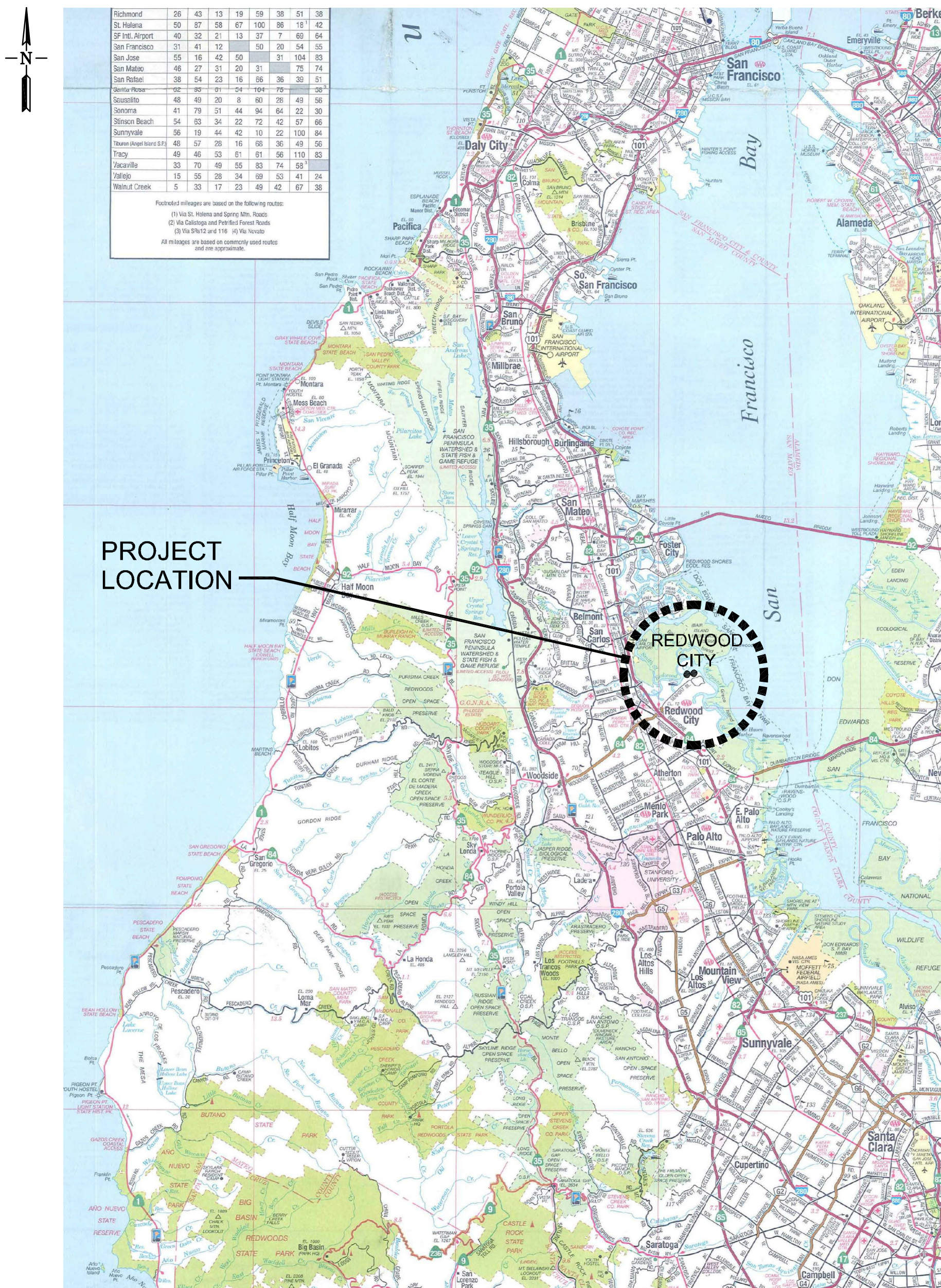


PORT OF REDWOOD CITY

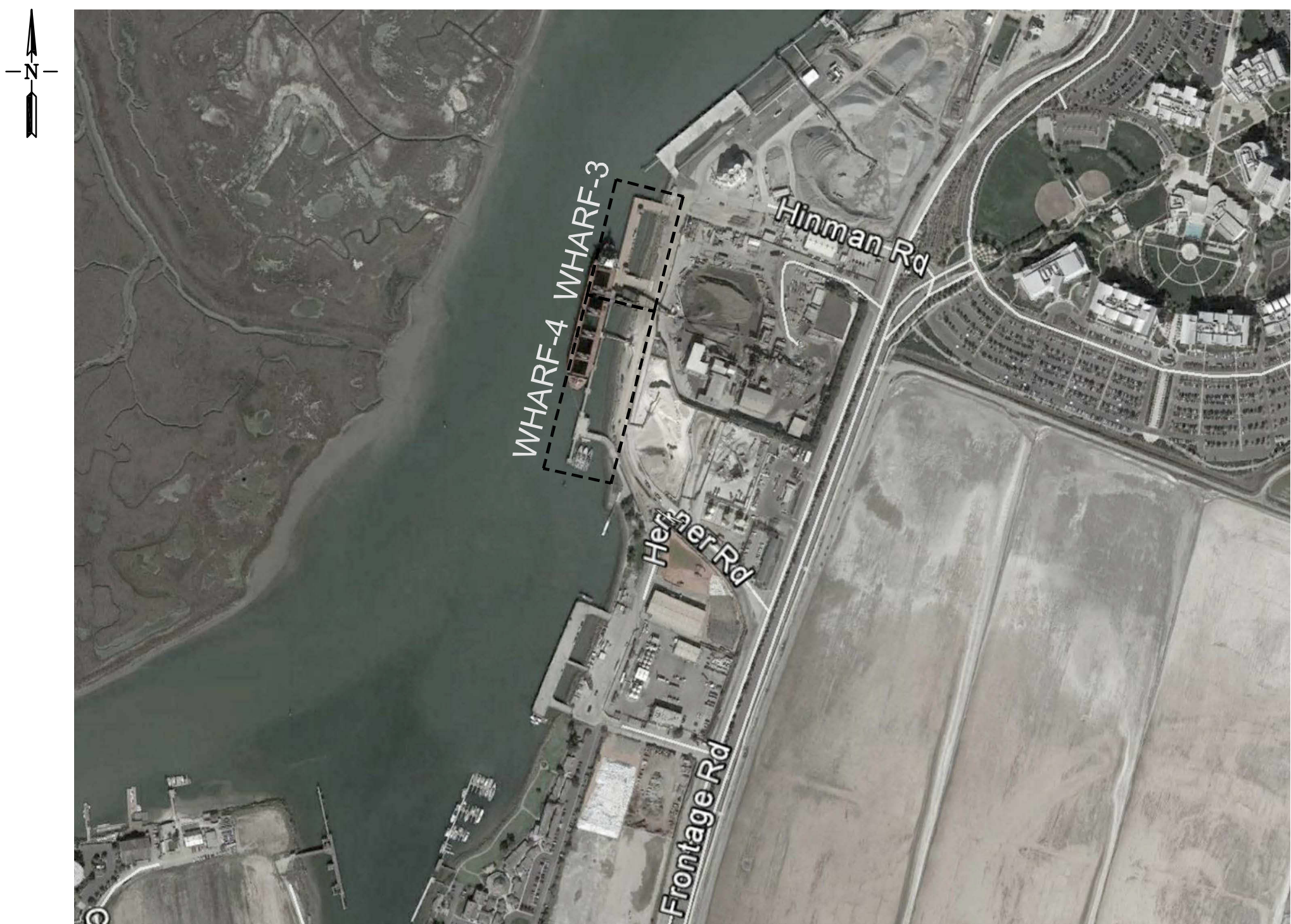
WHARVES 3 AND 4

FENDER SYSTEM REPLACEMENT

VICINITY MAP



PROJECT LOCATION



STRUCTURAL ENGINEER

COWI MARINE NORTH AMERICA
1300 CLAY STREET, 7TH FLOOR
OAKLAND, CA 94612
(510) 839-8972

GEOTECHNICAL ENGINEER

LANGAN TREADWELL ROLLO
555 MONTGOMERY STREET, SUITE 1300
SAN FRANCISCO, CA 94111
(415) 955-5200

SURVEYOR

PLS SURVEYS, INC.
2220 LIVINGSTON STREET, SUITE 202
OAKLAND, CA 94606
(510) 261-0900

MECHANICAL/ELECTRICAL ENGINEER

YEI ENGINEERS, INC.
7700 EDGEWATER DRIVE, SUITE 128
OAKLAND, CA 94621
(510) 383-1050

DRAWING INDEX

SHT. NO.	DRAWING NO.	DRAWING TITLE	REV.
1	G1	TITLE SHEET, VICINITY MAP, AND DRAWING INDEX	0
2	G2	GENERAL NOTES AND SPECIFICATIONS	0
3	G3	PROJECT SITE PLAN, NEW STRUCTURES	0
4	G4	MOORING ARRANGEMENTS	0
5	G5	GENERAL DETAILS AND PILE SCHEDULES	0
6	D1	WHARF 3 DEMOLITION PLAN	0
7	D2	WHARF 3 DEMOLITION DETAILS	0
8	D3	WHARF 3 DEMOLITION PHOTOS	0
9	D4	WHARF 4 DEMOLITION PLAN	0
10	D5	WHARF 4 DEMOLITION FENDER DETAILS	0
11	D6	STEEL WALKWAY DEMOLITION DETAILS	0
12	D7	WHARF 4 DEMOLITION PHOTOS	0
13	BD1	BREASTING DOLPHIN PLAN AND SECTION	0
14	BD2	EXTERIOR BREASTING DOLPHINS	0
15	BD3	BREASTING DOLPHIN DETAILS	0
16	BD4	CONCRETE PLAN	0
17	BD5	REINFORCEMENT DETAILS	0
18	F1	FENDER DETAILS - SHEET 1 OF 2	0
19	F2	FENDER DETAILS - SHEET 2 OF 2	0
20	WW1	WALKWAY PLAN AND ELEVATIONS	0
21	WW2	WHARF 4 WALKWAY DETAILS - SHEET 1 OF 2	0
22	WW3	WHARF 4 WALKWAY DETAILS - SHEET 2 OF 2	0
23	WW4	TRANSITION PLATE DETAILS - SHEET 1 OF 2	0
24	WW5	TRANSITION PLATE DETAILS - SHEET 2 OF 2	0
25	R1	DOLPHIN REPAIR	0
26	R2	REPAIR DETAILS 1	0
27	R3	DOLPHIN CRACK REPAIR LOCATIONS	0
28	R4	MISCELLANEOUS REPAIRS	0
29	E1	LEGEND, ABBREVIATIONS, GENERAL NOTES AND SINGLE LINE DIAGRAM	0
30	E2	ELECTRICAL SITE PLAN	0
31	E3	WALKWAY LIGHTING PLAN AND ELEVATIONS	0
32	E4	LIGHTING SCHEDULE AND SECTIONS, DETAILS	0
33	E5	SPECIFICATION	0
34	P1	PLUMBING LEGEND, ABBREVIATIONS, AND GENERAL NOTES	0
35	P2	PLUMBING SITE PLAN	0
36	P3	PLUMBING PLAN	0
37	P4	PLUMBING DETAILS	0



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675 SEAPORT BLVD
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WHARVES 3 AND 4
TITLE SHEET, VICINITY MAP,
AND DRAWING INDEX

SHEET NO.

G1

01 OF 37 SHEETS

A. GENERAL NOTES

- ## B. MATERIALS

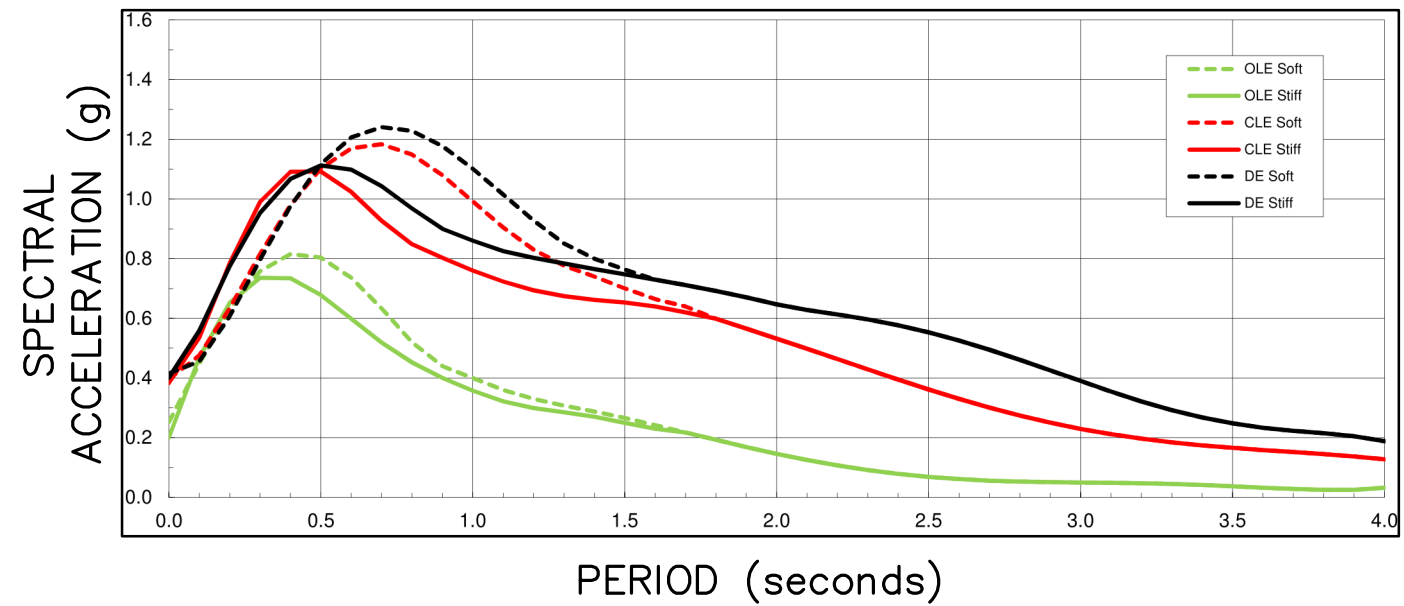
- PSI AT 28 DAYS.
- 3.3. MAXIMUM WATER CEMENT RATIO IS 0.40.
- 3.4. CHAMFER EDGES AND CORNERS $\frac{3}{4}$ ".

4. BOLTS AND WELDS

- 4.1. UNLESS OTHERWISE NOTED, BOLTS SHALL BE ASTM F3125 GRADE A325. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM F2329.
- 4.2. WELDS SHALL BE MADE WITH AWS D1.1 TABLE 3.1 FILLER METALS WITH 70 KSI MINIMUM TENSILE STRENGTH.
- 4.3. RETURN ALL WELDS AROUND CORNERS AND JOIN WITH ADJACENT WELDS. MAKE ALL JOINTS WATER TIGHT.
- 4.4. ANCHOR BOLTS SHALL BE F1554 GRADE 55 AND SHALL BE GALVANIZED.
- 4.5. EMBEDDED ANCHOR BOLTS SHALL BE INSTALLED WITH SET-XP ANCHORING ADHESIVE.
- 4.6. THROUGH BOLT ANNULUS TO BE SEALED WITH CORROSION PREVENTING GREASE.

C. DESIGN LOADS

- ## 6. SEISMIC



D. DESIGN VESSELS

1. LARGEST VESSEL: CSL ACADIAN. 74,500 DWT WITH LENGTH OVERALL OF 804 FT.
2. OTHER VESSELS: CSL ATLANTIC SUPERIOR, CSL IRON CHIEFTAIN, CSL TECUMSEH.

E. DEMOLITION

1. DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL LAWS AND REGULATIONS.
2. PILES TO BE REMOVED A MINIMUM OF 3 FT BELOW THE MUDLINE.
3. EXISTING TIMBER ASSUMED TO BE TREATED WITH CREOSOTE AND TO BE DISPOSED OF AT AN APPROVED FACILITY.
4. EMBEDDED ANCHORS TO BE CUT FLUSH WITH CONCRETE SURFACE AND TORCHED AND GROUTED TO PREVENT CORROSION.
5. PRIOR TO SAW CUTTING PRECAST-PRESTRESSED PANEL, SUBMIT DEMOLITION PLAN FOR APPROVAL. SPECIAL INSPECTION REQUIRED FOR CUTTING LOCATION. VERIFY LOCATION OF PRESTRESSED STRANDS BEFORE CUTTING.
6. PILES MAY NOT BE VISIBLE ABOVE WATERLINE BUT MAY BE PRESENT AND NEED TO BE REMOVED.
7. EXPOSED REBAR FROM CURB DEMOLITION OR ANY DEMOLITION PROCESS SHALL BE EPOXY GROUTED TO PREVENT CORROSION.

F. REPAIR

1. BOLLARDS SHALL BE BLASTED TO SSPC-SP6 AND CLEANED OF ANY GREASE OR OTHER FOREIGN MATTER WITH SUITABLE DEGREASER BEFORE APPLYING ANY COATINGS. BOLLARDS SHALL BE FINISHED WITH A 3-COAT PAINT SYSTEM AS RECOMMENDED BELOW OR APPROVED EQUAL:

BOLLARD MUST BE BLASTED AND RE-PRIMERED WITH:
 - 3-5 MILS CARBOZINC 859
 - INTERMEDIATE COAT, 4-6 MILS CARBOGUARD 893 CYCLOALIPHATIC AMINE EPOXY
 - TOP COAT, 2-3 MILS CARBOTHANE 134 ALIPHATIC ACRYLIC POLYURETHANE
2. THE EXTENT OF CRACKS IS CURRENTLY UNKNOWN, CONTRACTOR TO PROVIDE PICTURES AND REPAIR PLAN AFTER SPALLS AND CRACKS HAVE BEEN CHIPPED OUT DOWN TO SOUND CONCRETE FOR APPROVAL.
3. REPAIRS ON DOLPHINS TO BE PERFORMED BEFORE CONSTRUCTION OF NEW FENDERS.

G. PROJECT SPECIFIC REFERENCE DOCUMENTS

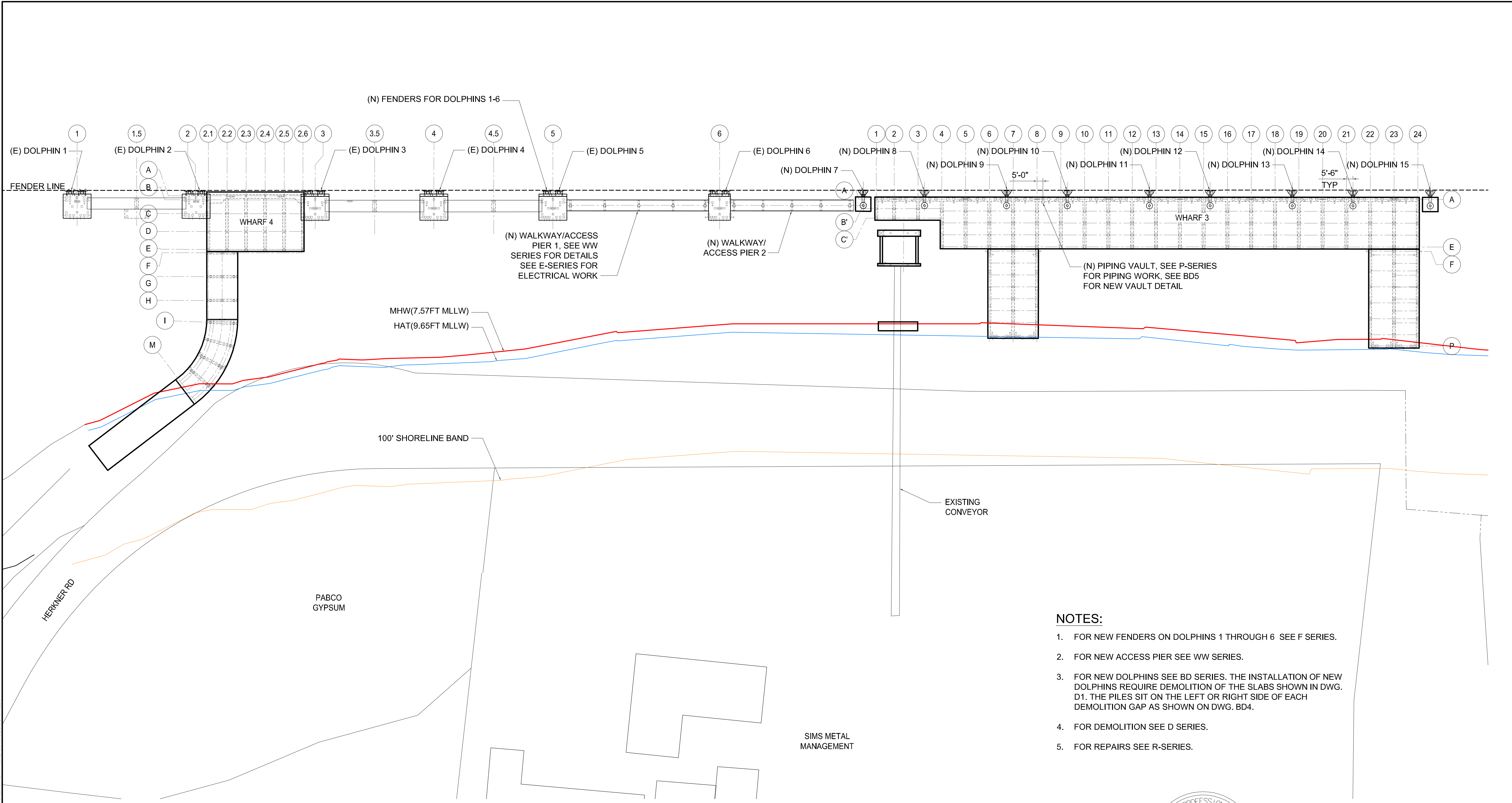
1. PLS SURVEYS, INC. SURVEY.
2. TREADWELL & ROLLO PORT OF REDWOOD CITY WHARVES 1 & 2
GEOTECHNICAL REPORT.
3. COWI MARINE NORTH AMERICA, INC. DESIGN BASIS.
4. VICKERMAN ZACHARY MILLER 1984 WHARF 3 DRAWING SET.

5. VICKERMAN ZACHARY MILLER 1983 WHARF 4 DRAWING SET .
6. URS CONSULTANTS 1994 DRAWING SET.
7. GKO MESSINGER & ASSOCIATES 1997 DRAWING SET.
8. LANGAN GEOTECHNICAL INVESTIGATION PORT OF REDWOOD CITY WHARVES 3 AND 4.

H. REFERENCE CODES AND STANDARDS

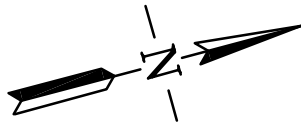
1. 2016 CALIFORNIA BUILDING CODE
2. MOTEMS. MARINE OIL TERMINAL ENGINEERING AND MAINTENANCE STANDARDS, CALIFORNIA STATE LANDS COMMISSION, 2013 CALIFORNIA BUILDING CODE CHAPTER 31F.
3. ACI 318–14. AMERICAN CONCRETE INSTITUTE, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," 2014.
4. AISC 14TH EDITION. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."
5. PIANC. PIANC INTERNATIONAL NAVIGATION ASSOCIATION, "GUIDELINES FOR THE DESIGN OF FENDER SYSTEMS: 2002," REPORT OF WORKING GROUP 33 OF THE MARITIME NAVIGATION COMMISSION.
6. PCI MANUAL. PRESTRESSED CONCRETE INSTITUTE, PCI DESIGN HANDBOOK: PRECAST AND PRESTRESSED CONCRETE, 7TH EDITION, 2013.
7. ASCE 7–10. AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES," 2010.

							DATE 09/30/16	SUBMITTED	DATE	REVIEWED	DATE	<div>PORT OF REDWOOD CITY</div> <div>675 SEAPORT BLVD</div> <div>REDWOOD CITY, CA 94063</div>	<div>WHARVES 3 AND 4</div> <div>GENERAL NOTES AND SPECIFICATIONS</div>	<div>SHEET NO.</div> <div>G2</div>
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						DATE 09/30/16	SUBMITTED	DATE	APPROVED	DATE				
						JUBA DELINEATED	ASSOCIATE ENGINEER	DATE	APPROVED	DATE				
						DATE 09/30/16	APPROVED	DATE	APPROVED	DATE				
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	DATE 09/30/16	APPROVED	DATE	APPROVED	DATE	FILE NO:	SCALE:	AUTOCAD DRAWING FILE: A06704-G002.DWG
DATE	SYMBOL	REVISIONS	BY	CHECKED	APPROVED	JCKG CHECKED								
02 OF 37 SHEETS														



- NOTES:**
- 1. FOR NEW FENDERS ON DOLPHINS 1 THROUGH 6 SEE F SERIES.
 - 2. FOR NEW ACCESS PIER SEE WW SERIES.
 - 3. FOR NEW DOLPHINS SEE BD SERIES. THE INSTALLATION OF NEW DOLPHINS REQUIRE DEMOLITION OF THE SLABS SHOWN IN DWG. D1. THE PILES SIT ON THE LEFT OR RIGHT SIDE OF EACH DEMOLITION GAP AS SHOWN ON DWG. BD4.
 - 4. FOR DEMOLITION SEE D SERIES.
 - 5. FOR REPAIRS SEE R-SERIES.

1 GENERAL LAYOUT PLAN
G3 G3 1" = 40'-0"



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						DATE 09/30/16			SUBMITTED			DATE			REVIEWED			DATE		
						JRSW			DESIGNED			PROJECT ENGINEER								
						DATE 09/30/16			SUBMITTED			DATE			APPROVED			DATE		
						JUBA			DELINEATED			ASSOCIATE ENGINEER								
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DATE			SYMBOL			REVISIONS			BY			CHECKED			APPROVED			CHECKED		
						JUBA			ROYO			JCKG						JCKG		

PORT OF REDWOOD CITY

675 SEAPORT BLVD

REDWOOD CITY, CA 94063

FILE NO:

SCALE:

AUTOCAD DRAWING FILE:
A086704-G003.DWG

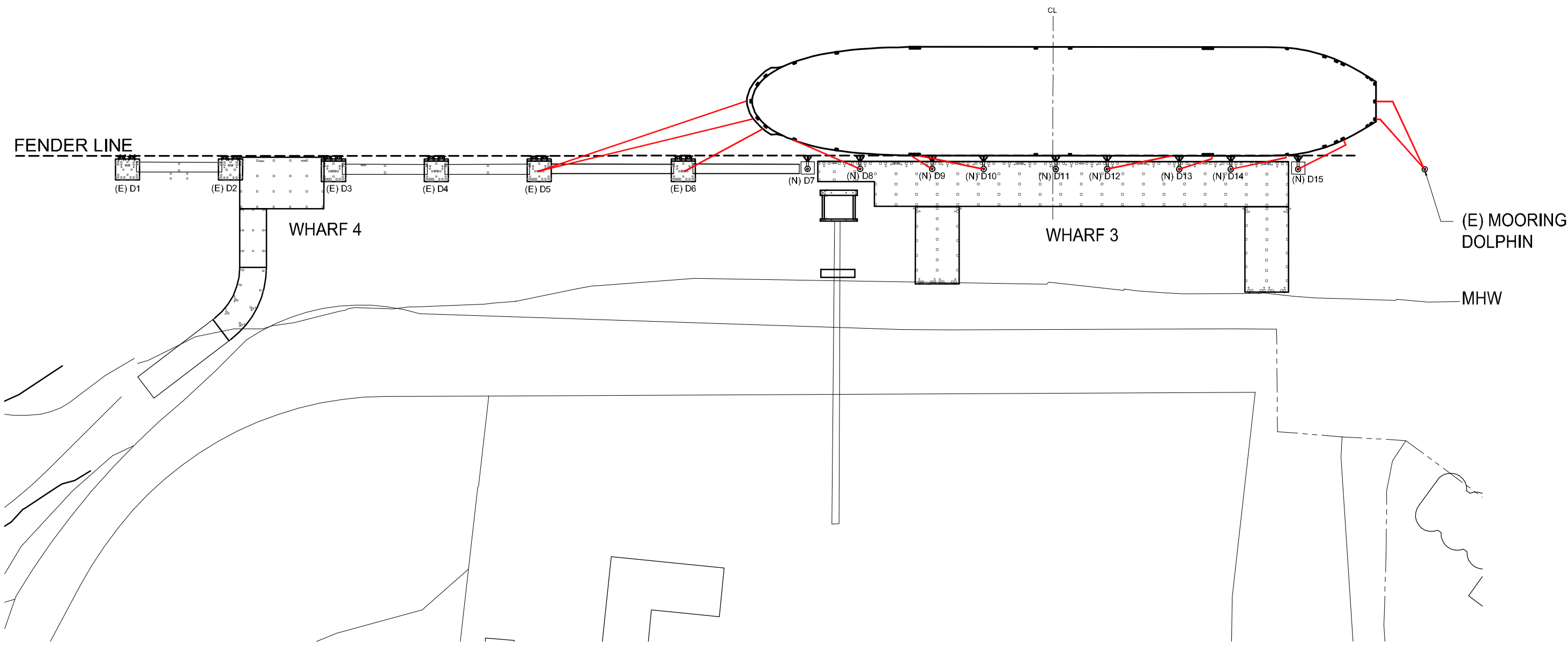
WHARVES 3 AND 4

PROJECT SITE PLAN, NEW STRUCTURES

SHEET NO.

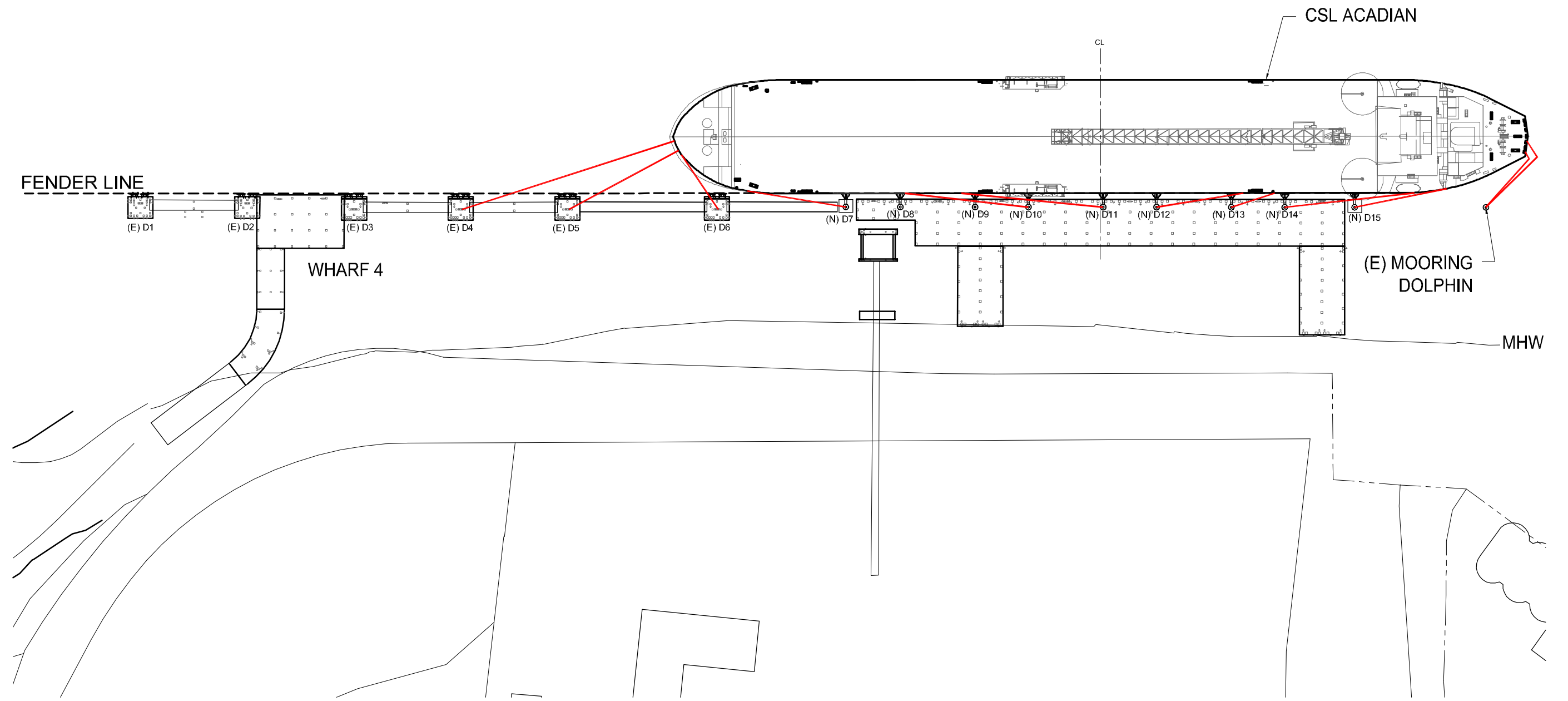
G3

03 OF 37 SHEETS



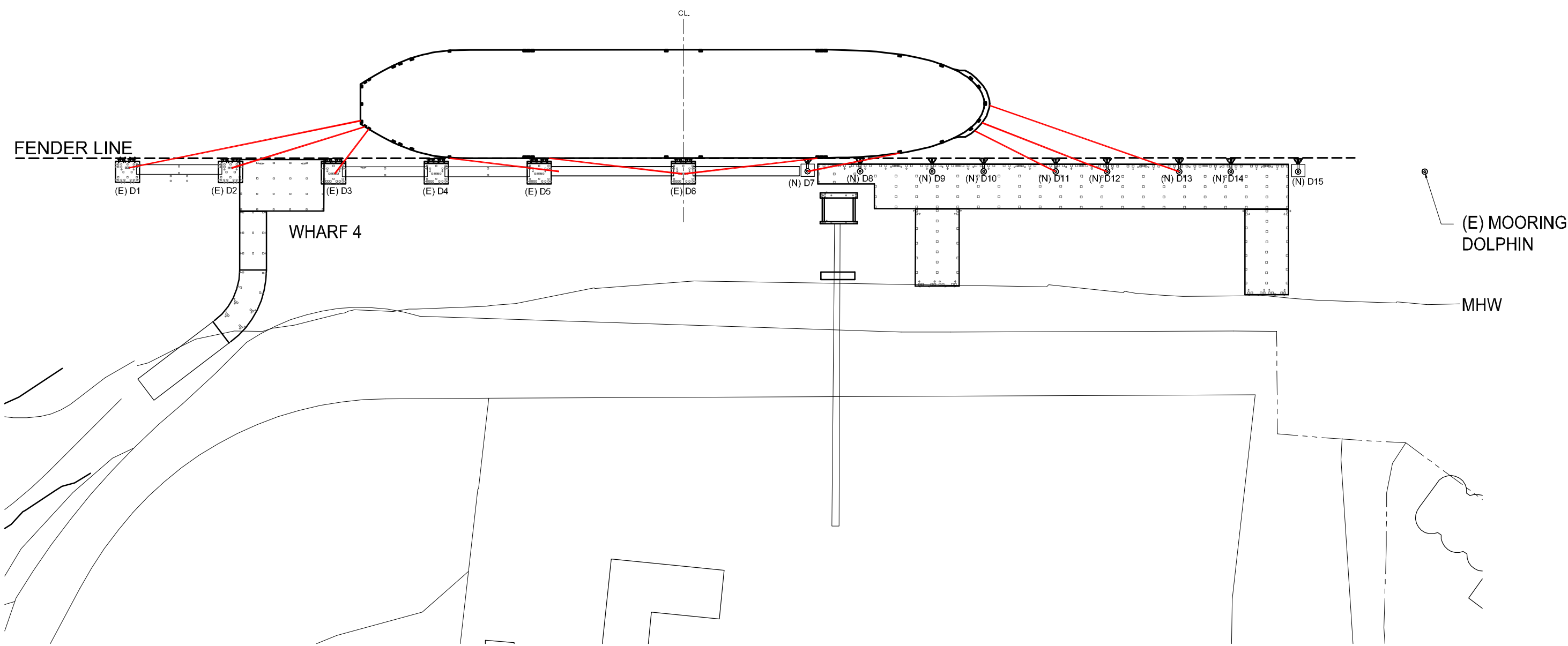
1 MOORING ARRANGEMENT - PORT SIDE
G4 G4 1" = 100'-0"

DWT = 50,000
L = 610'



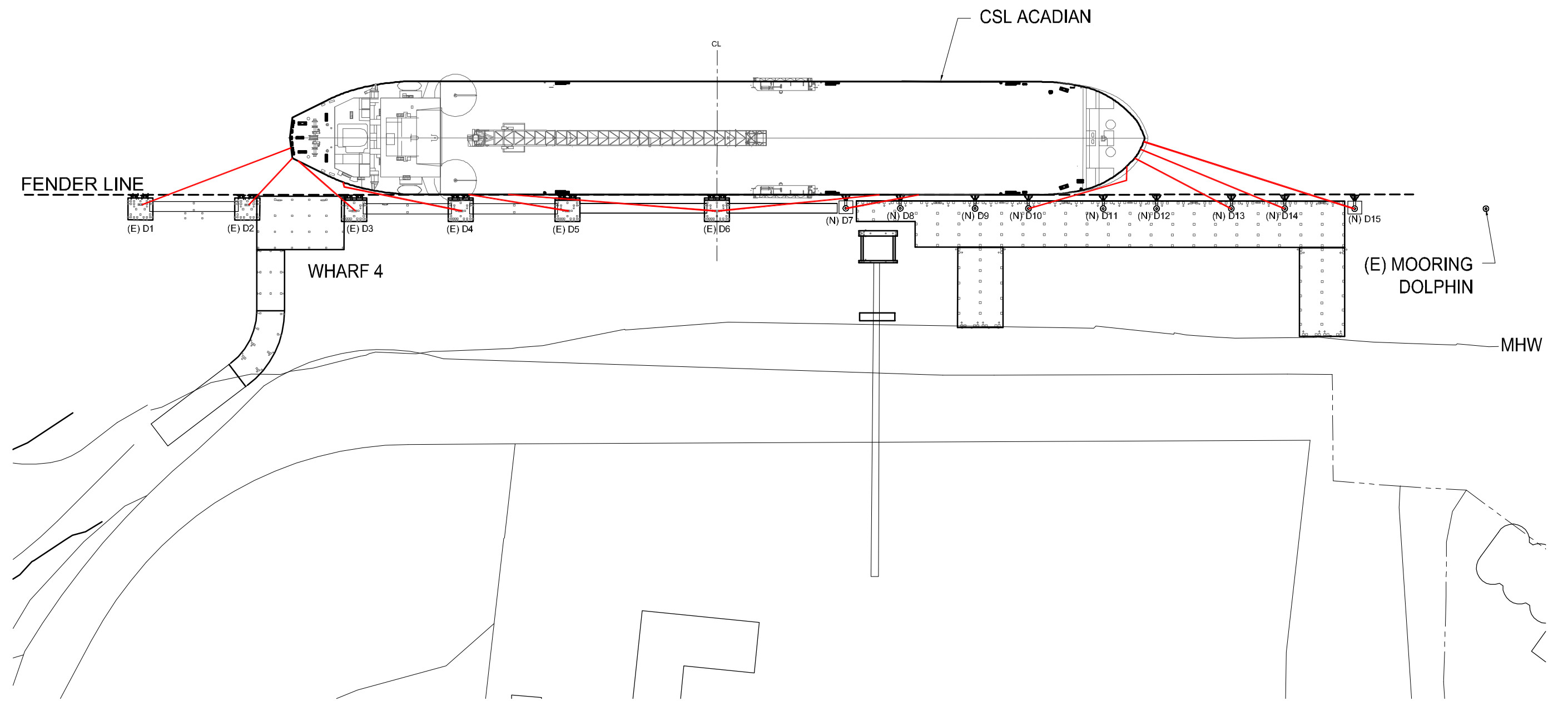
3 MOORING ARRANGEMENT - PORT SIDE
G4 G4 1" = 100'-0"

DWT = 73,300
L = 804'



2 MOORING ARRANGEMENT - STARBOARD SIDE
G4 G4 1" = 100'-0"

DWT = 50,000
L = 610'



4 MOORING ARRANGEMENT - STARBOARD SIDE
G4 G4 1" = 100'-0"

DWT = 73,300
L = 804'



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FILE LOCATION: C:\A086704-G004\A086704-G004.DWG DATE: 2/22/17 11:55:33 AM DRAFTSPERSON: JULIUS BACINILLO

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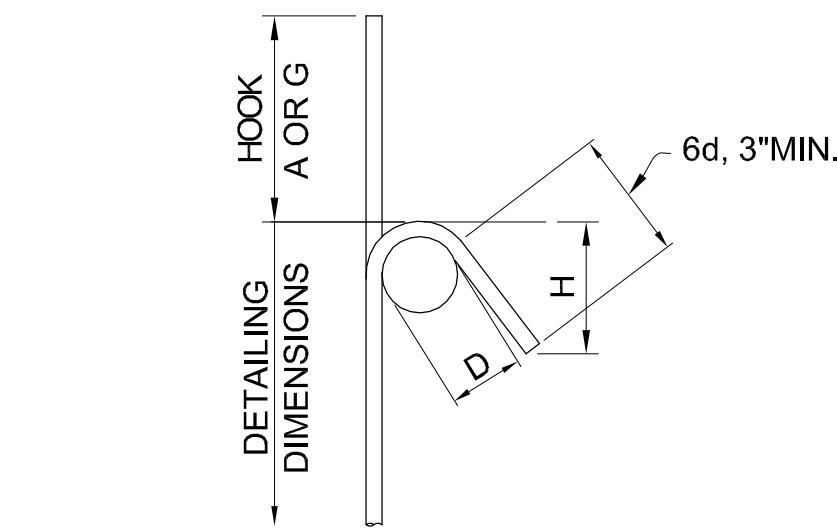
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REDWOOD CITY, CA 94063

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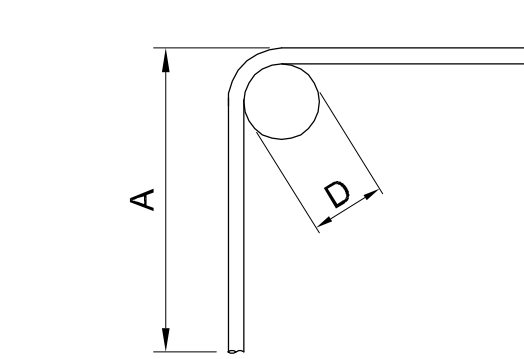
WHARVES 3 AND 4
MOORING ARRANGEMENTS

SHEET NO.
G4
04 OF 37 SHEETS

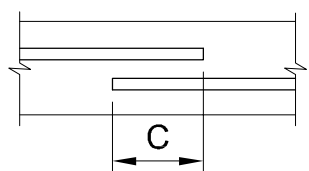
TYPICAL REINFORCING DETAILS



135° HOOKS			
BAR SIZE	D	A OR G	H APPROX.
#3	1½"	4"	2½"
#4	2"	4½"	3"
#5	2½"	5½"	3¾"
#6	4½"	8"	4½"
#7	5¼"	9"	5¼"
#8	6"	10½"	6"



90° HOOKS		
BAR SIZE	D	A
#3	2¼"	6"
#4	3"	8"
#5	3¾"	10"
#6	4½"	1'-0"
#7	5¼"	1'-2"
#8	6"	1'-4"
#9	9½"	1'-7"
#10	10¾"	1'-10"
#11	12"	2'-0"



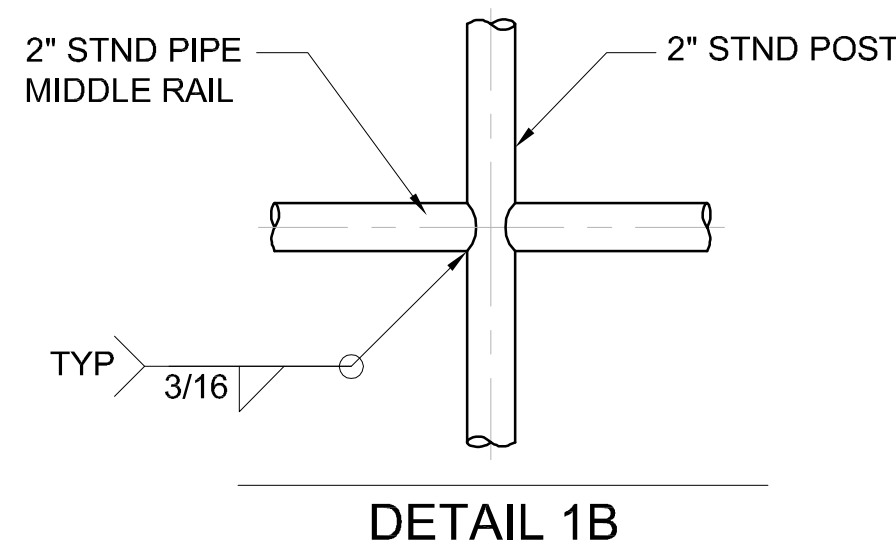
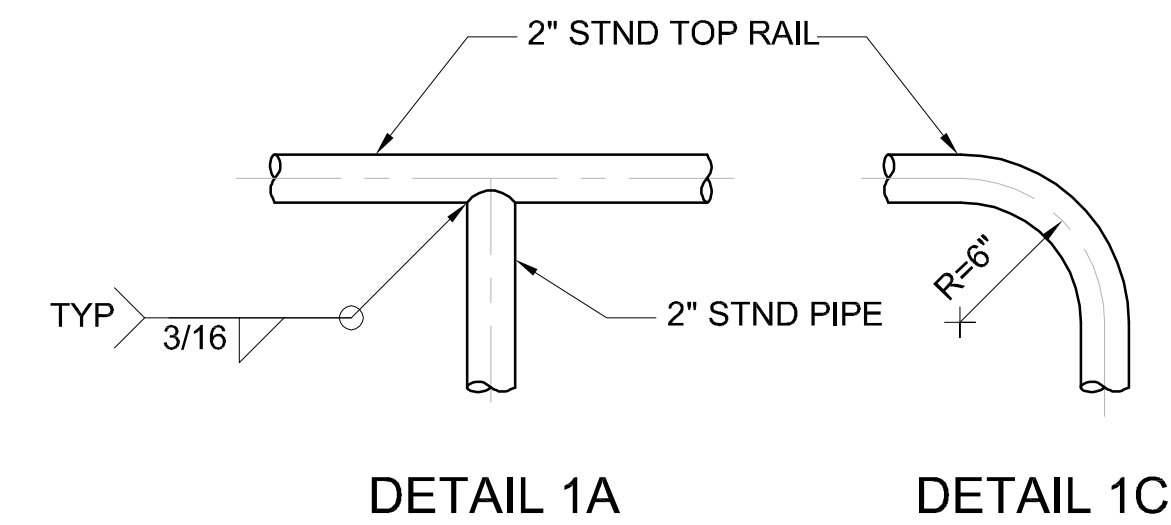
TYP. LAP SPLICE		
BAR SIZE	C	
	TOP REINF.	OTHER REINF.
#3	1'-9"	1'-4"
#4	2'-4"	1'-10"
#5	3'-0"	2'-3"
#6	3'-7"	2'-9"
#7	5'-2"	4'-0"
#8	5'-11"	4'-7"
#9	6'-8"	5'-2"
#10	7'-5"	5'-8"
#11	8'-2"	6'-3"

BREASTING DOLPHIN PILE SCHEDULE				
DIAMETER (IN)	WALL THICKNESS (IN)	TOP OF SECTION ELEVATION (FT)	BOTTOM OF SECTION ELEVATION (FT)	COATING LENGTH (FT)
66	1.25	7.5, SEE NOTE 1	-31	ALL
66	1.5	-31	-81	20
66	1.25	-81	-111	0

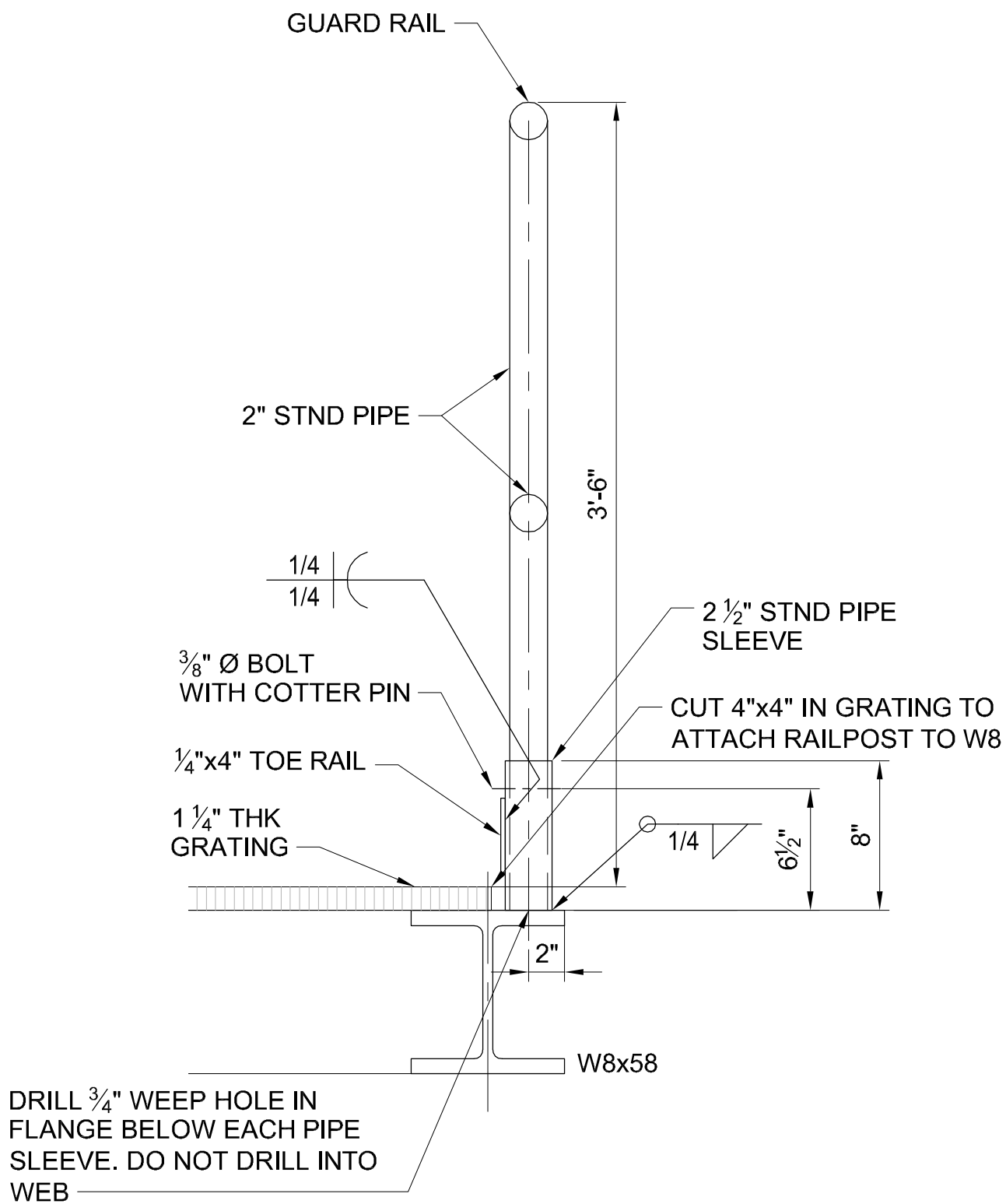
NOTE:
1. TOP OF SECTION ELEVATION IS TO CJP FIELD WELD. ADDITIONAL PIPE LENGTH NEEDED ABOVE THIS SECTION.

