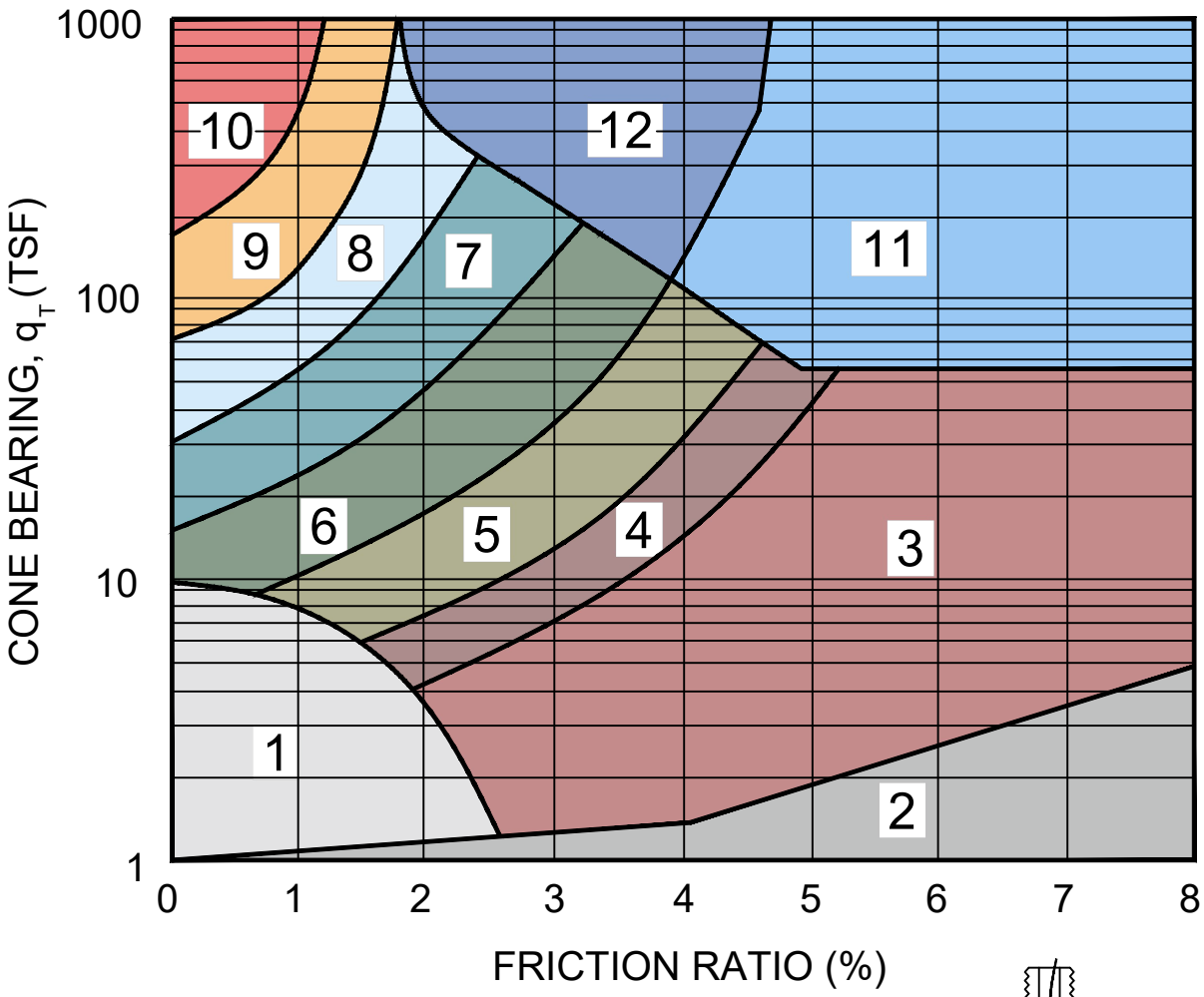
A. SUBSURFACE EXPLORATION

We performed five Cone Penetration Tests (CPT) on October 8, 2024 at the locations shown on the Site Plan, Figure 2. The CPT is a special exploration technique that provides a continuous profile of data throughout the depth of exploration. It is particularly useful in defining stratigraphy, relative soil strength and in assessing liquefaction potential.

The CPT is a cylindrical probe, 35 mm in diameter, which is pushed into the ground at a constant rate of 2 cm/sec. The device is illustrated on Figure A-1. It is instrumented to obtain continuous measurements of cone bearing (tip resistance), sleeve friction and pore water pressure. The data is sensed by strain gages and load cells inside the instrument. Electronic signals from the instrument are continuously recorded by an on-board computer at the surface, which permits an initial evaluation of subsurface conditions during the exploration.

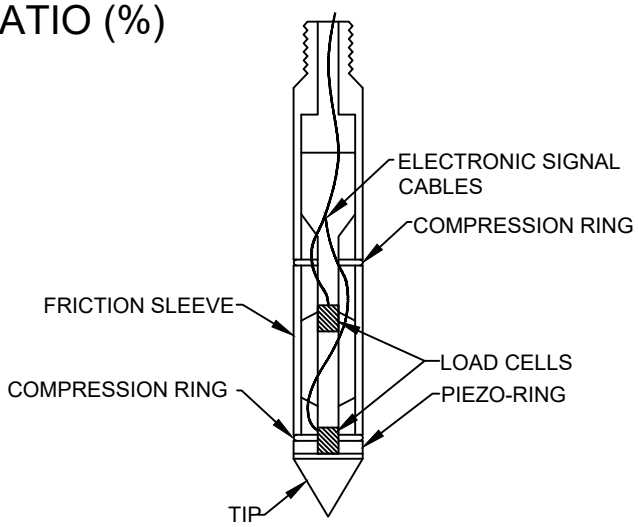
The recorded data is transferred to an in-office computer for reduction and analysis. The analysis of cone bearing and sleeve friction (i.e., friction ratio) indicates the soil type, the cone bearing alone indicates soil density or strength, and the pore pressure indicates the presence of clay. Variations in the data profile indicate changes in stratigraphy. This test method has been standardized and is described in detail by the ASTM Standard Test Method D3441 "Deep, Quasi-Static Cone and Friction Cone Penetration Tests of Soil." The interpretation of CPT data is illustrated on Figure A-1, and the CPT data logs are presented on Figures A-2 through A-3.

The exploratory CPT logs, description of soils encountered, and the laboratory test data reflect conditions only at the location of the CPTs at the time they were excavated. Conditions may differ at other locations and may change with the passage of time due to a variety of causes including natural weathering, climate, and changes in surface and subsurface drainage.



Zone:	Qc/N	Soil Behavior Type:
1)	2	Sensitive Fine Grained
2)	1	Organic Material
3)	1	Clay
4)	1.5	Silty Clay to Clay
5)	2	Clayey Silt to Silty Clay
6)	2.5	Sandy Silt to Clayey Silt
7)	3	Silty Sand to Sandy Silt
8)	4	Sand to Silty Sand
9)	5	Sand
10)	6	Gravelly Sand to Sand
11)	1	Very Stiff Fine Grained (*)
12)	2	Sand to Clayey Sand (*)

(*) Overconsolidated or Cemented



CONE PENETROMETER

(NO SCALE)

Reference: Robertson, P.K. (1986), "In-Situ Testing and Its Application to Geotechnical Engineering," Canadian Geotechnical Journal, Vol. 23; No. 23; No. 4, pp. 573-594

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CPT SOIL INTERPRETATION CHART

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Project No. 2332.012 Date: 3/21/2025

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A-1
FIGURE

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CPT PLOT: CPT-01

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Drawn NGK
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A-2
FIGURE

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Foth
Vallejo Ferry Terminal Expansion
Vallejo, California
Project No. 2332.012
Date: 3/21/2025

Drawn NGK
Checked

CPT PLOT: CPT-02

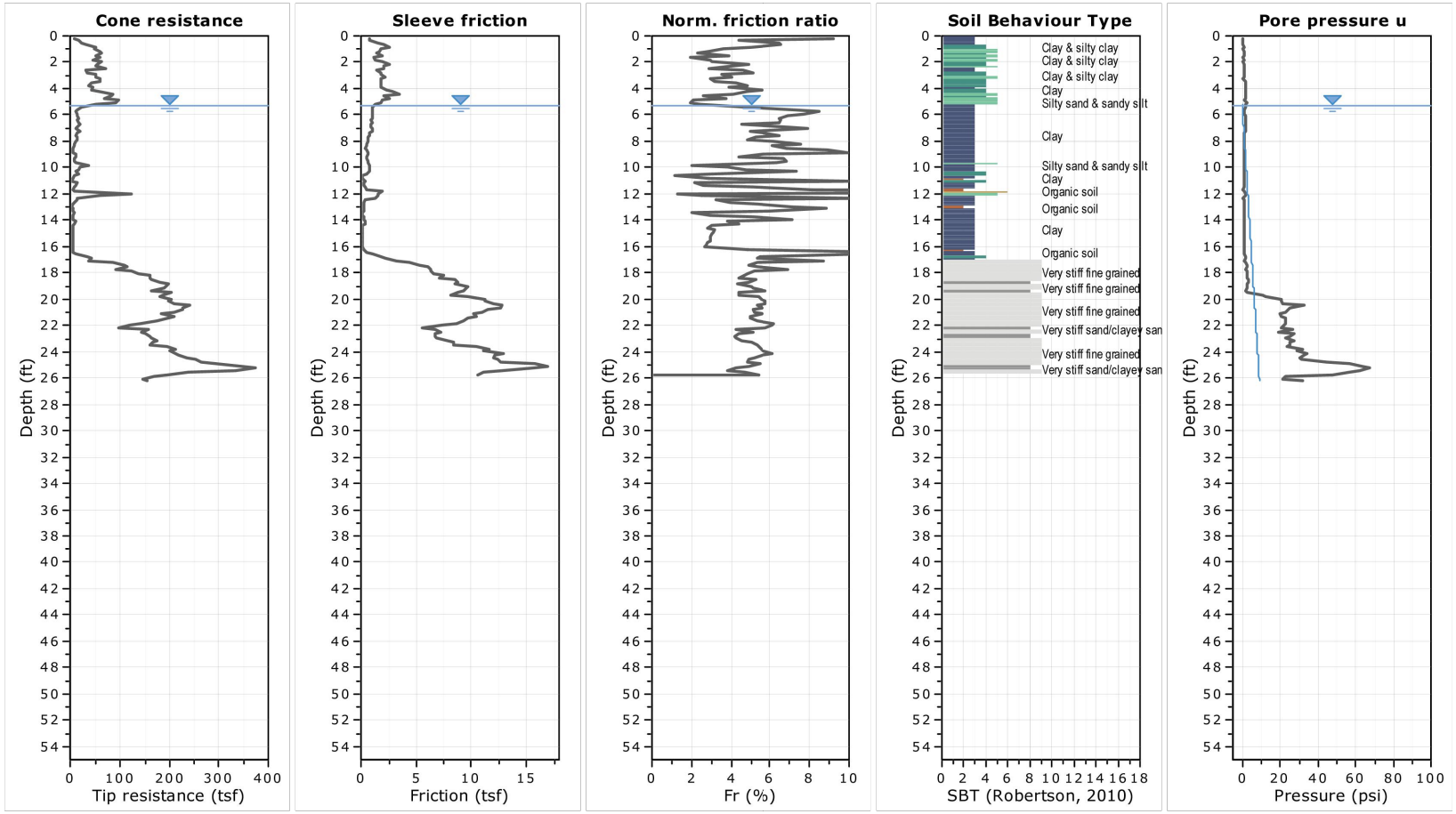
A-3
FIGURE

Miller Pacific Engineering Group

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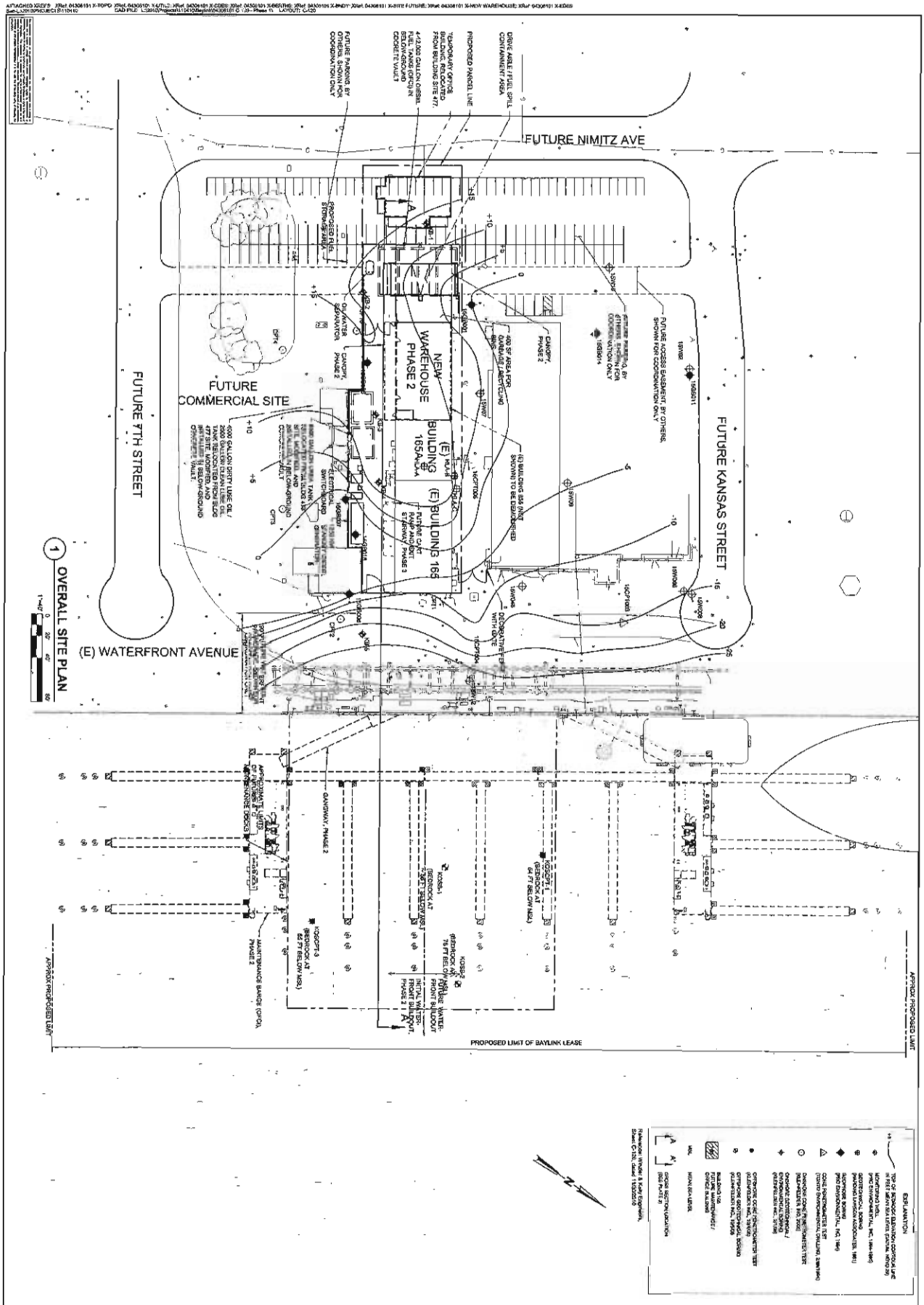
Project: Vallejo Ferry Terminal
Location: 289 Mare Island Way, Vallejo, CA 94590

CPT: CPT-02C
Total depth: 26.25 ft, Date: 3/13/2025
Est. GWL: 5.30 ft
Cone Type: 15cm²
Cone Operator: JM-IY



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ENGINEERING GROUP

APPENDIX B
REFERENCE SUBSURFACE EXPLORATION



OVERALL SITE PLAN

SUPPLEMENTAL GEOTECHNICAL REPORT
VALLEJO FERRY MAINTENANCE FACILITY - PHASED 1 AND 2
MARE ISLAND, VALLEJO, CALIFORNIA

KLEINFELDER
Bright People. Right Solutions.

PROJ. NO. 110410/II-5
ACAD FILE: 84308101 C-120-nw.dwg

NO.	REVISION	BY	DATE
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-

DESIGNED BY:
DRAWN BY: ASB
CHECKED BY:
DATE: 12/19/10
SCALE: 1" =40'
DRAWING SCALE IS INCHES FOR REDUCED PLANS
0 1/2 1 2
PLATE 2
1 of 1 sheets

PLOTTED: 06 Jan 2011, 8:18am, DRoss

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS				DESCRIPTIVE NAMES
COARSE GRAINED SOILS 50% is greater than #200 sieve	GRAVEL % GRAVEL > % SAND	CLEAN GRAVEL WITH LITTLE OR NO FINES (<=5%)	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES
		GRAVEL WITH > 12% FINES	GM	SILTY GRAVEL, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVEL, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SAND % SAND > % GRAVEL	CLEAN SAND WITH LITTLE OR NO FINES (<=5%)	SW	WELL GRADED SAND, GRAVELLY SAND
			SP	POORLY GRADED SAND, GRAVELLY SAND
		SAND WITH > 12% FINES	SM	SILTY SAND, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SAND, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS 50% passes #200 sieve	SILT AND CLAY LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILT AND VERY FINE SAND, ROCK FLOUR, SILTY OR CLAYEY FINE SAND, OR CLAYEY SILT WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAY, SANDY CLAY, SILTY CLAY, LEAN CLAY
			OL	ORGANIC CLAY AND ORGANIC SILTY CLAY OF LOW PLASTICITY
	SILT AND CLAY LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
			CH	INORGANIC CLAY OF HIGH PLASTICITY, FAT CLAY
			OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILT
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

FIELD SAMPLING

- CALIFORNIA SAMPLE 2.5" I.D.
- MODIFIED CALIFORNIA SAMPLE 2" I.D.
- DISTURBED, BAG OR BULK SAMPLE
- STANDARD PENETRATION TEST
- SHELBY TUBE SAMPLE
- 3.5" I.D. CONTINUOUS CORE SAMPLE
- UNRETAINED PORTION OF SAMPLE
- HAND SAMPLER
- WATER LEVEL OBSERVED IN BORING (at given post-drilling time)
- WATER LEVEL OBSERVED IN BORING (at time of drilling)

LABORATORY TESTS

LL	LIQUID LIMIT
PI	PLASTICITY INDEX
SA	SIEVE ANALYSIS
#200	PERCENT PASSING #200 SIEVE
RV	RESISTANCE VALUE
EI	EXPANSION INDEX
DS	DIRECT SHEAR
Tx/UU	TRIAXIAL SHEAR-UNCONSOLIDATED UNDRAINED
UC	UNCONFINED COMPRESSION
SG	SPECIFIC GRAVITY
PP	POCKET PENETROMETER SHEAR STRENGTH (tsf)

NOTES: Blow counts represent the number of blows of a 140-pound hammer falling 30-inches required to drive a sampler the last 12-inches of an 18-inch penetration. The blow counts have been converted to standard N-value blow counts.

The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil strata and groundwater observed at the boring location on the date of drilling only.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NUMBER 55954-4 DATE 12/22/2010

BORING LOG EXPLANATION

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE
A-1

Data Template: LEGEND BORING (2007) - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:27 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

WEATHERING

FRESH - No visible sign of rock material weathering; perhaps slight discoloration on major discontinuity surfaces.

SLIGHTLY WEATHERED - Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker than in its fresh condition.

MODERATELY WEATHERED - Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh of discolored rock is present either as a discontinuous framework or as corestones.

HIGHLY WEATHERED - More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones.

COMPLETELY WEATHERED - All rock material is decomposed and/or disintegrated to a soil. The original mass structure is still largely intact.

STRENGTH

FRIABLE - Material crumbles in hand, peeled by a pocket knife

WEAK - Crumbles under moderate blow with pick end of hammer and can be peeled with a knife

MEDIUM STRONG - Cannot be scraped or peeled with a pocket knife, specimen can be fractured with a single firm blow of geological hammer.

STRONG - Specimen requires more than one blow of geological hammer to fracture it.

VERY STRONG - Specimen withstands several blows of geological hammer without breaking.

EXTREMELY STRONG - Specimen can only be chipped with a geological hammer.

FRACTURE SPACING

VERY LITTLE FRACTURED	Greater than 4.0 feet
LITTLE FRACTURED	1.0 to 4.0 feet
MODERATELY FRACTURED	0.5 to 1.0 feet
CLOSELY FRACTURED	0.1 to 0.5 foot
INTENSELY FRACTURED	0.05 to 0.1 foot
CRUSHED	Less than 0.05 foot

BEDDING OR LAYERING

VERY THICK OR MASSIVE	Greater than 4.0 feet
THICK	2.0 to 4.0 feet
THIN	0.2 to 2.0 feet
VERY THIN	0.05 to 0.2 foot
LAMINATED	0.01 to 0.05 foot
THINLY LAMINATED	Less than 0.01 foot

■ Hand-Driven Tube Sample

P.P. +4.5 Pocket Penetrometer (tons per square foot, tsf)

KLEINFELDER
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PROJECT NUMBER **55954-4** DATE **12/22/2010**

ROCK DESCRIPTION CRITERIA

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE
A-2

Data Template:
LEGEND ROCK DESC CRITERIA (B4 2007) - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:44 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

LABORATORY				FIELD					
Dry Density (pcf)	Moisture Content (%)	Shear Strength (ksf)	Other Tests	Blows/foot *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
				0psi		1–8		ML	**SILT** gray, wet, very soft (bay mud)
				500psi		8–12		CH	**CLAY** mottled light brown & red, moist, soft, high plasticity
				500psi		12–16		CH	**CLAY** light brown with red mottles, moist, medium stiff
				21		16–18			**CLAYEY SILTY SAND/SANDY SILT** red brown with black mottles, moist, very stiff, medium to coarse rounded sand, trace fine angular gravel

* The blow counts have been converted to standard N-value blow counts.

SURFACE ELEVATION: **-37.0 ****
TOTAL DEPTH: **31.5 feet**
GROUND WATER DEPTH: ▽ **feet at time of drilling**
▼ **feet**

LOGGED BY: **R. Padgett**
DIAMETER of BORING: **8**
DATE DRILLED: **10-5-05**
EQUIPMENT: **Mobile B-80 Mounted on Quinn Delta Ship**
HAMMER TYPE: **140 lbs.**

KLEINFELDER
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PROJECT NUMBER **55954-4** DATE **12/22/2010**

LOG OF EXPLORATION BORING KOSB-1

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE **A-8**

Data Template:
SANTA ROSA - K:\KLEINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:26 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

LABORATORY				FIELD					
Dry Density (pcf)	Moisture Content (%)	Shear Strength (ksf)	Other Tests	Blows/foot *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
						21		SM/ML	
						22			
						23			**SILTSTONE** yellow brown, friable
				57/10"		24			
				68		25			
						26			
						27			
				55		28			
						29			
						30			**SILTSTONE** gray with yellow brown seams, weak, closly fractured
				92/10"		31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

* The blow counts have been converted to standard N-value blow counts.

** SURFACE ELEVATION: **-37.0 ****

TOTAL DEPTH: **31.5 feet**

GROUND WATER DEPTH: ▽ **feet at time of drilling**

▼ **feet**

LOGGED BY: **R. Padgett**

DIAMETER of BORING: **8**

DATE DRILLED: **10-5-05**

EQUIPMENT: **Mobile B-80 Mounted on Quinn Delta Ship**

HAMMER TYPE: **140 lbs.**

KLEINFELDER
Bright People. Right Solutions.

PROJECT NUMBER **55954-4** DATE **12/22/2010**

LOG OF EXPLORATION BORING KOSB-1

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE **A-8**

2 of 2

Data Template: SANTA ROSA - K:\EINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:26 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

LABORATORY				FIELD					
Dry Density (pcf)	Moisture Content (%)	Shear Strength (ksf)	Other Tests	Blows/foot *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
						1		ML	**SILT** gray , wet, very soft (bay mud)
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			
						13			
						14			
				17		15		CL	**SANDY CLAY** olive, moist, stiff to very stiff, fine to coarse rounded sand, color change to gray with red brown mottles at 15 feet
				18		16			
						17			
						18			
						19			
						20			

* The blow counts have been converted to standard N-value blow counts.

** SURFACE ELEVATION: **-38.0 ****

TOTAL DEPTH: **44.0 feet**

GROUND WATER DEPTH: ▽ **feet at time of drilling**

▼ **feet**

LOGGED BY: **R. Padgett**

DIAMETER of BORING: **8**

DATE DRILLED: **10-5-05**

EQUIPMENT: **Mobile B-80 Mounted on Quinn Delta Ship**

HAMMER TYPE: **140 lbs.**

KLEINFELDER
Bright People. Right Solutions.

PROJECT NUMBER **55954-4** DATE **12/22/2010**

LOG OF EXPLORATION BORING KOSB-2

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE **A-9**

Data Template:
SANTA ROSA - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:26 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

LABORATORY				FIELD		Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
Dry Density (pcf)	Moisture Content (%)	Shear Strength (ksf)	Other Tests	Blows/foot *	Sample				
				26		21		CL	**SANDY SILTY CLAY** red brown, moist, very stiff, fine to medium sand
						22			
						23			
						24			
						25			**CLAYEY SILTY SAND/SANDY SILT** red brown with black mottles, very stiff, fine to medium sand
				21		26			
						27			
						28			
						29			
						30			
						31			
						32			
						33			
						34		SM/ML	
				30		35			
						36			
						37			
						38			
						39			
						40			

* The blow counts have been converted to standard N-value blow counts.

SURFACE ELEVATION: **-38.0** **

TOTAL DEPTH: **44.0 feet**

GROUND WATER DEPTH: ▽ **feet at time of drilling**

▼ **feet**

LOGGED BY: **R. Padgett**

DIAMETER of BORING: **8**

DATE DRILLED: **10-5-05**

EQUIPMENT: **Mobile B-80 Mounted on Quinn Delta Ship**

HAMMER TYPE: **140 lbs.**

KLEINFELDER
Bright People. Right Solutions.

PROJECT NUMBER **55954-4** DATE **12/22/2010**

LOG OF EXPLORATION BORING KOSB-2

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE **A-9**

Data Template: SANTA ROSA - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:26 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

LABORATORY				FIELD					
Dry Density (pcf)	Moisture Content (%)	Shear Strength (ksf)	Other Tests	Blows/foot *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
						41			
						42			
						43			
				73/11"		44			**SILTSTONE** yellow brown, friable
						45			
						46			
						47			
						48			
						49			
						50			
						51			
						52			
						53			
						54			
						55			
						56			
						57			
						58			
						59			
						60			

* The blow counts have been converted to standard N-value blow counts.

SURFACE ELEVATION: **-38.0** **

TOTAL DEPTH: **44.0 feet**

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KLEINFELDER
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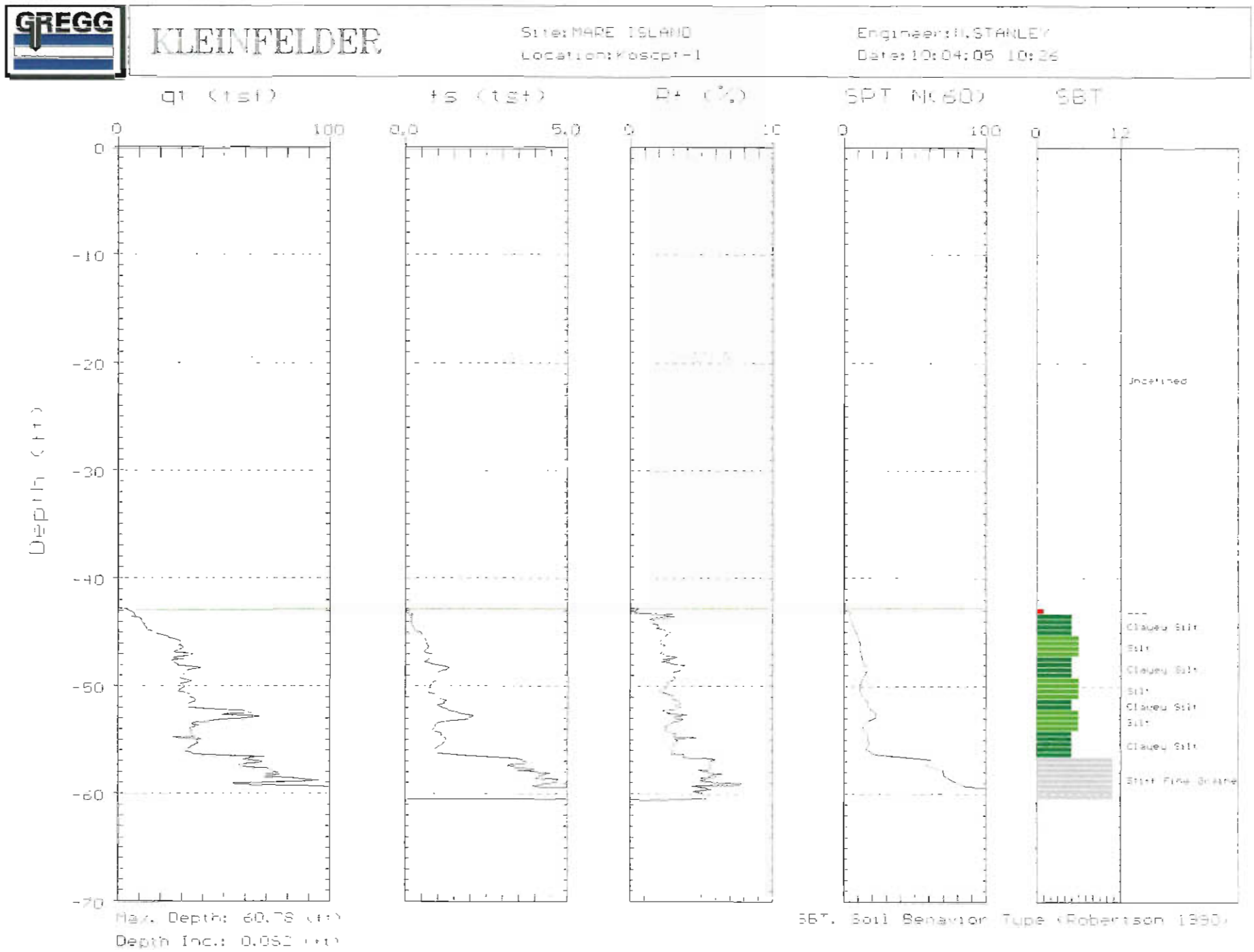
PROJECT NUMBER **55954-4** DATE **12/22/2010**

LOG OF EXPLORATION BORING KOSB-2

Baylink Ferry Maintainance Facility
Mare Island, Vallejo, California

PLATE **A-9**

Data Template:
SANTA ROSA - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 12/22/10 10:26 - U:\PROJECTS\ACTIVE\110410 BAYLINK\GINT COPIES FROM SANTA ROSA\BORINGS REV.GPJ

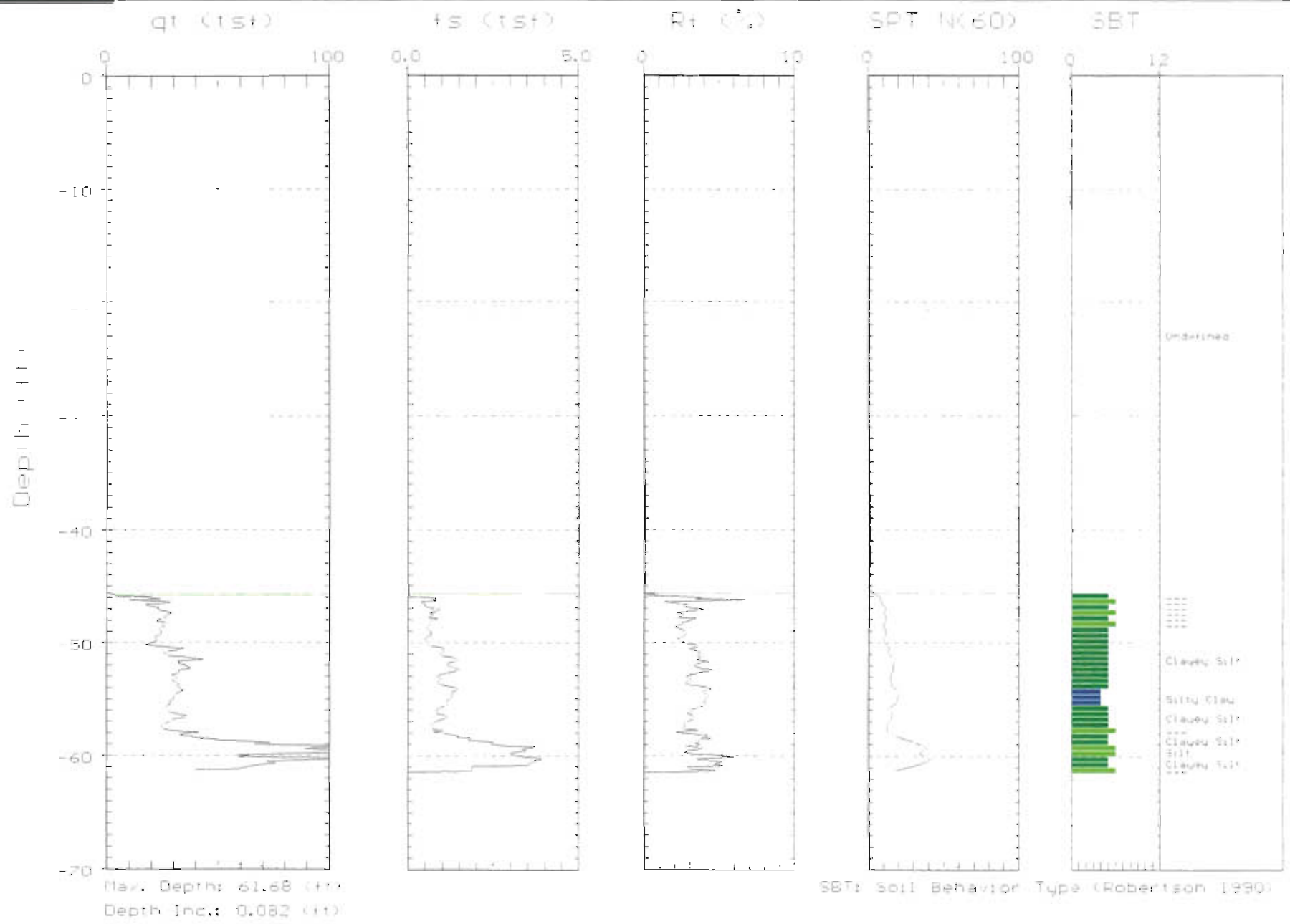

GREGG
KLEINFELDER
Site: MARE ISLAND
Location: Kosopt-1
Engineer: I.STANLEY
Date: 10:04:05 10:26
qt (tsf)
fs (tsf)
Rf (%)
SPT N(60)
SBT
Depth (ft)
Max. Depth: 60.75 (ft)
Depth Inc.: 0.082 (ft)
Undefined
Clayey Silt
Silt
Clayey Silt
Silt
Clayey Silt
Silt
Clayey Silt
Stiff Fine Grained
SBT, Soil Behavior Type (Robertson 1990)

GREGG

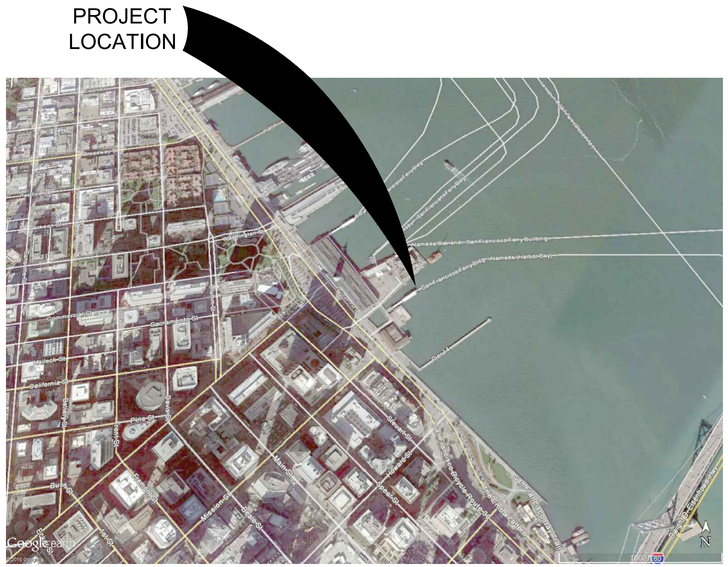
KLEINFELDER

Site: NAPE ISLAND
Location: Kosciet-3

Engineer: M.STANLEY
Date: 10:04:05 12:00



WATER EMERGENCY TRANSPORTATION AUTHORITY
DOWNTOWN SF TERMINAL UNIVERSAL CHARGING FLOAT PROJECT- NEW FLOAT



Owner

WETA
Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

Structural Engineer

Liftech Consultants Inc.
344 20th Street, Suite 360
Oakland, CA 94612

Naval Architect

Aurora Marine Design
2805 Canon Street
San Diego, CA 92106

95% SUBMITTAL

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
0	##/#/##	_____	AH	__	__

NOT FOR CONSTRUCTION

San Francisco Bay Ferry
WATER EMERGENCY TRANSPORTATION AUTHORITY
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111 • (415) 291-3377

Liftech
LIFTECH CONSULTANTS INC.

REGISTERED PROFESSIONAL ENGINEER
Eric C. Soderstrom
No. S4426
Exp. 12-31-18
STRUCTURAL
STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
TITLE SHEET

DATE 10-15-24
SHEET OF
DRAWING NO. G0.1
JOB NO. 2419

\\mw2k219\2419\Dwg\Production\Structural_Liftech\Design\GENERAL\G0.1 TITLE SHEET.dwg 10/15/2024 8:31 PM alvin hoffpauir

	SHEET NUMBER	DRAWING NUMBER	SHEET TITLE
GENERAL			
	1	G0.1	TITLE SHEET
	2	G0.2	DRAWING INDEX
	3	G0.3	SYMBOLS AND ABBREVIATIONS
	4	G1.1	DESIGN CRITERIA AND GENERAL NOTES - 1
	5	G1.2	DESIGN CRITERIA AND GENERAL NOTES - 2
	6	G1.3	DESIGN CRITERIA AND GENERAL NOTES - 3
	7	G1.4	DESIGN CRITERIA AND GENERAL NOTES - 4
	8	G1.5	DESIGN CRITERIA AND GENERAL NOTES - 5
	9	G2.1	SITE PLAN
	10	G2.2	FLOAT AND GANGWAY SITE PLAN
	11	G2.3	FLOAT AND GANGWAY MOTIONS - 1
	12	G2.4	FLOAT AND GANGWAY MOTIONS - 2
	13	G2.5	FLOAT AND GANGWAY MOTIONS - 3
	14	G3.1	FLOAT ARRANGEMENT - PLAN AND ELEVATIONS
	15	G3.2	FLOAT ARRANGEMENT - ELEVATIONS
	16	G3.3	FLOAT REFERENCE PLAN
	17	G3.4	FLOAT CANOPY ROOF PLAN
	18	G3.5	PLATFORM 1 SECTION-ELEVATION
	19	G3.6	COMPARTMENTS AND BALLASTING PLAN
STRUCTURAL			
FLOAT			
	20	S1.1	FLOAT GENERAL ARRANGEMENT
	21	S1.2	FLOAT STRUCTURAL ARRANGEMENT
	22	S1.3	FLOAT SECTIONS - 1
	23	S1.4	FLOAT SECTIONS - 2
	24	S1.5	FLOAT SECTIONS - 3
	25	S1.6	FLOAT SECTIONS - 4
	26	S1.7	CANOPY COLUMN BASE SECTIONS
	27	S1.8	FLOAT TYPICAL DETAILS - 1
	28	S1.9	FLOAT TYPICAL DETAILS - 2
	29	S1.10	FLOAT ACCESS DETAILS - 1
	30	S1.11	FLOAT ACCESS DETAILS - 2
	31	S1.12	FLOAT ACCESS DETAILS - 3
	32	S1.13	FLOAT GANGWAY SUPPORT DETAILS
	33	S1.14	FLOAT FENDER SUPPORT ELEVATIONS AND DETAILS
	34	S1.15	FLOAT FENDER SUPPORT DAVIT
	35	S1.16	MOORING LINE GUARD DETAILS
	36	S1.17	FLOAT GUIDE PILE COLLAR
	37	S1.18	FLOAT PILE GUIDE COLLAR DETAILS
	38	S1.19	LADDER DETAILS
	39	S1.20	DECK HATCH AND BITT DETAILS
	40	S1.21	CHARGER SUPPORT
	41	S1.22	CHARGER SUPPORT DETAILS
CANOPY			
	42	S2.1	FLOAT CANOPY PLANS
	43	S2.2	FLOAT CANOPY TYPICAL SECTIONS
	44	S2.3	FLOAT CANOPY DETAILS
	45	S2.4	CANOPY LIFT ARRANGEMENT
	46	S2.5	CANOPY LIFT BRACKET DETAILS
PLATFORMS AND RAMPS			
	47	S3.1	FLOAT PLATFORM AND RAMP GENERAL ARRANGMENT
	48	S3.2	FLOAT PLATFORM AND RAMP ENLARGED PLAN
	49	S3.3	FLOAT PLATFORM AND RAMP ELEVATIONS - 1
	50	S3.4	FLOAT PLATFORM AND RAMP ELEVATIONS - 2
	51	S3.5	FLOAT PLATFORM AND RAMP ELEVATIONS - 3
	52	S3.6	PLATFORM AND RAMP RAILING DETAILS
	53	S3.7	SERVICE ACCESS LADDER SECTIONS AND ELEVATIONS
	54	S3.8	SLIDING GUARDRAIL DETAILS
	55	S3.9	FLOAT PLATFORM AND RAMP FRAMING PLAN
	56	S3.10	FLOAT PLATFORM AND RAMP FRAMING SECTIONS
	57	S3.11	FLOAT PLATFORM AND RAMP PLANS - 1
	58	S3.12	FLOAT PLATFORM AND RAMP PLANS - 2
	59	S3.13	MOVABLE PLATFORM DETAILS
	60	S3.14	POST SUPPORT LOCATIONS
	61	S3.15	POST SUPPORT DETAILS

95% SUBMITTAL

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
0	##/##/##	_____	AH	__	__

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San Francisco Bay Ferry
WATER EMERGENCY TRANSPORTATION AUTHORITY
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111 • (415) 291-3377

Liftech
LIFTECH CONSULTANTS INC.

REGISTERED PROFESSIONAL ENGINEER — Lyle G Soderstrom — No. S4426 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:_____

DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
DRAWING INDEX

DATE 10-15-24
SHEET OF
DRAWING NO. G0.2
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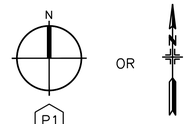
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ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE/ACRES
ACCES.	ACCESSIBLE
ACOUS	ACOUSTICAL
AD	AREA DRAIN
ADJ	ADJUSTABLE/ADJUSTMENT
AFC	AUTOMATIC FARE COLLECTION
A.F.F.	ABOVE FLOOR FINISH
AFM	ADD FARE MACHINE
AGGR	AGGREGATE
ALUM	ALUMINUM
ALT	ALTERNATE
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASPH	ASPHALT
AVG	AVERAGE
B.C.	BOTTOM OF CURB
BD	BOARD
BM	BEAM
BTWN	BETWEEN
BITUM	BITUMINOUS
BKG	BACKING
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BOC	BOTTOM OF CONCRETE
BOT	BOTTOM
BOS	BOTTOM OF STEEL
B.R.	BICYCLE RACK
BS	BOTTOM OF SLOPE
B.W.	BOTTOM OF WALL
CAB	CABINET
CB	CATCH BASIN
C CONC	COLORED CONCRETE
CCTV	CLOSED-CIRCUIT TELEVISION
CEM	CEMENT
CF	CUBIC FEET
C.I.	CAST IRON
C.	CURB INLET
CI	CONSTRUCTION JOINT
C..P.	CAST IN PLACE
CL	CENTERLINE
CLKG	CAULKING
CLR	CLEAR
C.O.	CLEAN OUT
COL	COLUMN
CONC.	CONCRETE
COND	CONDITION
CONN.	CONNECTION
CONST/ CONSTR	CONSTRUCTION
CONT.A.	CONTINUOUS
CTR	CENTER
CTRL	CONTROL
CSK	COUNTER SUNK SCREW
CTSK	COUNTERSUNK
CY	CUBIC YARD
DBL	DOUBLE
DET	DETAIL
DEPT	DEPARTMENT
DF	DOUGLAS FIR/DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIR	DIRECTORY
DN	DOWN
D.P.	DIMENSION POINT
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
E	EAST
EA	EACH
E.B.	EXPANSION BOLT
EJ	EXPANSION JOINT
ELEV.	ELEVATION
ELEC.	ELECTRICAL
EMER	EMERGENCY
ENAM	ENAMELED
ENCL	ENCLOSURE
EQ.	EQUAL
EQPT	EQUIPMENT
EW	EACH WAY
EXP	EXPANSION
EXPO	EXPOSED
(E)/EX	EXISTING
EXT	EXTERIOR
FA	FIRE ALARM
FD	FLOOR DRAIN
FDN	FOUNDATION
F.F.	FINISHED FLOOR
FFE	FINISH FLOOR ELEVATION
FEC	FIRE EXTINGUISHER CABINET
F.G.	FINISH GRADE
FH	FLATHEAD/FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN.	FINISH
FIXT	FIXTURE
FL	FLOOR
FLASH	FLASHING
FLUOR	FLUORESCENT
F.O.	FACE OF
FOB	FACE OF BUILDING
F.O.C.	FACE OF CONCRETE OR FACE OF CURB
F.O.F.	FACE OF FINISH
FUT	FUTURE
FRBRD	FREEBOARD
FPRF	FIREPROOF
FT	FOOT OR FEET
FTG	FOOTING
FV	FIRE VAULT
GA.	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS
GND	GROUND
GP	GROUND PLANE
GR/GD	GRADE
GSF	GROSS SQUARE FEET
GV	GRANITE VENEER
H	HIGH
H.B.	HOSE BIBB
HDWE	HARDWARE
H.I.D.	HIGH-INTENSITY DISCHARGE
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
HT.	HEIGHT OR HIGH
HR	HOUR
HSS	HOLLOW STRUCTURAL SECTION
I.D.	INSIDE DIAMETER
IE	INERT ELEVATION
IN	INCHES
INFO	INFORMATION
INT	INTERIOR
INTR	INTERMEDIATE
INV	INVERT
JB	JUNCTION BOX
JT(S)	JOINT(S)
L/LP	LOW POINT OR LENGTH
LA	LANDSCAPE ARCHITECT
LC	LANDSCAPE CONTRACTOR
L.F.	LIGHT FIXTURE/LINEAL FEET
LLV	LONG LEG VERTICAL
LT	LIGHT
LTG	LIGHTING
LWP	LOWER WORKING POINT
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MEMB	MEMBRANE
MIN	MINIMUM
MTL	METAL
MFR	MANUFACTURER
MH	MANHOLE
MHW	MEAN HIGH WATER
MIN.	MINIMUM
MISC	MISCELLANEOUS
MLW	MEAN LOW WATER
M.O.	MASONRY OPENING
MTD	MOUNTED
N	NORTH
(N)	NEW
N.I.C.	NOT IN CONTRACT
NO OR #	NUMBER
NOM	NOMINAL
N.T.S.A.	NOT TO SCALE
NW	NORTHWEST
O.A.	OVERALL
OBS	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFD	OVER FLOW DRAIN
OFOI	OWNER FURNISHED OWNER INSTALLED
OFW	OUTSIDE FACE OF WALL
OPNG	OPENING
OPP.	OPPOSITE
P.A.	PLANTED AREA
PC	PRECAST CONCRETE
PEN.	PENETRATING
PERF	PERFORATED
PL	PLATE
PLUMB	PLUMBING
PR	PAIR
PRCST	PRE-CAST
PROJ	PROJECT
PT	PRESSURE-TREATED
PTD.	PAINTED
PTFE	POLYTETRAFLUOROETHYLENE
PVC	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
R	RADIUS OR RISERS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF.	REFERENCE
REINF	REINFORCED
REQ'D	REQUIRED
RESIL	RESILIENT
REV	REVISION
R.O.	ROUGH OPENING
ROFD	ROOF OVERFLOW DRAIN
ROW	RIGHT OF WAY
RWL	RAIN WATER LEADER
S	SOUTH/SLOPE
SAD	SEE ARCHITECTURAL DRAWINGS
SAN	SANITARY SEWER
SC	SLIP CRITICAL
SCHED	SCHEDULE
SECT/SEC	SECTION
SED	SEE ELECTRICAL DRAWINGS
SEP	SEPARATION
SF/SQFT	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SJ	SCORE JOINT
SLV	SHORT LEG VERTICAL
S.M.S.SHEET	METAL SCREW
SMRD	SEE MOVABLE RAMP DRAWINGS
SPC	SPECIAL COATING
SPEC	SPECIFICATION
SPKR	SPEAKER
SQ	SQUARE
SS/ ST STL	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STA	STATION
STD	STANDARD
STL	STEEL
STRL/ STRUCT	STRUCTURAL
SW	SOUTHWEST
SWK	SIDEWALK
SYM	SYMMETRICAL
T/TRD	TREAD
TBC	TO BE CONFIRMED
TBR	TO BE REMOVED
TC/TOC	TOP OF CURB/TOP OF CONCRETE
TD	TRENCH DRAIN
TEL	TELEPHONE
TG	TOP OF GRANITE
TH	THRESHOLD
THK	THICK
T.L.	TRAFFIC LIGHT
TOP	TOP OF PAVEMENT
T.R.	TRASH RECEPTACLE
TW	TOP OF WALL OR TREE WELL
TYP.	TYPICAL
UNF	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W	WEST
W/	WITH
WAP	WIRELESS APPLICATION PROTOCOL
WD	WOOD
WIN	WINDOW
WM	WATER METER
W/O	WITHOUT
W.P.	WATERPROOF
W/ SPC	WITH SPECIAL COATING
WT	WEIGHT
WWF	WELDED WIRE FABRIC

SYMBOLS

DIRECTIONAL NORTH ARROW



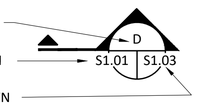
COLUMN LINES



SECTION IDENTIFICATION LETTER

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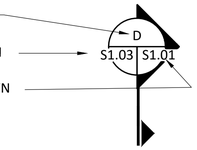
DRAWING WHERE SECTION IS SHOWN



SECTION IDENTIFICATION LETTER

DRAWING WHERE SECTION IS TAKEN

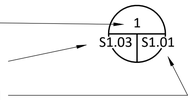
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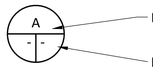


DETAIL IDENTIFICATION NUMBER

DRAWING WHERE DETAIL IS TAKEN

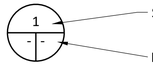
DRAWING WHERE DETAIL IS SHOWN





DETAIL IDENTIFICATION LETTER

INDICATES DETAIL IS CALL OUT ON THE SAME SHEET



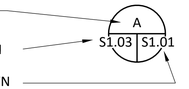
SECTION IDENTIFICATION LETTER

INDICATES SECTION IS CUT ON THE SAME SHEET

SECTION IDENTIFICATION LETTER

DRAWING WHERE SECTION IS TAKEN

DRAWING WHERE SECTION IS SHOWN



WINDOW TYPE



WORK POINT, CONTROL POINT, OR DATUM POINT

DIMENSION POINT



NEW SPOT ELEVATION



EXISTING SPOT ELEVATION



EXISTING SPOT ELEVATION, TOP OF WALL



EXISTING SPOT ELEVATION, TOP OF CURB



EXISTING SPOT ELEVATION, TOP OF PAVING



MATCH LINE



CENTER LINE

PROPERTY LINE



SQUARE

CHANNEL

ANGLE

AT

DIAMETER OR ROUND

PERPENDICULAR

POUND OR NUMBER

95% SUBMITTAL

REVISIONS

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LIFTECH CONSULTANTS INC.

