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# PORT OF TACOMA

## TACOMA, WASHINGTON PIER 3 UPGRADE CONTRACT NO. 069458

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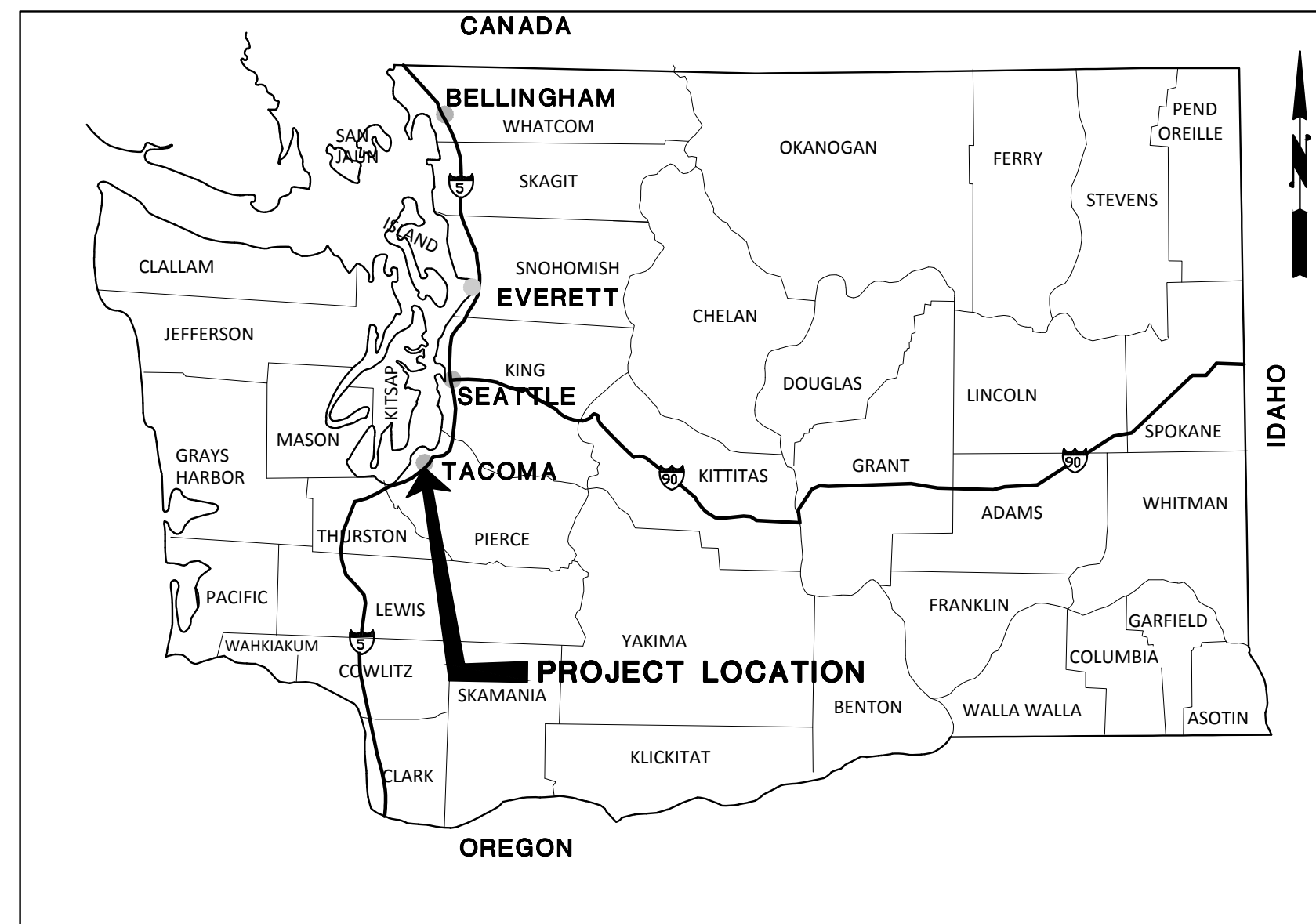
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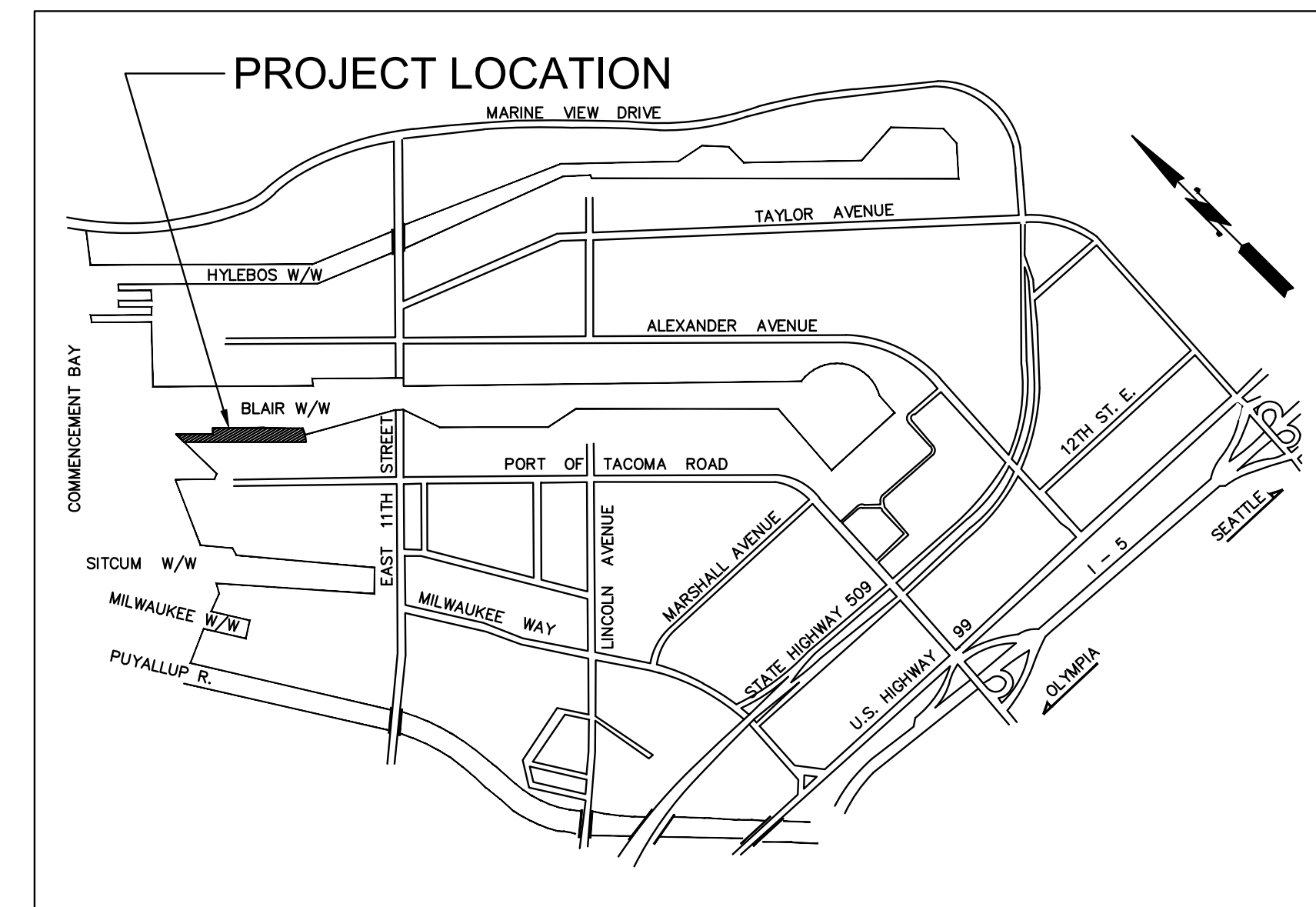

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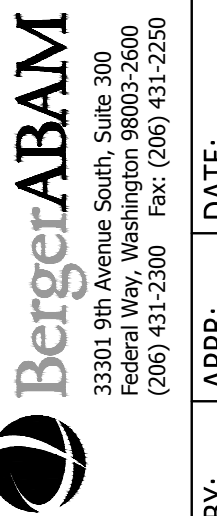

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**AREA MAP WASHINGTON**  
NO SCALE



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APPROVED:	CSB	7/17/13	DATE
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DIR OF ENG	PRINTED BY:	DATE	DATE
	Jason.mendenthal		
	PORT ADDRESS:	ONE SITCUM WAY	
		TACOMA, WA 98421-2300	

<b>PIER 3 UPGRADE</b>	COVER SHEET
	RANGE: 3 E SECTION: 27
	TOWNSHIP: 21 N
	DATE-HRZ: NAD 83-07
NO. TIDAL (MILLW = 0.0)	DRAWING SCALE: AS SHOWN
PARCEL: 27	

6502	<b>G1.0</b>
SHEET 1 OF 129	
CONT/CONS: 069458	
MASTER ID NO: 092935	
PHASE: RECORD DRAWINGS	

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<b>6502</b>	<b>PIER 3 UPGRADE</b>	APPROVED: CSB 7/17/13	DATE 7/17/13	DATE 7/17/13	DATE 7/17/13
<b>G2.0</b>	DRAWING LIST	DC 7/17/13	DIR OF ENGR JASON.MENDENHALL	DATE 7/17/13	DATE 7/17/13
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MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	PORT ADDRESS: ONE SITCUM WAY	BY: [ ]	DATE: [ ]
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	TACOMA, WA 98421-2300	MARK: [ ]	REVISION: [ ]
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250		 P.O. BOX 1887 TACOMA, WA 98401 (206) 385-5841			

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**SYMBOLS:**

	NORTH ARROW
	SECTION, DETAIL, OR ELEVATION CALLOUT
	DRAWING WHERE SECTION, DETAIL OR ELEVATION IS SHOWN OR CALLED FROM
	SECTION OR ELEVATION CUT
	PLAN, SECTION, DETAIL, OR ELEVATION
	WATER
	EXIST WATER
	FIRE WATER
	EXIST FIRE WATER
	SANITARY SEWER
	EXIST SANITARY SEWER
	NEW/TEMPORARY SECURITY FENCE
	EXIST SECURITY FENCE
	STORM DRAIN
	EXIST STORM DRAIN
	ELECTRICAL
	EXIST ELECTRICAL
	EXIST ELECTRICAL CONDUIT
	EXIST CRANE RAIL GROUNDING
	COORDINATES
	BENT OR GRID NO.
	SURVEY CONTROL MONUMENT, SURVEY CONTROL POINT
	WORK POINT
	PROJECT CONTROL POINT
	PROJECT CONTROL POINT

	EXIST HIGH MAST LIGHTPOLE
	EXIST STORM DRAIN INLET
	EXIST STORM WATER VAULT
	EXIST THRUST BLOCK
	EXIST OUTFALL
	EXIST FIRE HYDRANT
	EXIST ELECTRICAL VAULT
	TREATED TIMBER FENDER PILE
	EXIST 24" OCT PC/PS CONC PILE
	EXIST 24"Ø STEEL PIPE PILE, PLUMB
	EXIST 24"Ø STEEL PIPE PILE, BATTERED
	EXIST 16 1/2" OCT PC/PS CONC PILE, PLUMB
	EXIST 16 1/2" OCT PC/PS CONC PILE, BATTERED
	EXIST CRANE STOP
	EXIST CRANE POWER VAULT
	EXIST FENDER
	EXIST BOLLARD
	EXIST PIN SOCKETS
	EXIST WATER VAULT
	EXIST POWER VAULT
	EXIST ELECTRICAL PULL BOX
	EXIST CRANE TIE DOWN
	24" OCT PC/PS CONC PILE, PLUMB
	CRANE POWER VAULT
	SHORE POWER VAULT
	CRANE STOP
	FENDER ASSEMBLY
	200-TON BOLLARD
	100-TON BOLLARD
	LADDER
	WATER VAULT
	480V VAULT
	PIN SOCKET
	CRANE TIE DOWNS
	PILE CUT-OFF ELEVATION
	MIN PILE TIP ELEVATION
	INLET PROTECTION
	SILT FENCE
	FLOATING DEBRIS BOOM
	CONTRACTOR INGRESS/EGRESS ROUTE
	TEMP FENCE W/ JERSEY BARRIERS
	HIGH MAST LIGHT POLE
	DEMOLITION LIMITS
	EPOXY COATED REINFORCEMENT

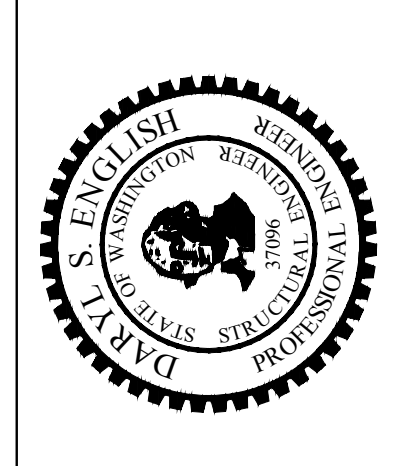
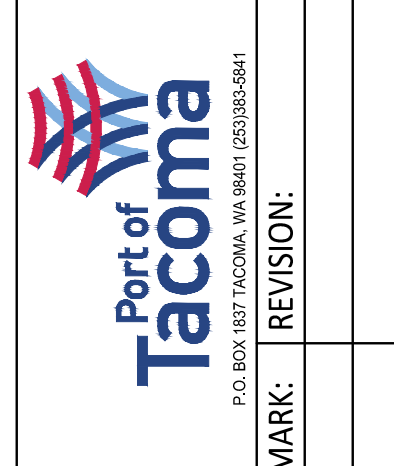
**ABBREVIATIONS:**

&	AND	N	NORTH
±	APPROXIMATELY	NAD	NORTH AMERICAN DATUM
@	AT	NAVD	NORTH AMERICAN VERTICAL DATUM
⊖	CENTERLINE	NCD	NEARSHORE CONFINED DISPOSAL
∅	DIAMETER	NIC	NOT IN CONTRACT
°	DEGREES	NIM	NORTH INTERMODAL
=	EQUALS	NGVD	NATIONAL GEODETIC VERTICAL DATUM
"	INCHES, SECONDS	NOM	NOMINAL
'	FEET, MINUTES	NO	NUMBER
ACI	AMERICAN CONCRETE INSTITUTE	NSF	NATIONAL SANITATION FOUNDATION
ACP	ASPHALT CONCRETE PAVEMENT	NW	NORTHWEST
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	OC	ON CENTER
AMP	AMPLITUDE	OCT	OCTAGONAL
APPROX	APPROXIMAT (-E, -LY)	OD	OUTSIDE DIAMETER
APWA	AMERICAN PUBLIC WORKS ASSOCIATION	OHW	ORDINARY HIGH WATER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	OPP	OPPOSITE
AWS	AMERICAN WELDING SOCIETY	P	POINT LOAD
AWWA	AMERICAN WATER WORKS ASSOCIATION	P/C, PC	PRECAST
BMP	BEST MANAGEMENT PRACTICE	PC/PS	PRECAST/PRESTRESSED
BOT	BOTTOM	PDA	PILE DRIVING ANALYZER
CBC	CALIFORNIA BUILDING CODE	PERP	PERPENDICULAR
CIP	CAST IN PLACE	PL	PLATE
CJ	CONSTRUCTION JOINT	PS	PRESTRESSED
CJP	COMPETE JOINT PENETRATION	PSF	POUNDS PER SQUARE FEET
CLR	CLEAR (-ANCE)	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	PT	POINT
CONT	CONTINUOUS	PVC	POLY VINYL CHLORIDE
COMM	COMMUNICATION(S)	R, RAD	RADIUS
DEMO	DEMOLISH OR DEMOLITION	R/C	REINFORCED CONCRETE
DIA	DIAMETER	REINFC	REINFORC (-E, -ED, -ING, -MENT)
DIP	DUCTILE IRON PIPE	REQ'D	REQUIRED
DWG(S)	DRAWING (-S)	RPM	RADIATION PORTAL MONITOR
EA	EACH	S	SECONDS, SOUTH
EHW	EXTREME HIGH WATER	SCHED	SCHEDULE
EL, ELEV	ELEVATION	SD	STORM DRAIN
ELW	EXTREME LOW WATER	SE	SOUTHEAST
EMBED	EMBEDMENT	SHT	SHEET
EQ	EQUAL (-LY)	SIM	SIMILAR
EW	EACH WAY	SPA	SPACE
EXIST, EX	EXISTING	SPECS	SPECIFICATIONS
EXP JT	EXPANSION JOINT	SQ	SQUARE
FB	FLAT BAR	SS	SANITARY SEWER/STAINLESS STEEL
f'c	COMPRESSIVE STRENGTH	SSP	SHIP SHORE POWER
FT	FEET, FOOT	STIFF	STIFFENER
FW	FIRE WATER	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
fy	YIELD STRENGTH	SYMM	SYMMETRICAL
GALV	GALVANIZE (-D)	T&B	TOP & BOTTOM
GPS	GLOBAL POSITIONING SYSTEM	TEMP	TEMPORARY
GR	GRADE	TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
HAS	HEADED ANCHOR STUD (-S)	THRU	THROUGH
HDPE	HIGH DENSITY POLYETHYLENE	TMC	TACOMA MUNICIPAL CODE
HMA	HOT MIX ASPHALT	TOPO	TOPOGRAPHY
HSS	HOLLOW STRUCTURAL SECTION	TPU	TACOMA PUBLIC UTILITIES
HORIZ	HORIZONTAL	TWIC	TRANSPORTATION WORKER IDENTIFICATION CREDENTIAL
IBC	INTERNATIONAL BUILDING CODE	TYP	TYPICAL
IE	INVERT ELEVATION	UHMW-PE	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE
IEBC	INTERNATIONAL EXISTING BUILDING CODE	UNC	UNIFIED NATIONAL COARSE
IN.	INCH (-ES)	UNO	UNLESS NOTED OTHERWISE
JT	JOINT	V	VOLT
KIP, KIPS	KILOPOUND(-S)	W/	WITH
LB, LBS	POUND(-S)	W/O	WITHOUT
LOC	LOCATION	WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
LF	LOAD FACTOR		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
LT	LONG-TON		
MAX	MAXIMUM		
MECH	MECHANICAL		
MH	MANHOLE		
MHHW	MEAN HIGHER HIGH WATER		
MIN	MINIMUM		
MJ	MECHANICAL JOINT		
MLLW	MEAN LOWER LOW WATER		
MSL	MEAN SEA LEVEL		

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NOTES:

GENERAL

- 1. THESE NOTES CONTAIN GENERAL INFORMATION AND ARE NOT NECESSARILY COMPLETE FOR CONSTRUCTION PURPOSES. THE CONTRACTOR SHALL VERIFY INFORMATION SHOWN ON THE DRAWINGS, IN THE SPECIFICATIONS AND OTHER DOCUMENTS, AND BRING ANY CONFLICTS TO THE ATTENTION OF THE ENGINEER BEFORE BEGINNING THE AFFECTED WORK. THE ENGINEER WILL RESOLVE ANY SUCH CONFLICTS. SEE THE SPECIFICATIONS FOR AVAILABLE RECORD DRAWINGS AND REFERENCE DOCUMENTS.
- 2. THE ADJACENT TERMINAL (PIER 4) WILL BE IN OPERATION DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL KEEP ITS WORKERS, MATERIAL, AND EQUIPMENT CLEAR OF ALL SHIPPING AND CONTAINER HANDLING OPERATIONS AND SHALL NOT IN ANY WAY HINDER OR DISRUPT TERMINAL OPERATIONS.

THE PROJECT SITE IS LOCATED ALONG AN ACTIVE SHIPPING CHANNEL. AT NO TIME SHALL THE CONTRACTOR OBSTRUCT OR HINDER SHIPPING ACTIVITIES WITHIN THE CHANNEL. ALL WATER BORNE CONSTRUCTION EQUIPMENT SHALL BE MOORED OUT OF THE SHIPPING CHANNEL. NO MOORING LINES OR ANCHORS SHALL BE PLACED WITHIN THE CHANNEL.

- 3. PROJECT DATUM AND SURVEY CONTROL: REFER TO DWG C1.0 FOR ESTABLISHED PROJECT CONTROL POINTS. THE CONTRACTOR SHALL PERFORM ALL SURVEYING AND STAKING REQUIRED DURING CONSTRUCTION, SEE SPECIFICATIONS ALSO.
- 4. LOCATIONS OF EXISTING UTILITIES SHOWN HEREIN HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THESE PLANS. SEE THE SPECIFICATIONS FOR AVAILABLE RECORD DRAWINGS AND REFERENCE DOCUMENTS.
- 5. THE CONTRACTOR SHALL USE A UTILITY LOCATION SERVICE FAMILIAR WITH THE SITE. DOCUMENTATION OF ALL LOCATES SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION. INFORM THE ENGINEER OF ANY POTENTIAL CONFLICTS OR INTERFERENCES FOR RESOLUTION PRIOR TO PERFORMING EXCAVATIONS.
- 6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION AND EROSION CONTROL (TESC) FACILITIES TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE NATURAL OR PIPED DRAINAGE SYSTEM. REFER TO THE APPLICABLE DRAWINGS AND THE SPECIFICATIONS FOR PLANS AND DETAILS THAT DESCRIBE THE MINIMUM TESC FEATURES REQUIRED.

AS CONSTRUCTION PROGRESSES AND SEASONAL CONDITIONS DICTATE, THE CONTRACTOR SHALL REVISE TESC FACILITIES AND CONFIGURATIONS AS NECESSARY TO ENSURE COMPLETE SILTATION CONTROL AND THAT NO SEDIMENT LADEN WATER ENTERS THE NATURAL OR PIPED DRAINAGE SYSTEM.

DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY ITS ACTIVITIES AND TO PROVIDE ADDITIONAL TESC FACILITIES THAT MAY BE NEEDED TO PROTECT THE SITE, ADJACENT LAND AND EXISTING DRAINAGE FEATURES. REMOVE TESC FACILITIES AT COMPLETION OF THE PROJECT.

- 7. THE CONTRACTOR SHALL ENSURE NO DEMOLITION, CONSTRUCTION, OR OTHER DEBRIS FALLS TO THE SLOPE OR IN THE WATER. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL DEBRIS THAT INADVERTENTLY FALLS ON THE SLOPE OR IN THE WATER ON AN ONGOING BASIS. SEE ADDITIONAL NOTES UNDER DEMOLITION AND THE SPECIFICATIONS.
- 8. PIER BENT NUMBERING SYSTEM SHALL BE AS SHOWN ON DWGS S3.0 TO S3.4. BENT CENTERLINES SHALL BE DEFINED BY THE CENTER OF THE EXIST STAGE I PILECAP AT FACE OF PIER

GENERAL CONT.

- 8. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE WORK AREAS OVER THE SLOPE AND IN OR OVER THE WATER.
- 9. THE CONTRACTOR SHALL KEEP ALL ON-SITE PROJECT AREAS CLEAN AT ALL TIMES BY SWEEPING. WASHING AND/OR USE OF A WATER TRUCK TO CLEAN PAVED AREAS ARE/IS NOT ALLOWED.
- 10. ALL EXISTING FEATURES AND PAVED SURFACES, INCLUDING TERMINAL YARDS, ROADWAYS, SIDEWALKS, FENCES, AND CURBS DESIGNATED TO REMAIN THAT ARE DAMAGED, AS DETERMINED BY THE ENGINEER, DURING CONSTRUCTION, SHALL BE REPAIRED BY THE CONTRACTOR AT ITS OWN EXPENSE.
- 11. THE CONTRACTOR SHALL DISPOSE OF EXCESS OR UNSUITABLE MATERIALS AS INDICATED IN THE SPECIFICATIONS. SEE SPECIFICATIONS FOR ITEMS TO BE SALVAGED.
- 12. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH NOTIFICATIONS OF UTILITY OUTAGES. THE CONTRACTOR SHALL COORDINATE AND ARRANGE FOR ALL UTILITY CONNECTIONS, UTILITY RELOCATIONS AND/OR SERVICE INTERRUPTIONS WITH ENGINEER, APPROPRIATE UTILITY OWNER AND WITH THE CITY OF TACOMA. CONNECTIONS TO EXISTING PUBLIC UTILITIES SHALL BE MADE PER CITY OR TACOMA POWER REQUIREMENTS. EXISTING UTILITY LINES IN SERVICE WHICH ARE DAMAGED DUE TO CONSTRUCTION WORK SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE AND INSPECTED AND ACCEPTED BY UTILITY OWNER'S REPRESENTATIVE PRIOR TO BACKFILLING.
- 13. CONTRACTOR AREAS FOR STAGING, LAYDOWN, STORAGE OF MATERIALS AND EQUIPMENT SHALL BE CONFINED TO THE PROJECT SITE, AS SHOWN ON DWG G5.0. REFER TO SECTION 01 14 00 WORK RESTRICTIONS IN THE SPECIFICATIONS FOR ADDITIONAL SITE ACCESS INFORMATION. AT NO TIME SHALL CONTRACTOR EQUIPMENT, MATERIAL OR PERSONNEL ENTER THE SLIP 5 MITIGATION AREA.
- 14. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING THE ADEQUACY OF EXISTING STRUCTURES AND UTILITIES TO SUPPORT CONSTRUCTION EQUIPMENT AND LOADS.
- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL INSTALL AND MAINTAIN SHORING AND BRACING NECESSARY TO PROTECT WORKERS, UTILITIES AND OTHER IMPROVEMENTS AND EXCAVATIONS AGAINST LOSS OF GROUND, ROCKS, RIPRAP, GRAVELS, OR CAVING EMBANKMENTS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF TEMPORARY SHORING AND BRACING.

EXISTING CONCRETE PILES THAT ARE TO BE REINCORPORATED INTO STRUCTURE SHALL BE Laterally BRACED PRIOR TO SAW CUTTING AND RELEASE AT TOP OF PILE. BRACING SHALL REMAIN IN PLACE UNTIL STAGE II CONCRETE ABOVE PILE HAS CURED FOR 14 DAYS.

- 16. A GEOTECHNICAL REPORT PREPARED BY GEOENGINEERS, DATED JANUARY 25, 2013, IS INCLUDED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL READ AND BE THOROUGHLY FAMILIAR WITH THE CONTENTS THEREOF.
- 17. ALL DEVIATIONS FROM THESE PLANS SHALL BE RECORDED ON A SET OF "AS-BUILT" OR RECORD DRAWINGS. THE CONTRACTOR SHALL SUBMIT "AS-BUILT" DRAWINGS TO THE ENGINEER IN ACCORDANCE WITH THE SPECIFICATIONS, SEE SECTION 01 70 00, EXECUTION AND CLOSEOUT REQUIREMENTS.




CIVIL

- 1. THE WASHINGTON STATE 2012 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), SHALL APPLY TO WORK AS IDENTIFIED IN THE SPECIFICATIONS.
- 2. ALL PIPING, FITTINGS & SUPPORTS SHALL CONFORM TO AMERICAN WATER WORKS ASSOCIATION (AWWA) GUIDELINES, AND SHALL BE NSF APPROVED.
- 3. FILL MATERIAL SHALL COMPLY WITH CONTRACT DOCUMENTS AND SHALL BE APPROVED BY THE ENGINEER.
- 4. SOILS IN THE SLIP 1 NCD BOUNDARY, AS DEPICTED ON DWG G5.0, MAY BE CONTAMINATED. THE CONTRACTOR SHALL COMPLY WITH APPLICABLE SECTIONS OF THE SPECIFICATIONS DURING DEMOLITION AND EXCAVATION OPERATIONS.
- 5. THERE SHALL BE NO CHANGE IN TOPO FOR THIS PROJECT. TOP OF FINISH GRADE SHALL EQUAL EXISTING GRADE. PAVEMENT PATCH WORK IS DISTURBED AREAS THAT IS REMOVED SHALL LATER BE REPLACED WITH SAME SURFACE ELEVATIONS. PERFORM SURVEYS AS REQ'D TO ENSURE TOPO REMAINS THE SAME. SURFACE IS FLUSH WITH TOP OF CRANE RAILS AND SLOPES DOWN TO DECK DRAINS THAT CREATE A VALLEY BETWEEN THE RAILS ALONG THE ALIGNMENT OF THE DRAINS. PAVEMENT DEMO ON THE PIER AND ADJACENT AREAS IS SHOWN ON THE STRUCTURAL DRAWINGS. LANDSIDE PAVEMENT DEMO FOR ELECTRICAL WORK IS NOT SHOWN. REFER TO TRENCH CROSS-SECTIONS.
- 6. PAVEMENT SECTIONS TO BE USED FOR ALL LANDSIDE REPLACEMENT PAVEMENT (AREAS WEST OF THE BULKHEAD STRUCTURE) SHALL BE 10 INCHES OF COMPACTED HMA OVER 12 INCHES OF COMPACTED BASE COURSE AGGREGATE OVER COMPACTED SELECT BACKFILL MATERIAL.
- 7. PAVEMENT SECTION TO BE USED FOR ALL PIER REPLACEMENT PAVEMENT SHALL BE 6 INCHES OF COMPACTED HMA OVER COMPACTED BALLAST (BASE COURSE AGGREGATE). ONLY BALLAST MATERIAL SHALL BE USED BETWEEN TOP OF CONCRETE AND HMA PAVEMENT UNLESS OTHERWISE SHOWN ON DRAWINGS.

DEMOLITION

- 1. DEMOLITION DRAWINGS ARE INTENDED TO SHOW OVERALL SCOPE AND COMPLEXITY OF DEMOLITION. IN ADDITION, THE CONTRACTOR SHALL PERFORM ALL OTHER INCIDENTAL DEMOLITION REQUIRED TO COMPLETE THE WORK.
- 2. PRIOR TO COMMENCING DEMOLITION OPERATIONS, IMPLEMENT EROSION AND SEDIMENT CONTROL PLAN.
- 3. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL SAWCUT WHERE NOTED OR OTHERWISE PROVIDE A SMOOTH CLEAN CUT FROM ALL CONNECTING LINKS TO THE REMAINING STRUCTURES OR ADJACENT YARD AREAS.
- 4. THE CONTRACTOR SHALL CONTAIN THE DEMOLITION WITHIN THE LIMITS DESIGNATED, TO PREVENT DAMAGE TO EXISTING STRUCTURES, UTILITIES, OR FACILITIES, AND KEEP ALL DEBRIS FROM FALLING INTO THE WATER OR ON THE SLOPE. THE CONTRACTOR SHALL PROVIDE FLOATS AND FALSEWORK TO CATCH ALL FALLING DEBRIS IN OVER-WATER AREAS.
- 5. ANY DAMAGE INCURRED TO ANY PART OF THE SITE OR BOUNDARY NOT SPECIFICALLY DESIGNATED FOR DEMOLITION SHALL BE REPAIRED, REPLACED, AND/OR RECONSTRUCTED BY THE CONTRACTOR, AT IT'S OWN EXPENSE, TO THE PREDISTURBED CONDITION AS DIRECTED BY THE ENGINEER.
- 6. ALL DEMOLITION MATERIAL, EXCEPT AS NOTED AND/OR SPECIFIED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR.
- 7. FOR BASIS OF BID FOR SAW-CUTTING AND FOR PAVEMENT DEMO, CONTRACTOR SHALL ASSUME EXISTING ASPHALT PAVEMENT THICKNESS ON PIER IS NOMINALLY 4-INCHES THICK, 6-INCHES WHERE THERE IS CONCRETE STRUCTURE DIRECTLY BELOW PAVEMENT, AND ASSUME EXISTING ASPHALT PAVEMENT THICKNESS LANDSIDE IS 10 INCHES.
- 8. SEE ELECTRICAL PLANS FOR DEMOLITION OF ELECTRICAL UTILITIES.

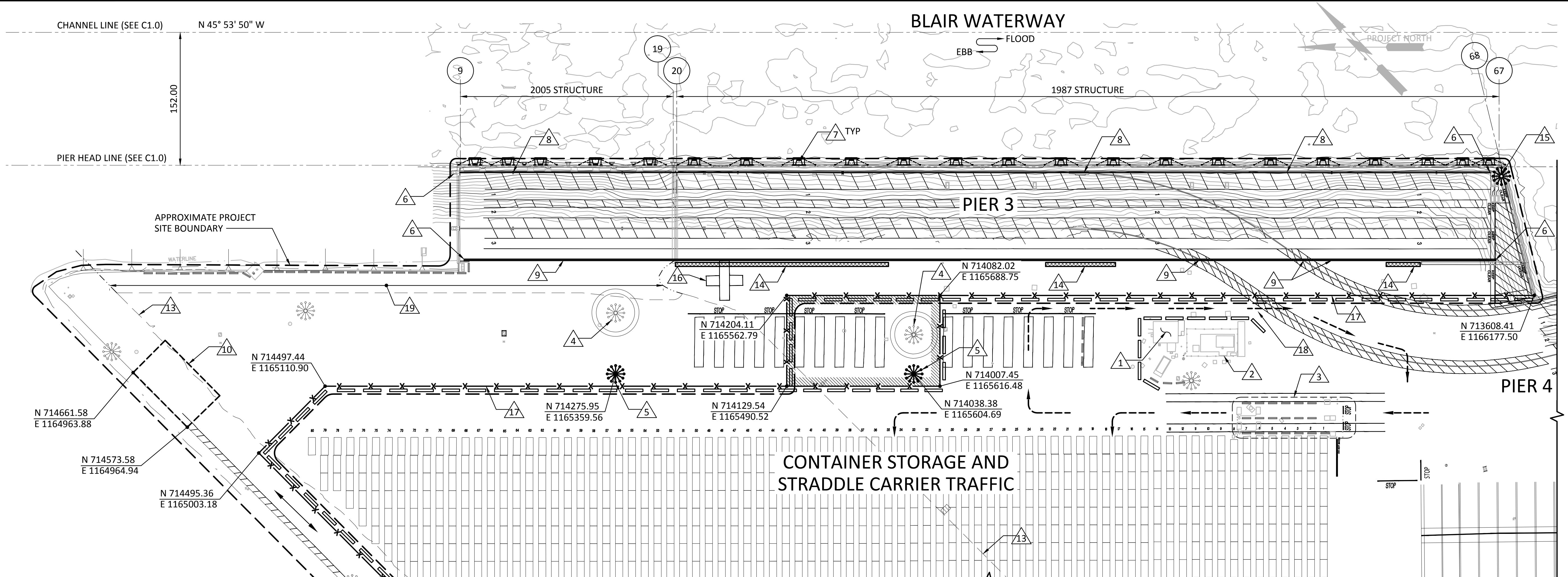
RECORD DRAWINGS:  
THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INFORMATION PROVIDED BY OTHERS,  
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 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	 P.O. BOX 1887 TACOMA, WA 98401 (253)585-8441		CSB CHECKED BY: JRG DATE: 7/17/13	DATE: 7/17/13
	MARK: REVISION: BY: APPR: DATE:	APPROVED: DC DIR OF ENG PRINTED BY: Jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	APPROVED: TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	GENERAL NOTES PIER 3 UPGRADE

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BINDING EDGE

Last Saved by: Jason.mendenthal on: Mar 30, 2015 10:50 AM File: C:\Federal\109\2012\FAWAT-12-09\1\CADD\Drawings\G05-00.dwg



**1 PLAN - PROJECT OVERVIEW**  
SCALE: 1" = 60'

**KEYED NOTES:**

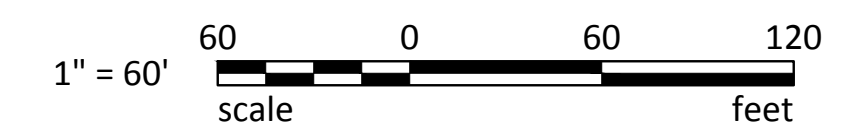
- 1 EXIST MARINE BUILDING, TO BE REMOVED BY OTHERS AFTER THIS CONTRACT
- 2 TACOMA POWER WILL DE-ENERGIZE EXIST SUBSTATION PRIOR TO NTP. CONTRACTOR TO REMOVE SUBSTATION, SEE ELEC DWGS.
- 3 EXIST RADIATION PORTAL MONITOR (RPM), TO REMAIN IN OPERATION
- 4 EXIST HIGH MAST LIGHT POLE, TO BE RELOCATED
- 5 RELOCATED HIGH MAST LIGHT POLE WITH COORDINATES
- 6 CRANE STOP
- 7 FENDER ASSEMBLY
- 8 WATERSIDE CRANE RAIL, CRANE RAIL PAD, SWITCH, CRANE BEAM, APPURTENANCES, AND PRESTRESSED PILES. PRESTRESSED PILES IN 1987 STRUCTURE ONLY
- 9 LANDSIDE CRANE RAIL, CRANE RAIL PAD, SWITCH, AND FROGS
- 10 NEW SUBSTATION, SEE ELECTRICAL DRAWINGS
- 11 CONTRACTOR GATE, OPENS INWARDS, OR USE ROLL GATE.
- 12 TPU VAULT AREA, SEE ELECTRICAL DRAWINGS. SIZE AND ACCESS TO THIS WORK AREA SHALL BE LIMITED DURATION DETERMINED BY COORDINATION WITH THE ENGINEER AND TENANT.
- 13 APPROXIMATE EXIST SLIP 1 NCD FACILITY BOUNDARY AT OHW
- 14 BULKHEAD SUPPORT BEAM AND PRESTRESSED CONCRETE PILES, TYP
- 15 EXIST HIGH MAST LIGHT POLE, TO BE REMOVED AND REINSTALLED
- 16 SPILL CONTAINMENT AREA AND UNDERGROUND VAULT
- 17 TEMPORARY FENCE WITH JERSEY BARRIERS OR ECOLOGY BLOCKS
- 18 PROVIDE AND MAINTAIN 20-FOOT WIDE LANE FOR TERMINAL TRAFFIC
- 19 APPROXIMATE EXIST SLIP 1 NCD FACILITY BERM

**GENERAL NOTES:**

THIS DRAWING PROVIDES AN OVERVIEW OF THE PROJECT ELEMENTS AND DOES NOT COMPLETELY DESCRIBE THE PROJECT. SEE COMPLETE CONTRACT DOCUMENTS FOR ALL CONTRACT AND PROJECT REQUIREMENTS.

**LEGEND**

- EXIST HIGH MAST LIGHT POLE
- HIGH MAST LIGHT POLE
- FENDER ASSEMBLY
- TEMPORARY FENCE WITH JERSEY BARRIERS OR ECOLOGY BLOCKS
- SLIP 1 NCD BOUNDARY, SEE SPECIFICATIONS FOR EARTHWORK REQUIREMENTS
- APPROXIMATE EDGE OF SLIP 1 NCD FACILITY BERM
- APPROXIMATE PROJECT SITE BOUNDARY
- TEMPORARY PROJECT SITE BOUNDARY DURING LIGHT POLE RELOCATIONS, TPU VAULT INSTALLATION
- TYPICAL TERMINAL TRAFFIC NEAR RPM STATION
- CONTRACTOR INGRESS/EGRESS
- JERSEY BARRIERS OR ECOLOGY BLOCKS (SPACE WITH 6-FT GAP, MAX)
- EXISTING BENT NUMBER



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**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401-0188

DAVE S. ENGLISH  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF WASHINGTON  
NO. 12000

APPROVED: CSB 7/17/13  
DC 7/17/13  
DIR OF ENG jason.mendenthal  
PRINTED BY: jason.mendenthal  
PORT ADDRESS: ONE SITCUM WAY  
TACOMA, WA 98421-2300

MARK: REVISION:  
BY: APPR: DATE:

**6502**

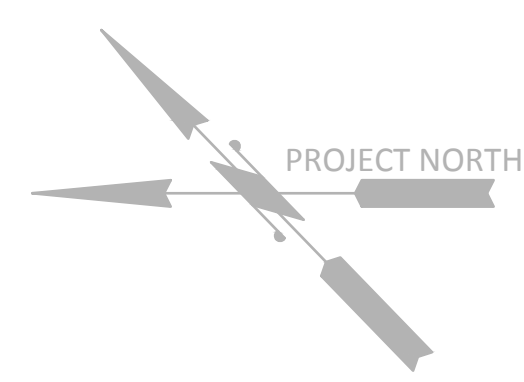
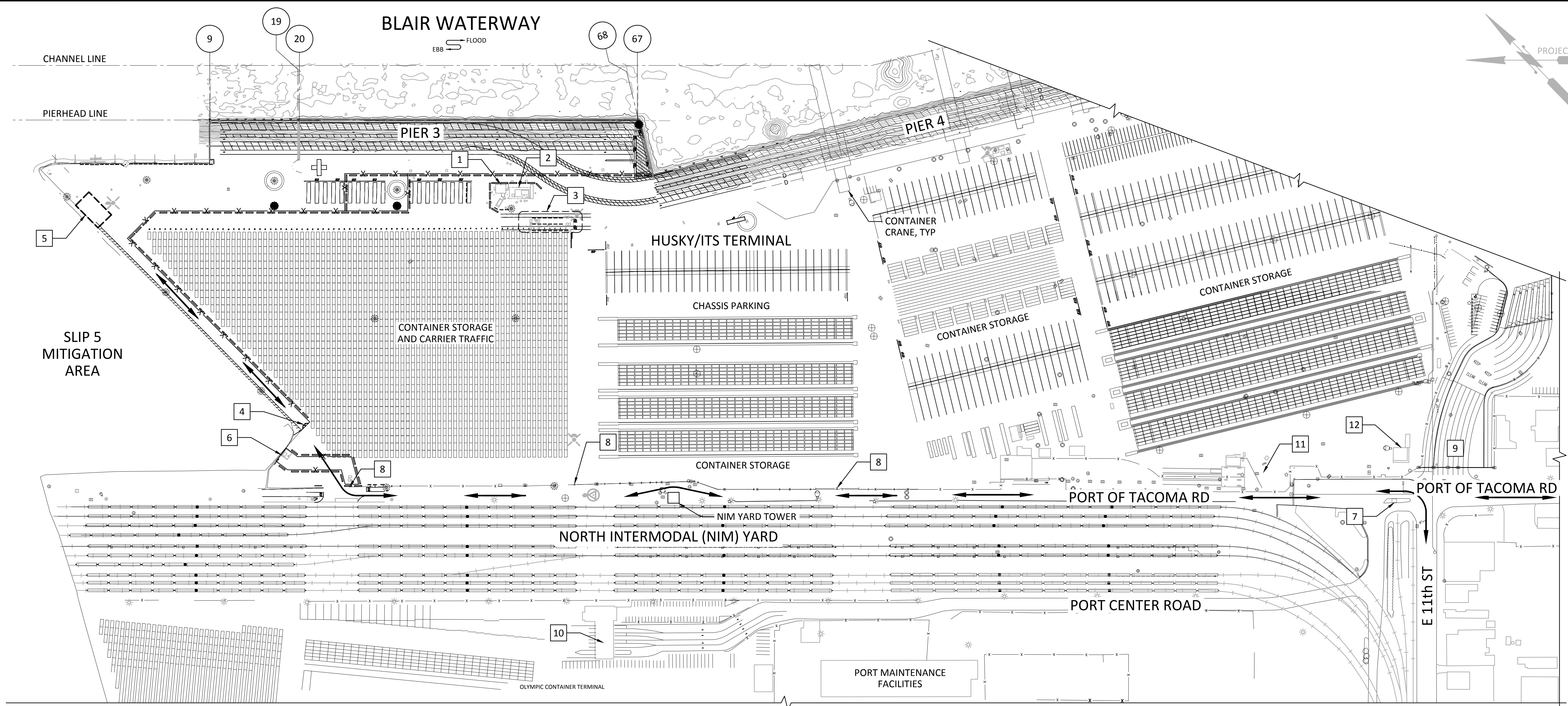
**G5.0**

SHEET 5 OF 129

CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

TOWNSHIP: 21 N  
RANGE: 3 E  
SECTION: 27  
DATE-HRZ: NAD 83-07  
VERT: NOS TIDAL (MLLW = 0.0)  
DRAWING SCALE: AS SHOWN  
PARCEL: 27

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**1** SITE ACCESS  
SCALE: 1" = 150'

**KEYED NOTES:**

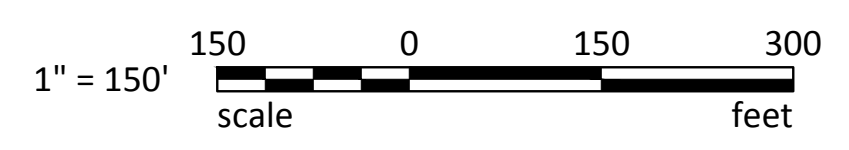
- 1 EXIST MARINE BUILDING
- 2 EXIST SUBSTATION
- 3 EXIST RADIATION PORTAL MONITOR (RPM)
- 4 CONTRACTOR GATE
- 5 NEW SUBSTATION
- 6 TPU VAULT AREA
- 7 EXIST PORT SECURITY CHECKPOINT AND GATE (TWIC REQ'D)
- 8 EXIST NIM YARD ACCESS GATES, SEE NOTE 5
- 9 HUSKY/ITS TERMINAL ACCESS AND SECURITY CHECKPOINT
- 10 EXISTING TERMINAL 7 GATE
- 11 TPU CONDUIT REPAIR
- 12 TPU POLE AND SWITCH

**GENERAL NOTES:**

- 1. SEE G-SERIES DWGS FOR GENERAL NOTES, AND OTHER INFORMATION SUCH AS PROJECT OVERVIEW, SITE ACCESS, CONSTRUCTION STAGING, SURVEY CONTROL, ETC.
- 2. SEE C-SERIES DWGS FOR CIVIL WORK.
- 3. SEE S-SERIES DWGS FOR DEMOLITION AND STRUCTURAL WORK.
- 4. SEE E-SERIES DWGS FOR ELECTRICAL WORK.
- 5. PROVIDE FLAGGERS WHERE CONTRACTOR INGRESS/EGRESS ROUTE CROSSES NIM YARD OR OTHER ACCESS GATES. STRADDLE CARRIERS AND/OR TERMINAL TRAFFIC SHALL HAVE RIGHT-OF-WAY AT ALL TIMES. REFER TO THE TRAFFIC CONTROL REQUIREMENTS IN SPECIFICATION SECTION 01 10 00 SUMMARY.

**LEGEND**

- TEMPORARY FENCE WITH JERSEY BARRIERS OR ECOLOGY BLOCKS
- JERSEY BARRIERS OR ECOLOGY BLOCKS
- CONTRACTOR INGRESS/EGRESS
- EXISTING BENT NUMBER
- EXISTING FENCE



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	CSB 7/17/13 CHECKED BY: JRG DIR OF ENG: jason.mendenhall PRINTED BY: jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13	APPROVED: _____ APPROVED: _____ APPROVED: _____ APPROVED: _____ APPROVED: _____
<b>6502</b> <b>G6.0</b> SHEET 6 OF 129	<b>PIER 3 UPGRADE</b> <b>ACCESS PLAN</b>	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION

### HORIZONTAL DATUM

WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83/07.

AS DERIVED FROM GLOBAL POSITIONING SYSTEM (GPS) TIES TO PORT OF TACOMA SURVEY CONTROL MONUMENTS AS SHOWN ON PORT OF TACOMA (PORT) 2007 SURVEY CONTROL MAP TITLED "BLAIR-HYLEBOS PENINSULA SURVEY CONTROL MAP", PREPARED BY PARAMETRIX, DATED JANUARY 7, 2008

PORT MONUMENT	175	N 708849.50, E 1176475.70
PORT MONUMENT	178	N 709882.72, E 1175404.91
PORT MONUMENT	180	N 712318.76, E 1172704.06
PORT MONUMENT	184	N 713842.60, E 1169390.14
PORT MONUMENT	307	N 715756.83, E 1171246.19
PORT MONUMENT	330	N 709147.15, E 1179422.44
PORT MONUMENT	846	N 703885.67, E 1168411.67
PORT MONUMENT	923	N 708568.72, E 1166224.52
PORT MONUMENT	925	N 710501.70, E 1166151.91

#### NOTE:

- ALL DISTANCES SHOWN ARE GROUND VALUES.
- UTILIZING THE LOCALIZATION OF THE PORT MONUMENTS LISTED ABOVE, MONUMENTS #102 & #1503 WERE TIED AND HELD FOR SITE CONTROL.

### VERTICAL DATUM

VERTICAL DATUM IS MEAN LOWER LOW WATER (MLLW) AS DEFINED BY THE NATIONAL OCEAN SERVICE FOR COMMENCEMENT BAY, BENCH MARK "TIDE 22 1933" = 19.39 FOR TIME PERIOD 1960-1978 EPOCH  
NGS PID: #SY0536  
NOAA VM: #13315  
ELEVATION = 19.39 MLLW US FEET

"TIDE 22 1933" IS A STANDARD DISK SET IN A CONCRETE SIDEWALK ON THE NORTH SIDE OF AND AT THE EAST END OF THE 11TH STREET BRIDGE OVER THE PUYALLUP RIVER. IT IS LOCATED ABOUT 3.5 FEET NORTH OF A LAMP POST.

#### PROJECT CONTROL POINT #102

DESCRIPTION: 2" BRASS DISK IN PORT OF TACOMA ROAD SOUTH OF 11TH STREET

ELEV: 17.62

### SURVEYOR'S METHODS AND EQUIPMENT

SURVEY PERFORMED WITH A 1" TOTAL STATION, USING TRAVERSE AND RADIAL SURVEY METHODS, AND SUPPLEMENTED USING A TOPCON HYPERLITE GPS RECEIVER UTILIZING RTK METHODS AND THE WASHINGTON STATE REFERENCE NETWORK. SURVEY MEETS OR EXCEEDS ACCURACY REQUIREMENTS CONTAINED IN W.A.C. 332.130.090.

### SURVEYOR'S NOTES

- DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION ON 06-28-12 THRU 08-09-12.
- CONTOUR INTERVALS ARE ONE HALF FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
- SUBSURFACE CONDITIONS OR FEATURES MAY EXIST THAT WERE NOT DETECTED AT THE TIME OF THE SURVEY.
- THE PURPOSE OF THIS SURVEY IS TO PROVIDE A TOPOGRAPHIC BASE MAP OF THE EXISTING CONDITIONS WITHIN PIER 3 PROJECT AREA FOR PLANNING, DESIGN AND CONSTRUCTION.
- UTILITIES OTHER THAN SHOWN MAY EXIST ON THE SITE. ONLY THOSE UTILITIES VISIBLE AT GROUND SURFACE ARE SHOWN HEREON. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITY LINES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE SURVEYOR DOES CERTIFY THAT THEY ARE SHOWN AS ACCURATELY AS POSSIBLE FROM FIELD SURVEY INFORMATION AND PAINTED UTILITY LOCATE LINES.
- THE STORM LINES SHOWN HEREON ARE AN APPROXIMATE LOCATION AND DIRECTION AS ASCERTAINED FROM WITHIN THE STORM STRUCTURES WHICH WERE OPENED TO CONFIRM INVERT ELEVATIONS.
- ALL SURFACES ARE ASPHALT UNLESS OTHERWISE SHOWN OR NOTED.

### PROJECT CONTROLS

1. PROJECT NORTH BEARING IS N 45° 53' 50" W.

2. PROJECT CONTROL POINTS FOR GENERAL LOCATIONS RELATIVE TO SITE SEE 

PT #	NORTHING	EASTING	ELEV.	DESCRIPTION
10	713672.29	1165946.83	16.36	RAIL ROAD SPIKE
20	713001.14	1166887.54	17.81	RAIL ROAD SPIKE
30	713228.24	1165505.61	17.74	PK NAIL & FLASHER
40	714593.83	1165043.58	16.86	PK NAIL & FLASHER
102	711167.81	1167410.52	17.62	PORT OF TACOMA MONUMENT
1503	713080.62	1165436.92	-	PORT OF TACOMA MONUMENT

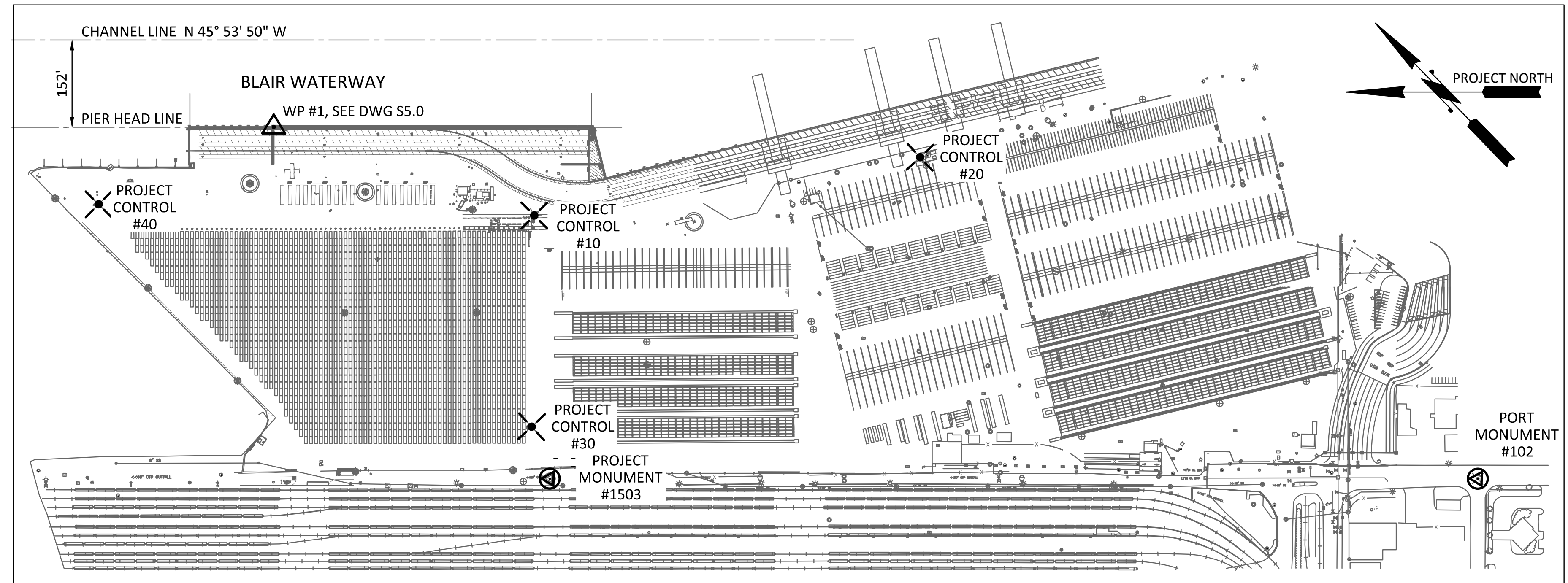
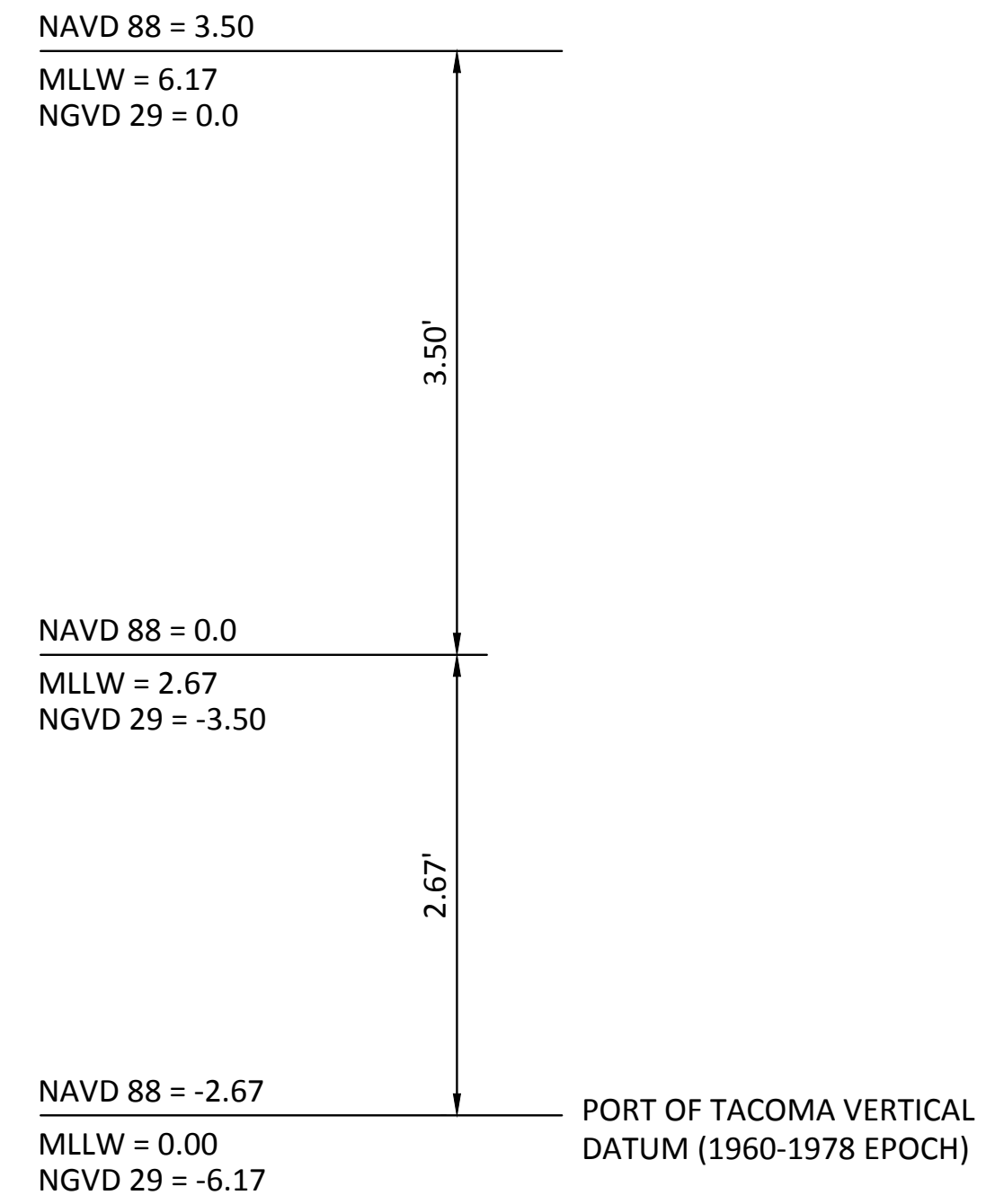
3. FACE OF PIER IS DEFINED BY WP #1 AND PROJECT NORTH BEARING, SEE DWG S5.0 (FACE OF PIER IS DIFFERENT THAN PIER HEAD LINE)

### TIDES

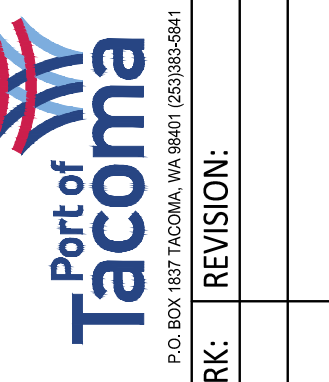
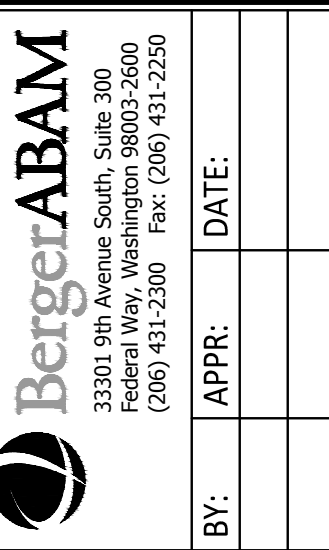
TIDAL DATA OBTAINED FROM NOAA WEBSITE FOR STATION ID 9446484 AND CHART 18453 FOR THE 1983-2001 EPOCH AS FOLLOWS.

EXTREME HIGH WATER (EHW)	14.30
MEAN HIGHER HIGH WATER (MHHW)	11.83
MEAN SEA LEVEL (MSL)	6.87
MEAN LOWER LOW WATER (MLLW)	0.00
EXTREME LOW WATER (ELW)	-4.30

### RELATIONSHIP BETWEEN VERTICAL DATUMS:



 **PLAN - PROJECT CONTROL POINTS**  
SCALE: NTS

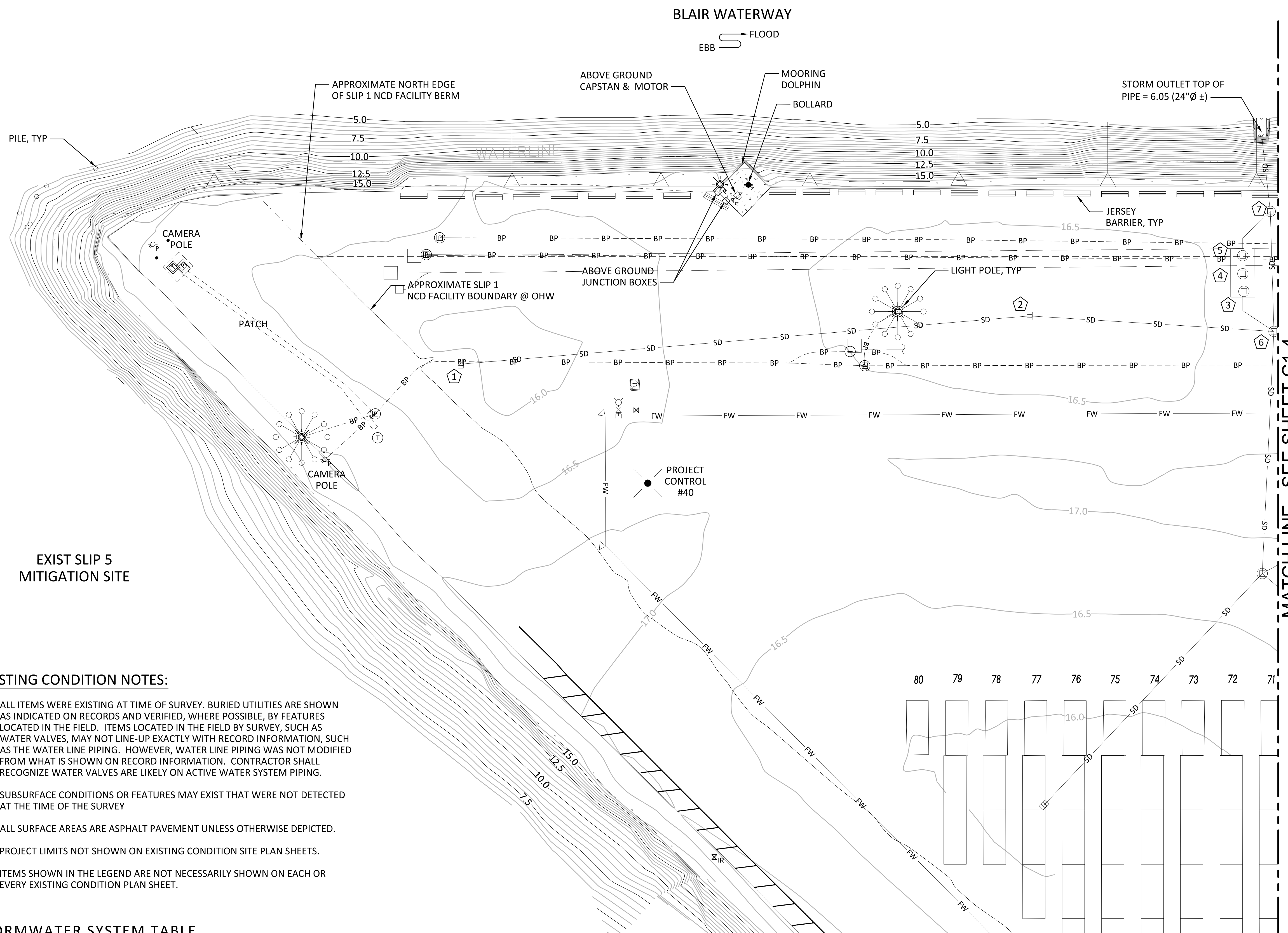


CSB	7/17/13	DATE	
CHECKED BY	JRG	7/17/13	DATE
PROJ. ENGR	jason.mendenhall	DATE	
PRINTED BY	ONE SITCUM WAY	DATE	
PORT ADDRESS:	TACOMA, WA 98421-2300	DATE	

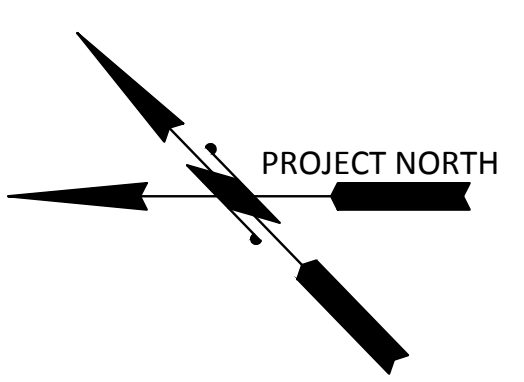
APPROVED:	DATE
DC	7/17/13
DIR OF ENG	jason.mendenhall
PRINTED BY	ONE SITCUM WAY
PORT ADDRESS:	TACOMA, WA 98421-2300

<b>PIER 3 UPGRADE</b>	RANGE: 3 E	SECTION: 27
<b>SURVEY CONTROLS AND NOTES</b>	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN
TOWNSHIP: 21 N	DATE: NAD 83-07	PARCEL: 27
DAT-HRZ: NAD 83-07	PARCEL: 27	

6502	<b>C1.0</b>
SHEET 7 OF 129	
CONT/CONS: 069458	
MASTER ID NO: 092935	
PHASE: RECORD DRAWINGS	



BLAIR WATERWAY  
EBB FLOOD



### LEGEND

- PROJECT CONTROL POINT
- MOORING BOLLARD
- STORMWATER MANHOLE
- STORMWATER CATCH BASIN
- STORMWATER YARD DRAIN
- STORMWATER CULVERT
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VAULT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- UTILITY POLE
- LIGHT POLE
- POWER MANHOLE
- POWER VAULT
- PAD MOUNTED TRANSFORMER
- POWER JUNCTION BOX
- POWER PANEL
- TELEPHONE/COMM MANHOLE
- TELEPHONE/COMM VAULT
- UNKNOWN UTILITY VAULT
- CAMERA SENSOR POLE
- SIGN
- PIPE BOLLARD
- CONCRETE
- SD
- SS
- W
- FW
- BP
- BT
- E(G)
- X
- 12.5
- 17.0
- 20.2'
- #
- STRIPING ON ASPHALT

### EXISTING CONDITION NOTES:

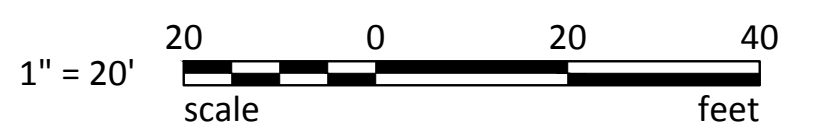
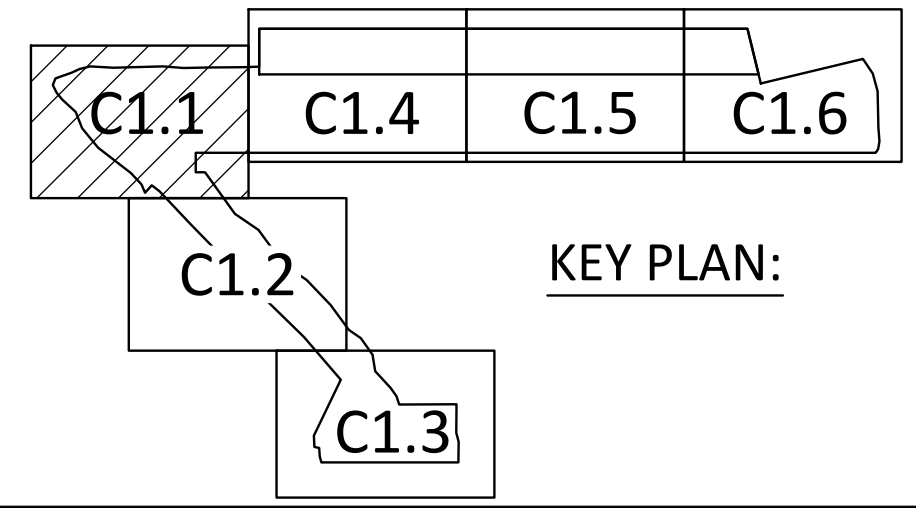
- ALL ITEMS WERE EXISTING AT TIME OF SURVEY. BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORDS AND VERIFIED, WHERE POSSIBLE, BY FEATURES LOCATED IN THE FIELD. ITEMS LOCATED IN THE FIELD BY SURVEY, SUCH AS WATER VALVES, MAY NOT LINE-UP EXACTLY WITH RECORD INFORMATION, SUCH AS THE WATER LINE PIPING. HOWEVER, WATER LINE PIPING WAS NOT MODIFIED FROM WHAT IS SHOWN ON RECORD INFORMATION. CONTRACTOR SHALL RECOGNIZE WATER VALVES ARE LIKELY ON ACTIVE WATER SYSTEM PIPING.
- SUBSURFACE CONDITIONS OR FEATURES MAY EXIST THAT WERE NOT DETECTED AT THE TIME OF THE SURVEY
- ALL SURFACE AREAS ARE ASPHALT PAVEMENT UNLESS OTHERWISE DEPICTED.
- PROJECT LIMITS NOT SHOWN ON EXISTING CONDITION SITE PLAN SHEETS.
- ITEMS SHOWN IN THE LEGEND ARE NOT NECESSARILY SHOWN ON EACH OR EVERY EXISTING CONDITION PLAN SHEET.

### STORMWATER SYSTEM TABLE

1	STORM CATCHBASIN #1563 RIM = 15.77 IE = 12.34 (12" DIP-S)	3	STORM MANHOLE #3048 RIM = 16.55 (NO LADDER) IE = 7.40 (12" CMP-SW) W/OIL SEPARATOR BOTTOM = 3.30	5	STORM MANHOLE #3049 RIM = 16.55 (NO LADDER) IE = 7.41 (12" CMP-SE) W/OIL SEPARATOR BOTTOM = 3.38	7	STORM MANHOLE #3000 RIM = 16.70 (LADDER SOUTH) BOTTOM = 3.30
2	STORM CATCH BASIN #3078 RIM = 16.05 IE = 10.92 (12" DIP-N) IE = 10.77 (12" DIP-S)	4	STORM MANHOLE #3047 RIM = 16.56 (NO LADDER) 7.33 TOP OF PLATES IN VAULT	6	STORM MANHOLE #3060 RIM = 16.66 (LADDER SOUTH) IE = 7.49 (18" RCP-SE)		

MATCH LINE - SEE SHEET C1.2

**PLAN - EXISTING CONDITIONS**  
SCALE: 1" = 20'



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**Port of Tacoma**  
P.O. BOX 187 TACOMA, WA 98401-0187

**Professional Seal:**  
JASON MENDENTHAL  
REGISTERED PROFESSIONAL ENGINEER  
NO. 48167  
STATE OF WASHINGTON

APPROVED:	CSB	CHECKED BY:	DATE
	7/17/13	JRG	7/17/13

DIR OF ENG	DATE	PROJ. ENGR	DATE
Jason Mendenthal			

PRINTED BY: jason.mendenthal  
PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300

**PIER 3 UPGRADE**  
EXISTING CONDITION PLAN SHEET 1

**6502 C1.1**  
SHEET 6 OF 129

CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

TOWNSHIP: 21 N RANGE: 3 E SECTION: 27  
DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)  
PARCEL: 27 DRAWING SCALE: AS SHOWN

MARK: REVISION: BY: APPR: DATE:

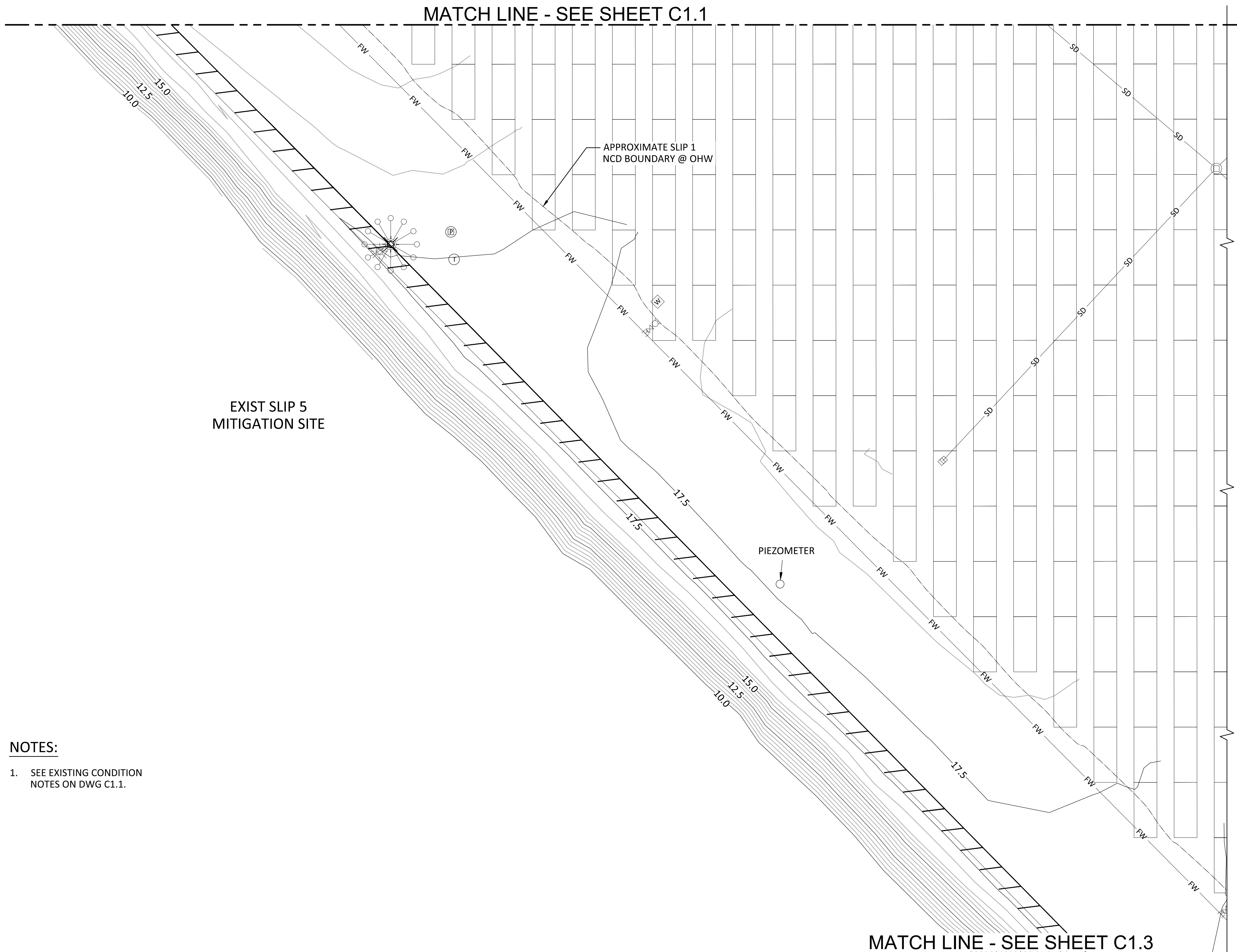


BINDING EDGE

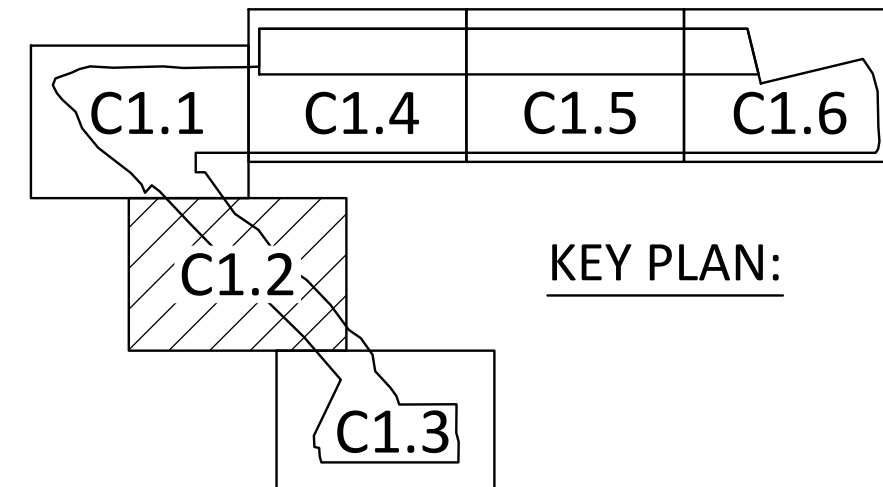
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**NOTES:**

- 1. SEE EXISTING CONDITION NOTES ON DWG C1.1.

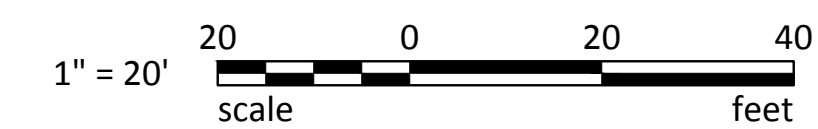
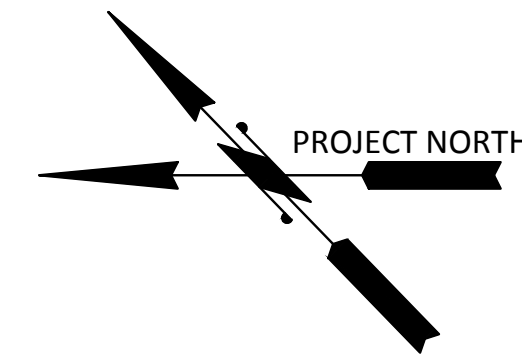


1 PLAN - EXISTING CONDITIONS  
SCALE: 1" = 20'



**LEGEND**

- PROJECT CONTROL POINT
- MOORING BOLLARD
- STORMWATER MANHOLE
- STORMWATER CATCH BASIN
- STORMWATER YARD DRAIN
- STORMWATER CULVERT
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VAULT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- UTILITY POLE
- LIGHT POLE
- POWER MANHOLE
- POWER VAULT
- PAD MOUNTED TRANSFORMER
- POWER JUNCTION BOX
- POWER PANEL
- TELEPHONE/COMM MANHOLE
- TELEPHONE/COMM VAULT
- UNKNOWN UTILITY VAULT
- CAMERA SENSOR POLE
- SIGN
- PIPE BOLLARD
- CONCRETE
- SD STORMWATER DRAIN LINE
- SS SANITARY SEWER LINE
- W WATER LINE
- FW FIRE WATER LINE
- BP ELECTRIC LINE
- BT COMMUNICATIONS LINE
- E(G) ELECTRICAL GROUND
- CHAIN LINK FENCE
- 12.5 MAJOR CONTOUR
- 17.0 MINOR CONTOUR
- x 20.2' SPOT ELEVATION
- # STORM STRUCTURE IDENTIFICATION NUMBER
- STRIPING ON ASPHALT



 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ DATE: _____
	REVISION: _____ MARK: _____
 P.O. BOX 187 TACOMA, WA 98401 (206) 884-1841	CSB 7/17/13 CHECKED BY: JRG DATE: 7/17/13
	DIR OF ENG: jason.mendenhall PRINTED BY: ONE SITCUM WAY TACOMA, WA 98421-2300
	APPROVED: _____ DATE: 7/17/13
	PROJECT: PIER 3 UPGRADE SHEET 2 OF 129
6502 <b>C1.2</b> SHEET 9 OF 129	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWN: TACOMA, WA 98421-2300

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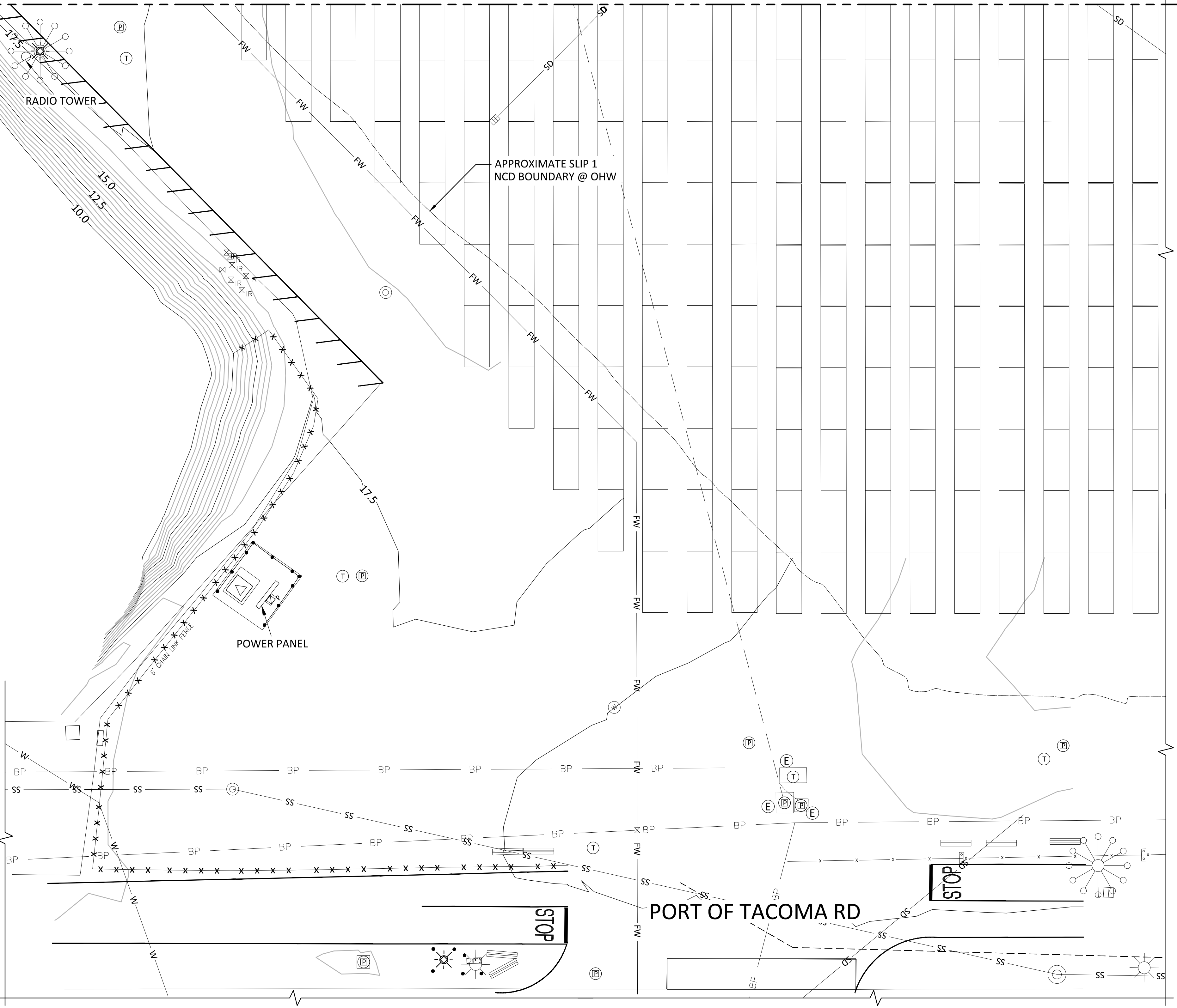
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MATCH LINE - SEE SHEET C1.2

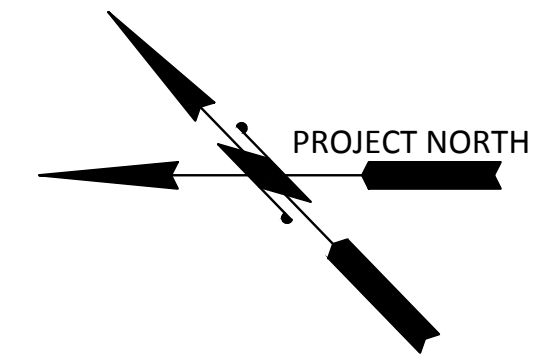
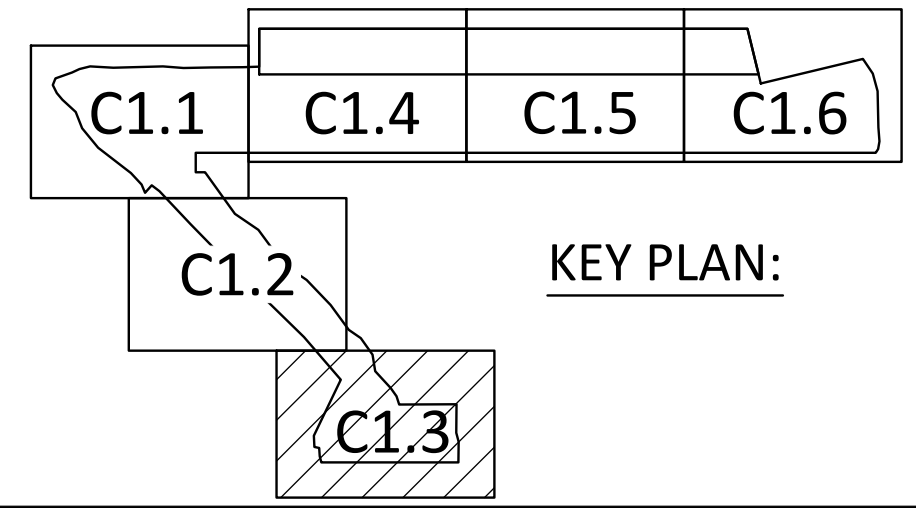
EXIST SLIP 5 MITIGATION SITE



**NOTES:**

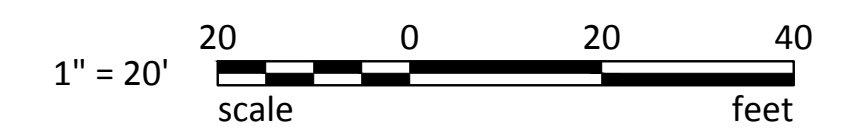
1. SEE EXISTING CONDITION NOTES ON DWG C1.1.

1 PLAN - EXISTING CONDITIONS  
SCALE: 1" = 20'



**LEGEND**

- PROJECT CONTROL POINT
- MOORING BOLLARD
- STORMWATER MANHOLE
- STORMWATER CATCH BASIN
- STORMWATER YARD DRAIN
- STORMWATER CULVERT
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VAULT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- UTILITY POLE
- LIGHT POLE
- POWER MANHOLE
- POWER VAULT
- PAD MOUNTED TRANSFORMER
- POWER JUNCTION BOX
- POWER PANEL
- TELEPHONE/COMM MANHOLE
- TELEPHONE/COMM VAULT
- UNKNOWN UTILITY VAULT
- CAMERA SENSOR POLE
- SIGN
- PIPE BOLLARD
- CONCRETE
- SD STORMWATER DRAIN LINE
- SS SANITARY SEWER LINE
- W WATER LINE
- FW FIRE WATER LINE
- BP ELECTRIC LINE
- BT COMMUNICATIONS LINE
- E(G) ELECTRICAL GROUND
- CHAIN LINK FENCE
- 12.5 MAJOR CONTOUR
- 17.0 MINOR CONTOUR
- x 20.2' SPOT ELEVATION
- # STORM STRUCTURE IDENTIFICATION NUMBER
- STRIPING ON ASPHALT



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	REVISION:	MARK:	
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	DC	7/17/13	DATE
	PROJ. ENGR	7/17/13	DATE
	PRINTED BY:	Jason.mendenthal	
APPROVED:	DIR OF ENG	ONE SITCUM WAY	TACOMA, WA 98421-2300
<b>PIER 3 UPGRADE</b> EXISTING CONDITION PLAN SHEET 3	TOWNSHIP:	21 N	SECTION: 27
	RANGE:	3 E	NOS TIDAL (MILLW = 0.0)
	DAT-HRZ:	NAD 83-07	VERT:
	PARCEL:	27	DRAWING SCALE:
<b>6502 C1.3</b> SHEET 10 OF 129	CONT/CONS:	069458	
MASTER ID NO:	092935		
PHASE:	RECORD DRAWINGS		

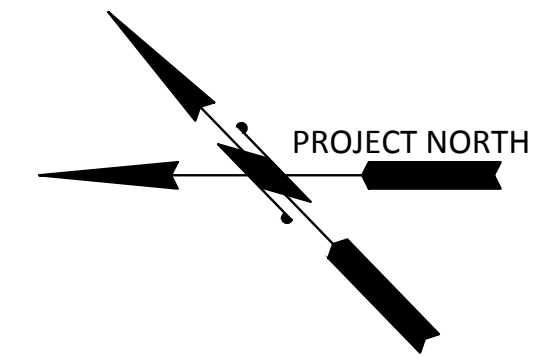
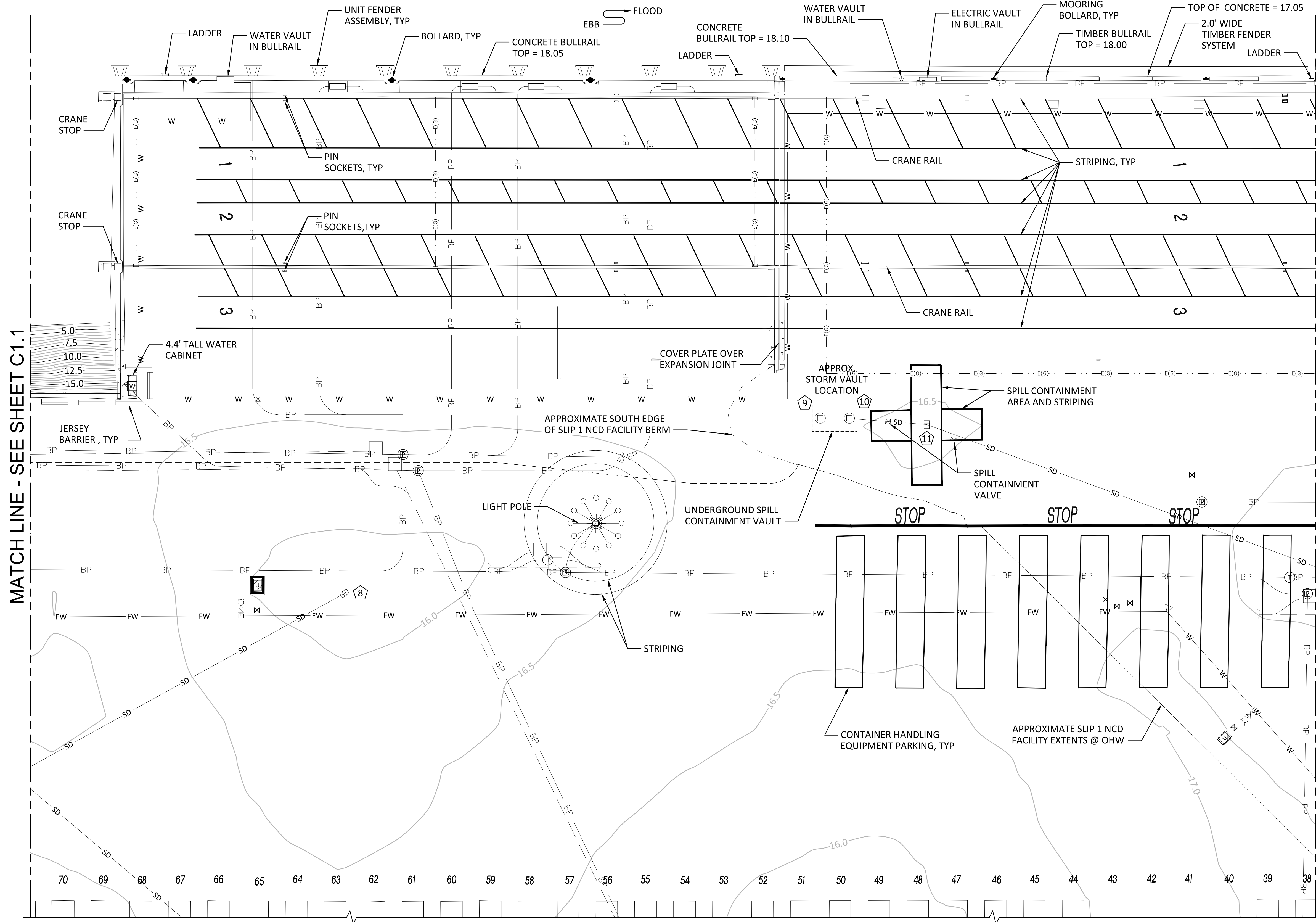
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### BLAIR WATERWAY



### LEGEND

- PROJECT CONTROL POINT
- MOORING BOLLARD
- STORMWATER MANHOLE
- STORMWATER CATCH BASIN
- STORMWATER YARD DRAIN
- STORMWATER CULVERT
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VAULT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- UTILITY POLE
- LIGHT POLE
- POWER MANHOLE
- POWER VAULT
- PAD MOUNTED TRANSFORMER
- POWER JUNCTION BOX
- POWER PANEL
- TELEPHONE/COMM MANHOLE
- TELEPHONE/COMM VAULT
- UNKNOWN UTILITY VAULT
- CAMERA SENSOR POLE
- SIGN
- PIPE BOLLARD
- CONCRETE
- STORMWATER DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- FIRE WATER LINE
- ELECTRIC LINE
- COMMUNICATIONS LINE
- ELECTRICAL GROUND
- CHAIN LINK FENCE
- MAJOR CONTOUR
- MINOR CONTOUR
- SPOT ELEVATION
- STORM STRUCTURE IDENTIFICATION NUMBER
- STRIPING ON ASPHALT

### STORMWATER SYSTEM TABLE

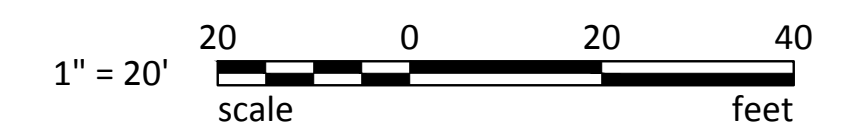
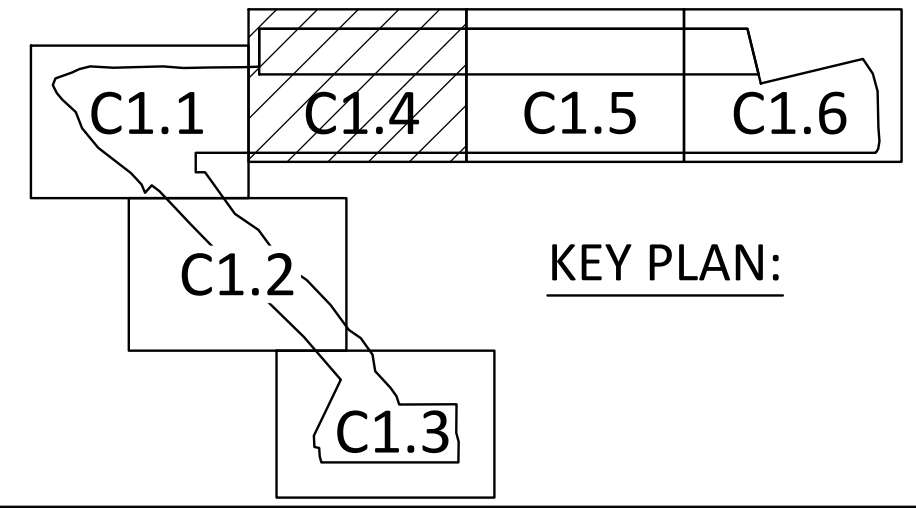
8	STORM CATCH BASIN #8576 RIM = 15.72 IE = 11.72 (12" DIP-NW)	10	STORM MANHOLE #1764 RIM = 16.67 (LADDER WEST) BOTTOM = 7.40
9	STORM MANHOLE #1763 RIM = 16.88 (LADDER SOUTH) BOTTOM = 6.27	11	STORM CATCH BASIN #1752 RIM = 16.15 IE = 13.79 (6" PVC-N & S)

### NOTES:

- SEE EXISTING CONDITION NOTES ON DWG C1.1.

### 1 PLAN - EXISTING CONDITIONS

SCALE: 1" = 20'



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CSB 7/17/13

PROJ. ENGR

DATE

DATE

DATE

DATE

6502

**C1.4**

SHEET 11 OF 129

EXISTING CONDITION PLAN

SHEET 4

TOWNSHIP: 21 N

RANGE: 3 E

SECTION: 27

DATE: 092935

NO. TIDAL (MLLW = 0.0)

DRAWING SCALE: AS SHOWN

CON/CONS: 069458

MASTER ID NO: 092935

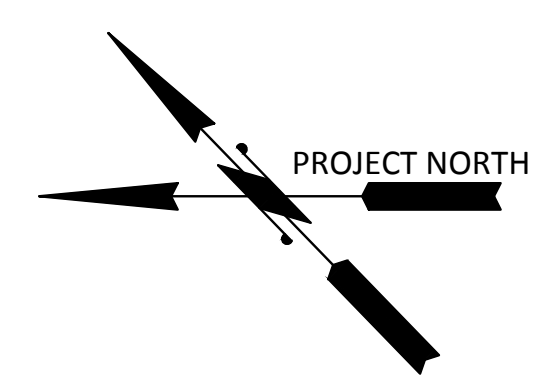
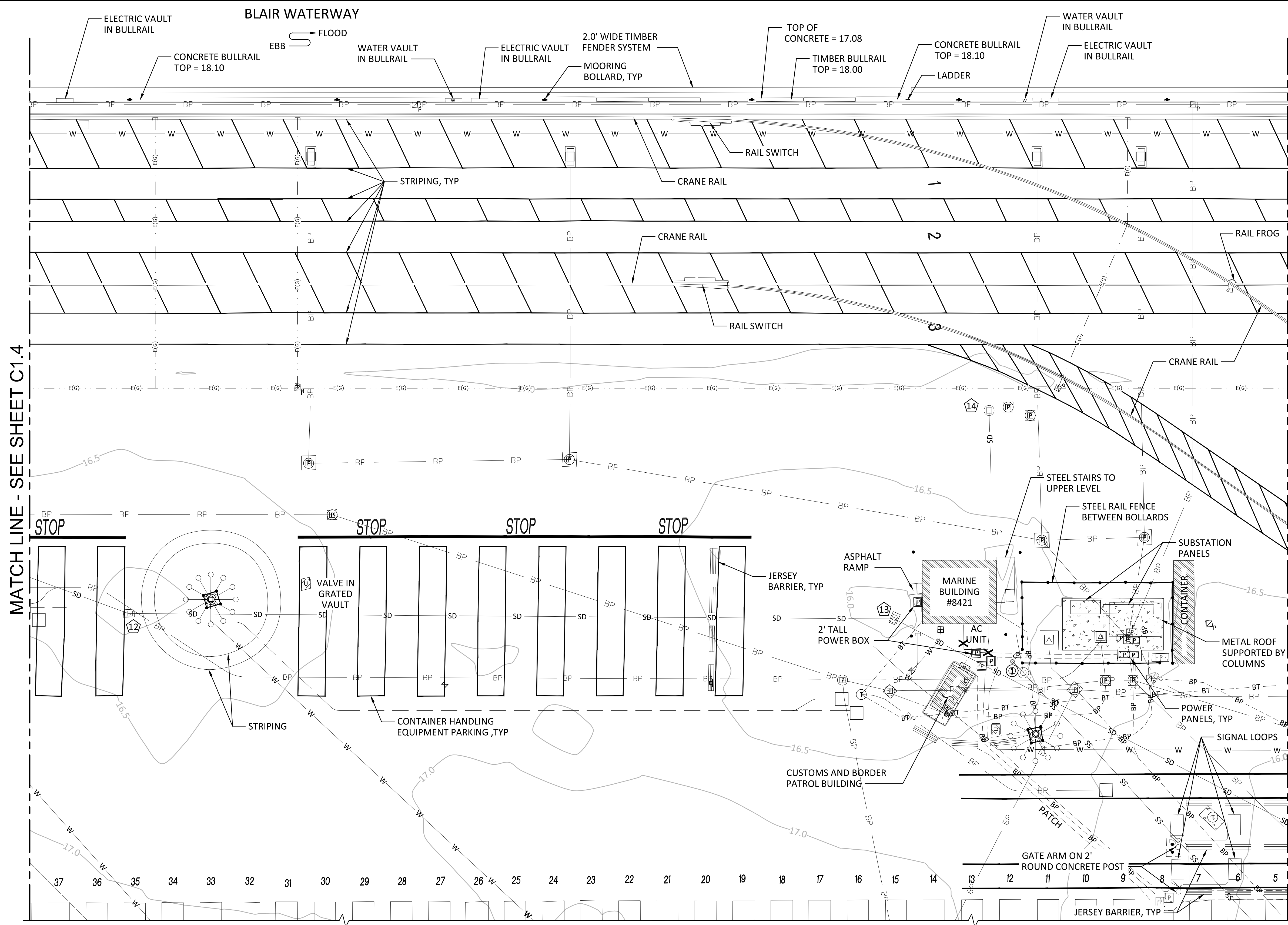
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MATCH LINE - SEE SHEET C1.4

MATCH LINE - SEE SHEET C1.6



**LEGEND**

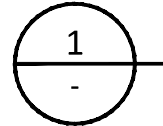
- PROJECT CONTROL POINT
- MOORING BOLLARD
- STORMWATER MANHOLE
- STORMWATER CATCH BASIN
- STORMWATER YARD DRAIN
- STORMWATER CULVERT
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VAULT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- UTILITY POLE
- LIGHT POLE
- POWER MANHOLE
- POWER VAULT
- PAD MOUNTED TRANSFORMER
- POWER JUNCTION BOX
- POWER PANEL
- TELEPHONE/COMM MANHOLE
- TELEPHONE/COMM VAULT
- UNKNOWN UTILITY VAULT
- CAMERA SENSOR POLE
- SIGN
- PIPE BOLLARD
- CONCRETE
- SD
- SS
- W
- FW
- BP
- BT
- E(G)
- X
- 12.5
- 17.0
- x 20.2'
- #
- STRIPING ON ASPHALT

**STORMWATER SYSTEM TABLE**

12	STORM CATCH BASIN #1945	RIM = 15.72 IE = 11.63 (6" PVC-N) IE = 11.74 (8" PVC-S)
13	STORM CATCH BASIN #3828	RIM = 15.89 IE = 10.20 (8" DIP-N) IE = 10.26 (8" DIP-SE)
14	STORM MANHOLE #5562	RIM = 16.60 (LADDER NORTH) IE = 12.37 (8" PVC-W) FULL OF MUD

**SANITARY SEWER TABLE**

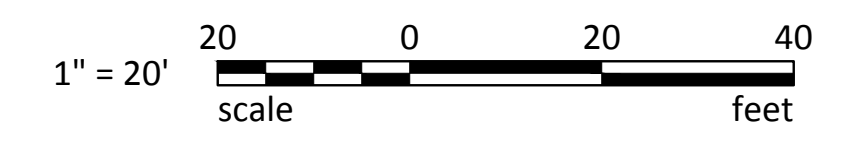
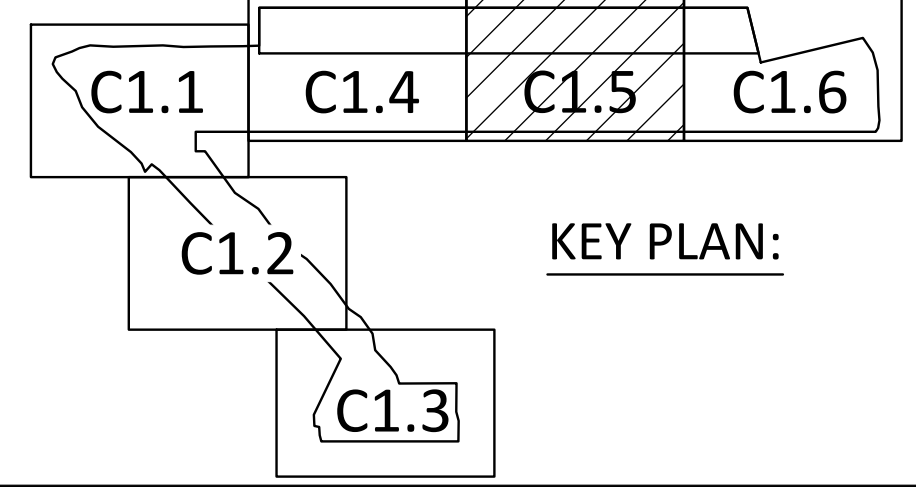
1	SANITARY SEWER MANHOLE #3643	RIM = 16.44 (LADDER NORTH) CTR OF CHANNEL = 11.78 (8" PVC-NE & SW, 6" PVC-E)
---	------------------------------	--



**PLAN - EXISTING CONDITIONS**  
SCALE: 1" = 20'

**NOTES:**

- SEE EXISTING CONDITION NOTES ON DWG C1.1.



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BY: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
MARK: \_\_\_\_\_

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**6502**

**C1.5**

SHEET 12 OF 129

EXISTING CONDITION PLAN

SHEET 5

TOWNSHIP: 21 N

DATE: 09/29/15

PARCEL: 27

RANGE: 3 E

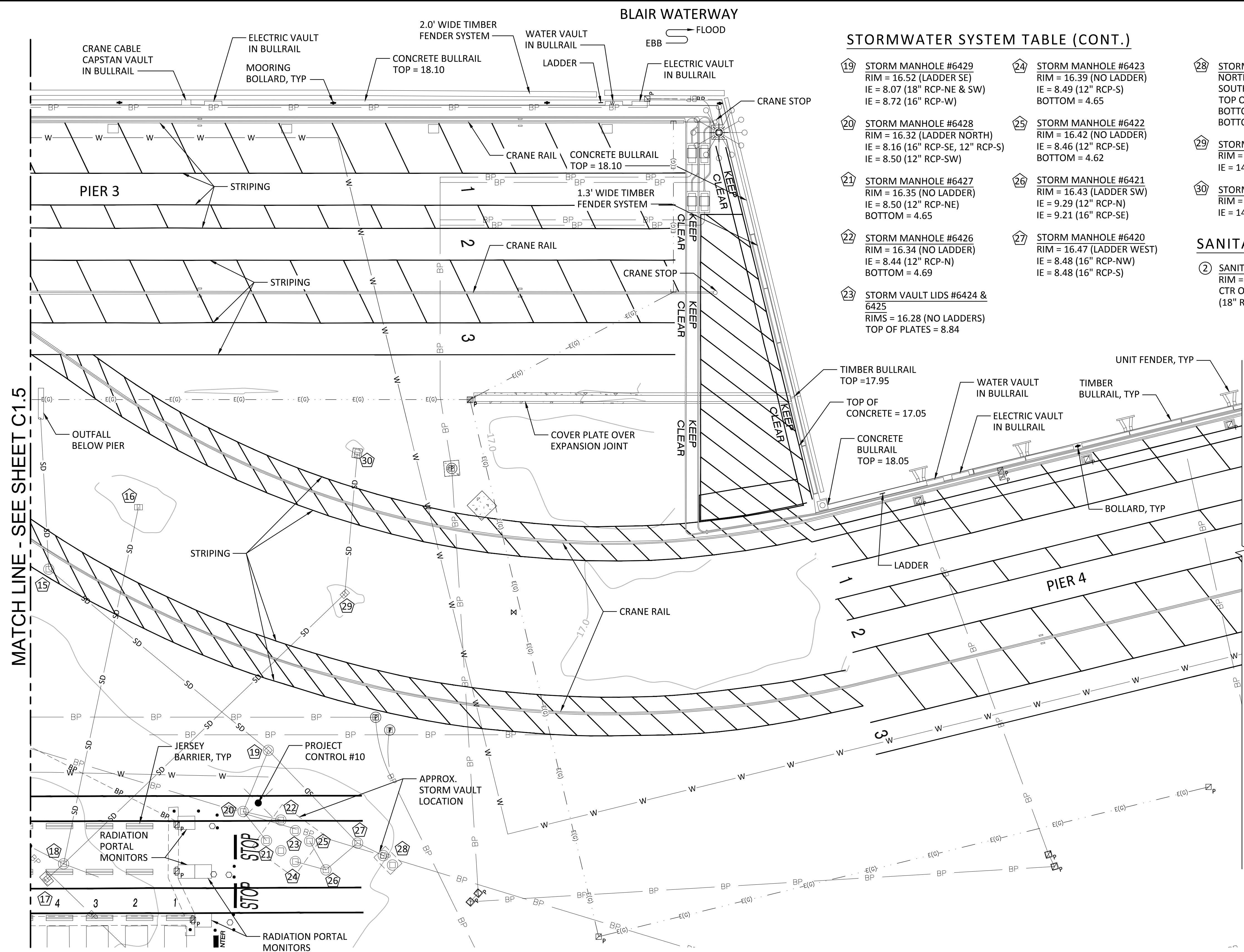
SECTION: 27

VERT: NOS TIDAL (MILLW = 0.0)

DRAWING SCALE: AS SHOWN

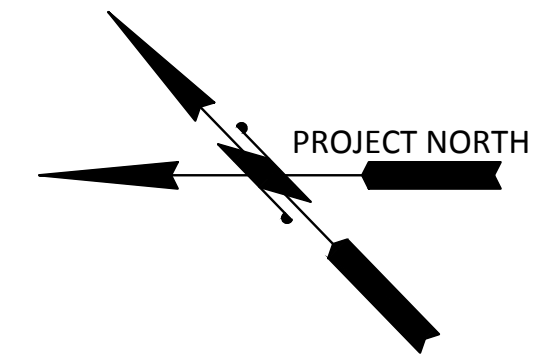
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**STORMWATER SYSTEM TABLE (CONT.)**

19	STORM MANHOLE #6429 RIM = 16.52 (LADDER SE) IE = 8.07 (18" RCP-NE & SW) IE = 8.72 (16" RCP-W)	24	STORM MANHOLE #6423 RIM = 16.39 (NO LADDER) IE = 8.49 (12" RCP-S) BOTTOM = 4.65	28	STORM VAULT LIDS #6419 & 6418 NORTH RIM = 16.55 SOUTH RIM = 16.58 TOP OF MIDDLE BAFFLE = 11.43 BOTTOM AT SOUTH SIDE = 6.45 BOTTOM AT NORTH SIDE = 4.47
20	STORM MANHOLE #6428 RIM = 16.32 (LADDER NORTH) IE = 8.16 (16" RCP-SE, 12" RCP-S) IE = 8.50 (12" RCP-SW)	25	STORM MANHOLE #6422 RIM = 16.42 (NO LADDER) IE = 8.46 (12" RCP-SE) BOTTOM = 4.62	29	STORM CATCH BASIN #6514 RIM = 16.37 IE = 14.83 (8" DIP-E & W)
21	STORM MANHOLE #6427 RIM = 16.35 (NO LADDER) IE = 8.50 (12" RCP-NE) BOTTOM = 4.65	26	STORM MANHOLE #6421 RIM = 16.43 (LADDER SW) IE = 9.29 (12" RCP-N) IE = 9.21 (16" RCP-SE)	30	STORM CATCH BASIN #6662 RIM = 16.48 IE = 14.94 (8" DIP-W)
22	STORM MANHOLE #6426 RIM = 16.34 (NO LADDER) IE = 8.44 (12" RCP-N) BOTTOM = 4.69	27	STORM MANHOLE #6420 RIM = 16.47 (LADDER WEST) IE = 8.48 (16" RCP-NW) IE = 8.48 (16" RCP-S)	<b>SANITARY SEWER TABLE</b>	
23	STORM VAULT LIDS #6424 & 6425 RIMS = 16.28 (NO LADDERS) TOP OF PLATES = 8.84			2 SANITARY SEWER MANHOLE #6131 RIM = 16.98 (LADDER SOUTH) CTR OF CHANNEL = 9.31 (18" RCP-NE & W)	



**LEGEND**

- PROJECT CONTROL POINT
- MOORING BOLLARD
- STORMWATER MANHOLE
- STORMWATER CATCH BASIN
- STORMWATER YARD DRAIN
- STORMWATER CULVERT
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VAULT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- UTILITY POLE
- LIGHT POLE
- POWER MANHOLE
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- SIGN
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- CONCRETE
- SD STORMWATER DRAIN LINE
- SS SANITARY SEWER LINE
- W WATER LINE
- FW FIRE WATER LINE
- BP ELECTRIC LINE
- BT COMMUNICATIONS LINE
- E(G) ELECTRICAL GROUND
- X CHAIN LINK FENCE
- 12.5 MAJOR CONTOUR
- 17.0 MINOR CONTOUR
- x 20.2' SPOT ELEVATION
- # STORM STRUCTURE IDENTIFICATION NUMBER
- STRIPING ON ASPHALT

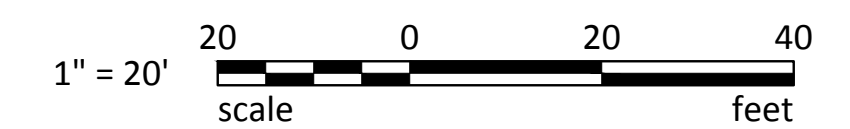
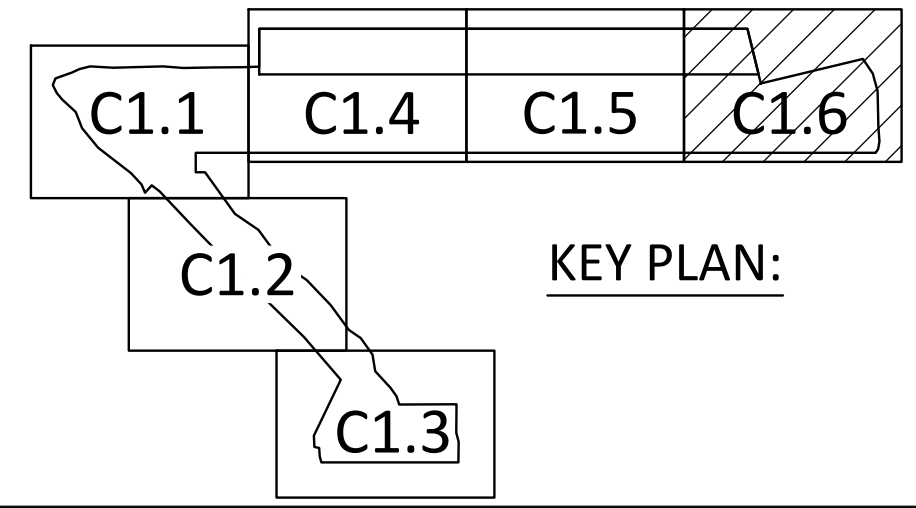
MATCH LINE - SEE SHEET C1.5

**STORMWATER SYSTEM TABLE**

15	STORM MANHOLE #6512 RIM = 16.78 (LADDER WEST) IE = 4.99 (18" RCP-NE & SW)	16	STORM CATCH BASIN #6513 RIM = 16.22 IE = 15.02 (6" DIP-W)	18	STORM MANHOLE #3502 RIM = 15.93 IE = 8.81 (12" PVC-NE) IE = 9.31 (8" PVC-E) IE = 9.27 (10" PVC-SE) IE = 8.60 (12" RCP-SW) IE = 9.03 (12" PVC-NW)
		17	STORM CATCH BASIN #3434 RIM = 15.63 IE = 11.79 (8" DIP-SE)		

**PLAN - EXISTING CONDITIONS**  
SCALE: 1" = 20'

**NOTES:**  
1. SEE EXISTING CONDITION NOTES ON DWG C1.1.



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MARK: \_\_\_\_\_

6502

**C1.6**

EXISTING CONDITION PLAN  
SHEET 6

PIER 3 UPGRADE

CSB 7/17/13  
CHECKED BY: JRG  
DATE: 7/17/13

DIR OF ENG: jason.mendenhall  
PRINTED BY: jason.mendenhall  
DATE: 7/17/13

SECTION: 27  
RANGE: 3 E  
TOWNSHIP: 21 N

DATE: 092935  
DAT-HRZ: NAD 83-07  
VERT: NOS TIDAL (MLLW = 0.0)

AS SHOWN  
DRAWING SCALE: 1" = 20'

CONTR/CONS: 069458

SHEET 13 OF 129

PHASE: RECORD DRAWINGS

PARCEL: 27

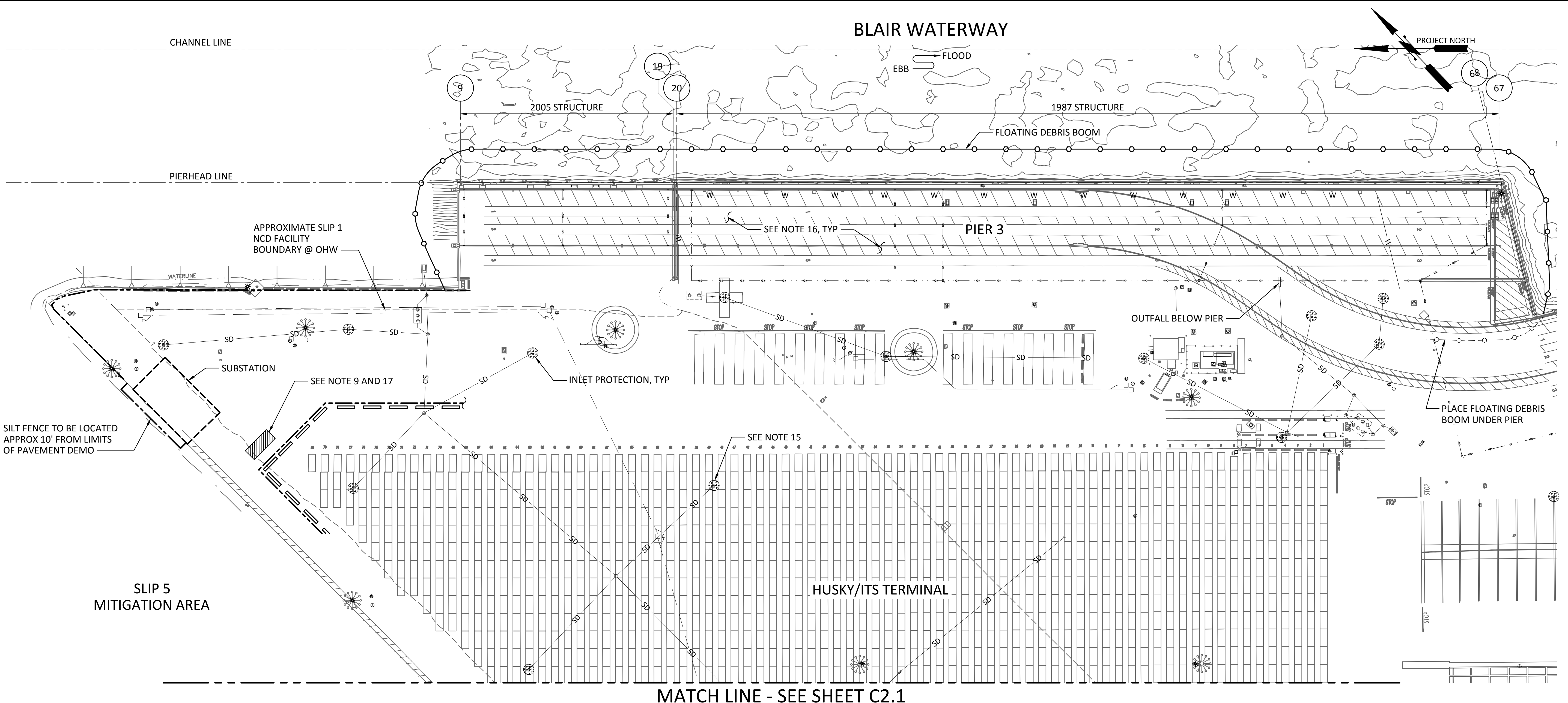
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TACOMA, WA 98421-2300

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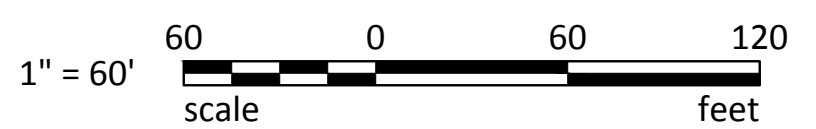
**1** TEMPORARY EROSION AND SEDIMENT CONTROL PLAN  
SCALE: 1" = 60'

**EROSION CONTROL NOTES:**

- THE CONTRACTOR SHALL COMPLY WITH, MAINTAIN, AND MODIFY AS NEEDED THE APPROVED CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS ANTICIPATED FOR SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DOES NOT LEAVE THE SITE.
- ON-SITE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF WORK AND SHALL BE MAINTAINED DURING AND AFTER EXCAVATION AND GRADING OPERATIONS TO THE APPROVAL OF THE ENGINEER.
- IF CONSTRUCTION OCCURS DURING DRY WEATHER PERIODS, DUST FROM CONSTRUCTION SHALL BE MINIMIZED THROUGH USE OF BEST MANAGEMENT PRACTICES (BMPs) OUTLINED IN THE SWPPP AND THE CITY'S STORMWATER MANUAL.
- THE TESC FACILITIES SHOWN ON THIS PLAN SHALL BE CONSTRUCTED IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE PORT DRAINAGE SYSTEM, ADJACENT WATERWAYS, OR VIOLATE APPLICABLE WATER QUALITY STANDARDS.
- THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- ALL FACILITIES SHALL BE MAINTAINED ON SITE BY SWEEPING OR OTHER MEANS TO PREVENT DEBRIS, DUST AND MUD FROM ACCUMULATING ON THE PAVED SURFACES, BANK SLOPE, OR IN ADJACENT WATERWAYS.
- NON-COMPLIANCE WITH THE EROSION CONTROL AND WATER QUALITY REQUIREMENTS MAY RESULT IN A TEMPORARY STOP-WORK ORDER UNTIL SAID EROSION CONTROL MEASURES ARE FUNCTIONAL. TEMPORARY STOP-WORK ORDER SHALL NOT MODIFY CONTRACT SCHEDULE.
- THE CONTRACTOR SHALL REMOVE MATERIAL DROPPED, WASHED OR TRACKED FROM VEHICLES OUTSIDE OF THE DESIGNATED PROJECT LIMITS OR INTO THE EXISTING STORM DRAINAGE SYSTEM. DEBRIS SHALL NOT BE WASHED INTO THE STORM DRAINAGE SYSTEM, ONTO THE BANK SLOPE, OR INTO THE ADJACENT WATERWAYS.
- DEWATERING ACTIVITIES SHALL BE PERFORMED IN A MANNER THAT ENSURES NO SILT-LADEN WATER ENTERS ADJACENT WATERWAYS OR STORM DRAINAGE SYSTEM.
- IMPLEMENTATION OF THESE EROSION & SEDIMENT CONTROL PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADE OF THE TESC FACILITIES SHOWN ON THE PLANS SHALL BE THE CONTRACTOR'S RESPONSIBILITY UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED.
- NOTIFY ENGINEER UPON INSTALLATION AND AFTER REMOVAL OF EROSION CONTROL MEASURES. THE NAME AND PHONE NUMBER OF THE CERTIFIED EROSION CONTROL LEAD SHALL BE PROVIDED TO THE ENGINEER AND REDLINED ON THE PLANS PRIOR TO THE EROSION CONTROL INSPECTION.
- ALL CATCH BASIN INLET PROTECTION INSTALLED ON-SITE OR WITHIN THE RIGHT-OF-WAY SHALL BE REMOVED AFTER FINAL INSPECTION AND ACCEPTANCE.
- REMOVE SEDIMENT FROM THE STORM SYSTEM ONCE THE SITE IS PERMANENTLY STABILIZED. THE CLEANING AND REMOVAL OPERATION SHALL NOT FLUSH SEDIMENT DOWNSTREAM.
- COORDINATE TESC PROVISIONS THAT ARE OUTSIDE OF THE PROJECT WORK AREA WITH THE ENGINEER. CONTRACTOR'S TEMPORARY WORK FENCE NOT SHOWN.
- IN ADDITION TO INLET PROTECTION SHOWN ON PLAN, INSTALL INLET PROTECTION ON ALL EXISTING CATCH BASINS THAT ARE DISCOVERED IN FIELD WITHIN THE CONTRACTORS WORK AREA OR THAT WILL BE IMPACTED BY CONTRACTOR ACTIVITY EVEN IF THEY ARE NOT SHOWN ON PLANS. WHARF SURFACE DRAIN PROTECTION SHOWN ON DRAWING C2.3, DETAIL 4, SHALL BE INSTALLED AT ALL WHARF SURFACE DRAIN LOCATIONS. INDIVIDUAL WHARF SURFACE DRAINS ARE NOT SHOWN ON PLAN
- THE CONTRACTOR SHALL REMOVE MATERIAL AND/OR DEBRIS FROM VEHICLES EXITING THE PROJECT LIMITS, BUT NOT WASH THE DEBRIS INTO THE EXISTING STORM DRAINAGE SYSTEM. PROVIDING A WASH DOWN AREA IS NOT PRECLUDED BY THIS REQUIREMENT.

**LEGEND**

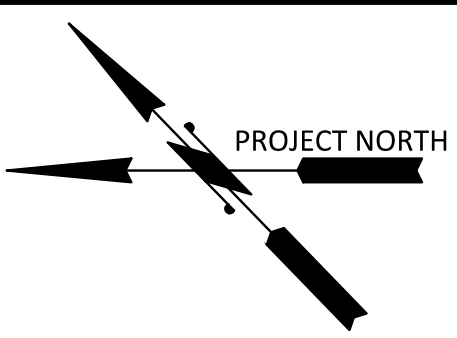
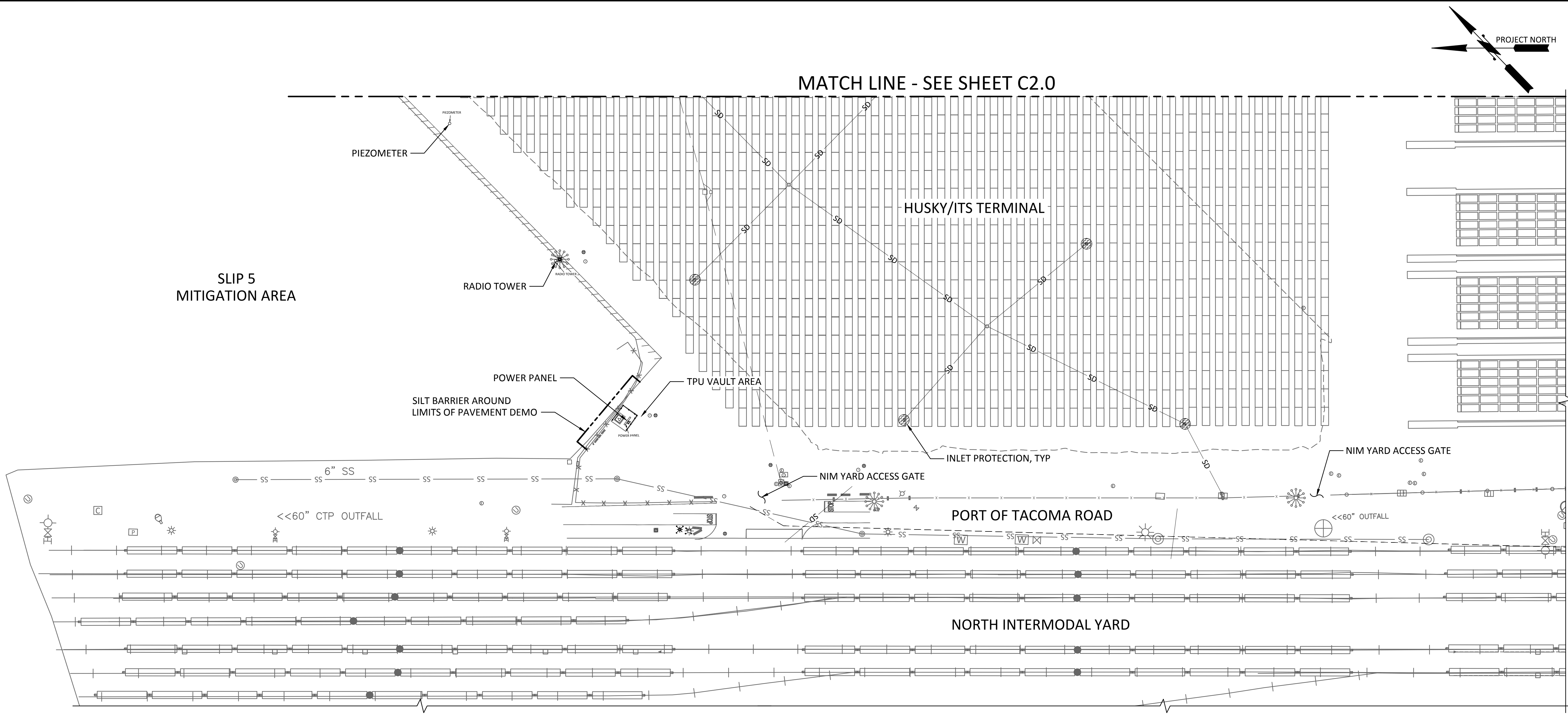
- INLET PROTECTION, SEE DWG C2.2
- SILT FENCE, SEE DWG C2.2
- FLOATING DEBRIS BOOM, (SEE DWGS S2.0 TO S2.3 FOR DEMO)
- EXIST BENT NO.



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<p>P.O. BOX 1887 TACOMA, WA 98401-0188</p>		<p>REVISION: _____</p> <p>MARK: _____</p>
<p>APPROVED:</p> <p>DC 7/17/13</p> <p>DIR OF ENG: jason.mendenthal</p> <p>PRINTED BY: ONE SITCUM WAY</p> <p>PORT ADDRESS: TACOMA, WA 98421-2300</p>	<p>CSB 7/17/13</p> <p>CHECKED BY: JRG</p> <p>PROJ. ENGR: jason.mendenthal</p>	<p>DATE: 7/17/13</p> <p>DATE: 7/17/13</p>
<p>6502</p> <p><b>C2.0</b></p> <p>SHEET 14 OF 129</p>	<p>PIER 3 UPGRADE</p> <p>TEMPORARY EROSION &amp; SEDIMENT CONTROL PLAN - SHEET 1</p> <p>RANGE: 3 E SECTION: 27</p> <p>TOWNSHIP: 21 N</p> <p>DATE-HRZ: NAD 83-07</p> <p>VERT: NOS TIDAL (MLLW = 0.0)</p> <p>DRAWING SCALE: AS SHOWN</p> <p>PARCEL: 27</p>	<p>PHASE: RECORD DRAWINGS</p>

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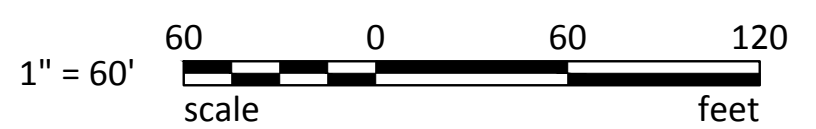
**1**  
-  
**TEMPORARY EROSION AND SEDIMENT CONTROL PLAN**  
SCALE: 1" = 60'

**EROSION CONTROL NOTES:**

- SEE NOTES ON DWG C2.0.

**LEGEND**

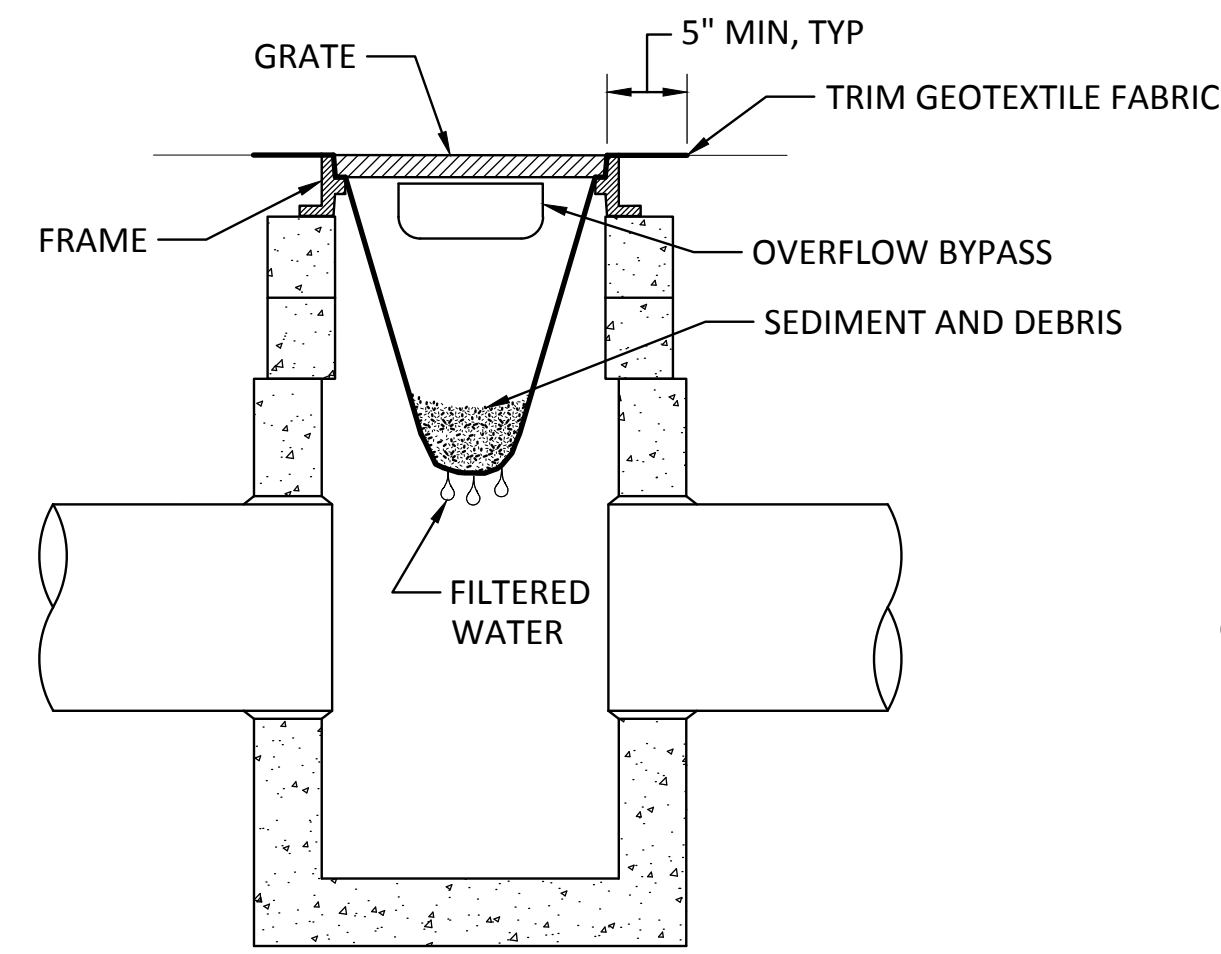
- INLET PROTECTION
- SILT FENCE/BARRIER
- EXISTING FENCE
- EXISTING RAIL TRACK



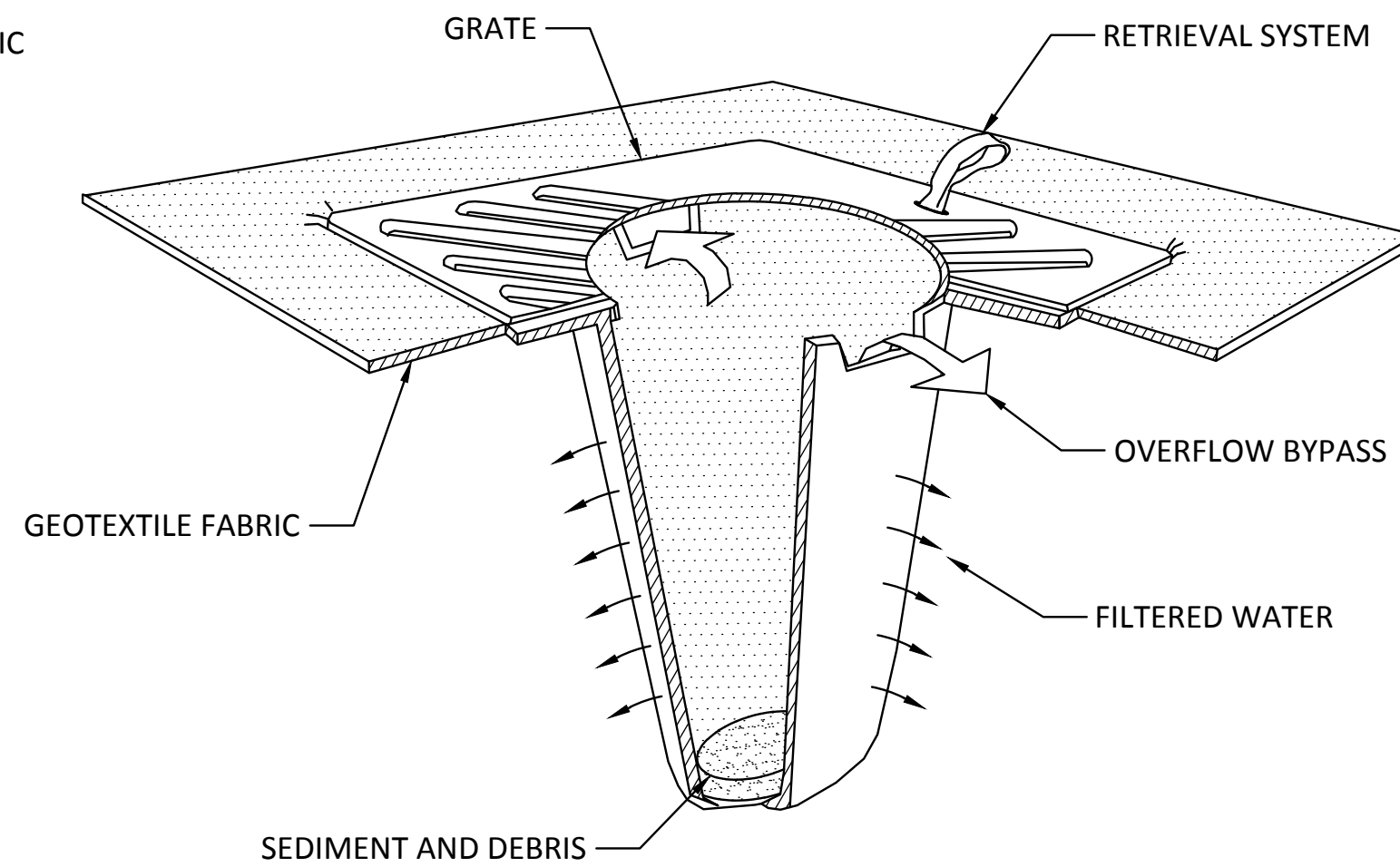
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<b>6502</b> <b>C2.1</b> SHEET 15 OF 129	<b>PIER 3 UPGRADE</b>		<b>TEMPORARY EROSION &amp; SEDIMENT CONTROL PLAN - SHEET 2</b>		DATE 7/17/13
	CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	CSB CHECKED BY: JRG
MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN	DIR OF ENG: jason.mendenhall	DATE: 7/17/13
PHASE: RECORD DRAWINGS	PARCEL: 27	PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300		PRINTED BY: jason.mendenhall	PROJ. ENGR: jason.mendenhall
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CROSS SECTION



ISOMETRIC VIEW

1 INLET PROTECTION  
SCALE: NTS

**INLET PROTECTION NOTES:**

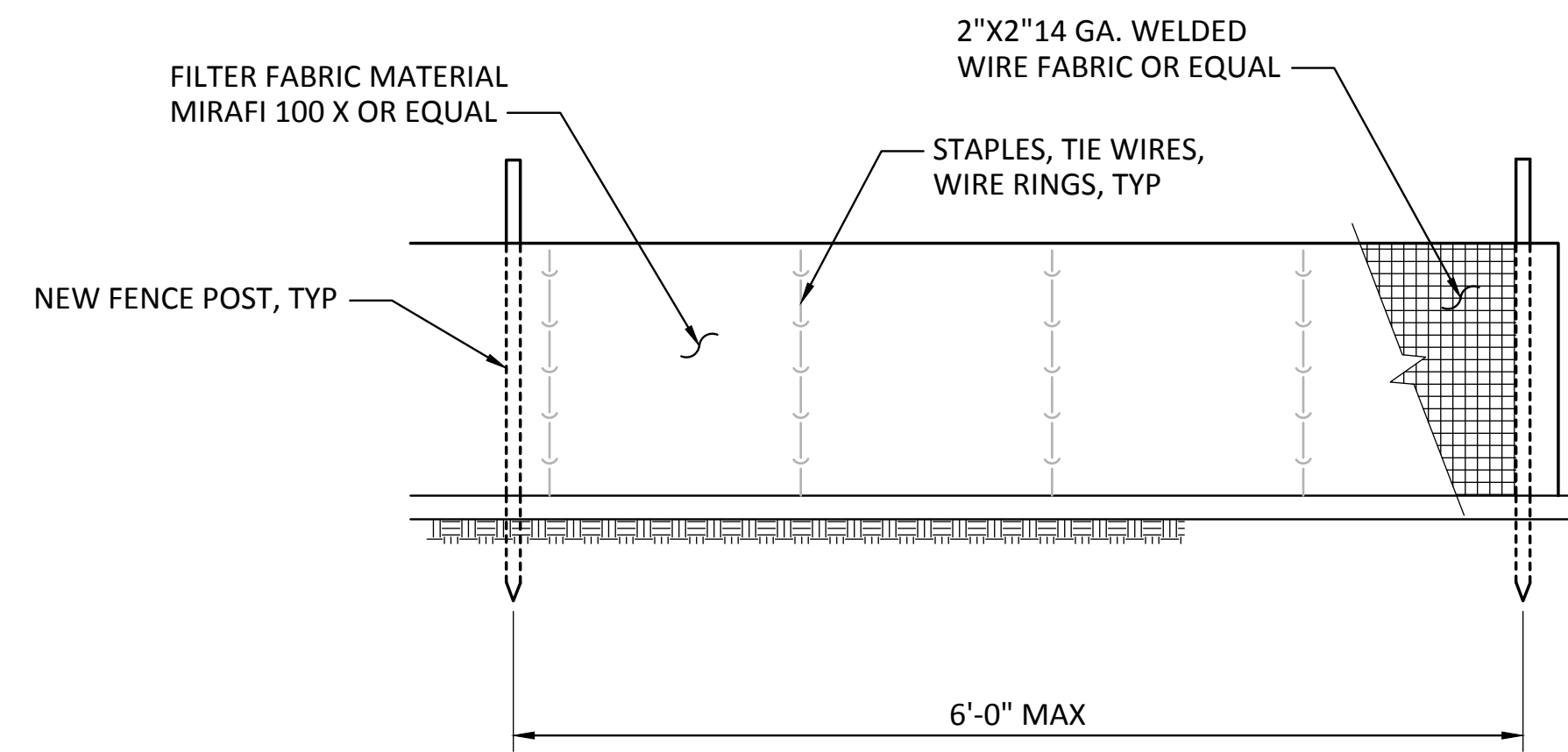
1. PROVIDE INLET SEDIMENT PROTECTION WITH STREAMGUARD CATCH BASIN INSERT #3003 (OR APPROVED EQUAL) AVAILABLE FROM:  
  
SEACOR ENVIRONMENTAL PRODUCTS  
815 W. EWING STREET SEATTLE, WA 98119  
PHONE: 1-866-644-3677
2. ACCUMULATED SEDIMENT ON OR AROUND A PROTECTED INLET SHALL BE REMOVED IMMEDIATELY. SEDIMENT SHALL NOT BE REMOVED BY FLUSHING.
3. ANY SEDIMENT IN THE CATCH BASIN INSERT SHALL BE REMOVED WHEN THE SEDIMENT HAS FILLED ONE-THIRD OF THE AVAILABLE STORAGE. THE FILTER MEDIA FOR THE INSERT SHALL BE CLEANED OR REPLACED AT LEAST MONTHLY, OR AS DIRECTED BY THE ENGINEER.

**SILT FENCE NOTES:**

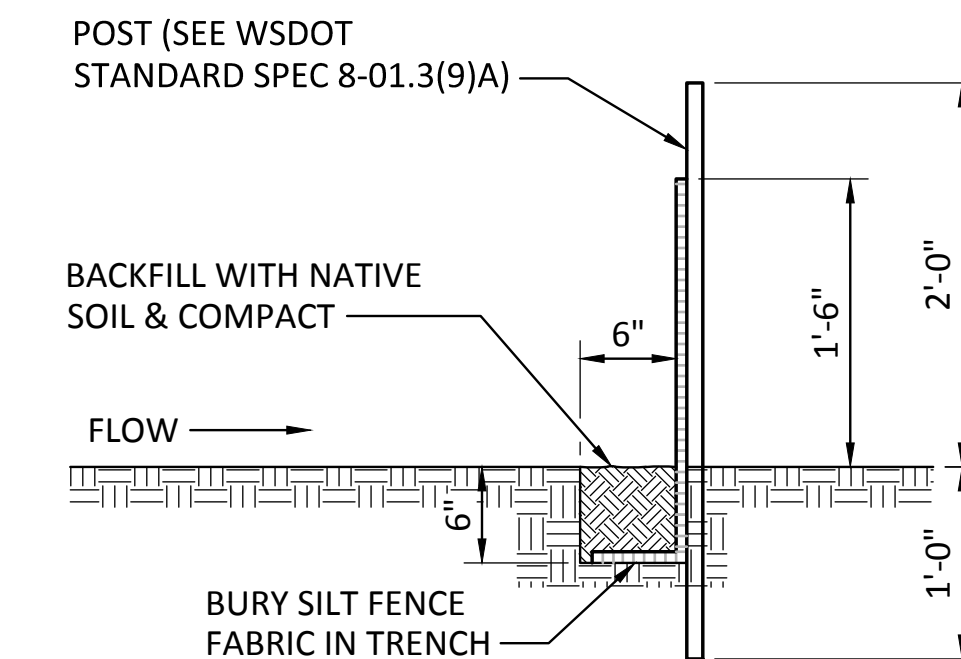
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO POST.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLANS.
3. FILTER FABRIC SHALL BE FASTENED SECURELY TO THE EXCAVATION/DEMOLITION SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1-INCH LONG, TIE WIRES OR WIRE RINGS. THE WIRES SHALL EXTEND TO THE BOTTOM OF FENCING.
4. A 6" MINIMUM DIAMETER WATTLE SHALL BE PLACED OVER THE FILTER FABRIC PLACED AS SHOWN ON 2
5. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY (INCLUDING WEEKENDS) DURING PROLONGED RAINFALL. REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
6. FILTER FABRIC FENCES SHALL REMAIN IN PLACE AND BE MAINTAINED THROUGHOUT THE DURATION OF THE CONTRACT. REMOVAL SHALL BE AT THE DIRECTION OF THE ENGINEER.

**EROSION AND SEDIMENT CONTROL NOTES:**

1. APPROVAL OF THIS TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF PIPES, RESTRICTORS, RETENTION FACILITIES, UTILITIES, ETC.), OR THE CONTRACTOR MAINTAINED CONSTRUCTION SWPPP.
2. THE IMPLEMENTATION OF THESE TESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE TESC FACILITIES SHOWN IN THESE PLANS SHALL BE CONSTRUCTED PRIOR TO ANY DEMOLITION, OR EXCAVATIONS SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
4. THE DETAILS SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE SITE AND TO PROVIDE ADDITIONAL MEASURES AS NEEDED TO CONTAIN ANY SEDIMENTS WITHIN THE PROJECT LIMITS.



ELEVATION

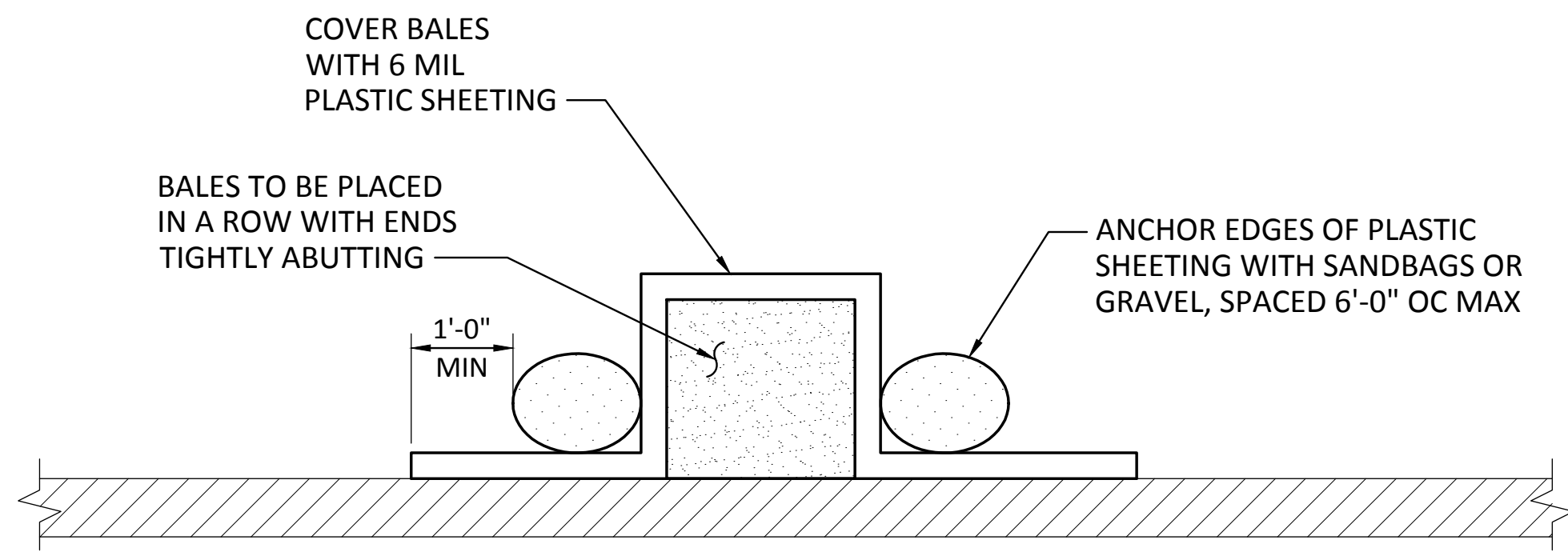


TYPICAL CROSS SECTION AT UNPAVED AREAS

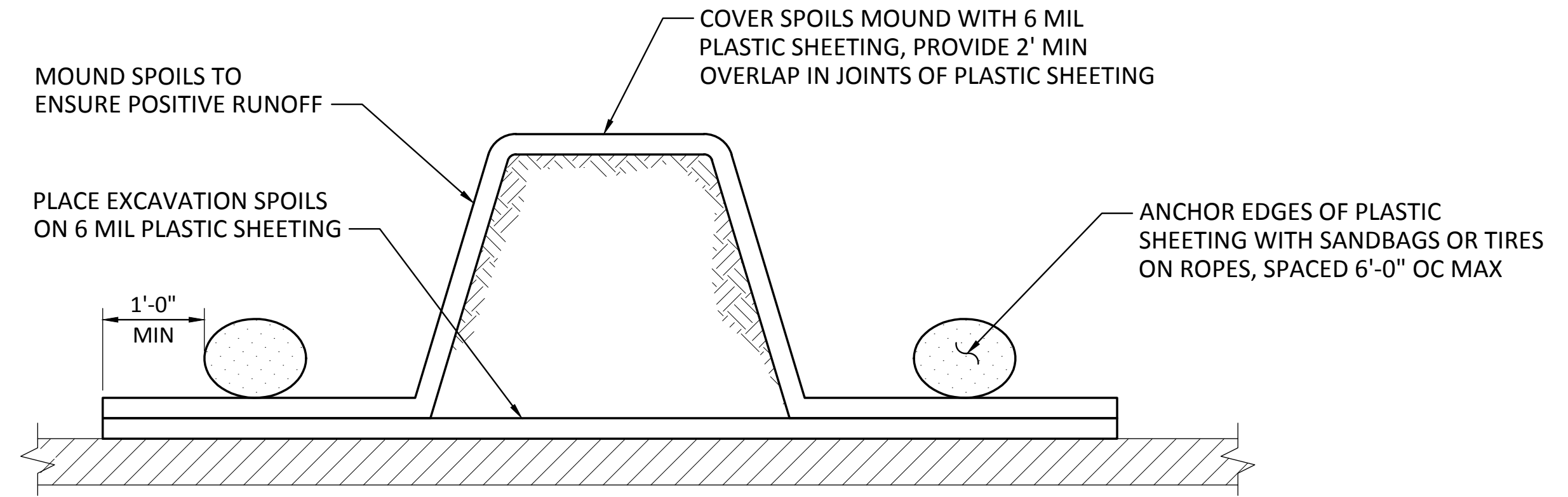
2 SILT FENCE DETAIL  
SCALE: NTS

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CSB CHECKED BY: JRG DATE: 7/17/13	DIR OF ENG: Jason Mendenthal PRINTED BY: _____ DATE: 7/17/13
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27	VERT: NOS TIDAL (MILLW = 0.0) DAT-HRZ: NAD 83-07 PARCEL: 27
MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300 DRAWING SCALE: AS SHOWN
6502 <b>C2.2</b> SHEET 16 OF 129	PIER 3 UPGRADE TEMPORARY EROSION & SEDIMENT CONTROL DETAILS & NOTES - SHEET 1

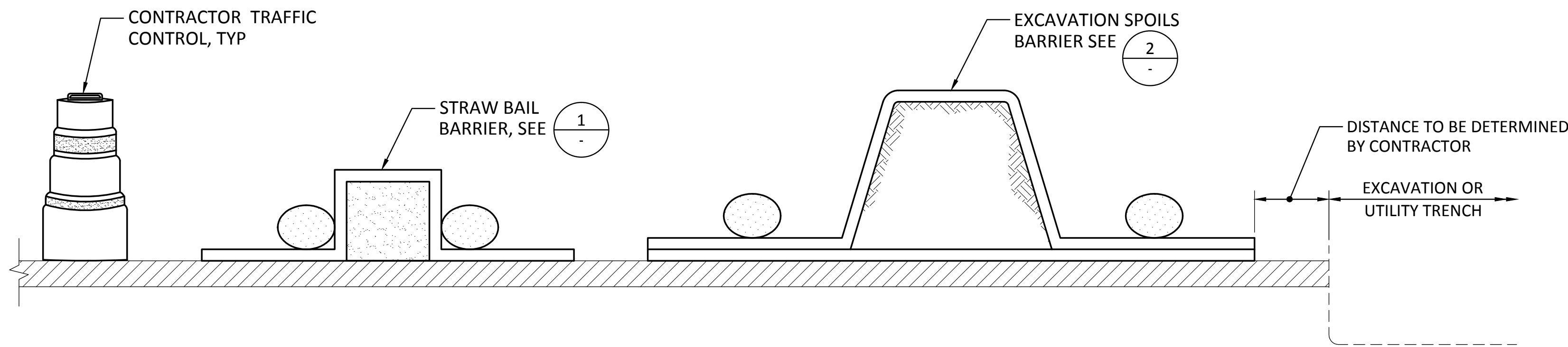




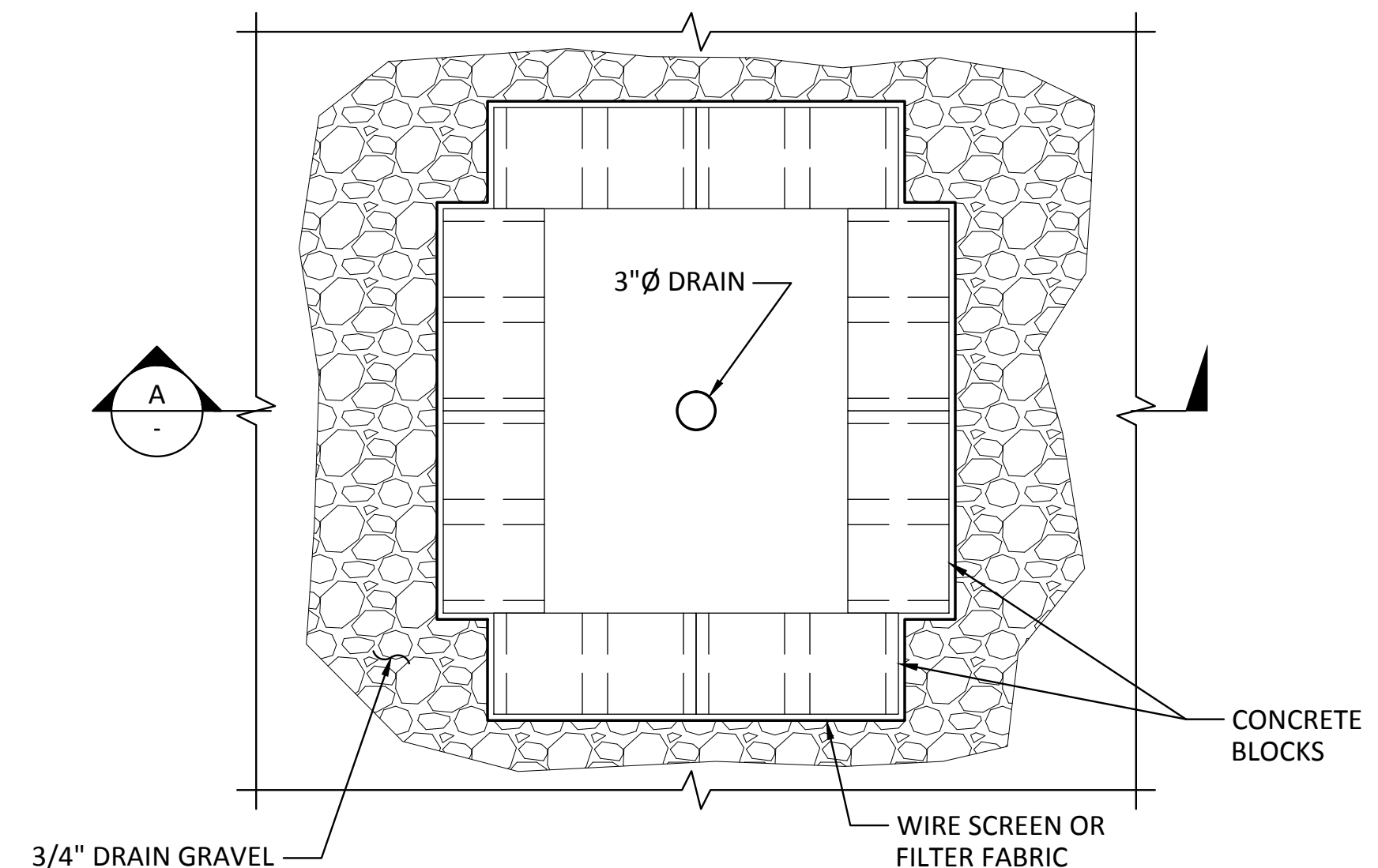
1 - DETAIL - TYP STRAW BALE BARRIER  
SCALE: NTS



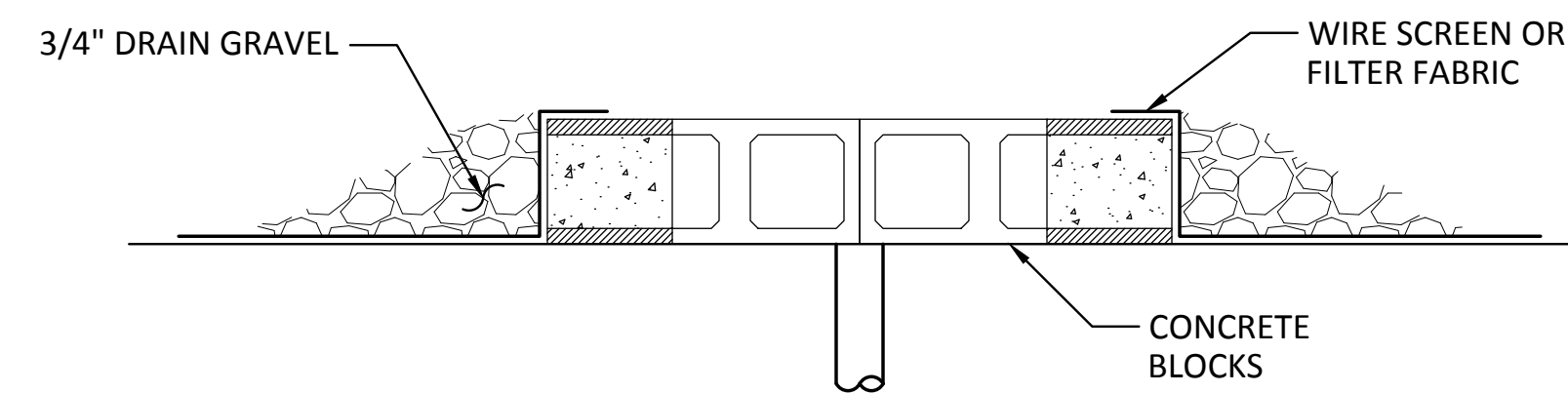
2 - DETAIL - TYP EXCAVATION SPOILS BARRIER  
SCALE: NTS



3 - DETAIL - TYP EXCAVATION SECTION  
SCALE: NTS



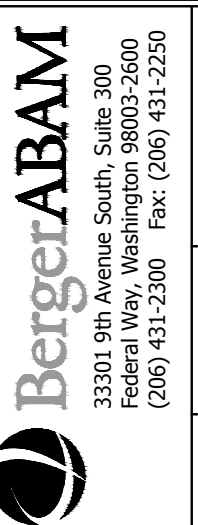
PLAN VIEW



SECTION A-A

4 - DETAIL - BLOCK AND GRAVEL WHARF DRAIN PROTECTION  
SCALE: NTS

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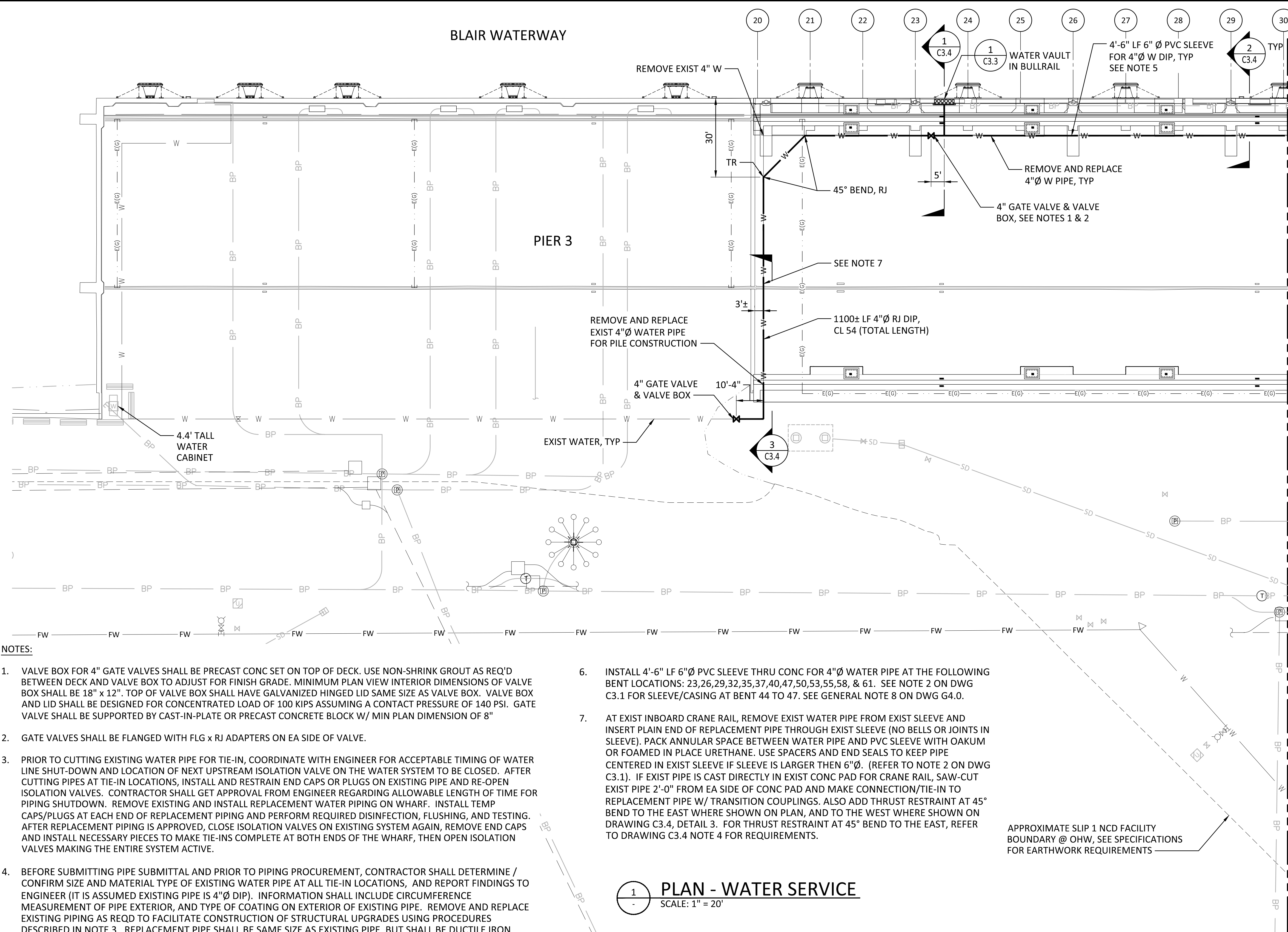
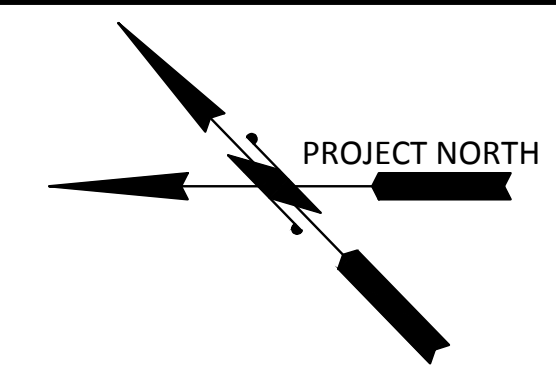
PIER 3 UPGRADE			
TEMPORARY EROSION & SEDIMENT CONTROL DETAILS & NOTES - SHEET 2			
RANGE:	3 E	SECTION:	27
TOWNSHIP:	21 N	VERT:	NOS TIDAL (MLLW = 0.0)
DAT-HRZ:	NAD 83-07	DRAWING SCALE:	AS SHOWN
PARCEL:	27		

6502	C2.3
SHEET 17 OF 129	
CONT/CONS:	069458
MASTER ID NO:	092935
PHASE:	RECORD DRAWINGS

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BINDING EDGE

# BLAIR WATERWAY



MATCH LINE - SEE SHEET C3.1

### NOTES:

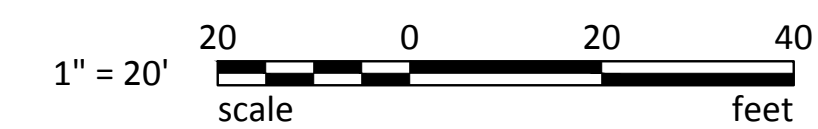
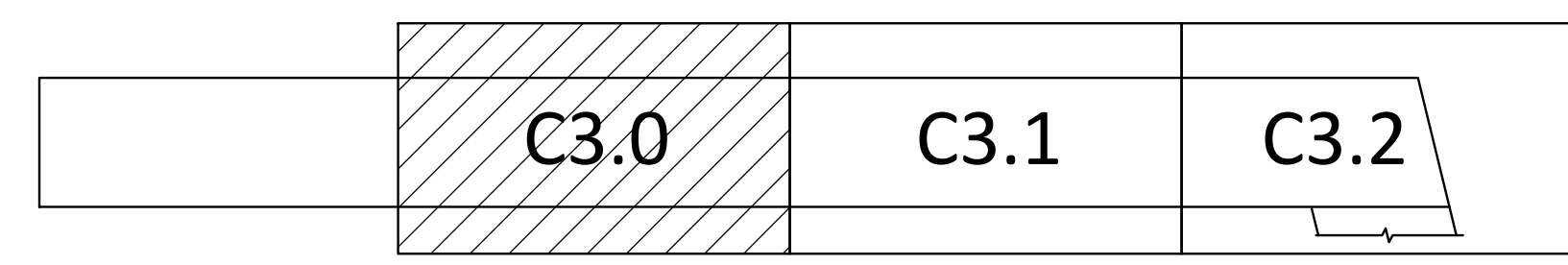
- VALVE BOX FOR 4" GATE VALVES SHALL BE PRECAST CONC SET ON TOP OF DECK. USE NON-SHRINK GROUT AS REQ'D BETWEEN DECK AND VALVE BOX TO ADJUST FOR FINISH GRADE. MINIMUM PLAN VIEW INTERIOR DIMENSIONS OF VALVE BOX SHALL BE 18" x 12". TOP OF VALVE BOX SHALL HAVE GALVANIZED HINGED LID SAME SIZE AS VALVE BOX. VALVE BOX AND LID SHALL BE DESIGNED FOR CONCENTRATED LOAD OF 100 KIPS ASSUMING A CONTACT PRESSURE OF 140 PSI. GATE VALVE SHALL BE SUPPORTED BY CAST-IN-PLATE OR PRECAST CONCRETE BLOCK W/ MIN PLAN DIMENSION OF 8"
- GATE VALVES SHALL BE FLANGED WITH FLG x RJ ADAPTERS ON EA SIDE OF VALVE.
- PRIOR TO CUTTING EXISTING WATER PIPE FOR TIE-IN, COORDINATE WITH ENGINEER FOR ACCEPTABLE TIMING OF WATER LINE SHUT-DOWN AND LOCATION OF NEXT UPSTREAM ISOLATION VALVE ON THE WATER SYSTEM TO BE CLOSED. AFTER CUTTING PIPES AT TIE-IN LOCATIONS, INSTALL AND RESTRAIN END CAPS OR PLUGS ON EXISTING PIPE AND RE-OPEN ISOLATION VALVES. CONTRACTOR SHALL GET APPROVAL FROM ENGINEER REGARDING ALLOWABLE LENGTH OF TIME FOR PIPING SHUTDOWN. REMOVE EXISTING AND INSTALL REPLACEMENT WATER PIPING ON WHARF. INSTALL TEMP CAPS/PLUGS AT EACH END OF REPLACEMENT PIPING AND PERFORM REQUIRED DISINFECTION, FLUSHING, AND TESTING. AFTER REPLACEMENT PIPING IS APPROVED, CLOSE ISOLATION VALVES ON EXISTING SYSTEM AGAIN, REMOVE END CAPS AND INSTALL NECESSARY PIECES TO MAKE TIE-INS COMPLETE AT BOTH ENDS OF THE WHARF, THEN OPEN ISOLATION VALVES MAKING THE ENTIRE SYSTEM ACTIVE.
- BEFORE SUBMITTING PIPE SUBMITTAL AND PRIOR TO PIPING PROCUREMENT, CONTRACTOR SHALL DETERMINE / CONFIRM SIZE AND MATERIAL TYPE OF EXISTING WATER PIPE AT ALL TIE-IN LOCATIONS, AND REPORT FINDINGS TO ENGINEER (IT IS ASSUMED EXISTING PIPE IS 4"Ø DIP). INFORMATION SHALL INCLUDE CIRCUMFERENCE MEASUREMENT OF PIPE EXTERIOR, AND TYPE OF COATING ON EXTERIOR OF EXISTING PIPE. REMOVE AND REPLACE EXISTING PIPING AS REQD TO FACILITATE CONSTRUCTION OF STRUCTURAL UPGRADES USING PROCEDURES DESCRIBED IN NOTE 3. REPLACEMENT PIPE SHALL BE SAME SIZE AS EXISTING PIPE, BUT SHALL BE DUCTILE IRON MEETING THE REQUIREMENTS OF THE PROJECT SPECIFICATION UNLESS DIRECTED OTHERWISE BY ENGINEER. USE MJ SLEEVES TO MAKE CONNECTIONS TO EXIST PIPE, OR TRANSITION COUPLINGS IF EXISTING PIPE IS NOT DUCTILE IRON.
- PIPE SLEEVES THROUGH CONCRETE FOR WATER PIPE SHALL BE SMOOTH WALL SCHED 40 STEEL PIPE SLEEVES. AT EACH END OF PIPE SLEEVE, PACK ANNULAR SPACE BETWEEN WATER PIPE AND PVC SLEEVE WITH OAKUM OR FOAMED IN PLACE URETHANE. SIZE OF SLEEVE SHALL BE 6"Ø UNLESS OTHERWISE SHOWN. INSERT PLAIN END OF PIPE THROUGH PVC SLEEVE (NO BELLS OR JOINTS INSIDE SLEEVE).

- INSTALL 4'-6" LF 6"Ø PVC SLEEVE THRU CONC FOR 4"Ø WATER PIPE AT THE FOLLOWING BENT LOCATIONS: 23,26,29,32,35,37,40,47,50,53,55,58, & 61. SEE NOTE 2 ON DWG C3.1 FOR SLEEVE/CASING AT BENT 44 TO 47. SEE GENERAL NOTE 8 ON DWG G4.0.
- AT EXIST INBOARD CRANE RAIL, REMOVE EXIST WATER PIPE FROM EXIST SLEEVE AND INSERT PLAIN END OF REPLACEMENT PIPE THROUGH EXIST SLEEVE (NO BELLS OR JOINTS IN SLEEVE). PACK ANNULAR SPACE BETWEEN WATER PIPE AND PVC SLEEVE WITH OAKUM OR FOAMED IN PLACE URETHANE. USE SPACERS AND END SEALS TO KEEP PIPE CENTERED IN EXIST SLEEVE IF SLEEVE IS LARGER THEN 6"Ø. (REFER TO NOTE 2 ON DWG C3.1). IF EXIST PIPE IS CAST DIRECTLY IN EXIST CONC PAD FOR CRANE RAIL, SAW-CUT EXIST PIPE 2'-0" FROM EA SIDE OF CONC PAD AND MAKE CONNECTION/TIE-IN TO REPLACEMENT PIPE W/ TRANSITION COUPLINGS. ALSO ADD THRUST RESTRAINT AT 45° BEND TO THE EAST WHERE SHOWN ON PLAN, AND TO THE WEST WHERE SHOWN ON DRAWING C3.4, DETAIL 3. FOR THRUST RESTRAINT AT 45° BEND TO THE EAST, REFER TO DRAWING C3.4 NOTE 4 FOR REQUIREMENTS.

## 1 PLAN - WATER SERVICE

SCALE: 1" = 20'

### KEY PLAN:



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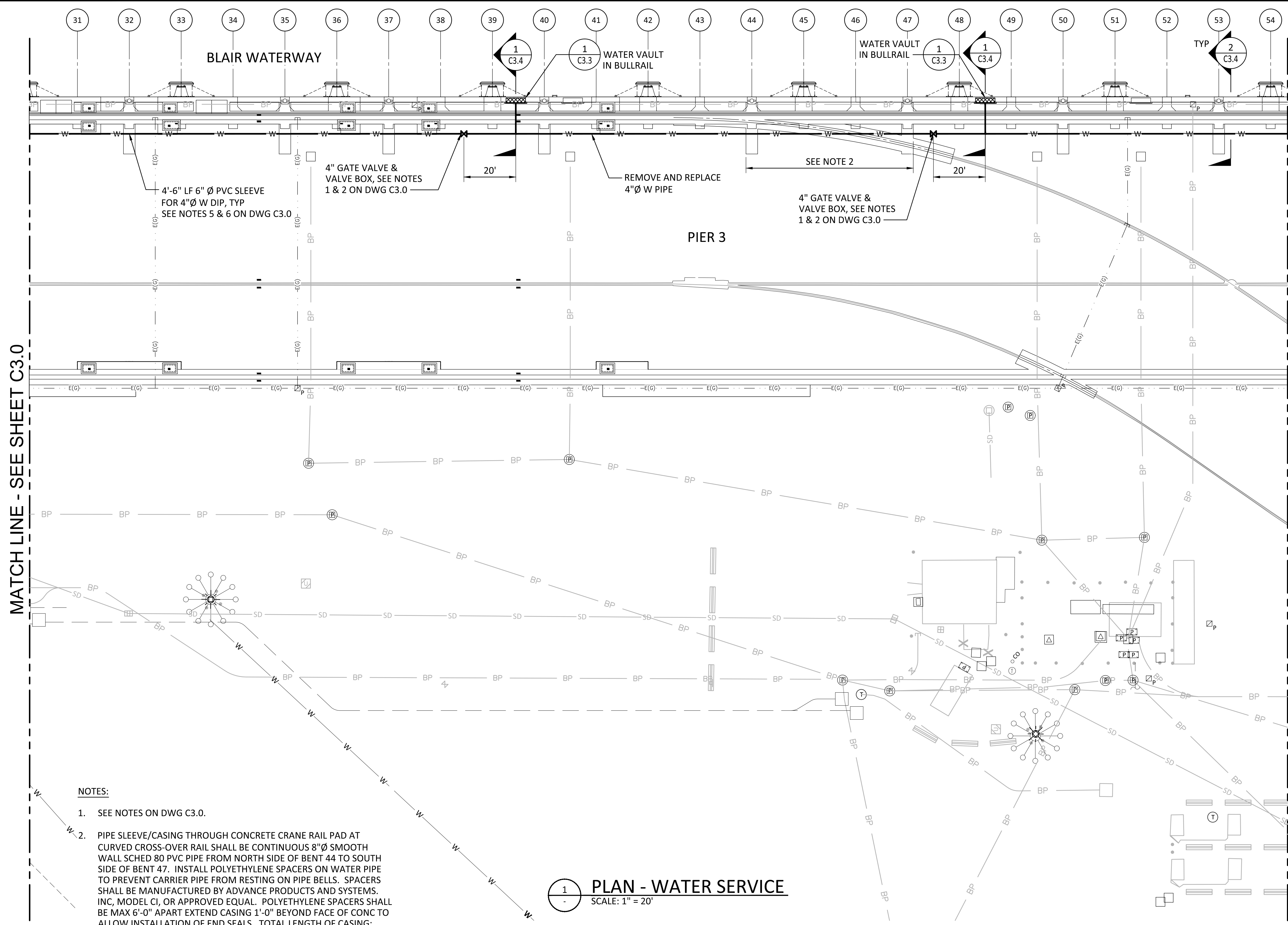
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<b>6502</b> <b>C3.0</b> SHEET 18 OF 129	<b>PIER 3 UPGRADE</b> <b>WATER SERVICE PLAN</b> SHEET 1
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION

BINDING EDGE

MATCH LINE - SEE SHEET C3.0

MATCH LINE - SEE SHEET C3.2

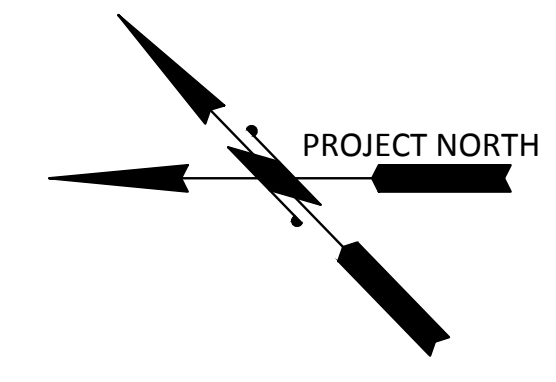
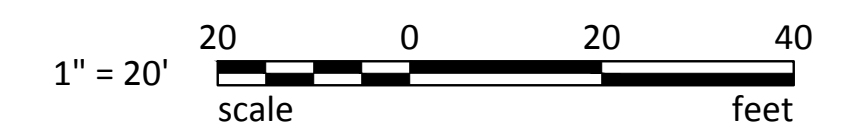
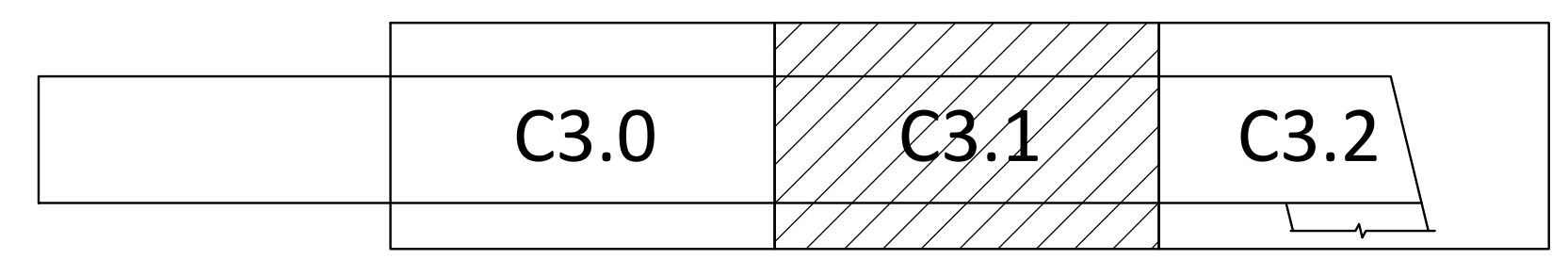


NOTES:

- SEE NOTES ON DWG C3.0.
- PIPE SLEEVE/CASING THROUGH CONCRETE CRANE RAIL PAD AT CURVED CROSS-OVER RAIL SHALL BE CONTINUOUS 8"Ø SMOOTH WALL SCHED 80 PVC PIPE FROM NORTH SIDE OF BENT 44 TO SOUTH SIDE OF BENT 47. INSTALL POLYETHYLENE SPACERS ON WATER PIPE TO PREVENT CARRIER PIPE FROM RESTING ON PIPE BELLS. SPACERS SHALL BE MANUFACTURED BY ADVANCE PRODUCTS AND SYSTEMS, INC, MODEL CI, OR APPROVED EQUAL. POLYETHYLENE SPACERS SHALL BE MAX 6'-0" APART EXTEND CASING 1'-0" BEYOND FACE OF CONG TO ALLOW INSTALLATION OF END SEALS. TOTAL LENGTH OF CASING: 67'-0". END SEALS SHALL BE OF SAME MANUFACTURE AS SPACERS.

1 PLAN - WATER SERVICE  
SCALE: 1" = 20'

KEY PLAN:



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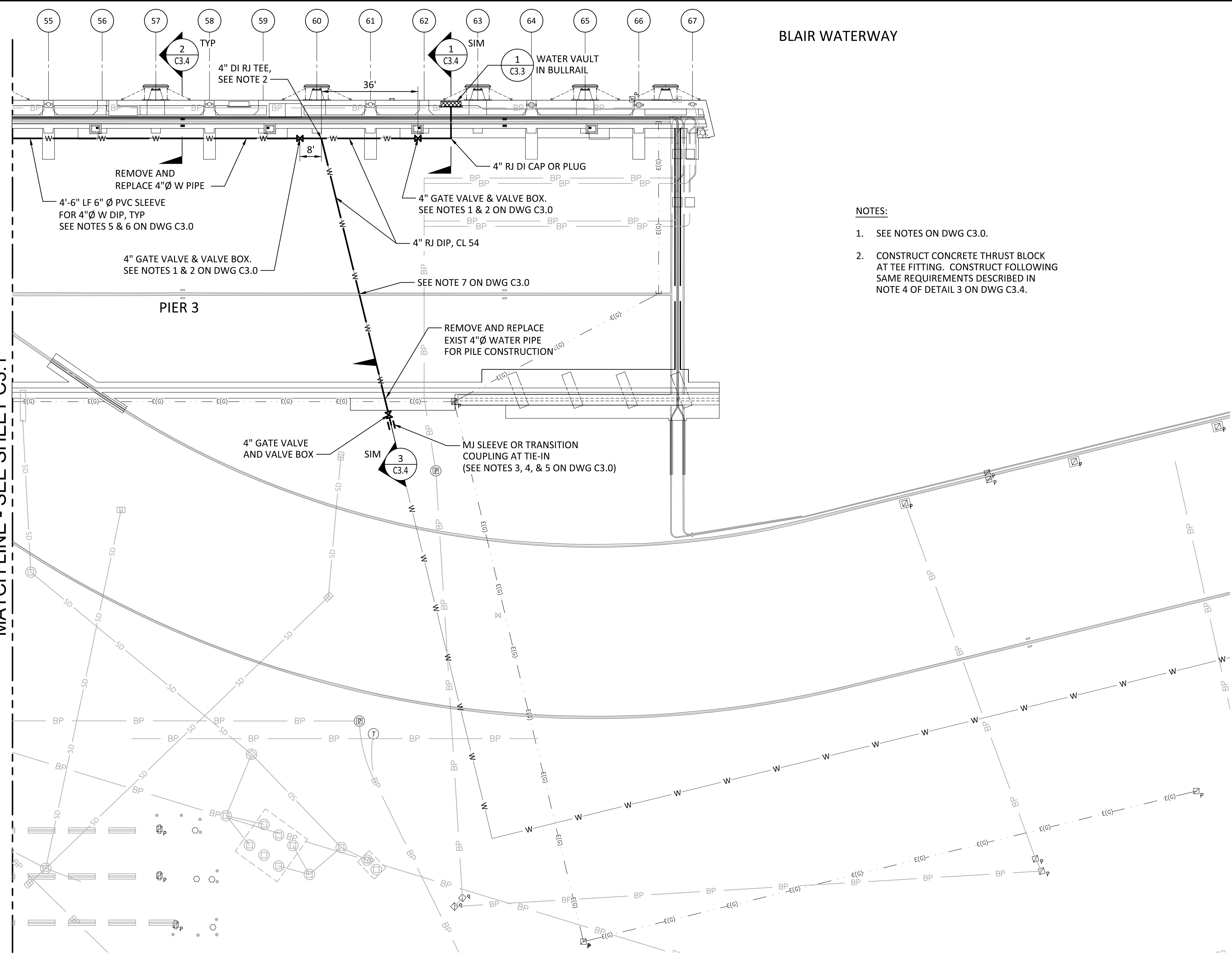
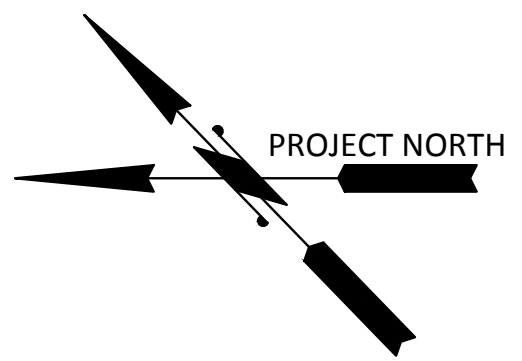
 3330 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ APPR: _____ DATE: _____
	REVISION: _____ MARK: _____
 JASON MENDENHALL PROFESSIONAL ENGINEER STATE OF WASHINGTON LICENSE NO. 17006	APPROVED: _____ CSB 7/17/13 CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: jason.mendenhall PRINTED BY: jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
<b>6502</b> <b>C3.1</b> SHEET 19 OF 129	<b>PIER 3 UPGRADE</b> <b>WATER SERVICE PLAN</b> <b>SHEET 2</b>
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN

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BINDING EDGE

MATCH LINE - SEE SHEET C3.1

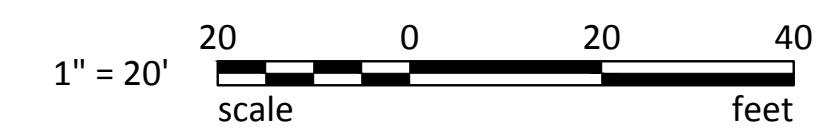
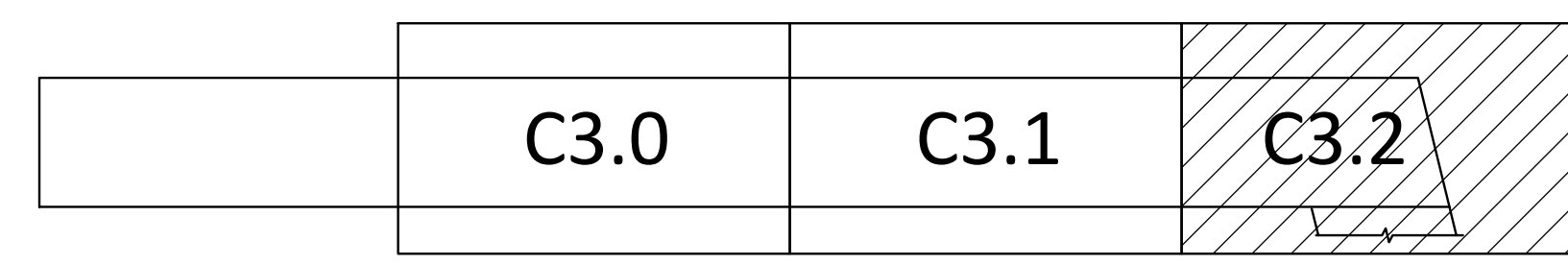
### BLAIR WATERWAY



- NOTES:**
- SEE NOTES ON DWG C3.0.
  - CONSTRUCT CONCRETE THRUST BLOCK AT TEE FITTING. CONSTRUCT FOLLOWING SAME REQUIREMENTS DESCRIBED IN NOTE 4 OF DETAIL 3 ON DWG C3.4.

**1 PLAN - WATER SERVICE**  
SCALE: 1" = 20'

**KEY PLAN:**

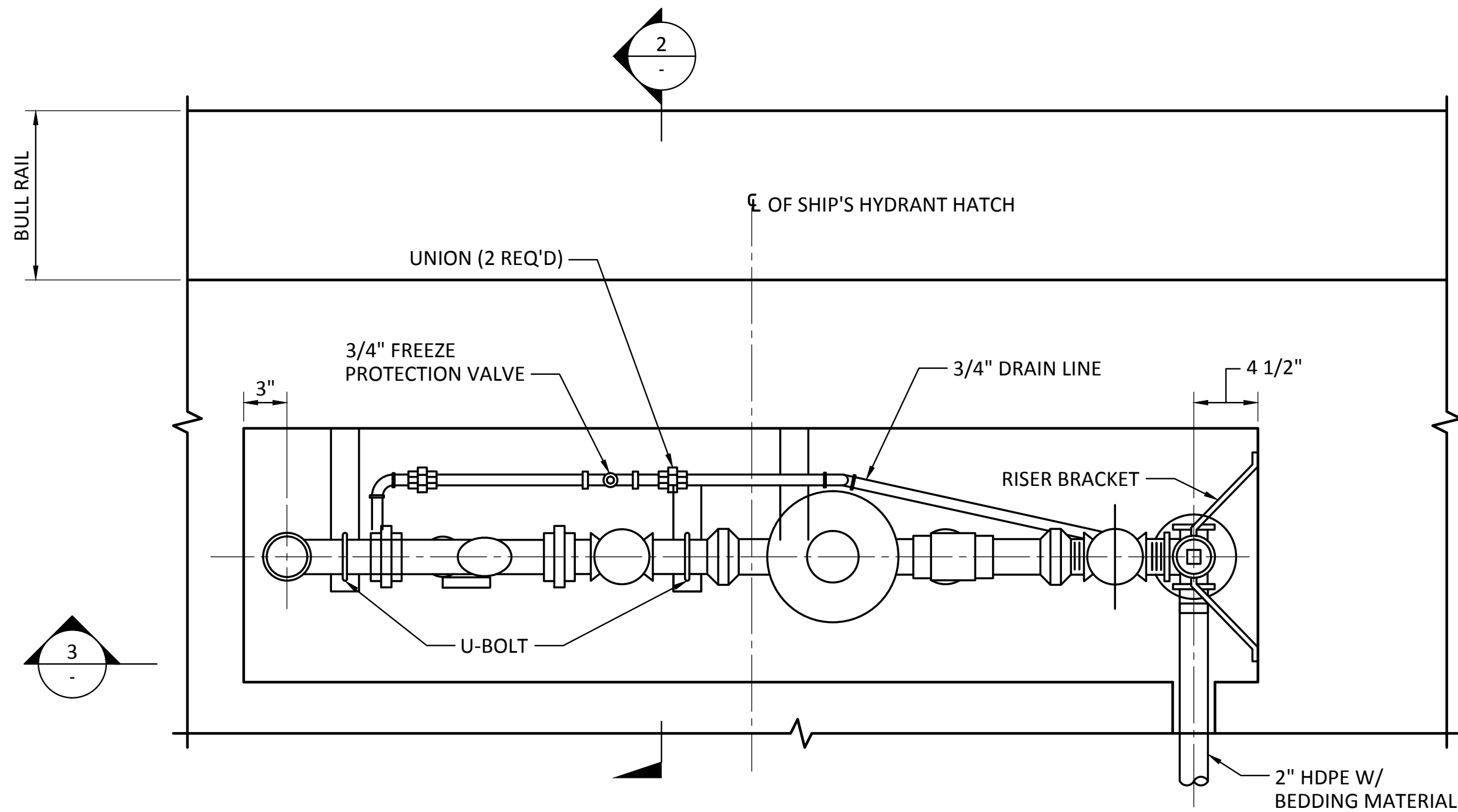


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<b>6502</b> <b>C3.2</b> SHEET 20 OF 129	<b>PIER 3 UPGRADE</b>		CSB 7/17/13
	<b>WATER SERVICE PLAN</b> SHEET 3		CHECKED BY JRG 7/17/13
CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	PRINTED BY: jason.mendenthal
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
		APPROVED:	DATE
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		REVISION:	DATE:
		MARK:	DATE:

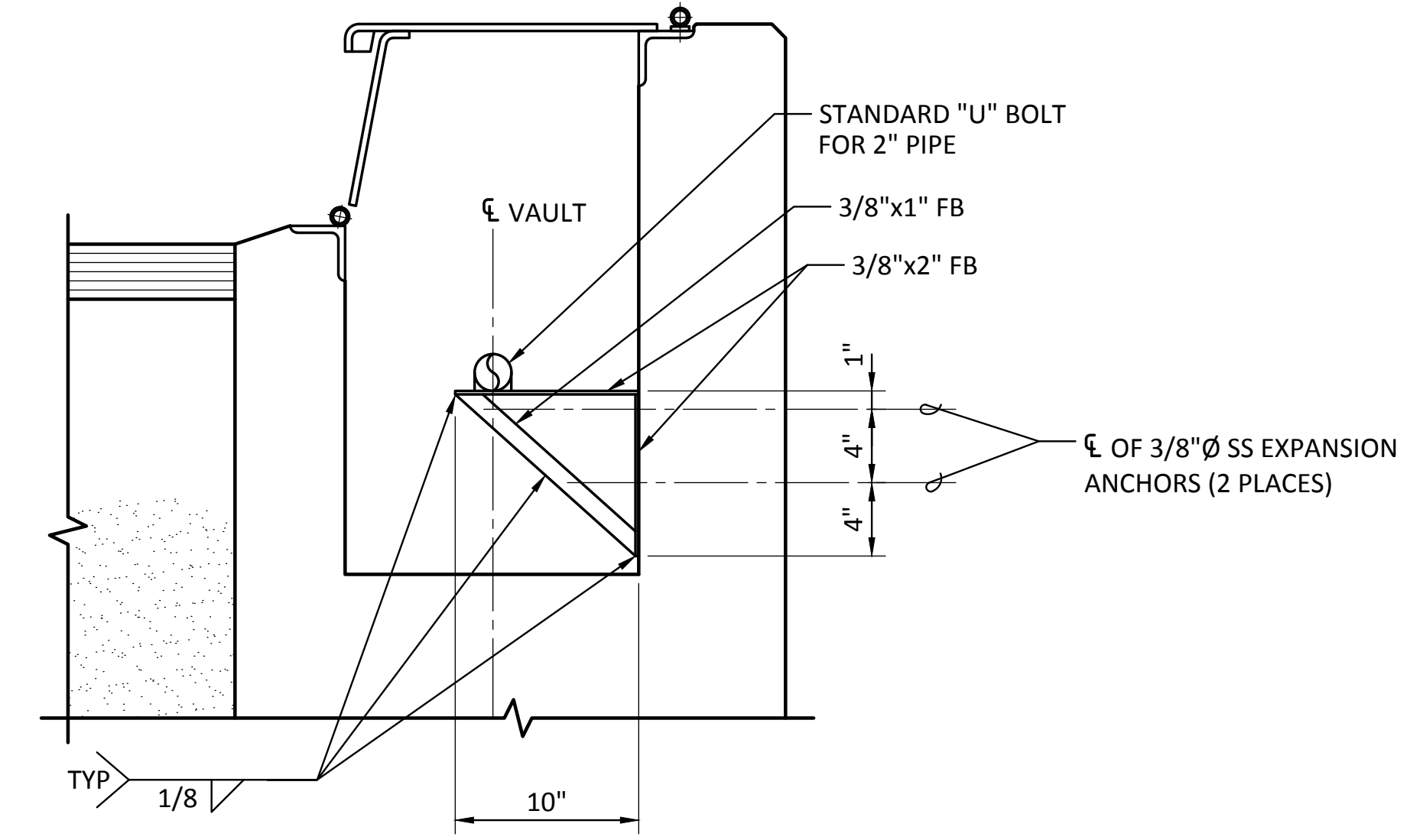
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NOTE:  
EQUIPMENT, SUCH AS WATER METER AND BACKFLOW PREVENTER, IN VAULT SHALL BE HEAT TRACED. REFER TO ELEC DRAWINGS. METER TO BE IN CUBIC FEET.

