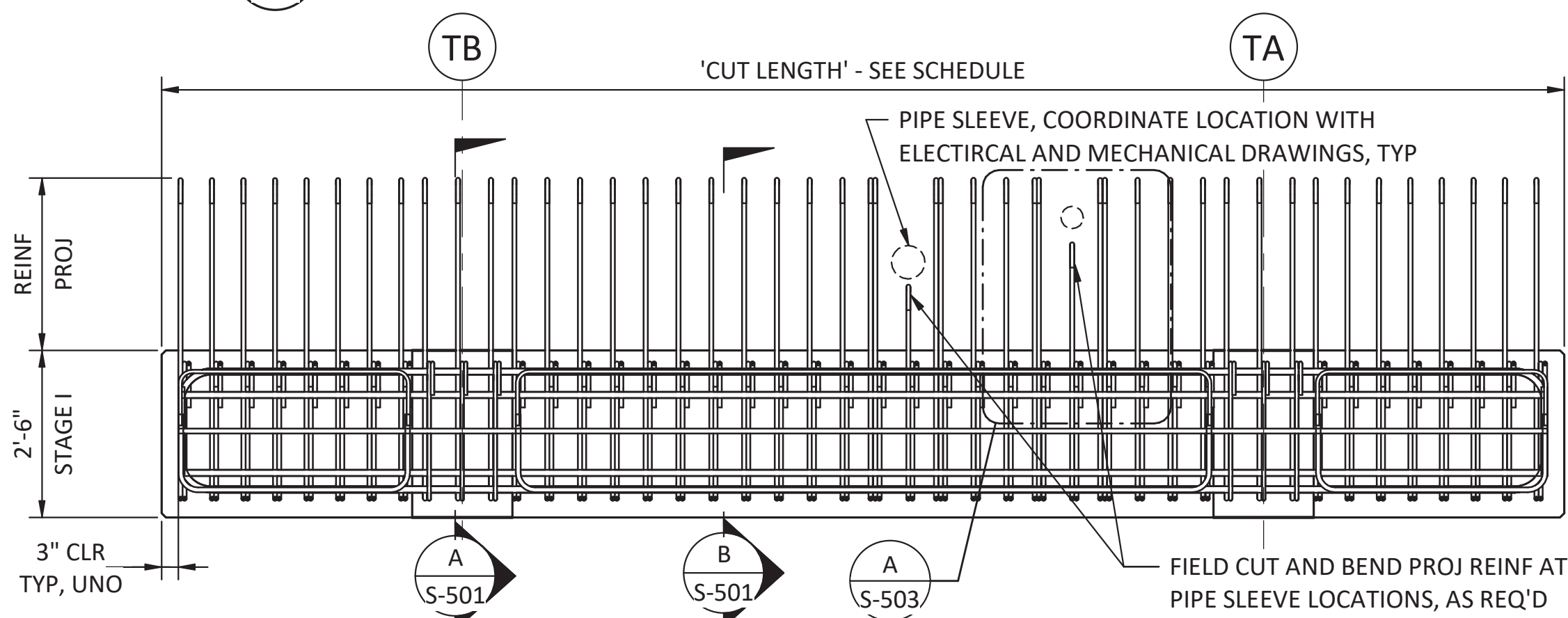
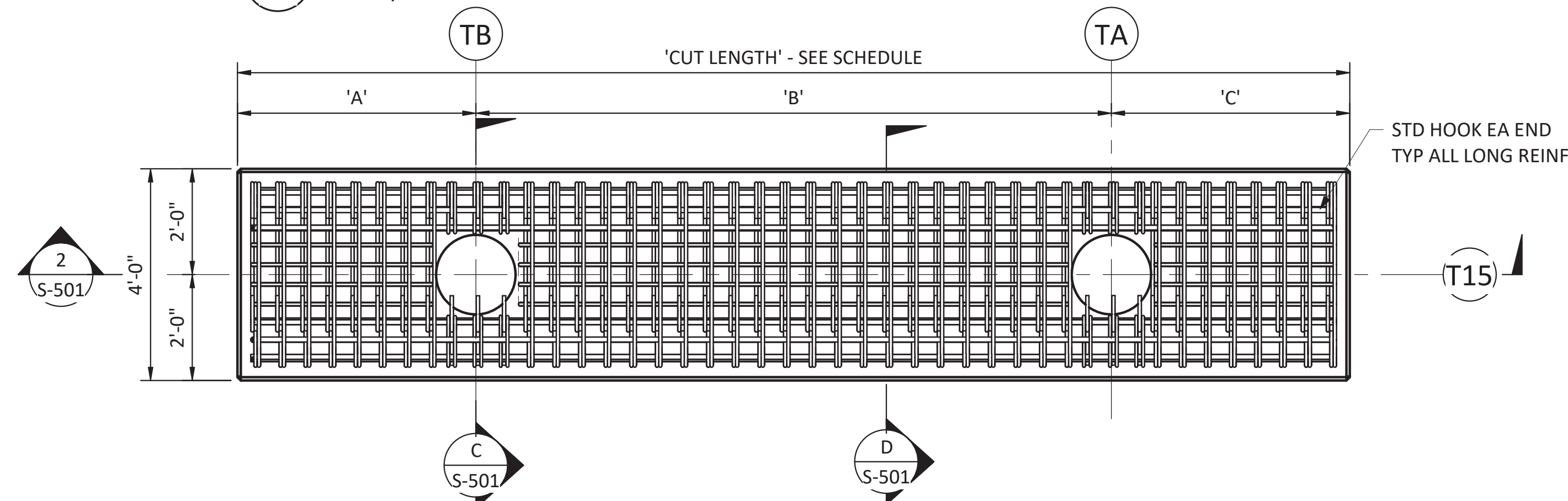


1 PLAN - TWO PILE PRECAST TRESTLE PILE CAP
SCALE: 1/2" = 1'-0"

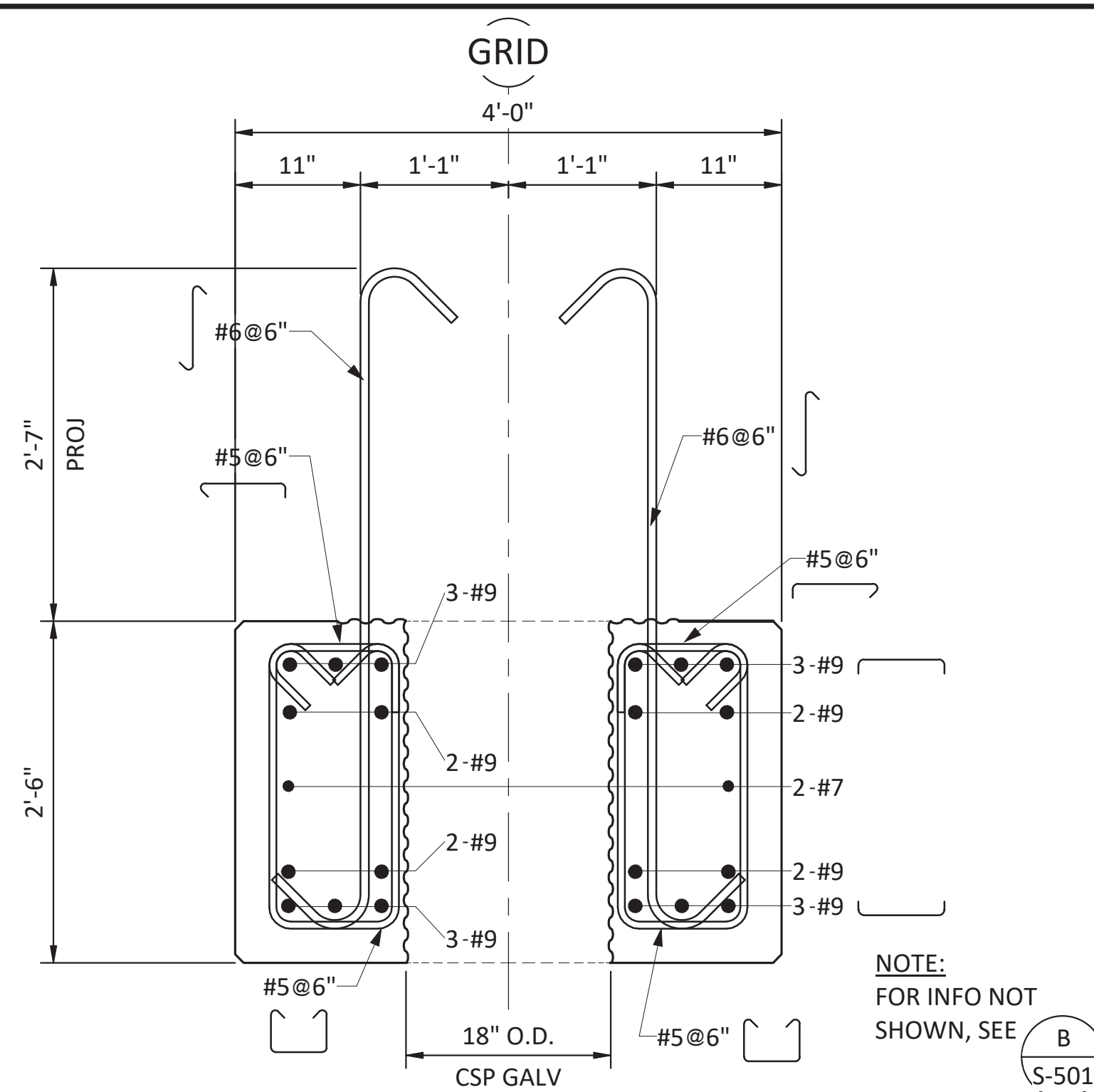


2 ELEVATION - TWO PILE PRECAST TRESTLE PILE CAP
SCALE: 1/2" = 1'-0"

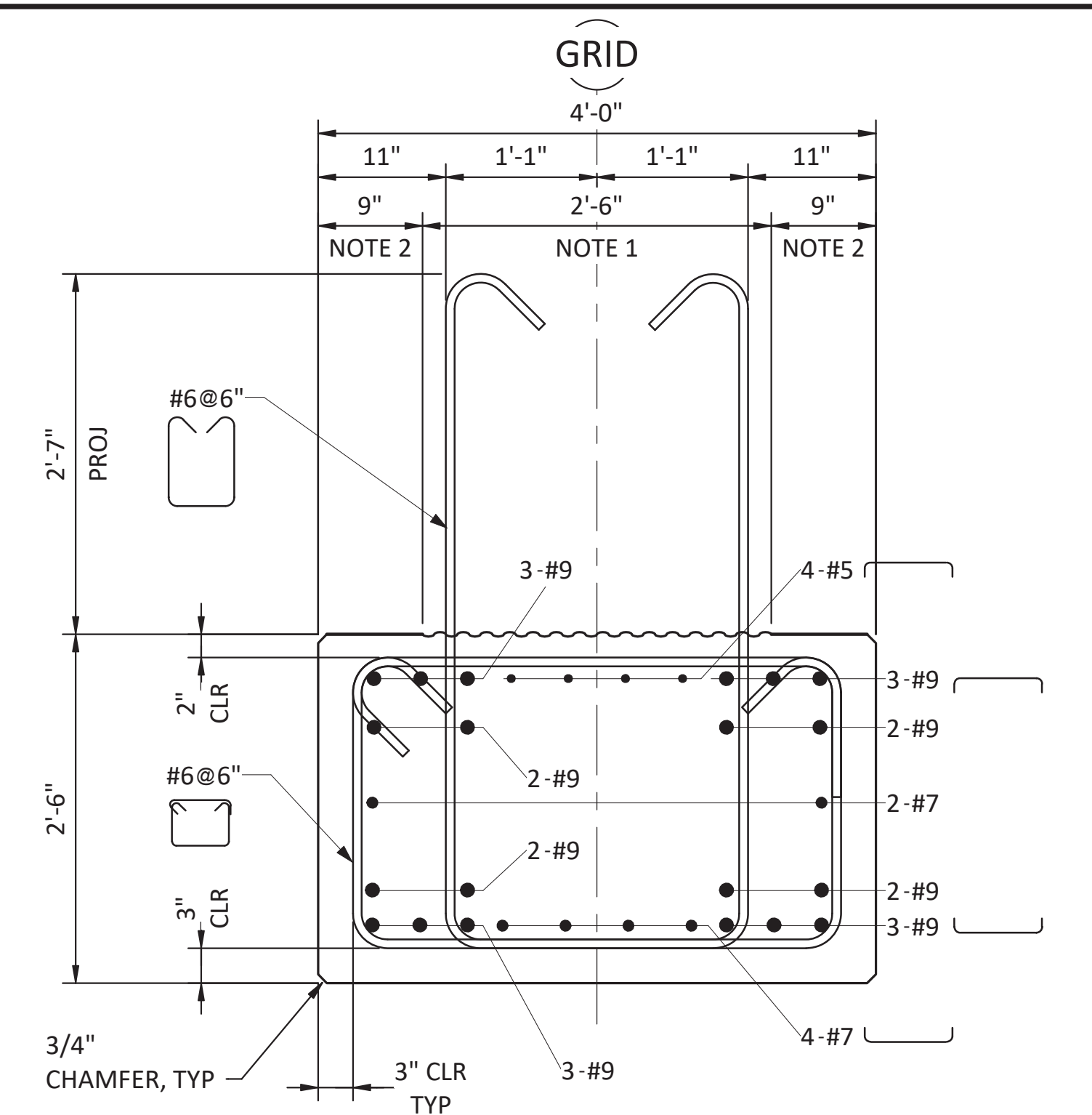


3 PLAN - TWO PILE PRECAST TRESTLE CAP - GRID T15
SCALE: 1/2" = 1'-0"

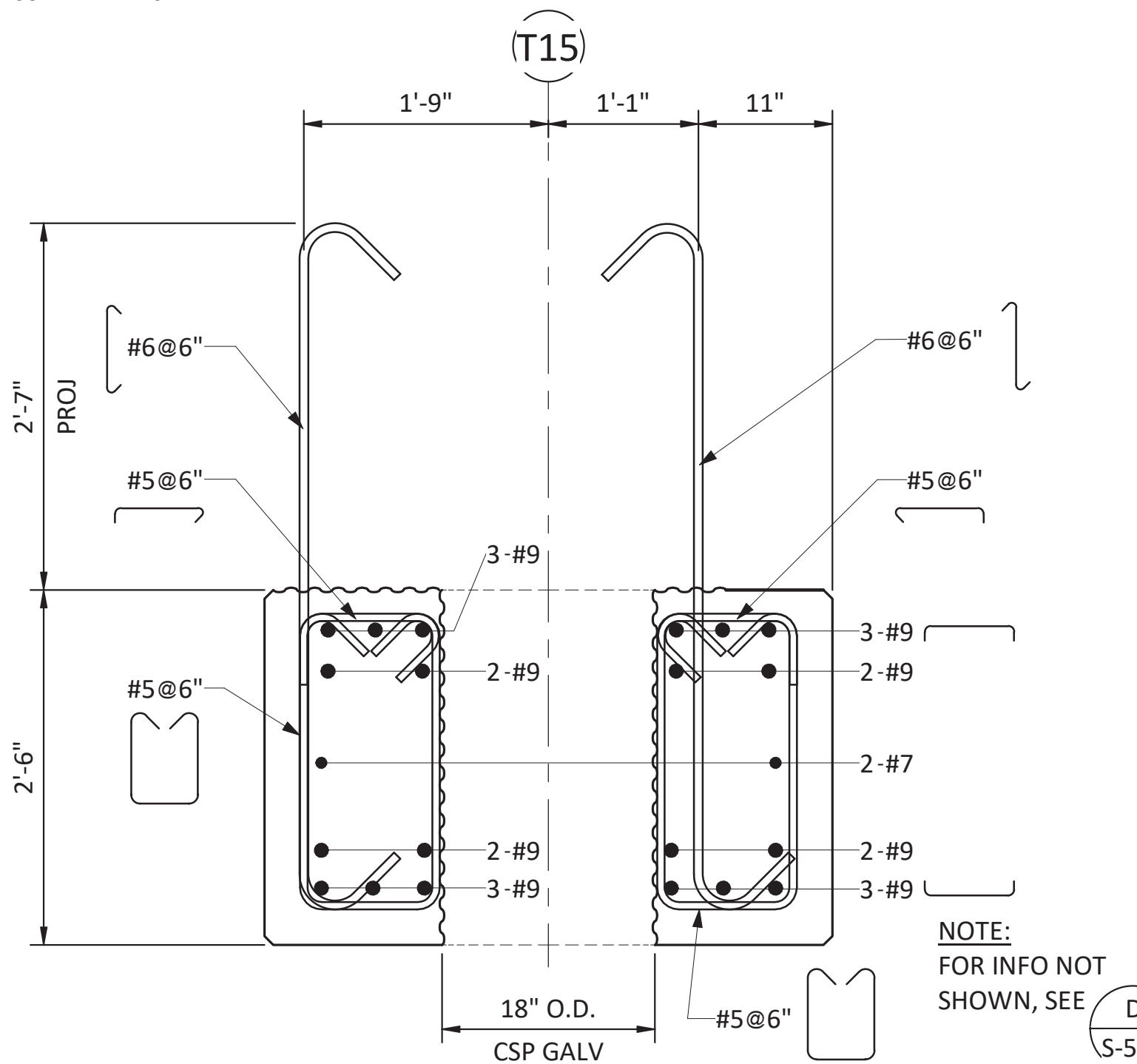
TRESTLE PRECAST PILE CAP SCHEDULE						
Type Name	COUNT	CUT LENGTH	'A'	'B'	'C'	'D'
PC0	1	39' - 0"	6'-3 1/8"	13'-2 7/8"	13'-2 7/8"	6'-3 1/8"
PC1	1	33' - 0"	4'-6"	12'-0"	12'-0"	4'-6"
PC2	10	21' - 0"	4'-6"	12'-0"	4'-6"	N/A
PC3	1	31' - 0"	4'-6"	10'-0"	12'-0"	4'-6"
PC4	1	31' - 0"	4'-6"	10'-0"	12'-0"	4'-6"
PC5	1	21' - 0"	4'-6"	12'-0"	4'-6"	N/A



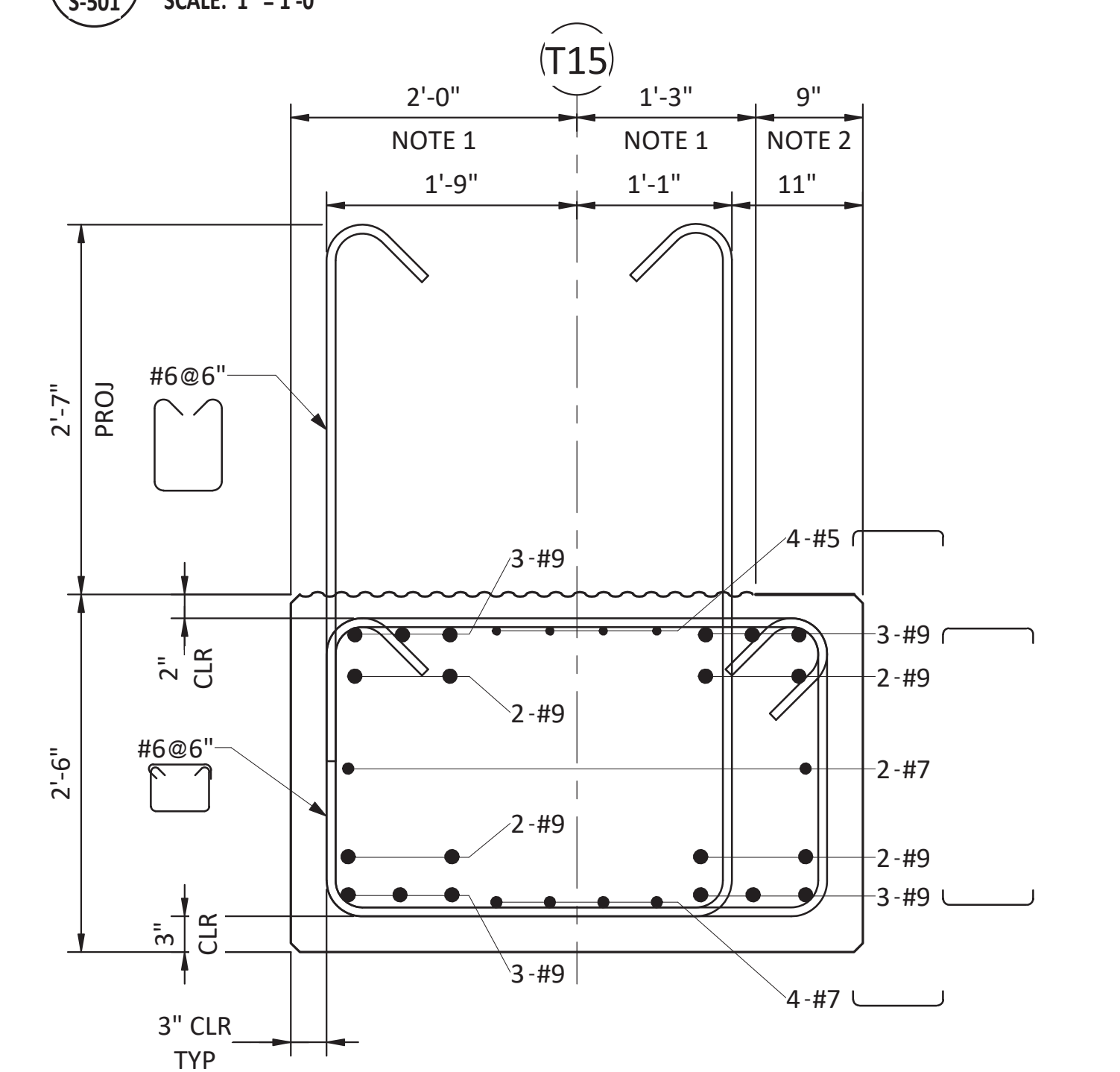
A SECTION - TRESTLE PRECAST PILE CAP AT PILE
SCALE: 1" = 1'-0"



B SECTION - TRESTLE PRECAST PILE CAP
SCALE: 1" = 1'-0"

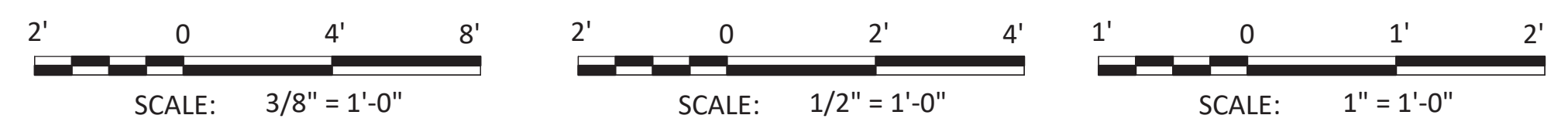


C SECTION - BENT 15 PRECAST PILE CAP AT PILE
SCALE: 1" = 1'-0"



D SECTION - BENT 15 PRECAST PILE CAP
SCALE: 1" = 1'-0"

- NOTES:**
- ROUGHEN SURFACE TO 1/4" AMPLITUDE
 - CHANNEL BEAM SEAT, TROWEL FINISH



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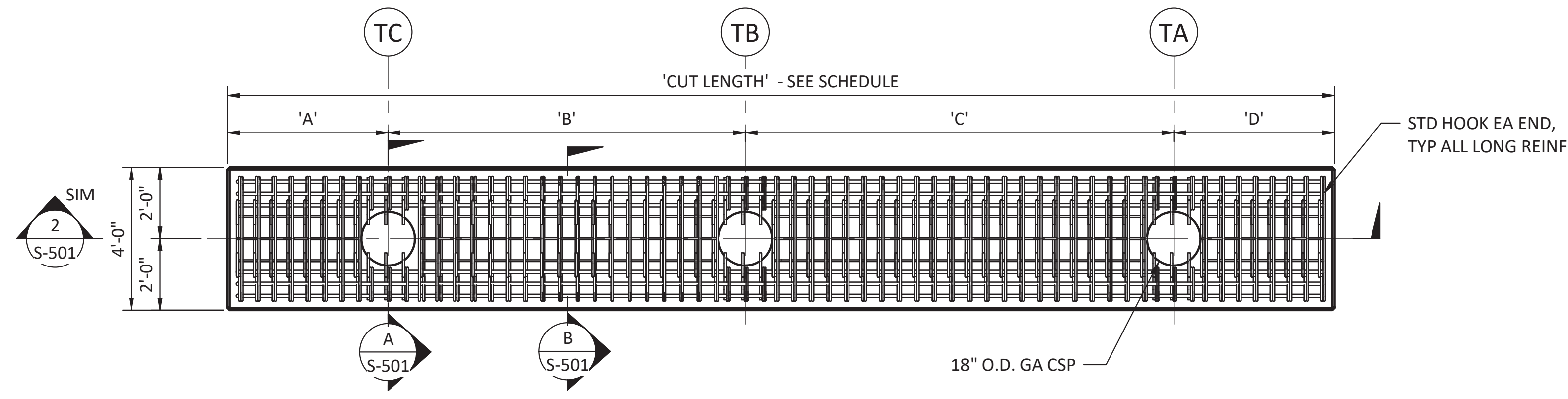
PORT OF NEAH BAY

MAKAH INDIAN TRIBE

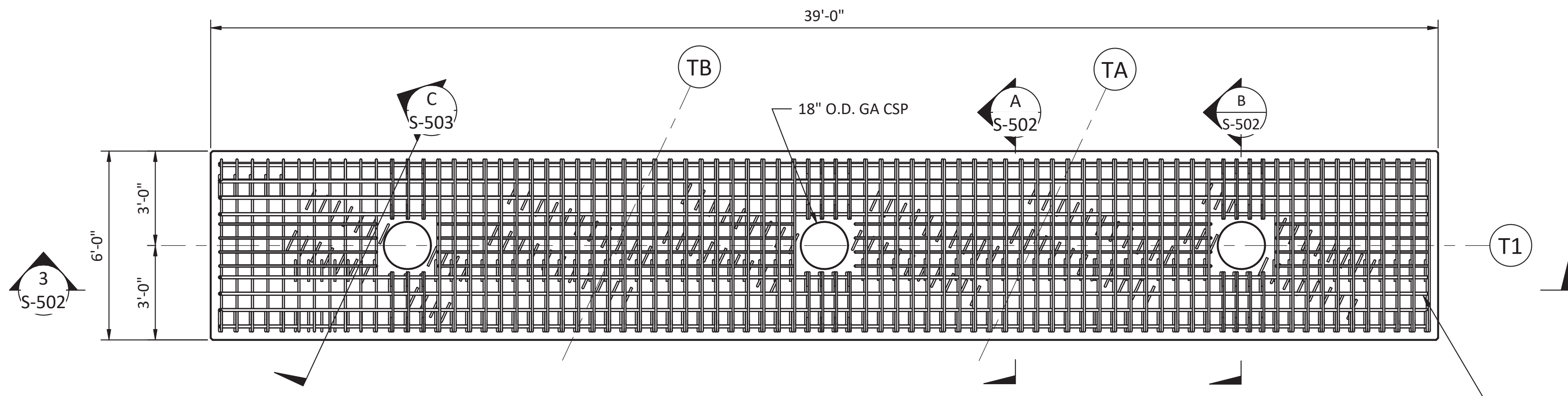
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST PILE CAPS (TWO PILE) - TRESTLE

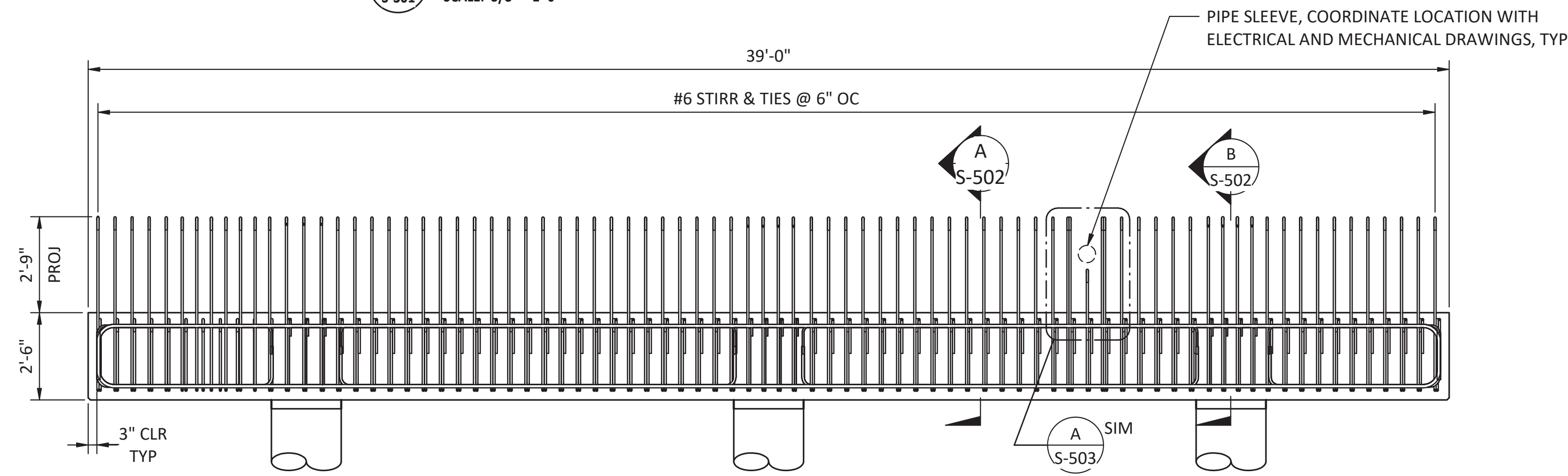
DRAWING NO. **S-501**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 61 OF 104



1 PLAN - TYPICAL THREE PILE PRECAST TRESTLE PILE CAP
S-301 SCALE: 3/8" = 1'-0"

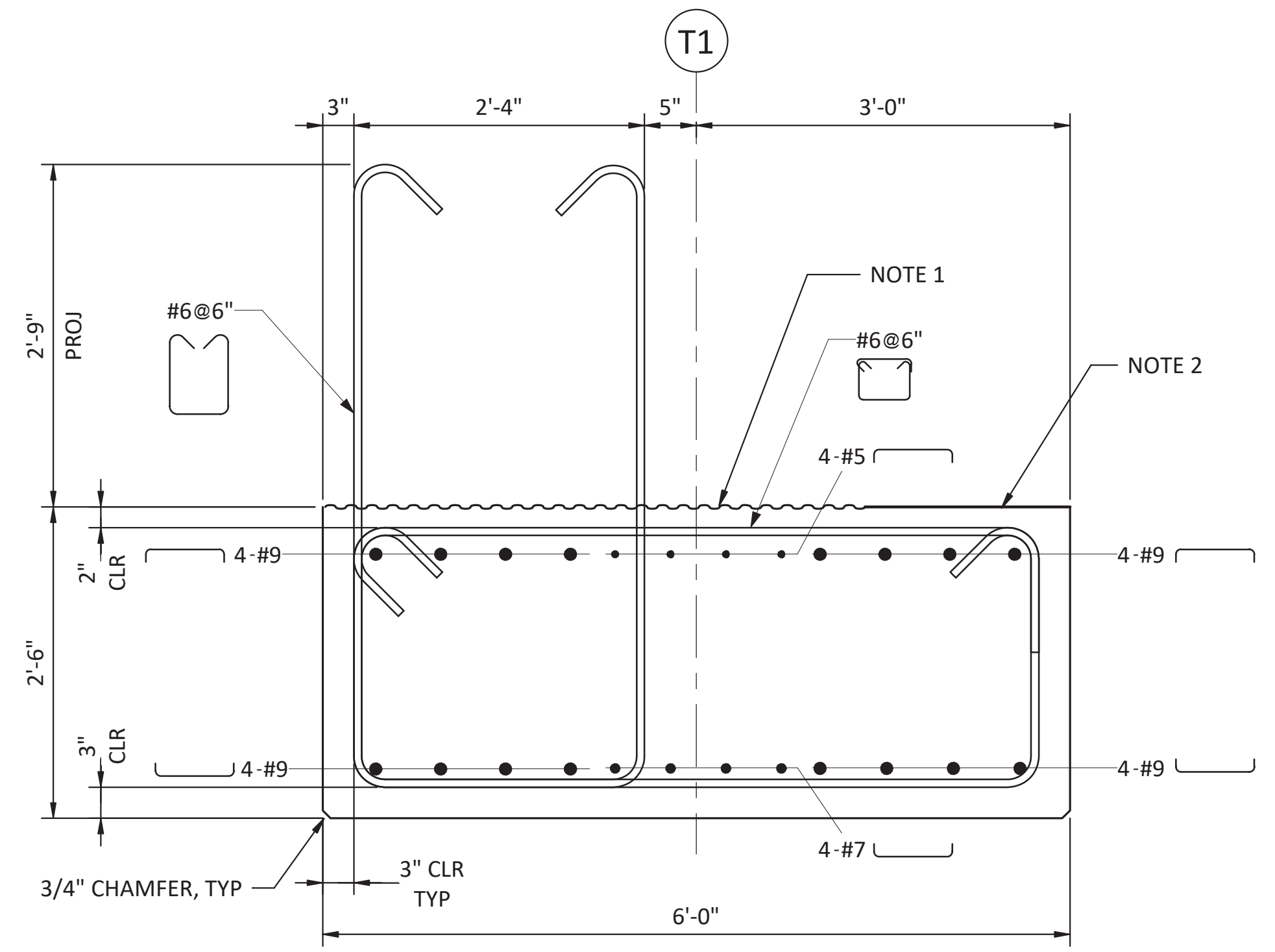
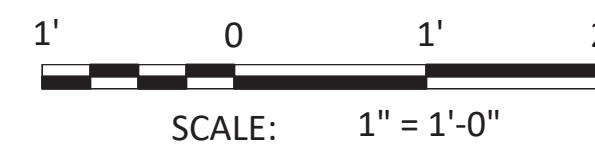


2 PLAN - PRECAST TRESTLE PILE CAP BENT T1
S-301 SCALE: 3/8" = 1'-0"

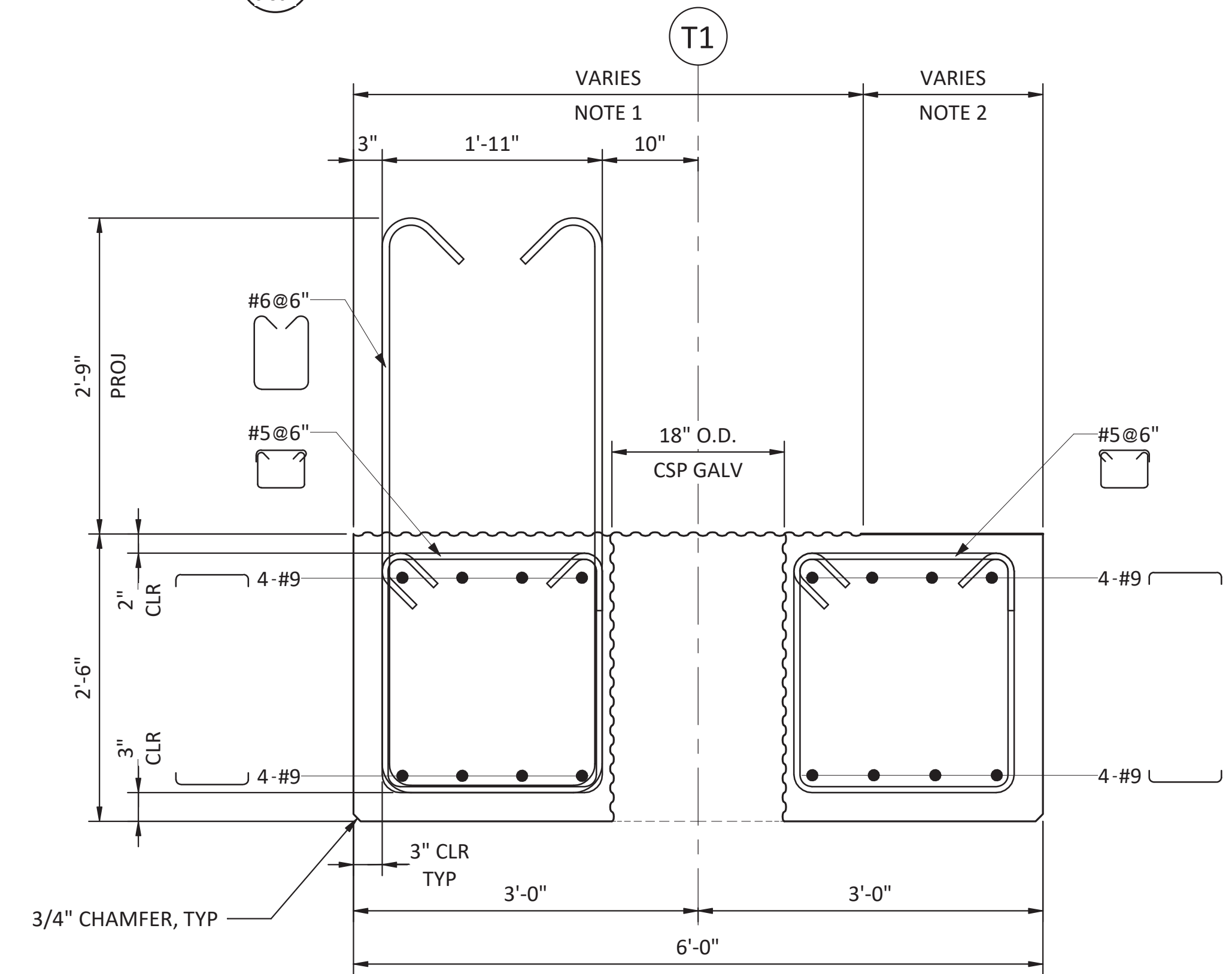


3 ELEVATION - PRECAST TRESTLE CAP BENT T1
S-400 SCALE: 3/8" = 1'-0"

- NOTES:
- ROUGHEN SURFACE TO 1/4" AMPLITUDE
 - CHANNEL BEAM SEAT, TROWEL FINISH



A SECTION - BENT 1 PRECAST PILE CAP
S-502 SCALE: 1" = 1'-0"



B SECTION - BENT 1 PRECAST PILE CAP AT PILE
S-502 SCALE: 1" = 1'-0"

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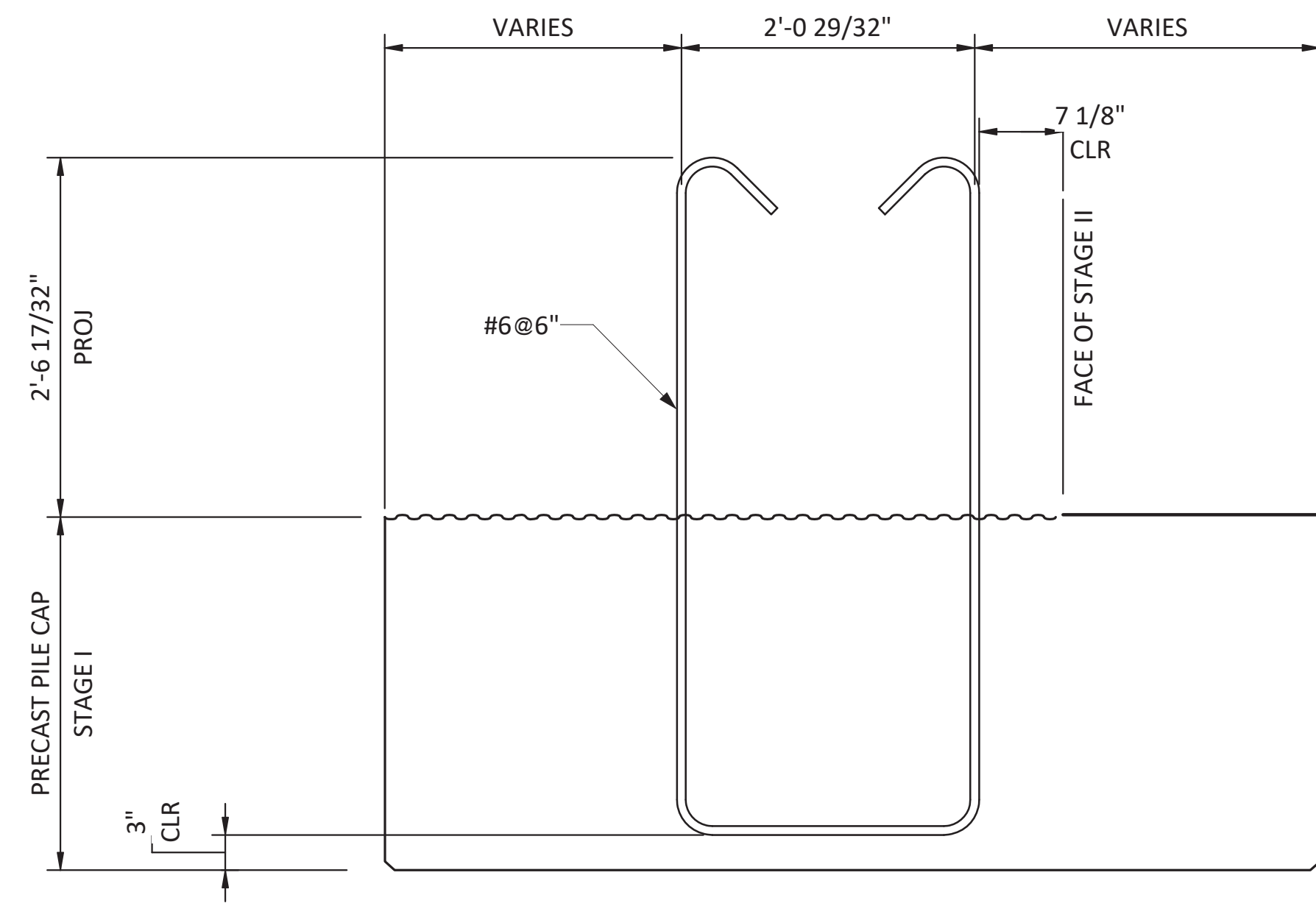
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

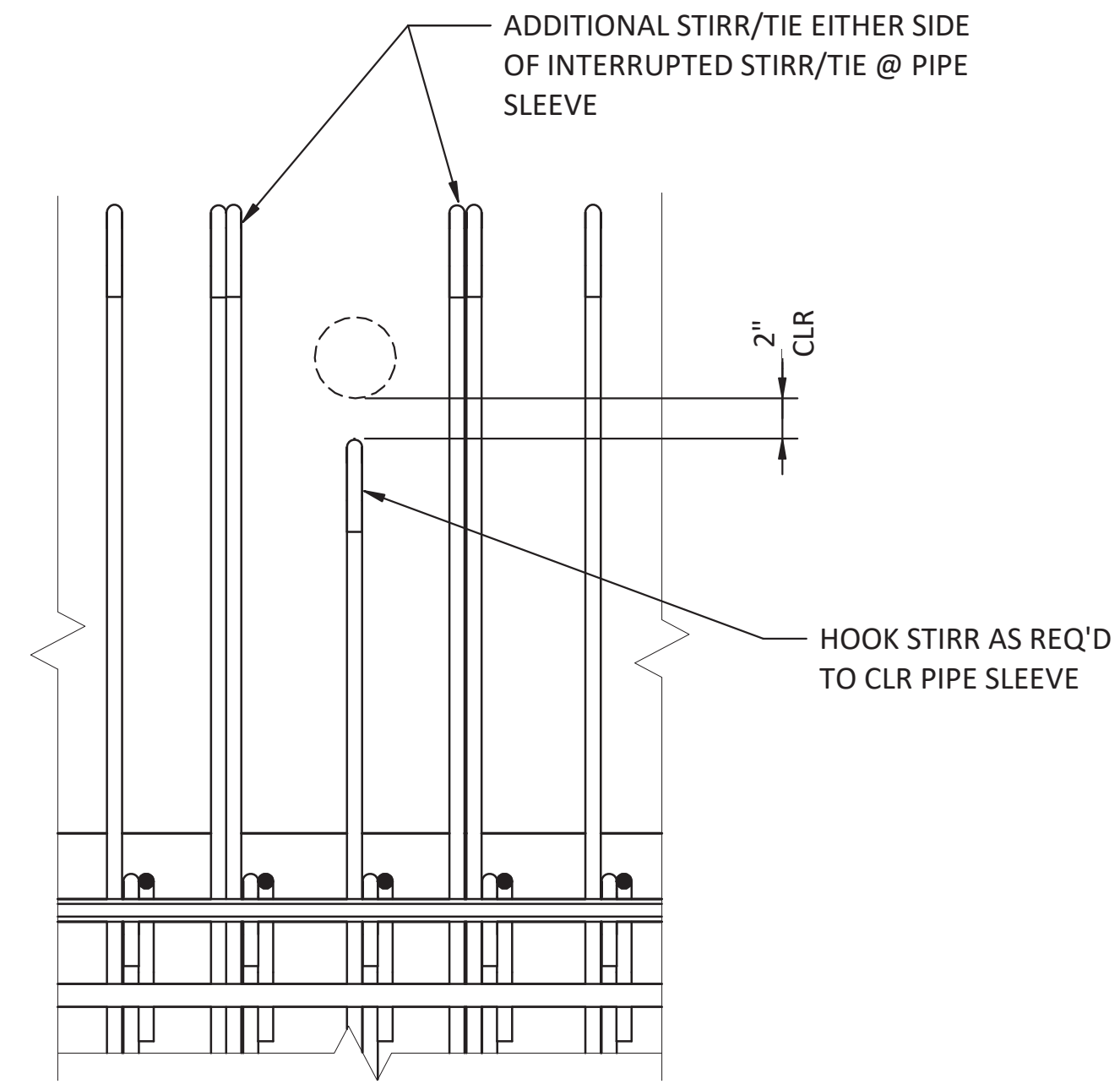
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST PILE CAPS (THREE PILE) - TRESTLE

DRAWING NO. **S-502**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 62 OF 104



C
SECTION - PRECAST PILE CAP BENT 1
S-502 SCALE: 1" = 1'-0"



A
DETAIL - PIPE SLEEVE
S-501 SCALE: 1 1/2" = 1'-0"

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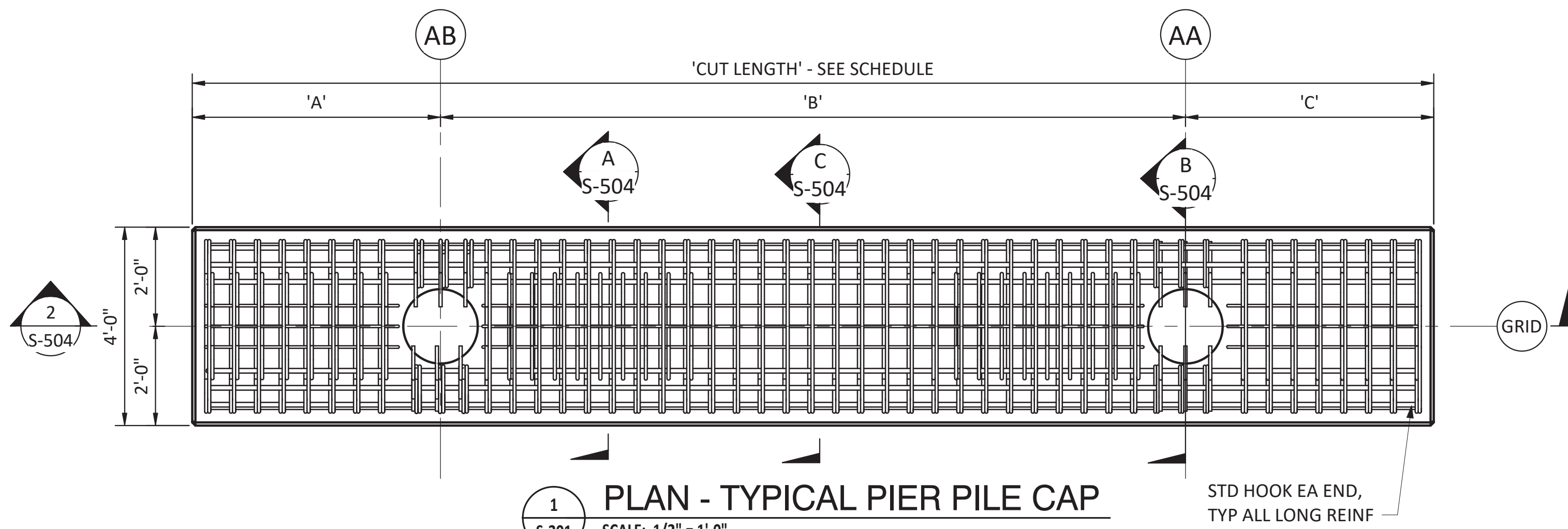
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

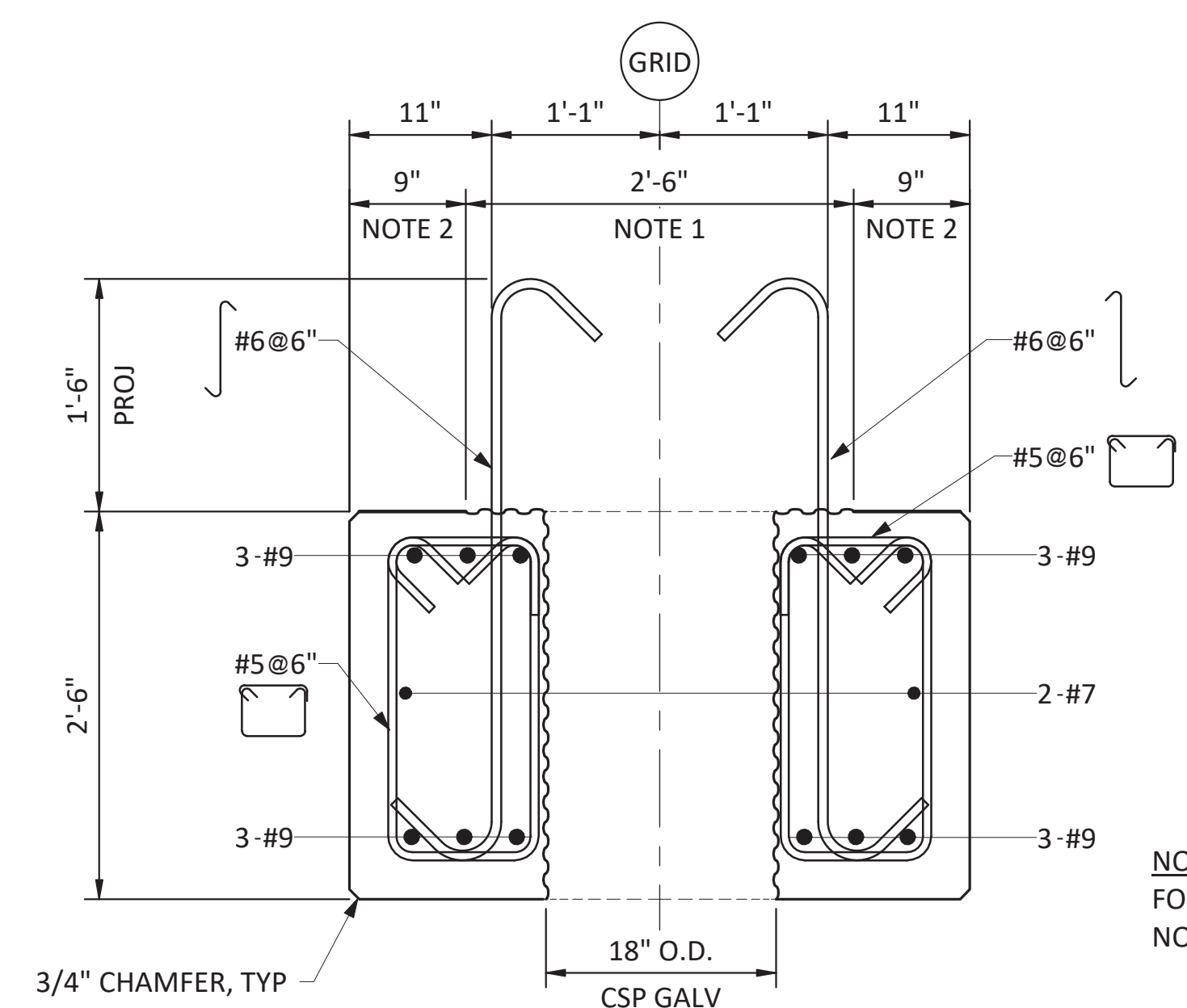
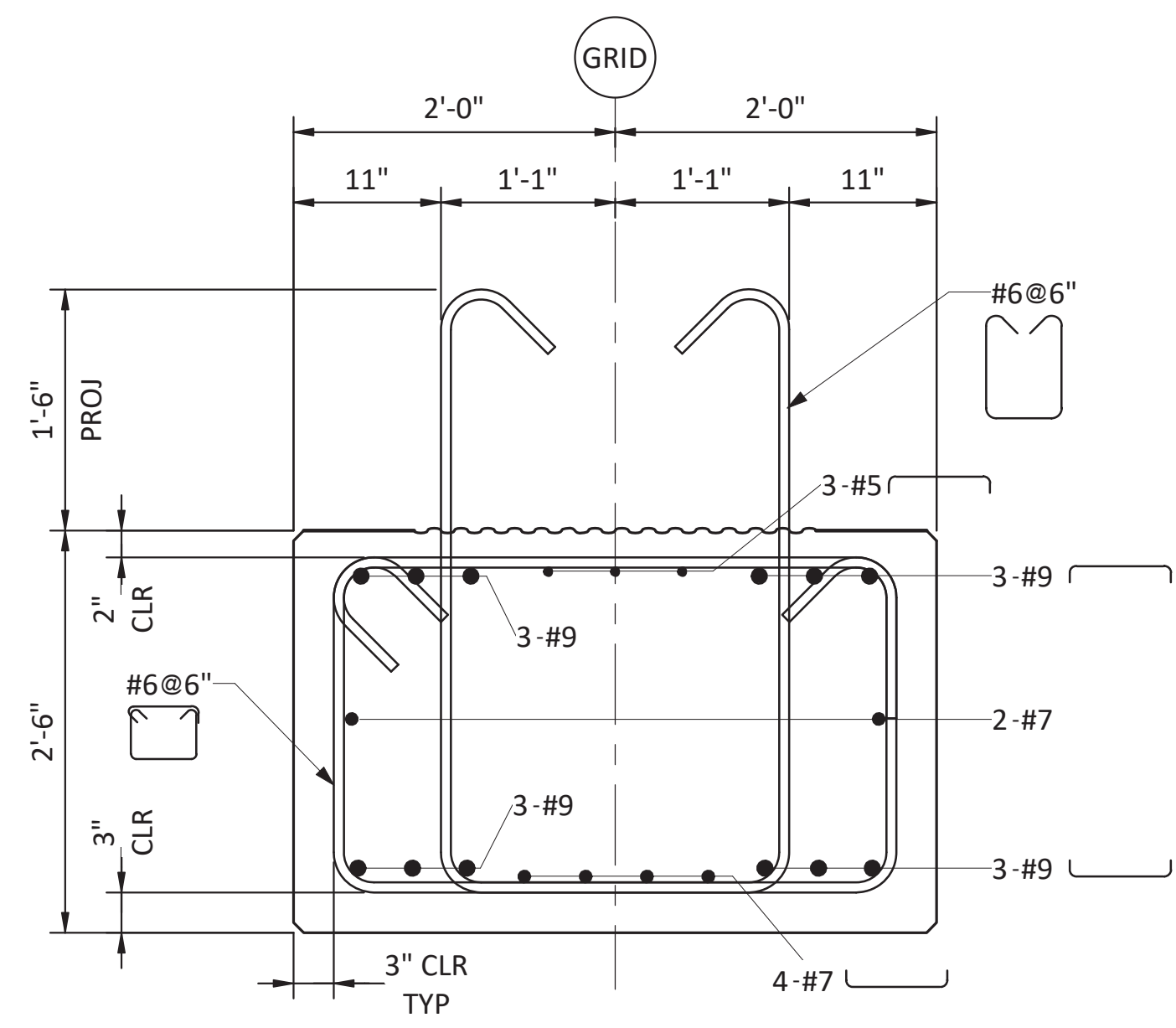
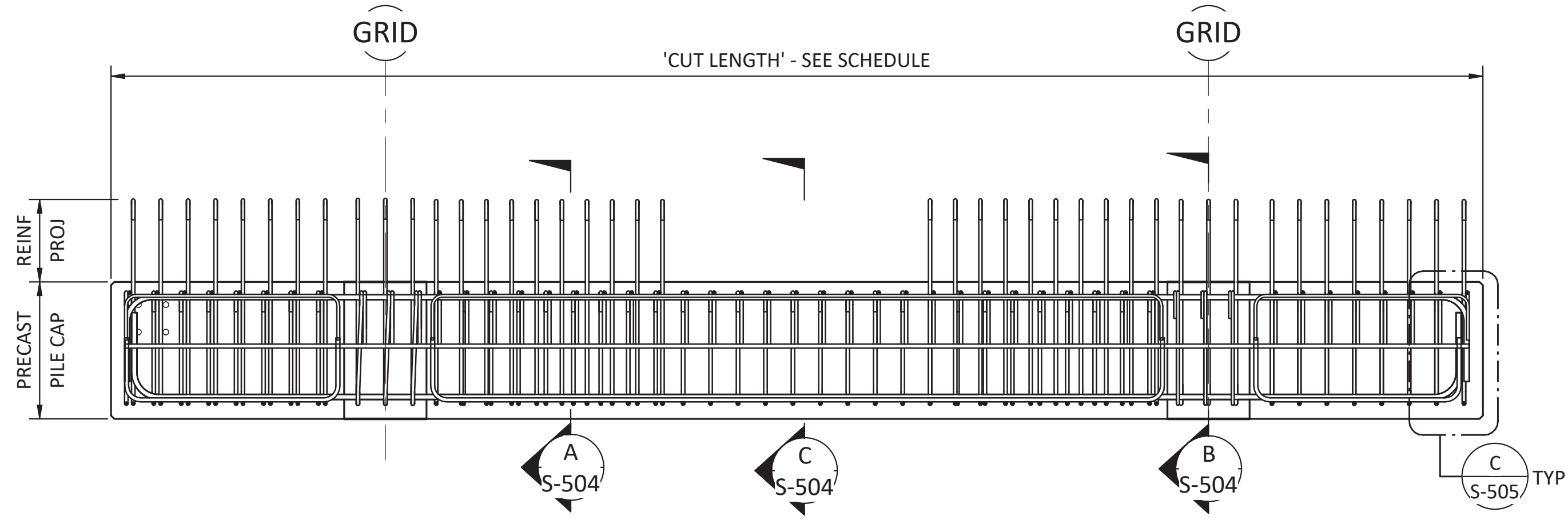
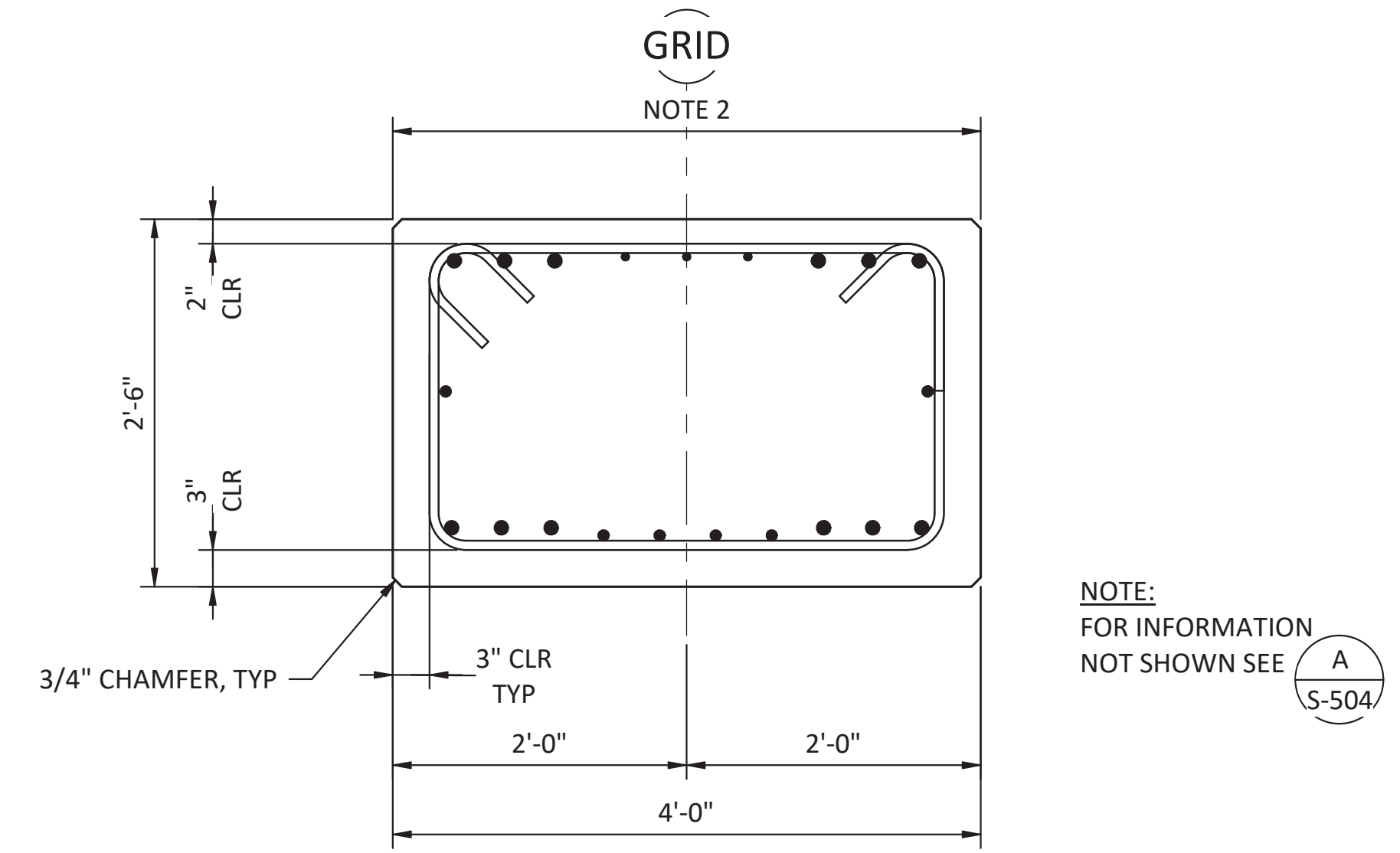
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST PILE CAP - DETAILS