REGISTERED PROFESSIONAL ENGINEER — Ling Soderman — No. S4426 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:

DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: SYMBOLS AND ABBREVIATIONS

DATE	10-15-24
SHEET	OF
DRAWING NO.	G0.3
JOB NO.	2419

\\nvo\2419\2419\Dwg\Production\Structural_Liftech\Design\GENERAL\G0.3 SYMBOLS AND ABBREVIATIONS.dwg 10/15/2024 8:31 PM alvin hoffpauir

PROJECT NOTES

BACKGROUND

The San Francisco Bay Area Water Emergency Transportation Authority (WETA, Client) is adding electrical ferries to their fleet and needs to upgrade their infrastructure to support the required electrical equipment. Given the lack of space on land around many of the terminals, and the distance from land to the ferries, WETA wants to put the electrical equipment inside many floats. This will require modifications to some existing floats and a new float design for future floats. WETA retained Aurora Marine Design (Aurora) to work on their overall electrification plan and retained Liftech Consultants Inc. (Liftech) to help with the designs of the new Universal Charging Float (UCF, new) and modification of existing floats (retrofit). WETA wants the new float design to be based on the Downtown San Francisco float design with modifications, where the modifications can be integrated into the existing floats.

This drawing set is based on replacing the WETA Downtown San Francisco floats at Gate G with the UCF, however, the design may also be used at other locations such as Mission Bay and Harbor Bay.

For Downtown, the existing terminal canopy shall be modified and reused on the new float. The existing gangway, gangway canopy, and gangway-float transition plate and sliding door shall be reused. See WETA South Basin Downtown SF Ferry Terminal Expansion drawings and specifications for details.

Refer to WETA's Construction RFP for the scope of work and contract requirements.

PARTIES

Owner / Client	WETA
Naval Architect	Aurora
Float Engineer	Liftech
Electrical Integrator	Wartsila

LIFTECH'S SCOPE & PURPOSE

Liftech is assembling 90% drawings for the UCF structural design for review by others and for inclusion in the Construction RFP by others.

PROJECT REFERENCES

Key references:

A. Drawings: WETA Downtown SF Ferry Terminal Expansion, Project Phase 2, New Gangways and Floats, prepared by Liftech, dated March 20, 2018.

B. Specifications for Phase 2 Construction Services, Downtown Ferry Terminal Expansion, San Francisco, CA, prepared by Liftech, dated March 20, 2018.

C. 2220-SK1 WETA Downtown Float Modification Arrgt (Preliminary) drawings, prepared by Aurora, dated March 20, 2023.

D. 2220-SK2 WETA Charge Float Mooring Arrangements (Preliminary) drawings, prepared by Aurora, dated February 28, 2023.

E. 2220-SK2 Boarding Ramp Height Comparison drawings, prepared by Aurora, provided to Liftech on March 30, 2023.

F. 2023_03_29 Float Modification Arrangement 3D Model, prepared by Aurora, provided to Liftech on March 30, 2023.

G. 2023_03_20 Equipment Removal Options prepared by Aurora and provided to Liftech on March 20, 2023.

H. 2023_03_20 WETA Charge Float RFP Kickoff PowerPoint Presentation prepared by Aurora

I. Ferry Vessel Freeboards from the WETA Emergency Response Plan dated March 2016, Revised September 2017, and provided by WETA to Liftech on April 5, 2023.

J. WETA Electrified Float Motions Revision 1, Argonautics Marine Engineering, Inc., dated December 2, 2023

DATUM

Elevations are North American Vertical Datum of 1988 (NAVD 88) unless otherwise noted.

DESIGN WATER LEVEL (REF. A)

Level	Elev. (ft) NAVD 88	Elev. (ft) MLLW
Lowest Observed Tide (Design Low Water)	-2.04	-2.06
Mean Lower Low Water (MLLW)	0.02	0.00
Mean Low Water (MLW)	1.14	1.12
Mean High Water (MHW)	5.66	5.64
Highest Observed Tide	9.22	9.20
Design 50 yr Sea Level Rise (SLR)	Δ = 3.17	Δ = 3.17
Highest Observed Tide + SLR (Design High Water)	12.38	12.36

See NOAA site, Datums for 9414317, Pier 22 ½, San Francisco, CA and SGH email "FW: WETA DFTX SF, Datum, 2196" dated 6/29/17

VESSEL DATA (REF. D)

See information by Aurora, including mooring layouts.

GENERAL (REF. A)

Design Life: 50 Years

Occupancy Category (CBC): IV

Facility Type: Essential facility intended to remain operational after design loadings.

SAFETY DESIGN REQUIREMENTS

Safety equipment to be determined by WETA, including, but not limited to, safety ladders, life rings, warning stripes, fire extinguishers, spill response and safety equipment, and navigation lights.

MEANS, METHODS, AND JOBSITE SAFETY

At all times, the Contractor shall be solely and completely responsible for means, methods, sequences, and procedures of work, and conditions of the jobsite including safety of persons and property, and for all necessary independent engineering review of these conditions. The Engineer's jobsite review is not intended to include review of the adequacy of the Contractor's safety measures.

DESIGN CRITERIA

General

The criteria below are for the conditions at the WETA Downtown San Francisco ferry terminal. If these criteria are used for preliminary design for other locations the environmental and seismic design loads and displacements should be verified for differing site conditions, e.g., more severe water conditions, stiffer piles for earthquake response.

These design criteria meet or exceed the applicable requirements in the codes shown below, including ABS, CBC, and AISC.

Performance criteria – the float system including float and gangway are critical structures and shall be designed to sustain minimal damage and remain operational in the design conditions provided below.

Primary

ABS	American Bureau of Shipping, *Rules for Building and Classing Steel Vessels 202*3. Spring, TX: American Bureau of Shipping, 2023.
ABS	American Bureau of Shipping, *Shipbuilding and Repair Quality Standard for Hull Structures during Construction 2007*. Spring, TX: American Bureau of Shipping, 2007.
CBC	International Code Council and the California Building Standards Commission, *2022 California Building Code, California Code of Regulations, Title 24*. Sacramento, CA: CBSC, 2022.
PoSF	Port of San Francisco Building Code, 2019

Secondary

AISC	American Institute of Steel Construction, *Steel Construction Manual, 15th Edition*. Chicago, IL: American Institute of Steel Construction, 2017.
ASCE	American Society of Civil Engineers, ASCE/SEI Standard 7-22, *Minimum Design Loads for Buildings and Other Structures*. Reston, VA: American Society of Civil Engineers, 2022.
AWS	American Welding Society, AWS D1.1/D1.1M:2020, *Structural Welding Code – Steel*, 24th Edition. Miami, FL: American Welding Society, 2020.
ABS	American Bureau of Shipping, *Rules for Materials and Welding (Part 2) 2023*. Spring, TX: American Bureau of Shipping, 2023.

REFERENCES (INFORMATION ONLY – NOT CRITERIA)

AASHTO	American Association of State Highway and Transportation Officials, Inc., *AASHTO LRFD Bridge Design Specifications*, 9th Edition. Washington, DC: AASHTO, 2020.
ACE	Army Corp of Engineers, Coastal Engineering Manual, Parts 1 through 6 and Appendix A. Washington DC: US Army Corp of Engineers, 2002.
MIL	MIL-HDBK-1026/4A Mooring Design, Department of Defense Handbook, Washington, D.C.,1999.
MOTEMS	International Code Council and the California Building Standards Commission, Marine Oil Terminals in 2022 California Building Code, California Code of Regulations, Title 24, Chapter 31F. Sacramento, CA: CBSC, 2022.
PIANC	PIANC MarCom Working Group 211, Updated Guidelines for the Design of Fender Systems, Refer to WG33 2002 version: 2022. Brussels, Belgium: International Navigation Association, 2022.

BASIC LOADS – UNFACTORED (ASD) U.O.N.

General Load Definitions

D Dead Load – Weight of Fixed Structure and Components

L Live Loads
- LU Uniform Loads from People and Equipment
- LC Concentrated Loads
- LB Vessel Berthing
- LM Mooring Loads

E Environment Loads Excluding Wind
- EW Waves
- EM Marine Growth
- EC Current

A Accidental Load
See Float Stability section for flooding definition

W Wind Loads per ASCE.

All structures but float design:

$q_z G_f$ = 0.00256 K_z K_{zt} K_d V^2 G (psf)

Basic wind speed, V	115 mph, 3-s gust, at 33 ft
Risk Category	IV
Directionality factor, K_d	0.85
Topographic factor, K_{zt}	1.0
Exposure category	D
Velocity pressure coef., K_z	$K_z = 2.01\ (z/700)^{0.17}$
Structure height, z	in feet
Gust effect factor, G	0.85

S Earthquake Loads - DE

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DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: DESIGN CRITERIA AND GENERAL NOTES - 1

DATE	10-15-24
SHEET	OF
DRAWING NO.	G1.1
JOB NO.	2419

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Individual Load Definitions

Stairs and Ladders

L Live Loads - Individual Non-concurrent Loads:
LU Uniform Load = 100 psf
LC Conc. Load on One Tread/Rung = 300 lbs

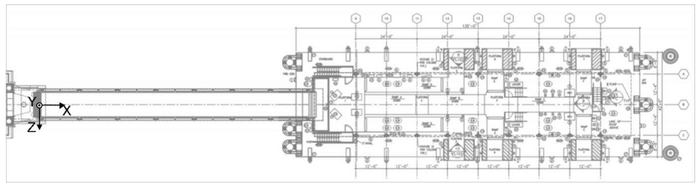
Railings / Guardrails (REF. A)

L Live Loads - Individual Non-concurrent Loads:
LU Lateral Load of 50 PLF
LC Uniform Load of 50 PLF or a Conc. Lateral Load of 200 lbs on handrail,

Gangway Loads (REF. A)

L Live Loads - Individual Non-concurrent Loads:
LU 100 psf on walking surfaces and 20 psf on roof
LC 650 lbs at any location between the guard rails

S Wharf acceleration: (REF. A, note: different axes orientation, see axes defined below)
Gangway connections and gangway structure designed to be elastic in DE



DE Design Earthquake = 2/3 MCE

Load Comb.	X	Y [1]	Z
1.0Z	0.68g	0.3g	0.89g
1.0X	0.74g	0.3g	0.28g
1.0Z+0.3X	0.9g	0.3g	0.97g
0.3Z+1.0X	0.95g	0.3g	0.55g

MCE MCE, Maximum Considered Earthquake

Load Comb.	X	Y [1]	Z
1.0Z	0.86g	0.38g	1.14g
1.0X	0.93g	0.38g	0.36g
1.0Z+0.3X	1.14g	0.38g	1.25g
0.3Z+1.0X	1.19g	0.38g	0.7g

Note: 1. Vertical acceleration based on WETA South San Francisco Ferry Terminal Project

E,W,S Design displacements and rotations. (REF A.)

Condition	Direction	Wharf	Float [2]	Total (SRSS)
Normal Ops	Longitudinal	0”	2”	2”
	Transverse	0”	<3”	<3”
	Rotation about Long. Axis	0”	4˚	4˚
E, W	Longitudinal	0”	4”	4”
	Transverse	0”	17”	17”
	Rotation about Long. Axis	0˚	14˚	14˚
S (MCE)	Longitudinal	15”	<6”	<16”
	Transverse	17”	<6”	<18”
	Rotation about Long. Axis	0˚	Does not Control	

Notes:
1. Displacements and rotations are in each direction relative to ground unless otherwise noted. Normal Operating and E,W design load motions are provided by Argonautics (see Project Reference D). S (MCE): Wharf motion provided by WETA, Float motion estimated by Liftech.
2. Float displacements include an additional 2” of movement in each direction due to gap between pile collar and pile. Gap between gangway and float will also change up to 4” due to change in water levels and gangway rotation.
3. See calculations for relative movements between components. Design utilities for 1.5 times this movement, except for in longitudinal direction design for at least +/-48” of movement between gangway and float when gangway is level.

Canopy Loads

L Live Loads
LU 20 psf on Roof
LC, LM Not applicable

E, L Relative Displacement and Rotation of the Supports

Walking Surface Loads on center trunk:

L Live Loads - Individual Non-concurrent Loads:
LU 100 psf uniform load on walking surfaces
LC 650 lbs at any location between the railings

Float Loads

D Dead Loads
Steel float
Permanent ballast
Structures supported on the deck
Permanent equipment supported on the deck and inside the float
Hydrostatic pressure

LU Uniform Loads: float lower deck: 40 psf

LC Concentrated Loads on deck of:
650 lbs at any location on float deck.
30,000 lbs at any location on center trunk deck including hatches to help accommodate equipment that handles electrical equipment. Load to be evenly distributed over a minimum of two stiffeners.

LB Vessel Berthing Design Condition:

Fender support non-concurrent load of 100 kips at 3’-6” above deck
25 kips at 7’-0” above deck

Friction load in any direction based on μ=0.25

Berthing and mooring loads not applied concurrently.

LM Mooring Loads

Guide Pile Collars (2 piles per end of float): 150 kips/collar (LRFD) based on Argonautics M.E. Inc. Analysis. Friction load in any direction based on μ=0.25

Bitt Load: 50 kips in any horizontal direction combined with 25 kips vertical

Mooring Loads on Fenders: The fender supports on the float have mooring line design load of 76 kips at shackle connection any direction and designed to fit 30 t shackles. Only one mooring connection loaded at a time.

EM Marine growth load of 5 psf on submerged surfaces

E, W Environmental and Wind Loads

STORM DESIGN CONDITION	Site	
	GATE F	GATE G
Directions	N	N
Wind Speed (1-hr average)	30.7 knots	30.7 knots
Current	4.3 ft/sec	4.3 ft/sec
Wave Ht (Hs)	3.3 ft	3.8 ft
Wave Peak Period (Tp)	3.5 sec	3.5 sec
Boat Wake/Wave	3.0 ft	3.0 ft

Combined Storm Conditions (Ref. F)

Wave class	Storm condition
Storm wave (ft)	3.8
Boat wake (ft)	3.0
Combined sig wave (ft)	4.85

Operating Conditions – for transition plate rotation

Wind load (3-sec gust)	85 mph
Current	-nil-
Wave height (Hs)	1.0. ft
Wave period	2.7 s
Boat wake	1.0 ft
Wave height incl. wake	1.4 ft

LOAD COMBINATIONS

Load Combinations are in accordance with the CBC and the following unless otherwise noted:

	LRFD LOAD FACTORS FOR LOAD COMBINATIONS					
LOAD TYPE	*TYPICAL DESIGN CONDITION*		*MOORING & BREASTING CONDITION*	*BERTHING CONDITION*	*EARTHQUAKE CONDITION[3]*	
Dead Load (D)	1.2	0.9	1.2	1.2	1.2 + k[1]	0.9 - k[1]
Live Load (L)	1.6	—	1.6	1.0	1.0	—
Buoyancy (B)	1.2	0.9	1.2	1.2	1.21	0.91
Wind on Structure (W)	1.0	1.0	1.0	1.0	—	—
Current on Structure (EC)	1.2	0.9	1.2	1.2	1.2	0.9
Mooring/ Breasting Load (LM)	—	—	1.6	—	—	—
Berthing Load (LB)	—	—	—	1.6	—	—
Earthquake Load (S)	—	—	—	—	1.0	1.0

1. k = 0.50 (PGA lateral). The k factor and buoyancy (B) shall be applied to the vertical dead load (D) only and not to the inertial mass of the structure.
2. An earth pressure on the Structure factor (H) of 1.0 may be used for pile or bulkhead structures.
3. Use load factor (LM) of 1.3 for the float mooring, e.g., float piles and float pile collars

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REGISTERED PROFESSIONAL ENGINEER L G Soderstrom No. S4426 Exp. 12-31-25 STRUCTURAL STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: DESIGN CRITERIA AND GENERAL NOTES - 2

DATE	10-15-24
SHEET	OF
DRAWING NO.	G1.2
JOB NO.	2419

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SERVICE OR ASD LOAD FACTORS FOR LOAD COMBINATIONS

LOAD TYPE	*TYPICAL DESIGN CONDITION*	*MOORING & BREASTING CONDITION*	*BERTHING CONDITION*	*EARTHQUAKE CONDITION[3]*	
Dead Load (D)	1.0	1.0	1.0	1 + 0.7k[1]	1 - 0.7k[1]
Live Load (L)	1.0	1.0	0.75	—	—
Buoyancy (B)	1.0	1.0	1.0	1.0	0.6
Wind on Structure (W)	0.6	0.6	0.45	—	—
Current on Structure (EC)	1.0	1.0	1.0	—	—
Mooring/ Breasting Load (LM)	—	1.0	—	—	—
Berthing Load (LB)	—	—	1.0	—	—
Earthquake Load (S)	—	—	—	0.7	0.7
% Allowable Stress	100	100	100	100[2]	

1. k = 0.50 (PGA)
2. Increase in allowable stress shall not be used with these load combinations unless it can be demonstrated that such increase is justified by structural behavior caused by rate or duration of load. See ASCE 7.

OTHER DESIGN REQUIREMENTS

1. Fatigue Design: Fatigue due to wave loading shall be considered for the float and pile structures, including equipment and equipment supports. In the float structure, particularly at discontinuities such as hatch and door openings in the center trunk structure and at discontinuous diaphragms.

   The design shall include a fatigue analysis of the calculated reliability and required periodic inspection. The fatigue analysis shall account for construction tolerances, i.e., misalignments and their effect on local stresses. All details shall have a calculated reliability for the design life of at least 50% without periodic inspection.

   A periodic inspection program shall be provided as part of the design documents that is based on the calculated reliability considering calculated fatigue damage and fatigue detail classes.

   The fatigue design should be based on a minimum of 20,000 cycles/year at the 100 year design storm loading and acceleration. The stress range shall consider the load reversing in direction for each cycle.

2. Capacity Based Design: Berthing, Mooring, and Pile Guide Hardware: The nominal strength of the connection to the float structure will be designed to exceed the nominal strength of the component by a factor of 1.3.

3. Float Freeboard: 2.83 feet with unfactored design dead load

4. Float Stability:

   Stability requirements: The following design stability requirements shall be met considering the most severe design conditions, e.g., effect of design ballast, loading on only portions of the float.

   Float Intact Stability:
   a. The intact float shall have a minimum initial stability (GM') of 3 ft.
   b. The float shall not list more than 2 degrees under the following concurrent loads on half of the float width:
      i. 40 psf live load on the float deck not covered by walkways/ramps.
      ii. 100 psf live load on walkways/ramps.

   Float Damaged Stability:
   a. The float must have a minimum freeboard of at least 3 inches considering ballasting and after flooding of:
      i. Any two adjacent outer compartments. Outer compartments are defined as being partially or wholly within a distance of 20% of the float width to the float edge.
      ii. Any single internal compartment.
   b. The float shall remain stable with the flooding shown in the Float Damaged Stability item "a" above and the following concurrent loads:
      i. 40 psf live load on the float deck not covered by walkways/ramps.
      ii. 100 psf live load on walkways/ramps.
      iii. Operational wind speed of 55 mph acting on the float system, e.g., canopy, gangway.
   c. The float shall remain stable under the flooding shown in the Float Damaged Stability item "a" above and the storm wind load.

5. Fenders
   a. Float Fenders:
      Speed: 1.5 fps perpendicular to fender
      Incidence angle: 15 degrees
      Berthing point fore of midship: Length / 4

      Morse 13W Trapezoidal "W" Series Fenders

6. Design for Blast Load
   a. Ventilation to be incorporated by others to limit the impact of a blast.

7. Float Storm Motions and Accelerations: 100 Year Design Storm (REF. A and F) (ASD, unfactored)

Motion component		Beam	Quartering	Head
Extreme roll ampl.	deg	12.1	2.5	0
Extreme pitch ampl.	deg	0	1.0	1.0
Extreme yaw ampl.	deg	0	.5	0
Extreme roll acc.	deg/s^2	39.9	8.0	0
Extreme pitch acc.	deg/s^2	0	2.7	3.1
Extreme yaw acc.	deg/s^2	0	1.5	0

The accelerations should be applied at the maximum angles roll and pitch, including the directional component due to gravity.

Load combinations:

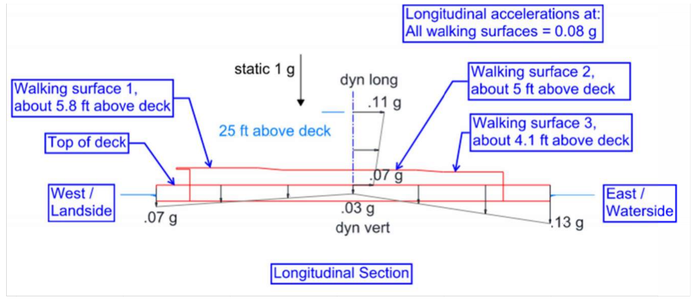
The longitudinal and transverse accelerations shown below are independent and should be combined with whatever angle results in the most severe loading.

The vertical and lateral accelerations shown for each load case should be combined concurrently as follows: 1.0*static vertical + 0.9*(dynamic vertical + dynamic transverse or dynamic longitudinal).

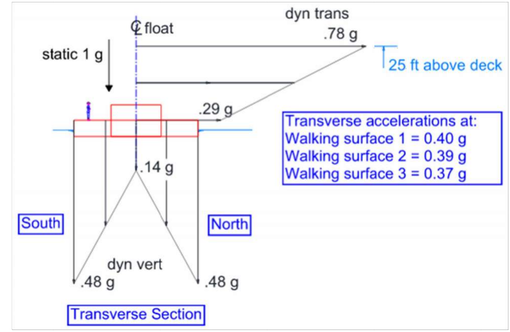
Loads:

The longitudinal and transverse acceleration load cases shown below should also include a static vertical acceleration of 1 g down due to gravity.

a. The float rotating in either longitudinal direction (including gravity effect with rotation). The longitudinal accelerations can occur in either direction.
   i. The vertical acceleration of 0.07 g is up on the west side of the float, and 0.13 g is down on the east side, with a lateral acceleration towards the east as shown in the figure below.
   ii. The vertical acceleration of 0.07 g is down, 0.13 g is up, with the lateral acceleration to the west.

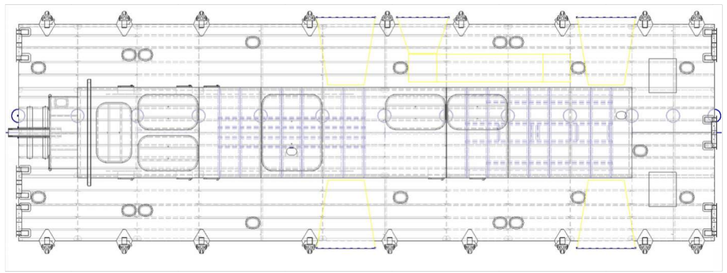


b. The float rotating in either transverse direction (including gravity effect with rotation). The transverse accelerations can occur in either direction.
   i. The vertical acceleration of 0.48 g is down on the south side of the float, and 0.48 g is up on the north side, with a lateral acceleration towards the north as shown in the graphic below.
   ii. The vertical acceleration of 0.48 g is up on the south side of the float, and 0.48 g is down on the north side, with a lateral acceleration towards the south.



8. Float Earthquake Accelerations, DE, unfactored,
   a. Lateral acceleration of 0.7 g in any direction with concurrent lateral acceleration of 0.21 g in orthogonal direction.
   b. Concurrent vertical acceleration of ±0.05 g due to motion on water.

9. Trunk door and hatch access based on Aurora's 3D model provided on 9/30/24. See snips below.



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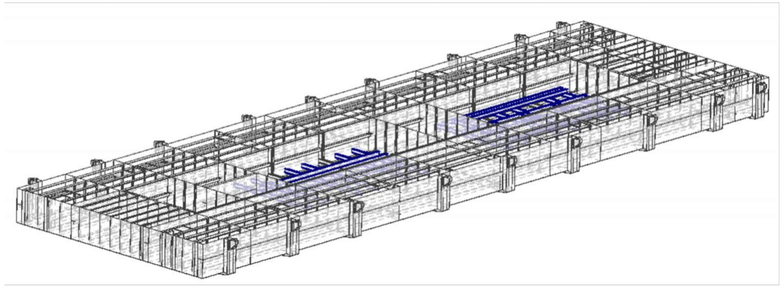
REGISTERED PROFESSIONAL ENGINEER — Eric G Soderstrom — No. S-5428 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:

DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT
SHEET: DESIGN CRITERIA AND GENERAL NOTES - 3

DATE: 10-15-24
SHEET: OF
DRAWING NO.: G1.3
JOB NO.: 2419

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GENERAL NOTES

GENERAL

The Project Specifications, which are a separate document, are an integral part of the construction documents. The Project Specifications take precedence over the General Notes. See structural drawings for other requirements.

All work shall conform to all applicable codes and ordinances including OSHA. All inspection, welding, workmanship, fabrication and tolerance requirements shall conform to the respective AISC and AWS codes. It is also acceptable to conform to ABS Guide for Shipbuilding and Repair Quality Standard for Hull Structures during Construction.

Contractor shall visit the site and verify that all existing conditions, elevations, dimensions, and construction are consistent with these drawings and notify the Owner of any discrepancies before proceeding with the work.

All codes and specifications are latest edition unless otherwise noted.

SPECIAL INSPECTION

Special inspection shall be provided in accordance with the requirements in IBC, Chapter 17, as follows:

Verification and Inspection	Continuous	Periodic
Steel Construction		
Material Verification of high-strength bots, nuts, and washers. Identification markings to conform to ASTM standards specified in the approved construction documents. Manufacturer's certificate of compliance required.	____	X
Snug-tight joints	____	X
Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation.	____	X
Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X	____
Material verification of structural steel – identification markings to conform to AISC 360.Manufacturer's certified test reports required.	____	X
Material verification of weld filler materials – identification markings to conform to AWS specification in the approved construction documents. Manufacturer's certificate of compliance required.	____	X
Material alignments, e.g., plate alignments to work points, out-of-straightness, out-of-plumb. Refer to AWS and AISC specifications. Contact Engineer if there are questions. Inspection at fit-up before welding is preferred.		X
Inspection of welding:		
1) Complete and partial joint penetration groove welds	X	____
2) Multipass fillet welds	X	____
3) Single-pass fillet welds > $^5/_{16}$"	X	____
4) Plug and slot welds	X	____
5) Single-pass fillet welds ≤ $^5/_{16}$"		X
Deep Foundation Elements		
Verify element materials, sizes and lengths comply with the requirements.	X	____
Determine capacities of test elements and conduct additional load tests, as required.	X	____
Observe driving operations and maintain complete and accurate records for each element.	X	____
Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	X	____

The Owner will retain the Special Inspector for the above inspections. Inspection reports shall be submitted to the Contractor, Owner, and Engineer.

STRUCTURAL OBSERVATION

Contractor shall notify the Owner and Engineer of the construction schedule and progress and prior to the following construction stages so that the Engineer may plan and perform a visual observation of the structures for general conformance to the approved construction documents:

Initial fit-up of float main structures
Near completion of float main structures
Installation of center trunk and ramps
Completion of construction and installation

STRUCTURAL STEEL

Workmanship

Work shall conform to the requirements of the ANSI/AISC 360 "Specification for Structural Steel Buildings", March 9, 2005, including current supplements and ANSI/AWS D1.1, "Structural Welding Code" including provisions applicable to cyclically loaded structures.

All steel members shall be made in an approved fabricator's shop. The approved fabricator shall submit the Certificate of Compliance to the building inspector prior to erection.

Material

NOTE: Dissimilar metals shall be electrically isolated unless otherwise noted.

Structural steel shall conform to the following unless otherwise noted:

Plate	ASTM A572, Grade 50
Bar	ASTM A36
W Shapes and Tees	ASTM A992
Pipes	ASTM A53, Grade B
Pipes (Promenade Canopy)	API 5L, Grade B X52
HSS Tubes	ASTM A500, Grade B, Fy = 46
Angles & Channels	ASTM A36
Bolts	ASTM F3125 A325-N
Anchor Bolts	ASTM F1554 Grade 55
Nuts	ASTM A563
Washers	ASTM F436
Pins	ASTM A182 Type F61
Stainless Steel	
Tubes	ASTM A269 Grade 316L
Plate and bar	ASTM A666 Grade 316L
Angles	ASTM A240 Grade 316L
Bolts	ASTM F593
Nuts	ASTM F594
Washers	ASTM A240, Type 316

Aluminum shall conform to the following unless otherwise noted:

Plate for walking surface	6061 T-6 or 5086
Round Bar	6061 T-6
Transition Plates	5052 H32

Other

Chain	BBB or short link pattern, ASTM 240 Type 316L
Ultra High Molecular Weight Polyethylene (UHMW)	Ultra-Fend, manufactured by Ultra Poly or approved equal. Color: white. Purchased new, not re-used.
Neoprene washers and gaskets	Durometer 45 or UON
Railings	Aluminum Hollaender Interna-Rail 2 Line Rail Top Mounting with 2" wire mesh panels, or approved equal

Coatings

Safety ladders and small non-stainless steel components to be hot dip galvanized, e.g., bolts, hardware, shim plates, in accordance with ASTM A123 and A153

See Project Specifications for other requirements.

Welding

Welders and welding operators shall have current AWS certificates for the materials and processes being used. The Contractor shall maintain current files of these certificates and shall provide them to the Owner upon request.

Weld procedures shall be qualified in accordance with AWS D1.1. The Contractor shall mainta current files of weld procedure specifications and test results. The Contractor shall review planned weld procedures, weld test results, or both, and verify they are acceptable prior to welding.

Steel electrodes shall be in accordance with Table 3.1 of AWS D1.1 except E60xx rods shall not be used.

Stainless steel electrodes shall be in accordance with AWS D1.6.

Fillet welds that occur on opposite sides of a common plane shall be interrupted at the corner common to both welds unless otherwise noted. See Figure 1.

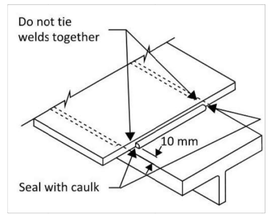


Figure 1 Fillet Welds on Opposite Sides of a Common Plane

Weld Inspection

All welds shall be visually inspected (VT). Additional nondestructive testing (NDT) shall be performed as indicated on the drawings. The Owner may perform NDT other than visual even though this inspection is not indicated on the drawings. It shall be the Contractor's responsibilit ensure that all welds meet the acceptance requirements of AWS D1.1, Section 6, "Inspection."

Weld inspectors performing non-visual NDT shall be certified in accordance with the current ed of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-1 1A. Inspectors shall be an NDT Level II inspector, or an NDT Level I inspector working under t supervision of an NDT Level II inspector.

The Contractor shall allow unrestricted access for inspection by the Owner or his representativ

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REGISTERED PROFESSIONAL ENGINEER Lee G Soderstrom No. S4426 Exp. 12-31-25 STRUCTURAL STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

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DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: DESIGN CRITERIA AND GENERAL NOTES - 4

DATE	10-15-24
SHEET	OF
DRAWING NO.	G1.4
JOB NO.	2419

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Bolts

All bolted steel to steel connections shall have high strength bolting conforming to ASTM F3125 A325, hot-dip galvanized unless otherwise noted; and where exposed, shall be of the same color and finish as the metal to which applied. Bolts shall conform to bearing connection requirements with threads excluded (X) unless otherwise noted.

Drain Holes

Drain holes, 1" diameter, shall be provided at all water traps.

Bent Plates

Bent plates shall have bend lines perpendicular to the direction of rolling. The plate temperature shall be at least 70° F at the time of bending. No sharp indentations, dents, or cracks will be allowed. The plate may be inspected by UT Methods.

Non-Skid Coating

Non-Skid steel coating shall be as noted in the Project Specifications.

CAULK

Caulking shall be 100% silicone suitable for exterior use.

SUBMITTALS

See Project Specifications.

FABRICATION NOTES

Dimensional Tolerance

In addition to other tolerance requirements, members shall meet ANSI/AWS D1.1-2015, Section 5.23, dimensional tolerance requirements. Some of the more pertinent requirements are provided below. Refer to AWS D1.1 and AISC 303-10 for other requirements.

The maximum variation in straightness between any two points along the length of the unloaded member shall be 1/1000 the distance between the two points. Refer to Figure 2.

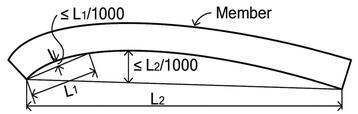


Figure 2 Unloaded Member Straightness Limits

The combined flange warpage and tilt shall not exceed 1% of the flange width or ¼", whichever is greater. Refer to Figure 3.

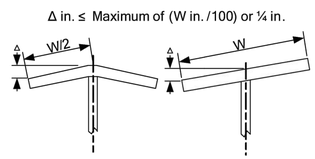


Figure 3 Plate Warpage Limits

In addition to AWS D1.1 requirements, webs and flanges shall meet the flatness requirements shown in Figure 4. Panels may be flattened or stiffened to meet these requirements. Obtain Engineer approval before adding stiffeners.

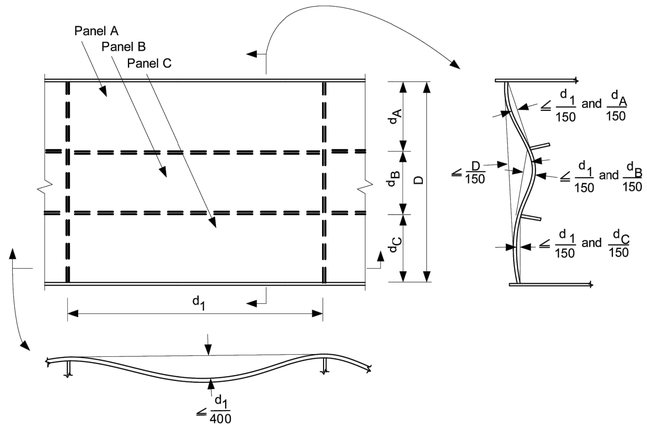


Figure 4 Plate Flatness Limits

The following figures show aligned and misaligned plates, and required alignment tolerances. Small misalignments can result in large, unacceptable localized stresses in the plates and their welds. The alignment requirements below are based on AWS 5.22.3. Report misalignments for other conditions to the Engineer for evaluation.

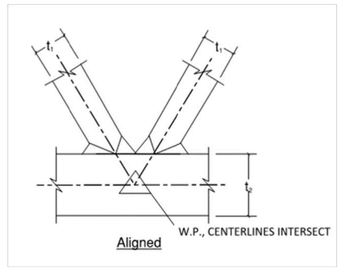


Figure 5 Aligned Plates

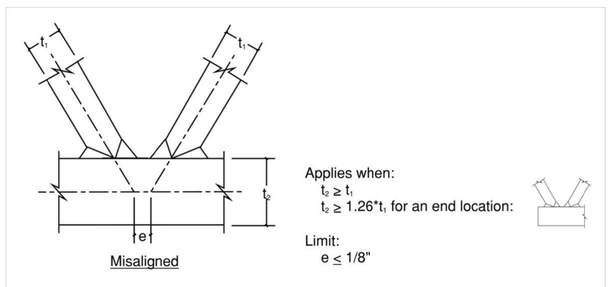


Figure 6 Misaligned Plates

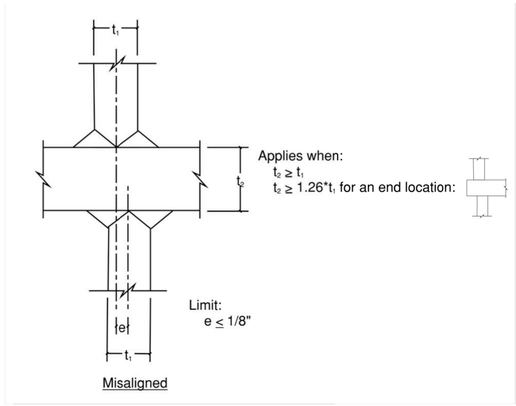


Figure 7 Misaligned Plates

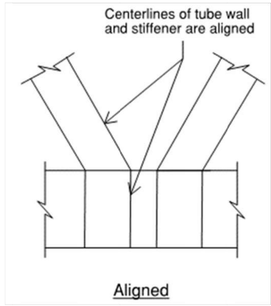


Figure 8 Aligned Plates

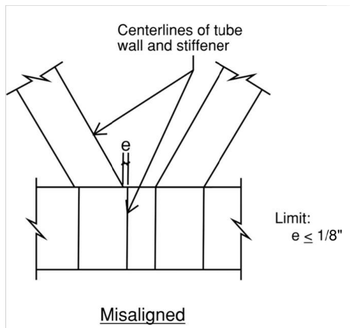


Figure 9 Misaligned Plates

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REGISTERED PROFESSIONAL ENGINEER — Eric G Soderstrom — No. S4426 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
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SHEET	DESIGN CRITERIA AND GENERAL NOTES - 5
DATE	10-15-24
SHEET	OF
DRAWING NO.	G1.5
JOB NO.	2419

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SOUTH BASIN PROJECT AREA

SOUTH BASIN

GATE C

GATE D

BART TRANSITION STRUCTURE

FERRY PLAZA (BART PLATFORM)

FERRY BUILDING

GATE E
FUTURE UNIVERSAL CHARGING FLOAT

GATE F
FUTURE UNIVERSAL CHARGING FLOAT

GATE G
UNIVERSAL CHARGING FLOAT

WETA

EAST BAYSIDE PROMENADE

PROMENADE CANOPIES

OPEN WATER

GRANITE PLAZA

ELECTRICAL, COMMUNICATION AND SEISMIC INSTRUMENTATION PANELS

AGRICULTURE BUILDING AND APRONS

AGRICULTURE BUILDING

PEDESTRIAN BRIDGE FOR A SECOND MEANS OF EGRESS AND PUBLIC ACCESS FROM THE SOUTH

EXISTING SEAWALL

PIER 14

40 0 40 80'

SCALE : 1"=40'

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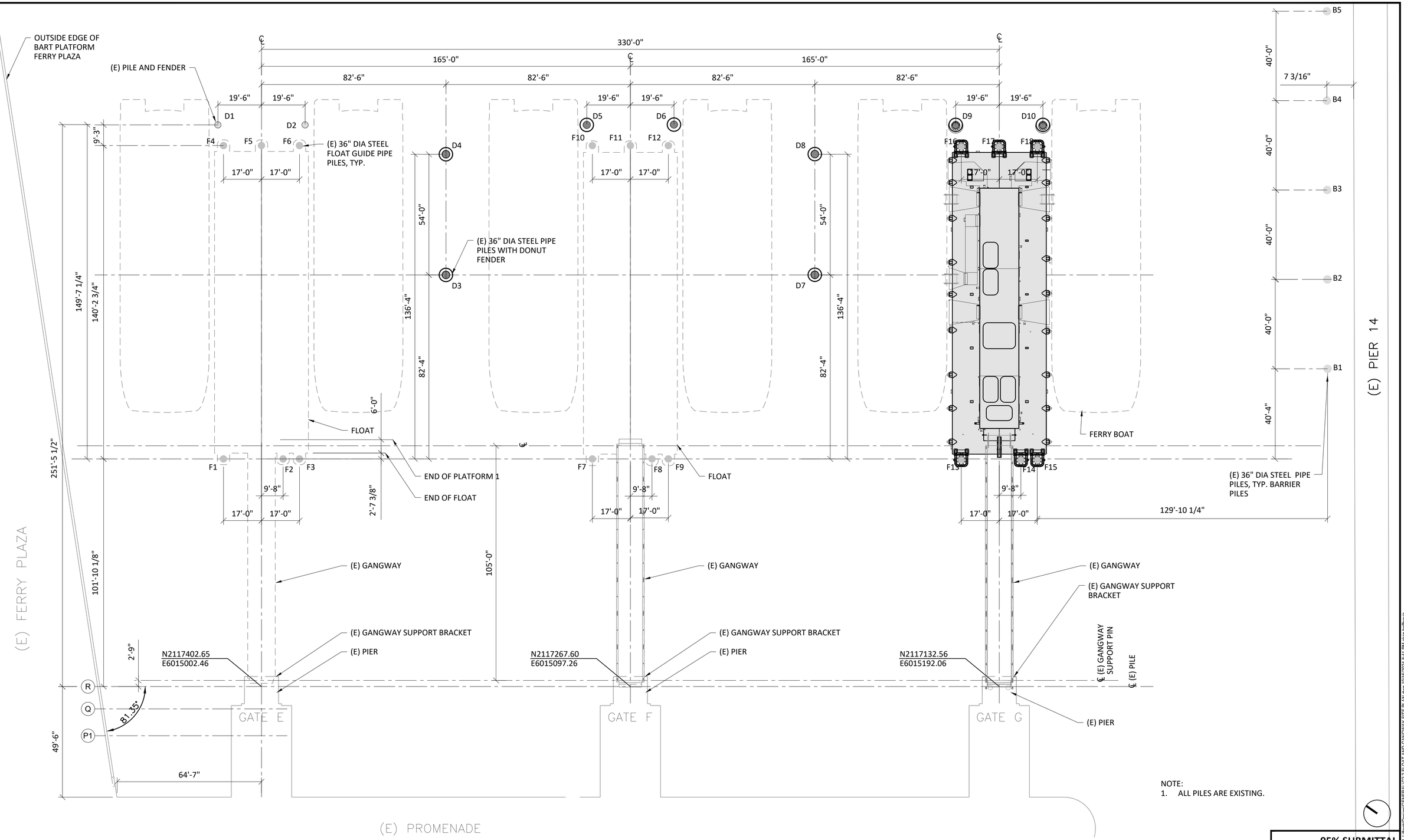
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PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: SITE PLAN

DATE	10-15-24
SHEET	OF
DRAWING NO.	G2.1
JOB NO.	2419

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NOTE:
1. ALL PILES ARE EXISTING.

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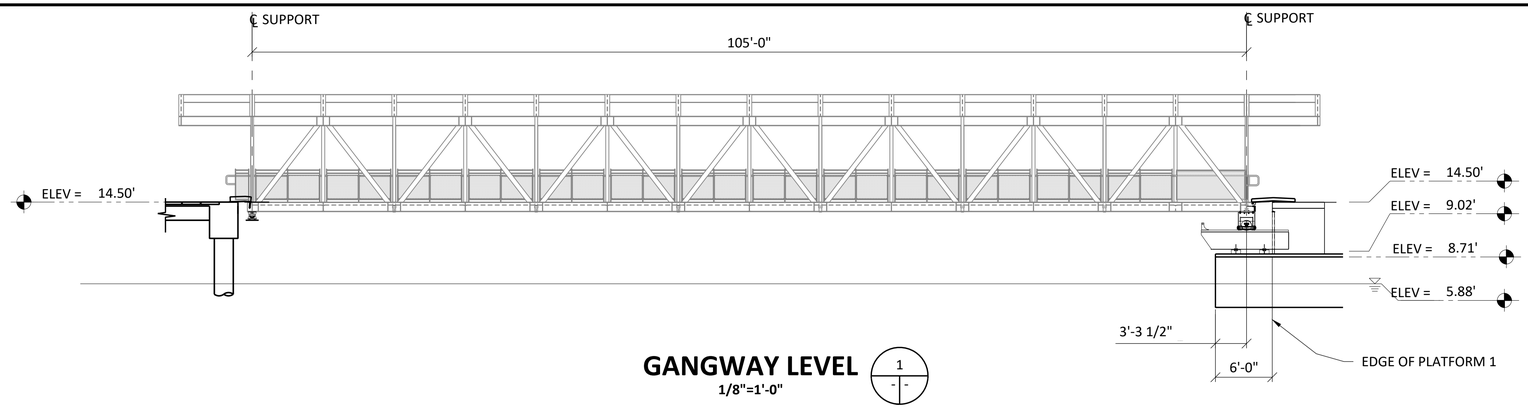
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PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: FLOAT AND GANGWAY SITE PLAN

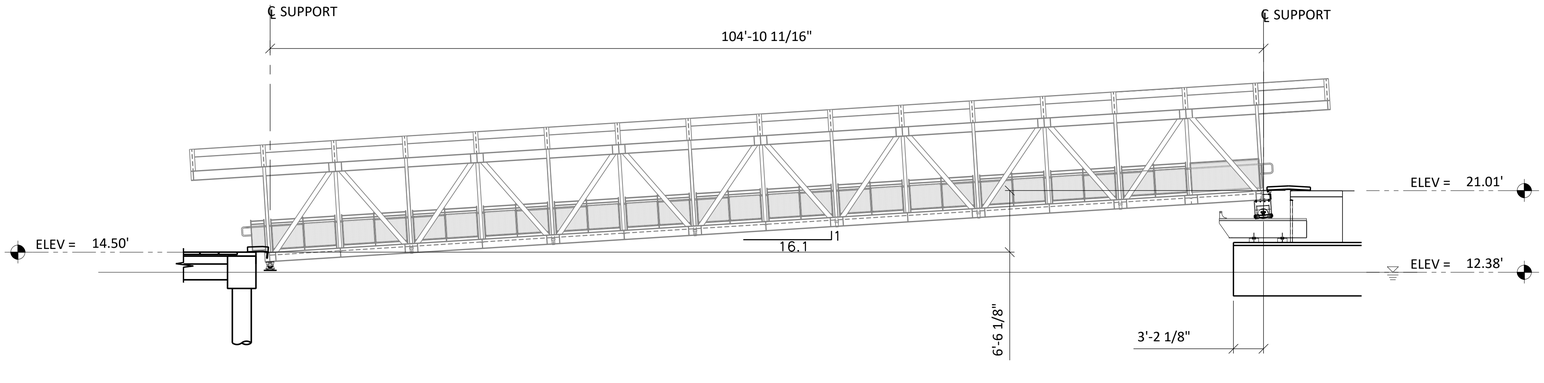
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JOB NO.	2419

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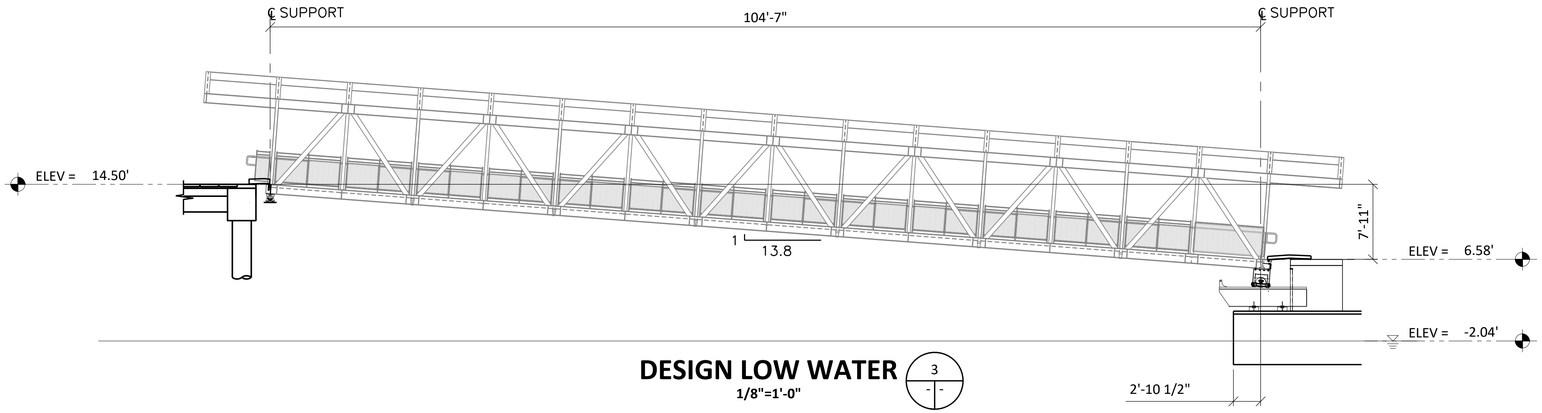
GANGWAY LEVEL

1/8"=1'-0"



DESIGN HIGH WATER

1/8"=1'-0"



DESIGN LOW WATER

1/8"=1'-0"

NOTES:
1. DIMENSIONS SHOWN AT THE CENTERLINE OF THE GANGWAY EXCEPT AS NOTED.
2. FOR PLAN DISPLACEMENTS SEE DRAWING G2.5
3. ELEVATIONS SHOWN ARE RELATIVE TO NAVD 88.