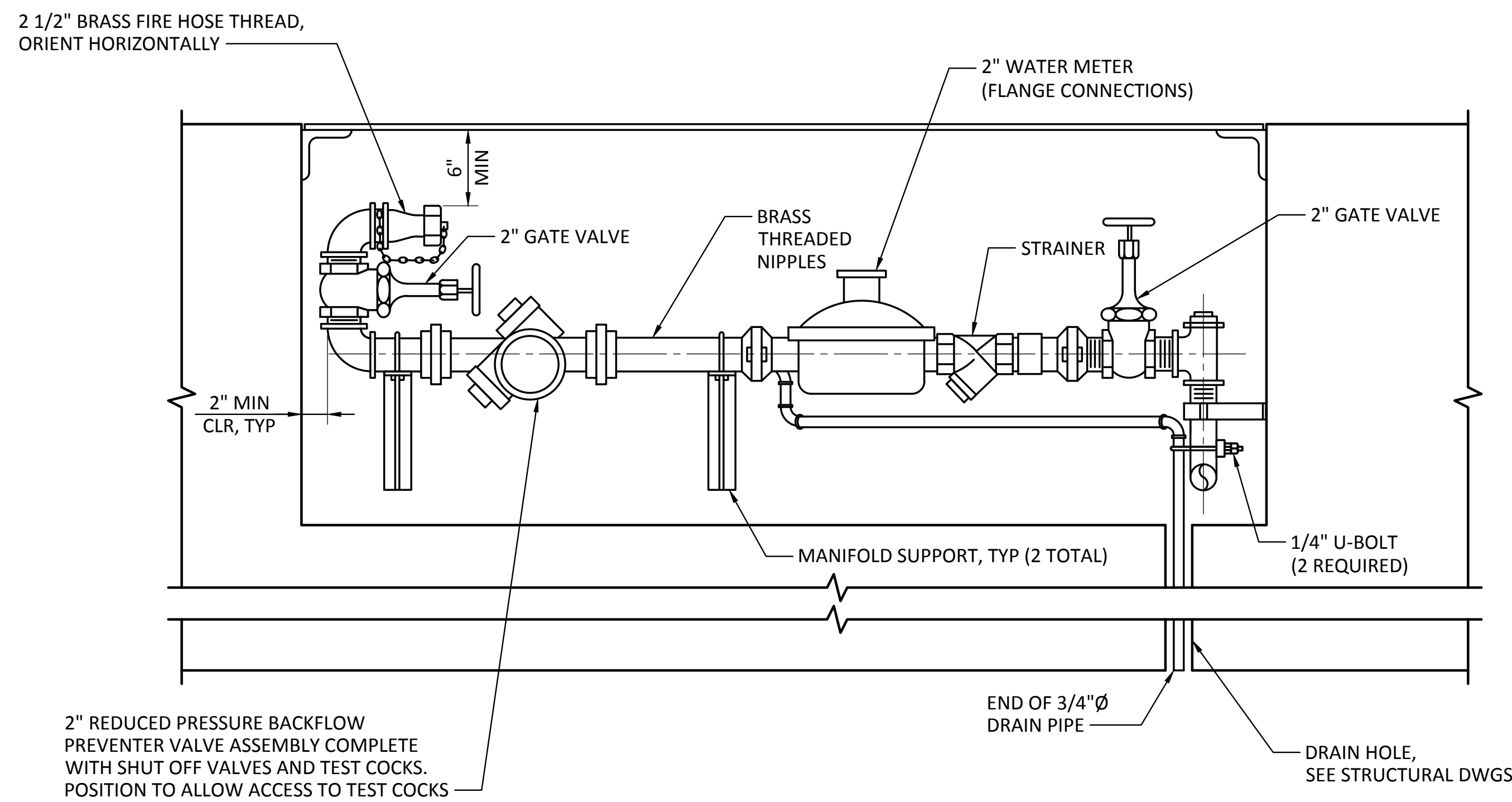
**1**  
C3.0  
SCALE: 1 1/2" = 1'-0"  
C3.1, C3.2

**DETAIL - WATER VAULT**

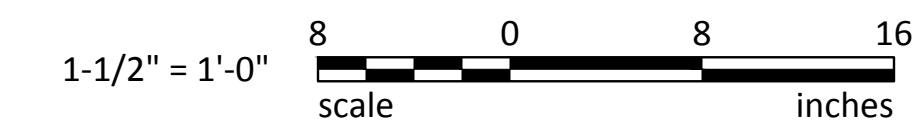


NOTE:  
SEE DRAWING S15.0 FOR VAULT CONSTRUCTION DETAILS. SEE DRAWING S1.0 FOR MANIFOLD SUPPORT MATERIALS

**2**  
SCALE: 1 1/2" = 1'-0"  
**DETAIL - MANIFOLD SUPPORT**

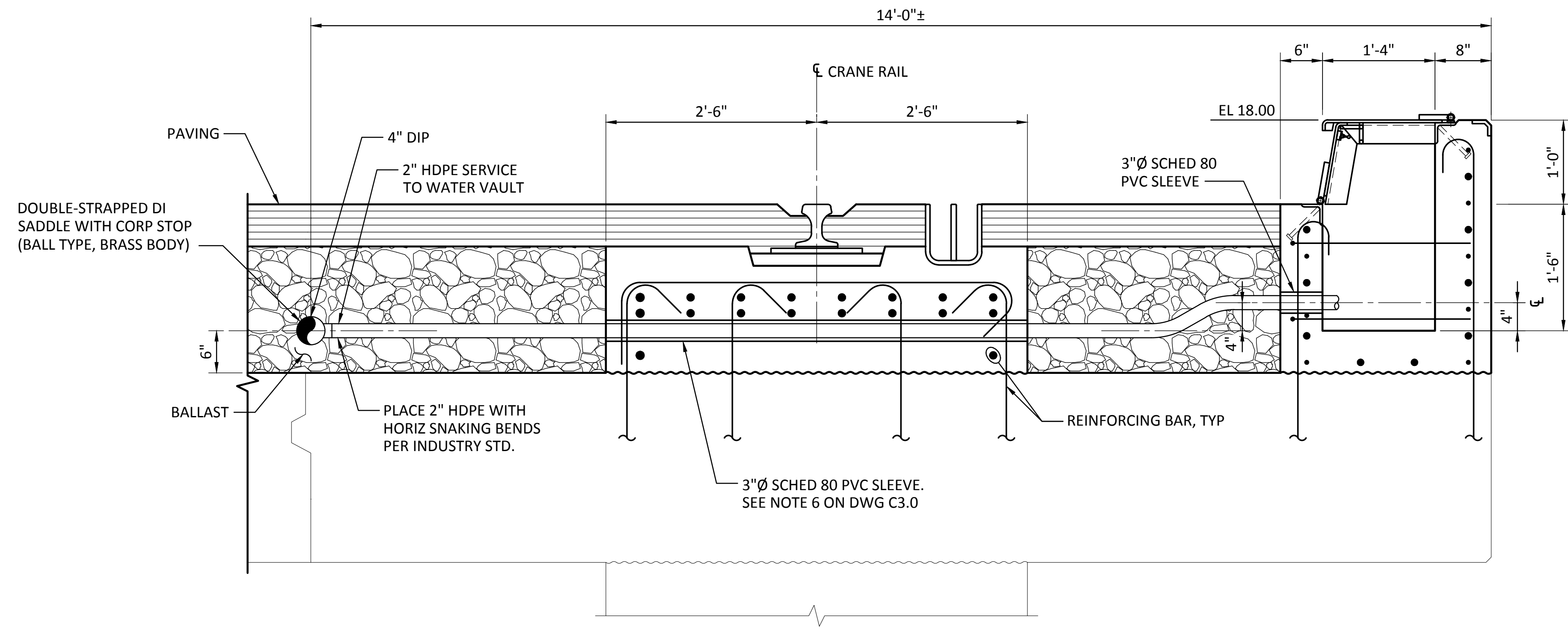


**3**  
SCALE: 1 1/2" = 1'-0"  
**SECTION - WATER VAULT**

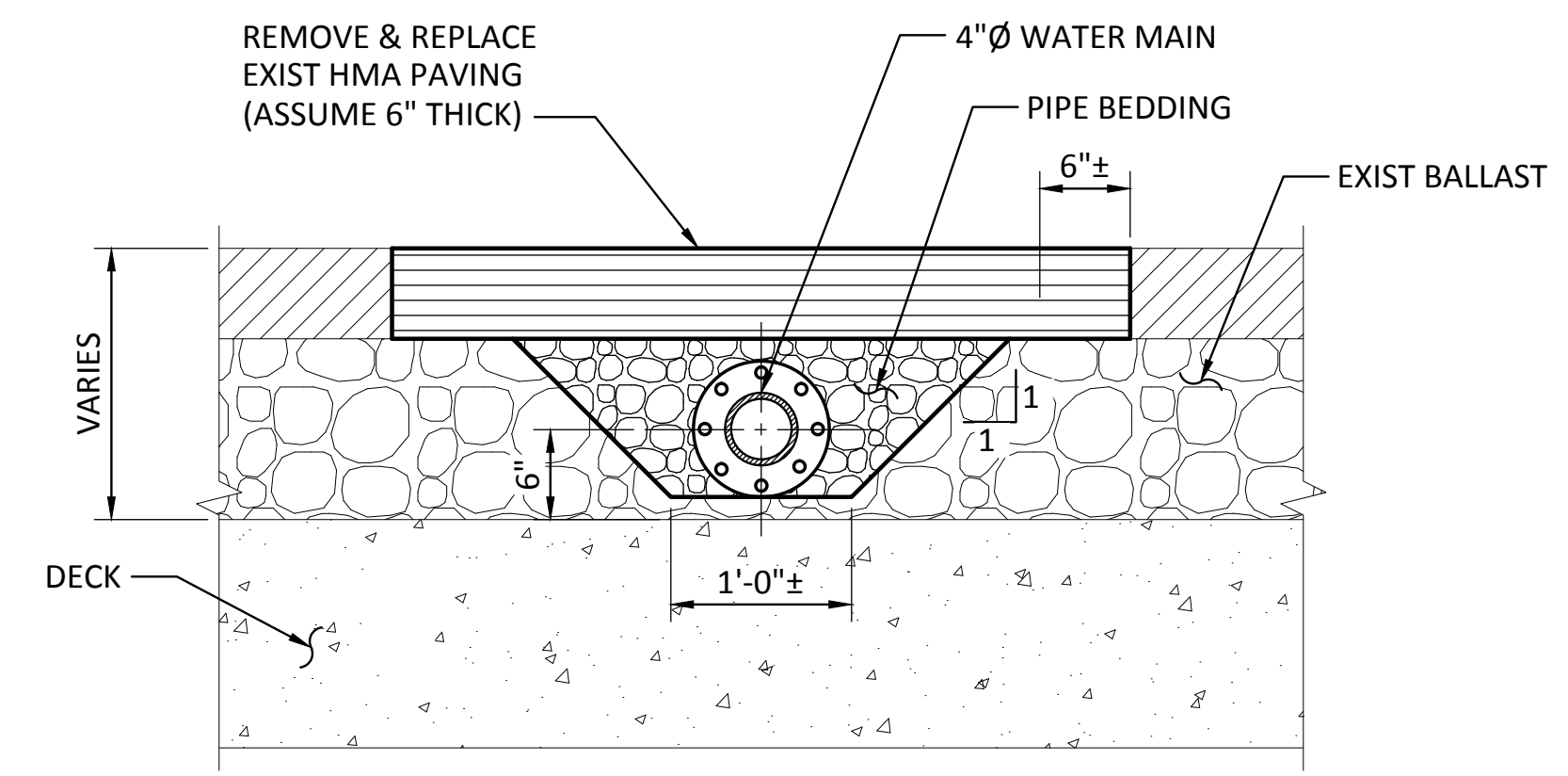


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	REVISION:		
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APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENG	Jason.mendenhall		DATE
PRINTED BY:	ONE SITCUM WAY		
PORT ADDRESS:	TACOMA, WA 98421-2300		
<b>PIER 3 UPGRADE</b> <b>WATER SERVICE DETAILS</b> <b>SHEET 1</b>			
RANGE: 3 E	SECTION: 27		
TOWNSHIP: 21 N	NOS TIDAL (MLLW = 0.0)		
DAT-HRZ: NAD 83-07	DRAWING SCALE: AS SHOWN		
PARCEL: 27			
<b>6502</b> <b>C3.3</b> SHEET 21 OF 129			
CONTR/CONS: 069458			
MASTER ID NO: 092935			
PHASE: RECORD DRAWINGS			

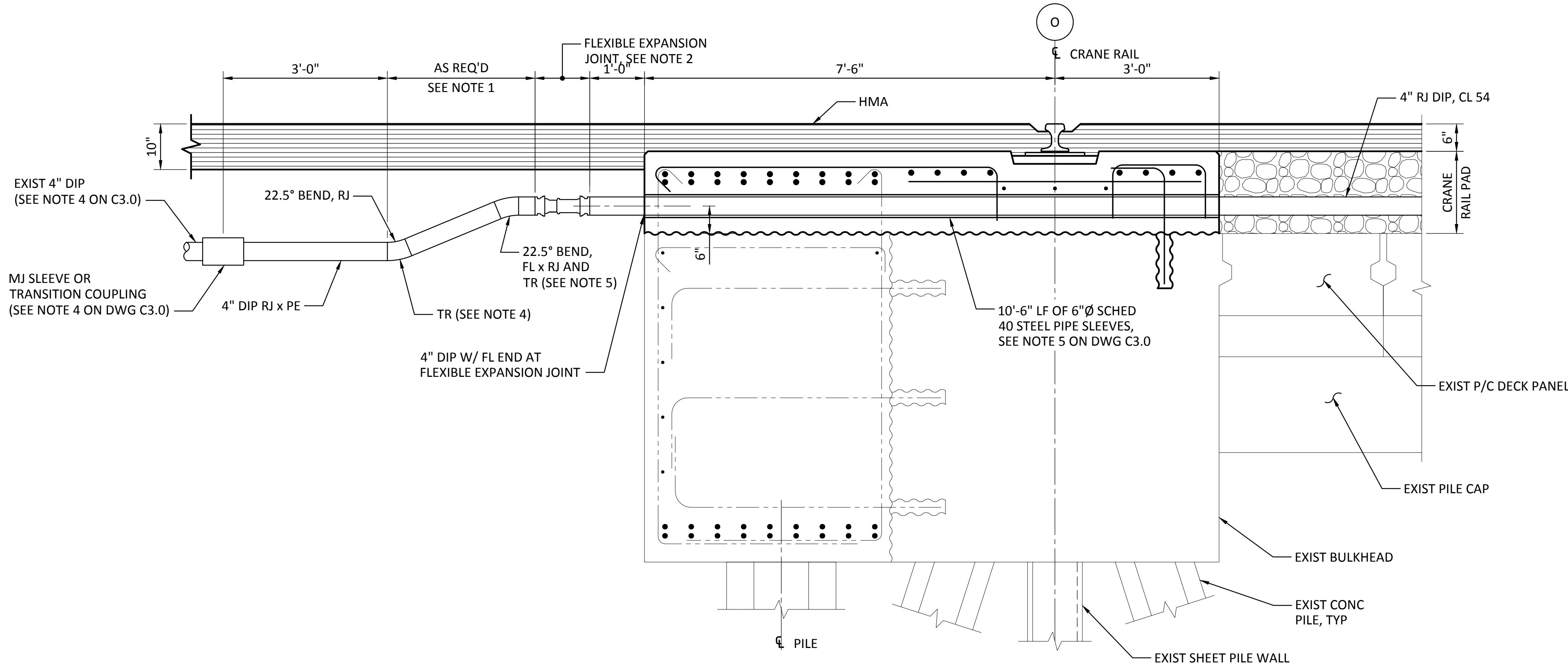
BINDING EDGE



1 SECTION - WATER PIPING TO HYDRANT  
 C3.0 SCALE: 1" = 1'-0"  
 C3.1, C3.2



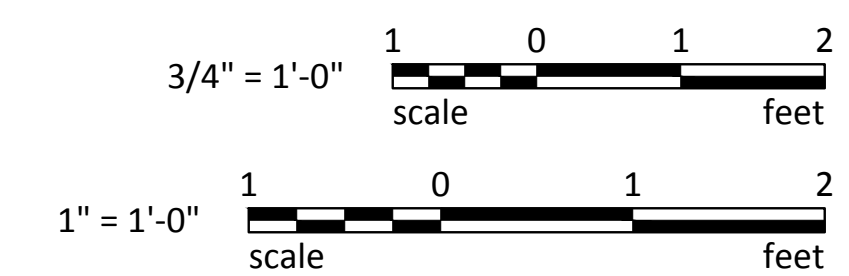
2 DETAIL - WATER MAIN TRENCH  
 C3.0 SCALE: 1" = 1'-0"  
 C3.1, C3.2



3 SECTION - WATERLINE REPLACEMENT AT CRANE RAIL PAD  
 C3.0 SCALE: 3/4" = 1'-0"

NOTES:

- INSTALL 4" Ø DIP BETWEEN VERTICAL BEND FITTINGS (LENGTH AS REQ'D).
- INSTALL A FLEXIBLE EXPANSION JOINT ON WATER LINE WITHIN 1'-0" OF LANDSIDE FACE OF STRUCTURAL CONCRETE. ENDS OF PIPE OR FITTINGS CONNECTING TO EACH SIDE OF EXPANSION JOINT SHALL BE FLANGED. DUCTILE IRON MULTI-DIRECTIONAL FLEXIBLE EXPANSION JOINT SHALL BE FLEX-TEND NO. 404F21 MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL, HAVING FLANGED ENDS AND RATED EXPANSION / CONTRACTION CAPABILITY OF 4-INCHES IN EITHER DIRECTION (8-INCHES TOTAL) AND AN OFFSET CAPABILITY OF 14.39 INCHES. WRAP EXPANSION JOINT WITH POLYETHYLENE WRAP.
- 4" DIP SHALL BE CL 54 RJ.
- CONSTRUCT CONCRETE THRUST RESTRAINT (TR) AT FIRST BEND FITTING FROM TIE-IN LOCATION AS SHOWN ON DETAIL 3. CONCRETE THRUST BLOCK SHALL BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STD PLAN B-90.40-00 USING A SAFE BEARING LOAD OF 1,500 PSF UNLESS SOIL CONDITION AT EXCAVATED AREA ARE POOR (SOFT CLAY, WET, MUCK, ETC) IN WHICH CASE CONTACT ENGINEER. SUBMIT PROPOSED CONCRETE THRUST BLOCK MIX DESIGN FOR REVIEW AND APPROVAL. DO NOT BURY OR APPLY PRESSURE IN PIPING FOR 7 DAYS AFTER CONC IS PLACED.
- IF COUPLING ARE REQUIRED TO CONNECT TO EXIST PIPE AT INBOARD CRANE RAIL (SEE DRAWING C3.0) CROSSING, CONSTRUCT CONCRETE THRUST RESTRAINT FOR 22.5° BEND ADJACENT TO FLEXIBLE EXPANSION JOINT IN ACCORDANCE WITH WSDOT STD PLAN B-90.50-00. SUBMIT PROPOSED CONCRETE THRUST BLOCK MIX DESIGN FOR REVIEW AND APPROVAL. DO NOT BURY OR APPLY PRESSURE IN PIPING FOR 7 DAYS AFTER CONC IS PLACED.



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 P.O. BOX 1887 TACOMA, WA 98401-0188		DATE: _____ APPR: _____ BY: _____ REVISION: _____ MARK: _____
CSB CHECKED BY: JRG DATE: 7/17/13	DATE: 7/17/13 PROJ. ENGR: Jason.mendenthal PRINTED BY: ONE SITUUM WAY TACOMA, WA 98421-2300	APPROVED: _____ DC: _____ DIR OF ENG: _____ PORT ADDRESS: _____
<b>PIER 3 UPGRADE</b> <b>WATER SERVICE DETAILS</b> <b>SHEET 2</b>		
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27	DRAWING SCALE: AS SHOWN	
<b>6502</b> <b>C3.4</b> SHEET 22 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	

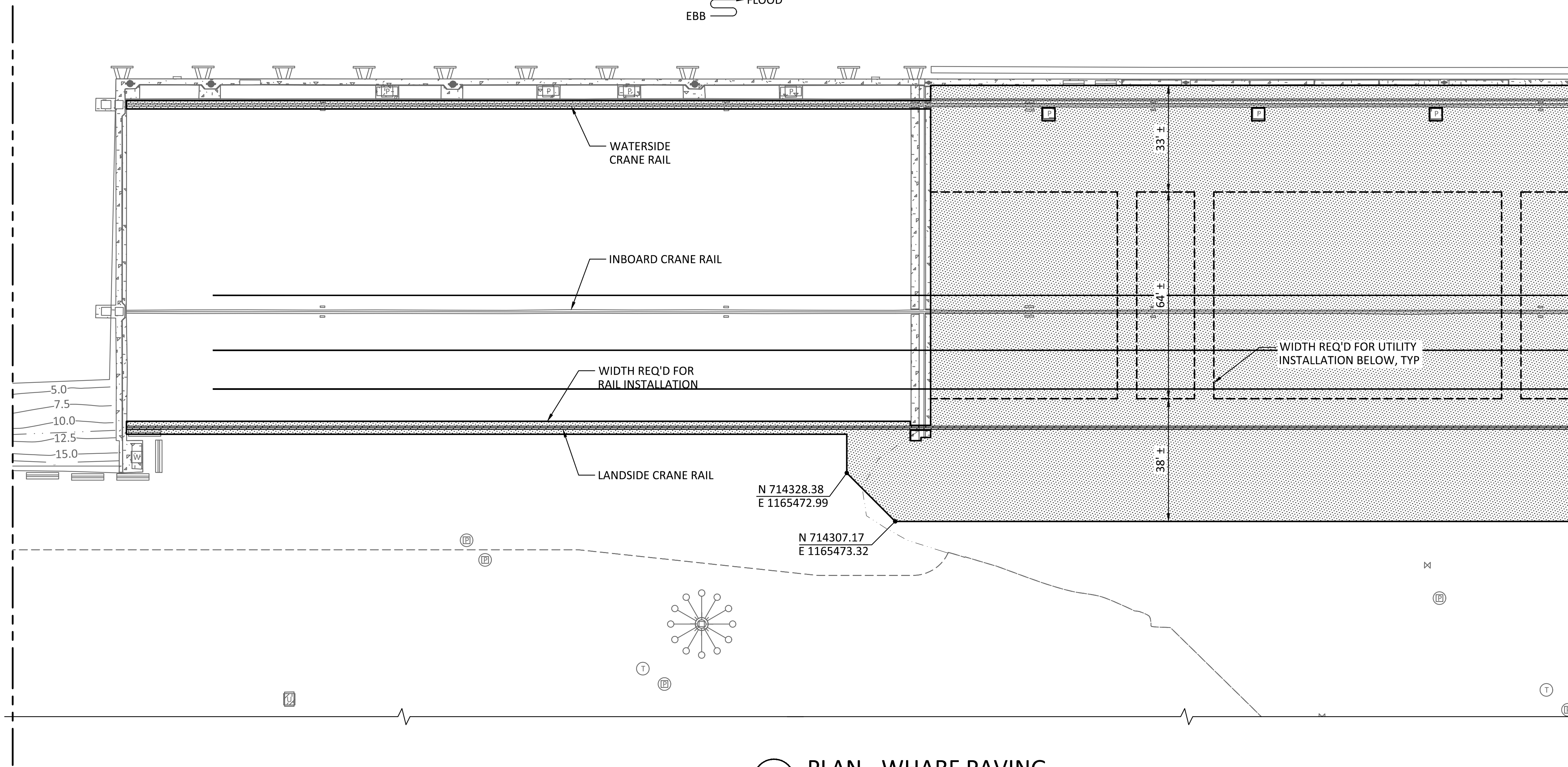
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### BLAIR WATERWAY

EBB FLOOD



MATCH LINE - SEE SHEET C4.1

1 PLAN - WHARF PAVING  
SCALE: 1" = 20'

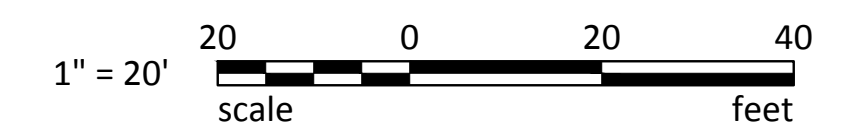
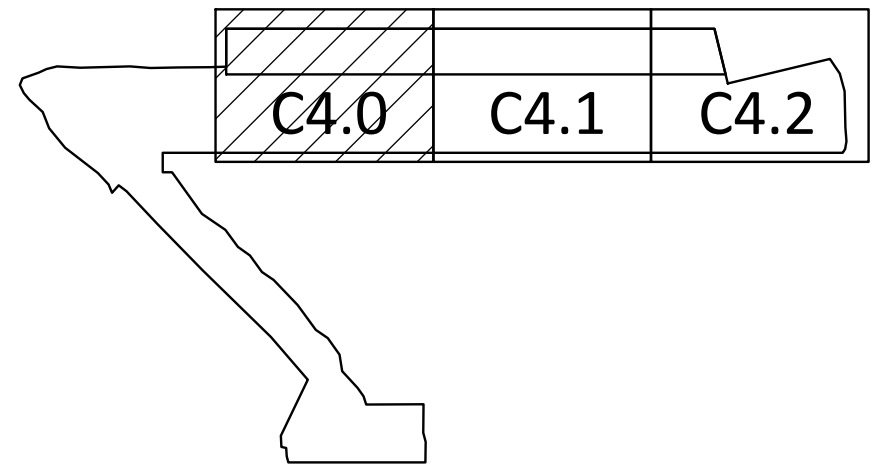
#### NOTES:

- PAVING SHOWN ON DWGS C4.0-C4.2 DOES NOT INCLUDE ASPHALT PAVEMENT RESTORATION FOR UPLAND ELECTRICAL/COMM INSTALLATION. REFER TO ELECTRICAL DWGS FOR AREAS REQUIRING PAVEMENT DISTURBANCE AND PATCHING.
- QUANTITY (AREA, SQ-FT) SHOWN IN LEGEND IS TOTAL AREA FOR DWGS C4.0-C4.2.
- ALL BOUNDARIES OF PAVEMENT REMOVAL SHALL BE SAW-CUT. QUANTITY (LF) SHOWN IN LEGEND IS TOTAL LENGTH FOR DWGS C4.0-C4.2, BUT DOES NOT INCLUDE SAW-CUTTING FOR ELECTRICAL UPLAND INSTALLATIONS. SEE DEMO NOTE ON G4.0.
- SEE DEMO NOTE 7 ON DWG G4.0 FOR APPROXIMATE THICKNESS OF EXIST ASPHALT PAVEMENT TO BE REMOVED. EXIST BALLAST REMOVED MAY BE REUSED AS UPLAND BACKFILL OR HAULED AWAY AS EXCESS MATERIAL OR USED FOR REPLACEMENT BALLAST ON DECK. THICKNESS OF REPLACEMENT HMA SHALL BE 5-INCHES, 2" OVER 3" OR 2 1/2" OVER 2 1/2", SEE SPECIFICATIONS. ALL FINISH GRADES SHALL MATCH EXISTING GRADES WITH BASE PREPARED ACCORDING TO WSDOT STD. SPECS FOR PLACEMENT OF HMA AND MAINTENANCE FOR DRAINAGE.
- FOR DECK DRAINS, SEE 2  
C4.2
- FOR PAVING AT CRANE RAIL, SEE 3  
C4.2

#### LEGEND

- REMOVE AND REPLACE ASPHALT PAVEMENT AND BALLAST.  
QUANTITY = 120,140 SQ-FT (SEE NOTE 4, DWG C4.0)
- MILL/GRIND 2" DEPTH INTO EXIST ASPHALT PAVEMENT.  
REPLACE WITH COMPACTED HMA NEAR COMPLETION OF PROJECT. MAINTAIN SAME GRADE. (SEE CIVIL NOTES, DWG G4.0)  
QUANTITY = ZERO SY
- SAW-CUT EXIST ASPHALT PAVEMENT  
QUANTITY = 7,200 LF (SEE NOTE 3, DWG C4.0.)

#### KEY PLAN:



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	MARK: REVISION: BY: APPR: DATE:			
<b>6502</b> <b>C4.0</b> SHEET 23 OF 129	<b>PIER 3 UPGRADE</b> <b>PAVING PLAN</b> <b>SHEET 1</b>			
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN		

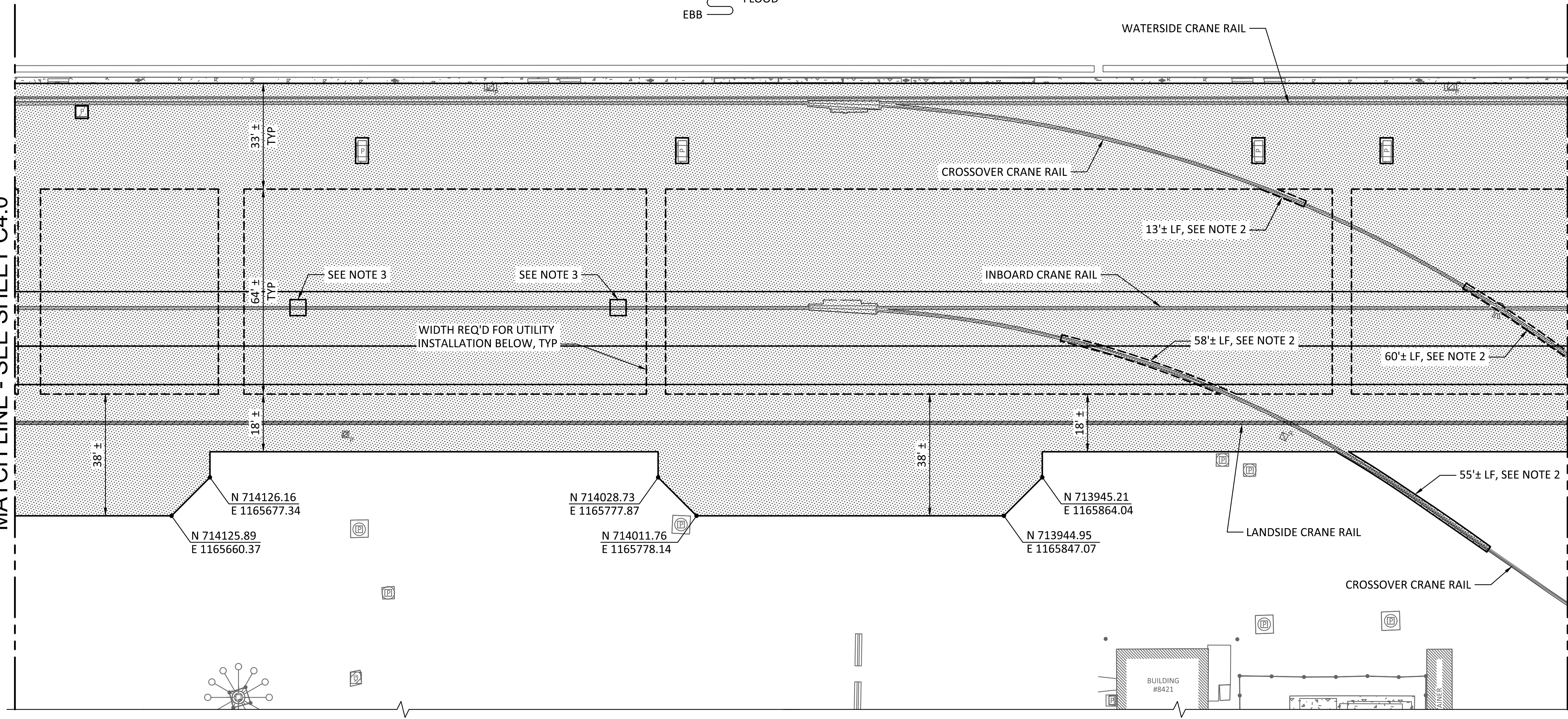
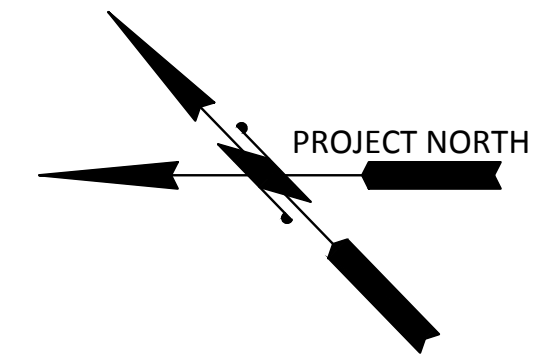
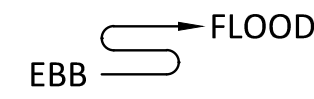
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MATCH LINE - SEE SHEET C4.0

MATCH LINE - SEE SHEET C4.2

BLAIR WATERWAY



1 PLAN - WHARF PAVING  
SCALE: 1" = 20'

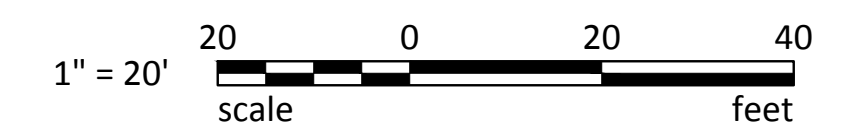
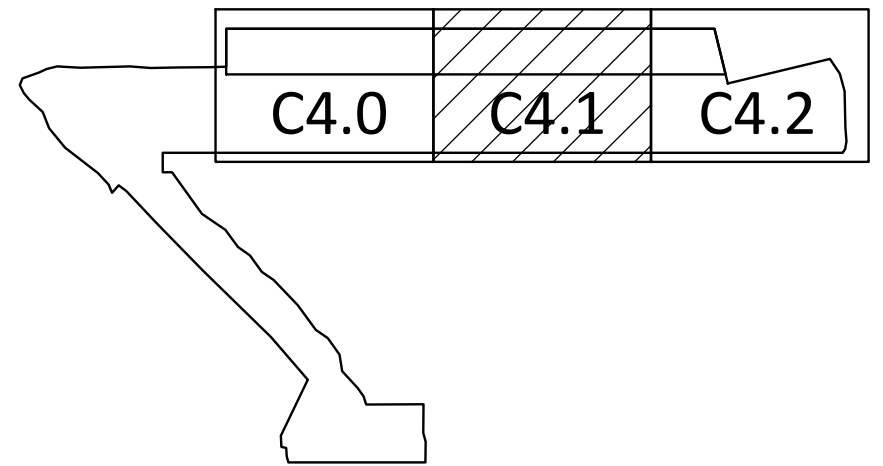
LEGEND

- REMOVE AND REPLACE ASPHALT PAVEMENT AND BALLAST. QUANTITY = 120,140 SQ-FT (SEE NOTE 4, DWG C4.0)
- MILL/GRIND 2" DEPTH INTO EXIST ASPHALT PAVEMENT. REPLACE WITH COMPACTED HMA NEAR COMPLETION OF PROJECT. MAINTAIN SAME GRADE. (SEE CIVIL NOTES, DWG G4.0) QUANTITY = ZERO SY
- SAW-CUT EXIST ASPHALT PAVEMENT QUANTITY = 7,200 LF (SEE NOTE 3, DWG C4.0.)

NOTES:

- SEE NOTES ON DWG C4.0.
- REMOVE ASPHALT PAVEMENT TO ACCESS AND RAISE RAIL FOR BOLTED RAIL SPLICE INSTALLATION. FOR LOCATION OF BOLTED RAIL SPLICES, SEE \$12.0
- REMOVE ASPHALT PAVEMENT FOR PIN SOCKET INSTALLATION, SEE \$18.3

KEY PLAN:



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 P.O. BOX 1887 TACOMA, WA 98401-0188	REVISION: _____ MARK: _____
	APPROVED: _____ DATE: 7/17/13
CSB CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: jason.mendenhall DATE: 7/17/13 PRINTED BY: ONE SITCUM WAY PORT ADDRESS: TACOMA, WA 98421-2300	APPROVED: _____ DATE: 7/17/13
<b>PIER 3 UPGRADE</b> <b>PAVING PLAN</b> <b>SHEET 2</b>	RANGE: 3 E SECTION: 27 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN
<b>6502</b> <b>C4.1</b> SHEET 24 OF 129	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN

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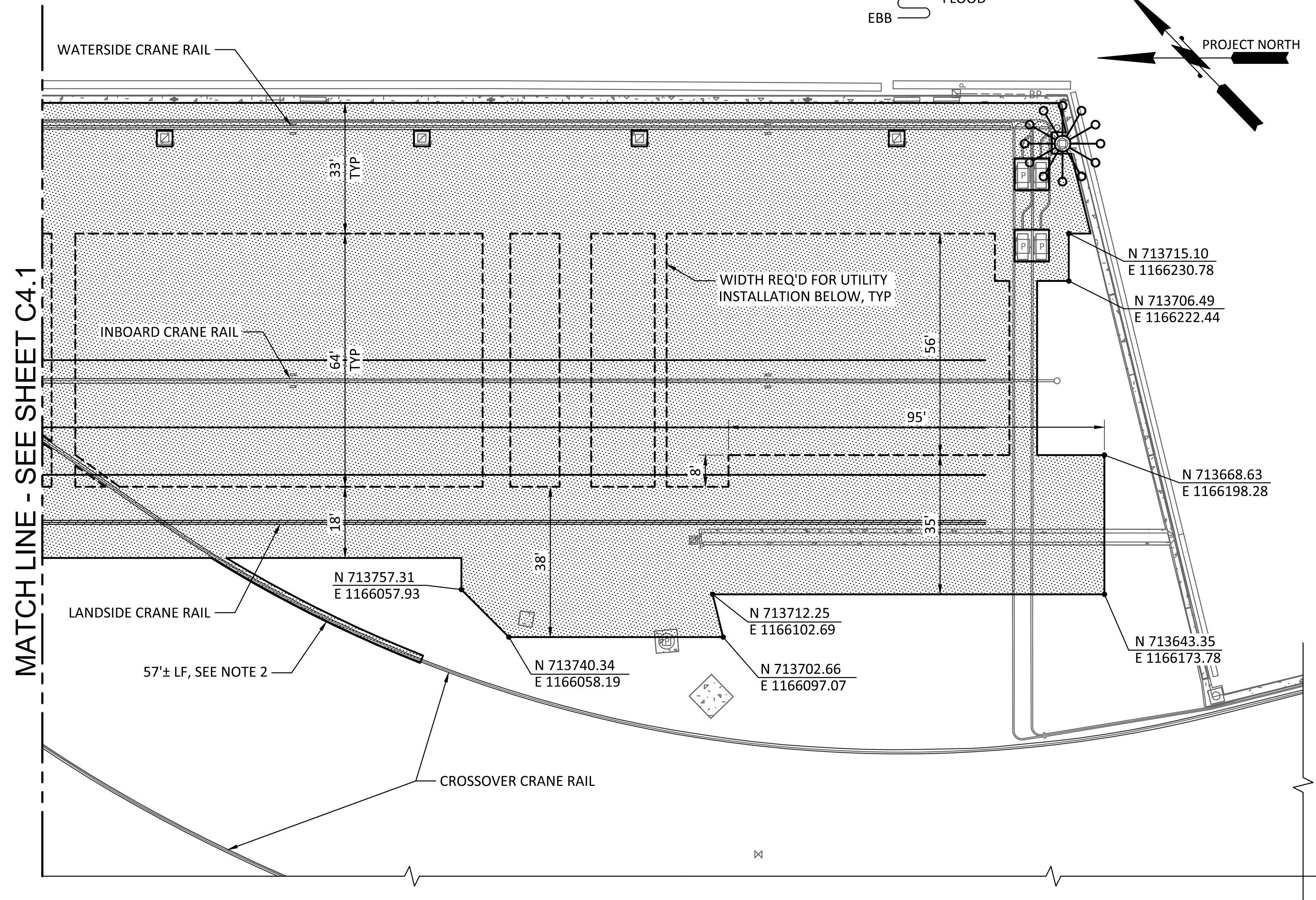
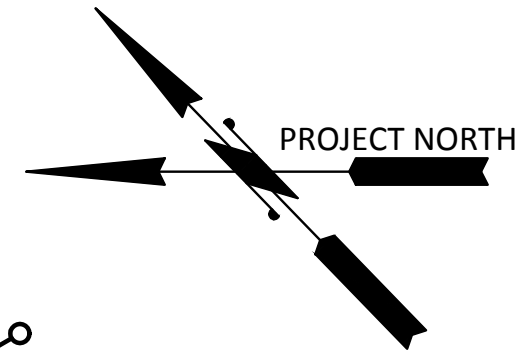


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### BLAIR WATERWAY

EBB FLOOD



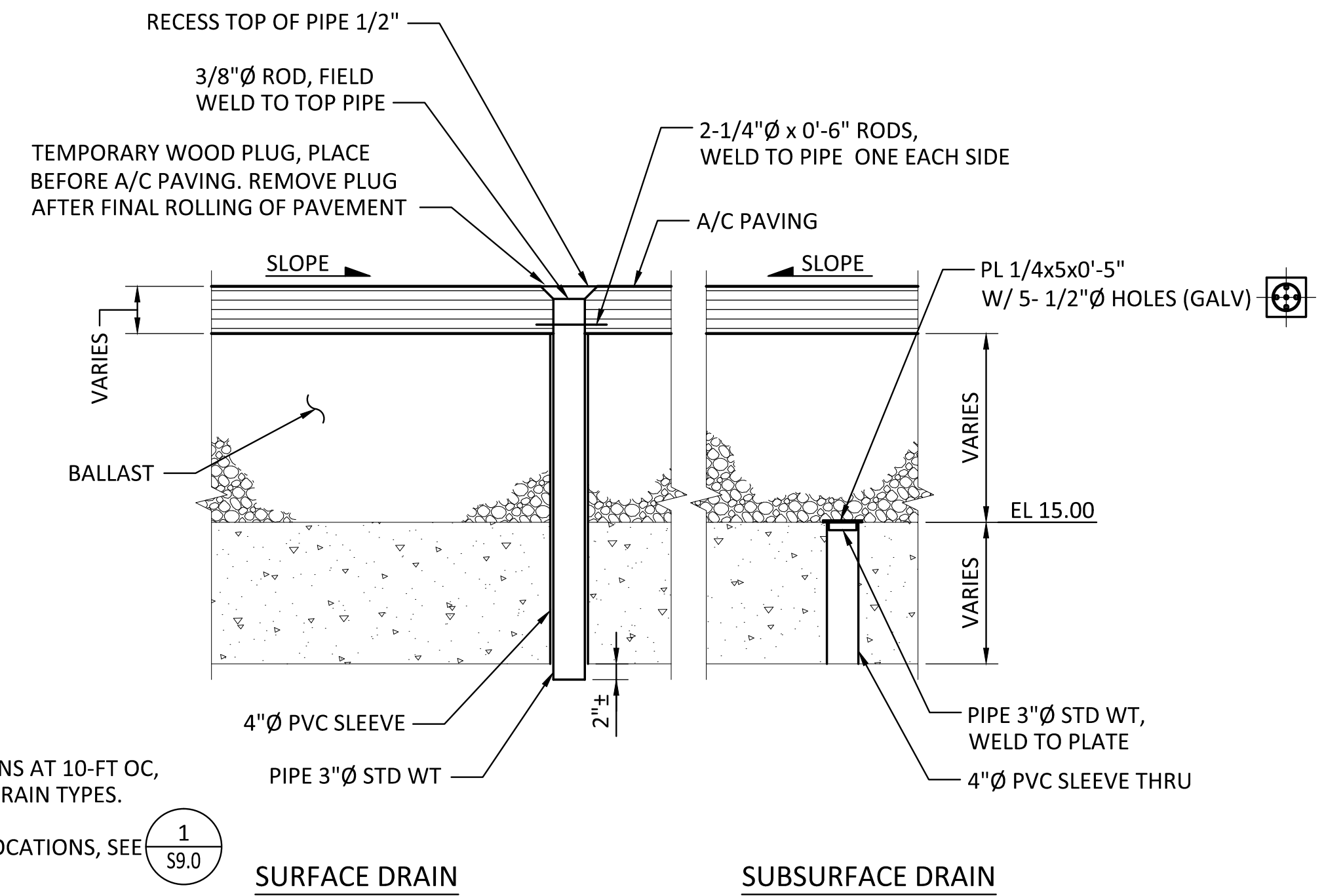
1 PLAN - WHARF PAVING  
SCALE: 1" = 20'

### LEGEND

- REMOVE AND REPLACE ASPHALT PAVEMENT AND BALLAST. QUANTITY = 120,140 SQ-FT (SEE NOTE 4, DWG C4.0)
- MILL/GRIND 2" DEPTH INTO EXIST ASPHALT PAVEMENT. REPLACE WITH COMPACTED HMA NEAR COMPLETION OF PROJECT. MAINTAIN SAME GRADE. (SEE CIVIL NOTES, DWG G4.0) QUANTITY = ZERO SY
- SAW-CUT EXIST ASPHALT PAVEMENT QUANTITY = 7,200 LF (SEE NOTE 3, DWG C4.0.)

### NOTES:

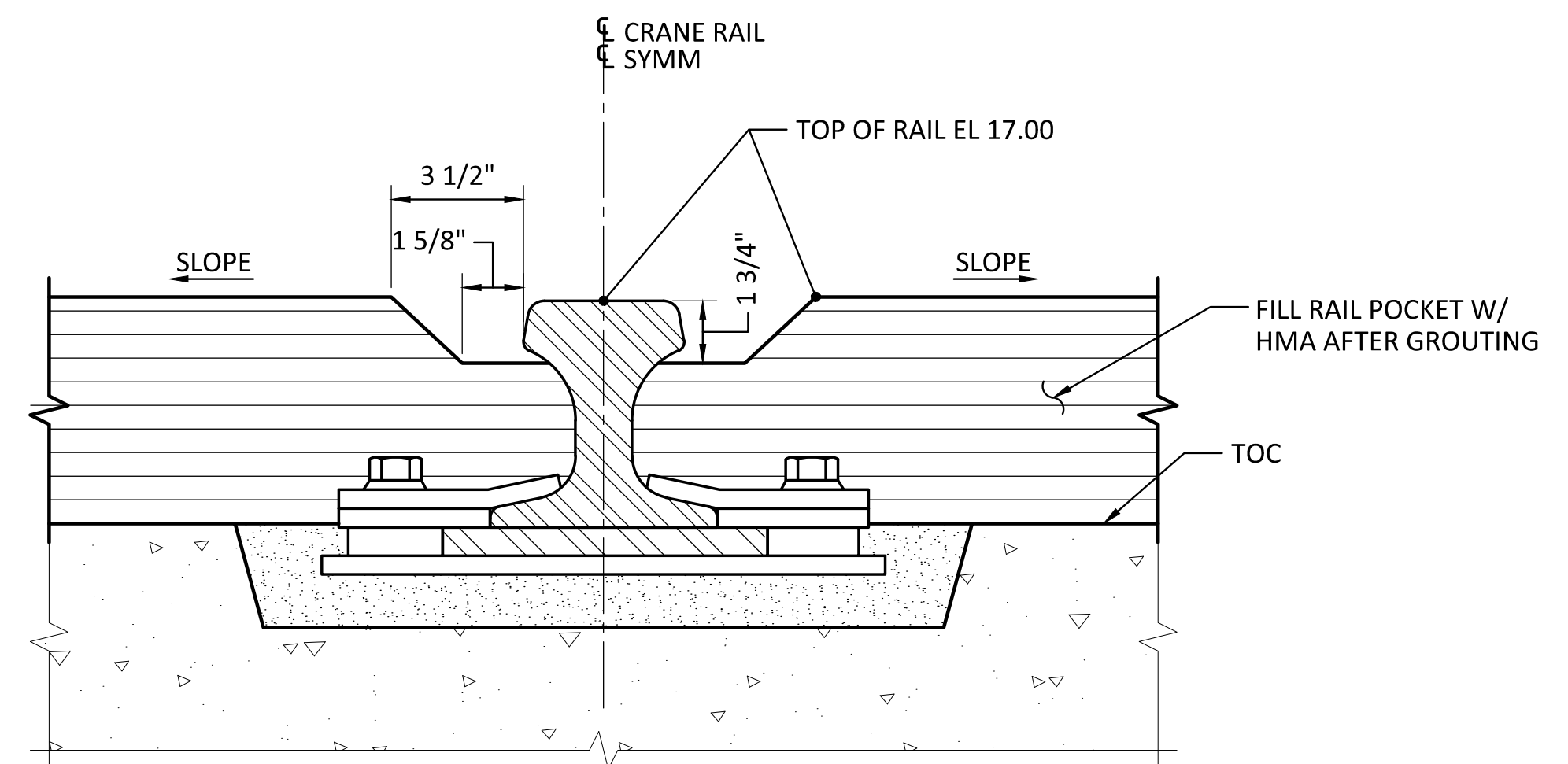
- SEE NOTES ON DWG C4.0.
- REMOVE ASPHALT PAVEMENT TO ACCESS AND RAISE RAIL FOR BOLTED RAIL SPLICE INSTALLATION. FOR LOCATION OF BOLTED RAIL SPLICES, SEE



### NOTES:

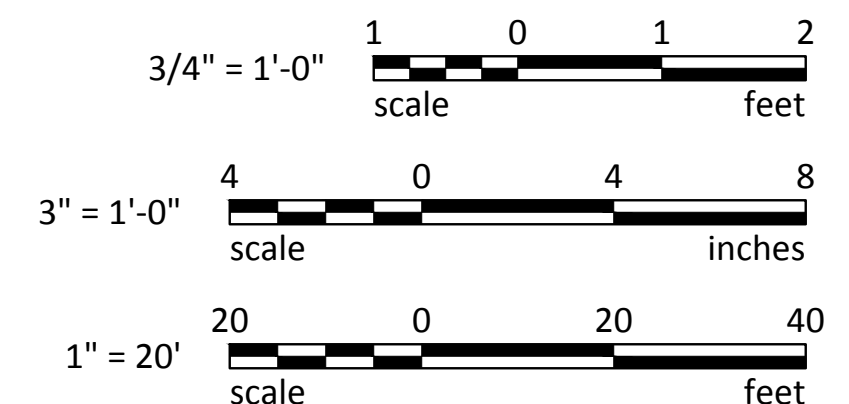
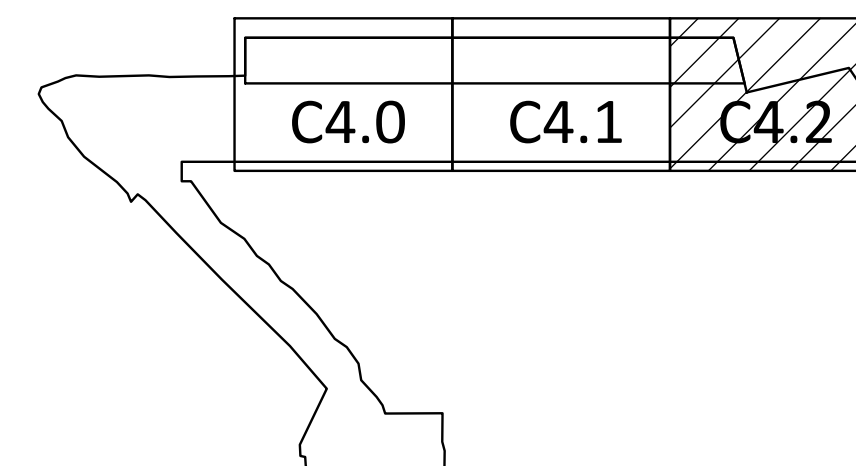
- INSTALL DRAINS AT 10-FT OC, ALTERNATE DRAIN TYPES.
- FOR DRAIN LOCATIONS, SEE

2 DETAIL - SURFACE & SUBSURFACE DRAIN AT BALLASTED AREA  
SCALE: 3/4" = 1'-0"



3 SECTION - PAVEMENT AT CRANE RAIL  
SCALE: 3" = 1'-0"

### KEY PLAN:



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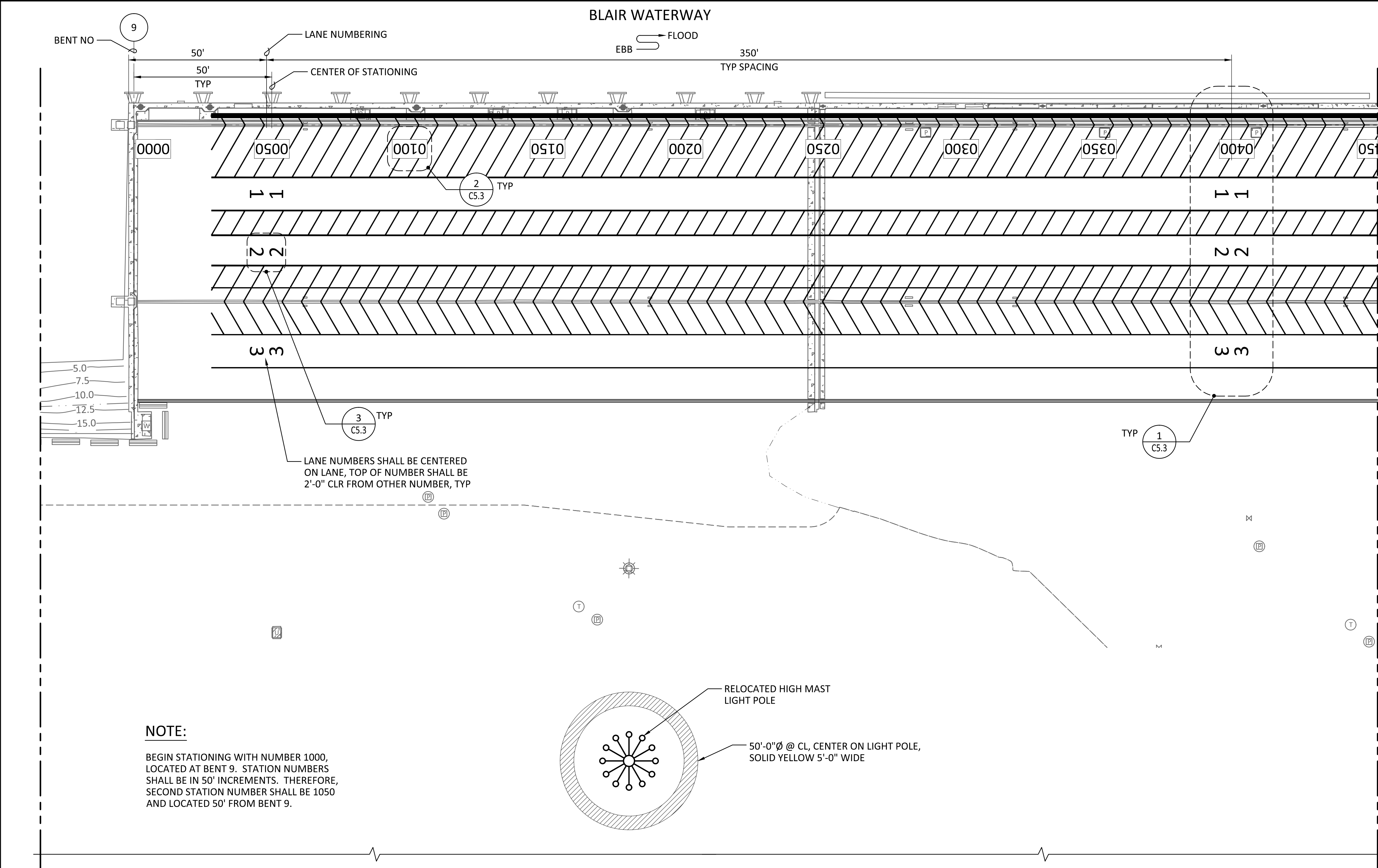
APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENG	Jason.mendenhall		
PRINTED BY:	ONE SITCUM WAY		
PORT ADDRESS:	TACOMA, WA 98421-2300		

PIER 3 UPGRADE	PAVING PLAN	SHEET 3
RANGE: 3 E	SECTION: 27	
TOWNSHIP: 21 N	VERT: NOS TIDAL (MLLW = 0.0)	
DATE-HRZ: NAD 83-07	DRAWING SCALE: AS SHOWN	
PARCEL: 27		

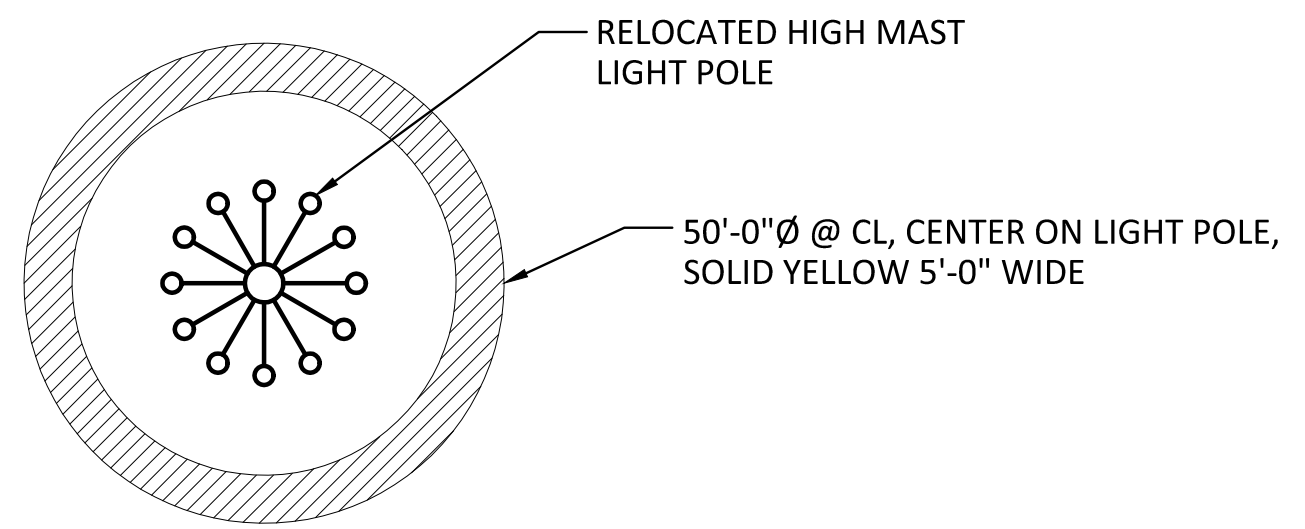
6502  
**C4.2**  
SHEET 25 OF 129  
CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

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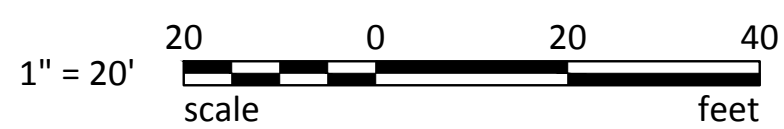
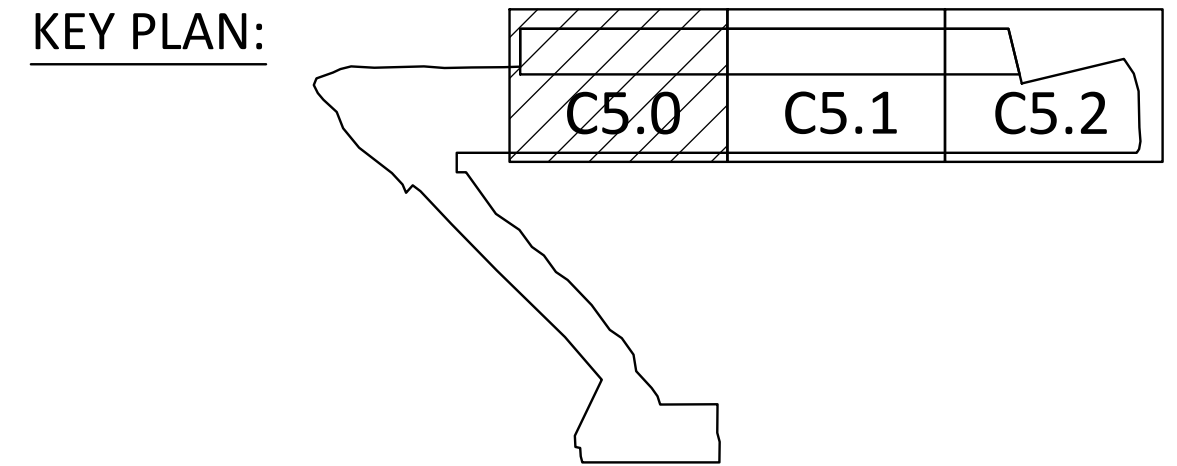
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**NOTE:**  
 BEGIN STATIONING WITH NUMBER 1000, LOCATED AT BENT 9. STATION NUMBERS SHALL BE IN 50' INCREMENTS. THEREFORE, SECOND STATION NUMBER SHALL BE 1050 AND LOCATED 50' FROM BENT 9.



**1 PLAN - WHARF STRIPING PLANS**  
 SCALE: 1" = 20'



<b>6502</b> <b>C5.0</b> SHEET 26 OF 129	<b>PIER 3 UPGRADE</b>		APPROVED:	CSB	7/17/13	DATE
	<b>WHARF STRIPING PLAN</b> SHEET 1		DC	7/17/13	7/17/13	DATE
TOWNSHIP: 21 N		RANGE: 3 E	DIR OF ENG	PROJ. ENGR	DATE	DATE
DATE: 09/29/15		NAD 83-07	PRINTED BY:	jason.mendenhall	TACOMA, WA 98421-2300	TACOMA, WA 98421-2300
PHASE: RECORD DRAWINGS		PARCEL: 27	PORT ADDRESS: ONE SITCUM WAY			
DRAWING SCALE: AS SHOWN		TACOMA, WA 98421-2300				DATE:
CONTR/CONS: 069458		MARK: REVISION:				BY:
MASTER ID NO: 092935		REVISION:				APPR:
PHASE: RECORD DRAWINGS		MARK: REVISION:				DATE:
DRAWING SCALE: AS SHOWN		MARK: REVISION:				DATE:
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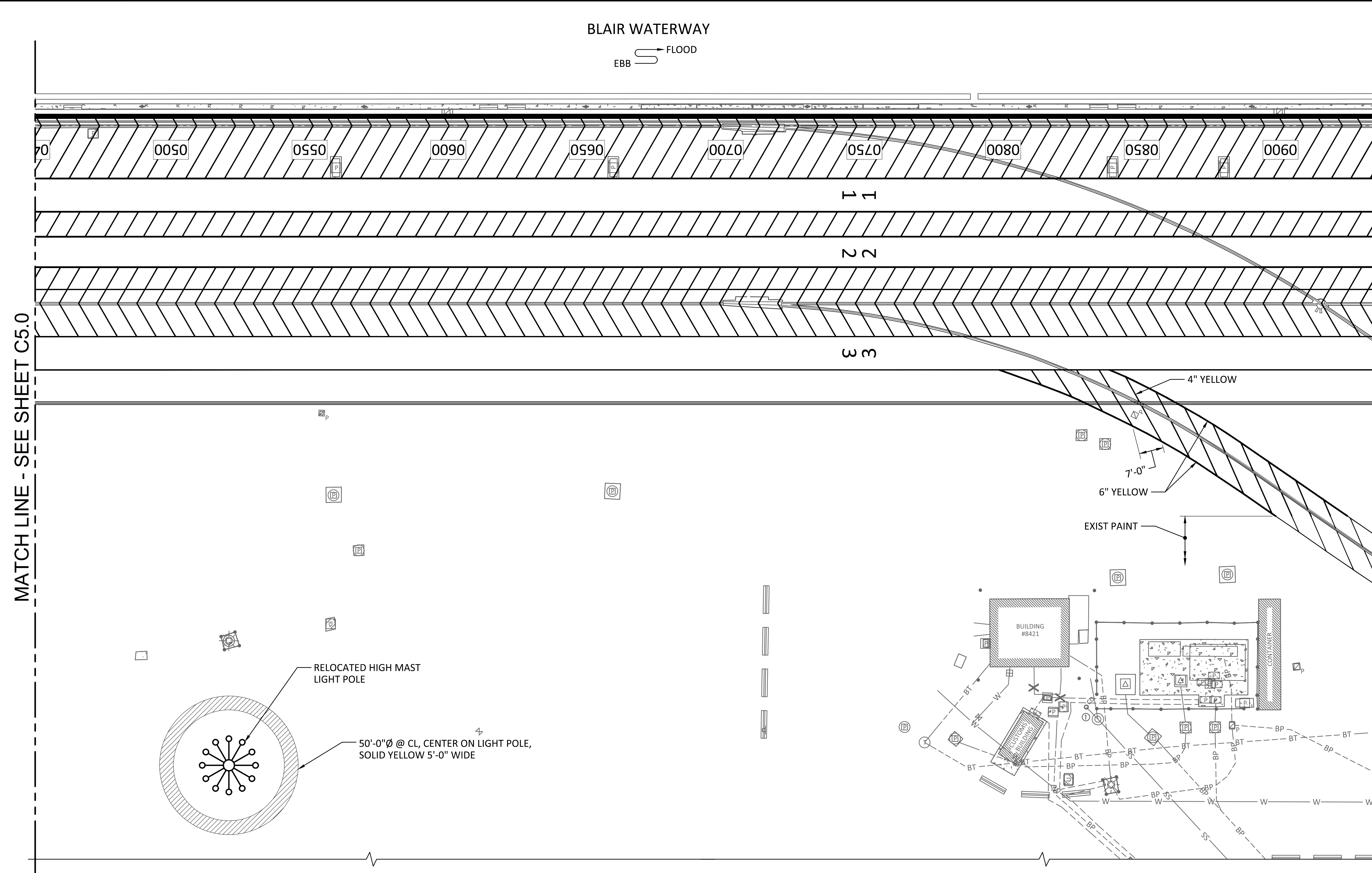
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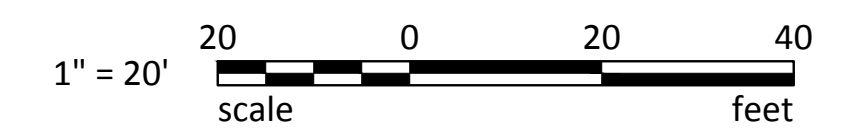
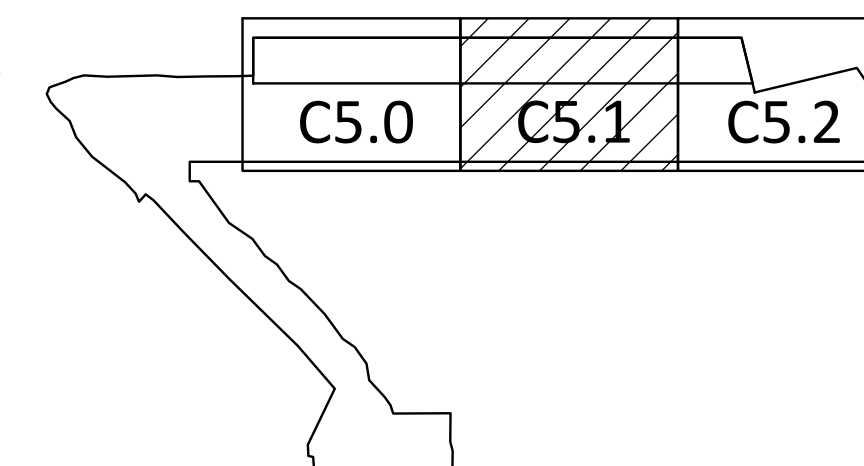
MATCH LINE - SEE SHEET C5.0

MATCH LINE - SEE SHEET C5.2

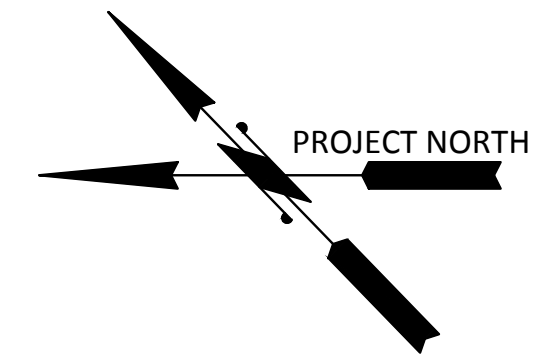


1 PLAN - WHARF STRIPING PLANS  
SCALE: 1" = 20'

KEY PLAN:



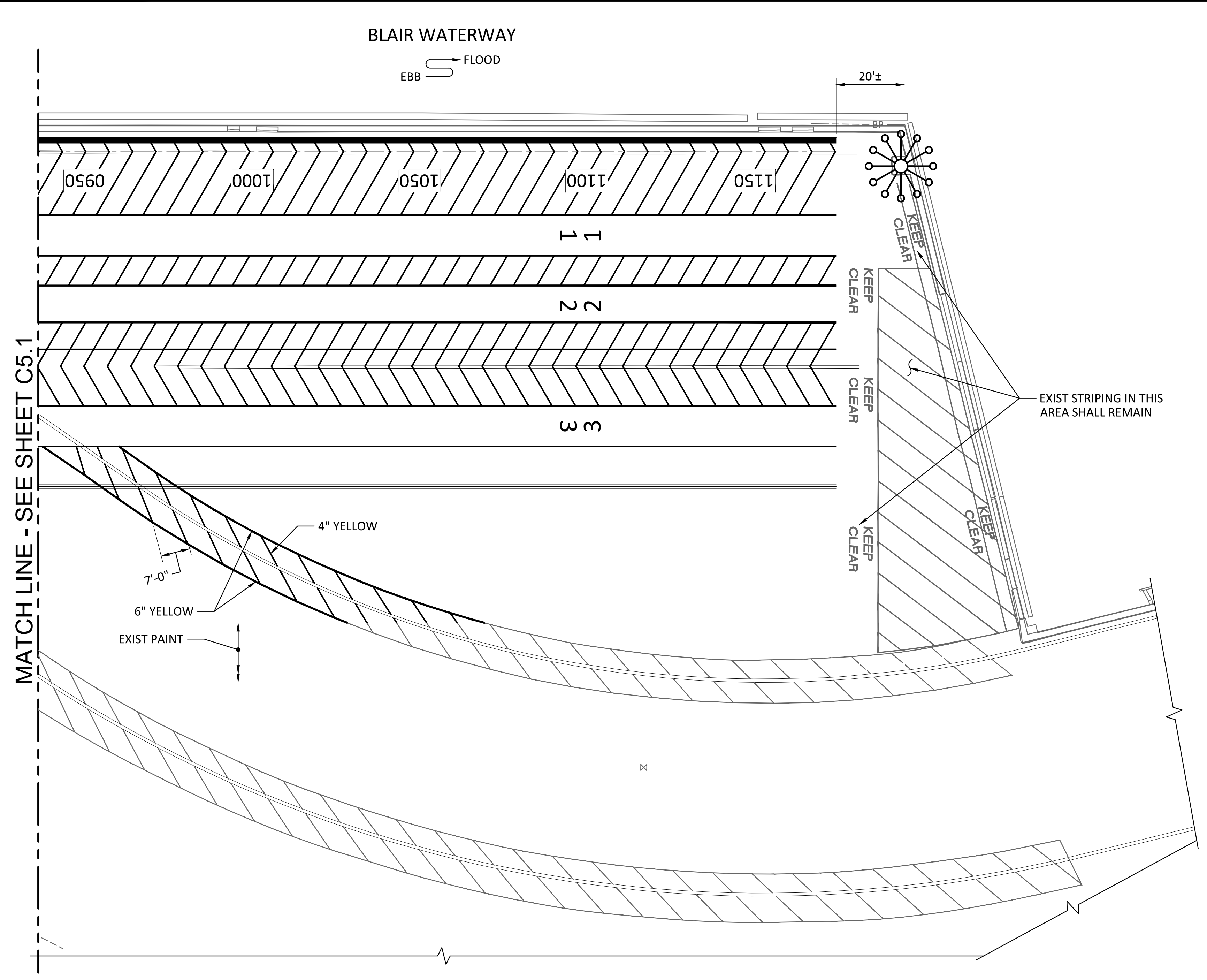
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<b>6502</b> <b>C5.1</b> SHEET 27 OF 129	<b>PIER 3 UPGRADE</b>		APPROVED:	CSB	7/17/13	DATE	
	<b>WHARF STRIPING PLAN</b> SHEET 2		DC	7/17/13	JRG	7/17/13	DATE
CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	DIR OF ENG	jason.mendenhall		DATE
MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	PRINTED BY:	ONE SITCUM WAY		TACOMA, WA 98421-2300	DATE:
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	PORT ADDRESS:				BY:
			MARK:	REVISION:	APPR:	DATE:	

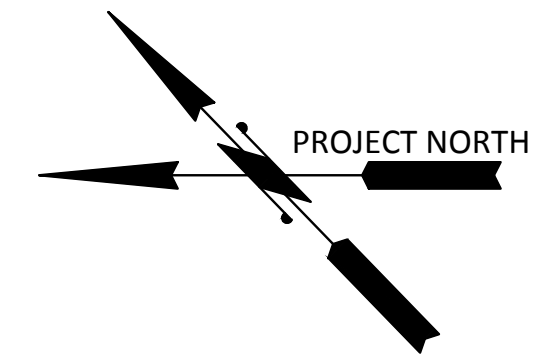
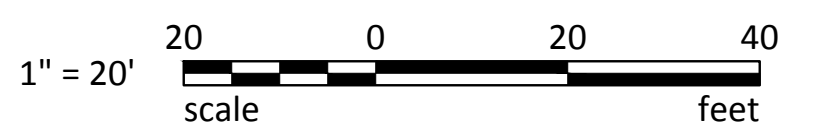
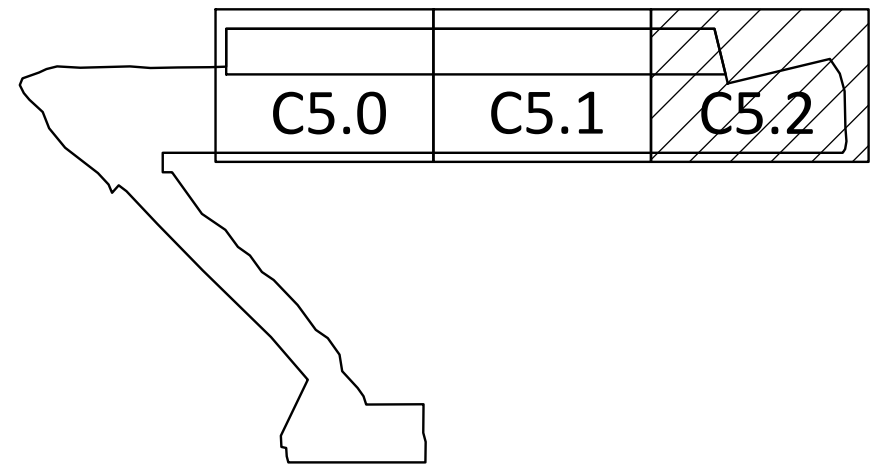
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**1**  
PLAN - WHARF STRIPING PLANS  
SCALE: 1" = 20'

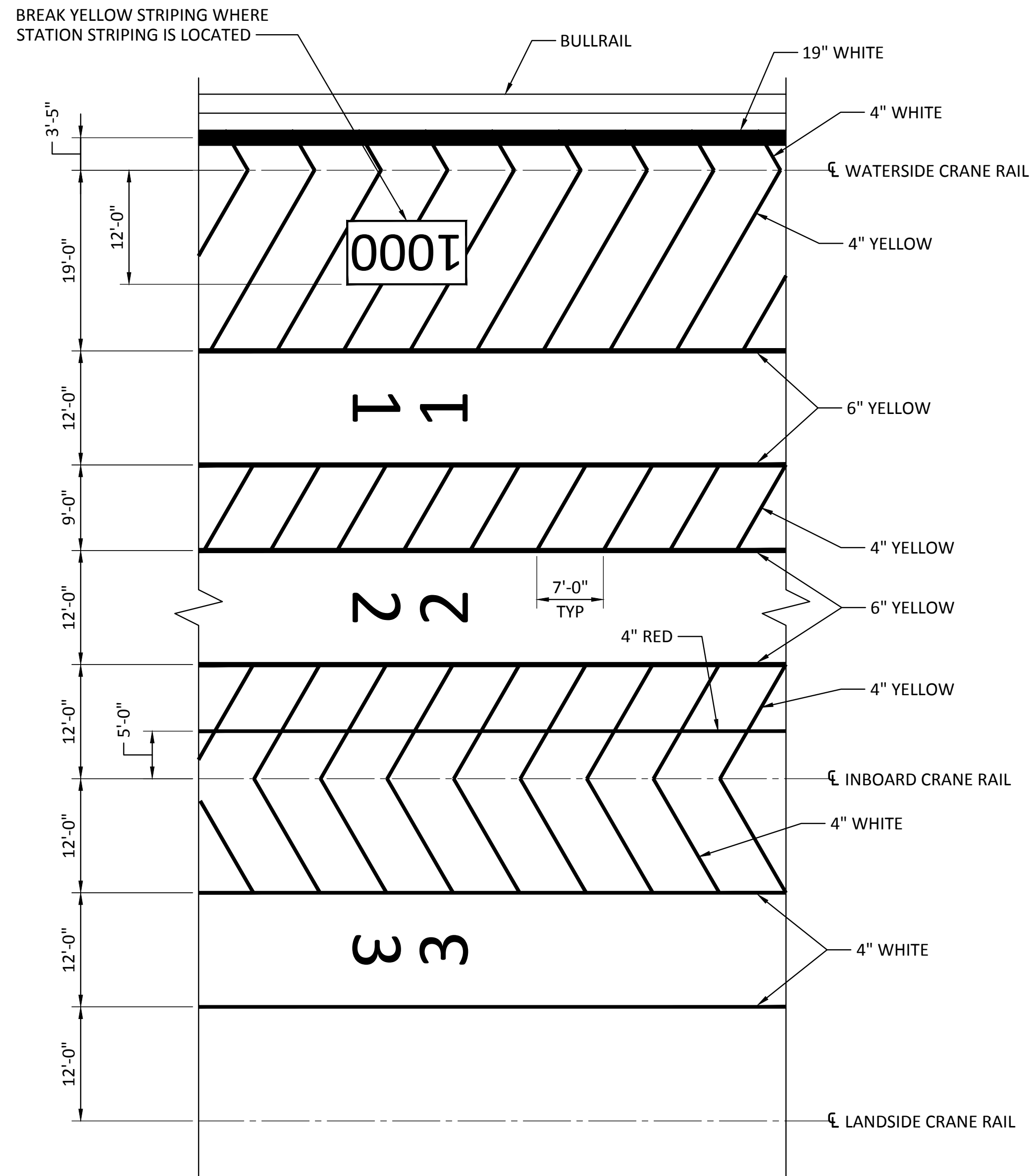
KEY PLAN:



RECORD DRAWINGS:  
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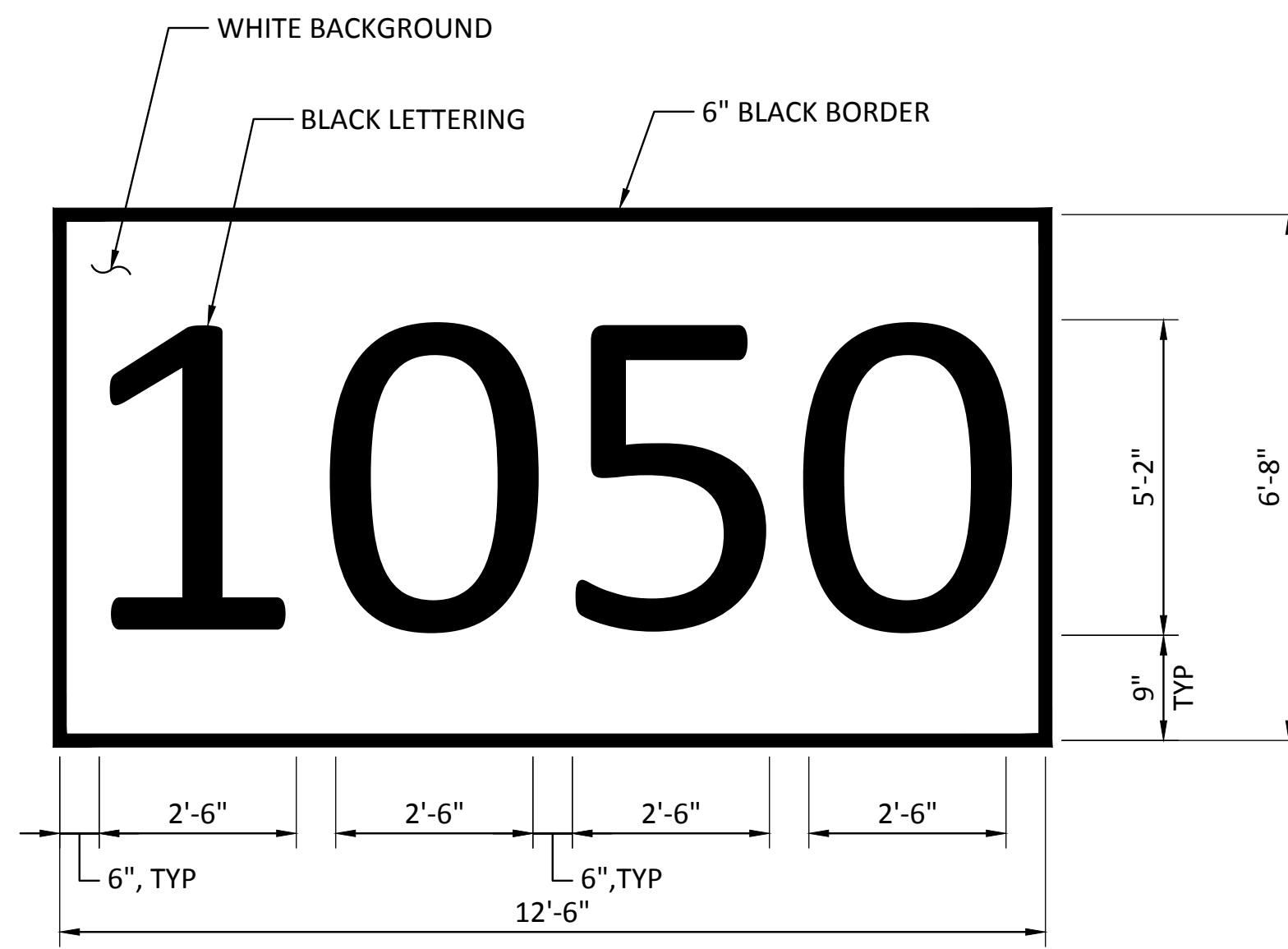
<b>6502</b> <b>C5.2</b> SHEET 28 OF 129	<b>PIER 3 UPGRADE</b>		APPROVED:	CSB	7/17/13	DATE	
	<b>WHARF STRIPING PLAN</b> SHEET 3		DC	7/17/13	JRG	7/17/13	DATE
CONT/CONS: 069458		TOWNSHIP: 21 N	DIR OF ENG	PROJ. ENGR		DATE	
MASTER ID NO: 092935		DAT-HRZ: NAD 83-07	PRINTED BY: jason.mendenthal	PORT ADDRESS: ONE SITCUM WAY		TACOMA, WA 98421-2300	
PHASE: RECORD DRAWINGS		PARCEL: 27	SECTION: 27		VERT: NOS TIDAL (MLLW = 0.0)		
		DRAWING SCALE: AS SHOWN					
 Berger/ABAM 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250		 Port of Tacoma P.O. BOX 1877 TACOMA, WA 98401 (206) 885-5841				MARK: REVISION: BY: APPR: DATE:	

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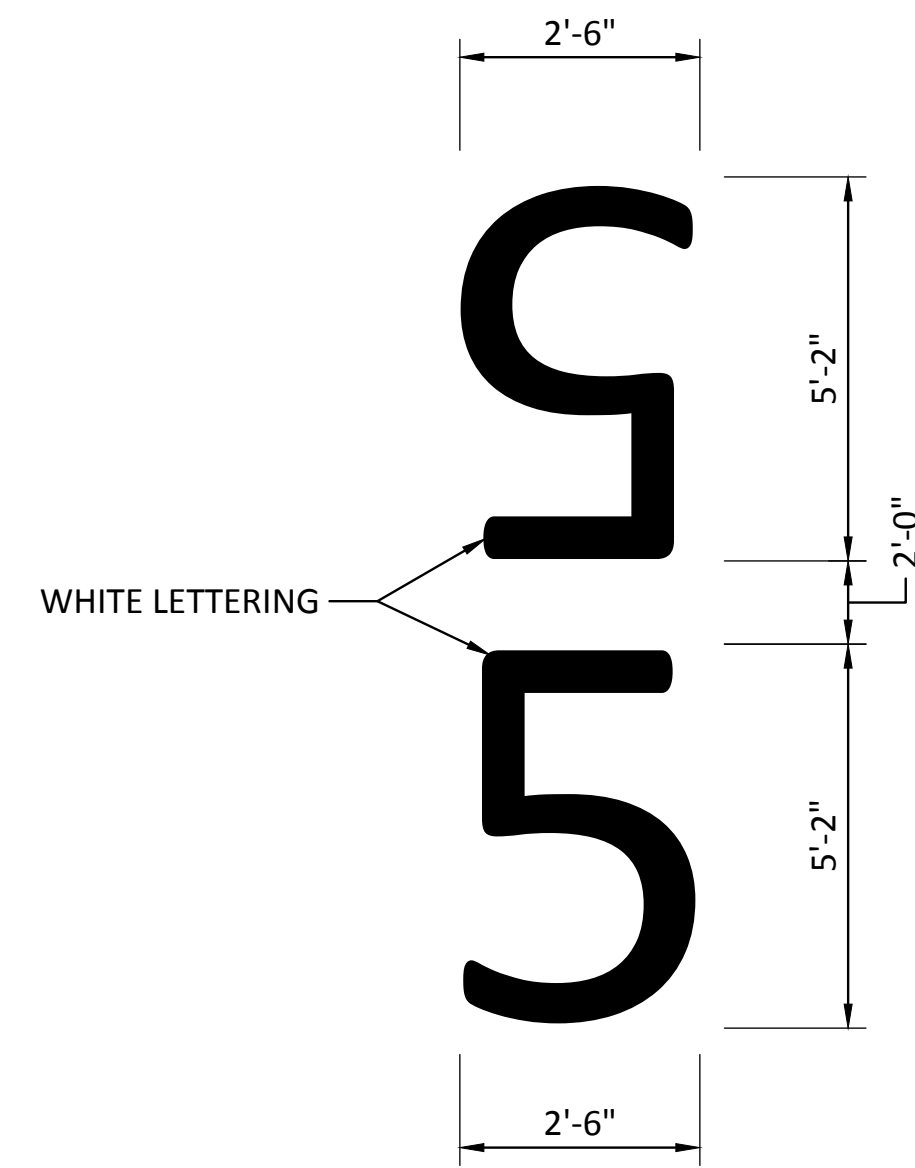
NOTE: DIMENSIONS ARE TO CENTERLINE OF STRIPE.

1 TYPICAL STRIPING PATTERN SCALE: 1" = 10'-0"

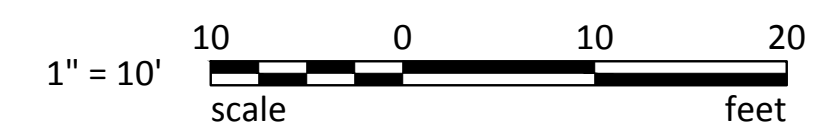


- NOTES:
- CENTER NUMBER AT 50' INCREMENTS.
  - BEGIN WITH NUMBER 0000, LOCATED AT BENT 9 (NORTH END)

2 STATION STRIPING DETAIL SCALE: NTS



3 LANE NUMBER DETAIL SCALE: NTS



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6502 <b>C5.3</b> SHEET 29 OF 129	PIER 3 UPGRADE		CSB	7/17/13
	WHARF STRIPING DETAILS		CHECKED BY	DATE
CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	DIR OF ENG
MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	PRINTED BY: jason.mendenhall	DATE
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	PORT ADDRESS: ONE SITCUM WAY	APPROVED:
			TACOMA, WA 98421-2300	
			MARK:	REVISION:
			BY:	DATE:
			APPR:	

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 (206) 451-2200 Fax: (206) 451-2250

P.O. BOX 1887 TACOMA, WA 98401 (206) 835-8441

# STRUCTURAL NOTES

## CODES AND STANDARDS

- ALL METHODS AND MATERIALS SHALL CONFORM TO BOTH THE INTERNATIONAL BUILDING CODE (IBC) (2009 EDITION) AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) (2009 EDITION) AS AMENDED AND ADOPTED BY THE CITY OF TACOMA (TMC).
- REINFORCED CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) AND "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318).
- STRUCTURAL AND MISCELLANEOUS STEEL FABRICATION AND ERECTION THEREOF SHALL CONFORM TO THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC 303) AND "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" (AISC 360).
- WELDING OF STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1).
- WELDING OF REINFORCING STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - REINFORCING STEEL" (AWS D1.4).
- ALL METHODS AND MATERIALS SHALL CONFORM TO THE WASHINGTON STATE 2012 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) AND THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) WASHINGTON STATE CHAPTER.

## GENERAL

- THESE NOTES CONTAIN GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY INFORMATION PROVIDED WITH THE SPECIFICATIONS AND OTHER DOCUMENTS AND BRING ANY CONFLICTS TO THE ATTENTION OF THE ENGINEER BEFORE BEGINNING AFFECTED WORK. THE ENGINEER WILL RESOLVE ANY SUCH CONFLICT.
- ALL DIMENSIONS AND DETAILS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION AND CONSTRUCTION.
- ALL SHOP DRAWINGS FOR PRECAST CONCRETE ELEMENTS, REINFORCING STEEL, MISCELLANEOUS STEEL, AND FENDER SYSTEM SHALL BE SUBMITTED TO THE ENGINEER AND WILL BE REVIEWED BY THE ENGINEER PRIOR TO FABRICATION.
- ALL ELEVATIONS REFER TO MEAN LOWER LOW WATER (MLLW) EL 0.00 FT AS DEFINED BY THE U.S. ARMY CORPS OF ENGINEERS. SEE DRAWING C1.0 FOR HORIZONTAL AND VERTICAL SURVEY CONTROL.
- EXISTING FEATURES SHOWN ON THESE DRAWINGS ARE BASED ON AS-BUILT DATA AND RECENT SURVEYS. THE LOCATIONS OF EXISTING UTILITIES AND OTHER FEATURES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO PERFORMING THE ASSOCIATED WORK. USE A LOCATOR SERVICE AND EXCAVATE TO EXPOSE UTILITY LINES.
- THE CONTRACTOR SHALL BRING ANY CONFLICTS BETWEEN EXISTING UTILITIES AND THE WORK TO THE ENGINEER'S ATTENTION PRIOR TO START OF CONSTRUCTION ON THE AFFECTED WORK.
- ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

## REINFORCED CONCRETE

### 1. REINFORCING STEEL

- PRESTRESSING STEEL SHALL BE UNCOATED LOW-RELAXATION SEVEN-WIRE STRAND CONFORMING TO ASTM A 416, GRADE 270.
- ALL REINFORCING STEEL SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615, GRADE 60, UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS.
- ALL DOWELS FOR PILING SHALL BE OF WELDABLE QUALITY AND SHALL CONFORM TO ASTM A 706, GRADE 60.
- EPOXY COATED REINFORCEMENT SHALL CONFORM TO ASTM A 934.
- WIRE FOR SPIRAL REINFORCEMENT SHALL CONFORM TO ASTM A 82.
- SEE SPECIFICATIONS FOR HIGH-STRENGTH BAR, WELDED HEADED STUD, MECHANICAL COUPLER, AND HEADED REINFORCEMENT REQUIREMENTS.
- SPLICING OF LONGITUDINAL REINFORCEMENT OVER 40 FT IN LENGTH, EXCEPT AS SPECIFICALLY NOTED ON THE DRAWINGS, WILL BE PERMITTED UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" (ACI 318) STAGGERED THREE LAP LENGTHS WITH NO MORE THAN 50% OF THE BARS BEING SPLICED AT ANY ONE LOCATION.
- PROVIDE CORNER BARS AT ALL CORNERS. CORNER BARS SHALL MATCH THE NUMBER/SPACING AND DIAMETER OF ALL HORIZONTAL REINFORCEMENT AT THE CORNER. TERMINATED STRAIGHT BARS SHALL EXTEND THE FULL AVAILABLE LENGTH INTO ADJOINING MEMBERS. SPLICE CORNER BAR TO TERMINATED STRAIGHT BAR WITH MINIMUM SPLICE LENGTH BELOW.
- SPLICES SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED

SCHEDULE OF LAP SPLICE LENGTHS (f'c = 5000 PSI)		
BAR SIZE	TOP BARS	BOTTOM BARS
4	2'-5"	1'-10"
5	3'-0"	2'-4"
6	3'-7"	2'-9"
7	5'-3"	4'-0"
8	6'-0"	4'-7"
9	6'-9"	5'-2"
10	7'-6"	5'-9"
11	8'-3"	6'-4"

#### NOTES:

- VALUES ARE BASED ON CLASS "B" SPLICES (MAX OF 50% BAR SPLICED AT ONE LOCATION).
- TOP BARS ARE DEFINED AS ANY HORIZONTAL BAR PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR.
- INCREASE LAP SPLICE LENGTH OF EPOXY COATED REINFORCEMENT BY 50%.

- DETAIL ALL REINFORCING STEEL IN ACCORDANCE WITH ACI 315, LATEST EDITION. ALL REINFORCING STEEL BENDS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. USE SEISMIC HOOK DETAILS FOR ALL TIES AND STIRRUPS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- ALTERNATE ENDS OF HORIZONTAL TIES (CROSS TIES WITH 135 DEGREE HOOK AND 90 DEGREE HOOK) EXCEPT WHEN PLACED AGAINST HARDENED CONCRETE WHERE THE 90 DEGREE HOOK SHALL BE PLACED AT THE HARDENED CONCRETE FACE.

### 2. PRECAST CONCRETE

MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS

PRECAST PRESTRESSED CONCRETE PILES 8000 PSI

### 3. CAST-IN-PLACE CONCRETE

MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS

- UNLESS NOTED OTHERWISE 5000 PSI
- CONCRETE IN PILE BUILDUP 6000 PSI
- DRILLED SHAFTS CLASS 4000W PER WSDOT

### 4. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4", UNLESS OTHERWISE NOTED.

### 5. CONSTRUCTION JOINTS SHALL BE PROVIDED ONLY AS NOTED ON THE DRAWINGS AND AS SPECIFICALLY PERMITTED BY THE ENGINEER. ROUGHEN EXISTING CONCRETE RECEIVING NEW CONCRETE TO A MINIMUM 1/4" AMPLITUDE IN ACCORDANCE WITH THE SPECIFICATIONS. CLEAN AND REMOVE LAITANCE, THEN DAMPEN FOR AT LEAST 12 HOURS BEFORE PLACING NEXT POUR.

## GROUT, MORTAR, DOWEL ADHESIVE, AND CRACK REPAIRS

- SEE SPECIFICATIONS.

## MISCELLANEOUS STEEL

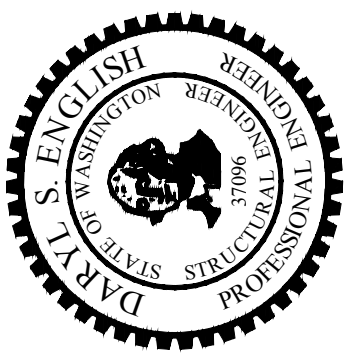
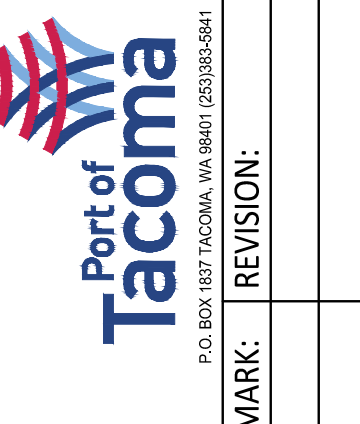
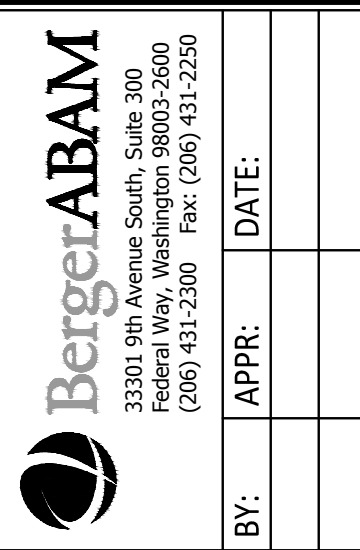
- MISCELLANEOUS AND STRUCTURAL STEEL SHAPES AND PLATES, EXCEPT AS NOTED OTHERWISE, SHALL CONFORM TO THE SPECIFICATIONS.
- BOLTS AND NUTS SHALL CONFORM TO ASTM A 307, UNLESS NOTED OTHERWISE.
- ANCHOR BOLT OR ANCHOR RODS SHALL CONFORM TO ASTM F 1554, GRADE 55, UNLESS NOTED OTHERWISE.
- FOR ITEMS TO BE COATED, GALVANIZED, OR GALVANIZED AND COATED, REFER TO THE SPECIFICATIONS. REPAIR DAMAGE TO COATINGS AND GALVANIZING IN ACCORDANCE WITH THE SPECIFICATIONS.
- PROVIDE BLEED HOLES IN EMBEDDED PLATES AND SHAPES AT 24-IN. ON CENTER MAXIMUM.
- ALL MISCELLANEOUS PIPE SHALL CONFORM TO ASTM A 53 GRADE B OR ASTM A 106 GRADE B OR C UNLESS NOTED OTHERWISE. PIPE BOLLARDS SHALL CONFORM TO ASTM A 106 GRADE C.

## PILING

- PILES SHALL BE DRIVEN TO THE REQUIRED TIP ELEVATIONS AND MINIMUM CAPACITIES INDICATED, SEE SPECIFICATIONS.

## LOAD PATH

- VERTICAL LOADS:  
LOADS ARE DISTRIBUTED THROUGH CONCRETE CRANE BEAMS AND BALLAST, BALLAST TO DECK SYSTEM, DECK SYSTEM TO PILE CAPS, PILE CAPS AND CRANE BEAMS TO PILES, PILES TO SOIL IN FRICTION AND END BEARING.
- HORIZONTAL LOADS:  
LOADS, INCLUDING SEISMIC FORCES, SOIL PRESSURE, SHIP IMPACT, AND MOORING FORCES ARE TRANSMITTED THROUGH THE DECK ACTING AS A DIAPHRAGM TO THE BATTER PILES. HORIZONTAL LOADS PARALLEL TO THE WHARF ARE RESISTED BY SOIL FRICTION AGAINST THE BULKHEAD AND SHEET PILES.



APPROVED:	CSB	7/17/13	DATE
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PIER 3 UPGRADE

STRUCTURAL NOTES SHEET 1

6502 S1.0 SHEET 30 OF 129

CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

TOWNSHIP: 21 N RANGE: 3 E SECTION: 27  
DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)  
PARCEL: 27 DRAWING SCALE: AS SHOWN

# DESIGN CRITERIA

## DESIGN LOADS:

### 1. UNIFORM LIVE LOAD ON PIER (MATCH EXISTING):

- A. 750 PSF ON ANY COMBINATION OF SPANS
- B. 2000 PSF AT HEAVY LOAD ZONE

### 2. CONCENTRATED LIVE LOAD (MATCH EXISTING):

P = 100 KIPS, INCLUDING IMPACT  
 WHEEL/OUTRIGGER TRANSVERSE SPACING > 8 FEET  
 WHEEL/OUTRIGGER LONGITUDINAL SPACING > 18 FEET  
 CONTACT PRESSURE: 100 PSI

### 3. CONTAINER STORAGE LOAD (MATCH EXISTING):

100 KIPS ON 8x20 FT FOOTPRINT

### 4. BERTHING:

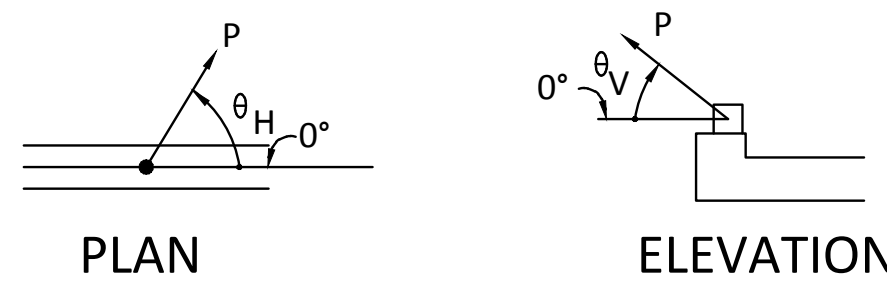
#### A. VESSELS

1. CONTAINER SHIP 1  
 LENGTH OVERALL (LOA): 1380 FEET  
 BEAM: 195 FEET  
 DRAFT: 50 FEET  
 DISPLACEMENT: 230,000 LT  
 APPROACH ANGLE: 6 DEGREES  
 PERPENDICULAR VELOCITY: 0.16 KNOTS (0.26 FT/S)
2. CONTAINER SHIP 2  
 LENGTH OVERALL (LOA): 1200 FEET  
 BEAM: 160 FEET  
 DRAFT: 50 FEET  
 DISPLACEMENT: 180,000 LT  
 APPROACH ANGLE: 6 DEGREES  
 PERPENDICULAR VELOCITY: 0.16 KNOTS (0.26 FT/S)
3. CONTAINER SHIP 3  
 LENGTH OVERALL (LOA): 1145 FEET  
 BEAM: 149 FEET  
 DRAFT: 45 FEET  
 DISPLACEMENT: 140,000 LT  
 APPROACH ANGLE: 6 DEGREES  
 PERPENDICULAR VELOCITY: 0.16 KNOTS (0.26 FT/S)
4. CONTAINER SHIP 4  
 LENGTH OVERALL (LOA): 965 FEET  
 BEAM: 106 FEET  
 DRAFT: 40 FEET  
 DISPLACEMENT: 80,000 LT  
 APPROACH ANGLE: 10 DEGREES  
 PERPENDICULAR VELOCITY: 0.24 KNOTS (0.40 FT/S)

#### B. FENDER REQUIREMENTS

1. MINIMUM BERTHING ENERGY = 600 KIP-FT
2. MAXIMUM BERTHING REACTION = 300 KIPS
3. VESSEL HULL REACTION PRESSURE ≤ 5.0 KSF

### 5. LINE PULL ON MOORING BOLLARDS:



LOCATION	LINE PULL P	RANGE OF HORIZONTAL ANGLE theta_H	RANGE OF VERTICAL ANGLE theta_V
EXIST BOLLARD (BENT 9 - 19)	150 TONS	0° TO 180°	0° TO 30°
BOLLARD (BENT 20 - 65)	100 TONS	0° TO 180°	0° TO 30°
BOLLARD (BENT 66 & 67)	200 TONS	0° TO 180°	0° TO 60°

### 6. CONTAINER CRANE LOADS:

WHEEL LOADS ARE EXPRESSED AS EQUIVALENT UNIFORM DISTRIBUTION LOADS BASED ON EIGHT WHEELS PER CORNER SPACED AT 4'-9" ON CENTER.

- A. OPERATING SERVICE (KIPS/FT):  
 WATER SIDE: C<sub>Lop</sub> = 50, W<sub>cr</sub> = 1.0  
 LAND SIDE: C<sub>Lop</sub> = 40, W<sub>cr</sub> = 1.0
- B. OVERLOAD SERVICE (KIPS/FT):  
 WATER SIDE: C<sub>Lov</sub> = 60, LATG = 0.5  
 LAND SIDE: C<sub>Lov</sub> = 50, LATG = 0.5
- C. STOWED SERVICE (KIPS/FT):  
 WATER SIDE: C<sub>Lst</sub> = 50, W = 2.5  
 LAND SIDE: C<sub>Lst</sub> = 50, W = 2.5
- D. EXTREME SERVICE (KIPS/FT):  
 WATER SIDE: C<sub>Leq</sub> = 65, EQ = 5.5  
 LAND SIDE: C<sub>Leq</sub> = 40, EQ = 5.5
- E. PIN SOCKETS (HORIZONTAL LOAD):  
 P = 150 KIPS PER SOCKET (SERVICE, LF = 1.6)
- F. CRANE STOPS (HORIZONTAL LOADS):  
 P = 330 KIPS @ 4'-6" ABOVE RAIL (LF = 1.6)
- G. CRANE TIE-DOWNS (UPLIFT LOAD):  
 P = 400 KIPS (SERVICE, LF = 1.6)

### 7. LOAD COMBINATIONS:

PER TMC, LOAD COMBINATIONS ARE FROM THE 2009 IEBC AND 2009 IBC. VESSEL LOADS (BERTHING, MOORING) HAVE BEEN INCLUDED PER CHAPTER 31F OF 2010 CBC.

#### LRFD (STRENGTH DESIGN & STRUCTURAL CAPACITY CHECK)

- U1 = 1.2D + 1.6L + 1.5C<sub>Lop</sub> + 1.2B + 1.6W + 1.2C + 1.6H (OPERATING)
- U2 = 1.2D + 1.6L + 1.3C<sub>Lst</sub> + 1.2B + 1.6W<sub>st</sub> + 1.2C + 1.6H (STOWED, VESSEL NOT MOORED)
- U3 = 1.2D + 1.6L + 1.0C<sub>Lov</sub> + 1.2B + 1.0LATG + 1.2C + 1.6H (OVERLOAD)
- U4 = 1.2D + 1.2C<sub>Ld</sub> + 1.2B + 1.6W + 1.2C + 1.6H + 1.6BE (BERTHING)
- U5 = 1.2D + 1.6L + 1.2B + 1.6W + 1.5C<sub>Lop</sub> + 1.2C + 1.6H + 1.6M (MOORING)
- U6 = 1.4(D+L+EQ) (EXTREME, 1987 STRUCTURE)
- U7 = 0.9D ± 1.4EQ (EXTREME, 1987 STRUCTURE)

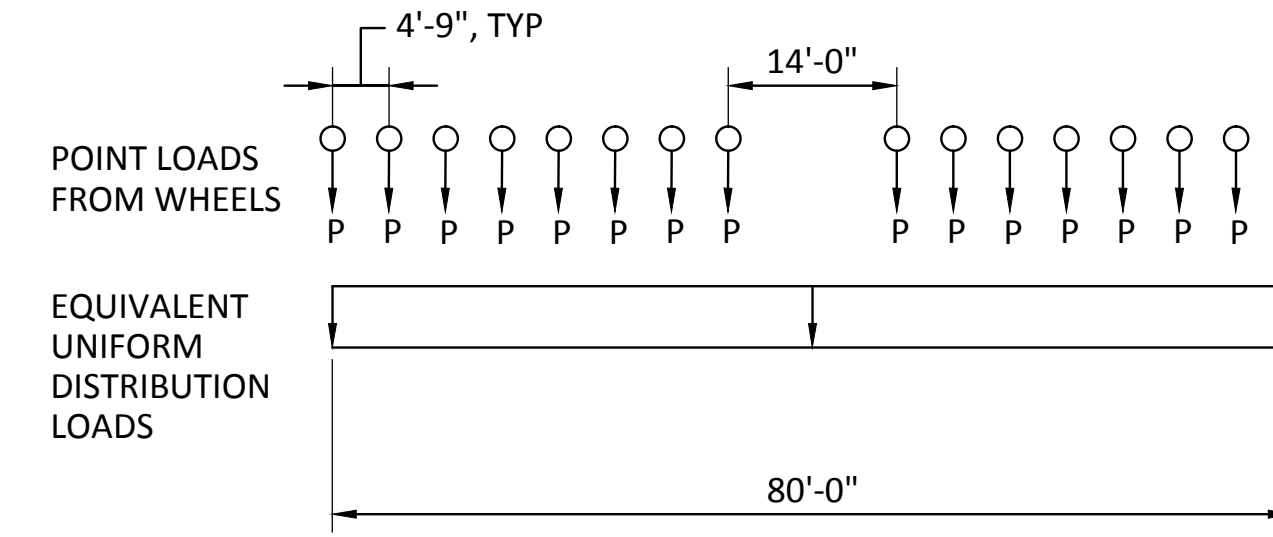
#### ASD (GEOTECHNICAL PILE CAPACITY & STRUCTURE SERVICEABILITY)

- S1 = 1.0D + 1.0L + 1.0C<sub>Lop</sub> + 1.0B + 1.0W + 1.0C + 1.0H (OPERATING)
- S2 = 1.0D + 1.0L + 1.0C<sub>Lst</sub> + 1.0B + 1.0W<sub>st</sub> + 1.0C + 1.0H (STOWED, VESSEL NOT MOORED)
- S3 = 1.0D + 1.0L + 1.0C<sub>Lov</sub> + 1.0B + 1.0LATG + 1.0C + 1.0H (OVERLOAD)
- S4 = 1.0D + 1.0C<sub>Ld</sub> + 1.0B + 1.0W + 1.0C + 1.0H + 1.0BE (BERTHING)
- S5 = 1.0D + 1.0L + 1.0B + 1.0W + 1.0C<sub>Lop</sub> + 1.0C + 1.0H + 1.0M (MOORING)
- S6 = D + L + EQ (1987 STRUCTURE)
- S7 = 0.85D ± EQ (1987 STRUCTURE)

#### LEGEND:

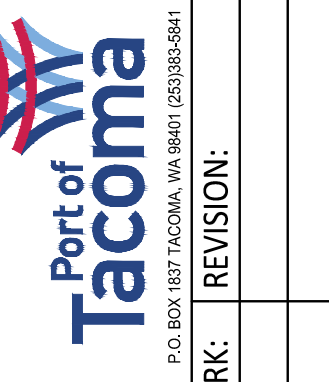
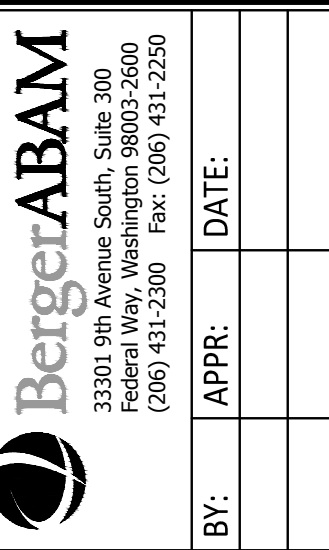
- B - BOUYANCY LOAD
- BE - BERTHING LOAD
- C - CURRENT LOAD
- D - STRUCTURE DEAD LOAD
- C<sub>Ld</sub> - CONTAINER CRANE DEAD LOAD
- EQ - EARTHQUAKE LOAD (INCLUDES C<sub>Leq</sub>)
- H - SOIL LOAD
- L - UNIFORM LIVE LOAD OR CONCENTRATED LIVE LOAD
- LATG - LATERAL GANTRY LOAD
- C<sub>Lop</sub> - CONTAINER CRANE OPERATING LOAD (INCLUDES C<sub>Ld</sub>)
- C<sub>Lov</sub> - CONTAINER CRANE OVERLOAD (INCLUDES C<sub>Ld</sub>)
- C<sub>Lst</sub> - CONTAINER CRANE LOAD UNDER STOWED (WIND) CONDITIONS (INCLUDES C<sub>Ld</sub>)
- M - MOORING LOAD
- W - WIND LOAD (55 MPH)
- W<sub>st</sub> - STOWED WIND LOAD (85 MPH)
- C<sub>Leq</sub> - CONTAINER CRANE DEAD LOAD INCLUDING VERTICAL EQ

### 8. CONTAINER CRANE WHEEL LOAD DIAGRAM



### 9. SPECIAL INSPECTION:

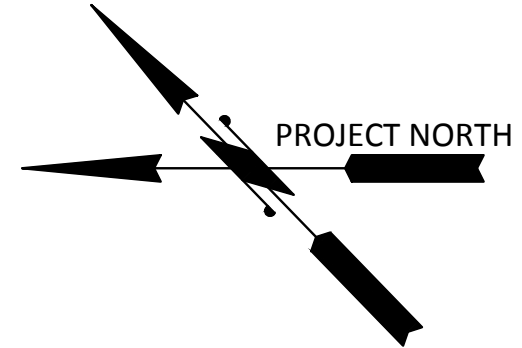
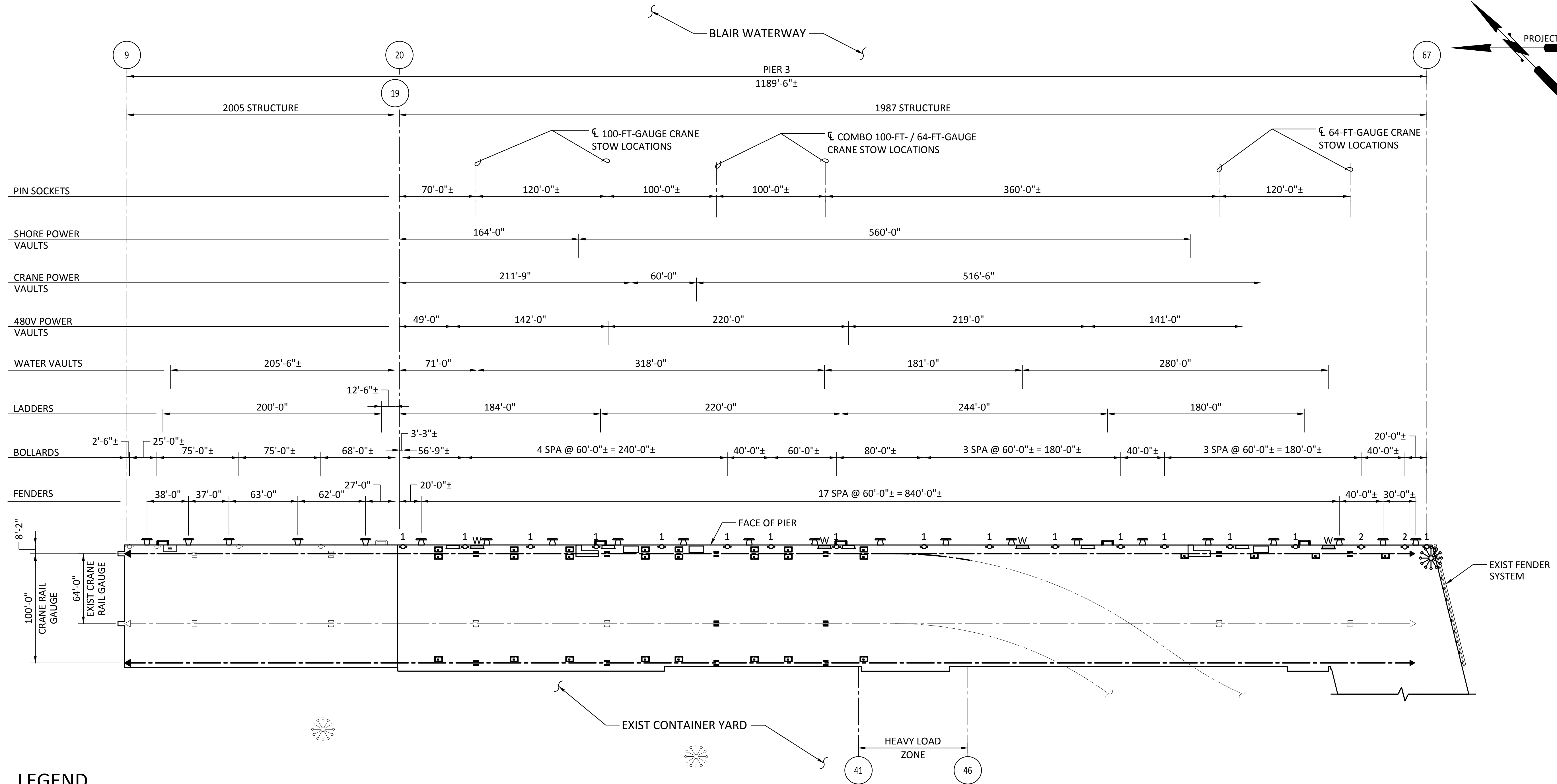
- A. SPECIAL INSPECTION WILL BE PROVIDED BY THE PORT. COORDINATE SPECIAL INSPECTION WITH THE ENGINEER.
- B. THE ELEMENTS REQUIRING SPECIAL INSPECTION PER IEBC & IBC CHAPTER 17 ARE AS FOLLOWS:
  1. CONCRETE
  2. BOLTS AND ANCHORS INSTALLED IN CONCRETE
  3. DRILLED-IN DOWELS
  4. REINFORCING STEEL
  5. STRUCTURAL WELDING
  6. PILING



APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENG	Jason.mendenhall	DATE	
PRINTED BY:	ONE SITCOM WAY		
PORT ADDRESS:	TACOMA, WA 98421-2300		

PIER 3 UPGRADE	TOWNSHIP: 21 N	SECTION: 27
STRUCTURAL NOTES	RANGE: 3 E	NOS TIDAL (MLLW = 0.0)
SHEET 2	DATE: NAD 83-07	DRAWING SCALE: AS SHOWN
	VERT: 27	

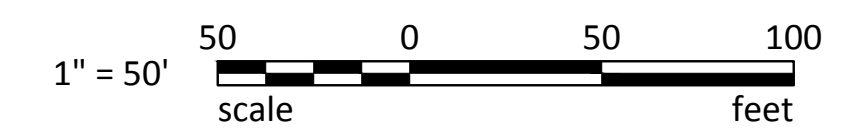
6502	S1.1
SHEET 31 OF 129	
CONT/CONS: 069458	
MASTER ID NO: 092935	
PHASE: RECORD DRAWINGS	



**LEGEND**

- |  |                                     |  |                              |  |  |
|--|-------------------------------------|--|------------------------------|--|--|
|  | EXIST 150 TON BOLLARD               |  | 100 TON BOLLARD, SEE S19.0   |  | CRANE POWER VAULT, SEE S14.0                 |
|  | EXIST CRANE STOP                    |  | 200 TON BOLLARD, SEE S19.0   |  | PIN SOCKET, SEE S18.3                        |
|  | EXIST PIN SOCKET                    |  | FENDERS, SEE S13.0 & S13.1   |  | CRANE TIE DOWN, SEE S18.0                    |
|  | EXIST CRANE POWER VAULT             |  | CRANE STOP, SEE 19.2 & S19.3 |  | WATER UTILITY VAULT, SEE S15.0               |
|  | EXIST LADDER                        |  | LADDER, SEE S19.4            |  | 480V UTILITY VAULT, SEE S15.0                |
|  | EXIST WATER SERVICE VAULT           |  | SHORE POWER VAULT, SEE S16.0 |  | RELOCATED HIGH MAST LIGHTPOLE, SEE DWG S19.5 |
|  | EXIST CRANE RAIL                    |  | CRANE RAIL, SEE S5.0 & S12.0 |  |  |
|  | EXIST HIGH MAST LIGHTPOLE, SEE S2.7 |  |                              |  |  |

**PLAN - SURFACE FEATURES**  
SCALE: 1" = 50'



RECORD DRAWINGS:  
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 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY:	APPR:	DATE:
	REVISION:	MARK:	
 P.O. BOX 1887 TACOMA, WA 98401 (206) 885-8841			
APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENG	PRINTED BY:	PROJ. ENGR	DATE
PORT ADDRESS:	ONE SITCUM WAY	TACOMA, WA 98421-2300	
<b>6502</b> <b>S1.2</b> SHEET 32 OF 129	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	PIER 3 UPGRADE SURFACE FEATURES PLAN	

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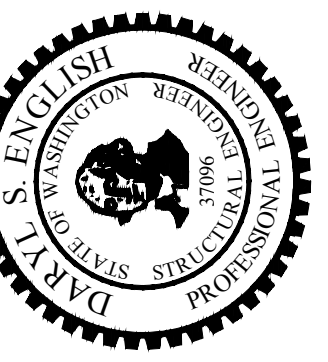
PILE NO	MUDLINE EL (ft)	FINAL TIP EL (ft)	ULT CAPACITY (Kips)
1**	-40	-114.5	950
2**	-40	-114.5	850
3	-40	-114.5	850
4	-40	-114	1000
5*	-40	-114	1000
6*	-40	-114	975
7	-40	-114	900
8	-40	-113	925
9	-40	-114	875
10	-40	-114	975
11	-40	-114	925
12	-40	-114	950
13	-40	-114	875
14	-40	-114	950
15**	-40	-114	875
16	-40	-114	975
17**	-40	-114.5	925
18	-40	-114.5	825
19**	-40	-114.5	950
20	-40	-114.5	825
21	-40	-114.5	950
22	-40	-114.5	950
23**	-43	-114	950
24	-43	-114.5	925
25	-43	-114.5	925
26	-43	-114.5	975
27	-43	-114.5	950
28	-43	-115	950
29	-43	-115	950
30	-43	-115	950
31	-43	-115	950
32	-43	-115	950
33**	-43	-115.5	850
34	-43	-115	900
35	-44	-115	875
36	-44	-115	950
37	-43	-115	875
38	-42.5	-115	900
39	-41	-114.5	825
40**	-42	-114.5	800
41	-45	-115	875
42	-41	-115	875
43	-42	-115	800
44	-41	-115.5	750
45	-40	-115	700
46	-40	-114	675
47*	-40	-114	700

PILE NO	MUDLINE EL (ft)	FINAL TIP EL (ft)	ULT CAPACITY (Kips)
48	-40	-116	825
49	-40	-115.5	850
50	-39	-114.5	825
51	-42.5	-115	800
52	-39	-114.5	800
53	-39	-115	875
54	-39	-114.5	750
55	-39	-114.5	850
56	-39	-114.5	825
57	-39	-114.5	775
58	-41	-114.5	850
59	-41	-114.5	825
60	-41	-114.5	775
61**	-41	-115	725
62	-43	-113.5	725
63	-42.5	-115	850
64	-43	-115	850
65	-42	-115	850
66	-41	-114.5	850
67	-42	-113.5	725
68	-41	-116	800
69	-42	-115.5	850
70	-42	-115	825
71	-41	-115	850
72	-42	-114.5	775
73	-42	-115	950
74	-41	-114.5	950
75**	-40	-115	900
76	-42	-114.5	975
77	-42	-115.5	725
78	-39	-115	800
79	-40	-114.5	800
80	-42	-111	800
81	-42	-114.5	750
82	-39	-114.5	775
83	-39	-114.5	775
84	-38	-110.5	775
85*	-40	-114.5	810
86	-40	-114.5	825
87	-42	-114.5	850
88	-42	-114.5	850
89	-35	-103.5	800
90	-35	-115	800
91	-34	-115	800
92	-36	-114.5	800
93	-36	-114.5	700
94	-37	-114.5	675

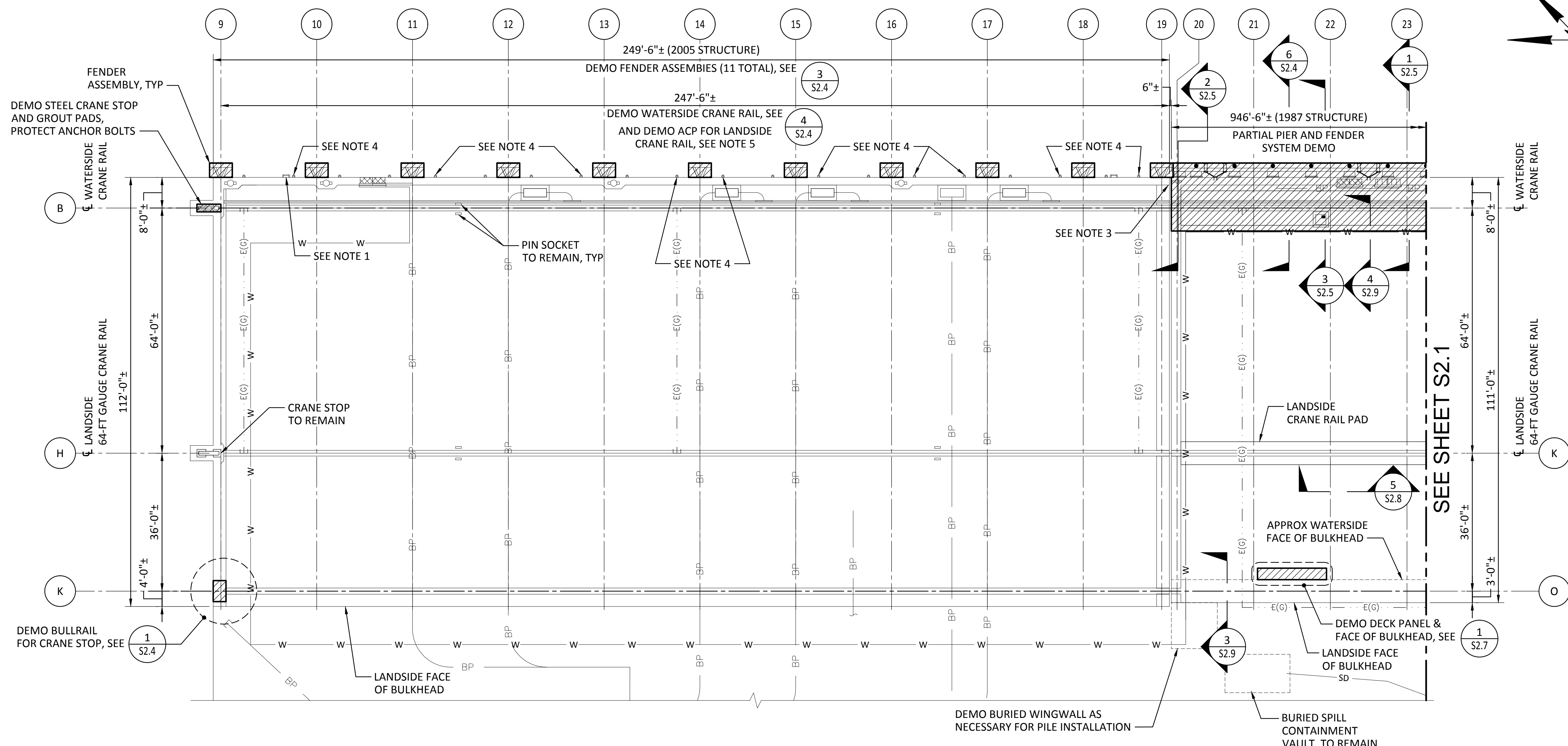
PILE NO	MUDLINE EL (ft)	FINAL TIP EL (ft)	ULT CAPACITY (Kips)
95	-31.5	-118.5	900
96**	-29.5	-119.5	775
97	-13	-110	975
98	-15	-111	875
99	-8.5	-118	750
100	-7.5	-118	725
101	-0.5	-119	825
102	-0.5	-119	750
103	7	-75.5	1150
104*	7	-75.5	1075
105	7	-75.5	1150
106	7	-75.5	1150
107	14	-75.5	790
108	14	-75.5	790
109	14	-75.5	790
110	14	-75.5	790
111*	14	-75.5	790
112	14	-75.5	790
113	14	-75.5	790
114	14	-75.5	790
115	14	-75.5	960
116	14	-75.5	885
117	14	-75.5	985
118	14	-75.5	885
119	14	-75.5	935
120	14	-75.5	1010
121	14	-75.5	1010
122	14	-75.5	885
123	14	-75.5	960
124	14	-75.5	885
125	14	-75.5	935
126	14	-75.5	885
127	14	-75.5	810
128	14	-75.5	835
129	14	-75.5	760
130	14	-75.5	835
131	14	-75.5	835
132	14	-75.5	885
133	14	-75.5	860
134	14	-75.5	860
135*	14	-75.5	835
136*	14	-75.5	835
137	14	-75.5	810
138	14	-75.5	760

\* PDA PILE W/ RESTRIKE  
 \*\* RESTRIKE PILE

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 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	DATE:
	APPR:
 P.O. BOX 1887 TACOMA, WA 98401-0188	REVISION:
	BY:
APPROVED:	CSB 7/17/13 CHECKED BY: DATE DC 7/17/13 JRG 7/17/13 DIR OF ENG DATE jason.mendenthal PRINTED BY: jason.mendenthal PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
PIER 3 UPGRADE AS-BUILT PILE INFORMATION	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
6502 <b>S1.3</b> SHEET 33 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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**1 PLAN - DEMOLITION**  
SCALE: 1/16" = 1'-0"

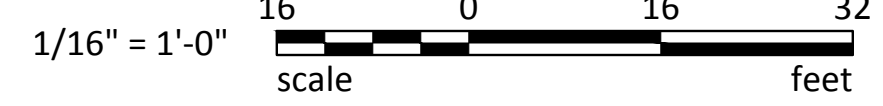
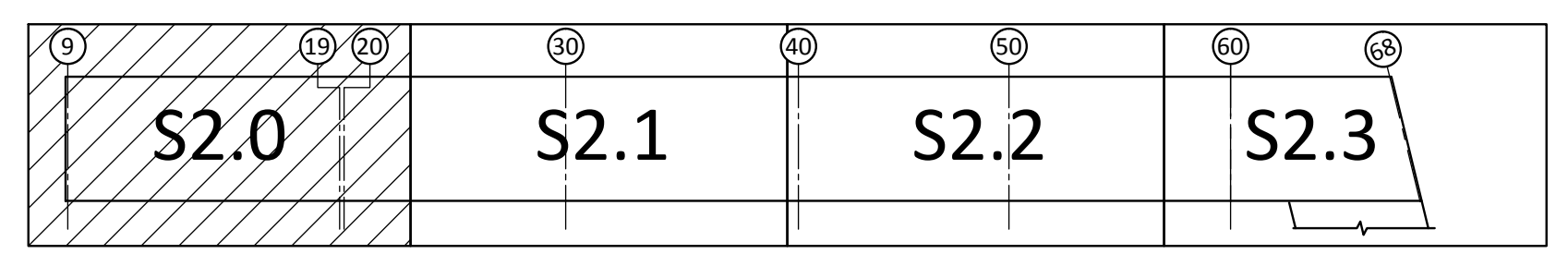
**LEGEND:**

- |  |                            |  |                            |
|--|----------------------------|--|----------------------------|
|  | CRANE STOP                 |  | WATER VAULT                |
|  | CRANE POWER VAULT          |  | POWER VAULT                |
|  | FENDER                     |  | ELECTRICAL PULL BOX        |
|  | BOLLARD                    |  | BURIED WATER               |
|  | LADDER                     |  | BURIED POWER               |
|  | PIN SOCKET                 |  | BURIED ELECTRICAL (GROUND) |
|  | TREATED TIMBER FENDER PILE |  | STORM DRAIN                |
|  |                            |  | APPROXIMATE DEMO LIMITS    |

**GENERAL NOTES:**

- DEMO LADDER AND GRAB BAR, DEMO EMBEDS PER
- FOR UPLAND UTILITIES, SEE C-SERIES DWGS.
- SALVAGE STEEL BULLRAIL EXPANSION JOINT COVER PLATE, DEMO EMBEDS PER
- DEMO SELECT SHEAR CHAIN EMBEDS, DEMO EMBEDS PER
- EXISTING ACP AND BALLAST NOT SHOWN. FOR TYPICAL ACP & BALLAST DEMO DETAILS, SEE DWG S2.9. FOR APPROX EXTENT OF ACP DEMO SEE C4.0 TO C4.2.
- DEMO BENT # TAGS ON 2005 STRUCTURE.

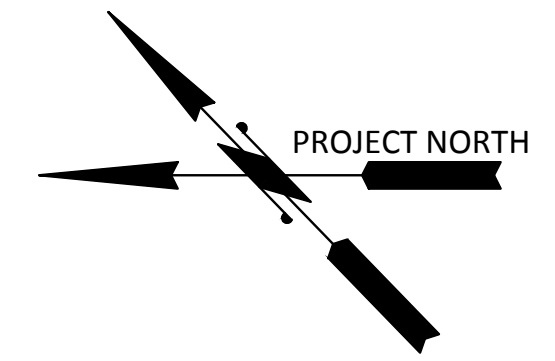
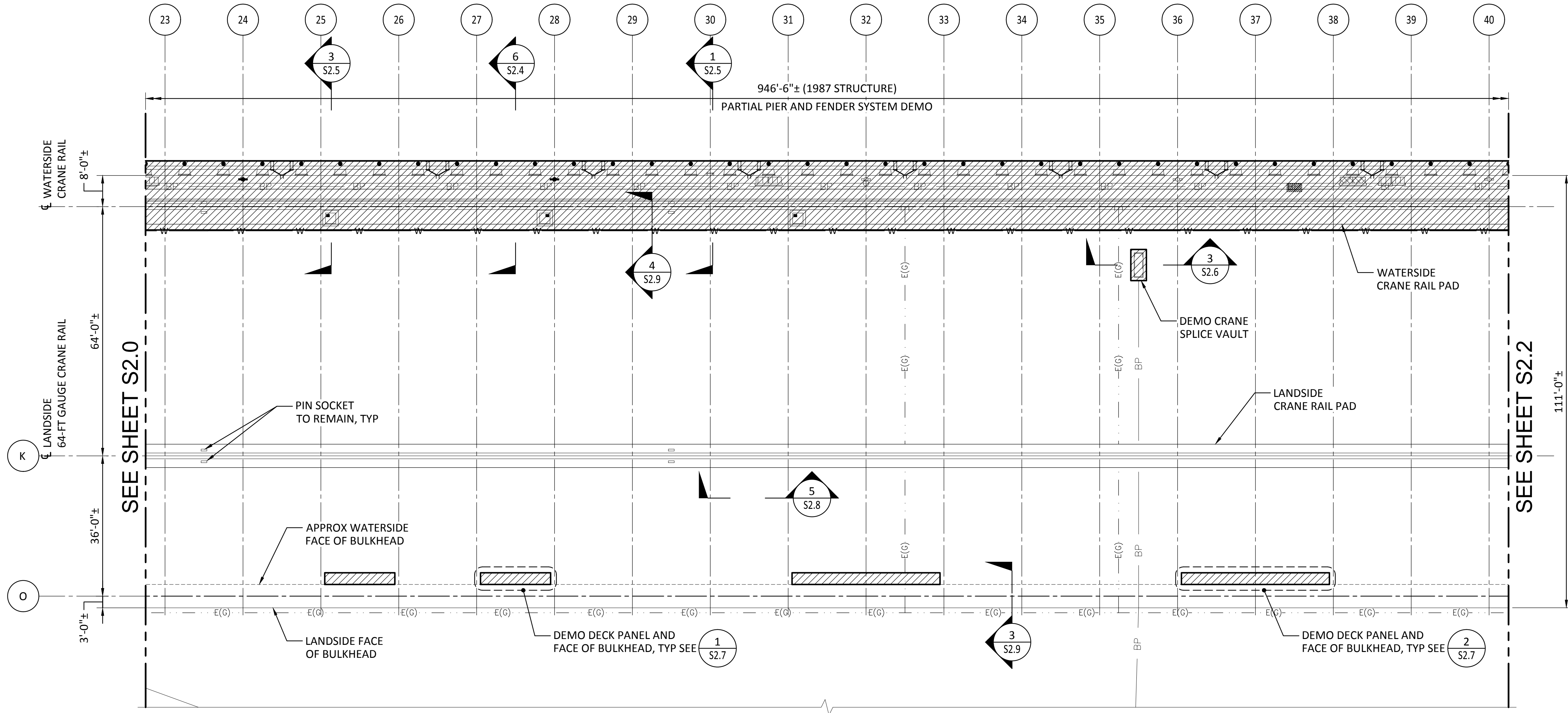
**KEY PLAN:**



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	REVISION: _____ MARK: _____
	APPROVED: _____ DATE: 7/17/13
PROJECT: PIER 3 UPGRADE SHEET: DEMOLITION PLAN SHEET 1 SHEET 34 OF 129	CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: Jason.mendenthal PRINTED BY: Jason.mendenthal PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 NOS TIDAL (MLLW = 0.0) DAT-HRZ: NAD 83-07 VERT: AS SHOWN DRAWING SCALE: AS SHOWN

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**1 PLAN - DEMOLITION**  
SCALE: 1/16" = 1'-0"

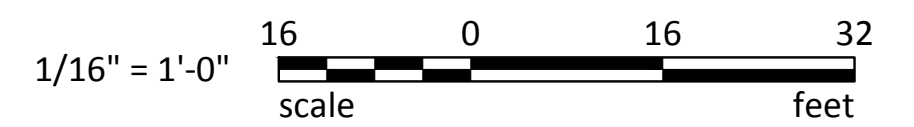
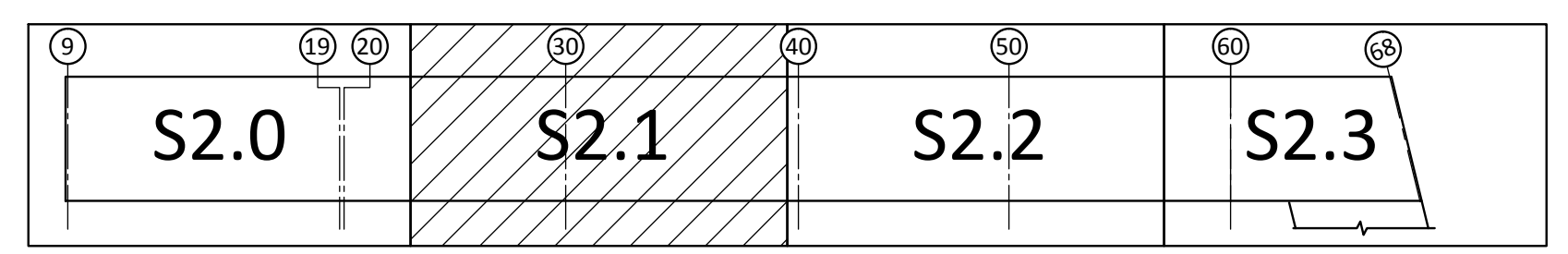
**LEGEND:**

- |  |                            |  |                            |
|--|----------------------------|--|----------------------------|
|  | CRANE STOP                 |  | WATER VAULT                |
|  | CRANE POWER VAULT          |  | POWER VAULT                |
|  | FENDER                     |  | BURIED WATER               |
|  | BOLLARD                    |  | BURIED POWER               |
|  | LADDER                     |  | BURIED ELECTRICAL (GROUND) |
|  | PIN SOCKET                 |  | STORM DRAIN                |
|  | TREATED TIMBER FENDER PILE |  | APPROXIMATE DEMO LIMITS    |
|  | ELECTRICAL PULL BOX        |  |                            |

**GENERAL NOTES:**

- FOR UPLAND UTILITIES, SEE C-SERIES DWGS.
- EXISTING ACP AND BALLAST NOT SHOWN. FOR TYPICAL ACP & BALLAST DEMO DETAILS, SEE DWG S2.9. FOR APPROX EXTENT OF ACP DEMO SEE C4.0 TO C4.2

**KEY PLAN:**



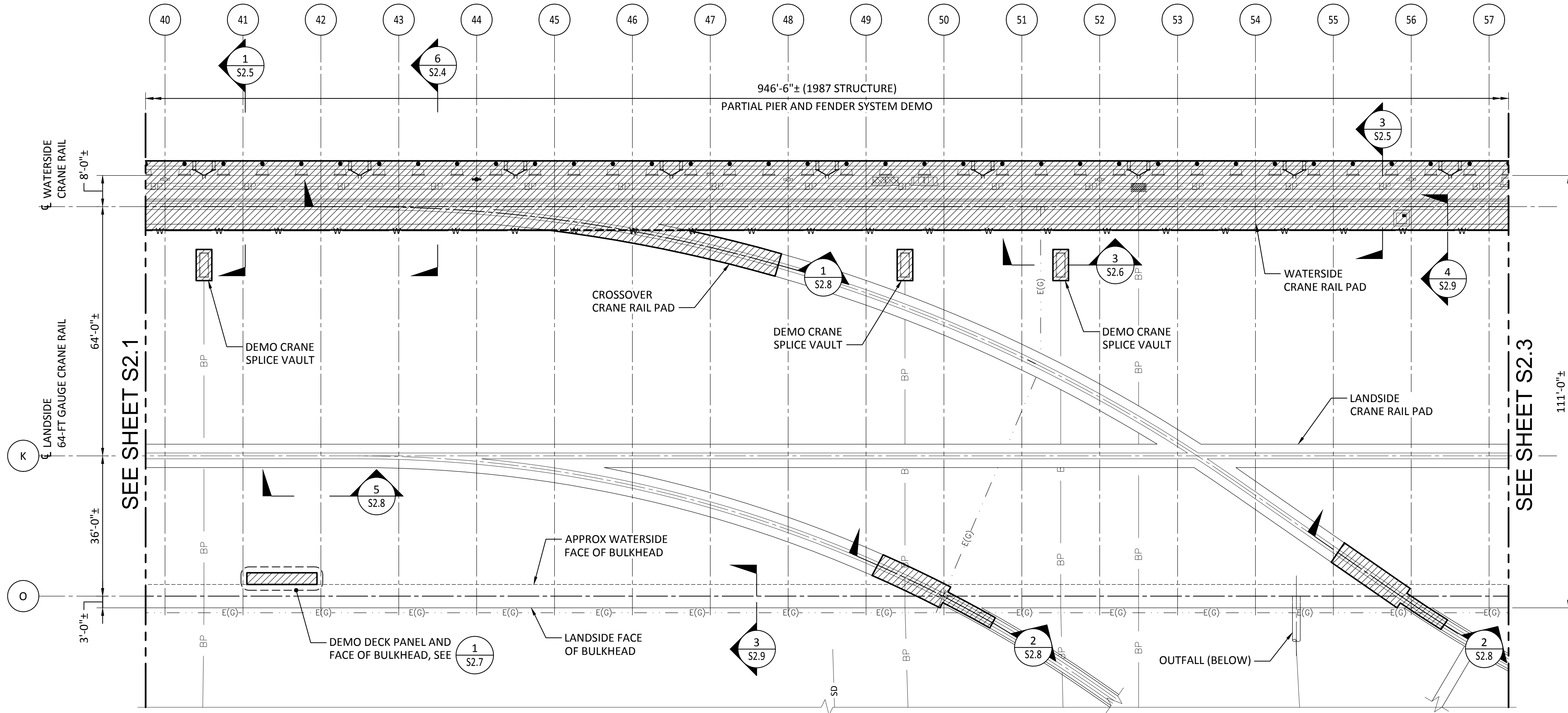
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	REVISION: _____ APPR: _____
 P.O. BOX 1887 TACOMA, WA 98401-0887	
APPROVED: _____ DC 7/17/13 DIR OF ENG jason.mendenhall PRINTED BY: jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	CSB 7/17/13 CHECKED BY: JRG PROJ. ENGR: jason.mendenhall DATE: 7/17/13
<b>PIER 3 UPGRADE</b> <b>DEMOLITION PLAN</b> <b>SHEET 2</b>	RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N NOS TIDAL (MILLW = 0.0) DAT-HRZ: NAD 83-07 VERT: AS SHOWN DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S2.1</b> SHEET 35 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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BINDING EDGE

Last Saved by: Jason.mendenthal on: Mar 23, 2015 5:09 PM File: Q:\FederalWay\2012\FAVAT-12\991\CADD\Drawings\03\_S02.02.dwg



**1**  
-  
PLAN - DEMOLITION  
SCALE: 1/16" = 1'-0"

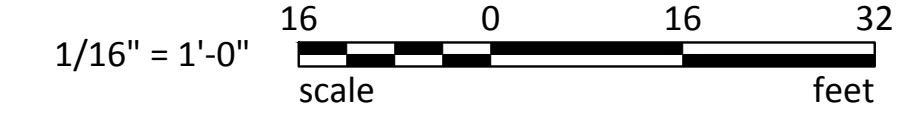
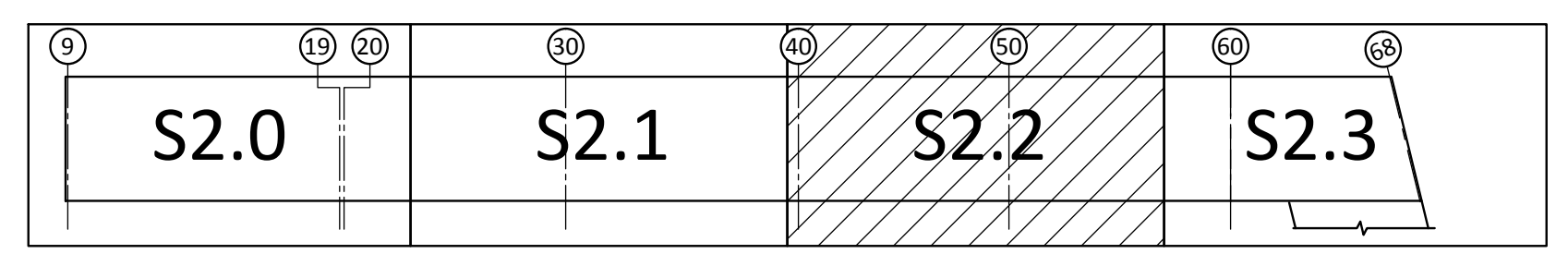
**LEGEND:**

- |  |                            |  |                            |
|--|----------------------------|--|----------------------------|
|  | CRANE STOP                 |  | WATER VAULT                |
|  | CRANE POWER VAULT          |  | POWER VAULT                |
|  | FENDER                     |  | BURIED WATER               |
|  | BOLLARD                    |  | BURIED POWER               |
|  | LADDER                     |  | BURIED ELECTRICAL (GROUND) |
|  | PIN SOCKET                 |  | STORM DRAIN                |
|  | TREATED TIMBER FENDER PILE |  | APPROXIMATE DEMO LIMITS    |
|  |                            |  | ELECTRICAL PULL BOX        |

**GENERAL NOTES:**

- FOR UPLAND UTILITIES, SEE C-SERIES DWGS.
- EXISTING ACP AND BALLAST NOT SHOWN. FOR TYPICAL ACP & BALLAST DEMO DETAILS, SEE DWG S2.9. FOR APPROX EXTENT OF ACP DEMO SEE C4.0 TO C4.2

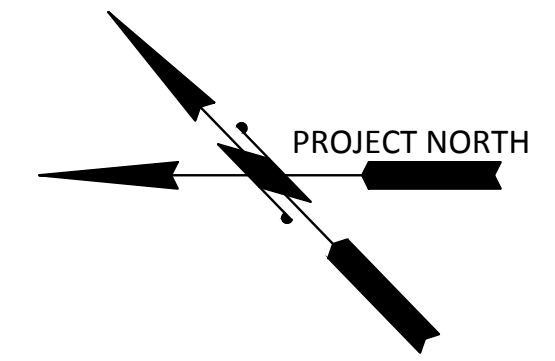
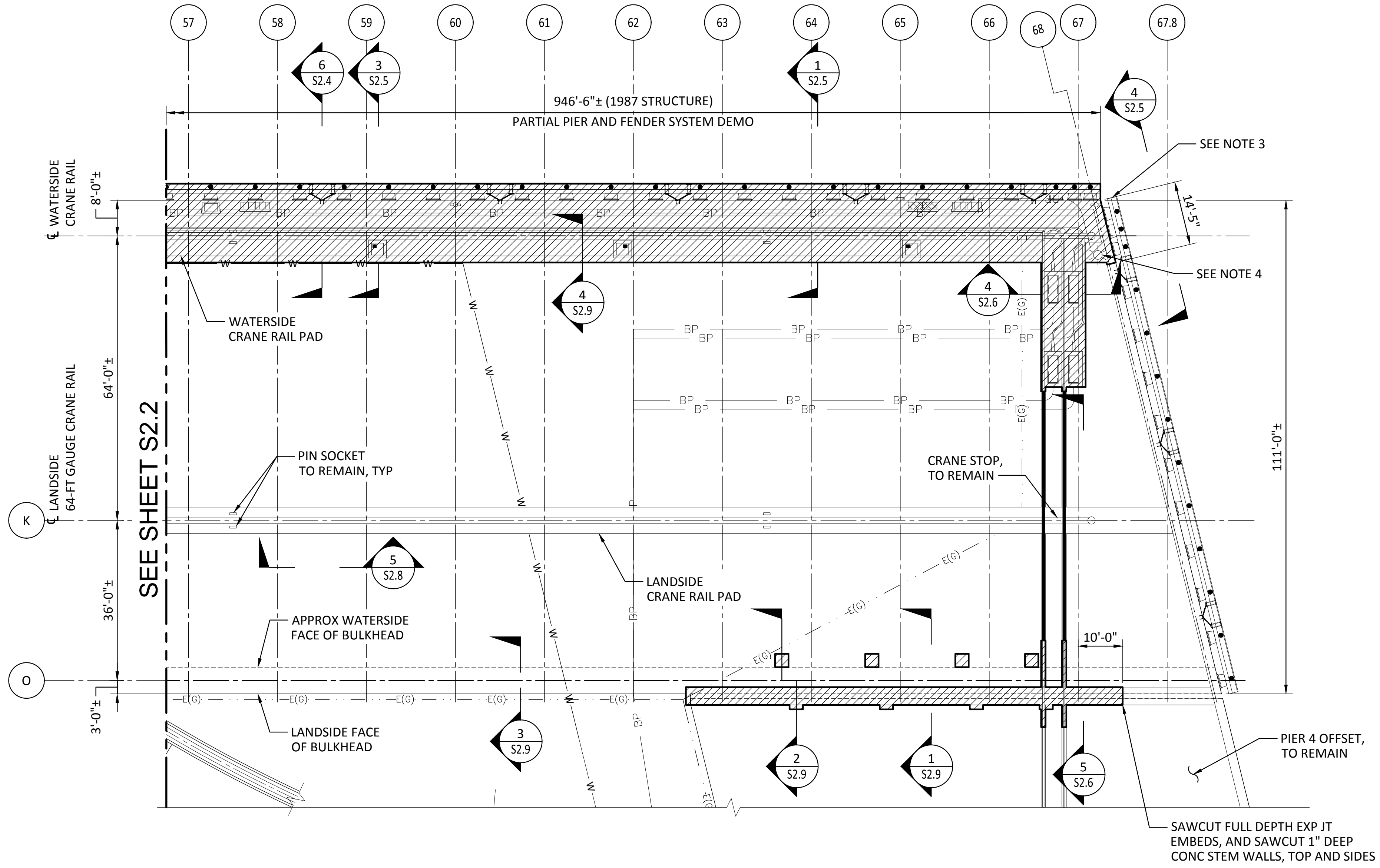
**KEY PLAN:**



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 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ DATE: _____
	REVISION: _____ MARK: _____
 P.O. BOX 1887 TACOMA, WA 98401 (206) 835-8441	
CSB 7/17/13 CHECKED BY: JRG DIR OF ENG: Jason.mendenthal PRINTED BY: JASON.MENDENTHAL PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13
<b>PIER 3 UPGRADE</b> DEMOLITION PLAN SHEET 3	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S2.2</b> SHEET 36 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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**1**  
PLAN - DEMOLITION  
SCALE: 1/16" = 1'-0"

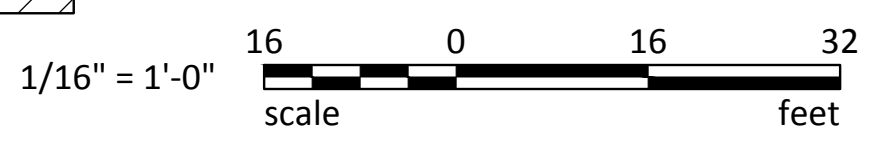
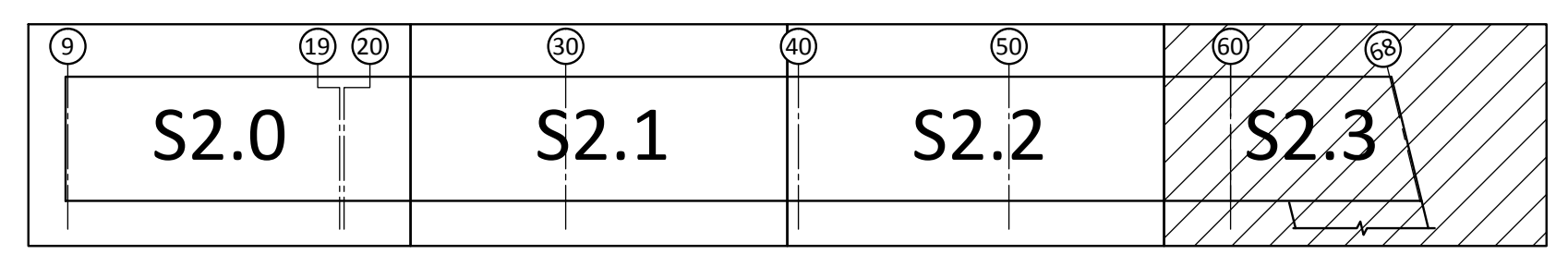
**LEGEND:**

- |  |                            |  |                            |
|--|----------------------------|--|----------------------------|
|  | CRANE STOP                 |  | WATER VAULT                |
|  | CRANE POWER VAULT          |  | POWER VAULT                |
|  | FENDER                     |  | BURIED WATER               |
|  | BOLLARD                    |  | BURIED POWER               |
|  | LADDER                     |  | BURIED ELECTRICAL (GROUND) |
|  | PIN SOCKET                 |  | STORM DRAIN                |
|  | TREATED TIMBER FENDER PILE |  | APPROXIMATE DEMO LIMITS    |

**GENERAL NOTES:**

- FOR UPLAND UTILITIES, SEE C-SERIES DWGS.
- EXISTING ACP AND BALLAST NOT SHOWN. FOR TYPICAL ACP & BALLAST DEMO DETAILS, SEE DWG S2.9. FOR APPROX EXTENT OF ACP DEMO SEE C4.0 TO C4.2
- DETACH FENDER SYSTEM AS REQUIRED AND LEAVE INTACT. SALVAGE ALL FENDERS AND HARDWARE FOR RE-INSTALLATION.
- SALVAGE HIGH MAST LIGHT FOR REINSTALLATION.

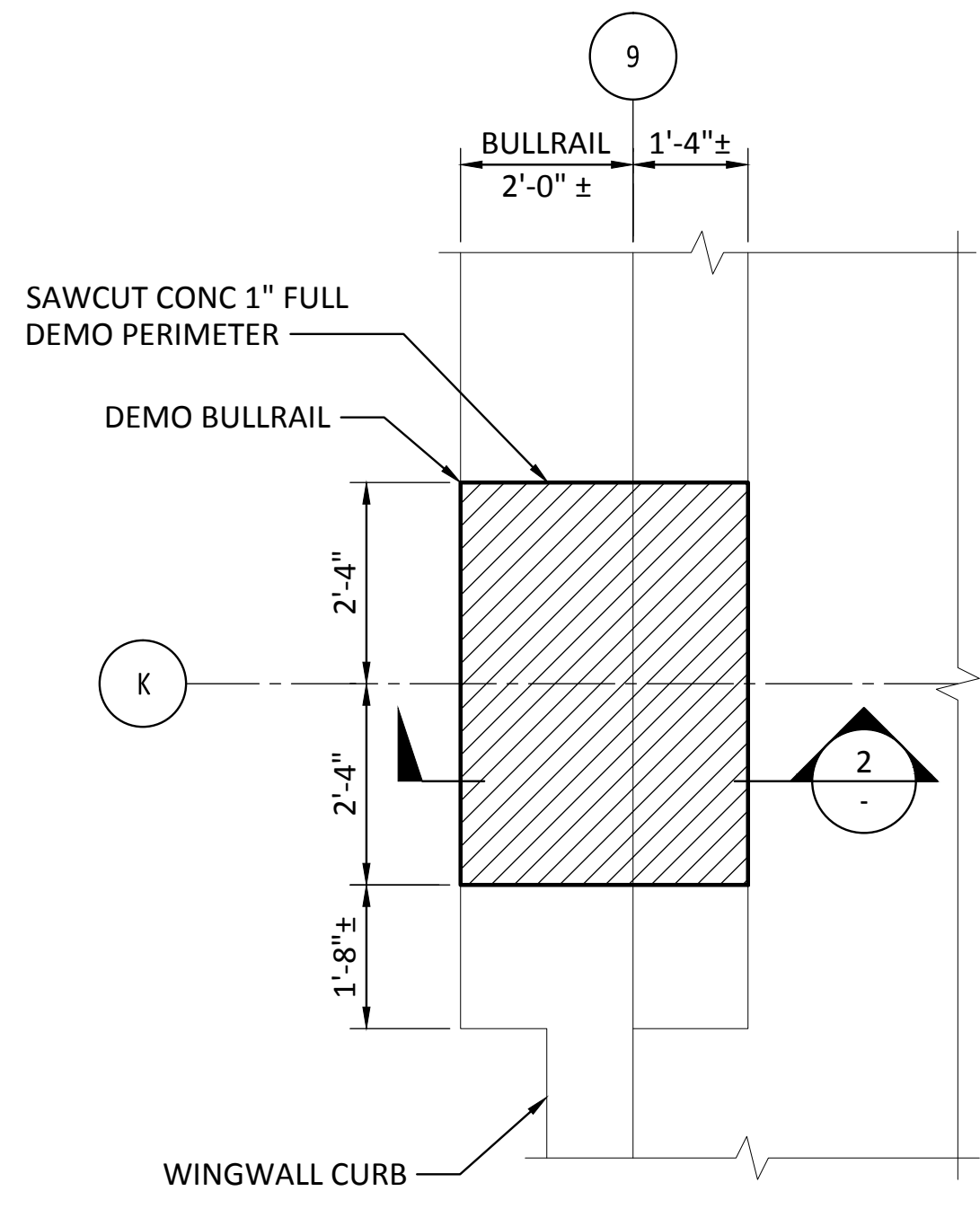
**KEY PLAN:**



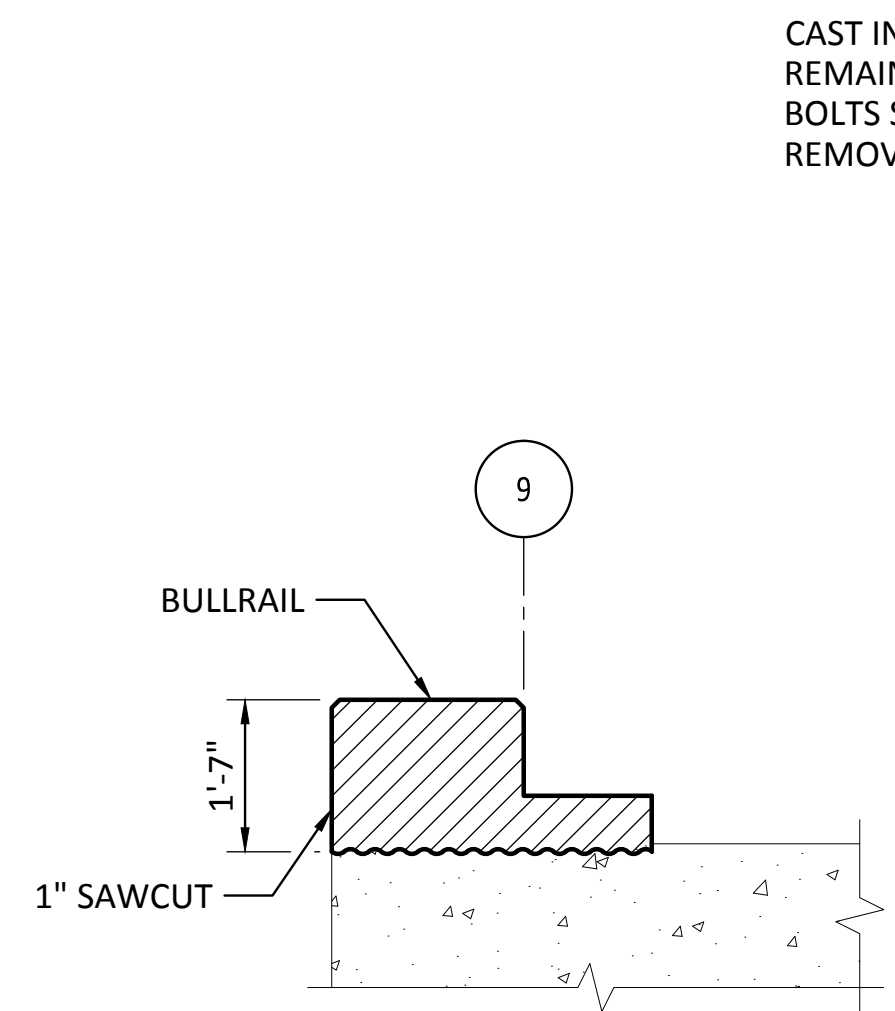
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	APPR: _____ DATE: _____
 P.O. BOX 1877 TACOMA, WA 98401 (206) 885-8841	REVISION: _____ MARK: _____
CSB CHECKED BY: JRG DATE: 7/17/13	DATE: 7/17/13
APPROVED: DC DIR OF ENG: JASON MENDENTHAL PRINTED BY: JASON MENDENTHAL PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	
<b>PIER 3 UPGRADE</b> DEMOLITION PLAN SHEET 4	
6502 <b>S2.3</b> SHEET 37 OF 129	
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 NOS TIDAL (MLLW = 0.0) DAT-HRZ: NAD 83-07 VERT: AS SHOWN DRAWING SCALE: AS SHOWN

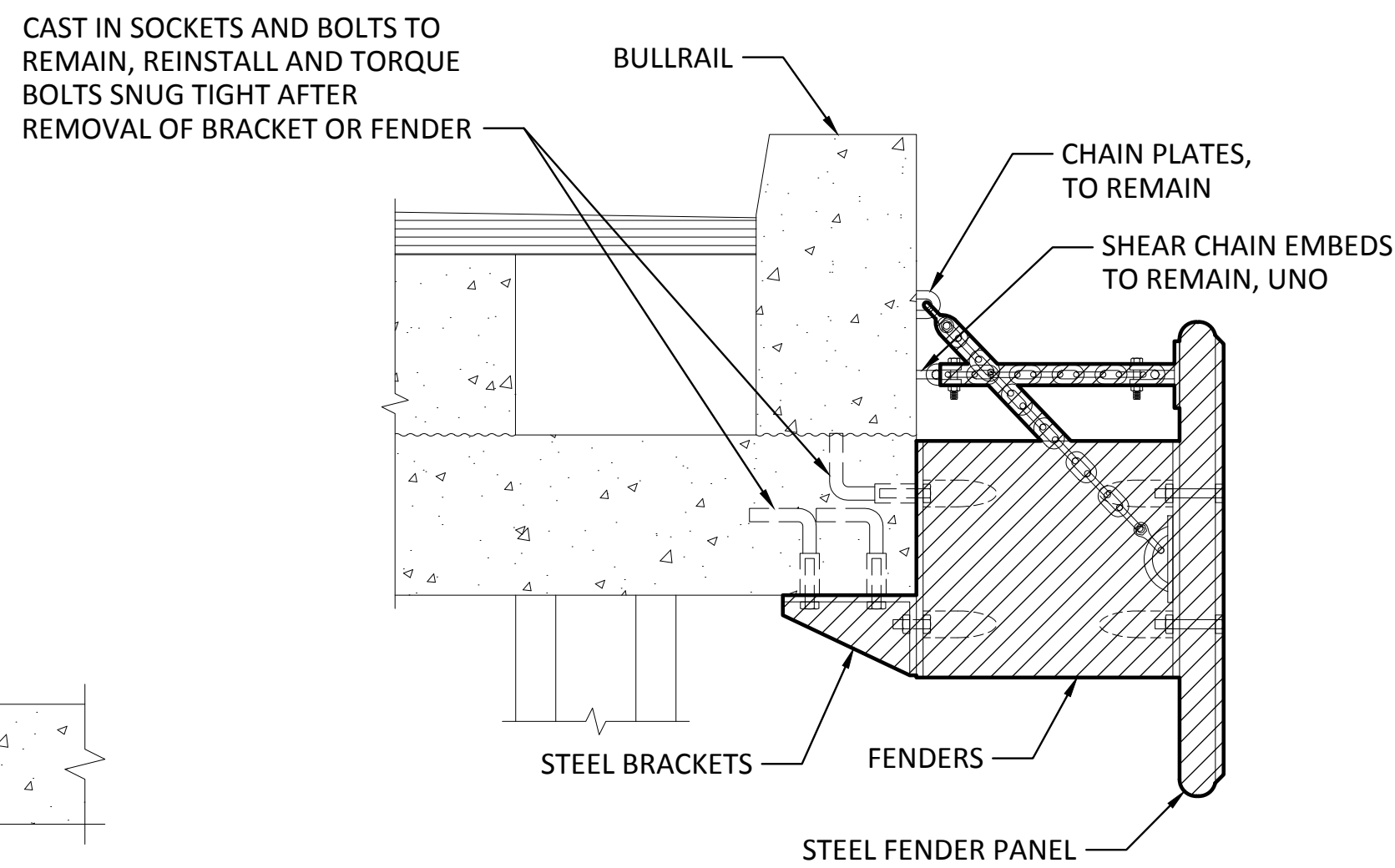
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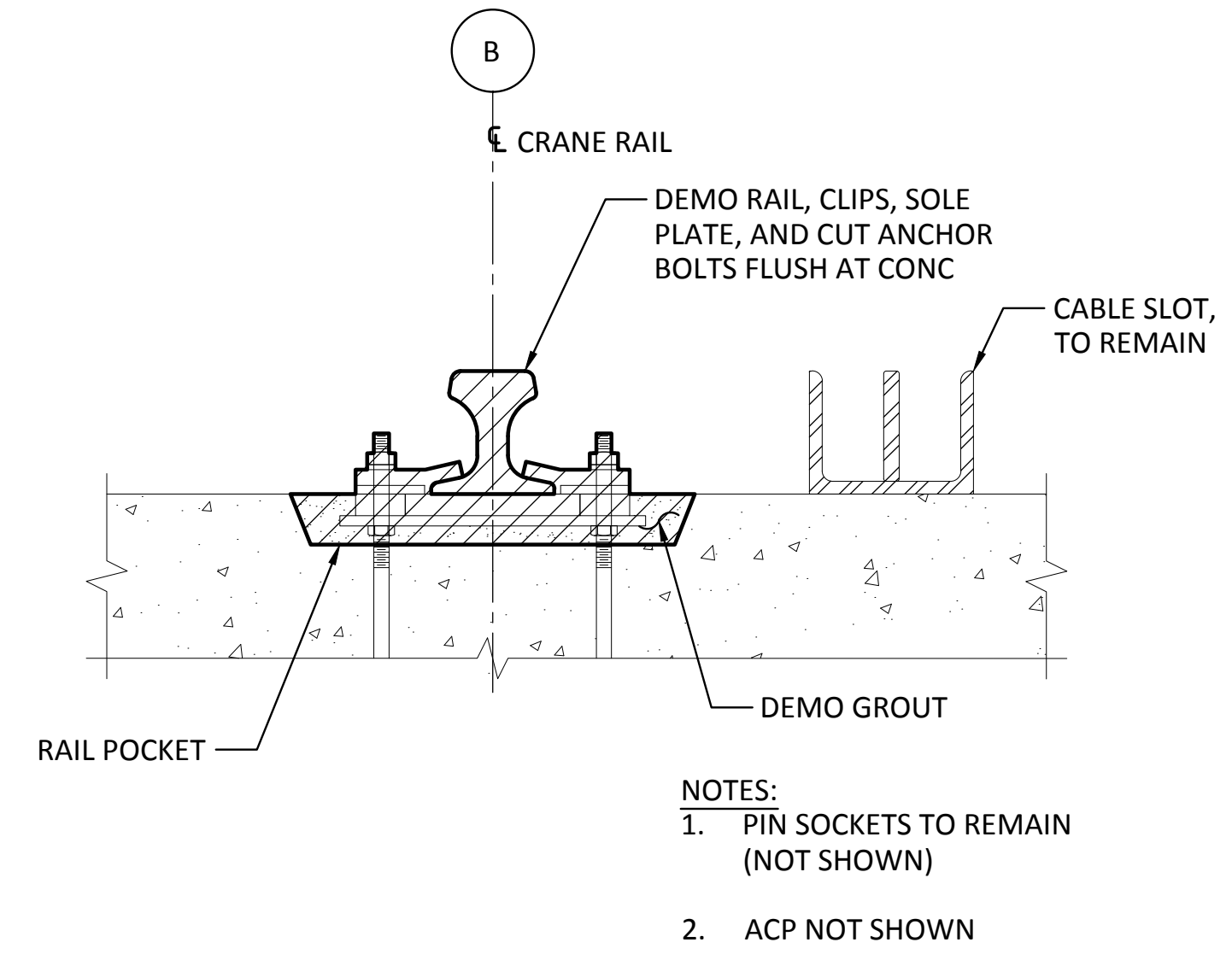
1 PLAN - BULLRAIL  
SCALE: 1/2"=1'-0"



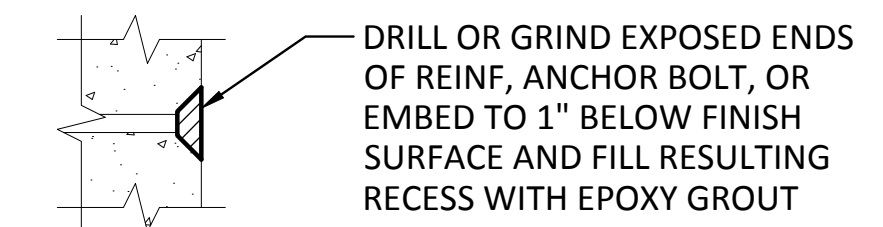
2 SECTION - BULLRAIL  
SCALE: 1/2"=1'-0"



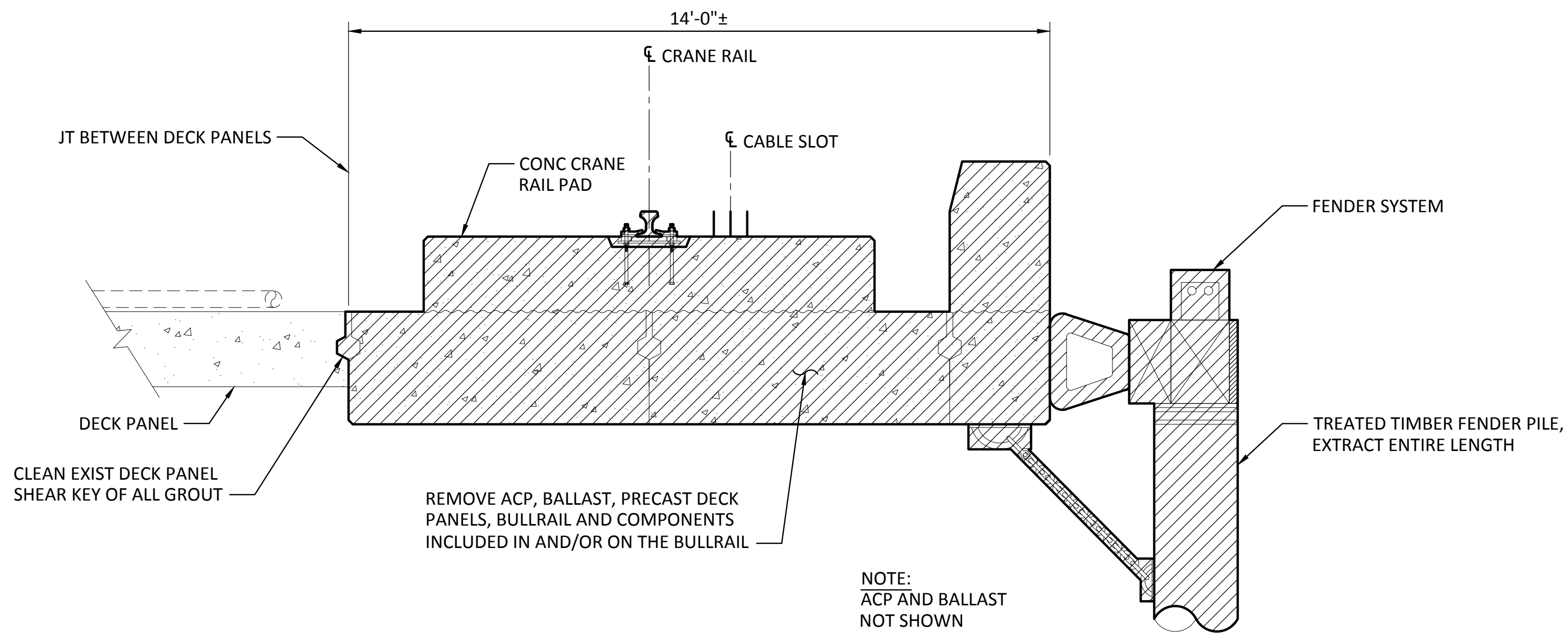
3 ELEVATION - FENDER ASSEMBLY  
SCALE: 1/2"=1'-0"



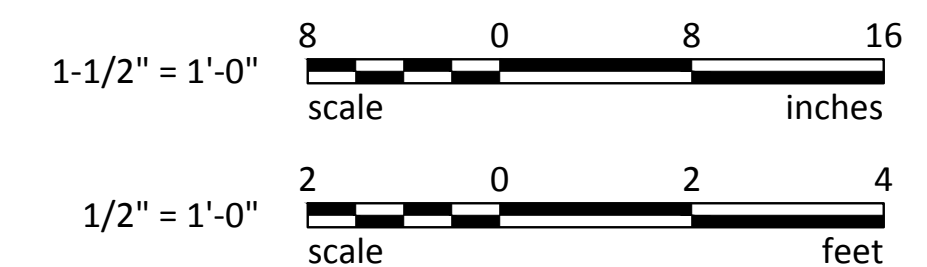
4 SECTION - WATERSIDE CRANE RAIL  
SCALE: 1 1/2" = 1'-0"  
2005 STRUCTURE



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



6 SECTION - TYP DEMO AT DECK  
SCALE: 1/2" = 1'-0"  
S2.1, S2.2, S2.3

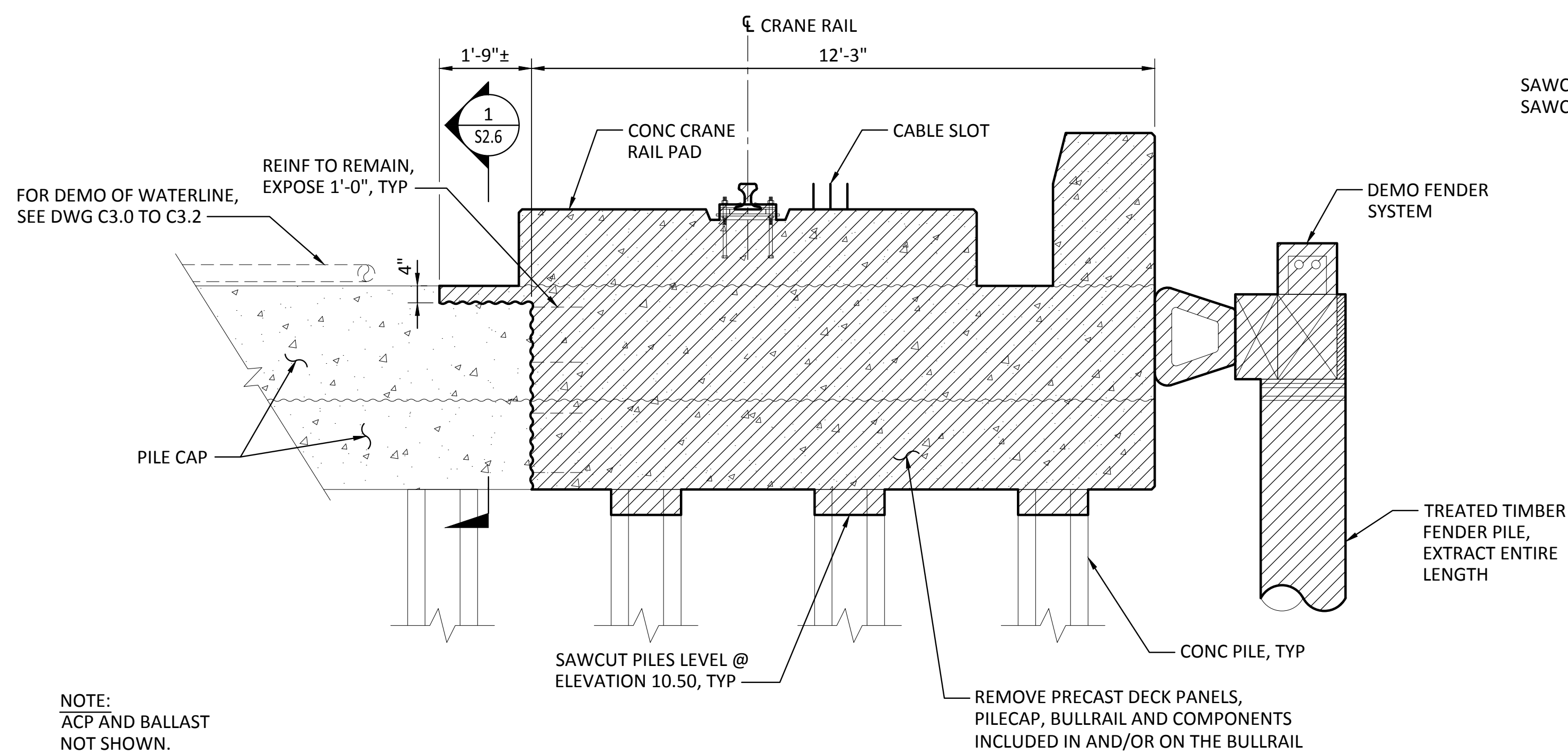


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PIER 3 UPGRADE			
DEMOLITION DETAILS			
SHEET 1			
TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN	
PARCEL: 27			

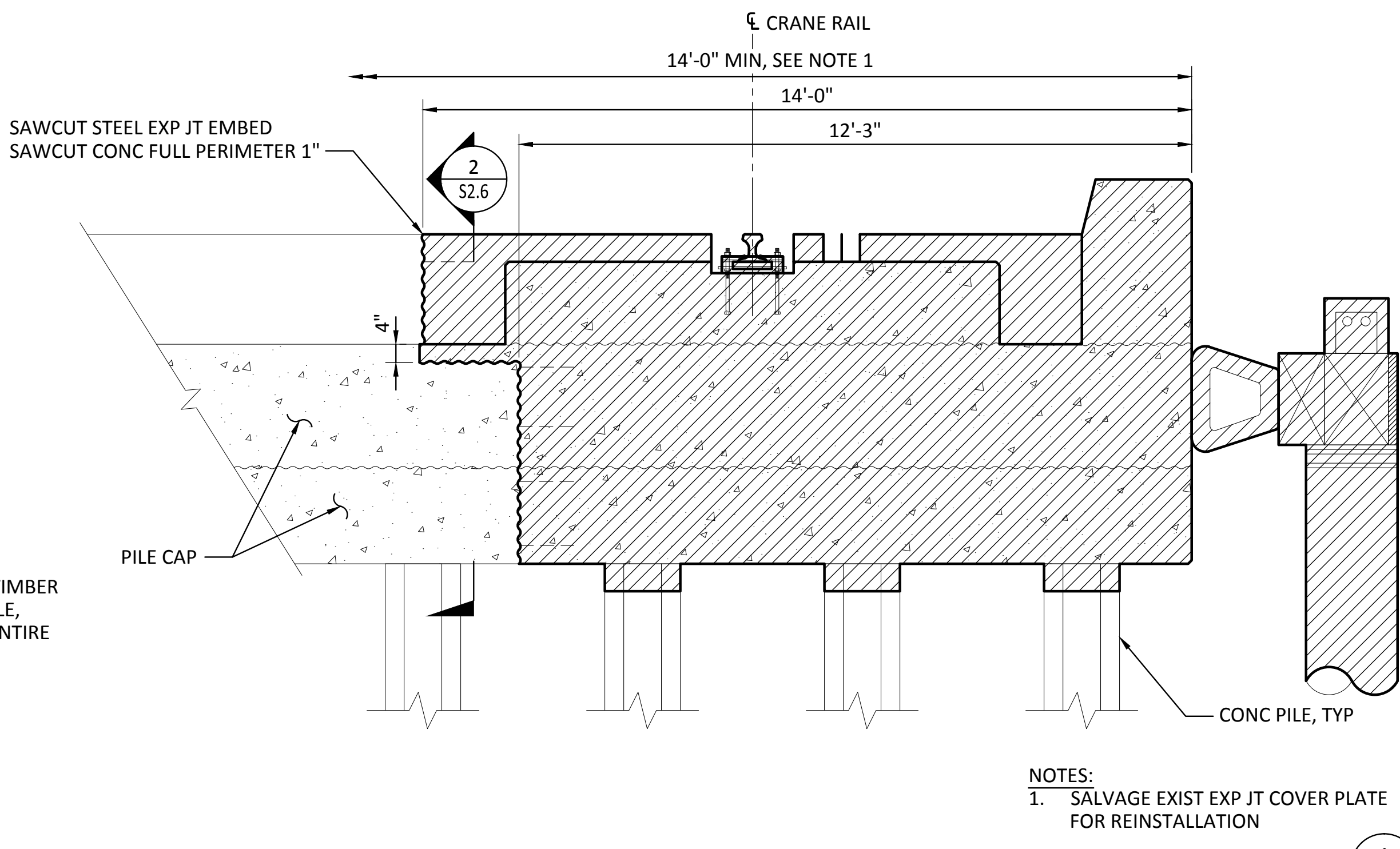
6502	<b>S2.4</b>
CONT/CONS: 069458	SHEET 38 OF 129
MASTER ID NO: 092935	
PHASE: RECORD DRAWINGS	

BINDING EDGE



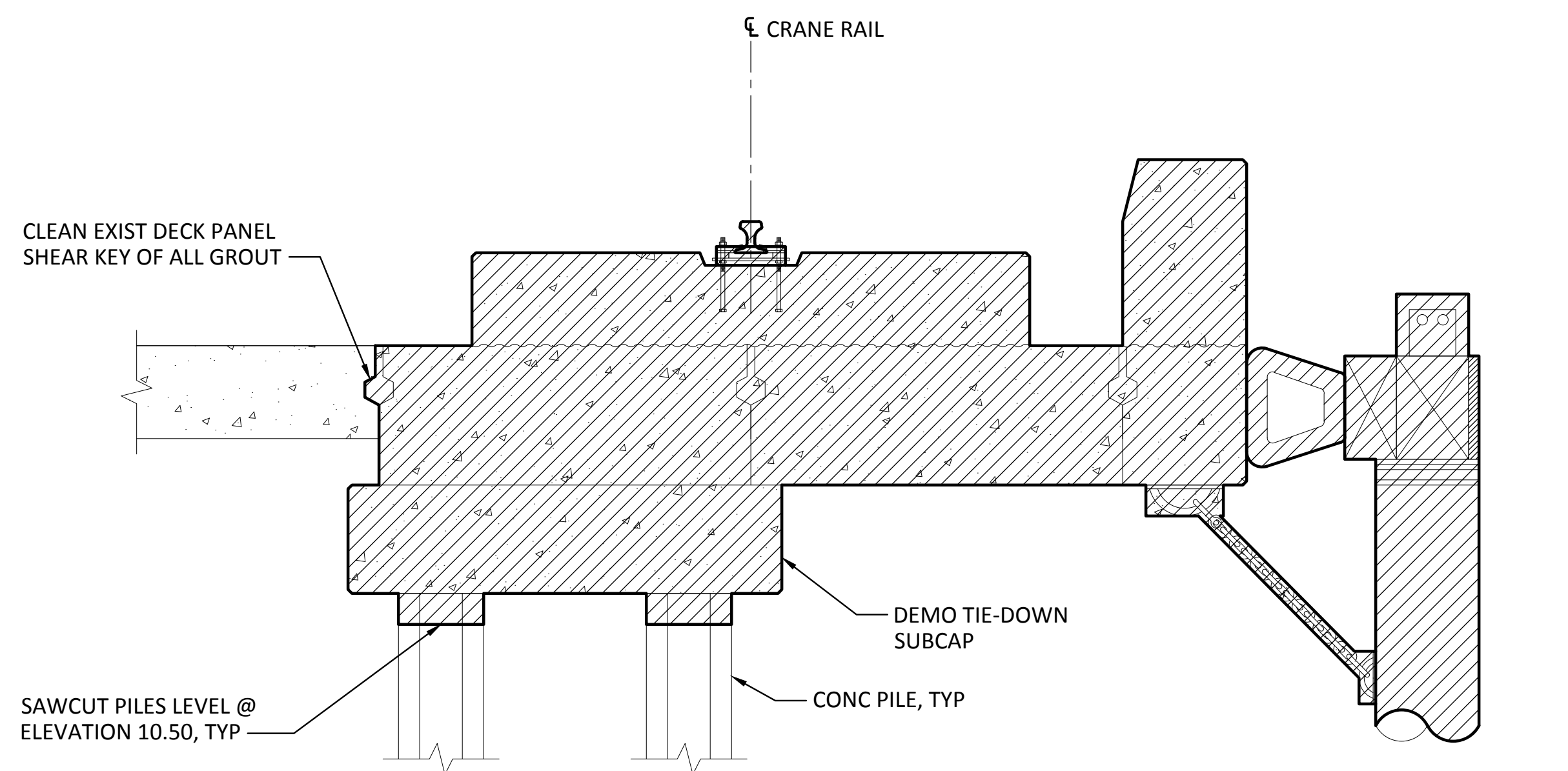
NOTE:  
ACP AND BALLAST  
NOT SHOWN.

**1** SECTION - DEMO AT TYP PILE CAP  
SCALE: 1/2" = 1'-0"  
S2.1, S2.2, S2.3



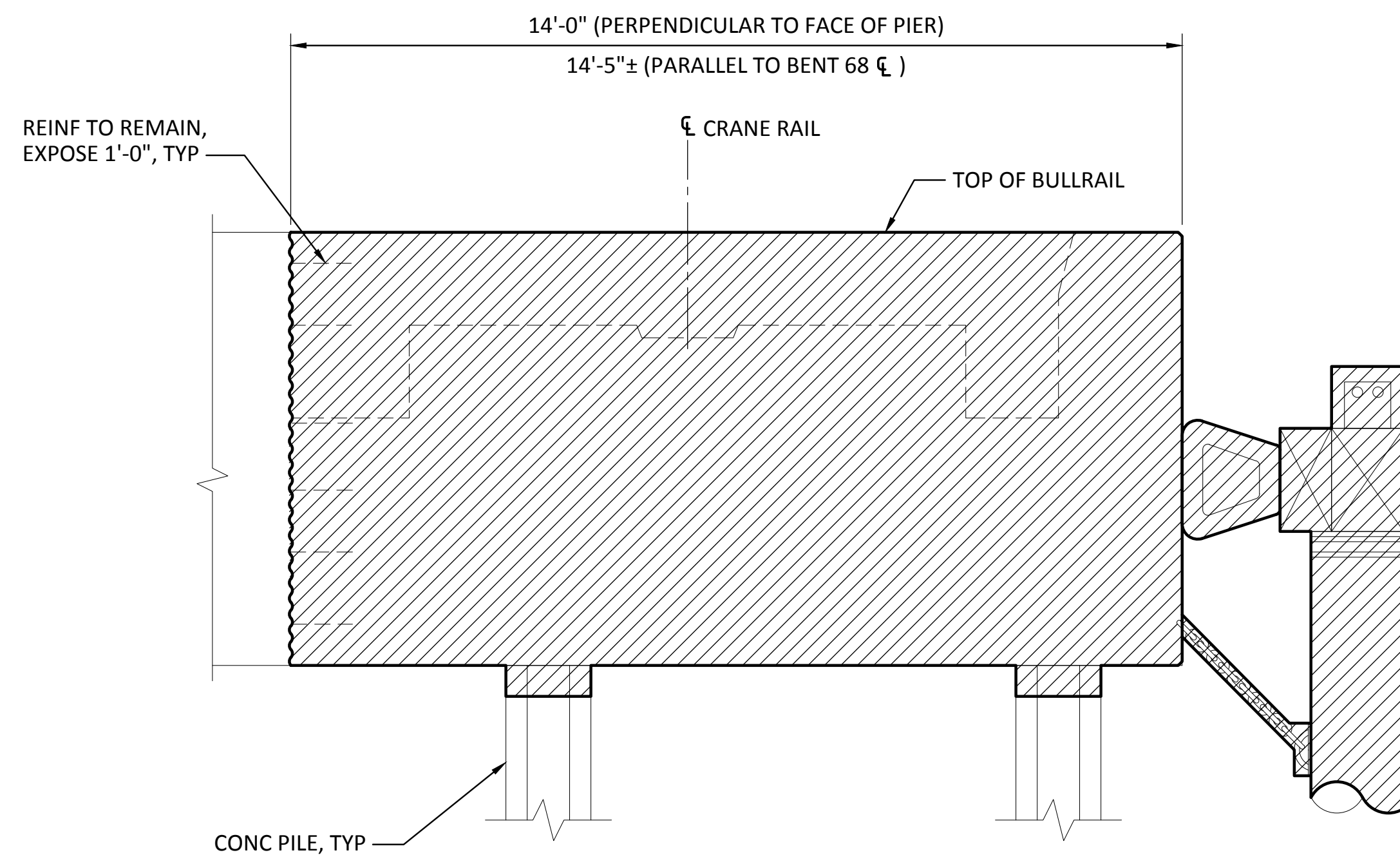
NOTES:  
1. SALVAGE EXIST EXP JT COVER PLATE FOR REINSTALLATION  
2. FOR DETAILS NOT SHOWN, SEE **1**

**2** SECTION - DEMO AT BENT 20  
SCALE: 1/2" = 1'-0"



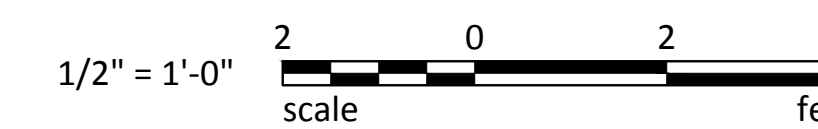
NOTE:  
FOR DETAILS NOT SHOWN, SEE **1**

**3** SECTION - DEMO AT TIE-DOWN  
SCALE: 1/2" = 1'-0"  
S2.1, S2.2, S2.3



NOTE:  
1. EXIST FENDER SYSTEM ON SOUTH FACE OF PIER 3 NOT SHOWN, TO REMAIN.  
2. FOR DETAILS NOT SHOWN, SEE **1**

**4** ELEVATION - DEMO AT BENT 68  
SCALE: 1/2" = 1'-0"

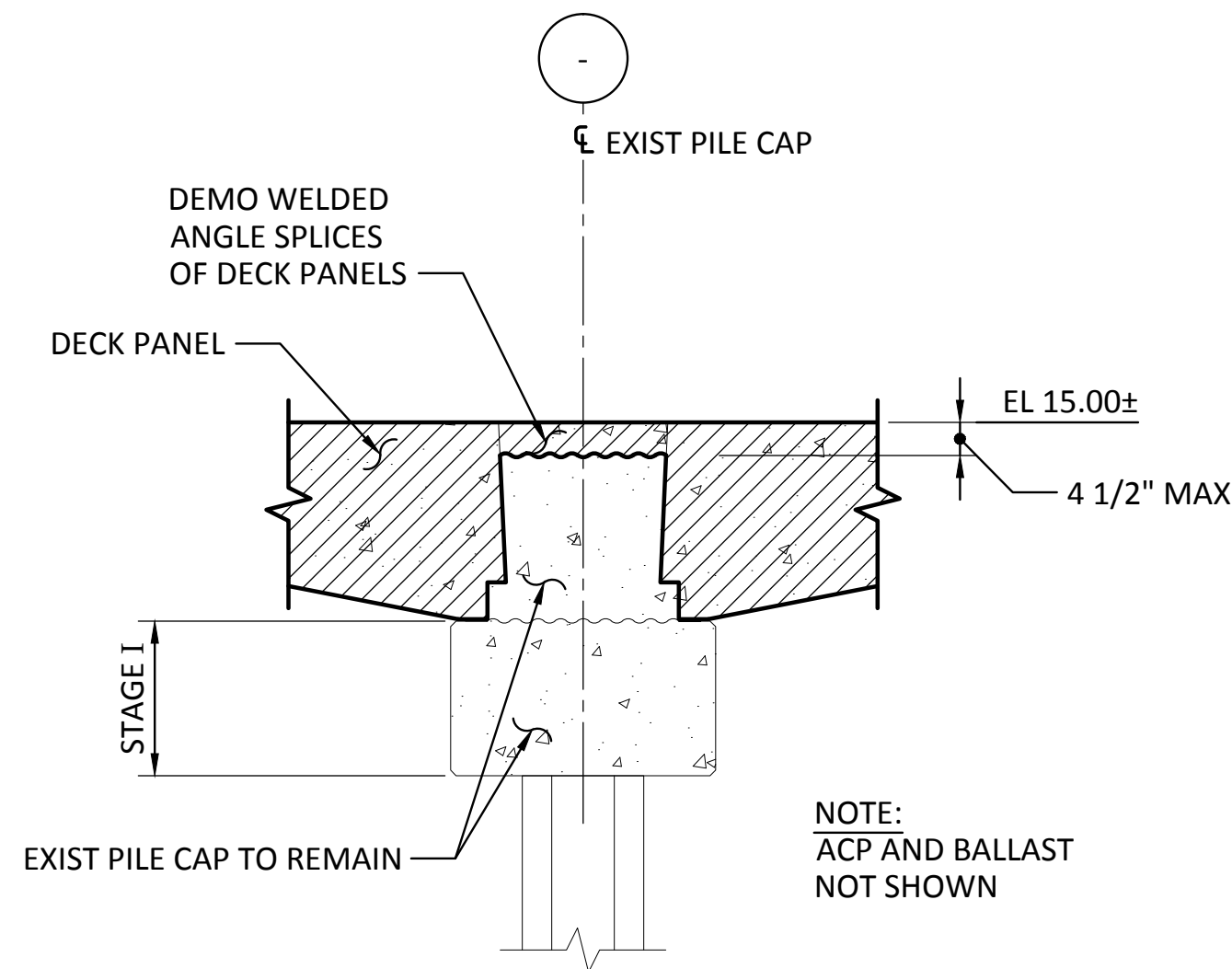


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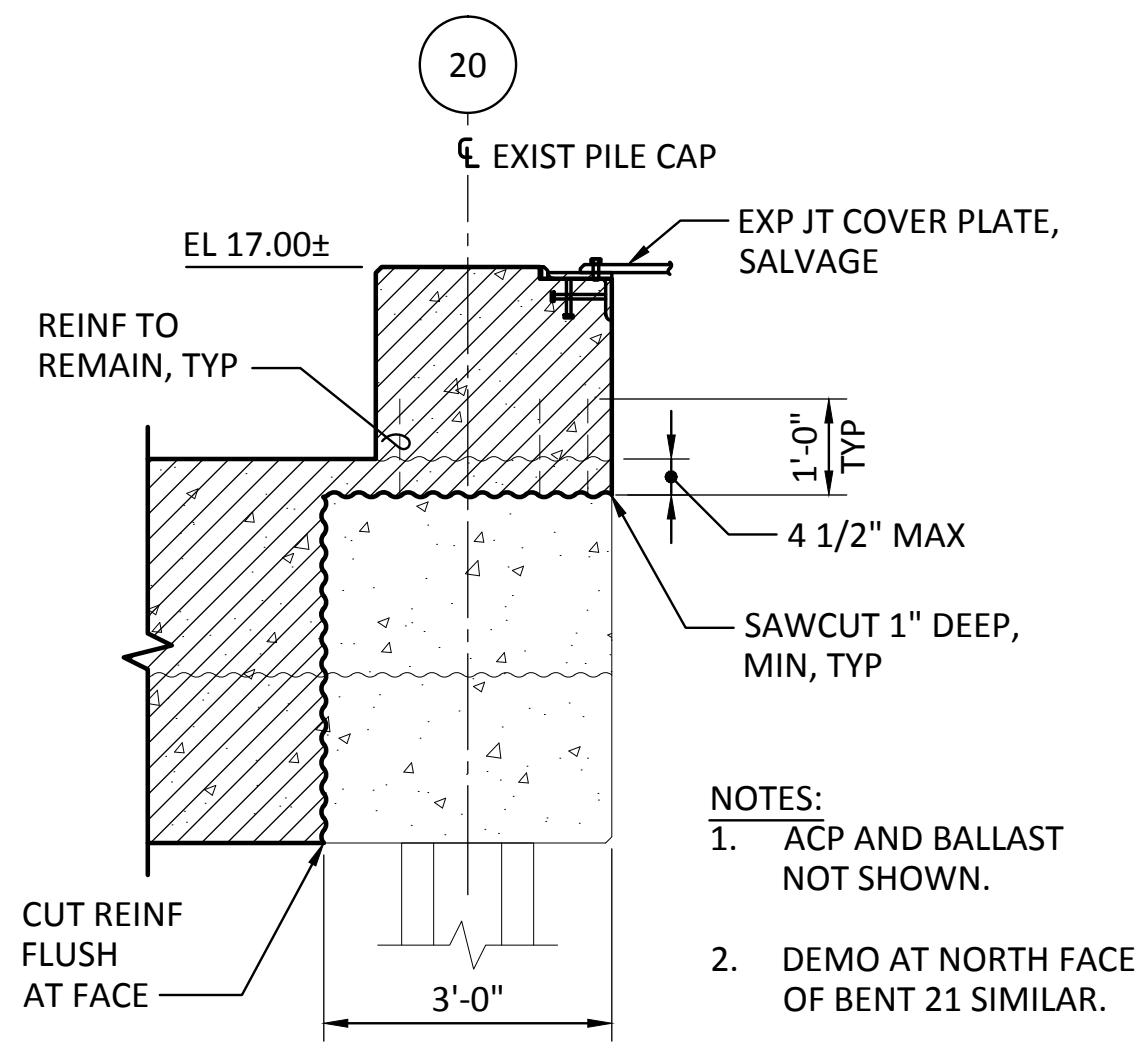
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	APPR:
 P.O. BOX 1887 TACOMA, WA 98401 (206) 841-1000	BY:
	REVISION:
	MARK:
	DATE:
CSB	7/17/13
CHECKED BY	DATE
JRG	7/17/13
PROJ. ENGR	DATE
jason.mendenhall	
PRINTED BY	
ONE SITCUM WAY	
TACOMA, WA 98421-2300	
APPROVED:	
DC	7/17/13
DIR OF ENG	DATE
PIER 3 UPGRADE	
DEMOLITION DETAILS	
SHEET 2	
RANGE: 3 E	SECTION: 27
TOWNSHIP: 21 N	
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)
PARCEL: 27	DRAWING SCALE: AS SHOWN
6502	
<b>S2.5</b>	
SHEET 39 OF 129	
CONT/CONS: 069458	
MASTER ID NO: 092935	
PHASE: RECORD DRAWINGS	

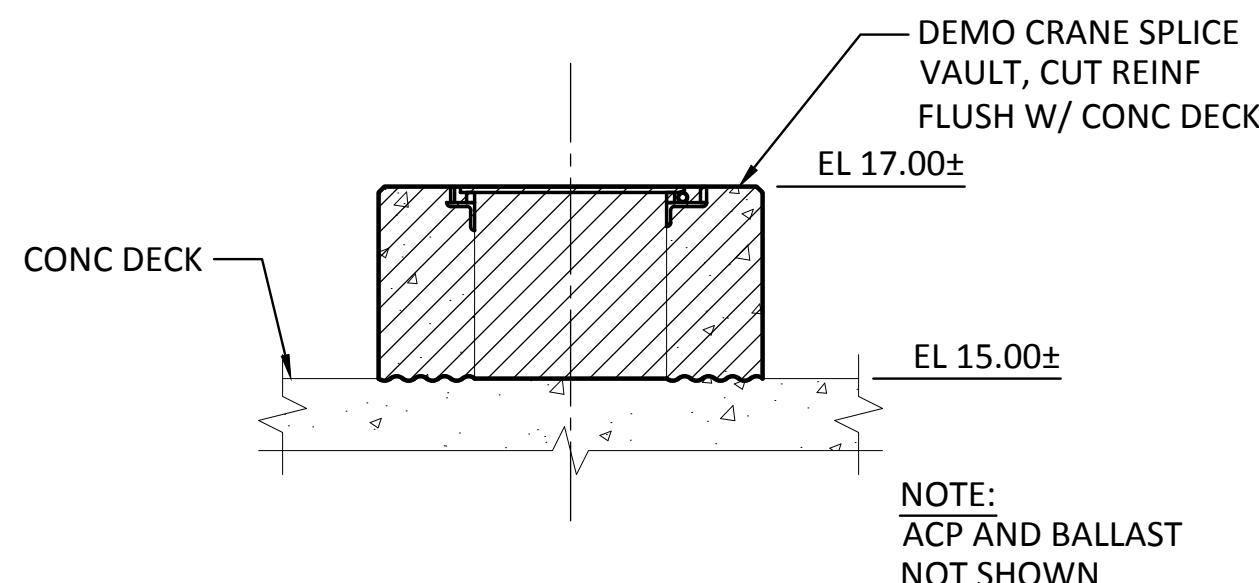
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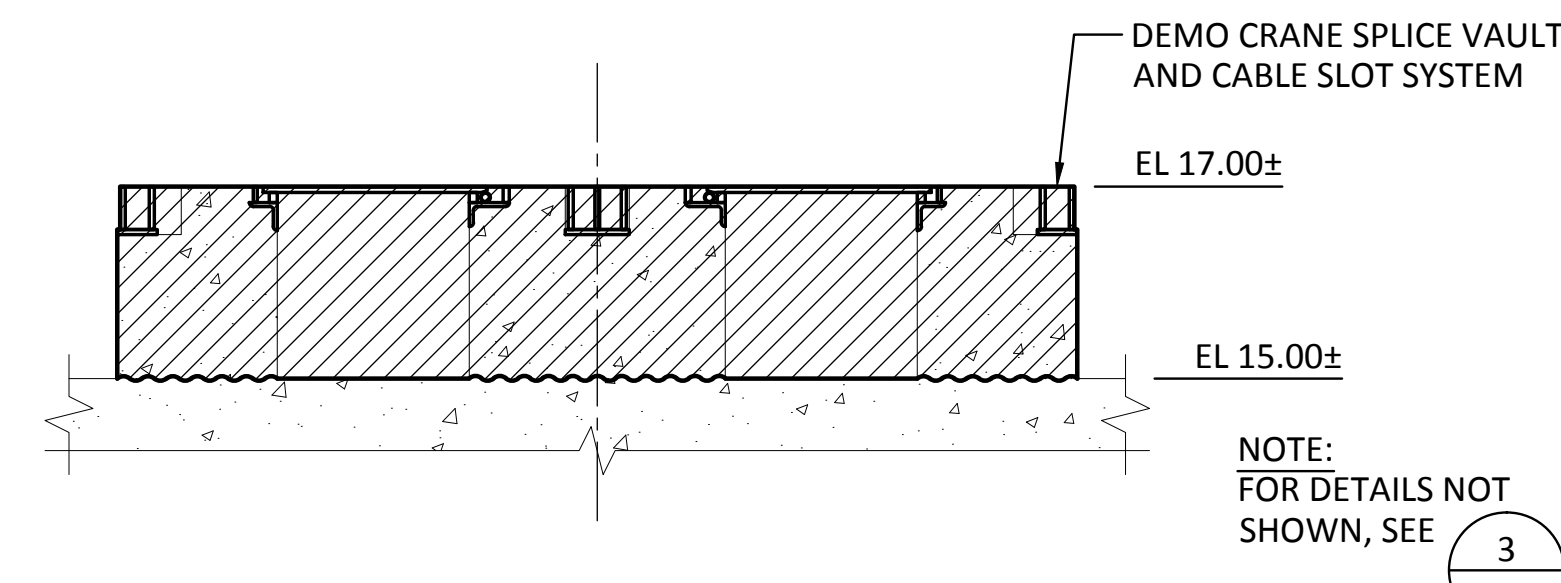
1 SECTION - PILE CAP  
S2.5 SCALE: 1/2" = 1'-0"



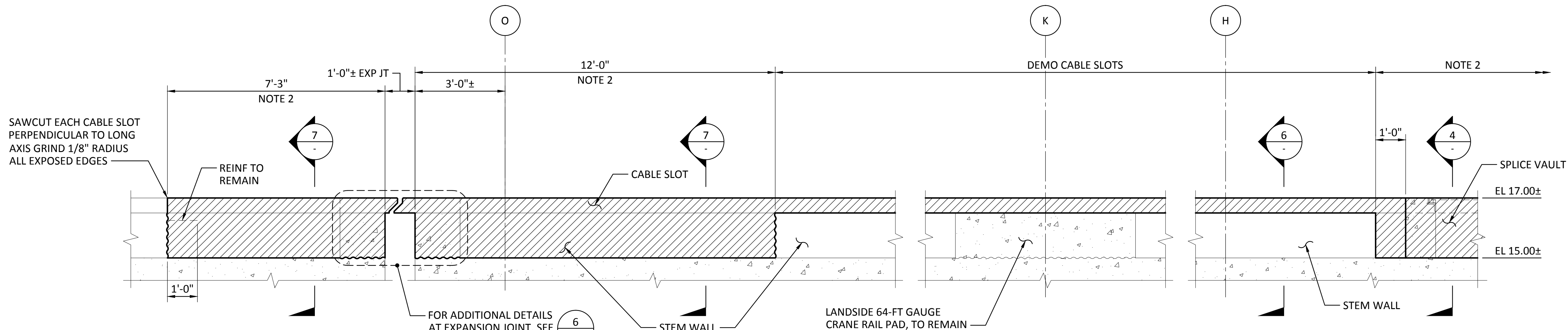
2 SECTION - BENT 20  
S2.5 SCALE: 1/2" = 1'-0"



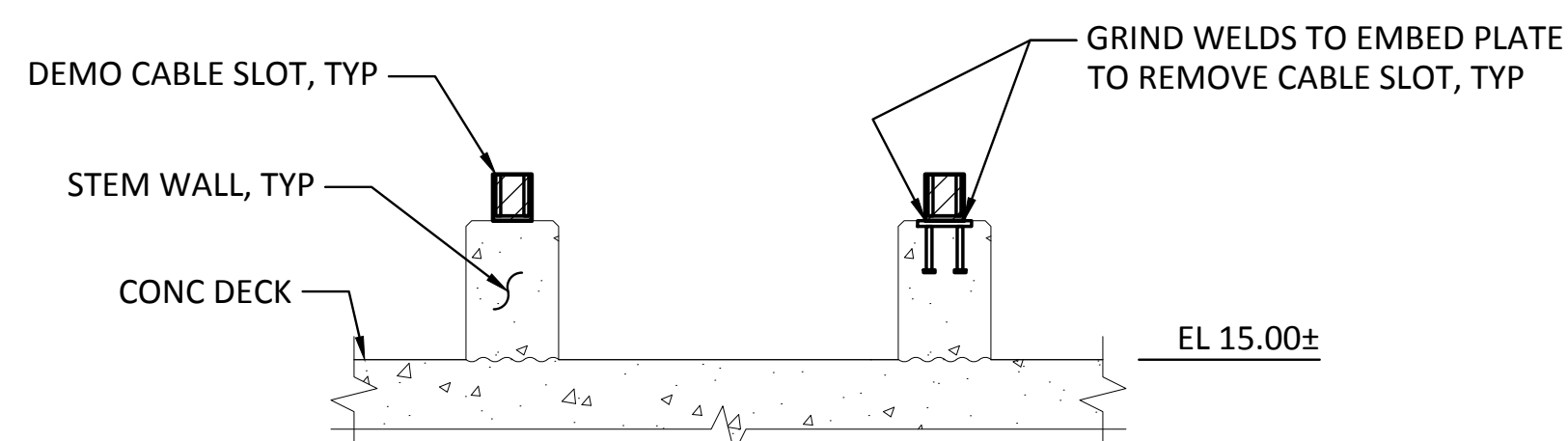
3 SECTION - CRANE SPLICE VAULT  
S2.1 SCALE: 1/2" = 1'-0"  
S2.2



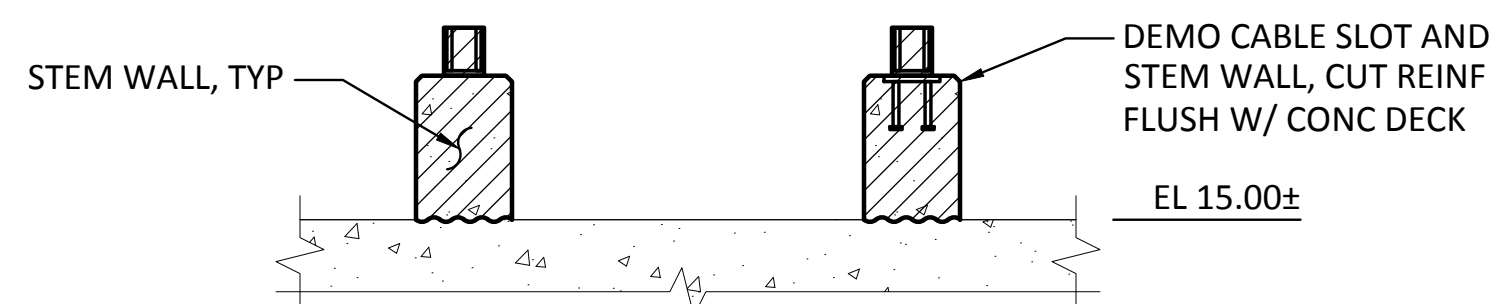
4 SECTION - CRANE SPLICE VAULTS  
S2.3 SCALE: 1/2" = 1'-0"



5 SECTION - CABLE SLOT CROSSOVER  
S2.3 SCALE: 1/2" = 1'-0"

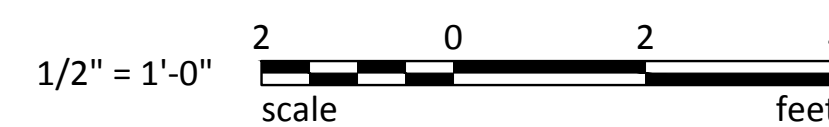


6 SECTION - CABLE SLOT  
SCALE: 1/2" = 1'-0"



7 SECTION - CABLE SLOT W/ WALL  
SCALE: 1/2" = 1'-0"

- NOTES:  
1. ACP AND BALLAST NOT SHOWN.  
2. DEMO CABLE SLOT AND SUPPORTING STEM WALL TO EL 15.0±.