ACCESS PIER PILE SCHEDULE			
DIAMETER (IN)	WALL THICKNESS (IN)	TIP ELEVATION (FT)	COATING LENGTH (FT)
30	1	-80	63

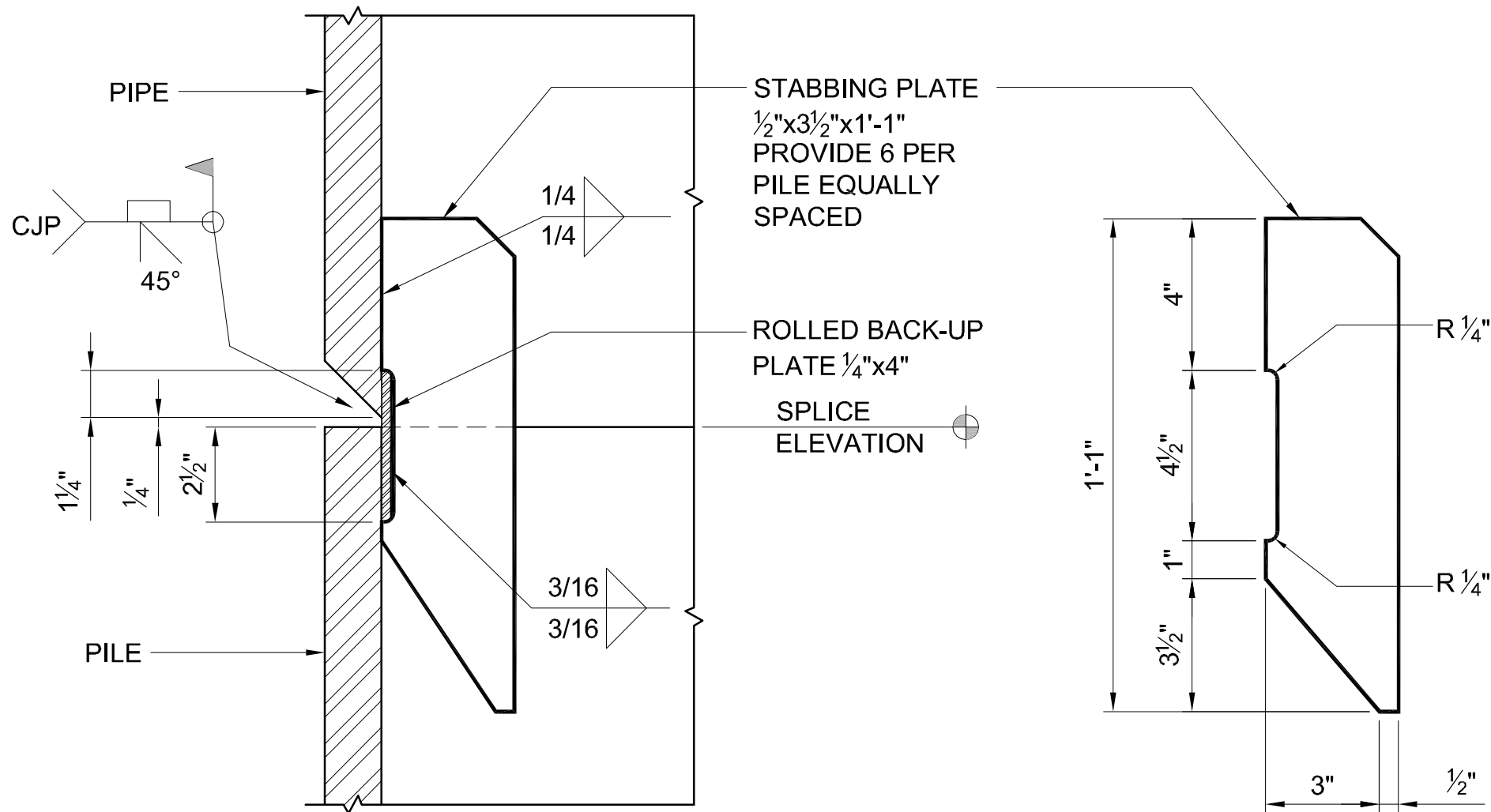
- NOTES:
- ACI 318 AND ACI 315 APPLIES UNLESS NOTED OTHERWISE.
 - TYPICAL REINFORCING DETAIL TABLES ARE PROVIDED FOR $f_c = 5000$ PSI CONCRETE.
 - CONCENTRIC MECHANICAL SPLICES IN COMPLIANCE WITH ACI 318 ARE ACCEPTABLE ALTERNATIVES TO LAP SPLICES.
 - WELDING SHALL NOT BE PERMITTED ON ANY REINFORCEMENT WITHOUT APPROVAL OF ENGINEER UNLESS OTHERWISE NOTED.



1 TYPICAL HANDRAIL DETAIL
SCALE: 1 1/2" = 1'-0"

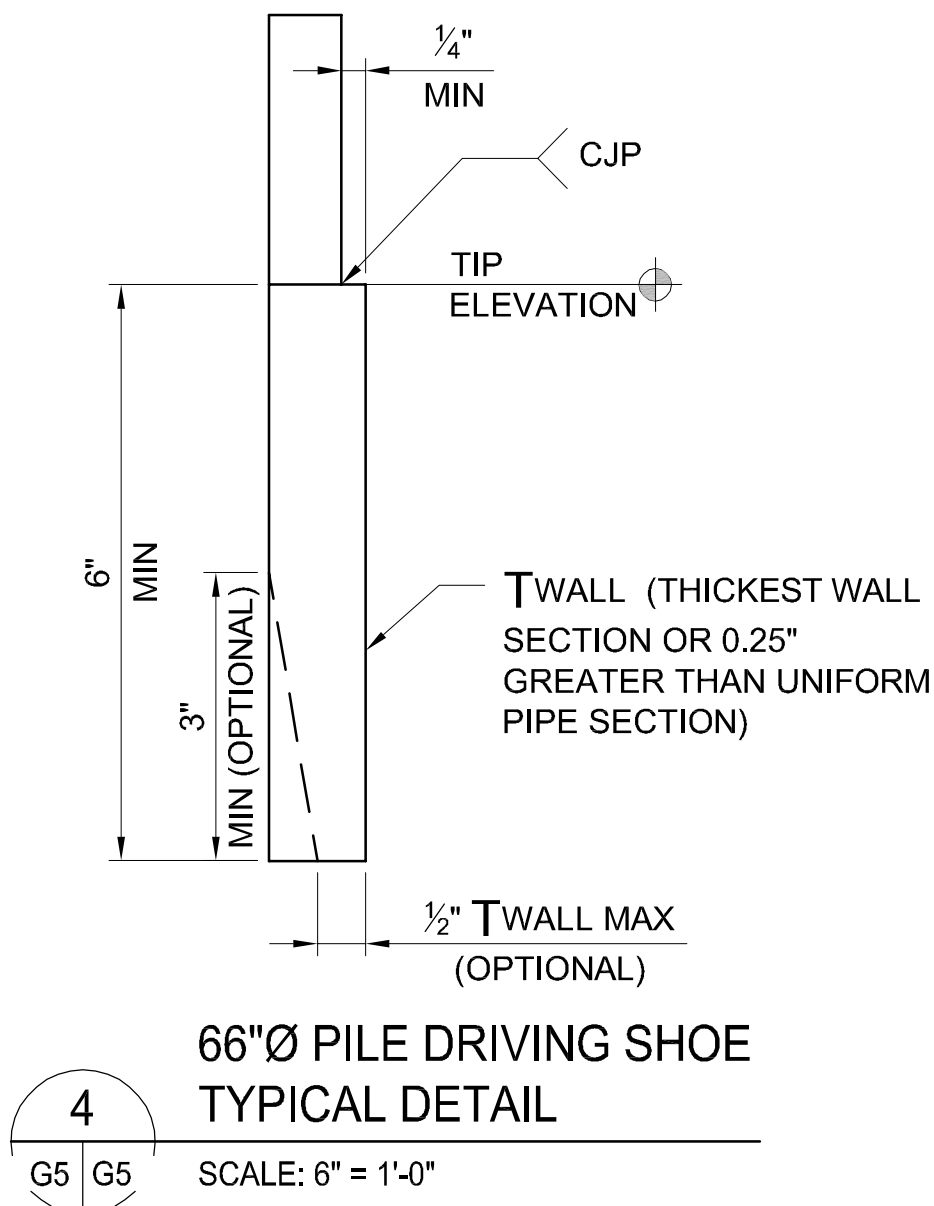


2 TYPICAL HANDRAIL DETAIL
SCALE: 1 1/2" = 1'-0"



66" Ø PILE - STEEL PIPE FIELD SPLICE CONNECTION

3 TYPICAL DETAIL
SCALE: 3" = 1'-0"



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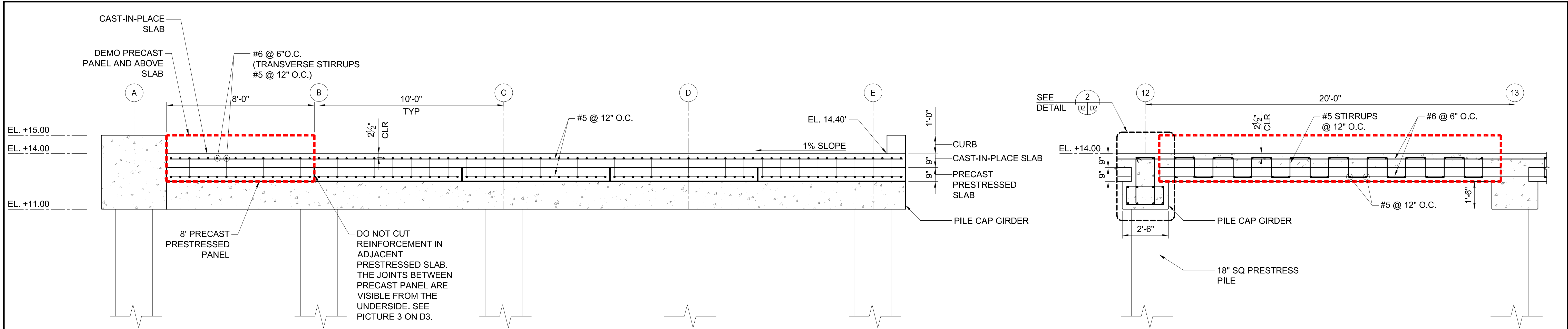
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						JRSW	DESIGNED	PROJECT ENGINEER			
							DATE 11/11/16	SUBMITTED	DATE	APPROVED	DATE
						NIF	DELINEATED	ASSOCIATE ENGINEER			
							DATE 11/11/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG					
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED					

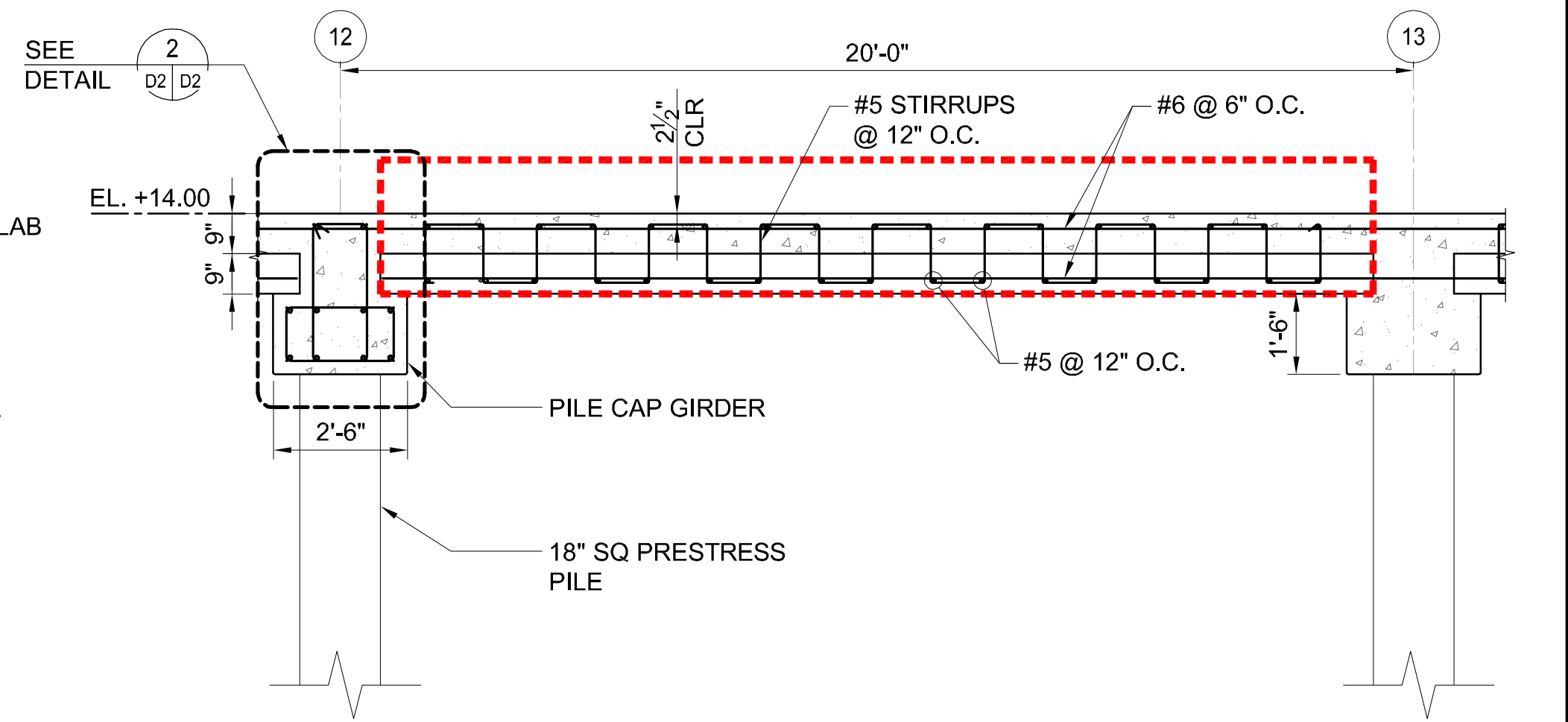
PORT OF REDWOOD CITY 675 SEAPORT BLVD REDWOOD CITY, CA 94063		
FILE NO:	SCALE:	AUTOCAD "DRAWING FILE:" A068704-G05.DWG

WHARVES 3 AND 4	
GENERAL DETAILS AND PILE SCHEDULE	

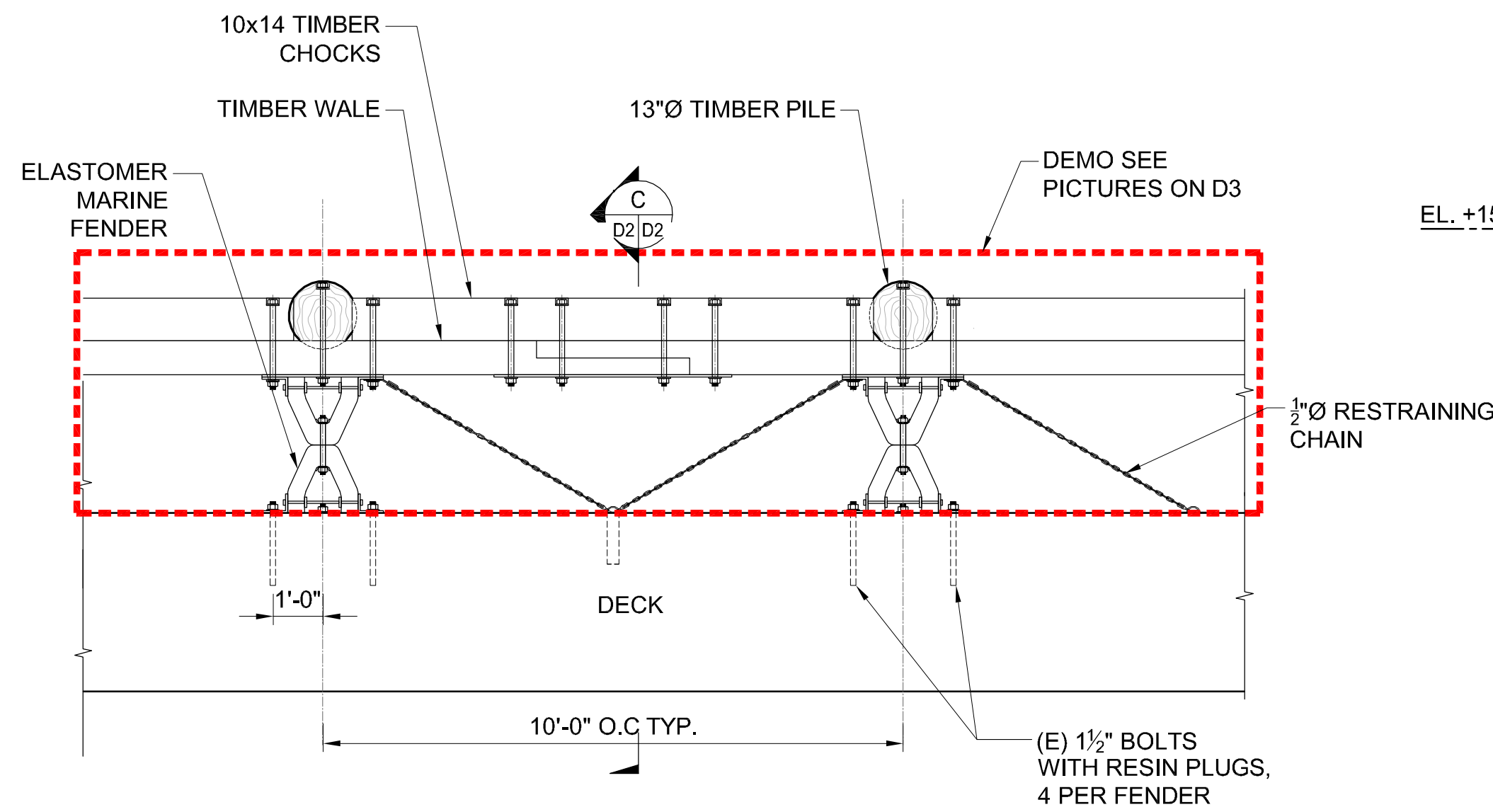
SHEET NO. G5
05 OF 37 SHEETS



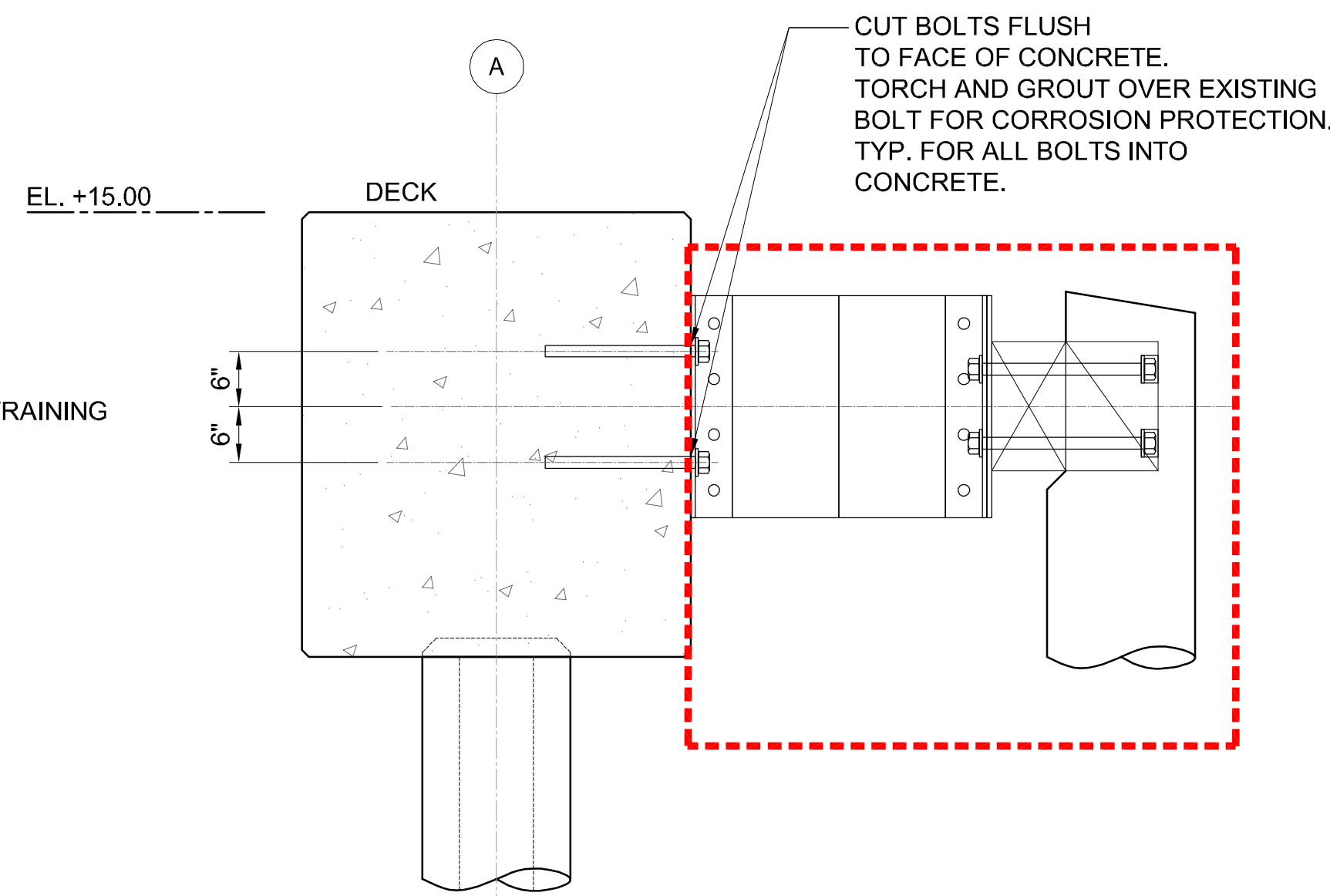
A SECTION
D1 D2 SCALE: 3/8" = 1'-0"



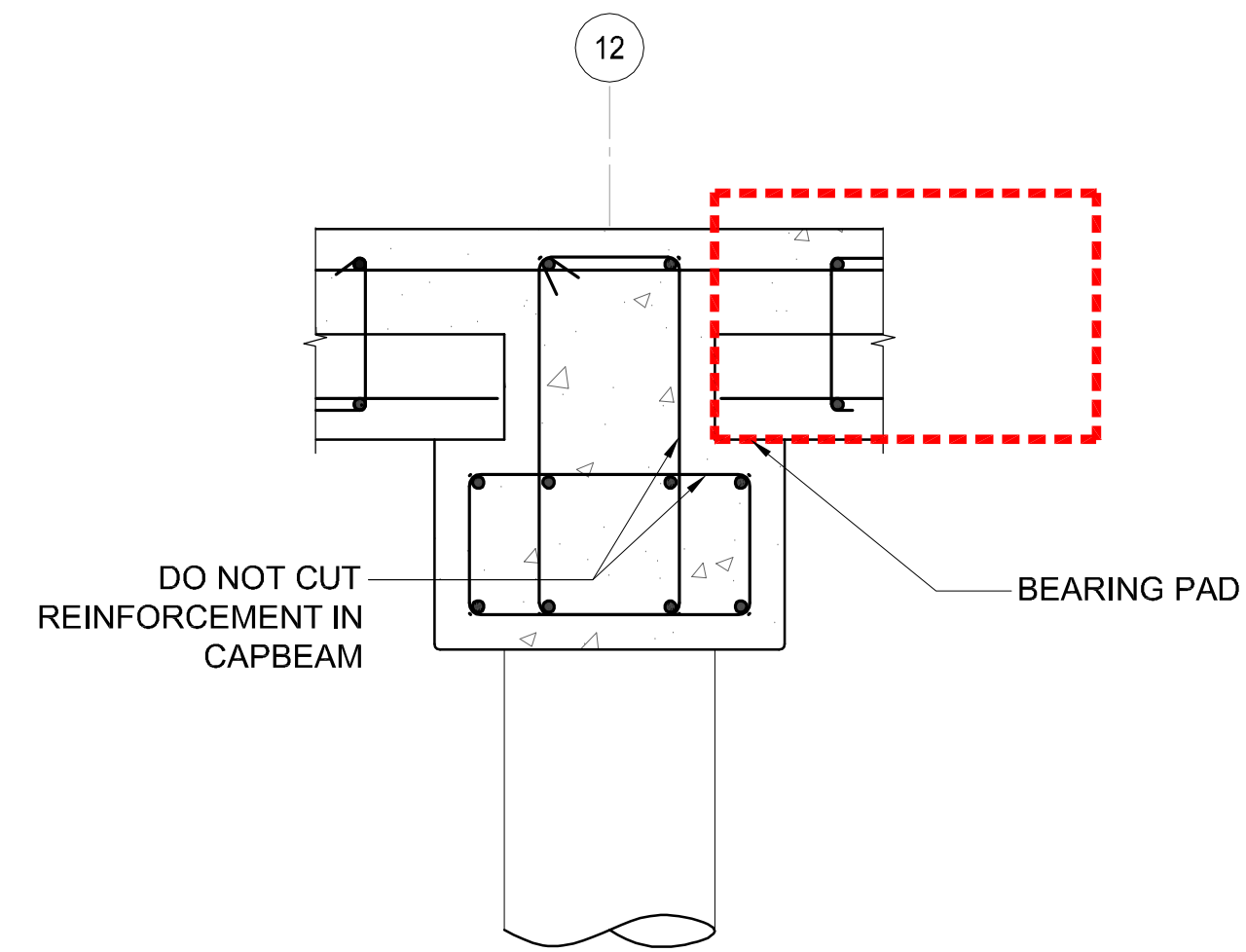
B SECTION
D1 D2 SCALE: 3/8" = 1'-0"



1 TYPICAL FENDER DETAILS
D1 D2 SCALE: 3/8" = 1'-0"



C TYPICAL FENDER - SECTION
D2 D2 SCALE: 1/2" = 1'-0"



2 TYPICAL CAPBEAM DETAILS
D2 D2 SCALE: 3/8" = 1'-0"



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FILE LOCATION: C:\A086704-D1 TO D7\DWG\DATE: 2/22/2017 11:52:01 AM DRAFTSPERSON: JULIUS BACINILLO

							DATE 09/30/16	SUBMITTED	DATE	REVIEWED	DATE	PORT OF REDWOOD CITY 675 SEAPORT BLVD REDWOOD CITY, CA 94063	WHARVES 3 AND 4 WHARF 3 DEMOLITION DETAILS	SHEET NO. D2	
							JRSW DESIGNED	PROJECT ENGINEER	DATE	APPROVED	DATE				
							DATE 09/30/16	SUBMITTED	DATE	APPROVED	DATE				
							JUBA DELINEATED	ASSOCIATE ENGINEER	DATE	APPROVED	DATE				
							DATE 09/30/16	APPROVED	DATE	APPROVED	DATE				
	2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	DATE 09/30/16	APPROVED	DATE	APPROVED				DATE
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	JCKG CHECKED					FILE NO:	SCALE:	AUTOCAD DRAWING FILE: A086704-D1 TO D7.DWG	07 OF 37 SHEETS



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WHARVES 3 AND 4

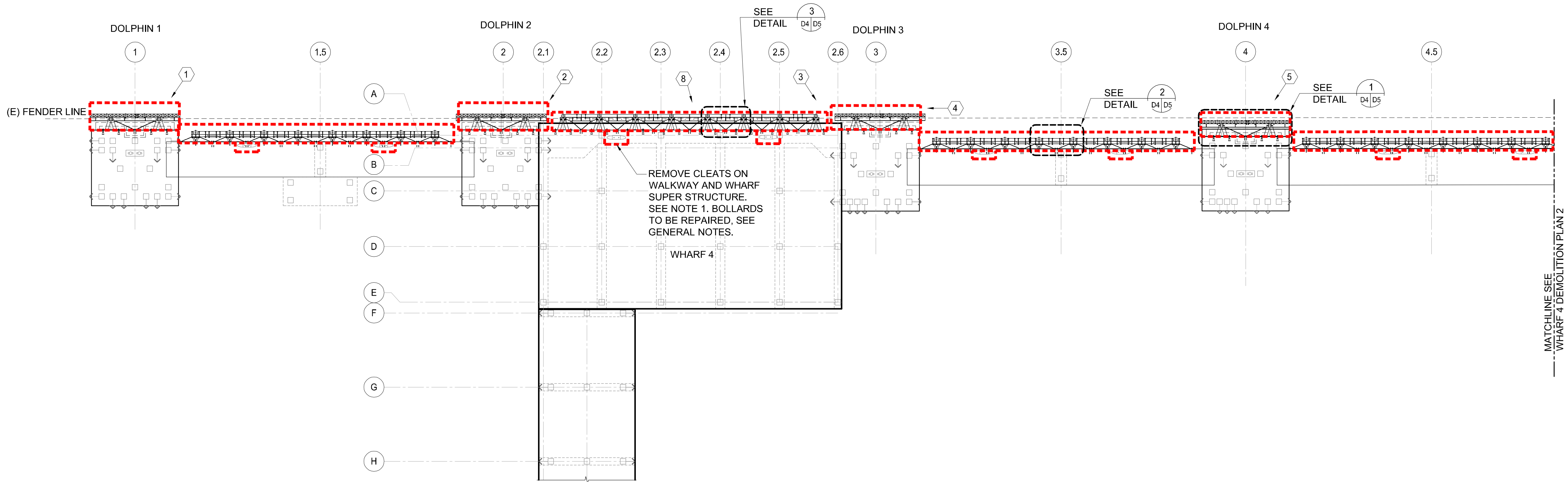
WHARF 3 DEMOLITION PHOTOS

SHEET NO.

D3

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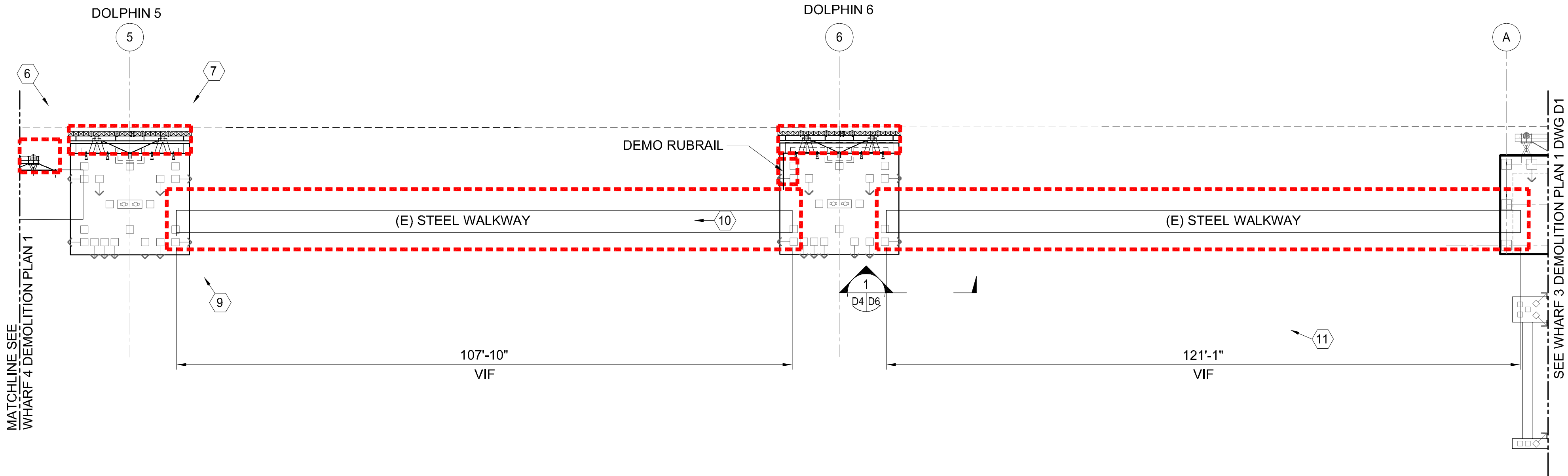
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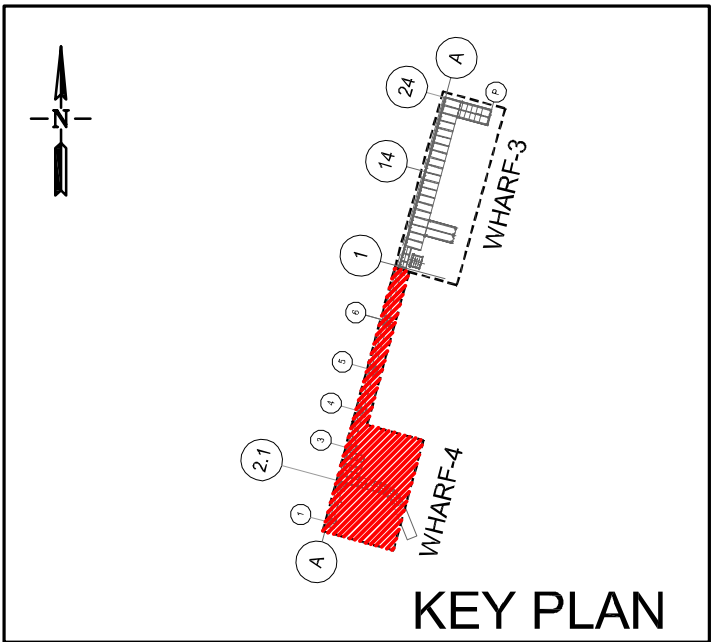
1 WHARF 4 DEMOLITION PLAN 1
D4 D4 SCALE: 1" = 15'-0"

NOTE:
1. CLEATS TO BE REMOVED BY TORCHING ANCHOR BOLTS.

LEGEND:
--- LIMITS OF DEMOLITION
X PHOTOS



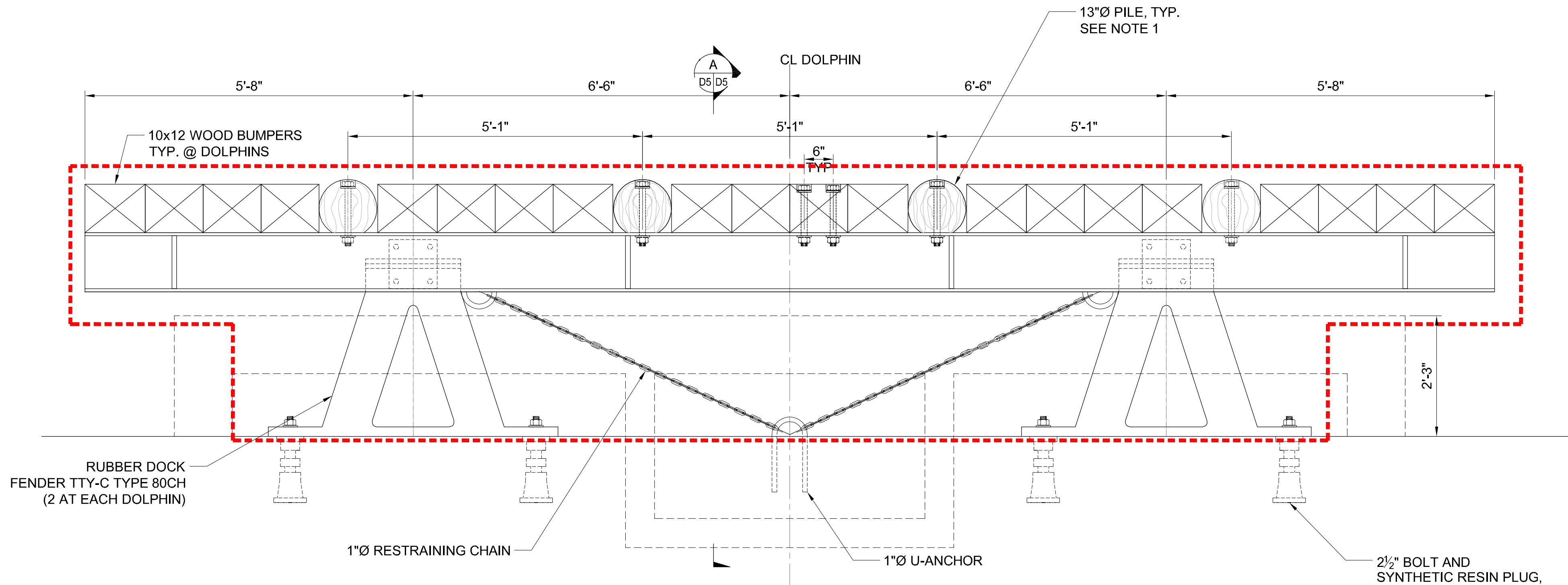
2 WHARF 4 DEMOLITION PLAN 2
D4 D4 SCALE: 1" = 15'-0"



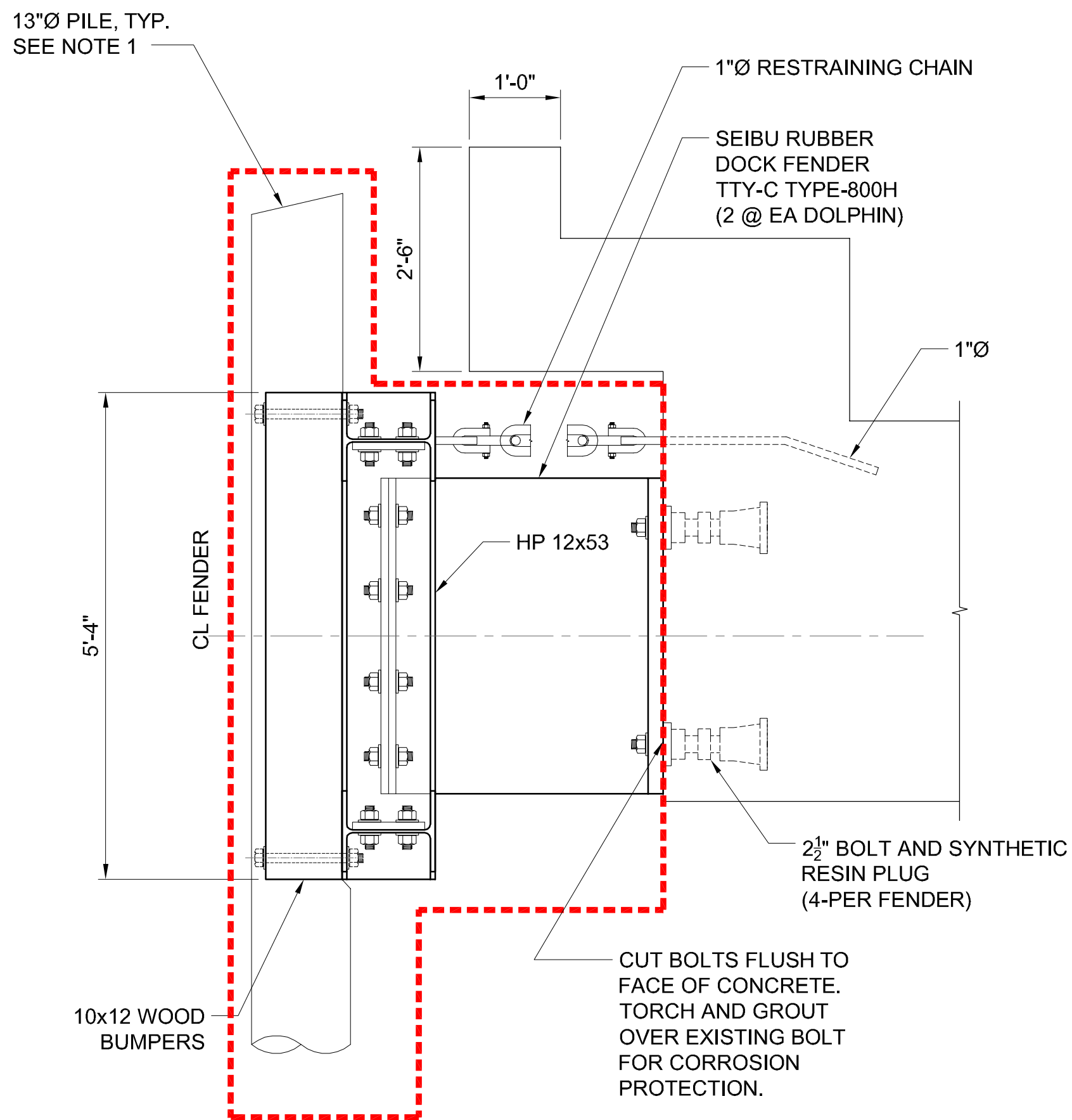
COWI Marine North America
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FILE LOCATION: C:\A086704-D1\DWG\A086704-D1.DWG DATE: 2/22/17 11:52:10 AM DRAFTSPERSON: JULIUS BACINILLO

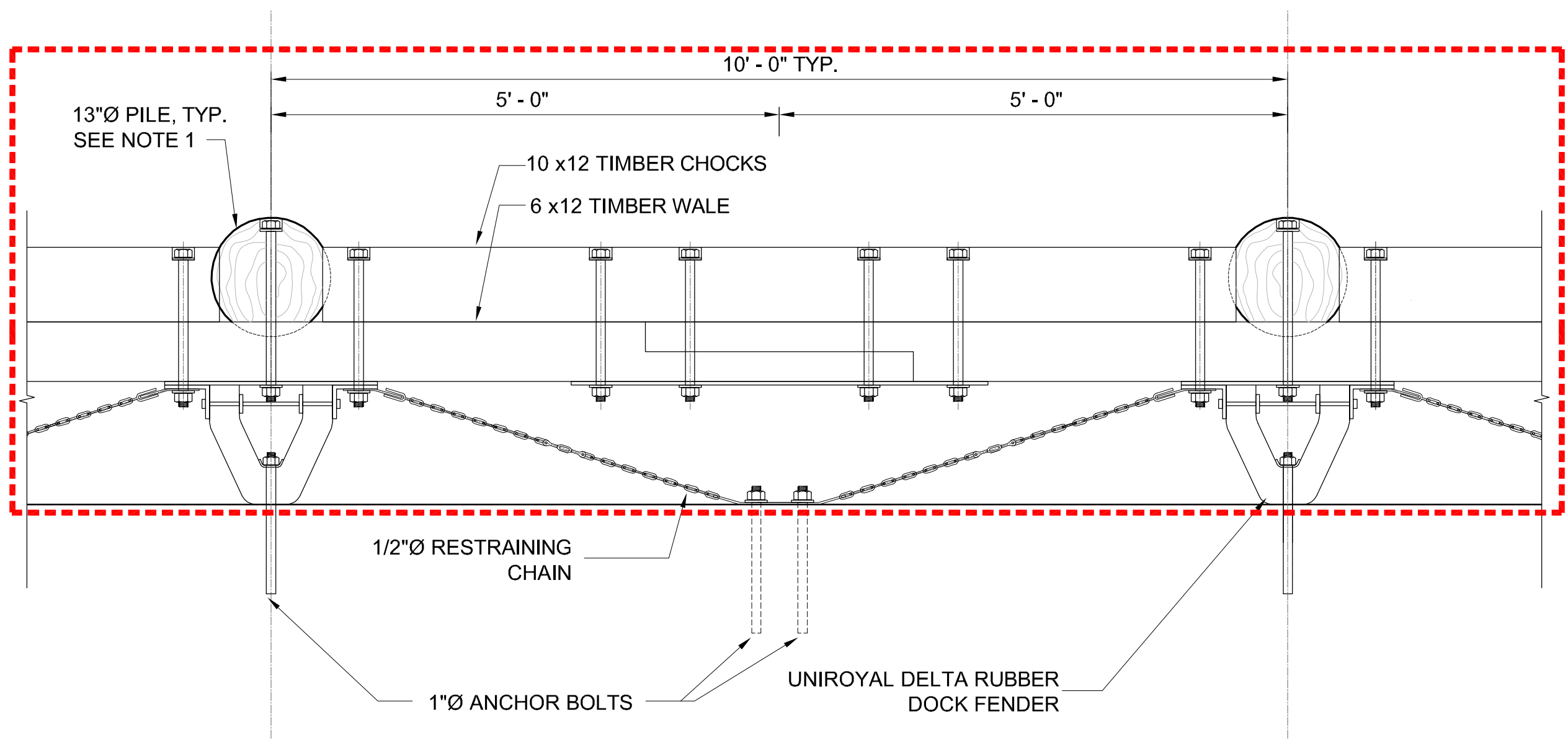
						DATE 09/30/16			SUBMITTED			DATE _____			REVIEWED			DATE _____			<div>PORT OF REDWOOD CITY</div> <div>675 SEAPORT BLVD</div> <div>REDWOOD CITY, CA 94063</div>						<div>WHARVES 3 AND 4</div> <div>WHARF 4 DEMOLITION PLAN</div>						SHEET NO. <div>D4</div>				
						JBSW DESIGNED			DATE 09/30/16			PROJECT ENGINEER			DATE _____			APPROVED																	DATE _____		
						JUBA DELINEATED			DATE 09/30/16			ASSOCIATE ENGINEER			DATE _____			APPROVED																	DATE _____		
2/22/17			0			ISSUE FOR BID			JUBA			ROYO			JCKG			DATE 09/30/16																	APPROVED		
DATE			SYMBOL			REVISIONS			BY			CHECKED			APPROVED			JCKG CHECKED			FILE NO:			SCALE:			AUTOCAD DRAWING FILE: A086704-D1 TO D7.DWG			09 OF 37 SHEETS							



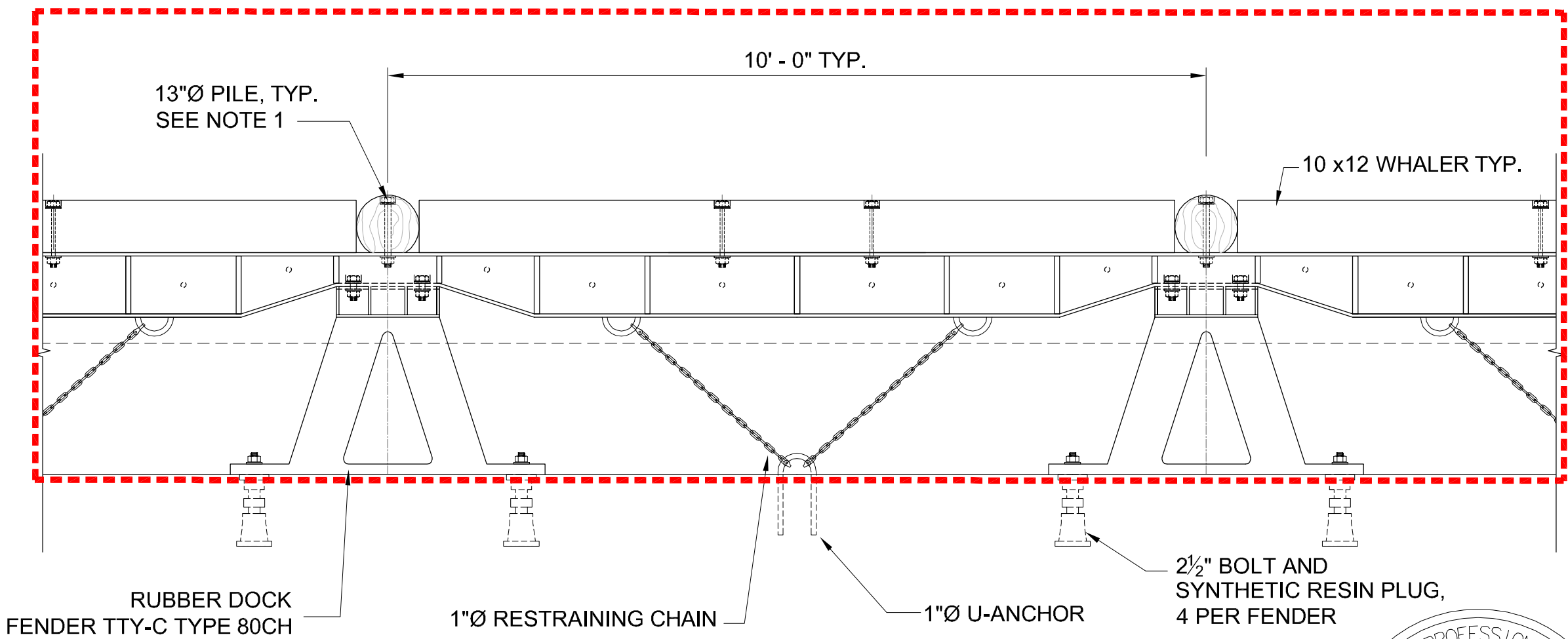
1 DOLPHIN FENDER SYSTEM - PLAN
SCALE: 3/4" = 1'-0"



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



2 WALKWAY FENDER SYSTEM - PLAN
SCALE: 3/4" = 1'-0"



3 WHARF SUPERSTRUCTURE FENDER SYSTEM - PLAN
SCALE: 1/2" = 1'-0"

NOTE:
1. PILES MAY NOT BE VISIBLE ABOVE WATER BUT STILL NEED TO BE REMOVED. SEE GENERAL NOTES.

