

## RFP ADDENDUM #3

Date of Addendum: 03/05/2024

### NOTICE TO ALL POTENTIAL RESPONDENTS

The Request for Proposals (RFP) is modified as set forth in this Addendum. The original RFP Documents will remain in full force and effect, except as modified by this Addendum, which is hereby made part of the RFP. Respondent shall take this Addendum into consideration when preparing and submitting its Proposal.

### 1. PROPOSAL SUBMITTAL DEADLINE

The Amended Proposal submittal deadline remains the same and is not changed by this Addendum.

### 2. QUESTIONS AND ANSWERS

The following questions and answers are provided as a matter of information to clarify issues raised about the RFP. To the extent that changes to the RFP are required based on the questions received, the RFP has been modified as noted above in the RFP section of this Addendum.

Item	Questions and Answers
3.1	<p><u>Question:</u> Please confirm the scope of water and fire suppression utility services. Is the contractor to assume just extension of existing services to A, G and H floats, or are upgrades on the headwalk and supply lines anticipated? Can you provide as-built information on the existing utilities?</p> <p><u>Answer:</u> The Contractor is expected to tie into the existing services. Please find attached the as-builts as requested.</p>
3.2	<p><u>Question:</u> We request any information and pictures especially you might have on the old floats or debris pile you want removed that you may have? Also is there a clear path or right of way where we could bring in a ramp type barge to the nearest beach to haul them out of there via water?</p> <p><u>Answer:</u> Beach access will be available starting September 2024. Pictures of the debris to be removed ("legacy floats") are attached below. Additionally, there is a clear right-of-way after September 15th and before May 15th, weather permitting.</p>
3.3	<p><u>Question:</u> Please provide the quantity of legacy wood pilings that will be replaced with steel piling noted in section 1.1 B, page 6. Please provide a map denoting the locations of all legacy wood pilings to be replaced.</p> <p><u>Answer:</u> Further information on legacy wood pilings, including a map of the locations, are attached below. There are a total of 153 wood piles and 24 steel piles.</p>
3.4	<p><u>Question:</u> Can you confirm the grants for this project don't require the Buy American Act to be applicable for this project?</p> <p><u>Answer:</u> This project does not have the Buy America Act requirements.</p>

3.5	<p><u>Question:</u> Please confirm the vessel parameters to be used for design (vessel lengths, beam widths, weight, etc.) of the various slips and side tie moorage. Are overlength vessels to be assumed for design of finger floats?</p> <p><u>Answer:</u> Our current practice is 10% overall finger length. A Float does not have vessel parameters. A Float has one landing craft that is 85ft overall length permanently assigned. A Float historically will moor large fishing vessels up to 60-85ft in length and often more 3-4 abreast on the outside (west side) and 2-3 wide on the inside (east side) of the float. G Float vessel parameters are 0' – 29' and H Float vessel parameters are also 0' - 29', so the stalls are currently 24' fingers. G and H floats are currently 21' apart with an assumed vessel width of 10'.</p>
3.6	<p><u>Question:</u> Please confirm the snow load to be used for design of the floatation/freeboard. The specified 100psf snow load and requirement for DL+snow load freeboard to be at least 6" will result in floats with high freeboard. The snow load requirements are also significantly greater than the specified live load DL+live load freeboard requirements.</p> <p><u>Answer:</u> With no snow load, the current floats are showing an 18" freeboard. Please match existing design.</p>
3.7	<p><u>Question:</u> Appendix D 4.1.1 Q: Will HDG Steel cleats or Aluminum cleats be allowed?</p> <p><u>Answer:</u> HDG Steel Cleats are preferred</p>
3.8	<p><u>Question:</u> Appendix D 4.1.9 C: Existing concrete float chaseways consist of 5.5" x 16.5" clear space. Will this same type be acceptable?</p> <p><u>Answer:</u> Yes.</p>
3.9	<p><u>Question:</u> Appendix D 4.2.1 K: Existing concrete float system utilizes waler and through rods. Will this same type be acceptable?</p> <p><u>Answer:</u> Yes.</p>
3.10	<p>Several questions were received regarding Appendix D, Section 4.2.2. This section has been stricken from the Request for Proposal documents.</p>
3.11	<p><u>Question:</u> Appendix D 4.2.3: Is FRP (fiber reinforced polymer) structural reinforcement acceptable? Is epoxy coated bar accepted as a one-to-one replacement over galvanized rebar reinforcement?</p> <p><u>Answer:</u> Yes.</p>
3.12	<p><u>Question:</u> Appendix D 4.2.4 A: Is an ISO 9001 Plant Certification acceptable in lieu of PCI Certification?</p> <p><u>Answer:</u> Yes.</p>
3.13	<p><u>Question:</u> Appendix D 4.2.5: Existing concrete float system provides all cleats bolted through timber walers. Is this acceptable?</p> <p><u>Answer:</u> Yes.</p>
3.14	<p><u>Question:</u> Appendix D 4.2.9 K: Are galvanized through rods accepted? Are FRP walers accepted?</p>

	<u>Answer:</u> Yes to both. We expect contractor to make these decisions based on cost.
3.15	<u>Question:</u> Appendix D: Specification section 4.2.1 items C and K, and 4.2.9 items I, J, K appear to be in conflict. Can you please clarify if a modular concrete system with a through rod and waler structural support system is permitted on this project? <u>Answer:</u> Yes.
3.16	<u>Question:</u> Appendix D 3.5: The RFP specification is for a 100 PSF snow load requires floats to be designed to a 26" freeboard level to accommodate a nearly 10-foot-deep snow event on the dock floatation system. Existing concrete float systems on site have likely been designed at a 70 PSF snow load and 20" freeboard or a 60 PSF snow load and 18" freeboard. Please clarify and confirm all freeboard levels for docks under DL, DL + LL, DL + SL, DL + LL + SL. <u>Answer:</u> With no snow load, the current floats are showing an 18" freeboard. Please match existing design.
3.17	<u>Question:</u> Appendix D: 4.1.6: Subsection B states that creosote treatment is not allowed, unless approved by the Owner. Will creosote treatment be allowed for glulam members located above water and not exposed to surface contact on trestles and floats? Additionally, many treatment alternative allowed by AWPA are prohibited by regulatory agencies for over/near water applications. Can you confirm the specific pressure treatments that will be permitted by regulatory agencies for this project? <u>Answer:</u> Yes.
3.18	<u>Question:</u> Appendix D 4.1.3: Will AWPA Marine Grade No. 1 Southern Pine be accepted as an equal? <u>Answer:</u> Yes.
3.19	<u>Question:</u> RFP Sections 1.2.A references replacement of the float systems for A/G/H floats and Section 1.2.C states "Design and installation of the Utility Service upgrades, including power, lighting, water, and fire suppression to all applicable areas in the float system and related upland improvements." Section 3.9 <i>Utilities</i> , second paragraph states "The electrical systems will include power to all slips on floats A and G, LED lighting, and all ancillary elements of the project." Lastly, the Appendix D Part 4.6.4 table only shows pedestal receptacle requirements for A and G floats. Please verify if power and lighting is required for H-float as well, and if so, please confirm receptacle requirements. <u>Answer:</u> H Float will not be powered.
3.20	<u>Question:</u> Appendix D part 4.6.2 <i>Service</i> requires new 208/120V, 3-phase electrical service for the harbor located in the uplands near the top of the Gangway. It is our understanding that the existing harbor service is 600A, 480V, 3-phase and feeds a distribution panel and substations on the dock that require 480V. We believe the distribution panel and substations were installed in 2015 and the service equipment was modified at the same time to add in new feeders and an Automatic Transfer Switch. Is a new 208/120V, 3-phase service truly required for this project, or can the existing 480V, 3-phase service and recently installed dock distribution panel be utilized to feed the electrical systems for floats A, G, and H, provided sufficient capacity exists within the equipment? <u>Answer:</u> Yes, existing will suffice.

3.21	<p><u>Question:</u> Appendix D part 4.6.4 requires pedestals "with a utility meter". We don't believe the other pedestals on the remaining floats have utility (Chugach Electric Association) meters, only kWh meters integral to the pedestals. Please confirm CEA meters are not required within the pedestals.</p> <p><u>Answer:</u> CEA meter is not required.</p>
3.22	<p><u>Question:</u> Appendix D part 4.6.5 Lighting states to "provide luminaries atop select shore-tie pedestals on the floating docks as needed for the specified amount of illumination". Is the desired intent to provide the pedestals with integral pedestal top lighting for all dock illumination, or are pole mounted LEDs spaced throughout the docks more desirable? The photocell and hand-off-auto lighting controls requirement within Part 4.6.3.G eludes to the separate pole mounted LED lighting. Please clarify the intent.</p> <p><u>Answer:</u> Design-Builder to determine based on cost; either are acceptable.</p>
3.23	<p><u>Question:</u> Is the Owner/Obligee requiring a P&amp;P Bond for six years after the performance period? (what is the length of the performance period? Second, when will the Owner/Obligee require the winning bidder to provide the performance and payment bonds? <u>Answer:</u> With respect to Article 5.1 A. Please change to read "These Bonds shall remain in effect for a minimum of one year after the date when the final payment becomes due, or when construction is complete, whichever is later, except as provided otherwise by Laws or Regulations." The purpose of this change is to serve as a warranty bond to ensure completion of the project.</p> <p>The winning bidder shall provide the performance and payment bond prior to the start of construction.</p> <p>With respect to Bonds and Insurance, Article 5.1 C. Please strike this entire section.</p>
3.24	<p><u>Question:</u> In regards to the warranty, wouldn't some of the large material items involved already come with longer term manufacturers warranties (so the warranty obligation essentially passes through the contractor)?</p> <p><u>Answer:</u> We would rely on the manufacturer's warranties in those cases, yes.</p>
3.25	<p><u>Question:</u> As referenced in Appendix A 2.D., please provide all reports, tests, and drawings associated with the representation being made by submission of this proposal.</p> <p><u>Answer:</u> Please see the attached "Whittier Small Boat Harbor Improvements – Phase I" for this data.</p>

**END OF ADDENDUM**

# CITY OF WHITTIER REPLACEMENT FLOAT PHASE 1

Whittier, AK

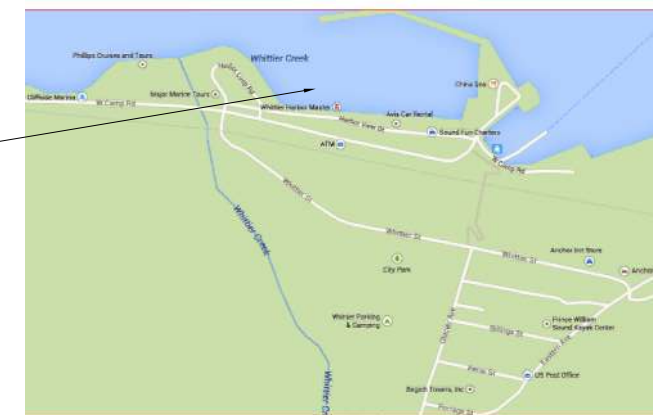
REV.	DRAWING:	SHEET NO.	DRAWING TITLE	DESCRIPTION
	C1.0		COVER SHEET	
	S1.0		ABBREVIATIONS & LEGEND	
	OL1.0	1	OVERALL LAYOUT	
	DL1.0	2	DIMENSIONAL LAYOUT	
	FL1.0	3	FLOAT LAYOUT	
	UL1.0	4	UTILITY LAYOUT	ELECTRICAL
	UL2.0	5	UTILITY LAYOUT	MECHANICAL
	CL1.0	6	CLEAT LAYOUT	
	SL1.0	7	MISC. MATERIAL FABRICATION	
	AL1.0-AL1.2	8-10	ASSEMBLY LAYOUT	Z DOCK MARGINAL
	AL2.0-AL2.1	11-12	ASSEMBLY LAYOUT	F DOCK MAINWALK
	AL3.0-AL3.1	13-14	ASSEMBLY LAYOUT	E DOCK MAINWALK
	AL4.0-AL4.1	15-16	ASSEMBLY LAYOUT	D DOCK MAINWALK
	AL5.0	17	ASSEMBLY LAYOUT	C-D DOCK MARGINAL
	AL6-AL6.2	18-20	ASSEMBLY LAYOUT	FINGERS
	FS1.0	21	FLOAT SECTIONS	
	SA1.0-SA1.1	22-23	SUB-ASSEMBLY DETAILS	GENERAL DETAIL
	SA2.0	24	SUB-ASSEMBLY DETAILS	TRI-FRAME
	SA2.1	25	SUB-ASSEMBLY DETAILS	END/SIDE PILE GUIDE
	SA2.2	26	SUB-ASSEMBLY DETAILS	TRANSFORMER
	SA2.3	27	SUB-ASSEMBLY DETAILS	TRANSITION PLATES

VICINITY MAP:



SITE MAP:

City of Whittier  
Existing Marina



DRAWING STATUS:

**AS BUILT**  
**07-17-2015**

**Bellingham MARINE**  
Northwest Division  
5500 Nordic Way  
Ferndale, WA 98248  
TEL: (360) 380-2142  
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JOB NUMBER: <b>14-1665</b>	SCALE:	N.T.S.
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	DRAWING:	C1.0
<b>UNIFLOAT</b> precision engineered floatation systems	SHEET NO.:	- OF -

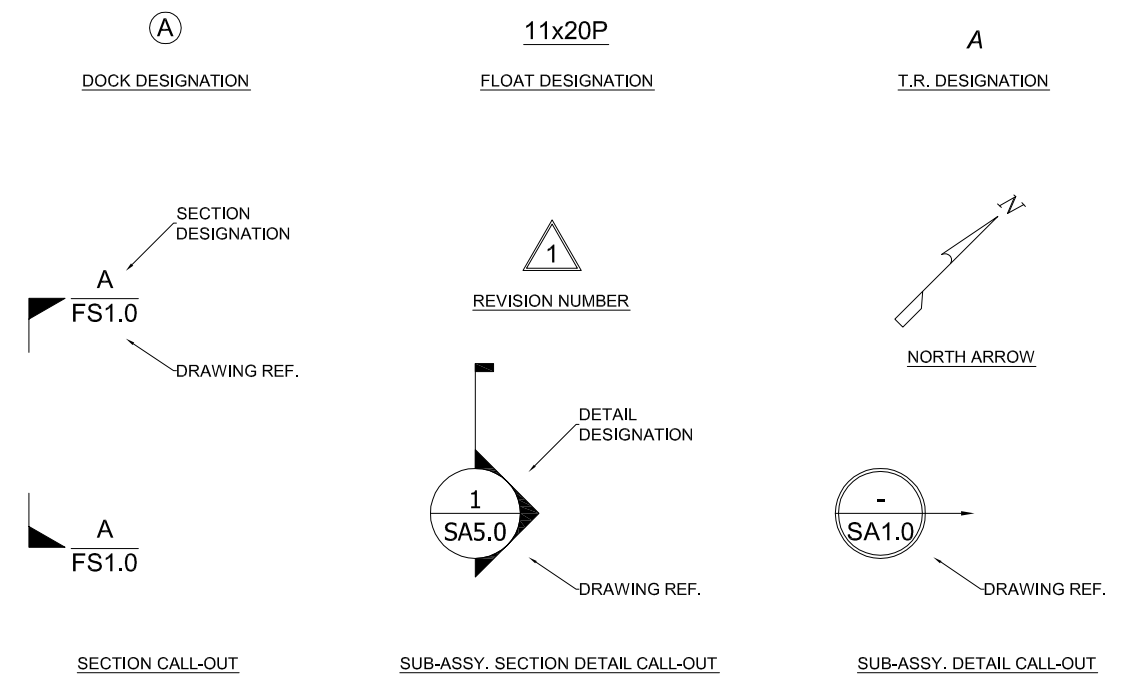
**CITY OF WHITTIER  
REPLACEMENT FLOATS PHASE 1**  
Whittier, AK  
**COVER SHEET**

TYP. DRAWING ABBREVIATIONS	DESCRIPTION
∠	ANGLE
◻	SQUARE
B.F.	BOARD FEET
BOTT.	BOTTOM
CHAMF.	CHAMFER
CHKR.	CHECKER
⊕	CENTER LINE
CLR.	CLEAR
CONC.	CONCRETE
CORN.	CORNER
CSC.	COUNTERSINK
CU.	CUBIC
D.	DEPTH
∅	DIAMETER
DET.	DETAIL
DBL.	DOUBLE
DWG.	DRAWING
EA.	EACH
E.W.	EACH WAY
EPS	EXPANDED POLYSTYRENE
F.F.	FAR FACE
F.B.	FREE BOARD/FLAT BAR
FLT.	FLOAT
FL.	FULL LENGTH
FT.	FOOT/FEET
F.W.	FIRE WATER
GA.	GAUGE
GALV.	GALVANIZED
H.D.	HEAVY DUTY
H.D.P.E.	HIGH DENSITY POLYETHYLENE
HORIZ.	HORIZONTAL
HSS.	HOLLOW STRUCTURAL SECTIONS
I.D.	INSIDE DIMENSION
L.	LENGTH
LG.	LONG
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
LONG.	LONGITUDINAL
MIN.	MINIMUM
N.F.	NEAR FACE
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.A.	OVERALL
O.C.	ON CENTER
O.D.	OUTSIDE DIMENSION
OPP.	OPPOSITE

TYP. DRAWING ABBREVIATIONS	DESCRIPTION
P.L.	PLATE
PLC'S	PLACES
P.S.I.	POUNDS PER SQUARE INCH
PT	POST TENSIONING
P.V.C.	POLYVINYL CHLORIDE
P.W.	POTABLE WATER
QTY.	QUANTITY
R.	RADIUS
REF.	REFERENCE
REQ'D	REQUIRED
REV.	REVISION
S.B.O.	SUPPLIED BY OTHERS
SCH.	SCHEDULE
SHT.	SHEET
SIM.	SIMILAR
SPA.	SPACES
S.S.	STAINLESS STEEL
STD.	STANDARD
T&B	TOP AND BOTTOM
T.B.D.	TO BE DETERMENT
THRD.	THREAD
TRANSF.	TRANSFORMER
T.S.	TUBE STEEL
TYP.	TYPICAL
U.H.M.W.	ULTRA HIGH MOLECULAR WEIGHT (POLYETHYLENE)
VERT.	VERTICAL
W.	WIDTH
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH

TYP. HARDWARE ABBREVIATIONS	DESCRIPTION
C.B.	CARRIAGE BOLT
E.B.	EYE BOLT
F.W.	FLAT (CUT) WASHER
F.H.W.S.	FLAT HEAD WOOD SCREW
H.B.	HEX BOLT
H.C.N.	HEX COUPLER NUT
H.H.B.	HEAVY HEX BOLT
H.N.	HEX NUT
J.N.	JAM NUT
L.B.	LAG BOLT
L.W.	LOCK WASHER
M.S.	MACHINE SCREW
P.W.	PLATE WASHER
S.P.	SHEAR PLATE
S.P.W	SQUARE PLATE WASHER
S.T.S.	SELF TAPPING SCREW
S.R.	SPLIT RING
T.B.	TIMBER BOLT
T.R.	THRU-ROD
F.H.H.D.S.	FLAT HEAD HEX DRIVE SCREW
P.P.H.S.	PHILLIPS PAN HEAD SCREW

**LEGEND**



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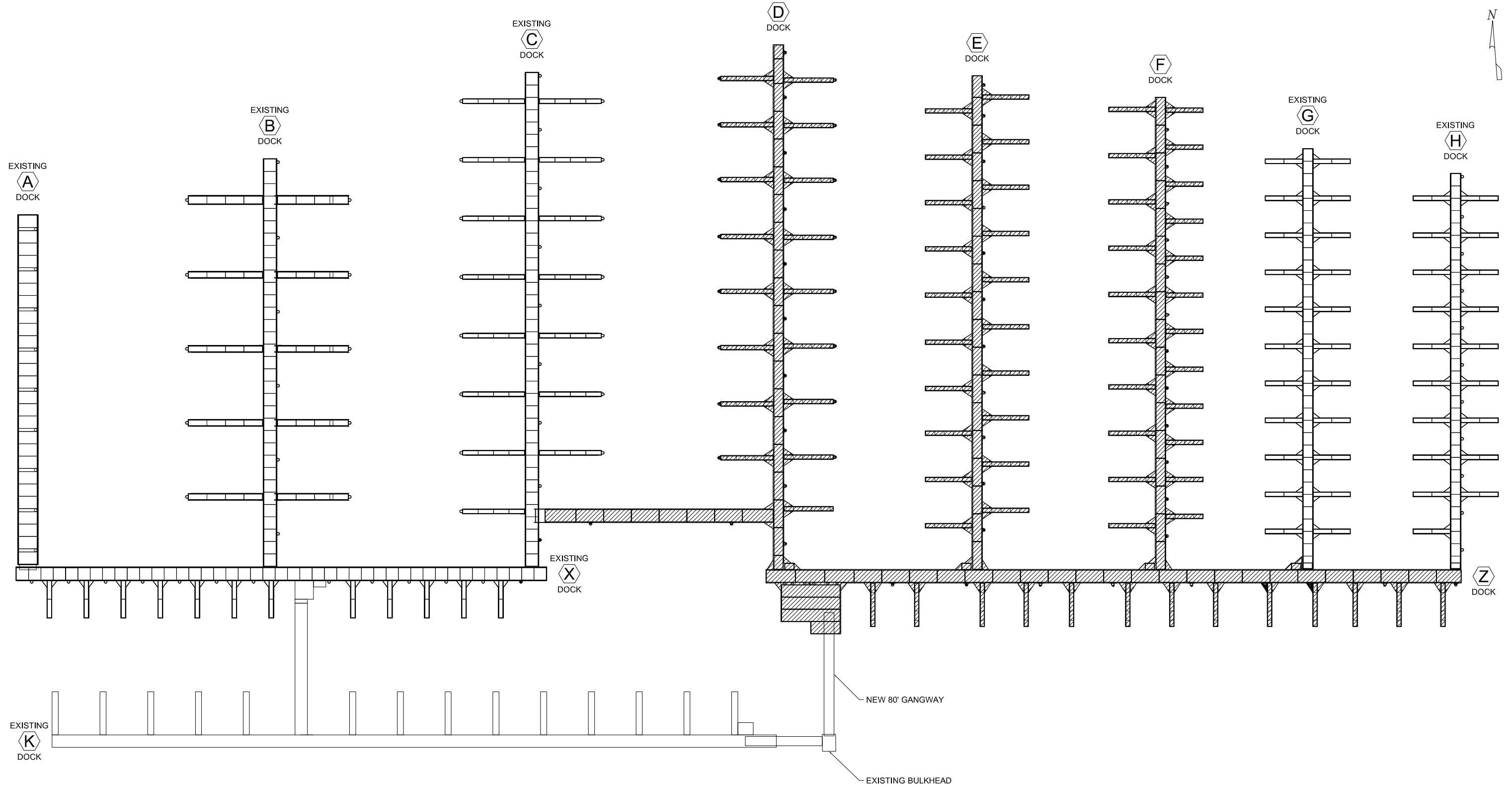
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	DATE:	03/05/15
<b>PAPER SIZE:</b> 11x17	DRAWN BY:	T.A.P.
	DRAWING:	S1.0
<b>UNIFLOAT</b> precision engineered floatation systems	SHEET NO.:	- OF -

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK

**ABBREVIATIONS & LEGEND**

GENERAL NOTES:

1.



REV.	DATE:	DESCRIPTION	BY:
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**DATE:** 02/20/15

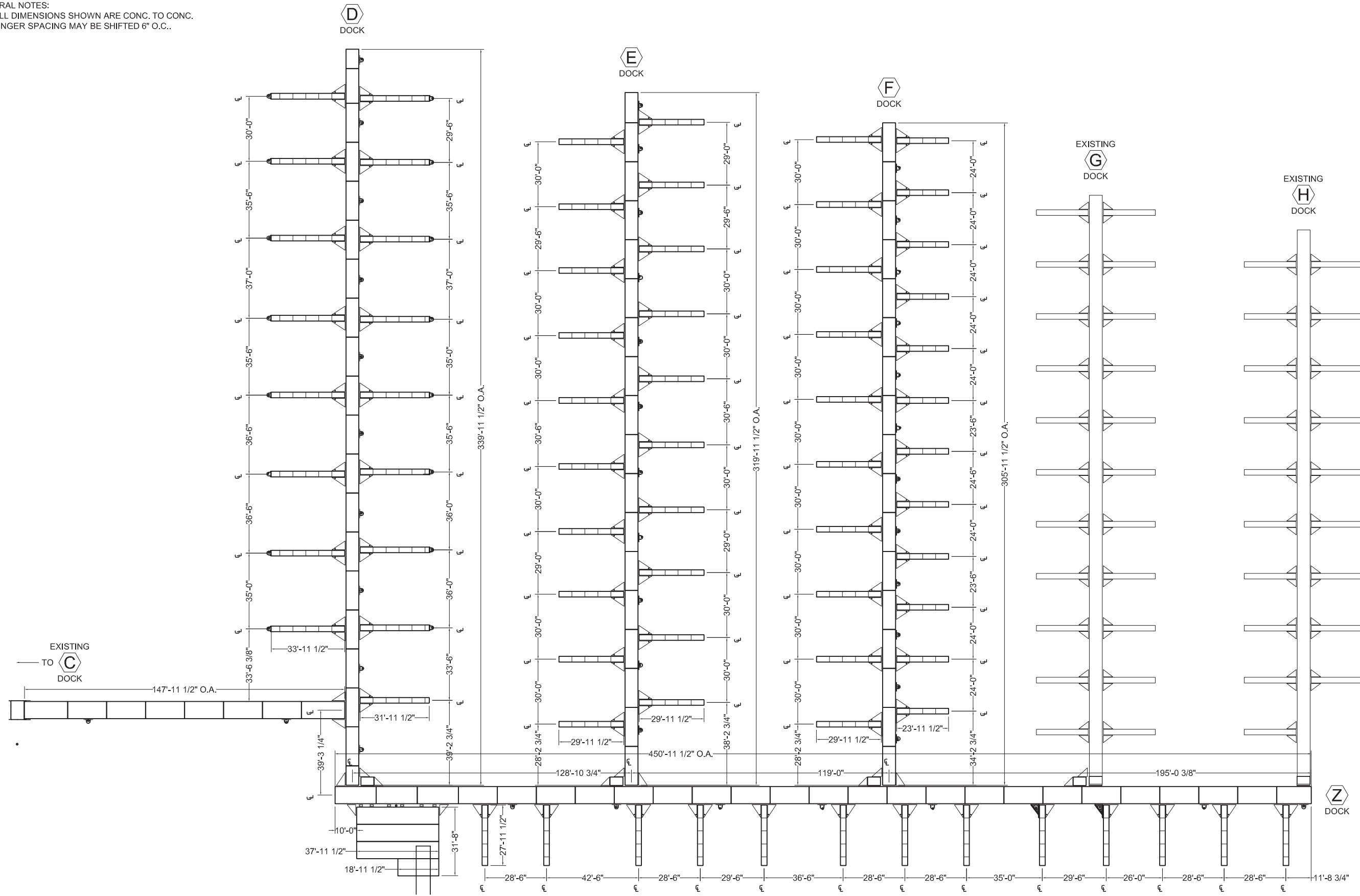
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**DRAWING:** OL1.0

**SHEET NO.:** 1

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**OVERALL LAYOUT**

- GENERAL NOTES:  
 1. ALL DIMENSIONS SHOWN ARE CONC. TO CONC.  
 2. FINGER SPACING MAY BE SHIFTED 6" O.C..



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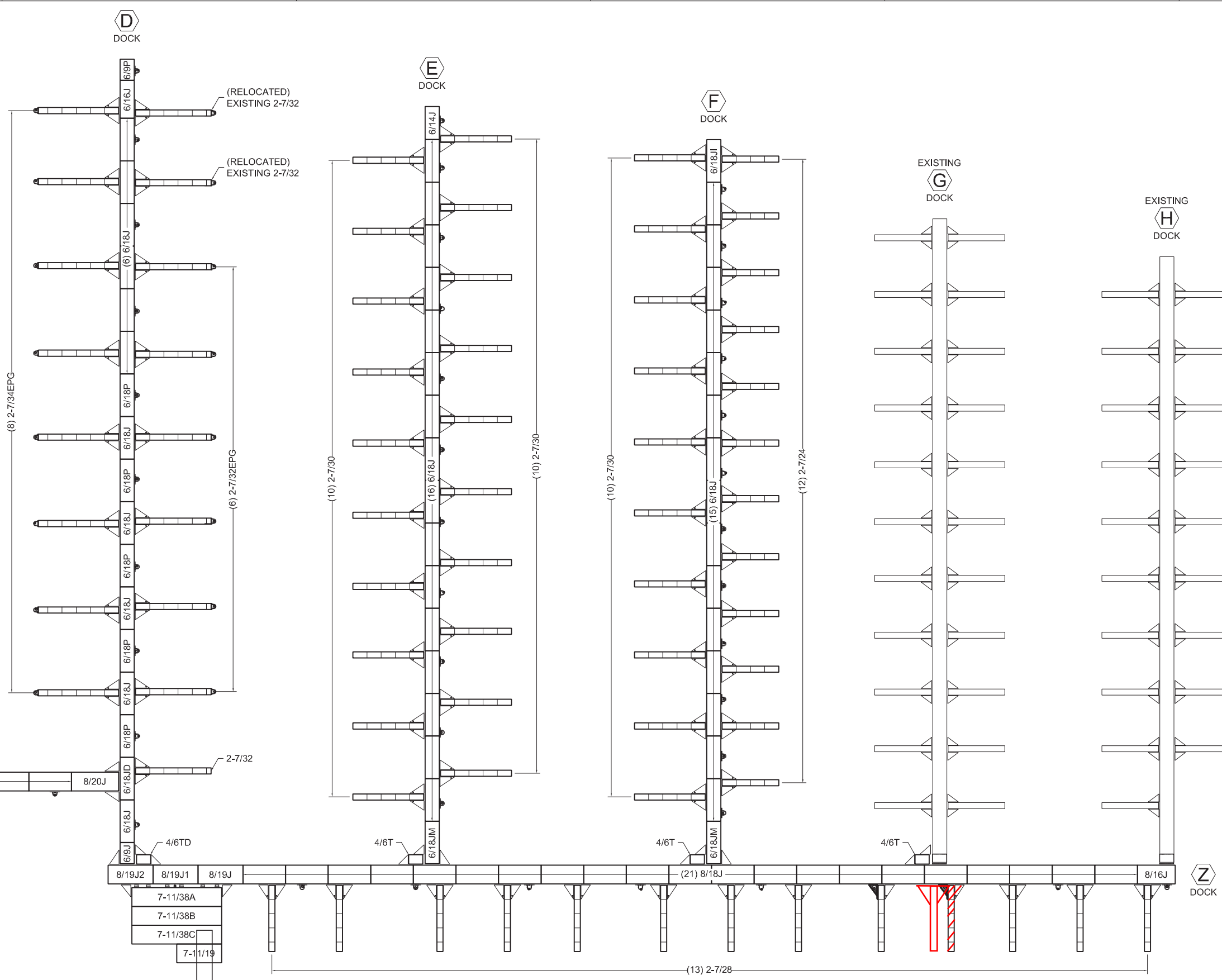
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**DIMENSIONAL LAYOUT**



GENERAL NOTES:

1.

SCHEDULE		
FINGER	2-7/24	(QTY:12)
	2-7/28	(QTY:13)
	2-7/30	(QTY:30)
	2-7/32	(QTY:1)
	EXISTING 2-7/32	(QTY:2)
WALKWAY	2-7/32EPG	(QTY:6)
	2-7/34EPG	(QTY:8)
	6/9J	(QTY:1)
	6/9P	(QTY:1)
	6/14J	(QTY:1)
	6/16J	(QTY:1)
	6/18J	(QTY:42)
	6/18JD	(QTY:1)
	6/18JI	(QTY:1)
	6/18JM	(QTY:2)
MAINWALK	6/18P	(QTY:5)
	8/16J	(QTY:1)
	8/18J	(QTY:27)
	8/19J	(QTY:1)
	8/19J1	(QTY:1)
	8/19J2	(QTY:1)
	8/20J	(QTY:2)
TRANSFORMER	4/6T	(QTY:3)
	4/6TD	(QTY:1)
GANGWAY PLATFORM	7-11/19	(QTY:1)
	7-11/38A	(QTY:1)
	7-11/38B	(QTY:1)
	7-11/38C	(QTY:1)



EXISTING  
TO C DOCK

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


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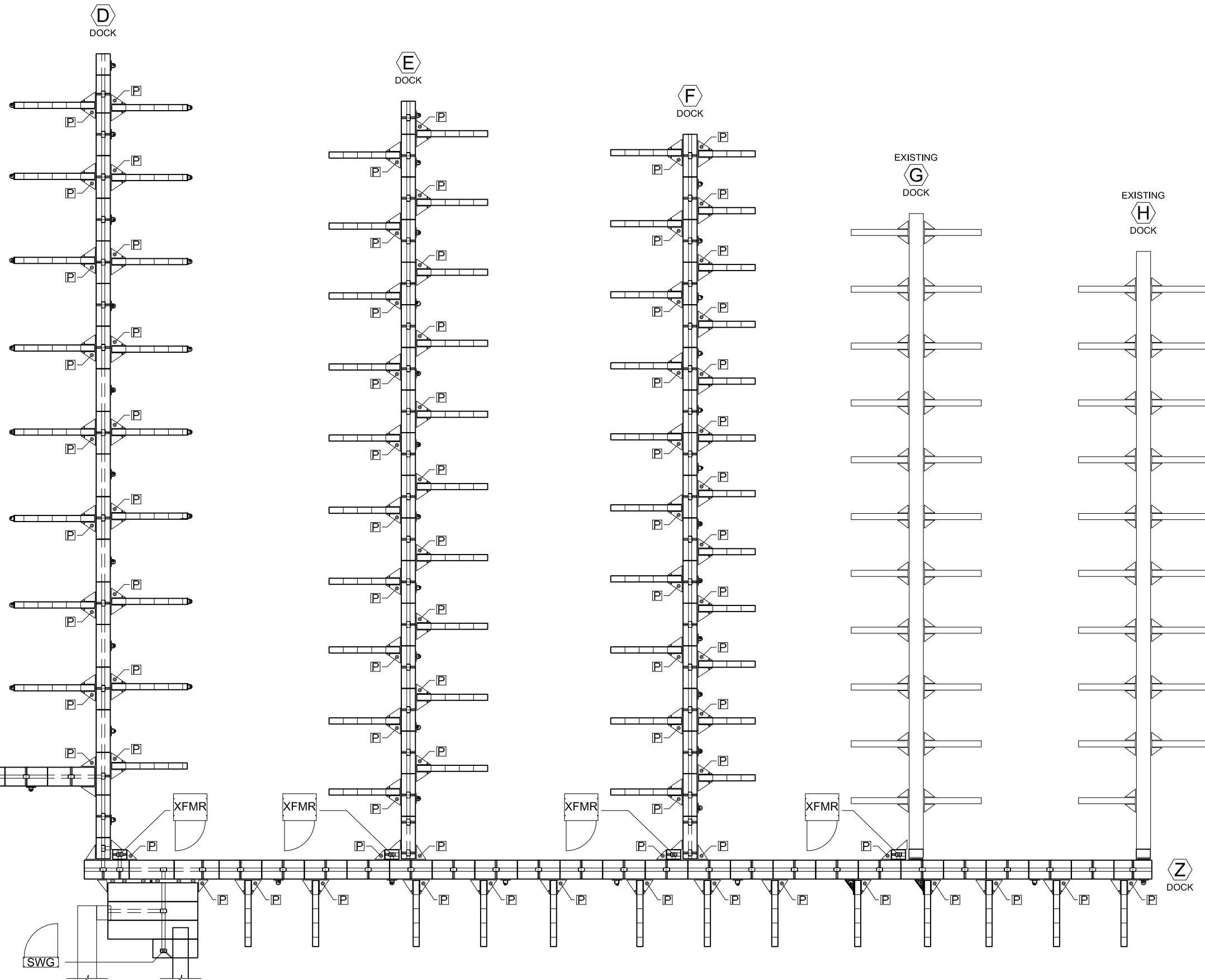
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**FLOAT LAYOUT**

GENERAL NOTES:  
1.

LEGEND

-  = MEE MDP (SWITCHGEAR)
-  = MEE GTX SUBSTATION (TRANSFORMER)
-  = MEE HARBOUR LIGHT SS (POWER PED.)
-  = ELEC. J-BOX (17"x30"x15"DEEP)

EXISTING  
TO  DOCK



REV.	DATE:	DESCRIPTION	BY:
3	07/14/15	D & E DOCK POWER PEDESTAL LOCATION REVISED.	CMK
2	06/02/15	F DOCK POWER PEDESTAL LOCATION REVISED	T.A.P.

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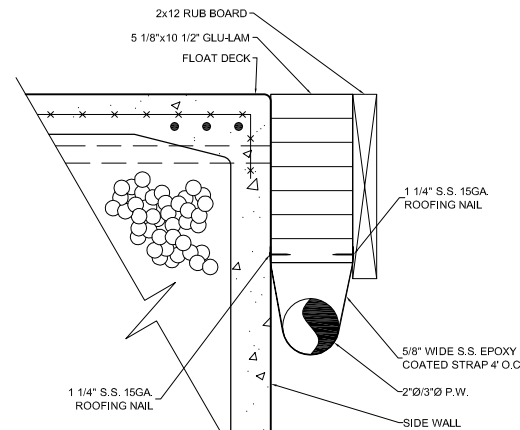
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		DRAWING:	UL1.0
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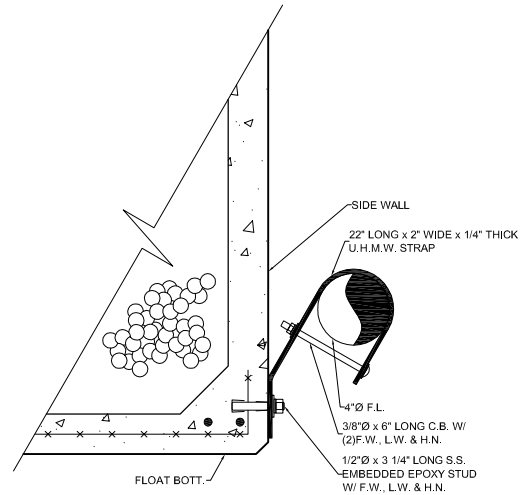
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**UTILITY LAYOUT**

GENERAL NOTES:

1.



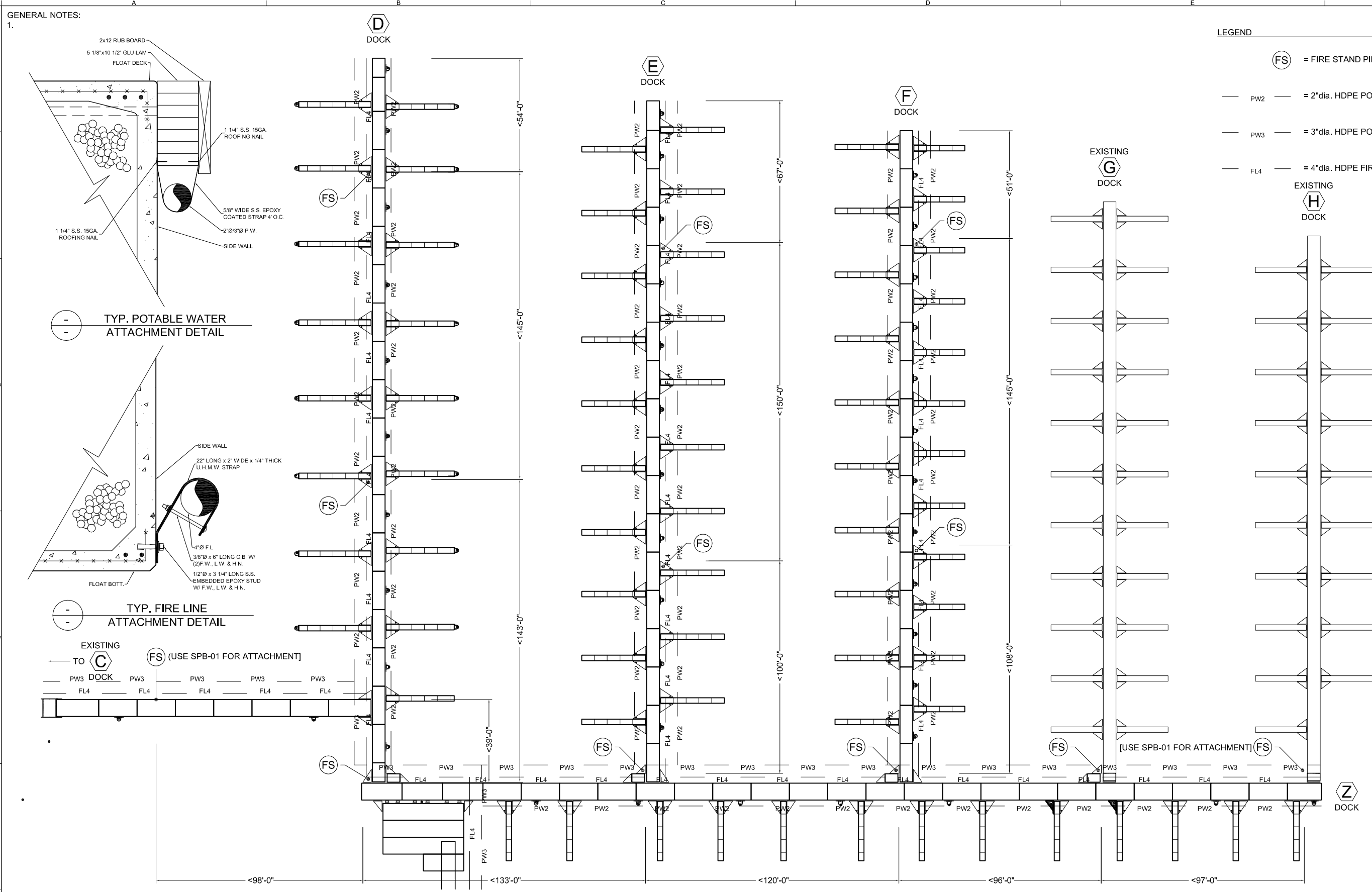
TYP. POTABLE WATER ATTACHMENT DETAIL



TYP. FIRE LINE ATTACHMENT DETAIL

EXISTING TO **C** DOCK (FS) (USE SPB-01 FOR ATTACHMENT)

PW3 FL4 PW3 FL4 PW3 FL4 PW3 FL4 PW3 FL4



- LEGEND
- (FS) = FIRE STAND PIPE
  - PW2 = 2"dia. HDPE POTABLE WATER
  - PW3 = 3"dia. HDPE POTABLE WATER
  - FL4 = 4"dia. HDPE FIRE LINE
- EXISTING DOCK
- EXISTING DOCK



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JOB NUMBER: <b>14-1665</b>		SCALE: N.T.S.
PAPER SIZE: 11x17		DATE: 02/13/15
DRAWN BY: T.A.P.		DRAWING: UL2.0
SHEET NO.: 5		

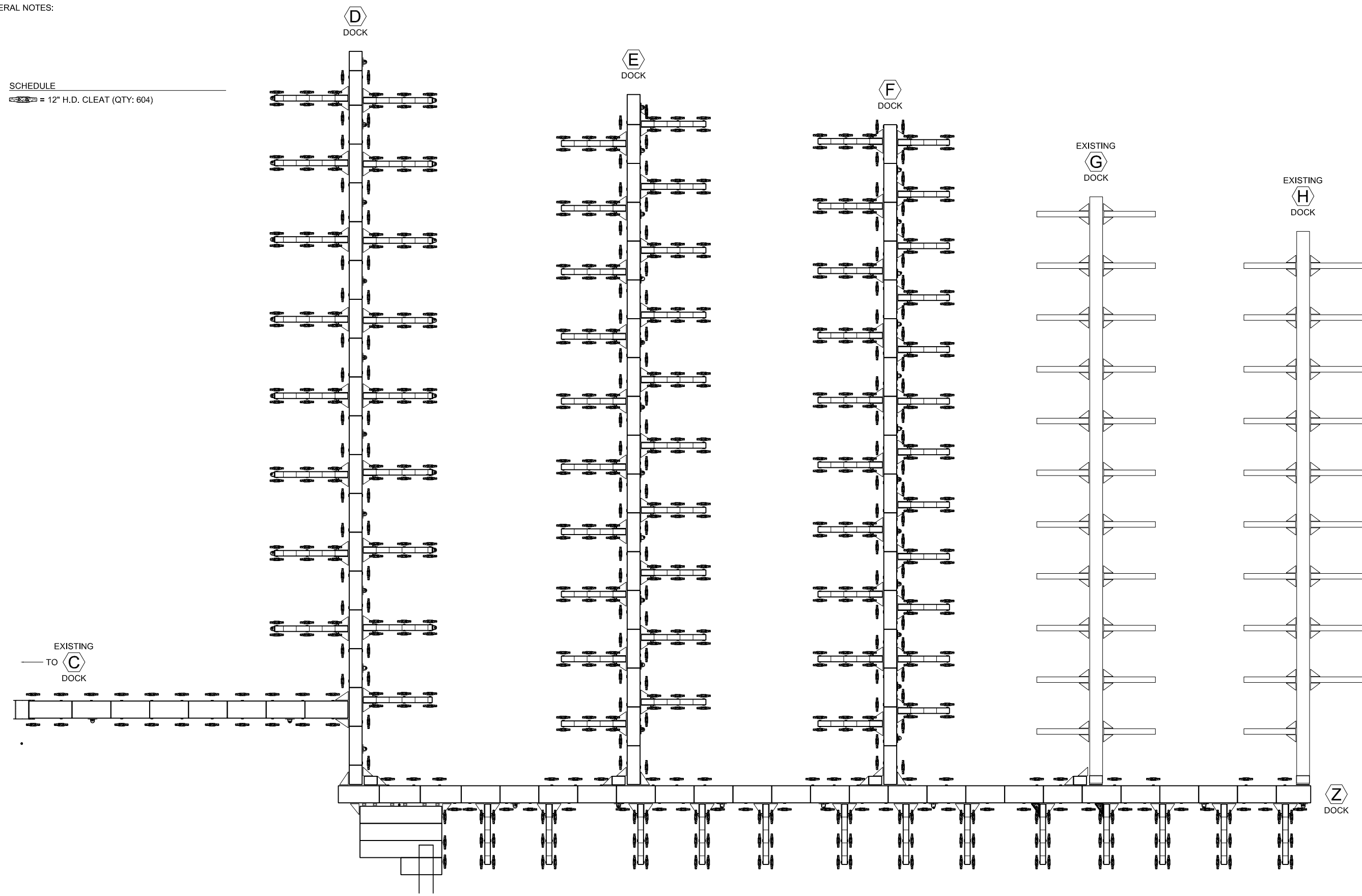
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
 UTILITY LAYOUT

GENERAL NOTES:

1.

SCHEDULE

12" H.D. CLEAT (QTY: 604)



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JOB NUMBER:	14-1665	SCALE:	N.T.S.
PAPER SIZE:	11x17	DATE:	02/09/15
		DRAWN BY:	T.A.P.
		DRAWING:	CL1.0
		SHEET NO.:	6

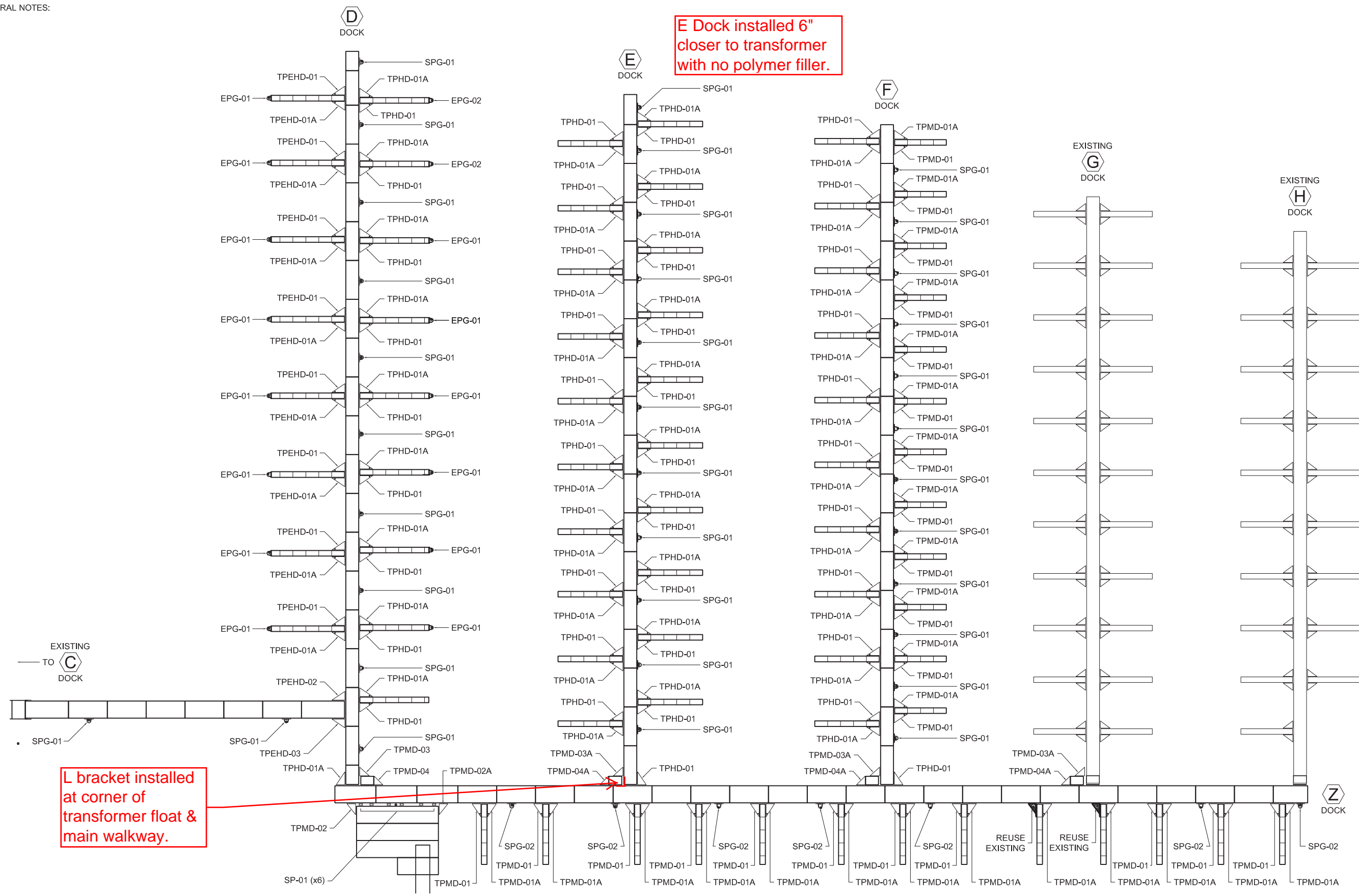
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**CLEAT LAYOUT**

GENERAL NOTES:  
1.



E Dock installed 6" closer to transformer with no polymer filler.

L bracket installed at corner of transformer float & main walkway.



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JOB NUMBER: <b>14-1665</b>		SCALE: N.T.S.
PAPER SIZE: 11x17		DATE: 02/04/15
DRAWN BY: T.A.P.		DRAWING: SL1.0
SHEET NO.: 7		

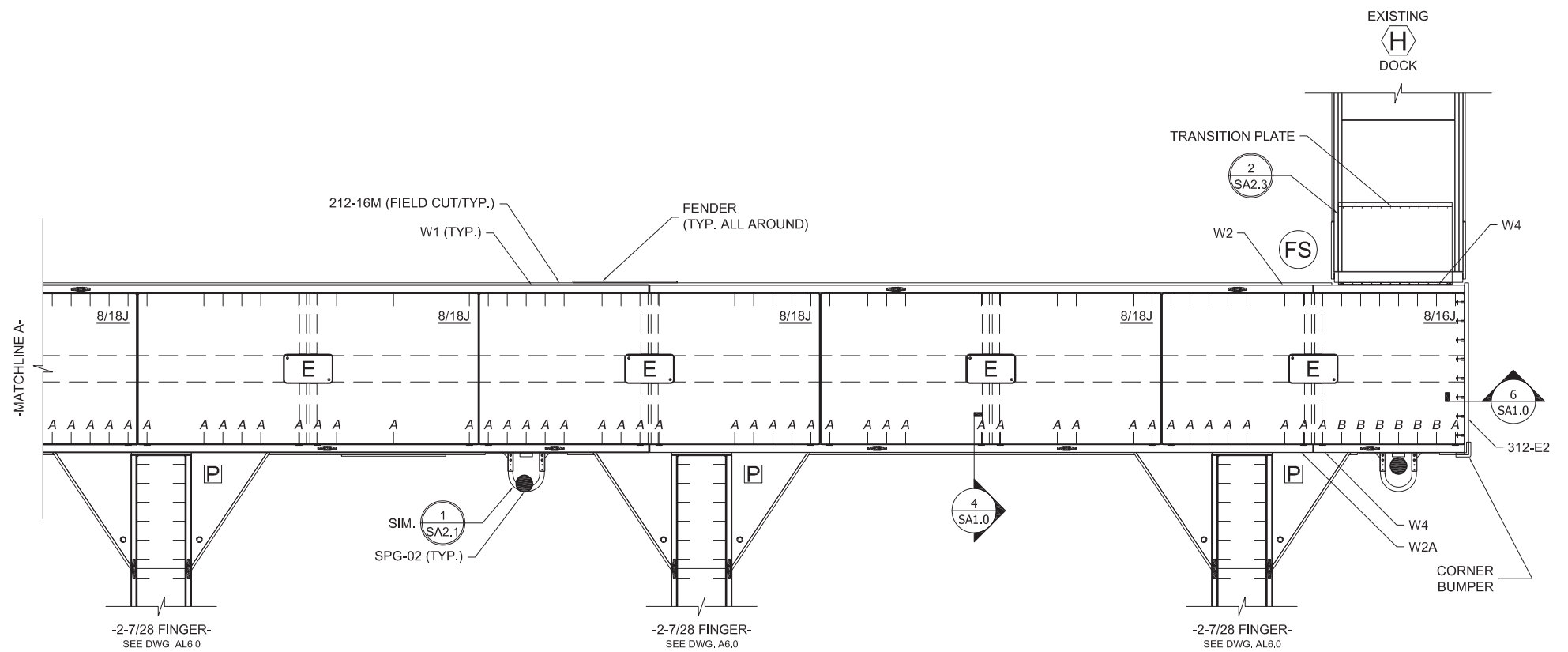
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
Whittier, AK

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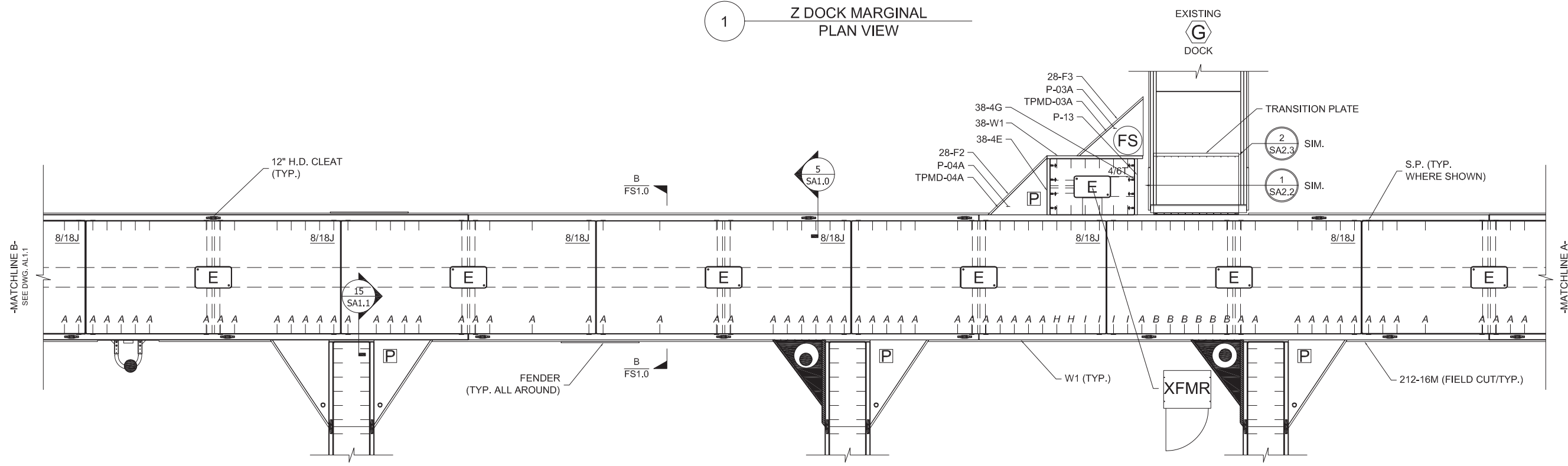
STEEL WELDMENT LAYOUT

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.

ROD(S)	DESCRIPTION
0.750" dia. x 9'-0.75" T.R. (A)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (Marginal)
0.750" dia. x 9'-1.25" T.R. (B)	3/4" dia. x 9'-1 1/4" Long Thru-Rod (Marginal)
0.750" dia. x 13'-1.25" T.R. (H)	3/4" dia. x 13'-1 1/4" Long Thru-Rod (Transformers)
0.750" dia. x 13'-3.25" T.R. (I)	3/4" dia. x 13'-3 1/4" Long Thru-Rod (Transformers)



1 Z DOCK MARGINAL PLAN VIEW



2 Z DOCK MARGINAL PLAN VIEW

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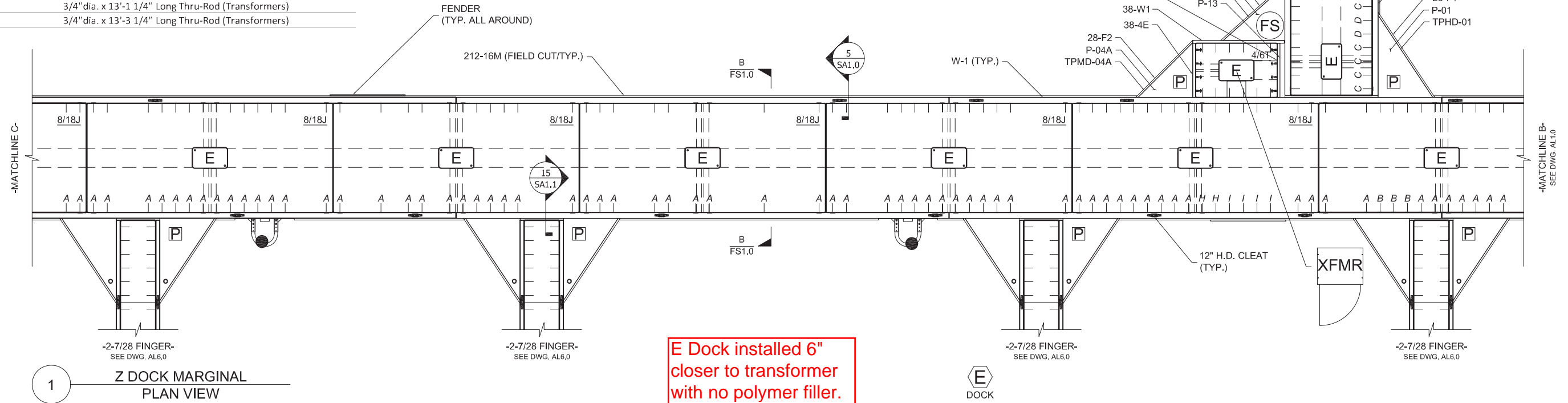
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<b>JOB NUMBER: 14-1665</b>		SCALE: 1/8" = 1'-0"
PAPER SIZE: 11x17		DATE: 01/24/15
DRAWN BY: T.A.P.		DRAWING: AL1.0
SHEET NO.: 8		BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

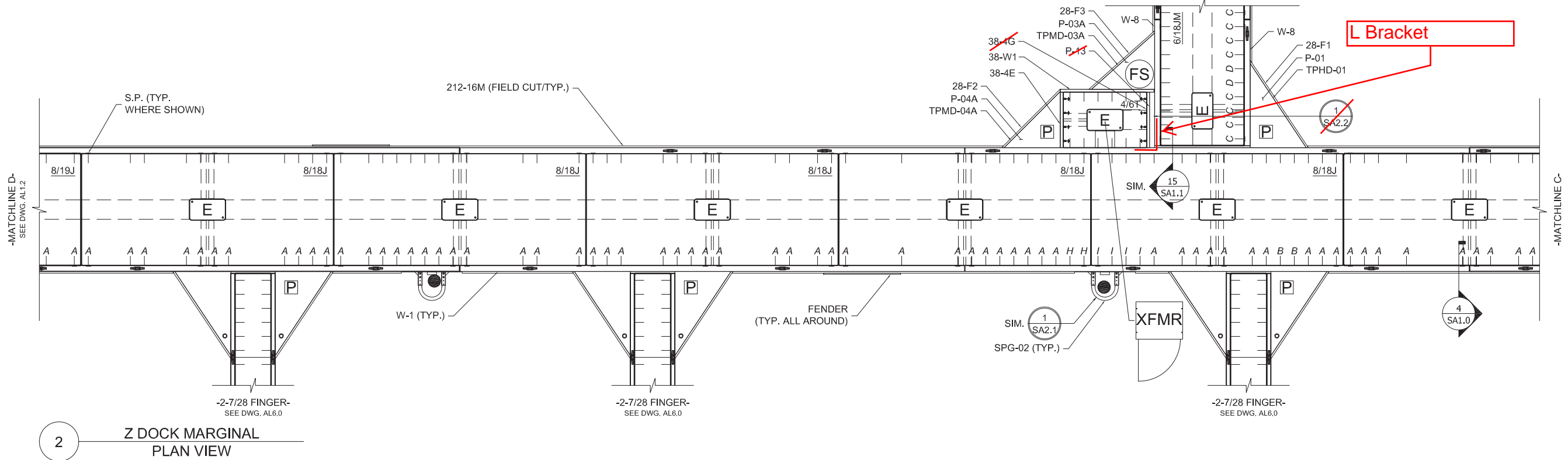
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.

ROD(S)	DESCRIPTION
0.750" dia. x 9'-0.75" T.R. (A)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (Marginal)
0.750" dia. x 9'-1.25" T.R. (B)	3/4" dia. x 9'-1 1/4" Long Thru-Rod (Marginal)
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)
0.750" dia. x 13'-1.25" T.R. (H)	3/4" dia. x 13'-1 1/4" Long Thru-Rod (Transformers)
0.750" dia. x 13'-3.25" T.R. (I)	3/4" dia. x 13'-3 1/4" Long Thru-Rod (Transformers)



E Dock installed 6"  
 closer to transformer  
 with no polymer filler.



L Bracket

REV	DATE	DESCRIPTION	BY

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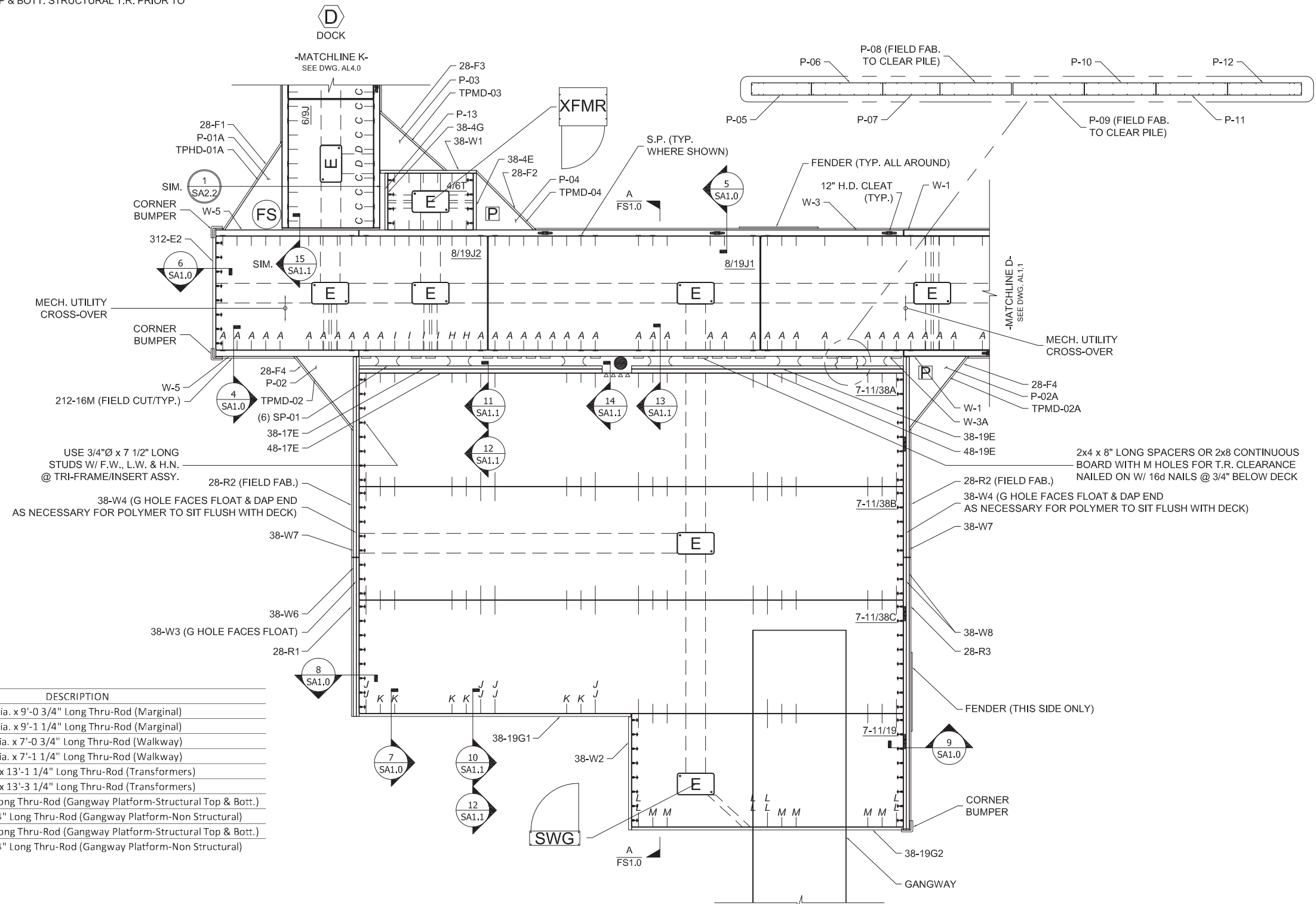
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PAPER SIZE:	11x17	DATE:	01/24/15
		DRAWN BY:	T.A.P.
		DRAWING:	AL1.1
		SHEET NO.:	9

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

- GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.  
 2. GANGWAY PLATFORM (MATCHCAST) MUST BE ASSEMBLY W/ TOP & BOT. STRUCTURAL T.R. PRIOR TO ASSEMBLY OF LUMBER.



USE 3/4"Ø x 7 1/2" LONG STUDS W/ F.W., L.W. & H.N. @ TRI-FRAME/INSERT ASSY.

38-W4 (G HOLE FACES FLOAT & DAP END AS NECESSARY FOR POLYMER TO SIT FLUSH WITH DECK)

2x4 x 8" LONG SPACERS OR 2x8 CONTINUOUS BOARD WITH M HOLES FOR T.R. CLEARANCE NAILED ON W/ 16d NAILS @ 3/4" BELOW DECK

38-W4 (G HOLE FACES FLOAT & DAP END AS NECESSARY FOR POLYMER TO SIT FLUSH WITH DECK)

ROD(S)	DESCRIPTION
0.750" dia. x 9'-0.75" T.R. (A)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (Marginal)
0.750" dia. x 9'-1.25" T.R. (B)	3/4" dia. x 9'-1 1/4" Long Thru-Rod (Marginal)
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)
0.750" dia. x 13'-1.25" T.R. (H)	3/4" dia. x 13'-1 1/4" Long Thru-Rod (Transformers)
0.750" dia. x 13'-3.25" T.R. (I)	3/4" dia. x 13'-3 1/4" Long Thru-Rod (Transformers)
0.750" dia. x 24'-1.50" T.R. (J)	3/4" dia. x 24'-1 1/2" Long Thru-Rod (Gangway Platform-Structural Top & Bott.)
0.750" dia. x 24'-7.25" T.R. (K)	3/4" dia. x 24'-7 1/4" Long Thru-Rod (Gangway Platform-Non Structural)
0.750" dia. x 32'-0.50" T.R. (L)	3/4" dia. x 32'-0 1/2" Long Thru-Rod (Gangway Platform-Structural Top & Bott.)
0.750" dia. x 32'-6.25" T.R. (M)	3/4" dia. x 32'-6 1/4" Long Thru-Rod (Gangway Platform-Non Structural)

1 Z DOCK MARGINAL/GANGWAY PLATFORM PLAN VIEW

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**JOB NUMBER:**  
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**SCALE:** 1/8" = 1'-0"

**DATE:** 01/24/15

**PAPER SIZE:** 11x17

**DRAWN BY:** T.A.P.

**DRAWING:** AL1.2

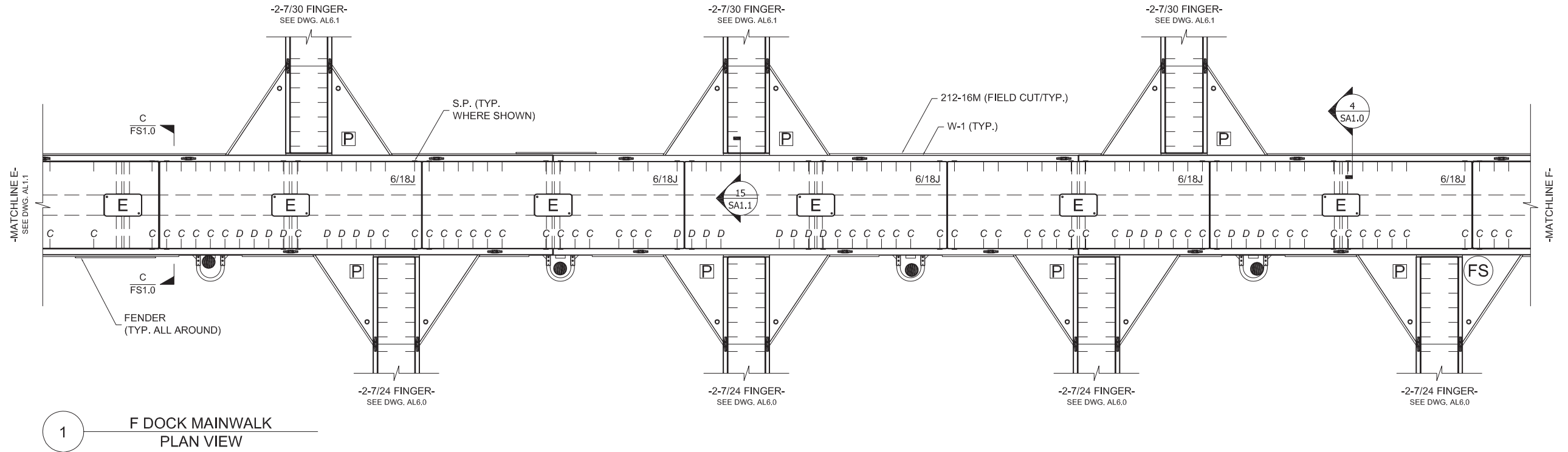
**SHEET NO.:** 10

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

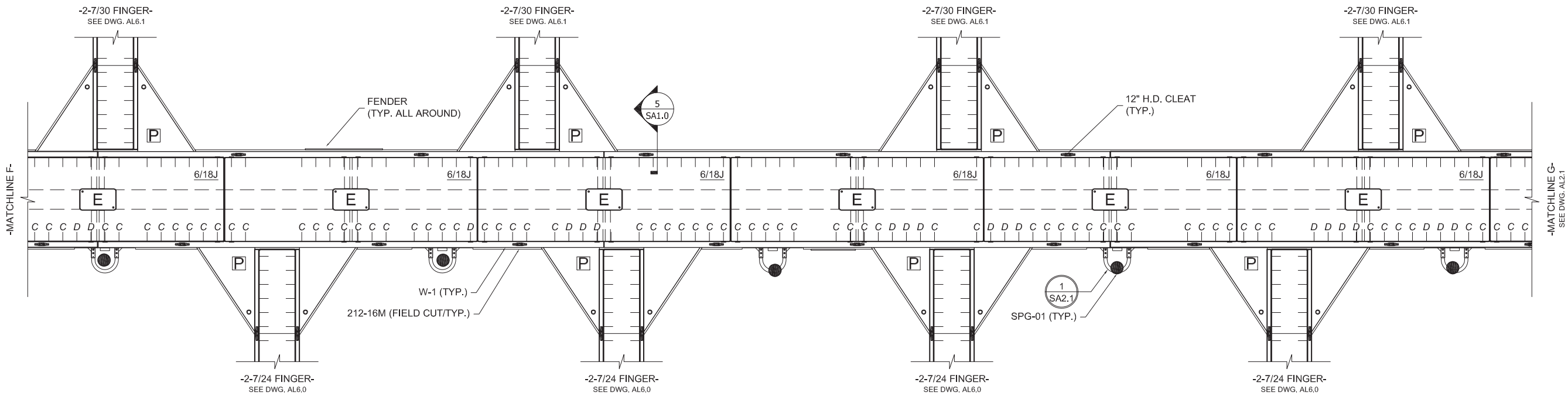


GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



1 F DOCK MAINWALK  
PLAN VIEW

ROD(S)	DESCRIPTION
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)



2 F DOCK MAINWALK  
PLAN VIEW

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JOB NUMBER:  
**14-1665**

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

DATE: 01/24/15

PAPER SIZE: 11x17

DRAWN BY: T.A.P.

DRAWING: AL2.0

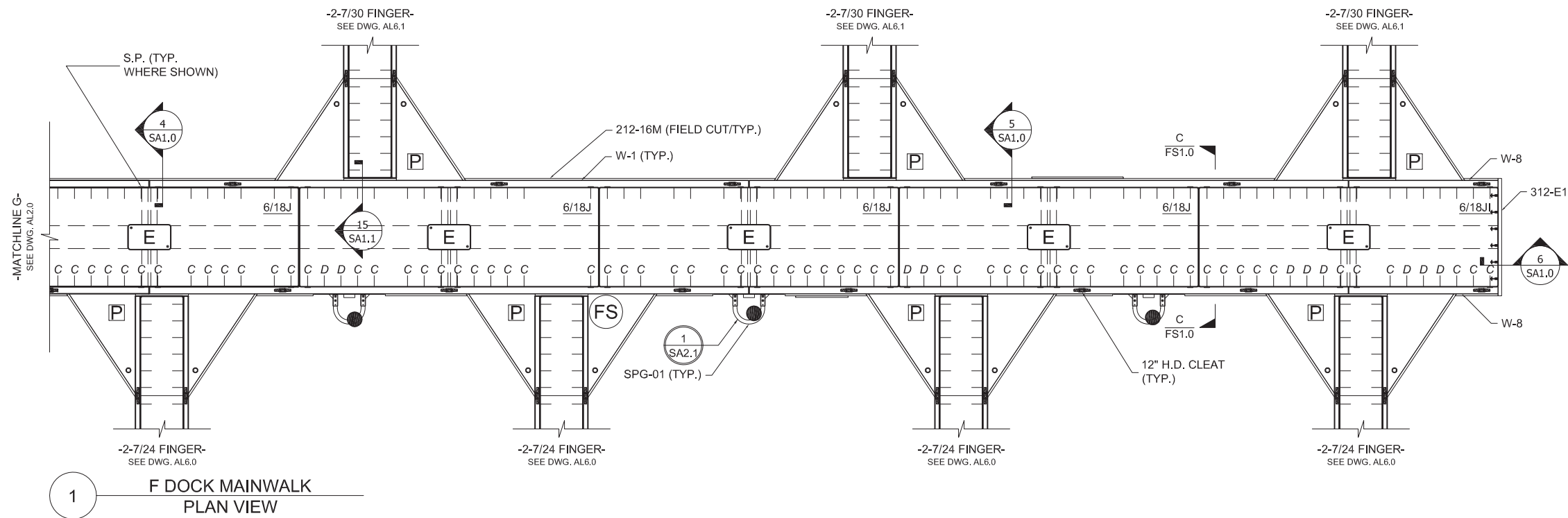
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**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK

**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



1 F DOCK MAINWALK  
PLAN VIEW

ROD(S)	DESCRIPTION
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)

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

**DATE:** 01/24/15

**PAPER SIZE:** 11x17

**DRAWN BY:** T.A.P.

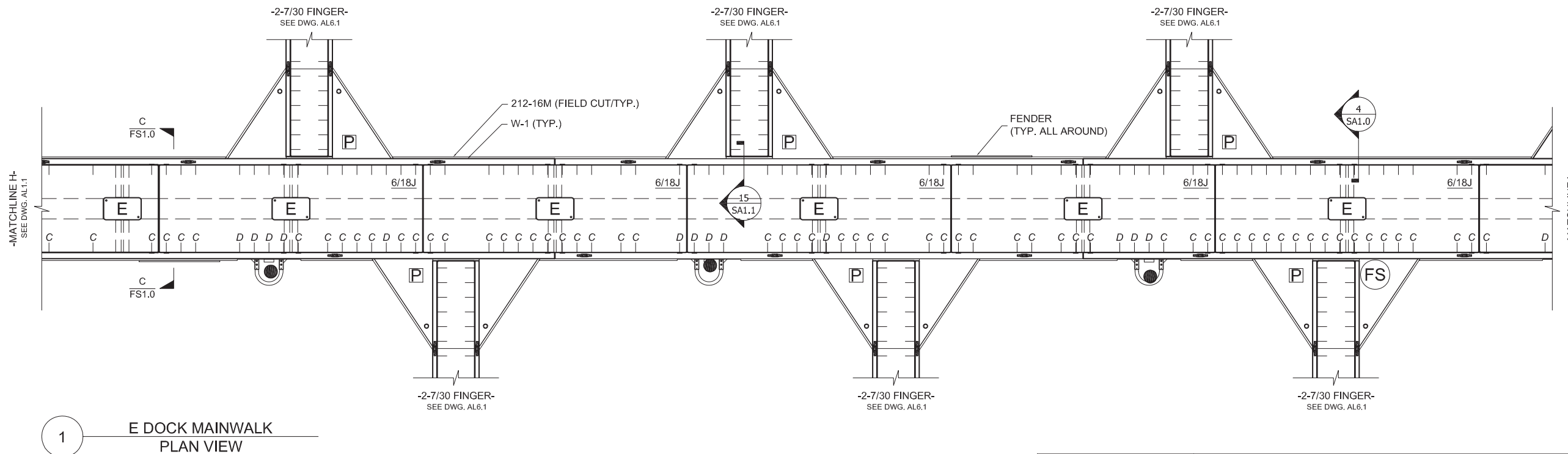
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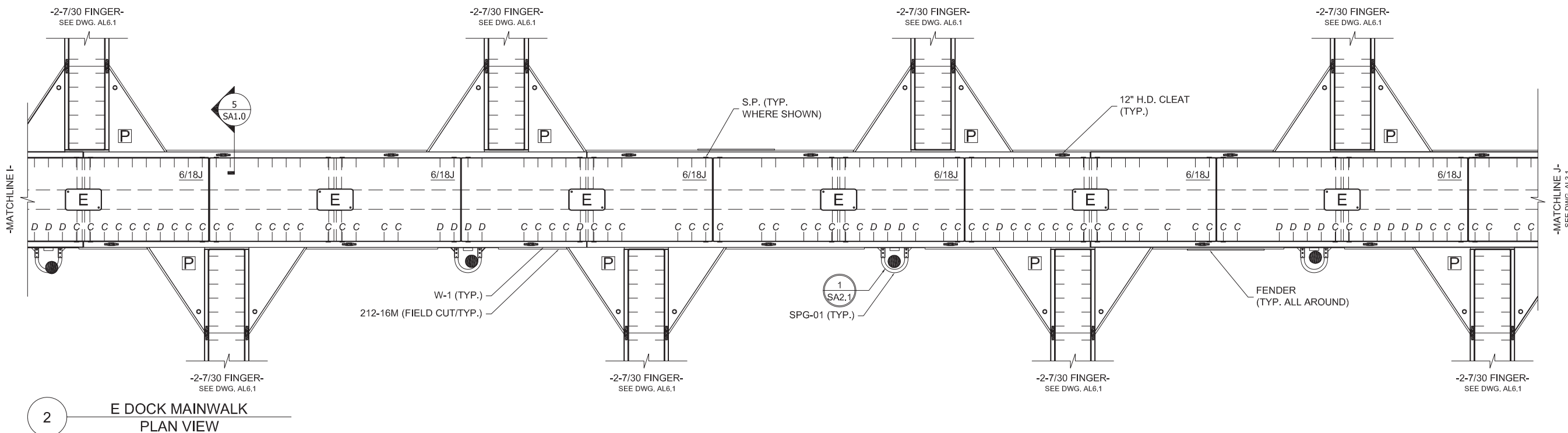
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



1 E DOCK MAINWALK  
PLAN VIEW

ROD(S)	DESCRIPTION
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)



2 E DOCK MAINWALK  
PLAN VIEW

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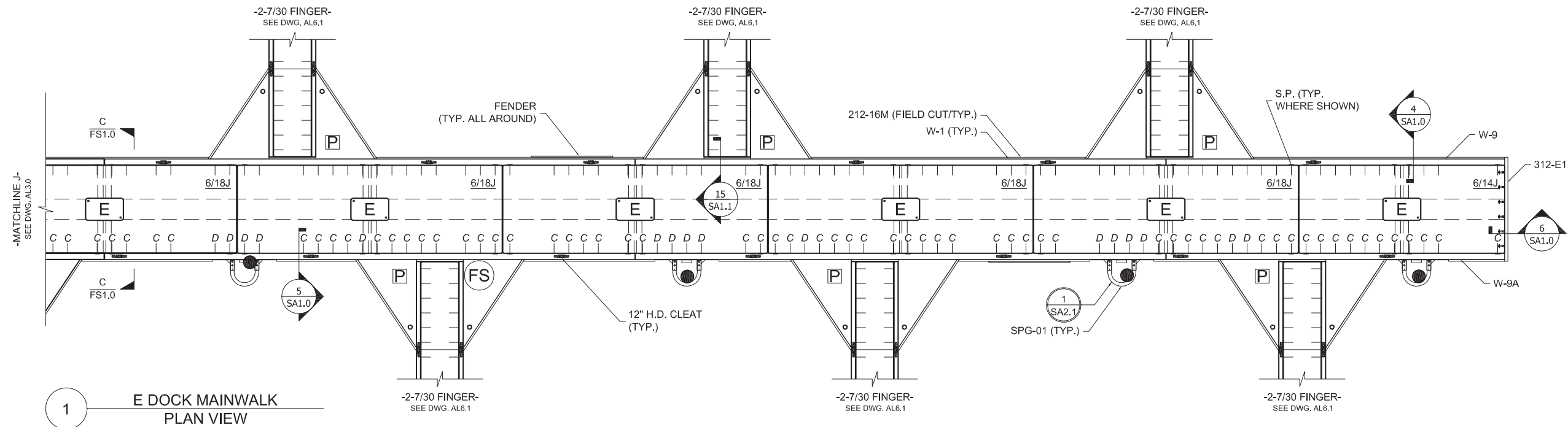
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BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: T.A.P.
DRAWING: AL3.0	DRAWING: AL3.0
SHEET NO.: 13	SHEET NO.: 13

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



**1** E DOCK MAINWALK  
PLAN VIEW

ROD(S)	DESCRIPTION
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)

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**PAPER SIZE:** 11x17

**DRAWN BY:** T.A.P.

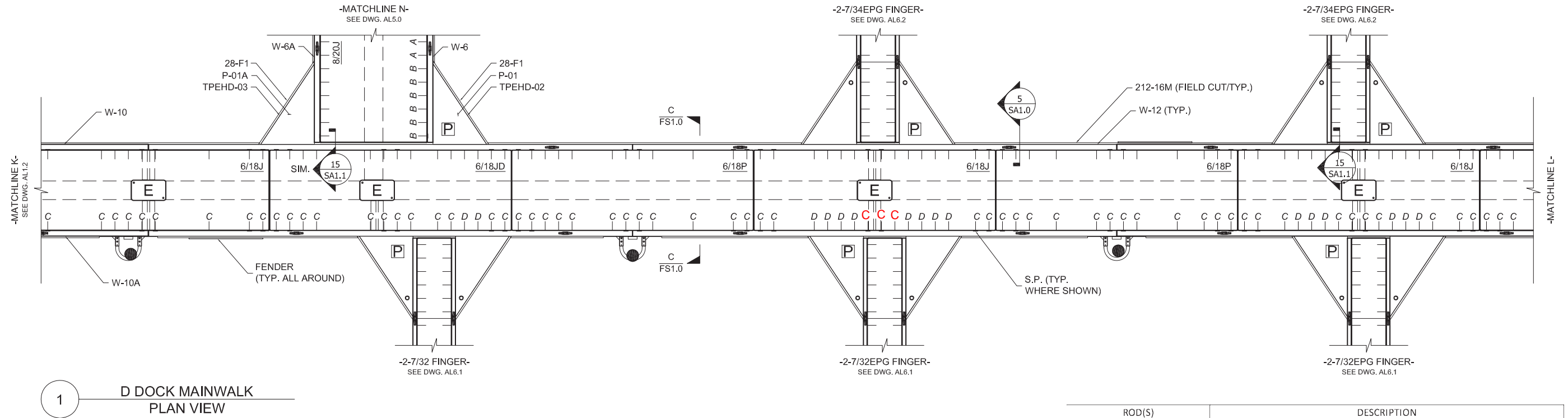
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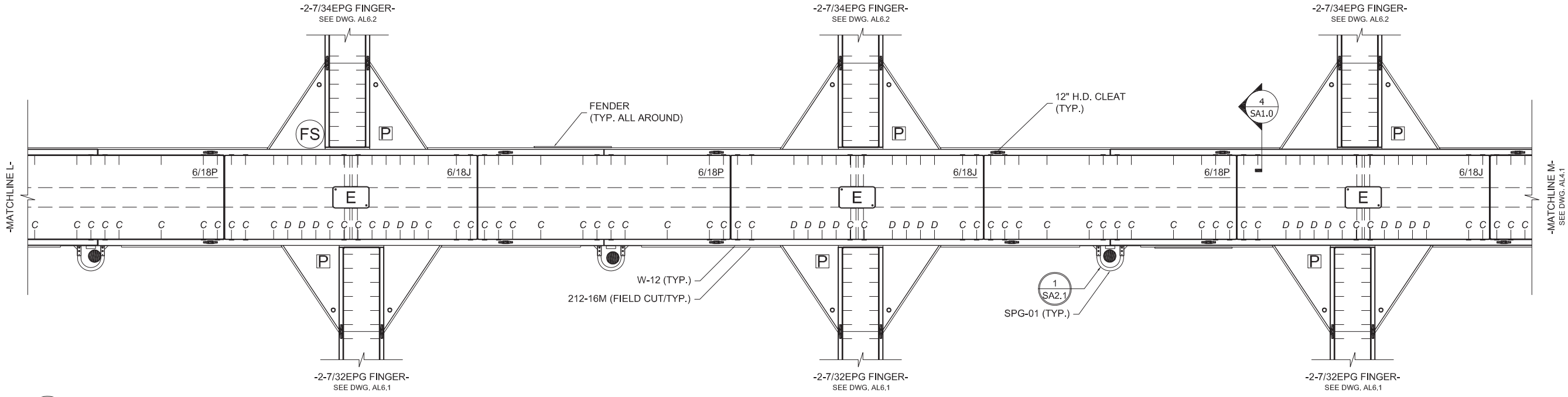
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1  
 Whittier, AK  
 ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



ROD(S)	DESCRIPTION
0.750" dia. x 9'-0.75" T.R. (A)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (Marginal)
0.750" dia. x 9'-1.25" T.R. (B)	3/4" dia. x 9'-1 1/4" Long Thru-Rod (Marginal)
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)

1 D DOCK MAINWALK  
PLAN VIEW



2 D DOCK MAINWALK  
PLAN VIEW

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**14-1665**

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

DATE: 01/24/15

PAPER SIZE: 11x17

DRAWN BY: T.A.P.