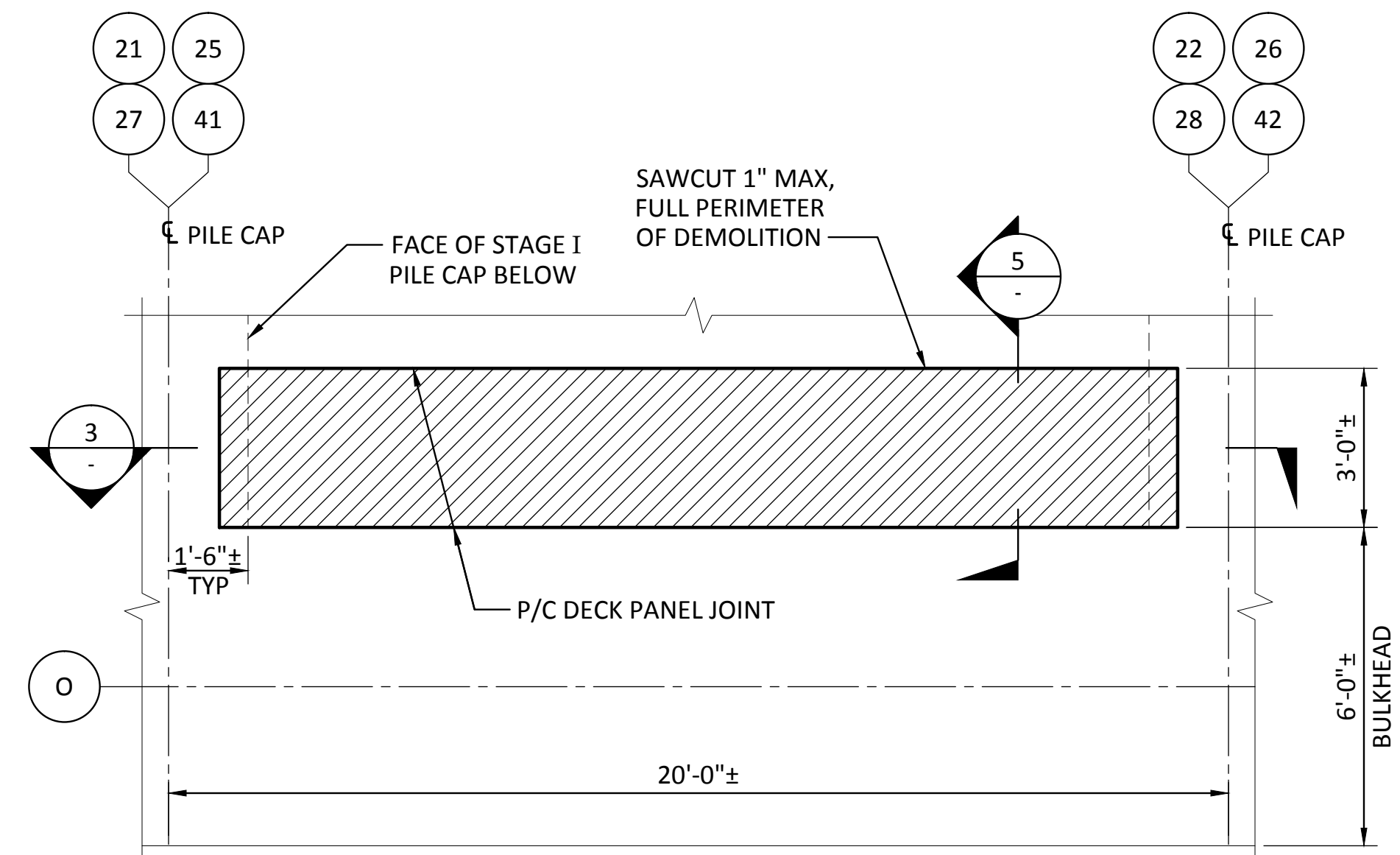


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	APPR:
 P.O. BOX 1887 TACOMA, WA 98401 (206) 835-8441	BY:
	REVISION:
 JASON MENDENHALL PROFESSIONAL ENGINEER STATE OF WASHINGTON NO. 27006	MARK:
	DATE:
CSB 7/17/13 CHECKED BY: JRG PROJ. ENGR: jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13 DATE: 7/17/13
APPROVED: DC 7/17/13 DIR OF ENG: jason.mendenhall PRINTED BY: jason.mendenhall TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PHASE: RECORD DRAWINGS PARCEL: 27 DRAWING SCALE: AS SHOWN	APPROVED: DC 7/17/13 DIR OF ENG: jason.mendenhall PRINTED BY: jason.mendenhall TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PHASE: RECORD DRAWINGS PARCEL: 27 DRAWING SCALE: AS SHOWN
6502 <b>S2.6</b> SHEET 40 OF 129	PIER 3 UPGRADE DEMOLITION DETAILS SHEET 3

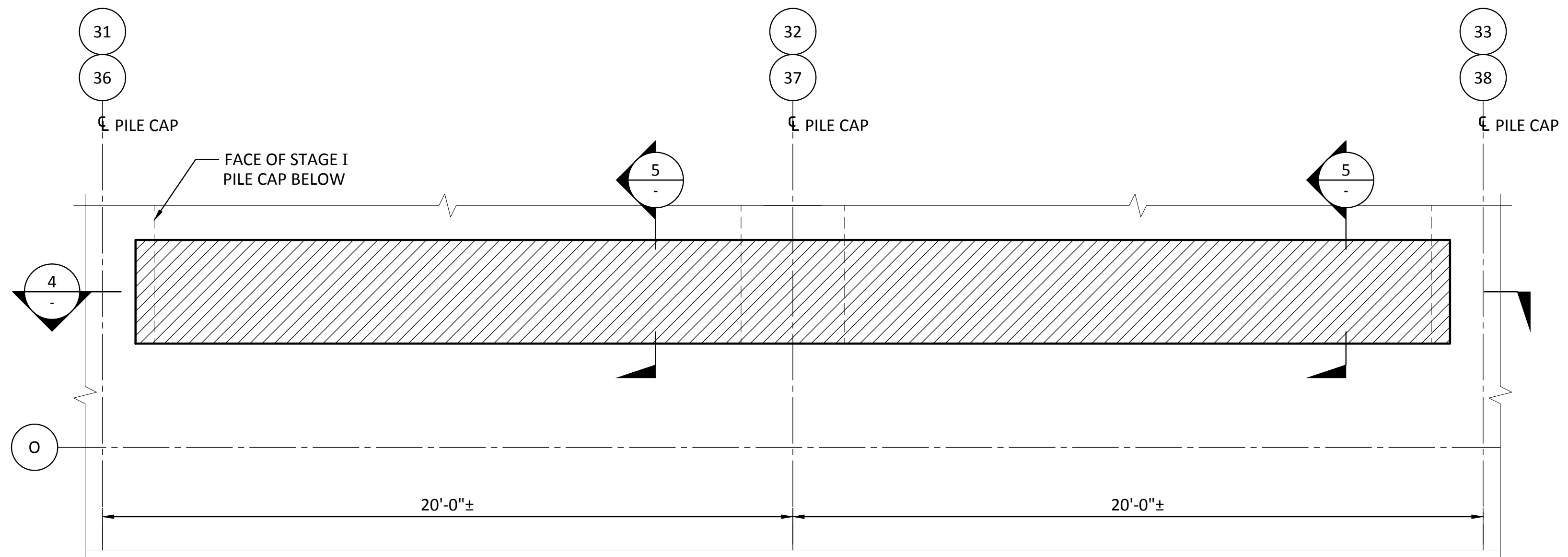


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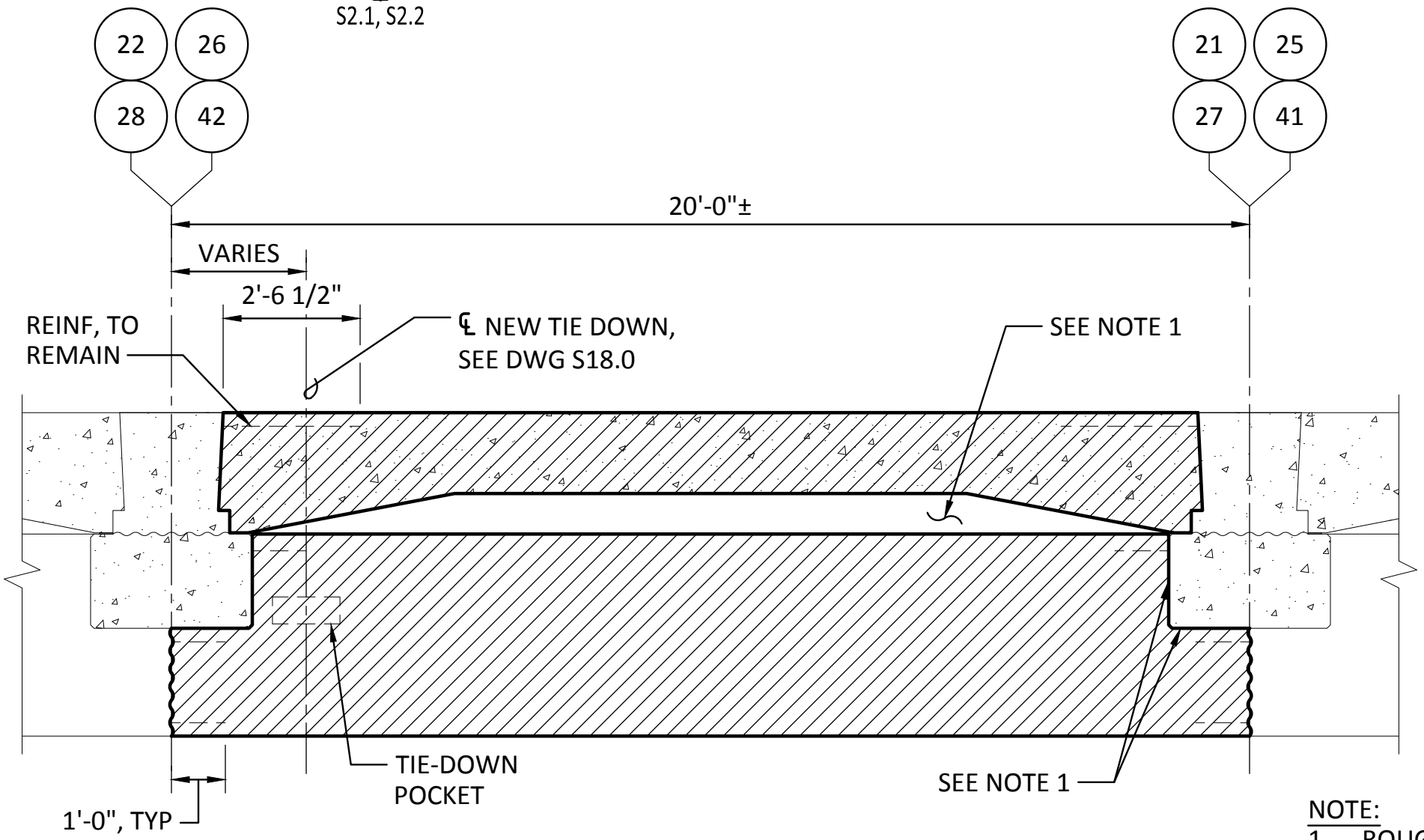
NOTE:  
ACP AND BALLAST  
NOT SHOWN

**1 PLAN - DEMO AT TIE-DOWNS**  
SCALE: 3/8" = 1'-0"  
S2.0, S2.1, S2.2



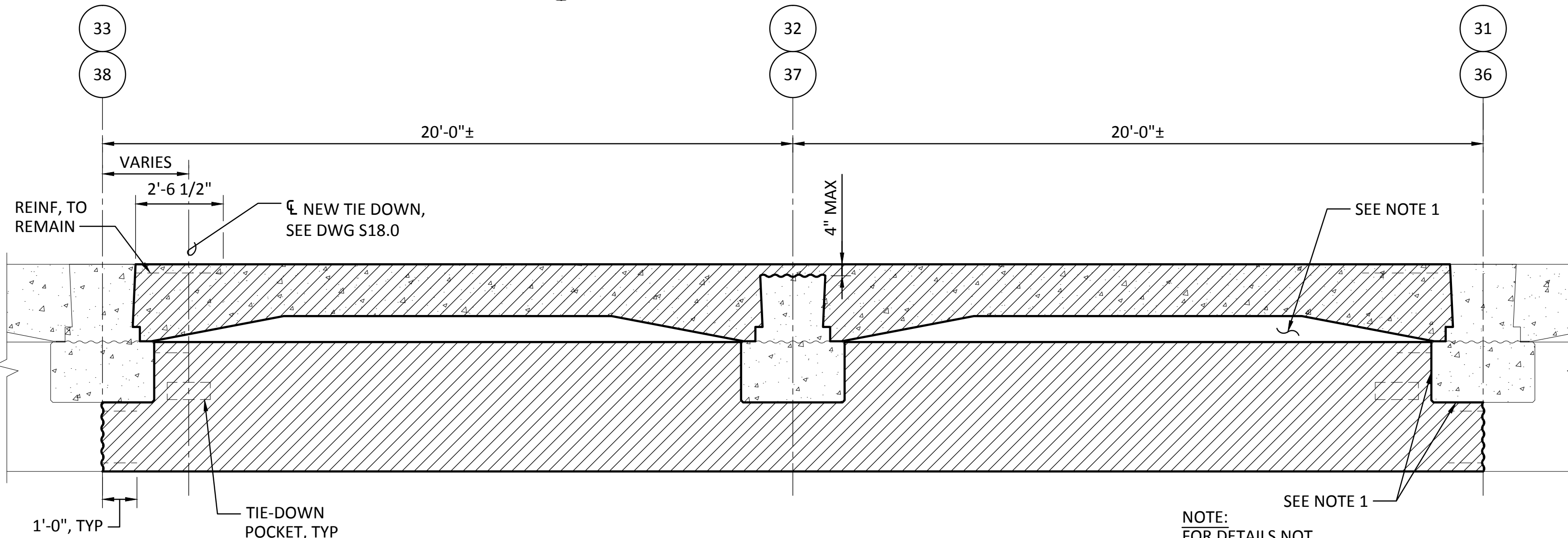
NOTE:  
FOR DETAILS NOT  
SHOWN, SEE **1**

**2 PLAN - DEMO AT TIE-DOWNS**  
SCALE: 3/8" = 1'-0"  
S2.1



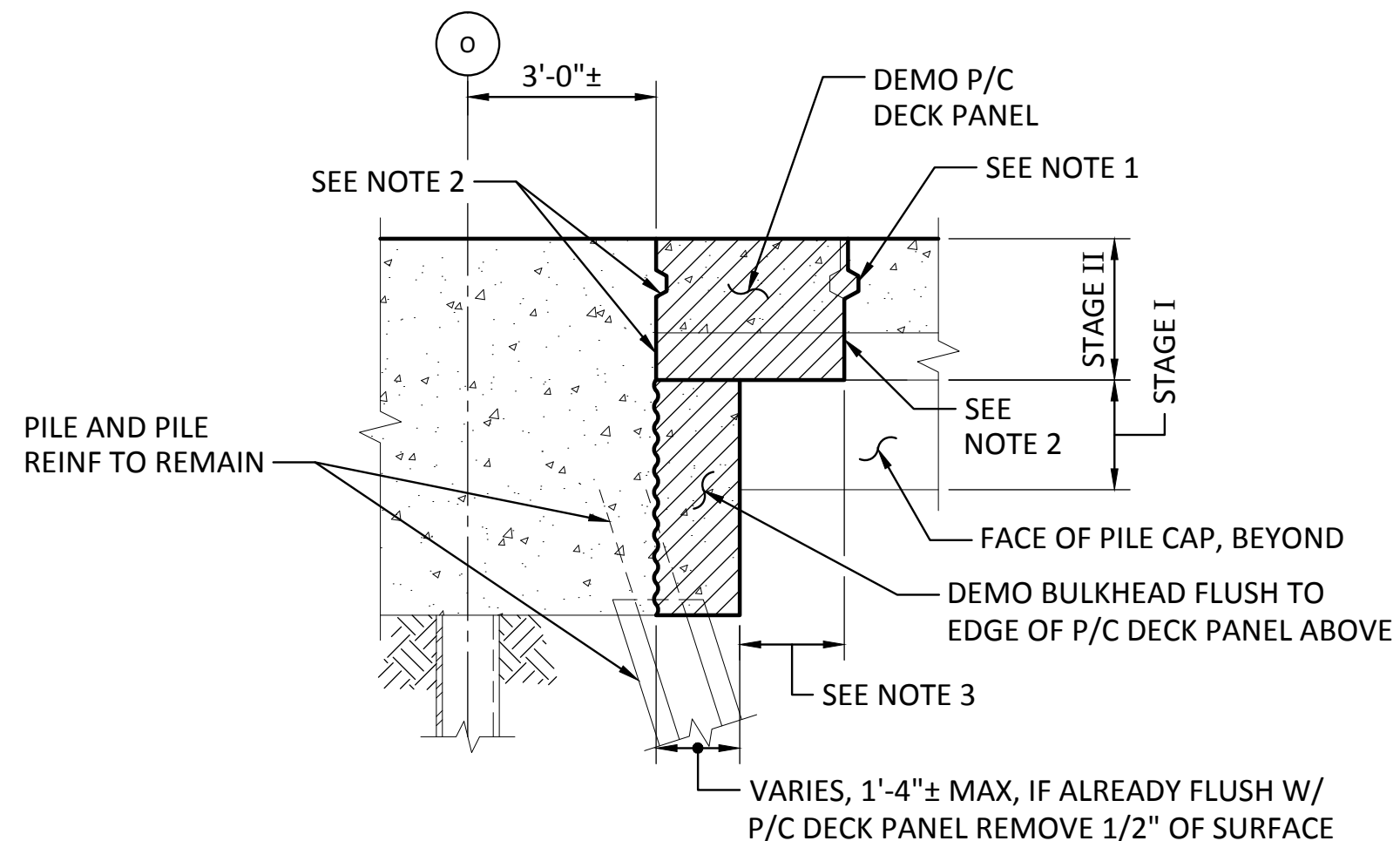
NOTE:  
1. ROUGHEN SURFACE  
TO 1/4" AMPLITUDE.  
2. ACP AND BALLAST  
NOT SHOWN.

**3 ELEVATION - DEMO AT TIE-DOWNS**  
SCALE: 3/8" = 1'-0"  
S2.1, S2.2



NOTE:  
FOR DETAILS NOT  
SHOWN, SEE **3**

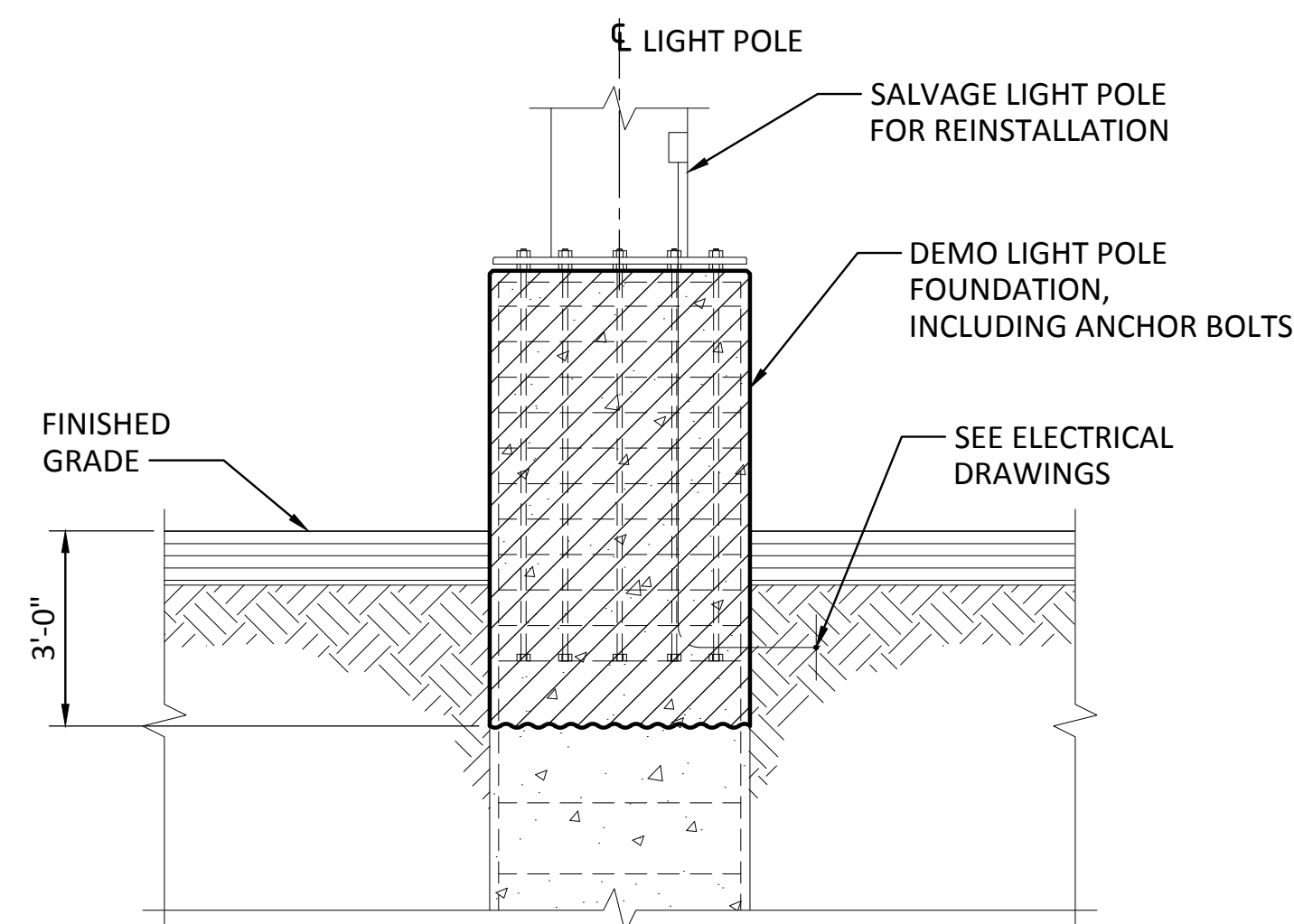
**4 ELEVATION - DEMO AT TIE-DOWNS**  
SCALE: 3/8" = 1'-0"  
S2.1



**5 SECTION - DEMO AT TIE-DOWNS**  
SCALE: 3/8" = 1'-0"  
S10.4

**NOTES:**

1. PRESERVE SHEAR KEYS, REMOVE LOOSE CONC.
2. ROUGHEN REMAINING SURFACE OF BULKHEAD CAST AGAINST P/C DECK PANEL AND SIDE OF P/C DECK PANEL TO REMAIN TO 1/4" AMPLITUDE.
3. ROUGHEN FACE AND SOFFIT OF PILE CAP TO 1/4" AMPLITUDE.
4. FOR ADDITIONAL DEMO AT TIE-DOWN WELDMENT, SEE **5**



**6 DETAIL - LIGHT POLE FOUNDATION DEMO**  
SCALE: 3/8" = 1'-0"  
S1.2

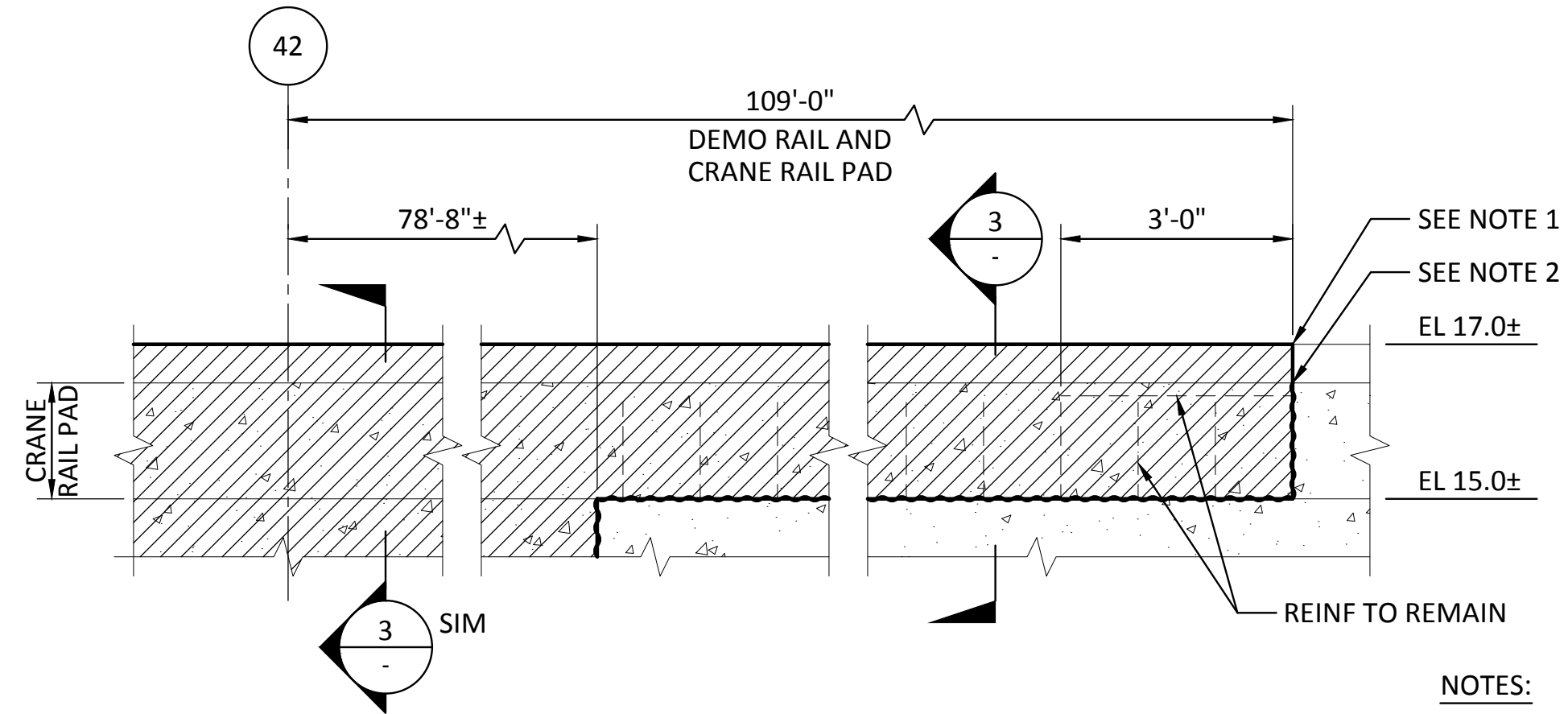
3/8" = 1'-0"  
scale

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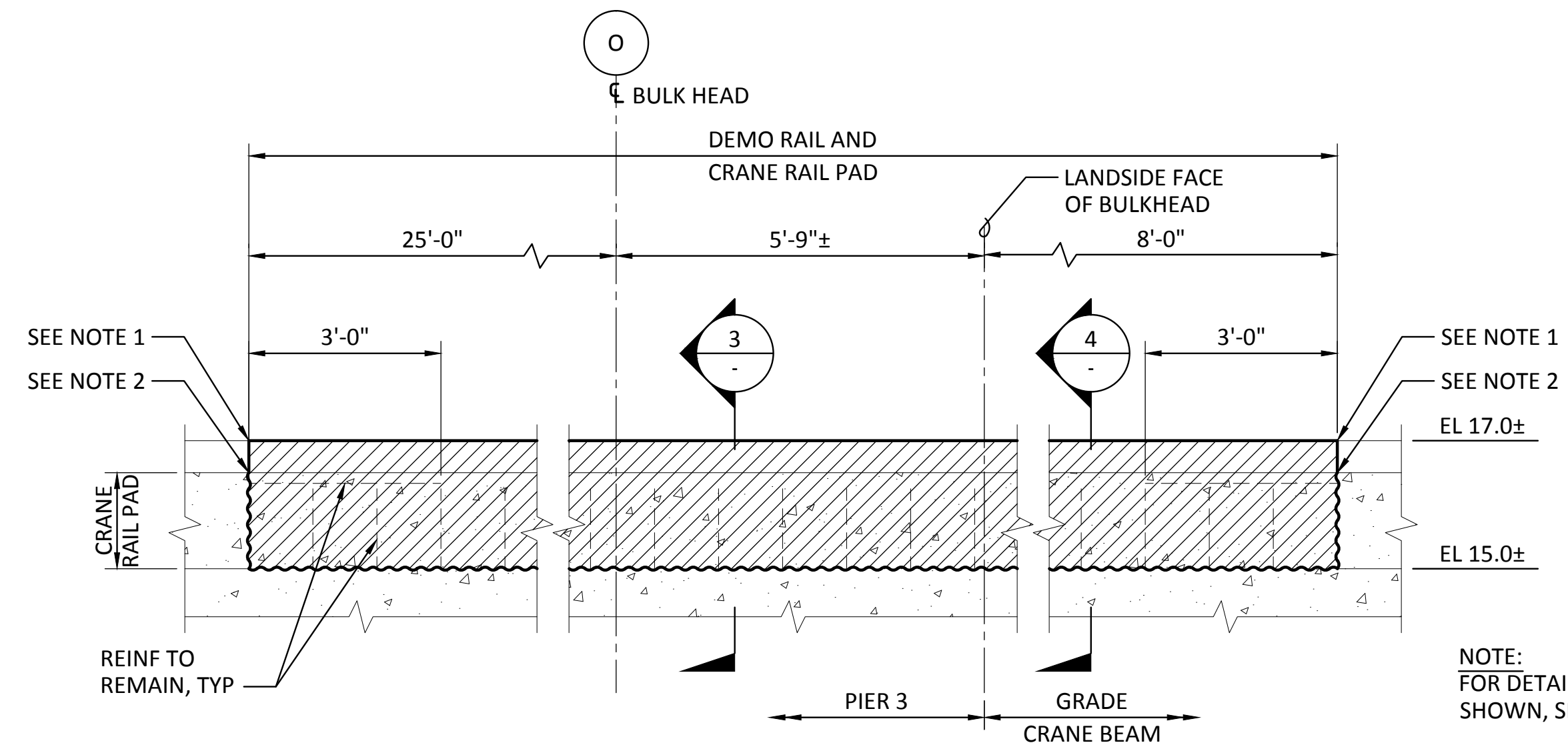
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DATE:	APPR:	BY:	REVISION:	MARK:	DATE:
7/17/13	JRG	7/17/13	PROJ. ENGR	DATE	DATE
DC	7/17/13	DATE	DIR OF ENG	DATE	DATE
PRINTED BY:	PORT ADDRESS:	ONE SITCUM WAY	TACOMA, WA 98421-2300	SECTION: 27	NOS TIDAL (MILLW = 0.0)
AS SHOWN	DRAWING SCALE:	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN
<p>6502 <b>S2.7</b> SHEET 41 OF 129</p>					
CONT/CONS:	069458	TOWNSHIP:	21 N	SECTION:	27
MASTER ID NO:	092935	DAT-HRZ:	NAD 83-07	VERT:	NOS TIDAL (MILLW = 0.0)
PHASE:	RECORD DRAWINGS	PARCEL:	27	DRAWING SCALE:	AS SHOWN

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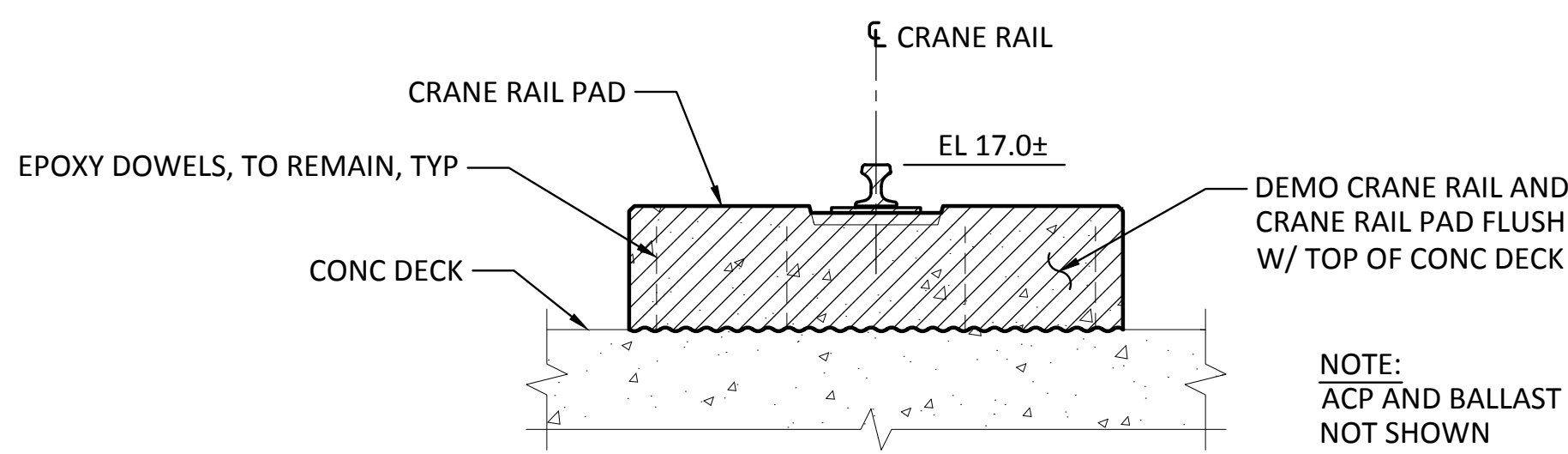
**1**  
S2.2 SECTION - DEMO AT CROSSOVER  
SCALE: 1/2" = 1'-0"

- NOTES:
1. SAWCUT CRANE RAIL PERP TO LONG AXIS OF RAIL CENTER RAIL CUT BETWEEN RAIL CLAMP PLATES.
  2. SAWCUT 1" DEEP TOP AND SIDES OF CRANE RAIL PAD.
  3. ACP AND BALLAST NOT SHOWN.



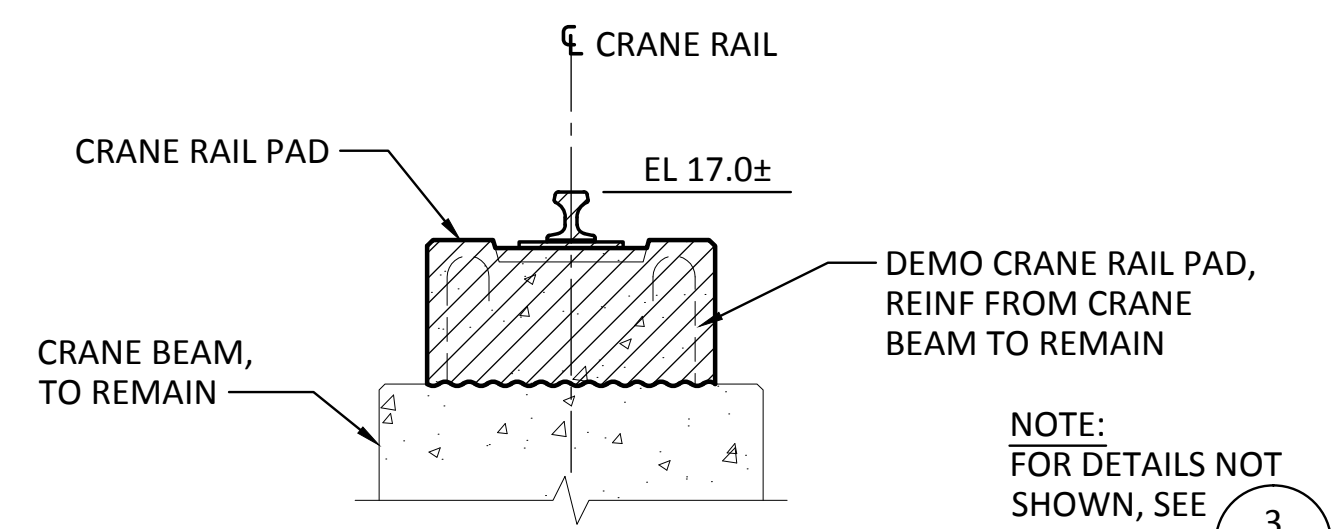
**2**  
S2.2 SECTION - DEMO AT CROSSOVER (BULKHEAD)  
SCALE: 1/2" = 1'-0"

NOTE:  
FOR DETAILS NOT SHOWN, SEE **1**



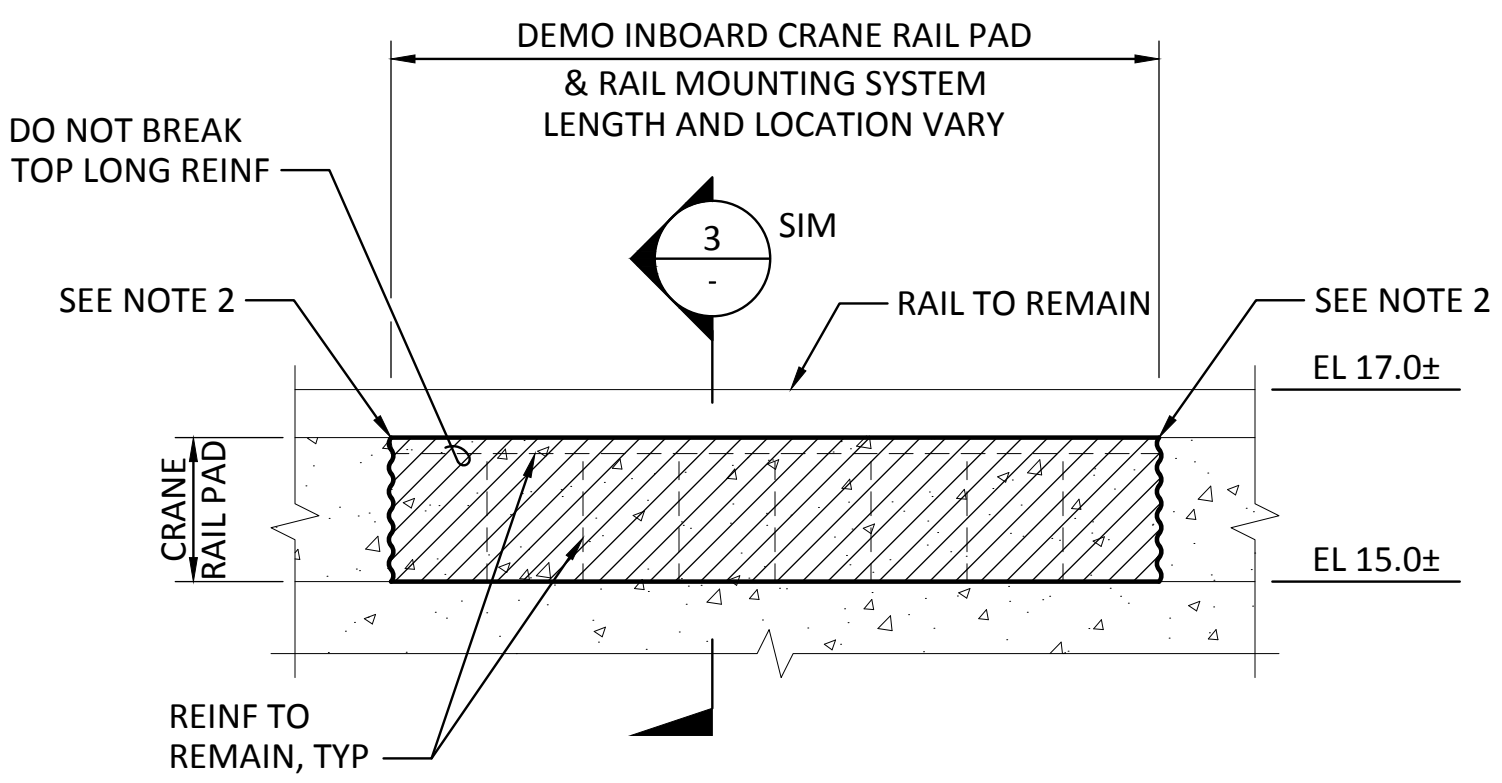
**3**  
SECTION - DEMO AT CROSSOVER  
SCALE: 1/2" = 1'-0"

NOTE:  
ACP AND BALLAST NOT SHOWN



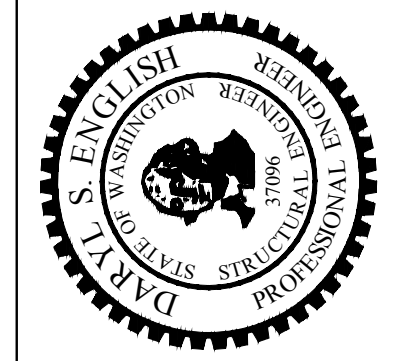
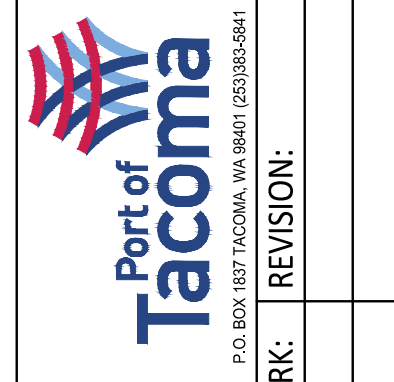
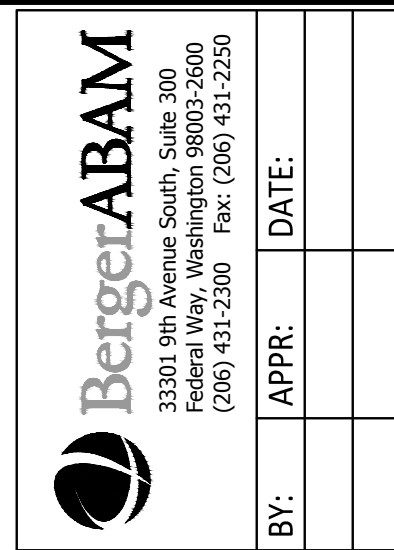
**4**  
SECTION - DEMO AT CROSSOVER  
SCALE: 1/2" = 1'-0"

NOTE:  
FOR DETAILS NOT SHOWN, SEE **3**



**5**  
S2.0 ELEVATION - DEMO AT INBOARD CRANE RAIL  
SCALE: 1/2" = 1'-0"

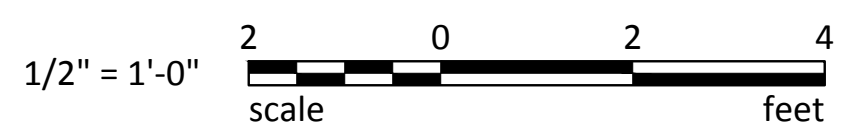
- NOTES:
1. FOR DETAILS NOT SHOWN, SEE **1**
  2. FOR LOCATIONS OF DEMO, SEE ELECTRICAL DWGS.

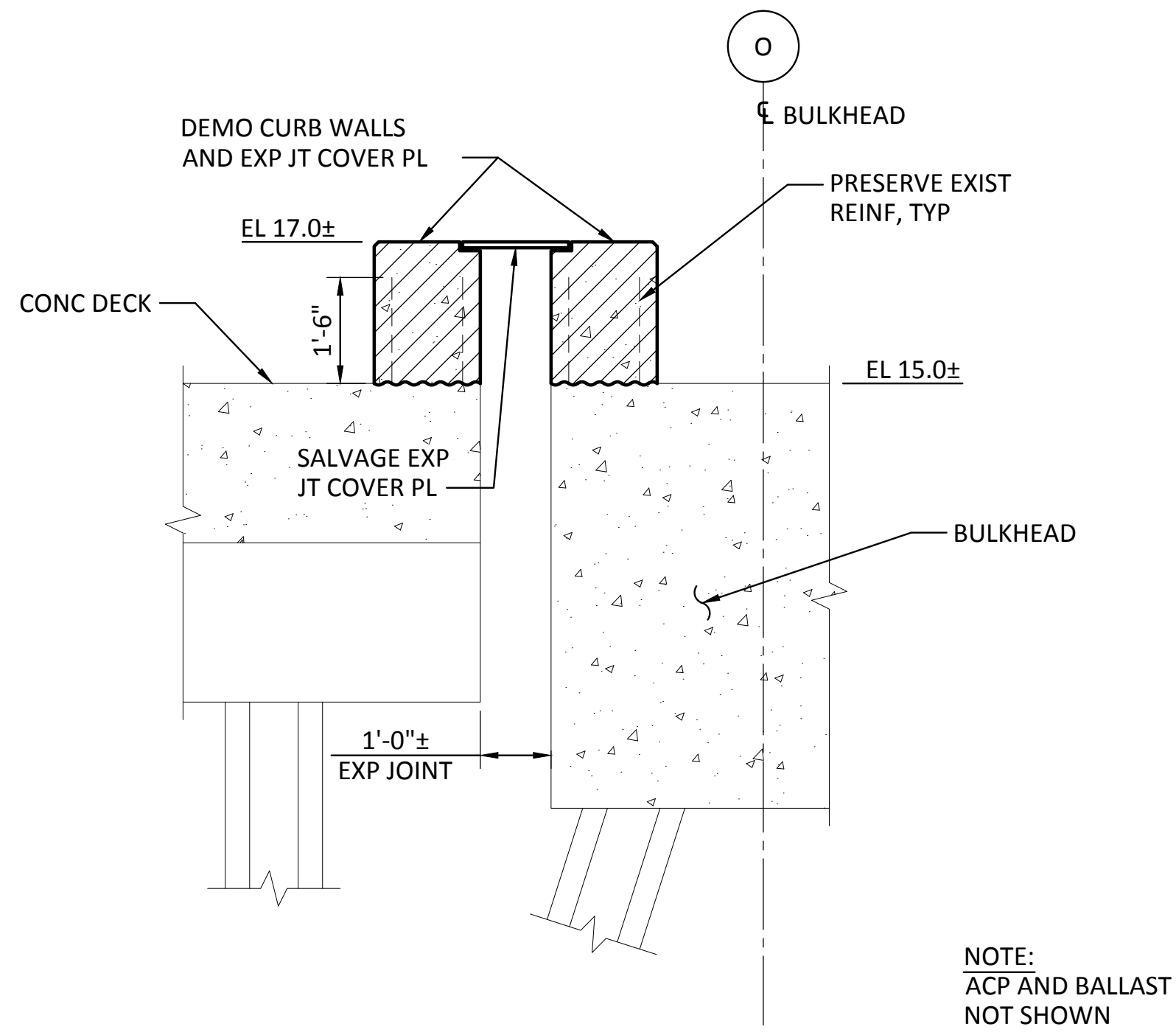


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DIR OF ENG	Jason Mendenthal	DATE	DATE
PRINTED BY:	ONE SITCUM WAY	TACOMA, WA 98421-2300	

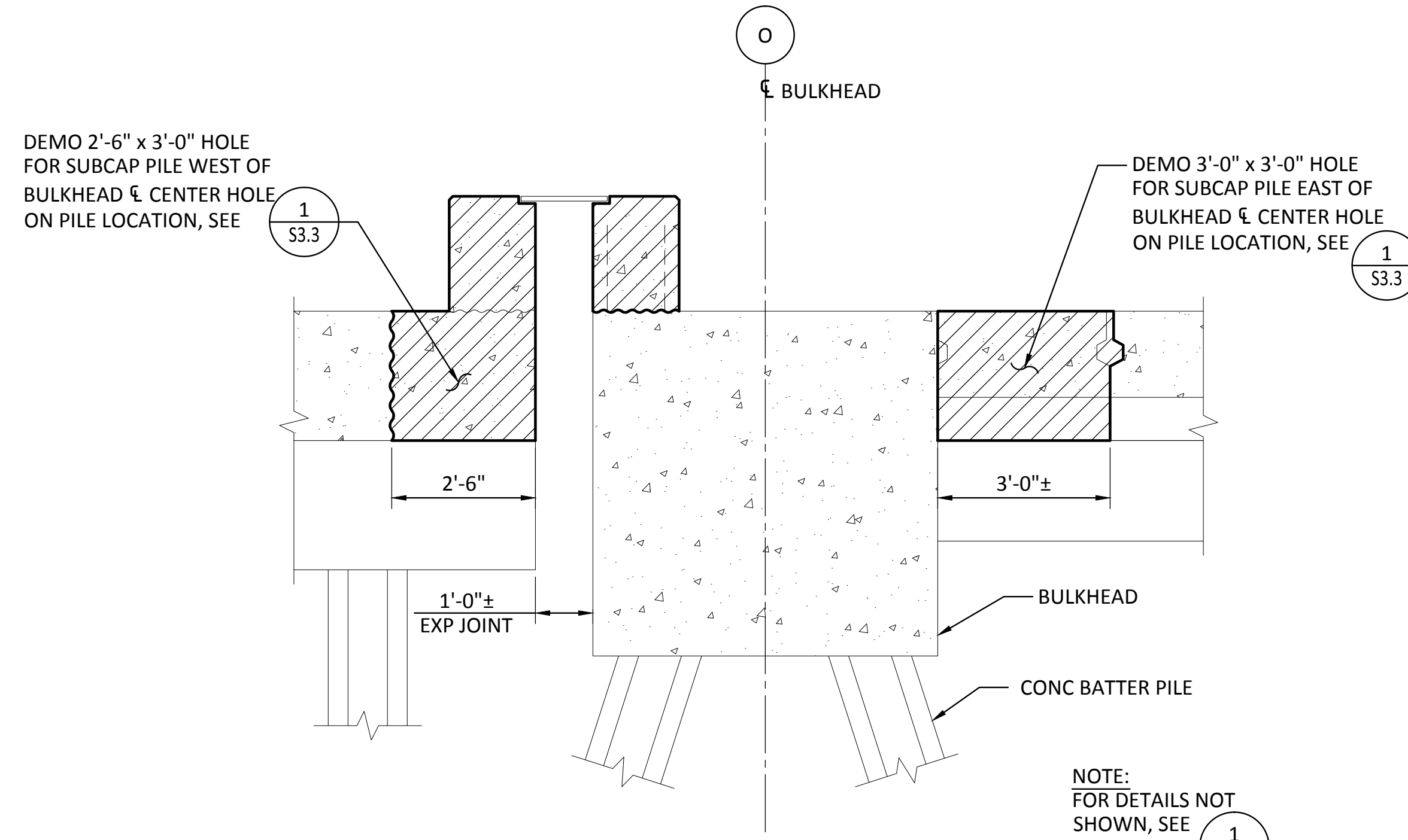
PIER 3 UPGRADE	SECTION: 27
DEMOLITION DETAILS	RANGE: 3 E
SHEET 5	VERT: NOS TIDAL (MLLW = 0.0)
TOWNSHIP: 21 N	PARCEL: 27
DAT-HRZ: NAD 83-07	DRAWING SCALE: AS SHOWN

6502	CONTR/CONS: 069458
S2.8	MASTER ID NO: 092935
SHEET 42 OF 129	PHASE: RECORD DRAWINGS

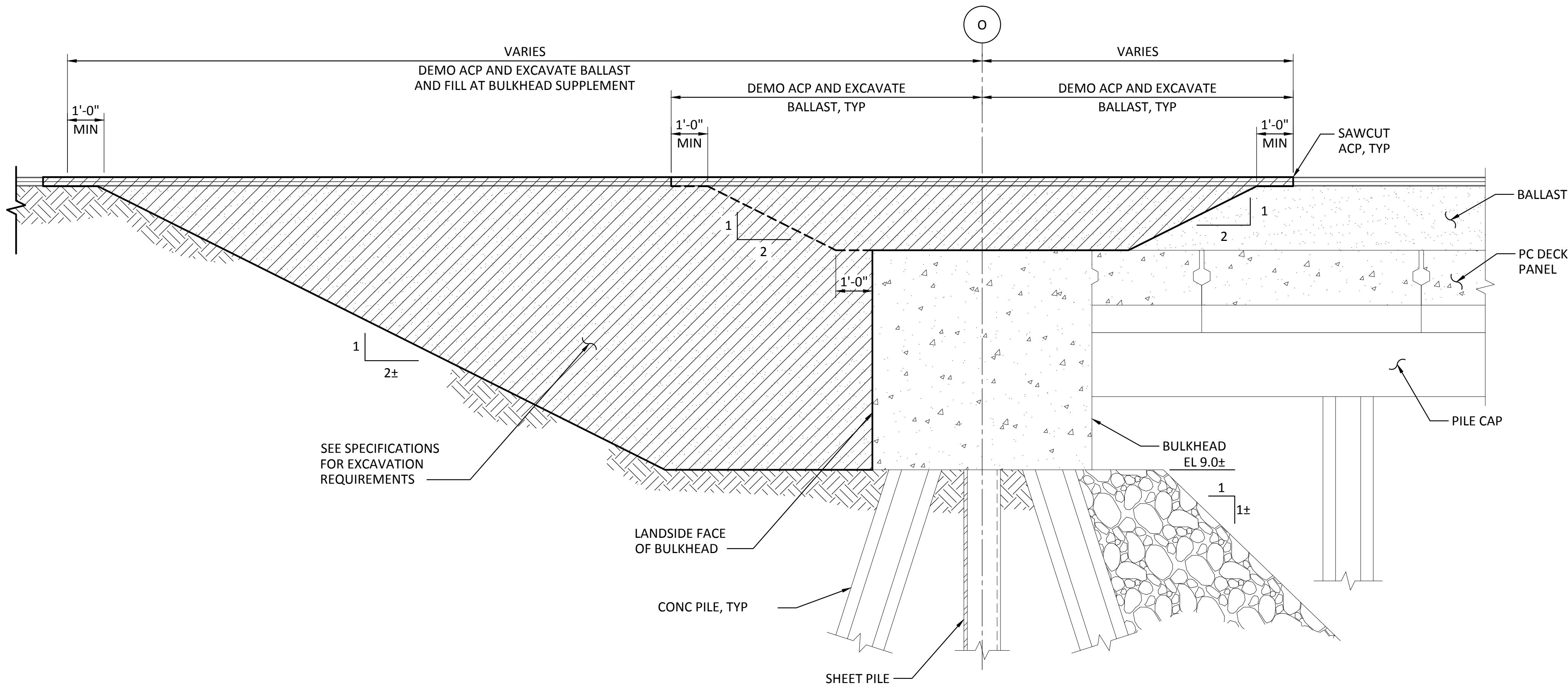




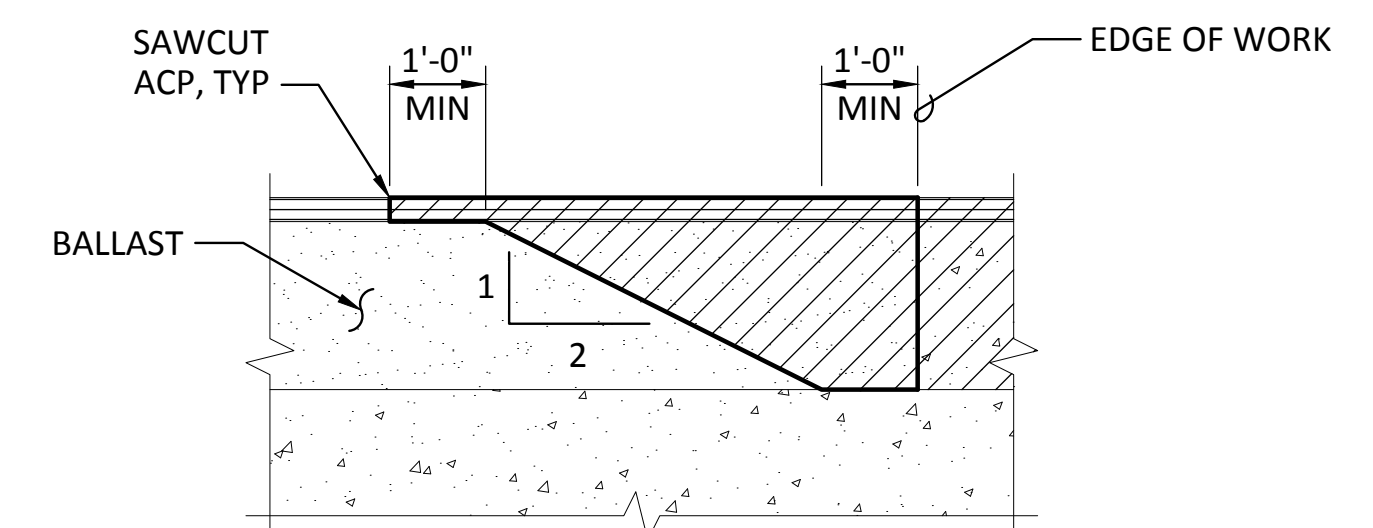
1 SECTION - DEMO AT SUBCAP  
S2.3 SCALE: 1/2"=1'-0"



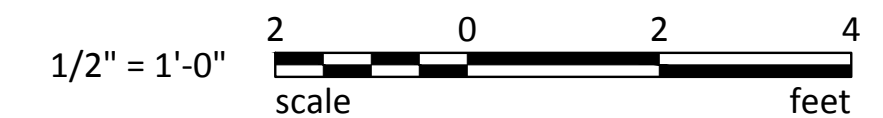
2 SECTION - DEMO AT SUBCAP  
S2.3 SCALE: 1/2"=1'-0"



3 SECTION - LANDSIDE EXCAVATION  
S2.0 SCALE: 1/2" = 1'-0"  
S2.1, S2.2, S2.3



4 SECTION - BALLAST EXCAVATION  
S2.0 SCALE: 1/2" = 1'-0"  
S2.1, S2.2, S2.3



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Federal Way, Washington 98003-2600  
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**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401-0887 (206) 835-8441

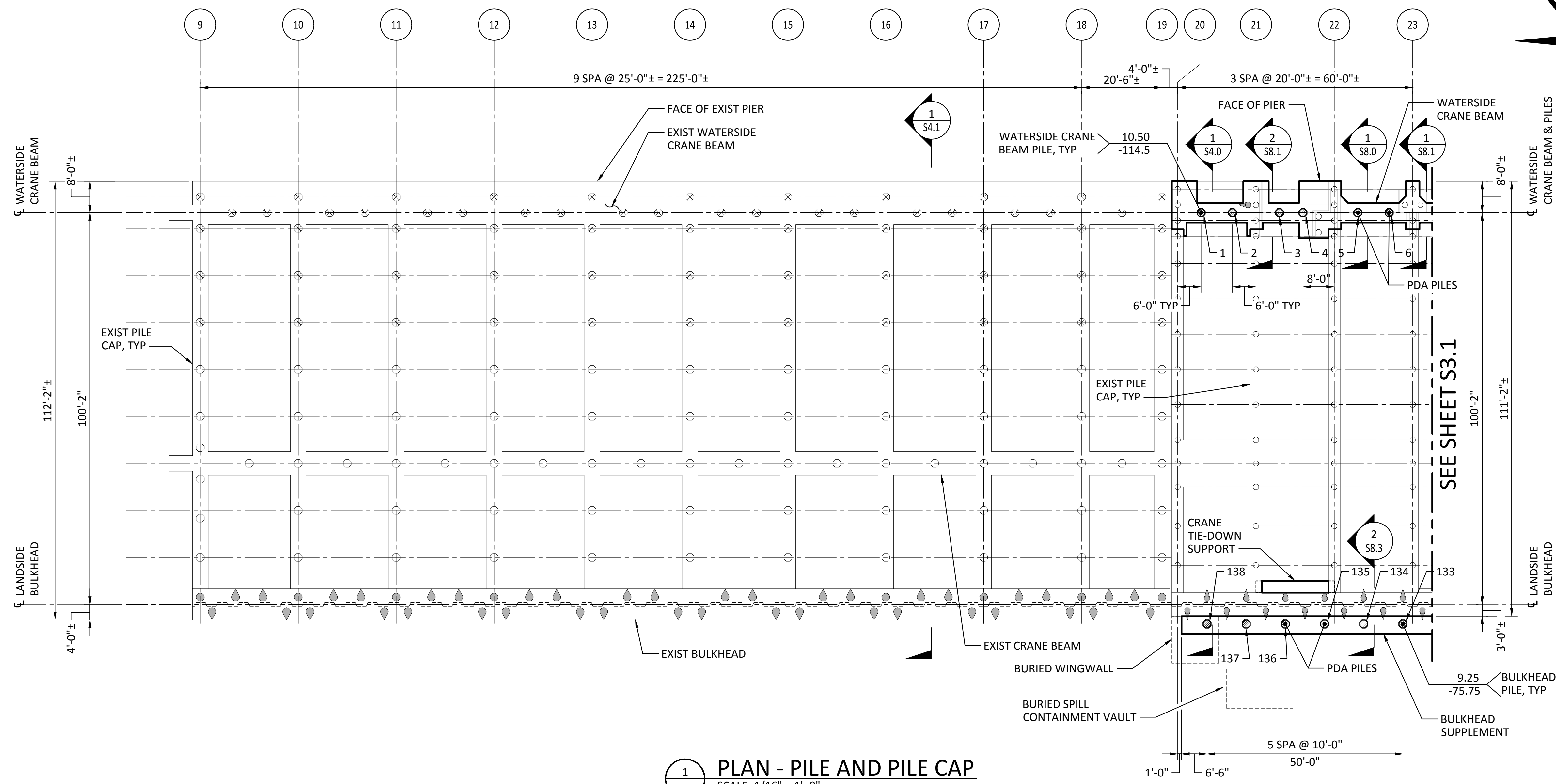


CSB	7/17/13	DATE
CHECKED BY	JRG	7/17/13
DIR OF ENG	Jason Mendenhall	DATE
PRINTED BY	ONE SITCUM WAY	DATE
PORT ADDRESS	TACOMA, WA 98421-2300	DATE

PIER 3 UPGRADE	
DEMOLITION DETAILS SHEET 6	
RANGE:	3 E SECTION: 27
VERT:	NOS TIDAL (MLLW = 0.0)
PARCEL:	27 DRAWING SCALE: AS SHOWN

6502	<b>S2.9</b>
SHEET 43 OF 129	
CONT/CONS:	069458
MASTER ID NO:	092935
PHASE:	RECORD DRAWINGS

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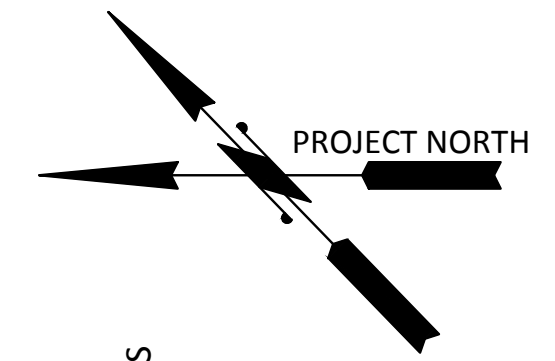
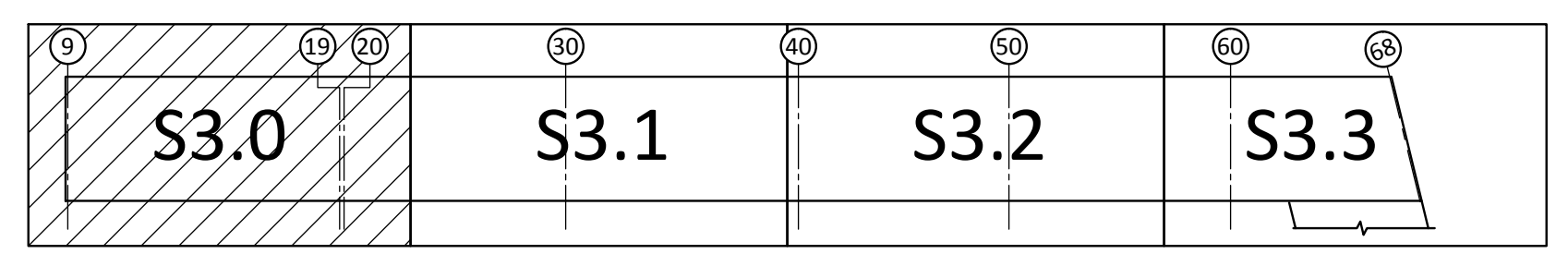
1 PLAN - PILE AND PILE CAP  
SCALE: 1/16" = 1'-0"

NOTE:  
SEE S1.3 FOR AS-BUILT  
PILE INFORMATION

LEGEND:

- ⊗ EXIST 24" OCT PC/PS CONC PILE
- EXIST 24"Ø STEEL PIPE PILE, PLUMB
- ⦿ EXIST 24"Ø STEEL PIPE PILE, BATTERED
- EXIST 16 1/2"Ø OCT PC/PS CONC PILE, PLUMB
- ⦿ EXIST 16 1/2" OCT PC/PS CONC PILE, BATTERED
- ⊗ 24" OCT PC/PS CONC PILE, PLUMB, SEE S6.0
- ⦿ 24" OCT PC/PS WITH KEY-LOCK MECHANICAL PILE SPLICE
- XX.XX PILE CUT-OFF ELEVATION
- -XX.X MIN PILE TIP ELEVATION
- XXX PILE NUMBER

KEY PLAN:



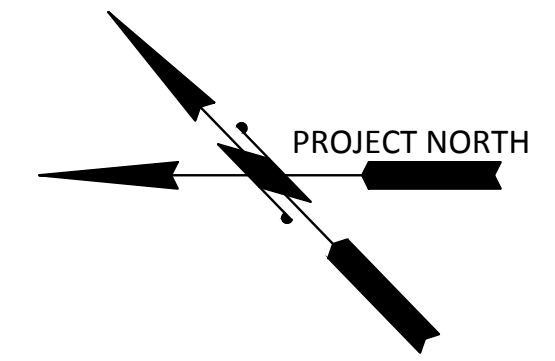
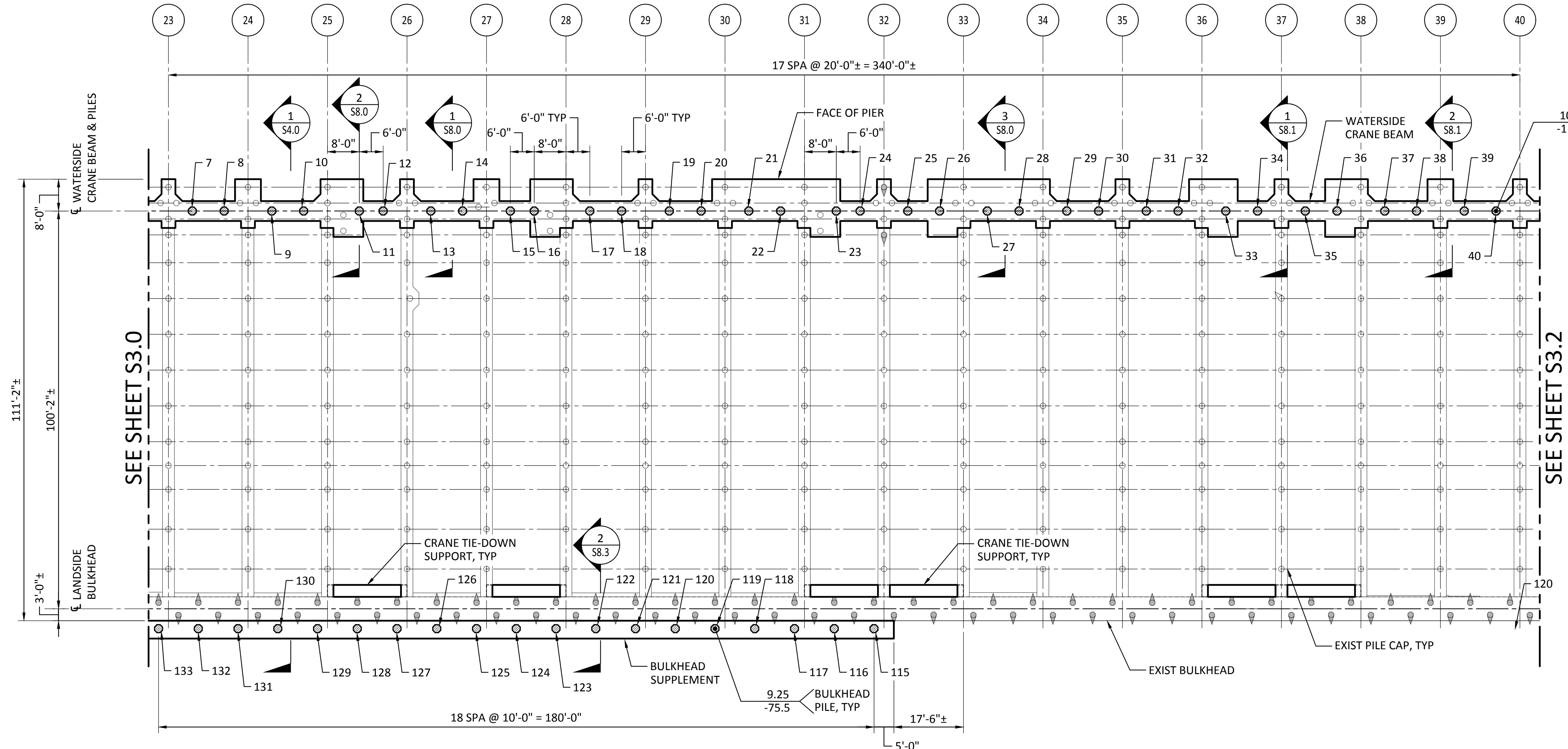
RECORD DRAWINGS:  
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	MARK: REVISION: BY: APPR:			
<b>PIER 3 UPGRADE</b> <b>PILE AND PILE CAP PLAN</b> <b>SHEET 1</b>		RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N NOS TIDAL (MLLW = 0.0) DAT-HRZ: NAD 83-07 VERT: AS SHOWN PARCEL: 27 DRAWING SCALE: AS SHOWN		
<b>6502</b> <b>S3.0</b> SHEET 44 OF 129				CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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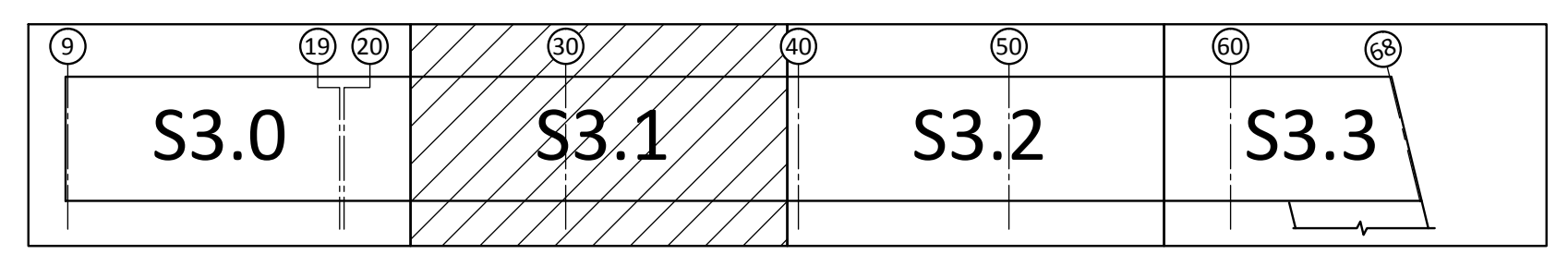
1 PLAN - PILE AND PILE CAP  
SCALE: 1/16" = 1'-0"

NOTE:  
SEE S1.3 FOR AS-BUILT  
PILE INFORMATION

**LEGEND:**

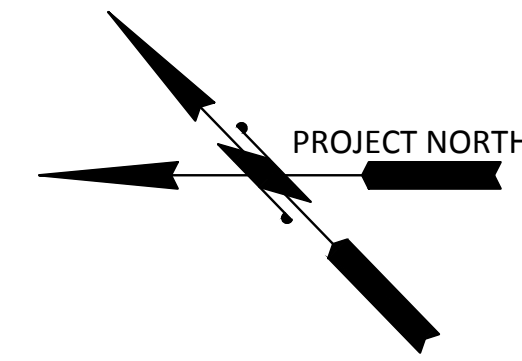
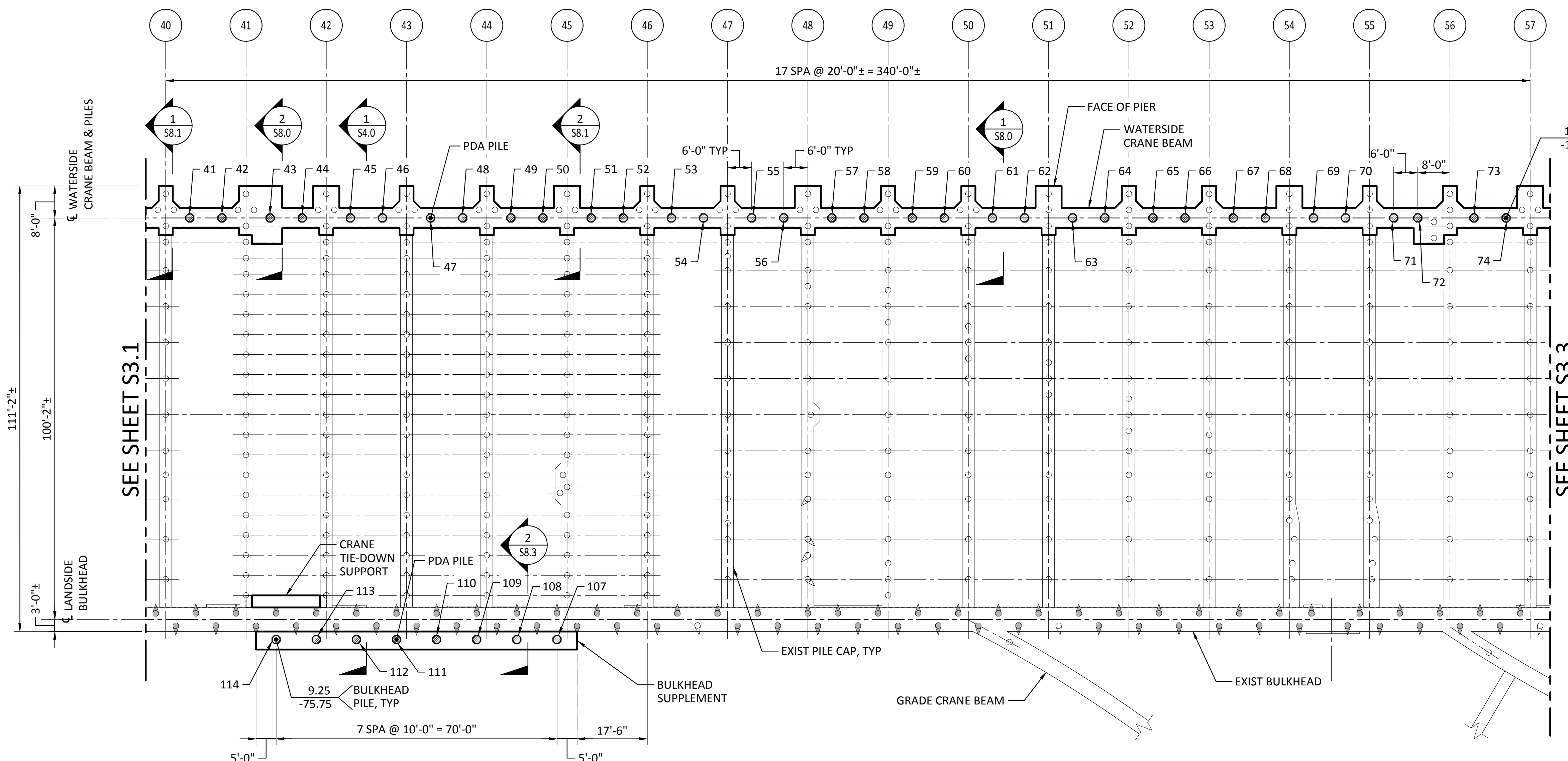
- ⊗ EXIST 24" OCT PC/PS CONC PILE
- EXIST 24"Ø STEEL PIPE PILE, PLUMB
- ◐ EXIST 24"Ø STEEL PIPE PILE, BATTERED
- EXIST 16 1/2"Ø OCT PC/PS CONC PILE, PLUMB
- ◐ EXIST 16 1/2" OCT PC/PS CONC PILE, BATTERED
- ⊗ 24" OCT PC/PS CONC PILE, PLUMB, SEE S6.0
- ⊗ 24" OCT PC/PS WITH KEY-LOCK MECHANICAL PILE SPLICE
- XX.XX PILE CUT-OFF ELEVATION
- -XX.X MIN PILE TIP ELEVATION
- XXX PILE NUMBER

**KEY PLAN:**



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	<b>PIER 3 UPGRADE</b> <b>PILE AND PILE CAP PLAN</b> <b>SHEET 2</b>		TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 NOS TIDAL (MLLW = 0.0) DAT-HRZ: NAD 83-07 VERT: AS SHOWN DRAWING SCALE: AS SHOWN	6502 <b>S3.1</b> SHEET 45 OF 129 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION



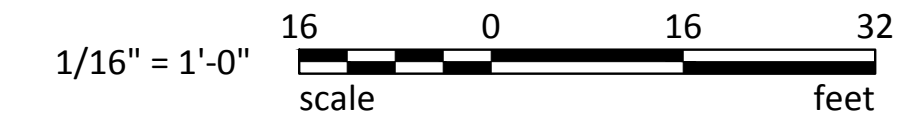
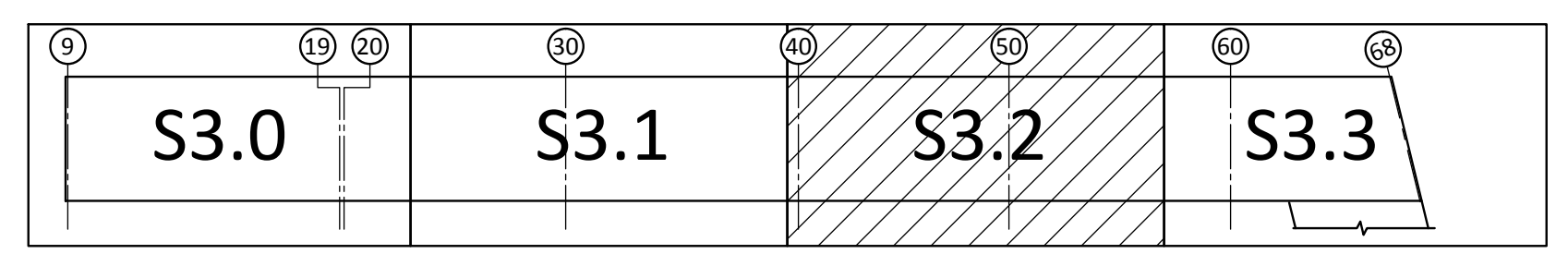
**1 PLAN - PILE AND PILE CAP**  
SCALE: 1/16" = 1'-0"

NOTE:  
SEE S1.3 FOR AS-BUILT  
PILE INFORMATION

**LEGEND:**

- ⊗ EXIST 24" OCT PC/PS CONC PILE
- EXIST 24"Ø STEEL PIPE PILE, PLUMB
- ⦿ EXIST 24"Ø STEEL PIPE PILE, BATTERED
- EXIST 16 1/2"Ø OCT PC/PS CONC PILE, PLUMB
- ⦿ EXIST 16 1/2" OCT PC/PS CONC PILE, BATTERED
- ⊗ 24" OCT PC/PS CONC PILE, PLUMB, SEE S6.0
- ⦿ 24" OCT PC/PS WITH KEY-LOCK MECHANICAL PILE SPLICE
- XX.XX — PILE CUT-OFF ELEVATION
- -XX.X — MIN PILE TIP ELEVATION
- XXX — PILE NUMBER

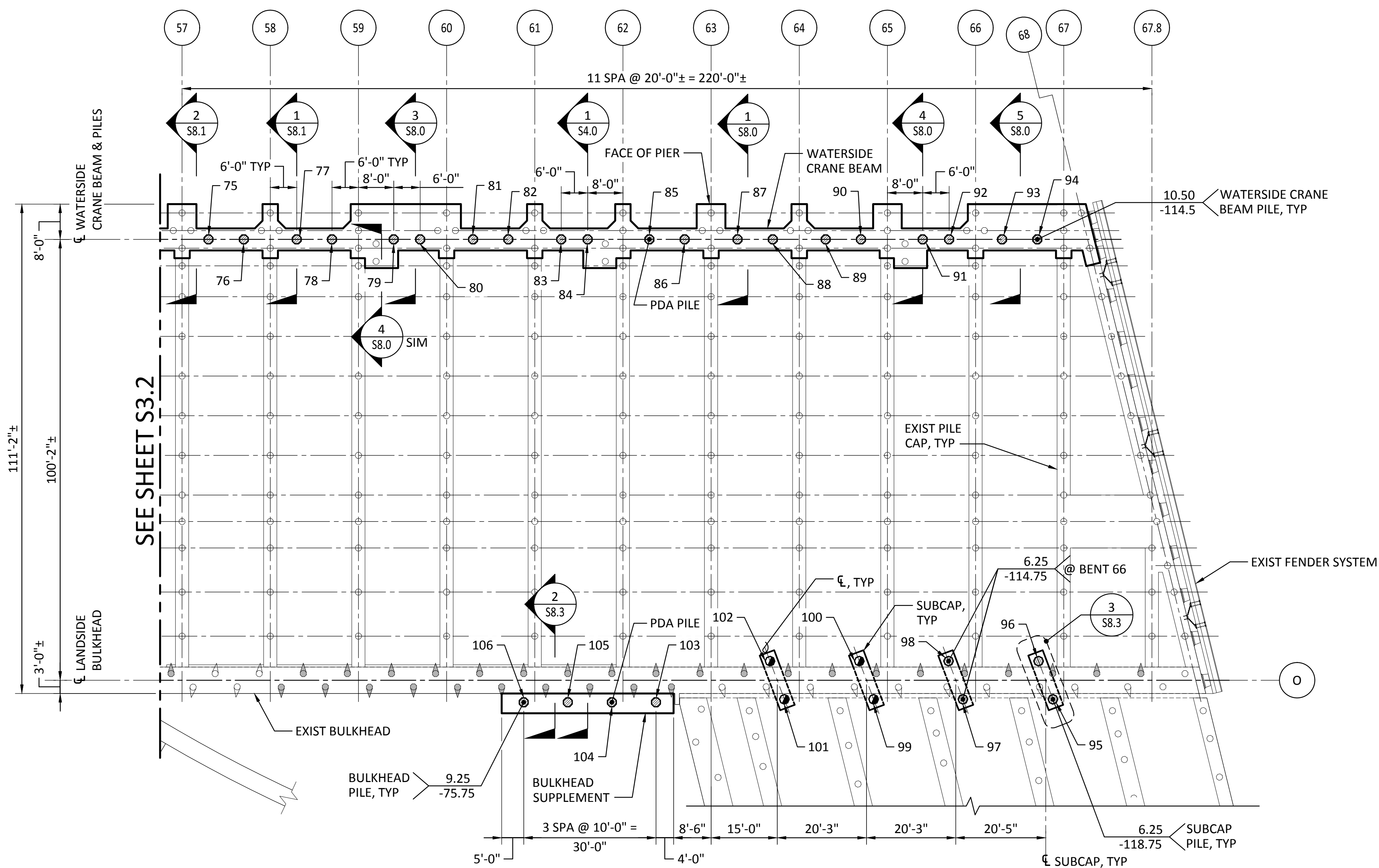
**KEY PLAN:**



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	APPR: _____ DATE: _____
 P.O. BOX 1887 TACOMA, WA 98401-0188	REVISION: _____ MARK: _____
APPROVED: CSB 7/17/13 DC 7/17/13 DIR OF ENG jason.mendenthal PRINTED BY: ONE SITCUM WAY TACOMA, WA 98421-2300	CHECKED BY: JRG 7/17/13 PROJ. ENGR: jason.mendenthal DATE: 7/17/13
<b>PIER 3 UPGRADE</b> <b>PILE AND PILE CAP PLAN</b> <b>SHEET 3</b>	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S3.2</b> SHEET 46 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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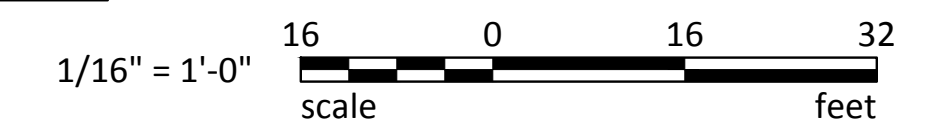
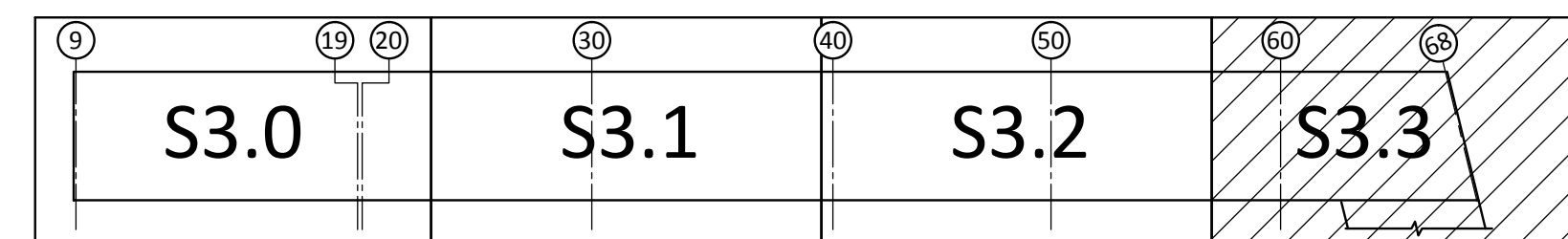
1 PLAN - PILE AND PILE CAP  
SCALE: 1/16" = 1'-0"

**LEGEND:**

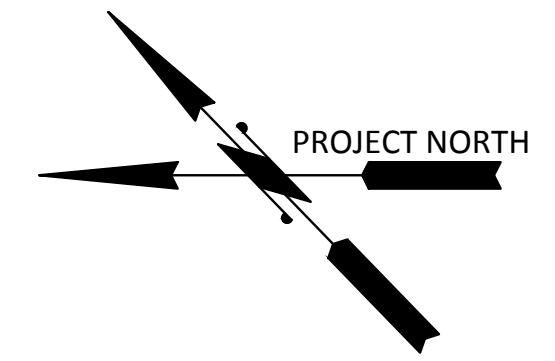
- ⊗ EXIST 24" OCT PC/PS CONC PILE
- EXIST 24"Ø STEEL PIPE PILE, PLUMB
- ⦿ EXIST 24"Ø STEEL PIPE PILE, BATTERED
- EXIST 16 1/2"Ø OCT PC/PS CONC PILE, PLUMB
- ⦿ EXIST 16 1/2" OCT PC/PS CONC PILE, BATTERED
- ⊗ 24" OCT PC/PS CONC PILE, PLUMB, SEE S6.0
- ⊗ 24" OCT PC/PS WITH KEY-LOCK MECHANICAL PILE SPLICE
- PILE CUT-OFF ELEVATION
- MIN PILE TIP ELEVATION
- PILE NUMBER

NOTE:  
SEE S1.3 FOR AS-BUILT  
PILE INFORMATION

**KEY PLAN:**

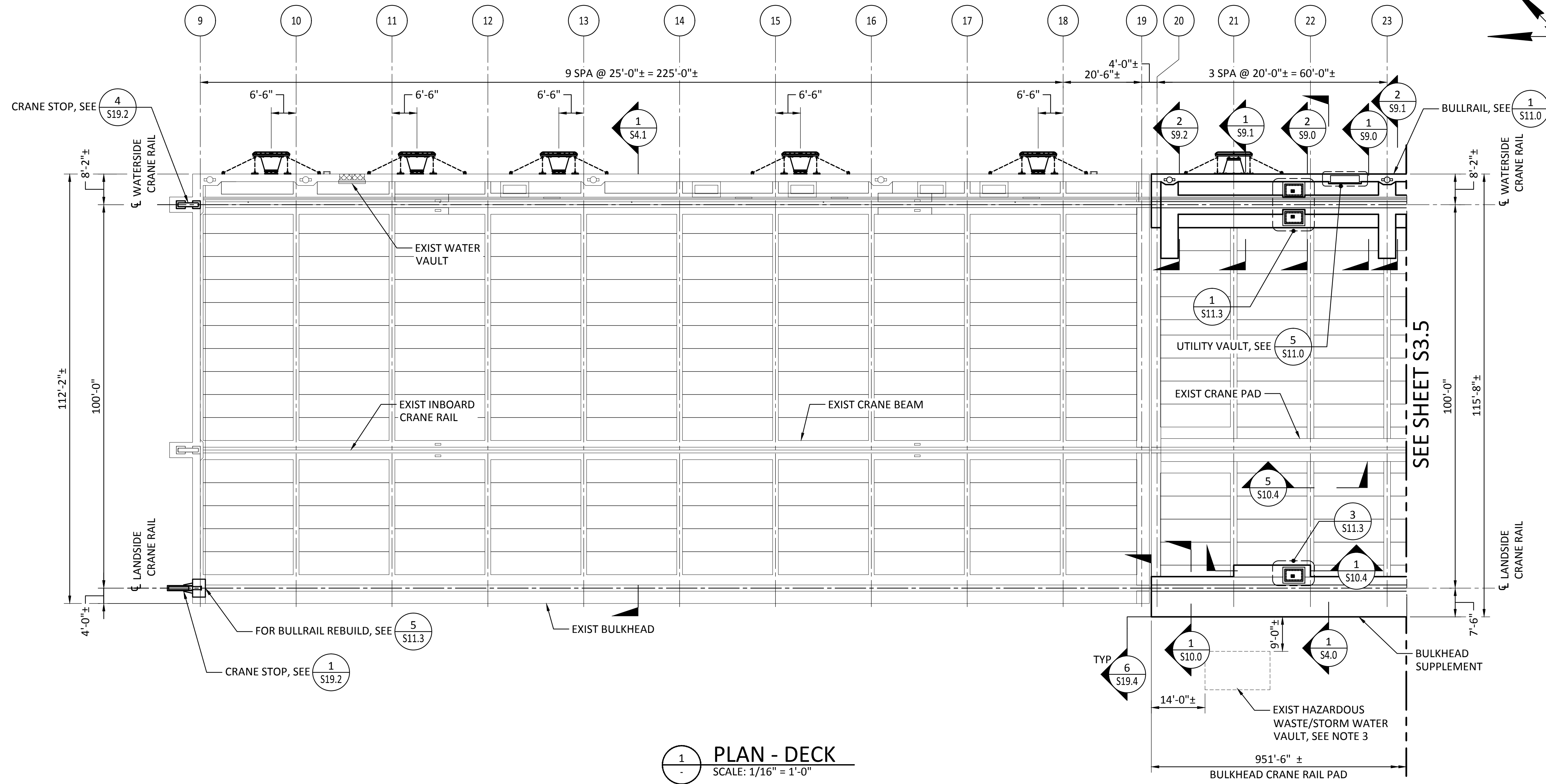


RECORD DRAWINGS:  
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	<b>PIER 3 UPGRADE</b> <b>PILE AND PILE CAP PLAN</b> SHEET 4		TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	6502 <b>S3.3</b> SHEET 47 OF 129 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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1 PLAN - DECK  
SCALE: 1/16" = 1'-0"

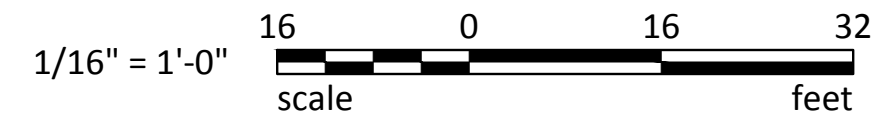
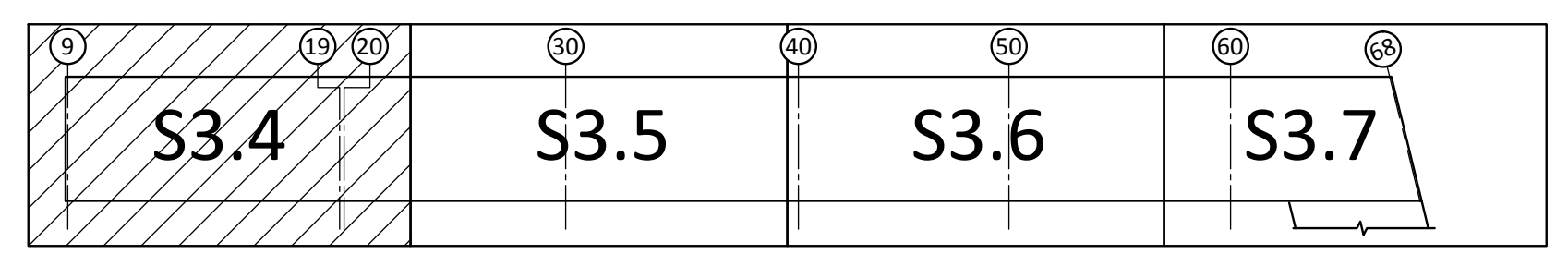
**LEGEND:**

- |  |                            |  |                     |
|--|----------------------------|--|---------------------|
|  | EXIST BOLLARD              |  | FENDER UNIT, NOTE 2 |
|  | EXIST SPLICE BOX           |  | 200-TON BOLLARD     |
|  | EXIST PIN SOCKET           |  | 100-TON BOLLARD     |
|  | EXIST STORM WATER VAULT    |  | LADDER              |
|  | EXIST STORM DRAIN INLET    |  | WATER UTILITY VAULT |
|  | EXIST WATER MAIN           |  | 480V UTILITY VAULT  |
|  | EXIST CRANE RAIL GROUNDING |  | CRANE TIE DOWNS     |
|  | EXIST ELECTRICAL CONDUIT   |  | CRANE POWER VAULT   |
|  | EXIST STORM DRAIN          |  | SHORE POWER VAULT   |
|  |                            |  | HIGH MAST LIGHT     |
|  |                            |  | PIN SOCKET          |

**NOTES:**

1. ACP AND BALLAST NOT SHOWN.
2. ALIGN CENTER OF FENDER UNITS ON CENTERLINE OF EXIST PILE CAPS, UNO.
3. DETERMINE LOCATION, SIZE, AND TOP ELEVATIONS (EA CORNER) OF THE EXISTING HAZARDOUS WASTE/STORM WATER VAULT, INCLUDING INLETS & OUTLETS. SUBMIT FINDINGS TO THE ENGINEER FOR APPROVAL BEFORE STARTING WORK ADJACENT TO THE VAULT.

**KEY PLAN:**

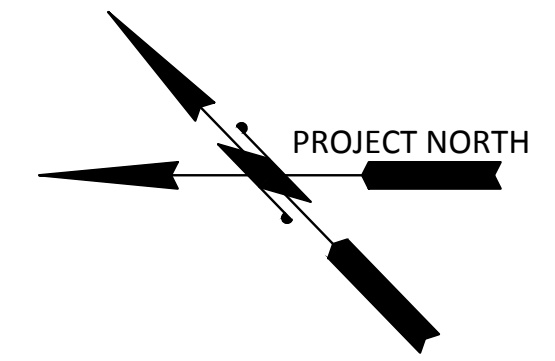
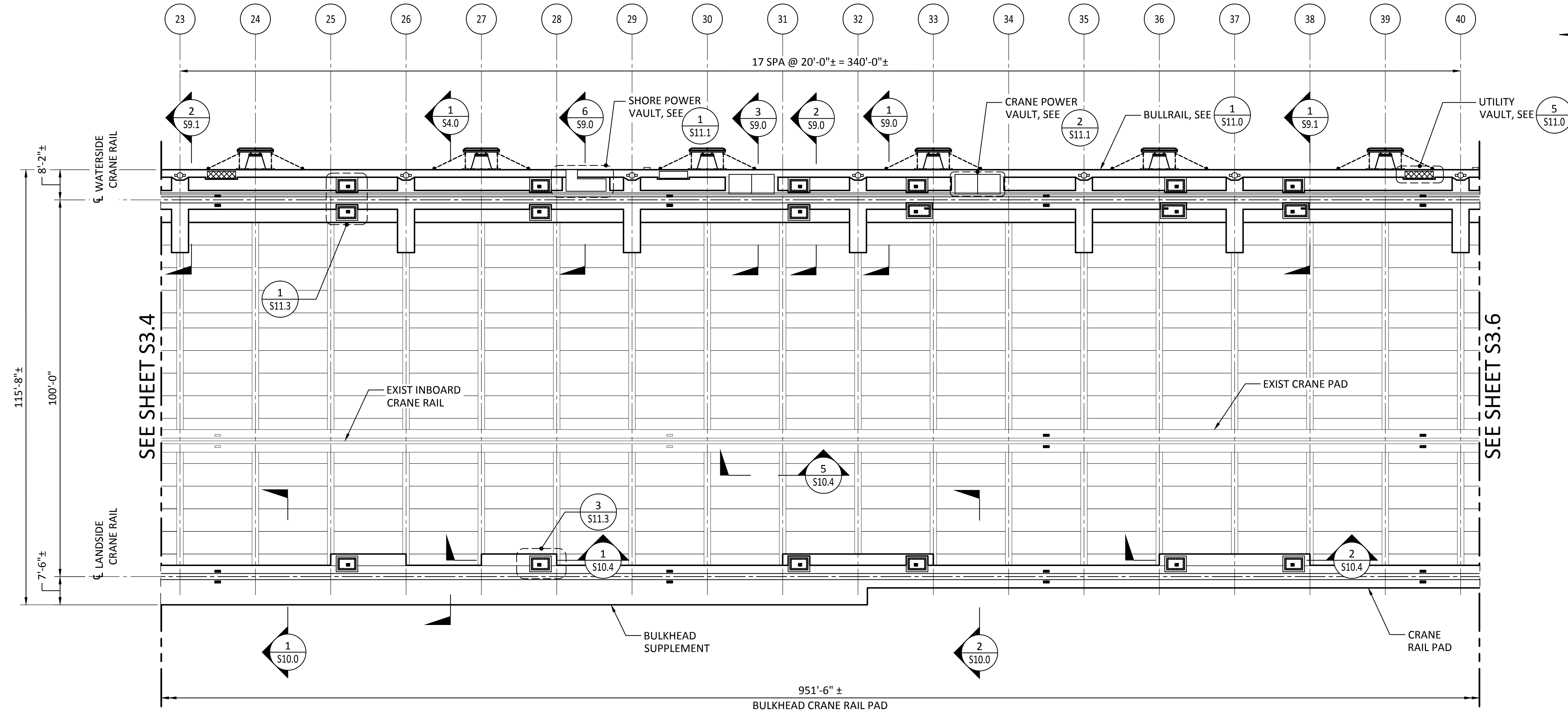


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	REVISION: _____ APPR: _____
 P.O. BOX 187 TACOMA, WA 98401-0187	 JASON MENDENTHAL PROFESSIONAL ENGINEER
APPROVED: _____ CSB 7/17/13 CHECKED BY: JRG DATE: 7/17/13	DIR OF ENG: jason.mendenthal PRINTED BY: jason.mendenthal PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
<b>PIER 3 UPGRADE</b> DECK PLAN SHEET 1	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502 S3.4</b> SHEET 48 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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SEE SHEET S3.4

SEE SHEET S3.6

**1 PLAN - DECK**  
SCALE: 1/16" = 1'-0"

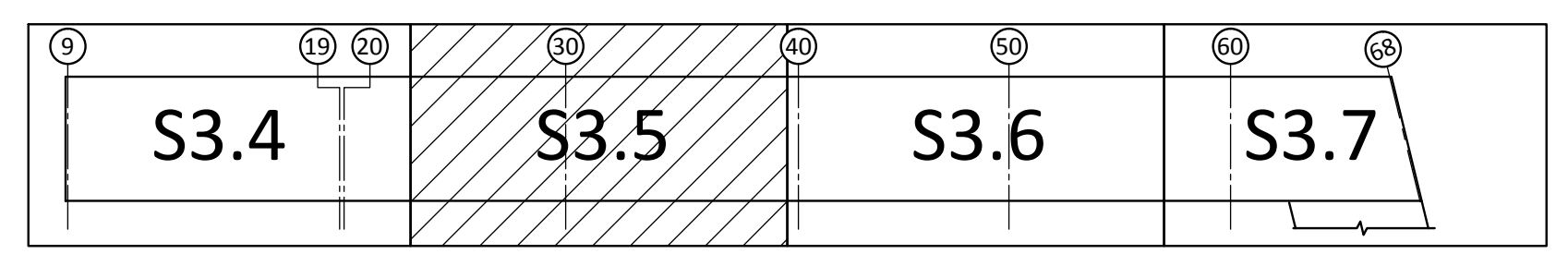
**LEGEND:**

- |  |                            |  |                     |
|--|----------------------------|--|---------------------|
|  | EXIST BOLLARD              |  | FENDER UNIT, NOTE 2 |
|  | EXIST SPLICE BOX           |  | 200-TON BOLLARD     |
|  | EXIST PIN SOCKET           |  | 100-TON BOLLARD     |
|  | EXIST STORM WATER VAULT    |  | LADDER              |
|  | EXIST STORM DRAIN INLET    |  | WATER UTILITY VAULT |
|  | EXIST WATER MAIN           |  | 480V UTILITY VAULT  |
|  | EXIST CRANE RAIL GROUNDING |  | CRANE TIE DOWNS     |
|  | EXIST ELECTRICAL CONDUIT   |  | CRANE POWER VAULT   |
|  | EXIST STORM DRAIN          |  | SHORE POWER VAULT   |
|  |                            |  | HIGH MAST LIGHT     |
|  |                            |  | PIN SOCKET          |

**NOTES:**

1. ACP AND BALLAST NOT SHOWN.
2. ALIGN CENTER OF FENDER UNITS ON CENTERLINE OF EXIST PILE CAPS, UNO.

**KEY PLAN:**



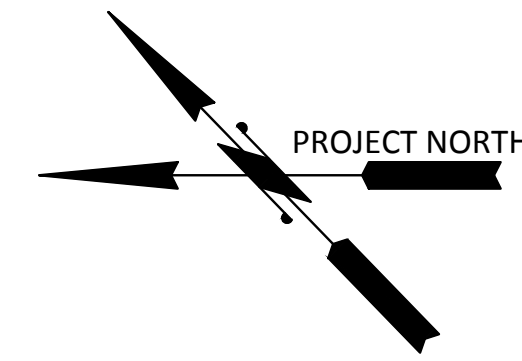
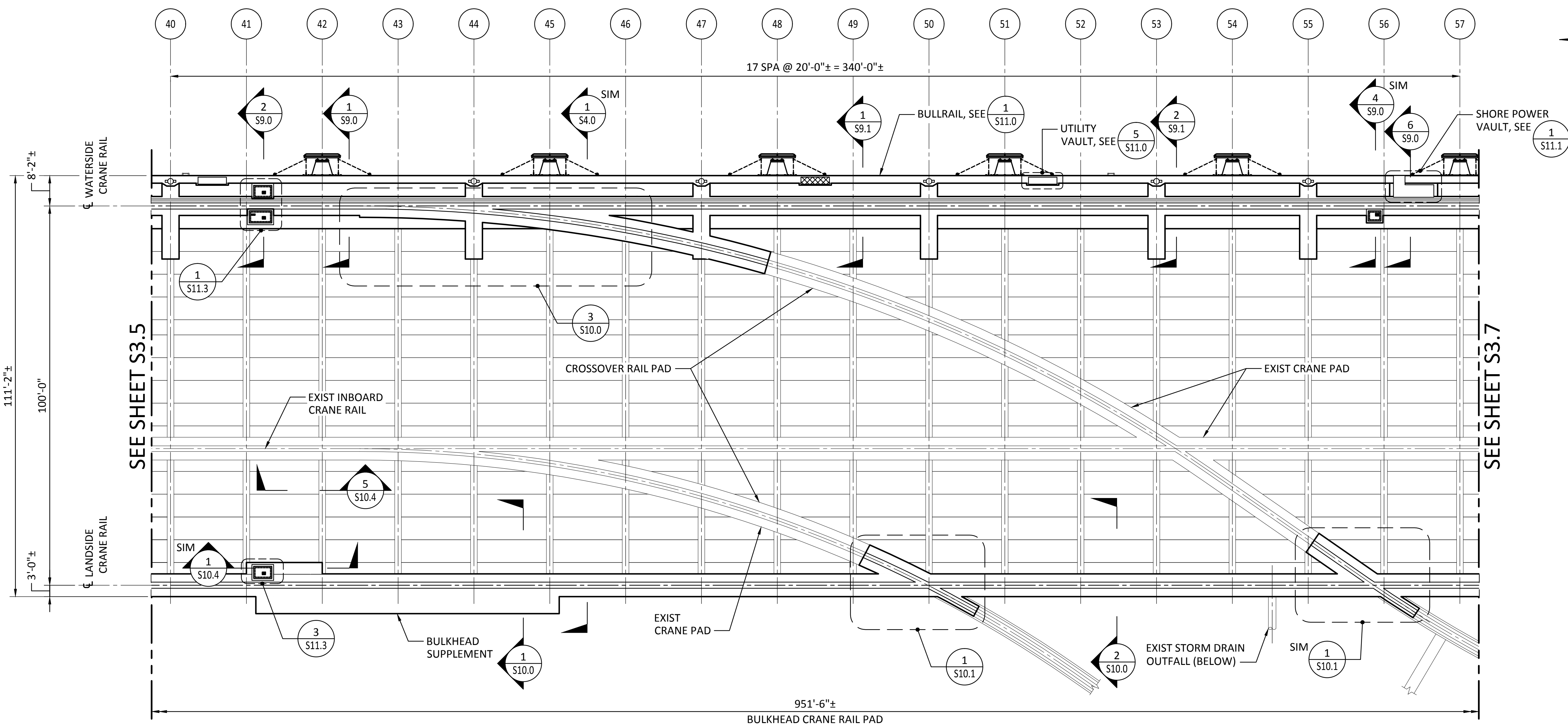
RECORD DRAWINGS:  
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	APPR: _____	DATE: _____
 P.O. BOX 1887 TACOMA, WA 98401-0188	REVISION: _____	
	MARK: _____	
	CSB	7/17/13
	CHECKED BY: JRG	7/17/13
APPROVED: DC	7/17/13	DATE
DIR OF ENG	DATE	DATE
PRINTED BY: Jason.mendenthal	PROJ. ENGR	DATE
PORT ADDRESS: ONE SITCUM WAY	ONE SITCUM WAY	DATE
TACOMA, WA 98421-2300	TACOMA, WA 98421-2300	DATE
<b>PIER 3 UPGRADE</b>		
<b>DECK PLAN SHEET 2</b>		
TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN
PARCEL: 27		
6502	069458	092935
<b>S3.5</b>	SHEET 49 OF 129	RECORD DRAWINGS

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BINDING EDGE

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SEE SHEET S3.5

SEE SHEET S3.7

**1 PLAN - DECK**  
SCALE: 1/16" = 1'-0"

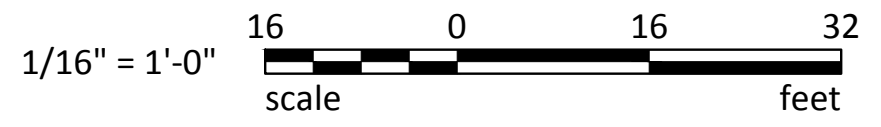
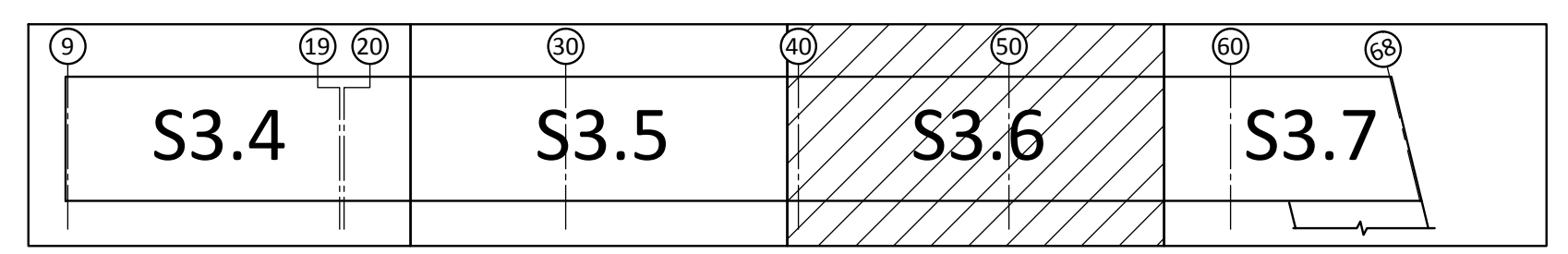
**LEGEND:**

- |  |                            |  |                     |
|--|----------------------------|--|---------------------|
|  | EXIST BOLLARD              |  | FENDER UNIT, NOTE 2 |
|  | EXIST SPLICE BOX           |  | 200-TON BOLLARD     |
|  | EXIST PIN SOCKET           |  | 100-TON BOLLARD     |
|  | EXIST STORM WATER VAULT    |  | LADDER              |
|  | EXIST STORM DRAIN INLET    |  | WATER UTILITY VAULT |
|  | EXIST WATER MAIN           |  | 480V UTILITY VAULT  |
|  | EXIST CRANE RAIL GROUNDING |  | CRANE TIE DOWNS     |
|  | EXIST ELECTRICAL CONDUIT   |  | CRANE POWER VAULT   |
|  | EXIST STORM DRAIN          |  | SHORE POWER VAULT   |
|  |                            |  | HIGH MAST LIGHT     |
|  |                            |  | PIN SOCKET          |

**NOTES:**

1. ACP AND BALLAST NOT SHOWN.
2. ALIGN CENTER OF FENDER UNITS ON CENTERLINE OF EXIST PILE CAPS, UNO.

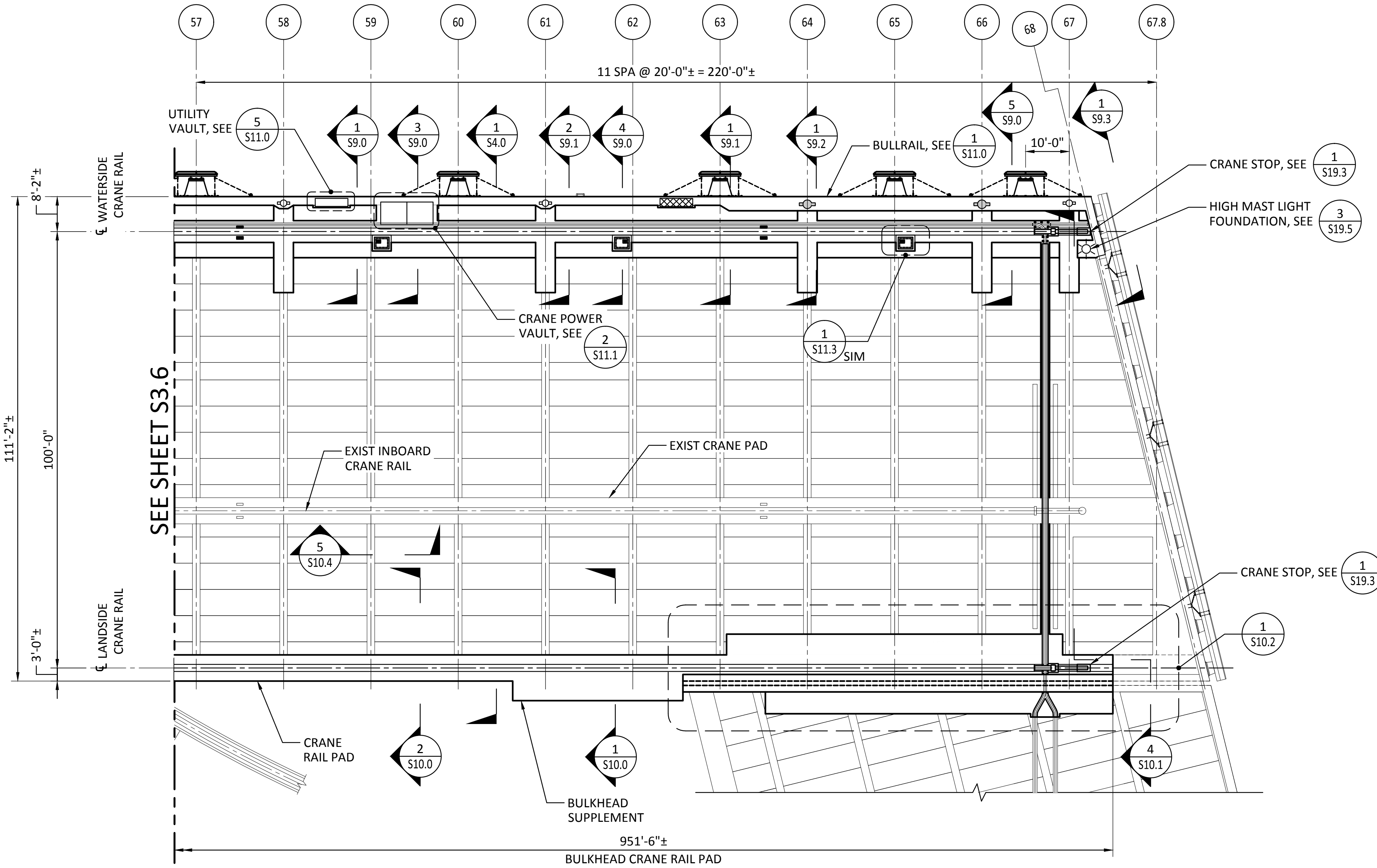
**KEY PLAN:**



**RECORD DRAWINGS:**  
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	APPR: _____	DATE: _____
 P.O. BOX 1887 TACOMA, WA 98421-2300	MARK: _____	REVISION: _____
	BY: _____	DATE: _____
	CSB	7/17/13
	CHECKED BY: JRG	DATE: 7/17/13
DC	7/17/13	PROJ. ENGR: jason.mendenthal
DIR OF ENG	DATE: jason.mendenthal	DATE: jason.mendenthal
PRINTED BY: jason.mendenthal	DATE: jason.mendenthal	DATE: jason.mendenthal
PORT ADDRESS: ONE SITCUM WAY	DATE: jason.mendenthal	DATE: jason.mendenthal
TACOMA, WA 98421-2300	DATE: jason.mendenthal	DATE: jason.mendenthal
<b>PIER 3 UPGRADE</b>		
<b>DECK PLAN SHEET 3</b>		
RANGE: 3 E	SECTION: 27	AS SHOWN
TOWNSHIP: 21 N	VERT: NOS TIDAL (MLLW = 0.0)	AS SHOWN
DAT-HRZ: NAD 83-07	PARCEL: 27	AS SHOWN
6502	069458	092935
<b>S3.6</b>	SHEET 50 OF 129	RECORD DRAWINGS

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1 PLAN - DECK  
SCALE: 1/16" = 1'-0"

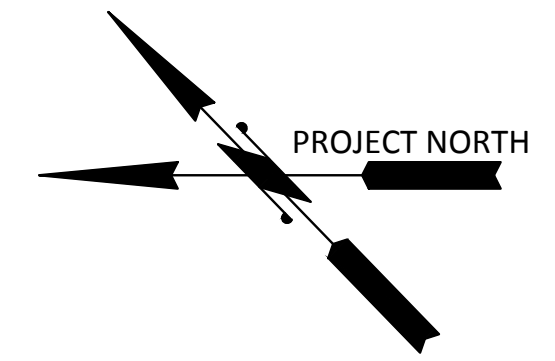
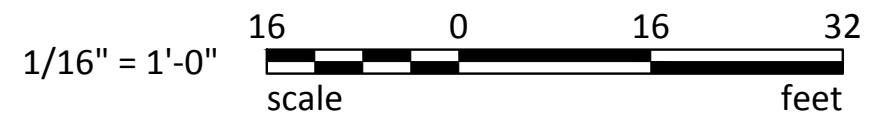
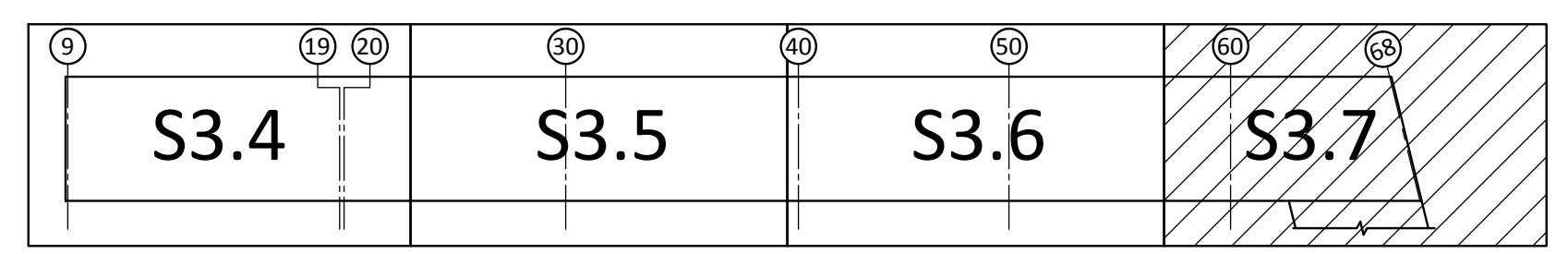
LEGEND:

- |  |                            |  |                     |
|--|----------------------------|--|---------------------|
|  | EXIST BOLLARD              |  | FENDER UNIT, NOTE 2 |
|  | EXIST SPLICE BOX           |  | 200-TON BOLLARD     |
|  | EXIST PIN SOCKET           |  | 100-TON BOLLARD     |
|  | EXIST STORM WATER VAULT    |  | LADDER              |
|  | EXIST STORM DRAIN INLET    |  | WATER UTILITY VAULT |
|  | EXIST WATER MAIN           |  | 480V UTILITY VAULT  |
|  | EXIST CRANE RAIL GROUNDING |  | CRANE TIE DOWNS     |
|  | EXIST ELECTRICAL CONDUIT   |  | CRANE POWER VAULT   |
|  | EXIST STORM DRAIN          |  | SHORE POWER VAULT   |
|  |                            |  | HIGH MAST LIGHT     |
|  |                            |  | PIN SOCKET          |

NOTES:

1. ACP AND BALLAST NOT SHOWN.
2. ALIGN CENTER OF FENDER UNITS ON CENTERLINE OF EXIST PILE CAPS, UNO.

KEY PLAN:



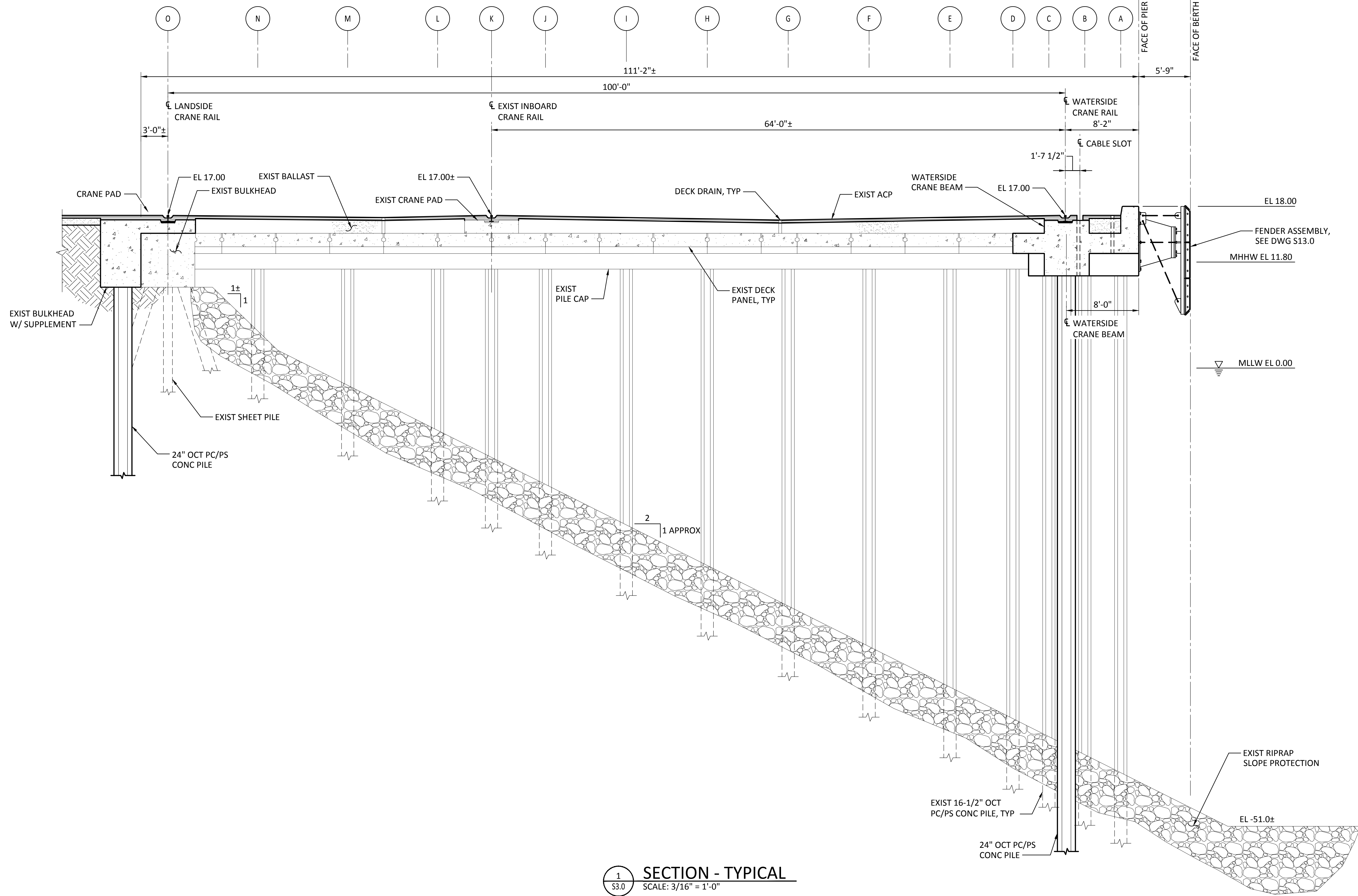
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ APPR: _____ DATE: _____
	REVISION: _____ MARK: _____
 JASON MENDENTHAL PROFESSIONAL ENGINEER STATE OF WASHINGTON LICENSE NO. 37006	
APPROVED: _____ CSB 7/17/13 CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: jason.mendenthal PRINTED BY: ONE SITCUM WAY PORT ADDRESS: TACOMA, WA 98421-2300	DECK PLAN SHEET 4 RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S3.7</b> SHEET 51 OF 129 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	PIER 3 UPGRADE

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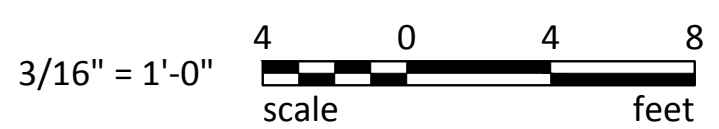
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**SECTION - TYPICAL**  
 SCALE: 3/16" = 1'-0"

S3.1, S3.2, S3.3,  
 S3.4 S3.5, 3.6, S3.7

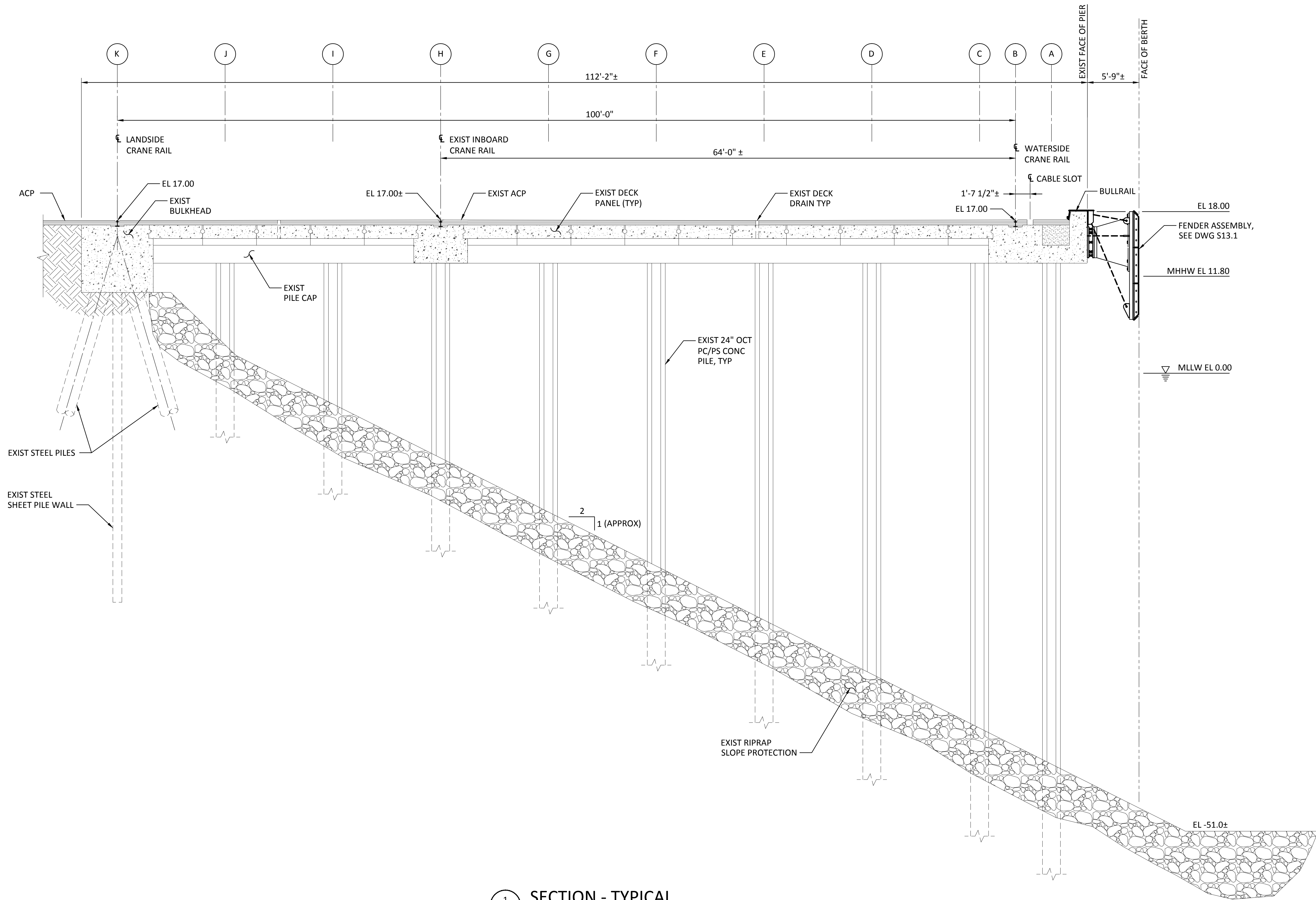


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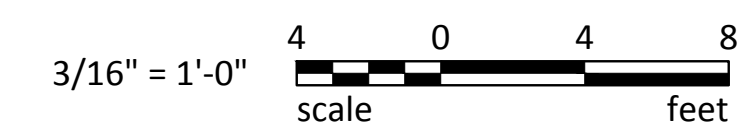
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2300 Fax: (206) 451-2250	BY: _____ DATE: _____
	REVISION: _____ APPR: _____
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	APPROVED: _____
TYPICAL SECTION SHEET 1 RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) DATE: 7/17/13 PRINTED BY: Jason.mendenhall AS SHOWN PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	CSB 7/17/13 CHECKED BY: JRG DIR OF ENG: jason.mendenhall PROJECT ENGR: jason.mendenhall DATE: 7/17/13
<b>6502 S4.0</b> SHEET 52 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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BINDING EDGE



**SECTION - TYPICAL**  
 SCALE: 3/16" = 1'-0"

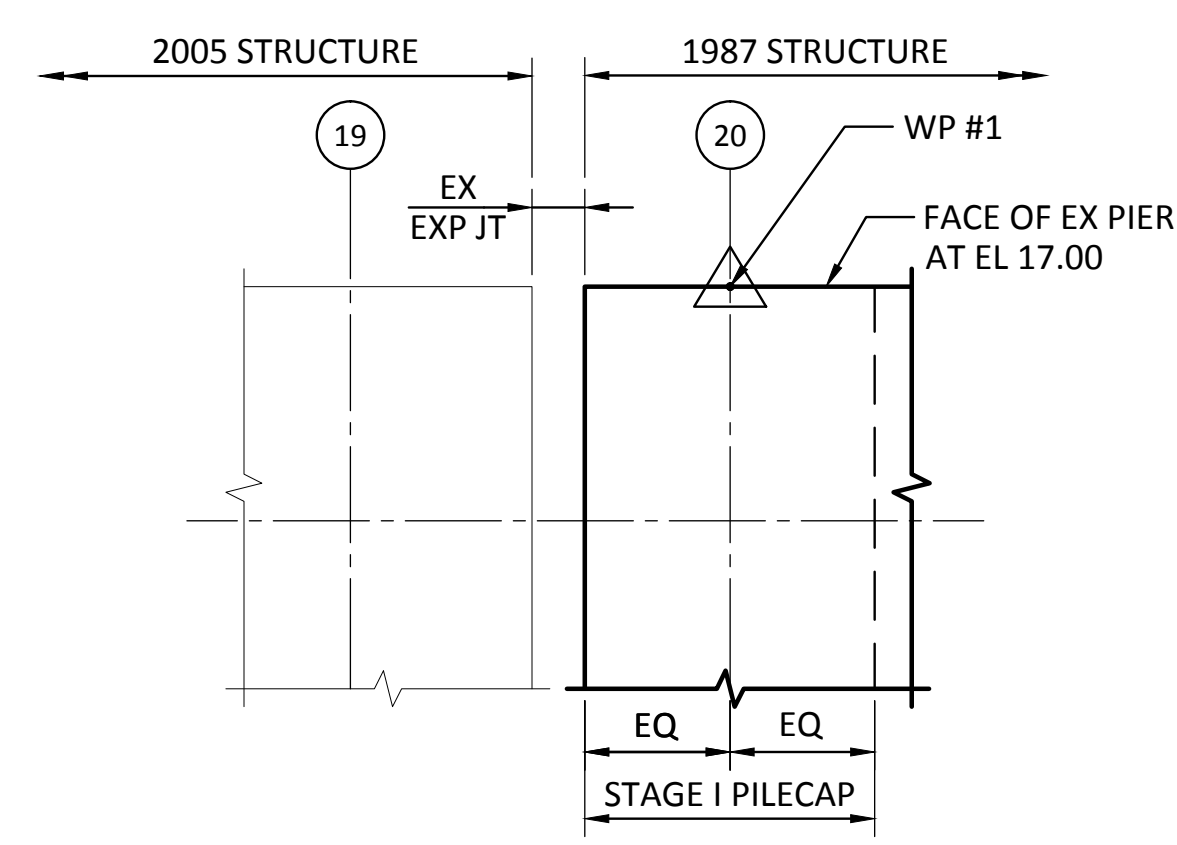
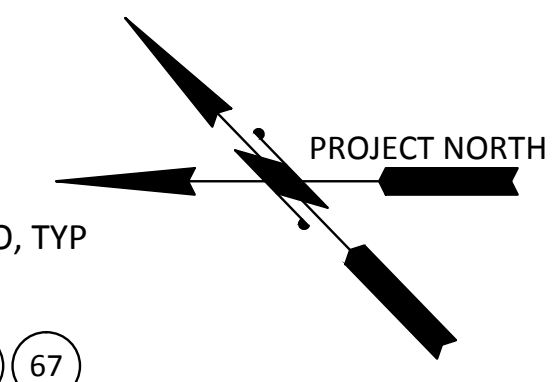
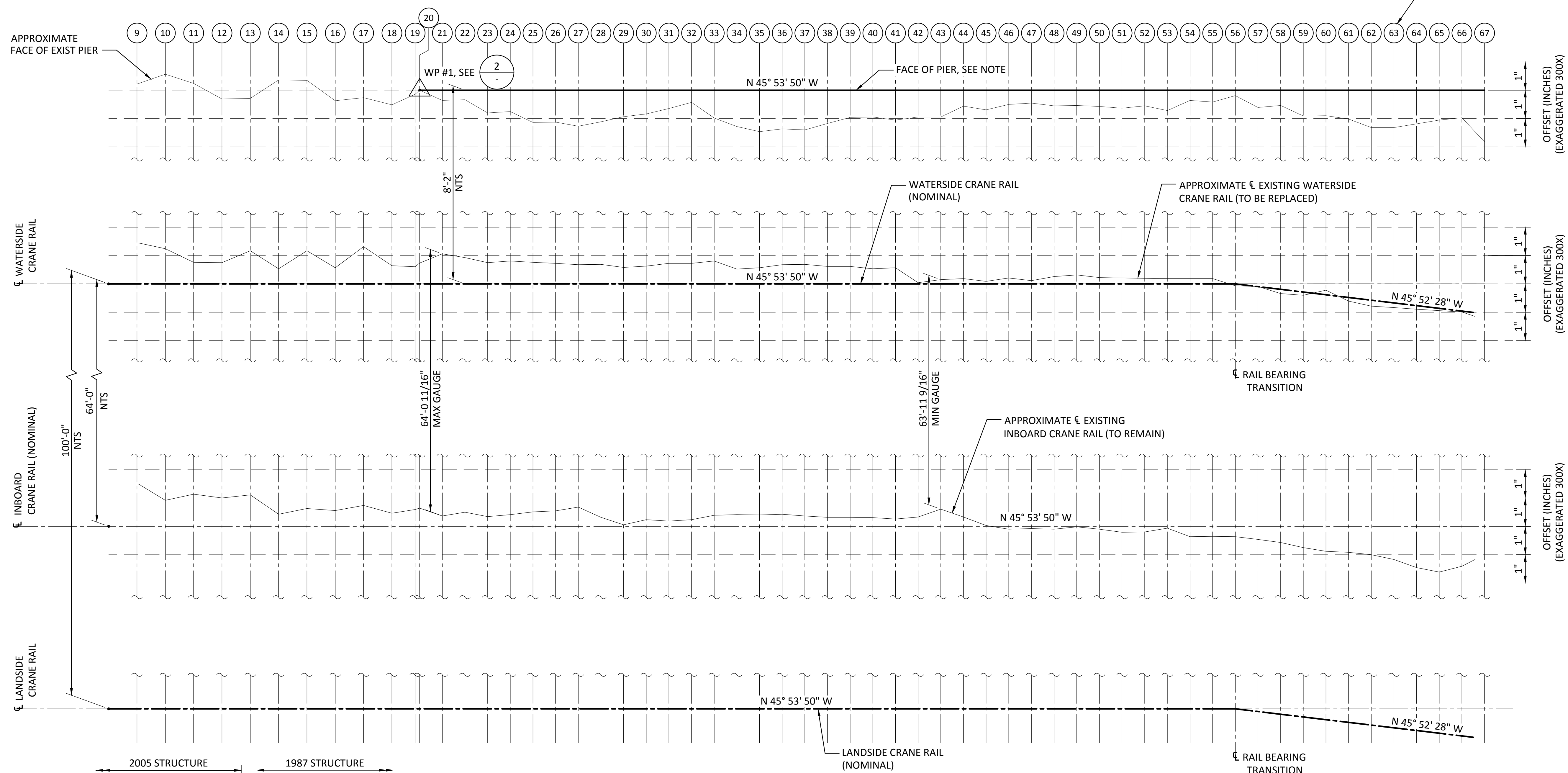


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<b>PIER 3 UPGRADE</b> TYPICAL SECTION SHEET 2	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S4.1</b> SHEET 53 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

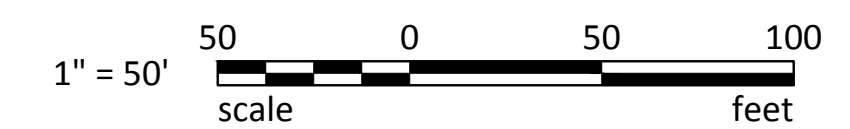
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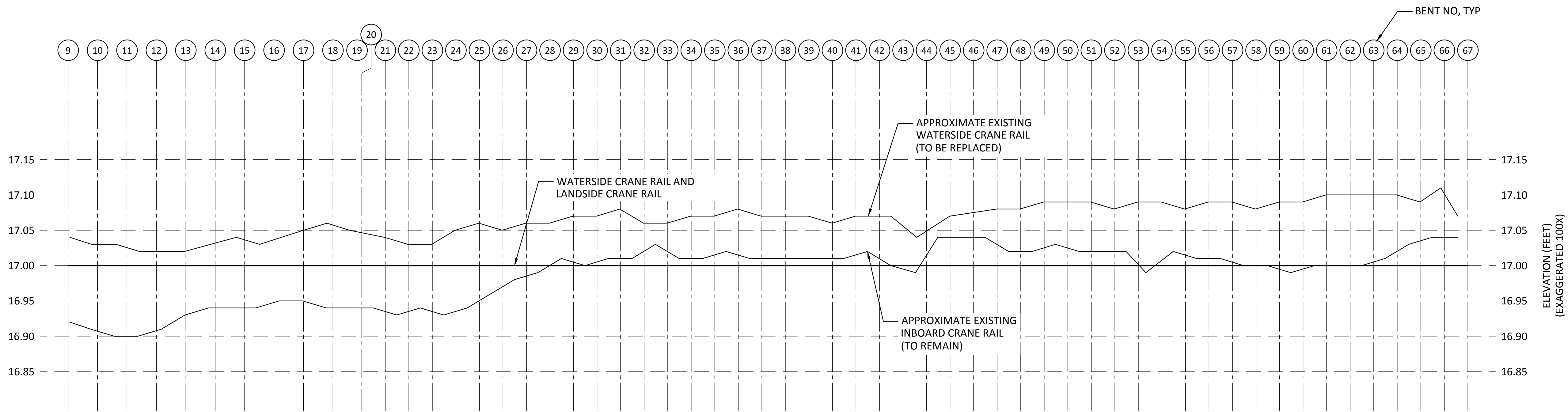
**2** - **DETAIL - WORKPOINT**  
NTS

**1** - **PLAN - CRANE RAIL ALIGNMENTS**  
SCALE: 1" = 50' (HORIZONTAL)

- NOTES:**
- FACE OF PIER IS DEFINED BY WP #1 AND PROJECT NORTH BEARING. WP #1 IS DEFINED BY FACE OF EXIST PIER AT BENT 20, EL 17.00, SEE **2**



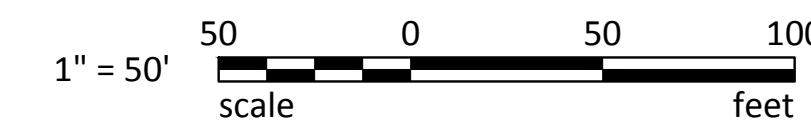
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<b>PIER 3 UPGRADE</b> <b>CRANE RAIL ALIGNMENT PLAN</b>	RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N NOS TIDAL (MILLW = 0.0) DAT-HRZ: NAD 83-07 VERT: _____ PARCEL: 27 DRAWING SCALE: AS SHOWN
6502 <b>S5.0</b> SHEET 54 OF 129 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWN: _____ RANGE: _____ SECTION: _____ DAT-HRZ: _____ VERT: _____ PARCEL: _____



**NOTE:**

- 1. ELEVATIONS ARE TO TOP OF RAIL

**1**  
-  
**PLAN - CRANE RAIL PROFILES**  
SCALE: 1" = 50' (VERTICAL)

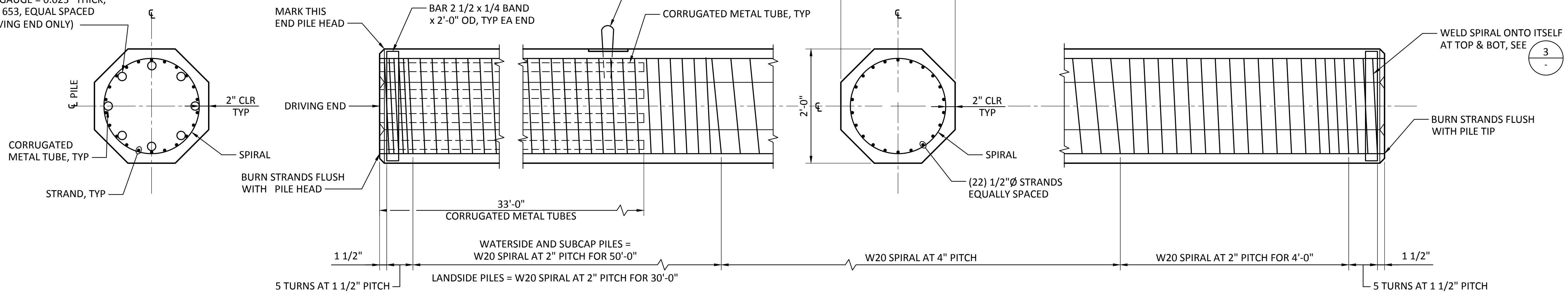


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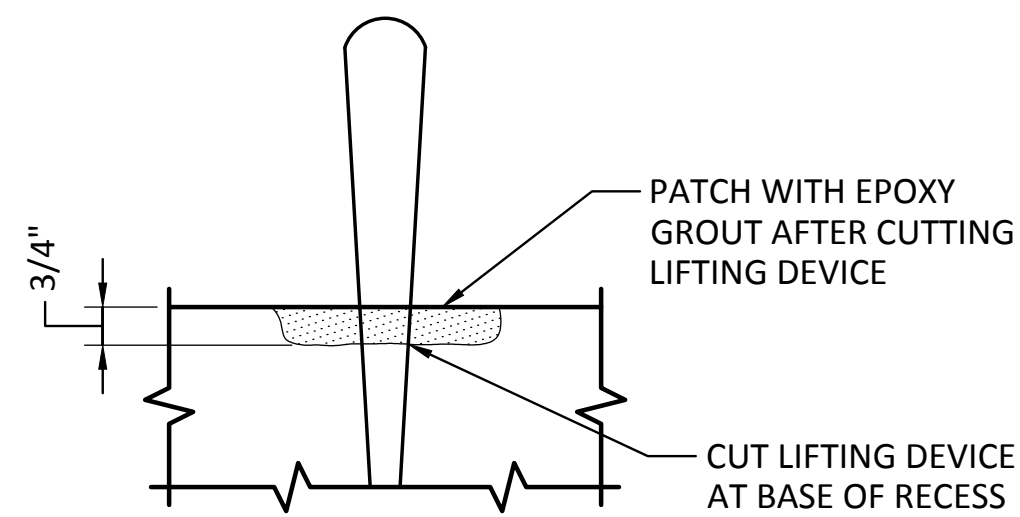
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ DATE: _____
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<b>6502</b> <b>S5.1</b> SHEET 55 OF 129	<b>PIER 3 UPGRADE</b> <b>CRANE RAIL PROFILES</b> RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN

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8- 1-3/4" ID METAL FLEXTUBES,  
MIN 24 GAUGE = 0.023" THICK,  
ATSM A 653, EQUAL SPACED  
(AT DRIVING END ONLY)

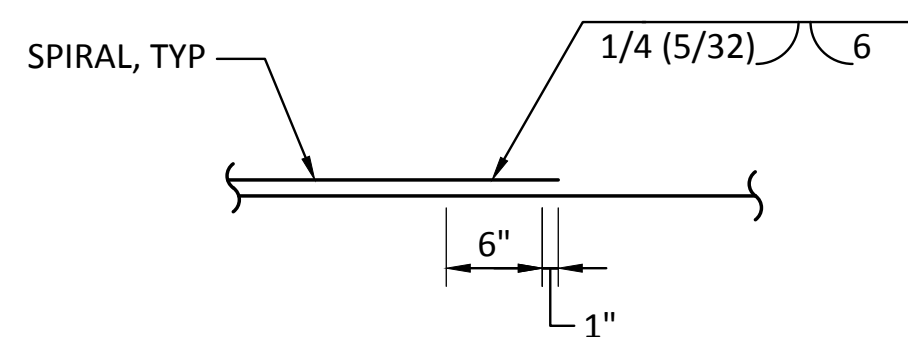


**1** 24" SOLID OCTAGONAL PRESTRESSED CONCRETE PILE  
SCALE: 1" = 1'-0"

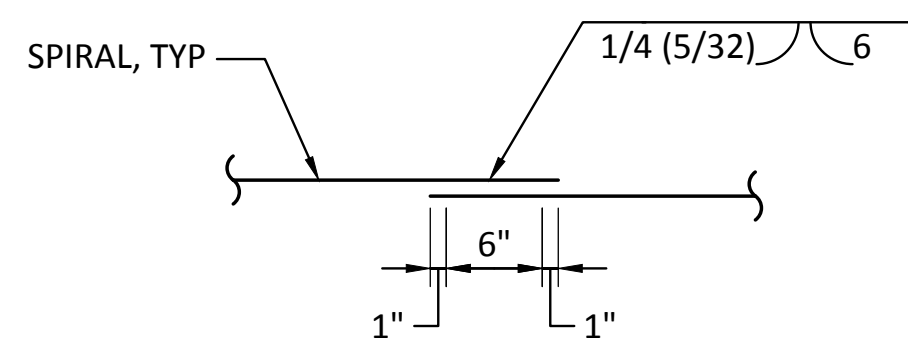


NOTE:  
LIFTING DEVICE QUANTITY AND LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR CONSIDERING ALL LOADS IMPARTED TO THE PILE (NORMAL AND PARALLEL TO THE LONGITUDINAL AXIS) BY THE RIGGING BEING USED. ALL MODES OF LIFTING (FABRICATION AND FIELD) SHALL BE CONSIDERED.

**2** DETAIL - LIFTING DEVICE  
SCALE: NTS



**3** DETAIL - WELD DETAIL AT END  
SCALE: NTS



NOTE:  
WELD ALL SPIRAL SPLICES IN THE TOP 1/3 OF THE PILE. LAPPED SPLICES WITH 2 OVER-LAPPING TURNS AND 135° HOOKS EXTENDING COMPLETELY ACROSS THE CORE MAY BE USED IN THE BOTTOM 2/3 OF THE PILE.

**4** DETAIL - SPIRAL SPLICE  
SCALE: NTS

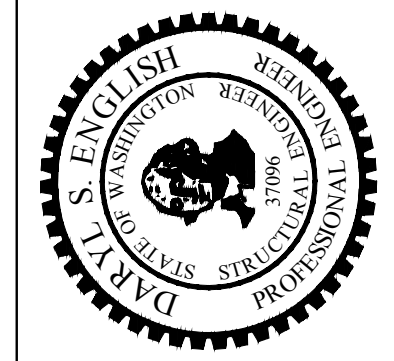
PRECAST PRESTRESSED PILE DATA (SOLID OCTAGONAL PILES)	
SIZE	24" SOLID
SECTION AREA	477 SQ IN
WEIGHT	525 LBS/FT
SECTION MODULUS	1515 CUBIC IN
PRETENSION:	24" SOLID
NUMBER OF STRANDS	22
DESIGN FORCE	555 KIPS
PRESTRESS IN CONCRETE	1160 PSI
MIN CONCRETE COMPRESSIVE STRENGTH:	
AT RELEASE	4800 PSI
AT DRIVING	8000 PSI
AT 28 DAYS	8000 PSI
PRESTRESSING STEEL	1/2" DIA 7-WIRE LOW RELAXATION STRAND
SPIRAL	ASTM A82 SPACING/DRAWING

NOTE:  
MARK DRIVING END OF ALL PILES CLEARLY IN PRECAST PLANT.

PILING SCHEDULE (24" SOLID OCTAGONAL CONCRETE PILES)			
INSTALLED LOCATIONS	QTY	SUPPLIED LENGTH (FT)	ULTIMATE DEMAND
WATERSIDE CRANE BEAM	93	130'-0"	650 KIPS
SUBCAP @ 66	2	130'-0"	650 KIPS
SUBCAP @ 67	2	138'-0"	650 KIPS
WATERSIDE CRANE BEAM NEAR BENT 67	1	138'-0"	650 KIPS
BULKHEAD SUPPLEMENT	36	90'-0"	500 KIPS

**BergerABAM**  
3301 9th Avenue South, Suite 300  
Federal Way, Washington 98003-2600  
(206) 451-2200 Fax: (206) 451-2250

**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401-01887

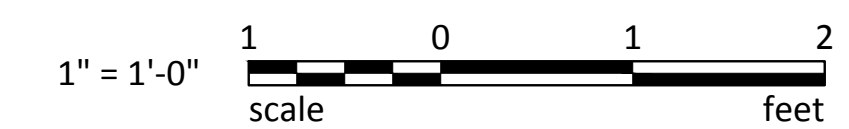


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DATE	7/17/13
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PORT ADDRESS	DATE

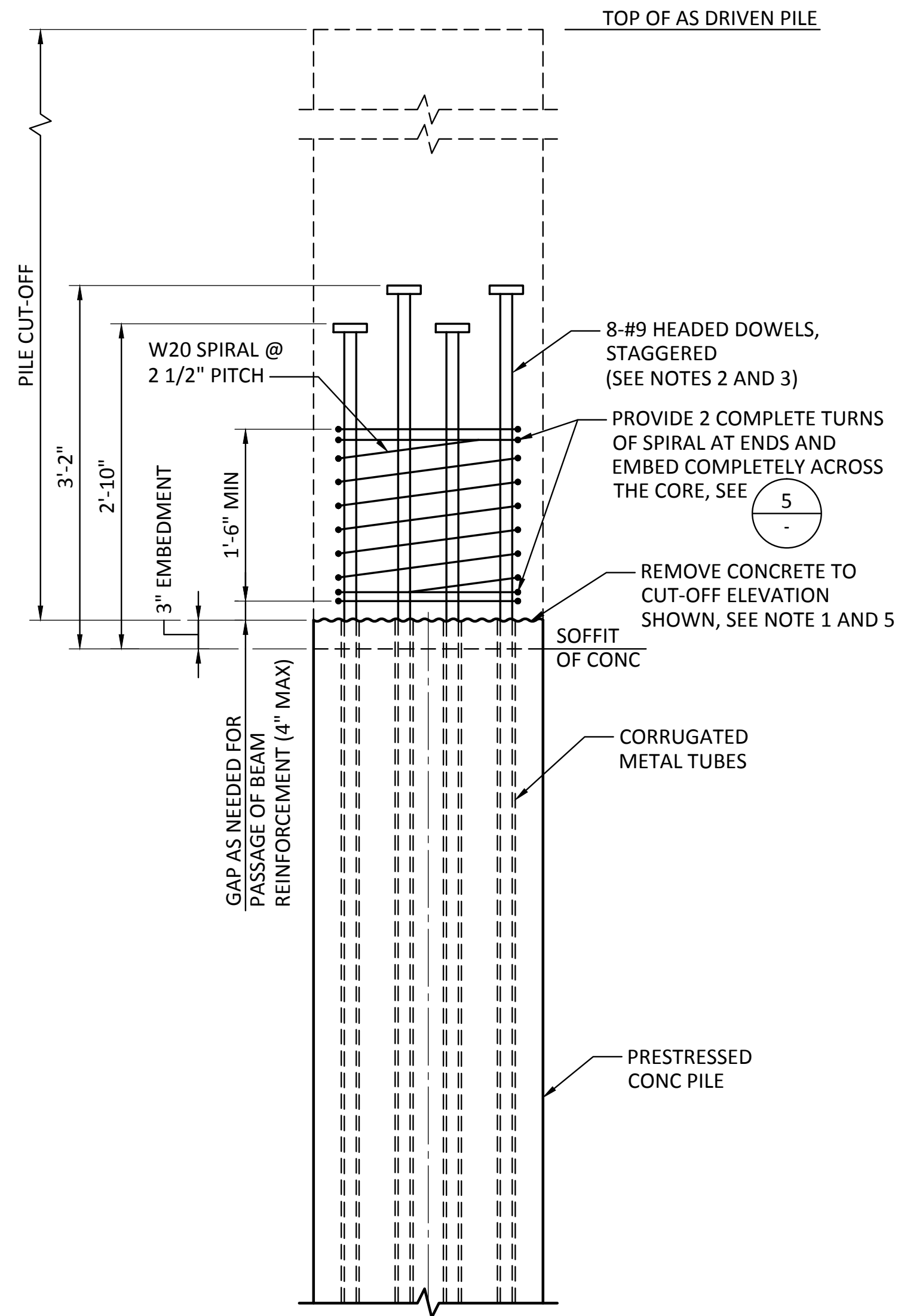
PIER 3 UPGRADE			
PRESTRESSED CONCRETE PILE DETAILS			
TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN	
PARCEL: 27			

**6502**  
**S6.0**  
SHEET 56 OF 129  
CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

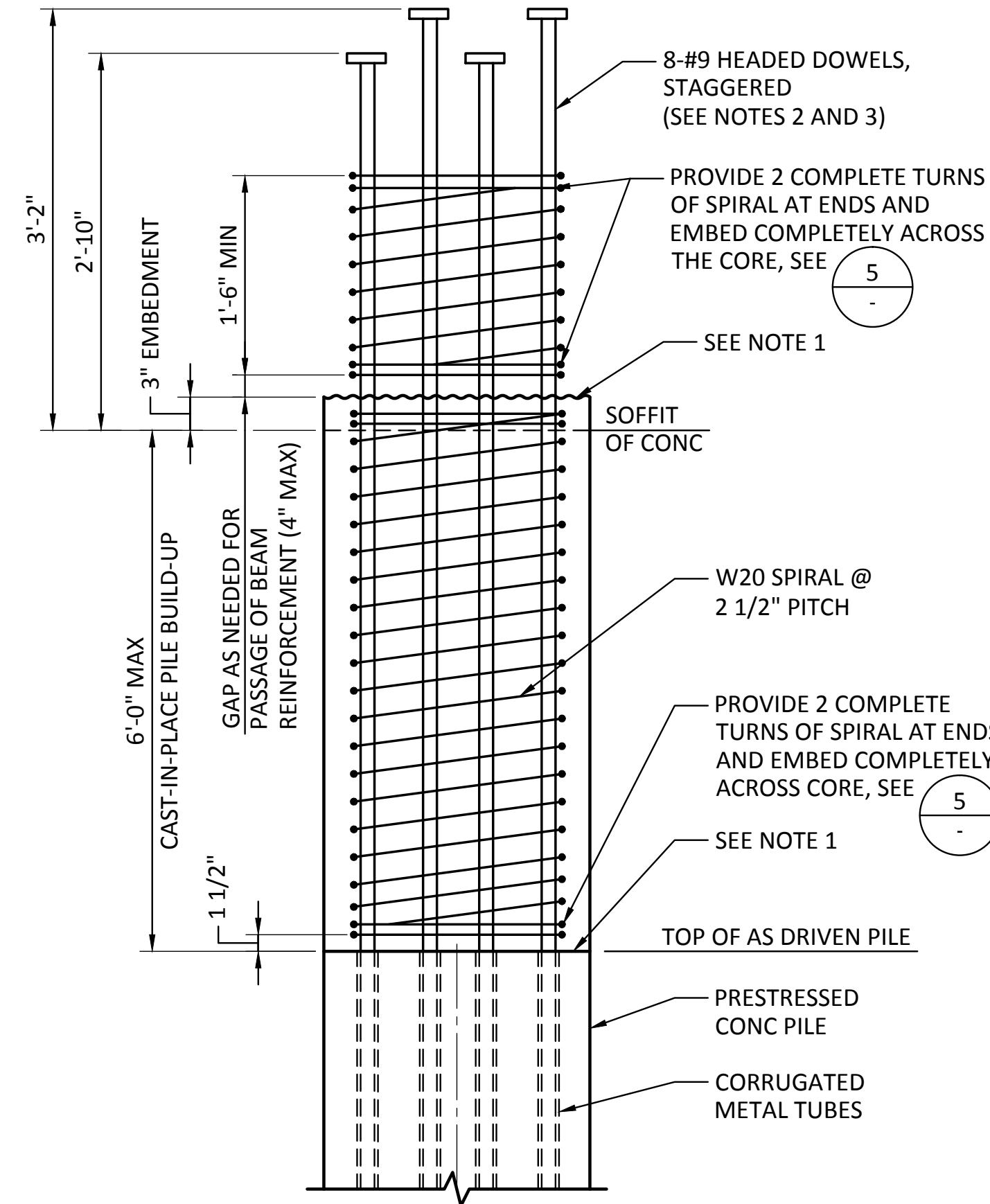




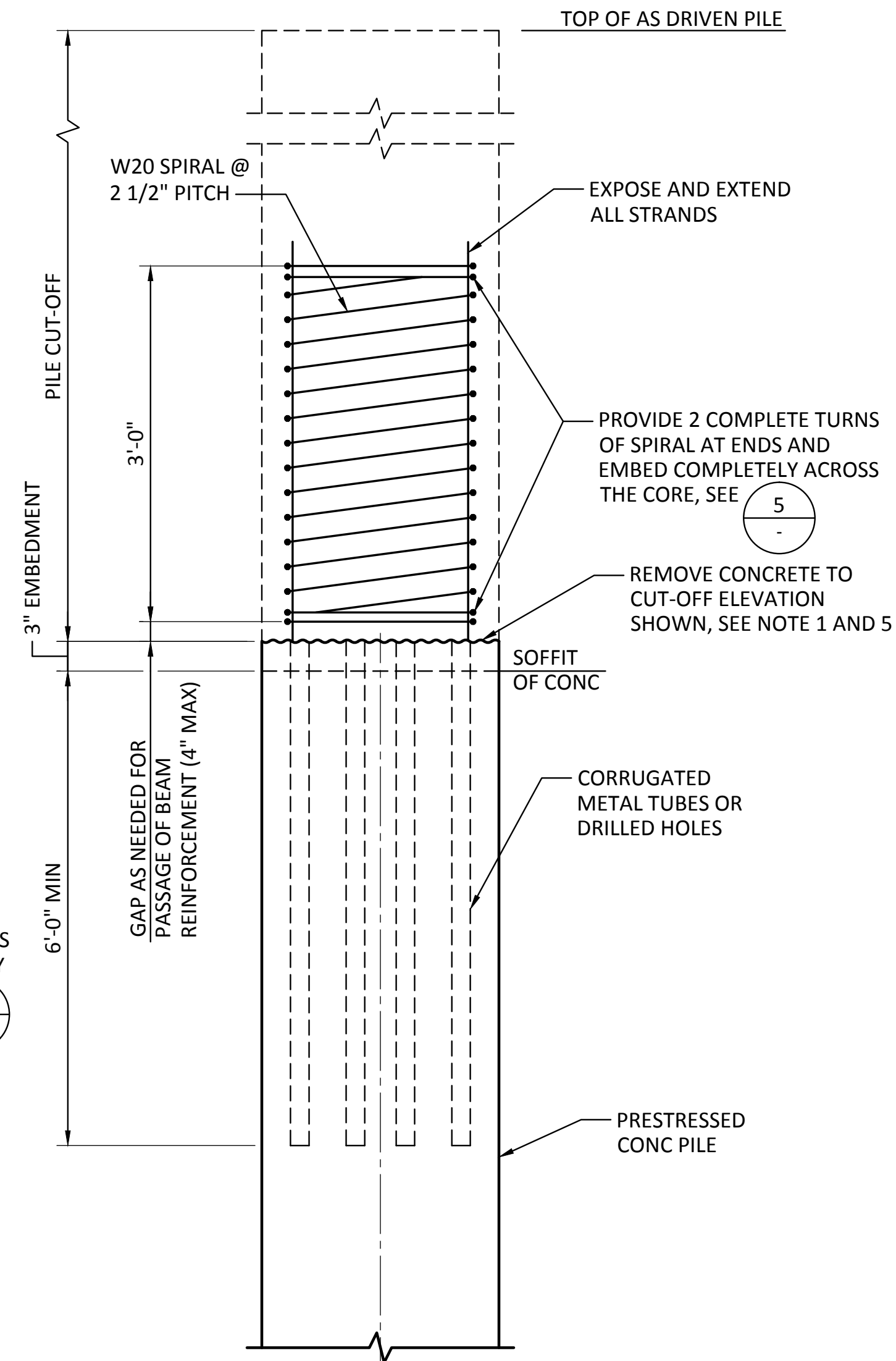
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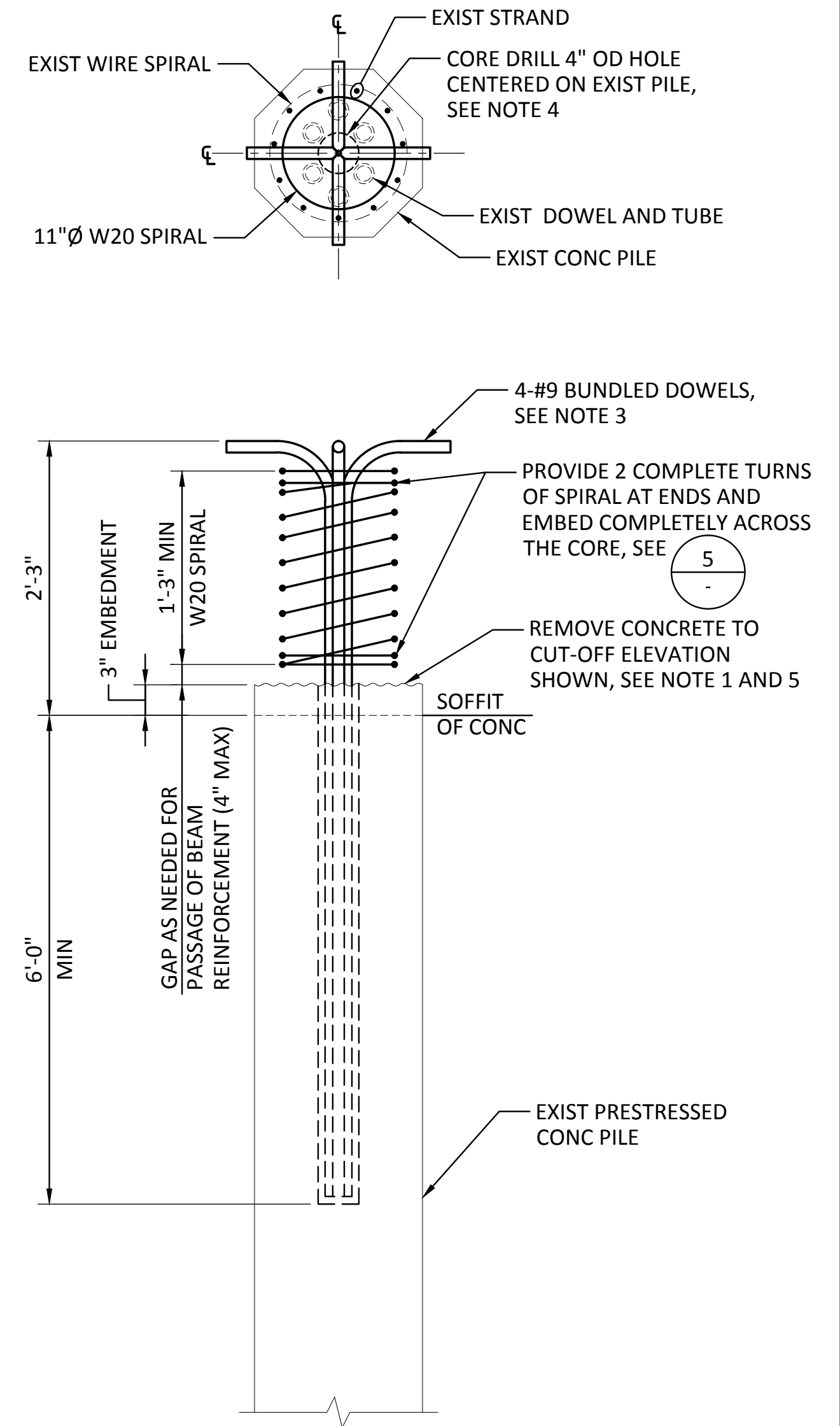
**1** **DETAIL - PILE CONNECTION**  
SCALE: 1" = 1'-0" PILE CUT-OFF LESS THAN 18'-9" FEET



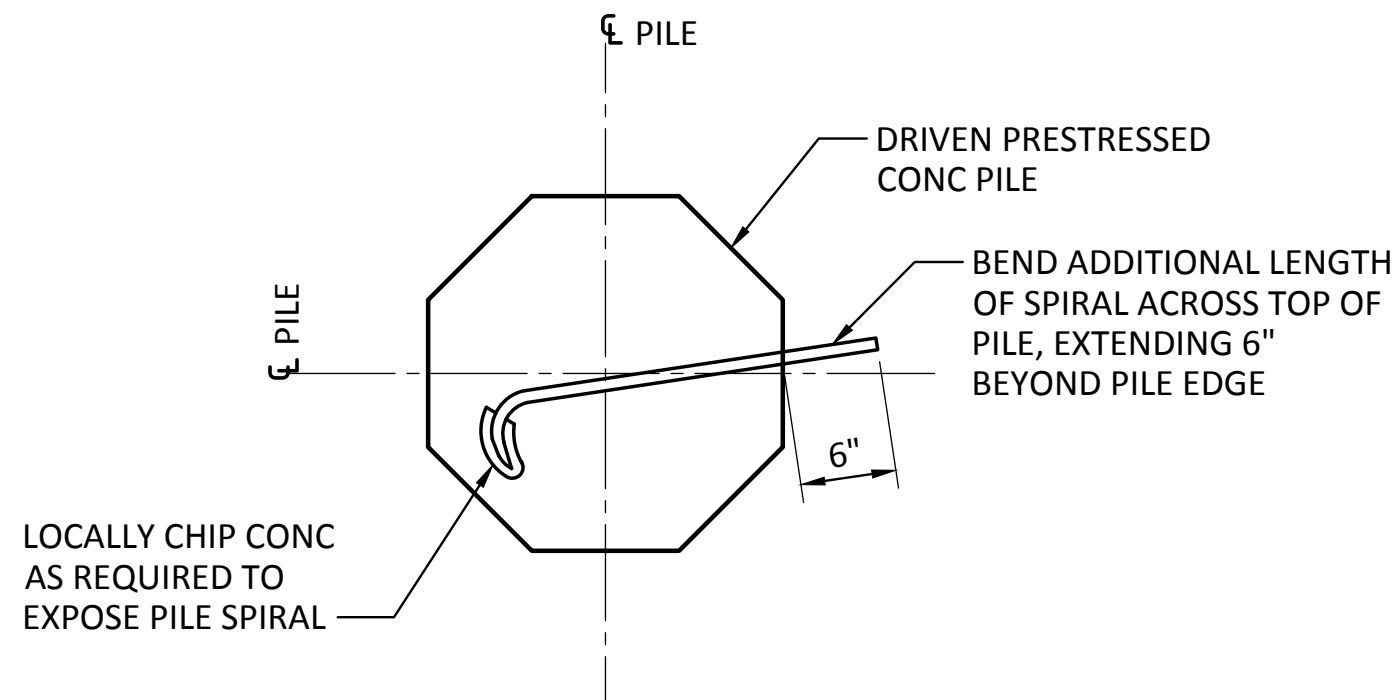
**2** **DETAIL - PILE CONNECTION**  
SCALE: 1" = 1'-0" NO PILE CUT-OFF NECESSARY



**3** **DETAIL - PILE CONNECTION**  
SCALE: 1" = 1'-0" PILE CUT-OFF EXCEEDS 18'-9" FEET



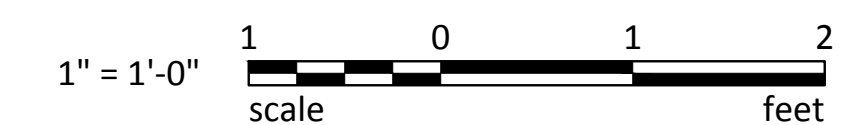
**4** **DETAIL - EXIST PILE CONNECTION**  
SCALE: 1" = 1'-0"



**5** **DETAIL - SPIRAL DEVELOPMENT @ TOP OF PILE**  
SCALE: NTS

**NOTES:**

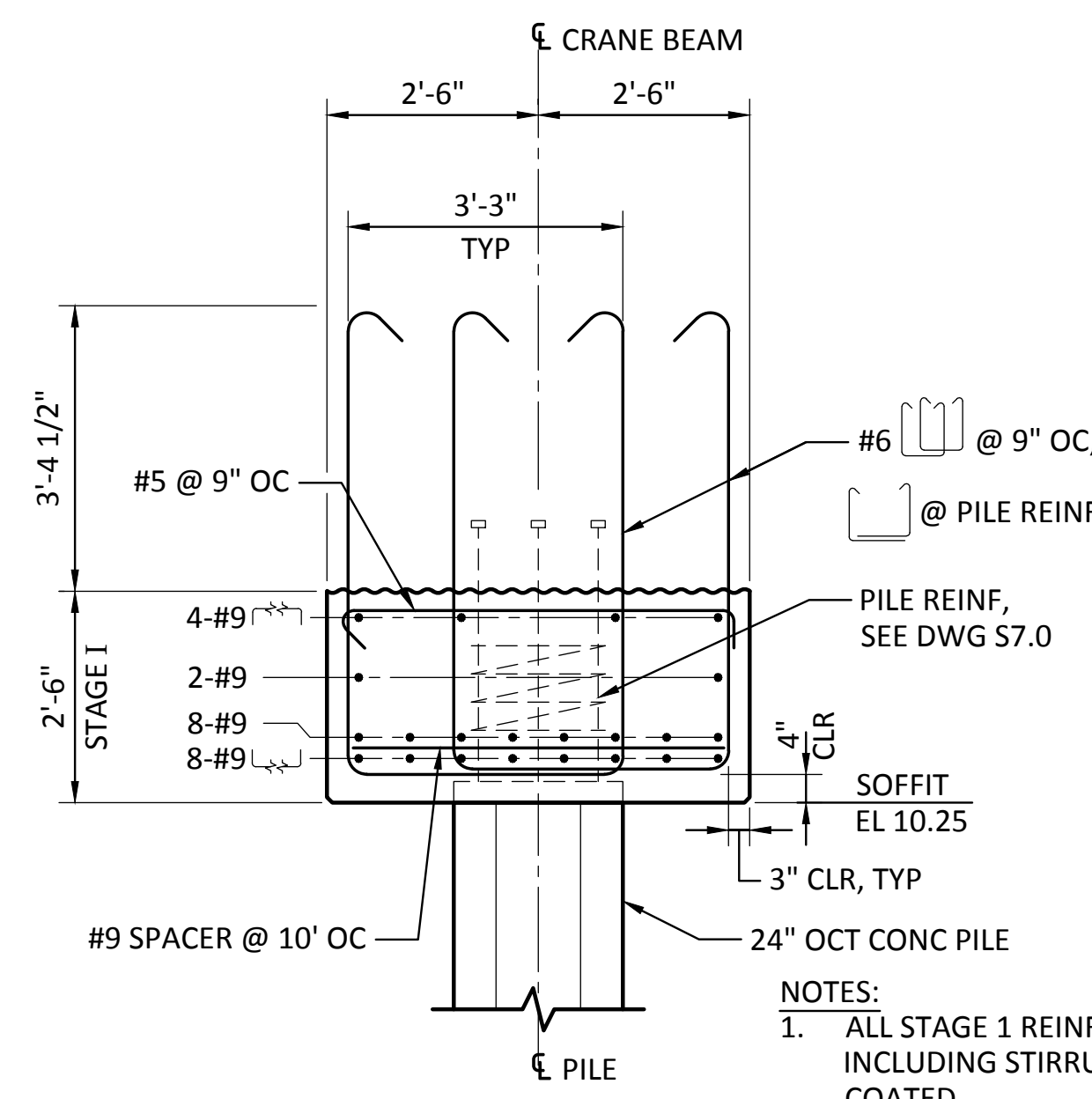
- ROUGHEN TOP SURFACE OF PILE TO 1/4" AMPLITUDE.
- DOWELS SHALL BE GROUTED INTO PILE MINIMUM 6'-3". FILL TUBE LENGTHS BELOW DOWELS WITH GROUT.
- DOWEL TUBES SHALL BE FILLED WITH GROUT. DOWELS SHALL BE PLACED INDIVIDUALLY AND IMMEDIATELY AFTER GROUTING. SEE SPECIFICATIONS FOR GROUT REQUIREMENTS.
- HOLES SHALL BE ROUGHENED TO 1/8" AMPLITUDE AND CLEANED PRIOR TO INSTALLATION OF DOWELS AND GROUT.
- DEVELOP PILE SPIRAL SIMILAR TO **5**



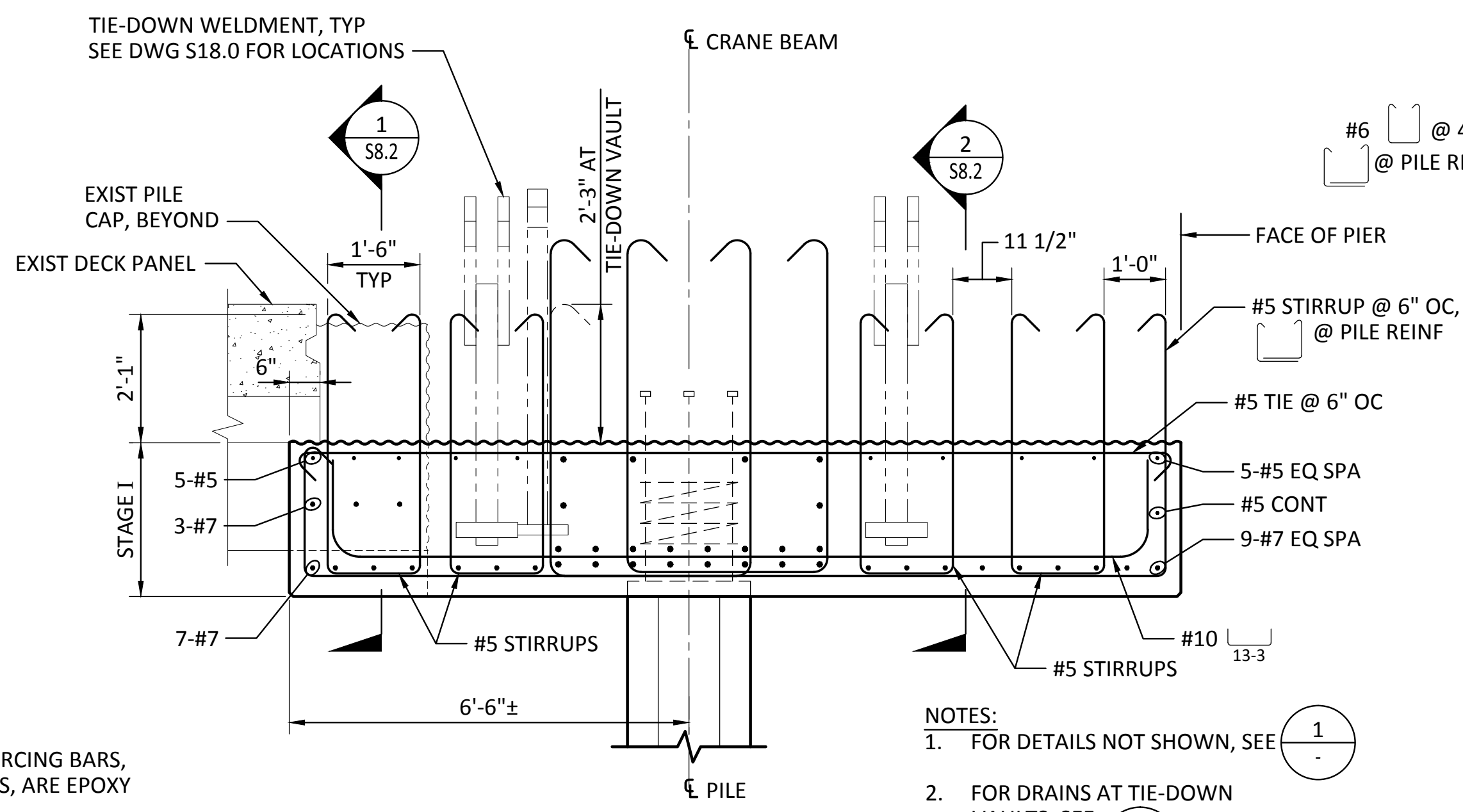
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	BY:
 P.O. BOX 1887 TACOMA, WA 98401-0887	REVISION:
	MARK:
 JASON MENDENTHAL PROFESSIONAL ENGINEER STATE OF WASHINGTON LICENSE NO. 27004	DATE:
	DATE:
CSB	7/17/13
CHECKED BY:	JRG
DIR OF ENG	DATE
PRINTED BY:	jason.mendenthal
PORT ADDRESS:	ONE SITCUM WAY TACOMA, WA 98421-2300
<b>PIER 3 UPGRADE</b> <b>PILE TO PILE CAP CONNECTION DETAILS</b>	
<b>6502</b> <b>S7.0</b> SHEET 57 OF 129	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	SECTION: 27 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN

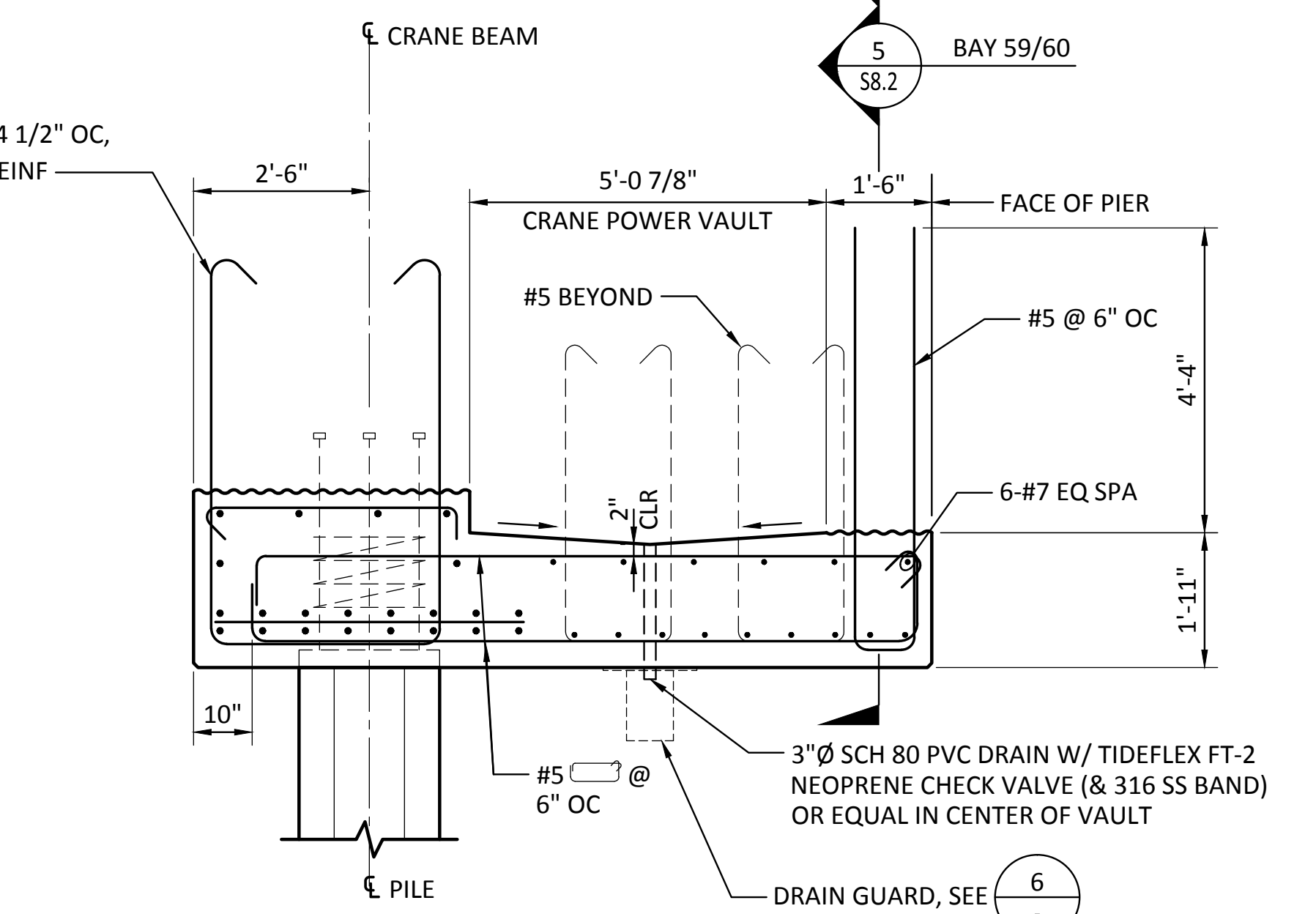
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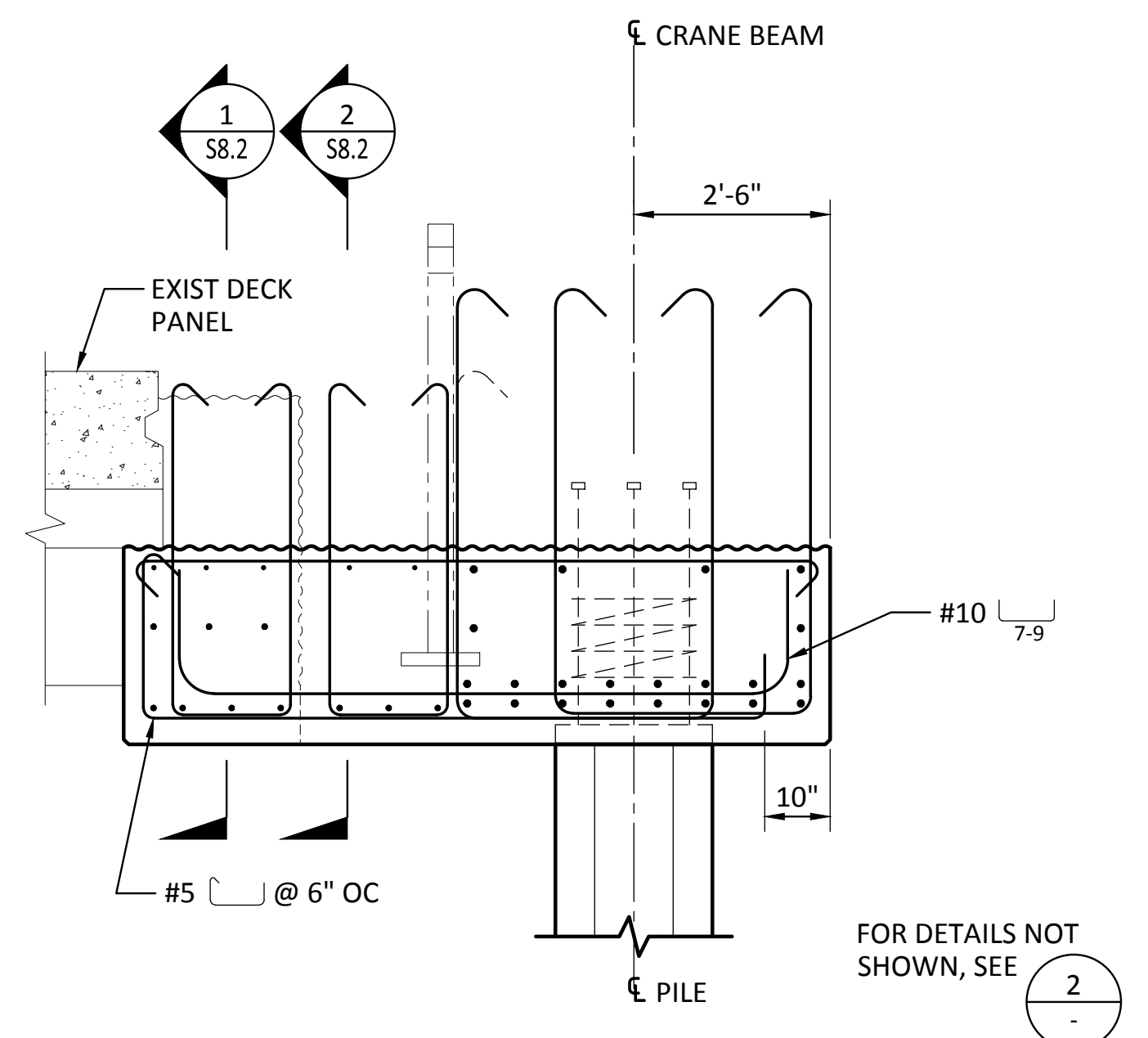
**1**  
S3.0  
**SECTION - CRANE BEAM**  
SCALE: 1/2" = 1'-0"  
S3.1, S3.2, S3.3



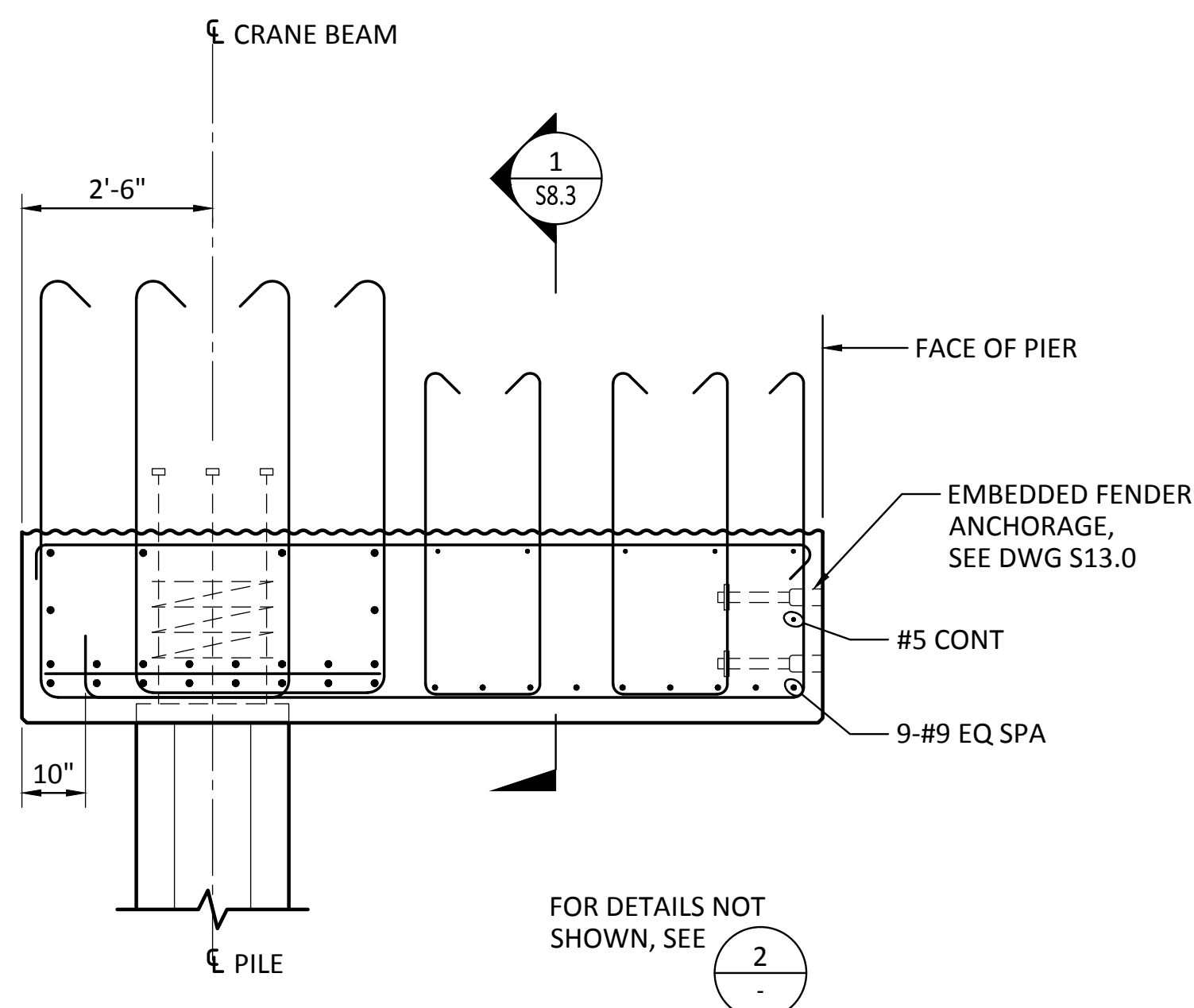
**2**  
S3.1  
**SECTION - TIE-DOWN (PAIR)**  
SCALE: 1/2" = 1'-0"  
S3.2



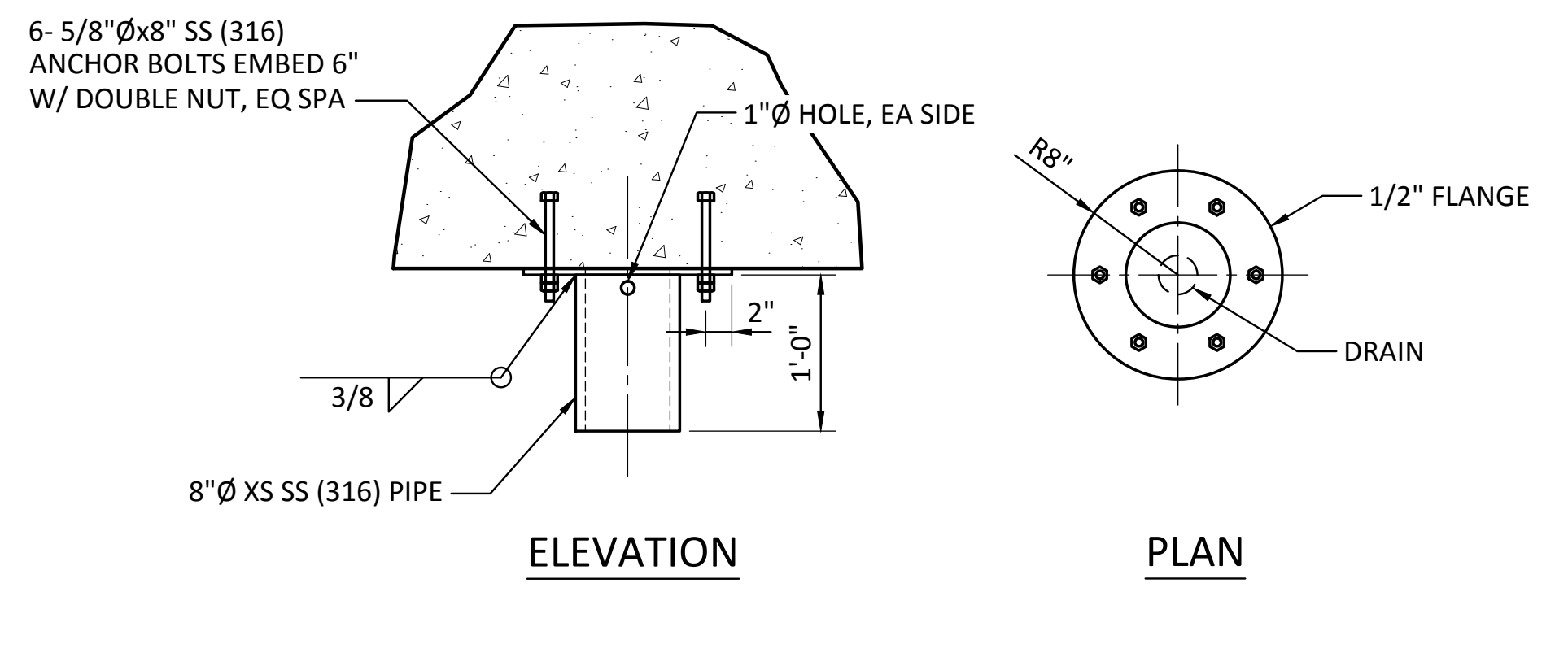
**3**  
S3.1  
**SECTION - CRANE POWER VAULT**  
SCALE: 1/2" = 1'-0"  
S3.3



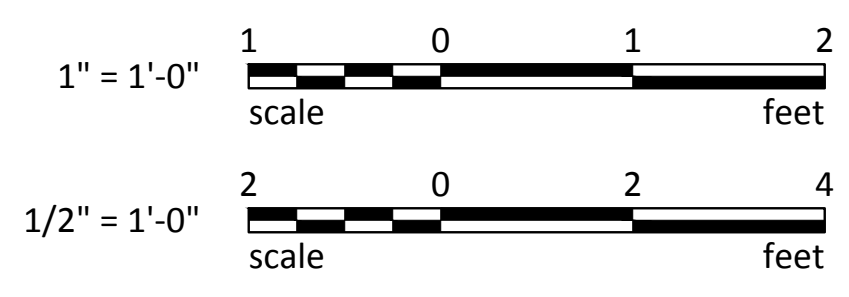
**4**  
S3.3  
**SECTION - TIE-DOWN (SINGLE)**  
SCALE: 1/2" = 1'-0"



**5**  
S3.3  
**SECTION - BAY 66 - 68**  
SCALE: 1/2" = 1'-0"



**6**  
SCALE: 1" = 1'-0"  
**DETAIL - DRAIN GUARD**  
(3 TOTAL)



- NOTES:
- ALL STAGE 1 REINFORCING BARS, INCLUDING STIRRUPS, ARE EPOXY COATED.
  - FOR PIPE SLEEVES AT CRANE STOP SEE DWG S19.3

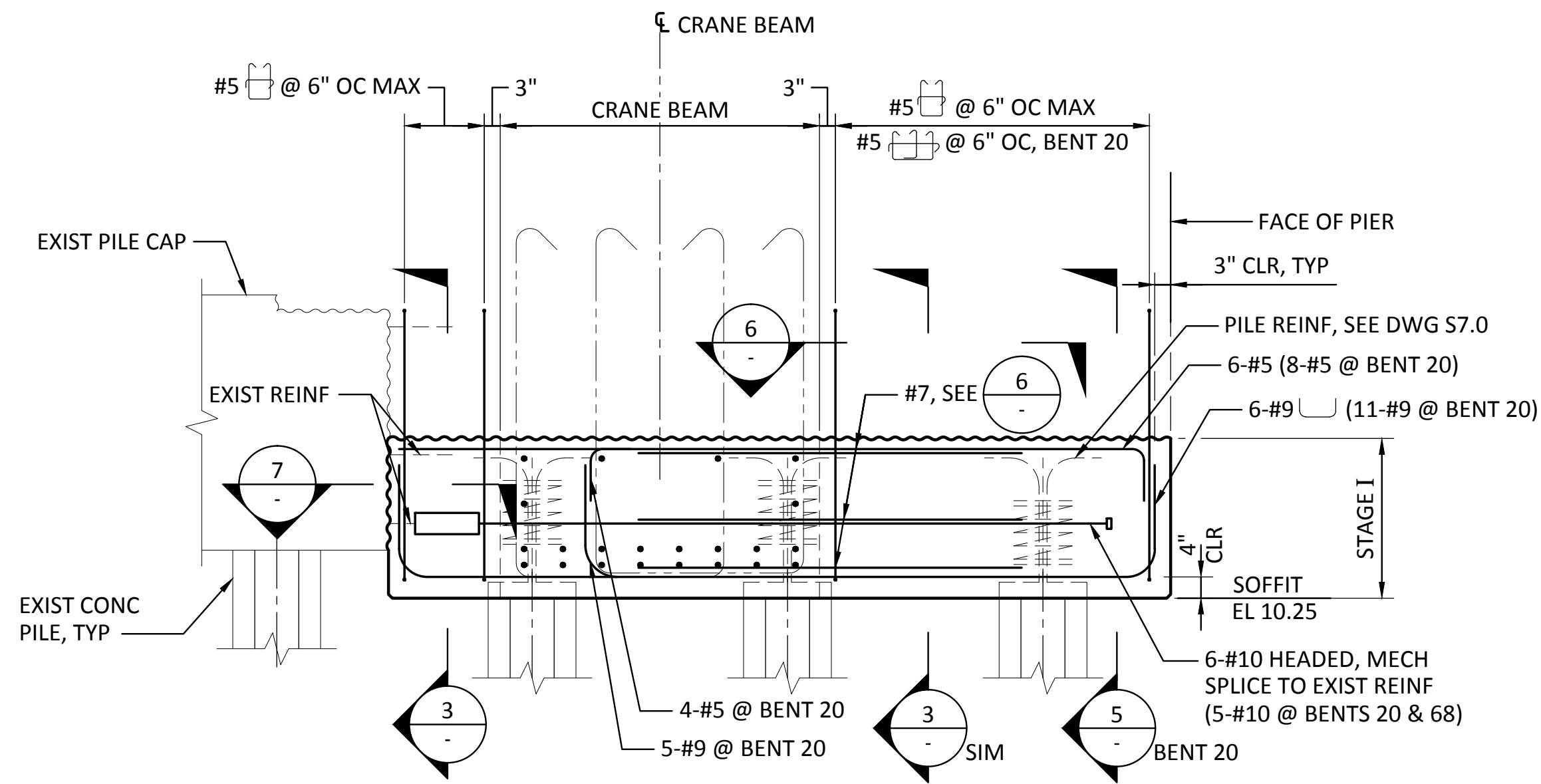
- NOTES:
- FOR DETAILS NOT SHOWN, SEE **1**
  - FOR DRAINS AT TIE-DOWN VAULTS, SEE **2**

FOR DETAILS NOT SHOWN, SEE **2**

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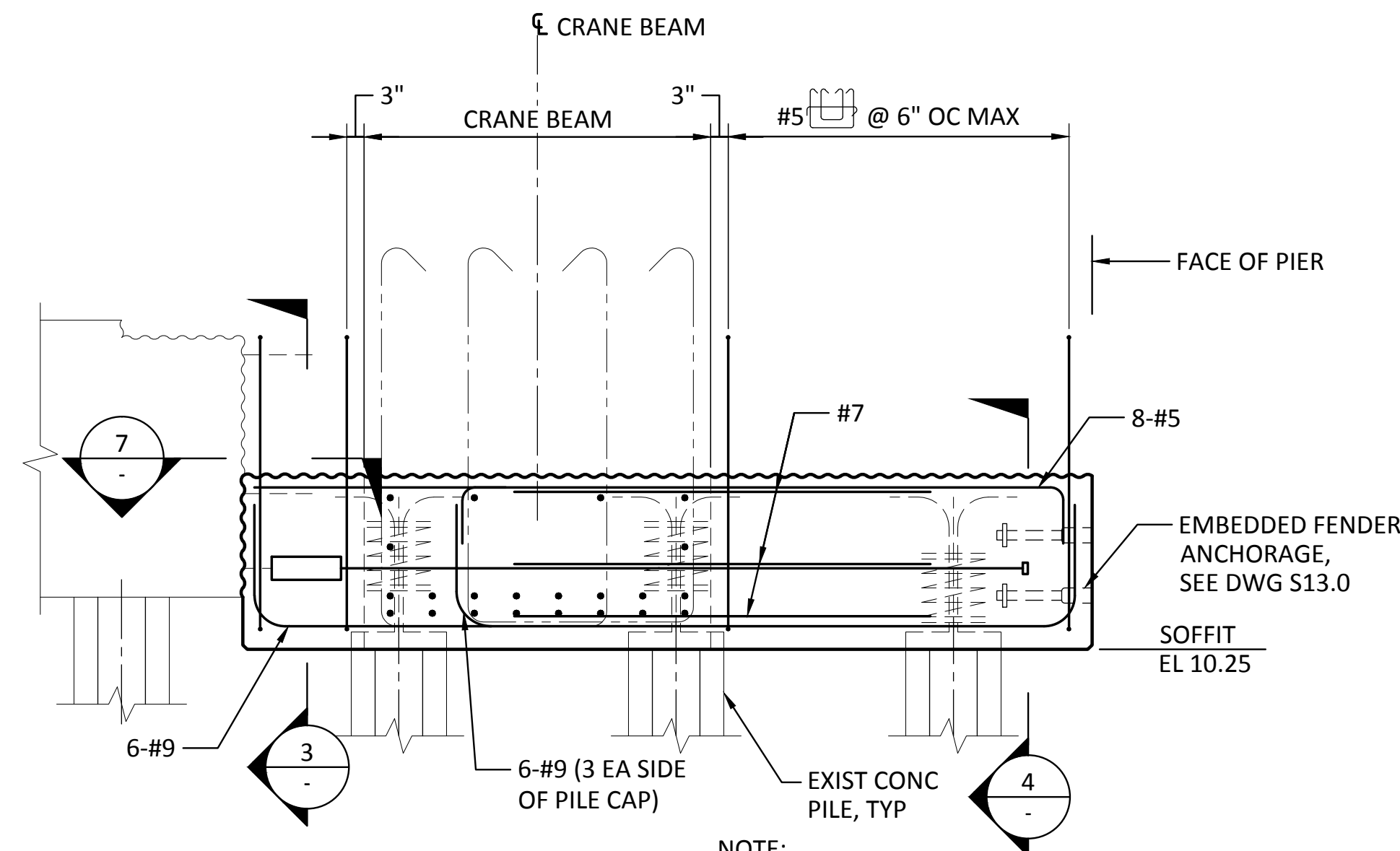
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	DATE: _____ BY: _____ APPR: _____
	REVISION: _____ MARK: _____
 P.O. BOX 1887 TACOMA, WA 98401-0887	
CSB CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: JASON MENDENHALL DATE: 7/17/13 PRINTED BY: JASON MENDENHALL PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	APPROVED: _____ DC: _____ DIR OF ENG: _____ PRINTED BY: _____ PORT ADDRESS: _____
<b>PIER 3 UPGRADE</b> STAGE I CONCRETE WATERSIDE CRANE BEAM RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN	6502 <b>S8.0</b> SHEET 58 OF 129 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION



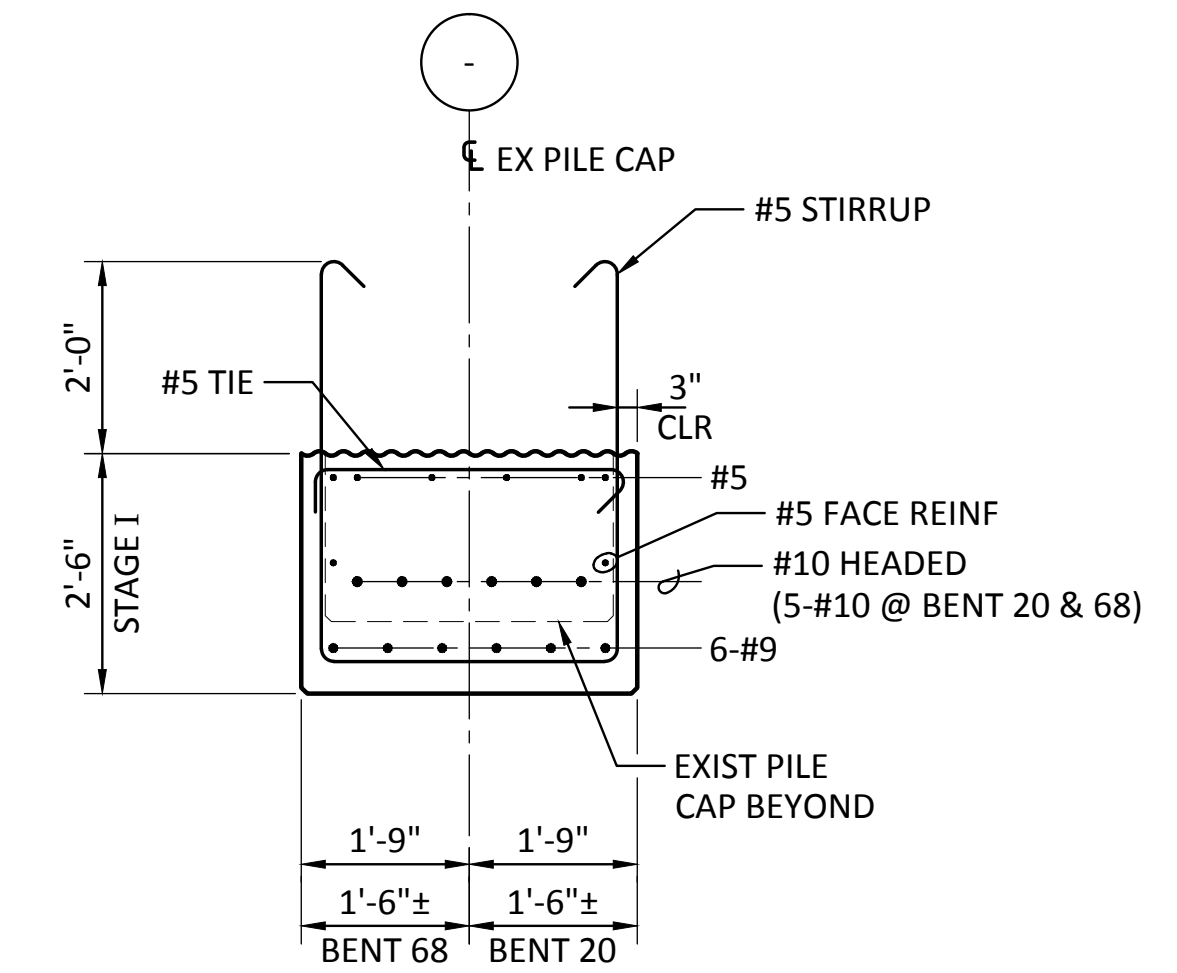
**1**  
ELEVATION - PILE CAP  
SCALE: 1/2" = 1'-0"  
S3.1, S3.2, S3.3

- NOTES:  
 1. FOR CRANE BEAM REINF, SEE **1** S8.0  
 2. ALL STAGE I REINFORCING BARS, INCLUDING STIRRUPS, ARE EPOXY COATED.