LEGEND:
LIMITS OF DEMOLITION



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FILE LOCATION: C:\A086704-D1\A086704-D1.DWG DATE: 2/22/17 11:52:15 AM DRAFTSPERSON: JULIUS BACINILLO

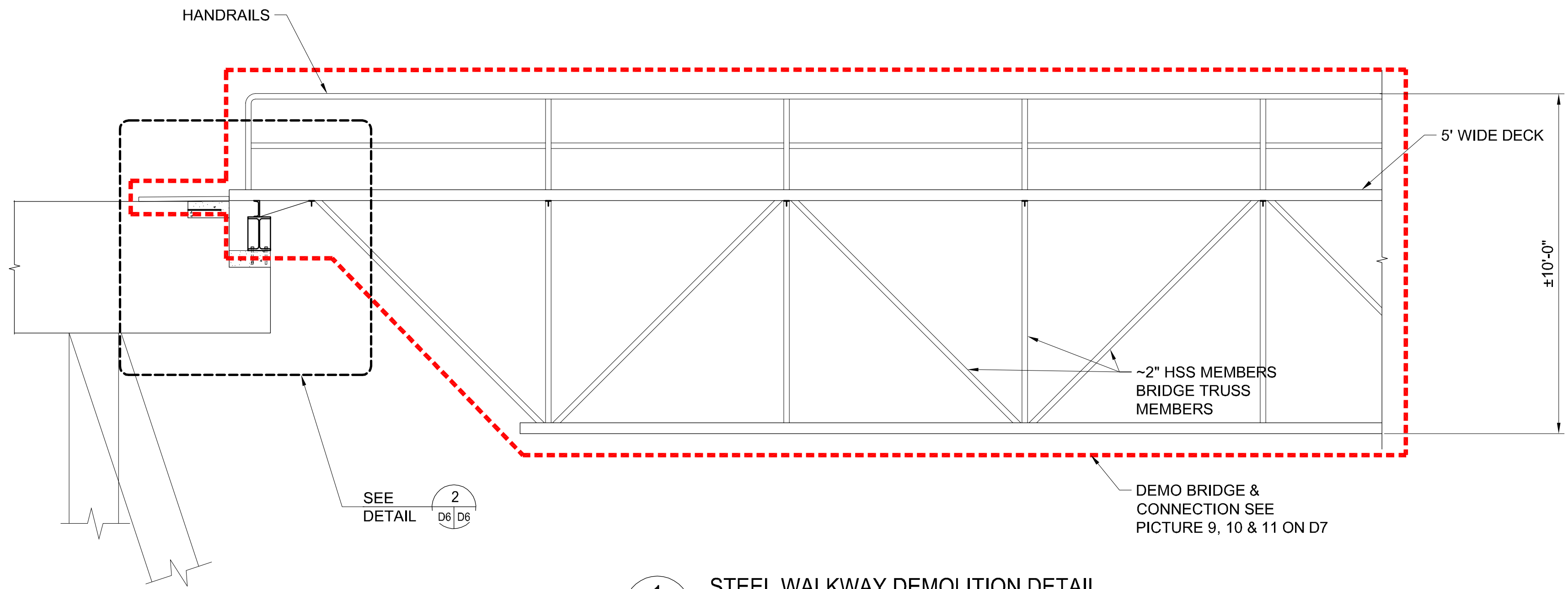
						DATE 09/30/16	SUBMITTED	DATE	REVIEWED	DATE
						JRSW DESIGNED	PROJECT ENGINEER			
						DATE 09/30/16	SUBMITTED	DATE	APPROVED	DATE
						JUBA DELINEATED	ASSOCIATE ENGINEER			
						DATE 09/30/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	JCKG			
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	CHECKED			

PORT OF REDWOOD CITY
675 SEAPORT BLVD
REDWOOD CITY, CA 94063

FILE NO: SCALE: AUTOCAD DRAWING FILE: A086704-D1 TO D7.DWG

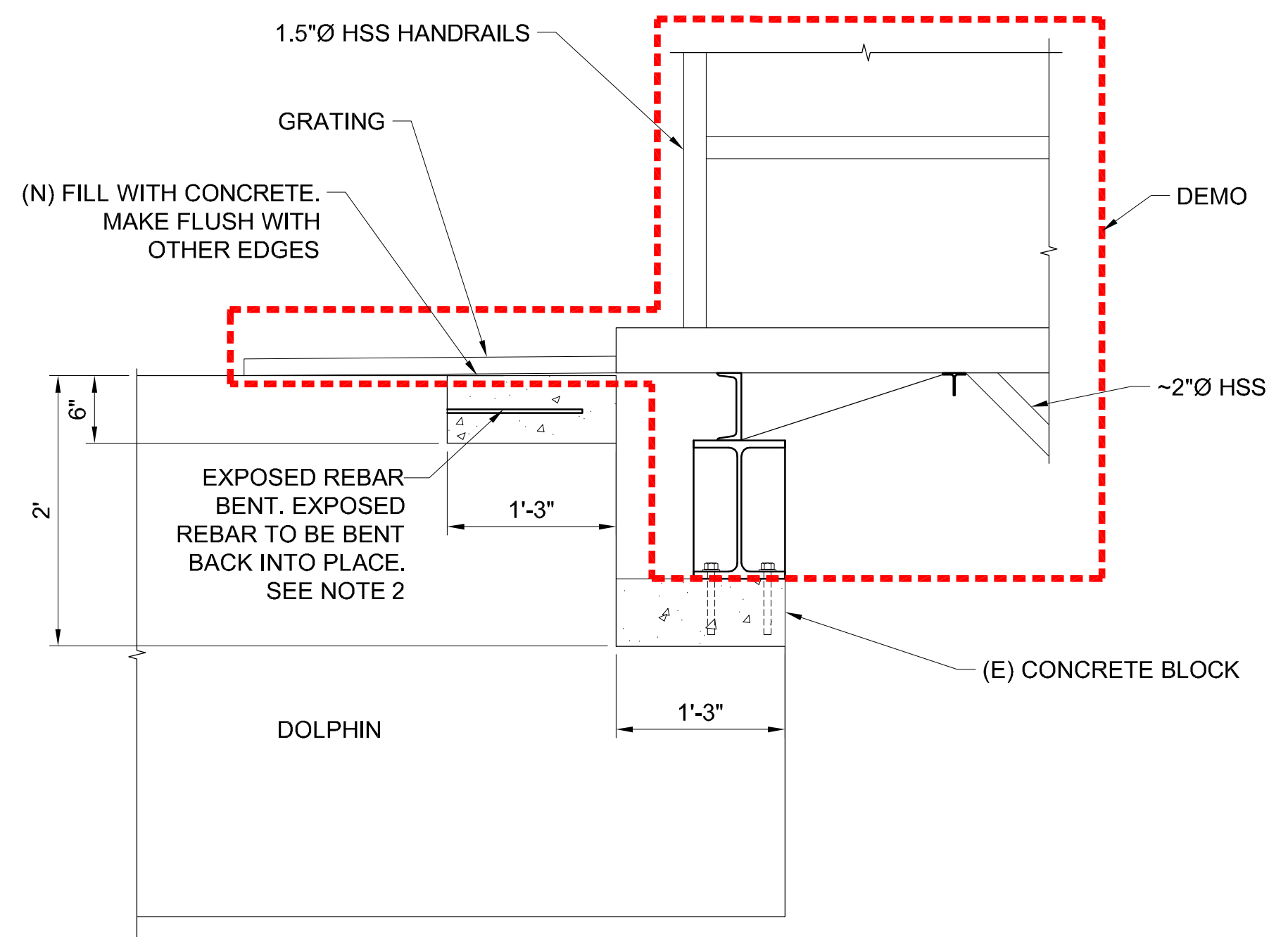
WHARVES 3 AND 4
WHARF 4 DEMOLITION FENDER DETAILS

SHEET NO.
D5
10 OF 37 SHEETS

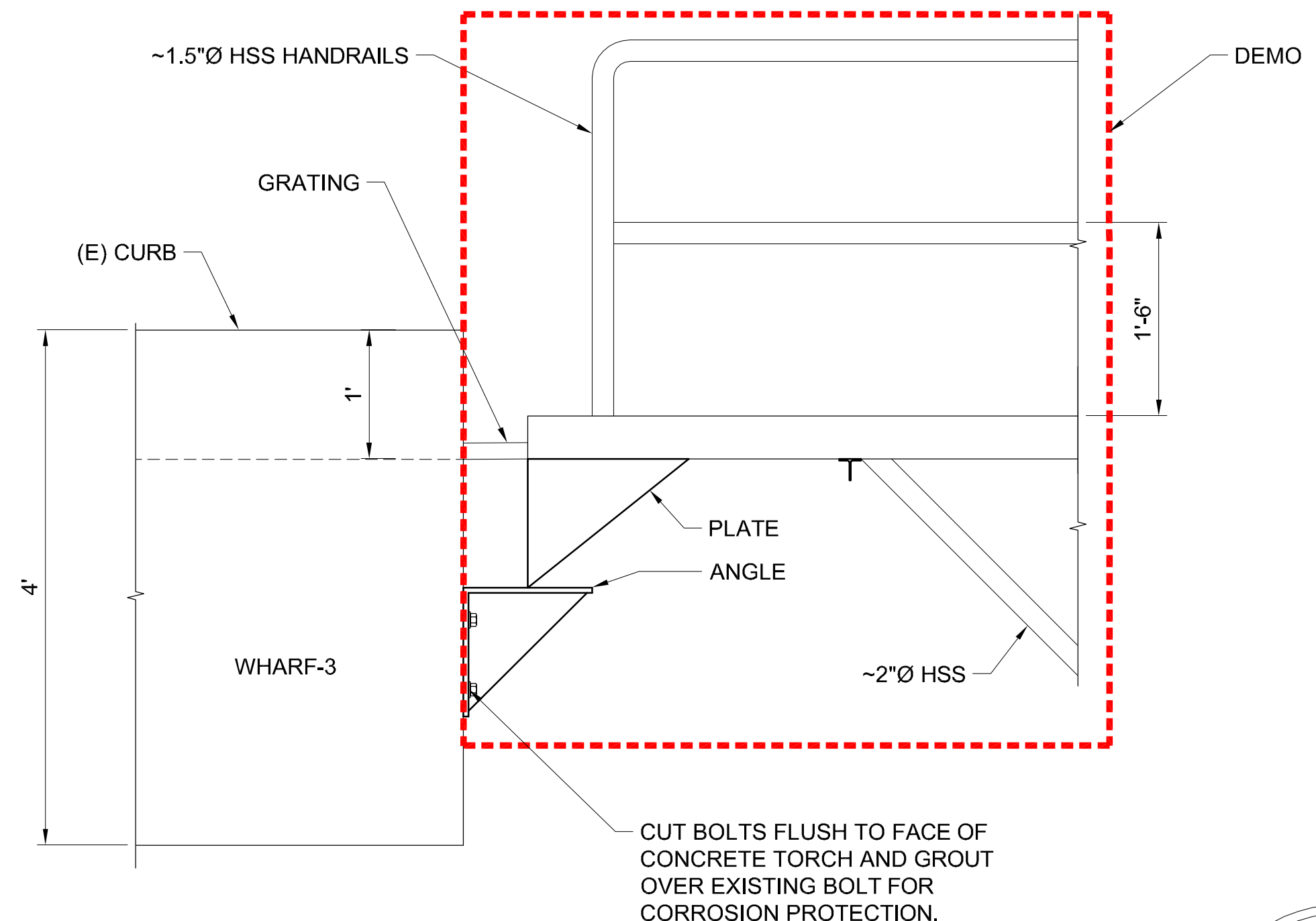


1 STEEL WALKWAY DEMOLITION DETAIL
SCALE: 3/8" = 1'-0"

- NOTE:
1. STEEL WALKWAYS ARE OUTFITTED WITH PIPING FOR ELECTRICAL. BEFORE STARTING STRUCTURE DEMOLITION, DISCONNECT POWER AS NECESSARY. SEE E-SERIES DRAWINGS.
 2. REBAR TO BE CLEANED AND COATED WITH SIKA ARMATEC 110 EPOCEM PER MANUFACTURERS RECOMMENDATIONS.



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



3 WHARF 3 TO WALKWAY CONNECTION
SCALE: 1" = 1'-0"

LEGEND:
- - - - - LIMITS OF DEMOLITION



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FILE LOCATION: C:\A086704-D1 TO D7\DWG\DATE 2/22/2017 11:52:19 AM DRAFTSPERSON: JULIUS BACINILLO

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1 DOLPHIN 1
D4 D7 NTS



2 DOLPHIN 2
D4 D7 NTS



3 DOLPHIN 3
D4 D7 NTS



4 DOLPHIN 3, FENDER SIDE VIEW
D4 D7 NTS



5 DOLPHIN 4
D4 D7 NTS



6 DOLPHIN 5
D4 D7 NTS



7 DOLPHIN 5
D4 D7 NTS



8 FENDER SYSTEM ALONG WHARF SUPERSTRUCTURE
D4 D7 NTS



9 D5 TO STEEL WALKWAY CONNECTION
D4 D7 NTS



10 STEEL WALKWAYS PAST D5
D4 D7 NTS



11 CONVEYOR ON DOLPHIN 6
D4 D7 NTS



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FILE LOCATION: C:\A086704-D1 TO D7.DWG DATE: 2/22/17 11:52:24 AM DRAFTSPERSON: JULIUS BACINILLO

							DATE 09/30/16	SUBMITTED	DATE	REVIEWED	DATE
							JRSW DESIGNED	PROJECT ENGINEER			
							DATE 09/30/16	SUBMITTED	DATE	APPROVED	DATE
							JUBA DELINEATED	ASSOCIATE ENGINEER			
							DATE 09/30/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	JCKG CHECKED				
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED					

PORT OF REDWOOD CITY

675 SEAPORT BLVD

REDWOOD CITY, CA 94063

FILE NO:

SCALE:

AUTOCAD DRAWING FILE:
A086704-D1 TO D7.DWG

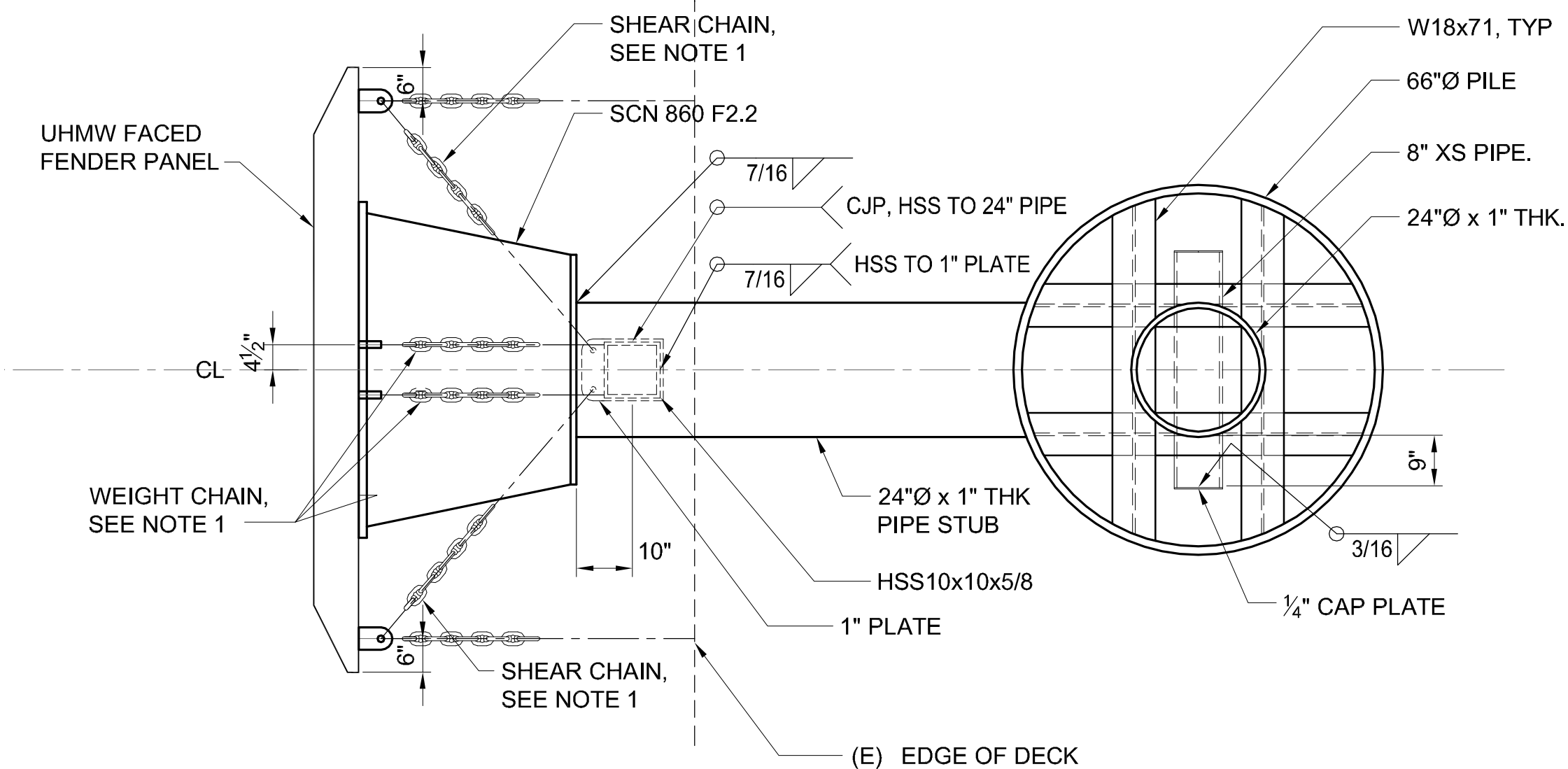
WHARVES 3 AND 4

WHARF 4 DEMOLITION PHOTOS

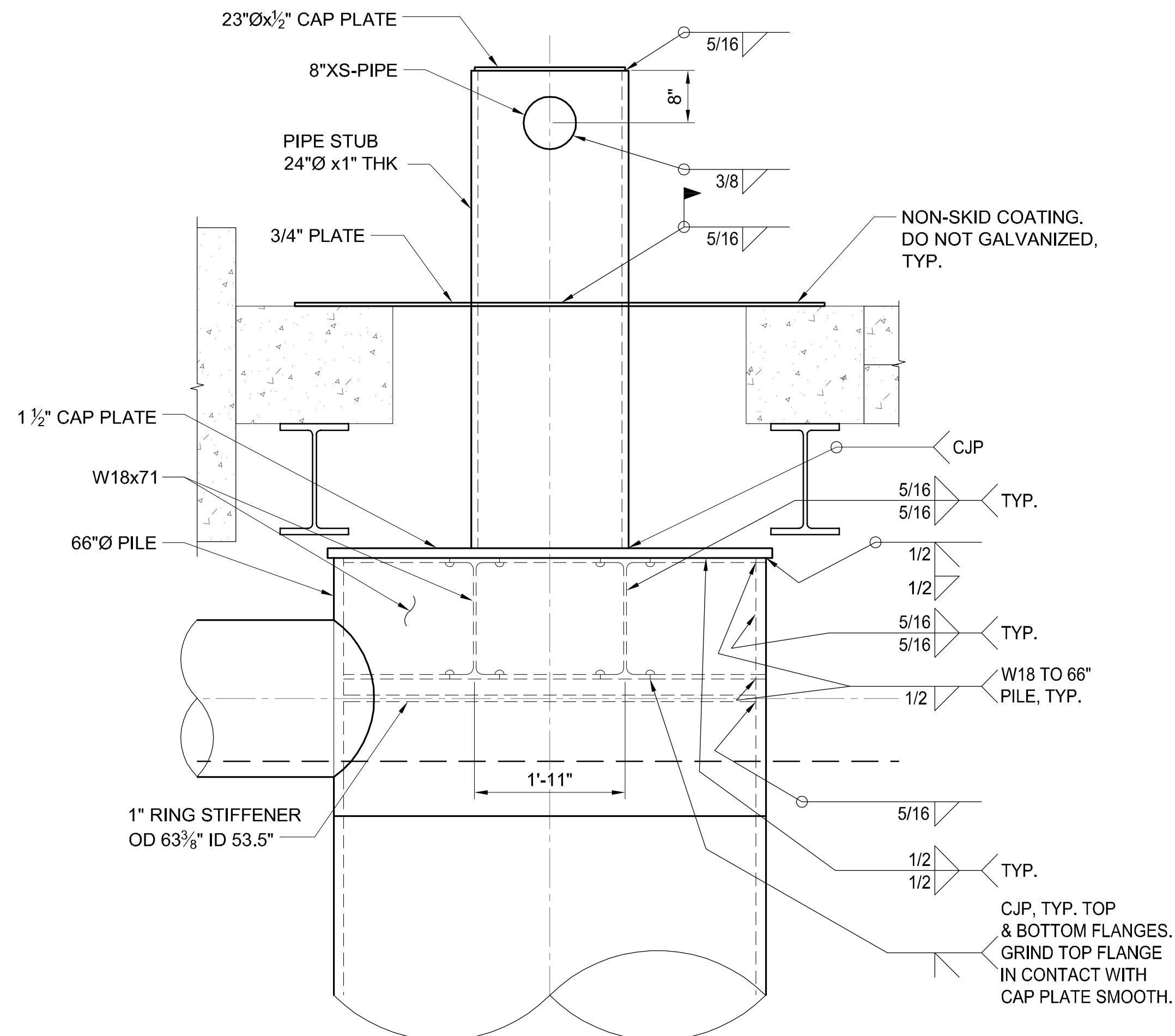
SHEET NO.

D7

12 OF 37 SHEETS



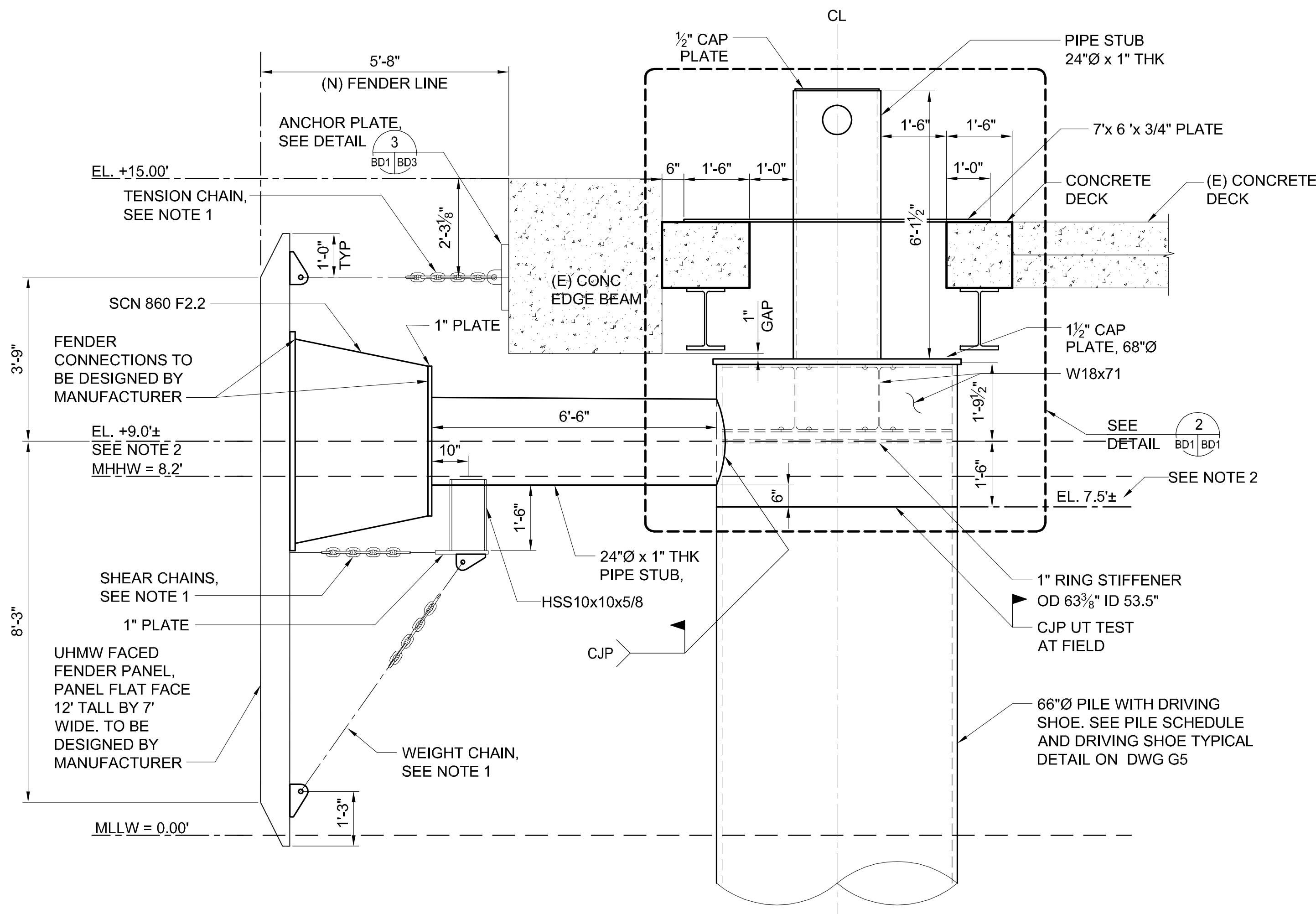
1 PLAN
BD1 BD1 SCALE: 1/2" = 1'-0"



2 DETAIL
BD1 BD1 SCALE: 3/4" = 1'-0"

NOTE:

1. CHAINS AND ACCOMPANYING HARDWARE TO BE DESIGNED BY MANUFACTURER. ASD LOAD = 62 KIPS, RECOMMENDED MBL = 155 KIPS.
2. CENTER OF FENDER AND FENDER PIPE STUB SHALL BE 1'-6" ABOVE PILE CUT. PILE CUT SHALL BE 42" BELOW EXISTING CONCRETE EDGE BEAM. ADJUST ELEVATION AS NEEDED.



A SECTION FOR DOLPHIN 8-14
BD1 BD1 SCALE: 1/2" = 1'-0"

NOTE: EXISTING PILES NOT SHOWN FOR CLARITY.



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WHARVES 3 AND 4
WHARF 3
BREASTING DOLPHIN PLAN AND SECTION

SHEET NO.

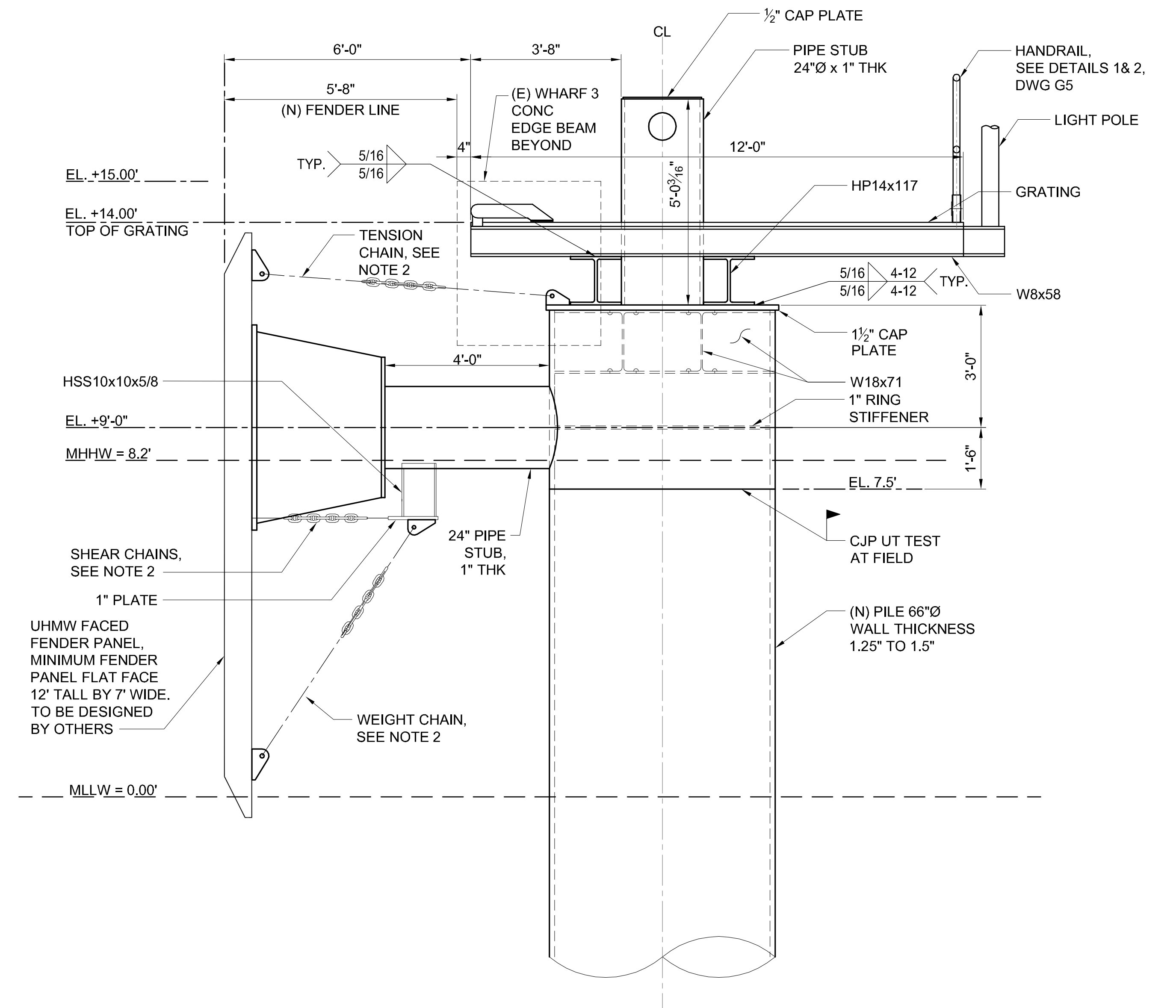
BD1

13 OF 37 SHEETS

FILE LOCATION: C:\A086704-BD1\A086704-BD1.dwg DATE: 2/22/2017 11:50:04 AM DRAWN BY: J. J. BACINILLO

DATE	SYMBOL	ISSUE FOR BID	REVISIONS	BY	CHECKED	APPROVED	DATE	SUBMITTED	DATE	REVIEWED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	DATE 09/30/16	DESIGNED	PROJECT ENGINEER		
							DATE 09/30/16	SUBMITTED		APPROVED	
							DATE 09/30/16	DELINEATED	ASSOCIATE ENGINEER		
							DATE 09/30/16	APPROVED		APPROVED	

FILE NO: SCALE: AUTOCAD DRAWING FILE: A086704-BD1 TO BD5.DWG



SECTION FOR DOLPHINS 7

BD2 BD2 SCALE: 1/2" = 1'-0"

NOTE:

NOTES:

-
- REGISTERED PROFESSIONAL ENGINEER
 JACK W. GERWICK
 No. C 68726
 Exp. 9/30/17
 CIVIL
 STATE OF CALIFORNIA

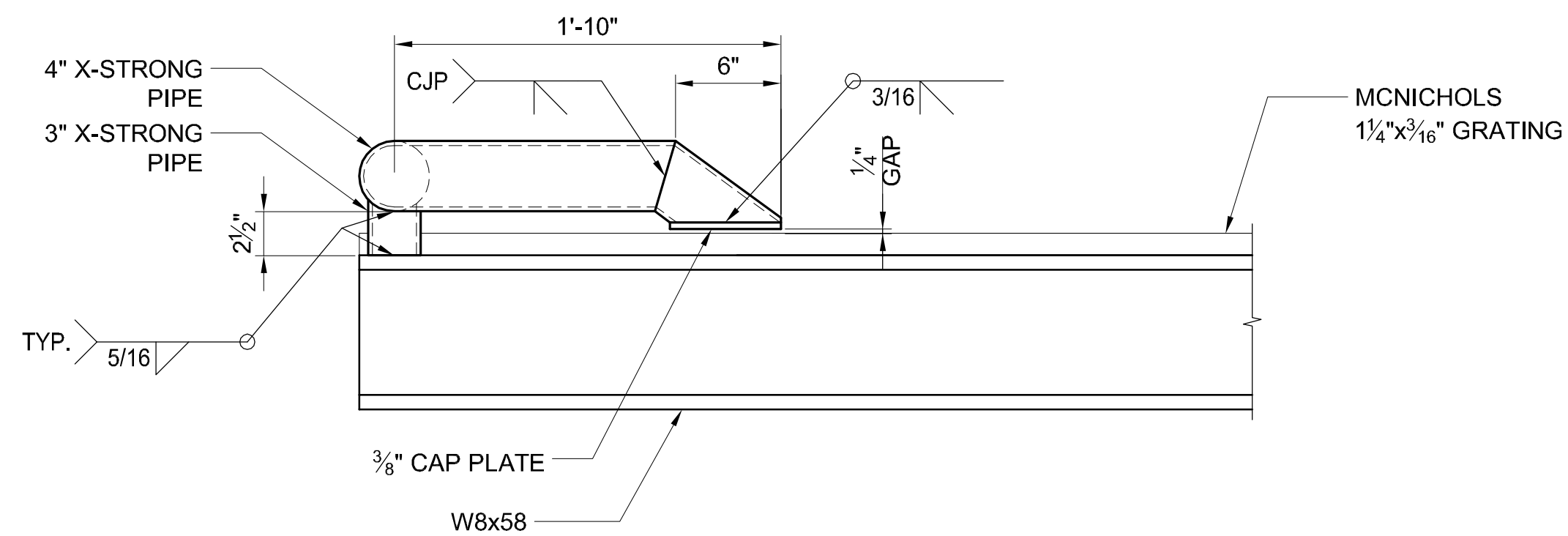
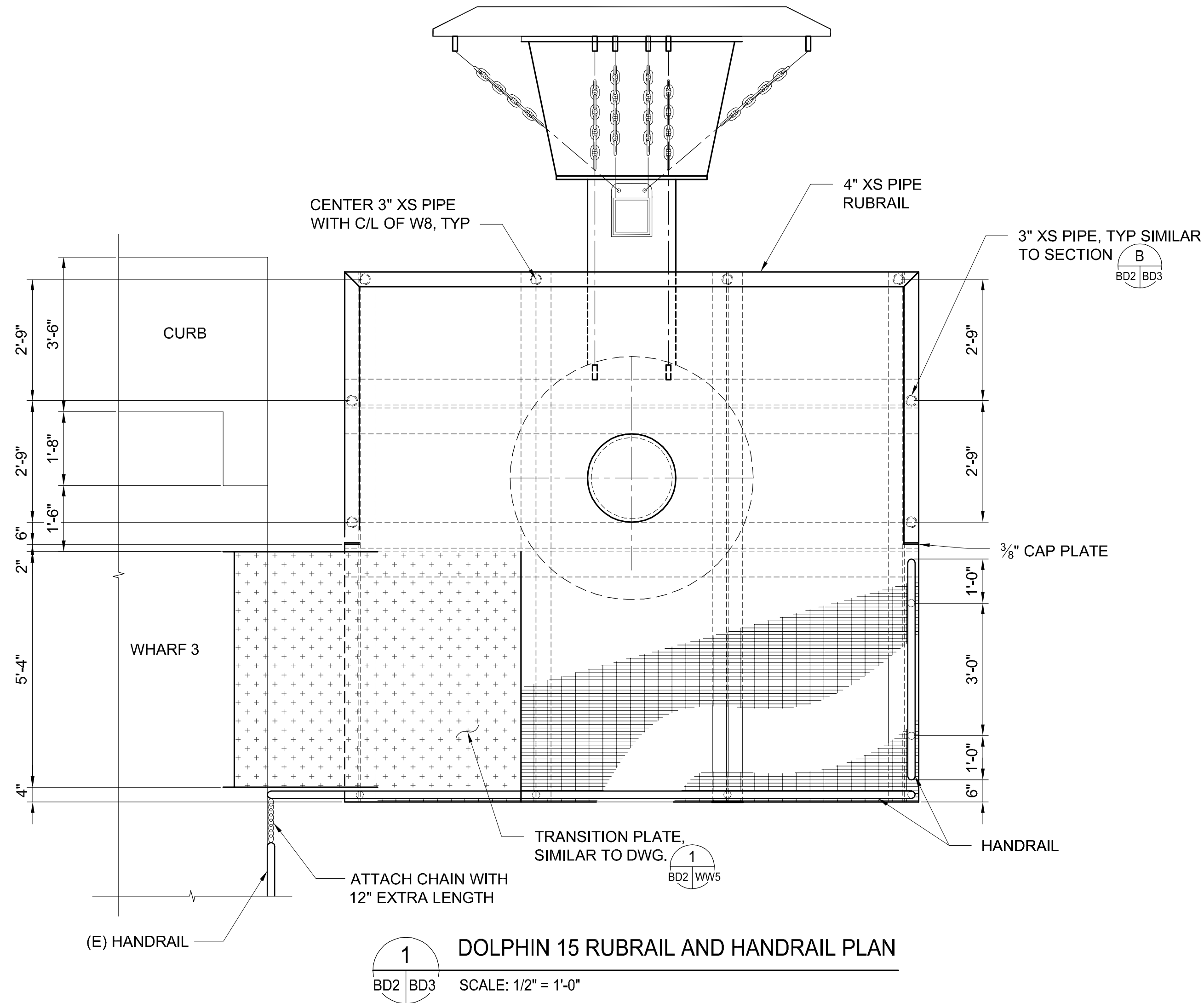
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HEET NO.

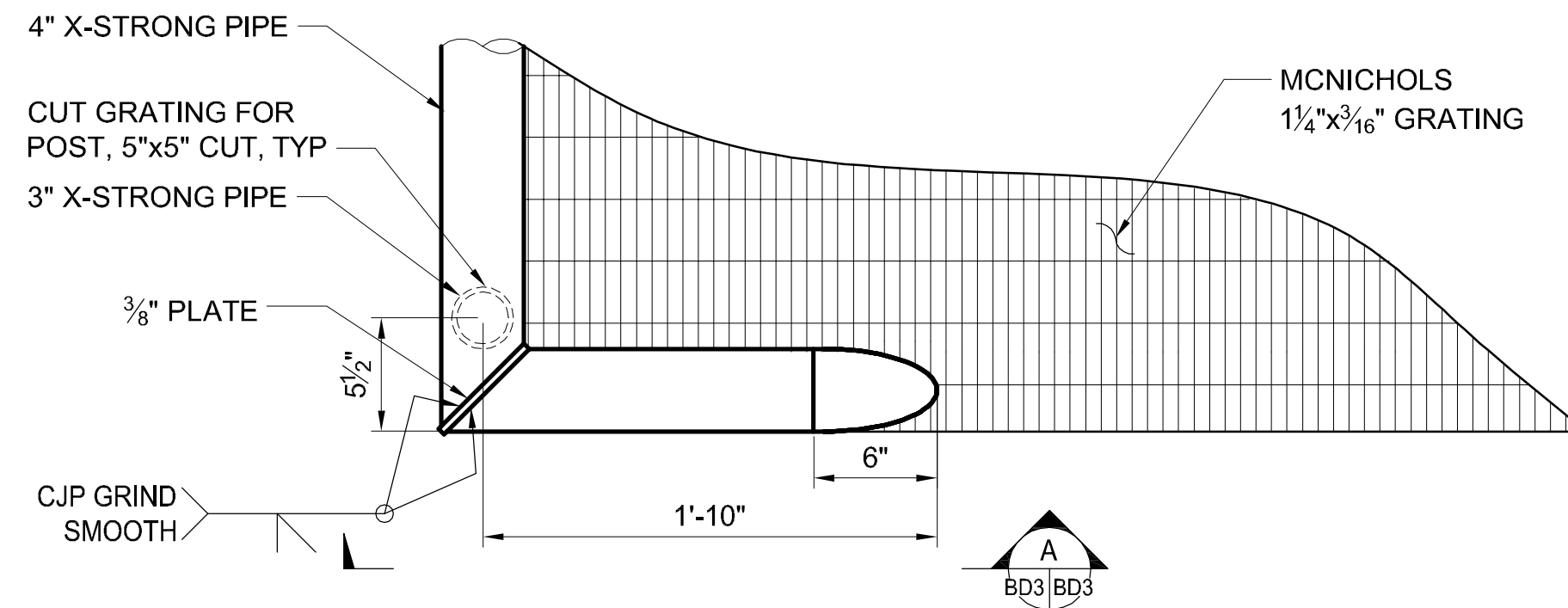
BD2

14 OF 37 SHEETS

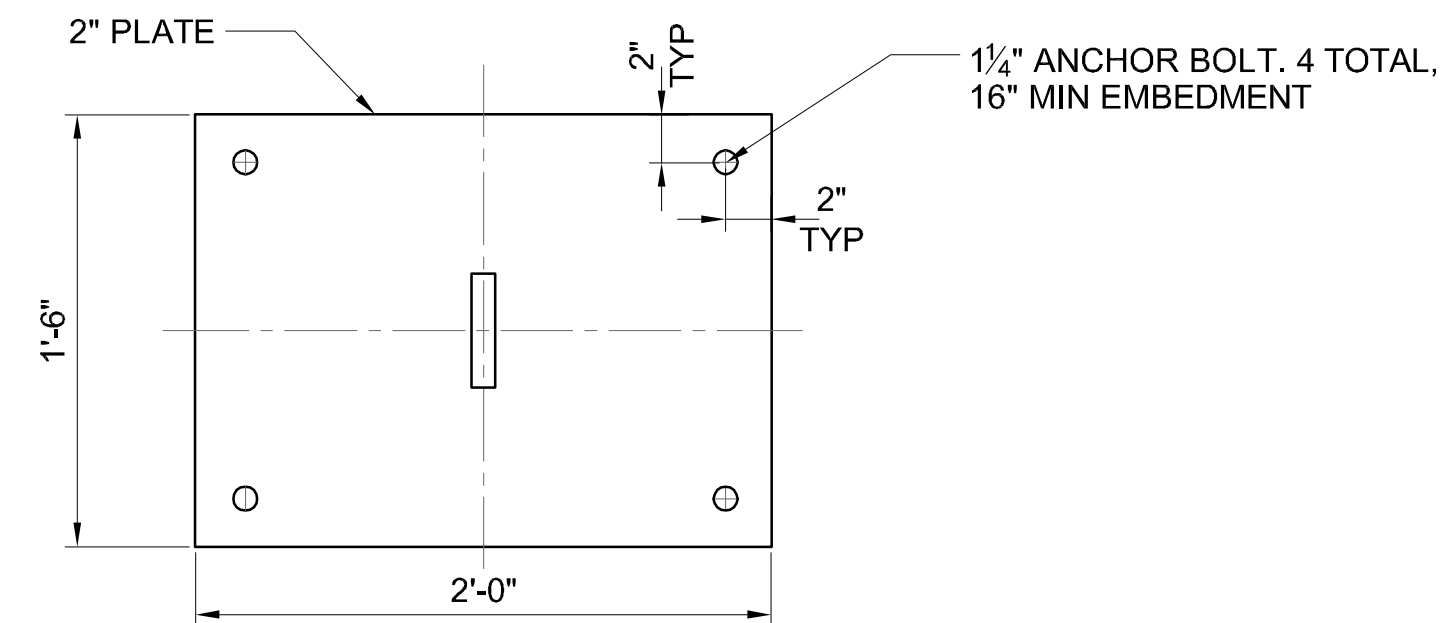
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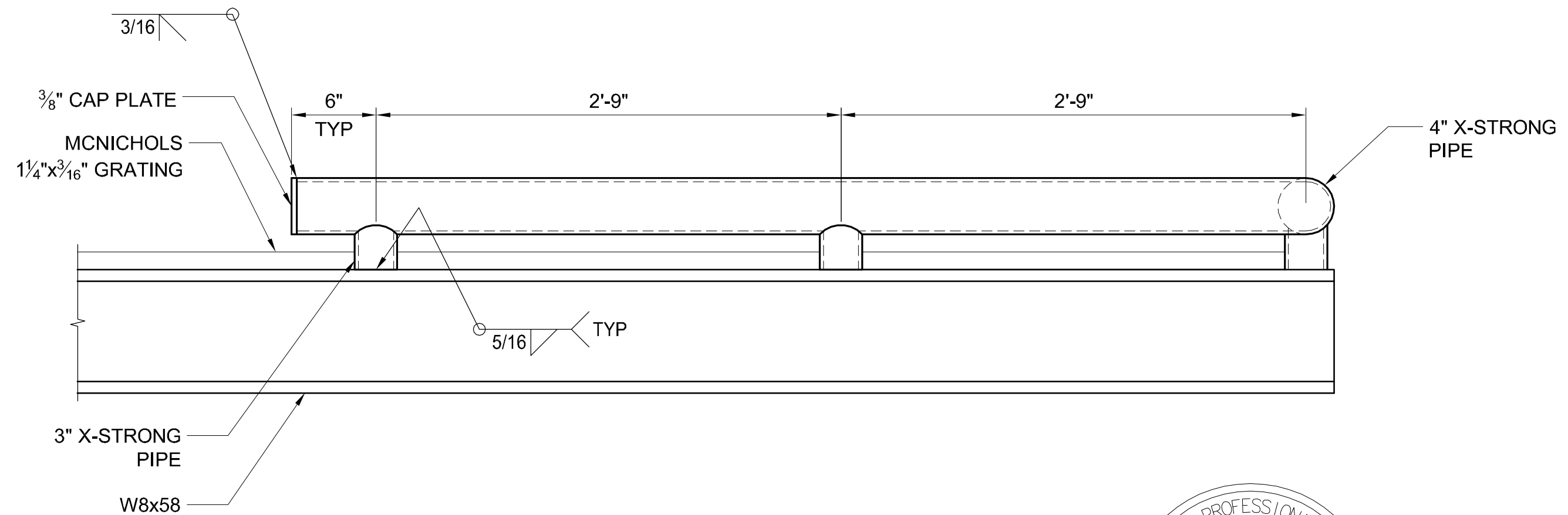
A SECTION
BD2 BD3 SCALE: 1 1/2" = 1'-0"



2 DETAIL
BD2 BD3 SCALE: 1 1/2" = 1'-0"



3 ANCHOR PLATE DETAIL
BD1 BD3 SCALE: 1 1/2" = 1'-0"



B SECTION
BD2 BD3 SCALE: 1 1/2" = 1'-0"



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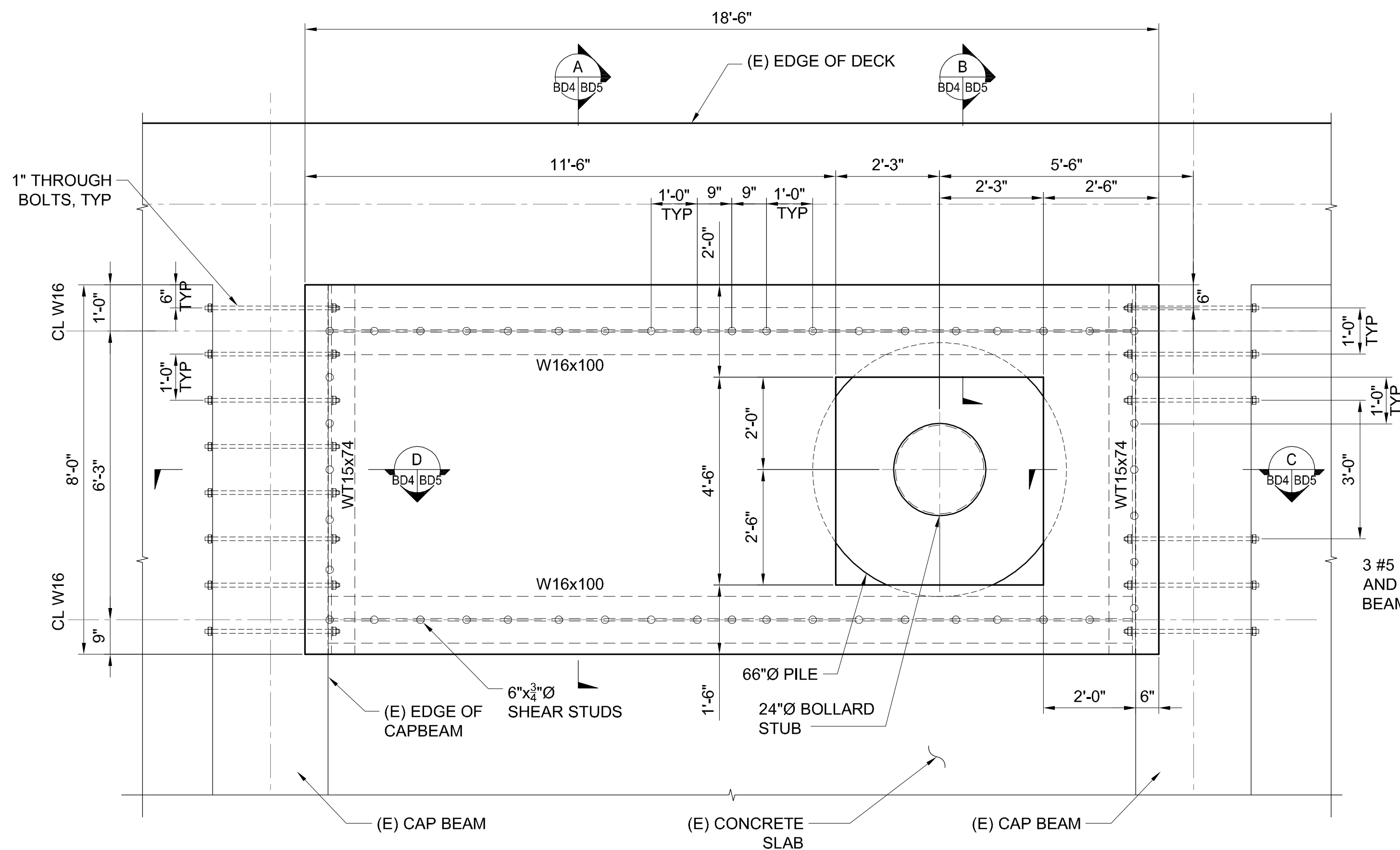
WHARVES 3 AND 4
BREASTING DOLPHIN
DETAILS

SHEET NO.