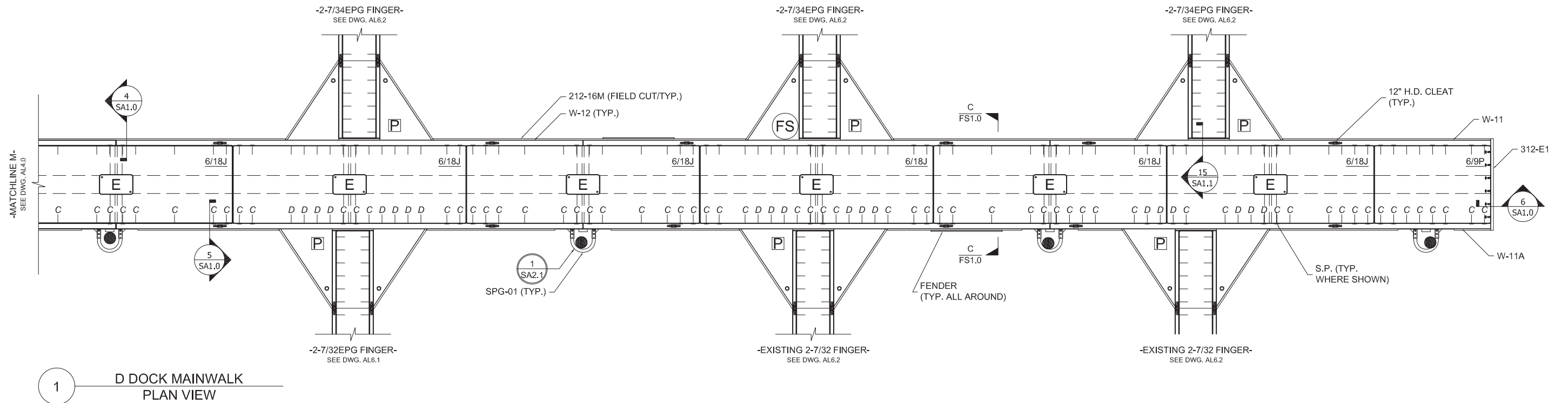
DRAWING: AL4.0

SHEET NO.: 15

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



1 D DOCK MAINWALK  
PLAN VIEW

ROD(S)	DESCRIPTION
0.750" dia. x 7'-0.75" T.R. (C)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (Walkway)
0.750" dia. x 7'-1.25" T.R. (D)	3/4" dia. x 7'-1 1/4" Long Thru-Rod (Walkway)

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JOB NUMBER:  
14-1665

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

DATE: 01/24/15

PAPER SIZE: 11x17

DRAWN BY: T.A.P.

DRAWING: AL4.1

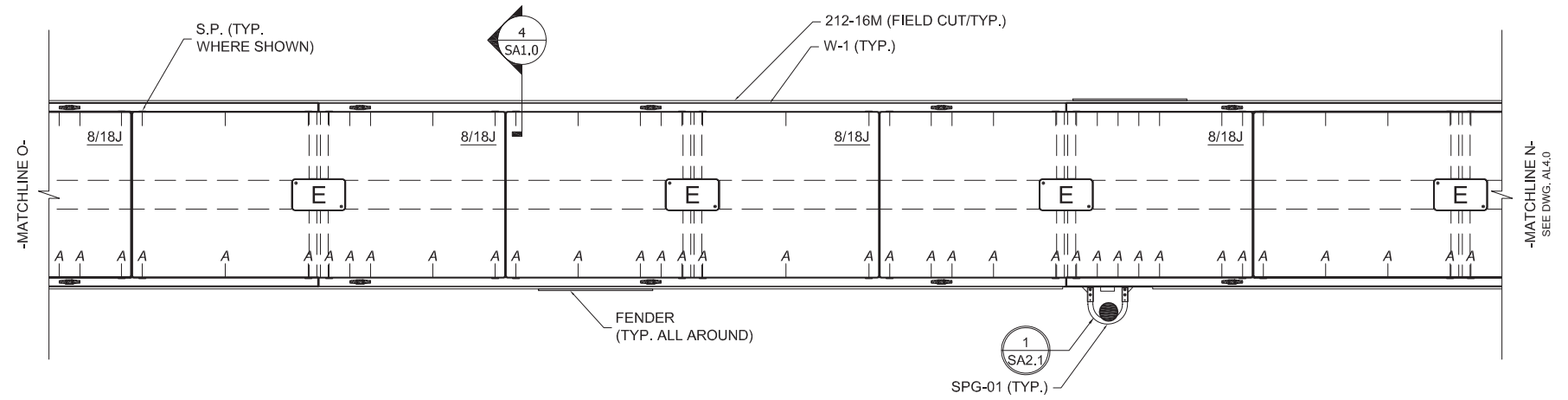
SHEET NO.: 16

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

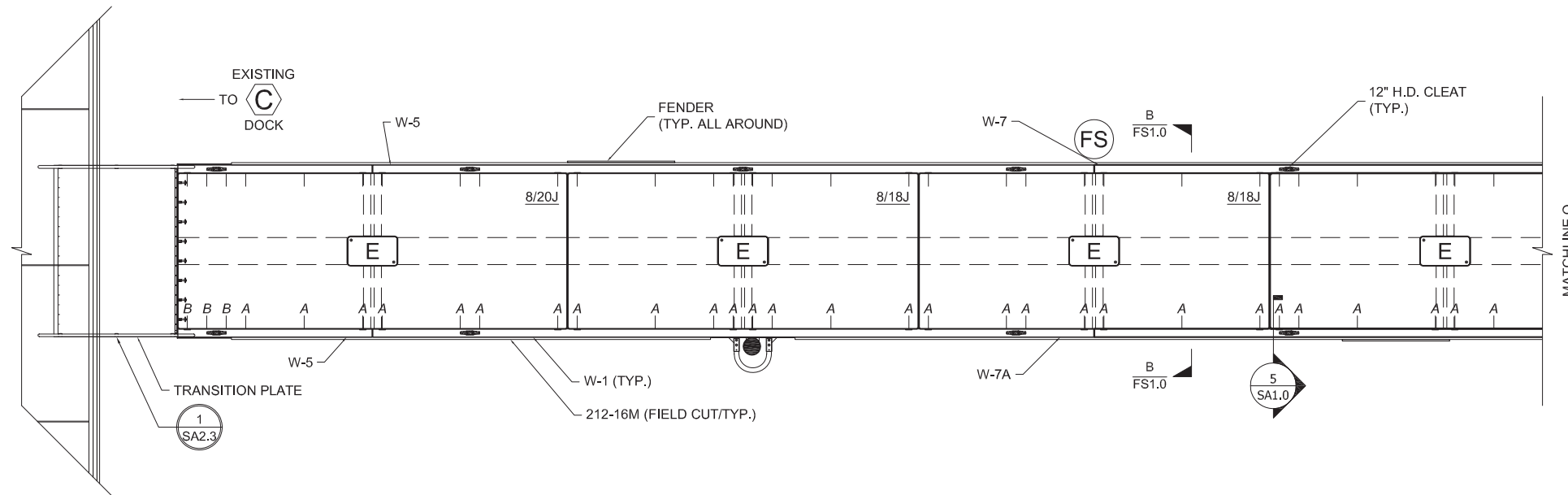
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.

ROD(S)	DESCRIPTION
0.750" dia. x 9'-0.75" T.R. (A)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (Marginal)
0.750" dia. x 9'-1.25" T.R. (B)	3/4" dia. x 9'-1 1/4" Long Thru-Rod (Marginal)



1 C-D DOCK MARGINAL  
PLAN VIEW



2 C-D DOCK MARGINAL  
PLAN VIEW

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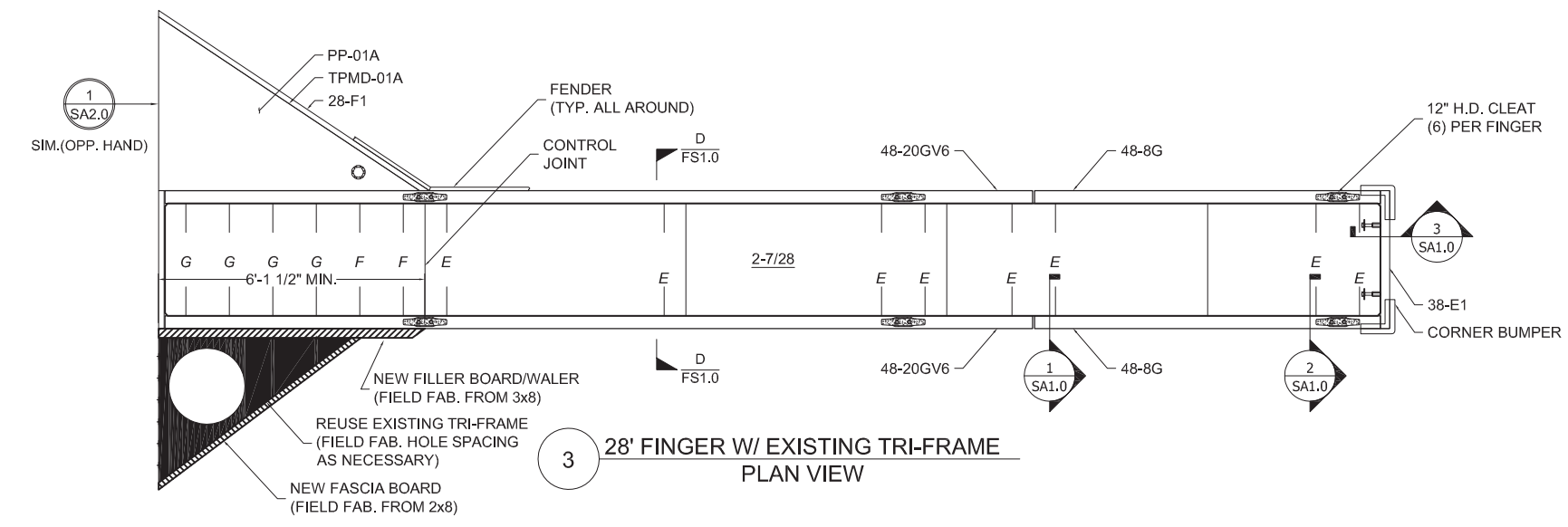
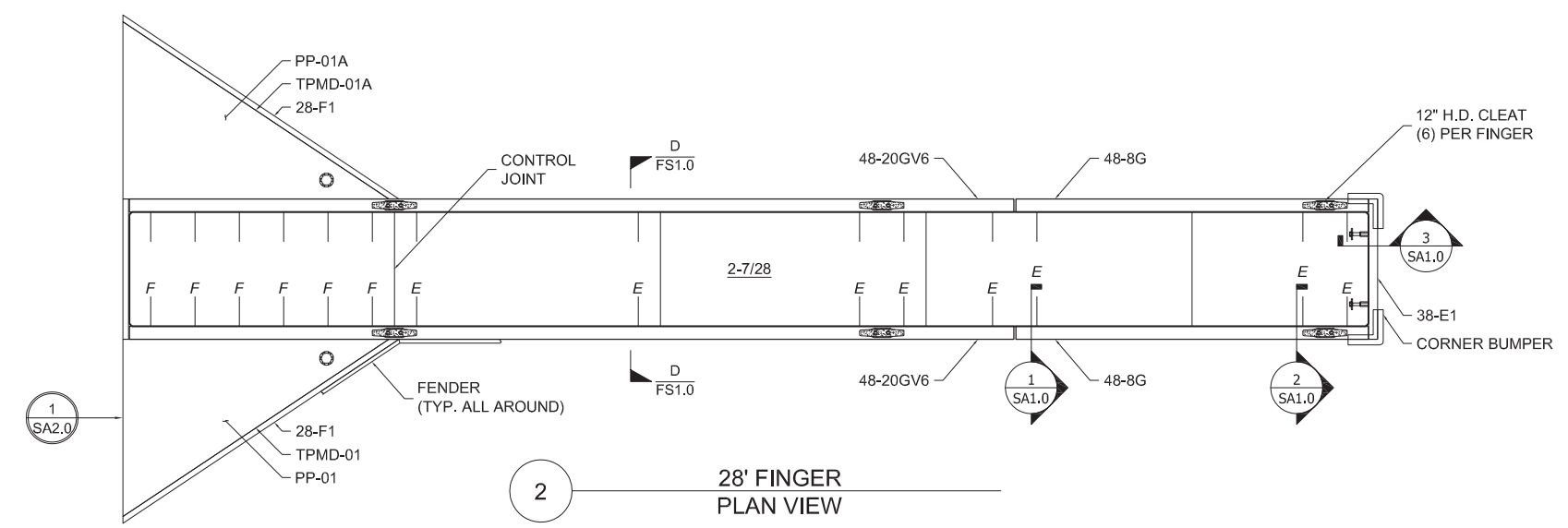
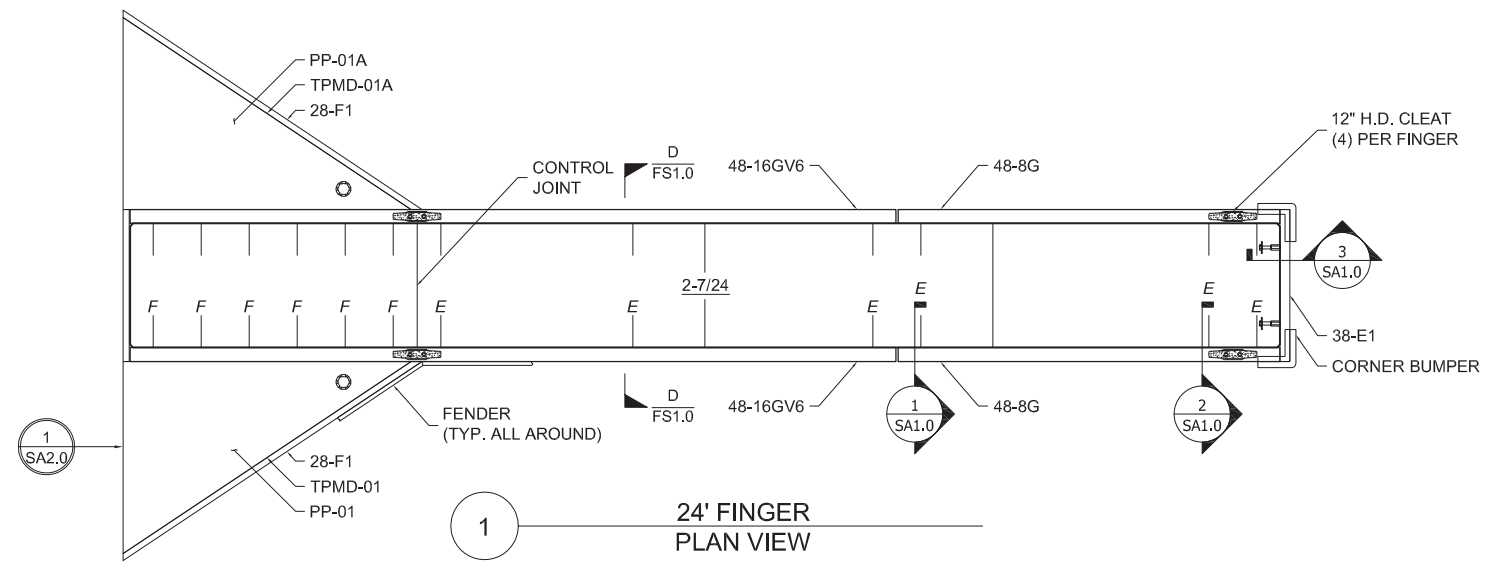
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JOB NUMBER: <b>14-1665</b>		SCALE: 1/8" = 1'-0"
PAPER SIZE: 11x17		DATE: 01/24/15
DRAWN BY: T.A.P.		DRAWING: AL5.0
SHEET NO.: 17		

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



ROD(S)	DESCRIPTION
0.750" dia. x 3'-1.75" T.R. (E)	3/4" dia. x 3'-1 3/4" Long Thru-Rod (Fingers)
0.750" dia. x 3'-5.50" T.R. (F)	3/4" dia. x 3'-5 1/2" Long Thru-Rod (Fingers)
0.750" dia. x 3'-8.00" T.R. (G)	3/4" dia. x 3'-8" Long Thru-Rod (Fingers)

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JOB NUMBER: **14-1665**

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

DATE: 02/24/15

PAPER SIZE: 11x17

DRAWN BY: T.A.P.

DRAWING: AL6.0

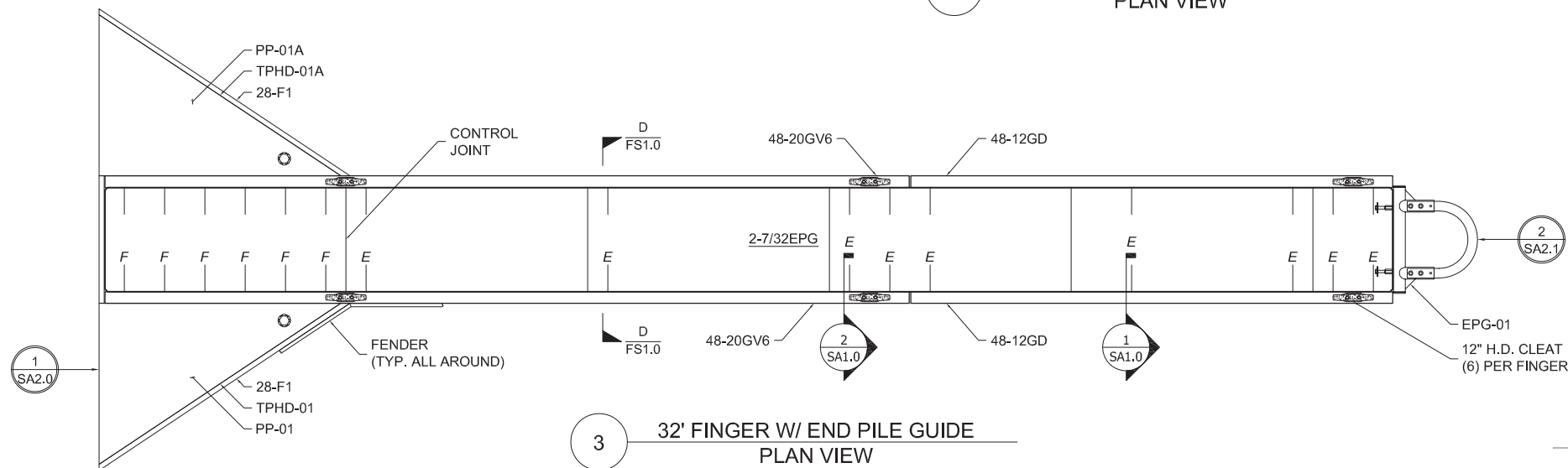
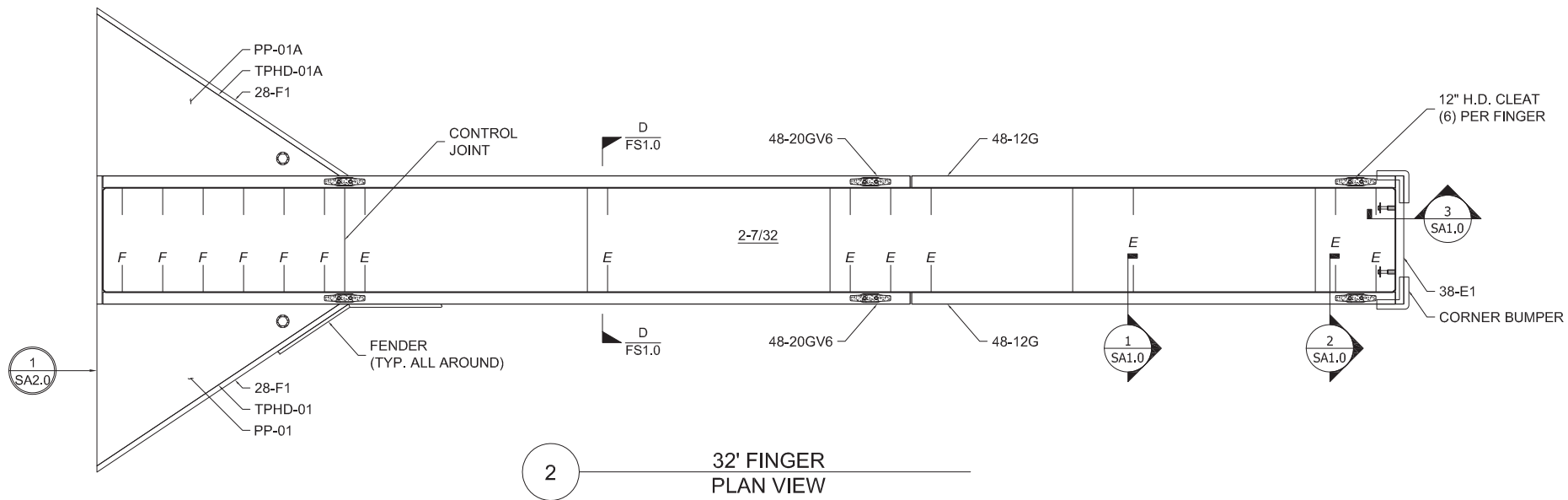
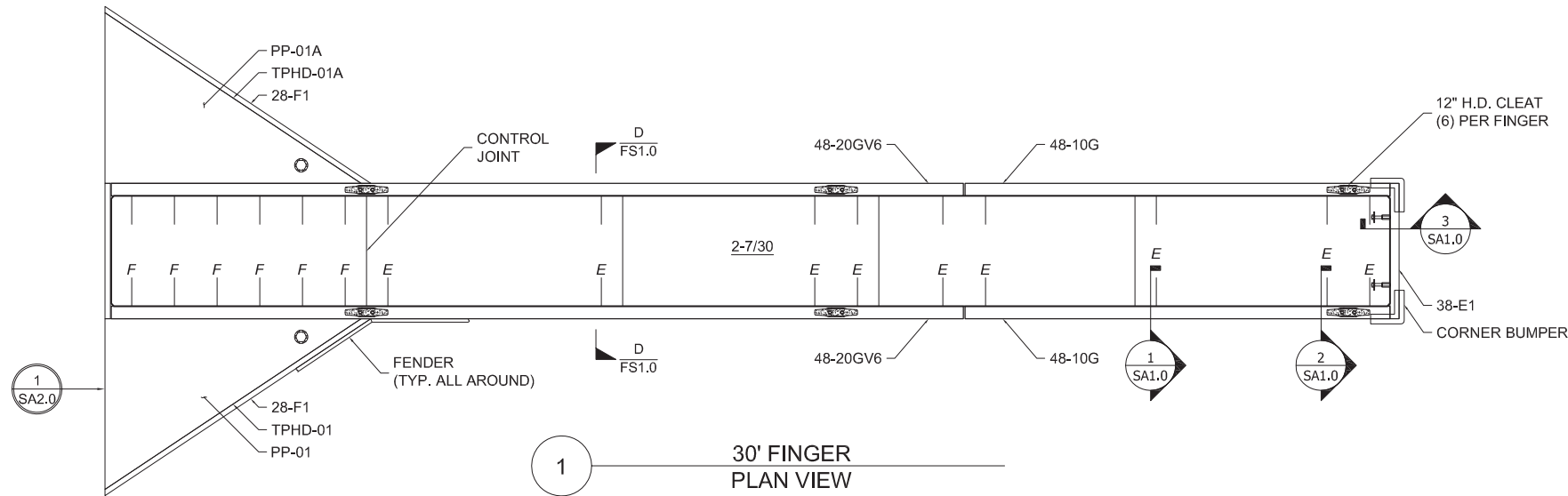
SHEET NO.: 18

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**



GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



ROD(S)	DESCRIPTION
0.750" dia. x 3'-1.75" T.R. (E)	3/4" dia. x 3'-1 3/4" Long Thru-Rod (Fingers)
0.750" dia. x 3'-5.50" T.R. (F)	3/4" dia. x 3'-5 1/2" Long Thru-Rod (Fingers)

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<b>JOB NUMBER:</b> 14-1665		<b>SCALE:</b> 1/4" = 1'-0"	
<b>PAPER SIZE:</b> 11x17		<b>DATE:</b> 02/24/15	
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.		<b>DRAWN BY:</b> T.A.P.	
		<b>DRAWING:</b> AL6.1	
		<b>SHEET NO.:</b> 19	

# CITY OF WHITTIER REPLACEMENT FLOATS PHASE 1

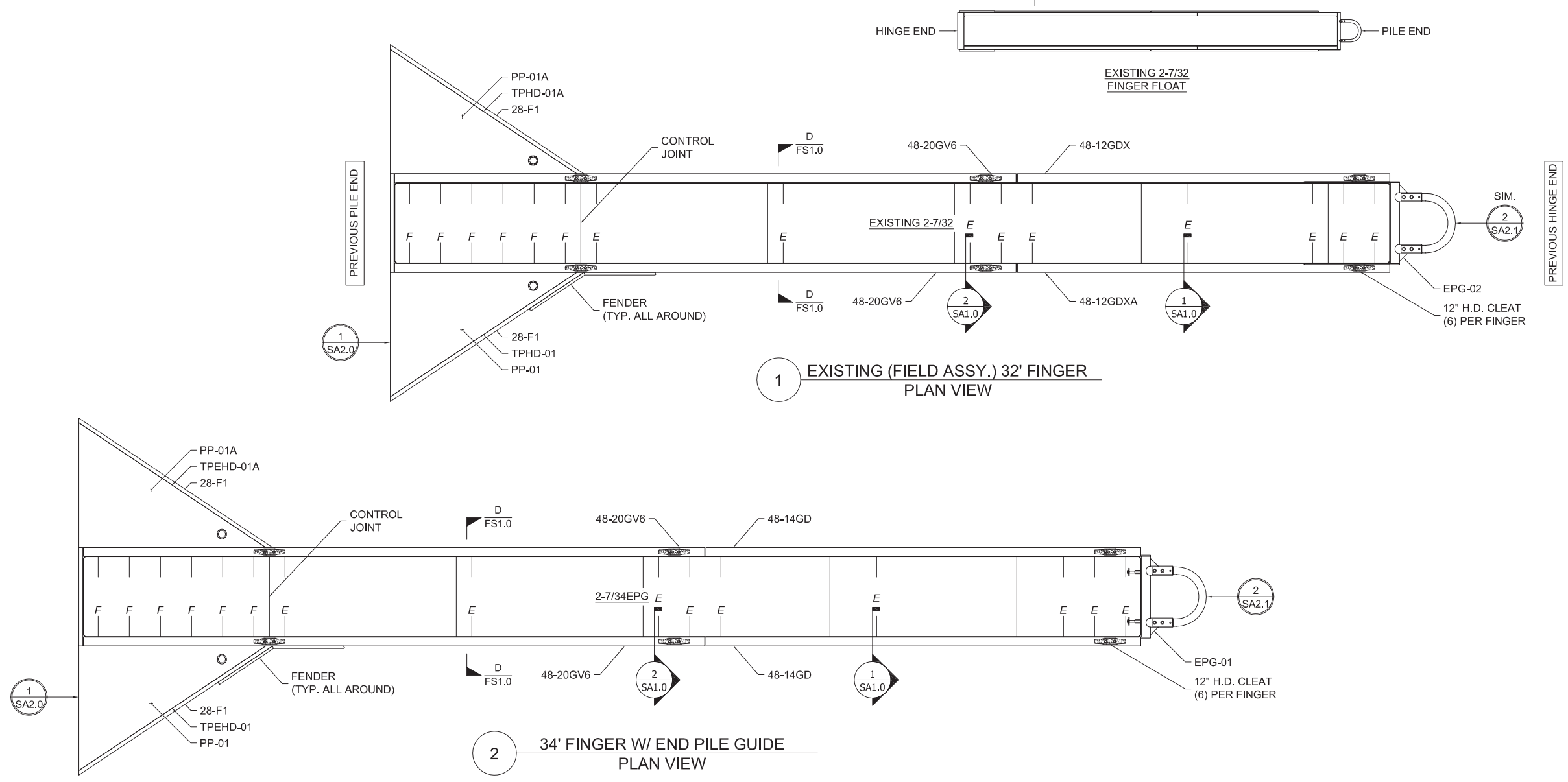
Whittier, AK

## ASSEMBLY LAYOUT

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.

FIRST (6) T.R. SLEEVES @ 2-1/2" DOWN FROM DECK | TYP. T.R. SLEEVES @ 3-3/4" DOWN FROM DECK

NOTE: REMOVE ALL HARDWARE, LUMBER & STEEL WELDMENTS. ROTATE FLOAT 180° FOR ASSY. AS SHOWN.



ROD(S)	DESCRIPTION
0.750" dia. x 3'-1.75" T.R. (E)	3/4" dia. x 3'-1 3/4" Long Thru-Rod (Fingers)
0.750" dia. x 3'-5.50" T.R. (F)	3/4" dia. x 3'-5 1/2" Long Thru-Rod (Fingers)

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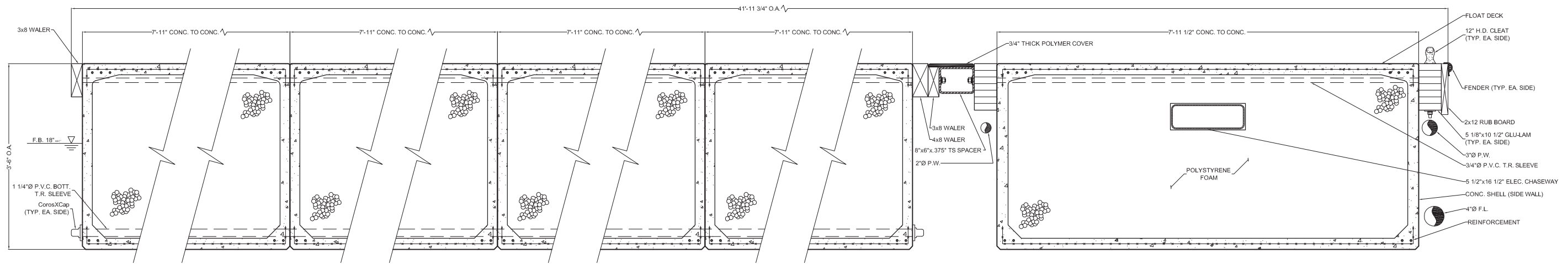
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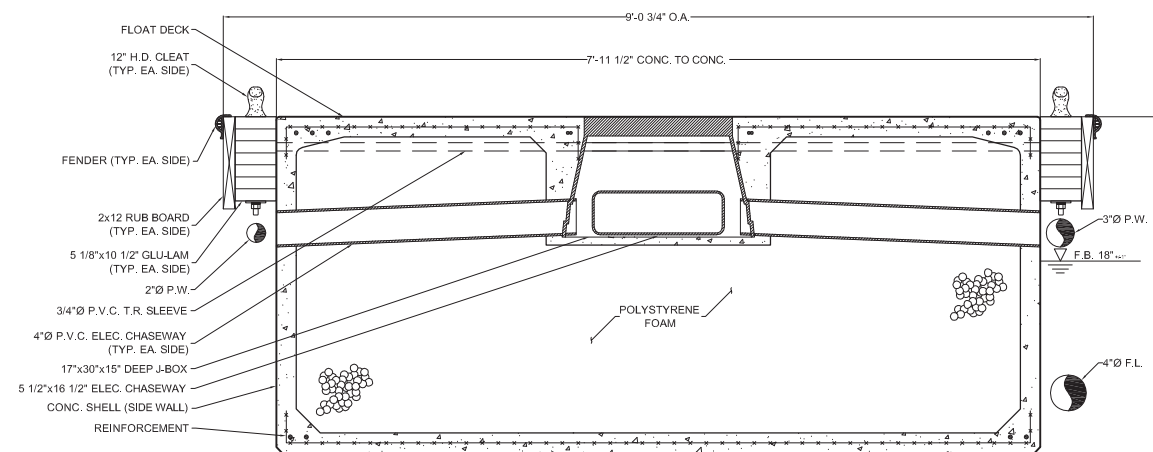
JOB NUMBER: <b>14-1665</b>	SCALE: 1/4" = 1'-0"
PAPER SIZE: 11x17	DATE: 02/24/15
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: T.A.P.
	DRAWING: AL6.2
	SHEET NO.: 20

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

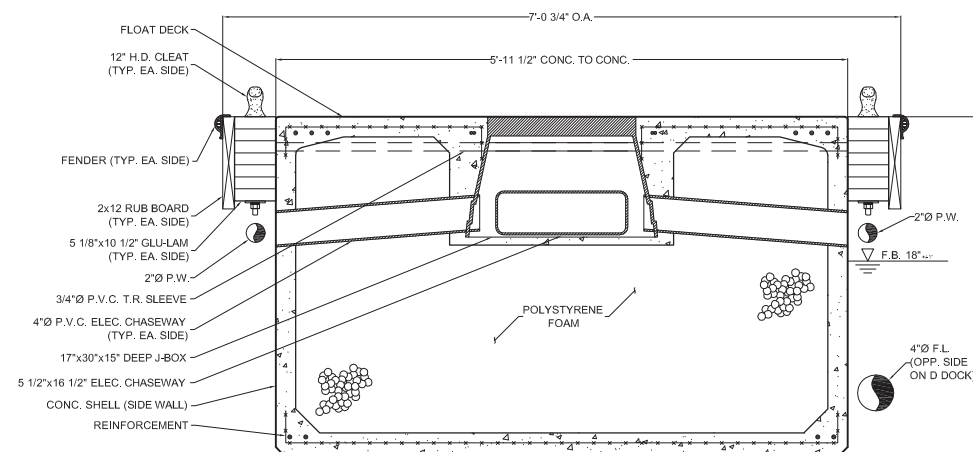
GENERAL NOTES:  
 1. SUPPLEMENTAL FLOATATION TUBS WILL BE USED PER THE CONTRACTORS DISCRETION.



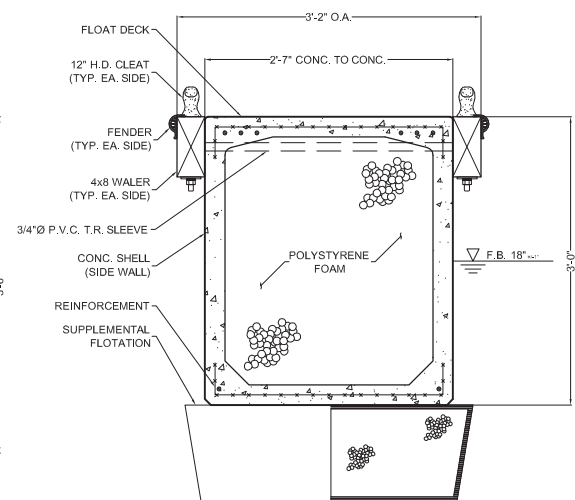
**A** Z DOCK MARGINAL TO GANGWAY (MATCHCAST)  
 PLATFORM FLOAT SECTION



**B** TYP. Z DOCK MARGINAL  
 FLOAT SECTION



**C** TYP. D,E & F DOCK MAINWALK  
 FLOAT SECTION



**D** TYP. FINGER  
 FLOAT SECTION

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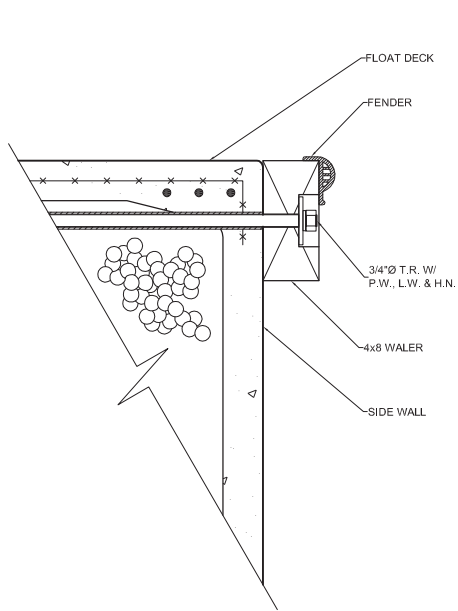
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<b>JOB NUMBER:</b> 14-1665		<b>SCALE:</b> 1/2" = 1'-0"	
<b>PAPER SIZE:</b> 11x17		<b>DATE:</b> 02/22/15	
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.		<b>DRAWN BY:</b> T.A.P.	
0 1		<b>DRAWING:</b> FS1.0	
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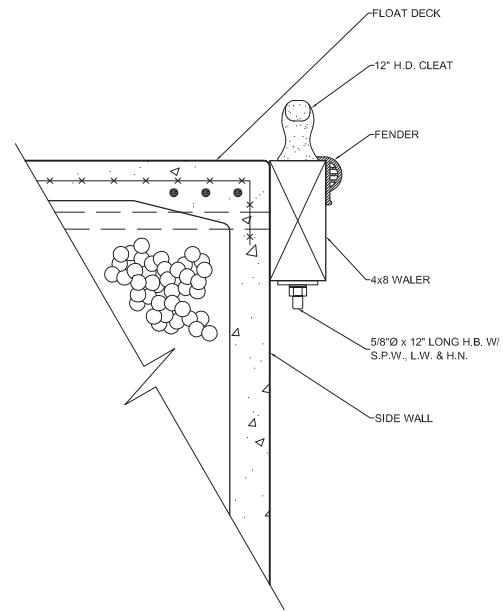
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**FLOAT SECTIONS**

GENERAL NOTES:

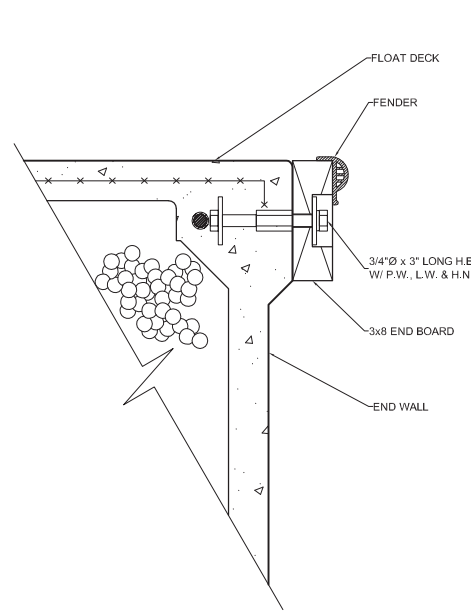
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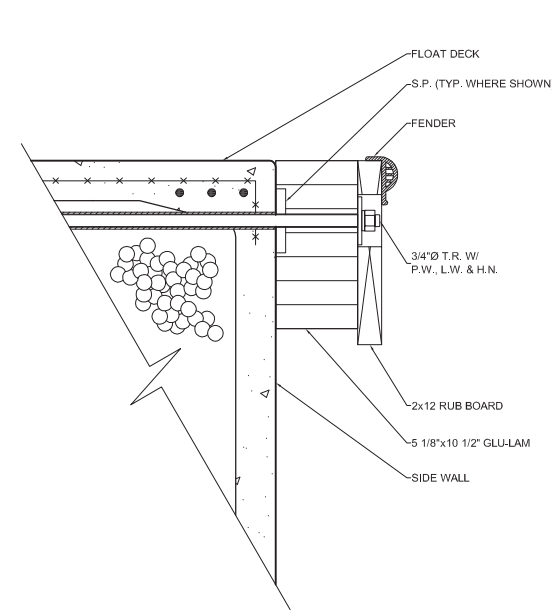
1 TYP. WALER @ FINGER ASSY. DETAIL



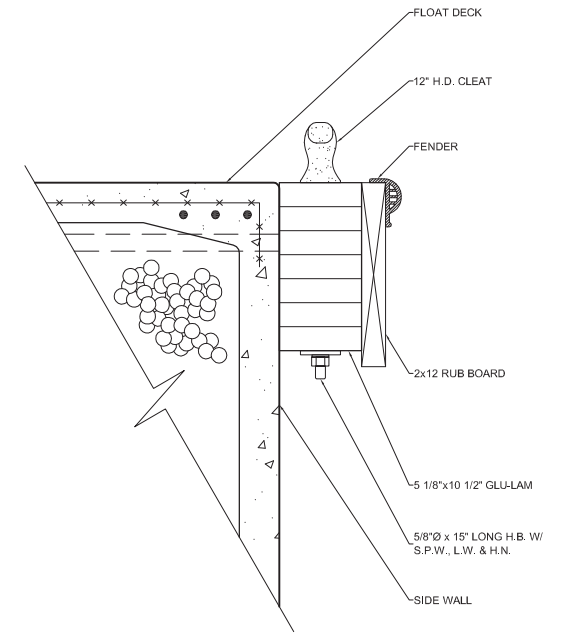
2 TYP. CLEAT @ FINGER ASSY. DETAIL



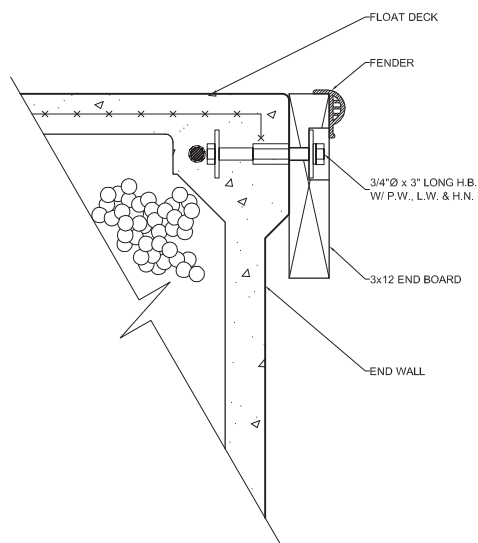
3 TYP. END BOARD @ FINGER ASSY. DETAIL



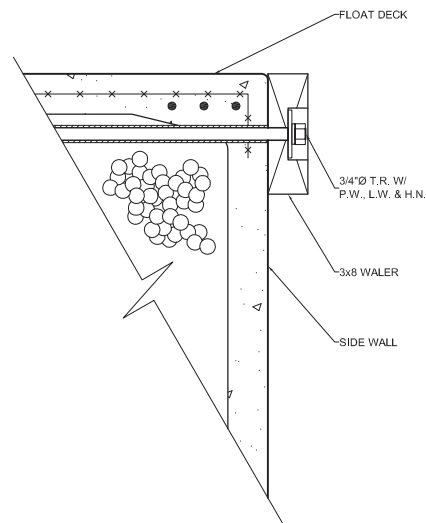
4 TYP. WALER @ FLOAT ASSY. DETAIL



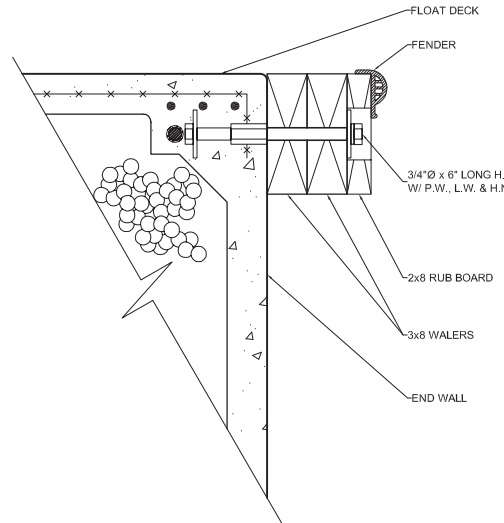
5 TYP. CLEAT @ FLOAT ASSY. DETAIL



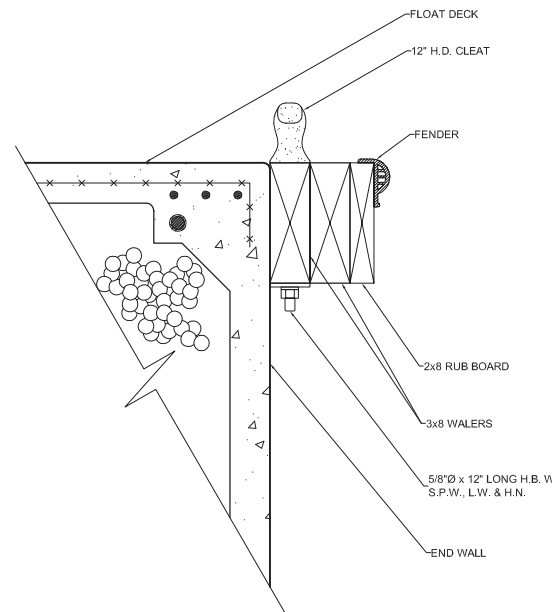
6 TYP. END BOARD @ FLOAT ASSY. DETAIL



7 WALER @ GANGWAY PLATFORM ASSY. DETAIL



8 END BOARDS @ GANGWAY PLATFORM ASSY. DETAIL



9 CLEAT @ GANGWAY PLATFORM ASSY. DETAIL

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JOB NUMBER:  
**14-1665**

PAPER SIZE: 11x17

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

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

DATE: 02/24/15

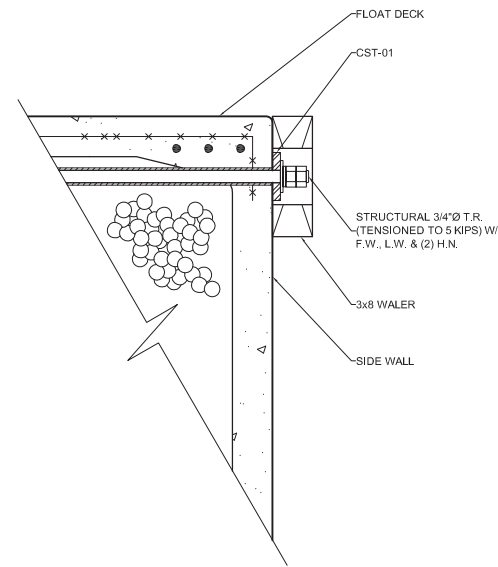
DRAWN BY: T.A.P.

DRAWING: SA1.0

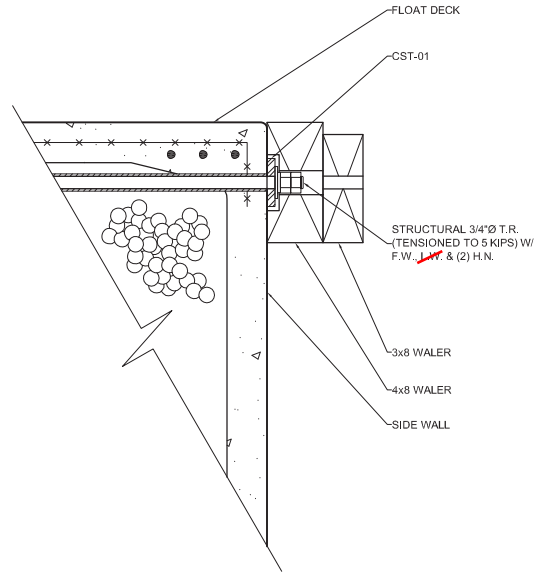
SHEET NO.: 22

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**

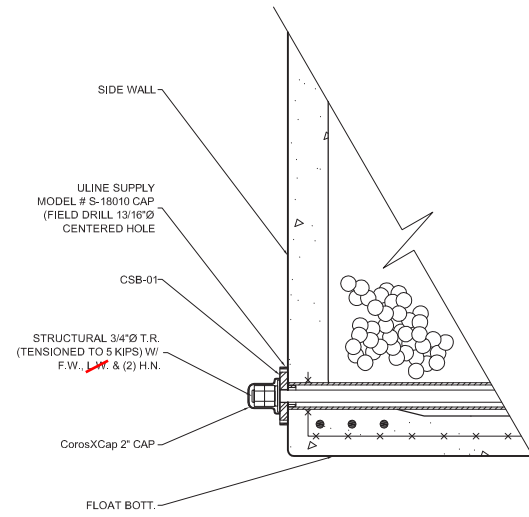
GENERAL NOTES:  
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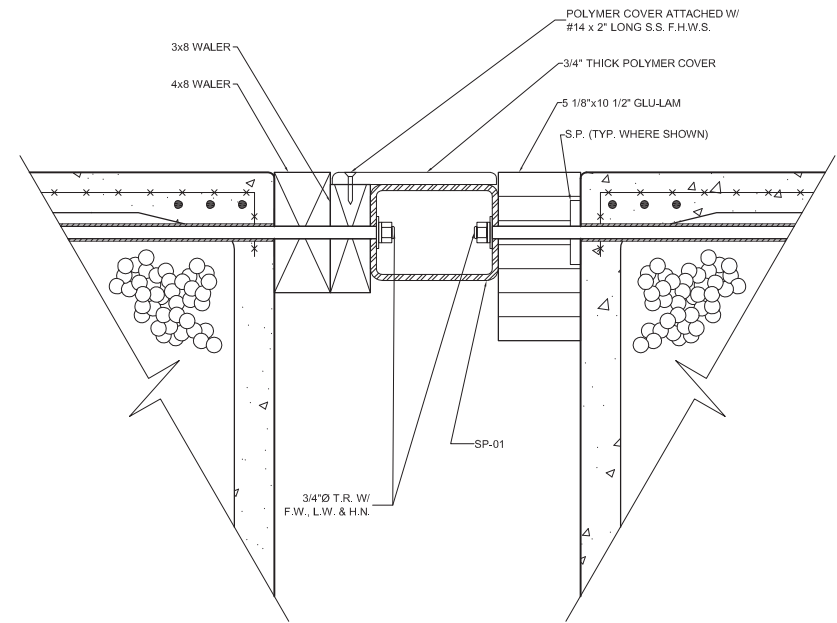
10 TOP STR. T.R. @ GANGWAY  
- PLATFORM ASSY. DETAIL



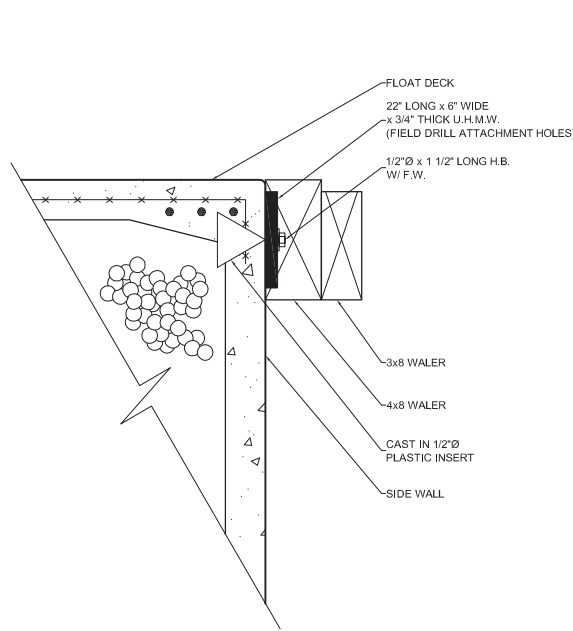
11 TOP STR. T.R. @ GANGWAY  
- PLATFORM ASSY. DETAIL



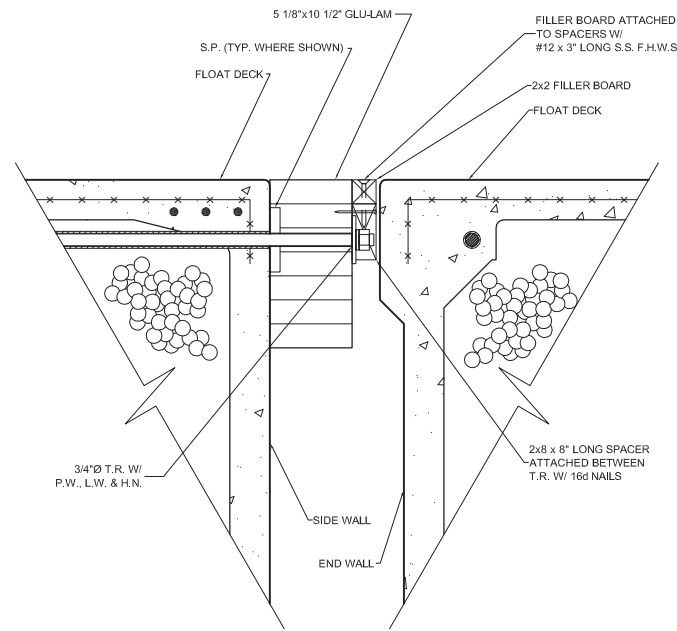
12 BOTT. STR. T.R. @ GANGWAY  
- PLATFORM ASSY. DETAIL



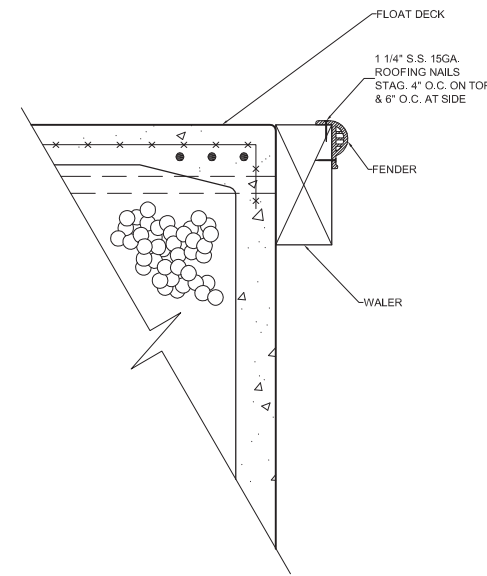
13 MAINWALK/GANGWAY  
- PLATFORM ASSY. DETAIL



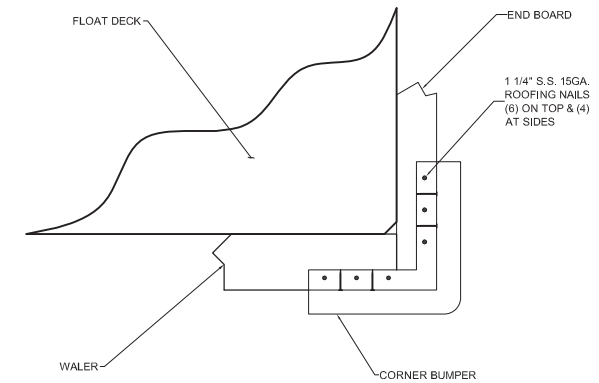
14 GANGWAY PLATFORM/PILE  
- U.H.M.W. PAD ASSY. DETAIL



15 TYP. FLOAT/FINGER  
- ASSY. DETAIL



- TYP. FENDER  
- ASSY. DETAIL



- TYP. CORNER BUMPER  
- ASSY. DETAIL

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JOB NUMBER:  
**14-1665**

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

DATE: 02/24/15

PAPER SIZE: 11x17

DRAWN BY: T.A.P.

DRAWING: SA1.1

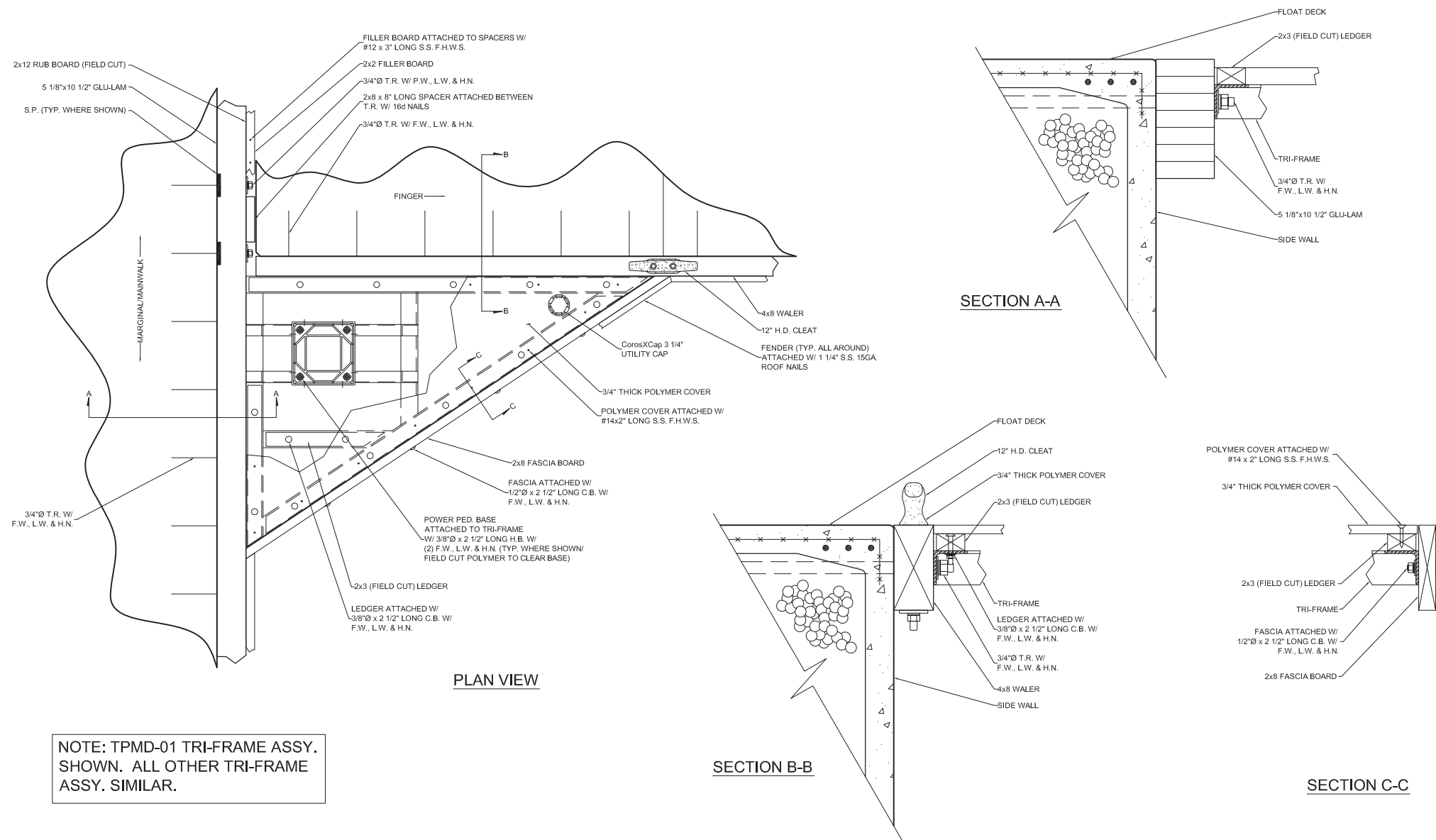
SHEET NO.: 23

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
Whittier, AK  
**SUB-ASSEMBLY DETAILS**

GENERAL NOTES:

1.



NOTE: TPMD-01 TRI-FRAME ASSY. SHOWN. ALL OTHER TRI-FRAME ASSY. SIMILAR.

1 TYP. TRI-FRAME ASSEMBLY DETAIL

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JOB NUMBER:  
**14-1665**

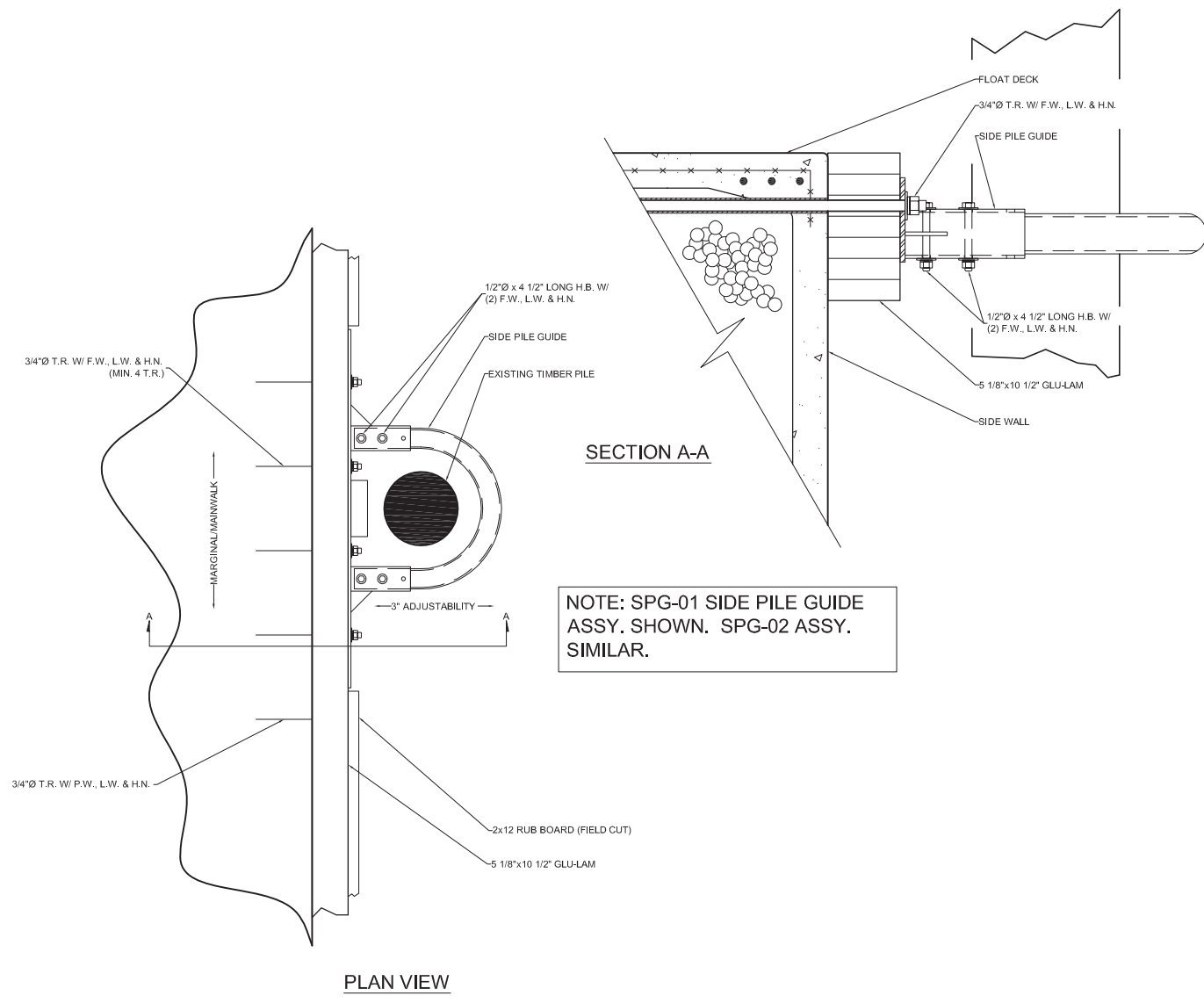
PAPER SIZE: 11x17

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

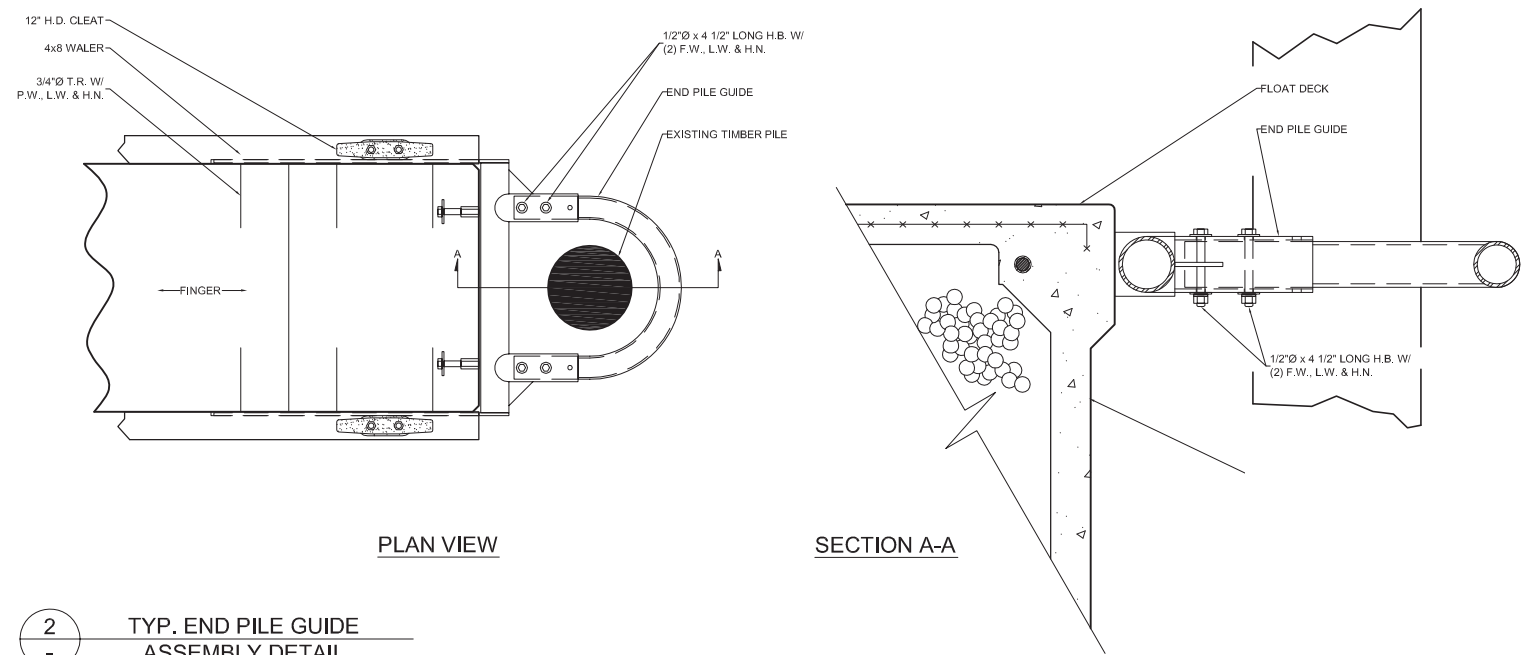
SCALE:	N.T.S.
DATE:	03/02/15
DRAWN BY:	T.A.P.
DRAWING:	SA2.0
SHEET NO.:	24

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**

GENERAL NOTES:  
1.



1 TYP. SIDE PILE GUIDE ASSEMBLY DETAIL



2 TYP. END PILE GUIDE ASSEMBLY DETAIL

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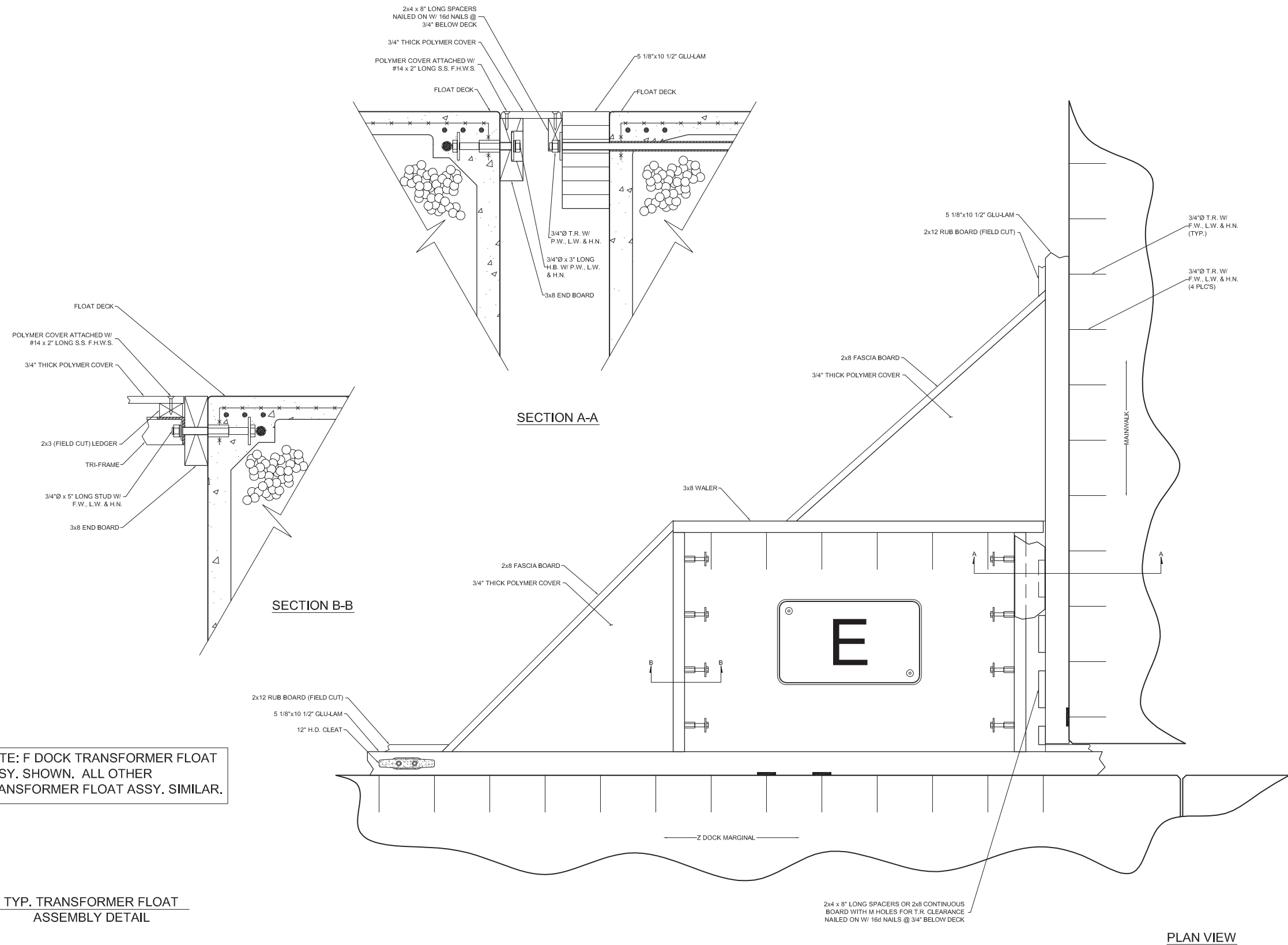
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JOB NUMBER: <b>14-1665</b>	SCALE: N.T.S.
PAPER SIZE: 11x17	DATE: 03/02/15
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: T.A.P.
DRAWING: SA2.1	SHEET NO.: 25

**CITY OF WHITTIER  
REPLACEMENT FLOATS PHASE 1**  
Whittier, AK  
SUB-ASSEMBLY DETAILS

GENERAL NOTES:

1.



NOTE: F DOCK TRANSFORMER FLOAT ASSY. SHOWN. ALL OTHER TRANSFORMER FLOAT ASSY. SIMILAR.