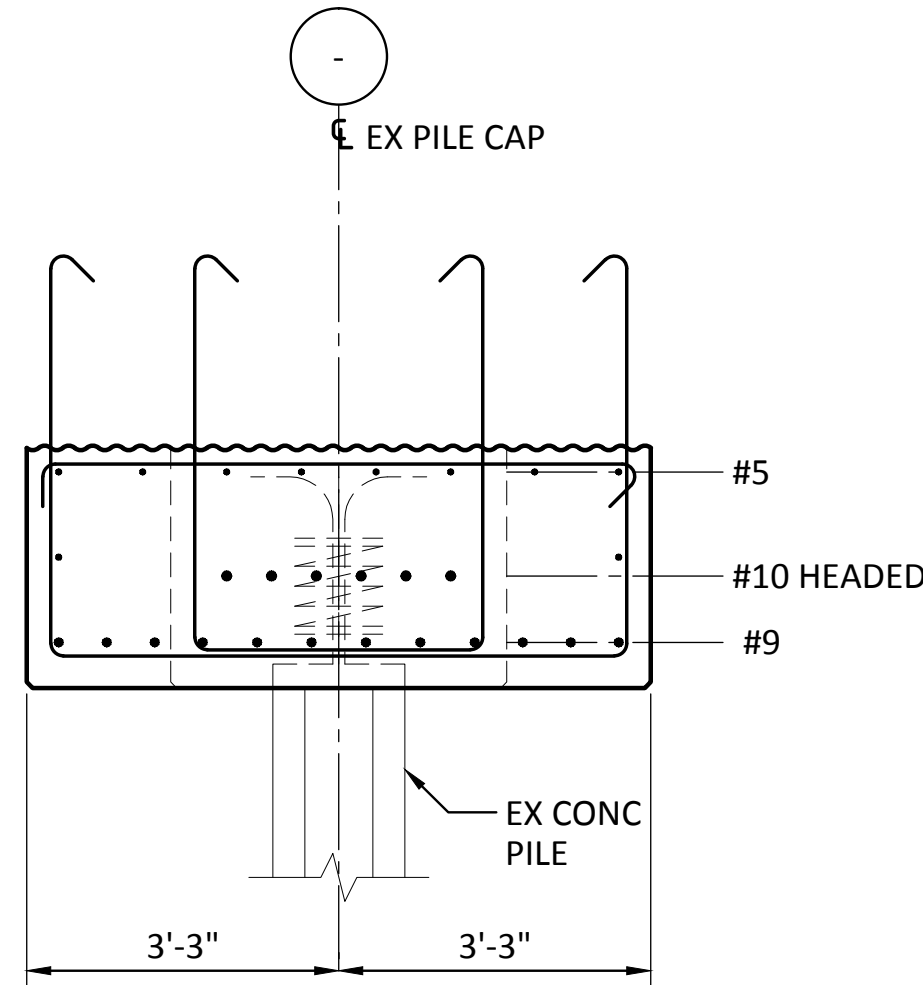


**2**  
ELEVATION - FENDER PILE CAP  
SCALE: 1/2" = 1'-0"  
S3.1, S3.2, S3.3

NOTE:  
FOR DETAILS NOT SHOWN, SEE **1**

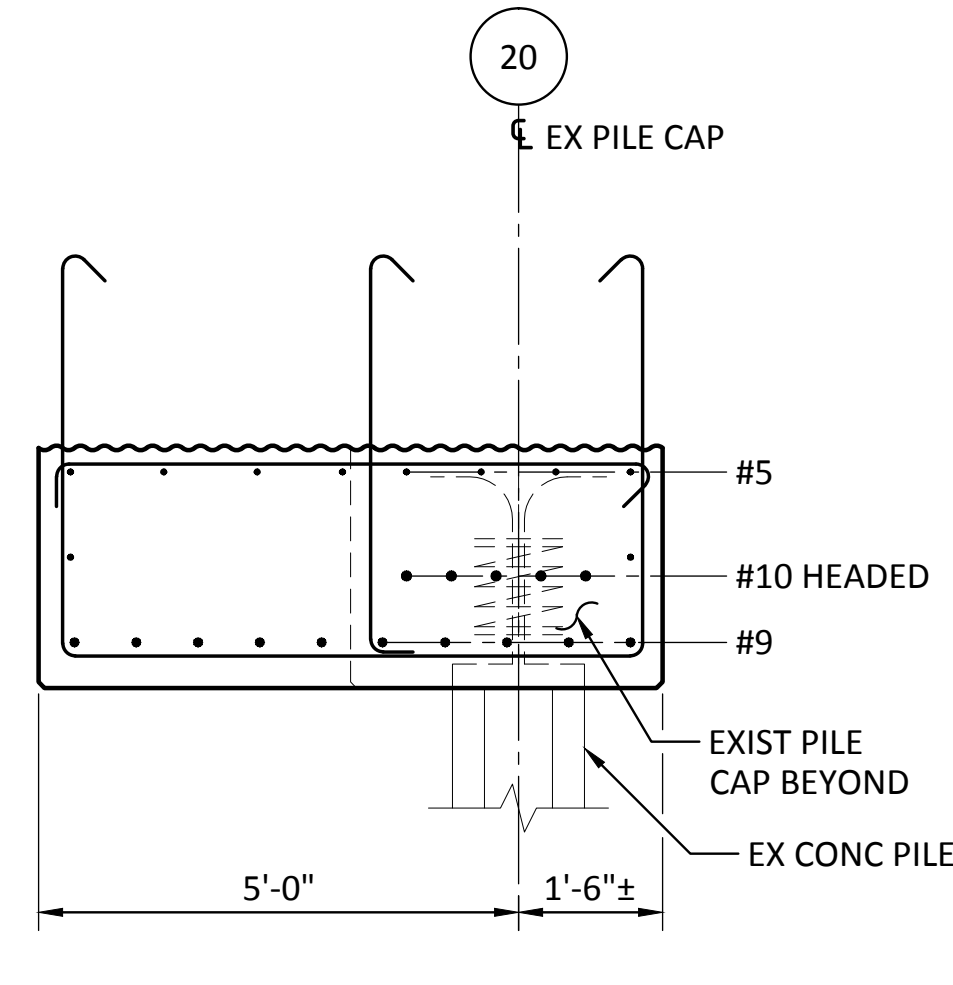


**3**  
SECTION - PILE CAP  
SCALE: 1/2" = 1'-0"



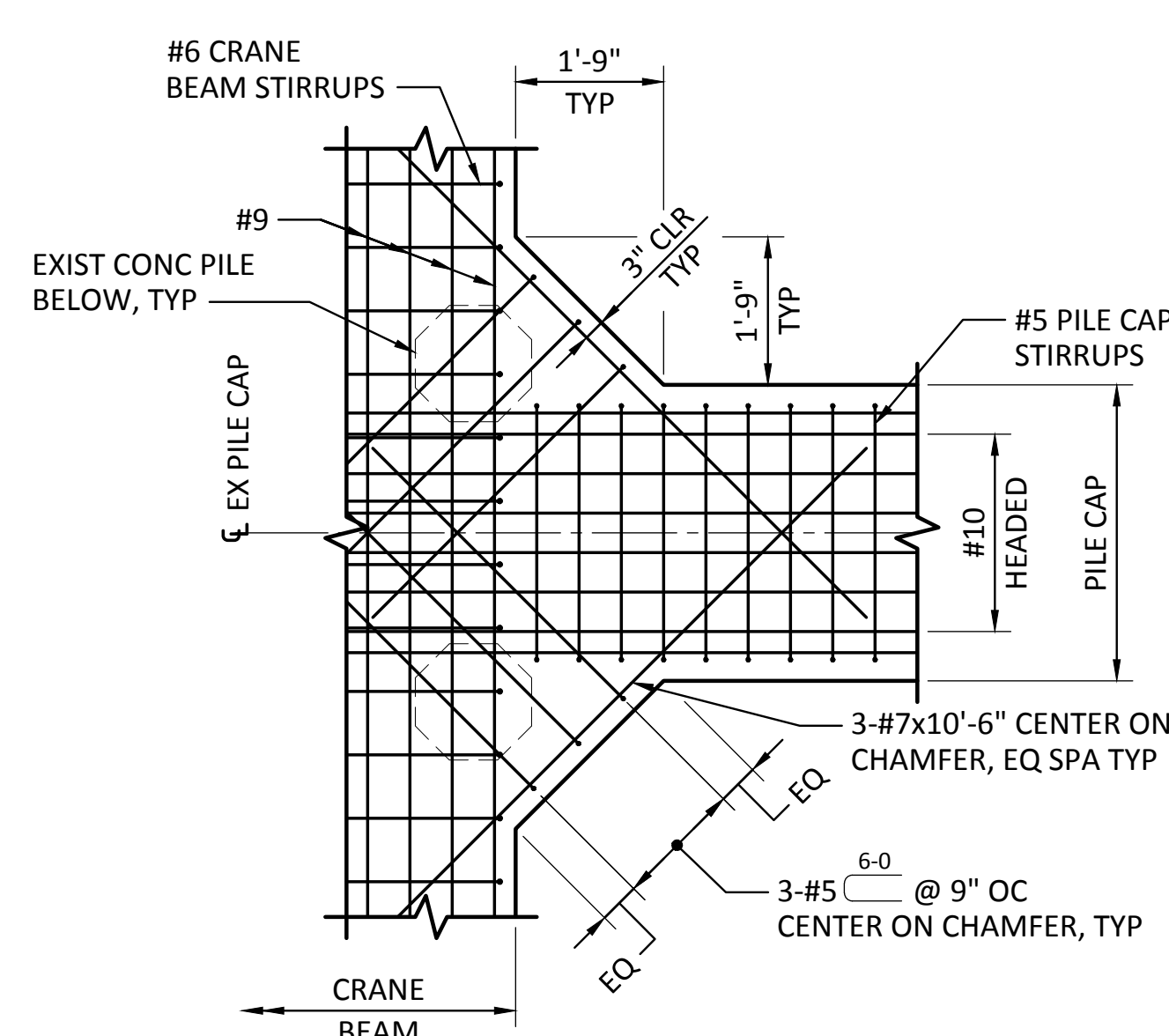
**4**  
SECTION - PILE CAP AT FENDER  
SCALE: 1/2" = 1'-0"

NOTE:  
FOR DETAILS NOT SHOWN, SEE **3**

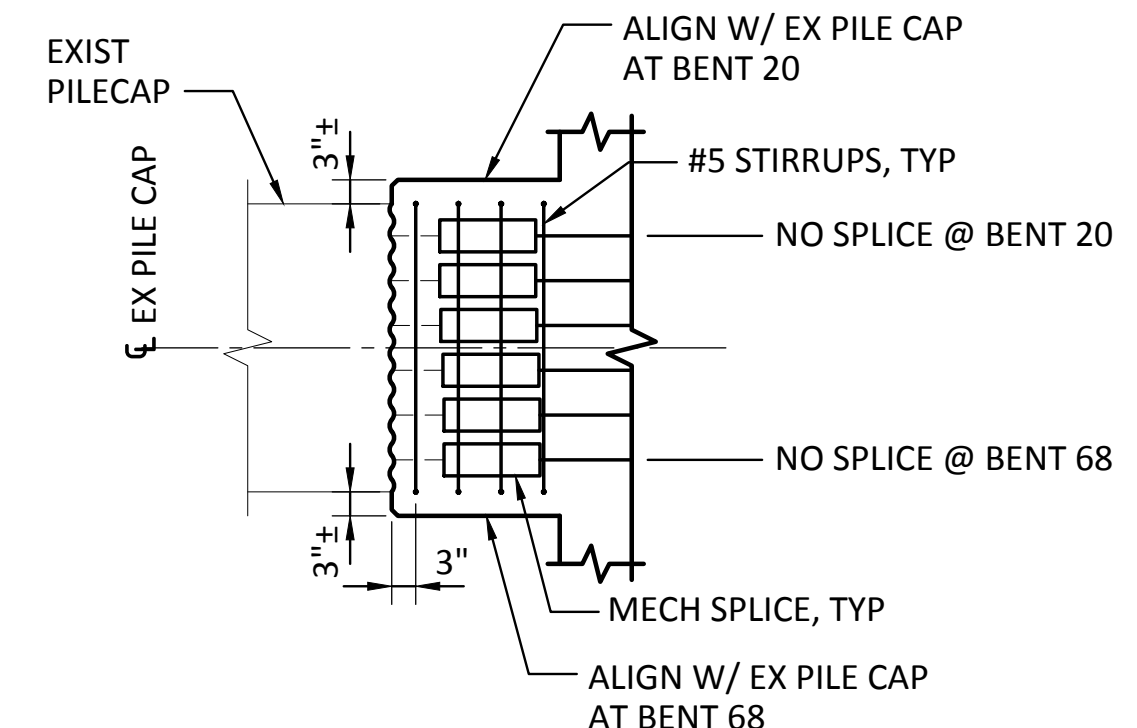


**5**  
SECTION - PILE CAP (BENT 20)  
SCALE: 1/2" = 1'-0"

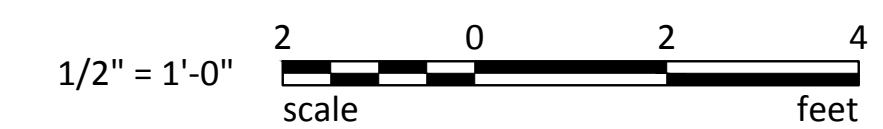
NOTE:  
FOR DETAILS NOT SHOWN, SEE **3**



**6**  
DETAIL - CHAMFER  
SCALE: 1/2" = 1'-0"



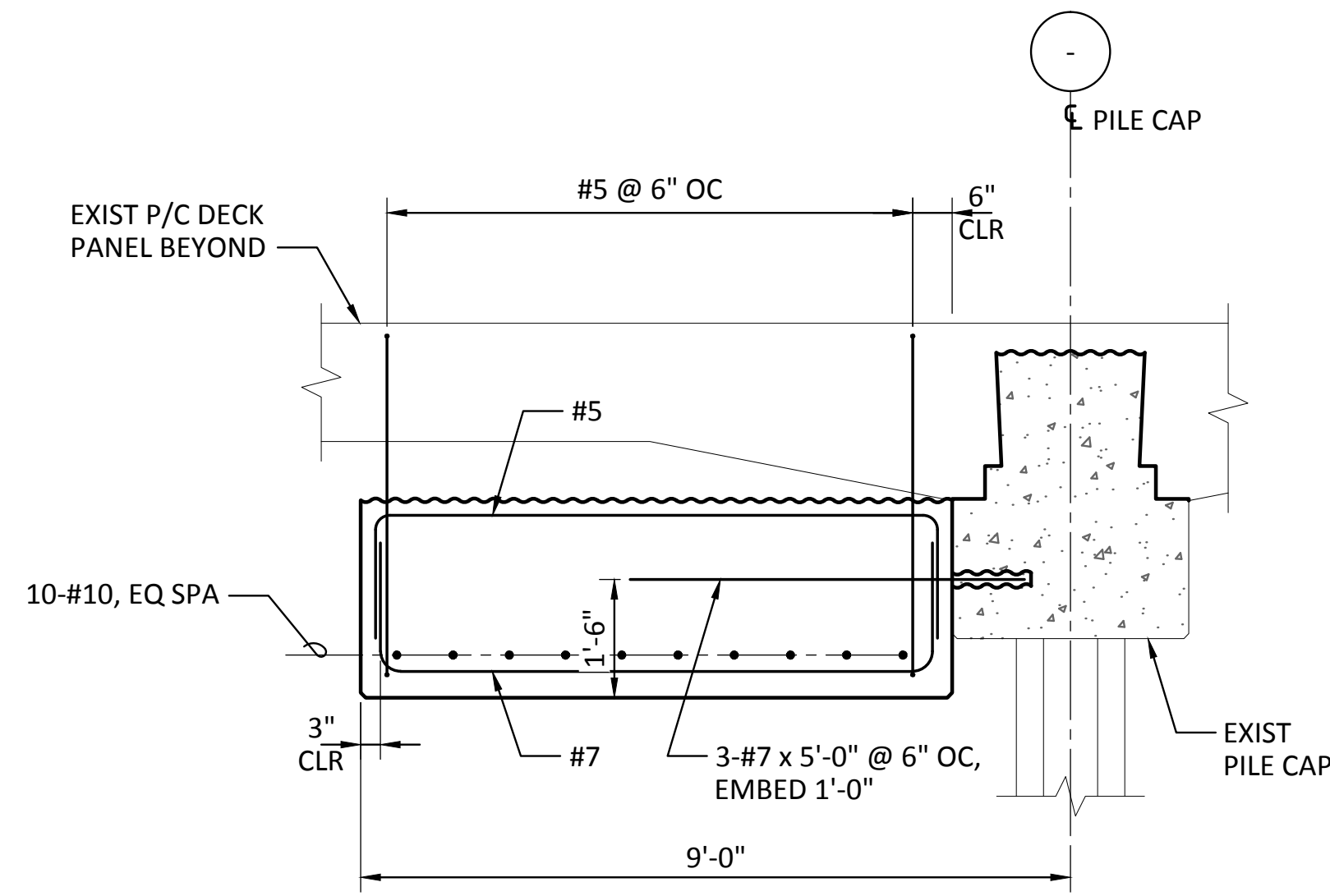
**7**  
DETAIL  
SCALE: 1/2" = 1'-0"



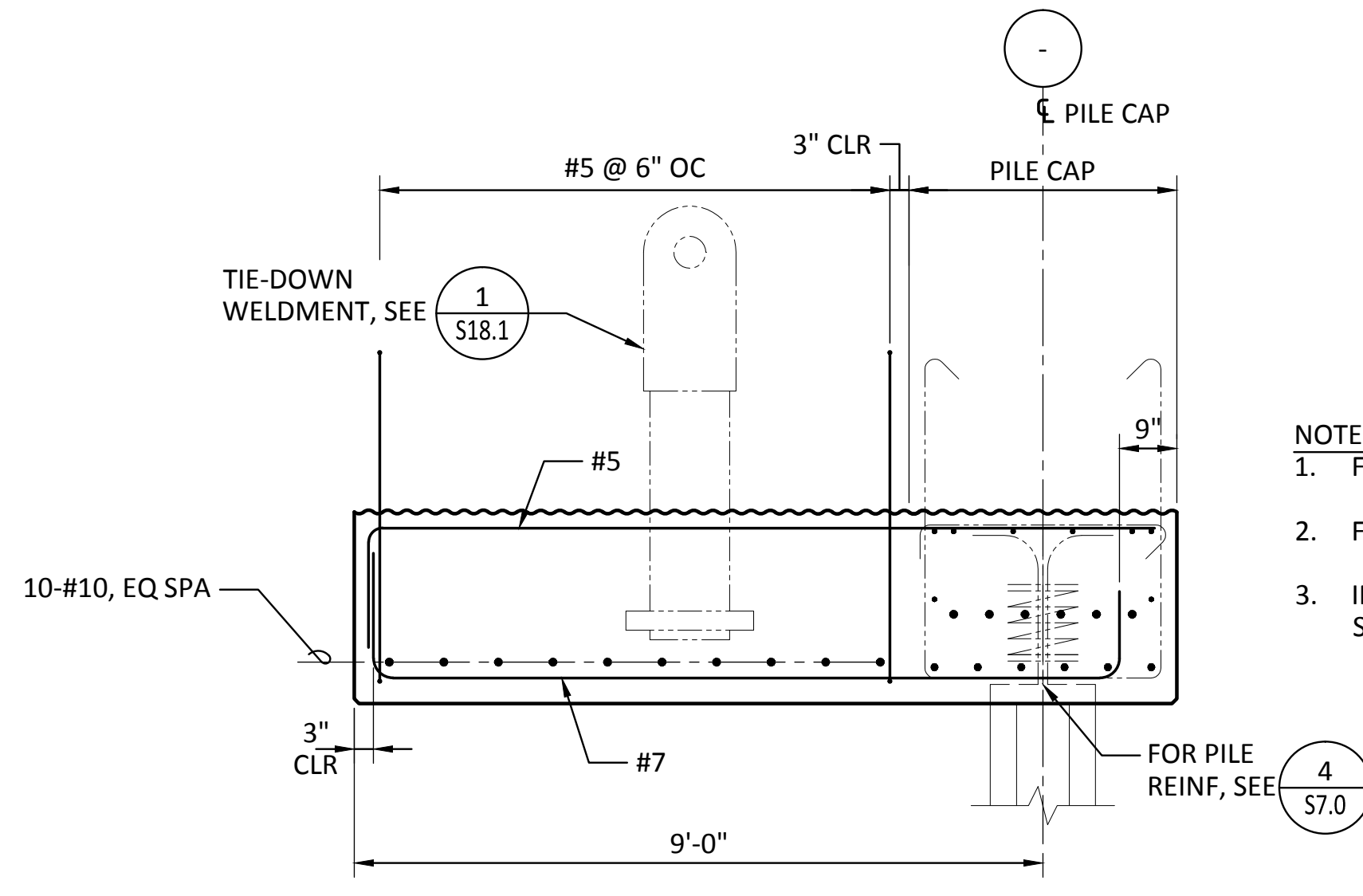
APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENGR	Jason.mendenhall	DATE	DATE
PRINTED BY:	ONE SITCUM WAY	TACOMA, WA 98421-2300	

<b>PIER 3 UPGRADE</b>	TOWNSHIP:	21 N	SECTION:	27
	RANGE:	3 E	NO S TIDAL (MLLW = 0.0)	
	DATE-HRZ:	NAD 83-07	DRAWING SCALE:	AS SHOWN
	PARCEL:	27		

<b>6502</b>	<b>S8.1</b>
CONT/CONS:	069458
MASTER ID NO:	092935
PHASE:	RECORD DRAWINGS
SHEET:	59 OF 129

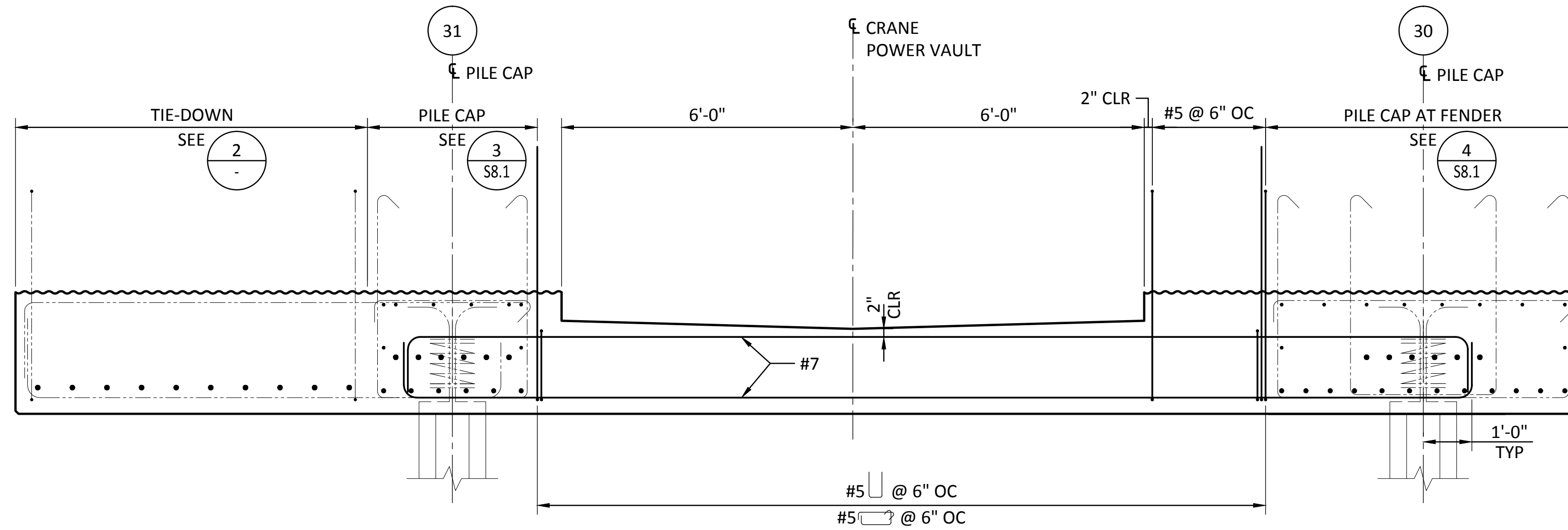


1 SECTION - TIE DOWN  
S8.0 SCALE: 1/2"=1'-0"

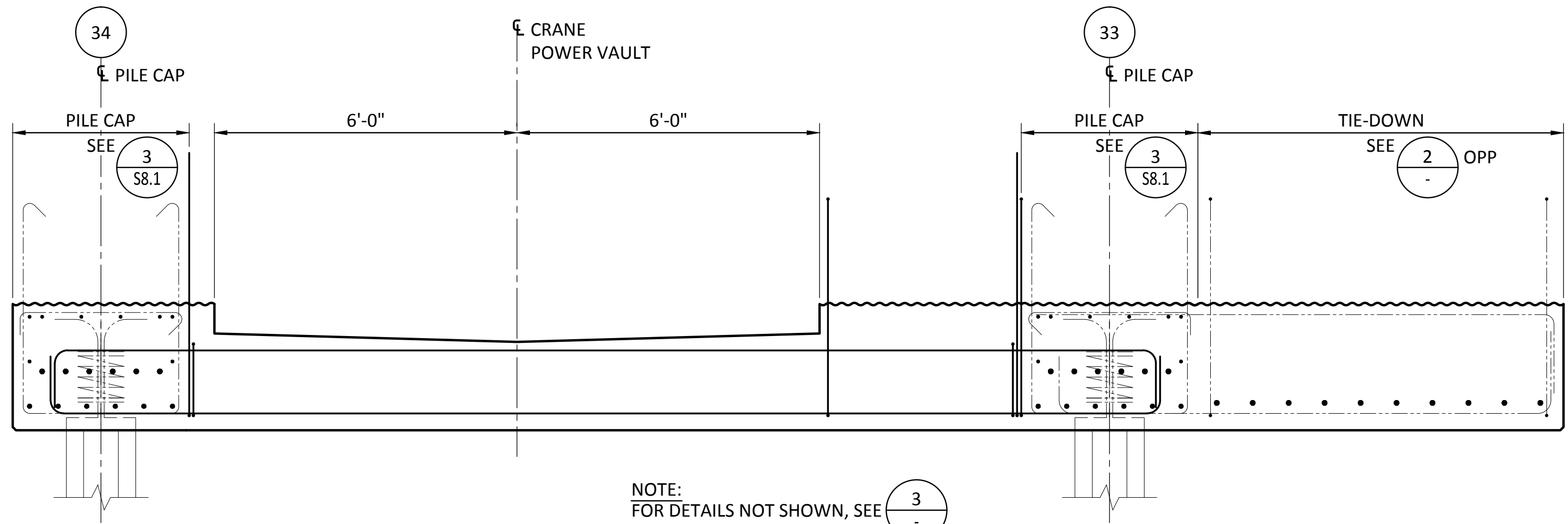


2 SECTION - TIE DOWN  
S8.0 SCALE: 1/2"=1'-0"

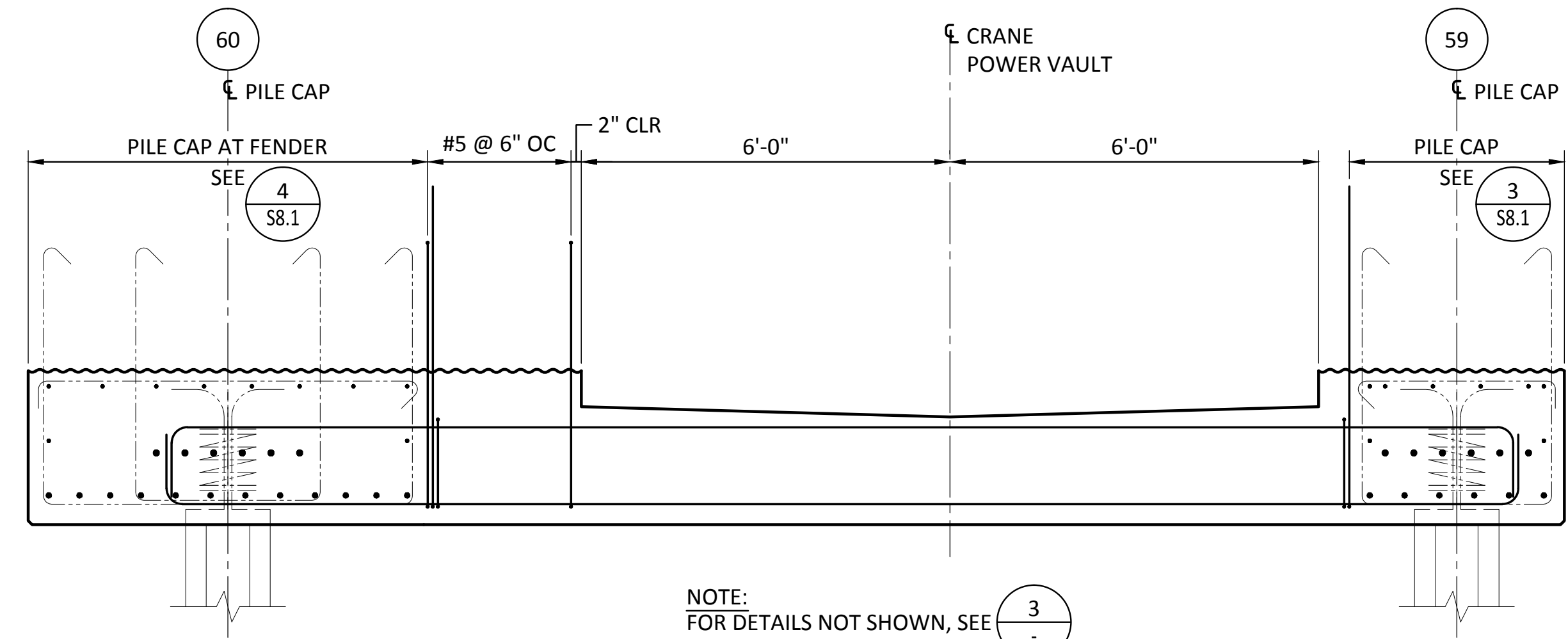
- NOTES:
- FOR TYP PILE CAP REINF, SEE 3 S8.1
  - FOR PILE CAP REINF AT 36, SEE 4 S8.1
  - INCORPORATE EXIST PILES, SEE DWG S3.0 TO DWG S3.3.



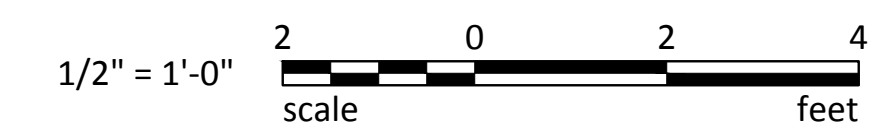
3 SECTION - CRANE POWER VAULT (BAY 30/31)  
S8.0 SCALE: 1/2"=1'-0"



4 SECTION - CRANE POWER VAULT (BAY 33/34)  
S8.0 SCALE: 1/2"=1'-0"



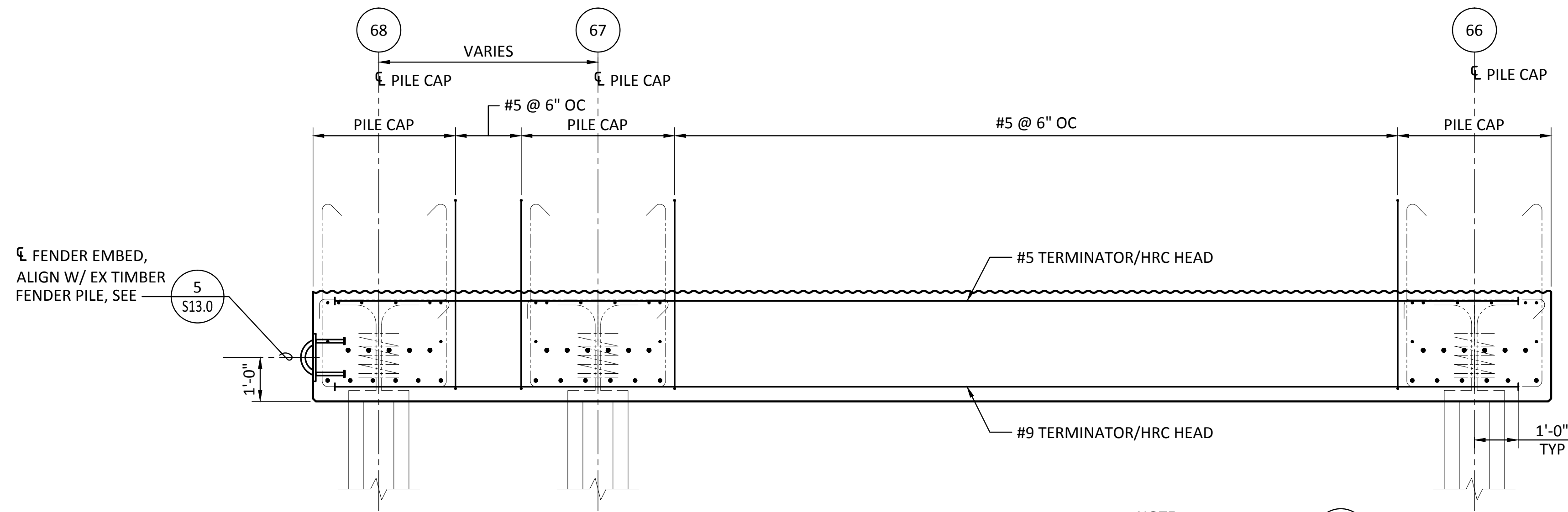
5 SECTION - CRANE POWER VAULT (BAY 59/60)  
S8.0 SCALE: 1/2"=1'-0"



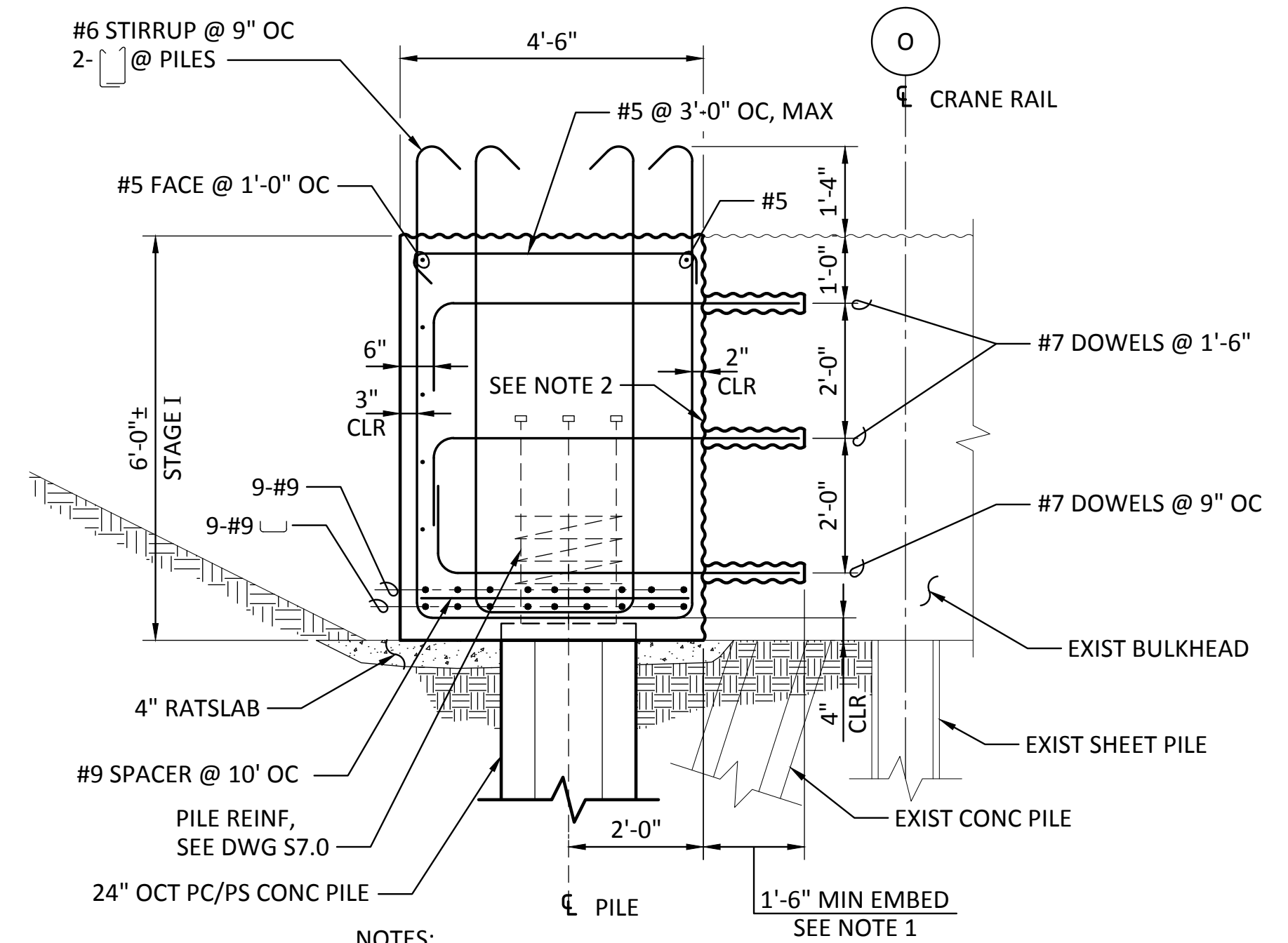
APPROVED:	CSB	7/17/13	DATE
DC	CHECKED BY	JRG	7/17/13
DIR OF ENG	DATE	PROJ. ENGR	DATE
PRINTED BY:	vector.mendenthal		
PORT ADDRESS:	ONE SITCUM WAY		
	TACOMA, WA 98421-2300		

**PIER 3 UPGRADE**

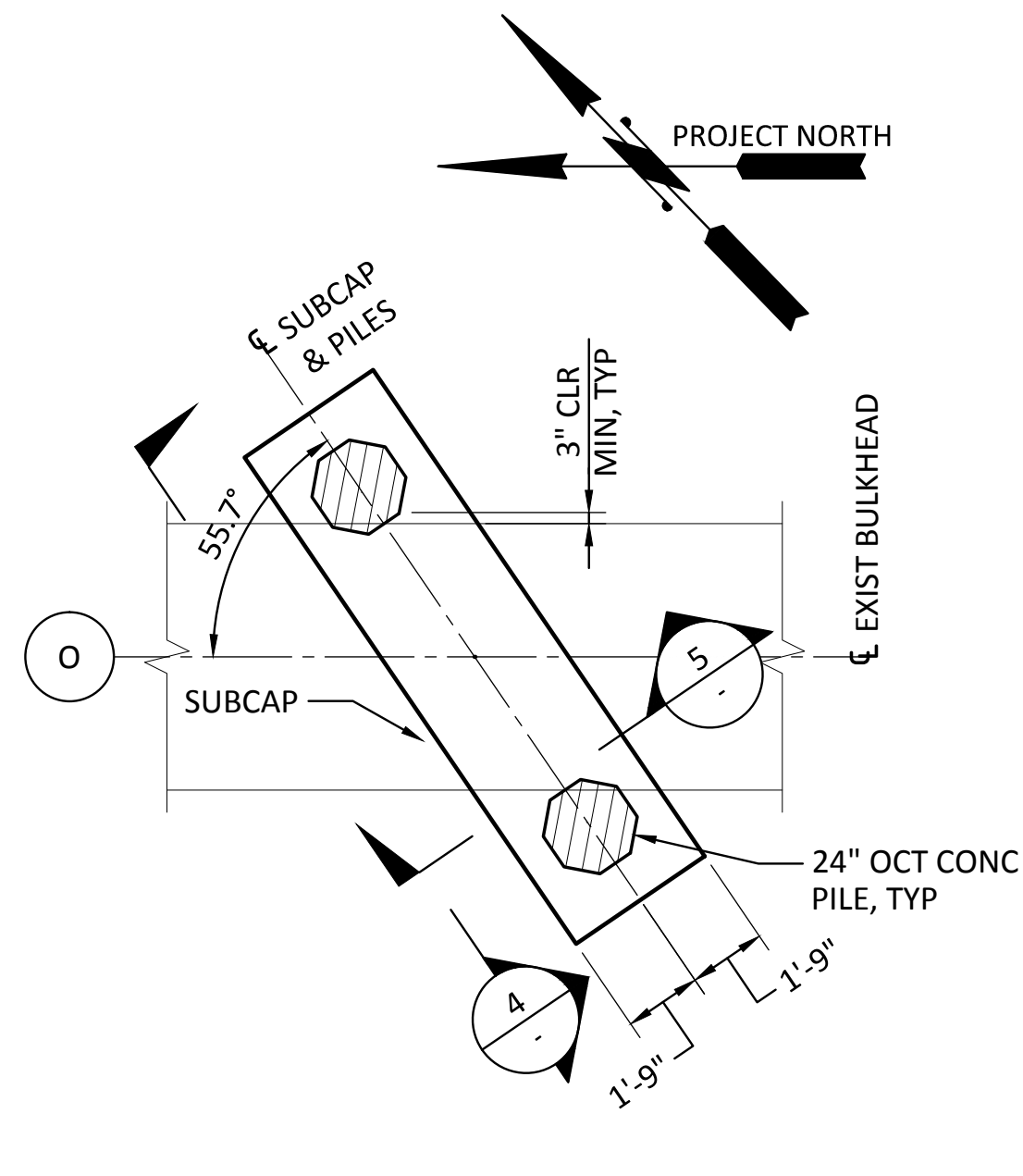
STAGE I	CONCRETE DETAILS
RANGE: 3 E	SECTION: 27
TOWNSHIP: 21 N	VERT: NOS TIDAL (MLLW = 0.0)
DATE-HRZ: NAD 83-07	PARCEL: 27
PHASE: RECORD DRAWINGS	DRAWING SCALE: AS SHOWN



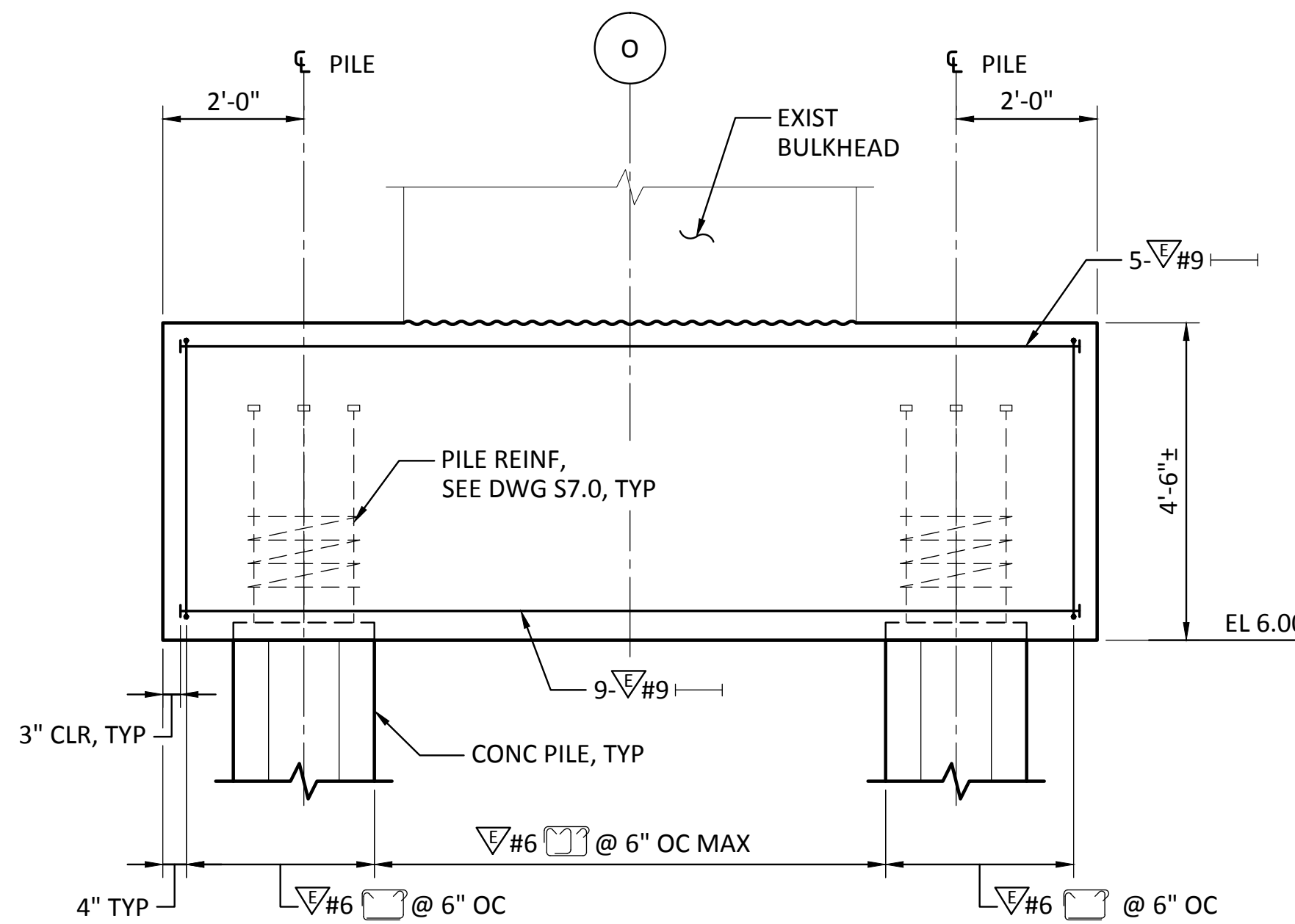
1 SECTION - BENT 66 TO 68  
SCALE: 1/2"=1'-0"



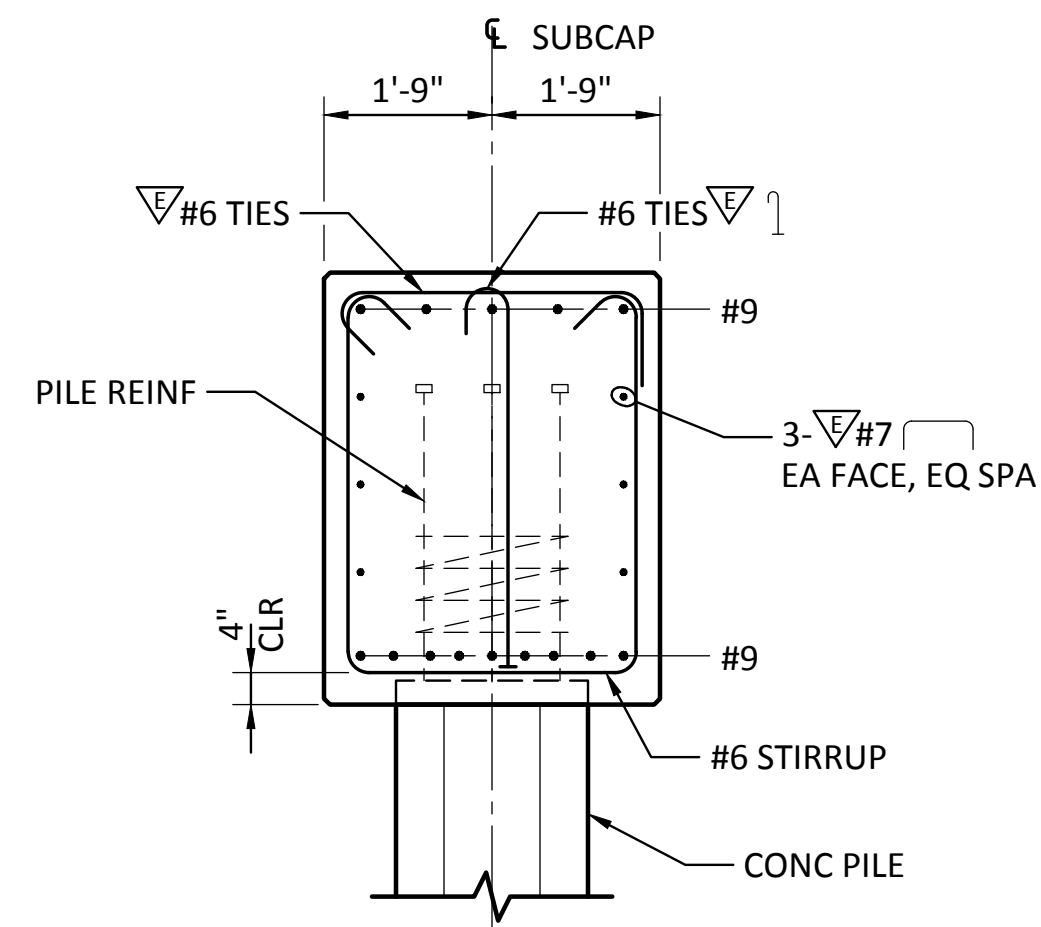
2 SECTION - BULKHEAD SUPPLEMENT  
SCALE: 1/2"=1'-0"  
S3.1, S3.2, S3.3



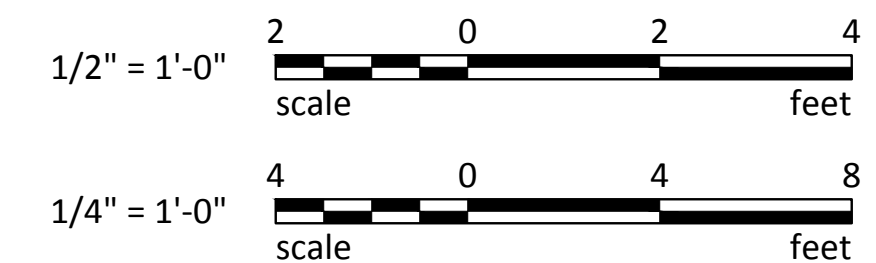
3 DETAIL - SUBCAP  
SCALE: 1/4"=1'-0" (4 TOTAL)



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



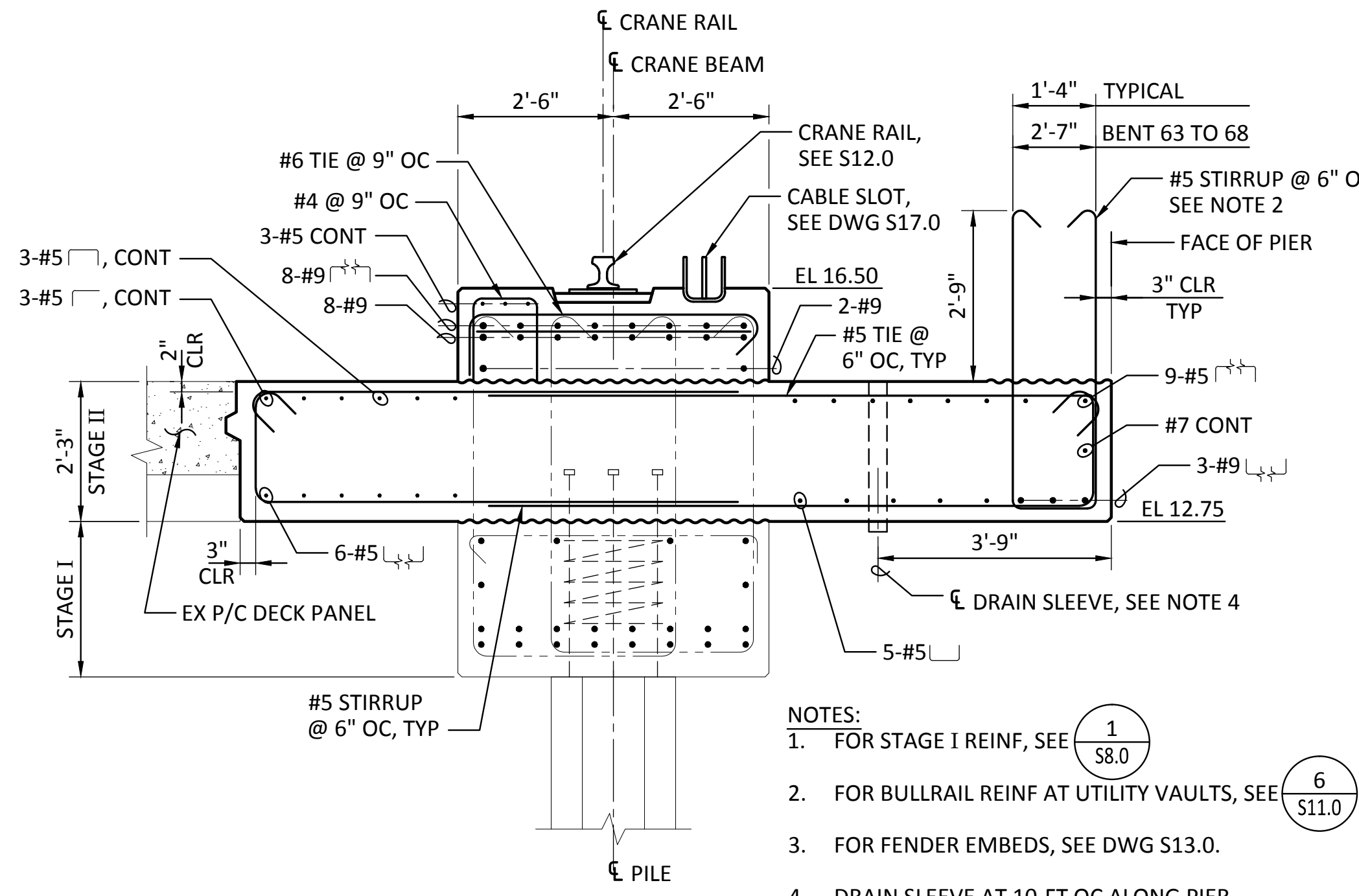
5 SECTION  
SCALE: 1/2"=1'-0"



RECORD DRAWINGS:  
THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INFORMATION PROVIDED BY OTHERS.  
BERGER/ABAM HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION

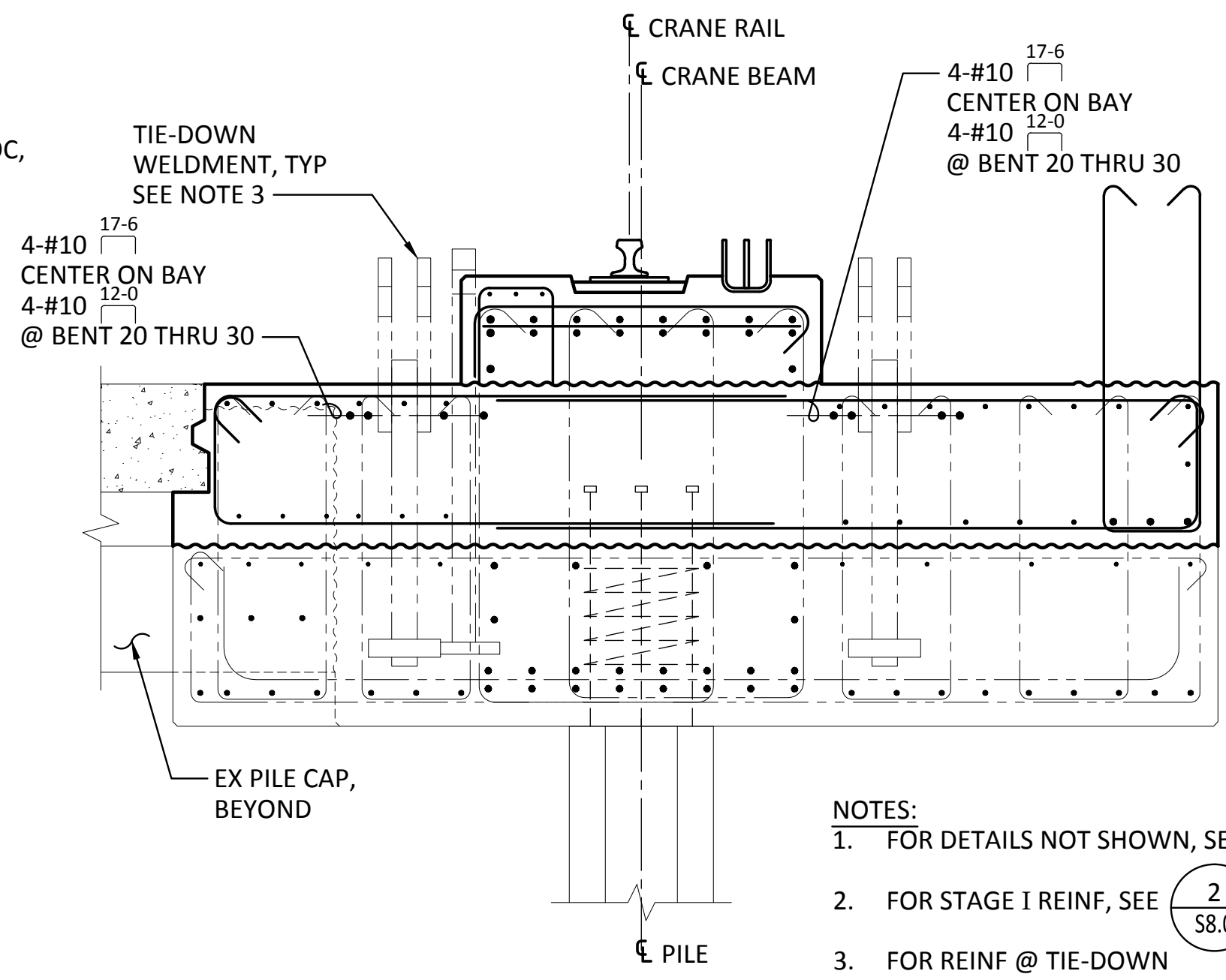
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2300 Fax: (206) 451-2250	DATE: BY: APPR:
	REVISION: MARK:
 P.O. BOX 1887 TACOMA, WA 98401-0887 (206) 461-3000	 JASON MENDENHALL PROFESSIONAL ENGINEER STATE OF WASHINGTON LICENSE NO. 12000
APPROVED:	CSB 7/17/13 CHECKED BY: JRG DIR OF ENG: jason.mendenhall DATE: 7/17/13 PRINTED BY: ONE SITCUM WAY TACOMA, WA 98421-2300
PIER 3 UPGRADE STAGE I DETAILS: BULKHEAD SUPPLEMENT & SUBCAPS	RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
6502 <b>S8.3</b> SHEET 61 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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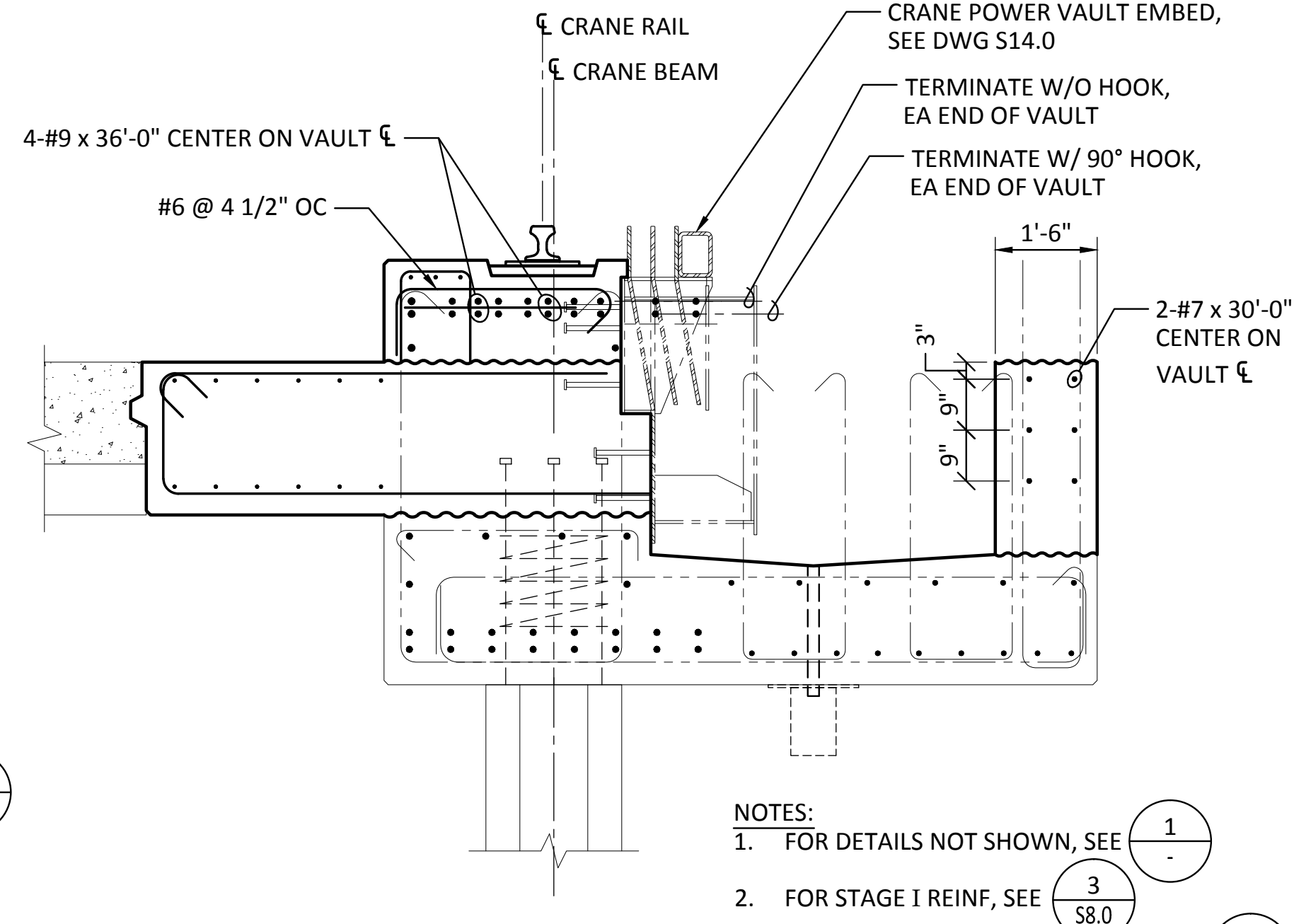
- NOTES:
1. FOR STAGE I REINF, SEE 1  
S8.0
  2. FOR BULLRAIL REINF AT UTILITY VAULTS, SEE 6  
S11.0
  3. FOR FENDER EMBEDS, SEE DWG S13.0.
  4. DRAIN SLEEVE AT 10-FT OC ALONG PIER, FOR DRAIN DETAILS, SEE 2  
C4.2
  5. ACP AND BALLAST NOT SHOWN.
  6. FOR CRANE STOP EMBEDS SEE DWG S19.3

1 SECTION - TYPICAL  
S3.4 SCALE: 1/2" = 1'-0"  
S3.5, S3.6, S3.7



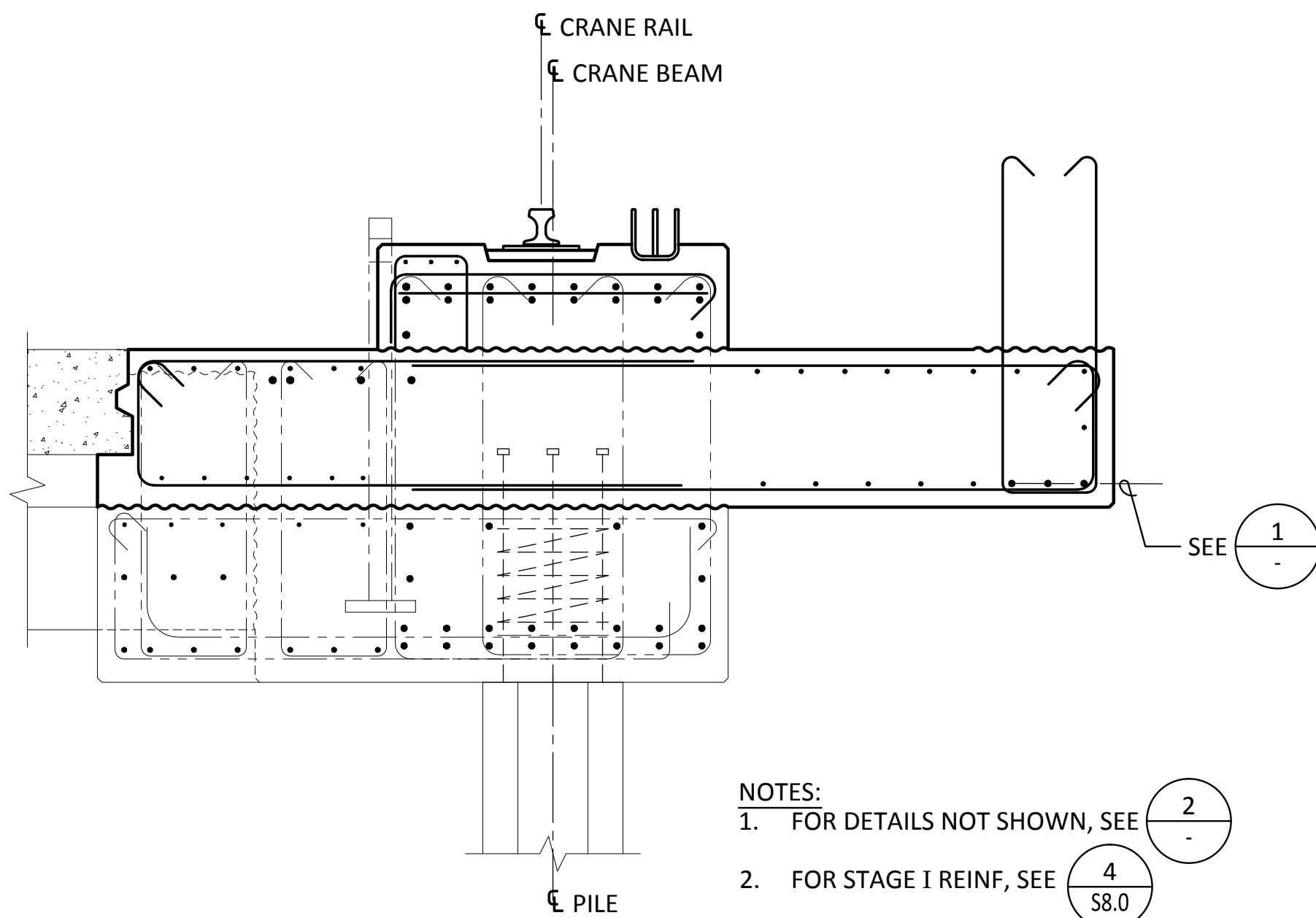
- NOTES:
1. FOR DETAILS NOT SHOWN, SEE 1  
-
  2. FOR STAGE I REINF, SEE 2  
S8.0
  3. FOR REINF @ TIE-DOWN VAULTS, SEE DWG S11.3.

2 SECTION - TIE-DOWN (PAIR)  
S3.4 SCALE: 1/2" = 1'-0"  
S3.5, S3.6



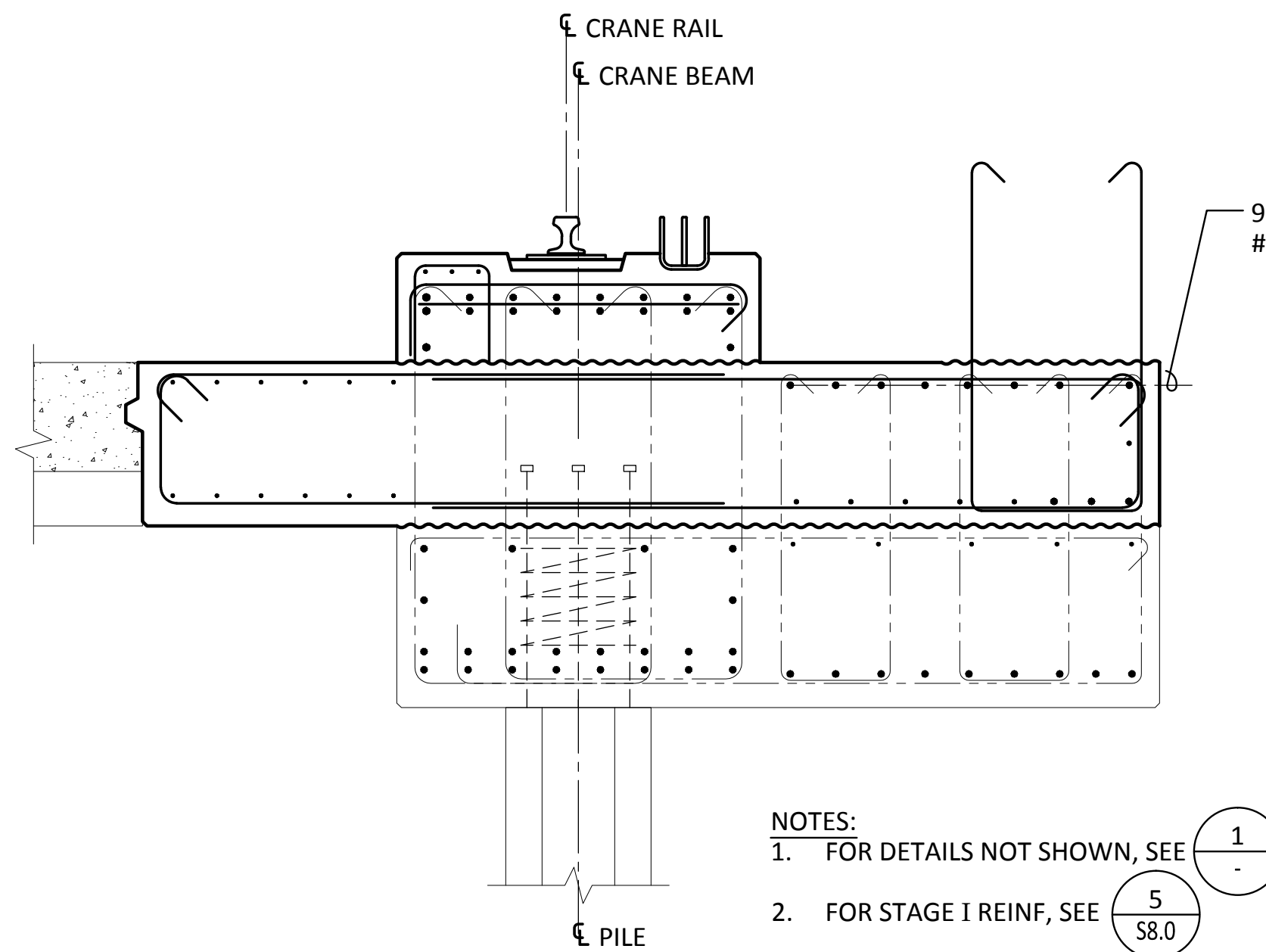
- NOTES:
1. FOR DETAILS NOT SHOWN, SEE 1  
-
  2. FOR STAGE I REINF, SEE 3  
S8.0
  3. FOR ADDITIONAL REINF AT VAULT, SEE 2  
S11.1

3 SECTION - CRANE POWER VAULT  
S3.7 SCALE: 1/2" = 1'-0"



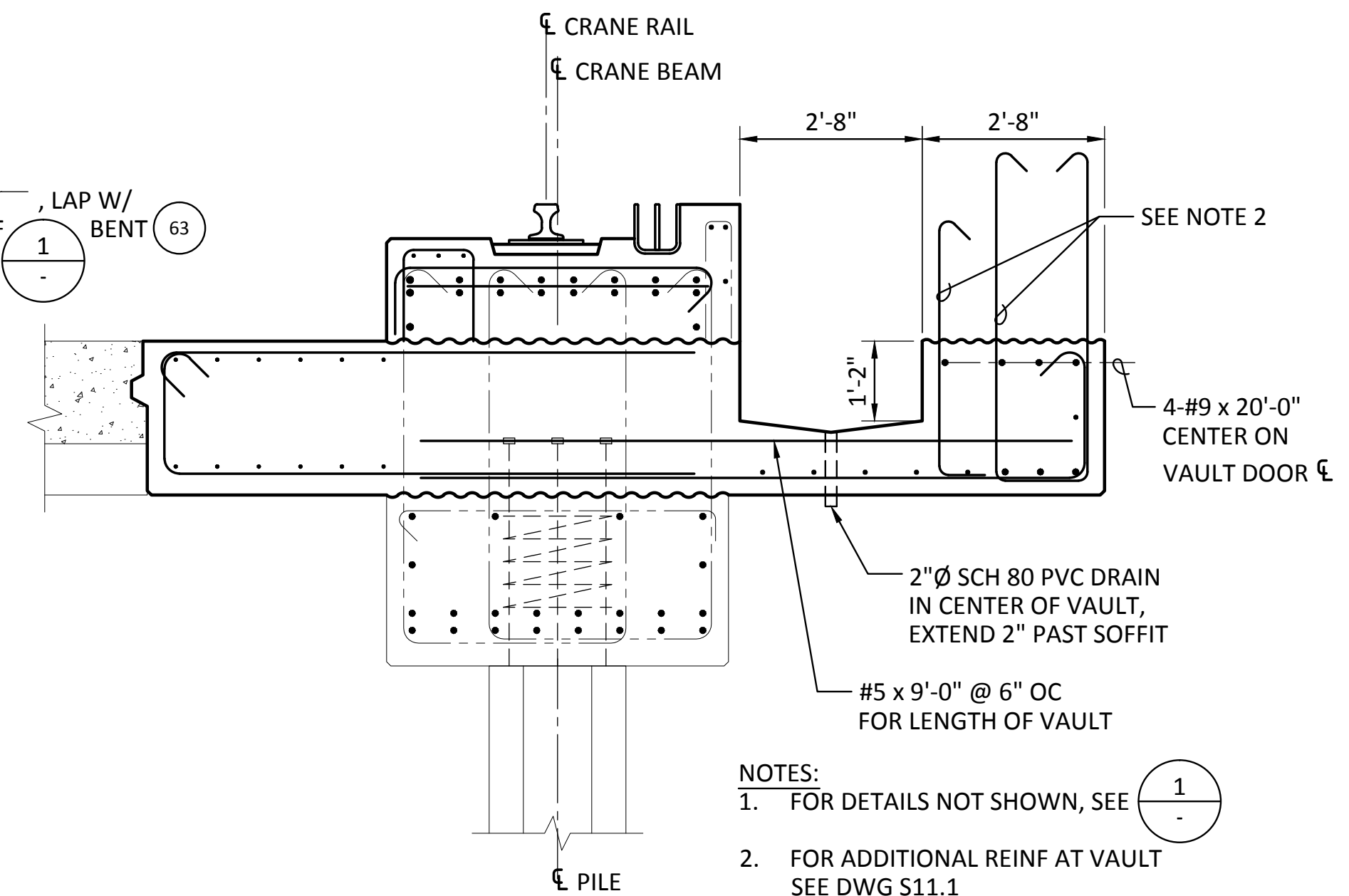
- NOTES:
1. FOR DETAILS NOT SHOWN, SEE 2  
-
  2. FOR STAGE I REINF, SEE 4  
S8.0
  3. FOR REINF @ TIE-DOWN VAULTS, SEE DWG S11.3.

4 SECTION - TIE-DOWN (SINGLE)  
S3.6 SCALE: 1/2" = 1'-0"  
S3.7



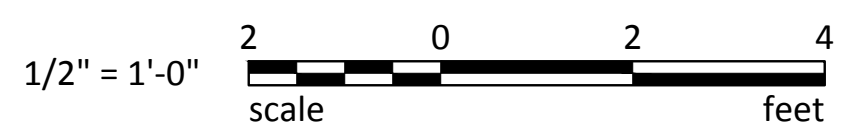
- NOTES:
1. FOR DETAILS NOT SHOWN, SEE 1  
-
  2. FOR STAGE I REINF, SEE 5  
S8.0
  3. FOR FENDER EMBEDS, SEE DWG S13.0.

5 SECTION - BAY 66 TO 68  
S3.7 SCALE: 1/2" = 1'-0"

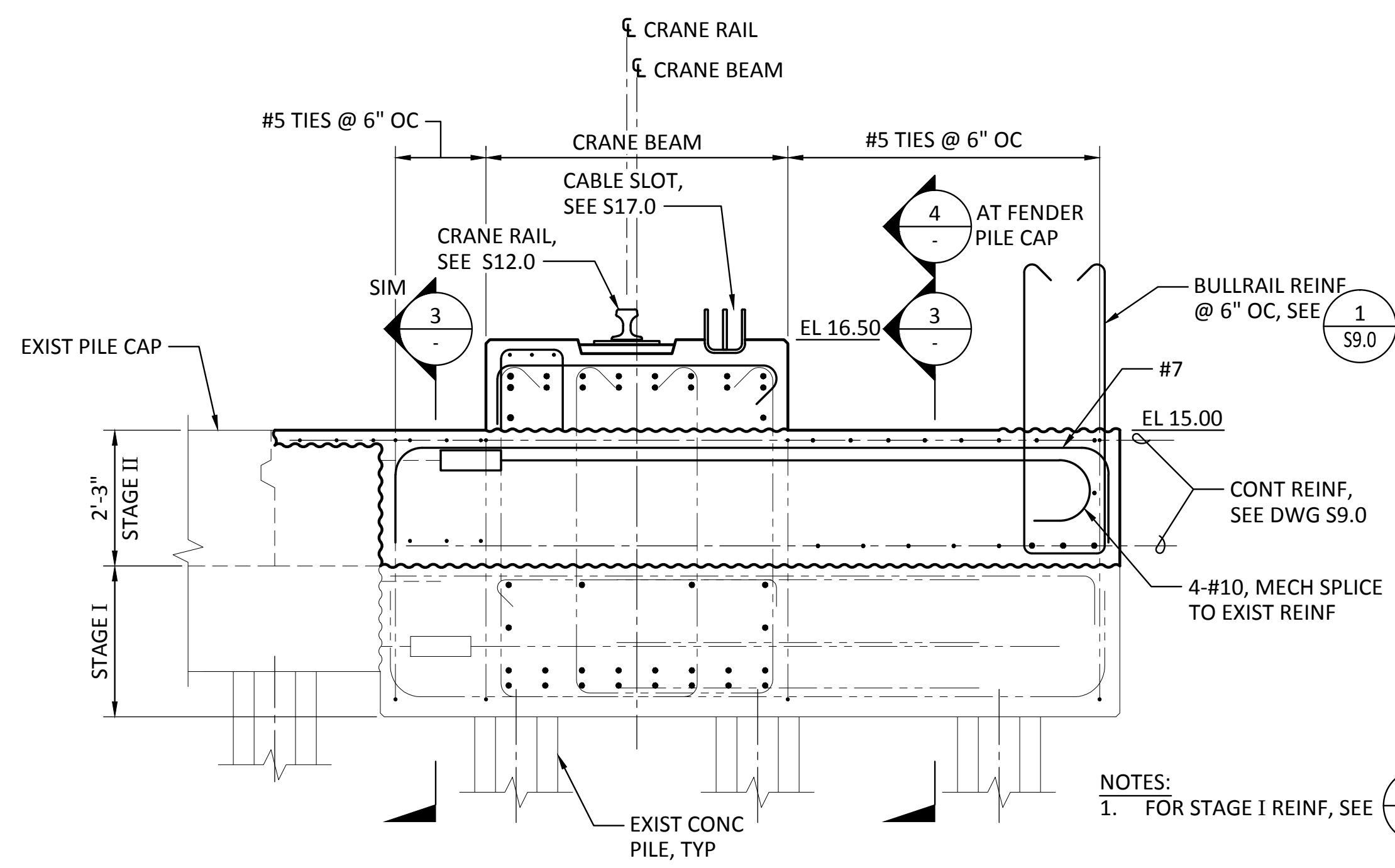


- NOTES:
1. FOR DETAILS NOT SHOWN, SEE 1  
-
  2. FOR ADDITIONAL REINF AT VAULT SEE DWG S11.1

6 SECTION - SHORE POWER VAULT  
S3.5 SCALE: 1/2" = 1'-0"  
S3.6

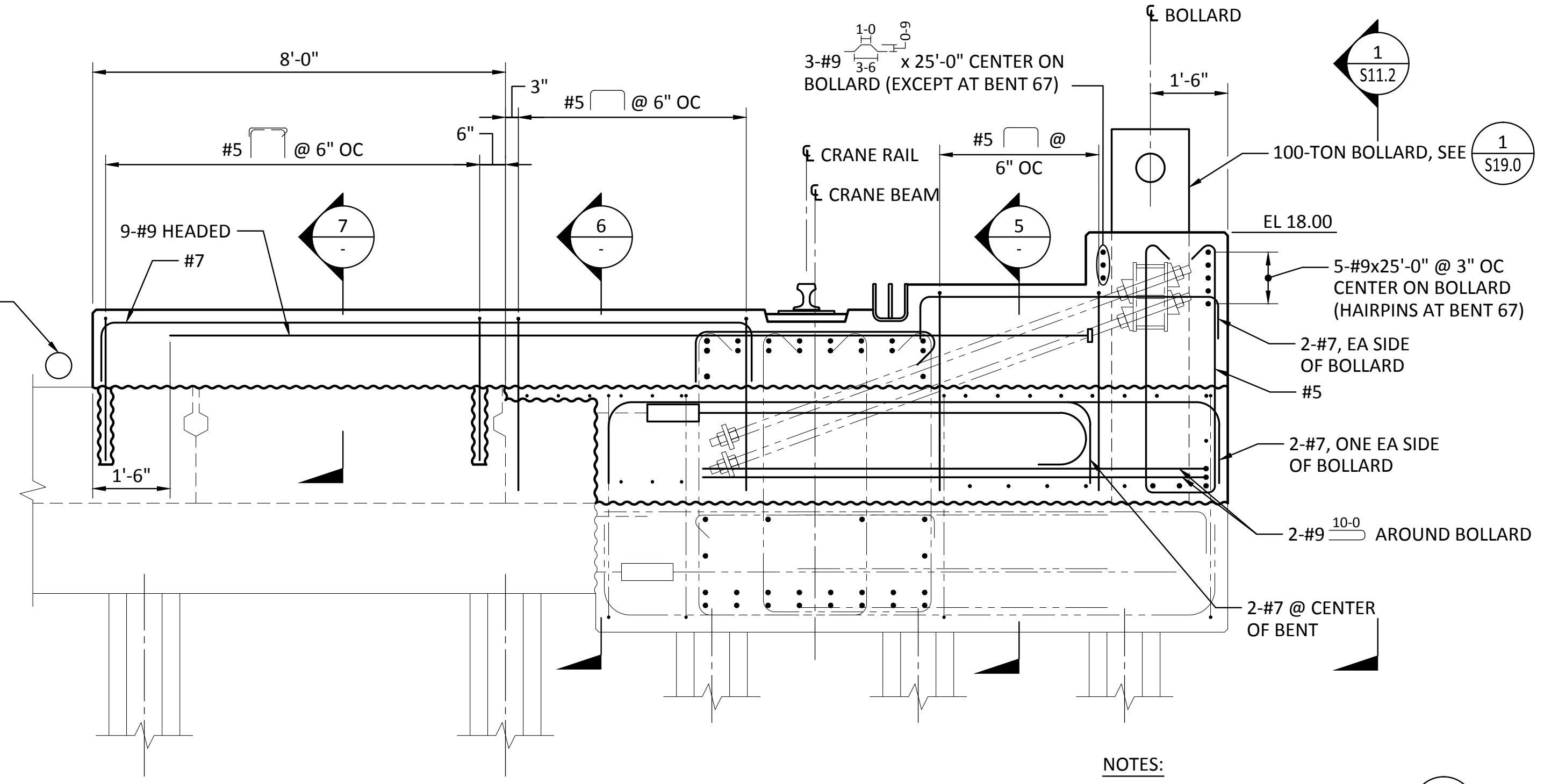


 <b>Port of Tacoma</b> <small>P.O. BOX 1887 TACOMA, WA 98401 (253)584-8441</small>	 <small>DATE: _____</small>
	<small>APPROVED:</small> <small>BY: _____</small> <small>REVISION: _____</small> <small>MARK: _____</small>
<small>CSB</small> <small>CHECKED BY: JRG</small> <small>DATE: 7/17/13</small>	<small>DATE: 7/17/13</small> <small>PROJ. ENGR: Jason.mendenthal</small> <small>DIR OF ENGR: jason.mendenthal</small> <small>PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300</small>
<b>PIER 3 UPGRADE</b> <small>STAGE II</small> <b>WATERSIDE CRANE BEAM</b>	<small>TOWNSHIP: 21 N</small> <small>DAT-HRZ: NAD 83-07</small> <small>PARCEL: 27</small> <small>RANGE: 3 E</small> <small>SECTION: 27</small> <small>VERT: NOS TIDAL (MILLW = 0.0)</small> <small>DRAWING SCALE: AS SHOWN</small>
<b>6502</b> <b>S9.0</b> <small>SHEET 62 OF 129</small>	<small>CONT/CONS: 069458</small> <small>MASTER ID NO: 092935</small> <small>PHASE: RECORD DRAWINGS</small>



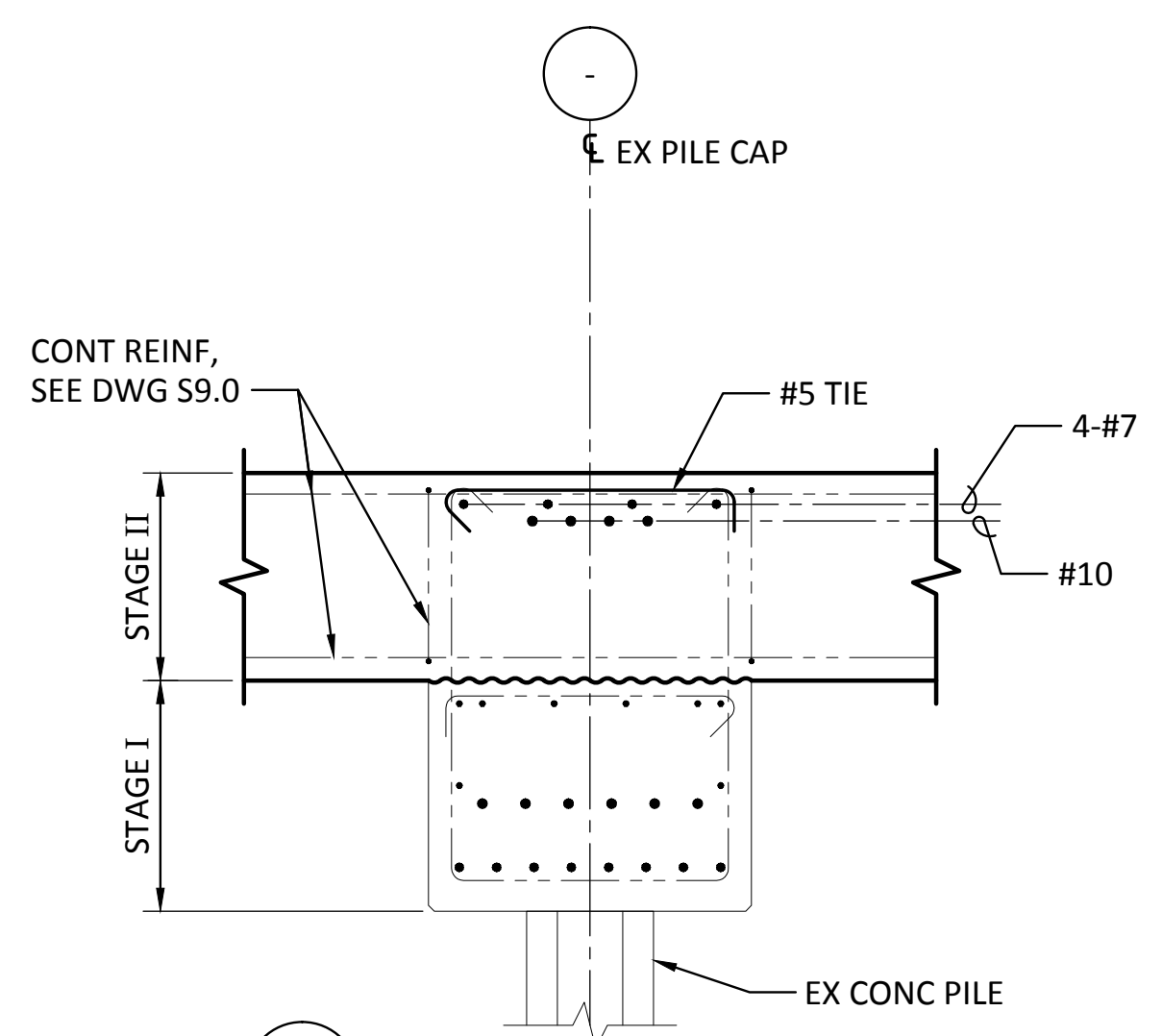
- NOTES:  
 1. FOR STAGE I REINF, SEE 1/S8.1 & 2/S8.2  
 2. FOR CRANE BEAM REINF, SEE 1/S9.0  
 3. FOR FENDER EMBEDS, SEE DWG S13.0.  
 4. ACP AND BALLAST NOT SHOWN.

1 ELEVATION - TYPICAL PILE CAP  
 S3.4 SCALE: 1/2" = 1'-0"  
 S3.5, S3.6, S3.7



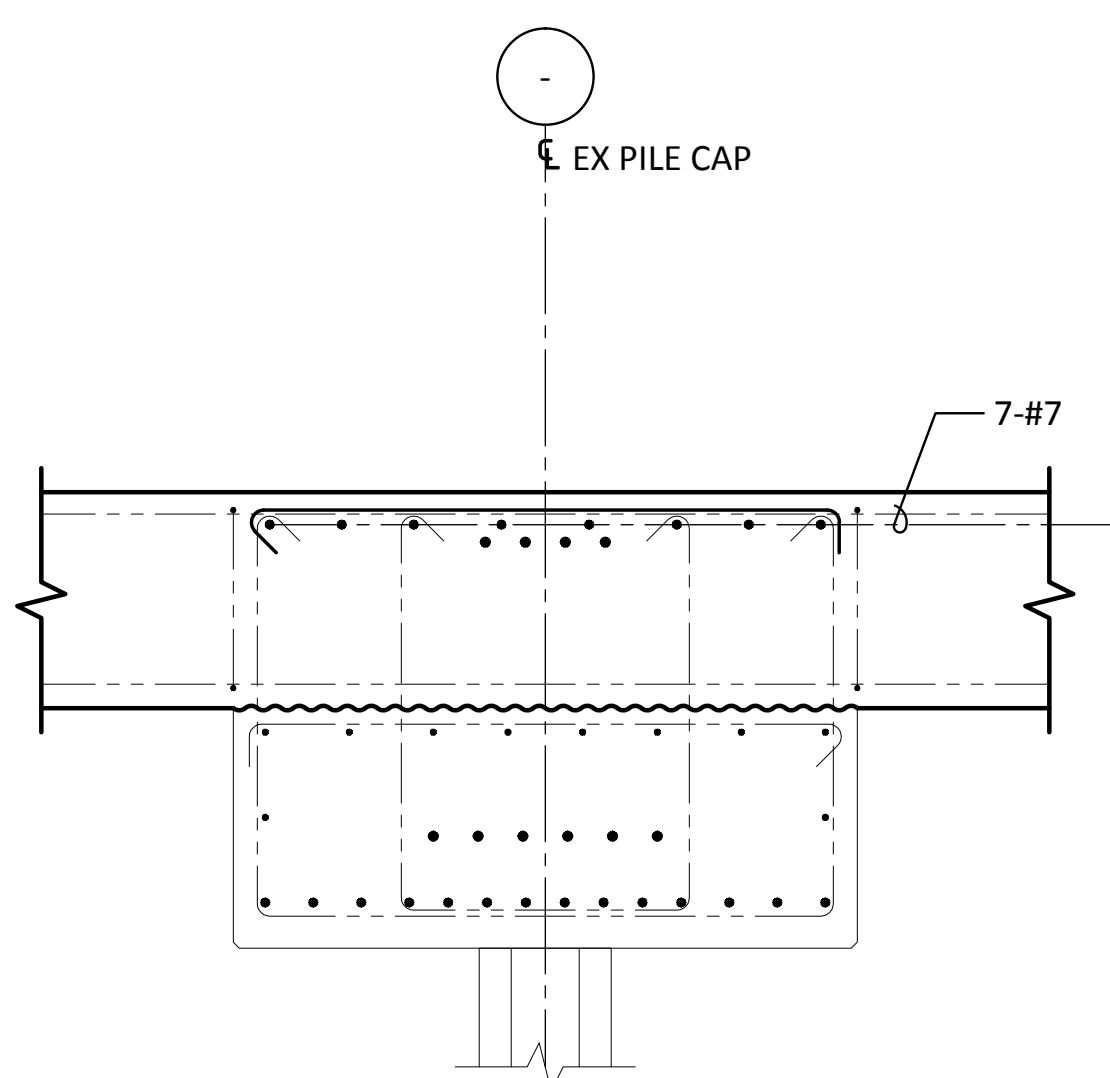
- NOTES:  
 1. FOR DETAILS NOT SHOWN, SEE 1/S11.2  
 2. TYPICAL BULLRAIL REINF NOT SHOWN, SEE 2/S11.0

2 ELEVATION - PILE CAP AT 100-TON BOLLARD  
 S3.4 SCALE: 1/2" = 1'-0"  
 S3.5, S3.6, S3.7



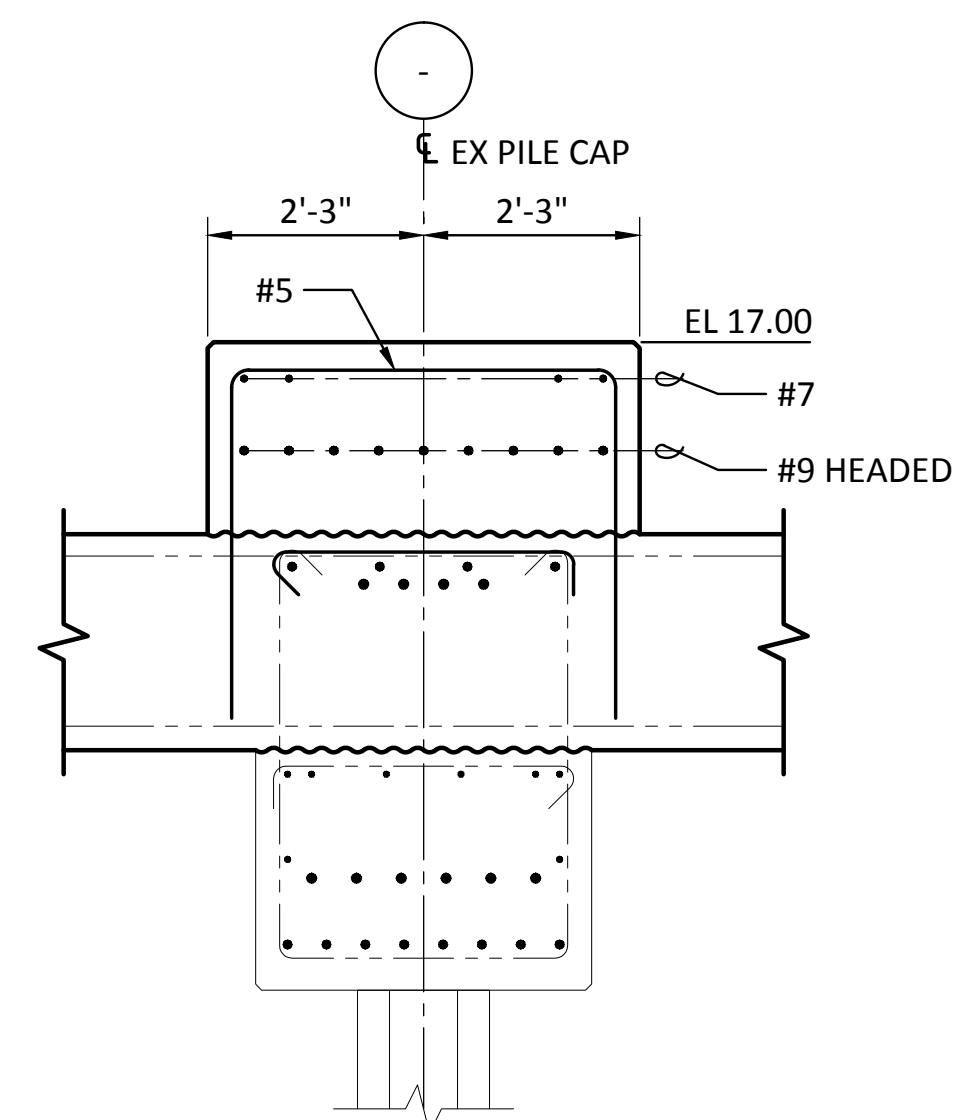
- NOTES:  
 1. FOR STAGE I REINF, SEE 3/S8.1  
 2. ACP AND BALLAST NOT SHOWN.

3 SECTION - TYPICAL PILE CAP  
 SCALE: 1/2" = 1'-0"



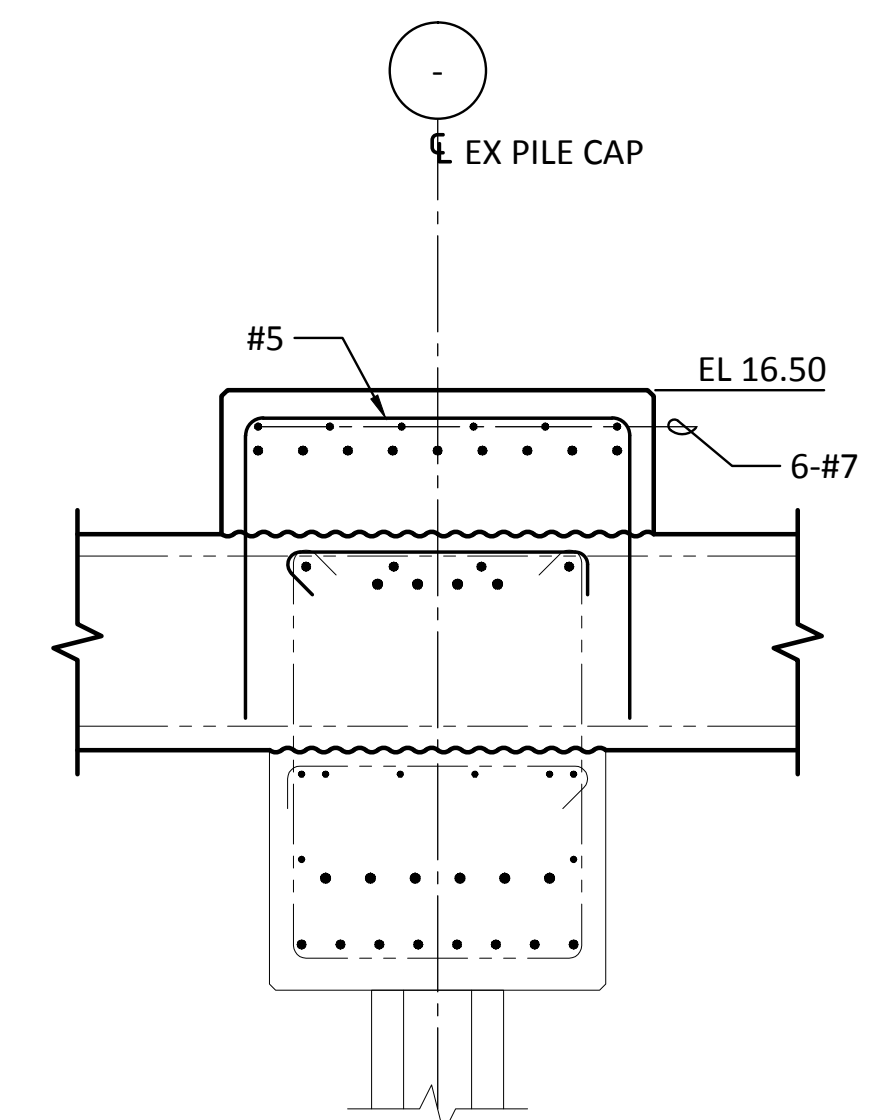
- NOTES:  
 1. FOR DETAILS NOT SHOWN, SEE 3/S8.1  
 2. FOR STAGE I REINF, SEE 4/S8.1

4 SECTION - AT FENDER  
 SCALE: 1/2" = 1'-0"



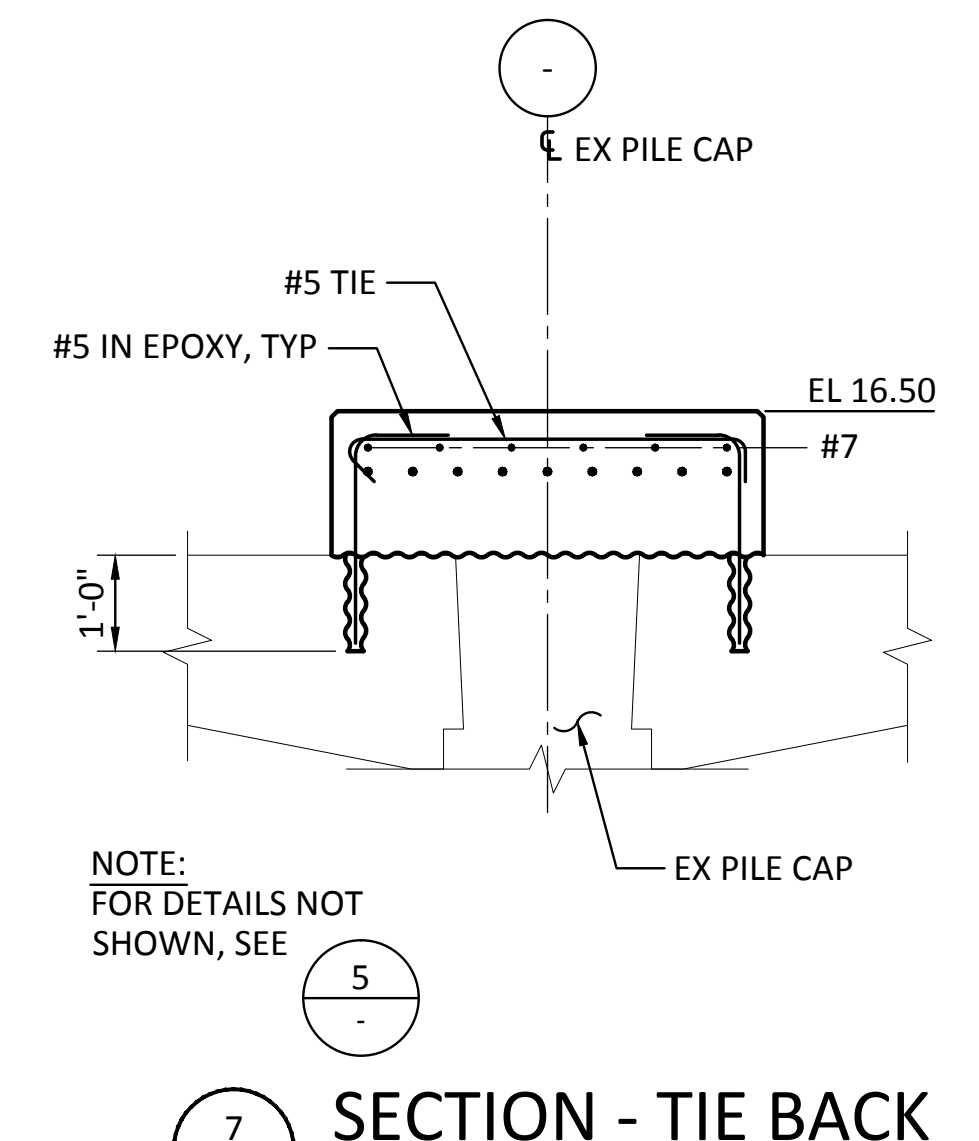
- NOTE:  
 FOR DETAILS NOT SHOWN, SEE 5/S8.1

5 SECTION - TYPICAL AT BOLLARD  
 SCALE: 1/2" = 1'-0"



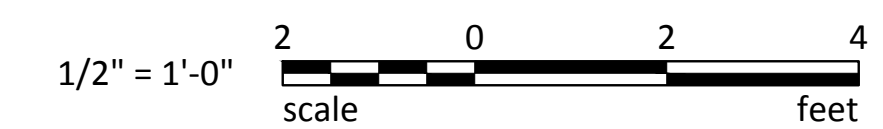
- NOTE:  
 FOR DETAILS NOT SHOWN, SEE 5/S8.1

6 SECTION - TYPICAL AT BOLLARD  
 SCALE: 1/2" = 1'-0"



- NOTE:  
 FOR DETAILS NOT SHOWN, SEE 5/S8.1

7 SECTION - TIE BACK  
 SCALE: 1/2" = 1'-0"



**Berger/ABAM**  
 33301 9th Avenue South, Suite 300  
 Federal Way, Washington 98003-2600  
 (206) 451-2200 Fax: (206) 451-2250

**Port of Tacoma**  
 P.O. BOX 1887 TACOMA, WA 98401-01887

**DAKOTA ENGINEERING**  
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 TACOMA, WA 98401

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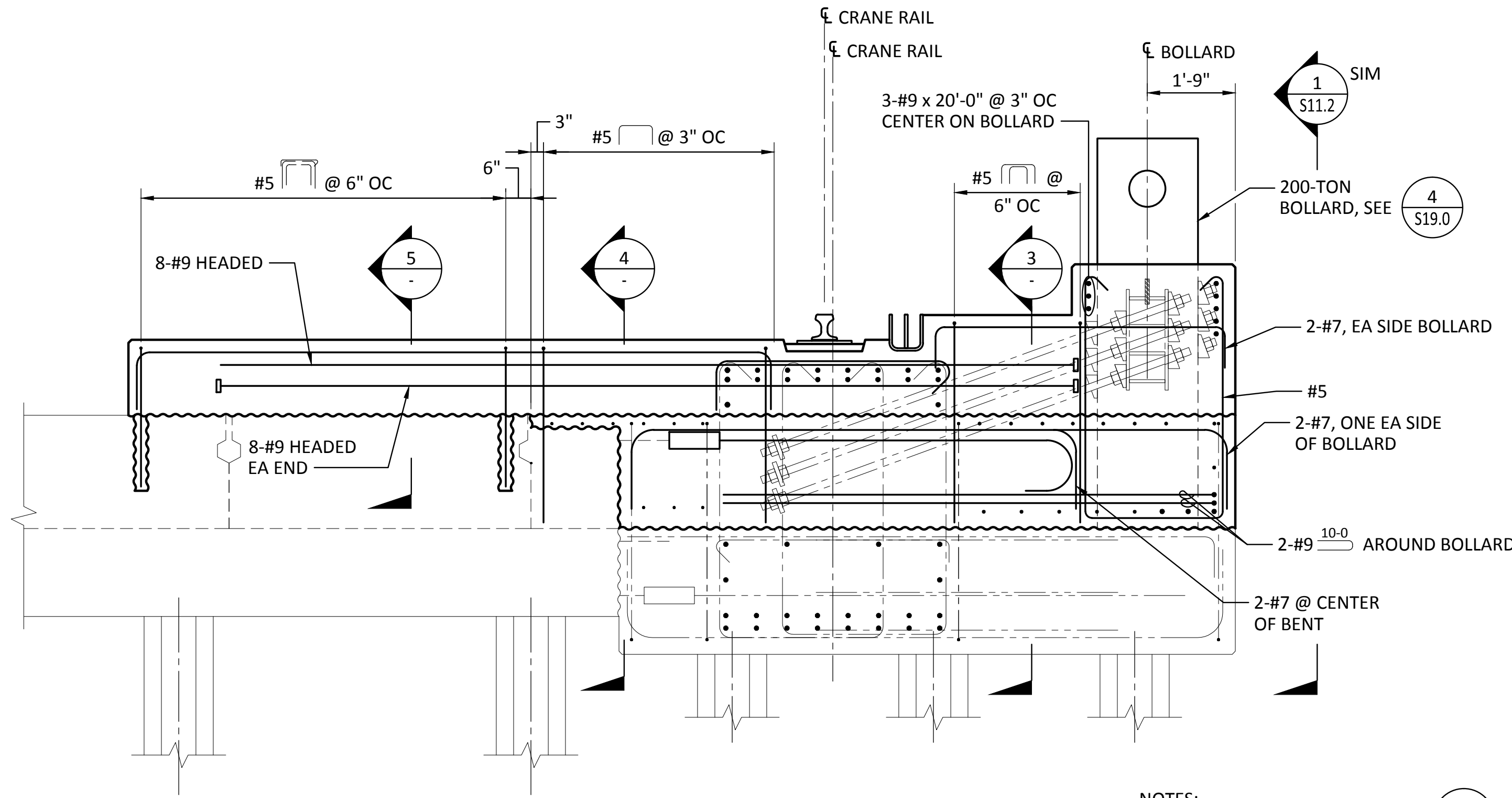
APPROVED: [Signature]

MARK: REVISION: BY: APPR: DATE:

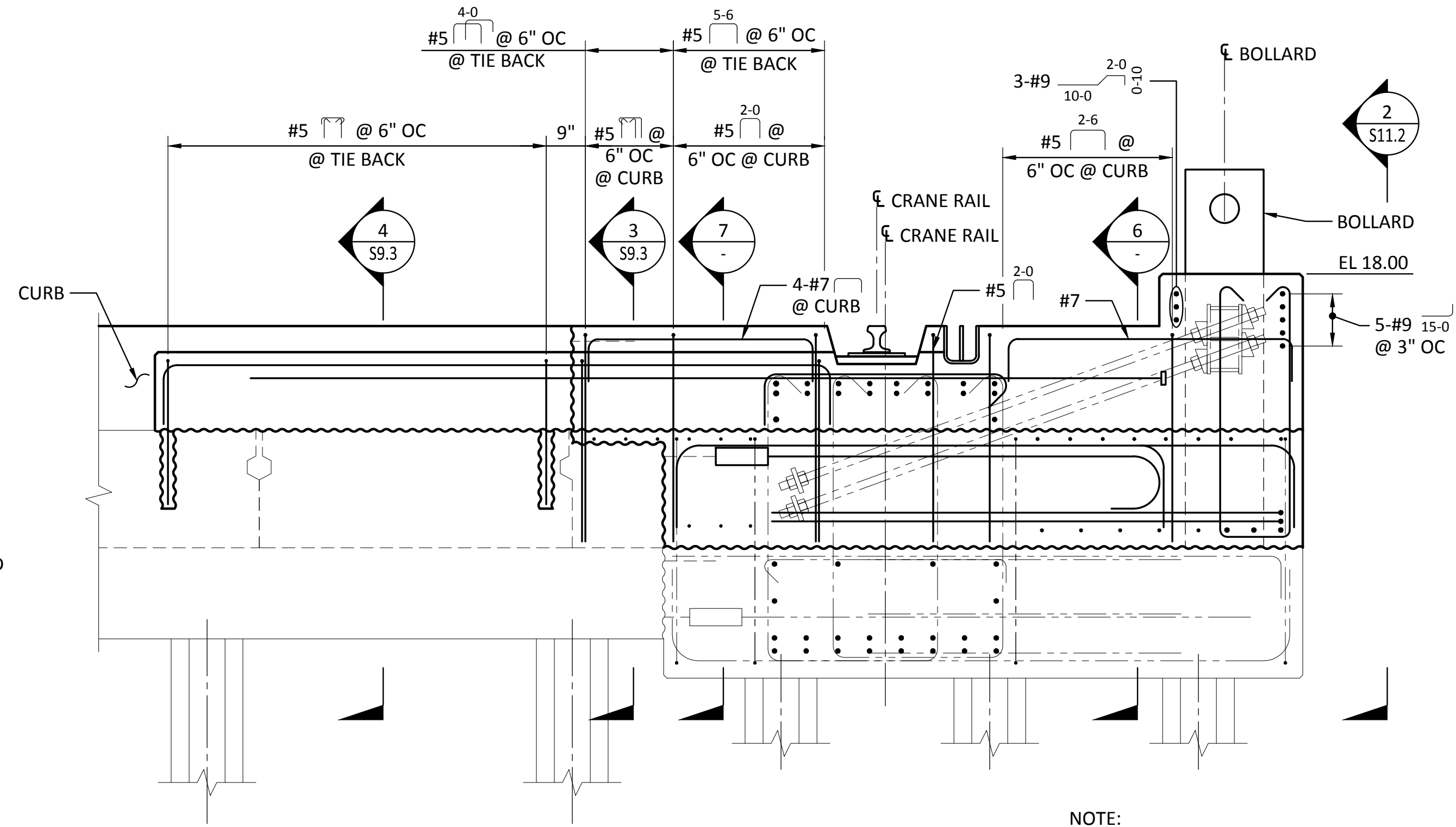
6502 **S9.1** SHEET 63 OF 129

CONTR/CONS: 069458 TOWNSHIP: 21 N RANGE: 3 E SECTION: 27  
 MASTER ID NO: 092935 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)  
 PHASE: RECORD DRAWINGS PARCEL: 27 DRAWING SCALE: AS SHOWN

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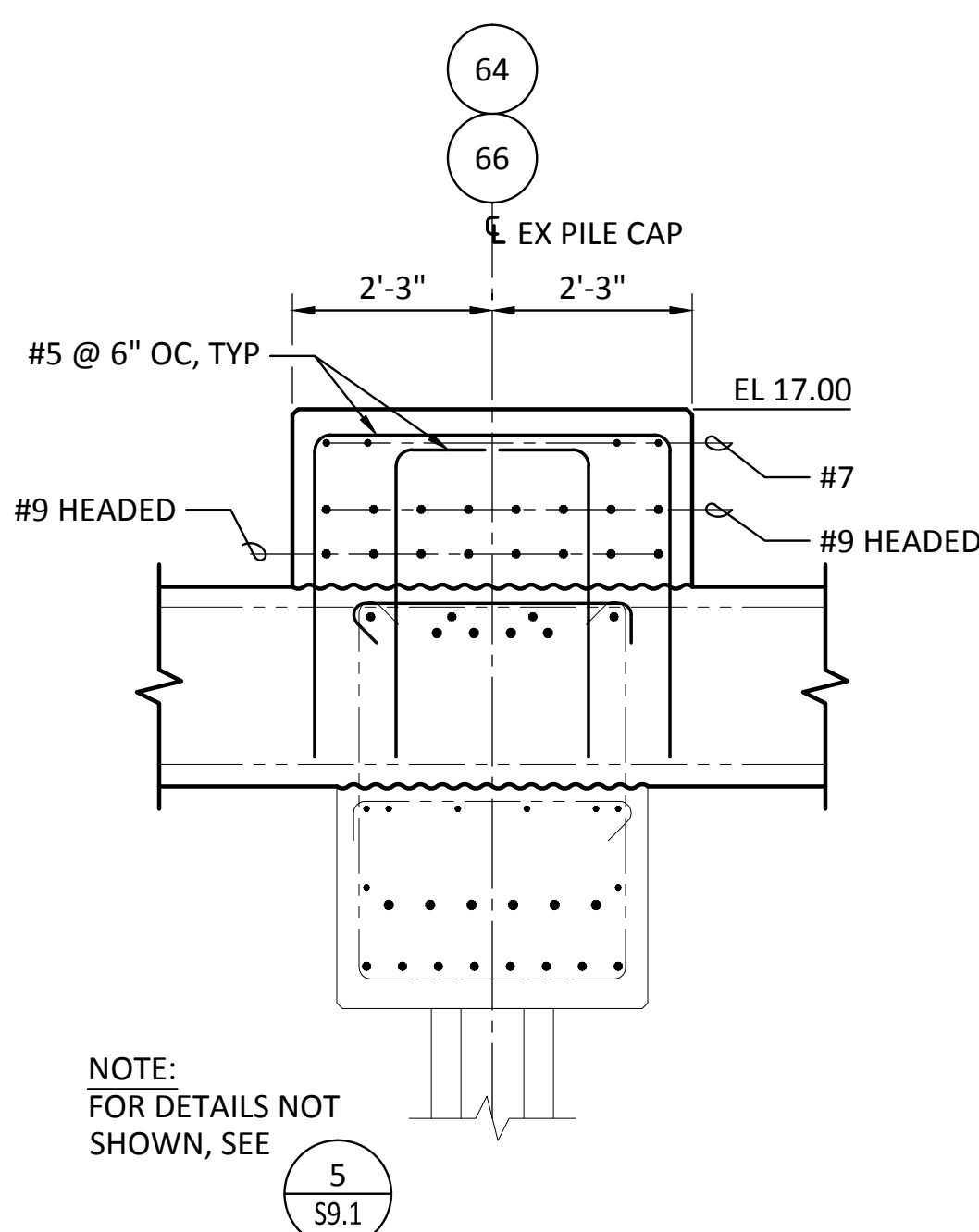
**1 ELEVATION - PILE CAP AT 200-TON BOLLARD**  
 SCALE: 1/2" = 1'-0"



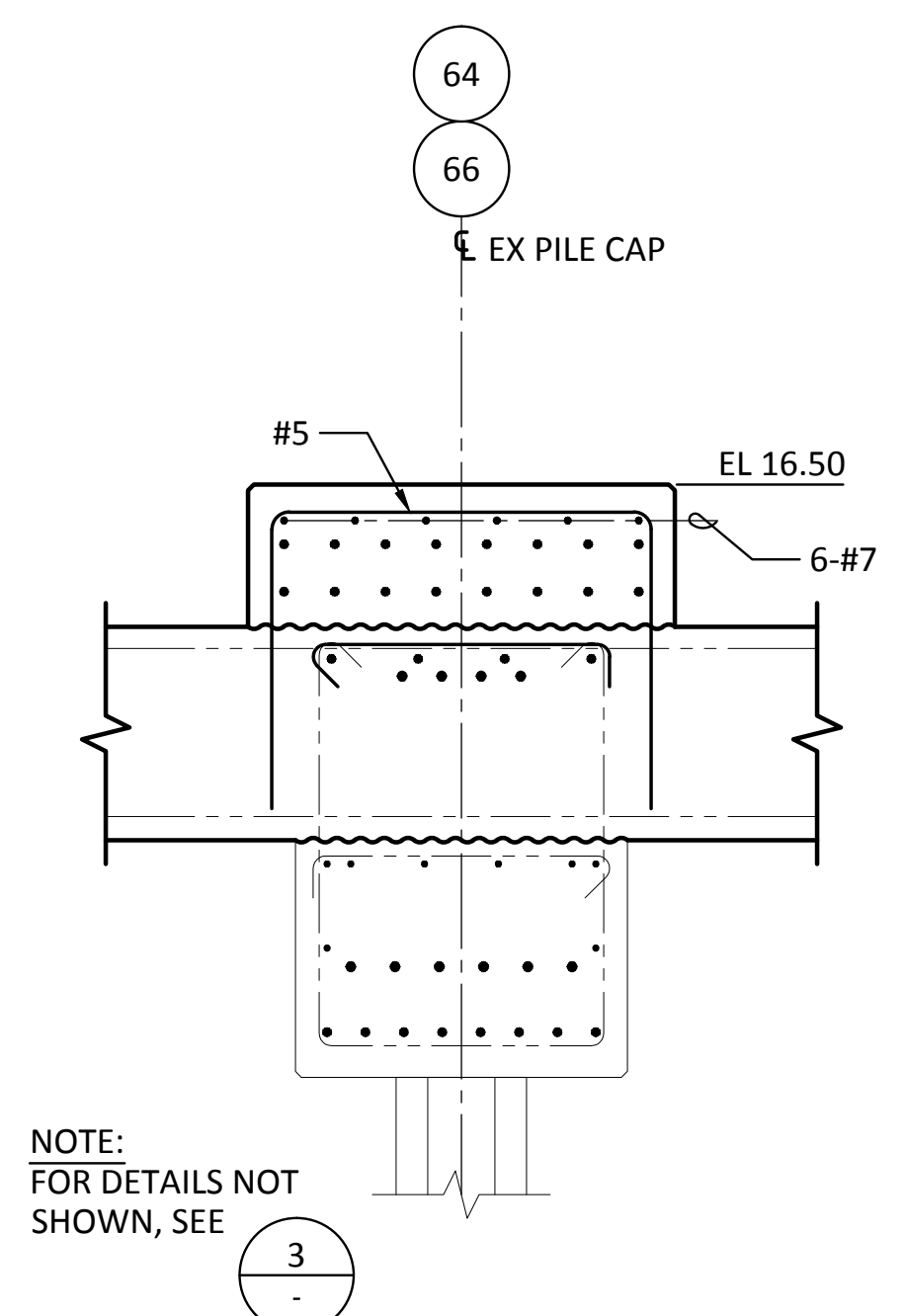
**2 ELEVATION - BENT 20**  
 SCALE: 1/2" = 1'-0"

NOTES:  
 1. FOR DETAILS NOT SHOWN, SEE **2** S9.1  
 2. TYPICAL BULLRAIL REINF NOT SHOWN, SEE **3** S11.0

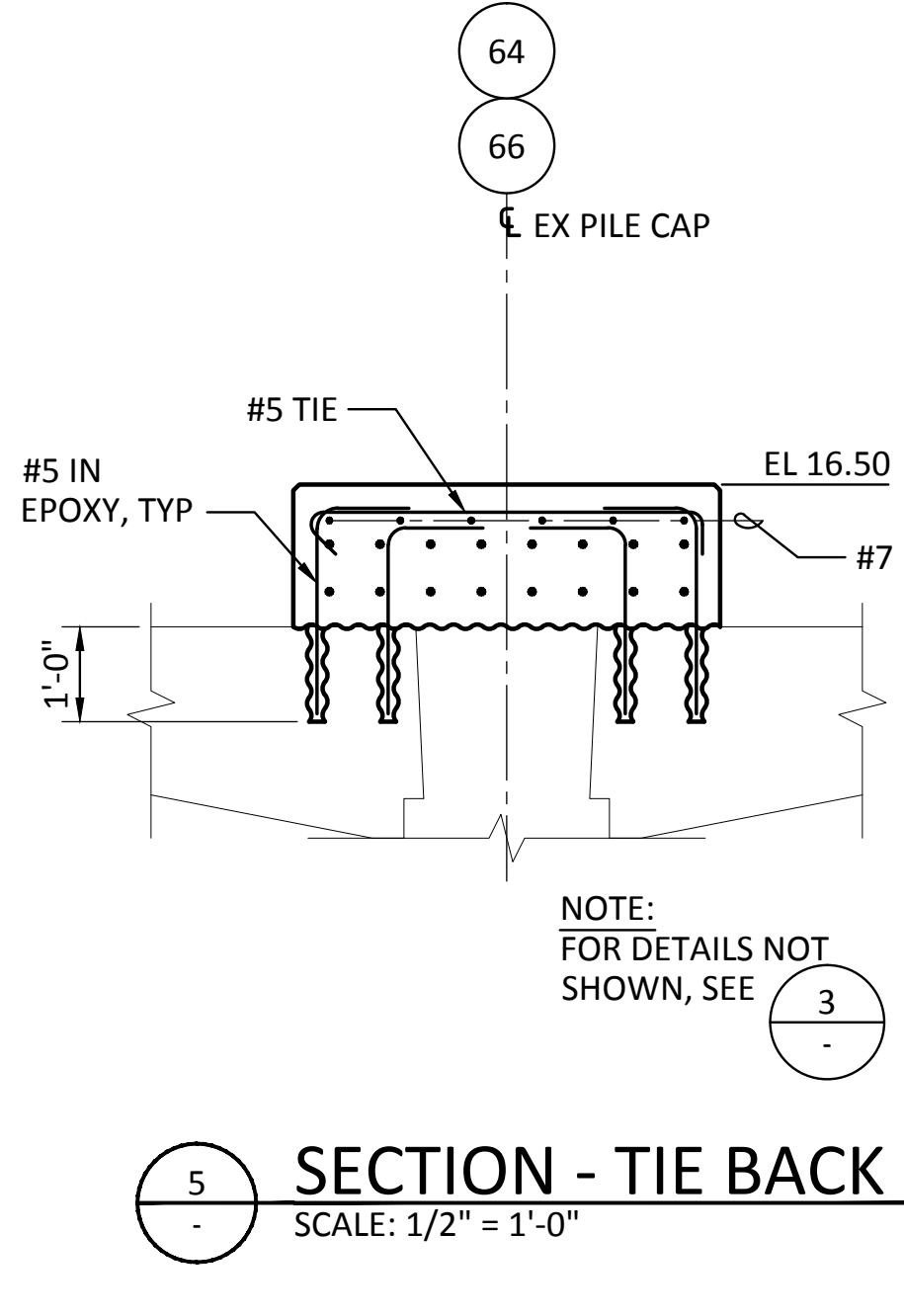
NOTE:  
 FOR DETAILS NOT SHOWN, SEE **2** S9.1



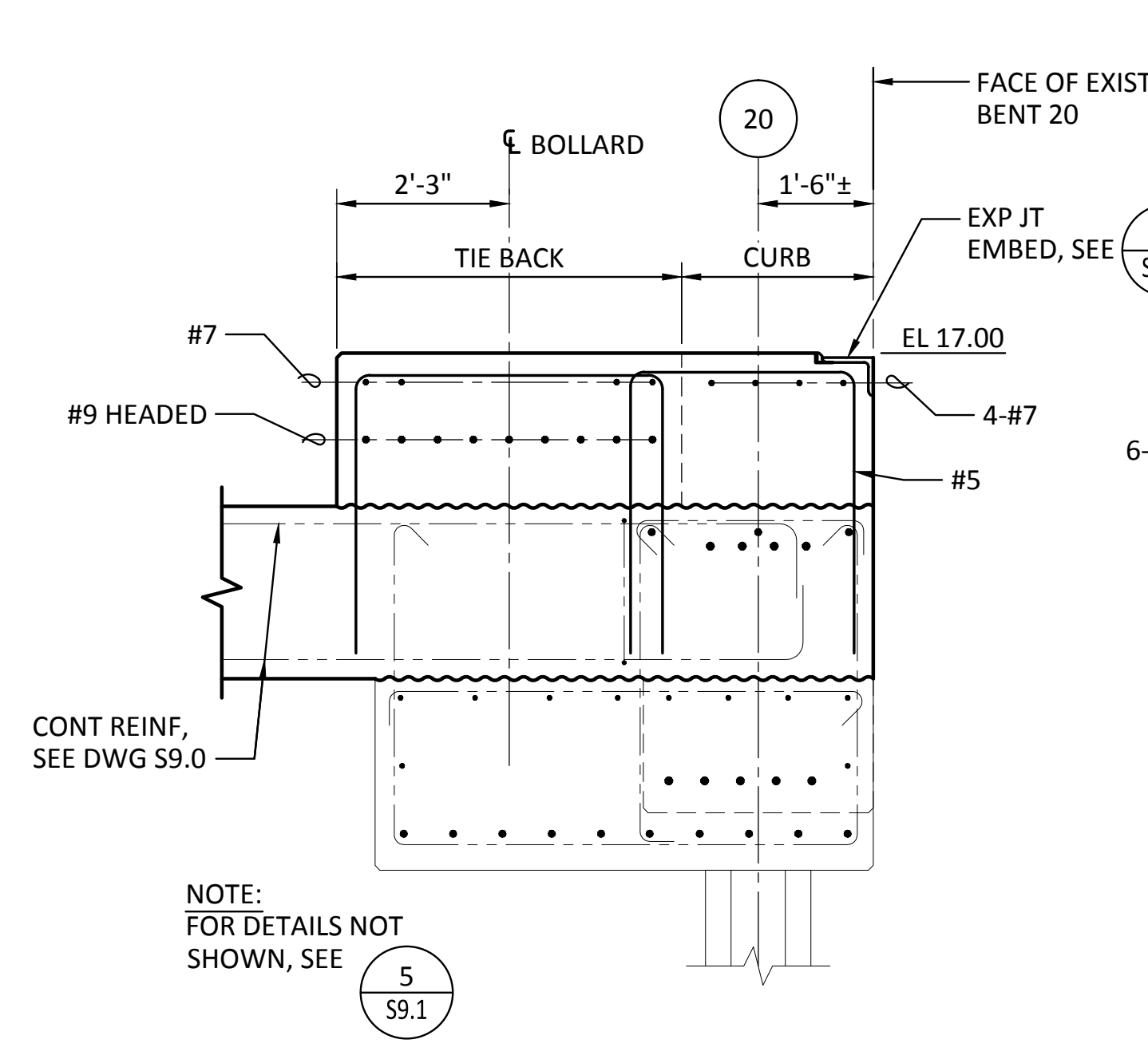
**3 SECTION - 200-TON BOLLARD**  
 SCALE: 1/2" = 1'-0"



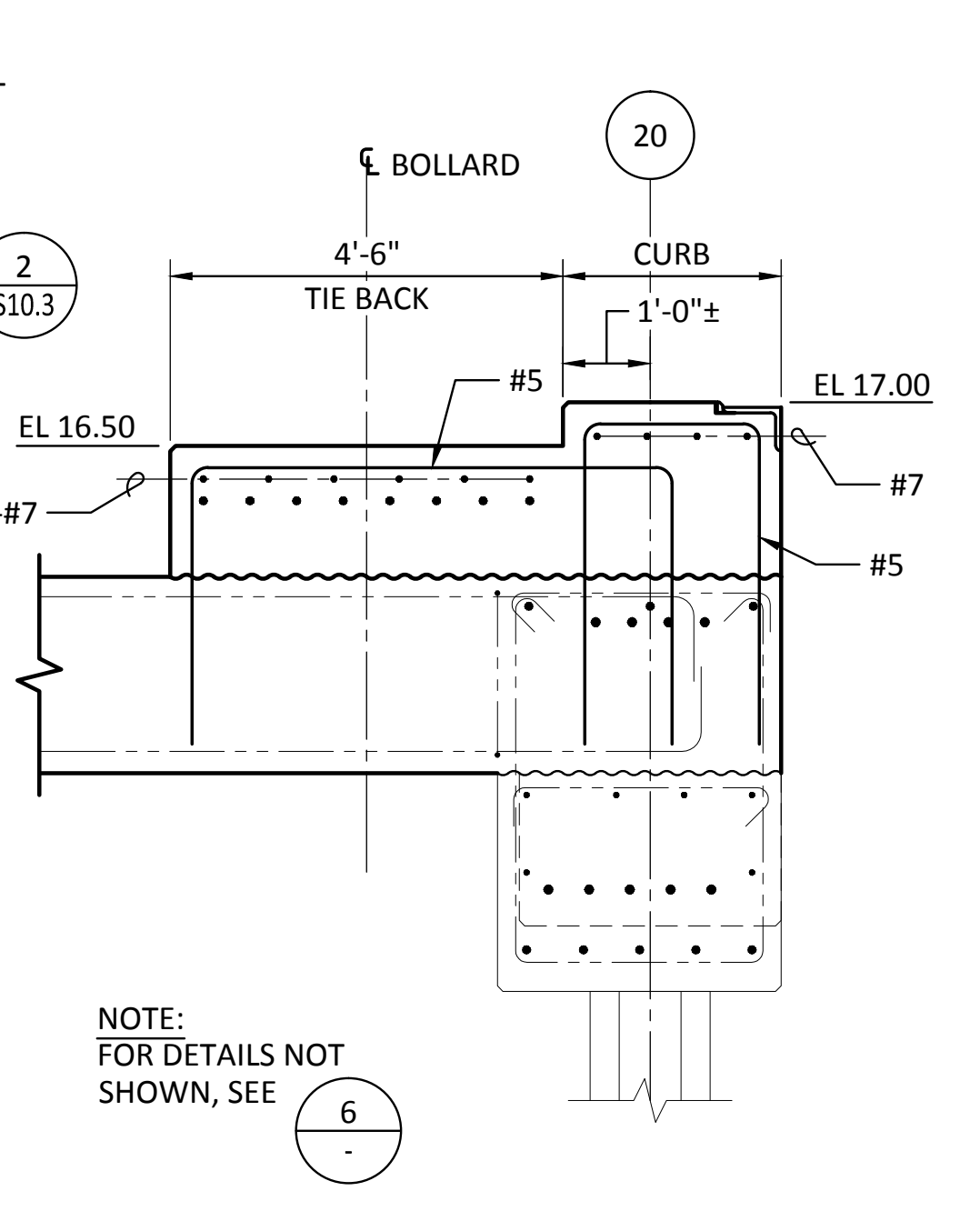
**4 SECTION - 200-TON BOLLARD**  
 SCALE: 1/2" = 1'-0"



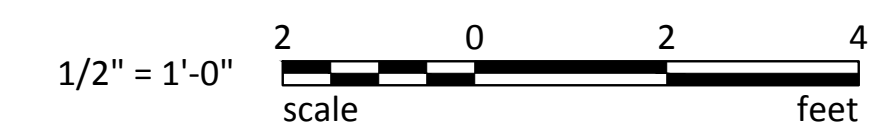
**5 SECTION - TIE BACK**  
 SCALE: 1/2" = 1'-0"



**6 SECTION - BENT 20**  
 SCALE: 1/2" = 1'-0"

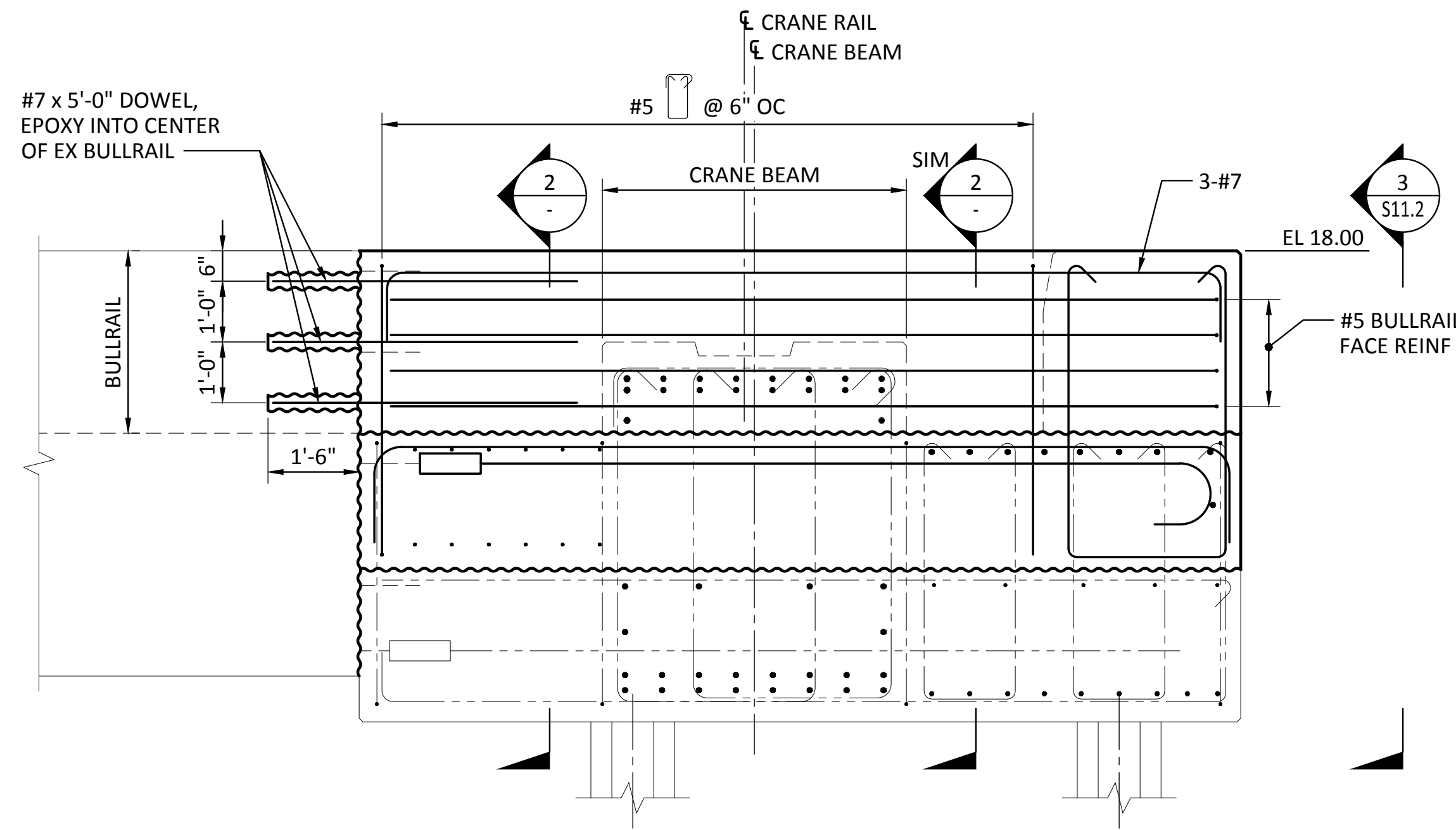


**7 SECTION - BENT 20**  
 SCALE: 1/2" = 1'-0"



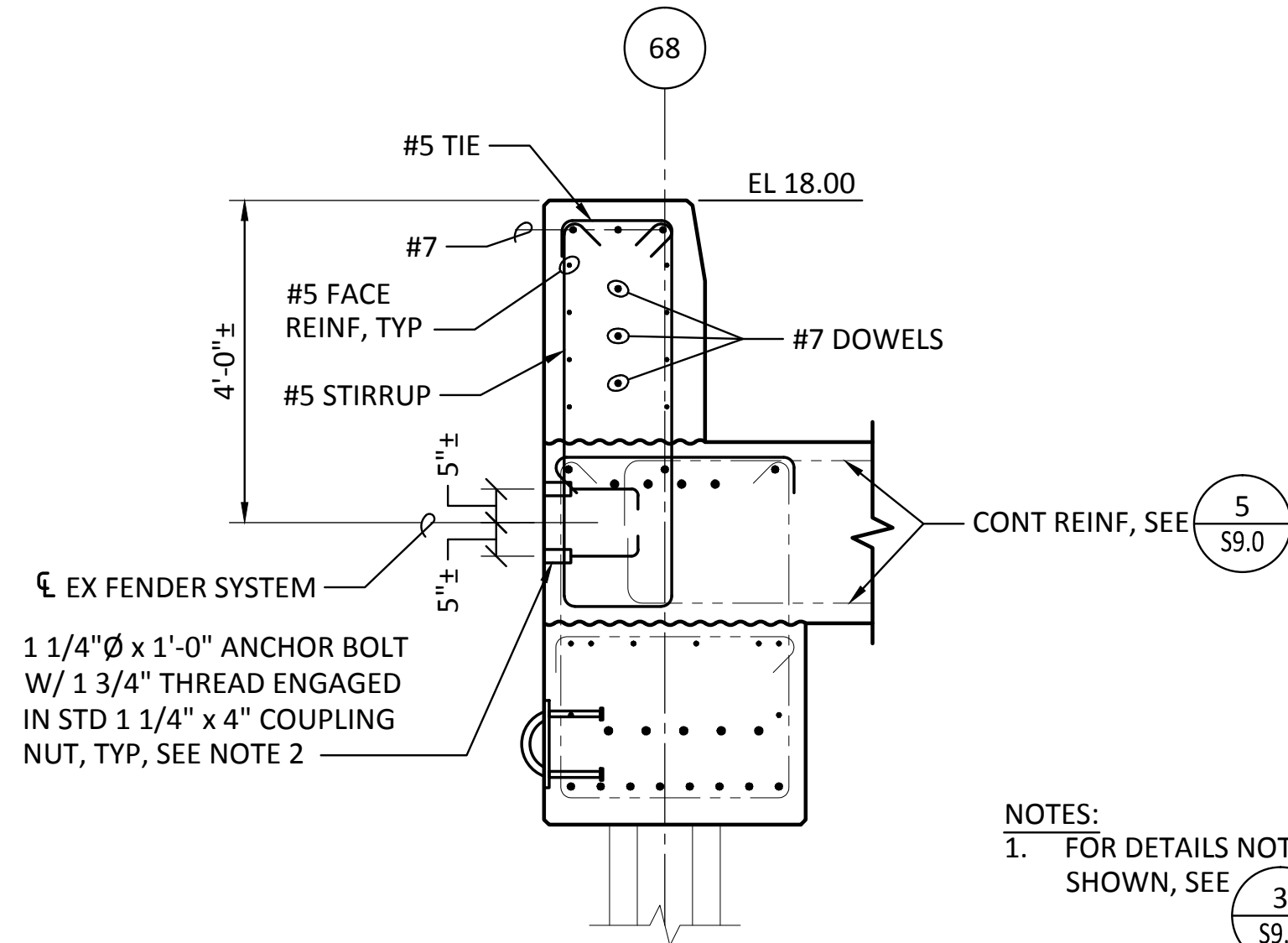
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ DATE: _____ APPR: _____
	REVISION: _____ MARK: _____
	CSB 7/17/13 DATE 7/17/13 CHECKED BY: JRG PROJ. ENGR: jason.mendenthal DIR OF ENG: jason.mendenthal PRINTED BY: jason.mendenthal PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
	APPROVED: _____
<b>PIER 3 UPGRADE</b> STAGE II PILE CAPS - SHEET 2	TOWNSHIP: 21 N SECTION: 27 RANGE: 3 E NOS TIDAL (MILLW = 0.0) DAT-HRZ: NAD 83-07 VERT: AS SHOWN PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502 S9.2</b> SHEET 64 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS





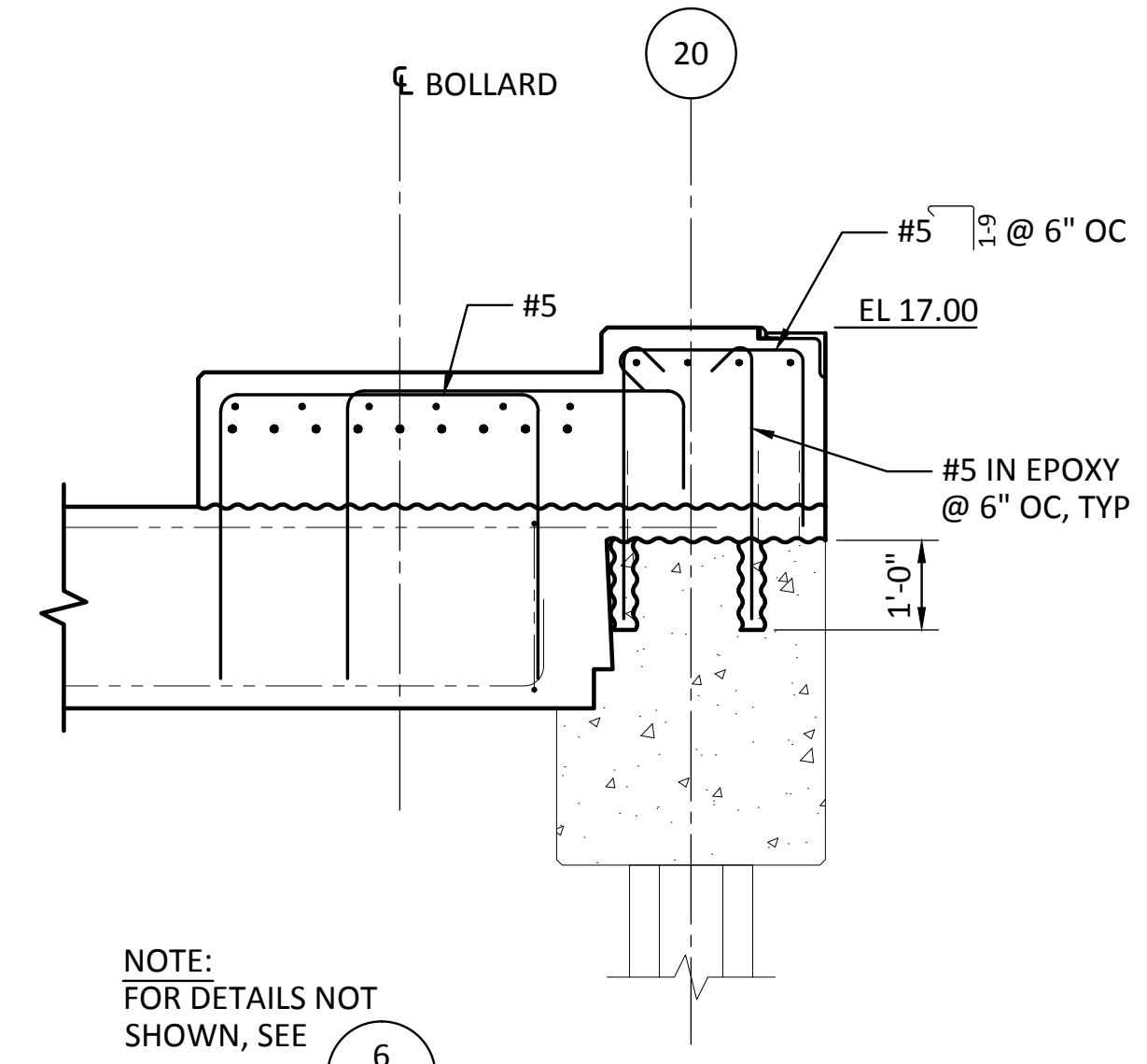
**1 ELEVATION - BENT 68**  
SCALE: 1/2" = 1'-0"

- NOTES:
- FOR STAGE I REINF, SEE **1** S8.1
  - FOR CRANE BEAM REINF, SEE **1** S9.0
  - FOR DETAILS NOTE SHOWN, SEE **1** S9.1
  - FOR TYP BULLRAIL REINF, SEE **3** S11.0
  - CRANE STOP AND LIGHTPOLE NOT SHOWN.



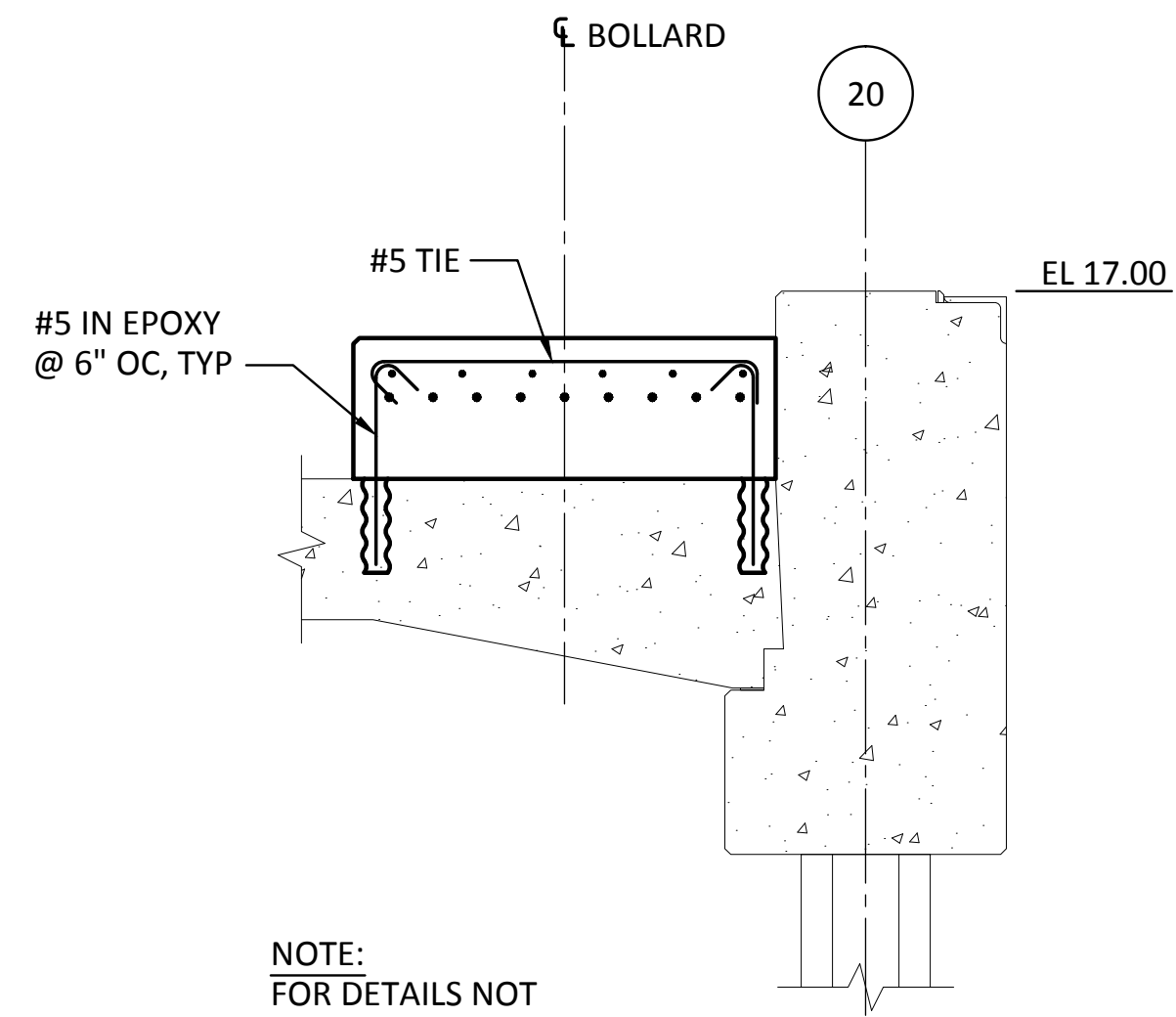
**2 SECTION - BENT 68**  
SCALE: 1/2" = 1'-0"

- NOTES:
- FOR DETAILS NOTE SHOWN, SEE **3** S9.1
  - LOCATE ANCHOR BOLTS TO RE-ATTACH SALVAGED FENDERS.



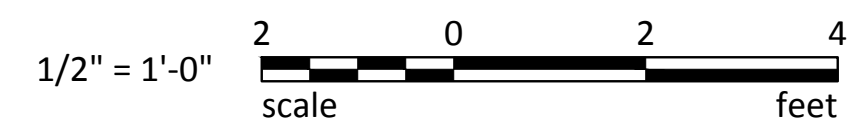
**3 SECTION - BENT 20**  
SCALE: 1/2" = 1'-0"

- NOTE:  
FOR DETAILS NOT SHOWN, SEE **6** S9.1

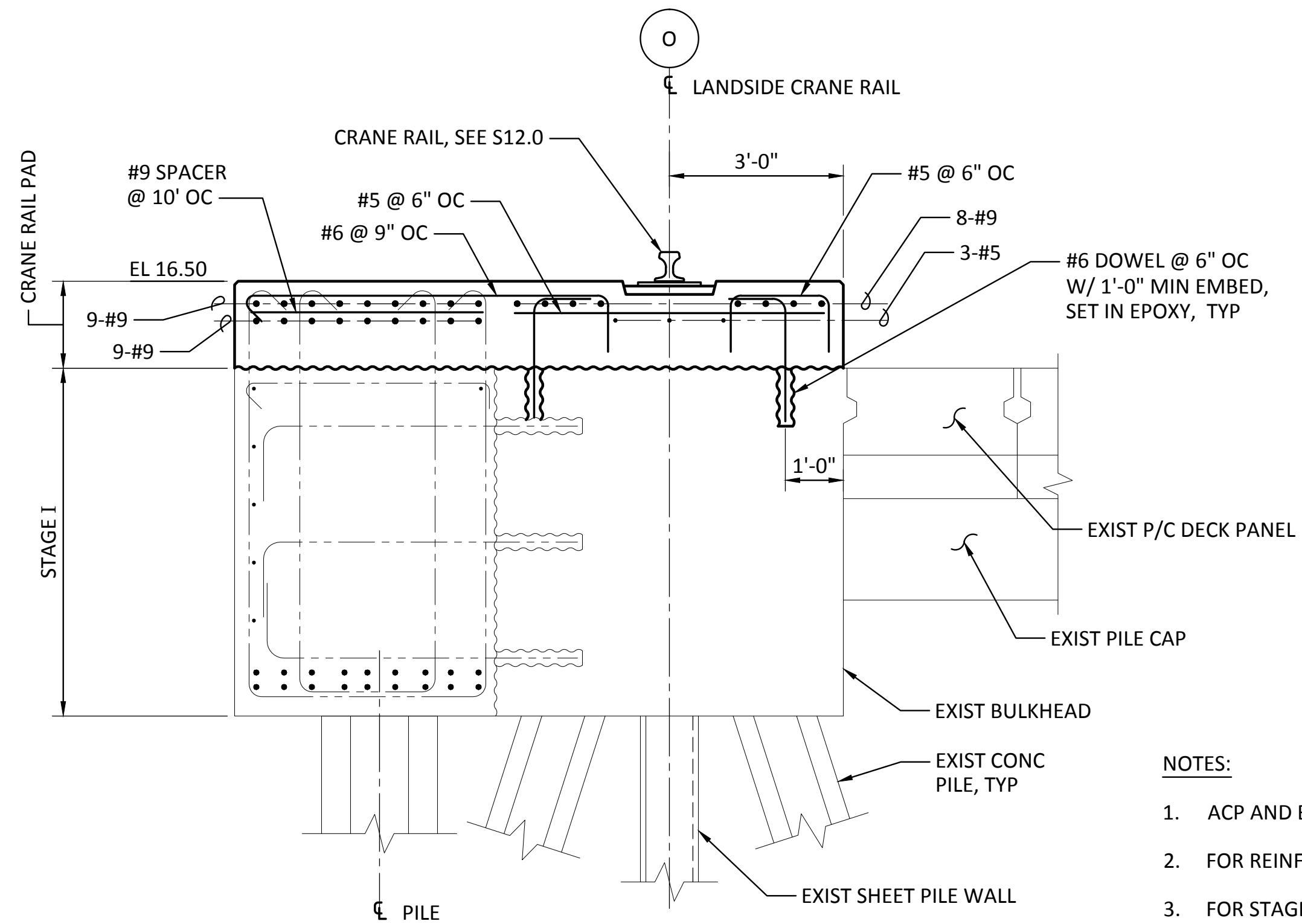


- NOTE:  
FOR DETAILS NOT SHOWN, SEE **7** S9.2

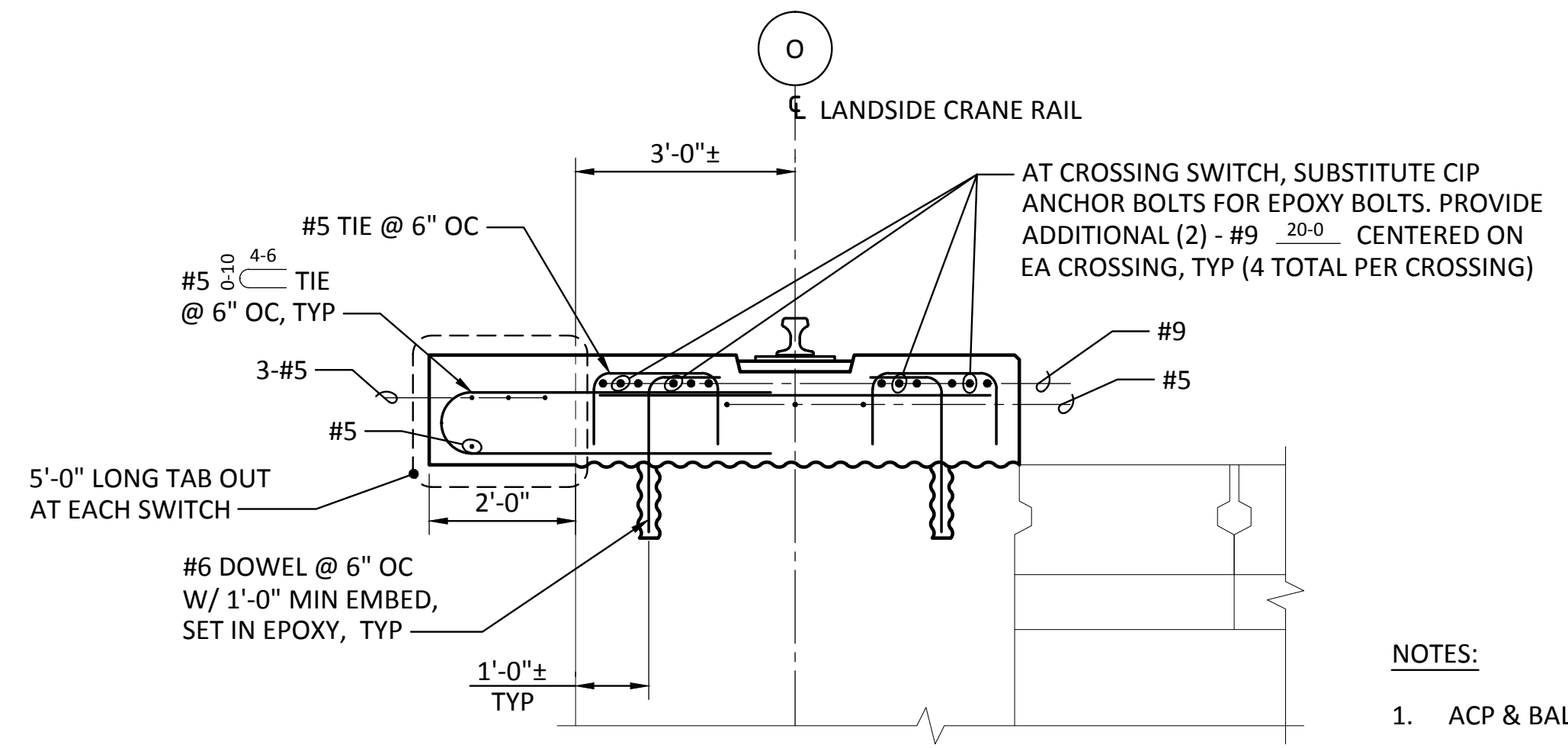
**4 SECTION - BENT 20**  
SCALE: 1/2" = 1'-0"



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	REVISION: _____ APPR: _____
<b>PIER 3 UPGRADE</b> STAGE II PILE CAPS - SHEET 3	CSB 7/17/13 CHECKED BY: JRG DIR OF ENG: jason.mendenthal PRINTED BY: jason.mendenthal PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	DATE: 7/17/13 DATE: 7/17/13
<b>6502</b> <b>S9.3</b> SHEET 65 OF 129	TOWN: _____ RANGE: _____ SECTION: _____ DAT-HRZ: _____ VERT: _____ PARCEL: _____ DRAWING SCALE: _____
CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TACOMA, WA 98421-2300



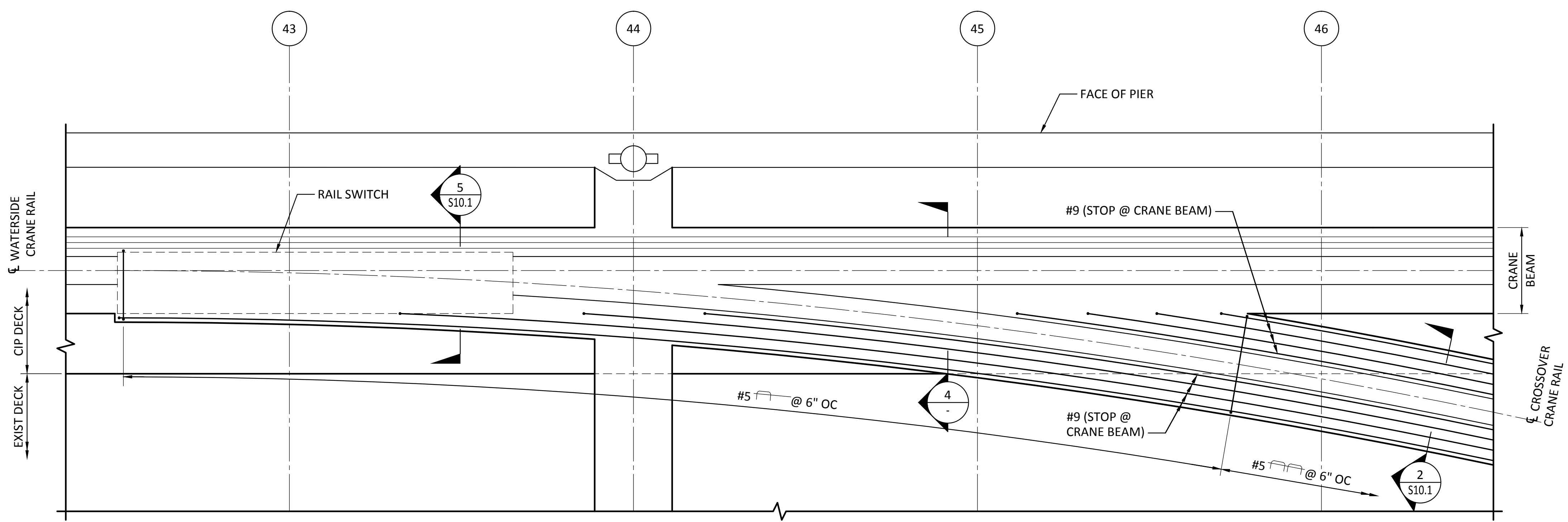
**1** SECTION - CRANE RAIL PAD W/ SUPPLEMENT  
 S3.4 SCALE: 1/2"=1'-0"  
 S3.5, S3.6, S3.7, S10.2



**2** SECTION - CRANE RAIL PAD  
 S3.5 SCALE: 1/2"=1'-0"  
 S3.6, S3.7

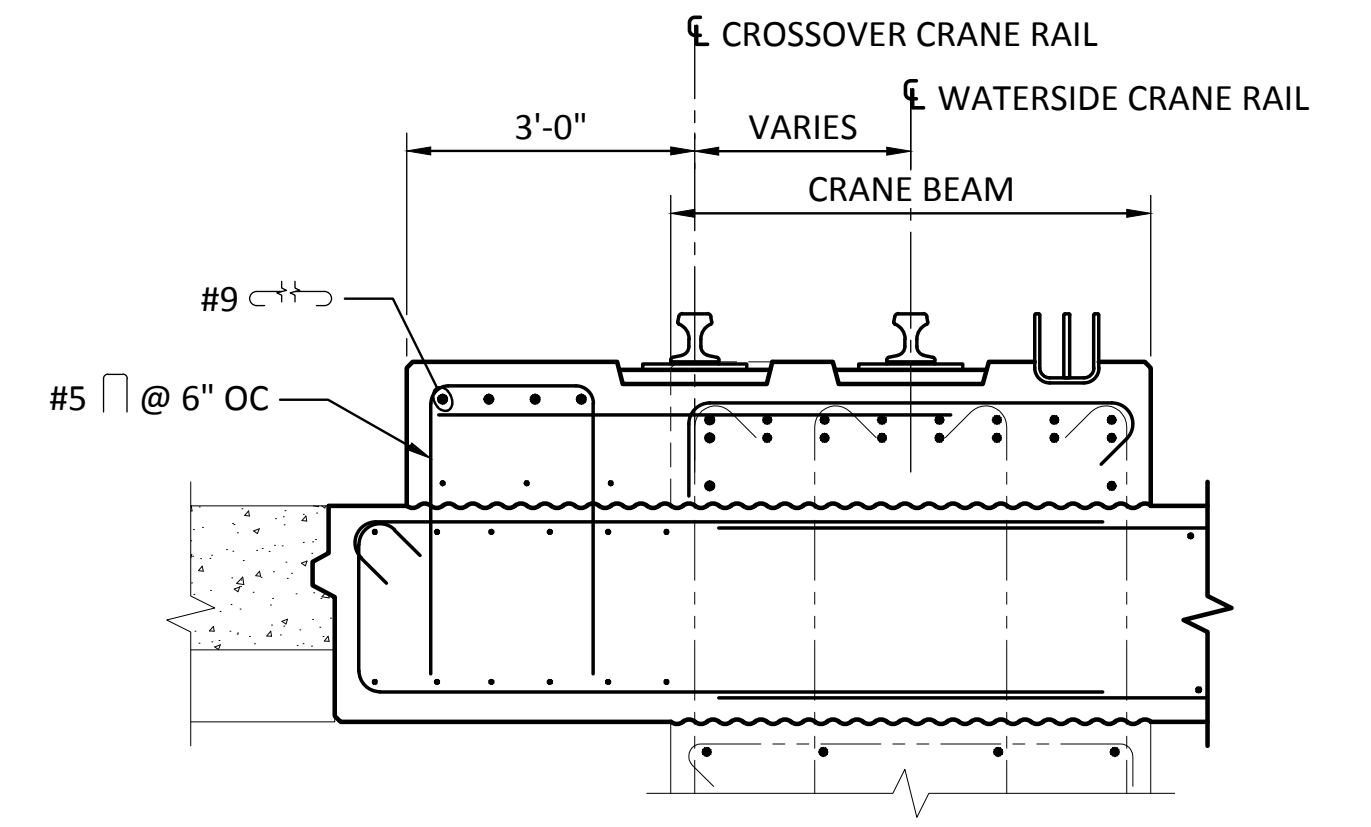
- NOTES:
1. ACP & BALLAST NOT SHOWN.
  2. FOR DETAILS NOT SHOWN, SEE **1**.

- NOTES:
1. ACP AND BALLAST NOT SHOWN.
  2. FOR REINF AT TIE-DOWN VAULTS, SEE **4**.
  3. FOR STAGE I REINF, SEE **2**.



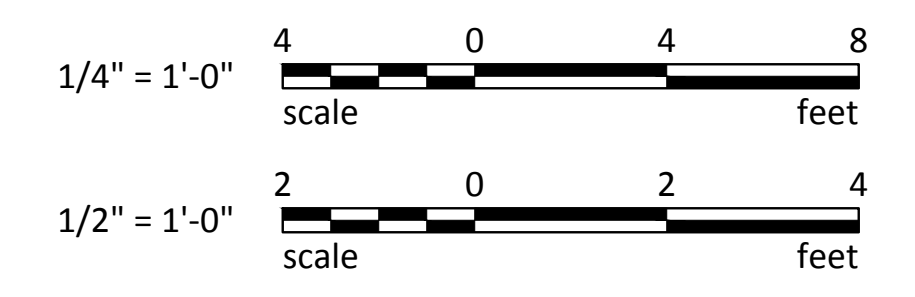
**3** PLAN - RAIL PAD AT SWITCH  
 S3.6 SCALE: 1/4" = 1'-0"

NOTE:  
 CRANE BEAM REINF NOT SHOWN, SEE DWG S9.0



NOTE:  
 FOR CRANE BEAM REINF, SEE **1**.