BD3

15 OF 37 SHEETS

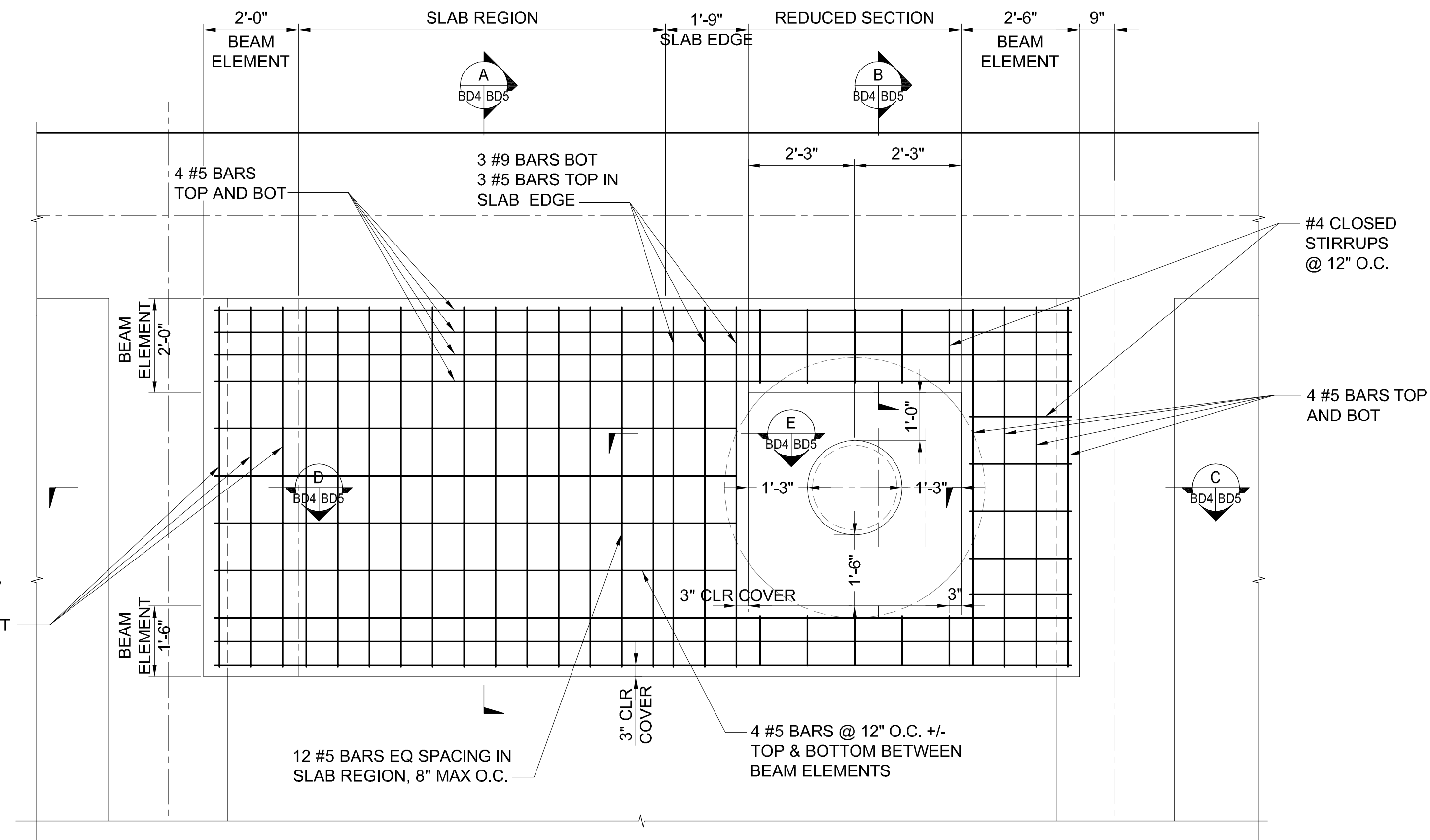
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1 DETAIL - CONCRETE PLAN FOR DOLPHINS 9,11,13
BD4 | BD4 SCALE: 1/2" = 1'-0"

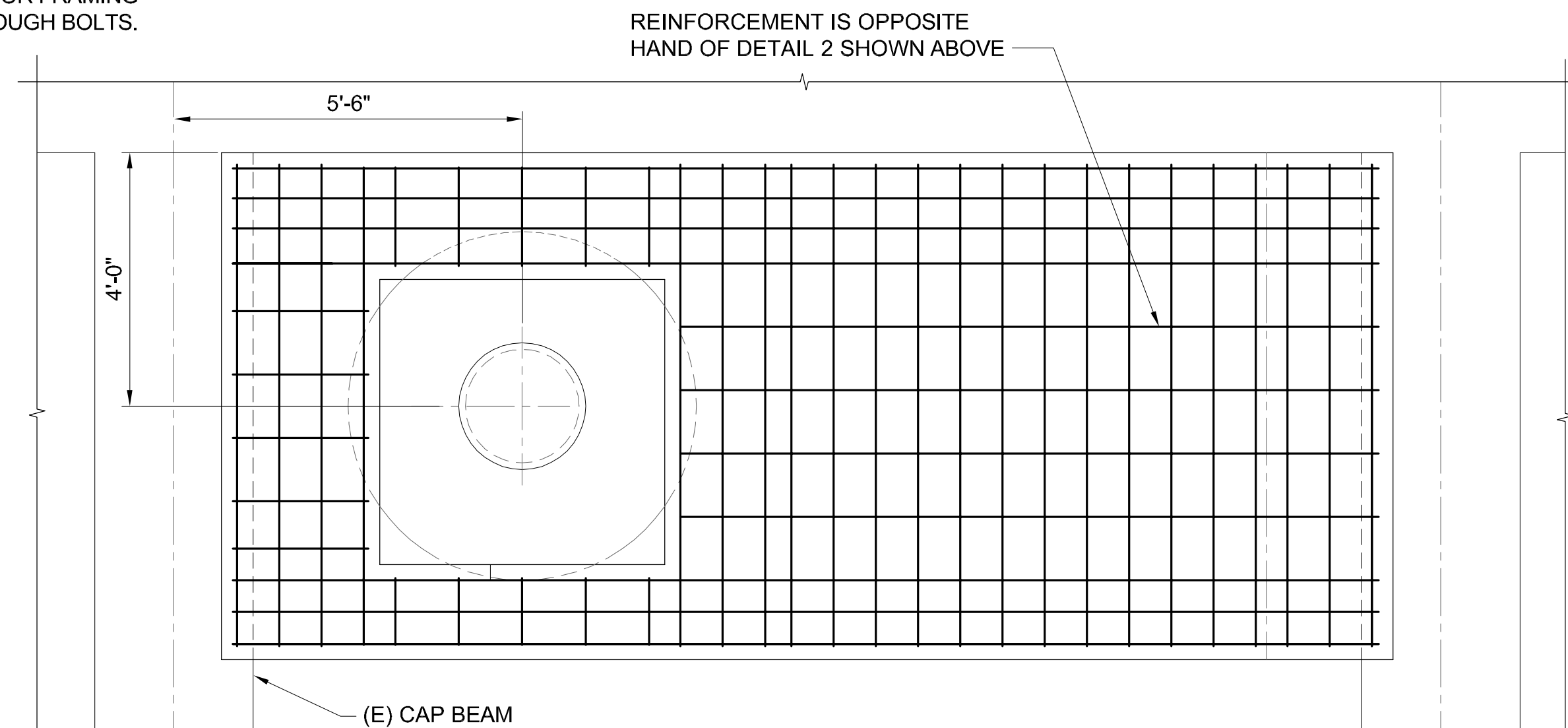
NOTES:

- EXISTING PILES AND FENDER SYSTEM NOT SHOWN FOR CLARITY.
- DOLPHINS 8, 10, 12, 14 HAVE SAME LOCATIONS FOR FRAMING MEMBERS: W16, WT15, SHEAR STUDS, AND THROUGH BOLTS.



2 REINFORCEMENT - PLAN FOR DOLPHINS 9, 11, 13
BD4 | BD4 SCALE: 1/2" = 1'-0"

NOTE: EXISTING PILES AND FENDER SYSTEM NOT SHOWN FOR CLARITY.



3 REINFORCEMENT - PLAN FOR DOLPHINS 8,10,12,14
BD4 | BD4 SCALE: 1/2" = 1'-0"



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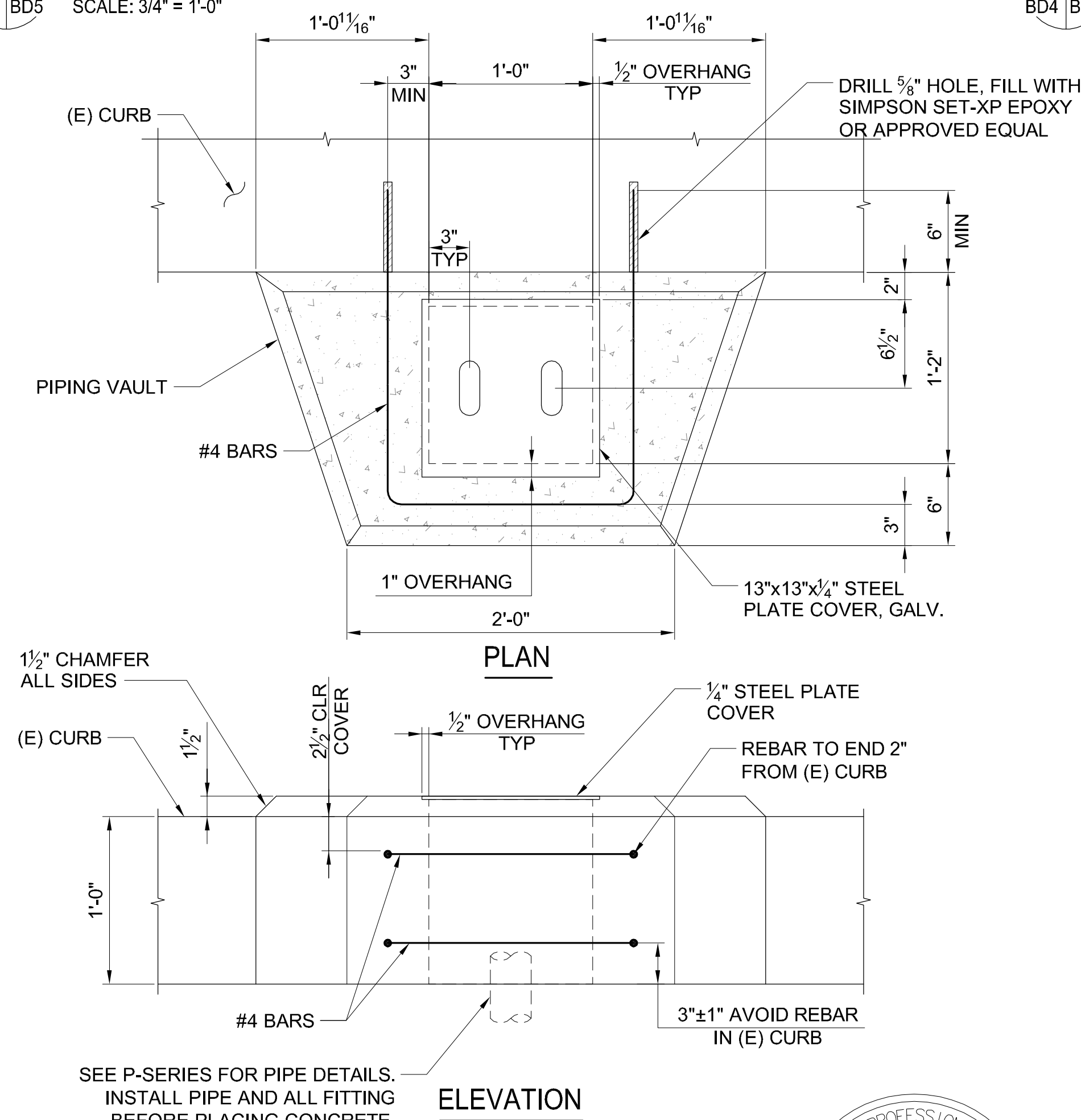
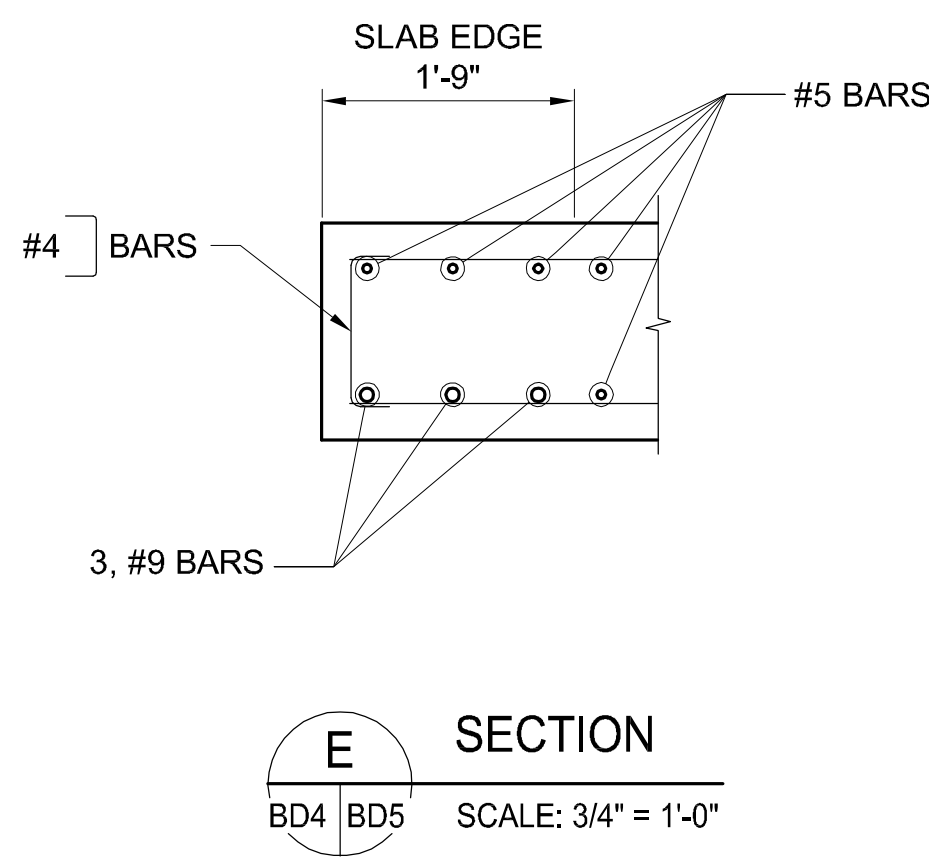
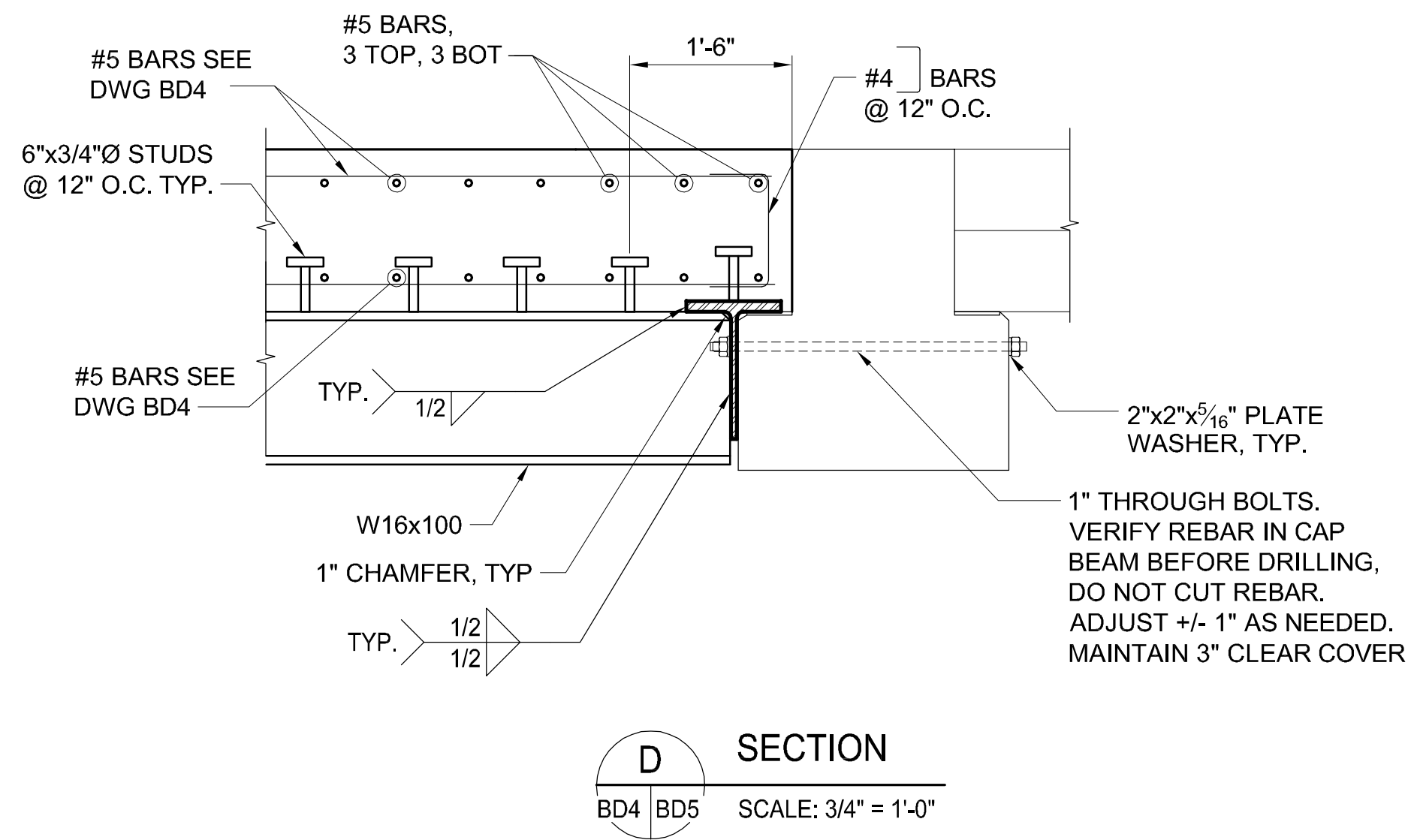
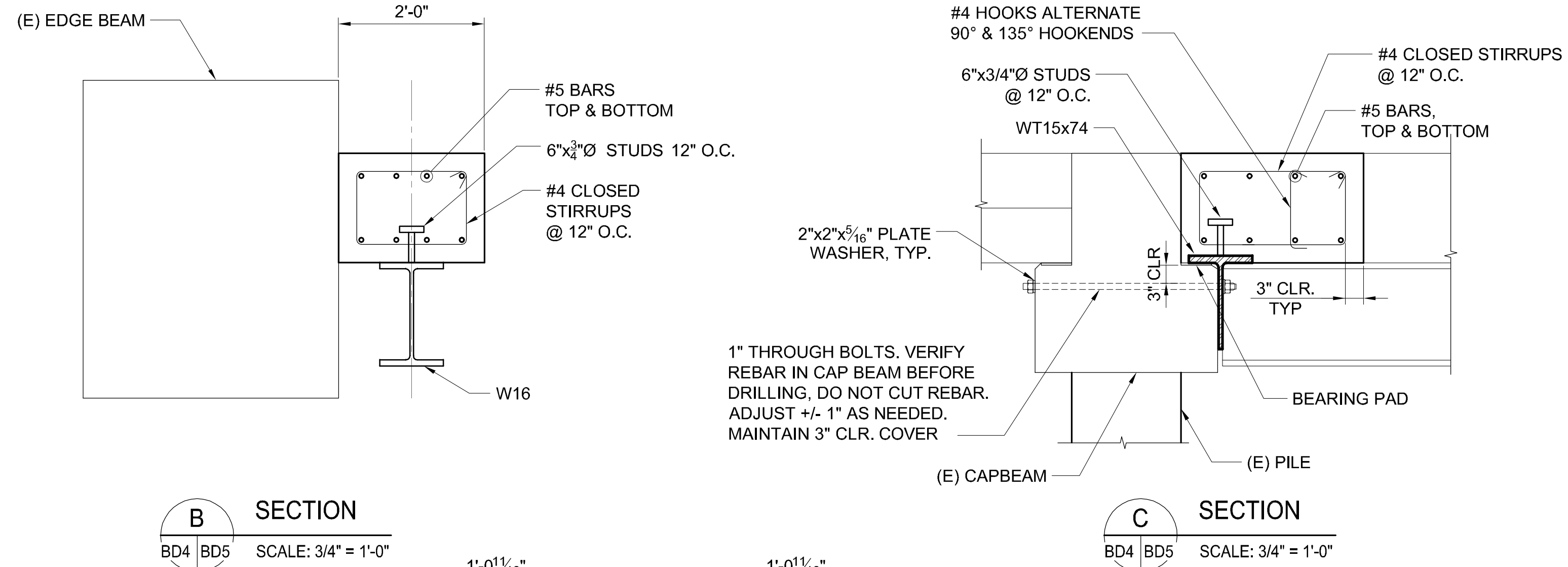
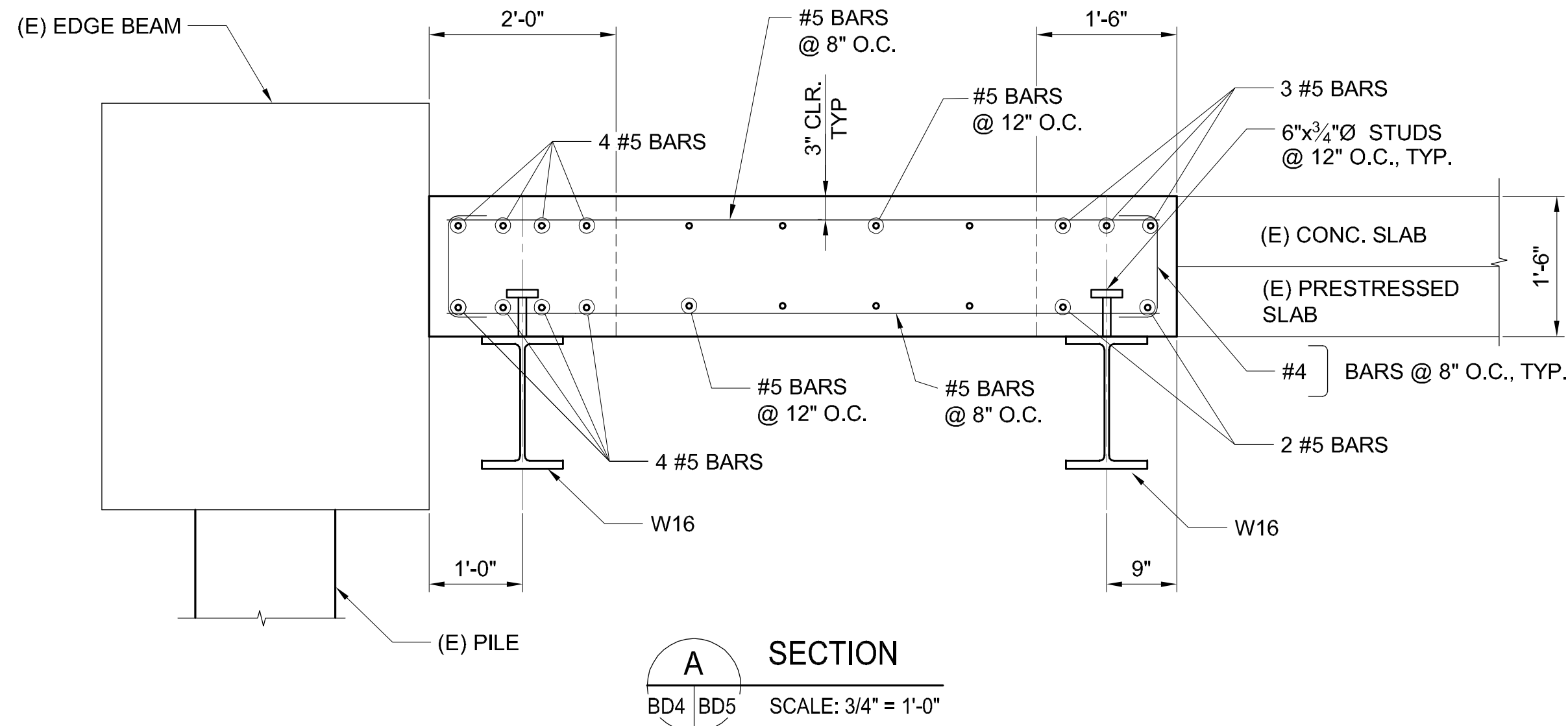
WHARVES 3 AND 4
CONCRETE PLAN

SHEET NO.
BD4
16 OF 37 SHEETS

						DATE 09/30/16	SUBMITTED	DATE	REVIEWED	DATE
						JRSW	DESIGNED		PROJECT ENGINEER	
						DATE 09/30/16	SUBMITTED	DATE	APPROVED	DATE
						JUBA	DELINEATED		ASSOCIATE ENGINEER	
						DATE 09/30/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG				
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED				

FILE NO: SCALE: AUTOCAD DRAWING FILE: A086704-BD1 TO B05.DWG

FILE LOCATION: C:\A085000\085000704\CAD\085000704\DWG\DATE: 2/22/2017 11:50:22 AM DRAFTER/PERSON: JULIUS BACINILLO



F PIPING VAULT - DETAIL
BD5 BD5 SCALE: 1 1/2" = 1'-0"



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							DATE 09/30/16	SUBMITTED	DATE	REVIEWED	DATE
						JRSW	DESIGNED	PROJECT ENGINEER			
							DATE 09/30/16	SUBMITTED	DATE	APPROVED	DATE
						JUBA	DELINEATED	ASSOCIATE ENGINEER			
							DATE 09/30/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG					
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	JCKG	CHECKED			

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WHARVES 3 AND 4
REINFORCEMENT DETAILS

SHEET NO.
BD5
17 OF 37 SHEETS

PLAN

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

C SECTION
F1 F1
SCALE: 1" = 1'-0"

SECTION

D

F1 F1

SCALE: 1" = 1'-0"

SECTION

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

SECTION

B

F1 F1

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

NOTES:

- 1) EACH FENDER AND ITS CHAIN ANCHORAGE SYSTEM CAN BE SHIFTED UP TO 3" AWAY FROM CL DOLPHIN TO AVOID EXISTING REBAR AND ANCHOR BOLTS.
- 2) CHAINS AND ACCOMPANYING HARDWARE IS TO BE DESIGNED BY MANUFACTURER. ASD LOAD = 38 KIPS, RECOMMENDED MBL = 95 KIPS.
- 3) DOLPHINS 1-4 AND 5-6 HAVE THEIR OWN TYPICAL GEOMETRY. THICKNESS OF CURB FOR DOLPHINS 1-4: 2'-6" AND DOLPHINS 5-6: 2'-3". LOCATIONS OF PADEYES ON FENDER PANEL VARY ACCORDINGLY.



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							DATE 09/30/16	SUBMITTED	DATE _____	REVIEWED	DATE _____
							JBSW DESIGNED	PROJECT ENGINEER			
							DATE 09/30/16	SUBMITTED	DATE _____	APPROVED	DATE _____
							JUBA DELINEATED	ASSOCIATE ENGINEER			
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DATE	SYMBOL		REVISIONS	BY	CHECKED	APPROVED	JCKG (JCKG)				

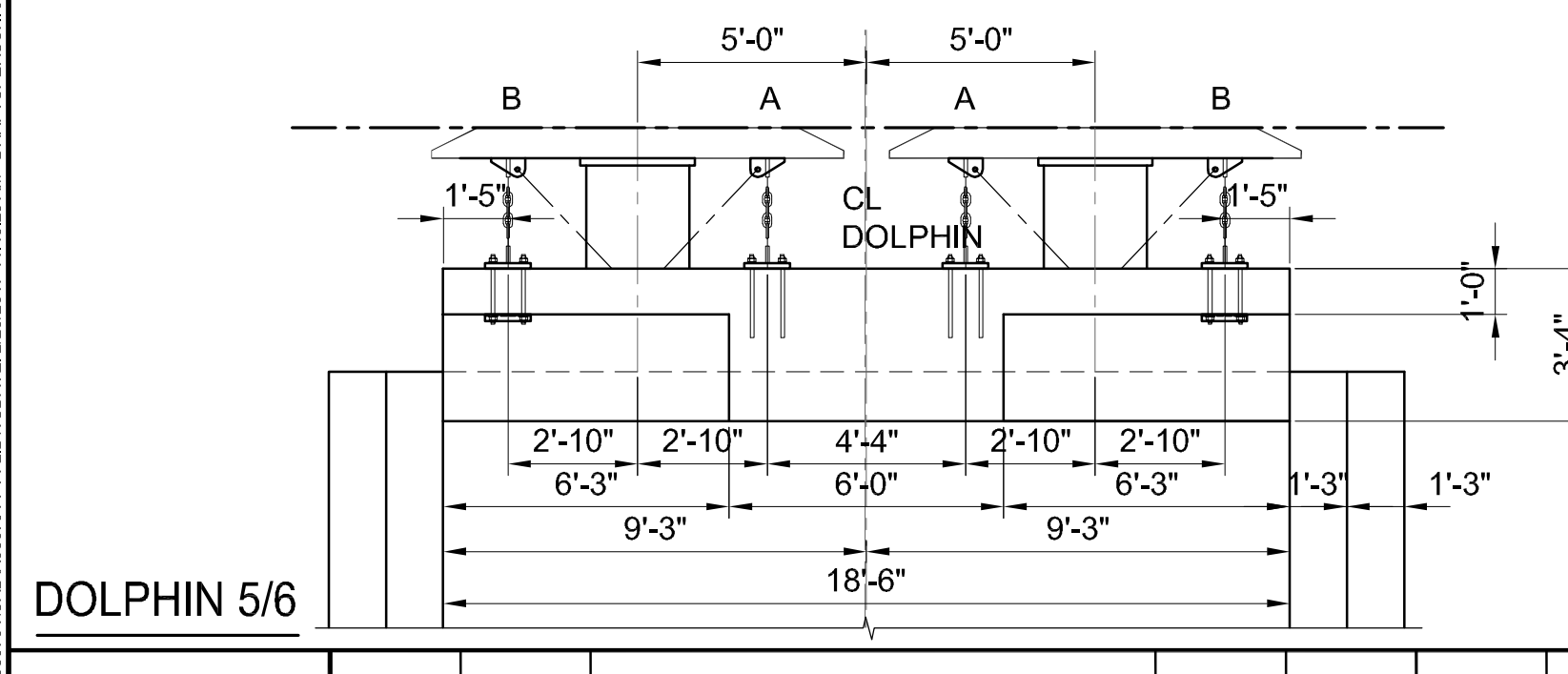
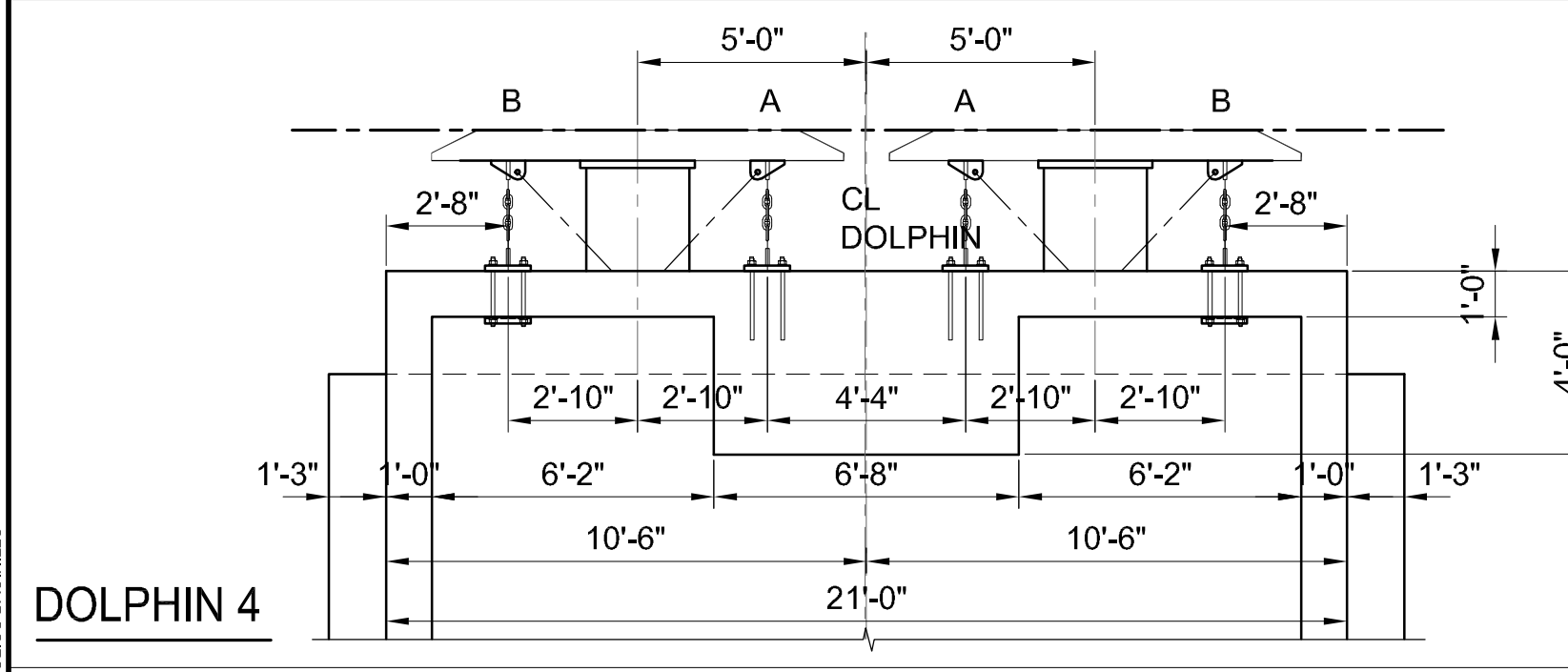
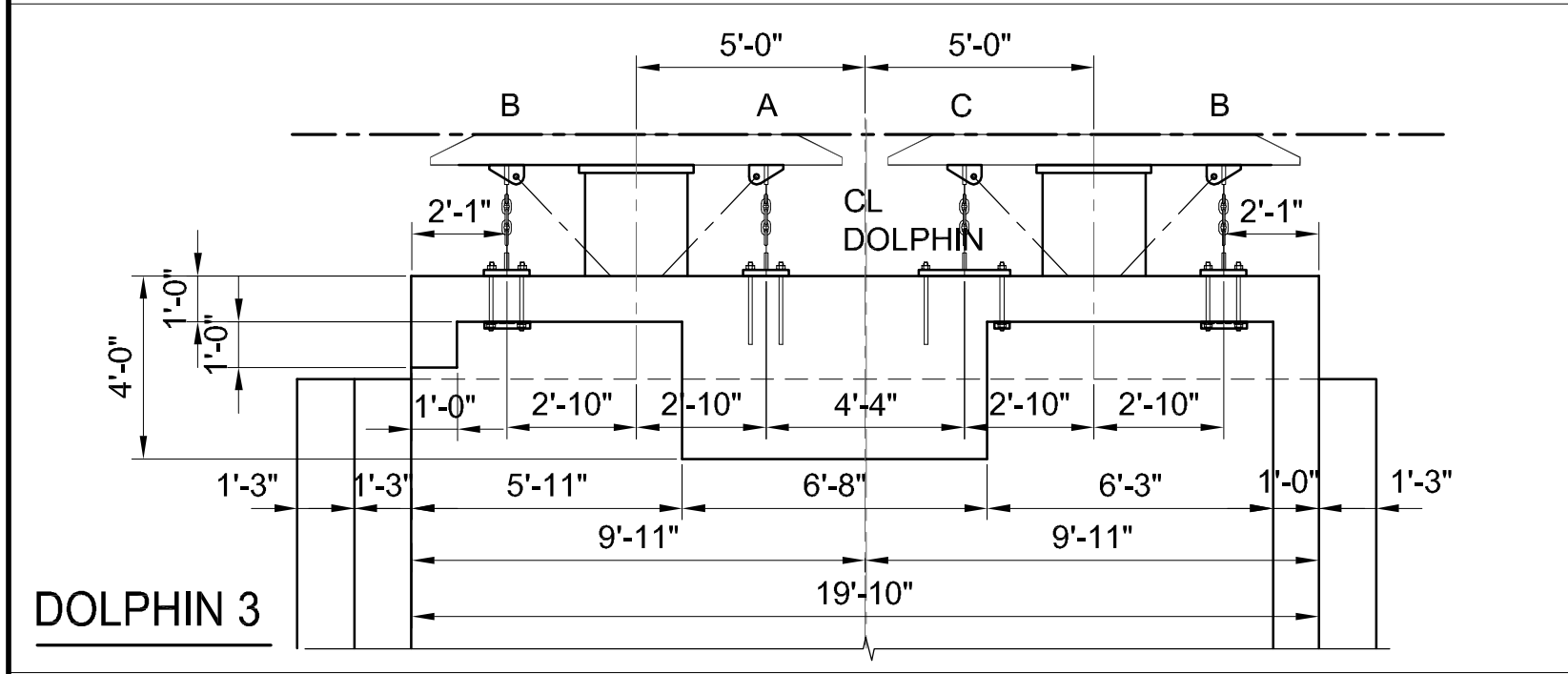
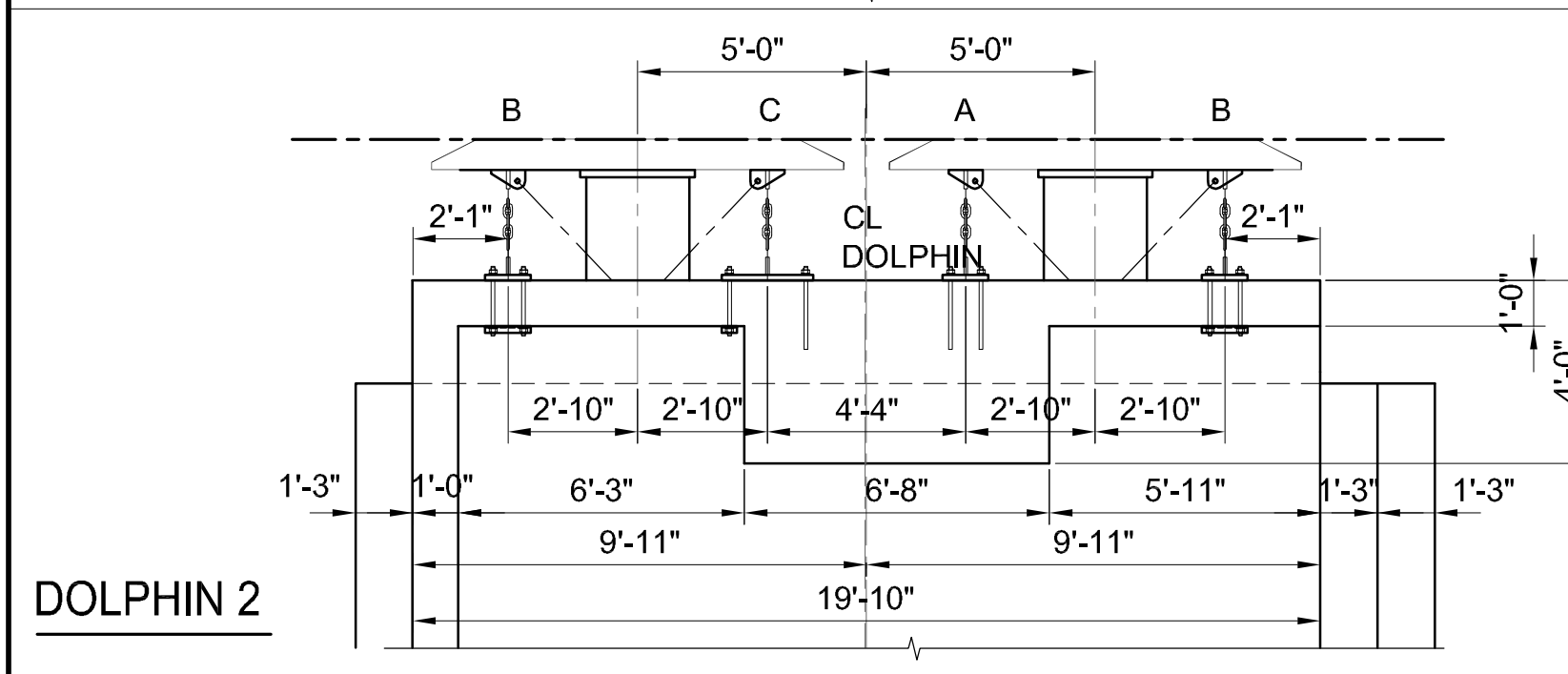
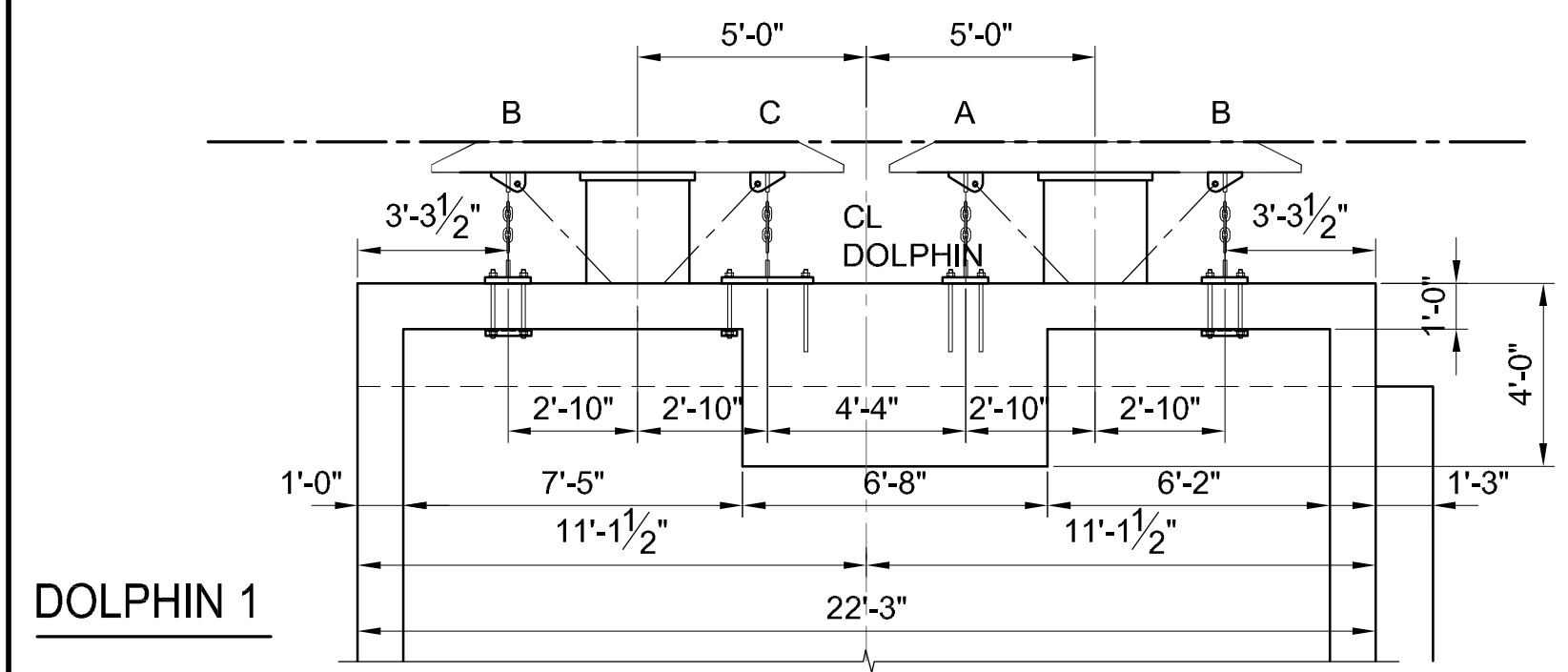
PORT OF REDWOOD CITY
675 SEAPORT BLVD
REDWOOD CITY, CA 94063