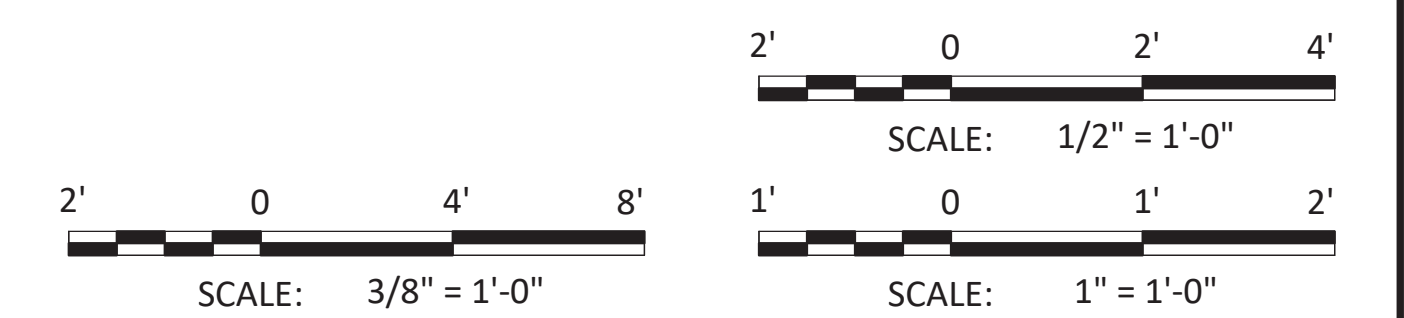
DRAWING NO. **S-503**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 63 OF 104



PIER PRECAST PILE CAP SCHEDULE						
Type Name	COUNT	CUT LENGTH	'A'	'B'	'C'	'D'
PC6	2		6'-10 1/8"	13'-2 7/8"	16'-6 5/8"	5'-4 3/8"
PC7	2	37' - 0"	5'-0"	12'-0"	15'-0"	5'-0"
PC8	16	25' - 0"	5'-0"	15'-0"	5'-0"	N/A
PC9	2	25' - 0"	5'-0"	15'-0"	5'-0"	N/A



- NOTES:**
- ROUGHEN SURFACE TO 1/4" AMPLITUDE
 - DECK PANEL SEAT, TROWEL FINISH



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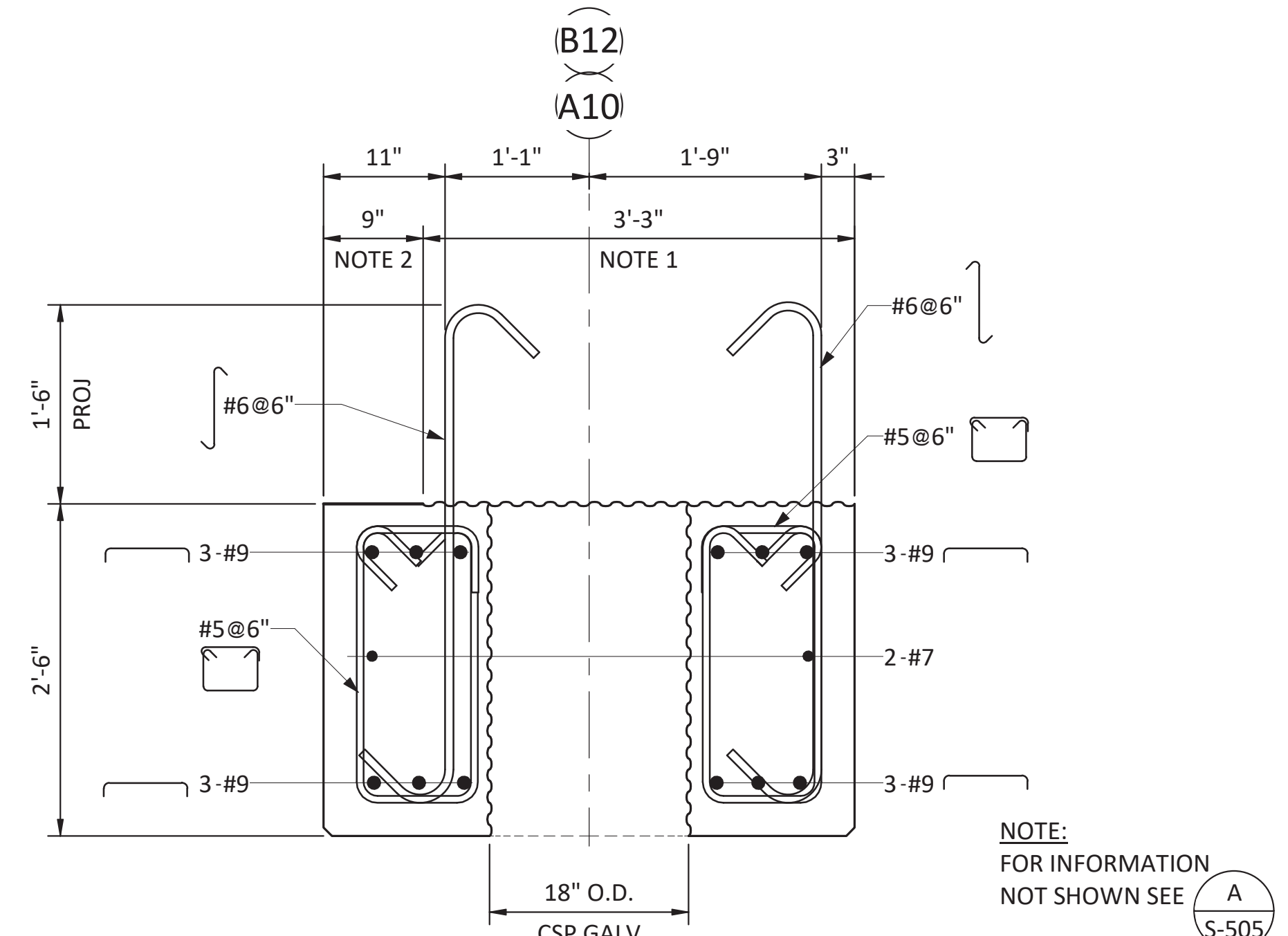
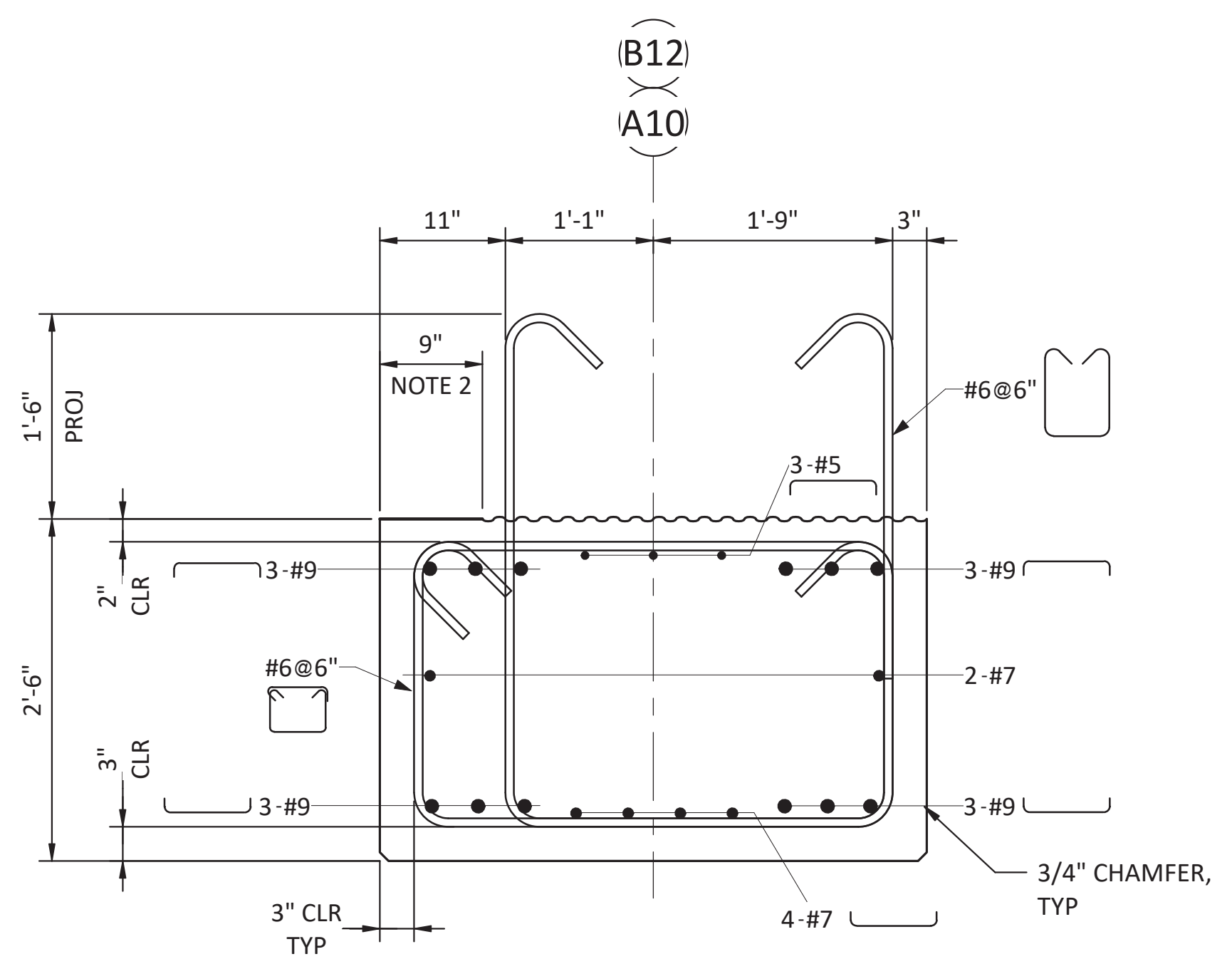
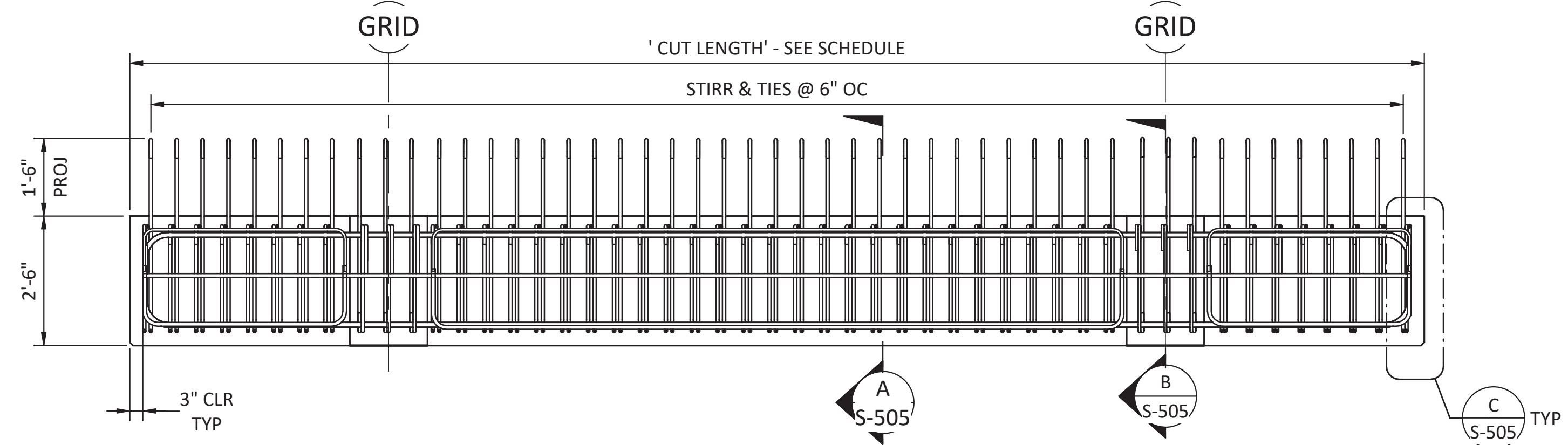
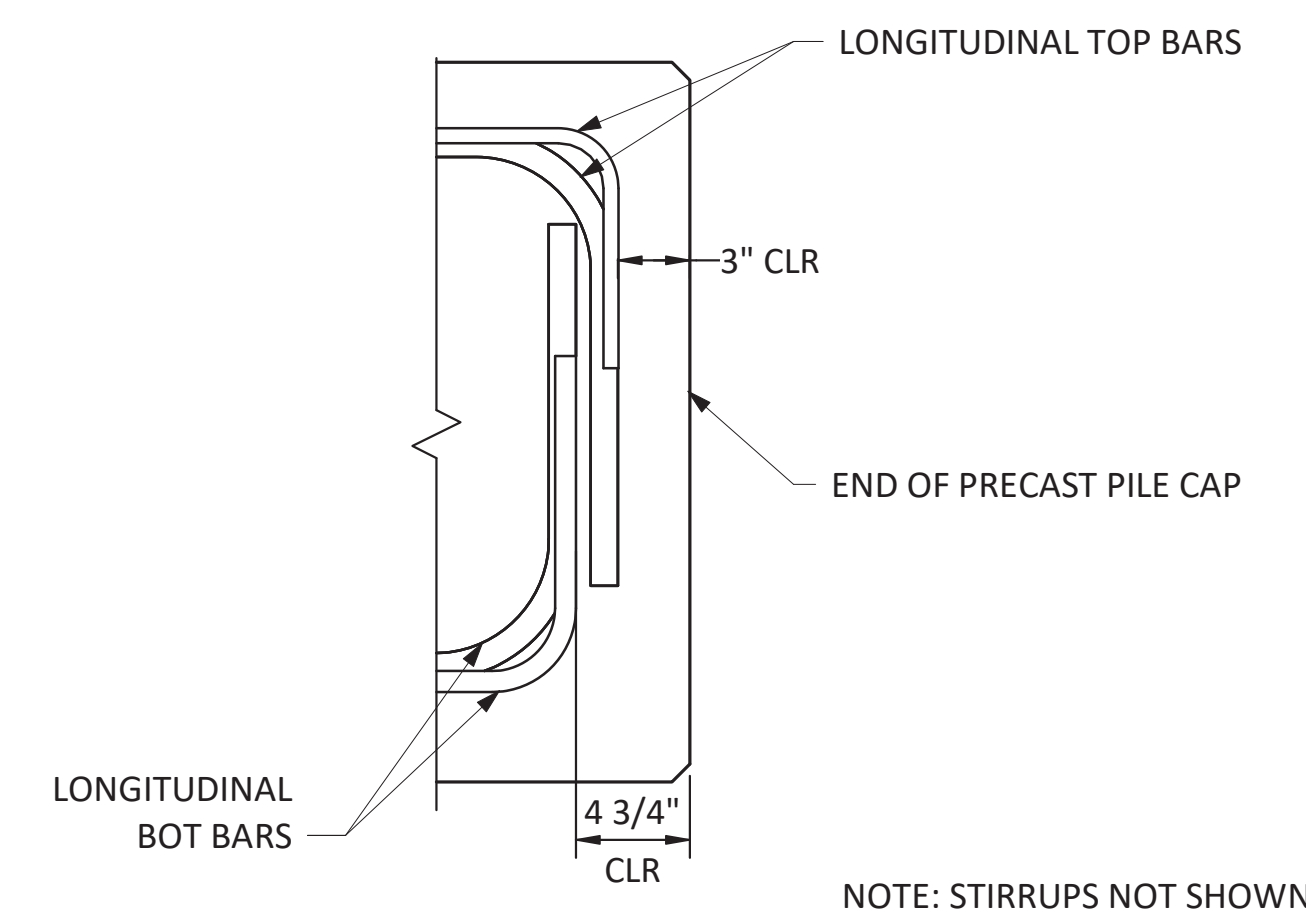
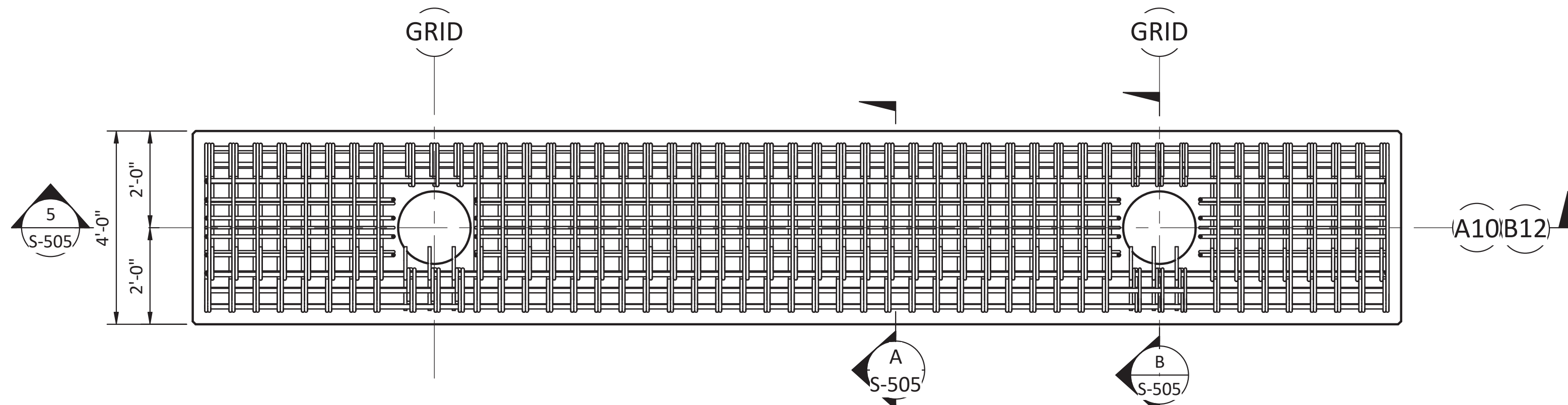
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

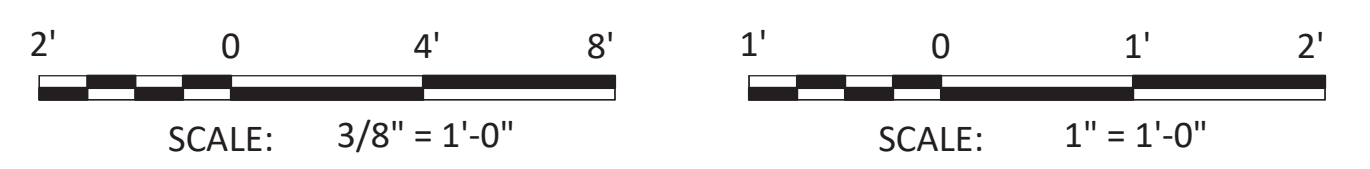
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

**PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST PILE CAPS - PIERS**

DRAWING NO. **S-504**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 64 OF 104



- NOTES:
1. ROUGHEN SURFACE TO 1/4" AMPLITUDE
 2. DECK PANEL SEAT, TROWEL FINISH



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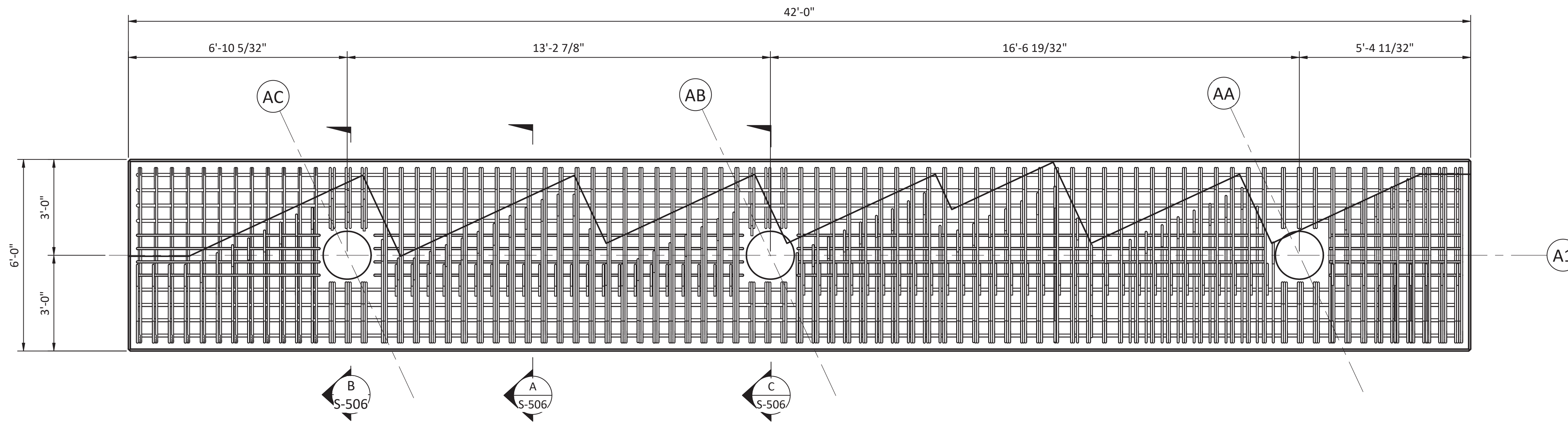
PORT OF NEAH BAY

MAKAH INDIAN TRIBE

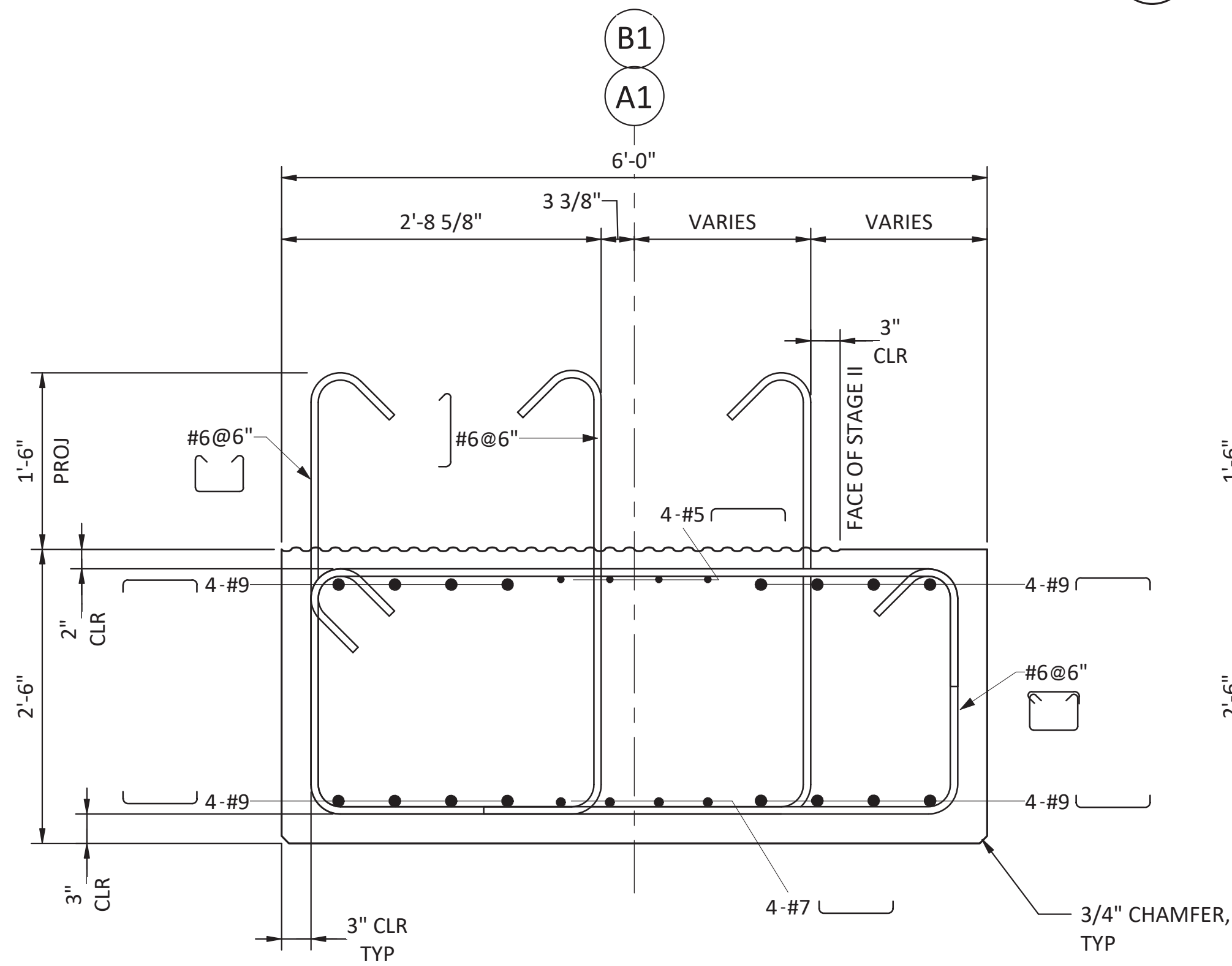
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DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

**PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST PILE CAPS - PIERS**

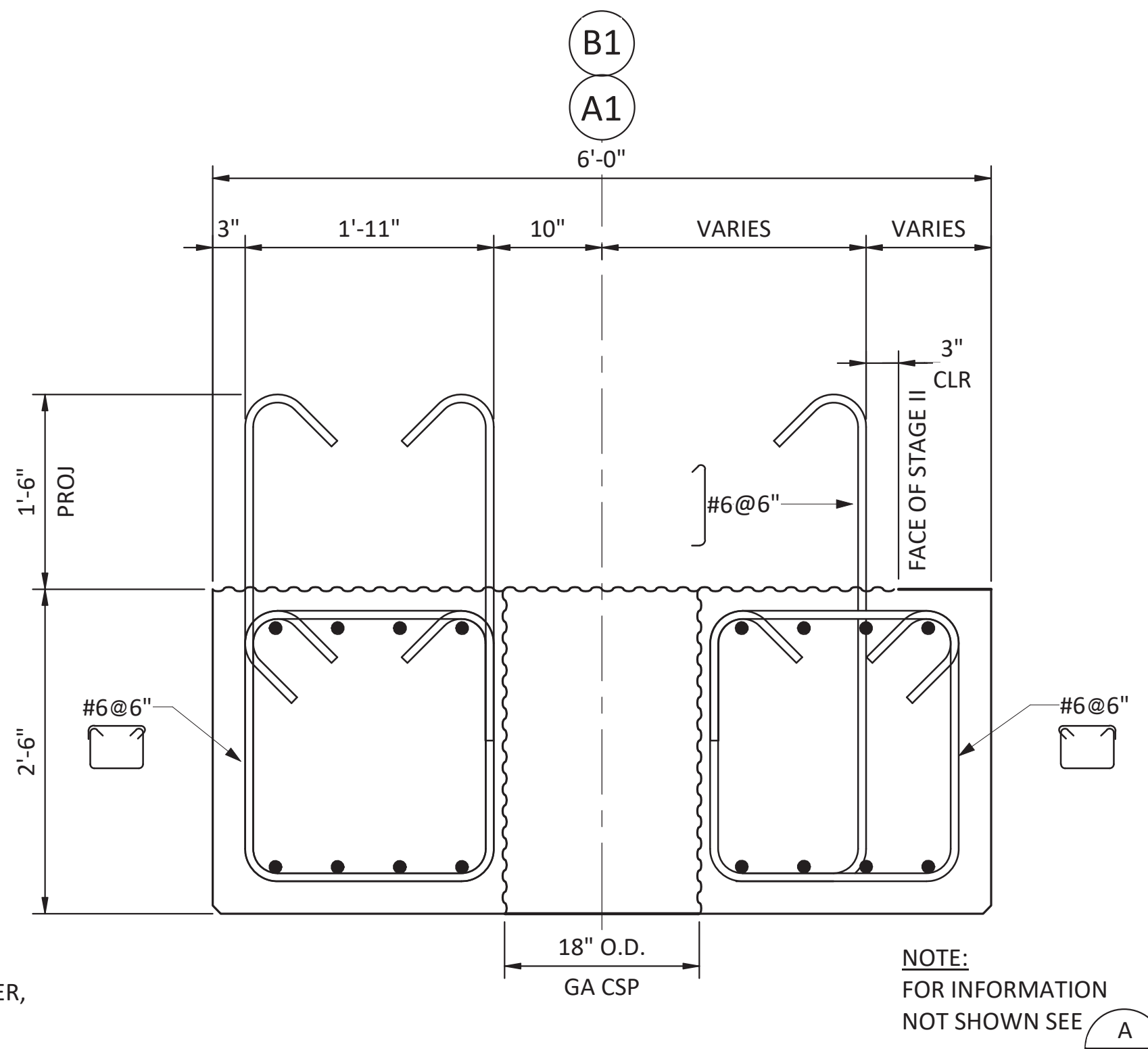
DRAWING NO. **S-505**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 65 OF 104



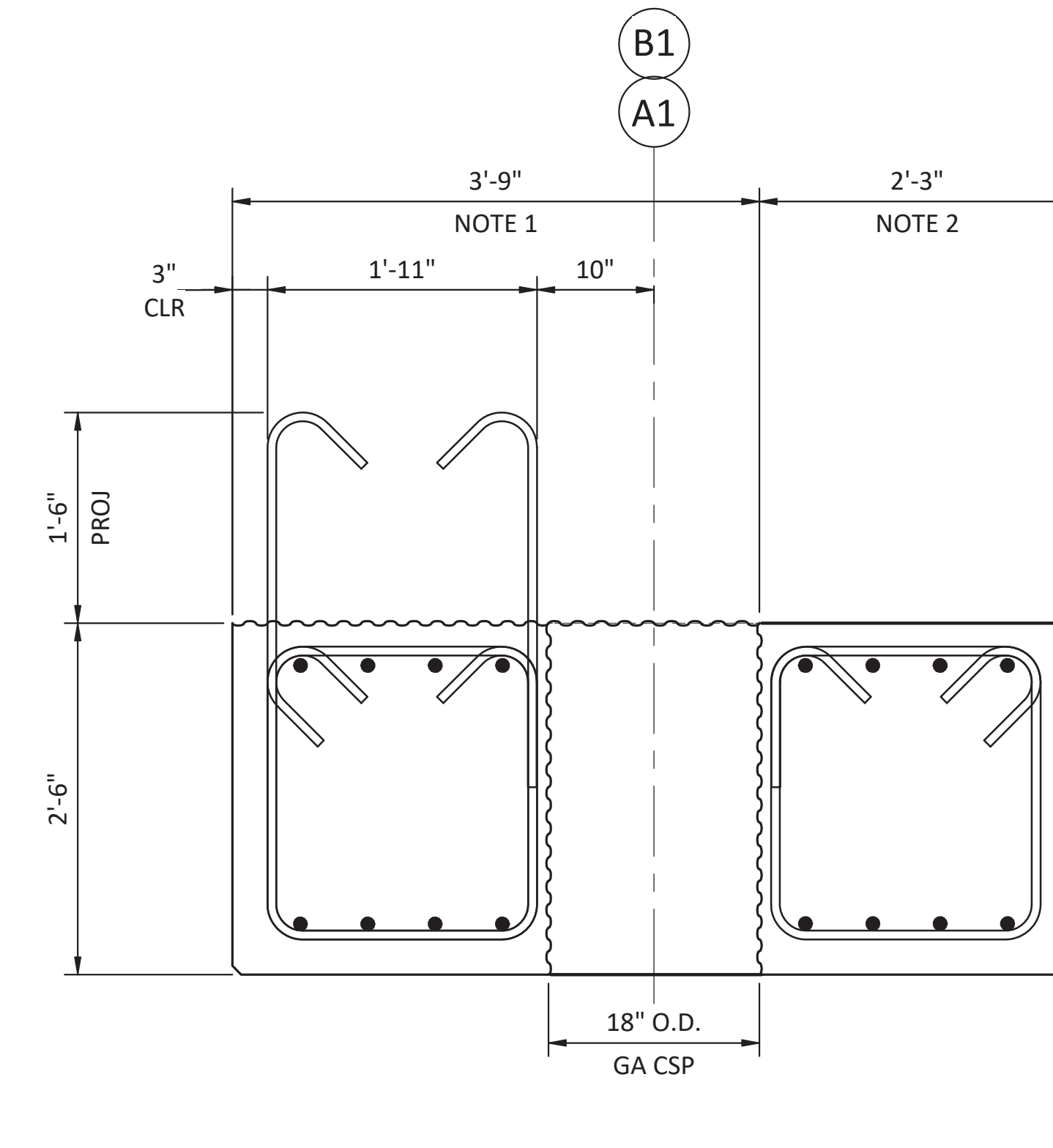
1 PLAN - PIER PRECAST PILE CAP BENT A1 & B1
 S-301 SCALE: 1/2" = 1'-0"



A SECTION - BENT A1 & B1 PILE CAP
 S-506 SCALE: 1" = 1'-0"



B SECTION - BENT A1 & B1 PILE CAP AT PILE
 S-506 SCALE: 1" = 1'-0"



C SECTION - BENT A1 & B1 PILE CAP AT PILE
 S-506 SCALE: 1" = 1'-0"

- NOTES:
- ROUGHEN SURFACE TO 1/4" AMPLITUDE
 - DECK PANEL SEAT, TROWEL FINISH



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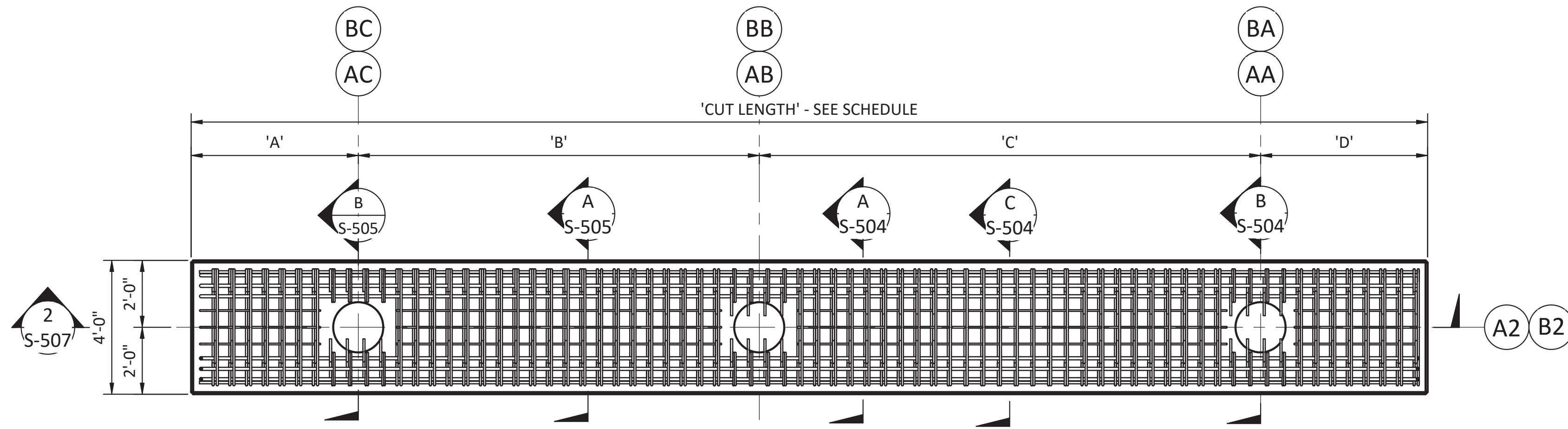
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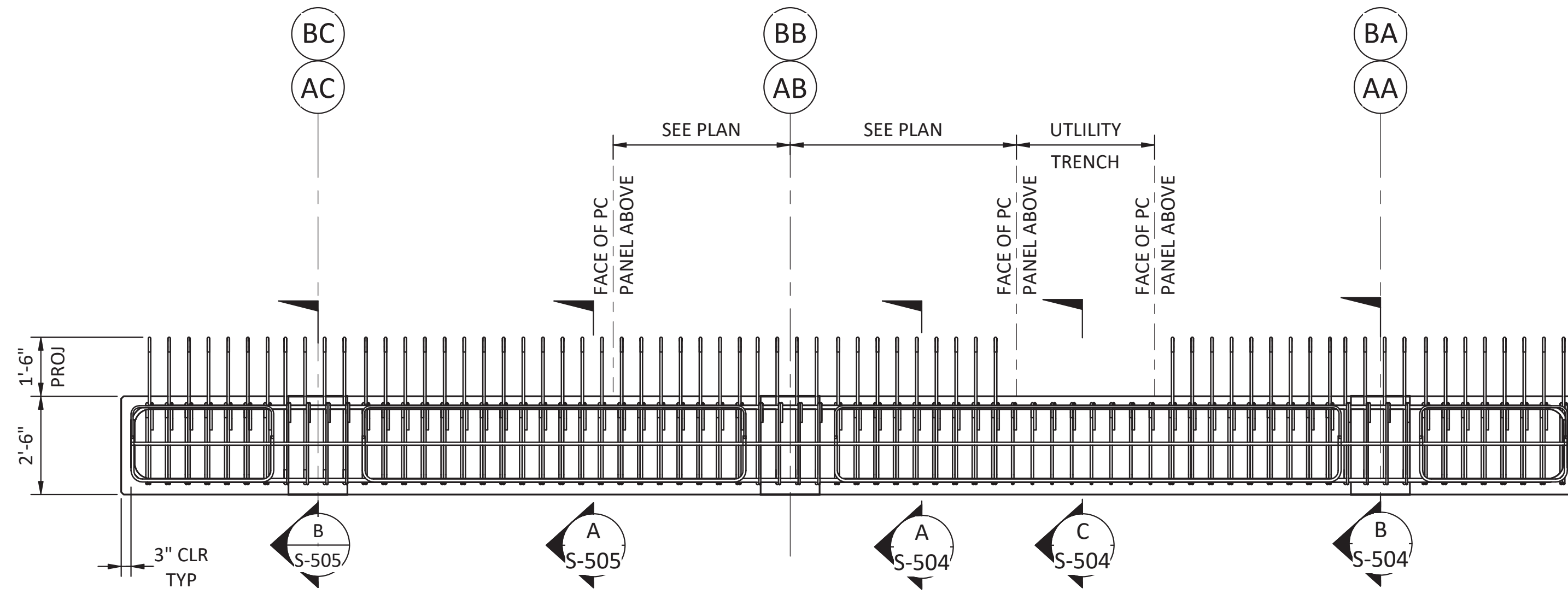
**PORT OF NEAH BAY
 MAKAH DOCK EXTENSION
 PRECAST PILE CAPS - PIERS**

DRAWING NO. **S-506**
 PROJECT NO. A16.0096
 DATE: 9/29/2017
 SHEET NO. 66 OF 104



1 PLAN - BENT A2 & B2 PILE CAP
SCALE: 3/8" = 1'-0"

NOTE:
SEE SCHEDULE ON S-504



2 SECTION - BENT A2 & B2 PILE CAP
SCALE: 3/8" = 1'-0"

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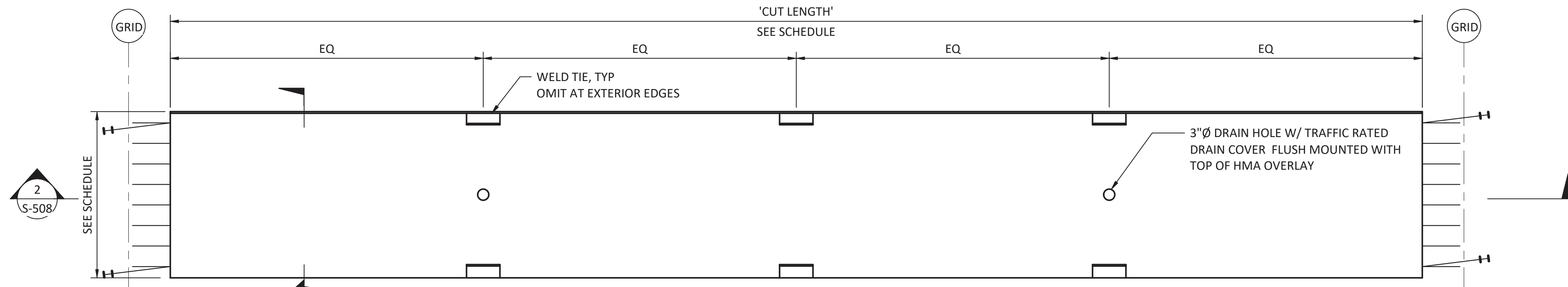
PORT OF NEAH BAY

MAKAH INDIAN TRIBE

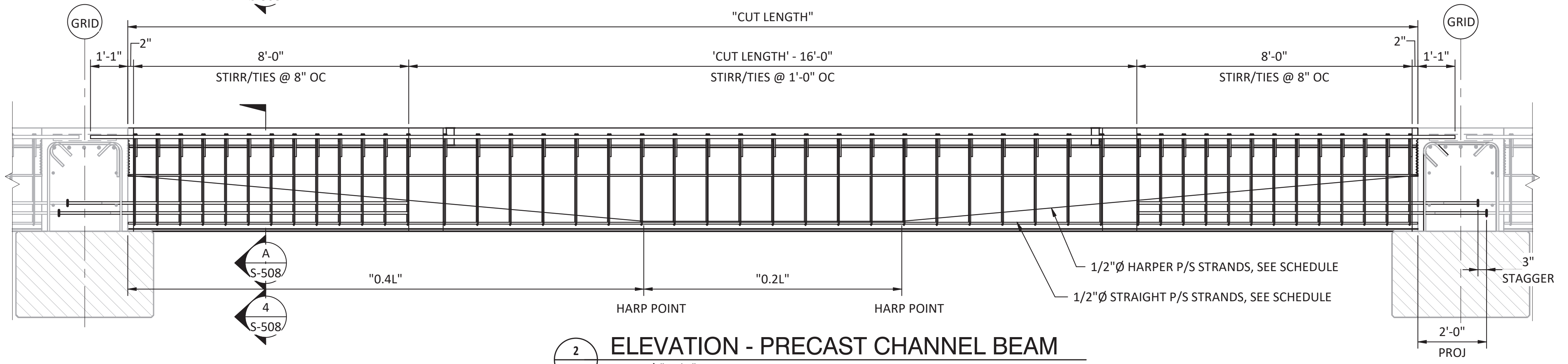
DRAWN BY: PKO
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CHECK BY: JLR
PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST PILE CAPS - PIERS

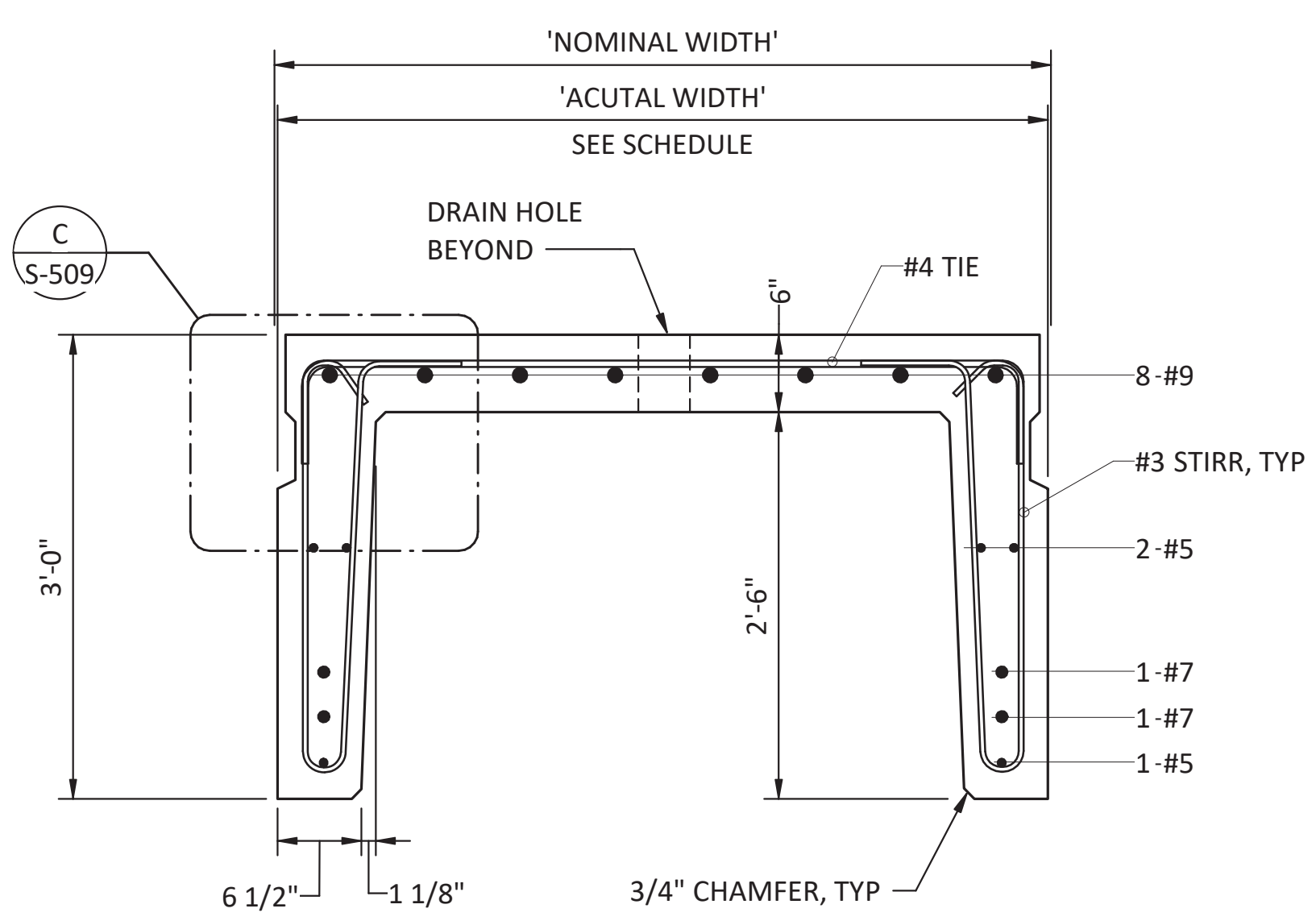
DRAWING NO. **S-507**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 68 OF 104



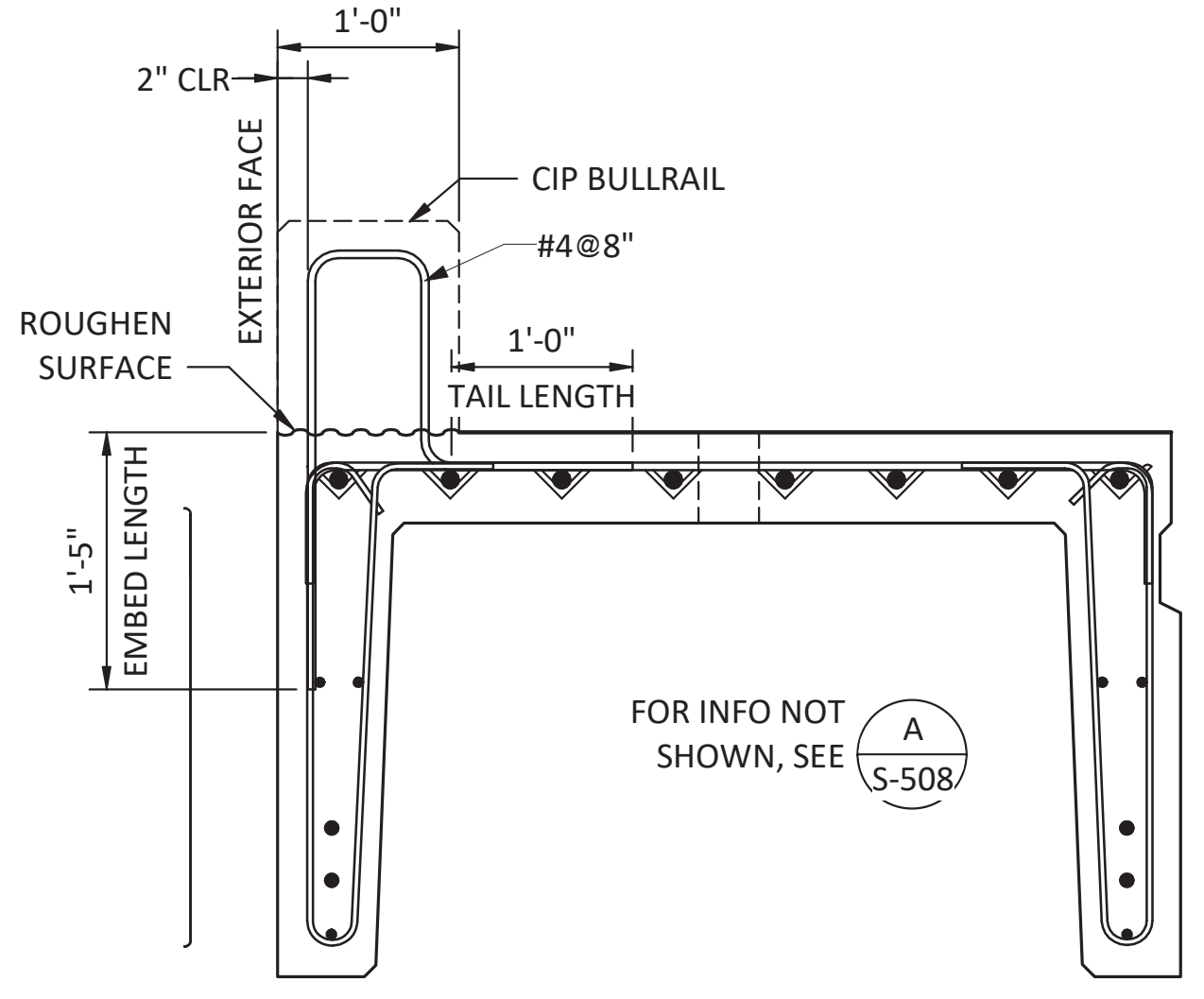
1 PLAN - PRECAST CHANNEL BEAM
 SCALE: 1/2" = 1'-0"



2 ELEVATION - PRECAST CHANNEL BEAM
 SCALE: 1/2" = 1'-0"



3 SECTION - INTERIOR CHANNEL BEAM
 SCALE: 1" = 1'-0"

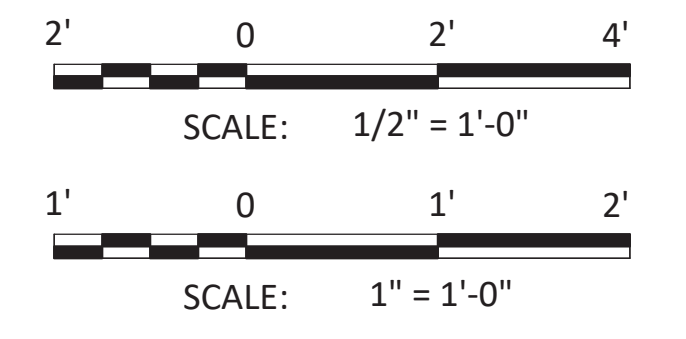


4 SECTION - EXTERIOR CHANNEL BEAM
 SCALE: 1" = 1'-0"

CHANNEL BEAM GIRDER NOTES:

- USE NORMAL WEIGHT CONCRETE HAVING THE FOLLOWING STRENGTHS:
 AT STRESS TRANSFER, f'_{ci} = 5000 PSI
 AT 28 DAYS, f'_{ci} = 7000 PSI
 MAXIMUM W/C RATIO LESS THAN 0.35
- USE 1/2" DIAMETER LOW RELAXATION STRANDS HAVING AN ULTIMATE STRENGTH OF 270 KSI.
- PRESTRESS DESIGN IS BASED ON THE FOLLOWING STRESSES:
 JACKING STRESS 202 KSI
 AFTER ALL LOSSES 172 KSI
- UNLESS OTHERWISE NOTED, CONCRETE COVER OVER MAIN LONGITUDINAL REINFORCING = 2.5", COVER OVER TIES AND STIRRUPS = 2".
- TOP FINISH, ROUGH BROOM FINISH.
- OMIT SHEAR KEY AND SHEAR CONNECTORS ON OUTSIDE LEGS OF EXTERIOR BEAMS.
- BEND #7 BARS 7 DEGREES IN PLAN TO CLEAR #7'S FROM OPPOSING CHANNEL BEAMS. SEE DETAILS FOR CLARIFICATION.