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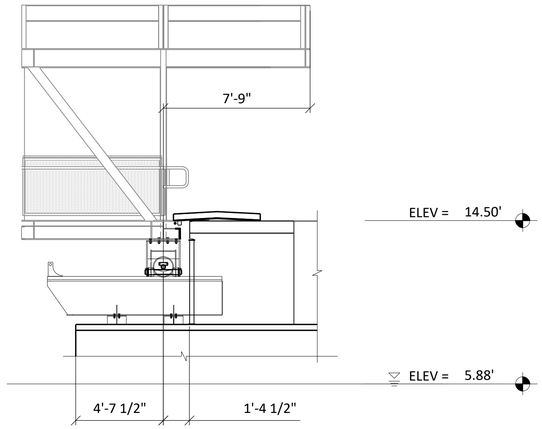
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PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: FLOAT AND GANGWAY MOTIONS - 1

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JOB NO.	2419

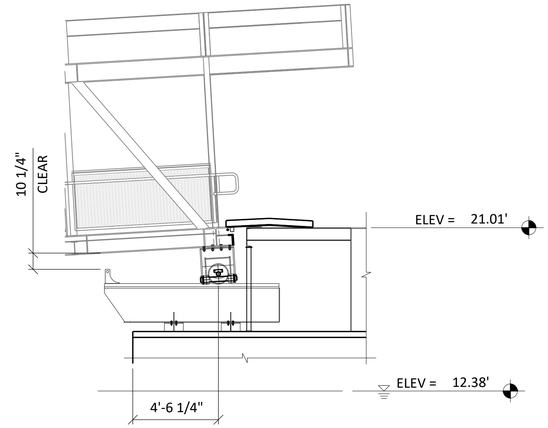
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GANGWAY MOTION TOWARDS FLOAT

GANGWAY LEVEL DURING DESIGN EARTHQUAKE

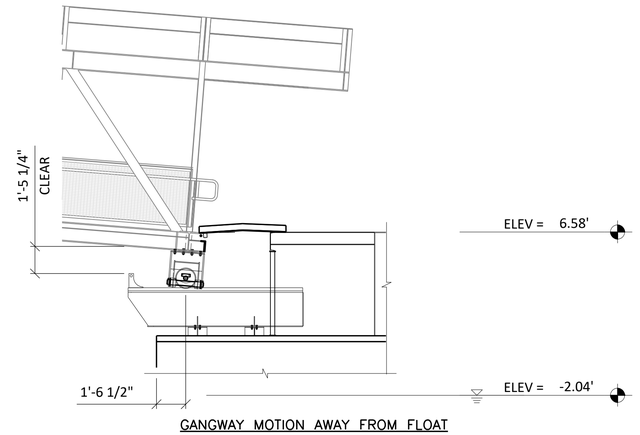
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GANGWAY MOTION TOWARDS FLOAT

DESIGN HIGH WATER DURING DESIGN EARTHQUAKE

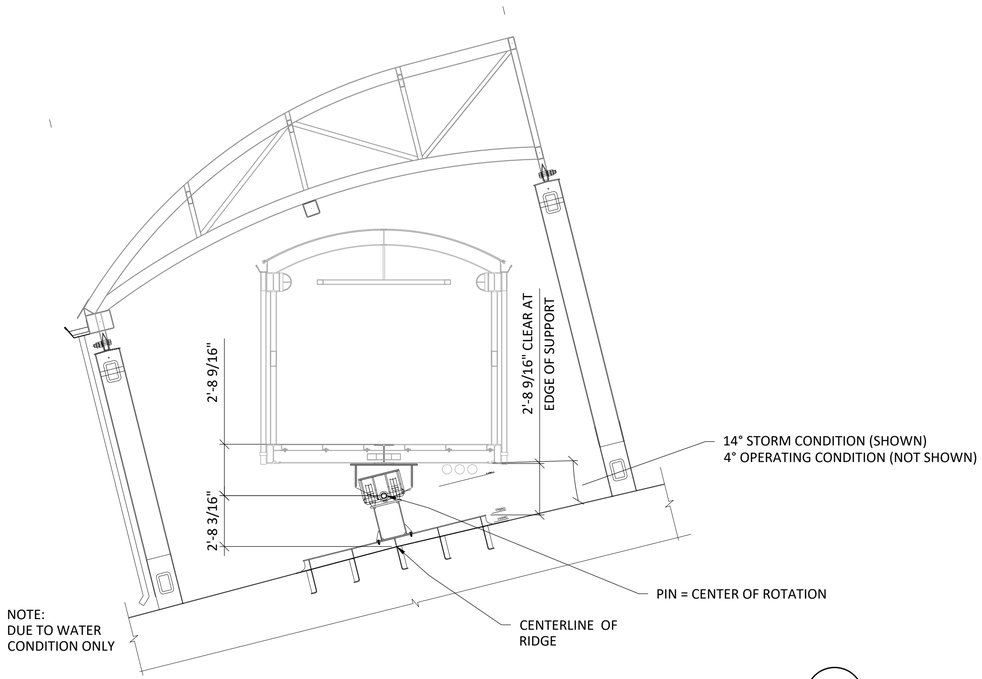
1/4"=1'-0"



GANGWAY MOTION AWAY FROM FLOAT

DESIGN LOW WATER DURING DESIGN EARTHQUAKE

1/4"=1'-0"



FLOAT AT MAXIMUM ROTATION DURING DESIGN STORM

1/4"=1'-0"

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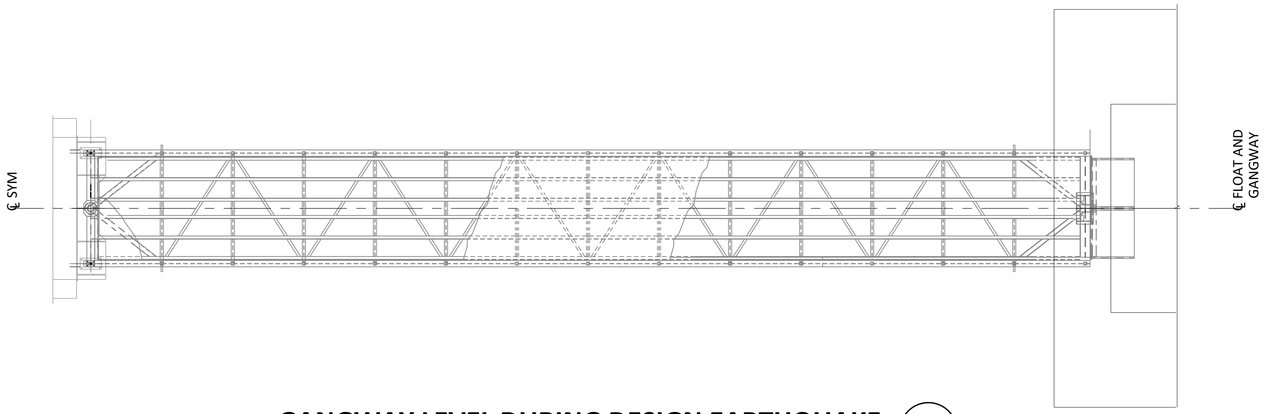
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DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT AND GANGWAY MOTIONS - 2

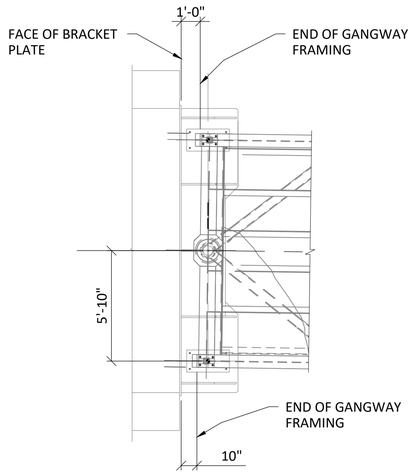
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JOB NO. 2419

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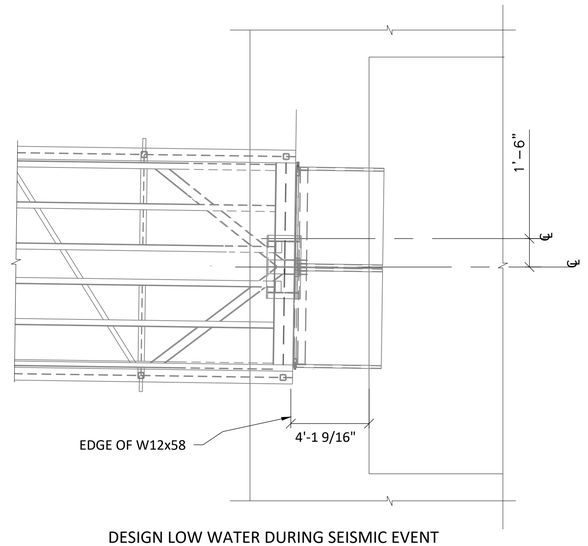
GANGWAY LEVEL DURING DESIGN EARTHQUAKE

1/8"=1'-0"



EXTREME HORIZONTAL GAP

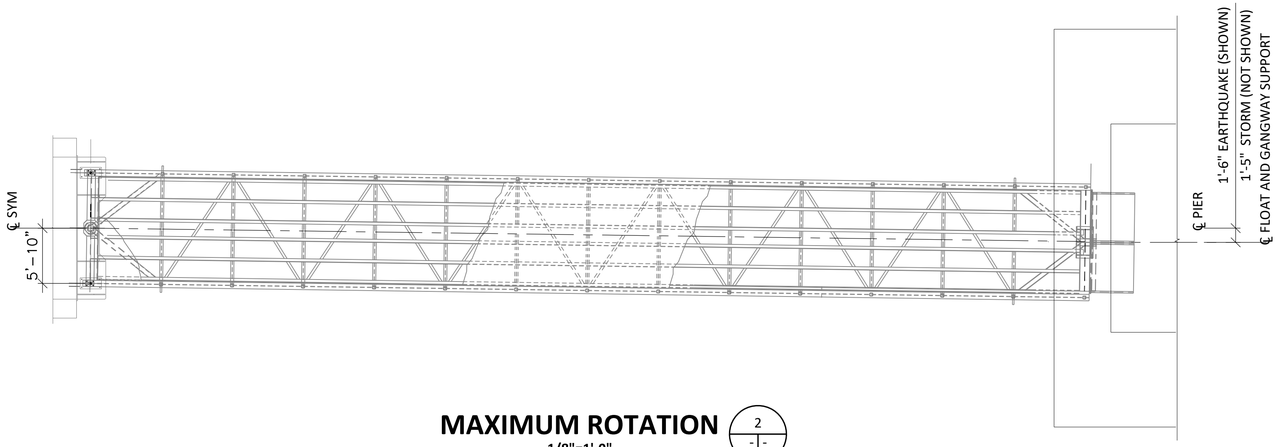
1/4"=1'-0"



DESIGN LOW WATER DURING SEISMIC EVENT

MAXIMUM HORIZONTAL GAP

1/4"=1'-0"



MAXIMUM ROTATION

1/8"=1'-0"

GANGWAY LEVEL DURING SEISMIC EVENT

MININUM HORIZONTAL GAP

1/4"=1'-0"

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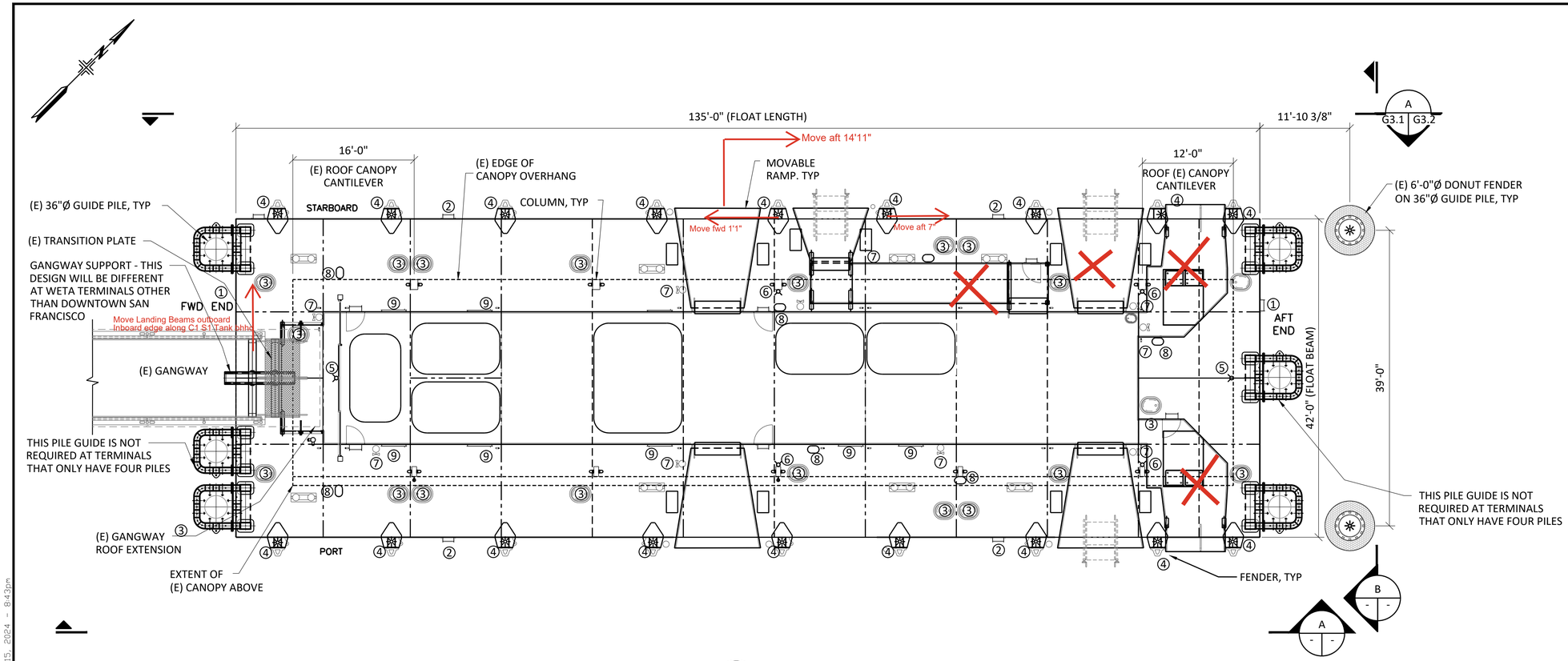
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT AND GANGWAY MOTIONS - 3

DATE 10-15-24
SHEET OF
DRAWING NO. G2.5
JOB NO. 2419

\\neo\2419\24195\Dwg\Production\Structural_Liftech\Design\GENERAL\G2.5 FLOAT AND GANGWAY MOTIONS - 3.dwg 10/15/2024 8:42 PM alvin hoff\paul



LEGEND - APPURTENANCES

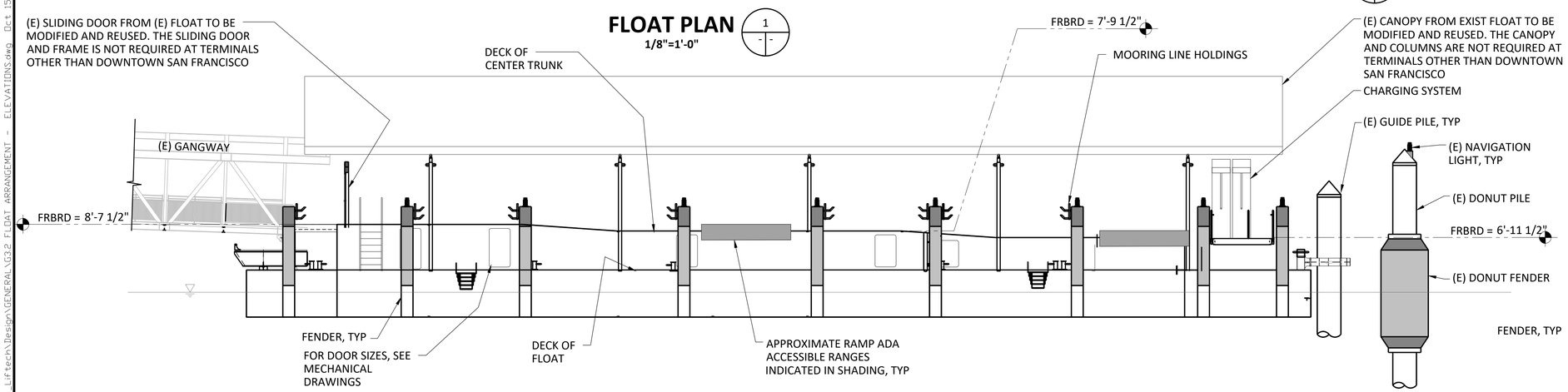
① - PERMANENT SAFETY LADDER TO WATER (3)
② - UP-N-OUT SAFETY LADDER TO WATER (4)
③ - DECK HATCH
④ - NAVIGATION LIGHT
⑤ - SECURITY CAMERA OPERATIONS MONITORING
⑥ - SECURITY CAMERA INCIDENT MONITORING
⑦ - PORTABLE FIRE EXTINGUISHER (8)
⑧ - LIFE RING (7)
⑨ - CENTER TRUNK ACCESS DOOR - HINGED WEATHER PROOF

NOTE:

1. FOR SLIDING DOOR REQUIREMENTS SEE SPECIFICATIONS.
2. GUARDRAILS NOT SHOWN FOR CLARITY.

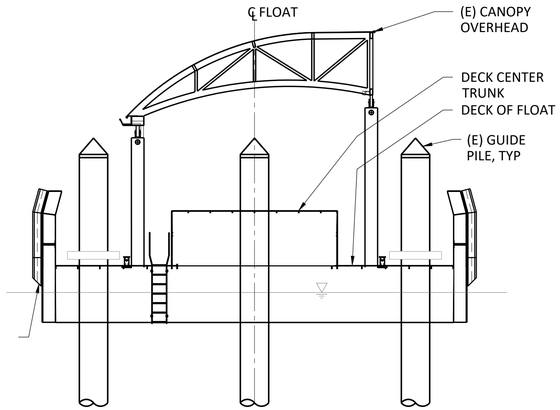
FLOAT PLAN

1/8"=1'-0"



FLOAT ELEVATION - PORT SIDE

1/8"=1'-0"



FLOAT SIDE ELEVATION

1/8"=1'-0"

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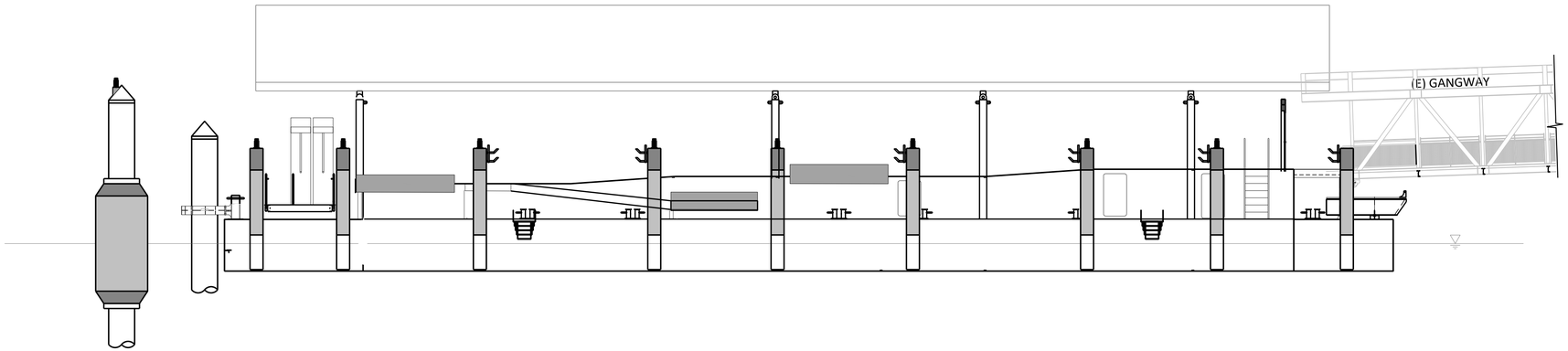
PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: FLOAT ARRANGEMENT - PLAN AND ELEVATIONS

DATE	10-15-24
SHEET	OF
DRAWING NO.	G3.1
JOB NO.	2419

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NOTE
FOR INFORMATION NOT SHOWN SEE SHEET G3.1

FLOAT ELEVATION - STARBOARD SIDE

1/8"=1'-0"

A
G3.1 | G3.2

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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT ARRANGEMENT - ELEVATIONS

DATE 10-15-24
SHEET OF
DRAWING NO. G3.2
JOB NO. 2419

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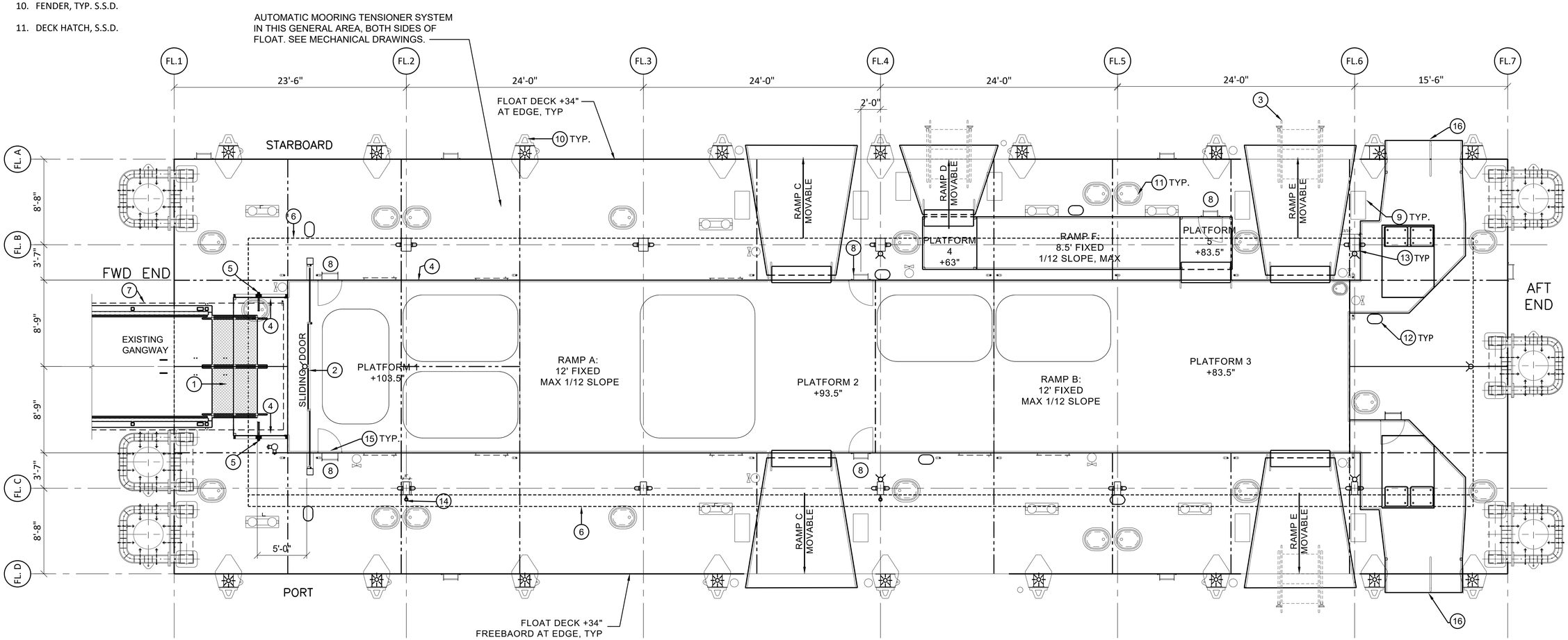
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FLOAT PLAN KEYED SHEET NOTES

1. EXISTING STAINLESS STEEL TRANSITION PLATE WITH SLIPNOT COATING, GUARDRAIL AND HANDRAIL.
2. AUTOMATIC SLIDING DOORS AND FIXED SIDELITES: TYPE 316 ST. STL. CLAD SLIDING BIPART DOOR, 8'-0" CLEAR OPENING WITH BREAKAWAY FOR EGRESS, WIRED FOR ACTIVATING MODE AND DECKHAND OPERATIONAL CONTROL. DOOR FLUSH PANIC DEVICE ON FLOAT SIDE OF DOORS.
3. OWNER PROVIDED BROW RAMP, TYP
4. 42" HIGH ALUMINUM HANDRAIL, GUARDRAIL IS NOT SHOWN, TYP. U.O.N.
5. SLIDE AWAY GUARDRAIL PANEL
6. OUTLINE OF EXISTING FLOAT CANOPY ABOVE
7. OUTLINE OF EXISTING GANGWAY CANOPY ABOVE
8. SERVICE ACCESS LADDER TO DECK LEVEL, S.S.D.
9. MOVABLE RAMP LIFT SYSTEM, SEE SPECIFICATIONS
10. FENDER, TYP. S.S.D.
11. DECK HATCH, S.S.D.
12. LIFE RING
13. HSS STEEL CANOPY COLUMN WITH SPECIAL COATING FOR STEEL, TYPICAL SSD
14. 3" DIA NPS RAINWATER LEADER AND BRACKETS NEAR ENDS AND AT 5'-0" O.C. MAX EQUAL SPACES.
15. GATE TO MATCH ADJACENT GUARDRAILS AND HARDWARE SET INCLUDING (2) PAIR WELDED HEAVY DUTY BARREL HINGES WITH LADDERSIDE LATCH BOLT AND LOCK.
16. CHARGING PLATFORM. SEE MECHANICAL DRAWINGS FOR CHARGER DETAILS.

FLOAT PLAN GENERAL NOTES:

1. ALL MOVABLE AND FIXED RAMPS AND LEVEL PLATFORMS AND LANDINGS PROVIDE FOR EMBARKING AND DISEMBARKING PASSENGERS AND ARE TO HAVE:
   - GUARDRAILS AND HANDRAILS TO MEET ALL CBC AND ADA REQUIREMENTS. GUARDRAIL SHALL BE CAPABLE OF SUPPORTING 50 POUND PER LINEAR FOOT LIVE LOAD APPLIED HORIZONTALLY AT RIGHT ANGLES TO THE TOP RAIL. HANDRAILS SHALL BE CAPABLE OF SUPPORTING 250 POUND POINT LOAD IN ANY DIRECTION AT ANY POINT ON THE RAIL.
   - ALL GUARDRAILS HEIGHT TO BE 42" FROM WALKING SURFACE.
   - TOP HANDRAIL HEIGHT TO BE AT 34" MIN. -38" MAX. ABOVE WALKING SURFACE.
   - ALL RAMP HANDRAIL EXTENSIONS TO BE 12".
   - WALKING SURFACE TO COMPLY WITH A MINIMUM STATIC COEFFICIENT OF FRICTION OF 0.8 AS DETERMINED BY MEASUREMENT WITH THE NBS BRUNGRABER TESTER ON CLEAN SURFACE UNDER WET CONDITIONS AND A MINIMUM DYNAMIC COEFFICIENT OF FRICTION OF 0.6 AS DETERMINED BY MEASUREMENT WITH BOT 3000 ACUTEST (WET) PER ANSI A137.1.
2. ALL SERVICE ACCESS STAIRS TO DECK LEVEL ONLY PROVIDE OCCASIONAL DECK HAND AND MAINTENANCE PERSONNEL ACCESS. THE DECK AREAS ARE NOT CUSTOMARILY OCCUPIED AND PUBLIC ACCESS IS NOT ALLOWED. THE SERVICE STAIRS TO COMPLY WITH TITLE 8, CALIFORNIA CODE OF REGULATION (OSHA) AND ANY APPLICABLE CBC 2013 PROVISIONS. SERVICE ACCESS GATES TO BE CLOSED DURING EMBARKATION AND DISEMBARKATION.
3. FOR GUARDRAILS, HANDRAILS, AND GATES TO SERVICE ACCESS LADDER, SEE ENLARGED PLANS AND DETAILS
4. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR FINAL DESIGN LAYOUT OF MECHANICAL AND ELECTRICAL EQUIPMENT



FLOAT REFERENCE PLAN

1 / - / -

3/16" = 1'-0"

95% SUBMITTAL

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PROJECT	WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT
SHEET	FLOAT REFERENCE PLAN
DATE	10-15-24
SHEET	OF
DRAWING NO.	G3.3
JOB NO.	2419

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FLOAT CANOPY ROOF PLAN GENERAL NOTES

A. ALL WORK IS NEW UNLESS OTHERWISE INDICATED.

B. FOR EXISTING GANGWAY AND RELATED ASSEMBLIES, SEE WETA SOUTH DOWNTOWN FERRY TERMINAL EXPANSION DRAWINGS.

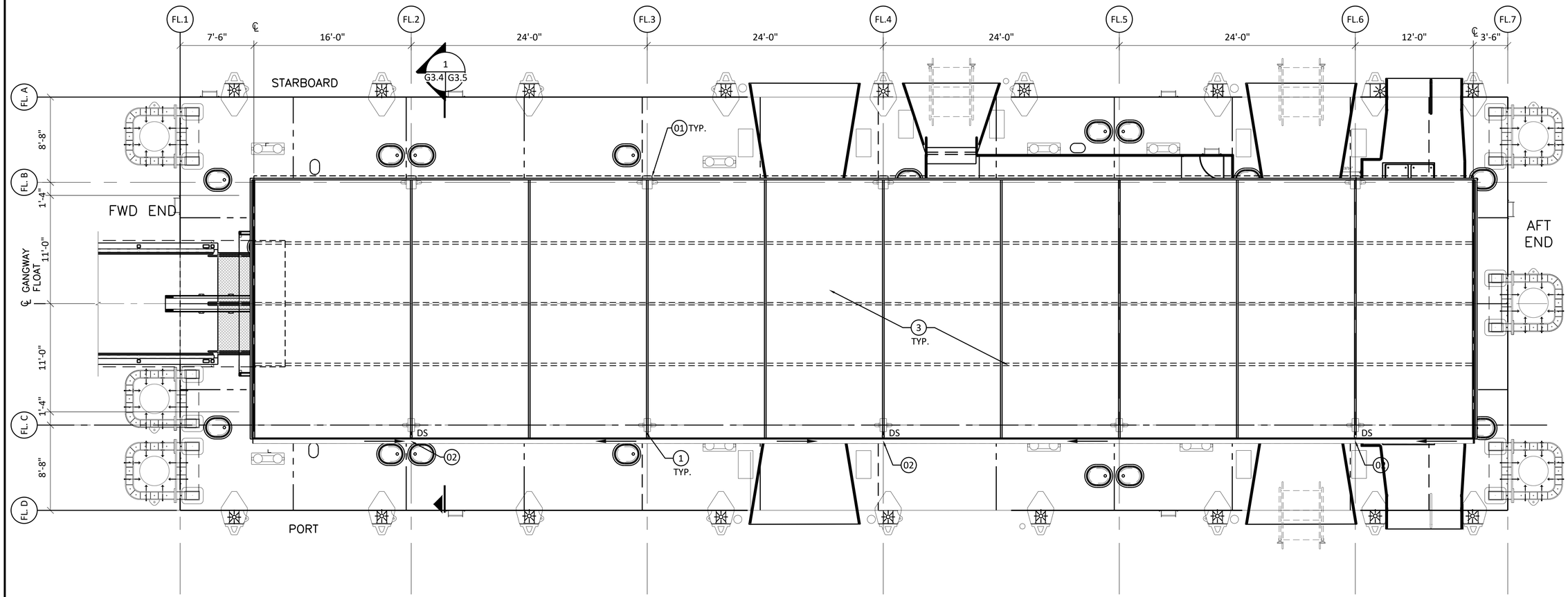
C. FOR EXISTING CANOPY AND RELATED ASSEMBLIES, SEE WETA SOUTH DOWNTOWN FERRY TERMINAL EXPANSION DRAWINGS.

D. STEEL FRAMING IS PRIMED AND COATED WITH SPECIAL COATINGS FOR STEEL (SPC.) UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS.

E. DIMENSIONS ARE TO EDGE OF FLOAT, EDGE OF PLATFORM OR CENTERLINE OF CANOPY COLUMNS UNLESS OTHERWISE INDICATED.

FLOAT CANOPY ROOF PLAN KEYED SHEET NOTES

1. HSS STEEL CANOPY COLUMN WITH SPECIAL COATING FOR STEEL (SPC), BELOW, TYPICAL
2. 4" DIA, ST. STL. OUTLET TO 4" DIA. GALV. STEEL PIPE DOWNSPOUT (DS.) PAINTED W/SPC. SEPARATE DISSIMILAR METALS WITH BITUMINOUS SHEET OR COATING
3. (E) TENSIONED FABRIC ROOF, TYP.



FLOAT CANOPY ROOF PLAN

1 / -

3/16" = 1'-0"

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PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: FLOAT CANOPY ROOF PLAN

DATE	10-15-24
SHEET	OF
DRAWING NO.	G3.4
JOB NO.	2419

\\mod2419\2419Dwg\Production\Structural_Liftech\Design\G3.4 FLOAT CANOPY ROOF PLAN.dwg 10/15/2024 8:33 PM alvin hoffpauir

FLOAT PLAN GENERAL NOTES

A. ALL WORK IS NEW UNLESS OTHERWISE INDICATED.

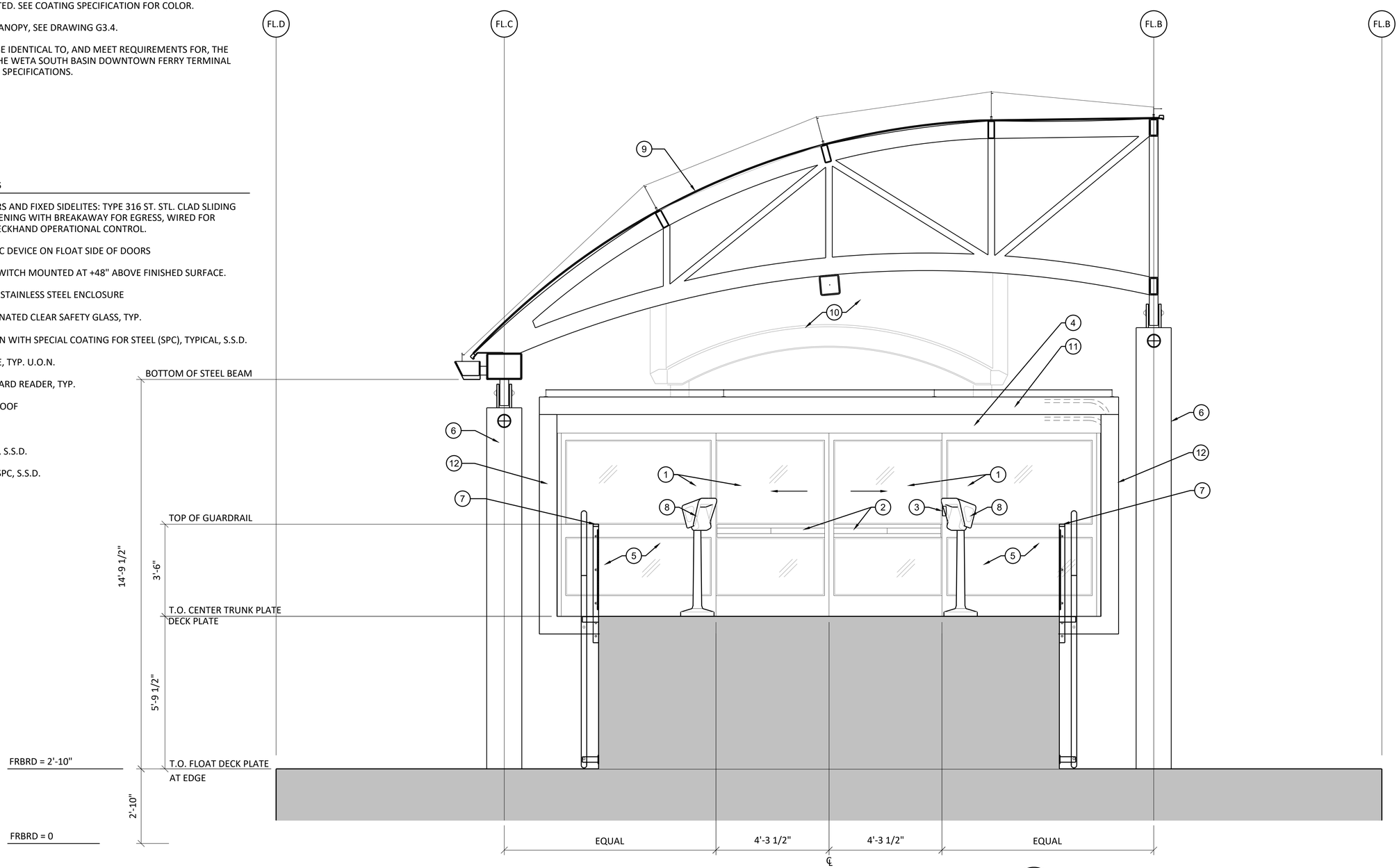
B. STEEL FRAMING IS PRIMED AND COATED WITH SPECIAL COATING FOR STEEL (SPC.) UNLESS OTHERWISE INDICATED. SEE COATING SPECIFICATION FOR COLOR.

C. FOR ROOF PLAN AT FLOAT CANOPY, SEE DRAWING G3.4.

D. NEW SLIDING DOOR SHALL BE IDENTICAL TO, AND MEET REQUIREMENTS FOR, THE SLIDING DOOR SHOWN IN THE WETA SOUTH BASIN DOWNTOWN FERRY TERMINAL EXPANSION DRAWINGS AND SPECIFICATIONS.

FLOAT PLAN KEYED SHEET NOTES

1. AUTOMATIC SLIDING DOORS AND FIXED SIDELITES: TYPE 316 ST. STL. CLAD SLIDING BIPART DOOR, 8' CLEAR OPENING WITH BREAKAWAY FOR EGRESS, WIRED FOR ACTIVATING MODE AND DECKHAND OPERATIONAL CONTROL.
2. SLIDING DOOR FLUSH PANIC DEVICE ON FLOAT SIDE OF DOORS
3. SLIDING DOOR CONTROL SWITCH MOUNTED AT +48" ABOVE FINISHED SURFACE.
4. DOOR OPERATOR AND 316 STAINLESS STEEL ENCLOSURE
5. 1/2" NOMINAL THICK LAMINATED CLEAR SAFETY GLASS, TYP.
6. HSS STEEL CANOPY COLUMN WITH SPECIAL COATING FOR STEEL (SPC), TYPICAL, S.S.D.
7. 42" HIGH ALUMINUM GATE, TYP. U.O.N.
8. DECK MOUNTED CLIPPER CARD READER, TYP.
9. (E) CANOPY WITH FABRIC ROOF
10. (E) GANGWAY BEYOND
11. 8"X8" HSS BEAM WITH SPC, S.S.D.
12. 8"X8" HSS COLUMN WITH SPC, S.S.D.



FLOAT SECTION-ELEVATION AT PLATFORM 1

1/2" = 1'-0"

1 G3.4 | G3.5

95% SUBMITTAL

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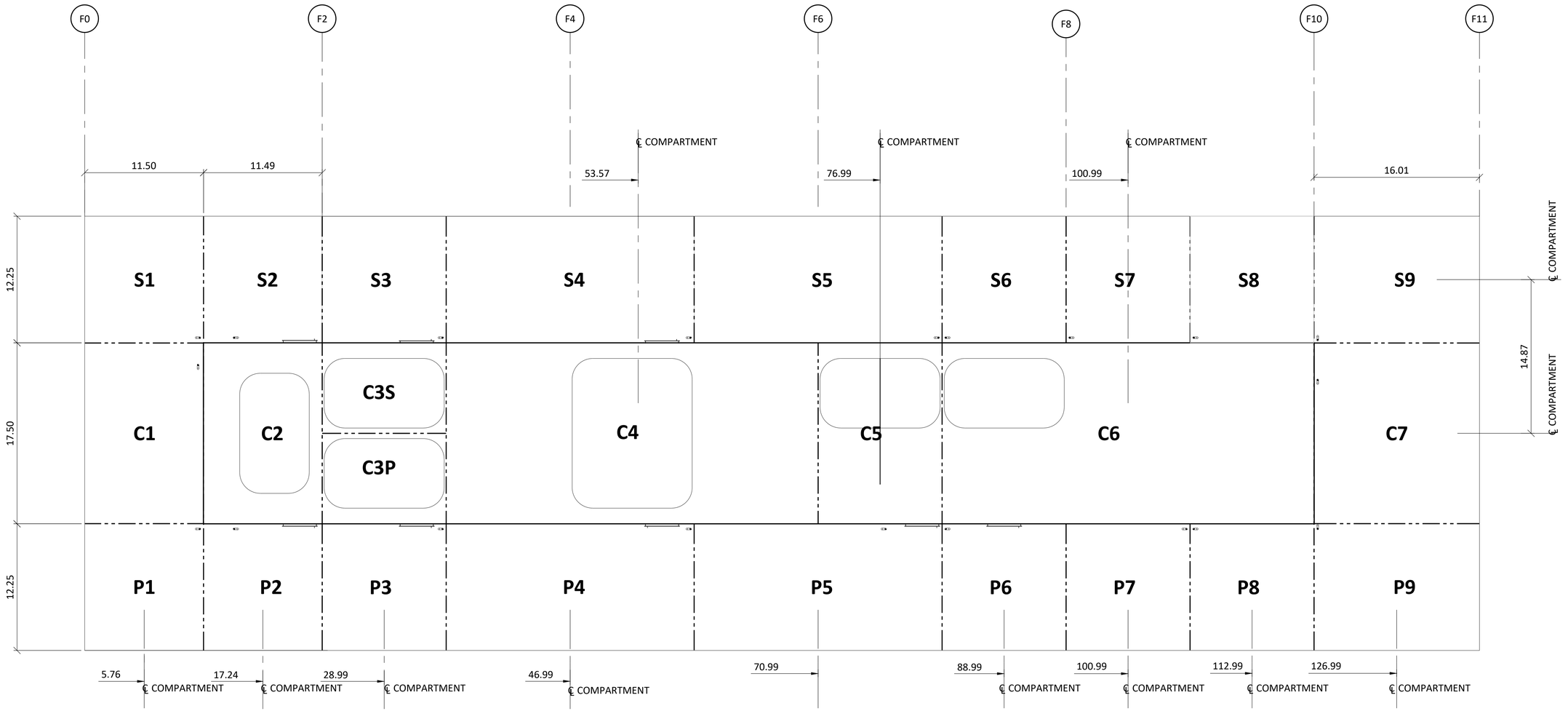
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PROJECT	WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT
SHEET	PLATFORM 1 SECTION-ELEVATION
DATE	10-15-24
SHEET	OF
DRAWING NO.	G3.5
JOB NO.	2419

\\nas\2419\24192\Dwg\Production\Structural_Liftech\Design\G3.5 PLATFORM 1 SECTION-ELEVATION.dwg 10/15/2024 8:37 PM alvin hoffpauir

NOTES:

1. AFTER GANGWAY AND ALL EQUIPMENT AND HARDWARE INSTALLED ON AND IN FLOAT, INSTALL WATER BALLAST TO LEVEL AND OBTAIN REQUIRED FREEBOARD. NO BALLAST IN CORNER COMPARTMENTS. ESTIMATED BALLAST AND LOCATIONS TO BE DETERMINED IN FUTURE.



NOTE:
ONLY OUTER WALLS OF FLOAT, TRUNK, AND BULKHEADS ARE SHOWN

FLOAT REFERENCE PLAN

3/16" = 1'-0"

1 / - | -

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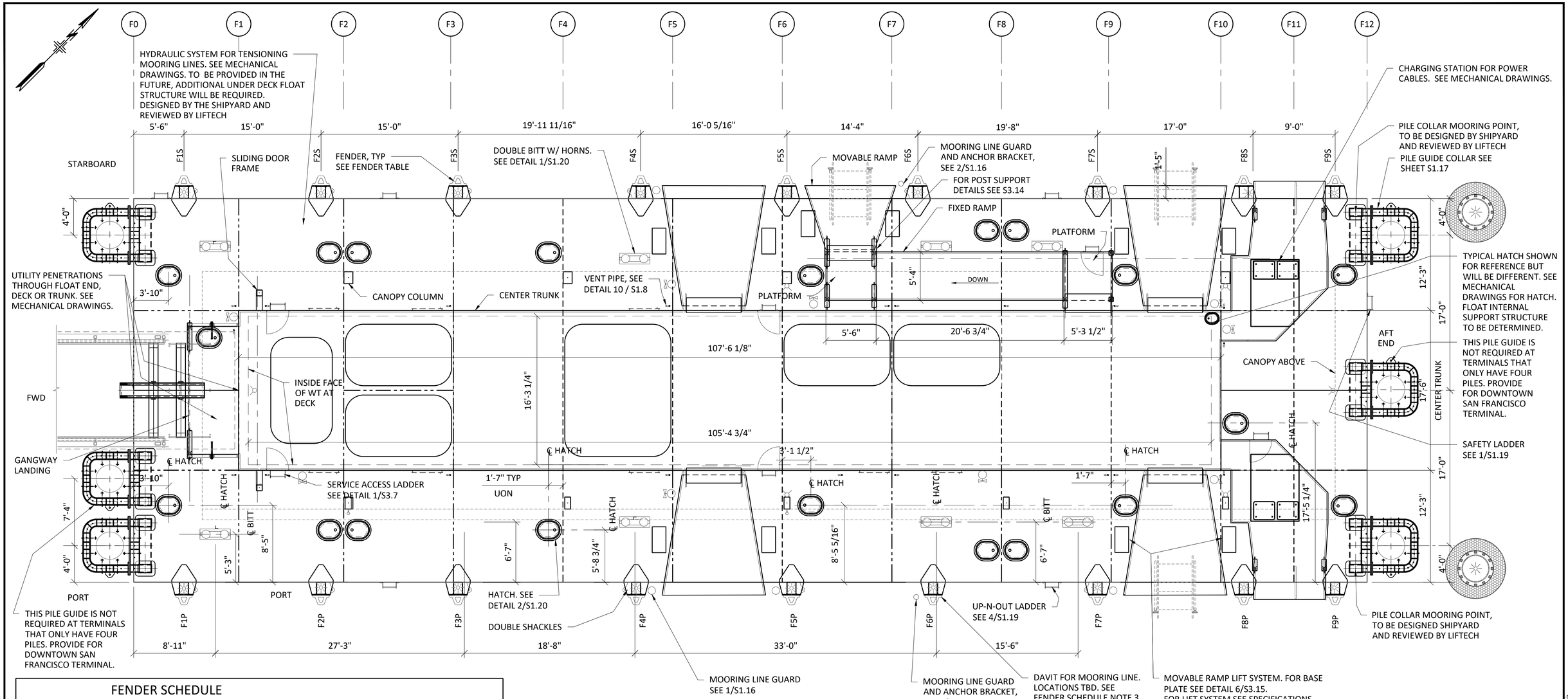
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PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: COMPARTMENTS AND BALLASTING PLAN

DATE	10-15-24
SHEET	OF
DRAWING NO.	G3.6
JOB NO.	2419

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FLOAT ARRANGEMENT

1 / - -

3/16" = 1'-0"

FENDER SCHEDULE

FENDER IDENTIFICATION	SHACKLE LUGS	NAVIGATION LIGHTS	MOORING LINE GUARD	MOORING LINE HOLDINGS	DAVIT	MOORING LINE GUARD AND ANCHOR BRACKET
F1P & F1S	A	X	-	A	TBD, SEE FENDER SCHEDULE NOTE 3	-
F2P & F2S	A	X	-	A		-
F3P & F3S	A	X	-	F		-
F4P & F4S	Fx2	X	A	F		-
F5P	A	X	F	A		-
F5S	-	X	-	-		-
F6P	-	X	F	-		F
F6S	-	X	F	-		F
F7P & F7S	Fx2	X	A	F		-
F8P & F8S	-	X	F	A		-
F9P & F9S	-	X	-	F		-

FENDER SCHEDULE NOTES

1. WHEN THERE IS ONLY ONE MOORING LINE HOLDING ON A FENDER SUPPORT, LOCATE IT ON THE SIDE AWAY FROM THE RAMP.
2. WETA TO ADVISE IF CHANGES ARE REQUIRED TO SUIT OPERATIONS.
3. DAVIT LOCATIONS TO BE DETERMINED BY WETA OPERATIONS. BASED ON DESIGN FOR SOUTH SAN FRANCISCO FERRY TERMINAL. DESIGN AND WILL BE REFINED FOR UCF IN THE FUTURE. BID SHOULD ASSUME FOUR DAVITS TOTAL ON FENDER SUPPORT - TWO ON EACH SIDE OF FLOAT, ONE FOR FORWARD SPRING LINE AND ONE FOR AFT SPRING LINE.

FENDER SCHEDULE LEGEND

A = ITEM ON AFT SIDE OF KNEE FENDER
F = ITEM ON FORWARD SIDE OF KNEE FENDER
x2 = DOUBLE SHACKLES ARE REQUIRED AT THESE LOCATIONS, SEE SECTION A/S1.14 FOR LOCATIONS OF THE 2 SHACKLE LUG PLATES.

NOTES:

1. THERE WILL BE NUMEROUS LARGE AND SMALL OPENINGS IN THE CENTER TRUNK DECK FOR HATCHES AND SUPPORTS IN THE CENTER TRUNK FOR ELECTRICAL EQUIPMENT. LAYOUT TO BE DETERMINED IN THE FUTURE. BASE BID ON FOUR LARGE HATCHES AND FOUR HALF HATCHES.
2. ALL HATCHES ON LOWER DECK AND TRUNK DECK TO BE WATERTIGHT.
3. TRUNK DECK SHALL HAVE FLUSH WATERTIGHT HATCHES FOR EGRESS FROM INSIDE CENTER TRUNK WITH SINGLE LEVER OR WHEEL. MUST BE LIFTABLE FROM INSIDE BY ONE PERSON. TOP MUST MEET ADA BECAUSE IT IS WITHIN THE WALKWAY. BASE BID ON A TOTAL OF SIX SMALL HATCHES INCLUDING FULL HEIGHT LADDERS INSIDE THE CENTER TRUNK. SEE MECHANICAL DRAWINGS FOR LOCATIONS.