1 TYP. TRANSFORMER FLOAT ASSEMBLY DETAIL

REV.	DATE:	DESCRIPTION	BY:
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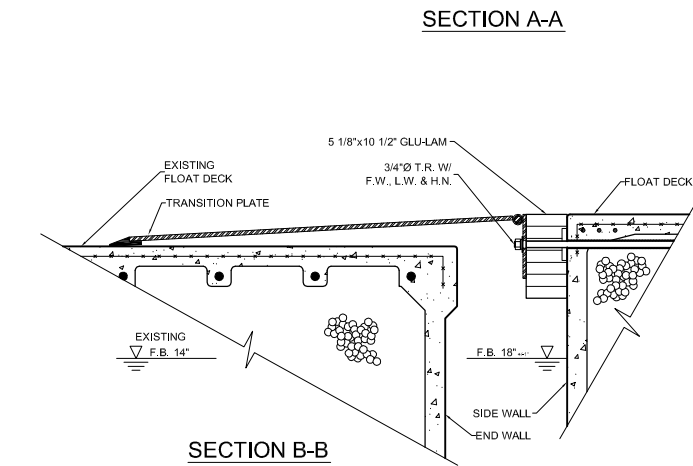
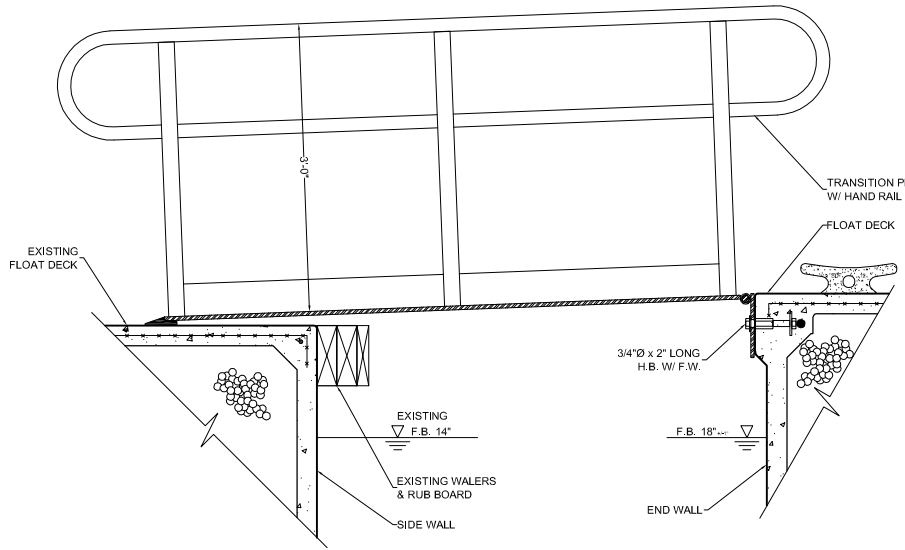
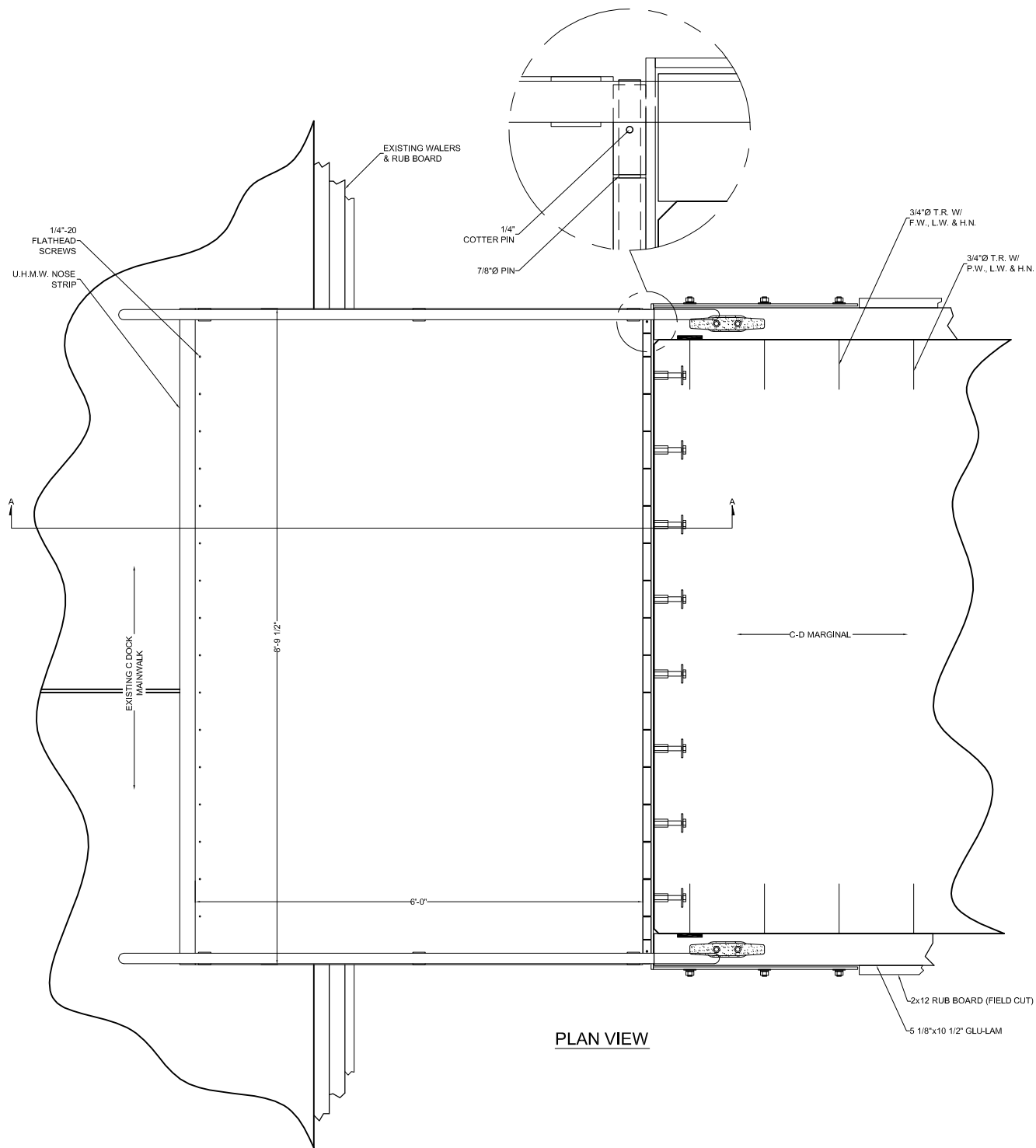
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PAPER SIZE: 11x17	DATE: 03/02/15
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: T.A.P.
	DRAWING: SA2.2
	SHEET NO.: 26

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK

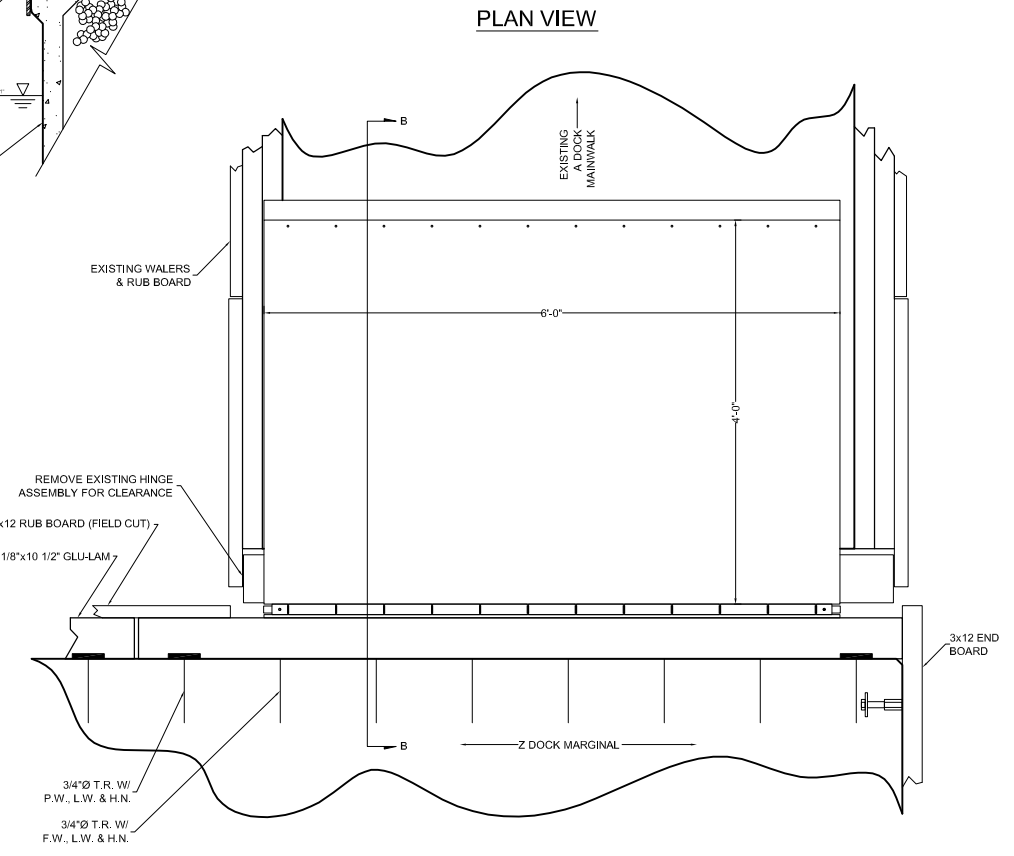
**SUB-ASSEMBLY DETAILS**



GENERAL NOTES:  
 1. DESIGN, PARTS, MATERIALS & HARDWARE PROVIDED BY TOPPER INDUSTRIES INC.



NOTE: A DOCK TRANSITION PLATE ASSY. SHOWN. B DOCK ASSY. SIMILAR.



2 EXISTING A DOCK TRANSITION PLATE ASSEMBLY DETAIL

1 C-D TRANSITION PLATE ASSEMBLY DETAIL

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	DRAWN BY: T.A.P.
	DRAWING: SA2.3
	SHEET NO.: 27

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 1**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**

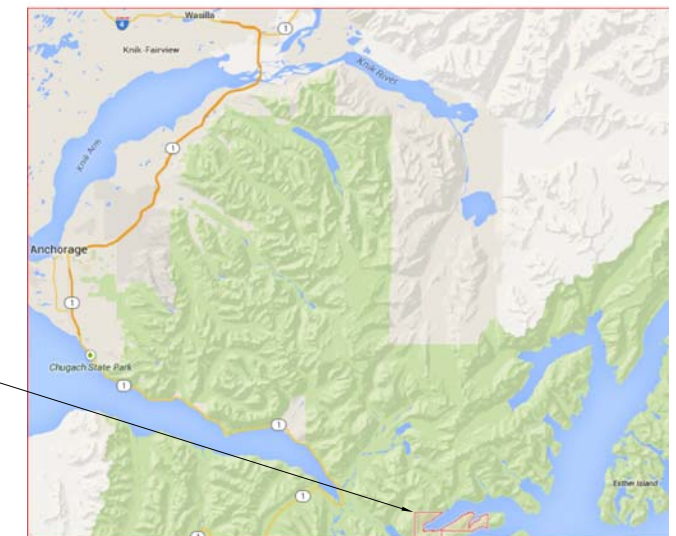
# CITY OF WHITTIER

## REPLACEMENT FLOAT PHASE 2

### Whittier, AK

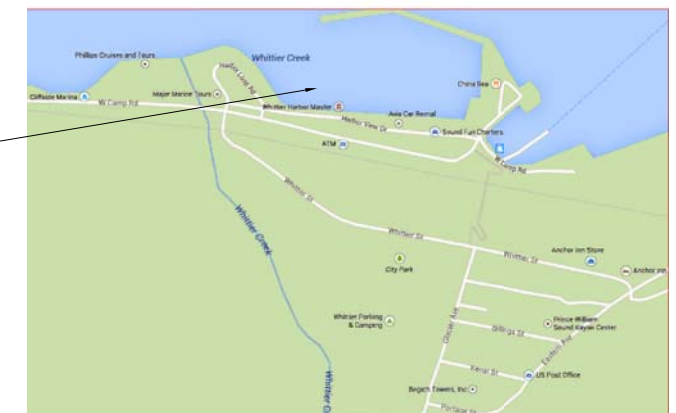
REV.	DRAWING:	SHEET NO.	DRAWING TITLE	DESCRIPTION
	C1.0		COVER SHEET	
	S1.0		ABBREVIATIONS & LEGEND	
	OL1.0	1	OVERALL LAYOUT	
	DL1.0	2	DIMENSIONAL LAYOUT	
	FL1.0	3	FLOAT LAYOUT	
	UL1.0	4	UTILITY LAYOUT	ELECTRICAL
	UL2.0	5	UTILITY LAYOUT	MECHANICAL
	CL1.0	6	CLEAT LAYOUT	
	SL1.0	7	STEEL WELDMENT LAYOUT	
	AL1.0-AL1.1	8-9	ASSEMBLY LAYOUT	X DOCK MARGINAL
	AL2.0-AL2.2	10-12	ASSEMBLY LAYOUT	B & C DOCK MAINWALK
	AL3.0-AL3.1	13-14	ASSEMBLY LAYOUT	FINGERS
	FS1.0	15	FLOAT SECTIONS	
	SA1.0	16	SUB-ASSEMBLY DETAILS	GENERAL DETAIL
	SA2.0	17	SUB-ASSEMBLY DETAILS	TRI-FRAME
	SA2.1	18	SUB-ASSEMBLY DETAILS	END/SIDE PILE GUIDE
	SA2.2	19	SUB-ASSEMBLY DETAILS	TRANSFORMER
	SA2.3	20	SUB-ASSEMBLY DETAILS	DUMMY TRI-FRAME
	SA2.4	21	SUB-ASSEMBLY DETAILS	MINI-FRAME

VICINITY MAP:



Whittier  
(60.776245, -148.684982)

SITE MAP:



City of Whittier  
Existing Marina

DRAWING STATUS:

AS BUILT  
08-25-17

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	DATE:	02/17/2017
PAPER SIZE: 11x17	DRAWN BY:	C. M. K.
	DRAWING:	C1.0
<b>UNIFLOAT</b> precision engineered floatation systems	SHEET NO.:	i

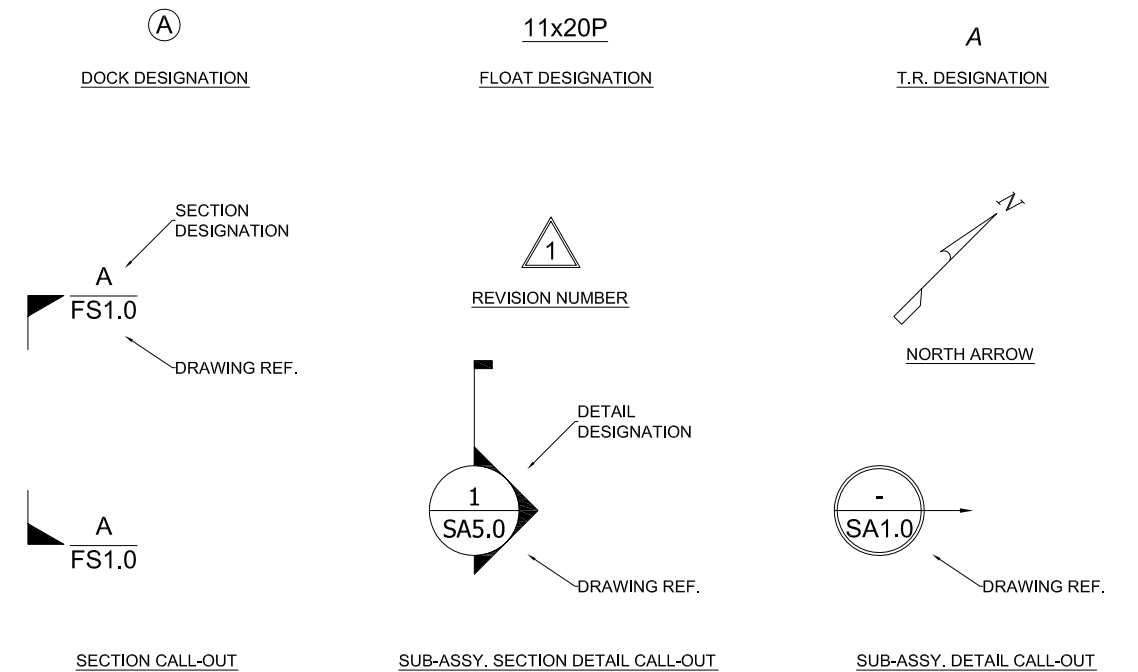
CITY OF WHITTIER  
REPLACEMENT FLOATS PHASE 2  
Whittier, AK  
COVER SHEET

TYP. DRAWING ABBREVIATIONS	DESCRIPTION
L	ANGLE
∕	SQUARE
B.F.	BOARD FEET
BOTT.	BOTTOM
CHAMF.	CHAMFER
CHKR.	CHECKER
⊕	CENTER LINE
CLR.	CLEAR
CONC.	CONCRETE
CORN.	CORNER
CSC.	COUNTERSINK
CU.	CUBIC
D.	DEPTH
∅	DIAMETER
DET.	DETAIL
DBL.	DOUBLE
DWG.	DRAWING
EA.	EACH
E.W.	EACH WAY
EPS	EXPANDED POLYSTYRENE
F.F.	FAR FACE
F.B.	FREE BOARD/FLAT BAR
FLT.	FLOAT
FL.	FULL LENGTH
FT.	FOOT/FEET
F.W.	FIRE WATER
GA.	GAUGE
GALV.	GALVANIZED
H.D.	HEAVY DUTY
H.D.P.E.	HIGH DENSITY POLYETHYLENE
HORIZ.	HORIZONTAL
HSS.	HOLLOW STRUCTURAL SECTIONS
I.D.	INSIDE DIMENSION
L.	LENGTH
LG.	LONG
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
LONG.	LONGITUDINAL
MIN.	MINIMUM
N.F.	NEAR FACE
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.A.	OVERALL
O.C.	ON CENTER
O.D.	OUTSIDE DIMENSION
OPP.	OPPOSITE

TYP. DRAWING ABBREVIATIONS	DESCRIPTION
P.L.	PLATE
PLC'S	PLACES
P.S.I.	POUNDS PER SQUARE INCH
PT	POST TENSIONING
P.V.C.	POLYVINYL CHLORIDE
P.W.	POTABLE WATER
QTY.	QUANTITY
R.	RADIUS
REF.	REFERENCE
REQ'D	REQUIRED
REV.	REVISION
S.B.O.	SUPPLIED BY OTHERS
SCH.	SCHEDULE
SHT.	SHEET
SIM.	SIMILAR
SPA.	SPACES
S.S.	STAINLESS STEEL
STD.	STANDARD
T&B	TOP AND BOTTOM
T.B.D.	TO BE DETERMINED
THR.D.	THREAD
TRANSF.	TRANSFORMER
T.S.	TUBE STEEL
TYP.	TYPICAL
U.H.M.W.	ULTRA HIGH MOLECULAR WEIGHT (POLYETHYLENE)
VERT.	VERTICAL
W.	WIDTH
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH

TYP. HARDWARE ABBREVIATIONS	DESCRIPTION
C.B.	CARRIAGE BOLT
E.B.	EYE BOLT
F.W.	FLAT (CUT) WASHER
F.H.W.S.	FLAT HEAD WOOD SCREW
H.B.	HEX BOLT
H.C.N.	HEX COUPLER NUT
H.H.B.	HEAVY HEX BOLT
H.N.	HEX NUT
J.N.	JAM NUT
L.B.	LAG BOLT
L.W.	LOCK WASHER
M.S.	MACHINE SCREW
P.W.	PLATE WASHER
S.P.	SHEAR PLATE
S.P.W.	SQUARE PLATE WASHER
S.T.S.	SELF TAPPING SCREW
S.R.	SPLIT RING
T.B.	TIMBER BOLT
T.R.	THRU-ROD
F.H.H.D.S.	FLAT HEAD HEX DRIVE SCREW
P.P.H.S.	PHILLIPS PAN HEAD SCREW

**LEGEND**



**CITY OF WHITTIER  
REPLACEMENT FLOATS PHASE 2**

Whittier, AK

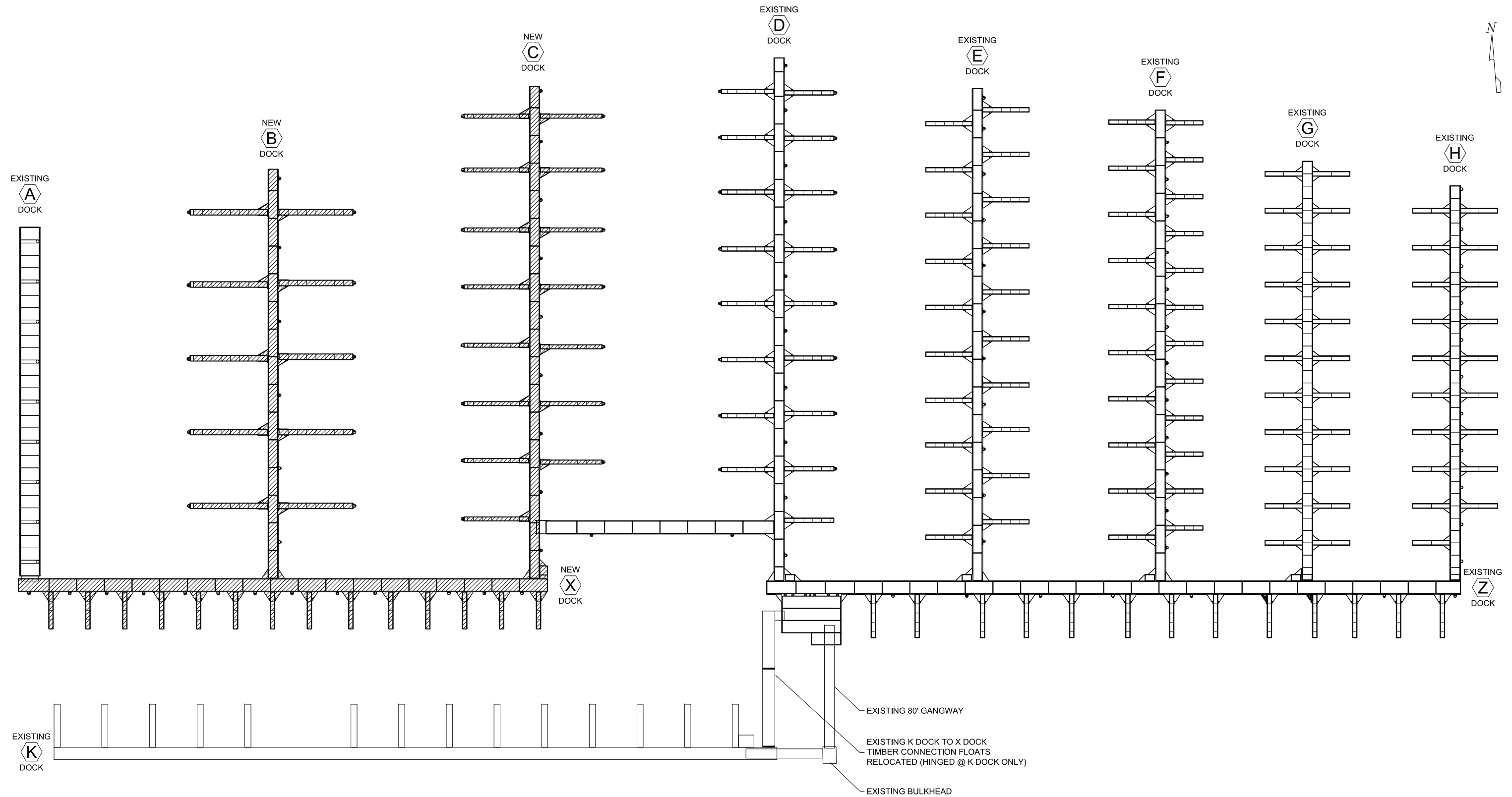
**ABBREVIATIONS & LEGEND**

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Ferndale, WA 98248  
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FAX: (360) 384-8134

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<b>PAPER SIZE: 11x17</b>	DRAWN BY:	C. M. K.
	DRAWING:	S1.0
<b>UNIFLOAT</b> precision engineered floatation systems	SHEET NO.:	ii



REV.	DATE:	DESCRIPTION	BY:
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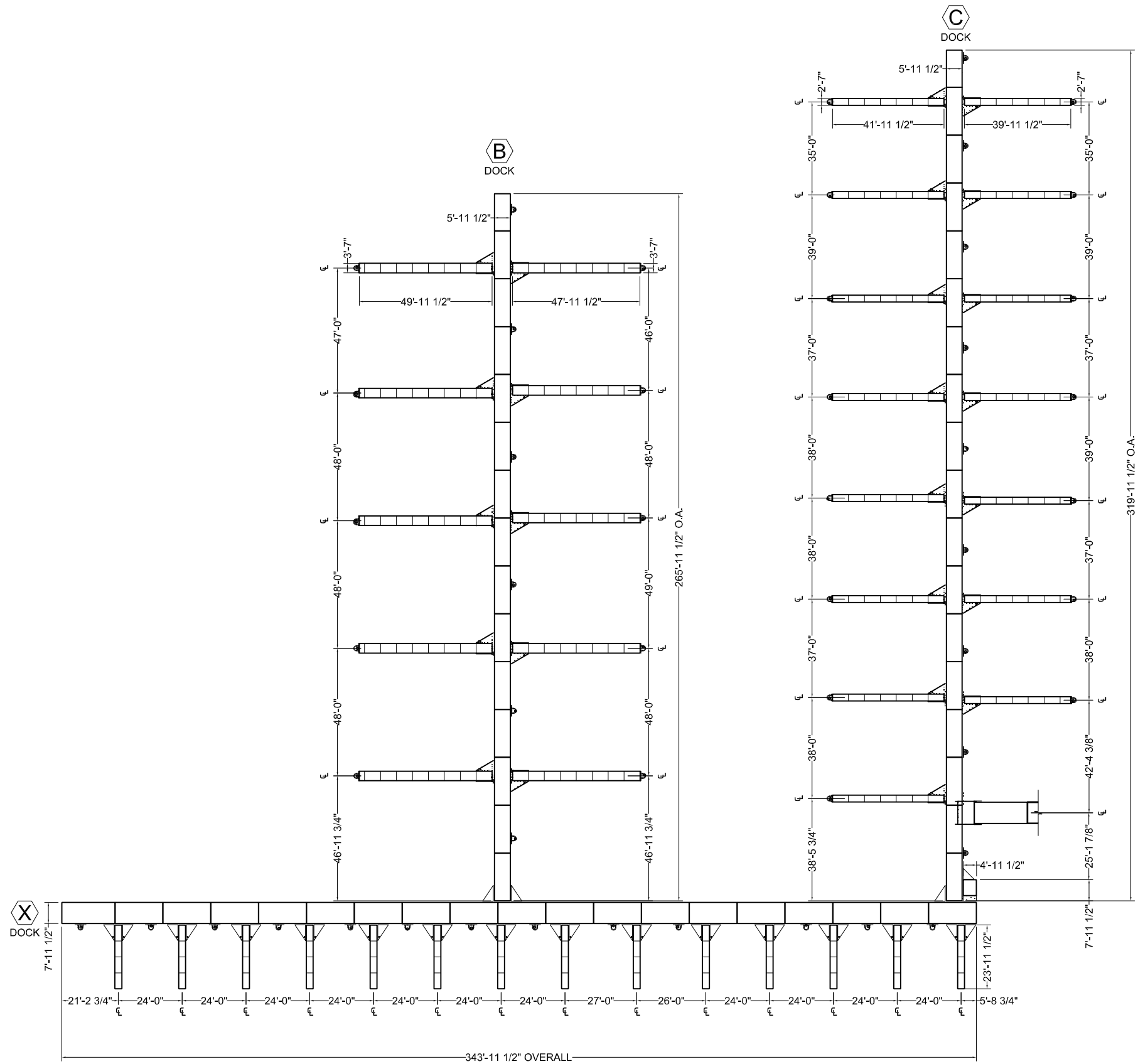
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		DRAWN BY: C. M. K.	
		DRAWING: OL1.0	
		SHEET NO.: 1	

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**OVERALL LAYOUT**

- GENERAL NOTES:  
 1. ALL DIMENSIONS SHOWN ARE CONC. TO CONC.  
 2. FINGER SPACING MAY BE SHIFTED 6" or 1'-0" O.C..



TO EXISTING  
 D DOCK



REV.	DATE:	DESCRIPTION	BY:

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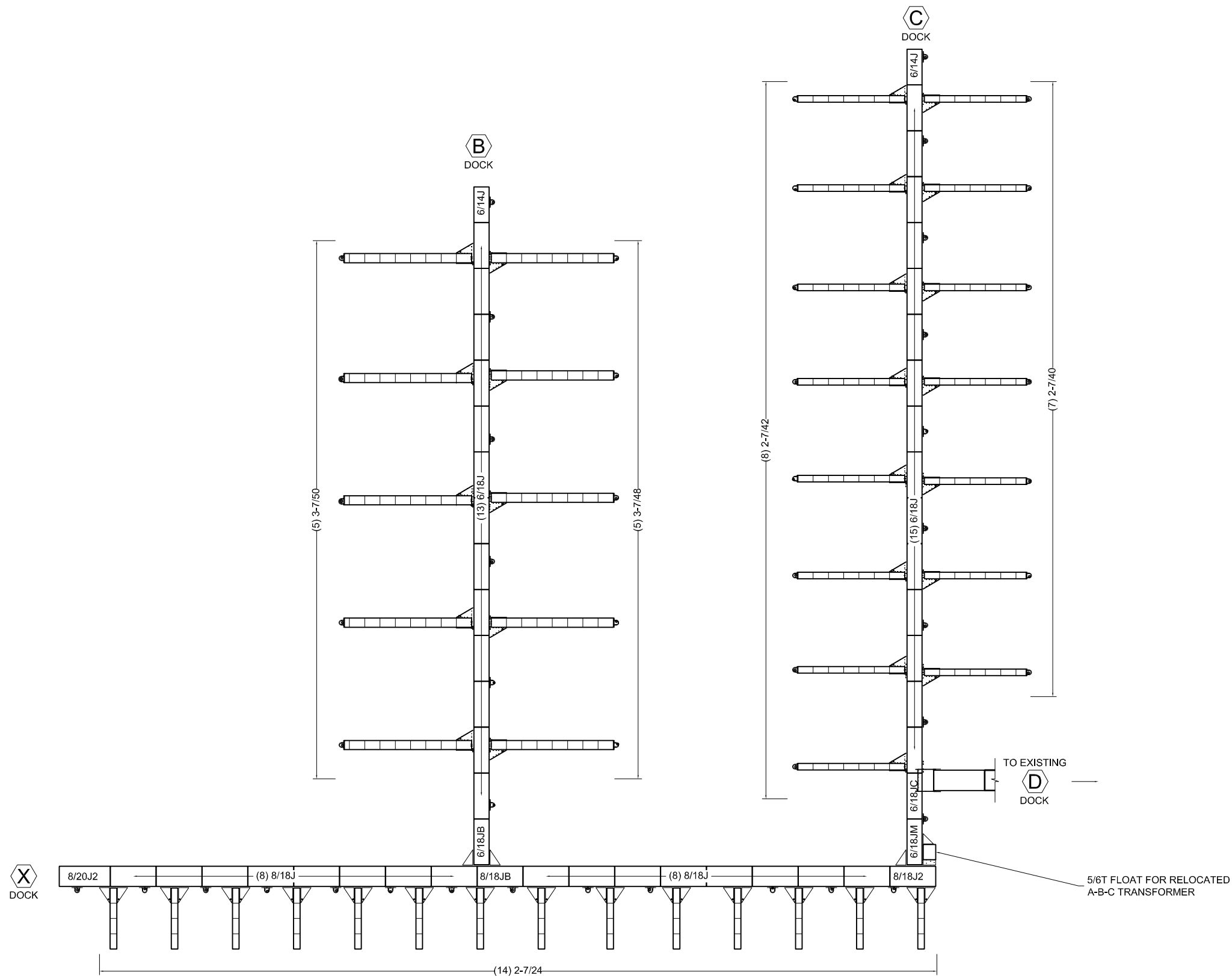
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SHEET NO.: 2	DRAWING: DL1.0

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**DIMENSIONAL FLOAT LAYOUT**

SCHEDULE		
FINGER	2-7/24	(QTY:14)
	2-7/40	(QTY:7)
	2-7/42	(QTY:8)
	3-7/48	(QTY:5)
WALKWAY	3-7/50	(QTY:5)
	6/14J	(QTY:2)
	6/18J	(QTY:28)
MAINWALK	6/18JB	(QTY:1)
	6/18JC	(QTY:1)
	6/18JM	(QTY:1)
	8/18J	(QTY:16)
	8/18JB	(QTY:1)
TRANSFORMER	8/18J2	(QTY:1)
	8/20J2	(QTY:1)
	5/6T	(QTY:1)



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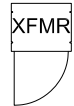


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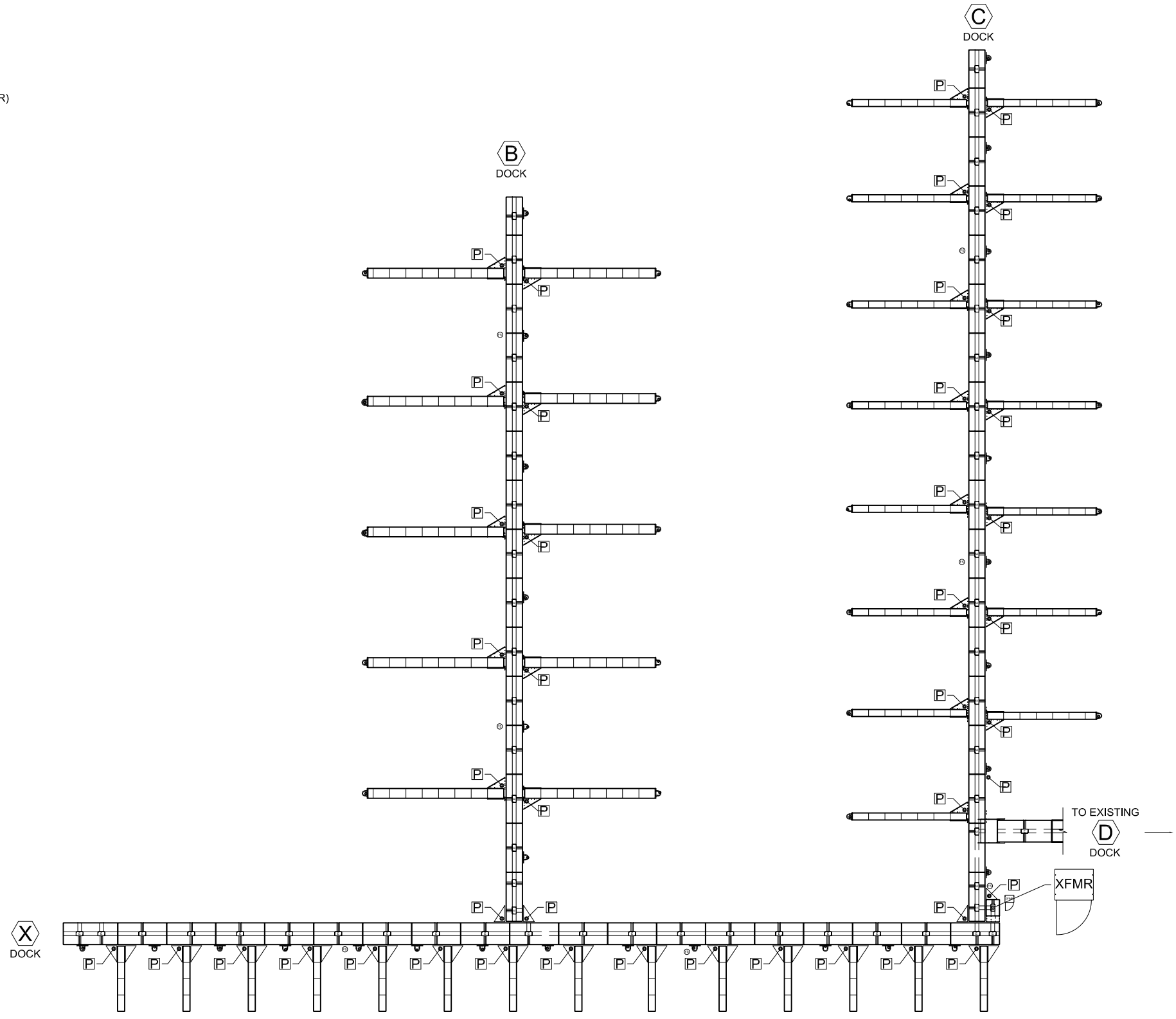
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<b>PAPER SIZE:</b> 11x17	<b>DATE:</b> 02/17/2017
<b>DRAWN BY:</b> C. M. K.	<b>DRAWING:</b> FL1.0
<b>SHEET NO.:</b> 3	

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**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**FLOAT LAYOUT**

LEGEND

-  = SALVAGED A-B-C SUBSTATION (TRANSFORMER)
-  = MEE HARBOUR LIGHT SS (POWER PED.)
-  = ELEC. J-BOX (17"x30"x15"DEEP)



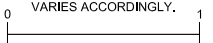
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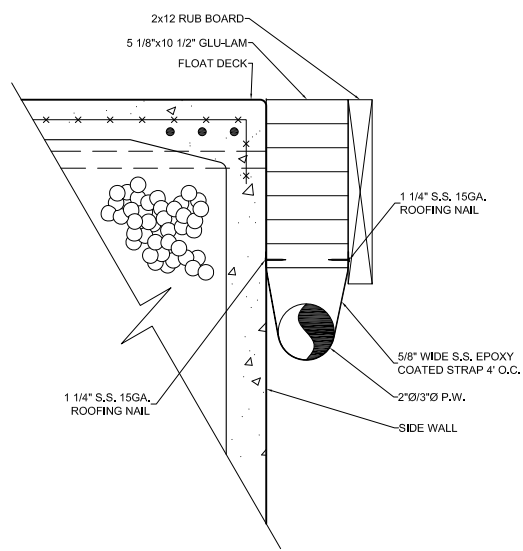
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<b>PAPER SIZE:</b> 11x17		<b>DATE:</b> 02/17/2017	
<b>DRAWN BY:</b> C. M. K.		<b>DRAWING:</b> UL1.0	
<b>SHEET NO.:</b> 4			

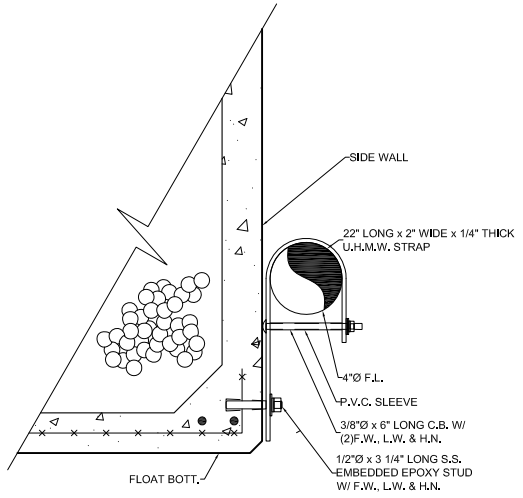
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.



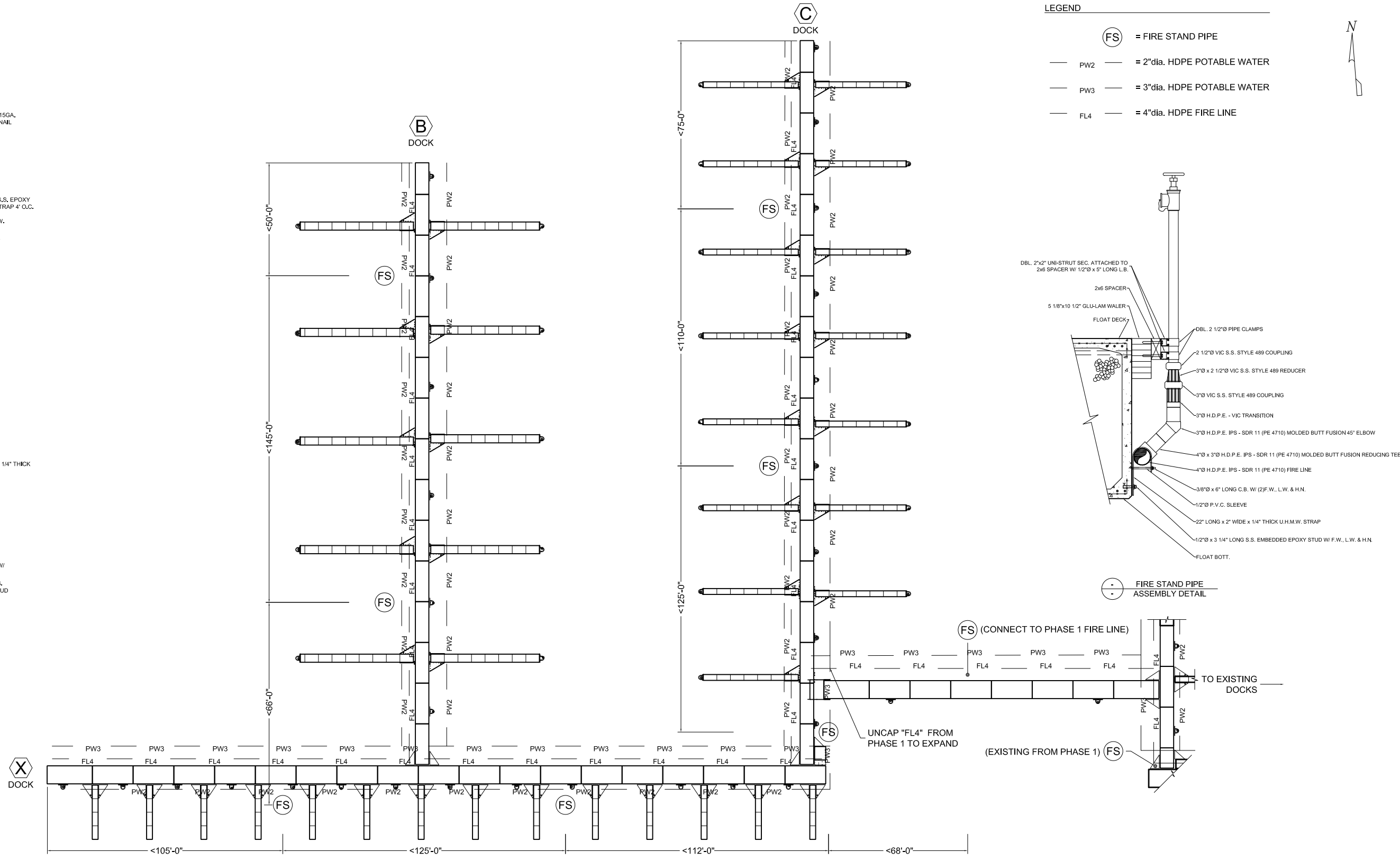
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**UTILITY LAYOUT (ELECTRICAL)**



TYP. POTABLE WATER ATTACHMENT DETAIL



TYP. FIRE LINE ATTACHMENT DETAIL



- LEGEND**
- (FS) = FIRE STAND PIPE
  - PW2 = 2"dia. HDPE POTABLE WATER
  - PW3 = 3"dia. HDPE POTABLE WATER
  - FL4 = 4"dia. HDPE FIRE LINE



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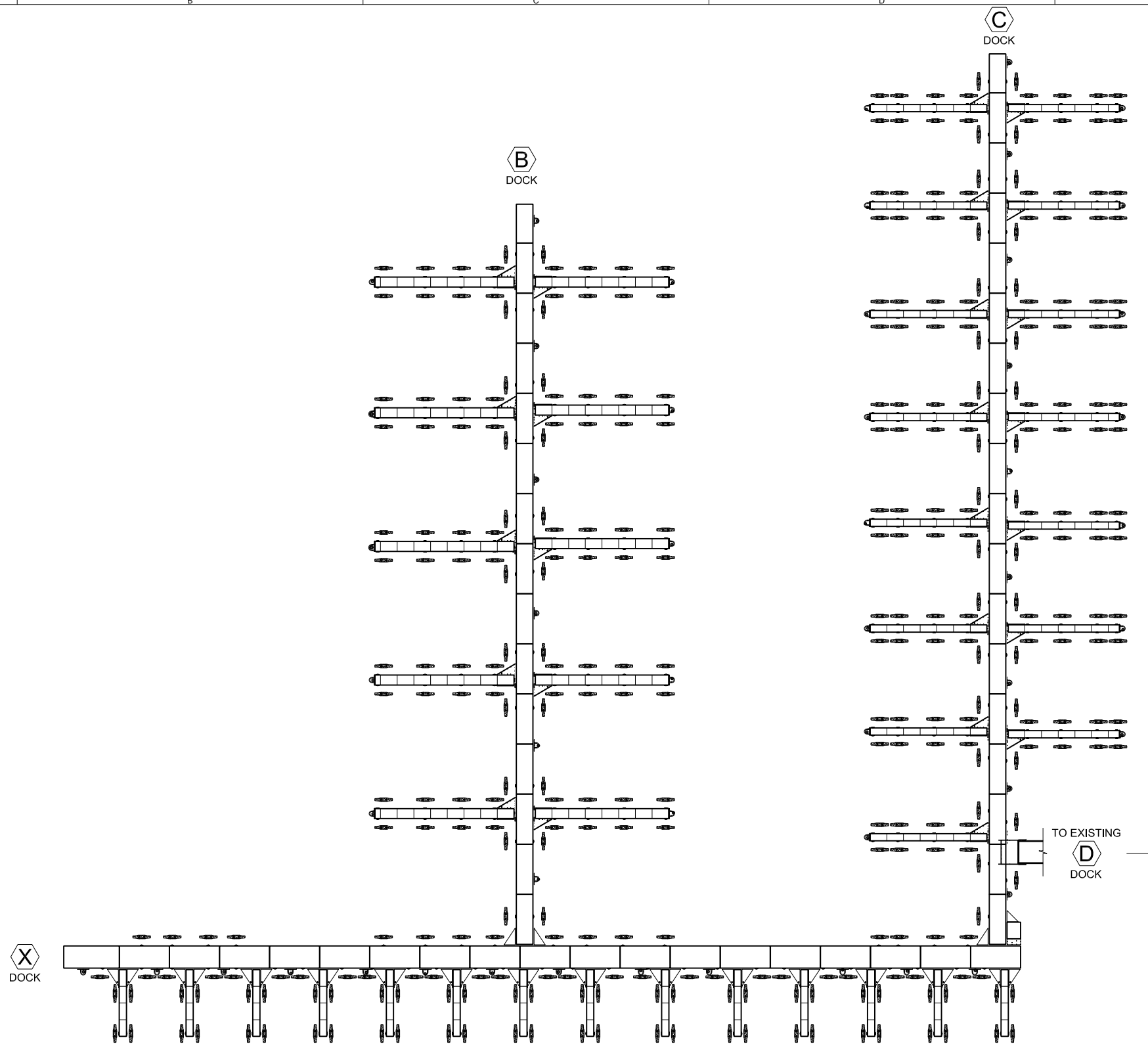
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<b>PAPER SIZE:</b> 11x17		<b>DATE:</b> 02/17/2017	
<b>DRAWN BY:</b> C. M. K.		<b>DRAWING:</b> UL2.0	
<b>SHEET NO.:</b> 5			

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**UTILITY LAYOUT (MECHANICAL)**



SCHEDULE

12" H.D. CLEAT (QTY: 355)



X DOCK

TO EXISTING  
D DOCK

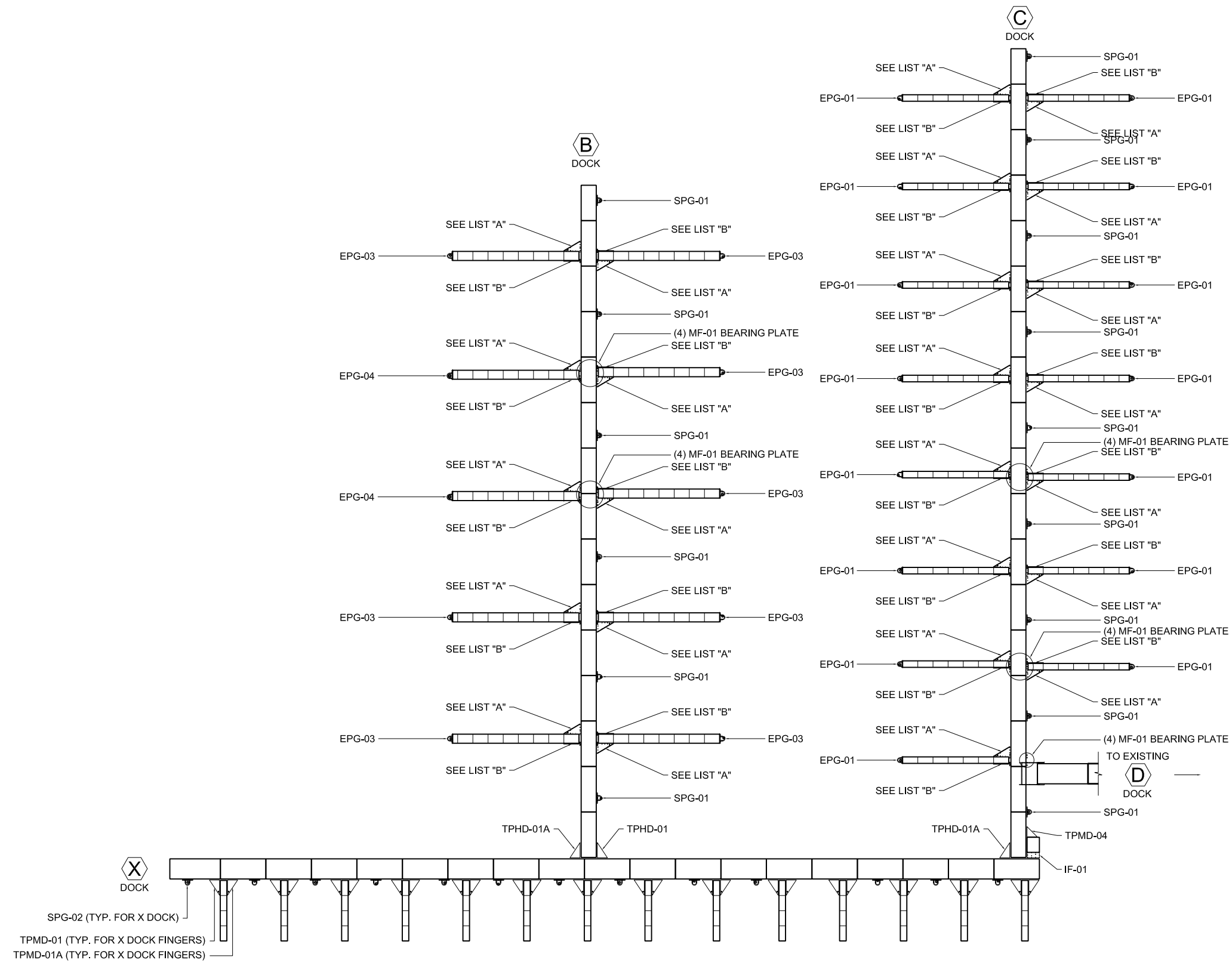
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PAPER SIZE: 11x17		DATE:	02/17/2017
		DRAWN BY:	C. M. K.
		DRAWING:	CL1.0
		SHEET NO.:	6

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**CLEAT LAYOUT**

- |          |          |
|----------|----------|
| LIST "A" | LIST "B" |
| DF-1     | DF-2     |
| DF-2     | DF-2A    |
| DF-2A    | MF-01    |
| DF-3     |          |
| DF-4     |          |
| DF-5     |          |
| MF-01    |          |



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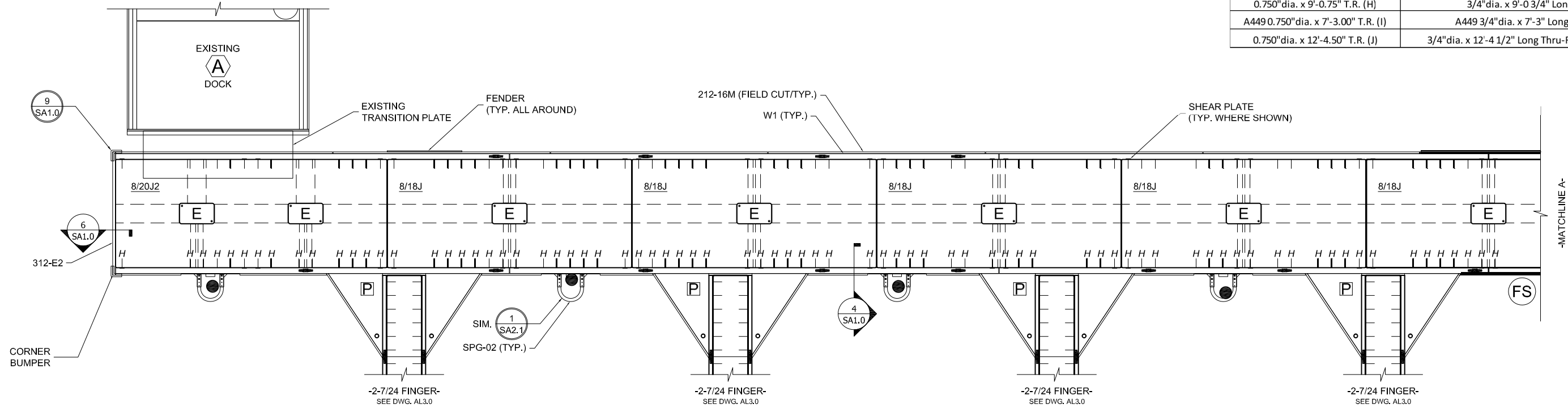
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JOB NUMBER: <b>17-1711</b>		SCALE: N.T.S.
PAPER SIZE: 11x17		DATE: 02/21/2017
DRAWN BY: C. M. K.		DRAWING: SL1.0
SHEET NO.: 7		

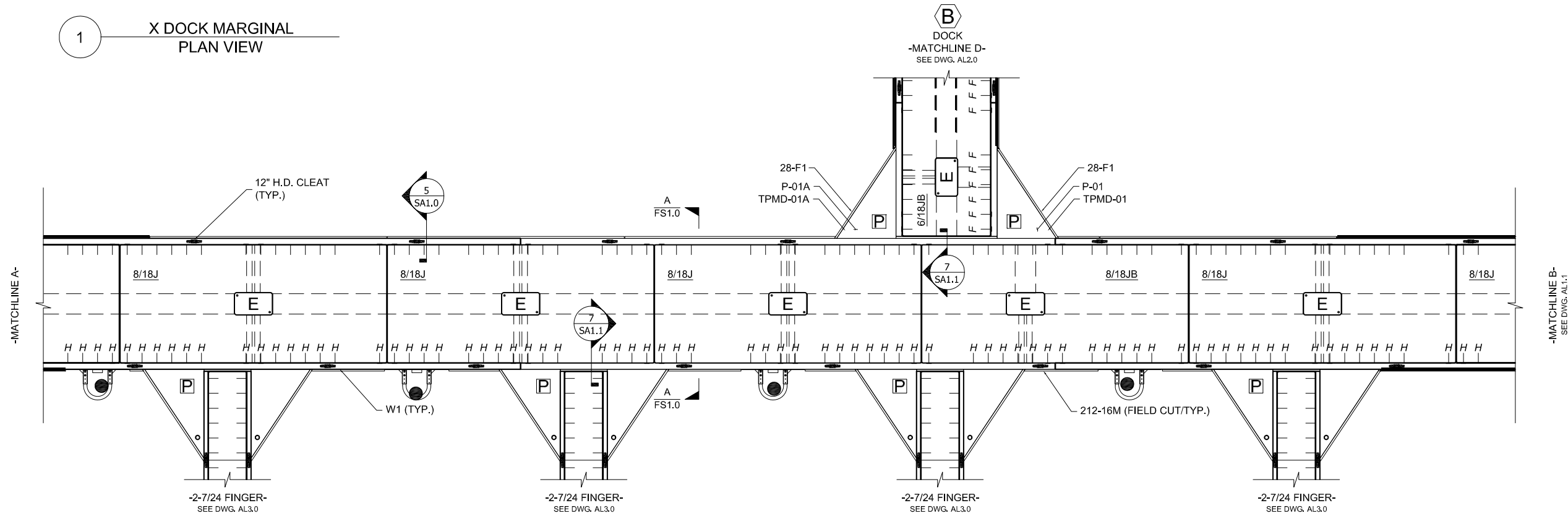
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**STEEL WELDMENT LAYOUT**

GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.

ROD(S)	DESCRIPTION
0.750" dia. x 7'-0.75" T.R. (F)	3/4" dia. x 7'-0 3/4" Long Thru-Rod (B & C Dock Walkway)
0.750" dia. x 7'-1.50" T.R. (G)	3/4" dia. x 7'-1 1/2" Long Thru-Rod (B Dock Alternate @ UH-01)
0.750" dia. x 9'-0.75" T.R. (H)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (X Dock Walkway)
A449 0.750" dia. x 7'-3.00" T.R. (I)	A449 3/4" dia. x 7'-3" Long Thru-Rod (B & C Dock @ MF-01)
0.750" dia. x 12'-4.50" T.R. (J)	3/4" dia. x 12'-4 1/2" Long Thru-Rod (C Dock to 5x6T Transformer Float)



1 X DOCK MARGINAL PLAN VIEW



2 X DOCK MARGINAL PLAN VIEW

REV.	DATE:	DESCRIPTION	BY:
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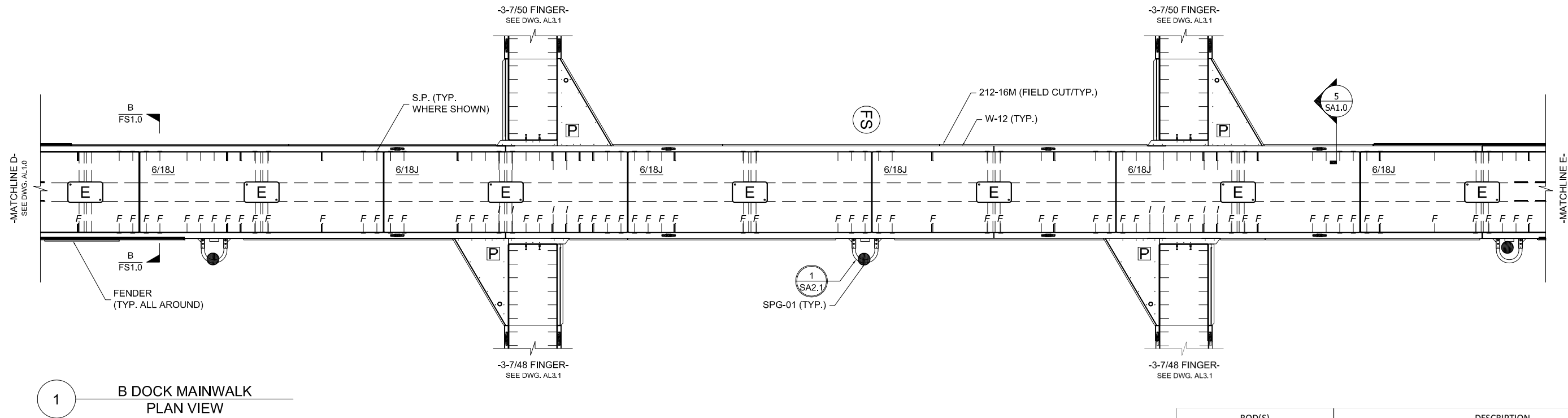
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JOB NUMBER: <b>17-1711</b>	SCALE: 1/8" = 1'-0"
PAPER SIZE: 11x17	DATE: 02/17/2017
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: C. M. K.
	DRAWING: AL1.0
	SHEET NO.: 8

**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

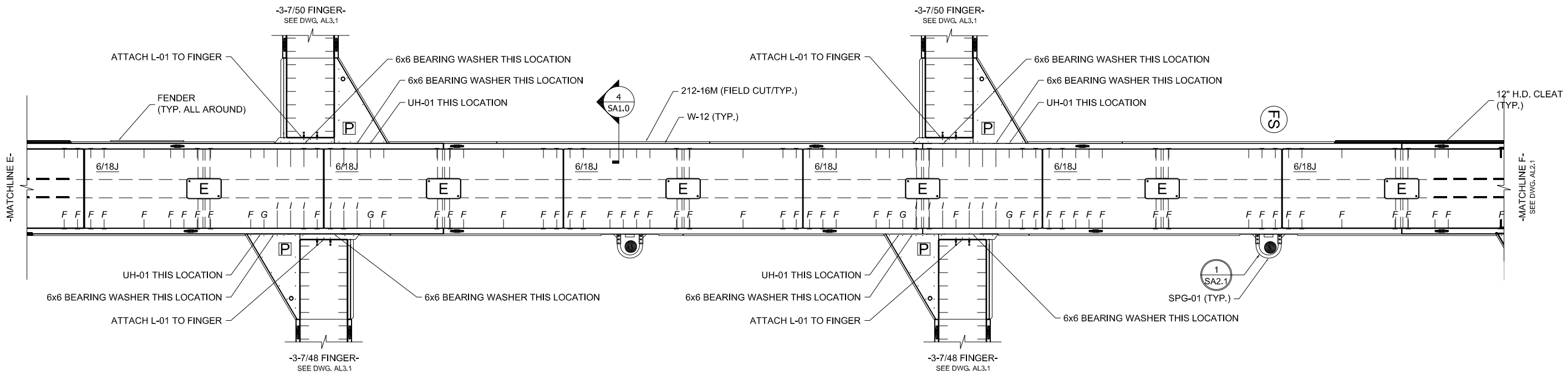


GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



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1 B DOCK MAINWALK  
PLAN VIEW



2 B DOCK MAINWALK  
PLAN VIEW

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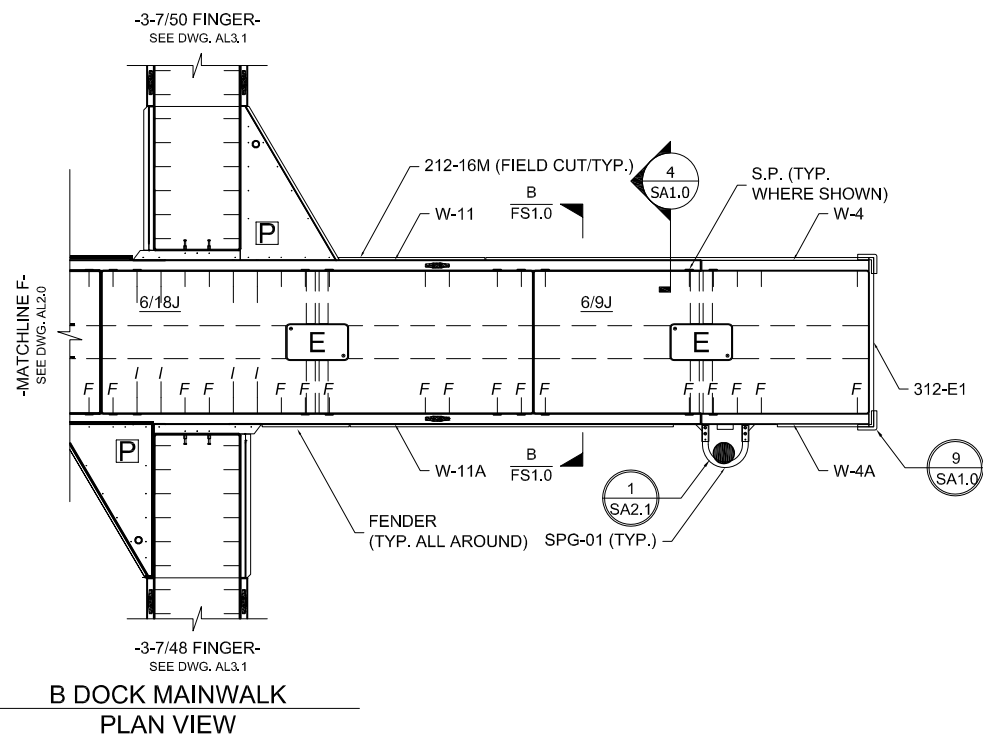
JOB NUMBER: <b>17-1711</b>		SCALE: 1/8" = 1'-0"
PAPER SIZE: 11x17		DATE: 02/17/2017
DRAWN BY: C. M. K.		DRAWING: AL2.0
SHEET NO.: 10		

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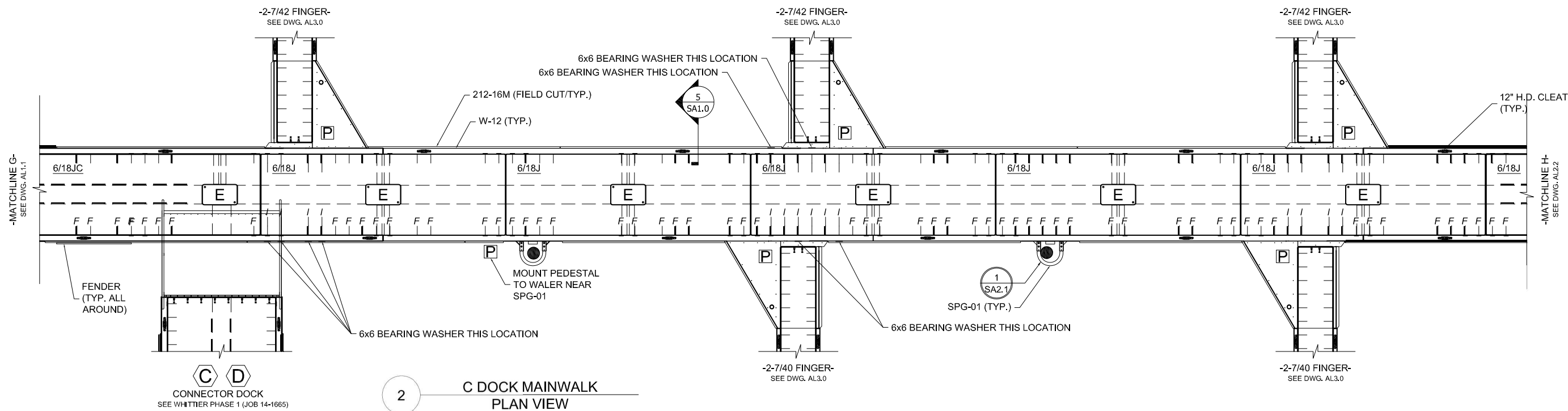
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

GENERAL NOTES:

1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



ROD(S)	DESCRIPTION
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0.750" dia. x 7'-1.50" T.R. (G)	3/4" dia. x 7'-1 1/2" Long Thru-Rod (B Dock Alternate @ UH-01)
0.750" dia. x 9'-0.75" T.R. (H)	3/4" dia. x 9'-0 3/4" Long Thru-Rod (X Dock Walkway)
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0.750" dia. x 12'-4.50" T.R. (J)	3/4" dia. x 12'-4 1/2" Long Thru-Rod (C Dock to 5x6T Transformer Float)



REV.	DATE:	DESCRIPTION	BY:

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JOB NUMBER:  
**17-1711**

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

DATE: 02/17/2017

PAPER SIZE: 11x17

DRAWN BY: C. M. K.

DRAWING: AL2.1

SHEET NO.: 11

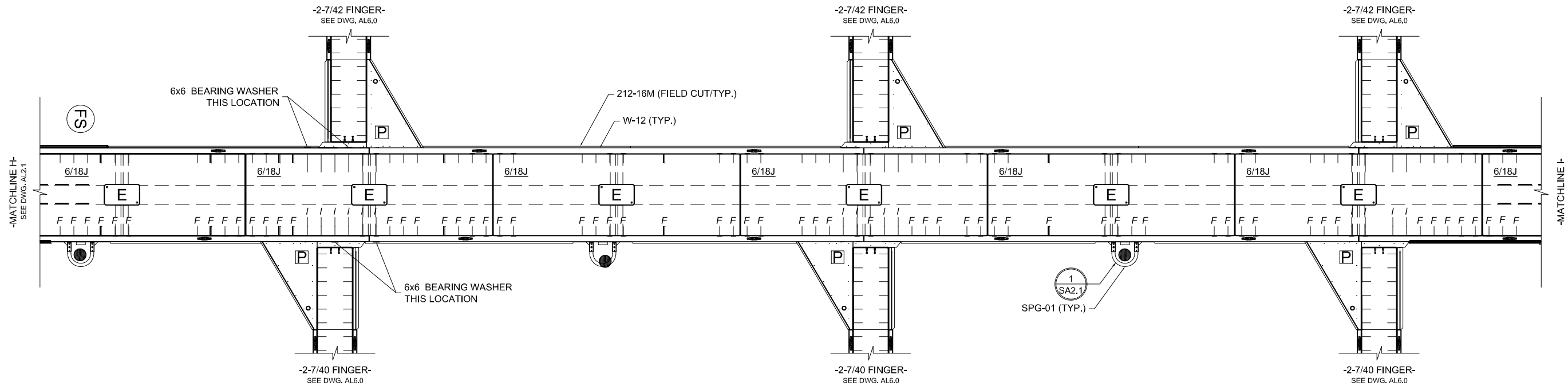
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER  
REPLACEMENT FLOATS PHASE 2**  
Whittier, AK

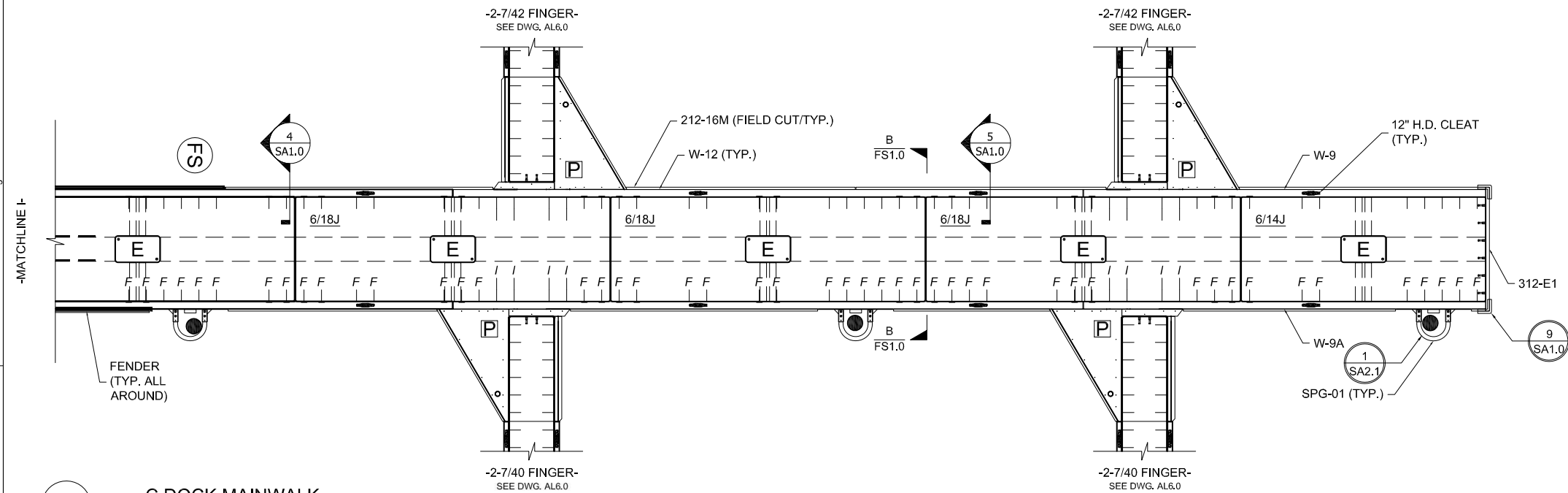
**ASSEMBLY LAYOUT**

GENERAL NOTES:

1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



1 C DOCK MAINWALK  
PLAN VIEW



2 C DOCK MAINWALK  
PLAN VIEW

REV.	DATE:	DESCRIPTION	BY:

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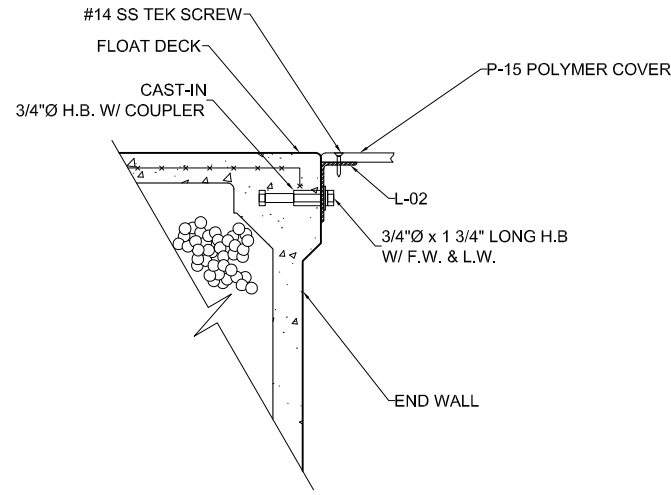
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PAPER SIZE: 11x17		DATE: 02/17/2017
DRAWN BY: C. M. K.		DRAWING: AL2.2
SHEET NO.: 12		

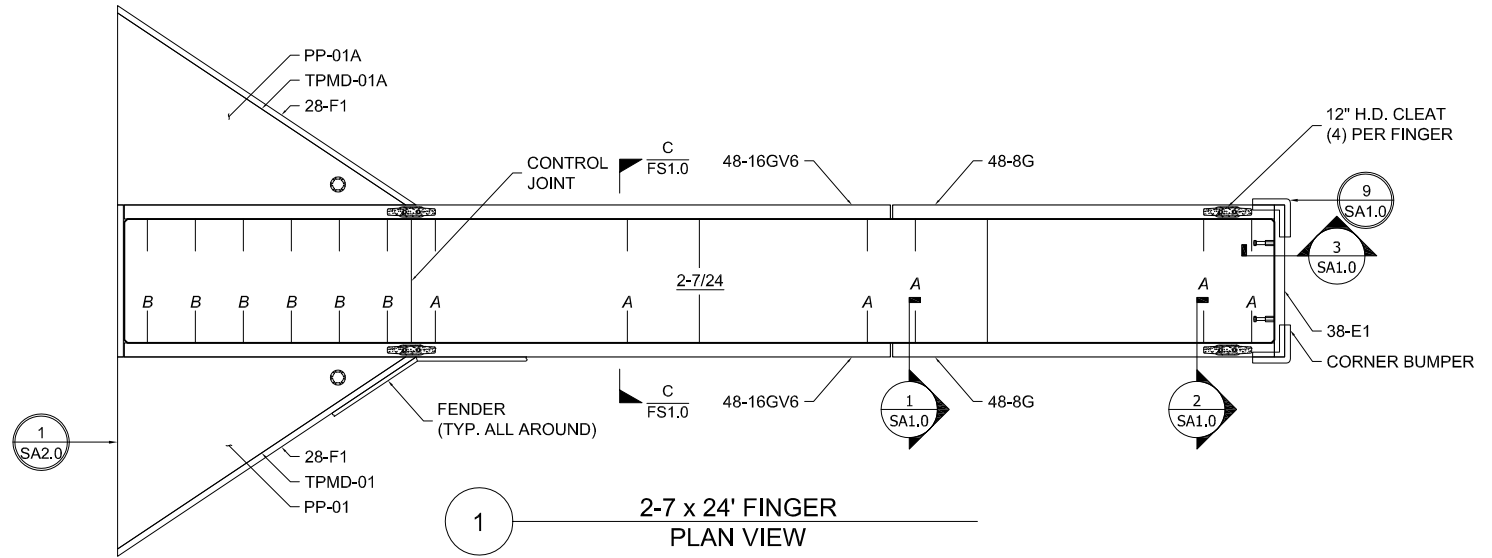
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER  
REPLACEMENT FLOATS PHASE 2**  
Whittier, AK  
**ASSEMBLY LAYOUT**

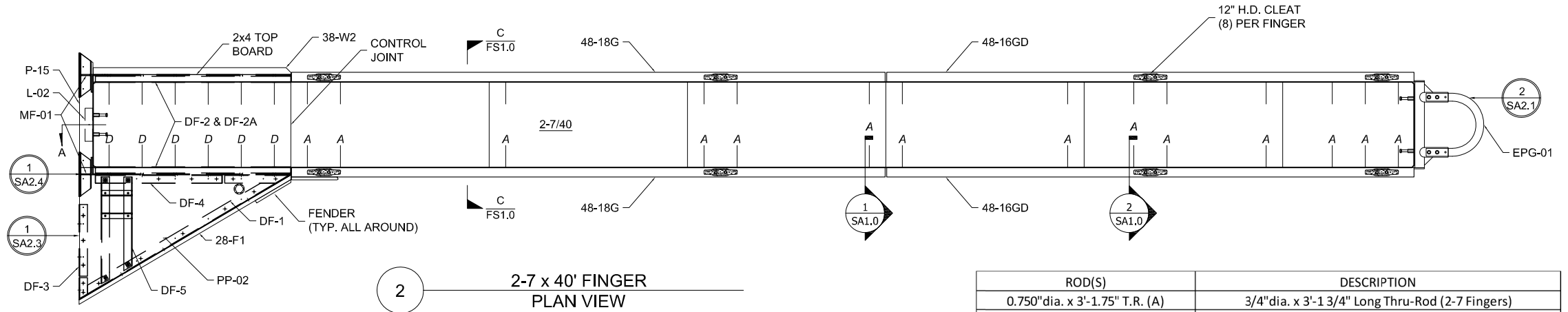
GENERAL NOTES:  
 1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.



**A**  
 -  
**2-7 FINGER END ASSY. DETAIL**

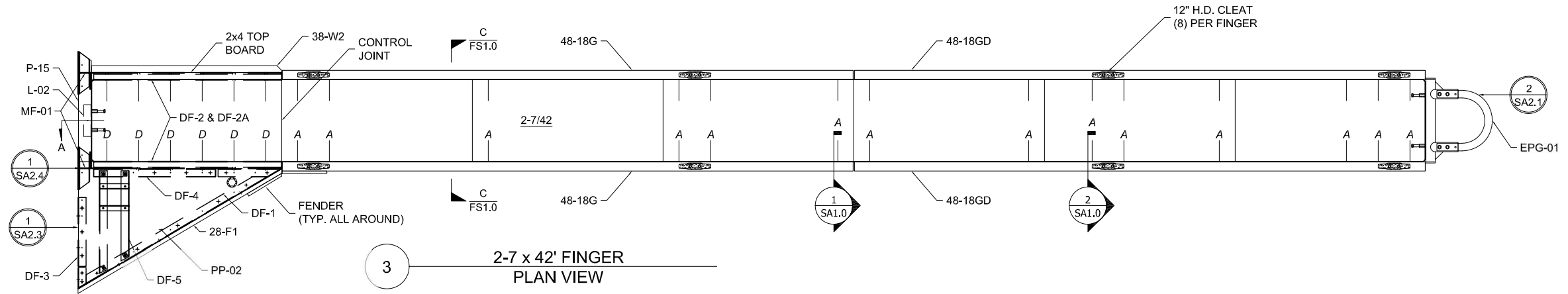


**1**  
**2-7 x 24' FINGER PLAN VIEW**



**2**  
**2-7 x 40' FINGER PLAN VIEW**

ROD(S)	DESCRIPTION
0.750" dia. x 3'-1.75" T.R. (A)	3/4" dia. x 3'-1 3/4" Long Thru-Rod (2-7 Fingers)
0.750" dia. x 3'-5.50" T.R. (B)	3/4" dia. x 3'-5 1/2" Long Thru-Rod (2-7x24 Fingers)
0.750" dia. x 4'-1.75" T.R. (C)	3/4" dia. x 4'-1 3/4" Long Thru-Rod (3-7 Fingers)
A449 0.750" dia. x 3'-4.75" T.R. (D)	A449 3/4" dia. x 3'-4 3/4" Long Thru-Rod (2-7 Finger @ MF-01)
A449 0.750" dia. x 4'-4.75" T.R. (E)	A449 3/4" dia. x 4'-4 3/4" Long Thru-Rod (3-7 Finger @ MF-01)



**3**  
**2-7 x 42' FINGER PLAN VIEW**

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**JOB NUMBER:**  
 17-1711

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

**DATE:**  
 02/21/2017

**PAPER SIZE:** 11x17

**DRAWN BY:** C. M. K.

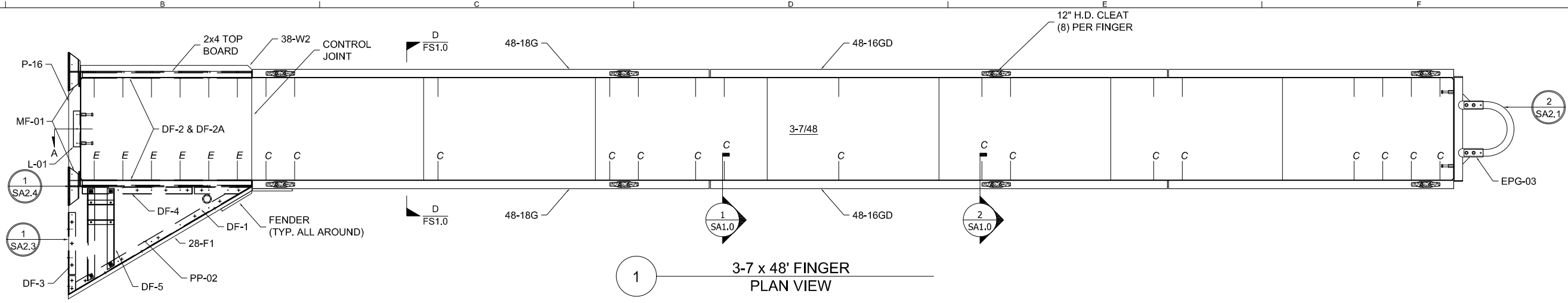
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**SHEET NO.:** 13

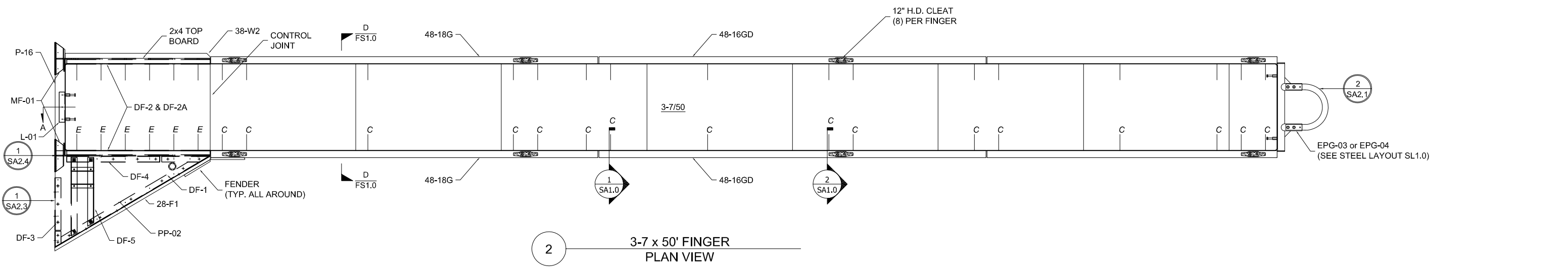
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**ASSEMBLY LAYOUT**

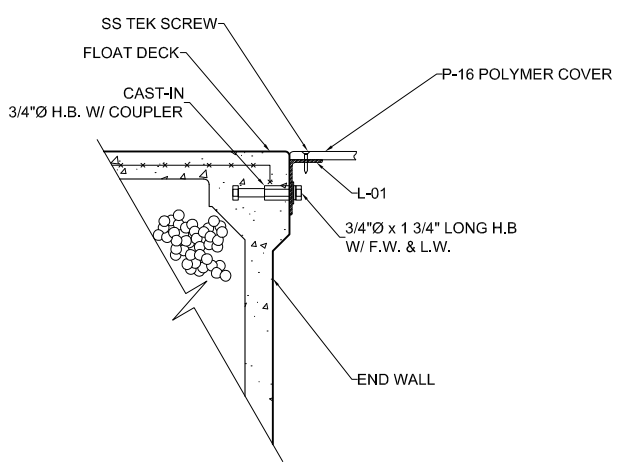




1 — 3-7 x 48' FINGER  
PLAN VIEW



2 — 3-7 x 50' FINGER  
PLAN VIEW



A — 3-7 FINGER END  
ASSY. DETAIL

GENERAL NOTES:  
1. ALL THRU-RODS (T.R.) SHALL HAVE P.W. @ LUMBER ASSY. & F.W. @ STEEL ASSY. W/ L.W. & H.N. @ EA. END.