MARK	COUNT	NOMINAL WIDTH	ACTUAL WIDTH	CUT LENGTH	PRESTRESSING				SEE DETAILS A & B DWG S-509		
					NUMBER OF HARPED STRANDS PER CHANNEL	NUMBER OF STRAIGHT STRANDS PER CHANNEL	JACKING FORCE (KIPS)	FINAL EFFECTIVE FORCE (KIPS)	Yb (IN)	Yb-e @ ENDS (IN)	Yb-e @ HARP (IN)
C1	1	6'-0"	5'-11 3/4"	21'-6"	4	2	186	158	24	13.2	4.8
C2	1	5'-0"	4'-11 3/4"	24'-0"	4	2	186	158	23.2	13.2	4.8
C3	1	5'-0"	4'-11 3/4"	26'-3"	4	2	186	158	23.2	13.2	4.8
C4	1	5'-0"	4'-11 3/4"	28'-6"	6	2	248	211	23.2	14.4	5
C5	1	5'-0"	4'-11 3/4"	31'-0"	6	2	248	211	23.2	14.4	5
C6	1	6'-0"	5'-11 3/4"	33'-9"	8	2	310	264	24	15.1	5.1
C7	54	5'-0"	4'-11 3/4"	37'-6"	10	2	371	326	23.2	15.6	5.2



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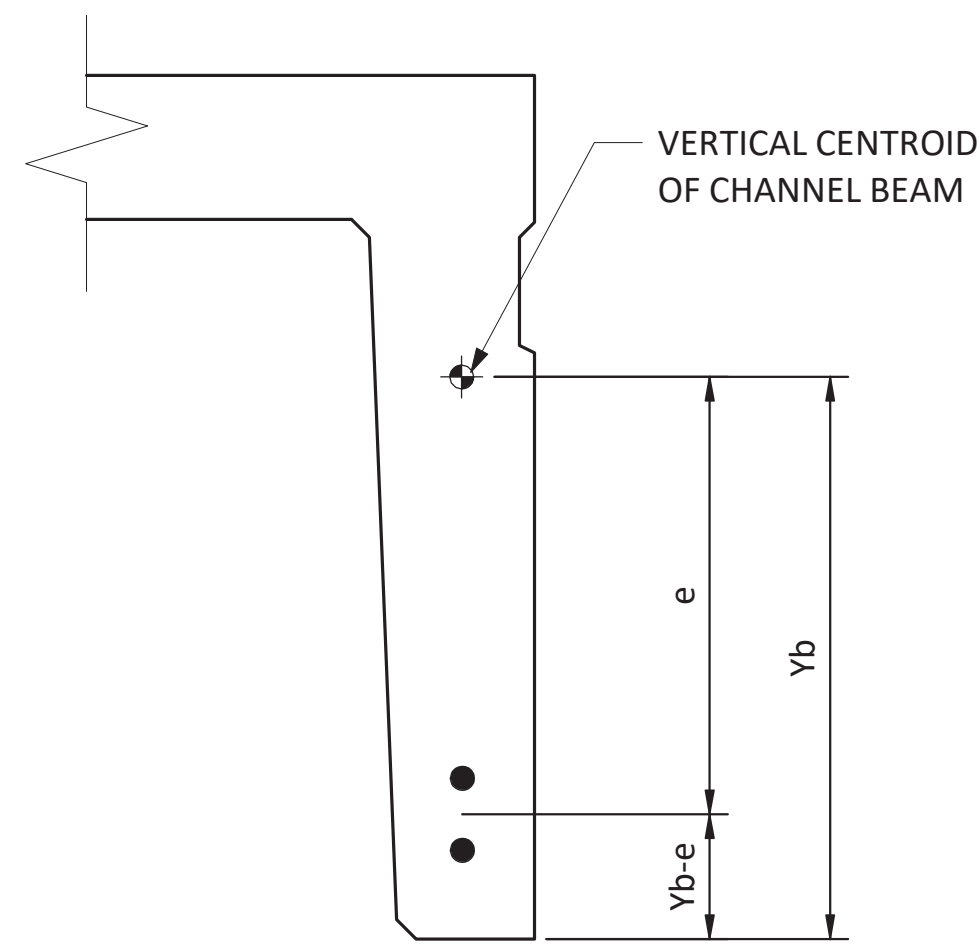
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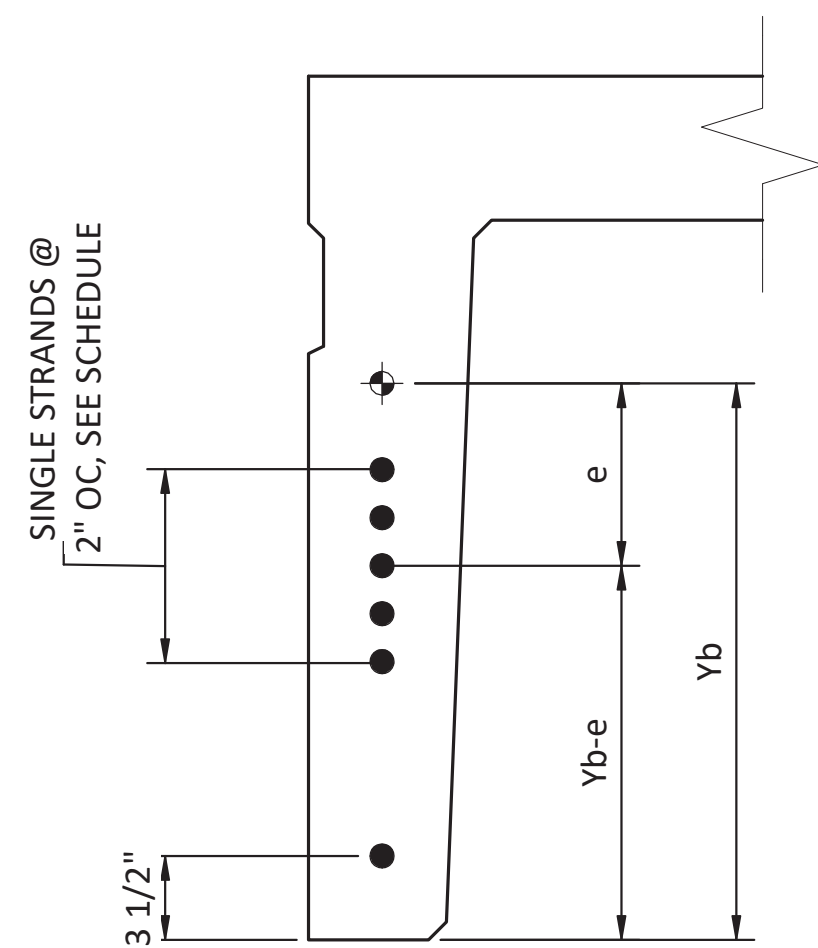
DRAWN BY: PKO
 DESIGN BY: PKO
 CHECK BY: JLR
 PROJ MGR: EAN

**PORT OF NEAH BAY
 MAKAH DOCK EXTENSION**
 PRECAST CHANNEL BEAMS SHEET 1 of 2

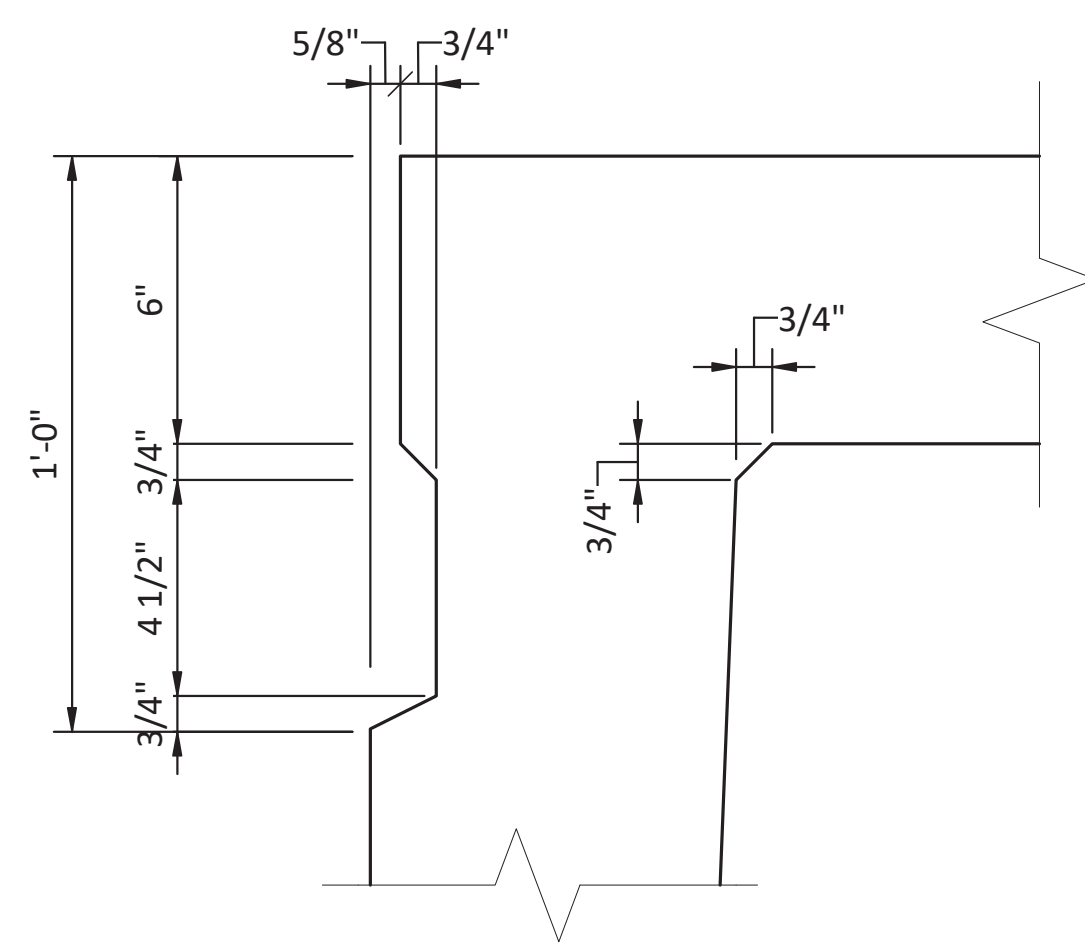
DRAWING NO. **S-508**
 PROJECT NO. A16.0096
 DATE: 9/29/2017
 SHEET NO. 69 OF 104



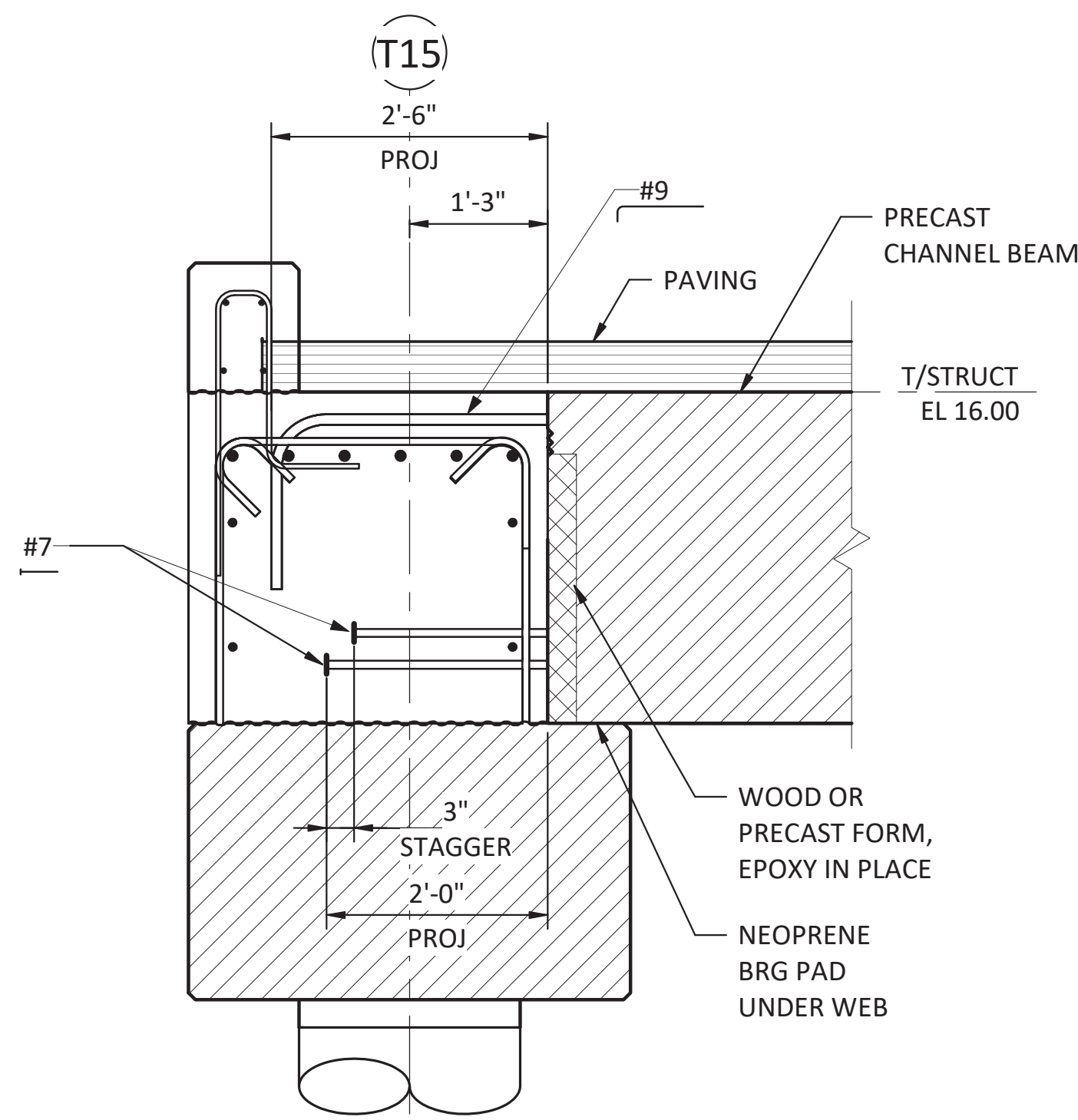
A CHANNEL BEAM STRANDS AT HARP
S-508 SCALE: 1 1/2" = 1'-0"



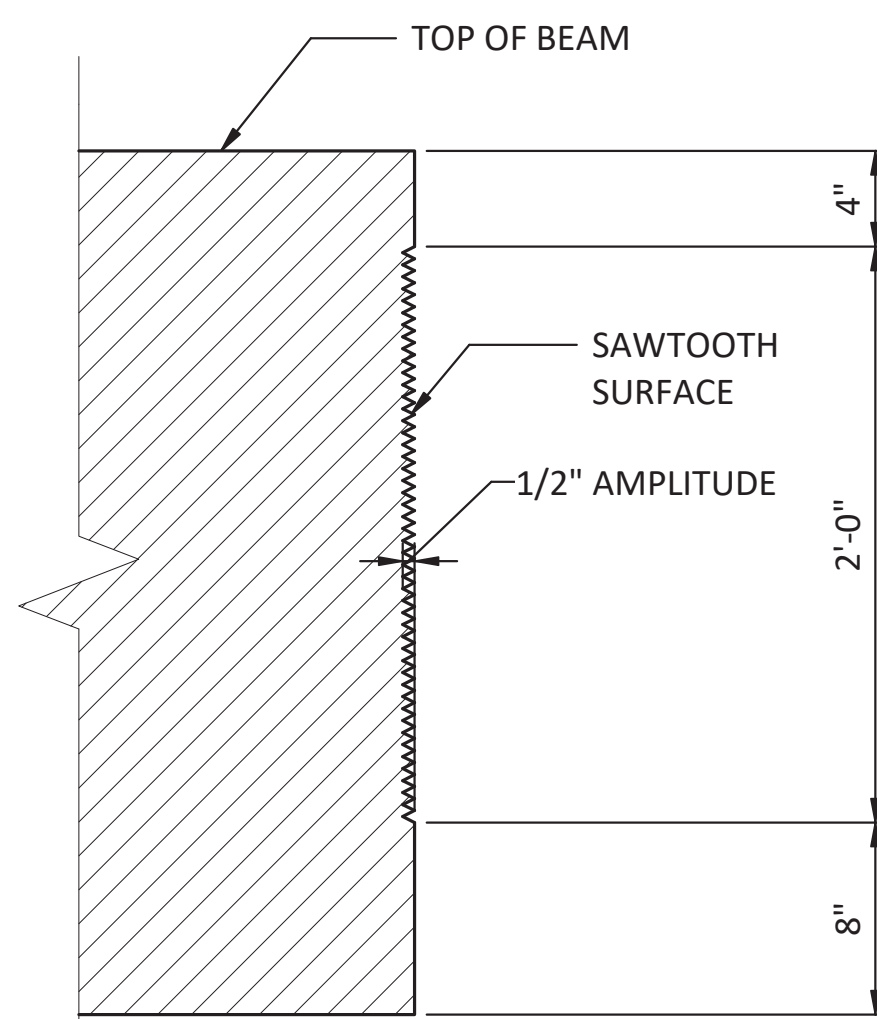
B CHANNEL BEAMS STRANDS AT END
S-508 SCALE: 1 1/2" = 1'-0"



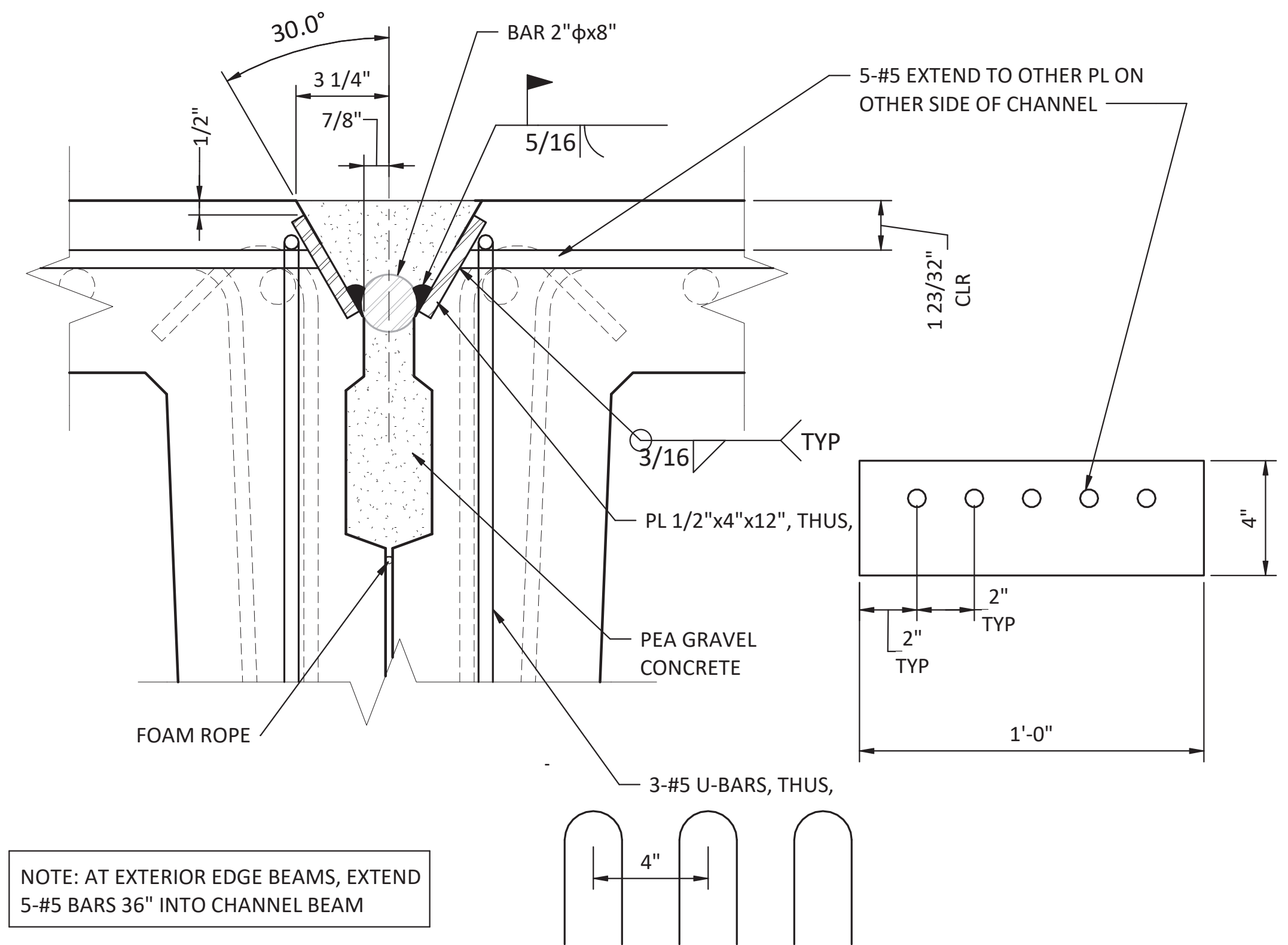
C DETAIL - SHEAR KEY
S-508 SCALE: 3" = 1'-0"



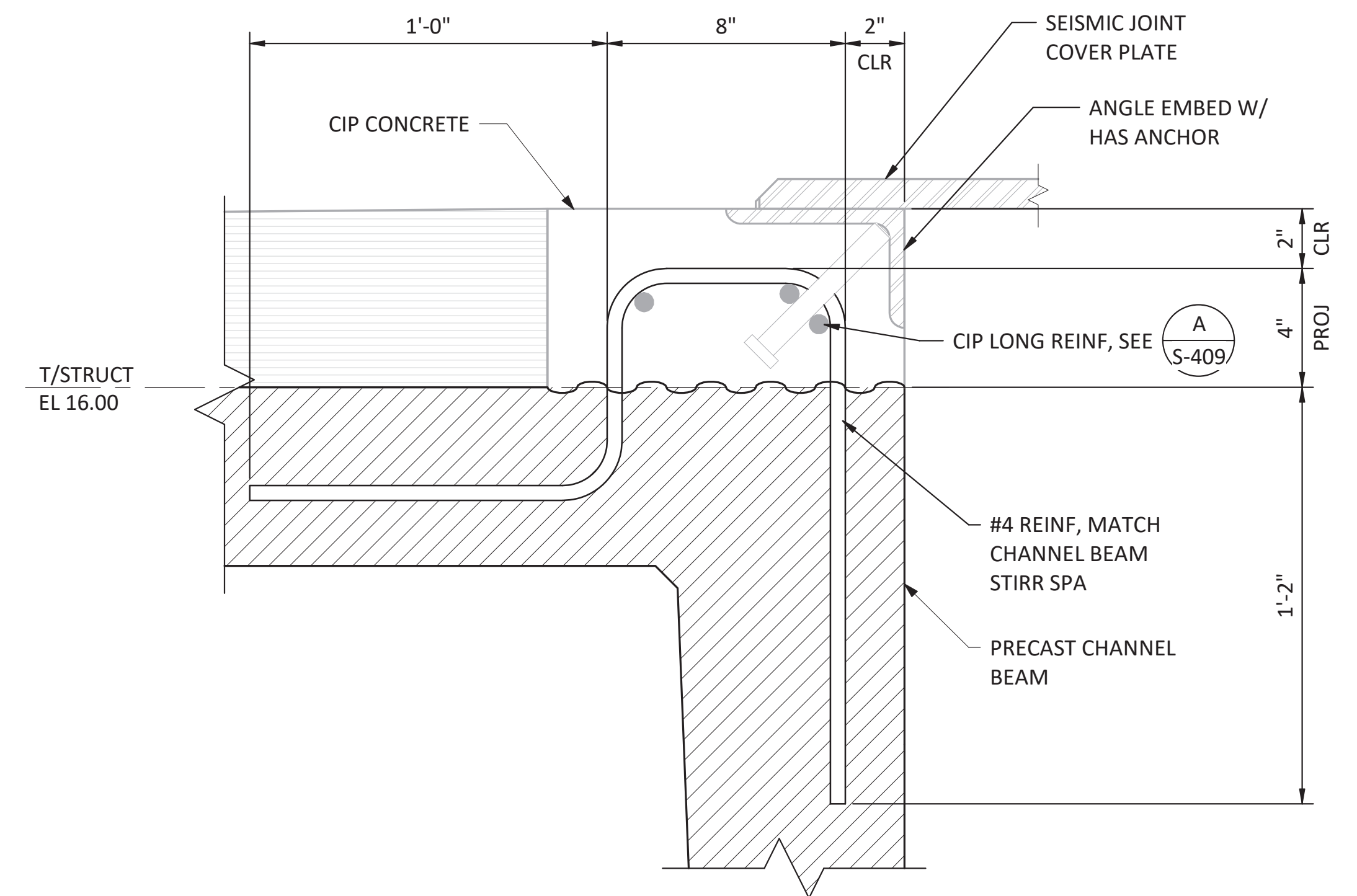
E SECTION - CHANNEL BEAM REINFORCEMENT AT BENT 15
S-303 SCALE: 3/4" = 1'-0"



D DETAIL - CHANNEL SAWTOOTH
SCALE: 1 1/2" = 1'-0"



F DETAIL - WELD TIE AT INTERIOR CONNECTIONS
SCALE: 3" = 1'-0"



G DETAIL - CHANNEL BEAM REINFORCEMENT AT COVER PLATE
SCALE: 3" = 1'-0"

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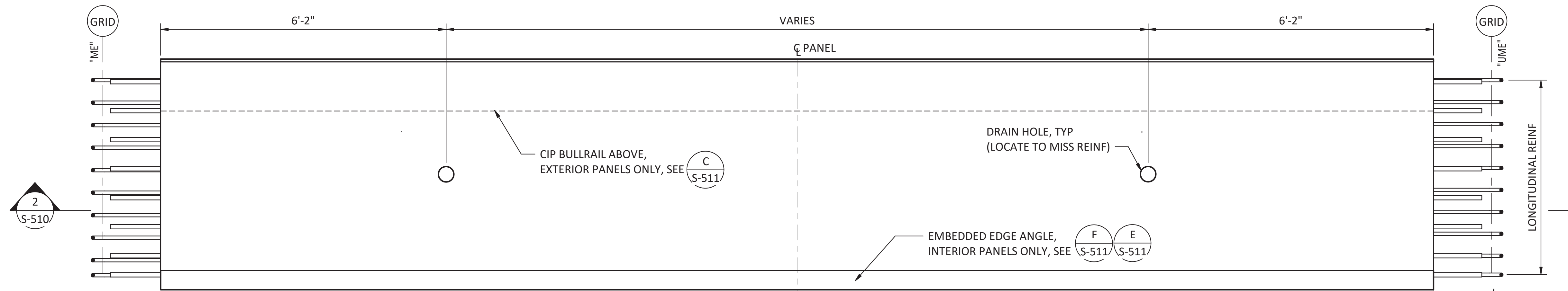
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

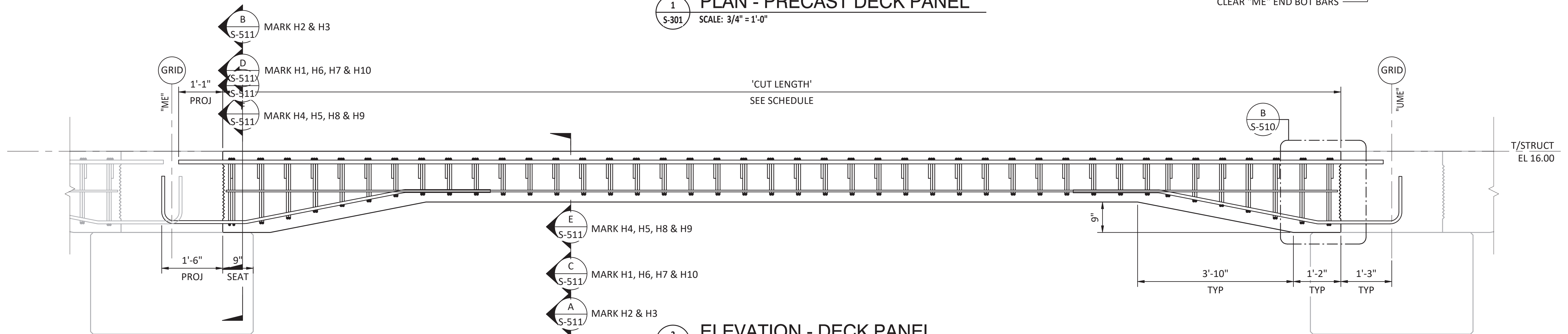
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PRECAST CHANNEL BEAMS SHEET 2 of 2

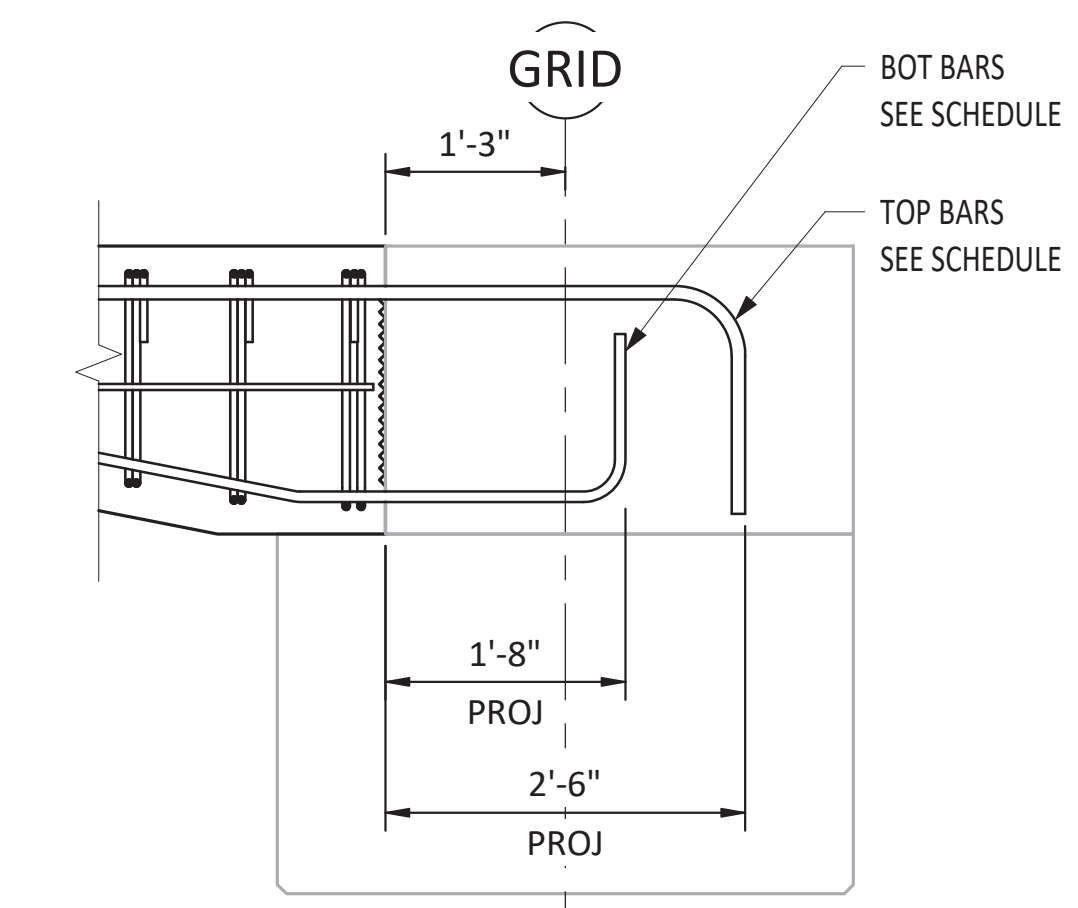
DRAWING NO. **S-509**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 69 OF 104



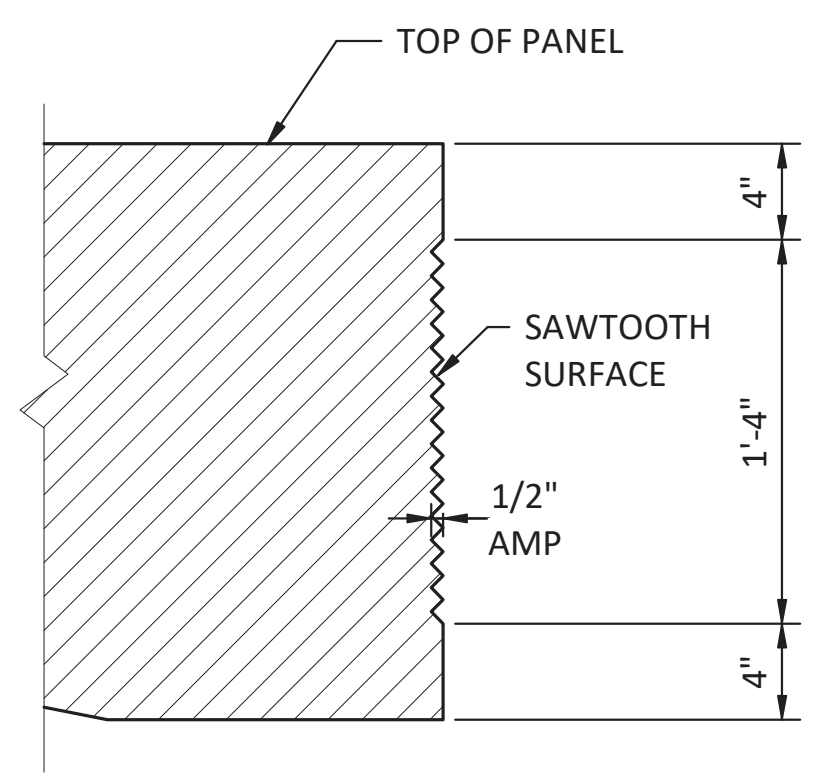
1 PLAN - PRECAST DECK PANEL
 S-301 SCALE: 3/4" = 1'-0"



2 ELEVATION - DECK PANEL
 S-510 SCALE: 3/4" = 1'-0"



A SECTION - DECK PANEL AT END CAP
 S-510 SCALE: 3/4" = 1'-0"



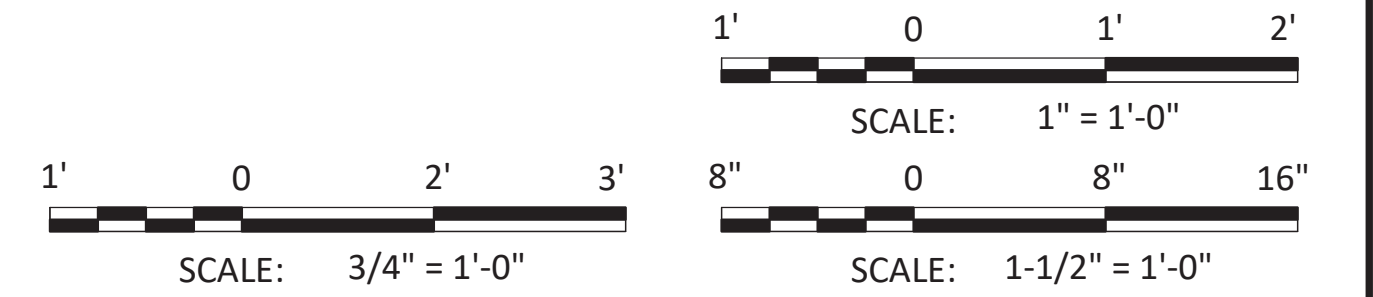
B DETAIL - SAWTOOTH
 S-510 SCALE: 1 1/2" = 1'-0"

NOTES

- USE NORMAL WEIGHT CONCRETE HAVING THE FOLLOWING STRENGTHS:
 AT STRESS TRANSFER, f'_{ci} = 5000 PSI
 AT 28 DAYS, f'_{ci} = 7000 PSI
 MAXIMUM W/C RATIO LESS THAN 0.35
- USE 1/2" DIAMETER LOW RELAXATION STRANDS HAVING AN ULTIMATE STRENGTH OF 270 KSI.
- PRESTRESS DESIGN IS BASED ON THE FOLLOWING STRESSES:
 JACKING STRESS 202 KSI
 AFTER ALL LOSSES 177 KSI
- TOP FINISH, ROUGH BROOM FINISH.
- "ME" = MARKED END, "UME" = UNMARKED END

PRECAST DECK PANEL SCHEDULE

MARK	NOMINAL WIDTH	ACTUAL WIDTH	CUT LENGTH	'ME' BEARING LENGTH	'ME' GRID OFFSET	'UME' BEARING LENGTH	'UME' GRID OFFSET	COUNT	PRESTRESSING STRANDS	MILD REINFORCEMENT		SHEAR KEY	
										TOP BARS	BOT BARS	LEFT SIDE	RIGHT SIDE
H1	6' - 0"	5' - 11 3/4"	15' - 8"	0' - 9"	1' - 6 1/4"	0' - 9"	1' - 3"	2	8	10 - #9	12 - #7	Yes	No
H2	6' - 0"	5' - 11 3/4"	18' - 8"	0' - 9"	1' - 3 27/32"	0' - 9"	1' - 3"	2	10	10 - #9	12 - #7	Yes	Yes
H3	5' - 0"	4' - 11 3/4"	21' - 6"	1' - 2"	1' - 0 19/32"	1' - 2"	1' - 3"	2	10	8 - #9	10 - #7	Yes	Yes
H4	5' - 0"	4' - 11 3/4"	23' - 6"	1' - 2"	1' - 4 19/32"	1' - 2"	1' - 3"	2	12	8 - #9	10 - #7	No	Yes
H5	5' - 0"	4' - 11 3/4"	27' - 6"	1' - 2"	1' - 6 15/16"	1' - 2"	1' - 3"	2	14	8 - #9	10 - #7	Yes	No
H6	5' - 0"	4' - 11 3/4"	29' - 6"	1' - 2"	1' - 10 15/16"	1' - 2"	1' - 3"	2	16	8 - #9	10 - #7	No	Yes
H7	5' - 0"	4' - 11 3/4"	27' - 6"	1' - 2"	1' - 3"	1' - 2"	1' - 3"	18	14	8 - #9	10 - #7	Yes	No
H8	5' - 0"	4' - 11 3/4"	27' - 6"	1' - 2"	1' - 3"	1' - 2"	1' - 3"	18	14	8 - #9	10 - #7	No	Yes
H9	5' - 0"	4' - 11 3/4"	27' - 6"	1' - 2"	1' - 3"	1' - 2"	1' - 3"	18	14	8 - #9	10 - #7	Yes	No
H10	5' - 0"	4' - 11 3/4"	27' - 6"	1' - 2"	1' - 3"	1' - 2"	1' - 3"	18	14	8 - #9	10 - #7	No	Yes



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MARK	REVISION DESCRIPTION	BY	APP.	DATE

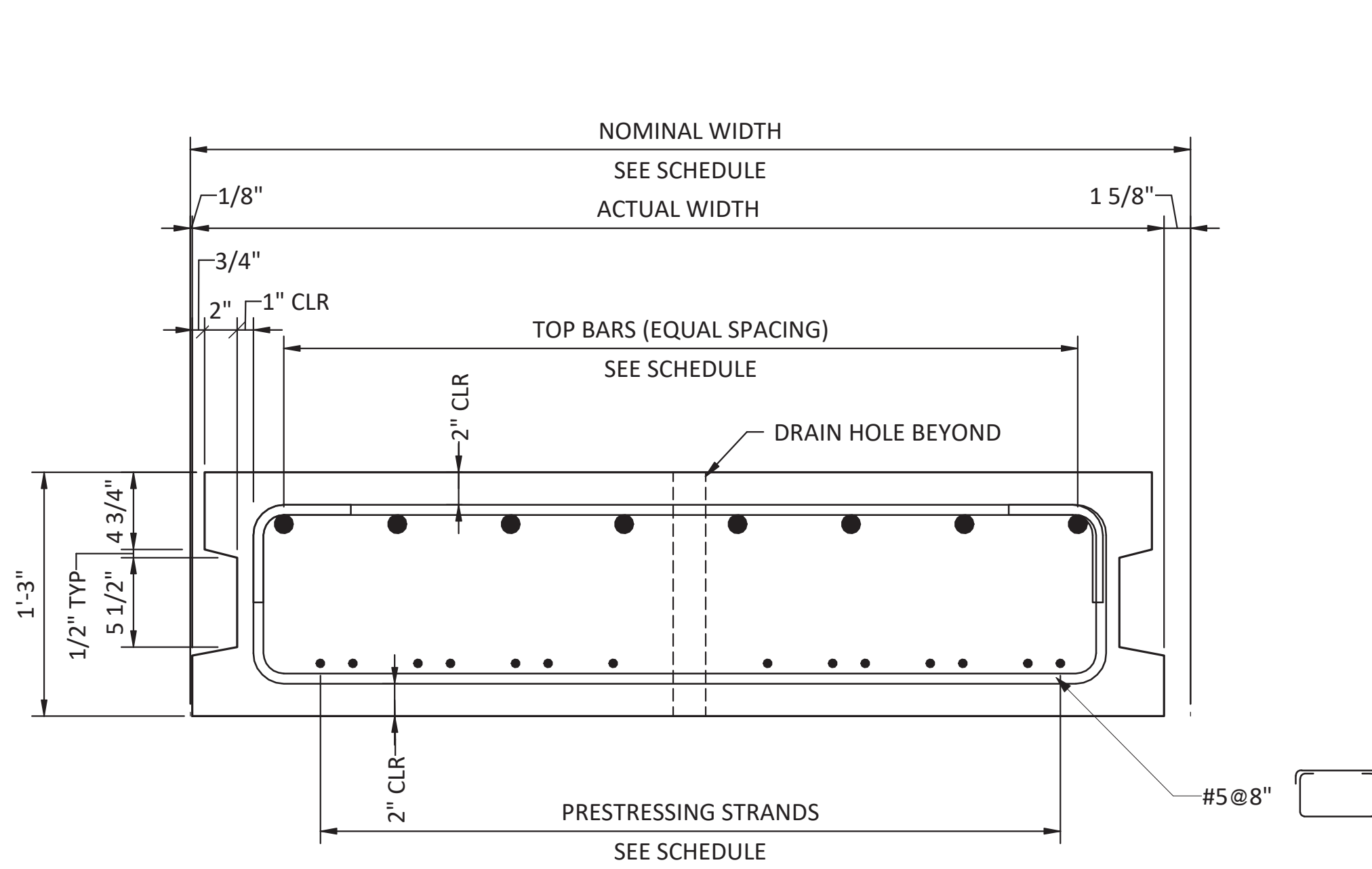
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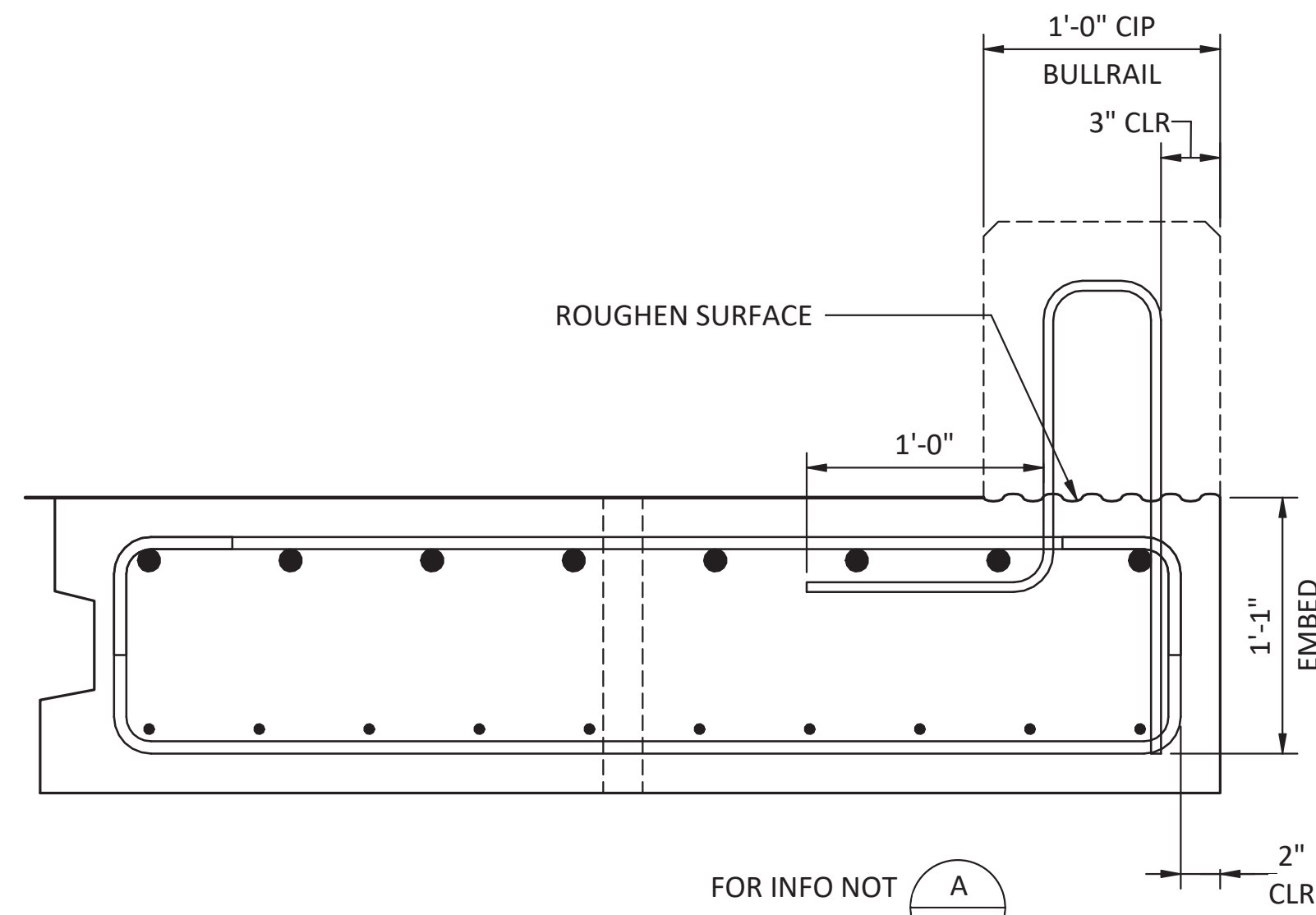
DRAWN BY: PKO
 DESIGN BY: PKO
 CHECK BY: JLR
 PROJ MGR: EAN

**PORT OF NEAH BAY
 MAKAH DOCK EXTENSION
 PRECAST HAUNCHED DECK PANELS**

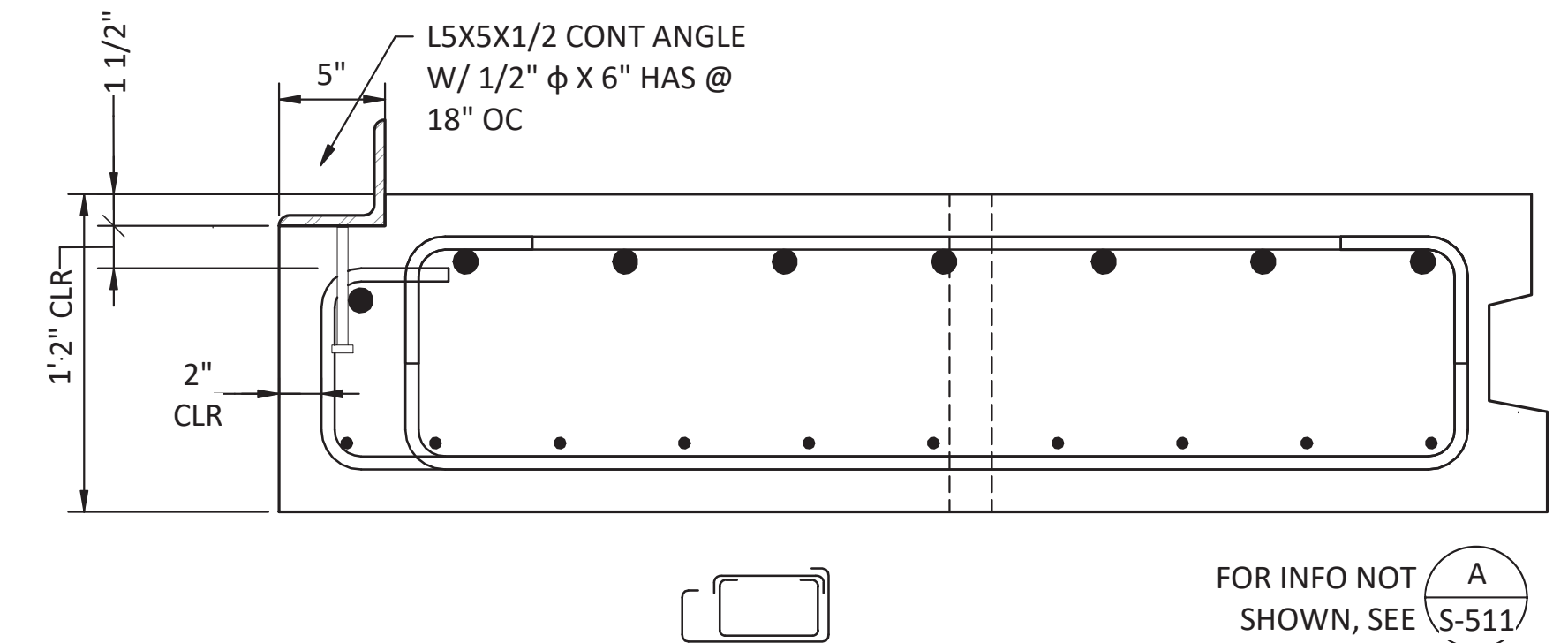
DRAWING NO. **S-510**
 PROJECT NO. A16.0096
 DATE: 9/29/2017
 SHEET NO. 70 OF 104



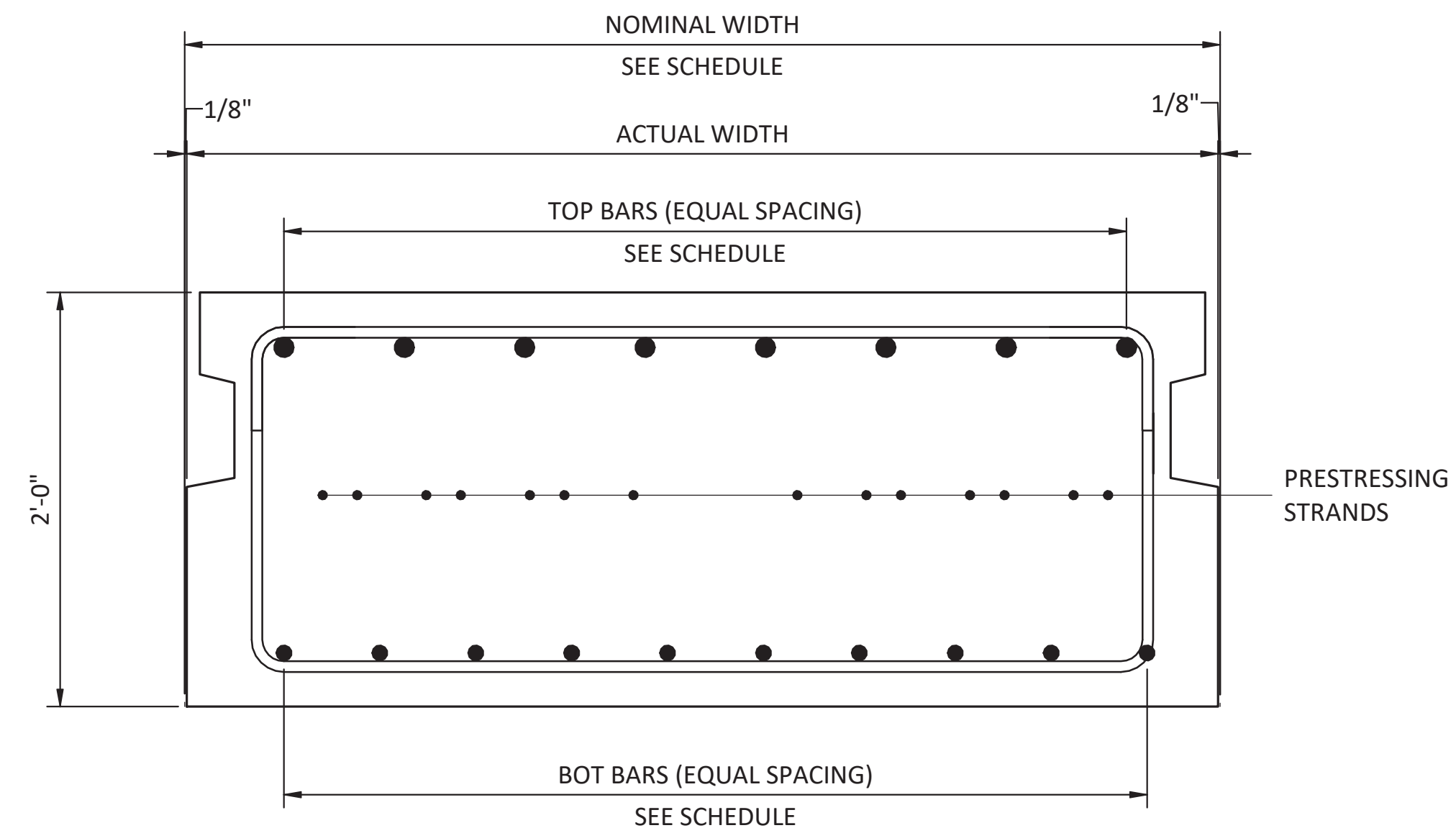
A SECTION - H2 & H3 AT MIDSPAN
S-510 SCALE: 1 1/2" = 1'-0"



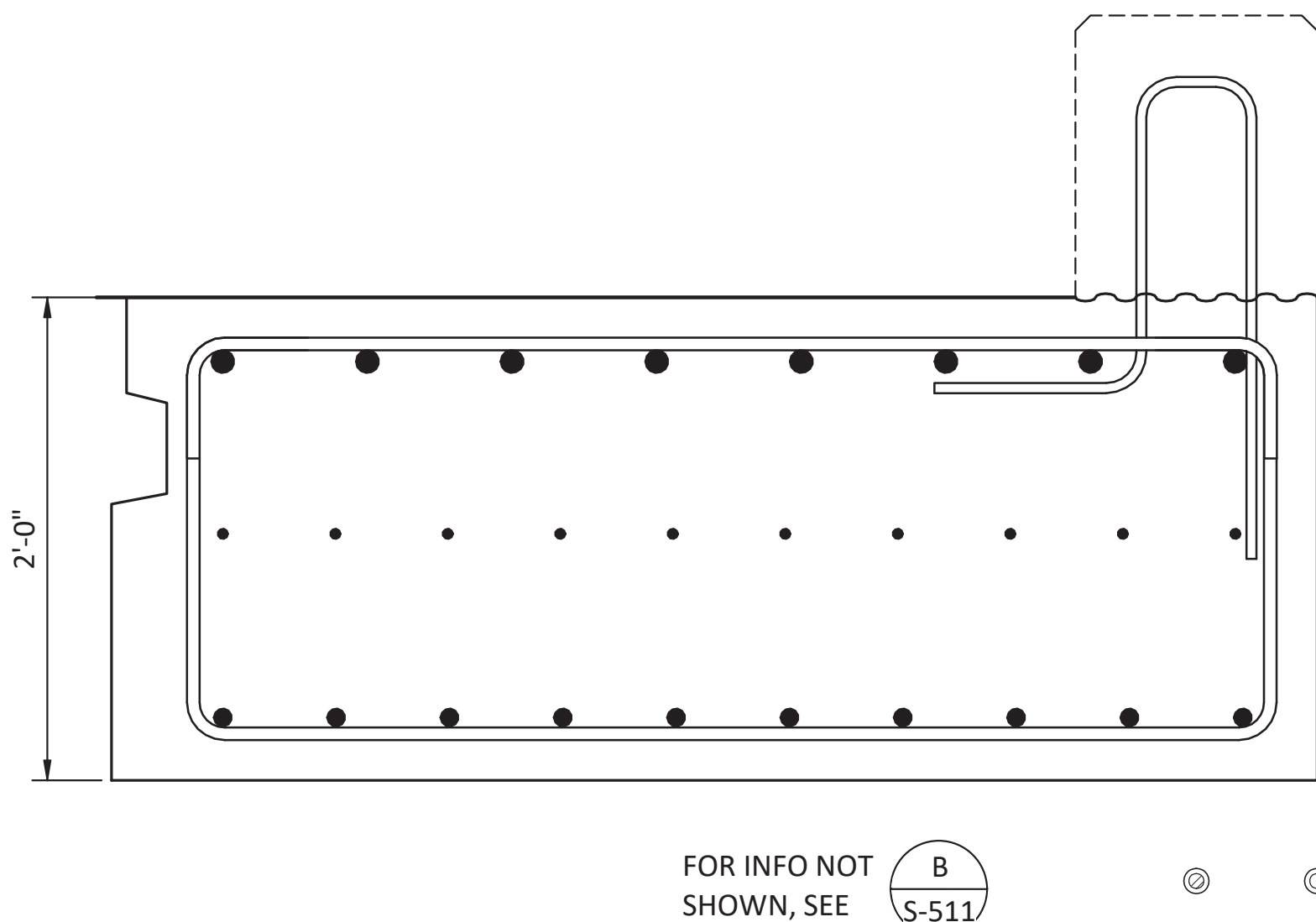
C SECTION - H1, H6, H7 & H10 AT MIDSPAN
S-510 SCALE: 1 1/2" = 1'-0"