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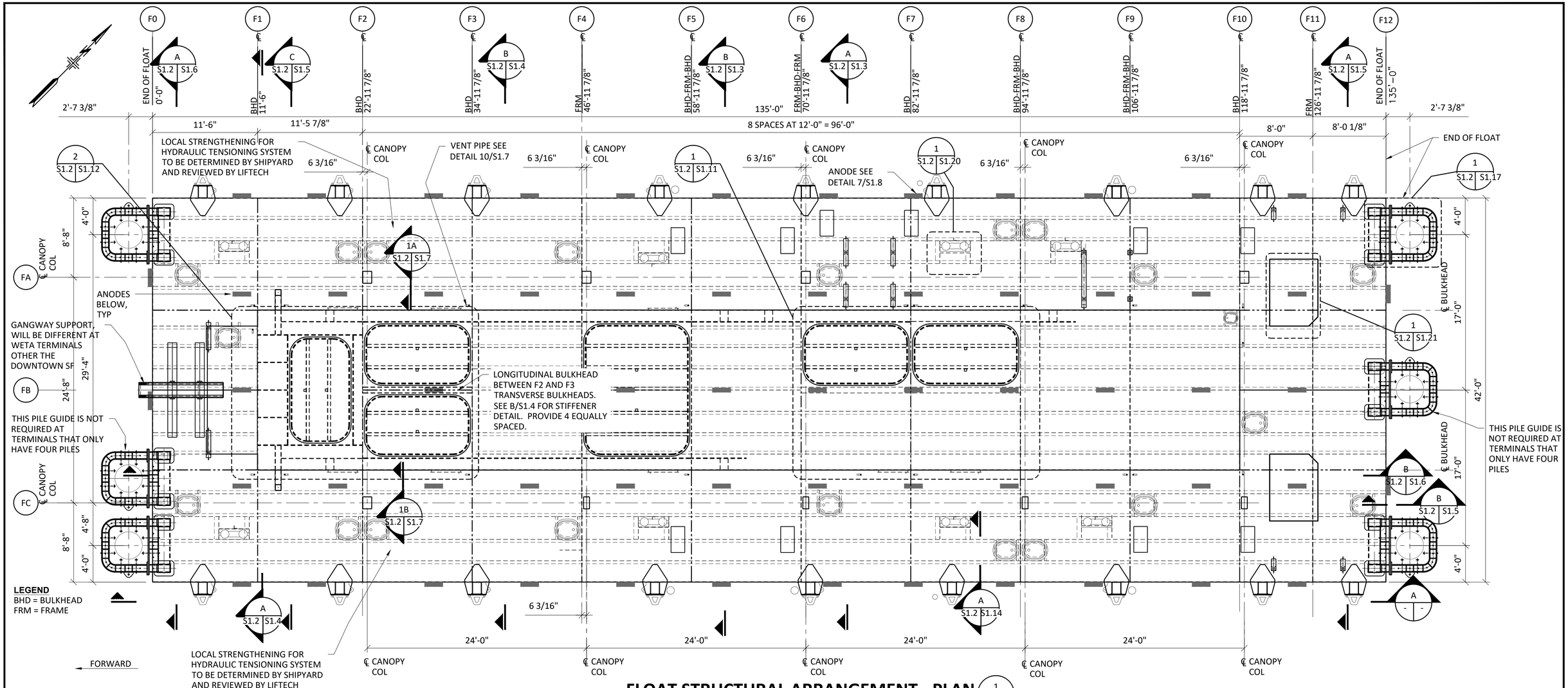
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT GENERAL ARRANGEMENT

DATE	10-15-24
SHEET	OF
DRAWING NO.	S1.1
JOB NO.	2419

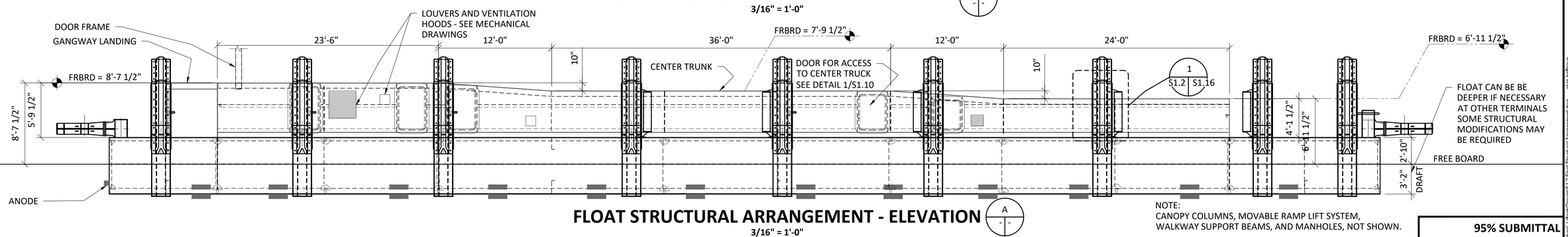
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FLOAT STRUCTURAL ARRANGEMENT - PLAN

1 / - -

3/16" = 1'-0"



FLOAT STRUCTURAL ARRANGEMENT - ELEVATION

A / - -

3/16" = 1'-0"

NOTE:
CANOPY COLUMNS, MOVABLE RAMP LIFT SYSTEM, WALKWAY SUPPORT BEAMS, AND MANHOLES, NOT SHOWN.

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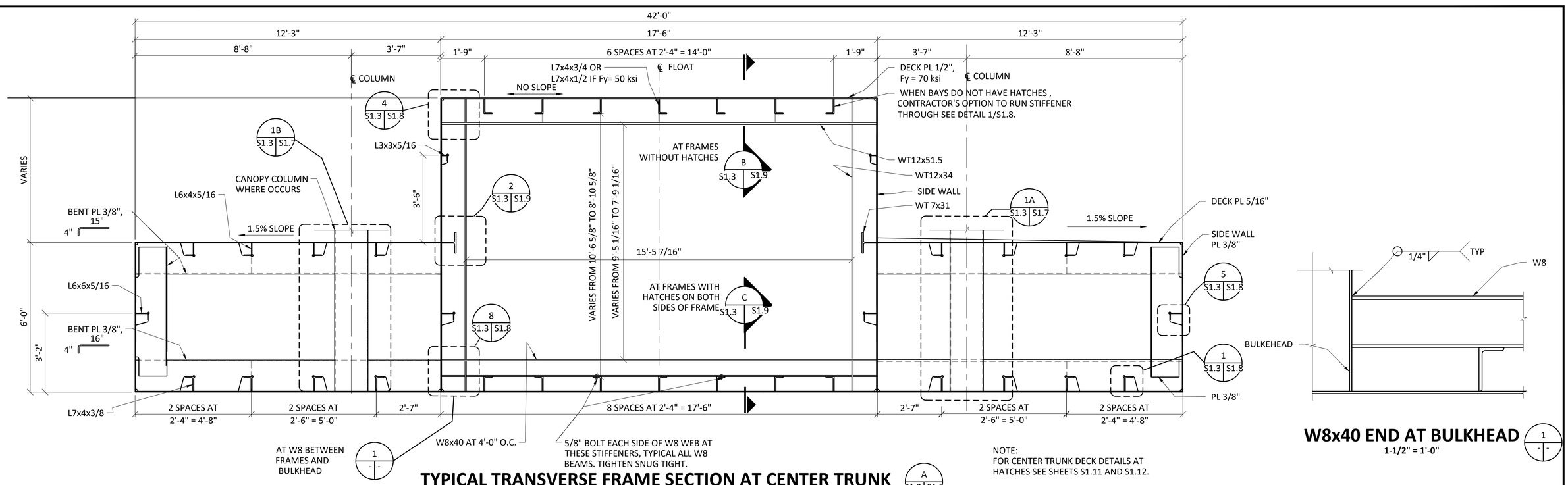
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REGISTERED PROFESSIONAL ENGINEER
Eric S. Soderstrom
No. S-4426
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:

DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT	WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT
SHEET	FLOAT STRUCTURAL ARRANGEMENT
DATE	10-15-24
SHEET	OF
DRAWING NO.	S1.2
JOB NO.	2419

\\mod241\2419\dwg\Production\Structural_Liftech\Design\S1.2 Float Structural Arrangement.dwg — ahm hoffpauir



TYPICAL TRANSVERSE FRAME SECTION AT CENTER TRUNK

1/2" = 1'-0"

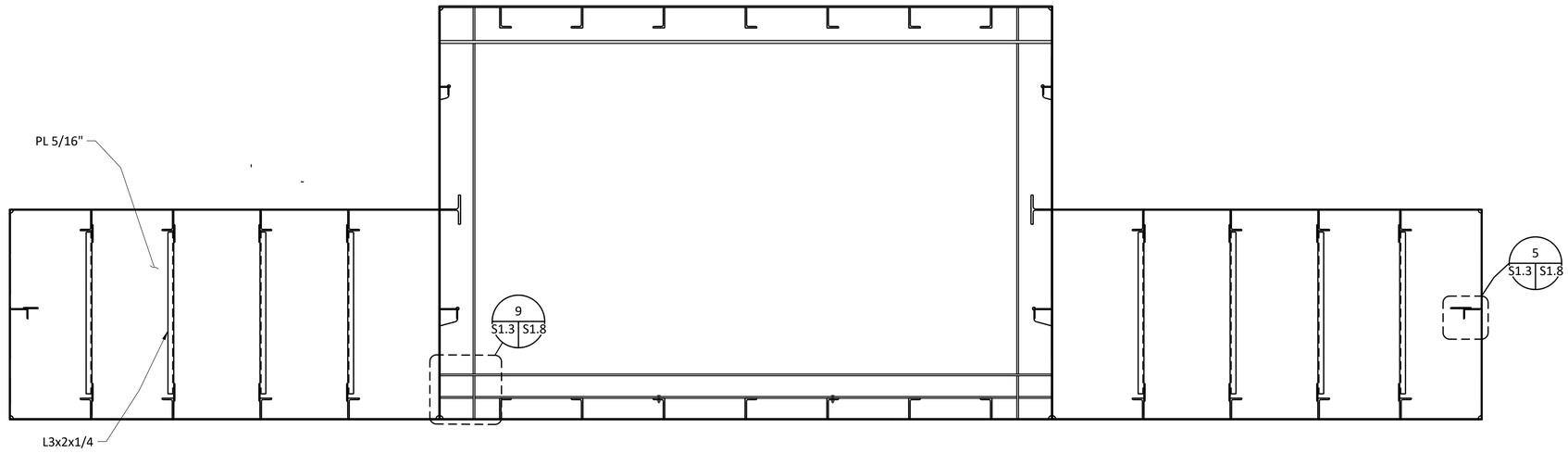
A
S1.2 S1.3

NOTE:
FOR CENTER TRUNK DECK DETAILS AT
HATCHES SEE SHEETS S1.11 AND S1.12.

W8x40 END AT BULKHEAD

1-1/2" = 1'-0"

1
- -



NOTE:
1. BULKHEAD TO BE WATERTIGHT.
2. FOR BULKHEAD PENETRATION DETAILS SEE DETAILS 8/S1.8 AND 9/S1.8.
3. FOR INFORMATION NOT SHOWN, SEE SECTION A/S1.3.

TYPICAL TRANSVERSE BULKHEAD\FRAME\BULKHEAD SECTION AT CENTER TRUNK

1/2" = 1'-0"

B
S1.2 S1.3

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
Erik O Soderstrom
No. S-4428
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE

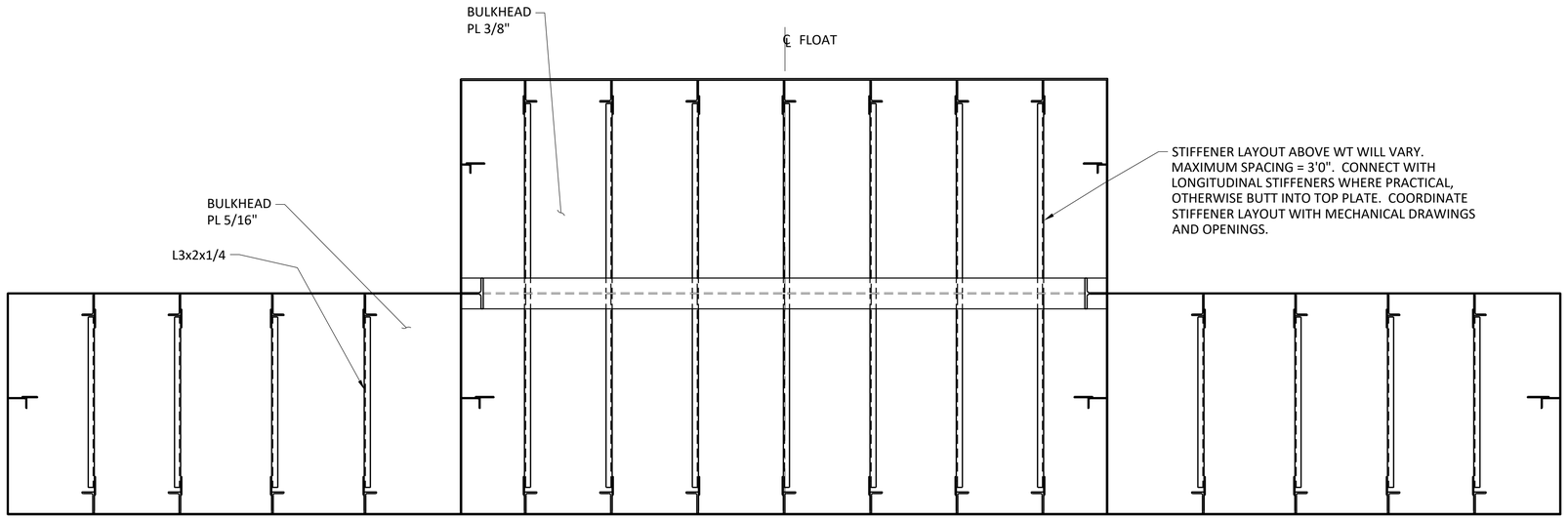
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT SECTIONS - 1

DATE 10-15-24
SHEET OF
DRAWING NO. S1.3
JOB NO. 2419

\\mac\k\2419\24\19\Dwg\Production\Structural_Liftech\Design\S1.6 FLOAT SECTIONS - 4.dwg — alvin hoffpauir

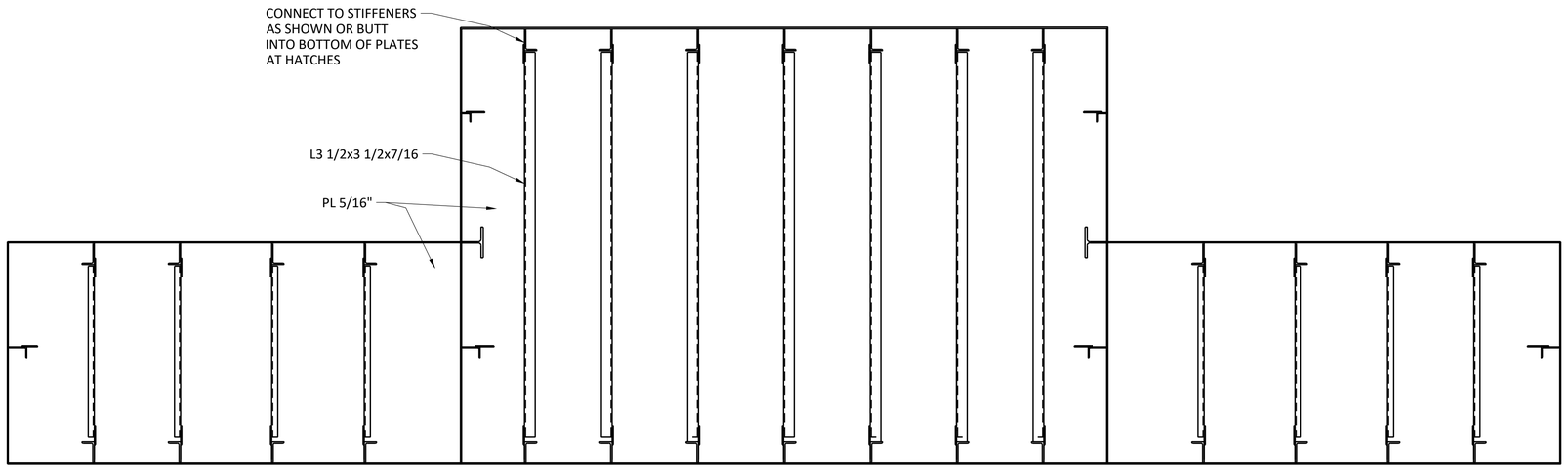


NOTE:
1. BULKHEAD TO BE WATERTIGHT
2. FOR BULKHEAD PENETRATION DETAILS, SEE MECHANICAL DRAWINGS
3. FOR INFORMATION NOT SHOWN SEE A/S1.3.

TRANSVERSE BULKHEAD END SECTION AT CENTER TRUNK

1/2" = 1'-0"

A
S1.2 | S1.4



NOTE:
1. BULKHEAD TO BE WATERTIGHT
2. FOR BULKHEAD PENETRATION DETAILS, SEE MECHANICAL DRAWINGS.
3. FOR INFORMATION NOT SHOWN SEE SECTION A.
4. SECTION WITH TRANSVERSE BULKHEAD IN CENTER TRUNK AND FRAMES ON THE OUTER PORTION IS SIMILAR TO B/S1.4 AND A/S1.3.

TRANSVERSE BULKHEAD SECTION AT CENTER TRUNK

1/2" = 1'-0"

B
S1.2 | S1.4

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REGISTERED PROFESSIONAL ENGINEER — Erik O. Soderstrom — No. S-4428 — Ex. 12-31-18 — STRUCTURAL — STATE OF CALIFORNIA

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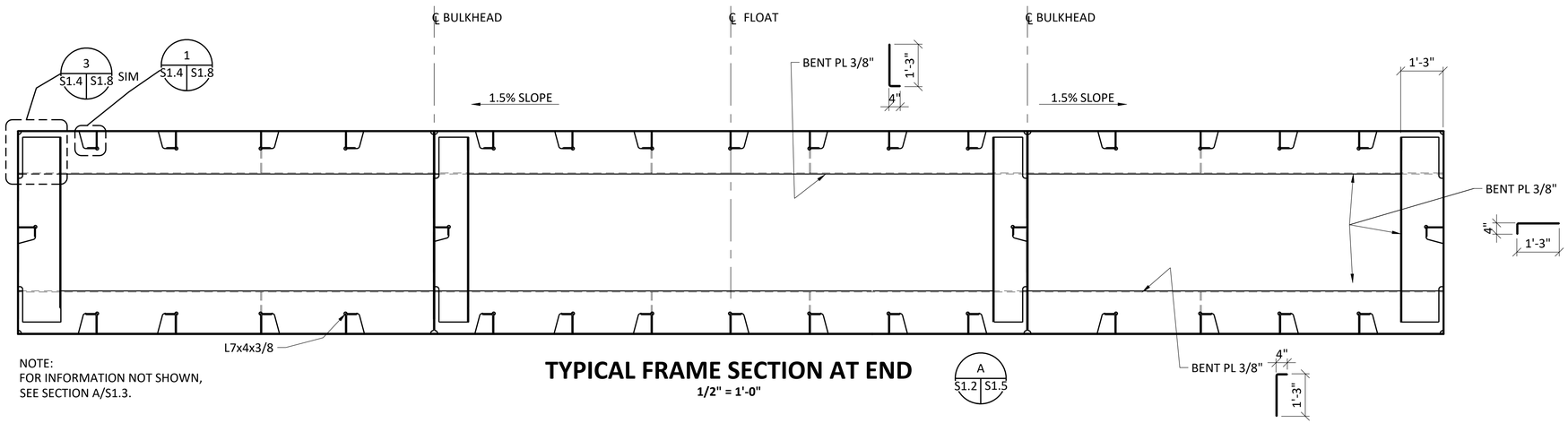
DESIGNED BY: ES
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT SECTIONS - 2

DATE 10-15-24
SHEET OF
DRAWING NO. S1.4
JOB NO. 2419

tmoe/2419/2419Dwgs\Production\Structural_Liftech\Design\S1.6 FLOAT SECTIONS - 4.dwg — alvin hoffpauir

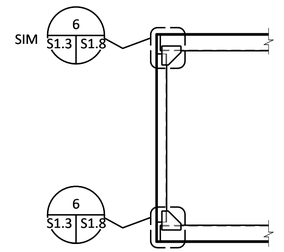


NOTE:
FOR INFORMATION NOT SHOWN,
SEE SECTION A/S1.3.

TYPICAL FRAME SECTION AT END

1/2" = 1'-0"

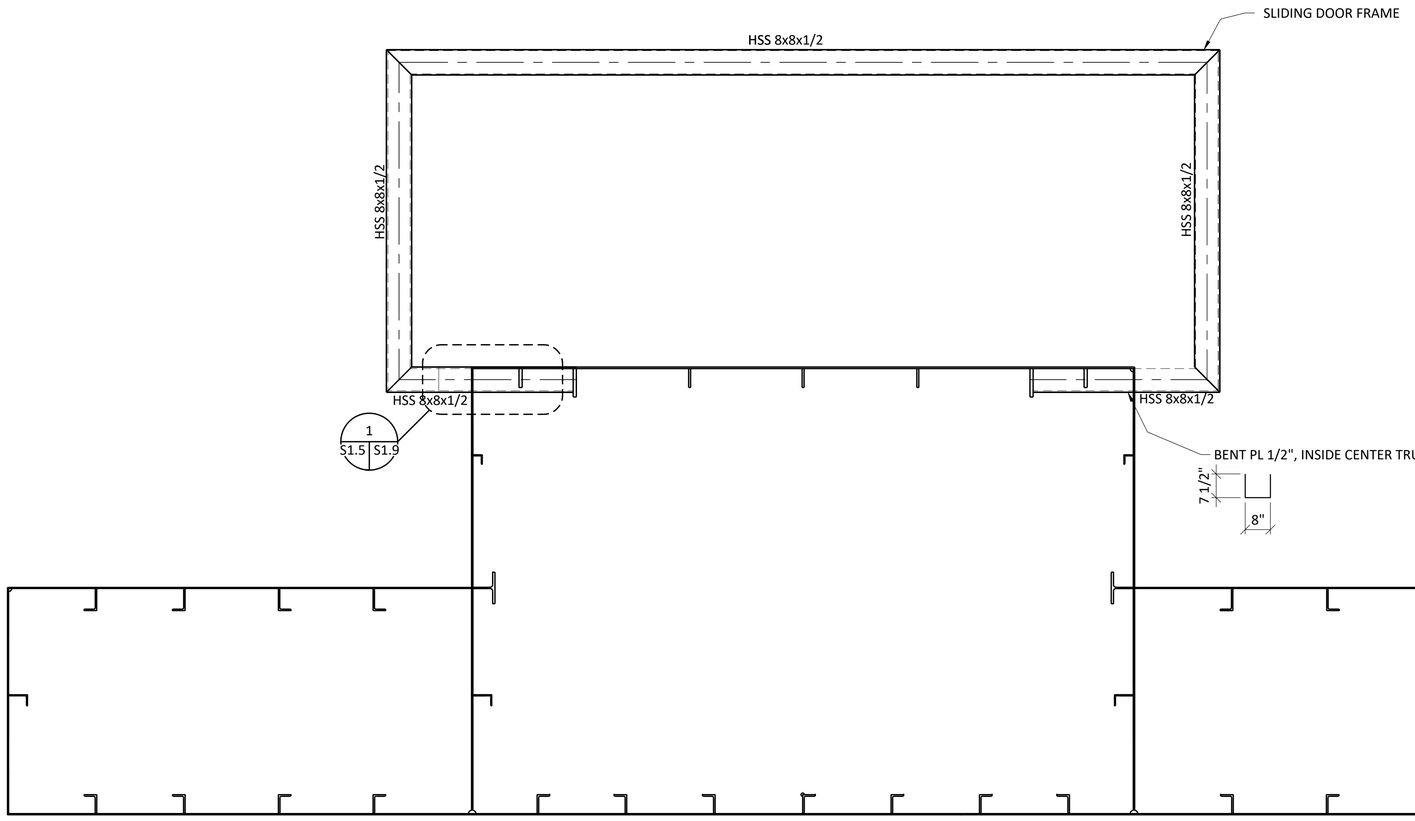
A S1.2 S1.5



END WALL SECTION

1/2" = 1'-0"

B S1.2 S1.3



FLOAT SECTION AT SLIDING DOOR FRAME

1/2" = 1'-0"

C S1.2 S1.5

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REGISTERED PROFESSIONAL ENGINEER
Eric G. Soderstrom
No. S-4426
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

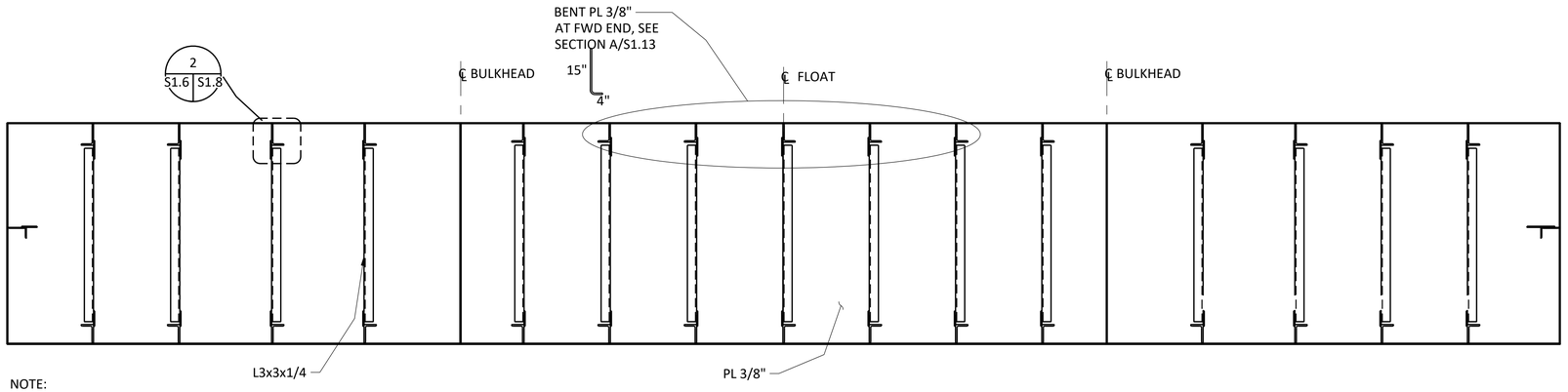
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT SECTIONS - 3

DATE 10-15-24
SHEET OF
DRAWING NO. S1.5
JOB NO. 2419

tmod241924\Dwg\Production\Structural_Liftech\Design\S1.6 FLOAT SECTIONS - 4.dwg — ahm hoffpaur

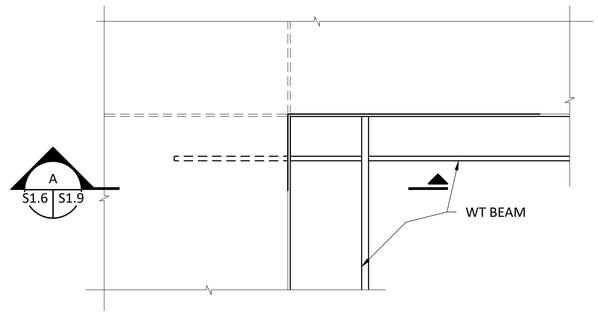


NOTE:
1. FOR INFORMATION NOT SHOWN SEE SECTION A/S1.3.
2. FOR BULKHEAD PENETRATION DETAILS SEE MECHANICAL DRAWINGS.

TYPICAL BULKHEAD AT FLOAT END AND END WALL SECTION

A
S1.2 S1.6

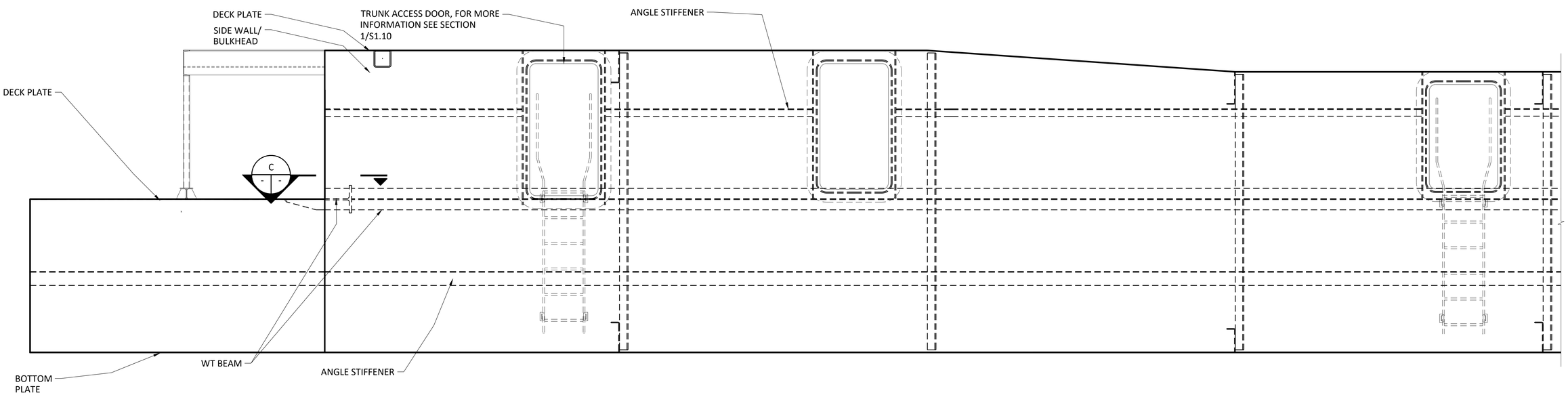
1/2" = 1'-0"



SECTION

C
- -

1" = 1'-0"



NOTE:
BULKHEADS TO BE WATERTIGHT

LONGITUDINAL BULKHEAD SECTION

B
S1.2 S1.6

1/2" = 1'-0"

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Eric G Soderstrom
No. S-4426
Exp. 12-31-18
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
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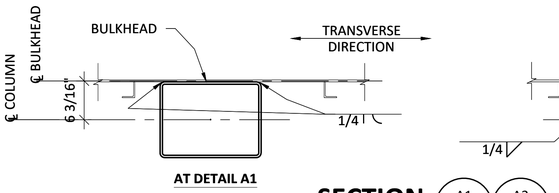
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CHECKED BY: LMO

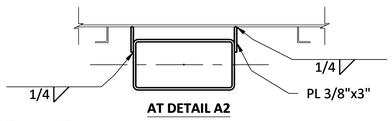
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT SECTIONS - 4

DATE 10-15-24
SHEET OF
DRAWING NO. S1.6
JOB NO. 2419

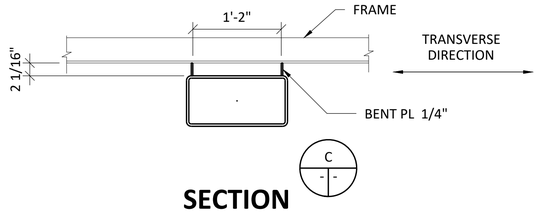
time/24\19\24\19Dwg\Production\Structural_Liftech\Design\S1.6 FLOAT SECTIONS - 4.dwg — alvin hoffpauir



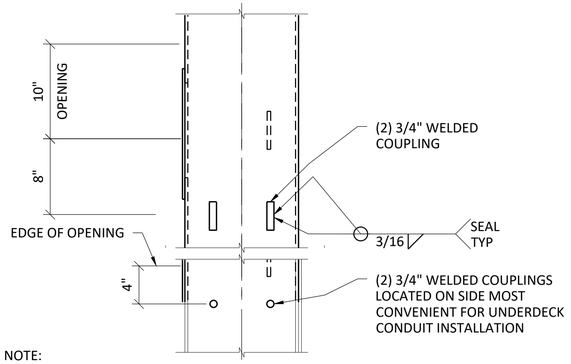


SECTION
1" = 1'-0"

A1 | A2



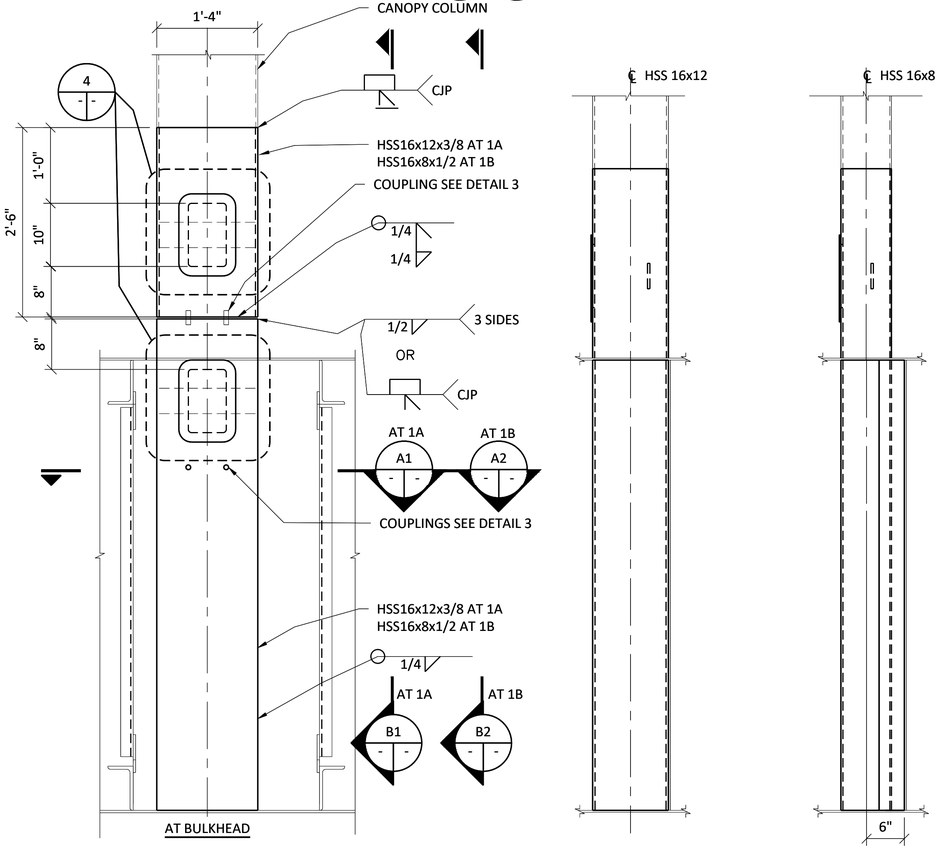
SECTION
1" = 1'-0"



NOTE:
FOR LOCATIONS AND SIZES SEE ELECTRICAL DRAWINGS FROM WETA SOUTH BASIN DOWNTOWN FERRY TERMINAL EXPANSION PROJECTS

UTILITY CONDUIT SLEEVE DETAIL AT CANOPY COLUMN
1-1/2" = 1'-0"

3

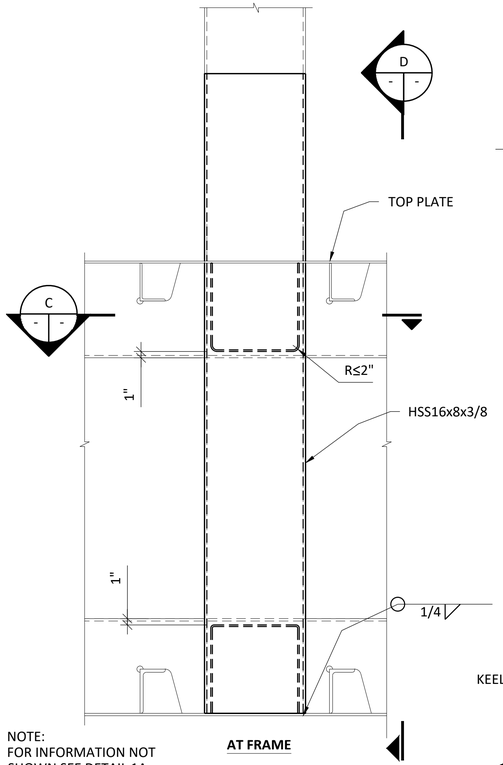


CANOPY COLUMN BASE SECTION
1" = 1'-0"

1A | 1B
S1.2 S1.7 S1.3 | S1.2 S1.7 S1.3

SECTION
1" = 1'-0"

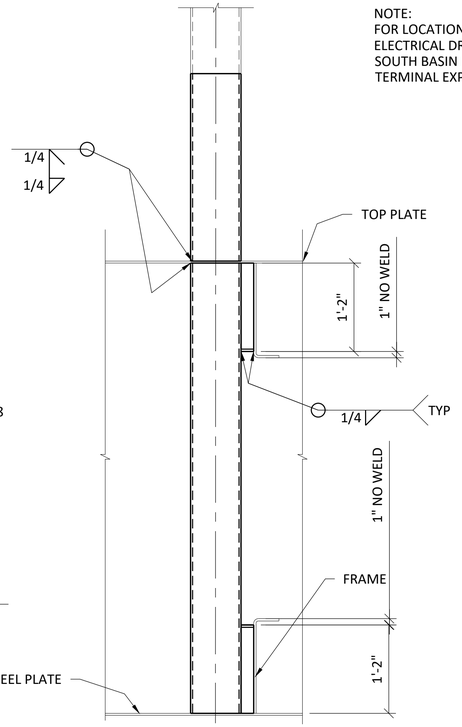
B1 | B2



NOTE:
FOR INFORMATION NOT SHOWN SEE DETAIL 1A

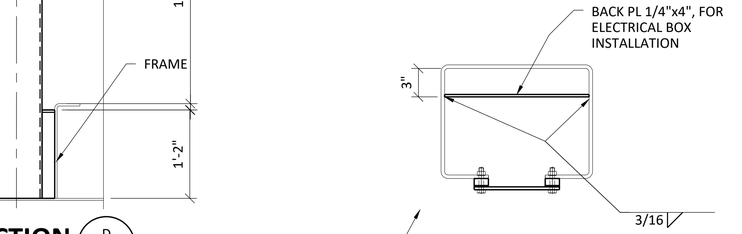
CANOPY COLUMN BASE SECTION
1" = 1'-0"

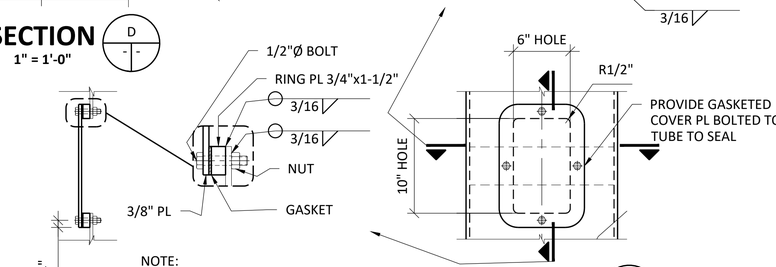
2 | S1.2 S1.7



SECTION
1" = 1'-0"

D





NOTE:
SEE ELECTRICAL DRAWINGS FROM WETA DOWNTOWN FERRY TERMINAL EXPANSION PROJECT FOR REQUIRED LOCATIONS.

DETAIL
1 1/2" = 1'-0"

4 | S1.7 S1.7 | S2.3

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REGISTERED PROFESSIONAL ENGINEER — Eric G Soderstrom — No. S4426 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:

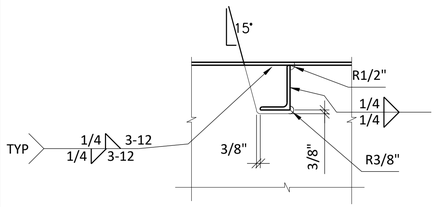
DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

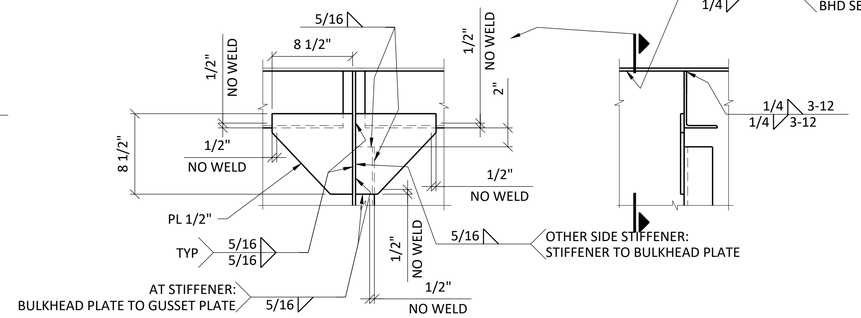
SHEET: CANOPY COLUMN BASE SECTIONS

DATE	10-15-24
SHEET	OF
DRAWING NO.	S1.7
JOB NO.	2419

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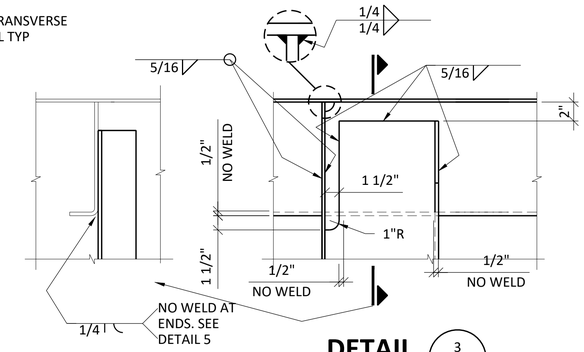


DETAIL 1
1" = 1 1/2"



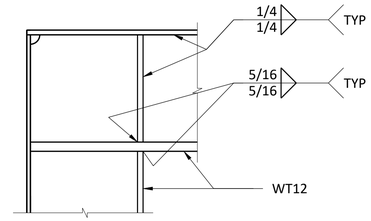
NOTE:
1. CONNECTION TO BOTTOM FLANGE SIMILAR
2. FOR INFORMATION NOT SHOWN SEE DETAIL 5/S1.8

DETAIL 2
1-1/2" = 1'-0"
S1.3 | S1.8
S1.6

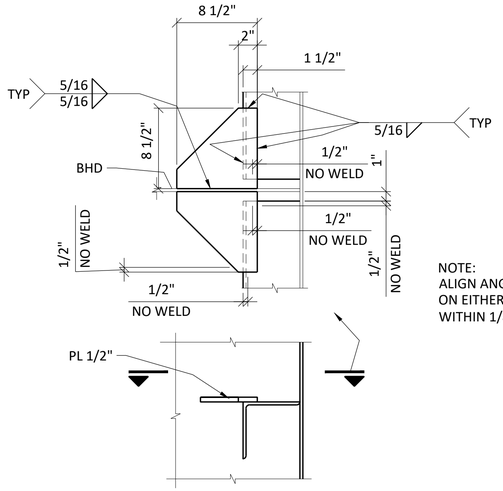


NOTE:
1. CONNECTION TO BOTTOM FLANGE SIMILAR

DETAIL 3
1-1/2" = 1'-0"
S1.4 | S1.8

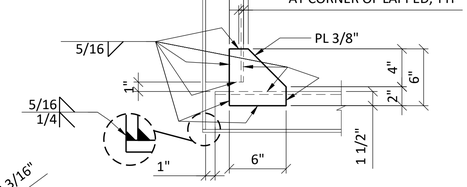


DETAIL 4
1-1/2" = 1'-0"
S1.3 | S1.8

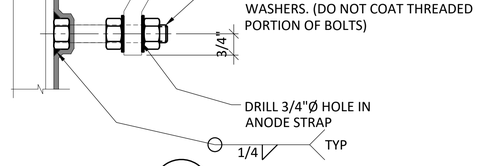


DETAIL 5
S1.3 | S1.8

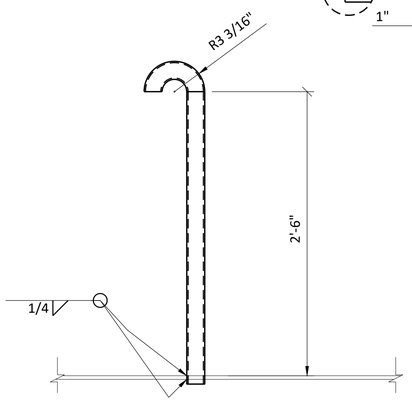
NOTE:
ALIGN ANGLES AND PLATES ON EITHER SIDE OF BULKHEAD WITHIN 1/8"



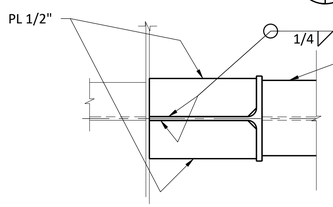
DETAIL 6
1-1/2" = 1'-0"
S1.3 | S1.8

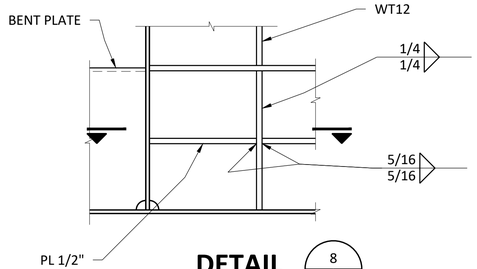


DETAIL 7
NOT TO SCALE
S1.2 | S1.8

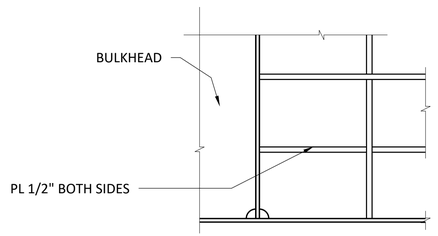


VENT PIPE 10
1-1/2" = 1'-0"
S1.4 | S1.8





DETAIL 8
1-1/2" = 1'-0"
S1.3 | S1.8



NOTE:
FOR INFORMATION NOT SHOWN SEE DETAIL 8

DETAIL 9
1-1/2" = 1'-0"
S1.3 | S1.8

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REVISIONS NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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REGISTERED PROFESSIONAL ENGINEER
ELIZABETH G SODERSTROM
No. S-4426
Exp. 12-31-18
STRUCTURAL
STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:

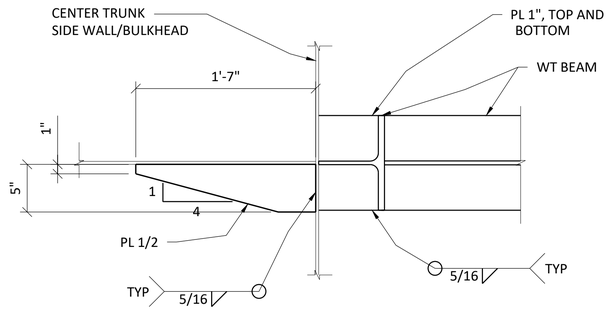
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

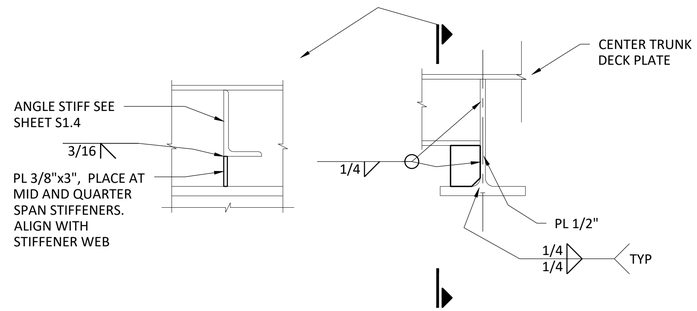
SHEET
FLOAT TYPICAL DETAILS - 1

DATE 10-15-24
SHEET OF
DRAWING NO. S1.8
JOB NO. 2419

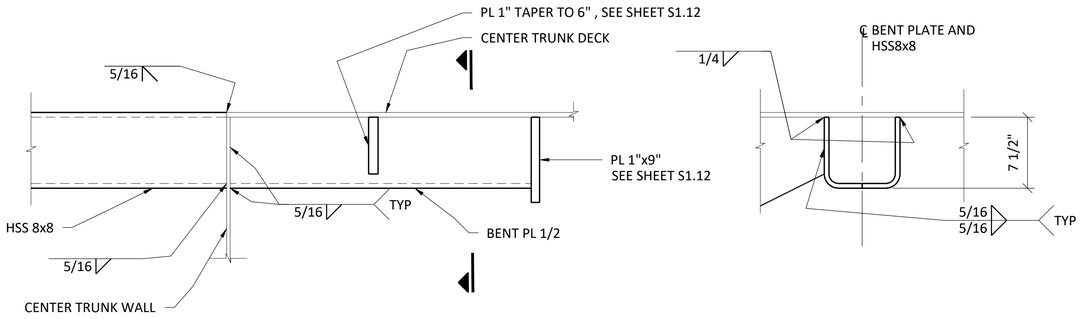
\\mod2419\2419Dwg\Production\Structural_Liftech\Design\S1.8 FLOAT TYPICAL DETAILS - 1.dwg 10/15/2024 8:40 PM alvin hoffpauir



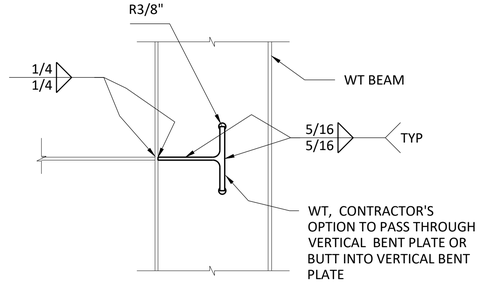
SECTION
1-1/2" = 1'-0"
A
S1.6 | S1.9



SECTION
1-1/2" = 1'-0"
B
S1.3 | S1.9



DETAIL
1-1/2" = 1'-0"
1
S1.5 | S1.9



DETAIL
1-1/2" = 1'-0"
2
S1.3 | S1.9

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
Lee M. Odell
No. S4426
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:

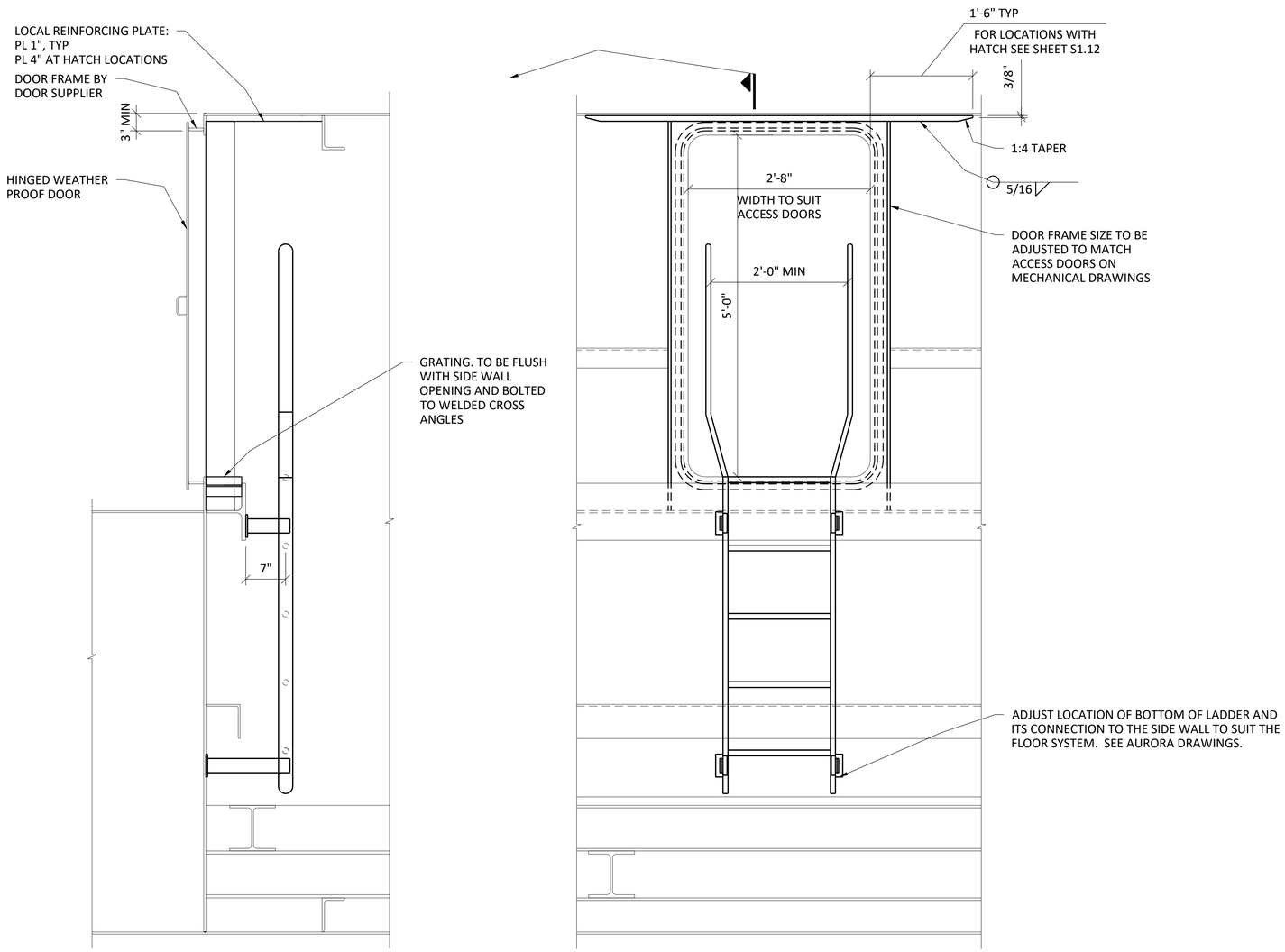
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT TYPICAL DETAILS - 2

DATE 10-15-24
SHEET OF
DRAWING NO. S1.9
JOB NO. 2419

\\mw2k219\2419\Dwg\Production\Structural_Liftech\Design\S1.9 FLOAT TYPICAL DETAILS - 2.dwg 10/15/2024 8:39 PM alvin hoffpauir



CENTER TRUNK ACCESS DOOR AND LADDER

1" = 1'-0"

1
S1.2 | S1.10

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LIFTECH CONSULTANTS INC.