ROD(S)	DESCRIPTION
0.750" dia. x 3'-1.75" T.R. (A)	3/4" dia. x 3'-1 3/4" Long Thru-Rod (2-7 Fingers)
0.750" dia. x 3'-5.50" T.R. (B)	3/4" dia. x 3'-5 1/2" Long Thru-Rod (2-7x24 Fingers)
0.750" dia. x 4'-1.75" T.R. (C)	3/4" dia. x 4'-1 3/4" Long Thru-Rod (3-7 Fingers)
A449 0.750" dia. x 3'-4.75" T.R. (D)	A449 3/4" dia. x 3'-4 3/4" Long Thru-Rod (2-7 Finger @ MF-01)
A449 0.750" dia. x 4'-4.75" T.R. (E)	A449 3/4" dia. x 4'-4 3/4" Long Thru-Rod (3-7 Finger @ MF-01)

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

**DATE:** 02/21/2017

**PAPER SIZE:** 11x17

**DRAWN BY:** C. M. K.

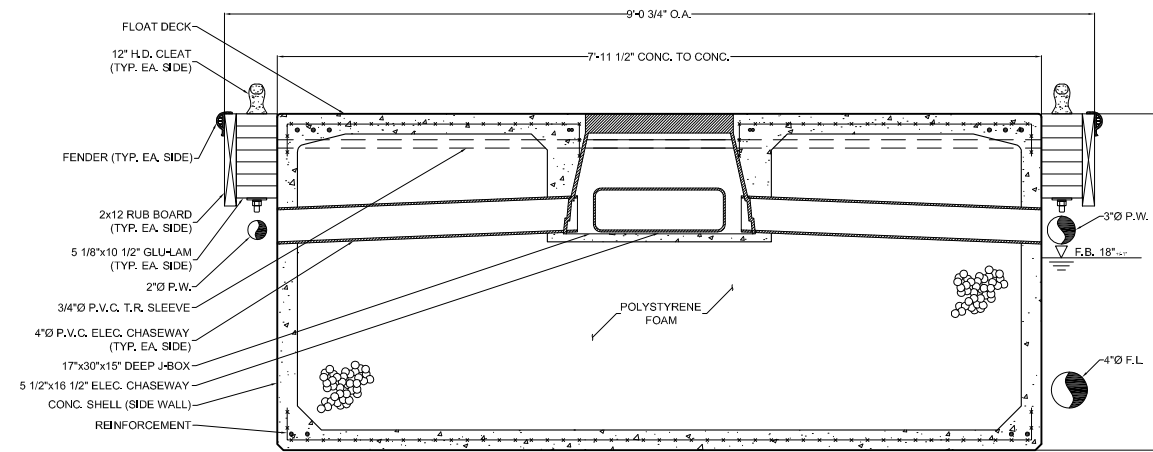
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**SHEET NO.:** 14

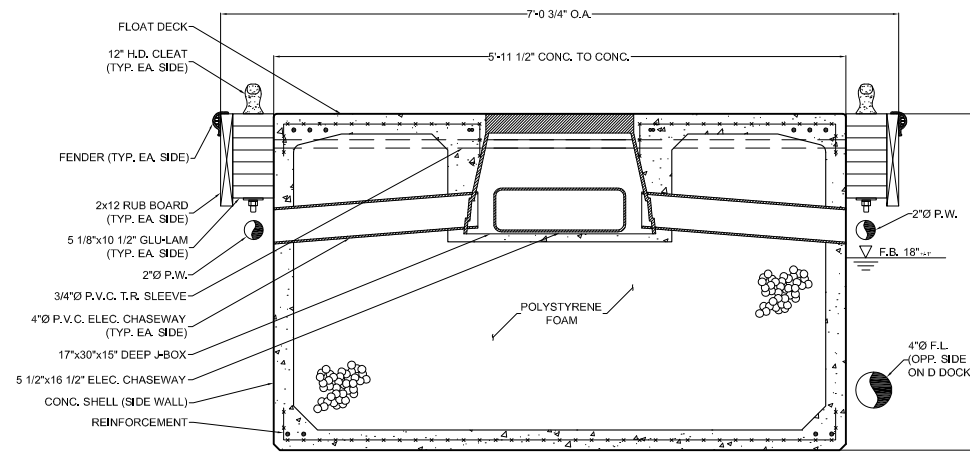
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**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
Whittier, AK  
**ASSEMBLY LAYOUT**

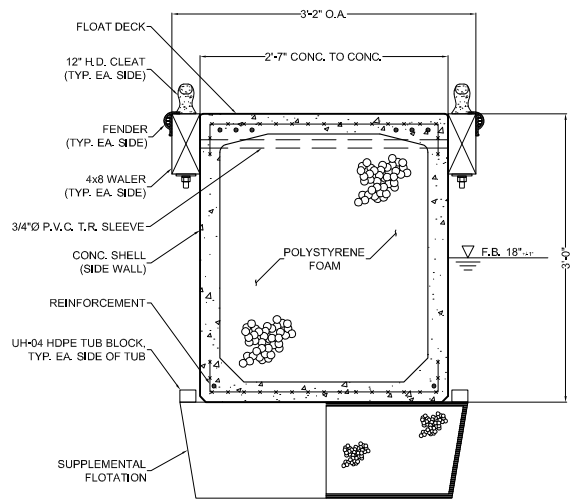
GENERAL NOTES:  
 1. SUPPLEMENTAL FLOTATION TUBS WILL BE USED PER THE CONTRACTORS DISCRETION.



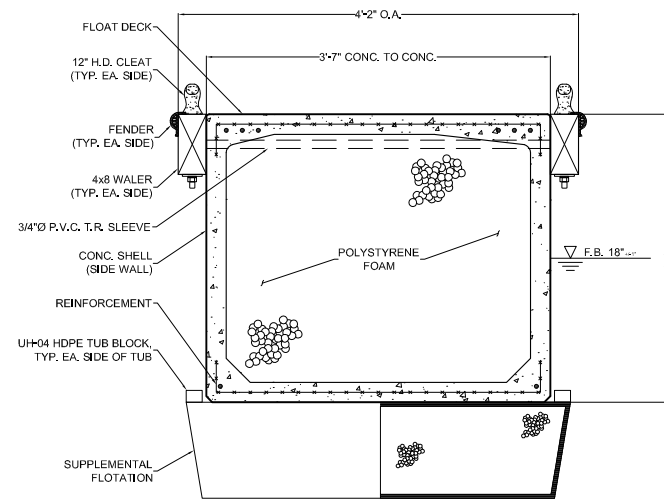
**A**  
 - TYP. X DOCK MARGINAL  
 FLOT SECTION



**B**  
 - TYP. B & C DOCK MAINWALK  
 FLOT SECTION



**C**  
 - 2-7 FINGER  
 FLOT SECTION



**D**  
 - 3-7 FINGER  
 FLOT SECTION

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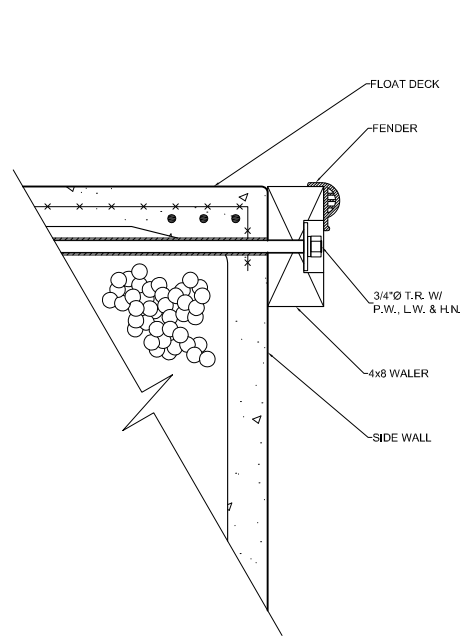
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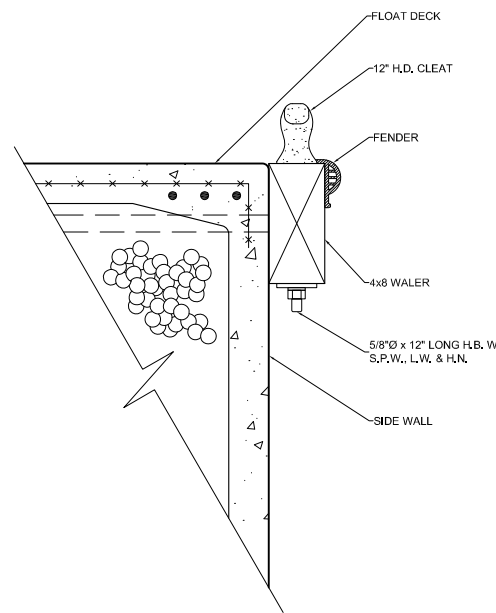
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<b>PAPER SIZE:</b> 11x17		<b>DATE:</b> 02/17/2017
<b>DRAWN BY:</b> C. M. K.		<b>DRAWING:</b> FS1.0
<b>SHEET NO.:</b> 15		

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

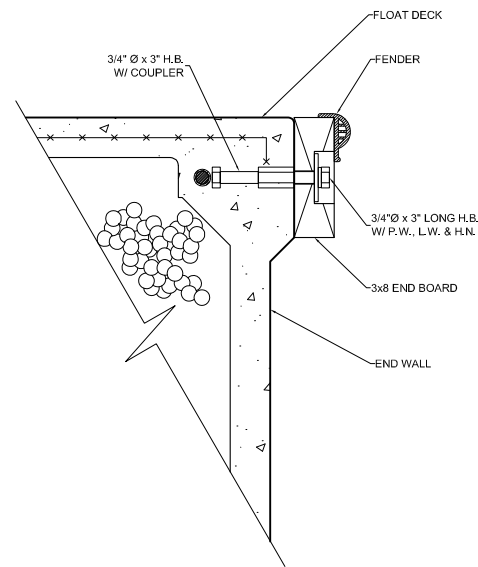
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**FLOT SECTIONS**



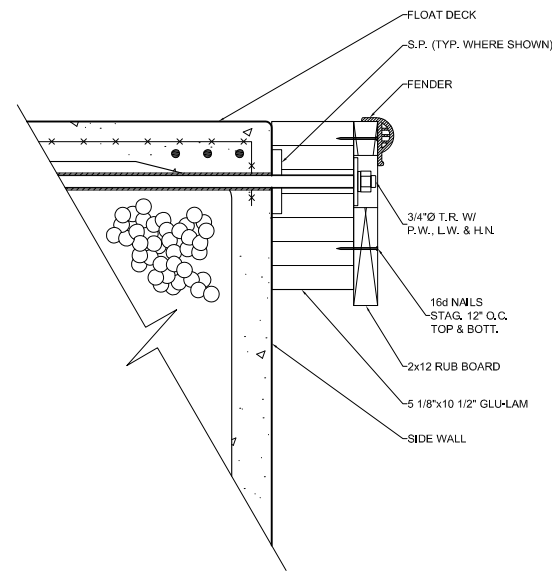
1 TYP. WALER @ FINGER ASSY. DETAIL



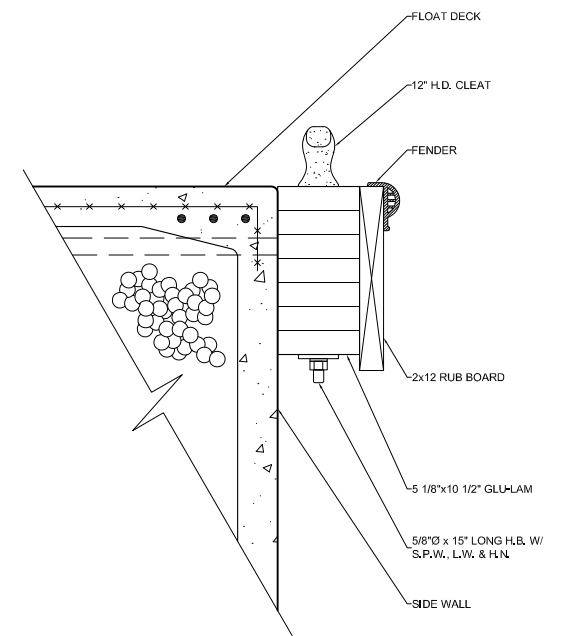
2 TYP. CLEAT @ FINGER ASSY. DETAIL



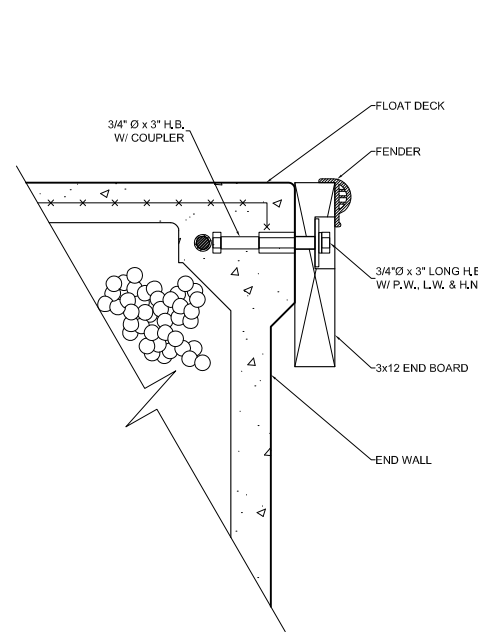
3 TYP. END BOARD @ FINGER ASSY. DETAIL



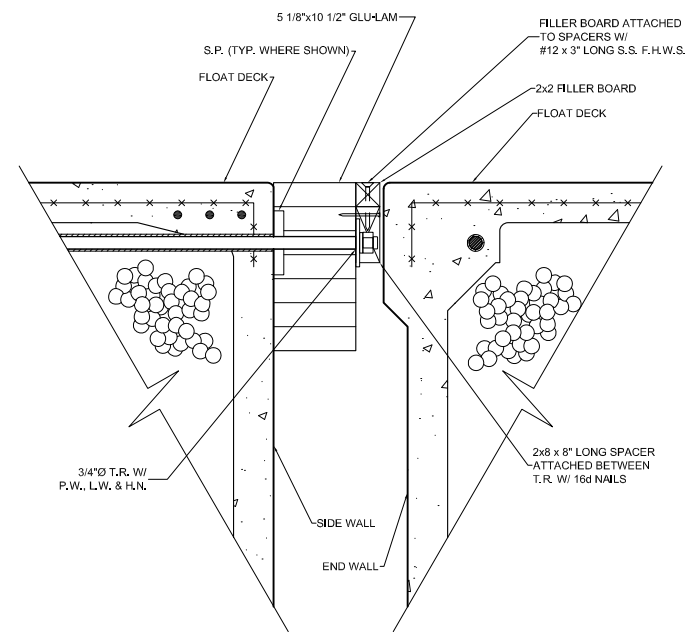
4 TYP. WALER @ FLOAT ASSY. DETAIL



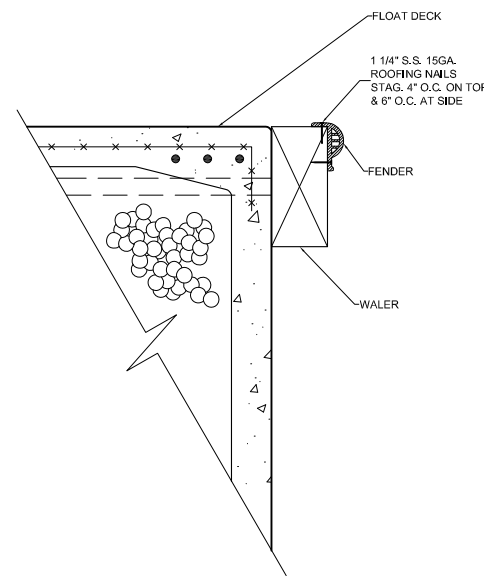
5 TYP. CLEAT @ FLOAT ASSY. DETAIL



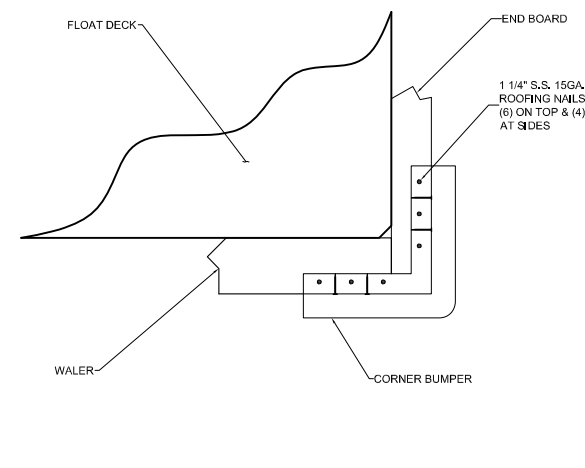
6 TYP. END BOARD @ FLOAT ASSY. DETAIL



7 TYP. FLOAT/FINGER ASSY. DETAIL



8 TYP. FENDER ASSY. DETAIL



9 TYP. CORNER BUMPER ASSY. DETAIL

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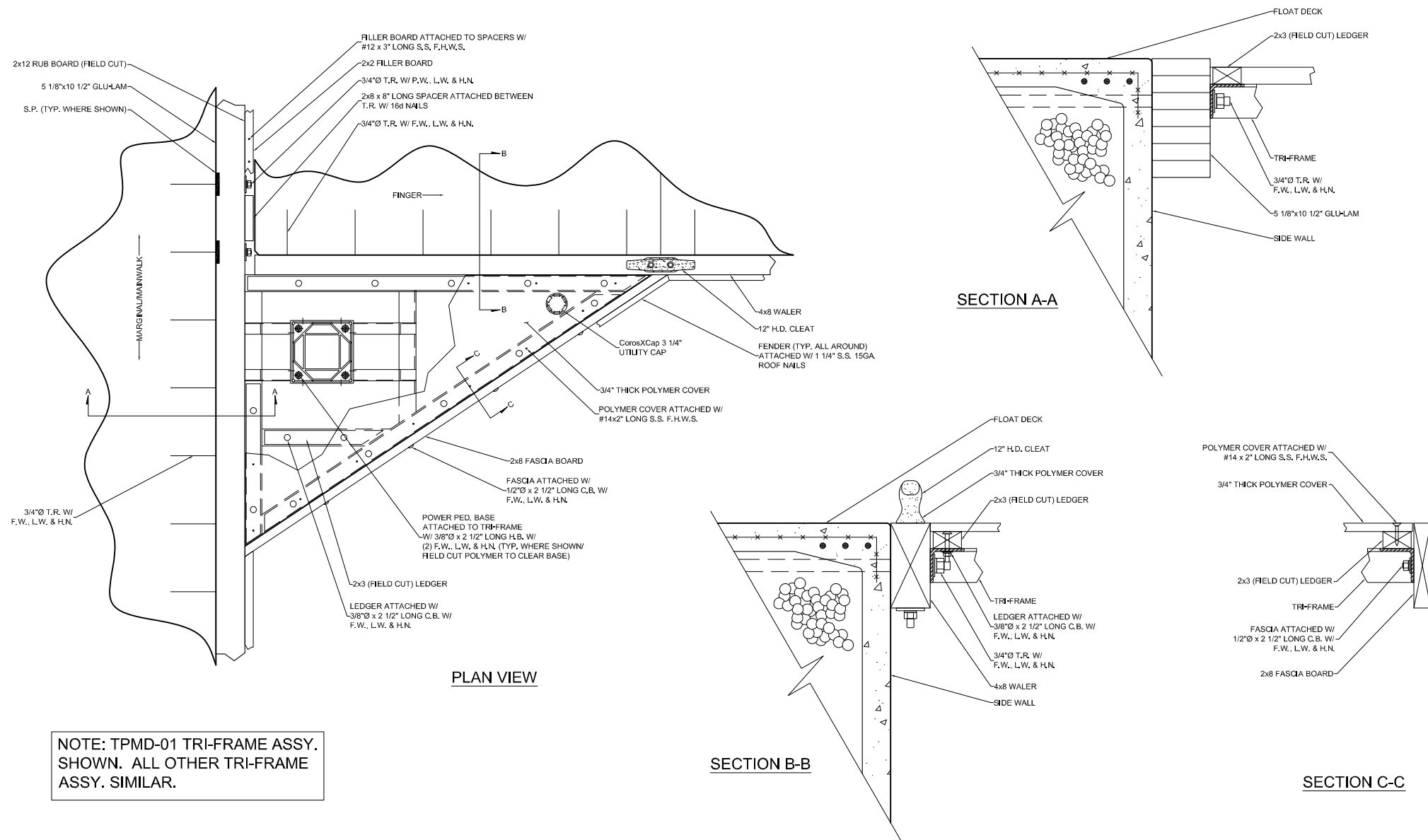
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<b>PAPER SIZE:</b> 11x17		<b>DATE:</b> 02/17/2017	
<b>DRAWN BY:</b> C. M. K.		<b>DRAWING:</b> SA1.0	
<b>SHEET NO.:</b> 16		<b>BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.</b>	

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**



NOTE: TPMD-01 TRI-FRAME ASSY. SHOWN. ALL OTHER TRI-FRAME ASSY. SIMILAR.

1 TYP. TRI-FRAME ASSEMBLY DETAIL

REV.	DATE:	DESCRIPTION	BY:
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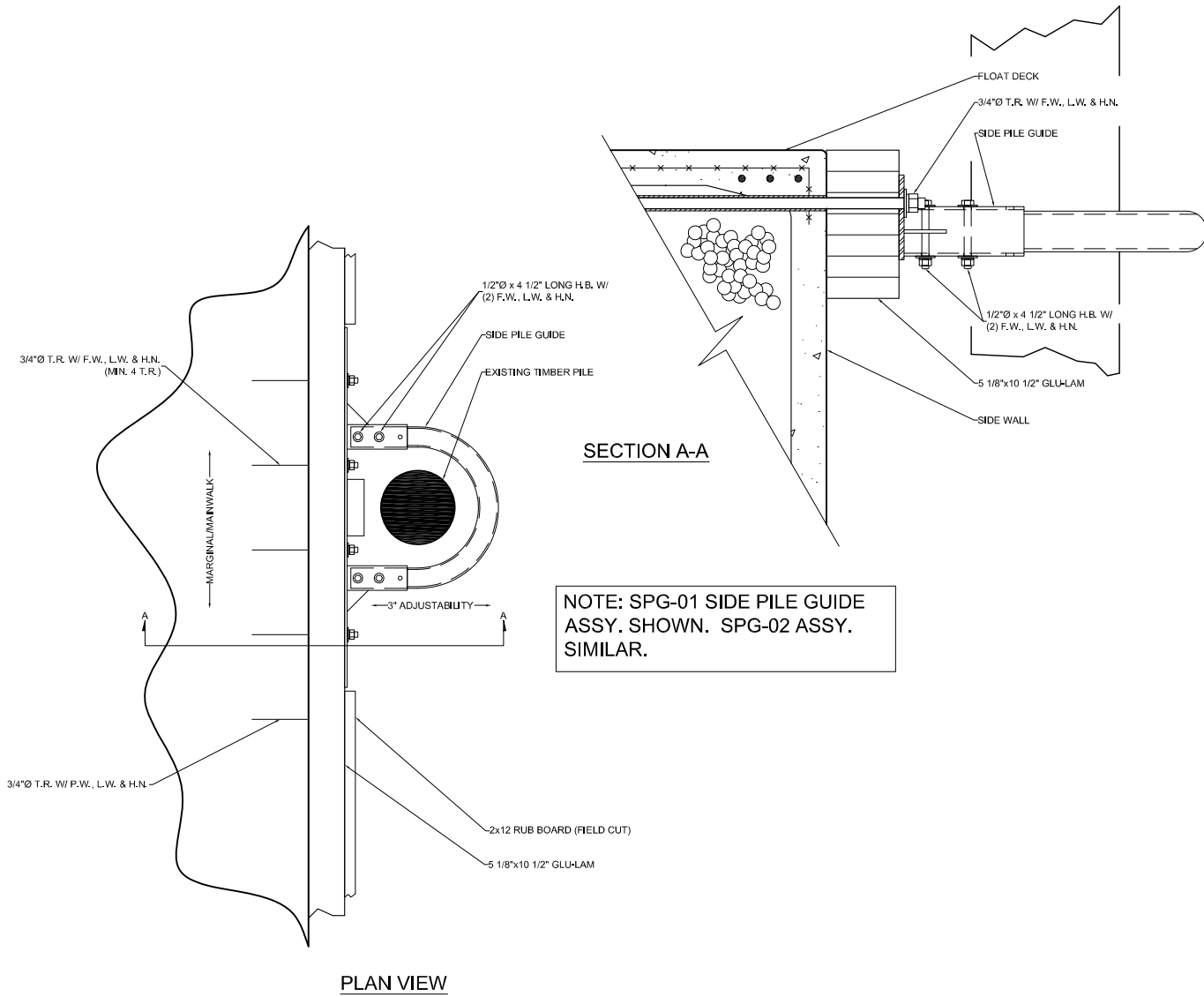
**Bellingham** Northwest Division  
 5500 Nordic Way  
 Ferndale, WA 98248  
 TEL: (360) 380-2142  
 FAX: (360) 384-6134

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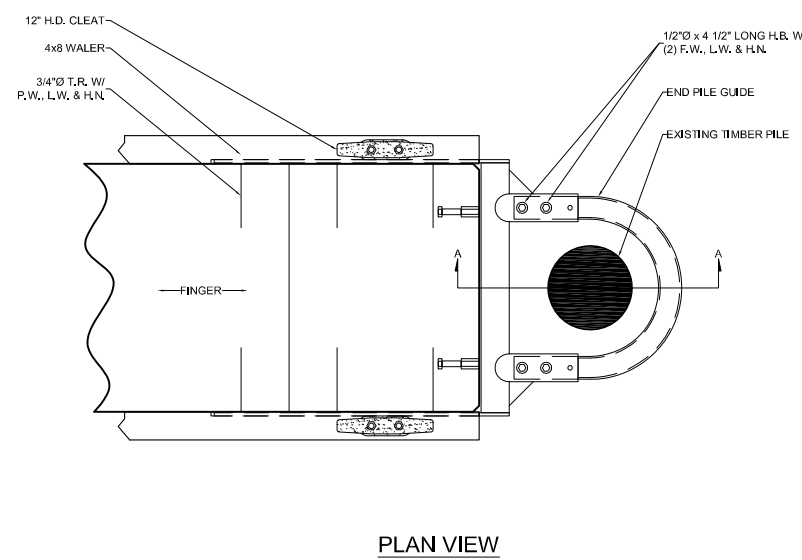
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JOB NUMBER: <b>17-1711</b>	SCALE: N.T.S.
PAPER SIZE: 11x17	DATE: 02/17/2017
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: C. M. K.
	DRAWING: SA2.0
	SHEET NO.: 17

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**



NOTE: SPG-01 SIDE PILE GUIDE ASSY. SHOWN. SPG-02 ASSY. SIMILAR.



NOTE: EPG-01 END PILE GUIDE ASSY. SHOWN. EPG-03 & EPG-04 ASSY. SIMILAR.

1 TYP. SIDE PILE GUIDE ASSEMBLY DETAIL

2 TYP. END PILE GUIDE ASSEMBLY DETAIL

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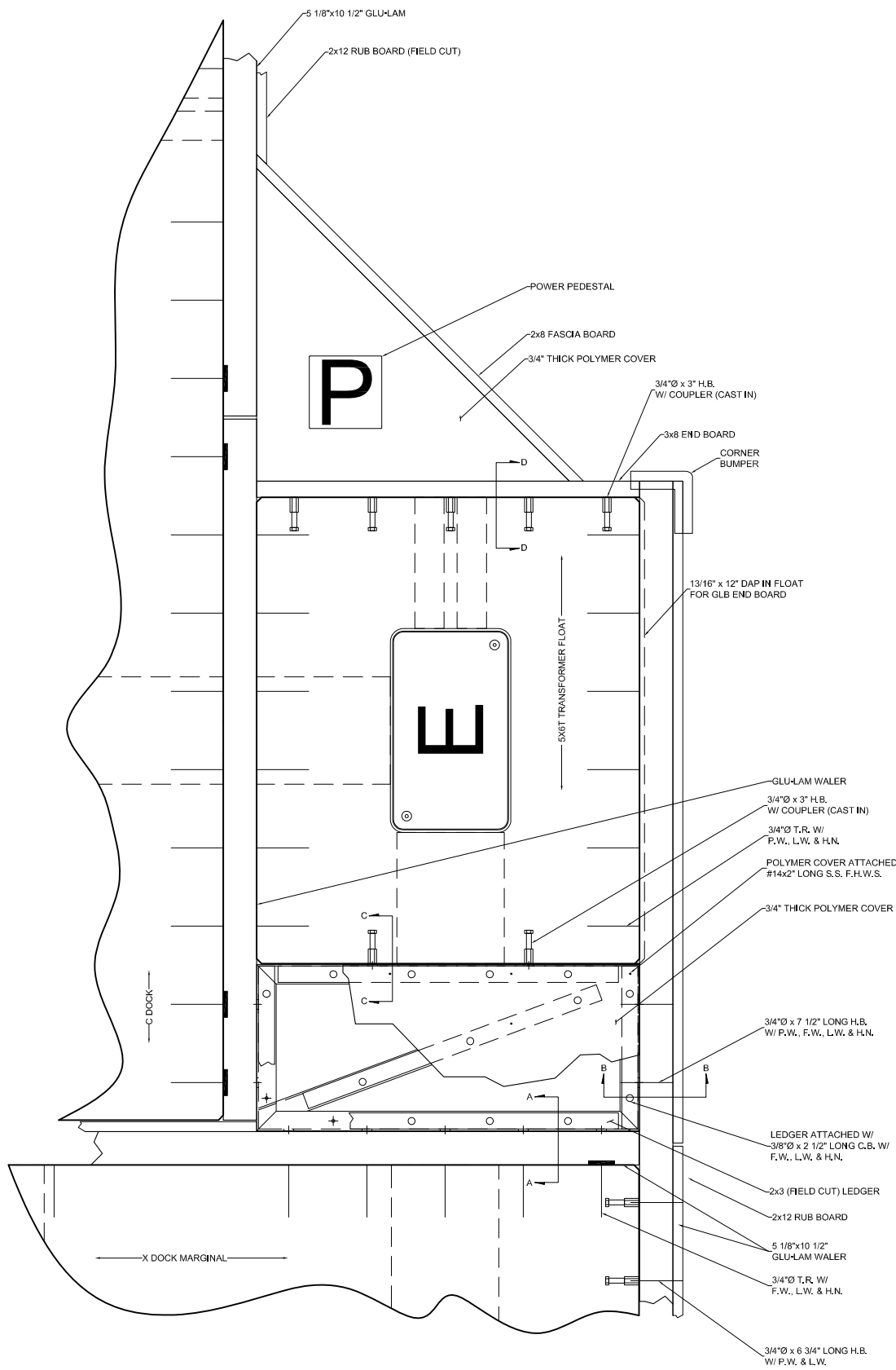
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17-1711

**PAPER SIZE:** 11x17

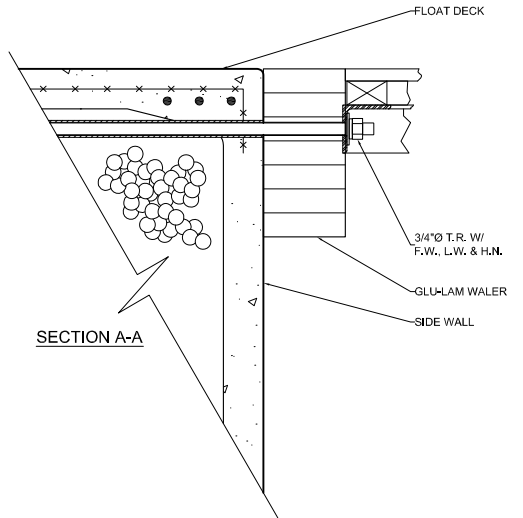
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

<b>SCALE:</b>	N.T.S.
<b>DATE:</b>	02/17/2017
<b>DRAWN BY:</b>	C. M. K.
<b>DRAWING:</b>	SA2.1
<b>SHEET NO.:</b>	18

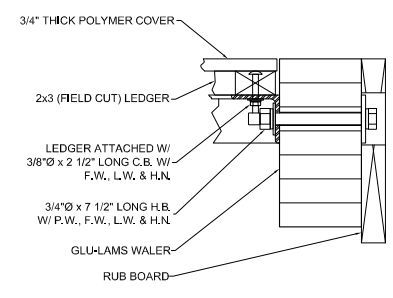
**CITY OF WHITTIER  
 REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**



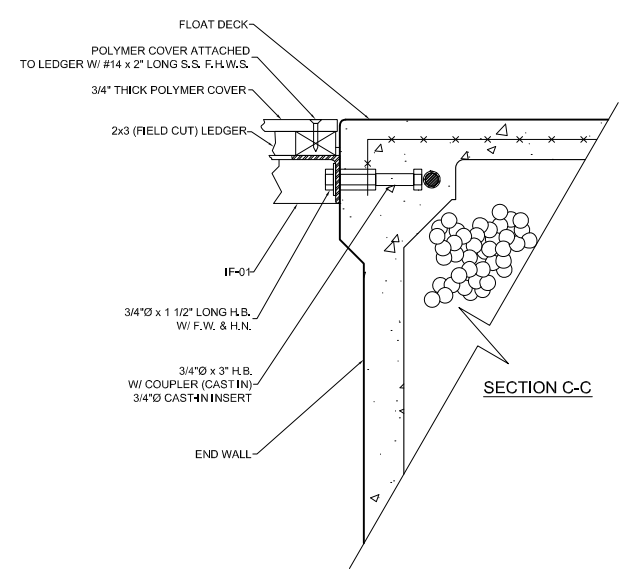
PLAN VIEW



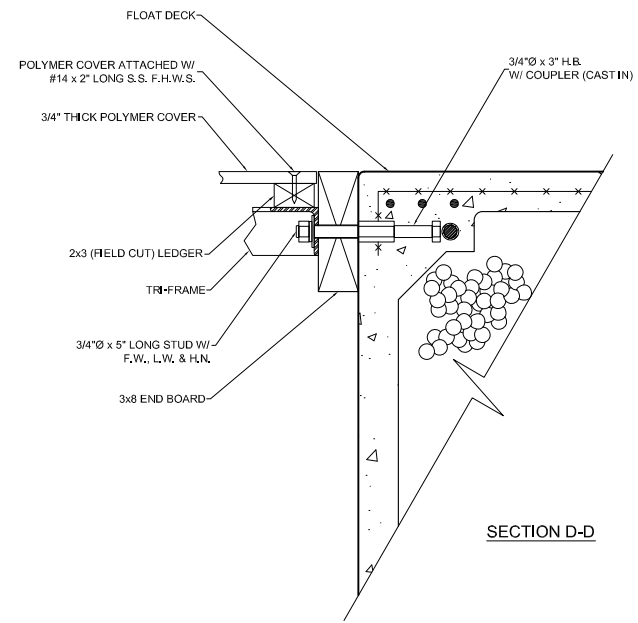
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

1 TRANSFORMER FLOAT ASSEMBLY DETAIL

REV.	DATE:	DESCRIPTION	BY:
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**17-1711**

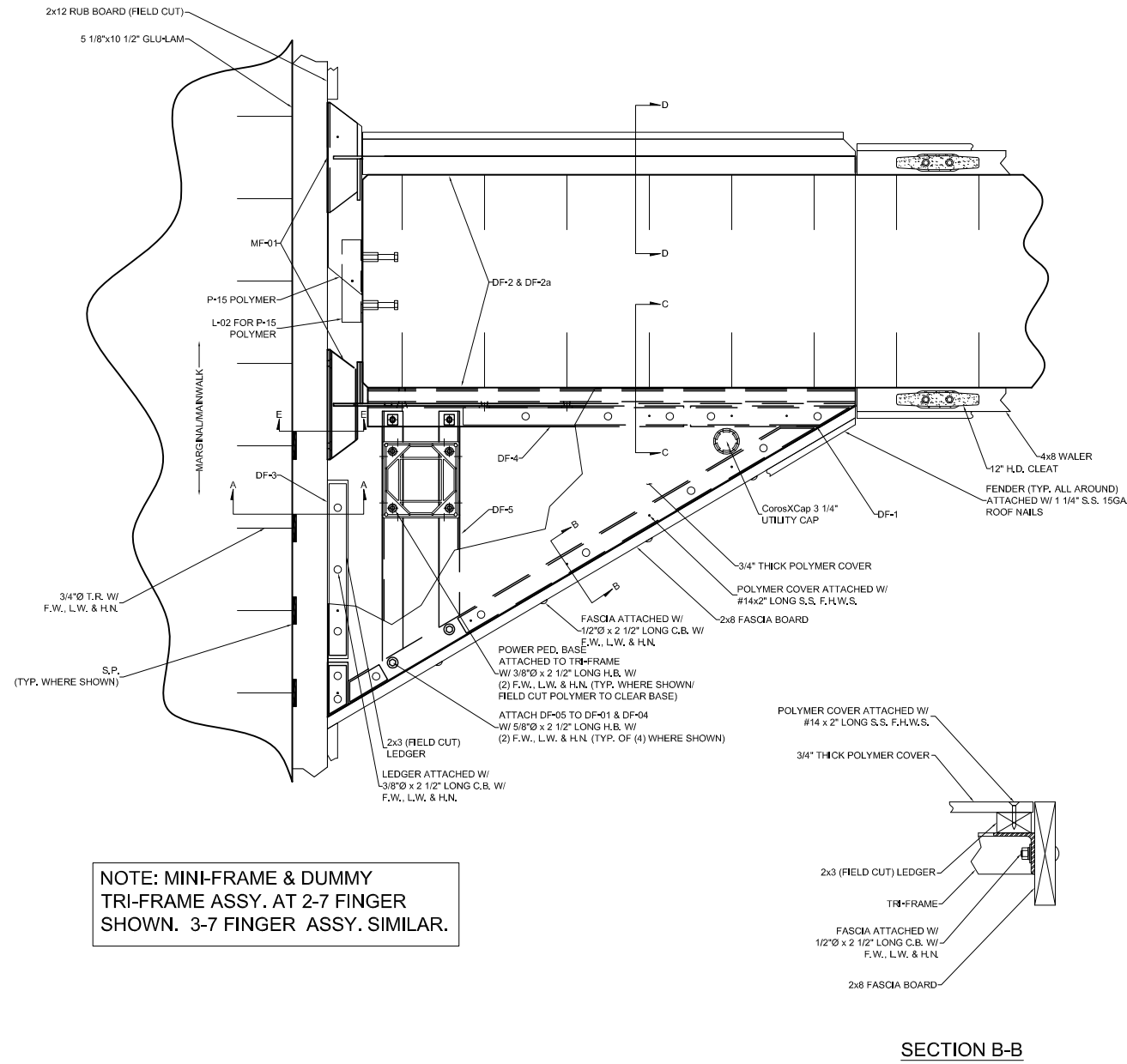
PAPER SIZE: 11x17

BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.

SCALE:	N.T.S.
DATE:	02/17/2015
DRAWN BY:	C. M. K.
DRAWING:	SA2.2
SHEET NO.:	19

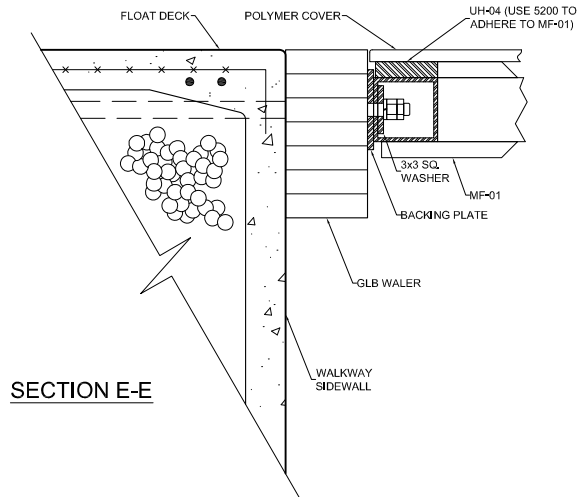
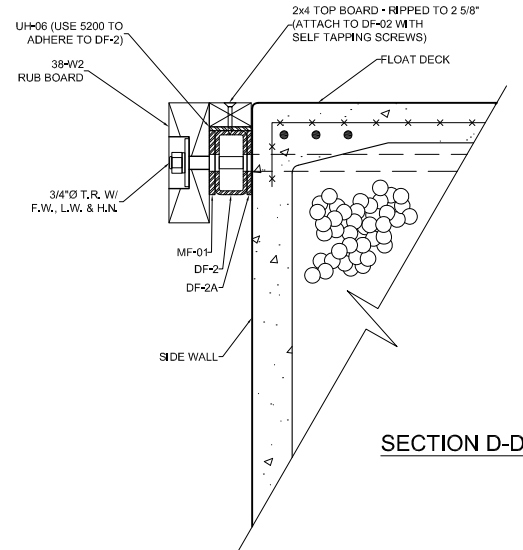
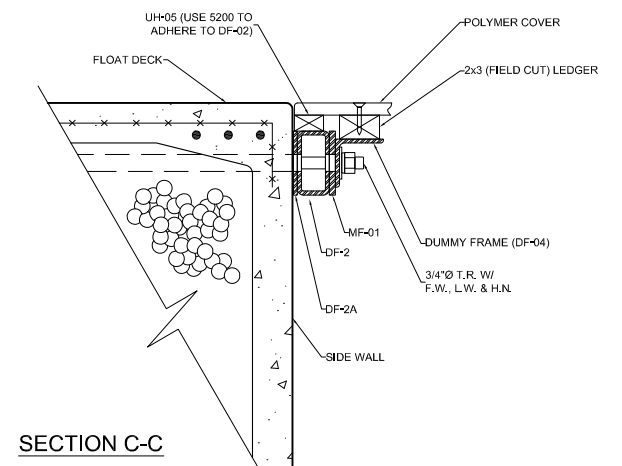
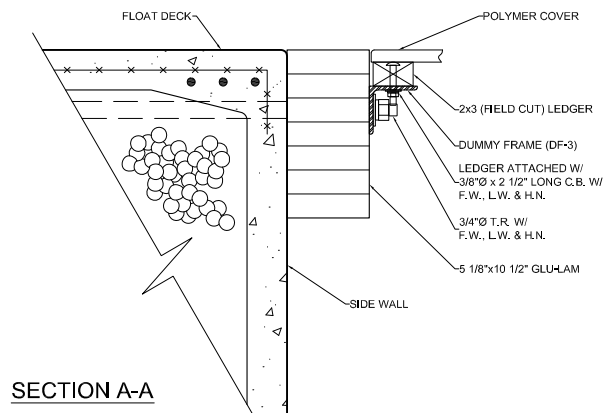
**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
Whittier, AK  
**SUB-ASSEMBLY DETAILS**

GENERAL NOTES:  
 1. DESIGN, PARTS, MATERIALS & HARDWARE PROVIDED BY TOPPER INDUSTRIES INC.



NOTE: MINI-FRAME & DUMMY TRI-FRAME ASSY. AT 2-7 FINGER SHOWN. 3-7 FINGER ASSY. SIMILAR.

1 - TYP. MINI-FRAME ASSEMBLY DETAIL



REV.	DATE:	DESCRIPTION	BY:
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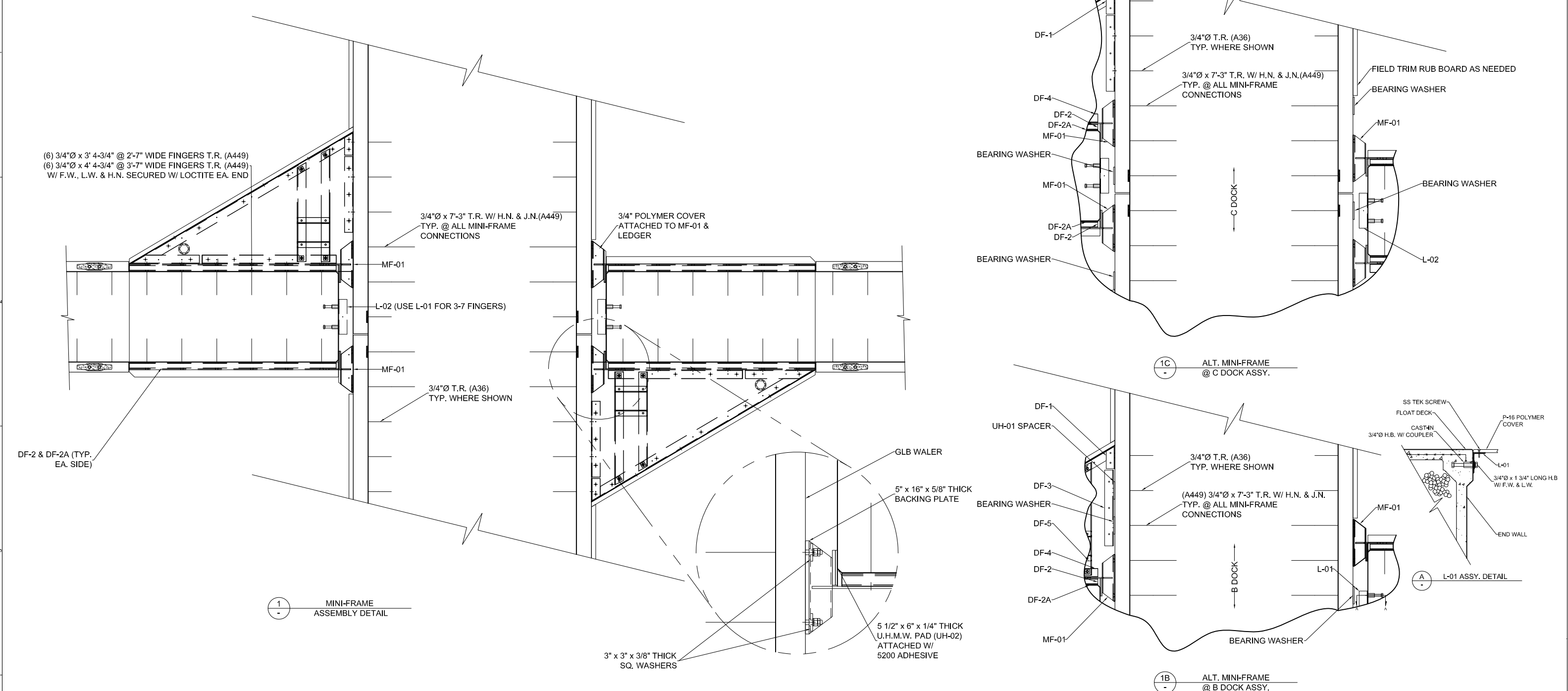
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	DRAWING: SA2.3
	SHEET NO.: 20

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**

GENERAL NOTES:

- USE 3/4" x 6" x 6" STEEL BEARING WASHER FOR A449 WALKWAY RODS WHEN THE MF-01 ARE NOT DIRECTLY OPPOSITE EACH OTHER. (SEE SL1.0 FOR SPECIFIC LOCATIONS & DETAILS 1B & 1C).



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PAPER SIZE: 11x17	DATE: 02/21/2017
BAR EQUALS TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES IF DISTANCE VARIES ACCORDINGLY.	DRAWN BY: C. M. K.
DRAWING: SA2.4	SHEET NO.: 21

**CITY OF WHITTIER**  
**REPLACEMENT FLOATS PHASE 2**  
 Whittier, AK  
**SUB-ASSEMBLY DETAILS**

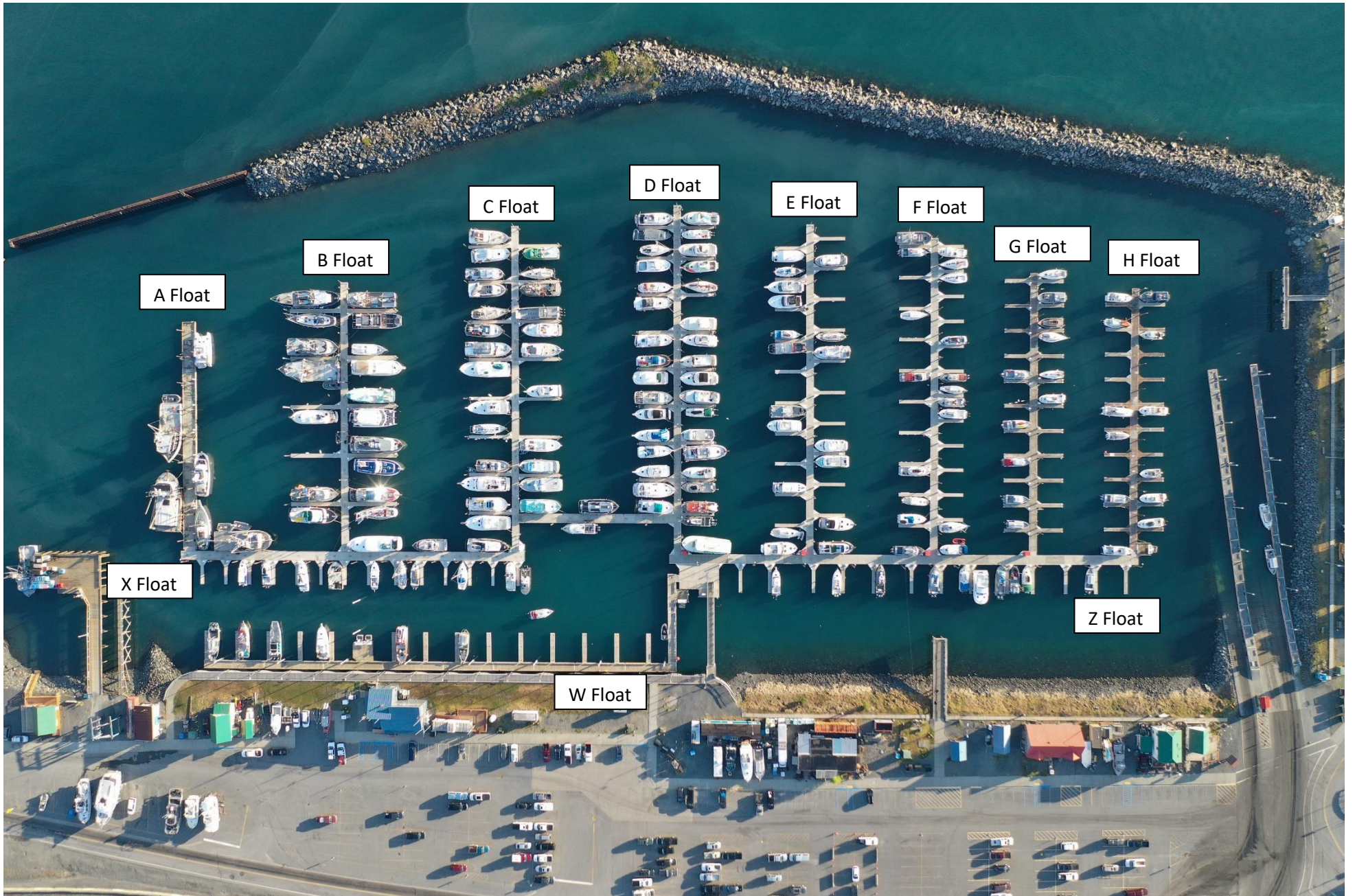


## Item 3.2 Debris for Removal

Legacy floats (B/C/D/E/F) and headwalk (Y/Z) = **2300 linear feet x 7/8ft wide**

Fingers	10ea x 48ft	480ft
Fingers	15ea x 40ft	400ft
Fingers	17ea x 33ft	560ft
Fingers	30ea x 30ft	900ft
Fingers	13ea x 28ft	365ft
Fingers	26ea x 24ft	625ft
<b>Total</b>		<b>3330 lft x 2/3ft wide</b>





A Float

B Float

C Float

D Float

E Float

F Float

G Float

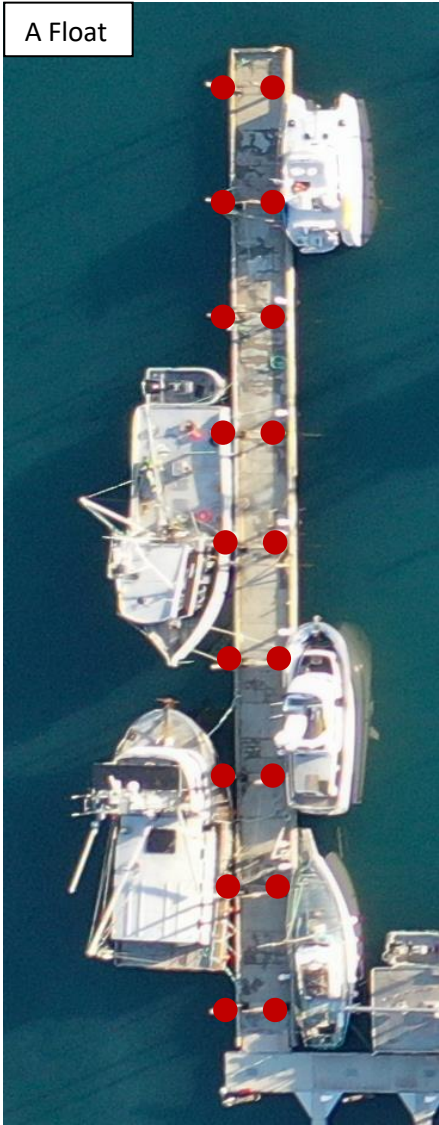
H Float

X Float

W Float

Z Float

- = Existing Steel Pile
- = Existing Wood Pile



A Float – 18 Wood Piles

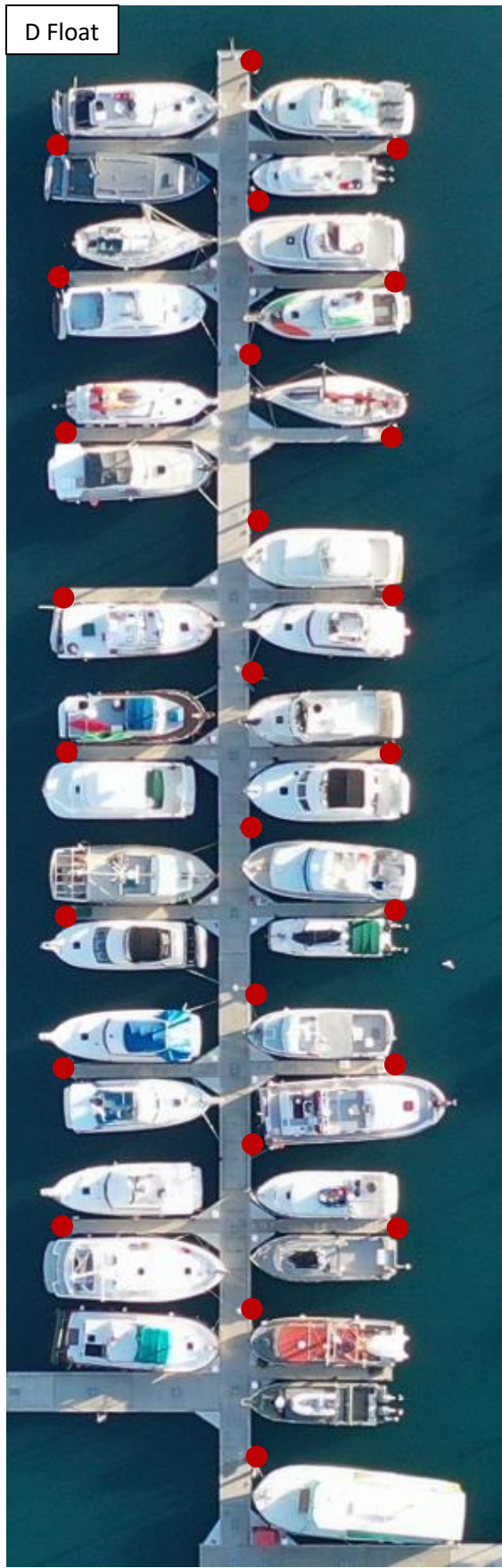


B Float – 14 Wood Piles  
2 Steel Piles



C Float

C Float – 24 Wood Piles



D Float

D Float – 26 Wood Piles



Crossing Between C and D Floats

2 Wood Piles



E Float

F Float

E Float

11 Wood Piles

F Float

12 Wood Piles

G Float

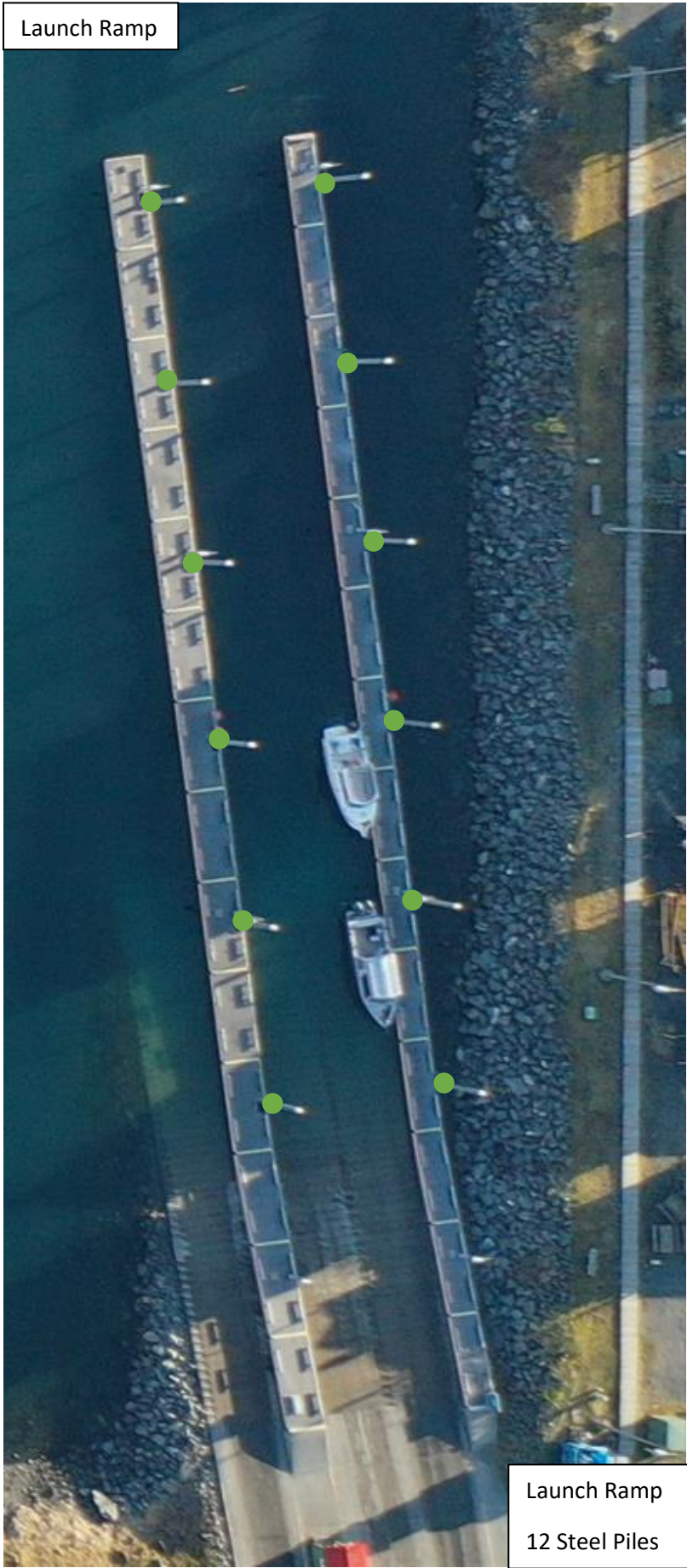
H Float



G Float  
11 Wood Piles

H Float  
11 Wood Piles

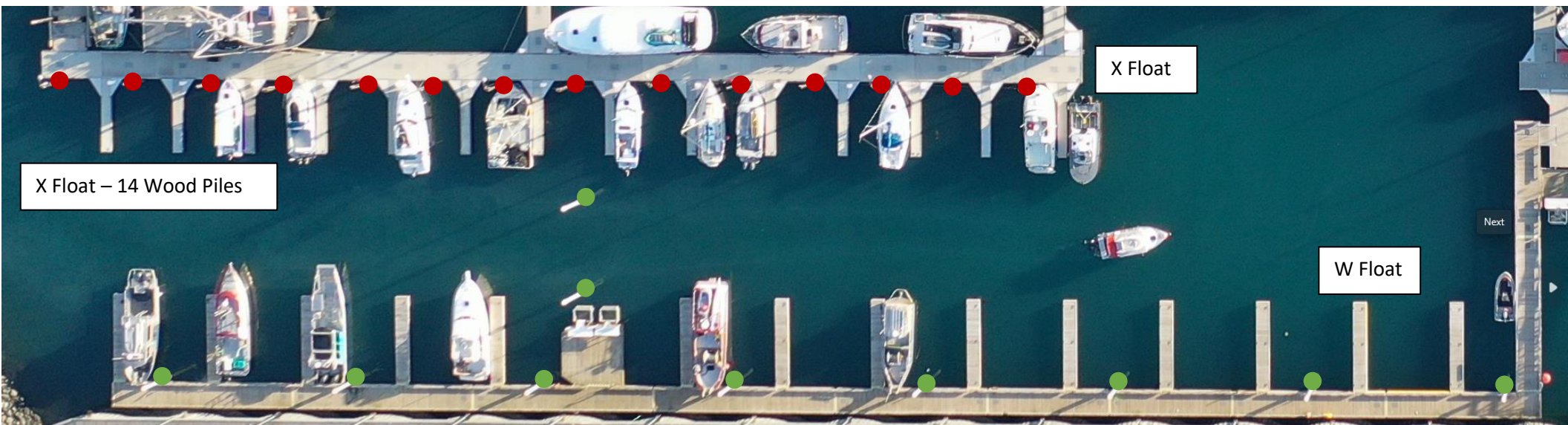
Launch Ramp



Launch Ramp  
12 Steel Piles

● = Existing Steel Pile

● = Existing Wooden Pile



X Float – 14 Wood Piles

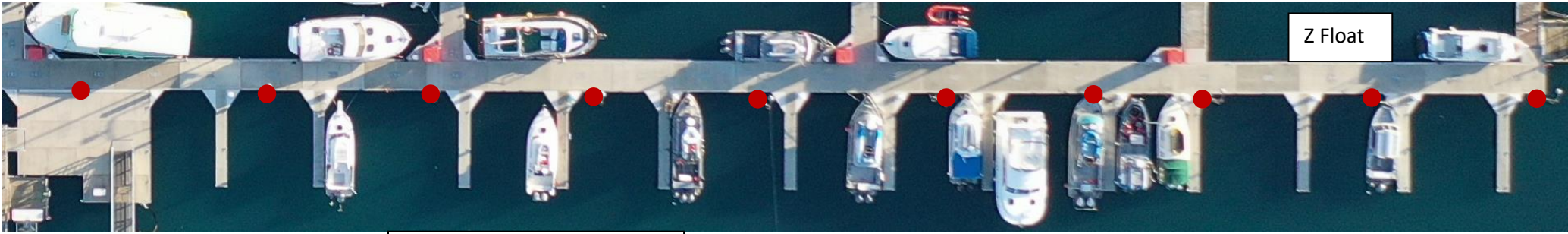
X Float

W Float

W Float – 8 Steel Piles  
2 Additional Steel Piles  
between W and X

Next



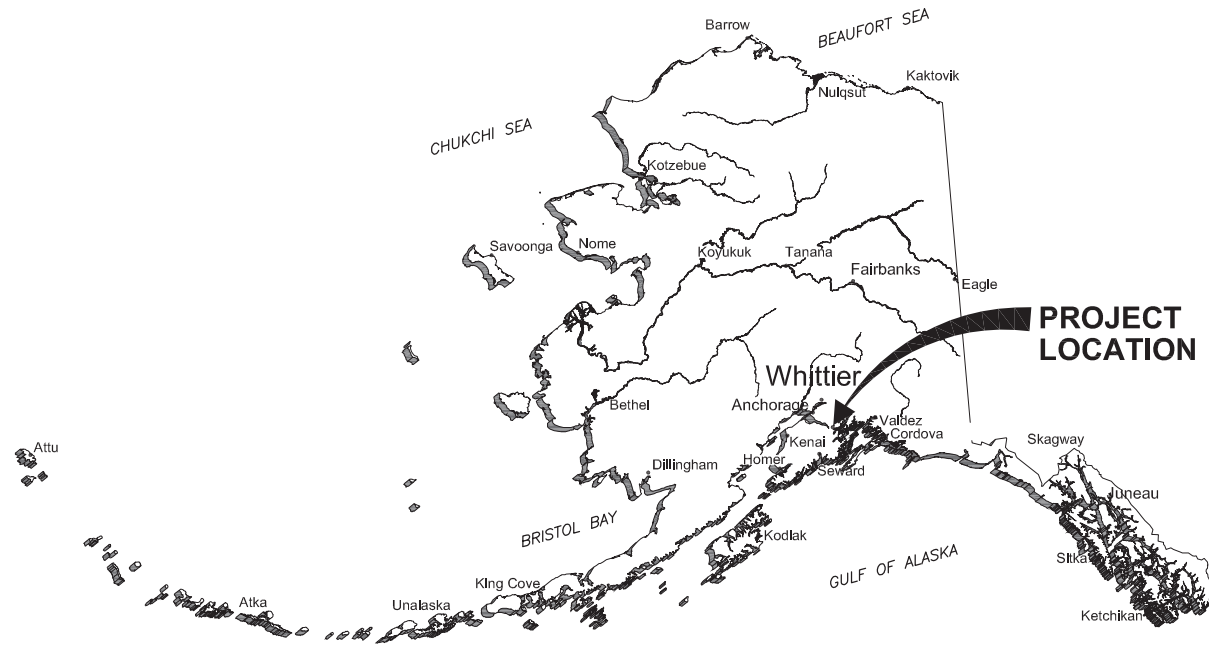


Z Float

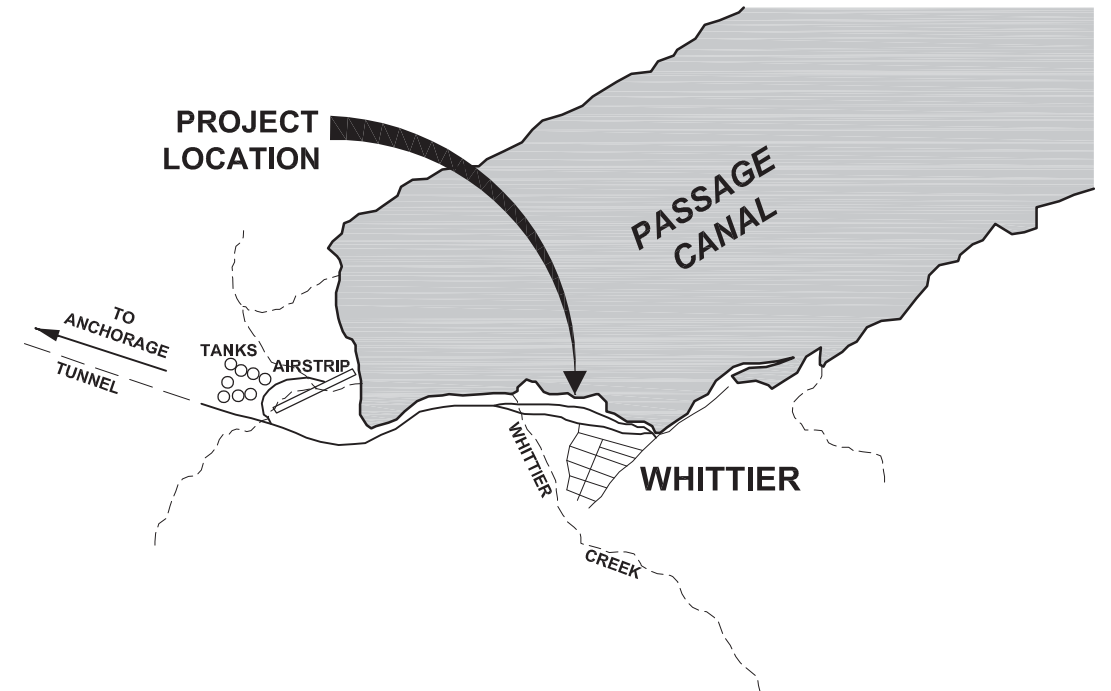
Z Float – 9 Wood Piles  
One Additional Wood Pile at  
bottom of Gangway (furthest  
Left in above photo)

# WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I

NOVEMBER 2010  
WHITTIER, ALASKA



**STATE OF ALASKA**



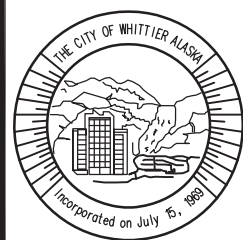
**WHITTIER VICINITY**

**DRAFT**  
**ISSUED FOR BID**  
11/11/10

**SHEET INDEX**

TITLE SHEET & INDEX	1	BOARDWALK DETAILS (1 OF 3)	13	WATERLINE SECTION & WATER VAULT DETAILS	25	<b>ELECTRICAL PLANS:</b>	
EXISTING CONDITIONS	2	BOARDWALK DETAILS (2 OF 3)	14	WATER SERVICE DETAILS (1 OF 3)	26	HARBOR ELECTRICAL DEMOLITION PLAN	E1
DEMOLITION PLAN	3	BOARDWALK DETAILS (3 OF 3)	15	WATER SERVICE DETAILS (2 OF 3)	27	DOCK LIGHTING PLAN	E2
NEW SITE PLAN	4	UPLANDS DETAILS	16	WATER SERVICE DETAILS (3 OF 3)	28	FLOAT POWER PLAN	E3
TEST HOLE LOGS	5	GANGWAY PLATFORM DETAILS (1 OF 2)	17	GENERAL NOTES (1 OF 4)	30	SCHEDULES AND DIAGRAMS	E4
DREDGING PLAN	6	GANGWAY PLATFORM DETAILS (2 OF 2)	18	GENERAL NOTES (2 OF 4)	31	SPECIFICATIONS AND DETAILS	E5
OFFSHORE DREDGE DISPOSAL AREA	7	K FLOAT PLAN	19	GENERAL NOTES (3 OF 4)	32	PANEL SCHEDULES	E6
UPLANDS OVERVIEW & TYPICAL SECTION	8	8-FT WIDE MAIN FLOAT UNITS	20	GENERAL NOTES (4 OF 4)	33	SCHEDULES AND DIAGRAMS	E7
UPLANDS PLAN (1 OF 2)	9	4-FT WIDE FINGER FLOAT UNITS	21				
UPLANDS PLAN (2 OF 2)	10	HEADWALK TO CONNECTION FLOAT & PILE HOOP DETAILS	22				
HARBORMASTER BUILDING FOUNDATION PLAN	11	BULLRAIL & MISCELLANEOUS DETAILS	23				
OPEN CELL WALL DETAILS	12	WATER & SEWER SERVICE PLAN	24				

J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\01 Cover.dwg, 1, 11/11/2010 11:28:45 AM, James, 12



CITY OF WHITTIER  
PO BOX 608  
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Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com



**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE SHEET & INDEX

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>1</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	

**NOTES:**

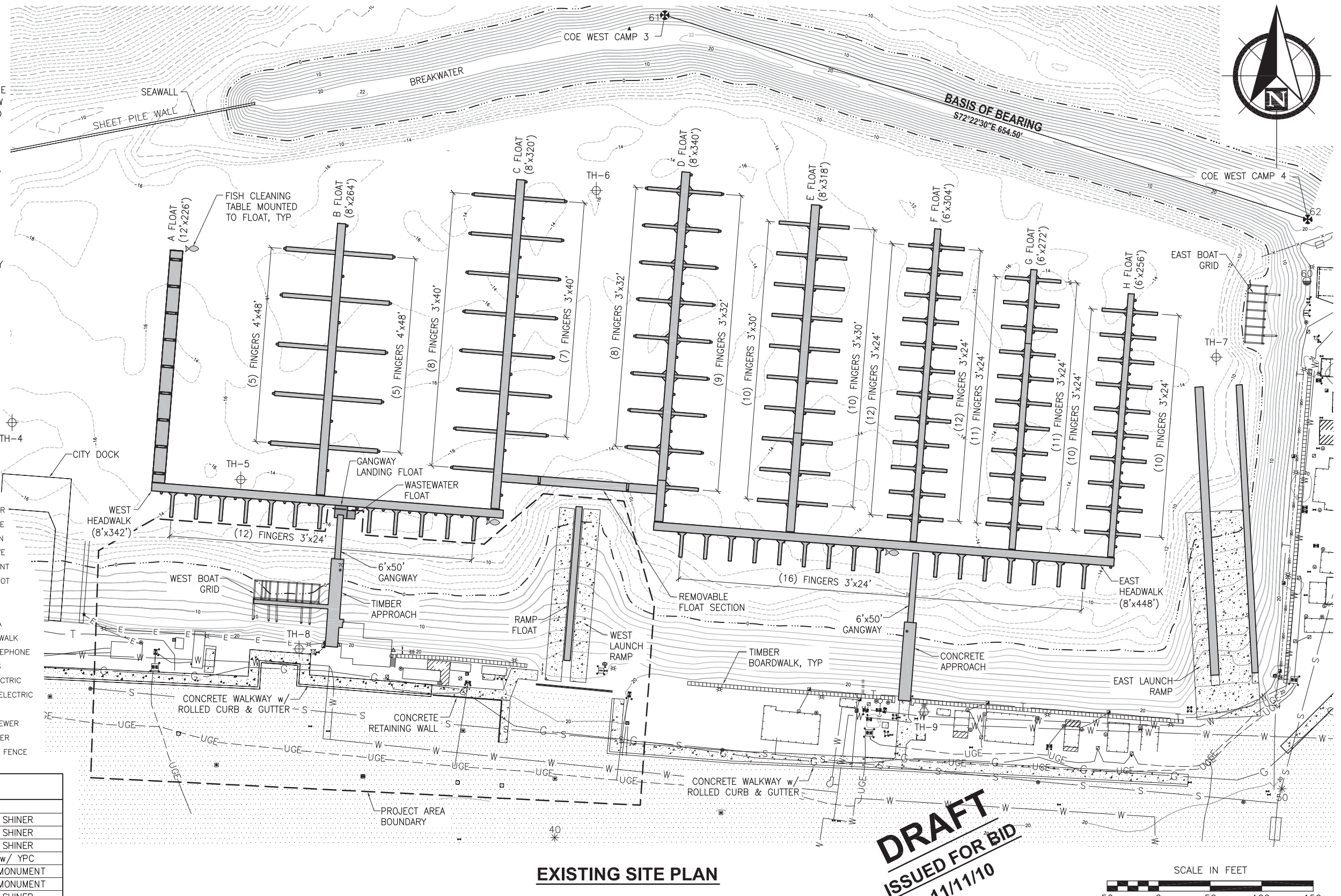
- 1) VERTICAL DATUM IS MEAN LOWER LOW WATER (MLLW = 0.00')
- 2) BASIS OF VERTICAL DATUM FOR THIS SURVEY IS FROM THE C.O.E. "WEST CAMP 4" MONUMENT ELEVATION 20.64' MLLW (SEE NOTE 1). FOR LOCATION AND DESCRIPTION REFER TO THE CORPS OF ENGINEERS JULY 1995 CONDITION SURVEY OF THE WHITTIER BOAT HARBOR.
- 3) BASIS OF BEARING FOR THIS SURVEY IS S72°22'30"E AND IS BASED ON THE FOUND C.O.E. MONUMENTS "WEST CAMP 3" & "WEST CAMP 4" LOCATED ALONG THE WHITTIER HARBOR BREAKWATER AS SHOWN ON C.O.E. JULY 1995 CONDITION SURVEY. COORDINATE VALUES LISTED ON SAID DRAWING WERE USED TO ESTABLISH BEARING BETWEEN "WEST CAMP 3 & 4".
- 4) INFORMATION REGARDING THE LOCATION OF THE UNDERGROUND UTILITIES WAS PROVIDED BY ONSITE UTILITY COMPANY LOCATORS. THE REMAINING UTILITIES WERE LOCATED BASED ON VISUAL ABOVE GROUND UTILITY STRUCTURES. CONTRACTOR SHALL CALL FOR LOCATES PRIOR TO ANY WORK.
- 5) CONTOURS ARE IN FEET, WITH TWO FOOT INTERVALS.
- 6) FIELD SURVEY PERFORMED APRIL 14-29, 2005. EAST RAMP PARTIAL SURVEY PERFORMED DEC 15, 2008.
- 7) ALL EXISTING FLOATS ARE CONCRETE. ALL EXISTING FLOAT PILES ARE TIMBER

**LEGEND**

- |                               |                        |
|-------------------------------|------------------------|
| ● FOUND MONUMENT              | ⊕ TEST HOLE            |
| ⊗ FOUND C.O.E. MONUMENT       | ⬇ GUY ANCHOR           |
| ● SET REBAR W/ PND YPC        | ⌵ UTILITY POLE         |
| * SET NAIL W/ PND SHINER      | ⌵ STREET SIGN          |
| ⊠ SANITARY SEWER LIFT STATION | ⌵ WATER VALVE          |
| ⊙ SANITARY SEWER MANHOLE      | ⌵ FIRE HYDRANT         |
| ⊙ SANITARY SEWER CLEANOUT     | ⌵ WATER SPIGOT         |
| ⊠ STORM DRAIN MANHOLE         | ⌵ ANTENNA              |
| ⊠ STORM DRAIN CATCH BASIN     | ⊠ FUEL VAULT           |
| ⊠ PHONE/CABLE MANHOLE         | ▨ PAVED AREA           |
| ⊠ PHONE/CABLE PEDESTAL        | ▨ CONCRETE WALK        |
| ⊙ GAS METER                   | — T BURIED TELEPHONE   |
| ⊙ UTILITY SERVICE CONNECT     | — G BURIED GAS         |
| ⊠ ELECTRIC TRANSFORMER        | — UGE BURIED ELECTRIC  |
| ⊠ ELECTRIC MANHOLE            | — E OVERHEAD ELECTRIC  |
| ⊠ LIGHT POLE                  | — W WATER LINE         |
| ⊠ ELECTRIC PEDESTAL           | — S SANITARY SEWER     |
| ⊙ ELECTRIC METER              | — SD STORM SEWER       |
| ⊙ POWER POLE                  | — x-x CHAIN LINK FENCE |

**PROJECT CONTROL**

POINT #	NORTHING	EASTING	ELEV.	DESCRIPTION
30	2478111.651	1874030.066	24.35	SET NAIL & SHINER
40	2478026.733	1874659.054	22.12	SET NAIL & SHINER
50	2478074.095	1875364.893	20.23	SET NAIL & SHINER
60	2478566.843	1875389.133	20.34	SET REBAR w/ YPC
61	2478825.114	1874765.998	16.71	FND C.O.E. MONUMENT
62	2478626.939	1875389.779	20.64	FND C.O.E. MONUMENT
70	2478286.429	1874450.963	20.76	SET NAIL & SHINER



**EXISTING SITE PLAN**



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REV	DATE	DESCRIPTION

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 Fax: 907.563.4220  
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PROJECT: WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I	
TITLE: EXISTING CONDITIONS	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
CHECKED BY: DST	PROJECT NO: 051020
SHEET NO: <b>2</b> OF 33	

J:\2005\051020 Whittier Small Boat Harbor\Drawings\02 Existing Conditions.dwg, 02\_11/11/2010 11:27:05 AM, james, 12

# DEMOLITION SUMMARY

## GENERAL

ALL EXISTING FLOATS AND FLOAT PILES TO REMAIN.

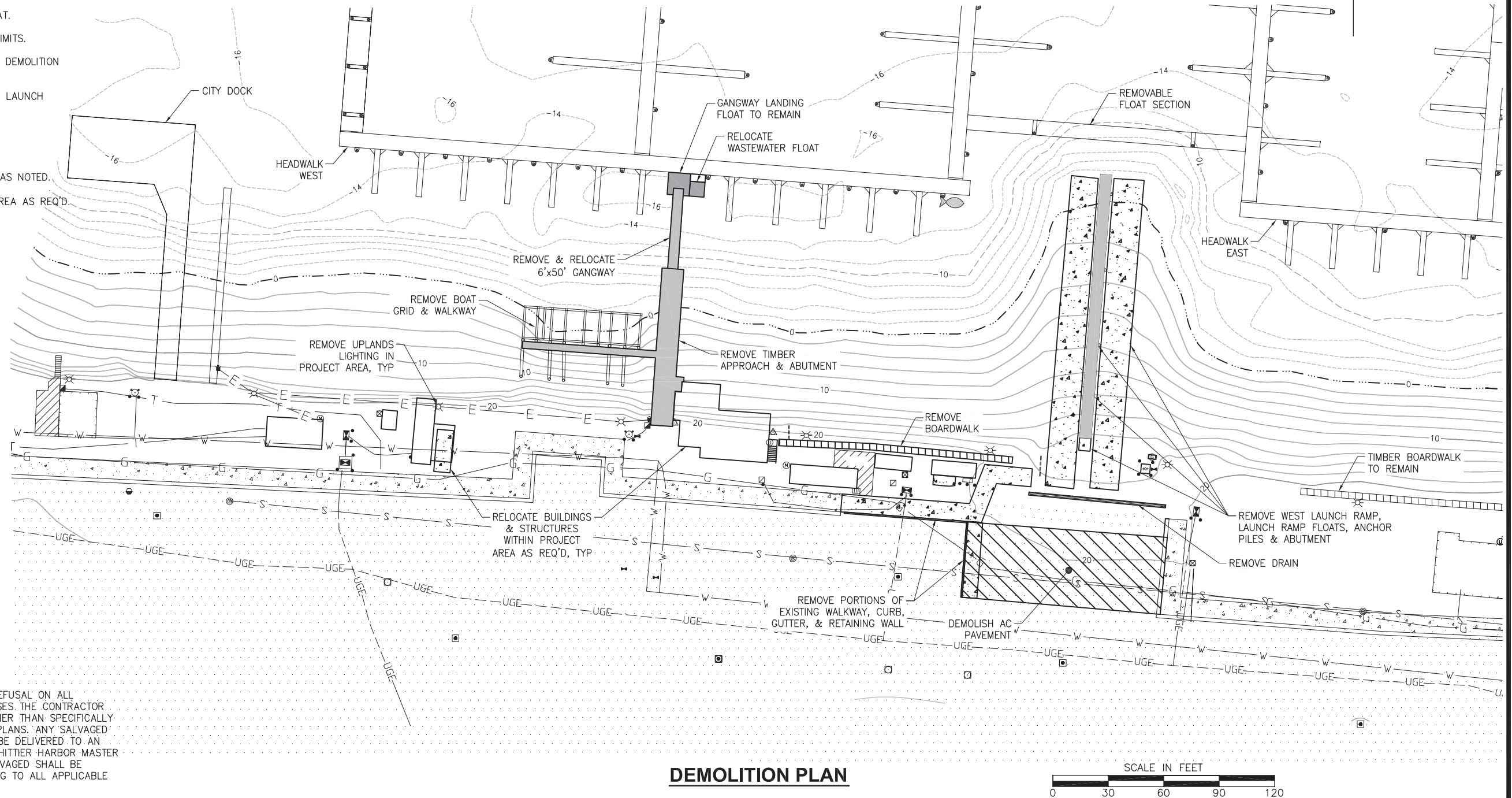
REMOVE THE FOLLOWING ITEMS:

1. REMOVE & RELOCATE WEST GANGWAY.
2. REMOVE GANGWAY ATTACHMENTS FROM WEST GANGWAY LANDING FLOAT.
3. REMOVE & RELOCATE WASTEWATER FLOAT.
4. WATER SERVICE UP TO CONSTRUCTION LIMITS.
5. SEE ELECTRICAL PLANS FOR ELECTRICAL DEMOLITION REQUIREMENTS.
6. WEST LAUNCH RAMP CONCRETE PANELS, LAUNCH FLOAT, PILES, & WALKWAY.
7. WEST BOAT GRID & WALKWAY.
8. WEST TIMBER APPROACH & ABUTMENT.
9. CONCRETE WALKWAYS & AC PAVEMENT AS NOTED.
10. RELOCATE BUILDINGS WITHIN PROJECT AREA AS REQ'D.
11. OTHER ITEMS AS SHOWN.