**4** SECTION  
 S10.0 SCALE: 1/2" = 1'-0"

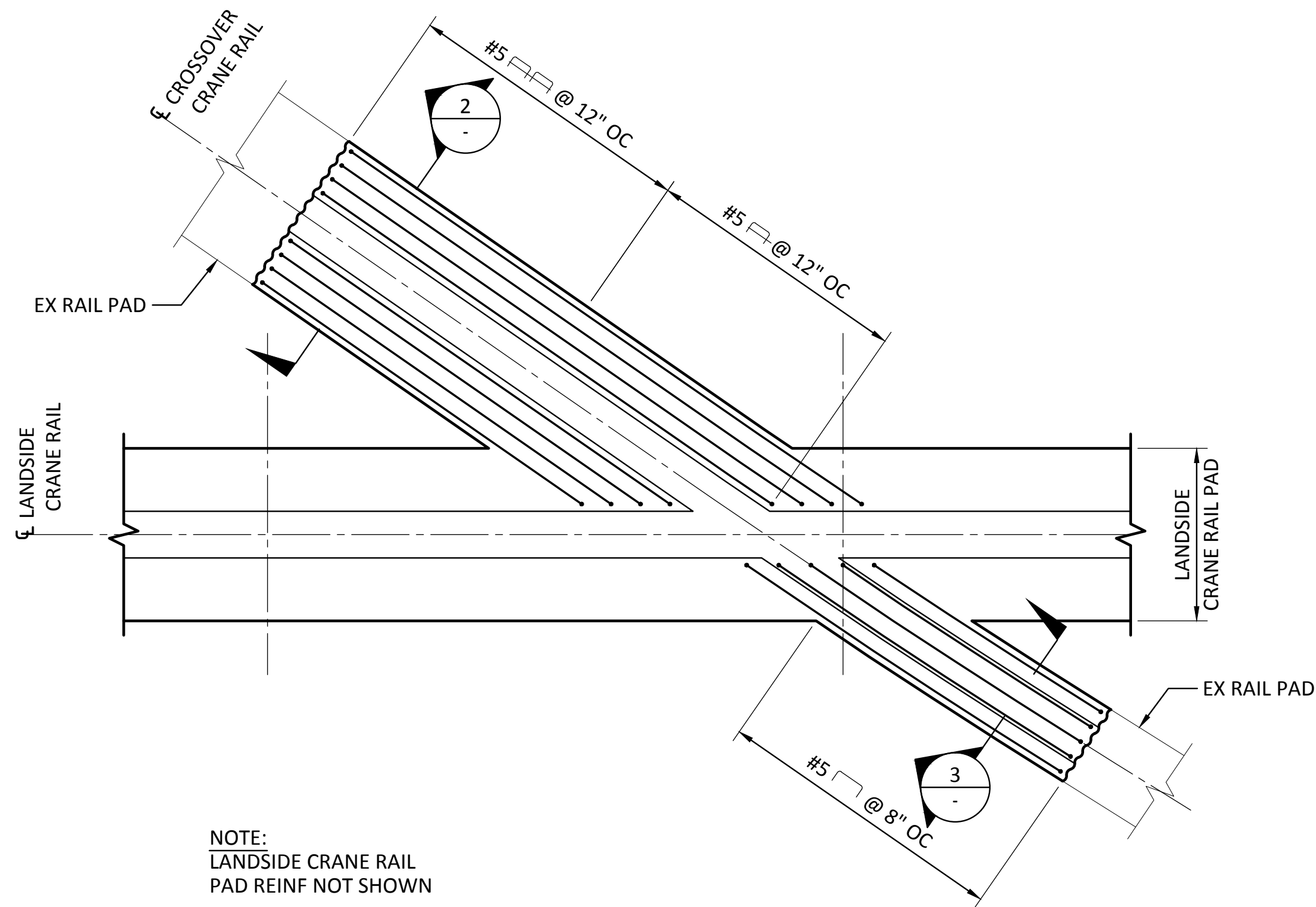


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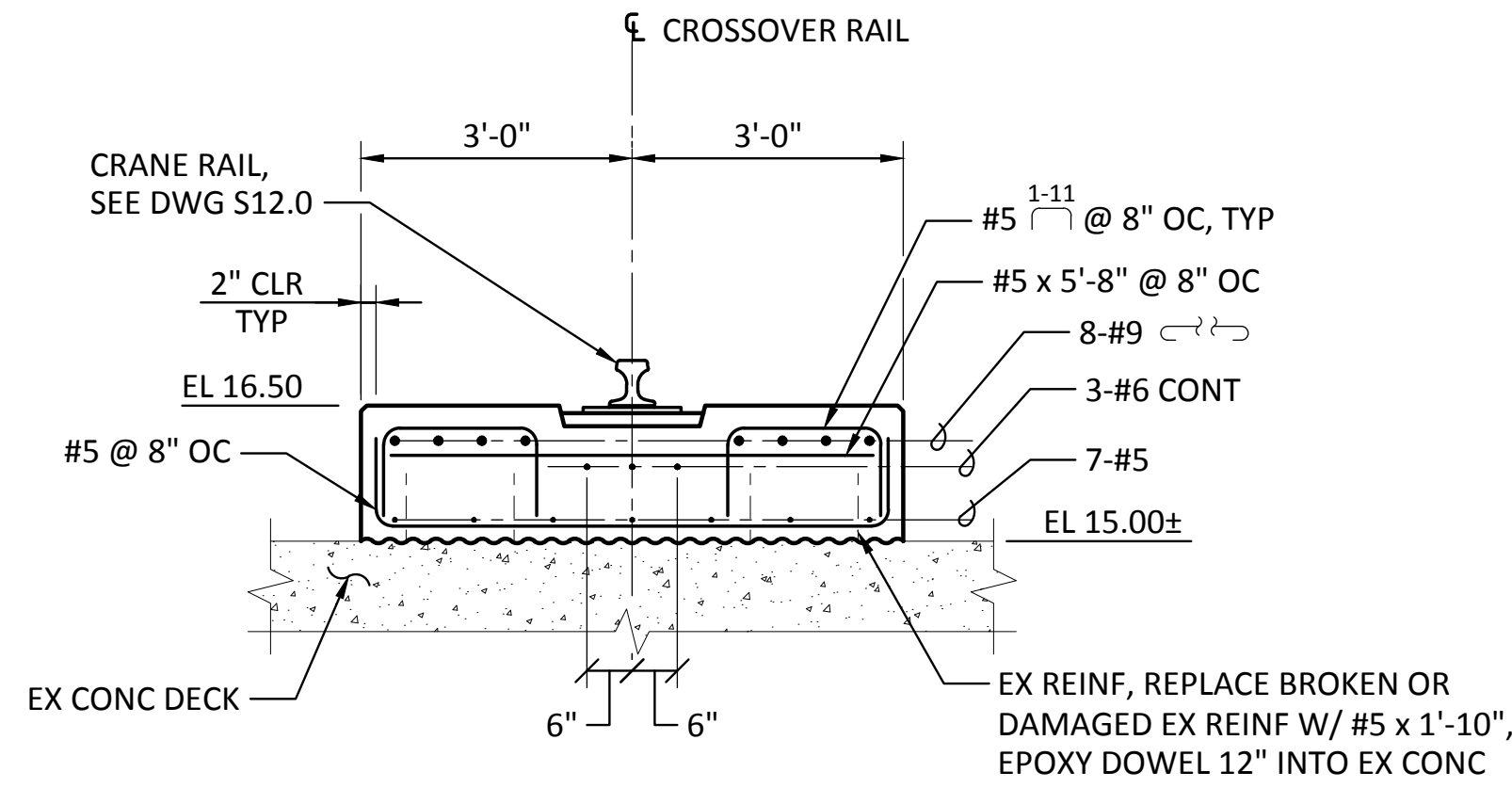
33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250		P.O. BOX 1887 TACOMA, WA 98401-0887 (206) 388-8841		DATE: _____ APPR: _____ BY: _____ REVISION: _____ MARK: _____	
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CHECKED BY	JRG	PRINTED BY	ONE SITCUM WAY	TACOMA, WA 98421-2300	
APPROVED:		SECTION:	27	DRAWING SCALE:	AS SHOWN
<b>6502</b> <b>S10.0</b> SHEET 66 OF 129		TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27			

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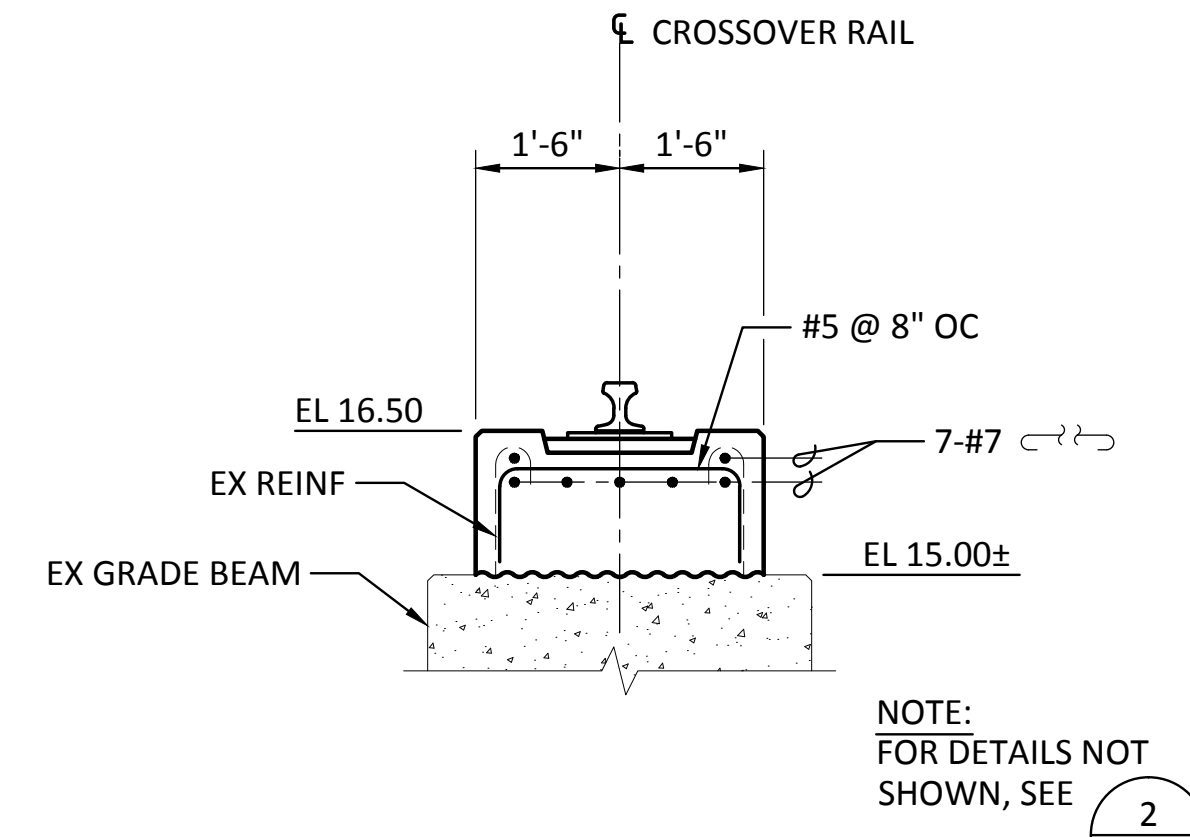
BINDING EDGE



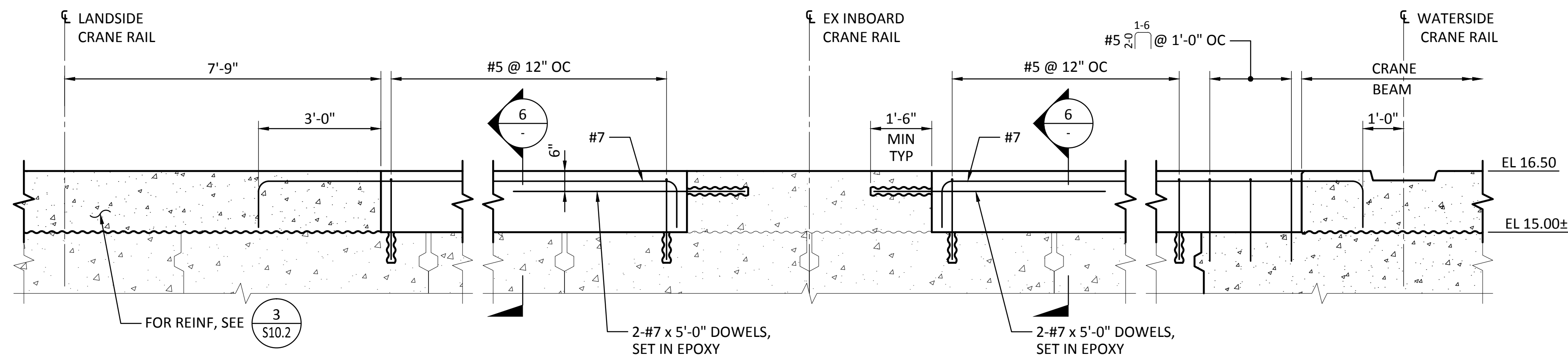
1  
S3.6  
SCALE: 1/4" = 1'-0"



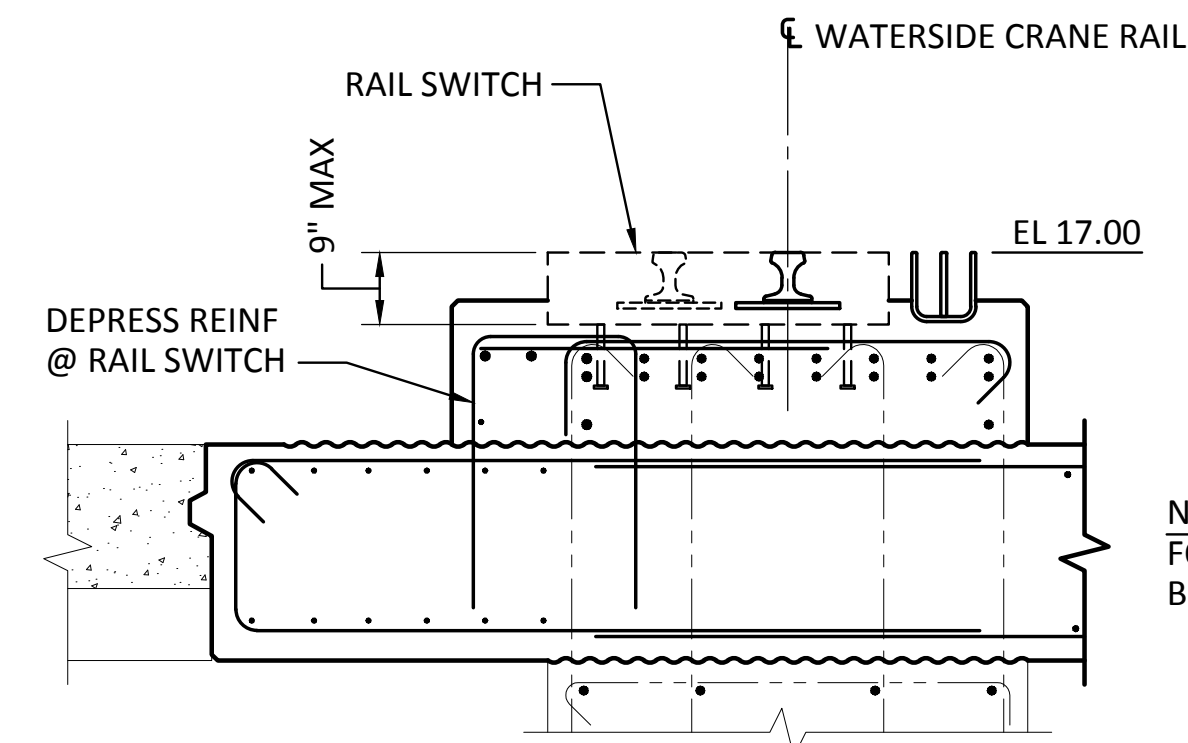
2  
S10.0  
SCALE: 1/2" = 1'-0"



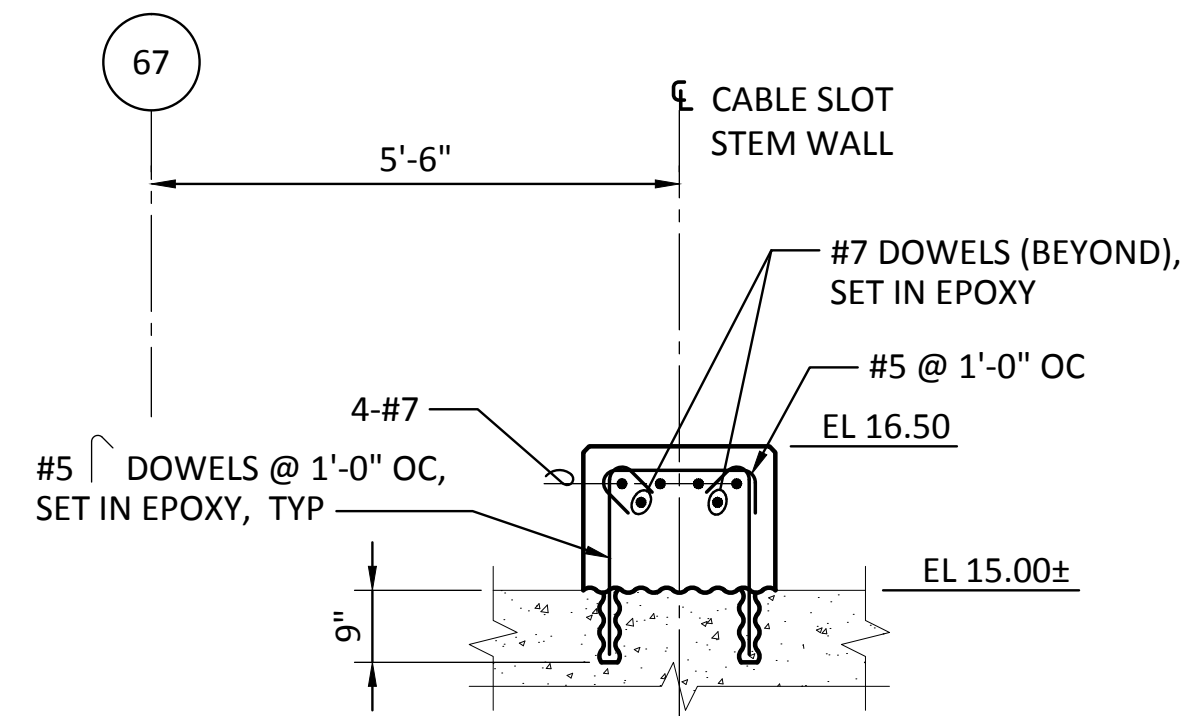
3  
SCALE: 1/2" = 1'-0"



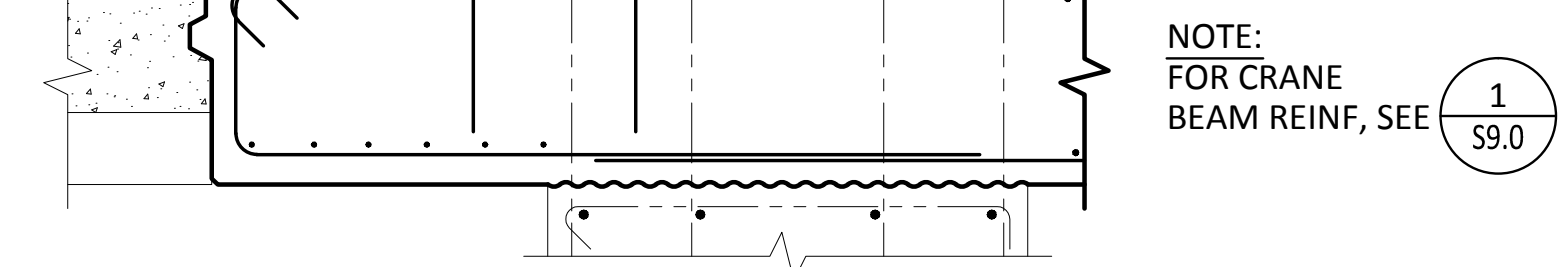
4  
S3.7  
SCALE: 1/2" = 1'-0"



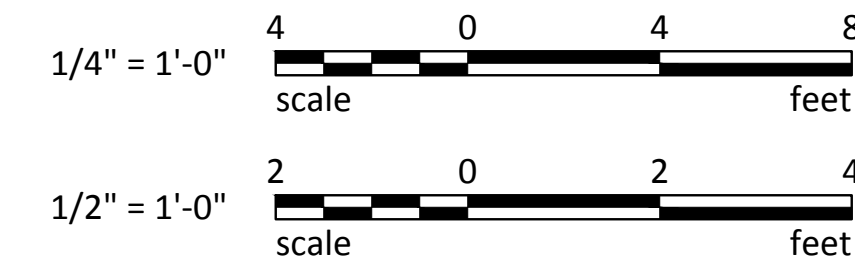
5  
S10.0  
SCALE: 1/2" = 1'-0"



6  
SCALE: 1/2" = 1'-0"



1  
S9.0



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**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401 (253) 863-8441

**Professional Engineer**  
DAVID S. ENGLISH  
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PRINTED BY	ONE SITCUM WAY	DATE
PORT ADDRESS	TACOMA, WA 98421-2300	DATE

**PIER 3 UPGRADE**

**CRANE PADS AND MISC DETAILS**  
SHEET 1

RANGE: 3 E SECTION: 27  
TOWNSHIP: 21 N NOS TIDAL (MILLW = 0.0)  
DATE-HRZ: NAD 83-07 VERT: AS SHOWN  
PARCEL: 27 DRAWING SCALE:

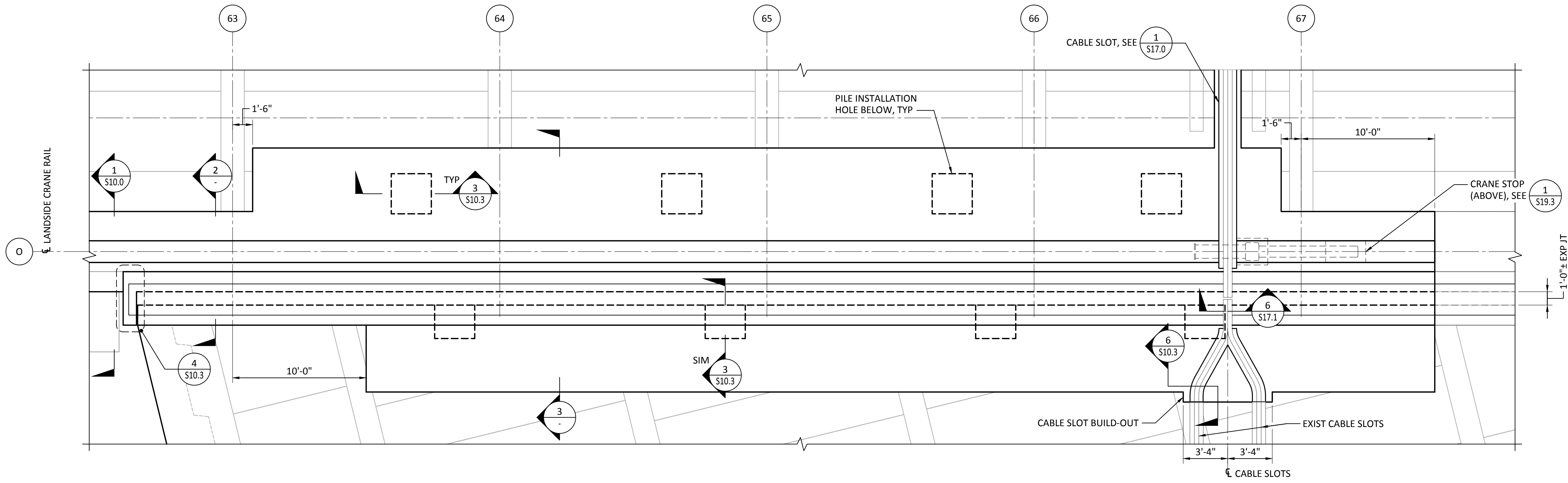
6502  
**S10.1**  
SHEET 67 OF 129

CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

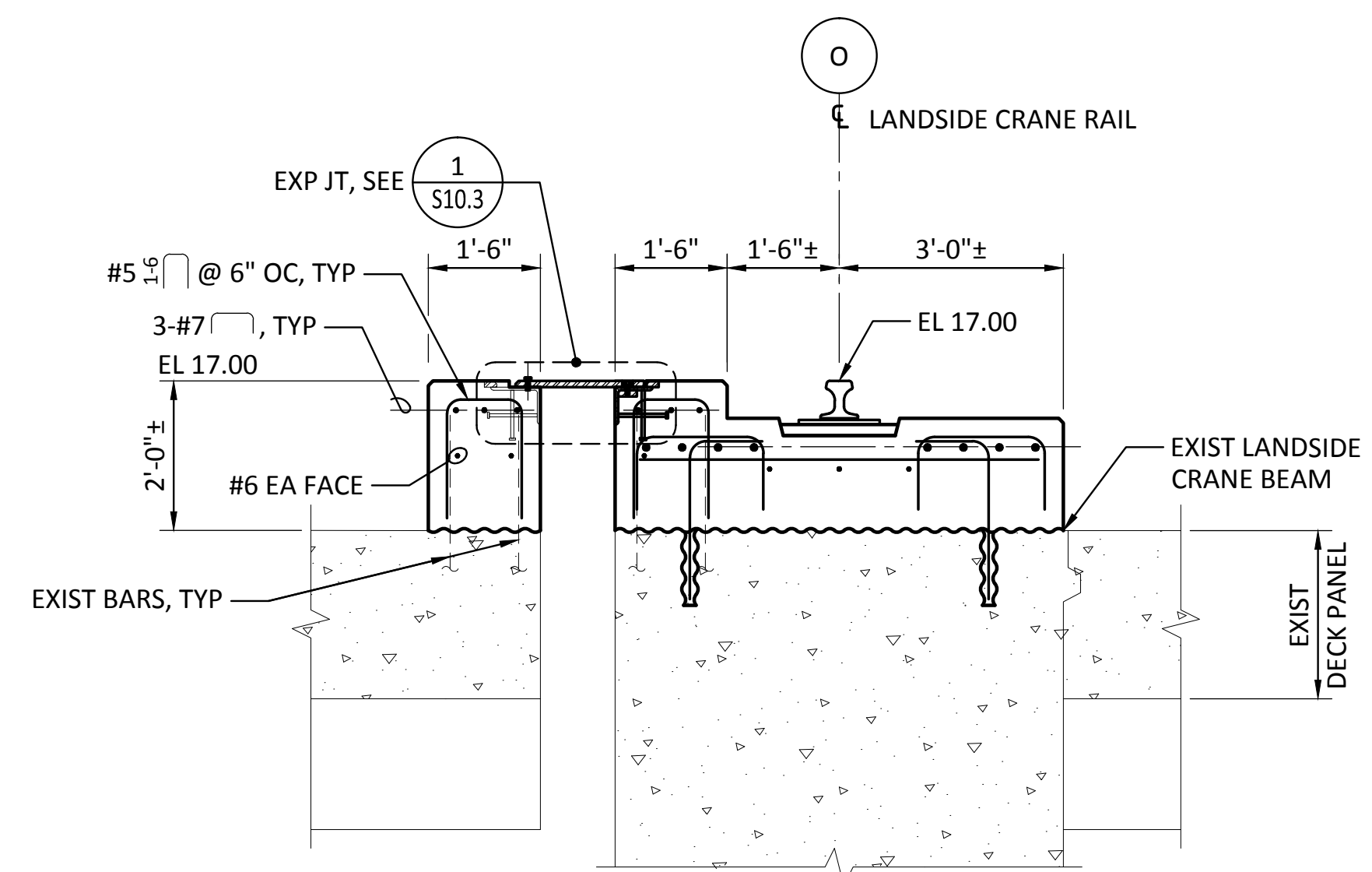
MARK: REVISION: BY: APPR: DATE:

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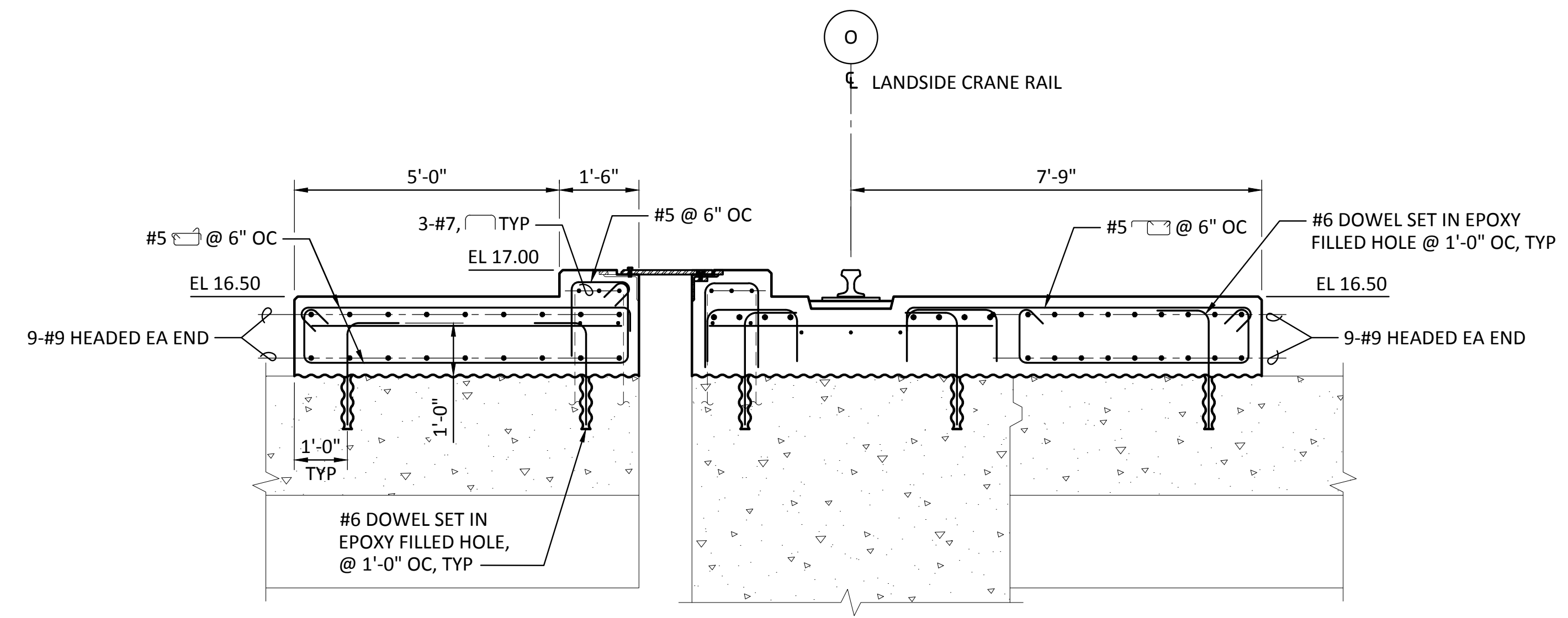


1  
S3.7  
DETAIL - DECK AT SUBCAPS  
SCALE: 1/4" = 1'-0"



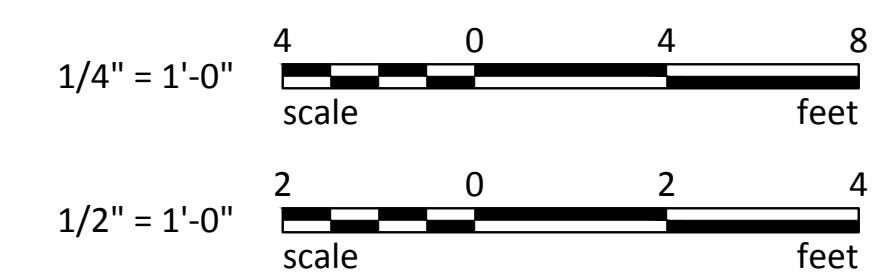
2  
SECTION - CRANE RAIL PAD AT EXP JT  
SCALE: 1/2" = 1'-0"

- NOTES:
1. ACP AND BALLAST NOT SHOWN.
  2. FOR INFORMATION NOT SHOWN, SEE S10.0



3  
SECTION - DECK AT SUBCAPS  
SCALE: 1/2" = 1'-0"

- NOTE:
1. FOR INFORMATION NOT SHOWN, SEE S19.3
  2. FOR CRANE STOP EMBEDS SEE DWG S19.3

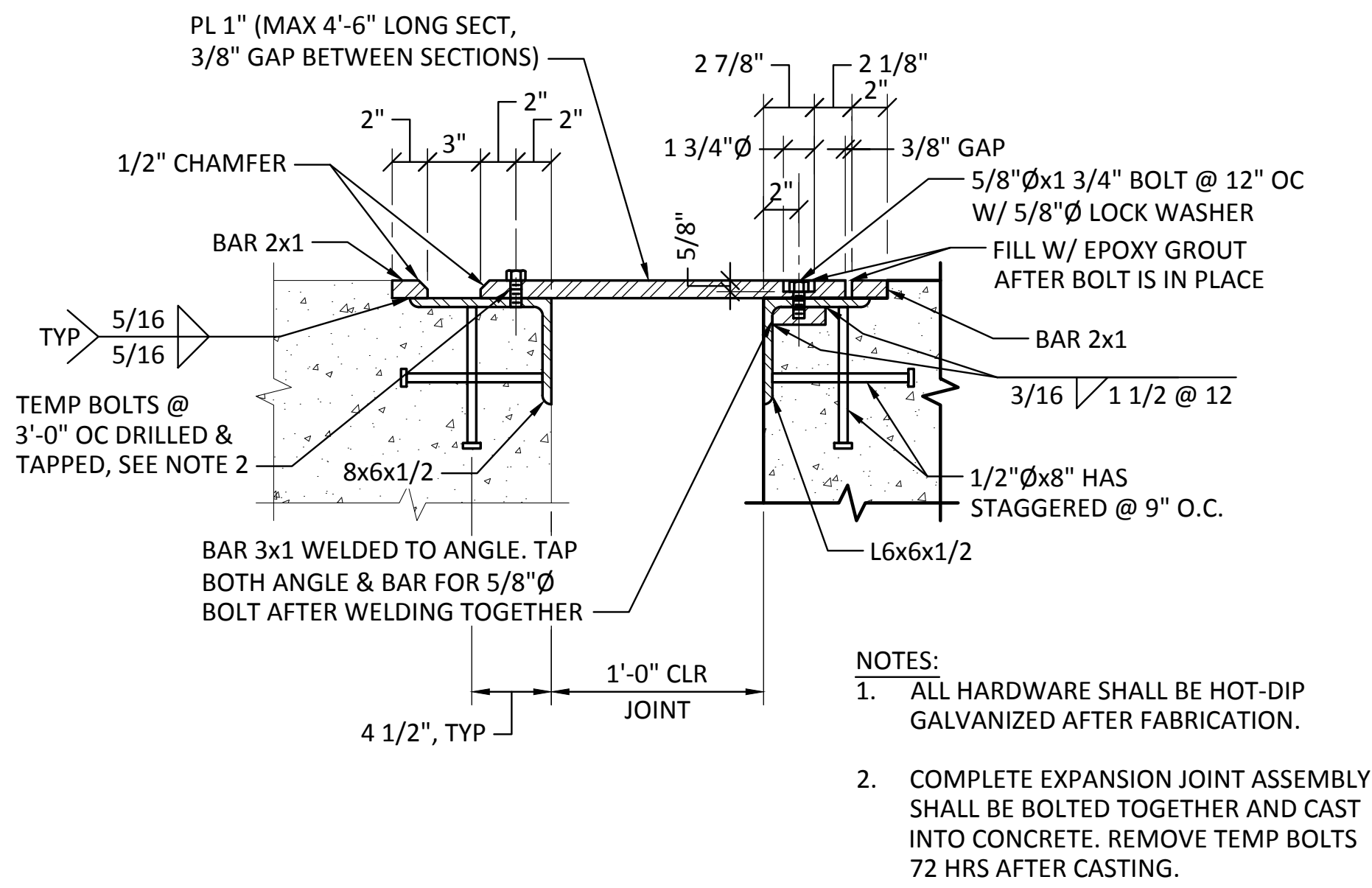


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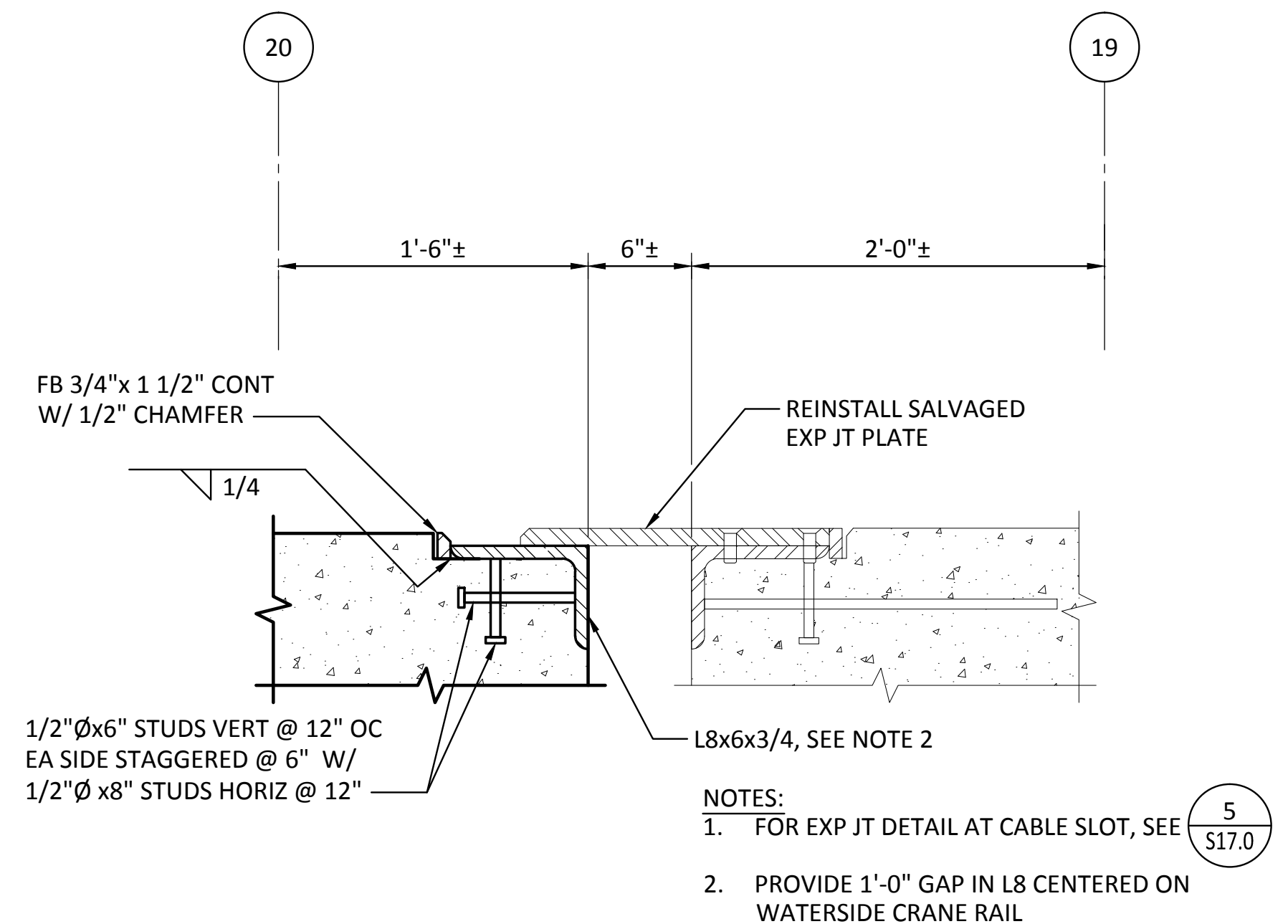
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	DIR OF ENG: jason.mendenthal PRINTED BY: jason.mendenthal PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
	APPROVED: _____ DATE: 7/17/13
	PROJECT: PIER 3 UPGRADE SHEET: 27 SECTION: 27 RANGE: 3 E TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MILLW = 0.0) DRAWING SCALE: AS SHOWN
6502 <b>S10.2</b> SHEET 68 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

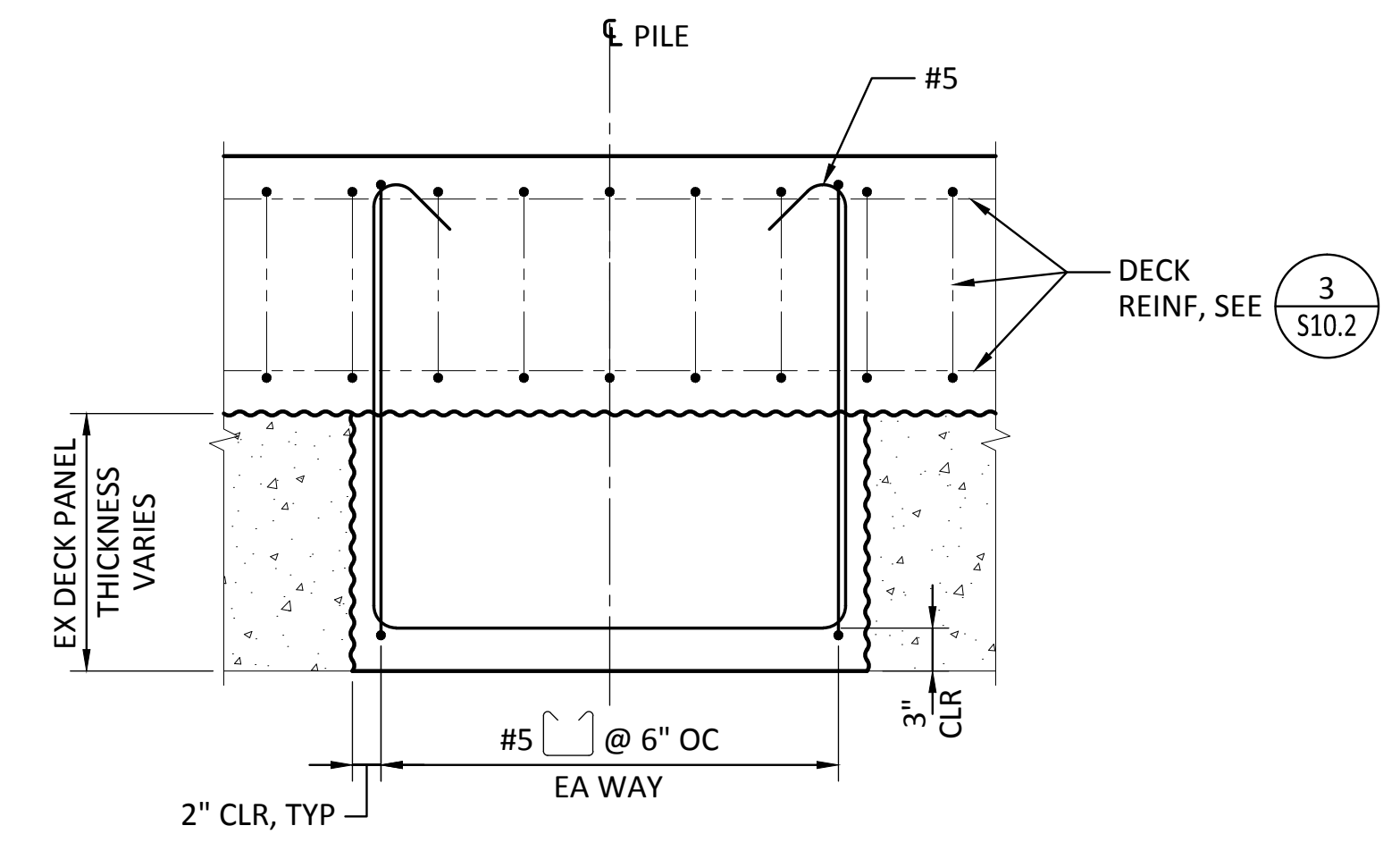
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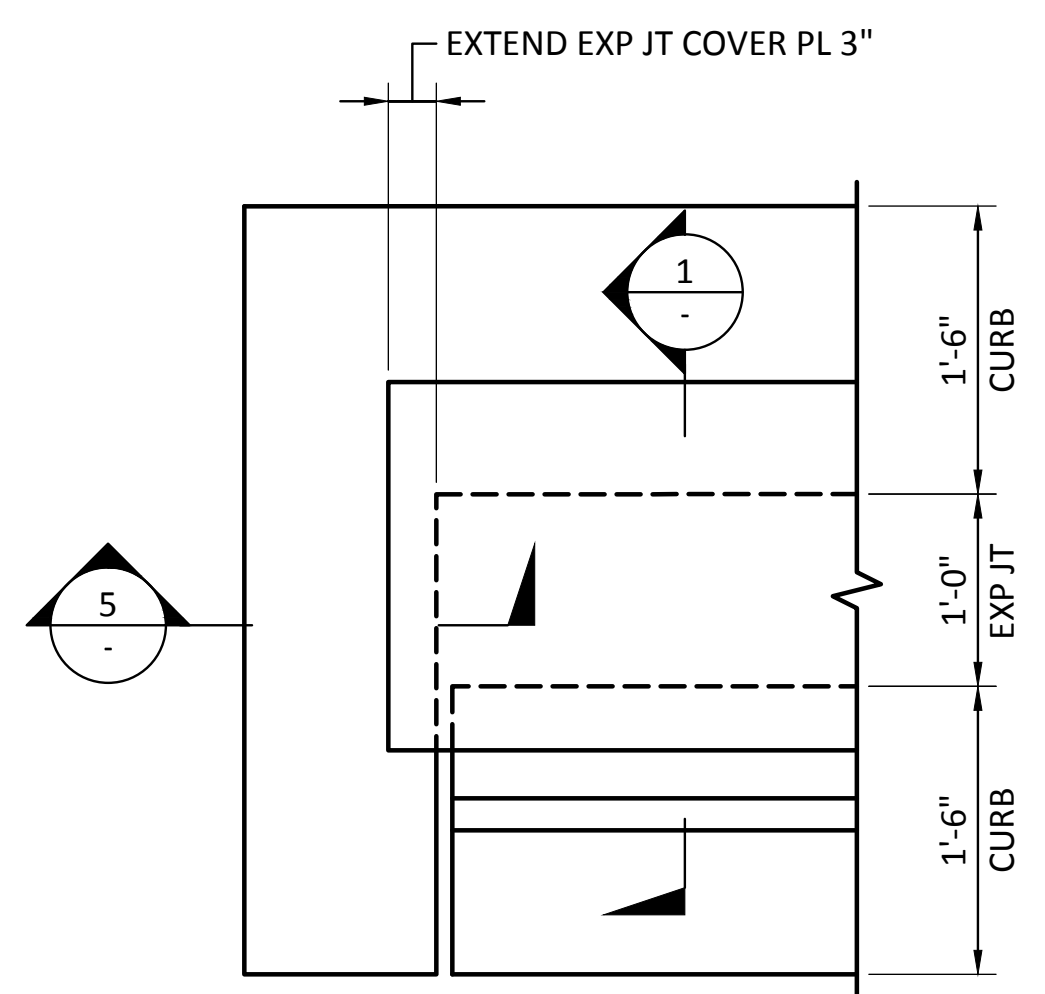
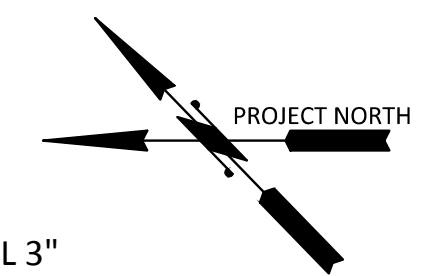
**1** **DETAIL - EXPANSION JOINT**  
S10.2 SCALE: 1 1/2" = 1'-0"



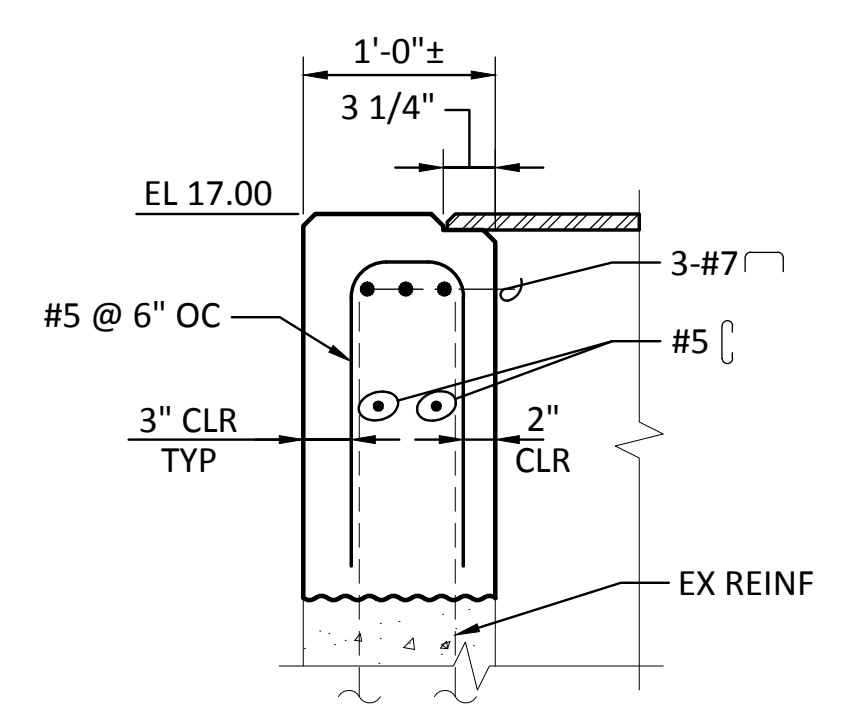
**2** **DETAIL - SEISMIC JOINT**  
S9.2 SCALE: 1 1/2" = 1'-0"



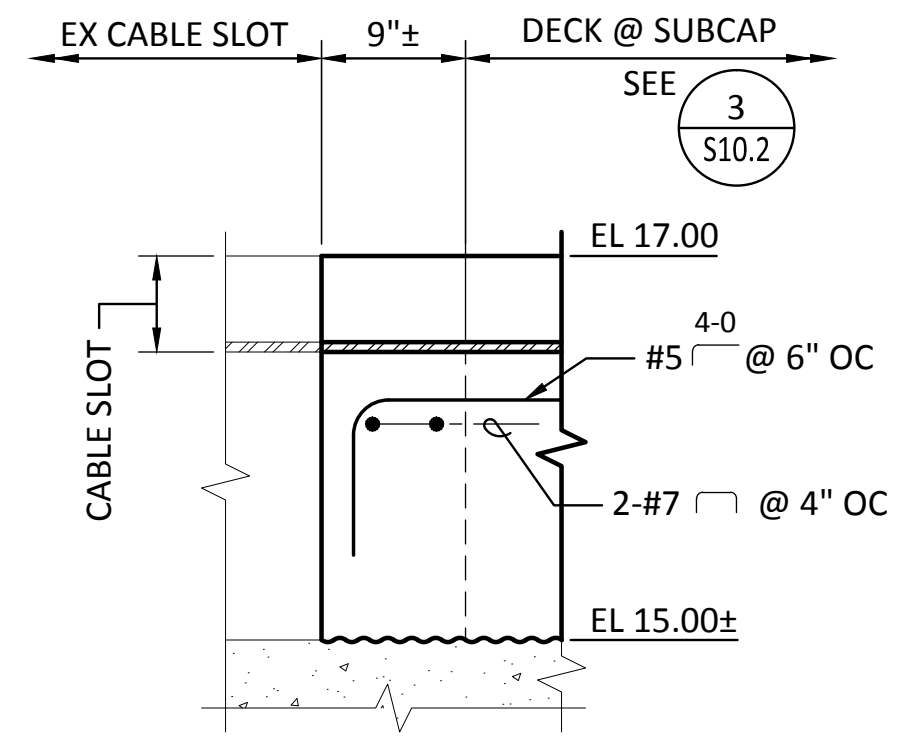
**3** **SECTION - PILE HOLE REPAIR**  
S10.2 SCALE: 1" = 1'-0"



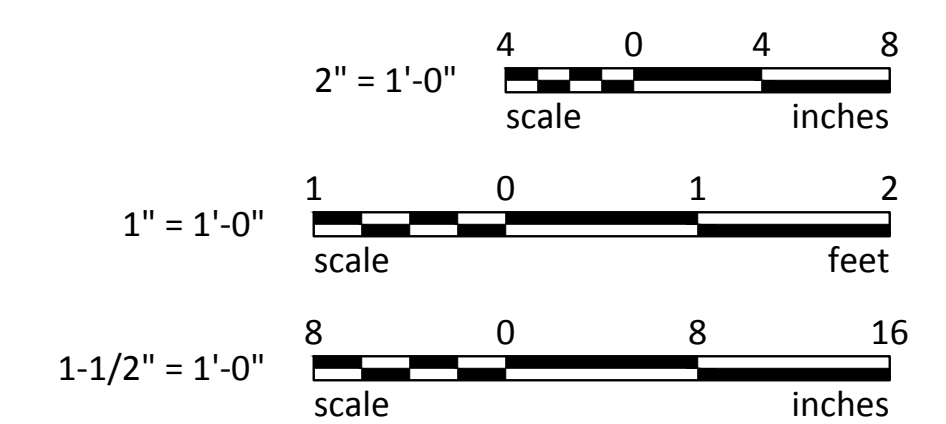
**4** **DETAIL - CURB RETURN**  
S10.2 SCALE: 1" = 1'-0"



**5** **SECTION - CURB RETURN**  
S10.2 SCALE: 1" = 1'-0"



**6** **SECTION - CABLE SLOT BUILD-OUT**  
S10.2 SCALE: 1" = 1'-0"

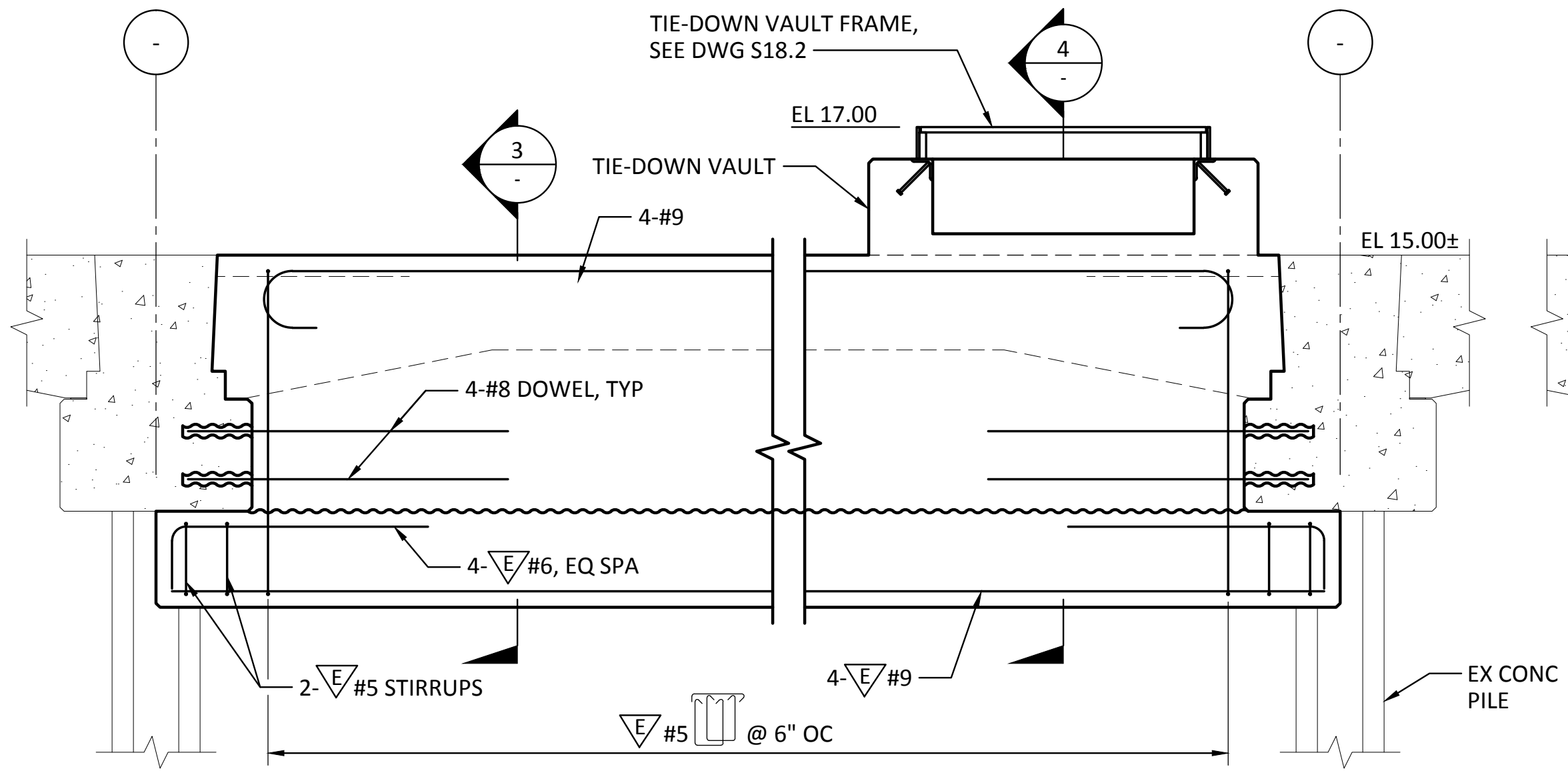


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 P.O. BOX 1887 TACOMA, WA 98401 (206) 388-5841	DATE: _____ BY: _____ APPR: _____
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	REVISION: _____ MARK: _____
APPROVED: _____ DC: _____ DIR OF ENG: _____ PRINTED BY: _____ PORT ADDRESS: _____	CSB: _____ CHECKED BY: _____ JRG: _____ PROJ. ENGR: _____ DATE: _____ DATE: _____ ONE SITCUM WAY TACOMA, WA 98421-2300
<b>PIER 3 UPGRADE</b> <b>MISC DECK DETAILS</b>	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S10.3</b> SHEET 69 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

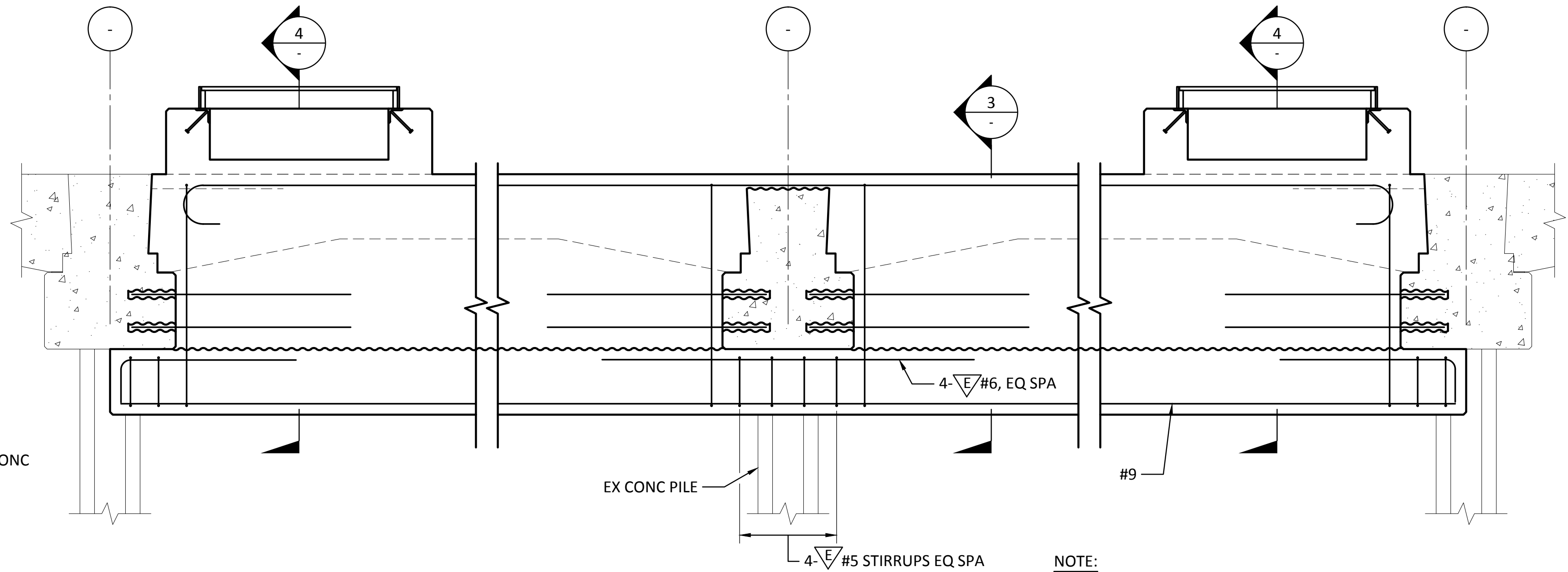
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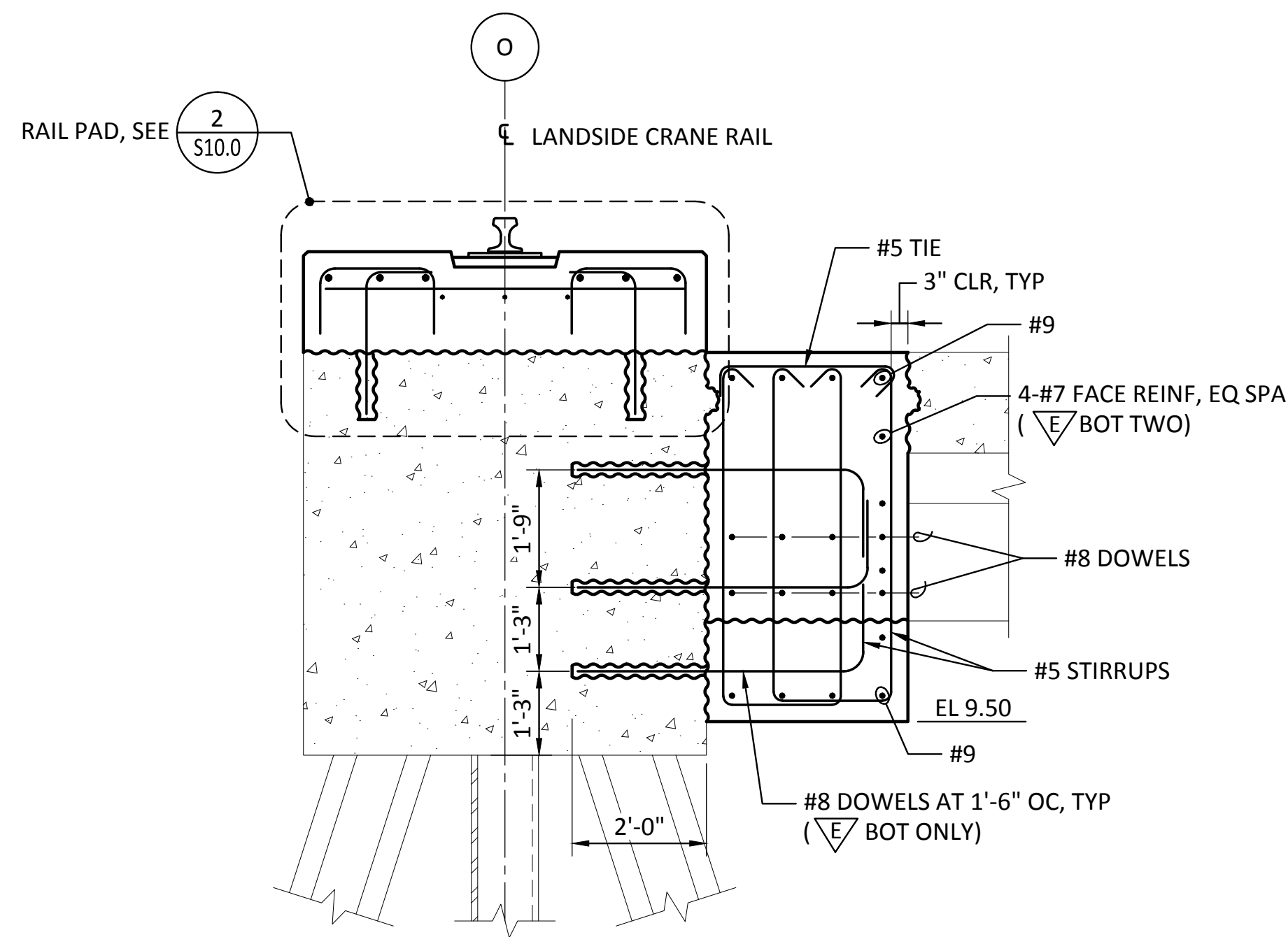
1 SECTION - BULKHEAD TIE-DOWN  
S3.4 SCALE: 1/2" = 1'-0"  
S3.5, S3.6

- NOTES:
1. FACE REINF NOT SHOWN.
  2. TIE-DOWN VAULT REINF NOT SHOWN, SEE DWG S11.3
  3. FOR TIE-DOWN VAULT LOCATION, SEE DWG S18.0
  4. ACP & BALLAST NOT SHOWN.

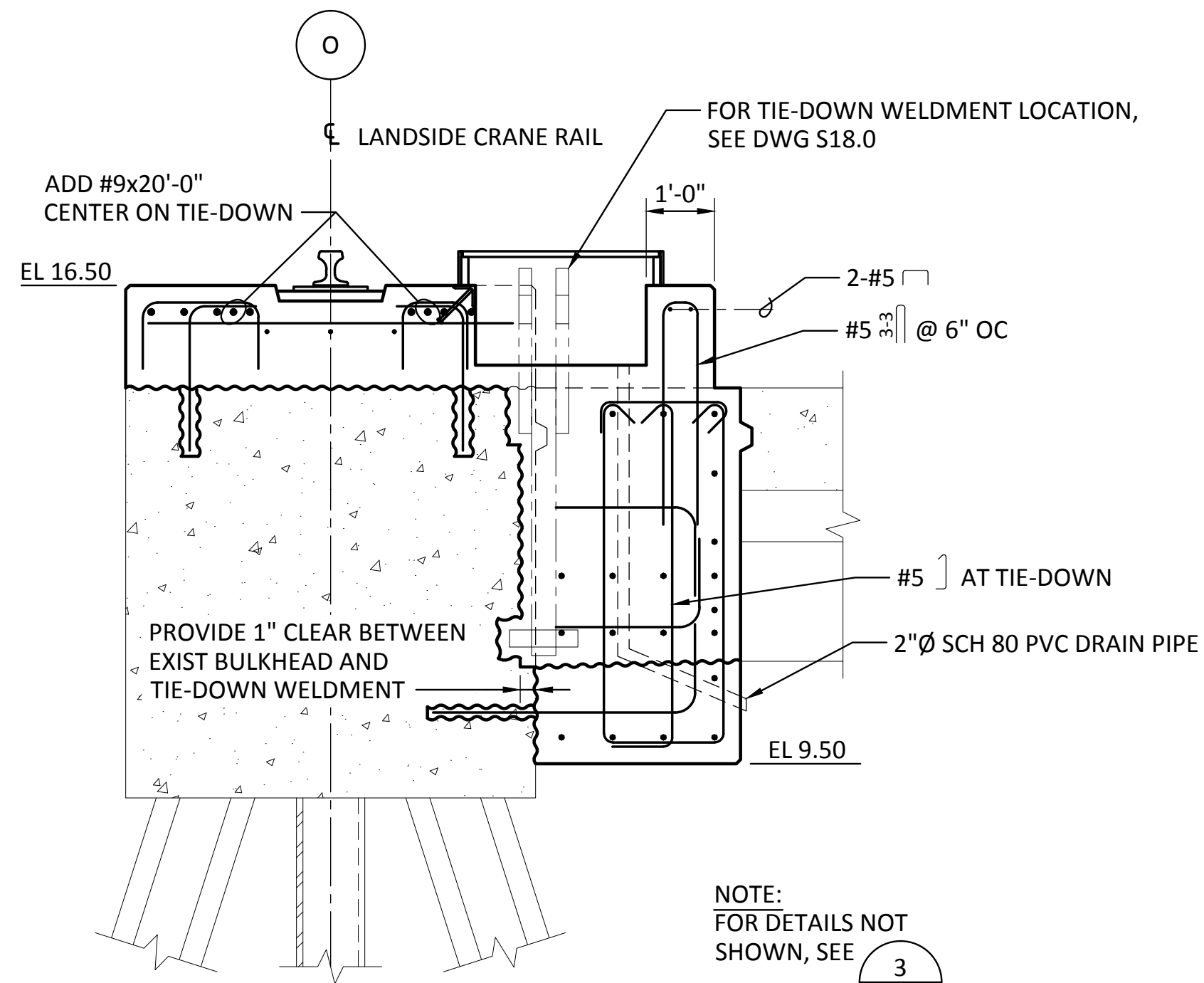


2 SECTION - BULKHEAD TIE-DOWN  
S3.5 SCALE: 1/2" = 1'-0"

NOTE:  
FOR DETAILS NOT SHOWN, SEE 1

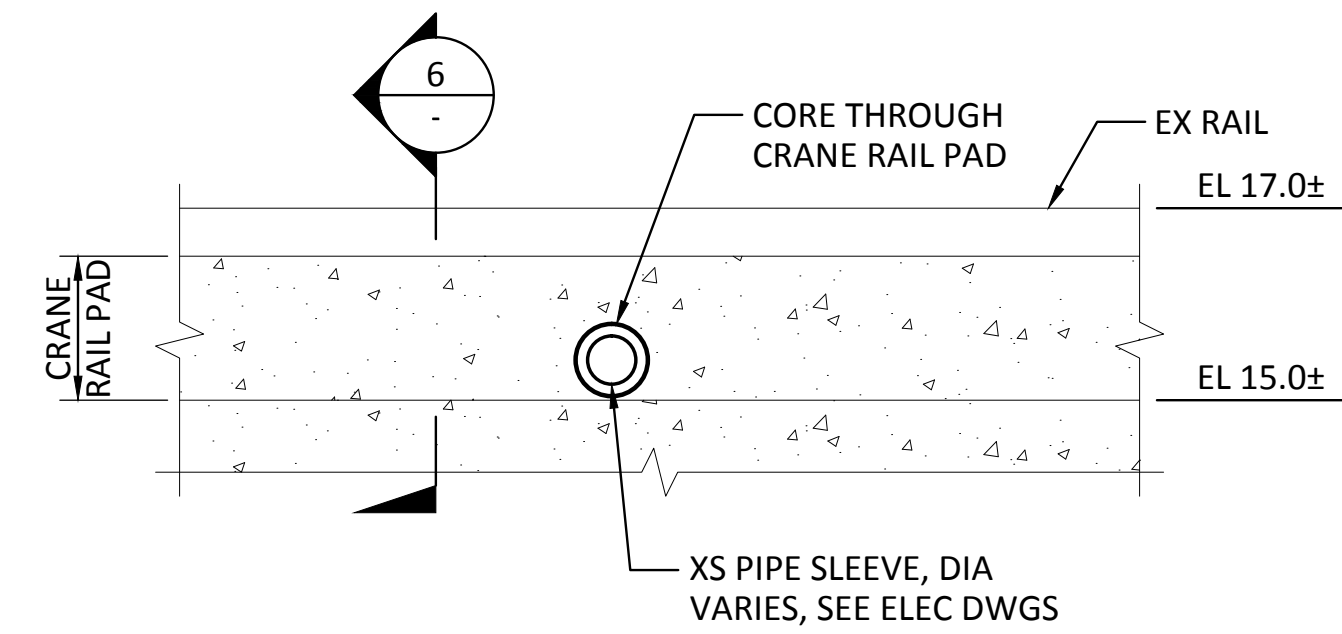


3 SECTION - TYPICAL  
SCALE: 1/2" = 1'-0"



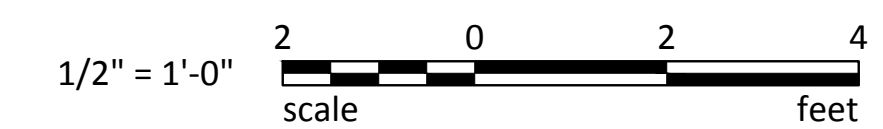
4 SECTION - AT TIE-DOWN  
SCALE: 1/2" = 1'-0"

NOTE:  
FOR DETAILS NOT SHOWN, SEE 3



5 ELEVATION - UTILITIES INBOARD CRANE RAIL PAD  
S3.4 SCALE: 1/2" = 1'-0"  
S3.5, S3.6, S3.7

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	MARK: REVISION: BY: APPR: DATE:	APPROVED:	DIR OF ENG: jason.mendenthal PRINTED BY: jason.mendenthal DATE: 7/17/13	PROJECT ENGR: jason.mendenthal DATE: 7/17/13	DATE: 7/17/13
6502 <b>S10.4</b> SHEET 70 OF 129	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)	PARCEL: 27 DRAWING SCALE: AS SHOWN	PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	PROJECT: PIER 3 UPGRADE BULKHEAD TIE-DOWN	PROJECT: PIER 3 UPGRADE BULKHEAD TIE-DOWN
RECORD ID NO: 092935 PHASE: RECORD DRAWINGS	TOWN: 21 N RANGE: 3 E SECTION: 27	PARCEL: 27 DRAWING SCALE: AS SHOWN	PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	PROJECT ENGR: jason.mendenthal DATE: 7/17/13	DATE: 7/17/13

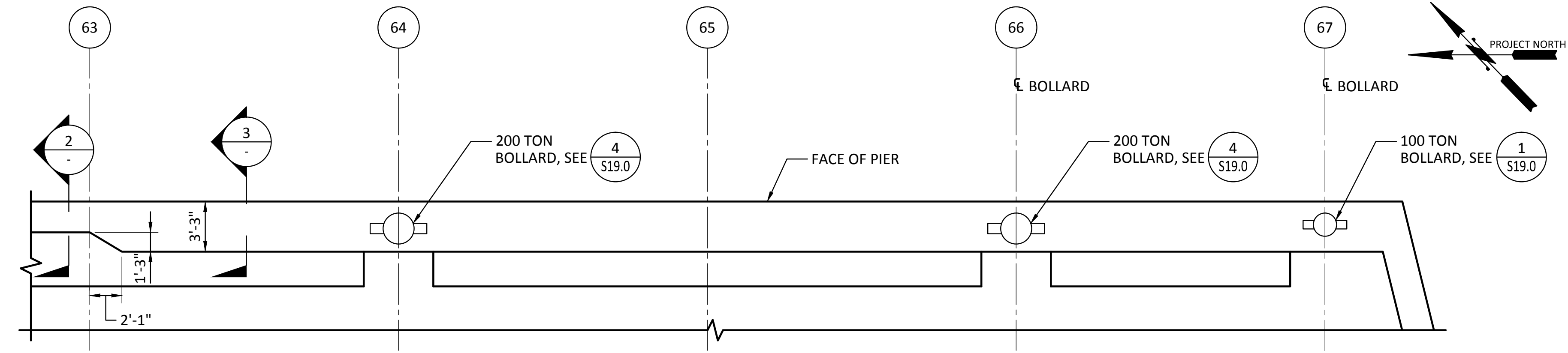
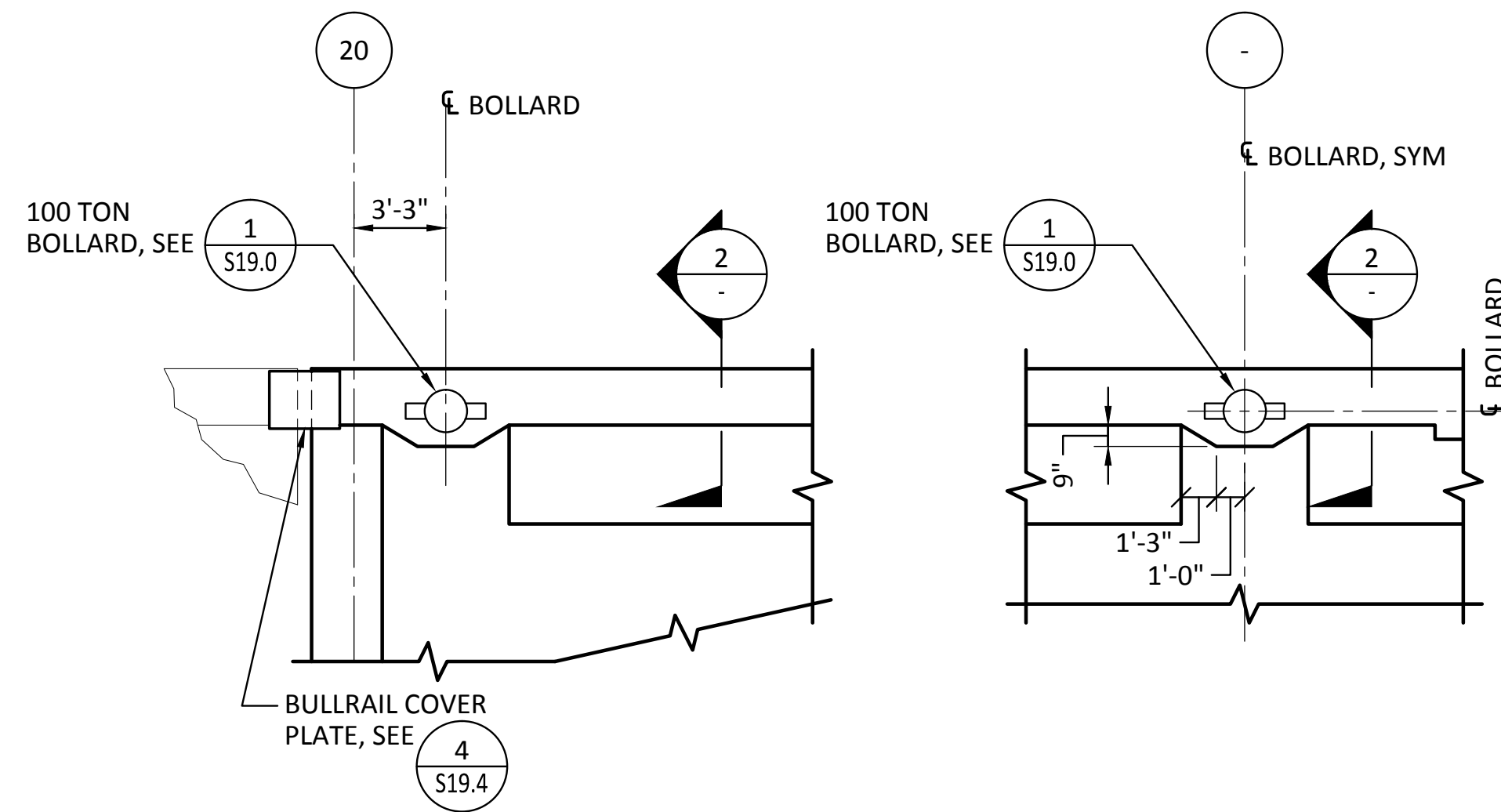


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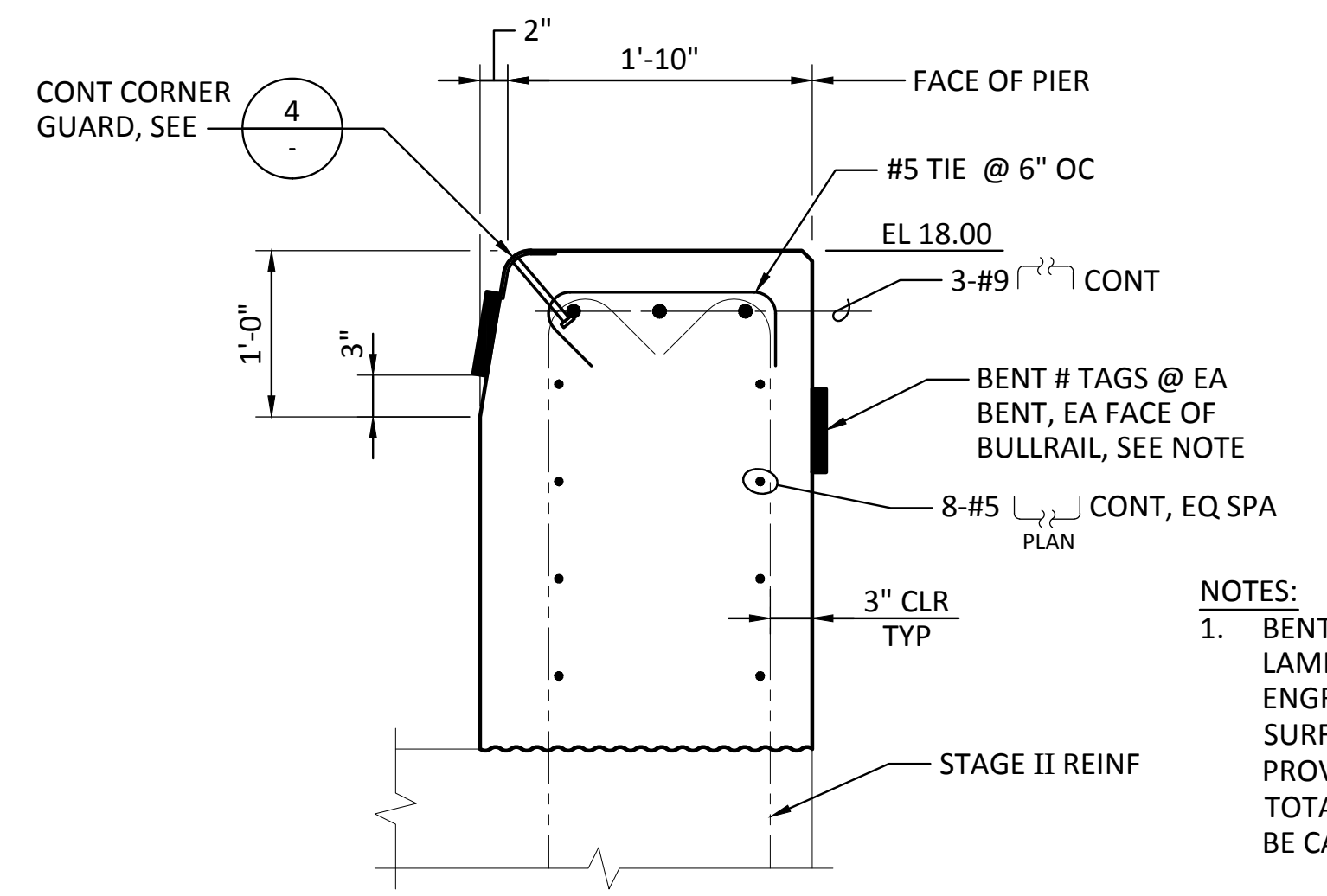
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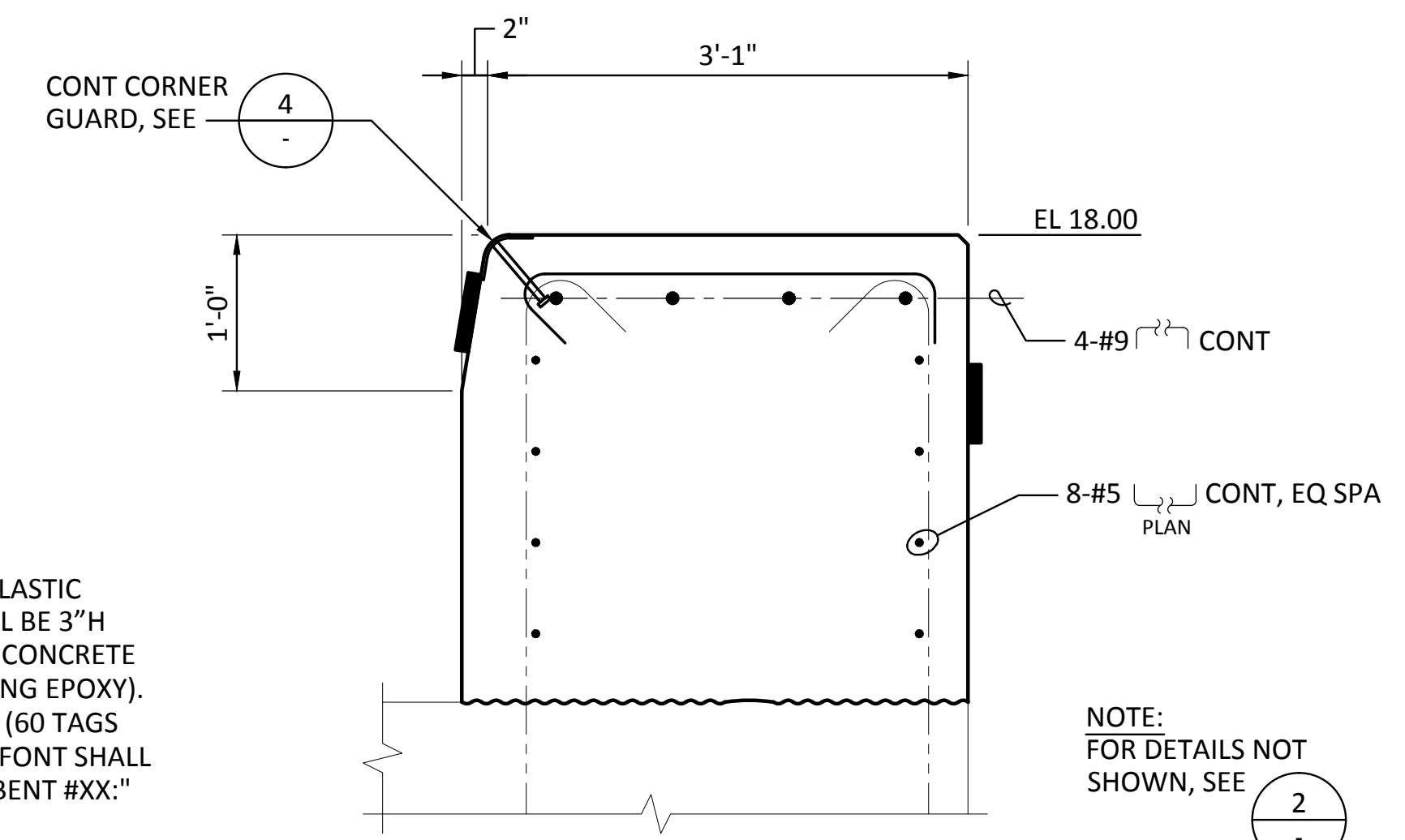
**1 PLAN - BULLRAIL**  
 SCALE: 1/4" = 1'-0"  
 S3.5, S3.6, S3.7

NOTE:  
FENDER SYSTEMS NOT SHOWN



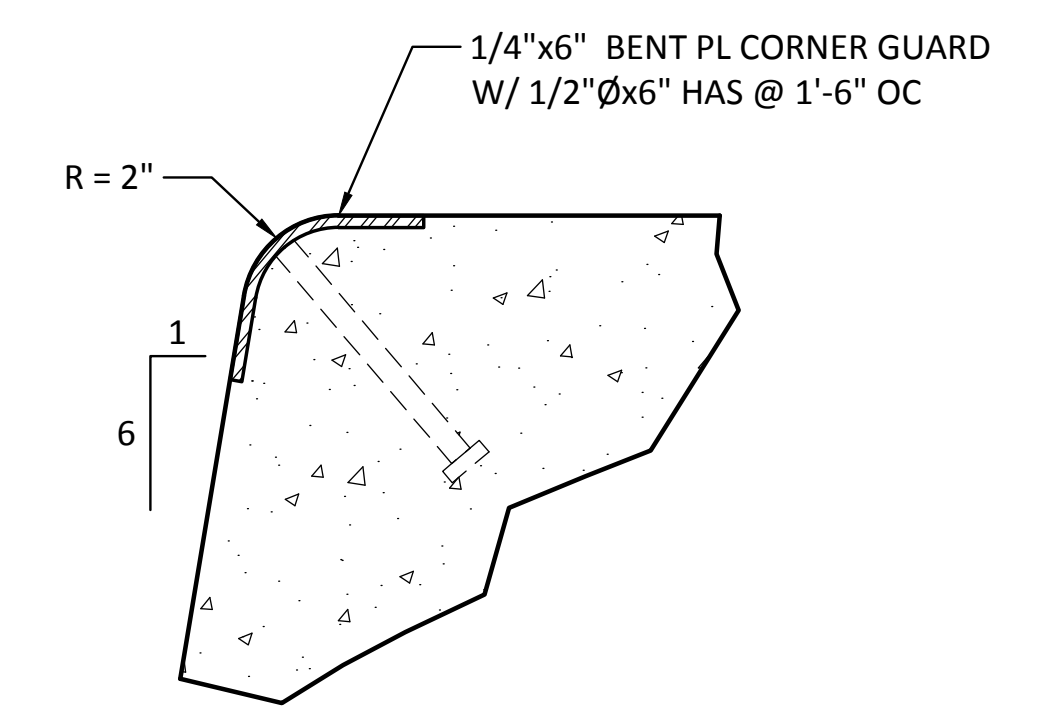
**2 SECTION - TYPICAL BULLRAIL**  
 SCALE: 1" = 1'-0"

- NOTES:
- BENT # TAGS SHALL BE 1/8" X 6"W X 4"H PHENOLIC PLASTIC LAMINATED BLACK WITH WHITE CORE. LETTERS SHALL BE 3"H ENGRAVED TO EXPOSE WHITE CORE. EPOXY TAGS TO CONCRETE SURFACE (ROUGHEN BACK OF TAGS PRIOR TO APPLYING EPOXY). PROVIDE BENT # TAGS AT BENT LINES 9 THROUGH 68 (60 TAGS TOTAL). SEE DWG S3.0 TO S3.3 FOR BENT # SYSTEM. FONT SHALL BE CALIBRI, TEXT SHALL BE 3" HIGH AND SHALL SAY "BENT #XX:"
  - AT BULLRAIL REINF DISCONTINUITIES PROVIDE STD 90° HOOKS.
  - INSERTS FOR FENDER EMBEDS NOT SHOWN, SEE DWG S13.0.
  - ACP AND BALLAST NOT SHOWN.

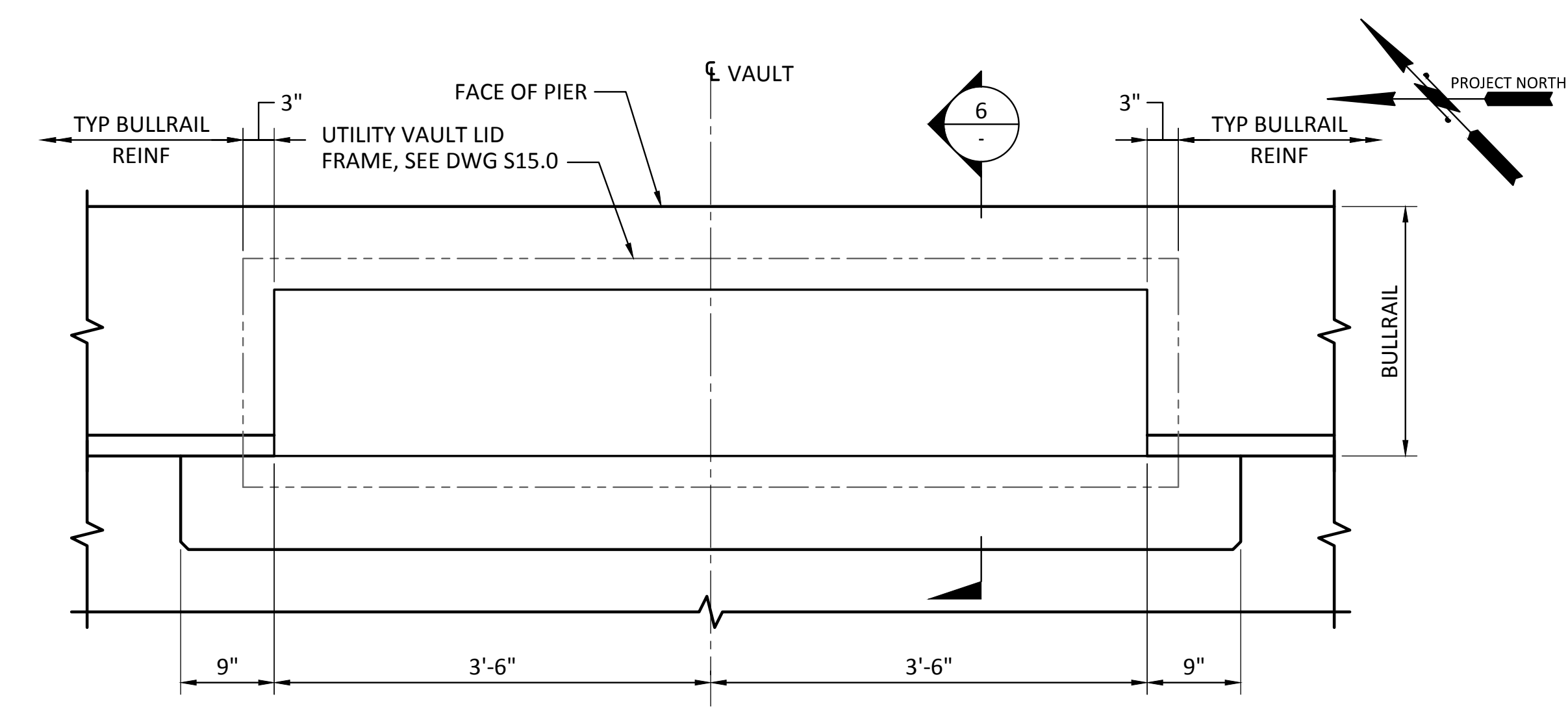


**3 SECTION - BULLRAIL**  
 SCALE: 1" = 1'-0"

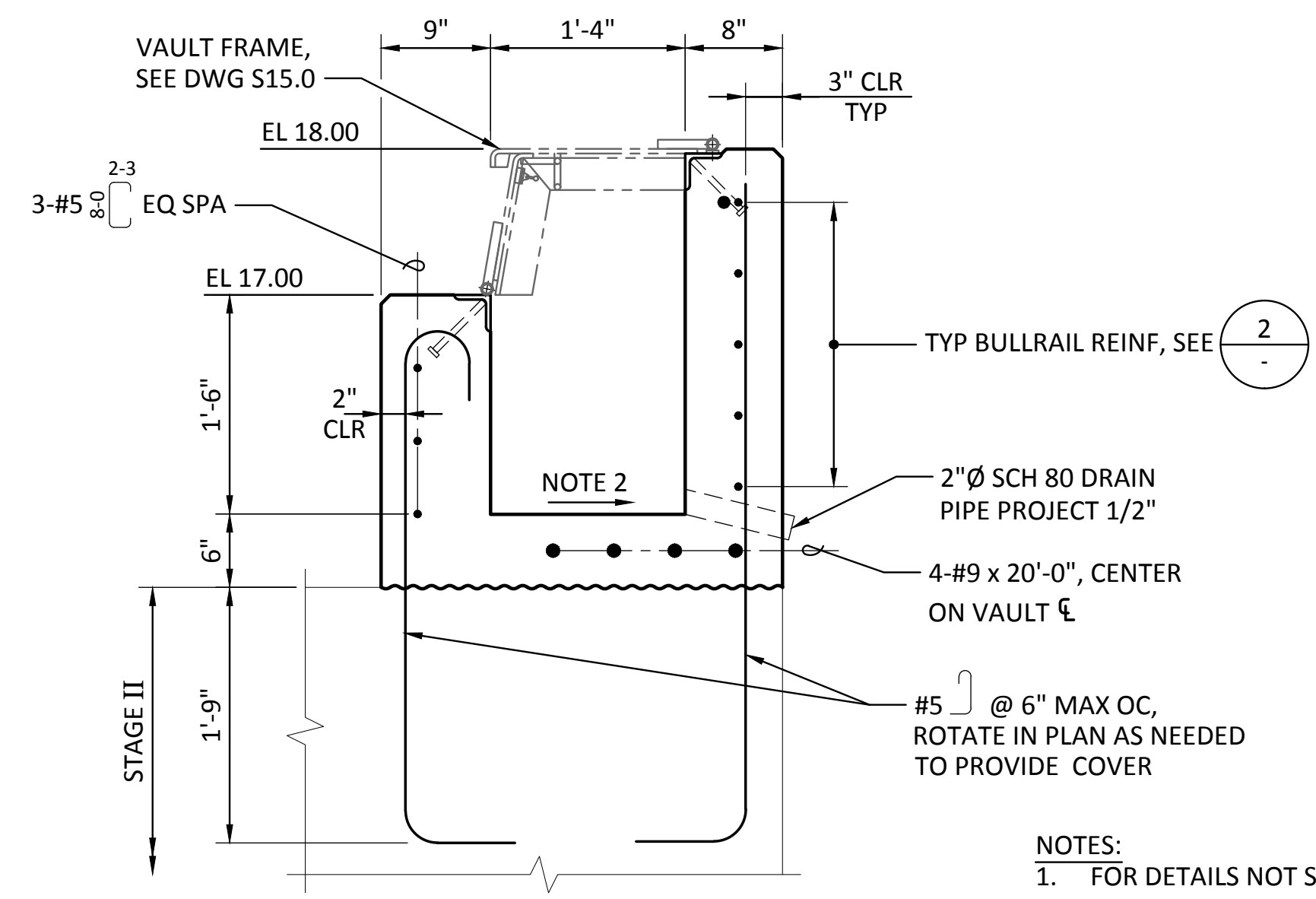
NOTE:  
FOR DETAILS NOT SHOWN, SEE **2**



**4 DETAIL - BENT PL CORNER GUARD**  
 SCALE: 3" = 1'-0"

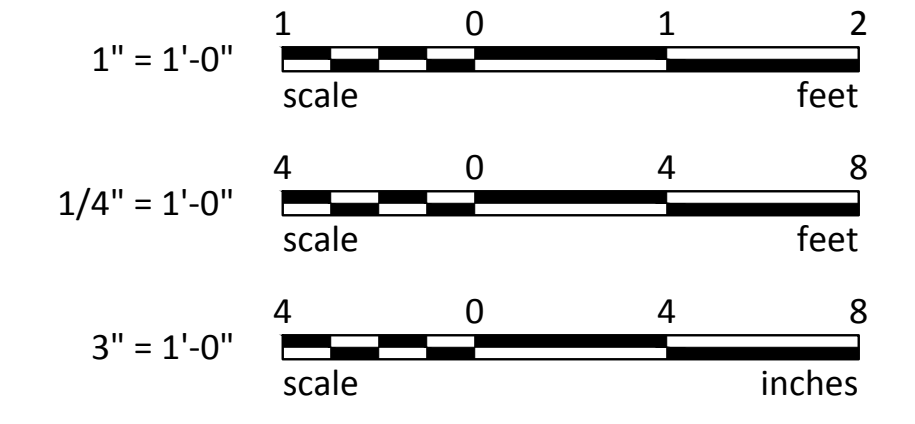


**5 PLAN - UTILITY VAULT**  
 SCALE: 1" = 1'-0"  
 S3.5, S3.6, S3.7



**6 SECTION - UTILITY VAULT**  
 SCALE: 1" = 1'-0"  
 WATER AND 480V SERVICE

- NOTES:
- FOR DETAILS NOT SHOWN, SEE **2**
  - SLOPE VAULT TO DRAIN.



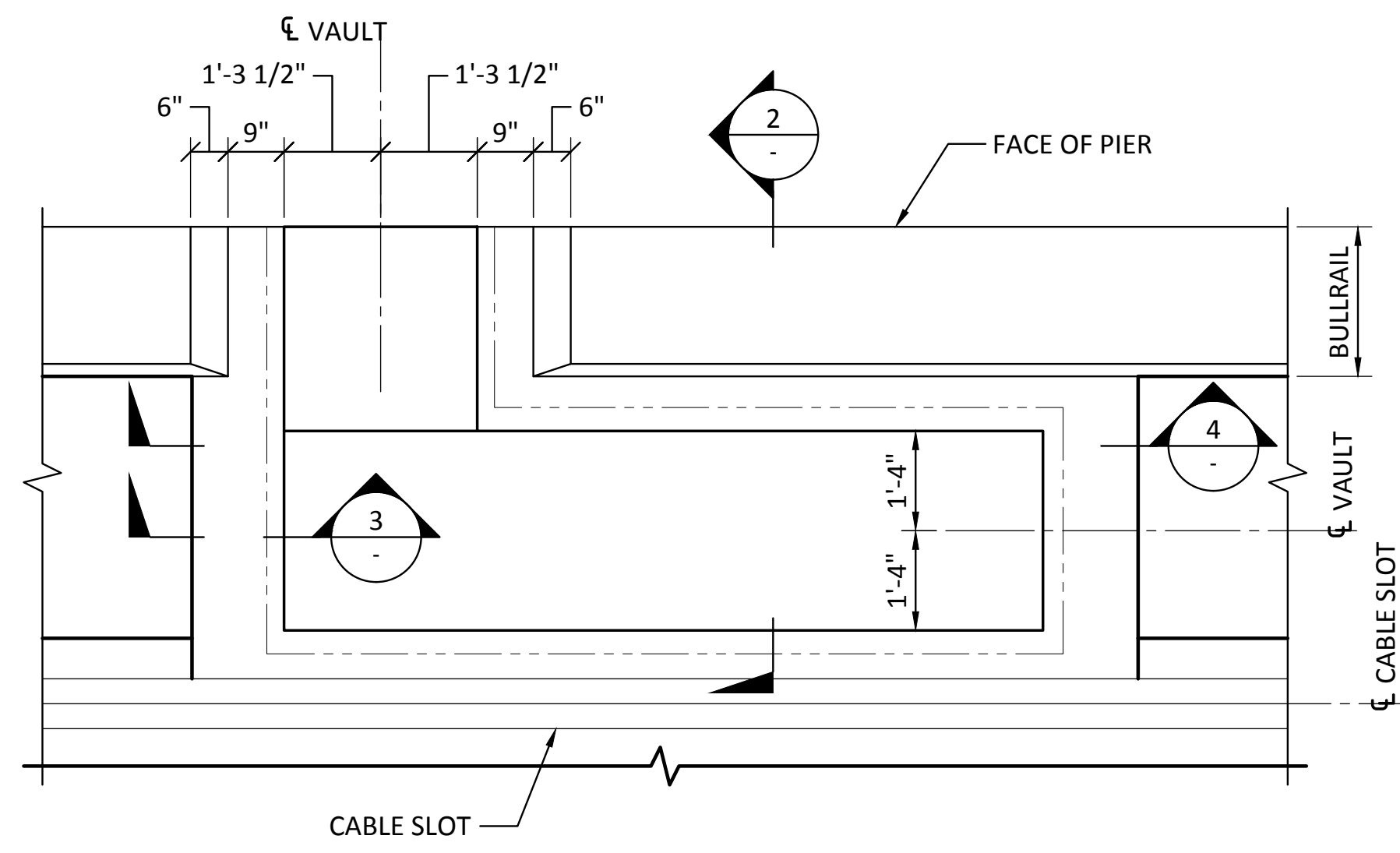
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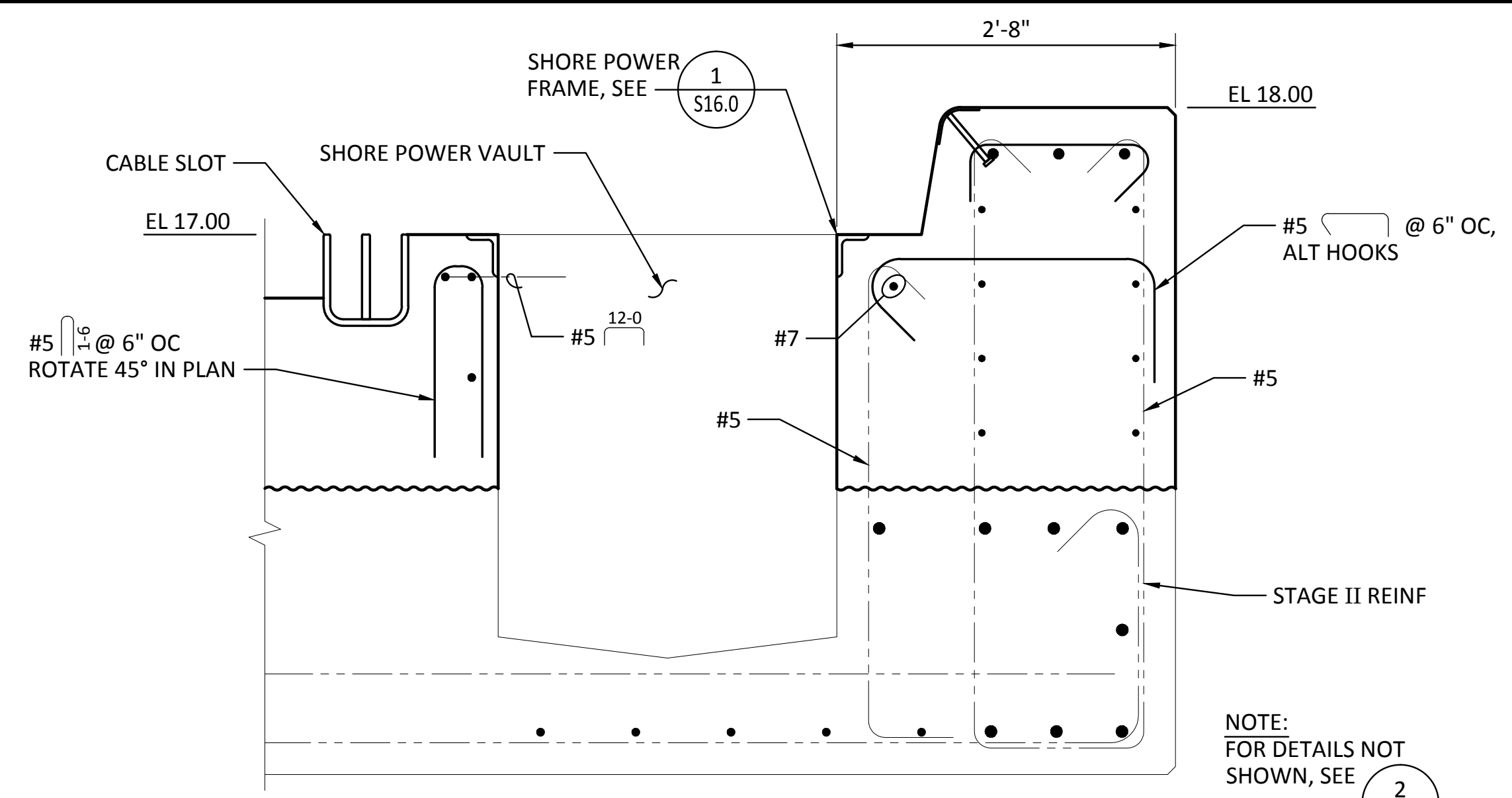
33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	P.O. BOX 1887 TACOMA, WA 98401 (360) 885-8841	DATE: _____ APPR: _____ BY: _____ REVISION: _____ MARK: _____	CSB 7/17/13 CHECKED BY: JRG DIR OF ENG: JASON MENDENTHAL PRINTED BY: JASON MENDENTHAL PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	DATE: 7/17/13 DATE: 7/17/13 DATE: JASON MENDENTHAL DATE: JASON MENDENTHAL DATE: JASON MENDENTHAL	SECTION: 27 RANGE: 3 E TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502 SHEET 71 OF 129</b> <b>S11.0</b>		<b>PIER 3 UPGRADE</b> <b>BULLRAIL PLAN AND DETAILS</b>			

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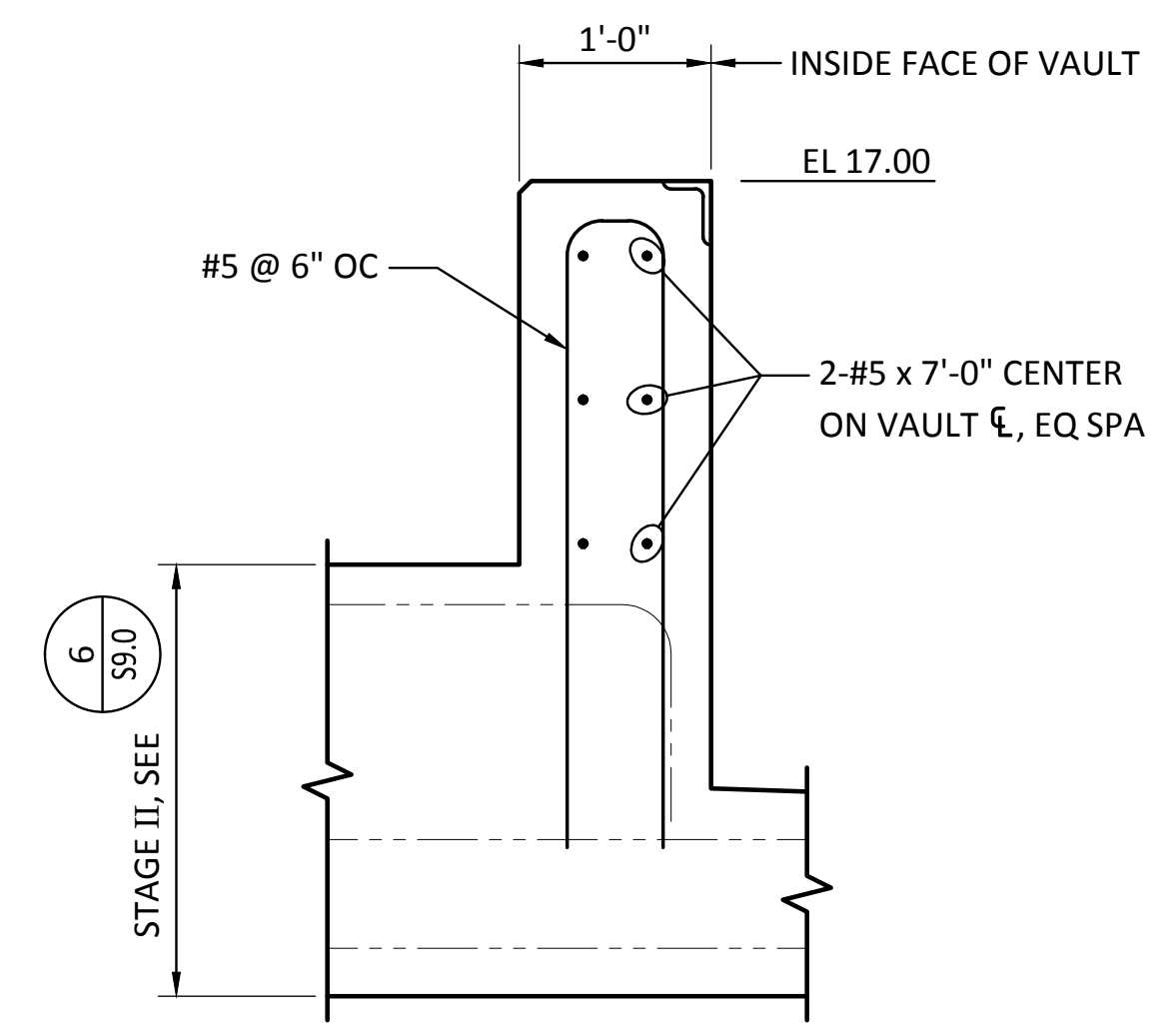
BINDING EDGE



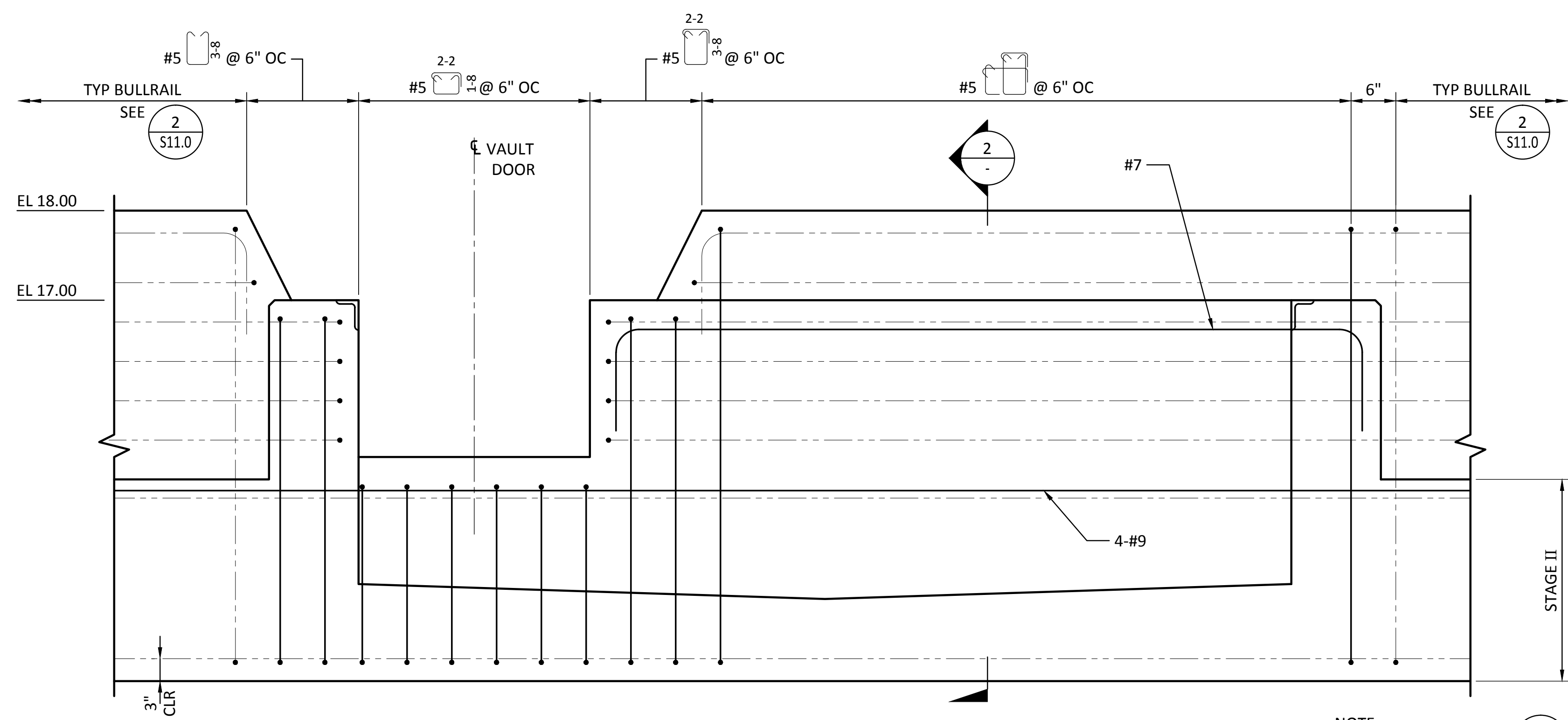
**1 PLAN - SHORE POWER VAULT**  
 SCALE: 1/2" = 1'-0"  
 S3.5  
 S3.6



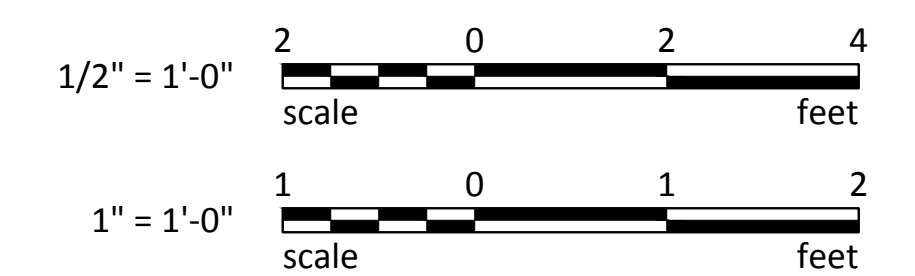
**2 BULLRAIL @ SHORE POWER VAULTS**  
 SCALE: 1" = 1'-0"  
 S11.0



**3 DETAIL - VAULT WALL**  
 SCALE: 1" = 1'-0"  
 S9.0



**4 SECTION - BULLRAIL @ SHORE POWER VAULT**  
 SCALE: 3/4" = 1'-0"  
 S9.0



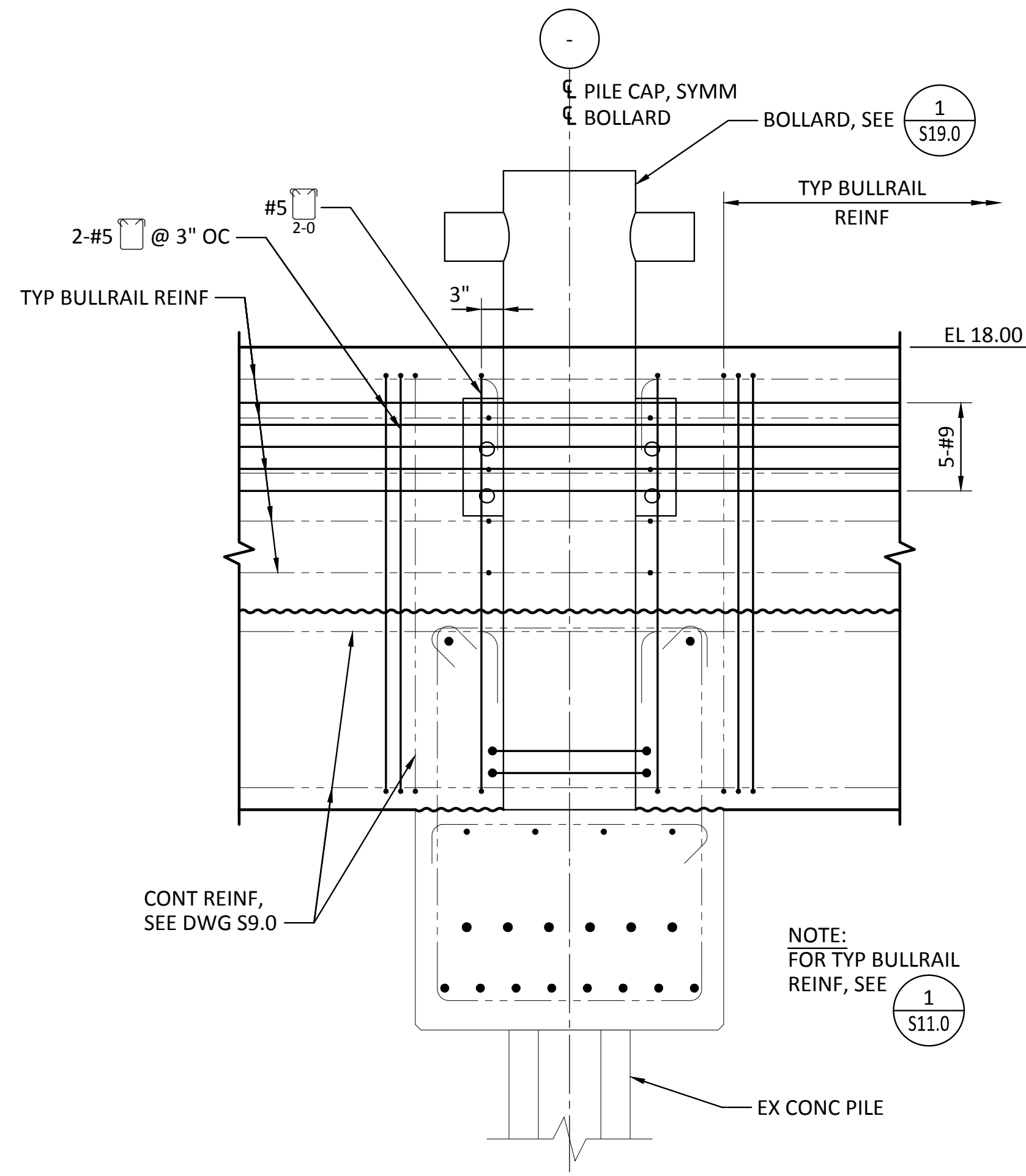
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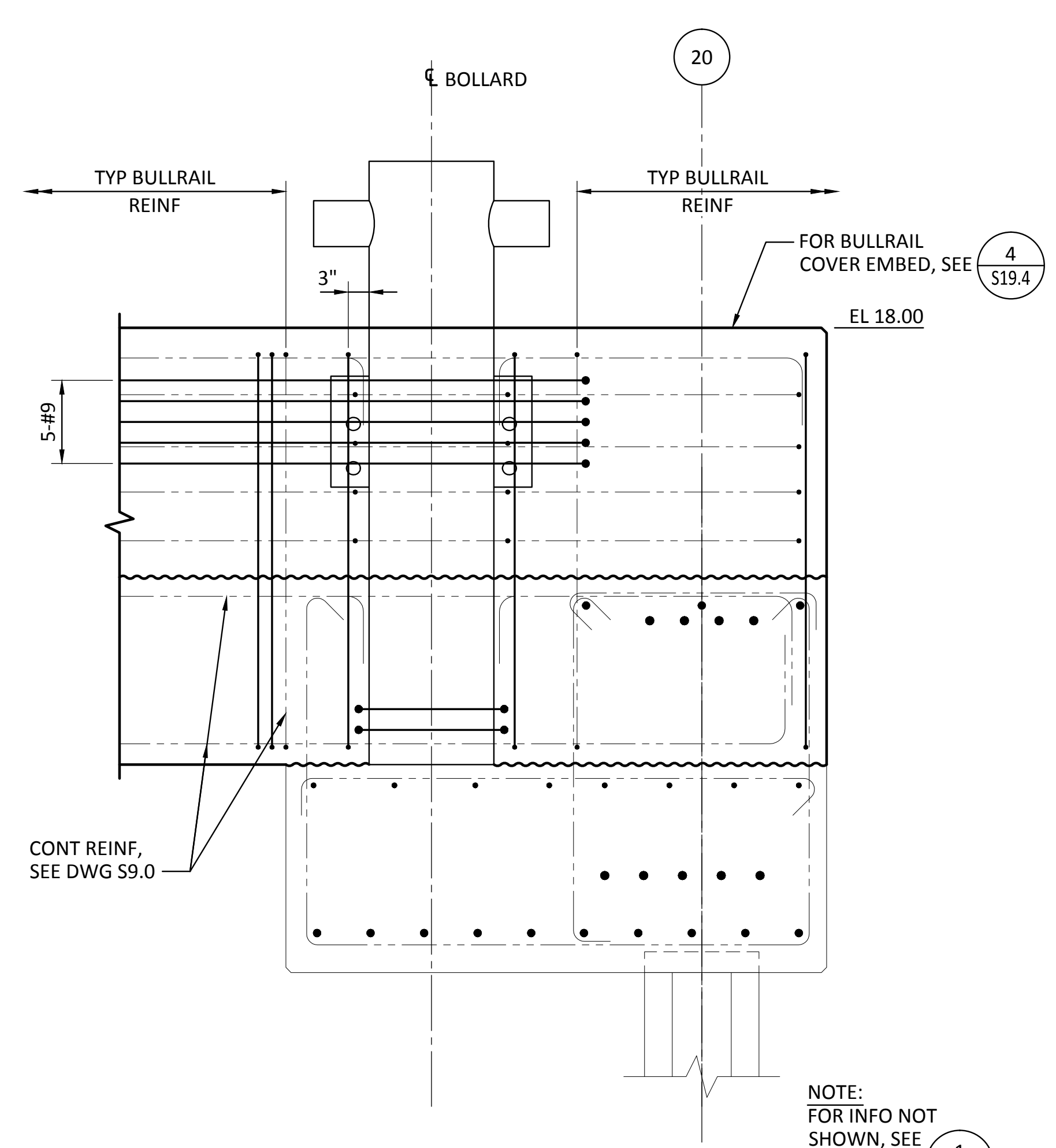
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	REVISION: _____ MARK: _____
	APPROVED: _____ CSB 7/17/13 CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: jason.mendenhall PRINTED BY: jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
<b>PIER 3 UPGRADE</b> <b>BULLRAIL DETAILS</b> <b>SHEET 1</b>	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502</b> <b>S11.1</b> SHEET 72 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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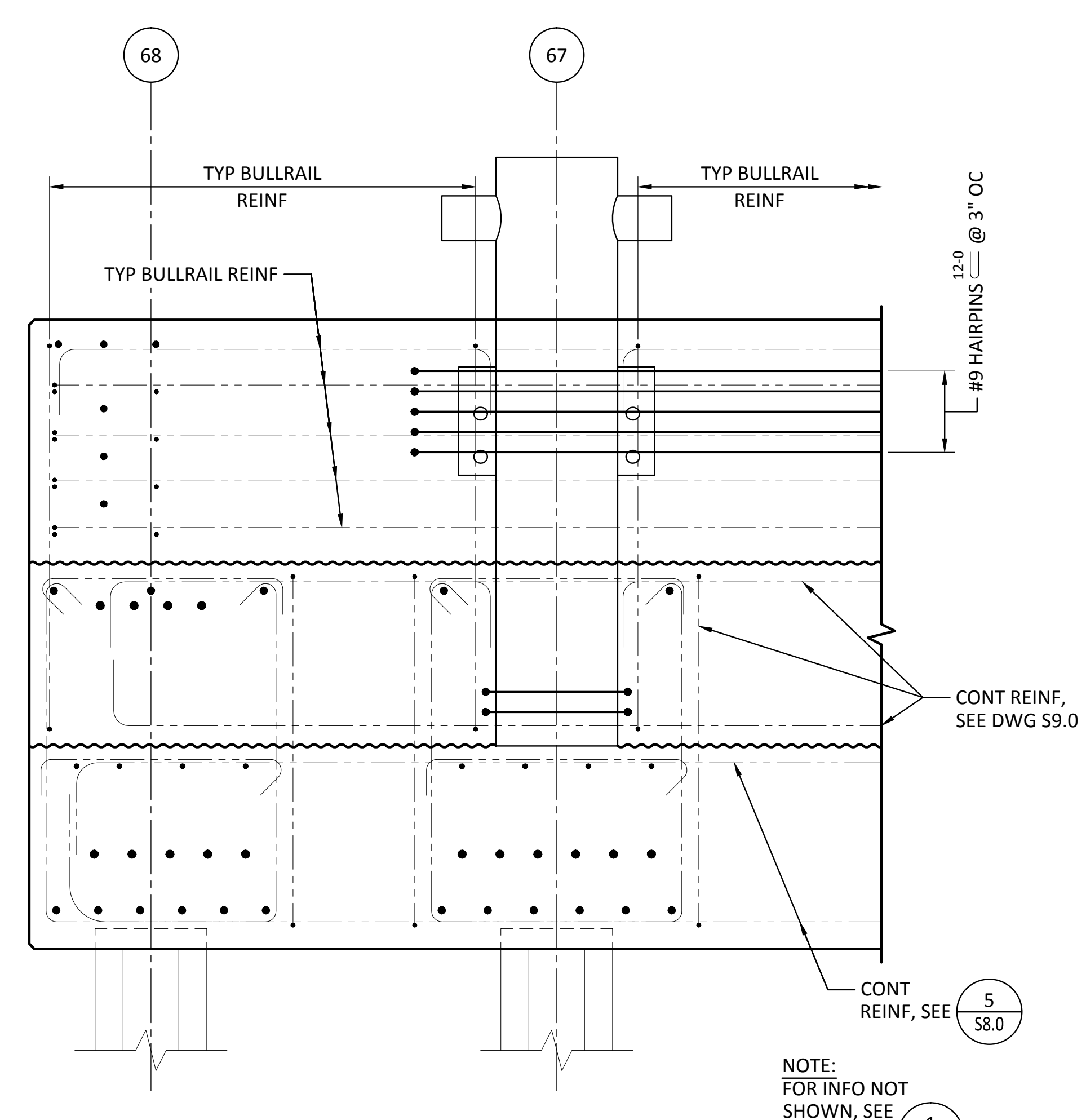




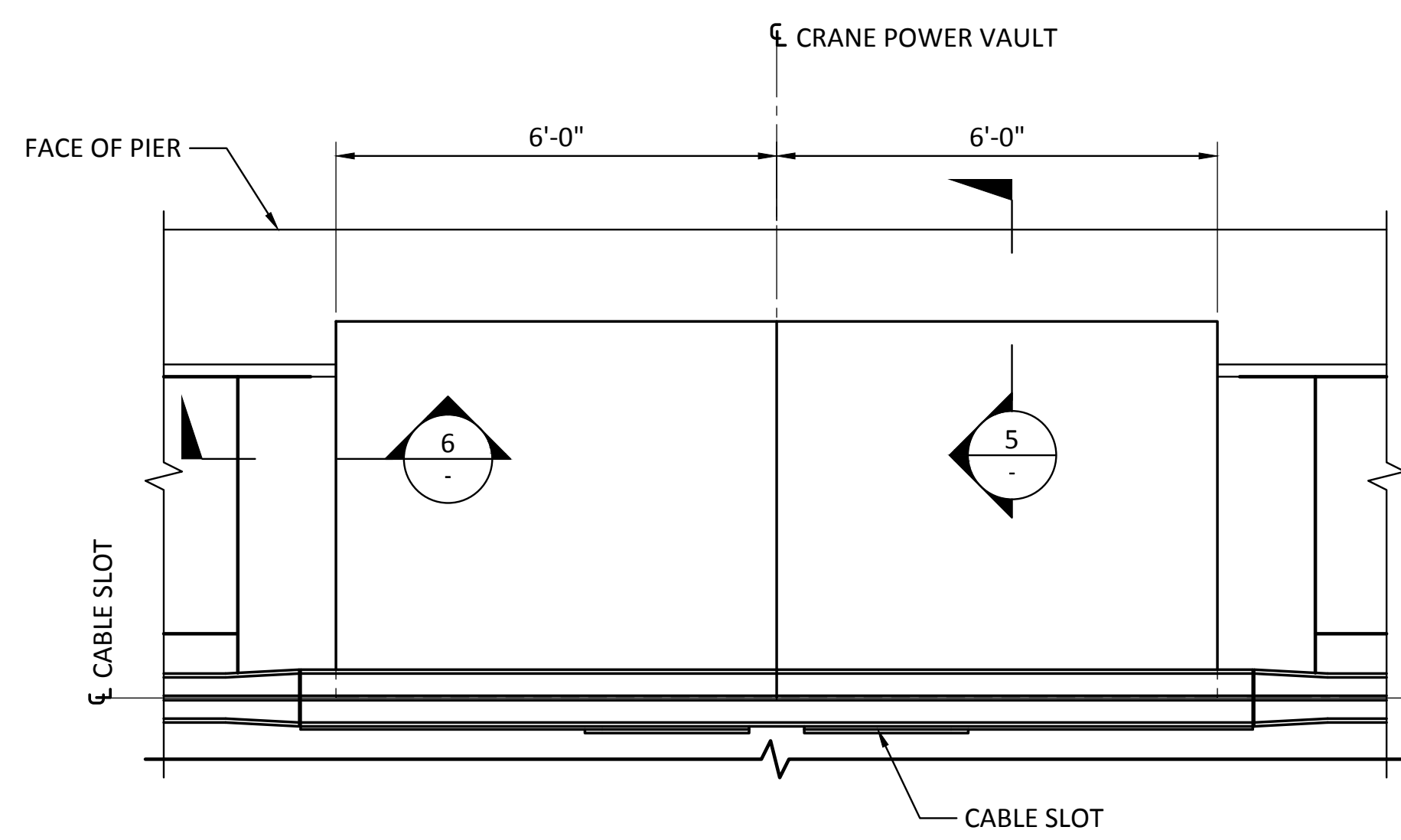
**1**  
S9.1  
S9.2  
**ELEVATION - AT TYP BOLLARD**  
SCALE: 3/4" = 1'-0"



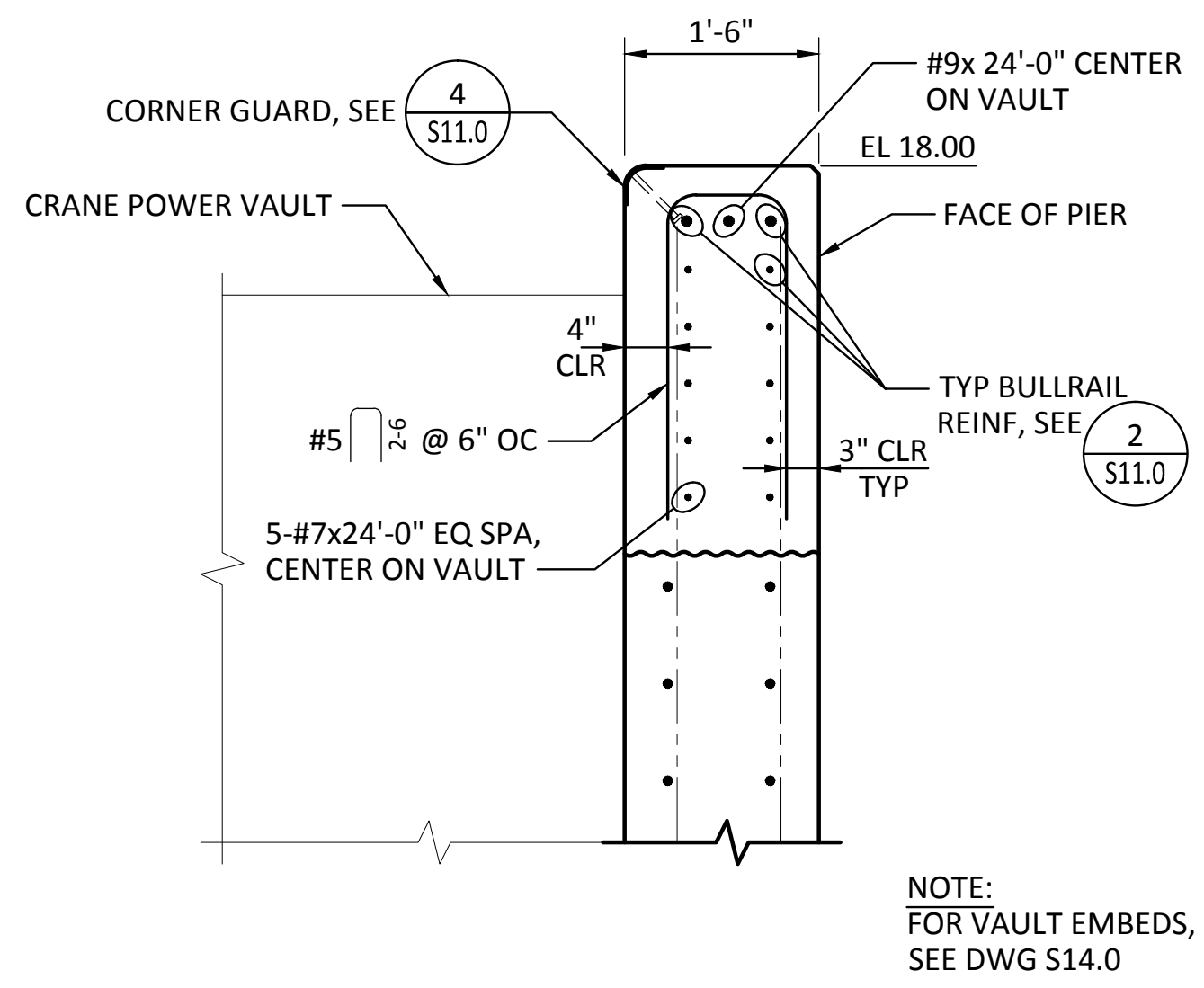
**2**  
S9.2  
**ELEVATION - AT BENT 20**  
SCALE: 3/4" = 1'-0"



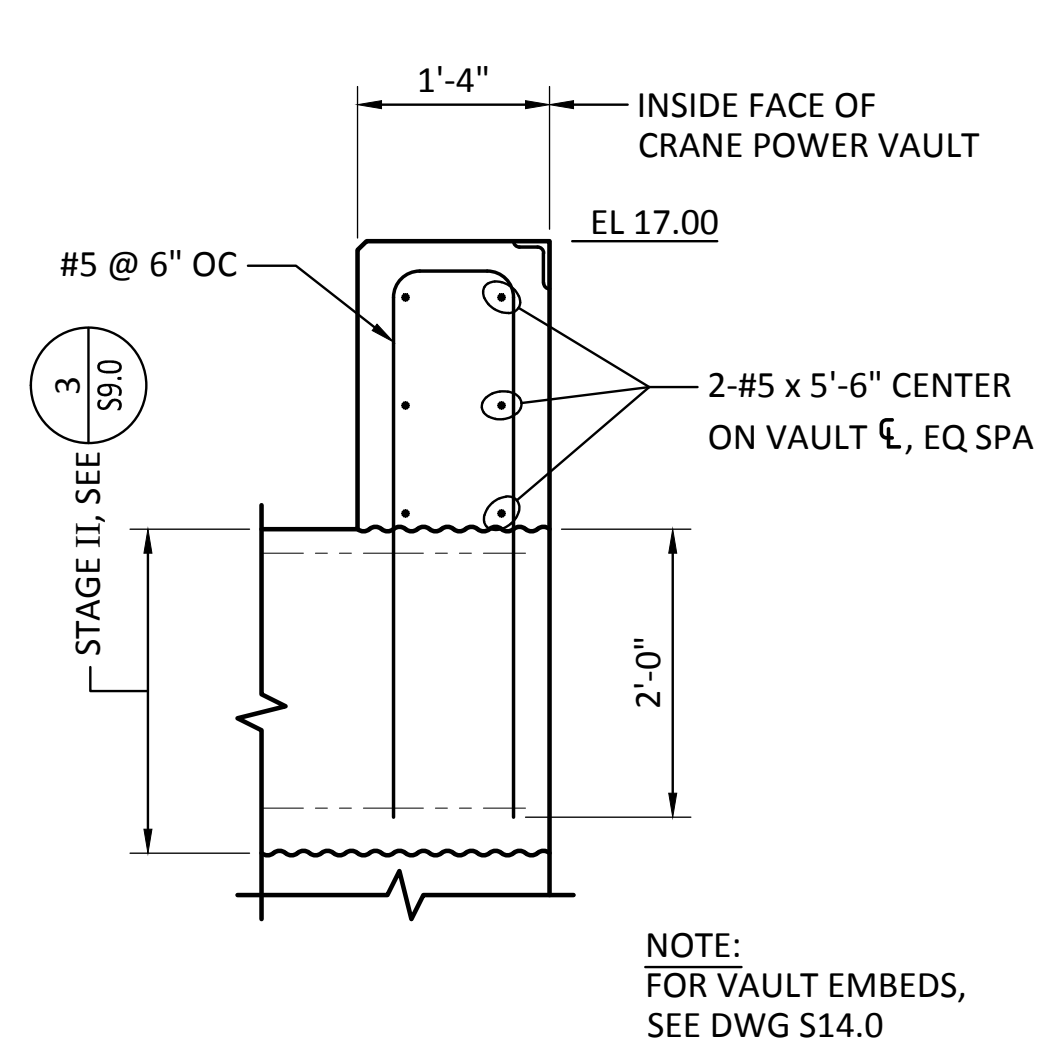
**3**  
S9.3  
**ELEVATION - AT BENT 67-68**  
SCALE: 3/4" = 1'-0"



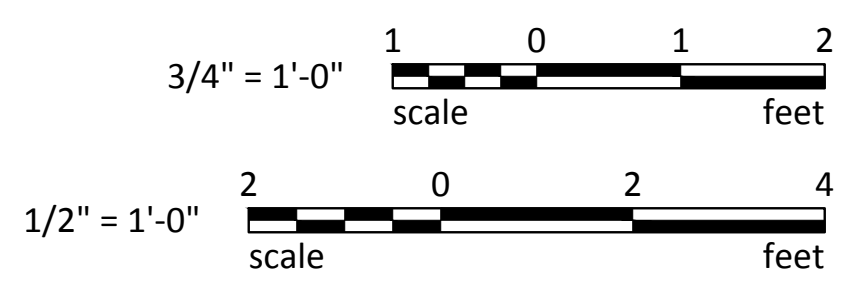
**4**  
S3.5  
S3.7  
**PLAN - CRANE POWER VAULT**  
SCALE: 1/2" = 1'-0"



**5**  
**SECTION - CRANE POWER VAULT**  
SCALE: 3/4" = 1'-0"



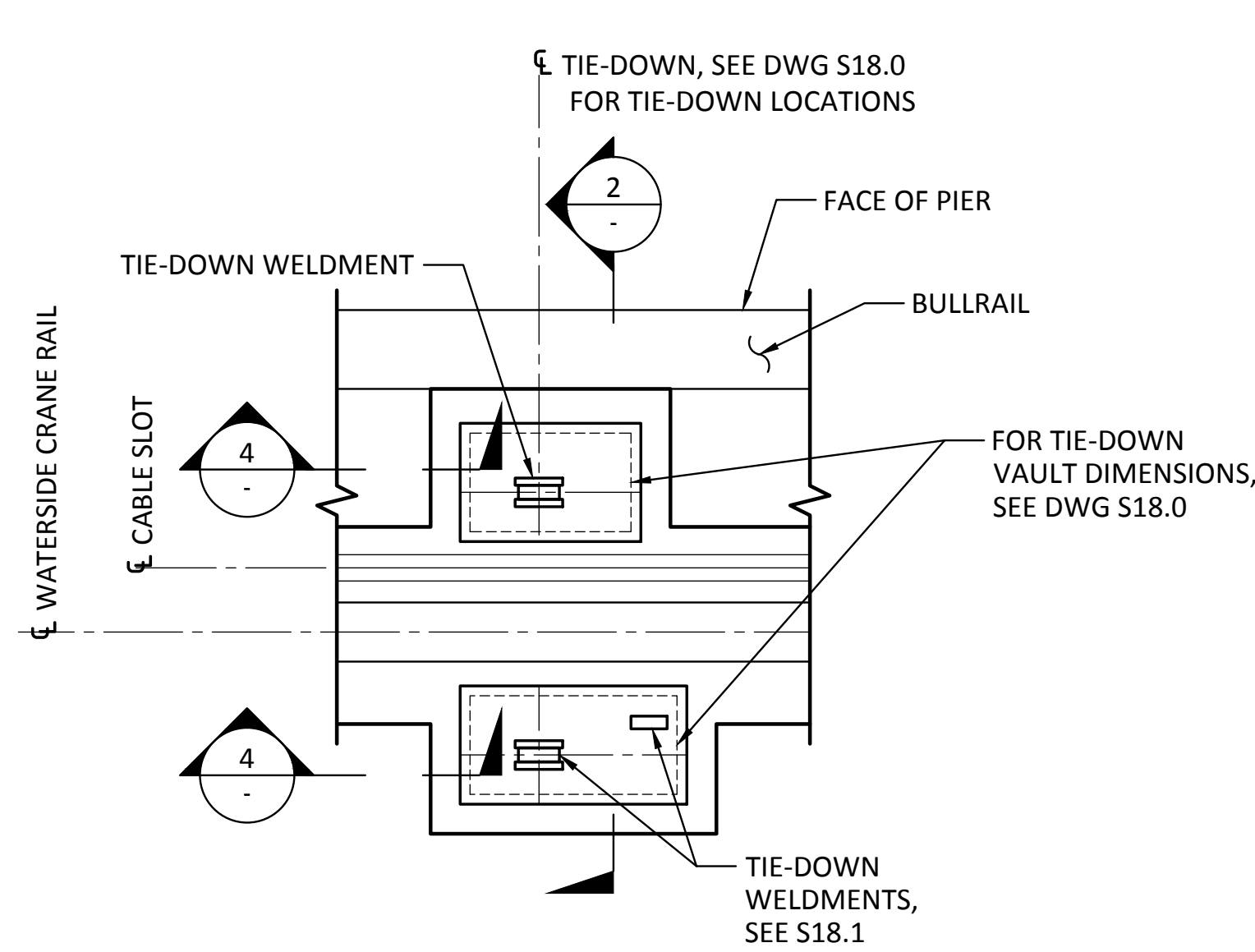
**6**  
**DETAIL - VAULT WALL**  
SCALE: 3/4" = 1'-0"



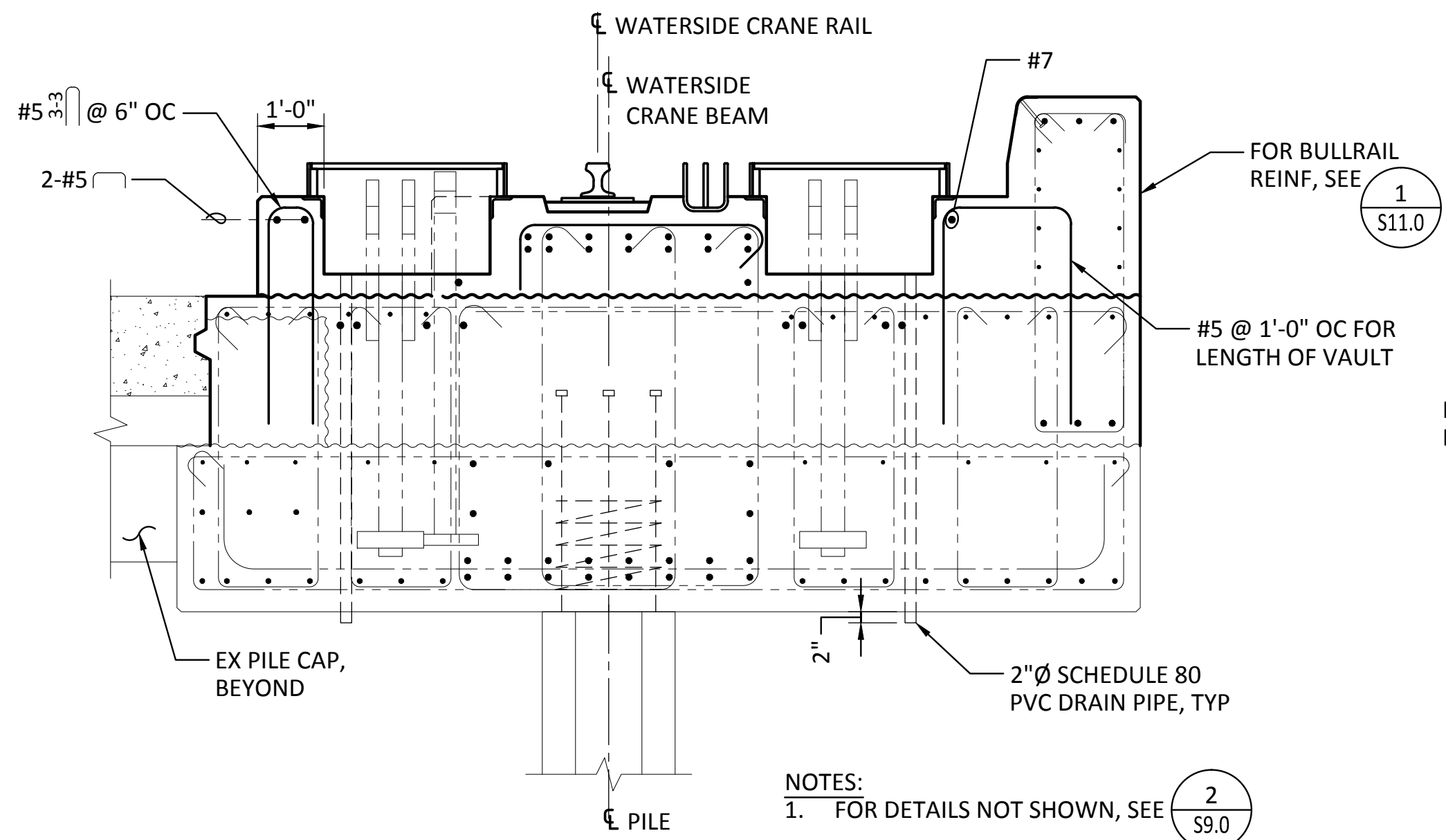
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<b>PIER 3 UPGRADE</b> <b>BULLRAIL DETAILS</b> <b>SHEET 2</b>		
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 NOS TIDAL (MLLW = 0.0)	DATE-HRZ: NAD 83-07 VERT: AS SHOWN DRAWING SCALE: AS SHOWN	MASTER ID NO: 069458 092935 PHASE: RECORD DRAWINGS PARCEL: 27
<p>6502 <b>S11.2</b> SHEET 73 OF 129</p>		

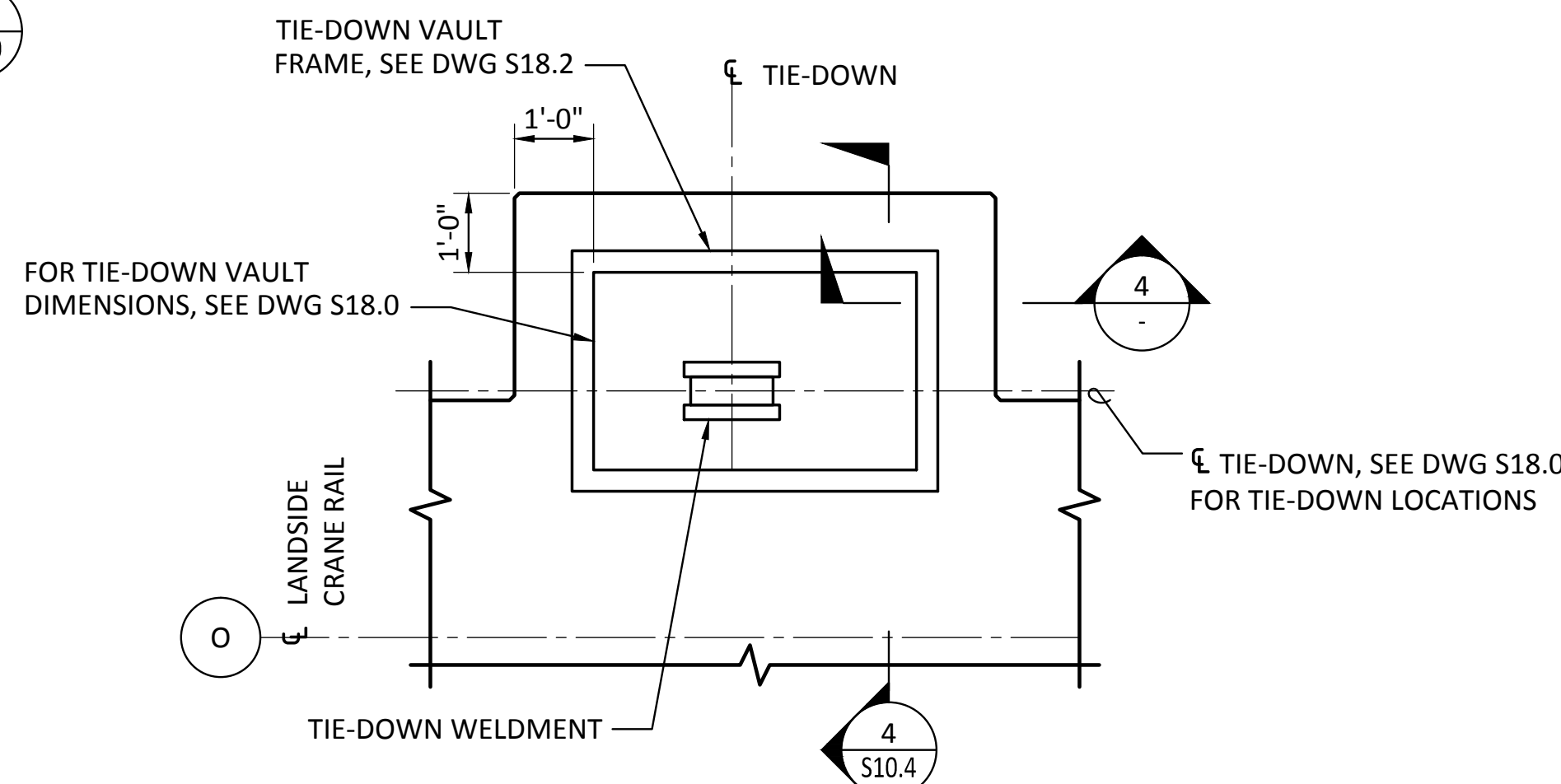
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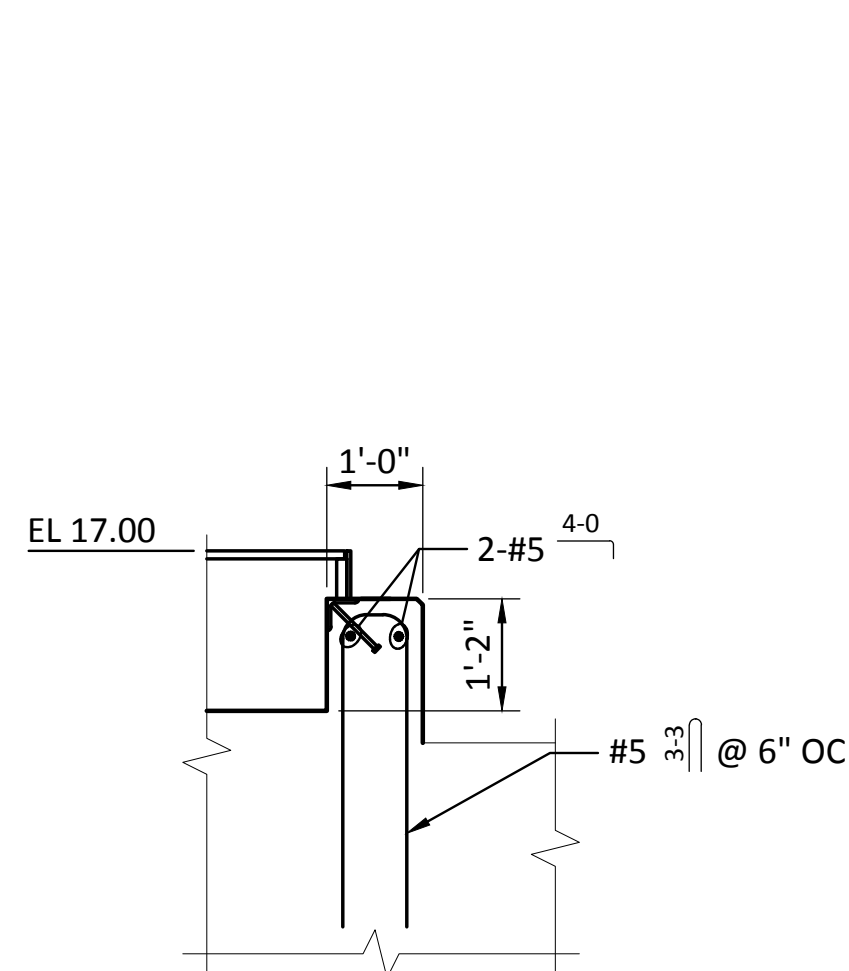
**1 PLAN - WATERSIDE TIE DOWN VAULT**  
 S3.4 SCALE: 1/4" = 1'-0"  
 S3.5, S3.6, S3.7



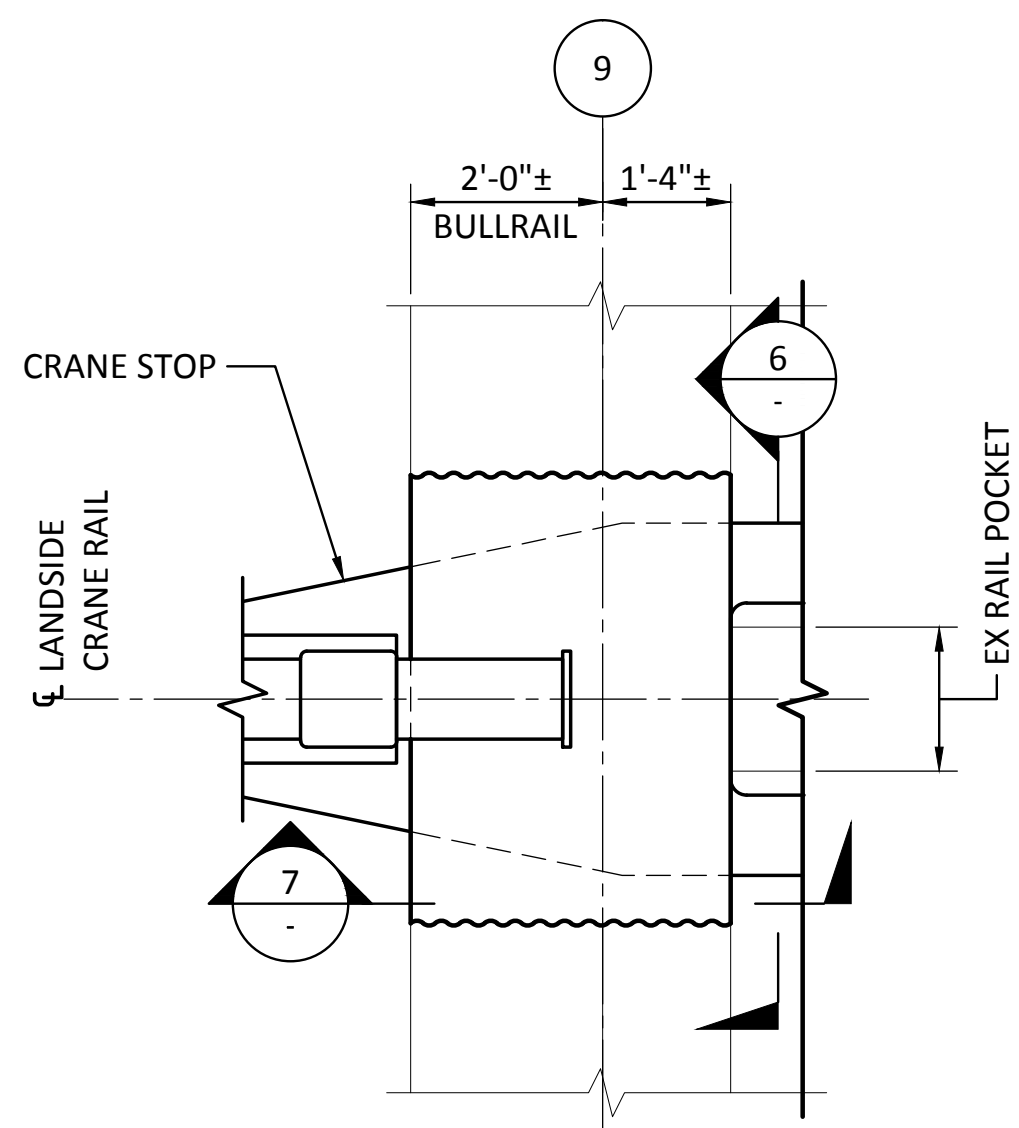
**2 SECTION - WATERSIDE TIE-DOWN VAULTS**  
 SCALE: 1/2" = 1'-0"



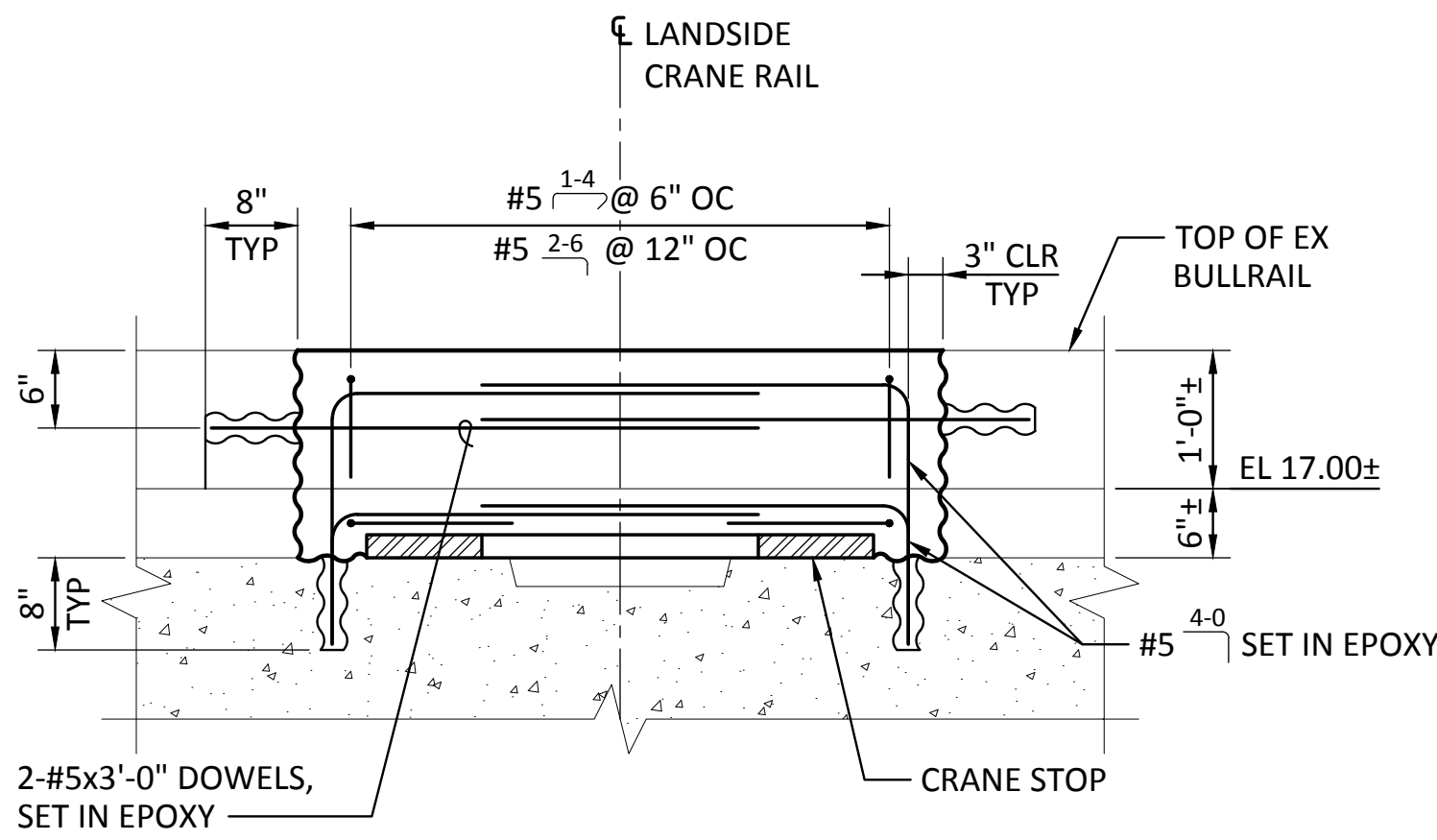
**3 PLAN - BULKHEAD TIE-DOWN VAULT**  
 S3.4 SCALE: 1/2" = 1'-0"  
 S3.5, S3.6



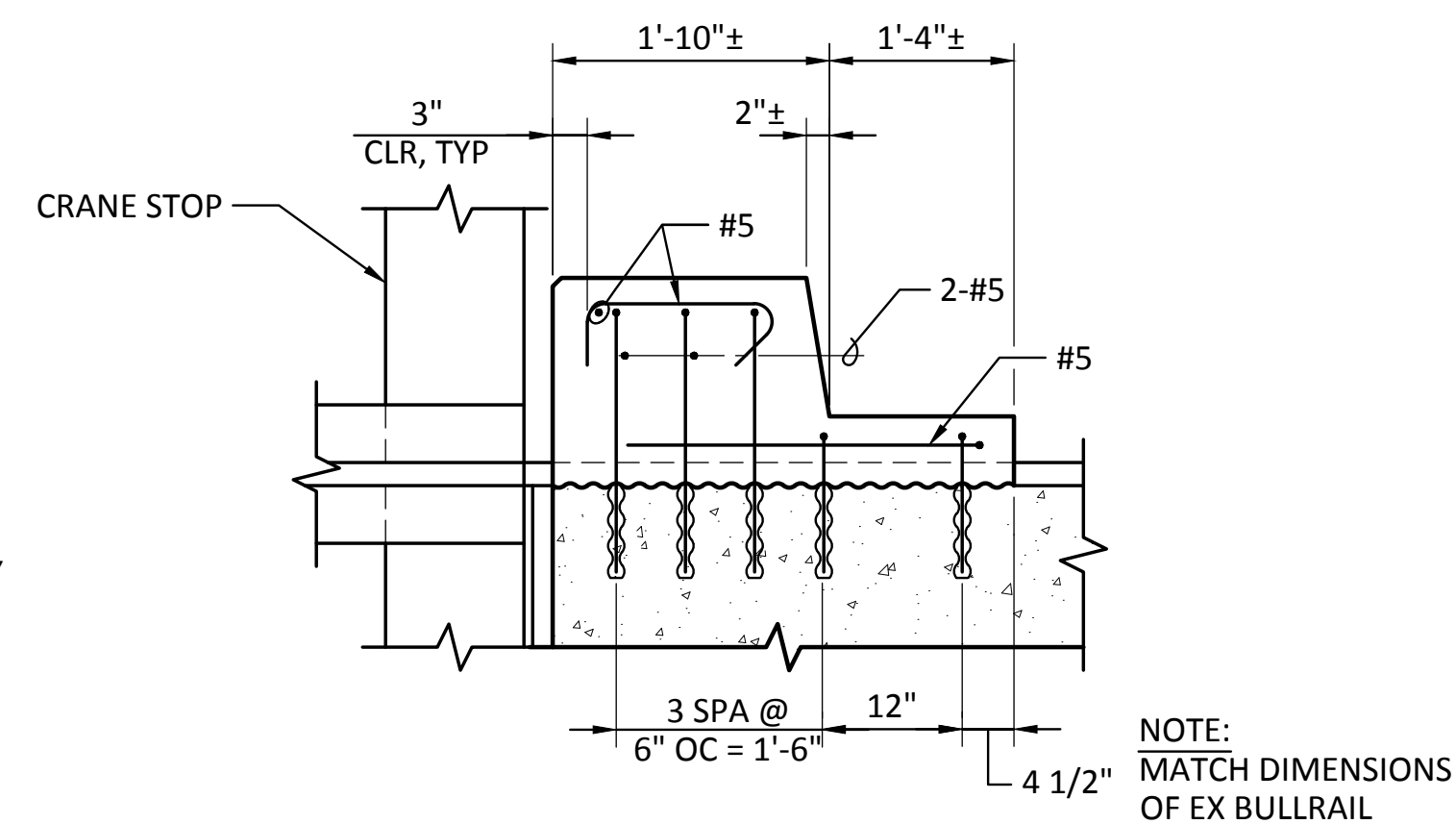
**4 SECTION - VAULT WALL**  
 S3.4 SCALE: 1/2" = 1'-0"



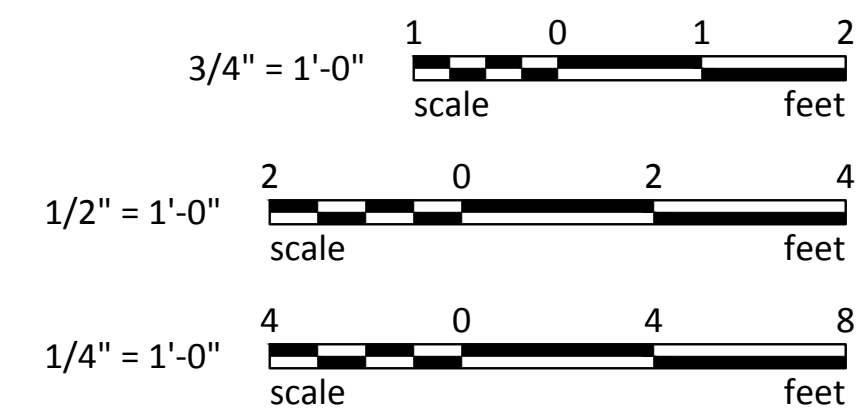
**5 PLAN - BULLRAIL @ CRANE STOP**  
 S3.4 SCALE: 1/2" = 1'-0"



**6 ELEVATION -**  
 SCALE: 3/4" = 1'-0"



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



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**DATE:** 7/17/13  
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**BY:**  
**REVISION:**  
**MARK:**

**PIER 3 UPGRADE**  
**WATERSIDE CRANE TIE-DOWN VAULTS**

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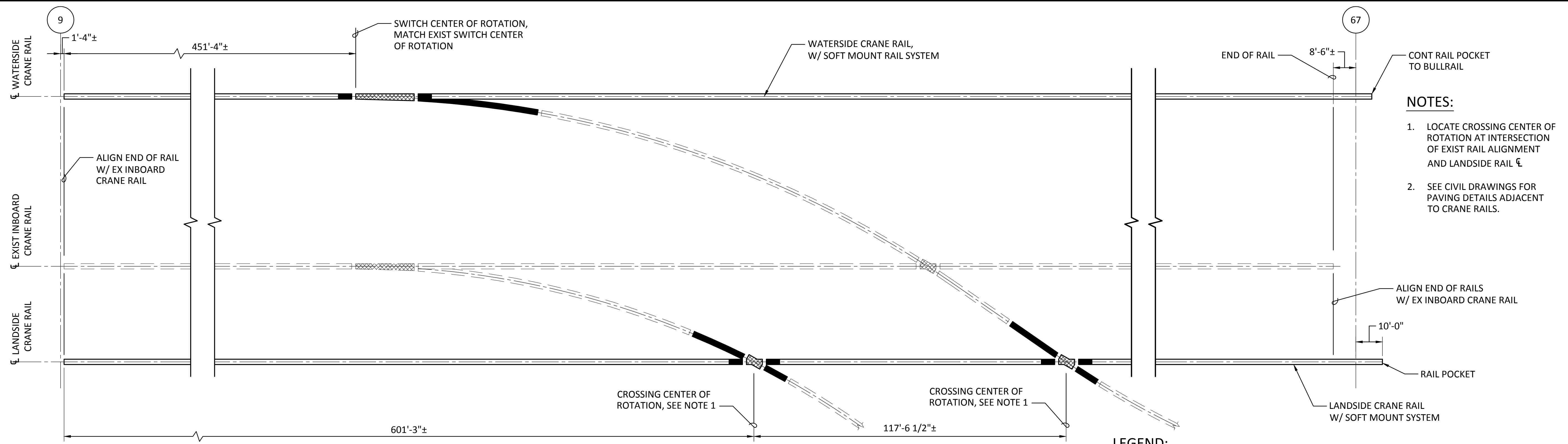
**6502**  
**S11.3**  
 SHEET 74 OF 129

CONT/CONS: 069458  
 MASTER ID NO: 092935  
 PHASE: RECORD DRAWINGS

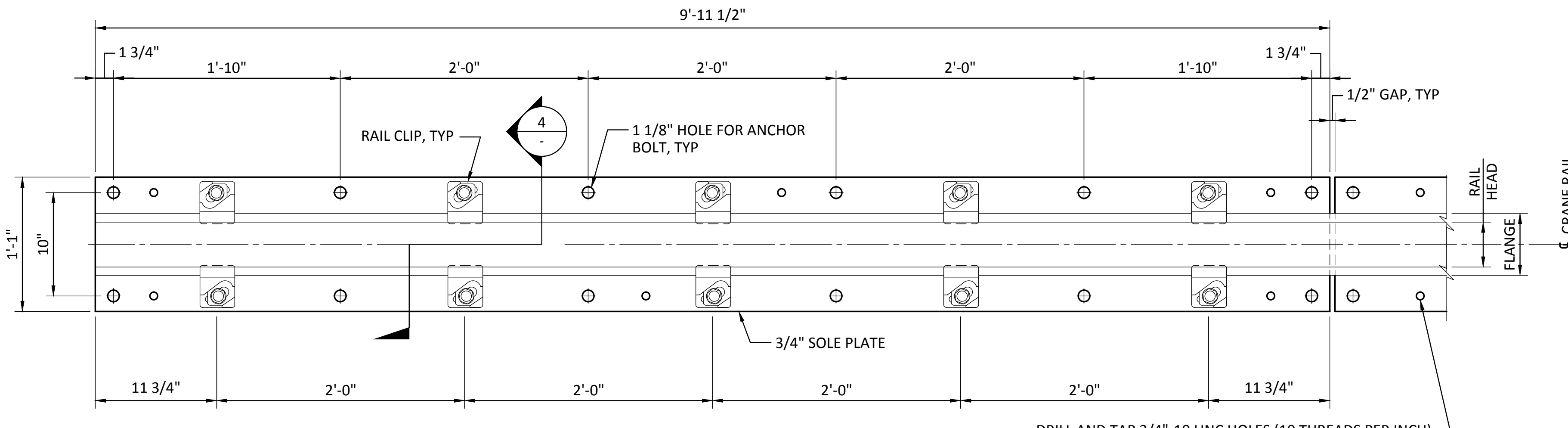
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27  
 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)  
 PARCEL: 27 DRAWING SCALE: AS SHOWN

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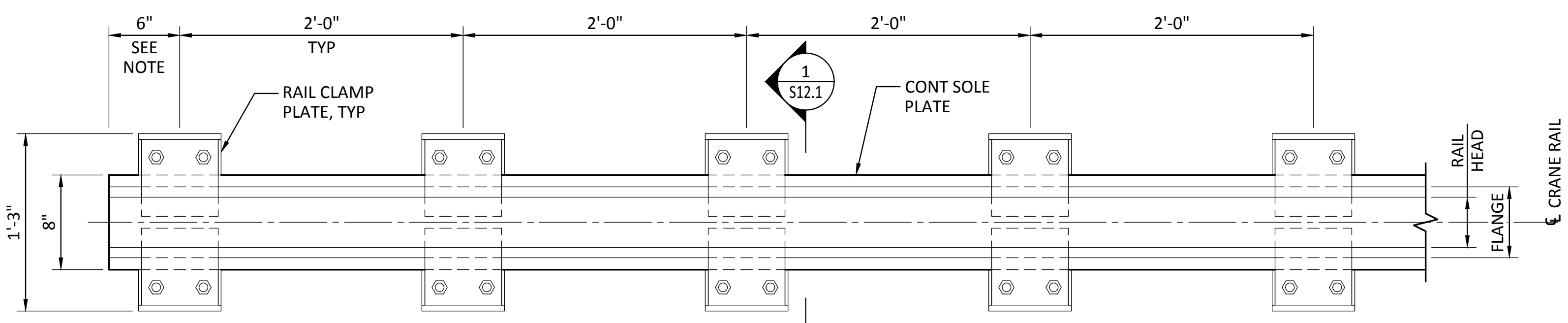
BINDING EDGE



1 PLAN - CRANE RAIL  
SCALE: 1" = 20'-0"



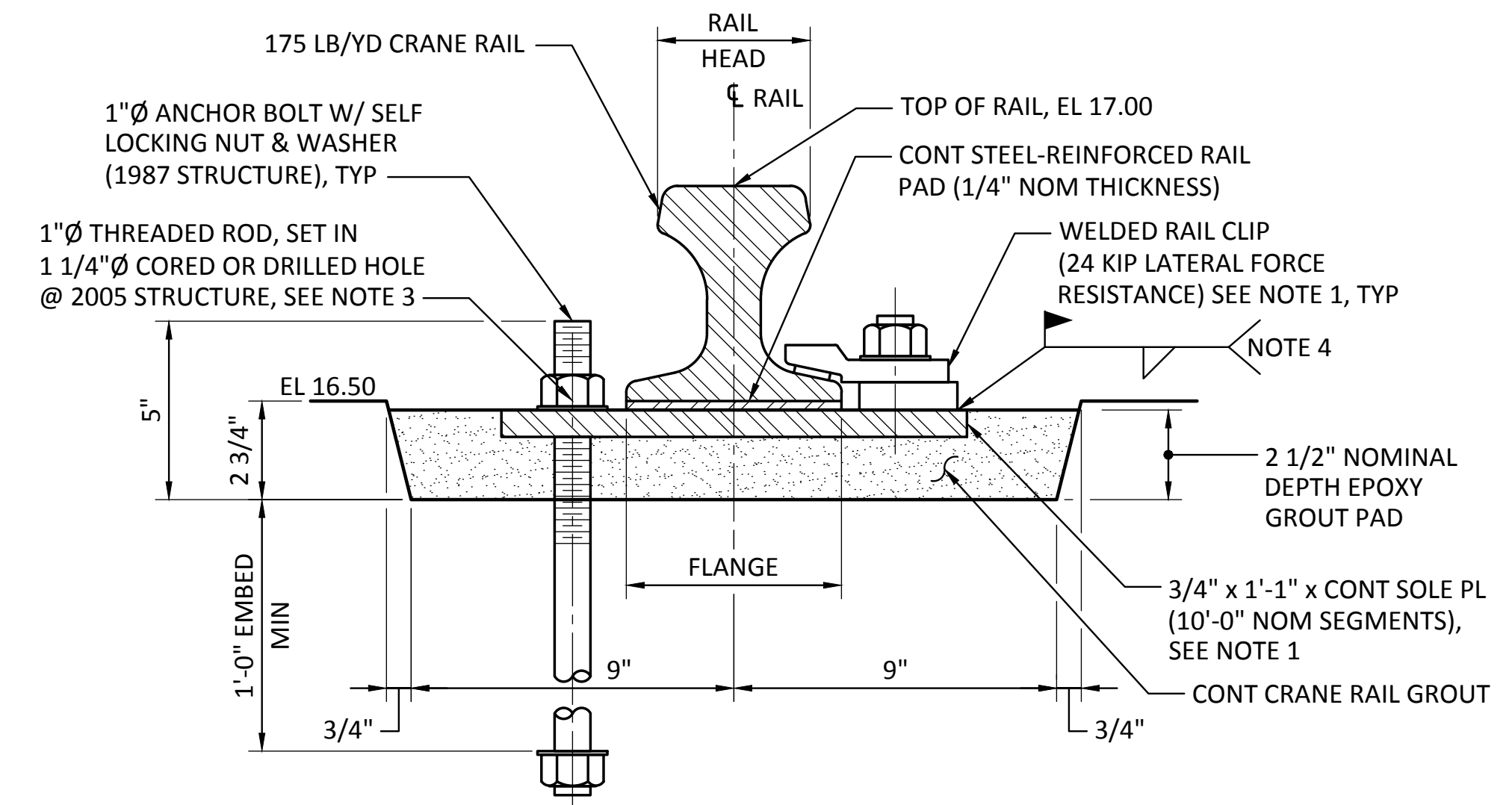
2 PLAN - SOFT MOUNT SYSTEM  
SCALE: 1 1/2" = 1'-0"



3 PLAN - HARD MOUNT SYSTEM  
SCALE: 1 1/2" = 1'-0"

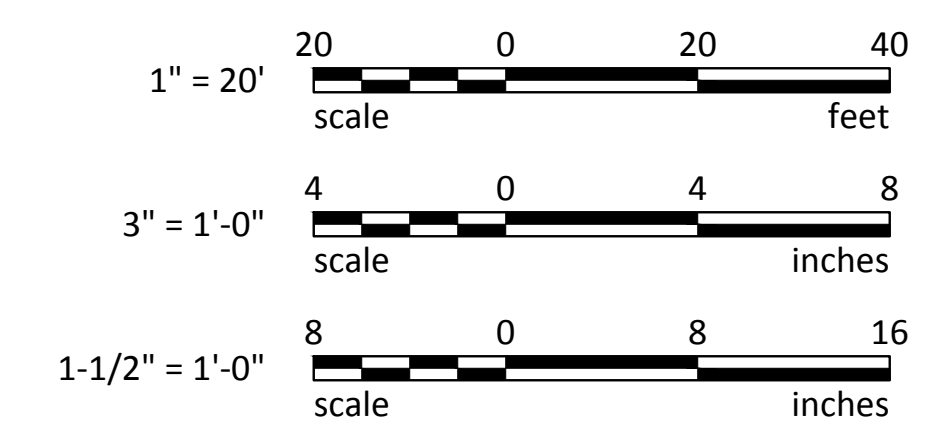
LEGEND:

- 175 LB/YD RAIL ON SOFT MOUNT SYSTEM, SEE 2
- 175 LB/YD RAIL ON HARD MOUNT SYSTEM, SEE 3
- EXIST 175 LB/YD RAIL ON HARD MOUNT SYSTEM
- MOUNTING SYSTEM TRANSITION, SEE 5
- BOLTED RAIL SPLICE
- RAIL SWITCH
- EXIST RAIL SWITCH
- RAIL CROSSING
- EXIST RAIL CROSSING



4 SECTION - SOFT MOUNT RAIL  
SCALE: 3" = 1'-0"

- NOTES:
- SOLE PLATES AND RAIL CLIP ASSEMBLIES SHALL BE HOT-DIP GALVANIZED.
  - ACP NOT SHOWN.
  - HOLES SHALL BE ROUGHENED TO 1/8" AMPLITUDE AND CLEANED PRIOR TO INSTALLATION OF ANCHOR BOLTS AND EPOXY.
  - WELD RAIL CLIP PER MANUFACTURER'S REQUIREMENTS.



NOTES:

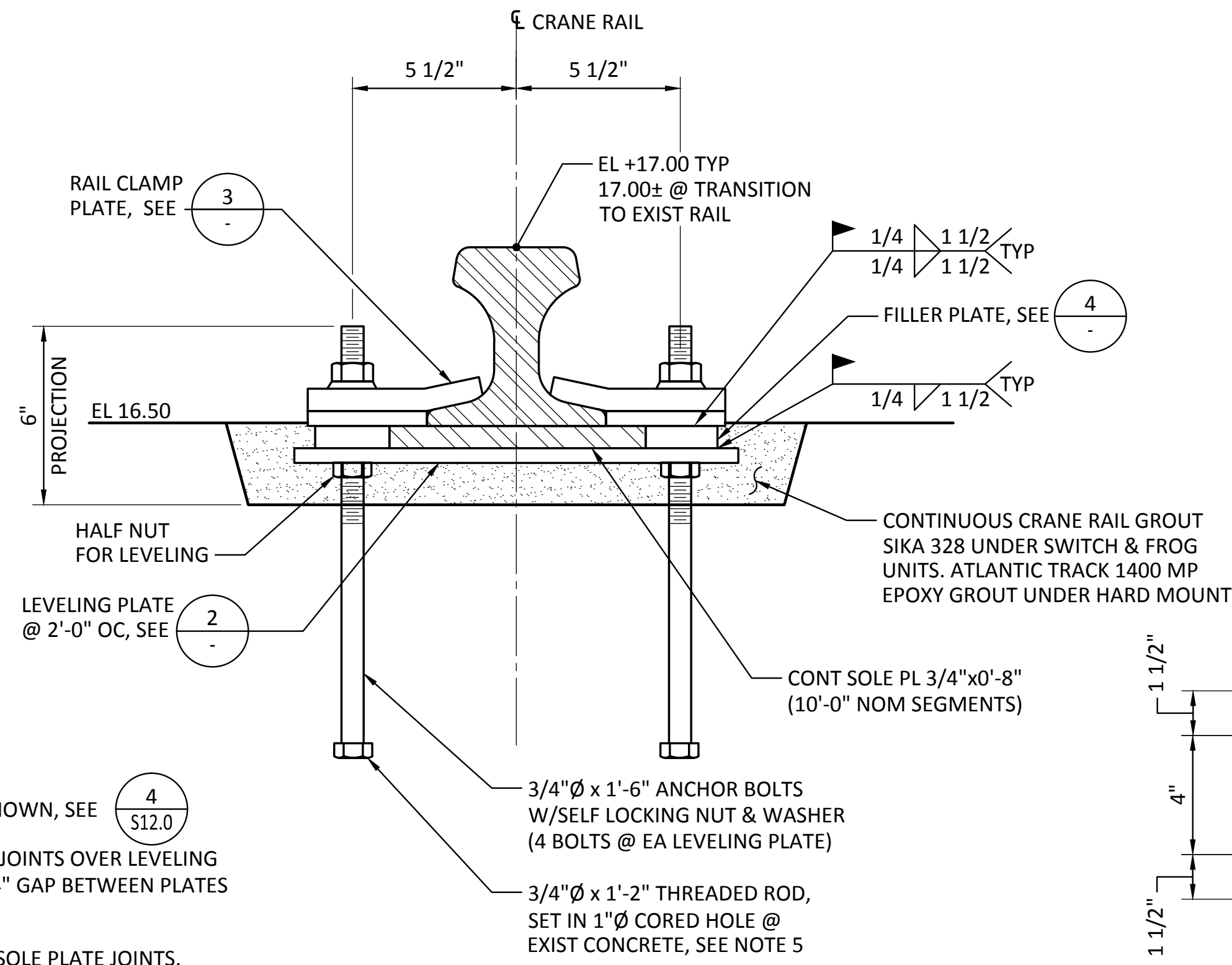
- LOCATE CROSSING CENTER OF ROTATION AT INTERSECTION OF EXIST RAIL ALIGNMENT AND LANDSIDE RAIL.
- SEE CIVIL DRAWINGS FOR PAVING DETAILS ADJACENT TO CRANE RAILS.

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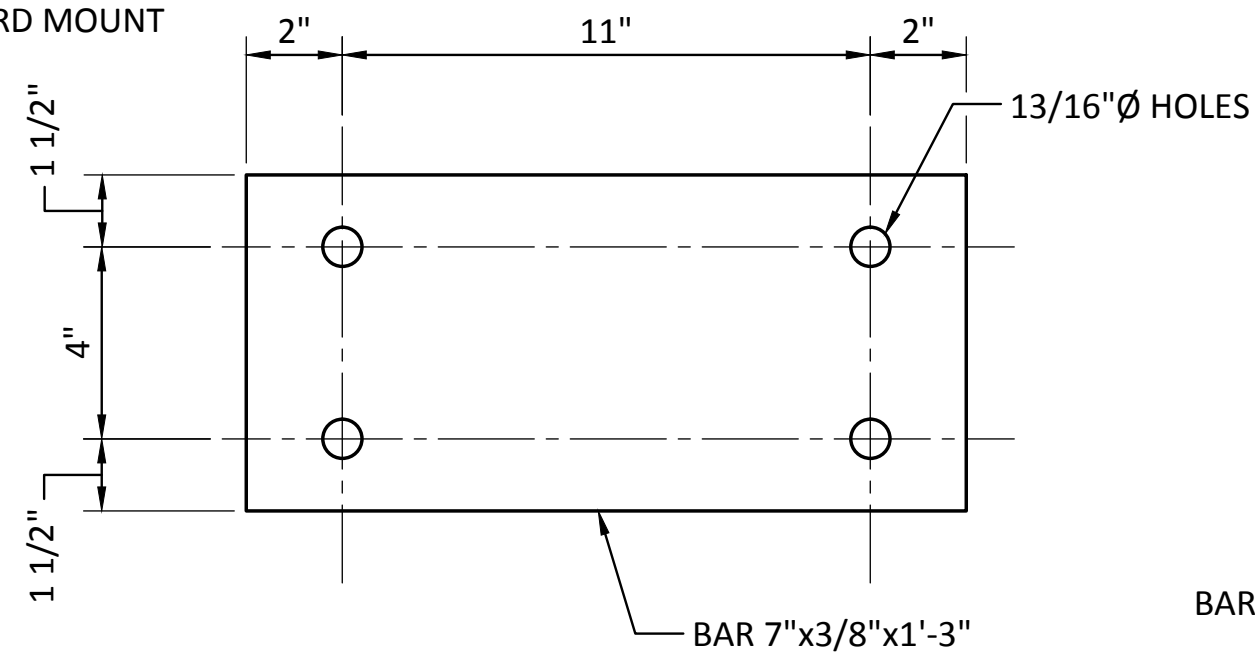
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APPROVED: _____ CSB 7/17/13 CHECKED BY: _____ DATE: 7/17/13 DC JRG DIR OF ENG: Jason Mendenhall PRINTED BY: jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	CRANE RAIL SHEET 1 RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MILLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
<b>6502 S12.0</b> SHEET 75 OF 129 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	

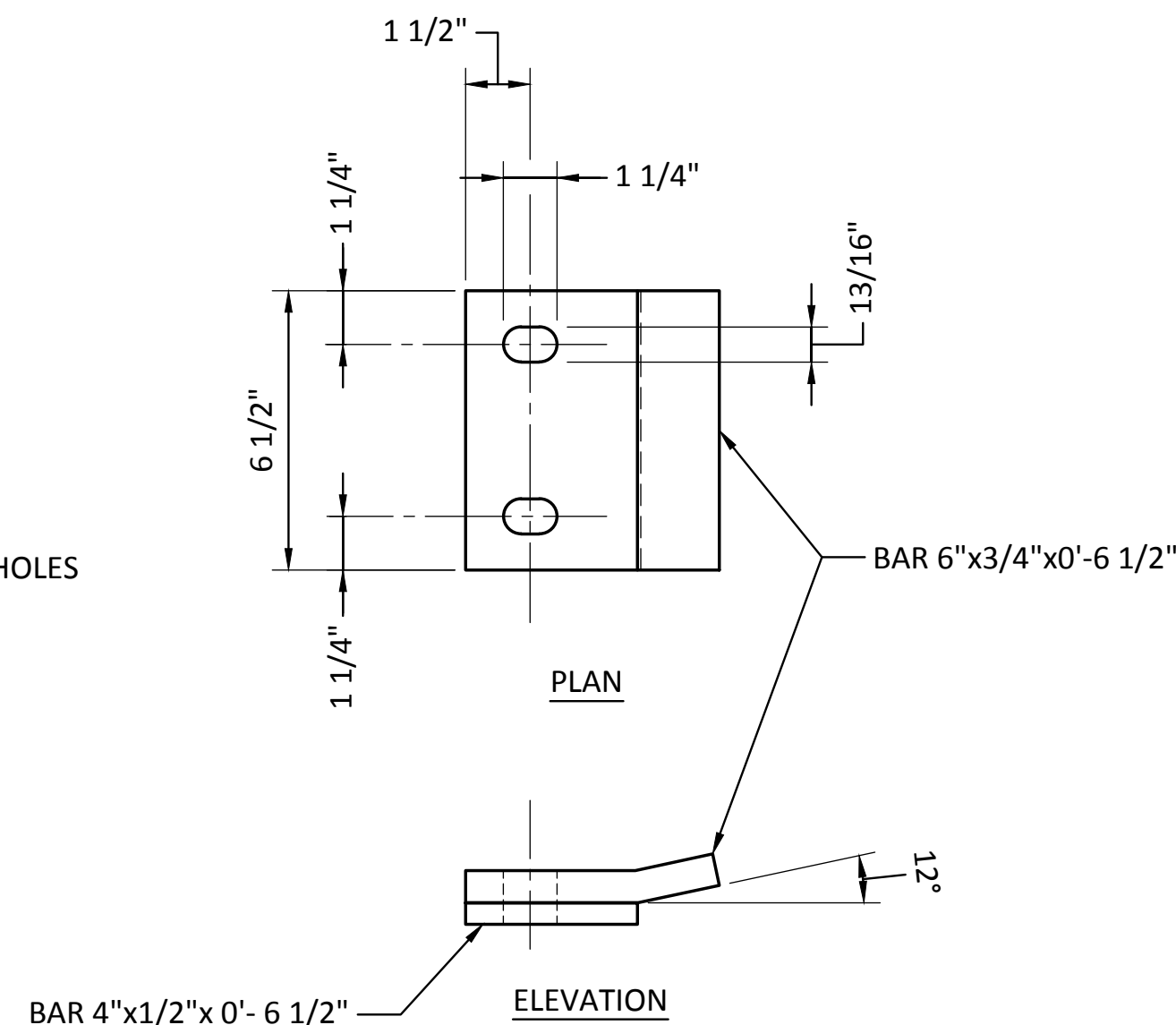
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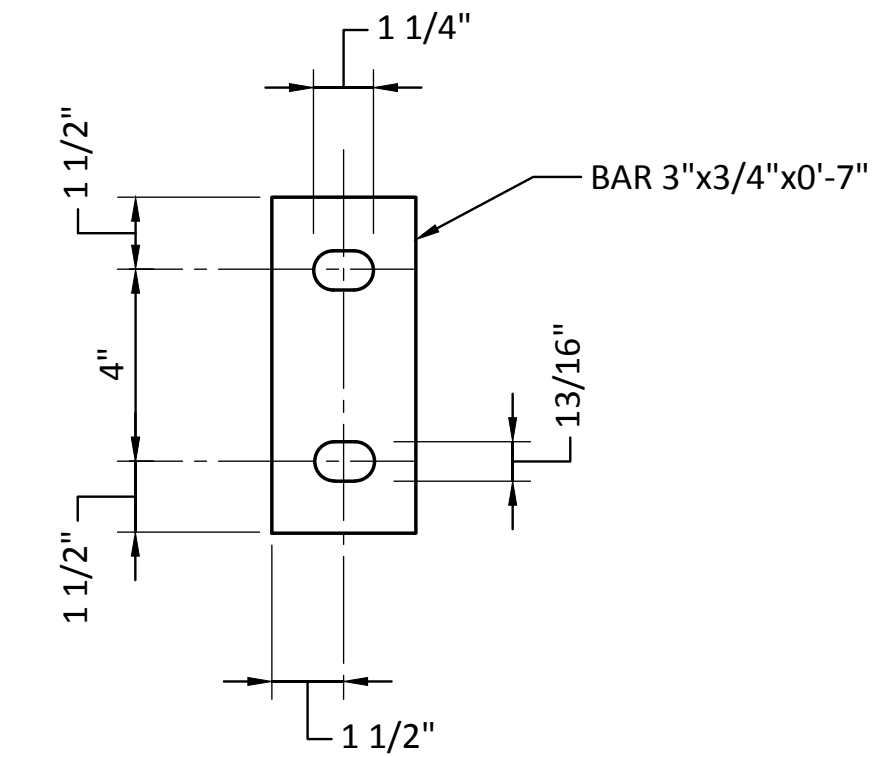
1 SECTION - HARD MOUNT RAIL  
SCALE: 3" = 1'-0"



2 DETAIL - LEVELING PLATE  
SCALE: 3" = 1'-0"



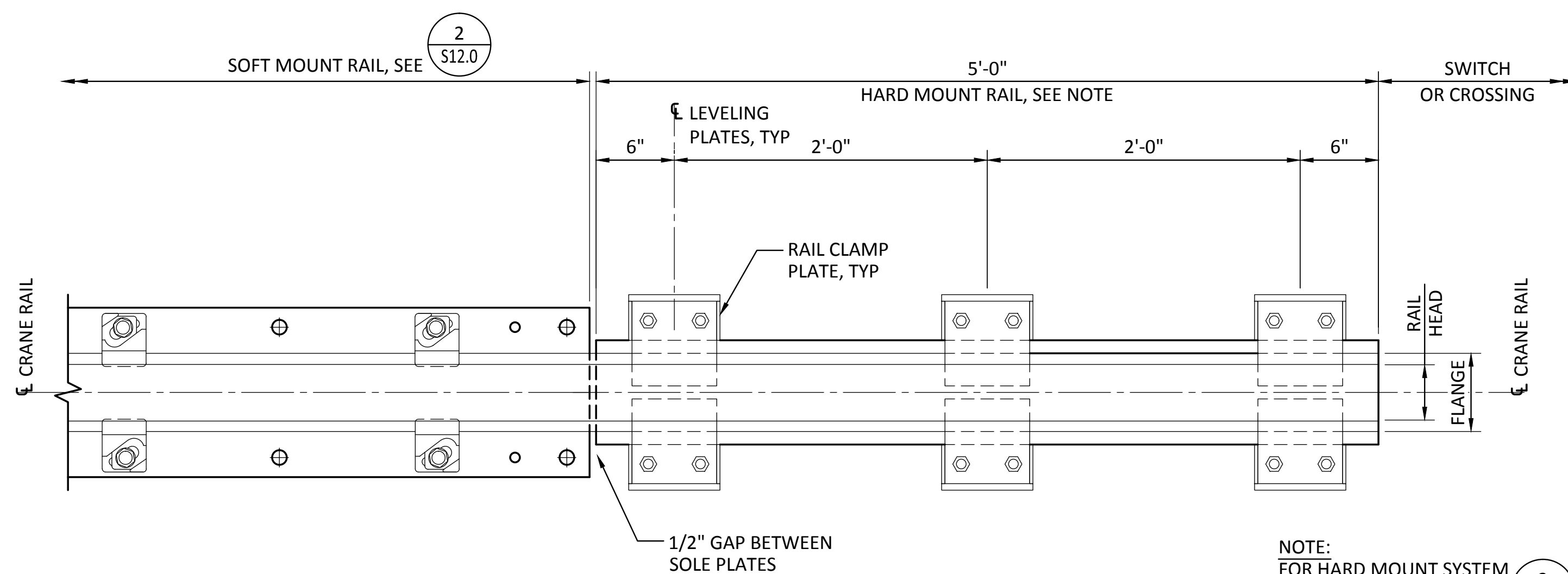
3 DETAIL - RAIL CLAMP  
SCALE: 3" = 1'-0"



4 DETAIL - FILLER PLATE  
SCALE: 3" = 1'-0"

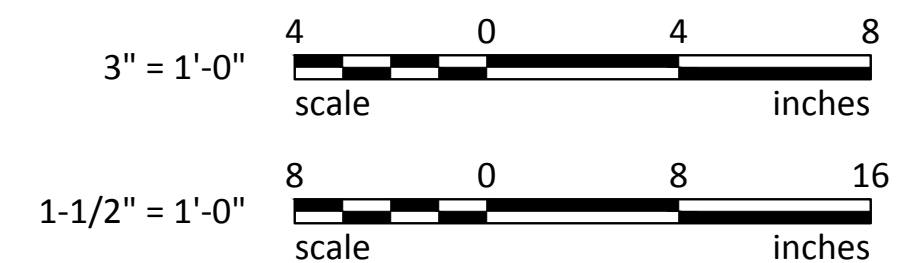
NOTES:

- FOR DETAILS NOT SHOWN, SEE 4
- LOCATE SOLE PLATE JOINTS OVER LEVELING PLATE. PROVIDE 1/4" GAP BETWEEN PLATES AT JOINT.
- STAGGER RAIL AND SOLE PLATE JOINTS.
- SOLE PLATE EDGES UNDER RAIL, AT JOINT LINE, SHALL BE GROUND SMOOTH.
- HOLES SHALL BE ROUGHENED TO 1/8" AMPLITUDE AND CLEANED PRIOR TO INSTALLATION OF ANCHOR BOLTS AND EPOXY.



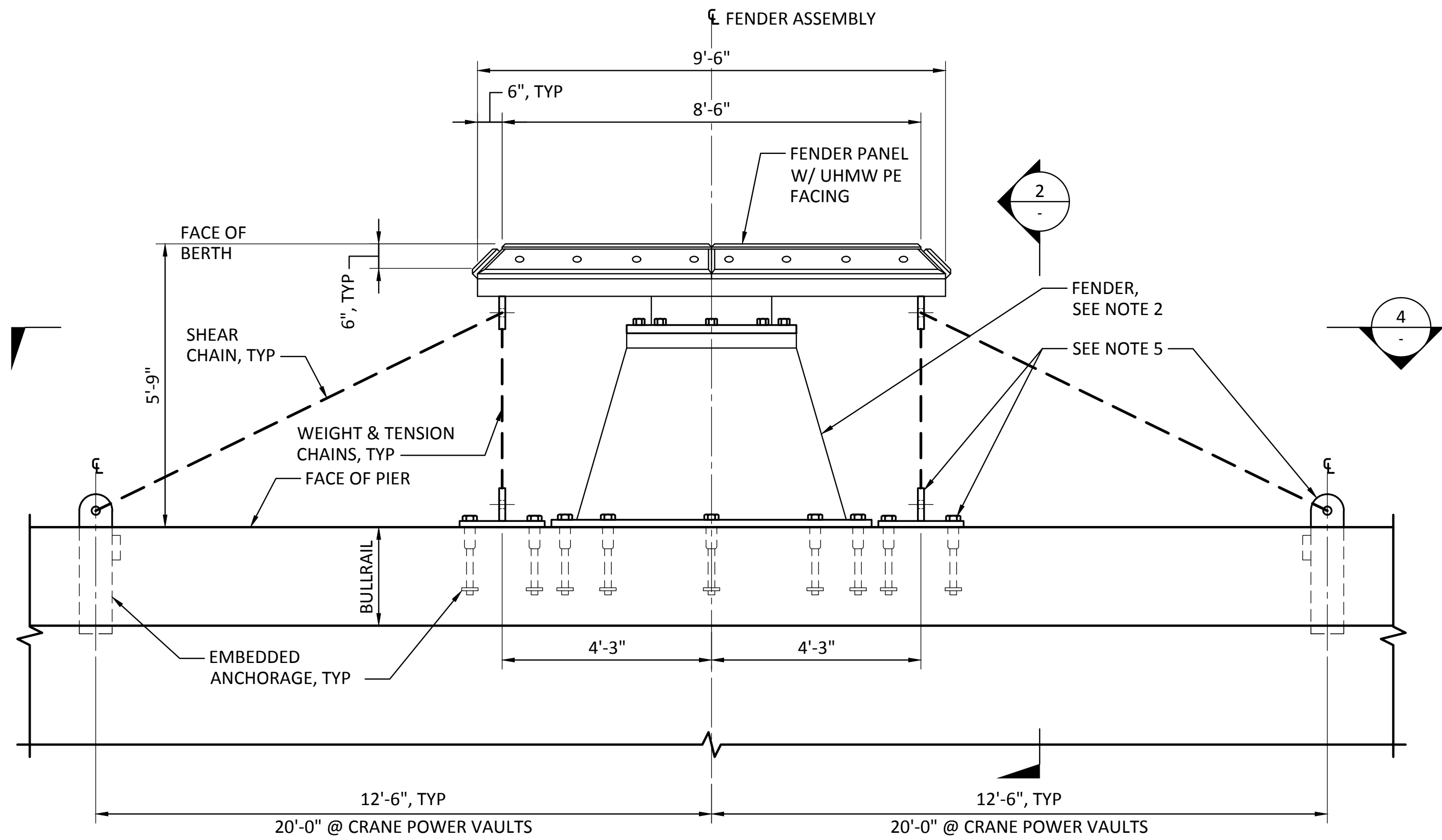
5 DETAIL - MOUNTING SYSTEM TRANSITION  
SCALE: 1 1/2" = 1'-0"

NOTE:  
FOR HARD MOUNT SYSTEM  
DETAILS NOT SHOWN, SEE 3

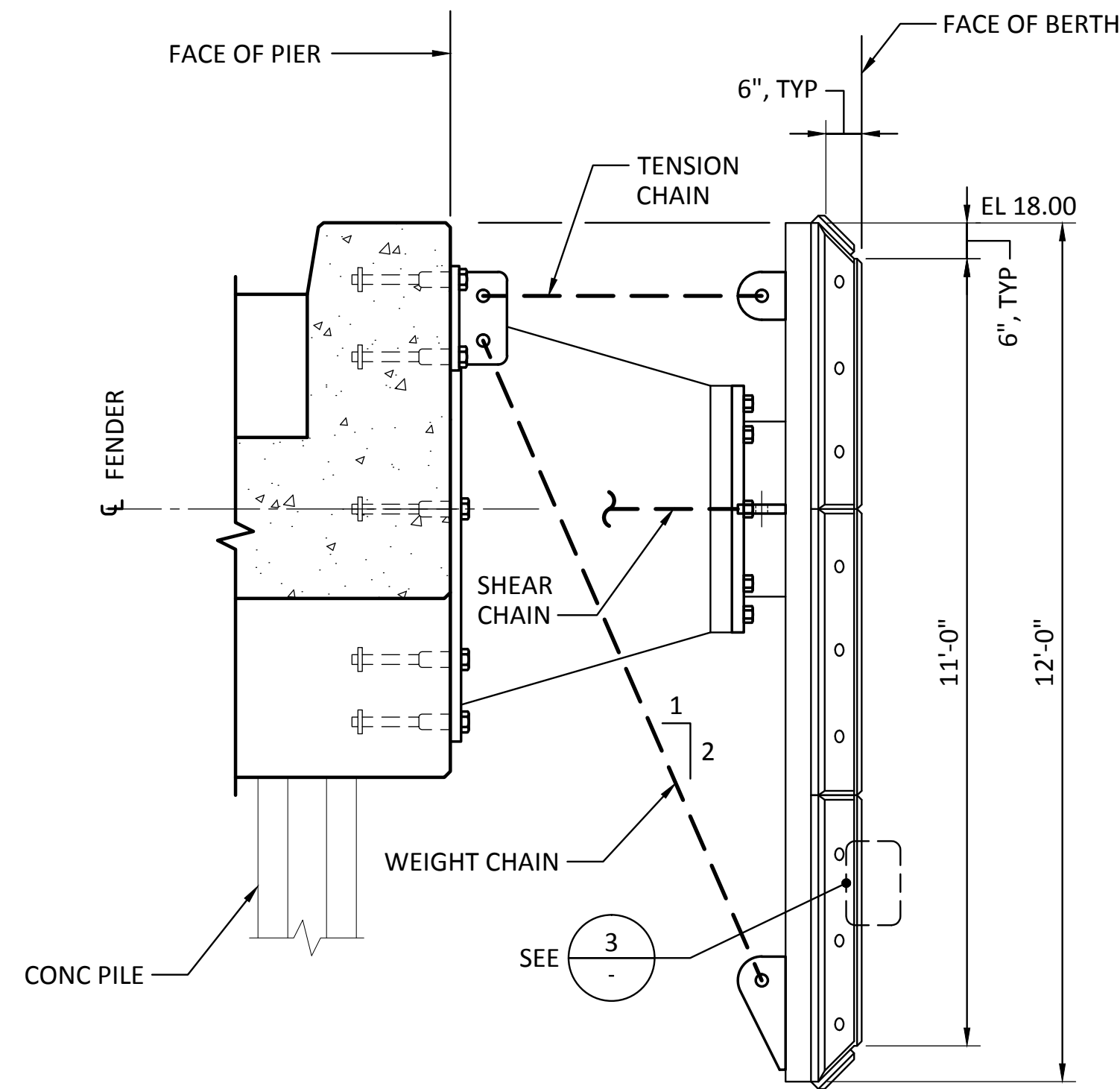


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<b>PIER 3 UPGRADE</b> <b>CRANE RAIL</b> <b>SHEET 2</b>		
6502	TOWNSHIP: 21 N	RANGE: 3 E
SECTION: 27	DATE: 092935	VERT: NOS TIDAL (MLLW = 0.0)
PARCEL: 27	PHASE: RECORD DRAWINGS	DRAWING SCALE: AS SHOWN
<b>S12.1</b> SHEET 76 OF 129		

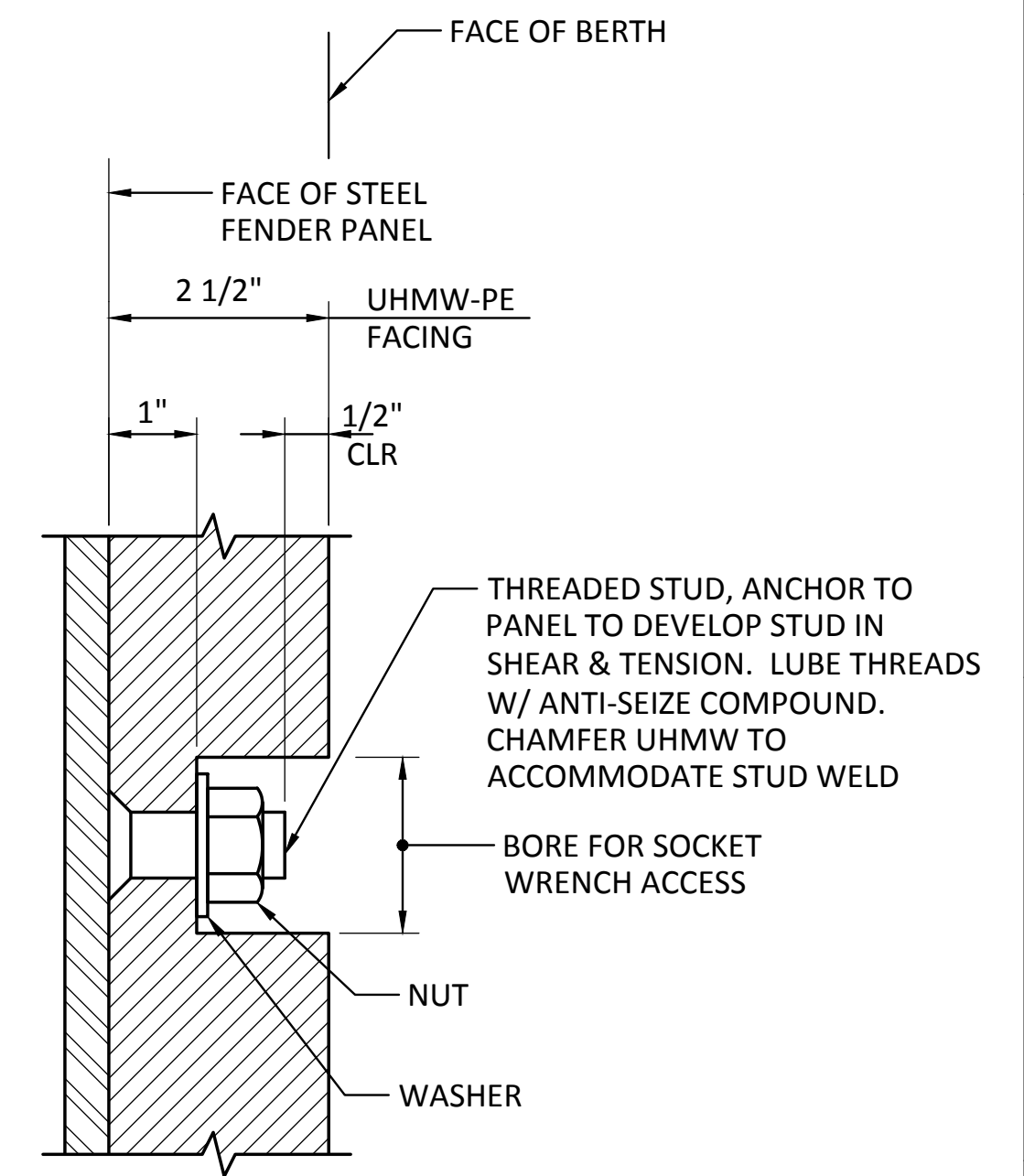
BINDING EDGE



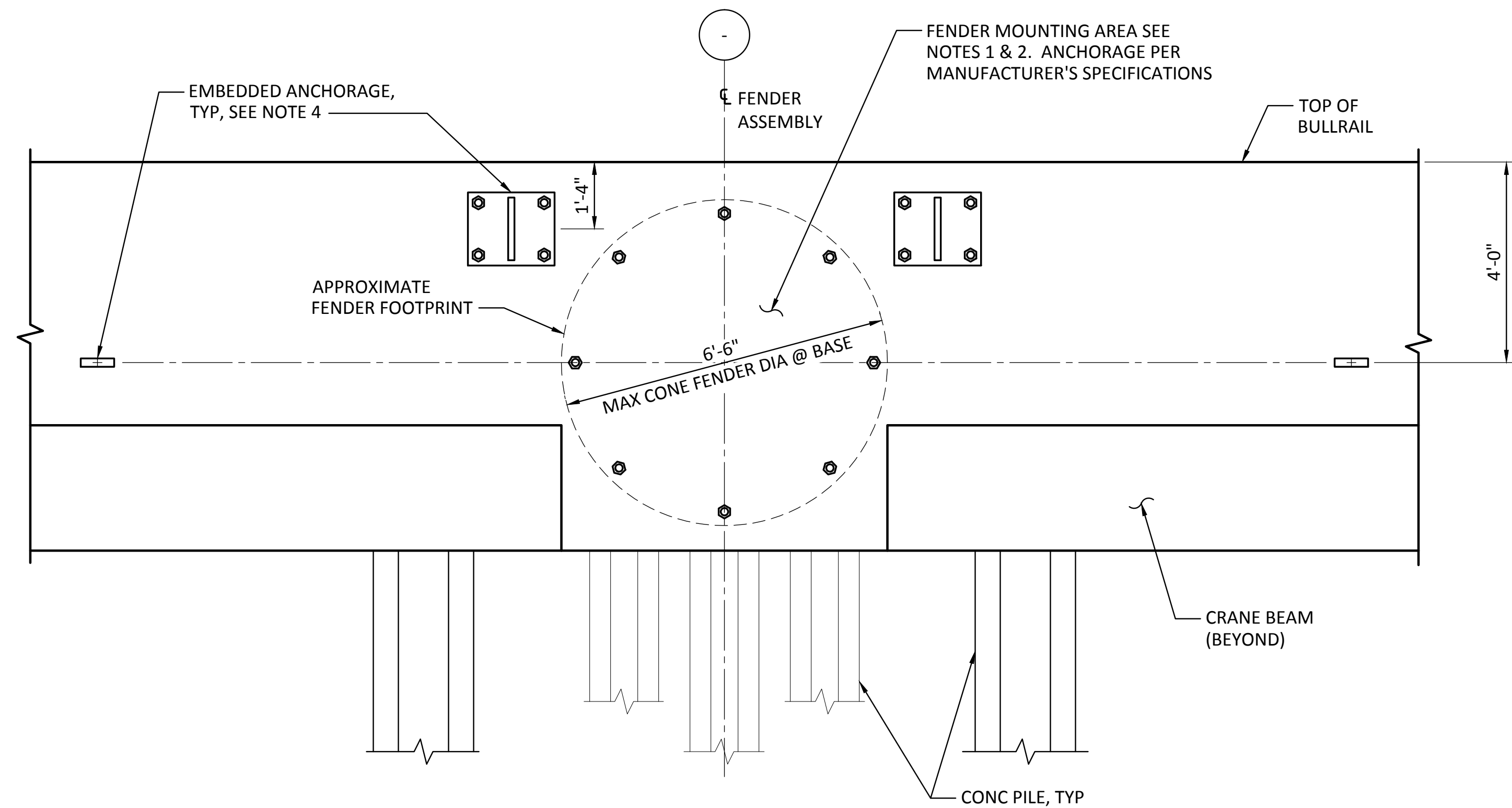
**1**  
S3.4  
SCALE: 1/2" = 1'-0"  
S3.5, S3.6, S3.7  
**PLAN - FENDER AT BENTS 20 TO 67**  
(17 TOTAL)



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



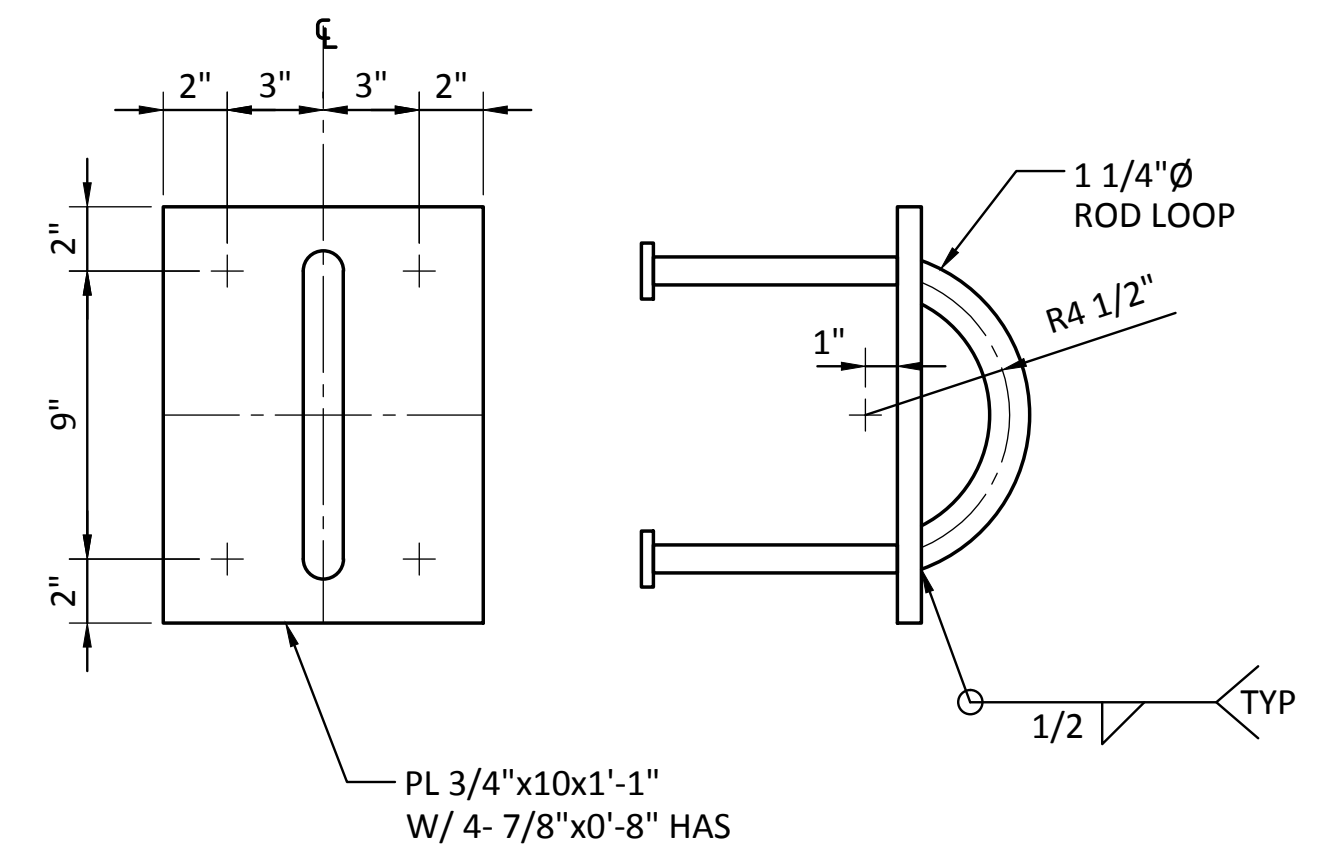
**3**  
SCALE: 6" = 1'-0"  
**DETAIL - ATTACHMENT OF FACING**



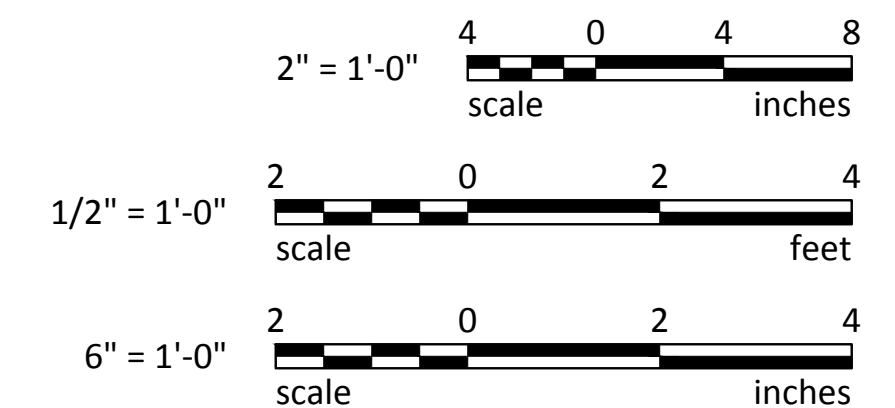
**4**  
SCALE: 1/2" = 1'-0"  
**ELEVATION - FENDER**

**FENDER SYSTEM NOTES:**

- SEE DWG S1.1 FOR MINIMUM ENERGY AND MAXIMUM REACTION REQUIREMENTS. FOR FENDER LOCATIONS, SEE DWG S2.0. SEE SPECIFICATIONS FOR DEFLECTION LIMITS AND OTHER REQUIREMENTS.
- FENDER SHOWN IS REPRESENTATIVE OF AN ACCEPTABLE PRODUCT. OTHER PRODUCTS THAT FIT WITHIN THE AREA ALLOWED FOR FENDER ASSEMBLY AND MEET SPECIFIED ENERGY AND REACTION PERFORMANCE CHARACTERISTICS MAY BE ACCEPTED SUBJECT TO ENGINEER'S PRIOR APPROVAL.
- COORDINATE LOCATION OF EMBEDDED ITEMS WITH PLACEMENT OF REINFORCING STEEL AND OTHER APPURTENANCES DURING SUBMITTAL PREPARATION.
- PRIOR TO FABRICATING ANY MATERIALS FOR FENDER SYSTEM VERIFY SIZE, DIMENSIONS, AND LOCATIONS OF ALL ITEMS. INCLUDING RUBBER FENDER, UHMW-PE FACING, FENDER PANEL, CHAINS, FENDER BOLTS, ANCHORS RODS OR BOLTS, EMBEDDED PLATES, ETC., SO THAT TIGHT CONNECTIONS CAN BE MADE AND ALL COMPONENTS ARE COMPATIBLE AND SNUG UPON COMPLETION.
- EMBEDDED ANCHORAGE (1987 STRUCTURE) IS PART OF THE FENDER ASSEMBLY AND SHALL BE DESIGNED AND PROVIDED BY THE FENDER ASSEMBLY MANUFACTURER.