WHARVES 3 AND 4
WHARF 4
FENDER DETAILS - SHEET 1 OF 2

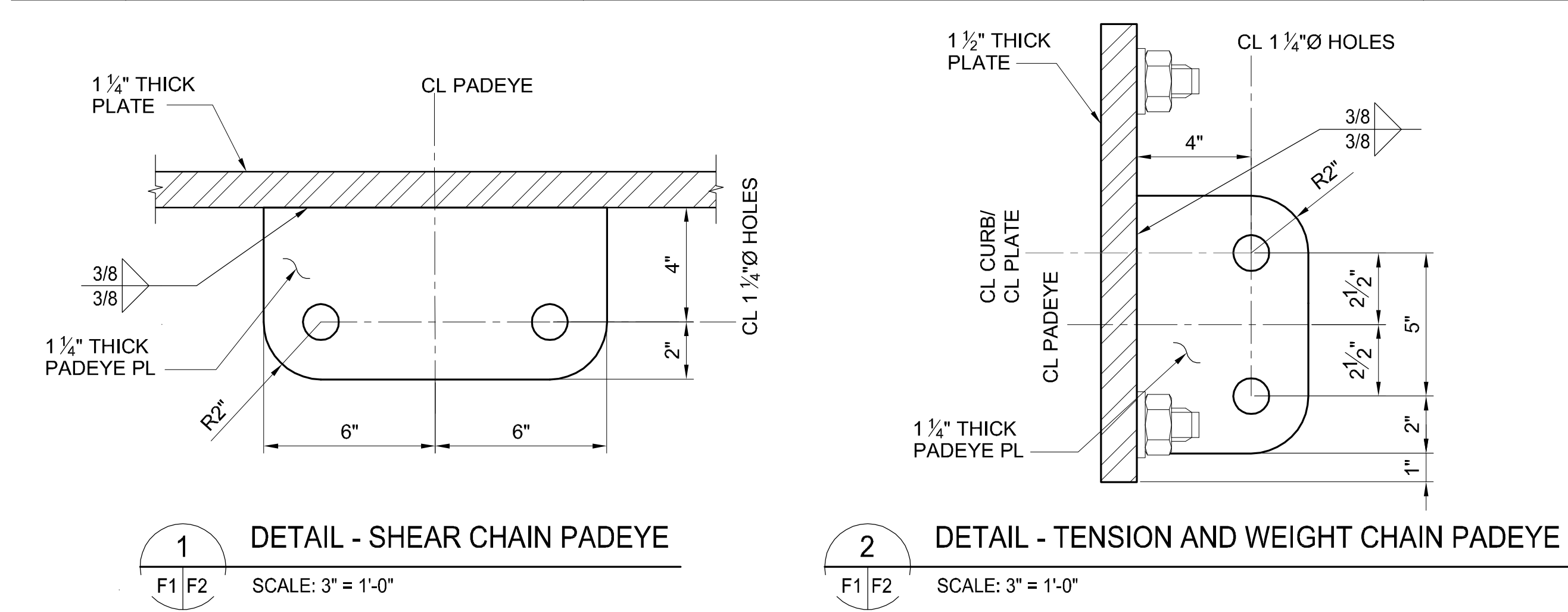
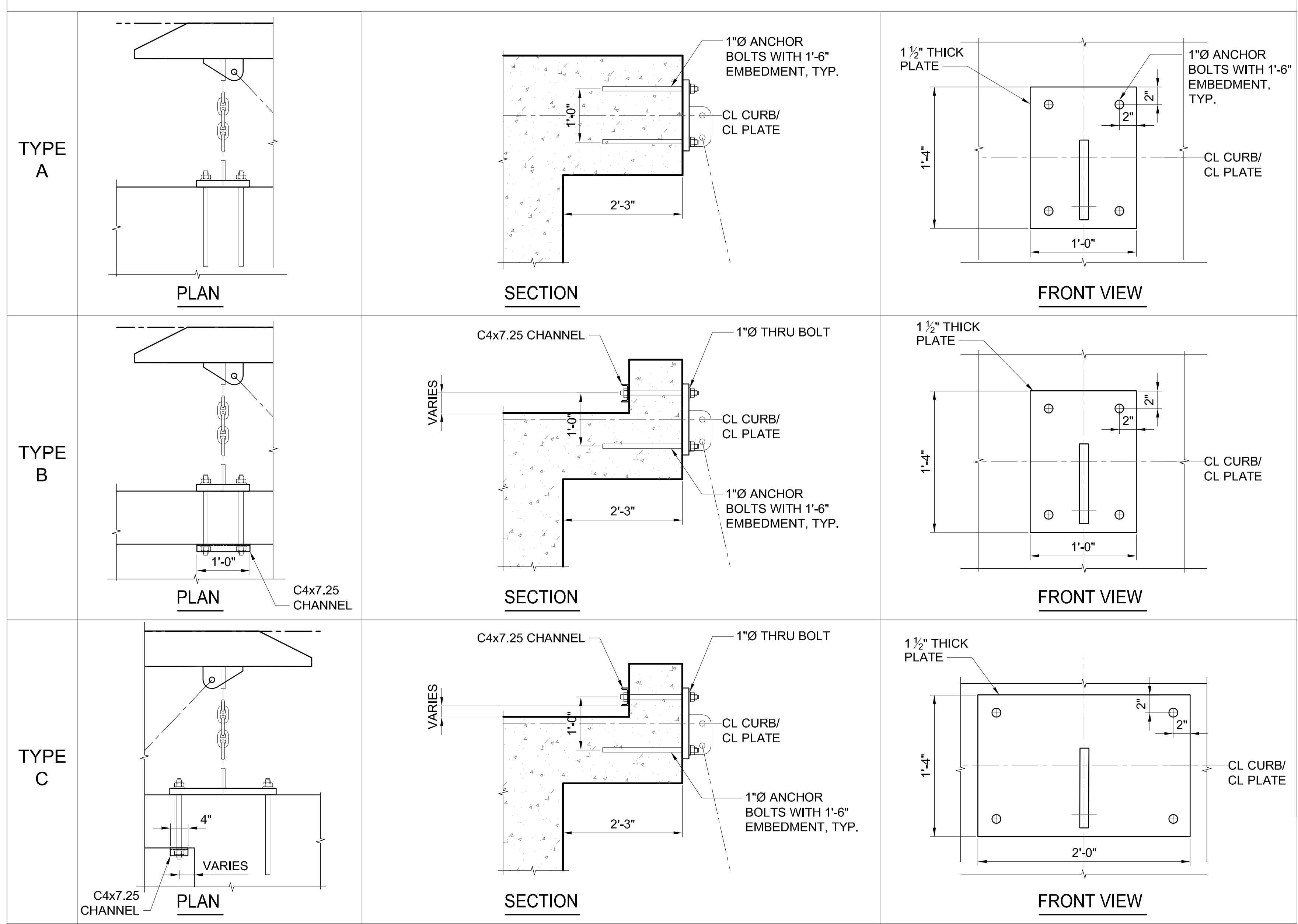
SHEET NO.
F1
18 OF 37 SHEETS

FILE LOCATION: O:\A085000\A086704\CAD\A086704\F1-F2.DWGDATE: 2/23/2017 11:45:54 AM DRAFTSPERSON: JULIUS BACINILLO

ANCHORAGE SYSTEM LAYOUT (TENSION AND WEIGHT CHAINS)
SEE NOTE 1 AND 2 ABOUT FENDER POSITIONING



ANCHORAGE SYSTEM DETAILS (TENSION AND WEIGHT CHAINS)

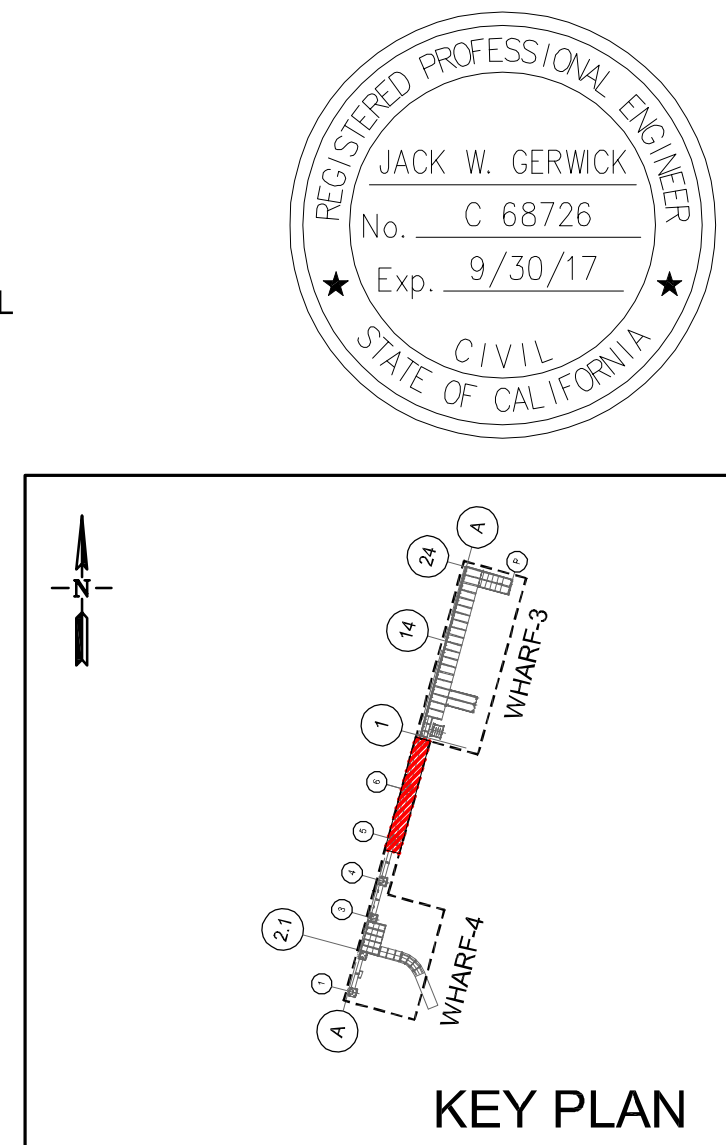
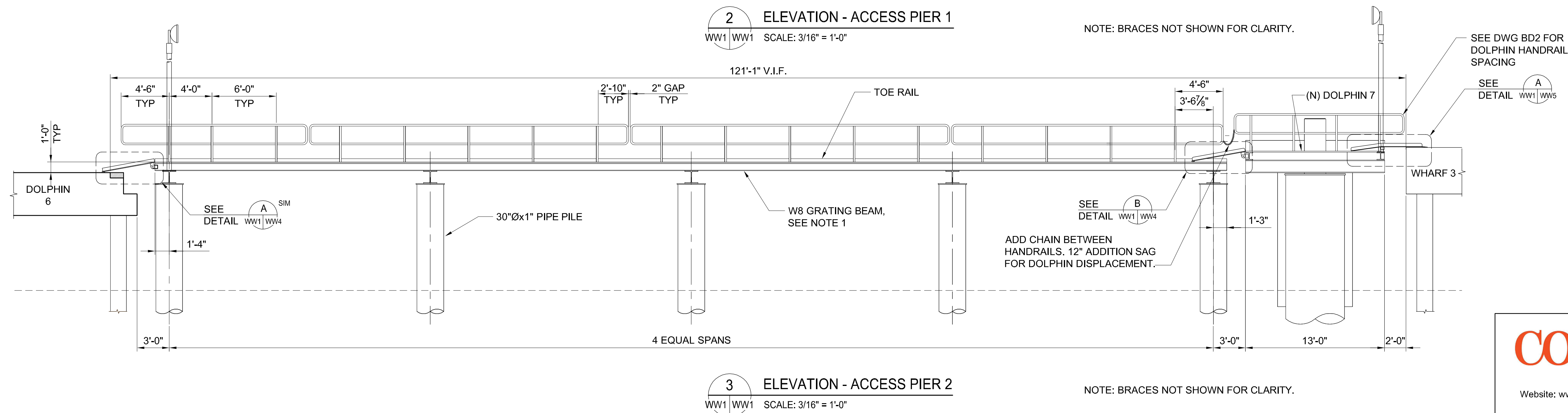
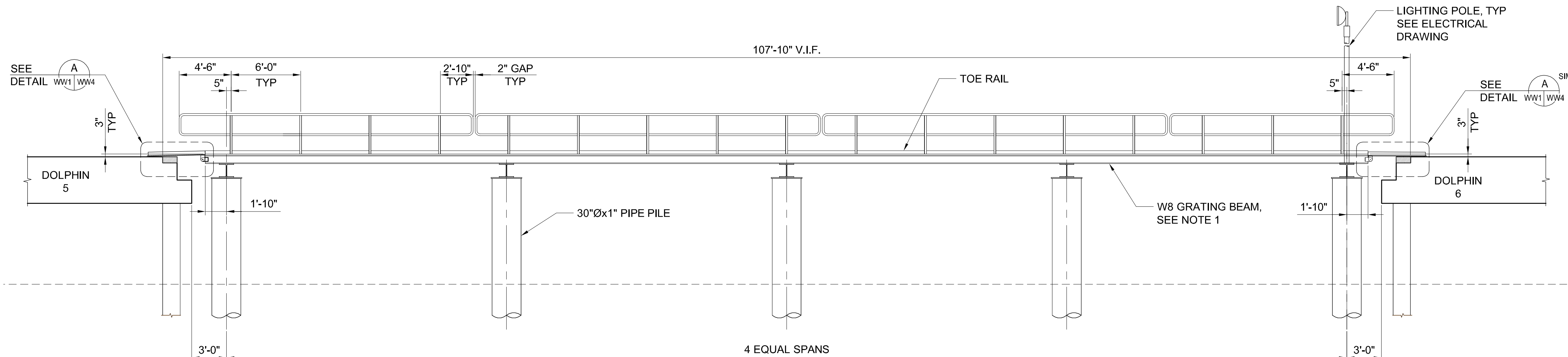
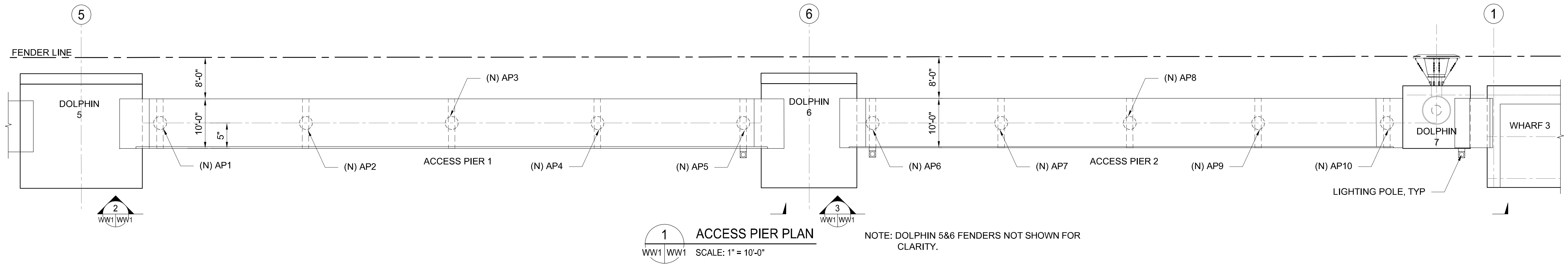


- NOTES:
- 1) EACH FENDER AND ITS CHAIN ANCHORAGE SYSTEM CAN BE SHIFTED UP TO 3" AWAY FROM CL DOLPHIN TO AVOID EXISTING REBAR AND ANCHOR BOLTS.
 - 2) VERIFY DIMENSIONS FOR EACH DOLPHIN IN FIELD. FENDER SYSTEMS ARE PLACED WITH RESPECT TO CL DOLPHIN AND CL CURB.



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12/23/16 C 100% DESIGN NIF ROYO JCKG						DATE 09/30/16 SUBMITTED	DATE	REVIEWED	DATE	PORT OF REDWOOD CITY 675 SEAPORT BLVD REDWOOD CITY, CA 94063			WHARVES 3 AND 4 WHARF 4 FENDER DETAILS - SHEET 2 OF 2		SHEET NO. F2
11/11/16 B 90% DESIGN NIF ROYO JCKG						DATE 09/30/16 SUBMITTED	DATE	APPROVED	DATE	FILE NO:			SCALE:		19 OF 37 SHEETS
09/30/16 A ISSUE WITH REPORT JUBA ROYO JCKG						DATE 09/30/16 APPROVED	DATE	APPROVED	DATE	AUTOCAD DRAWING FILE: A086704-F1-F2.DWG					
DATE SYMBOL REVISIONS BY CHECKED APPROVED															



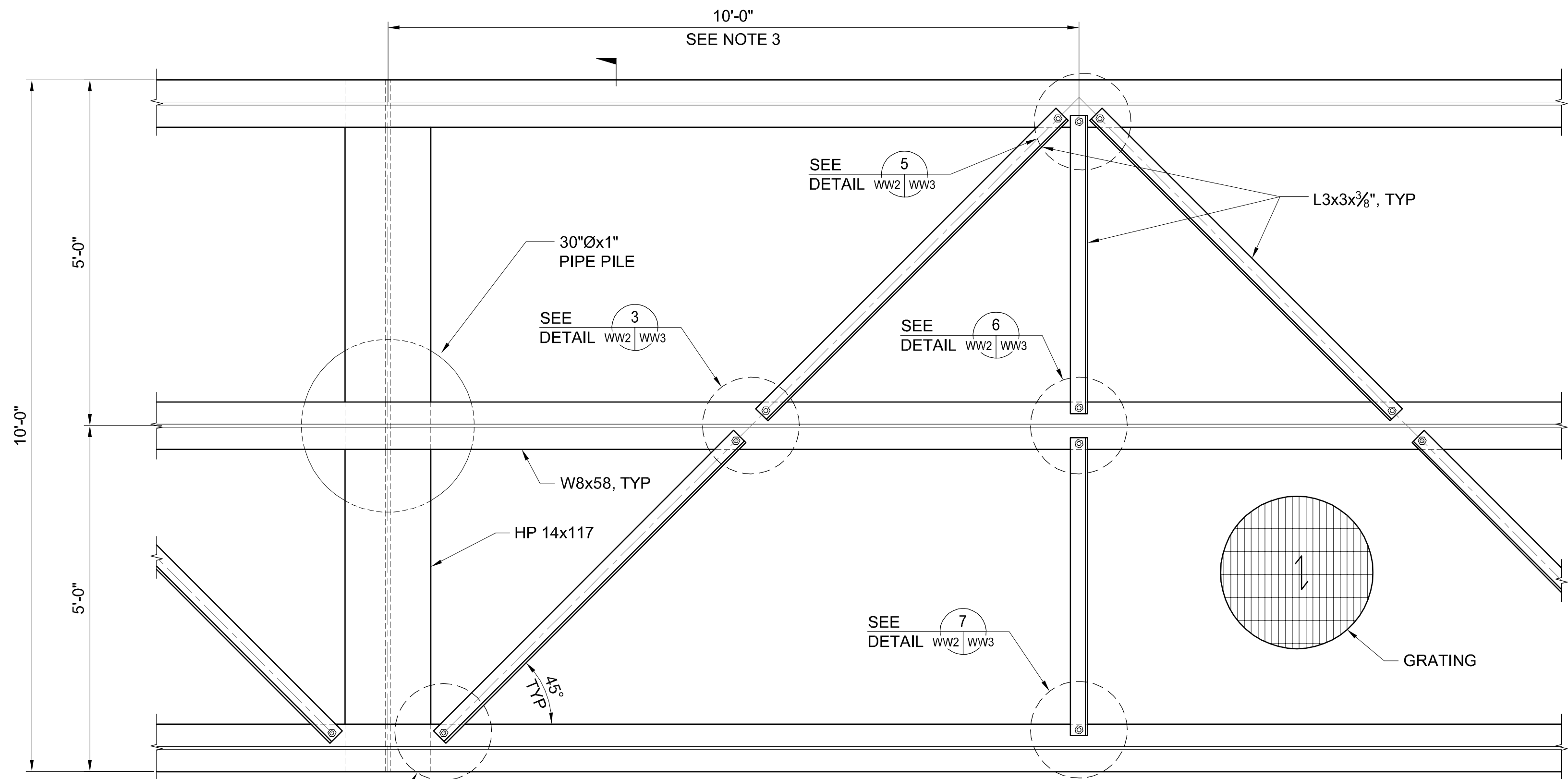
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DATE	SYMBOL	ISSUE FOR BID	REVISIONS	BY	CHECKED	APPROVED	DATE	09/30/16	SUBMITTED	DATE	REVIEWED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	DATE	09/30/16	DESIGNED	DATE	APPROVED	DATE
							DATE	09/30/16	PROJECT ENGINEER	DATE	APPROVED	DATE
							DATE	09/30/16	ASSOCIATE ENGINEER	DATE	APPROVED	DATE
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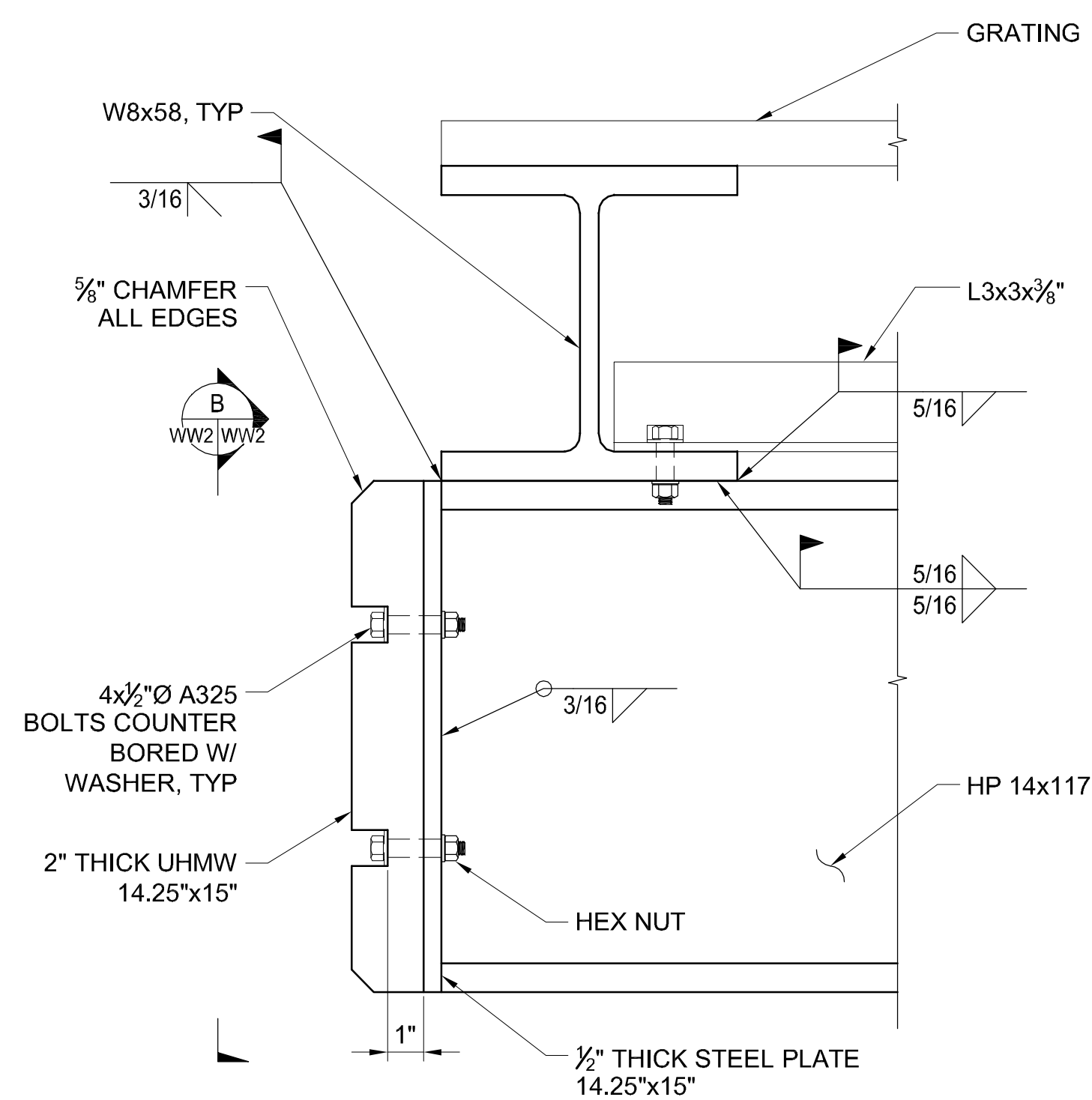
PORT OF REDWOOD CITY
675 SEAPORT BLVD
REDWOOD CITY, CA 94063

WHARVES 3 AND 4
WHARF 4
WALKWAY PLAN AND ELEVATIONS

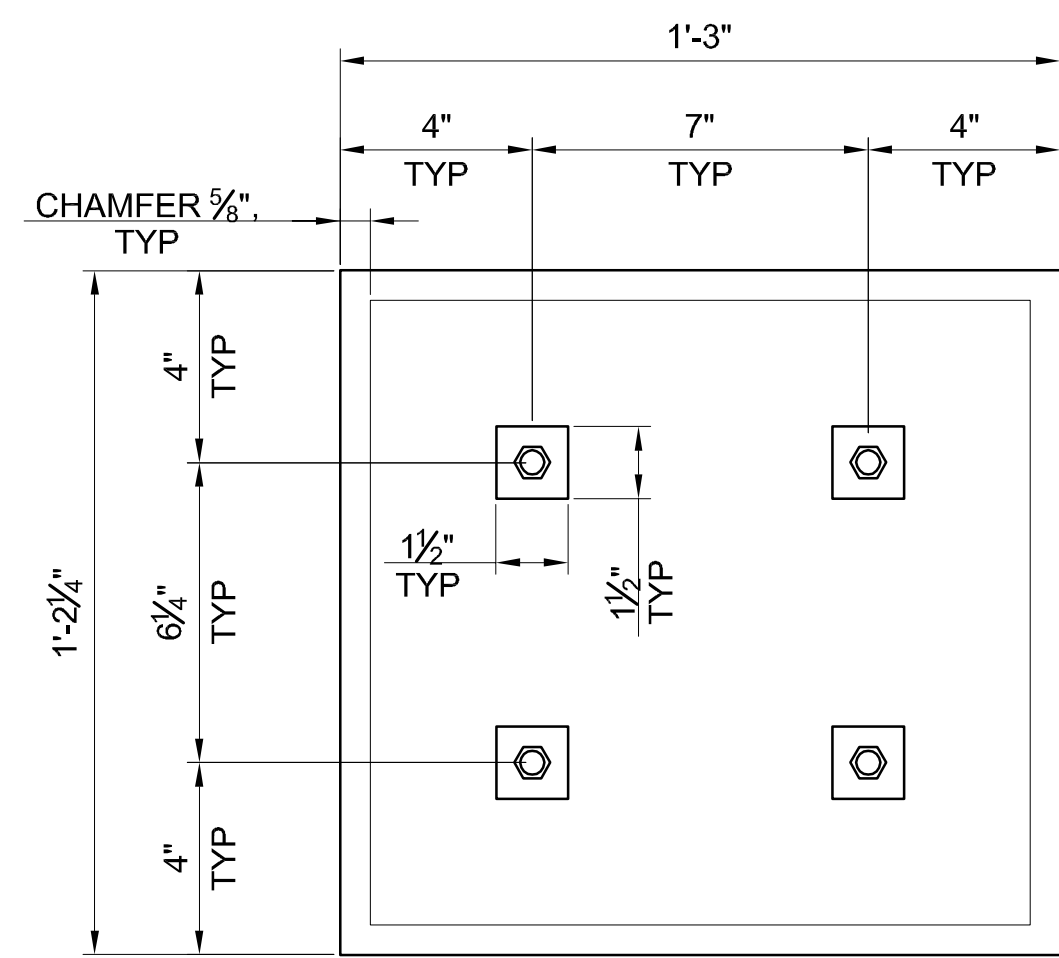
SHEET NO.
WW1
20 OF 37 SHEETS



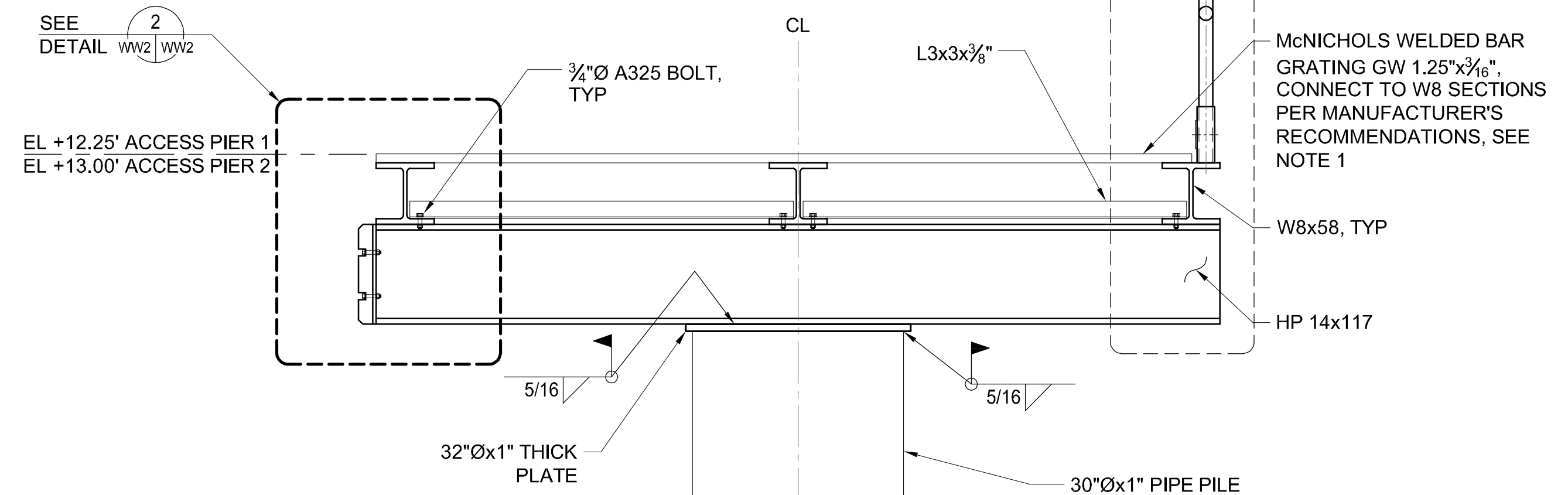
1 PLAN - ACCESS PIER 1
WW2 | WW2 SCALE: 1/2" = 1'-0"



2 DETAIL-PILE CAP CORNER PROTECTOR
WW2 | WW2 SCALE: 3" = 1'-0"



B SECTION
WW2 | WW2 SCALE: 3" = 1'-0"



A SECTION
WW2 | WW2 SCALE: 1/2" = 1'-0"

- NOTES:
- ATTACH GRATING ALONG THE LENGTH OF W8x58 MEMBERS WITH SADDLE TYPE GRATING CLIPS. 4' MAXIMUM SPACING AND WITHIN 1' FROM EDGE. SPLICE GRATING AT CENTER OF W8 IF NECESSARY AND USE CLIPS ON BOTH SIDES OF THE W8.
 - GRATING SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
 - NOMINAL SPACING OF BRACES MAY VARY BASED UPON PILE POSITION.



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FILE LOCATION: C:\A086704\A086704-CA\A086704-WW2.DWG DATE: 2/22/2017 11:44:35 AM DRAWN BY: JWS/SP/SSA/JULIUS SACHINELLO

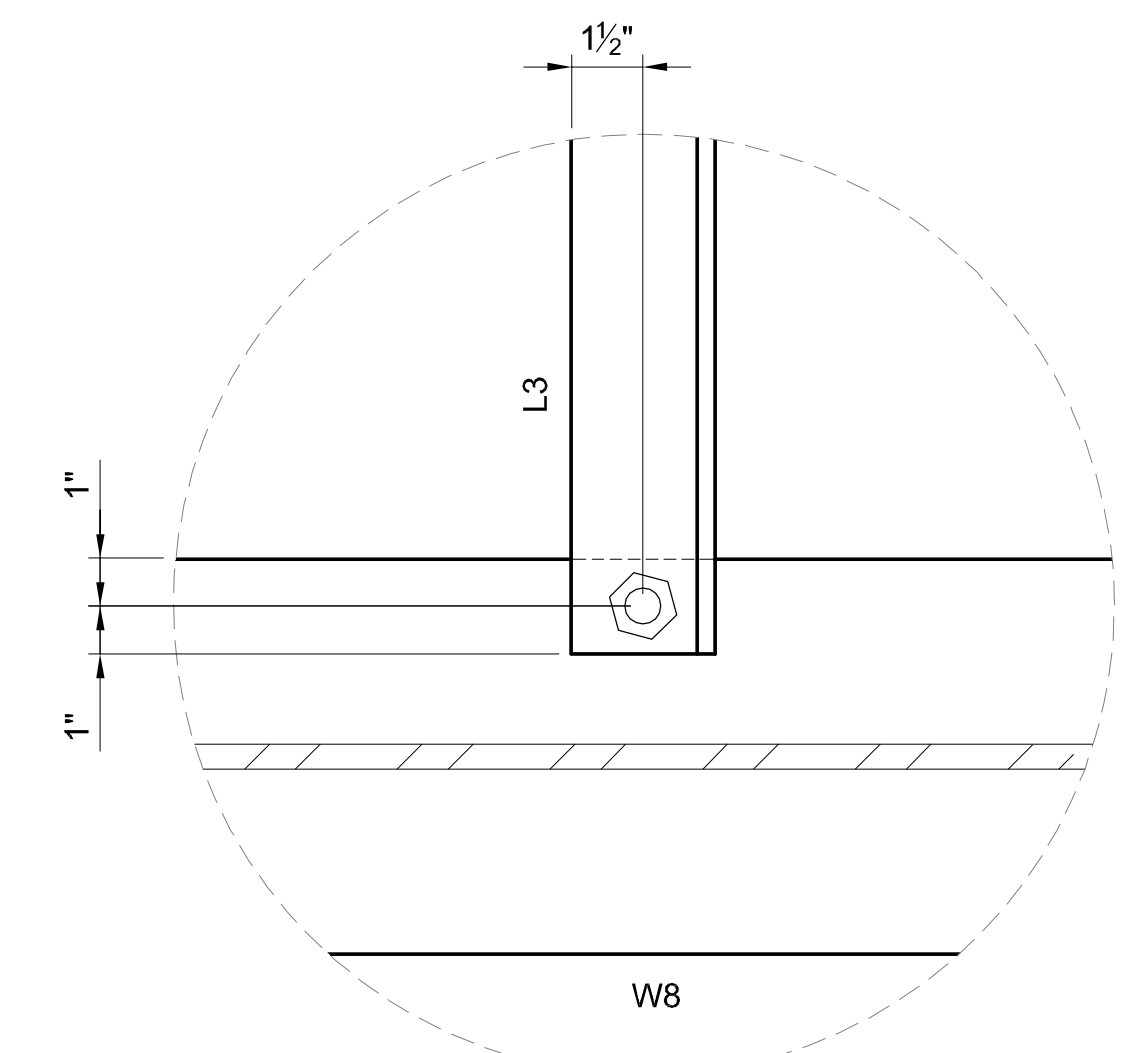
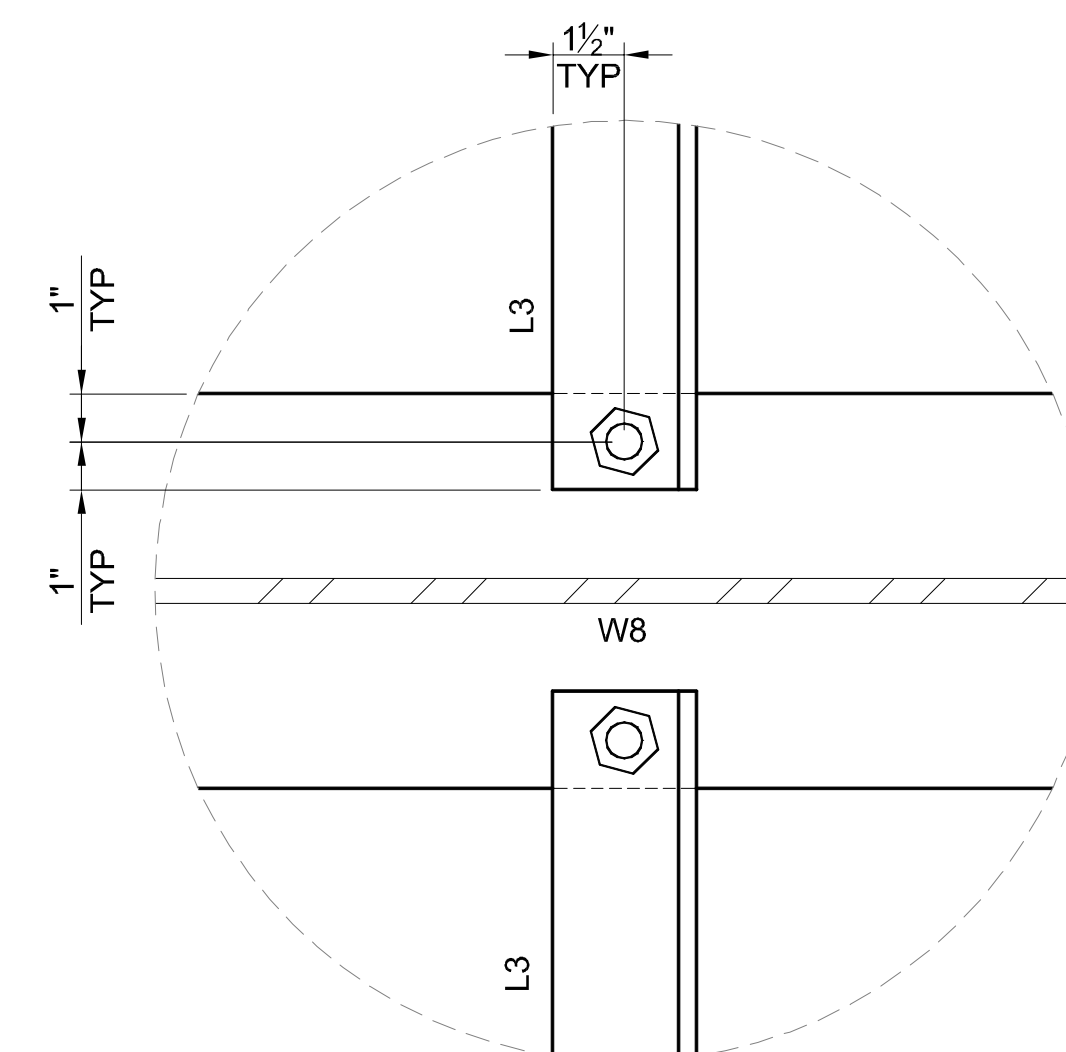
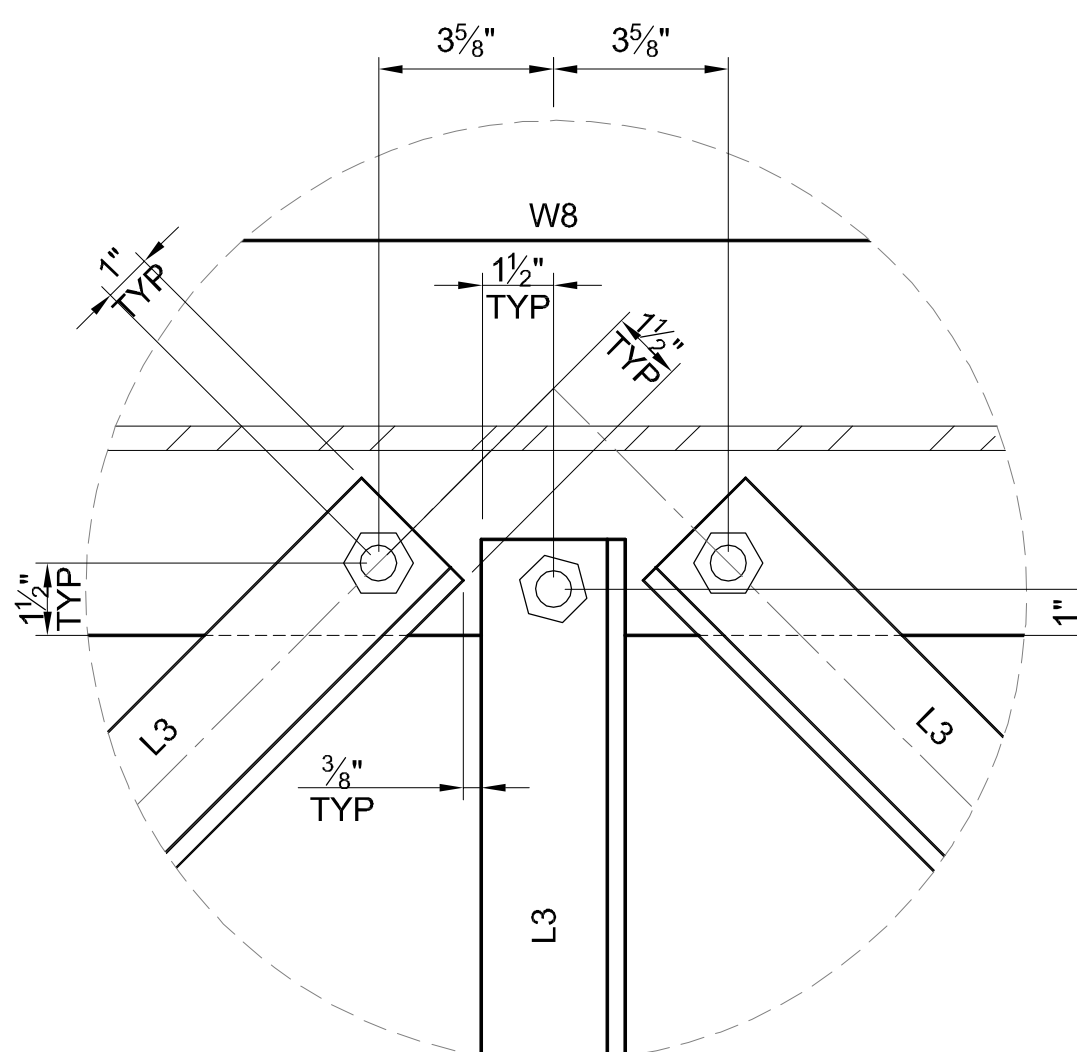
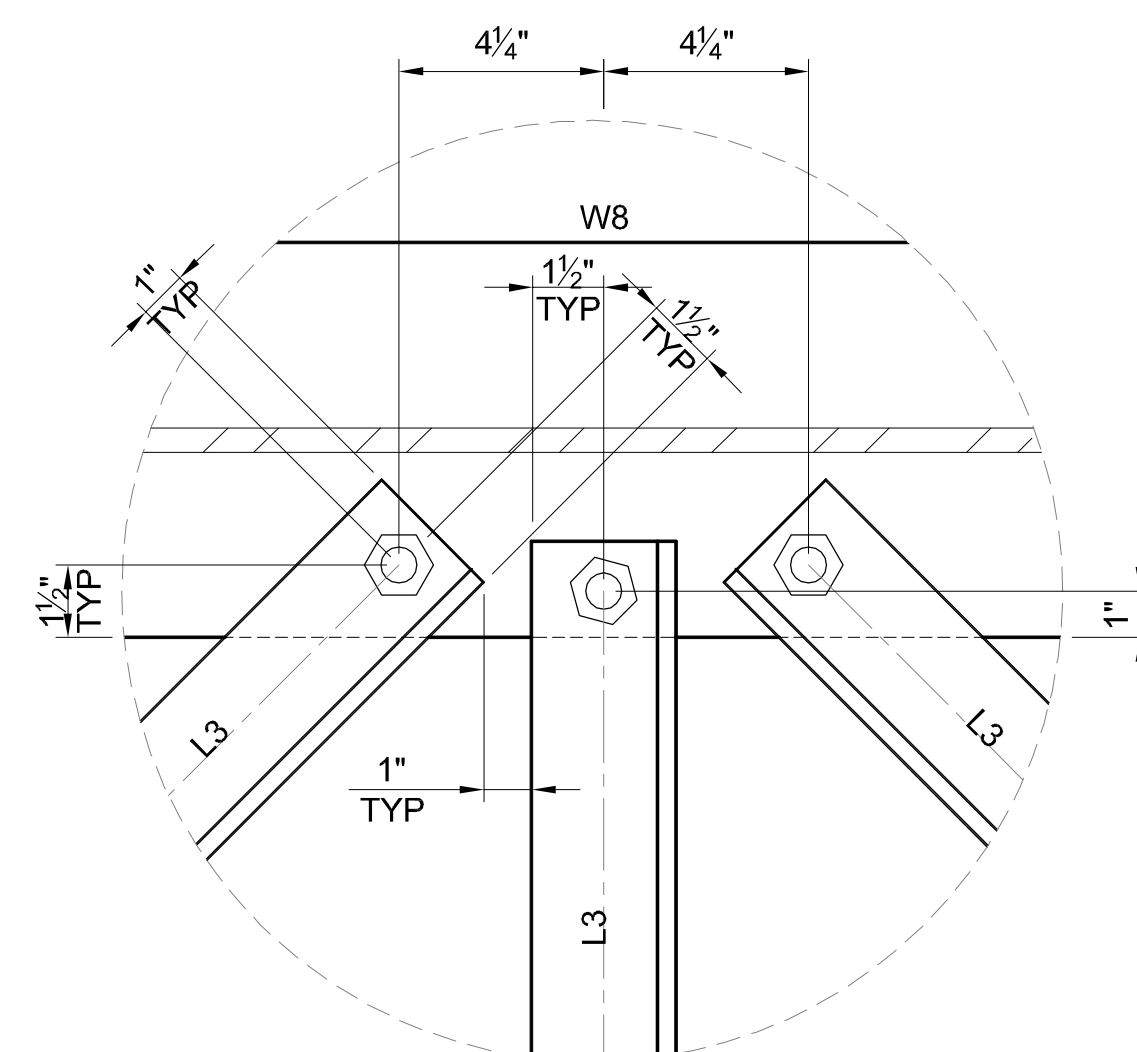
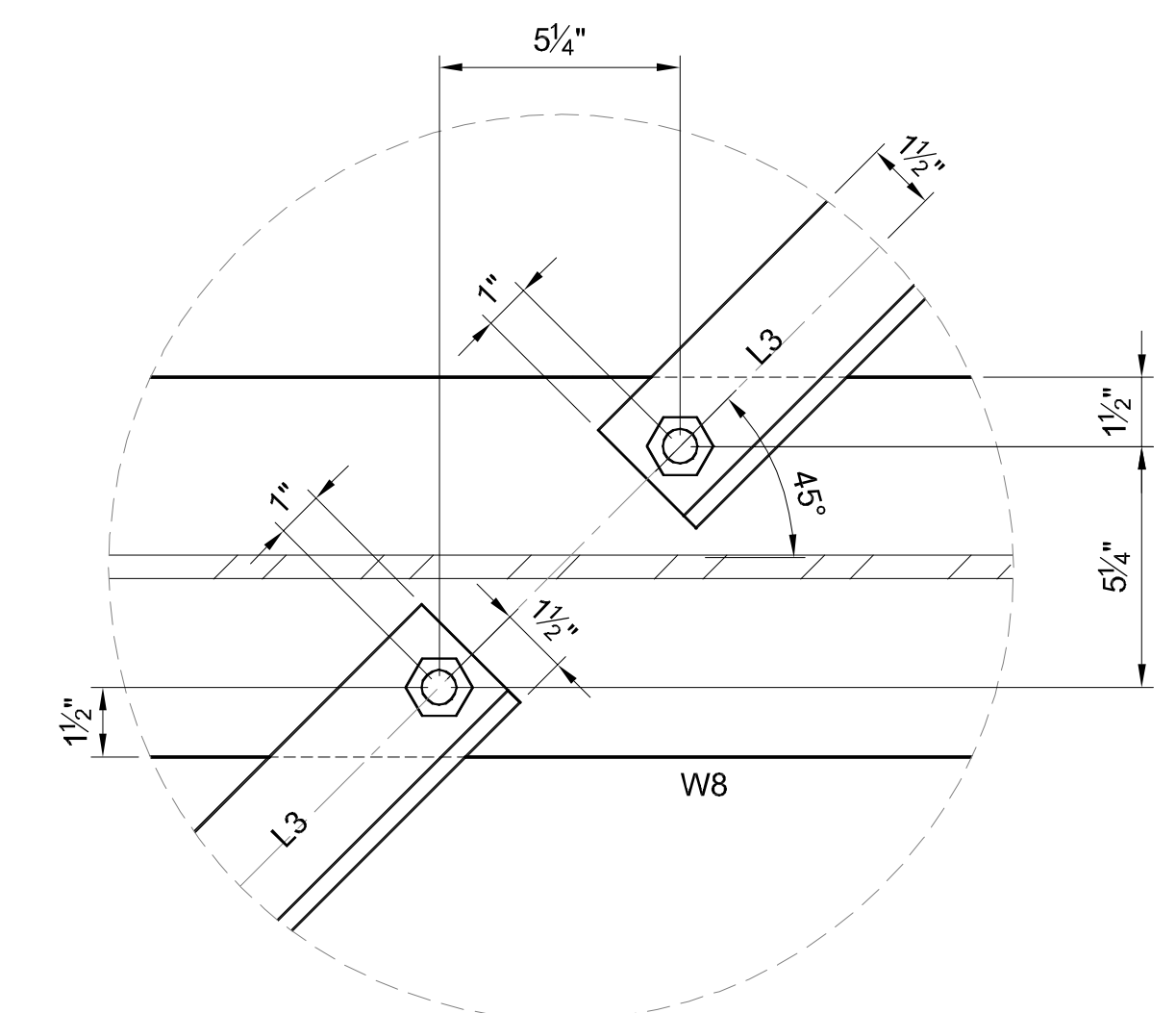
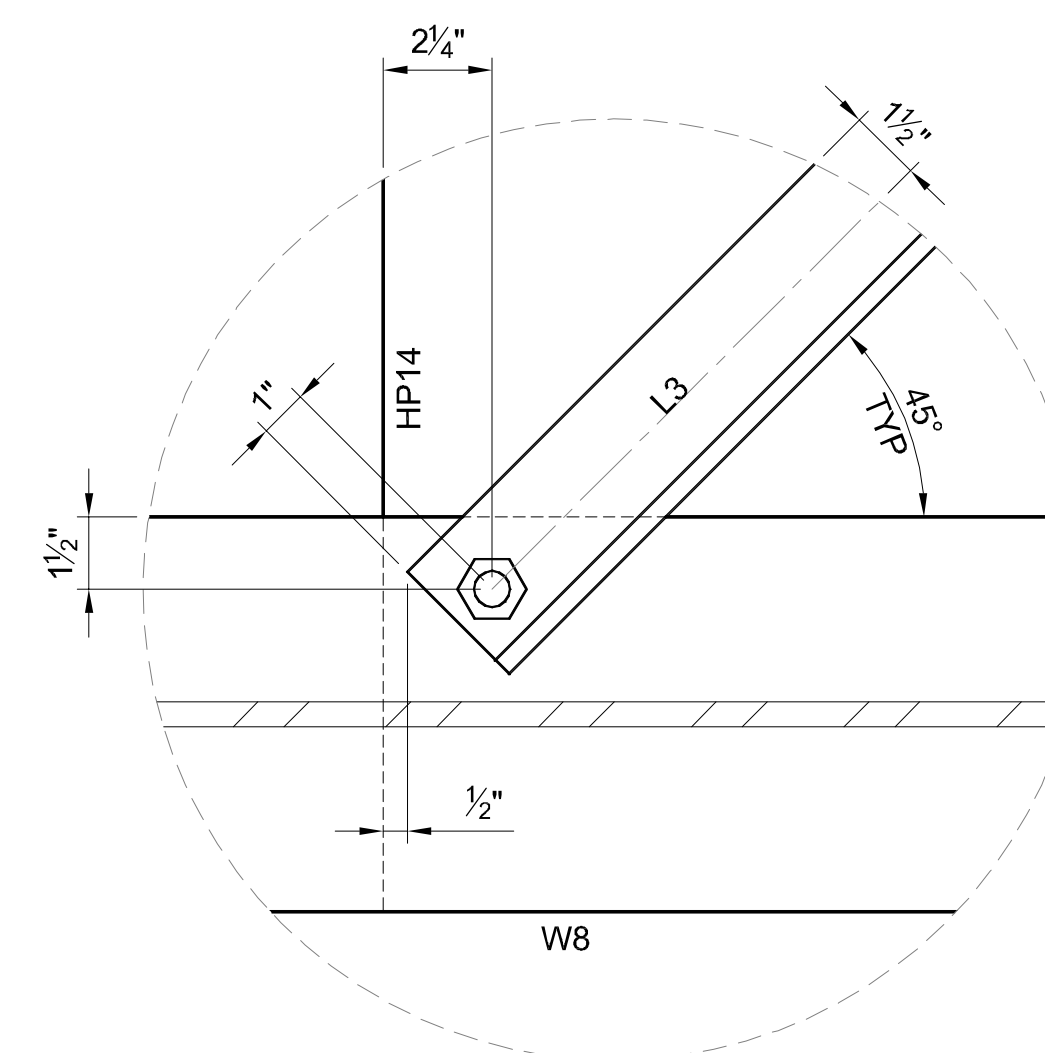
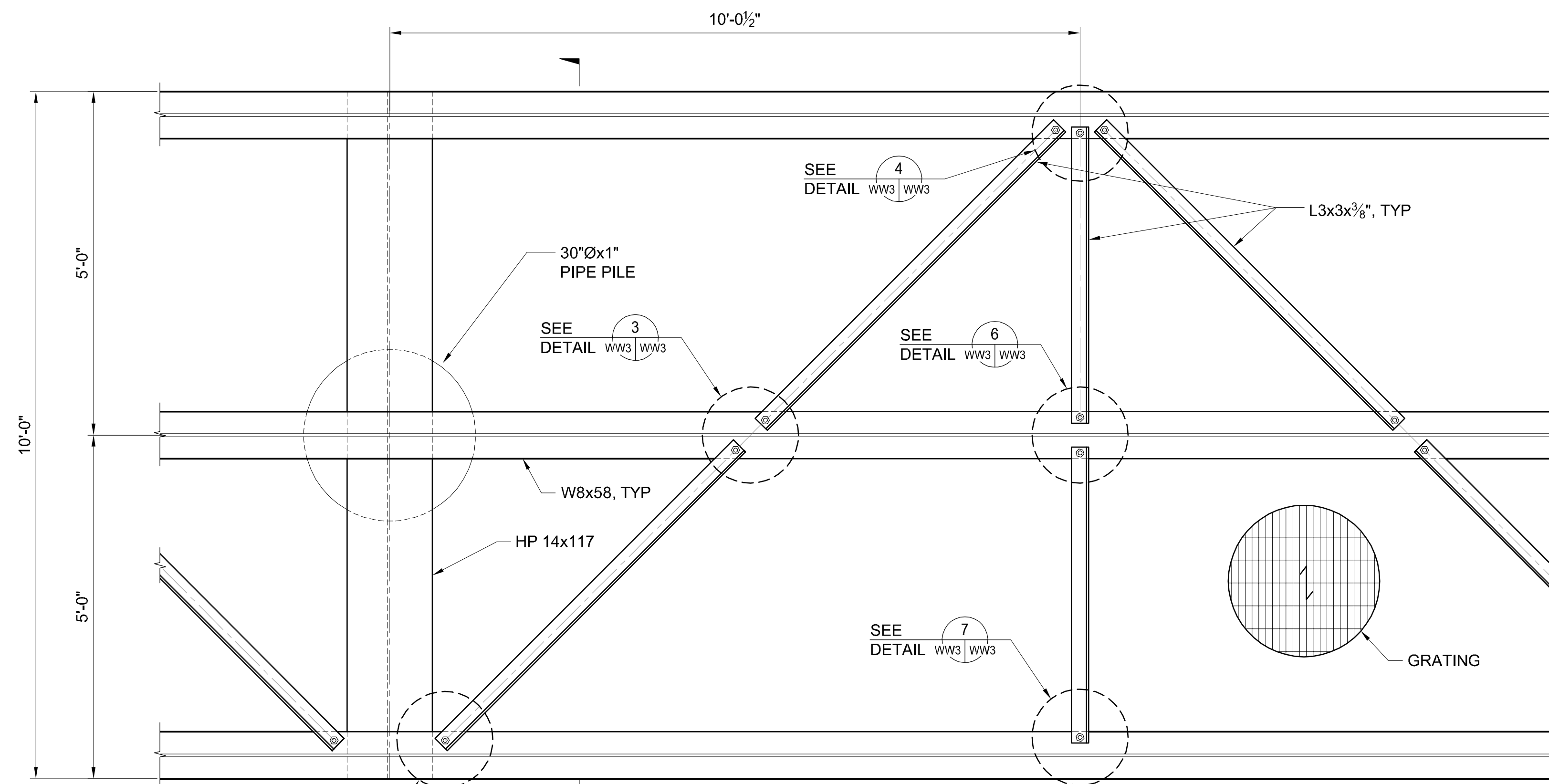
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					JRSW	DESIGNED	PROJECT ENGINEER			
					DATE 09/30/16	SUBMITTED		DATE	APPROVED	DATE
					JUBA	DELINEATED	ASSOCIATE ENGINEER			
					DATE 09/30/16	APPROVED		DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG				
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED				