REGISTERED PROFESSIONAL ENGINEER
Lee M. Sobel
No. S4426
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:

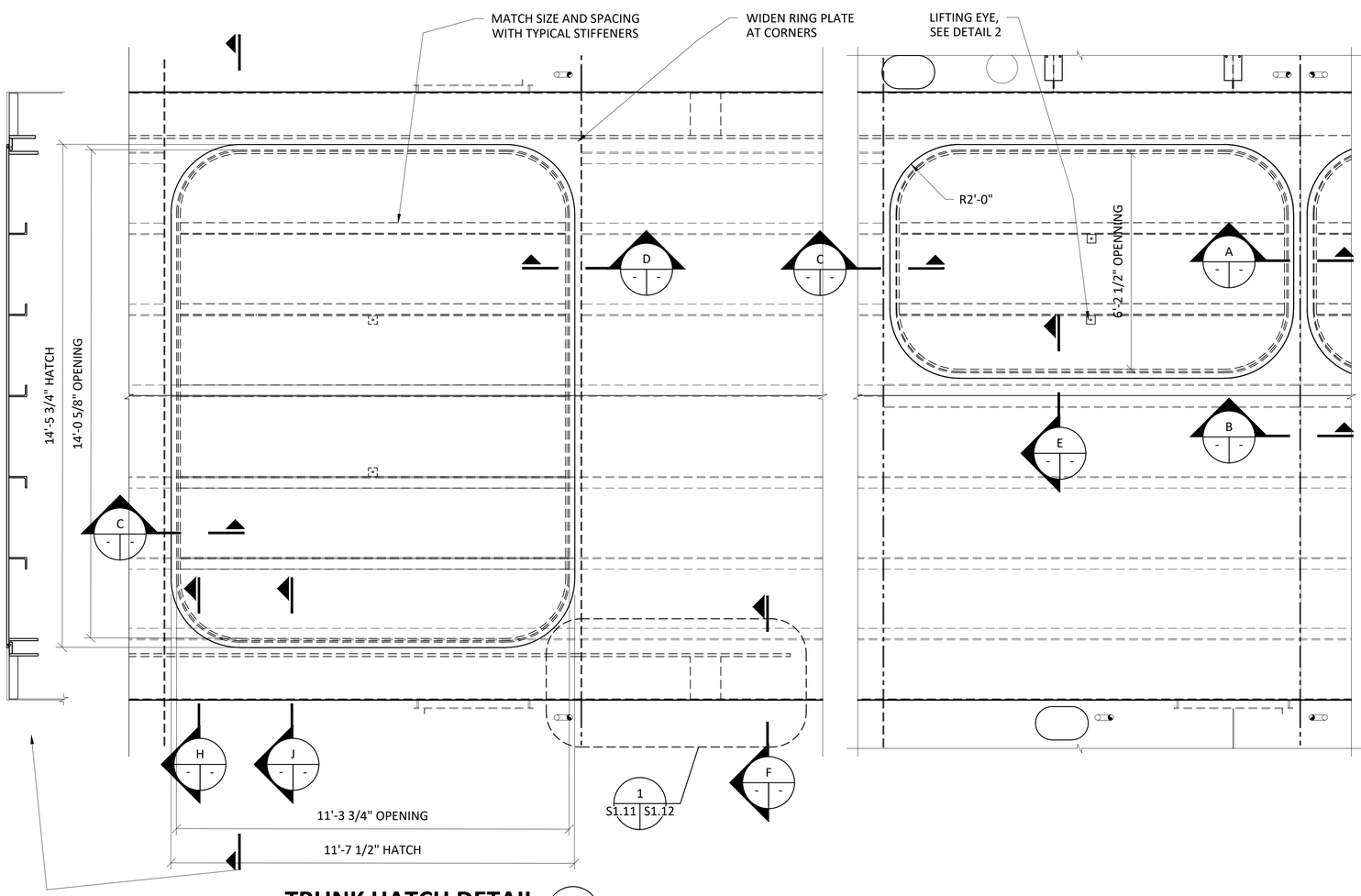
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT ACCESS DETAILS - 1

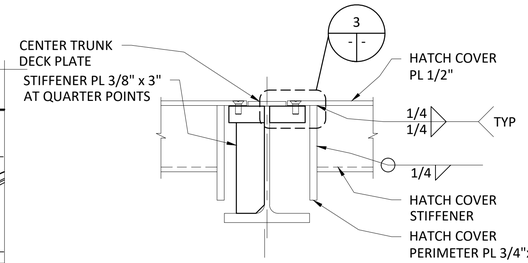
DATE 10-15-24
SHEET OF
DRAWING NO. S1.10
JOB NO. 2419

\\mw2419\2419\Dwg\Production\Structural_Liftech\Design\S1.10 Float Access Details - 1.dwg 10/15/2024 8:37 PM alvin.hoffpauir



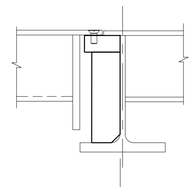
TRUNK HATCH DETAIL
1/2" = 1'-0"

1 S1.2 S1.11



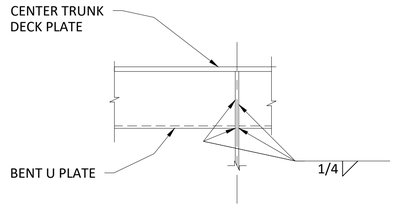
SECTION
1-1/2" = 1'-0"

A



SECTION
1-1/2" = 1'-0"

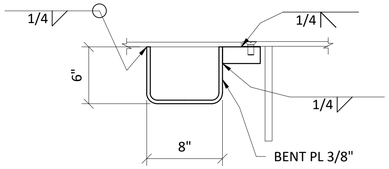
D



NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION A

SECTION
1-1/2" = 1'-0"

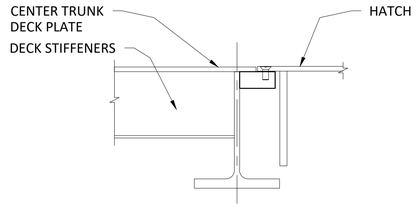
B



NOTE:
FOR INFORMATION NOT SHOWN SEE DETAIL 3

SECTION
1-1/2" = 1'-0"

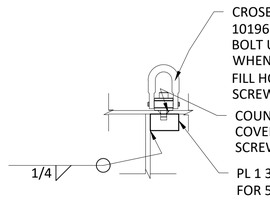
E



NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION A

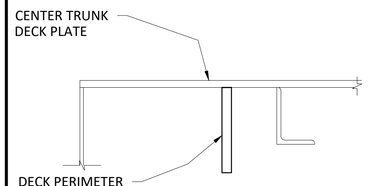
SECTION
1-1/2" = 1'-0"

C



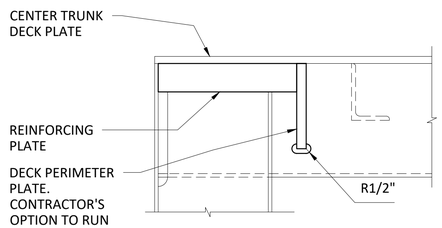
DETAIL
1-1/2" = 1'-0"

2



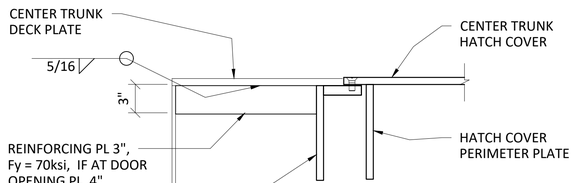
SECTION
1-1/2" = 1'-0"

F



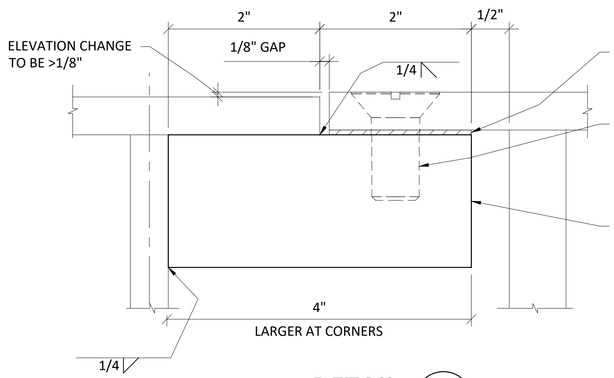
SECTION
1-1/2" = 1'-0"

H



SECTION
1-1/2" = 1'-0"

J



DETAIL
1 : 1

3

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REVISIONS

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FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:

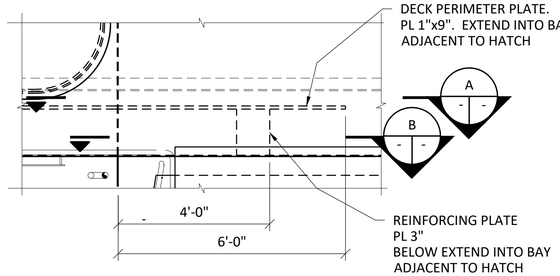
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT ACCESS DETAILS - 2

DATE 10-15-24
SHEET OF
DRAWING NO. S1.11
JOB NO. 2419

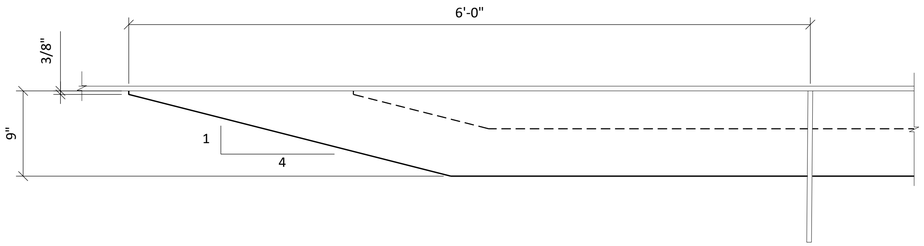
\\mod219\219\Dwg\Production\Structural_Liftech\Design\S1.11 FLOAT ACCESS DETAILS - 2.dwg 10/15/2024 8:58 PM ahmhoffpair



TRUNK HATCH REINFORCING DETAIL

1/2" = 1'-0"

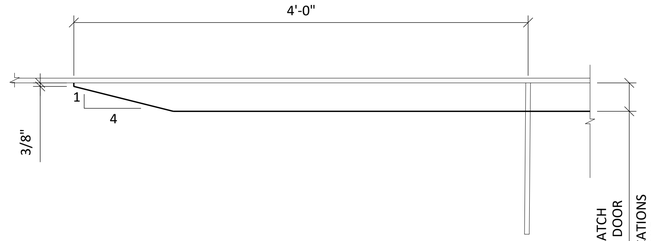
1 S1.2 S1.12 S1.11



SECTION

1-1/2" = 1'-0"

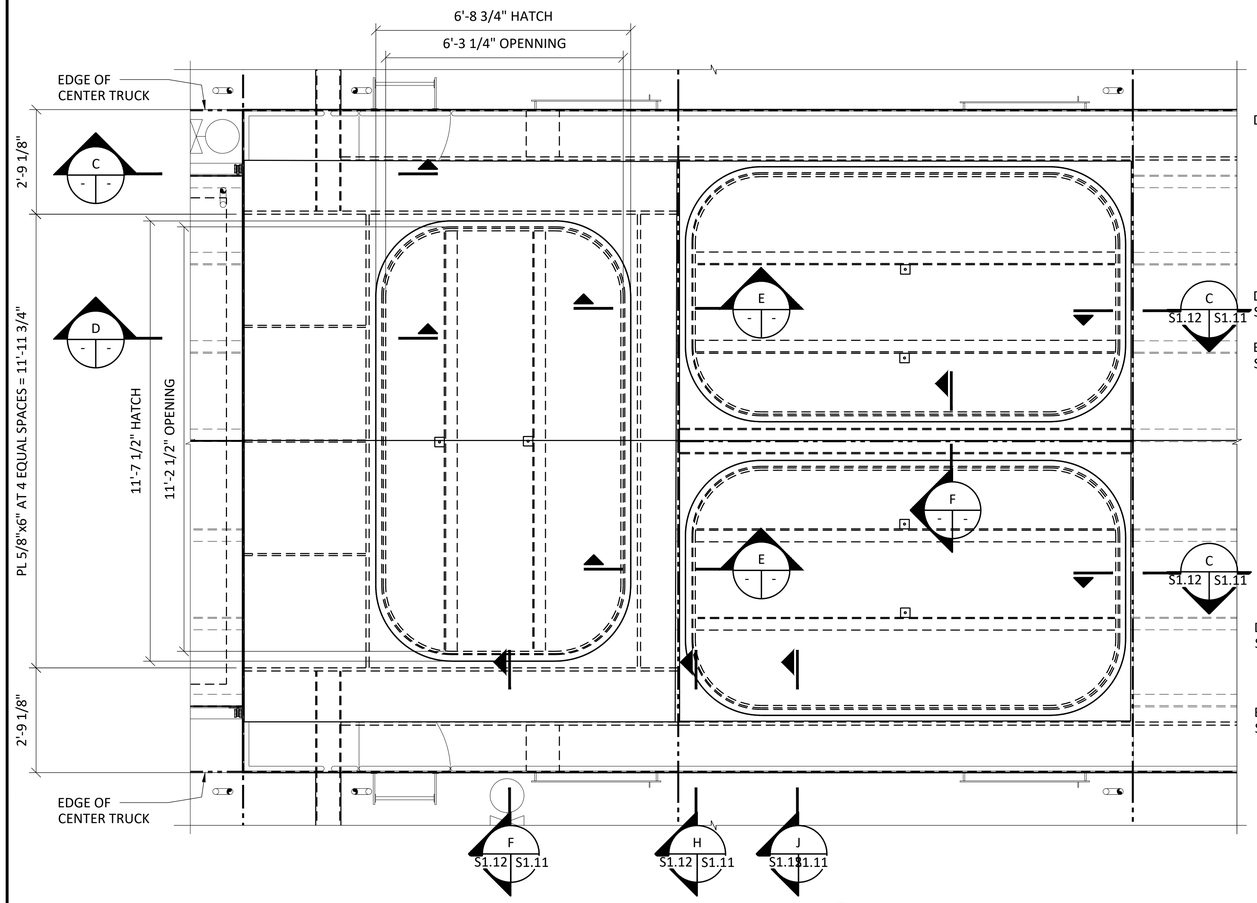
A



SECTION

1-1/2" = 1'-0"

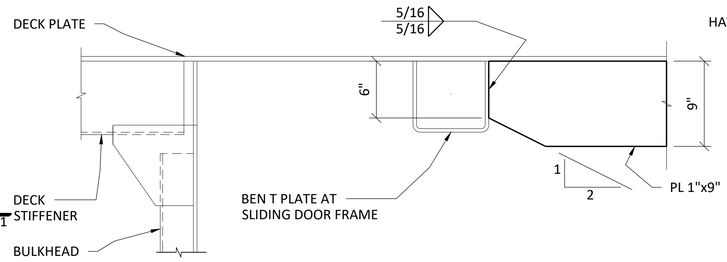
B



TRUNK HATCH DETAIL

1/2" = 1'-0"

2 S1.2 S1.12

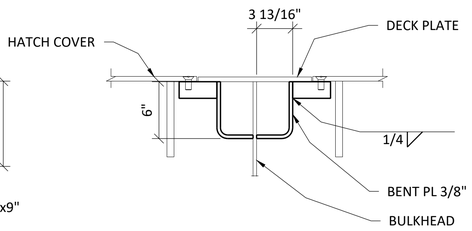


NOTE:
FOR INFORMATION NOT SHOWN
SEE SECTION SECTION A

SECTION

1-1/2" = 1'-0"

C

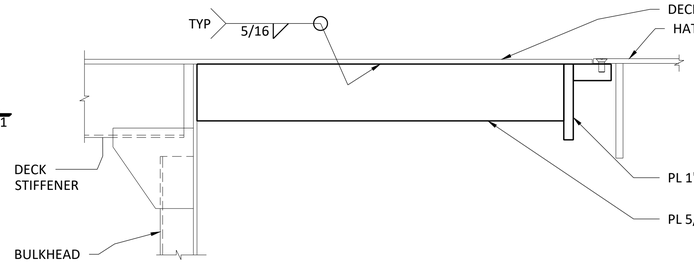


NOTE:
FOR INFORMATION NOT
SHOWN SEE DETAIL C/S1.11

SECTION

1-1/2" = 1'-0"

F

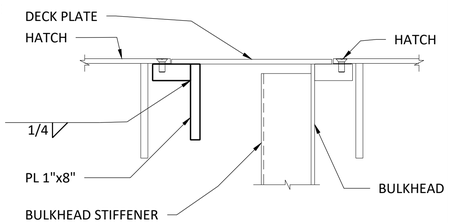


NOTE:
FOR INFORMATION NOT
SHOWN SEE SECTION A/S1.11
AND SECTION C

SECTION

1-1/2" = 1'-0"

D



NOTE:
FOR INFORMATION NOT
SHOWN SEE SECTION A/S1.11

SECTION

1-1/2" = 1'-0"

E

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
L. G. Soderstrom
No. S4426
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:

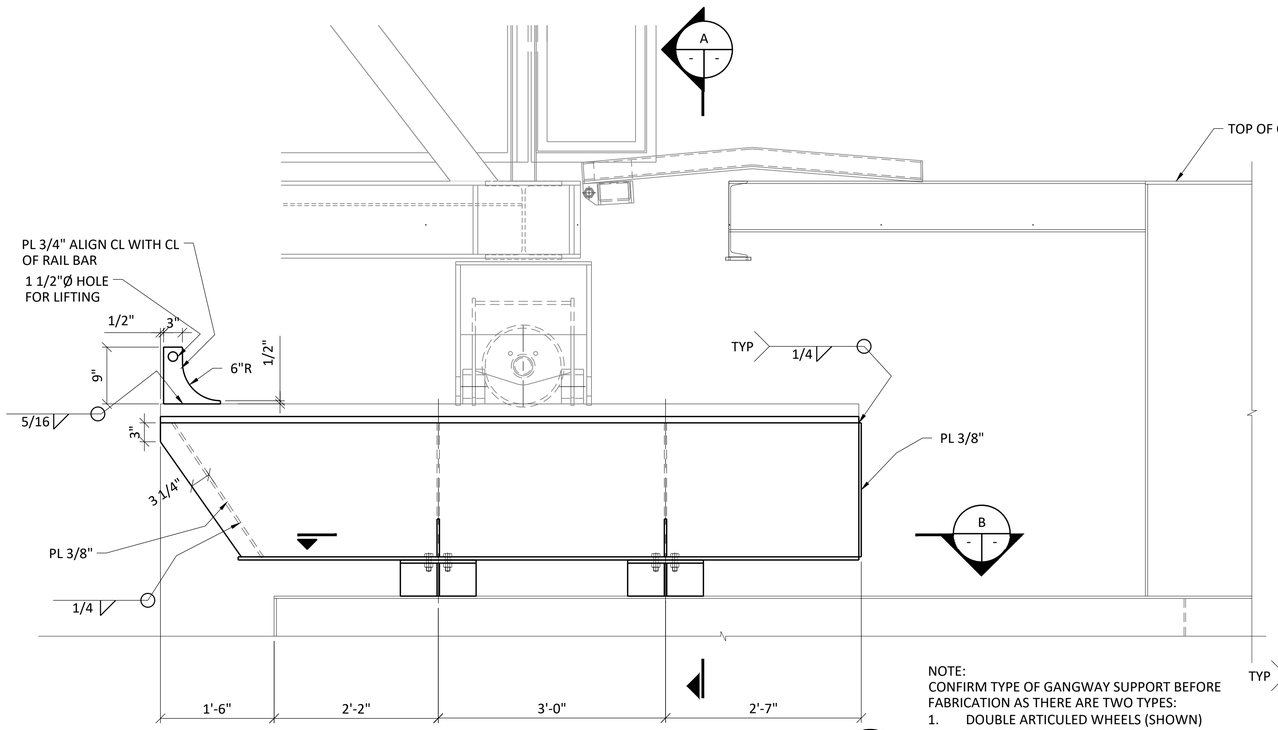
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT ACCESS DETAILS - 3

DATE 10-15-24
SHEET OF
DRAWING NO. S1.12
JOB NO. 2419

\\mod\2419\241919\Dwg\Production\Structural_Liftech\Design\S1.12 FLOAT ACCESS DETAILS - 3.dwg 10/15/2024 8:38 PM alvin.hofpaur



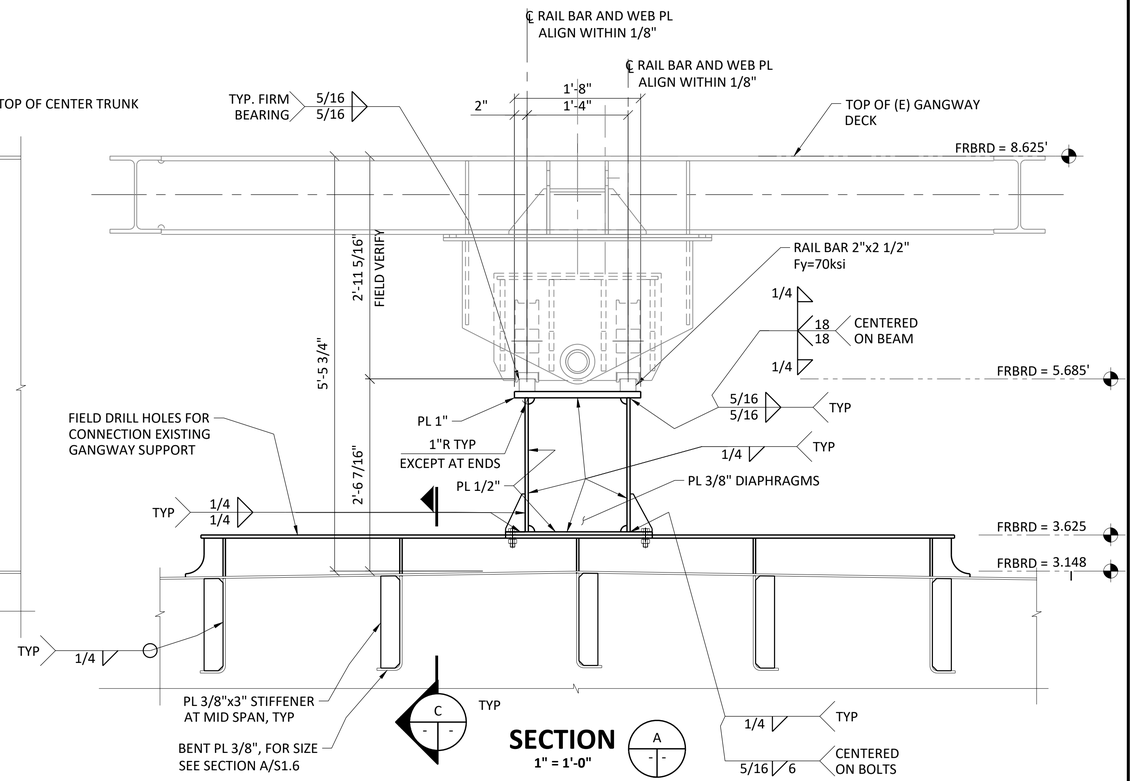
SUPPORT BEAM DETAIL

1" = 1'-0"

1 S1.2 | S1.13

NOTE:
CONFIRM TYPE OF GANGWAY SUPPORT BEFORE FABRICATION AS THERE ARE TWO TYPES:
1. DOUBLE ARTICULED WHEELS (SHOWN)
2. ROCKER BEAMS (NOT SHOWN).

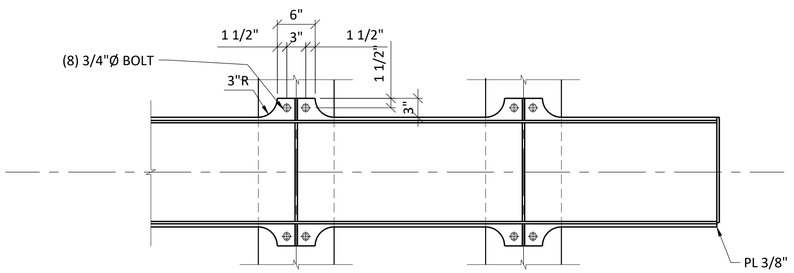
WHEEL SUPPORT BEAM WILL NOT BE NEEDED FOR ROCKER BEAM TYPE.



SECTION

1" = 1'-0"

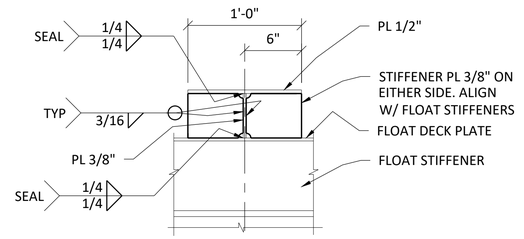
A



SECTION

1" = 1'-0"

B



SECTION

1-1/2" = 1'-0"

C

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REVISIONS NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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REGISTERED PROFESSIONAL ENGINEER — Eric S. Soderstrom — No. S-4426 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

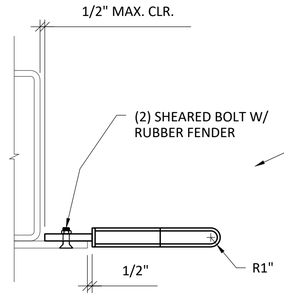
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

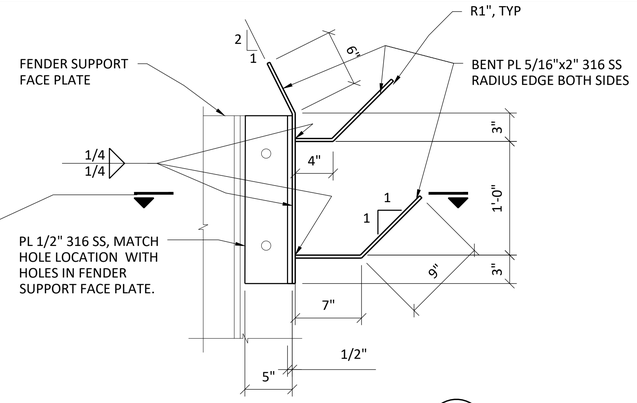
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT GANGWAY SUPPORT DETAILS

DATE 10-15-24
SHEET OF
DRAWING NO. S1.13
JOB NO. 2419

Imod/24\9624\16\Dwg\Production\Structural_Liftech\Design\S1.13 FLOAT GANGWAY SUPPORT DETAILS.dwg 10/15/2024 8:32 PM alvin hoffpauir

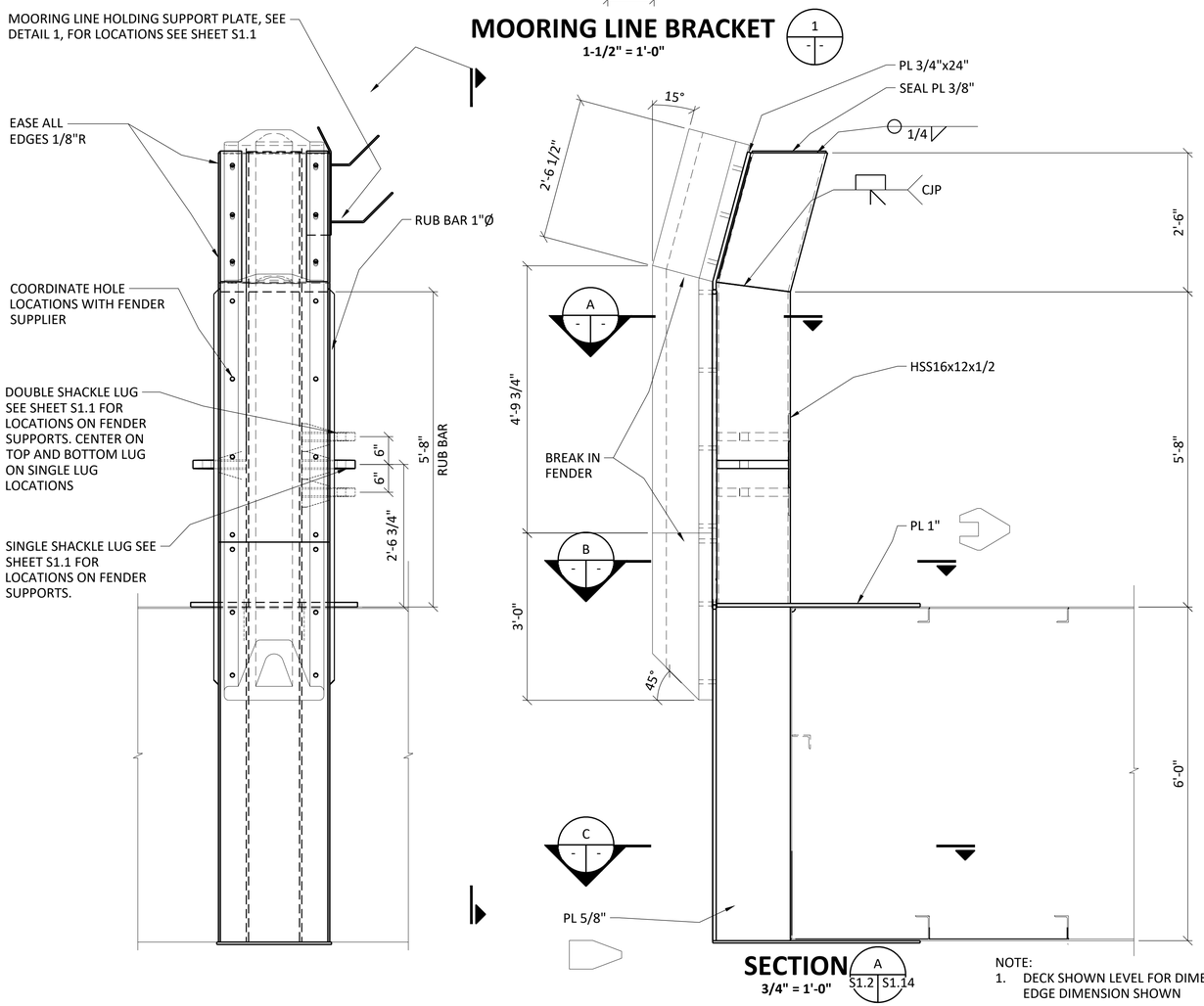




MOORING LINE BRACKET

1

1-1/2" = 1'-0"



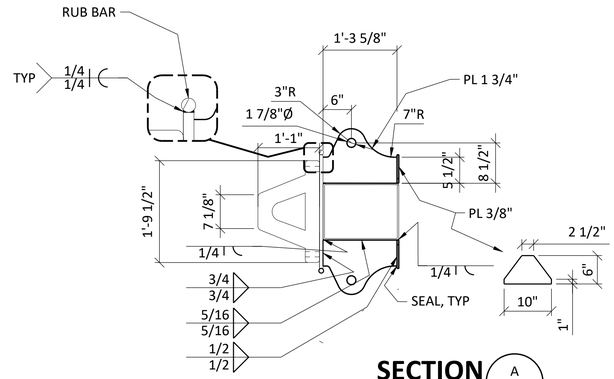
SECTION

A

S1.2 S1.14

3/4" = 1'-0"

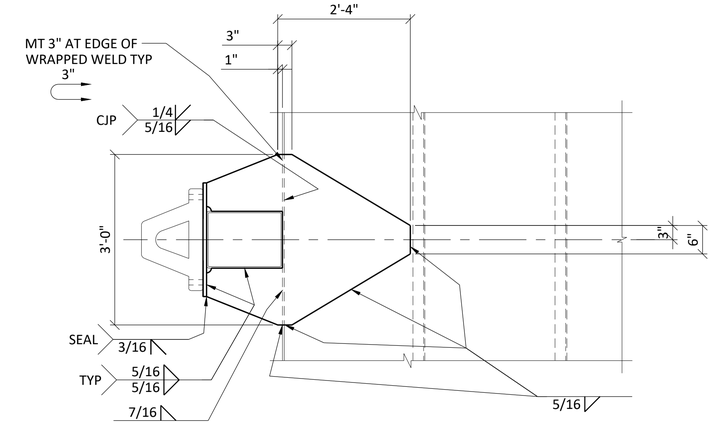
NOTE:
1. DECK SHOWN LEVEL FOR DIMENSIONS. EDGE DIMENSION SHOWN



SECTION

A

3/4" = 1'-0"

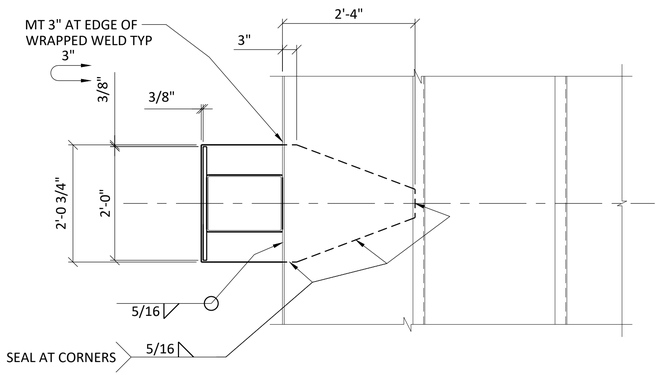


NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION A

SECTION

B

3/4" = 1'-0"



NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION A

SECTION

C

3/4" = 1'-0"

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REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHKD	APRD
0	##/#/##	_____	AH	__	__

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REGISTERED PROFESSIONAL ENGINEER — L. M. O Sodergren — No. S-4428 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:

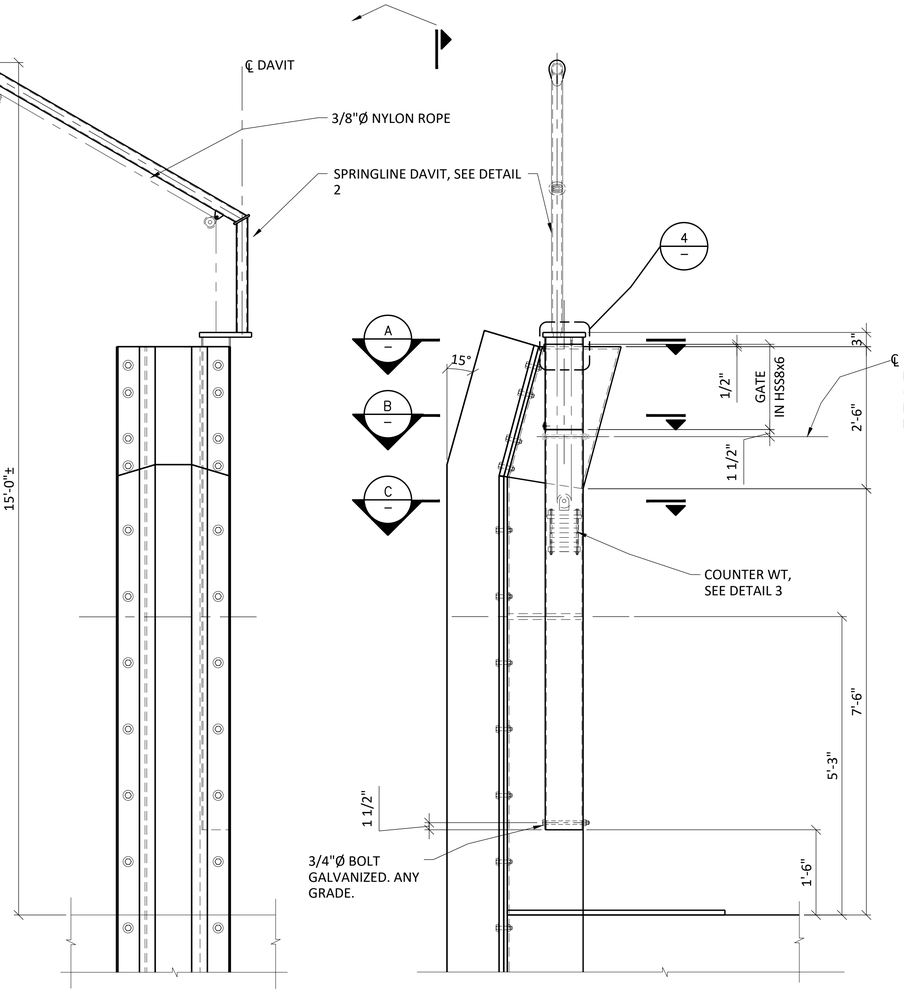
DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

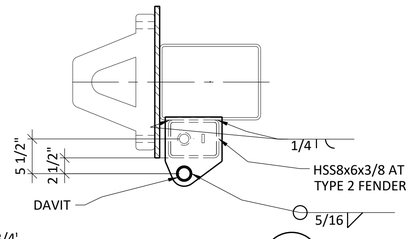
SHEET: FLOAT FENDER SUPPORT ELEVATIONS AND DETAILS

DATE	10-15-24
SHEET	OF
DRAWING NO.	S1.14
JOB NO.	2419

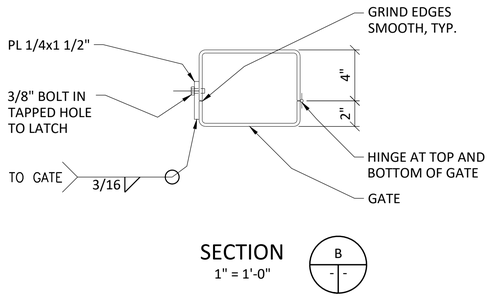
\\nas4\2419\2Dwg\Production\Structural_Liftech\Dwgs\S1.14 FLOAT FENDER SUPPORT ELEVATIONS AND DETAILS.dwg 10/15/2024 8:39 PM alvin.hoffpauir



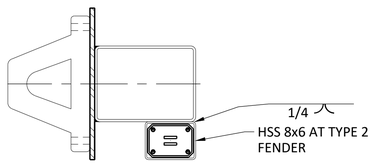
DAVIT ON FENDER
3/4" = 1'-0" (1)



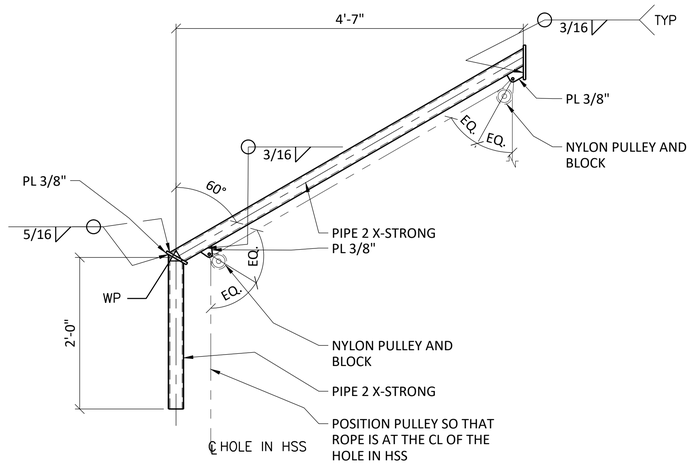
SECTION A
1" = 1'-0"



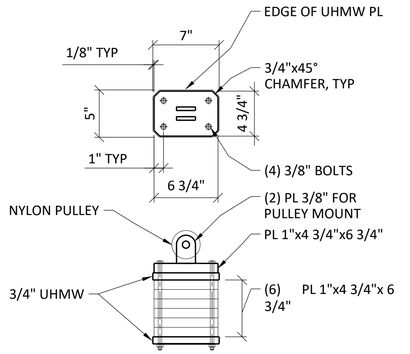
SECTION B
1" = 1'-0"



SECTION C
1" = 1'-0"



DAVIT DETAIL
1" = 1'-0" (2)



COUNTERWEIGHT DETAIL
1-1/2" = 1'-0" (3)

CASSETTE DETAIL
1-1/2" = 1'-0" (4)

NOTES:
DAVIT DETAILS ARE BASED ON DESIGN FROM SOUTH SAN FRANCISCO FERRY TERMINAL PROJECT. DETAILS MAY CHANGE BUT INFORMATION SHOWN SHOULD BE SUFFICIENT FOR PRICING.
ASSUME (4) FENDER SUPPORTS HAVE DAVITS, WITH (2) ON EACH SIDE OF THE FLOAT - (1) FORWARD SPRING LINE AND (1) AFT SPRING LINE.
FOR FENDER INFORMATION NOT SHOWN SEE DETAIL 1/S1.14

95% SUBMITTAL

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
0	##/#/##	_____	AH	___	___

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LIFTECH CONSULTANTS INC.

REGISTERED PROFESSIONAL ENGINEER Erik O Soderstrom No. S-4428 Exp. 12-31-25 STRUCTURAL STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE

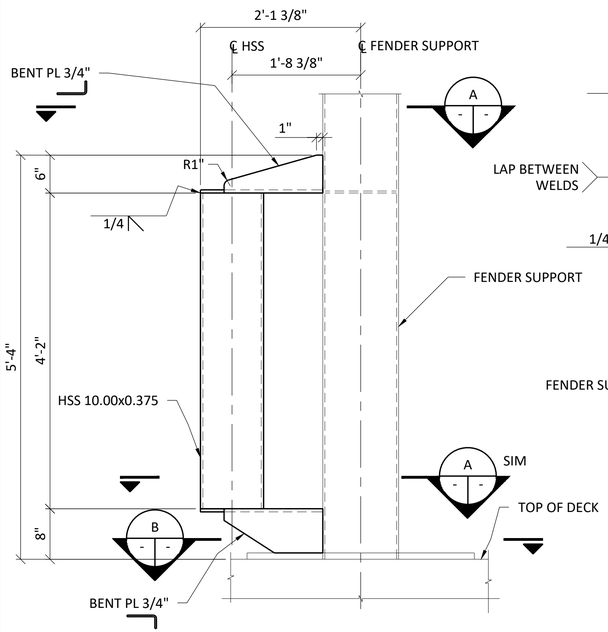
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT FENDER SUPPORT DAVIT

DATE 10-15-24
SHEET OF
DRAWING NO. S1.15
JOB NO. 2419

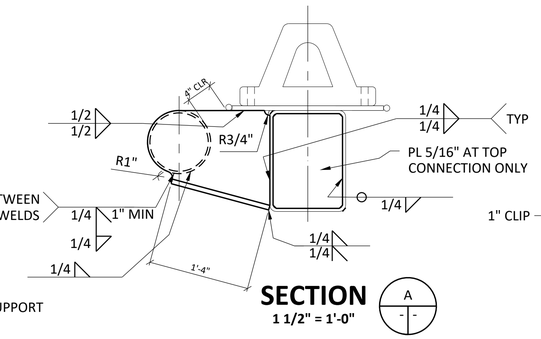
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MOORING LINE GUARD DETAIL

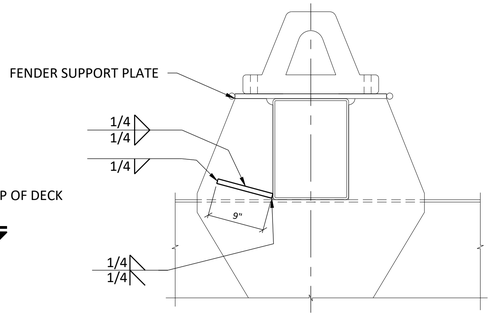
1" = 1'-0"

NOTE:
ALL PLATE EDGES CONTACTED BY ROPE SHALL BE SMOOTH AND HAVE A 1/4"R



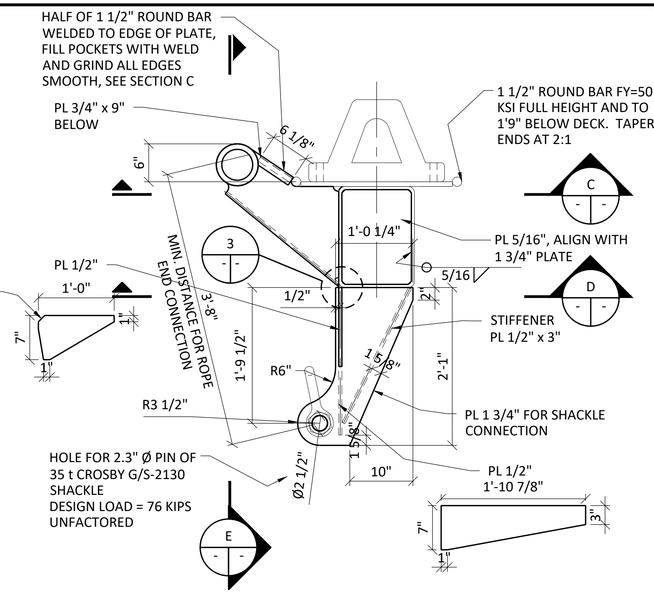
SECTION

1 1/2" = 1'-0"



SECTION

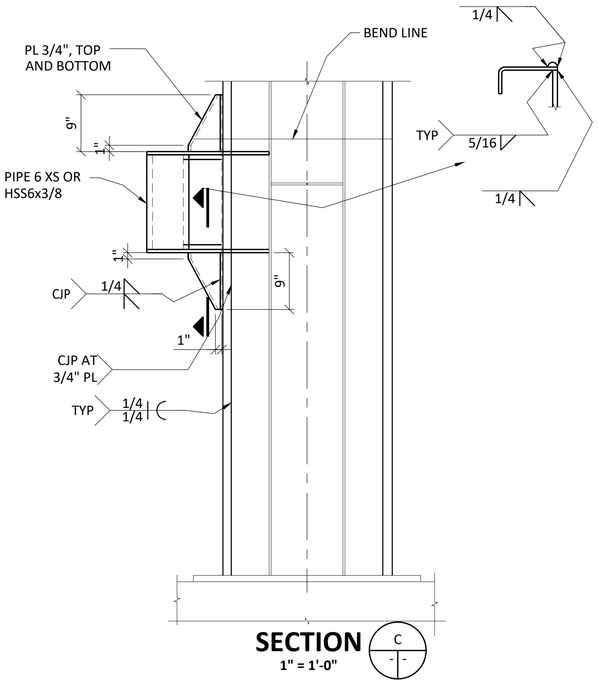
1" = 1'-0"



MOORING LINE GUARD AND ANCHOR BRACKET DETAIL

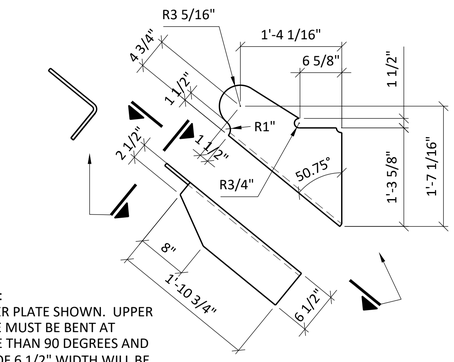
1" = 1'-0"

2 | S1.1 | S1.16



SECTION

1" = 1'-0"

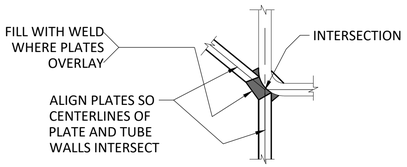


NOTE:
LOWER PLATE SHOWN. UPPER PLATE MUST BE BENT AT MORE THAN 90 DEGREES AND END OF 6 1/2" WIDTH WILL BE LONGER AND HAVE TAPER TO CONNECT WITH UPPER PORTION OF HSS16X12.