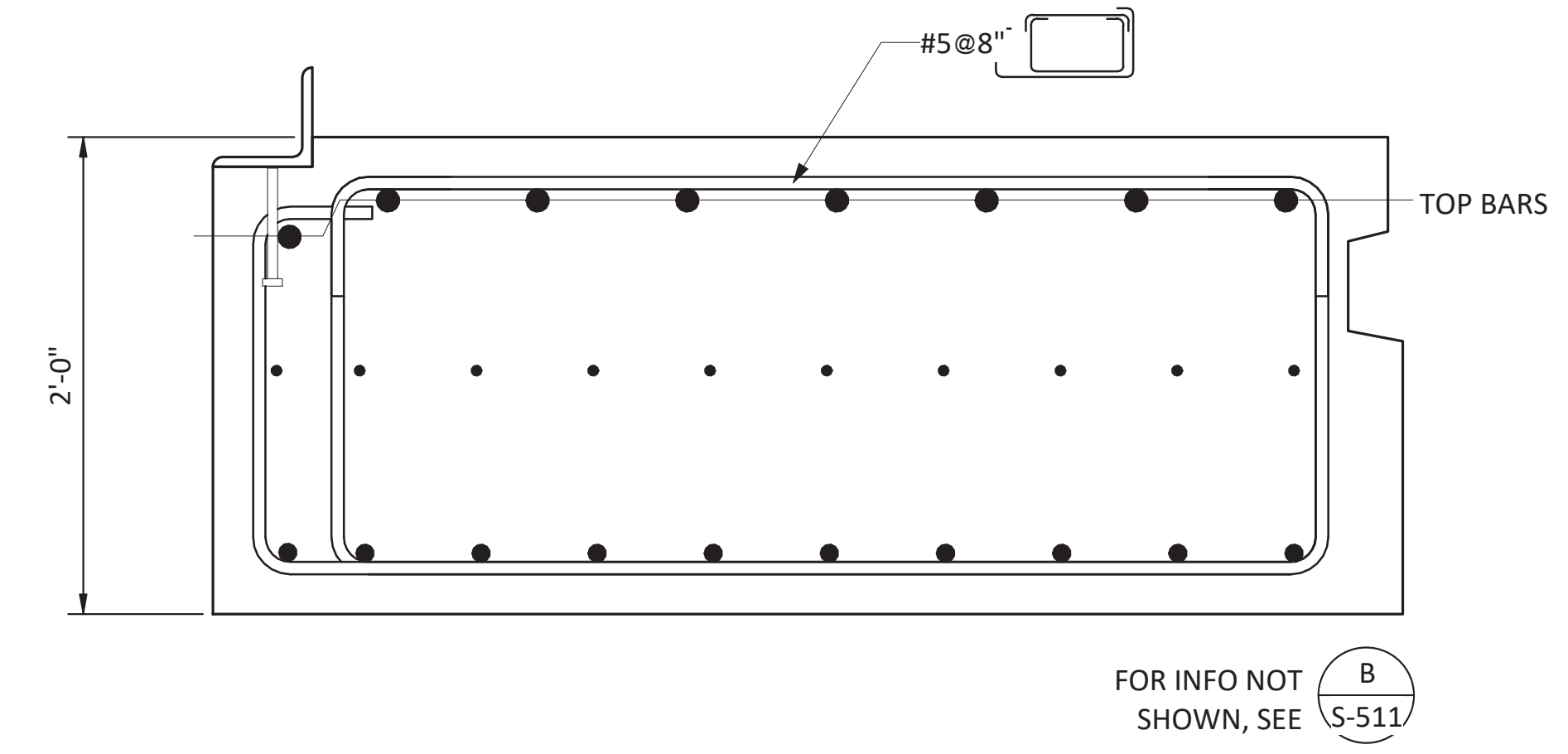
E SECTION - H4, H5, H8 & H9 AT MIDSPAN
S-510 SCALE: 1 1/2" = 1'-0"



B SECTION - H2 & H3 AT END
S-510 SCALE: 1 1/2" = 1'-0"



D SECTION - H1, H6, H7 & H10 AT END
S-510 SCALE: 1 1/2" = 1'-0"



F SECTION - H4, H5, H8 & H9 AT END
S-510 SCALE: 1 1/2" = 1'-0"

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MARK	REVISION DESCRIPTION	BY	APP.	DATE

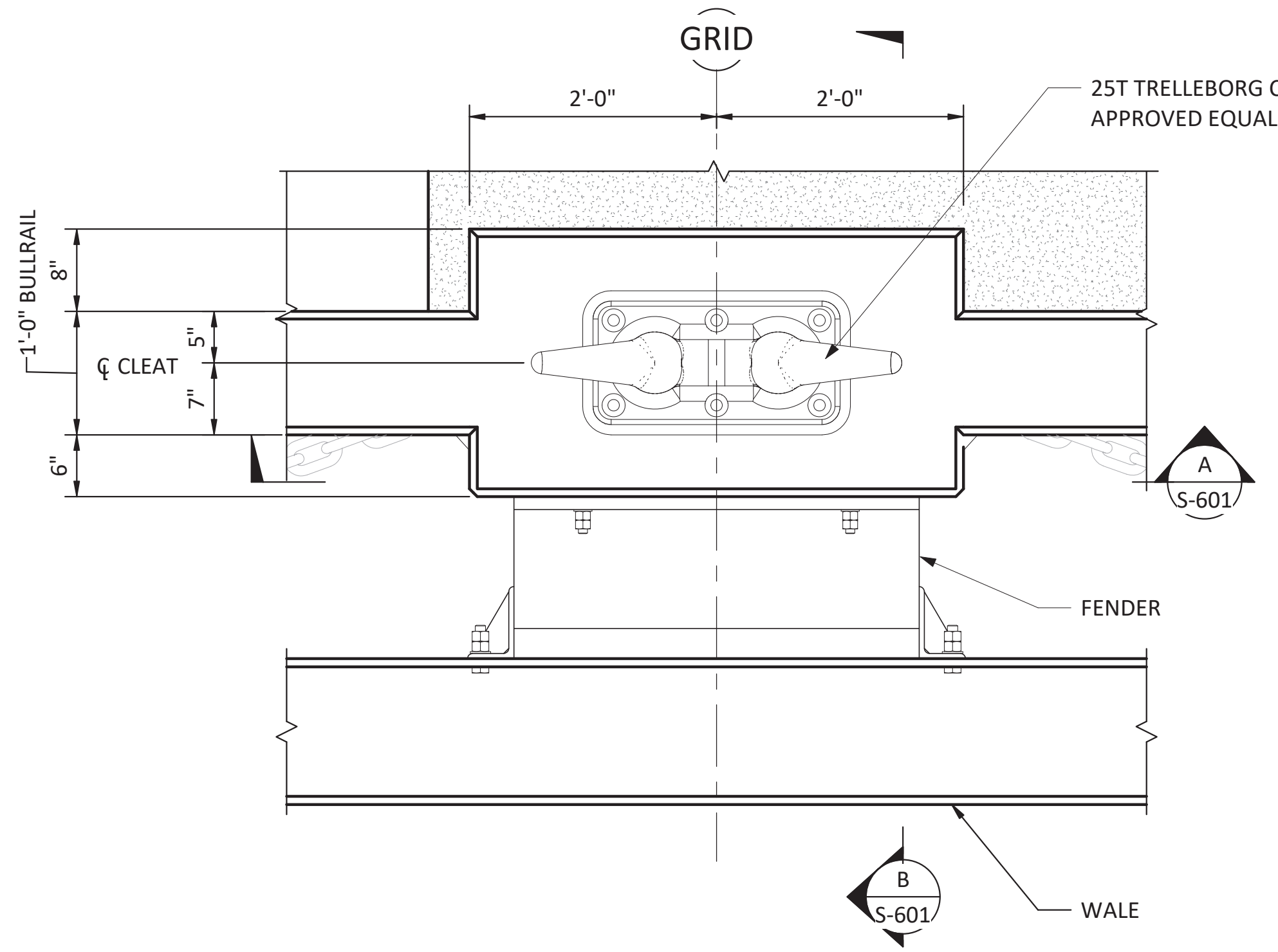
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

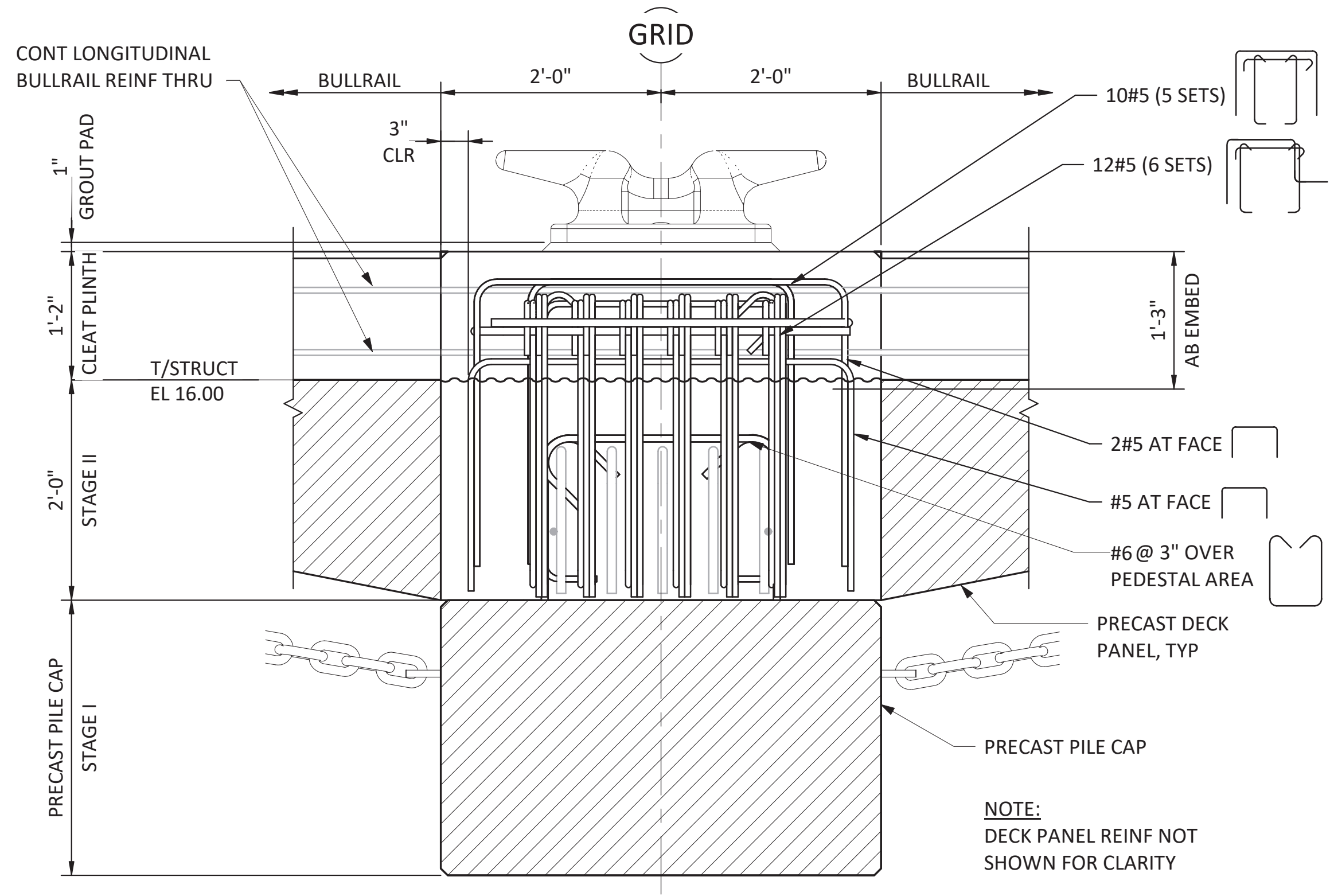
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

**PORT OF NEAH BAY
MAKAH DOCK EXTENSION**
PRECAST HAUNCHED DECK PANEL DETAILS

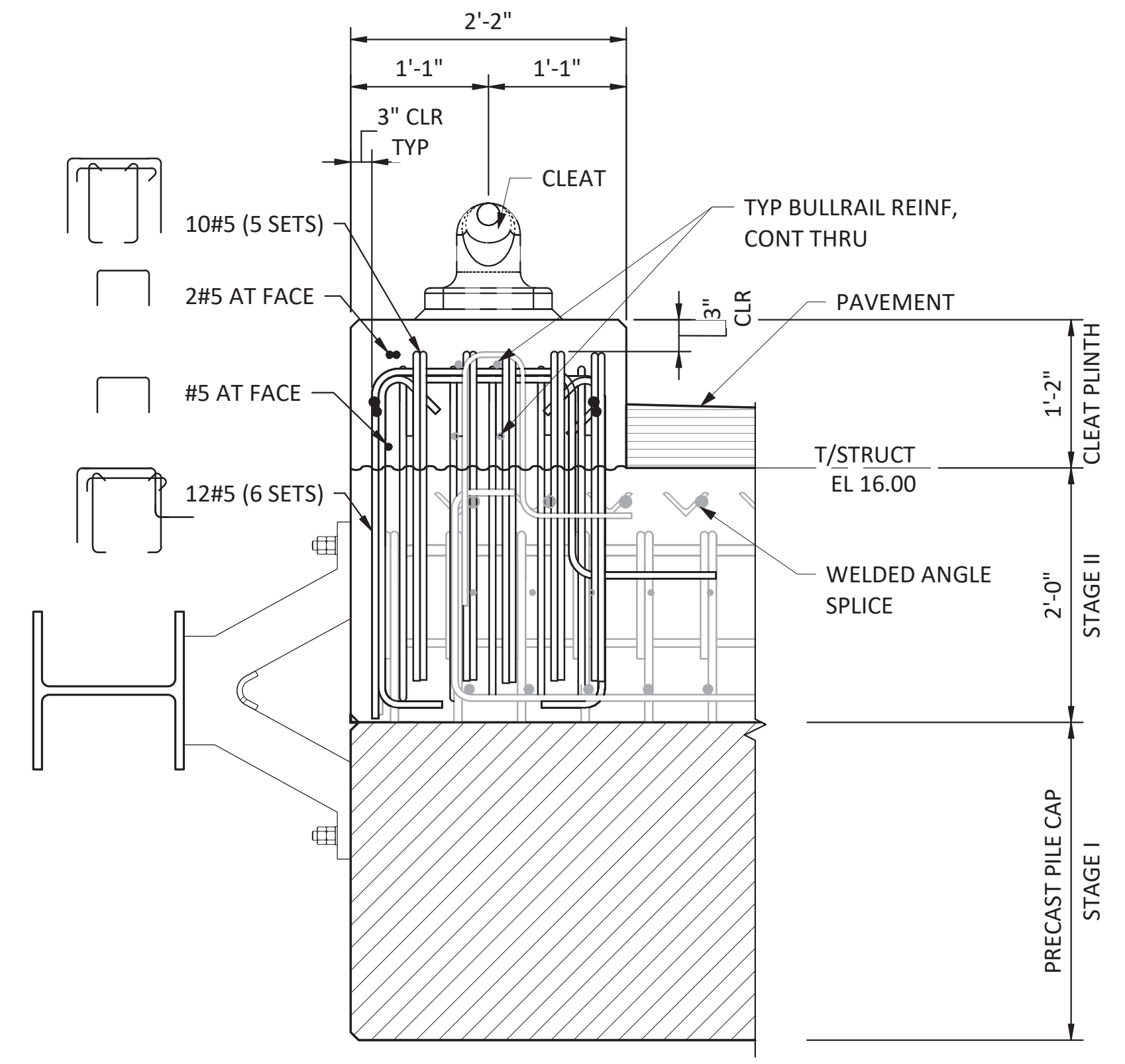
DRAWING NO. **S-511**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 71 OF 104



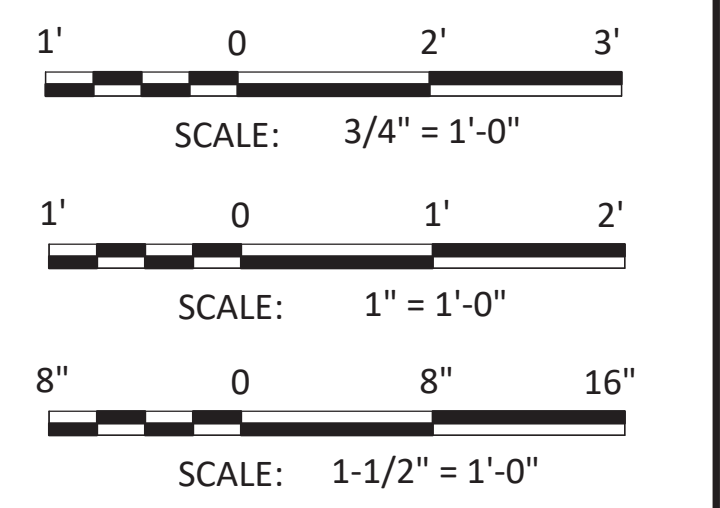
1 PLAN - FENDER AND CLEAT LOCATION
SCALE: 1" = 1'-0"



A SECTION - 25T CLEAT
SCALE: 1" = 1'-0"



B DETAIL - 25T CLEAT
SCALE: 1" = 1'-0"



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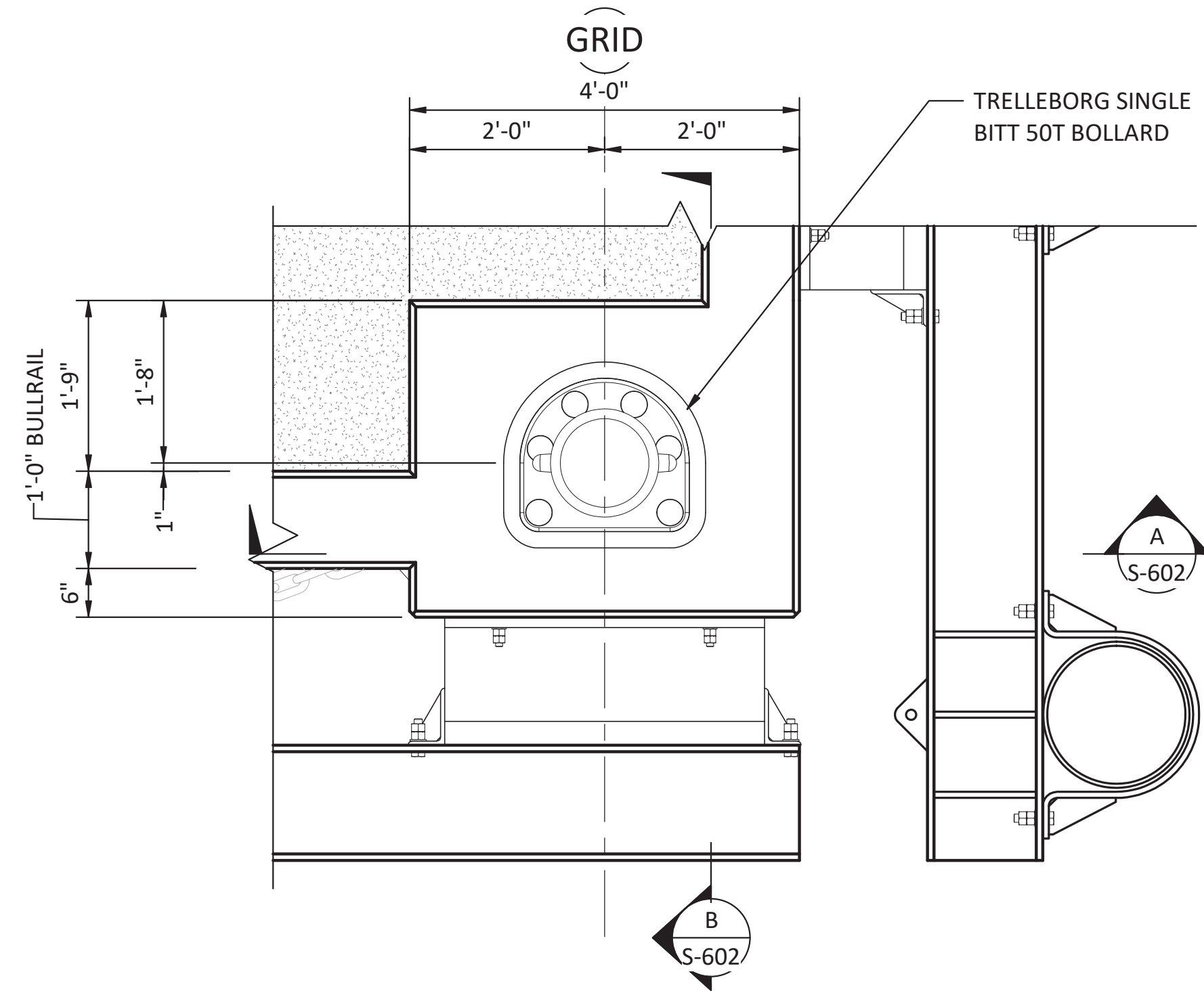
PORT OF NEAH BAY

MAKAH INDIAN TRIBE

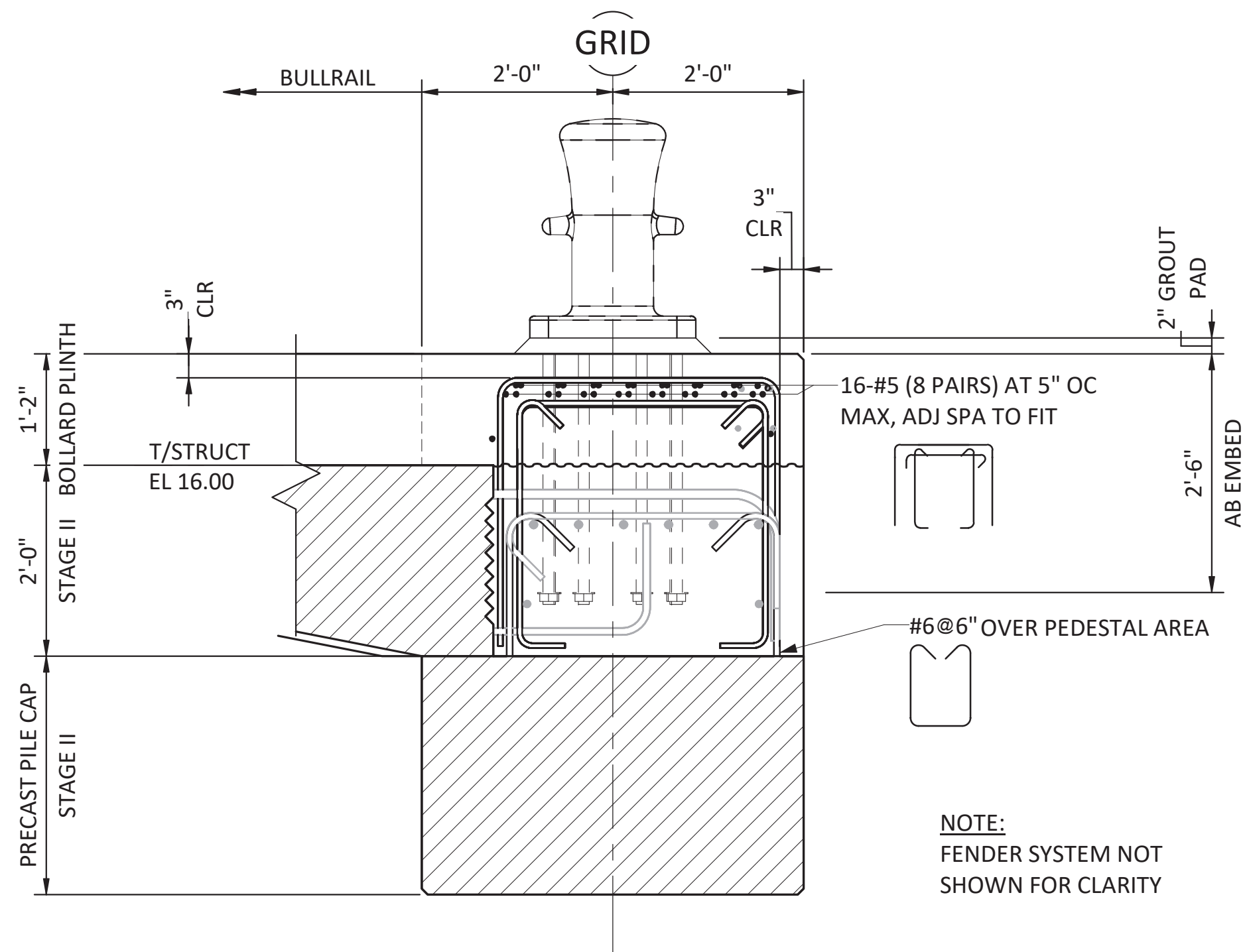
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

**PORT OF NEAH BAY
MAKAH DOCK EXTENSION
MOORING SYSTEM - CLEATS**

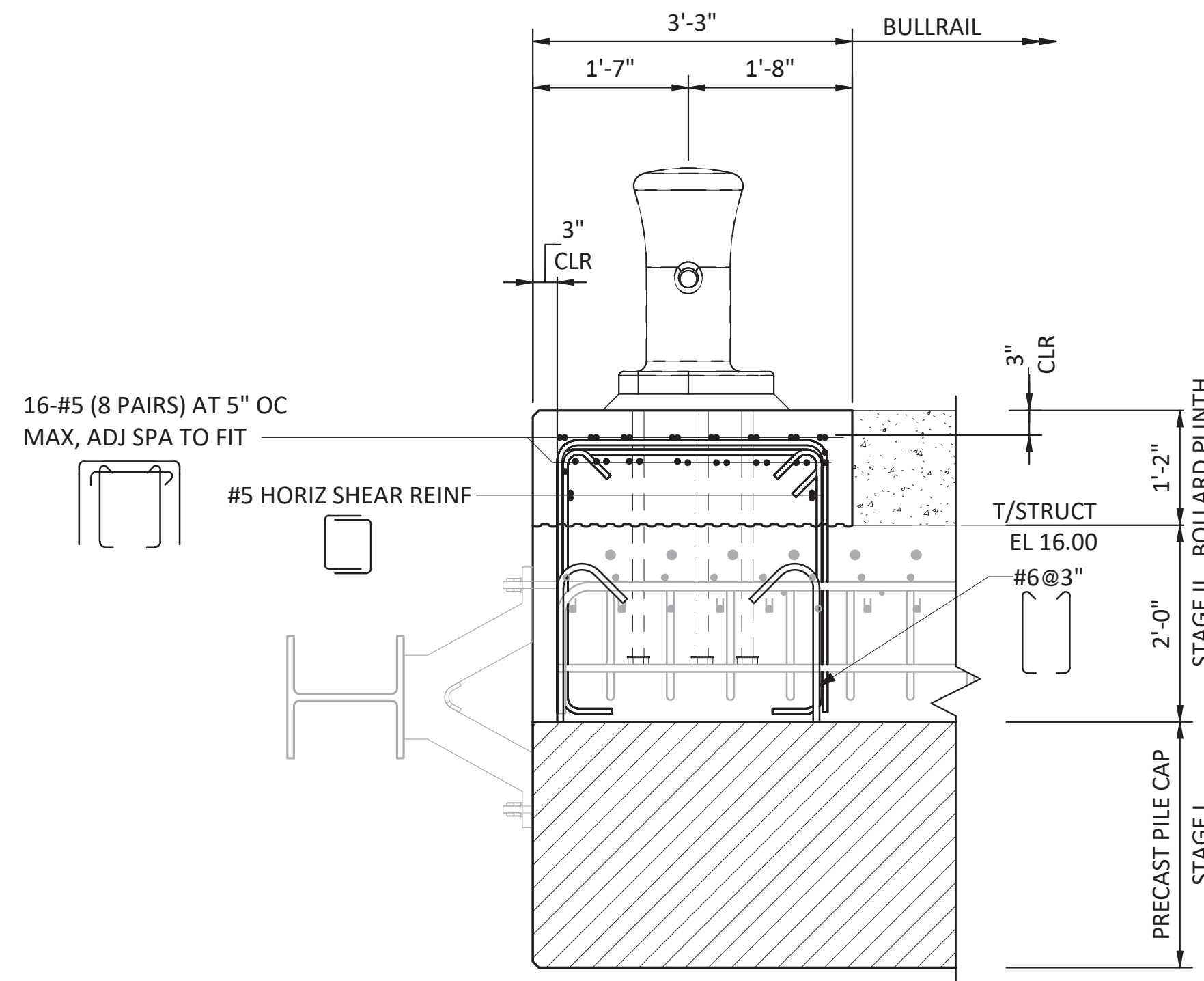
DRAWING NO. **S-601**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 72 OF 104



1 PLAN - 50T BOLLARD @ CORNER
 S-104 SCALE: 3/4" = 1'-0"



A SECTION - 50T BOLLARD
 S-602 SCALE: 3/4" = 1'-0"



B SECTION - 50T BOLLARD
 S-602 SCALE: 3/4" = 1'-0"

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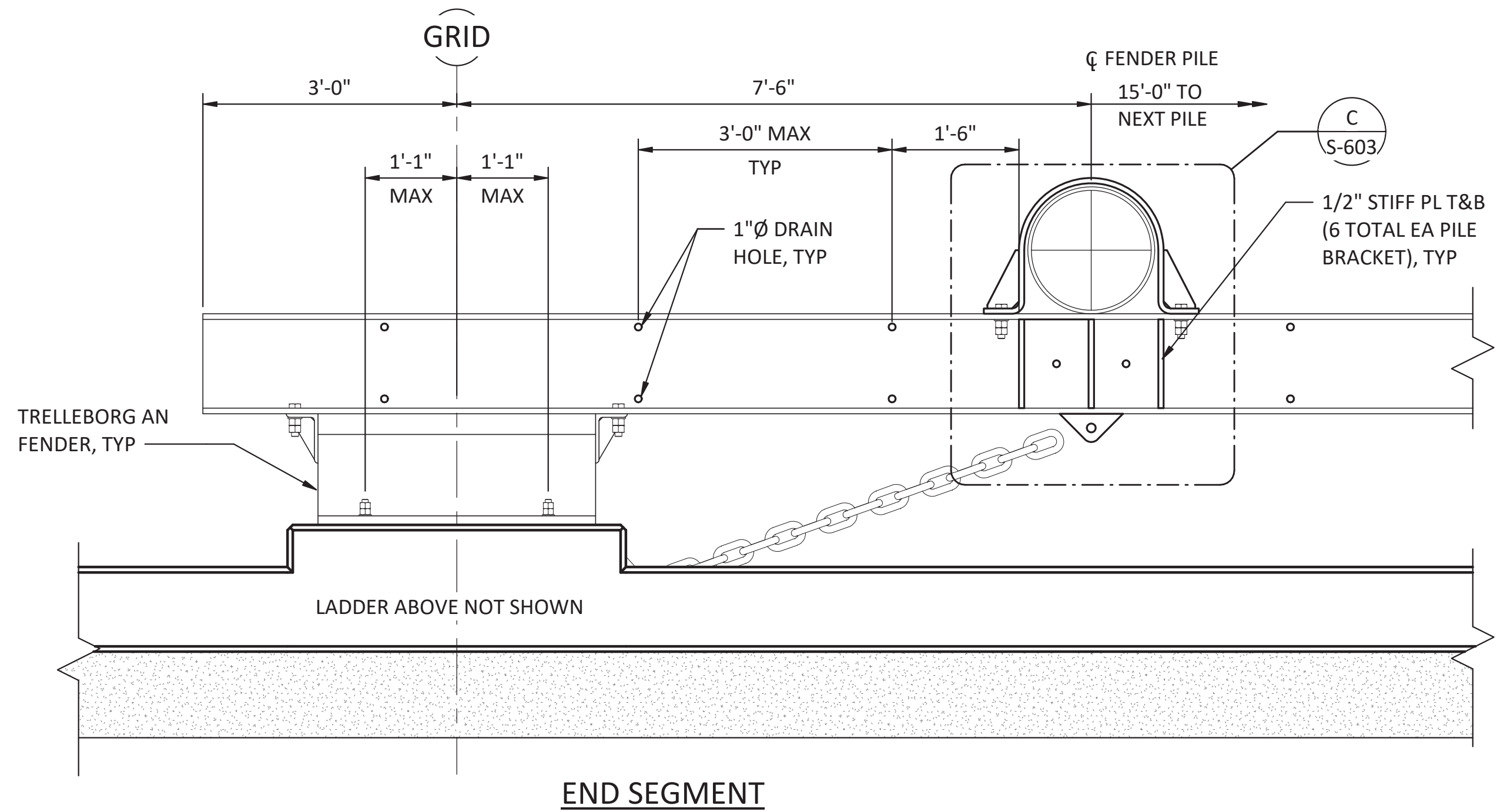
PORT OF NEAH BAY

 MAKAH INDIAN TRIBE

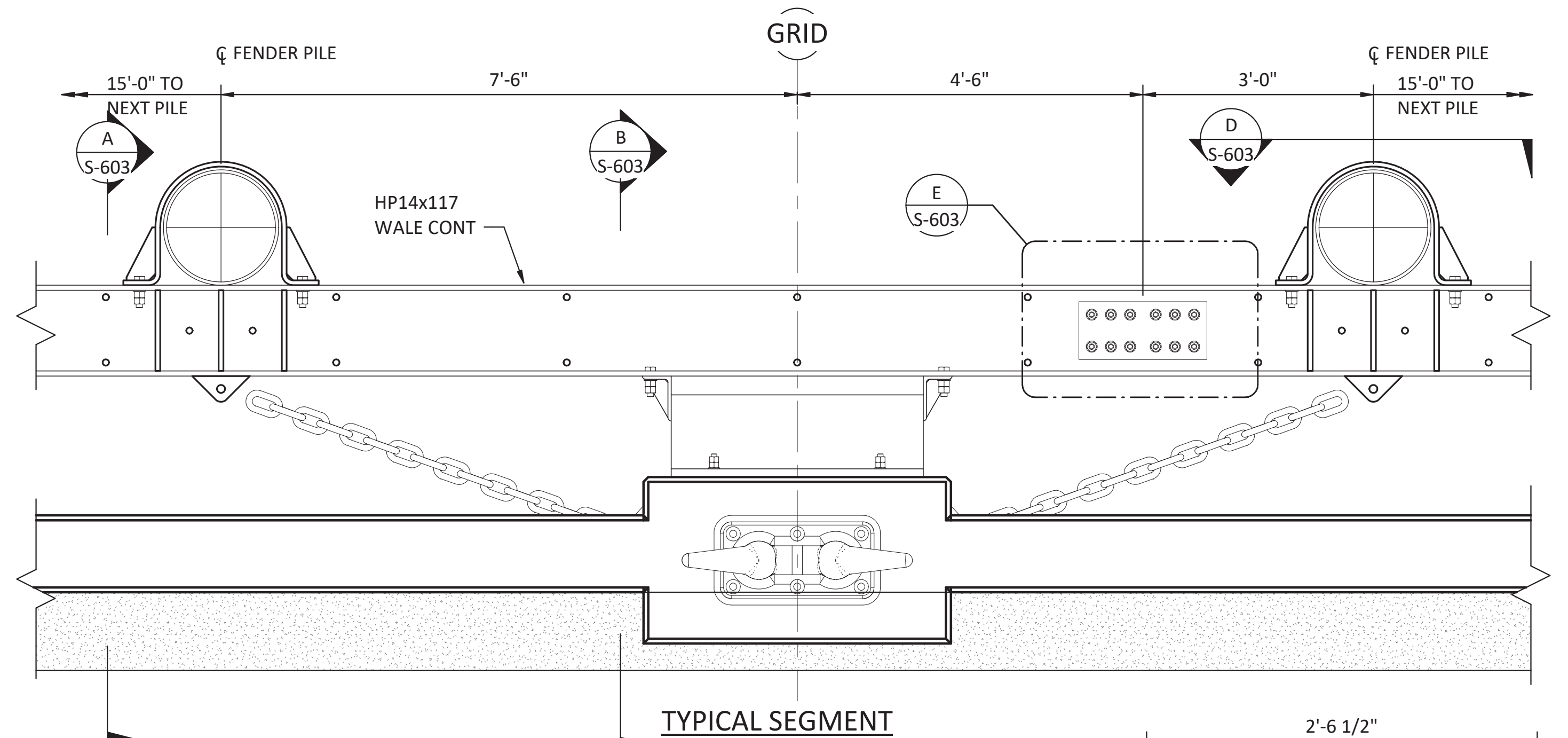
DRAWN BY: PKO
 DESIGN BY: PKO
 CHECK BY: JLR
 PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
 MOORING SYSTEM - BOLLARDS

DRAWING NO. **S-602**
 PROJECT NO. A16.0096
 DATE: 9/29/2017
 SHEET NO. 73 OF 104

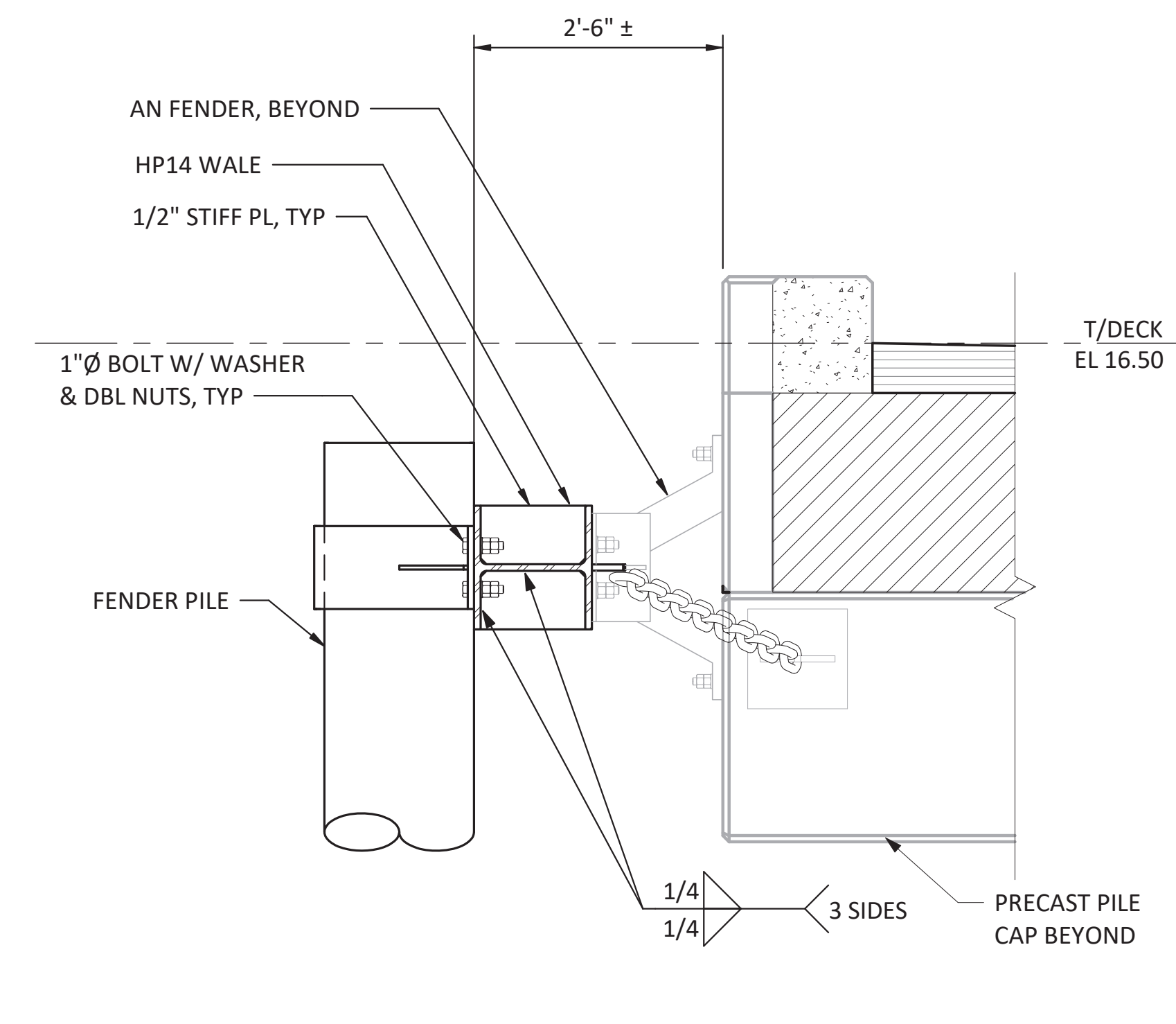


END SEGMENT

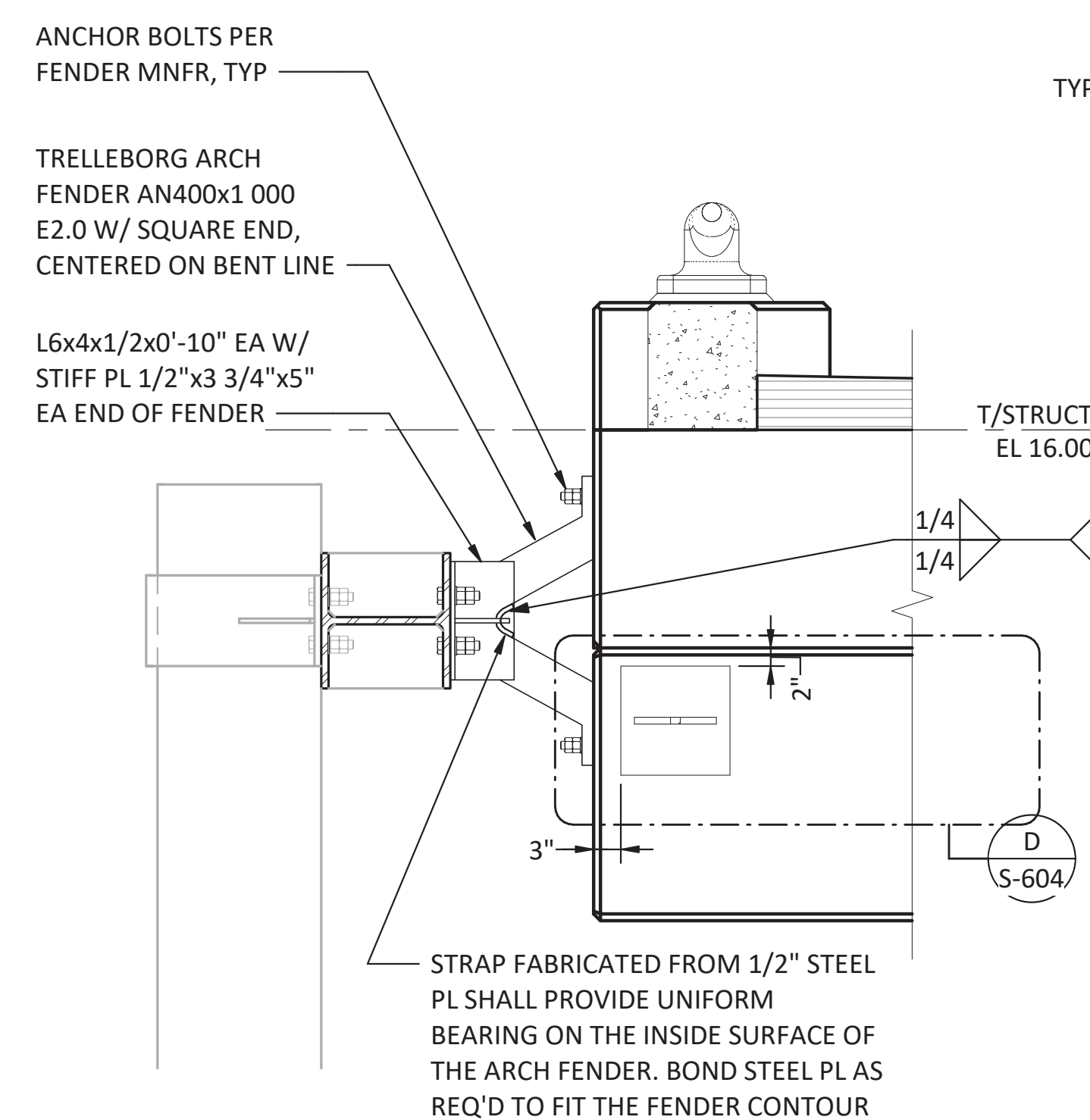


TYPICAL SEGMENT

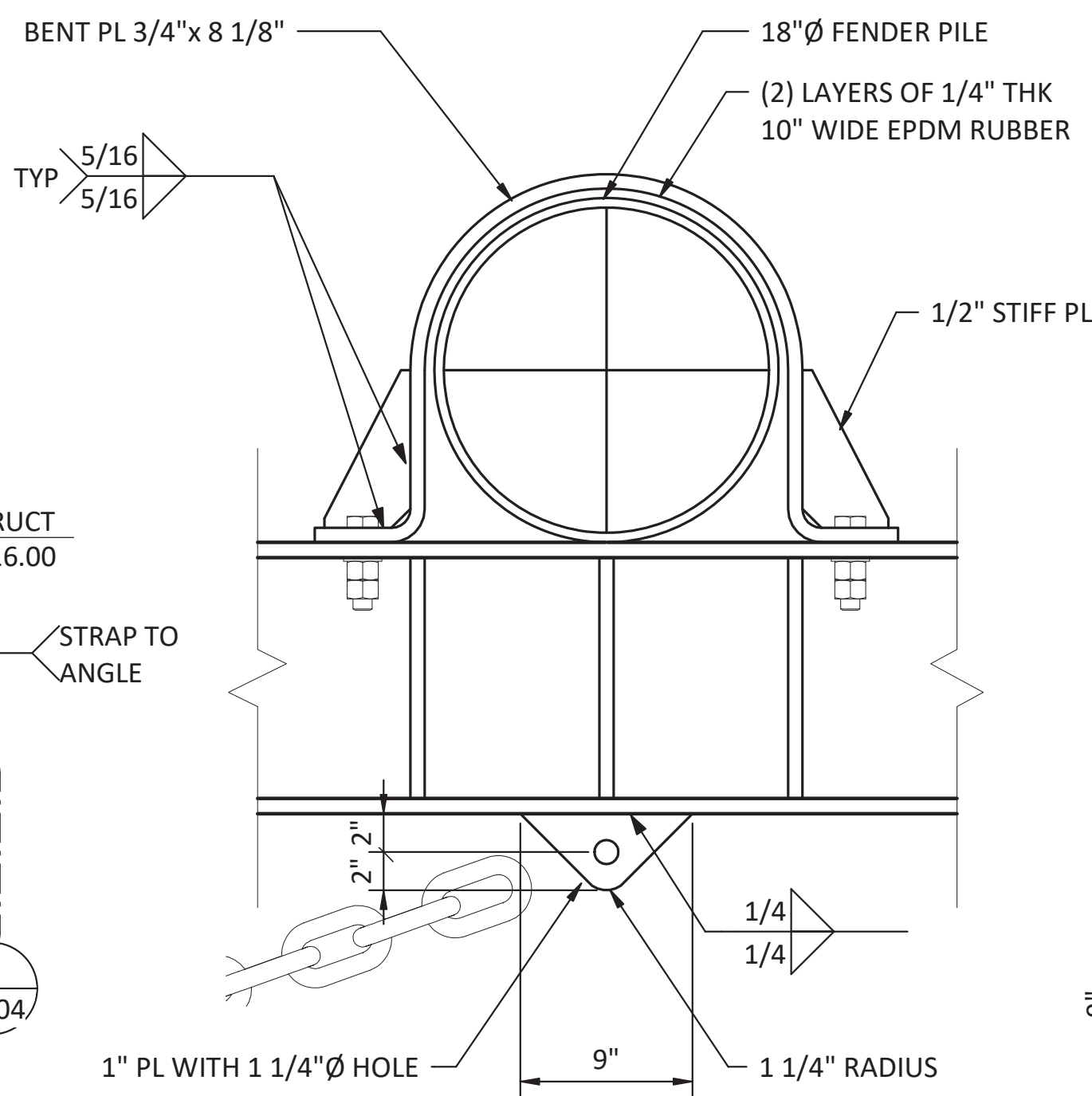
2 PLAN - FENDER SYSTEM
S-104 SCALE: 3/4" = 1'-0"



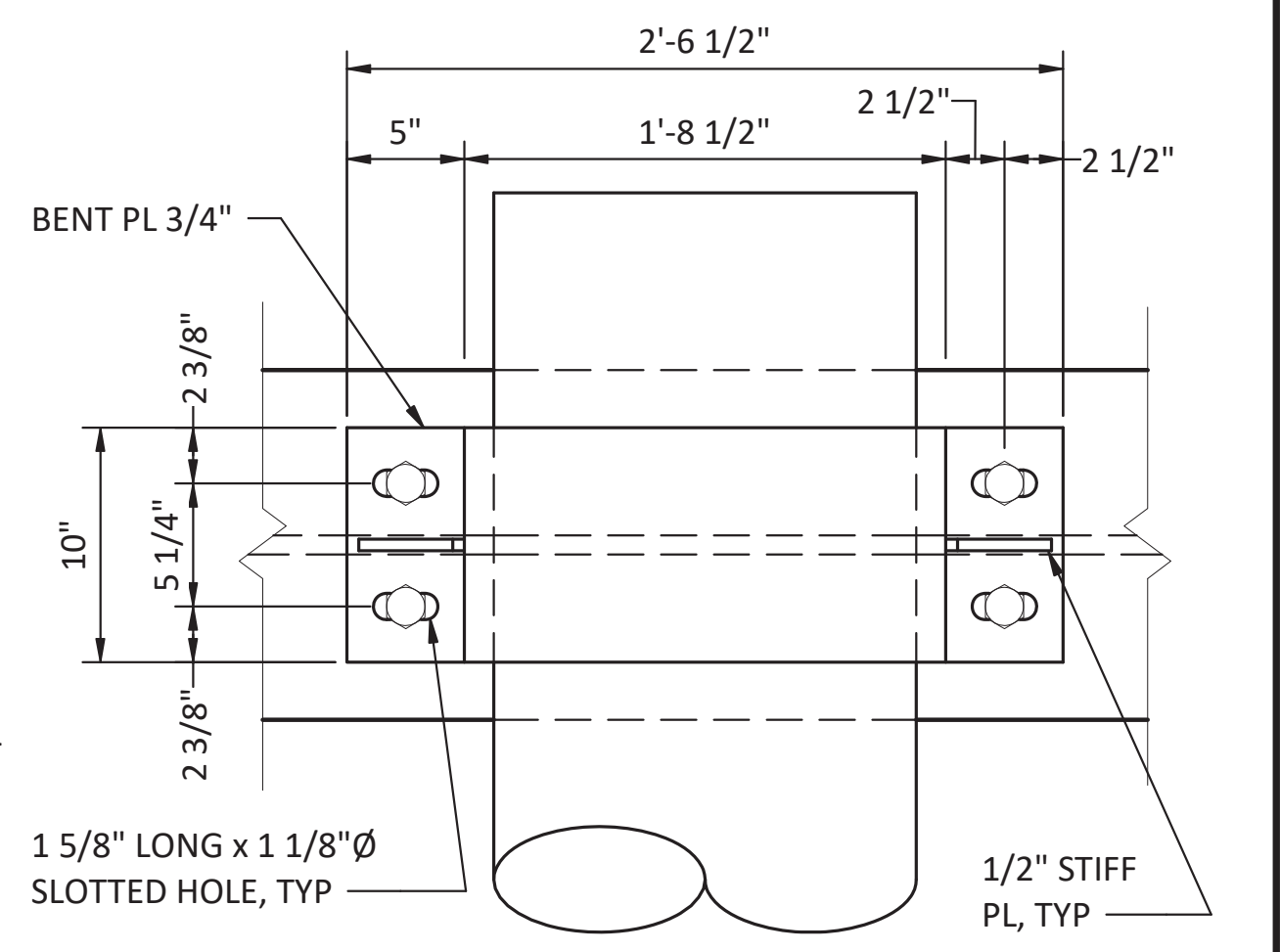
A SECTION - FENDER SYSTEM
S-104 SCALE: 3/4" = 1'-0"



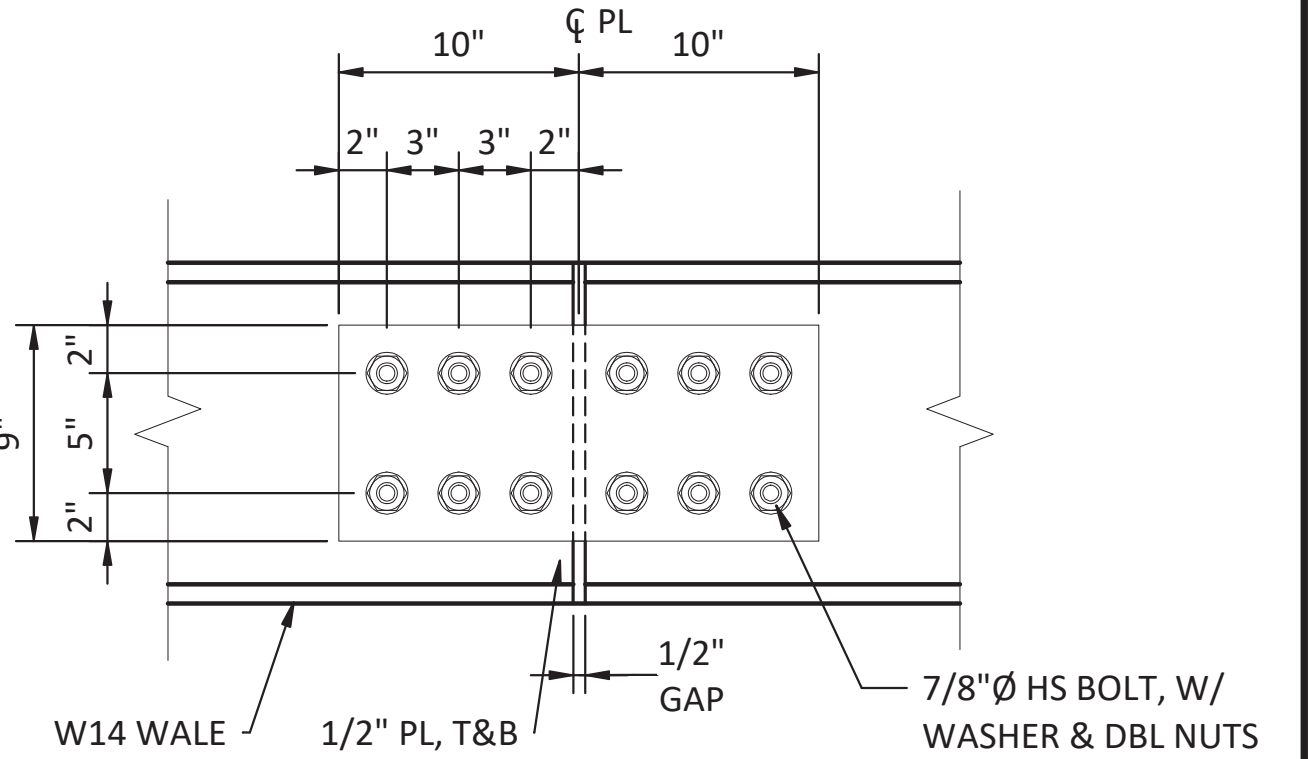
B SECTION - FENDER
S-603 SCALE: 3/4" = 1'-0"



C DETAIL - FENDER PILE BRACKET
S-603 SCALE: 1 1/2" = 1'-0"



D DETAIL - FENDER PILE BRACKET
S-603 SCALE: 1 1/2" = 1'-0"



E DETAIL - WALE SPLICE
S-603 SCALE: 1 1/2" = 1'-0"

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MARK	REVISION DESCRIPTION	BY	APP.	DATE

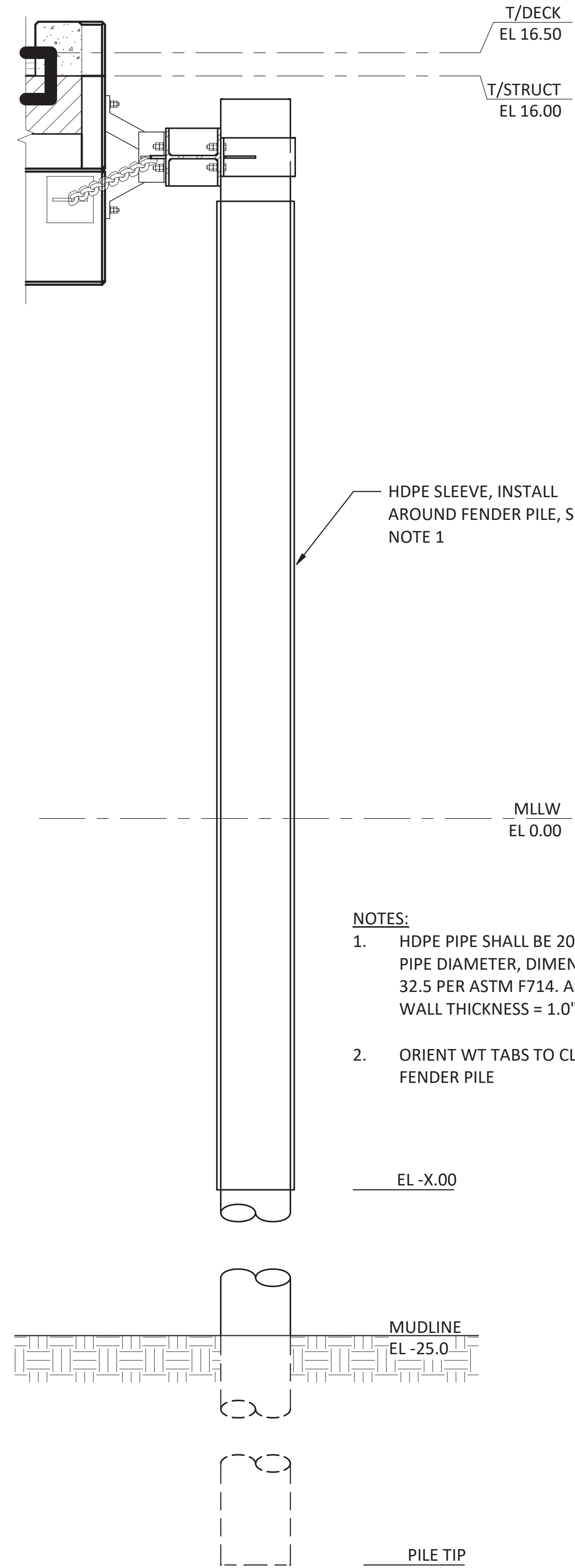
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MAKAH INDIAN TRIBE