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REDWOOD CITY, CA 94063

FILE NO: SCALE: AUTOCAD DRAWING FILE: A086704-WW1-WW2.DWG

WHARVES 3 AND 4
WHARF 4 - WALKWAY DETAILS
SHEET 1 OF 2

SHEET NO.
WW2
21 OF 37 SHEETS



NOTE:

1. NOMINAL SPACING OF BRACES MAY VARY BASED UPON PILE POSITION.

FILE LOCATION: C:\A085000\A086704\CAD\A086704\WW3.DWGDATE: 2/23/2017 11:43:59 AM DRAFTSPERSON: JULIUS BACINILLO

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							JBSW DESIGNED	PROJECT ENGINEER			
							DATE XX/XX/XX	SUBMITTED	DATE _____	APPROVED	DATE _____
							NIF DELINEATED	ASSOCIATE ENGINEER			
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	DATE XX/XX/XX	APPROVED	DATE _____	APPROVED	DATE _____
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	XXXX (CHECK/FK)				

PORT OF REDWOOD CITY
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REDWOOD CITY, CA 94063

FILE NO:

SCALE:

AUTOCAD DRAWING FILE:
A086704-MW3.DWG

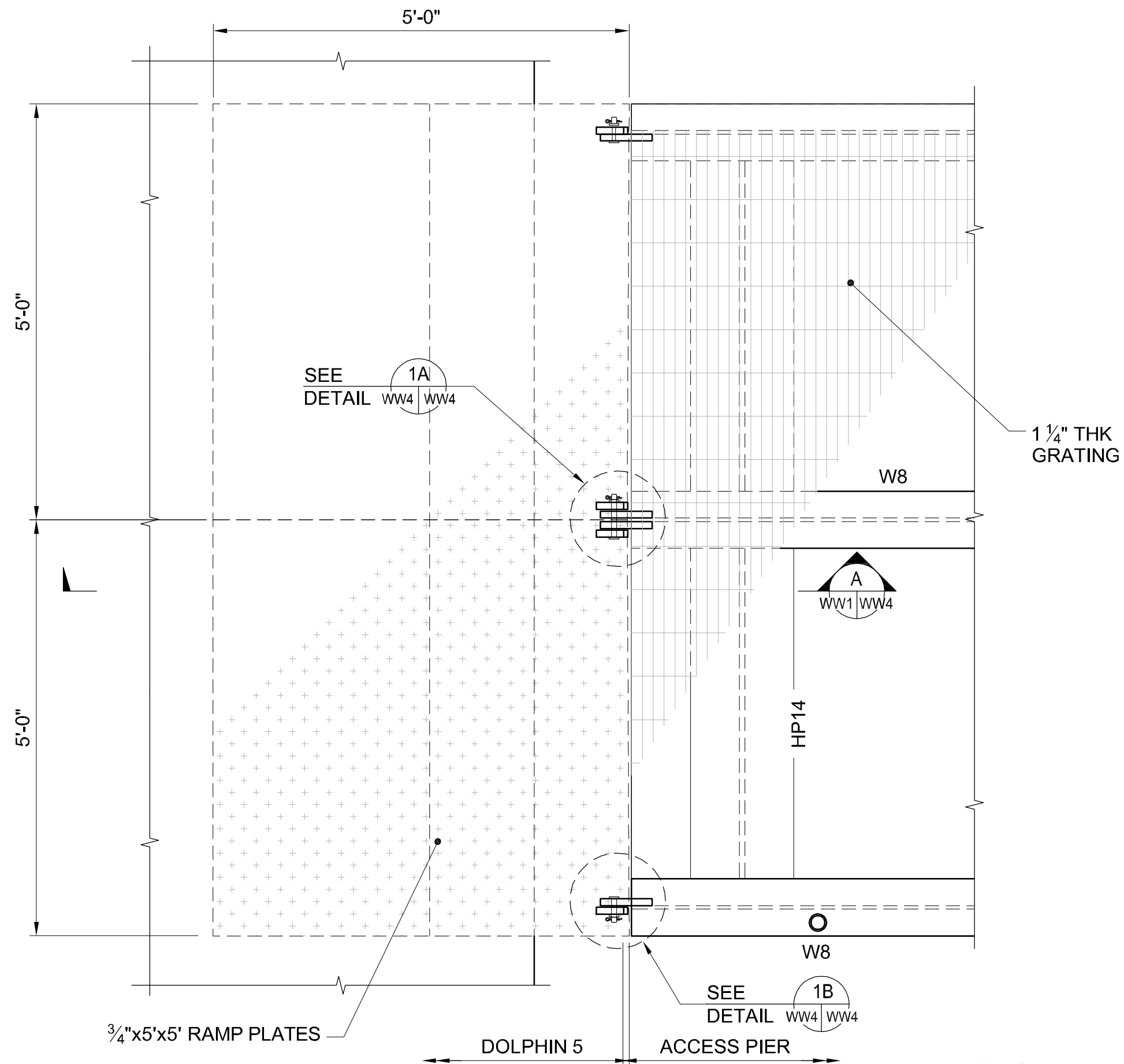
WHARVES 3 AND 4

WHARF 4 - WALKWAY DETAILS
SHEET 2 OF 2

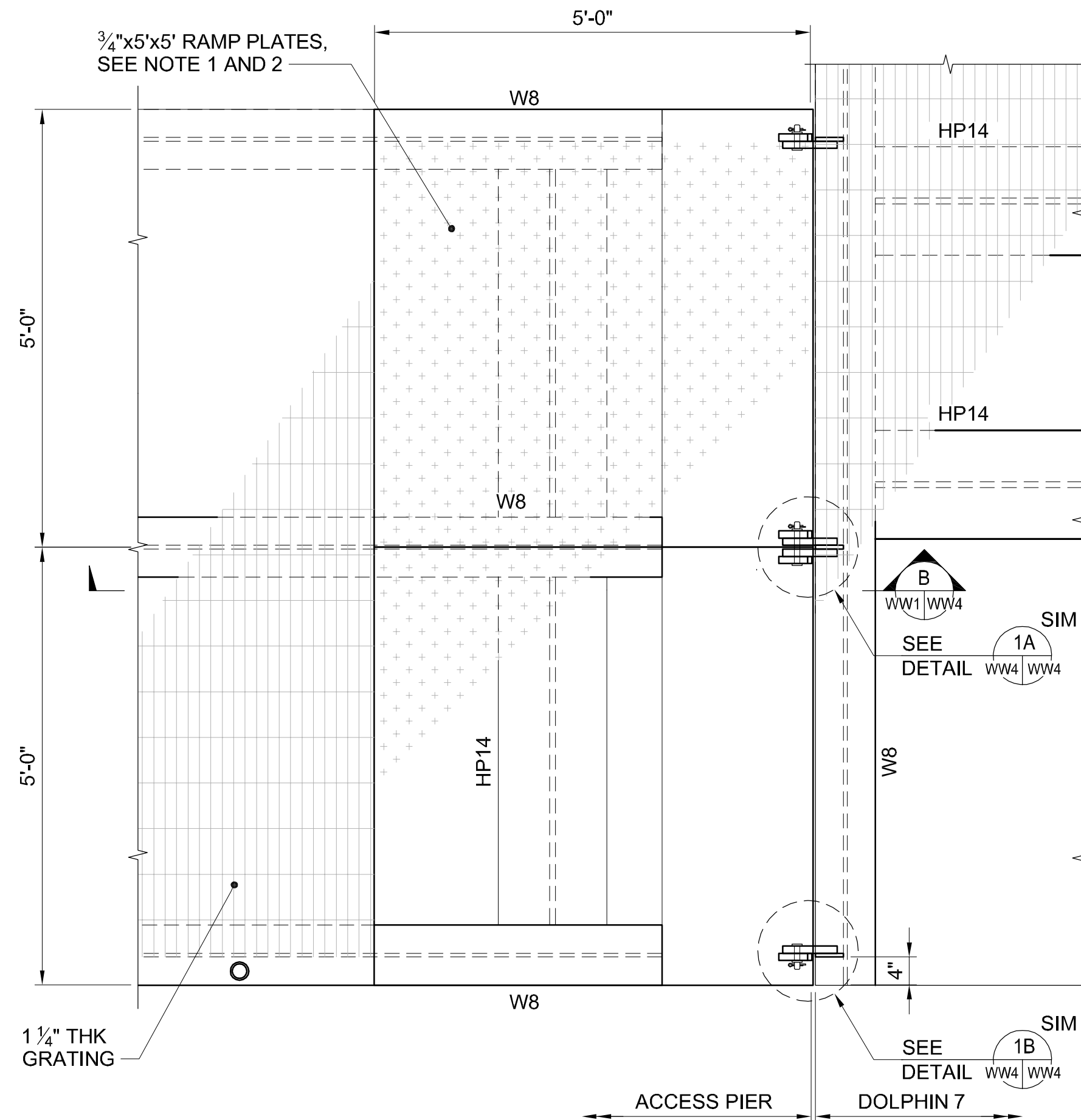
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WW3

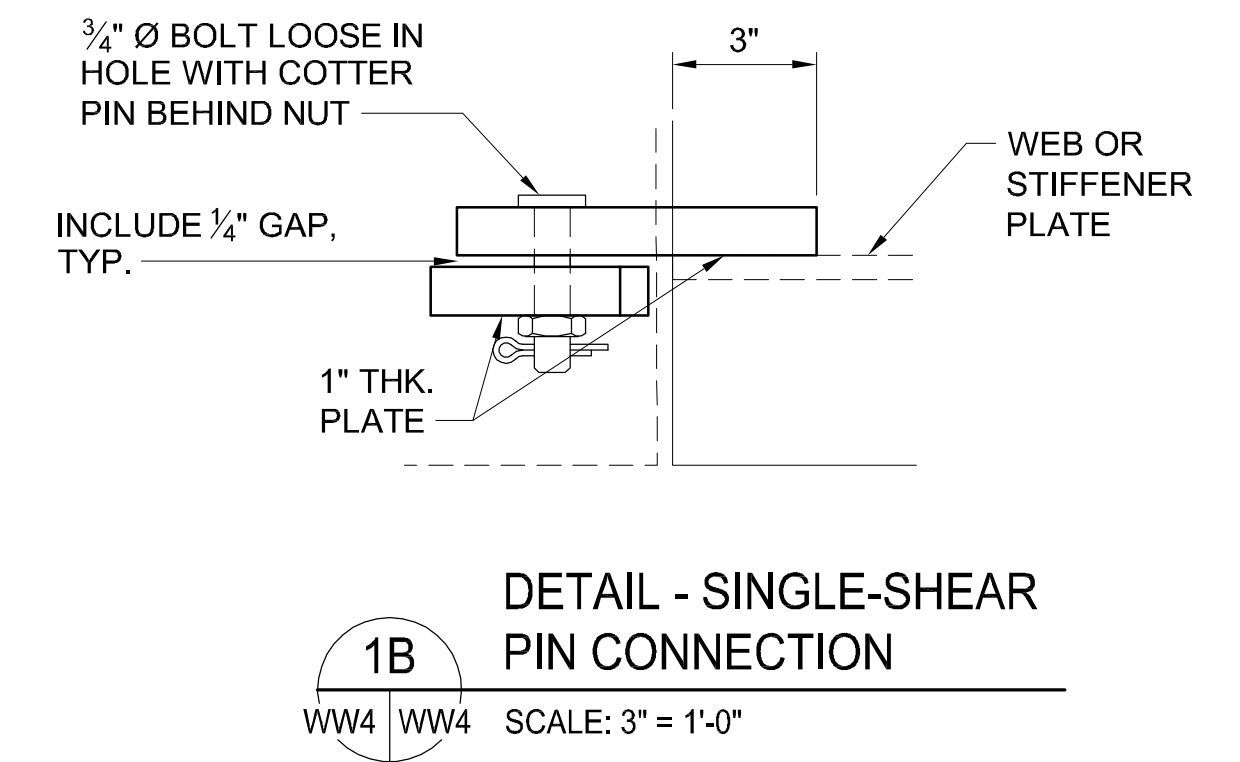
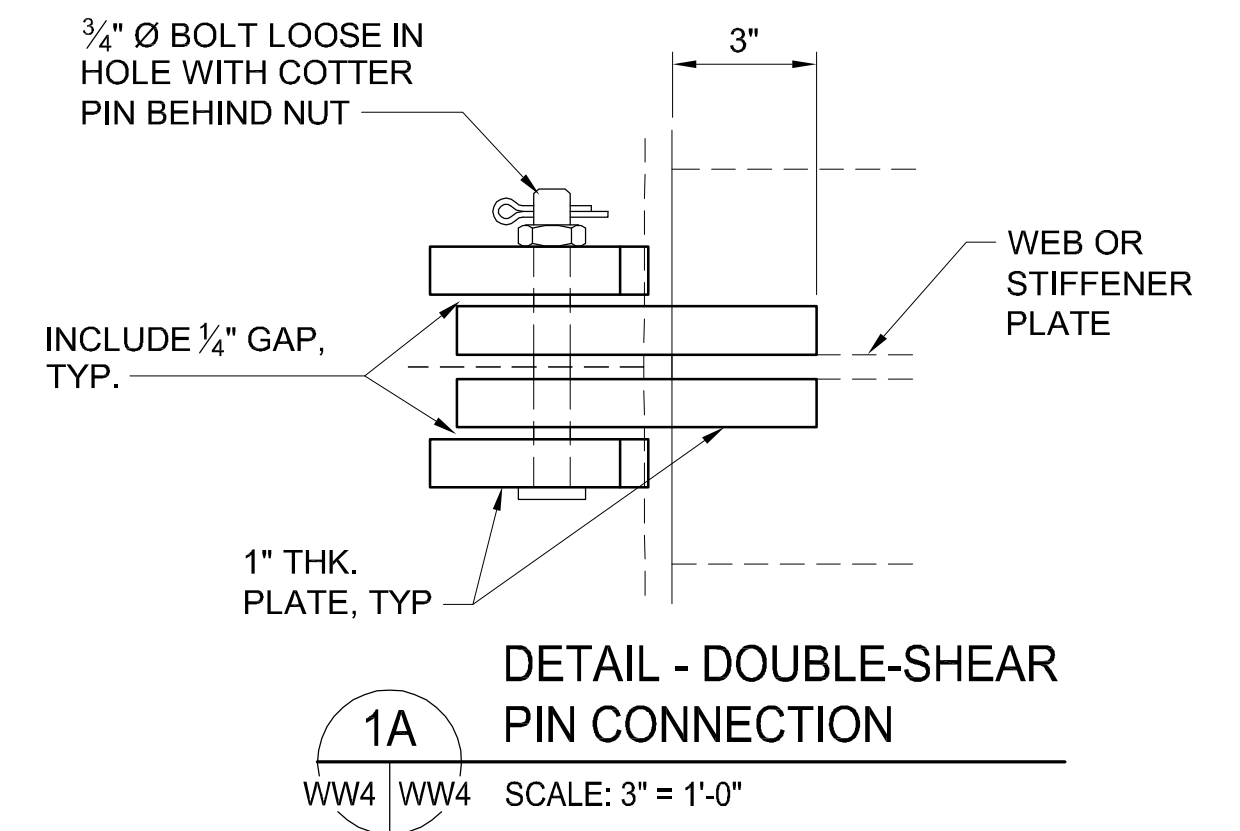
22 OF 37 SHEETS



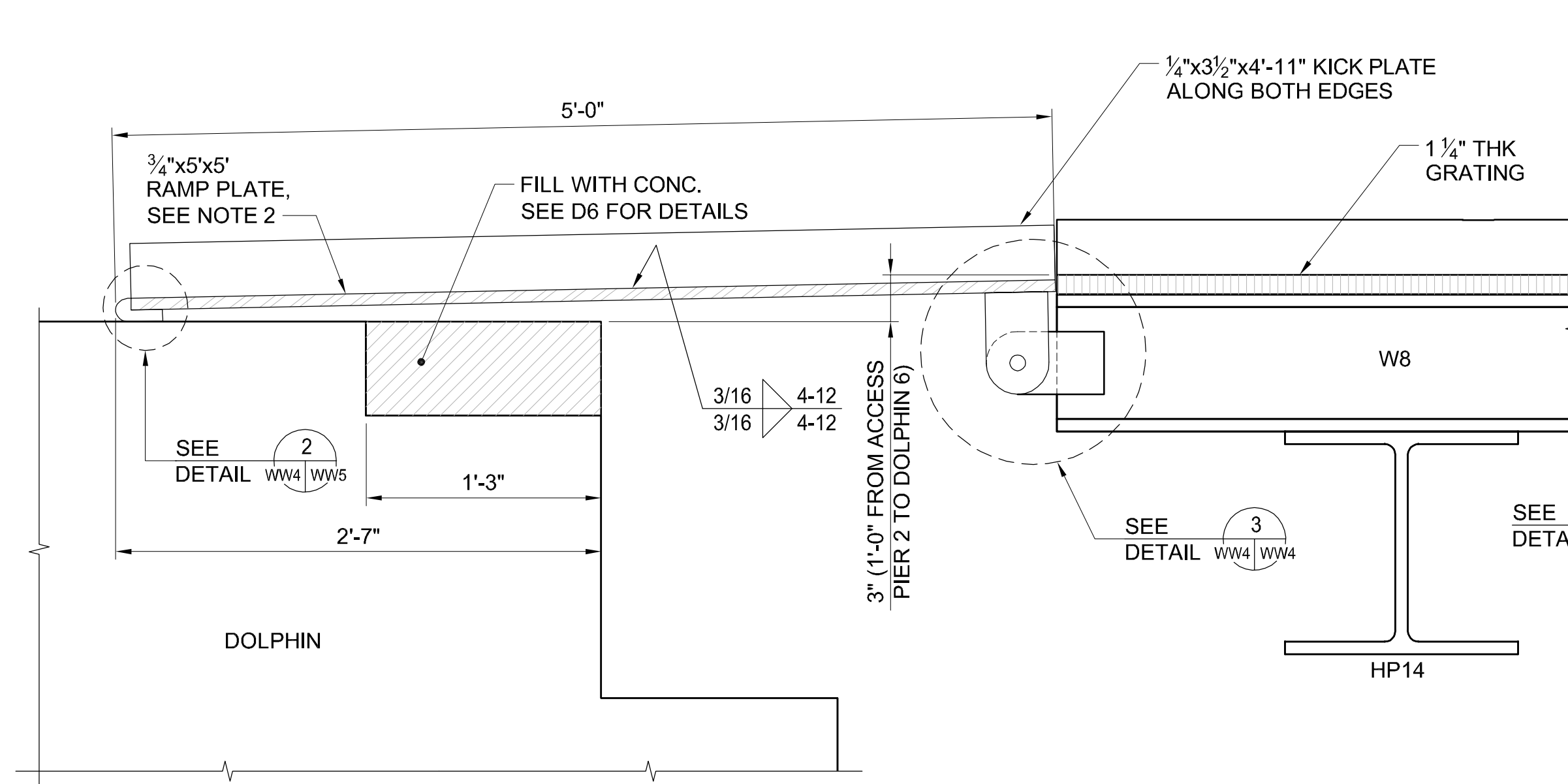
1 PLAN - ACCESS PIER 1 TO DOLPHIN 5
WW4 WW4 SCALE: 3/4" = 1'-0"



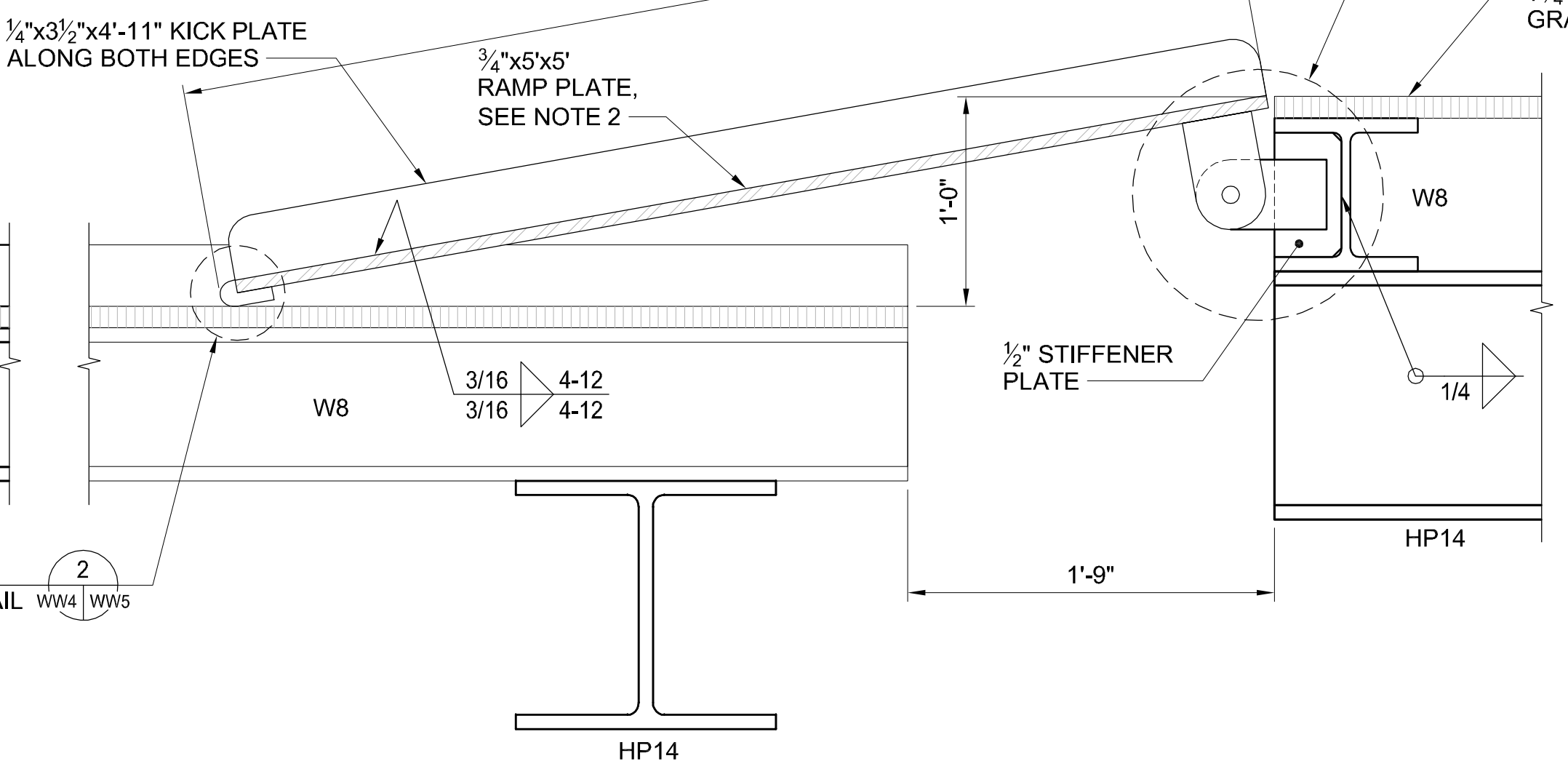
2 PLAN - DOLPHIN 7 TO ACCESS PIER 2
BD2 WW4 SCALE: 3/4" = 1'-0"



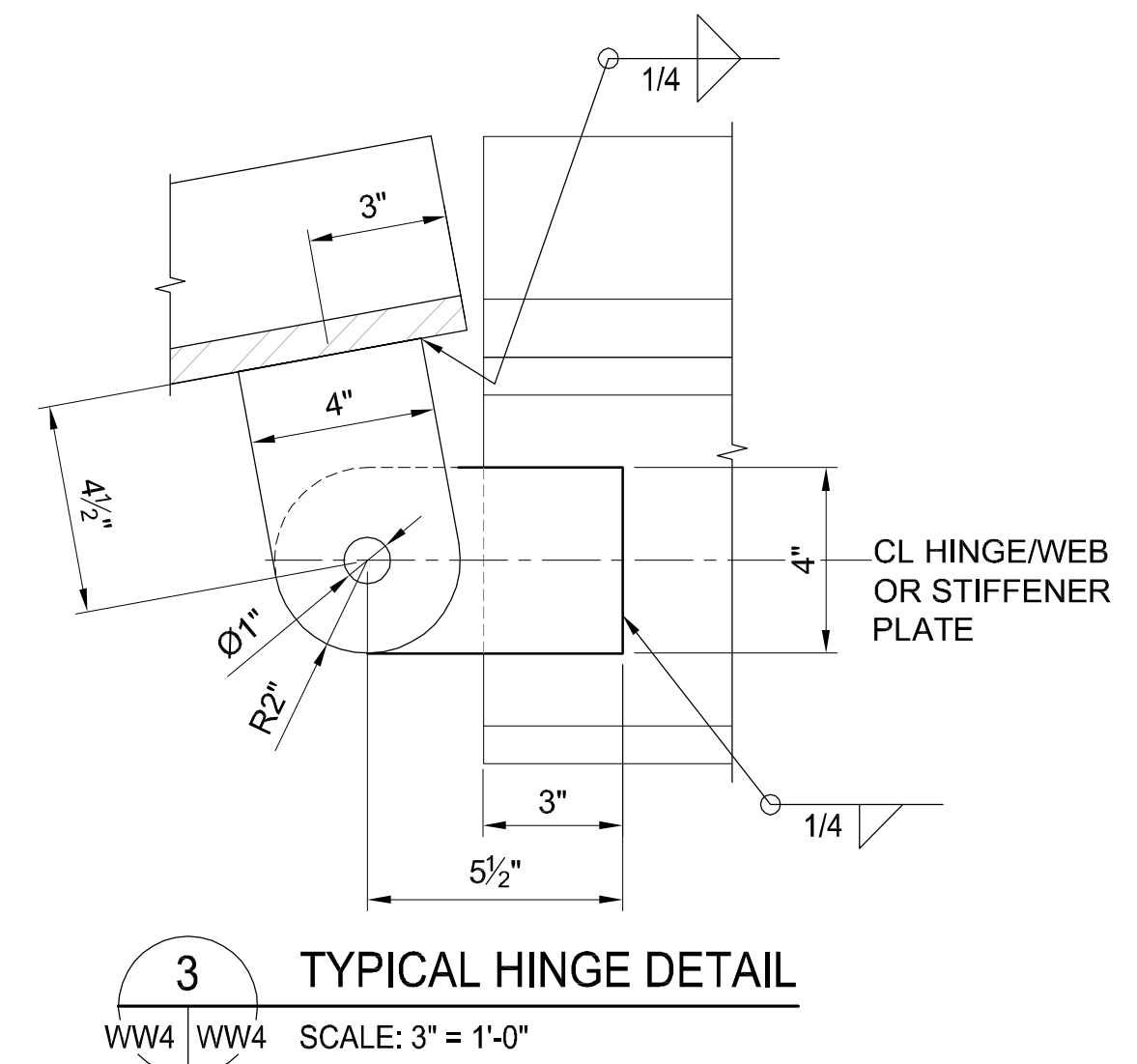
- NOTES:
- ACCESS PIER 2 TO DOLPHIN 6 TYPICAL, ACCESS PIER 1 TO DOLPHIN 6 OPPOSITE.
 - RAMP PLATES TO BE COATED WITH NON-SKID MARINE GRADE COATING. DO NOT GALVANIZE.



A SECTION - ACCESS PIER 1 TO DOLPHIN 5
WW1 WW4 SCALE: 3/4" = 1'-0"



B SECTION - DOLPHIN 7 TO ACCESS PIER 2
WW1 WW4 SCALE: 3/4" = 1'-0"



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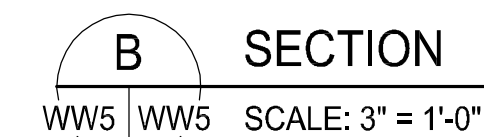
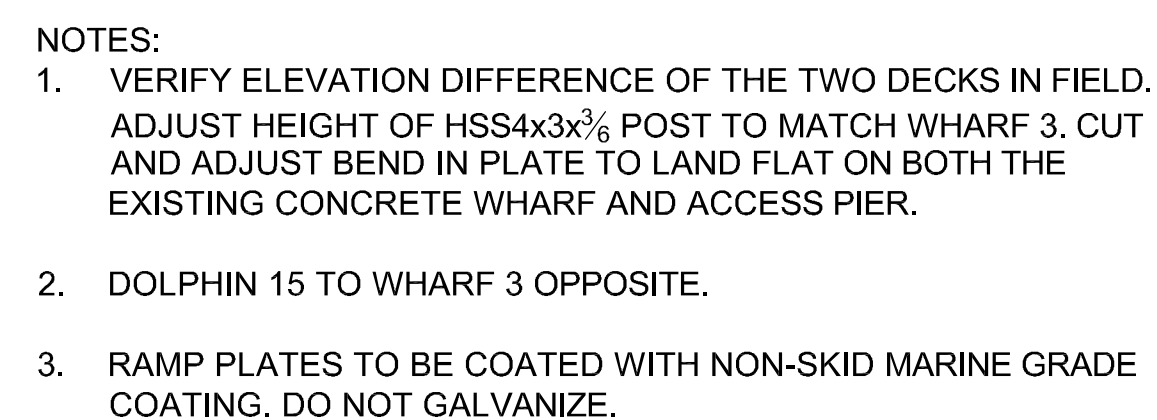
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						DATE XX/XX/XX	APPROVED	DATE	APPROVED	DATE

PORT OF REDWOOD CITY
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REDWOOD CITY, CA 94063

WHARVES 3 AND 4
TRANSITION PLATE DETAILS
SHEET 1 OF 2

SHEET NO.
WW4
23 OF 37 SHEETS



FILE NO:	SCALE:	AUTOCAD DRAWING FILE: A088704.MW5.DWG
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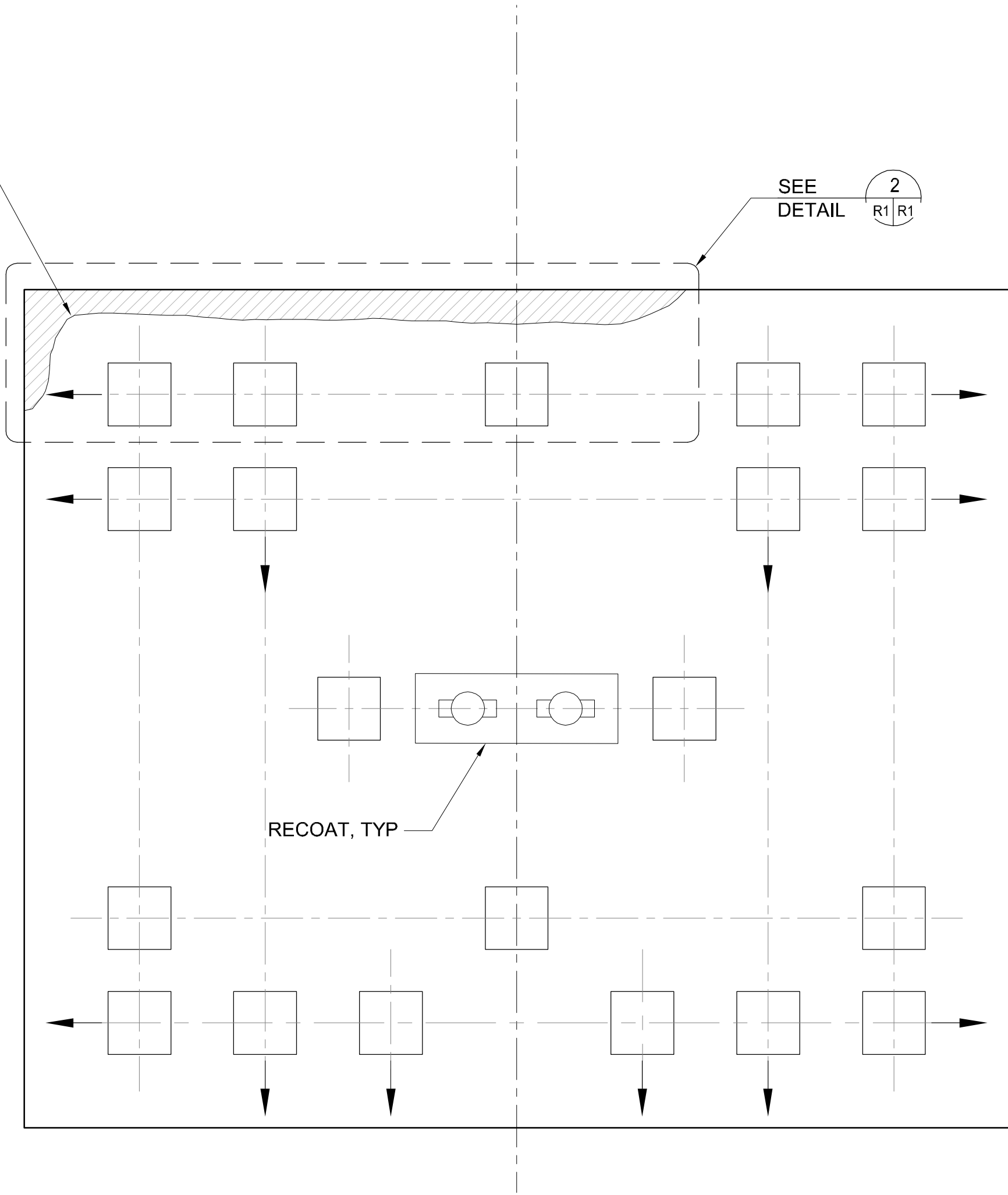
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TRANSITION PLATE DETAILS
SHEET 2 OF 2

SHEET NO.

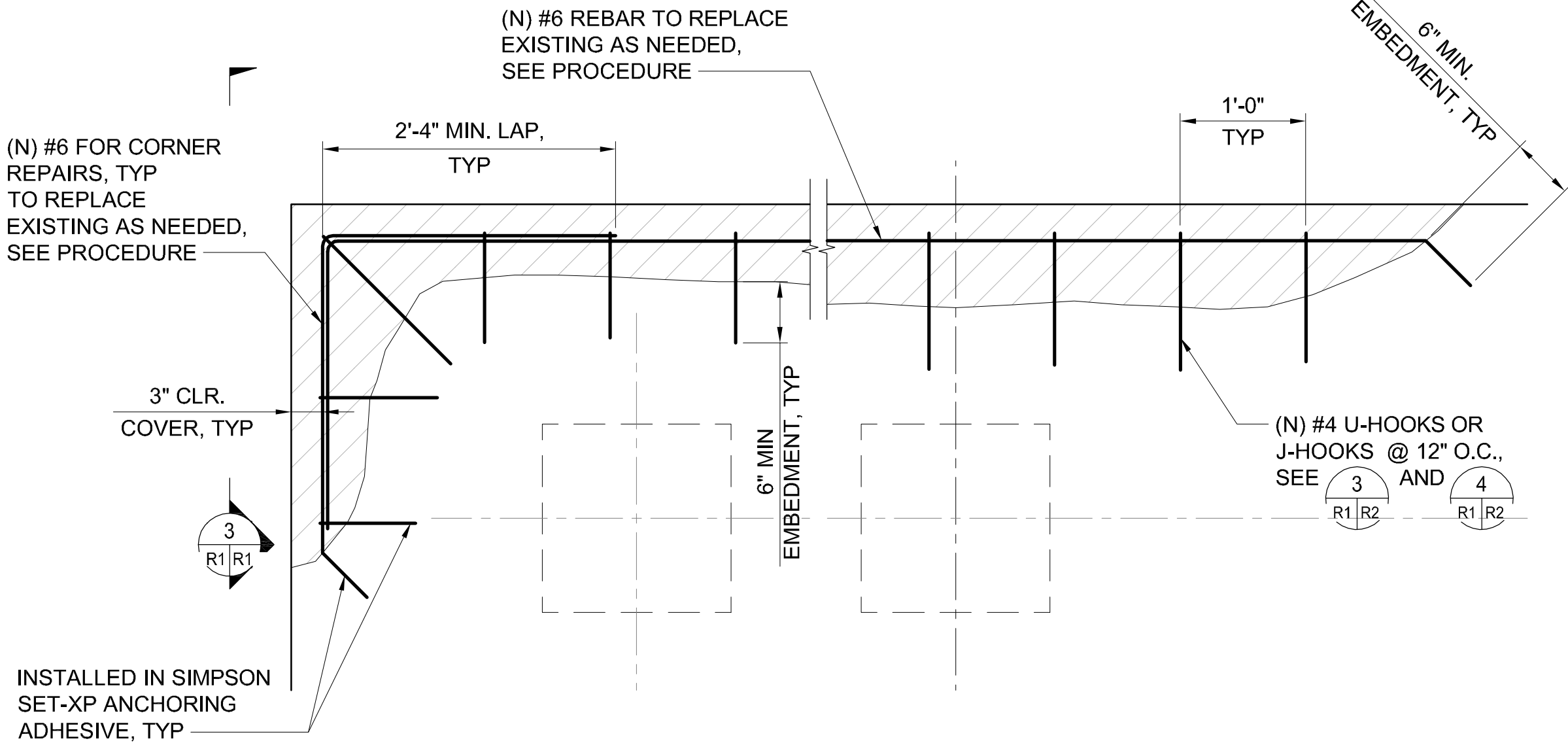
WW5

4 OF 37 SHEETS

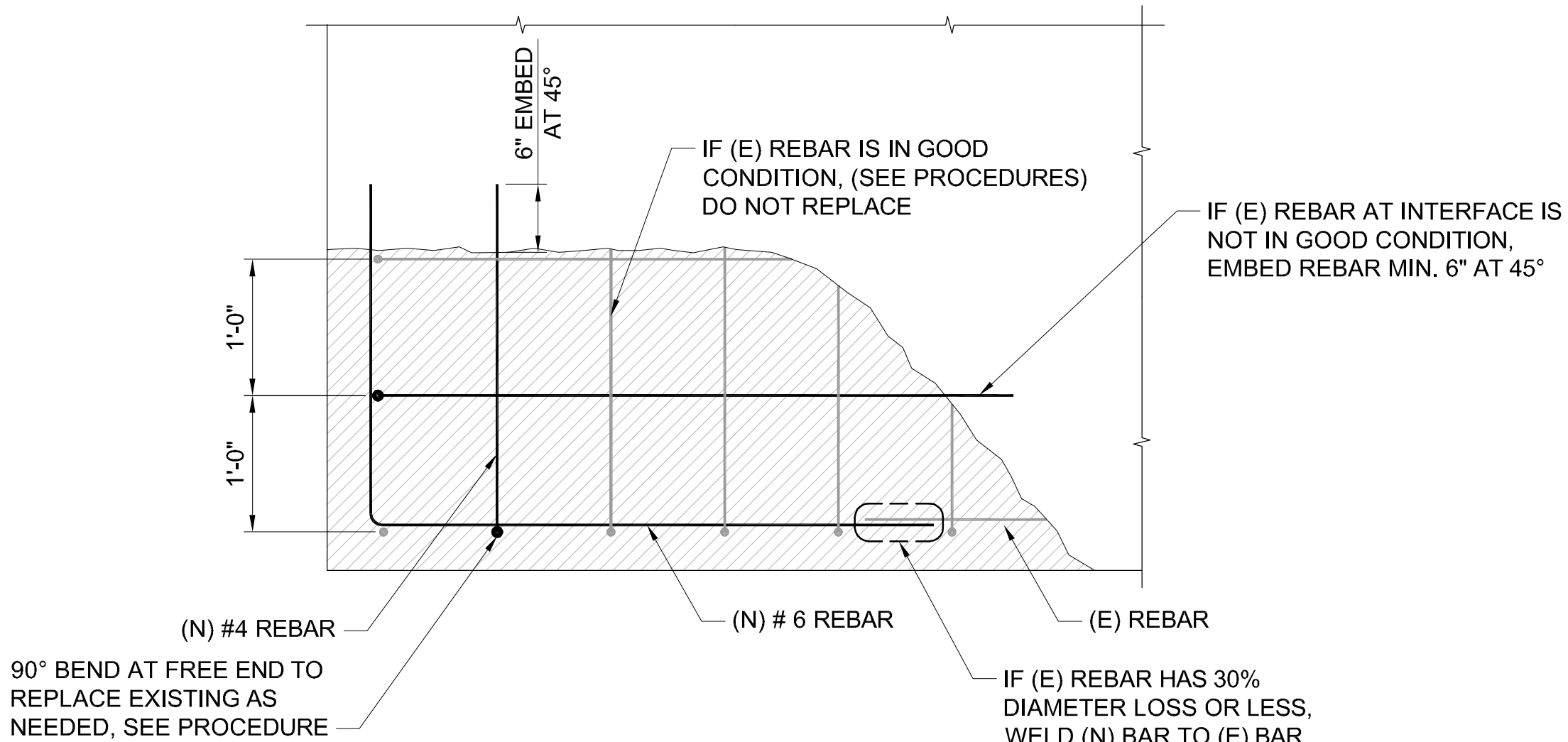
TYPICAL EXTENTS
OF SPALLED CONC



1 TYPICAL DOLPHIN CORNER SPALLING REBAR REPLACEMENT DETAIL
R1 R1 SCALE: 1/2" = 1'-0"



2 DETAIL
R1, R3 R1 SCALE: 1" = 1'-0"



3 ELEVATION
R1 R1 SCALE: 1" = 1'-0"

PROCEDURE

1. CHIP OUT CLOSED SPALLING TO SOUND CONCRETE.
2. GRIND THE PERIMETER OF THE AREA TO BE REPAIRED TO 1" DEPTH MINIMUM TO AVOID FEATHERED EDGES.
3. CLEAN SURFACE OF ANY LOOSE CONCRETE, DIRT, OIL, GREASE, AND ALL BOND INHIBITING MATERIALS.
4. CLEAN STEEL REINFORCEMENT MECHANICALLY TO REMOVE ALL RUST.
5. IF LONGITUDINAL REINFORCEMENT DIAMETER LOSS IS MORE THAN 30%, REPAIR THE REBAR AS SHOWN IN THE REBAR REPLACEMENT DETAIL.
6. USING A STIFF BRUSH, APPLY SIKA ARMATEC 110 EPOCEM 20 MILS THICK MINIMUM, COVERING ALL EXPOSED STEEL. ALLOW TO DRY, THEN APPLY A SECOND COAT AT 20 MILS MINIMUM THICKNESS. ALLOW SECOND COAT TO DRY.
7. PRE-WET SURFACE WITH CLEAN WATER TO SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER DURING APPLICATION.
8. USING STIFF BRUSH, PREPARE AREA WITH ARMATEC 110 EPOCEM.
9. SET FORM IF REQUIRED.
10. PLACE THE REPAIR MATERIAL SIKACRETE 211 SCC PLUS WITHIN THE INDICATED OPEN TIMES. MINIMUM THICKNESS TO BE 1". CONSULT ENGINEER IF MINIMUM THICKNESS CANNOT BE MET.
11. VIBRATE FORM WHILE POURING. NOTE: THE FORM SHOULD NOT DEFLECT.
12. IF SEVERAL LIFTS ARE NECESSARY, WAIT 30 MINUTES BETWEEN LAYERS, SATURATING SURFACE AGAIN BEFORE NEW LIFT. SCORE SURFACE TO CREATE A ROUGH SURFACE FOR NEXT LIFT.
13. CURE CONCRETE AS RECOMMENDED BY SUPPLIER/MANUFACTURER.