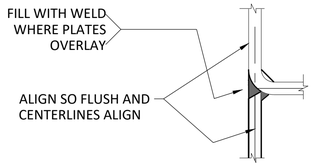
1/2" BENT PLATE

1" = 1'-0"

4



TWO PLATE CONDITION

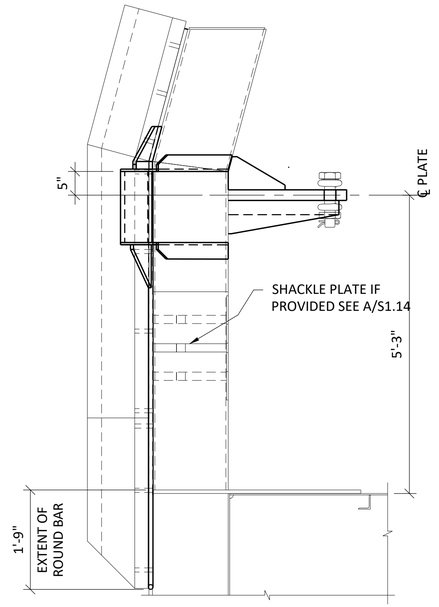


SINGLE PLATE CONDITION

DETAILS

DO NOT SCALE

3

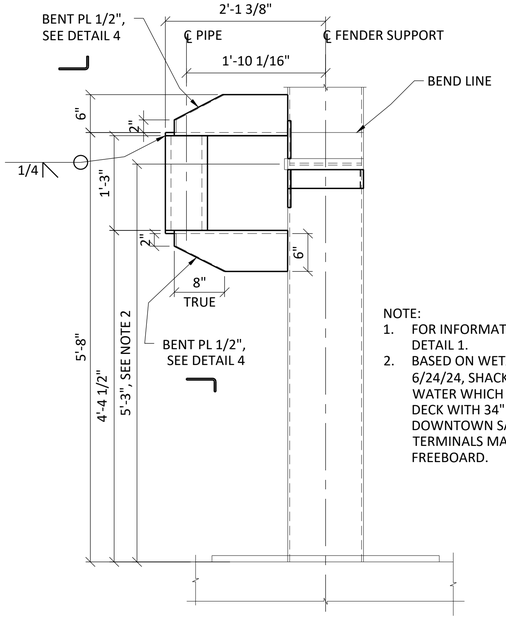


NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION A/S1.14

SECTION

3/4" = 1'-0"

E



NOTE:
1. FOR INFORMATION NOT SHOWN SEE DETAIL 1.
2. BASED ON WETA OPS EMAIL DATED 6/24/24, SHACKLES TO BE 97" OFF THE WATER WHICH IS 63" ABOVE THE DECK WITH 34" FREEBOARD AT DOWNTOWN SAN FRANCISCO. OTHER TERMINALS MAY HAVE 36" FREEBOARD.

SECTION

1" = 1'-0"

D

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
Lee G Soderstrom
No. S-4426
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

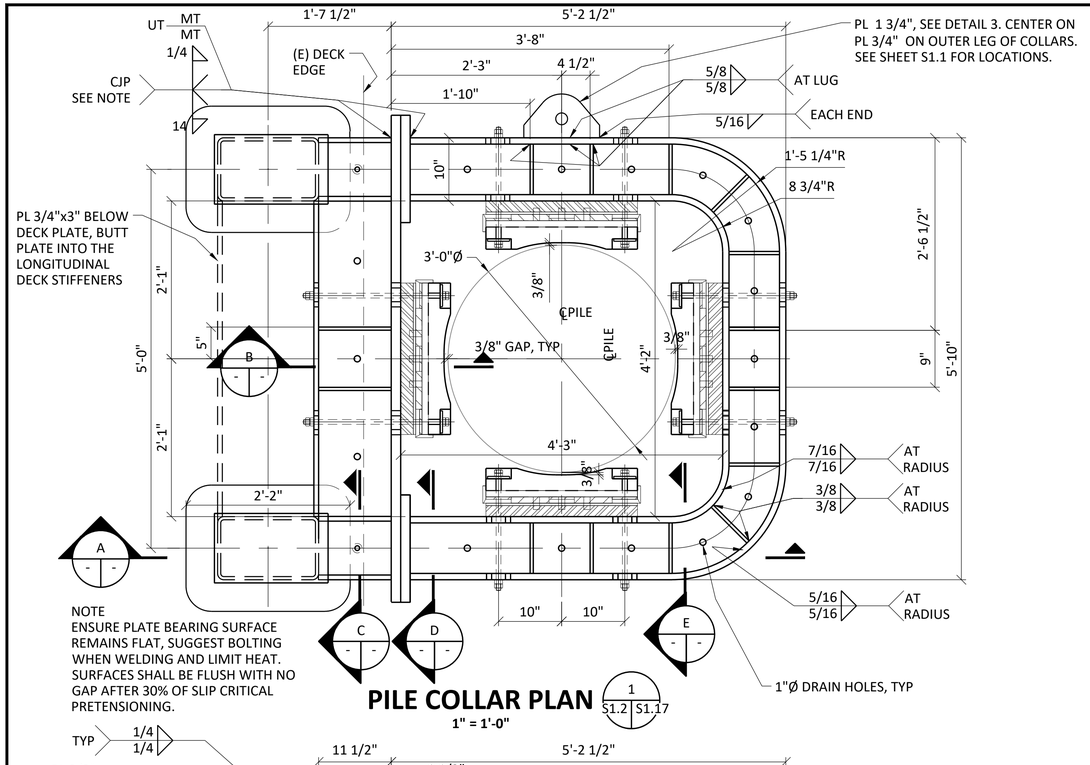
DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
MOORING LINE GUARD DETAILS

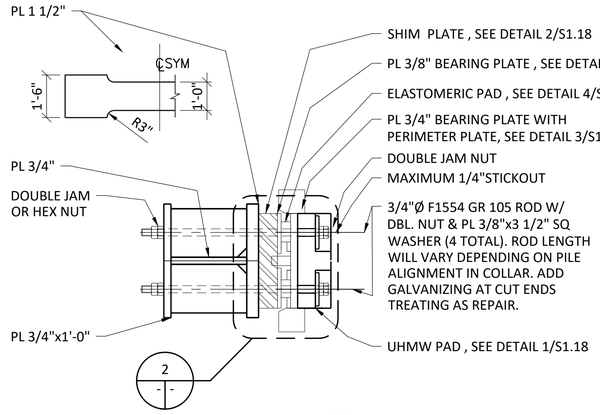
DATE	10-15-24
SHEET	OF
DRAWING NO.	S1.16
JOB NO.	2419

\\mod-2419\2419 Dwg\Production\Structural_Liftech\Design\S1.16 MOORING LINE GUARD DETAILS.dwg 10/15/2024 8:41 PM alvin hoffpauir



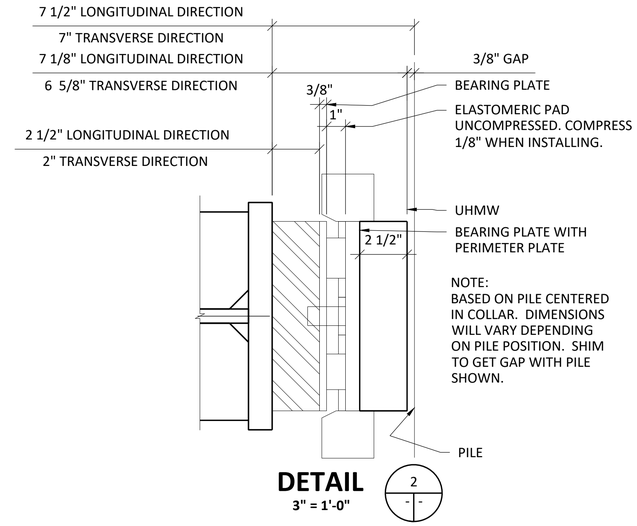
PILE COLLAR PLAN
1 S1.2 | S1.17

1" = 1'-0"



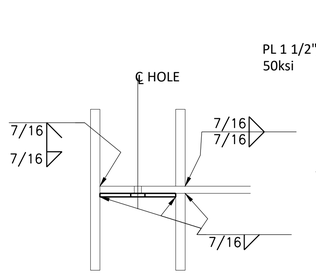
SECTION
1 1/2" = 1"-0'

B



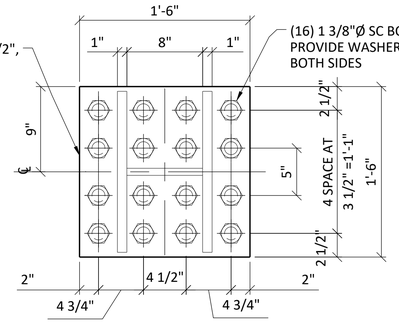
DETAIL
3" = 1'-0"

2



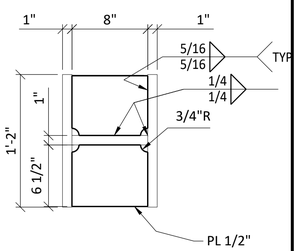
SECTION
1 1/2" = 1'-0"

C



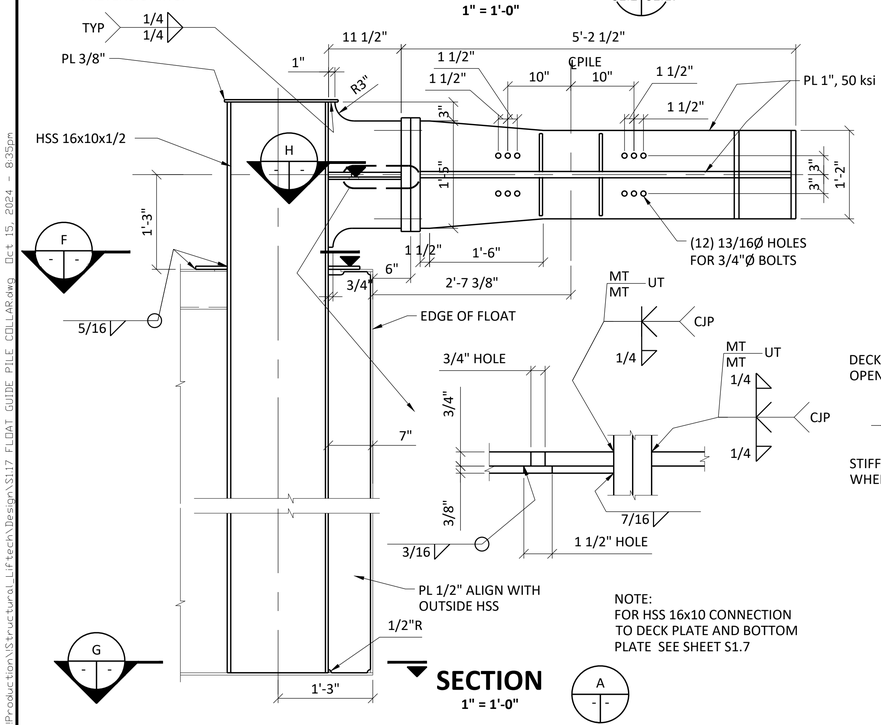
SECTION
1-1/2" = 1'-0"

D



SECTION
1 1/2" = 1'-0"

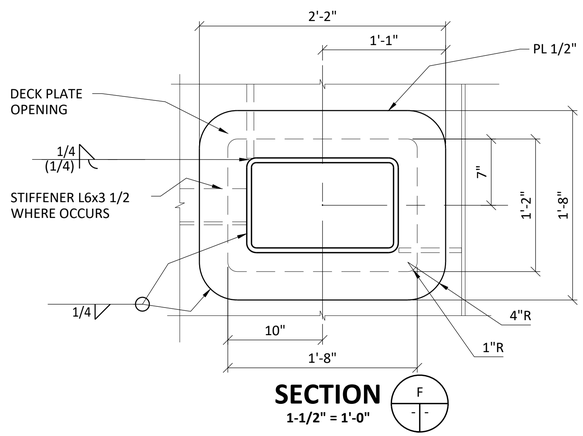
E



SECTION
1" = 1'-0"

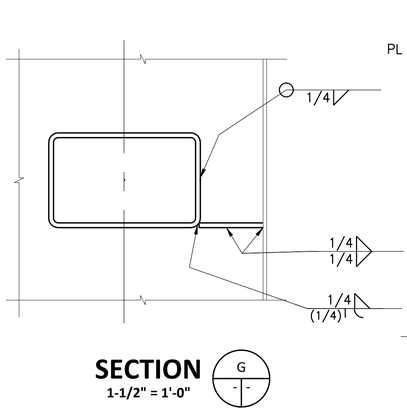
A

NOTE:
FOR HSS 16x10 CONNECTION TO DECK PLATE AND BOTTOM PLATE SEE SHEET S1.7



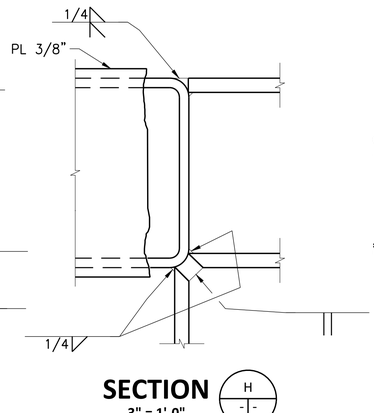
SECTION
1-1/2" = 1'-0"

F



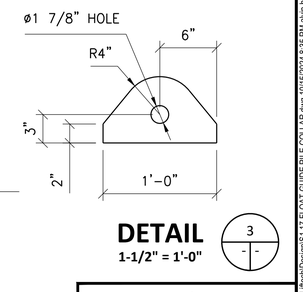
SECTION
1-1/2" = 1'-0"

G



SECTION
3" = 1'-0"

H



DETAIL
1-1/2" = 1'-0"

3

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REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:_____

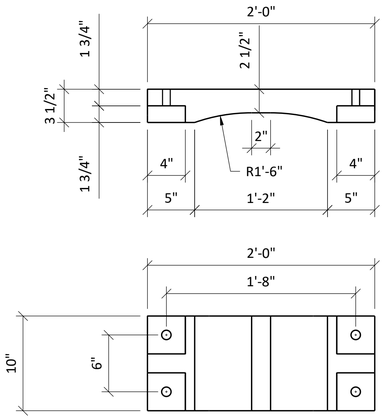
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT GUIDE PILE COLLAR

DATE 10-15-24
SHEET OF
DRAWING NO. S1.17
JOB NO. 2419

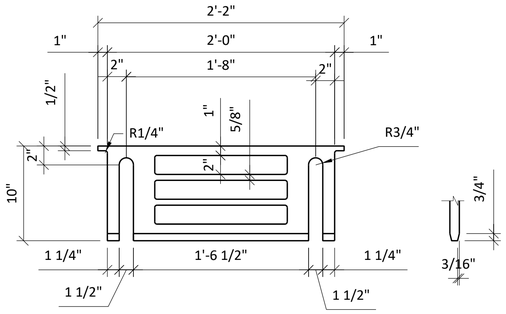
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moe\2419\2419\Dwg\Production\Structural_Liftech\Design\S1.17 FLOAT GUIDE PILE COLLAR.dwg 10/15/2024 8:35 PM alvin hoffpauir



UHMW PAD DETAIL

1-1/2" = 1'-0"

1 | S1.17 | S1.18



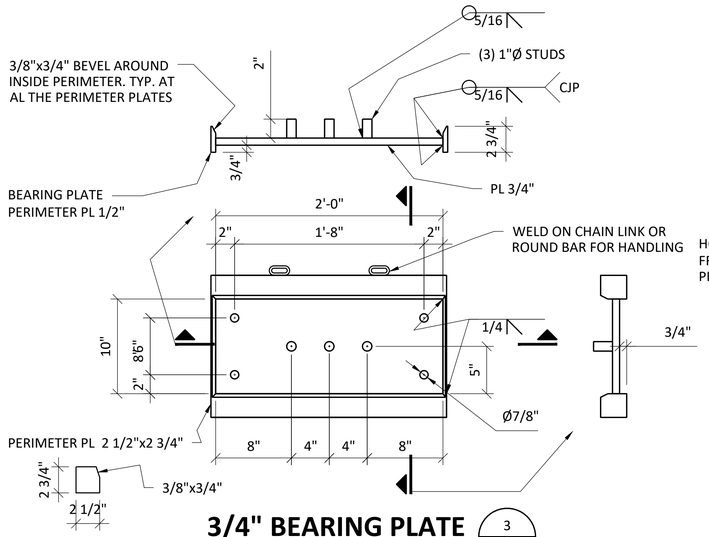
NOTES:

1. MINIMUM THICKNESS = 1/2", MAXIMUM = 1". PROVIDE AT LEAST ONE 1/2" PLATE.
2. CONTRACTOR TO PROVIDE ONE EXTRA 3/4" SHIM PLATE AT EACH LOCATION FOR FUTURE WEAR.

SHIM PLATE

1-1/2" = 1'-0"

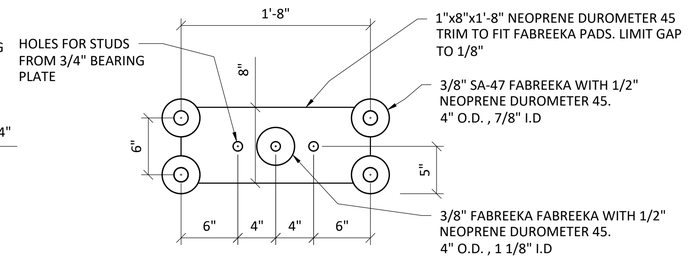
2 | S1.17 | S1.18



3/4" BEARING PLATE

1-1/2" = 1'-0"

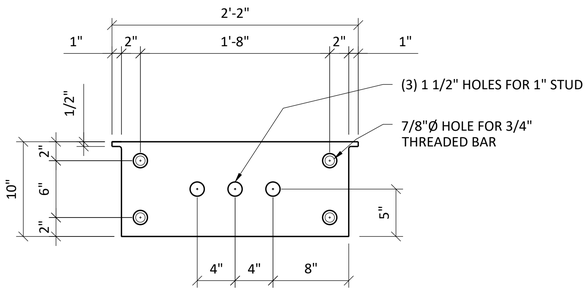
3 | S1.17 | S1.18



ELASTOMERIC PADS ARRANGEMENT

1-1/2" = 1'-0"

4 | S1.17 | S1.18



3/8" BEARING PLATE

1-1/2" = 1'-0"

5 | S1.17 | S1.18

95% SUBMITTAL

REVISIONS

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REGISTERED PROFESSIONAL ENGINEER — Lee C. Soderstrom — No. S4426 — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

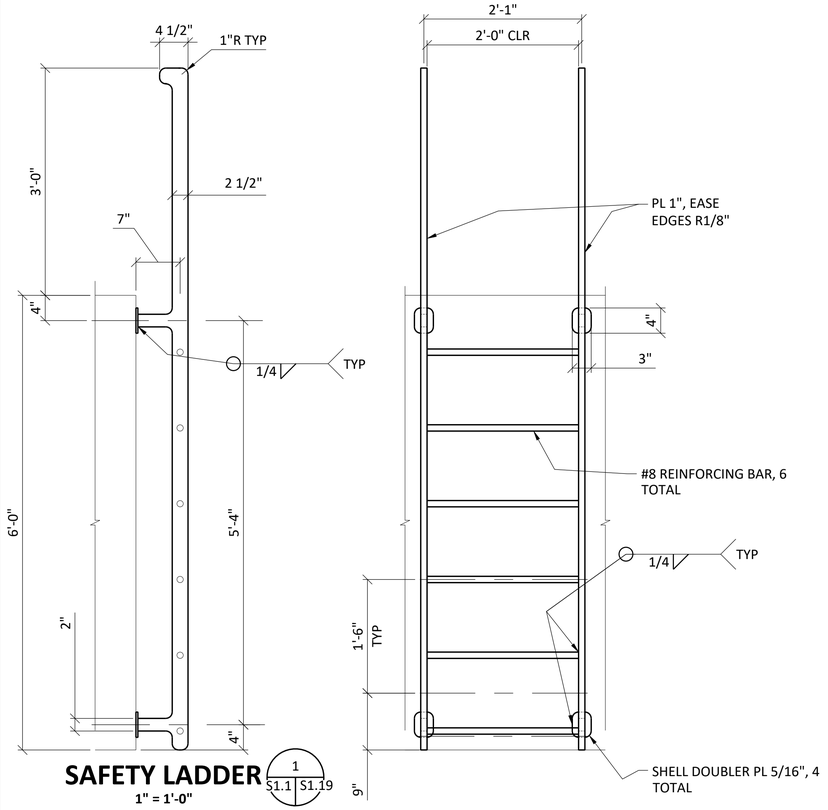
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PILE GUIDE COLLAR DETAILS

DATE 10-15-24
SHEET OF
DRAWING NO. S1.18
JOB NO. 2419

\\nas\2419\2419\Dwg\Production\Structural_Liftech\Design\S1.18 FLOAT PILE GUIDE COLLAR DETAILS.dwg 10/15/2024 8:35 PM alvin hoffpauir

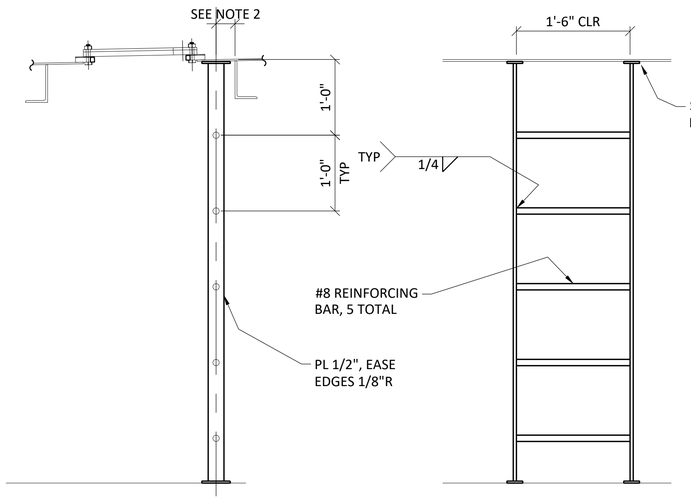


SAFETY LADDER

1" = 1'-0"

1 S1.1 | S1.19

NOTES:
1. SAFETY LADDERS TO BE GALVANIZED STEEL.
2. UP-N-OUT LADDERS TO BE STAINLESS STEEL.

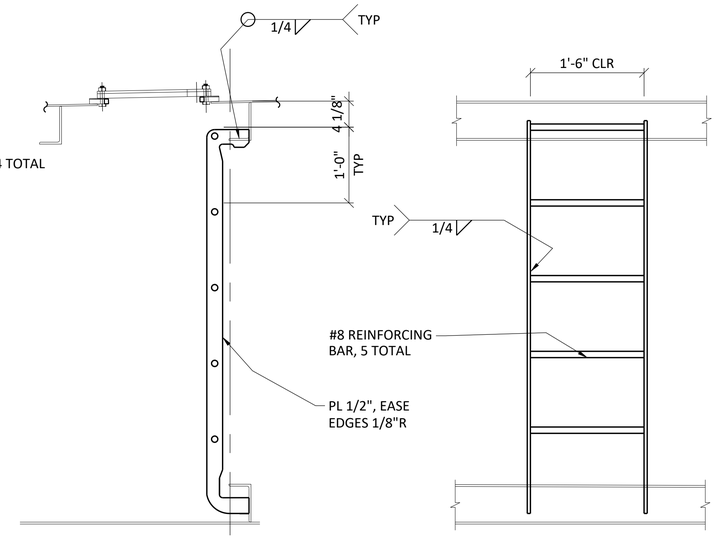


NOTE:
1. FOR INFORMATION NOT SHOWN SEE DETAIL 1.
2. IF <7" CLEAR PAINT THE TOP RUNG AND THE PART OF THE STIFFENER BEHIND THE RUNG YELLOW.
3. NEED TO COORDINATE FLOOR CONNECTION TO SUIT FLOOR SYSTEM BY OTHERS, SEE MECHANICAL DRAWINGS.

COMPARTMENT LADDER 1

1" = 1'-0"

2 S1.20 | S1.19

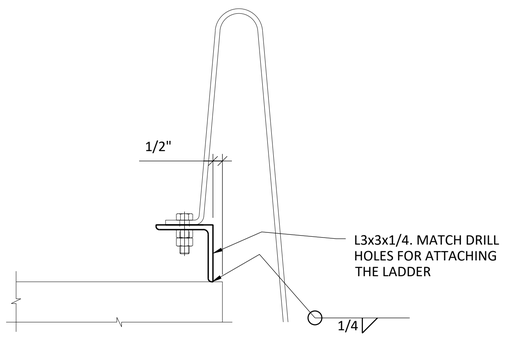


NOTE:
FOR INFORMATION NOT SHOWN SEE DETAIL 1

COMPARTMENT LADDER 2

1" = 1'-0"

3 S1.20 | S1.19



UP-N-OUT LADDER DETAIL

3" = 1'-0"

4 S1.1 | S1.19

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REGISTERED PROFESSIONAL ENGINEER
E. O. Soares
No. S-4428
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA
FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE

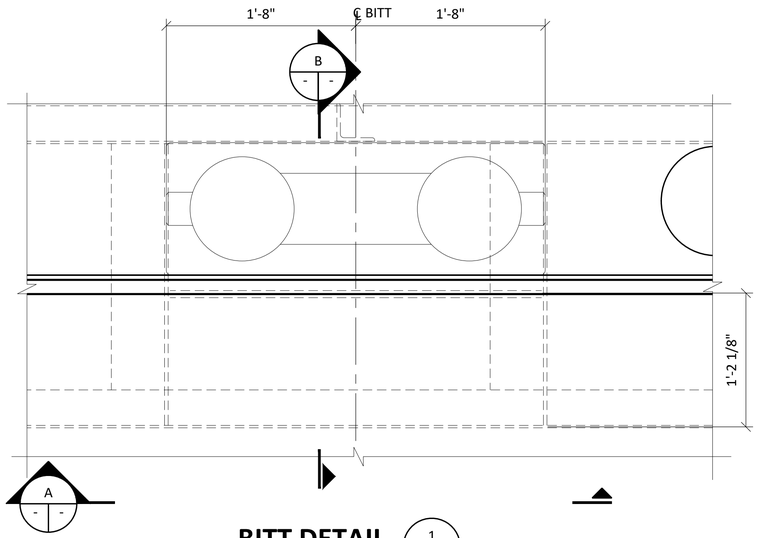
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT LADDER DETAILS

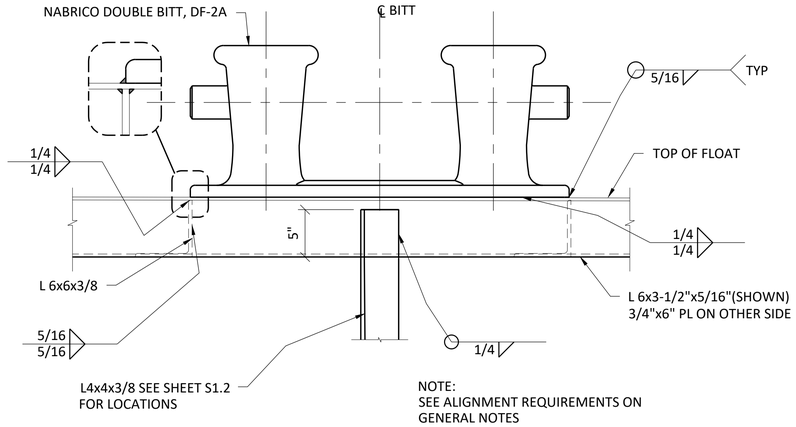
DATE 10-15-24
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DRAWING NO. S1.19
JOB NO. 2419

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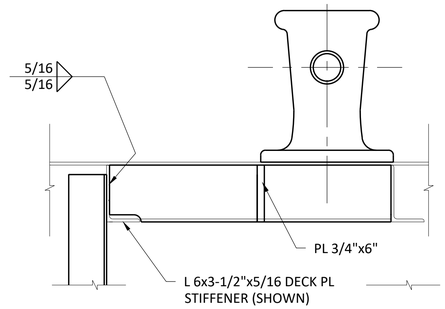
BITT DETAIL
1-1/2" = 1'-0"

1
S1.1 | S1.20
S1.2



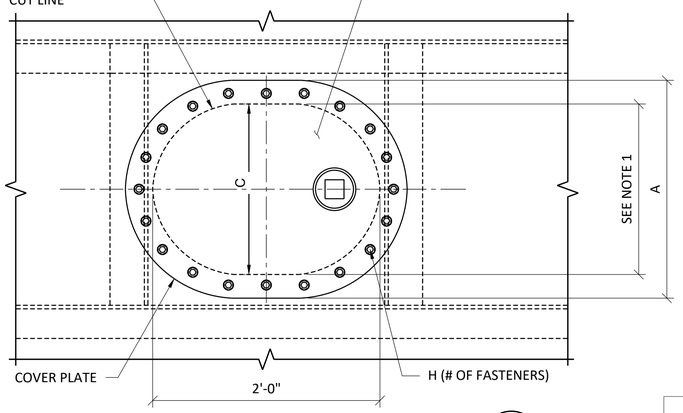
BITT ELEVATION
1-1/2" = 1'-0"

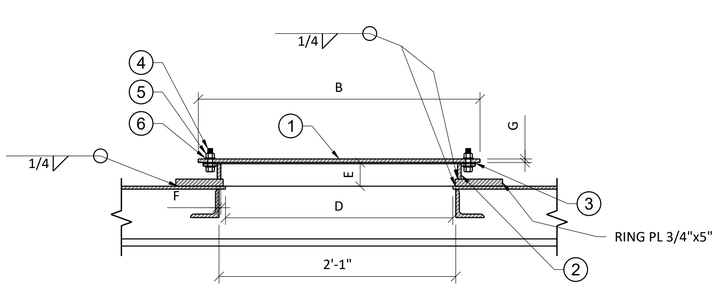
A



BITT ELEVATION
1-1/2" = 1'-0"

B





WATERTIGHT DECK HATCH DETAIL
1-1/2" = 1'-0"

2
S1.1 | S1.20
S1.2

NOTES:

1. ALIGN C/L OF HATCH W/ITH C/L OF CLEAR SPACE BETWEEN DECK BEAM ANGLES.
2. PAINT HATCH COVER WHITE & STENCIL "CONFINED SPACE" IN BLACK ON EACH.
3. EASE LOWER EDGE OF FLOAT DECK PLATE CUT 1/8" RADIUS.
4. NABRICO DF-502 RAISED BOLTED HATCH ASSEMBLY WITH A HOLE BURNED IN THE TOP FOR AN INSPECTION PORT: 316 STAINLESS STEEL SCHEDULE 40 PIPE 4"x0'-4" PLUS A 150 PSI 316 STAINLESS STEEL FEMALE-THREADED PIPE CAP. SEE SCHEDULES 1 AND 2.
5. PROVIDE AN INTERIOR LADDER AT EACH HATCH PER SPECIFICATION SECTION 35 50 00 STEEL FLOAT, SEE SHEET DETAILS 2/S1.19 AND 3/S1.19.

SCHEDULE 1

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (LBS)
DF-502	21105	18X24	23"	29 3/4"	18"	24"	2 1/2"	3/8"	3/8"	24	106

SCHEDULE 2

PIECE NO.	DESCRIPTION	DF-502	MATERIAL
1	COVER PLATE	21350	STEEL
2	COAMING	21377	STEEL
3	GASKET	21393	NEOPRENE
4	HEX HEAD BOLT	14610	304 STAINLESS
5	HEX NUT	21245	316 STAINLESS
6	WASHER	21237	316 STAINLESS

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REVISIONS

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STATE OF CALIFORNIA
EGS.jpg
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SIGNATURE DATE:_____

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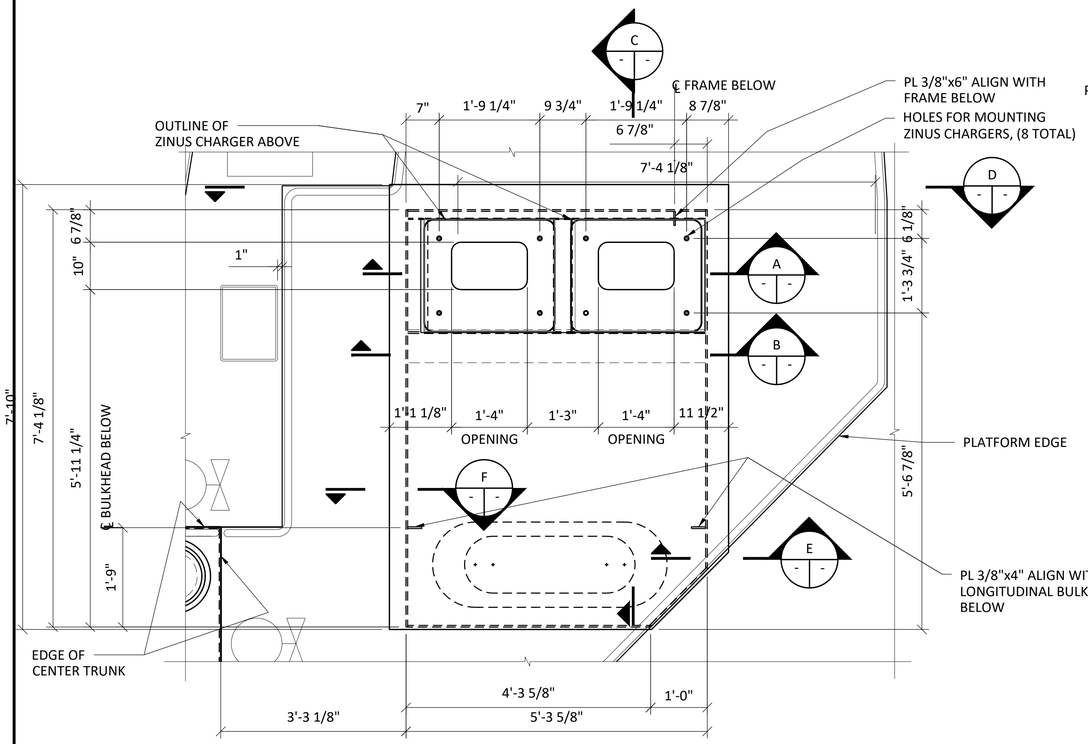
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
DECK HATCH AND BITT DETAILS

DATE 10-15-24
SHEET OF
DRAWING NO. S1.20
JOB NO. 2419

\\nas\2419\Dwg\Production\Structural_Liftech\Design\S1.20 DECK HATCH AND BITT DETAILS.dwg Oct 15, 2024 - 8:33pm

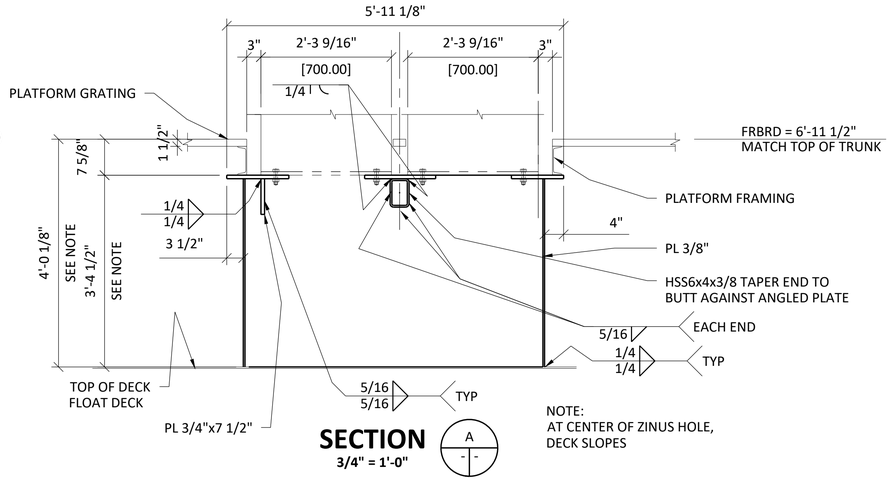
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ZINUS CHANGER SUPPORT PLAN

3/4" = 1'-0"

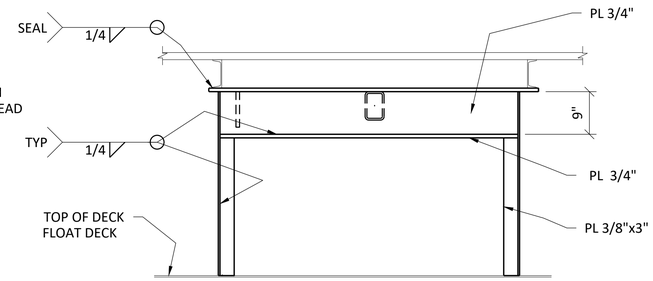
1 / S1.2 | S1.21



SECTION

3/4" = 1'-0"

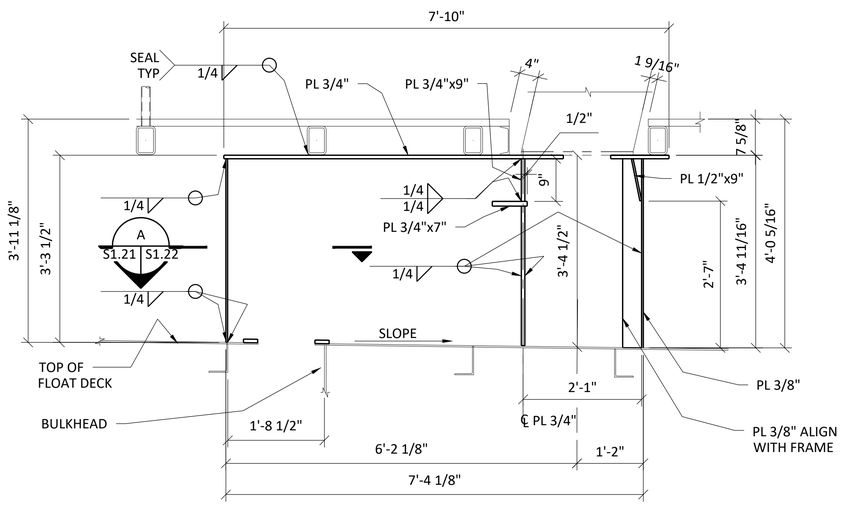
A / - -



SECTION

3/4" = 1'-0"

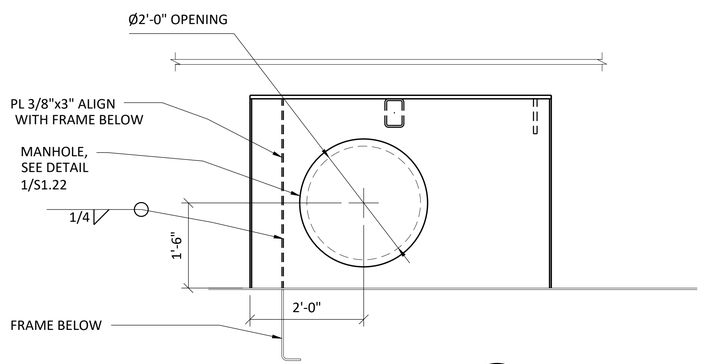
B / - -



SECTION

3/4" = 1'-0"

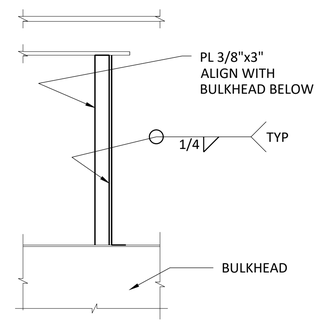
C / - -



SECTION

3/4" = 1'-0"

D / - -



SECTION

3/4" = 1'-0"

E / - -

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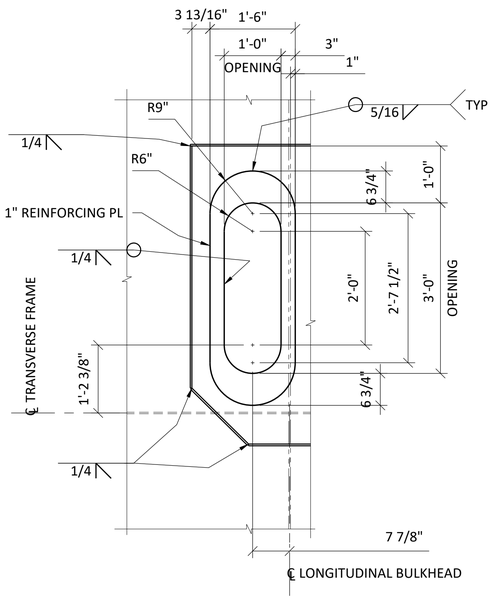
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
CHARGER SUPPORT

DATE 10-15-24
SHEET OF
DRAWING NO. S1.21
JOB NO. 2419

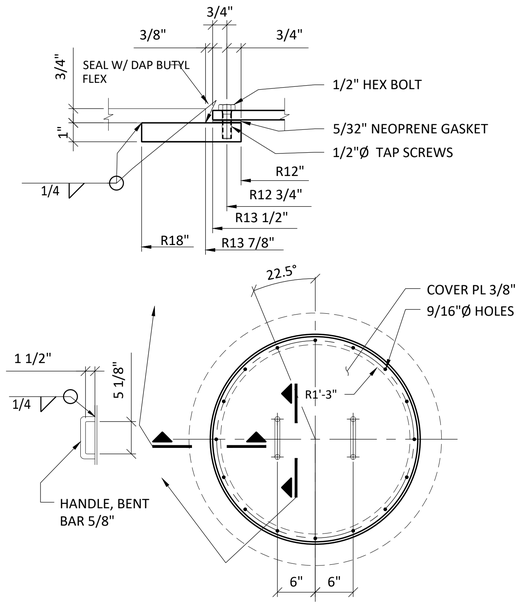
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SECTION

3/4" = 1'-0"

A
S1.21 | S1.22



MANHOLE DETAIL

1" = 1'-0"

1
S1.21 | S1.22

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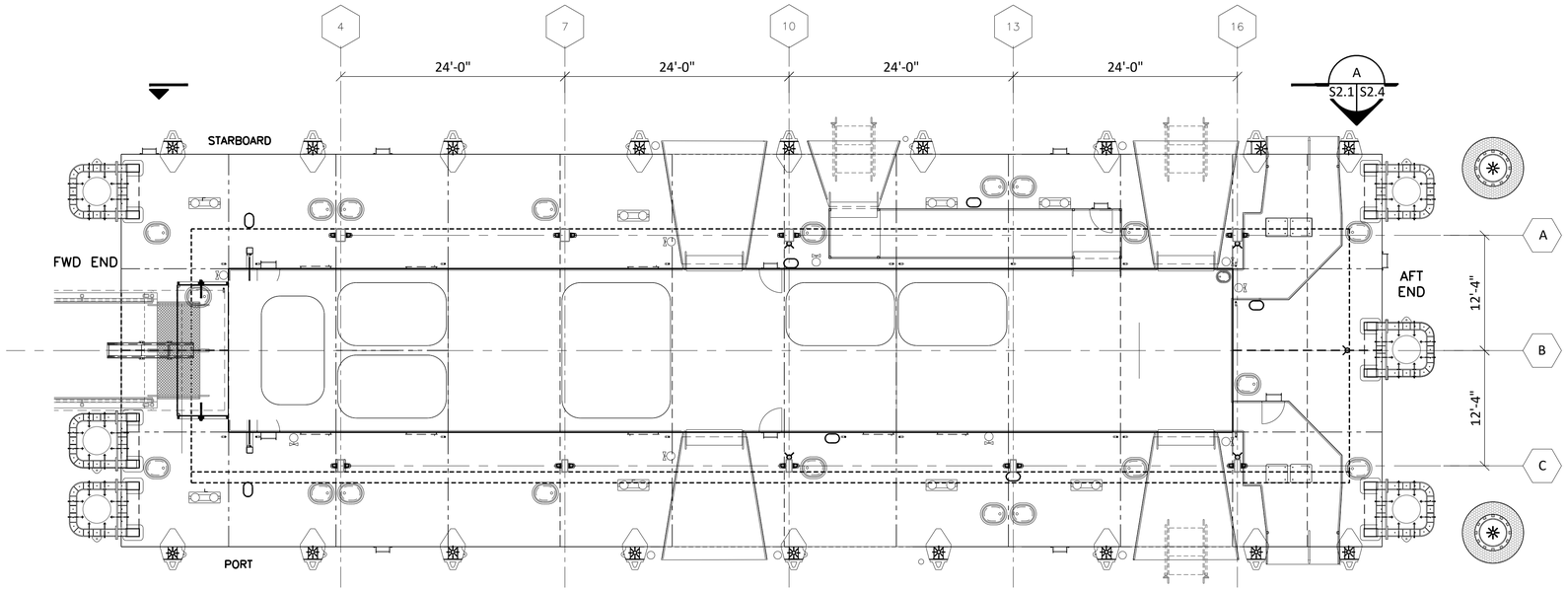
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
CHARGER SUPPORT DETAILS

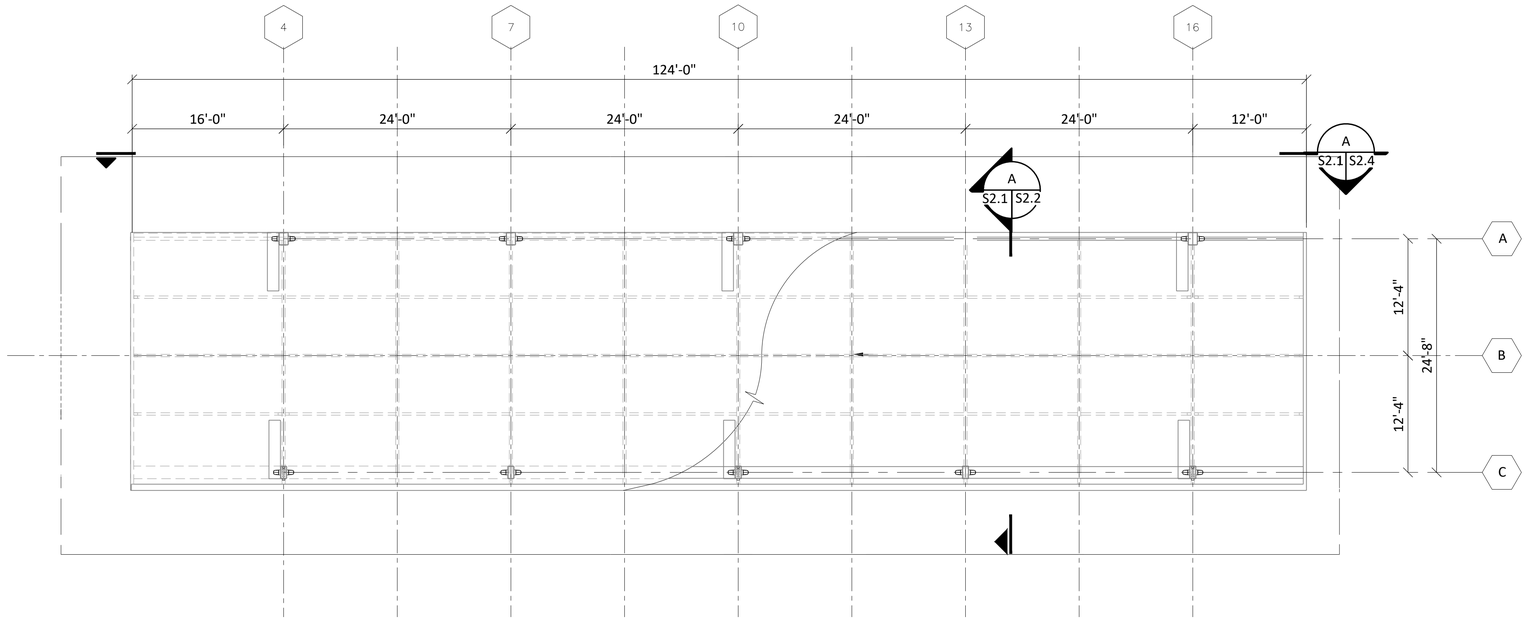
DATE 10-15-24
SHEET OF
DRAWING NO. S1.22
JOB NO. 2419

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\\mw2419\2419\Dwg\Production\Structural_Liftech\Design\S1 22 CHARGER SUPPORT DETAILS.dwg 10/15/2024 8:40 PM alvin hoffpauir



FLOOR PLAN
1/8"=1'-0"



PARTIAL ROOF PLAN
1/8"=1'-0"

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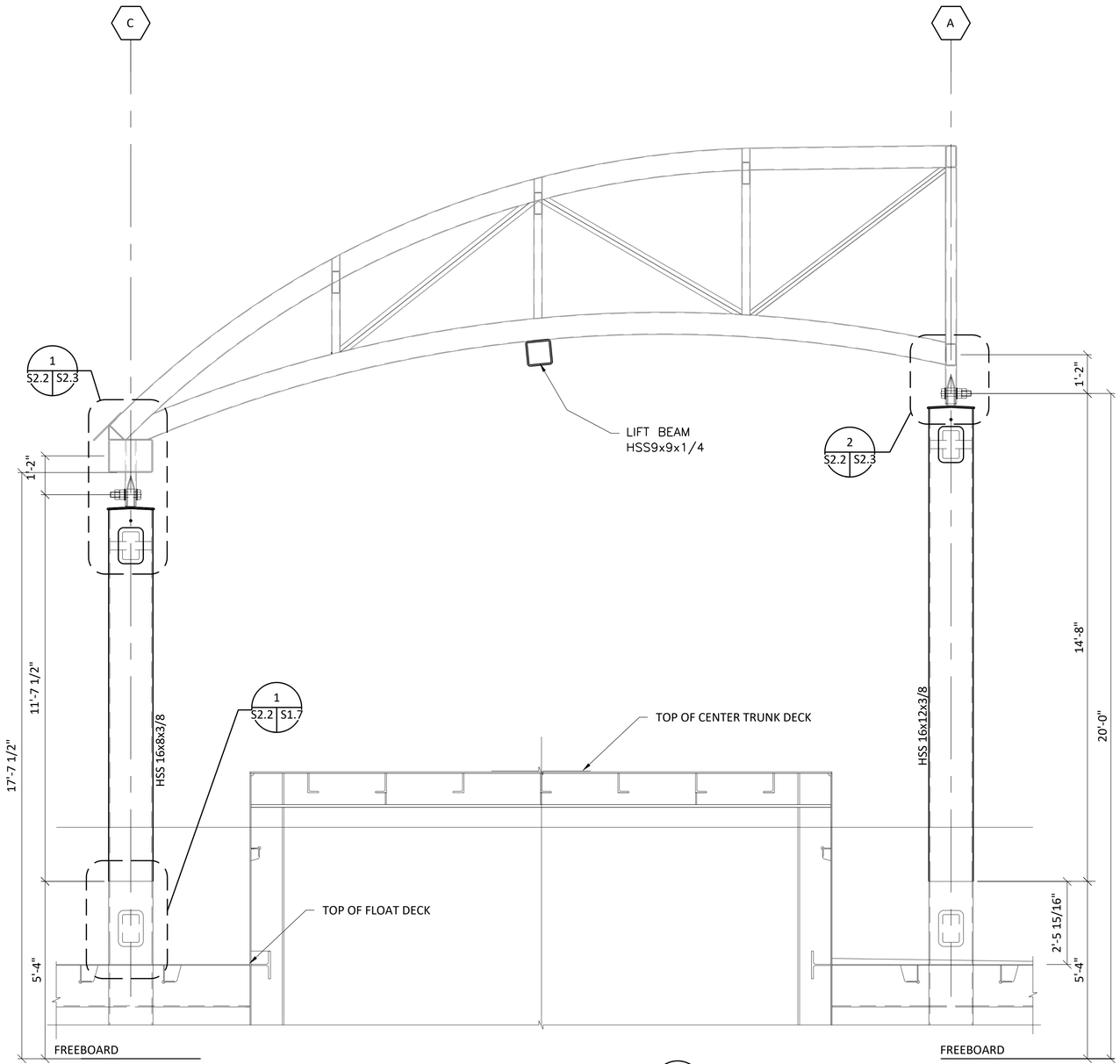
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT CANOPY PLANS