DRAWN BY: PKO
DESIGN BY: PKO
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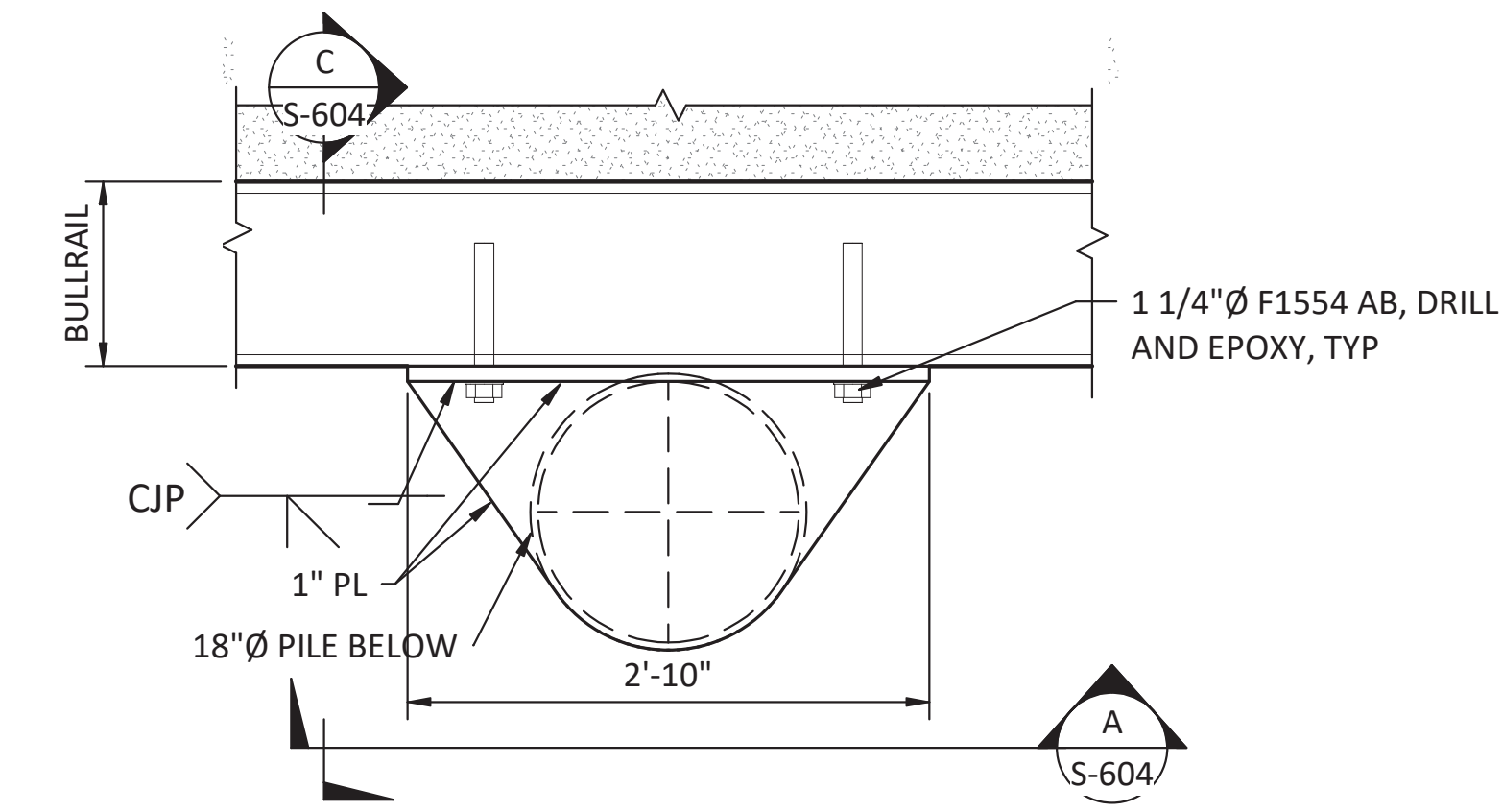
PORT OF NEAH BAY
MAKAH DOCK EXTENSION
FENDER SYSTEM

DRAWING NO. **S-603**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 74 OF 104

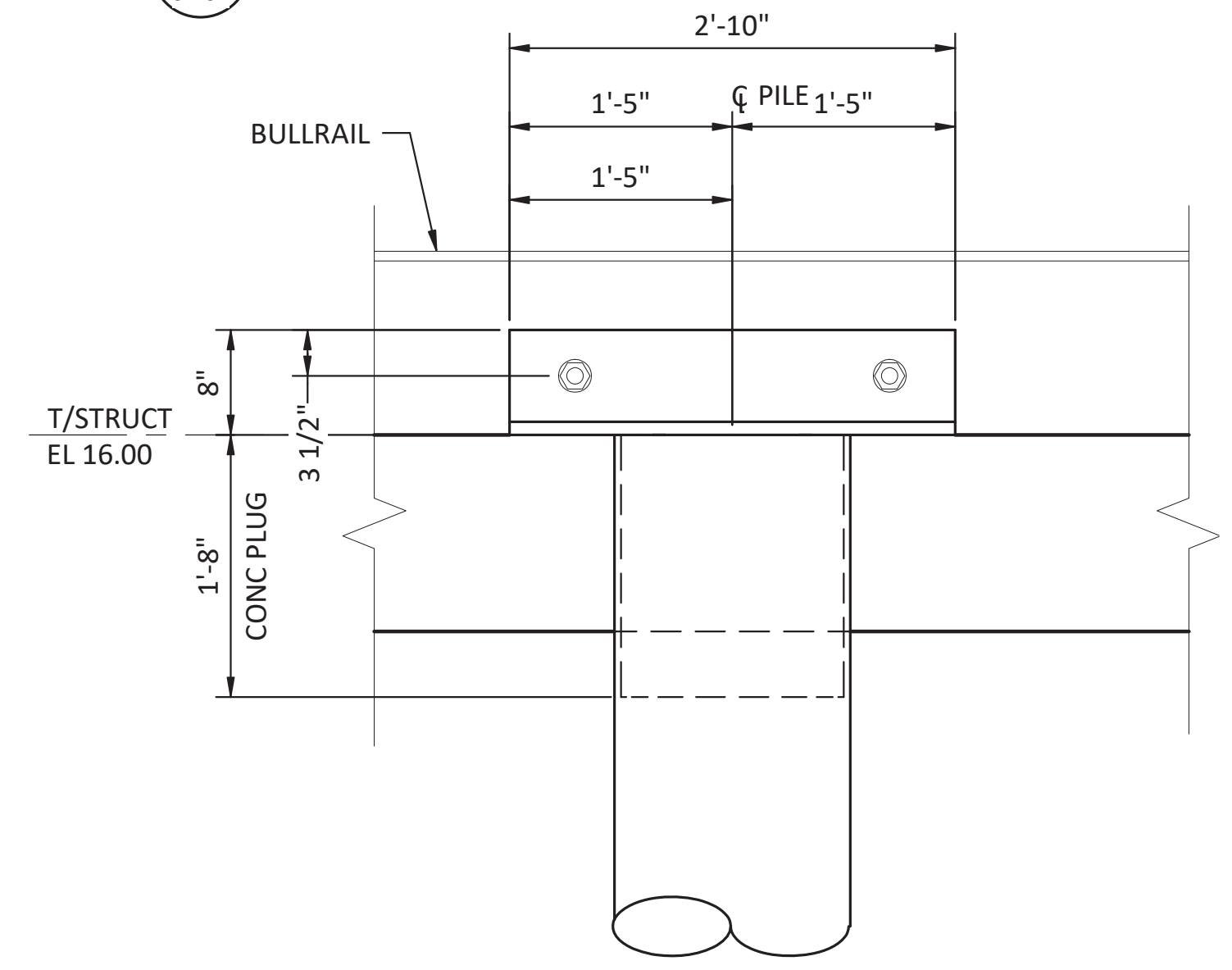


3
S-104
ELEVATION - TYPICAL FENDER PILE
SCALE: 1/2" = 1'-0"

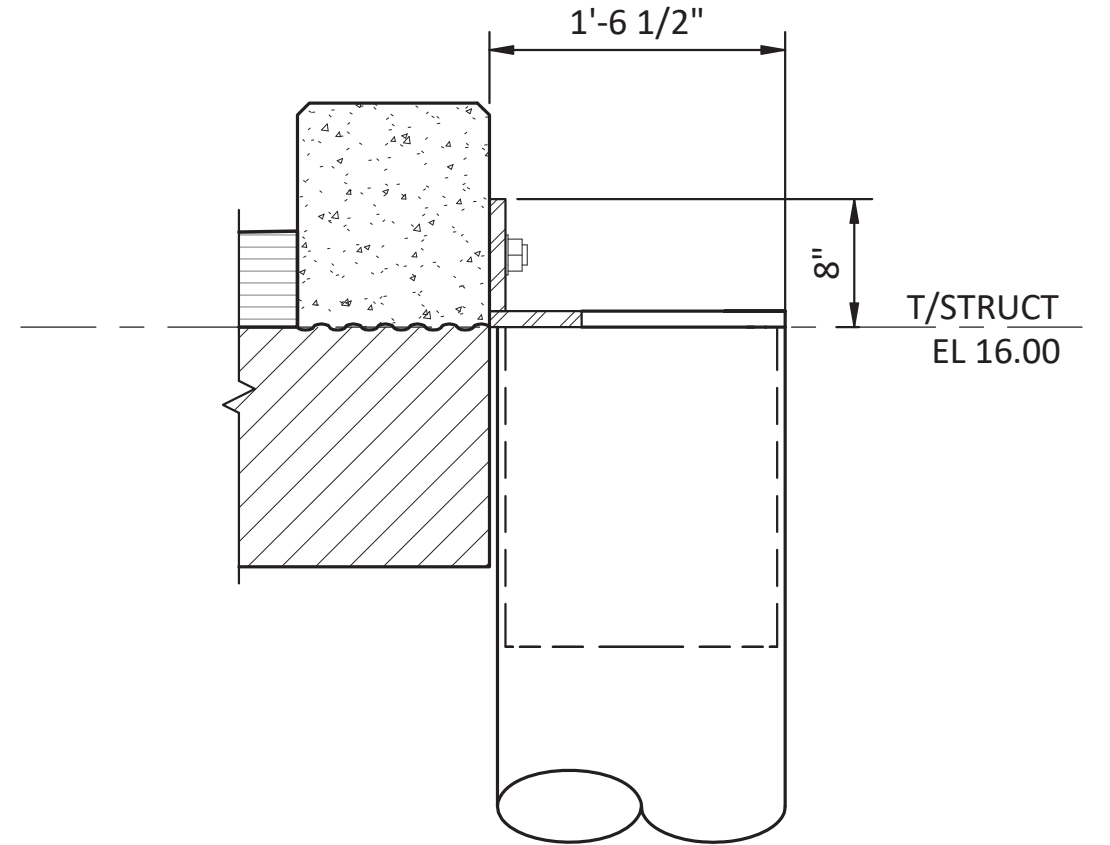
- NOTES:**
1. HDPE PIPE SHALL BE 20" NOMINAL IPS PIPE DIAMETER, DIMENSION RATIO 32.5 PER ASTM F714. ASSUMEND WALL THICKNESS = 1.0"
 2. ORIENT WT TABS TO CLR FACE OF FENDER PILE



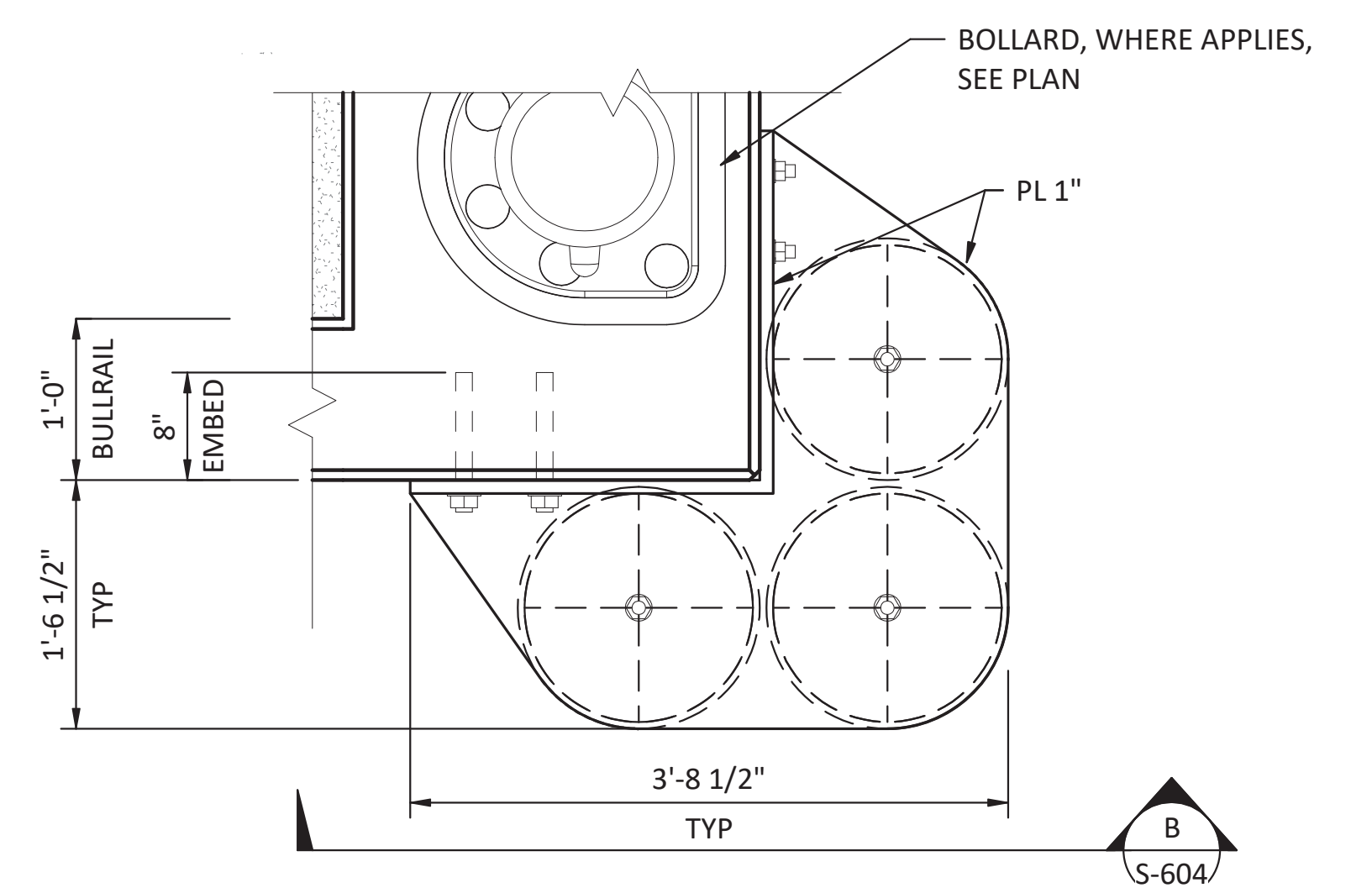
1
S-604
PLAN - FENDER PILE CONNECTION
SCALE: 1" = 1'-0"



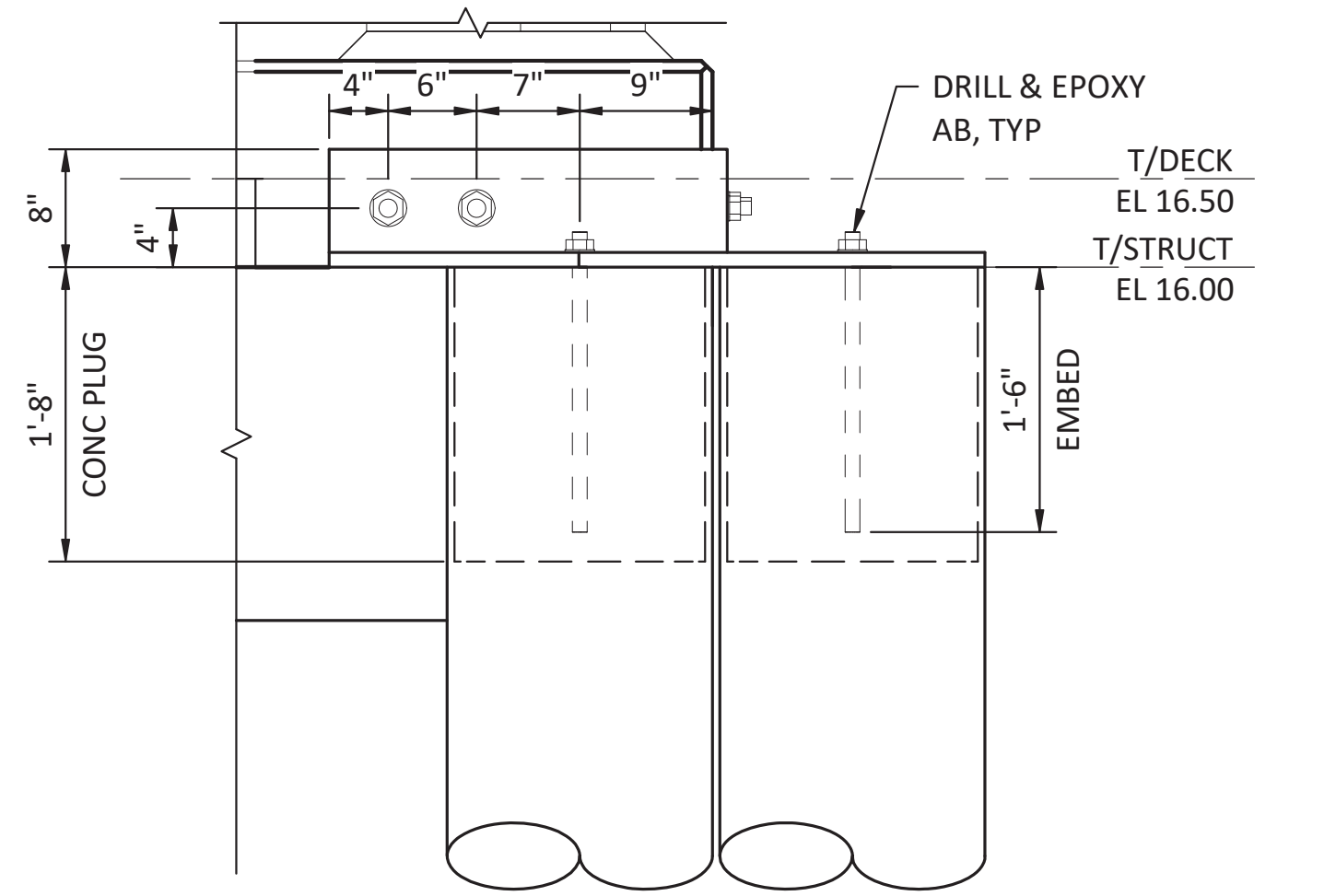
A
S-604
ELEVATION - FENDER PILE CONNECTION (SINGLE PILE)
SCALE: 1" = 1'-0"



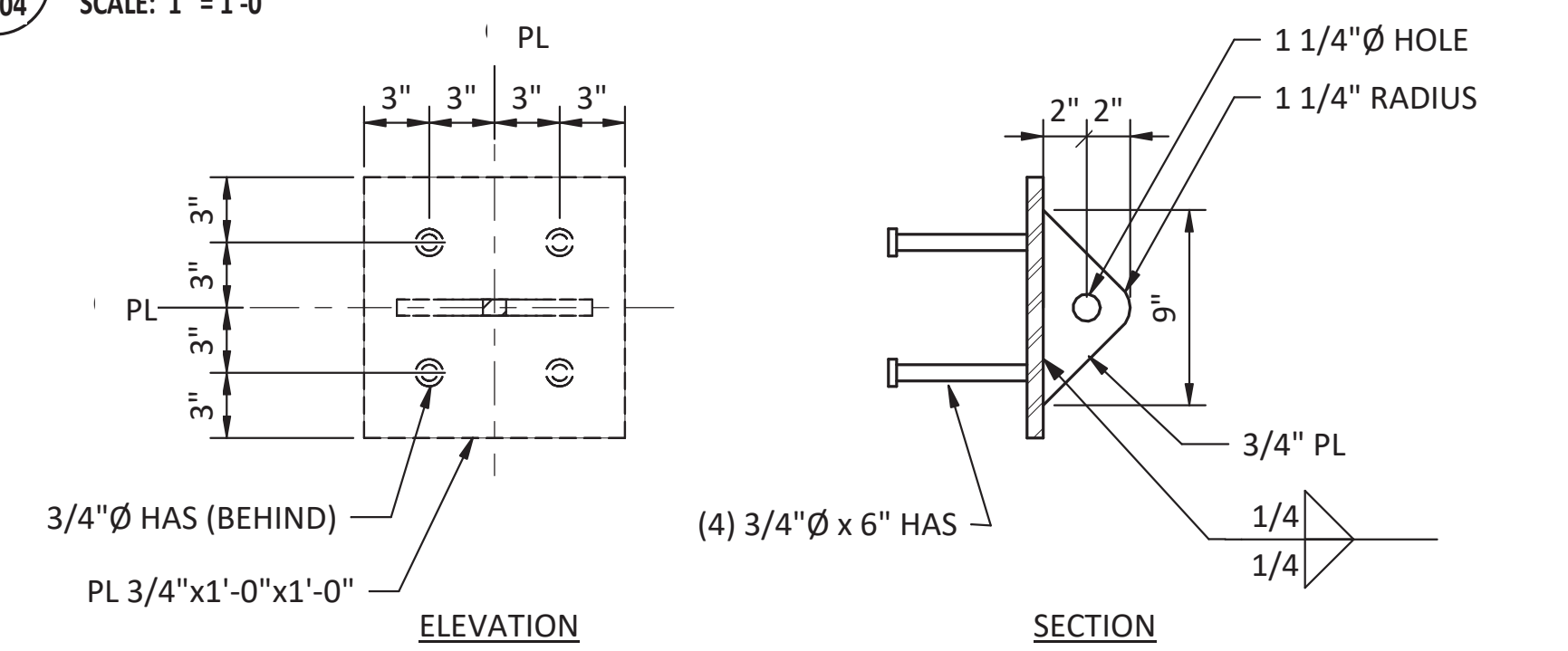
C
S-604
SECTION - FENDER PILE CONNECTION
SCALE: 1" = 1'-0"



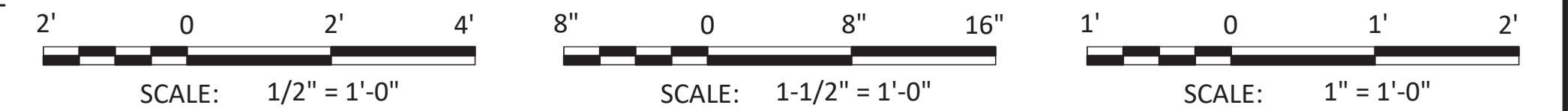
2
S-102
PLAN - FENDER PILE CONNECTION AT CORNER
SCALE: 1" = 1'-0"



B
S-604
ELEVATION - FENDER PILE CONNECTION AT CORNER
SCALE: 1" = 1'-0"



D
S-603
DETAIL - CHAIN EMBED PLATE
SCALE: 1 1/2" = 1'-0"



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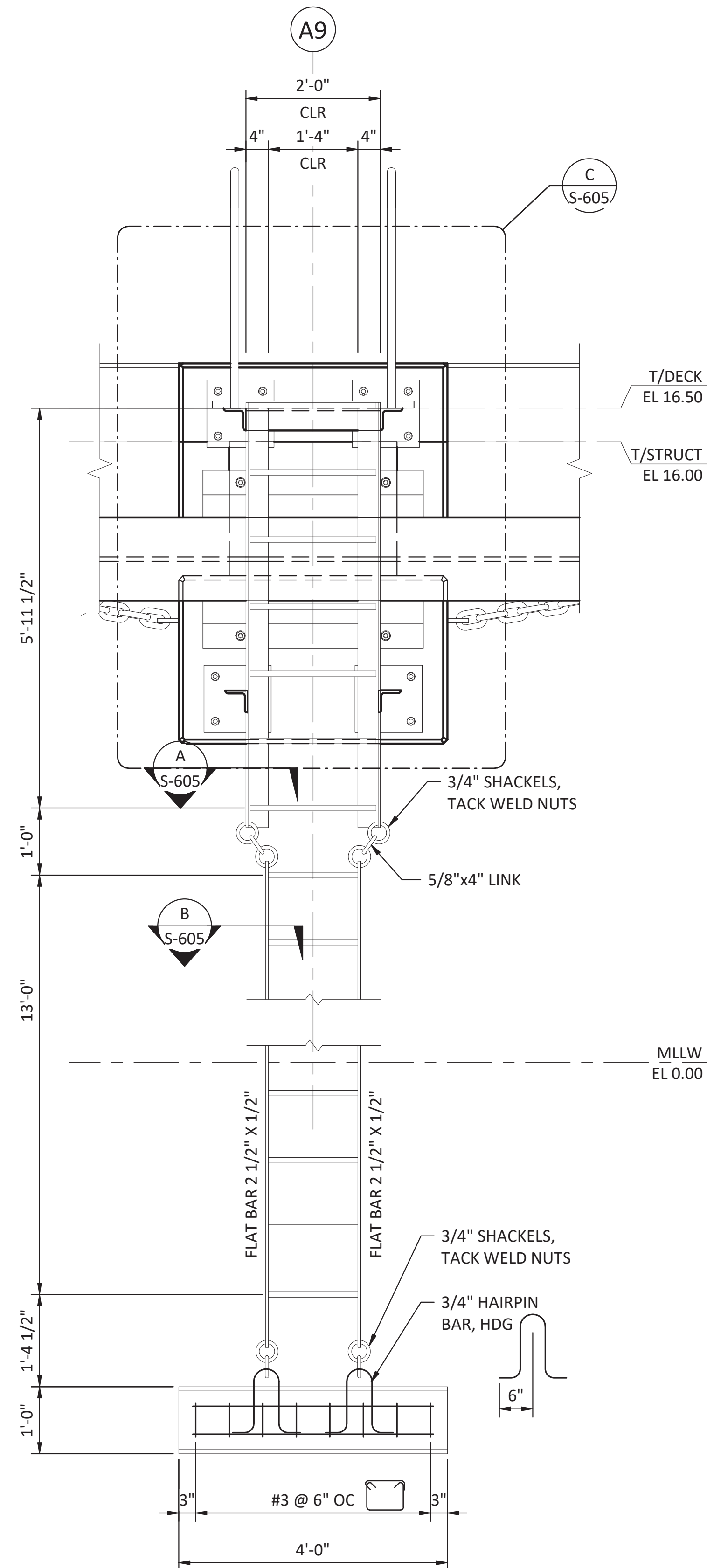
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

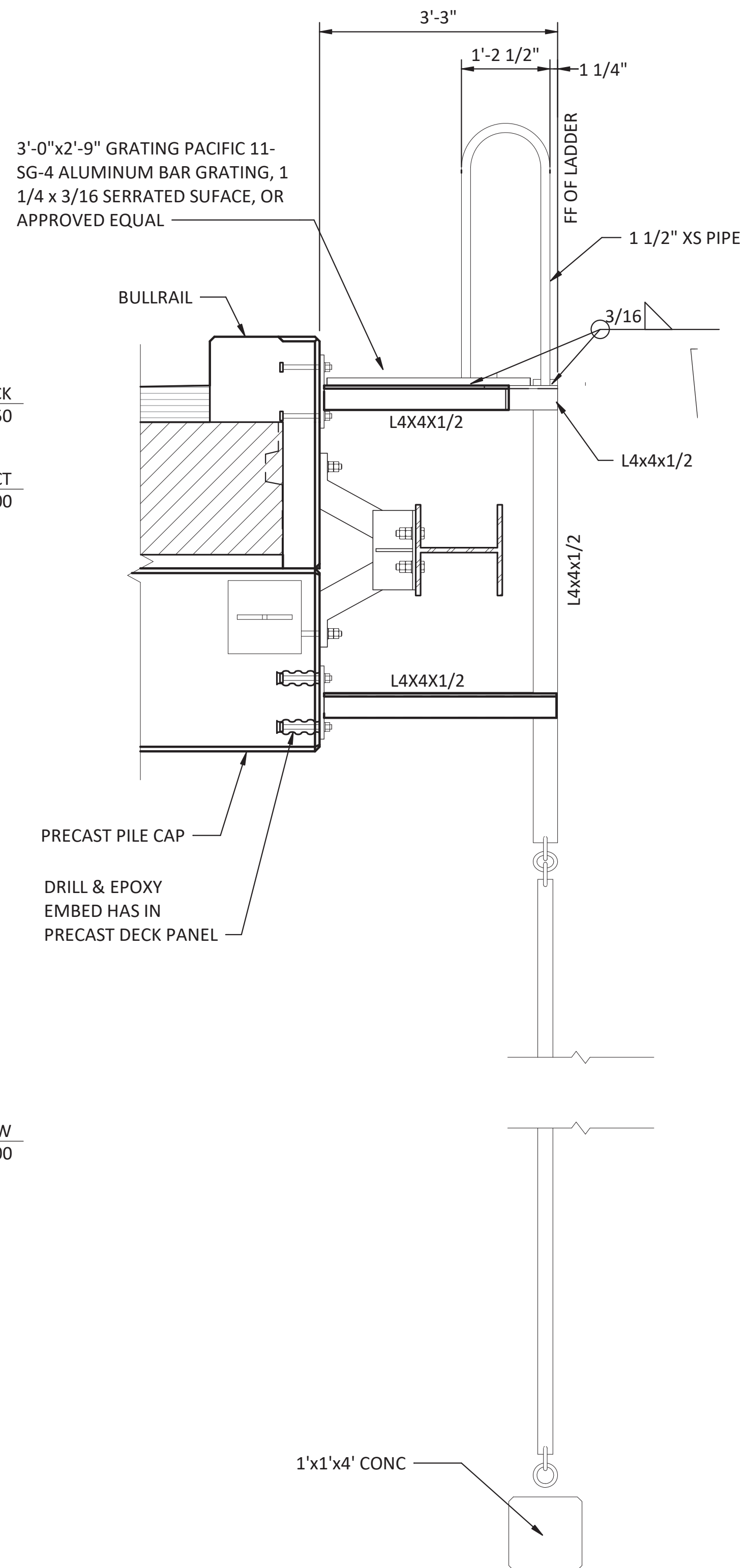
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

**PORT OF NEAH BAY
MAKAH DOCK EXTENSION
FENDER PILE CONNECTION DETAILS**

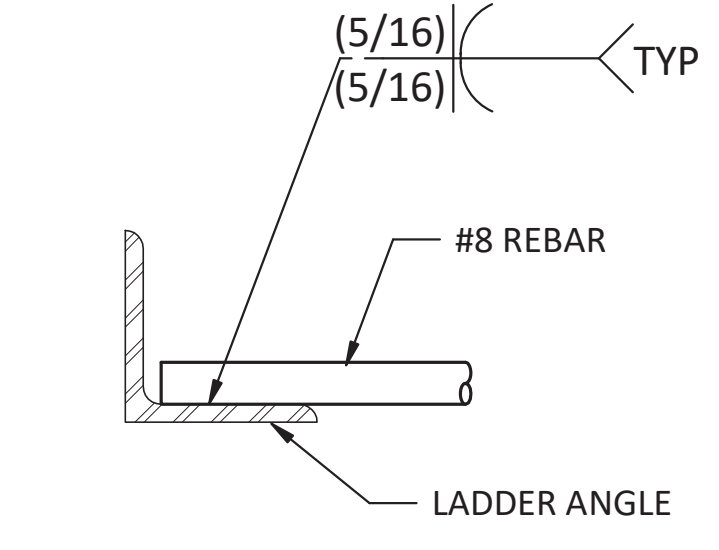
DRAWING NO. **S-604**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 75 OF 104



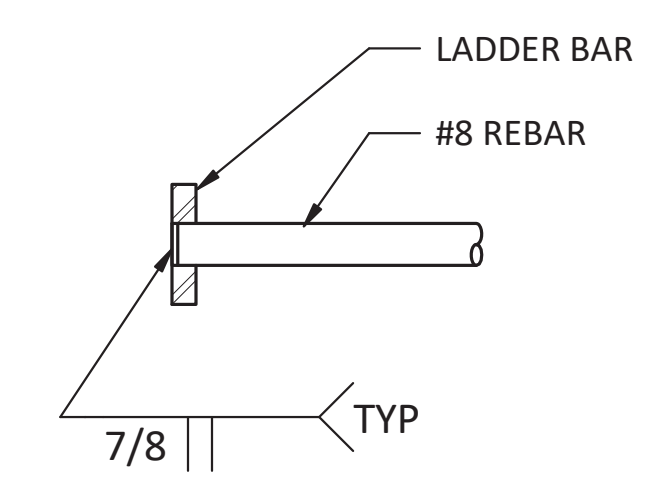
2 ELEVATION - LADDER SCALE: 3/4" = 1'-0"



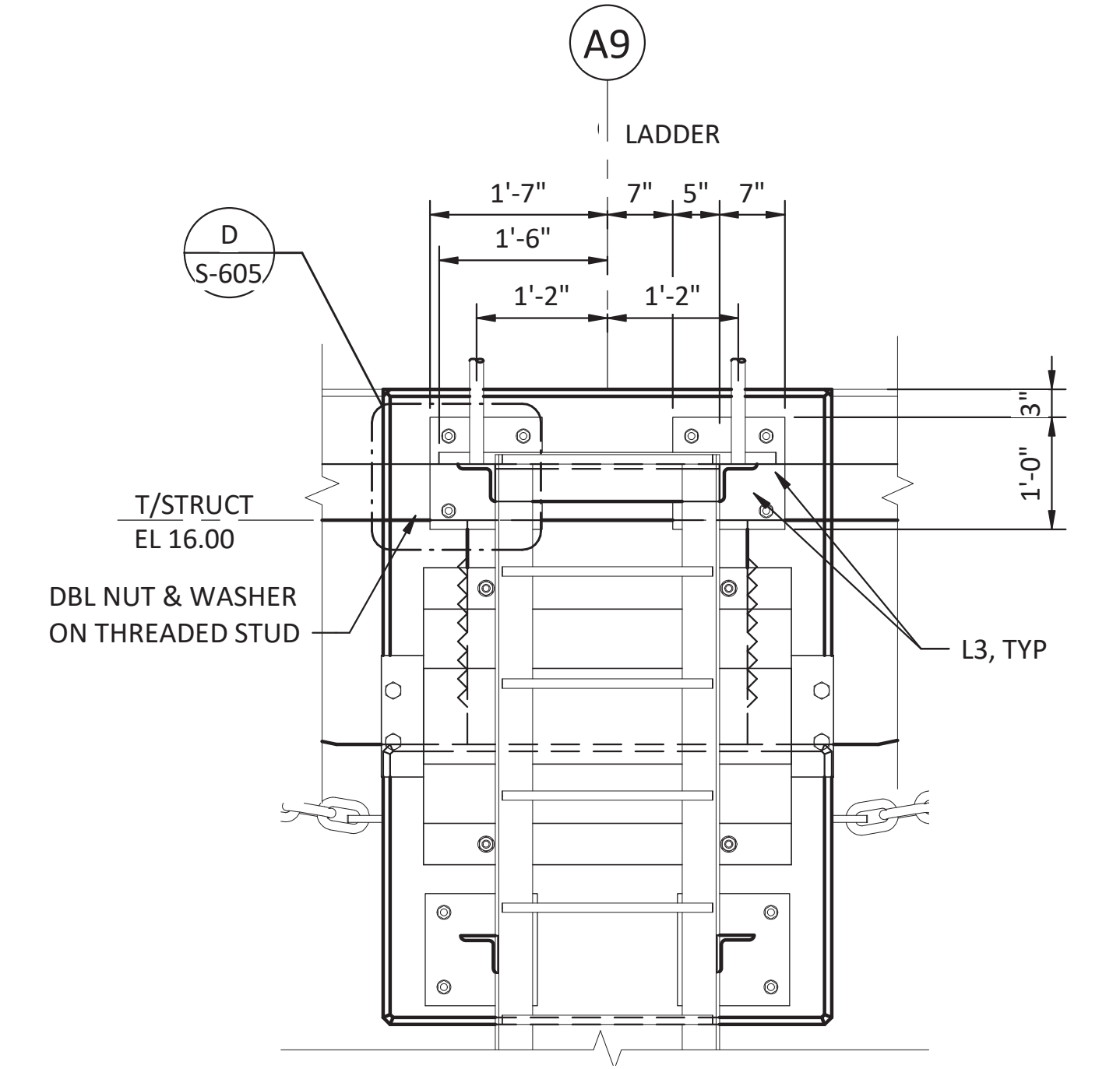
1 DETAIL - LADDER SCALE: 3/4" = 1'-0"



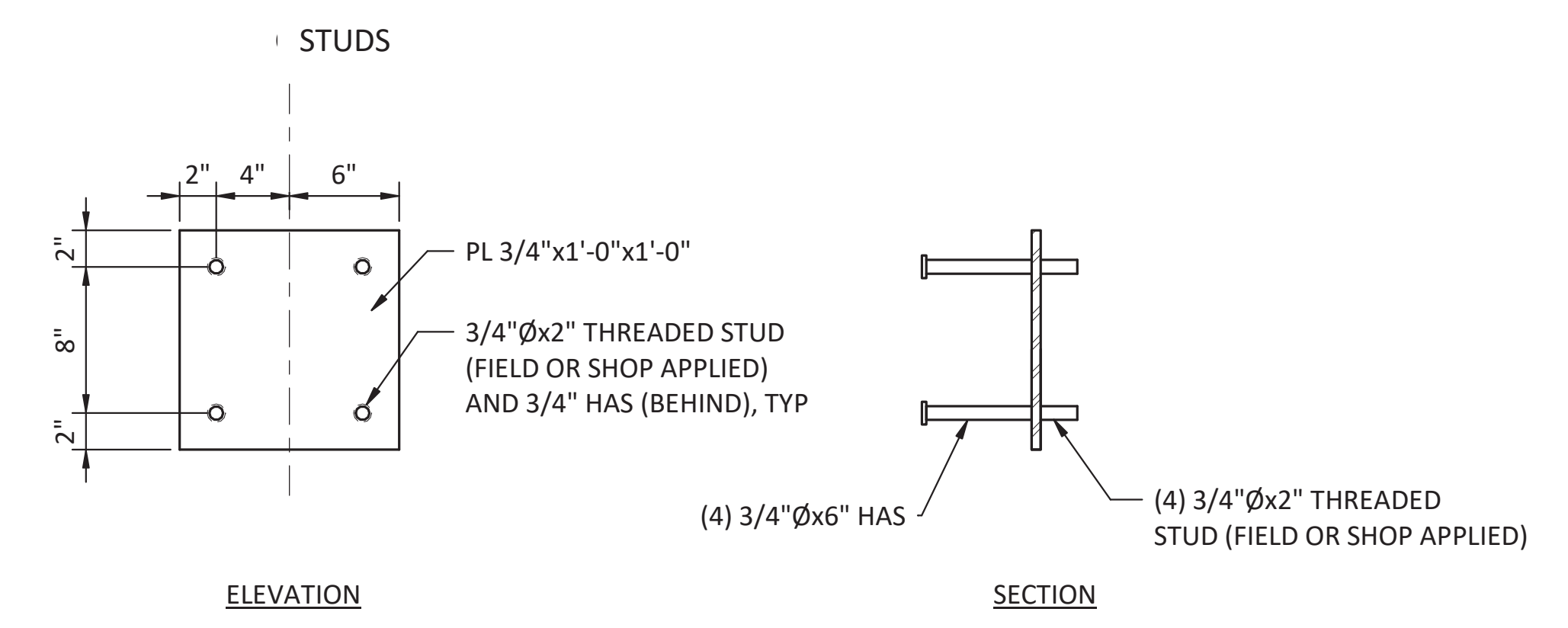
A DETAIL - RUNG SCALE: 3" = 1'-0"



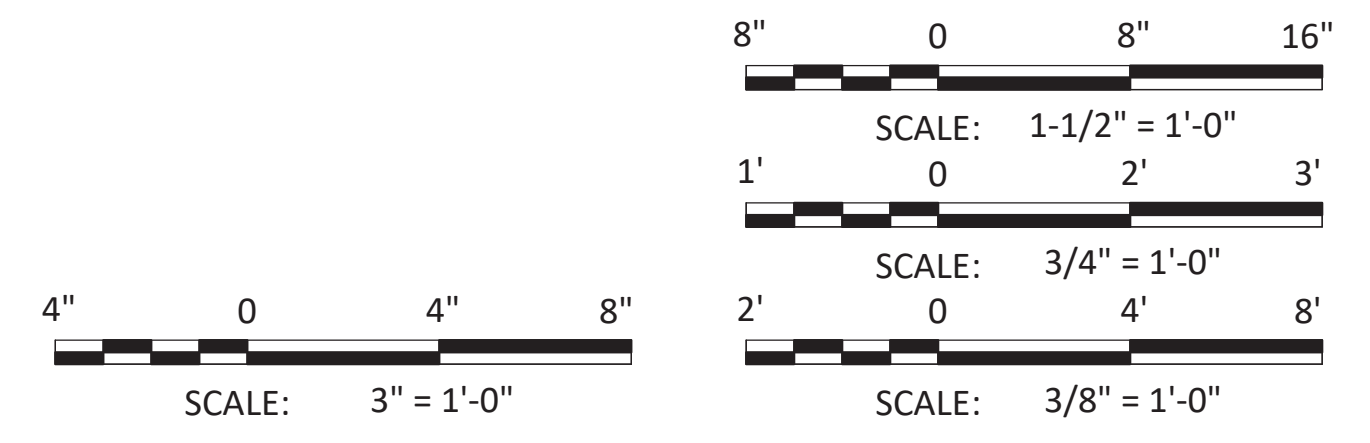
B DETAIL - RUNG SCALE: 3" = 1'-0"



C DETAIL - LADDER ATTACHMENT SCALE: 3/4" = 1'-0"



D LADDER EMBED SCALE: 1 1/2" = 1'-0"



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MARK	REVISION DESCRIPTION	BY	APP.	DATE

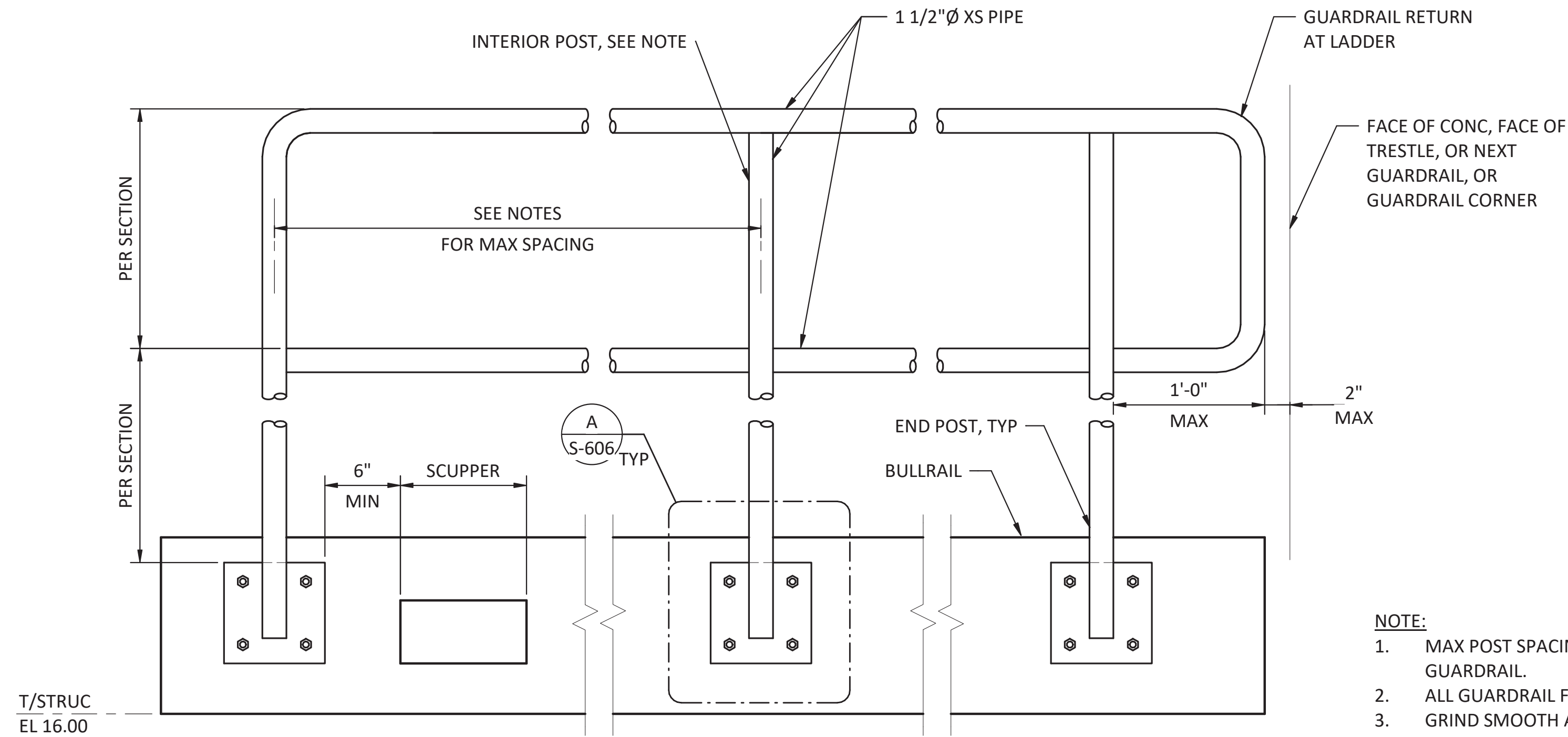
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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

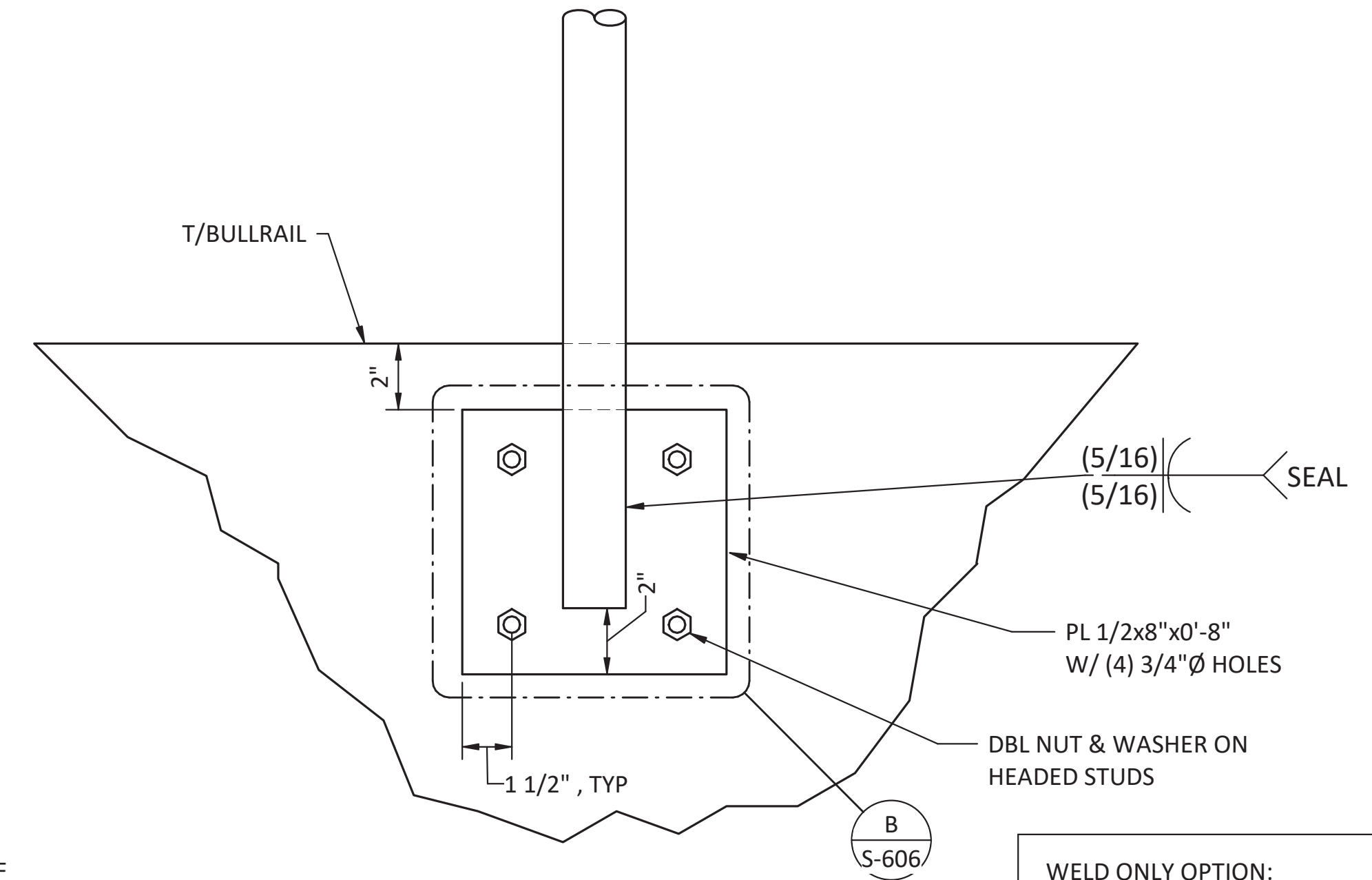
DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

**PORT OF NEAH BAY
MAKAH DOCK EXTENSION
LADDER DETAILS**

DRAWING NO. **S-605**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 76 OF 104



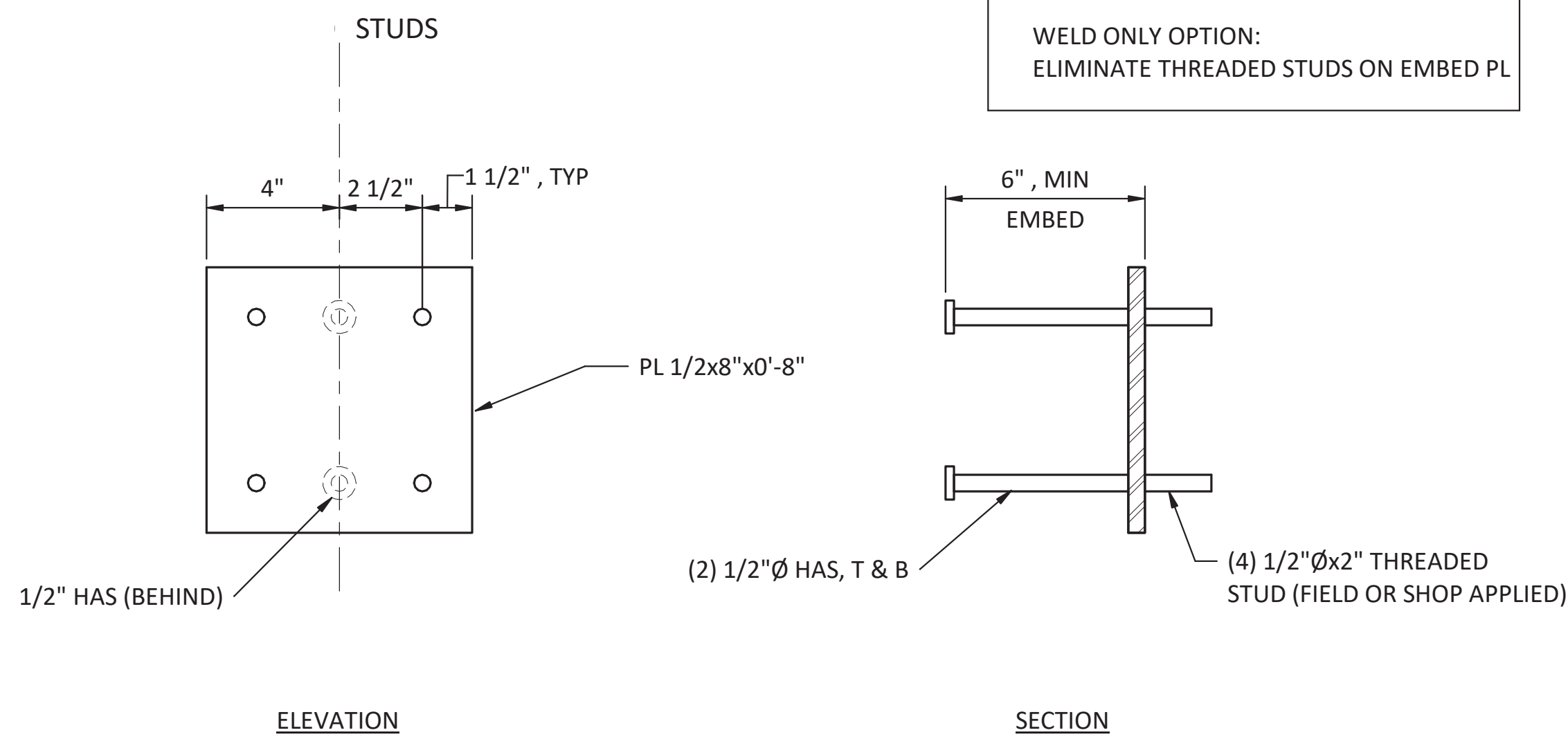
- NOTE:**
1. MAX POST SPACING SHALL BE 5 FT OC, ALONG LENGTH OF GUARDRAIL.
 2. ALL GUARDRAIL FABRICATION SHALL BE WELDED.
 3. GRIND SMOOTH ALL SHARP CORNERS & ROUGH EDGES FTER FABRICATION.
 4. USE AT LEAST TWO POSTS PER GUARDRAIL SEGMENT.
 5. PAINT ACCORDING TO SPECIFICATIONS



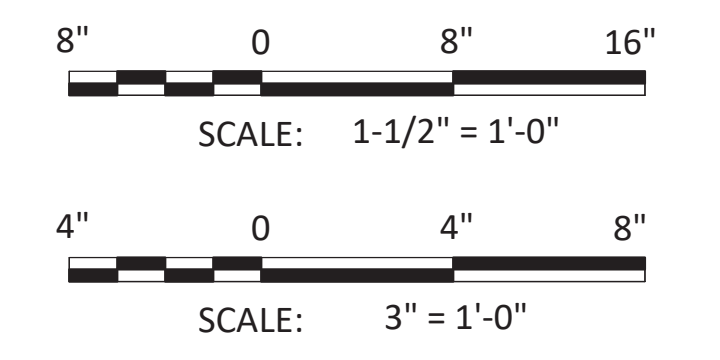
WELD ONLY OPTION:
ELIMINATE PL 1/2"x8"x0'-8" & WELD RAILING STANCHION DIRECTLY TO EMBED PL

1
S-403 **ELEVATION - TRESTLE GUARDRAIL**
SCALE: 1 1/2" = 1'-0"

A
S-606 **DETAIL - GUARDRAIL SUPPORT**
SCALE: 3" = 1'-0"



B
S-606 **DETAIL - PLATFORM AND DOLPHIN GUARDRAIL**
SCALE: 3" = 1'-0"



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PORT OF NEAH BAY
MAKAH INDIAN TRIBE

DRAWN BY: PKO
DESIGN BY: PKO
CHECK BY: JLR
PROJ MGR: EAN

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
GUARDRAIL DETAILS

DRAWING NO. **S-606**
PROJECT NO. A16.0096
DATE: 9/29/2017
SHEET NO. 77 OF 104

FIRE ABBREVIATION LIST

(E)	EXISTING
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
CO	CLEANOUT
DIA	DIAMETER
DN	DOWN
EXP	EXPANSION JOINT
F	FIRE PIPE
FDC	FIRE DEPARTMENT CONNECTION
GAL	GALLON
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
ID	INSIDE DIAMETER
IN	INCH
L	LENGTH
MFG	MANUFACTURER
MIN	MINIMUM
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PSI	POUNDS PER SQUARE INCH
SP	STAND PIPE
TYP	TYPICAL
W/	WITH

FIRE GENERAL NOTES

- 1 OBTAIN AND PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS.
- 2 LOCATE ALL VALVES, TRAPS, TEST PORTS DAMPERS, CONTROLS, CLEANOUTS, ETC. TO BE ACCESSIBLE FOR MAINTENANCE, ADJUSTMENTS, AND TESTING. PROVIDE ACCESS PANELS FOR ALL CONCEALED DEVICES. ACCESS PANELS SHALL BE PROVIDED AND COORDINATED WITH ARCHITECTURAL SPECIFICATIONS.
- 3 SEISMIC PROVISIONS ARE REQUIRED - REFER TO SPECIFICATIONS.
- 4 A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	FIRE SPRINKLER PIPING
	PIPE DOWN
	PIPE UP
	BRANCH - TOP CONNECTION
	BRANCH - BOTTOM CONNECTION
	BRANCH - SIDE CONNECTION
	CAP END OF PIPE
	PIPE OR DUCT BREAK (GRAPHIC ONLY - CONTINUOUS PIPE/DUCT)
	FLOW DIRECTION
	PIPE SLOPE (DOWNWARD IN DIRECTION OF ARROW)
	BALL VALVE
	FLEXIBLE PIPE CONNECTION
	EXPANSION JOINT
	EXPANSION LOOP
	REDUCER
	UNION
	POINT OF CONNECTION TO EXISTING

FIRE EQUIPMENT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	TYPE	SERVICE	DESCRIPTION/DATA	NOTES
FDC-1	-	-	FIRE STAND PIPE	FIRE	FIRE DEPARTMENT CONNECTION STAND PIPE	
SP-1	-	-	FIRE STAND PIPE	FIRE	-	

NOTES:

FIRE EXPANSION JOINT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	TYPE	SIZE (IN)	SERVICE	CONFIGURATION		TRAVEL (IN)		FORCES (LB)		ANCHOR		NOTES
						SINGLE	DOUBLE	COMP	EXT	JOINT SEAL	PRESSURE	TYPE	POSITION	
EXP-1	METRAFLEX	METRALOOP	-	6	FIRE	X	-	-	-	-	-	-	-	
EXP-2	METRAFLEX	METRALOOP	-	6	FIRE	X	-	-	-	-	-	-	-	
EXP-3	METRAFLEX	METRALOOP	-	6	FIRE	X	-	-	-	-	-	-	-	
EXP-7	METRAFLEX	METRALOOP	-	6	FIRE	X	-	-	-	-	-	-	-	

NOTES:



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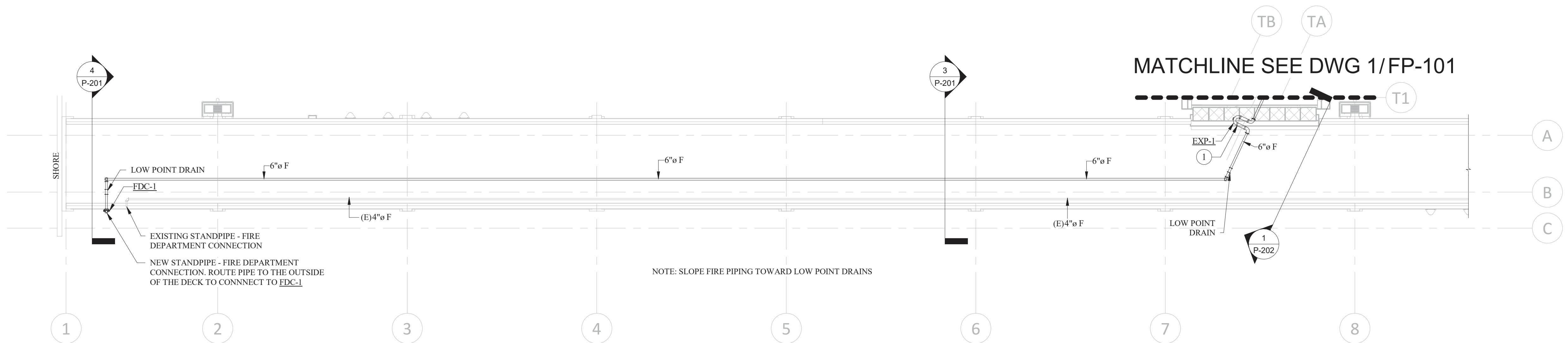
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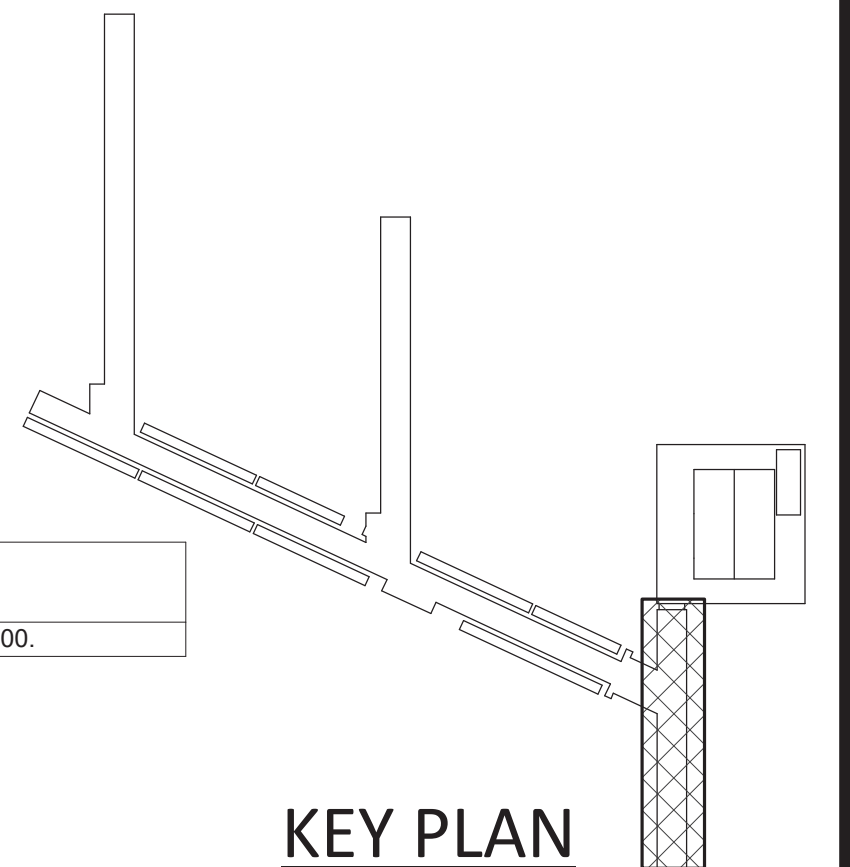
PORT OF NEAH BAY
 LEGENDS ABBREVIATIONS AND SCHEDULES

DRAWING NO. **FP001**
 PROJECT NO. 15051
 DATE: 08/01/2017
 SHEET NO. _____



1 SURFACE FEATURES EXISTING - FIRE PROTECTION
SCALE: 1/16" = 1'-0"

PLAN NOTES
1 FOR DETAIL OF EXP-1 REFER TO DETAIL 2/P-300.