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WHARVES 3 AND 4
DOLPHIN REPAIR

SHEET NO.

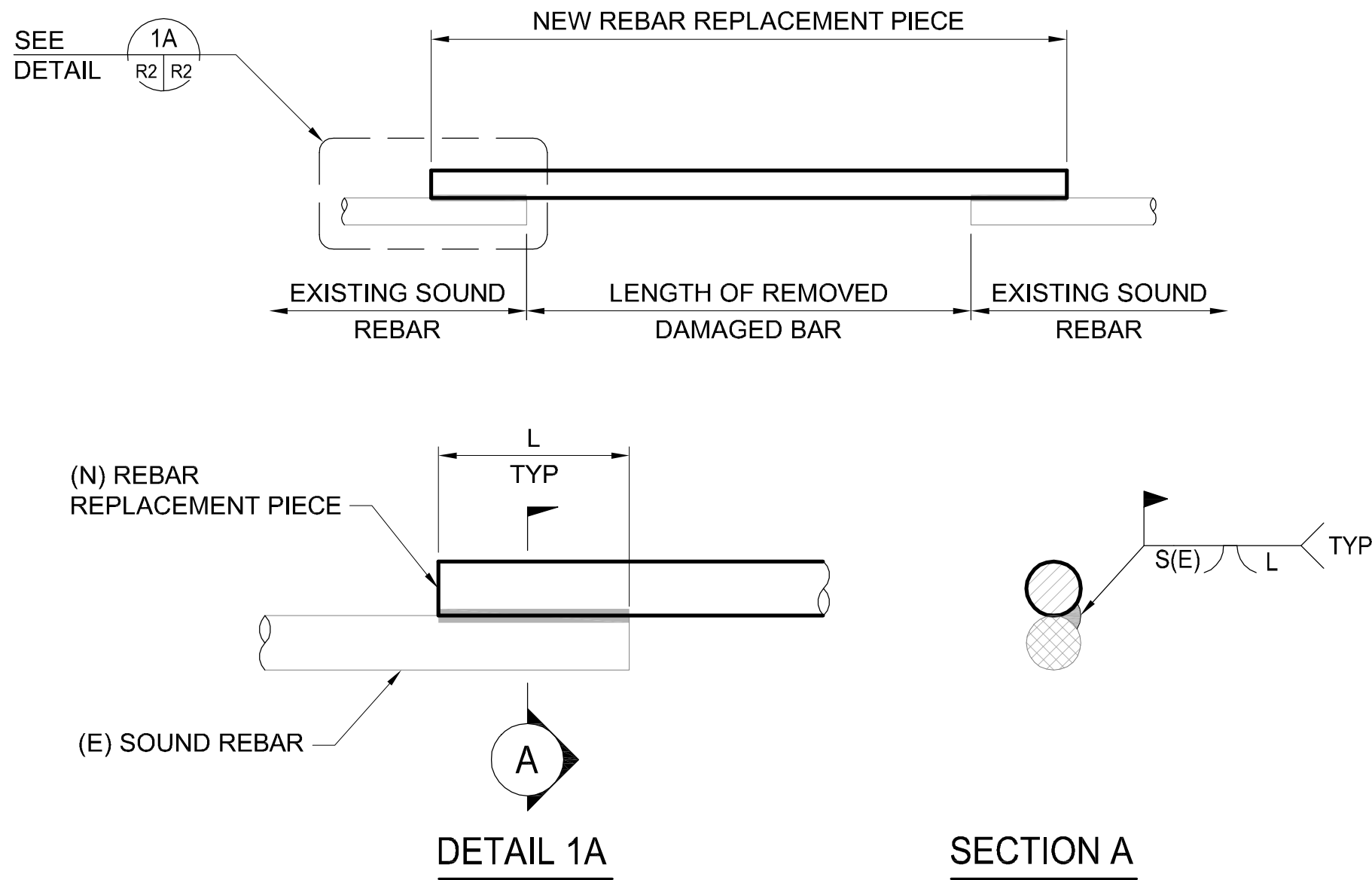
R1

25 OF 37 SHEETS

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							DATE 11/11/16	SUBMITTED	DATE	APPROVED	DATE
						NIF	DELINEATED	ASSOCIATE ENGINEER			
							DATE 11/11/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG					
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED					

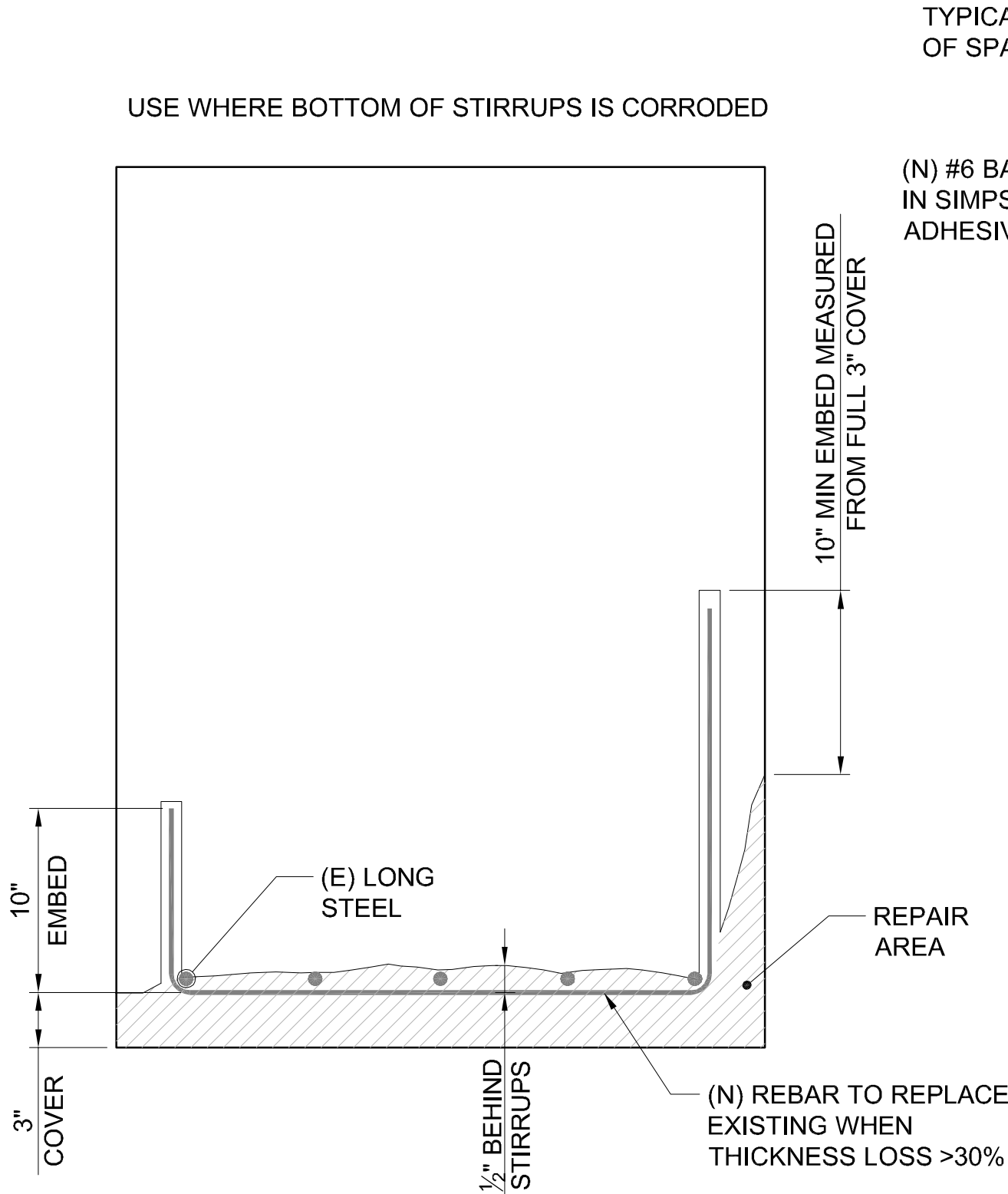
FILE NO: SCALE: AUTOCAD DRAWING FILE: A086704-R001.DWG



BAR WELD SCHEDULE			
REBAR SIZE	BAR RADIUS, S INCH	EFFECTIVE WELD SIZE, E (.6*S) INCH	EFFECTIVE WELD LENGTH L, INCH
3	0.1875	0.1125	2
4	0.25	0.15	2.5
5	0.3125	0.1875	2.75
6	0.375	0.225	3
7	0.4375	0.2625	3.25
8	0.5	0.3	4
9	0.564	0.3384	4.25
10	0.635	0.381	4.5

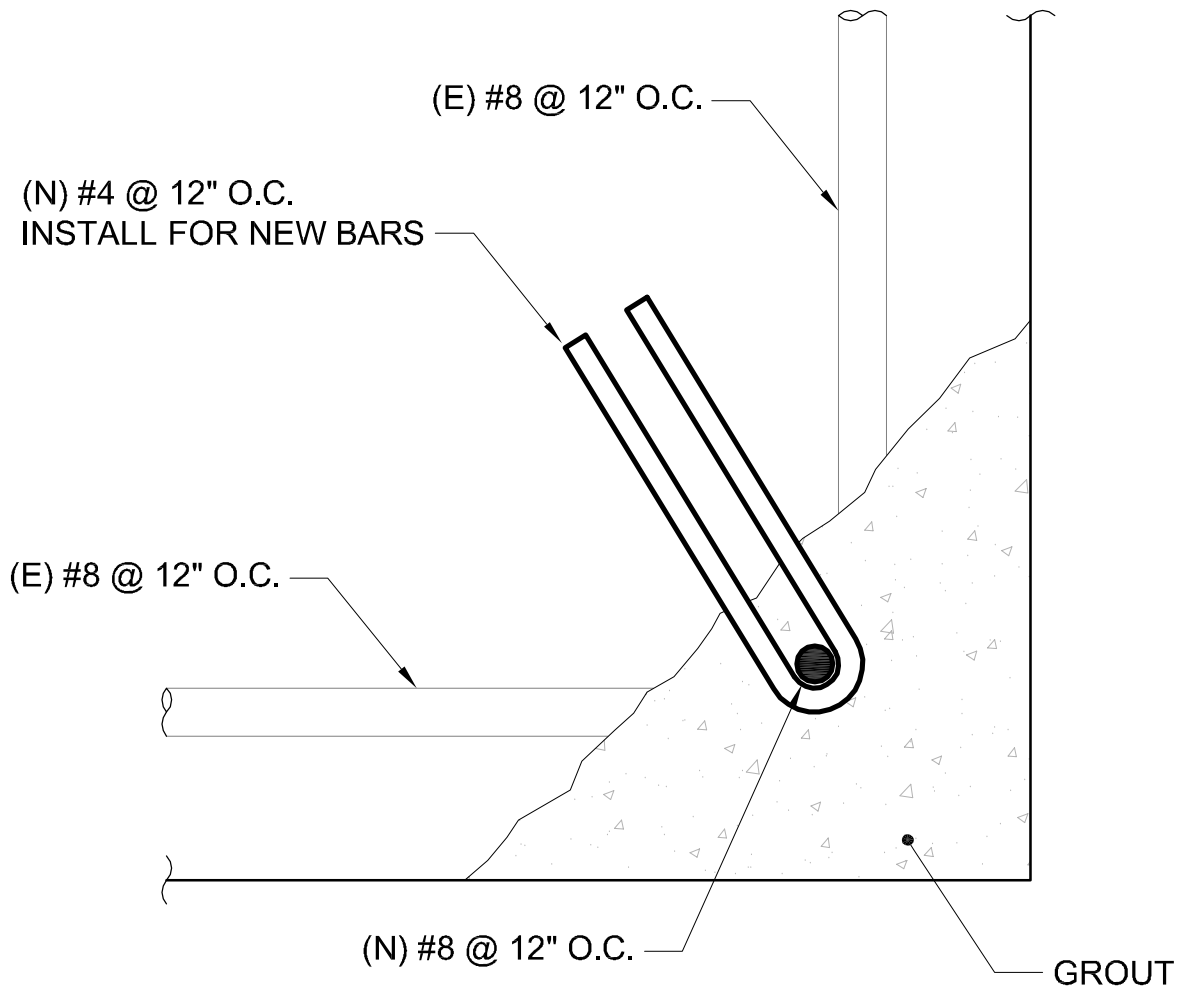
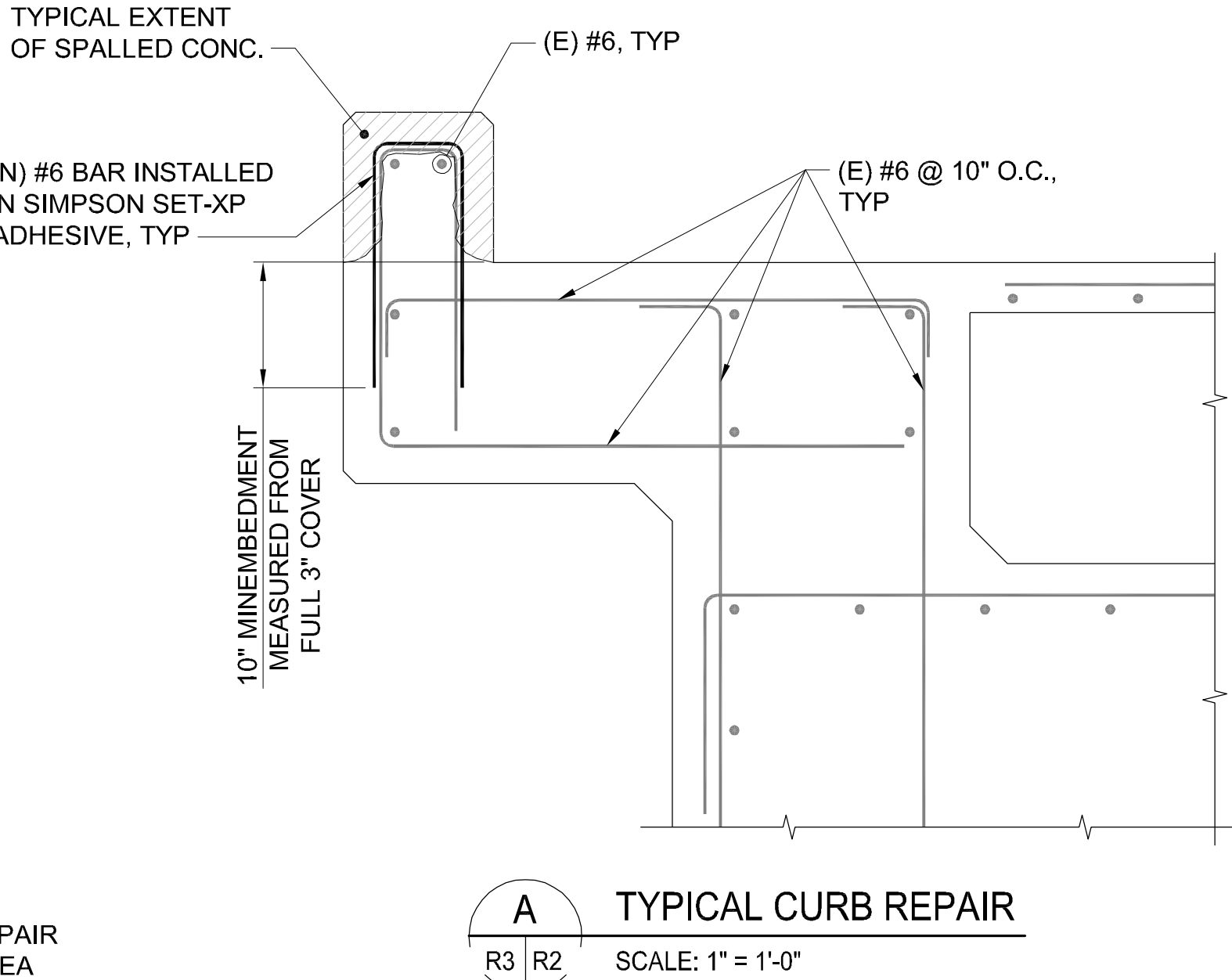
- NOTES:
- CUT-OUT DAMAGED REBAR PIECE WITH MORE THAN 30% DIAMETER LOSS.
 - INSTALL REPLACEMENT REBAR PIECE, MARKING WELDED CONNECTIONS TO EXISTING REBAR AS SHOWN ABOVE.

1 BAR REPLACEMENT DETAIL
R1 R2 SCALE: 3" = 1'-0"

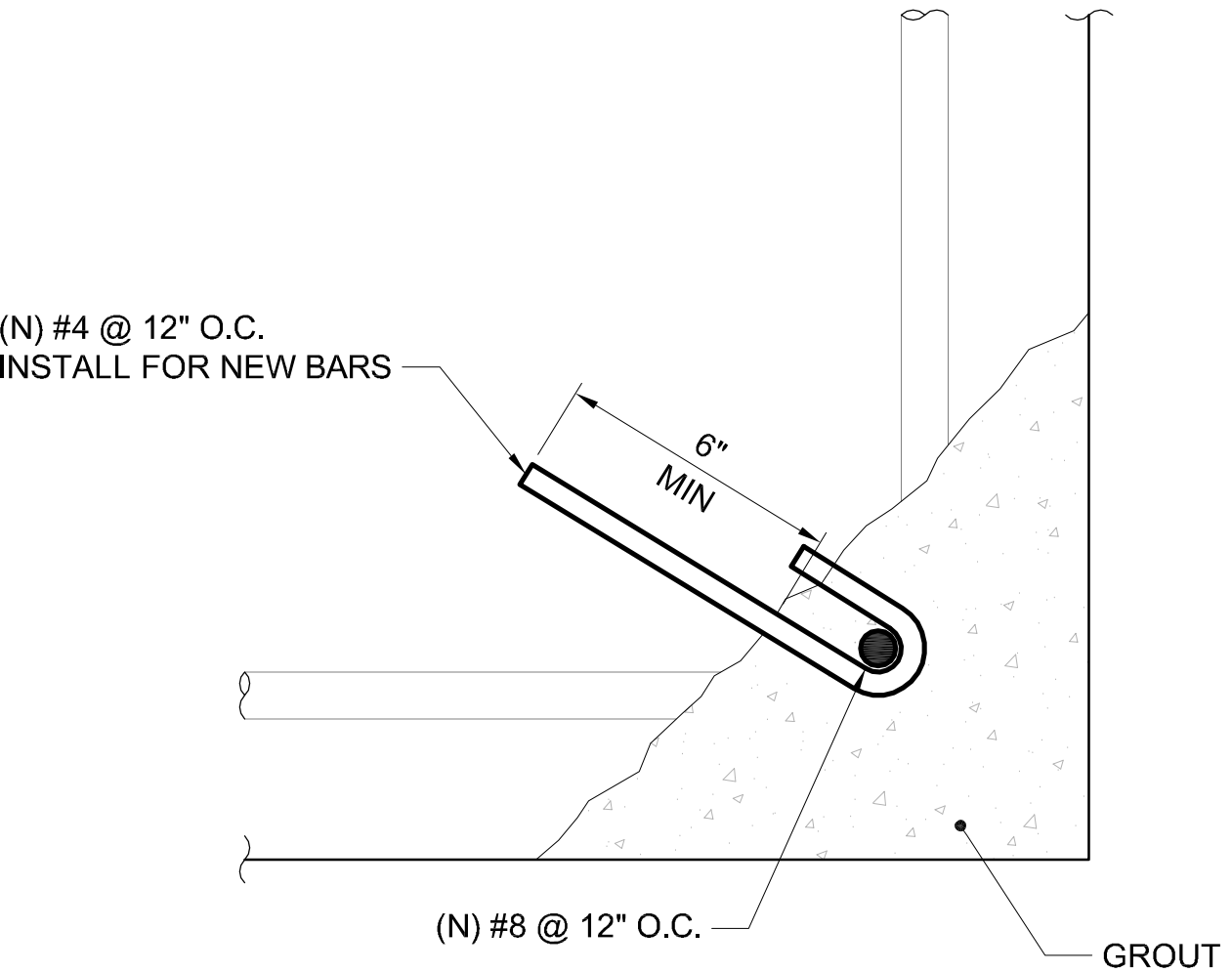
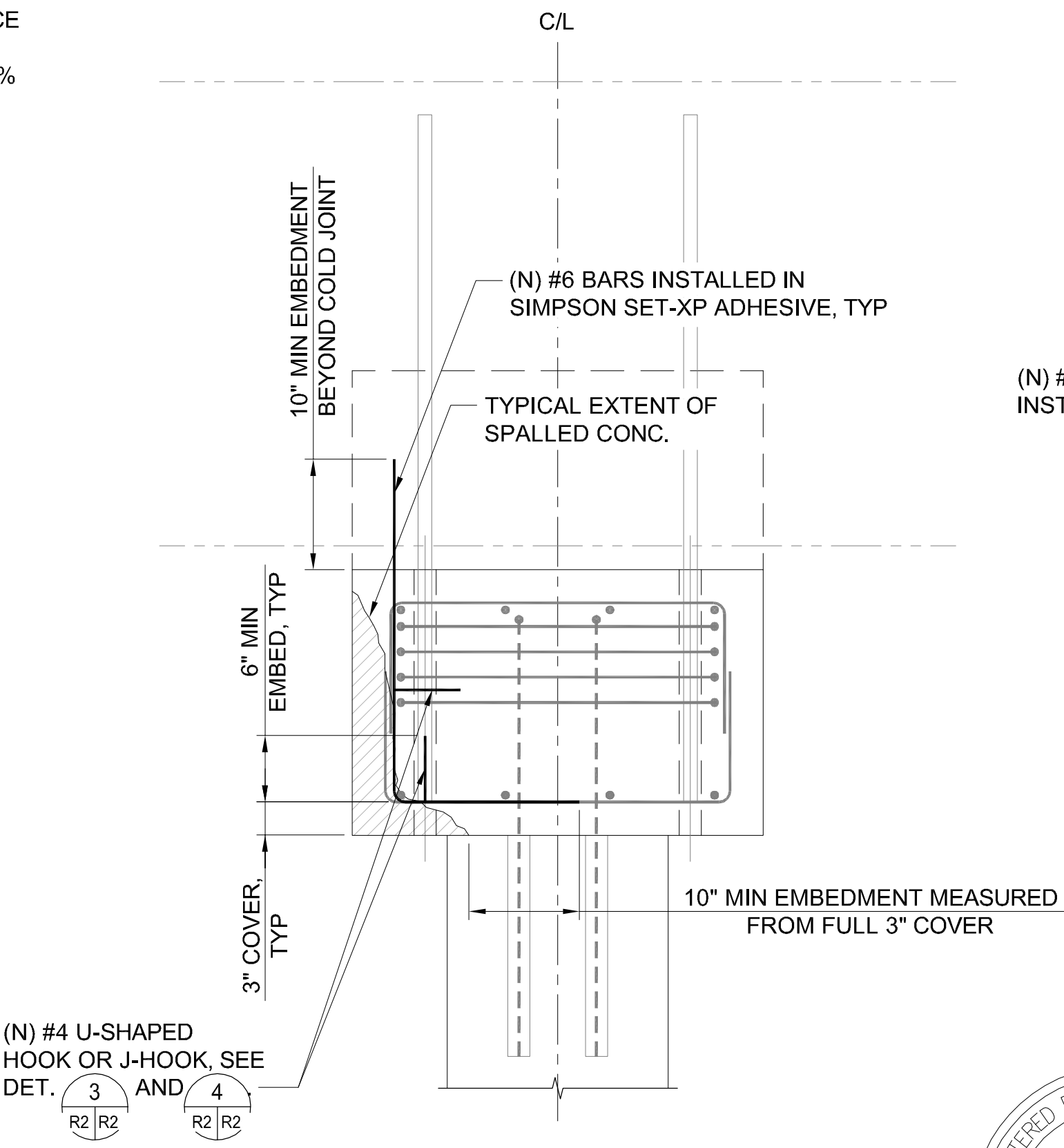


- NOTES:
- CHIP OUT CONCRETE TO EXISTING LONGITUDINAL OR 3" OF SHEET COVER.
 - DRILL 3/4" Ø HOLES, 10" DEEP AT EACH SIDE OF BEAM.
 - FILL HOLE WITH SIMPSON SET-XP EPOXY OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - INSTALL #5 STIRRUPS.

2 STIRRUP REPLACEMENT DETAIL FOR CAP BEAM
R2, R3 R2 SCALE: 1 1/2" = 1'-0"



3 SPALL AND REBAR REPAIR - U SHAPED HOOK
R1, R2 R2 SCALE: 3" = 1'-0"



4 ALTERNATE DETAIL - J HOOK
R1, R2 R2 SCALE: 3" = 1'-0"

B SECTION
R2 R2 SCALE: 1" = 1'-0"



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1300 Clay Street, 7th Floor
Oakland, CA 94612
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675 SEAPORT BLVD
REDWOOD CITY, CA 94063

WHARVES 3 AND 4
REPAIR DETAILS 1

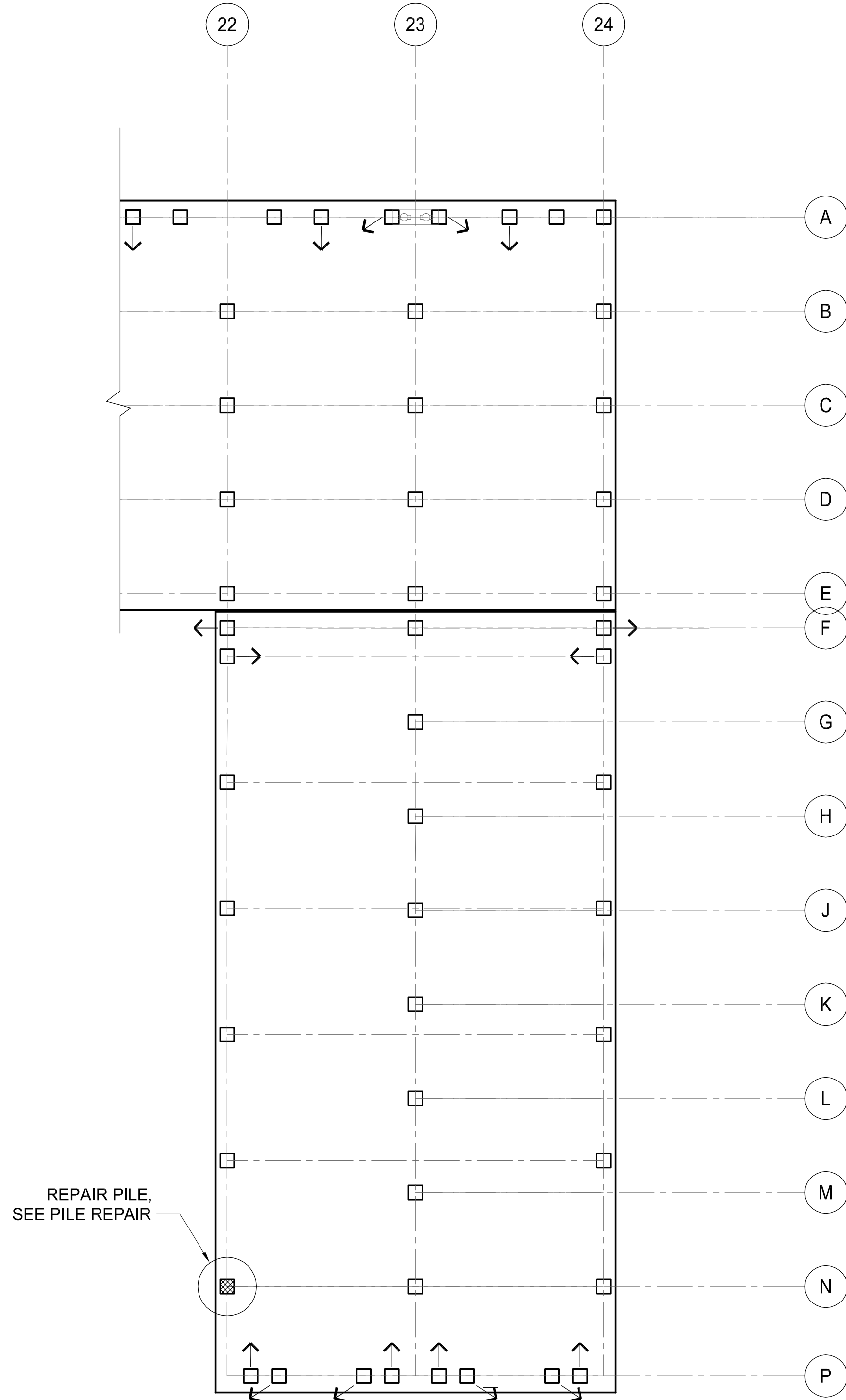
SHEET NO.
R2
26 OF 37 SHEETS

FILE LOCATION: C:\A086704-R002.DWG DATE: 2/22/2017 11:34:41 AM DRAFTER/PERSON: JULIUS BACHNULO

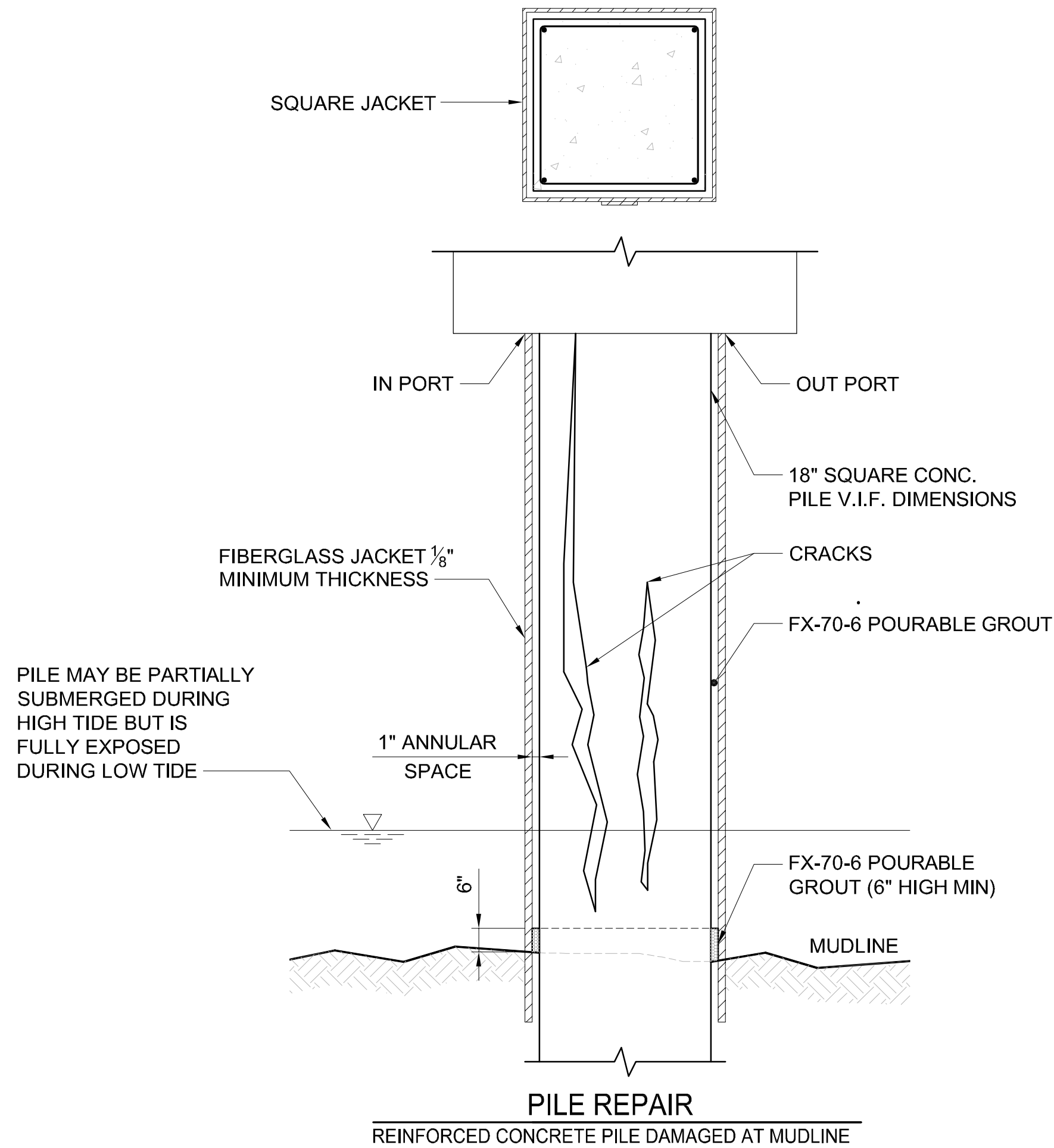
						DATE 11/11/16	SUBMITTED	DATE	REVIEWED	DATE
						JRSW DESIGNED	PROJECT ENGINEER			
						DATE 11/11/16	SUBMITTED	DATE	APPROVED	DATE
						NIF DELINEATED	ASSOCIATE ENGINEER			
						DATE 11/11/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	JCKG			
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	CHECKED			

FILE NO: SCALE: AUTOCAD DRAWING FILE: A086704-R002.DWG

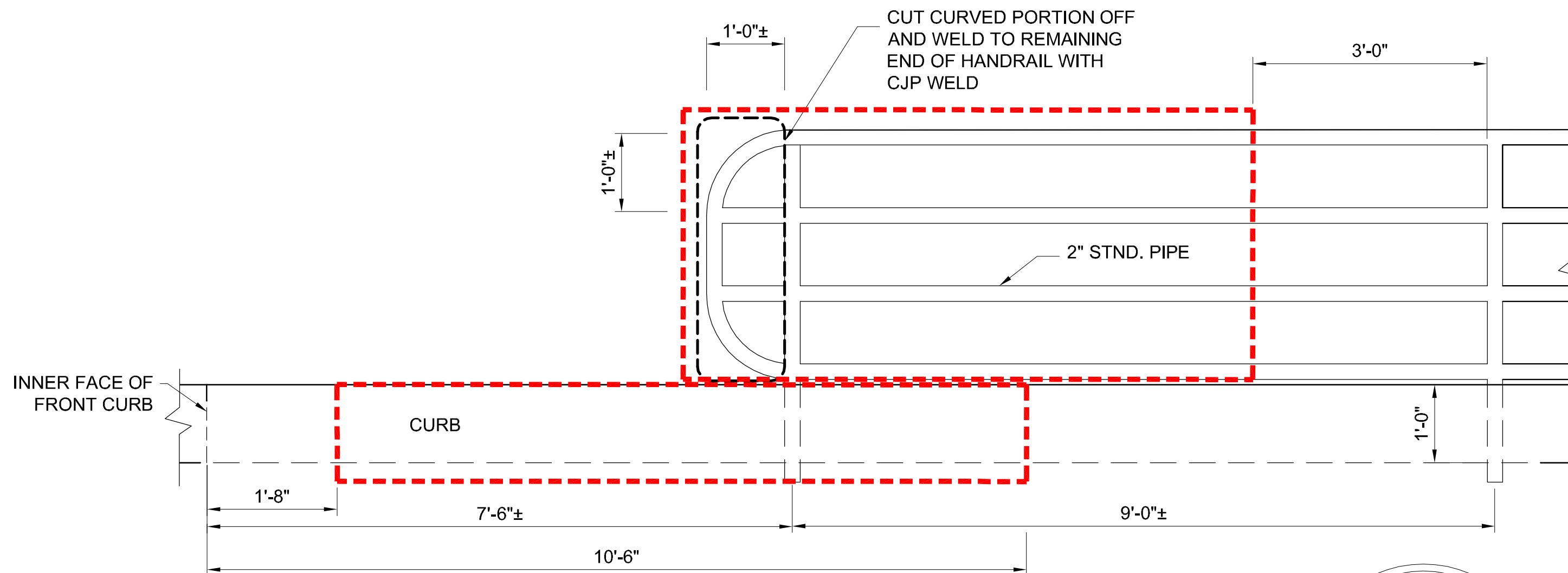
FILE LOCATION: C:\A086704-R004\DWG\DATE: 2/22/2017 1:35:11 AM DRAFTSPERSON: JULIUS BACINILLO



1 WHARF 3 PARTIAL PILE PLAN
R4 R4 SCALE: 1" = 10'-0"



- NOTES:
1. MECHANICALLY REMOVE GREASE, RUST, MARINE GROWTH AND OTHER BOND INHIBITING MATERIALS (WATER BLAST/SAND BLAST/WIRE BRUSH).
 2. POSITION FX-70 FIBERGLASS JACKET PER MANUFACTURERS RECOMMENDATIONS, PENETRATING INTO THE MUD AT LEAST 1 FOOT.
 3. MIX AND INSTALL FX-70-6 HYDRO-ESTER POURABLE EPOXY GROUT PACK INTO THE BOTTOM OF THE ANNULAR SPACE TO CREATE A 6" MINIMUM HEIGHT BOTTOM SEAL. ALLOW GROUT TO CURE OVERNIGHT.
 4. POUR FX-70-6 HYDRO-ESTER-POURABLE EPOXY GROUT TOP OF THE JACKET. PORTS ON EITHER SIDE OF JACKET CAN BE INSTALLED AS NEEDED BUT CONTRACTOR TO VERIFY THAT THE JACKET IS FILLED TO THE TOP WITH GROUT.



LEGEND:
--- LIMITS OF DEMOLITION

A WHARF 3 HANDRAIL DEMOLITION DETAIL - DOLPHIN 15
D1 R4 SCALE: 3/4" = 1'-0"



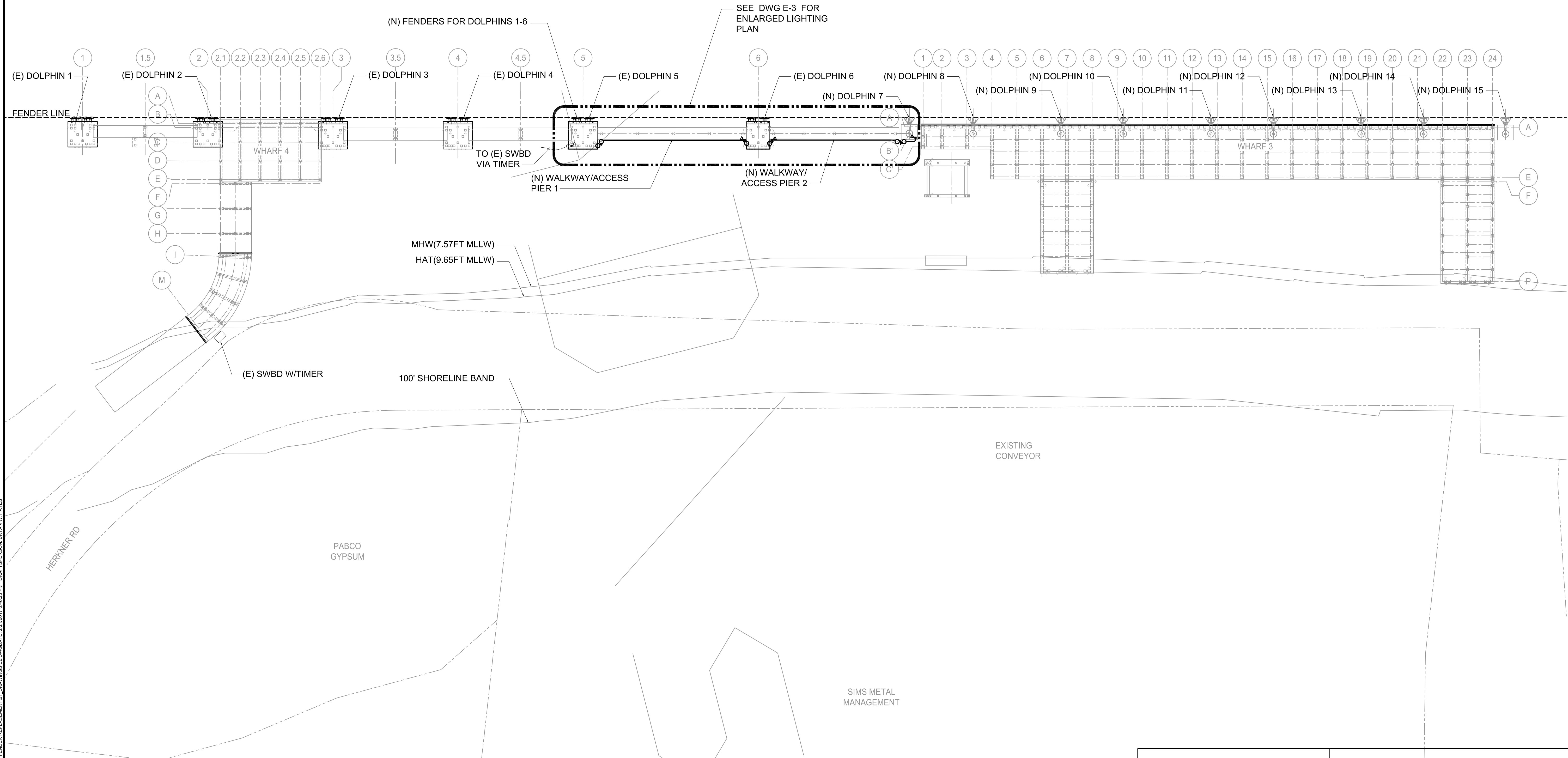
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REDWOOD CITY, CA 94063

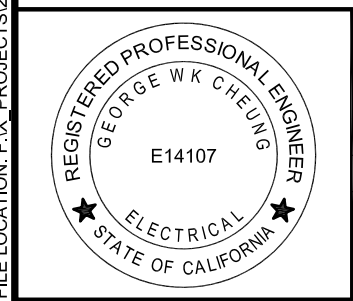
WHARVES 3 AND 4
MISCELLANEOUS REPAIRS

						DATE 11/11/16	SUBMITTED	DATE	REVIEWED	DATE
						JRSW DESIGNED	PROJECT ENGINEER			
						DATE 11/11/16	SUBMITTED	DATE	APPROVED	DATE
						NIF DELINEATED	ASSOCIATE ENGINEER			
						DATE 11/11/16	APPROVED	DATE	APPROVED	DATE
2/22/17	0	ISSUE FOR BID		JUBA	ROYO	JCKG	JCKG			
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	CHECKED			

FILE LOCATION: \\X:\PROJECTS\2016\PORT OF REDWOOD CITY FENDER REPLACEMENT\1. DRAWINGS\DWG\SITE 22\2217.4652.DWG DATE: 2/22/17 4:52 PM DRAFTSPERSON: BRYAN W. HAVES



1 ELECTRICAL SITE PLAN
E2 E2 1" = 40'-0"



DATE 12/23/16			SUBMITTED			DATE			REVIEWED			DATE		
T. LE			DESIGNED			PROJECT ENGINEER								
DATE 12/23/16			SUBMITTED			DATE			APPROVED			DATE		
S. HO			DELINEATED			ASSOCIATE ENGINEER								
DATE 12/23/16			APPROVED			DATE			APPROVED			DATE		
2/22/17	0	ISSUE FOR BID	S. HO	T. LE	G. CHEUNG	G. CHEUNG								
DATE	SYMBOL	REVISIONS	BY	CHECKED	APPROVED	CHECKED								

PORT OF REDWOOD CITY
675 SEAPORT BLVD
REDWOOD CITY, CA 94063

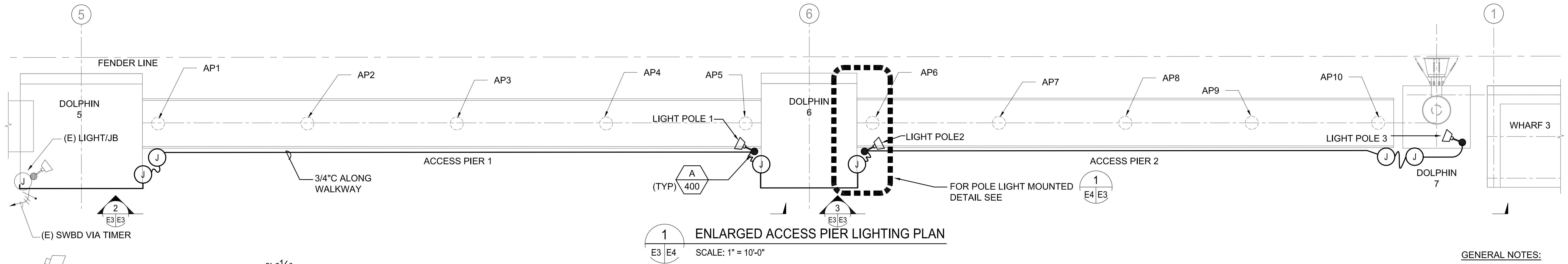
FILE NO: SCALE: AUTOCAD DRAWING FILE: E2.DWG

YEI ENGINEERS, INC.
7700 EDGEWATER DRIVE, SUITE 128
OAKLAND, CA 94621
Phone: (510) 383-1050
Fax: (510) 383-1057
web: www.yeiengineers.com

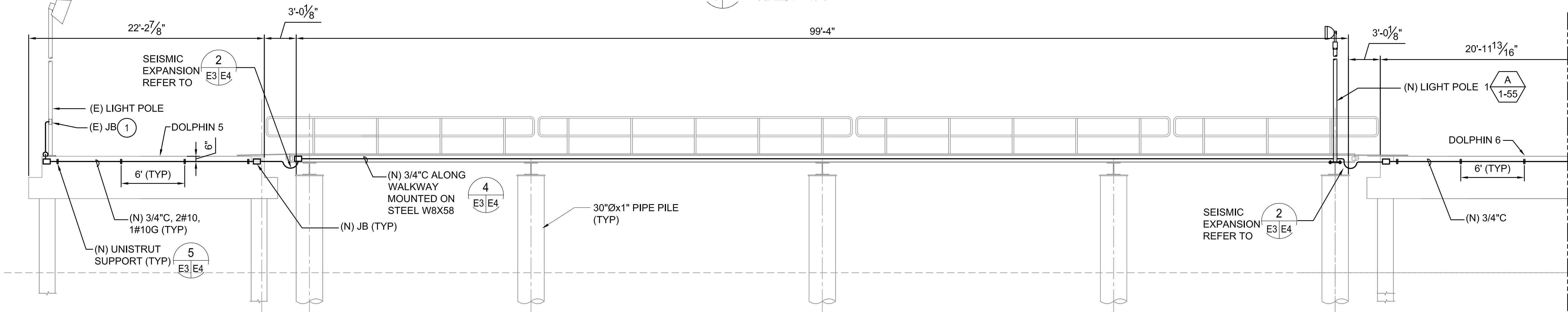
COWI Marine North America
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Website: www.cowi-na.com

WHARVES 3 AND 4
ELECTRICAL SITE PLAN

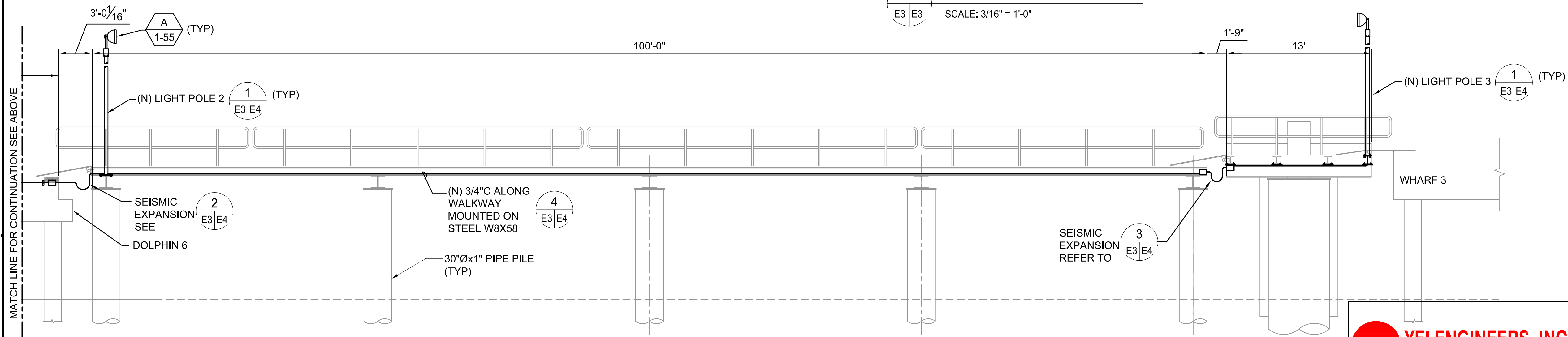
SHEET NO.
E2
30 OF 37 SHEETS



1 ENLARGED ACCESS PIER LIGHTING PLAN
SCALE: 1" = 10'-0"



2 ELEVATION - ACCESS PIER 1
SCALE: 3/16" = 1'-0"



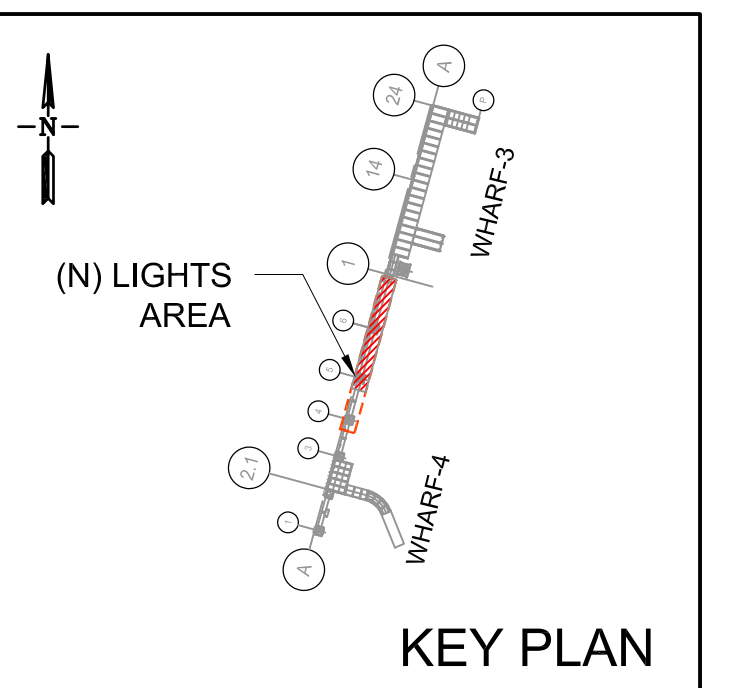
3 ELEVATION - ACCESS PIER 2
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. ALL CONDUITS SHALL BE PVC COATED RGS.
2. ALL FLEXIBLE CONDUIT SHALL BE PVC COATED LIQUID TIGHT STEEL.
3. ALL STRAP, SCREW, BOLT, NUT & WASHER, J-BOX SHALL BE STAINLESS STEEL 316.