DATE 10-15-24
SHEET OF
DRAWING NO. S2.1
JOB NO. 2419

\\mod2419\2419\Dwg\Production\Structural_Liftech\Design\S2.1 FLOAT CANOPY PLANS.dwg 10/15/2024 8:42 PM alvin hoffpauir



SECTION

1/2" = 1'-0"

A
S2.1 S2.2

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Exp. 12-31-25
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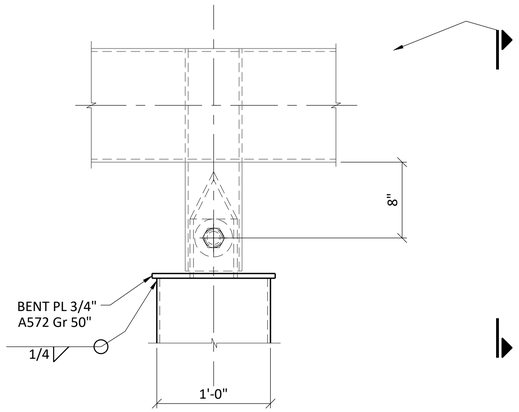
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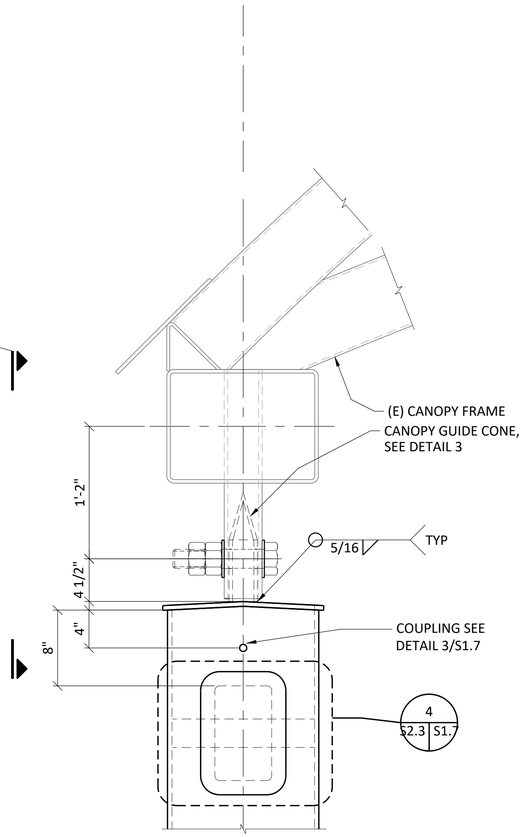
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT CANOPY TYPICAL SECTION

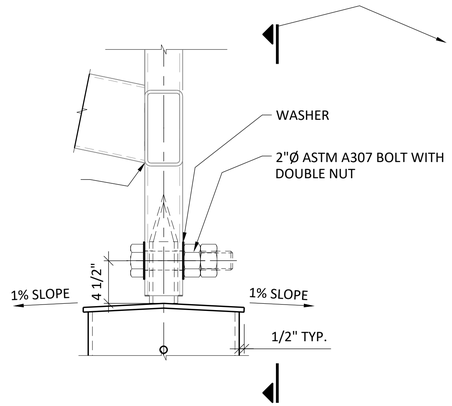
DATE	10-15-24
SHEET	OF
DRAWING NO.	S2.2
JOB NO.	2419

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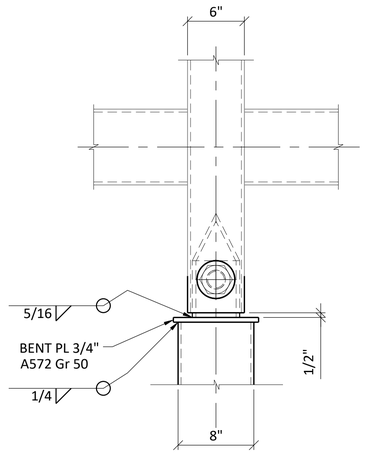


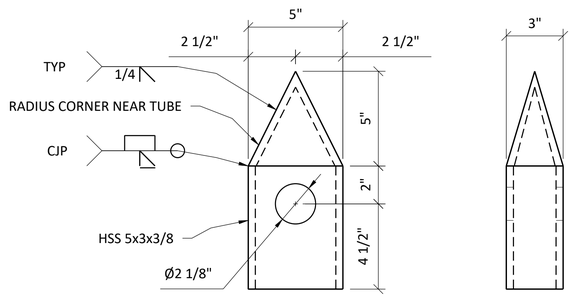


DETAIL
1 1/2" = 1'-0"
1 | S2.2 | S2.3



DETAIL
1 1/2" = 1'-0"
2 | S2.2 | S2.3





CANOPY GUIDE CONE
3" = 1'-0"
3 | - | -

NOTE
FOR CANOPY LIFT BRACKET DETAIL
SEE SHEET S2.5

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REVISIONS

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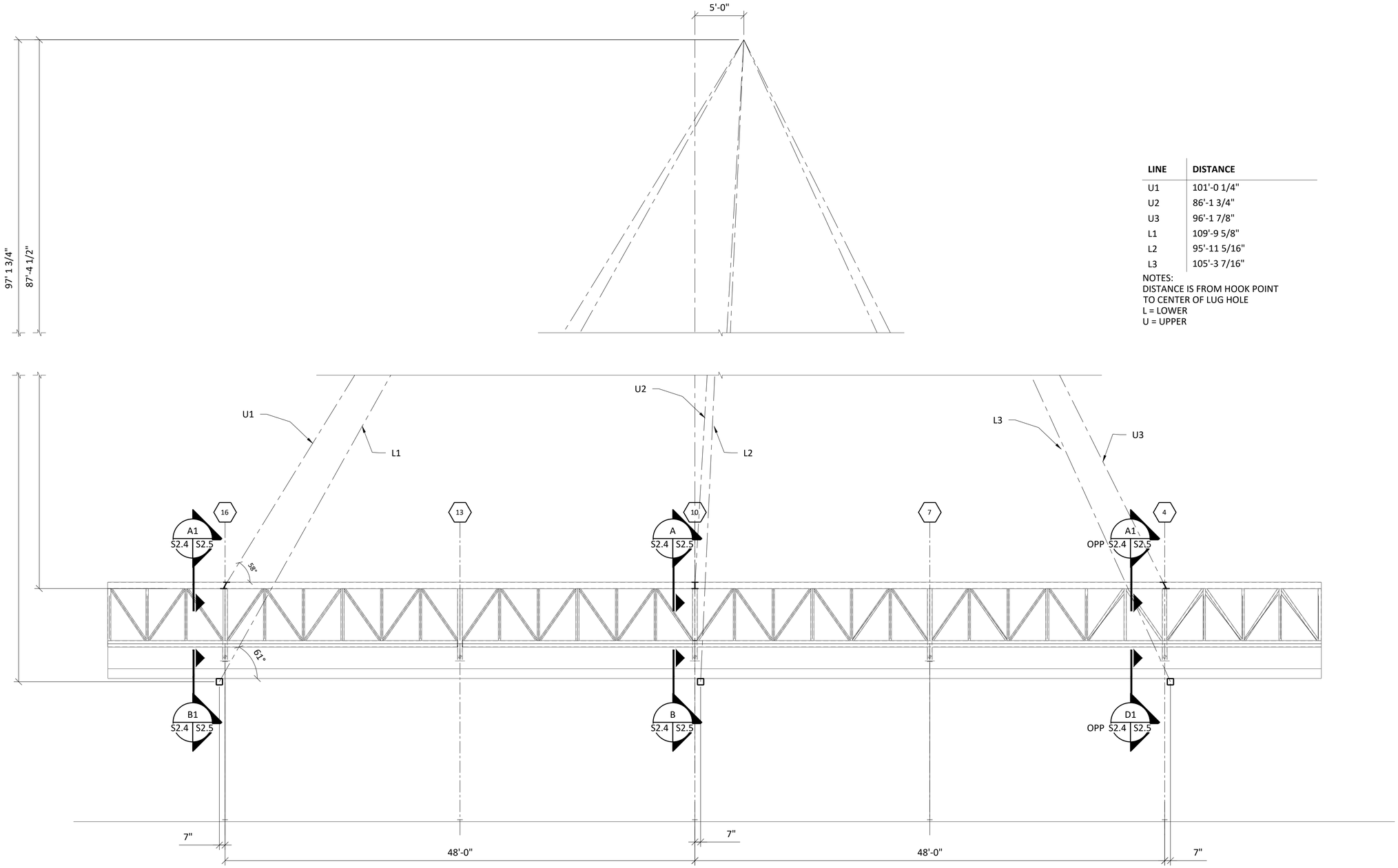
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT CANOPY DETAILS

DATE 10-15-24
SHEET OF
DRAWING NO. S2.3
JOB NO. 2419

\\mod24\24\24\Dwg\Production\Structural_Liftech\Design\S2.3 FLOAT CANOPY DETAILS.dwg 10/15/2024 8:38 PM alvin hoffpauir



LINE	DISTANCE
U1	101'-0 1/4"
U2	86'-1 3/4"
U3	96'-1 7/8"
L1	109'-9 5/8"
L2	95'-11 5/16"
L3	105'-3 7/16"

NOTES:
DISTANCE IS FROM HOOK POINT
TO CENTER OF LUG HOLE
L = LOWER
U = UPPER

CANOPY LIFT ARRANGEMENT

A
S2.1 S2.4

1-1/2" = 1'-0"

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REVISIONS

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Exp. 12-31-18
STRUCTURAL
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FOR LIFTECH CONSULTANTS INC.
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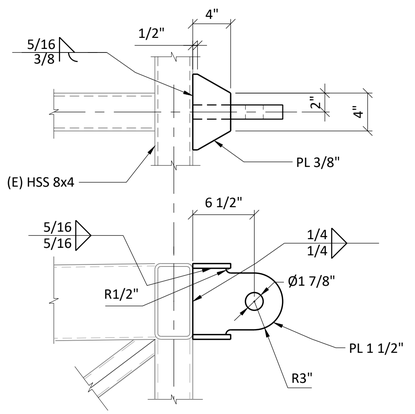
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DRAWN BY: AH
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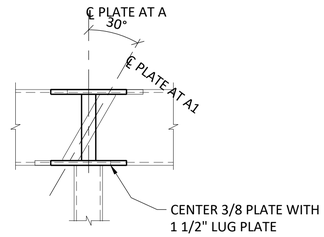
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
CANOPY LIFT ARRANGMENT

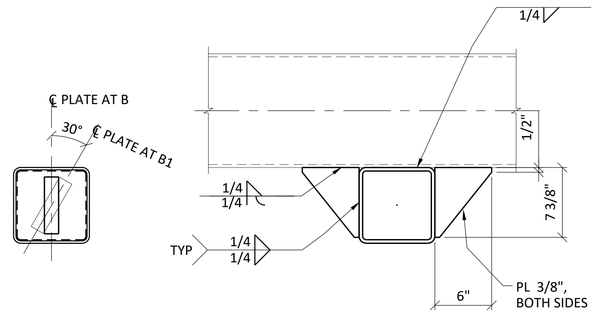
DATE 10-15-24
SHEET OF
DRAWING NO. S2.4
JOB NO. 2419

\\mod2419\2419\Dwg\Production\Structural_Liftech\Design\S2.4 CANOPY LIFT ARRANGMENT.dwg — alvin hoffpauir

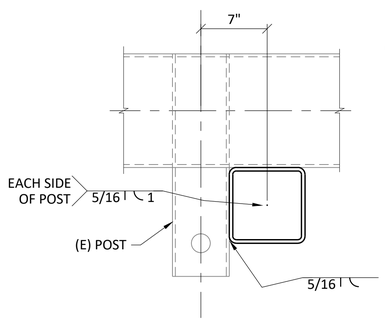




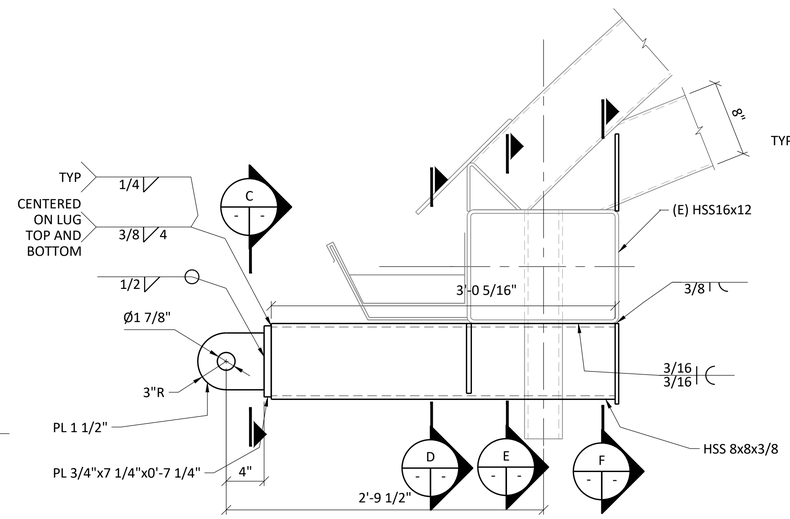
DETAIL (A | S2.4 | S2.5) (A1 | S2.4 | S2.5)
1 1/2" = 1'-0"



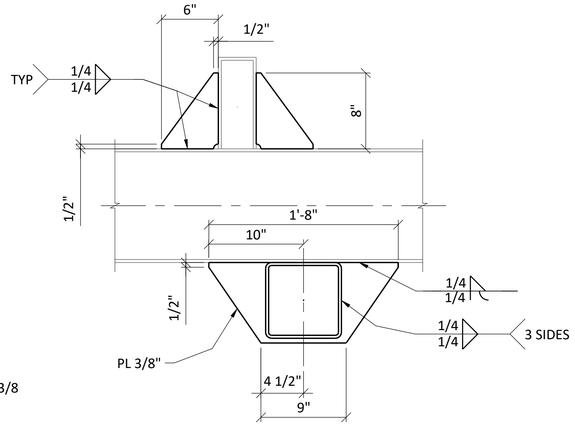
SECTION (C) **1 1/2" = 1'-0"**



SECTION (D) **1 1/2" = 1'-0"**



SECTION (B | S2.4 | S2.5) (B1 | S2.4 | S2.5) **1 1/2" = 1'-0"**



SECTION (F) **1 1/2" = 1'-0"**

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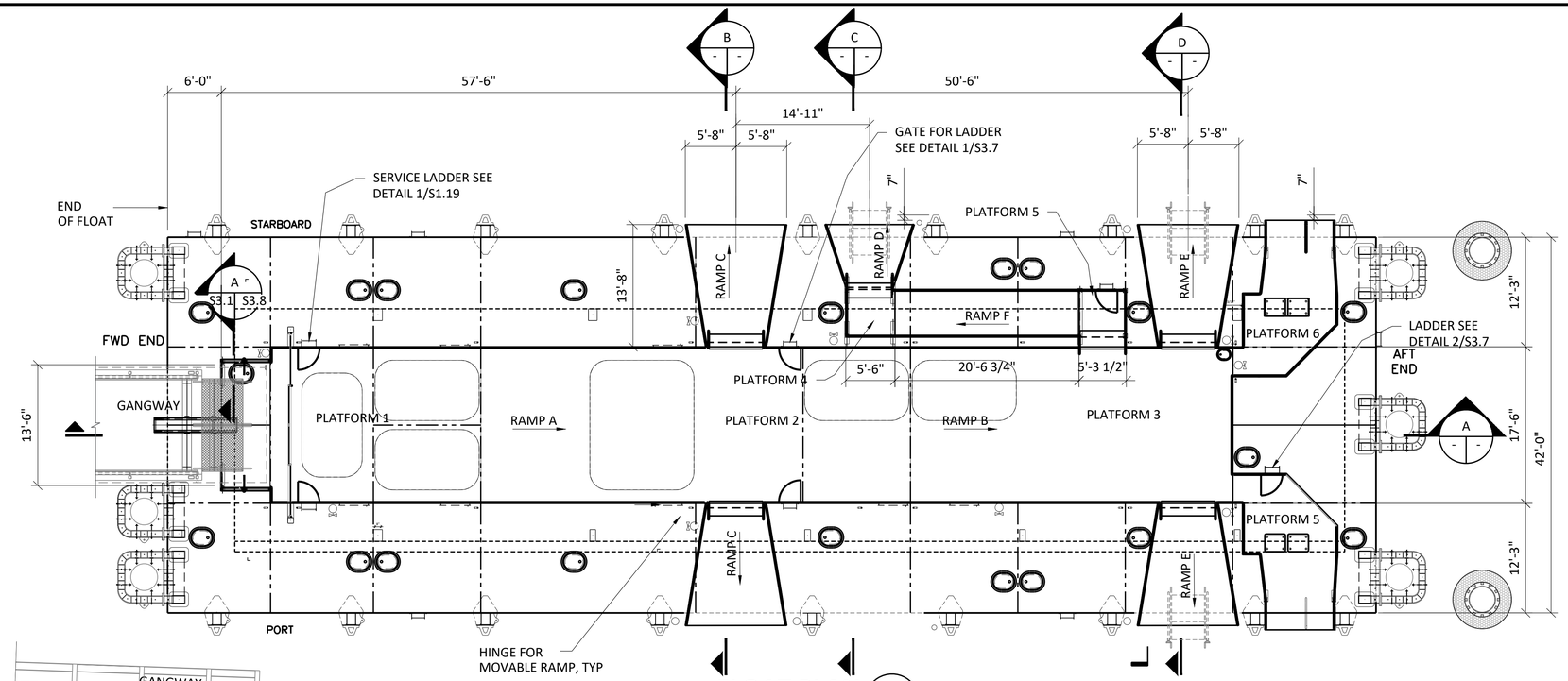
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
CANOPY LIFT BRACKET DETAILS

DATE	10-15-24
SHEET	OF
DRAWING NO.	S2.5
JOB NO.	2419

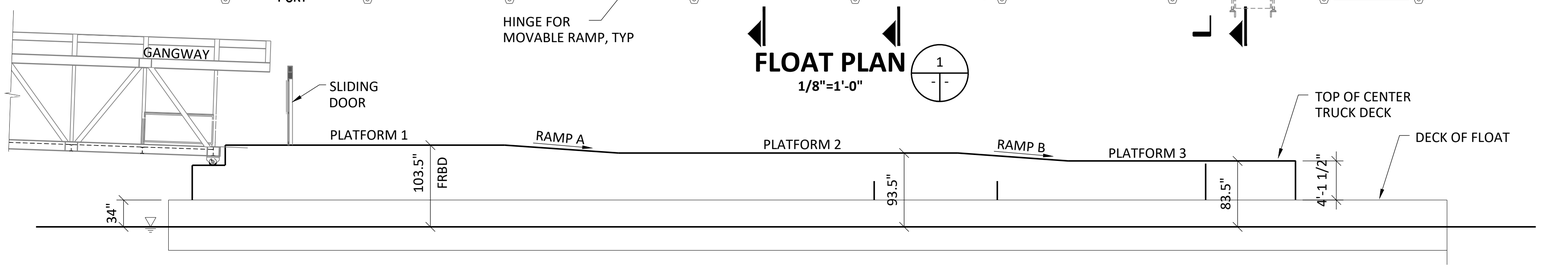
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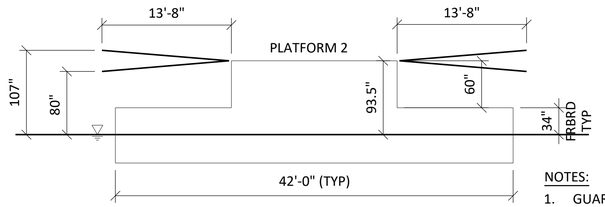
FLOAT PLAN
1/8"=1'-0"

RAMP AND PLATFORM SCHEDULE		
RAMP OR PLATFORM	HEIGHT ABOVE WATER (FRBD)	MAXIMUM SLOPE FOR ADA COMPLIANCE (V:H)
1	103.5	-
A		1:12
2	93.5	-
B		1:12
3	83.5	-
4	63	-
C		1:12
5	83.5	
D		1:12
E		1:12
F		1:12

NOTE:
1. LADDERS AND GUARDRAILS NOT SHOWN FOR CLARITY.
2. FOR GUARDRAIL ELEVATIONS SEE SHEETS S3.2-S3.5 AND FOR DETAIL SEE SHEET S3.6.
3. THE ROLL AND PITCH OF THE FLOAT ARE NOT INCLUDED IN THE SLOPES SHOWN



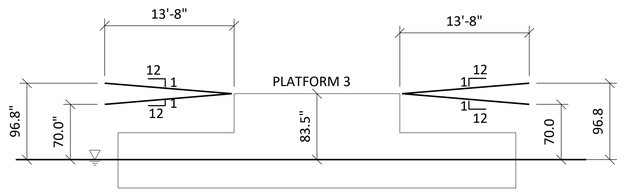
SECTION
1/8"=1'-0"



NOTES:
1. GUARDRAILS NOT SHOWN FOR CLARITY, TYP.
2. WETA TO ADVISE ABOUT MAX REQUIRED MAX RANGE FOR LIFT SYSTEM.

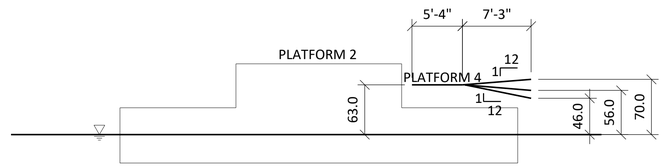
RAMP C	
ADA COMPLIANT RANGE	MAX RANGE
80" - 107"	CONTRACTOR TO ADVISE PRACTICAL RANGE WITH LIFT SYSTEM

SECTION - RAMP C
1/8"=1'-0"



RAMP E	
ADA COMPLIANT RANGE	MAX RANGE
70" -97"	CONTRACTOR TO ADVISE PRACTICAL RANGE WITH LIFT SYSTEM

SECTION - RAMP E
1/8"=1'-0"



FIXED RAMP	
ADA COMPLIANT RANGE	MAX RANGE
56" - 70"	CONTRACTOR TO ADVISE PRACTICAL RANGE WITH LIFT SYSTEM

NOTE:
46" MAY NOT BE ACHIEVABLE DUE TO RAMP AND RAMP SUPPORT STRUCTURE. IF IT ISNT ACHIEVABLE, CONTRACTOR TO ADVISE WHAT IS.

SECTION - RAMP D
1/8"=1'-0"

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NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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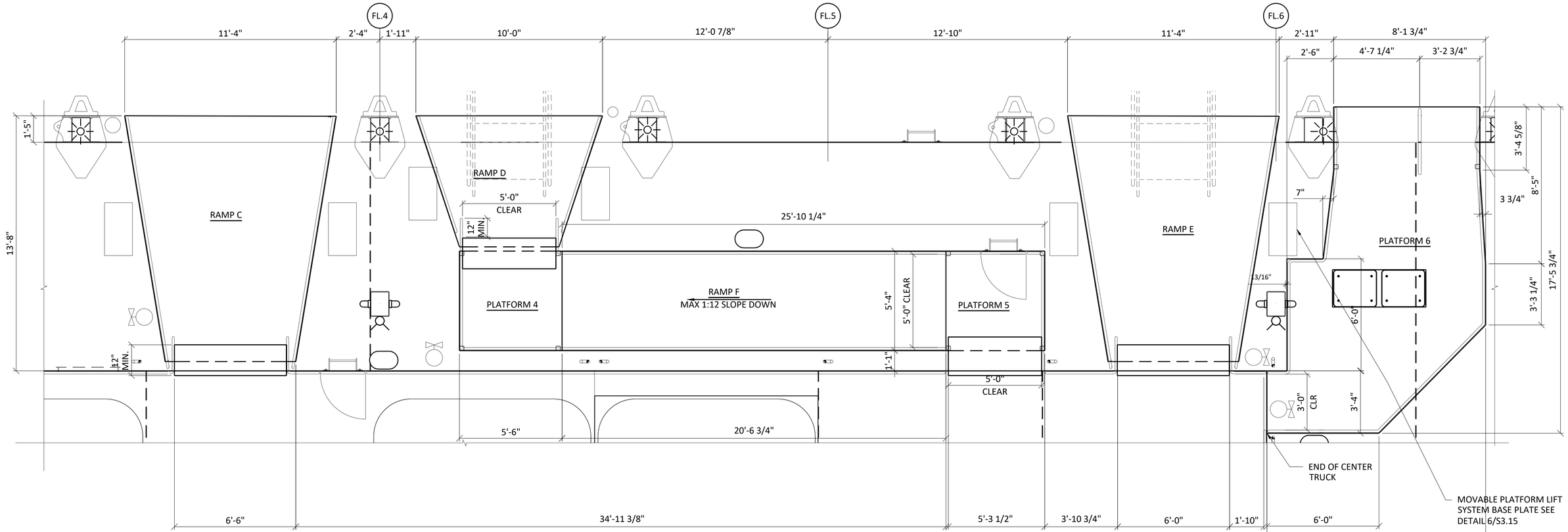
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PLATFORM AND RAMP GENERAL ARRANGMENT

DATE 10-15-24
SHEET OF
DRAWING NO. S3.1
JOB NO. 2419

\\noe\2419\2419\Dwg\Production\Structural_Liftech\Design\GENERAL\S3.1 FLOAT PLATFORM AND RAMP GENERAL ARRANGMENT.dwg Oct 15, 2024 - 8:31pm

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ENLARGED FLOAT PLAN - MOVEABLE AND FIXED RAMPS AND PLATFORMS

1/2" = 1'-0"

1
G3.3 | S3.2

95% SUBMITTAL

REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
Lisa M. Odegaard
No. 544416
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
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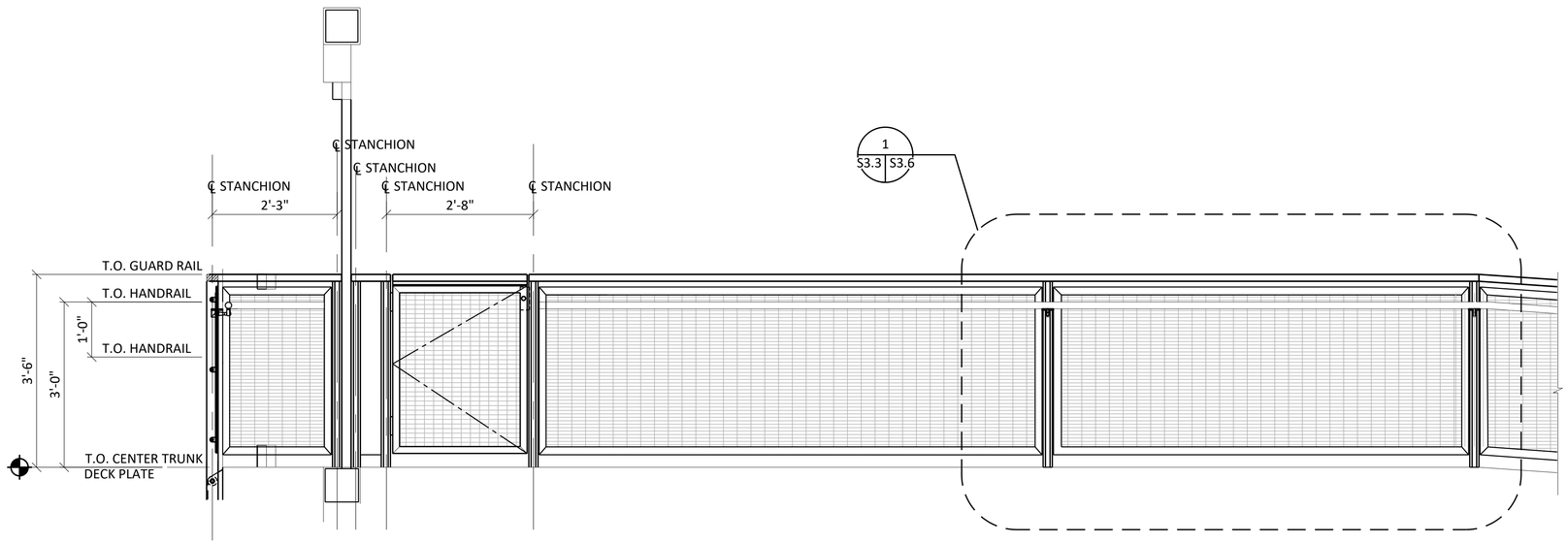
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PLATFORM AND RAMP ENLARGED PLAN

DATE	10-15-24
SHEET	OF
DRAWING NO.	S3.2
JOB NO.	2419

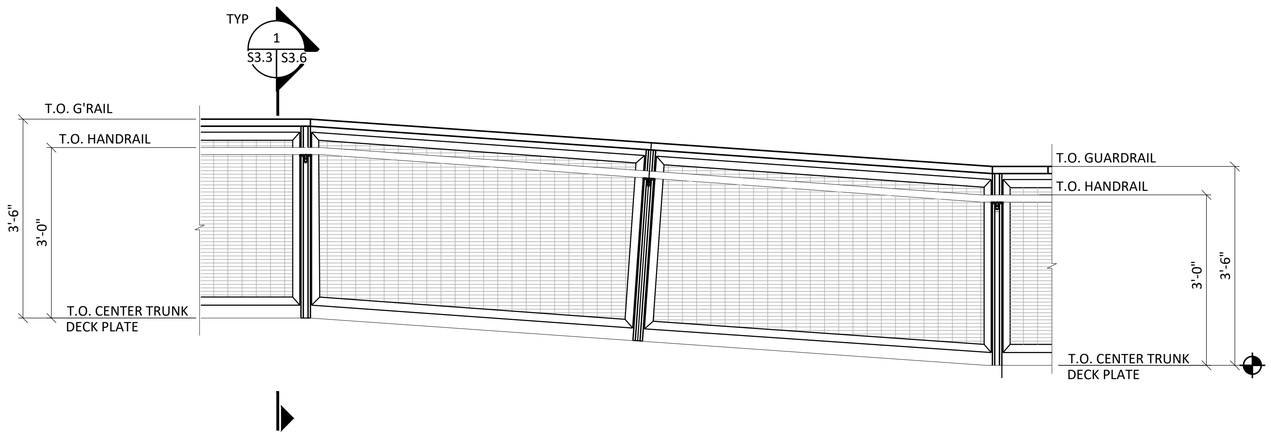
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LONGITUDINAL SECTION/ELEVATION AT PLATFORM 1

1 S3.1 S3.3

3/4" = 1'-0"



LONGITUDINAL SECTION/ELEVATION AT RAMPS A AND B

2 S3.1 S3.3

3/4" = 1'-0"

FLOAT PLATFORM AND RAMP GENERAL NOTES

A. ALL WORK IS NEW UNLESS OTHERWISE INDICATED.

B. FOR FLOAT STRUCTURAL FRAMING INFORMATION, SEE STRUCTURAL DRAWINGS.

C. THE GUARDRAIL AND RAILINGS SHOWN ON THESE DRAWINGS ARE INTENDED ONLY TO DESCRIBE THE DESIGN INTENT. SHOP DRAWINGS AND FABRICATION DETAILS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO INITIATING CONSTRUCTION.

D. THE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER OF RECORD, SHALL BE RESPONSIBLE FOR THE APPROPRIATE DETAILS TO CREATE ISOLATION OF DISSIMILAR MATERIALS AND PROVIDE CATHODIC PROTECTION.

E. FOR TYPICAL HANDRAIL DETAIL SEE SHEET S3.6.

F. POST ARE NOT SHOWN SEE SHEET S3.14 FOR POST LOCATIONS

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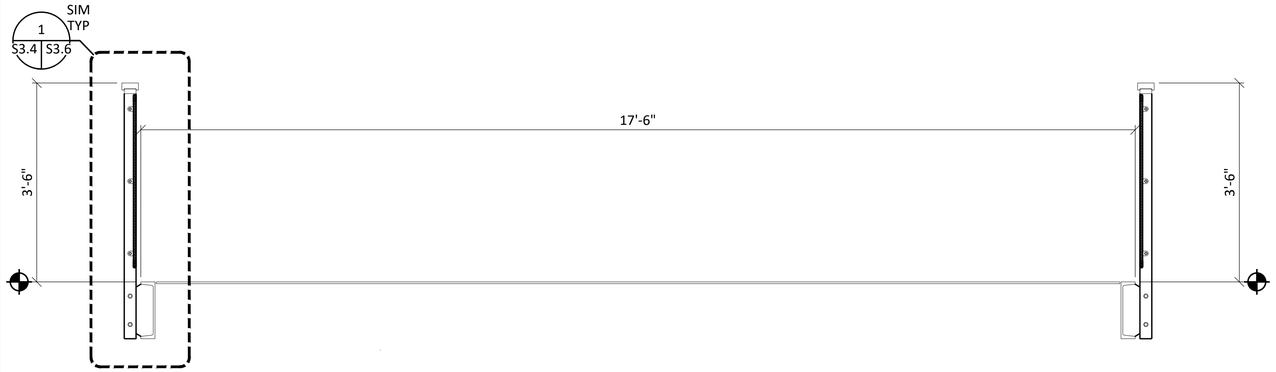
PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: FLOAT PLATFORM AND RAMP ELEVATIONS - 1

DATE	10-15-24
SHEET	OF
DRAWING NO.	S3.3
JOB NO.	2419

\\nas\2419\2419Dwg\Production\Structural_Liftech\Design\S3.3 FLOAT PLATFORM AND RAMP ELEVATIONS - 1.dwg 10/15/2024 8:38 PM ahm hoffpauir

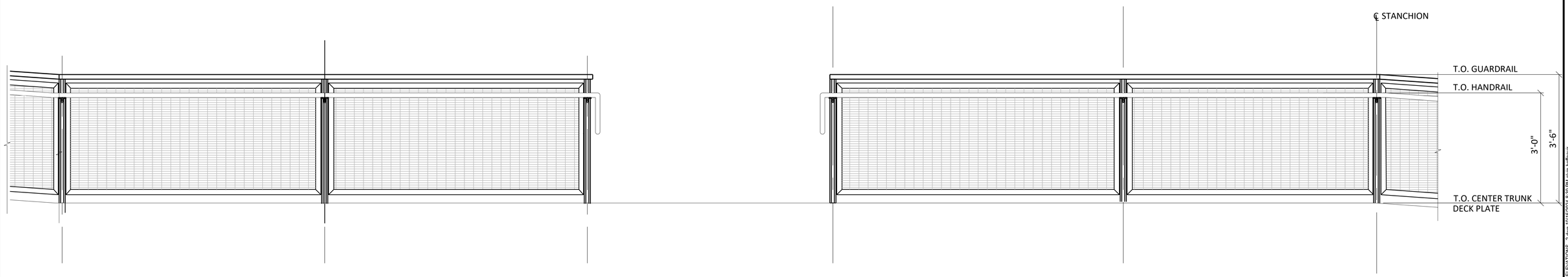
FOR NOTES SEE SHEETS S3.3.



TRANSVERSE SECTION AT PLATFORMS 1-3 AND RAMPS A AND B

1 / S3.1 | S3.4

3/4" = 1'-0"



LONGITUDINAL SECTION/ELEVATION AT PLATFORM 2

2 / S3.1 | S3.4

3/4" = 1'-0"

95% SUBMITTAL

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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CHECKED BY: LMO

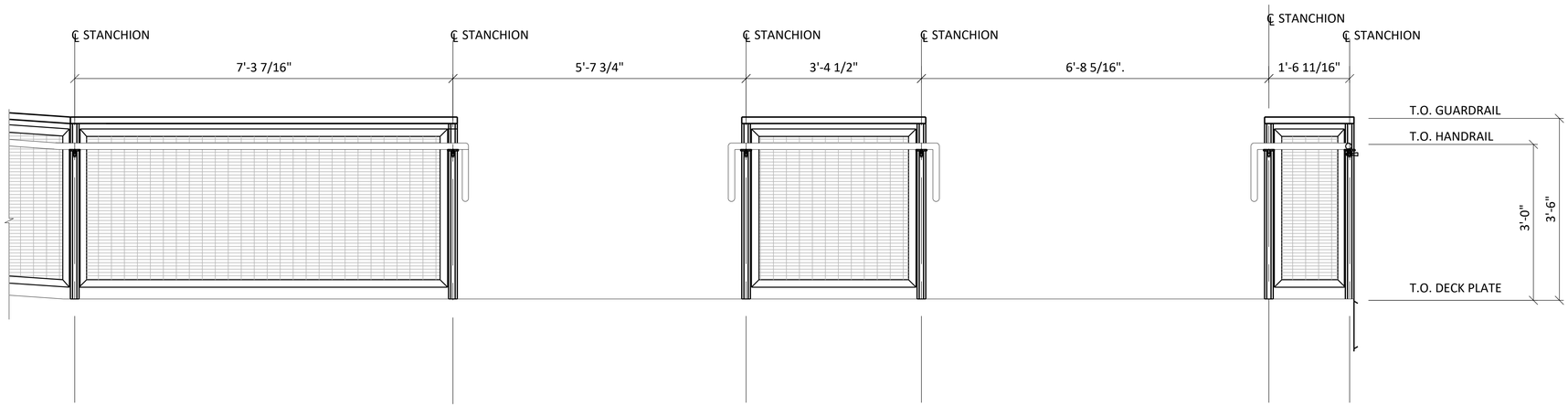
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PLATFORM AND RAMP ELEVATIONS - 2

DATE 10-15-24
SHEET OF
DRAWING NO. S3.4
JOB NO. 2419

\\mac\Li\2419\24190\Dwgs\Production\Structural_Liftech\Design\S3.4 FLOAT PLATFORM AND RAMP ELEVATIONS - 2.dwg 10/15/2024 8:39 PM alvin hoffpauir

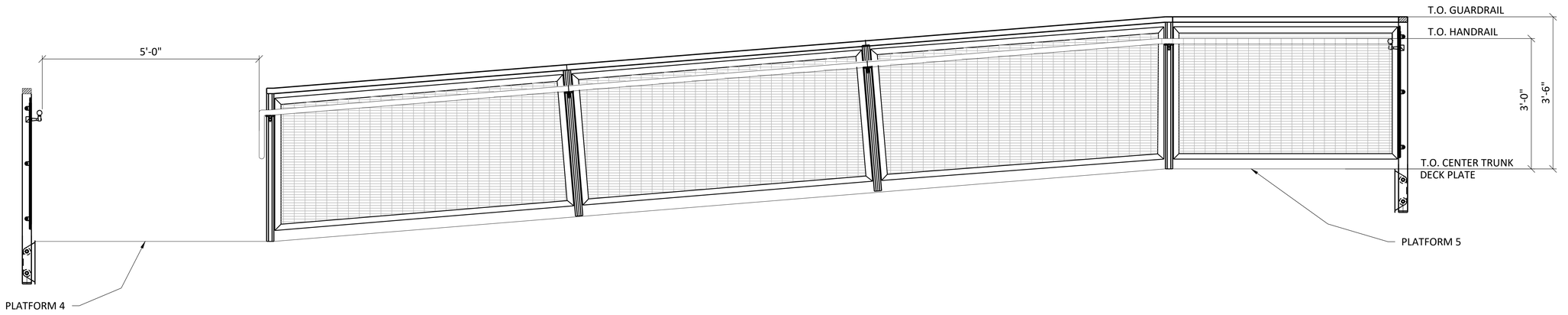
FOR NOTES SEE SHEETS S3.3.



LONGITUDINAL SECTION/ELEVATION AT PLATFORM 3

1 S3.1 | S3.5

3/4" = 1'-0"



LONGITUDINAL SECTION/ELEVATION AT RAMP F

2 S3.1 | S3.5

3/4" = 1'-0"

95% SUBMITTAL

REVISIONS NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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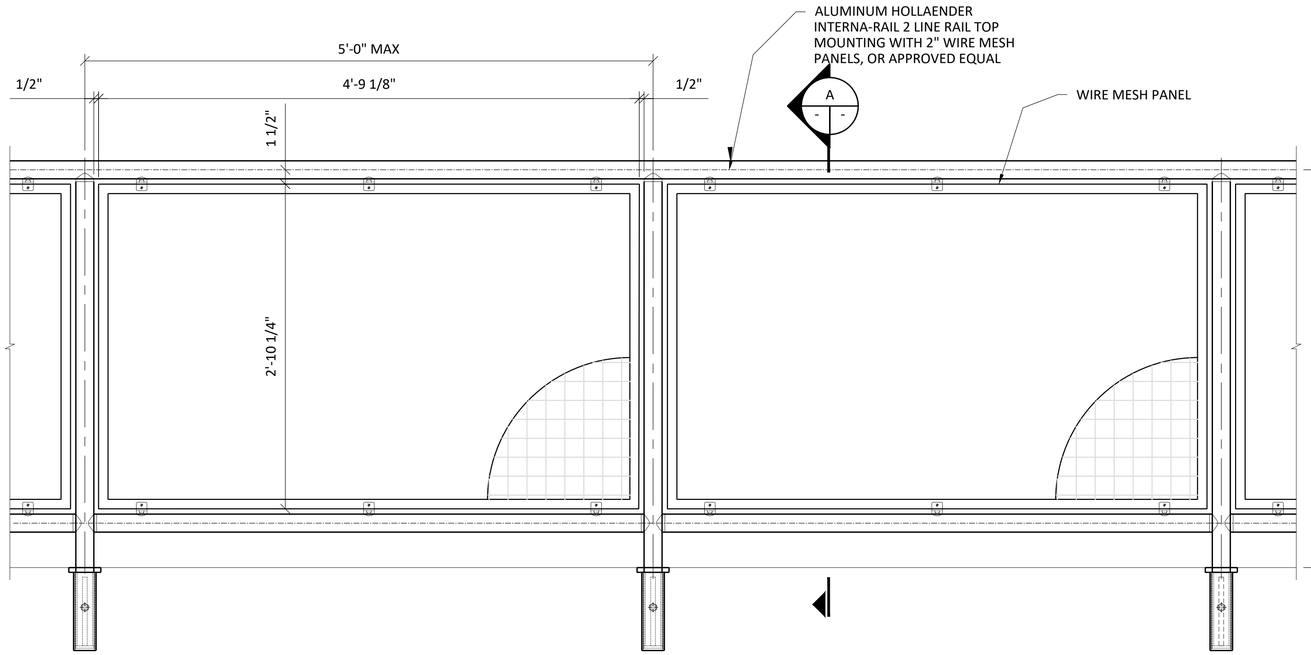
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: FLOAT PLATFORM AND RAMP ELEVATIONS - 3

DATE 10-15-24
SHEET OF
DRAWING NO. S3.5
JOB NO. 2419

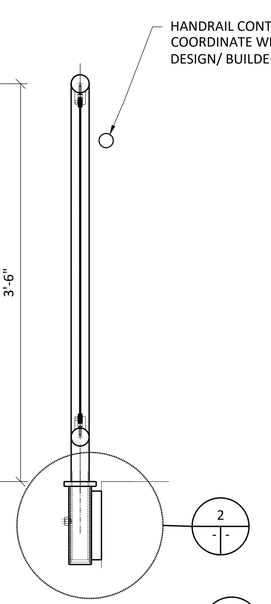
tmac/d:\19\2419\Dwg\Production\Structural_Liftech\Design\S3.5 FLOAT PLATFORM AND RAMP ELEVATIONS - 3.dwg 10/15/2024 8:34 PM alvin hoffpauir



TYPICAL HANDRAIL ELEVATION

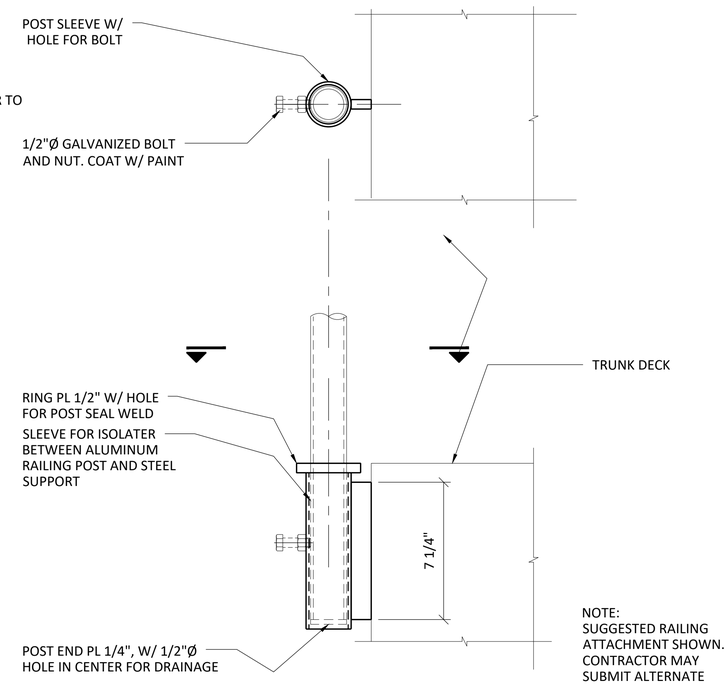
1-1/2" = 1'-0"

1 / G3.3 | S3.6



SECTION

1-1/2" = 1'-0"



DETAIL

3" = 1'-0"

2

95% SUBMITTAL

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
PLATFORM AND RAMP RAILING DETAILS

DATE	10-15-24
SHEET	OF
DRAWING NO.	S3.6
JOB NO.	2419

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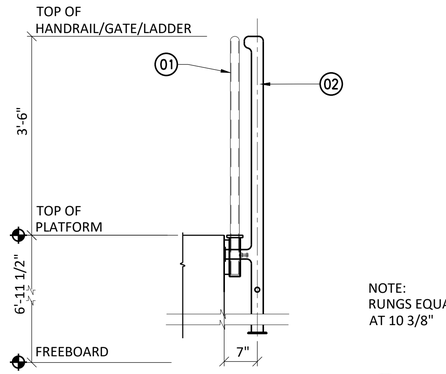
SERVICE ACCESS STAIR AND LADDER GENERAL NOTES

A. LADDER DRAWINGS ARE INTENDED ONLY TO DESCRIBE THE DESIGN INTENT. SHOP DRAWINGS AND FABRICATION DETAILS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO INITIATING CONSTRUCTION.