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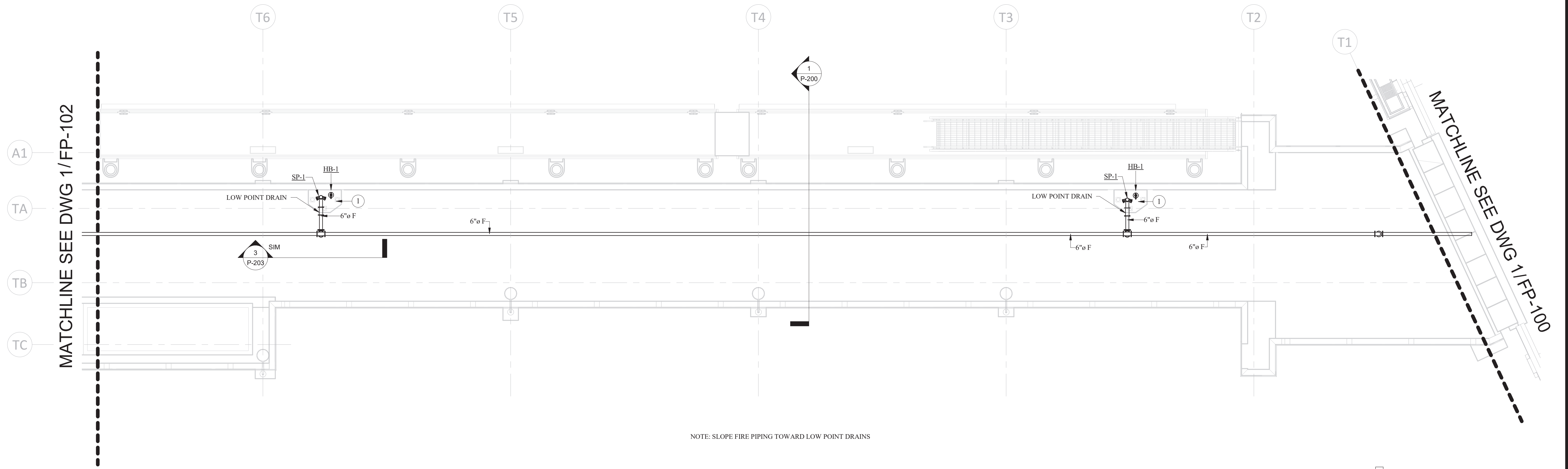
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PORT OF NEAH BAY
EXISTING SITE - FIRE PROTECTION PLAN

DRAWING NO. **FP-100**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

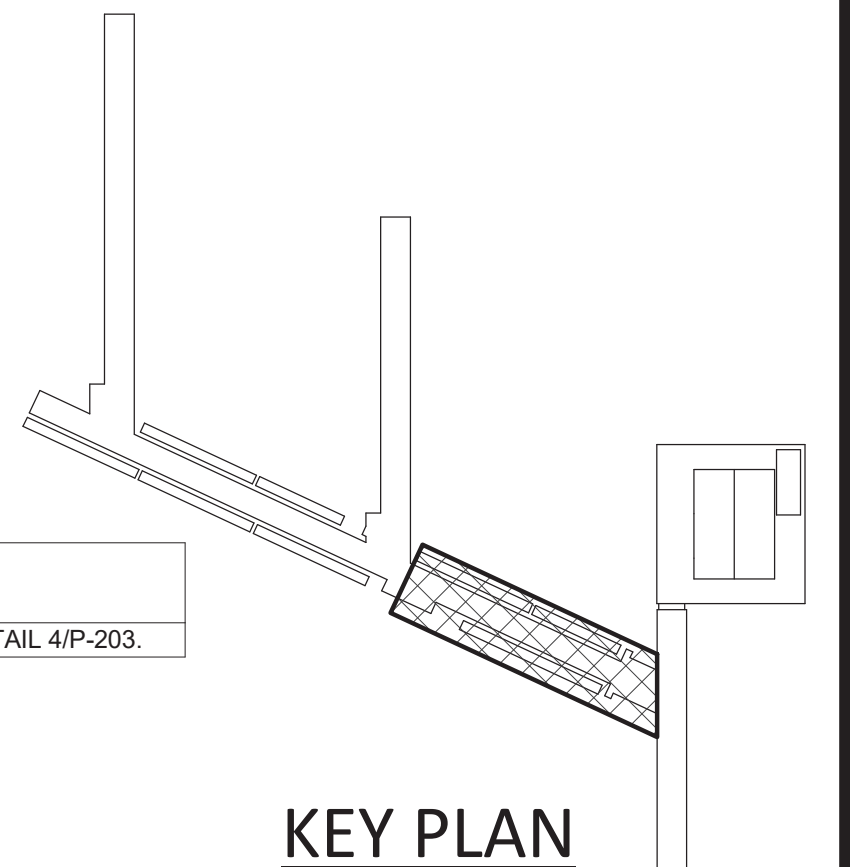
MARK	REVISION DESCRIPTION	BY	APP.	DATE



NOTE: SLOPE FIRE PIPING TOWARD LOW POINT DRAINS

1 TRESTLE 1 - FIRE PROTECTION
 SCALE: 1/8" = 1'-0"

PLAN NOTES
 1 FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



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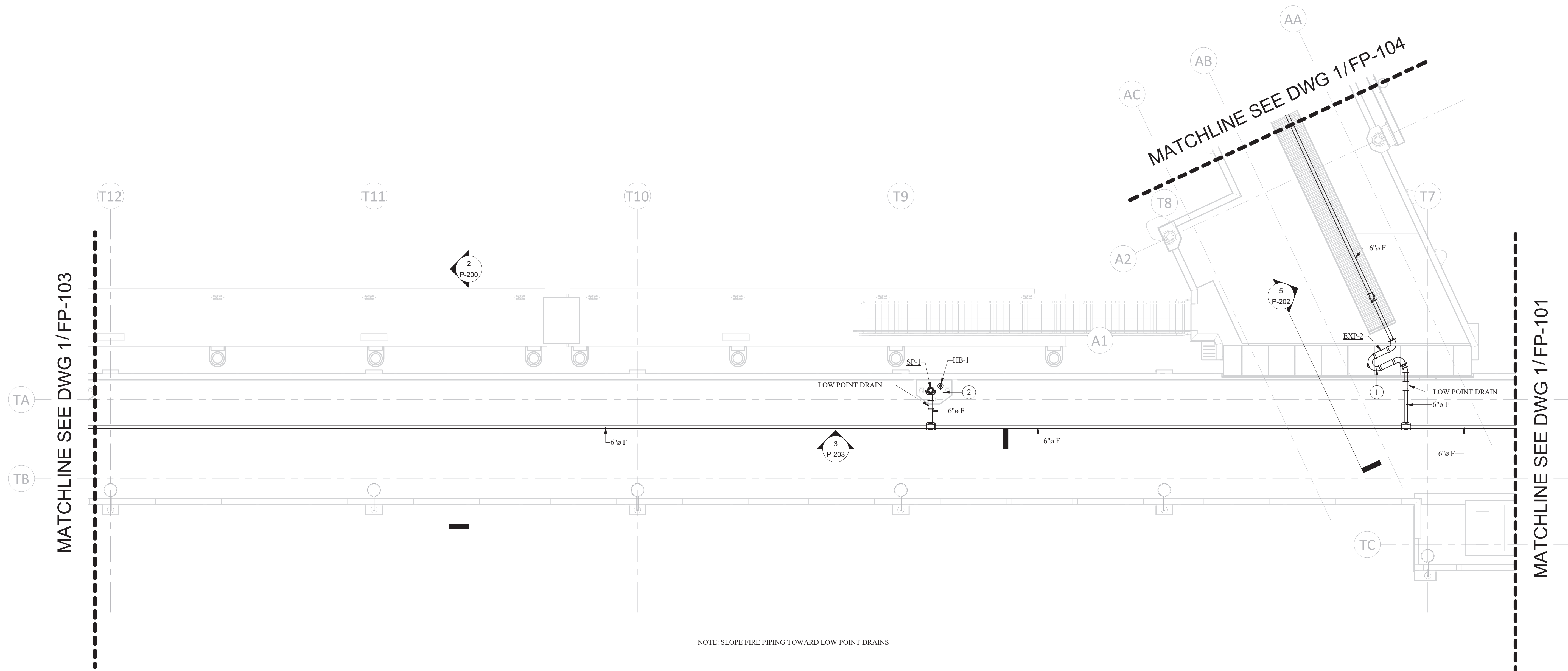
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 CHECK BY: CA
 PROJ MGR: JB

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PORT OF NEAH BAY
 TRESTLE 1 - FIRE PROTECTION PLAN

DRAWING NO. **FP-101**
 PROJECT NO. 15051
 DATE: 08/01/2017
 SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE



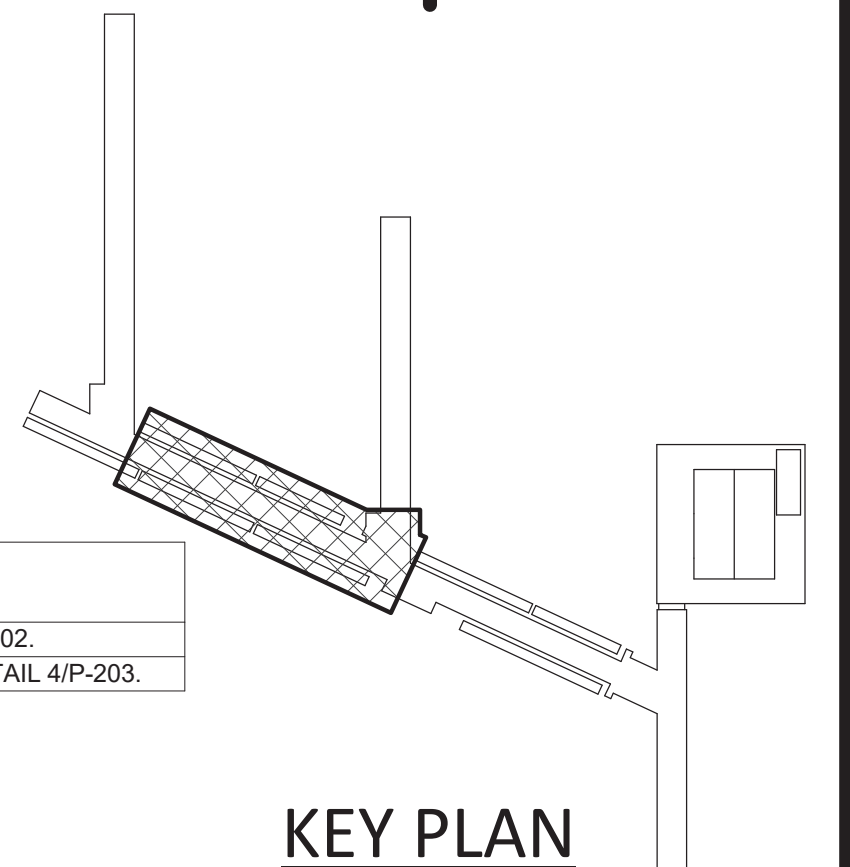
MATCHLINE SEE DWG 1/FP-103

MATCHLINE SEE DWG 1/FP-101

NOTE: SLOPE FIRE PIPING TOWARD LOW POINT DRAINS

1 TRESTLE 2 - FIRE PROTECTION
 SCALE: 1/8" = 1'-0"

PLAN NOTES	
1	FOR DETAIL OF EXP-2 REFER TO DETAIL 6/P-202.
2	FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



KEY PLAN

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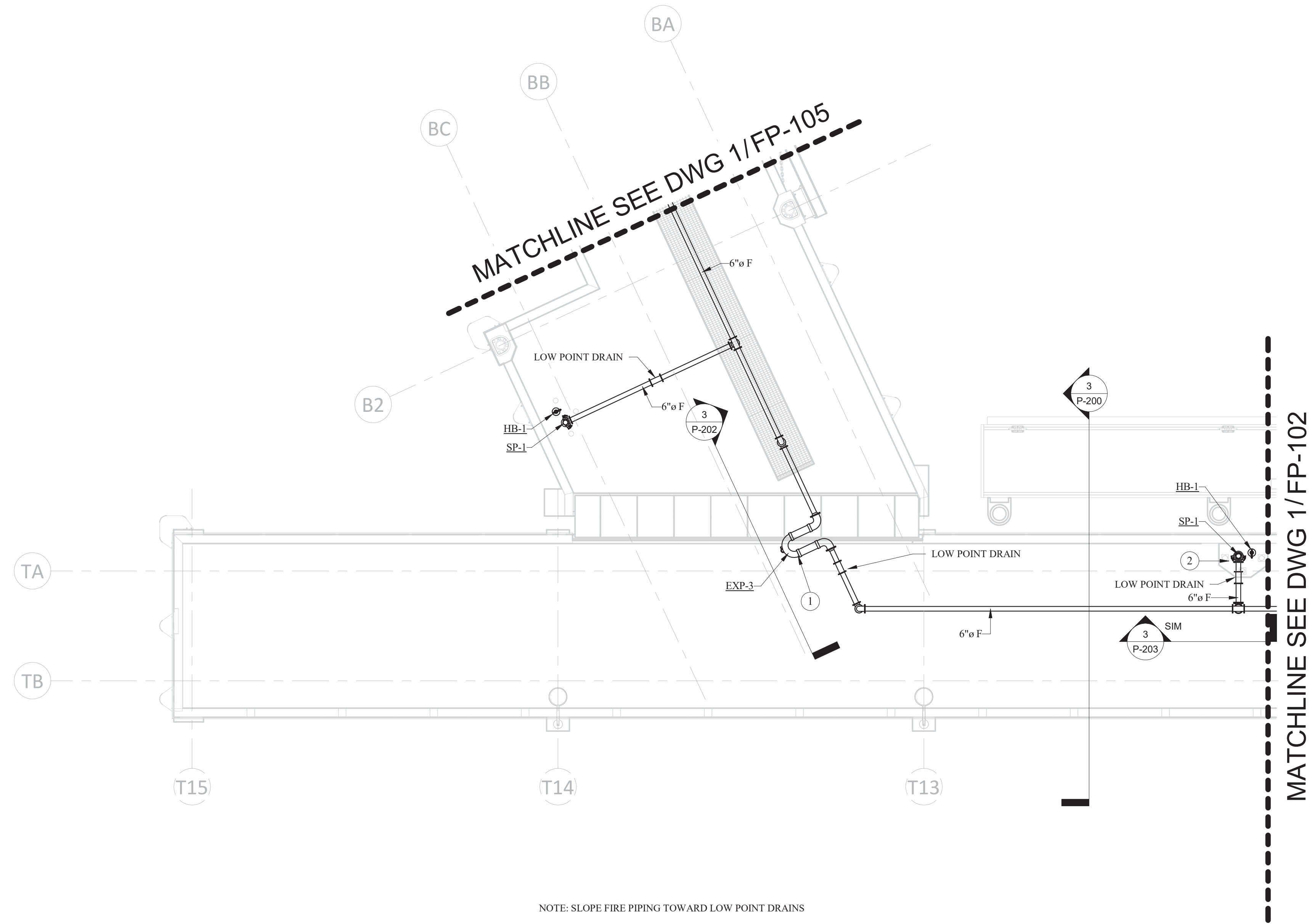


DRAWN BY: KT
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 PROJ MGR: JB

PORT OF NEAH BAY
 TRESTLE 2 - FIRE PROTECTION PLAN

DRAWING NO. **FP-102**
 PROJECT NO. 15051
 DATE: 08/01/2017
 SHEET NO.

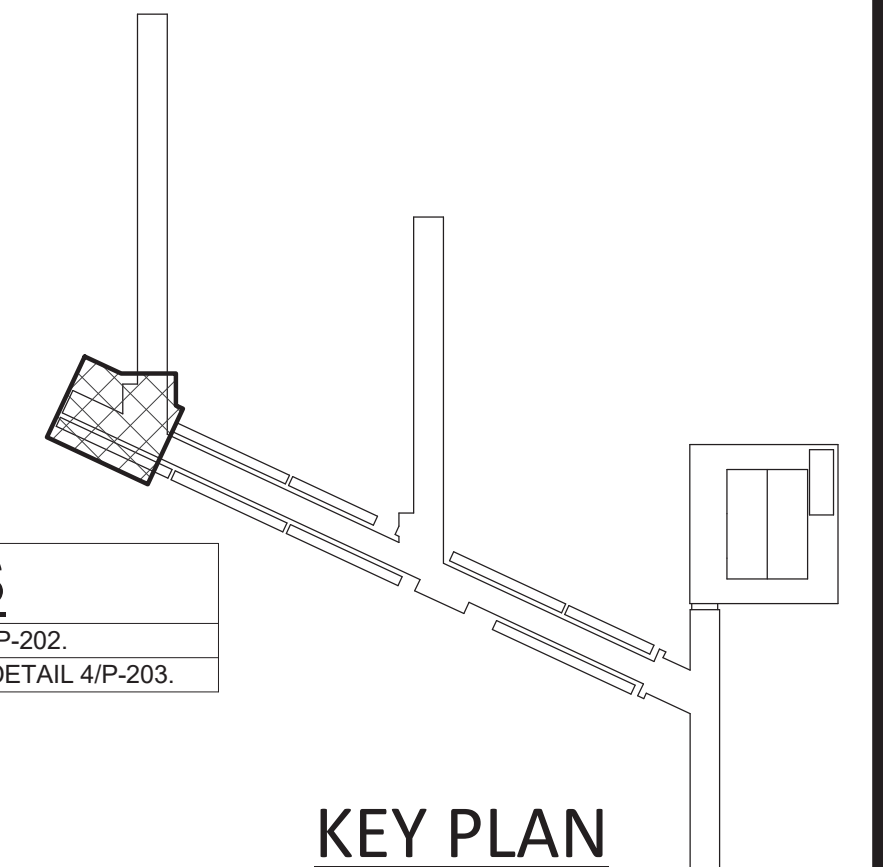
MARK	REVISION DESCRIPTION	BY	APP.	DATE



NOTE: SLOPE FIRE PIPING TOWARD LOW POINT DRAINS

1 TRESTLE 3 - FIRE PROTECTION
SCALE: 1/8" = 1'-0"

PLAN NOTES	
1	FOR DETAIL OF EXP-3 REFER TO DETAIL 4/P-202.
2	FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



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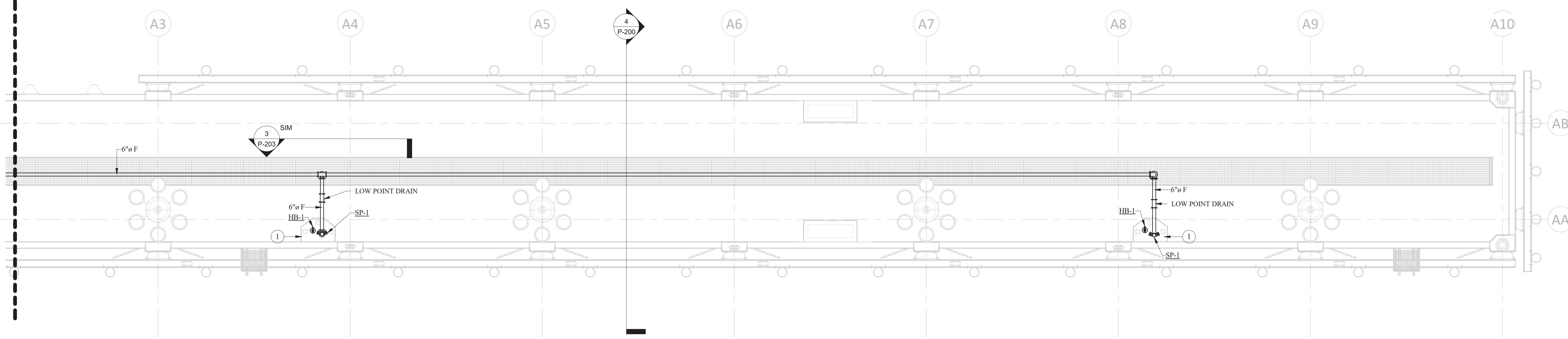
90% SUBMITTAL - NOT FOR CONSTRUCTION

PORT OF NEAH BAY
TRESTLE 3 - FIRE PROTECTION PLAN

DRAWING NO. **FP-103**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE

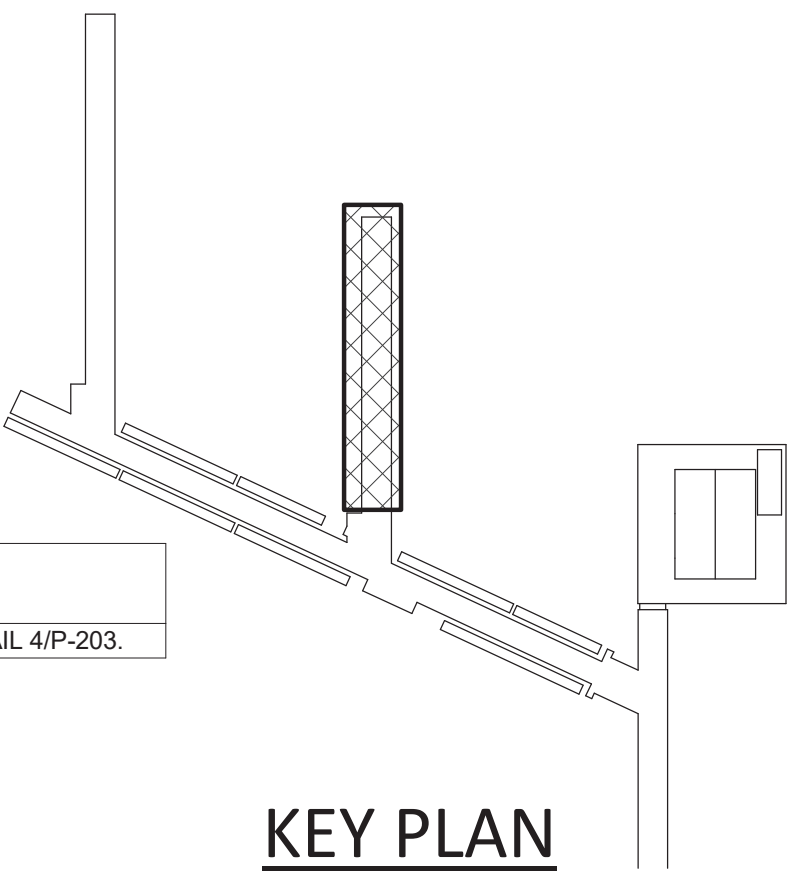
MATCHLINE SEE DWG 1/FP-102



NOTE: SLOPE FIRE PIPING TOWARD LOW POINT DRAINS

1 PIER 1 - FIRE PROTECTION
 SCALE: 1/8" = 1'-0"

PLAN NOTES
 1 FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



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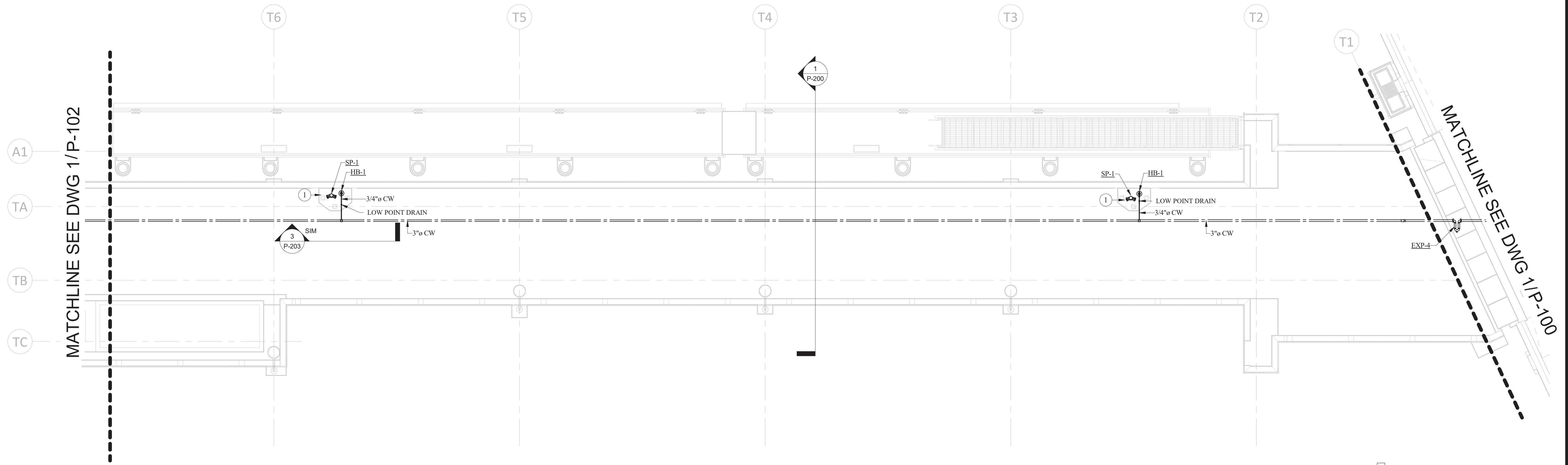
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 PROJ MGR: JB

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PORT OF NEAH BAY
 PIER 1 - FIRE PROTECTION PLAN

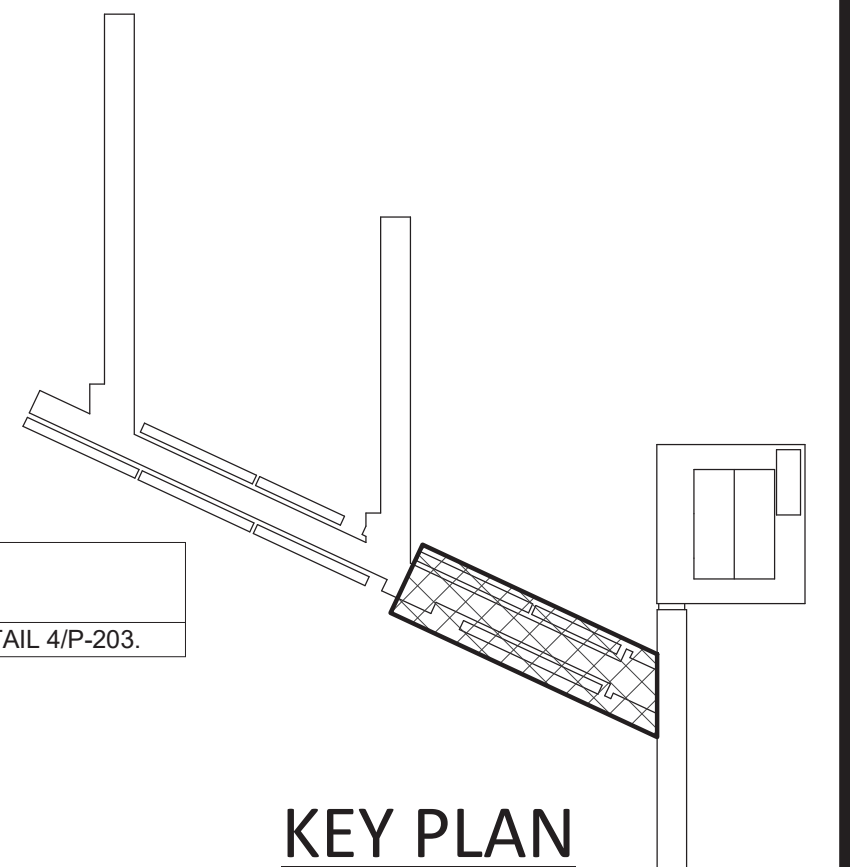
DRAWING NO. **FP-104**
 PROJECT NO. 15051
 DATE: 08/01/2017
 SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE



1 TRESTLE 1 - PLUMBING PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES
1 FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



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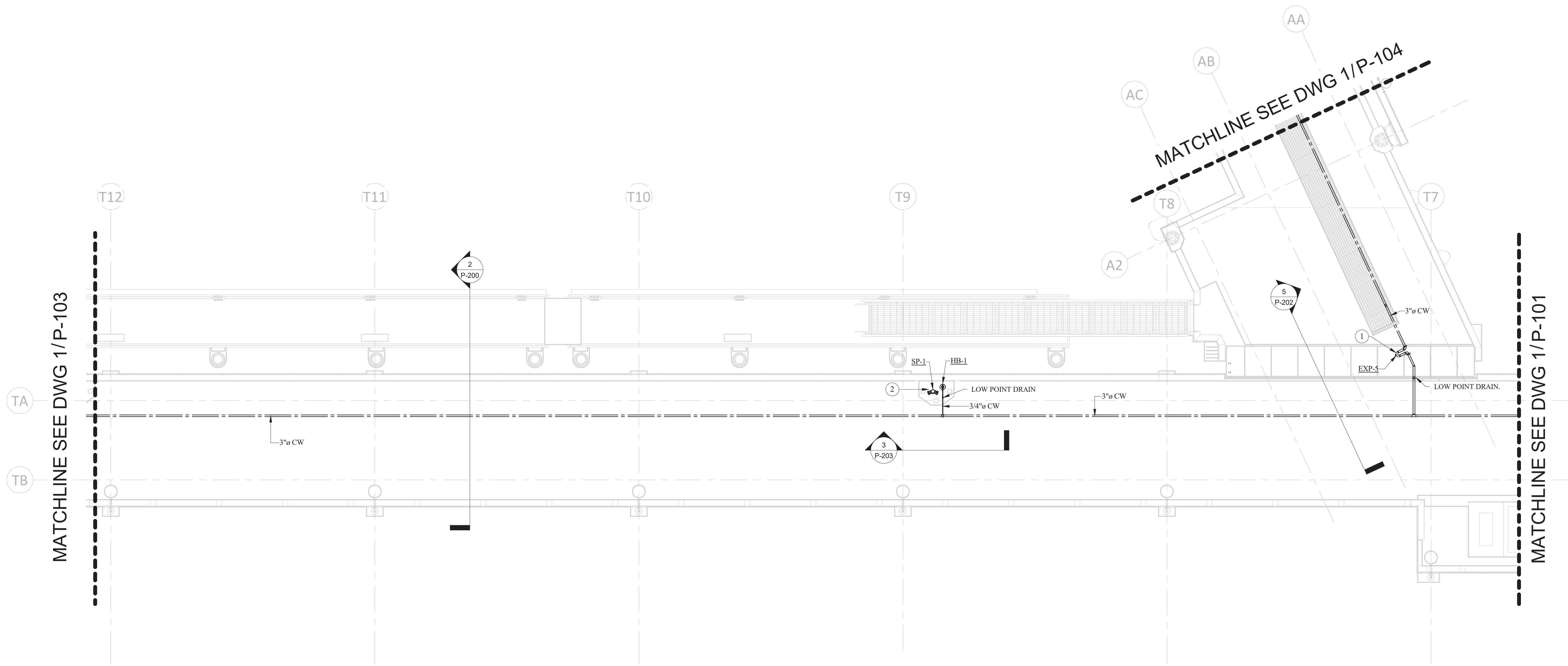
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DESIGN BY: KT
CHECK BY: CA
PROJ MGR: JB

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PORT OF NEAH BAY
TRESTLE 1 - PLUMBING PLAN

DRAWING NO. **P-101**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE



1 TRESTLE 2 - PLUMBING PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES	
1	FOR DETAIL OF EXP-5 REFER TO DETAIL 6/P-202.
2	FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.

KEY PLAN

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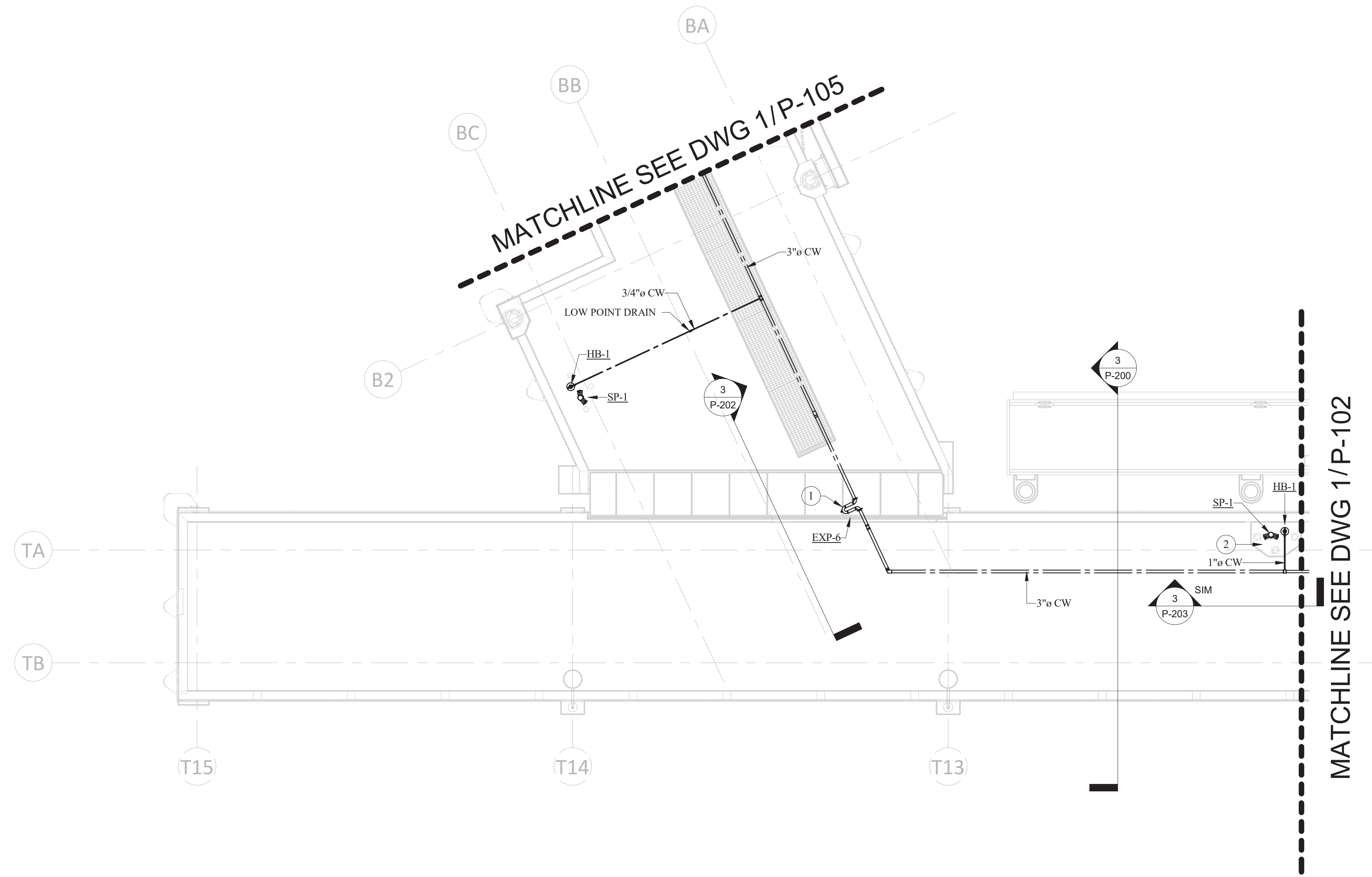


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CHECK BY: CA
PROJ MGR: JB

PORT OF NEAH BAY
TRESTLE 2 - PLUMBING PLAN

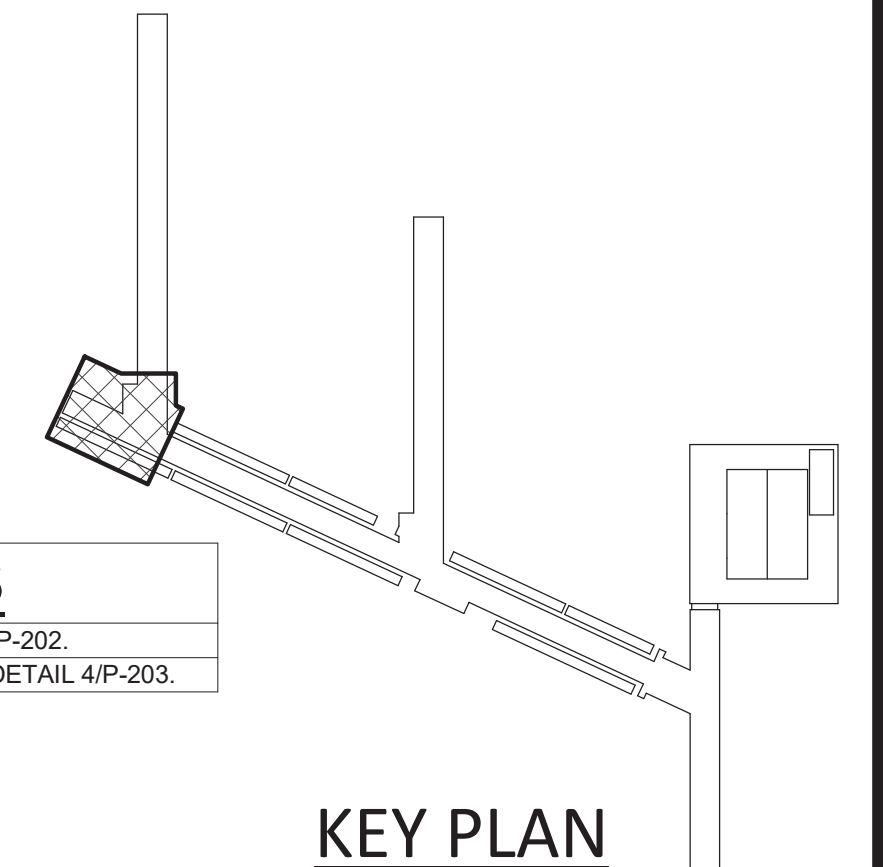
DRAWING NO. **P-102**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE



1 TRESTLE 3 - PLUMBING PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES	
1	FOR DETAIL OF EXP-5 REFER TO DETAIL 6/P-202.
2	FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



KEY PLAN

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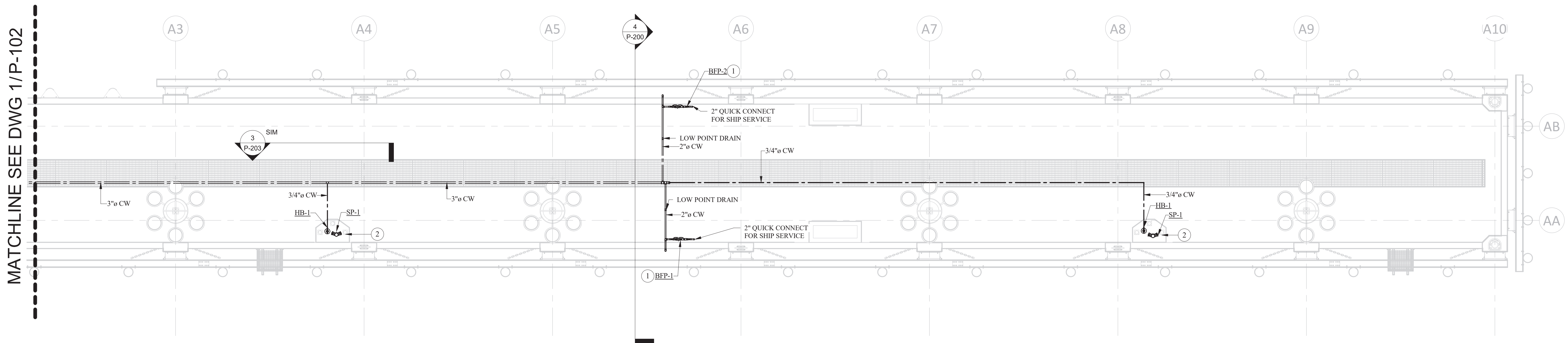


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PROJ MGR: JB

PORT OF NEAH BAY
TRESTLE 3 - PLUMBING PLAN

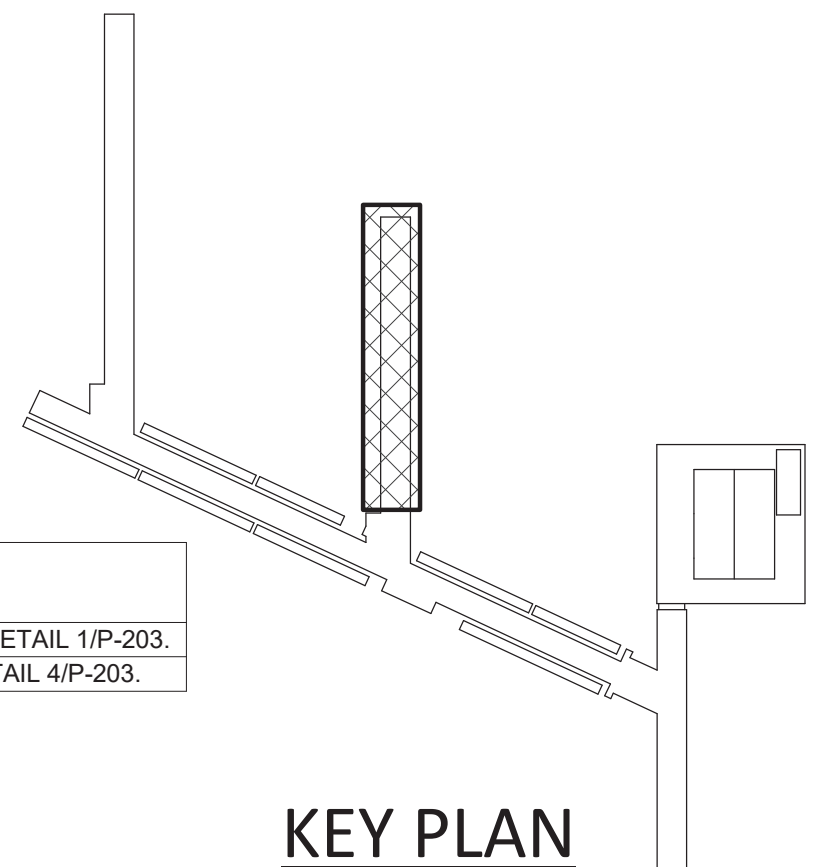
DRAWING NO. **P-103**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE



1 PIER 1 - PLUMBING PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES	
1	FOR DETAIL OF BFP-1 AND BFP-2 REFER TO DETAIL 1/P-203.
2	FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.



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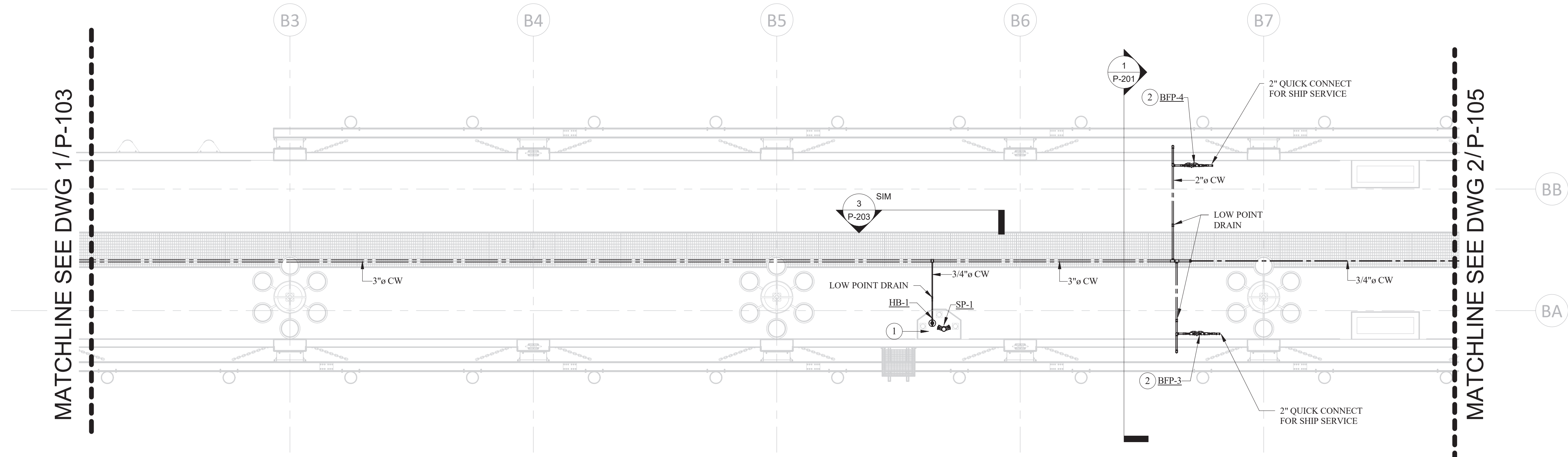
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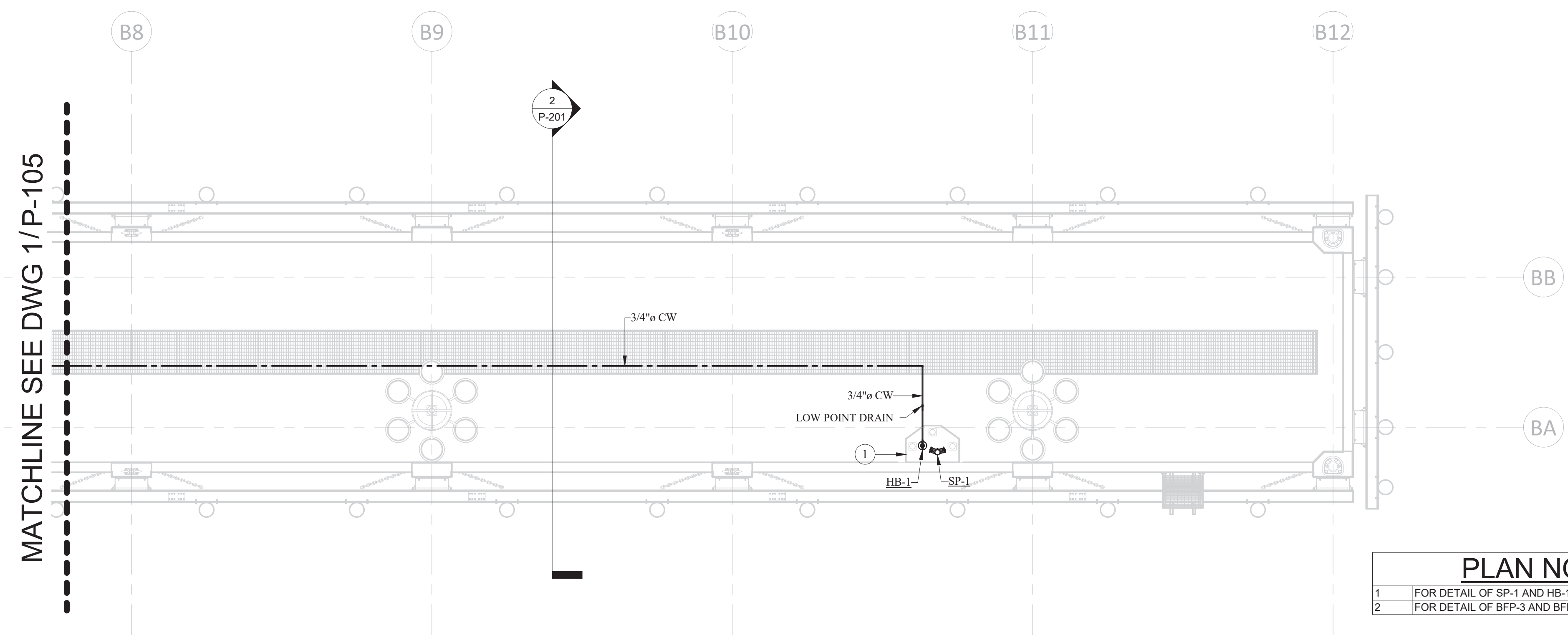
PORT OF NEAH BAY
PIER 1 - PLUMBING PLAN

DRAWING NO. **P-104**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE



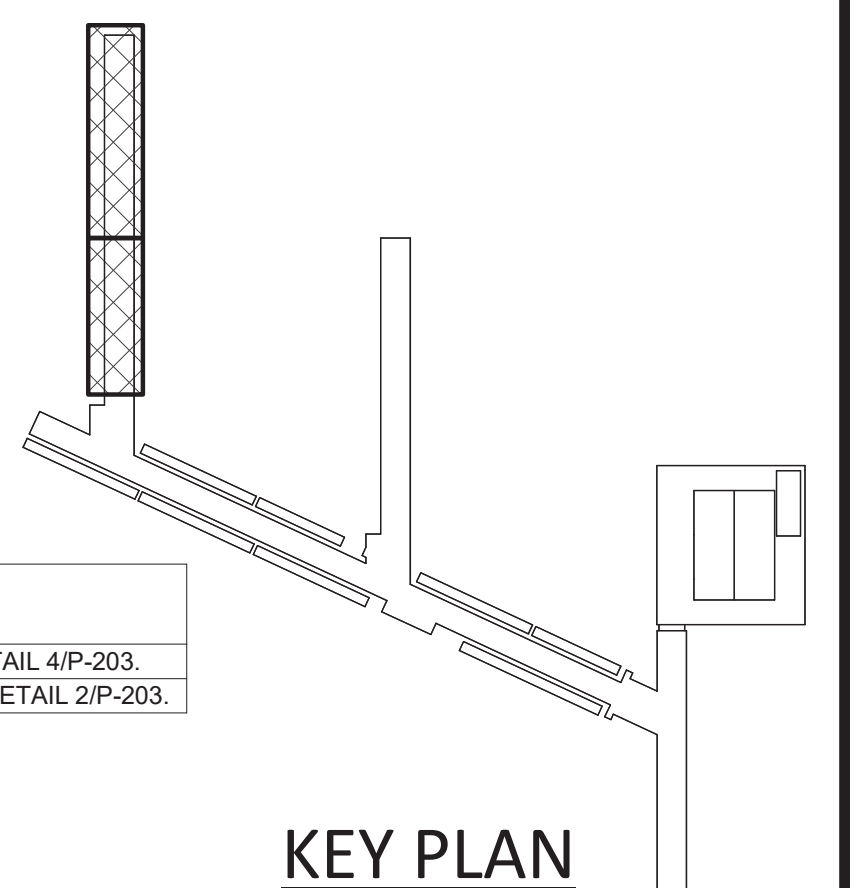
1 PIER 2A - PLUMBING PLAN
SCALE: 1/8" = 1'-0"



2 PIER 2B - PLUMBING PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES

1	FOR DETAIL OF SP-1 AND HB-1 REFER TO DETAIL 4/P-203.
2	FOR DETAIL OF BFP-3 AND BFP-4 REFER TO DETAIL 2/P-203.



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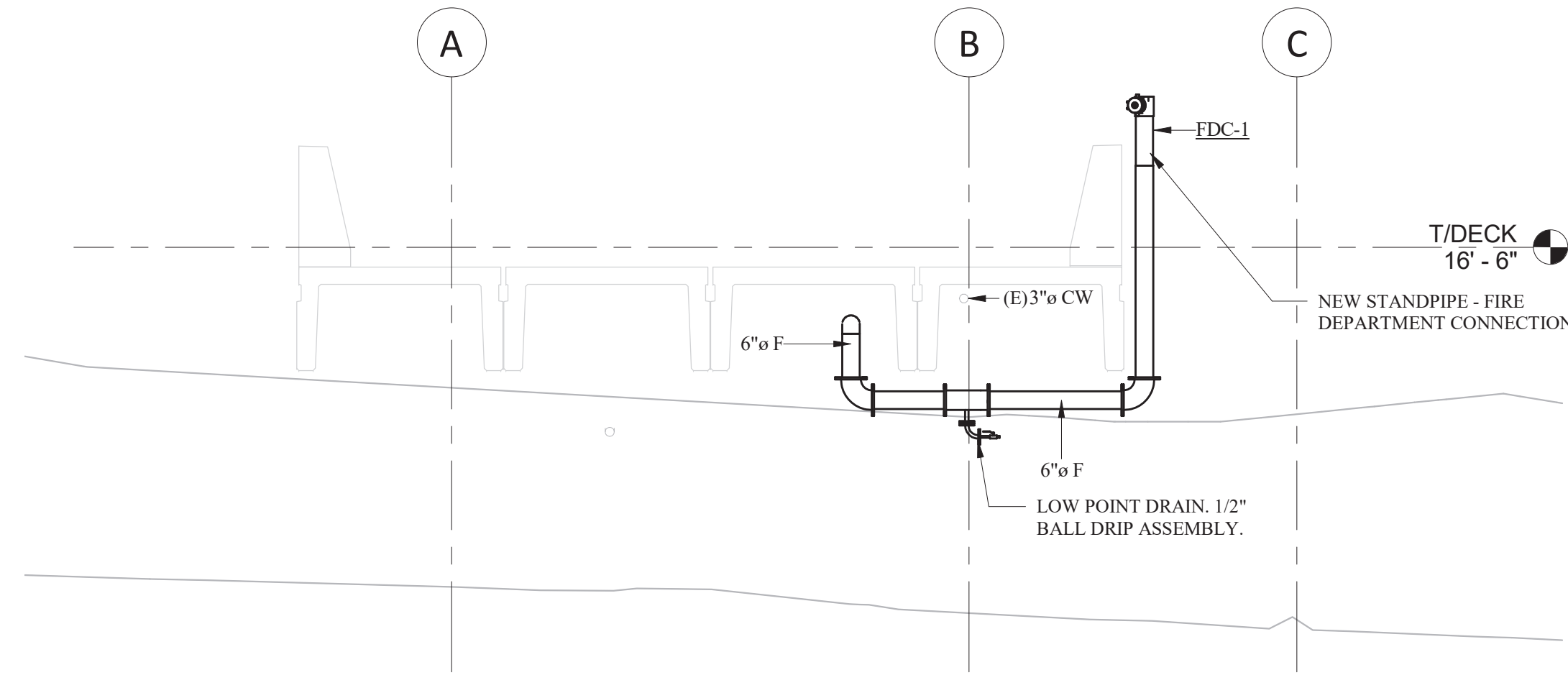
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DESIGN BY: KT
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PROJ MGR: JB