## STAGING AREA

THE CONTRACTOR SHALL BE PROVIDED WITH A STAGING AREA LOCATED IN THE UPLANDS PARKING LOT. THE CONTRACTOR SHALL COORDINATE THE STAGING AREA SIZE AND LOCATION WITH THE WHITTIER HARBOR MASTER.

**DRAFT**  
**ISSUED FOR BID**  
11/11/10



THE OWNER SHALL RETAIN FIRST RIGHT OF REFUSAL ON ALL DEMOLISHED MATERIALS. FOR BIDDING PURPOSES THE CONTRACTOR SHALL ASSUME NO SALVAGED MATERIALS OTHER THAN SPECIFICALLY IDENTIFIED AS SALVAGED MATERIALS IN THE PLANS. ANY SALVAGED MATERIALS SELECTED BY THE OWNER SHALL BE DELIVERED TO AN OWNER SPECIFIED LOCATION. CONTACT THE WHITTIER HARBOR MASTER PRIOR TO DELIVERY. ALL MATERIALS NOT SALVAGED SHALL BE DISPOSED OF BY THE CONTRACTOR ACCORDING TO ALL APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS.

### DEMOLITION PLAN



J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\03 Demolition Plan.dwg, 3, 11/11/2010 1:27:27 AM, jmmes, 1:2



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FAX: (907) 472-2404

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PATENT - US 7,018,141 B2  
PATENT - US 7,488,140 B2

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Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com



PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **DEMOLITION PLAN**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

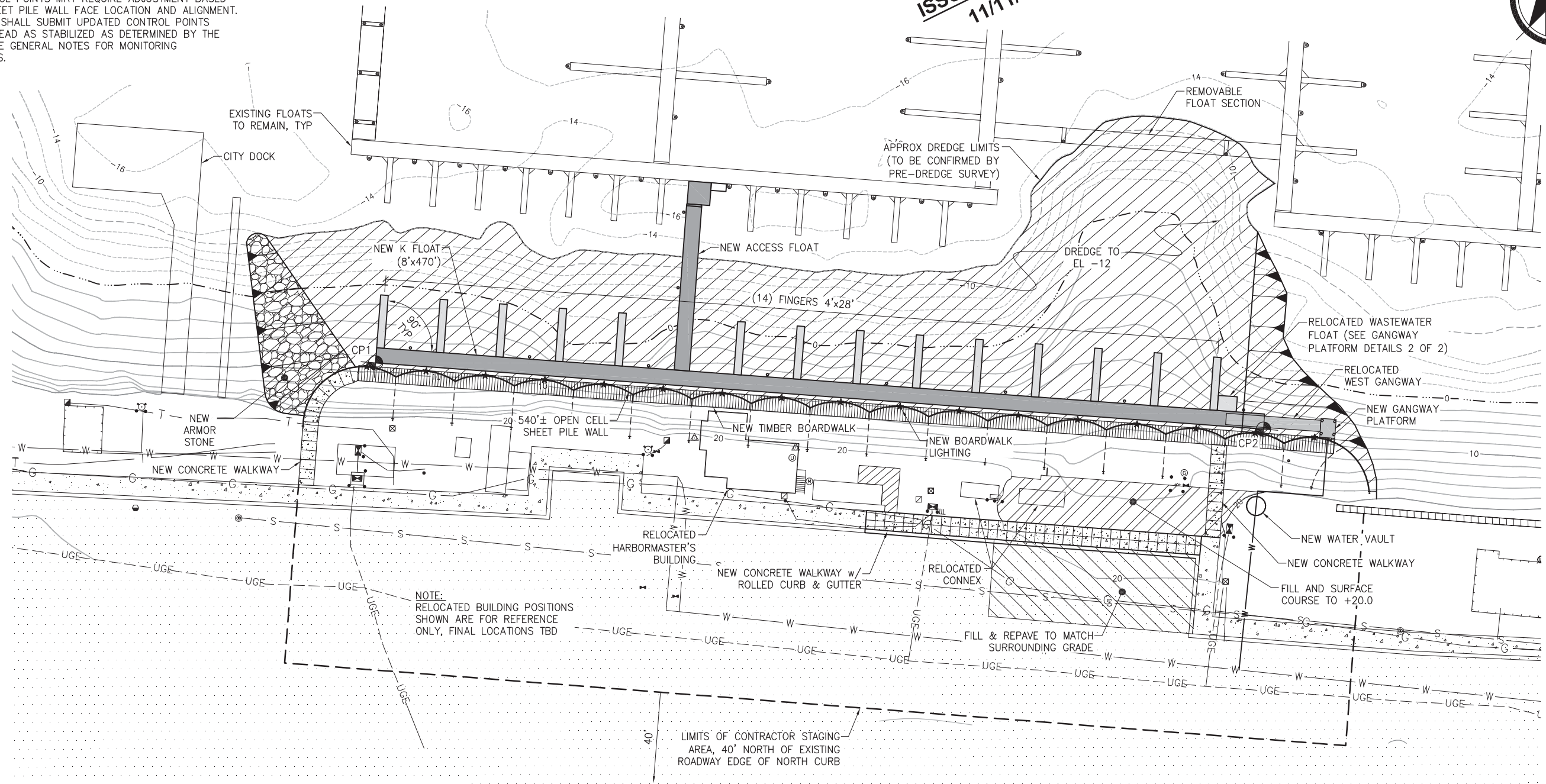
SHEET NO: **3** OF 33

**PROJECT LAYOUT**

ID	NORTHING	EASTING	DESCRIPTION
CP1	2478253.27	1874280.81	SW CORNER OF NEW K FLOAT
CP2	2478218.30	1874749.48	SE CORNER OF NEW K FLOAT

**NOTE:**  
 FLOAT CONTROL POINTS MAY REQUIRE ADJUSTMENT BASED ON FINAL SHEET PILE WALL FACE LOCATION AND ALIGNMENT. CONTRACTOR SHALL SUBMIT UPDATED CONTROL POINTS AFTER BULKHEAD AS STABILIZED AS DETERMINED BY THE ENGINEER. SEE GENERAL NOTES FOR MONITORING REQUIREMENTS.

**DRAFT**  
**ISSUED FOR BID**  
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**NOTE:**  
 RELOCATED BUILDING POSITIONS SHOWN ARE FOR REFERENCE ONLY, FINAL LOCATIONS TBD

**NEW SITE PLAN**



J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\04 New Site Plan.dwg, 04, 11/11/2010 11:27:45 AM, James, 1:2



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**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

**NEW SITE PLAN**

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>4</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	

# SOILS CLASSIFICATION, CONSISTENCY AND SYMBOLS

**CLASSIFICATION:** Identification and classification of the soil is accomplished in general accordance with the ASTM version of the Unified Soil Classification System (USCS) as presented in ASTM Standard D 2487-93. The standard is a qualitative method of classifying soil into the following major divisions (1) coarse grained (2) fine-grained, (3) highly organic soils. Classification is performed on the soils passing the 75 mm (3 inch) sieve and if possible the amount of oversize material (> 75 mm particles) is noted on the soil logs. This is not always possible for drilled test holes because the oversize particles are typically too large to be captured in the sampling equipment. Oversize materials greater than 300 mm (12 inches) are termed boulders, while materials between 75 mm and 300 mm are termed cobbles. Coarse grained soils are those having 50% or more of the non-oversize soil retained on the No. 200 sieve; if a greater percentage of the coarse grains is retained on the No. 4 sieve the coarse grained soil is classified as gravel, otherwise it is classified as sand. Fine grained soils are those having more than 50% of the non-oversize material passing the No. 200 sieve; these may be classified as silt or clay depending their Atterberg liquid and plastic limits or observations of field consistency. Refer to ASTM D 2487-93 for a complete discussion of the classification method.

**SOIL CONSISTENCY - CRITERIA:** Soil consistency as defined below and determined by normal field and laboratory methods applies only to non-frozen material. For these materials, the influence of such factors as soil structure, i.e. fissure systems, shrinkage cracks, slicken sides, etc., must be taken into consideration in making any correlation with the consistency values listed below. In permafrost zones, the consistency and strength of frozen soils may vary significantly and unexplainably with ice content, thermal regime and soil type.

Relative Density of Sands According to results of Standard Penetration Test		Consistency of Clay in Terms of Unconfined Compressive Strength (tsf)	
N*(bpf)	Relative Density	Very Soft	0 - 0.25
Loose	0 - 10	Soft	0.25 - 0.5
Medium Dense	10 - 30	Stiff	0.5 - 1.0
Dense	30 - 60	Firm	1.0 - 2.0
Very Dense	> 60	Very Firm	2.0 - 4.0
		Hard	> 4.0

\* Standard Penetration, "N": Blows per foot of a 140-pound hammer falling 30 inches on a 1.4" ID split-spoon sampler except where noted.

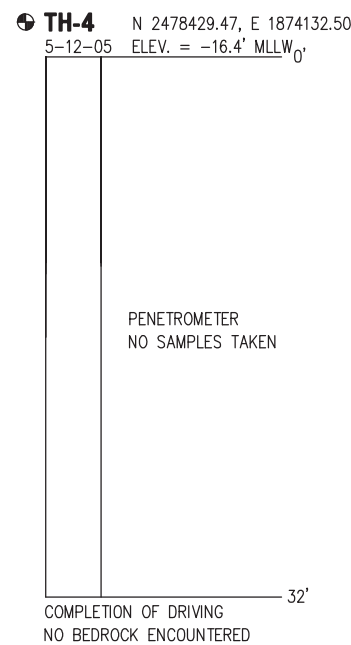
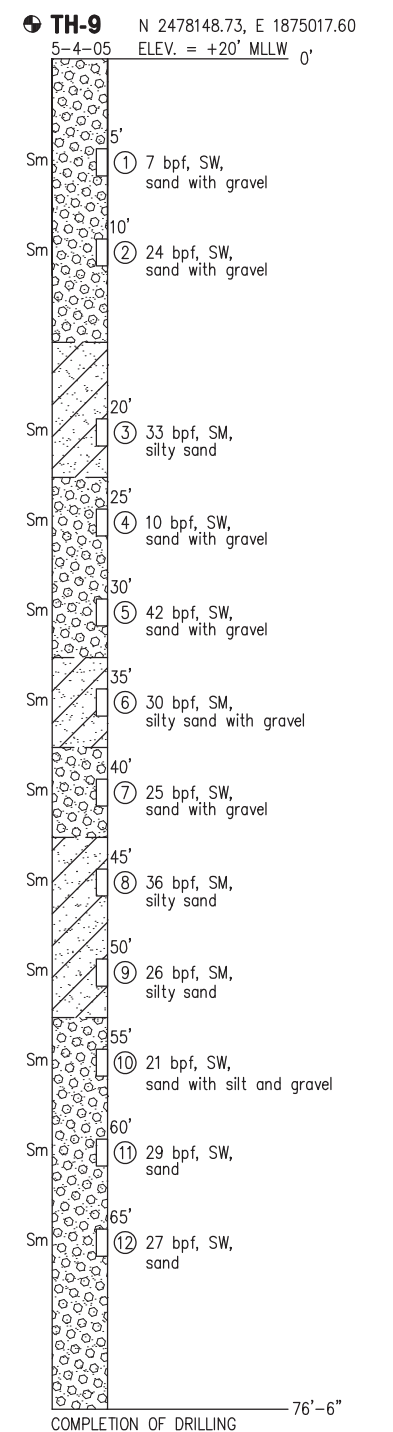
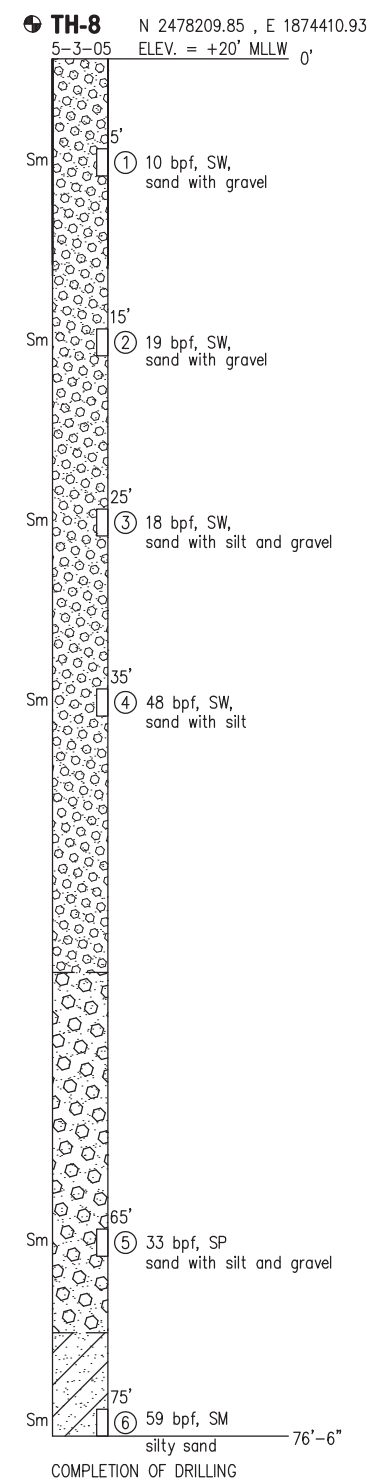
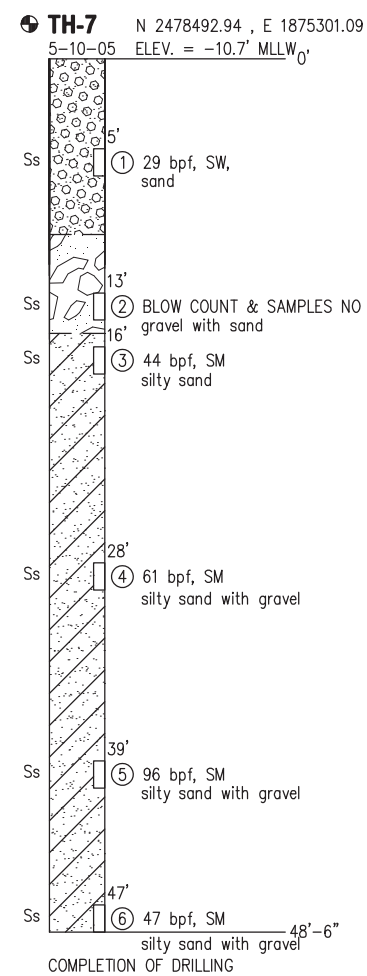
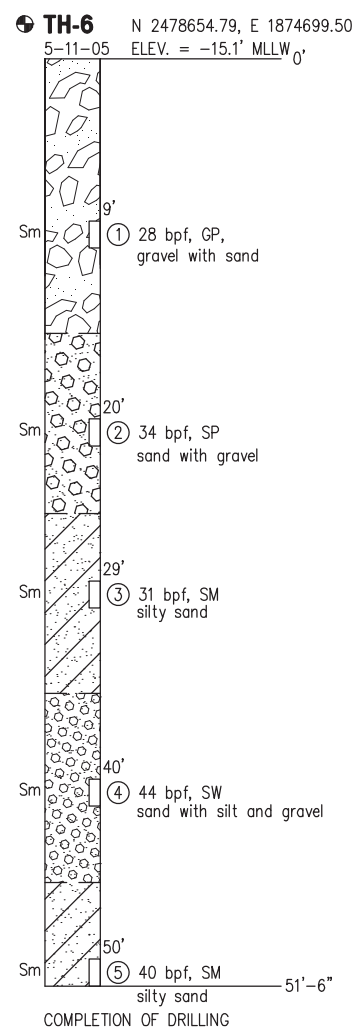
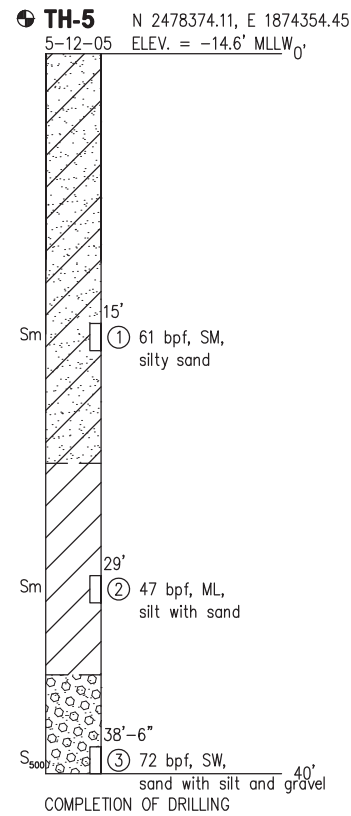
## SAMPLER TYPE SYMBOLS

- Ts .... Shelby Tube
- Ss .... 1.4" Split Spoon W/ 140# Hammer
- Cs .... Core Barrel W/ Single Tube
- Sm .... 2.5" Split Spoon W/ 300# Hammer
- S<sub>500</sub> .... 2.5" Split Spoon W/ 500# Hammer
- G .... Grab Sample

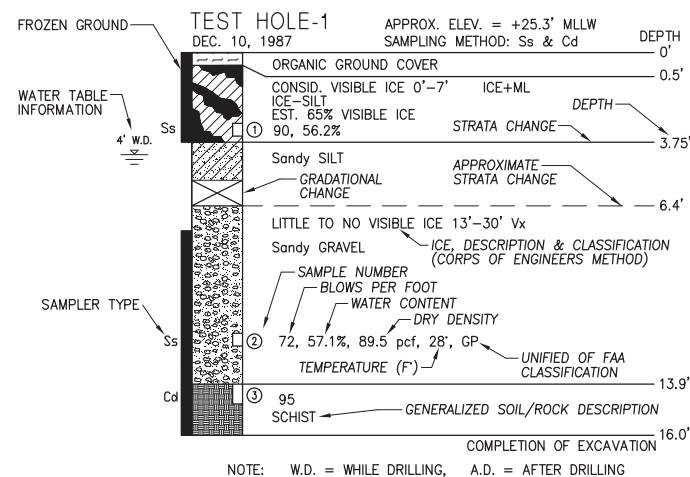
## NOTES:

- SAMPLER TYPES ARE EITHER NOTED ABOVE THE BORING LOG OR ADJACENT TO IT AT THE RESPECTIVE DEPTH.
- SPLIT SPOON SAMPLER SIZES PRESENTED ABOVE REFER TO THE INSIDE DIAMETER OF THE SAMPLER.
- SEE EXISTING CONDITIONS SHEET FOR TEST HOLE LOCATIONS.

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## TYPICAL BORING LOG



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PROJECT: WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I

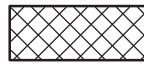
TITLE: TEST HOLE LOGS

DESIGNED BY: MTB DATE: NOVEMBER 2010  
 CHECKED BY: DST PROJECT NO: 051020

SHEET NO: 5 OF 33



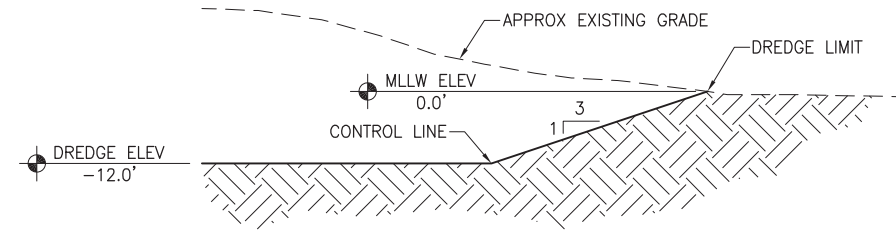
DREDGE AREA



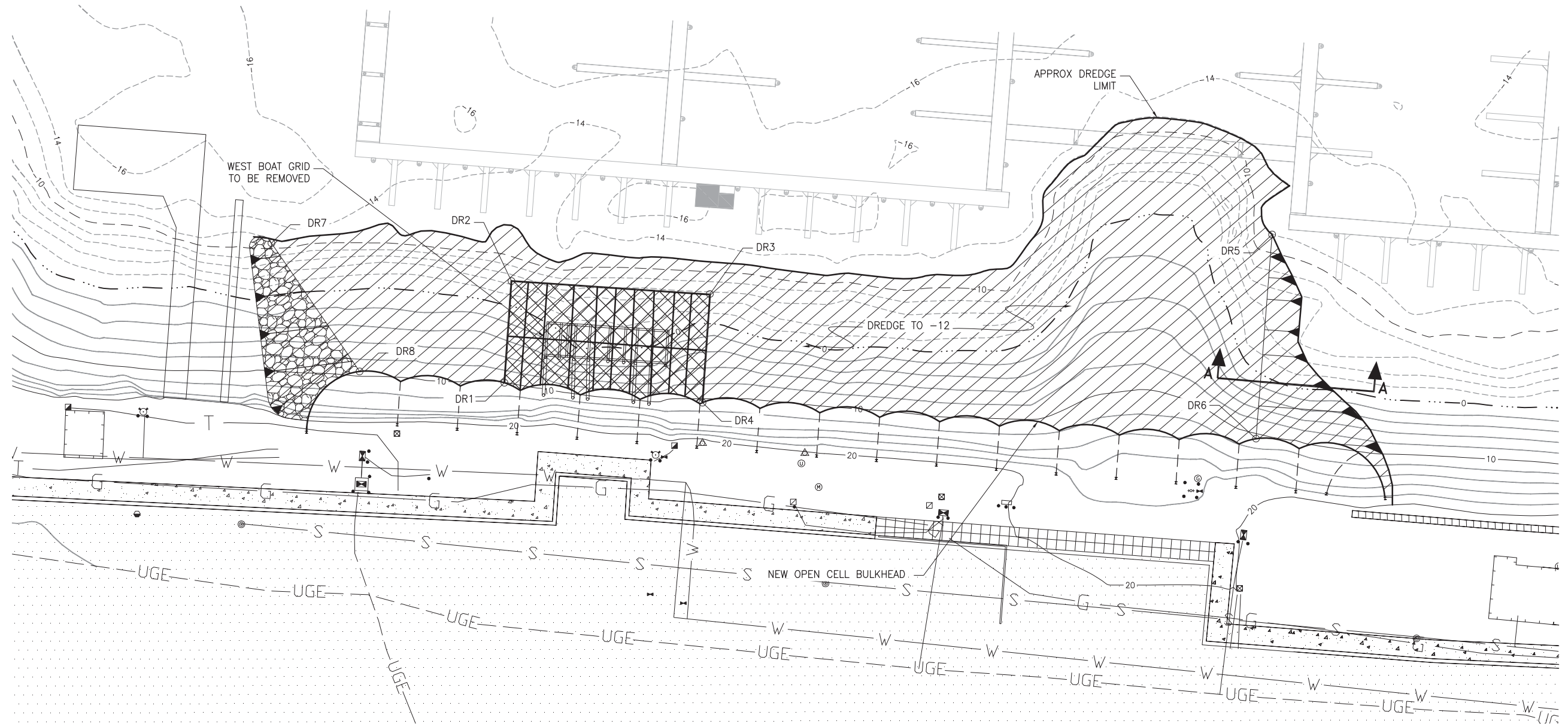
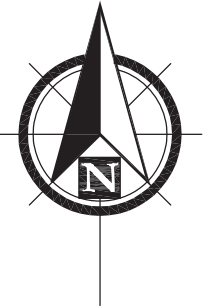
TBT CONTAMINATED SOILS, SEE GENERAL NOTES FOR SPECIFIC REQUIREMENTS

ID	NORTHING	EASTING
DR1	2478245.23	1874345.79
DR2	2478298.34	1874349.42
DR3	2478291.27	1874453.04
DR4	2478234.86	1874449.19
DR5	2478322.59	1874746.45
DR6	2478215.99	1874737.98
DR7	2478318.11	1874224.15
DR8	2478251.13	1874270.19

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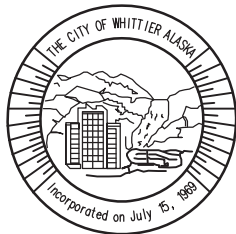
**SECTION A-A**  
NTS



**DREDGING PLAN**



J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\06 Dredging Plan.dwg, 06, 11/11/2010 11:28:15 AM, james, 1:2



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PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

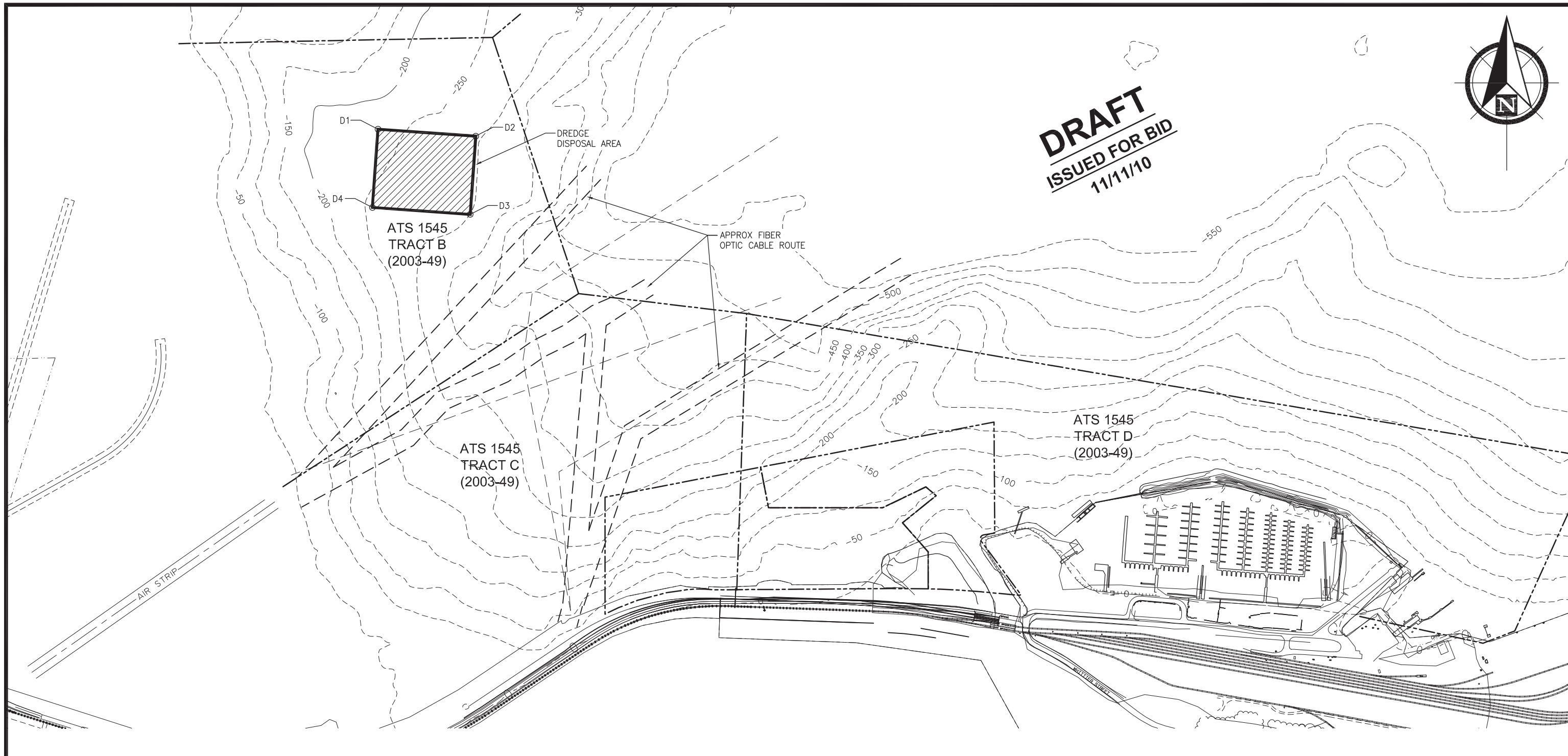
TITLE: **DREDGING PLAN**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **6** OF 33



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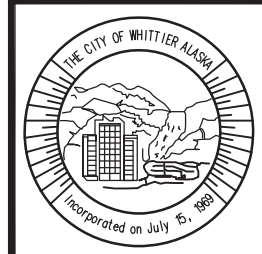


ID	NORTHING	EASTING
D1	2480571.98	1870474.79
D2	2480536.72	1870973.54
D3	2480137.71	1870945.33
D4	2480172.98	1870446.58

**OFFSHORE DREDGE DISPOSAL AREA**



J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\07 Offshore Dredge Disposal Areas.dwg, 07, 11/11/2010 11:28:30 AM, James, 1:2



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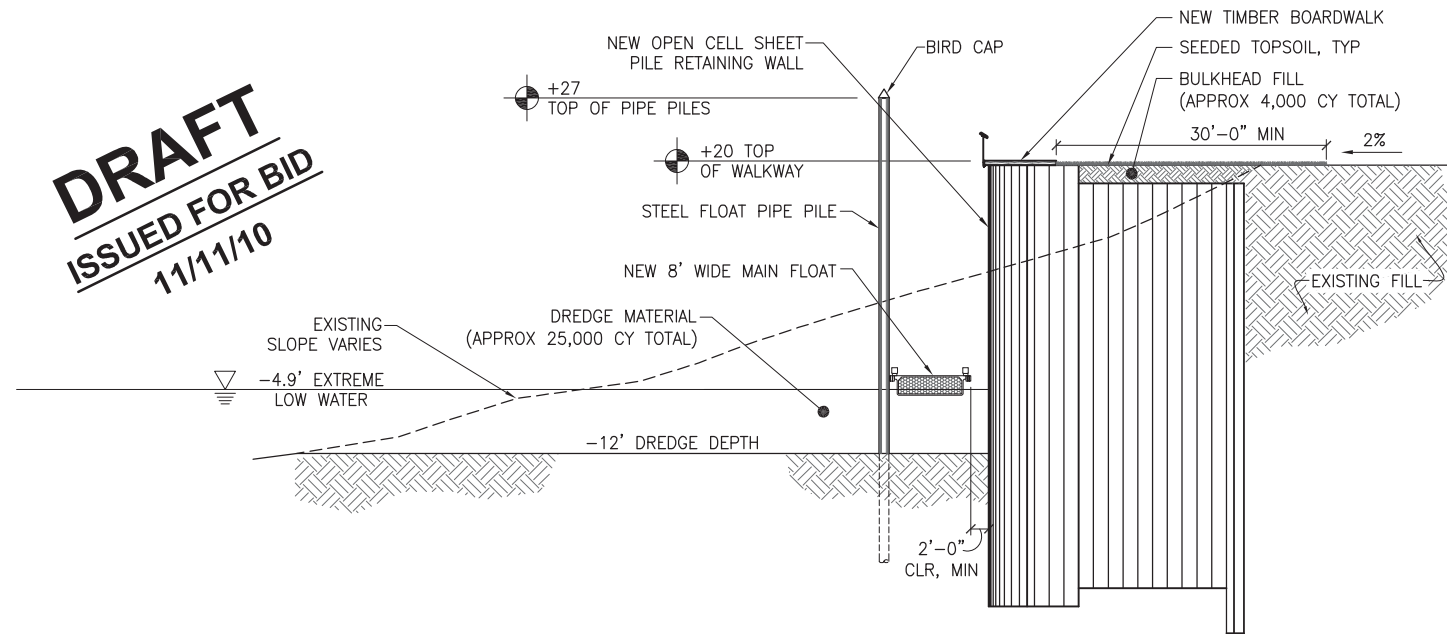
1506 West 36th Avenue  
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Fax: 907.563.4220  
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PROJECT: <b>WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I</b>	
TITLE: <b>OFFSHORE DREDGE DISPOSAL AREA</b>	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
CHECKED BY: DST	PROJECT NO: 051020
SHEET NO: <b>7</b> OF 33	



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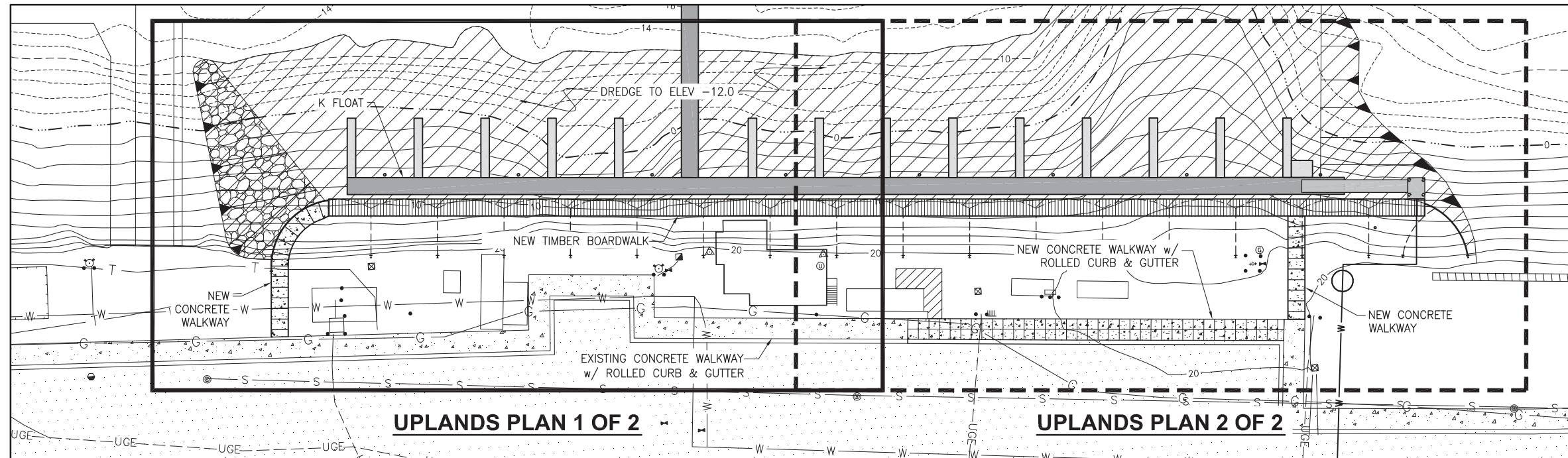


**TYPICAL WALL SECTION**  
NTS

**LEGEND**

- ⊙ FOUND MONUMENT
- ⊗ FOUND C.O.E. MONUMENT
- ⊙ SET REBAR W/ PND YPC
- \* SET NAIL W/ PND SHINER
- ⊕ SANITARY SEWER LIFT STATION
- ⊕ SANITARY SEWER MANHOLE
- ⊕ SANITARY SEWER CLEANOUT
- ⊕ STORM DRAIN MANHOLE
- ⊕ STORM DRAIN CATCH BASIN
- ⊕ PHONE/CABLE MANHOLE
- ⊕ PHONE/CABLE PEDESTAL
- ⊕ GAS METER
- ⊕ UTILITY SERVICE CONNECT
- ⊕ ELECTRIC TRANSFORMER
- ⊕ ELECTRIC MANHOLE
- ⊕ LIGHT POLE
- ⊕ ELECTRIC PEDESTAL
- ⊕ ELECTRIC METER
- ⊕ POWER POLE
- ⊕ GUY ANCHOR
- ⊕ UTILITY POLE
- ⊕ STREET SIGN
- ⊕ WATER VALVE
- ⊕ FIRE HYDRANT
- ⊕ WATER SPIGOT
- ⊕ ANTENNA
- ⊕ FUEL VAULT
- ▨ PAVED AREA
- ▨ CONCRETE WALK
- T — BURIED TELEPHONE
- G — BURIED GAS
- UGE — BURIED ELECTRIC
- E — OVERHEAD ELECTRIC
- W — WATER LINE
- S — SANITARY SEWER
- SD — STORM SEWER
- x — x — CHAIN LINK FENCE

**NOTE:**  
DEPENDING ON CONTRACTOR MEANS AND METHODS, ADDITIONAL BUILDINGS AND UTILITIES MAY REQUIRE RELOCATION OR REMOVAL. THE CONTRACTOR SHALL IDENTIFY ALL ITEMS TO BE DISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL REMOVAL & RELOCATION OPERATIONS WITH THE CITY & ALL APPLICABLE UTILITIES. REMOVAL, RELOCATION, & COORDINATION SHALL BE CONSIDERED INCIDENTAL TO OPEN CELL CONSTRUCTION.



**UPLANDS OVERVIEW PLAN**



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**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

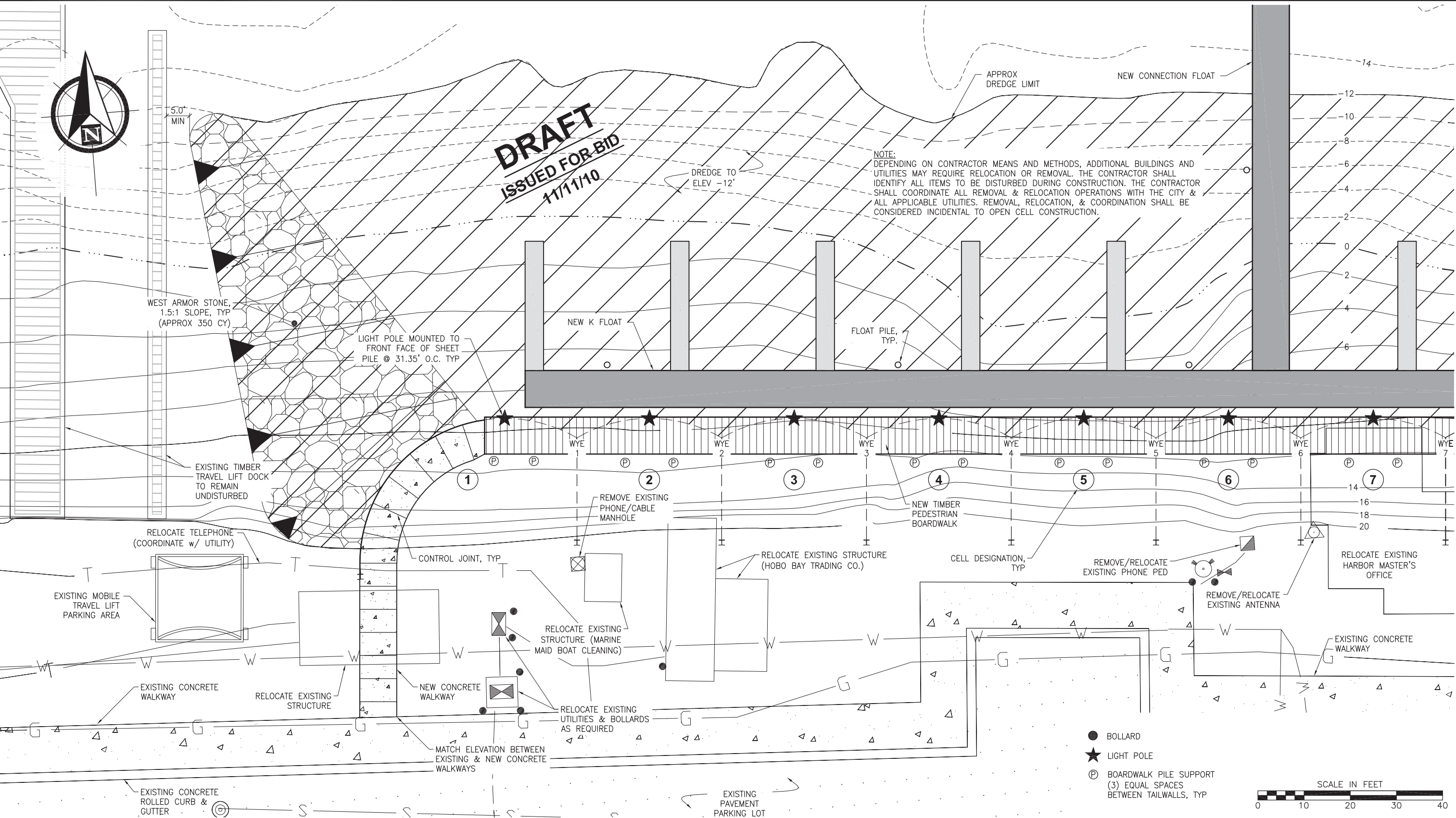
UPLANDS OVERVIEW & TYPICAL SECTION

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>8</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	



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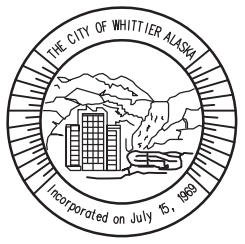
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- BOLLARD
- ★ LIGHT POLE
- ⊙ BOARDWALK PILE SUPPORT (3) EQUAL SPACES BETWEEN TAILWALLS, TYP



J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\09-10 Uplands Plan.dwg, 09, 11/11/2010 11:28:06 AM, James, 1:2



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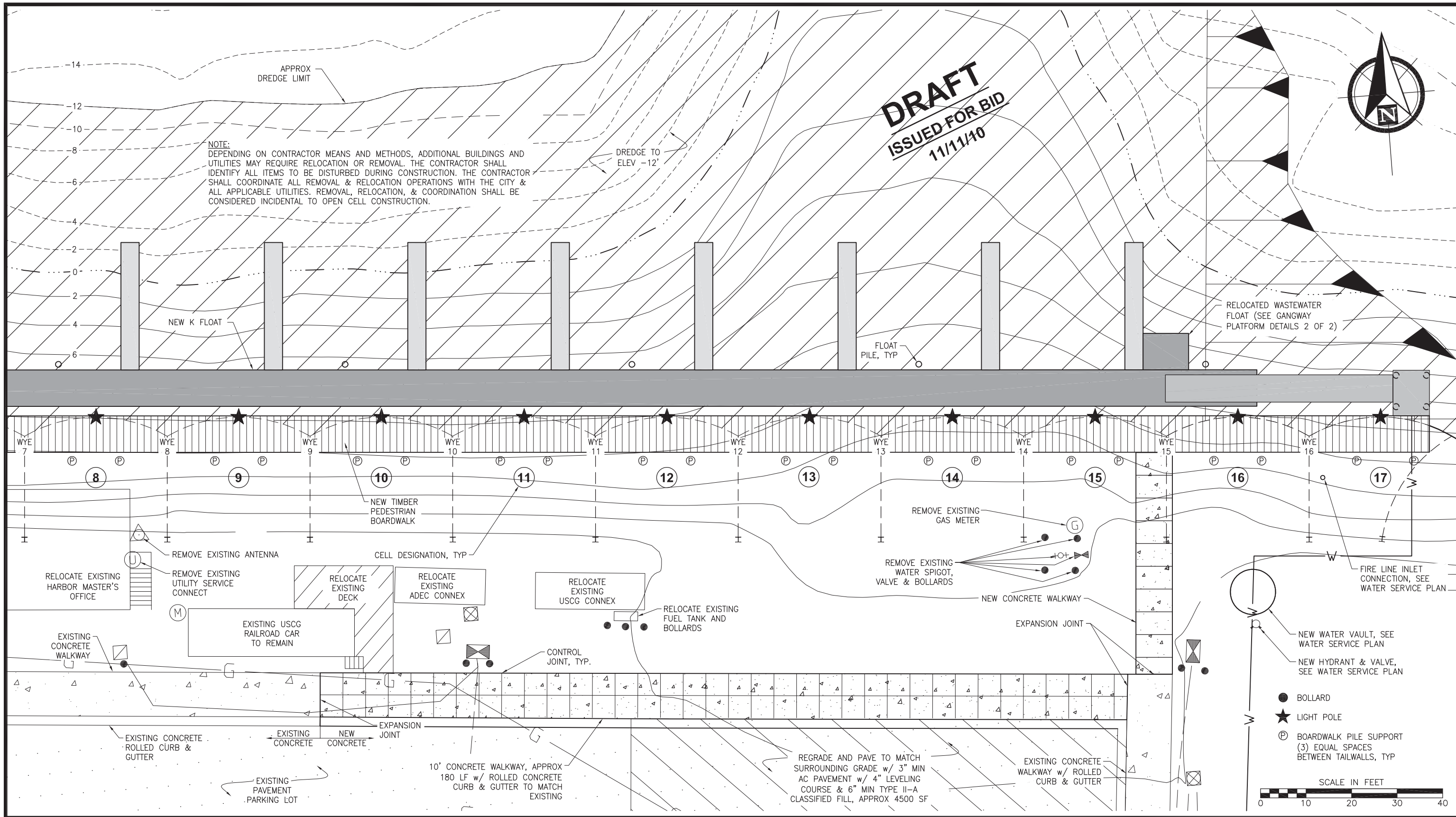
PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **UPLANDS PLAN (1 OF 2)**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **9** OF 33

J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\09-10 Uplands Plan.dwg, 10, 11/11/2010 11:28:13 AM, James, 1:2



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**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

UPLANDS PLAN  
 (2 OF 2)

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>10</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	

# HARBORMASTER RELOCATION SPECIFICATIONS:

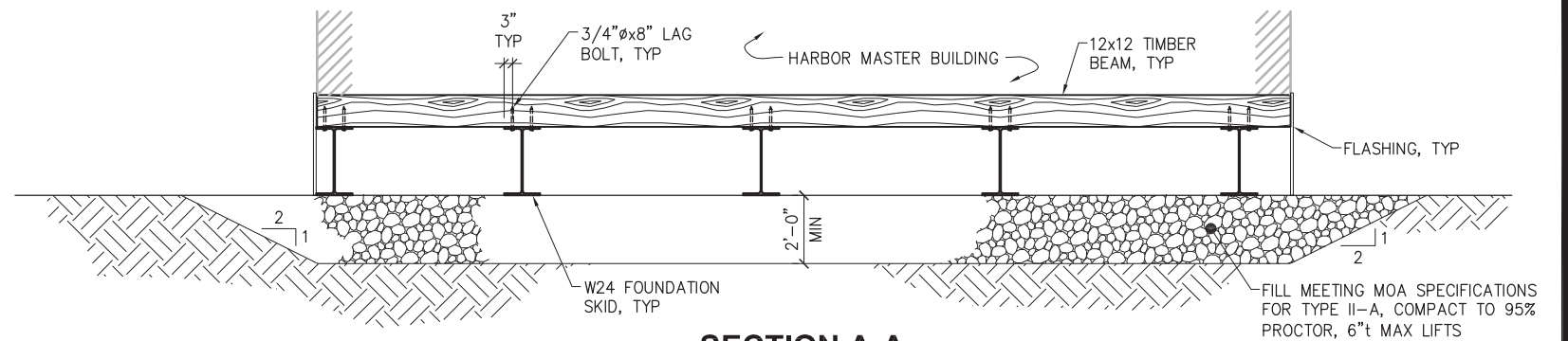
CONTRACTOR SHALL FOLLOW THE HARBORMASTER RELOCATION PLAN OUTLINED BELOW

1. CONDUCT INSPECTION OF BUILDING TO DETERMINE AND DOCUMENT THE EXISTING CONDITION
2. PROVIDE ENGINEER WITH LABELED PHOTO AND VIDEO DOCUMENTATION OF EXISTING BUILDING CONDITION
3. LIFT BUILDING AND INSTALL FOUNDATION BEAMS AS SHOWN
4. TRANSPORT BUILDING TO DESIGNATED TEMPORARY SITE, NO MORE THAN 1/4 MILE FROM EXISTING LOCATION
5. PROVIDE NECESSARY SUPPORT OF BUILDING DURING ALL PHASES OF CONSTRUCTION

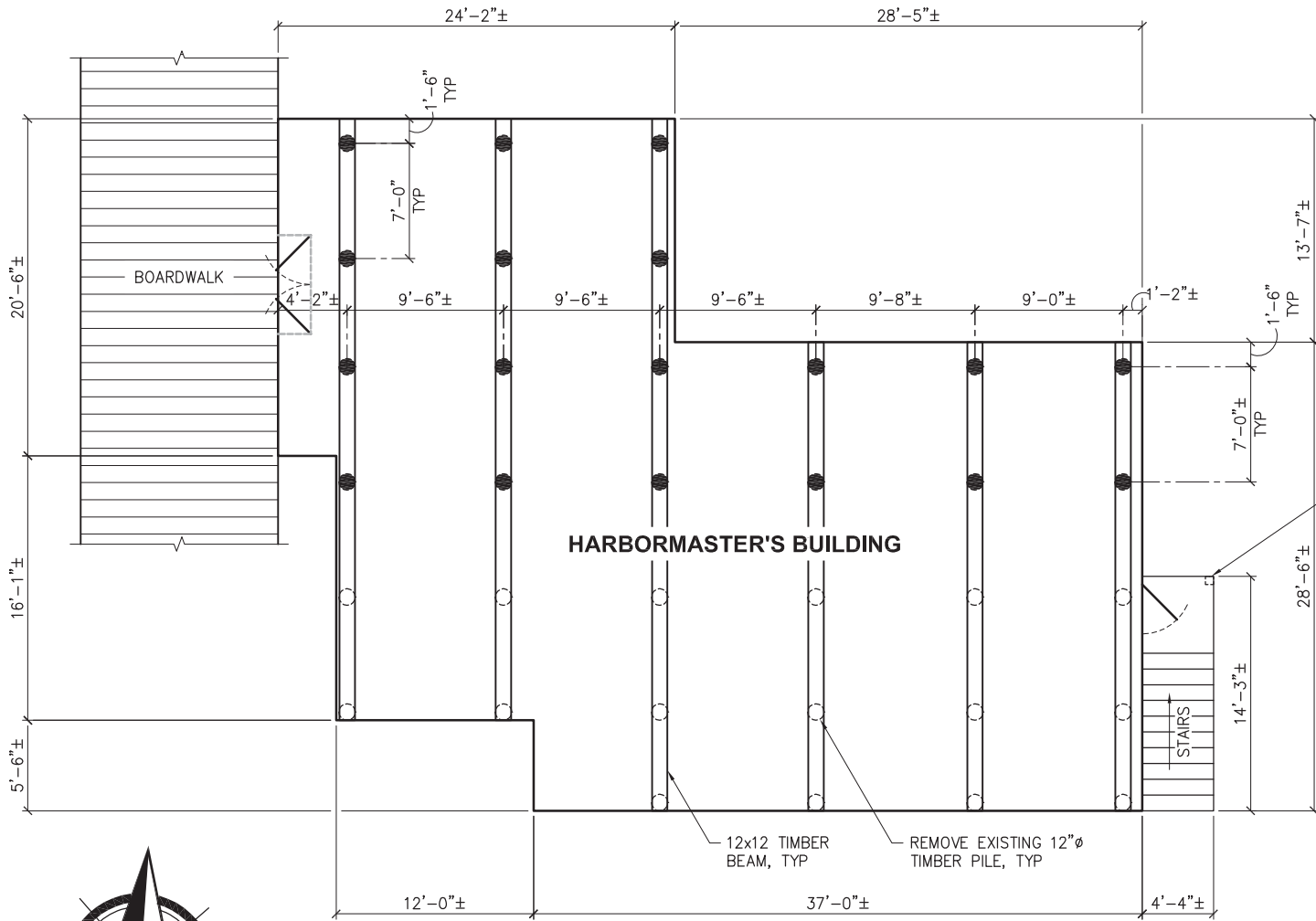
6. PREPARE FOUNDATION SUBGRADE AT NEW BUILDING LOCATION SHOWN ON UPLANDS PLAN
7. TRANSPORT BUILDING TO NEW LOCATION
8. PLACE BUILDING SUPPORTED ON NEW FOUNDATION BEAMS AS SHOWN IN AN ORIENTATION SIMILAR TO THE EXISTING ORIENTATION
9. RECONNECT UTILITIES AND INSTALL PERIMETER FLASHING
10. CONSTRUCT/INSTALL ACCESS TO STAIRS AND DOORWAYS AS SHOWN
11. REPEAT STEPS 1 & 2. REPAIR ANY DAMAGE.

**NOTE:**

CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE BUILDING DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE.



**SECTION A-A**  
NTS



**EXISTING HARBORMASTER BUILDING FOUNDATION PLAN**  
NTS

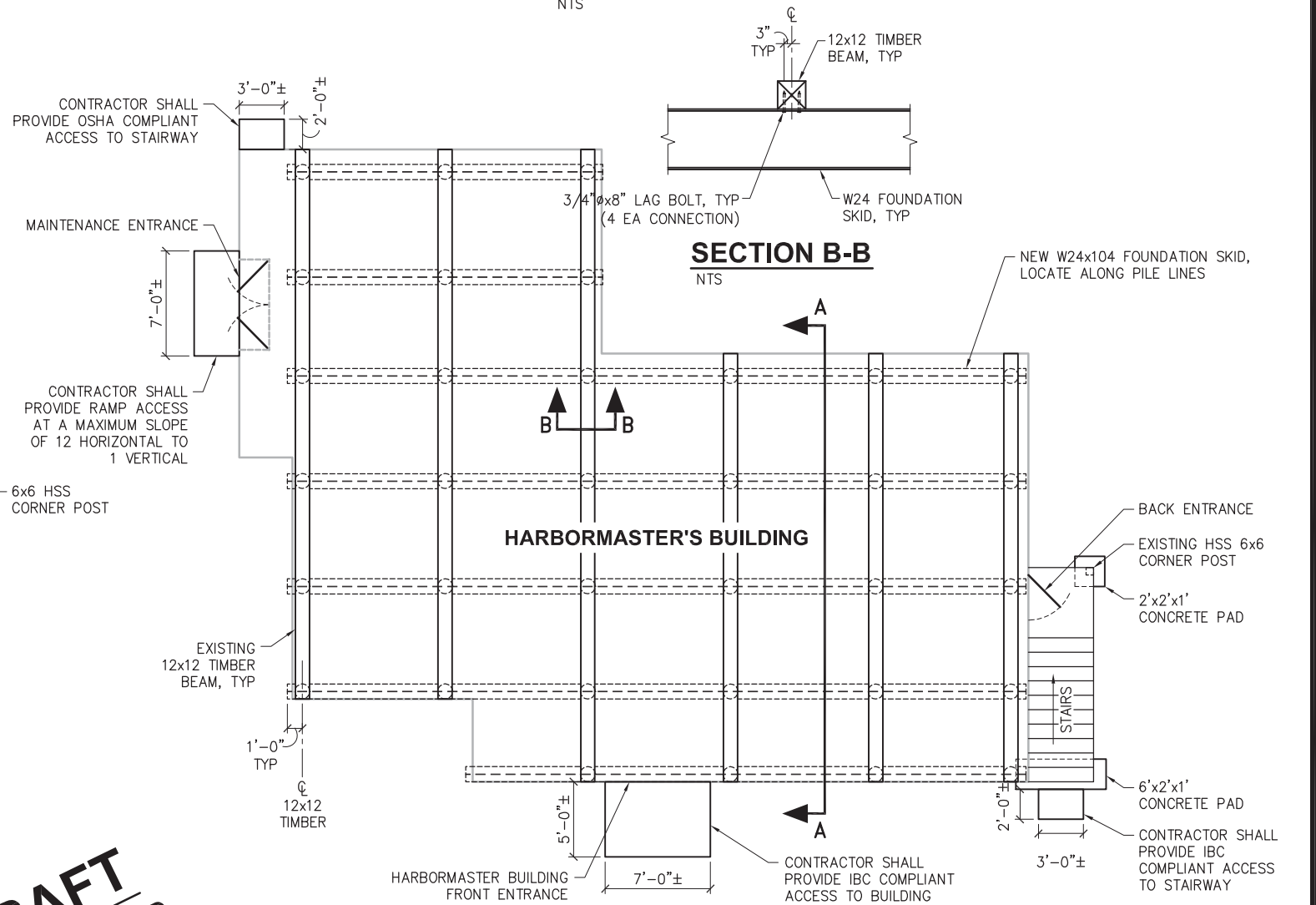
**NOTES:**

1. DIMENSIONS SHOWN ARE APPROXIMATE
2. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS
3. FOUNDATION ON SOUTH HALF OF BUILDING IS UNKNOWN

**LEGEND**

- KNOWN TIMBER PILE
- POSSIBLE TIMBER PILE OR SIMILAR

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**ISSUED FOR BID**  
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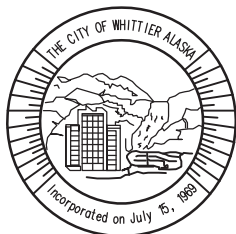
**NEW HARBORMASTER BUILDING FOUNDATION PLAN**  
NTS

**NOTES:**

1. TIMBER PILES ARE SHOWN AS REFERENCE TO LOCATION OF NEW FOUNDATION BEAMS. TIMBER PILES SHALL BE REMOVED.
2. CONTRACTOR SHALL RECONNECT ALL UTILITIES.



J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\11 Harbormaster Building Foundation Plan.dwg, 11, 11/11/2010 11:28:23 AM, James, 1/2



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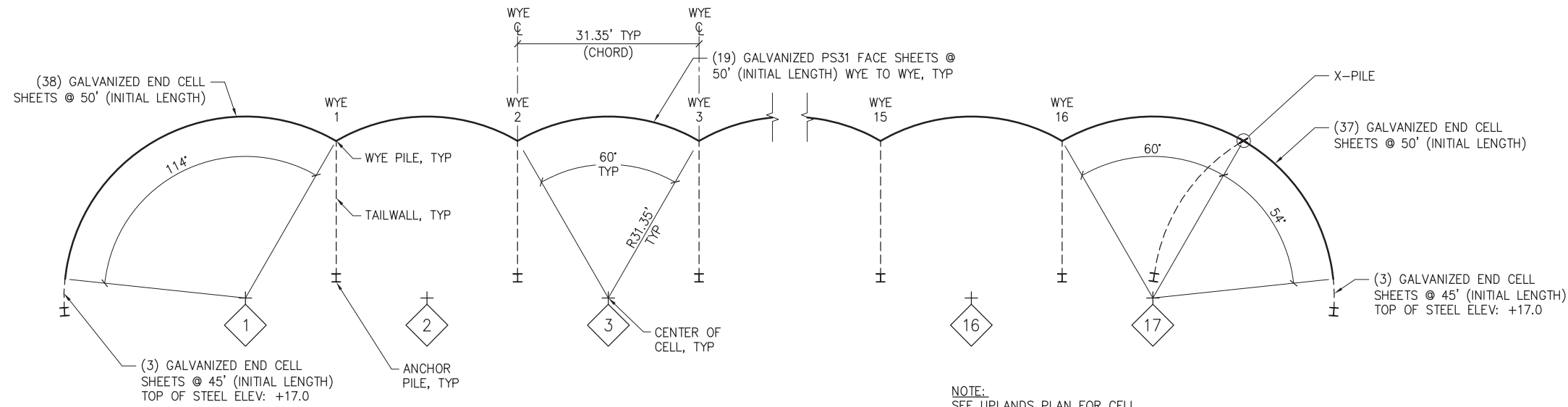
1506 West 36th Avenue  
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PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**  
TITLE: **HARBOR MASTER BUILDING FOUNDATION PLAN**

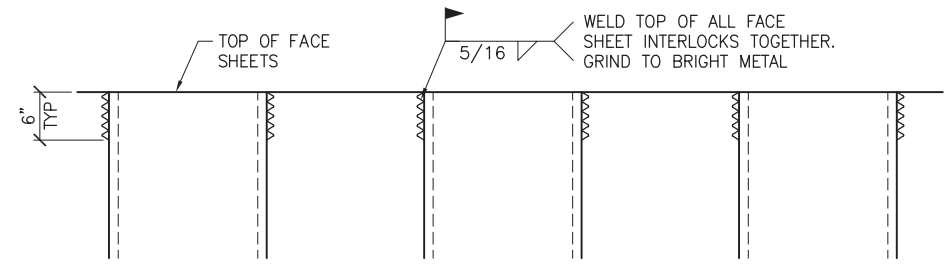
DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020 SHEET NO: **11** OF 33

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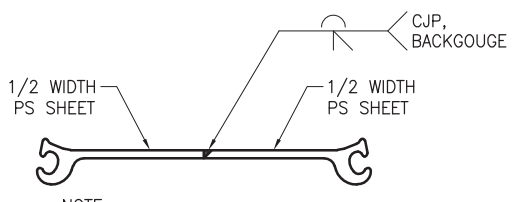
**SHEET PILE LAYOUT**  
NTS

WYE PILE LAYOUT TABLE		
WYE#	NORTHING	EASTING
1	2478245.90	1874291.52
2	2478243.57	1874322.78
3	2478241.24	1874354.04
4	2478238.90	1874385.31
5	2478236.57	1874416.57
6	2478234.24	1874447.83
7	2478231.91	1874479.09
8	2478229.58	1874510.36
9	2478227.24	1874541.62
10	2478224.91	1874572.88
11	2478222.58	1874604.15
12	2478220.25	1874635.41
13	2478217.92	1874666.67
14	2478215.58	1874697.94
15	2478213.25	1874729.20
16	2478210.92	1874760.46
X-PILE	2478208.59	1874791.73



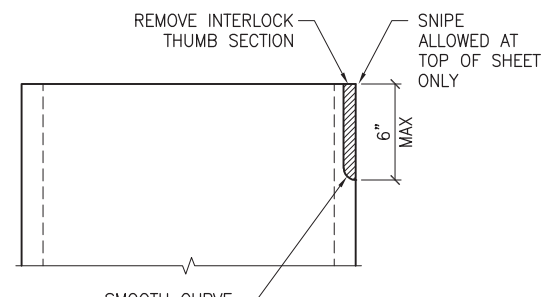
**INTERLOCK WELDING DETAIL**  
NTS

NOTE:  
BULKHEAD SHALL BE STABILIZED AS DEFINED IN THE GENERAL NOTES PRIOR TO WELDING FACE SHEET INTERLOCKS

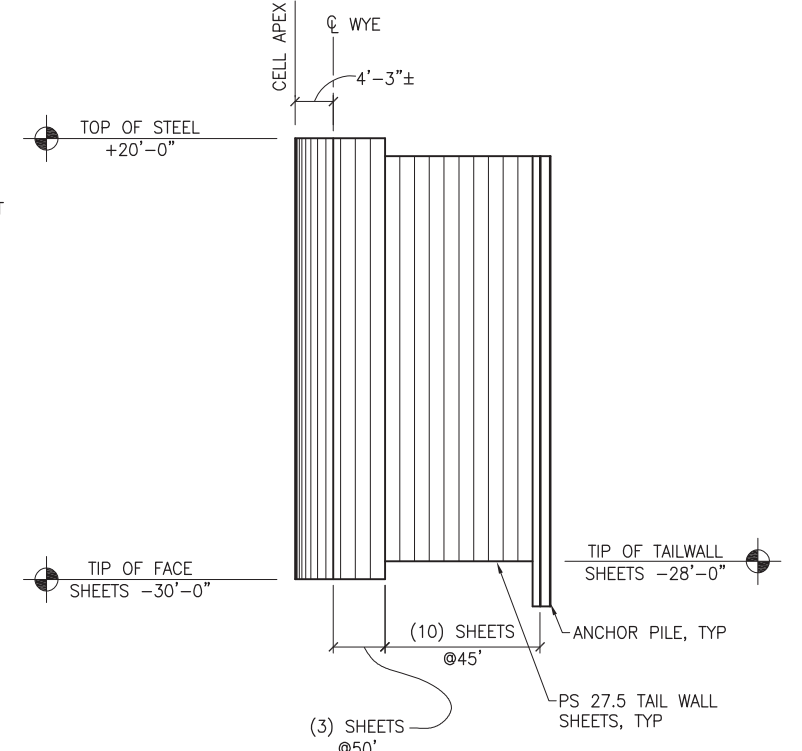


**MAKE UP SHEET**  
NTS

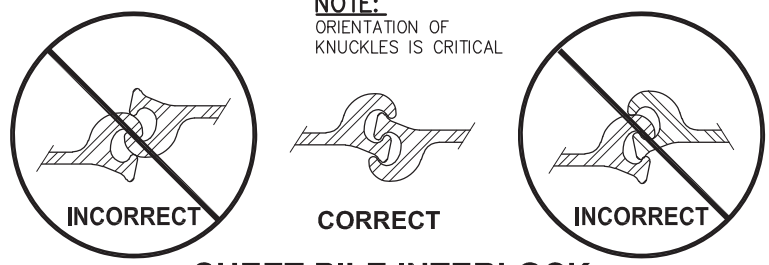
NOTE:  
REQUIRED WHERE PS SHEETS FROM DIFFERING MANUFACTURERS CONNECT



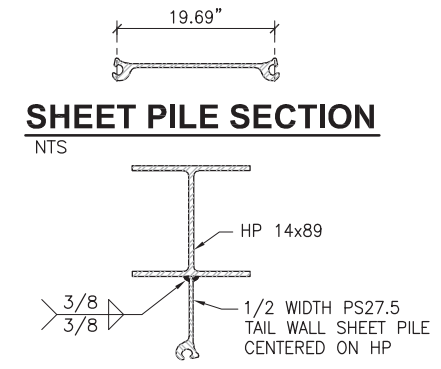
**SHEET SNIPIING DETAIL**  
NTS



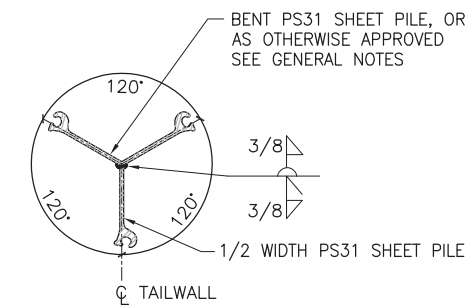
**TYPICAL TAILWALL SECTION**  
NTS



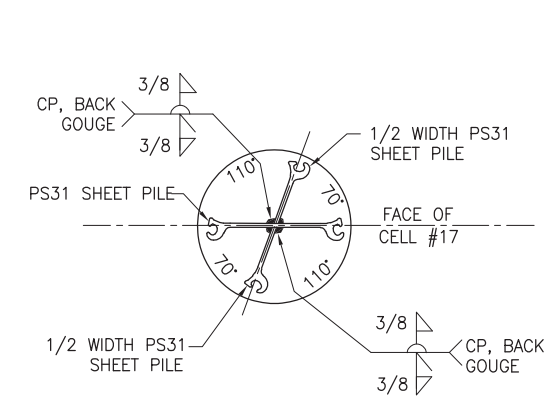
**SHEET PILE INTERLOCK TYPICAL DETAIL**  
NTS



**ANCHOR PILE SECTION**  
NTS (50' EA)

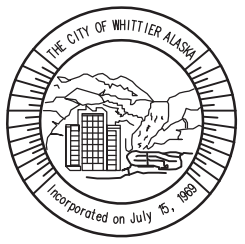


**WYE SECTION**  
NTS (50' EA)



**X-PILE SECTION**  
NTS (1 @ 50')

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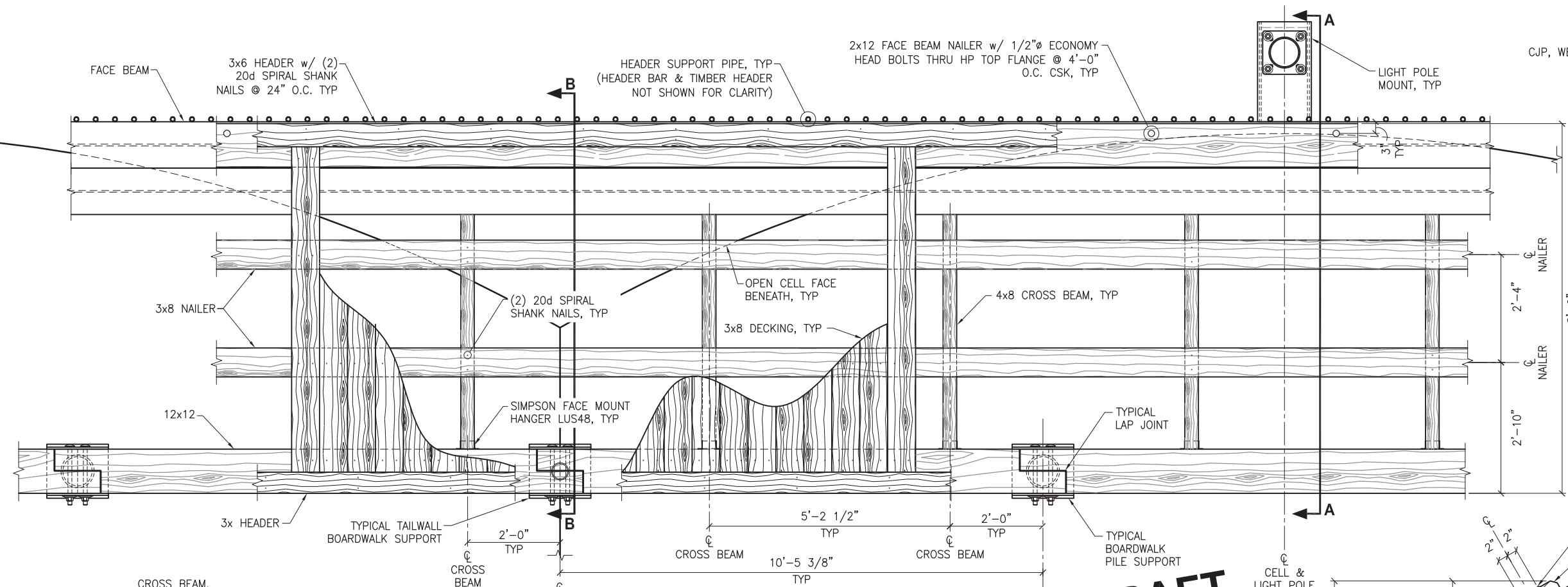


**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

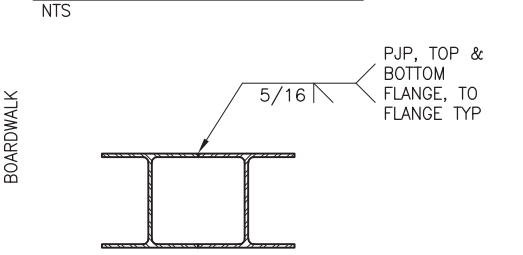
OPEN CELL WALL DETAILS

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>12</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	

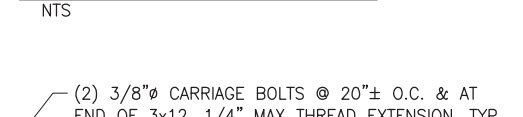
J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\13 Boardwalk Details 1 of 3.dwg, 13, 11/11/2010 11:29:42 AM, james, 12



**FACE BEAM SPLICE**



**FACE BEAM SECTION**

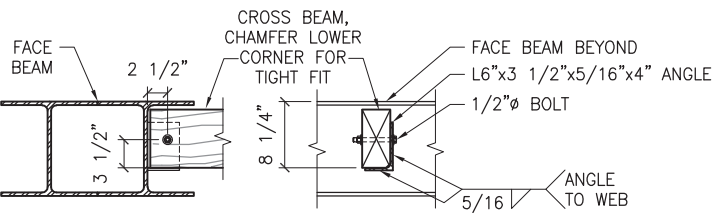


**BOARDWALK PLAN**

NTS  
**DRAFT**  
**ISSUED FOR BID**  
**11/11/10**

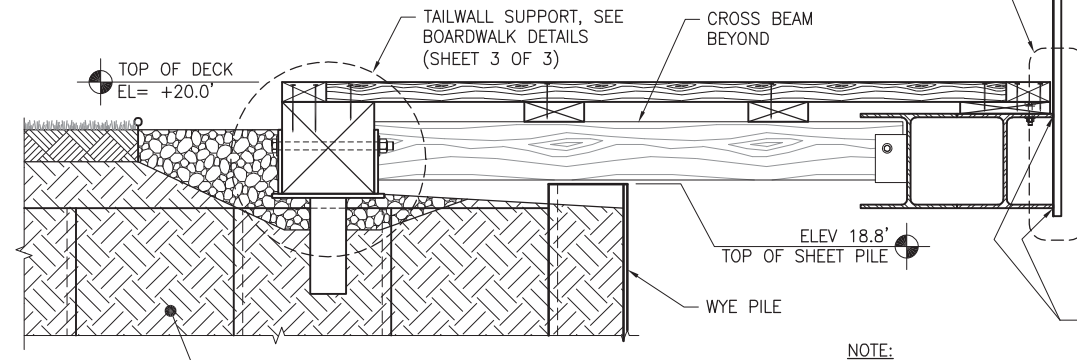
**CROSS BEAM TO FACE BEAM CONNECTION DETAIL**

NTS



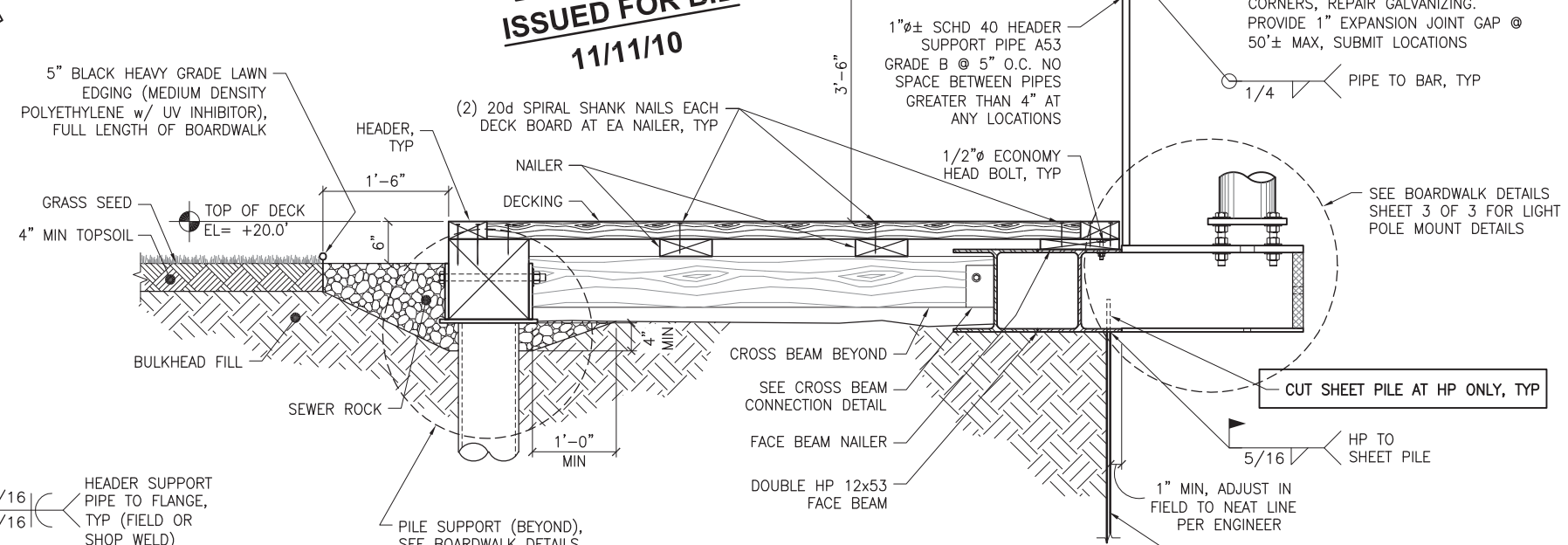
**SECTION B-B**

NTS



**SECTION A-A**

NTS



NOTE:  
 ALL DETAILS NOT SHOWN  
 SIM TO SECTION A-A



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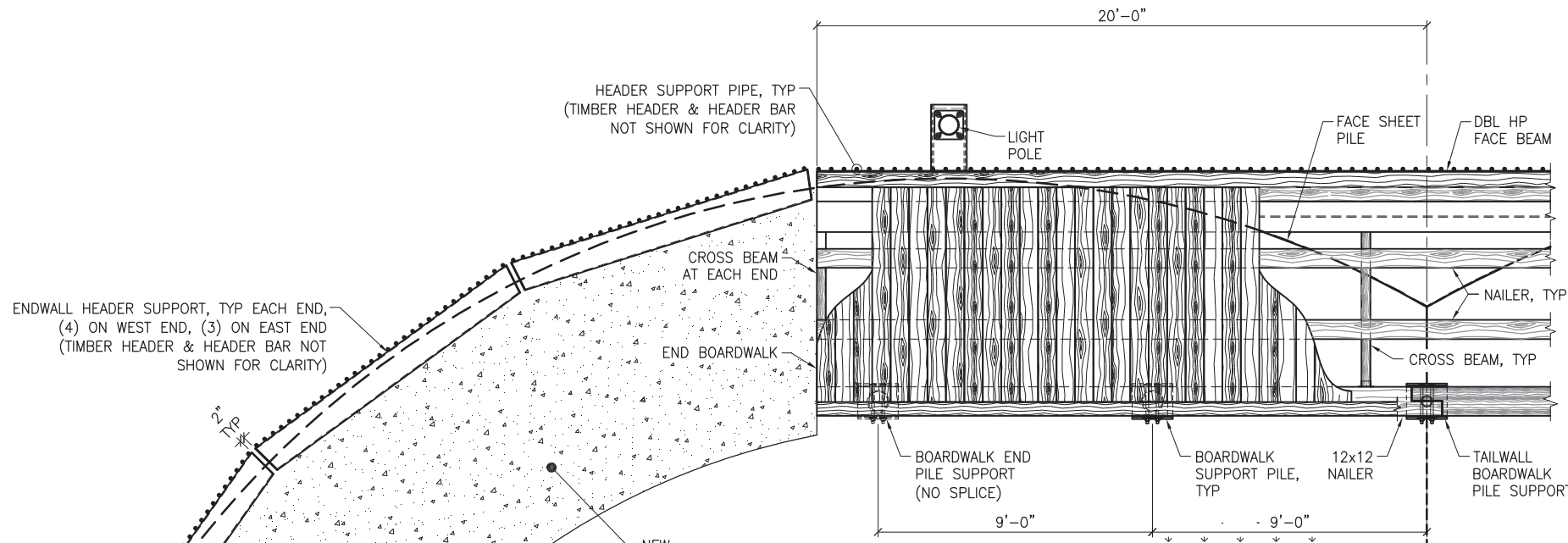
PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **BOARDWALK DETAILS (1 OF 3)**

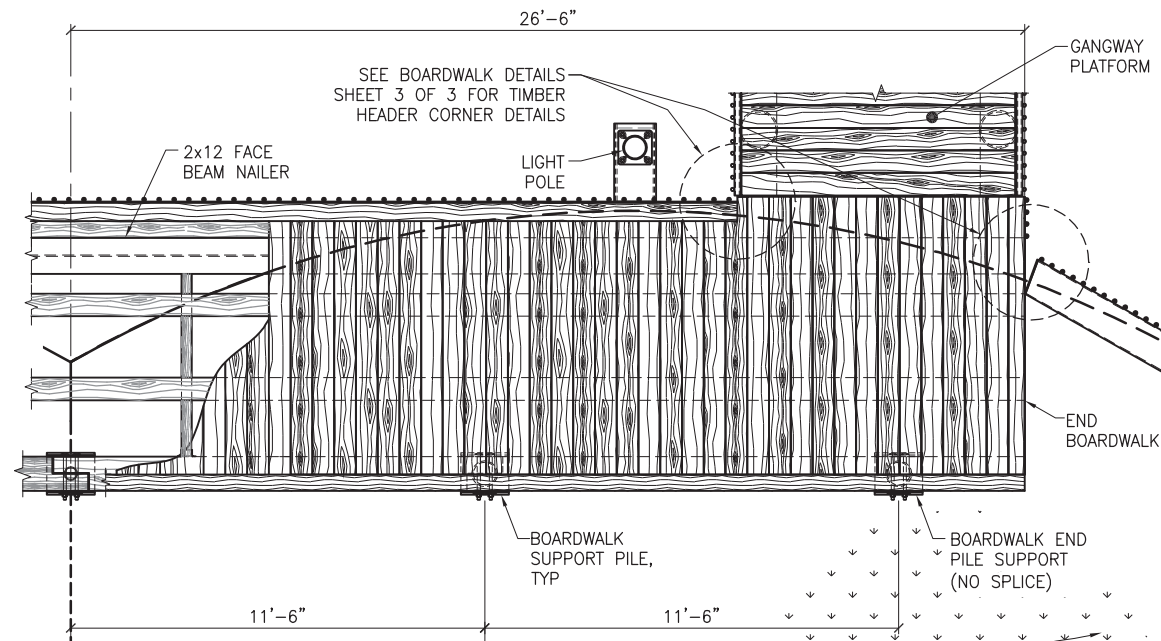
DESIGNED BY: MTB DATE: NOVEMBER 2010  
 CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **13** OF 33