B. DIMENSIONS ARE APPROXIMATE BECAUSE FLOAT DECK IS SLOPED

FLOAT LADDER KEYED NOTES

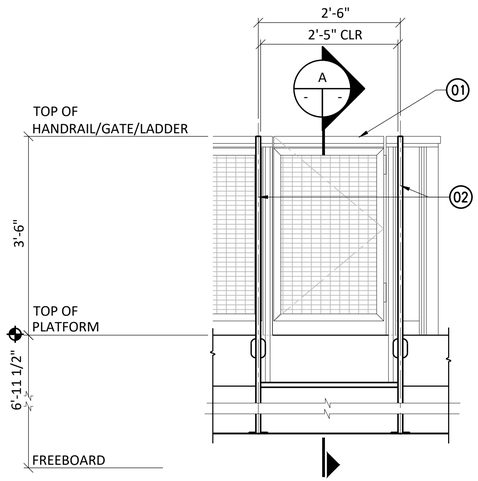
1. GUARDRAIL GATE
2. LADDER



NOTE:
RUNGS EQUALLY SPACED
AT 10 3/8"

LADDER SECTION
3"=1'-0"

A
-



NOTE:
SERVICE ACCESS LADDERS AT
PLATFORM 2 ARE SIMILAR
EXCEPT FREEBOARD IS 7'-9 1/2"

SERVICE ACCESS LADDER ELEVATION
3"=1'-0"

1
S3.1 | S3.7

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REGISTERED PROFESSIONAL ENGINEER
Lily O Sodergren
No. S-4416
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
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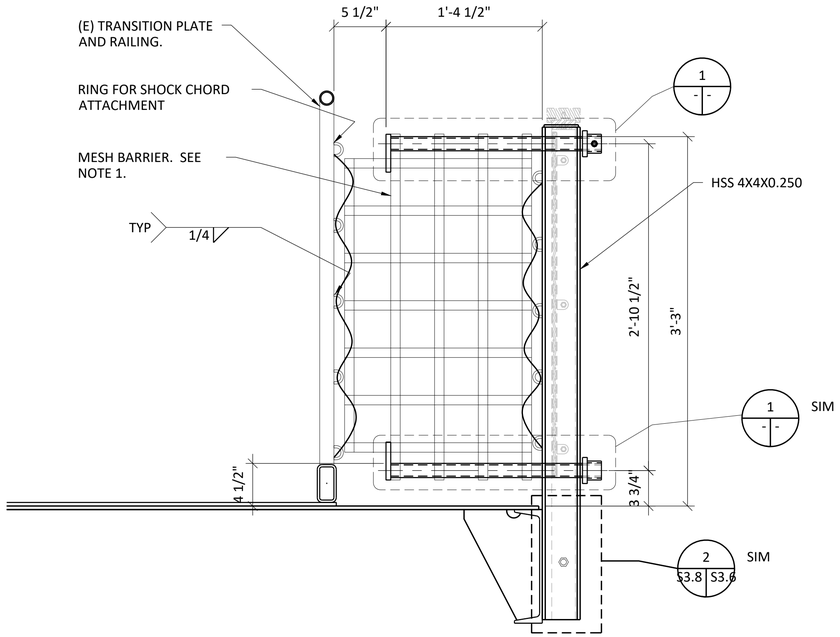
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
SERVICE ACCESS LADDER SECTIONS AND ELEVATIONS

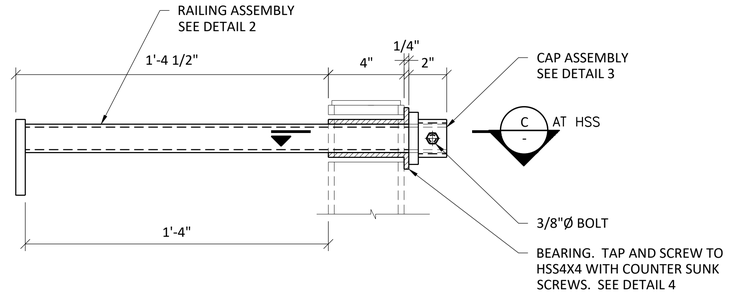
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SHEET	OF
DRAWING NO.	S3.7
JOB NO.	2419

\\moe\241902419\Dwgs\Production\Structural_Liftech\Design\S3.7 SERVICE ACCESS LADDER SECTIONS AND ELEVATIONS.dwg 10/15/2024 8:38 PM alvin.hoffpauir



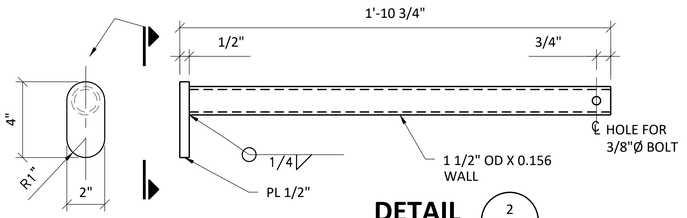
SECTION
1 1/2" = 1'-0"

A
S3.2 S3.8



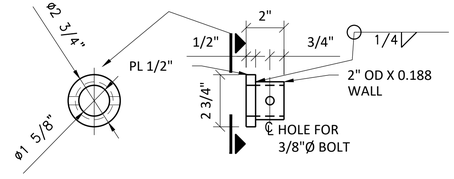
DETAIL
3" = 1'-0"

1



DETAIL
3" = 1'-0"

2

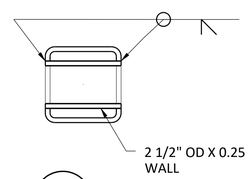


DETAIL
3" = 1'-0"

3

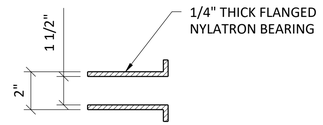
NOTES

1. MESH BARRIER TO BE US NETTING TWO SIDED EZ BARRIER PANELS OR APPROVED EQUAL. MESH SIZE TO HAVE OPENINGS LESS THAN 4"X4".
2. ATTACH STRAP ENDS TO THE TOP AND BOTTOM SLIDING RAILS.
3. ATTACH SIDES OF MESH TO GANGWAY TRANSITION PLATE VERTICAL RAIL AND HSS4X4 WITH BUNGEE SHOCK CORD. BUNGEE SHOCK CORD SHALL HAVE A BREAKING CAPACITY LESS THAN 200 LBS.
4. SLIDING RAILINGS MAY NEED TO BE RESET AFTER A LARGE STORM OR SEISMIC EVENT. THIS MAY INCLUDE SLIDING THE RAILINGS AND MESH BACK INTO PLACE, AND REPLACING THE BUNGEE SHOCK CORD.



SECTION
3" = 1'-0"

C



DETAIL
3" = 1'-0"

4

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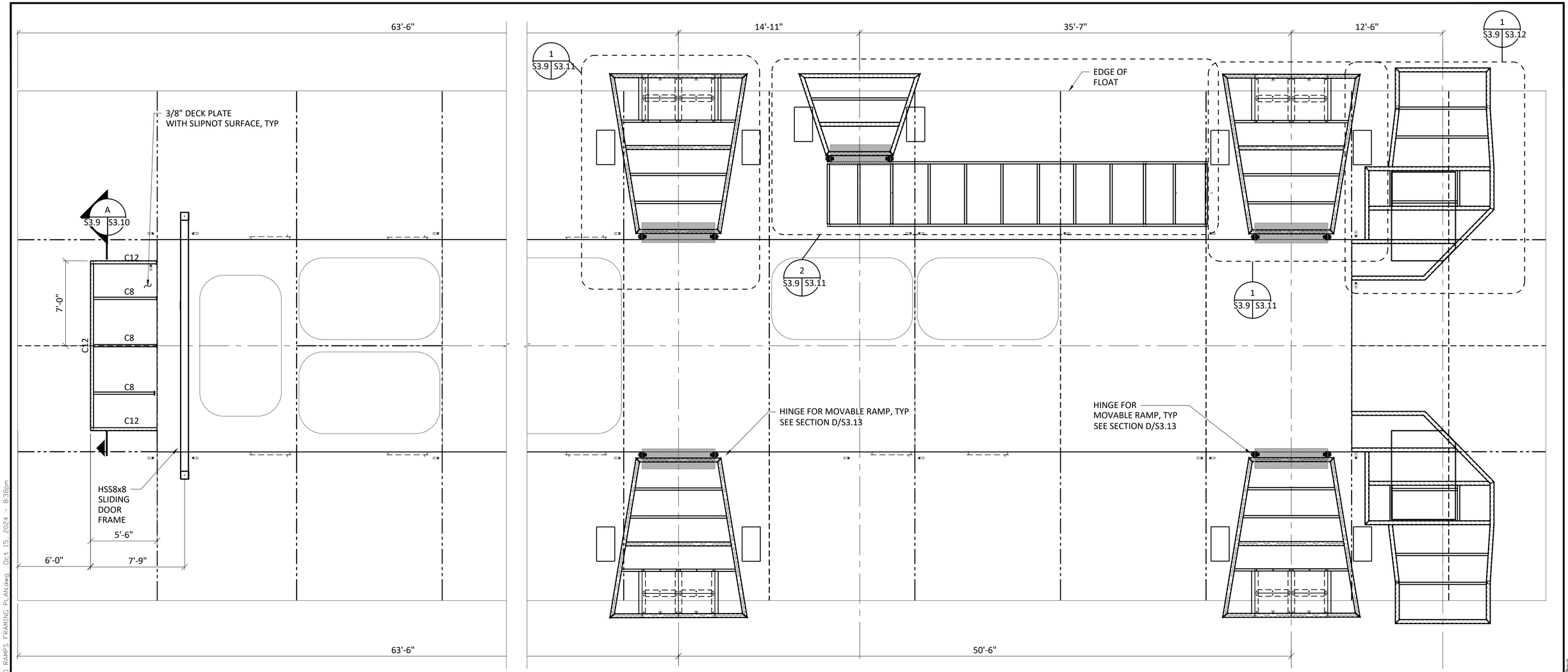
DESIGNED BY:	ES
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PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: SLIDING GUARDRAIL DETAILS

DATE	10-15-24
SHEET	OF
DRAWING NO.	S3.8
JOB NO.	2419

\\mod2419\2419Dwg\Production\Structural_Liftech\Design\S3.8 SLIDING GUARDRAIL DETAILS.dwg 10/15/2024 8:37 PM akirin hoffpauir



NOTE:

1. BEAM SIZE C6 IS C6x8.2 OR BENT PL 6X2.5X3/8 TYPICAL UON. MAX SPACING=27"
2. BEAM SIZE C8 IS C8x11.5 TYPICAL UON.
3. BEAM SIZE C12 IS C12x20.7 TYPICAL.
4. GUARDRAILS NOT SHOWN FOR CLARITY.

PLATFORM AND RAMP FRAMING PLAN

1/4"=1'-0"

A
- | -

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REVISIONS NO.	DATE	DESCRIPTION	BY	CHKD	APRD
0	##/#/##	_____	AH	__	__

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REGISTERED PROFESSIONAL ENGINEER
Eric G Soderstrom
Exp. 12-31-25
STRUCTURAL
STATE OF CALIFORNIA

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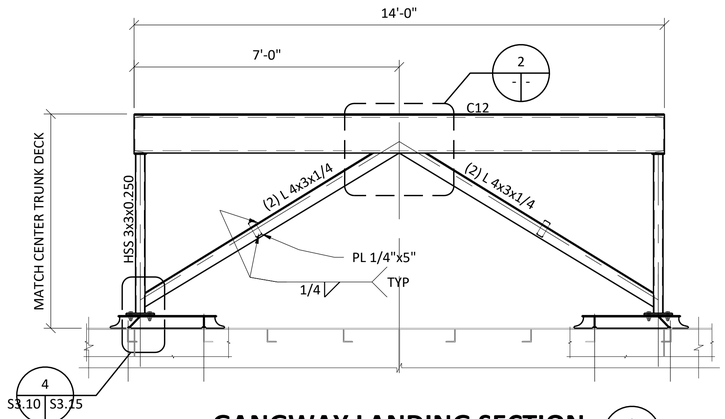
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PLATFORM AND RAMPS FRAMING PLAN

DATE	10-15-24
SHEET	OF
DRAWING NO.	S3.9
JOB NO.	2419

\\moe\2419\Dwg\Production\Structural Liftech\Design\S3.9 FLOAT PLATFORM AND RAMPS FRAMING PLAN.dwg Oct 15, 2024 - 8:38pm

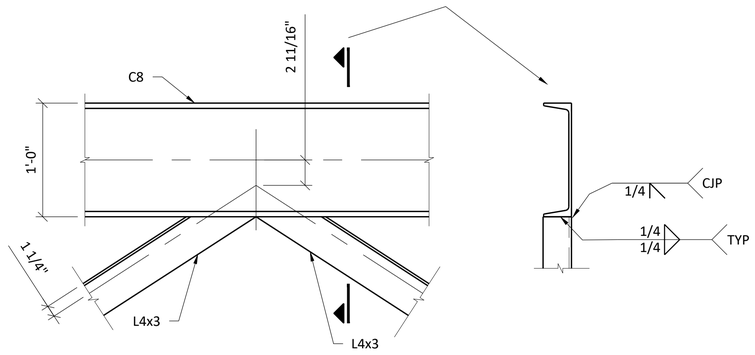
\\moe\2419\Dwg\Production\Structural_Liftech\Design\S3.9 FLOAT PLATFORM AND RAMPS FRAMING PLAN.dwg 10/15/2024 8:38 PM arlen hoffpauir



GANGWAY LANDING SECTION

1/4" = 1'-0"

A
S3.9 S3.10



DETAIL

1-1/2" = 1'-0"

2
- -

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REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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FOR LIFTECH CONSULTANTS INC.
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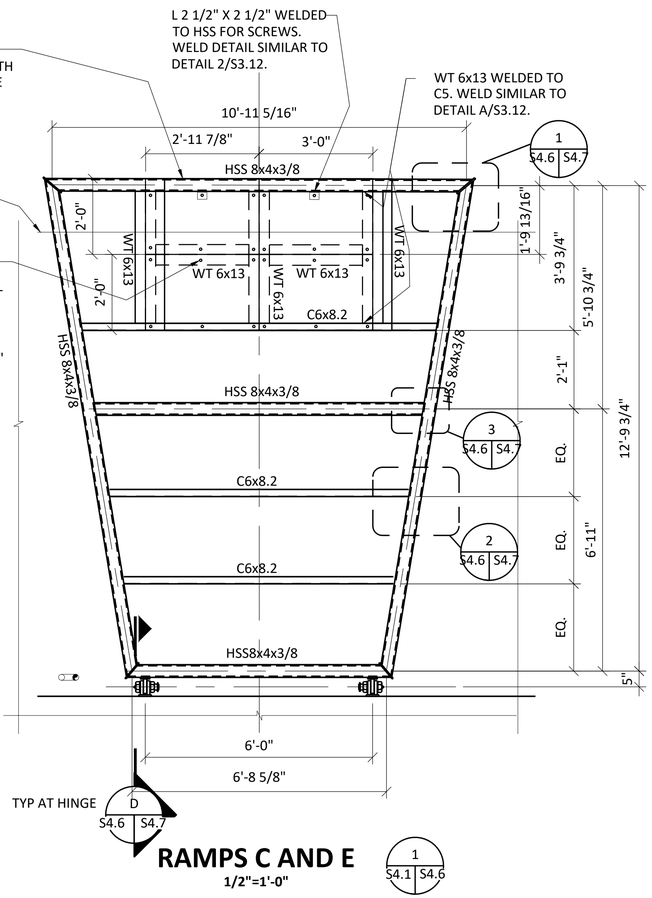
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PLATFORM AND RAMP FRAMING SECTIONS

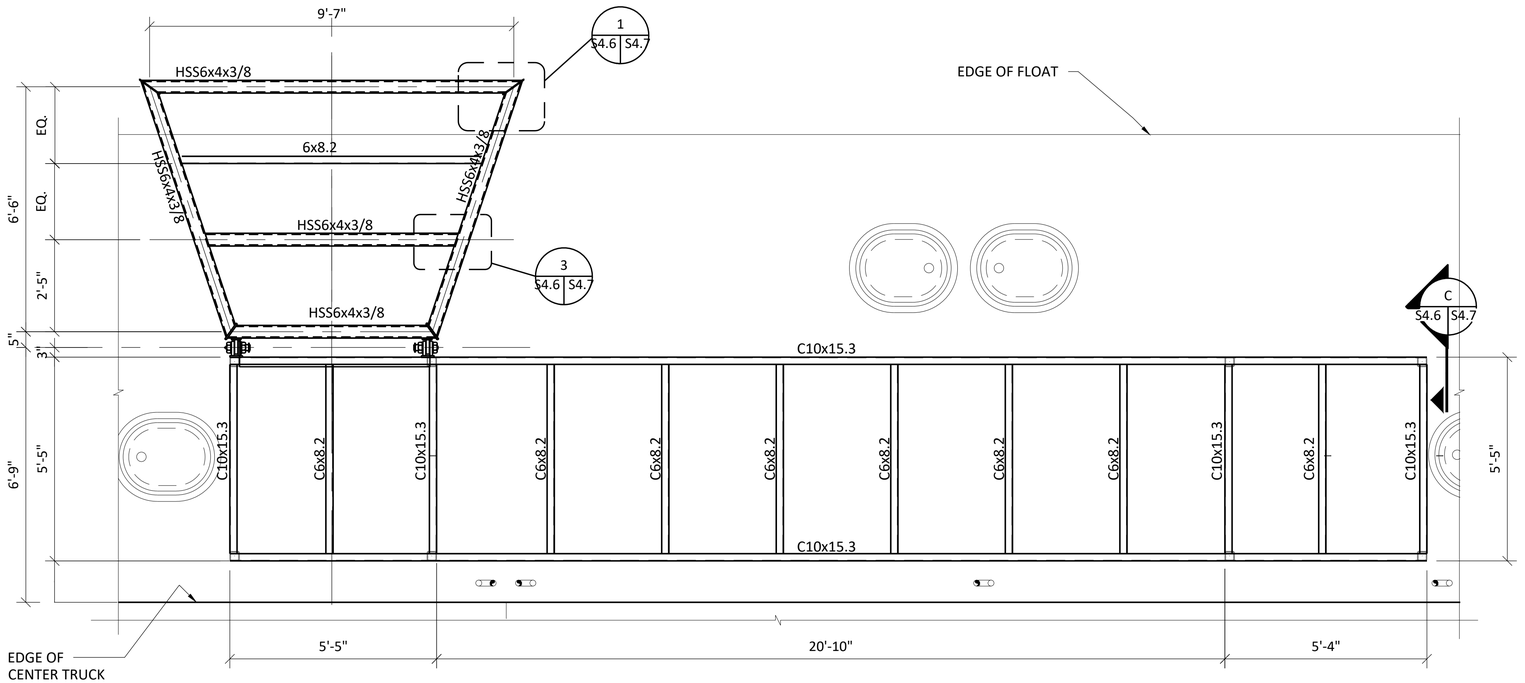
DATE 10-15-24
SHEET OF
DRAWING NO. S3.10
JOB NO. 2419

tmac\2419\2419Dwgs\Production\Structural_Liftech\Design\SS\ 10 FLOAT PLATFORM AND RAMP FRAMG SENCTIONS.dwg 10/15/2024 8:37 PM allen hoffpauir



RAMPS C AND E

1/2"=1'-0"



DETAIL

1/2"=1'-0"

NOTE:
1. FIXED DECK PLATE NOT SHOWN FOR CLARITY.
2. FOR POST BASE DETAIL SEE DETAIL 5/S2.13.

95% SUBMITTAL

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APRD
0	##/#/##	_____	AH	__	__

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REGISTERED PROFESSIONAL ENGINEER — Exp. 12-31-25 — STRUCTURAL — STATE OF CALIFORNIA
EGS.jpg
FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

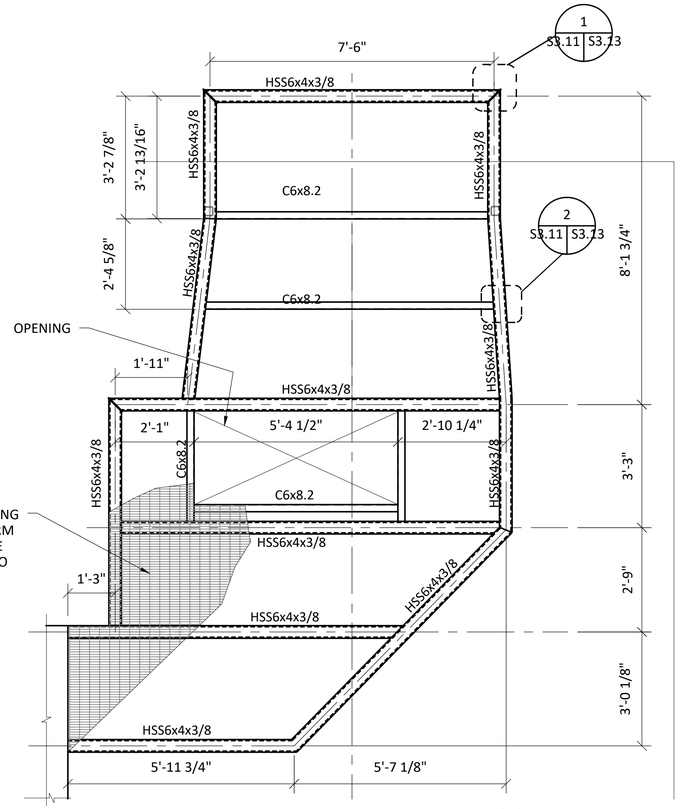
PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
FLOAT PLATFORM AND RAMP PLANS - 1

DATE 10-15-24
SHEET OF
DRAWING NO. S3.11
JOB NO. 2419

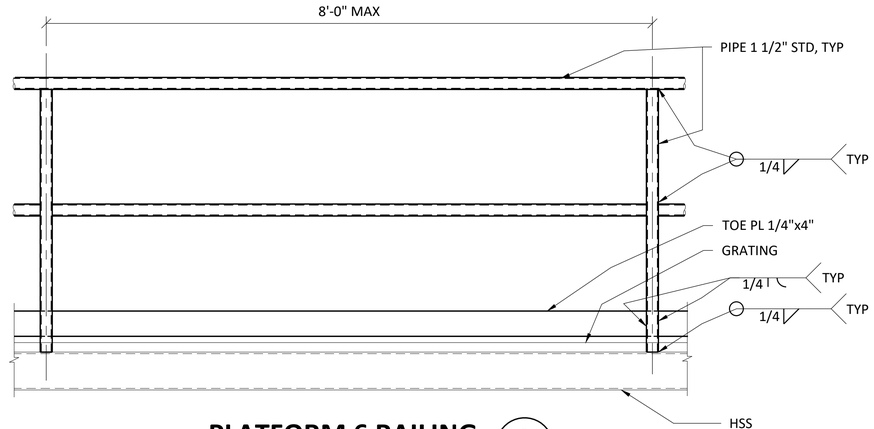
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PLATFORM 6 FRAMING
1/2" = 1'-0" (1 / S3.9 | S3.12)

NOTE:
FOR RAILING ATTACHMENTS SEE
DETAIL 2



PLATFORM 6 RAILING
1" = 1'-0" (2 / - | -)

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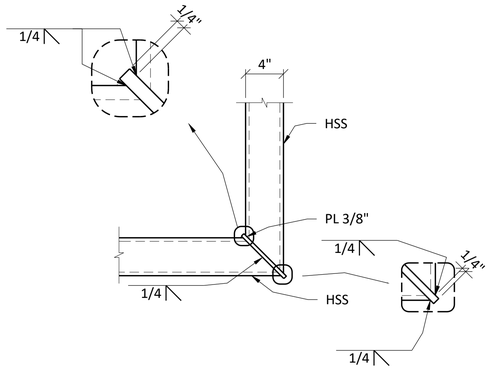
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

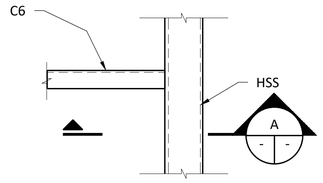
SHEET
FLOAT PLATFORM AND RAMP PLANS - 2

DATE 10-15-24
SHEET OF
DRAWING NO. S3.12
JOB NO. 2419

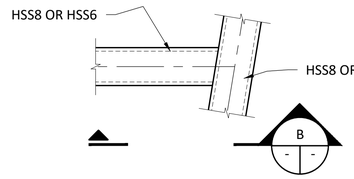
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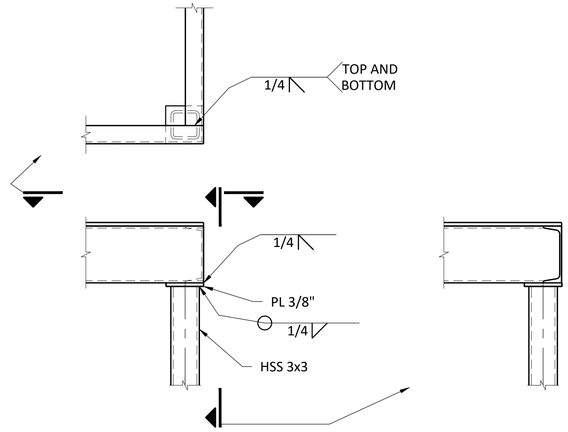
DETAIL 1 — S3.11 | S3.13
1 1/2" = 1'-0"



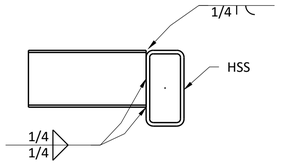
DETAIL 2 — S3.11 | S3.13
1-1/2"=1'-0"



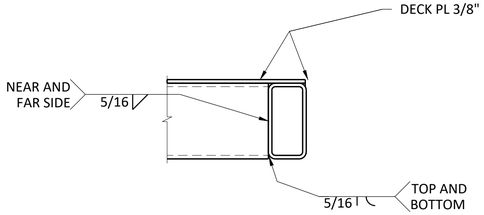
SECTION 3 — S3.11 | S3.13
1 1/2" = 1'-0"



SECTION C — S3.11 | S3.13
1-1/2"=1'-0"



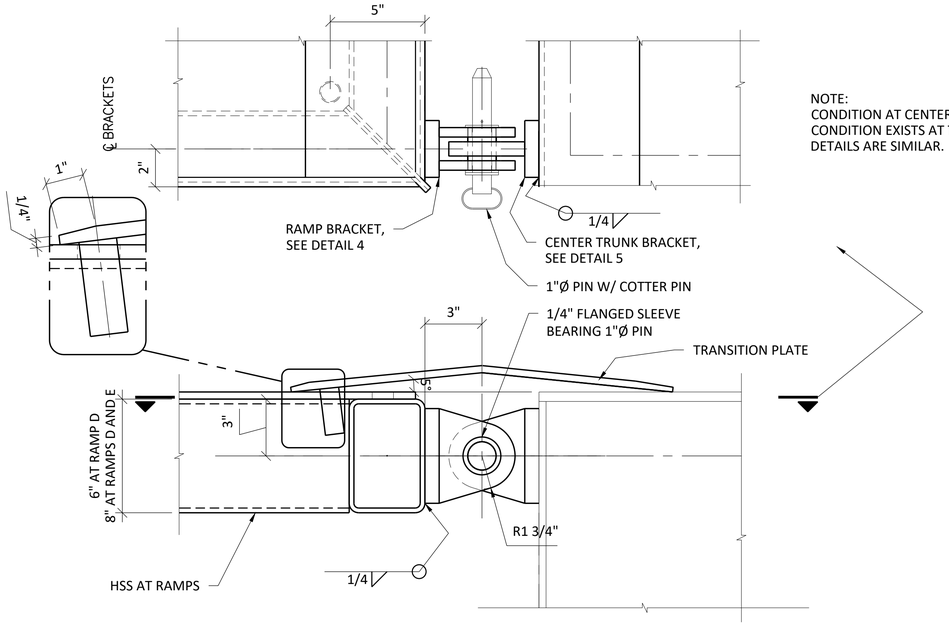
SECTION A
1-1/2"=1'-0"



SECTION B
1 1/2" = 1'-0"

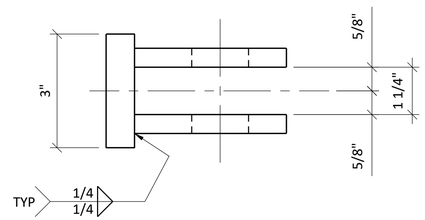
MOVABLE RAMP

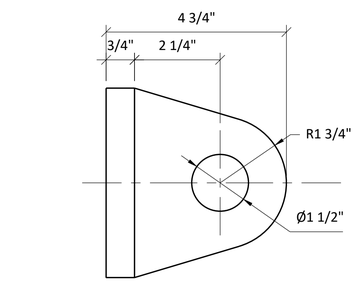
CENTER TRUNK



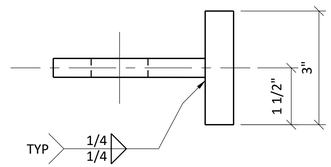
SECTION D — S3.2 | S3.13
3"=1'-0"

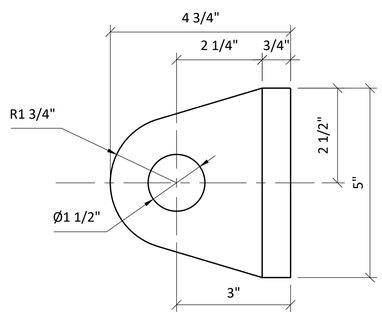
NOTE:
CONDITION AT CENTER TRUCK SHOWN, ONE CONDITION EXISTS AT THE FIXED PLATFROM, DETAILS ARE SIMILAR.





RAMP BRACKET 4
6" = 1'-0"





CENTER TRUNK BRACKET 5
6" = 1'-0"

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FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE

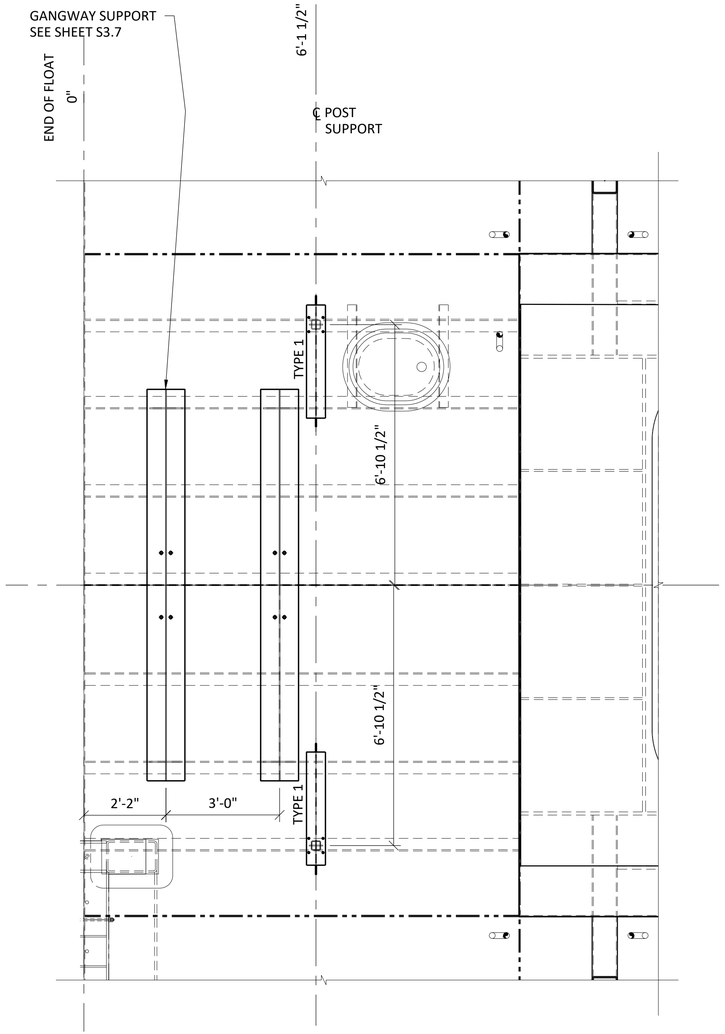
DESIGNED BY: ES
DRAWN BY: AH
CHECKED BY: LMO

PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
MOVABLE PLATFORM DETAILS

DATE 10-15-24
SHEET OF
DRAWING NO. S3.13
JOB NO. 2419

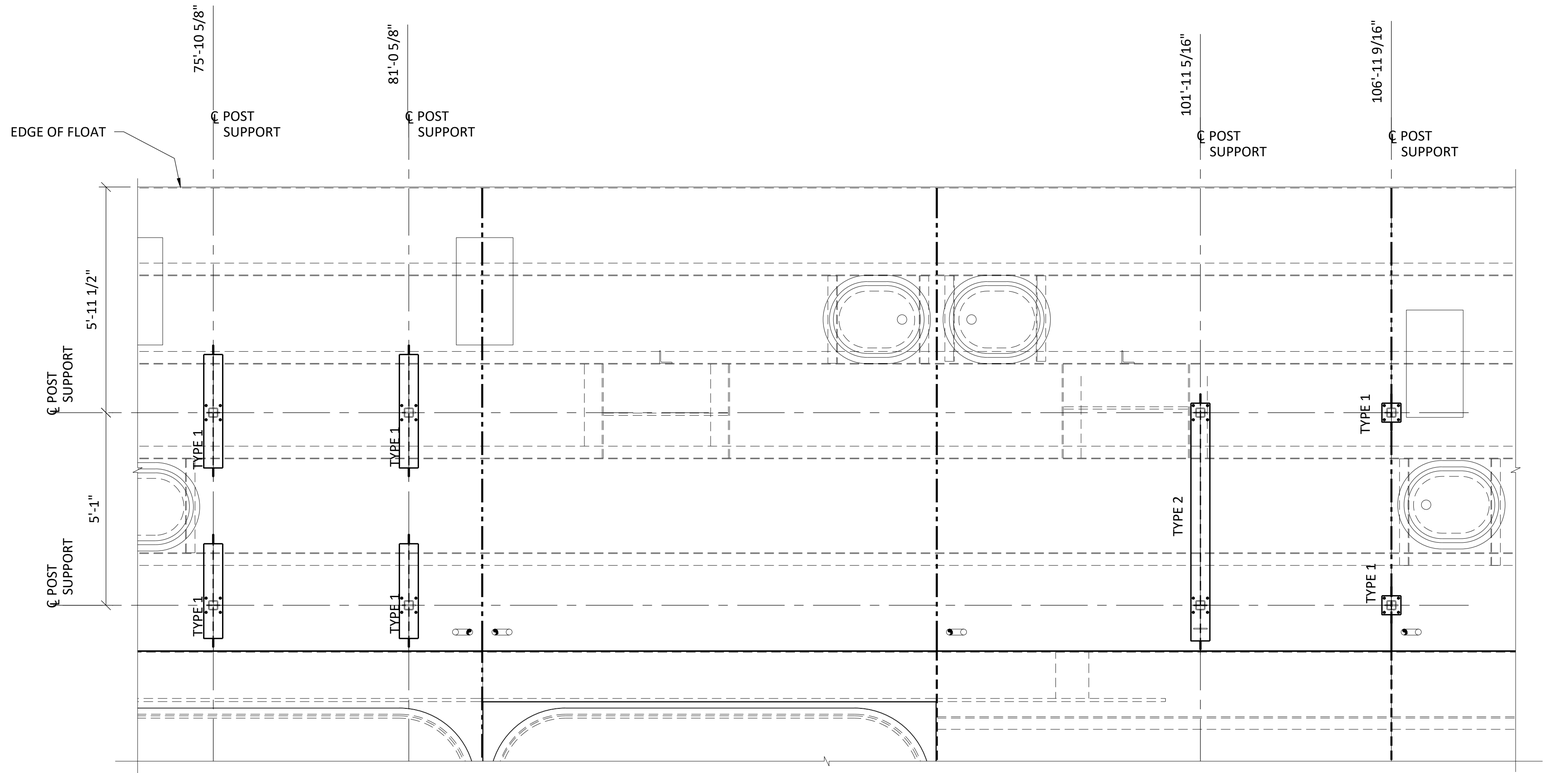
lmoe\2419\24\Dwgs\Production\Structural_Liftech\Design\S3.13 MOVABLE PLATFORM DETAILS.dwg 10/15/2024 5:37 PM ahm hoffpaur



POST SUPPORT LOCATIONS AT GANGWAY LANDING PLATFORM

1/2"=1'-0"

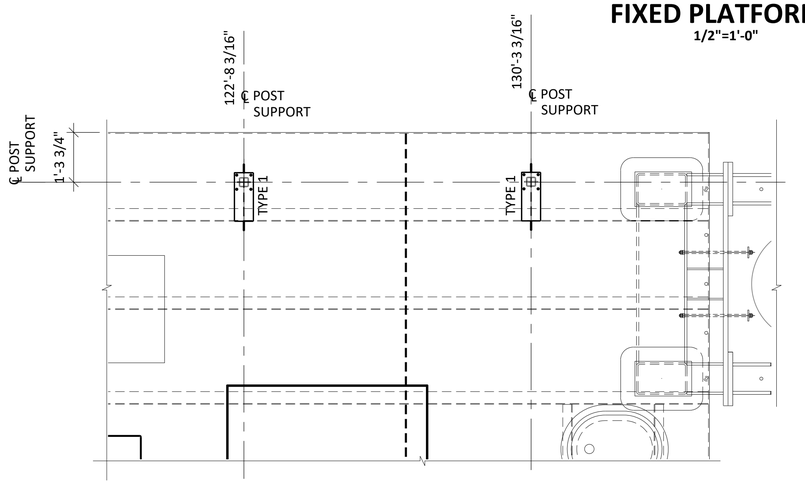
1



POST SUPPORT LOCATIONS AT FIXED PLATFORMS

1/2"=1'-0"

2



POST SUPPORT LOCATIONS AT CHARGER PLATFORM

1/2"=1'-0"

3

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NO.	DATE	DESCRIPTION	BY	CHKD	APRD
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REGISTERED PROFESSIONAL ENGINEER
Erik G Soderstrom
No. S-4426
Exp. 12-31-18
STRUCTURAL
STATE OF CALIFORNIA

FOR LIFTECH CONSULTANTS INC.
SIGNATURE DATE:

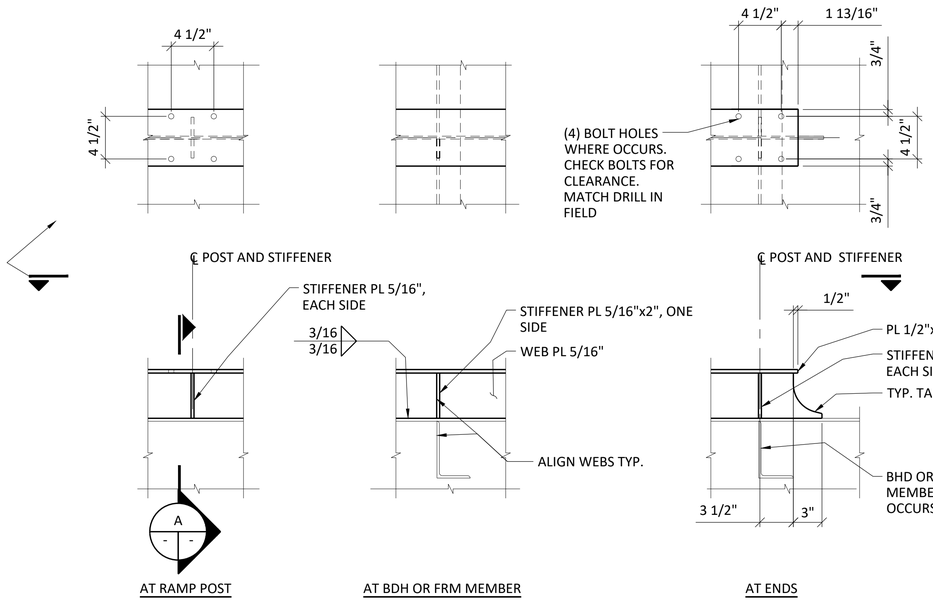
DESIGNED BY: ES
DRAWN BY: AH
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PROJECT
WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET
POST SUPPORT LOCATIONS

DATE 10-15-24
SHEET OF
DRAWING NO. S3.14
JOB NO. 2419

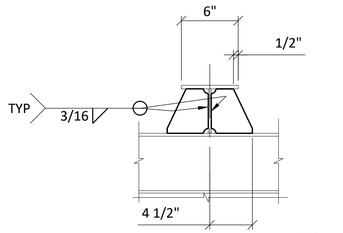
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TYPICAL POST SUPPORT DETAILS

1-1/2" = 1'-0"

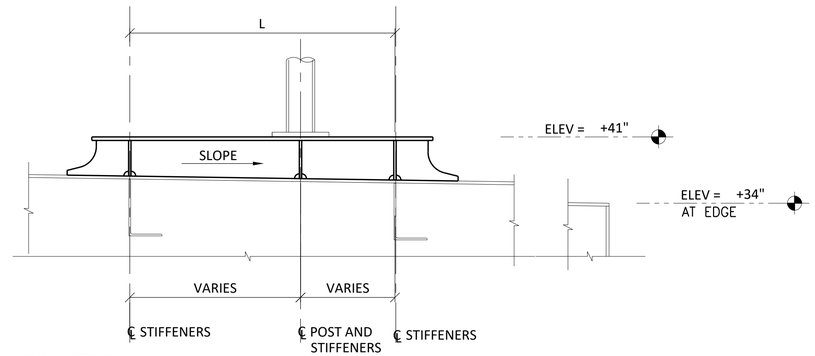
1



SECTION

1-1/2" = 1'-0"

A
- -

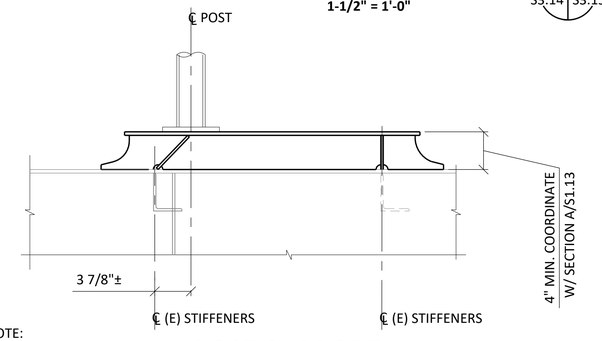


NOTE:
1. FOR INFORMATION NOT SHOWN SEE DETAIL 1
2. IF CENTERLINE OF POST IS WITHIN 4" OF STIFFENER SEE DETAIL 2

POST SUPPORT - TYPE 1

1-1/2" = 1'-0"

2
S3.14 | S3.15

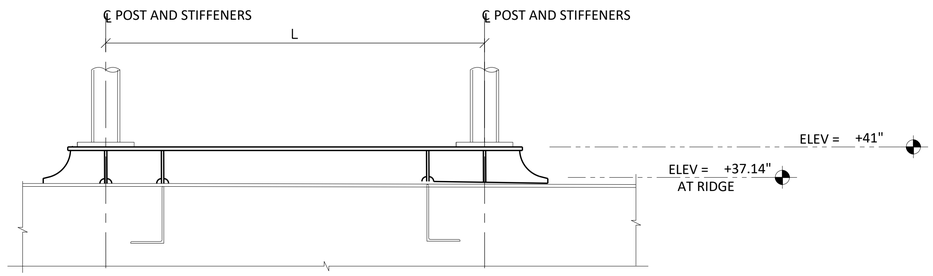


NOTE:
FOR INFORMATION NOT SHOWN SEE DETAIL 1

POST SUPPORT

1-1/2" = 1'-0"

3
S3.14 | S3.15

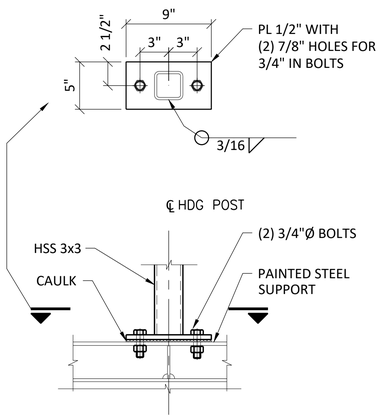


NOTE:
FOR INFORMATION NOT SHOWN
SEE DETAIL 1

POST SUPPORT - TYPE 2

1-1/2" = 1'-0"

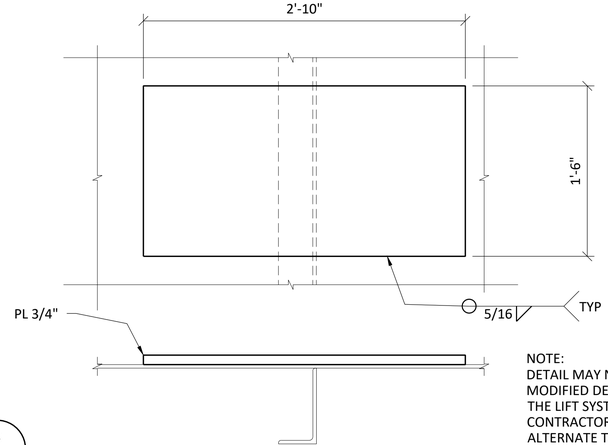
4
S3.14 | S3.15



GANGWAY LANDING RAMP POST SUPPORT

1-1/2" = 1'-0"

5
S3.10 | S3.15



NOTE:
DETAIL MAY NEED TO BE MODIFIED DEPENDING ON THE LIFT SYSTEM USED. CONTRACTOR TO PROPOSE ALTERNATE TO ENGINEER OF RECORD IF NECESSARY.

MOVABLE RAMP LIFT SYSTEM BASE PLATE DETAIL

1-1/2" = 1'-0"

6
S3.14 | S3.15

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FOR LIFTECH CONSULTANTS INC
SIGNATURE DATE:_____

DESIGNED BY:	ES
DRAWN BY:	AH
CHECKED BY:	LMO

PROJECT: WETA DOWNTOWN SF FERRY TERMINAL UNIVERSAL CHARGING FLOAT PROJECT - NEW FLOAT

SHEET: POST SUPPORT DETAILS

DATE	10-15-24
SHEET	OF
DRAWING NO.	S3.15
JOB NO.	2419

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755 Baywood Drive, Suite 228
Petaluma, CA 94954
(415) 884-8011
foth.com

September 14, 2026

Chad Mason
San Francisco Bay Water Emergency Transportation Authority
The Embarcadero – Pier 9, Suite 9

Re: WETA Vallejo Ferry Terminal Gap Analysis Memorandum

Dear Chad Mason:

Foth has prepared this memorandum to document identified key differences in the scope for the Vallejo Ferry Reconfiguration Project. The source for the float to be utilized at the Vallejo Terminal has changed from modifying the existing float at Pier 48 ½ to a new version of the Universal Charging Float (UCF), sourced under a separate contract. This memorandum will provide recommendations on whether the identified gap items should be addressed as part of the float procurement and construction contract or within the Vallejo Ferry Terminal (VFT) Reconfiguration scope of work.

Chain of Communication

All questions, inquiries, or Requests for Information (RFI) regarding elements of the new float shall be submitted to WETA in writing via the RFI process outlined in Volume 1, Section 01 30 00. WETA will coordinate responses to RFIs between the VFT Contractor and JT Marine and serve as the point of contact between the two parties.

Float Configuration

It is recommended that all Float Configuration items listed below be addressed within the float construction contract by the float supplier (JT Marine). JT Marine shall coordinate with the VFT Reconfiguration contractor via WETA to ensure compatibility between the float and the reconfigured terminal.

- The forward boarding ramp on the Starboard side of the float (Ramp C) will be shifted aft 14 feet – 11 inches to align with Ramp D.
- The fifth (5th) and sixth (6th) fenders (moving clockwise from the forward starboard corner of the float) will be shifted to accommodate the relocated Ramp C. The 5th fender will shift 13 inches forward, and the 6th fender will shift 7 inches aft.
- Ramps A and B will return to sloped ramps with a maximum slope of 1V:12H rather than maintaining a consistent elevation of 4 feet – 3 inches over the float for all platforms and ramps.
    - *Deviation from previously planned Pier 48 ½ Float Modifications*

- The third movable ramp from the bow of the float on the Starboard side (Ramp E) and fixed ramp (Ramp F) will be removed.

- Starboard and Port Charging Platforms will not be installed.

- A pad eye will be added to the stern starboard pile keeper for a vessel spring line to accommodate starboard berthing.

- The gangway will rotate to land between the pile collars and the leading edge of the central trunk deck on the starboard side of the UCF. To accommodate that, the transverse T beams will be shifted to starboard on the float so that the inboard edge is aligned over the bulkhead between tanks S1 and C1 versus over a below deck frame as originally intended. A support bracket will be designed by VFT contractor to bolt to the transverse deck T beams.

- Landing beams will be moved outboard to the inboard edge along the C1/S1 tank bulkhead.

- Relocation of fenders, cleats, hatches, etc. as required to accommodate starboard gangway landing.

- Construct shims to allow pile guides intended for 36" piles to accommodate 24" piles when float is at the temporary facility.

- Install Bull Dog Lifting Mechanisms

It is recommended that the Float Configuration items listed below be addressed within the Vallejo Terminal Reconfiguration scope of work.

- The temporary float location will use the new 10'x90' gangway. The new float design will only accommodate this gangway. The new temporary landing will be required to accommodate the new gangway.

- Design of gangway landing platform on float.

    - The new gangway landing platform will be designed to land on the modified landing beams installed as part of the UCF procurement and construction contract. It will be important to provide As-Built plans to the VFT Design Builder to ensure that their gangway landing platform is compatible with the landing beams on the UCF.

- Construct the gangway support bracket which will bolt onto JT Marine's gangway landing beams. The design of the new gangway landing apparatus shall account for movements of float during vessel landing.

- Following delivery of the new float, the VFT contractor shall coordinate with WETA to perform a full inspection of the entire float, including but not limited to the condition of the coating, condition of welds, ultrasonic thickness measurements taken throughout the hull, condition of mooring fittings, condition of fendering elements and frames, etc. Submit a comprehensive report to WETA documenting findings.

- Perform ballasting of float per project specifications.

- Coordinate with WETA to retrieve the 24" dia. temporary float landing piles.

Utilities

It is recommended that the utility items listed below be addressed within the float construction contract by JT Marine.

- Install wireways for all utility and electrical components.
- Potable water and fire suppression; Infrastructure by JT Marine, piping by VFT Contractor.
- Sewage in 4" corrugated sewage hose, connection on both bow and stern of float. JT to install infrastructure to accept piping by VFT Contractor.

It is recommended that the Float Configuration items listed below be addressed within the Vallejo Terminal Reconfiguration scope of work.

- Design and installation of all conduit, hangers, wiring, connections and disconnections, inspections, and connections to existing systems as required to complete the installation and connection of utility and electrical components as shown on the contract plans.
- It should be noted that penetrations through the central trunk of the float will not be permitted.

Accessories

It is recommended that the utility items listed below be addressed within the float construction contract by JT Marine.

- Install mounts onto the railings which will support the LED strip lighting on all float railings.
- Install light pole base flanges.
- Cathodic Protection system for float hull.

It is recommended that the accessory items listed below be addressed within the Vallejo Terminal Reconfiguration scope of work.

- The float will be equipped with Lighting, Cameras, 120-Volt Power, Shore Power Connections, Ethernet, and Wi-Fi. The contractor will need to design and install lighting and cameras on poles, mounted to the canopy landing pads.
- Four (4) Clipper readers will be installed. It will be the responsibility of the reconfiguration contractor to coordinate with WETA during the installation of the readers.
- Install the LED strip railing lighting onto the mounts installed by JT Marine.
- Install lighting poles to the pole base flanges installed by JT Marine.

- Install all necessary components for a fully functional fire suppression system and potable water system including washdown areas.

Regulatory Compliance

The VFT Reconfiguration contractor shall be responsible for meeting all regulatory requirements including but not limited to those identified in the Permit Requirement Summary in Attachment 2.

Required Approvals

VFT Contractor will be required to secure permits, inspections, and approvals from the City of Vallejo Planning Division, Building Division, Public Works Division, Fire Prevention Division, and the Vallejo Flood and Wastewater District for the new float. See Conditions of Approval of Development Review PLN26-0075 for additional information and specific requirements.

Responsibility Matrix

Component	Contractor Responsibility	
	Float Construction	VFT Reconfiguration
Float Configuration		
Shift Ramp C	☑	
Shift Fenders	☑	
Install Sloped Ramps	☑	
Remove Ramps E and F	☑	
Do not Install Charging Platforms	☑	
Install Pad Eye	☑	
Shift T Beam for Gangway Landing	☑	
Relocate Landing Beams	☑	
Relocate Fenders, Cleats, Hatches for Gangway Landing	☑	
Install Pile Shims for Temporary Facility Piles	☑	
Install Bull Dog Lifting Mechanisms	☑	
Design and Install Gangway Landing Platform		☑
Construct Gangway Support Bracket		☑
Perform Full Float Inspection with WETA		☑
Perform Ballasting of Float		☑
Retrieve 24" Dia. Temporary Float Piles		☑
Utilities		
Install Utility Wireways	☑	
Complete Installation of Utilities		☑
Utilities		
Install Lighting Mounts		☑
Install Light Poles		☑
Install Lighting, Cameras, Power, Ethernet		☑
Install Clipper Readers		☑
Install LED Strip Lighting		☑
Install Lighting Units to Poles		☑
Install Components for Fire Suppression, Potable Water Systems		☑