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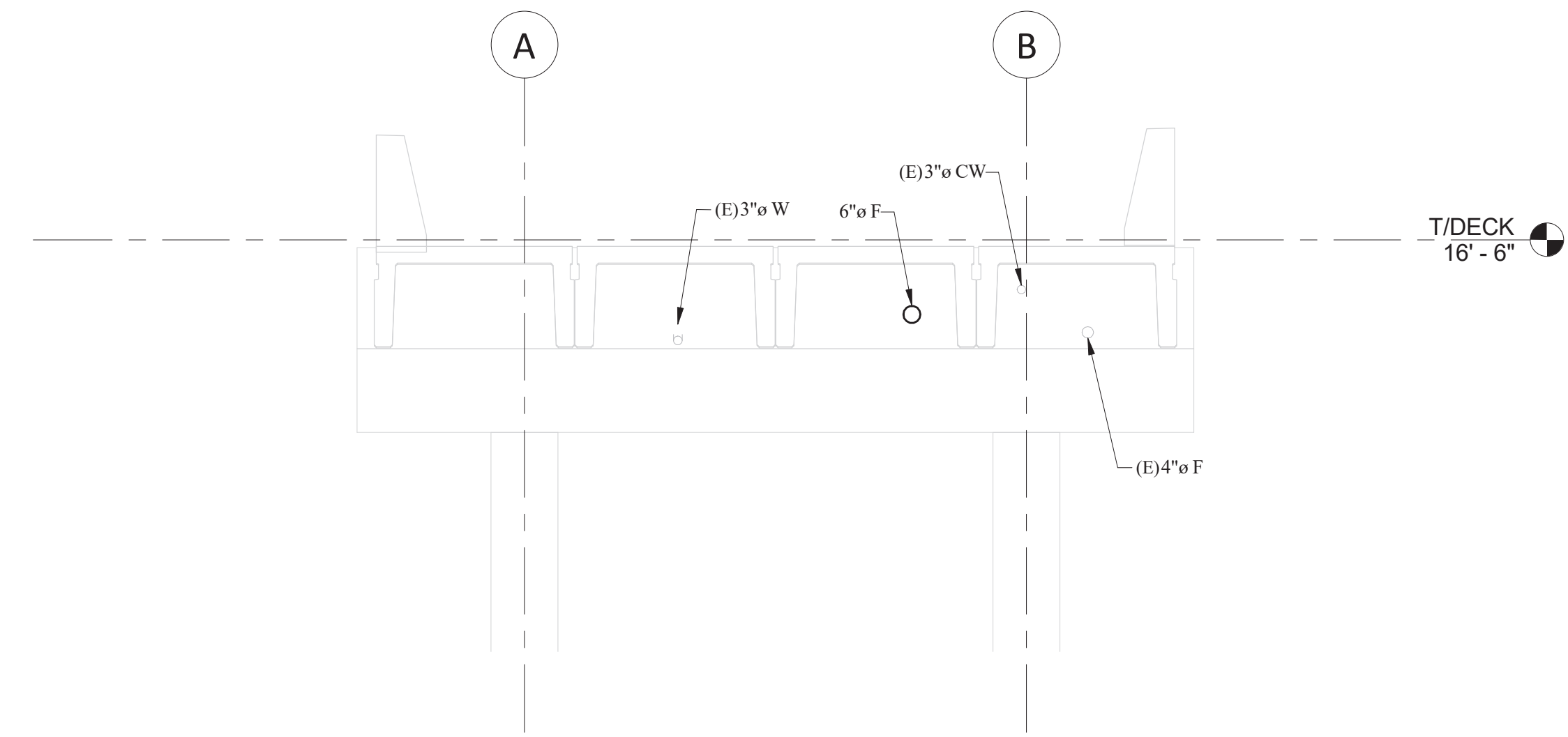
PORT OF NEAH BAY
PIER 2 - PLUMBING PLAN

DRAWING NO. **P-105**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

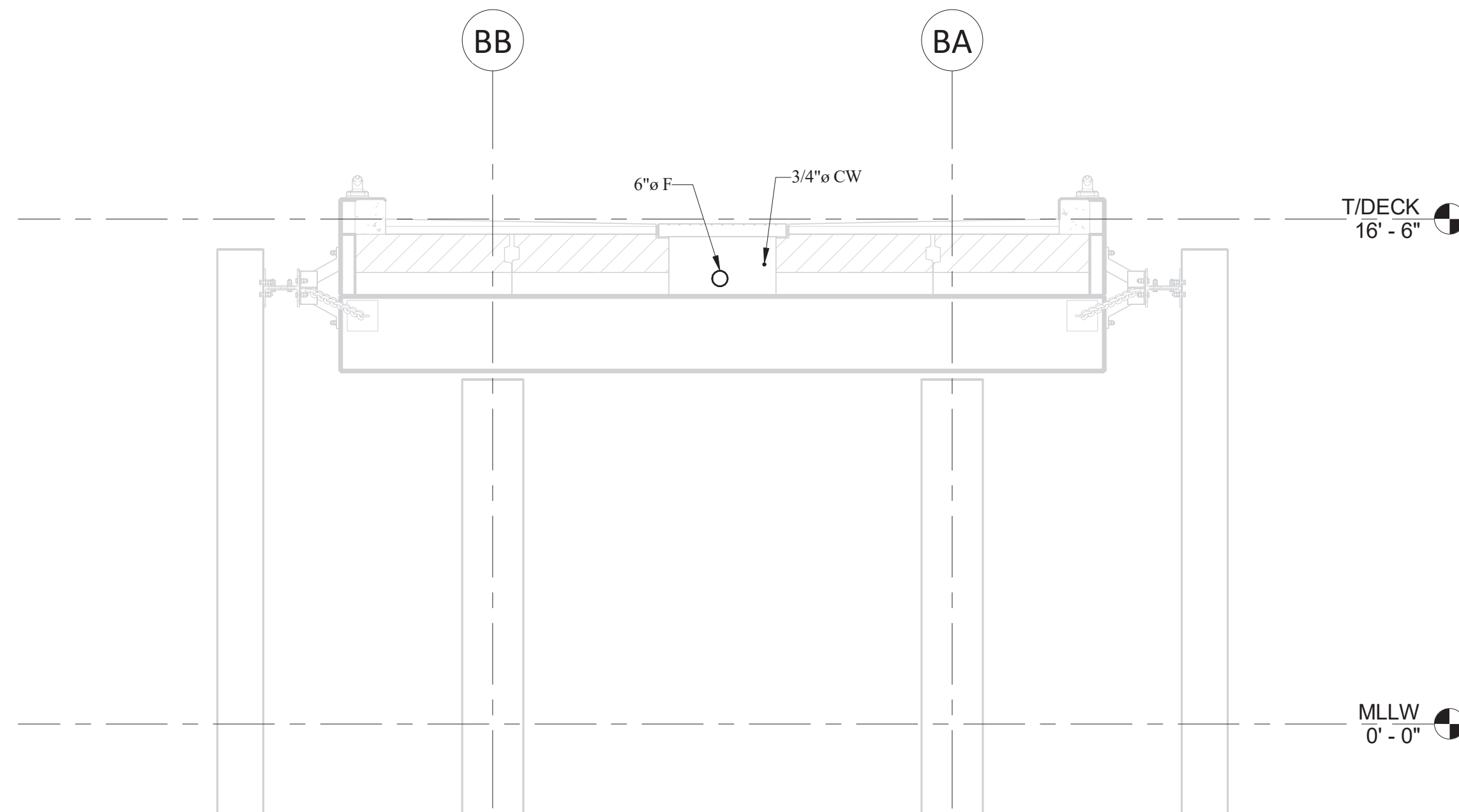
MARK	REVISION DESCRIPTION	BY	APP.	DATE



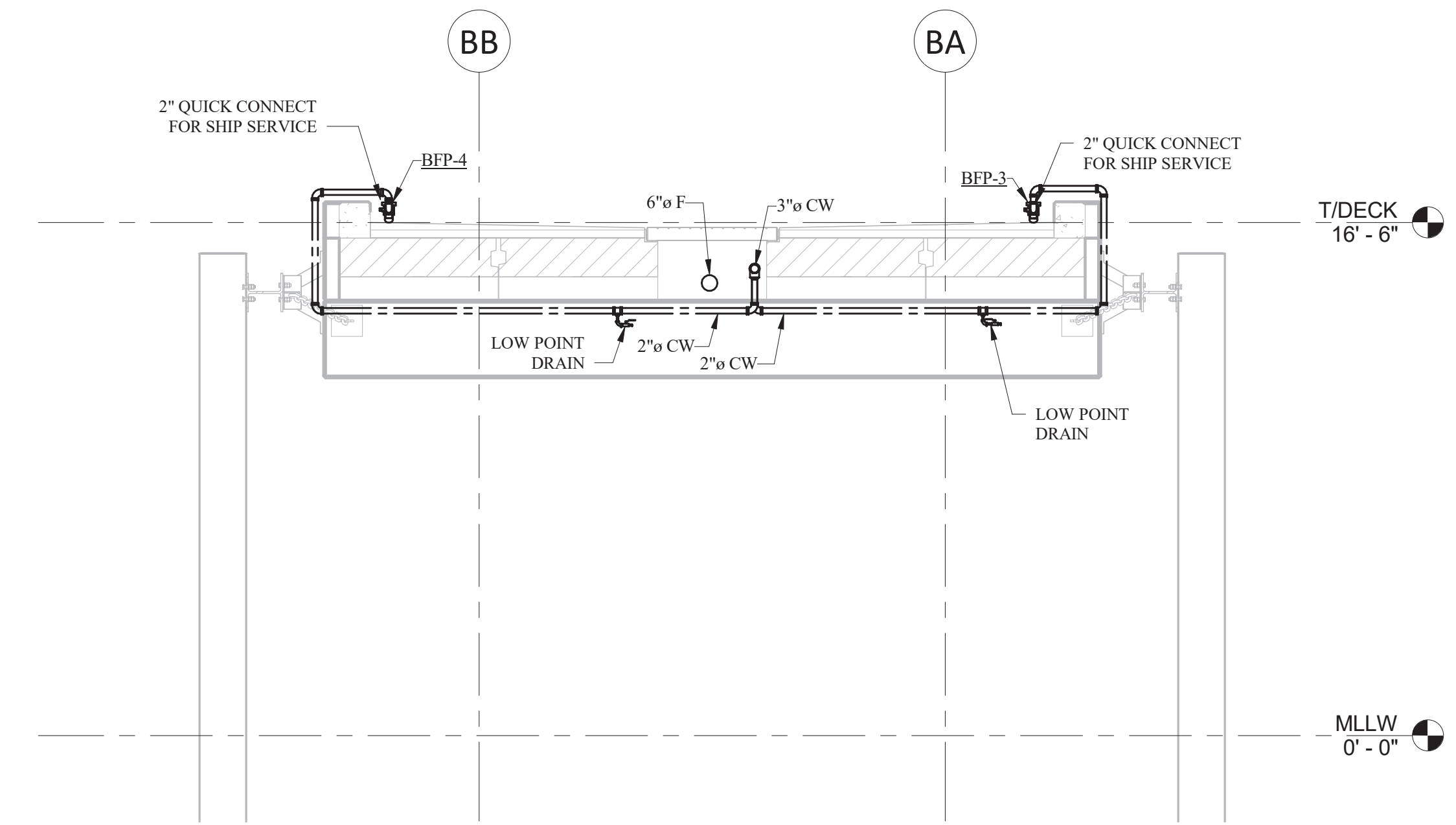
4 EXISTING DOCK SECTION 2
 FP-100 SCALE: 1/4" = 1'-0"



3 EXISTING DOCK SECTION 1
 FP-100 SCALE: 1/4" = 1'-0"



2 PIER 2B SECTION
 FP-105 SCALE: 1/4" = 1'-0"



1 PIER 2A SECTION
 FP-105 SCALE: 1/4" = 1'-0"



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 PROJ MGR: JB

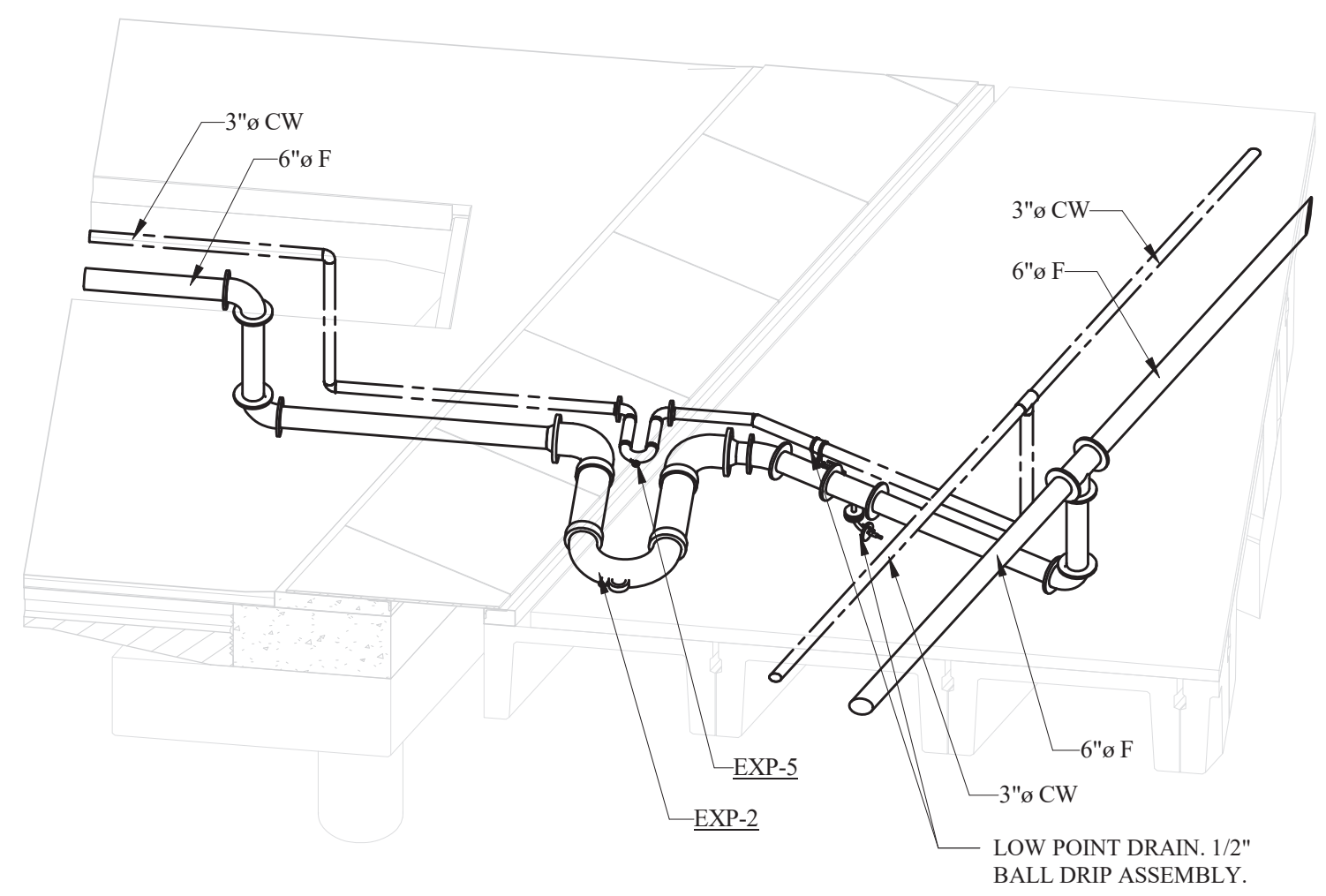
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PORT OF NEAH BAY

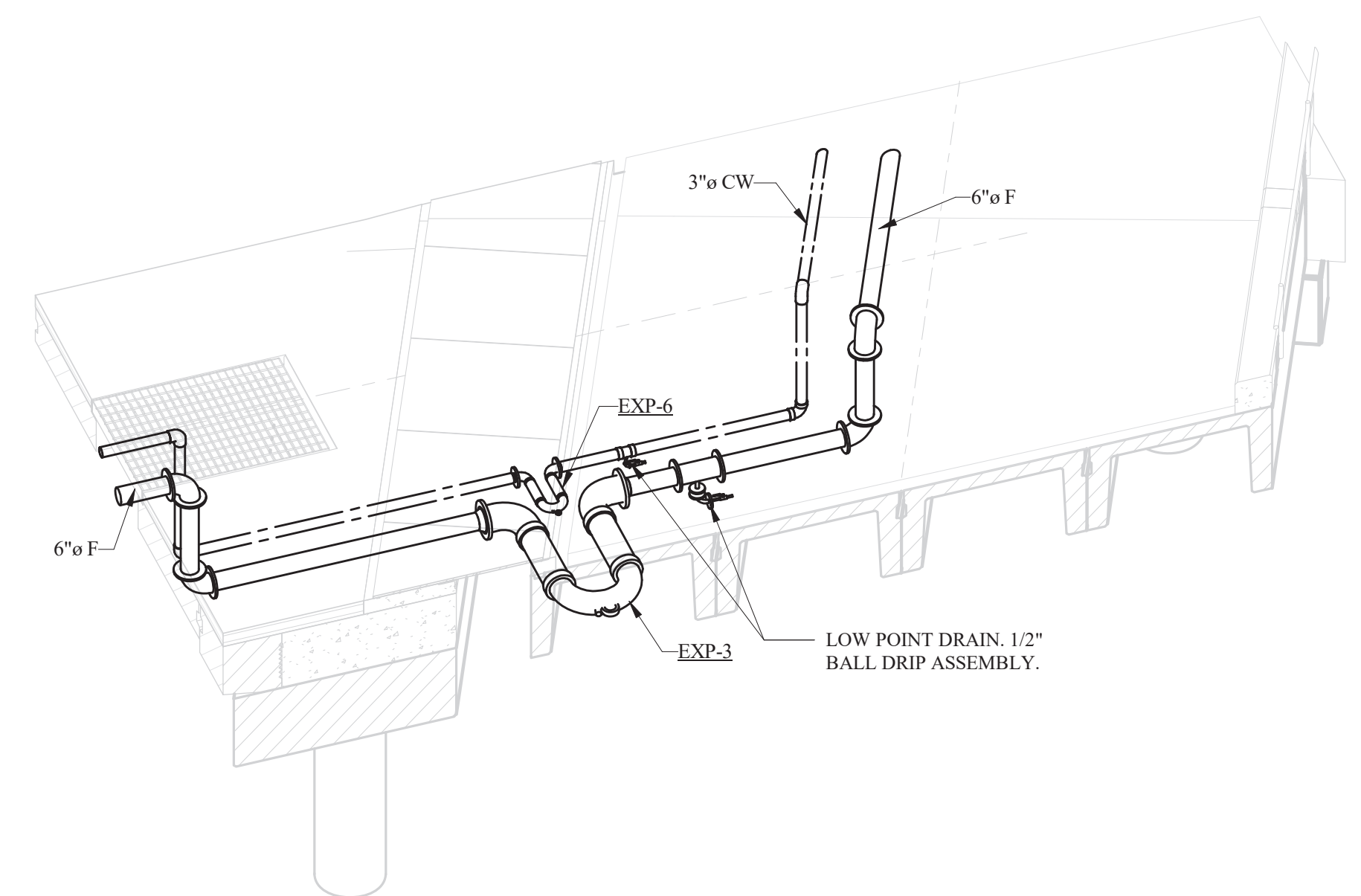
SECTIONS

DRAWING NO. **P-201**
 PROJECT NO. 15051
 DATE: 08/01/2017
 SHEET NO. _____

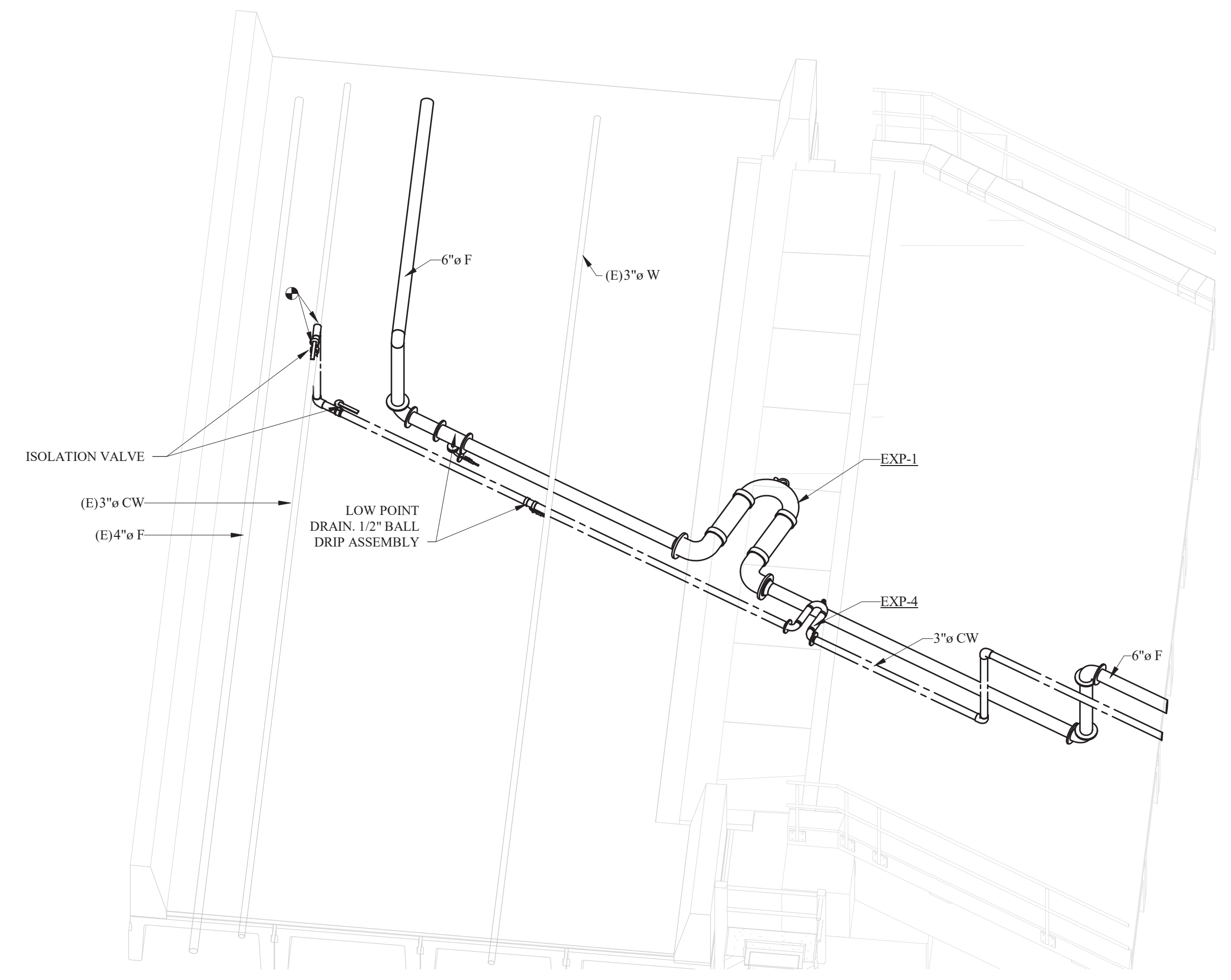
MARK	REVISION DESCRIPTION	BY	APP.	DATE



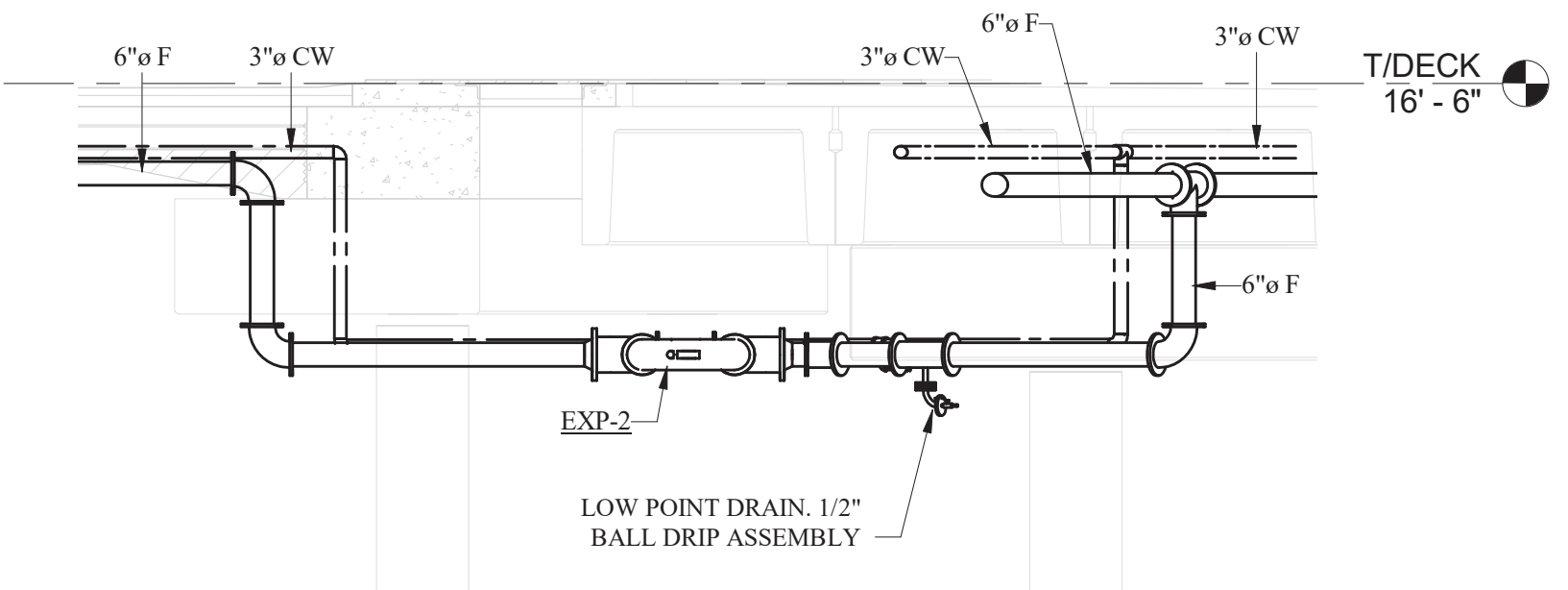
6 TRESTLE 2 CONNECTION ISOMETRIC
SCALE: NTS



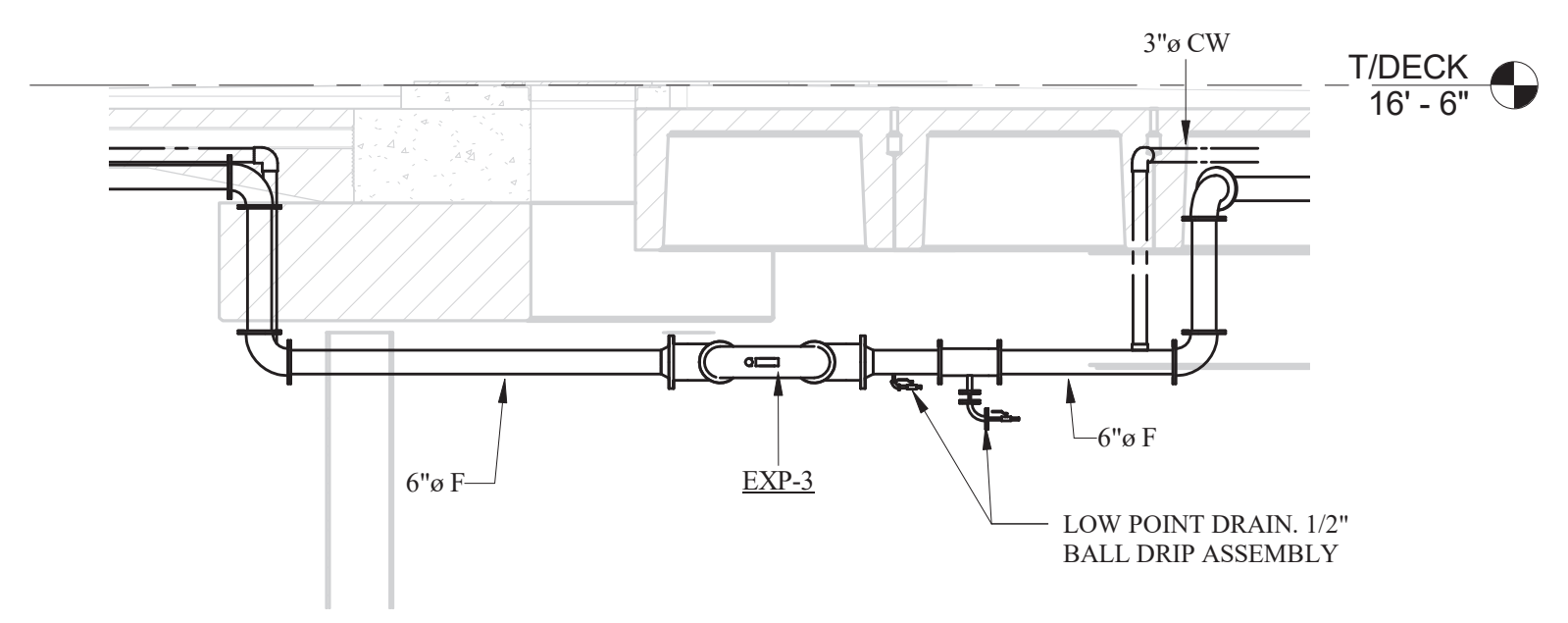
4 TRESTLE 3 CONNECTION ISOMETRIC
SCALE: NTS



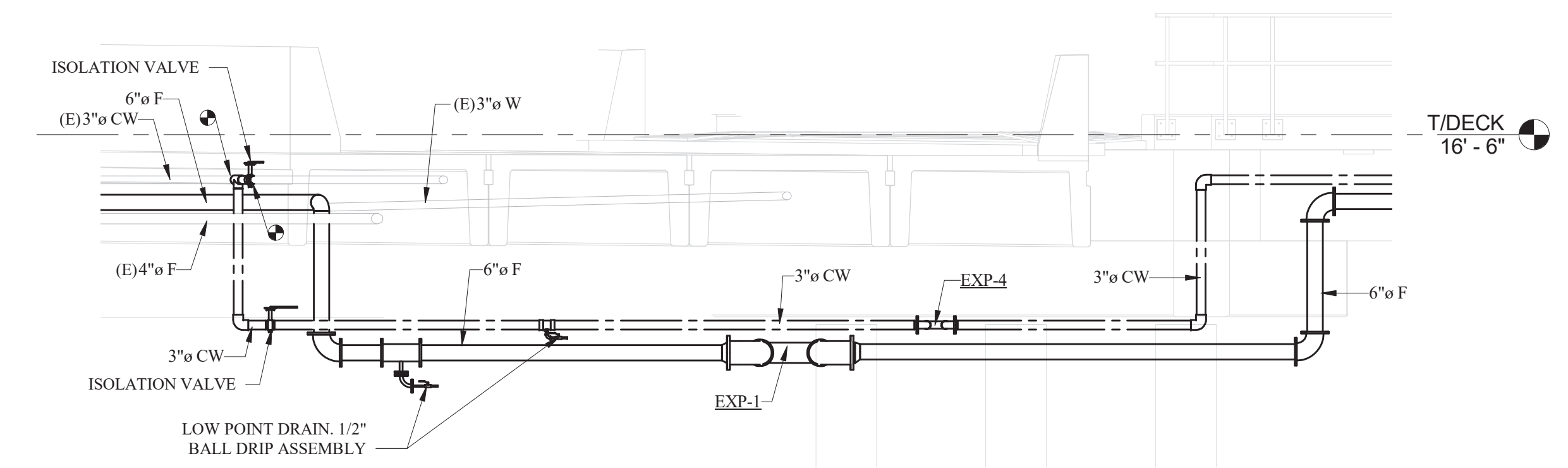
2 TRESTLE 1 CONNECTION ISOMETRIC
SCALE: NTS



5 TRESTLE 2 CONNECTION DETAIL
SCALE: 1/4" = 1'-0"



3 TRESTLE 3 CONNECTION DETAIL
SCALE: 1/4" = 1'-0"



1 TRESTLE 1 CONNECTION SECTION
SCALE: 1/4" = 1'-0"



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PORT OF NEAH BAY

DETAILS

DRAWING NO. **P-202**
PROJECT NO. 15051
DATE: 08/01/2017
SHEET NO.

MARK	REVISION DESCRIPTION	BY	APP.	DATE

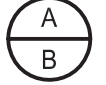













LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	LAMPS	WATTS
① P1	PHILIPS - GARDCO P21-MRI-A1-1-2-105LA-NW- UNV-BRP-EHHS-BD	LED	103
② P2	PHILIPS - GARDCO P21-MRI-A2-1-2-70LA-NW- UNV-BRP-EHHS-BD	LED	69

LIGHTING FIXTURE SCHEDULE NOTES:

- ① PROVIDE 20'-0", 5" ROUND STEEL POLE, PAINTED TO WITHSTAND SALT WATER ENVIRONMENT AND MATCH LIGHT FIXTURE. PROVIDE LIGHT POLE ATTACHMENT TO TRESTLE PER STRUCTURAL DRAWINGS SHEET S-XXX, DETAIL X.
- ② PROVIDE 12'-0", 4" ROUND STEEL POLE, PAINTED TO WITHSTAND SALT WATER ENVIRONMENT AND MATCH LIGHT FIXTURE. PROVIDE LIGHT POLE ATTACHMENT TO TRESTLE PER STRUCTURAL DRAWING SHEET S-XXX, DETAIL X.

ELECTRICAL SYMBOLS LEGEND

-  DETAIL/SECTION IDENTIFICATION: A = DETAIL/SECTION LETTER, B = SHEET NUMBER WHERE DETAIL/SECTION IS DRAWN.
-  PVC COATED RIGID STEEL CONDUIT (PVRSC) ROUTED SURFACE BELOW TRESTLE. PROVIDE 316 STAINLESS STEEL RODS, 316 STAINLESS STEEL C-CHANNEL, AND DRILLED EPOXY ANCHORS FOR CONDUIT SUPPORT. HASH MARKS INDICATE NUMBER OF #12 CONDUCTORS IN CODE SIZE CONDUIT. NO HASH MARKS INDICATES 2-#12 CONDUCTORS PLUS GROUND IN 3/4" CONDUIT, LONG HASH MARKS INDICATES NEUTRAL CONDUCTOR. ↘ INDICATES GROUND CONDUCTOR.
-  FLEXIBLE RACEWAY, PROVIDE GROUND CONDUCTORS PER NATIONAL ELECTRICAL CODE.
-  A-1,3 ADJACENT TO ARROW INDICATES HOMERUN OF CONDUCTORS IN CONDUIT FOR CIRCUITS 1 AND 3 TO PANEL "A".
-  POLE MOUNTED LIGHT FIXTURE.
-  JUNCTION BOX.
- A1 LIGHT FIXTURE TYPE. A1 = SPECIFIC LIGHTING FIXTURE REFERENCED ON LIGHTING FIXTURE SCHEDULE.
-  DUPLEX RECEPTACLE 20A, 125 VOLT WALL MOUNTED AT 18 INCHES ABOVE FINISHED FLOOR. G = GROUND FAULT INTERRUPTING, WITH NEMA 3R "IN USE" COVER.
-  EQUIPMENT CONNECTION. PROVIDE PER NATIONAL ELECTRICAL CODE AND MANUFACTURERS REQUIREMENTS AND/OR RECOMMENDATIONS.
-  DISCONNECT SWITCH, 316 STAINLESS STEEL, NEMA 4X.
-  FUSED DISCONNECT SWITCH WITH FUSES, 316 STAINLESS STEEL, NEMA 4X.
-  TRANSFORMER. SIZE AND TYPE AS NOTED. PROVIDE GROUNDING AS REQUIRED BY NATIONAL ELECTRICAL CODE.
-  GROUND PER NATIONAL ELECTRICAL CODE.
-  TRANSIENT VOLTAGE SURGE SUPPRESSION. TOTAL PROTECTION SOLUTIONS MODEL # ST240-3Y480-FL (480V) AND MODEL # ST240-240NN-FL (240V)
- (E) EXISTING
- WP WEATHERPROOF
-  SHORE TO SHIP POWER PEDESTAL.
TYPE A = EATON ADMIRAL SS POWER PEDESTAL WITH (1)480V,3PH,5W,100A, RECEPTACLE, (1)20A,125V,GFI DUPLEX RECEPTACLE, DUAL PHONE/CAT 5 HIGH-SPEED INTERNET CONNECTIONS, DIGITAL ELECTRONIC METERING, LED LIGHTING 270 DEGREE RED LENSE, OR EQUAL.
TYPE B = EATON ADMIRAL SS POWER PEDESTAL WITH (2)240V,1PH,4W,50A, RECEPTACLES, (1)20A,125V,GFI DUPLEX RECEPTACLE, DUAL PHONE/CAT 5 HIGH-SPEED INTERNET CONNECTIONS, DIGITAL ELECTRONIC METERING, LED LIGHTING 270 DEGREE RED LENSE, OR EQUAL.

CROSS ENGINEERS, INC
 6509 6th Avenue Phone: (253) 759-0118
 Tacoma, WA 98406 Job Number: 16-100
 info@crossengineers.com

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 DESIGN BY GLW
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 PROJ MGR GLW

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**PORT OF NEAH BAY
 MAKAH DOCK EXTENSION**

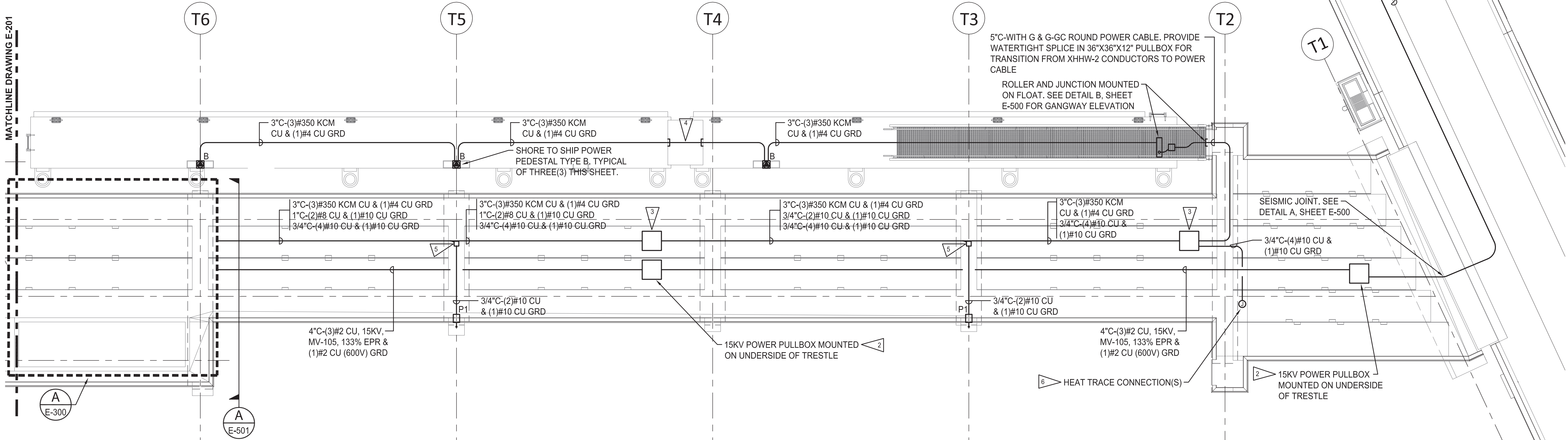
ELECTRICAL SYMBOLS LEGEND/ LIGHT FIXTURE SCHEDULE

DRAWING NO.	E-100
PROJECT NO.	16-100
DATE:	7/28/17
SHEET NO.	- OF -

MARK	REVISION	DESCRIPTION	BY	APP.	DATE

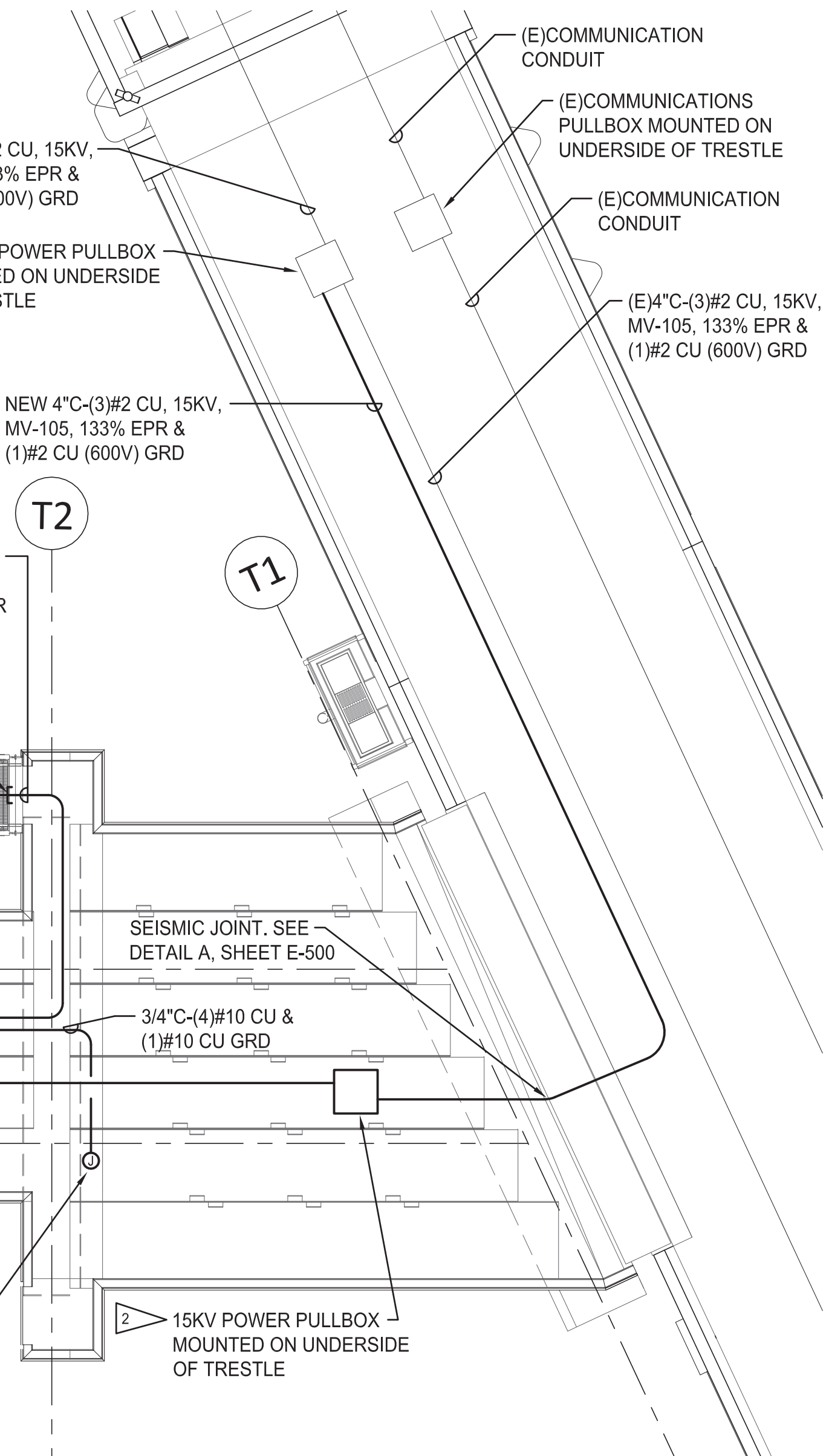
ELECTRICAL NOTES:

- 1 COORDINATE WITH OWNER AND PROVIDE TEMPORARY POWER TO EXISTING 480V, 2000A SWITCHBOARD AT END OF EXISTING TRESTLE. INTERRUPT EXISTING 15KV POWER FEED AT SHORE MOUNTED, EXISTING PADMOUNT FUSED SWITCH. INTERCEPT EXISTING 15KV CABLE IN EXISTING PULLBOX AND INSTALL THREE(3) NEW SEPARABLE, 15KV, 200A, NON-LOAD BREAK JUNCTIONS AND ONE(1) WATERTIGHT THREE-WAY SEPARABLE GROUND JUNCTION.
- 2 CONTRACTOR SHALL PROVIDE 316 STAINLESS STEEL, NEMA 4X, HINGED, 36"x36"x12", PULLBOX MOUNTED TO UNDERSIDE OF TRESTLE. PROVIDE 316 STAINLESS STEEL MOUNTING HARDWARE WITH EPOXY ANCHORS FOR MOUNTING PULLBOX TO CONCRETE TRESTLE. COORDINATE WITH STRUCTURAL FOR DOCK CONSTRUCTION AND MATERIALS. PROVIDE FULL 360° WIRE LOOPS IN PULLBOX.
- 3 CONTRACTOR SHALL PROVIDE 316 STAINLESS STEEL, NEMA 4X, HINGED, 36"x36"x12", PULLBOX MOUNTED TO UNDERSIDE OF TRESTLE. PROVIDE STAINLESS STEEL MOUNTING HARDWARE WITH EPOXY ANCHORS FOR MOUNTING PULLBOX TO TRESTLE. COORDINATE WITH STRUCTURAL FOR TRESTLE CONSTRUCTION AND MATERIALS. PROVIDE FULL 360° XHHW-2 WIRE LOOPS IN PULLBOX. COORDINATE WITH PLUMBING AND OTHER TRADES TO ALLOW FOR WATER PIPING INSTALLATION.
- 4 CONTRACTOR SHALL PROVIDE 3"PVC COATED, LIQUIDTIGHT FLEX AT TRANSITION BETWEEN FLOATS. PROVIDE MINIMUM 3'-0" CONDUIT HORIZONTAL DROOP TO ALLOW MOVEMENT BETWEEN FLOATS.
- 5 CONTRACTOR SHALL PROVIDE 10"x10"x4", 316 STAINLESS STEEL, NEMA 4X, JUNCTION BOX AT THIS LOCATION FOR TRANSITION TO LIGHT POLE. PROVIDE WATERTIGHT SPLICES OF CONDUCTORS WITHIN JUNCTION BOX. CONDUIT FROM JUNCTION BOX TO LIGHT POLE POWER PEDESTAL SHALL BE ROUTED BELOW TRESTLE. PROVIDE 1-5/8"x1-5/8", 316 STAINLESS STEEL STRUT FOR ATTACHMENT OF CONDUIT TO UNDERSIDE OF TRESTLE.
- 6 CONTRACTOR SHALL PROVIDE THREE (3), 120V, 20A, CONNECTION TO HEAT TRACE PROVIDED AND INSTALLED BY PLUMBING/ FIRE PROTECTION CONTRACTOR. COORDINATE EXACT TERMINATION LOCATION OF HEAT TRACE WITH PLUMBING/ FIRE PROTECTION CONTRACTOR PRIOR TO ROUGH-IN.



EXISTING/ NEW TRESTLE PARTIAL ELECTRICAL PLAN

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



IF SHEET IS LESS THAN 22" x 34" IT IS A REDUCED SET

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 Tacoma, WA 98406
 info@crossengineers.com
 Phone: (253) 759-0118
 Job Number: 16-100

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 33301 Ninth Avenue South, Suite 300
 Federal Way, Washington 98003-2600
 www.abam.com



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 PROJ MGR: GLW

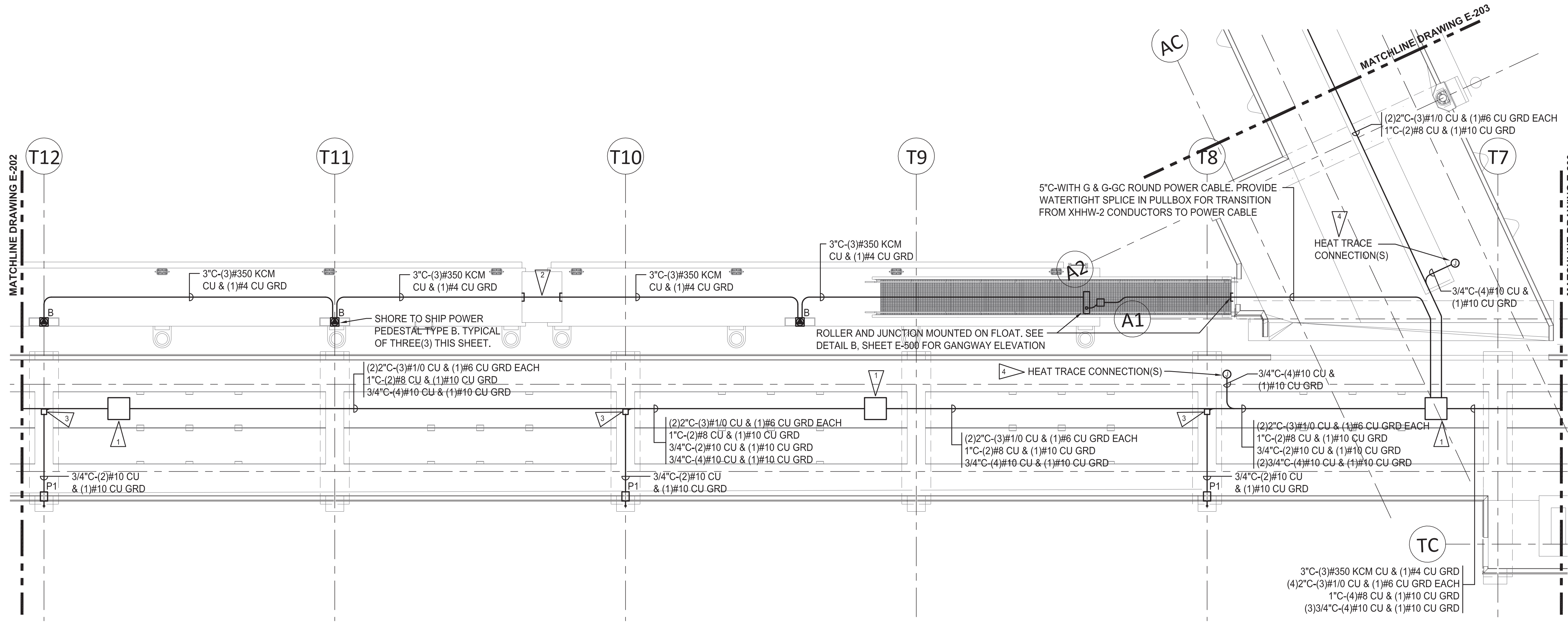
**PORT OF NEAH BAY
 MAKAH DOCK EXTENSION
 PARTIAL DOCK ELECTRICAL PLAN**

DRAWING NO. **E-200**
 PROJECT NO. 16-100
 DATE: 7/28/17
 SHEET NO. - OF -

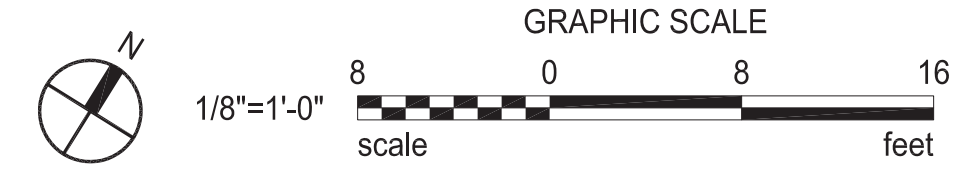
MARK	REVISION	DESCRIPTION	BY	APP.	DATE

ELECTRICAL NOTES:

- 1 CONTRACTOR SHALL PROVIDE 316 STAINLESS STEEL, NEMA 4X, HINGED, 36"x36"x12", PULLBOX MOUNTED TO UNDERSIDE OF TRESTLE. PROVIDE 316 STAINLESS STEEL MOUNTING HARDWARE WITH EPOXY ANCHORS FOR MOUNTING PULLBOX TO CONCRETE TRESTLE. COORDINATE WITH STRUCTURAL FOR DOCK CONSTRUCTION AND MATERIALS. PROVIDE FULL 360° WIRE LOOPS IN PULLBOX.
- 2 CONTRACTOR SHALL PROVIDE 3" PVC COATED, LIQUIDTIGHT FLEX AT TRANSITION BETWEEN FLOATS. PROVIDE MINIMUM 3'-0" CONDUIT HORIZONTAL DROOP TO ALLOW MOVEMENT BETWEEN FLOATS.
- 3 CONTRACTOR SHALL PROVIDE 10"x10"x4", 316 STAINLESS STEEL, NEMA 4X, JUNCTION BOX AT THIS LOCATION FOR TRANSITION TO LIGHT POLE. PROVIDE WATERTIGHT SPLICES OF CONDUCTORS WITHIN JUNCTION BOX. CONDUIT FROM JUNCTION BOX TO LIGHT POLE POWER PEDESTAL SHALL BE ROUTED BELOW TRESTLE. PROVIDE 1-5/8"x1-5/8", 316 STAINLESS STEEL STRUT FOR ATTACHMENT OF CONDUIT TO UNDERSIDE OF TRESTLE.
- 4 CONTRACTOR SHALL PROVIDE THREE (3), 120V, 20A, CONNECTION TO HEAT TRACE PROVIDED AND INSTALLED BY PLUMBING/ FIRE PROTECTION CONTRACTOR. COORDINATE EXACT TERMINATION LOCATION OF HEAT TRACE WITH PLUMBING/ FIRE PROTECTION CONTRACTOR PRIOR TO ROUGH-IN.