**5**  
S8.3  
SCALE: 2" = 1'-0"  
**DETAIL - FENDER EMBED**



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DATE	7/17/13	DATE
DC	7/17/13	DATE
DIR OF ENG	Jason.mendenhall	PROJ. ENGR
PRINTED BY	ONE SITCUM WAY	TACOMA, WA 98421-2300
PORT ADDRESS		

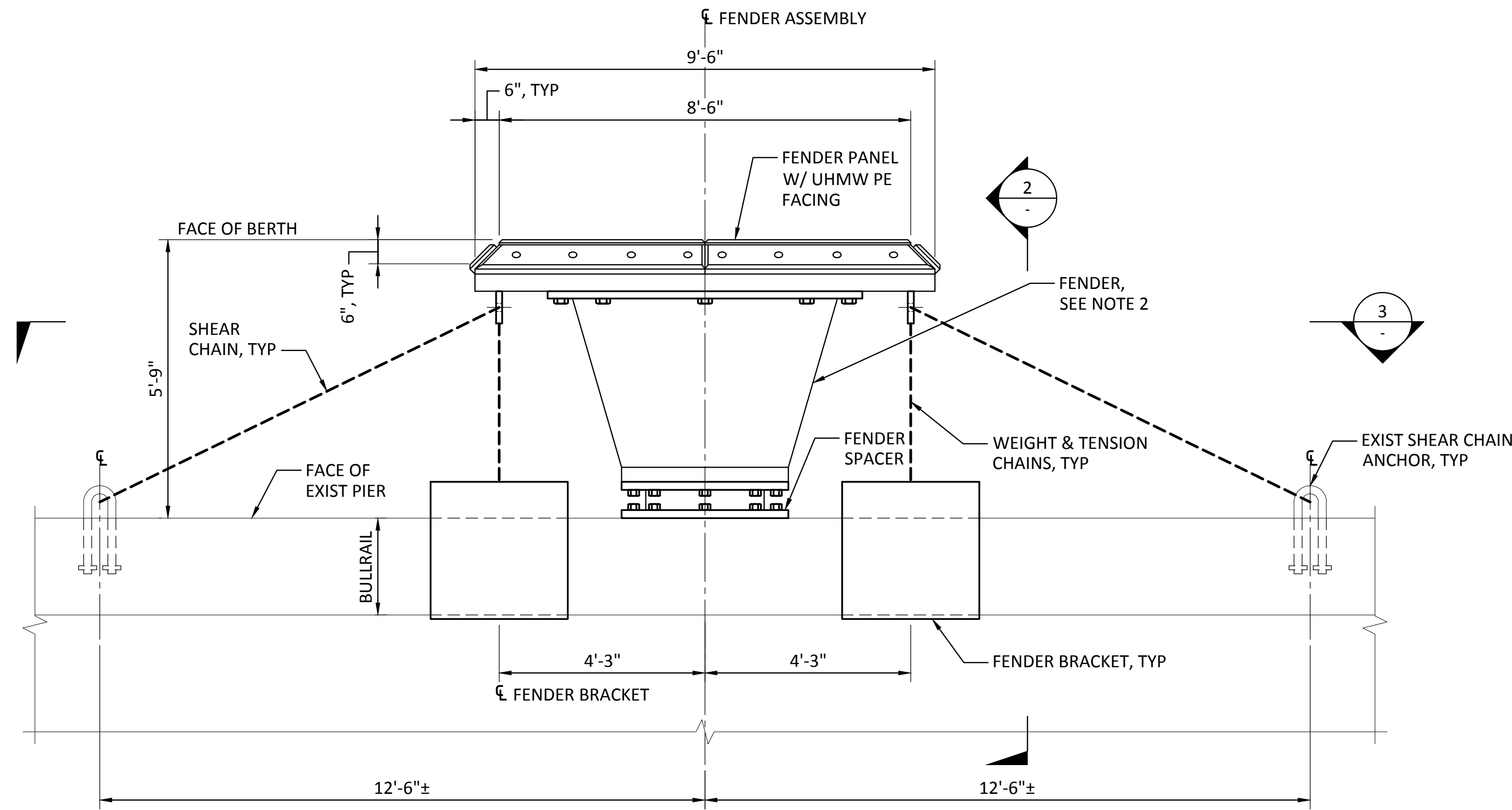
PIER 3 UPGRADE

FENDER SYSTEM DETAILS  
SHEET 1

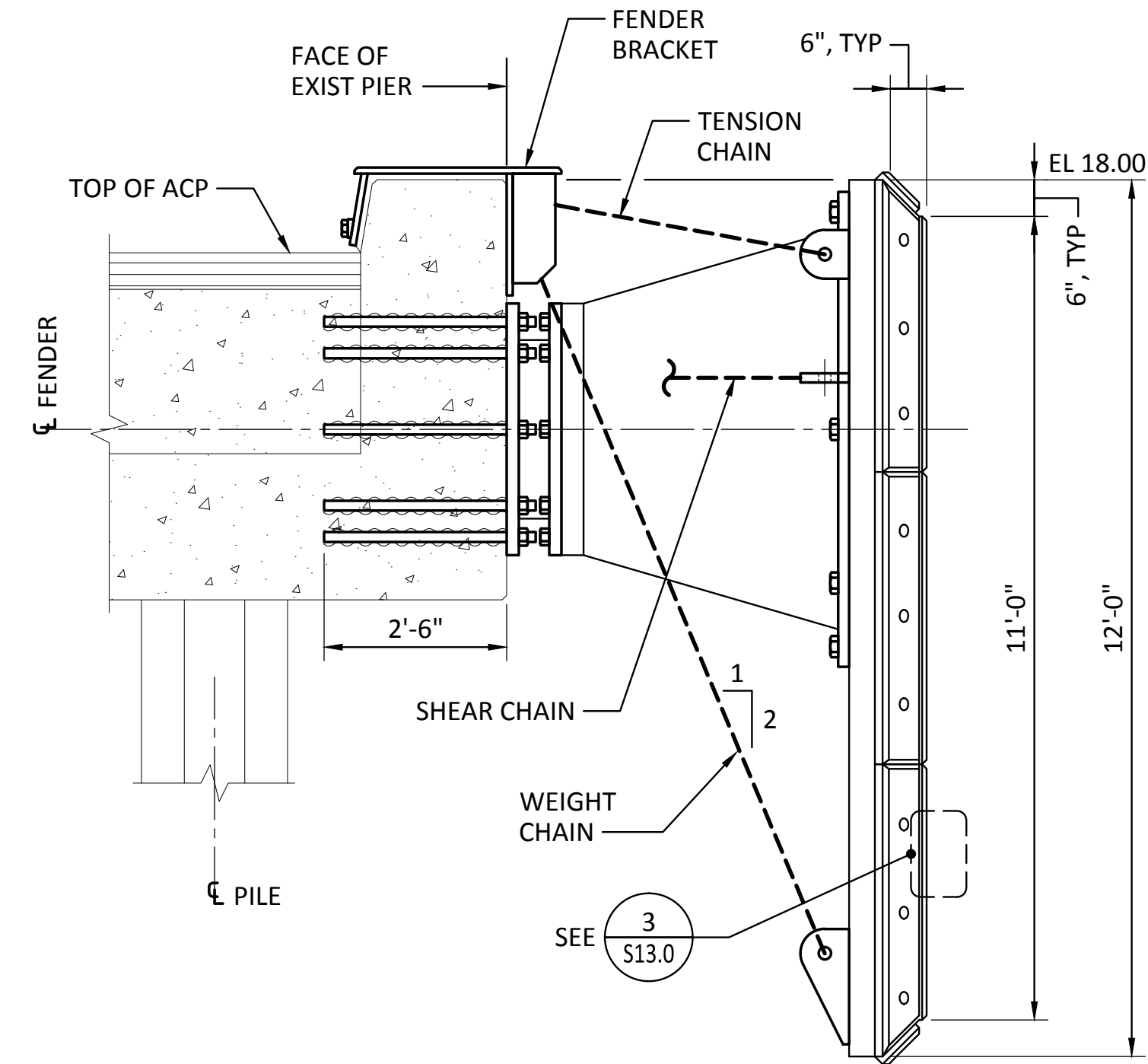
TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN
CONTRACT NO: 069458	DATE: 092935	PARCEL: 27
MASTER ID NO: 092935	RECORD DRAWINGS	
PHASE: RECORD DRAWINGS		

6502  
**S13.0**  
SHEET 77 OF 129

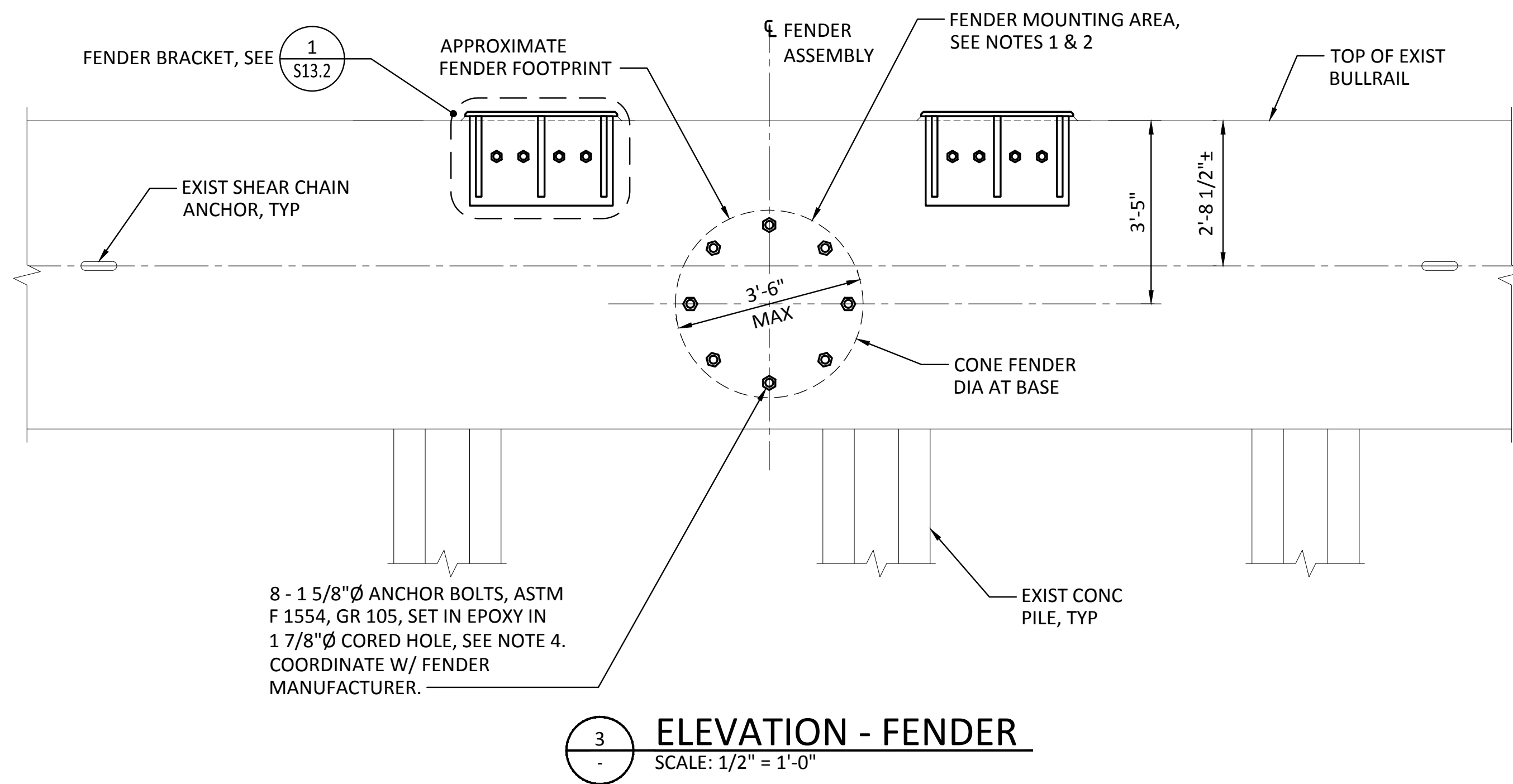
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**1 PLAN - FENDER AT BENTS 9 TO 19 (5 TOTAL)**  
 SCALE: 1/2" = 1'-0"



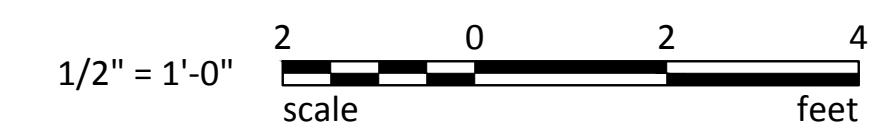
**2 SECTION - FENDER**  
 SCALE: 1/2" = 1'-0"



**3 ELEVATION - FENDER**  
 SCALE: 1/2" = 1'-0"

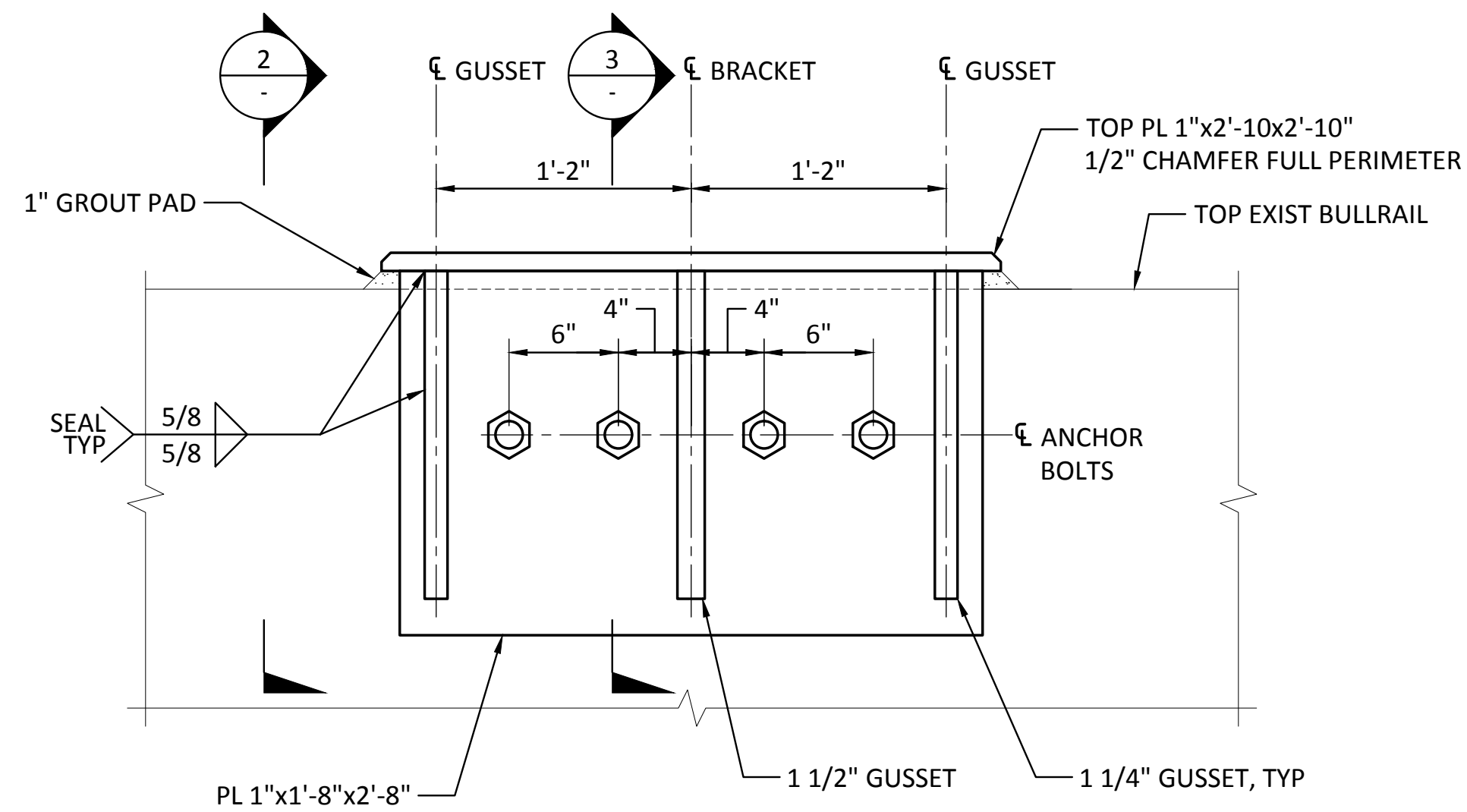
**FENDER SYSTEM NOTES:**

- SEE DWG S1.1 FOR MINIMUM ENERGY AND MAXIMUM REACTION REQUIREMENTS. FOR FENDER LOCATIONS, SEE DWG S2.0. SEE SPECIFICATIONS FOR DEFLECTION LIMITS AND OTHER REQUIREMENTS.
- FENDER SHOWN IS REPRESENTATIVE OF AN ACCEPTABLE PRODUCT. OTHER PRODUCTS THAT FIT WITHIN THE AREA ALLOWED FOR FENDER ASSEMBLY SHALL MEET SPECIFIED ENERGY AND REACTION PERFORMANCE CHARACTERISTICS MAY BE ACCEPTED SUBJECT TO ENGINEER'S PRIOR APPROVAL.
- PRIOR TO FABRICATING ANY MATERIALS FOR FENDER SYSTEM VERIFY SIZE, DIMENSIONS, AND LOCATIONS OF ALL ITEMS. INCLUDING RUBBER FENDER, UHMW-PE FACING, FENDER PANEL, FENDER SPACER, CHAINS, FENDER BOLTS, ANCHORS RODS OR BOLTS, EMBEDDED PLATES, ETC., SO THAT TIGHT CONNECTIONS CAN BE MADE AND ALL COMPONENTS ARE COMPATIBLE AND SNUG UPON COMPLETION.
- HOLES SHALL BE ROUGHENED TO 1/8" AMPLITUDE AND CLEANED PRIOR TO INSTALLATION OF ANCHOR BOLTS AND EPOXY.

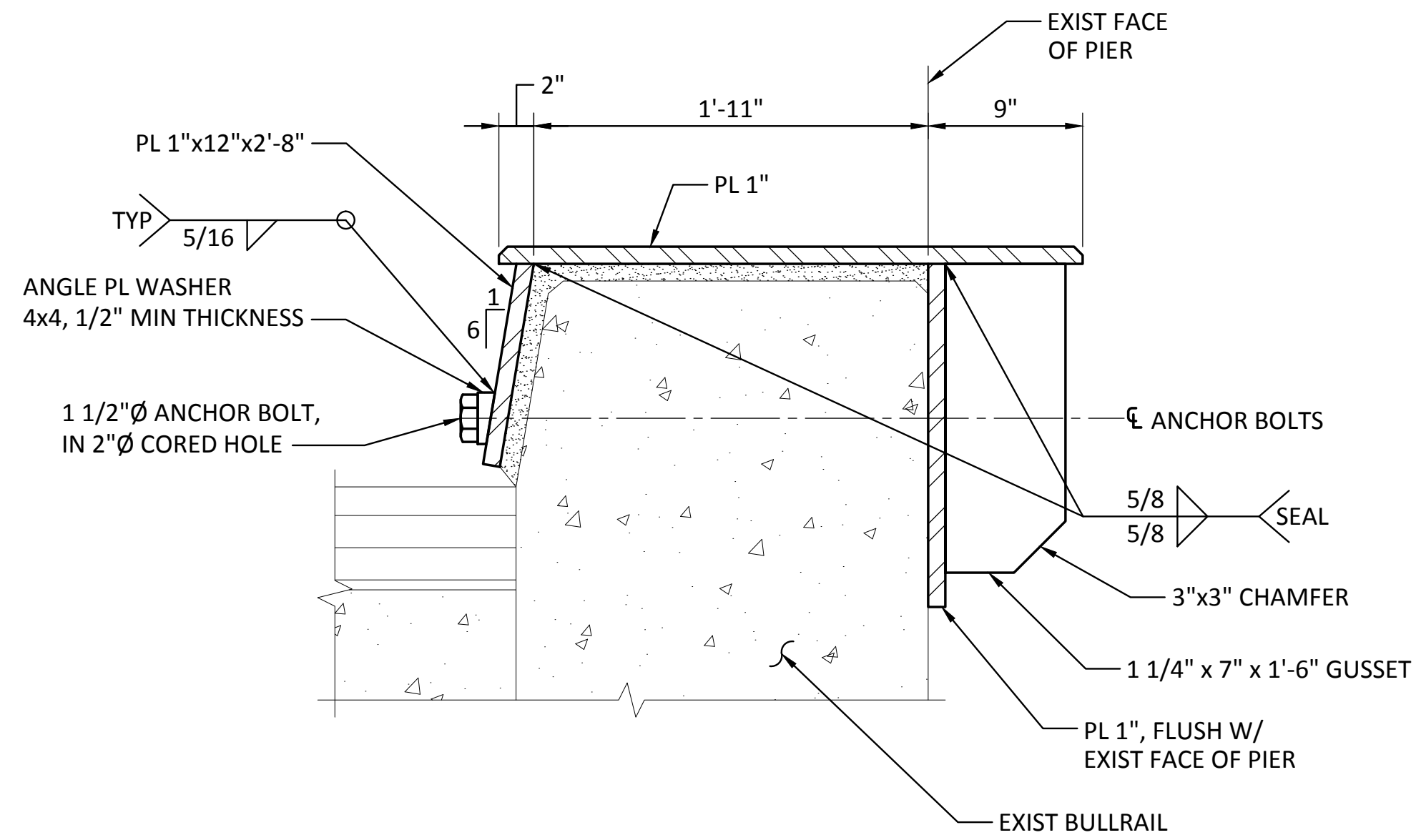


 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	 P.O. BOX 1887 TACOMA, WA 98401-0188		CSB 7/17/13	DATE 7/17/13
	MARK: REVISION:	BY: APPR:	DATE:	APPROVED: DC 7/17/13
<b>PIER 3 UPGRADE</b>		<b>FENDER SYSTEM DETAILS</b> SHEET 2		
CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	DATE: 092935
MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN	PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
PHASE: RECORD DRAWINGS PARCEL: 27				

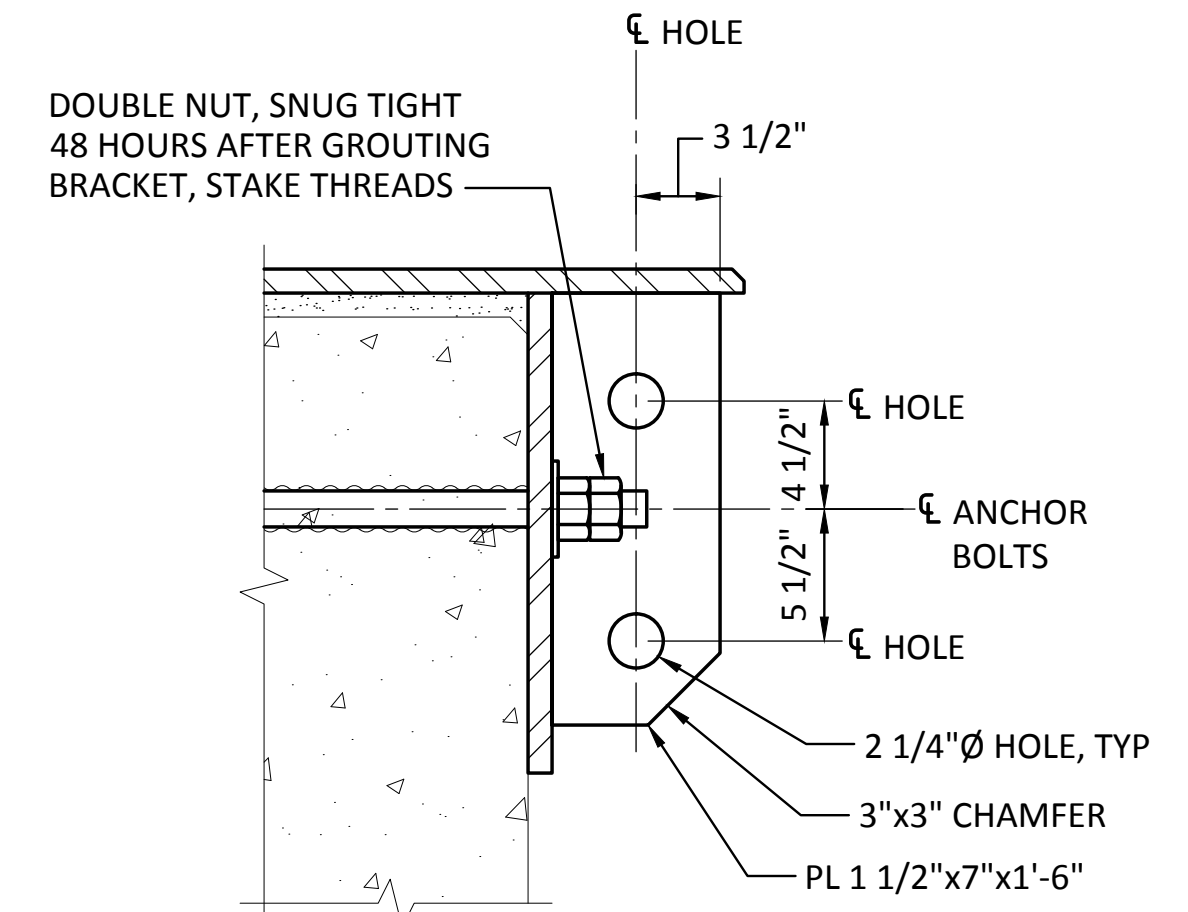
6502  
S13.1



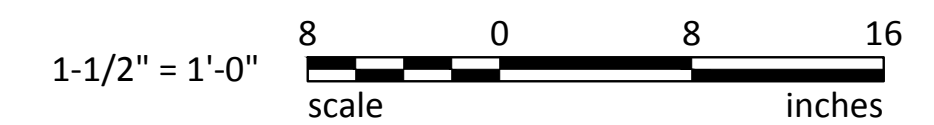
1 ELEVATION - FENDER BRACKET  
 S13.1 SCALE: 1 1/2" = 1'-0"



2 SECTION - BRACKET  
 S13.2 SCALE: 1 1/2" = 1'-0"

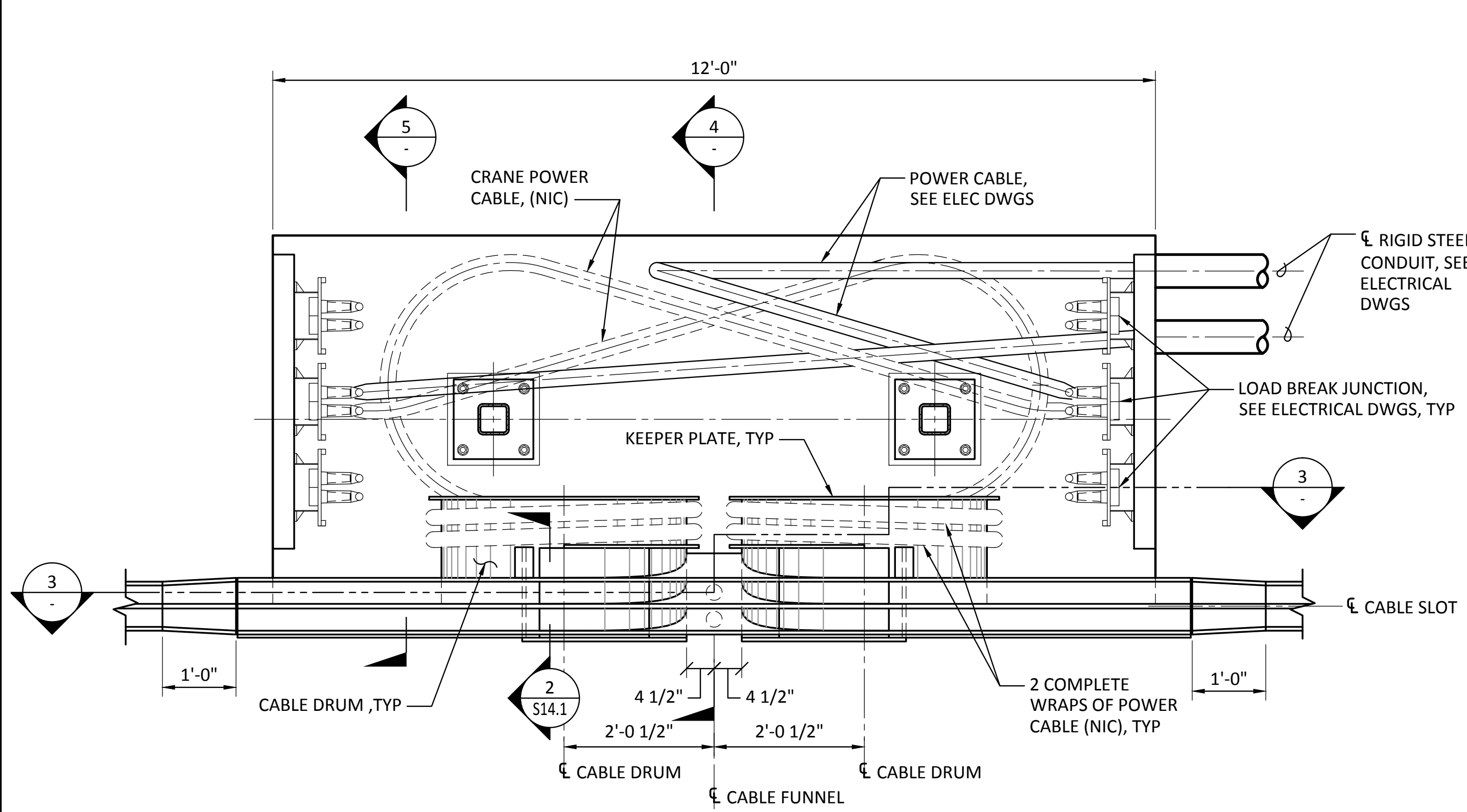


3 SECTION - BRACKET  
 S13.2 SCALE: 1 1/2" = 1'-0"

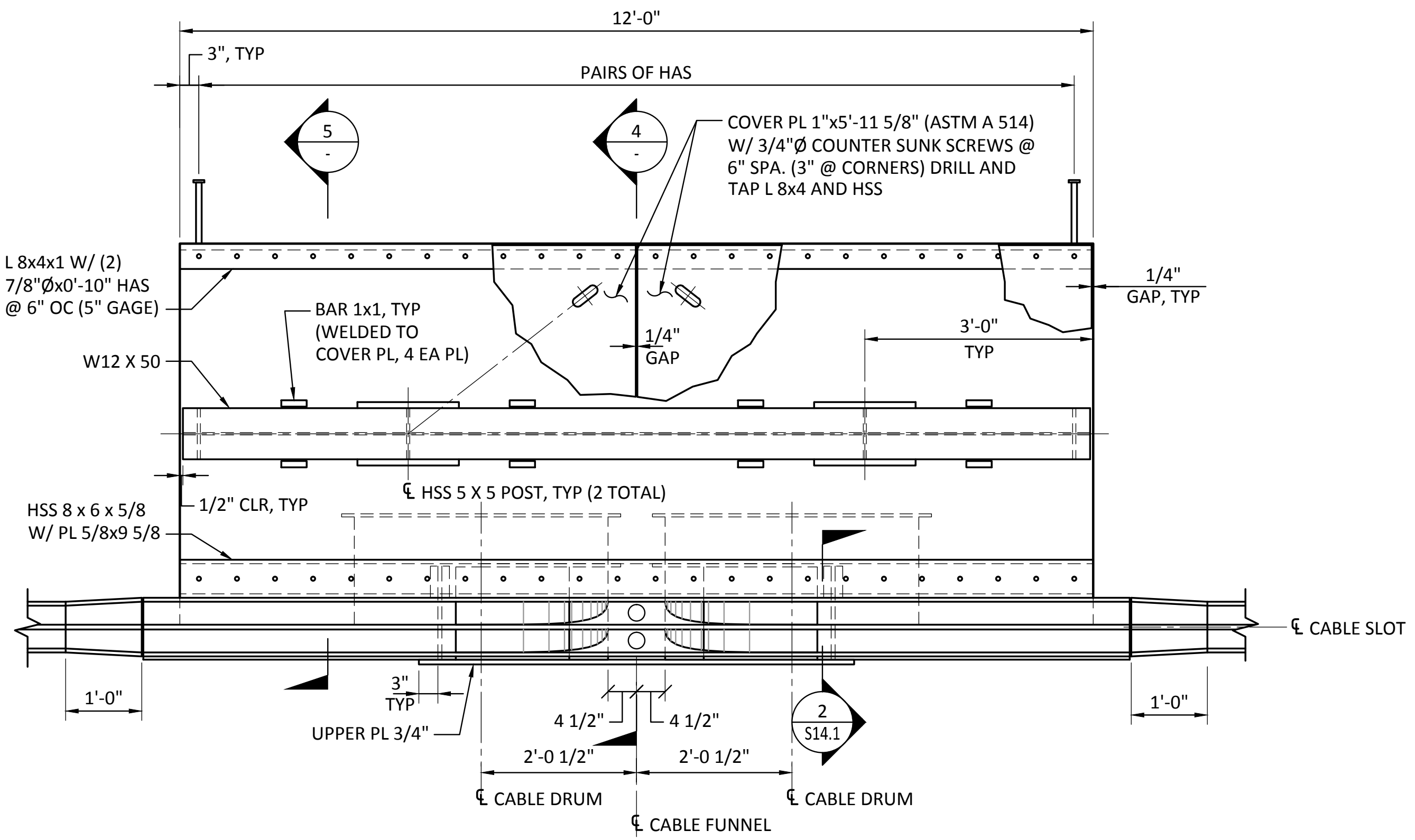


<p>6502  <b>S13.2</b>                  SHEET 79 OF 129</p>	<p>PIER 3 UPGRADE</p>		<p>CSB 7/17/13</p>	<p>DATE 7/17/13</p>
	<p>FENDER SYSTEM DETAILS                  SHEET 3</p>		<p>DC 7/17/13</p>	<p>DATE 7/17/13</p>
<p>CONT/CONS: 069458</p>	<p>TOWNSHIP: 21 N</p>	<p>RANGE: 3 E</p>	<p>SECTION: 27</p>	<p>PROJ. ENGR jason.mendenhall</p>
<p>MASTER ID NO: 092935</p>	<p>DAT-HRZ: NAD 83-07</p>	<p>VERT: NOS TIDAL (MLLW = 0.0)</p>	<p>PRINTED BY: jason.mendenhall</p>	<p>DATE 7/17/13</p>
<p>PHASE: RECORD DRAWINGS</p>	<p>PARCEL: 27</p>	<p>DRAWING SCALE: AS SHOWN</p>	<p>PORT ADDRESS: ONE SITCUM WAY                  TACOMA, WA 98421-2300</p>	<p>DATE:</p>
<p>Port of Tacoma                  P.O. BOX 187 TACOMA, WA 98401-0187 (253)585-8441</p>		<p>MARK: REVISION:</p>		<p>BY: APPR: DATE:</p>
<p>Berger/ABAM                  33301 9th Avenue South, Suite 300                  Federal Way, Washington 98003-2600                  (206) 451-2300 Fax: (206) 451-2250</p>		<p>THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION</p>		

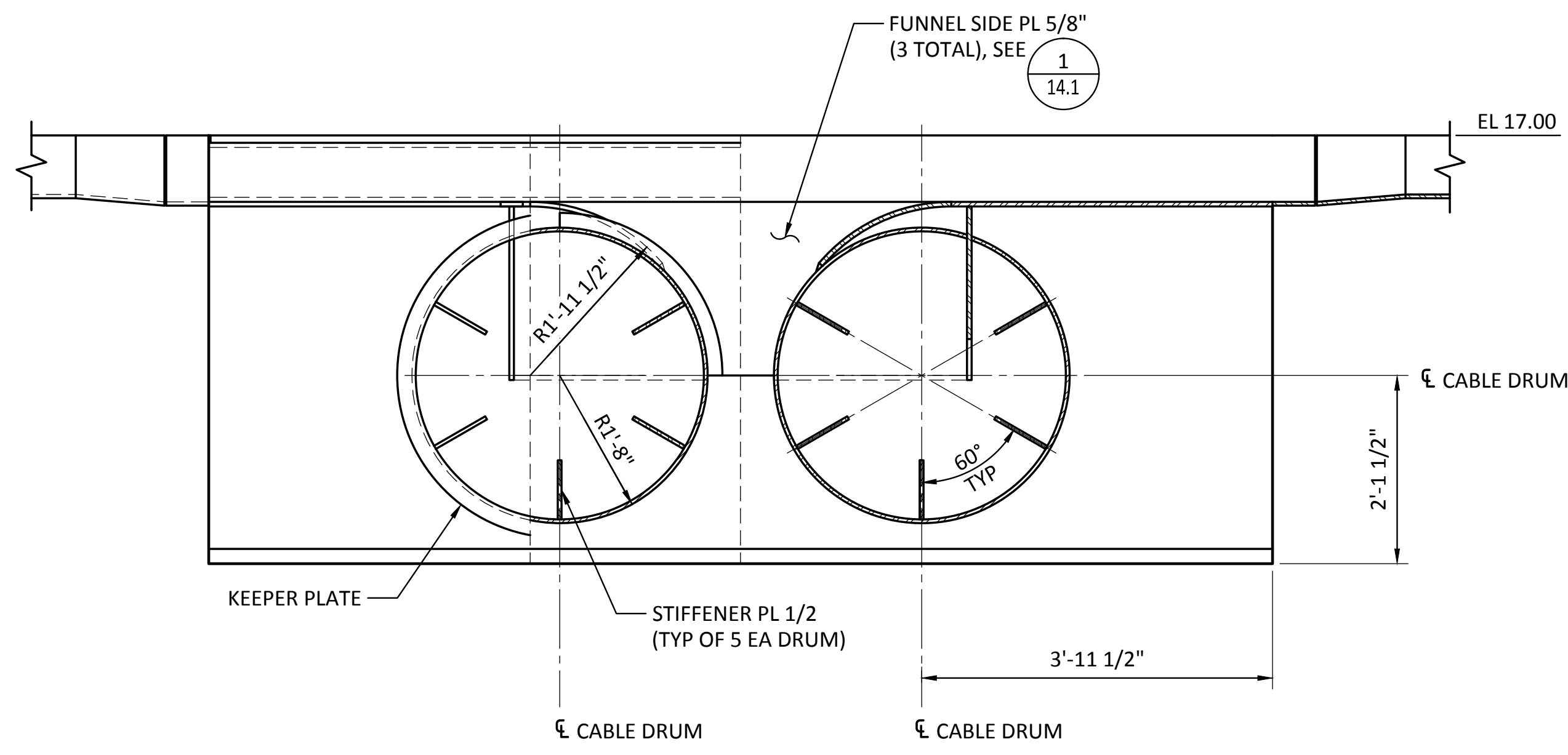
BINDING EDGE



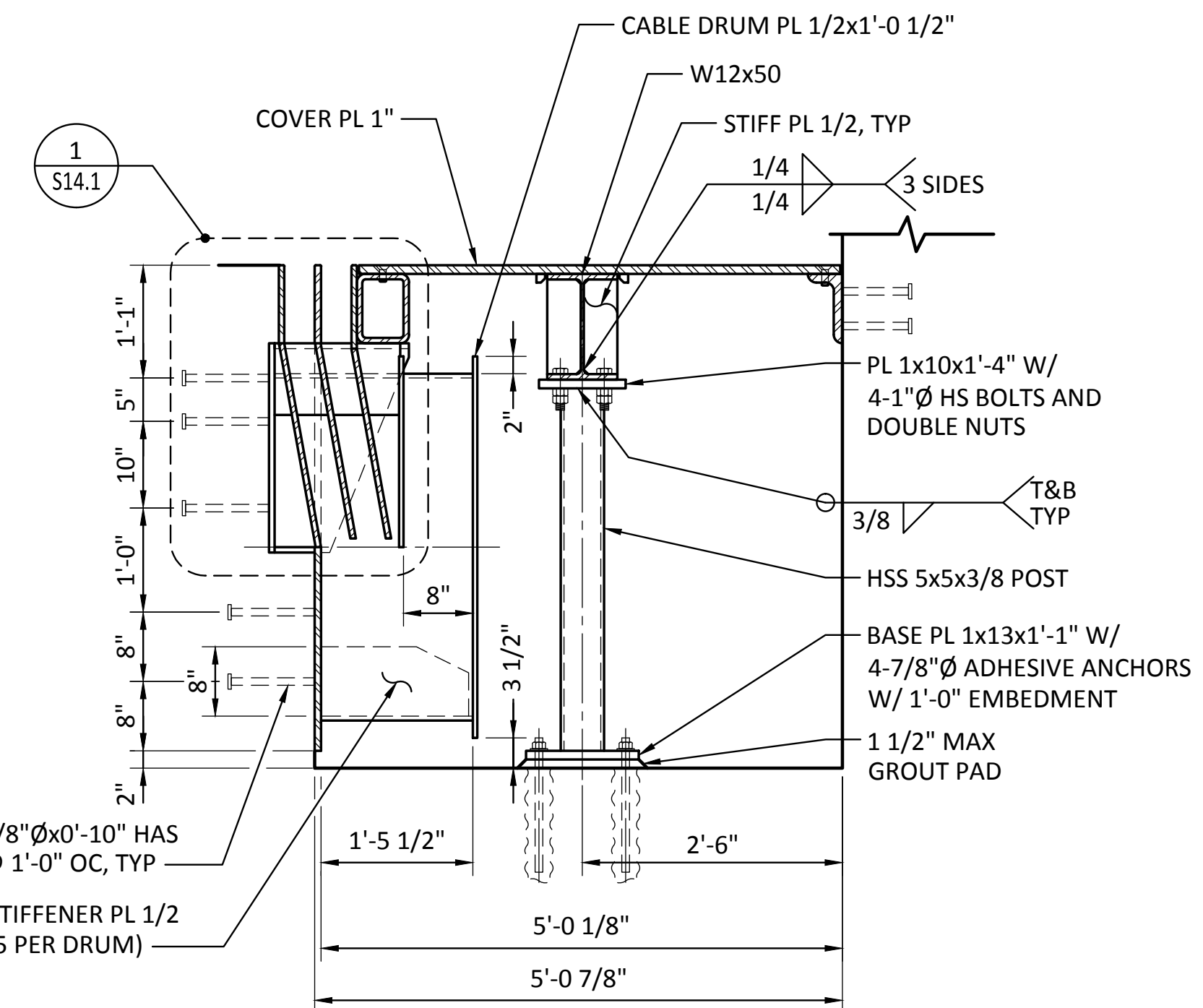
**1 PLAN - CRANE POWER VAULT**  
SCALE: 3/4" = 1'-0"



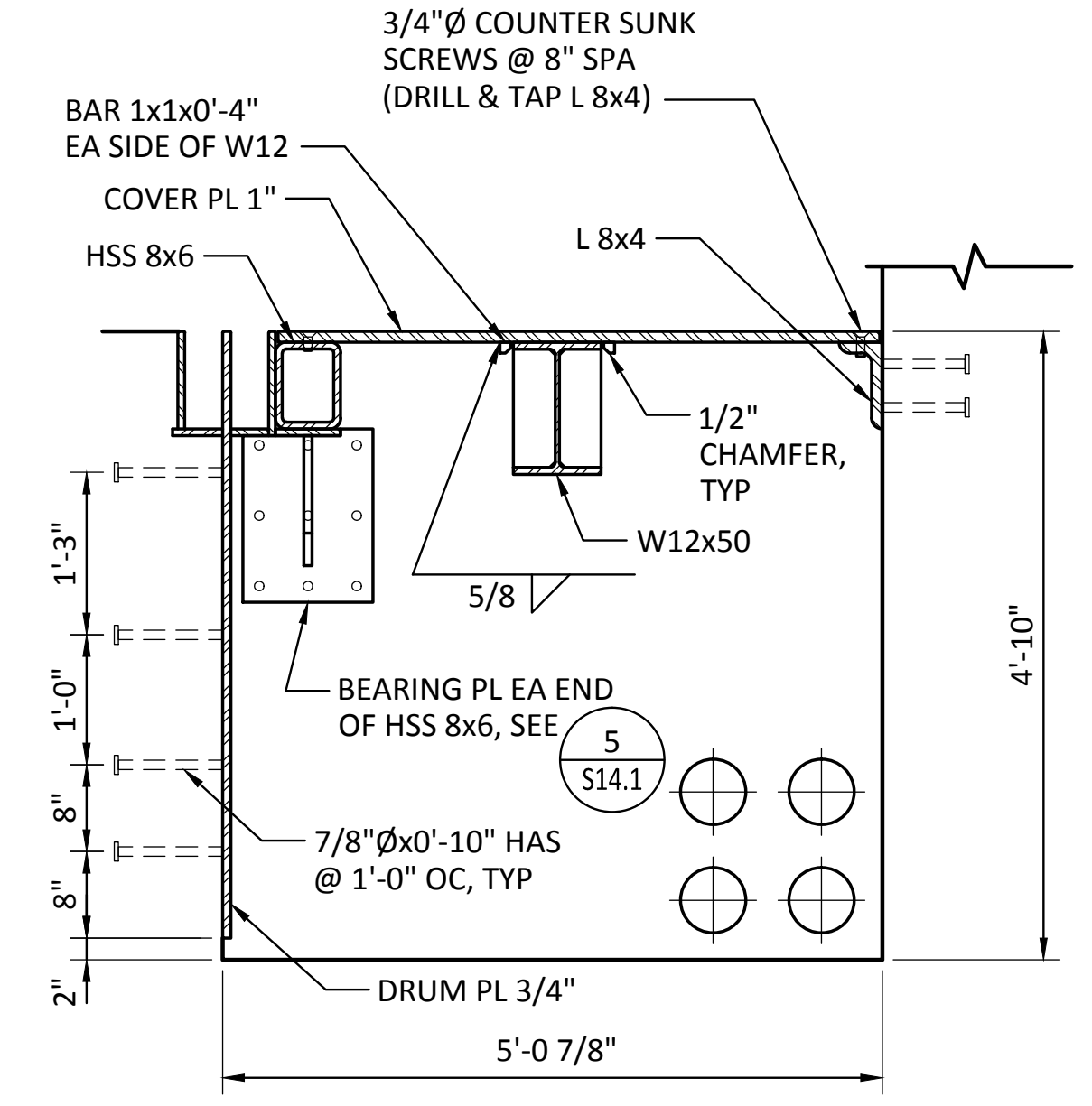
**2 PLAN - CRANE POWER VAULT**  
SCALE: 3/4" = 1'-0"



**3 SECTION - CRANE POWER VAULT**  
SCALE: 3/4" = 1'-0"

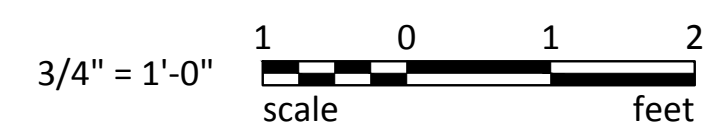


**4 SECTION - CRANE POWER VAULT**  
SCALE: 3/4" = 1'-0"



**5 SECTION - CRANE POWER VAULT**  
SCALE: 3/4" = 1'-0"

NOTE:  
SLOPE OF CONCRETE FLOOR  
NOT SHOWN, SEE DWG S8.2



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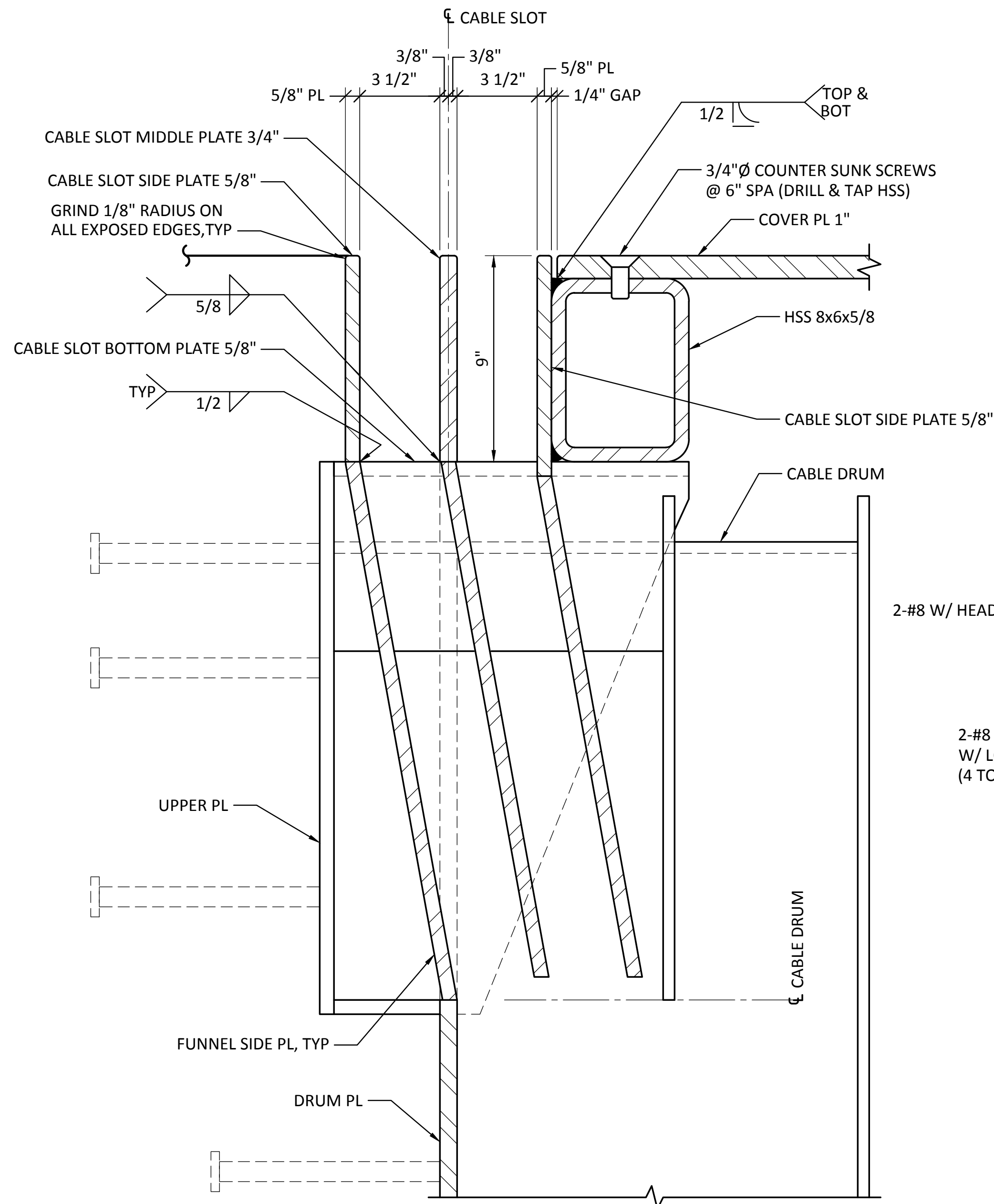
RECORD DRAWINGS:  
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	REVISION: _____ MARK: _____
 P.O. BOX 1887 TACOMA, WA 98401-0188 PROFESSIONAL	
APPROVED: _____ DC: _____ DIR OF ENG: _____ PRINTED BY: Jason.mendenhall PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	CSB: 7/17/13 CHECKED BY: JRG PROJ. ENGR: jason.mendenhall DATE: 7/17/13 DATE: 7/17/13
<b>PIER 3 UPGRADE</b> <b>CRANE POWER VAULT DETAILS</b> <b>SHEET 1</b>	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 NOS TIDAL (MILLW = 0.0) DATE: MAR 23 2015 DAT-HRZ: NAD 83-07 VERT: _____ DRAWING SCALE: AS SHOWN PARCEL: 27
6502 <b>S14.0</b> SHEET 80 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

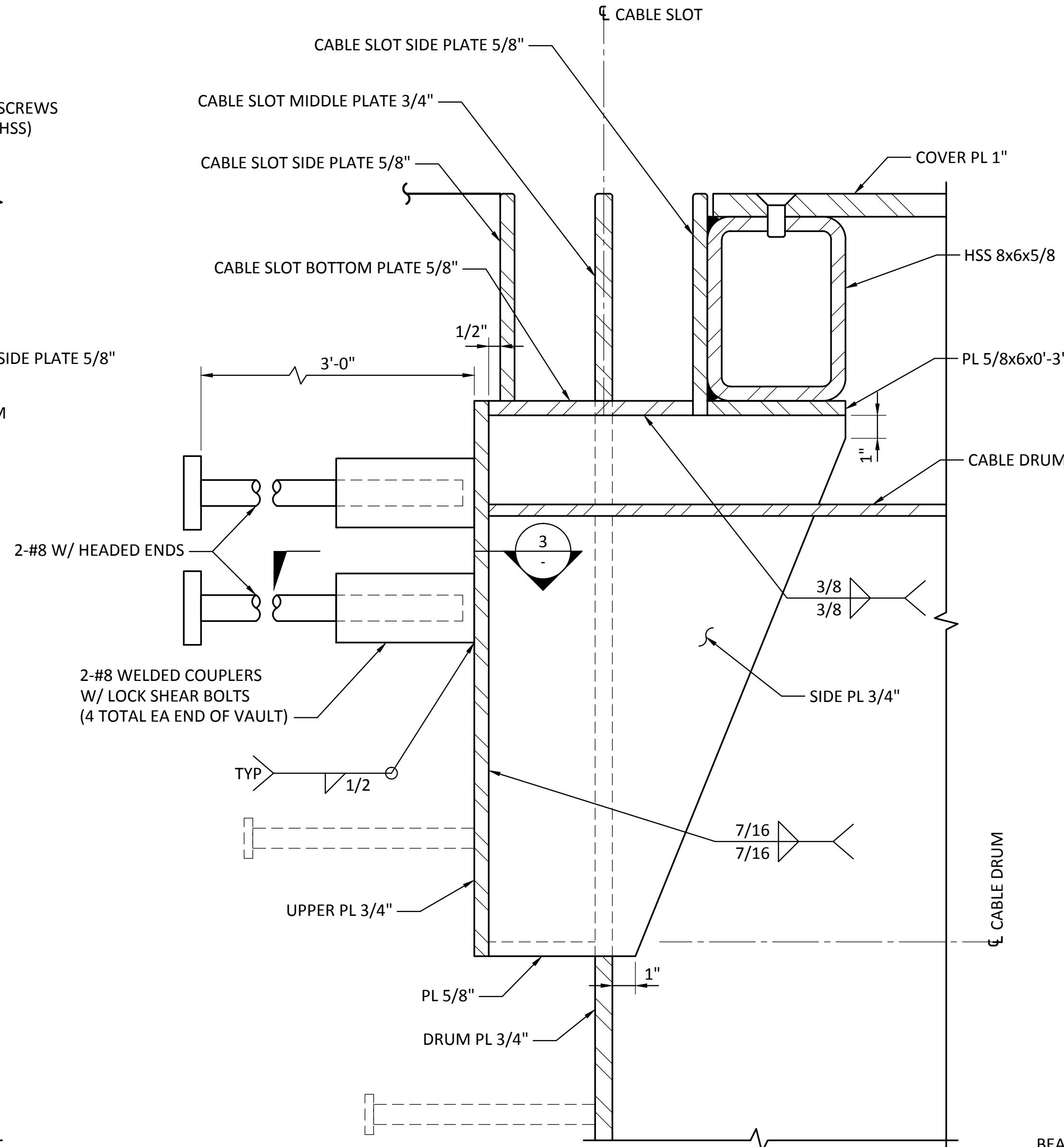
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BINDING EDGE

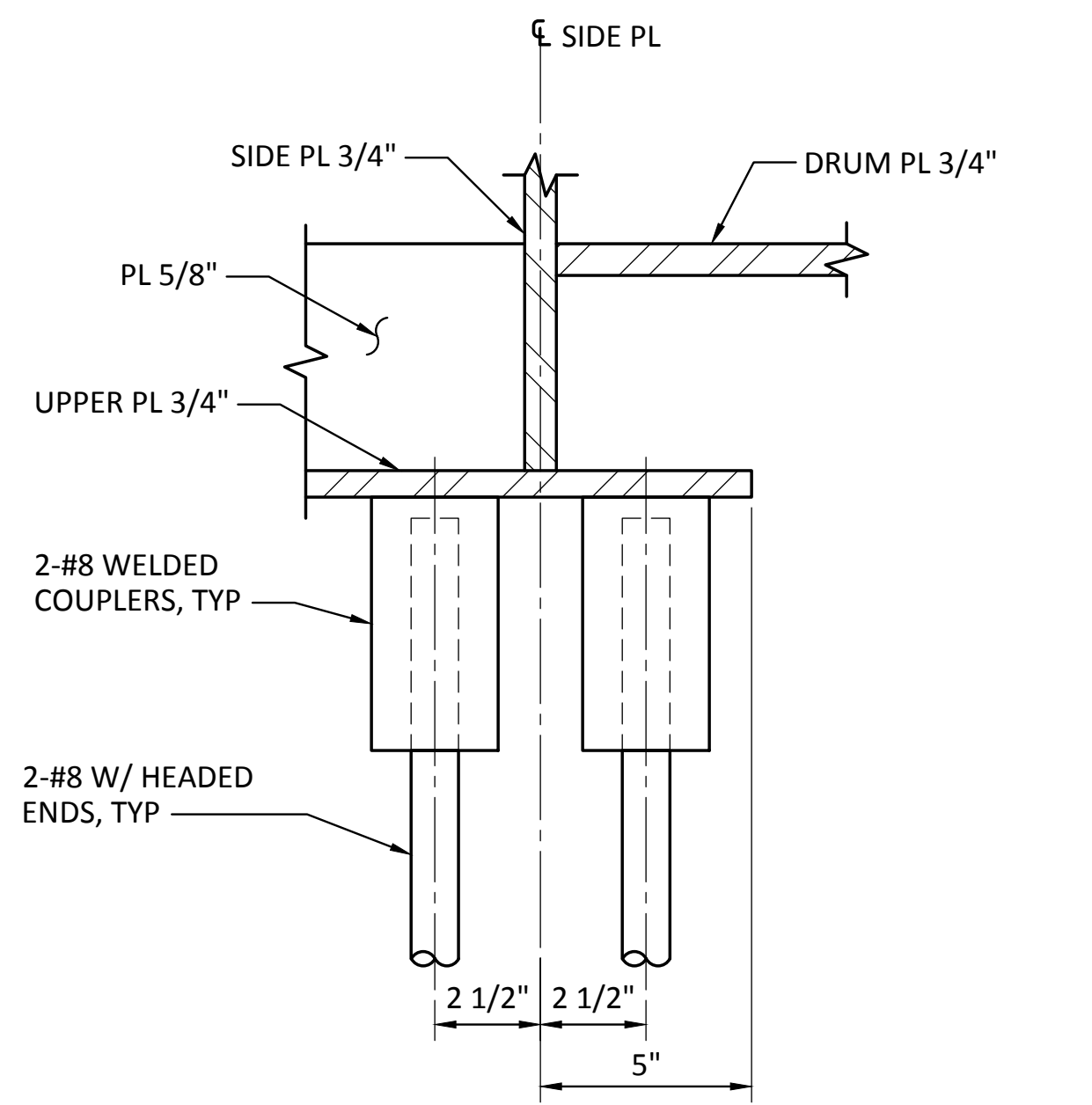


**1**  
S14.0  
**DETAIL**  
SCALE: 3" = 1'-0"

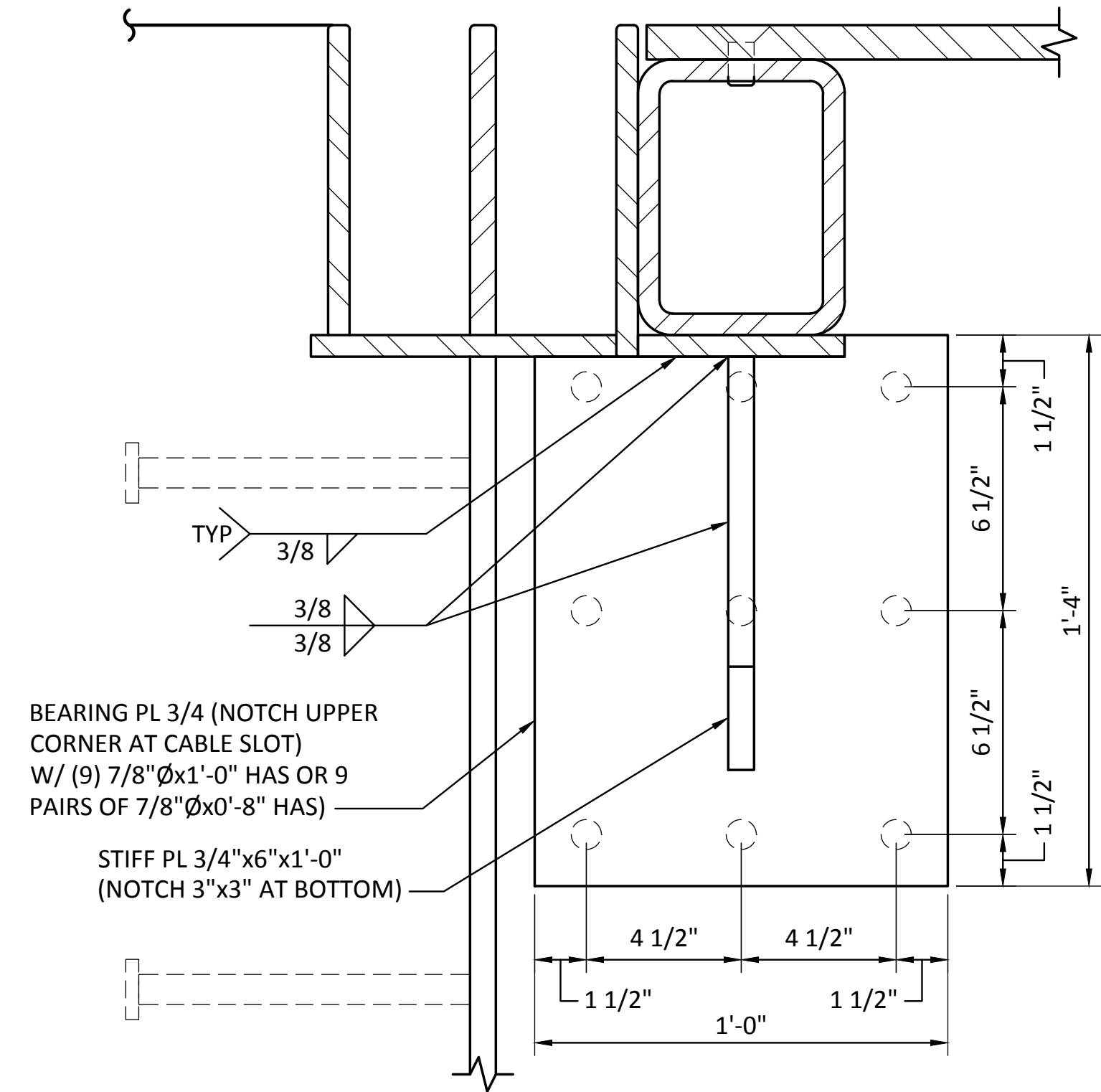


NOTE:  
FOR INFO NOT  
SHOWN, SEE **1**

**2**  
S14.0  
**SECTION**  
SCALE: 3" = 1'-0"

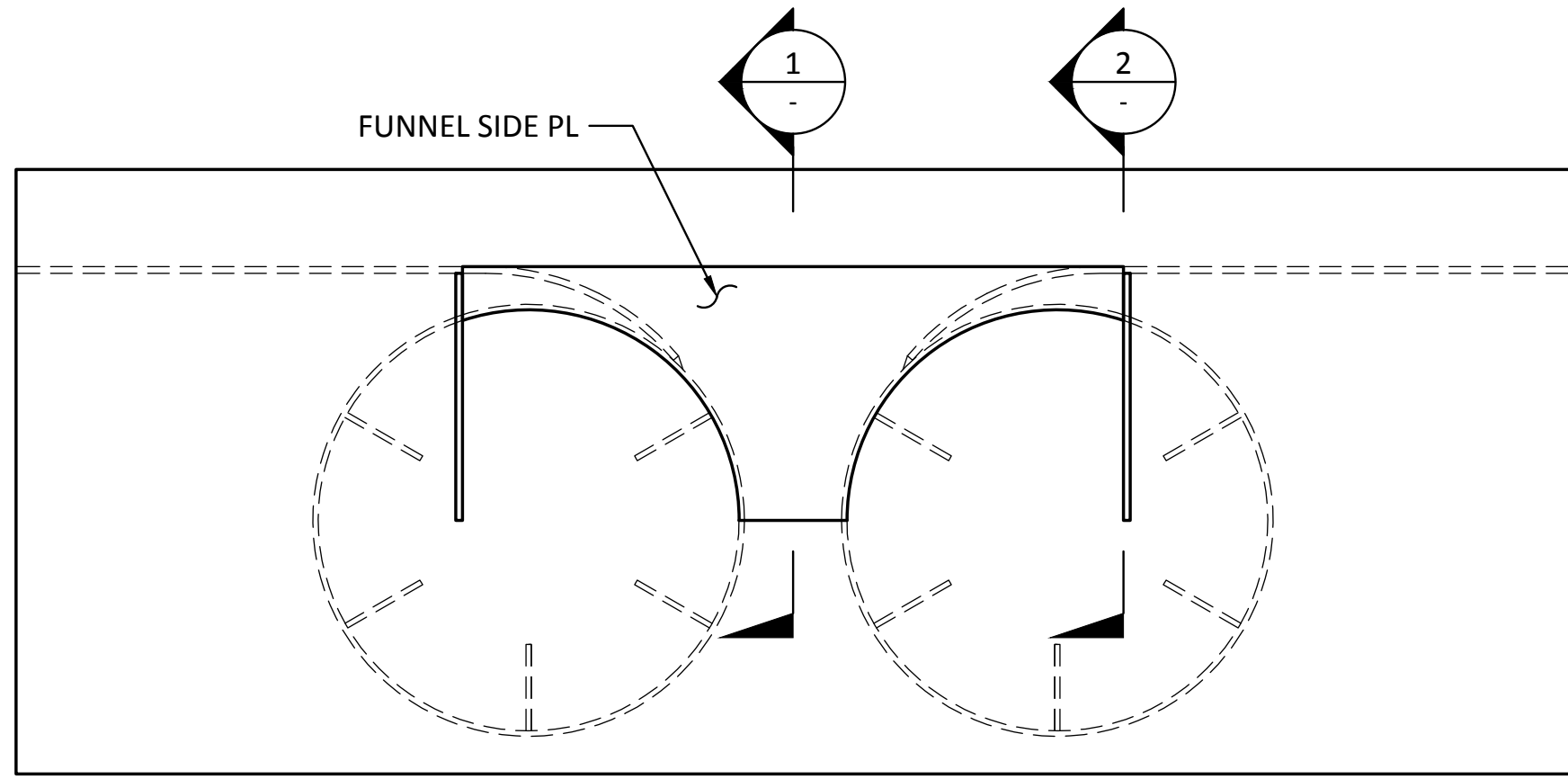


**3**  
SCALE: 3" = 1'-0"

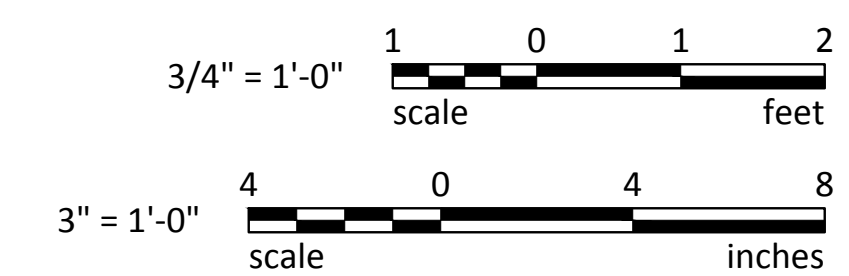


**5**  
SCALE: 3" = 1'-0"

- NOTES:
- EMBED BEARING PLATE FLUSH W/ FACE OF CONCRETE WALL
  - FOR INFO NOT SHOWN, SEE **2**



**4**  
SCALE: 3/4" = 1'-0"  
**ELEVATION - DRUM PLATE**



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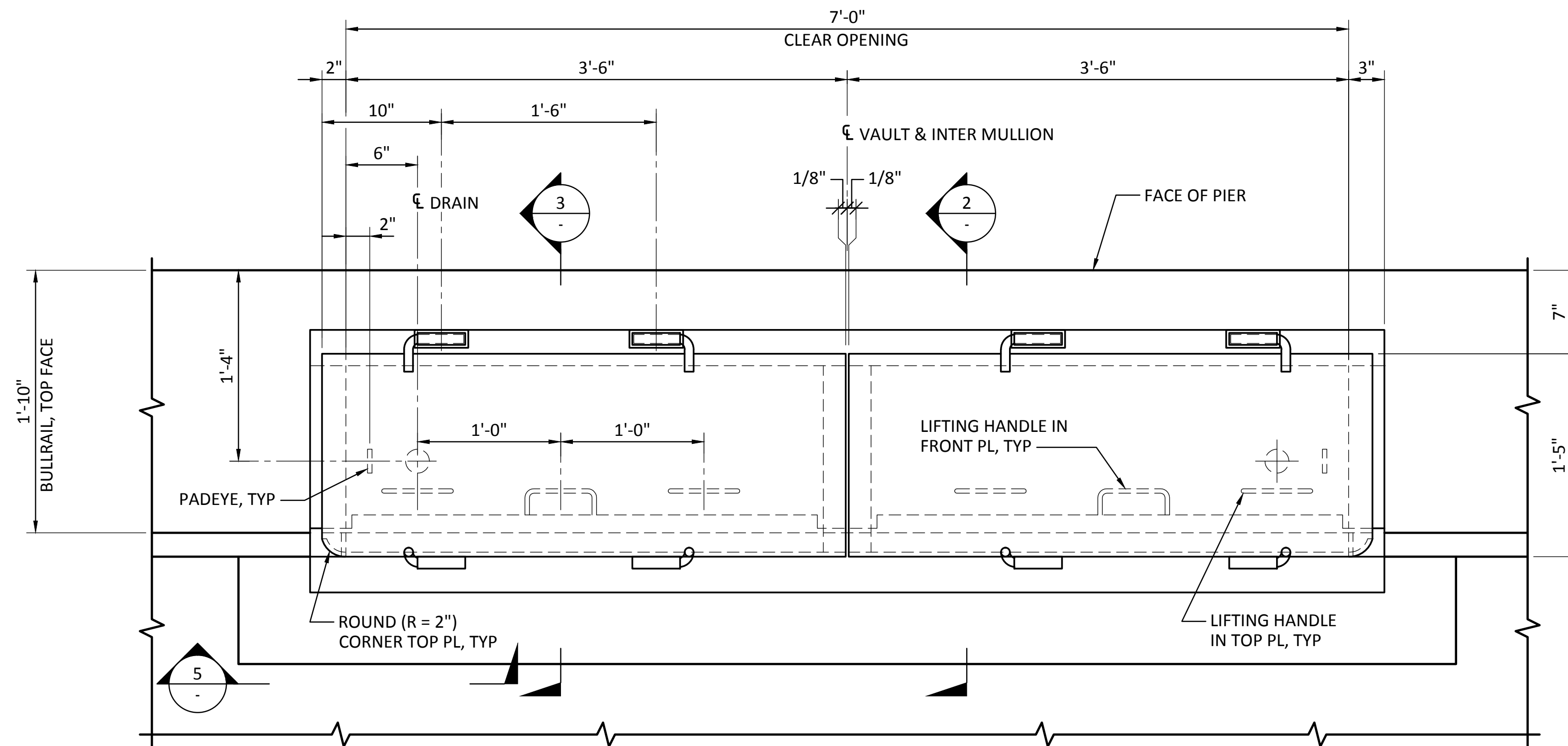
RECORD DRAWINGS:  
THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INFORMATION PROVIDED BY OTHERS.  
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<p>33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250</p>		<p>DATE:</p>
<p>P.O. BOX 1887 TACOMA, WA 98401-0188</p>		<p>BY:</p>
		<p>REVISION:</p>
<p>MARK:</p>		<p>APPR:</p>
<p>CSB</p>		<p>DATE</p>
<p>7/17/13</p>		<p>7/17/13</p>
<p>CHECKED BY: JRG</p>		<p>DATE</p>
<p>7/17/13</p>		<p>DATE</p>
<p>DIR OF ENG: Jason.mendenthal</p>		<p>PROJ. ENGR</p>
<p>PRINTED BY: Jason.mendenthal</p>		<p>TACOMA, WA 98421-2300</p>
<p>PORT ADDRESS: ONE SITCUM WAY</p>		<p>AS SHOWN</p>
<p>TACOMA, WA 98421-2300</p>		<p>DRAWING SCALE:</p>
<p>AS SHOWN</p>		<p>SECTION: 27</p>
<p>NO. TIDAL (MILLW = 0.0)</p>		<p>TOWNSHIP: 21 N</p>
<p>PARCEL: 27</p>		<p>RANGE: 3 E</p>
<p>DATE: NAD 83-07</p>		<p>VERT: NOS TIDAL (MILLW = 0.0)</p>
<p>DATE: 27</p>		<p>SECTION: 27</p>
<p>DATE: 27</p>		<p>SECTION: 27</p>

6502  
**S14.1**  
SHEET 81 OF 129

CONTR: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

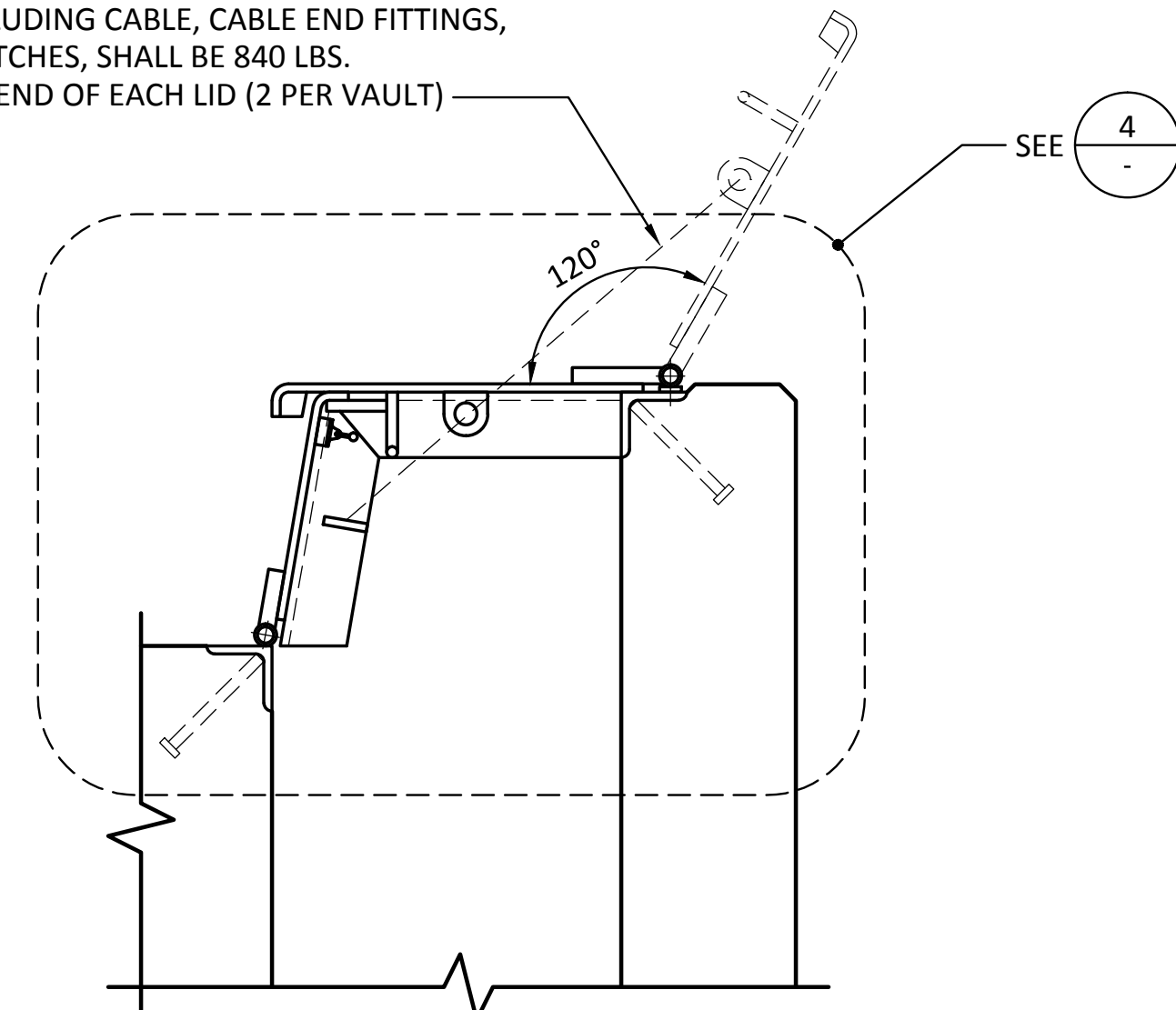
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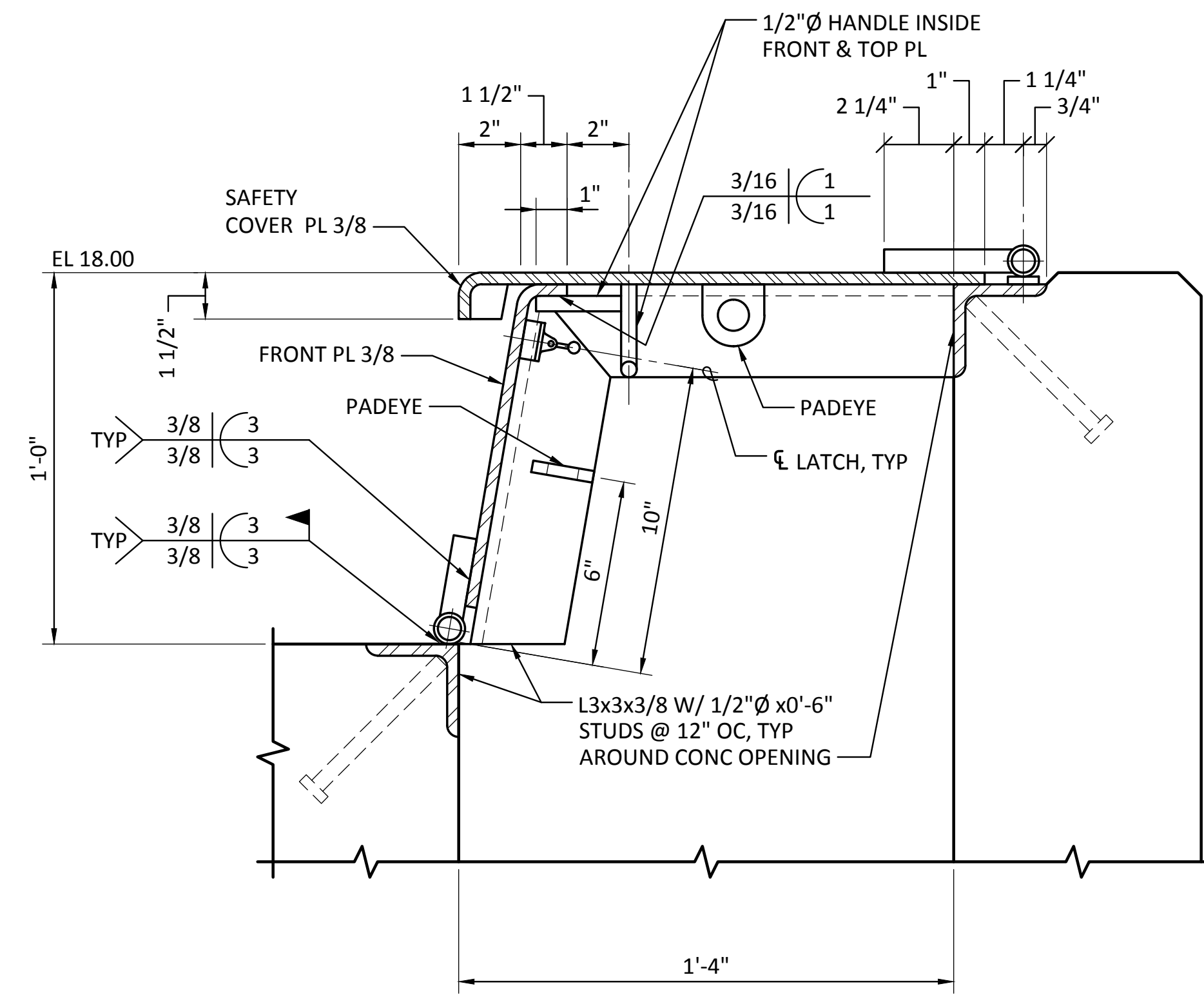
1 PLAN - UTILITY VAULT  
SCALE: 1 1/2" = 1'-0"

- NOTES:
1. PAINT DESIGNATOR SIGNS - "WATER" & "ELECTRICAL" ON TOP OF RESPECTIVE VAULTS. USE HELVETICA FONT 4" TALL TEXT.
  2. CONTRACTOR SHALL VERIFY AND COORDINATE ALL PENETRATIONS PRIOR TO FABRICATION AND SHOW ON SHOP DWGS.

GALV AIRCRAFT CABLE ASSEMBLY W/ SPRING LATCH AT EACH END. MINIMUM WORKING LOAD LIMIT FOR ASSEMBLY, INCLUDING CABLE, CABLE END FITTINGS, AND SPRING LATCHES, SHALL BE 840 LBS. PROVIDE (1) AT END OF EACH LID (2 PER VAULT)

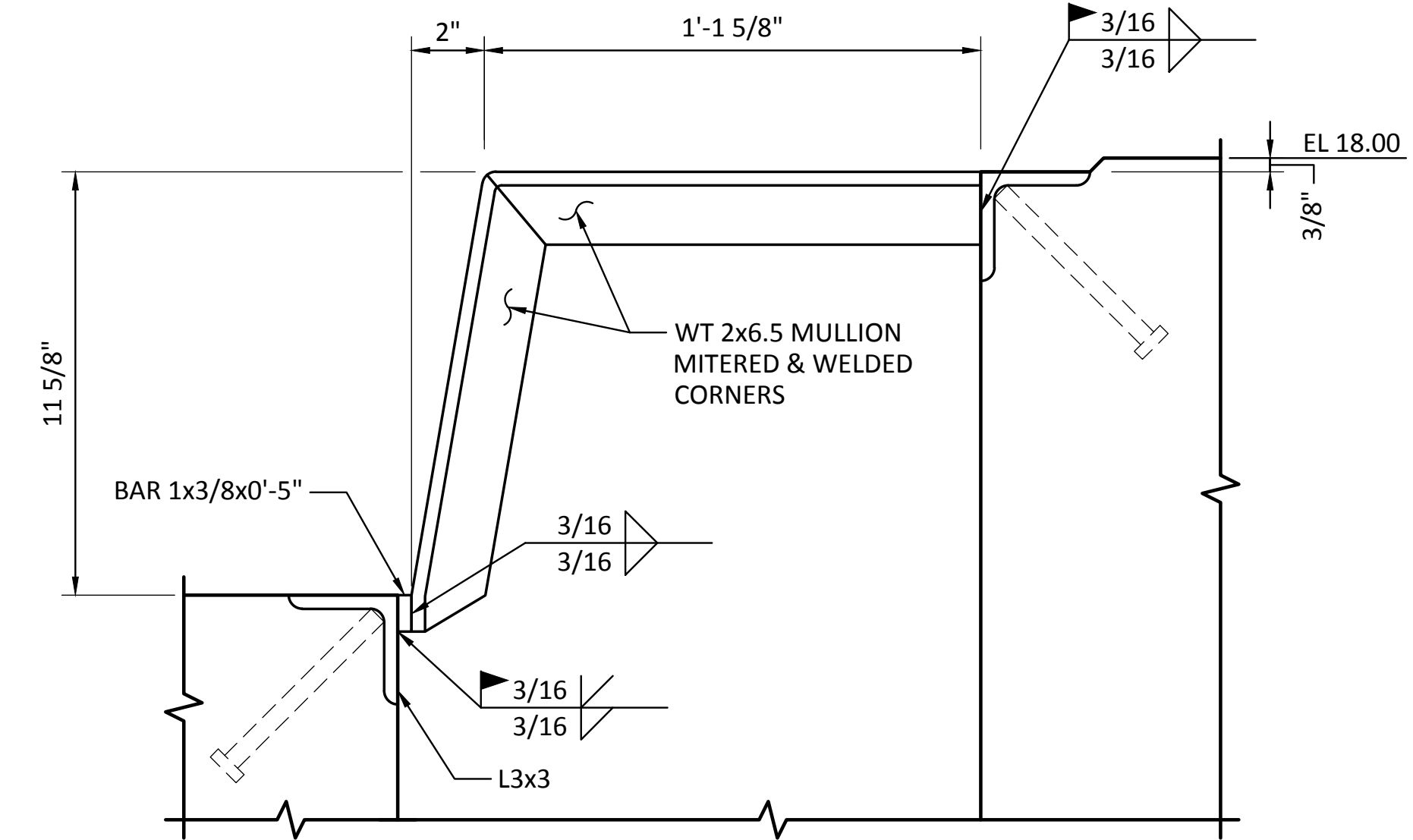


3 SECTION - UTILITY VAULT  
SCALE: 1" = 1'-0"

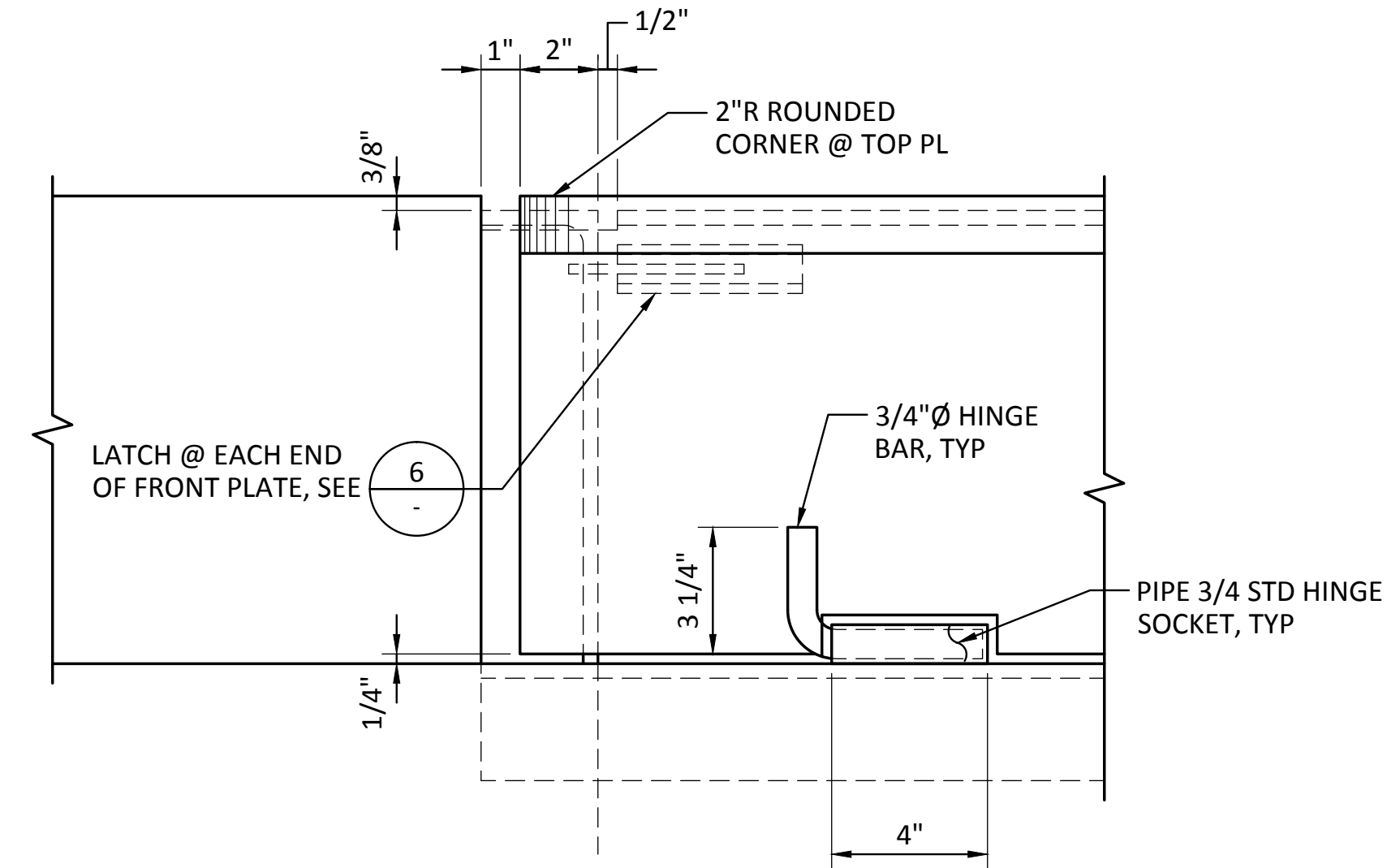


4 DETAIL - VAULT COVER  
SCALE: 3" = 1'-0"

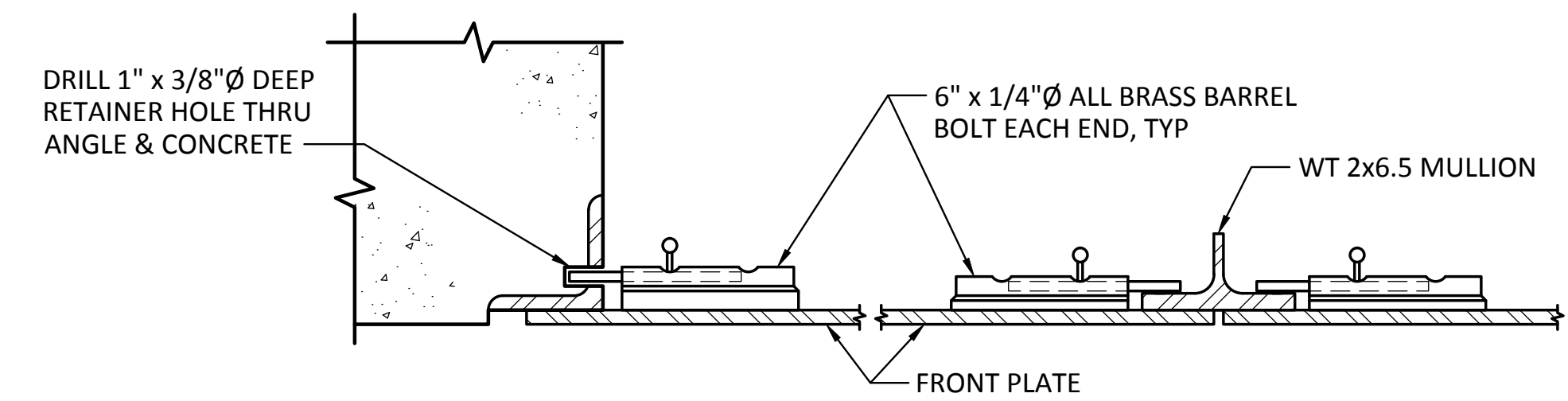
NOTE: LID WIRE RESTRAINT NOT SHOWN FOR CLARITY.



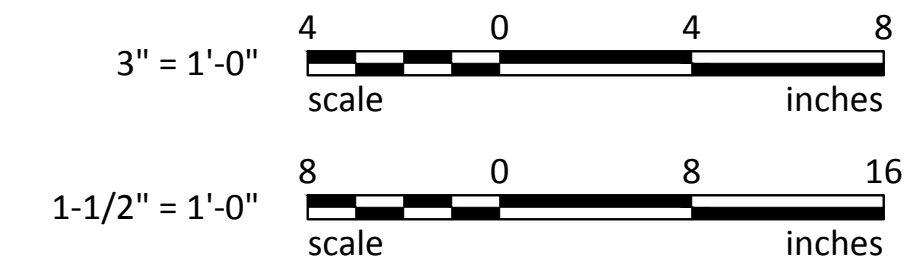
2 SECTION - INTERMEDIATE MULLION  
SCALE: 3" = 1'-0"



5 ELEVATION - FRONT PLATE  
SCALE: 3" = 1'-0"



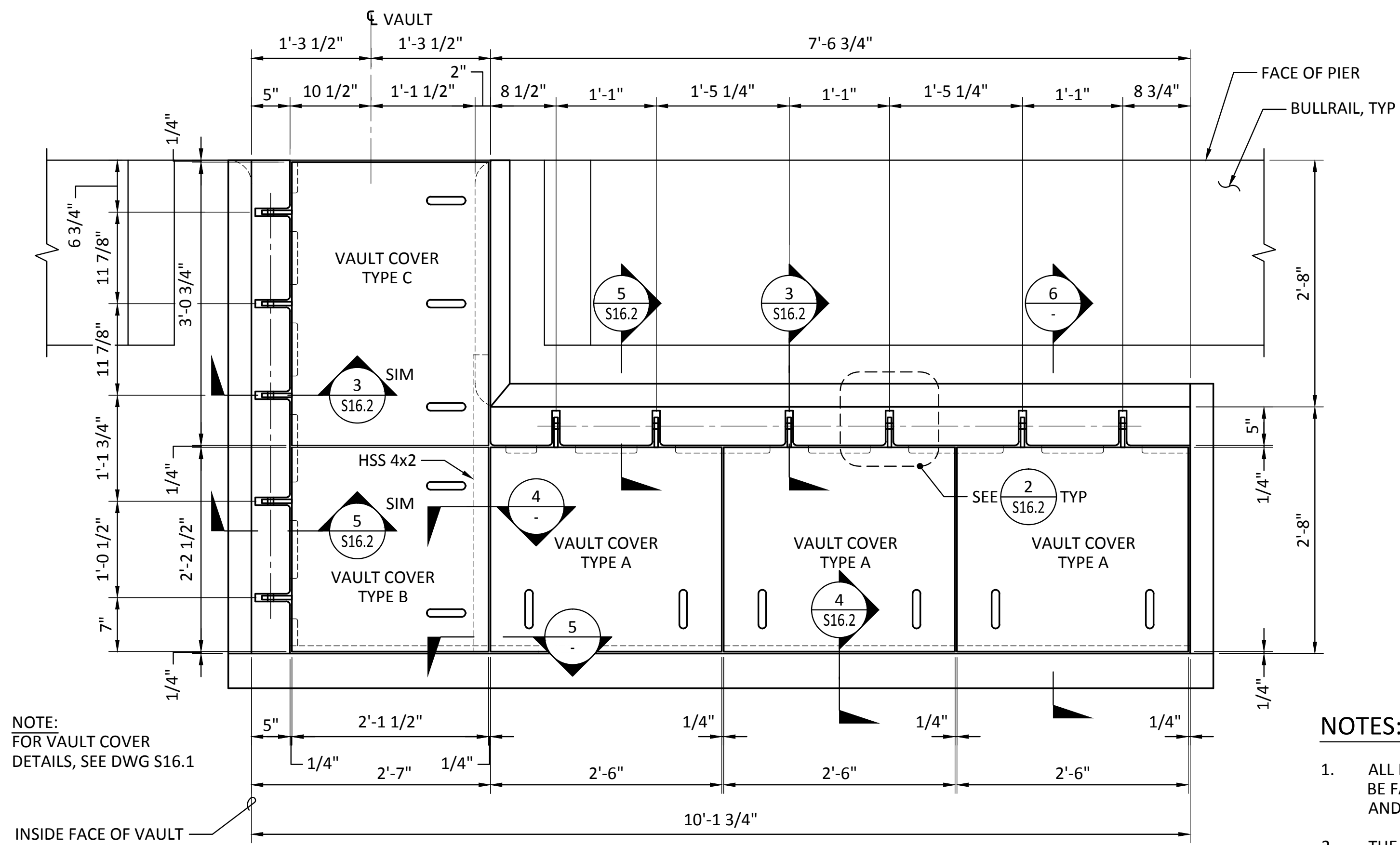
6 PLAN - LATCH DETAIL  
SCALE: 3" = 1'-0"



CSB	7/17/13	DATE
CHECKED BY	JRG	7/17/13
PROJ. ENGR	Jason Mendenhall	DATE
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PORT ADDRESS		DATE

PIER 3 UPGRADE	
UTILITY VAULT DETAILS	
TOWNSHIP: 21 N	RANGE: 3 E SECTION: 27
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)
PARCEL: 27	DRAWING SCALE: AS SHOWN

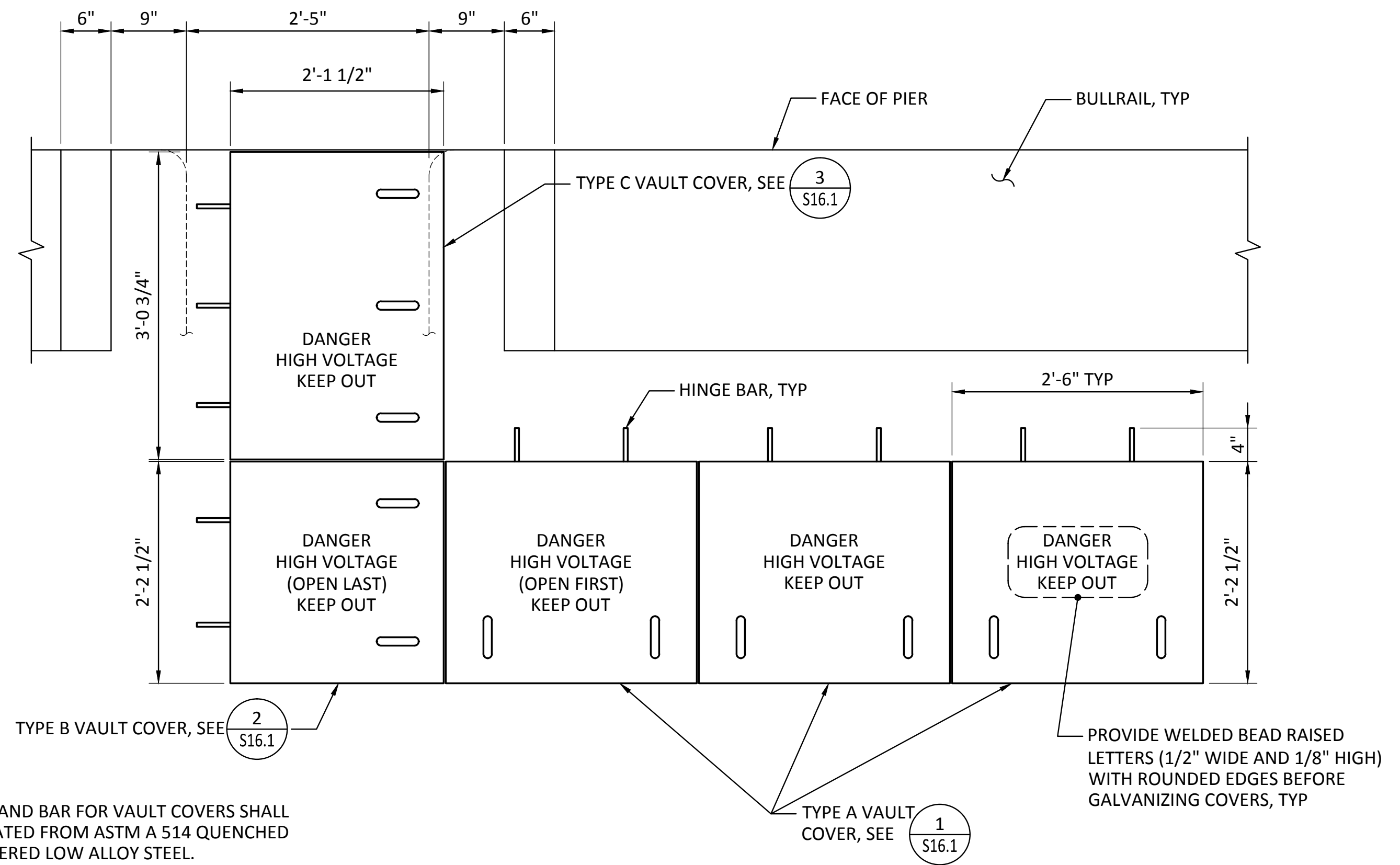
BINDING EDGE



NOTE:  
FOR VAULT COVER  
DETAILS, SEE DWG S16.1

INSIDE FACE OF VAULT

**1 PLAN**  
SCALE: 1" = 1'-0"



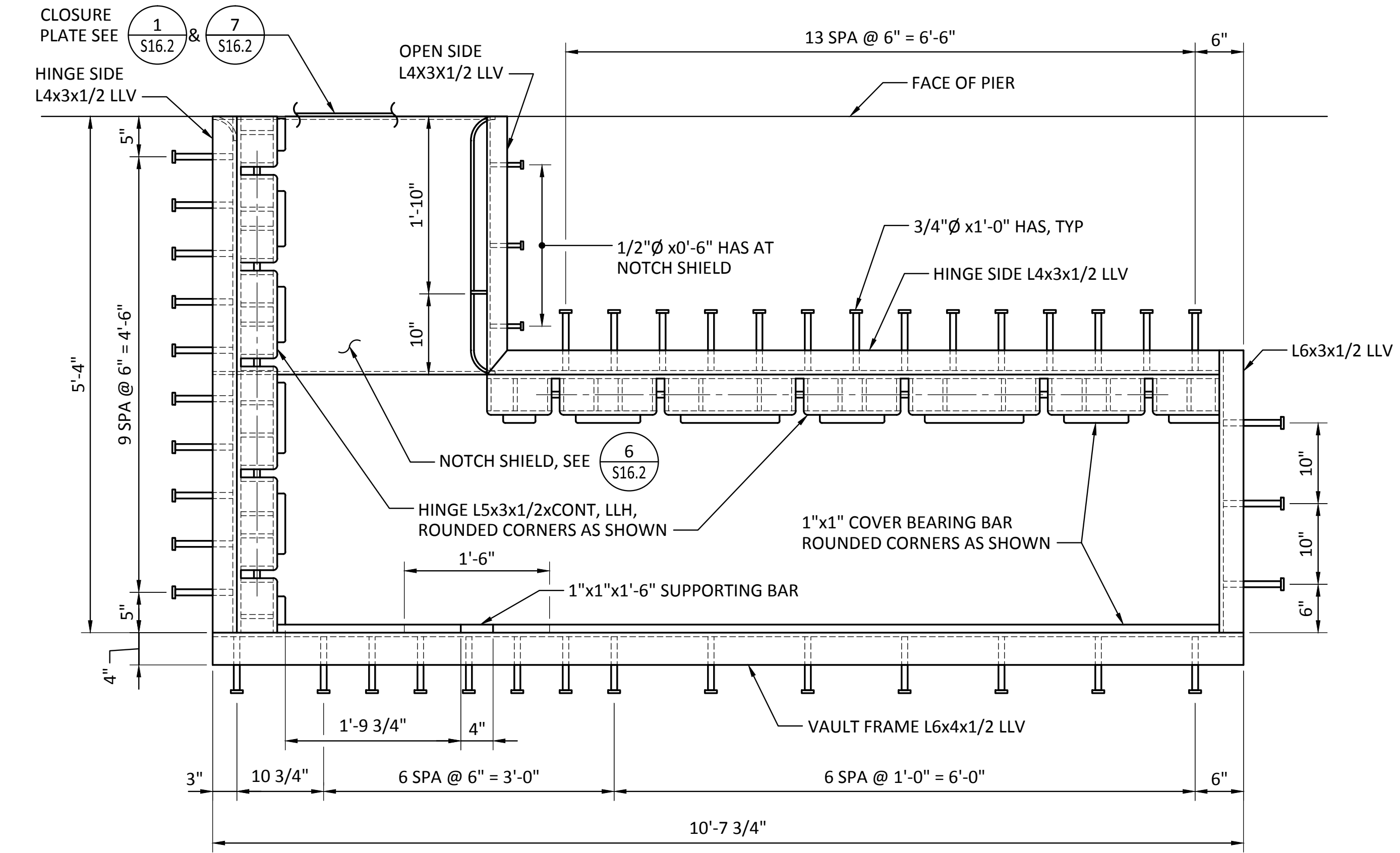
- NOTES:**
- ALL PLATE AND BAR FOR VAULT COVERS SHALL BE FABRICATED FROM ASTM A 514 QUENCHED AND TEMPERED LOW ALLOY STEEL.
  - THE TERM "PLATE" AND "BAR" HAVE BEEN USED INTERCHANGEABLY FOR SOME ASTM A 514 MATERIAL CALL OUTS.

**2 PLAN - COVERS**  
SCALE: 1" = 1'-0"

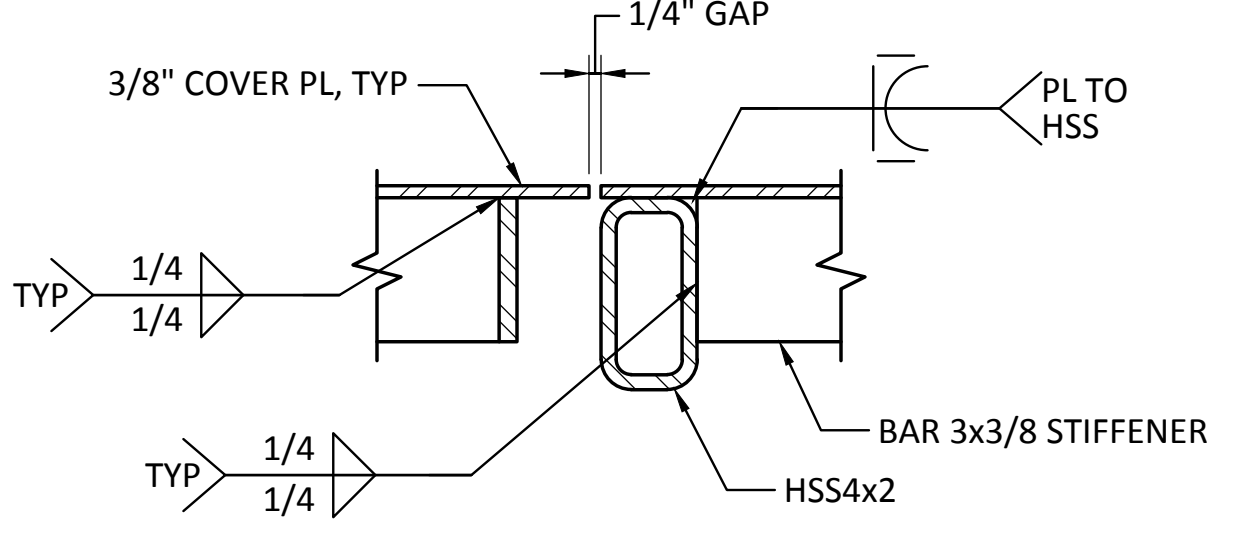
TYPE B VAULT COVER, SEE **2** S16.1

TYPE A VAULT COVER, SEE **1** S16.1

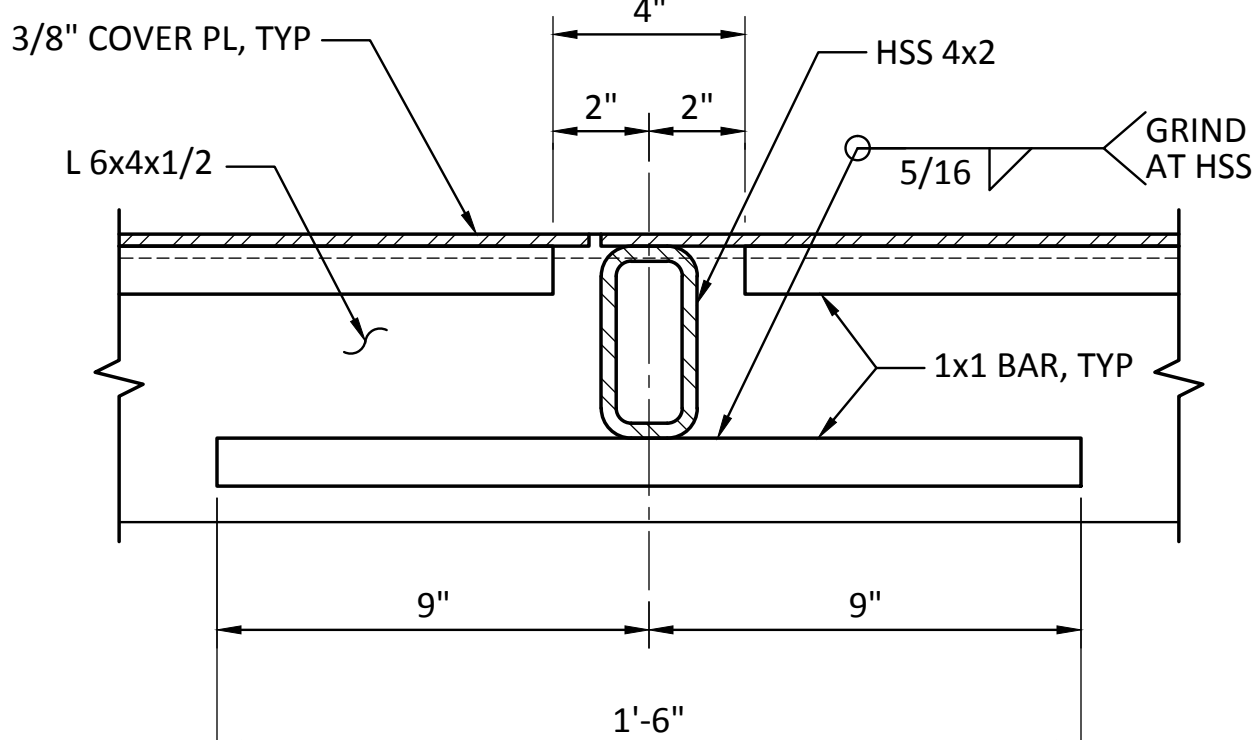
PROVIDE WELDED BEAD RAISED LETTERS (1/2" WIDE AND 1/8" HIGH) WITH ROUNDED EDGES BEFORE GALVANIZING COVERS, TYP



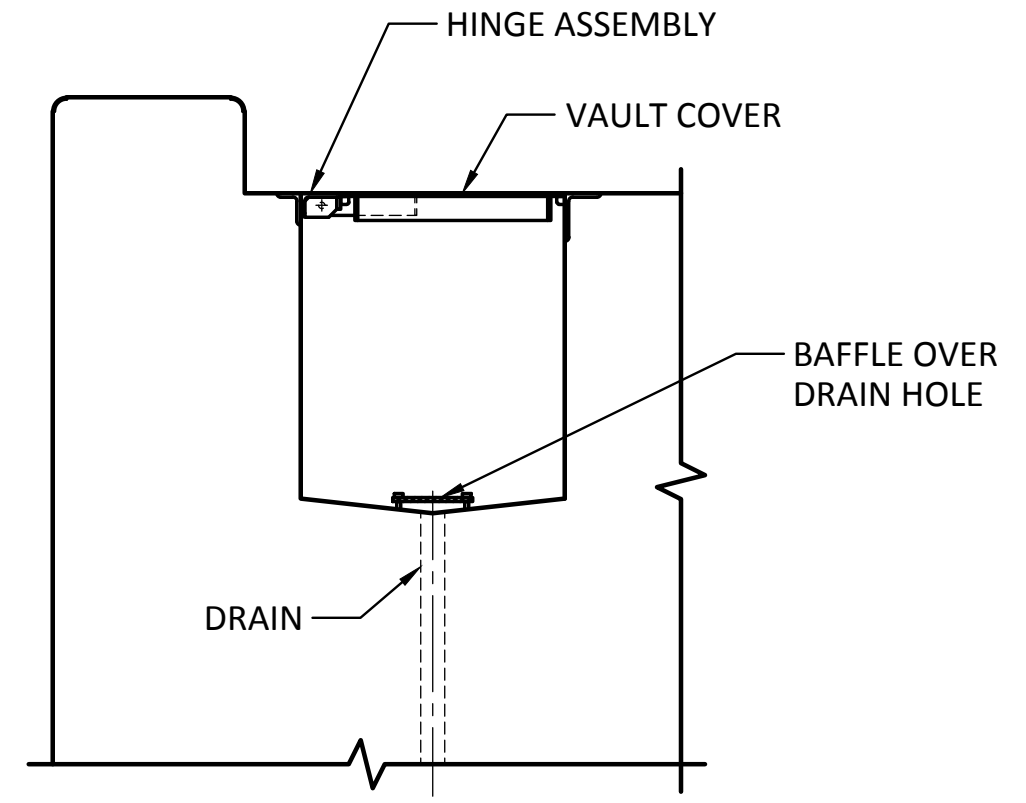
**3 PLAN - FRAME**  
SCALE: 1" = 1'-0"



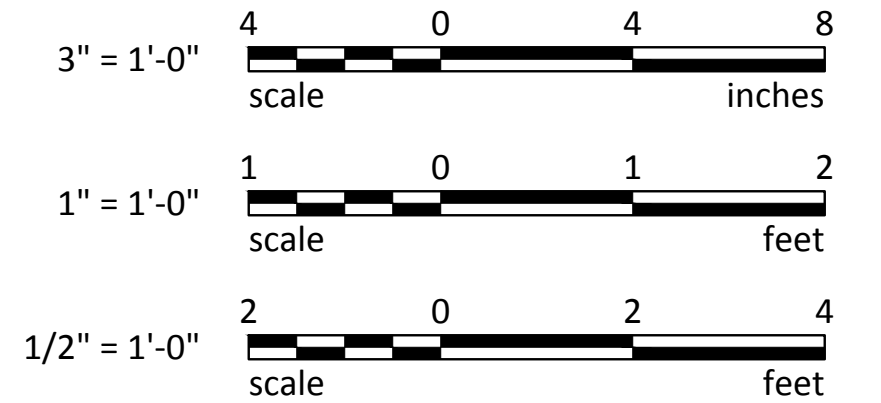
**4 SECTION**  
SCALE: 3" = 1'-0"



**5 SECTION**  
SCALE: 3" = 1'-0"



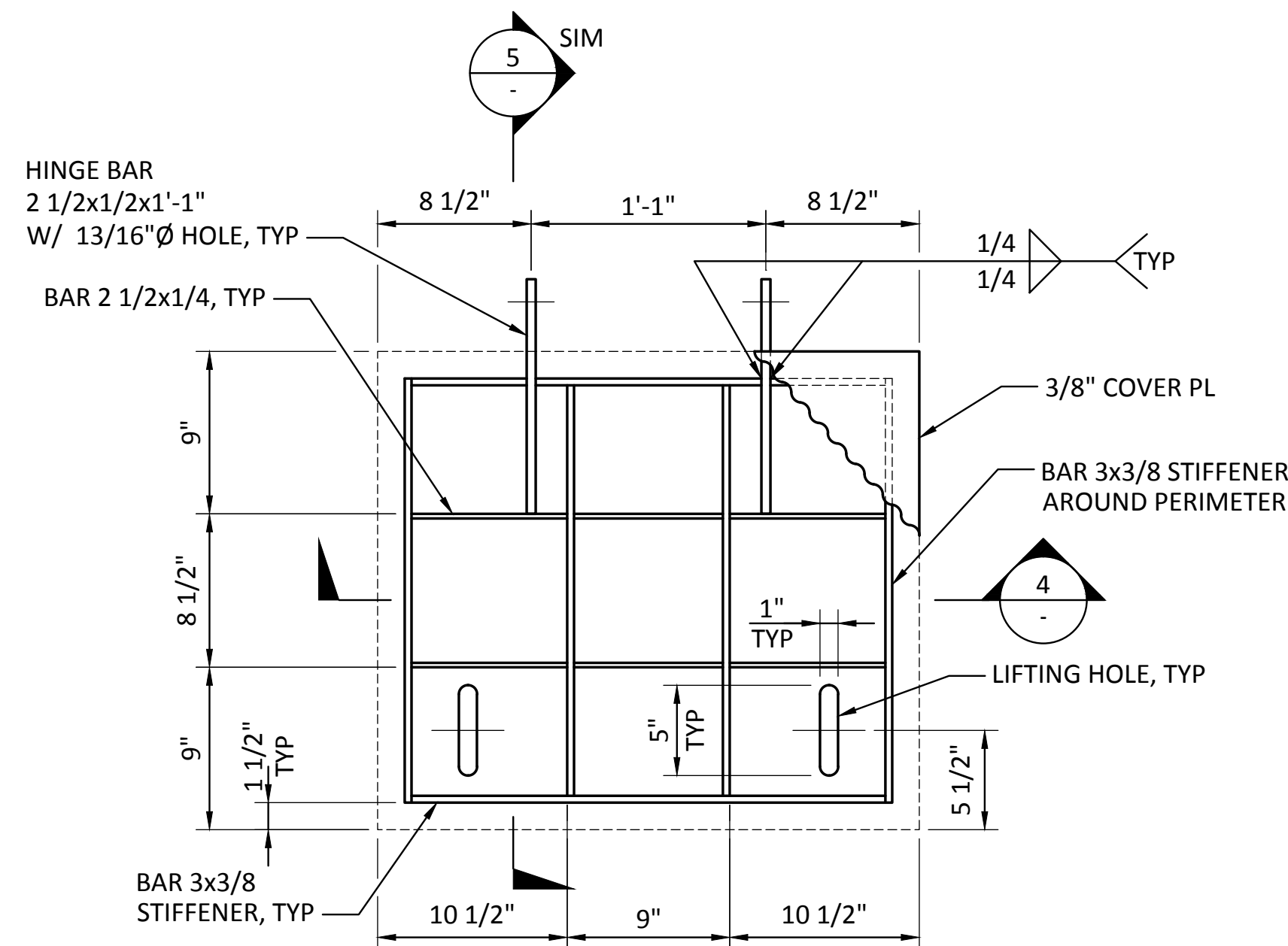
**6 SECTION**  
SCALE: 1/2" = 1'-0"



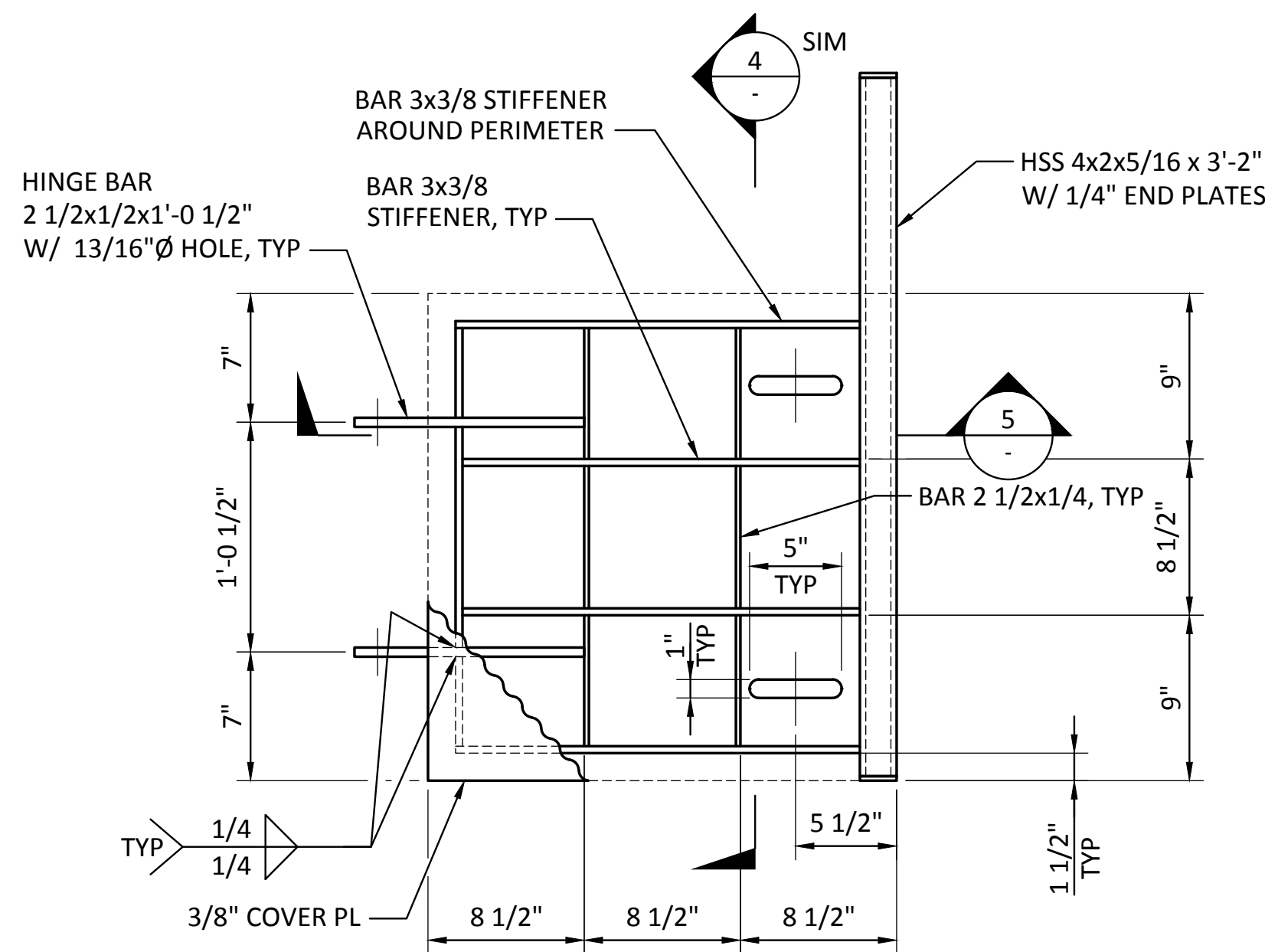
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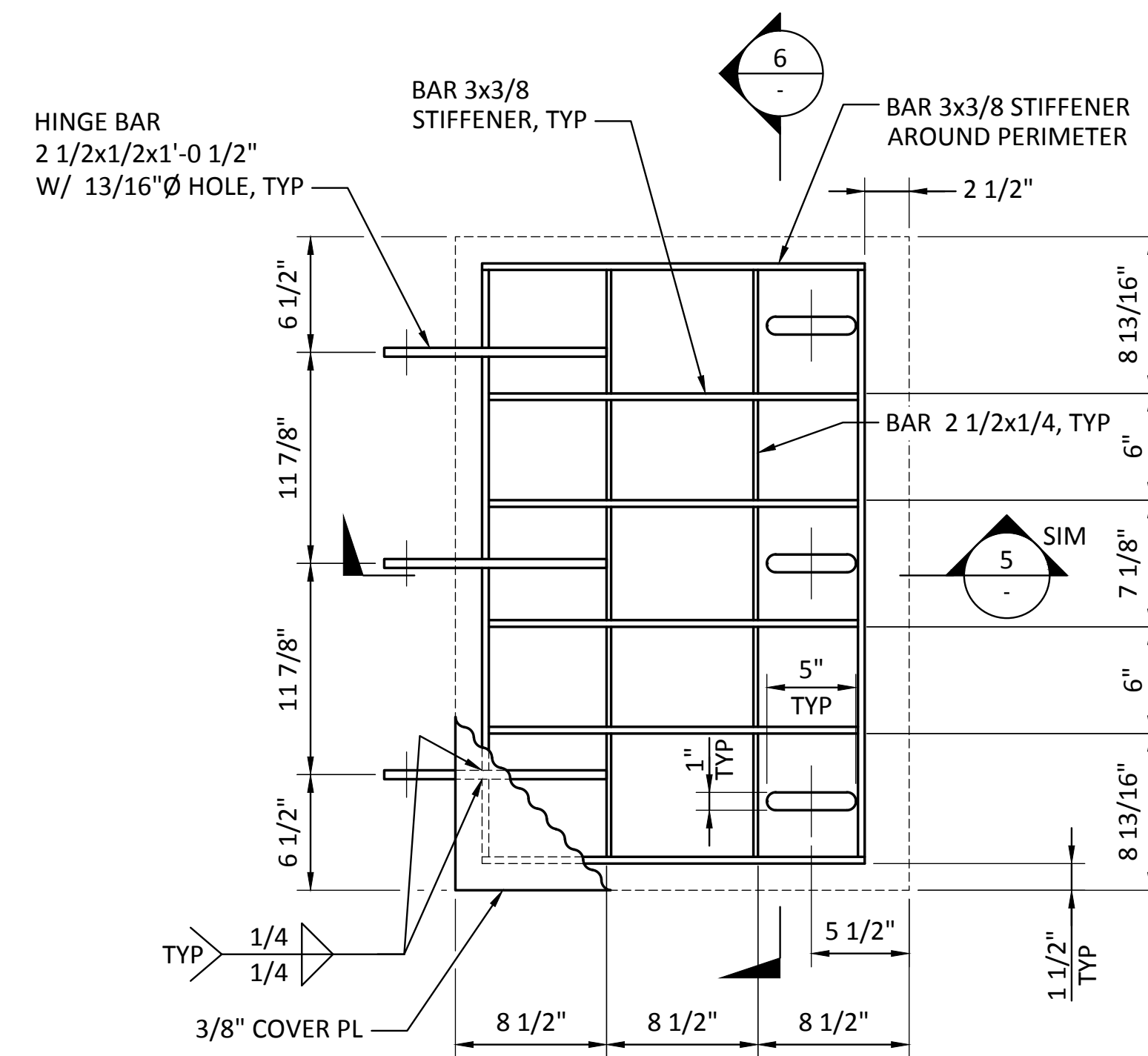
<p style="font-size: 8px; margin: 0;">33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250</p>		DATE:
<p style="font-size: 8px; margin: 0;">P.O. BOX 187 TACOMA, WA 98402-0187</p>		BY:
		REVISION:
<p style="font-size: 8px; margin: 0;">APPROVED:</p>		APPR:
CSB	7/17/13	DATE
CHECKED BY	JRG	DATE
DC	7/17/13	DATE
DIR OF ENG	Jason Mendenhall	DATE
PRINTED BY	ONE SITCUM WAY	DATE
PORT ADDRESS	TACOMA, WA 98421-2300	DATE
<p style="font-size: 8px; margin: 0;"><b>PIER 3 UPGRADE</b></p> <p style="font-size: 8px; margin: 0;"><b>SHORE POWER VAULT DETAILS</b></p> <p style="font-size: 8px; margin: 0;"><b>SHEET 1</b></p>		
TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
DATE-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN
PARCEL: RECORD DRAWINGS	27	AS SHOWN
<p style="font-size: 8px; margin: 0;">THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION</p>		
6502	069458	S16.0
CONT/CONS: SHEET 83 OF 129	092935	RECORD DRAWINGS
MASTER ID NO:	092935	RECORD DRAWINGS



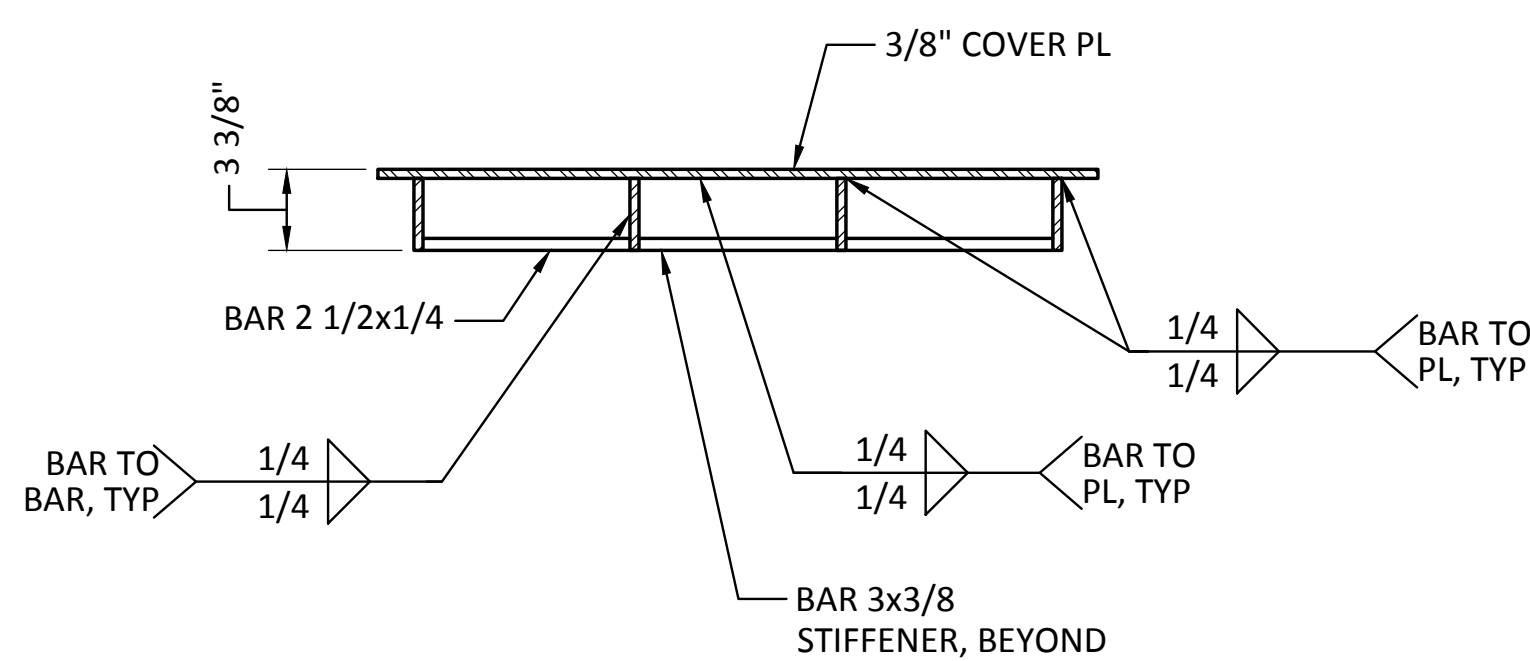
1  
S16.0  
**DETAIL - VAULT COVER (TYPE A)**  
SCALE: 1 1/2" = 1'-0"



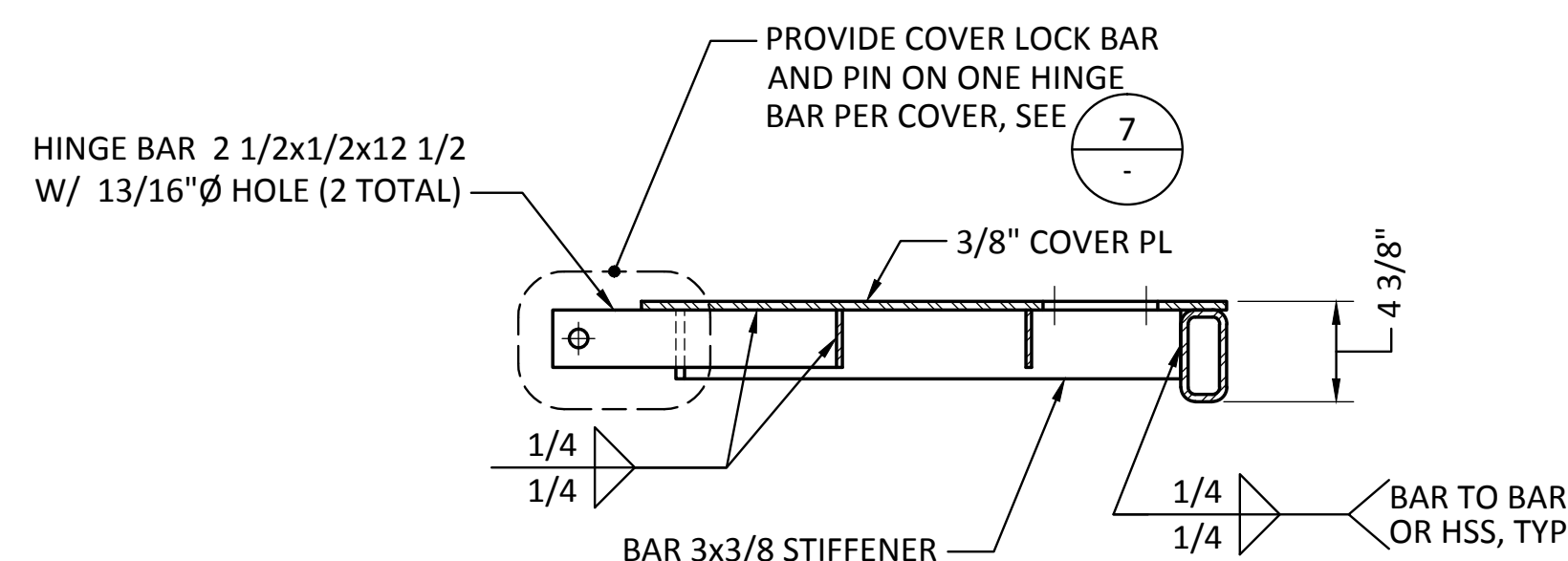
2  
S16.0  
**DETAIL - VAULT COVER (TYPE B)**  
SCALE: 1 1/2" = 1'-0"



3  
S16.0  
**DETAIL - VAULT COVER (TYPE C)**  
SCALE: 1 1/2" = 1'-0"

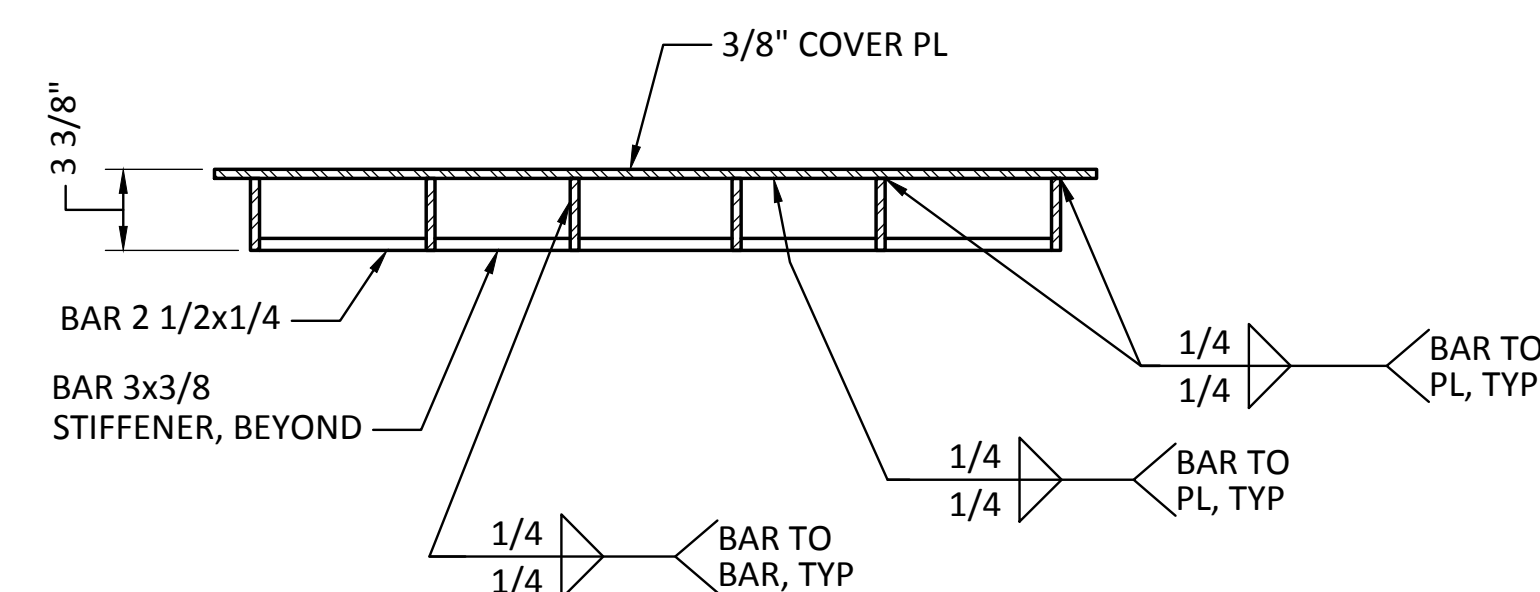


4  
SCALE: 1 1/2" = 1'-0"

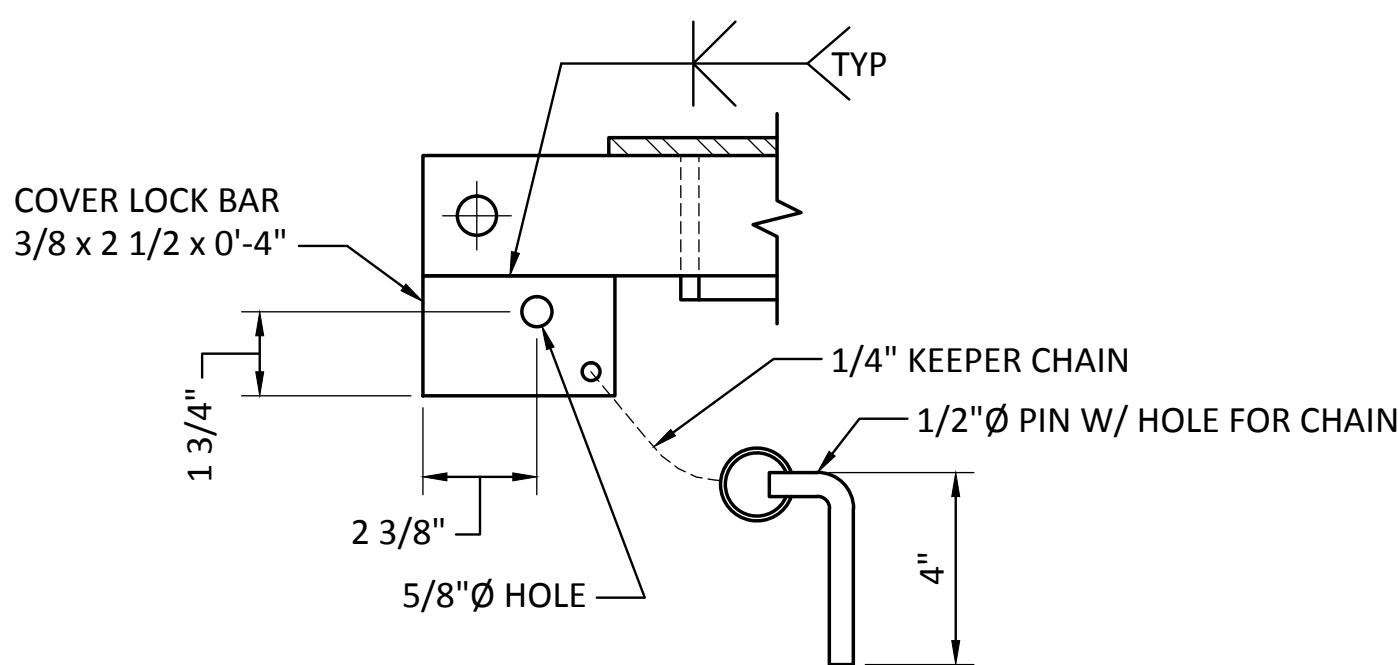


NOTE:  
FOR INFORMATION  
NOT SHOWN SEE 4

5  
SCALE: 1 1/2" = 1'-0"

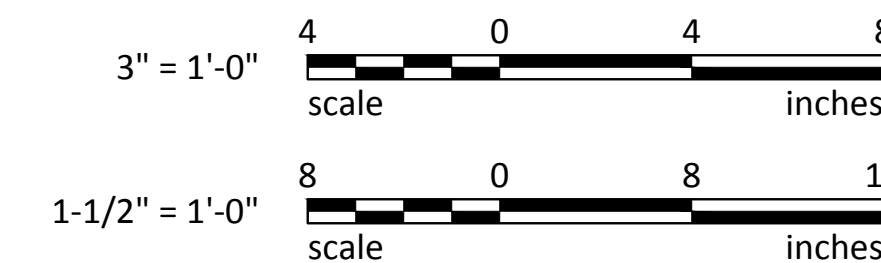


6  
SCALE: 1 1/2" = 1'-0"

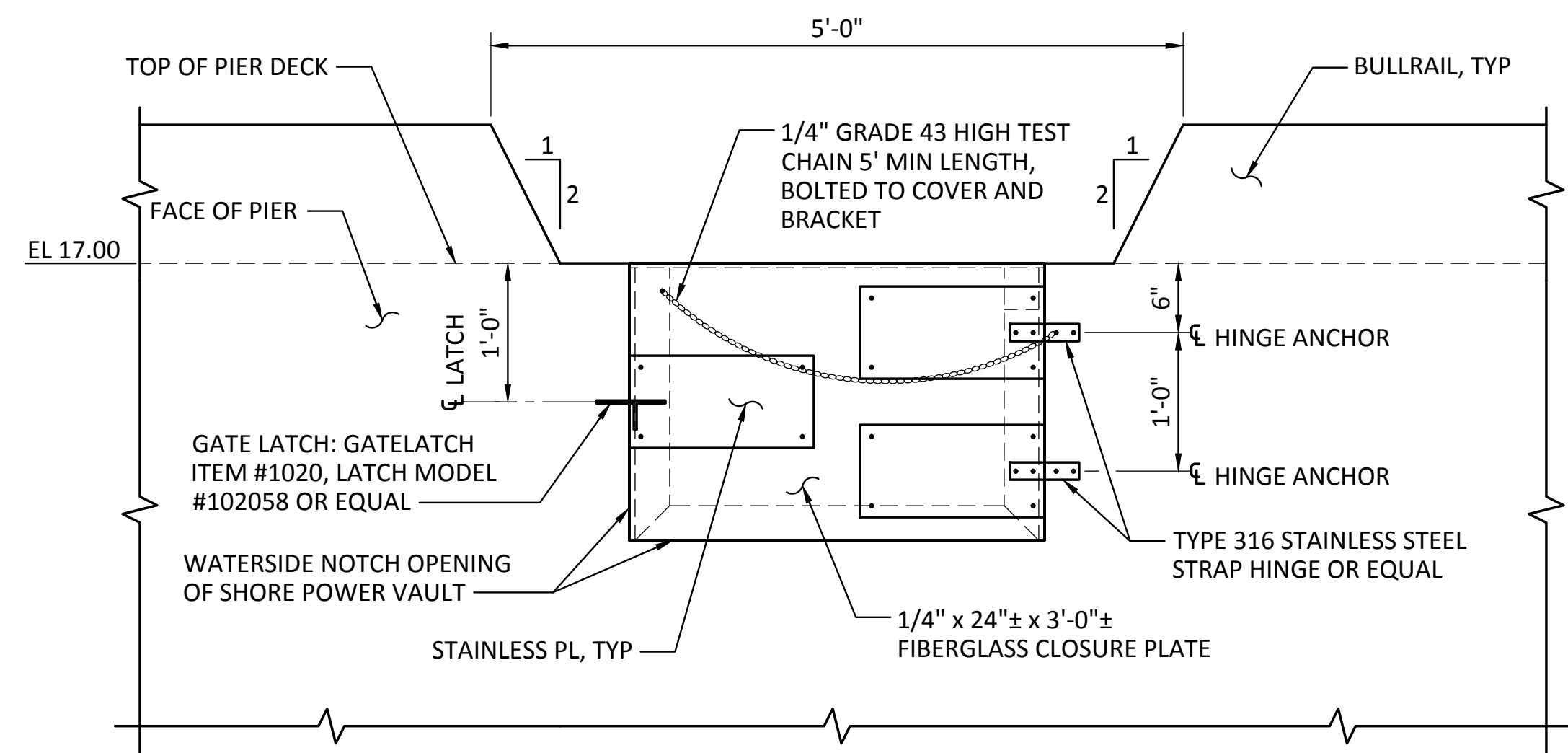


7  
SCALE: 3" = 1'-0"

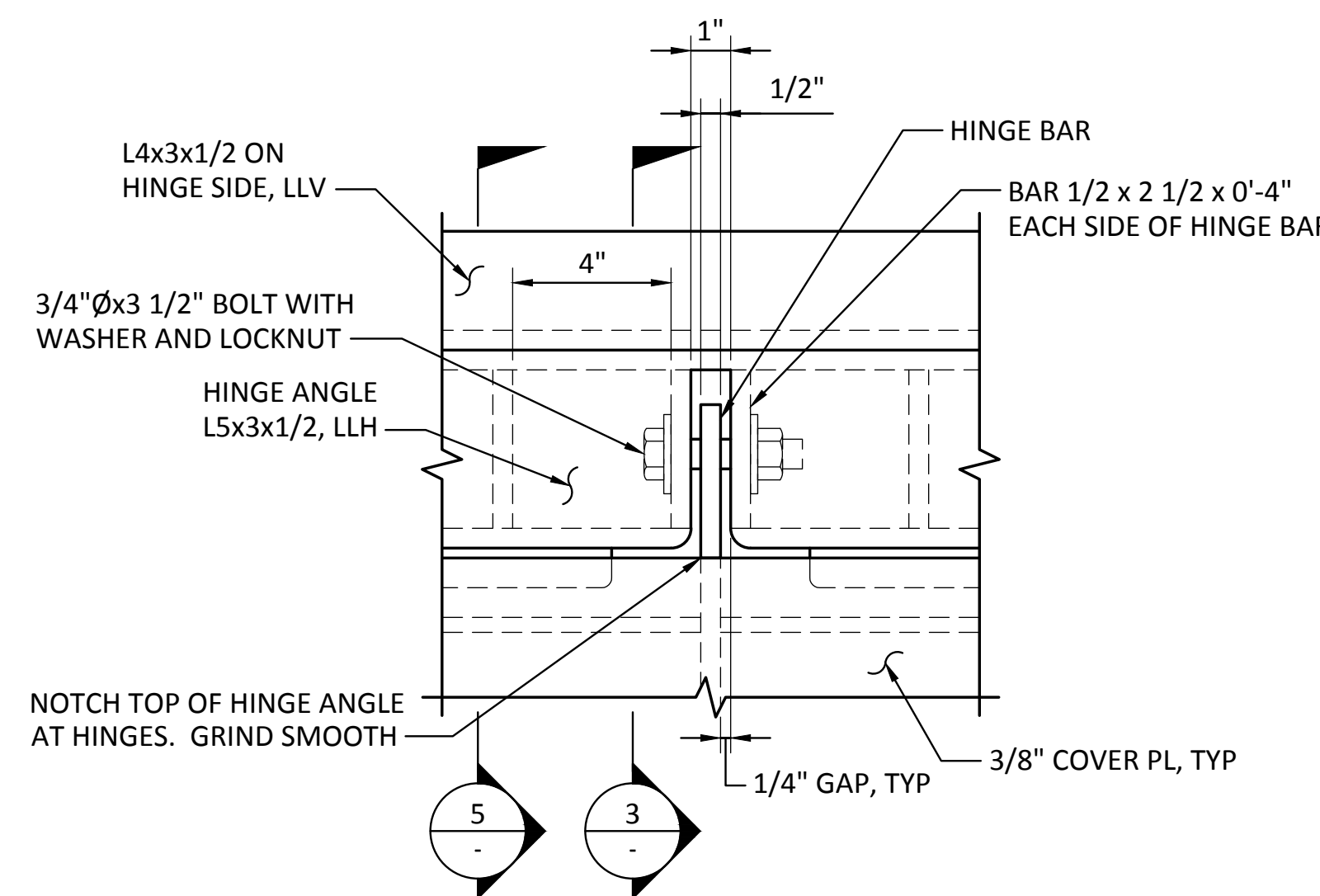
NOTE:  
SEE NOTES ON DWG S16.0.



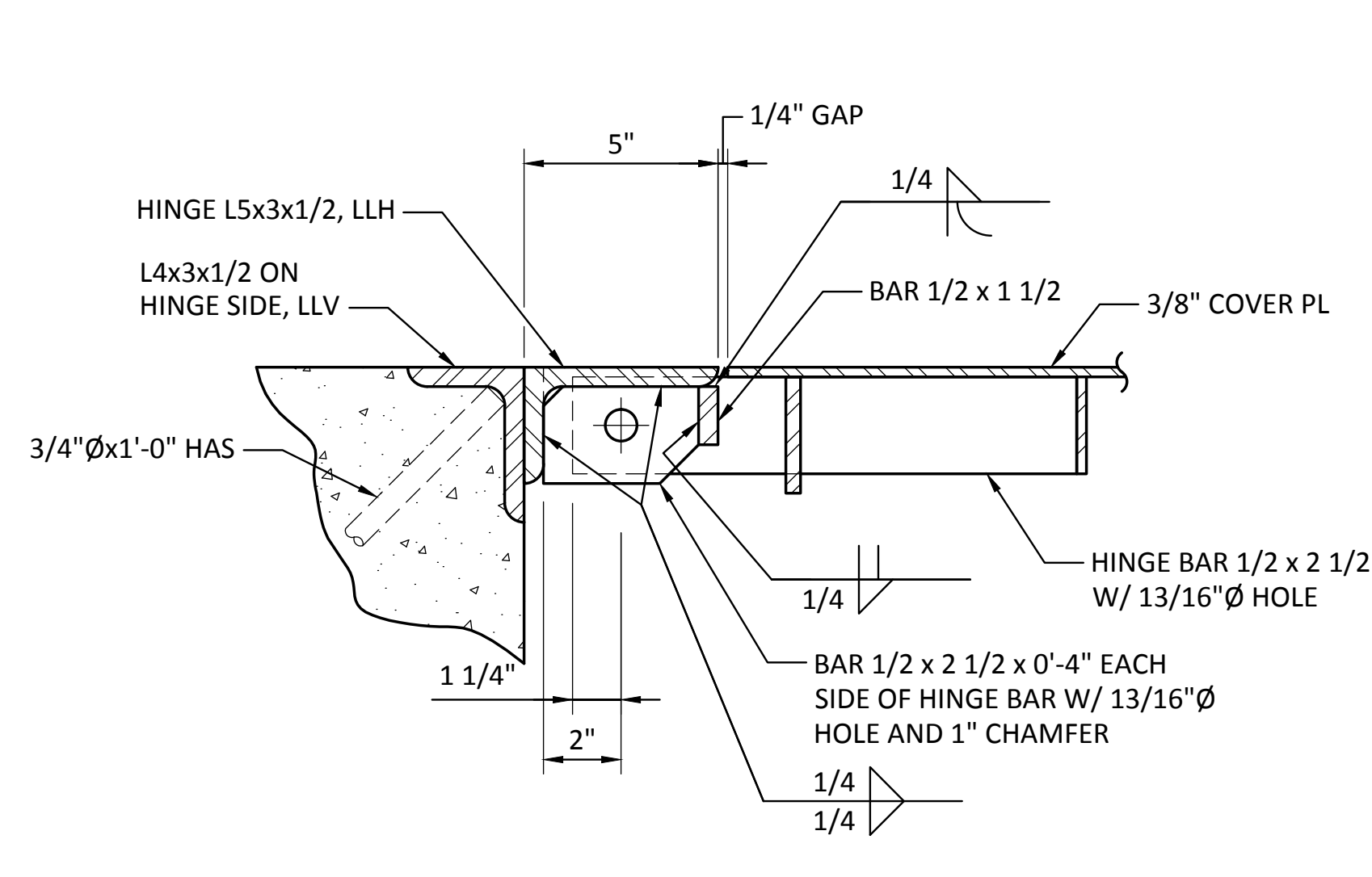
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	
 P.O. BOX 1887 TACOMA, WA 98401-0188	
CSB 7/17/13	DATE 7/17/13
CHECKED BY JRG	DATE 7/17/13
DIR OF ENG Jason Mendenhall	DATE 7/17/13
PRINTED BY ONE SITCUM WAY TACOMA, WA 98421-2300	DATE 7/17/13
APPROVED:	DATE:
PROJECT:	BY:
SHEET:	REVISION:
TOWNSHIP: 21 N	SECTION: 27
RANGE: 3 E	NOS TIDAL (MLLW = 0.0)
DAT-HRZ: NAD 83-07	VERT: AS SHOWN
PARCEL: 27	DRAWING SCALE: AS SHOWN
6502 <b>S16.1</b>	SHEET 84 OF 129
CONT/CONS: 069458	MASTER ID NO: 092935
PHASE: RECORD DRAWINGS	PARCEL: 27



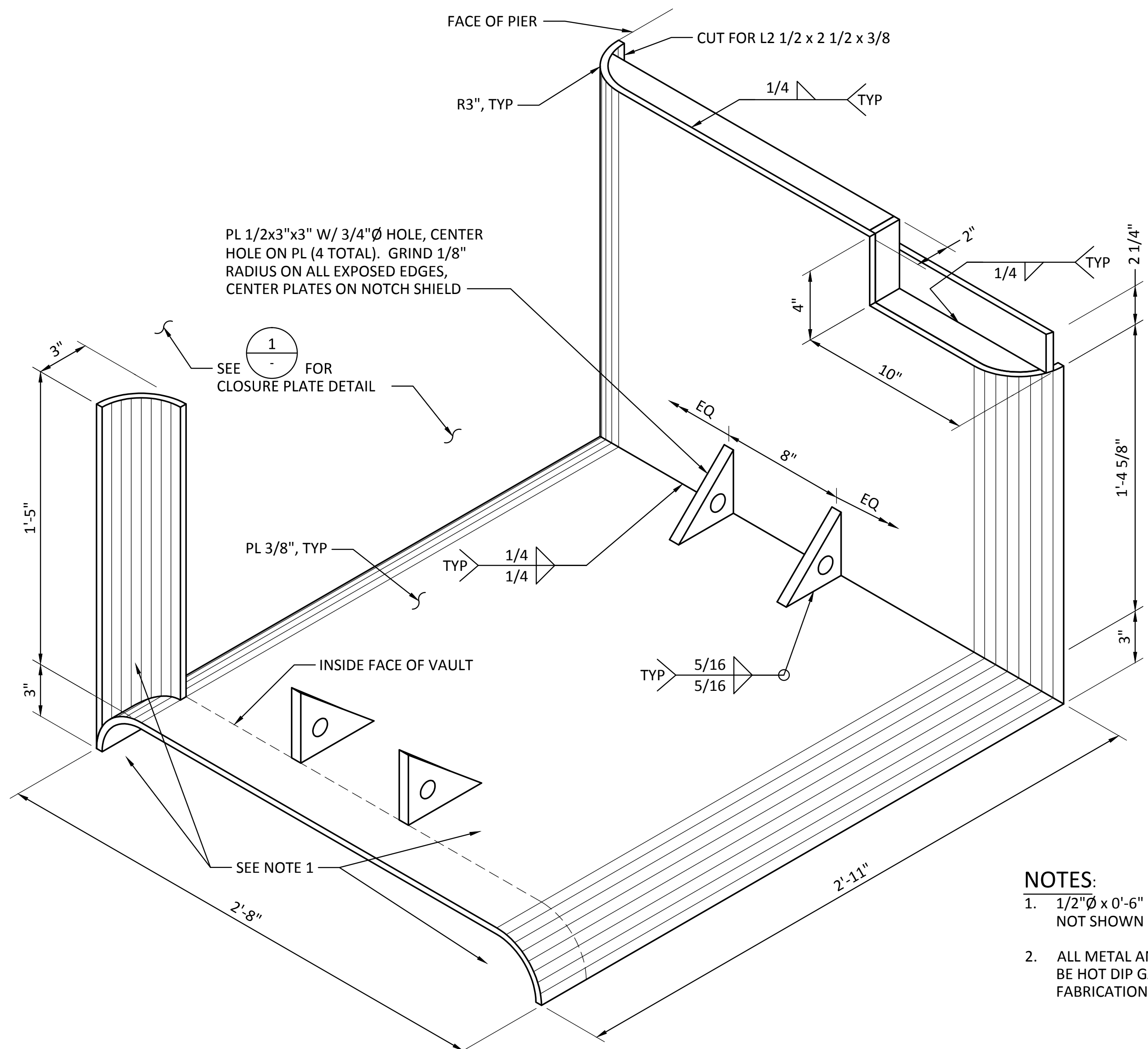
**1** DETAIL - CLOSURE PLATE  
SCALE: 1" = 1'-0"



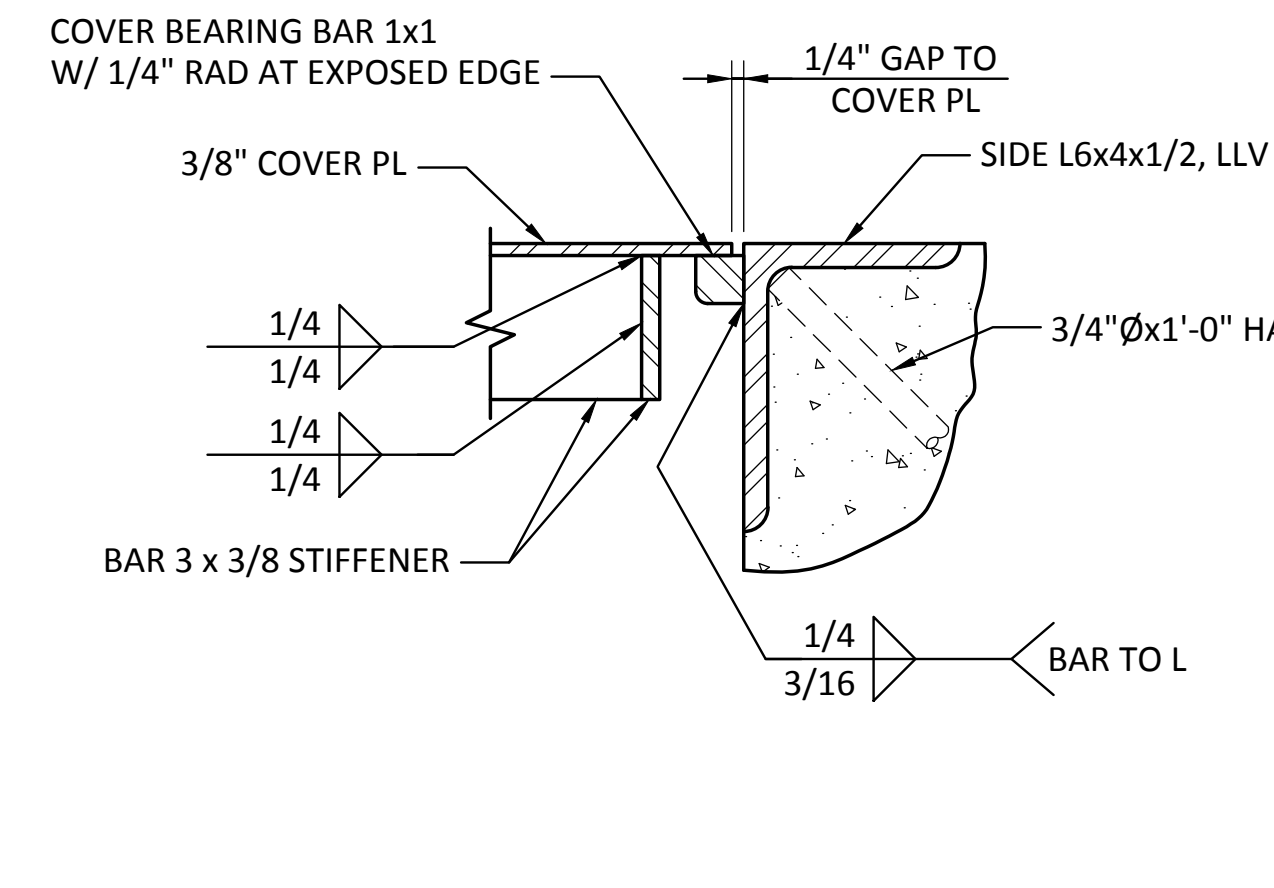
**2** DETAIL - HINGE  
SCALE: 3" = 1'-0"



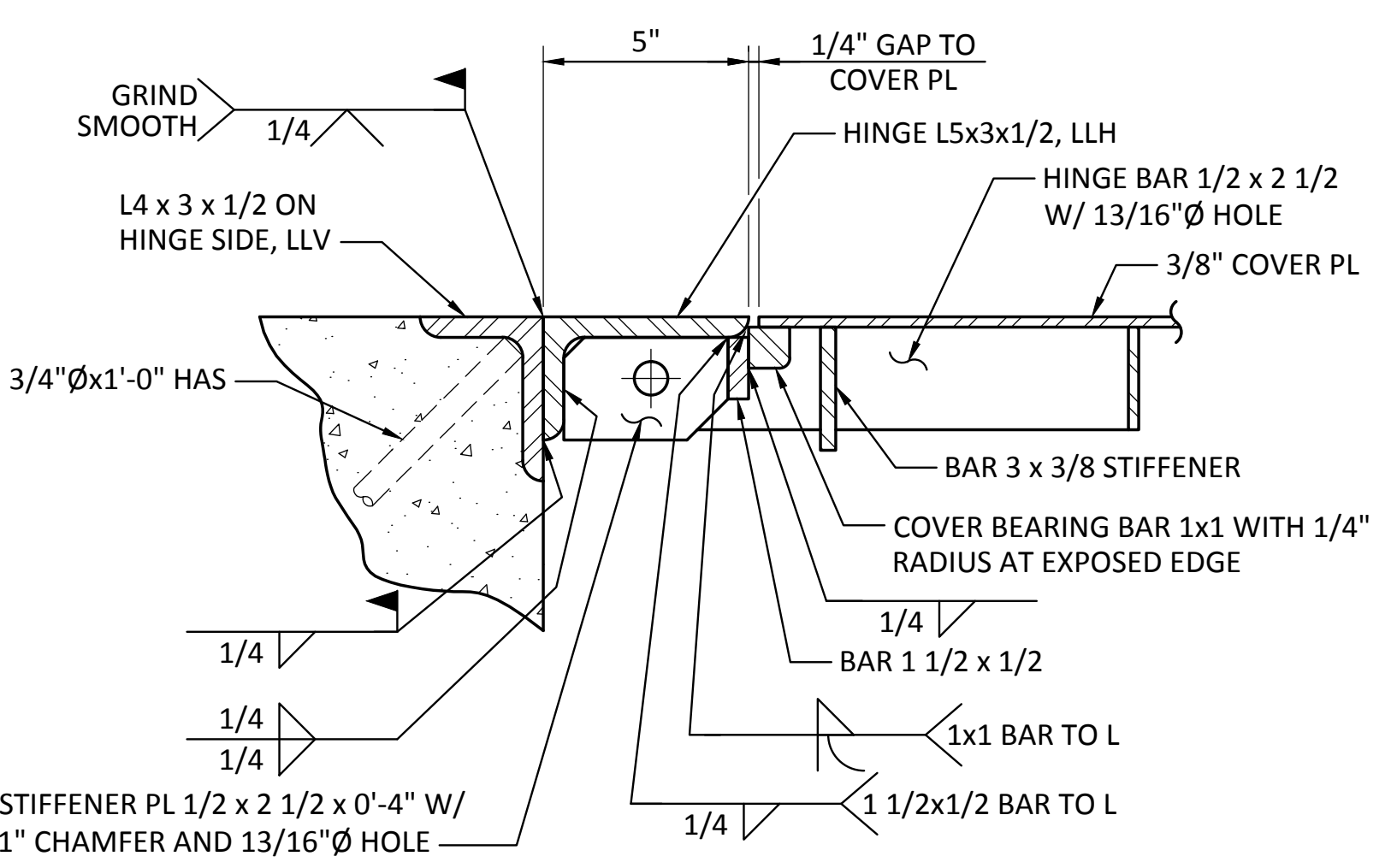
**3** SECTION  
SCALE: 3" = 1'-0"



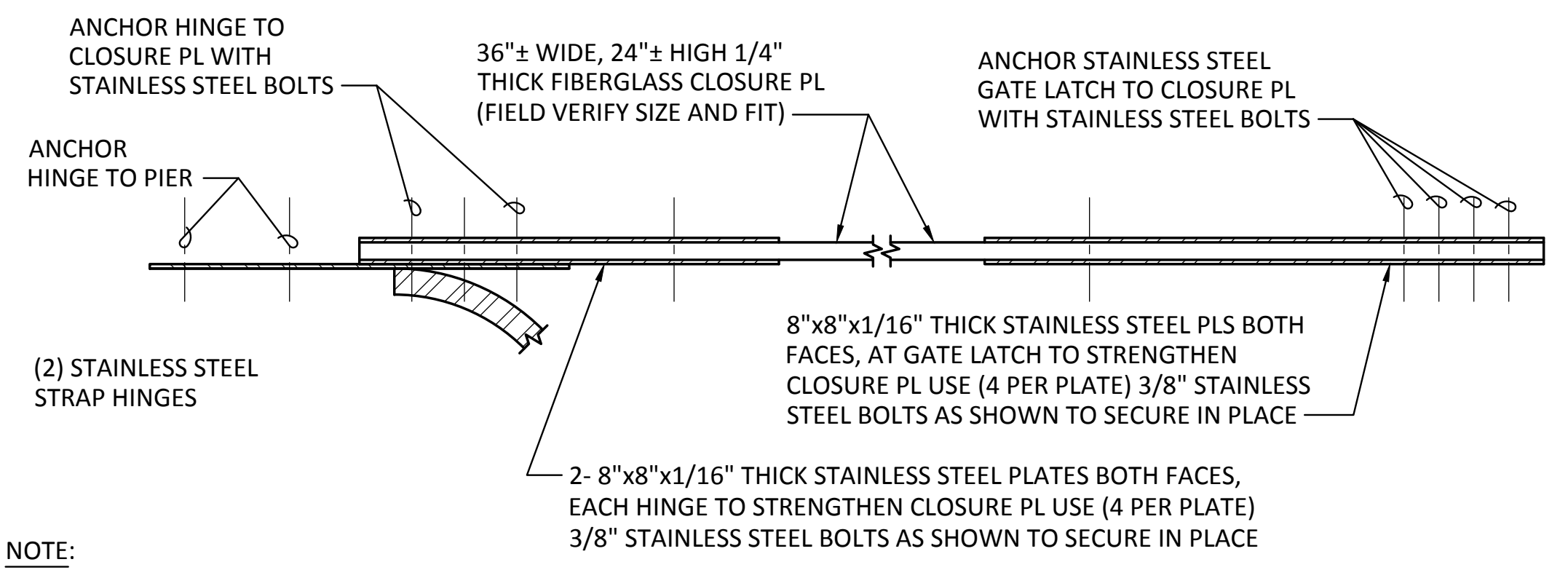
**6** DETAIL - NOTCH SHIELD (ISOMETRIC VIEW)  
SCALE: 3" = 1'-0"



**4** SECTION  
SCALE: 3" = 1'-0"

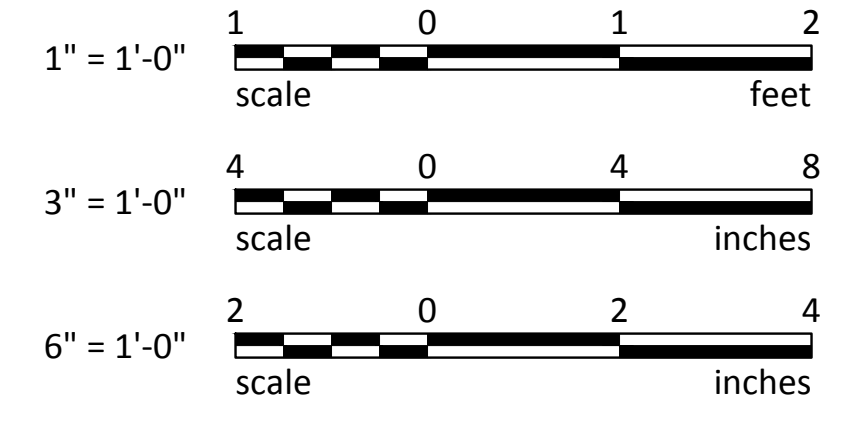


**5** SECTION  
SCALE: 3" = 1'-0"



**NOTE:**  
USE TYPE 316 SS HARDWARE

**7** DETAIL - CLOSURE PLATE  
SCALE: 6" = 1'-0"



- NOTES:**
- 1/2" x 0'-6" HAS @ 12" OC EW NOT SHOWN FOR CLARITY, TYP
  - ALL METAL AND HARDWARE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION, SEE SPECIFICATIONS.

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33301 9th Avenue South, Suite 300  
Federal Way, Washington 98003-2600  
(206) 451-2260 Fax: (206) 451-2260

**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401-0887

**DISTRICT OF COLUMBIA REGISTERED PROFESSIONAL ENGINEER**

APPROVED:	DATE: 7/17/13
DC:	CHECKED BY: JRG
DIR OF ENG:	DATE: 7/17/13
PRINTED BY: Jason.mendenhall	PROJ. ENGR:
PORT ADDRESS: ONE SITCUM WAY	TACOMA, WA 98421-2300
TOWNSHIP: 21 N	RANGE: 3 E
SECTION: 27	VERT. NOS TIDAL (MILLW = 0.0)
DATE-HRZ: NAD 83-07	PARCEL: 27
PHASE: RECORD DRAWINGS	DRAWING SCALE: AS SHOWN

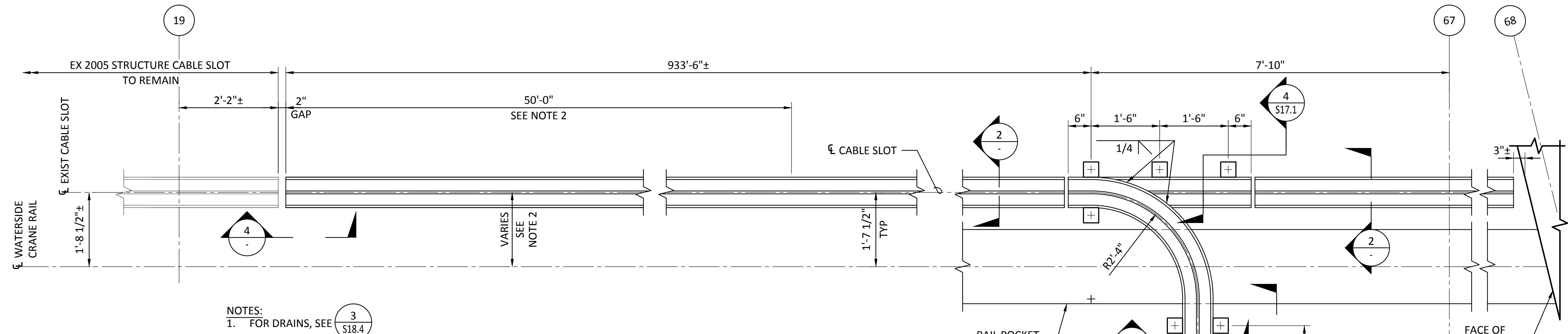
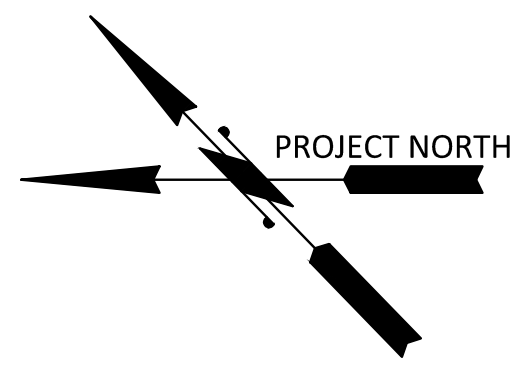
**PIER 3 UPGRADE**

**SHORE POWER VAULT DETAILS**  
SHEET 3

**6502 S16.2**  
SHEET 85 OF 129

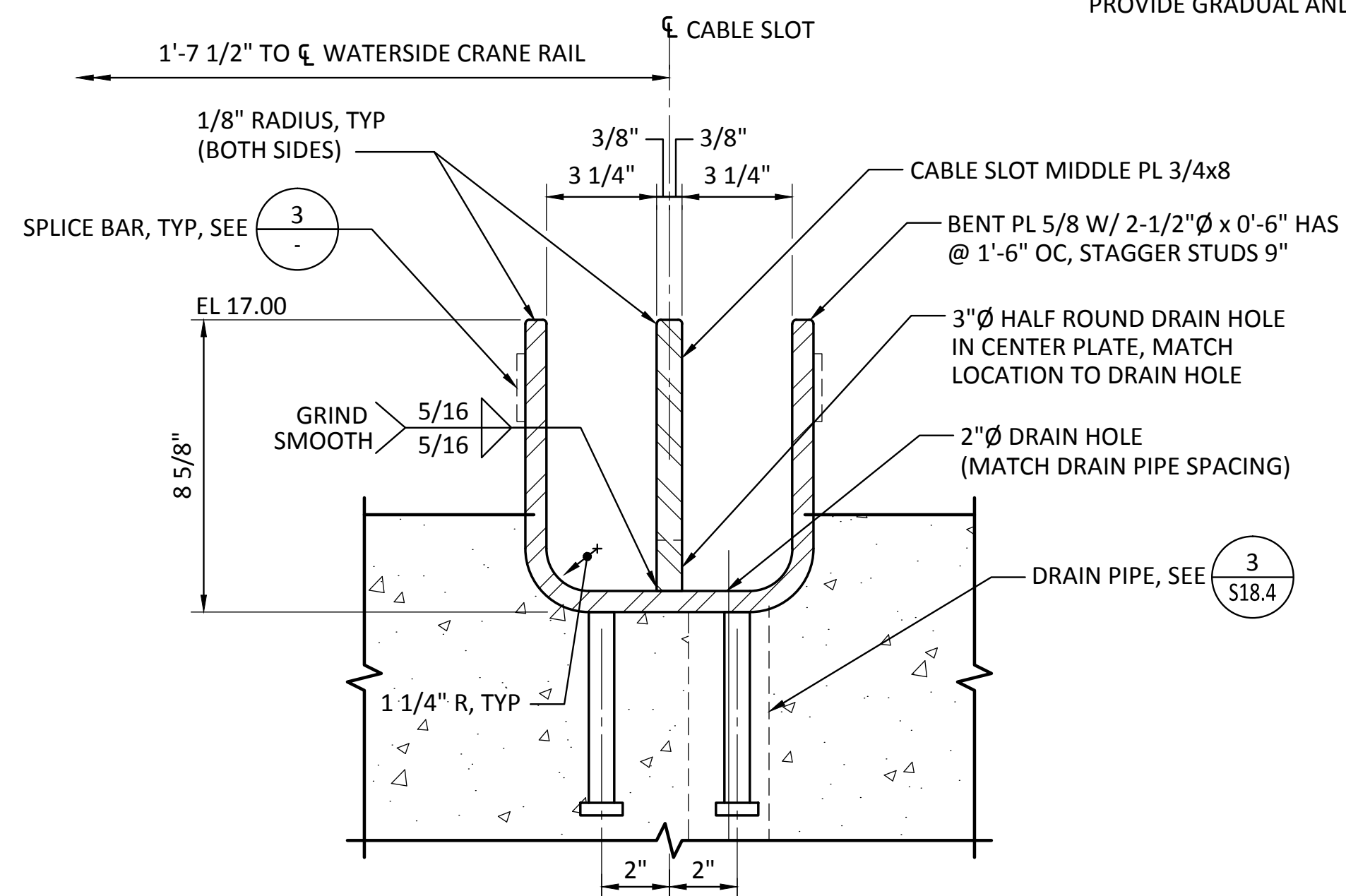
CONT/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

BINDING EDGE

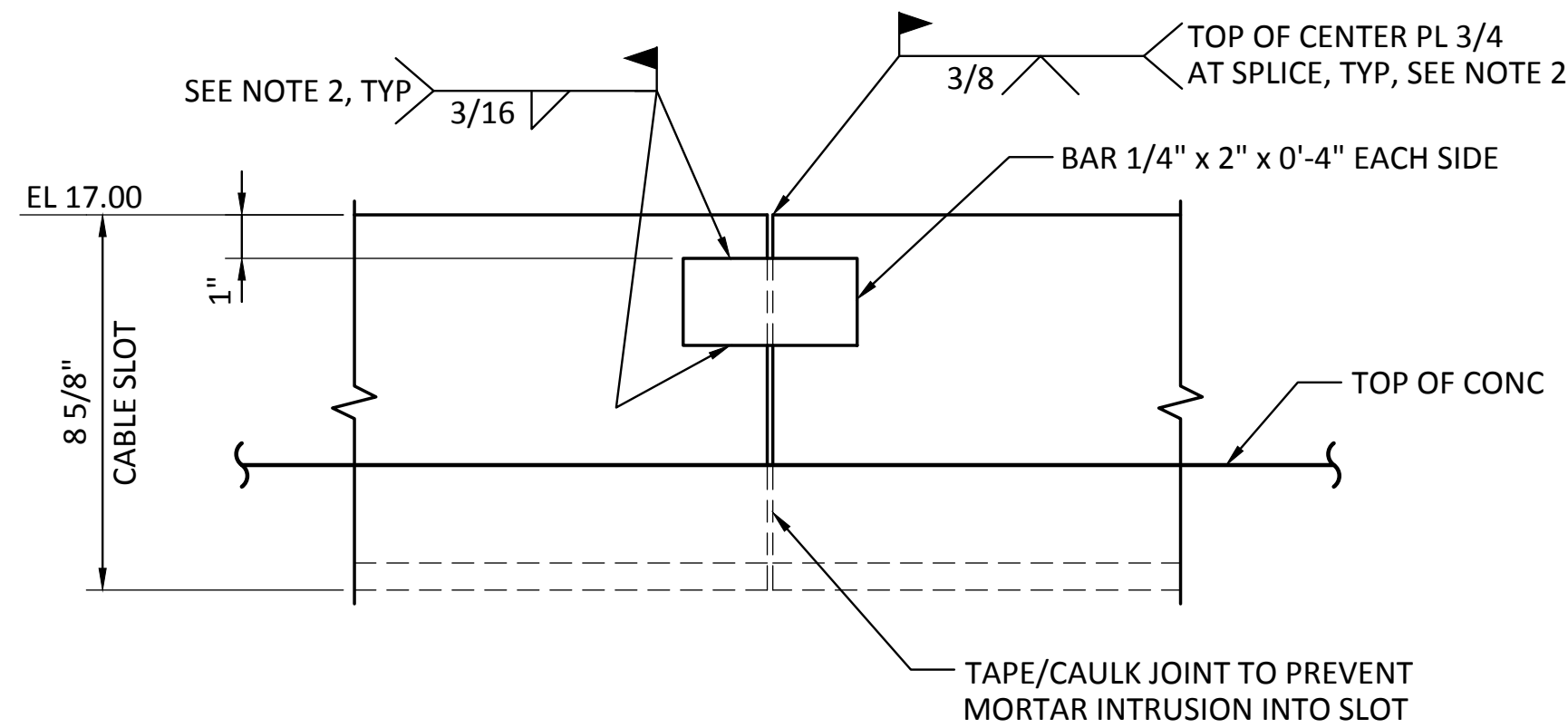


- NOTES:
- FOR DRAINS, SEE **3** S18.4
  - TRANSITION CABLE SLOT  $\epsilon$  TO EXIST CABLE  $\epsilon$ . PROVIDE GRADUAL AND SMOOTH TRANSITION

**1 PLAN - CABLE SLOT**  
SCALE: 3/8" = 1'-0"



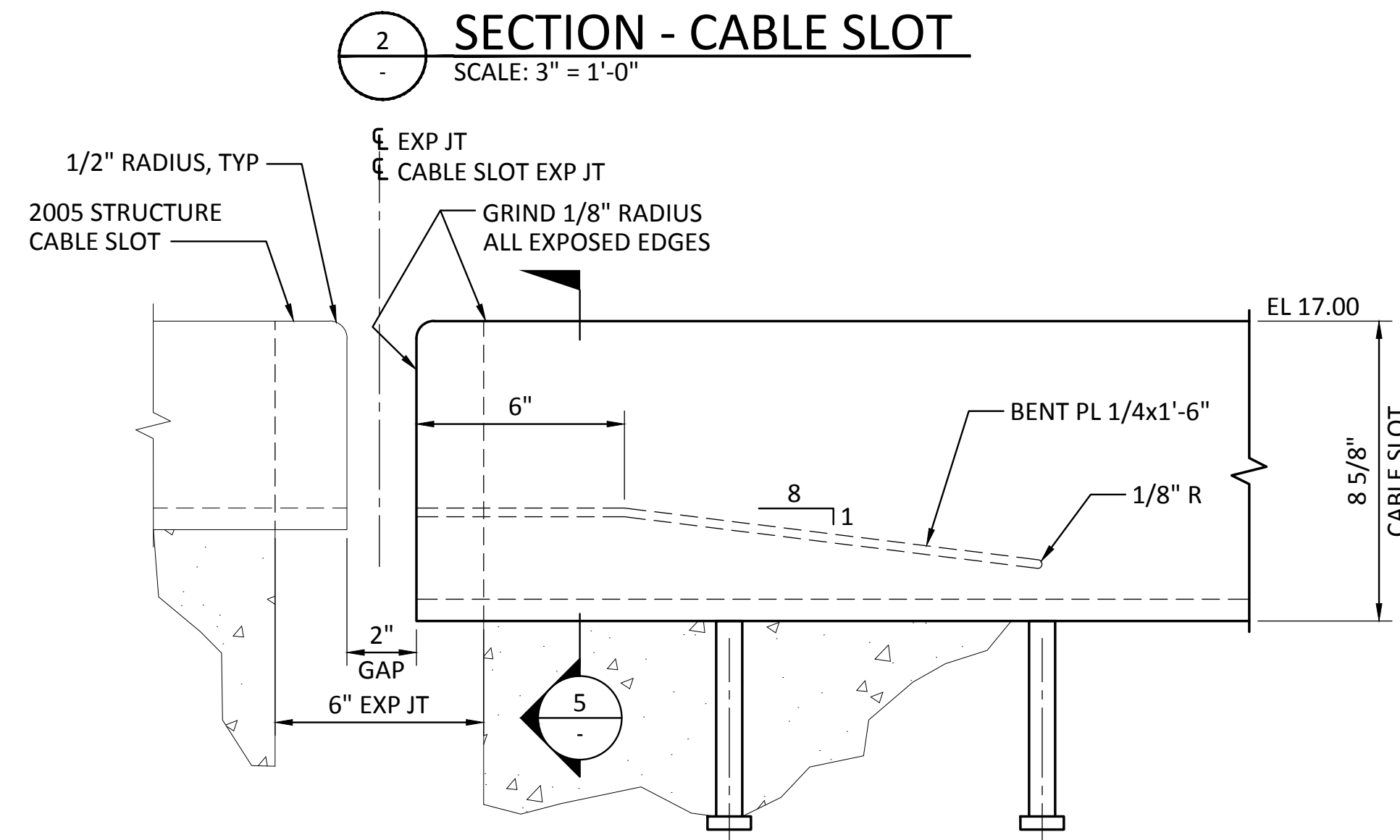
**2 SECTION - CABLE SLOT**  
SCALE: 3" = 1'-0"



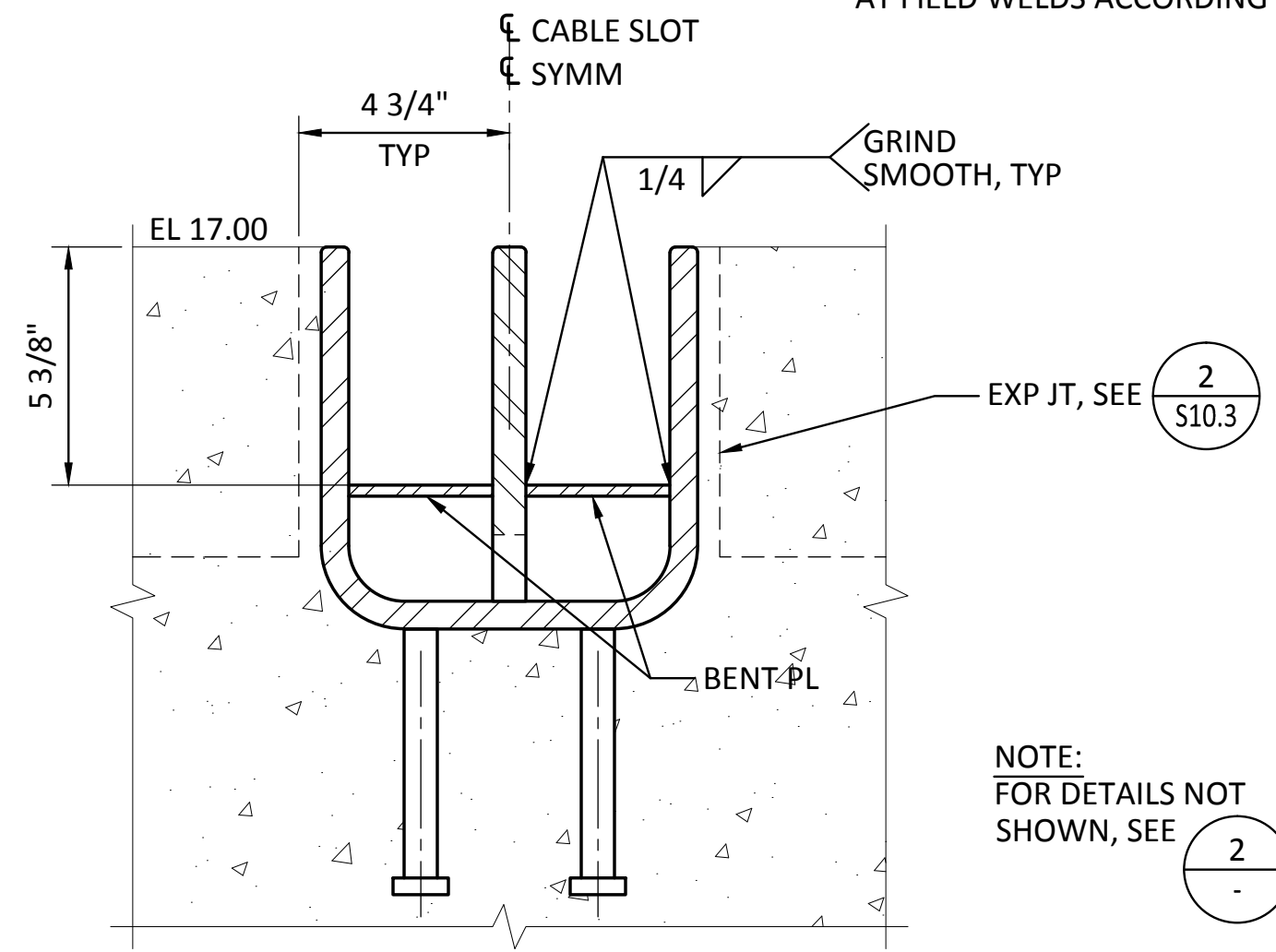
**3 ELEVATION - CABLE SLOT AT SPLICE**  
SCALE: 3" = 1'-0"

**GENERAL NOTES**

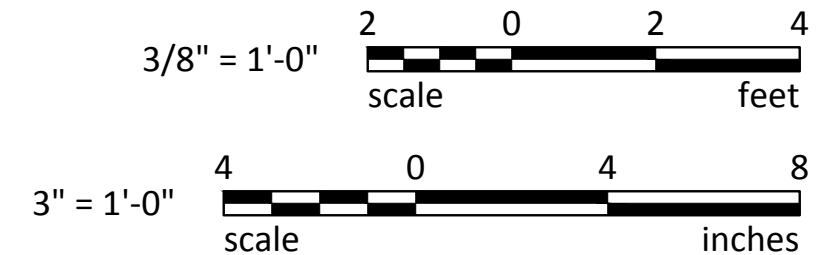
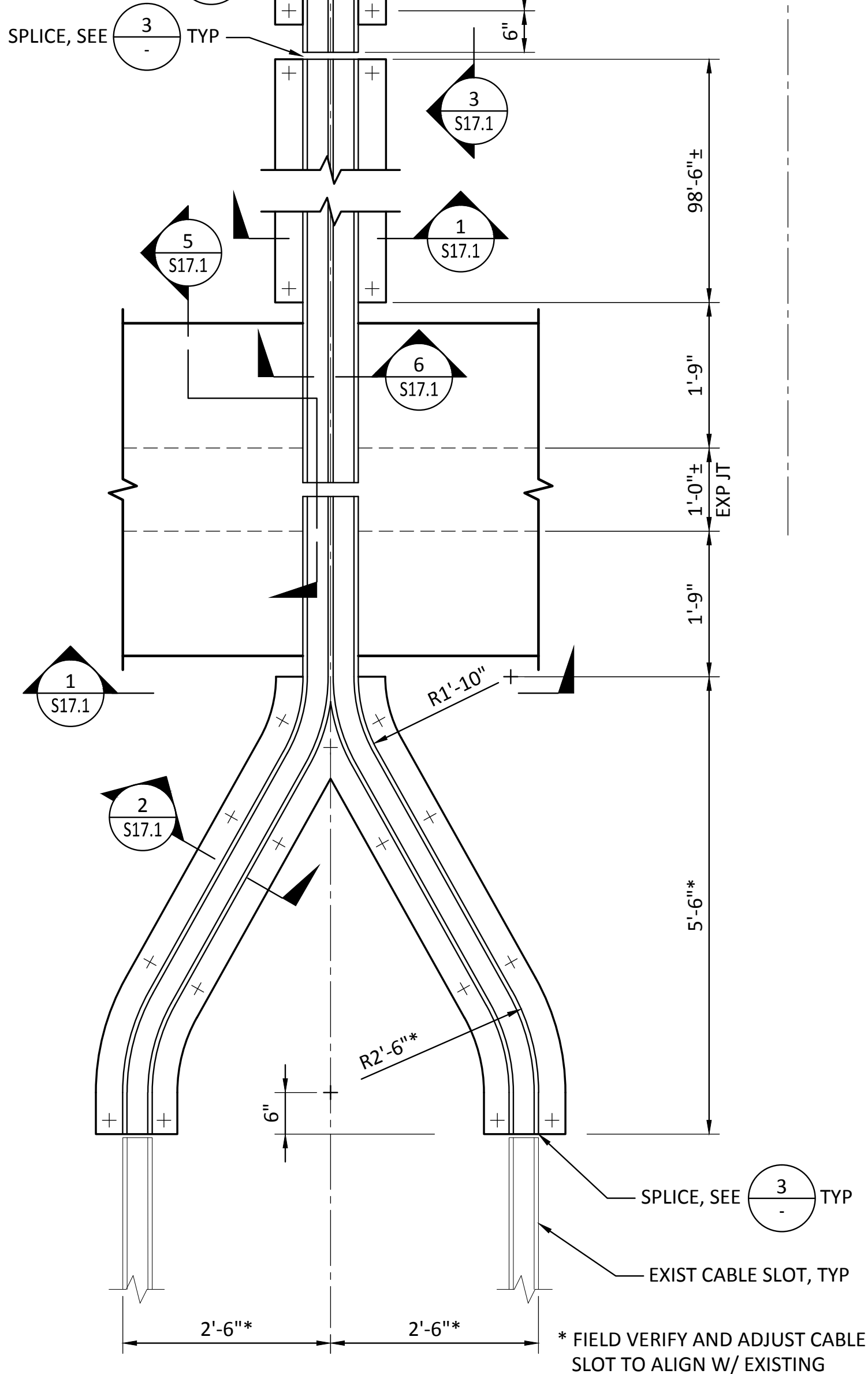
- ACP NOT SHOWN.
- REPAIR DAMAGED GALVANIZING AND GALVANIZING AT FIELD WELDS ACCORDING TO THE SPECIFICATIONS.