KEY NOTES:

1. EXTEND (E) CIRCUIT TO (N) LIGHTS



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WHARVES 3 AND 4
WALKWAY LIGHTING PLAN
AND ELEVATIONS

SHEET NO.

E3

31 OF 37 SHEETS

FILE LOCATION: P:\PROJECTS\2016\PORT OF REDWOOD CITY FENDER REPLACEMENT\1. DRAWINGS\DWG\DATE: 2/22/17 4:41:36 PM DRAWN BY: ERYAN W. HAYES

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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32 OF 37 SHEETS

FILE LOCATION: \\P:\PROJECTS\2016\ISSUE-REPORT OF REDWOOD CITY FENDER REPLACEMENT\DRAWINGS\ISSUE-DWG\DATE: 2/22/2017 4:47:59 PM DRAWN BY: SP506, ERVAN W. HAVES

SPECIFICATIONS

CONDUITS AND BOXES

- 1 PRODUCTS
- 1.1 METAL CONDUITS:
- A. LISTING AND LABELING: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

B. PVC -COATED STEEL CONDUIT: PVC COATED RIGID STEEL CONDUIT

B.1. COMPLY WITH NEMA RN 1.

B.2. COATING THICKNESS: 0.040 INCH (1 MM), MINIMUM.

C. LPMC: FLEXIBLE STEEL CONDUIT WITH PVC JACKET AND COMPLYING WITH UL 360.
- 1.2 METAL FITTINGS:
- D. COMPLY WITH NEMA FB 1 AND UL 514B.

E. LISTING AND LABELING: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

F. FITTINGS, GENERAL: LISTED AND LABELED FOR TYPE OF CONDUIT, LOCATION, AND USE.

G. COORDINATE "CONDUIT FITTINGS FOR HAZARDOUS (CLASSIFIED) LOCATIONS" SUBPARAGRAPH BELOW WITH DRAWINGS.

H. CONDUIT FITTINGS FOR HAZARDOUS (CLASSIFIED) LOCATIONS: COMPLY WITH UL 1203 AND NFPA 70.

I. EXPANSION FITTINGS: PVC OR STEEL TO MATCH CONDUIT TYPE, COMPLYING WITH UL 651, RATED FOR ENVIRONMENTAL CONDITIONS WHERE INSTALLED, AND INCLUDING FLEXIBLE EXTERNAL BONDING JUMPER.

J. COATING FOR FITTINGS FOR PVC-COATED CONDUIT: MINIMUM THICKNESS OF 0.040 INCH (1 MM), WITH OVERLAPPING SLEEVES PROTECTING THREADED JOINTS.

K. JOINT COMPOUND FOR IMC, GRC, OR ARC: APPROVED, AS DEFINED IN NFPA 70, BY AUTHORITIES HAVING JURISDICTION FOR USE IN CONDUIT ASSEMBLIES, AND COMPOUNDED FOR USE TO LUBRICATE AND PROTECT THREADED CONDUIT JOINTS FROM CORROSION AND TO ENHANCE THEIR CONDUCTIVITY.
- 1.3 BOXES, ENCLOSURES, AND CABINETS
- A. BOXES INSTALLED IN WET AREAS SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION
- 2 INSTALLATION
- A. COMPLY WITH NECA 1 AND NECA 101 FOR INSTALLATION REQUIREMENTS EXCEPT WHERE REQUIREMENTS ON DRAWINGS OR IN THIS ARTICLE ARE STRICTER. COMPLY WITH NECA 102 FOR ALUMINUM CONDUITS. COMPLY WITH NFPA 70 LIMITATIONS FOR TYPES OF RACEWAYS ALLOWED IN SPECIFIC OCCUPANCIES AND NUMBER OF FLOORS.

B. KEEP RACEWAYS AT LEAST 6 INCHES (150 MM) AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.

C. COMPLETE RACEWAY INSTALLATION BEFORE STARTING CONDUCTOR INSTALLATION.

D. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS IN ANY CONDUIT RUN EXCEPT FOR CONTROL WIRING CONDUITS, FOR WHICH FEWER BENDS ARE ALLOWED. SUPPORT WITHIN 12 INCHES (300 MM) OF CHANGES IN DIRECTION.

E. SUPPORT CONDUIT WITHIN 12 INCHES (300 MM)OF ENCLOSURES TO WHICH ATTACHED.

J. THREADED CONDUIT JOINTS, EXPOSED TO WET, DAMP, CORROSIVE, OR OUTDOOR CONDITIONS: APPLY LISTED COMPOUND TO THREADS OF RACEWAY AND FITTINGS BEFORE MAKING UP JOINTS. FOLLOW COMPOUND MANUFACTURER'S WRITTEN INSTRUCTIONS.

K. COAT FIELD-CUT THREADS ON PVC-COATED RACEWAY WITH A CORROSION-PREVENTING CONDUCTIVE COMPOUND PRIOR TO ASSEMBLY.

L. INSTALL RACEWAYS SQUARE TO THE ENCLOSURE AND TERMINATE AT ENCLOSURES WITH LOCKNUTS. INSTALL LOCKNUTS HAND TIGHT PLUS 1/4 TURN MORE.

M. DO NOT RELY ON LOCKNUTS TO PENETRATE NONCONDUCTIVE COATINGS ON ENCLOSURES. REMOVE COATINGS IN THE LOCKNUT AREA PRIOR TO ASSEMBLING CONDUIT TO ENCLOSURE TO ASSURE A CONTINUOUS GROUND PATH.

N. CUT CONDUIT PERPENDICULAR TO THE LENGTH.

T. INSTALL RACEWAY SEALING FITTINGS AT ACCESSIBLE LOCATIONS ACCORDING TO NFPA 70 AND FILL THEM WITH LISTED SEALING COMPOUND. FOR CONCEALED RACEWAYS,

V. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR SOLVENT WELDING RNC AND FITTINGS.

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- 1 PRODUCTS
- 1.1 COPPER WIRE
- A. DESCRIPTION: FLEXIBLE, INSULATED AND UNINSULATED, DRAWN COPPER CURRENT-CARRYING CONDUCTOR WITH AN OVERALL INSULATION LAYER OR JACKET, OR BOTH, RATED 600 V OR LESS.

B. STANDARDS:

1. LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE.

2. ROHS COMPLIANT.

3. CONDUCTOR AND CABLE MARKING: COMPLY WITH WIRE AND CABLE MARKING ACCORDING TO UL'S "WIRE AND CABLE MARKING AND APPLICATION GUIDE."

C. CONDUCTORS: COPPER, COMPLYING WITH ASTM B 3 FOR BARE ANNEALED COPPER AND WITH ASTM B 8 FOR STRANDED CONDUCTORS.

D. CONDUCTOR INSULATION:

1. TYPE THHN AND TYPE THWN-2: COMPLY WITH UL 83.
- 1.2 CONNECTORS AND SPLICES

A. DESCRIPTION: FACTORY-FABRICATED CONNECTORS, SPLICES, AND LUGS OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED; LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE.

B. JACKETED CABLE CONNECTORS: FOR STEEL AND ALUMINUM JACKETED CABLES, ZINC DIE-CAST WITH SET SCREWS, DESIGNED TO CONNECT CONDUCTORS SPECIFIED IN THIS SECTION.

C. LUGS: ONE PIECE, SEAMLESS, DESIGNED TO TERMINATE CONDUCTORS SPECIFIED IN THIS SECTION.

1. MATERIAL: COPPER.

2. TYPE: ONE OR TWO HOLE WITH STANDARD BARRELS.

3. TERMINATION: COMPRESSION.

PART 2 - EXECUTION

2.1 CONDUCTOR MATERIAL APPLICATIONS

A. BRANCH CIRCUITS: COPPER. SOLID FOR NO. 12 AWG AND SMALLER; STRANDED FOR NO. 10 AWG AND LARGER.

2.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. EXPOSED BRANCH CIRCUITS: TYPE THHN/THWN-2, SINGLE CONDUCTORS IN RACEWAY

2.3 INSTALLATION OF CONDUCTORS AND CABLES

A. COMPLETE RACEWAY INSTALLATION BETWEEN CONDUCTOR AND CABLE TERMINATION POINTS PRIOR TO PULLING CONDUCTORS AND CABLES.

B. USE MANUFACTURER-APPROVED PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT DETERIORATE CONDUCTOR OR INSULATION. DO NOT EXCEED MANUFACTURER'S RECOMMENDED MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES.

C. USE PULLING MEANS, INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS, THAT WILL NOT DAMAGE CABLES OR RACEWAY.

2.4 CONNECTIONS

A. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A-486B.

B. MAKE SPLICES, TERMINATIONS, AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL.

LIGHTING POLES

1 GENERAL

1.1 SUBMITTALS

A. MANUFACTURERS' SHOP DRAWINGS FOR:

1. BASE TEMPLATE FOR BOLT MOUNTING

2. ASSEMBLY DRAWINGS FOR POLES AND MOUNTING BRACKETS

B. POLE AND ANCHORAGE STRUCTURAL CALCULATIONS: SUBMIT CALCULATIONS PREPARED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE FOLLOWING STRUCTURAL ELEMENTS MEET THE SEISMIC DESIGN REQUIREMENTS OF THE CALIFORNIA BUILDING CODE (CBC), AND THE WIND DESIGN REQUIREMENTS OF EITHER A) AASHTO SPECIFICATIONS FOR STRUCTURAL SUPPORTS (LTS-4) APPENDIX C, "ALTERNATE METHOD FOR WIND PRESSURES," OR C) CBC, EXPOSURE "D", WHICHEVER IS MORE STRINGENT.

1. POLE AND ATTACHMENTS

2. BASE PLATE

3. ANCHOR BOLTS

1.2 WARRANTIES

THE CONTRACTOR SHALL PROVIDE A FIVE (5) YEAR WARRANTY DATED FROM FINAL COMPLETION FOR PRODUCTS FROM THE LUMINAIRE, LAMP, BALLAST, AND PHOTOCELL MANUFACTURERS AND ON FOR ALL OTHER ELECTRICAL COMPONENTS.

2 PRODUCTS

2.1 PERFORMANCE

A. STRUCTURAL CHARACTERISTICS: COMPLY WITH AASHTO LTS-6-M.

B. DEAD LOAD: WEIGHT OF LUMINAIRE AND ITS HORIZONTAL AND VERTICAL SUPPORTS, LOWERING DEVICES, AND SUPPORTING STRUCTURE, APPLIED ACCORDING TO AASHTO LTS-6-M.

C. LIVE LOAD: SINGLE LOAD OF 500 LBF (2200 N) DISTRIBUTED ACCORDING TO AASHTO LTS-6-M.

D. WIND LOAD: PRESSURE OF WIND ON POLE AND LUMINAIRE, CALCULATED AND APPLIED ACCORDING TO AASHTO LTS-6-M.
- 2.2 STEEL POLES

A. SOURCE LIMITATIONS: OBTAIN POLES FROM SINGLE MANUFACTURER OR PRODUCER.

B. POLES: COMPLY WITH ASTM A 240/A 240M, STAINLESS STEEL WITH A MINIMUM YIELD OF 55,000 PSIG (379 MPA); ONE-PIECE CONSTRUCTION UP TO 40 FEET (12 M) IN HEIGHT WITH ACCESS HANDHOLE IN POLE WALL.

C. SHAPE: ROUND, STRAIGHT.

D. MOUNTING PROVISIONS: BUTT FLANGE FOR BOLTED MOUNTING ON FOUNDATION OR BREAKAWAY SUPPORT.

E. POLE-TOP TENONS: FABRICATED TO SUPPORT LUMINAIRE OR LUMINAIRES AND BRACKETS INDICATED, AND SECURELY FASTENED TO POLE TOP.

F. FASTENERS: [STAINLESS STEEL] [GALVANIZED STEEL] <INSERT FINISH OR GRADE>, SIZE AND TYPE AS DETERMINED BY MANUFACTURER. CORROSION-RESISTANT ITEMS COMPATIBLE WITH SUPPORT COMPONENTS.

G. MATERIALS: COMPATIBLE WITH POLES AND STANDARDS AS WELL AS THE SUBSTRATES TO WHICH POLES AND STANDARDS ARE FASTENED AND SHALL NOT CAUSE GALVANIC ACTION AT CONTACT POINTS.

H. ANCHOR BOLTS, LEVELING NUTS, BOLT CAPS, AND WASHERS: HOT-DIP GALVANIZED AFTER FABRICATION UNLESS OTHERWISE INDICATED.

I. GROUNDING AND BONDING LUGS: WELDED 1/2-INCH (13-MM) THREADED LUG, LISTED FOR ATTACHING GROUNDING AND BONDING CONDUCTORS OF TYPE AND SIZE INDICATED, AND ACCESSIBLE THROUGH HANDHOLE.

J. HANDHOLE: OVAL SHAPED, WITH MINIMUM CLEAR OPENING OF 2-1/2 BY 5 INCHES (65 BY 130 MM), WITH COVER SECURED BY STAINLESS-STEEL CAPTIVE SCREWS.

2.3 MOUNTING HARDWARE

A. ANCHOR BOLTS: MANUFACTURED TO ASTM F 1554, GRADE 55, WITH A MINIMUM YIELD STRENGTH OF 55,000 PSI (380,000 KPA).

1. THREADING: UNIFORM NATIONAL COARSE CLASS 2A.

B. NUTS: ASTM A 563, GRADE A, HEAVY-HEX

1. TWO NUTS PROVIDED PER ANCHOR BOLT, SHIPPED WITH NUTS PRE-ASSEMBLED TO THE ANCHOR BOLTS.

C. WASHERS: ASTM F 436, TYPE 1.

1. TWO WASHERS PROVIDED PER ANCHOR BOLT.

3 EXECUTION

3.1 EXAMINATION

A. EXAMINE AREAS AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.

B. EXAMINE POLES, LUMINAIRE-MOUNTING DEVICES, LOWERING DEVICES, AND POLE ACCESSORIES BEFORE INSTALLATION. COMPONENTS THAT ARE SCRATCHED, DENTED, MARRED, WET, MOISTURE DAMAGED, OR VISIBLY DAMAGED ARE CONSIDERED DEFECTIVE.

C. EXAMINE ROUGHING-IN FOR FOUNDATION AND CONDUIT TO VERIFY ACTUAL LOCATIONS OF INSTALLATION.

D. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 POLE FOUNDATION

F. ANCHOR BOLTS: INSTALL PLUMB USING MANUFACTURER-SUPPLIED STEEL TEMPLATE, UNIFORMLY SPACED.

3.3 POLE INSTALLATION

G. ALIGNMENT: ALIGN POLE FOUNDATIONS AND POLES FOR OPTIMUM DIRECTIONAL ALIGNMENT OF LUMINAIRES AND THEIR MOUNTING PROVISIONS ON POLE.

H. CLEARANCES: MAINTAIN THE FOLLOWING MINIMUM HORIZONTAL DISTANCES OF POLES FROM SURFACE AND UNDERGROUND FEATURES UNLESS OTHERWISE INDICATED ON DRAWING.

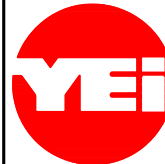
1. WATER PIPING:60 INCHES


2. WATER, GAS, ELECTRIC, COMMUNICATIONS, AND SEWER LINES: 10 FEET

3.4 GROUNDING

A. GROUND METAL POLES AND SUPPORT STRUCTURES:

1. INSTALL GROUNDING ELECTRODE FOR EACH POLE UNLESS OTHERWISE INDICATED.

2. INSTALL GROUNDING CONDUCTOR PIGTAIL IN THE BASE FOR CONNECTING LUMINAIRE TO GROUNDING SYSTEM.
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REDWOOD CITY, CA 94063
- WHARVES 3 AND 4
SPECIFICATION
- SHEET NO.
E5
33 OF 37 SHEETS

FILE LOCATION: \\P:\PROJECTS\2016\160502-PORT OF REDWOOD CITY FENDER REBATEMENT\DRAWINGS\DWG\DATE 2/22/17 4:53 PM DWGTYPE: BRYAN W. HAYES

MECHANICAL LEGEND								
SYMBOL	ABBREV	DESCRIPTION	SYMBOL	ABBREV	DESCRIPTION	SYMBOL	ABBREV	DESCRIPTION
	POC	POINT OF CONNECTION		AFF	ABOVE FINISHED FLOOR		MIN	MINIMUM
	POD	POINT OF DISCONNECTION		APPROX	APPROXIMATE		MM	MILLIMETER
		EXISTING EQUIPMENT OR PIPING TO REMAIN		CL	CENTER LINE		NC	NORMALLY CLOSED
		NEW EQUIPMENT OR PIPING		CONC	CONCRETE		NIC	NOT IN CONTRACT
		REMOVE EXISTING EQUIPMENT OR PIPING		CONN	CONNECT OR CONNECTION		NO	NUMBER
		PIPE TEE UP		CONT	CONTINUATION		NSF 61	NATIONAL SANITATION FOUNDATION- DRINKING WATER SYSTEM COMPONENTS- HEALTH EFFECTS
		PIPE TEE DOWN		DI	DUCTILE IRON		NTS	NOT TO SCALE
		PIPE DOWN		DIA	DIAMETER		OD	OUTSIDE DIAMETER
		PIPE UP		DIM	DIMENSION		OS&Y	OUTSIDE SCREW & YOKE
	GV	GATE VALVE		DWG	DRAWING		PD	PRESSURE DROP
	U	UNION		(E)	EXISTING		QTY	QUANTITY
	RED	REDUCER		EA	EACH		RE	REDUCING ELBOW
	CH V	CHECK VALVE		ELECT	ELECTRICAL		REQD	REQUIRED
	EJ	FLEXIBLE EXPANSION JOINT		ELEV	ELEVATION		SD	STORM DRAIN
		PIPE PENETRATION WITH SLEEVE		ELL	ELBOW		SPEC	SPECIFICATION
	PA	PIPE ANCHOR		EXIST	EXISTING		SS	STAINLESS STEEL
	CW	DOMESTIC COLD WATER PIPE		FDC	FIRE DEPARTMENT CONNECTION		STD	STANDARD
		REDUCED PRINCIPLE BACKFLOW PREVENTER ASSEMBLY		FIN	FINISH OR FINISHED		STL	STEEL
	W	WATER		FLR	FLOOR		TEMP	TEMPERATURE
		SECTION REFERENCE SYMBOL		FW	FIRE WATER		THD	THREADED
		SECTION IDENTIFICATION LETTER		GA	GAUGE/ GAGE		THK	THICKNESS
		SHEET NUMBER ON WHICH SECTION IS DRAWN		GALV	GALVANIZED		TYP	TYPICAL
		SHEET NUMBER(S) FROM WHICH SECTION IS TAKEN		ID	INSIDE DIAMETER		UNO	UNLESS NOTED OTHERWISE
				kPa	KILOPASCALS		U/G	UNDERGROUND
				LR	LONG RADIUS		VV	VALVE VAULT
				M	METER		VOL	VOLUME
				MAX	MAXIMUM		W/	WITH
				MECH	MECHANICAL		WB	WHARF WATER BOX

GENERAL NOTES

- FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS, INCLUDING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK AND COORDINATE WITH ALL OTHER TRADES. ALL DISCREPANCIES OR POTENTIAL PROBLEMS SHALL BE BROUGHT TO THE ATTENTION OF THE PORT OF REDWOOD CITY ENGINEER PRIOR TO INSTALLATION.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED TO DETERMINE THE EXACT LOCATION OF THE PIPING.
- COORDINATE INSTALLATION OF PIPING AND ACCESSORIES WITH OTHER TRADES PRIOR TO INSTALLATION.
- PROVIDE A HANGER NOT MORE THAN 12-INCHES FROM THE POINT OF CHANGE OF DIRECTION OF A PIPE RUN IN BOTH HORIZONTAL AND VERTICAL PLANE.
- PLANS ARE BASED ON ANTICIPATED EQUIPMENT SIZE AND CONFIGURATION. CONTRACTOR SHALL MODIFY ARRANGEMENT TO SUIT ACTUAL PURCHASED EQUIPMENT AS REQUIRED FOLLOWING THE CRITERIA ESTABLISHED BY THE PLAN. DEPARTURES FROM THE CONTRACT DRAWING RESULT FROM CHANGES IN EQUIPMENT SIZES AND CONFIGURATIONS, OR RE-ARRANGEMENTS TO ACCOMMODATE FIELD CONDITIONS, SHALL BE SUBMITTED IN DETAIL FOR THE ENGINEER'S APPROVAL.
- ENGINEER AT LEAST ONE (1) WEEK IN ADVANCE TO COORDINATE SHUTDOWN FOR RECONNECTION TO (E) AFFECTED UTILITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL VERIFICATION OF EXISTING CONDITIONS AND COORDINATION OF HIS WORK WITH THE EXISTING CONDITIONS AND OTHER TRADES. ALL DISCREPANCIES OR POTENTIAL PROBLEMS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO CONSTRUCTION OR AS OBSERVED. THE BID SHALL CONTAIN UNIT PRICES OF ITEMS THAT MAY NEED TO BE REPLACED AND REINSTALLED.
- IN CASE OF DIFFERENCE BETWEEN CODES, SPECIFICATIONS, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, AND CONTRACT DOCUMENTS, THE MOST STRINGENT SHALL GOVERN. PROMPTLY NOTIFY THE OWNER IN WRITING OF ANY SUCH DIFFERENCE.
- ALL MATERIALS AND EQUIPMENT FURNISHED AND INSTALLED SHALL BE NEW, FREE FROM DEFECTS AND SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. SHOULD ANY PROBLEMS DEVELOP DURING THE PERIOD DUE TO FAULTY WORKMANSHIP OR MATERIAL AND LABOR IT SHALL BE CORRECTED WITHOUT COST TO THE OWNER.
- THE EXISTENCE AND LOCATION OF UTILITY PIPELINES SHOWN ON THE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. APPROVAL OF THESE PLANS BY THE ENGINEER DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION OR THE EXISTENCE OF ANY UTILITIES WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR IS REQUIRED TO TAKE ALL DUE PRECAUTIONARY MEANS TO PROTECT THE UTILITIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, PROTECT, AND MAINTAIN ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS.

DOMESTIC WATER PIPING NOTES

- A. PROVIDE (N) SHIP WATER SERVICE. INSTALLATION SHALL BE IN CONFORMANCE WITH CITY OF REDWOOD CITY DEPARTMENT OF PUBLIC WORK STANDARDS AND ACCEPTABLE TO REDWOOD CITY FIRE DEPARTMENT. DO NOT INTERRUPT WATER SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED.

COPPER PIPE:

- GENERAL:
 - COPPER PIPE TO BE USED FOR BRANCH SERVICE PIPE AND RISER.
- MATERIALS:
 - HARD COPPER TUBE, CONFORMING TO ASTM B 88, TYPE L, DRAWN TEMPER, WITH ASME B16.22 WROUGHT-COPPER THREADED FITTINGS. THREADS ON PIPE SHALL BE TAPERED AND CONFORM TO ANSI/ASME B1.20.1. HOSE END THREAD SHALL MATCH HOSE CONNECTOR TYPE.
- MARKING:
 - COPPER TUBING SHALL BE IDENTIFIED WITH THE NAME OR TRADEMARK OF THE MANUFACTURER AND THE MARK INDICATIVE OF THE TYPE SHALL BE PERMANENTLY INCISED ON EACH TUBE AT INTERVALS NO GREATER THAN 1.5 FEET. TUBE IN STRAIGHT LENGTHS SHALL BE FURTHER IDENTIFIED THROUGHOUT ITS LENGTH BY MEANS OF A CONTINUOUS COLORED STRIPE, SYMBOL OR LOGO, INCLUDING A LEGEND AT INTERVALS NOT GREATER THAN 3 FEET INDICATING THE TYPE OF THE TUBE; NAME OR TRADEMARK OF THE MANUFACTURER, OR BOTH; AND COUNTRY OF ORIGIN.

CLEANING:

- FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.
- CLEAN INTERIOR OF DOMESTIC WATER PIPING SYSTEM. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES.

TESTING:

- HYDROSTATIC PRESSURE TEST AND LEAK TEST DOMESTIC COLD WATER PIPING. CAP AND SUBJECT PIPING TO PROCEDURES AND TEST PRESSURES THAT SHALL BE IN ACCORDANCE WITH CITY OF REDWOOD CITY PUBLIC WORKS STANDARDS.
- FILL WATER PIPING 24 HOURS BEFORE TESTING AND APPLY TEST PRESSURE TO STABILIZE SYSTEM, USING ONLY POTABLE WATER. TEST AT NO LESS THAN ONE-AND-ONE HALF TIMES THE WORKING PRESSURE. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.
- TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.
- LEAVE NEW, ALTERED, EXTENDED, OR REPLACED DOMESTIC WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
- CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.

- DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.
- REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS. AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.
- DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST ONE DAY BEFORE INSPECTION MUST BE MADE. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION.
- FINAL INSPECTION: ARRANGE FOR AUTHORITIES HAVING JURISDICTION TO OBSERVE TESTS AND TO ENSURE COMPLIANCE WITH REQUIREMENTS.
- REINSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TESTS OR INSPECTIONS, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.
- DOMESTIC WATER PIPING WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS
- REPORTS: PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION.



							DATE 12/23/16	SUBMITTED	DATE _____	REVIEWED	DATE _____
							B. HAYES DESIGNED	PROJECT ENGINEER			
							DATE 12/23/16	SUBMITTED	DATE _____	APPROVED	DATE _____
							P. WINGARD DELINEATED	ASSOCIATE ENGINEER			
							DATE 12/23/16	APPROVED	DATE _____	APPROVED	DATE _____
2/22/17	0	ISSUE FOR BID		P. WINGARD	B. HAYES	P. MALLILIN	P. MALLILIN				
DATE	SYMBOL	REVISIONS		BY	CHECKED	APPROVED	CHECKED				

PORT OF REDWOOD CITY
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FILE NO:

SCALE:

AUTOCAD DRAWING FILE:
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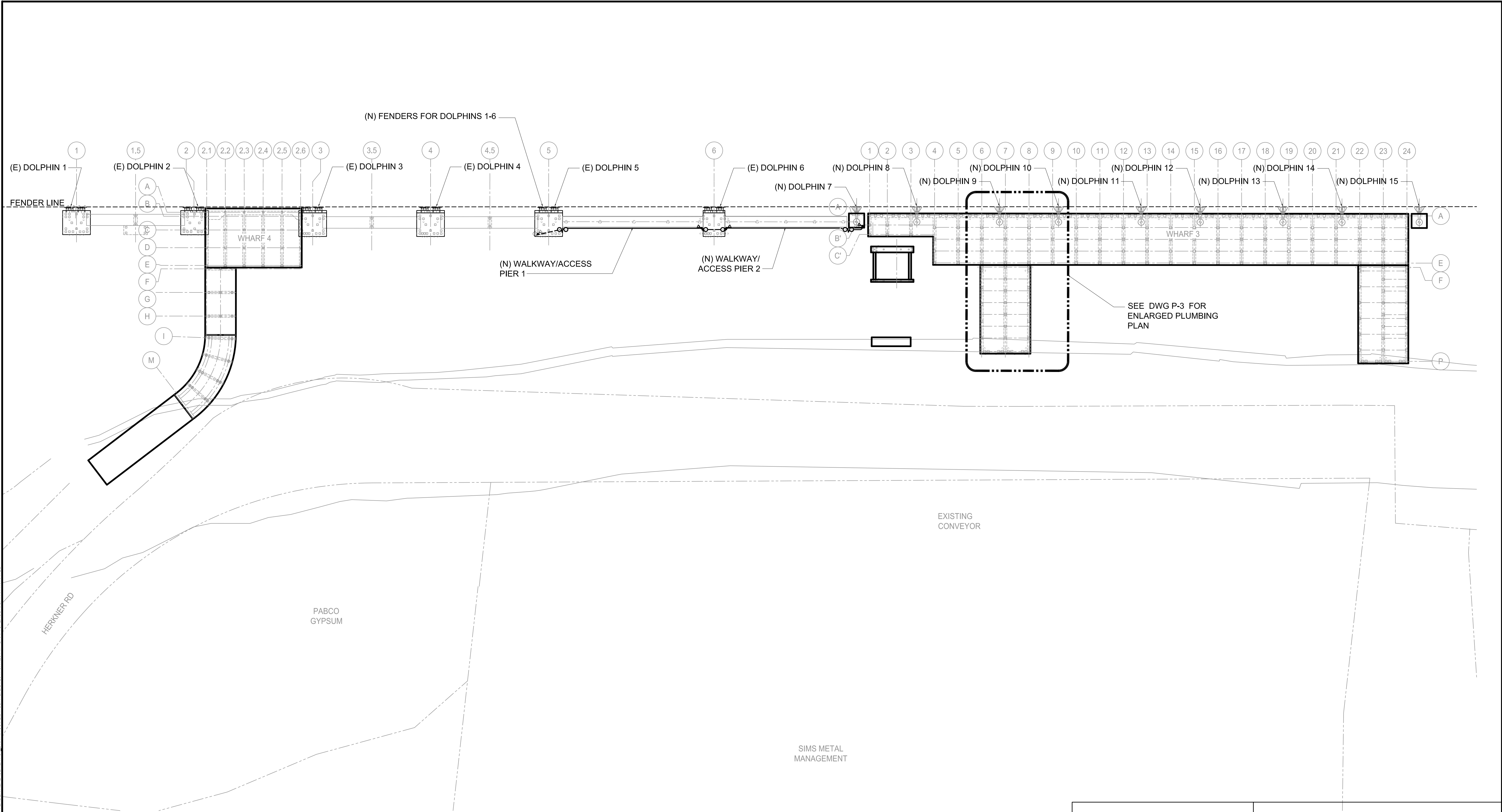
Website: www.cowi-na.com

WHARVES 3 AND 4
PLUMBING
LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET NO.

P1

34 OF 37 SHEETS




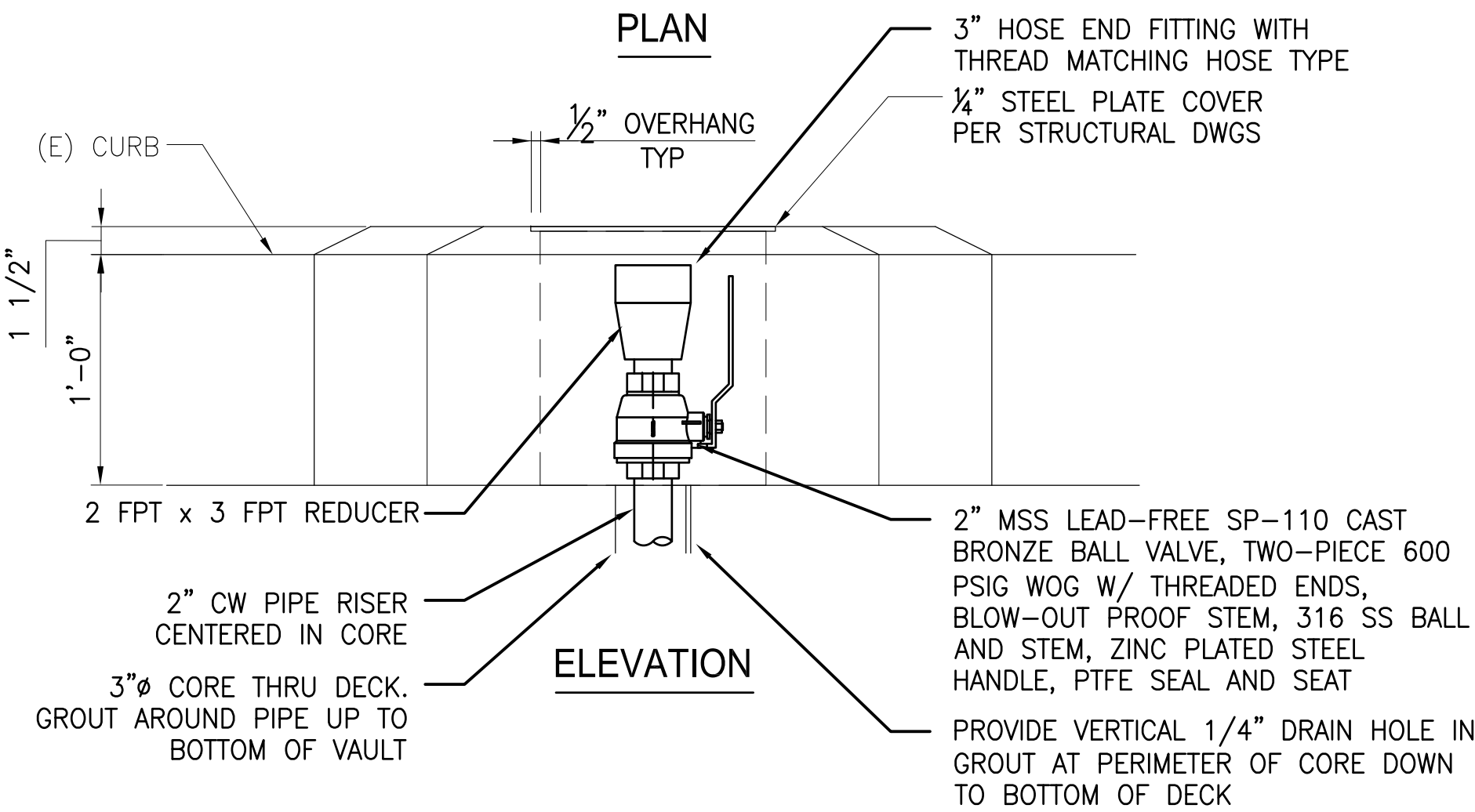
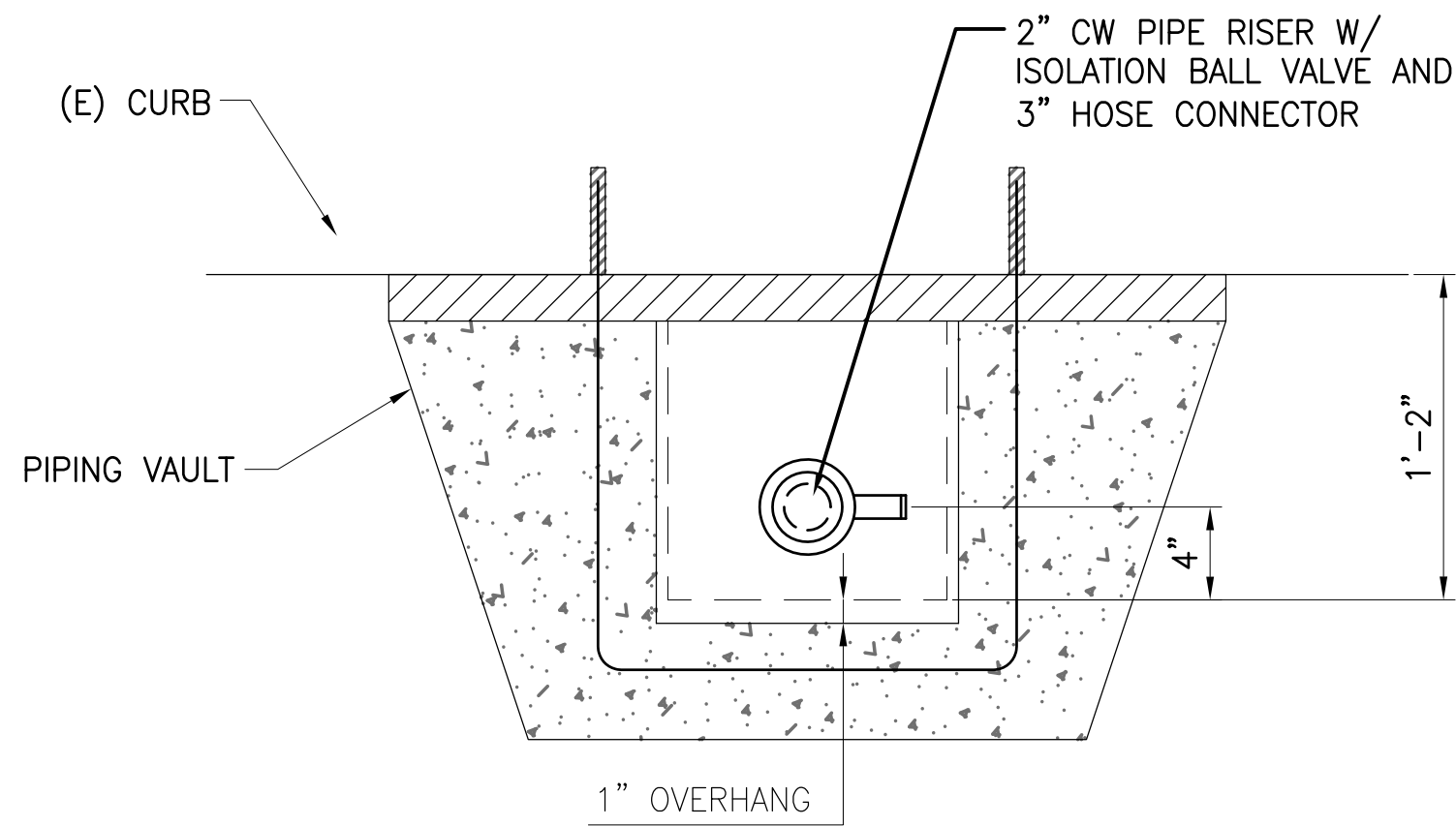
1 PLUMBING SITE PLAN
P2 P2 1" = 40'-0"

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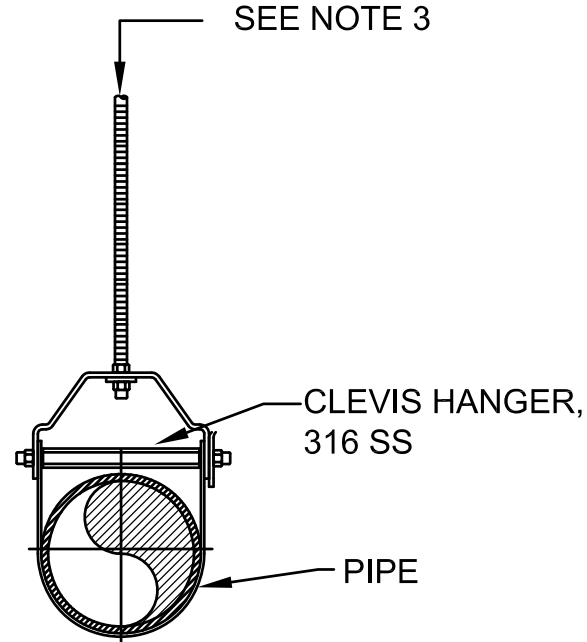
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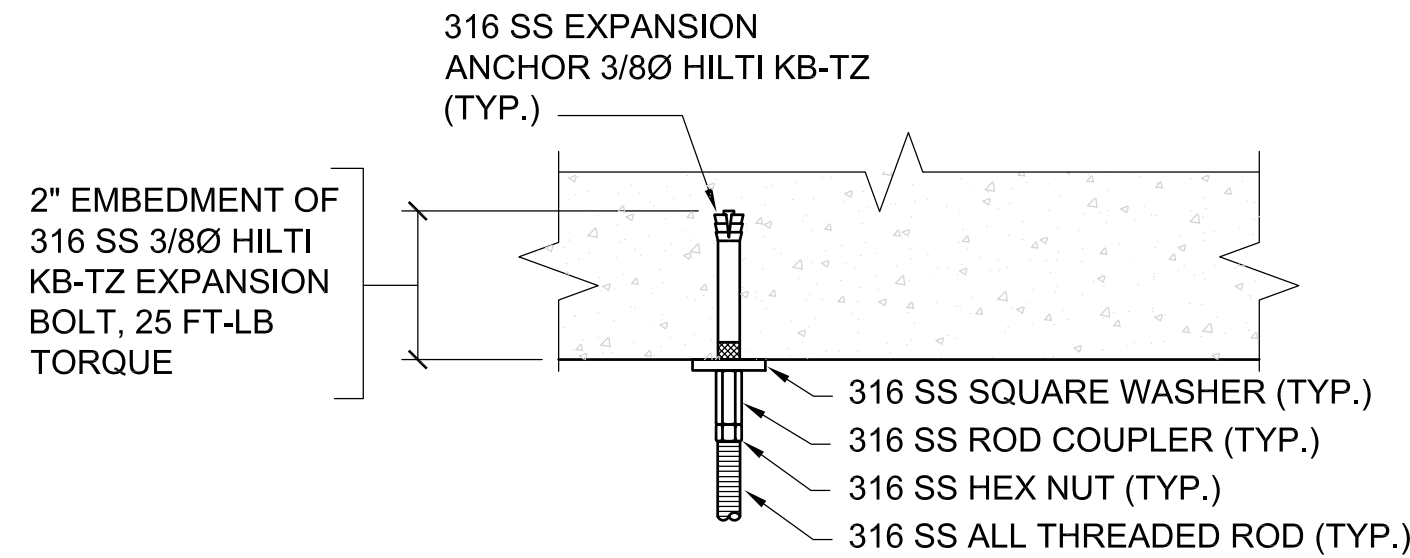
- NOTE:
- REFER TO STRUCTURAL DWGS FOR STRUCTURE WORK FOR PIPE PENETRATION. COORDINATE LOCATION AND AVOID CUTTING AND DRILLING INTO STEEL REINFORCEMENT WHEN INSTALLING PIPE.
 - VERIFY PIPE ASSEMBLY CAN FIT INSIDE OF VAULT PRIOR TO VAULT INSTALLATION, AND COORDINATE WITH STRUCTURAL TRADES. SEAL ALL AROUND VAULT WITH WATERPROOF SEAL WATERTIGHT.

1 PIPING IN VAULT DETAIL
P4 P3 SCALE: NONE



- NOTES:
- MOUNT PIPE MAXIMUM 12 INCHES BELOW DECK. SEISMIC BRACING NOT REQUIRED.
 - ALL PIPE SUPPORTS SHALL BE TYCO, BLINE COOPER OR EQUAL.
 - REFER TO TYPICAL DECK ATTACHMENT DETAIL FOR APPLICATION CONTINUATION.
 - PROVIDE NONMETALLIC SEPARATION BETWEEN UNINSULATED PIPING AND DISSIMILAR METAL SUPPORTS, WITH PLASTIC COATED CLEVIS HANGER OR PIPE CLAMP.
 - INSTAL HANGERS MAXIMUM 8 FEET SPACING FOR 2 INCH PIPING, WITH 3/8" ROD.

2 TYPICAL PIPE HANGER DETAIL
P4 SCALE: NTS



3 TYPICAL PIPE HANGER ATTACHMENT DETAIL
P4 SCALE: NTS

FILE LOCATION: P:\PROJECTS\2016\1606-PORT OF REDWOOD CITY FENDER REPLACEMENT\01 - DRAWINGS\04 DWGS\DATE: 2/22/17 4:42 PM DRAFTSPERSON: BRYAN W. HAYES



DATE	SYMBOL	REVISIONS	BY	CHECKED	APPROVED
2/22/17	0	ISSUE FOR BID	P. WINGERO	B. HAYES	P. MALLILIN

DATE 12/23/16	SUBMITTED	DATE	REVIEWED	DATE
B. HAYES	DESIGNED	DATE 12/23/16	SUBMITTED	DATE
P. WINGERO	DELINEATED	DATE 12/23/16	APPROVED	DATE

DATE 12/23/16	SUBMITTED	DATE	REVIEWED	DATE
B. HAYES	DESIGNED	DATE 12/23/16	SUBMITTED	DATE
P. WINGERO	DELINEATED	DATE 12/23/16	APPROVED	DATE

PORT OF REDWOOD CITY
675 SEAPORT BLVD
REDWOOD CITY, CA 94063

FILE NO: SCALE: AUTOCAD DRAWING FILE: P4.DWG

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7700 EDGEWATER DRIVE, SUITE 128
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Fax: 510.839.9715

WHARVES 3 AND 4
PLUMBING DETAILS

SHEET NO.

P4

37 OF 37 SHEETS