NEW TRESTLE PARTIAL ELECTRICAL PLAN
SCALE: 1/8"=1'-0"



IF SHEET IS LESS THAN 22" x 34" IT IS A REDUCED SET

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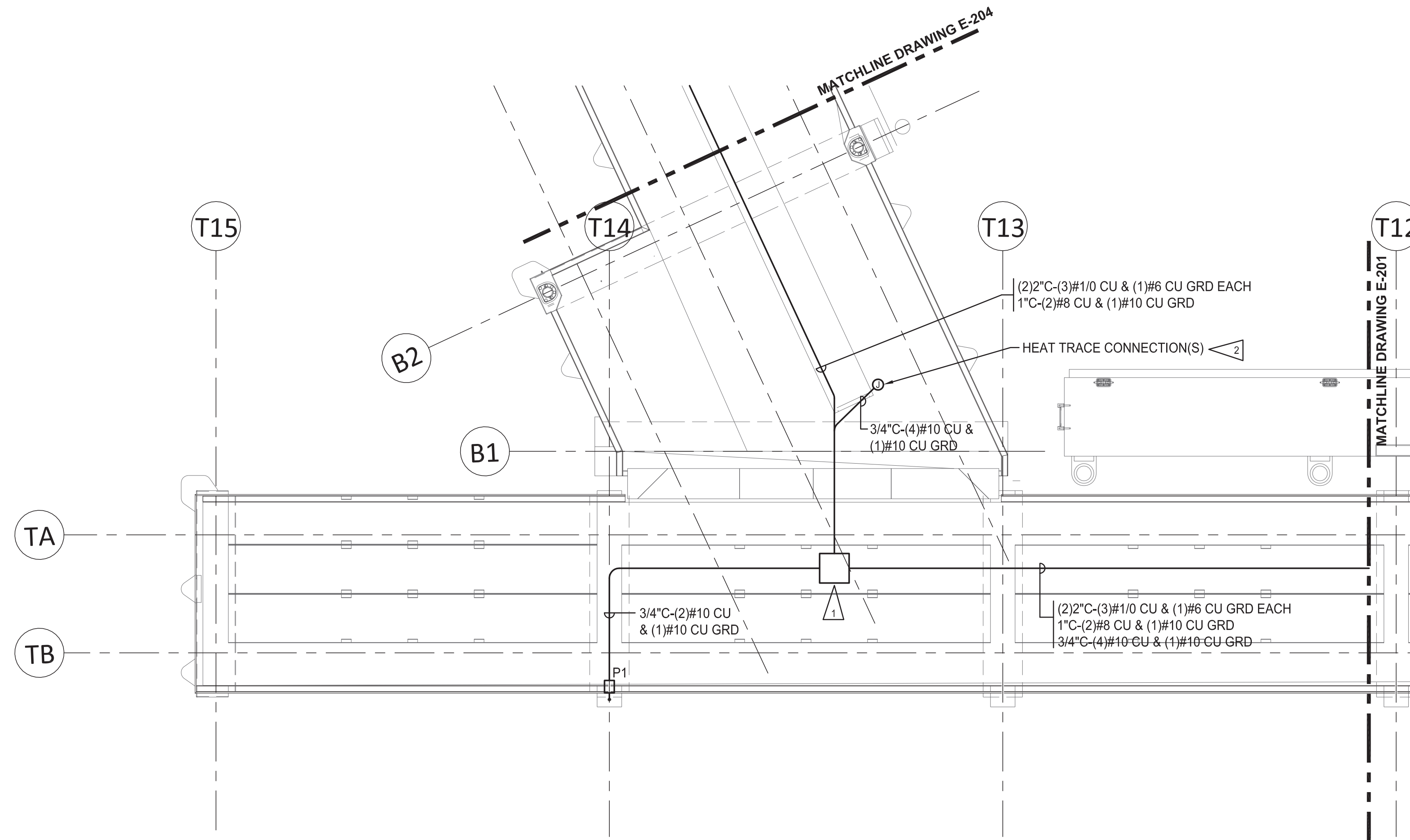
PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PARTIAL DOCK ELECTRICAL PLAN

DRAWING NO. **E-201**
PROJECT NO. 16-100
DATE: 7/28/17
SHEET NO. - OF -

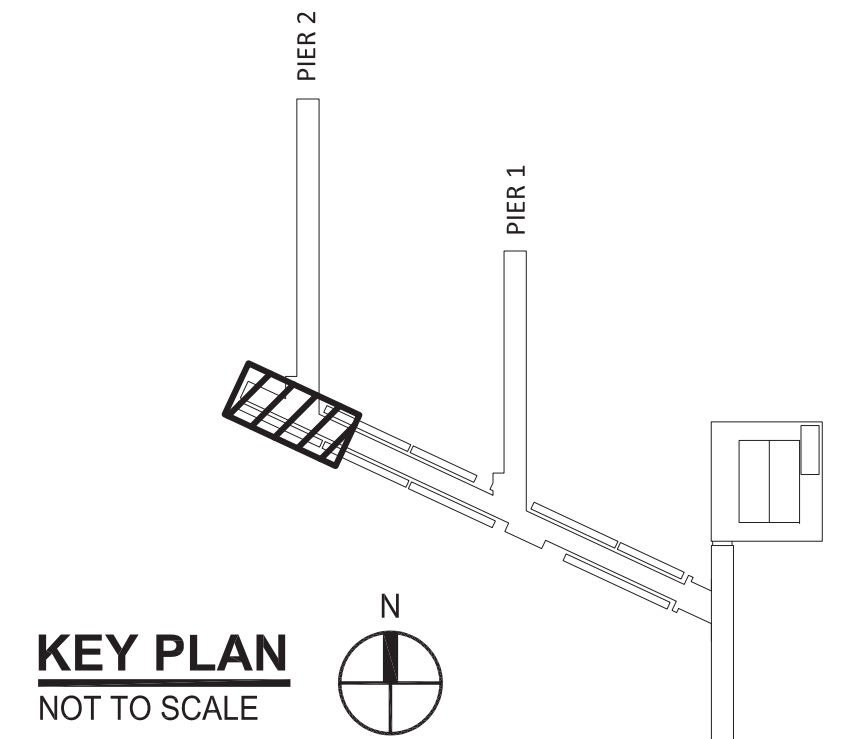
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ELECTRICAL NOTES:

- 1 CONTRACTOR SHALL PROVIDE 316 STAINLESS STEEL, NEMA 4X, HINGED, 36"x36"x12", PULLBOX MOUNTED TO UNDERSIDE OF TRESTLE. PROVIDE 316 STAINLESS STEEL MOUNTING HARDWARE WITH EPOXY ANCHORS FOR MOUNTING PULLBOX TO CONCRETE TRESTLE. COORDINATE WITH STRUCTURAL FOR DOCK CONSTRUCTION AND MATERIALS. PROVIDE FULL 360° WIRE LOOPS IN PULLBOX.
- 2 CONTRACTOR SHALL PROVIDE THREE (3), 120V, 20A, CONNECTION TO HEAT TRACE PROVIDED AND INSTALLED BY PLUMBING/ FIRE PROTECTION CONTRACTOR. COORDINATE EXACT TERMINATION LOCATION OF HEAT TRACE WITH PLUMBING/ FIRE PROTECTION CONTRACTOR PRIOR TO ROUGH-IN.



NEW TRESTLE PARTIAL ELECTRICAL PLAN
SCALE: 1/8"=1'-0"



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STEVEN L. HUBBS
STATE OF WASHINGTON
0029060
REGISTERED
PROFESSIONAL ENGINEER

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PROJ MGR: GLW

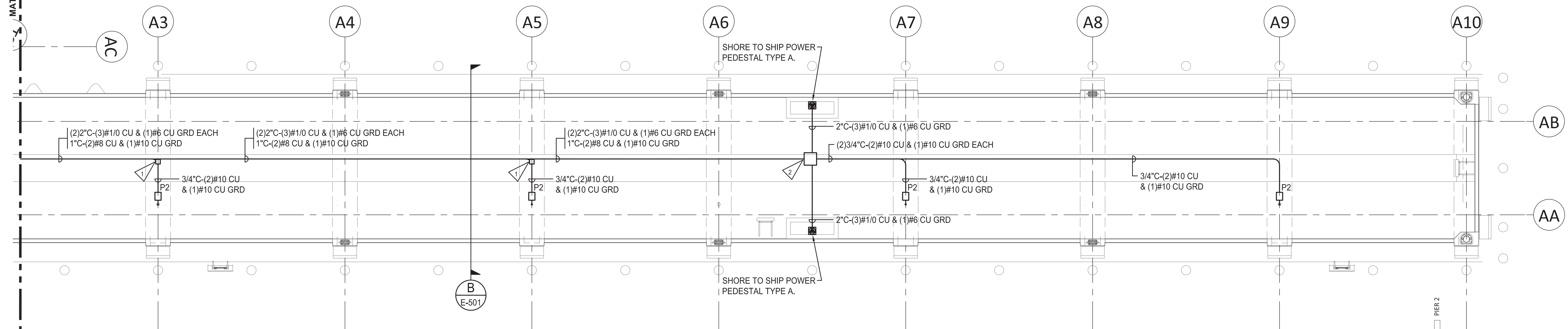
PORT OF NEAH BAY
MAKAH DOCK EXTENSION
PARTIAL DOCK ELECTRICAL PLAN

DRAWING NO.	E-202
PROJECT NO.	16-100
DATE:	7/28/17
SHEET NO.	- OF -

ELECTRICAL NOTES:

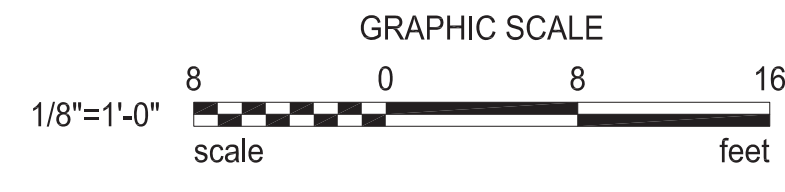
- 1 CONTRACTOR SHALL PROVIDE 10"x10"x4", 316 STAINLESS STEEL, NEMA 4X, JUNCTION BOX AT THIS LOCATION FOR TRANSITION TO LIGHT POLE. PROVIDE WATERTIGHT SPLICES OF CONDUCTORS WITHIN JUNCTION BOX.
- 2 CONTRACTOR SHALL PROVIDE 24"x24"x8", 316 STAINLESS STEEL, NEMA 4X, JUNCTION BOX AT THIS LOCATION FOR TRANSITION TO SHORE TO SHIP POWER PEDESTAL. PROVIDE WATERTIGHT SPLICES OF LIGHTING CONDUCTORS WITHIN JUNCTION BOX. CONDUIT FROM JUNCTION BOX TO SHORE TO SHIP POWER PEDESTAL SHALL BE ROUTED BELOW PIER. PROVIDE 1-5/8"x1-5/8", STAINLESS STEEL STRUT WITH DRILLED EPOXY ANCHORS FOR ATTACHMENT OF CONDUIT TO UNDERSIDE OF PIER.

MATCHLINE DRAWING E-201

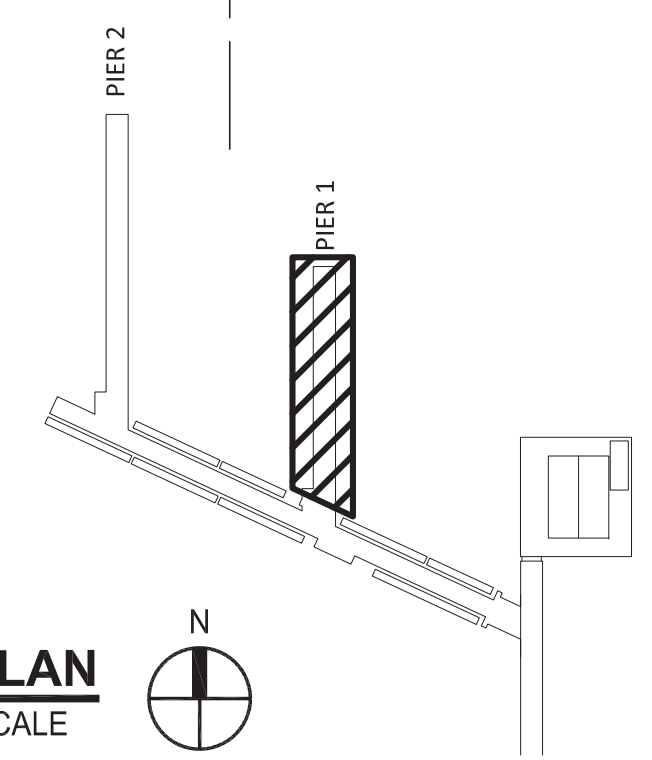


NEW PIER 1 PARTIAL ELECTRICAL PLAN

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



KEY PLAN
NOT TO SCALE



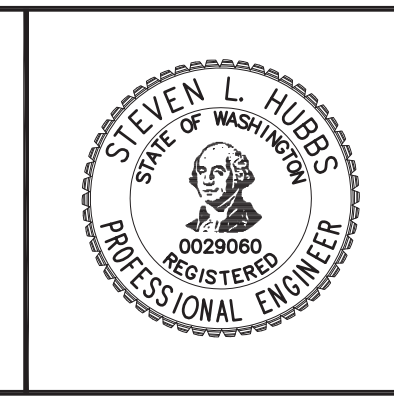
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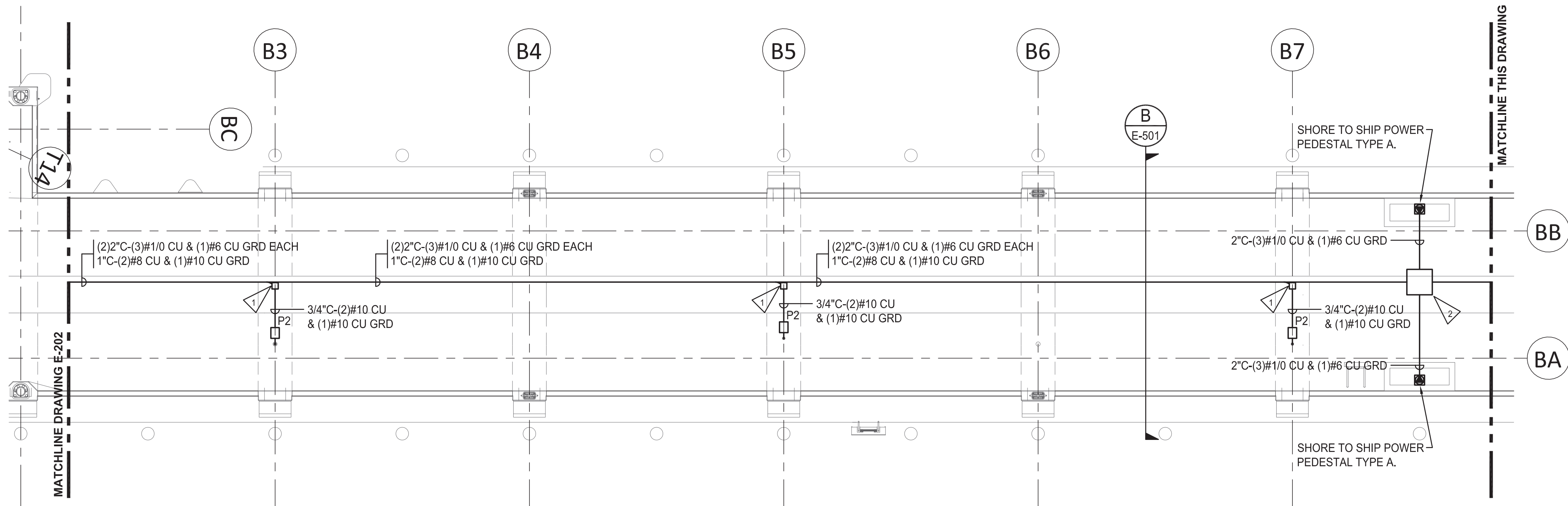
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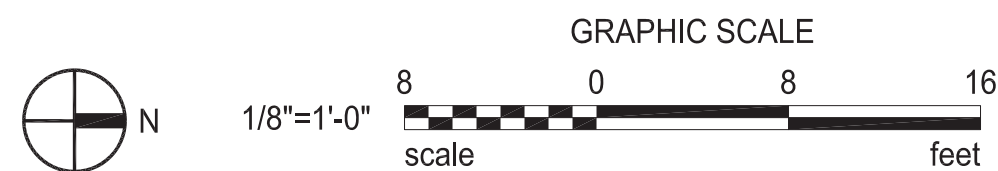
PORT OF NEAH BAY
MAKAH DOCK EXTENSION
 PARTIAL DOCK ELECTRICAL PLAN

DRAWING NO. **E-203**
 PROJECT NO. 16-100
 DATE: 7/28/17
 SHEET NO. - OF -



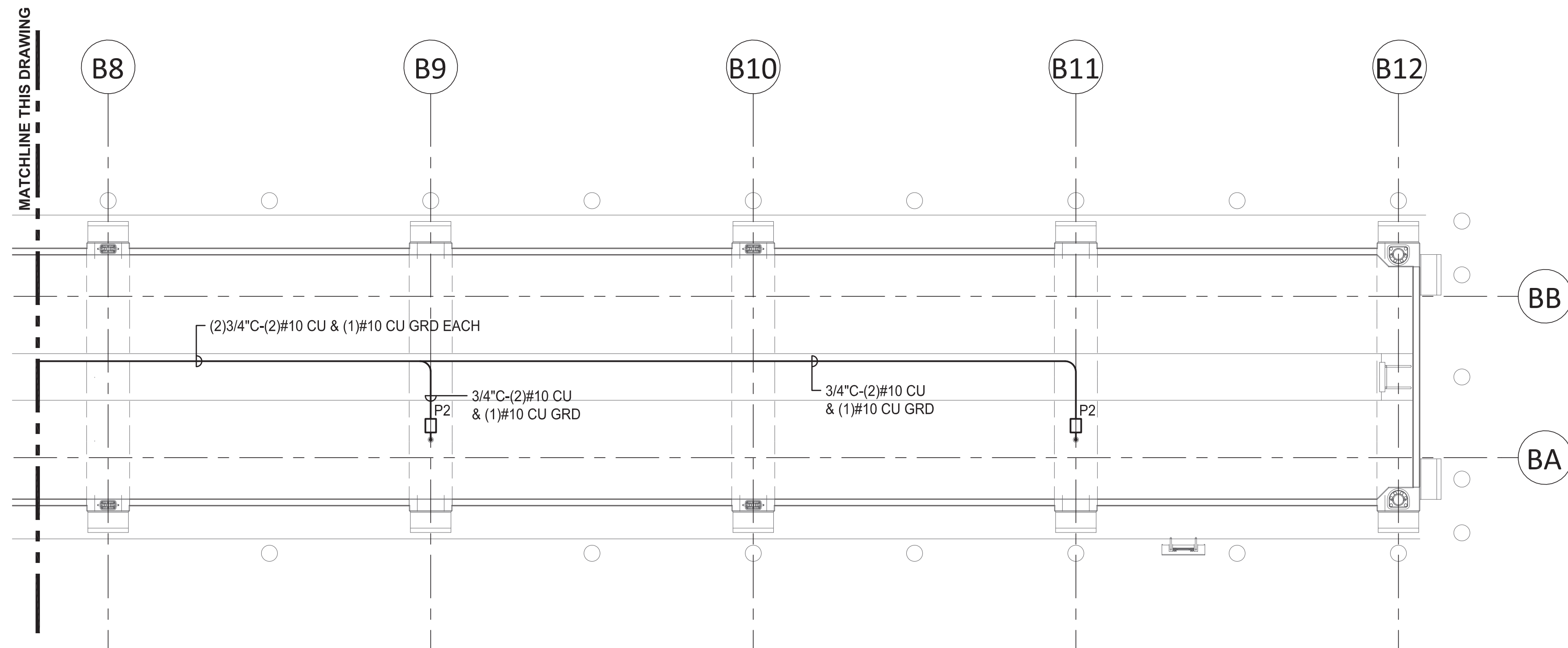
NEW PIER 2 PARTIAL ELECTRICAL PLAN

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



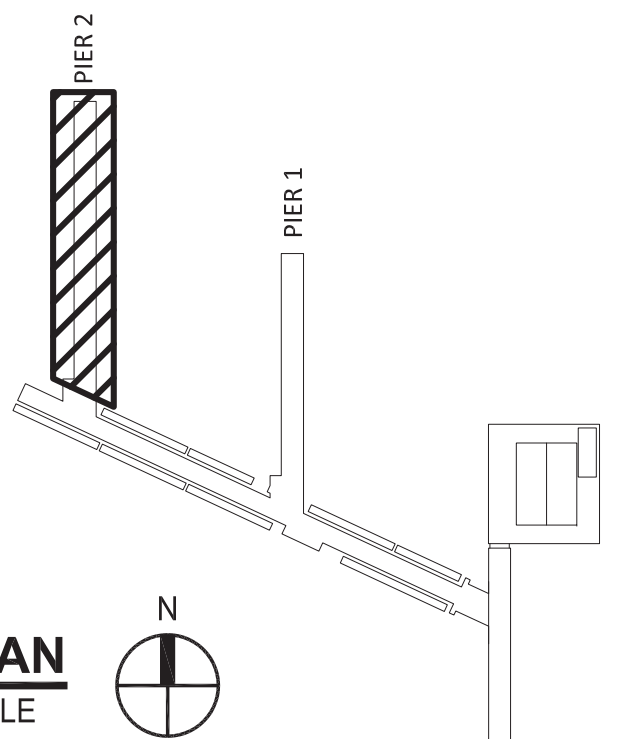
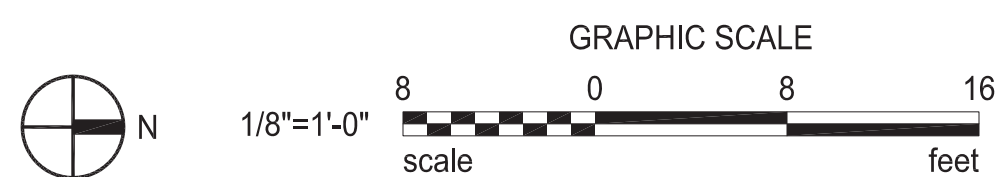
ELECTRICAL NOTES:

- 1 CONTRACTOR SHALL PROVIDE 10"x10"x4", 316 STAINLESS STEEL, NEMA 4X, JUNCTION BOX AT THIS LOCATION FOR TRANSITION TO LIGHT POLE. PROVIDE WATERTIGHT SPLICES OF CONDUCTORS WITHIN JUNCTION BOX.
- 2 CONTRACTOR SHALL PROVIDE 24"x24"x8", 316 STAINLESS STEEL, NEMA 4X, JUNCTION BOX AT THIS LOCATION FOR TRANSITION TO SHORE TO SHIP POWER PEDESTAL. PROVIDE WATERTIGHT SPLICES OF LIGHT POLE CONDUCTORS WITHIN JUNCTION BOX.



NEW PIER 2 PARTIAL ELECTRICAL PLAN

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



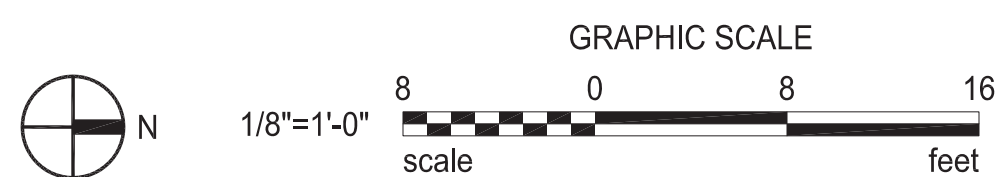
KEY PLAN
NOT TO SCALE

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NEW PIER 2 PARTIAL ELECTRICAL PLAN

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



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PORT OF NEAH BAY
MAKAH DOCK EXTENSION

PARTIAL DOCK ELECTRICAL PLAN

DRAWN BY: SJK
DESIGN BY: GLW
CHECK BY: SLH
PROJ MGR: GLW



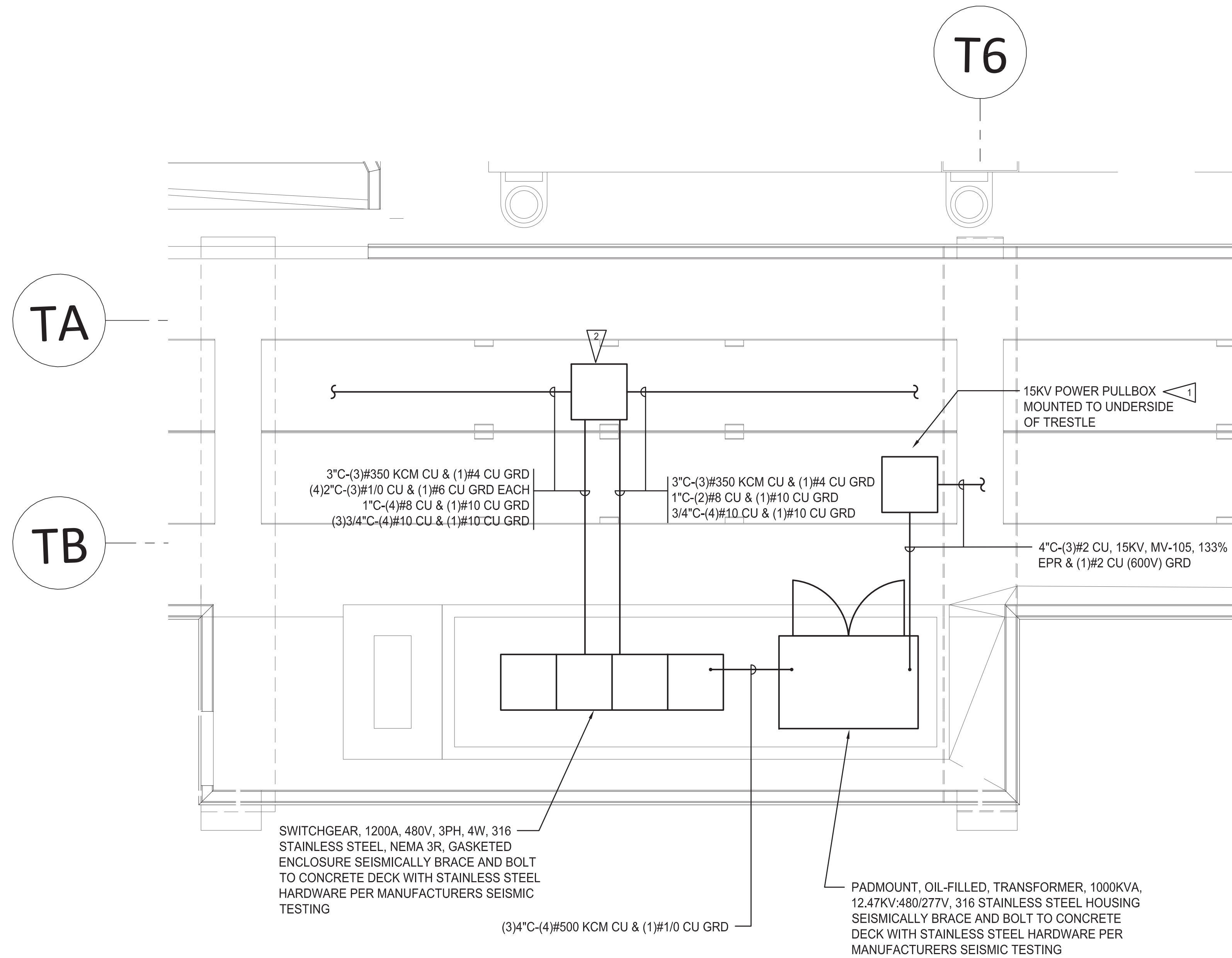
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DRAWING NO. **E-204**
PROJECT NO. 16-100
DATE: 7/28/17
SHEET NO. - OF -

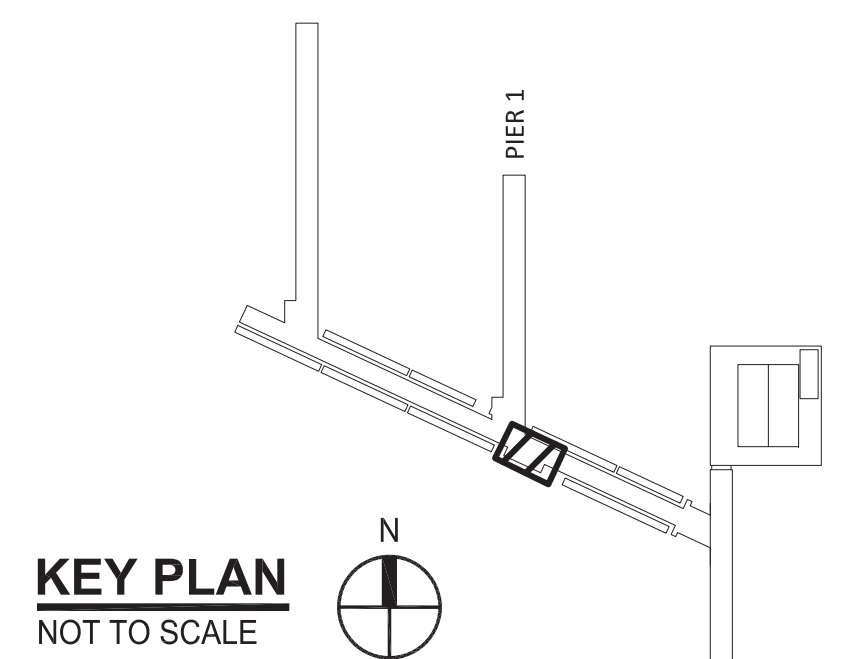
MARK	REVISION	DESCRIPTION	BY	APP.	DATE

ELECTRICAL NOTES:

- 1 CONTRACTOR SHALL PROVIDE 316 STAINLESS STEEL, NEMA 4X, HINGED, 36"x36"x12", PULLBOX MOUNTED TO UNDERSIDE OF TRESTLE. PROVIDE 316 STAINLESS STEEL MOUNTING HARDWARE FOR MOUNTING PULLBOX TO DOCK. COORDINATE WITH STRUCTURAL FOR DOCK CONSTRUCTION AND MATERIALS. PROVIDE FULL 360° CABLE LOOP IN PULLBOX.
- 2 CONTRACTOR SHALL PROVIDE 316 STAINLESS STEEL, NEMA 4X, HINGED, 36"x36"x12", PULLBOX MOUNTED TO UNDERSIDE OF TRESTLE. PROVIDE 316 STAINLESS STEEL MOUNTING HARDWARE WITH EPOXY ANCHORS FOR MOUNTING PULLBOX TO TRESTLE. COORDINATE WITH STRUCTURAL FOR TRESTLE CONSTRUCTION AND MATERIALS. PROVIDE FULL 360° XHHW-2 WIRE LOOPS IN PULLBOX.



A PARTIAL ELECTRICAL EQUIPMENT PLAN
 E-300 SCALE: 1/4"=1'-0"

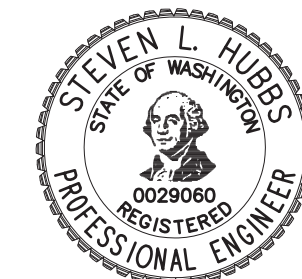


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 PROJ MGR GLW

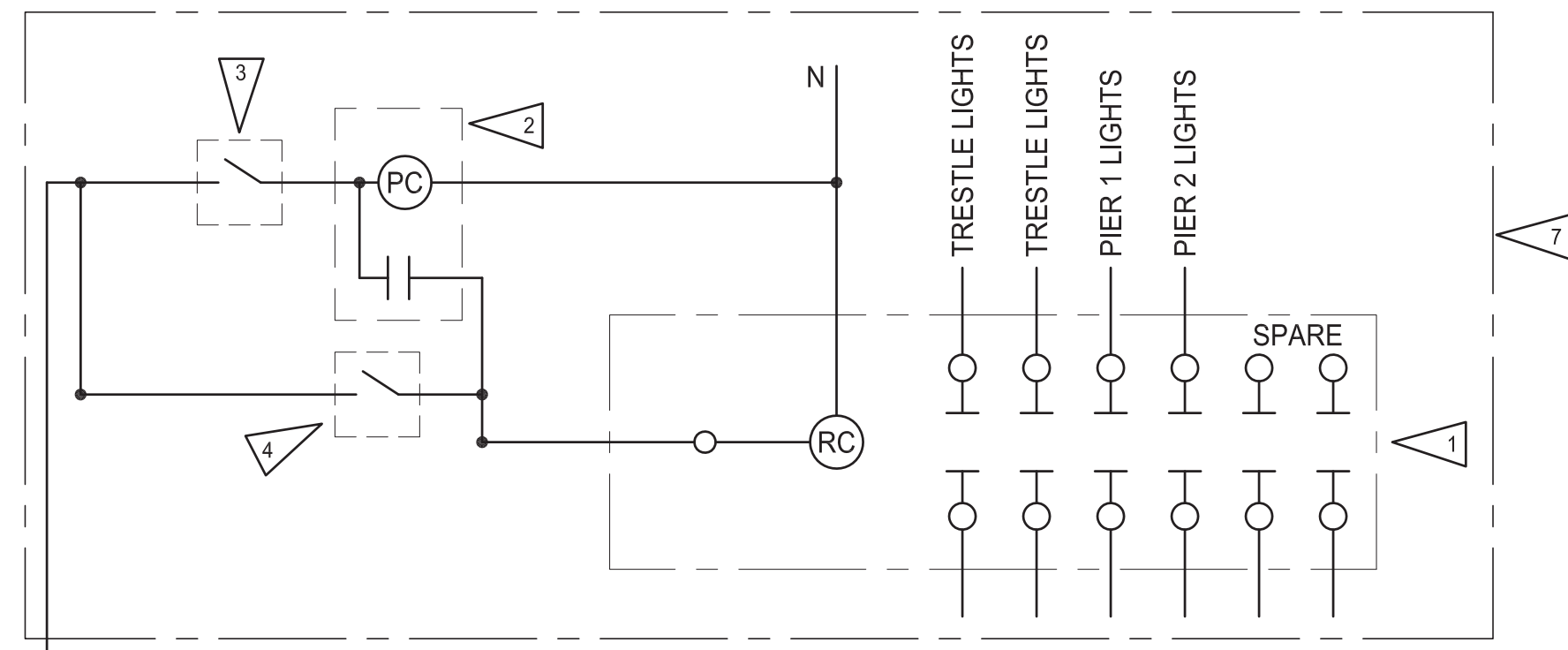
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PORT OF NEAH BAY
 MAKAH DOCK EXTENSION

PARTIAL DOCK ELECTRICAL PLAN

DRAWING NO. **E-300**
 PROJECT NO. 16-100
 DATE: 7/28/17
 SHEET NO. - OF -

MARK	REVISION	DESCRIPTION	BY	APP.	DATE



LIGHTING CONTROL DIAGRAM
NO SCALE

TO SEDB2. SEE POWER RISER DIAGRAM, THIS SHEET

ELECTRICAL NOTES:

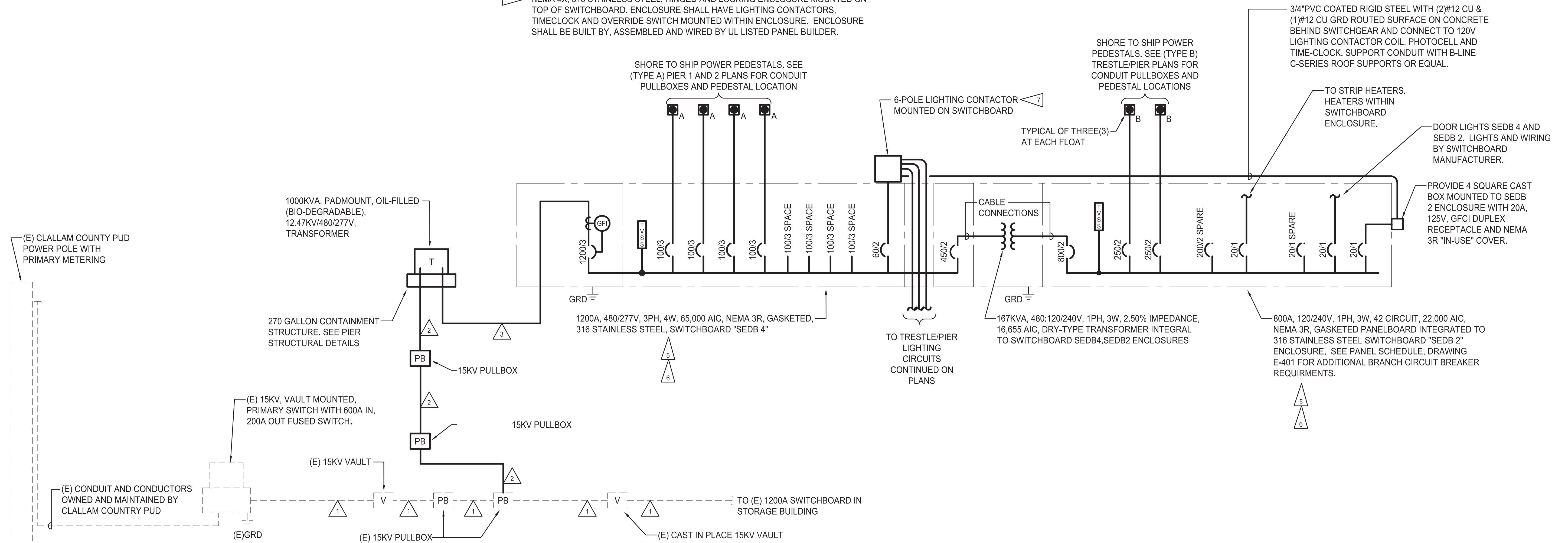
- 1 ELECTRICAL HELD, 480V RATED, LIGHTING CONTACTORS WITH 120V, 60 Hz COIL, SQUARE D 8903 L0-40 OR APPROVED. PROVIDE ALL CONTACTORS MOUNTED WITHIN NEMA 4X, 316 STAINLESS STEEL, HINGED AND LOCKING ENCLOSURE MOUNTED ON TOP OF SWITCHBOARD.
- 2 PHOTOCELL MOUNTED ON CONTACTOR ENCLOSURE ROOF FACING NORTH. PRECISION CONTROLS T15 (120V) OR APPROVED.
- 3 MOUNT TOGGLE SWITCH INSIDE LIGHTING CONTACTOR ENCLOSURE. PROVIDE LABEL "PHOTOCELL DISCONNECT SWITCH, NORMALLY ON".
- 4 MARK TIME #9000 SERIES, 0-6 HOUR TIME SWITCH, WITHOUT "HOLD" FEATURE, OR APPROVED. MOUNT SWITCH INSIDE LIGHTING CONTACTOR ENCLOSURE. PROVIDE LABEL "MANUAL SWITCH TURN ON ALL TRESTLE/PIER LIGHTS, NORMALLY OFF".
- 5 CONTRACTOR SHALL PROVIDE LED STRIP LIGHTS (MINIMUM 24") WITH INTEGRAL OCCUPANCY SENSORS ABOVE EACH DOOR IN EACH SWITCHGEAR SEDB 4 AND SEDB 2 SECTION.
- 6 CONTRACTOR SHALL PROVIDE 500W HEATER(S) WITH INTEGRAL THERMOSTAT IN EACH SWITCHGEAR SECTION. HEATERS SHALL BE SET TO TURN ON AT 36°F AND OFF AT 40°F OR MORE.
- 7 NEMA 4X, 316 STAINLESS STEEL, HINGED AND LOCKING ENCLOSURE MOUNTED ON TOP OF SWITCHBOARD. ENCLOSURE SHALL HAVE LIGHTING CONTACTORS, TIMECLOCK AND OVERRIDE SWITCH MOUNTED WITHIN ENCLOSURE. ENCLOSURE SHALL BE BUILT BY, ASSEMBLED AND WIRED BY UL LISTED PANEL BUILDER.

CONDUIT AND CONDUCTOR SCHEDULE:

- 1 (E)1/4"C-(3)#2 CU, 15KV, MV-105, 133% EPR & (1)#2 CU GRD (600V)
(E)1/4"C-EMPTY WITH PULLSTRING
- 2 NEW (1)1/4"C-(3)#2 CU, 15KV, MV-105, 133% EPR & (1)#2 CU GRD (600V)
- 3 NEW (4)1/4"C-(4)#350KCM CU & (1)#3/0 CU GRD EACH

LEGEND:

- EXISTING
- NEW



EXISTING/ NEW POWER RISER DIAGRAM
NO SCALE

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PROJ MGR: GLW

PORT OF NEAH BAY
MAKAH DOCK EXTENSION
POWER RISER DIAGRAM

DRAWING NO. **E-400**
PROJECT NO. 16-100
DATE: 7/28/17
SHEET NO. - OF -

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PANEL SHALL BE INTEGRAL TO SWITCHBOARD

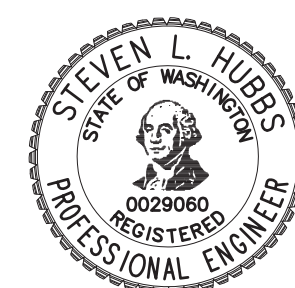
INTEGRAL MOUNTING 22,000 AIC		PANEL SCHEDULE									
No. SEDB 2		LOCATION: SWITCHBOARD SERVING: EQUIPMENT					120/240 VOLTS 1PHASE 3WIRE 800 AMPS WITH 800 MAIN BREAKER				
CKT NO.	LOAD DESCRIPTION	KVA	TRIP AMPS	TRIP AMPS	KVA	LOAD DESCRIPTION	CKT NO.				
1	SHIP/SHORE PEDESTALS	57.60	250	250	57.60	SHIP/SHORE PEDESTALS	2				
3	(QTY OF 3)		2	2		(QTY OF 3)	4				
5	STRIP HEATERS	1.00	20	20	.30	LIGHTING CNTRLS/ RECEPT.	6				
7	SWITCHBOARD LIGHTS	.50			1.50	HEAT TRACE	8				
9	HEAT TRACE	1.50			1.50		10				
11		1.50			1.50		12				
13		1.50			1.50		14				
15		1.50			1.50		16				
17		1.50			1.50	HEAT TRACE	18				
19	HEAT TRACE	1.50				SPARE	20				
21	SPARE						22				
23							24				
25							26				
27				20		SPARE	28				
29	SPARE		20			SPACE	30				
31	SPACE						32				
33							34				
35							36				
37						SPACE	38				
39						TVSS	40				
41	SPACE						42				

REMARKS: * PROVIDE GFI CIRCUIT BREAKER.

CONNECTED LOAD: 135.0 KVA 563 AMPS
DEMAND LOAD: 135.1 KVA 563 AMPS

SEDB 2 LOAD CALCULATIONS

SERVICE	KVA LOAD	FACTOR	NEC REF.	DEMAND LOAD
LIGHTING	.50	X 1.25	220.19(A)(1)	= .63
RECEPTS TO 10KW	.18	X 1.00	220.44	= .18
RECEPTS OVER 10KW	-	X 0.50	220.44	= -
MOTORS (LARGEST)	-	X 1.25	430.24	= -
MOTORS	-	X 1.00	430.24	= -
KITCHEN EQUIP.	-	X 1.00	220.56	= -
WELDERS	-	X 1.00	630.11(B)	= -
SHIP/SHORE PEDESTALS	115.20	X 1.00		= 115.20
ELECTRIC HEAT	19.00	X 1.00	220.51	= 19.00
MISCELLANEOUS	.10	X 1.00		= .10
TOTAL CONNECTED	135.0 KVA			135.1 KVA
	(563 AMPS)			(563 AMPS)



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PROJ MGR GLW

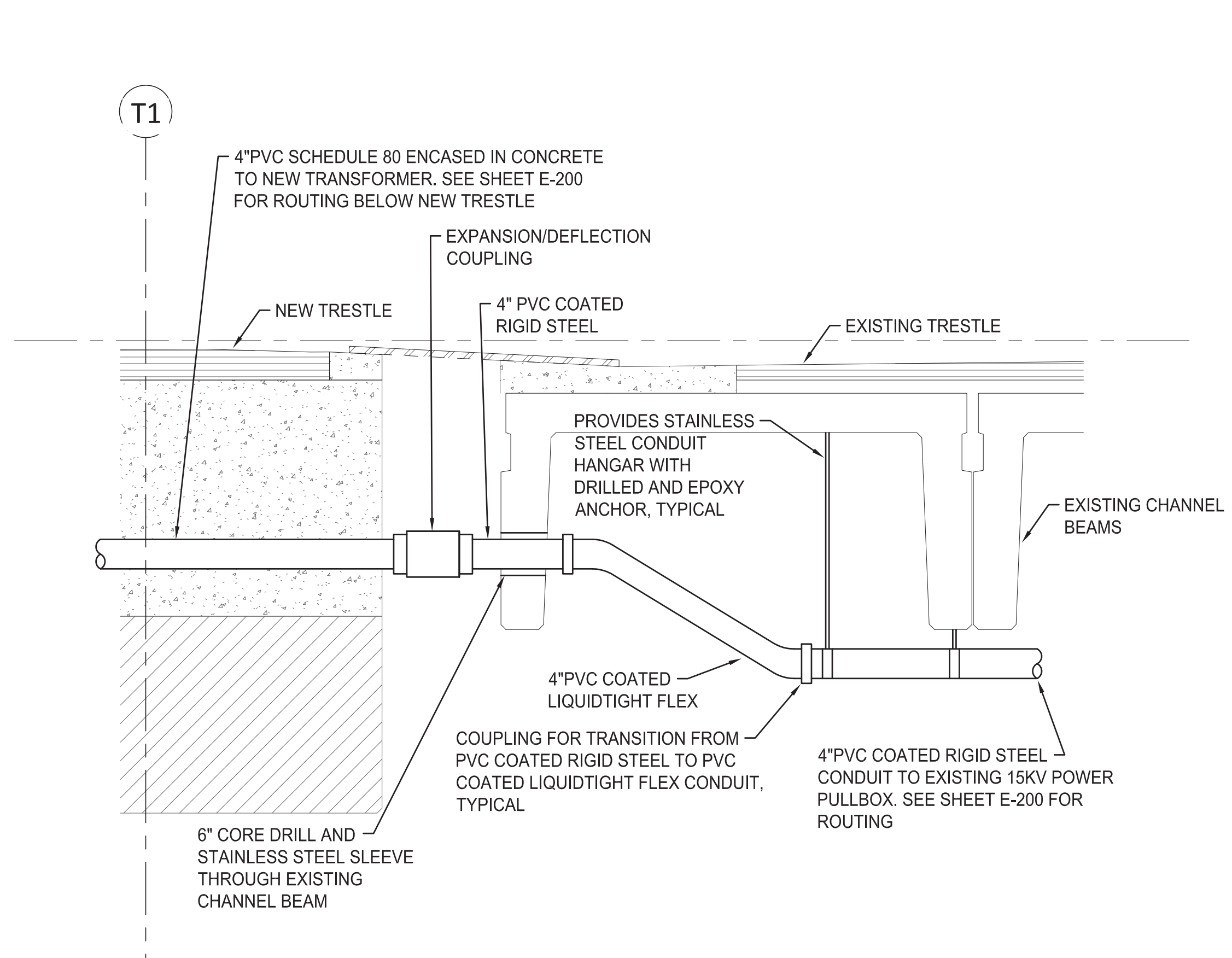
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PORT OF NEAH BAY
MAKAH DOCK EXTENSION

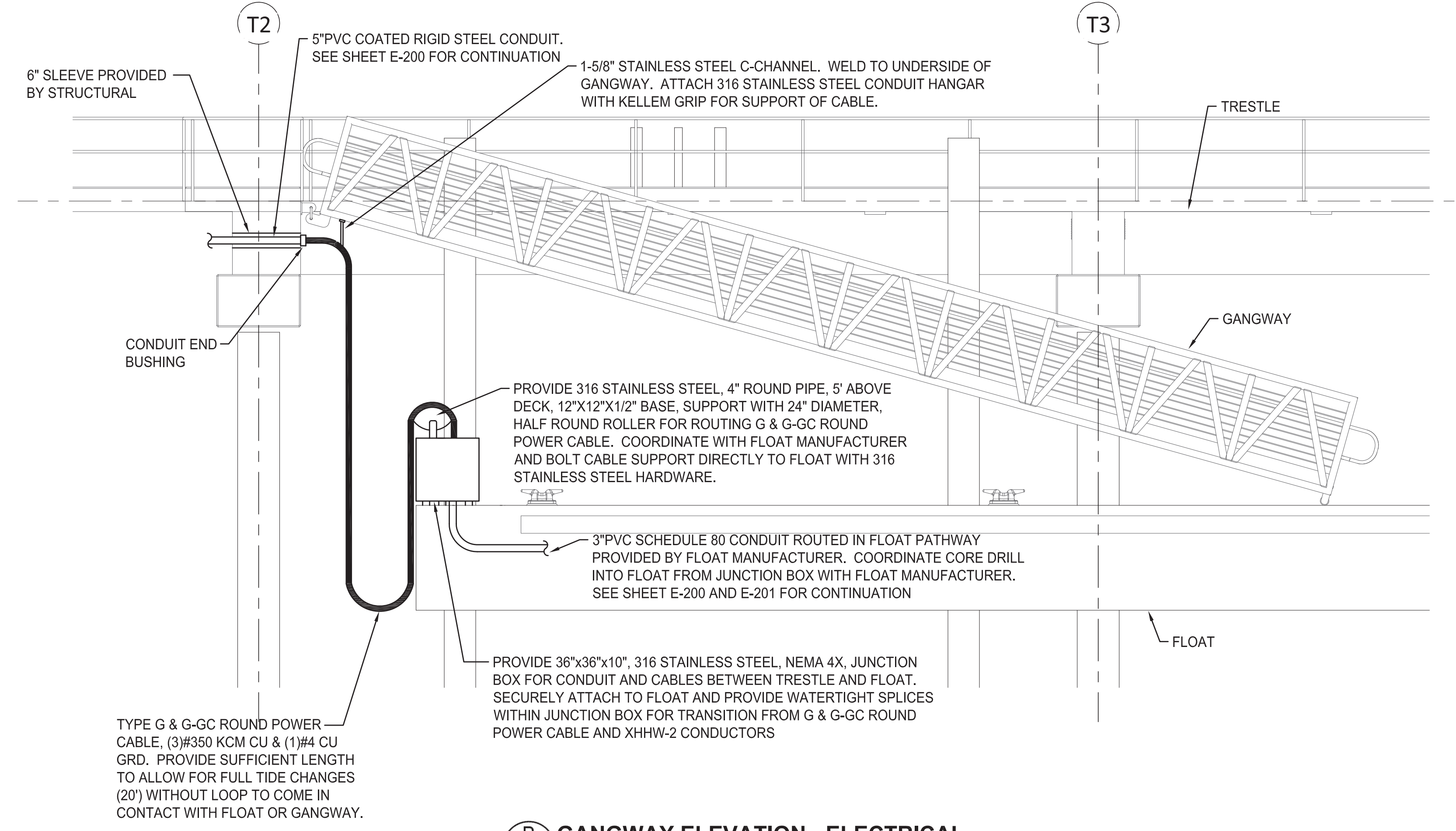
PANEL SCHEDULES

DRAWING NO. **E-401**
PROJECT NO. 16-100
DATE: 7/28/17
SHEET NO. - OF -

MARK	REVISION DESCRIPTION	BY	APP.	DATE



A SEISMIC JOINT - ELECTRICAL
E-500 SCALE: 3/4"=1'-0"



B GANGWAY ELEVATION - ELECTRICAL
E-500 SCALE: 1/4"=1'-0"

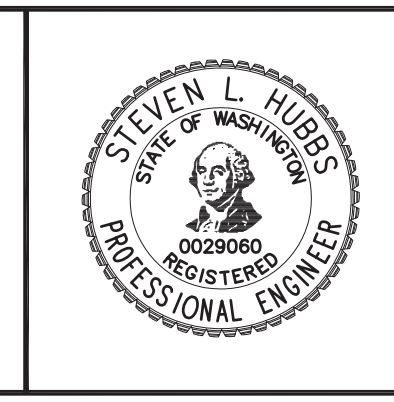
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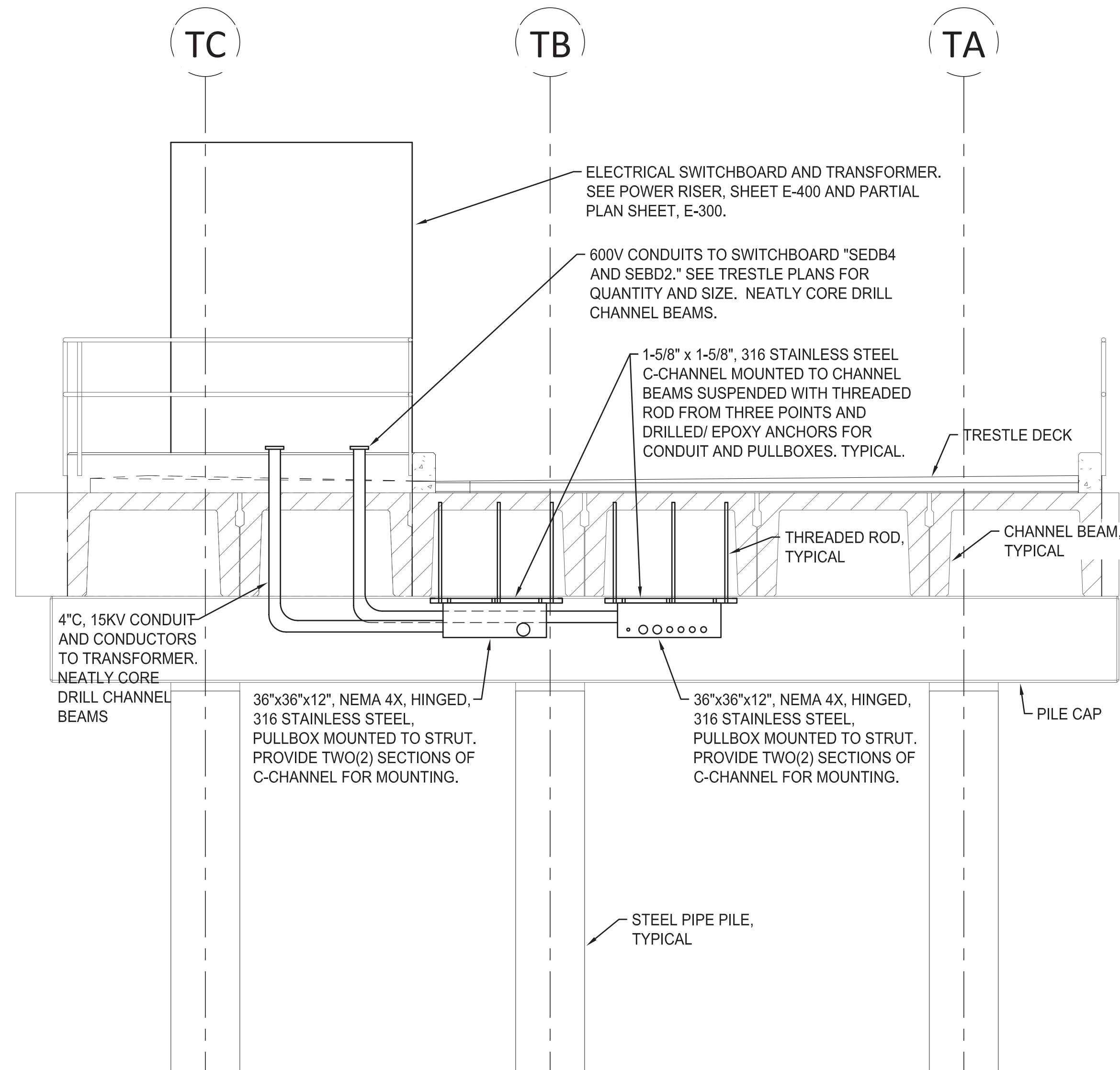


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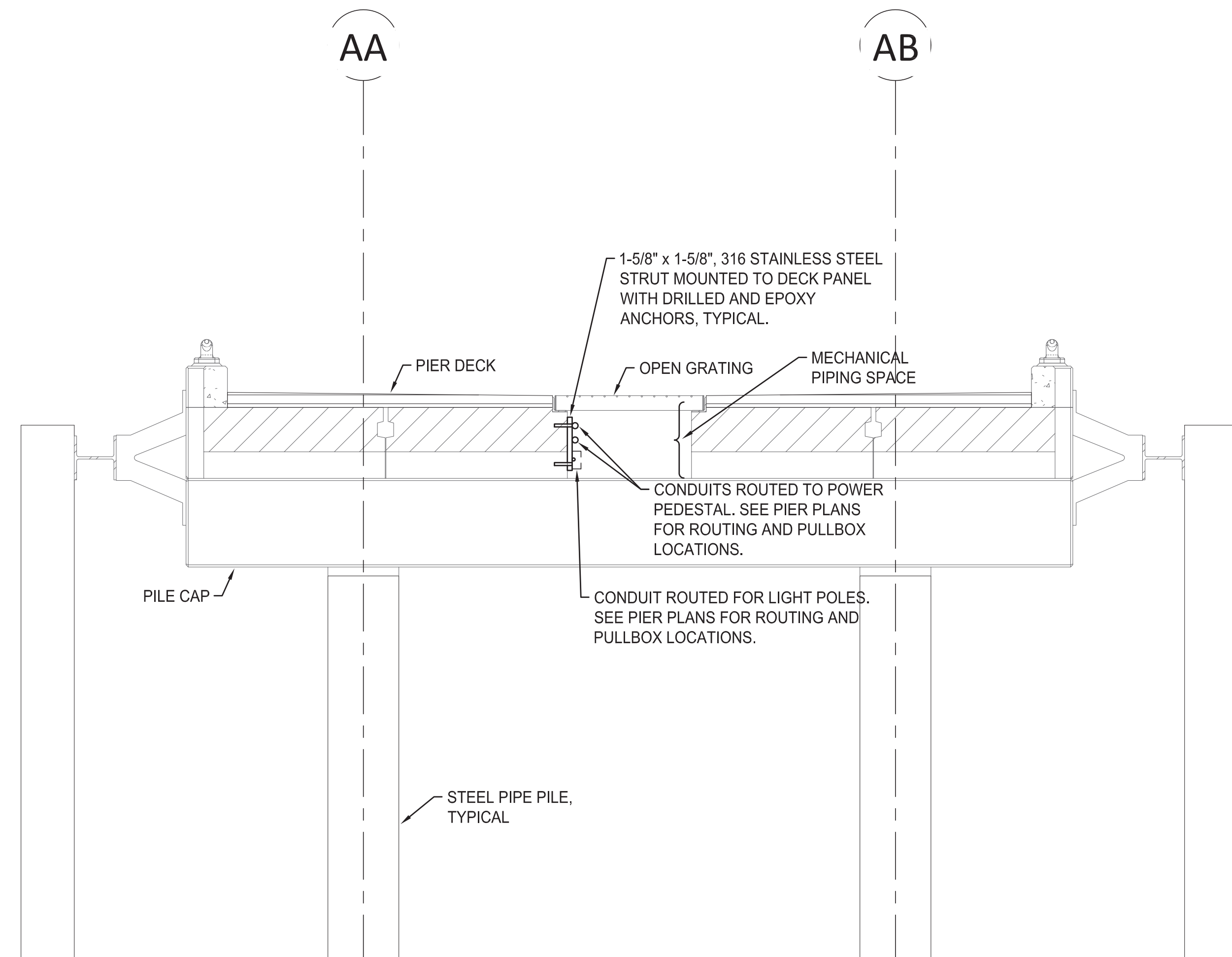
**PORT OF NEAH BAY
MAKAH DOCK EXTENSION**

ELECTRICAL DETAILS

DRAWING NO. **E-500**
PROJECT NO. 16-100
DATE: 7/28/17
SHEET NO. - OF -



A TRESTLE SECTION - ELECTRICAL
E-501 SCALE: 3/8"=1'-0"



B PIER SECTION - ELECTRICAL
E-501 SCALE: 3/8"=1'-0"

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PORT OF NEAH BAY
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ELECTRICAL DETAILS

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