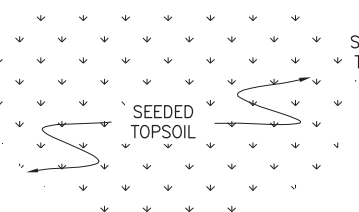
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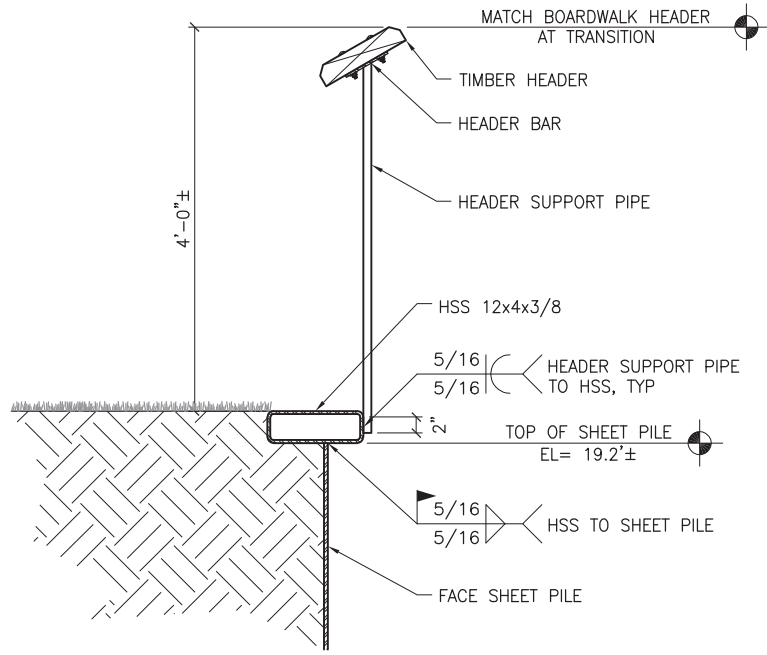
**BOARDWALK WEST END PLAN**  
NTS



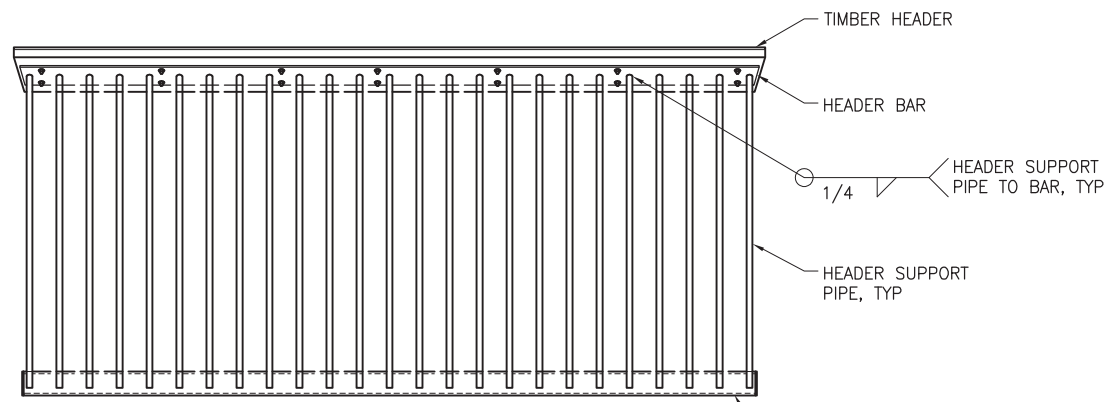
**BOARDWALK EAST END PLAN**  
NTS



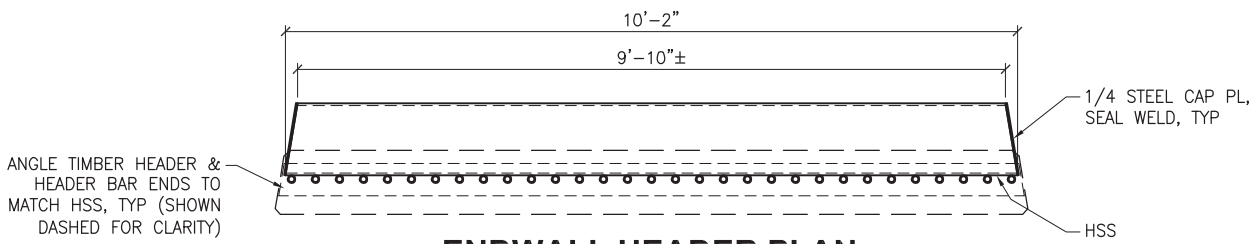
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**ENDWALL HEADER DETAIL**  
NTS

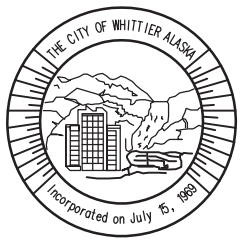


**ENDWALL HEADER ELEVATION**  
NTS



**ENDWALL HEADER PLAN**  
NTS

NOTE:  
DETAILS NOT SHOWN SIM TO  
TYPICAL BOARDWALK HEADERS



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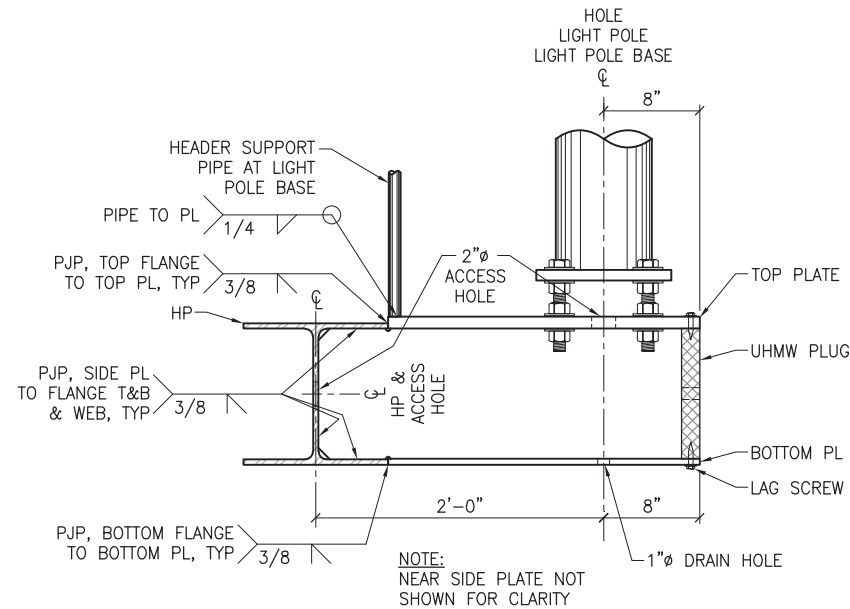


PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

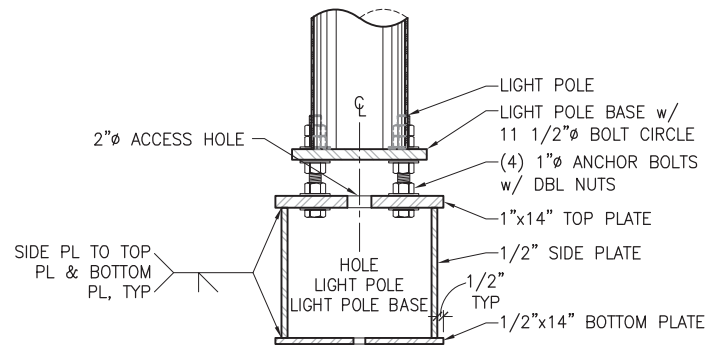
TITLE: **BOARDWALK DETAILS (2 OF 3)**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

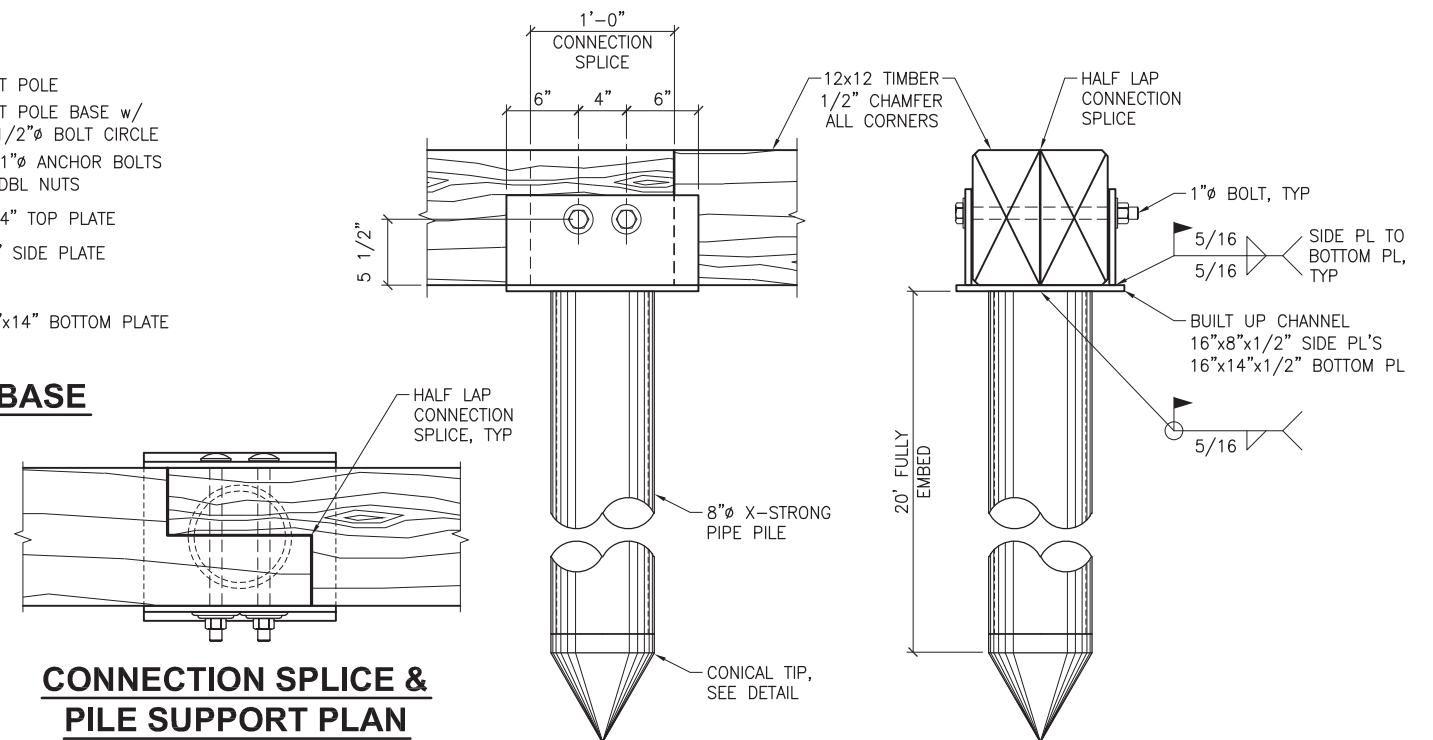
SHEET NO: **14** OF 33



**BOARDWALK LIGHT POLE BASE - SIDE ELEVATION**  
NTS

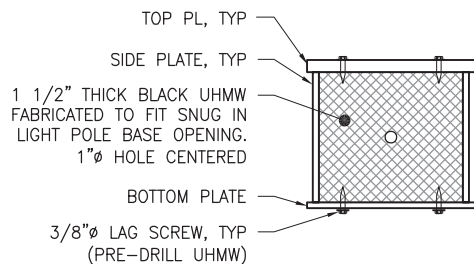


**BOARDWALK LIGHT POLE BASE CROSS SECTION**  
NTS

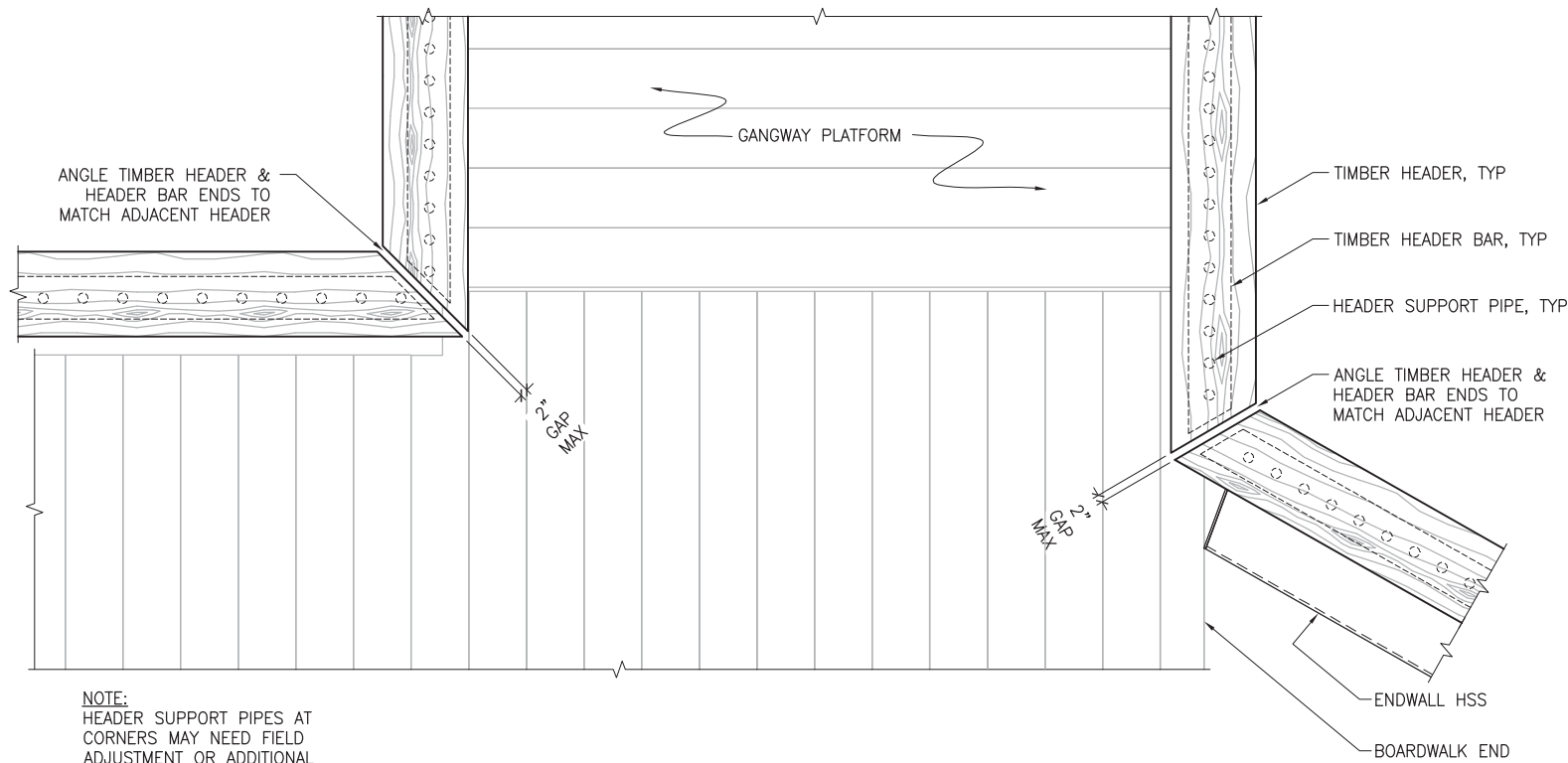


**CONNECTION SPLICE & PILE SUPPORT PLAN**  
NTS

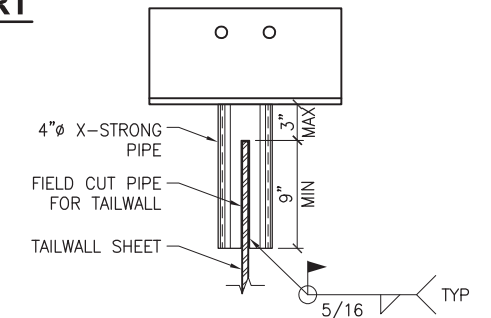
**PILE SUPPORT**  
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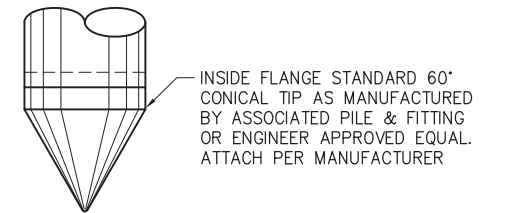
**BOARDWALK LIGHT POLE BASE - END ELEVATION**  
NTS



**BOARDWALK EAST END HEADER CORNER DETAIL**  
NTS



**TAILWALL SUPPORT**  
NTS



**CONICAL TIP DETAIL**  
NTS (BOARDWALK PILES ONLY)

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PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **BOARDWALK DETAILS (3 OF 3)**

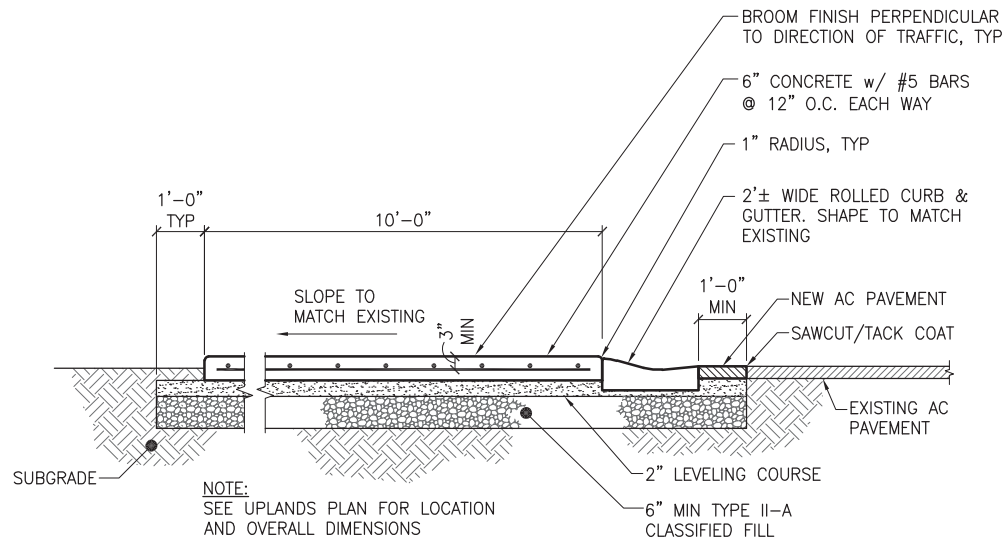
DESIGNED BY: MTB DATE: NOVEMBER 2010  
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SHEET NO: **15** OF 33



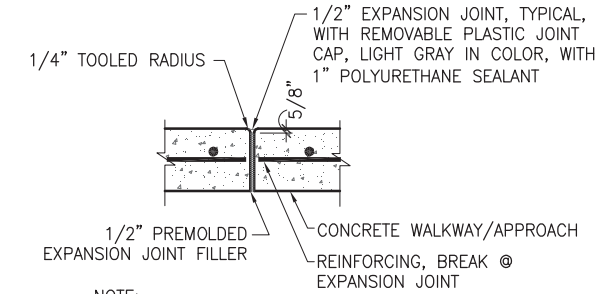
**NOTES:**

1. MATCH EXISTING BITUMINOUS PAVEMENT THICKNESS OR PROVIDE 2" MINIMUM THICKNESS, WHICHEVER IS GREATER.
2. ASPHALT FOR TACK COAT SHALL BE APPLIED TO ALL BITUMINOUS PAVEMENT SAWCUT SURFACES.
3. NEW AC PAVEMENT SHALL MEET ADOT&PF TYPE II-A.



**CONCRETE WALKWAY SECTION**

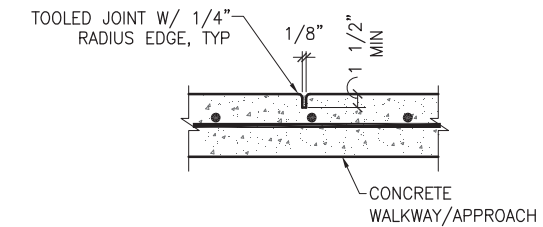
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**NOTE:**  
SPACING AT 25' OC AND BETWEEN CHANGE IN CONTROL JOINT GRIDS

**EXPANSION JOINT DETAIL**

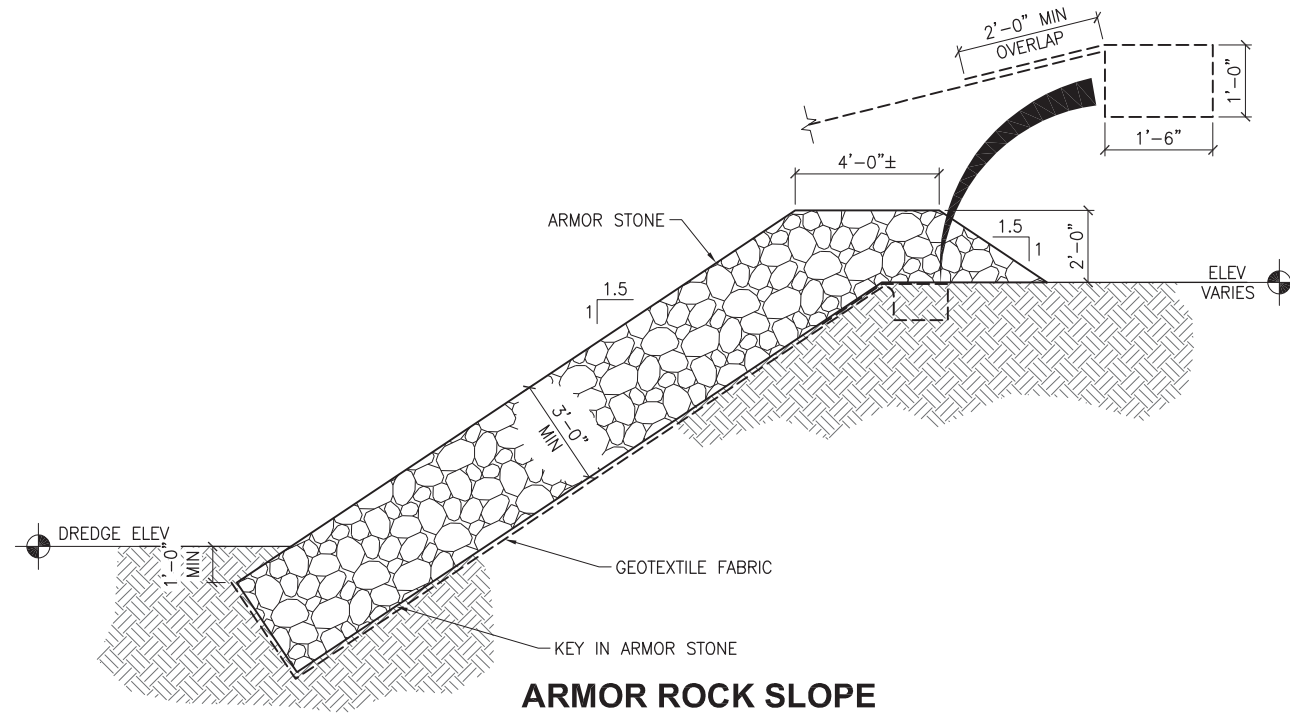
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**NOTE:**  
SPACE AT 5' O.C. GRID AS SHOWN ON UPLANDS PLAN

**CONTROL JOINT DETAIL**

NTS

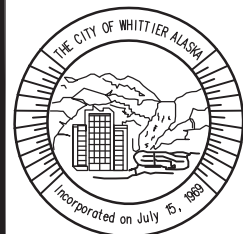


**ARMOR ROCK SLOPE**

NTS

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J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\16 Uplands Details.dwg, 16, 11/11/2010 11:30:12 AM, james, 12



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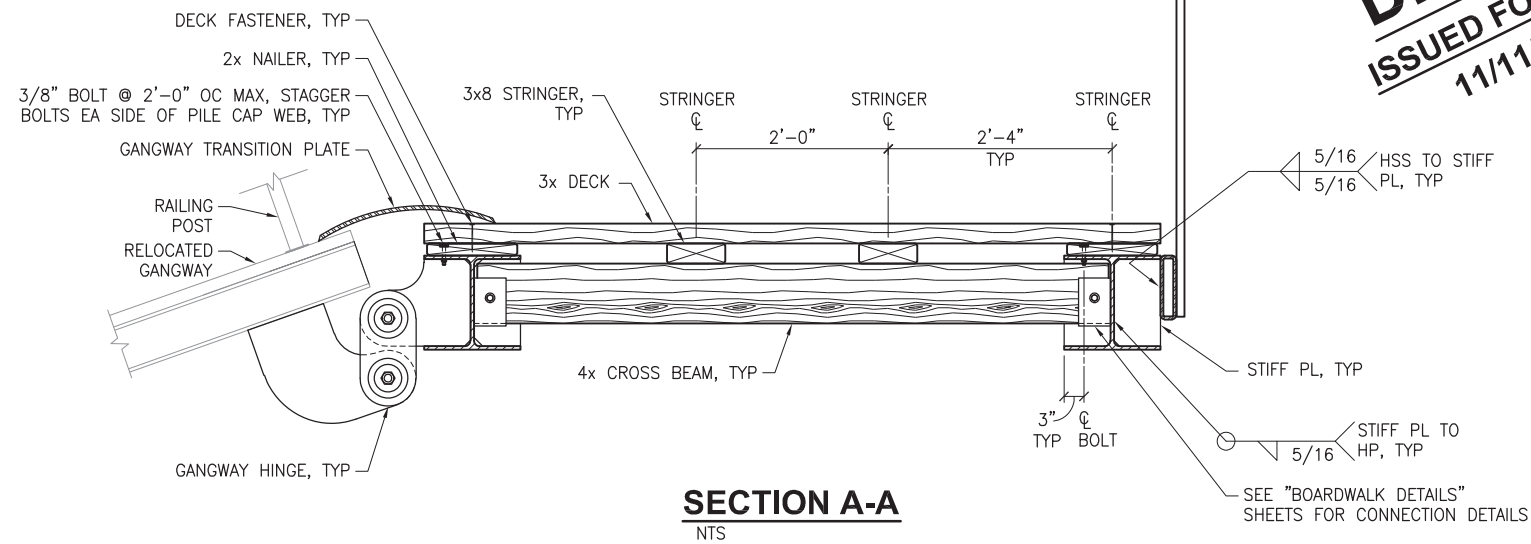
**PROJECT: WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

**TITLE: UPLANDS DETAILS**

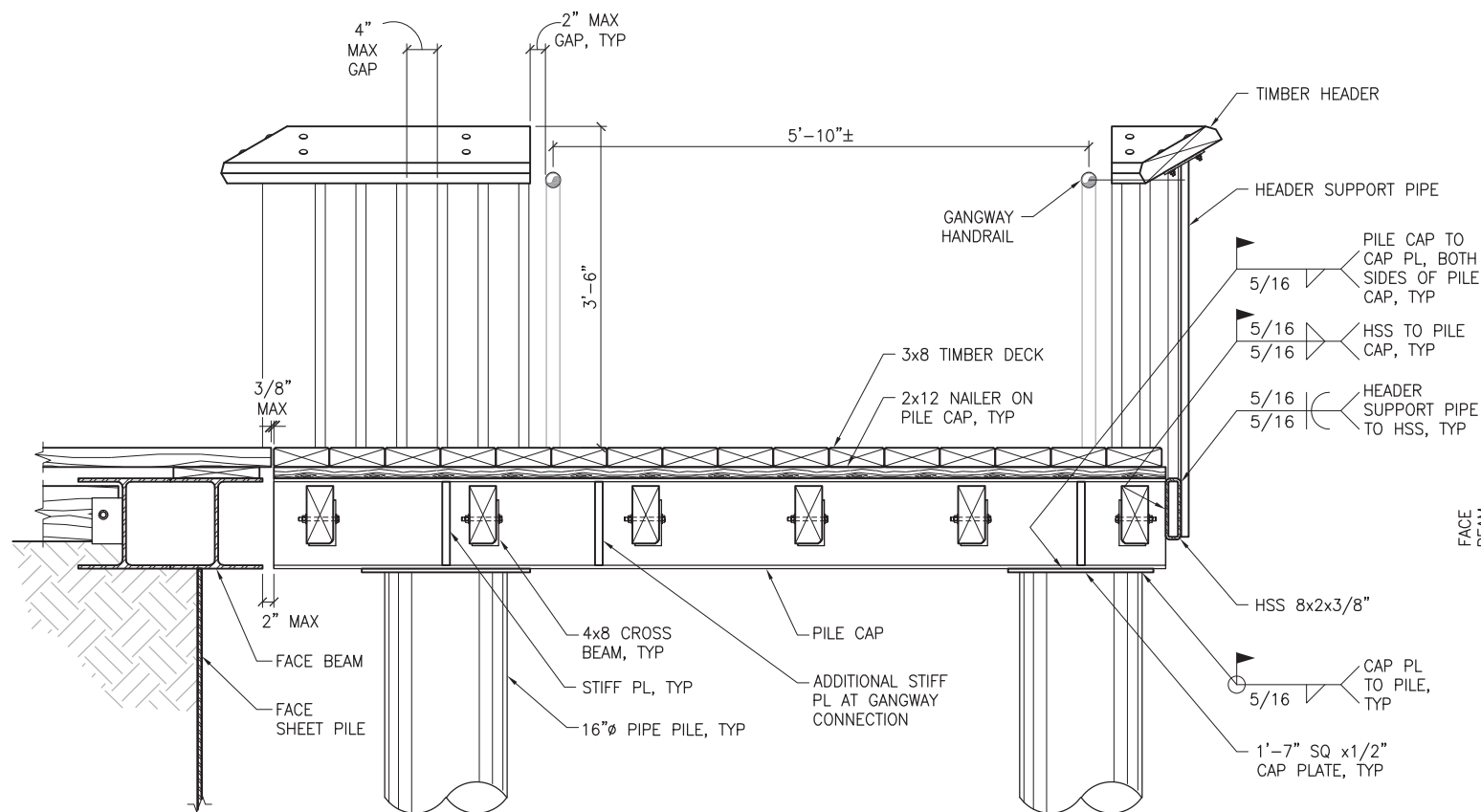
DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **16** OF 33

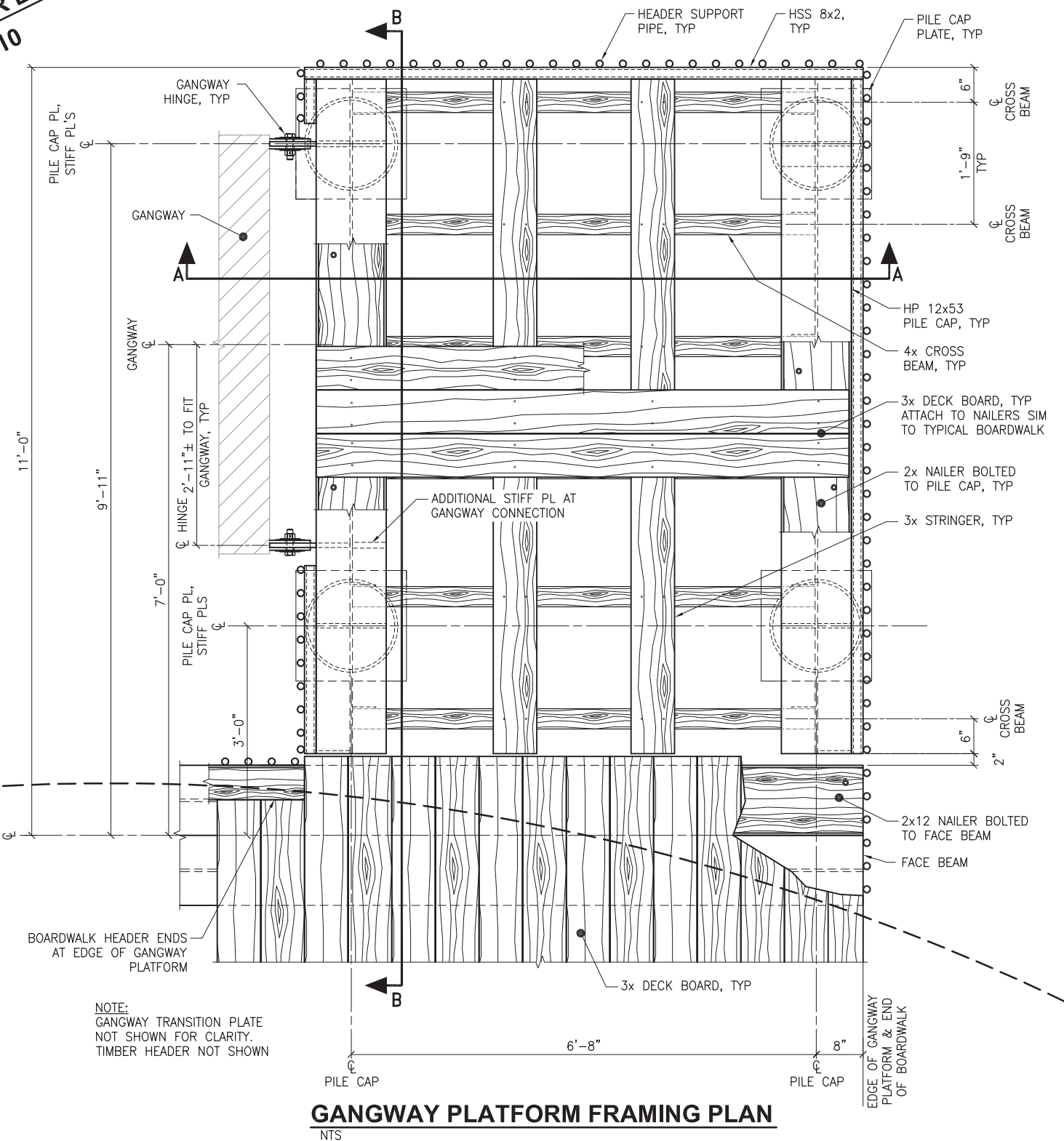
**DRAFT**  
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**SECTION A-A**  
NTS



**SECTION B-B**  
NTS



**GANGWAY PLATFORM FRAMING PLAN**  
NTS

J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\17-18 Gangway Platform Details.dwg, 17, 11/11/2010 11:30:24 AM, james, 1:2



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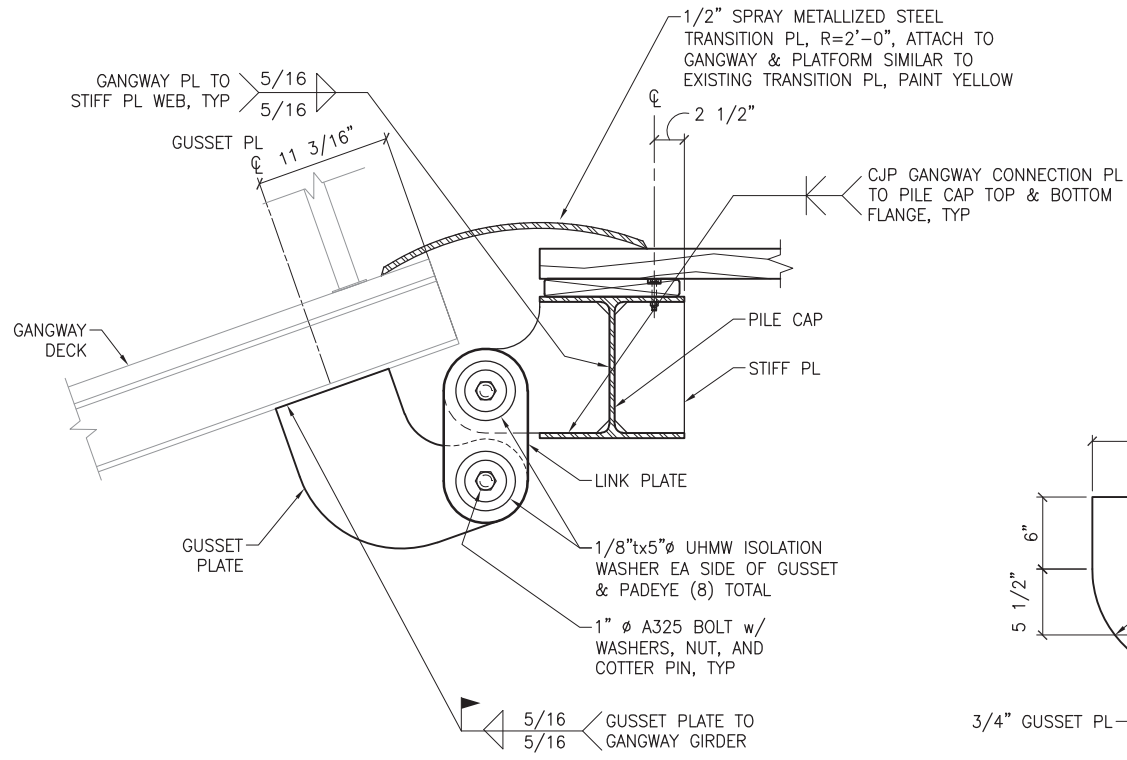
TITLE: **GANGWAY PLATFORM DETAILS 1 OF 2**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

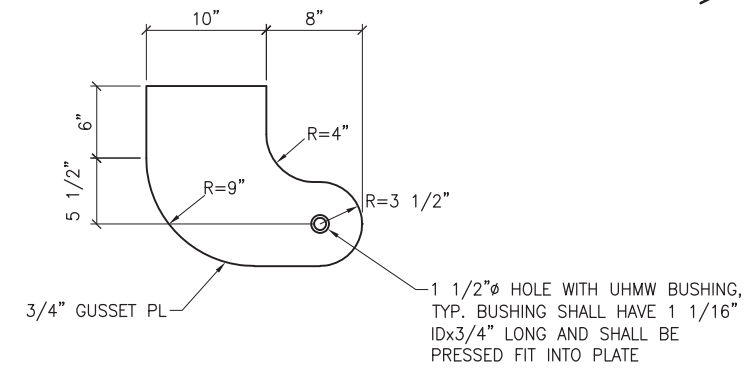
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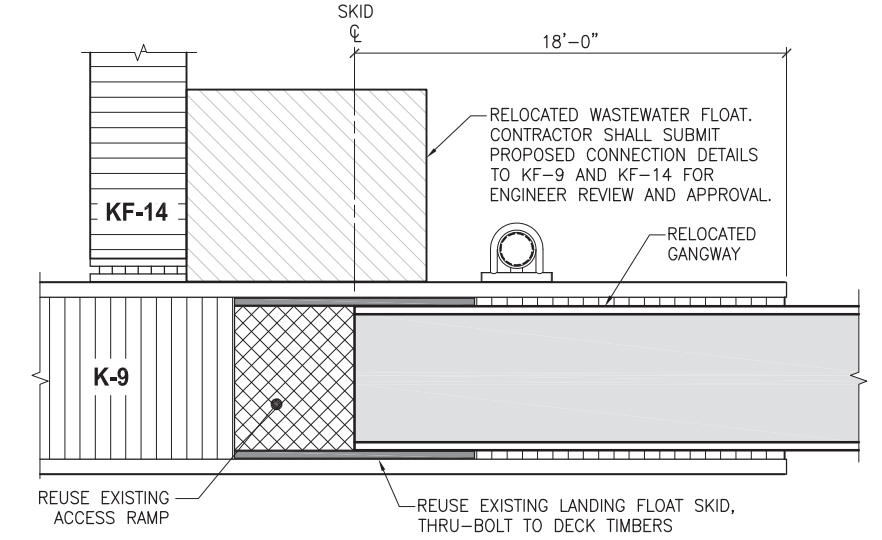
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11/11/10



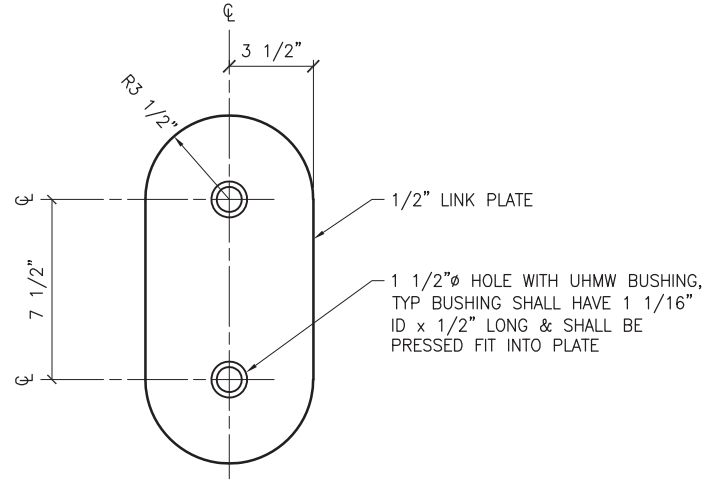
**GANGWAY HINGE DETAILS**  
NTS



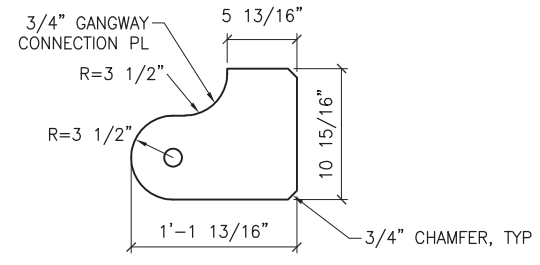
**GUSSET PLATE**  
NTS (2) TOTAL



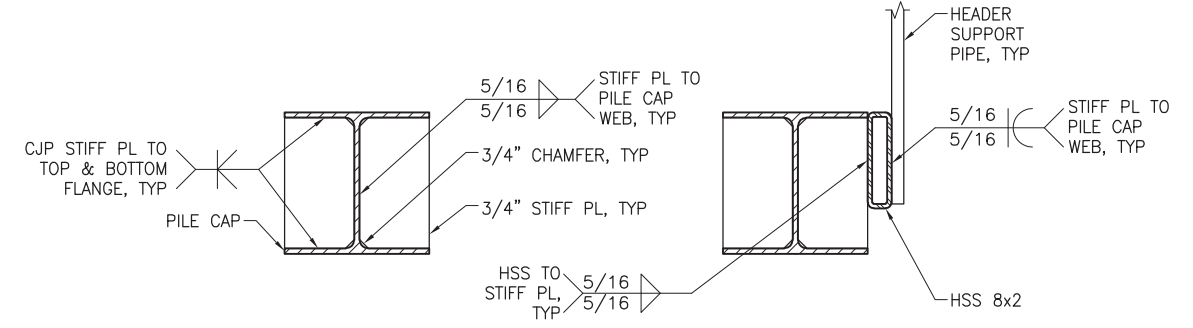
**GANGWAY LANDING**  
NTS



**LINK PLATE**  
NTS (4 TOTAL)



**GANGWAY CONNECTION PL**  
NTS



**PILE CAP DETAILS**  
NTS



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PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **GANGWAY PLATFORM DETAILS 2 OF 2**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **18** OF 33

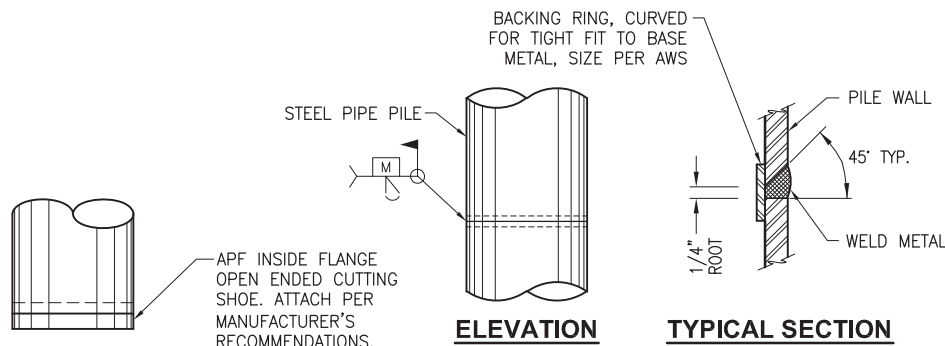
**FLOAT SCHEDULE\***

FLOAT DESIGNATION	FLOAT WIDTH	FLOAT LENGTH	BILLET DEPTH*	NO. DECK BOARDS**
<b>K FLOAT</b>				
K-1	8'	60'	22.0"	124
K-2	8'	60'	22.0"	124
K-3	8'	60'	22.5"	124
K-4	8'	60'	22.0"	124
K-5	8'	50'	22.5"	103
K-6	8'	40'	22.0"	82
K-7	8'	40'	22.5"	82
K-8	8'	50'	22.5"	103
K-9	8'	50'	22.0"	103
KF-1	4'	30'	22.0"	59
KF-2	4'	30'	22.0"	59
KF-3	4'	30'	22.0"	59
KF-4	4'	28'	22.0"	59
KF-5	4'	28'	22.0"	59
KF-6	4'	28'	22.0"	59
KF-7	4'	28'	22.0"	59
KF-8	4'	28'	22.0"	59
KF-9	4'	28'	22.0"	59
KF-10	4'	28'	22.0"	59
KF-11	4'	28'	22.0"	59
KF-12	4'	28'	22.0"	59
KF-13	4'	28'	22.0"	59
KF-14	4'	28'	22.0"	59
AF-1	8'	50'	22.0"	103
AF-2	8'	37'	22.5"	76

\* ENGINEER'S ESTIMATED BILLET DEPTH TO PROVIDE 20" OF DECK FREEBOARD FOR FINGER FLOATS, 19" DECK FREEBOARD FOR MAIN FLOATS. SEE GENERAL NOTES FOR FLOATATION REQUIREMENTS.

\*\* ENGINEER'S ESTIMATE NUMBER OF WHOLE, EVENLY SPACED DECK TIMBERS PER FLOAT UNIT. FABRICATOR SHALL CONFIRM.

**DRAFT**  
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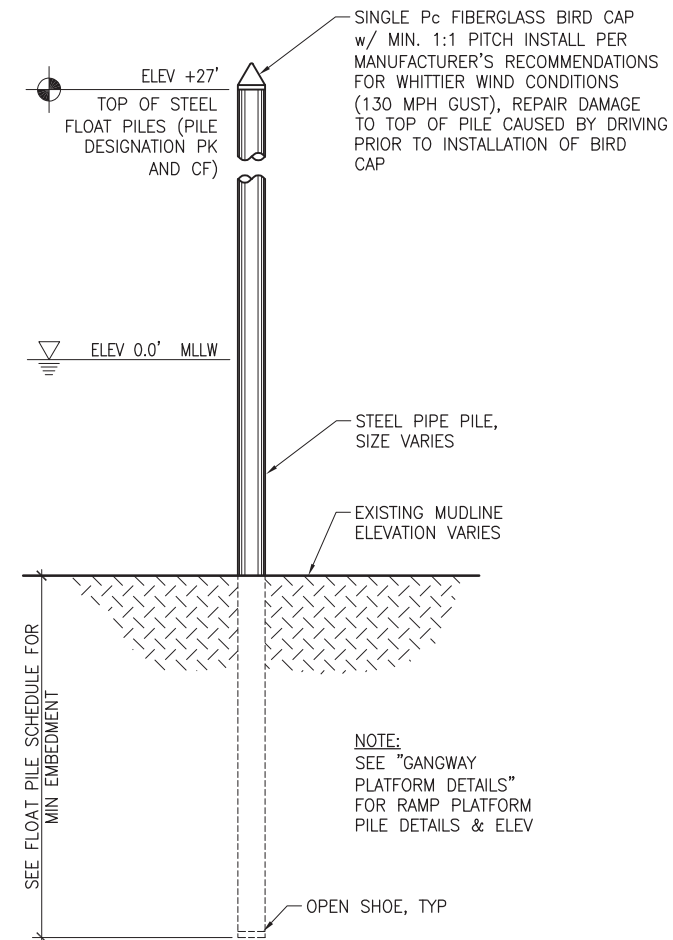
**OPEN SHOE DETAIL**

NTS

**TYPICAL PILE SPLICE WELD**

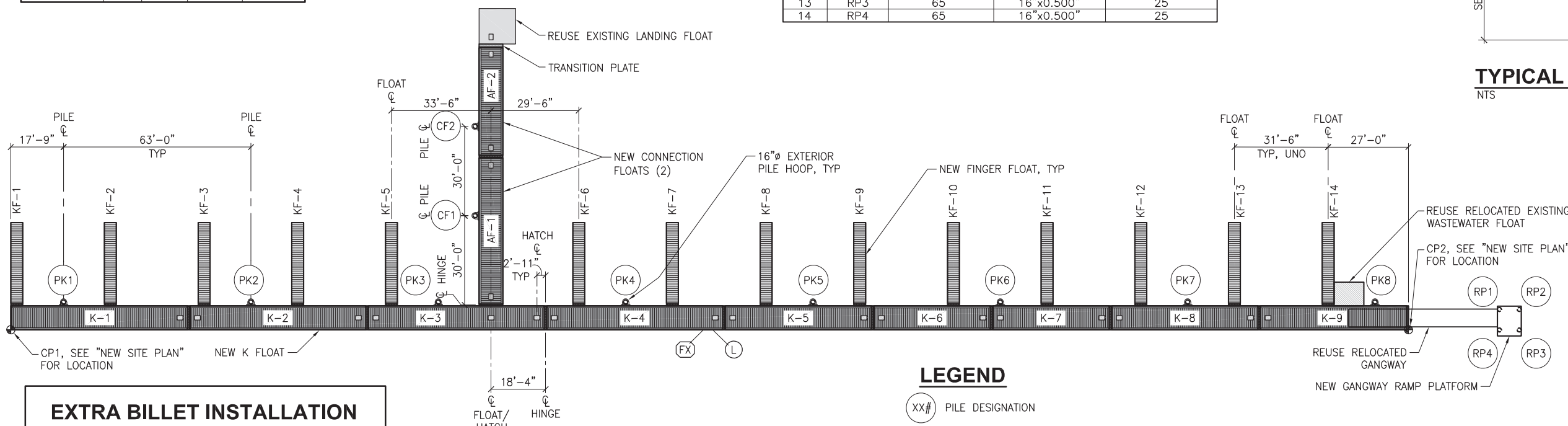
TYPICAL FOR ALL SHOP & FIELD PIPE PILE SPLICES NTS

PILE #	LOCATION	PILE SUPPLY LENGTH (FEET)	DIAMETER/WALL THICKNESS	MIN EMBEDMENT (FEET)
1	PK1	65	16"x0.500"	20
2	PK2	65	16"x0.500"	20
3	PK3	65	16"x0.500"	20
4	PK4	65	16"x0.500"	20
5	PK5	65	16"x0.500"	20
6	PK6	65	16"x0.500"	20
7	PK7	65	16"x0.500"	20
8	PK8	65	16"x0.500"	20
9	CF1	65	16"x0.500"	20
10	CF2	65	16"x0.500"	20
11	RP1	65	16"x0.500"	25
12	RP2	65	16"x0.500"	25
13	RP3	65	16"x0.500"	25
14	RP4	65	16"x0.500"	25



**TYPICAL STEEL FLOAT PILE**

NTS



**LEGEND**

XX# PILE DESIGNATION

**LEGEND**

- ELECTRICAL ACCESS HATCH (20 TOTAL)
- (FX) FIRE EXTINGUISHER (1 TOTAL)
- (L) LIFE RING (1 TOTAL)
- CONTROL POINT

**EXTRA BILLET INSTALLATION**

CONTRACTOR SHALL PROVIDE & INSTALL EXTRA BILLETS AS NECESSARY TO MEET FREEBOARD REQUIREMENTS SPECIFIED IN THE GENERAL NOTES

**K FLOAT PILE PLAN**

NTS

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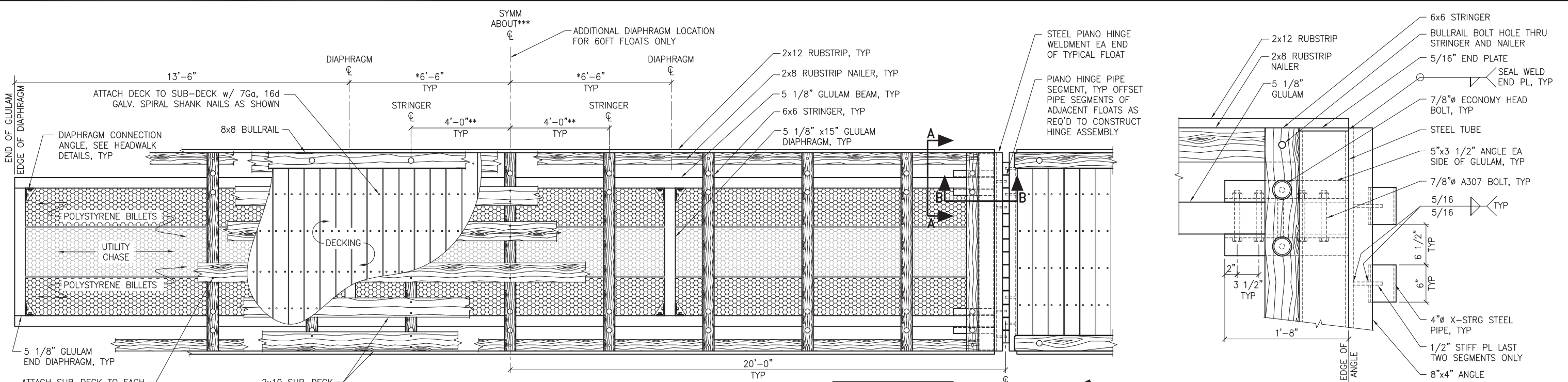
**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

**K FLOAT PLAN**

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>19</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	



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**TYPICAL 8'x40' FLOAT UNIT - PLAN**  
 NTS (40FT FLOAT SHOWN; 37FT, 50FT, AND 60FT FLOATS SIMILAR)

\* DIAPHRAGM SPACING

FLOAT LENGTH (FT)	DIMENSION
37	6'-0"
50	8'-0"
60	15'-0"

\*\* TYPICAL STRINGER SPACING SHALL BE 4'-0" MAXIMUM. STRINGER SPACING WILL VARY AND ADDITIONAL STRINGERS ARE REQ'D AT PILE HOOPS & FINGER FLOATS. SEE INDIVIDUAL DETAILS FOR REQUIREMENTS.

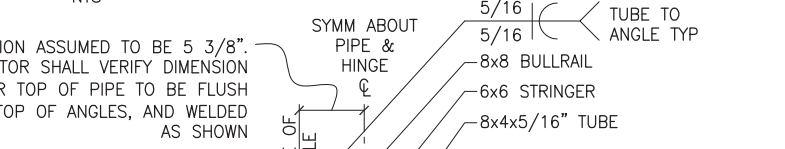
\*\*\* FLOAT UNITS AT THE END OF THE MAIN FLOAT SYSTEMS HAVE ONLY 1 HINGED END. FLOAT LENGTH SHALL BE MEASURED FROM CENTER OF HINGE TO END OF GLULAMS. SEE MAIN FLOAT PLAN FOR FLOAT LENGTH REQUIREMENTS.

ALL FLOATS HAVE 4 DIAPHRAGMS EXCEPT FOR 60FT FLOATS WHICH HAVE 5 DIAPHRAGMS. PROVIDE ADDITIONAL INTERMEDIATE DIAPHRAGM AT CENTERLINE OF 60FT FLOATS.

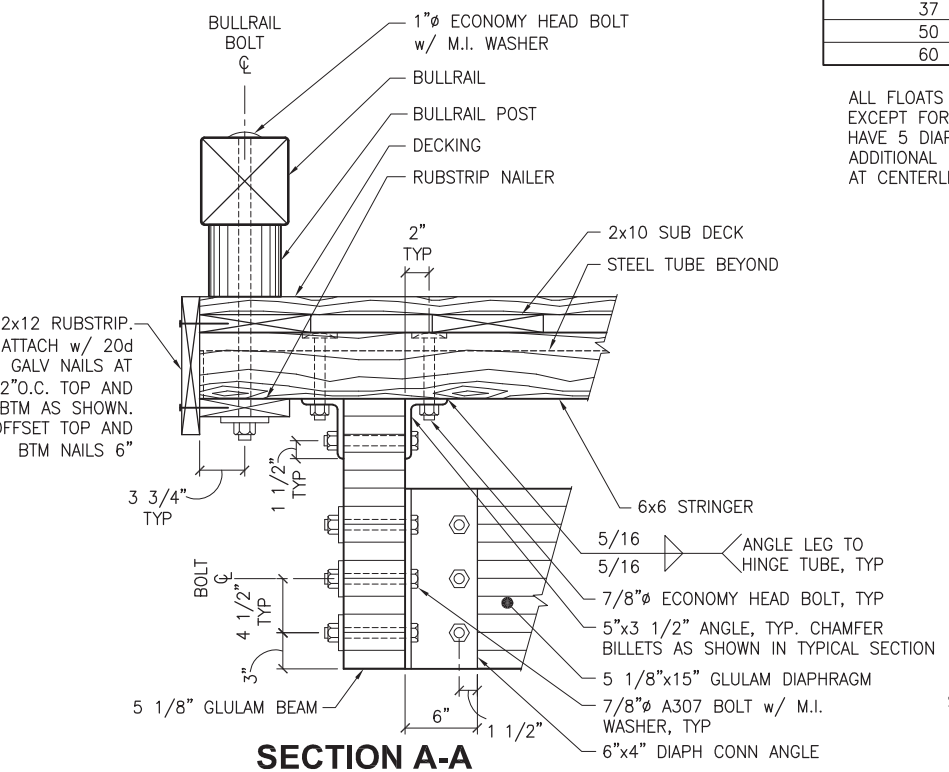
NOTE: PROVIDE PAINTED NON-SKID COATING ON TOP SURFACE OF HINGE ANGLES

**DRAFT**  
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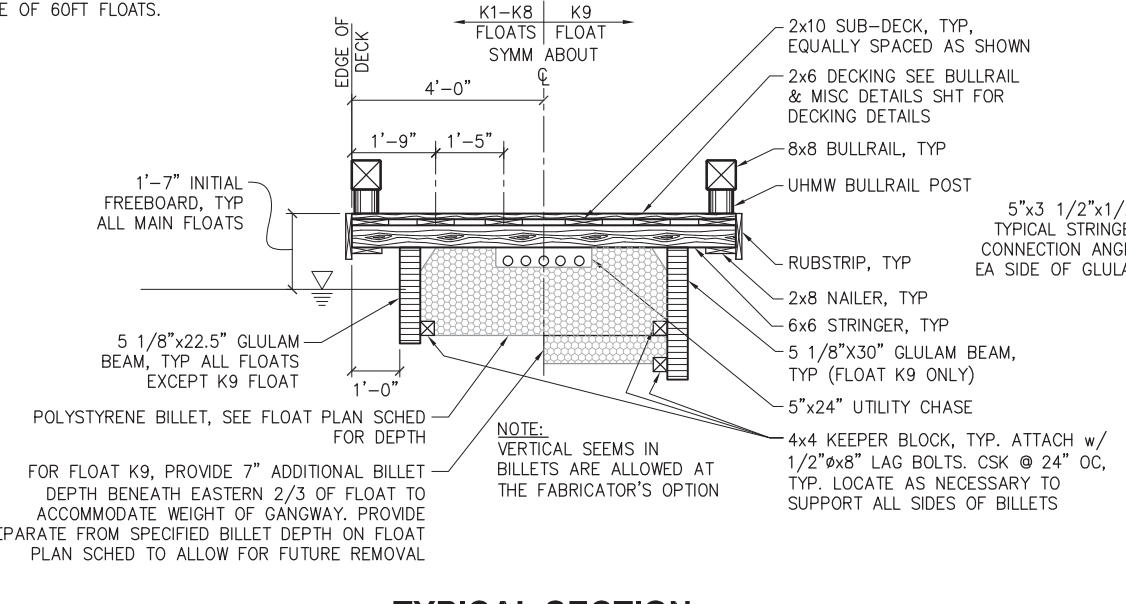
**PIANO HINGE CONNECTION - PLAN**  
 NTS



DIMENSION ASSUMED TO BE 5 3/8". FABRICATOR SHALL VERIFY DIMENSION REQ'D FOR TOP OF PIPE TO BE FLUSH W/ TOP OF ANGLES, AND WELDED AS SHOWN



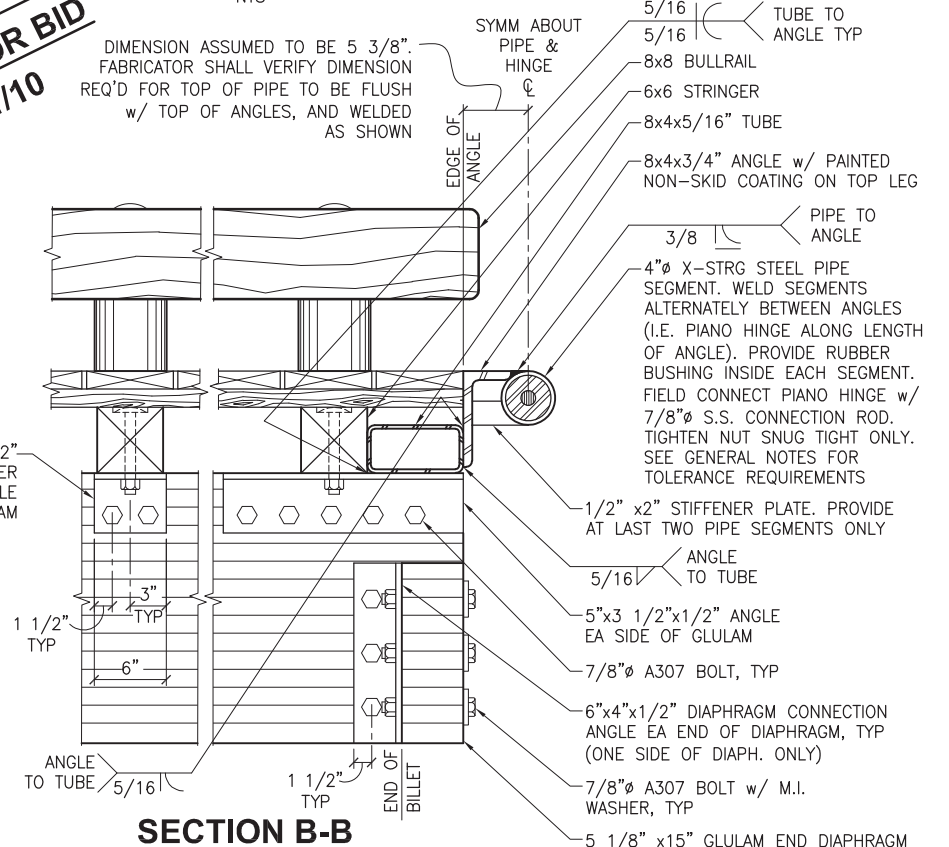
**SECTION A-A**  
 NTS  
 NOTE: FLOATION BILLET NOT SHOWN FOR CLARITY



**TYPICAL SECTION**  
 NTS

NOTE: VERTICAL SEAMS IN BILLETS ARE ALLOWED AT THE FABRICATOR'S OPTION

FOR FLOAT K9, PROVIDE 7" ADDITIONAL BILLET DEPTH BENEATH EASTERN 2/3 OF FLOAT TO ACCOMMODATE WEIGHT OF GANGWAY. PROVIDE SEPARATE FROM SPECIFIED BILLET DEPTH ON FLOAT PLAN SCHED TO ALLOW FOR FUTURE REMOVAL



**SECTION B-B**  
 NTS  
 NOTE: FLOATION BILLET NOT SHOWN FOR CLARITY



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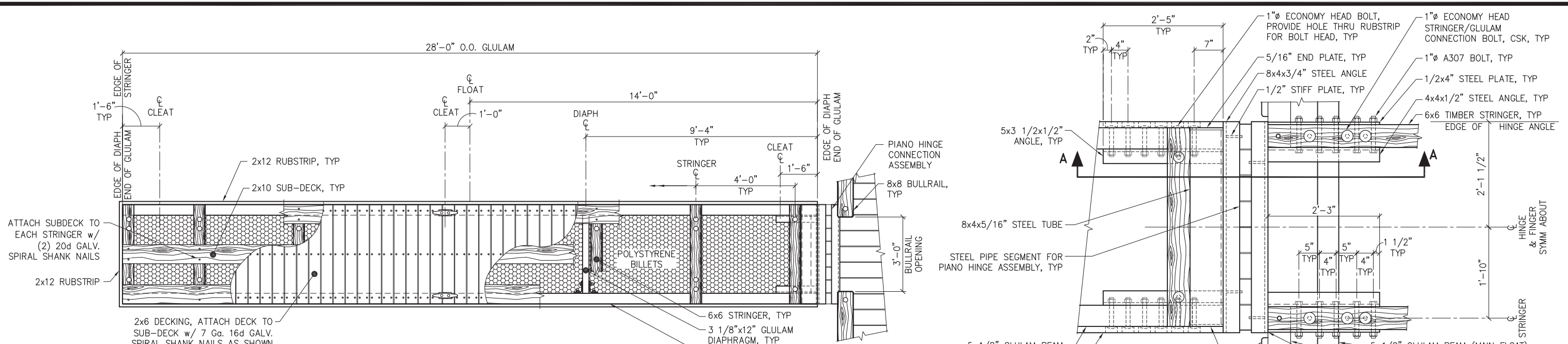
PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **8-FT WIDE MAIN FLOAT UNITS**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
 CHECKED BY: DST PROJECT NO: 051020

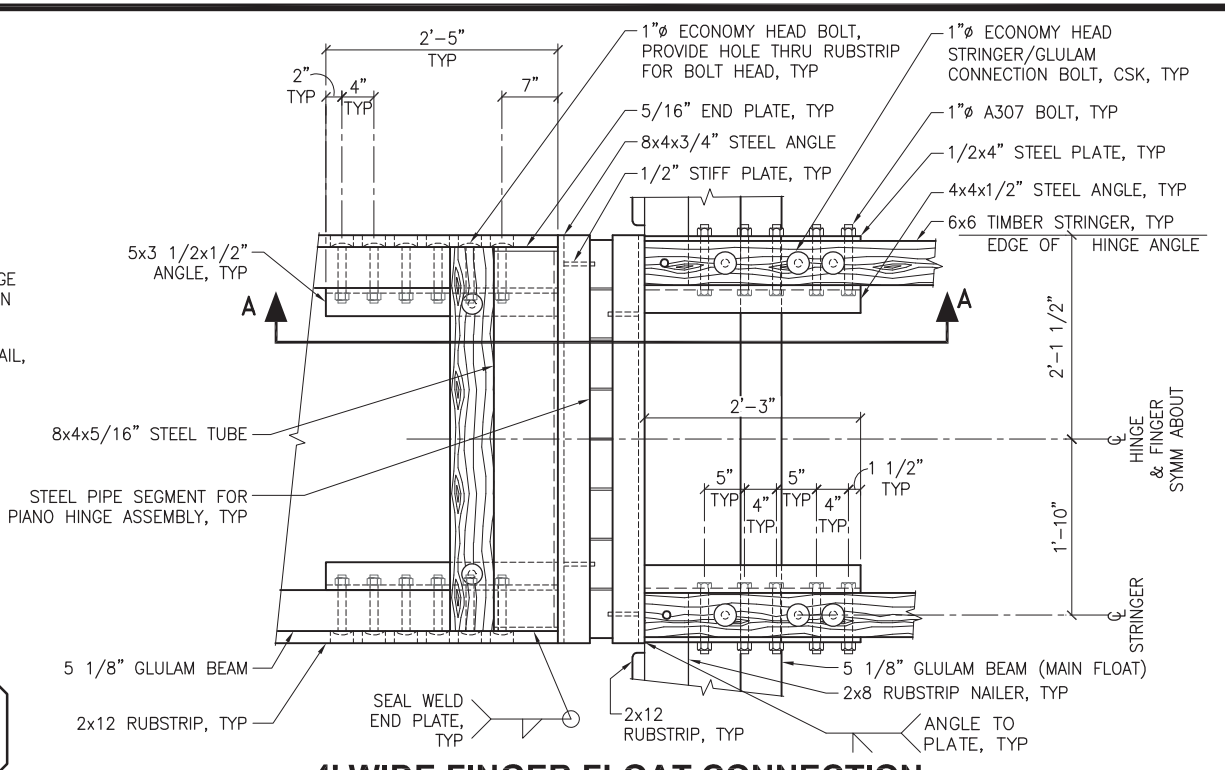
SHEET NO: **20** OF 33

J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\21 4-ft Wide Finger Float Plan & Details.dwg, 21, 11/11/2010 11:31:00 AM, James, 1:2

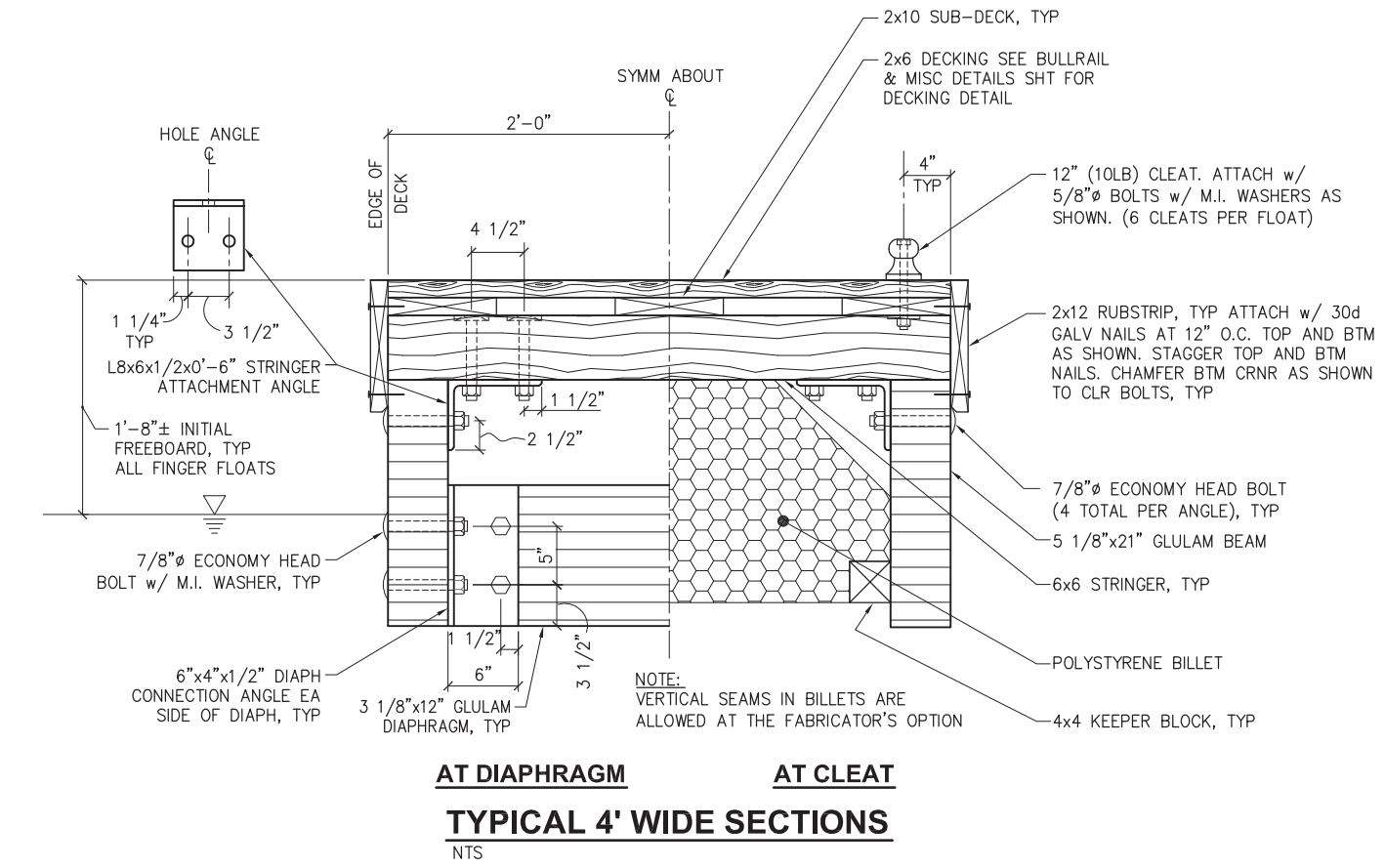


**4'x28' FINGER FLOAT - PLAN**  
NTS

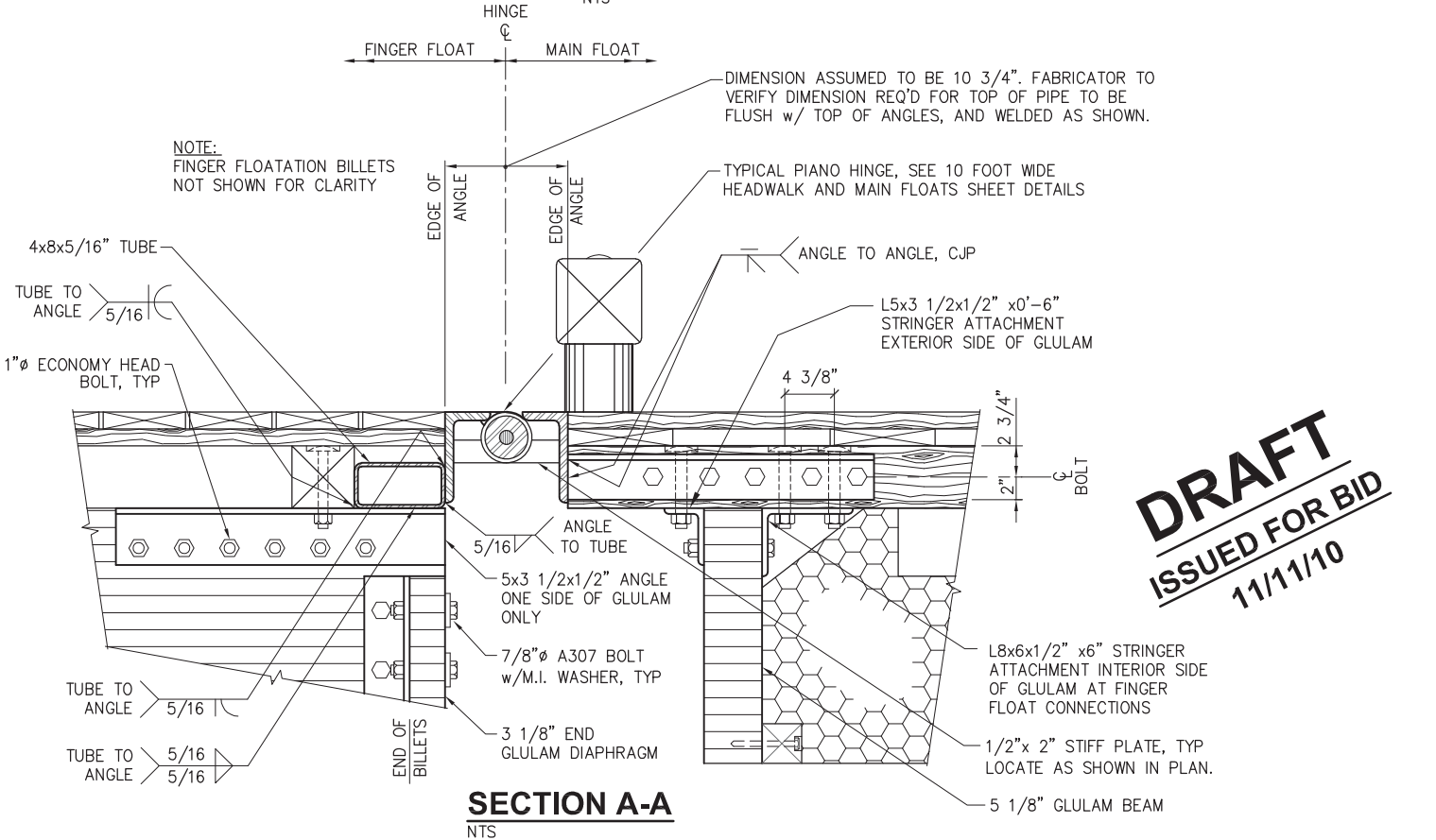
NOTE:  
PROVIDE PAINTED NON-SKID COATING ON TOP SURFACE OF HINGE ANGLES



**4' WIDE FINGER FLOAT CONNECTION**  
NTS




**TYPICAL 4' WIDE SECTIONS**  
NTS



**SECTION A-A**  
NTS

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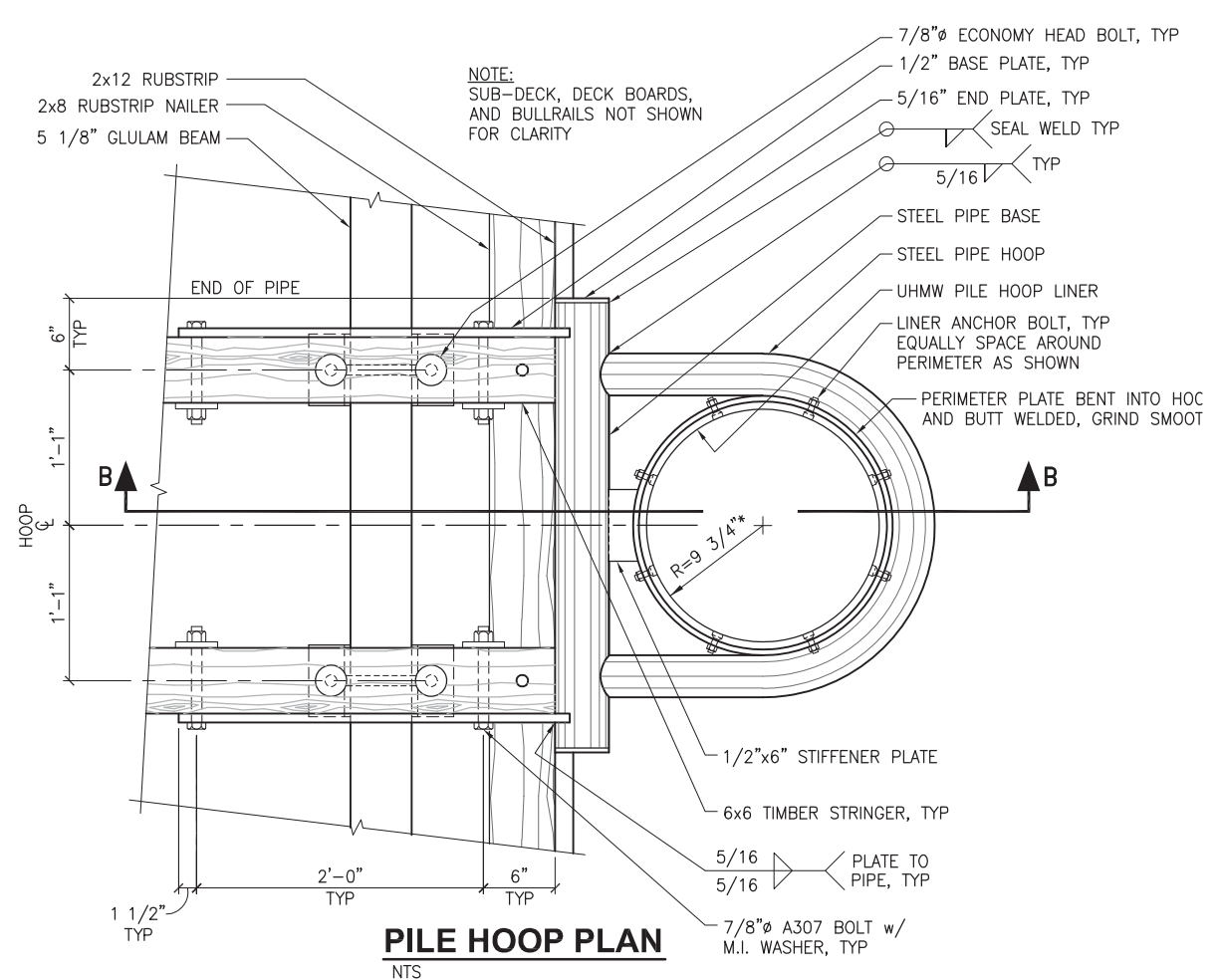
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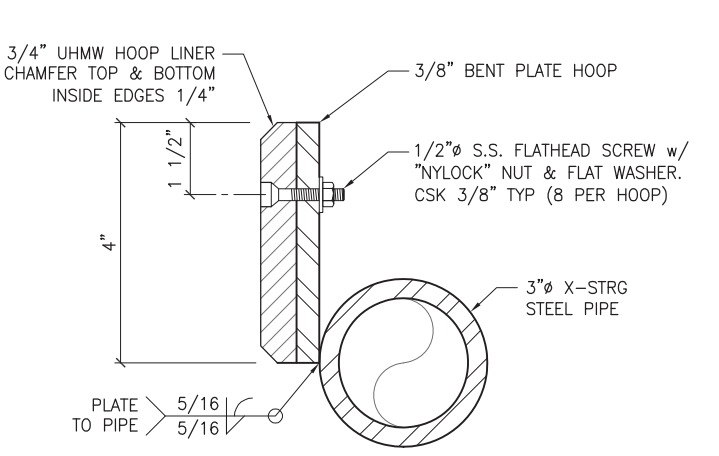