**4 ELEVATION - CABLE SLOT AT TRANSITION**  
SCALE: 3" = 1'-0"



**5 SECTION - AT TRANSITION**  
SCALE: 3" = 1'-0"



\* FIELD VERIFY AND ADJUST CABLE SLOT TO ALIGN W/ EXISTING

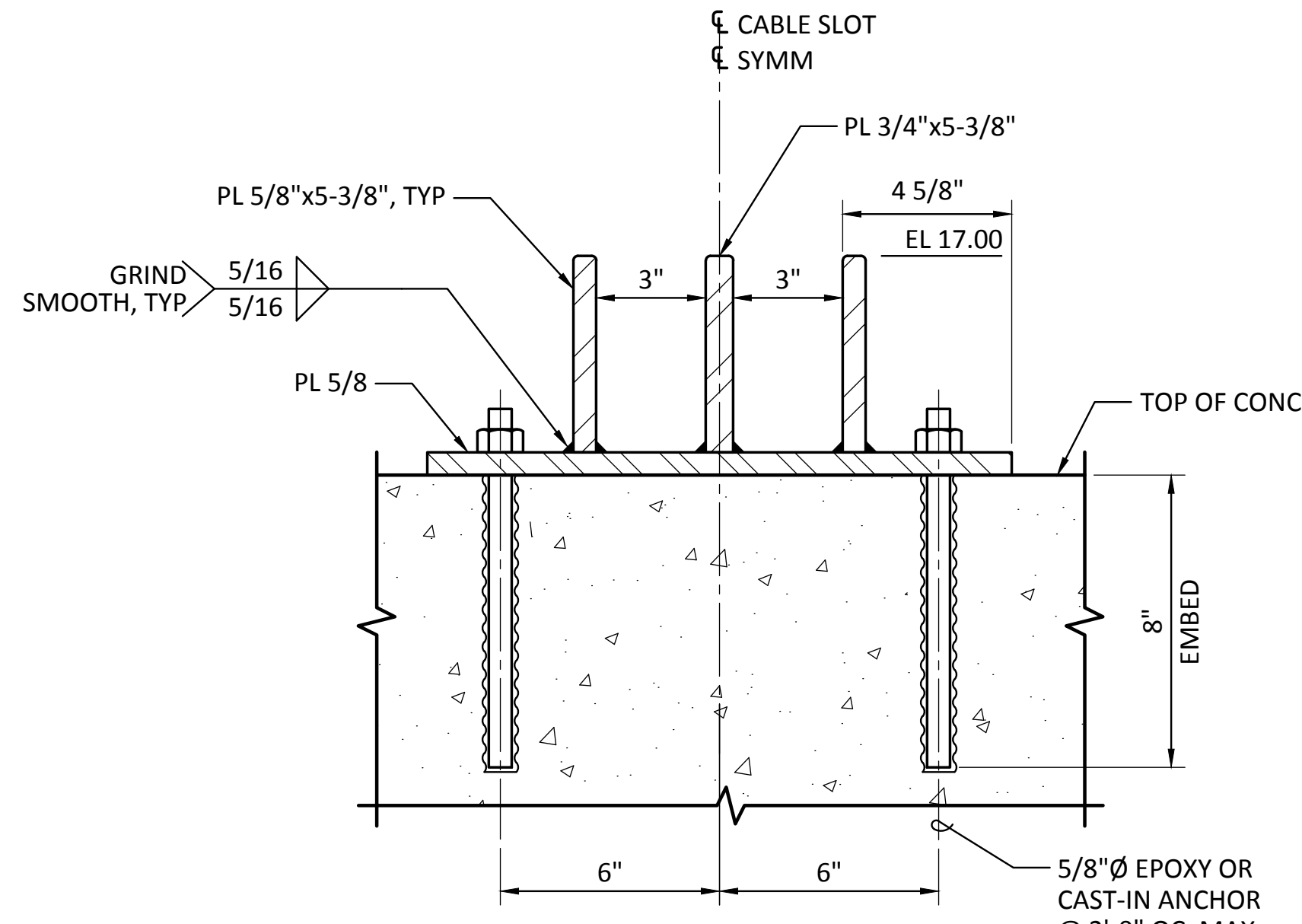
33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250		P.O. BOX 1887 TACOMA, WA 98401-0887		DATE:	APPR:
REVISION:		BY:		DATE:	
MARK:		REVISION:		DATE:	
CSB 7/17/13	CHECKED BY JRG	DATE 7/17/13	PROJECT ENGR jason.mendenthal	DATE 7/17/13	PROJECT ADDRESS ONE SITCUM WAY TACOMA, WA 98421-2300
APPROVED:		DIR OF ENG jason.mendenthal			
DC 7/17/13		PRINTED BY:			
TOWNSHIP: 21 N		RANGE: 3 E		SECTION: 27	
DATE-HRZ: NAD 83-07		VERT: NOS TIDAL (MLLW = 0.0)		DRAWING SCALE: AS SHOWN	
MASTER ID NO: 092935		PARCEL: 27		AS SHOWN	
PHASE: RECORD DRAWINGS		TACOMA, WA 98421-2300			

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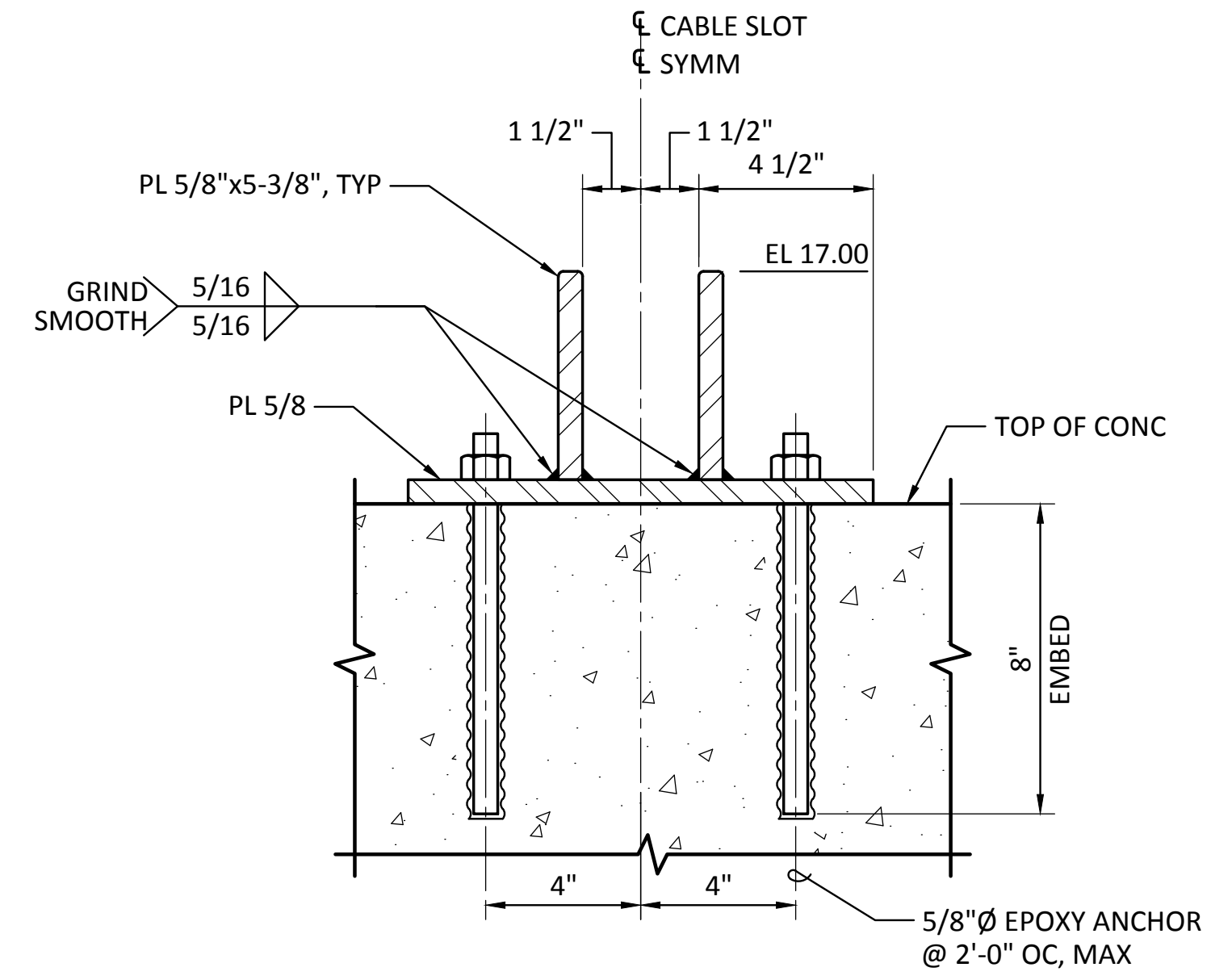
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6502  
**S17.0**  
 SHEET 86 OF 129



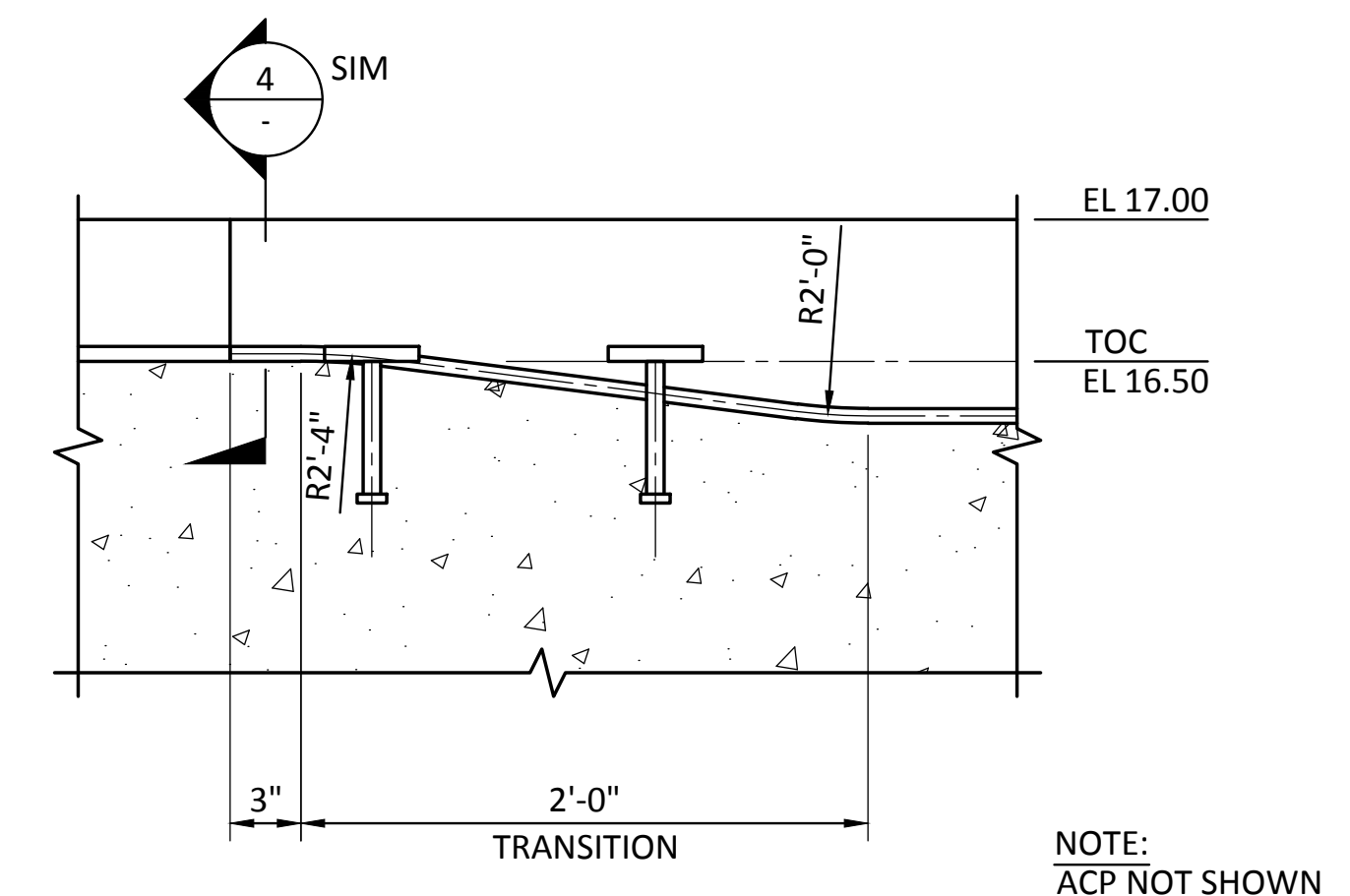
NOTE: ACP NOT SHOWN

1 SECTION - DOUBLE CABLE SLOT SCALE: 3" = 1'-0"



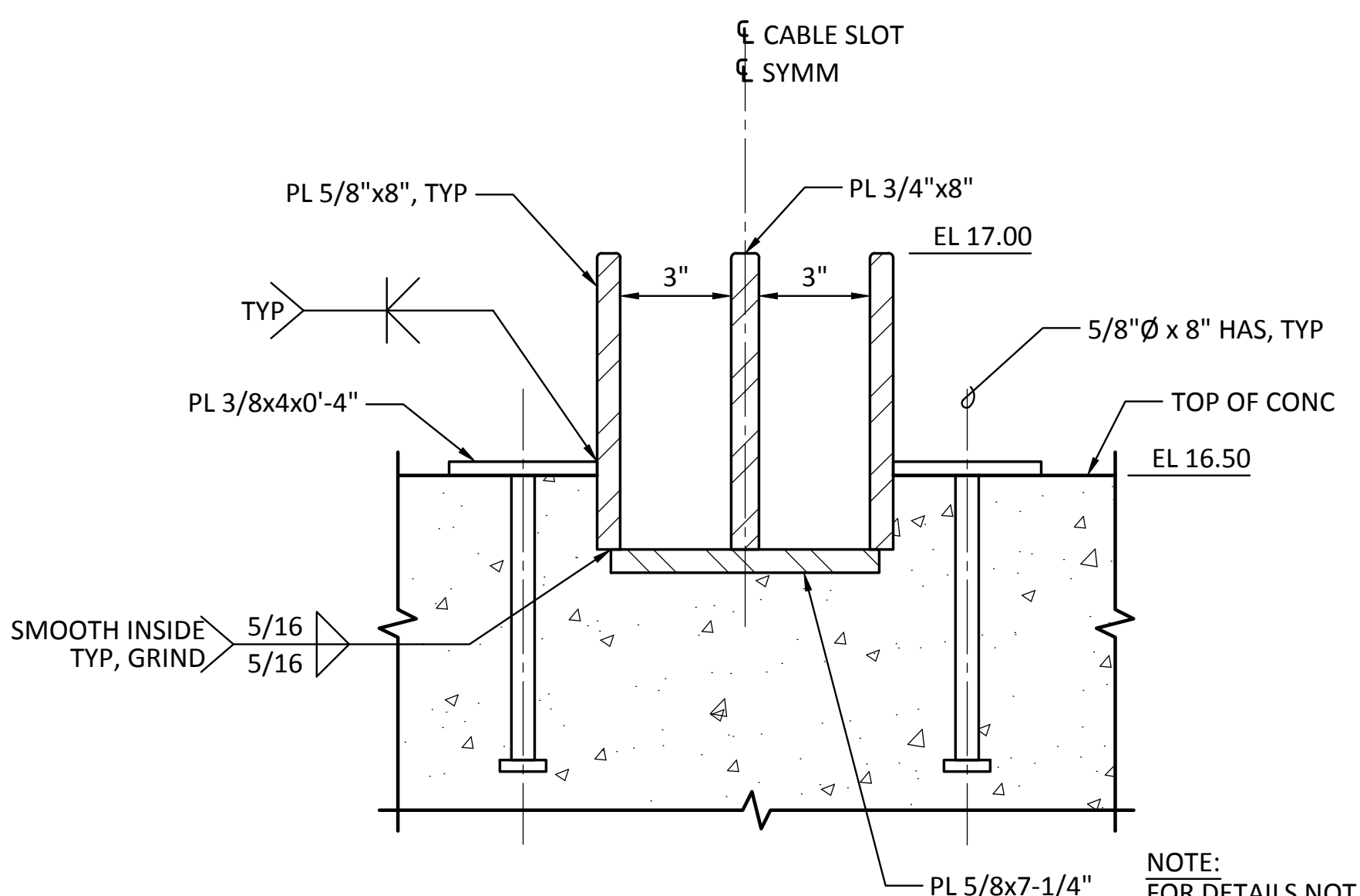
NOTE: ACP NOT SHOWN

2 SECTION - SINGLE CABLE SLOT SCALE: 3" = 1'-0"



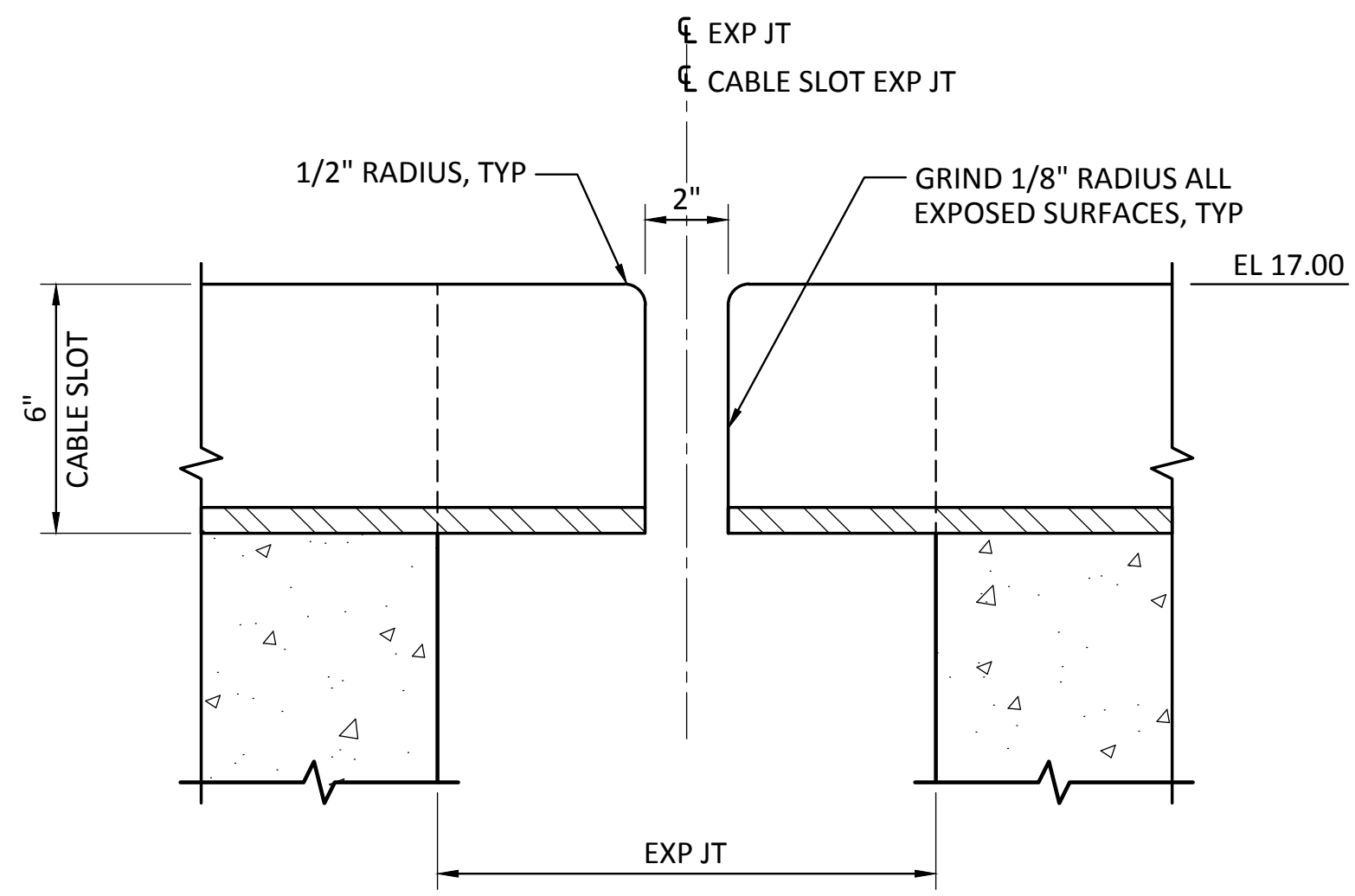
NOTE: ACP NOT SHOWN

3 SECTION - CABLE SLOT TRANSITION SCALE: 1 1/2" = 1'-0"

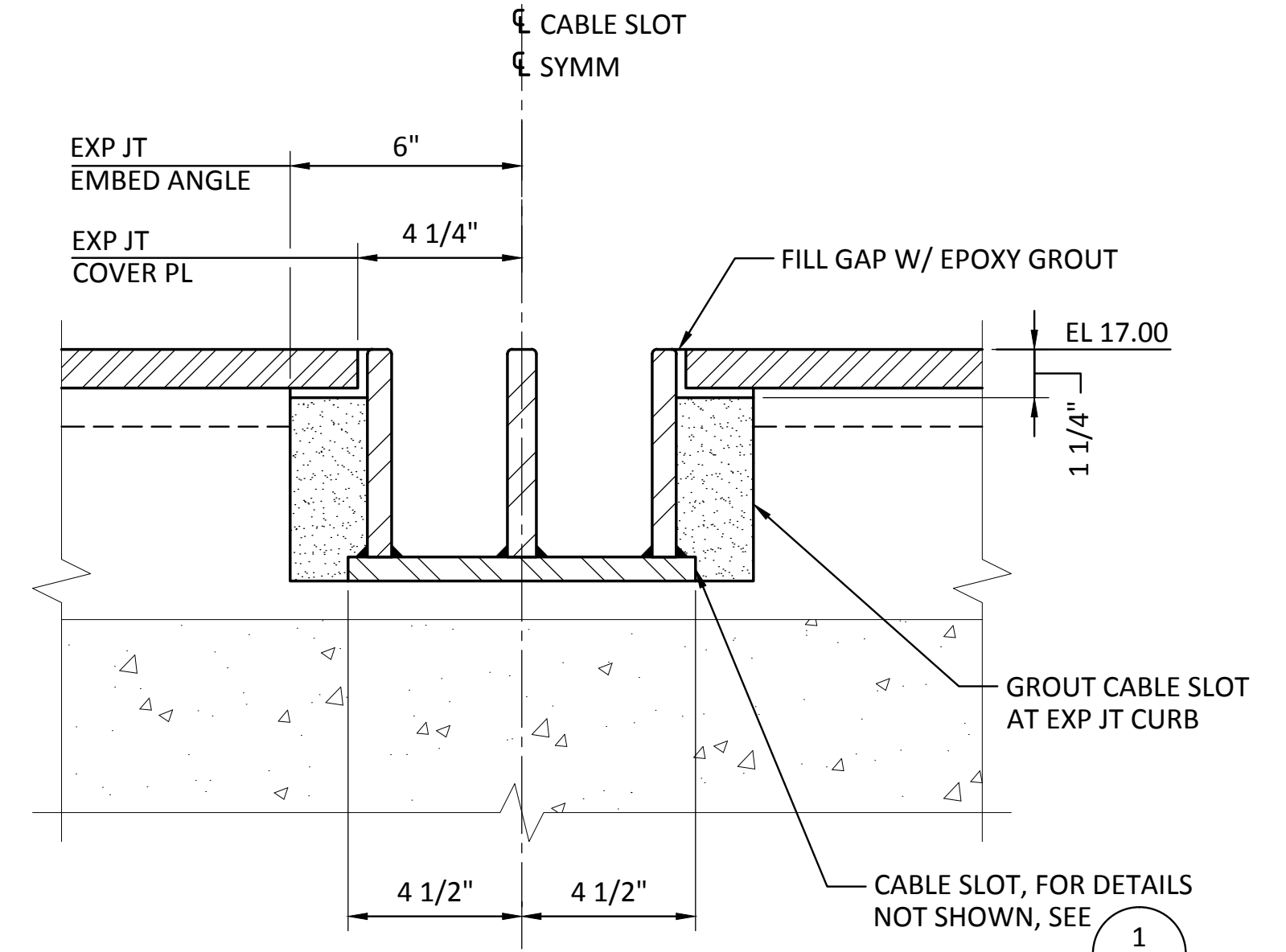


NOTE: FOR DETAILS NOT SHOWN, SEE 2

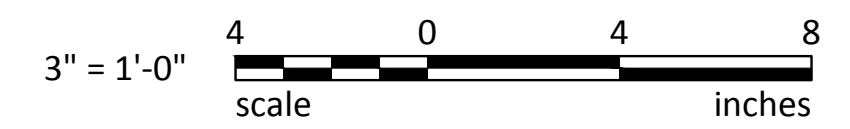
4 SECTION SCALE: 3" = 1'-0"



5 SECTION - CABLE SLOT EXP JOINT SCALE: 3" = 1'-0"



6 SECTION - CABLE SLOT AT EXP JOINT SCALE: 2" = 1'-0"

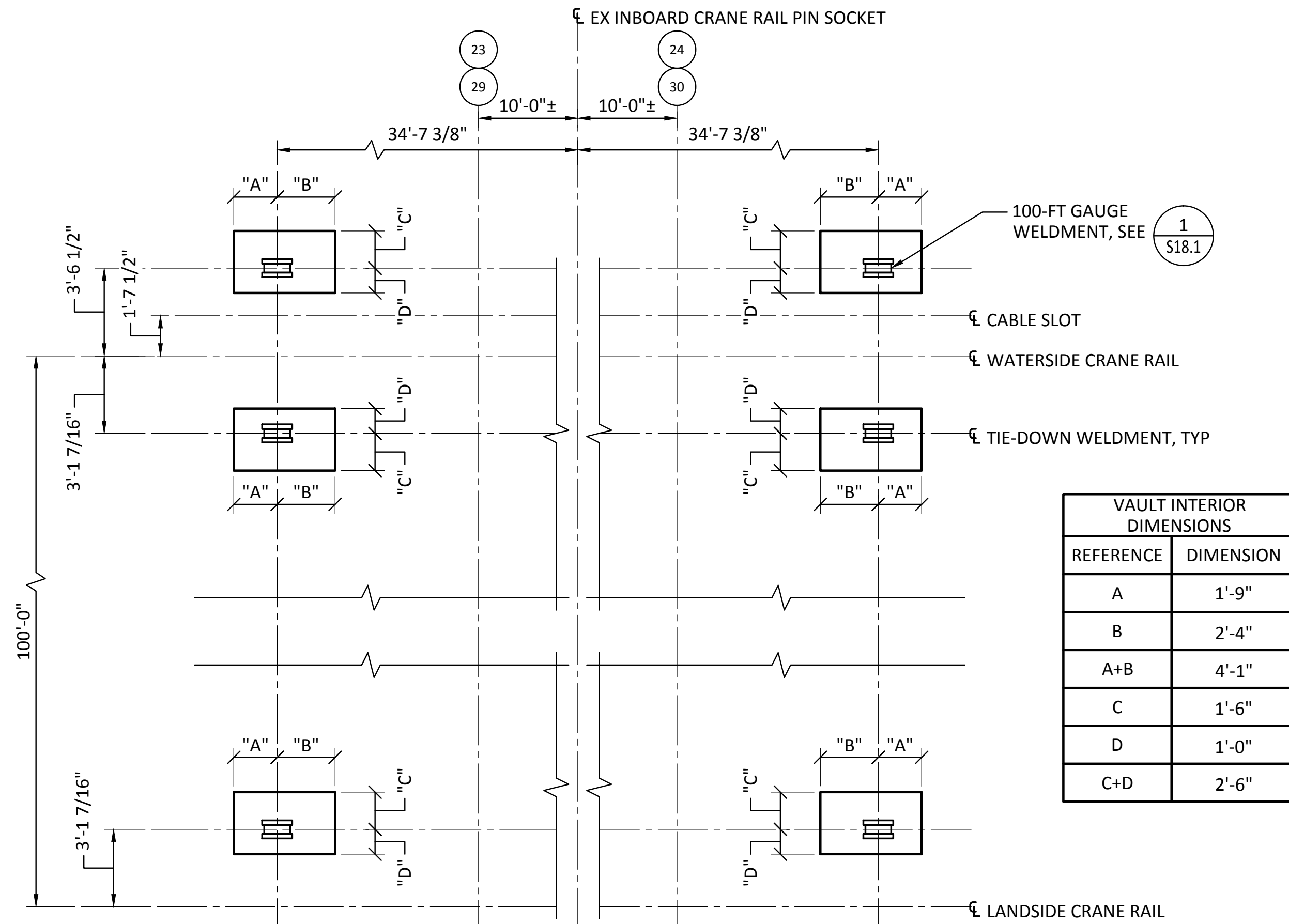


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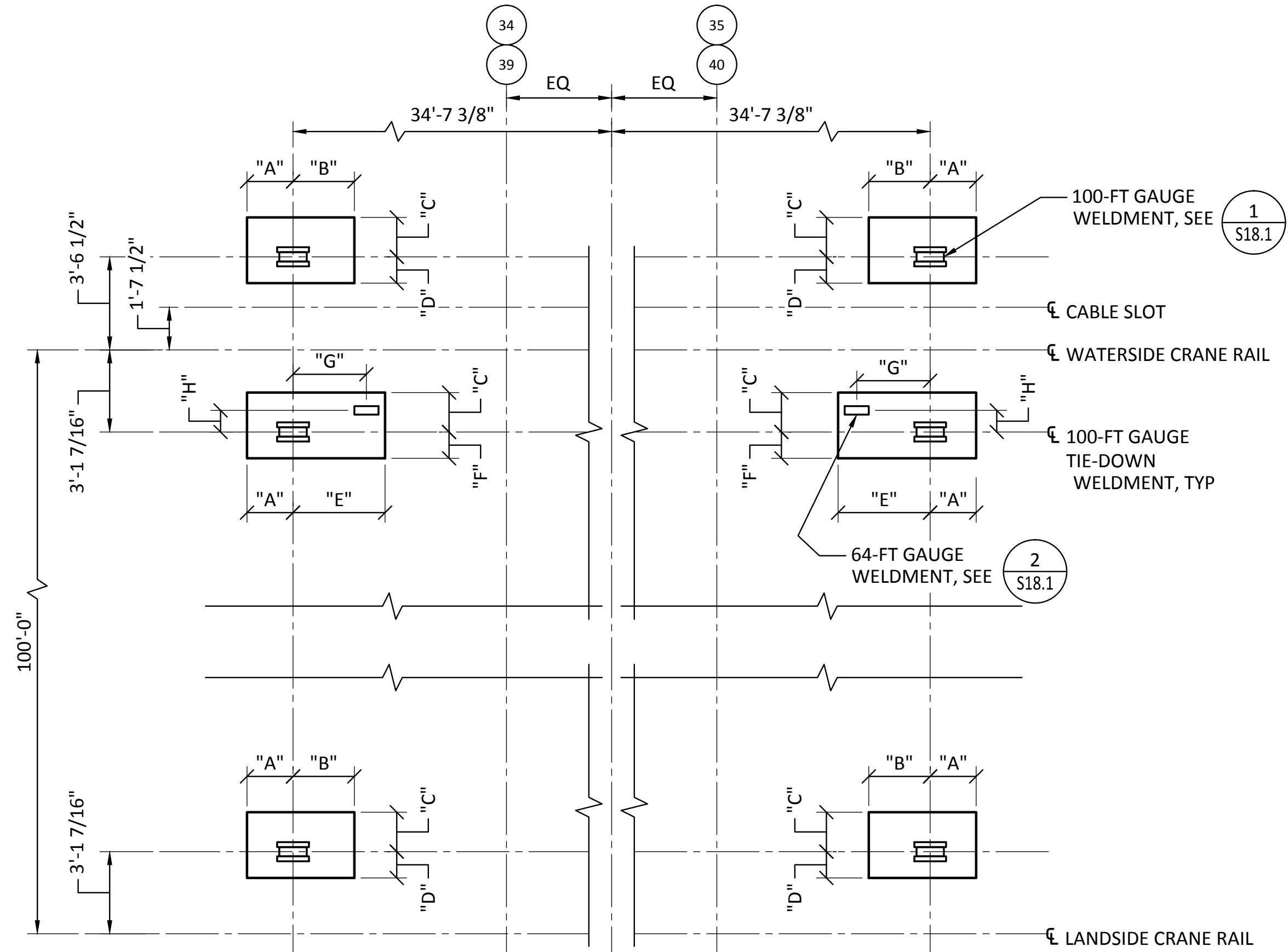
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2200 Fax: (206) 451-2250	BY: _____ DATE: _____
	REVISION: _____ APPR: _____
 P.O. BOX 1887 TACOMA, WA 98401-0188	
CSB CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: JASON MENDENHALL PRINTED BY: JASON MENDENHALL PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	APPROVED: _____ DATE: 7/17/13
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	PIER 3 UPGRADE CABLE SLOT DETAILS
6502 <b>S17.1</b> SHEET 87 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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VAULT INTERIOR DIMENSIONS	
REFERENCE	DIMENSION
A	1'-9"
B	2'-4"
A+B	4'-1"
C	1'-6"
D	1'-0"
C+D	2'-6"

NOTE:  
COVER PLATES AND FRAME  
EMBEDMENTS NOT SHOWN.

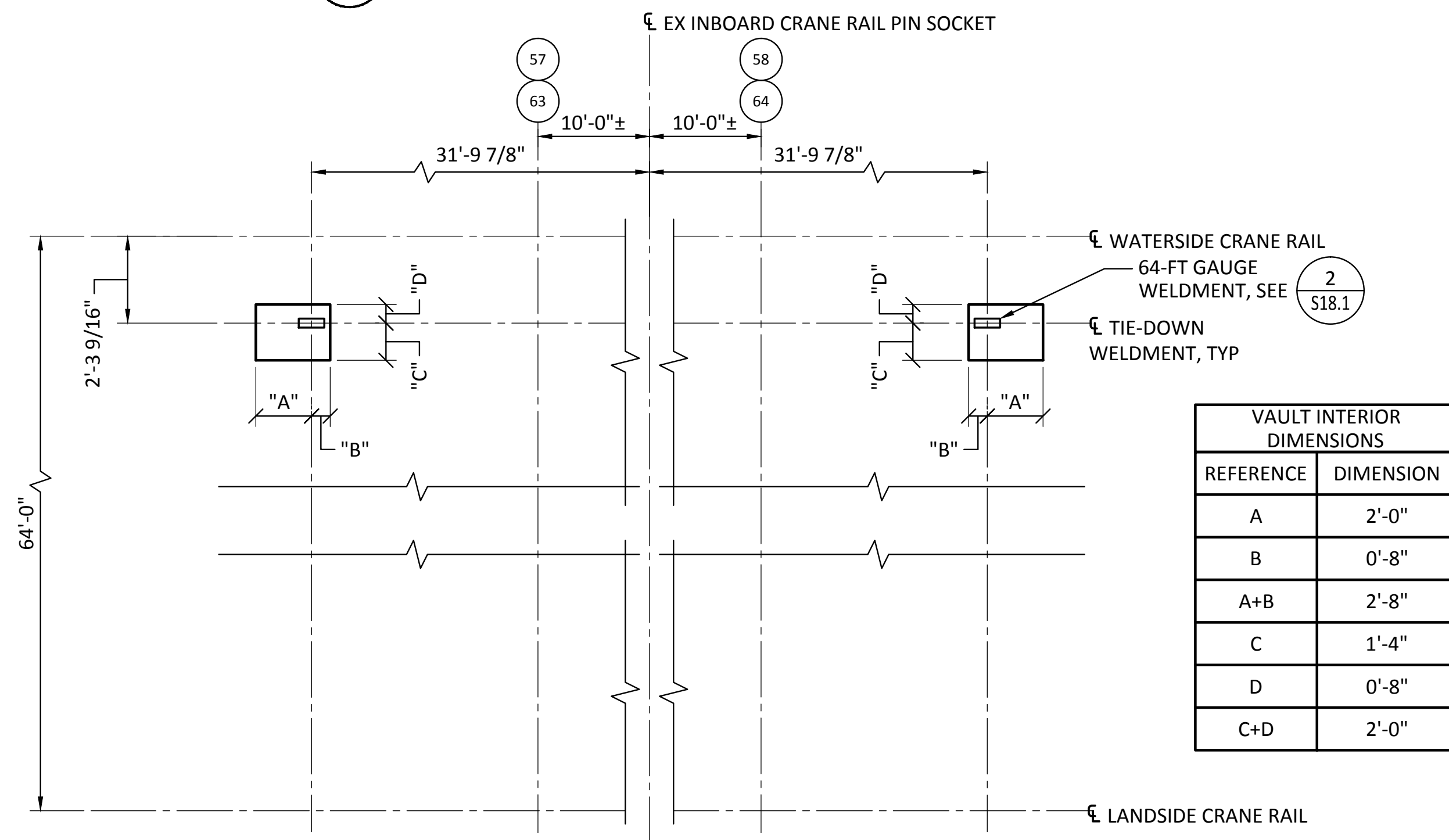


VAULT INTERIOR DIMENSIONS	
REFERENCE	DIMENSION
A	1'-9"
B	2'-4"
A+B	4'-1"
C	1'-6"
D	1'-0"
C+D	2'-6"
E	3'-6"
F	1'-0"
A+E	5'-3"
C+F	2'-6"
G	2'-9 1/2"
H	0'-9 7/8"

NOTE:  
COVER PLATES AND FRAME  
EMBEDMENTS NOT SHOWN.

**1**  
S11.3 **PLAN - 100-FT GAUGE CRANE TIE DOWN VAULTS**  
SCALE: 1/4" = 1'-0"

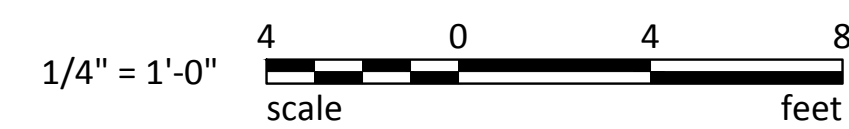
**2**  
S11.3 **PLAN - COMBINED 64-FT AND 100-FT GAUGE CRANE TIE DOWN VAULTS**  
SCALE: 1/4" = 1'-0"



VAULT INTERIOR DIMENSIONS	
REFERENCE	DIMENSION
A	2'-0"
B	0'-8"
A+B	2'-8"
C	1'-4"
D	0'-8"
C+D	2'-0"

NOTE:  
COVER PLATES AND FRAME  
EMBEDMENTS NOT SHOWN.

**3**  
S11.3 **PLAN - 64-FT GAUGE CRANE TIE DOWN VAULTS**  
SCALE: 1/4" = 1'-0"



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**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401 (206) 835-8441

DAVID S. ENGLISH  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF WASHINGTON  
NO. 10000  
EXPIRES 12/31/2016

APPROVED: CSB 7/17/13

DC 7/17/13

DIR OF ENG JRG

PRINTED BY: Jason.mendenthal

PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300

CHECKED BY: JRG

DATE: 7/17/13

PROJ. ENGR: Jason.mendenthal

SECTION: 27

RANGE: 3 E

TOWNSHIP: 21 N

DAT-HRZ: NAD 83-07

PARCEL: 27

DATE: 7/17/13

DATE: 7/17/13

DATE: 7/17/13

DATE: 7/17/13

DATE: 7/17/13

BY: [Signature]

REVISION: [Blank]

APPR: [Blank]

DATE: [Blank]

6502

**S18.0**

SHEET 88 OF 129

CONT/CONS: 069458

MASTER ID NO: 092935

PHASE: RECORD DRAWINGS

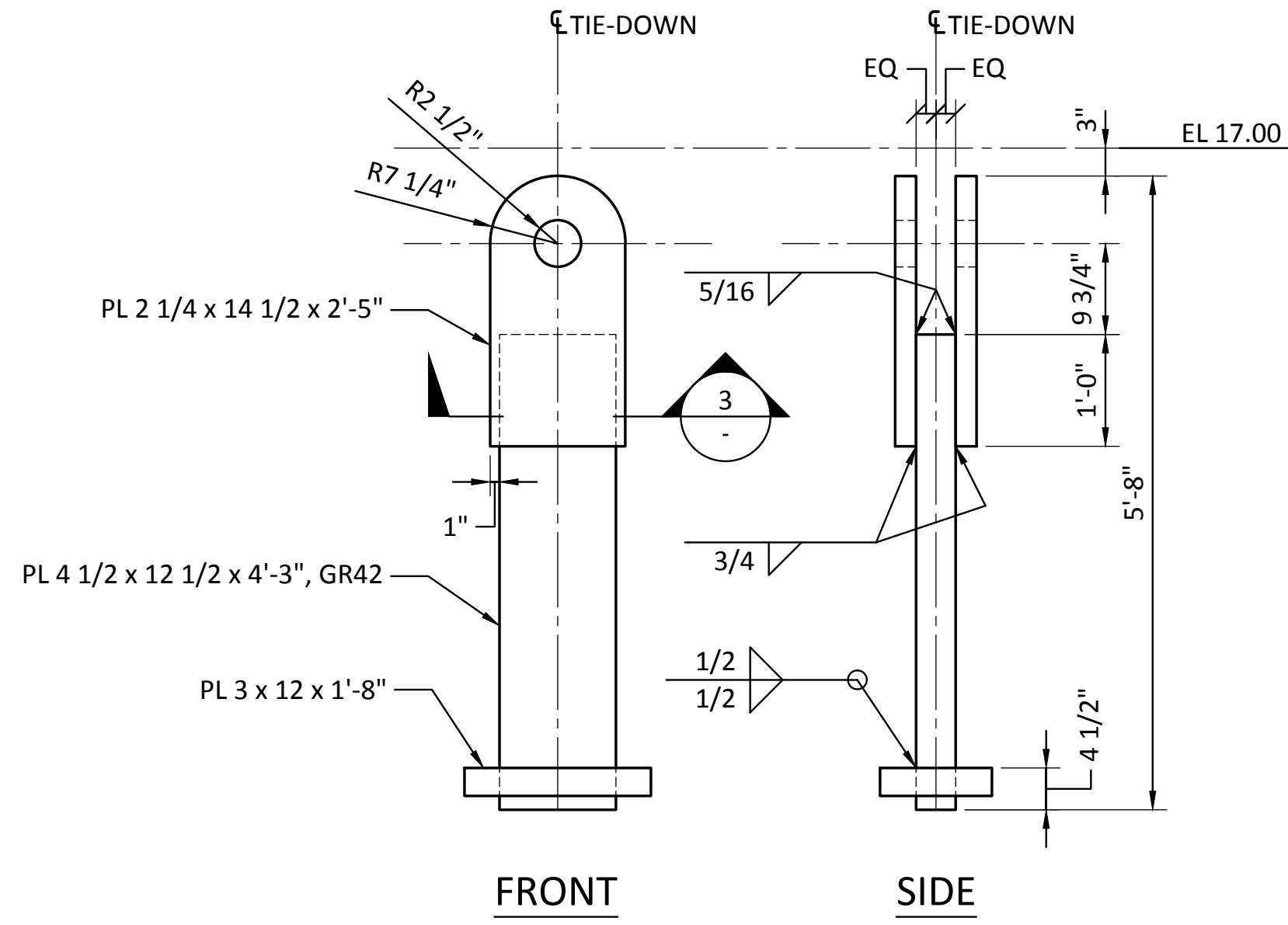
**PIER 3 UPGRADE**

**CRANE TIE-DOWN PLANS**

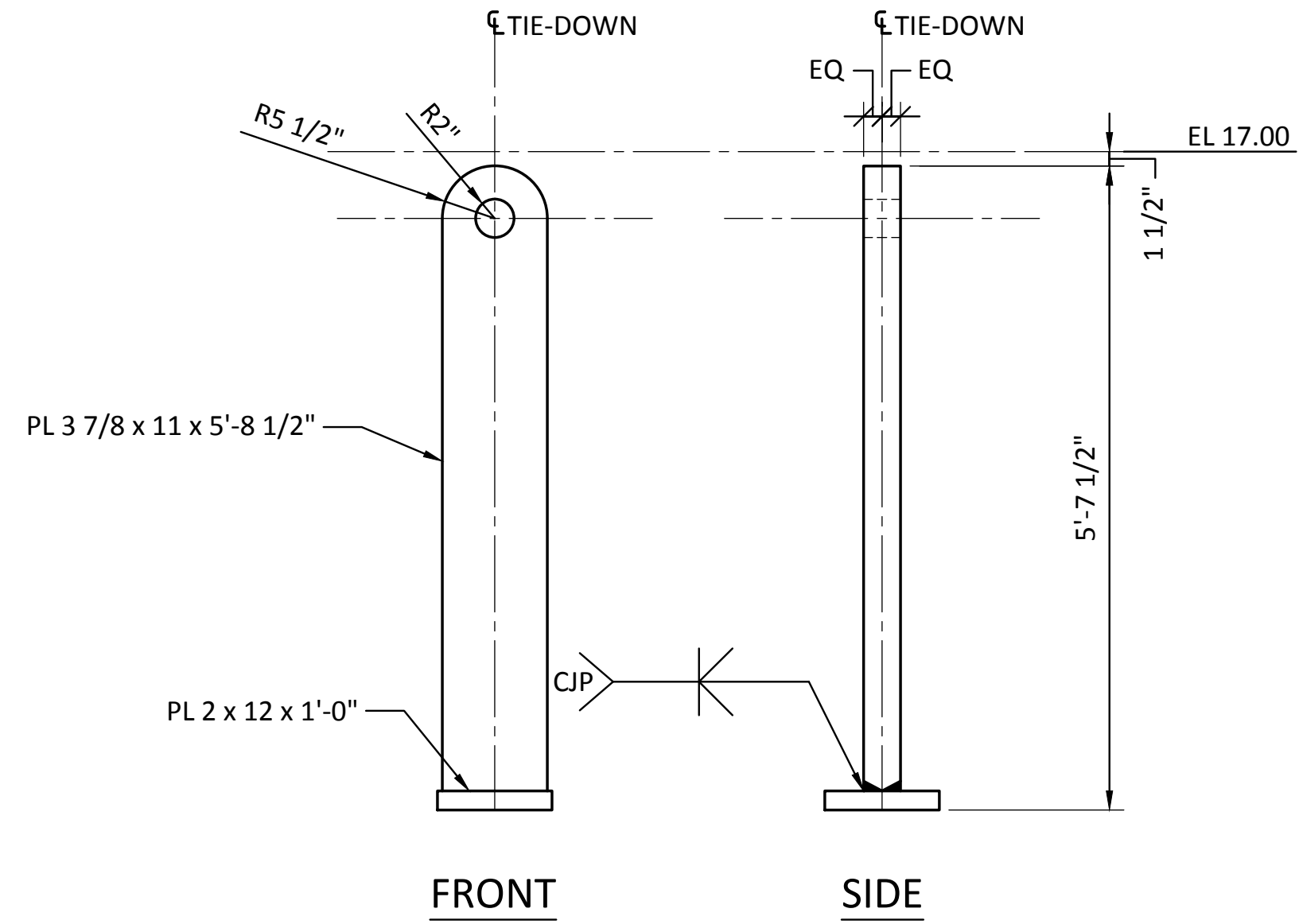
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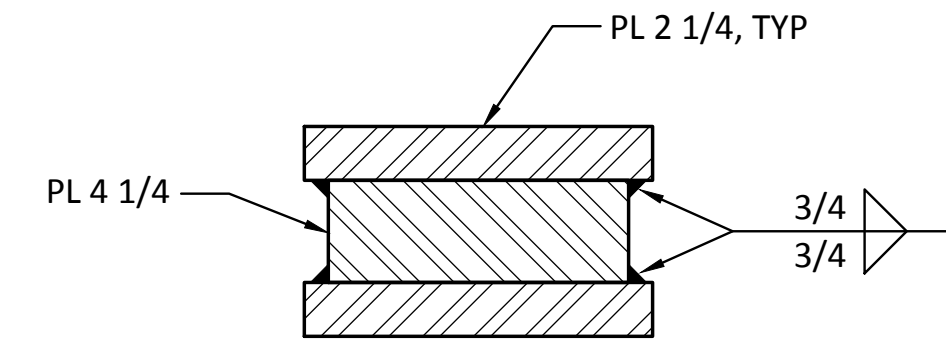
BINDING EDGE



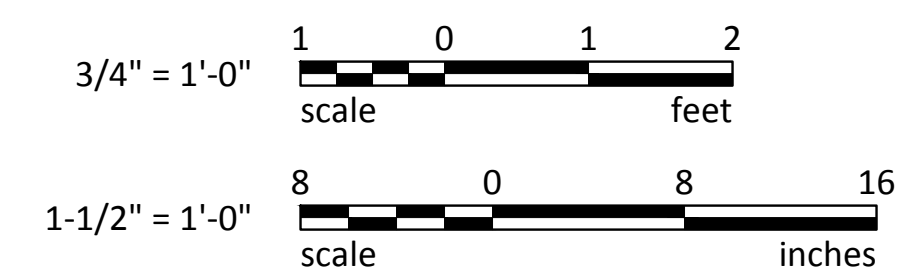
1  
S18.0  
DETAIL - 100-FT-GAUGE WELDMENT  
SCALE: 3/4" = 1'-0"  
( 24 TOTAL)



2  
S18.0  
DETAIL - 64-FT-GAUGE WELDMENT  
SCALE: 3/4" = 1'-0"  
( 8 TOTAL)



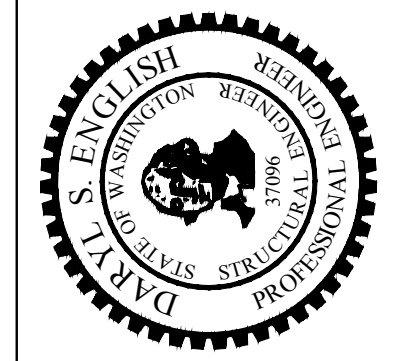
3  
SECTION  
SCALE: 1 1/2" = 1'-0"



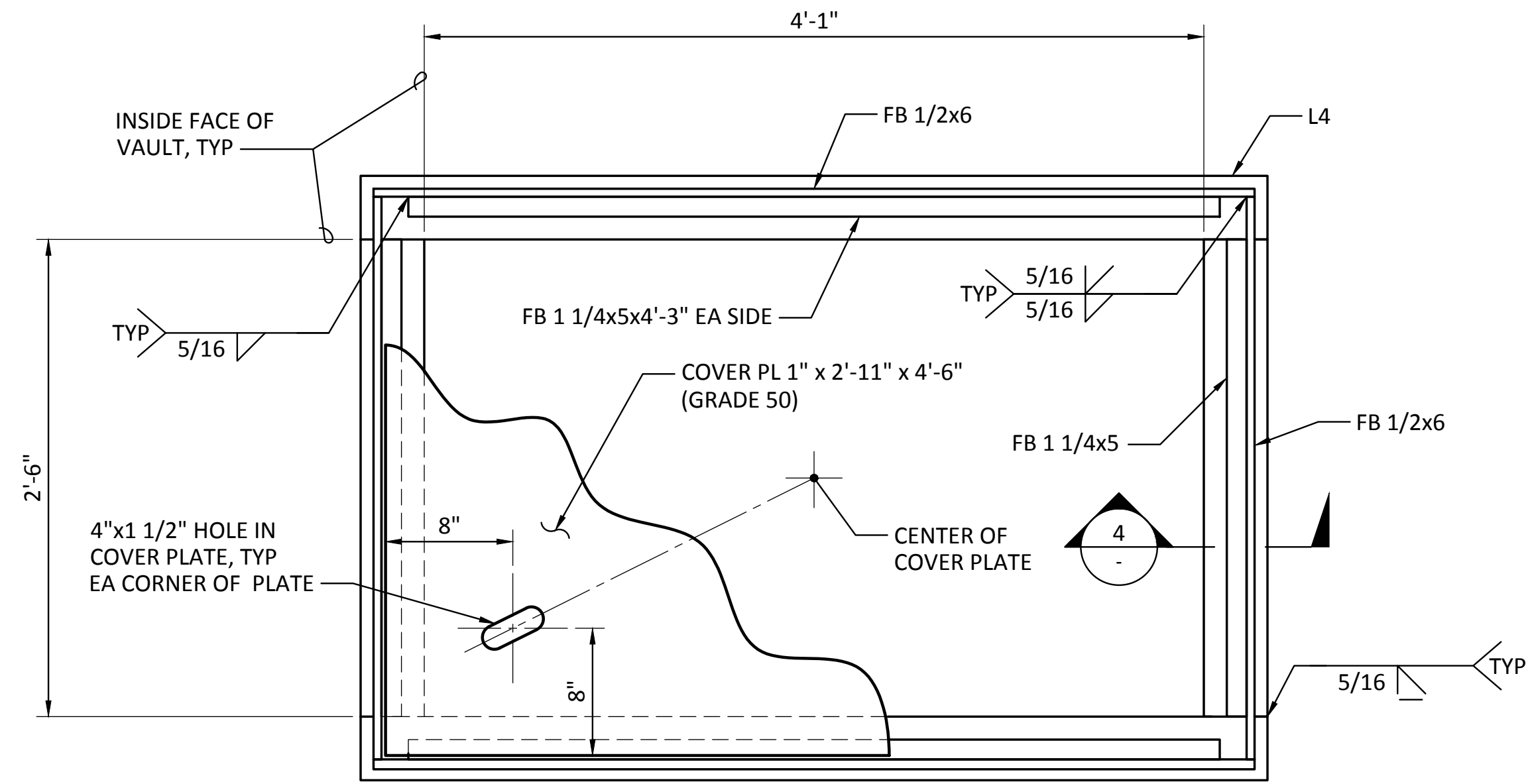
Last Saved by: Jason.mendenhall on: Mar 23, 2015 5:17 PM File: Q:\FederalWay\2012\FAWAT-12\091\CADD\Drawings\S18-01.dwg

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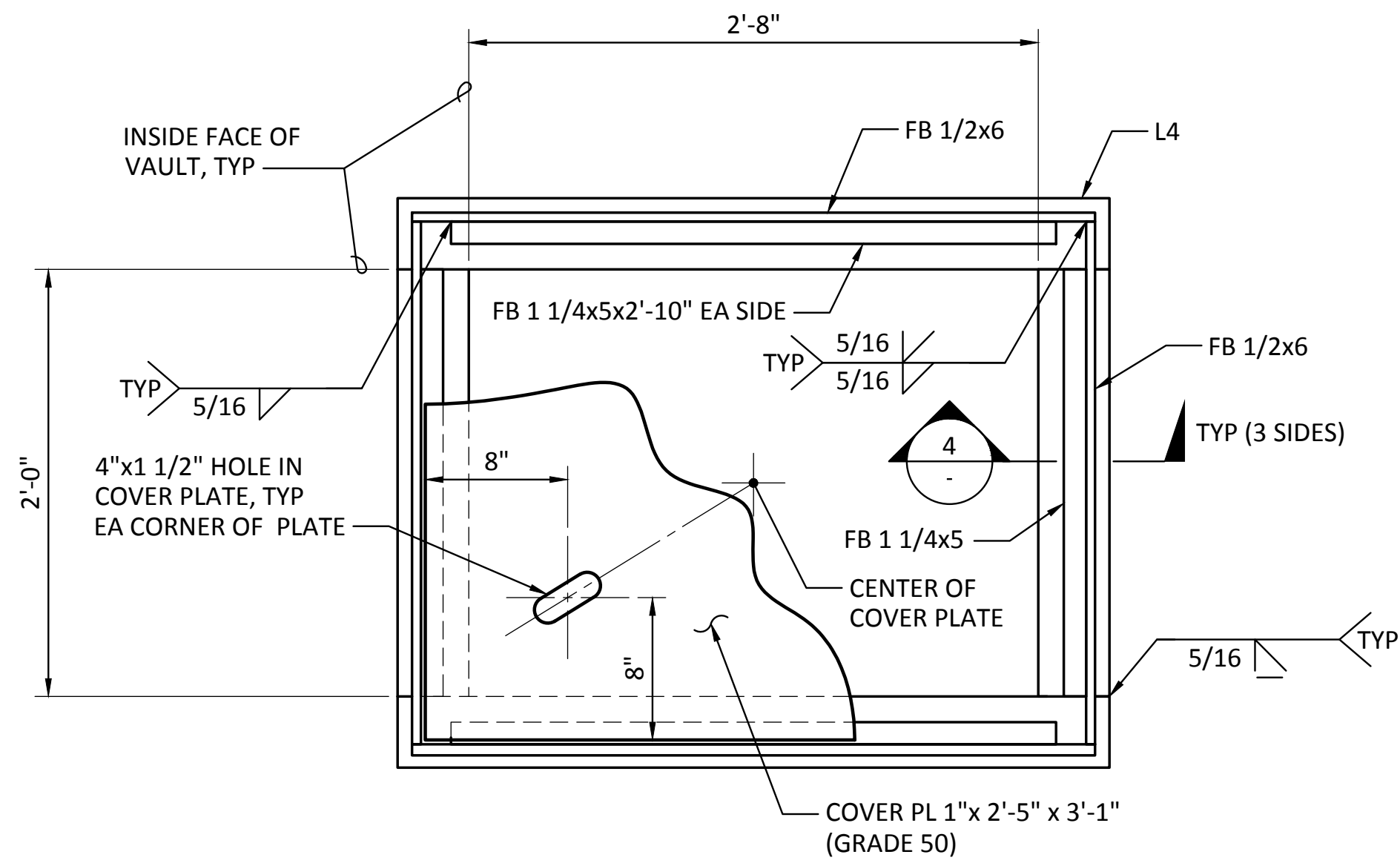
<p><b>6502</b> <b>S18.1</b> SHEET 89 OF 129</p>	<b>PIER 3 UPGRADE</b>		<p>CSB 7/17/13</p>
	<b>CRANE TIE-DOWN WELDMENTS</b>		<p>CHECKED BY: JRG 7/17/13</p>
<p>CONT/CONS: 069458</p>	<p>TOWNSHIP: 21 N</p>	<p>RANGE: 3 E</p>	<p>SECTION: 27</p>
<p>MASTER ID NO: 092935</p>	<p>DAT-HRZ: NAD 83-07</p>	<p>VERT: NOS TIDAL (MLLW = 0.0)</p>	<p>PRINTED BY: Jason.mendenhall</p>
<p>PHASE: RECORD DRAWINGS</p>	<p>PARCEL: 27</p>	<p>DRAWING SCALE: AS SHOWN</p>	<p>PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300</p>
<p>APPROVED:</p>		<p>DC 7/17/13</p>	<p>DATE 7/17/13</p>
<p>APPROVED:</p>		<p>DIR OF ENG</p>	<p>PROJ. ENGR</p>
<p>APPROVED:</p>		<p>PRINTED BY: Jason.mendenhall</p>	<p>DATE</p>
<p>APPROVED:</p>		<p>PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300</p>	<p>DATE</p>
<p>APPROVED:</p>		<p>MARK: REVISION:</p>	<p>BY: APPR: DATE:</p>
<p>APPROVED:</p>		<p>MARK: REVISION:</p>	<p>BY: APPR: DATE:</p>
<p>APPROVED:</p>		<p>MARK: REVISION:</p>	<p>BY: APPR: DATE:</p>



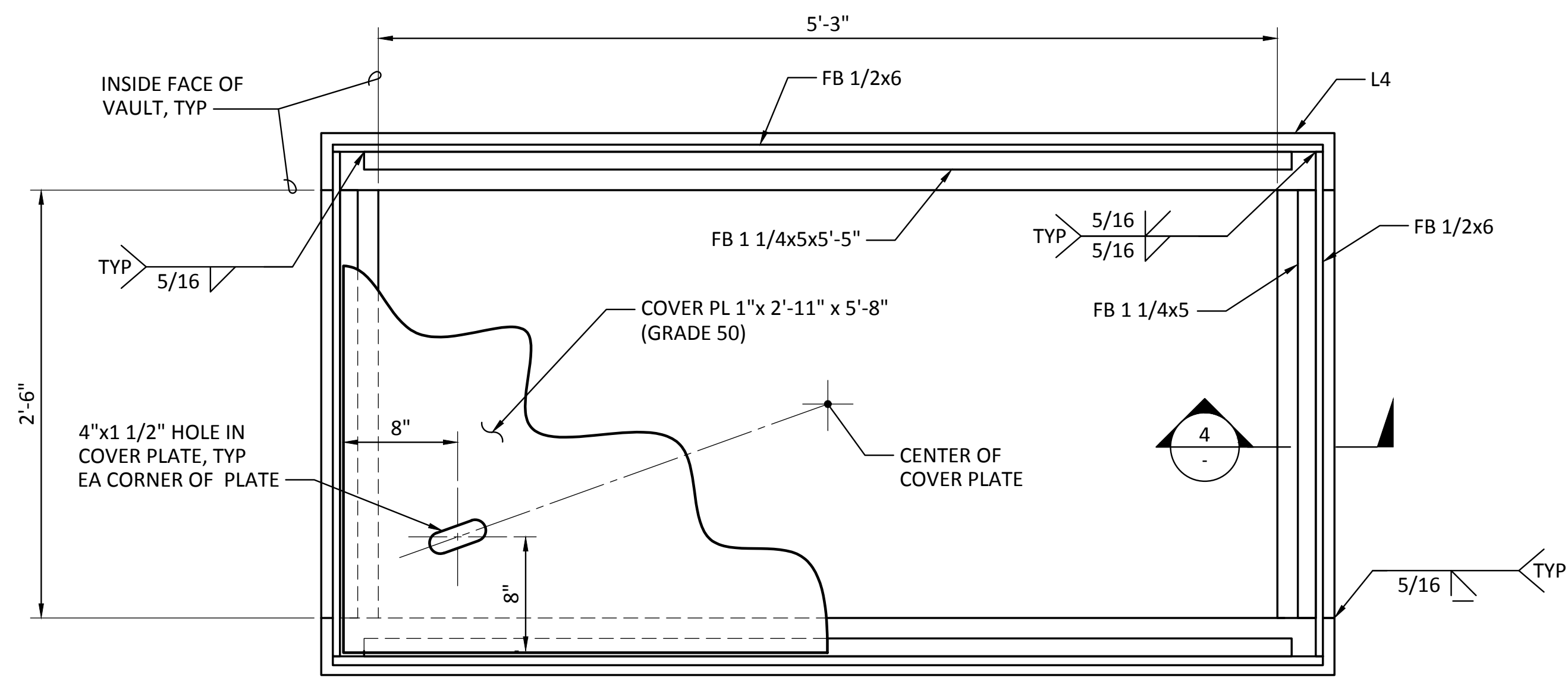
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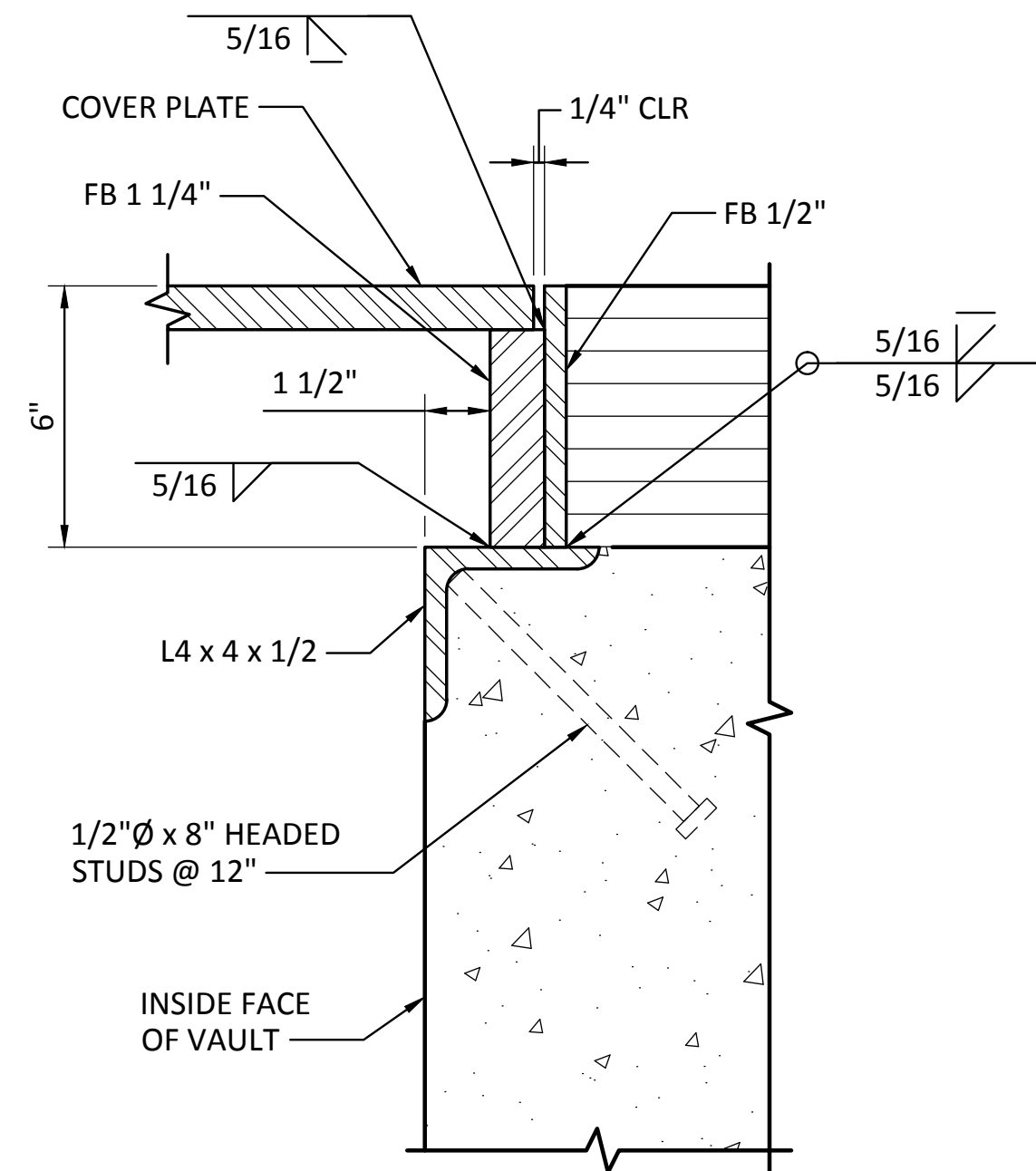
1 PLAN - TIE-DOWN VAULT FRAME - TYPE 1  
 S11.3 SCALE: 1 1/2" = 1'-0" (20 TOTAL)



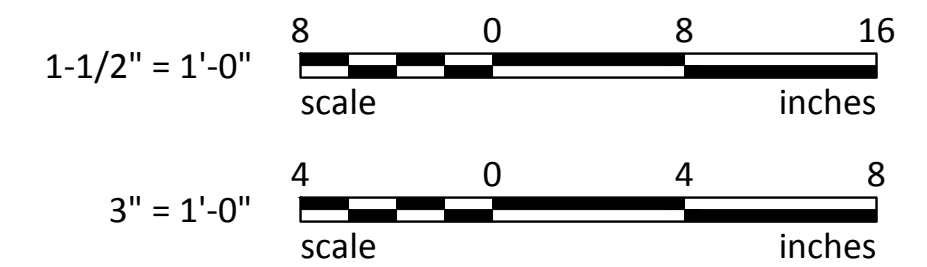
2 PLAN - TIE-DOWN VAULT FRAME - TYPE 2  
 S11.3 SCALE: 1 1/2" = 1'-0" (4 TOTAL)



3 PLAN - TIE-DOWN VAULT FRAME - TYPE 3  
 S11.3 SCALE: 1 1/2" = 1'-0" (4 TOTAL)



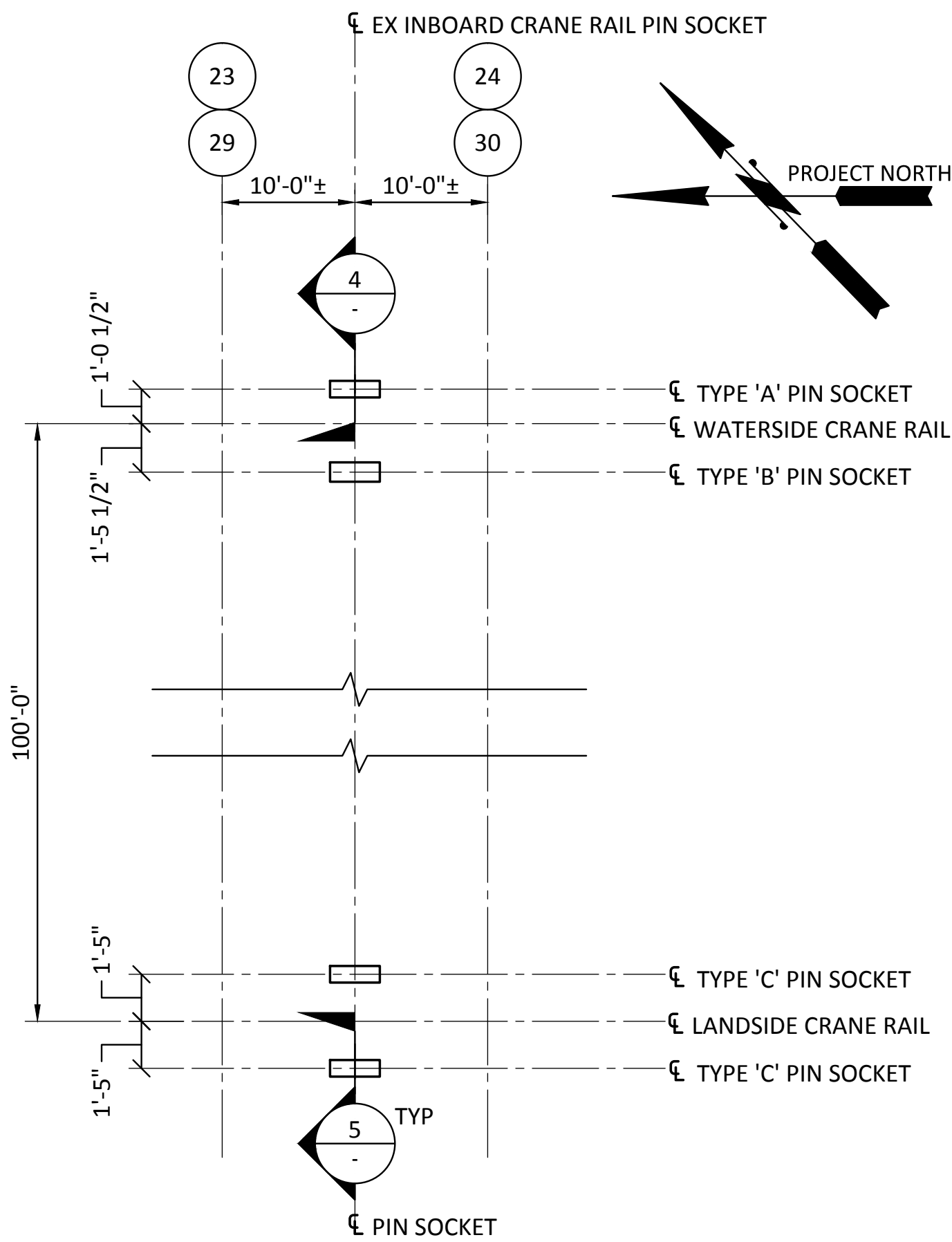
4 SECTION - COVER PLATE SUPPORT  
 SCALE: 3" = 1'-0"



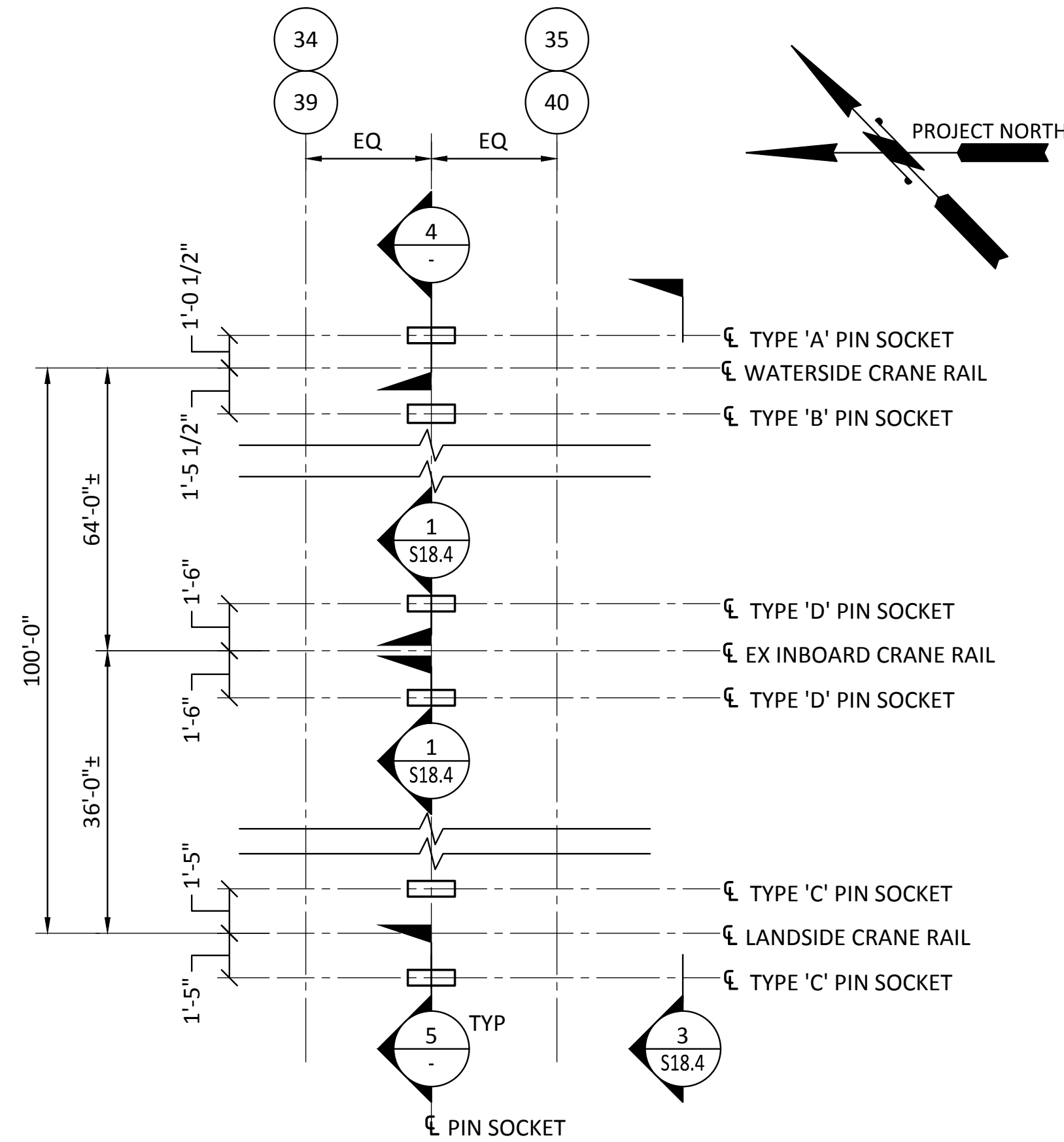
APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENG	Jason.mendenhall		DATE
PRINTED BY:	ONE SITCUM WAY	TACOMA, WA 98421-2300	

PIER 3 UPGRADE			
CRANE TIE-DOWN VAULT LIDS			
TOWNSHIP:	21 N	RANGE:	3 E
SECTION:	27	VERT:	NOS TIDAL (MLLW = 0.0)
DAT-HRZ:	NAD 83-07	PARCEL:	27
PHASE:	RECORD DRAWINGS	DRAWING SCALE:	AS SHOWN

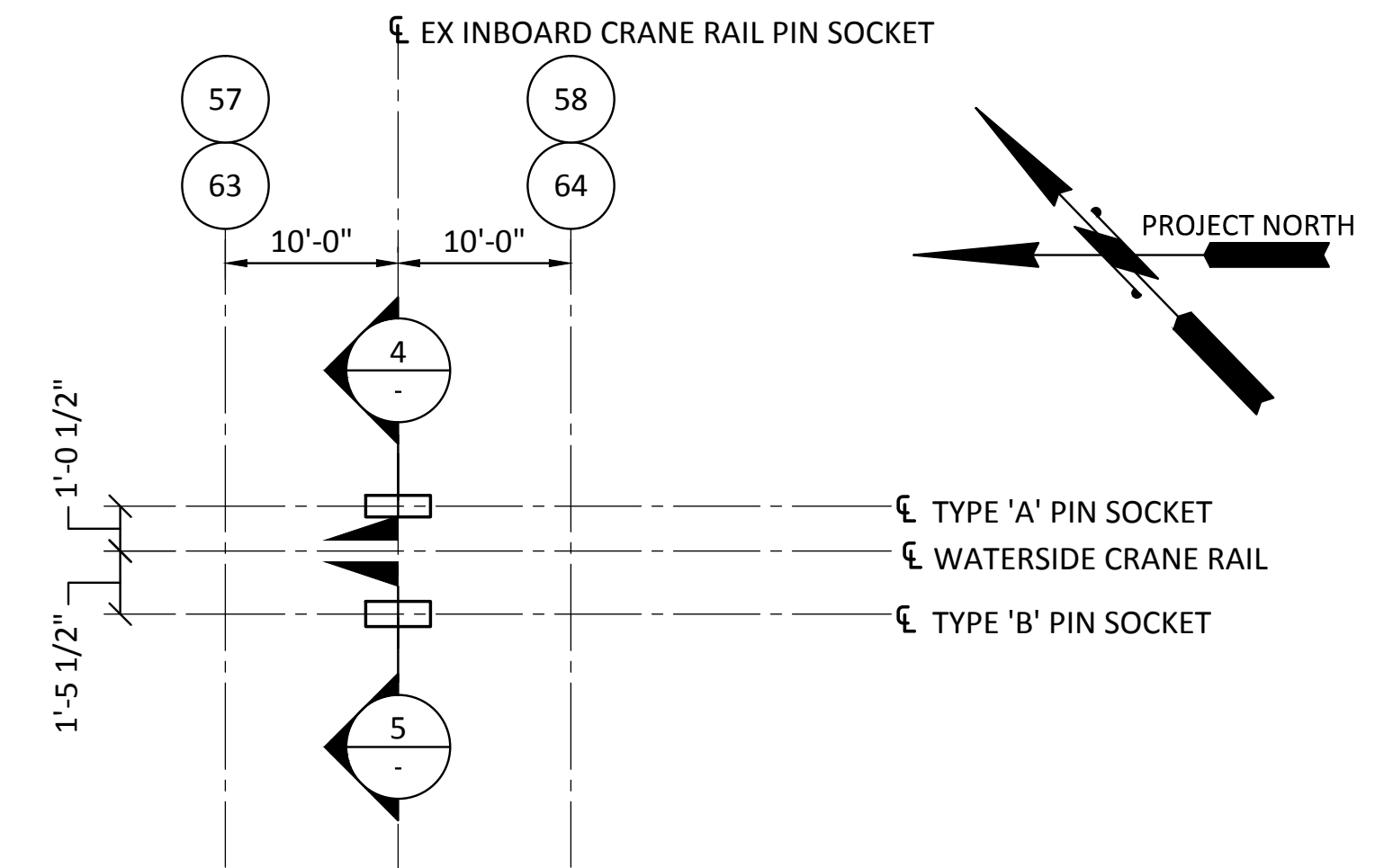
BINDING EDGE



1 PLAN - 100-FT GAUGE CRANE PIN SOCKETS  
SCALE: 1/4" = 1'-0"

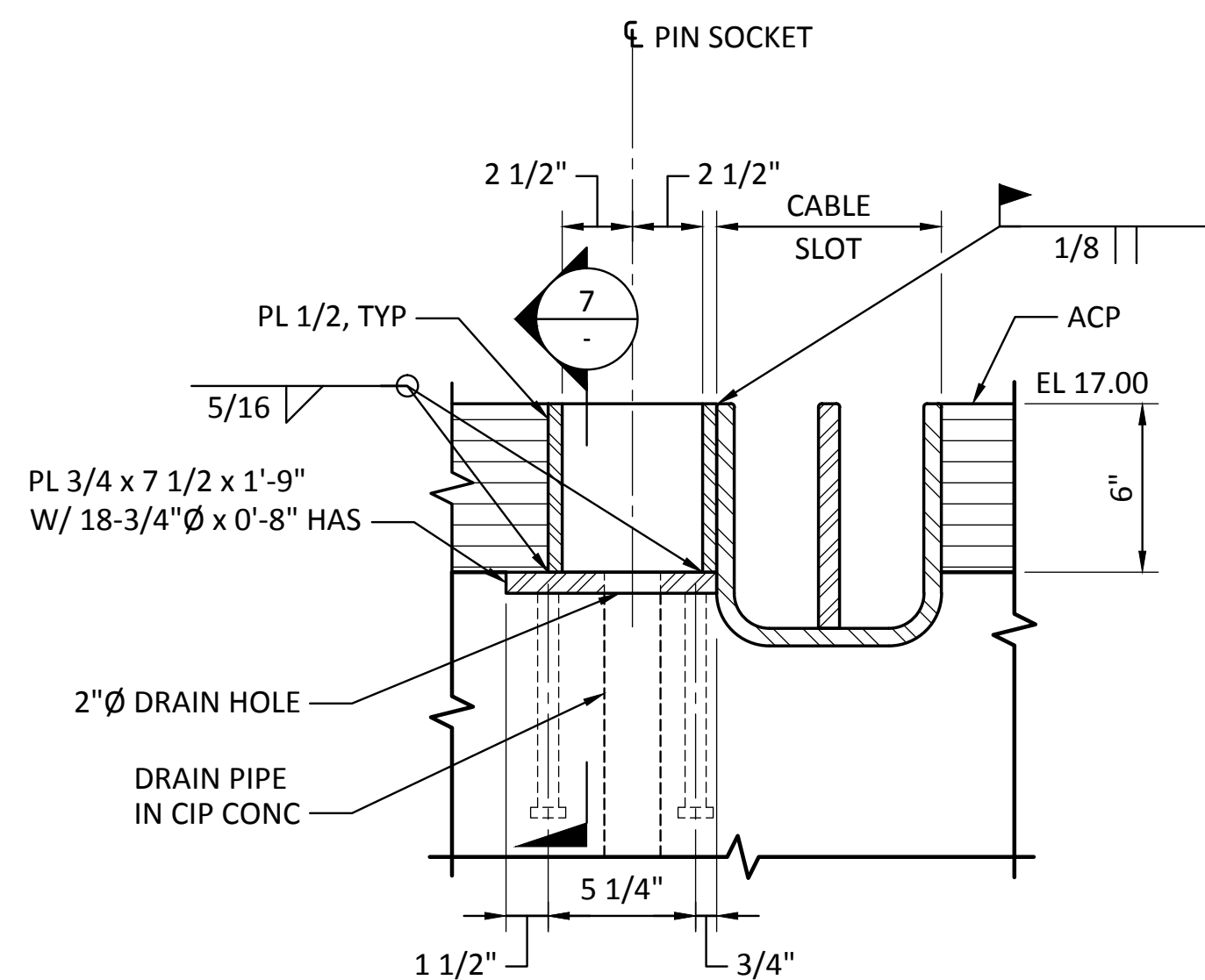


2 PLAN - COMBINED 64-FT AND 100-FT GAUGE CRANE PIN SOCKETS  
SCALE: 1/4" = 1'-0"

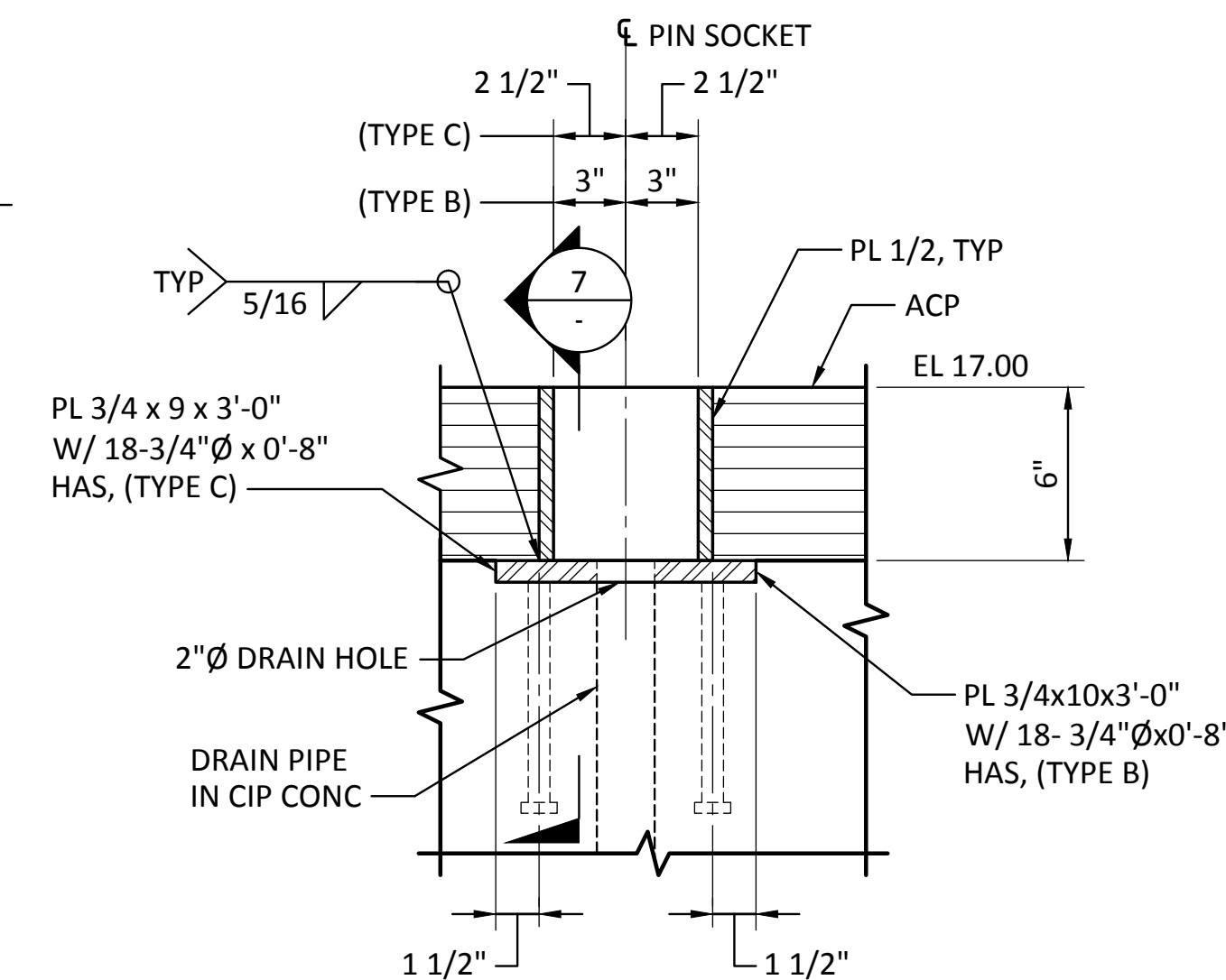


3 PLAN - 64-FT GAUGE CRANE PIN SOCKETS  
SCALE: 1/4" = 1'-0"

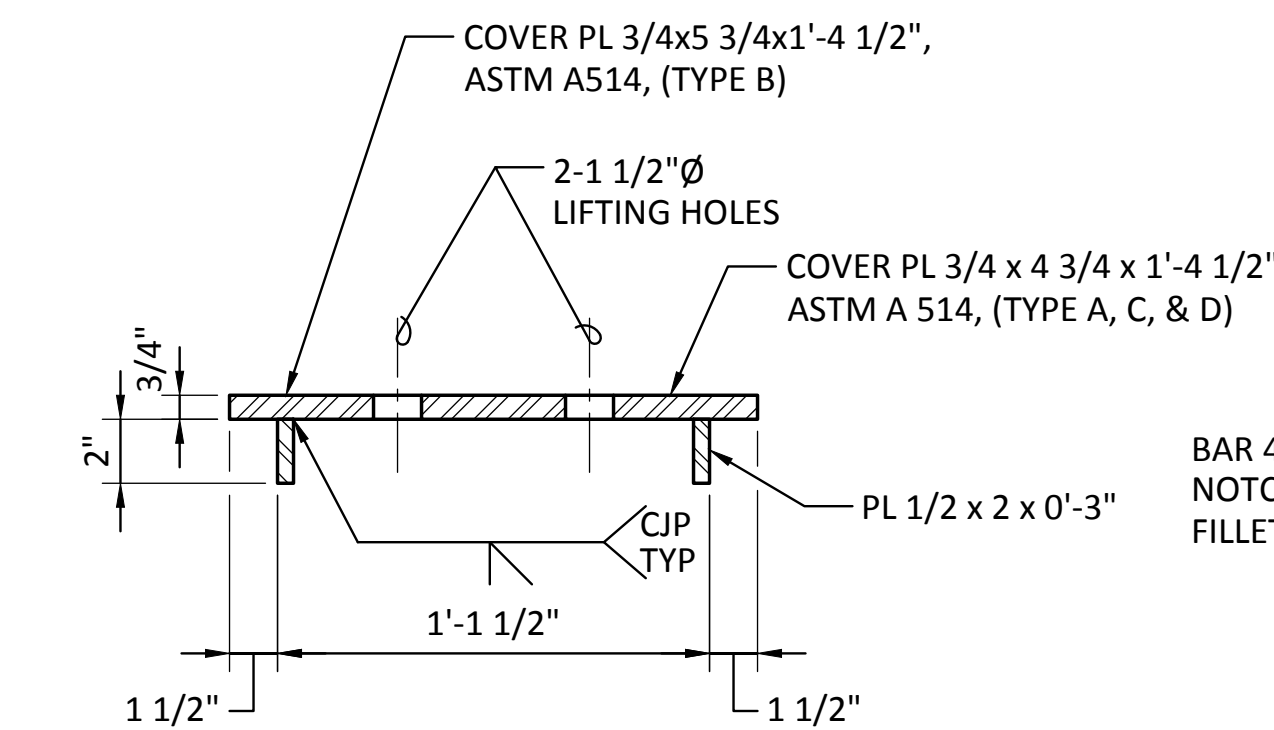
- NOTES:
- COVER PLATES AND EMBEDMENTS NOT SHOWN.
  - FOR COVER PLATES, SEE 6.
  - FOR PIN SOCKET DRAINS, SEE 3.



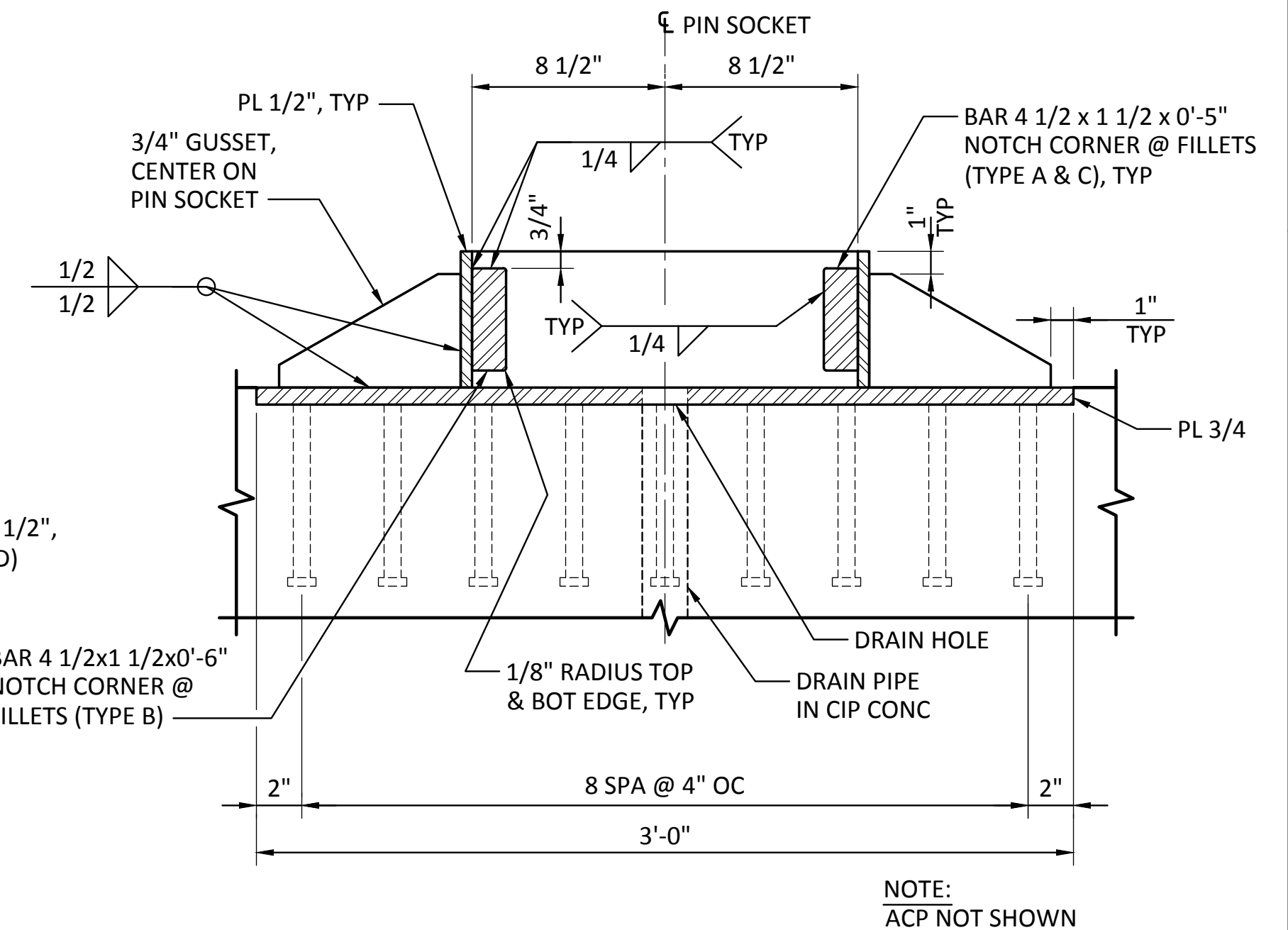
4 SECTION - TYPE 'A' PIN SOCKET  
SCALE: 2" = 1'-0"



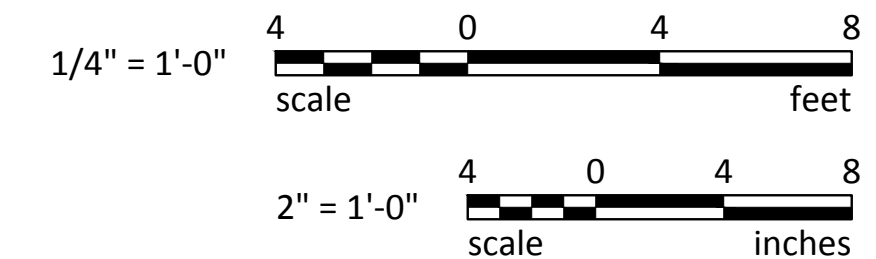
5 SECTION - TYPE 'B' & 'C' PIN SOCKET  
SCALE: 2" = 1'-0"



6 SECTION - COVER PLATE  
SCALE: 2" = 1'-0"

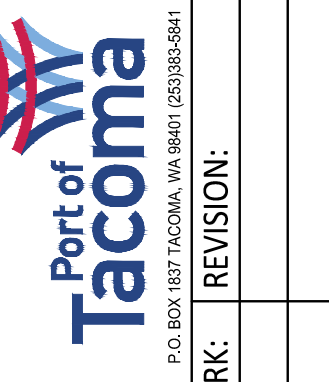
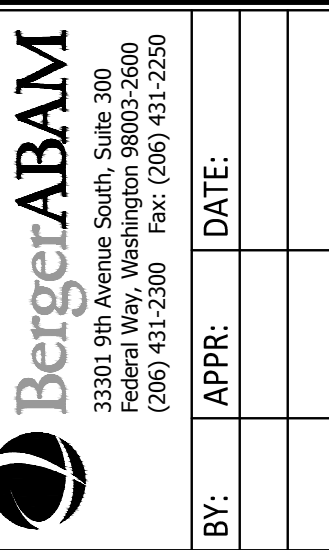


7 SECTION - TYPICAL PIN SOCKET  
SCALE: 2" = 1'-0"



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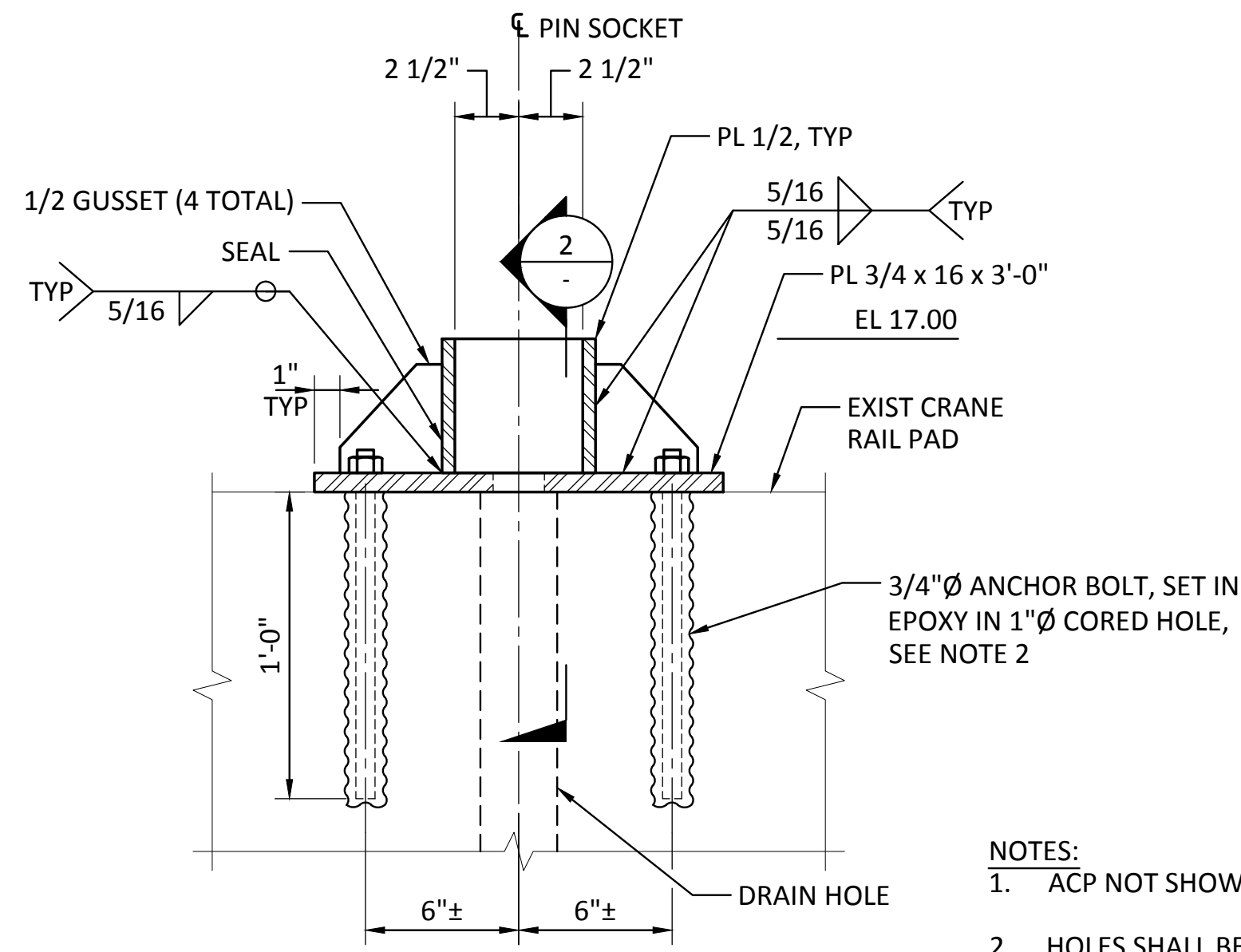
CSB	7/17/13	DATE
CHECKED BY	JRG	7/17/13
DC	7/17/13	DATE
DIR OF ENG	Jason.mendenhall	DATE
PRINTED BY	ONE SITCUM WAY	PORT ADDRESS
TACOMA, WA 98421-2300		

APPROVED:	
PIER 3 UPGRADE	
CRANE PIN SOCKET PLAN AND DETAILS	
SHEET 1	
RANGE: 3 E	SECTION: 27
TOWNSHIP: 21 N	VERT: NOS TIDAL (MILLW = 0.0)
DATE-HRZ: NAD 83-07	DRAWING SCALE: AS SHOWN
PARCEL: 27	

6502	
S18.3	
SHEET 91 OF 129	
CONT/CONS: 069458	
MASTER ID NO: 092935	
PHASE: RECORD DRAWINGS	

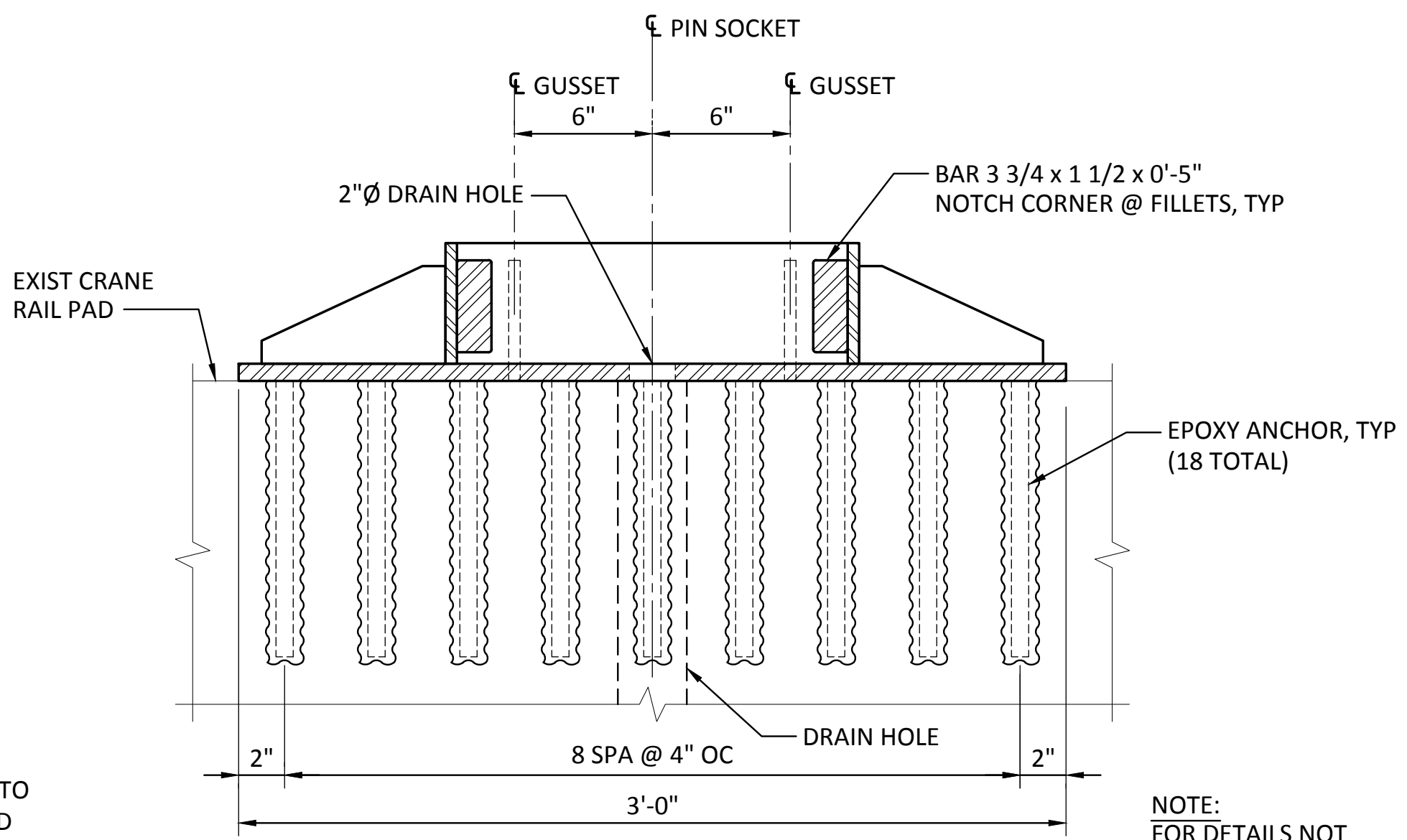
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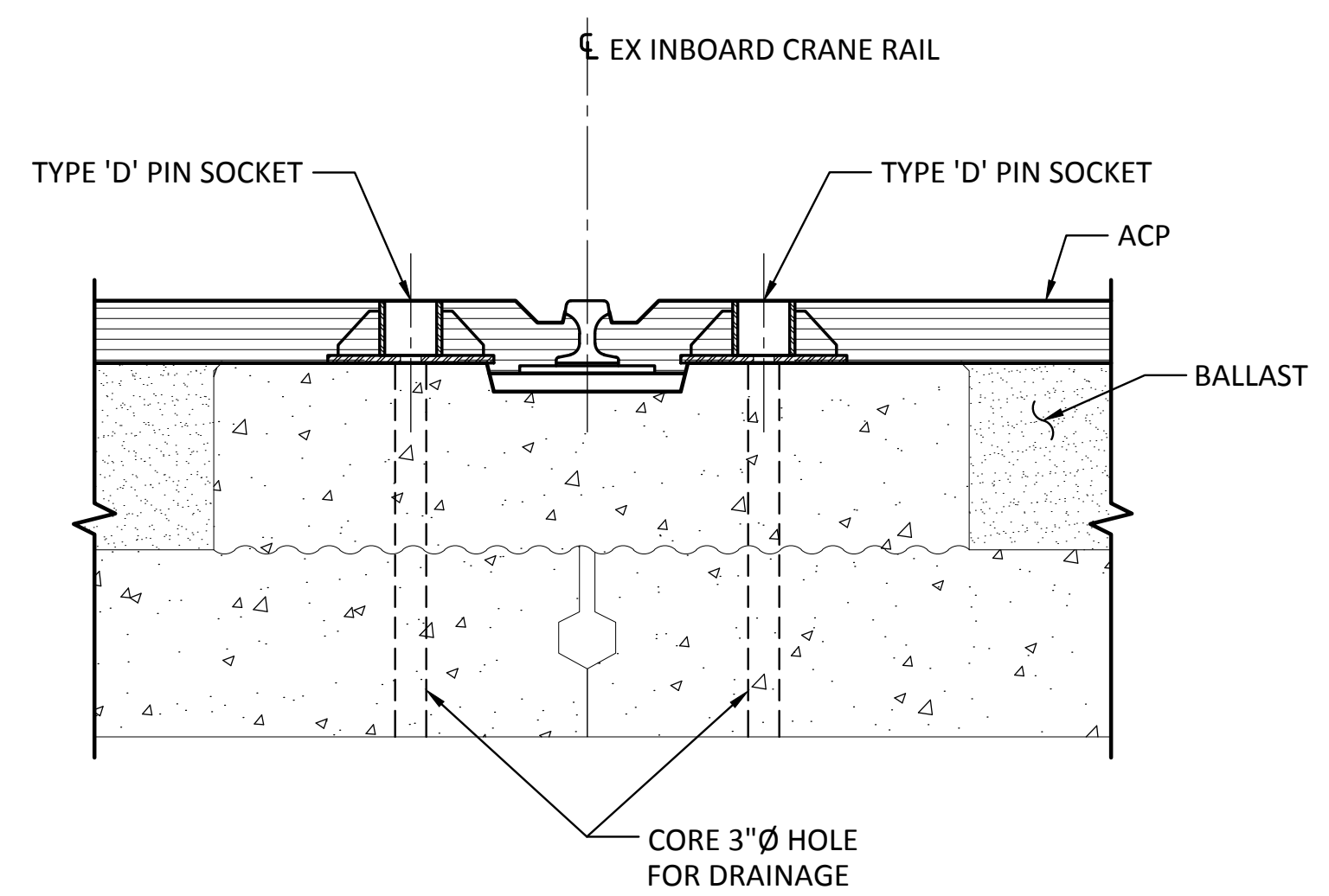
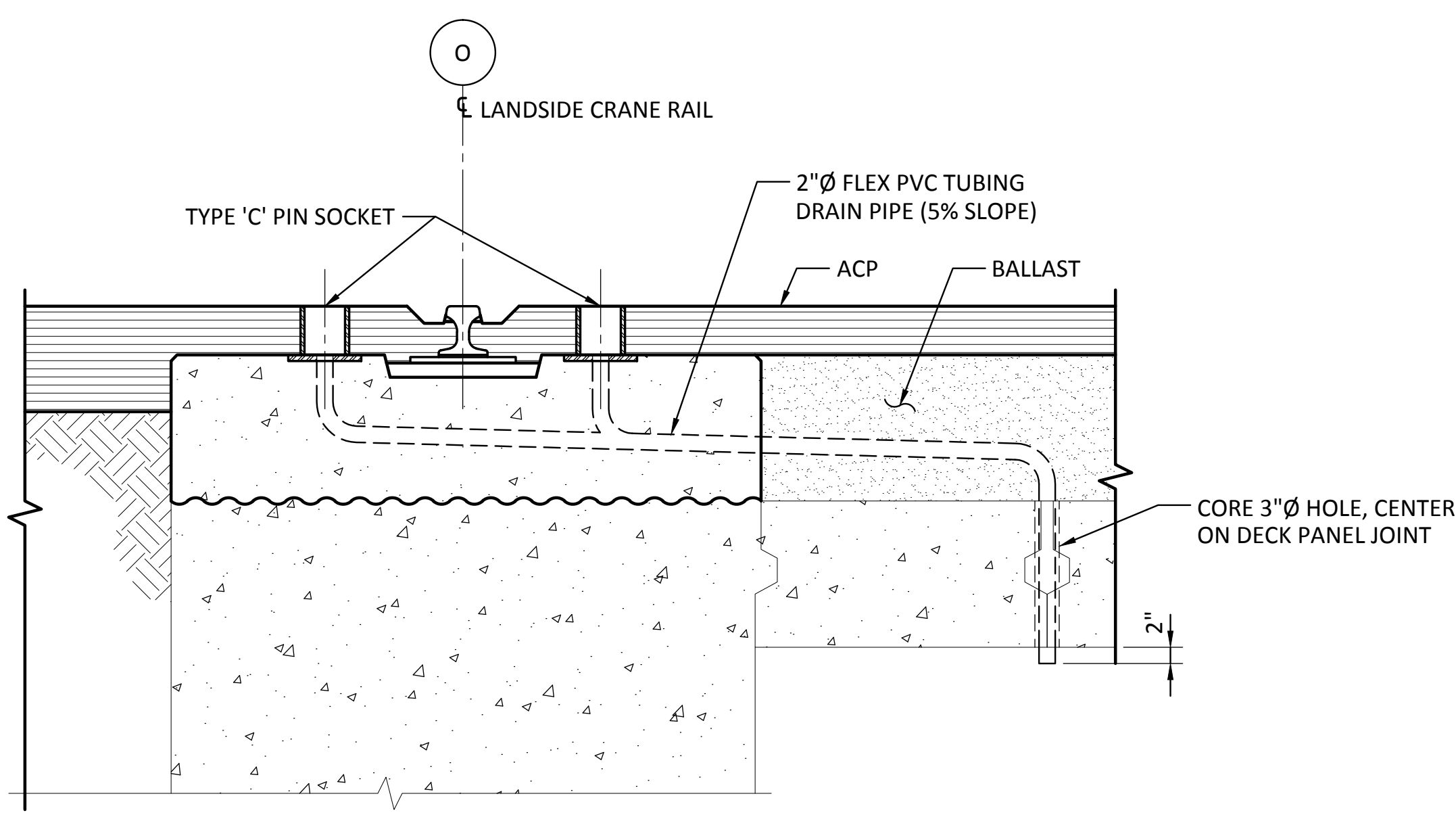
1 SECTION - TYPE 'D' PIN SOCKET  
SCALE: 2" = 1'-0"

- NOTES:  
1. ACP NOT SHOWN.  
2. HOLES SHALL BE ROUGHENED TO 1/8" AMPLITUDE AND CLEANED PRIOR TO INSTALLATION OF ANCHOR BOLTS AND EPOXY



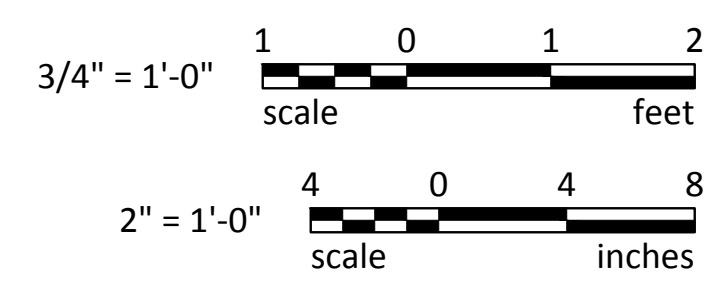
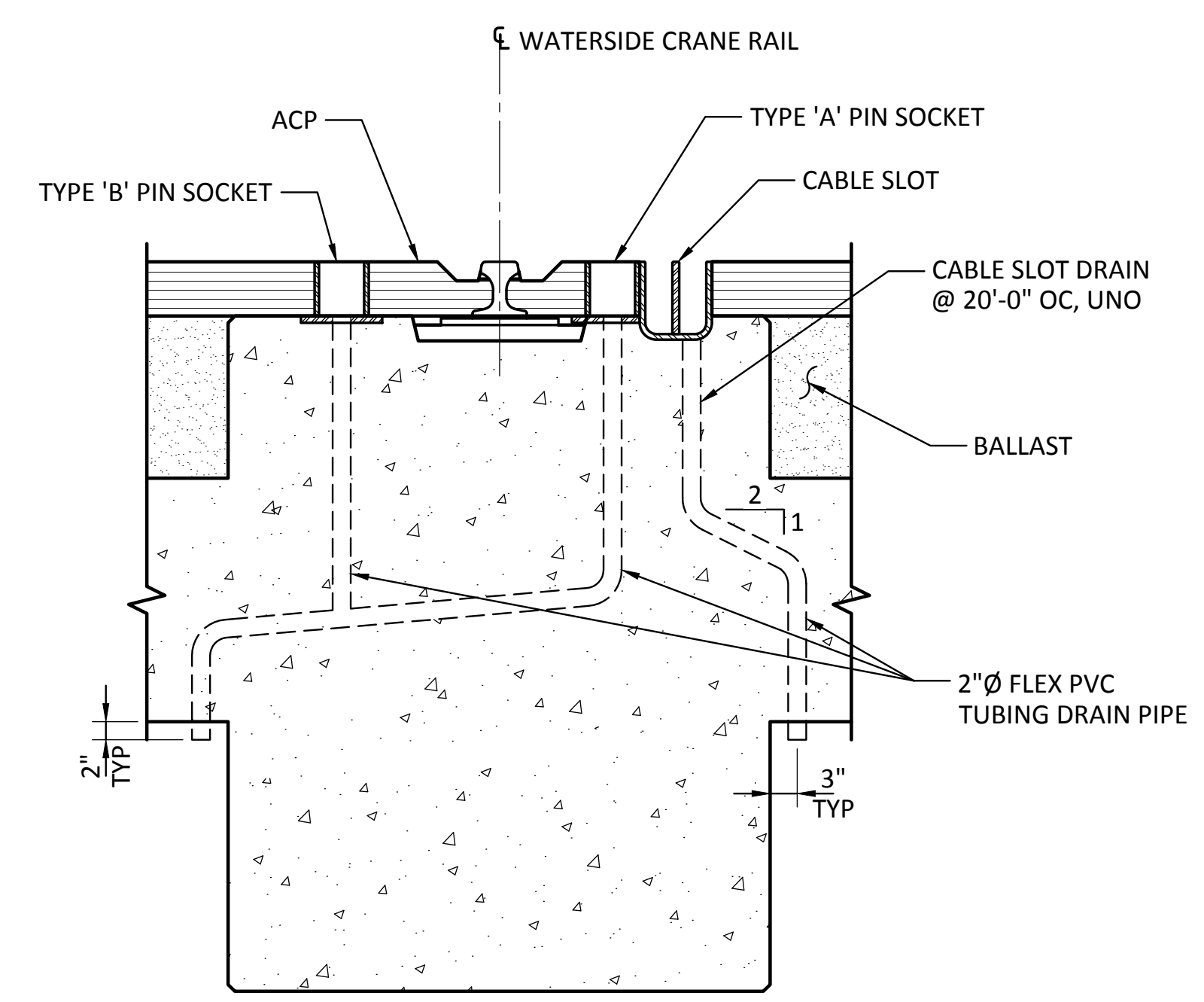
2 SECTION - TYPE 'D' PIN SOCKET  
SCALE: 2" = 1'-0"

NOTE:  
FOR DETAILS NOT SHOWN, SEE 7



NOTE:  
CAULK GAP BETWEEN PIN SOCKET DRAIN HOLE AND DRAIN PIPE OR HOLE

3 SECTION - PIN SOCKET DRAINS  
SCALE: 3/4" = 1'-0"



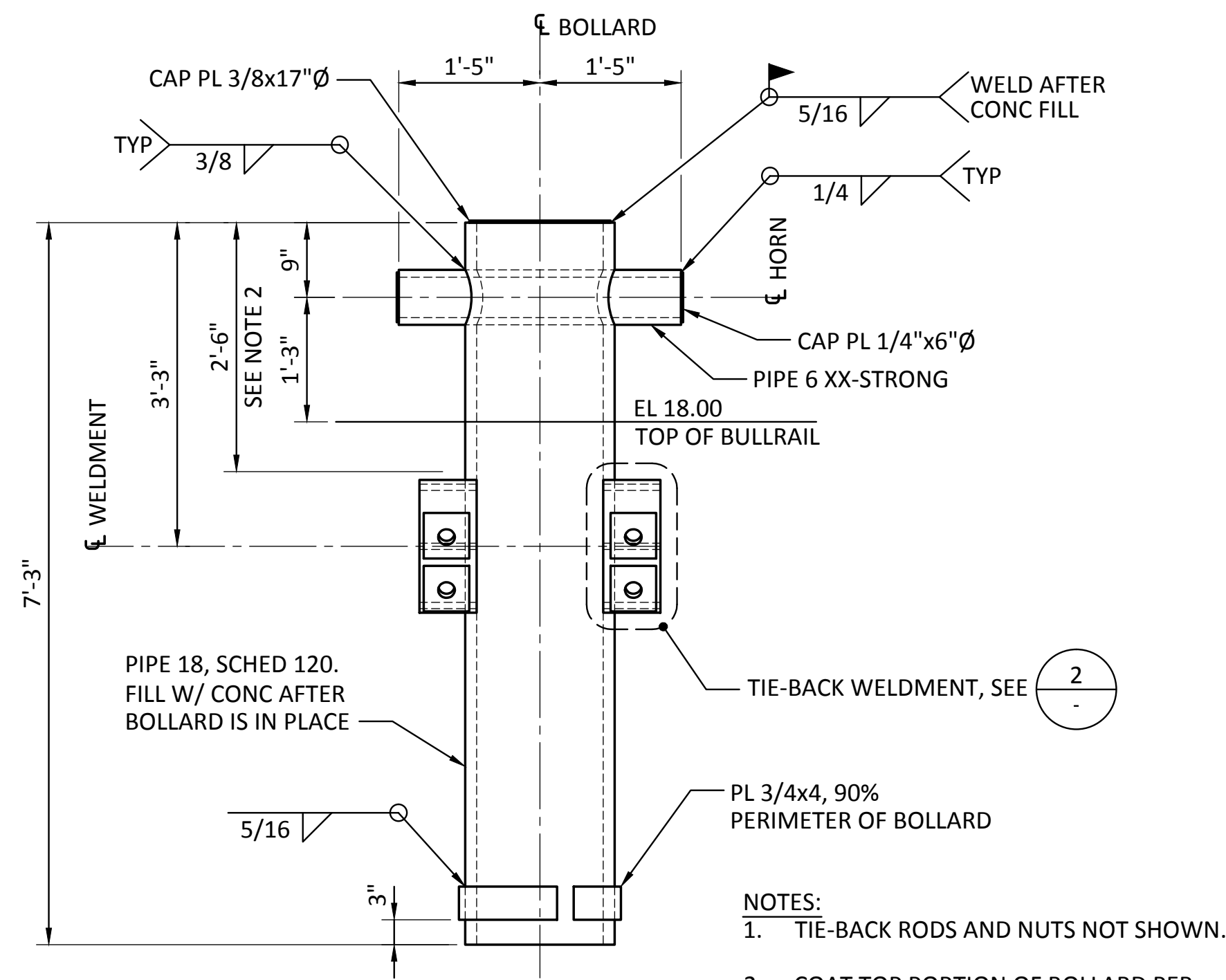
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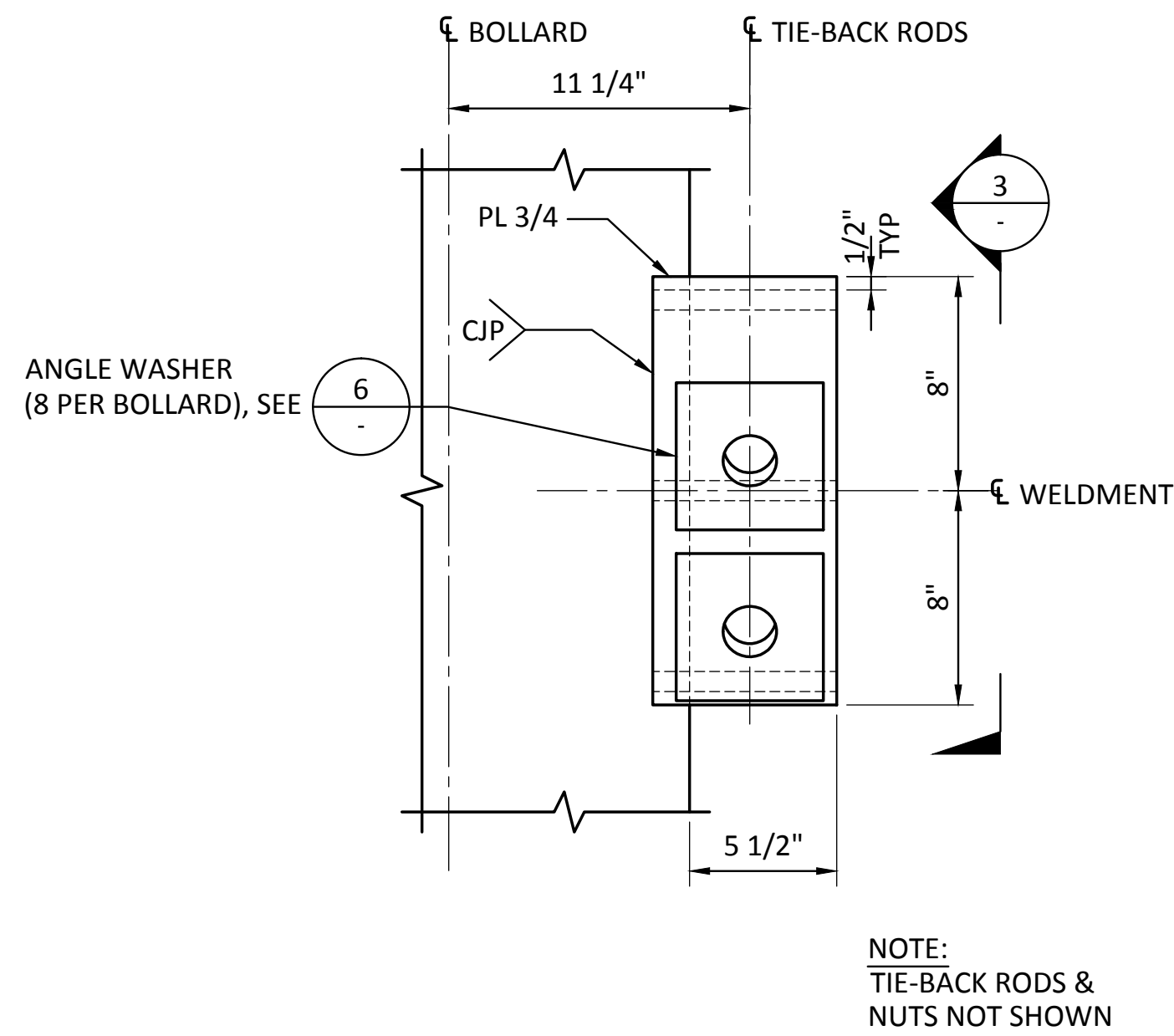
 33301 9th Avenue South, Suite 300 Federal Way, Washington 98003-2600 (206) 451-2300 Fax: (206) 451-2250	BY: _____ DATE: _____
	REVISION: _____ APPR: _____
 P.O. BOX 1887 TACOMA, WA 98401-0887	
APPROVED: _____ DATE: 7/17/13	CSB CHECKED BY: JRG DATE: 7/17/13 DIR OF ENG: JASON MENDENHALL PRINTED BY: JASON MENDENHALL PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300
<b>PIER 3 UPGRADE</b> <b>CRANE PIN SOCKET PLAN AND DETAILS</b> SHEET 2	RANGE: 21 N DAT-HRZ: NAD 83-07 PARCEL: 27
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 NOS TIDAL (MLLW = 0.0) VERT: AS SHOWN DRAWING SCALE: AS SHOWN	DATE: 7/17/13 PROJ. ENGR: JASON MENDENHALL DATE: 7/17/13 TACOMA, WA 98421-2300
<b>6502</b> <b>S18.4</b> SHEET 92 OF 129	CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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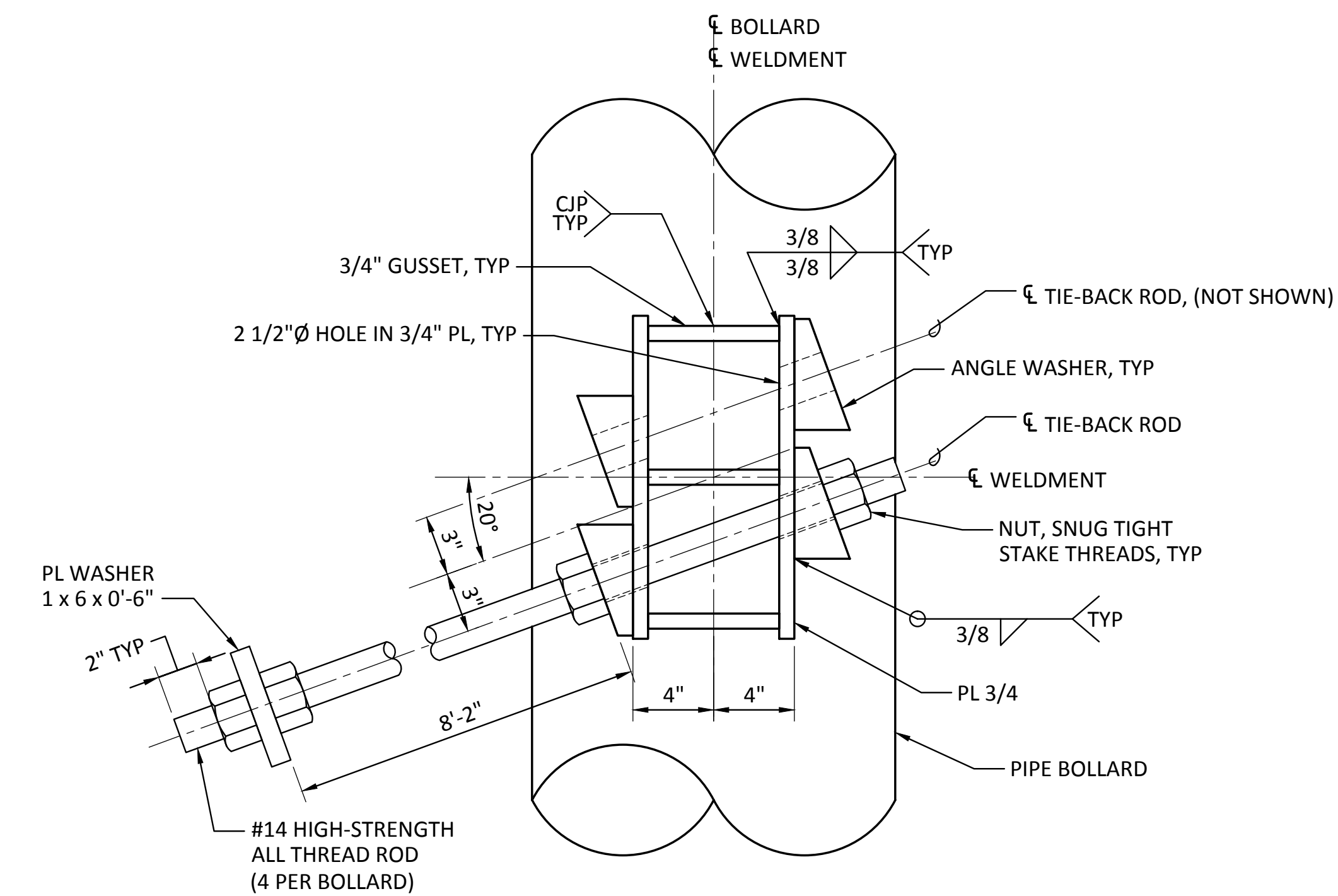
BINDING EDGE



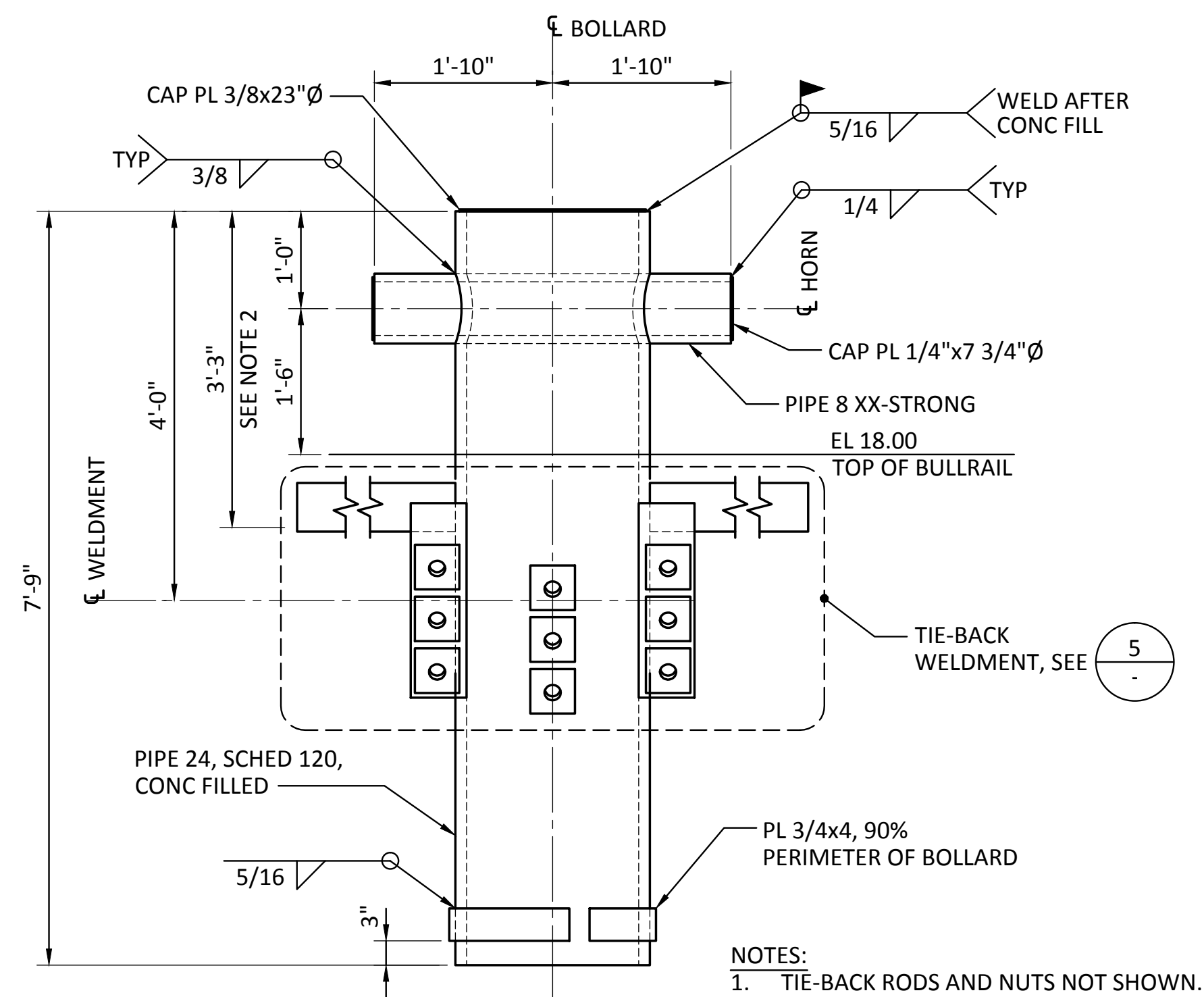
**1** **DETAIL - 100-TON BOLLARD**  
SCALE: 3/4" = 1'-0"



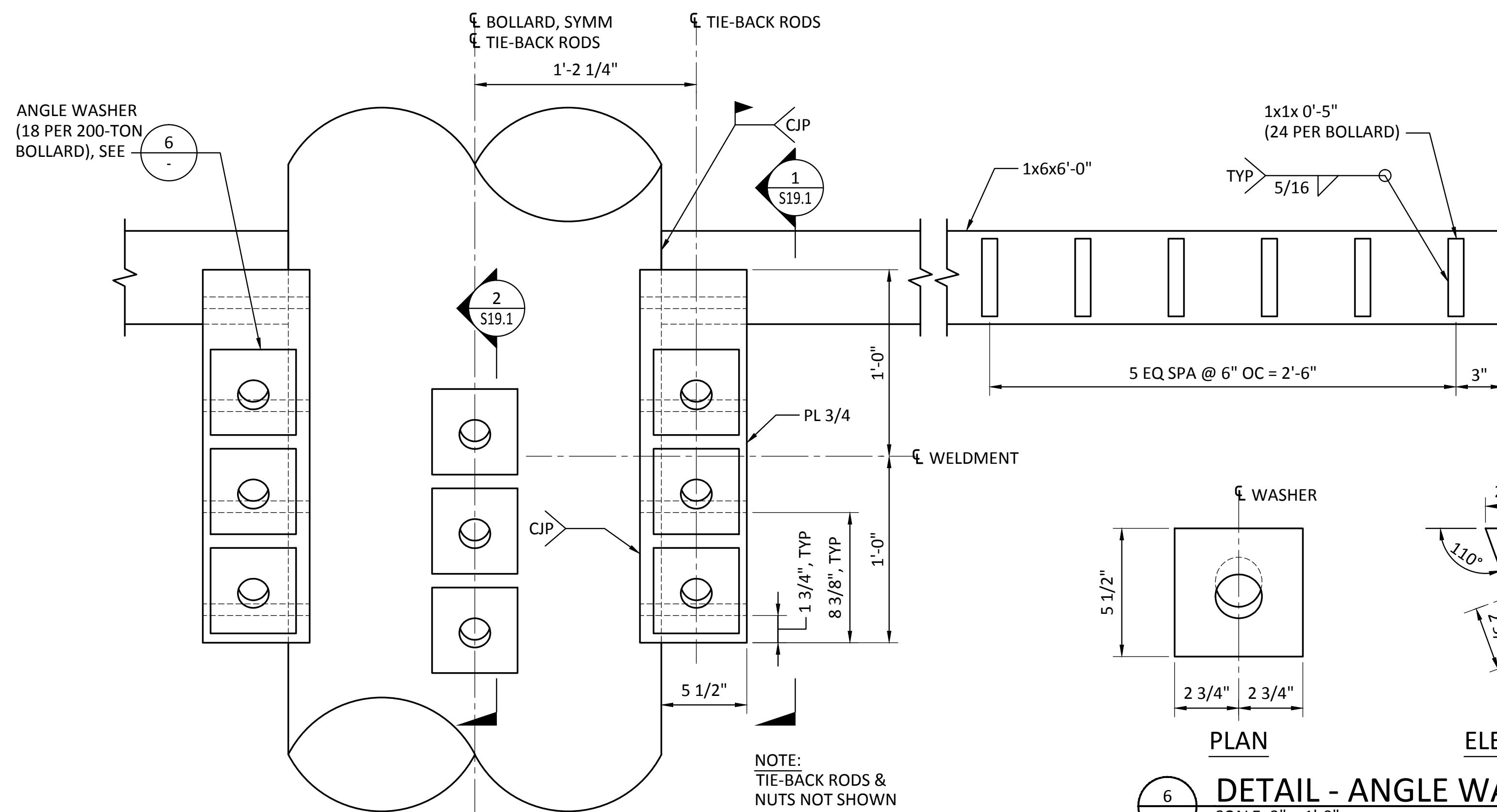
**2** **DETAIL - 100-TON WELDMENT**  
SCALE: 2" = 1'-0"



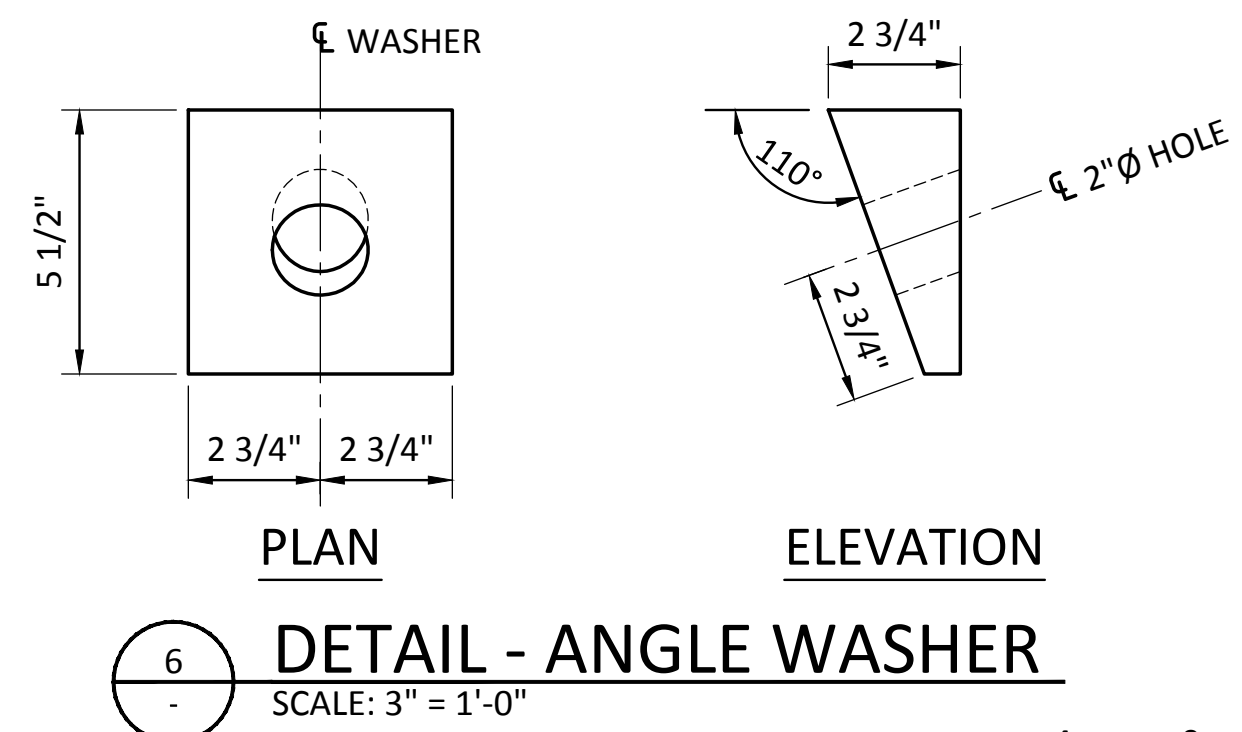
**3** **DETAIL - 100-TON WELDMENT**  
SCALE: 2" = 1'-0"



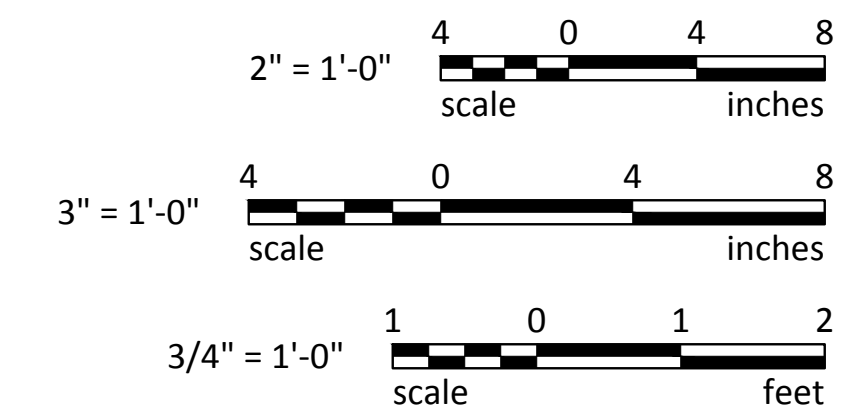
**4** **DETAIL - 200 TON BOLLARD**  
SCALE: 3/4" = 1'-0" (BENTS 64 & 66)



**5** **DETAIL - 200-TON WELDMENT**  
SCALE: 2" = 1'-0"



**6** **DETAIL - ANGLE WASHER**  
SCALE: 3" = 1'-0"



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**Port of Tacoma**  
P.O. BOX 1887 TACOMA, WA 98401-0188

**DAKOTA ENGINEERING & ARCHITECTURE**  
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DIR OF ENG	Jason.mendenhall	DATE
PRINTED BY	JASON.MENDENHALL	DATE
PORT ADDRESS	ONE SITCUM WAY	DATE
TACOMA, WA 98421-2300		DATE

**PIER 3 UPGRADE**

**BOLLARD DETAILS SHEET 1**

TOWNSHIP: 21 N RANGE: 3 E SECTION: 27  
 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)  
 PARCEL: 27 DRAWING SCALE: AS SHOWN

6502 **S19.0**  
SHEET 93 OF 129

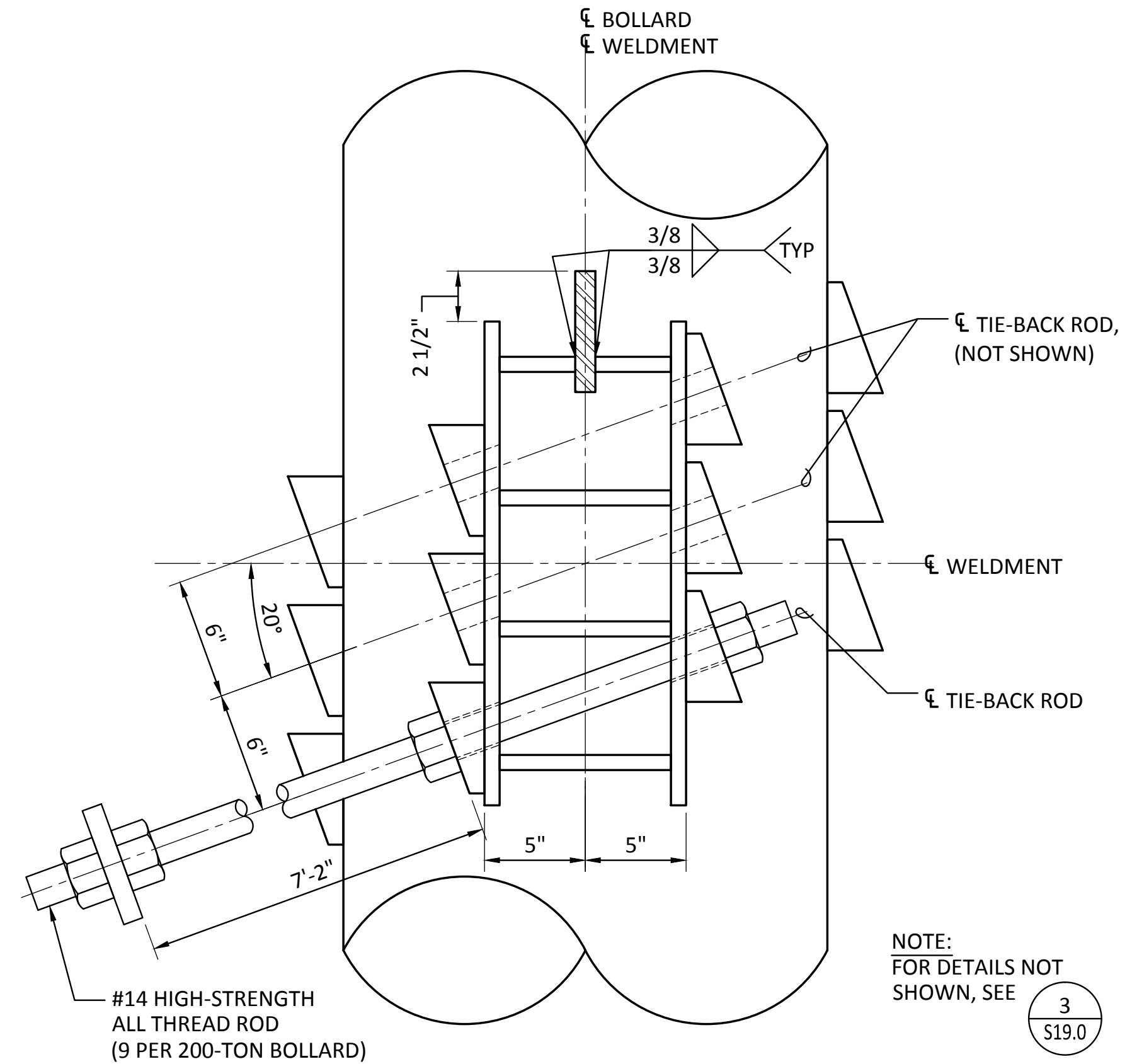
CONT/CONS: 069458  
 MASTER ID NO: 092935  
 PHASE: RECORD DRAWINGS

MARK: REVISION: BY: APPR: DATE:

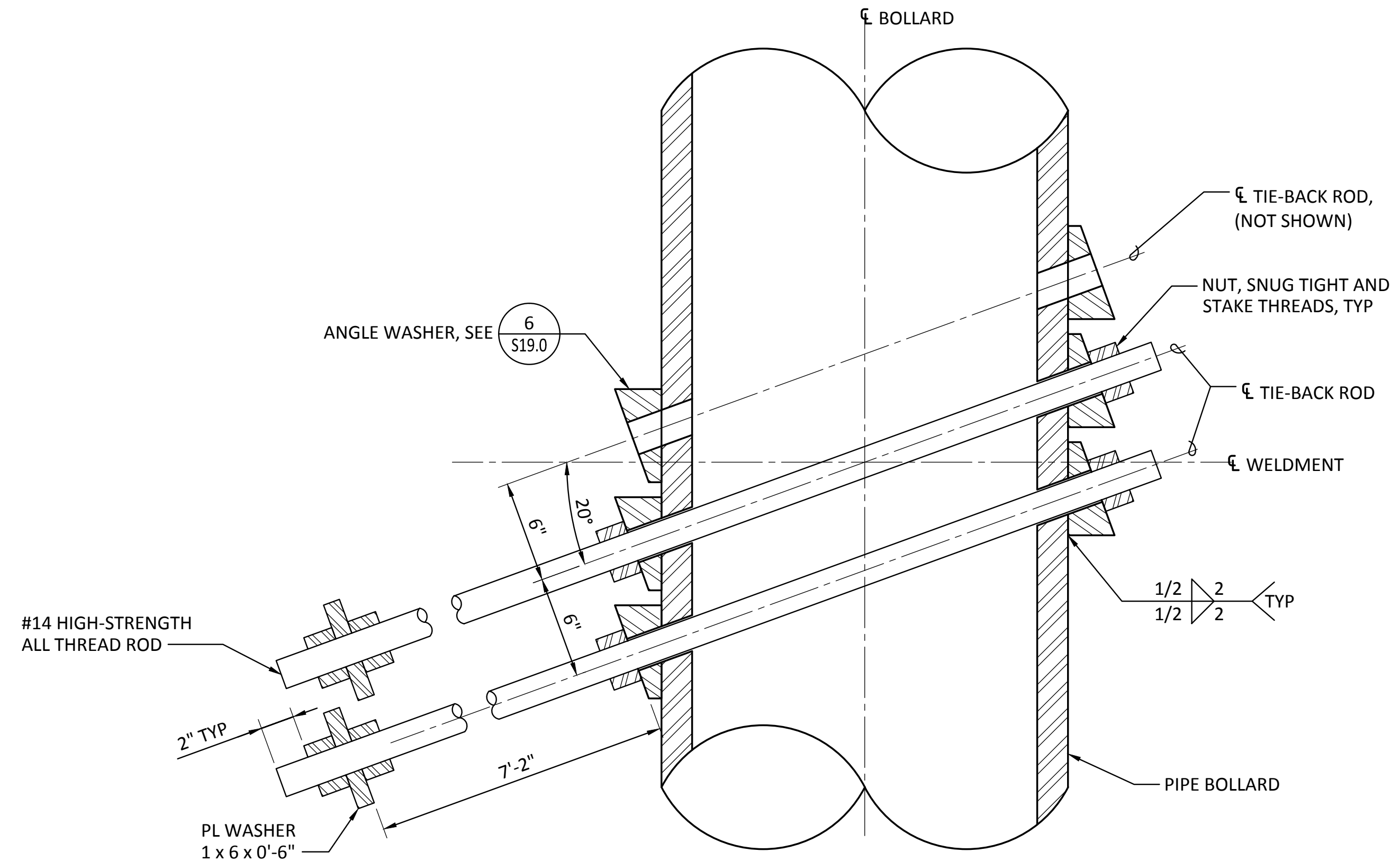
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**1**  
S19.0  
**DETAIL - 200-TON WELDMENT**  
SCALE: 2" = 1'-0"

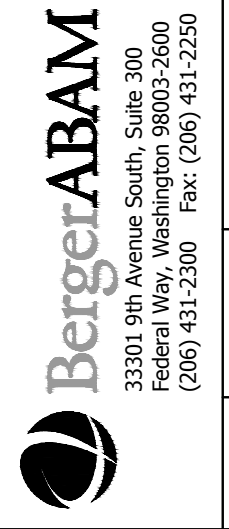
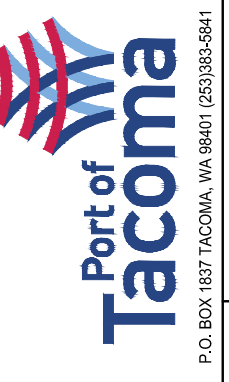
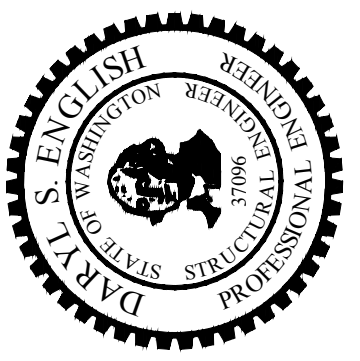


**2**  
S19.0  
**DETAIL - 200-TON TIE-BACK RODS**  
SCALE: 2" = 1'-0"

2" = 1'-0"  
  
 scale inches

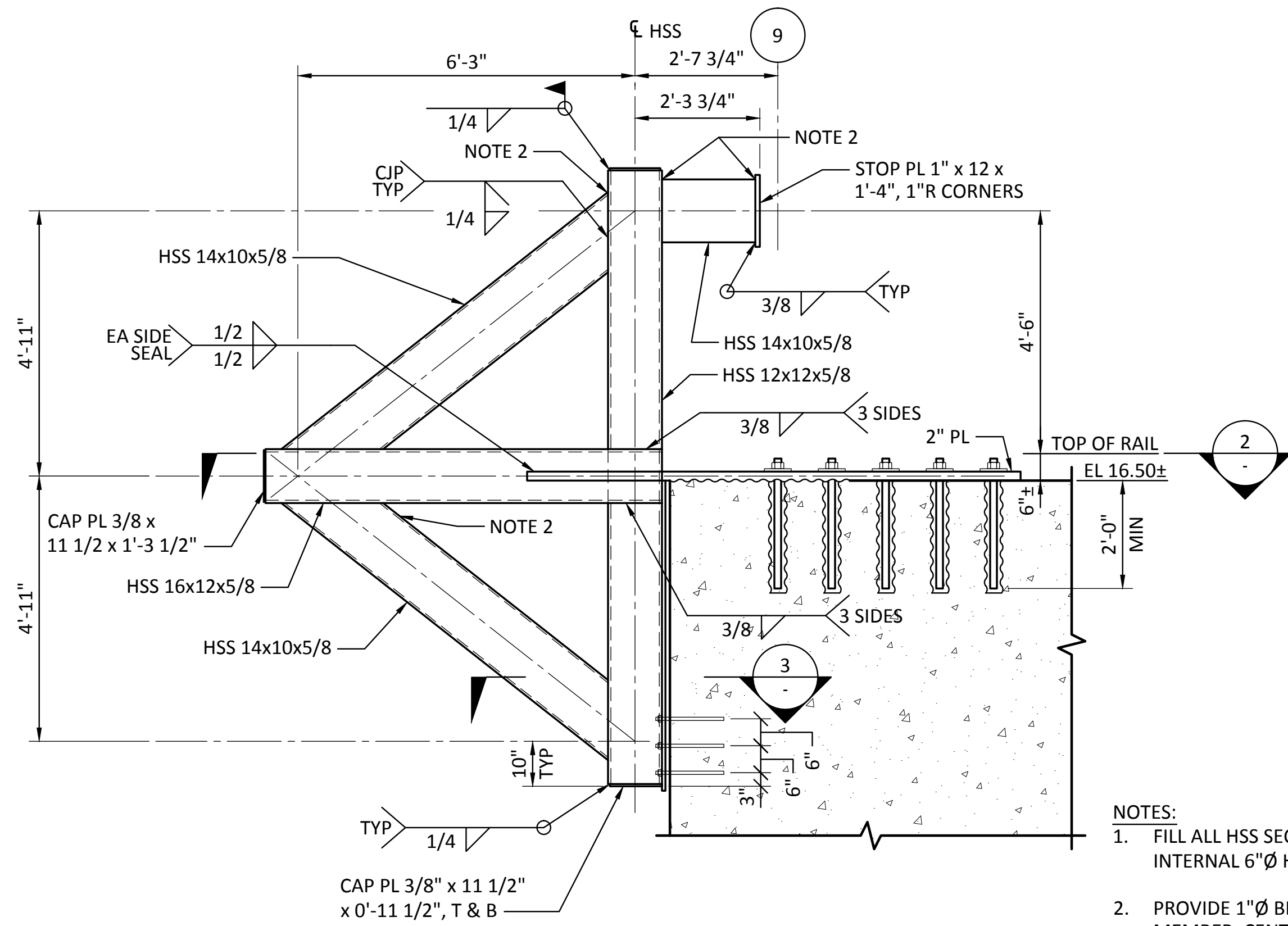
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<p><b>6502</b> <b>S19.1</b> SHEET 94 OF 129</p> <p>CONT/CONS: 069458          MASTER ID NO: 092935          PHASE: RECORD DRAWINGS</p>	<p><b>PIER 3 UPGRADE</b></p> <p><b>BOLLARD DETAILS</b> SHEET 2</p>		<p>APPROVED:</p> <p>DC 7/17/13          DIR OF ENG          PRINTED BY: jason.mendenhall          PORT ADDRESS: ONE SITCUM WAY          TACOMA, WA 98421-2300</p>	<p>CSB 7/17/13          CHECKED BY: JRG          PROJ. ENGR: jason.mendenhall          DATE: 7/17/13</p>	<p>DATE: 7/17/13</p>
	<p>TOWNSHIP: 21 N          RANGE: 3 E          SECTION: 27          DAT-HRZ: NAD 83-07          VERT: NOS TIDAL (MLLW = 0.0)          PARCEL: 27          DRAWING SCALE: AS SHOWN</p>		<p>REVISION:</p> <p>MARK: BY: APPR: DATE:</p>		



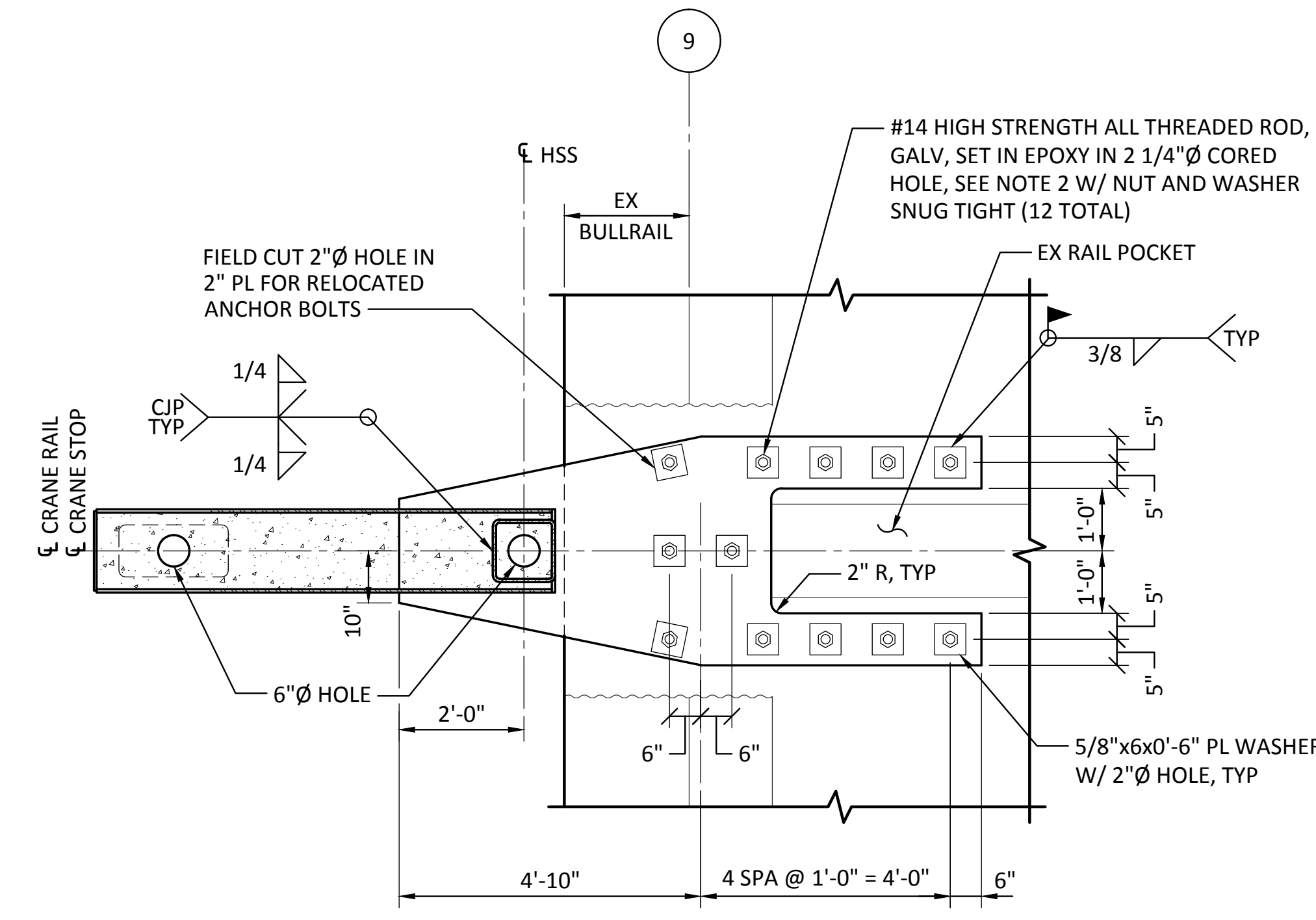
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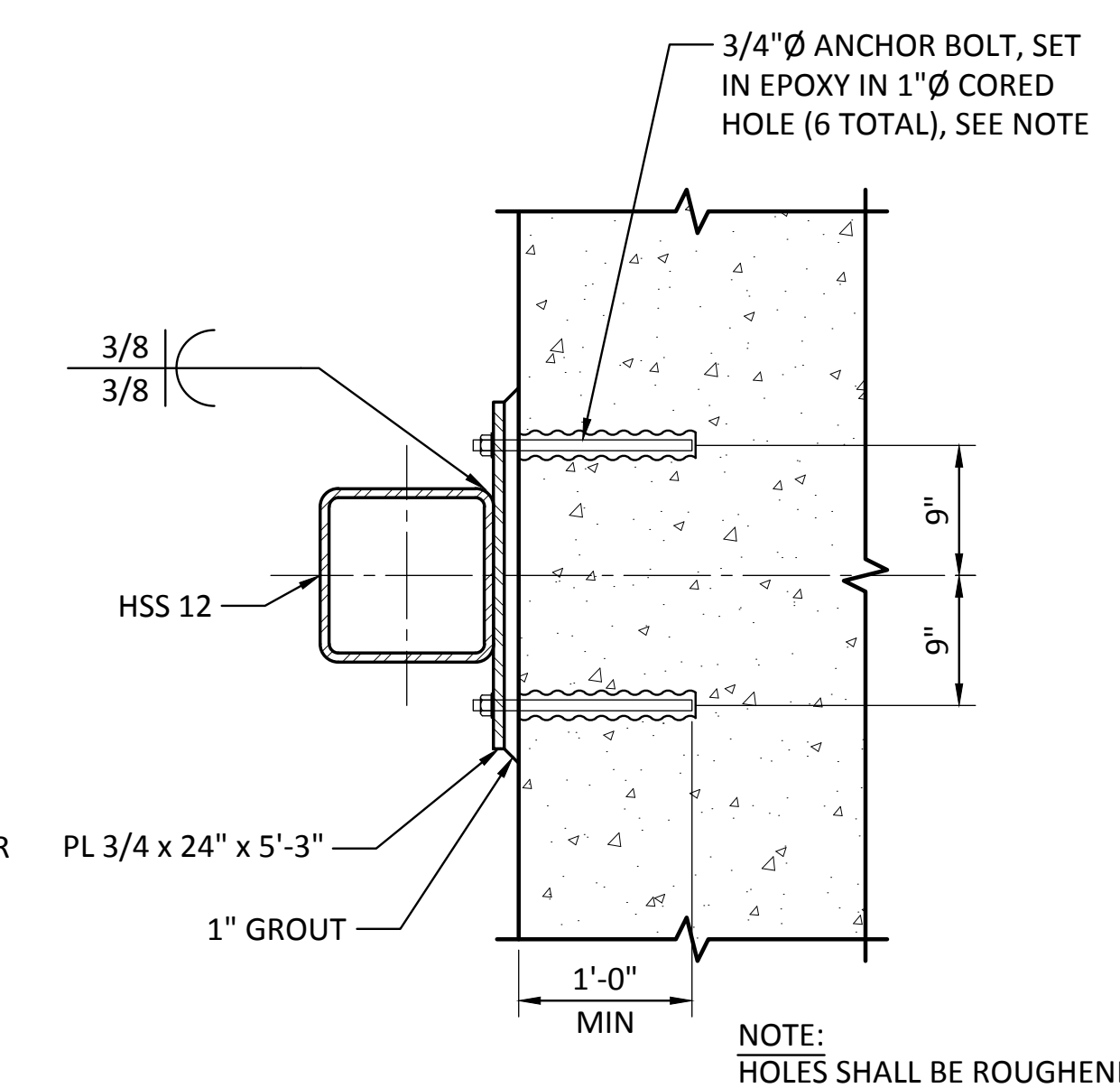
**3.4 ELEVATION - NORTHWEST CRANE STOP**  
SCALE: 1/2" = 1'-0"

- NOTES:
1. FILL ALL HSS SECTIONS W/ CONC. PROVIDE INTERNAL 6"Ø HOLES BETWEEN HSS MEMBERS
  2. PROVIDE 1"Ø BLEED HOLE IN TOP OF HSS MEMBER, CENTER ON CRANE BEAM CL
  3. ACP NOT SHOWN.

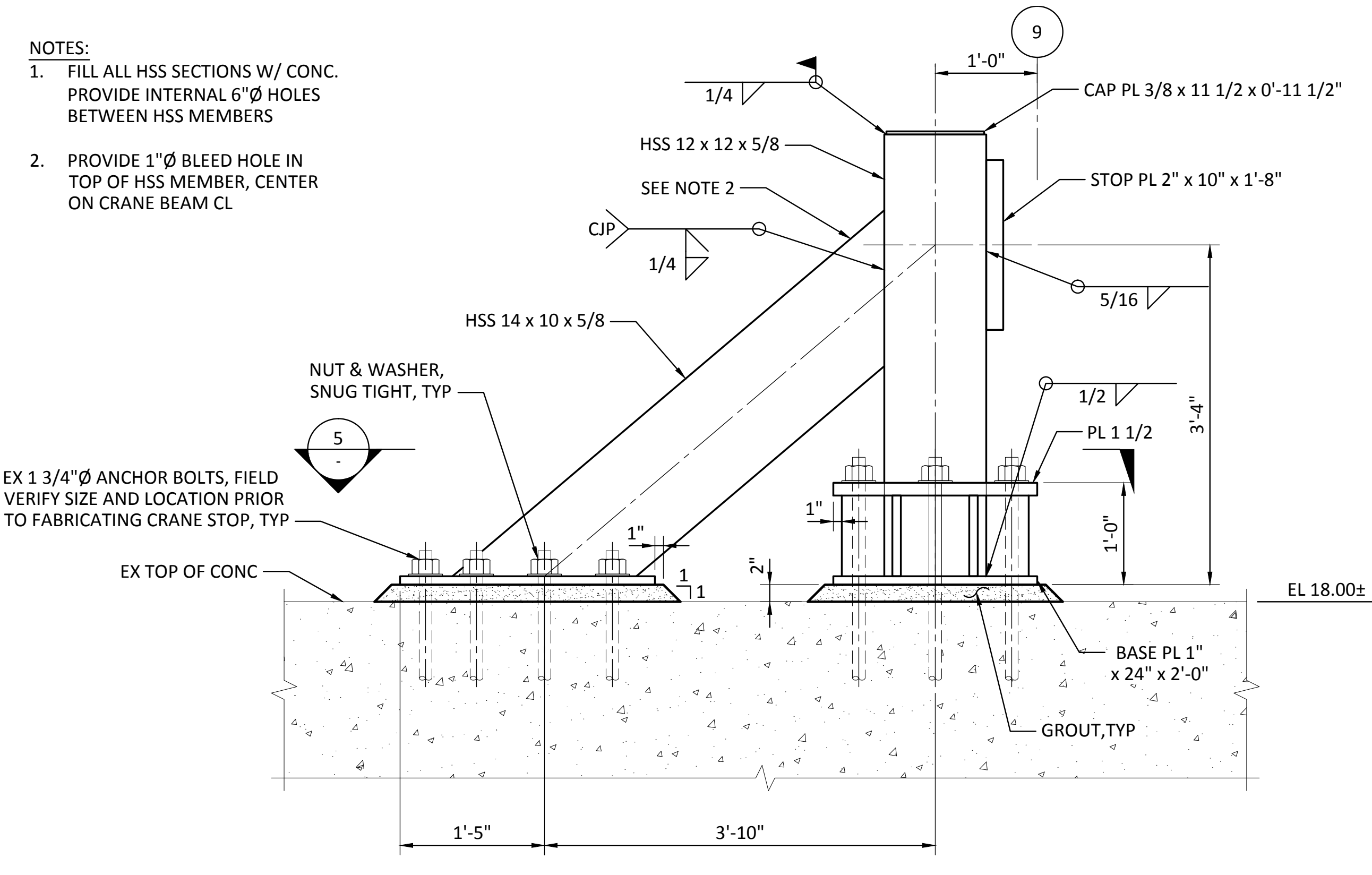


**2 PLAN - NORTHWEST CRANE STOP**  
SCALE: 1/2" = 1'-0"

- NOTES:
1. ACP NOT SHOWN.
  2. HOLES SHALL BE ROUGHENED TO 1/8" AMPLITUDE AND CLEANED PRIOR TO INSTALLATION OF THREADED ROD.

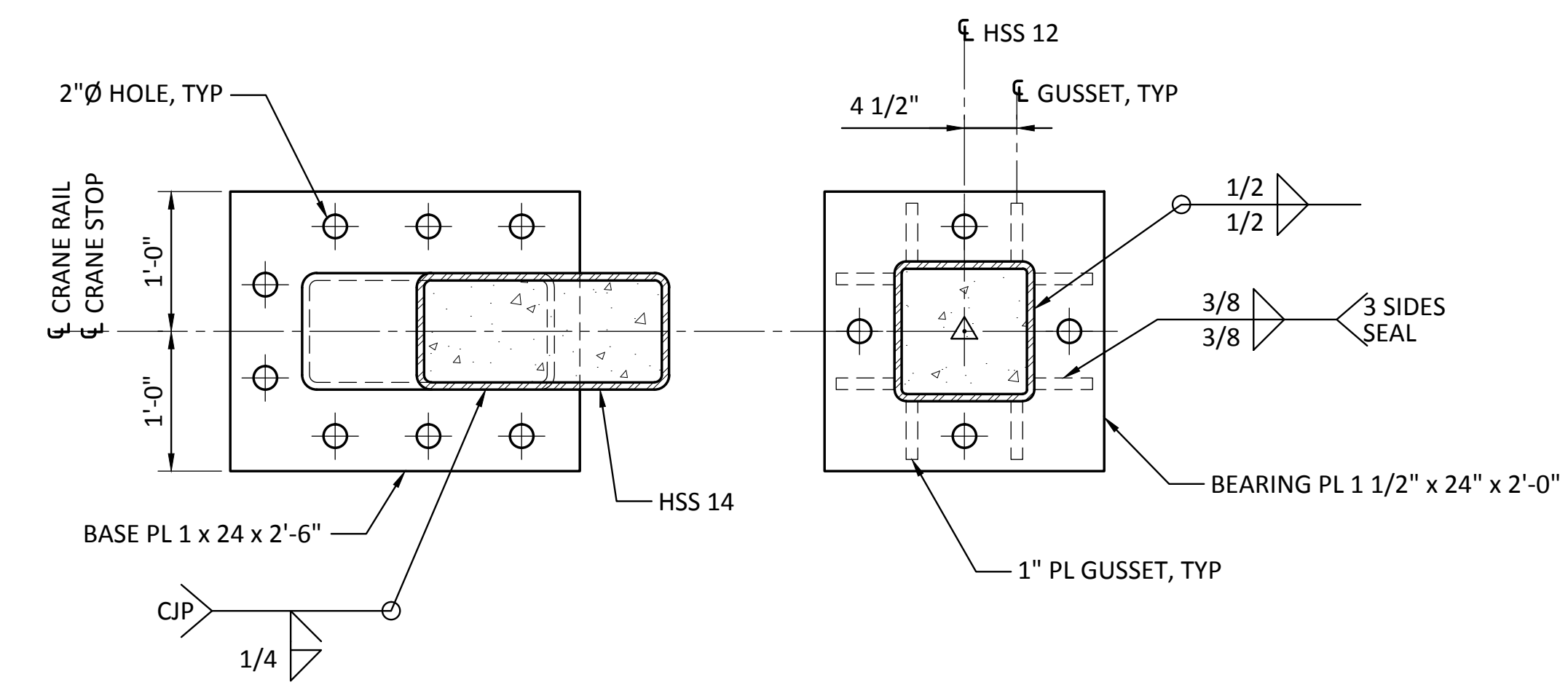


**3 DETAIL**  
SCALE: 1" = 1'-0"

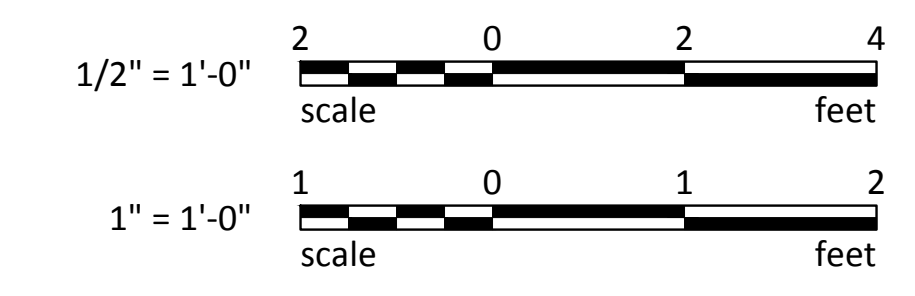


**4 ELEVATION - NORTHEAST CRANE STOP**  
SCALE: 1" = 1'-0"

- NOTES:
1. FILL ALL HSS SECTIONS W/ CONC. PROVIDE INTERNAL 6"Ø HOLES BETWEEN HSS MEMBERS
  2. PROVIDE 1"Ø BLEED HOLE IN TOP OF HSS MEMBER, CENTER ON CRANE BEAM CL



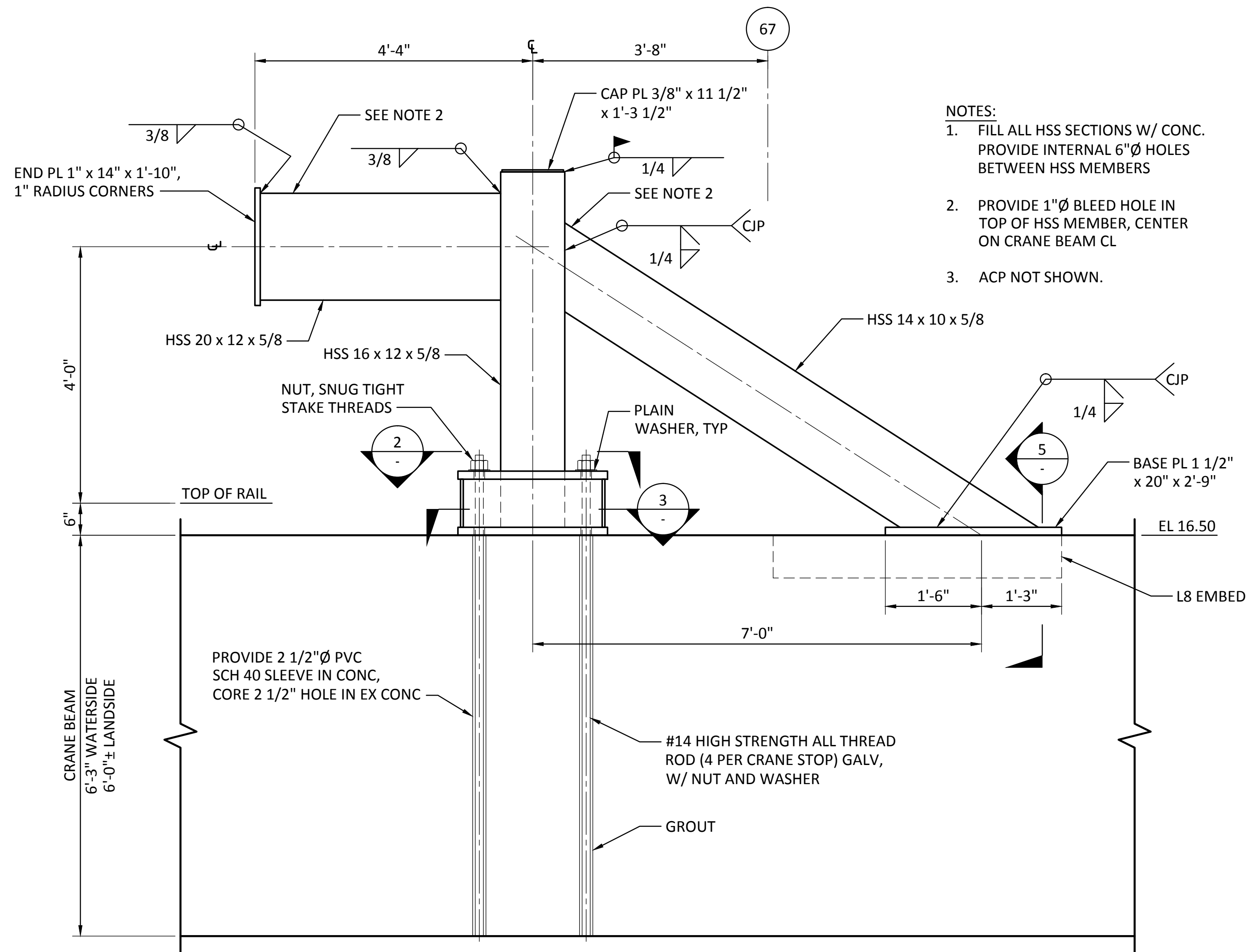
**5 DETAIL - BASE PLATE**  
SCALE: 1" = 1'-0"



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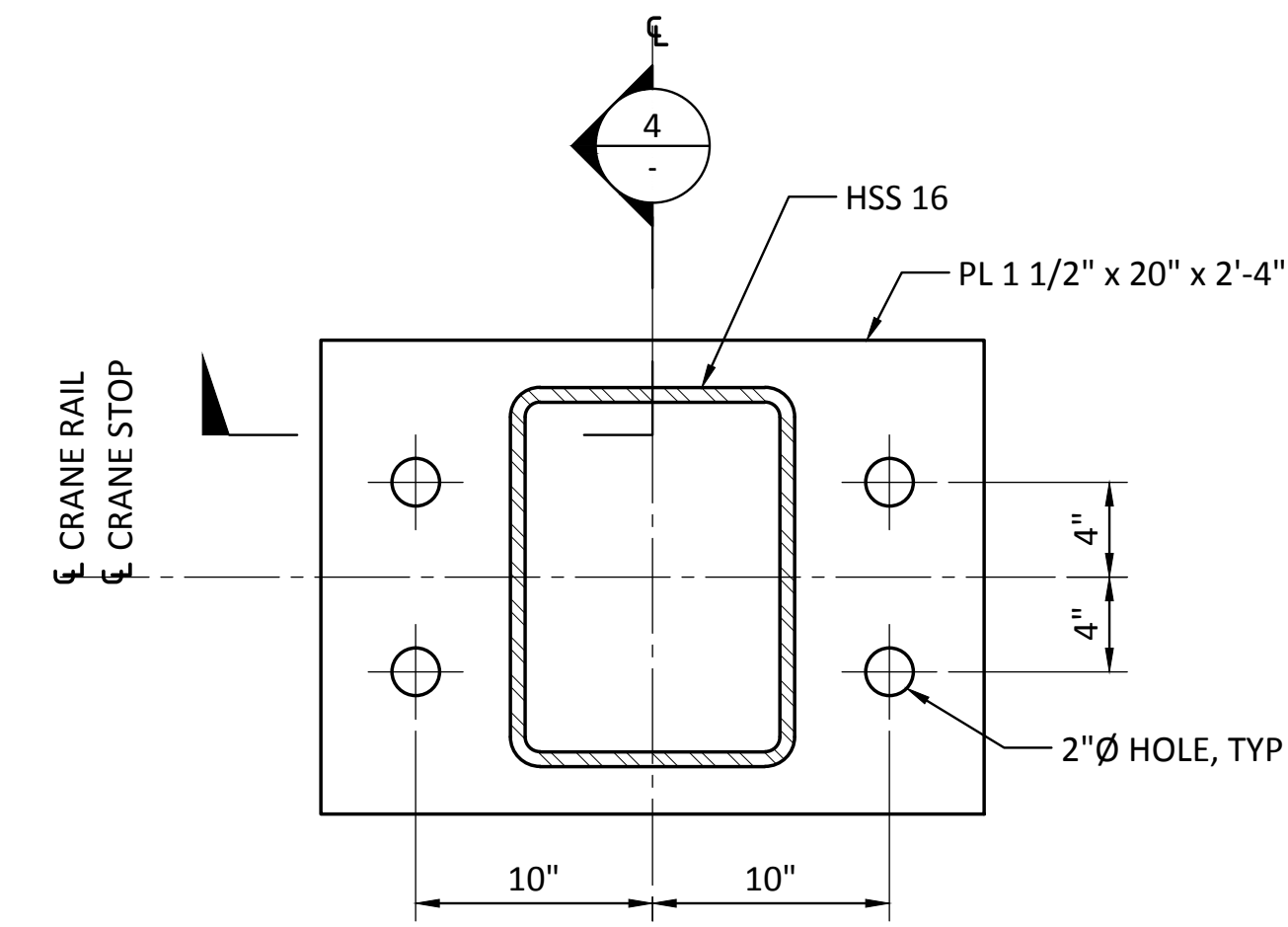
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	7/17/13 DC DIR OF ENG	jason.mendenthal PROJECT ENGR	jason.mendenthal DATE
<b>PIER 3 UPGRADE</b> <b>CRANE STOP DETAILS</b> <b>SHEET 1</b>			
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27		NO. TIDAL (MLLW = 0.0) VERT: 27 DRAWING SCALE: AS SHOWN	
DATE: MAR 23, 2015 TIME: 5:18 PM		DATE:	
MASTER ID NO: 092935		DATE:	
PHASE: RECORD DRAWINGS		DATE:	
PARCEL: 27		DATE:	
TACOMA, WA 98421-2300		DATE:	
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<b>6502</b> <b>S19.2</b> SHEET 95 OF 129		BY:	
REVISION:		APPR:	

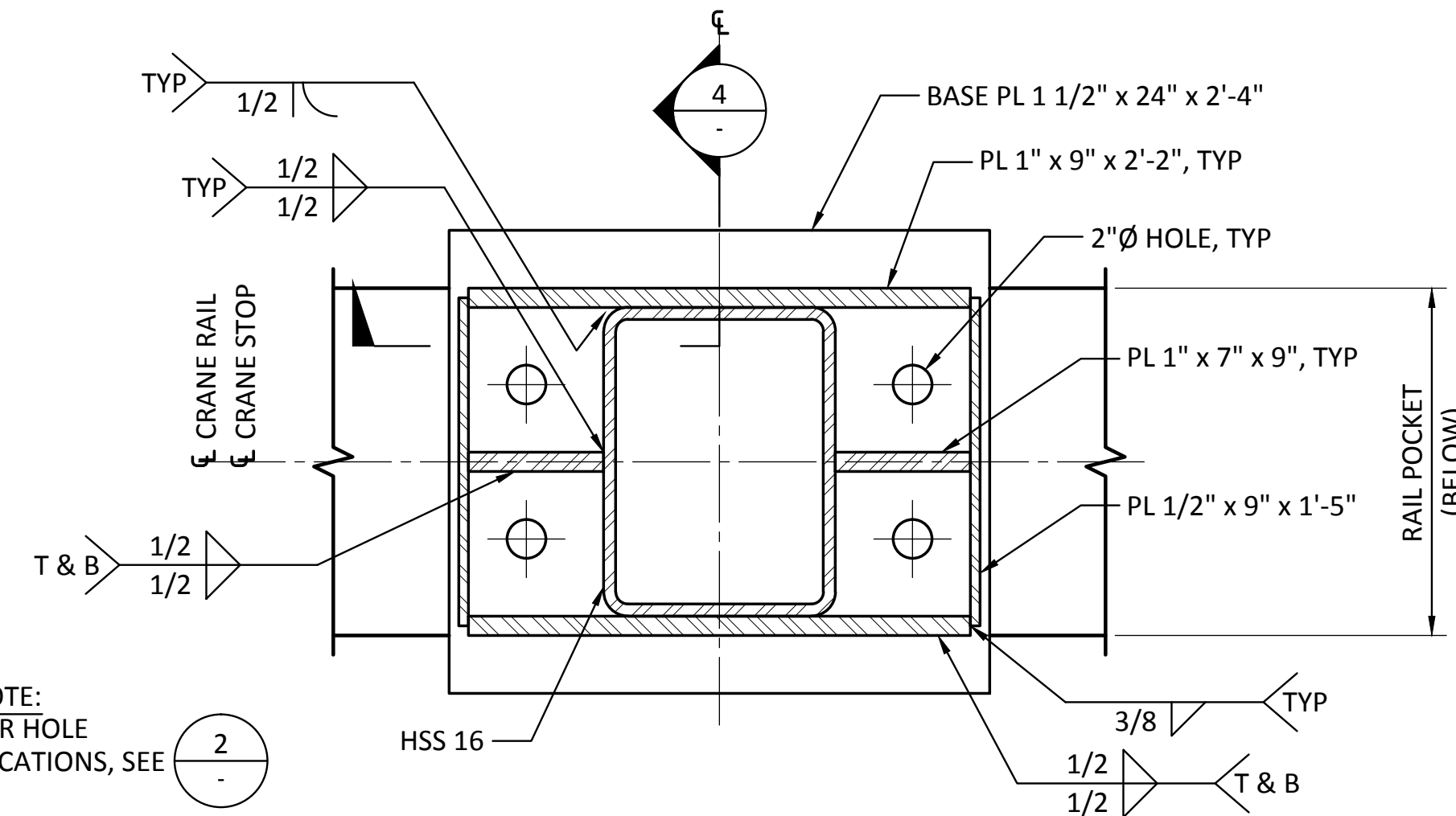


1 ELEVATION - SOUTH CRANE STOP  
SCALE: 3/4" = 1'-0"

- NOTES:
1. FILL ALL HSS SECTIONS W/ CONC. PROVIDE INTERNAL 6" Ø HOLES BETWEEN HSS MEMBERS
  2. PROVIDE 1" Ø BLEED HOLE IN TOP OF HSS MEMBER, CENTER ON CRANE BEAM CL
  3. ACP NOT SHOWN.