PROJECT: WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I  
TITLE: 4-FT WIDE FINGER FLOAT PLAN & DETAILS  
DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020 SHEET NO: 21 OF 33

J:\2005\051020 Whittier Small Boat Harbor Replacement\Drawings\22 Headwalk to Connection Float & Pile Hoop Details.dwg, 22, 11/11/2010 11:31:09 AM, james, 1:2

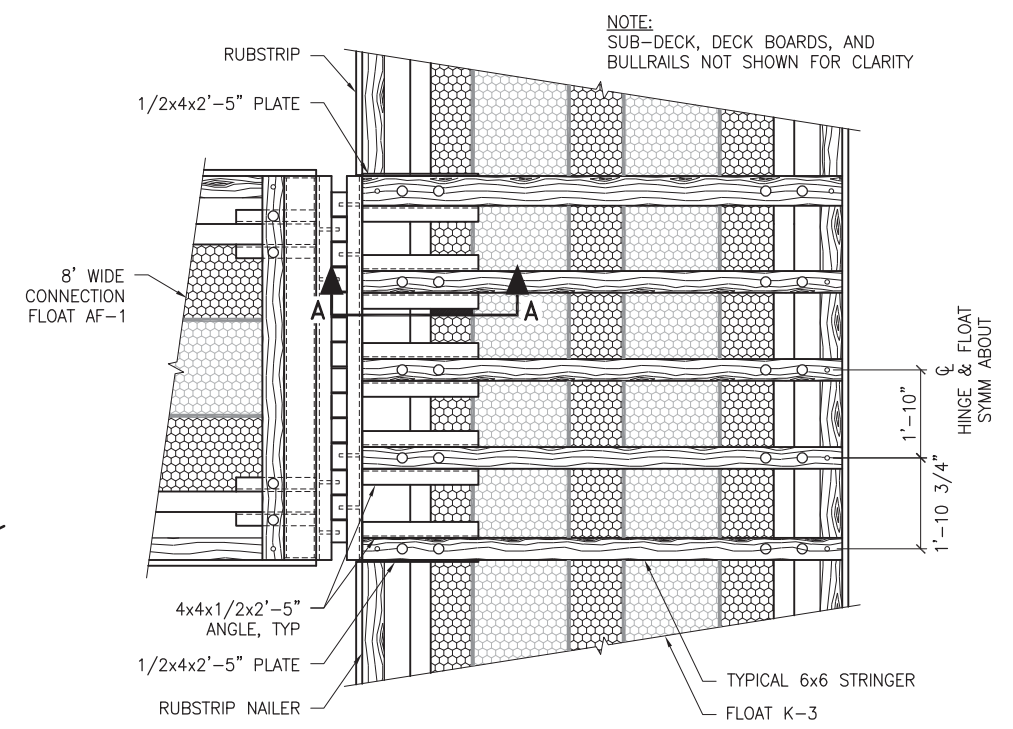


**PILE HOOP PLAN**  
NTS

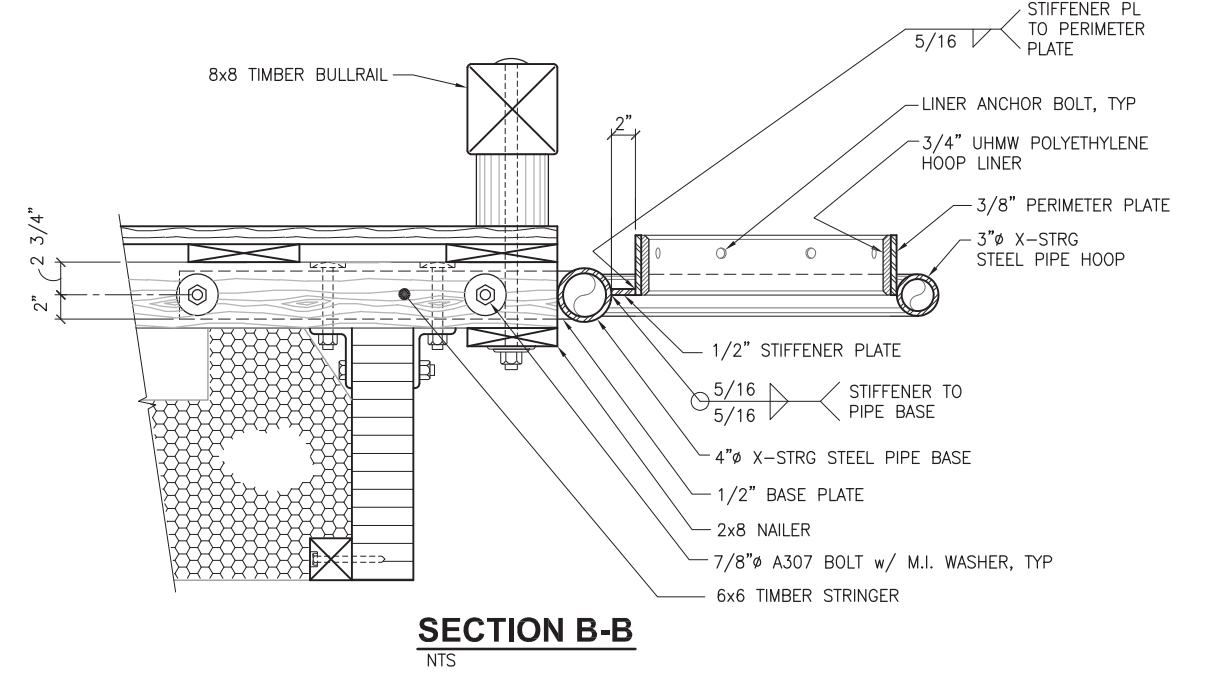


**TYPICAL HOOP SECTION**  
NTS

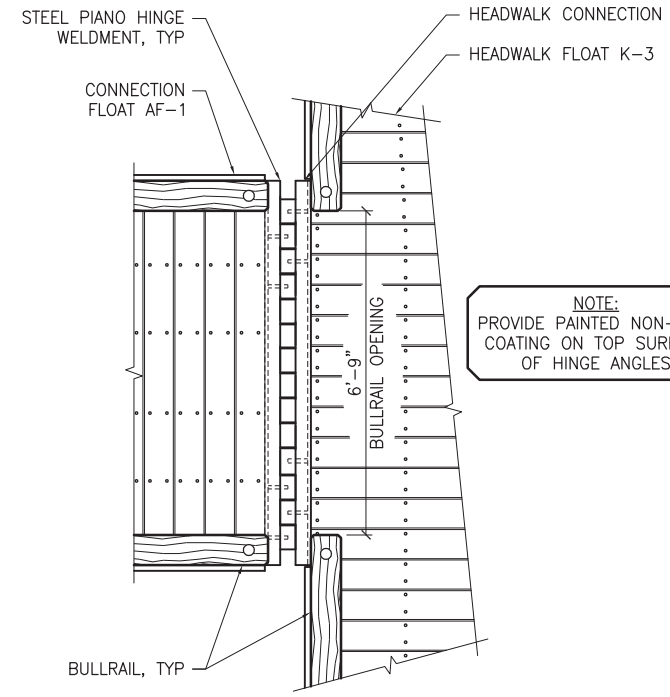
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**HEADWALK CONNECTION FLOATS K-3 TO AF-1 FRAMING PLAN**  
NTS

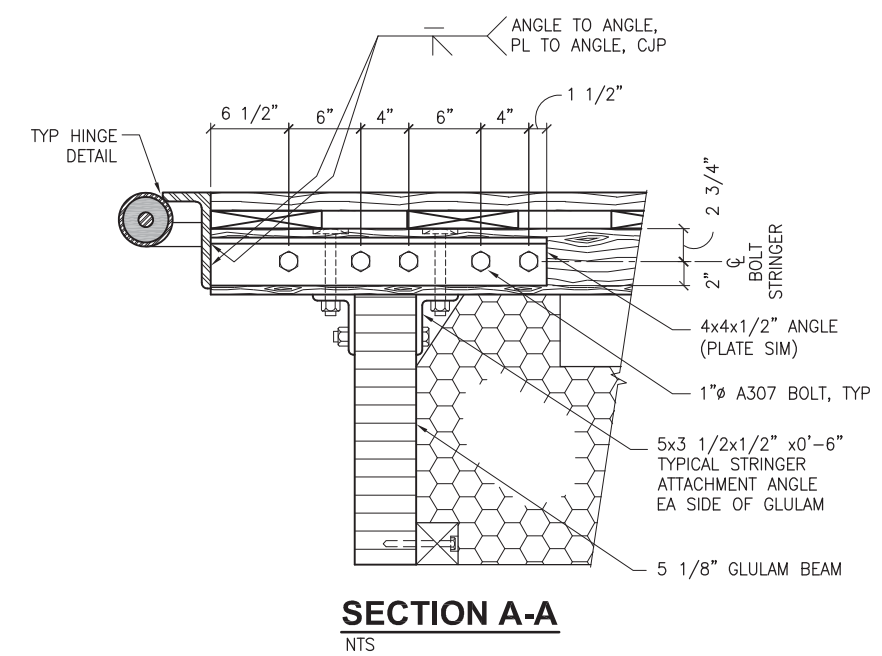


**SECTION B-B**  
NTS



**HEADWALK TO CONNECTION FLOAT PLAN**  
NTS

NOTE:  
PROVIDE PAINTED NON-SKID COATING ON TOP SURFACE OF HINGE ANGLES



**SECTION A-A**  
NTS



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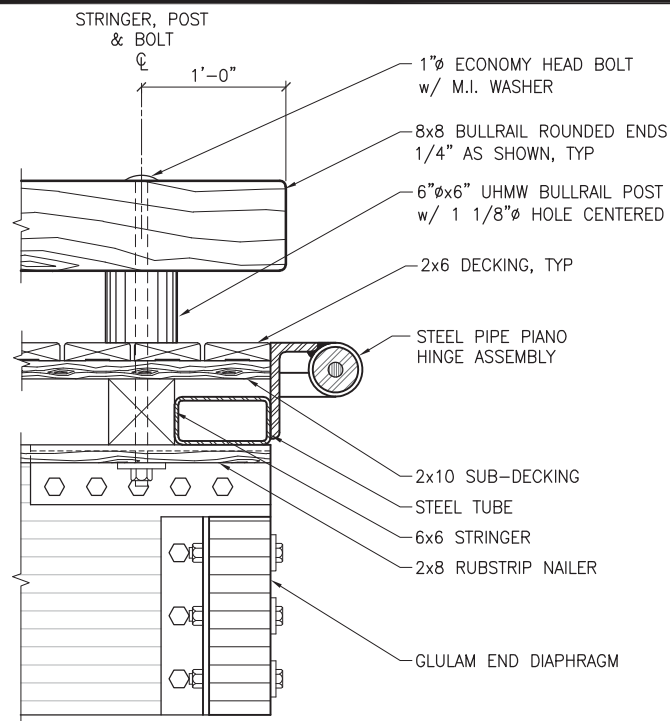
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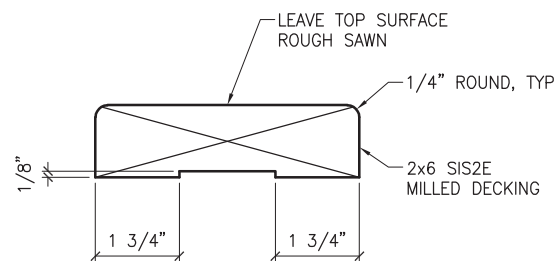
PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**  
TITLE: **HEADWALK TO CONNECTION FLOAT & PILE HOOP DETAILS**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020 SHEET NO: **22** OF 33



**TYPICAL SECTION  
FLOAT BULLRAIL END**

NTS



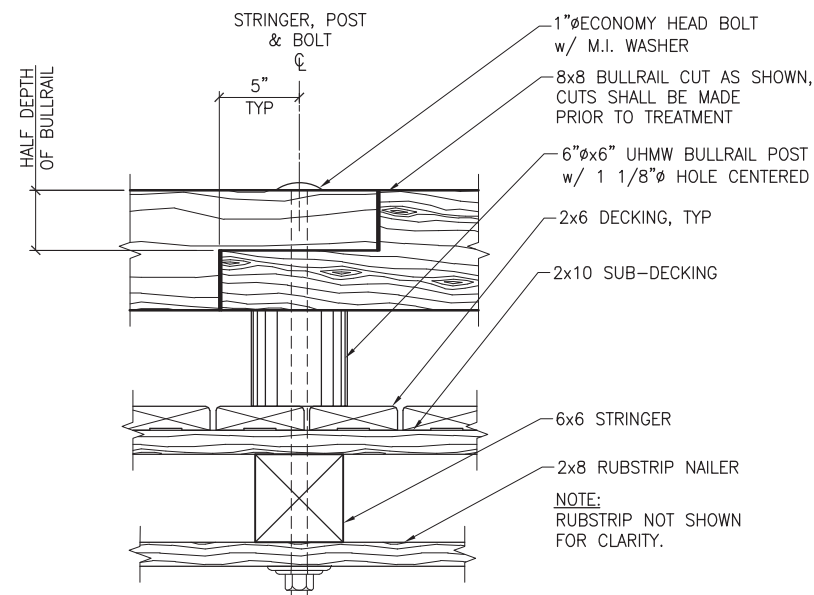
**NOTES:**  
2x6 DECKING MILL S1S2E ROUGH SIDE UP. MILLED SIDE SHALL BE TOWARDS THE CENTER OF THE TREE

SECURE WITH 7 GA, 16d GALV. SPIRAL SHANK NAILS AT EACH LOCATION. PREDRILL TO PREVENT SPLITTING.

SEE FLOAT SCHEDULES FOR ENGINEER'S ESTIMATED NUMBER OF DECKING BOARDS FOR EACH FLOAT. FABRICATOR SHALL CONFIRM DECK BOARD ESTIMATE.

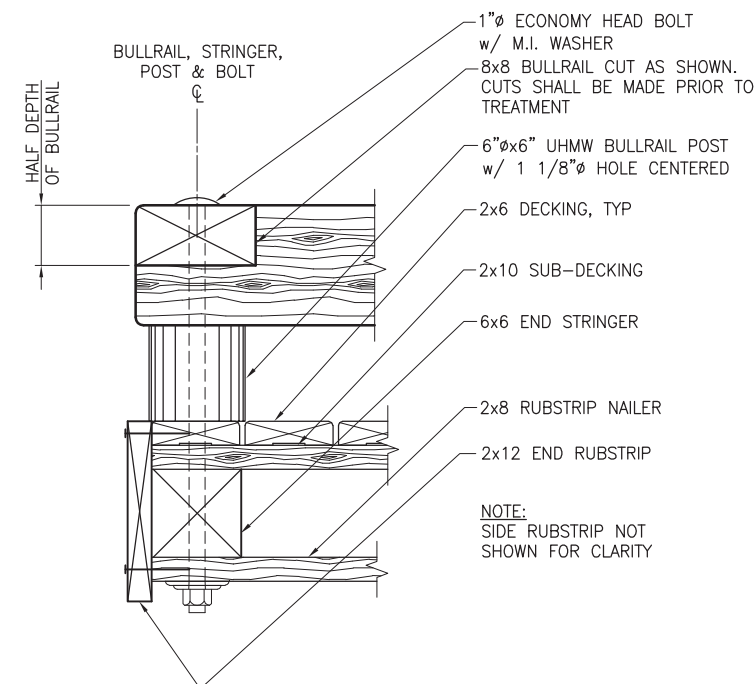
**TIMBER DECKING DETAIL**

NTS



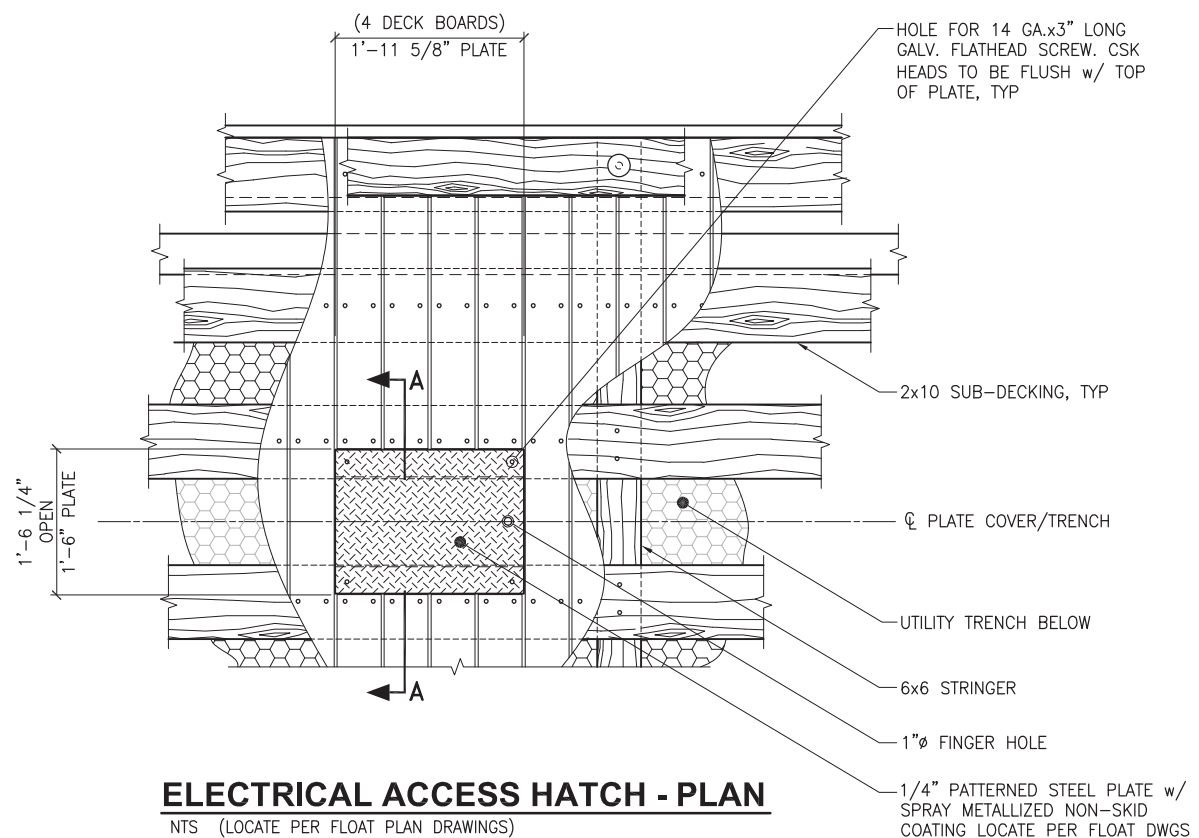
**TYPICAL SPLICE - ELEVATION**

NTS



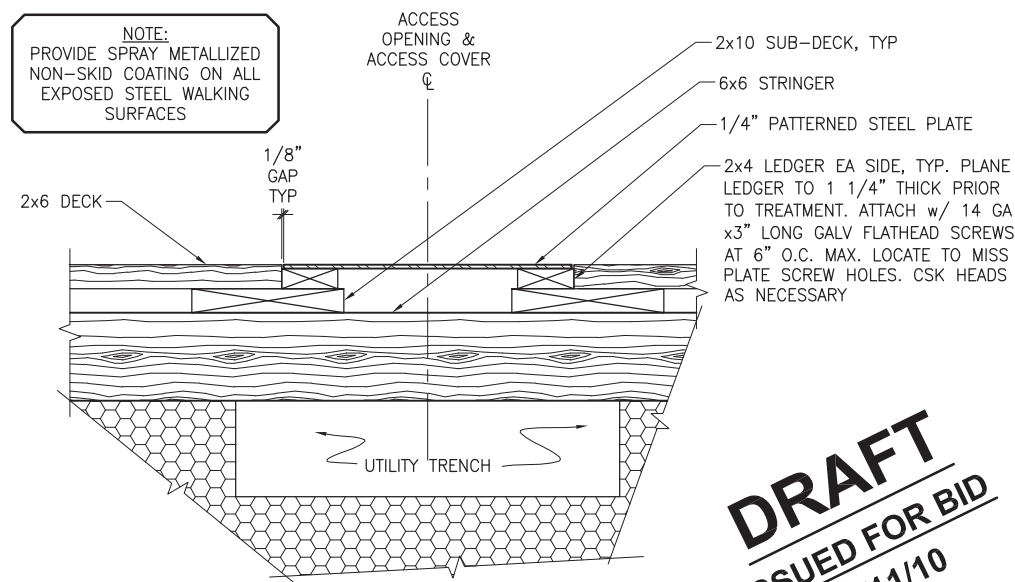
**TYPICAL CORNER SPLICE - ELEVATION**

NTS



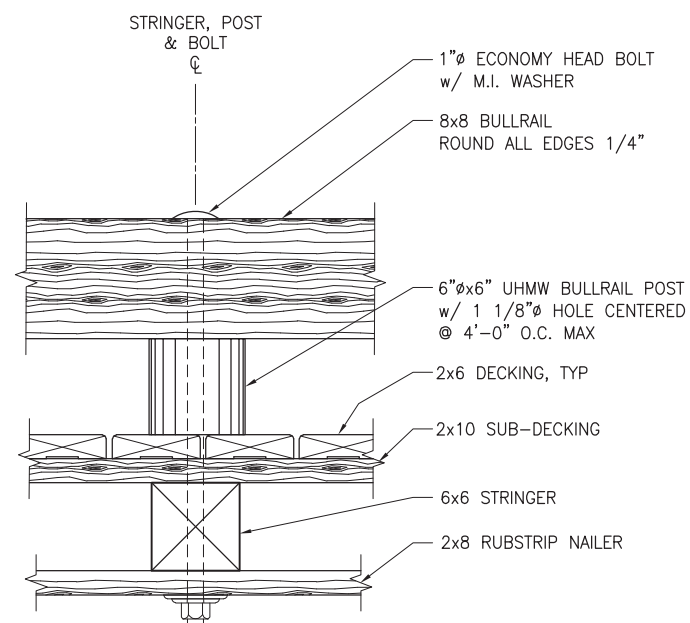
**ELECTRICAL ACCESS HATCH - PLAN**

NTS (LOCATE PER FLOAT PLAN DRAWINGS)



**SECTION A-A**

NTS



**TYPICAL BULLRAIL - ELEVATION**

NTS

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PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **BULLRAIL AND MISCELLANEOUS DETAILS**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **23** OF 33



**CAUTION!!**

THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE. THERE MAY ALSO BE ADDITIONAL UTILITIES THAT ARE NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING EXCAVATION.

WATER AND WASTEWATER (907) XXX-XXXX  
 TELEPHONE (907) 478-3121  
 POWER & LIGHT (907) 478-3121  
 CABLE TV (907) 478-3121

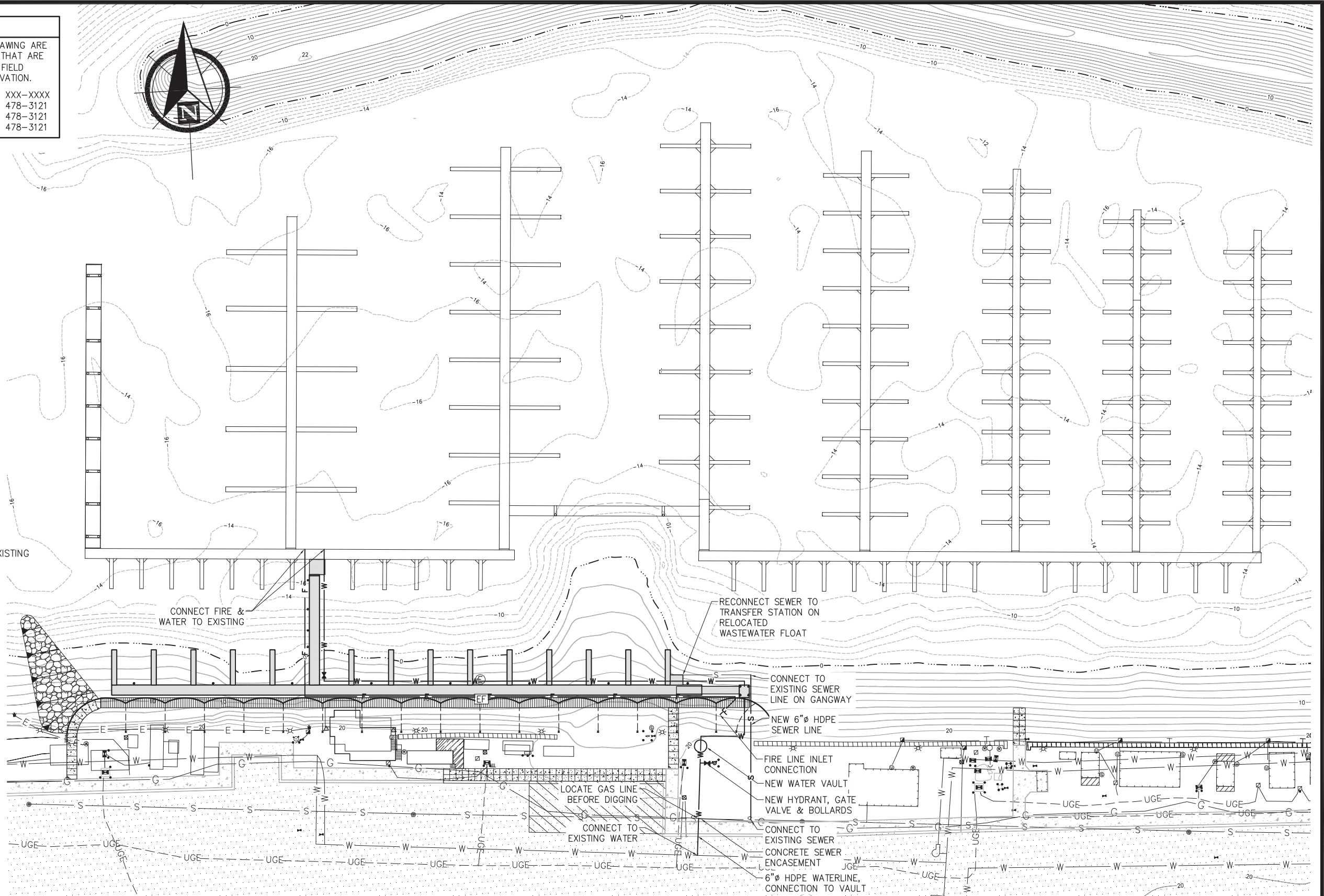
**NOTES:**

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY THE LOCATION AND CONFIGURATION OF ALL EXISTING UTILITIES.
2. CONTACT THE CITY OF WHITTIER PUBLIC WORKS AND THE HARBOR MASTERS OFFICE PRIOR TO CONDUCTING ANY WORK ON UTILITIES.

**LEGEND**

- FC ↑ FIRE HOSE CONNECTION
- ⊕ THERMAL EXPANSION JOINT (WATERLINE)
- ⊕ THERMAL EXPANSION JOINT & CLEANOUT (FIRE LINE)
- ✕ NEW WATER VALVE
- ▨ AC PAVEMENT
- W — WATER LINE - NEW
- S — SEWER LINE - NEW
- F — FIRE LINE - NEW
- G — GAS LINE - EXISTING
- UGE — UNDERGROUND ELECTRIC - EXISTING
- W — WATER LINE - EXISTING
- S — SEWER LINE - EXISTING

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**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

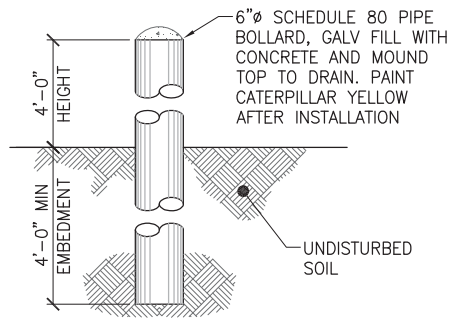
**WATER & SEWER SERVICE PLAN**

DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>24</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	

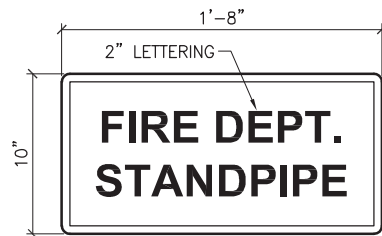
**CAUTION!!**

THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE. THERE MAY ALSO BE ADDITIONAL UTILITIES THAT ARE NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING EXCAVATION.

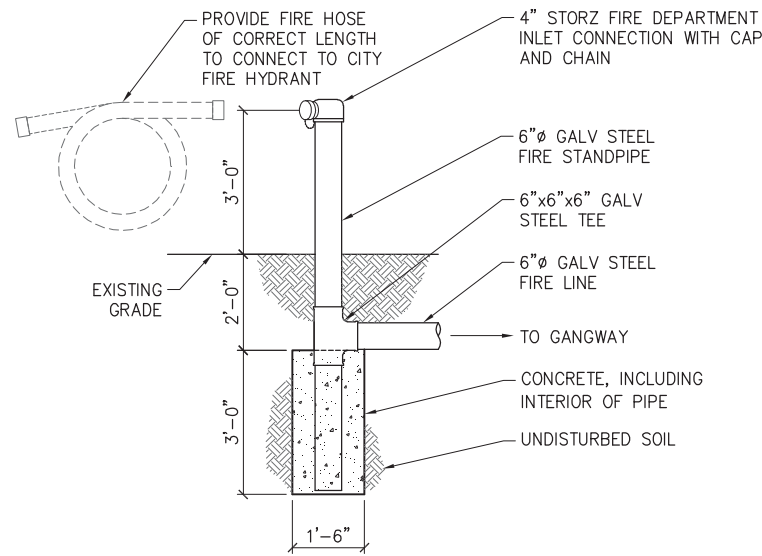
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 TELEPHONE (907) 478-3121  
 POWER & LIGHT (907) 478-3121  
 CABLE TV (907) 478-3121



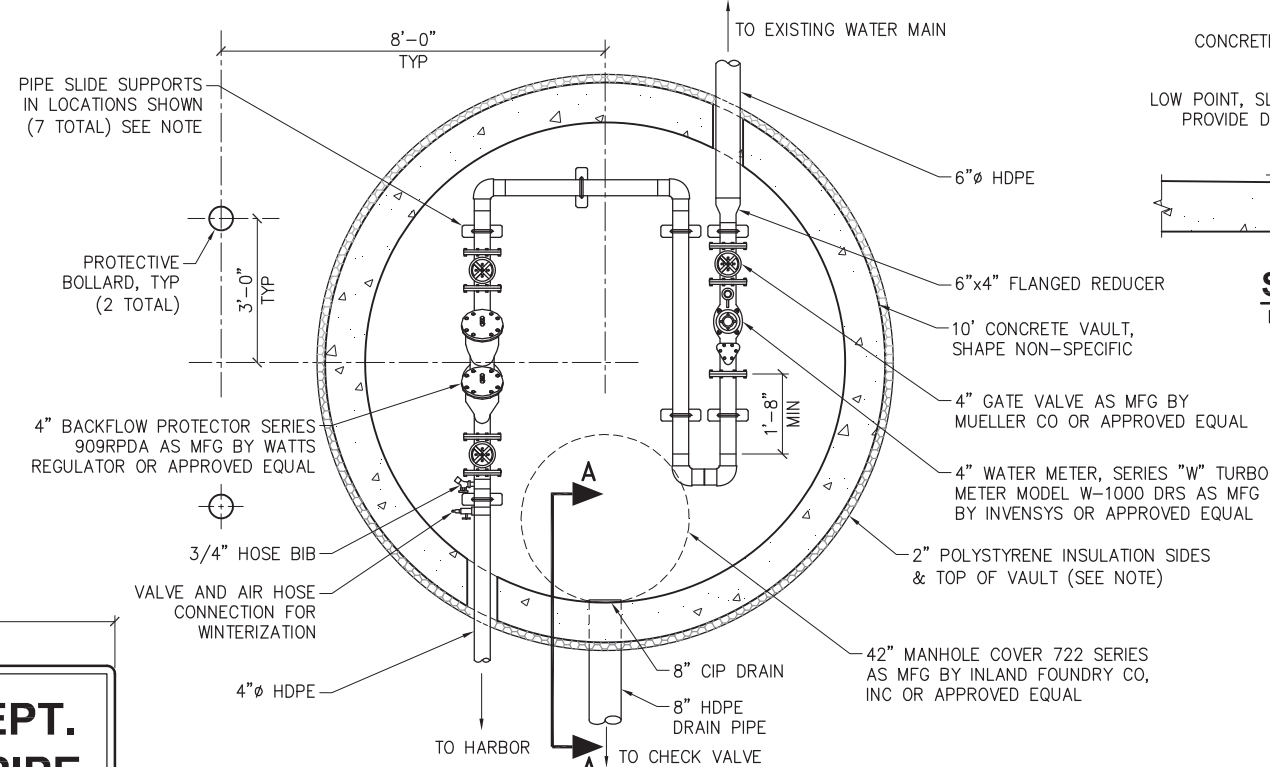
**TYPICAL PROTECTIVE BOLLARD**  
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**FIRE CONNECTION SIGN**  
NTS

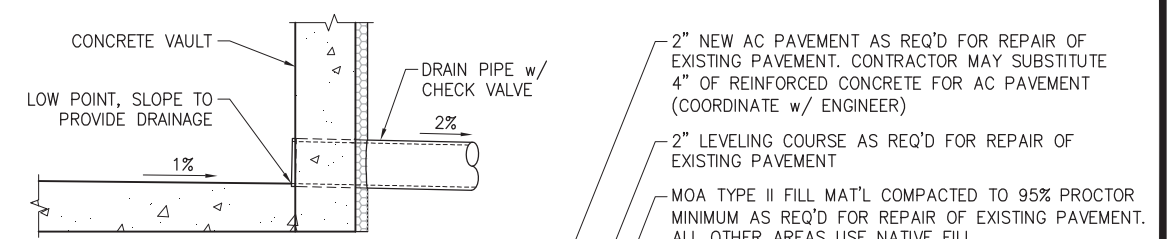


**FIRE DEPARTMENT INLET CONNECTION**  
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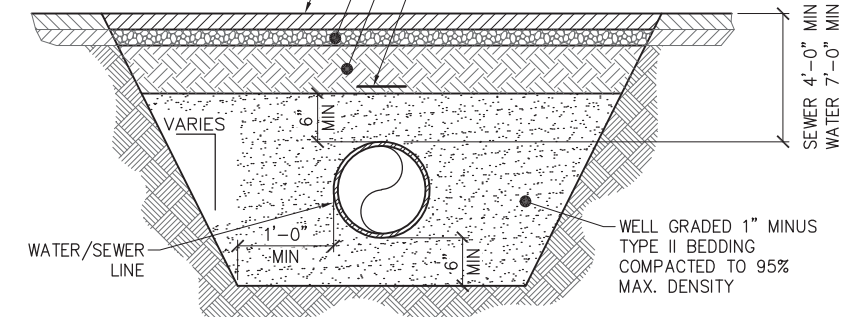


**WATER SERVICE VAULT PLAN**

- NOTES:**
- CONTRACTOR SHALL SUBMIT VAULT, VAULT INSULATION & PIPE SUPPORT PLAN FOR ENGINEER APPROVAL PRIOR TO VAULT CONSTRUCTION.
  - EXCAVATE FOR VAULT AS REQ'D TO A MINIMUM DEPTH OF 12" BELOW THE VAULT'S BOTTOM.
  - PIPE SLIDE SUPPORTS SHALL BE GRINNEL TYPE I PTFE PIPE SLIDES W/ PIPE CLAMPS & SHALL BE ANCHORED TO THE VAULT FLOOR.



**SECTION A-A**  
NTS



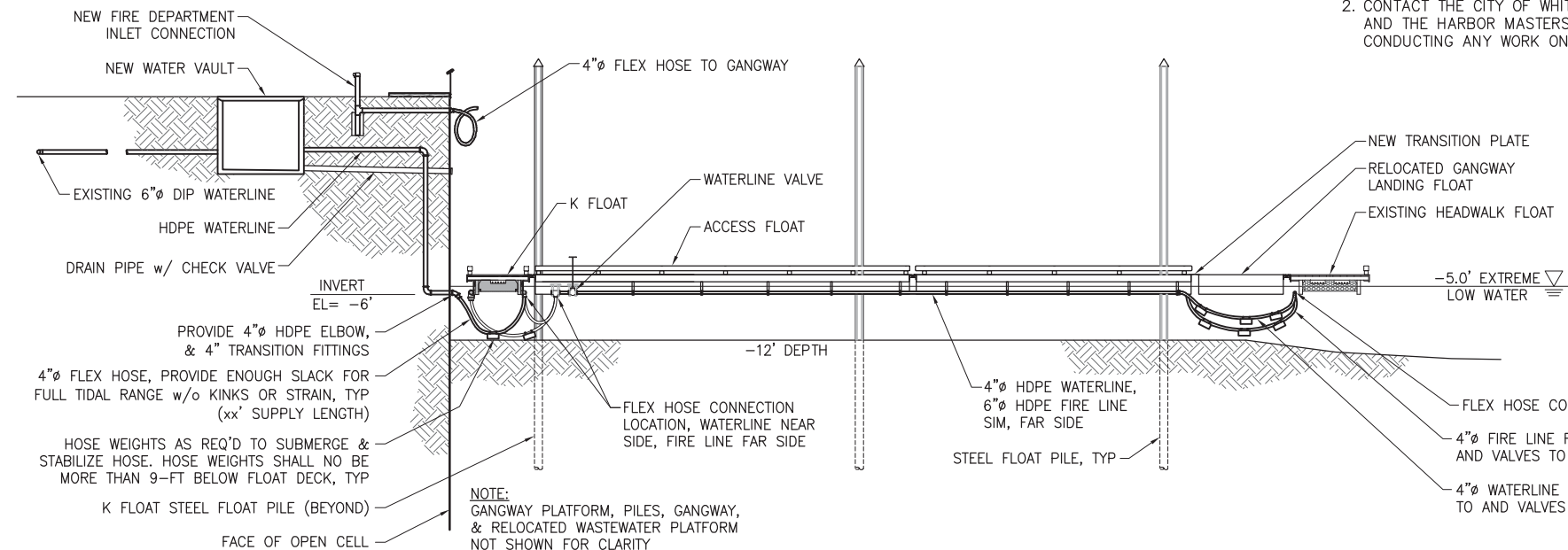
**TYPICAL TRENCH SECTION**  
NTS

**NOTE:**  
TRENCH WALL SLOPES WILL VARY WITH SOIL STRENGTH AND CHARACTER PER OSHA

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**NOTES:**

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- CONTACT THE CITY OF WHITTIER PUBLIC WORKS AND THE HARBOR MASTERS OFFICE PRIOR TO CONDUCTING ANY WORK ON UTILITIES.



**WATERLINE SECTION AT WATER VAULT**  
NTS

**WATERLINE SECTION AT ACCESS FLOAT**  
NTS

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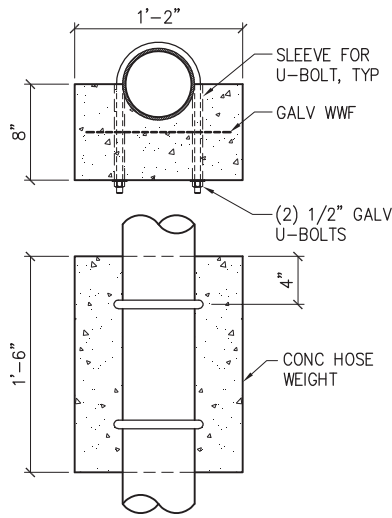
**WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

**WATERLINE SECTION AND WATER VAULT DETAILS**

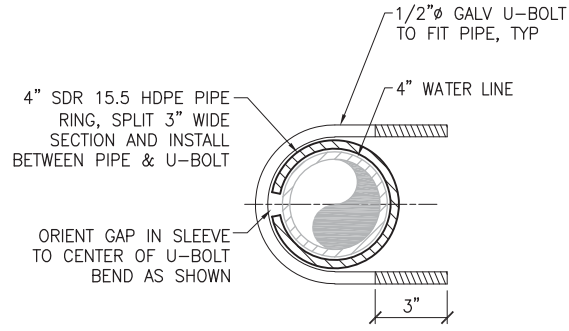
DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>25</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	



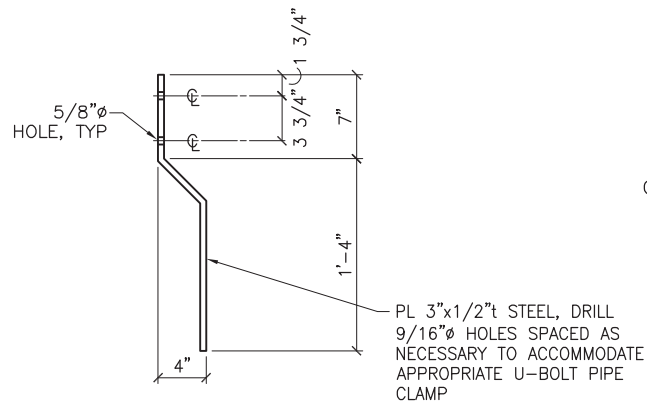
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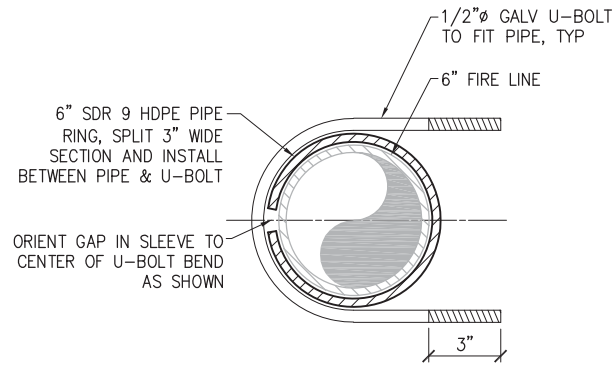
**HOSE WEIGHT DETAIL**  
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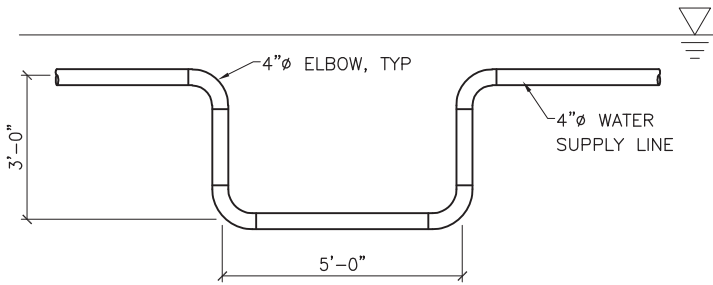
**TYPICAL 4" U-BOLT PIPE CLAMP AND PIPE SLEEVE**  
NTS



**ANGLED WATER LINE SUPPORT BRACKET**  
(USE AT VALVE LOCATIONS)

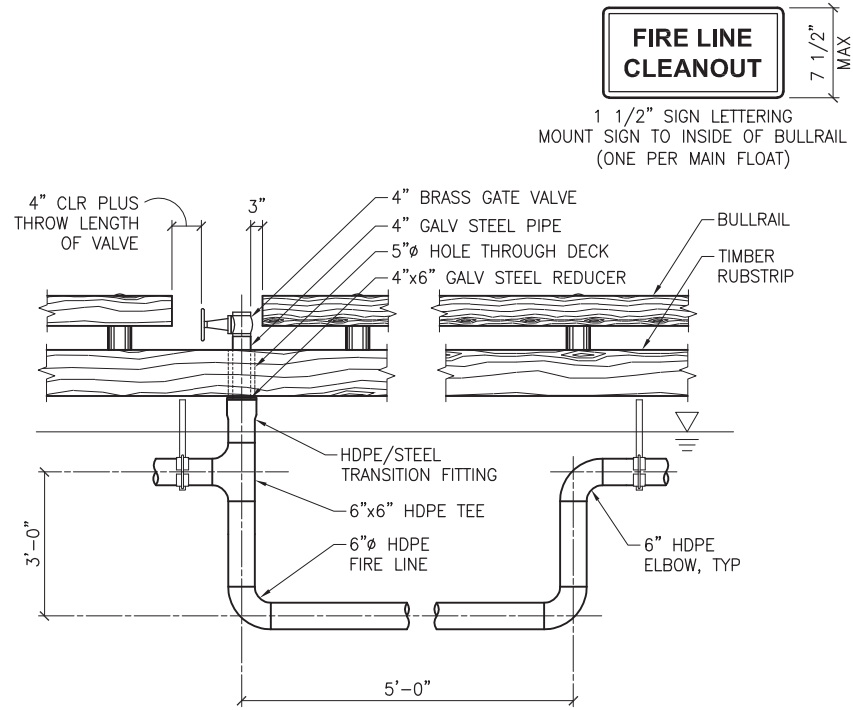


**TYPICAL 6" U-BOLT PIPE CLAMP AND PIPE SLEEVE**  
NTS

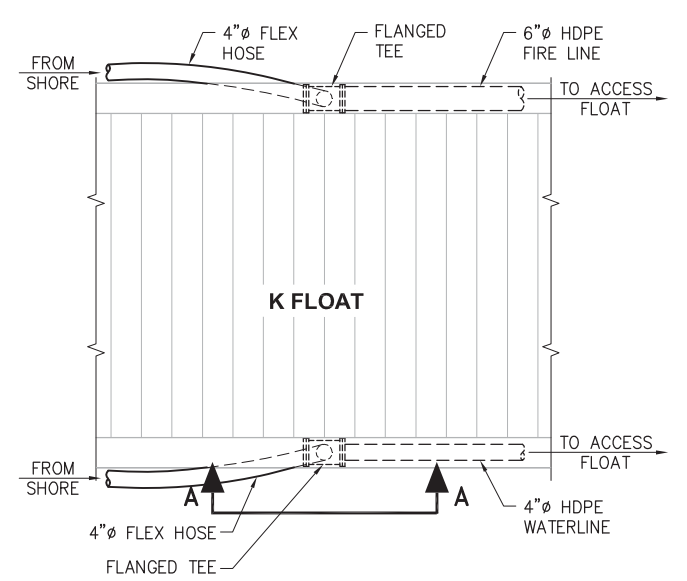


**DETAIL 4" EXPANSION LOOP**  
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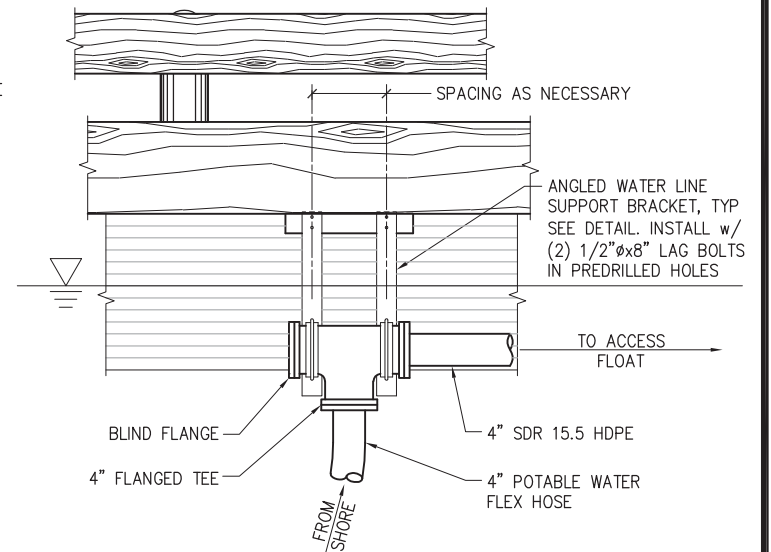
- NOTES:
1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY THE LOCATION AND CONFIGURATION OF ALL EXISTING UTILITIES.
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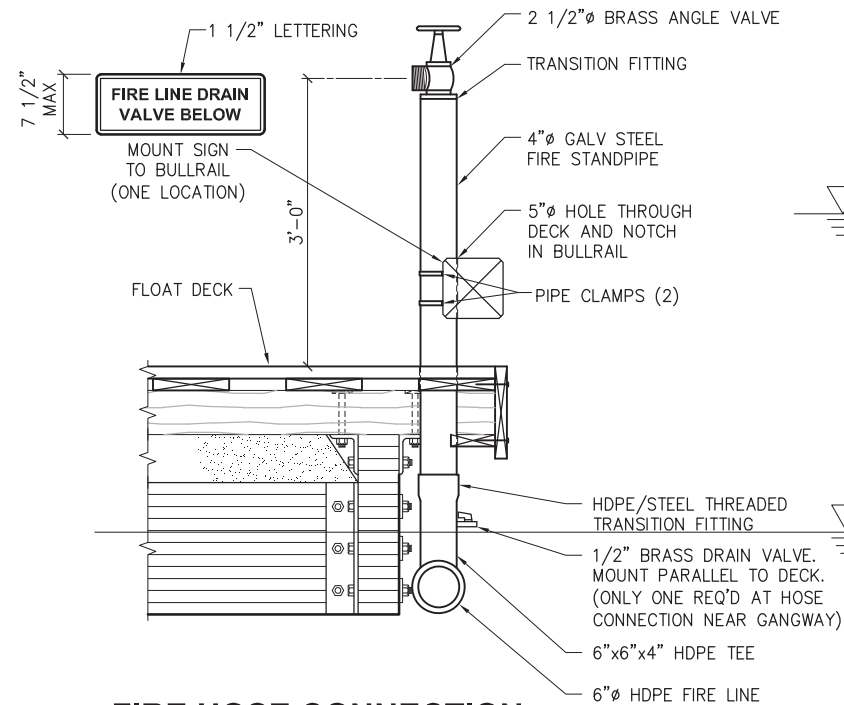
**THERMAL EXPANSION JOINT AND FIRE LINE CLEANOUT**  
NTS



**FLEX HOSE CONNECTION PLAN**  
NTS



**ELEVATION A-A**  
NTS



**FIRE HOSE CONNECTION**  
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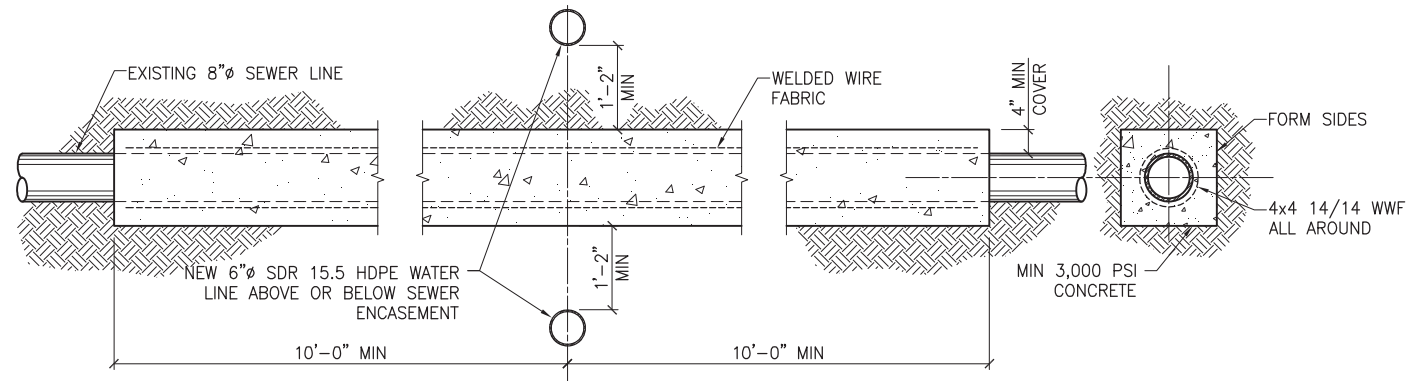
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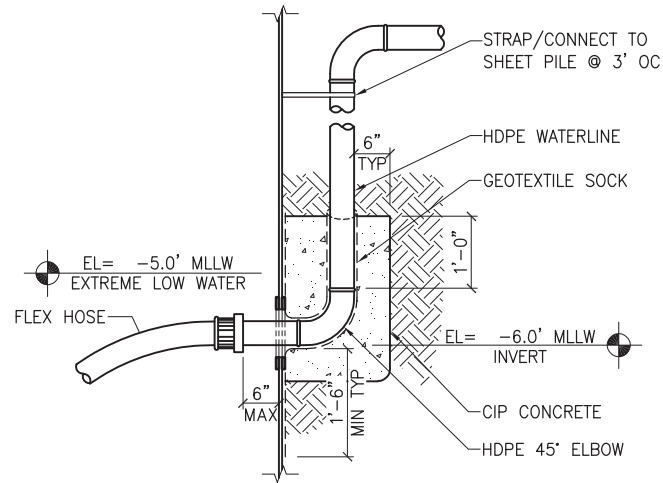
PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **WATER SERVICE DETAILS (1 OF 3)**

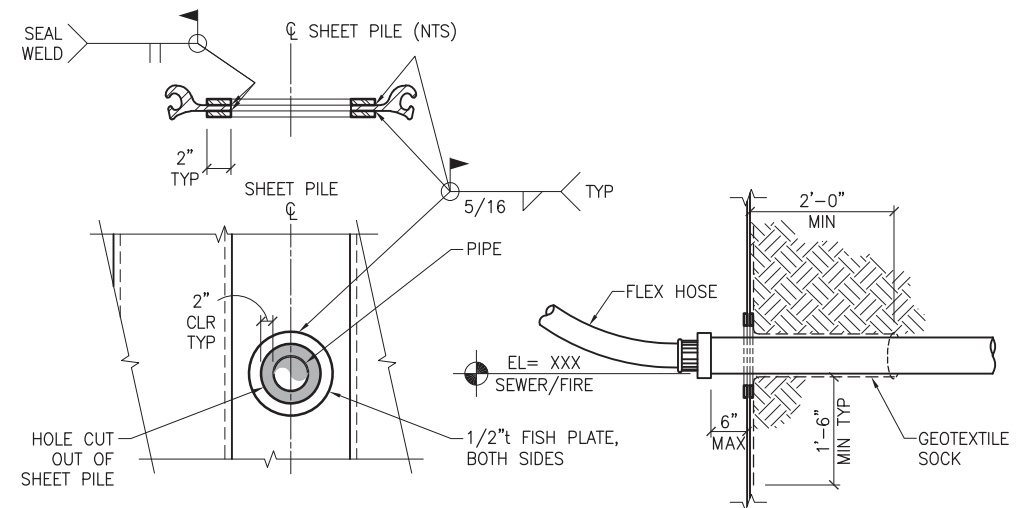
DESIGNED BY: MTB	DATE: NOVEMBER 2010	SHEET NO: <b>26</b> OF 33
CHECKED BY: DST	PROJECT NO: 051020	



**SEWER ENCASEMENT**  
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**WATERLINE PENETRATION DETAIL**  
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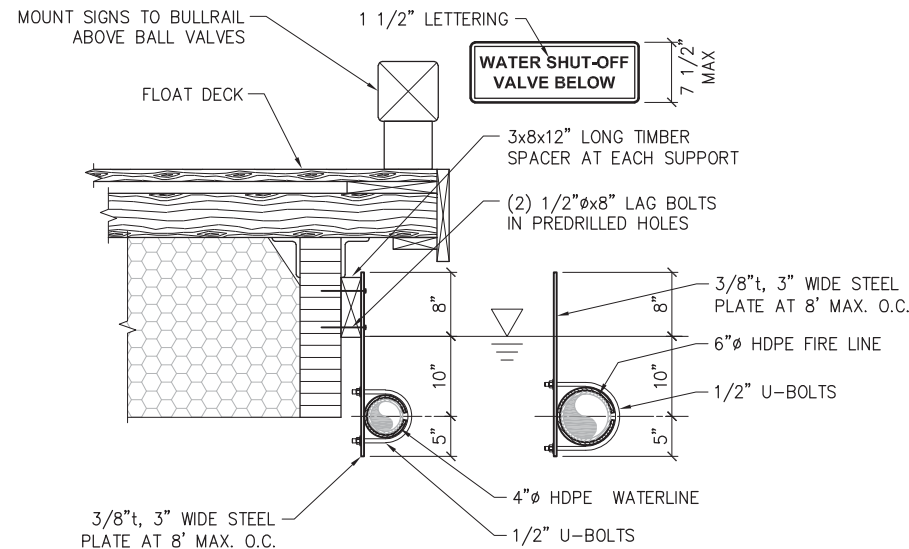
**SHEET PILE PENETRATION DETAIL**  
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**FIRELINE / SEWER PENETRATION DETAIL**  
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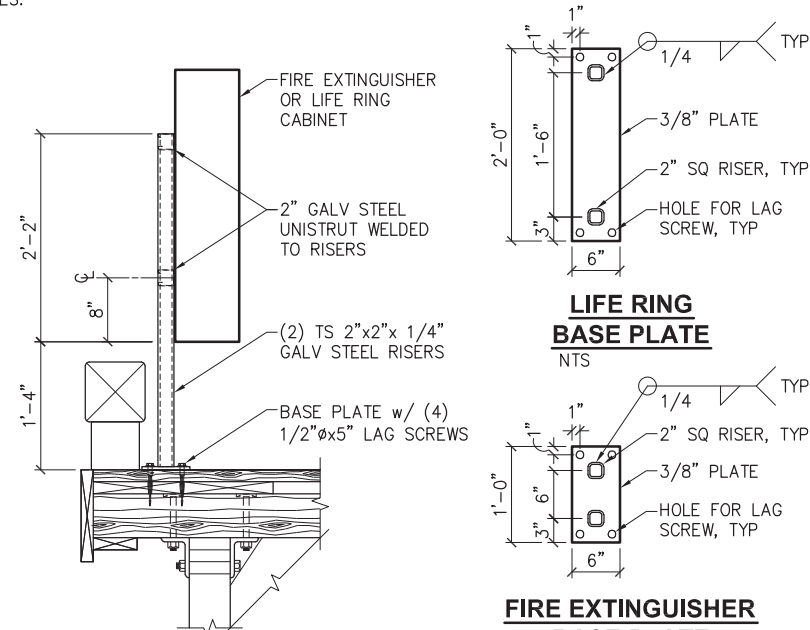
**NOTES:**

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**PIPE HANGER**  
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**LIFE RING & FIRE EXTINGUISHER CABINETS**  
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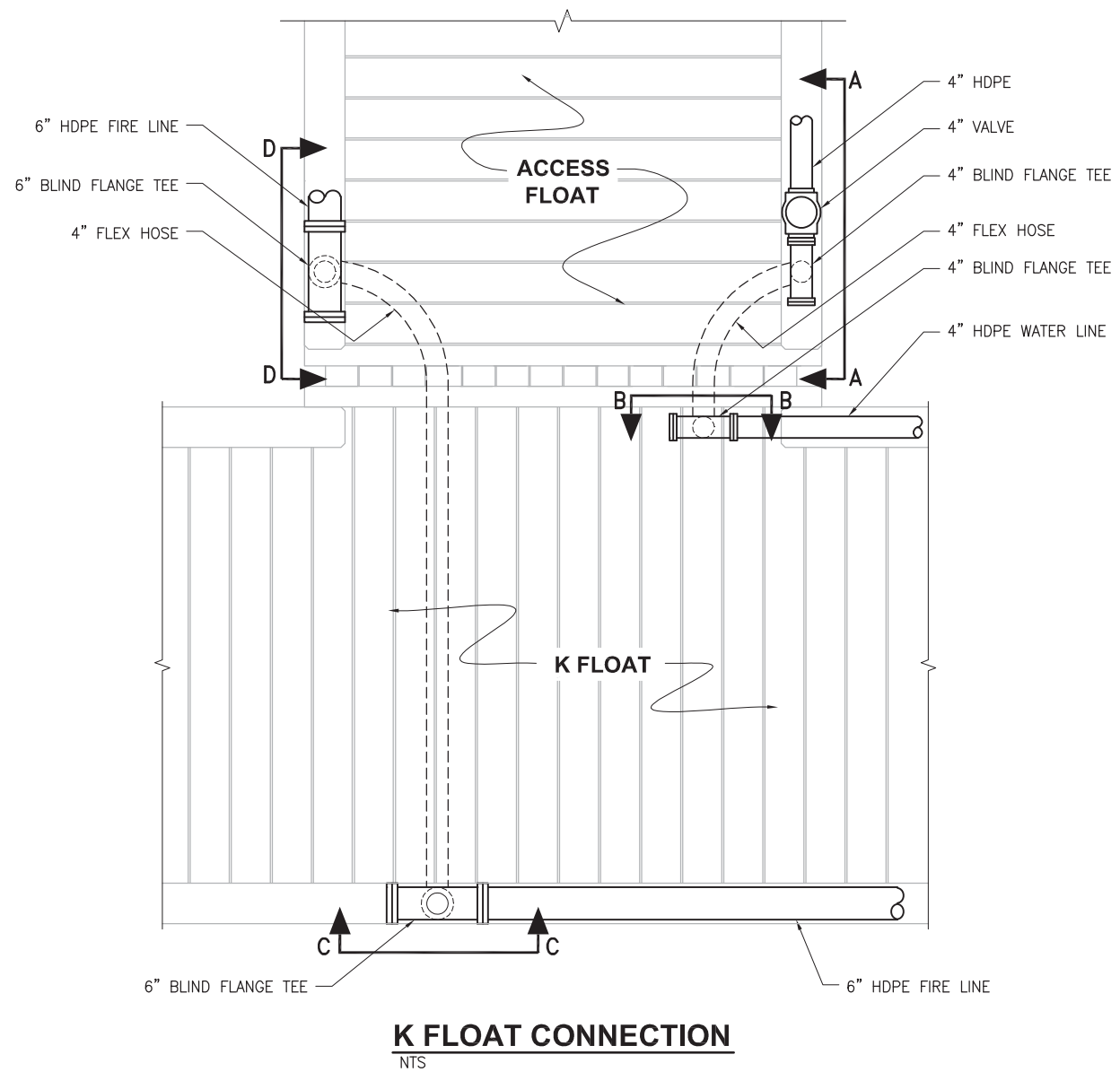
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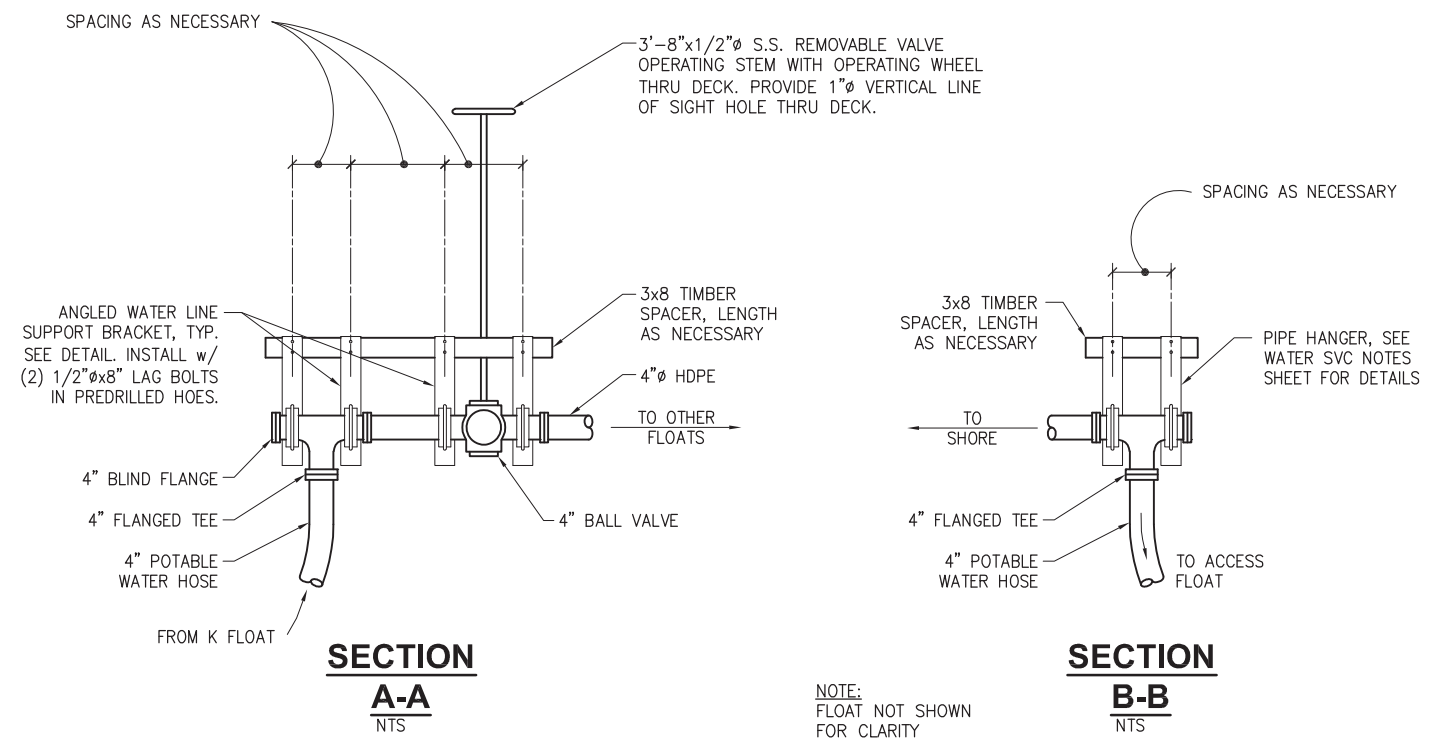
PROJECT: WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I	
TITLE: WATER SERVICE DETAILS (2 OF 3)	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
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SHEET NO: 27 OF 33	

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**K FLOAT CONNECTION**  
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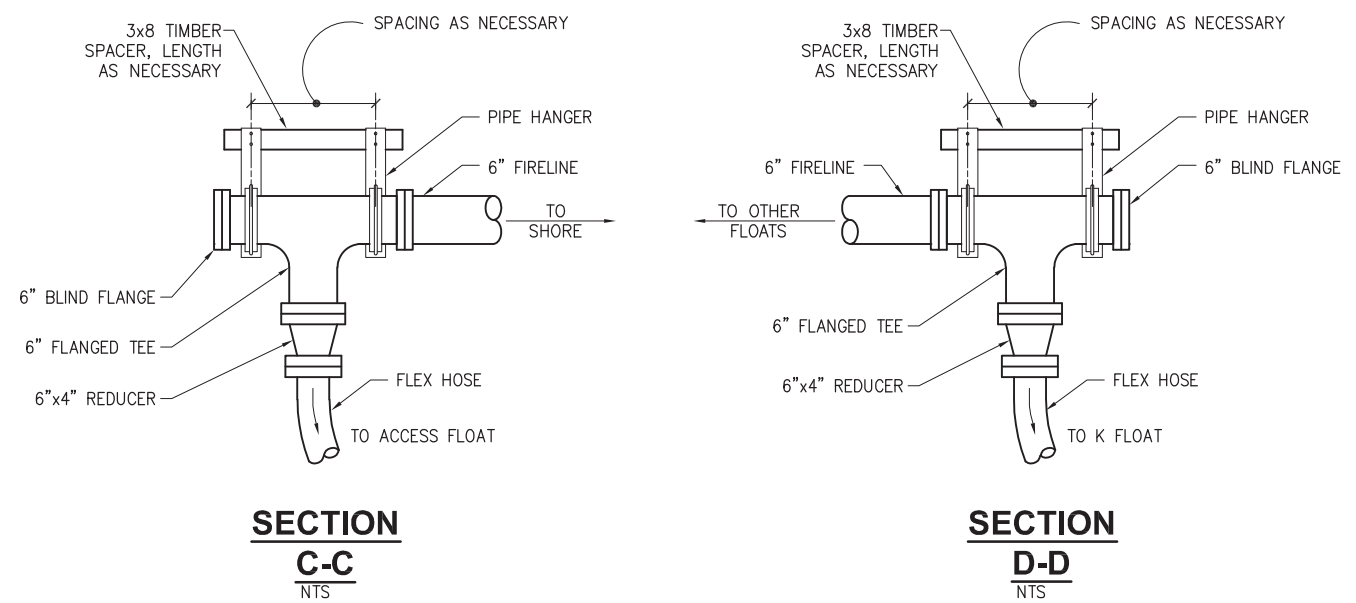
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**SECTION A-A**  
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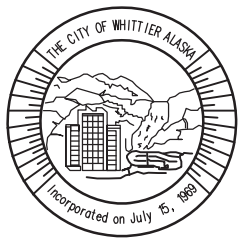
**SECTION B-B**  
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NOTE:  
FLOAT NOT SHOWN  
FOR CLARITY



**SECTION C-C**  
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**SECTION D-D**  
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TITLE: WATER SERVICE DETAILS (3 OF 3)	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
CHECKED BY: DST	PROJECT NO: 051020
SHEET NO: <b>28</b> OF 33	

# WATER & SEWER SYSTEM NOTES

## GENERAL

WATER & SEWER SYSTEM SHALL BE OPERATED DURING SUMMER MONTHS ONLY.

## APPLICABLE CODES

ALL LOCAL CODES PLUS THE FOLLOWING CODES ARE APPLICABLE TO THIS PROJECT: UNIFORM PLUMBING CODE; NFPA 14 (1996 EDITION); AWWA C906 & C901; ASTM SPECIFICATIONS

## SUBMITTALS

THE ENGINEER'S REVIEW OF SUBMITTALS WILL BE FOR GENERAL CONFORMANCE ONLY AND IT SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR TO CONFORM TO ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. ANY INTENDED DEVIATION FROM THE PLANS AND SPECIFICATIONS MUST BE SPECIFICALLY IDENTIFIED BY THE CONTRACTOR AND SPECIFICALLY APPROVED BY THE ENGINEER TO BE ACCEPTABLE.

ALL SUBMITTALS SHALL BE BOUND IN A THREE RING BINDER AS A COMPLETE PACKAGE. SHOP DRAWINGS OF ALL FABRICATED MATERIALS SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO PURCHASE, FABRICATION OR MOBILIZATION OF ANY ITEM. A MINIMUM OF THREE SETS SHALL BE PROVIDED FOR EACH SUBMITTAL, OF WHICH TWO WILL BE RETURNED TO THE CONTRACTOR. THE CONTRACTOR SHOULD ALLOW TWO WEEKS FROM THE TIME OF RECEIPT FOR REVIEW OF SUBMITTALS BY THE ENGINEER FOR A REASONABLE NUMBER OF DRAWINGS.

CERTIFICATIONS, MANUFACTURER'S DATA AND OTHER INFORMATION FOR ALL MATERIALS, INCLUDING THOSE NOT SPECIFICALLY SHOWN IN THESE NOTES OR ON INDIVIDUAL DRAWINGS, SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL TO VERIFY CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. IN THE EVENT THAT THE PLANS AND SPECIFICATIONS DO NOT SPECIFICALLY REFERENCE A MATERIAL, THE APPROVAL OF MATERIALS WILL BE BASED ON ITS CONFORMANCE TO THE ABOVE REFERENCED APPLICABLE CODES. ALL METHODS AND MATERIALS SHALL CONFORM TO THESE GENERAL NOTES, GOOD WORKMANSHIP, GENERALLY ACCEPTED INDUSTRY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

## MATERIALS AND CONSTRUCTION

### PIPE AND FITTINGS

ALL WATER SYSTEMS PIPE AND PIPE FITTINGS SHALL BE MADE FROM HIGH DENSITY POLYETHYLENE (HDPE), AND APPROVED BY THE NATIONAL SANITATION FOUNDATION (NSF). 3-INCH POTABLE WATER LINES SHALL BE SDR 11 HDPE RATED FOR 160 PSI; 4-INCH AND 6-INCH POTABLE WATER LINES SHALL BE SDR 13.5 HDPE RATED FOR 130 PSI; 6-INCH FIRE LINES SHALL BE SDR 9 RATED FOR 200 PSI UNLESS NOTED OTHERWISE.

ALL SEWER SYSTEM PIPE AND FITTINGS SHALL BE MADE FROM HDPE AND APPROVED BY THE NSF. 4-INCH SEWER FORCE MAIN SHALL BE SDR 13.5 RATED FOR 130 PSI.

ALL HDPE PIPE SHALL BE INSTALLED IN A MANNER SUFFICIENT TO ACCOMMODATE FOR THERMAL EXPANSION AND CONTRACTION. THE PIPE SHALL BE FUSED BY AN INDIVIDUAL WHO HAS BEEN CERTIFIED BY THE PIPE SUPPLIER OR FUSION MACHINE MANUFACTURER.

FUSION WELDED PIPES SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FUSED JOINTS SHALL EXHIBIT SMALL, SMOOTH, UNIFORM, WELL-ROUNDED JOINT BEADS. JOINTS WITH SHARP EDGED, IRREGULAR OR PARTICULARLY LARGE BEADS WILL BE REJECTED AND REPLACED. THE NUMBER OF PIPE JOINTS, WELDED OR FLANGED SHALL BE KEPT TO A MINIMUM, WITH NO MORE THAN AN AVERAGE OF ONE EVERY 20 FEET.

FITTINGS SHALL MEET THE SAME PRESSURE AND INTEGRITY STANDARDS AS THE PIPE.

### PIPE HANGERS AND CLAMPS

PIPE HANGER SPACING SHALL BE EVERY 8 FEET MAX. UNLESS NOTED OTHERWISE AND AT THE END OF EACH FLOAT.

### HARDWARE AND BOLTS

ALL MISCELLANEOUS STEEL PLATES AND SHAPES SHALL BE ASTM A36 GALVANIZED.

ALL BOLTS, LAG SCREWS, NUTS AND WASHERS SHALL BE GALVANIZED STEEL, HEAVY SEMI-FINISHED HEX NUTS, UNLESS OTHERWISE NOTED. WASHERS SHALL BE USED UNDER BOTH HEAD AND NUT OF ALL BOLTS.

ALL GALVANIZED BOLTS, LAG SCREWS, NUTS, WASHERS AND NAILS SHALL MEET ASTM A307 OR SIMILAR REQUIREMENTS AS APPROVED BY THE ENGINEER AND SHALL BE HOT-DIPPED GALVANIZED. MALLEABLE IRON WASHERS SHALL BE USED IN ALL AREAS WHERE THE BOLT HEAD OR NUT BEAR AGAINST WOOD, EXCEPT UNDER ECONOMY HEADS.

## WATER SYSTEM COMPONENTS

THE BACKFLOW PREVENTER SHALL BE A WATTS MODEL NUMBER 909 RPDA SERIES REDUCED-PRESSURE-ZONE BACKFLOW PREVENTER OR APPROVED EQUAL.

THE WATER SERVICE VAULT SHALL BE A MODIFIED UTILITY VAULT MODEL #687-LA, OR APPROVED EQUAL, WITH AN EXTERIOR WATERPROOF MEMBRANE AND INTERIOR ACCESS LADDER. A CLEAR DISTANCE OF 10 FEET MINIMUM SHALL BE MAINTAINED BETWEEN WALLS TO ACCOMMODATE WATER UTILITIES. MINIMUM WEIGHT OF VAULT SHALL BE 40,000 POUNDS. THE MANHOLE SHALL BE RATED FOR AASHTO H-20 LOADING, AND STAMPED "WATER" IN 3" LETTERING. A CLEARANCE OF 12 INCHES SHALL BE MAINTAINED BETWEEN THE FLOOR AND WALLS OF THE VAULT AND THE EQUIPMENT INSIDE.

THE BALL VALVE SHALL BE PVC, AND RATED FOR 150 PSI, ASAHI OR APPROVED EQUAL.

THE 3" CHECK VALVE SHALL BE A RED VALVE TIDE-FLEX SERIES TF-1 CHECK VALVE, OR APPROVED EQUAL.

THE 1" HDPE FLEX HOSE SHALL BE PERFORMANCE PIPE SDR 7 (IPS) POTABLE WATER TUBING. ALL FITTINGS SHALL BE BRASS WATER WORKS FLARE FITTINGS, COMPATIBLE WITH THE TUBING MATERIAL.

FLEX HOSE SHALL BE 4-INCH TITAN EW328 POTABLE WATER HOSE OR APPROVED EQUAL. PROVIDE PREMANUFACTURED GALVANIZED FLANGE CONNECTION AT EACH END.

THE HOSE BIBS SHALL BE INSTALLED WITH A VACUUM BREAKER, WATTS NO. 8A SERIES OR APPROVED EQUAL.

GATE VALVE NEAR HYDRANT SHALL BE RESILIENT SEAT GATE VALVE RATED AT 250 PSI CONFORMING TO AWWA C-509 "U.S. PIPE METROSEAL 250" OR EQUAL.

FIRE HYDRANT SHALL HAVE A CAST-IRON BODY, COMPRESSION TYPE VALVE OPENING AGAINST PRESSURE AND CLOSING WITH PRESSURE, NPS 6 MECHANICAL-JOINT INLET, 150 PSIG WORKING PRESSURE AND CONFORM TO NFPA 1963, WITH EXTERNAL HOSE THREAD USED BY LOCAL FIRE DEPARTMENT. INCLUDE CAST IRON CAPS WITH STEEL CHAINS. HYDRANT GUARD BOLLARDS SHALL BE INSTALLED AT EACH HYDRANT LOCATION.

WATER METER INSIDE WATER SERVICE VAULT SHALL BE A 4" POSITIVE DISPLACEMENT TYPE, INVENSYS OR APPROVED EQUAL.

## SEWER SYSTEM COMPONENTS

FLEX HOSE SHALL BE 4-INCH TITAN EW328 POTABLE WATER HOSE OR APPROVED EQUAL. PROVIDE PREMANUFACTURED GALVANIZED FLANGE CONNECTION AT EACH END.

## FIRE SYSTEM COMPONENTS

FIRE EXTINGUISHER CABINETS SHALL BE A CHEYENNE MODEL FEH-L OR APPROVED EQUAL, MOUNTED TO THE FIRE EXTINGUISHER CABINET STAND AS REQUIRED. CABINETS SHALL INCLUDE FIRE EXTINGUISHERS WITH A MINIMUM RATING OF 2A, 20-B.C. CABINETS SHALL HAVE A SIGN CLEARLY IDENTIFYING IT AS CONTAINING A FIRE EXTINGUISHER.

FIRE DEPARTMENT INLET CONNECTIONS SHALL BE A 4" STORZ TYPE AND RATED FOR 1250 GPM. THE 4-INCH DIAMETER FLEX HOSE SHALL BE GOODYEAR PLICORD BREWLINE, OR APPROVED EQUAL, WITH COMPATIBLE FITTINGS. THE HOSE AND FITTINGS SHALL BE RATED FOR 200 PSI. ANGLE VALVES SHALL BE MANUFACTURED BY POWHATAN, OR APPROVED EQUAL.

## LIFE RING CABINETS

LIFE RING CABINETS SHALL BE A CHEYENNE MODEL LRHC-2, OR APPROVED EQUAL. CABINETS SHALL BE MOUNTED TO THE LIFE RING CABINET STAND AS REQUIRED. CABINETS SHALL HAVE A SIGN CLEARLY IDENTIFYING IT AS CONTAINING A LIFE RING.

## FLOAT SIGNAGE

SIGNS SHALL BE MOUNTED ONTO THE TIMBER WALKER PORTION OF THE FLOAT DECK ABOVE AND ADJACENT TO THE VALVE. SIGNS SHALL BE INSTALLED WITH SLOTTED HOLES FOR SHRINKAGE AND EXPANSION. SUBMIT DETAILS FOR APPROVAL. PROVIDE ALL SHUT-OFF, AND DRAIN VALVES WITH SIGNS IDENTIFYING THE TYPE OF VALVE AND THE AREA AFFECTED BY THE VALVE. SIGNS SHALL BE 1/8" THICK ENGRAVING STOCK MELAMINE PLASTIC LAMINATE, COMPLY WITH FSL-P-387. HELVETICA LETTER STYLE OF MINIMUM 1/4-INCH HIGH RED LETTERS ON A WHITE BACKGROUND.

## TESTING AND DISINFECTION

PRESSURE TESTING, FLUSHING, AND DISINFECTION SHALL BE CONDUCTED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE, MANUFACTURERS RECOMMENDATIONS, AND CITY OF WHITTIER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT TESTING AND DISINFECTION UNDER THE SUPERVISION OF THE ENGINEER PRIOR TO FINAL CONNECTION TO THE EXISTING WATER MAIN. THE CONTRACTOR SHALL PROVIDE PLUGS AND TEMPORARY BLOW-OFF ASSEMBLIES FOR PRESSURE TESTING ALL LINES AND DISINFECTING THE POTABLE WATER LINES.

THE POTABLE WATER SHALL BE HYDROSTATICALLY TESTED TO 120 PSI (1.5 TIMES THE SYSTEM DESIGN OPERATING PRESSURE). INITIALLY, THE TEST PRESSURE SHALL BE APPLIED TO THE HDPE PIPE FOR 3 TO 4 HOURS TO ALLOW FOR THE INITIAL EXPANSION OF THE PIPE. AFTER THIS PERIOD, ADD ADDITIONAL MAKE-UP WATER AND RETURN TO THE FINAL TEST PRESSURE FOR A MINIMUM OF 30 MINUTES. DURING THE 30 MINUTE TESTING PERIOD, WATER PRESSURE MAY DROP BY NO MORE THAN 5 PSI. DISINFECTING THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH CITY SPECIFICATIONS. THE POTABLE WATER SYSTEM SHALL PASS THE PRESSURE TEST AND DISINFECTING REQUIREMENTS AND BE FLUSHED PRIOR TO CONNECTING TO THE CITY WATER SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY VALVES AND CAPS TO PERFORM THE TEST.

## AS-BUILT PLANS

THE CONTRACTOR SHALL SUBMIT THREE SETS OF COMPLETED AS-BUILT PLANS TO THE ENGINEER UPON COMPLETION OF THE WATER SYSTEM.

## WATER SERVICE SUBMITTAL LIST

THE FOLLOWING IS A PARTIAL LIST OF SUBMITTALS REQUIRED FOR THE WATER SERVICE PORTION OF THIS PROJECT. THIS DOES NOT CONSTITUTE A COMPLETE LIST AS IT WILL DEPEND UPON THE CONTRACTOR'S METHODS.

CONSTRUCTION PLANS, (INCLUDES DRAWINGS AND WRITTEN DESCRIPTION OF METHODS)

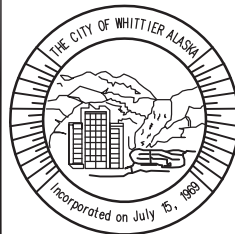
1. DEMOLITION PLAN.
2. TRAFFIC AND PEDESTRIAN CONTROL PLAN FOR CONNECTION TO EXISTING UTILITY MAIN.
3. GENERAL WATER VAULT AND WATER LINE INSTALLATION PLAN.

SHOP DRAWINGS AND MATERIAL CERTIFICATIONS

1. HDPE PIPE AND FITTINGS
2. WATER VAULT
3. PIPE SUPPORT PLAN
4. ALL U-BOLT, BOLTS AND MISCELLANEOUS HARDWARE
5. POTABLE WATER HOSE
6. HOSE WEIGHTS
7. CHECK VALVE
8. PIPE SUPPORTS
9. PROTECTIVE BOLLARDS
10. GATE VALVES AND BALL VALVES
11. WATER METER
12. BACK FLOW PREVENTER
13. HOSE BIBS
14. HDPE FLEX HOSE AND FITTINGS
15. AIR HOSE CONNECTION
16. PRESSURE TESTING RESULTS
17. RED-LINED AS-BUILT PLANS

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**P | N | D**  
**ENGINEERS, INC.**

PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **WATER & SEWER SERVICE NOTES**

DESIGNED BY: MTB DATE: NOVEMBER 2010  
CHECKED BY: DST PROJECT NO: 051020

SHEET NO: **29** OF 33

# GENERAL NOTES

**OWNER:** CITY OF WHITTIER  
THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL BE POSTED PROMINENTLY AT THE CONTRACTOR'S ONSITE PROJECT OFFICE.

ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, SPECIFICATIONS, SITE CONDITIONS, AND THESE NOTES SHALL BE REPORTED TO THE OWNER/ENGINEER AT ONCE. ANY FURTHER WORK PERFORMED BY THE CONTRACTOR AFTER FINDING SUCH DISCREPANCIES SHALL BE DONE AT HIS OWN RISK.

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**APPLICABLE CODES**  
ALL LOCAL CODES PLUS THE FOLLOWING SPECIFICATIONS, STANDARDS AND CODES ARE PART OF THESE GENERAL NOTES:

- INTERNATIONAL BUILDING CODE, 2010 EDITION
- AWS D1.1 STRUCTURAL WELDING CODE - 2010 EDITION
- ASTM SPECIFICATIONS
- ASCE 7 - 2005

IN THE EVENT THAT THERE IS A CONFLICT BETWEEN THE ABOVE REFERENCES AND THESE GENERAL NOTES THE FOLLOWING PRIORITY WILL BE FOLLOWED:

- ALL PROJECT PERMIT REQUIREMENTS
- THESE GENERAL NOTES AND PLANS
- LOCAL CODES (& MOA SPECIFICATIONS)
- THE SPECIFICATIONS, STANDARDS AND CODES LISTED ABOVE IN ORDER OF PRECEDENCE

**DESIGN CRITERIA FOR NEW FLOATS**

DEAD LOADS - ALL  
FLOAT LIVE LOAD - UNIFORM 40 PSF, 1000 POUND CONCENTRATED  
FLOAT SNOW LOAD - UNIFORM 40 PSF  
WIND LOAD - 120 MPH 3-SECOND WIND SPEED, EXPOSURE D REDUCED TO 1-MINUTE WIND WITH VESSEL SHAPE FACTORS.  
VESSEL SIZE - MAXIMUM LENGTH EQUAL TO ADJACENT FINGER FLOAT LENGTH + X FT.

**TIDAL LEVELS - ELEVATION DATUM FOR THIS PROJECT IS 0.0 MEAN LOWER LOW WATER**

EXTREME HIGH WATER +18.7 FT.  
HIGH TIDE LINE (HTL) +15.5 FT.  
MEAN HIGHER HIGH WATER (MHHW) +12.3 FT.  
MEAN HIGH WATER (MHW) +11.3 FT.  
MEAN TIDE LINE (MTL) +6.4 FT.  
MEAN LOW WATER (MLW) +1.5 FT.  
MEAN LOWER LOW WATER (MLLW) +0.0 FT.  
EXTREME LOW WATER -5.0 FT.

**SURVEY DATUM**

HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 4 NAD 83 METERS CONVERTED TO FEET. CONTROL IS BASED ON THE PUBLISHED 1992 VALUE OF THE USC&GS CONTROL MONUMENT "MARGIN 1956", WHICH HAS SINCE BEEN DESTROYED. TO INSURE THE CORRECT POSITION OF POINTS LOCATED BY "GPS", THE CONTRACTOR MUST PERFORM A "GPS SIGHT CALIBRATION" PRIOR TO THE USE OF GPS FOR LAYOUT PURPOSES.

**SURVEY**

ALL CONSTRUCTION SURVEYS SHALL BE PERFORMED BY OR UNDER THE SUPERVISION OF A SURVEYOR LICENSED IN THE STATE OF ALASKA.

AN ACCURATE METHOD OF HORIZONTAL CONTROL SHALL BE ESTABLISHED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER BEFORE CONSTRUCTION BEGINS. THE CONTRACTOR SHALL MAINTAIN THE CONTROL SYSTEM THROUGHOUT THE PROJECT. IF AT ANY TIME THE METHODS UTILIZED FAIL TO PROVIDE ACCURATE LOCATION THE CONTRACTOR MAY BE REQUIRED TO SUSPEND WORK. THE CONTRACTOR SHALL LAY OUT THE WORK FROM OWNER ESTABLISHED VERTICAL CONTROL POINTS AND CONTRACTOR ESTABLISHED HORIZONTAL CONTROL POINTS AND SHALL BE RESPONSIBLE FOR ALL REQUIRED MEASUREMENTS TAKEN FROM THESE POINTS.

THE CONTRACTOR SHALL FURNISH AT ITS OWN EXPENSE ALL STAKES, TEMPLATES, PLATFORMS, EQUIPMENT, RANGE MARKERS, AND LABOR AS MAY BE REQUIRED TO LAY OUT THE WORK FROM THE CONTROL POINTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THE CONTROL POINTS UNTIL AUTHORIZED TO REMOVE THEM. IF SUCH POINTS ARE DESTROYED OR DISTURBED THEY SHALL BE REESTABLISHED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

**STAGING AREA**

THE UPLAND STAGING AREA NOTED ON THE PLANS WILL BE AVAILABLE FOR USE BY THE CONTRACTOR FOR THE DURATION OF THE CONTRACT. THE CONTRACTOR SHALL NOT BLOCK THE ACCESS TO ADJOINING PROPERTIES OR TRAFFIC. ANY DAMAGE CAUSED BY THE CONTRACTOR OR HIS SUB CONTRACTORS TO THE PROPERTY OR ADJOINING PROPERTY SHALL BE REPAIRED IMMEDIATELY AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR USE OF THE SITE. THE CONTRACTOR IS REQUIRED TO CLEAN THE SITE STAGING AREA AS PART OF THE FINAL CLEANUP WORK ON THE PROJECT.

## MATERIALS AND CONSTRUCTION

**GENERAL**

THE FOLLOWING SECTION COVERS ALL PHASES OF CONSTRUCTION FOR THIS PROJECT, EXCEPT SEWER WATER AND ELECTRICAL REQUIREMENTS WHICH ARE COVERED ELSEWHERE. ADDITIONAL SPECIFIC REQUIREMENTS ARE COVERED IN THE PLANS. REQUIREMENTS COVERED ON THE PLANS SUPERSEDE THOSE IN THIS SECTION IN CASE OF CONFLICT.

MATERIALS NOT SPECIFICALLY NOTED IN THESE GENERAL NOTES OR ELSEWHERE ON THE DRAWINGS SHALL BE SUBMITTED BY THE SUPPLIER FOR APPROVAL. APPROVAL WILL BE BASED ON CONFORMANCE TO CURRENT STANDARDS UTILIZED BY THE OWNER. ALL MATERIALS MUST CONFORM TO GOOD WORKMANSHIP, ACCEPTABLE INDUSTRY STANDARDS AND MANUFACTURERS RECOMMENDATIONS.

CONSTRUCTION NOT MENTIONED IN THESE GENERAL NOTES SHALL BE PERFORMED USING REASONABLE CARE AND GOOD CONSTRUCTION PRACTICES. FINAL INSPECTION AND ACCEPTANCE OF ALL WORK NOT SPECIFICALLY INCLUDED IN THESE GENERAL NOTES OR ON THE DRAWINGS SHALL BE MADE BY THE ENGINEER. APPROVAL OF ALL METHODS AND PRODUCTS SHALL BE BASED UPON CONFORMANCE TO THE GENERAL NOTES, DRAWINGS, QUALITY OF WORKMANSHIP, APPLICABLE INDUSTRY STANDARDS, AND PERTINENT MANUFACTURERS RECOMMENDATIONS.

**FLOATS - GENERAL**

THE FLOAT MANUFACTURER SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN THE DESIGN AND MANUFACTURE OF TIMBER FLOATS. THE TIMBER FLOAT MANUFACTURING FACILITY SHALL PROVIDE THE PROPER ENVIRONMENT AND PHYSICAL CONDITIONS NECESSARY FOR CONSTRUCTION OF HIGH QUALITY TIMBER FLOAT UNITS.

WALKING SURFACES OF FLOAT UNITS SHALL BE LEVEL AND FLUSH WITH ADJOINING FLOAT UNITS AND SHALL FLOAT LEVEL UNDER DEAD LOAD. THE MAXIMUM SLOPE OF THE FLOAT DECK UNDER DEAD LOAD IS ONE (1) INCH PER TEN (10) FEET OF FLOAT LENGTH OR WIDTH. THE MAXIMUM HEIGHT VARIATION BETWEEN ADJOINING SURFACES SHALL BE 1/4-INCH.

AS EACH FLOAT UNIT IS UNIQUE TO A SPECIFIC LOCATION, IDENTIFICATION OF FLOAT UNITS IS CRUCIAL. ALL FLOATS SHALL BE CLEARLY IDENTIFIED WITH PLACARDS SECURELY ATTACHED ON ONE SIDE AND ONE END. PLACARD INFORMATION SHALL INCLUDE THE DATE OF MANUFACTURE, SPECIFIC FLOAT TYPE, JOB NUMBER, AND INDIVIDUAL FLOAT DESIGNATION LOCATED IN THE FLOAT SCHEDULE. IN ADDITION, MAIN FLOAT SCHEDULE DESIGNATIONS SHALL BE PAINTED WITH 4" WHITE STENCILED LETTERS ON THE OUTSIDE CENTER OF ONE BULLRAIL. FLOAT IDENTIFICATION LOCATIONS SHALL BE CONSISTENT AND CLEARLY VISIBLE.

THE FLOATS SHALL BE LIFTED AND SUPPORTED DURING STOCKPILING, TRANSPORTING, AND ASSEMBLY ONLY AT LIFTING OR SUPPORTING POINTS AS SHOWN ON THE APPROVED SHOP DRAWINGS. FLOATS SHALL BE PROTECTED AGAINST DAMAGE FROM ANY CAUSE. ANY DAMAGED UNITS SHALL BE REJECTED OR REPAIRED AT THE ENGINEERS OPTION. REPAIR OR REPLACEMENT SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

THE FIRST TWO FLOAT UNITS PRODUCED OF EACH WIDTH AND LENGTH SHALL BE CHECKED FOR FREEBOARD PRIOR TO ASSEMBLY OF REMAINING FLOATS OF THAT WIDTH AND LENGTH. FLOATS SHALL BE PLACED IN SALT WATER AND FREEBOARD MEASURED.

IF ADJUSTMENTS TO FREEBOARD ARE REQUIRED AS DETERMINED BY THE ENGINEER THE FOAM BILLET CONFIGURATION WILL BE MODIFIED. COST TO MODIFY FOAM BILLETS WILL BE NEGOTIATED WITH THE OWNER AT THAT TIME.

**POLYSTYRENE**

FLOAT INNER CORES SHALL BE CLOSED-CELL EXPANDED POLYSTYRENE IN ACCORDANCE WITH ASTM C578. THE DENSITY OF THE POLYSTYRENE SHALL BE BETWEEN 0.9 AND 1.0 POUNDS PER CUBIC FOOT AND BILLETS SHALL NOT CONTAIN GREATER THAN 5% REGRIND MATERIAL. THE FOAM SHALL HAVE A MAXIMUM ADSORPTION OF 4 PERCENT BY VOLUME AS TESTED BY ASTM C-272. FOAM SHALL HAVE A 10 PSI MINIMUM COMPRESSIVE STRENGTH AT 10% DEFORMATION AND A 25 PSI MINIMUM FLEXURAL STRENGTH. BILLETS SHALL HAVE A VARIATION IN DESIGN DIMENSION OF LESS THAN 1/8 INCH.

FOAM CORE SHALL BE MADE OF NOT MORE THAN 4 LAMINATED SECTIONS. LAMINATIONS SHALL BE GLUED WITH A LOW SOLVENT GLUE, AND SHALL BE STRAPPED TO PREVENT DELAMINATION DURING TRANSPORTATION AND HANDLING. LAMINATIONS SHALL BE PLACED IN SUCH A MANNER SO AS NOT TO PUT UNDO STRAIN FROM BENDING OR OTHER LOADING ON LAMINATED JOINTS.

POLYSTYRENE FOAM BILLETS SHALL BE COATED ON ALL SIDES WITH A 65-MIL DFT OF 100% SOLID POLYURETHANE. ALL UTILITY TRENCHES SHALL BE COATED ON ALL SIDES TO A THICKNESS OF 75-MIL DFT.

VERTICAL SEAMS AS SHOWN ON THE PLANS ARE ALLOWED IF ALL EXTERNAL SURFACES OF EACH INDIVIDUAL BILLET ARE COATED WITH 50-MIL DFT OF POLYURETHANE. BILLET DIMENSIONAL TOLERANCES SHALL BE AS FOLLOWS: (SUBMIT BILLET GEOMETRY FOR ENGINEER REVIEW.)

WIDTH- MAXIMUM OF 1/4" GAP BETWEEN BILLET AND ADJACENT GLULAM.  
LENGTH- MAXIMUM OF 1/2" GAP BETWEEN BILLET AND ADJACENT DIAPHRAGM.

**EXTRA POLYSTYRENE FOAM BILLETS**

35 FULL-SIZE (10"x20"x9") AND 25 HALF-SIZE (10"x20"x4"-6") POLYSTYRENE LEVELING BILLETS SHALL BE PROVIDED IN THE BASE CONTRACT AND CONSIDERED INCIDENTAL TO THE FLOAT SYSTEM. THESE BILLETS SHALL BE COATED PER THE POLYSTYRENE SPECIFICATION FOUND IN THESE GENERAL NOTES.

THE CONTRACTOR SHALL INSTALL EXTRA LEVELING BILLETS UNDER FLOATS AS REQUIRED TO OBTAIN THE FOLLOWING FREEBOARD REQUIREMENTS AS MEASURED BY THE ENGINEER. FINAL FREEBOARD AND SLOPES SHALL BE MEASURED AFTER ALL FLOAT UTILITIES AND ATTACHMENTS HAVE BEEN INSTALLED.

NEW TIMBER FLOATS: AS DETAILED IN THE PLANS MINIMUM w/ A MAX DIFFERENCE OF 1" BETWEEN CORNERS OF FLOAT UNITS

THE CONTRACTOR SHALL SUBMIT A BILLET INSTALLATION PLAN FOR ENGINEER APPROVAL. BILLET INSTALLATION SHALL BE PROVIDED IN THE BASE CONTRACT & CONSIDERED INCIDENTAL TO FLOAT INSTALLATION.

**FLOAT INSTALLATION**

ALL NEW AND EXISTING FLOATS SHALL BE HANDLED IN A MANNER THAT WILL NOT CAUSE DAMAGE TO THE FLOAT. ALL FLOAT CONNECTIONS ARE DESIGNED TO ACCOMMODATE THE REQUIRED VESSELS LOADS ONLY WHEN INSTALLED AS A COMPLETE FLOAT SYSTEM AS SHOWN IN THESE PLANS. DAMAGE TO THE FLOAT CONNECTION HARDWARE AND FLOAT STRUCTURE WILL OCCUR IF FLOATS ARE LEFT IN PLACE WITHOUT THE PROPER SUPPORT STRUCTURES AROUND THEM. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE AT THE OWNER'S PREFERENCE, AND AT NO COST TO THE OWNER, ANY FLOAT AND/OR STRUCTURAL COMPONENT THAT IS DAMAGED BECAUSE OF IMPROPER INSTALLATION OR SUPPORT.

**STRUCTURAL STEEL PILES**

STEEL PILES FOR FLOATS SHALL CONFORM TO ASTM A252, GRADE 3 WITH ASTM A36 CHEMISTRY SUITABLE FOR WELDING OR APPROVED EQUIVALENT. ALL PILES SHALL BE GALVANIZED. SPIRAL WELD PILES ARE NOT ALLOWED.

**FLOAT PILE INSTALLATION**

ALL FLOAT PILES SHALL BE DRIVEN PLUMB THROUGH THE PILE HOOPS IN SUCH A MANNER TO ALLOW THE FLOAT FULL MOVEMENT THROUGH THE TIDES WITHOUT BINDING. EACH FLOAT PILE SHALL BE CAPABLE OF 10,000 POUNDS OF BEARING. SHOULD VIBRATORY HAMMER REFUSAL OCCUR PRIOR TO ACHIEVING COMPLETE EMBEDMENT, SEE "K FLOAT PLAN" SHEET FOR FLOAT PILE & GANGWAY PILE BEARING REQUIREMENTS.

**PIPE PILE DRIVING**

ALL PILES SHALL BE DRIVEN. THE CONTRACTOR SHALL SUBMIT A PLAN FOR PILE DRIVING. THE PLAN SHALL CONTAIN HAMMER TYPE AND DRIVING METHOD FOR ALL PIPE TYPES. THE CONTRACTOR SHALL NOT MOBILIZE HAMMERS AND RELATED EQUIPMENT PRIOR TO RECEIVING WRITTEN APPROVAL OF THE PLAN. THE CONTRACTOR SHOULD ALLOW ONE WEEK FOR REVIEW OF THE PLAN BY THE ENGINEER. ALL PILE DRIVING METHODS SHALL MEET THE REQUIREMENTS OF THE PERMITS ISSUED FOR THIS PROJECT.

ALL FLOAT PILES SHALL BE DRIVEN WITH A VIBRATORY HAMMER, APE 200 OR EQUIVALENT AND IMPACT HAMMER AS REQUIRED TO THE NECESSARY EMBEDMENT AS SHOWN ON THE DRAWINGS. ALL GANGWAY PILES SHALL BE DRIVEN WITH AN IMPACT HAMMER HAVING A MINIMUM 45,000 FT-LBS ENERGY TO OBTAIN NECESSARY EMBEDMENT & CAPACITY AS SHOWN ON THE DRAWINGS. PILE CAPACITY AND EMBEDMENT SHALL BE DETERMINED SOLELY BY THE ENGINEER.

ANY HAMMER THAT CAUSES DAMAGE TO THE PILES DURING DRIVING OPERATIONS SHALL BE SUBSTITUTED WITH AN ACCEPTABLE ALTERNATE HAMMER AT NO ADDITIONAL EXPENSE TO THE OWNER. IMPACT HAMMERS SHALL BE SUPPLIED WITH NEW CAPBLOCK CUSHIONS, WHICH SHALL BE CHANGED AT THE MANUFACTURER'S RECOMMENDED CYCLE. THE CONTRACTOR'S DRIVING PLAN SHALL INCLUDE MANUFACTURER'S RECOMMENDATIONS AND INFORMATION ON HAMMER CUSHIONS.

PILES SHALL BE PLACED WITHIN 1% OF SPECIFIED VERTICAL ALIGNMENT AND WITHIN 2 INCHES OF SPECIFIED LOCATION AT CUTOFF. PILES HITTING OBSTACLES, MISALIGNED PILES AND PILES THAT HAVE NOT ACHIEVED MINIMUM PENETRATION PRIOR TO REFUSAL SHALL BE PULLED BY THE CONTRACTOR WITH A VIBRATORY HAMMER AND REDRIVEN AT NO ADDITIONAL COST TO THE OWNER. A VIBRATORY HAMMER WITH A MINIMUM OF 300 HORSEPOWER AND MINIMUM ECCENTRIC MOMENT OF 4,000 IN-LBS OR AS OTHERWISE APPROVED BY ENGINEER MUST BE AVAILABLE AND ON SITE DURING ALL PIPE PILE DRIVING OPERATIONS.

PILE LENGTHS SHALL BE SUPPLIED AS SPECIFIED.

ALL PILE INSTALLATIONS SHALL BE CONDUCTED WITH ENGINEER PRESENT. THE CONTRACTOR SHALL ASSIST THE ENGINEER IN MONITORING THE PILE DRIVING. THE CONTRACTOR SHALL MARK EACH PILE WITH ONE-FOOT INCREMENTS WITH EVERY FIVE-FOOT INCREMENT NUMBERED. FOR DETERMINATIONS OF PILE REFUSAL OR CAPACITY, THE CONTRACTOR SHALL MARK THE PILES WITH ONE-INCH INCREMENTS DURING THE FINAL DRIVE. THE MARKS SHALL BE VISABLE/READABLE FROM ALL SIDES OF THE PILE.

**DRAFT**  
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PROJECT: <b>WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I</b>	
TITLE: <b>GENERAL NOTES (1 OF 4)</b>	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
CHECKED BY: DST	PROJECT NO: 051020
SHEET NO: <b>30</b> OF 33	

## GENERAL NOTES (CONT.)

ALL RECLAIMED STEEL PILES, EXTRA NEW STEEL PILES AND STEEL PIPE PILE CUTOFFS 10' AND LONGER SHALL BE DELIVERED TO THE OWNER. CUTOFFS SHORTER THAN 10' SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL RETRIEVE PIPE CUTOFFS THAT FALL INTO HARBOR WATER. THE CONTRACTOR SHALL REMOVE THE PIPE CUTOFFS FROM THE PROJECT SITE.

PILES SHALL BE DRIVEN TO REQUIRED PILE CAPACITY AND EMBEDMENT AS SHOWN ON THE DRAWINGS. PILE CAPACITY AND EMBEDMENT WILL BE DETERMINED SOLELY BY THE ENGINEER.

PILE SPLICES SHALL BE COMPLETE JOINT PENETRATION WITH BACKING RINGS PER AWS SPECIFICATIONS. CARE SHALL BE TAKEN THAT MEMBERS REMAIN IN STRAIGHT ALIGNMENT THROUGH SPLICES. NO PIECE OF PILE LESS THAN 5 FEET LONG SHALL BE SPLICED.

### FLAT SHEET PILE MATERIALS

ALL FLAT SHEET PILES SHALL BE NEW PS31 AND PS27.5 AS SHOWN ON THE DRAWINGS. ALL PS31 SHEET PILE, WYE PILES AND X-PILES SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123 AND ASTM A385, ALL OTHER FLAT SHEET PILES SHALL BE UNCOATED. ALL FLAT SHEET PILE SHALL MEET THE REQUIREMENTS OF ASTM A328 OR A572 GRADE 50 WITH A MAXIMUM CARBON EQUIVALENCY (CE) OF 0.44, CALCULATED PER THE LATEST EDITION OF AWS D1.1, AND BE INSTALLED FULL LENGTH WITHOUT SPLICES. MINIMUM INTERLOCK TENSILE STRENGTH SHALL BE 20,000 LBS PER INCH, AND ALLOWABLE FLAT SHEET INTERLOCK SWING ANGLE SHALL BE 7° MINIMUM FROM CENTER, EACH WAY. SHEET PILES SHALL BE PROVIDED WITH 2.5-INCH DIAMETER PICKING EYES, WITH A CENTER OF HOLE TO EDGE DISTANCE OF 6 INCHES. PICKING HOLES SHALL BE PROVIDED ON AT LEAST ONE END OF ALL SHEET PILES AND FABRICATED ITEMS.

A PORTION OF THE REQUIRED SHEET PILE IS PROVIDED BY THE OWNER. A DETAILED OWNER SUPPLIED MATERIALS LIST IS INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL ADDITIONAL SHEET PILE. SHOULD THE MANUFACTURER OF THE CONTRACTOR SUPPLIED SHEET PILE DIFFER FROM THE OWNER SUPPLIED MATERIALS, A MAKE-UP SHEET, AS DETAILED IN THE PLANS, SHALL BE USED IN ALL AREAS WHERE SHEETS FROM DIFFERING MANUFACTURERS CONNECT.

### FLAT SHEET PILE FABRICATION

WYE AND ANCHOR PILES SHALL BE FABRICATED SUCH THAT THE FINISHED SHEET PILE CAMBER DOES NOT VARY BY MORE THAN 1/8 INCH IN ANY 10-FOOT LENGTH, AND THE FINISHED SHEET PILE SWEEP DOES NOT VARY BY MORE THAN 1/8 INCH IN ANY 5-FOOT LENGTH. CONTROL HEAT INPUT TO MINIMIZE DISTORTION. HEAT STRAIGHTEN PER ASIC AS REQUIRED. FABRICATOR SHALL SUBMIT WYE PILE FABRICATION AND QUALITY CONTROL PLAN.

### FLAT SHEET PILE HANDLING

SHEET PILE SHALL BE STORED AND HANDLED PER MANUFACTURER RECOMMENDATIONS TO PREVENT DEFLECTION, DISTORTION AND DAMAGE TO THE PILING. PILES SHALL BE LOADED, TRANSPORTED AND UNLOADED IN A HORIZONTAL POSITION, AS SINGLE UNITS OR IN BUNDLES UP TO FOUR UNITS ACCORDING TO THE PILE LENGTH AND THE LIFTING CAPACITY OF THE HOISTS. PILES UP TO 40-FOOT IN LENGTH SHALL BE TRANSPORTED BY LIFTING AT LEAST TWO POINTS. THE POINTS SHALL BE NOT MORE THAN 16 FEET FROM THE ENDS OF THE PILES. SHEET PILE MAY BE STACKED ON TOP OF EACH OTHER PROVIDED THEY ARE OFFSET SIDEWAYS SO THAT THE INTERLOCKS ARE SITUATED ALTERNATELY IN THE SAME VERTICAL PLANE. STACKING OF SHEET PILE SHALL BE SEPARATED BY SQUARE TIMBER PLACED PER MANUFACTURER ALONG THE LENGTH OF THE PILE TO LIMIT DEFORMATION. THE END OVERHANG SHALL NOT BE OVER 5 FEET, SPACING OF TIMBERS SHALL NOT BE OVER 10 FEET.

### OPEN CELL FLAT SHEET PILE DRIVING

CONTRACTOR'S PILE DRIVING SUPERINTENDENT OR PROJECT MANAGER SHALL HAVE EXPERIENCE WITH INSTALLATION OF AT LEAST 3 OPEN CELL OR CLOSED CELL BULKHEADS OF SIMILAR MAGNITUDE WITHIN THE LAST SEVEN (7) YEARS. SUBMIT QUALIFICATIONS AND RESUME PRIOR TO MOBILIZATION.

SHEET PILES SHALL BE DRIVEN FULL LENGTH WITH A VIBRATORY AND/OR IMPACT HAMMER BY METHODS WHICH WILL ACHIEVE PENETRATION WITHOUT PILE DAMAGE. ALL SHEET PILE DRIVING METHODS AND EQUIPMENT SHALL BE SUBMITTED TO THE ENGINEER AND APPROVED BEFORE DRIVING STARTS. ALL DRIVING SHALL BE DONE WITH THE ENGINEER PRESENT.

PILES SHALL BE DRIVEN SUCH THAT THE TIPS OF ADJACENT PILES DO NOT VARY MORE THAN 5-FOOT. NO FACE SHEET PILE IN ANY CELL UNIT SHALL BE DRIVEN MORE THAN 5-FOOT BEYOND ANY OTHER SHEET IN THAT CELL UNIT. IN INSTANCES OF HARD DRIVING, THIS DISTANCE SHALL BE REDUCED TO 2 FT. HARD DRIVING OF SHEET PILE SHALL BE DEFINED AS A PILE ADVANCEMENT RATE OF LESS THAN 6-INCHES PER MINUTE OR WHEN INTERLOCKS BECOME OVERHEATED (150°F). ADDITIONAL ASSISTIVE METHODS SUCH AS: CHANGING OF VIBRATORY HAMMER FREQUENCY, PILE PROBING, PRE-DRILLING, EXCAVATION, OR WATER JET MAY BE REQUIRED DURING HARD DRIVING. THE ENGINEER SHALL BE CONTACTED IMMEDIATELY IF HARD DRIVING IS ENCOUNTERED.

IT IS RECOMMENDED THAT A SHEET PILE THREADER (STAB CAT® OR SIMILAR) BE USED DURING THREADING OF ALL SHEET PILE. SNIPING OF SHEET PILE SHALL ONLY OCCUR AT THE TOP OF THE SHEET PILE WITHIN THE PORTION OF SHEET ABOVE FINAL CUTOFF ELEVATION PER THE PROVIDED DETAIL. TEMPORARY WELDS SHALL NOT BE PERFORMED ON SHEET PILE INTERLOCKS WITHOUT ENGINEER APPROVAL. TEMPORARY WELDS LOCATED ON THE SHEET PILE SHALL BE REMOVED BY GRINDING AND SHALL BE FLUSH WITH THE ORIGINAL SURFACE. TEMPORARY WELDS SHALL NOT BE INTENTIONALLY BROKEN (I.E. DRIVEN THROUGH) DURING SHEET PILE DRIVING. COATING SHALL BE REPAIRED WHERE THEY WILL BE EXPOSED AFTER CONSTRUCTION IS COMPLETE.

CONTRACTOR SHALL PROVIDE A REGISTERED SURVEYOR TO CONFIRM CELL LAYOUT PRIOR TO INSTALLING SHEET PILE AND PROVIDE PERIODIC CHECKS OF LAYOUT AND ALIGNMENT DURING INSTALLATION.

### FLAT SHEET PILE INSTALLATION TOLERANCE

FACE AND ENDWALL SHEET PILES AND SHALL BE DRIVEN USING A TEMPLATE. CONTRACTOR SHALL SUBMIT TEMPLATE SHOP DRAWINGS FOR REVIEW PRIOR TO DRIVING SHEETS. FACE SHEET PILES SHALL NOT BE DRIVEN MORE THAN 3 INCHES FROM PLAN LOCATION AT CUTOFF ELEVATION, NOR MORE THAN A 1/4-INCH-PER-FOOT LENGTH OUT OF PLUMB IN ANY DIRECTION. FACE AND ENDWALL SHEETS SHALL BE DRIVEN AND LEFT 1 FOOT ABOVE PLANNED CUT-OFF ELEVATION AND MONITORED AS DESCRIBED BELOW BEFORE CUT-OFF.

TAILWALL SHEET PILES SHALL BE DRIVEN IN A STRAIGHT LINE OR SMOOTH CURVE AS SHOWN, WITH PILES NOT MORE THAN 2 FEET FROM PLAN LOCATION, NOR MORE THAN A 1/2-INCH PER FOOT LENGTH OUT OF PLUMB IN ANY DIRECTION. DRIVING OF TAILWALL SHEETS SHALL BE DRIVEN FROM THE MOST CONSTRAINED END TOWARDS THE FREE END (I.E. FROM WYE TOWARDS ANCHOR).

WYE PILES SHALL BE DRIVEN NOT MORE THAN 2 INCHES FROM PLAN LOCATION AT THE TOP, AND NOT MORE THAN 1/4-INCH PER FOOT OF LENGTH OUT OF PLUMB. THE PLAN DISTANCE FROM CENTERLINE TO CENTERLINE OF WYE SECTIONS AT THE TOP SHALL BE MAINTAINED WITH RIGID BRACING, AFTER DRIVING AND DURING FILL OPERATIONS. THE PLAN WYE DRIVING LOCATION SHALL BE DETERMINED IN CONSULTATION WITH THE ENGINEER AS THE COMPLETED CELLS ARE EXPECTED TO MOVE OUTWARDS 6 INCHES OR MORE AS THE CELL EXPANDS.

### OBSTRUCTIONS

IF OBSTACLES ARE ENCOUNTERED ALONG THE CELL FACE THAT WOULD INTERFERE WITH SHEET DRIVING, THE DEBRIS SHALL BE EXCAVATED, REMOVED, AND THE SUBSEQUENT VOID REFILLED. IF OBSTACLES ARE ENCOUNTERED ALONG THE TAIL WALL, THE DEBRIS WILL BE REMOVED AS PREVIOUSLY STATED, OR THE WALL ALIGNMENT SHALL BE CURVED AWAY FROM THE OBSTACLE IN A SMOOTH CURVE AS APPROVED BY THE ENGINEER. IN SUCH EVENTS, THE ENGINEER SHALL BE CONTACTED IN ADVANCE OF REMOVING THE OBSTACLE OR REALIGNING THE TAILWALL. SHOULD SOFT SOILS BE ENCOUNTERED, FACE SHEETS MAY REQUIRE SUPPORT FROM THE TEMPLATE BEFORE FILLING CELL. CONTRACTOR'S SHALL DEVELOP METHOD NECESSARY TO EMBED SHEET PILES AS IDENTIFIED IN THE DRAWINGS.

### POST DRIVING

AFTER DRIVING ALL SHEETS WITHIN A CELL TO REQUIRED ELEVATION AND PRIOR TO BACKFILLING, THE CONTRACTOR SHALL PULL AND RE-DRIVE A MINIMUM OF 10% OF THE SHEETS WITHIN THE CELL TO VERIFY PROPER INTERLOCK CONNECTION AND ALIGNMENT BETWEEN SHEETS. THE SHEET PILE SHALL BE PULLED TO AN ELEVATION SUCH THAT 15-FOOT +/- 2 FOOT OF THE SHEET REMAINS THREADED BETWEEN THE ADJACENT SHEETS. PULLING AND RE-DRIVING OF SHEETS SHALL BE PERFORMED WITH THE OWNER'S REPRESENTATIVE PRESENT.

### TIDAL VARIATION

TIDAL VARIATION WILL AFFECT SHEET PILE CONSTRUCTION. RESULTING POTENTIAL DIFFERENTIAL WATER HEADS INSIDE AND OUTSIDE CELL CONSTRUCTION MUST BE MINIMIZED. TO ACCOMPLISH THIS, HOLES UP TO 12 INCHES IN DIAMETER MAY BE CUT THROUGH TAIL WALLS AT LOCATIONS APPROVED BY THE ENGINEER.

### OPEN CELL SHEET PILE FILLING

FILL WITHIN THE SHEET PILE CELLS SHALL CONSIST OF MATERIALS AS INDICATED IN THE PLANS. THE INITIAL FILL FROM EXISTING MUDLINE TO ELEVATION +5 MLLW SHALL NOT BE DUMPED INTO FINAL POSITION, BUT SHALL BE DUMPED ON TOP OF THE EMBANKMENT AND PUSHED INTO PLACE IN A MANNER THAT WILL INSURE PROPER PLACEMENT SUCH THAT VOIDS, POCKETS, SEGREGATION AND BRIDGING WILL BE REDUCED TO A MINIMUM.

FILL SHALL BE PLACED IN 12-INCH-THICK MAXIMUM HORIZONTAL LIFTS ABOVE ELEVATION +5 MLLW. EACH LIFT SHALL BE COMPACTED BY NO LESS THAN 5 PASSES OF A 10-TON VIBRATORY ROLLER. SMALLER COMPACTORS AND ADDITIONAL CARE SHALL BE USED TO COMPACT WITHIN 5 FEET OF THE DOCK FACE SHEET PILES TO PREVENT DAMAGE OR DISTORTION TO THE BULKHEAD FACE. SPECIAL CARE SHALL ALSO BE USED TO OBTAIN THOROUGH COMPACTION AGAINST TAIL WALL SHEET PILES.

FILL SHALL BE PLACED AS FOLLOWS AROUND SHEET PILE CELLS TO PREVENT DISTORTION OF THE BULKHEAD. ALL FACE AND ADJACENT TAIL WALL SHEETS IN A CELL SHALL BE INSTALLED TO REQUIRED ELEVATION PRIOR TO PLACING FILL AGAINST THE FACE OF THE CELL. PLACE FILL IN APPROXIMATELY LEVEL LIFTS ACROSS THE ENTIRE CELL AREA. FILL AROUND TAIL WALL SHEETS FIRST, THEN FILL AGAINST FACE SHEETS. THE ELEVATION OF FILL BETWEEN ADJACENT CELLS SHALL NOT DIFFER BY MORE THAN 3 FEET. THE CONTRACTOR SHALL USE RIGID BRACING BETWEEN WYES THAT SHALL BE INSTALLED PRIOR TO CELL FILLING. THE CONTRACTOR IS CAUTIONED THAT UNEVEN FILLING OF CELLS OR FAILURE TO MAINTAIN PLAN DISTANCE BETWEEN WYES WILL RESULT IN UNDESIRABLE DISTORTIONS OF THE SHEET PILE WALL WHICH THE CONTRACTOR SHALL BE REQUIRED TO CORRECT.

MATERIAL THAT IS LOST TO TIDE OR WAVE ACTION SHALL NOT BE CONSIDERED A PAY ITEM BUT SHALL BE INCIDENTAL TO THE CONTRACT SUM.

### OPEN CELL BULKHEAD STABILIZATION

DURING AND AFTER FILLING, THE BULKHEAD FACE IS EXPECTED TO MOVE 6 INCHES OR MORE OUTWARD AND TO SETTLE VERTICALLY. AFTER FILLING TO WITHIN 2 FOOT OF FINISHED GRADE, THE FILLING SHALL BE DISCONTINUED AND VERTICAL AND HORIZONTAL MOVEMENT OF THE CELLS WILL BE MEASURED BY THE CONTRACTOR EVERY THREE DAYS UNTIL THE CELL SETTLEMENT HAS STABILIZED.

CELL SETTLEMENT MAY BE CONSIDERED STABILIZED WHEN SHEET PILE WYE DIRECTIONAL MOVEMENT (HORIZONTAL AND/OR VERTICAL) RATES SLOW TO A 7-DAY AVERAGE OF 0.05 FOOT OR LESS PER WEEK (7 DAYS) AS DETERMINED BY THE ENGINEER. AFTER STABILIZATION, SHEET PILE CUTOFF, SHEET PILE INTERLOCK WELDING, BOARDWALK FACE BEAM INSTALLATION AND FILLING TO FINISH ELEVATION CAN BEGIN. ADDITIONAL GRADING MAY BE REQUIRED TO COMPENSATE FOR BULKHEAD SETTLEMENT AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT SUM.

### BOARDWALK FACE BEAM ALIGNMENT

AFTER CELL SETTLEMENT HAS STABILIZED AS DEFINED IN "OPEN CELL BULKHEAD STABILIZATION", THE CONTRACTOR SHALL PROVIDE AN AS-BUILT SURVEY OF THE CONSTRUCTED SHEET PILE DOCK SPECIFICALLY IDENTIFYING ALL FINAL WYE LOCATIONS AND THE SEAWARD CELL APEX OF EACH CELL TO THE ENGINEER. A FINAL BOARDWALK FACE ALIGNMENT SHALL BE ESTABLISHED AND APPROVED BY THE ENGINEER TO WHICH THE BOARDWALK FACE BEAM SHALL BE ALIGNED. THE BOARDWALK FACE BEAM SHALL BE INSTALLED AFTER A FINAL DOCK FACE ALIGNMENT HAS BEEN ESTABLISHED BY THE ENGINEER.

### STRUCTURAL STEEL

MISCELLANEOUS PLATES AND SHAPES SHALL BE ASTM A36 OR A572 GR. 50, GALVANIZED, UNLESS OTHERWISE NOTED. PIPE SHALL BE ASTM A53, GRADE B, TYPE E OR S, GALVANIZED, UNLESS OTHERWISE NOTED. TUBES SHALL BE ASTM A500, GRADE B, GALVANIZED, UNLESS OTHERWISE NOTED.

### STEEL WELDING

PER LATEST AWS D1.1 BY WELDERS QUALIFIED PER AWS FOR THE TYPE AND POSITION OF THE WELDS WELDED. ALL FILLER METAL SHALL MEET CHARPY IMPACT CRITERIA OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT AND SHALL HAVE A MAXIMUM CARBON CONTENT OF 0.20%. ALL SMAW ELECTRODES SHALL BE PROPERLY CONDITIONED LOW HYDROGEN. SUBMIT WELDER QUALIFICATIONS AND WELDING PROCEDURES TO ENGINEER FOR APPROVAL AT LEAST 15 DAYS PRIOR TO WELDING.

ALL WELDS SHALL BE 100% VISUALLY INSPECTED BY THE CONTRACTOR. IN ADDITION 10% OF ALL CJP SHOP WELDS SHALL BE TESTED BY UT EXAMINATION OR OTHER NDT METHODS APPROVED BY ENGINEER. ALL FIELD WELDS WILL BE 100% VISUALLY INSPECTED BY THE OWNER. ANY WELD FAILING INSPECTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, WHICH WILL INCLUDE THE COST FOR RETESTING.

NO WELDING THROUGH GALVANIZED COATING WILL BE PERFORMED. THE GALVANIZING WITHIN ONE INCH OF THE WELD SHALL BE REMOVED AND REPAIRED AFTER WELDING.

### BOLTS

ALL BOLTS CONNECTING STEEL TO CONCRETE OR STEEL TO STEEL CONNECTIONS SHALL BE ASTM A325, GALVANIZED, UNLESS OTHERWISE NOTED. WASHERS SHALL BE USED UNDER BOTH HEAD AND NUT OF ALL ASTM A325 BOLTS. ALL STAINLESS STEEL (S.S.) FASTENER COMPONENTS SHALL BE TYPE 316 S.S.

IF "NYLOCK" NUTS ARE SPECIFIED WITH STEEL BOLTS, THE BOLT SHALL BE THREADED AND GALVANIZED TO ACCEPT THE CORROSION RESISTANT NYLOCK NUT.

ALL OTHER BOLTS, THRU-RODS, LAG SCREWS, NUTS, WASHERS, NAILS AND SPIKES SHALL MEET ASTM A307 OR ASTM A36 OR SIMILAR REQUIREMENTS AS APPROVED BY THE ENGINEER AND SHALL BE HOT-DIPPED GALVANIZED. WASHERS SHALL BE USED UNDER BOTH HEAD AND NUT OF ALL ASTM A307 AND ASTM A36 BOLTS AND THRU-RODS AND UNDER THE HEAD OF ALL ASTM A307 AND ASTM A36 LAG SCREWS. MALLEABLE IRON WASHERS SHALL BE USED IN ALL AREAS WHERE THE BOLT HEAD OR NUT SHALL BEAR AGAINST WOOD, EXCEPT UNDER ECONOMY HEADS.

### GALVANIZING

ALL STEEL, PILE AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED PER ASTM A385 A123 OR A153 AFTER FABRICATION UNLESS OTHERWISE NOTED. (DAMAGED GALVANIZING, INCLUDING THAT REMOVED FOR WELDING SHALL BE REPAIRED BY SPRAY METALLIZING).

### GALVANIZING/METALIZING REPAIR

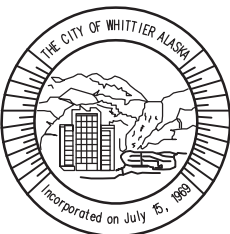
CONTRACTOR SHALL TAKE NECESSARY MEANS TO PROTECT COATINGS DURING TRANSPORTATION, HANDLING, WELDING, CUTTING AND INSTALLATION. DAMAGED GALVANIZING INCLUDING THAT REMOVED FOR WELDING, WELDS, CUTS, GOUGES OR OTHER HOLIDAYS IN THE COATINGS SHALL BE REPAIRED BY THE CONTRACTOR.

SHOP REPAIR OF GALVANIZING/METALIZING SHALL BE DONE BY MEANS OF SPRAY METALLIZING. FIELD REPAIR DAMAGED GALVANIZING BY SPRAY METALLIZING IF OVER 100 SQUARE INCHES BY SPRAY METALLIZING. "GALV STICK" OR ENGINEER APPROVED EQUAL MAY BE USED FOR FIELD REPAIR UNDER 100 SQUARE INCHES. CONTRACTOR SHALL SUBMIT REPAIR MATERIALS AND METHODS OF REPAIRS TO ENGINEER FOR REVIEW AND APPROVAL.

### GALV-STICK

GALV-STICK SHALL BE ZINC OR ALUMINUM ALLOY. PREPARE DAMAGED GALVANIZING WITH A GRINDER AND THEN ABRASE THE ENTIRE SURFACE WITH A WIRE BRUSH WHERE APPLICATION OF THE GALVANIZING REPAIR IS REQUIRED. CLEAN THE SURFACE TO REMOVE ALL GREASE, OIL, AND SURFACE DEPOSITS. HEAT LOCAL AREA TO MANUFACTURER SUGGESTED TEMPERATURE AND APPLY GALV-STICK IN MANNER TO ACHIEVE MINIMUM 10 MIL TOTAL FINAL THICKNESS. AFTER COOLING, APPLY 2 COATS OF ZINC-RICH PAINT. ALLOW EACH COATING TO DRY THOROUGHLY BETWEEN APPLICATIONS.

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**ENGINEERS, INC.**

PROJECT: **WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I**

TITLE: **GENERAL NOTES (2 OF 4)**

DESIGNED BY:	MTB	DATE:	NOVEMBER 2010	SHEET NO: <b>31</b>
CHECKED BY:	DST	PROJECT NO:	051020	

OF 33



**GENERAL NOTES (cont.)**

**SPRAY METALLIZING**

ALL SPRAY METALLIZING SHALL BE PERFORMED AWS C2.23-2003. STEEL SUBSTRATE SHALL BE PREPARED TO SSPC-SP/NACE NO.1 WHITE METAL BLAST FINISH WITH A MINIMUM ANGULAR PROFILE DEPTH OF 2.5 MILS. BLAST MEDIA SHALL BE KLEEN BLAST SIZE 16-30 AS MANUFACTURED BY KLEEN INDUSTRIAL SERVICES (800-227-1134) OR ENGINEER APPROVED EQUAL. AFTER BLASTING REMOVE DUST AND SPENT ABRASIVE FROM THE SURFACE BY USING OIL-FREE PRESSURIZED AIR, BRUSHING, OR VACUUM CLEANING. THE STEEL SURFACE TEMPERATURE SHALL BE AT LEAST 5 DEGREES F ABOVE THE DEW POINT OF THE AMBIENT AIR TEMPERATURE. FOR FLAMESPRAYING THE INITIAL STARTING AREA SHALL BE PREHEATED TO 250 DEGREES F. FEEDSTOCK SHALL BE 85/15 ALUMINUM/ZINC APPLIED IN SEVERAL PASSES (APPROXIMATELY 2-4 MILS/PASS) TO A MINIMUM DRY COATING FILM THICKNESS OF 12 MILS. DURING APPLICATION, SPRAY GUN SHALL BE HELD PERPENDICULAR TO THE SUBSTRATE AT A STAND-OFF DISTANCE OF 6 TO 10 INCHES. THE CONTRACTOR SHALL PERIODICALLY VERIFY PASS AND TOTAL COATING THICKNESSES. TENSILE BOND STRENGTH SHALL MEASURED PER ASTM D4541 AT THE START OF EACH SHIFT, AFTER ANY CHANGE TO THE APPLICATION METHOD, OR EVERY 500 SF. THE MINIMUM TENSILE BOND SHALL BE 700 PSI. FIELD METALLIZING SHALL BE BOND TESTED BY AN OWNER'S REPRESENTATIVE WITH THE CONTRACTOR'S ASSISTANCE. CONTRACTOR SHALL SUBMIT METALLIZING EQUIPMENT, BLAST MEDIA, FEEDSTOCK MATERIAL CERTIFICATION, APPLICATION AND QUALITY CONTROL METHOD FOR ENGINEER REVIEW AND APPROVAL.

**RUBBER**

RUBBER BUSHINGS FOR PIANO HINGE CONNECTIONS SHALL BE NATURAL RUBBER COMPOUND REINFORCED WITH CARBON BLACK. HARDNESS SHALL BE 70 DUROMETER SHORE A. MINIMUM TENSILE STRENGTH OF 2000 PSI AS PER ASTM D412. ULTIMATE ELONGATION AT BREAK OF 300% AS PER ASTM D412. OPERATING TEMPERATURE SHALL BE -40° TO 158° FAHRENHEIT. ALL OTHER RUBBER COMPONENTS SHALL BE BUTYL RUBBER WITH 50 DUROMETER HARDNESS WITH TEMPERATURE RATING TO -20 DEGREES F.

FIT-UP OF EACH PIPE HINGE CONNECTION IS CRITICAL. PIPE HINGE RUBBER BUSHINGS MUST FIT INTO PIPE SEGMENTS, YET NOT ALLOW APPRECIABLE MOVEMENT WITHIN THE PIPE. FABRICATOR SHALL COORDINATE WITH BUSHING MANUFACTURER AND METAL FABRICATOR TO PRODUCE SAMPLE BUSHINGS AND A SAMPLE HINGE ASSEMBLY, COMPLETE WITH GALVANIZED COATING, AND USING PIPE FROM THE SINGLE BATCH OF PIPE PROPOSED TO BE USED FOR THE PROJECT. THIS SAMPLE ASSEMBLY SHALL BE USED TO DETERMINE FINAL BUSHING OUTSIDE DIAMETER REQUIRED TO ACHIEVE A FIT THAT IS SNUG-TIGHT WITHIN THE GALVANIZED PIPE. BUSHING DIMENSIONS INDICATED ON THE PLANS ARE FOR INITIAL FABRICATION ONLY. BUSHINGS MAY NEED TO THEN BE TURNED DOWN, ON A LATHE, TO ACHIEVE THE FINAL FIT-UP REQUIREMENTS. A SAMPLE BUSHING OF THE DIMENSIONS AS DETERMINED BY THE METHOD DESCRIBED ABOVE, COMPLETE WITH THE REQUIRED, PRESSED-FIT UHMW SLEEVE, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION OF BUSHINGS TO BE USED FOR THIS PROJECT.

**TIMBER PRESSURE TREATMENT**

ALL SAWN TIMBER, GLULAMINATED TIMBER, PLYWOOD, AND TIMBER PILES SHALL BE INCISED AND PRESSURE TREATED ACCORDING TO CURRENT AWWA SPECIFICATIONS TO THE FOLLOWING RETENTIONS:

- 1) SAWN TIMBER AND PLYWOOD LOCATED ABOVE WATERLINE SHALL HAVE A NET DRY SALT RETENTION OF NOT LESS THAN 0.60 POUNDS PER CUBIC FOOT OF ACZA (AMMONIACAL COPPER ZINC ARSENATE) IN THE ASSAY ZONE PER AWWA C18.
- 2) SAWN TIMBER LOCATED BELOW WATERLINE SHALL BE TREATED TO A MINIMUM RETENTION OF CREOSOTE OF 20 PCF PER AWWA C18.
- 3) GLULAMINATED TIMBERS SHALL BE TREATED TO A MINIMUM RETENTION OF CREOSOTE OF 12 PCF PER AWWA C28.

ALL TIMBER MEMBERS BEING MANUFACTURED SHALL BE PRODUCED IN ACCORDANCE WITH THE CURRENT INDUSTRY BEST MANAGEMENT PRACTICES (BMP) SET FORTH BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI).

THE CONTRACTOR SHALL HIRE AN INDEPENDENT AGENCY CERTIFIED BY THE AMERICAN LUMBER STANDARD COMMITTEE TO INSPECT TIMBER MEMBERS. INSPECTION PROCEDURES SHALL BE PERFORMED IN ACCORDANCE TO AWWA M2. THE INSPECTOR SHALL REPORT ALL FINDINGS DIRECTLY TO THE OWNER'S REPRESENTATIVE ON THE DAY OF INSPECTION. THE OWNER RESERVES THE RIGHT TO DO ADDITIONAL TESTING AT OWNER'S OWN EXPENSE.

THE MANUFACTURER SHALL NOTIFY THE INSPECTOR OF ALL PRESSURE TREATING DAYS AND TIMES A MINIMUM OF 24-HOURS IN ADVANCE. THE MANUFACTURER WILL AID THE INSPECTOR WITH OBTAINING SAMPLE TIMBERS AND PROVIDING LOCATION FOR TESTING.

EXCESSIVE EXTERIOR CREOSOTE RESIDUE, AS DICTATED BY THE INDUSTRY BMP, SHALL NOT BE ALLOWED AND MUST BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. EXCESSIVE INCISING THAT CAUSES STRUCTURAL DAMAGE TO THE TIMBER SHALL BE REJECTED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. "EXCESSIVE INCISING" IS DEFINED AS UNDUE INCISION DEPTHS AND INCISION DENSITY PER AREA OF TIMBER WHEN PRESERVATIVE RETENTION HAS BEEN ACHIEVED. EVIDENCE OF EXCESSIVE INCISING SHALL BE TIMBER FLAKING OR CHIPPING DUE TO LIGHTLY SCUFFING THE TIMBER SURFACE. IN NO CASE SHALL INCISING EXCEED THE MAXIMUMS ALLOWED BY NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION, SECTION 2.3.11.

TIMBER COMPONENTS SHALL BE CUT TO LENGTH, DRILLED, DAPPED, AND SHAPED BEFORE PRESSURE TREATING. ANY FIELD FABRICATION OR DAMAGE SHALL BE REPAIRED PER AWWA M4.

**CONCRETE**

CEMENT SHALL CONFORM TO ASTM C150 TYPE II, OR TYPE I OR III WITH TRI-CALCIUM ALUMINATE CONTENT BELOW 8%. AGGREGATE SHALL CONFORM TO ASTM C33 WITH MAXIMUM SIZE OF 3/4 IN. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 6,000 PSI. A MINIMUM OF 35 LBS/CY OF SILICA FUME SHALL BE ADDED TO CONCRETE. ENTRAINED AIR SHALL BE 4 TO 7%. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO SHALL BE 0.40. MATERIALS, BATCHING, MIXING AND TRANSPORTATION SHALL BE IN ACCORDANCE WITH ASTM C94. MIX DESIGN AND TESTING SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ACI 318 AND ACI 345. MIXING, FORMWORK, REINFORCEMENT, CONCRETE PLACEMENT, CONSOLIDATION, FINISHING AND CURING SHALL FOLLOW THE STANDARDS SET BY ACI 345.

THE CONTRACTOR SHALL SUBMIT A DETAIL FOR PANEL LIFTING MECHANISM. LIFTING MECHANISM SHALL BE LOCATED BELOW THE UPPER LAYER OF REINFORCEMENT. LIFTING MECHANISM SHALL NOT PROTRUDE FROM FINAL, IN-PLACE FINISH SURFACES OF CONCRETE.

**CONCRETE QUALITY CONTROL**

AIR ENTRAINMENT TESTS AND TEMPERATURE TESTS SHALL BE TAKEN BY AN ACI TECHNICIAN FROM EACH CONCRETE TRUCK, OR EVERY 10 CY OF CONCRETE WHERE TRUCKS ARE NOT UTILIZED. COMPRESSIVE STRENGTH TEST CYLINDERS SHALL ONLY BE TAKEN AFTER ALL ADDITIVES HAVE BEEN ADDED. A MINIMUM OF THREE (3) COMPRESSIVE TEST CYLINDERS WILL BE TAKEN DAILY, PER MIX. CONTRACTOR SHALL NOTIFY ACI TECHNICIAN AND OWNER'S REPRESENTATIVE OF ALL CASTING DAYS AND TIMES A MINIMUM OF 24-HOURS IN ADVANCE. CONTRACTOR SHALL AID THE ACI TECHNICIAN WITH OBTAINING SAMPLES AND PROVIDING A LOCATION FOR CURING AND TESTING. AT NO TIME WILL WATER BE ADDED TO CONCRETE IN THE FIELD TO INCREASE WORKABILITY.

**REINFORCING STEEL**

ALL REINFORCING SHALL BE NEW BILLET STOCK GALVANIZED ASTM A706, GRADE 60 STEEL UNLESS NOTED OTHERWISE. BARS SHALL BE SUPPORTED ON APPROVED CHAIRS OR WELL-CURED CONCRETE BLOCKS. REINFORCING STEEL SHALL BE DETAILED, BENT, AND PLACED IN ACCORDANCE WITH THE LATEST ACI 318. TWO-INCH MINIMUM CLEARANCE UNLESS OTHERWISE NOTED. BARS SHALL BE CLEAN AND FREE FROM CUTTING OIL OR OTHER DELETERIOUS MATERIAL.

**NON-SKID COATING**

ALL STEEL WALKING SURFACES ON THE FLOATS & WALKWAYS SHALL BE PROVIDED WITH A NON-SKID COATING. A NON-SKID COATING SHALL CONSIST OF THE SPECIFIED YELLOW GRIT PAINT OR A ROUGH SPRAY METALLIZED SURFACE. ALL FLAT, TOP SURFACES OF ALL CONNECTION ASSEMBLIES SHALL BE COATED WITH "SURE-GRIP", SAFETY YELLOW, TO A MINIMUM 60-MIL DFT. SURE-GRIP IS AVAILABLE FROM FARWEST PAINT MANUFACTURING COMPANY IN TUKWILA, WA. THE COATING SHALL BE APPLIED IN THE SHOP, SPECIFICALLY PER MANUFACTURER'S RECOMMENDATIONS. FINISH SHALL HAVE NAPE THAT PROVIDES ADEQUATE NON-SKID CHARACTERISTICS ACCEPTABLE TO INDUSTRY STANDARDS. DAMAGED FINISH SHALL BE CAUSE FOR REJECTION. SUPPLIER SHALL PROVIDE SAMPLES OF COATED, GALVANIZED STEEL PLATE W/ VARIOUS ROUGHNESS TO ENGINEER FOR APPROVAL.

**BOLLARD PAINT FINISH**

PROTECTIVE BOLLARDS SHALL BE PAINTED WITH TWO 4-MIL COATS OF ZINC OXIDE PAINT. TOP COAT SHALL BE "CATERPILLAR YELLOW" OR OTHER SUITABLE BRIGHT SAFETY YELLOW.

**ARMOR ROCK**

ARMOR ROCK SHOULD BE HARD (UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 10,000 PSI ASTM D-2938), ANGULAR, AND HAVE NO MORE THAN 30% LOSS AT 1000 REVOLUTIONS, AS DETERMINED BY ASTM C-535, BULK SPECIFIC GRAVITY NOT LESS THAN 2.60 (AASHTO T 104), WATER ABSORPTION NOT MORE THAN 2.5% (WAQTC FOP FOR AASHTO T 85), AND BREADTH AND THICKNESS AT LEAST 1/3 ITS LENGTH. ROUNDED ROCK WILL NOT BE ACCEPTED. STONES SHALL ALSO ENDURE FREEZE/THAW (25 CYCLES) HAVING LESS THAN 5% LOSS (ASTM C-666), SODIUM SULFATE SOUNDNESS (5 CYCLES) HAVING LESS THAN 12% LOSS (ASTM C-88), AND EXPANSIVE BREAKDOWN IN ETHYLENE GLYCOL (15 DAYS) HAVING LESS THAN 8% LOSS (CRD-C148).

ARMOR ROCK SHOULD BE WELL GRADED WITH WEIGHTS OF INDIVIDUAL STONES RANGING FROM AT LEAST 30 LBS TO 400 LBS MAX. AT LEAST 50 PERCENT OF THE INDIVIDUAL STONES SHALL WEIGH MORE THAN 100 LBS. THE ARMOR LAYER SHALL BE A MINIMUM OF 3.0 FEET THICK AND AT LEAST THREE (3) STONES THICK. STONE SHALL BE PLACED SUCH THAT A WELL KEYS, STABLE ROCK MASS WITH A RELATIVELY REGULAR SURFACE IS OBTAINED. PLACING STONE THROUGH CHUTES, DROPPING STONE MORE THAN 4 FEET, AND OTHER METHODS WHICH SEGREGATE OR DAMAGE THE STONE WILL NOT BE PERMITTED. THE FINISHED REVETMENT SURFACE SHALL BE FREE FROM POCKETS OF STONE LESS THAN AVERAGE SIZE. INDIVIDUAL STONES SHALL NOT PROTRUDE MORE THAN 12 INCHES ABOVE THE AVERAGE LEVEL OF THE SLOPE.

**BULKHEAD FILL**

BULKHEAD FILL SHALL BE FREE OF ORGANICS, ICE, SNOW, AND OTHER DELETERIOUS MATERIALS. SUITABLE NON-CONTAMINATED DREDGE SPOILS MAY BE USED AS BULKHEAD FILL. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ADDITIONAL FILL SOURCES AS NECESSARY. MAX FINES = 8%.

**LEVELING COURSE**

LEVELING COURSE SHALL MEET MOA SPECIFICATIONS FOR LEVELING COURSE MATERIAL. AC PAVEMENT-SHALL MEET MOA SPECIFICATIONS FOR CLASS-E ASPHALT CONCEPTS.

**GEOTEXTILE FABRIC**

GEOTEXTILE SHALL BE NONWOVEN GEOTEX 1071 AS MANUFACTURED BY PRONEX ON APPROVED EQUAL. GEOTEXTILE SHALL BE LAID OUT PARALLEL TO SLOPE SUCH THAT ADJACENT SHEETS OVERLAP A MINIMUM OF 24-INCHES. INSTALL PER MANUFACTURES RECOMMENDATIONS.

**TOPSOIL AND SEEDING**

TOPSOIL AND SEEDING SHALL BE PAID LUMP SUM. WORK SHALL INCLUDE TOPSOIL, SEED, MULCH, FERTILIZER, AND WATERING AS NECESSARY TO ESTABLISH A PERMANENT VEGETATIVE MAT. SEEDING SHALL BE COMPLETED BETWEEN MAY 15TH AND AUGUST 15TH.

FURNISH TOPSOIL THAT IS REPRESENTATIVE OF THE EXISTING NATURAL ORGANIC BLANKET OF THE LOCAL AREA. SOIL WITH A MINIMUM OF 5% ORGANIC CONTENT, AS DETERMINED BY ATM 203, MAY BE USED AS TOPSOIL. REMOVE ROOTS, STUMPS, UNNATURAL MATERIAL, AND ROCKS GREATER THAN 3 INCH IN DIAMETER.

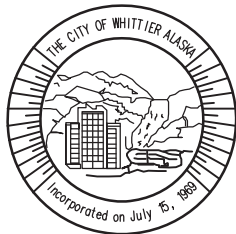
SEED MIX SHALL BE 50% 'NORCOAST' BERING HAIRGRASS, 40% 'ARCTARED' RED FESCUE, AND 10% 'NORTRAN' TUFTED HAIRGRASS. CONTRACTOR MAY SUBMIT ALTERNATE SEED MIXES THAT ADHERE TO THE RECOMMENDATIONS FROM "REVEGETATION MANUAL FOR ALASKA" PUBLISHED BY THE DEPARTMENT OF NATURAL RESOURCES. SEED SHALL BE APPLIED AT 0.7 LBS PER 1,000 SQUARE FEET. FERTILIZER WITH AN N-P-K OF 20-20-10 SHALL BE APPLIED AT A RATE OF 12.0 LBS PER 1,000 SQUARE FEET.

APPLY SEED WITH A BONDED FIBER MATRIX MULCH SUCH AS "FLEXTERRA" OR APPROVED EQUAL. MULCH SHALL BE APPLIED A RATE OF 70.0 LBS PER 1,000 SQUARE FEET.

PRIOR TO SEEDING, TOPSOIL SHALL BE TRACK WALKED, OR OTHERWISE PREPARED, TO PROVIDE GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE.

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PROJECT: <b>WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I</b>	
TITLE: <b>GENERAL NOTES (3 OF 4)</b>	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
CHECKED BY: DST	PROJECT NO: 051020
SHEET NO: <b>32</b> OF 33	

**GENERAL NOTES (CONT.)**

**DREDGING**

ALL MATERIAL SHALL BE REMOVED BY THE CONTRACTOR WITHIN THE DREDGING PRISM SHOWN ON THE DRAWINGS. MATERIAL SHALL BE DREDGED USING SUCTION DREDGE, CLAMHELL, BACKHOE OR OTHER APPROVED EQUIPMENT. ANY SUBMERGED OR FLOATING DEBRIS WILL BE REMOVED CONCURRENTLY WITH DREDGING AND DISPOSAL. THE DREDGED MATERIAL WILL BE DISPOSED OF AT AN OWNER APPROVED LOCATION. HAZARDOUS MATERIAL/WASTE SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS. WHEN SUCH MATERIALS/WASTE ARE ENCOUNTERED THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE OWNER.

CARE SHALL BE TAKEN WHEN DREDGING NOT TO HIT THE SHEET PILE OR OTHER STRUCTURAL COMPONENTS, DURING DREDGING OR TO EXCAVATE DEEPER THAN THE ALLOWABLE OVER-DEPTH SHOWN ON THE DRAWINGS. ANY DAMAGE TO THE STRUCTURE, WHICH IS CAUSED BY THE CONTRACTOR'S OPERATIONS, AS DETERMINED BY OWNER SHALL IMMEDIATELY BE REPAIRED TO THE PRE-DAMAGE CONDITION AT THE CONTRACTOR'S EXPENSE.

A PRE-DREDGE SURVEY SHALL BE COMPLETED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL A MINIMUM OF 2 WEEKS PRIOR TO COMMENCING WITH THE WORK. THE PRE-DREDGE SURVEY SHALL ALSO INCLUDE QUANTITY CALCULATIONS FOR POTENTIAL DREDGE VOLUMES. THE ENGINEER WILL VERIFY THE CALCULATED VOLUMES PRIOR TO COMMENCEMENT OF DREDGING OPERATIONS. A POST-DREDGE SURVEY SHALL BE BASED ON A 25-FT GRID AND BE COMPLETED AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FINAL PAYMENT. PROGRESS SURVEYS SHALL BE SUBMITTED. ALL SURVEY SUBMISSIONS SHALL INCLUDE A HARD COPY AND AN ELECTRONIC COPY OF THE DIGITAL SURVEY DATA.

A 1-FOOT ALLOWABLE OVER-DEPTH IS THE DREDGING TOLERANCE ALLOWED TO ENSURE REMOVAL OF ALL MATERIAL WITHIN THE DREDGING LIMITS. MATERIAL REMOVED FROM WITHIN THE 1-FOOT ALLOWABLE OVER-DEPTH WILL BE INCLUDED IN THE PAY QUANTITIES. DREDGING BEYOND THE 1-FOOT ALLOWABLE OVER-DEPTH WILL NOT BE PAID FOR. NO OVER-DEPTH ALLOWANCE IS PERMITTED BELOW THE SIDE SLOPES.

NO LATER THAN 14 DAYS PRIOR TO THE SCHEDULED START OF DREDGING AND DISPOSAL OPERATIONS, THE CONTRACTOR SHALL SUBMIT TO OWNER, FOR REVIEW AND APPROVAL, A DETAILED DREDGING AND DISPOSAL WORK PLAN, RIGHT OF WAY WORK PLAN AND QUALITY CONTROL PLAN. THE PLANS SHALL INCLUDE THE FOLLOWING:

- ORDER IN WHICH THE WORK IS TO BE PERFORMED INDICATING THE WORK SEQUENCE, EQUIPMENT TO BE USED, METHODS OF OPERATION AND THE TIME REQUIRED TO COMPLETE EACH ACTIVITY. A LIST OF KEY PERSONNEL AND SUPERVISORY CHAIN WILL BE INCLUDED.
- PROCEDURES AND EQUIPMENT TO BE USED FOR DREDGING AND DISPOSAL OF DREDGED MATERIALS, INCLUDING NAME AND/OR NUMBER OF EQUIPMENT AND ITS CAPACITY, DUMPING SCHEDULE, HOURS OF OPERATION AND NAMES OF OPERATORS.
- PROCEDURES AND EQUIPMENT FOR: COORDINATING AND PERFORMING HYDROGRAPHIC SURVEYS; POSITIONING DUMP BARGES AT THE DISPOSAL SITE AND ENVIRONMENTAL MONITORING, INCLUDING PROCEDURES FOR EMERGENCY SPILL CONTAINMENT AND REMOVAL OPERATIONS.
- PROCEDURES AND EQUIPMENT FOR COLLECTING AND DISPOSING OF SUBMERGED AND FLOATING DEBRIS AS A RESULT OF DREDGING AND DISPOSAL OPERATIONS.
- THE CONTRACTOR'S SUPERINTENDENT AND SITE POSITIONING SUPERVISOR AND THE OWNER REPRESENTATIVE SHALL ATTEND A PRE DISPOSAL CONFERENCE TO REVIEW THE WORK PLAN AND QUALITY CONTROL PROCEDURES FOR DISPOSAL POSITIONING..

THE POST-DREDGE SURVEY MUST DEMONSTRATE THAT ALL MATERIAL HAS BEEN REMOVED FROM WITHIN THE DREDGE PRISM INDICATED ON THE DRAWINGS. THE POST-DREDGE SURVEY MUST DEMONSTRATE THAT ALL AREAS WITHIN THE LIMITS IDENTIFIED IN THE PLANS ARE AT OR BELOW THE REQUIRED DREDGE ELEVATION, AND THAT THE SIDE SLOPE IS NO STEEPER THAN INDICATED ON THE DRAWINGS. TO RECEIVE APPROVAL FOR PAYMENT, THE POST-DREDGE SURVEY AND FINAL QUANTITY CALCULATIONS SHALL BE SUBMITTED TO THE OWNER.

**DREDGE AREA SWEEP**

DREDGED BASIN SHALL BE SWEEP PRIOR TO FINAL APPROVAL TO VERIFY THE COMPLETE ABSENCE OF HIGH SPOTS AND THAT THE BOTTOM IS RELATIVELY SMOOTH AND FREE OF ROCK PROTRUSIONS AND POINTS. THE OWNER SHALL BE PRESENT TO OBSERVE. THE DREDGED AREA SHALL BE SWEEP USING AT LEAST ONE OF THREE METHODS:

- SIDE-SCAN SONAR AND/OR MULTI-BEAM HYDROGRAPHIC SURVEY TECHNOLOGY
- SWEEP THE DREDGE BASIN WITH A STEEL PIPE, 20 TO 40 FEET LONG, 10" TO 14" DIAMETER, 0.5" MIN. WALL THICKNESS. THE STEEL PIPE SHALL BE SUSPENDED AT A PRESET DEPTH AND TOWED BEHIND A VESSEL. IF THE PIPE DOES NOT HIT ANYTHING THEN IT IS KNOWN THAT THE AREA IS FREE OF OBSTRUCTIONS AT THAT DEPTH.
- WIRE-DRAGGING: WIRE DRAGGING IS DONE BY ATTACHING A STEEL CABLE OR CHAIN TO TWO VESSELS, AND TOWED BETWEEN THEM AT A PRESET DEPTH. IF IT SNAGS, THEN THE OBSTRUCTION IS LOCATED. THE WIRE IS SUSPENDED AT A KNOWN DEPTH USING MULTIPLE BUOYS. IF THE CABLE RUNS FREELY ACROSS AN AREA, THEN IT IS KNOWN THAT THAT AREA IS FREE OF OBSTRUCTIONS TO THAT DEPTH. A DESCRIPTION OF WIRE DRAGGING IS AT THE FOLLOWING WEB SITE:  
<WWW.NJSCUBA.NET/ARTIFACTS/MISC\_WIRE\_DRAG.HTML>

**MISPLACED MATERIALS**

SHOULD THE CONTRACTOR, DURING THE EXECUTION OF THE WORK, LOSE, DUMP, THROW OVERBOARD, SINK OR MISPLACE ANY DREDGE MATERIAL, DREDGE, BARGE, MACHINERY, APPLIANCE, OR OTHER MATERIALS, THE CONTRACTOR SHALL PROMPTLY RECOVER AND REMOVE THE SAME.

**DISPOSAL OF MATERIALS**

ALL UNSUITABLE MATERIAL THAT CANNOT BE REUSED WITHIN THE LIMITS OF THE PROJECT SHALL BE DISPOSED OF AT THE DISPOSAL LOCATION. HAZARDOUS MATERIAL/WASTE SUCH AS AND BATTERIES SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS AT NO COST TO THE OWNER. WHEN SUCH MATERIALS/ WASTE ARE ENCOUNTERED THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE OWNER.

**EXISTING STRUCTURES**

THE CONTRACTOR SHALL REMOVE IN THEIR ENTIRETY THE STRUCTURES SHOWN ON THE PLANS.

**TBT CONTAMINATED SOIL**

DURING THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT LABORATORY ANALYSIS OF SOIL SAMPLES INDICATED THAT TRIBUTYL TIN (TBT) WAS PRESENT IN THE INSITU SOIL SURROUNDING THE EXISTING BOAT GRID.

DREDGE MATERIAL FROM THE TOP TWO FEET OF MATERIAL IN THE TBT CONTAMINATED SOIL AREA SHALL BE DISPOSED OF AT A SUITABLE OFFSITE LOCATION. MATERIAL IN THIS AREA SHALL BE DREDGED WITHIN THE SITE IS NATURALLY DEWATERED TO THE GREATEST EXTENT POSSIBLE (I.E. LOW TIDE) TO MINIMIZE RE-SUSPENSION OF TBT INTO THE WATER COLUMN.

**SILT CURTAIN**

A SILT CURTAIN WHICH EXTENDS FROM WATER SURFACE TO SEA BOTTOM SHALL BE INSTALLED AND MAINTAINED ENCLOSING ALL DREDGING ACTIVITIES. PRIOR TO AND DURING DREDGING THE CURTAIN SHALL REMAIN IN PLACE UNTIL ALL DREDGING IS COMPLETE. CARE SHALL BE TAKEN TO MAINTAIN THE CURTAIN IN GOOD WORKING ORDER AND TO PROTECT THE CURTAIN FROM CONFLICTS WITH VESSELS USING THE HARBOR. SUBMIT SILT CURTAIN DETAILS AND MAINTENANCE AND OPERATION PLAN FOR REVIEW AND APPROVAL. SEE USACOE PERMIT FOR ADDITIONAL REQUIREMENTS.

**SUBMITTALS**

THE ENGINEER'S REVIEW OF SUBMITTALS WILL BE FOR GENERAL CONFORMANCE ONLY AND IT SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR TO CONFORM TO ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. ANY INTENDED DEVIATION FROM THE PLANS AND SPECIFICATIONS MUST BE SPECIFICALLY IDENTIFIED BY THE CONTRACTOR AND SPECIFICALLY APPROVED BY THE ENGINEER TO BE ACCEPTABLE.

THE CONTRACTOR SHALL FULLY REVIEW AND STAMP SHOP DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING DRAWINGS TO THE ENGINEER. SHOP DRAWINGS OF ALL FABRICATED MATERIALS SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO FABRICATION OR MOBILIZATION OF ANY ITEM. A MINIMUM OF THREE SETS SHALL BE PROVIDED FOR EACH SUBMITTAL, OF WHICH TWO WILL BE RETURNED TO THE CONTRACTOR. THE CONTRACTOR SHOULD ALLOW TWO WEEKS FROM THE TIME OF RECEIPT FOR REVIEW OF SUBMITTALS BY THE ENGINEER FOR A REASONABLE NUMBER OF DRAWINGS. THE CONTRACTOR AND FABRICATOR ARE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS THAT ACCURATELY SHOW THE APPROPRIATE DETAILS, DIMENSIONS, ASSEMBLY, MATERIAL REQUIREMENTS, AND OTHER REQUIREMENTS NECESSARY TO FABRICATE AND ERECT COMPONENTS OF THE STRUCTURE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. AT THE JUDGMENT OF THE ENGINEER, SHOP DRAWINGS SHALL BE REJECTED WHEN THEY EITHER DEVIATE SIGNIFICANTLY FROM THE CONTRACT REQUIREMENTS WITHOUT THE ENGINEER'S PRIOR APPROVAL, OR ARE UNACCEPTABLE DUE TO INCOMPLETENESS, LEGIBILITY, OR NUMBER OF ERRORS.

CERTIFICATIONS, MANUFACTURER'S DATA AND OTHER INFORMATION FOR ALL MATERIALS, INCLUDING THOSE NOT SPECIFICALLY SHOWN IN THESE NOTES OR ON INDIVIDUAL DRAWINGS, SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL TO VERIFY CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. IN THE EVENT THAT THE PLANS OR SPECIFICATIONS DO NOT SPECIFICALLY REFERENCE A MATERIAL, THE APPROVAL OF MATERIALS WILL BE BASED ON ITS CONFORMANCE TO THE INTERNATIONAL BUILDING CODE. ALL METHODS AND MATERIALS SHALL CONFORM TO THESE GENERAL NOTES, GOOD WORKMANSHIP, GENERALLY ACCEPTED INDUSTRY STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS.

WORK PERFORMED BY THE CONTRACTOR PRIOR TO RECEIVING OWNER/ENGINEERS WRITTEN APPROVAL OF REQUIRED SUBMITTALS SHALL BE AT THE CONTRACTORS OWN RISK. ANY SUCH WORK REQUIRED BY THE OWNER/ENGINEER TO BE REMOVED AND/OR REPLACED SHALL BE AT THE EXPENSE OF THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

THE FOLLOWING IS A PARTIAL LIST OF REQUIRED SUBMITTALS FOR THIS PROJECT. THIS DOES NOT CONSTITUTE A COMPLETE LIST AS IT WILL VARY DEPENDING UPON THE CONTRACTOR'S METHODS.

CONSTRUCTION PLANS (INCLUDES PLAN DRAWINGS AND WRITTEN DESCRIPTION OF METHODS):

- SURVEY PLAN AND UPDATES
- DEMOLITION PLAN
- GENERAL WORK PLAN SEQUENCING BY FLOAT DESIGNATION
- STAGING AREA PLAN - INCLUDING DATES OF USE, SECURITY AND PEDESTRIAN CONTROL PLAN
- PILE DRIVING PLAN AND EQUIPMENT
- FLOATATION BILLET INSTALLATION PLAN
- DREDGING, EXCAVATION WORK PLAN
- CROSS SECTIONS AND QUANTITY COMPUTATIONS
- SILT CURTAIN OPERATION PLAN
- DETAILED CONSTRUCTION SCHEDULE
- HARBOR MASTER'S BUILDING RELOCATION PLAN
- TRAFFIC CONTROL PLAN
- EXISTING FLOAT TEMPORARY ACCESS & UTILITY PLAN/NOTIFICATION

SHOP DRAWINGS AND MATERIAL CERTIFICATION

- STRUCTURAL STEEL SHOP DRAWINGS
- STEEL PIPE PILES
- GALVANIZING CERTIFICATION AND/OR METALLIZING CERTIFICATION
- METALLIZING REPAIR METHOD AND MATERIALS
- AWS WELDING CERTIFICATION FOR ALL WELDERS UTILIZED ON THE PROJECT
- WELDING PROCEDURES FOR ALL SHOP AND FIELD WELDS
- STEEL FABRICATION DRAWINGS
- TIMBER FLOAT SHOP DRAWINGS
- TIMBER GRADING AND PRESSURE TREATMENT CERTIFICATIONS
- STEEL PILE SHOES
- SIGN SHOP DRAWINGS
- UHMW SHOP DRAWINGS
- RUBBER PIPE HINGE BUSHING & COMPLETE SAMPLE w/ UHMW BUSHING
- CONCRETE MIX DESIGN & TEST RESULTS
- REINFORCING STEEL
- TRACTION PLATE
- POLYSTYRENE SHOP DRAWINGS & CUT SHEETS
- RED-LINED AS-BUILT DRAWINGS

TIMBER FLOAT SHOP DRAWINGS SHALL PICTORIALY DEMONSTRATE ALL ELEMENTS (TIMBERS, STEEL HARDWARE AND BOLTS, AND FOAM) THAT MAKE UP EACH TYPE OF FLOAT MODULE AND THE POSITION OF THE ELEMENTS ON THE FLOAT.

**AS-BUILT PLANS**

THE CONTRACTOR SHALL MAINTAIN A SET OF AS-BUILT PLANS IN THE ONSITE PROJECT OFFICE. THE AS-BUILT PLANS SHALL BE KEPT UP TO DATE THROUGHOUT THE PROJECT WITH THE LATEST AS-BUILT DIMENSIONS AND DETAILS AS APPROVED BY THE ENGINEER AND SHALL BE SUBMITTED TO THE OWNER AT THE END OF THE PROJECT. FINAL PROJECT PAYMENT SHALL NOT BE MADE TO THE CONTRACTOR UNTIL RED-LINED AS-BUILT DRAWINGS HAVE BEEN SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE OWNER/ENGINEER.

**DRAFT**  
**ISSUED FOR BID**  
**11/11/10**

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PROJECT: <b>WHITTIER SMALL BOAT HARBOR IMPROVEMENTS - PHASE I</b>	
TITLE: GENERAL NOTES (4 OF 4)	
DESIGNED BY: MTB	DATE: NOVEMBER 2010
CHECKED BY: DST	PROJECT NO: 051020
SHEET NO: <b>33</b> OF 33	