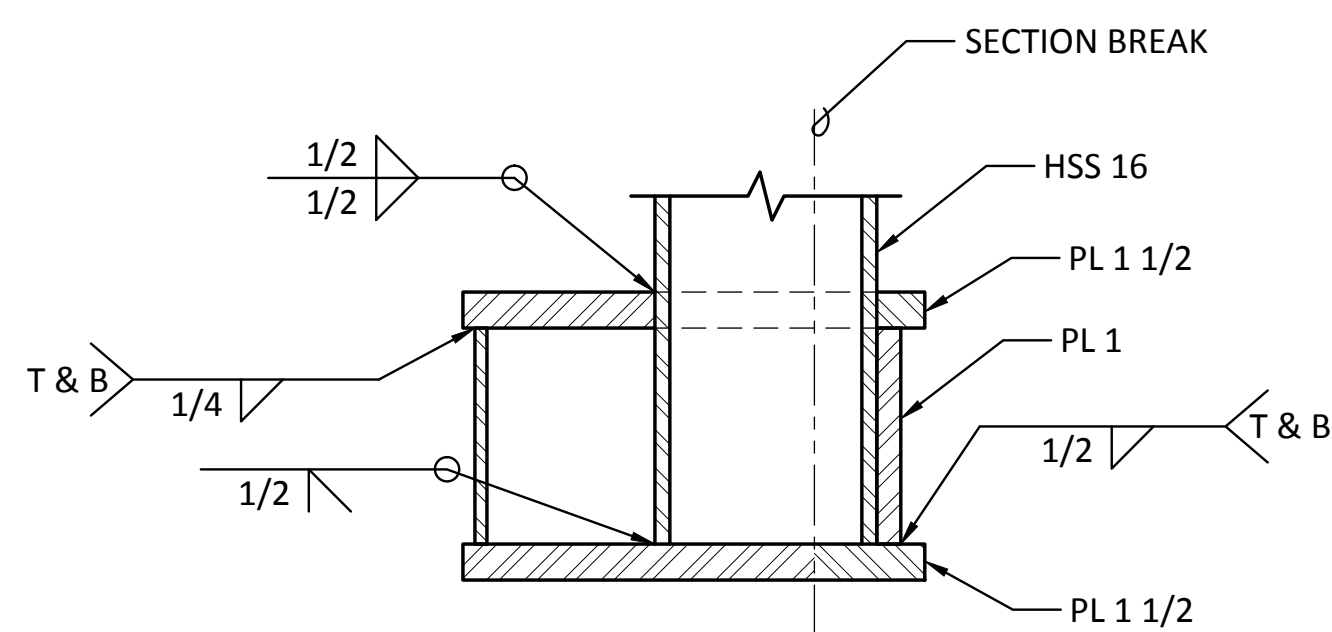


2 SECTION  
SCALE: 1 1/2" = 1'-0"

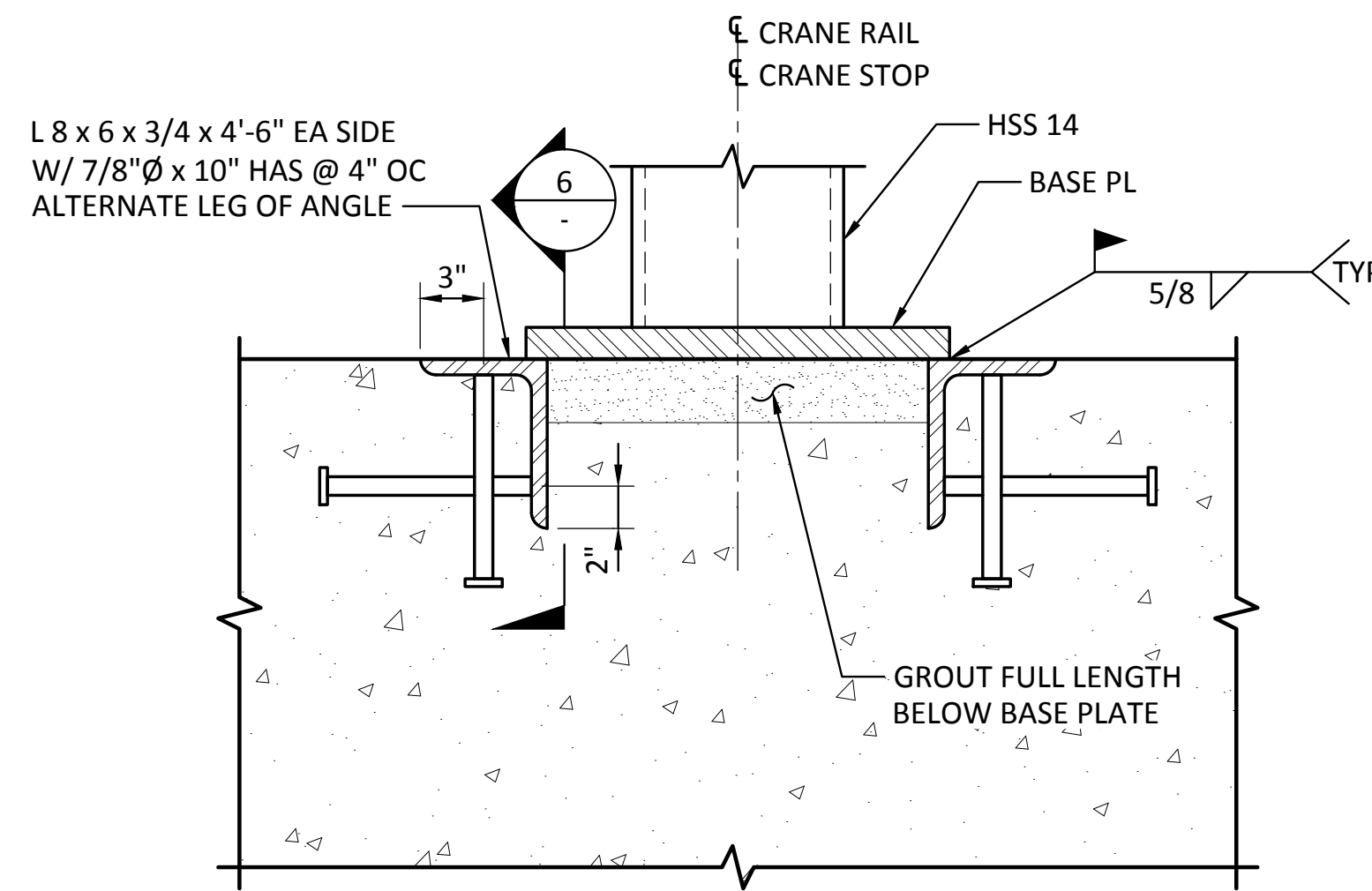


3 SECTION  
SCALE: 1 1/2" = 1'-0"

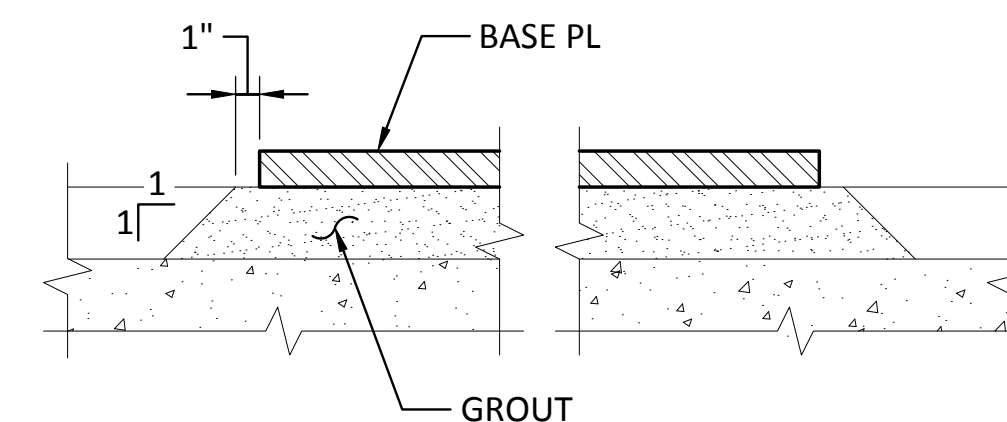
NOTE: FOR HOLE LOCATIONS, SEE 2



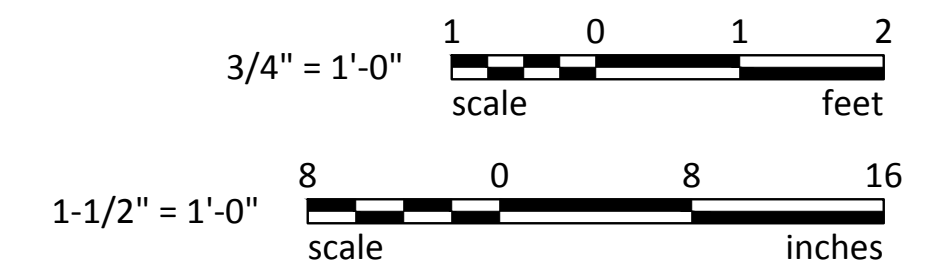
4 SECTION  
SCALE: 1 1/2" = 1'-0"



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



6 DETAIL - GROUT EDGE  
SCALE: 1 1/2" = 1'-0"



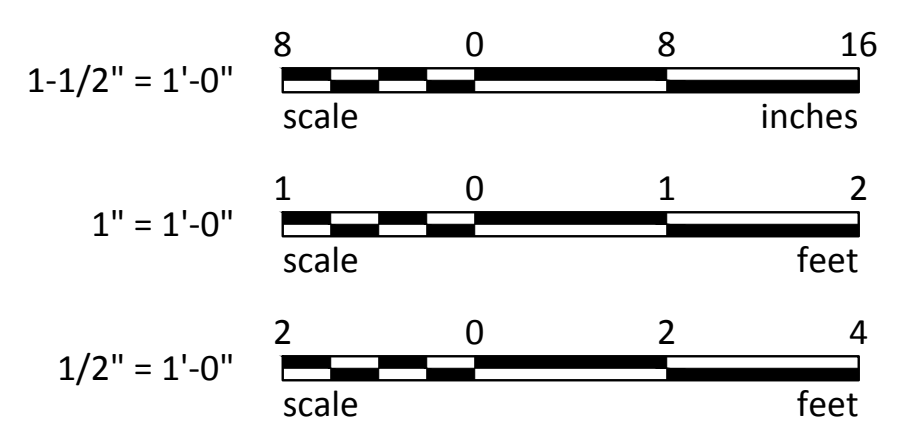
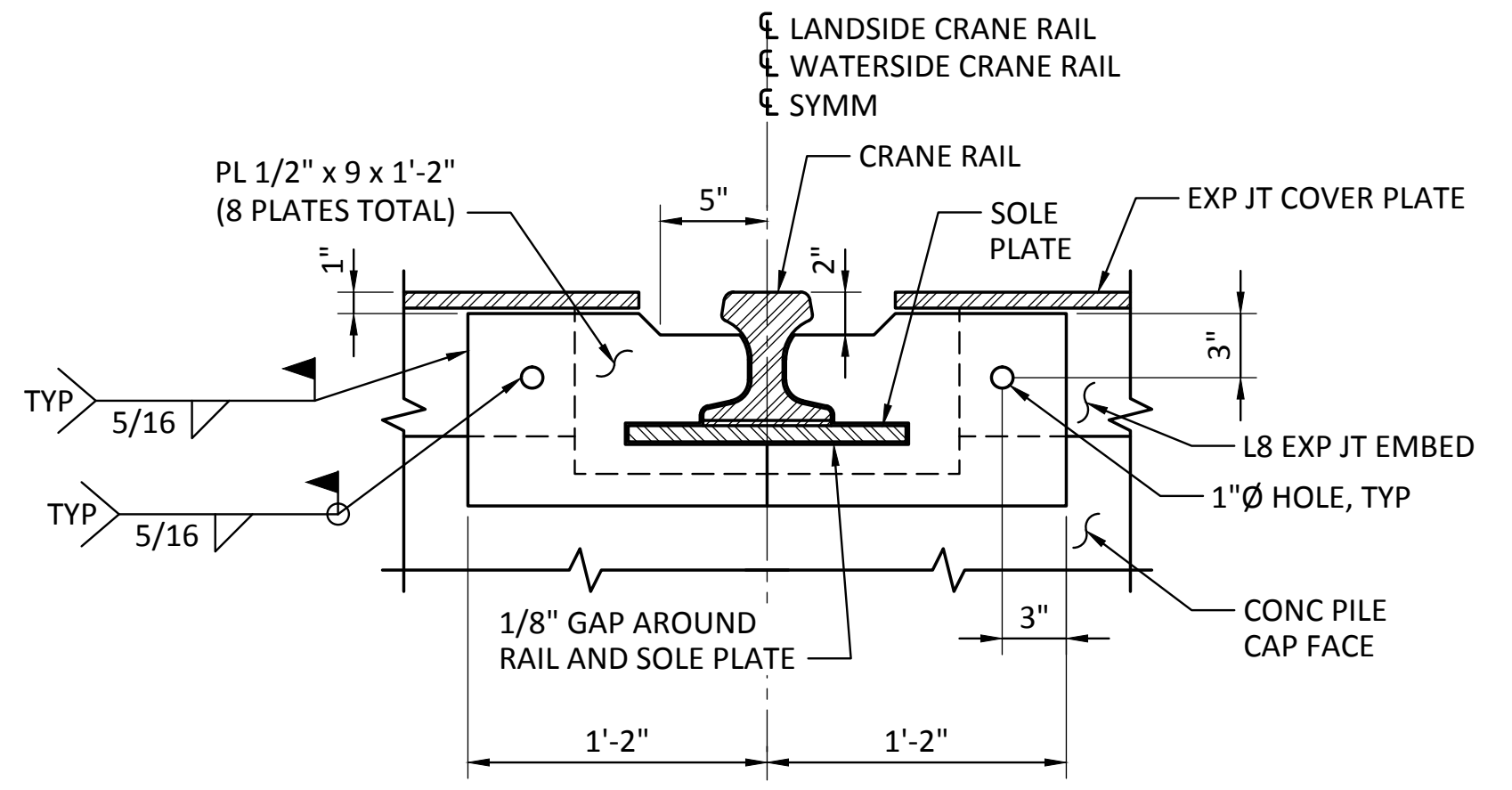
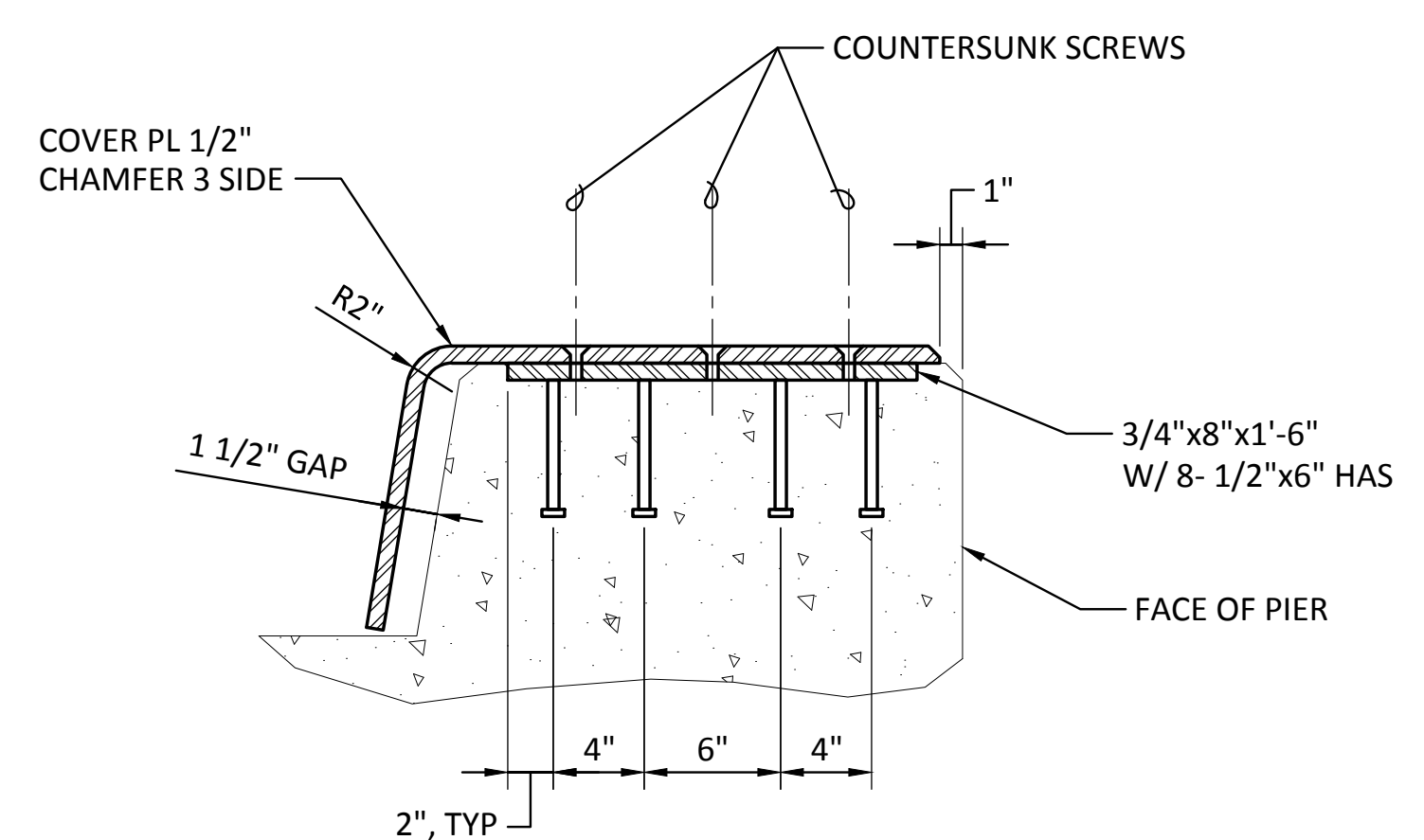
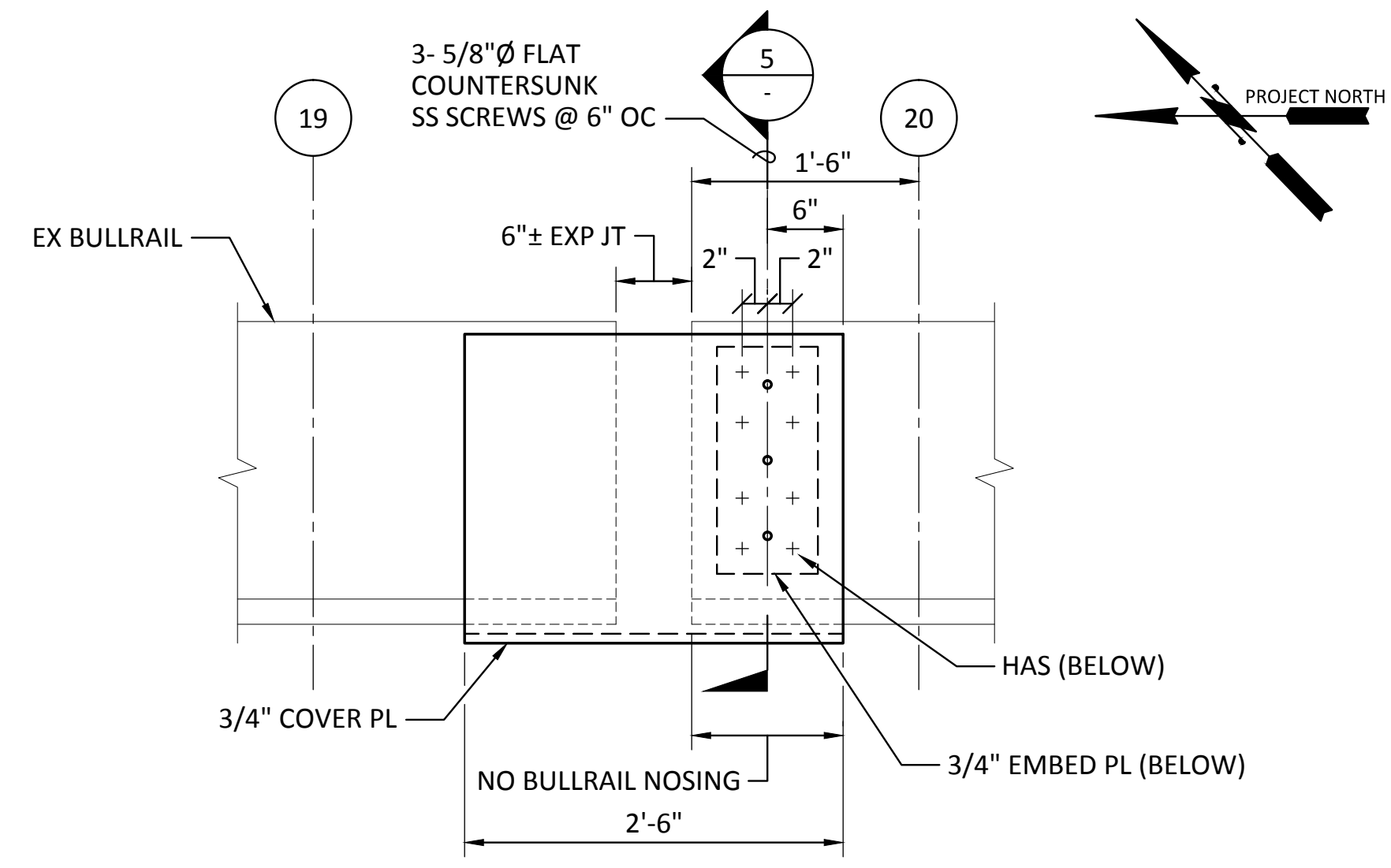
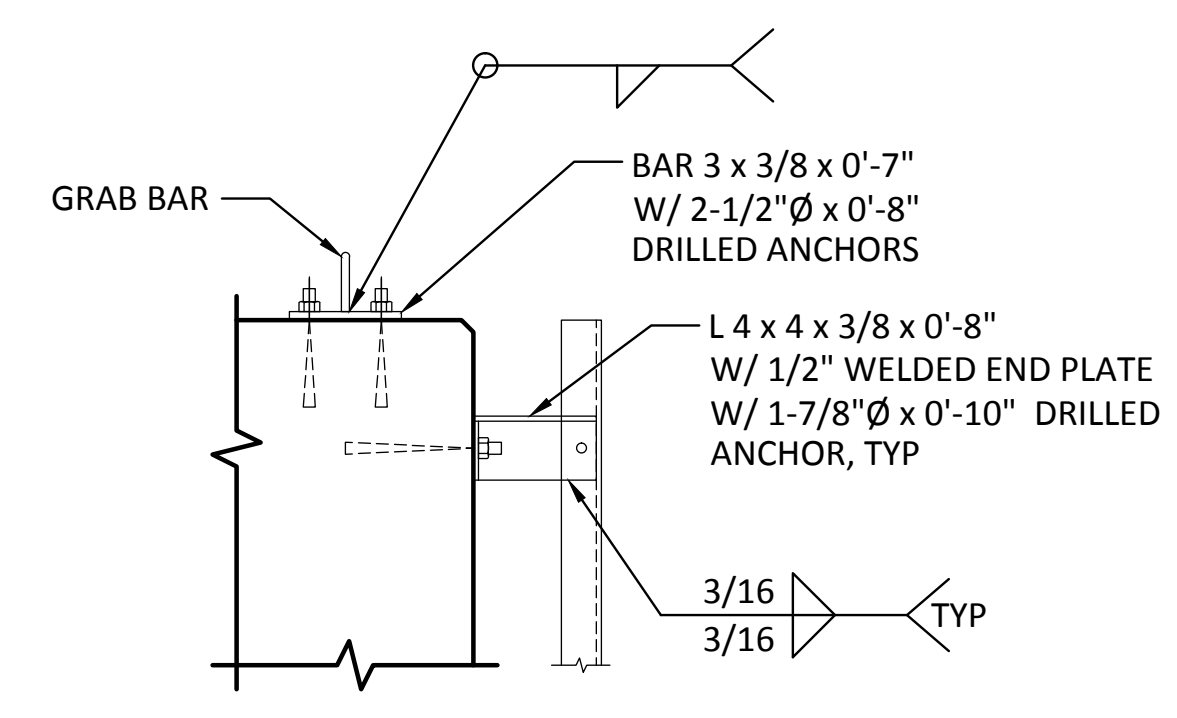
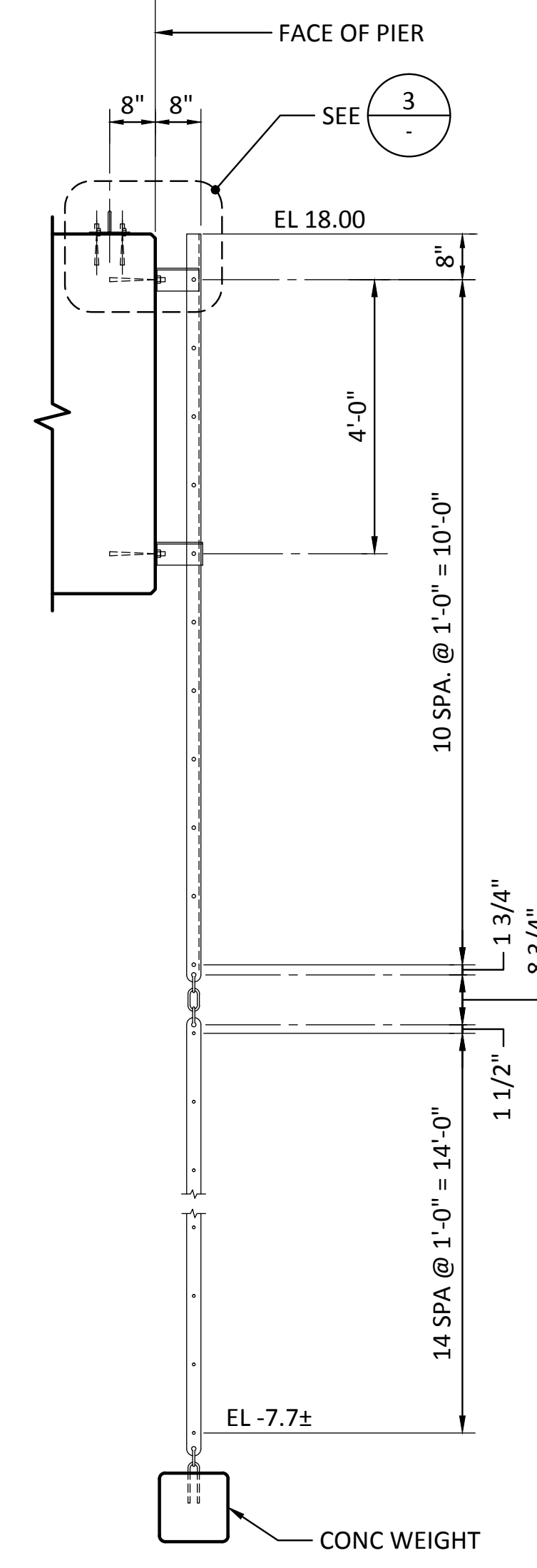
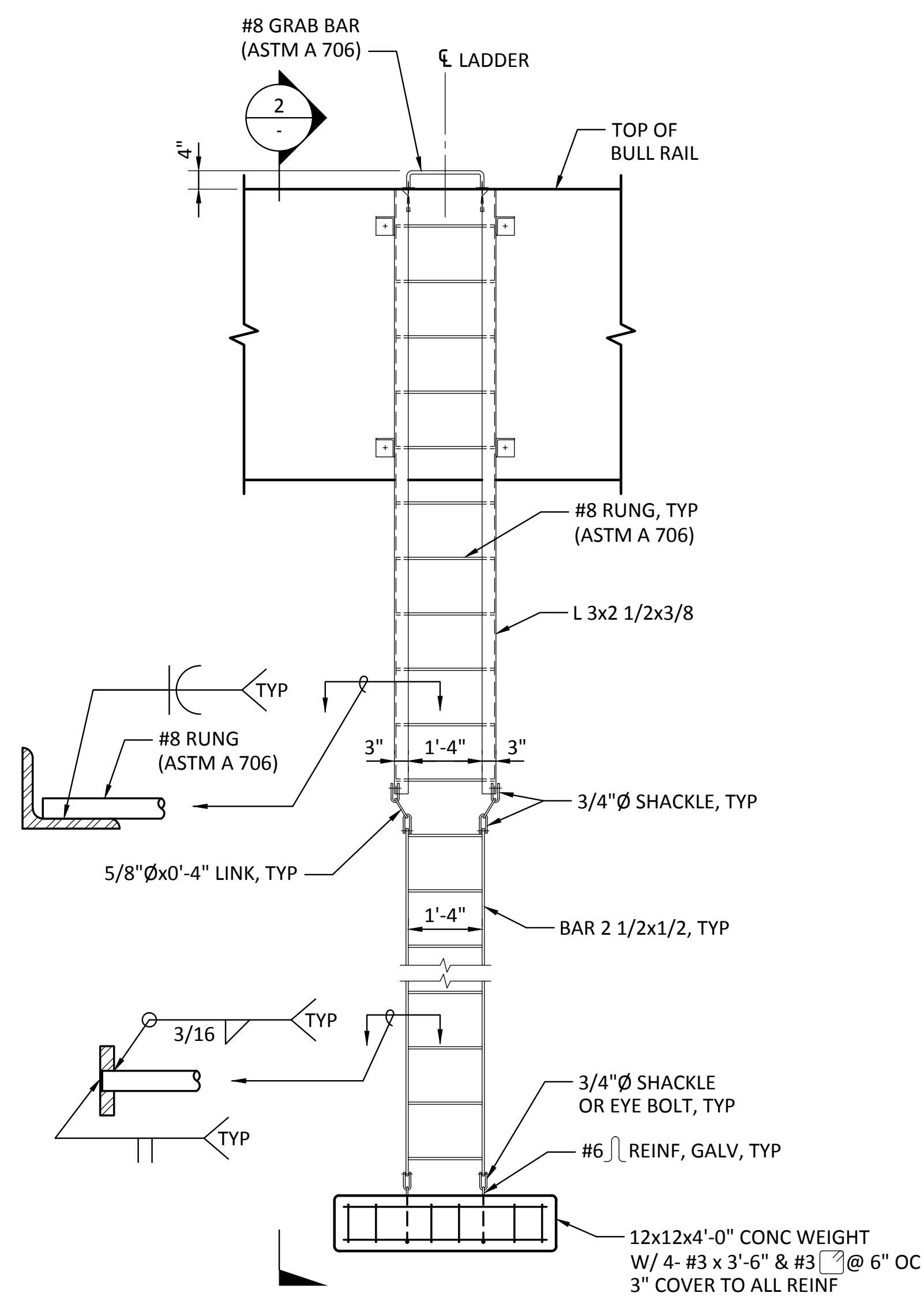
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DC	JRG	7/17/13	DATE
DIR OF ENG	Jason.mendenthal		
PRINTED BY:	ONE SITCUM WAY		
PORT ADDRESS:	TACOMA, WA 98421-2300		

PIER 3 UPGRADE  
CRANE STOP DETAILS  
SHEET 2

TOWNSHIP:	21 N	SECTION:	27
RANGE:	3 E	NOS TIDAL (MILLW = 0.0)	
DAT-HRZ:	NAD 83-07	VERT:	AS SHOWN
PARCEL:	27	DRAWING SCALE:	





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<p>P.O. BOX 1887 TACOMA, WA 98401 (206) 885-8841</p>		<p>BY:</p>
		<p>REVISION:</p>
<p>APPROVED:</p>		<p>DATE</p>
<p>CSB</p>	<p>7/17/13</p>	<p>DATE</p>
<p>DC</p>	<p>7/17/13</p>	<p>DATE</p>
<p>DIR OF ENG</p>	<p>Jason.mendenhall</p>	<p>DATE</p>
<p>PRINTED BY:</p>	<p>ONE SITCUM WAY</p>	<p>DATE</p>
<p>PORT ADDRESS:</p>	<p>TACOMA, WA 98421-2300</p>	<p>DATE</p>
<p>TOWNSHIP: 21 N</p>	<p>RANGE: 3 E</p>	<p>SECTION: 27</p>
<p>DAT-HRZ: NAD 83-07</p>	<p>VERT: NOS TIDAL (MLLW = 0.0)</p>	<p>DRAWING SCALE: AS SHOWN</p>
<p>PARCEL: 27</p>	<p>DRAWING SCALE: AS SHOWN</p>	<p>DATE</p>

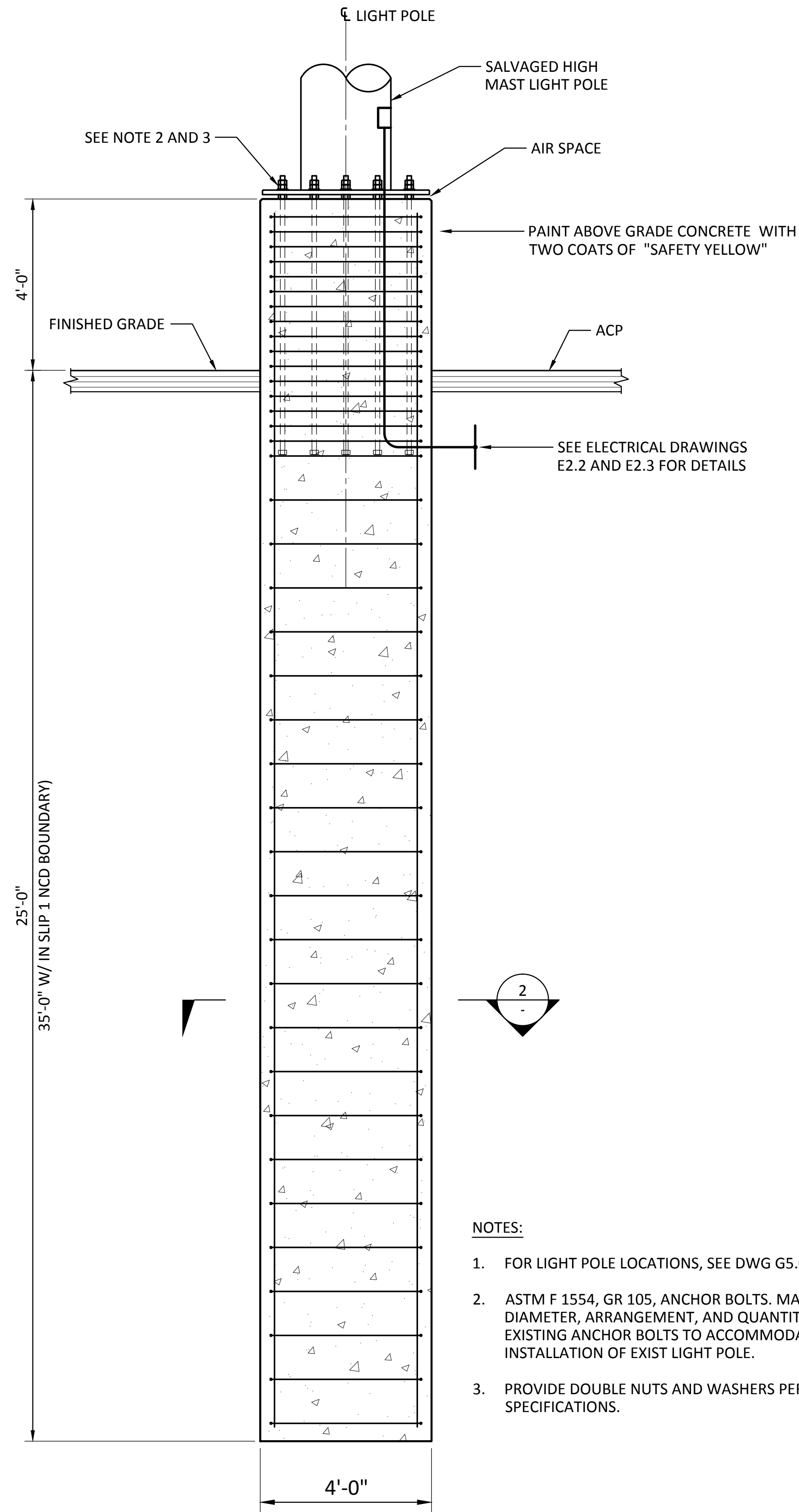
**PIER 3 UPGRADE**

**LADDER DETAILS**

**6502 SHEET 97 OF 129 S19.4**

CON/CONS: 069458  
MASTER ID NO: 092935  
PHASE: RECORD DRAWINGS

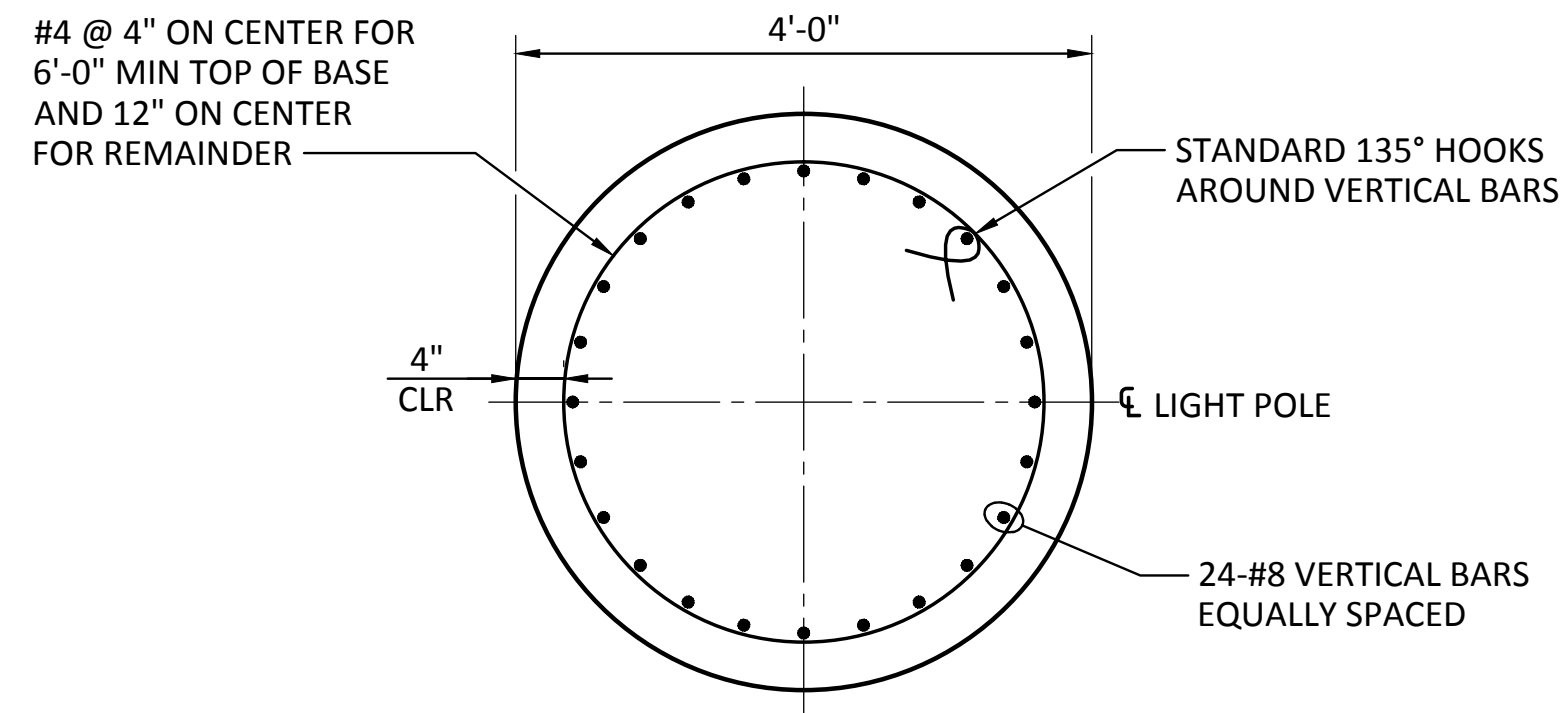
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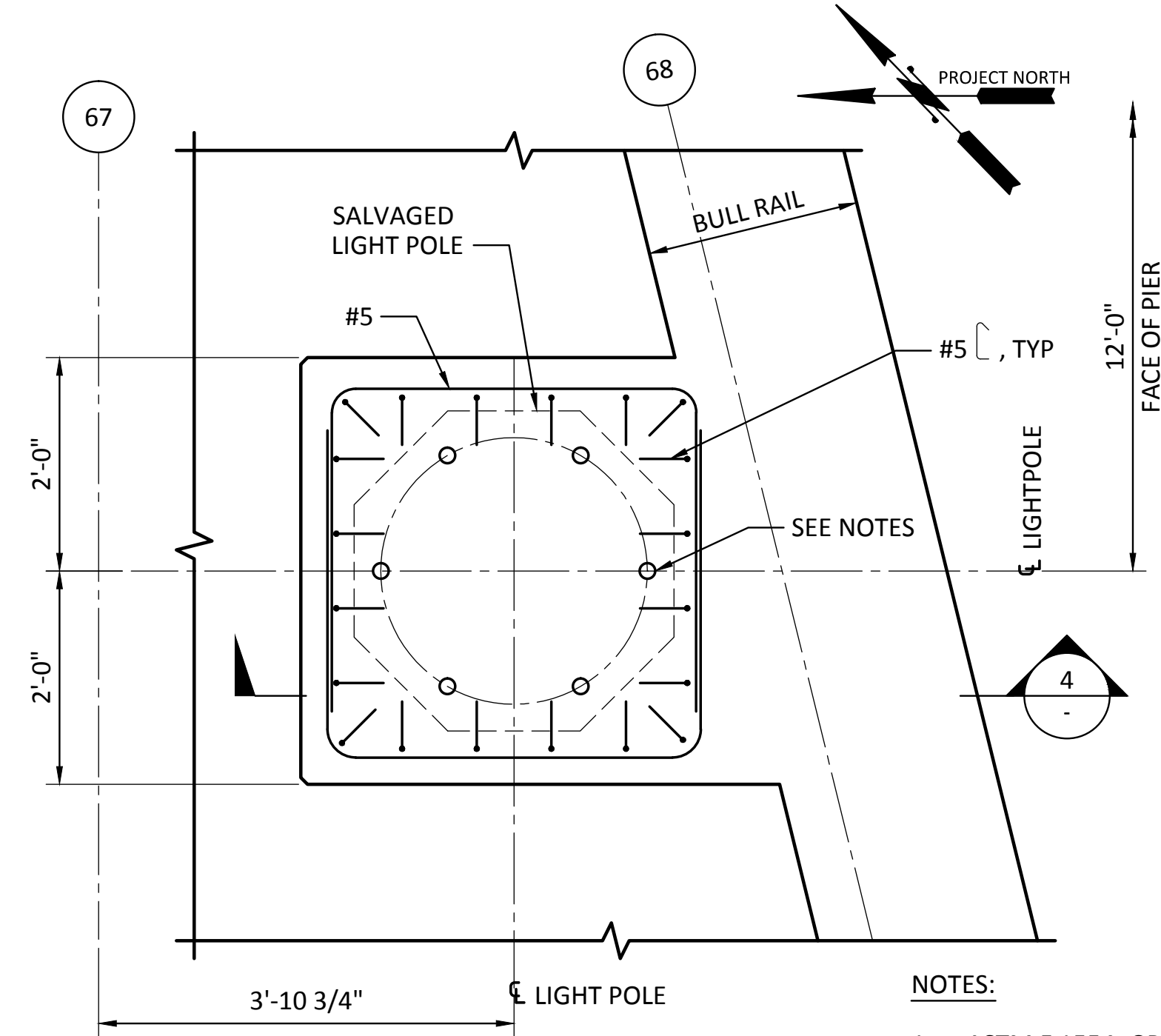
**1**  
S1.2 LIGHT POLE CONCRETE BASE  
SCALE: 1/2" = 1'-0"

NOTES:

1. FOR LIGHT POLE LOCATIONS, SEE DWG G5.0.
2. ASTM F 1554, GR 105, ANCHOR BOLTS. MATCH DIAMETER, ARRANGEMENT, AND QUANTITY OF EXISTING ANCHOR BOLTS TO ACCOMMODATE INSTALLATION OF EXIST LIGHT POLE.
3. PROVIDE DOUBLE NUTS AND WASHERS PER SPECIFICATIONS.



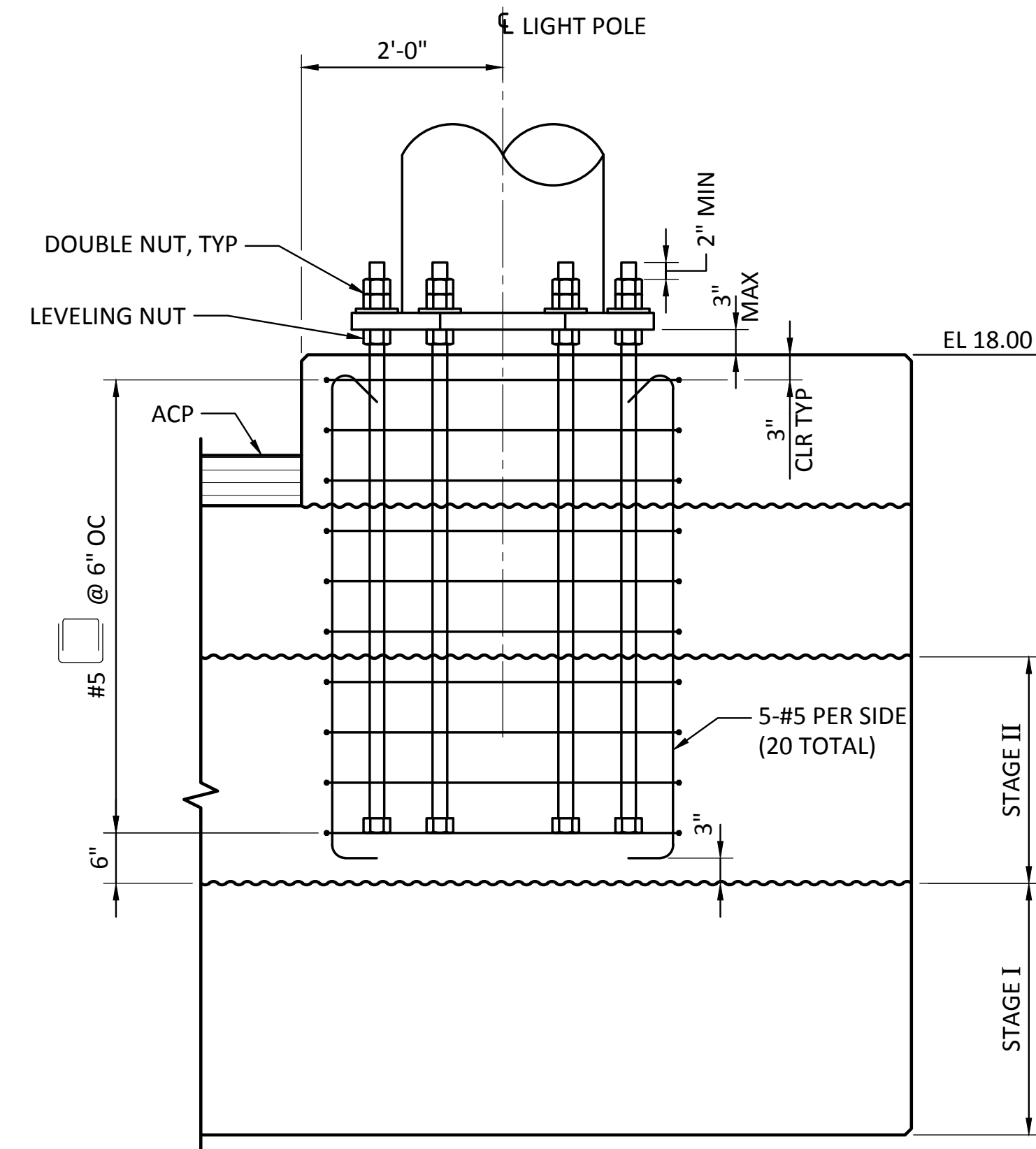
**2**  
SECTION  
SCALE: 3/4" = 1'-0"



**3**  
S3.7 PLAN - HIGH MAST LIGHT  
SCALE: 3/4" = 1'-0"

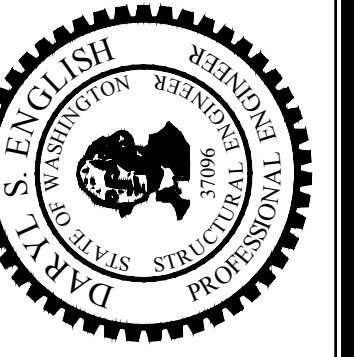
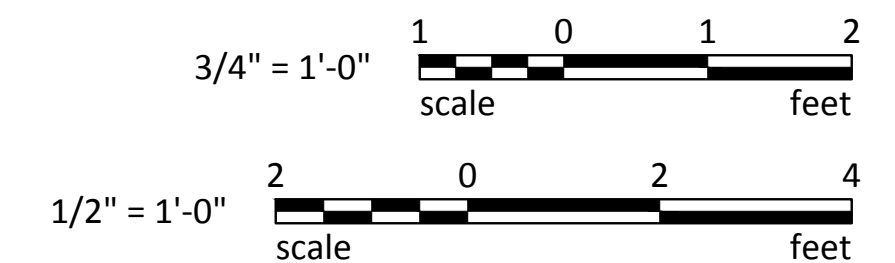
NOTES:

1. ASTM F 1554, GR 105, ANCHOR BOLTS MATCH DIAMETER, ARRANGEMENT, AND QUANTITY OF EXISTING ANCHOR BOLTS TO ACCOMMODATE INSTALLATION OF EXIST LIGHT POLE.
2. PROVIDE DOUBLE NUTS AND WASHERS PER SPECIFICATIONS.



**4**  
SECTION - PIER LIGHT  
SCALE: 3/4" = 1'-0"

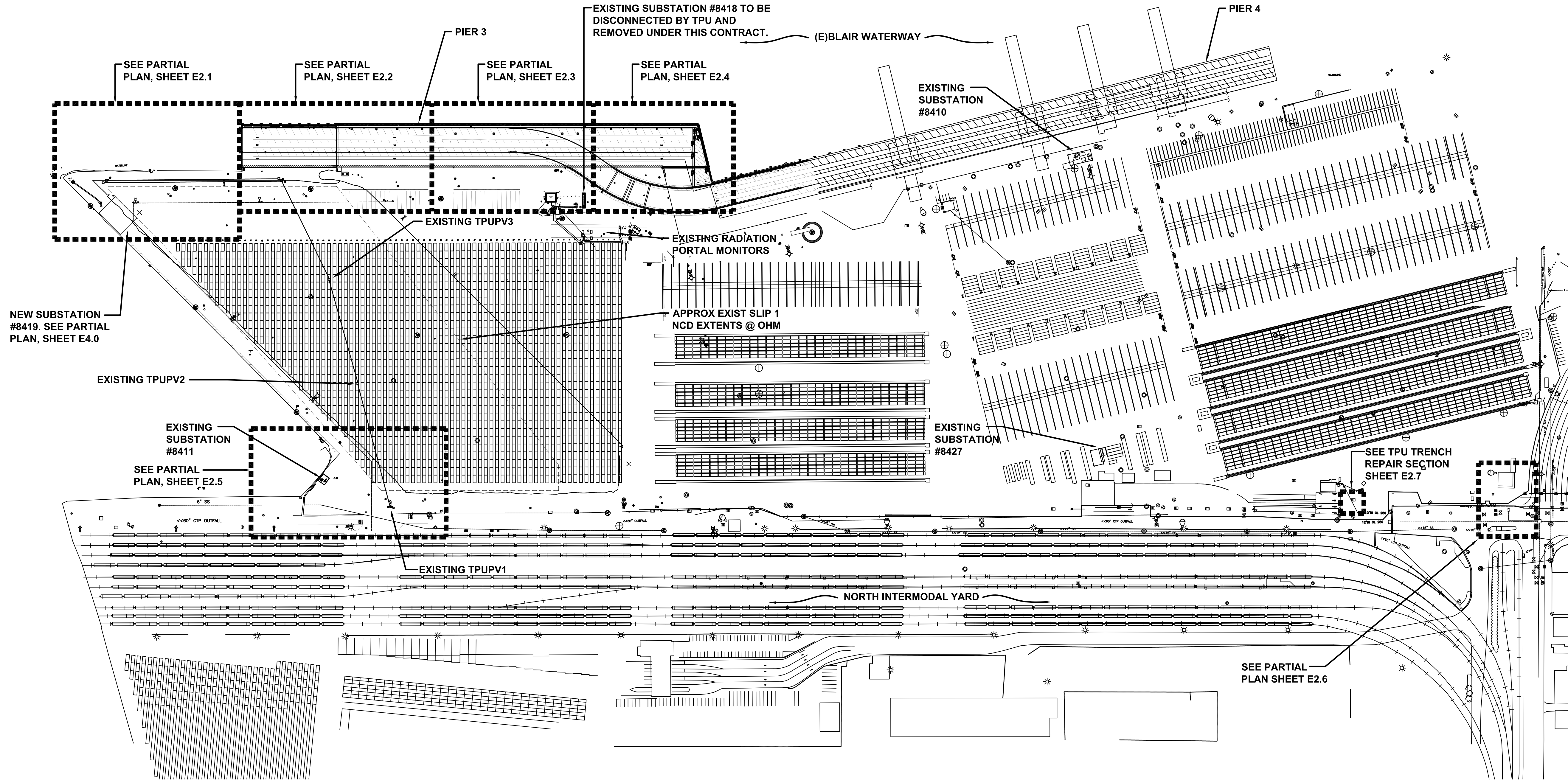
NOTE:  
FOR TYP REINF, SEE DWG S9.3



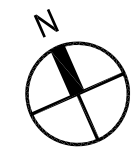
APPROVED:	CSB	7/17/13	DATE
DC	JRG	7/17/13	DATE
DIR OF ENG	PROJ ENGR	DATE	DATE
PRINTED BY:	ONE SITCUM WAY	TACOMA, WA 98421-2300	

<b>PIER 3 UPGRADE</b>			
<b>LIGHT POLE FOUNDATION DETAILS</b>			
TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN	
PARCEL: 27			

CONT/CONS:	069458
MASTER ID NO:	092935
PHASE:	RECORD DRAWINGS



**OVERALL ELECTRICAL SITE PLAN**  
SCALE: 1"=150'-0"










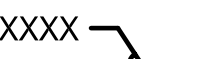

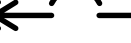
<b>6502</b> <b>E1.0</b> SHEET 98 OF 128	<b>PIER 3 UPGRADE</b>		<b>APPROVED:</b>		<b>GLW/SLH</b> 7/17/13
	<b>OVERALL ELECTRICAL SITE PLAN</b>		<b>DC</b> 7/17/13	<b>CHECKED BY</b> DATE	<b>GLW</b> 7/17/13
<b>CONTR/CONS:</b> 069458	<b>TOWNSHIP:</b> 21 N	<b>RANGE:</b> 3 E	<b>SECTION:</b> 27	<b>DIR OF ENG</b> DATE	<b>PROJ. ENGR</b> DATE
<b>MASTER ID NO:</b> 092935	<b>DAT-HRZ:</b> NAD 83-07	<b>VERT:</b> NOS TIDAL (MLLW = 0.0)	<b>PRINTED BY:</b> Scottk	<b>PORT ADDRESS:</b> ONE STICUM WAY	<b>TACOMA, WA 98421-2300</b>
<b>PHASE:</b> RECORD DRAWINGS	<b>PARCEL:</b> 27	<b>DRAWING SCALE:</b> AS SHOWN			
			<b>MARK:</b> REVISION:	<b>RECORD DRAWINGS</b>	<b>DATE:</b> 2-13-15
			<b>BY:</b> APPR:	<b>GLW</b>	<b>SLK</b>

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### GENERAL NOTES:

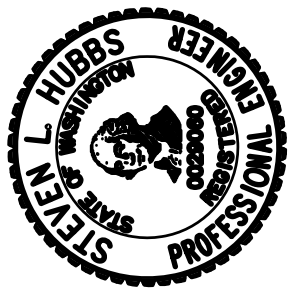

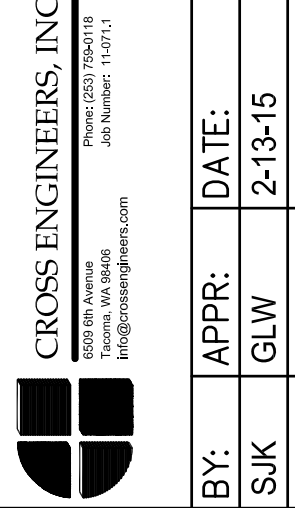
1. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO CIVIL AND STRUCTURAL DRAWINGS TO COORDINATE THE EXACT LOCATION OF ALL ELECTRICAL EQUIPMENT, STRUCTURES, VAULTS, CONDUITS, ETC. NOTIFY ENGINEER IN THE EVENT OF A CONFLICT.
2. SEE DRAWING E7.0, E7.1 AND E7.2 FOR CONDUIT AND CONDUCTOR SCHEDULE. NOT ALL CONDUIT AND CONDUCTORS ARE INDICATED ON THE SCHEDULES. SEE SITE PLANS, DETAILS AND SUBSTATION PLANS FOR ADDITIONAL CONDUIT AND CONDUCTOR REQUIREMENTS. METALLIC CONDUITS, COUPLINGS AND JOINTS OF METALLIC CONDUITS EMBEDDED IN CONCRETE, CDF, EARTH OR ASPHALT SHALL BE 1/2 LAP TAPED OR OTHERWISE MADE WATERTIGHT TO PREVENT INTRUSION OF MORTAR, WATER OR OTHER MATERIALS. TEST CONDUIT FOR ABSENCE OF ANY BLOCKAGE PRIOR TO AND WITHIN 24 HOURS OF COMPLETING A CONCRETE OR CDF POUR OR ASPHALT PAVING.
3. ALL CONDUITS ENTERING OR LEAVING VAULTS (EXCEPT THOSE NOTED AS (TPUV) VAULTS) SHALL USE VAULT TERM-A-DUCT OPENINGS. PROVIDE REMOVABLE FOAM FILL IN ALL CONDUIT OPENINGS. PROVIDE PULL STRINGS WITH DISTANCE INCREMENTS (FEET) IN ALL CONDUITS. CONTRACTOR SHALL PROVIDE CONDUIT LABELS FOR ALL CONDUITS ENTERING AND LEAVING VAULTS. PROVIDE PHENOLIC LABEL ATTACHED TO VAULT WALL WITH TWO (2) PLASTIC INSERTS AND STAINLESS STEEL SCREWS ADJACENT TO EACH CONDUIT. PHENOLIC LABEL SHALL HAVE CONDUIT ID ENGRAVED AS INDICATED ON CONDUIT AND CONDUCTOR SCHEDULE.
4. CONTRACTOR SHALL INCLUDE IN THE BID ALL COSTS TO HAVE A DEPARTMENT OF LABOR AND INDUSTRIES APPROVED FIRM TO FIELD EVALUATE THE INSTALLATION, SAFETY, AND COMPLIANCE REQUIRED PER TACOMA POWER ELECTRICAL INSPECTION AND/OR PER W.A.C. 296-46B-901 FOR ANY EQUIPMENT SPECIFIED OR FURNISHED THAT IS NOT UL LABELED.
5. CONTRACTOR AS PART OF THIS WORK IS TO INCLUDE CIVIL WORK AS RELATED TO TACOMA PUBLIC UTILITIES VAULTS, CONDUITS, PROTECTIVE BOLLARDS AND INSPECTIONS. PRIOR TO BID CONTRACTOR SHALL BECOME FAMILIAR WITH TACOMA PUBLIC UTILITY ELECTRICAL CONSTRUCTION STANDARDS. THESE CAN BE REVIEWED AT WWW.MYTPU/TACOMAPOWER/ELECTRICAL-PERMITTING/ELECTRICALCONSTRUCTION-STANDARDS.HTM TACOMA PUBLIC UTILITIES COORDINATION CONTRACT ENGINEER IS DAN REED, 253-502-8292.
6. THERE IS ADDITIONAL ELECTRICAL WORK SHOWN ON THE CIVIL AND STRUCTURAL DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. EXTENSIVE COORDINATION IS REQUIRED BY THE CONTRACTOR WITH GOVERNING AUTHORITIES, OTHER CONTRACTORS, POT AND POT TENANTS. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS SECTIONS TO INCLUDE ALL COORDINATION AND RELATED WORK IN THE BID.
7. FOR ALL EXCAVATIONS IN EXISTING ASPHALT AREAS FOR ELECTRICAL WORK, THE CONTRACTOR SHALL SAWCUT, EXCAVATE, HAND DIG, BACKFILL, COMPACT AND PATCH ASPHALT PER THE SPECIFICATIONS. LIMITS OF PAVEMENT DEMOLITION AND RESTORATION SHALL BE AS REQUIRED TO PERFORM THE ELECTRICAL INSTALLATIONS. PAVEMENT PATCHING SHALL BE 10 INCHES HMA, OVER 12 INCHES BASE COURSE, OVER COMPACTED BACKFILL.
8. SEE CIVIL DRAWINGS FOR EXISTING AND NEW BELOW GRADE UTILITIES FOR COORDINATION WITH ROUTING ON NEW ELECTRICAL UNDERGROUND INFRASTRUCTURE. CALL FOR LOCATES PRIOR TO ANY EXCAVATIONS.

### SYMBOLS LEGEND:

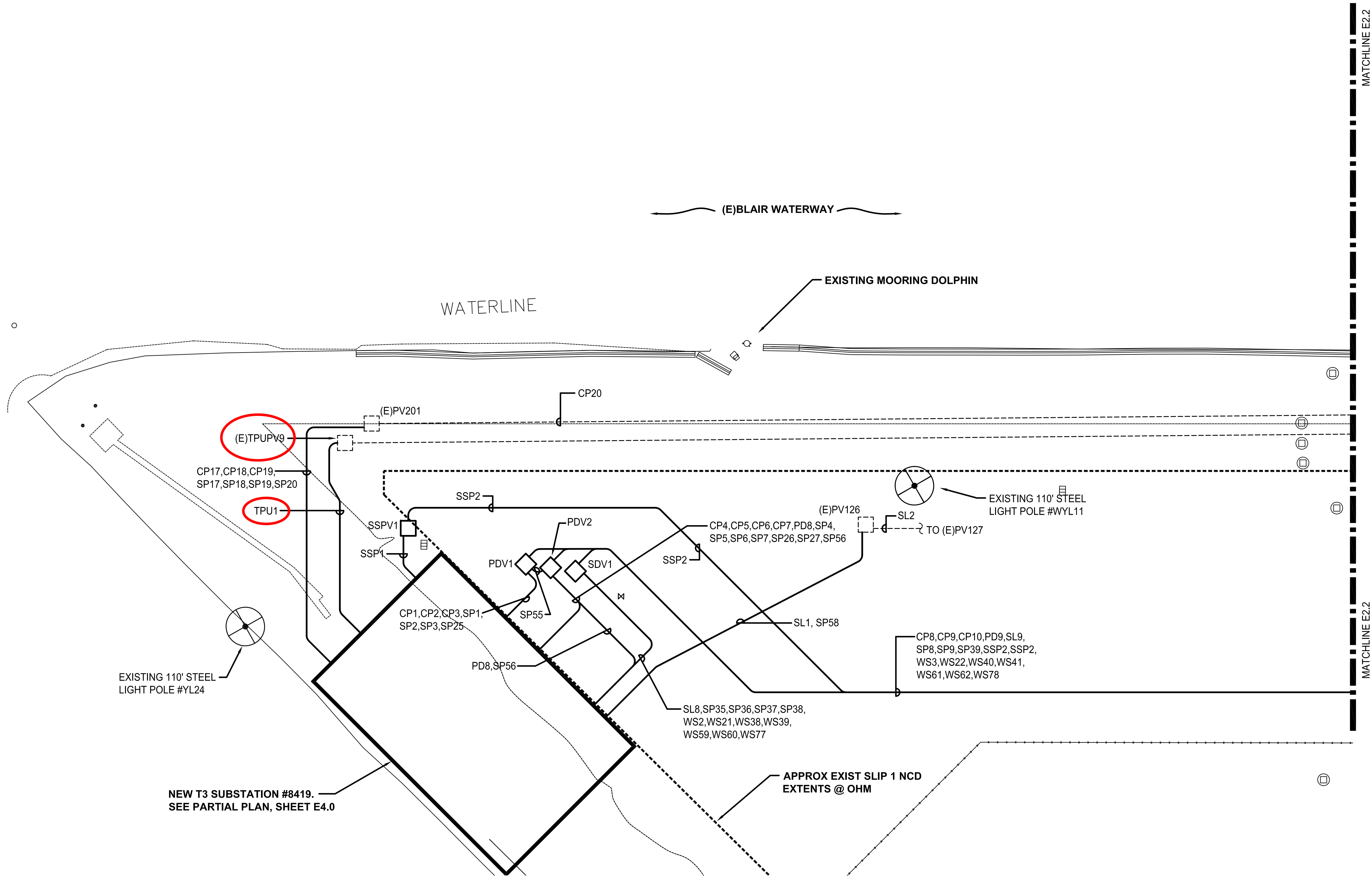
-  XXX- POWER/COMMUNICATIONS VAULT IDENTIFICATION. SEE DRAWING E6.0. FOR VAULT REQUIREMENTS.
-  ELECTRICAL POWER PANEL.
-  DUPLEX 120V, 20A, WP = GFI RECEPTACLE IN NEMA 3R CAST BOX WITH "IN USE" NEMA 3R COVER.
-  GROUND PER NEC
-  EQUIPMENT CONNECTION. PROVIDE PER NEC AND MANUFACTURER'S REQUIREMENTS AND/OR RECOMMENDATIONS.
-  EXISTING SITE LIGHTING POLE
-  15KV TRANSFORMER  
PT=POTENTIAL TRANSFORMER, CT= CURRENT TRANSFORMER
-  CONDUIT IDENTIFICATION. SEE CONDUIT AND CONDUCTOR SCHEDULE DRAWINGS E7.0, E7.1 AND E7.2
-  AVAILABLE FAULT CURRENT
-  DRAW OUT CIRCUIT BREAKER

### ABBREVIATION LEGEND:

- A = AMPS
- AFG = ABOVE FINISHED GRADE
- AIC = FAULT CURRENT RATING
- C = COMMUNICATIONS
- CDF = CONTROLLED DENSITY FILL
- CKT = CIRCUIT
- CP = CRANE POWER
- CPV = CRANE POWER VAULT
- E = EXISTING
- FT = FEET
- GRD = GROUND
- GRS = GALVANIZED RIGID STEEL
- ID = IDENTIFICATION
- N = NEW
- NEC = NATIONAL ELECTRICAL CODE
- NEMA = NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
- PB = PULLBOX
- PD = PRIMARY DISTRIBUTION
- PDV = PRIMARY DISTRIBUTION VAULT
- POT = PORT OF TACOMA
- SDV = SECONDARY POWER VAULT
- SD = SECONDARY 600V DISTRIBUTION
- SP = SPARE CONDUIT
- SSB = SHORE SHIP CONNECTION VAULT
- SSP = SHORE SHIP POWER
- SSPV = SHORE SHIP POWER VAULT
- SWBD = SWITCHBOARD
- TPU = TACOMA POWER UTILITIES
- TPUC = TACOMA POWER UTILITIES COMMUNICATIONS
- TPUV = TACOMA PUBLIC UTILITIES VAULT
- TPUM = TACOMA PUBLIC UTILITIES MANHOLE
- WAC = WASHINGTON ADMINISTRATIVE CODE
- WP = WEATHERPROOF

<b>6502</b> <b>E2.0</b> SHEET 99 OF 128	<b>PIER 3 UPGRADE</b> <b>ELECTRICAL LEGEND/NOTES</b>	APPROVED: DC 7/17/13 DIR OF ENG PRINTED BY: Scott K PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300	GLW/SLH 7/17/13 CHECKED BY: DATE GLW 7/17/13 PROJ. ENGR DATE TACOMA, WA 98421-2300	MARK: REVISION: RECORD DRAWINGS BY: APPR: DATE: SJK GLW 2-13-15
TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MILLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN				
				
				
				

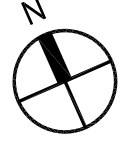
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MATCHLINE E2.2

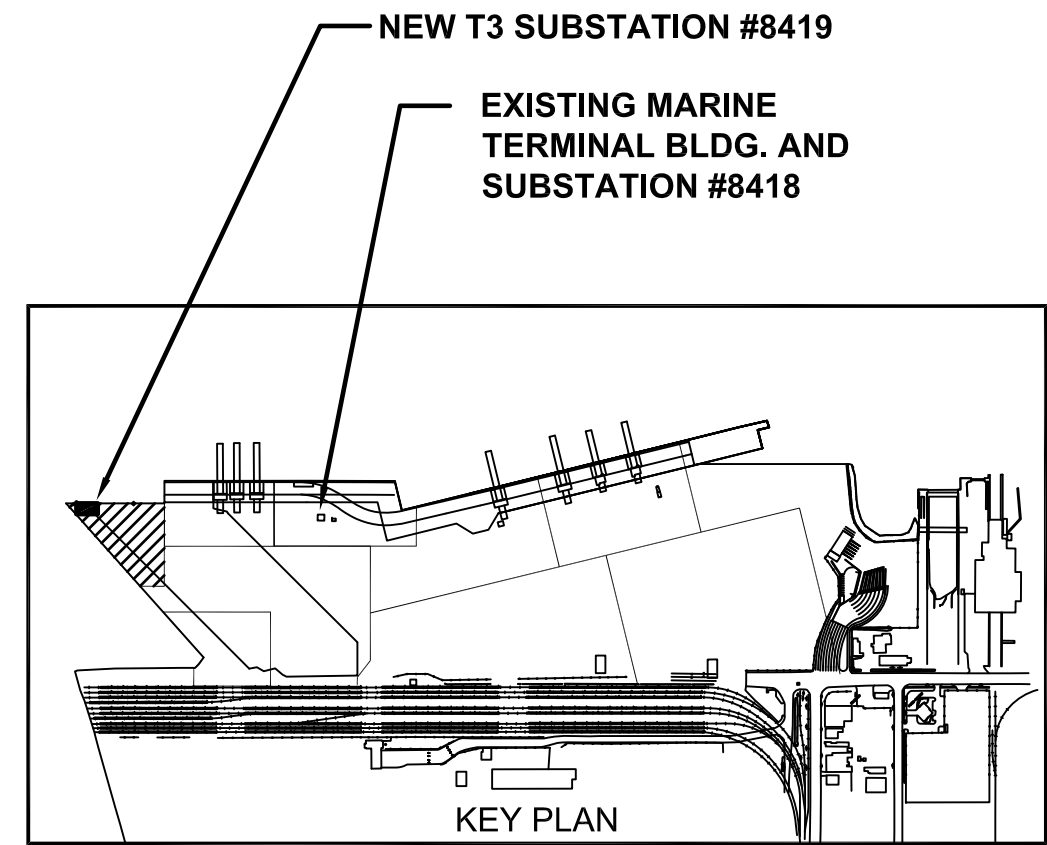
MATCHLINE E2.2

**PARTIAL ELECTRICAL SITE PLAN**  
SCALE: 1"=20'-0"



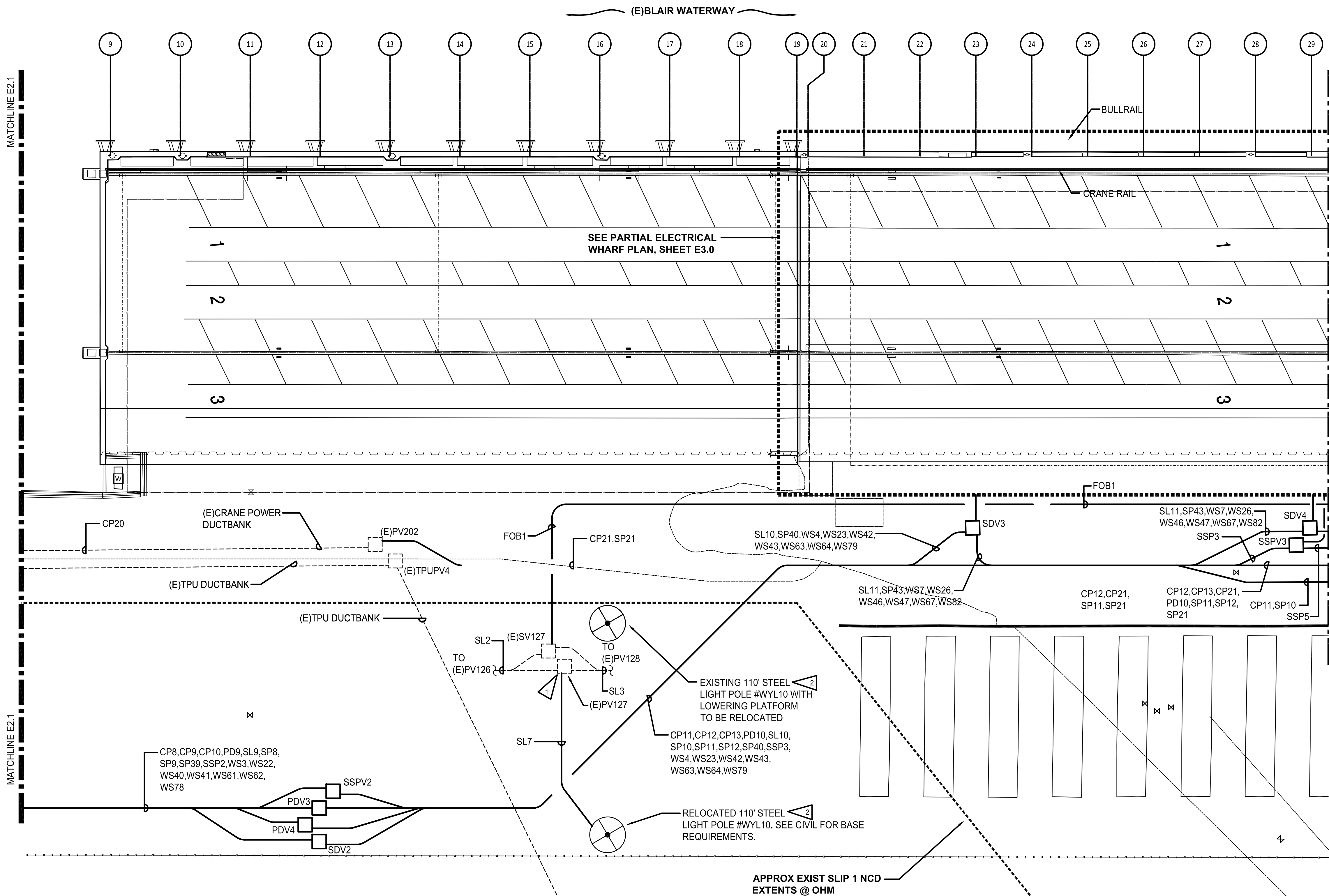
**GENERAL NOTES:**

- 1. SEE SHEET E2.0 FOR GENERAL NOTES.

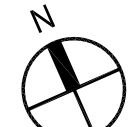


6502 <b>E2.1</b> SHEET 100 OF 128	PIER 3 UPGRADE		APPROVED:		GLW/SLH 7/17/13
	PARTIAL ELECTRICAL SITE PLAN		DC 7/17/13	CHECKED BY DATE	GLW 7/17/13
CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	DIR OF ENG DATE	PROJ. ENGR DATE
MASTER ID NO: 092935	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	PRINTED BY: ScottK	PORT ADDRESS: ONE STICUM WAY	TACOMA, WA 98421-2300
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	MARK: REVISION: RECORD DRAWINGS	BY: APPR: DATE:	SLK GLW 2-13-15

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**PARTIAL ELECTRICAL SITE PLAN**  
SCALE: 1"=20'-0"

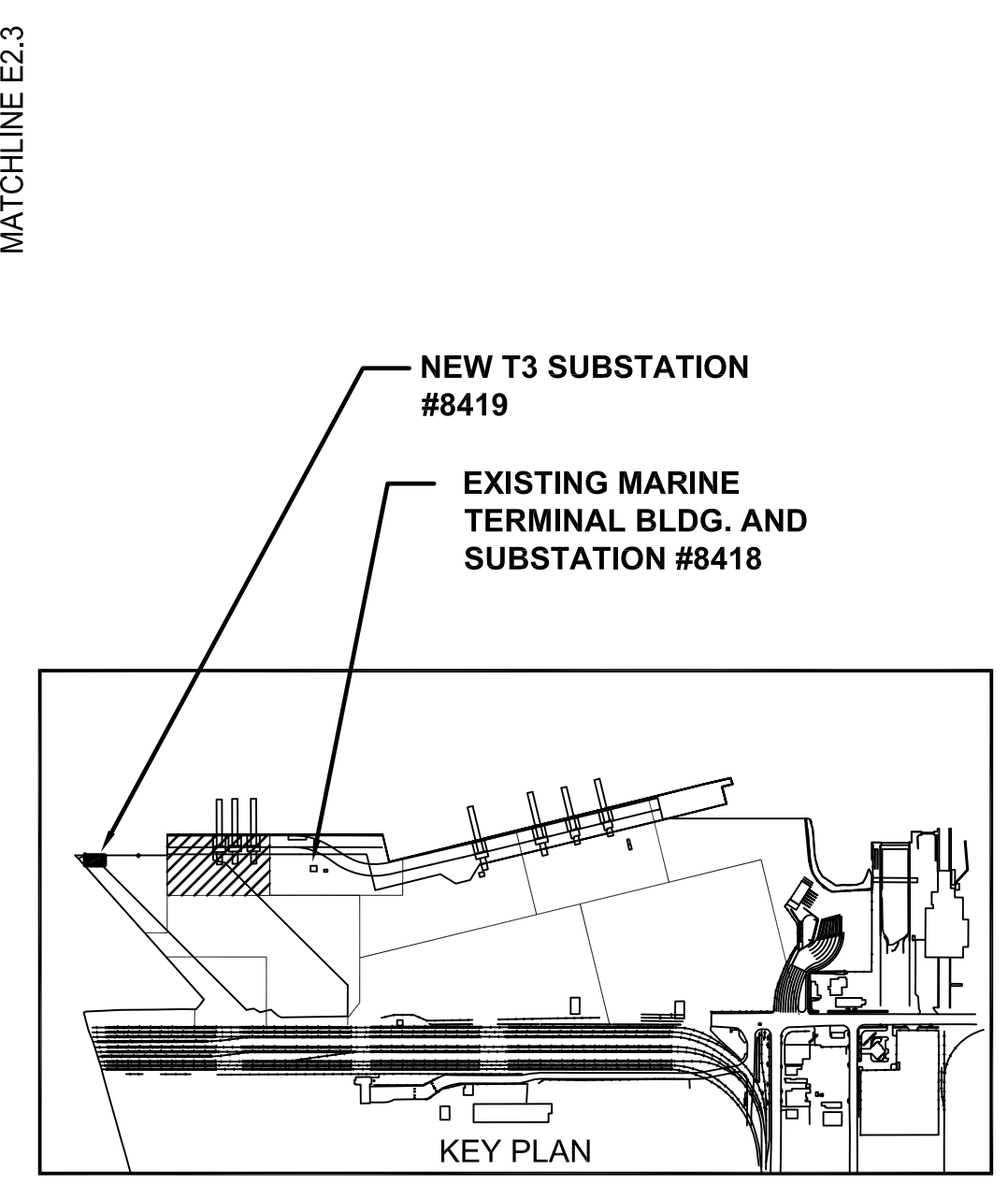


**GENERAL NOTES:**

- SEE SHEET E2.0 FOR GENERAL NOTES.

**ELECTRICAL NOTES:**

- CONTRACTOR SHALL PROVIDE (2)2"C-(3)#1/0 CU & (1)#6 CU GRD EACH FROM EXISTING VAULT #PV127 TO RELOCATED LIGHT POLE #WYL10. PROVIDE WATERTIGHT SPLICES WITHIN EXISTING VAULT #PV127 FOR CONNECTION OF EXISTING AND NEW CONDUCTORS.
- CONTRACTOR SHALL PROVIDE NEW ANCHOR BOLTS TO BE INSTALLED IN NEW CONCRETE POLE BASE.



 <b>CROSS ENGINEERS, INC.</b> <small>Professional Engineers          License No. WA 00000000          License No. WA 00000000          License No. WA 00000000</small>	BY: <b>GLW</b> APPR: <b>GLW</b> DATE: <b>2-13-15</b>
	REVISION: <b>RECORD DRAWINGS</b> MARK:
 <b>Port of Tacoma</b> <small>P.O. BOX 1887 TACOMA, WA 98401 (253)858-6441</small>	 <b>SCOTT K. HUBBS</b> LICENSE NO. 11870 PROFESSIONAL ENGINEER
<b>APPROVED:</b> DC <b>7/17/13</b> DIR OF ENGR DATE PRINTED BY: <b>ScottK</b> PORT ADDRESS: <b>ONE STICUM WAY TACOMA, WA 98421-2300</b>	<b>GLW/SLH 7/17/13</b> CHECKED BY DATE <b>GLW 7/17/13</b> PROJ. ENGR DATE
<b>PIER 3 UPGRADE</b> <b>PARTIAL ELECTRICAL SITE PLAN</b> RANGE: <b>3 E</b> SECTION: <b>27</b> TOWNSHIP: <b>21 N</b> DATE-HRZ: <b>NAD 83-07</b> VERT: <b>NOS TIDAL (MLLW = 0.0)</b> CONT/CONS: <b>069458</b> PARCEL: <b>27</b> MASTER ID NO: <b>092935</b> DRAWING SCALE: <b>AS SHOWN</b> PHASE: <b>RECORD DRAWINGS</b>	<b>6502</b> <b>E2.2</b> SHEET 101 OF 128

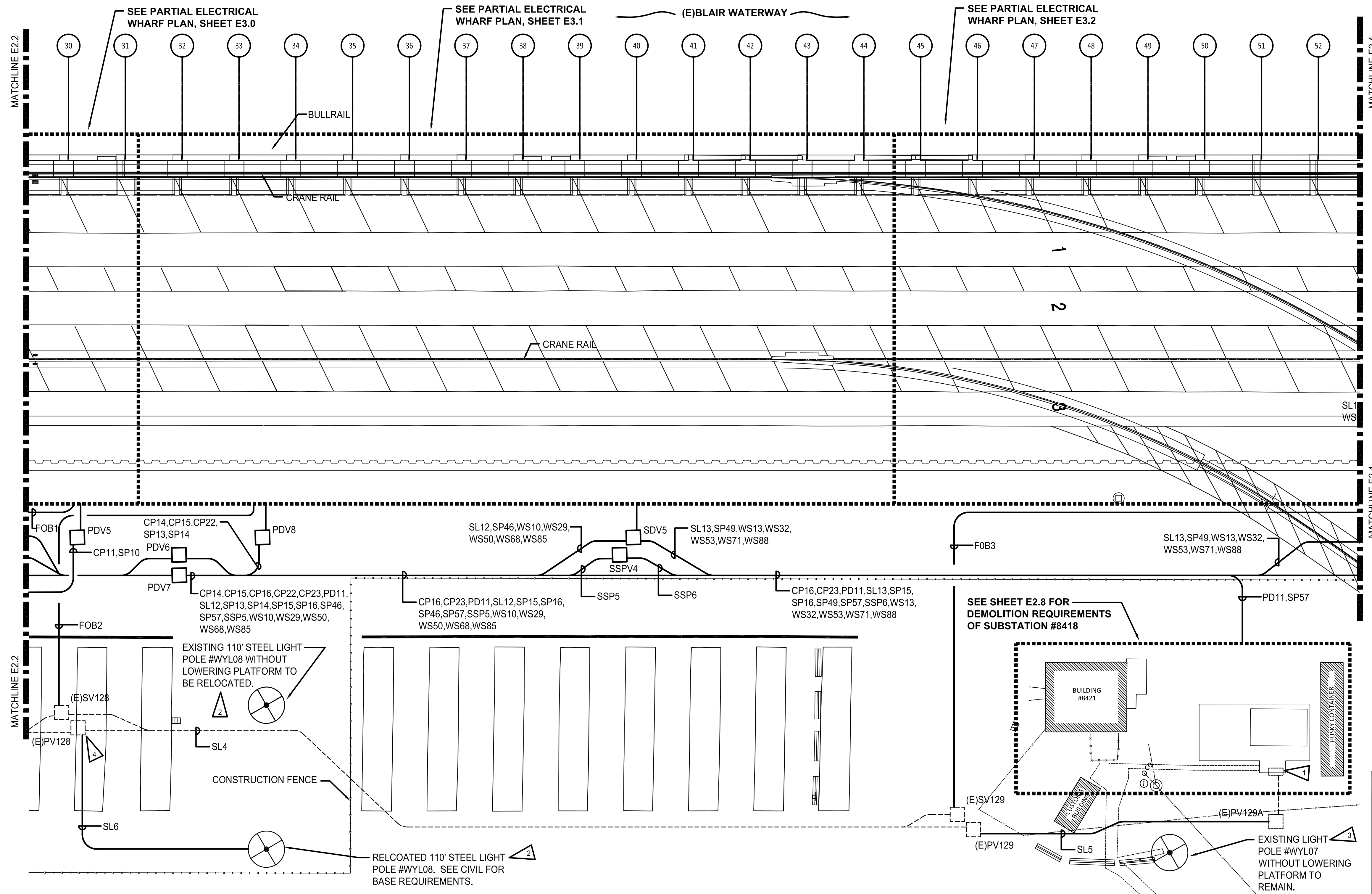
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### GENERAL NOTES:

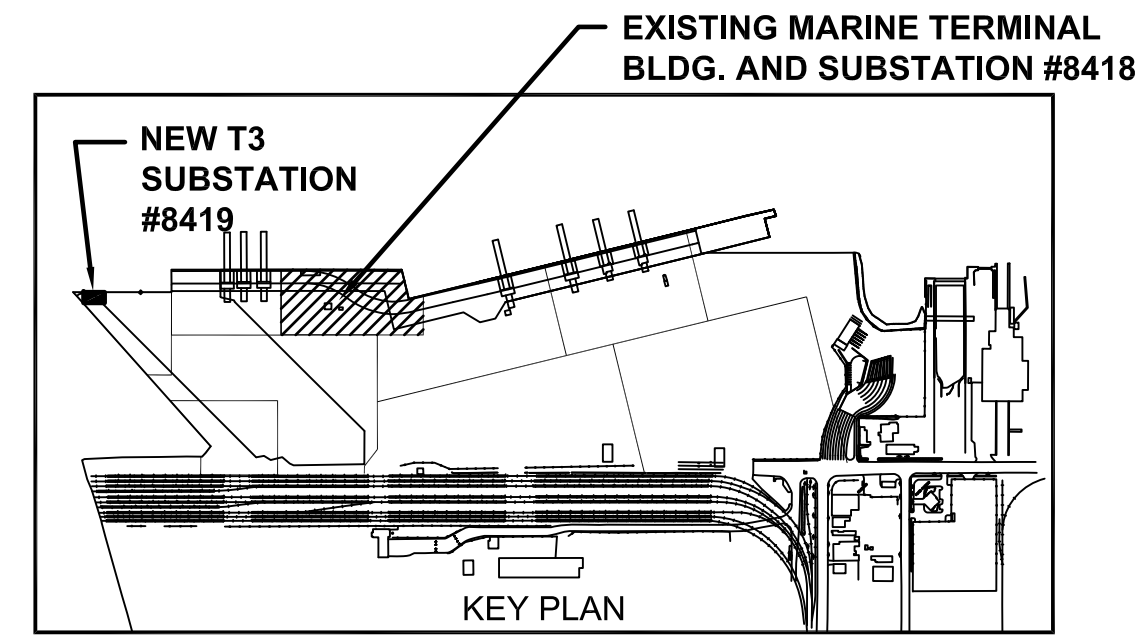
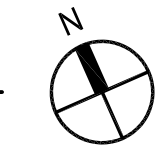
1. SEE SHEET E2.0 FOR GENERAL NOTES.

### ELECTRICAL NOTES:

1. CONTRACTOR SHALL DISCONNECT EXISTING LIGHTING CIRCUITS (3) FROM LIGHTING CONTROLLER AND PULL BACK TO EXISTING VAULT. PROVIDE WATERTIGHT SPLICE OF EXISTING LIGHTING CONDUCTORS TO NEW LIGHTING CIRCUIT(S) CONDUCTORS. REMOVE EXISTING LIGHTING CONTROL PANEL AND CUT CONDUITS FLUSH AT GRADE AND FILL WITH GROUT.
2. PROVIDE NEW ANCHOR BOLTS TO BE INSTALLED IN NEW CONCRETE POLE BASE.
3. NOT USED. WORK DELETED.
4. CONTRACTOR SHALL PROVIDE (2)2" C - (3)#1/0 CU & (1) #6 CU GRD EACH FROM EXISTING POWER VAULT #PV128 TO RELOCATED LIGHT POLE #WYL08. PROVIDE WATERTIGHT SPLICE WITHIN EXISTING VAULT #PV128 FOR CONNECTION OF NEW AND EXISTING CONDUCTORS.



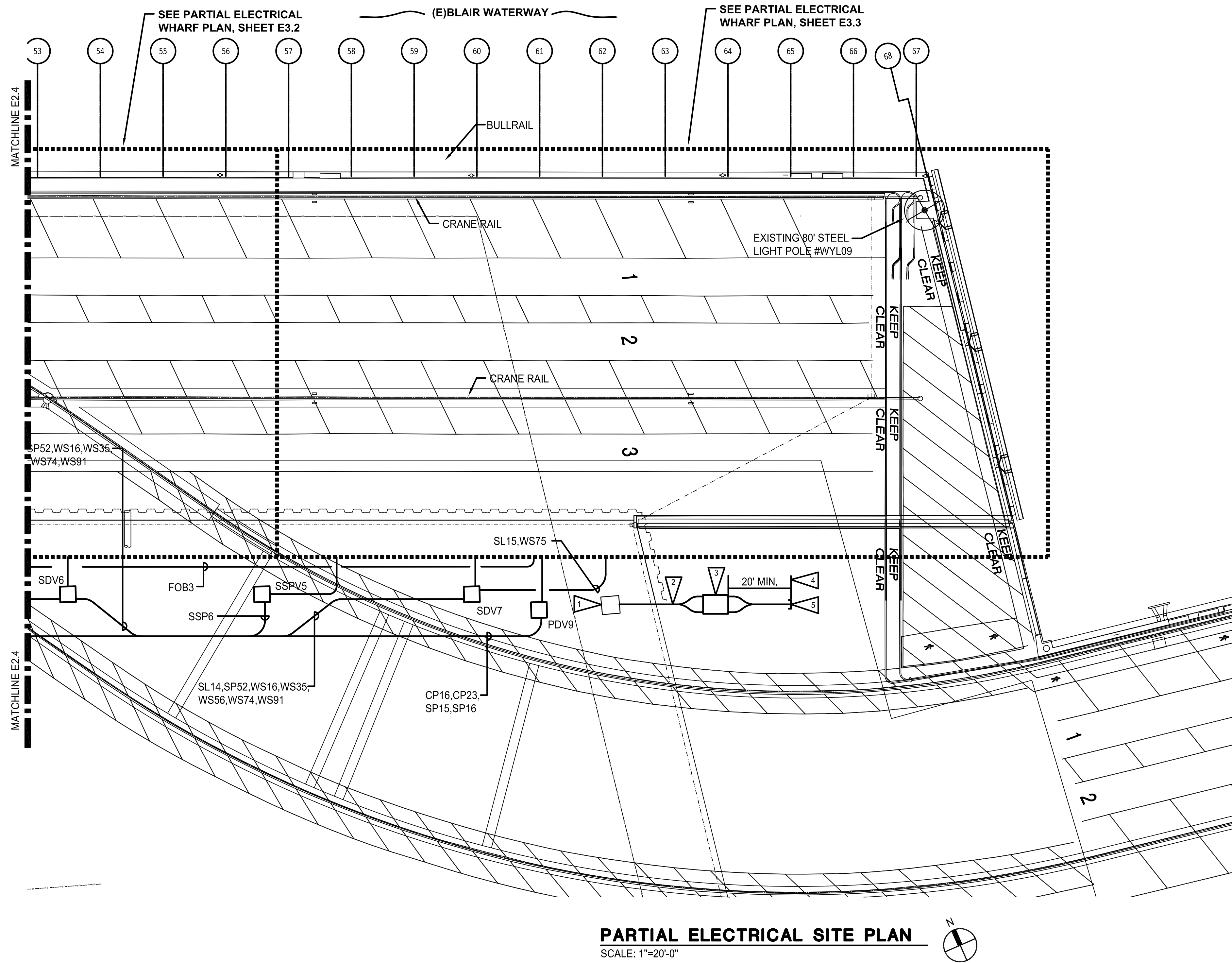
**PARTIAL ELECTRICAL SITE PLAN**  
SCALE: 1"=20'-0"



Last Saved by: ScottK on: Apr 8, 2015 10:38 AM File: N:\Jobs\2011\11-1071\_11Dwg\Record Drawings\11-1071\_1-E2.3.dwg

 CROSS ENGINEERS, INC. 1800 W. WASHINGTON TACOMA, WA 98401 PHONE: 253-473-1171 FAX: 253-473-1172 WWW.CROSSENGINEERS.COM	CHECKED BY: <b>GLW</b> DATE: <b>7/17/13</b> PROJ. ENGR: <b>GLW</b> DATE: <b>7/17/13</b>
	APPROVED: <b>DC</b> DATE: <b>7/17/13</b> DIR OF ENG: <b>ScottK</b> PRINTED BY: <b>ScottK</b> PORT ADDRESS: <b>ONE STICUM WAY TACOMA, WA 98421-2300</b>
	TOWNSHIP: <b>21 N</b> RANGE: <b>3 E</b> SECTION: <b>27</b> DAT-HRZ: <b>NAD 83-07</b> VERT: <b>NOS TIDAL (MLLW = 0.0)</b> PHASE: <b>RECORD DRAWINGS</b>   PARCEL: <b>27</b>   DRAWING SCALE: <b>AS SHOWN</b>
<b>6502 E2.3</b> SHEET 102 OF 128 CONT/CONS: <b>089458</b> MASTER ID NO: <b>092935</b> PHASE: <b>RECORD DRAWINGS</b>	<b>PIER 3 UPGRADE</b> <b>PARTIAL ELECTRICAL SITE PLAN</b>

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**GENERAL NOTES:**

- 1. SEE SHEET E2.0 FOR GENERAL NOTES.

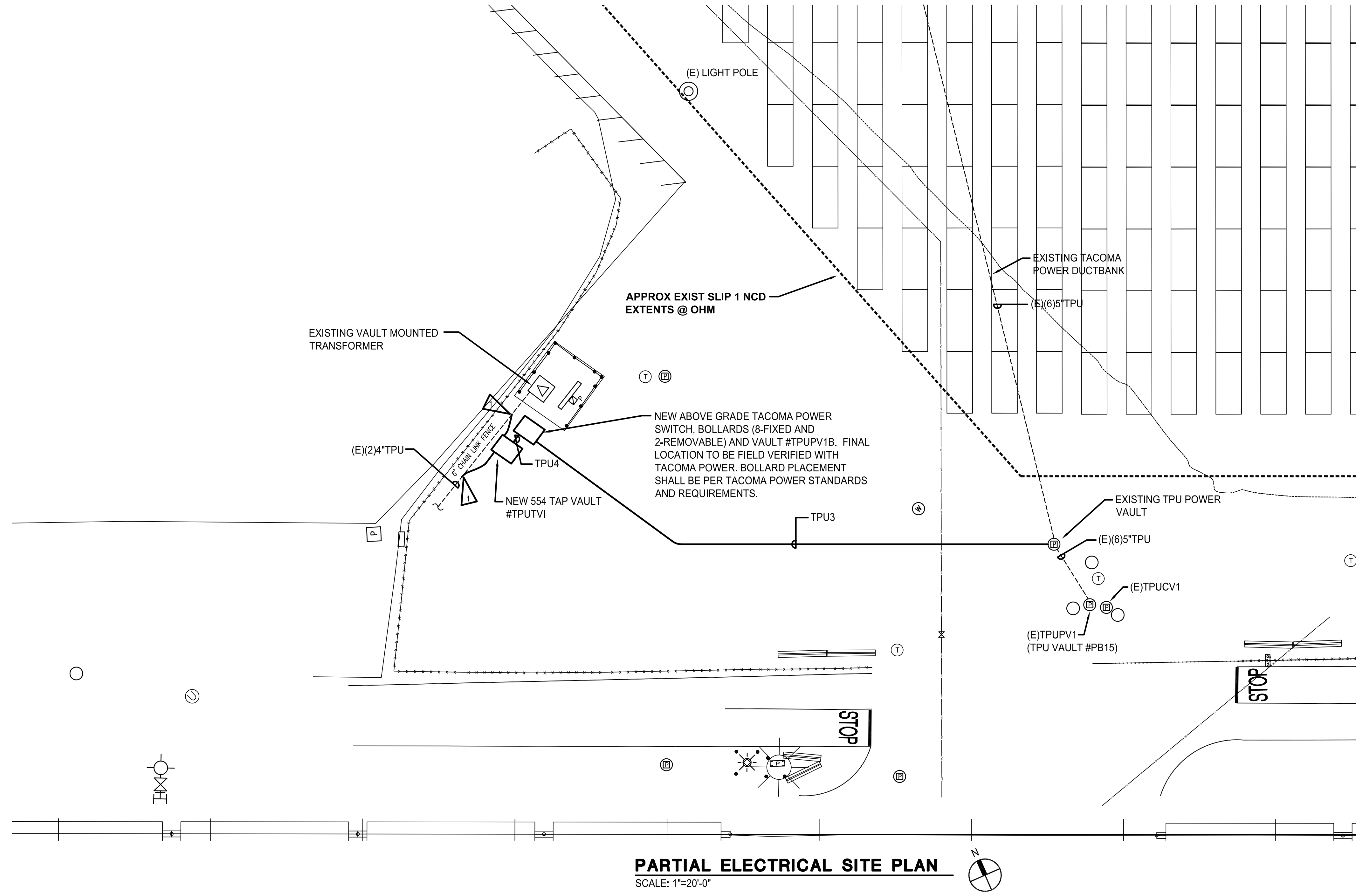
**ELECTRICAL NOTES:**

- 1. EXISTING VAULT WITH EXISTING 5KV CRANE CABLES. INTERCEPT EXISTING 5KV CRANE CABLES CURRENTLY IN USE, PROVIDE NON-LOAD BREAK INLINE, WATERTIGHT SPLICE AND EXTEND NEW 5" CRANE CABLE, AND GROUND TO NEW VAULT LOCATION SHOWN. THIS CONDUIT AND CRANE CABLE IS NOT SHOWN ON CONDUIT AND WIRE SCHEDULE. AT COMPLETION OF PROJECT THIS EXISTING VAULT AND CRANE CABLES SHALL BE REMOVED BACK TO EXISTING 5KV SWITCHGEAR AT SUBSTATION #8418.
- 2. PROVIDE (2)5"C-(3)#1/0 5KV SHIELDED CU, 133% & (1)#1/0 CU GRD EACH. THIS EQUIPMENT IS TEMPORARY AND SHALL BE REMOVED AT PROJECT COMPLETION WITH GRADE RESTORED TO MATCH NEW.
- 3. PROVIDE NEW CUSTOM VAULT WITH HINGED LIDS. SEE SHEET E2.9, E2.10 AND E2.11 FOR ADDITIONAL WORK. THIS VAULT IS TEMPORARY AND SHALL BE REMOVED AT COMPLETION OF PROJECT.
- 4. PROVIDE (2)5"C ENTERING THE VAULT AS LOW AS POSSIBLE WITH BELL ENDS. SLOPE CONDUIT UP FROM VAULT A MINIMUM OF 20' TO BE EXPOSED AT GRADE WITH END BUSHINGS ON CONDUIT. THIS EQUIPMENT IS TEMPORARY AND SHALL BE REMOVED AT COMPLETION OF PROJECT.
- 5. COORDINATE WITH ENGINEER FOR SCHEDULING DISCONNECTION AND RECONNECTION OF EXISTING 5KV CRANE CABLES.

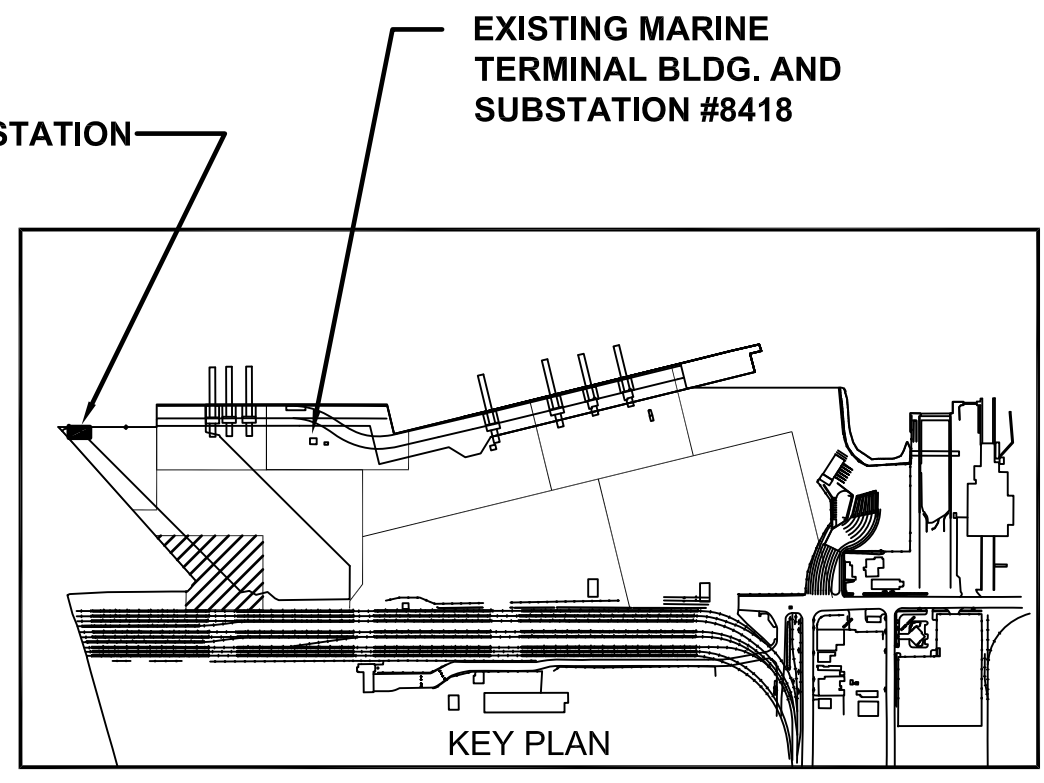
 CROSS ENGINEERS, INC. 11000 15th Avenue SW Tacoma, WA 98402 Phone: 253-838-5841 Fax: 253-838-5842 www.crossengineers.com	DATE: 2-13-15 BY: APPR: GLW MARK: RECORD DRAWINGS SJK
	 Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401 (253)863-8411
	APPROVED: GLW/SLH 7/17/13 CHECKED BY: DATE: 7/17/13 DIR OF ENGR: DATE: 7/17/13 PRINTED BY: ScottK PORT ADDRESS: ONE STICUM WAY TACOMA, WA 98421-2300
6502 <b>E2.4</b> SHEET 103 OF 128 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN
PIER 3 UPGRADE PARTIAL ELECTRICAL SITE PLAN	APPROVED: DC 7/17/13 DIR OF ENGR: DATE: 7/17/13 PRINTED BY: ScottK PORT ADDRESS: ONE STICUM WAY TACOMA, WA 98421-2300

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**PARTIAL ELECTRICAL SITE PLAN**  
SCALE: 1"=20'-0"



**GENERAL NOTES:**

1. SEE SHEET E2.0 FOR GENERAL NOTES.

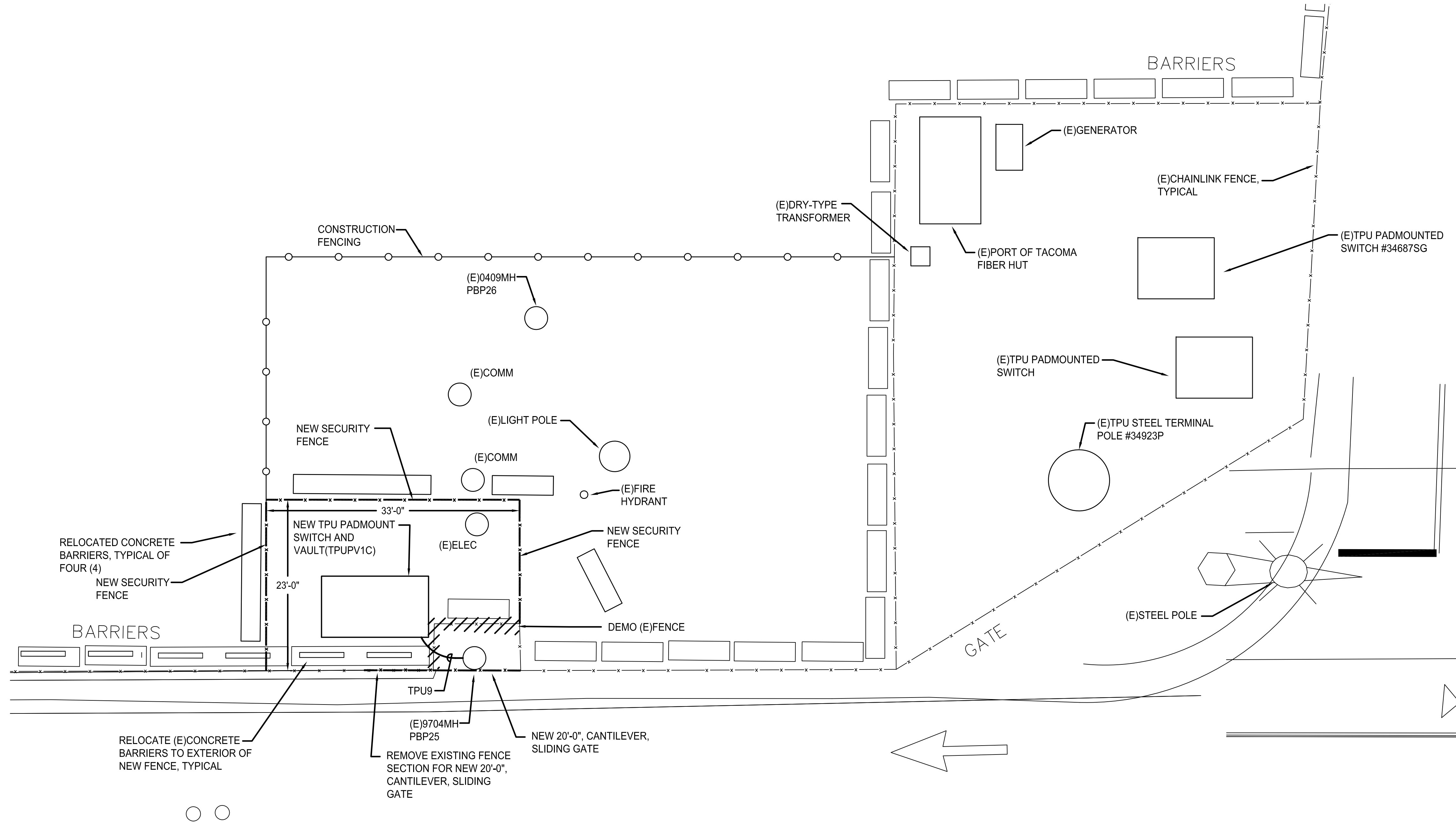
**ELECTRICAL NOTES:**

CONTRACTOR SHALL INTERCEPT (1)4" PVC SCHEDULE 80, TACOMA POWER, EMPTY CONDUIT AND EXTEND INTO NEW TPU VAULT #TPUV1. THERE IS ONE (1)EMPTY CONDUIT AND ONE (1)CONDUIT WITH 15KV CONDUCTORS. CONTRACTOR SHALL COORDINATE WITH TPU FOR INTERCEPTION OF EMPTY CONDUIT.

WORK DELETED

 CROSS ENGINEERS, INC. 10000 1st Avenue, Suite 100 Tacoma, WA 98562 Phone: 253-733-1111 Fax: 253-733-1112 www.crossengineers.com	DATE: 2-13-15 BY: SJK APPR: GLW
	REVISION: RECORD DRAWINGS MARK:
 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253)858-3441	
APPROVED:	GLW/SLH 7/17/13 CHECKED BY: DATE DC 7/17/13 DIR OF ENG DATE PRINTED BY: ScottK PORT ADDRESS: ONE STICUM WAY TACOMA, WA 98421-2300
PIER 3 UPGRADE PARTIAL ELECTRICAL SITE PLAN	RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN
6502 <b>E2.5</b> SHEET 104 OF 128 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	PARCEL: 27

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**PARTIAL ELECTRICAL SITE PLAN**  
SCALE: 1/8"=1'-0"

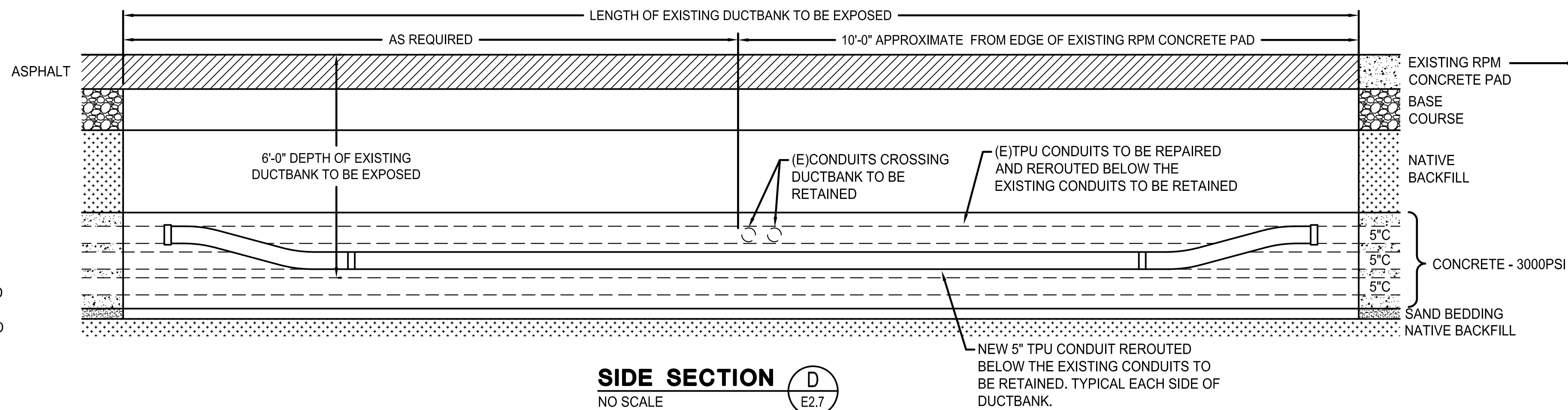
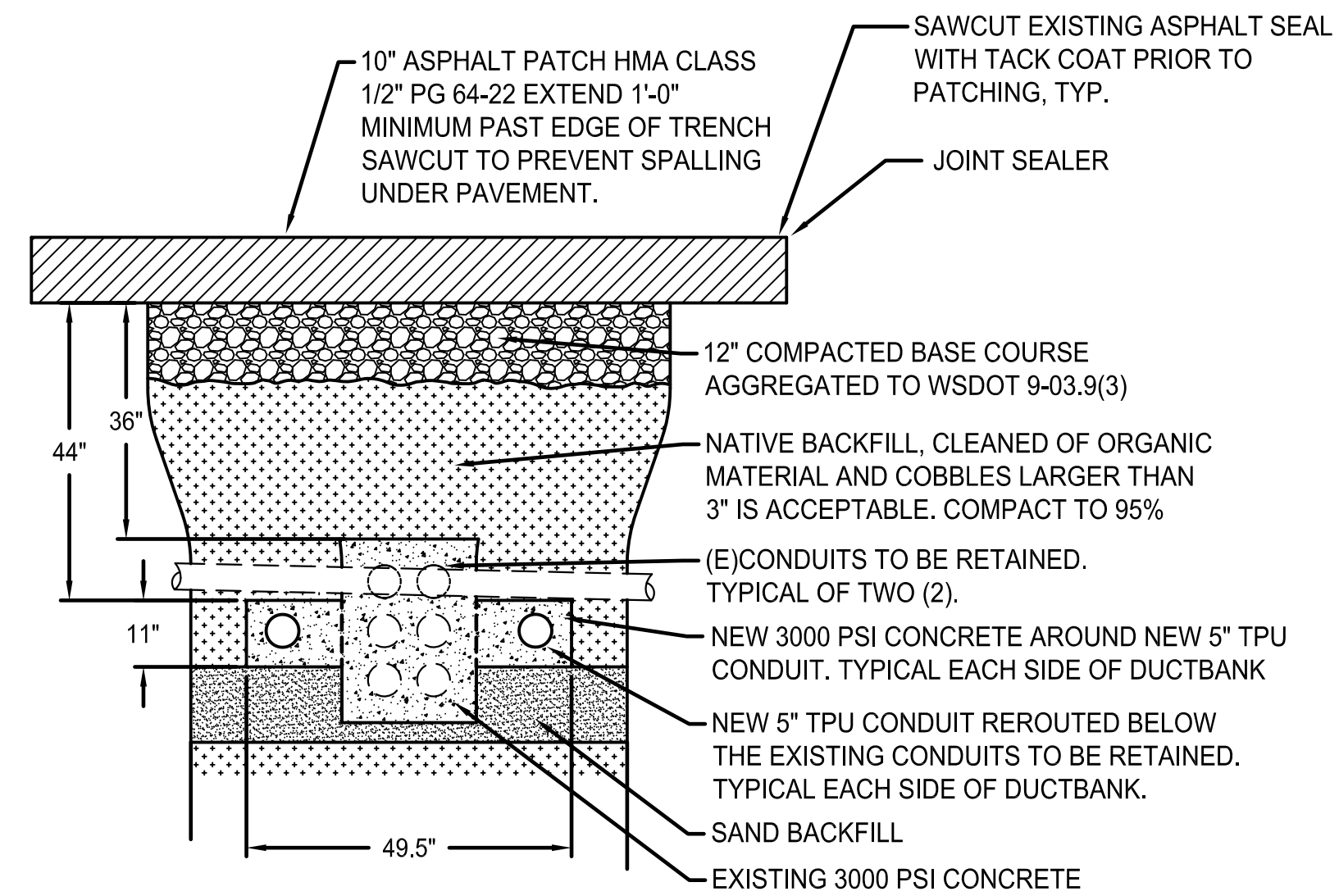
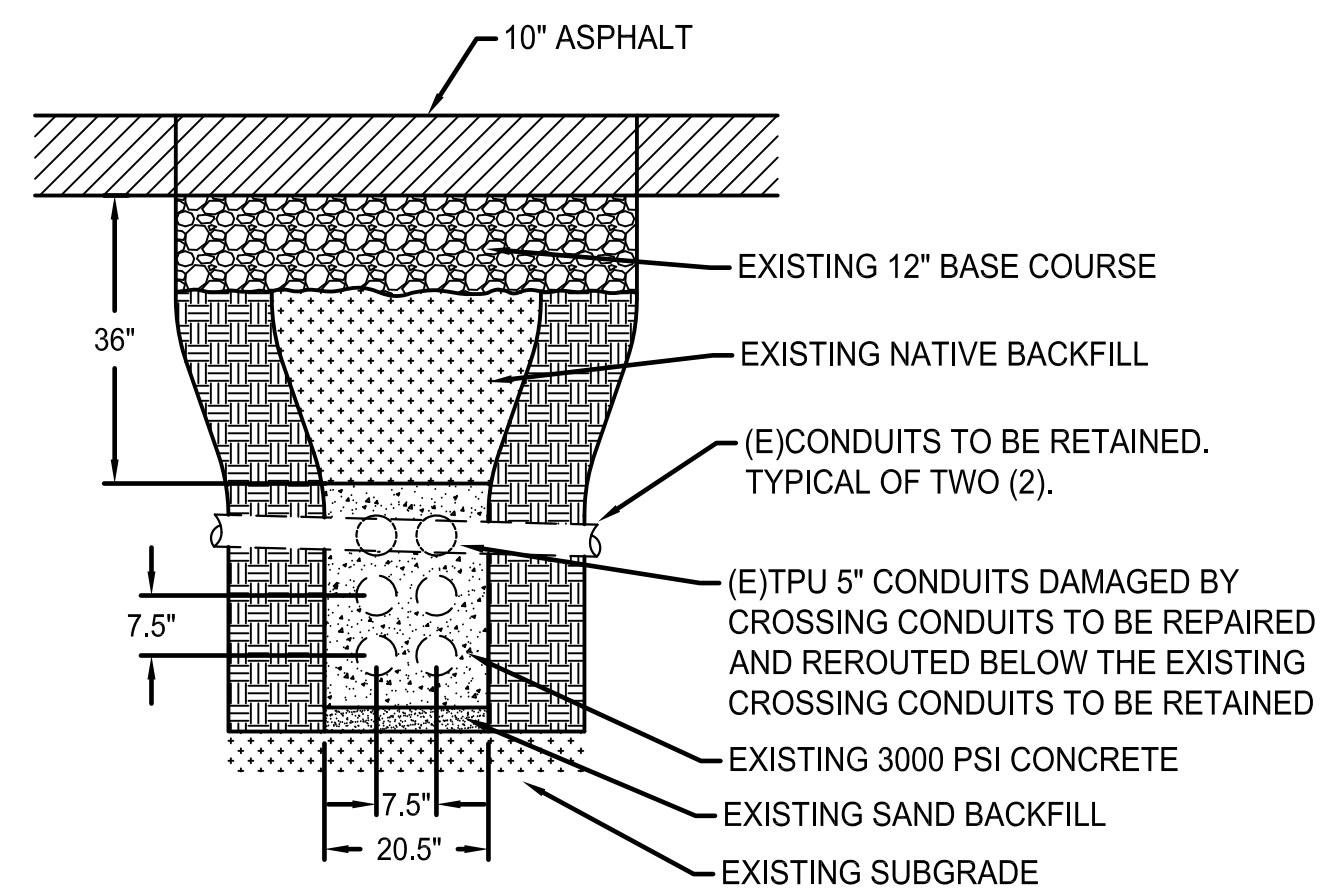
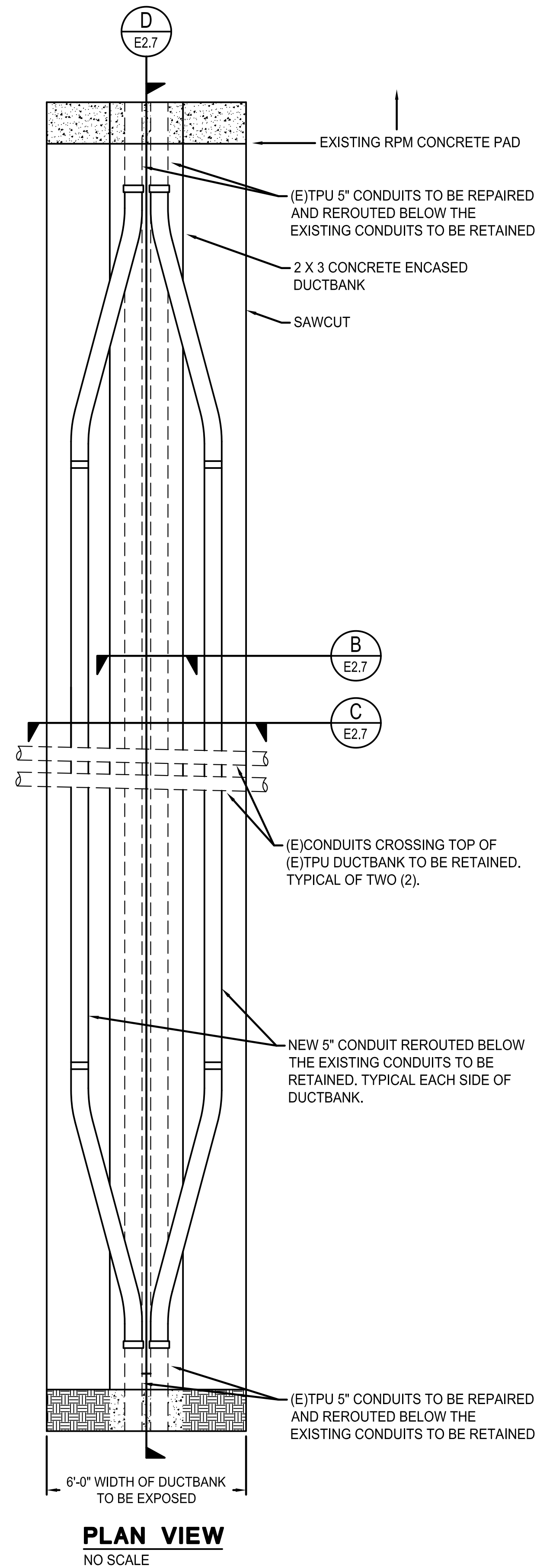


**GENERAL NOTES:**

- SEE SHEET E2.0 FOR GENERAL NOTES.
- TPU REQUIRES THIS SPECIFIC ELECTRICAL WORK TO BE COMPLETED BY A CONTRACTOR ON THE TPU APPROVED LIST. COORDINATE AND SCHEDULE ALL WORK WITH TPU, TENANT (HUSKY) AND ENGINEER SO WORK WILL NOT IMPACT TERMINAL TENANTS OR OPERATIONS. ALL WORK SHALL BE TO TPU STANDARDS AND REQUIREMENTS. TPU ELECTRICAL CONSTRUCTION STANDARDS CAN BE VIEWED AT WWW.MYTPU/TACOMAPOWER/ELECTRICAL-PERMITTING/ELECTRICAL-CONSTRUCTION-STANDARDS.HTM.
- SECURITY FENCE SHALL BE 8'-0", VINYL COATED, CHAIN LINK PER SPECIFICATIONS. CORNER AND GATE POSTS SHALL REQUIRE A 18" DIAMETER X 4'-0" DEEP, CONCRETE BASE. ALL OTHER FENCE POSTS SHALL REQUIRE A 12" DIAMETER X 4'-0" DEEP, CONCRETE BASE. CONTRACTOR SHALL UTILIZING A VACTOR TRUCK FOR EXCAVATION OF ALL FENCE POST BASES.

			<b>GLW/SLH</b> 7/17/13 CHECKED BY: DATE	<b>DC</b> 7/17/13 DIR OF ENGR DATE	<b>APPROVED:</b>	<b>GLW/SLH</b> 7/17/13 CHECKED BY: DATE	<b>GLW</b> 7/17/13 PROJ. ENGR DATE
	BY: <b>APPR:</b> <b>GLW</b> BY: <b>SKK</b> REVISION: <b>RECORD DRAWINGS</b>	DATE: <b>2-13-15</b>	TOWNSHIP: <b>21 N</b> RANGE: <b>3 E</b> SECTION: <b>27</b> DAT-HRZ: <b>NAD 83-07</b> VERT: <b>NOS TIDAL (MLLW = 0.0)</b> PARCEL: <b>27</b> DRAWING SCALE: <b>AS SHOWN</b>	<b>PIER 3 UPGRADE</b>	<b>PARTIAL ELECTRICAL SITE PLAN</b>	<b>6502</b> <b>E2.6</b> SHEET 105 OF 128	CONT/CONS: <b>069458</b> MASTER ID NO: <b>092935</b> PHASE: <b>RECORD DRAWINGS</b>

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### CONSTRUCTION NOTES:

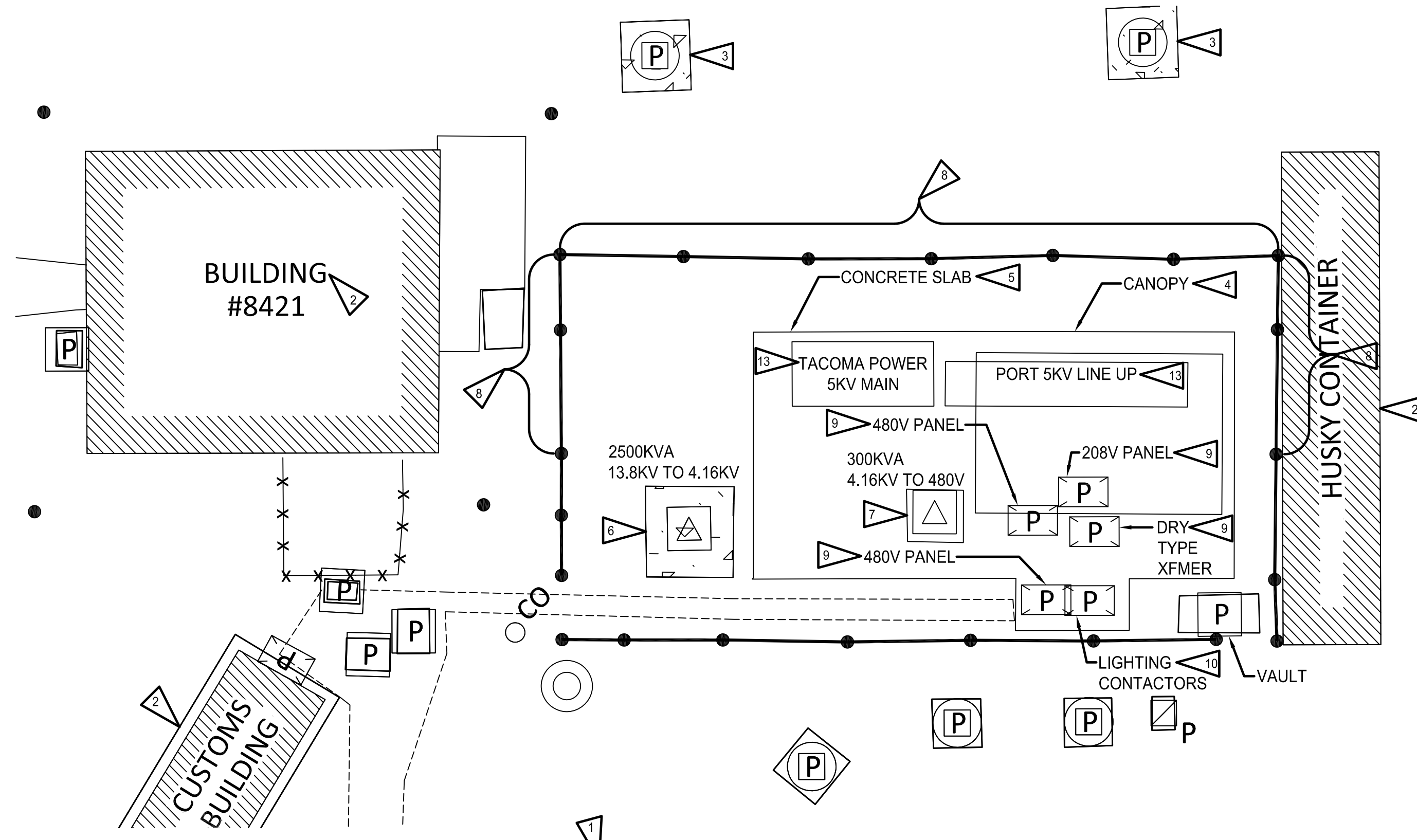
1. THE EXISTING 2 X 3 CONCRETE (3000 PSI) ENCASED TACOMA POWER (TPU) DUCTBANK UPPER (2)5" CONDUITS HAVE BEEN DAMAGED BY TWO (2) 4" CONDUITS CROSSING THE TOP OF THE DUCTBANK. THE LOWER (4)5" CONDUITS HAVE EXISTING ENERGIZED 13.8KV TPU CABLES. CONTRACTOR SHALL SAWCUT, REMOVE ASPHALT AND BASE COURSE TO EXPOSE THE TPU DUCTBANK ON EITHER SIDE OF THE DAMAGE. CONTRACTOR SHALL CAREFULLY REMOVE CONCRETE ON EACH END OF DUCTBANK TO EXPOSE DAMAGED TPU CONDUITS AND PROVIDE NEW 5" CONDUITS. CONDUIT BENDS SHALL BE NO MORE THAN 10 TO 15 DEGREES OF BEND HORIZONTAL AND VERTICAL. ALL WORK SHALL BE TO TPU STANDARDS AND REQUIREMENTS. TPU REQUIRES THIS SPECIFIC WORK TO BE COMPLETED BY A CONTRACTOR ON THE TPU APPROVED LIST. COORDINATE AND SCHEDULE ALL WORK WITH TPU, TENANT (HUSKY) AND ENGINEER SO WORK WILL NOT IMPACT TERMINAL TENANTS OR OPERATIONS. CONTRACTOR SHALL PROVIDE PLATING OVER OPEN TRENCHING TO ALLOW TENANT ACCESS DURING TERMINAL OPERATING HOURS.
2. SEE SHEET E1.0 FOR TPU TRENCH REPAIR LOCATION.

 CROSS ENGINEERS, INC. 10000 1st Avenue, Suite 100 Tacoma, WA 98404 Phone: 253-733-1111 Fax: 253-733-1112 www.crossengineers.com	 Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401 (253)385-8441	 STEVEN L. HUBBS LICENSED PROFESSIONAL ENGINEER STATE OF WASHINGTON No. 10000	DATE: 7-13-15 BY: SKK APPR: GLW REVISION: RECORD DRAWINGS MARK:
	CHECKED BY: DATE: 7/17/13 GLW DIR OF ENG: DATE: 7/17/13 ScottK PRINTED BY: DATE: 7/17/13 PORT ADDRESS: ONE STICUM WAY TACOMA, WA 98421-2300	APPROVED: DC 7/17/13 TACOMA POWER CONDUIT REPAIR RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN	6502 <b>E2.7</b> SHEET 106 OF 128 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS

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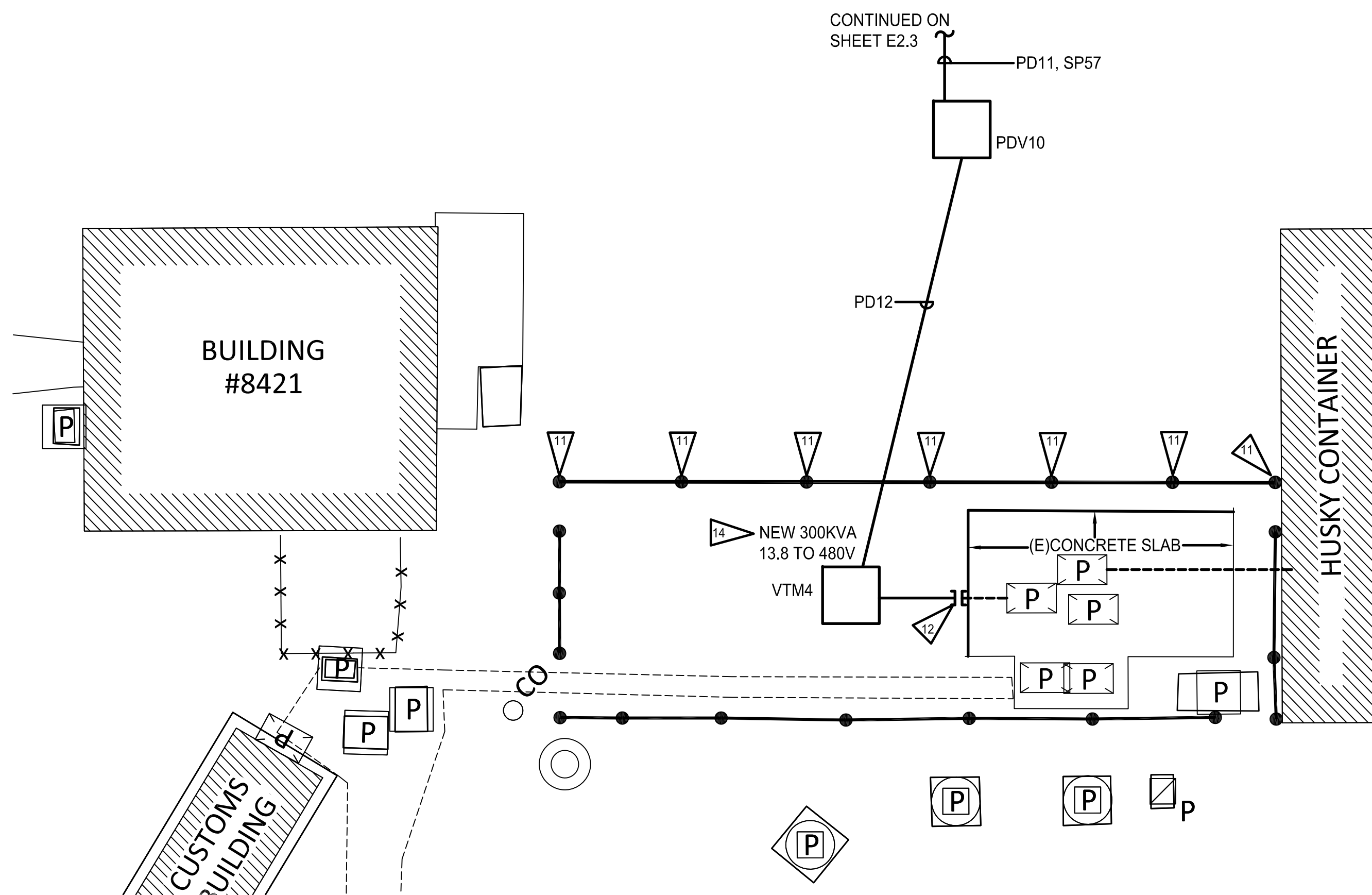
### TACOMA POWER CONDUIT REPAIR A

NO SCALE



**SUBSTATION #8418 EXISTING PLAN**

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



**SUBSTATION #8418 NEW LAYOUT PLAN**

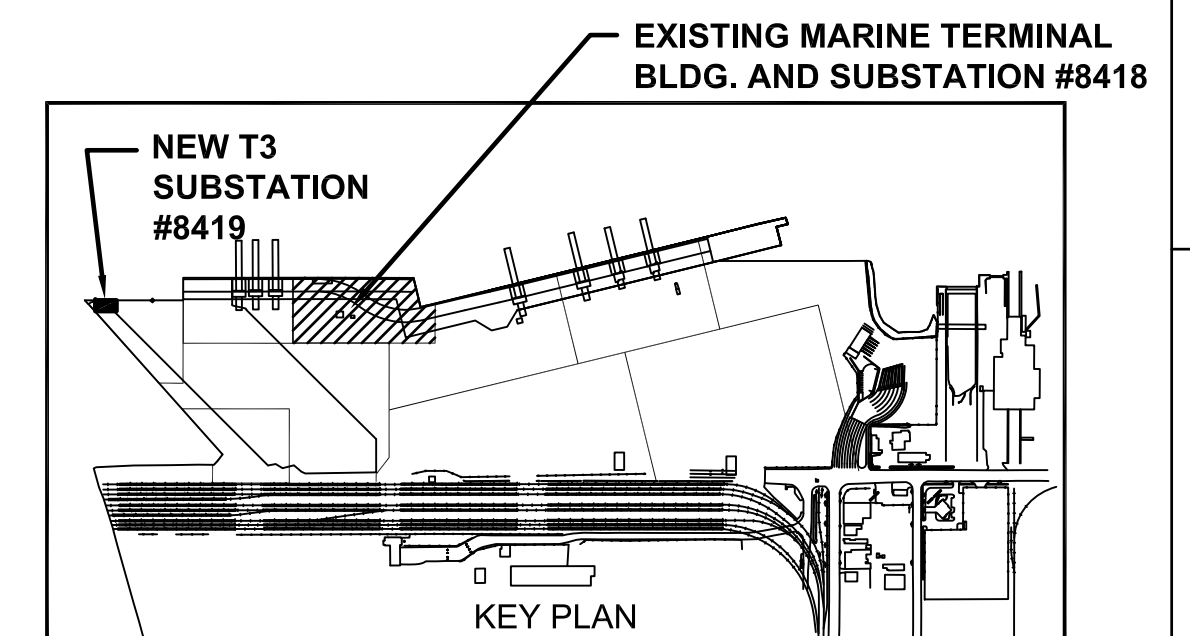
SCALE: 1/8"=1'-0"

**GENERAL NOTES:**

1. SEE SHEET E2.0 FOR GENERAL NOTES.
2. OIL FILLED TRANSFORMERS SHALL HAVE OIL TESTED AND DRAINED PRIOR TO DEMOLITION AND DISPOSAL OF IN A LEGAL MANNER.
3. THE PORT OF TACOMA HAS EXISTING AS-BUILT DRAWINGS FOR VARIOUS PREVIOUS PROJECTS WITHIN THIS AREA OF WORK. CONTRACTOR SHALL REVIEW EXISTING AS-BUILTS, FIELD VERIFY EXISTING CONDUIT/ CONDUCTOR ROUTINGS, AND LABEL ALL EXISTING CONDUCTORS TO REMAIN AT COMPLETION OF PROJECT PRIOR TO STARTING DEMOLITION.

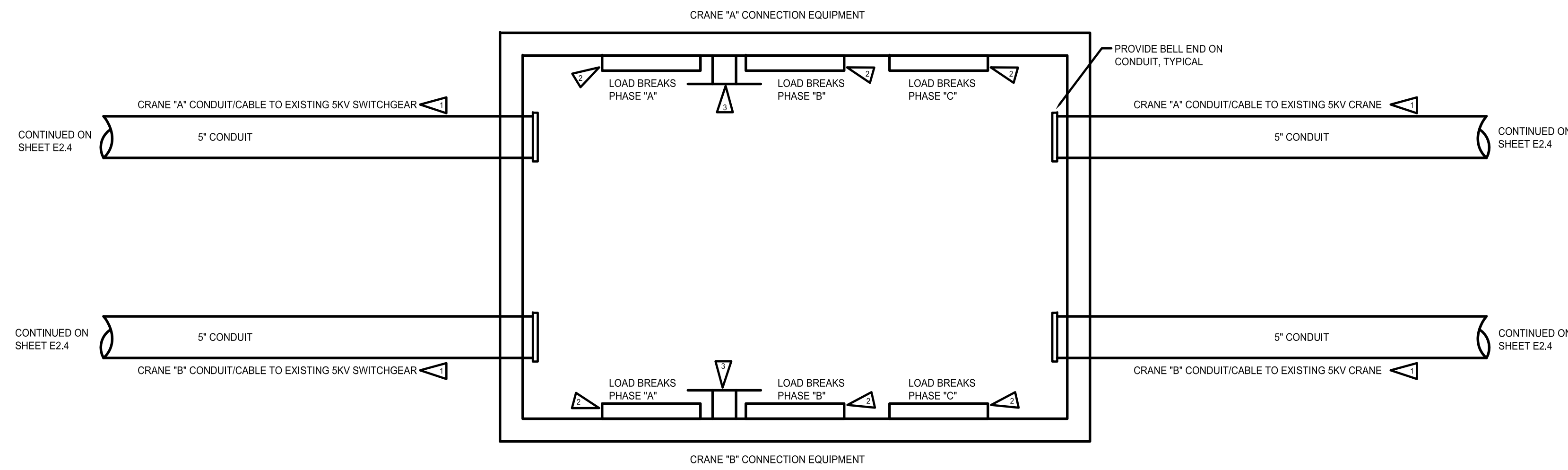
**CONSTRUCTION NOTES:**

1. EXISTING SUBSTATION #8414 SHALL REMAIN OPERATIONAL UNTIL THE NEW SUBSTATION #8419 IS OPERATIONAL, TESTED, AND EXISTING 5KV CRANES HAVE BEEN TRANSFERRED AND TESTED.
2. EXISTING CUSTOMS BUILDING, ADJACENT RADIATION PORTAL MONITORS, LONGSHORE BUILDING #8421 AND HUSKY CONTAINER SHALL REMAIN OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMP POWER (PORTABLE GENERATOR) FROM 7AM UNTIL 7PM EVERYDAY UNTIL PERMANENT POWER IS RESTORED. COORDINATE WITH ENGINEER AND TENANT FOR DISCONNECT, OUTAGE AND CUT OVER TO NEW TRANSFORMER.
3. EXISTING 5KV CRANE VAULT(S) TO BE REMOVED. REMOVE CONDUIT AND CABLES FROM VAULTS TO 5KV SWITCHGEAR.
4. EXISTING CANOPY TO BE REMOVED.
5. CONTRACTOR SHALL SAW CUT AND DEMO EXISTING 8" REINFORCED CONCRETE SLAB EXCEPT FOR PORTION SHOWN TO REMAIN IN NEW LAYOUT PLAN.
6. EXISTING TACOMA POWER TRANSFORMER TO BE REMOVED BY TACOMA POWER.
7. EXISTING PORT OWNED 300KVA, 4160/480V, 3PH, OIL-FILLED, PADMOUNT TRANSFORMER TO BE REMOVED BY ELECTRICAL CONTRACTOR. CONTRACTOR SHALL HAVE TRANSFORMER TESTED FOR PCB'S, OIL DRAINED AND DISPOSED OF IN A LEGAL MANNER PRIOR TO REMOVAL OF TRANSFORMER. CONTRACTOR SHALL ALSO REMOVE EXISTING CONDUIT AND 5KV CABLES FROM TRANSFORMER TO SWITCHGEAR.
8. EXISTING CONCRETE BOLLARDS, BASE AND PIPE RAIL TO BE REMOVED.
9. EXISTING EQUIPMENT TO REMAIN AND BE RE-FED FROM NEW TRANSFORMER.
10. EXISTING CABINET AND CENTER YARD LIGHTS CONTACTOR TO REMAIN ALL OTHER CONTACTORS TO BE REMOVED. REMOVE CONDUCTORS FOR CONTACTORS BEING REMOVED TO EXISTING POWER VAULT PV129A (SEE SHEET E2.3 FOR LOCATION).
11. PROVIDE GUARD RAIL AND FIXED BOLLARD, TYPICAL. SEE DETAIL A, SHEET E5.1
12. CONTRACTOR SHALL INTERCEPT EXISTING 4"C AND PROVIDE NEW 4"C-(4)#600 KCM CU & (1)#2 CU GRD BETWEEN TRANSFORMER AND PANEL.
13. EXISTING 5KV EQUIPMENT TO BE REMOVED. CONTRACTOR SHALL REMOVE ALL BELOW GRADE CONDUIT AND CONDUCTORS FROM TRANSFORMER TO SWITCHGEAR AND VAULTS TO BE REMOVED.
14. CONTRACTOR SHALL PROVIDE NEW 300KVA, 13.8KV/480V, 3PH, VAULT MOUNTED, OIL-FILLED TRANSFORMER WITH NEW VAULT (#VMT4). RECONNECT EXISTING 480V POWER PANEL TO NEW TRANSFORMER.



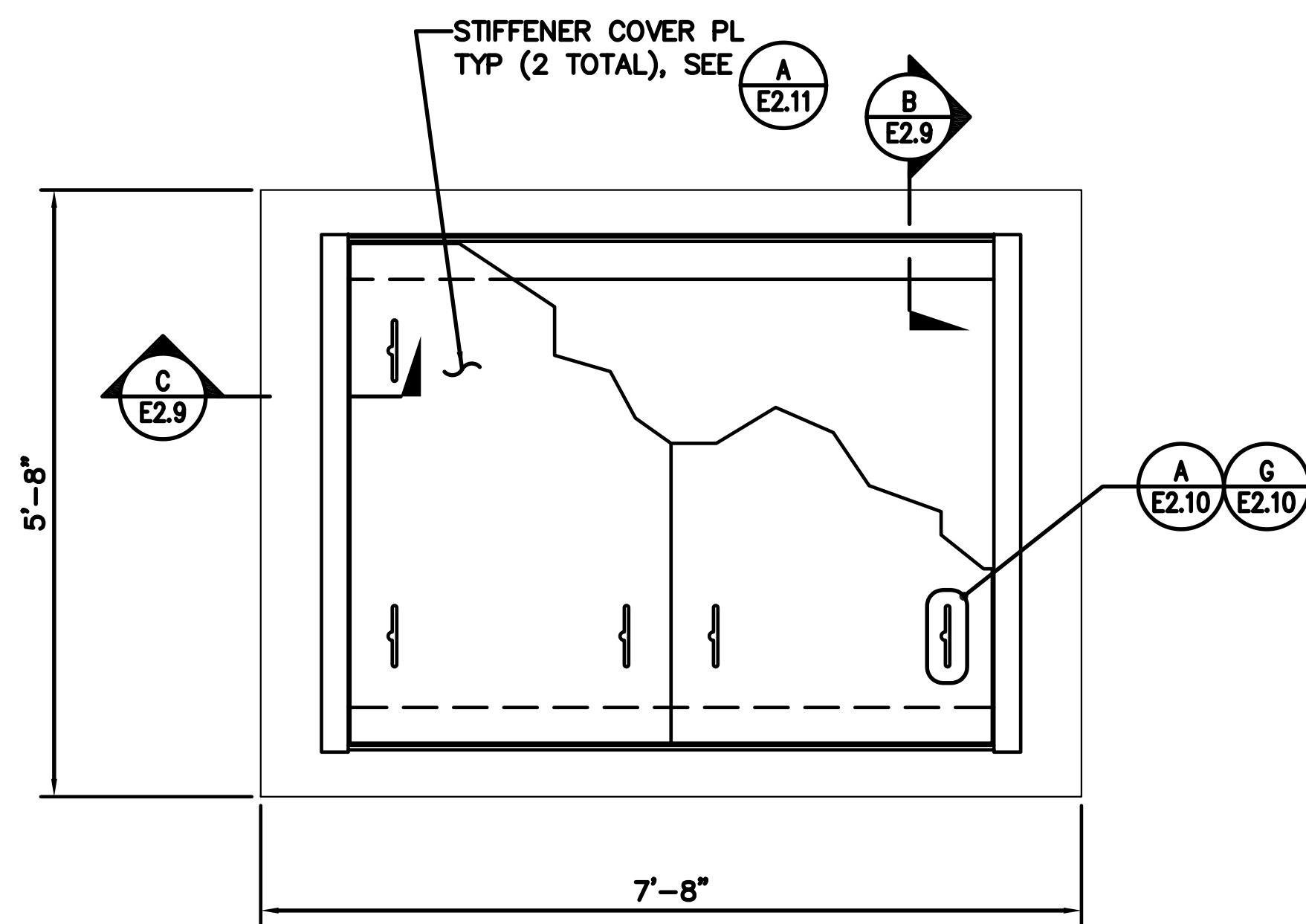
 CROSS ENGINEERS, INC. 10000 1st Avenue, Suite 100 Tacoma, WA 98404 Phone: 253-838-8841 Fax: 253-838-8842 www.crossengineers.com	 Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401 (253)838-8841	 STEVEN L. HUBBS LICENSED PROFESSIONAL ENGINEER STATE OF WASHINGTON NO. 10000	DATE: 2-13-15 BY: APPR: GLW MARK: REVISION: RECORD DRAWINGS
	CHECKED BY: DATE GLW/SLH 7/17/13	DIR OF ENG: DATE DC 7/17/13	PRINTED BY: DATE Scottk 7/17/13
<b>PIER 3 UPGRADE</b> PARTIAL ELECTRICAL SITE PLAN SUBSTATION #8418			
6502 <b>E2.8</b> SHEET 107 OF 128	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27	DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN PARCEL: 27

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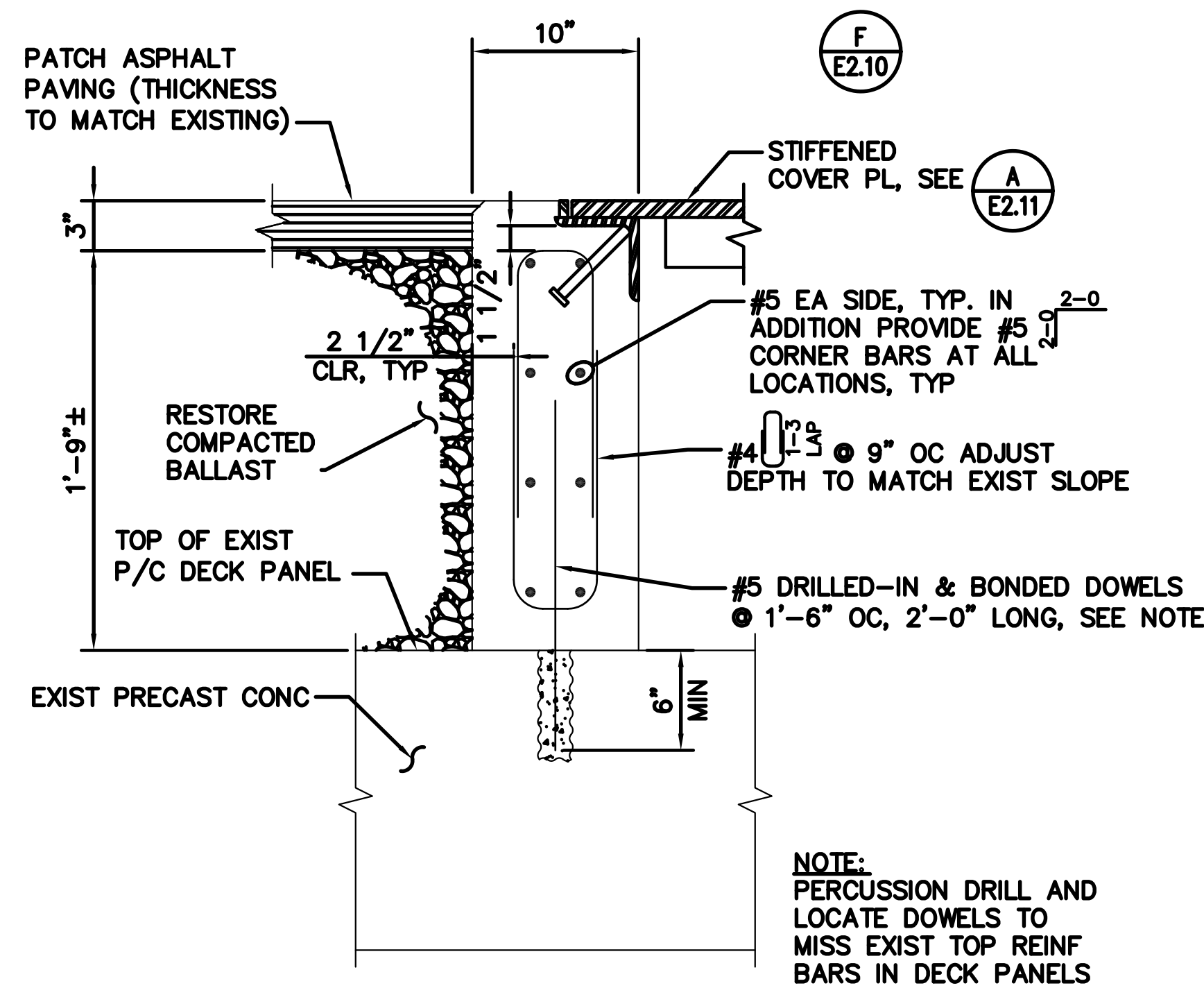
**CRANE POWER TEMPORARY CONNECTION VAULT ELECTRICAL LAYOUT**

SCALE: 1"=1'-0"



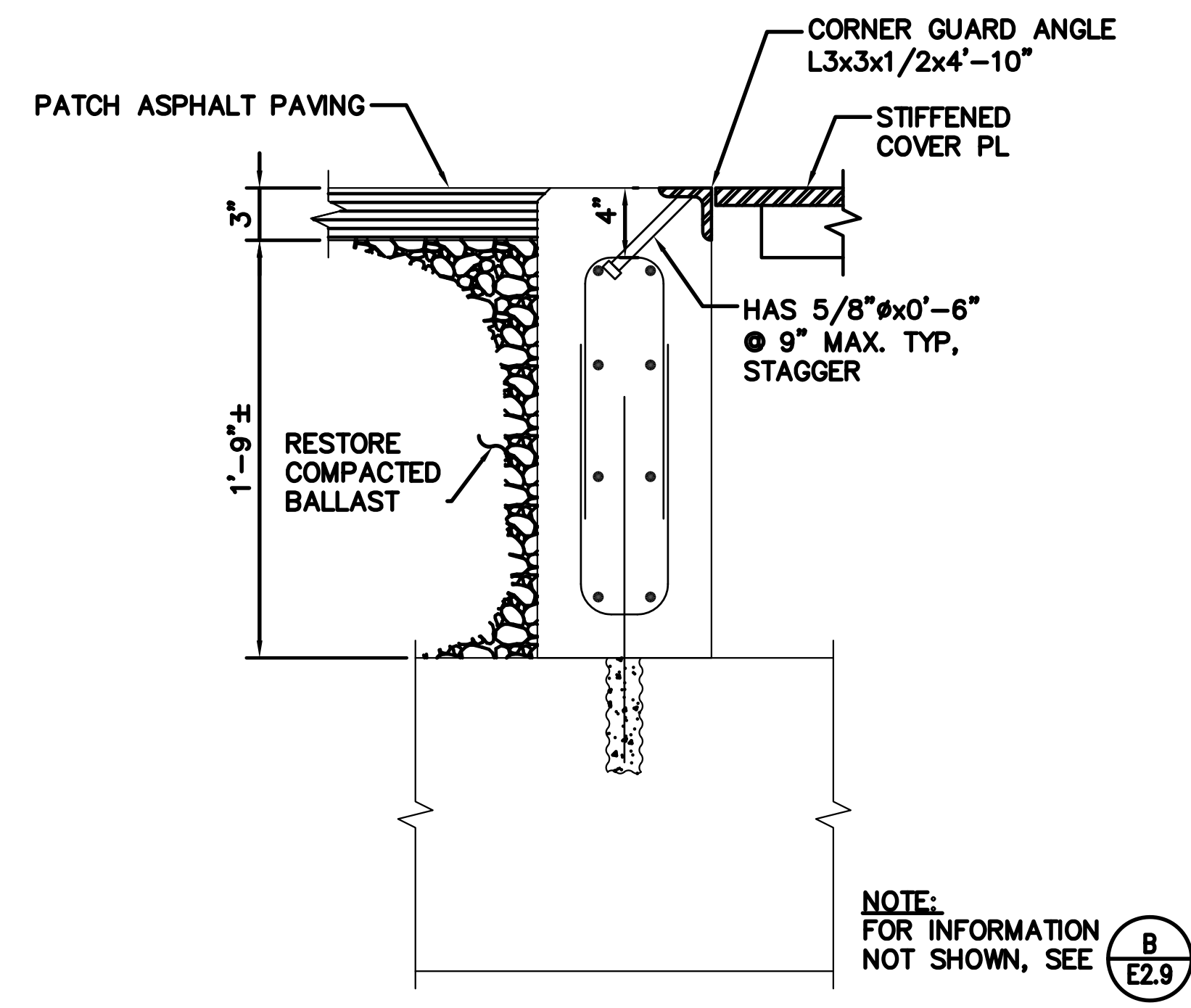
**PLAN - TEMP CRANE POWER VAULT**

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



**SECTION - WALL**

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



**SECTION - WALL**

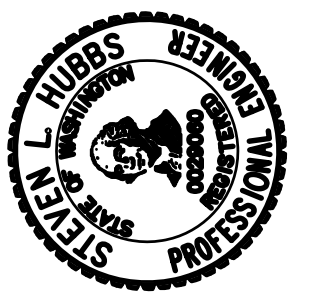
SCALE: 1-1/2"=1'-0"

**GENERAL NOTES:**

- SEE SHEET E2.0 FOR GENERAL NOTES.

**CONSTRUCTION NOTES:**

- CONTRACTOR SHALL COORDINATE WITH ENGINEER AND FIELD VERIFY EXACT LABELING AND IDENTIFICATION FOR EXISTING 5KV CRANES AND CABLES. PROVIDE NEW LABELS ON EXISTING 5KV SWITCHGEAR, CABLES (EXISTING AND NEW) AND JUNCTIONS TO MATCH FROM EXISTING 5KV SWITCHGEAR TO EXISTING CRANES.
- PROVIDE TWO (2) POSITION LOAD-BREAK JUNCTIONS MOUNTED TO CONCRETE VAULT WALLS AND ROTATE TO A 45 DEGREE POSITION FOR MOUNTING 5KV, 200A LOAD-BREAK ELBOWS. PROVIDE TWO (2) 5KV, 200A LOAD-BREAK ELBOWS AT EACH JUNCTION (TOTAL OF 12). CONTRACTOR WILL NEED TO INSTALL LOAD-BREAK ELBOWS ON NEW 5KV CABLES AND ON EXISTING 5KV CRANE CABLES. COOPER PRODUCTS OR EQUAL.
- PROVIDE GROUND BAR(S) WITH MULTIPLE SIZES GROUND HOLES MOUNTED TO VAULT WALL BELOW THE 5KV LOAD-BREAK JUNCTIONS. ALL GROUNDS WITHIN THE VAULT SHALL BE NEATLY ROUTED ALONG VAULT WALLS AND FLOOR.



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PORT ADDRESS:	ONE STICUM WAY		
	TACOMA, WA 98421-2300		

<b>6502</b> <b>E2.9</b>	PIER 3 UPGRADE			
	TEMPORARY CRANE CONNECTION			
	VAULT DETAILS			
	SHEET 108 OF 128	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
CONT/CONS: 069458	DATE-HRZ: NAD 83-07			VERT: NOS TIDAL (MLLW = 0.0)
MASTER ID NO: 092935	PARCEL: 27			DRAWING SCALE: AS SHOWN
PHASE: RECORD DRAWINGS				

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### GENERAL NOTES:

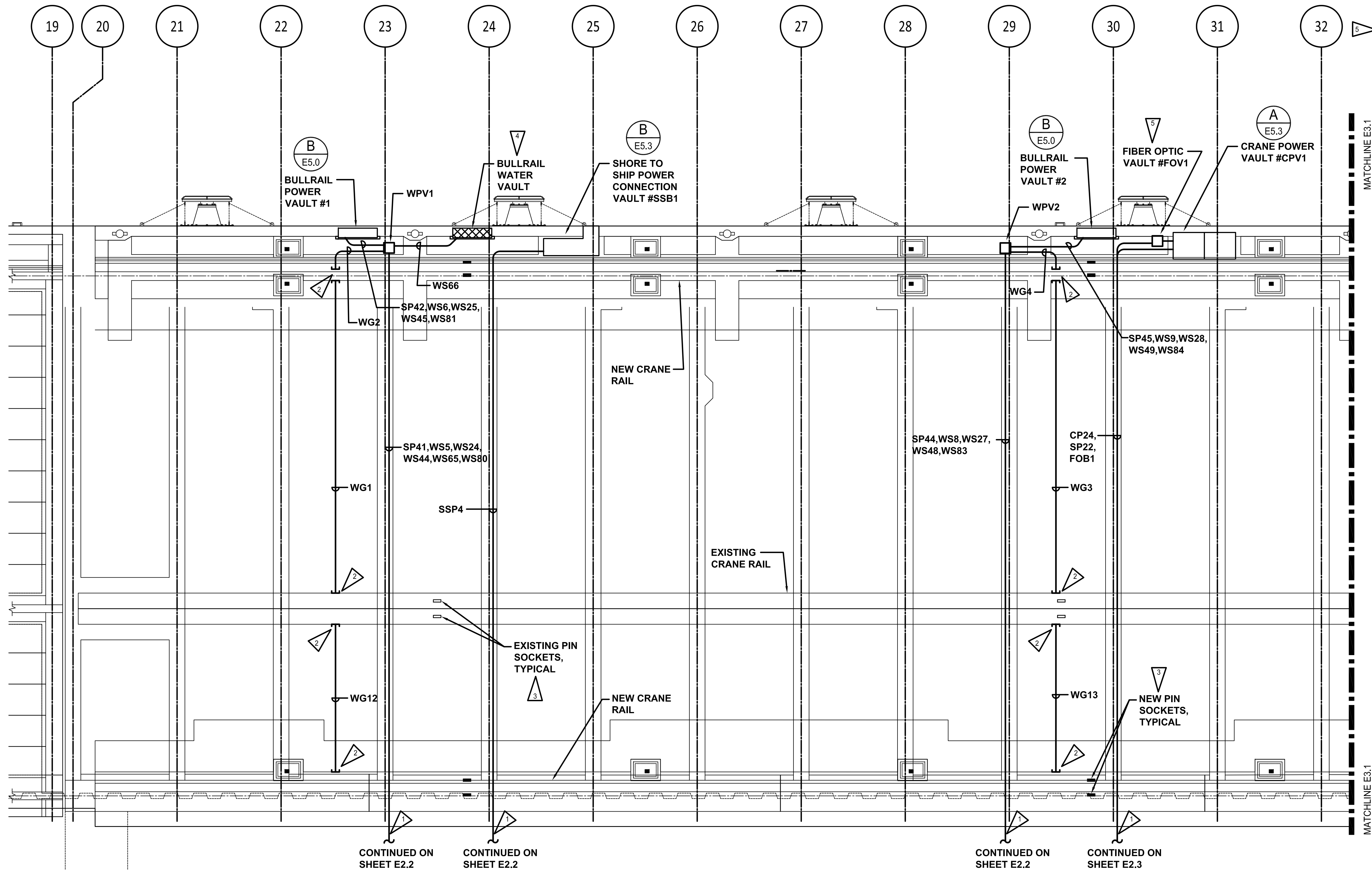
1. SEE SHEET E2.0 FOR GENERAL NOTES.

### ELECTRICAL NOTES:

1. CONTRACTOR SHALL PROVIDE CONDUIT DEFLECTION AND EXPANSION COUPLING AT TRANSITION BETWEEN WHARF AND SITE FOR ALL CONDUITS. SEE DETAIL C, SHEET E5.1.
2. CONTRACTOR SHALL PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTION AT CRANE RAILS. SEE STRUCTURAL DRAWINGS FOR CRANE RAIL DETAILS.

### ELECTRICAL NOTES:

3. CONTRACTOR SHALL PROVIDE 3/4" PVC SCHEDULE 80- (1) #4 CU GRD FROM CRANE RAIL TO EACH CRANE RAIL PIN SOCKET AND CRANE CABLE SLOTS. PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTIONS. FIELD COORDINATE CONDUIT AND CABLE ROUTING, SLEEVES, SAWCUTTING REQUIREMENTS AND CONNECTIONS.
4. CONTRACTOR SHALL PROVIDE 120V/20A DUPLEX RECEPTACLE WITH NEMA 3R "IN USE" COVER IN WATER VAULT FOR HEAT TRACE PROVIDED WITH WATER PIPING. SEE CIVIL/STRUCTURAL DRAWINGS FOR RECEPTACLE LOCATION IN WATER VAULT.
5. CONTRACTOR SHALL PROVIDE 2" PVC SCHEDULE 80 CONDUIT WITH PULLSTRING BETWEEN FIBER OPTIC VAULT #FOV1 AND CRANE POWER VAULT #CPV1.



### PARTIAL ELECTRICAL WHARF PLAN

SCALE: 3/32"=1'-0"

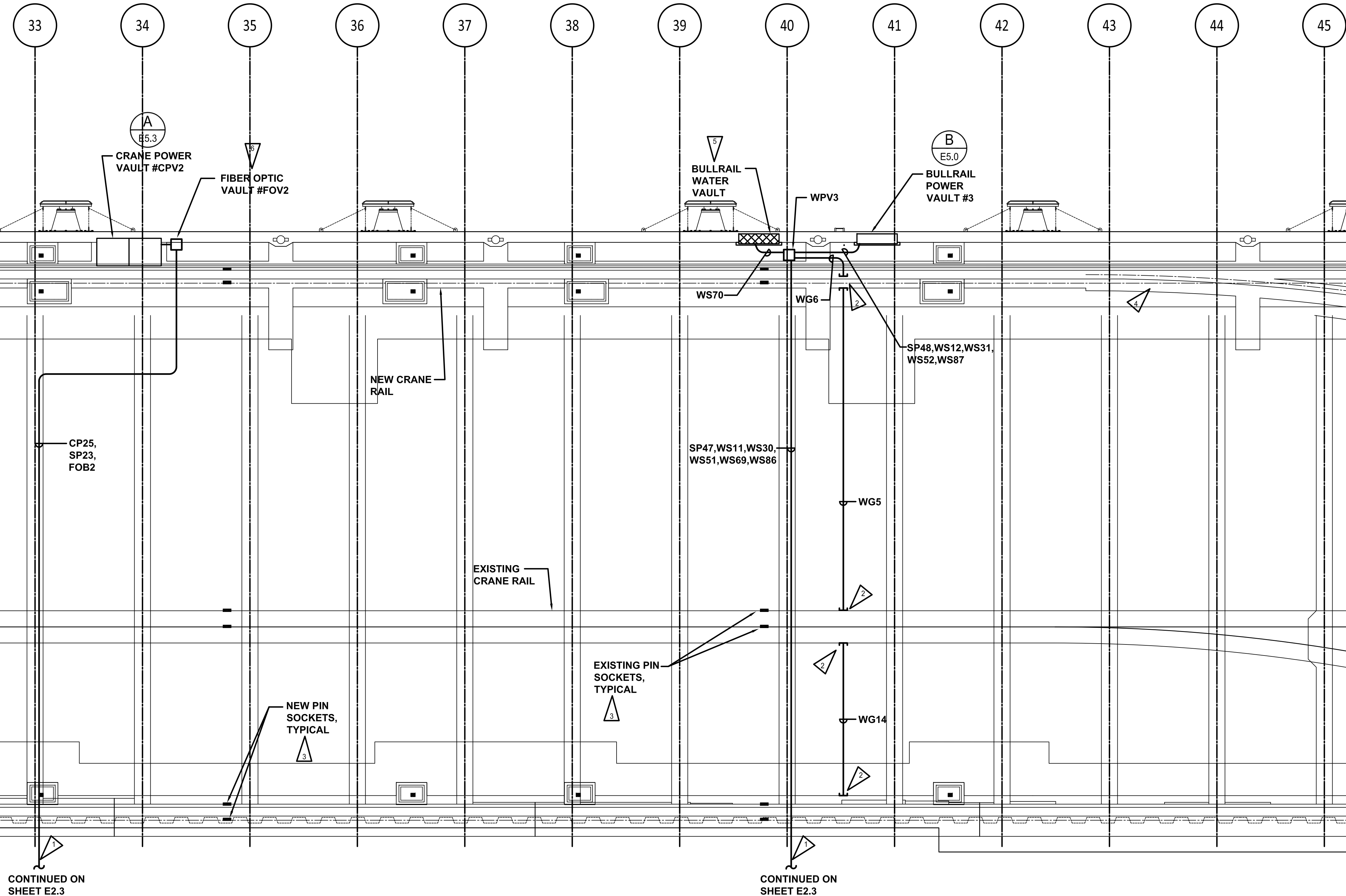


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	BY:	GLW
	REVISION:	RECORD DRAWINGS
	MARK:	GLW
	APPROVED:	DATE
	DC	7/17/13
APPROVED:	CHECKED BY:	DATE
GLW/SLH	7/17/13	7/17/13
DIR OF ENG	DATE	DATE
PRINTED BY:	SCOTT K	
PORT ADDRESS:	ONE STICUM WAY	
	TACOMA, WA 98421-2300	
PIER 3 UPGRADE	TOWNSHIP: 21 N	RANGE: 3 E
PARTIAL ELECTRICAL WHARF PLAN	SECTION: 27	
	DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)
	PARCEL: 27	DRAWING SCALE: AS SHOWN
6502	E3.0	SHEET 111 OF 128
CONT/CONS:	069458	
MASTER ID NO:	092935	
PHASE:	RECORD DRAWINGS	

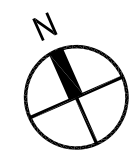
BINDING EDGE

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MATCHLINE E3.0



**PARTIAL ELECTRICAL WHARF PLAN**  
 SCALE: 3/32"=1'-0"



**GENERAL NOTES:**

1. SEE SHEET E2.0 FOR GENERAL NOTES.

**ELECTRICAL NOTES:**

1. CONTRACTOR SHALL PROVIDE CONDUIT DEFLECTION AND EXPANSION COUPLING AT TRANSITION BETWEEN WHARF AND SITE FOR ALL CONDUITS. SEE DETAIL C, SHEET E5.1.
2. CONTRACTOR SHALL PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTION AT CRANE RAILS. SEE STRUCTURAL DRAWINGS FOR CRANE RAIL DETAILS.
3. CONTRACTOR SHALL PROVIDE 3/4" PVC SCHEDULE 80- (1)#4 CU GRD FROM CRANE RAIL TO EACH CRANE RAIL PIN SOCKET AND CRANE CABLE SLOTS. PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTIONS. FIELD COORDINATE CONDUIT AND CABLE ROUTING, SLEEVES, SAWCUTTING REQUIREMENTS AND CONNECTIONS.
4. RAIL SWITCH. SEE STRUCTURAL DRAWINGS FOR DETAILS. CONTRACTOR SHALL PROVIDE 3/4" PVC SCHEDULE 80 -(1)#4 CU GRD JUMPER AROUND SWITCH TO EACH RAIL AND TO SWITCH. PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTIONS. FIELD COORDINATE CONDUIT AND CABLE ROUTING, SLEEVES, SAWCUTTING REQUIREMENTS AND CONNECTIONS.
5. CONTRACTOR SHALL PROVIDE 120V/20A DUPLEX RECEPTACLE WITH NEMA 3R "IN USE" COVER IN WATER VAULT FOR HEAT TRACE PROVIDED WITH WATER PIPING. SEE CIVIL/STRUCTURAL DRAWINGS FOR RECEPTACLE LOCATION IN WATER VAULT.
6. CONTRACTOR SHALL PROVIDE 2" PVC SCHEDULE 80 CONDUIT WITH PULLSTRING BETWEEN FIBER OPTIC VAULT #FOV2 AND CRANE POWER VAULT #CPV2.

6502  
**E3.1**  
 SHEET 112 OF 128

CONT/CONS: 069458  
 MASTER ID NO: 092935  
 PHASE: RECORD DRAWINGS

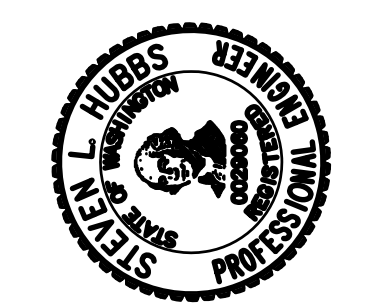
PIER 3 UPGRADE  
 PARTIAL ELECTRICAL WHARF PLAN

TOWNSHIP: 21 N RANGE: 3 E SECTION: 27  
 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0)  
 PARCEL: 27 DRAWING SCALE: AS SHOWN

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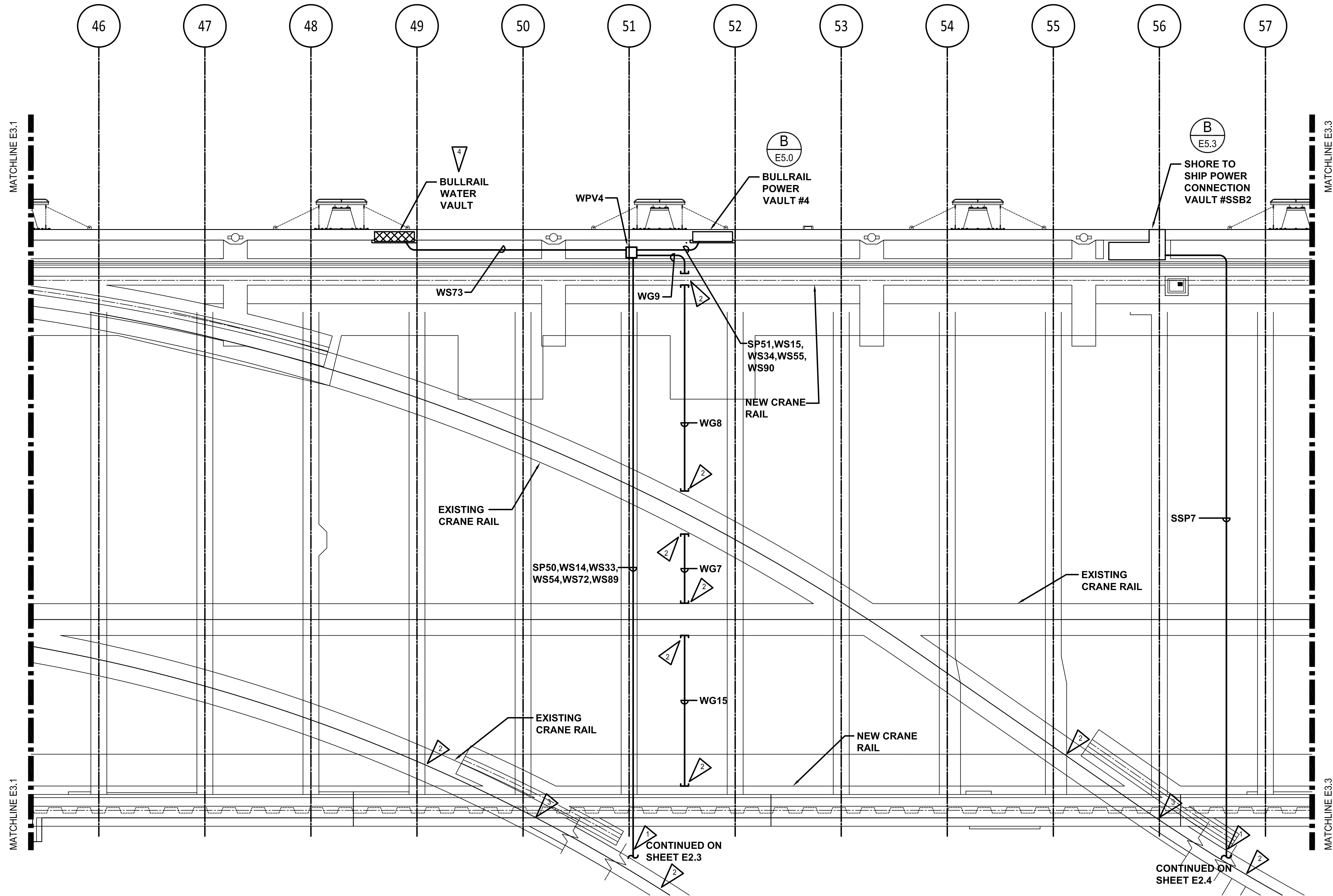
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Port of Tacoma  
 P.O. BOX 1887 TACOMA, WA 98401 (253)858-8441

CROSS ENGINEERS, INC.  
 10000 1st Avenue SW  
 Burien, WA 98148  
 (253) 858-1271  
 BY: APPR: DATE:  
 SJK GLW 2-13-15

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**PARTIAL ELECTRICAL WHARF PLAN**  
 SCALE: 3/32"=1'-0"

**GENERAL NOTES:**

1. SEE SHEET E2.0 FOR GENERAL NOTES.

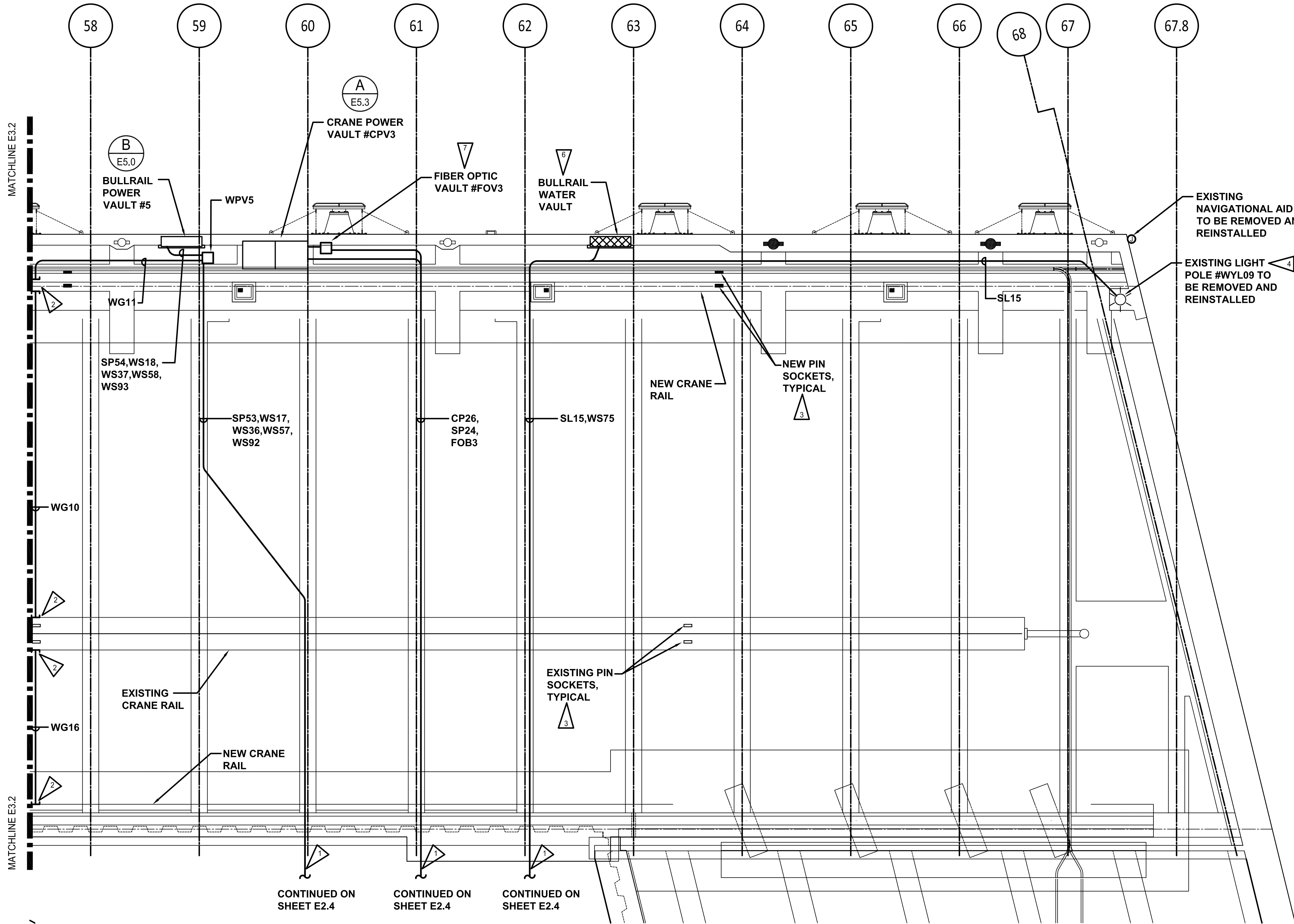
**ELECTRICAL NOTES:**

- 1. CONTRACTOR SHALL PROVIDE CONDUIT DEFLECTION AND EXPANSION COUPLING AT TRANSITION BETWEEN WHARF AND SITE FOR ALL CONDUITS. SEE DETAIL C, SHEET E5.1.
- 2. CONTRACTOR SHALL PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTION AT CRANE RAILS AND JUMPERS AT BOLTED RAIL SPLICES. SEE STRUCTURAL DRAWINGS FOR CRANE RAIL DETAILS.
- 3. RAIL FROG SWITCH. SEE STRUCTURAL DRAWINGS FOR DETAILS. CONTRACTOR SHALL PROVIDE 3/4" PVC SCHEDULE 80 -(1)#4 CU GRD JUMPER AROUND SWITCH TO EACH RAIL AND TO SWITCH. PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTIONS. FIELD COORDINATE CONDUIT AND CABLE ROUTING, SLEEVES, SAWCUTTING REQUIREMENTS AND CONNECTIONS.
- 4. CONTRACTOR SHALL PROVIDE 120V/20A DUPLEX RECEPTACLE WITH NEMA 3R "IN USE" COVER IN WATER VAULT FOR HEAT TRACE PROVIDED WITH WATER PIPING. SEE CIVIL/STRUCTURAL DRAWINGS FOR RECEPTACLE LOCATION IN WATER VAULT.

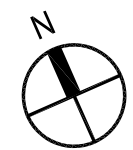
	CROSS ENGINEERS, INC. 1887 TACOMA, WA 98402 253-841-1171 www.crossengineers.com	DATE: 2-13-15 APPR: GLW BY: SJK RECORD DRAWINGS
		PORT OF TACOMA P.O. BOX 1887 TACOMA, WA 98402 253-841-1171 www.portoftacoma.com
APPROVED: DC 7/17/13 DIR OF ENG	CHECKED BY: GLW 7/17/13 PROJ. ENGR	DATE: 7/17/13
PRINTED BY: ScottK PORT ADDRESS: ONE STICUM WAY TACOMA, WA 98421-2300		
<b>6502</b> <b>E3.2</b> SHEET 113 OF 128	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) PARCEL: 27	PIER 3 UPGRADE PARTIAL ELECTRICAL WHARF PLAN
PHASE: RECORD DRAWINGS DRAWING SCALE: AS SHOWN		

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**PARTIAL ELECTRICAL WHARF PLAN**  
SCALE: 3/32"=1'-0"

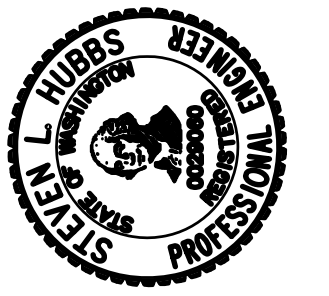


**GENERAL NOTES:**

- SEE SHEET E2.0 FOR GENERAL NOTES.

**ELECTRICAL NOTES:**

- CONTRACTOR SHALL PROVIDE CONDUIT DEFLECTION AND EXPANSION COUPLING AT TRANSITION BETWEEN WHARF AND SITE FOR ALL CONDUITS. SEE DETAIL C, SHEET E5.1.
- CONTRACTOR SHALL PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTION AT CRANE RAILS. SEE STRUCTURAL DRAWINGS FOR CRANE RAIL DETAILS.
- CONTRACTOR SHALL PROVIDE 3/4" PVC SCHEDULE 80- (1)#4 CU GRD FROM CRANE RAIL TO EACH CRANE RAIL PIN SOCKET AND CRANE CABLE SLOTS. PROVIDE EXOTHERMIC WELD FOR GROUND WIRE CONNECTIONS. FIELD COORDINATE CONDUIT AND CABLE ROUTING, SLEEVES, SAWCUTTING REQUIREMENTS AND CONNECTIONS.
- CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING LIGHTING CIRCUIT SERVING LIGHT POLE #WYL09. REMOVE EXISTING CONDUCTORS BACK TO SOURCE POINT. RECONNECT LIGHT POLE #WYL09 TO NEW LIGHTING CIRCUIT.
- CONTRACTOR SHALL PROVIDE NEW ANCHOR BOLTS TO BE INSTALLED IN NEW CONCRETE POLE BASE.
- CONTRACTOR SHALL PROVIDE 120V/20A DUPLEX RECEPTACLE WITH NEMA 3R "IN USE" COVER IN WATER VAULT FOR HEAT TRACE PROVIDED WITH WATER PIPING. SEE CIVIL/STRUCTURAL DRAWINGS FOR RECEPTACLE LOCATION IN WATER VAULT.
- CONTRACTOR SHALL PROVIDE 2" PVC SCHEDULE 80 CONDUIT WITH PULLSTRING BETWEEN FIBER OPTIC VAULT #FOV3 AND CRANE POWER VAULT #CPV3.



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DIR OF ENG	DATE	PRINTED BY:	ScottK
PORT ADDRESS: ONE STICUM WAY TACOMA, WA 98421-2300			

<b>6502</b> <b>E3.3</b> SHEET 114 OF 128	PIER 3 UPGRADE		PARTIAL ELECTRICAL WHARF PLAN	
	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	
CONTRACT/CONS: 069458	DATE-HRZ: NAD 83-07		VERT: NOS TIDAL (MLLW = 0.0)	
MASTER ID NO: 092935	PARCEL: 27		DRAWING SCALE: AS SHOWN	
PHASE: RECORD DRAWINGS				

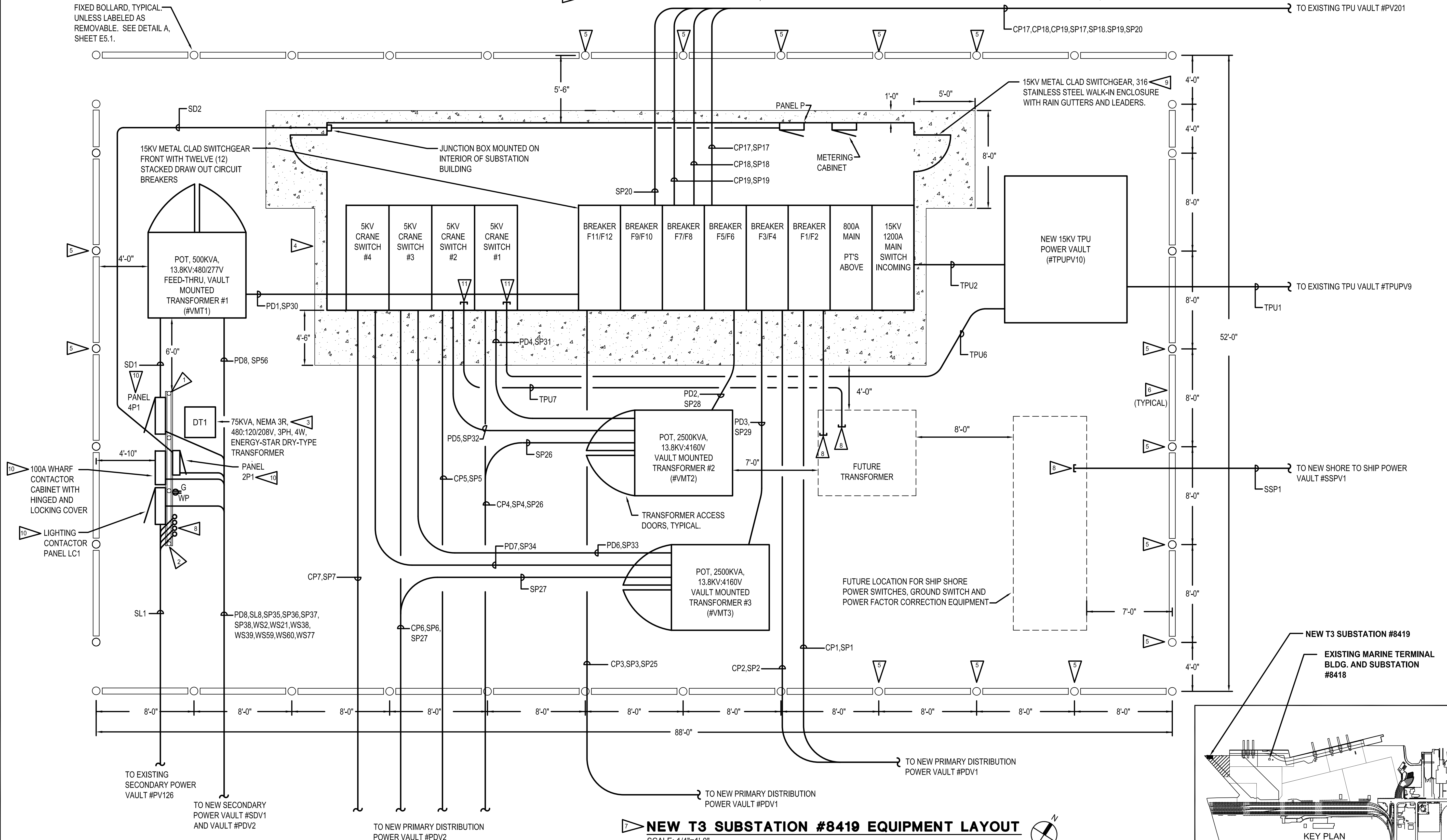
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### GENERAL NOTES:

- 1. SEE SHEET E2.0 FOR GENERAL NOTES.
- 2. SUBSTATION AREA WITHIN BOLLARDS TO BE FINISH COVERED WITH ASPHALT. COORDINATE ASPHALT REQUIREMENTS WITH SPECIFICATIONS AND REFER TO GENERAL NOTE #8. SHEET E2.0 FOR ADDITIONAL INFORMATION.

### ELECTRICAL NOTES:

- 1. PROVIDE 8'-0" SECTION OF 3" PVC COATED RIGID GALVANIZED STEEL CONDUIT WITH THREADED END CAP. PROVIDE 8" x 3'-0" CONCRETE BASE AND EMBED 3'-0" BELOW FINISHED GRADE. TYPICAL OF FIVE (5).
- 2. PROVIDE (3)1-5/8" PVC COATED STRUT EACH SIDE BETWEEN PVC COATED RIGID STEEL POSTS (CONDUIT) FOR MOUNTING EQUIPMENT. PROVIDE STAINLESS STEEL MOUNTING HARDWARE FOR STRUT AND EQUIPMENT MOUNTING.
- 3. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PAD EXTENDING 6" PAST EQUIPMENT FOOTPRINT ON ALL SIDES.
- 4. PROVIDE MINIMUM 8" ABOVE FINISHED GRADE AND 4" BELOW FINISHED GRADE, RE-BAR REINFORCED, CONCRETE PAD BELOW SWITCHGEAR BUILDING. PROVIDE BLOCK-OUTS IN CONCRETE PAD BELOW SWITCHGEAR FOR CONDUIT ACCESS. CONTRACTOR AS PART OF THE SHOP DRAWINGS SHALL PROVIDE CONCRETE PAD SUBMITTAL THAT HAS BEEN DESIGNED AND STAMPED BY A WASHINGTON STATE LICENSED STRUCTURAL ENGINEER. SEE SPECIFICATIONS 03 10 00, 03 20 00, AND 03 30 00 FOR CONCRETE SLAB AND REINFORCING CONSTRUCTION REQUIREMENTS.
- 5. REMOVABLE GUARD POST, SEE DETAIL B, SHEET E5.1.
- 6. FIXED BOLLARD AND GUARDRAIL. SEE DETAIL A, SHEET E5.1.
- 7. AREA WITHIN GUARDRAIL SHALL BE PAVED. SEE CIVIL DRAWINGS FOR PAVING REQUIREMENTS AND SPECIFICATIONS.
- 8. STUB AND CAP CONDUIT 12" ABOVE FINISHED GRADE. PROVIDE MECHANICAL GROUND CONNECTION TO SUBSTATION GROUND GRID.
- 9. SWITCHGEAR HOUSING SHALL BE PROVIDED WITH STRUT FOR MOUNTING ALL INTERIOR EQUIPMENT (CONDUIT, JUNCTION BOXES, LIGHTS, PANELS, ETC.). NO ROOF PENETRATIONS OR FIELD WELDING IS ACCEPTABLE FOR MOUNTING EQUIPMENT.
- 10. PROVIDE INTEGRAL 500 WATT SELF-REGULATING INTEGRAL HEATER SET AT 42°F TO 50°F. CONNECT TO PANEL 2P1, CIRCUIT #24 AND #27. CONNECT TWO (2) HEATERS PER CIRCUIT.
- 11. STUB AND CAP CONDUITS ABOVE GRADE BELOW 5KV SWITCH. PROVIDE MECHANICAL GROUND CONNECTION TO SUBSTATION GROUND GRID.

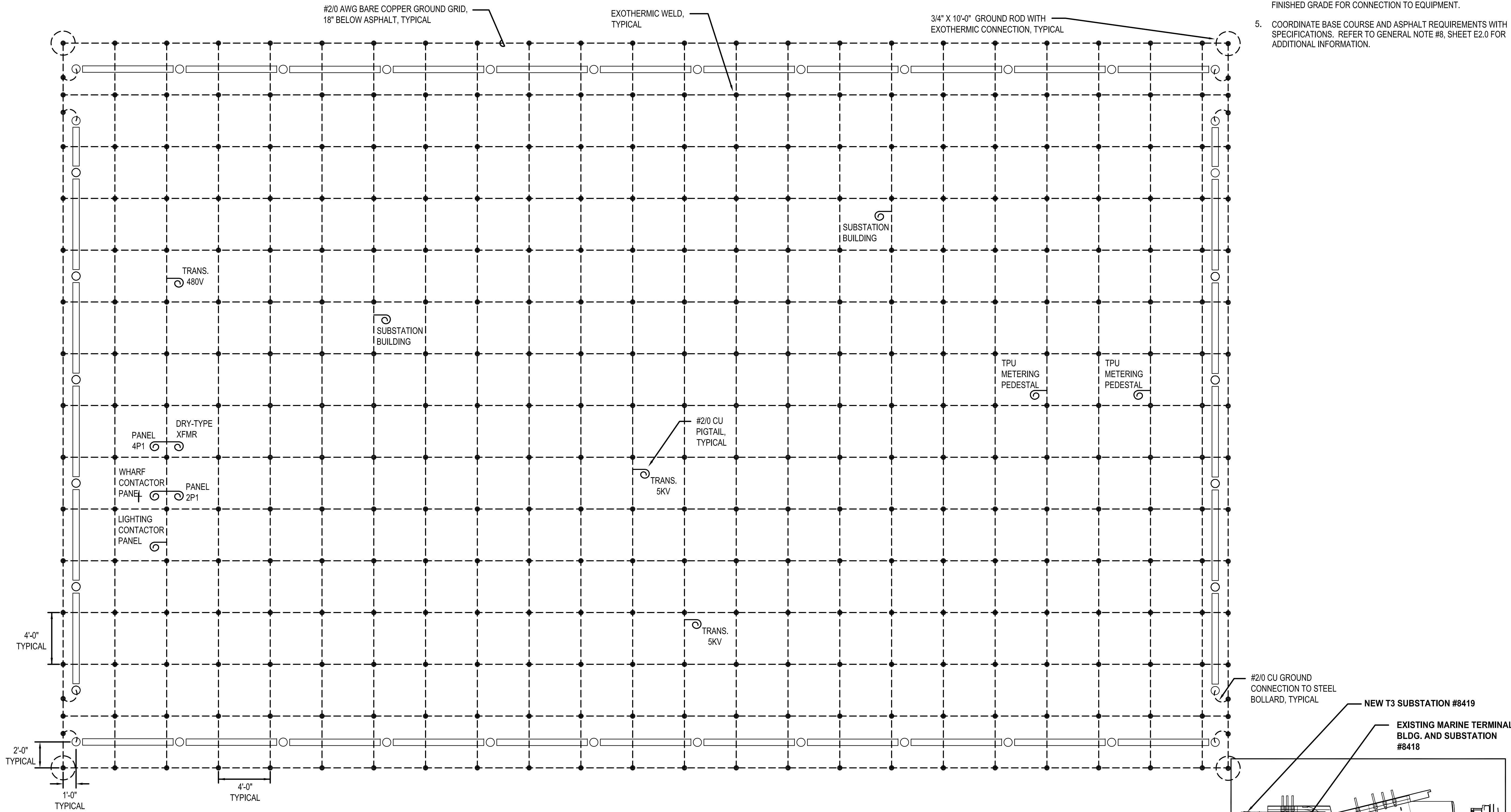


**7 NEW T3 SUBSTATION #8419 EQUIPMENT LAYOUT**  
SCALE: 1/4"=1'-0"

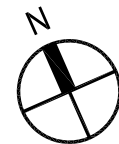
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<b>CROSS ENGINEERS, INC.</b> <small>10000 1st Avenue, Suite 200 Tacoma, WA 98404 Phone: 253-867-1111 Fax: 253-867-1111</small>	
<b>Port of Tacoma</b> <small>P.O. BOX 1887 TACOMA, WA 98401 (253)867-5841</small>	
<b>L. HUBBS</b> <small>REGISTERED PROFESSIONAL ENGINEER</small>	
APPROVED: <b>GLV/SLH/7/17/13</b>	CHECKED BY: <b>DATE</b>
DC <b>7/17/13</b>	DIR OF ENG DATE <b>7/17/13</b>
PRINTED BY: <b>Scottk</b>	
PORT ADDRESS: <b>LINE SITCOM WAY</b>	
<b>TACOMA, WA 98421-2300</b>	
<b>PIER 3 UPGRADE</b>	
<b>SUBSTATION #8419 EQUIPMENT LAYOUT</b>	
TOWNSHIP: <b>21 N</b>	RANGE: <b>3 E</b>
SECTION: <b>27</b>	DATE-HRZ: <b>NAD 83-07</b>
VERT: <b>NAD 83-07</b>	VERT: <b>NAD 83-07</b>
PARCEL: <b>27</b>	PARCEL: <b>27</b>
DRAWING SCALE: <b>AS SHOWN</b>	
SHEET <b>115</b> OF <b>128</b>	
CONT/CONS: <b>069458</b>	
MASTER ID NO: <b>092995</b>	
PHASE: <b>RECORD DRAWINGS</b>	

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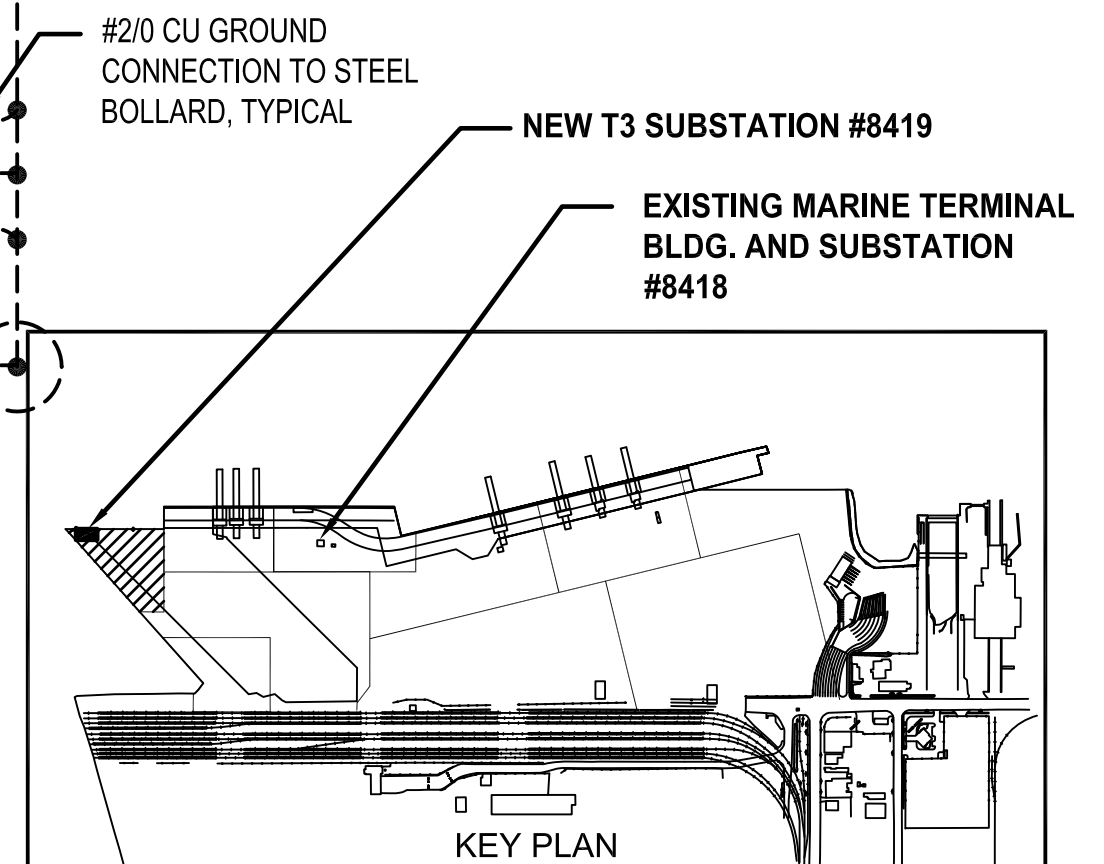


**NEW T3 SUBSTATION #8419 GROUND GRID**  
 SCALE: 1/4"=1'-0"



**GENERAL NOTES:**

- SEE SHEET E2.0 FOR GENERAL NOTES.
- PROVIDE EACH CORNER AND EACH FIXED POST ADJACENT TO REMOVABLE POST WITH #2/0 AWG COPPER. SEE SHEET E4.0
- EXOTHERMIC WELD ALL BELOW GRADE GROUND GRID CONNECTIONS.
- ALL PIGTAILS TO EQUIPMENT SHOWN SHALL BE #2/0 AWG BARE COPPER GROUND. PIGTAILS SHALL BE EXTENDED 3'-0" ABOVE FINISHED GRADE FOR CONNECTION TO EQUIPMENT.
- COORDINATE BASE COURSE AND ASPHALT REQUIREMENTS WITH SPECIFICATIONS. REFER TO GENERAL NOTE #8, SHEET E2.0 FOR ADDITIONAL INFORMATION.



 CROSS ENGINEERS, INC. 10000 1st Avenue, Suite 100 Tacoma, WA 98404 Phone: (253) 733-1111 Fax: (253) 733-1112 www.crossengineers.com	BY: <b>GLV</b> APPR: <b>GLV</b> DATE: <b>2-13-15</b>
	REVISION: <b>RECORD DRAWINGS</b> MARK: <b>SJK</b>
APPROVED: <b>GLV/SLH7/17/13</b> CHECKED BY: <b>GLV</b> DATE: <b>7/17/13</b>	DATE: <b>7/17/13</b> PROJ. ENGR: <b>GLV</b> DATE: <b>7/17/13</b>
DC: <b>7/17/13</b> DIR OF ENG: <b>ScottK</b> PRINTED BY: <b>ScottK</b>	PORT ADDRESS: <b>ONE SITCUM WAY</b> <b>TACOMA, WA 98421-2300</b>
<b>PIER 3 UPGRADE</b> SUBSTATION #8419 GROUND GRID RANGE: <b>3 E</b> SECTION: <b>27</b> TOWNSHIP: <b>21 N</b> DAT-HRZ: <b>NAD 83-07</b> VERT: <b>NAD 83-07</b> TIDAL (MLLV = 0.0) DRAWING SCALE: <b>AS SHOWN</b>	
<b>6502</b> <b>E4.1</b> SHEET 116 OF 128 CONT/CONS: <b>069458</b> MASTER ID NO: <b>092995</b> PHASE: <b>RECORD DRAWINGS</b>	PARCEL: <b>27</b>

### CONDUIT AND WIRE SCHEDULE:

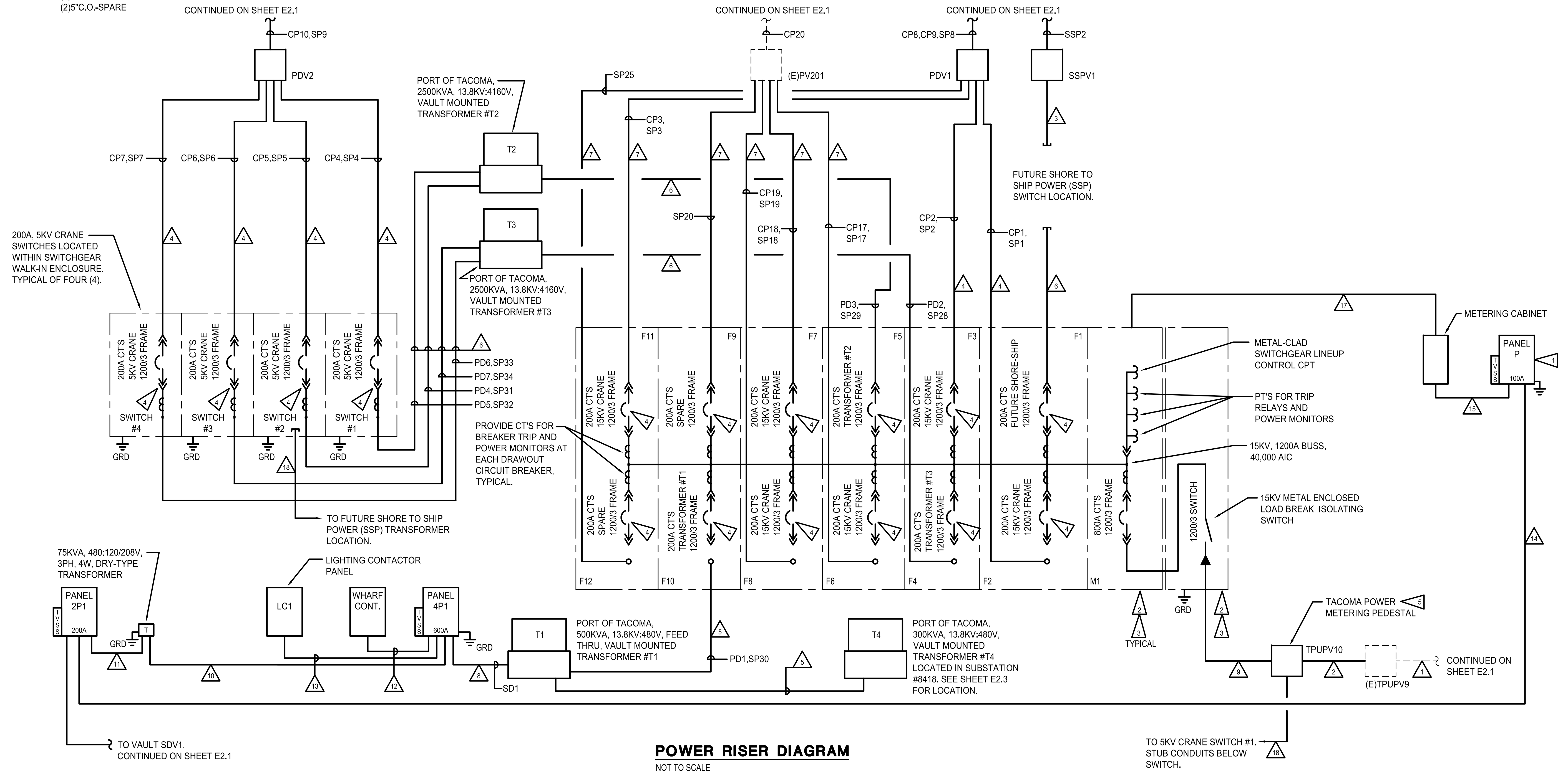
- 1 (E)4"5"C.O. - CONDUCTORS BY TPU
- 2 (4)5"C-CONDUCTORS BY TPU
- 3 (4)5"C-FOR FUTURE SHORE TO SHIP EQUIPMENT
- 4 (1)4"C-(3)#1/0 15KV, MV105 CU, (1)#1/0 CU 600V GRD, (1)#10 CU 600V GRD (1)4"C.O. - SPARE
- 5 NOT USED
- 6 (1)4"C-(3)#1/0 15KV, MV105 CU, (1)#1/0 CU 600V GRD (1)4"C.O. - SPARE
- 7 (2)4"C-SPARE
- 8 (2)4"C-(4)#350KCM CU EACH
- 9 (2)5"C-(3)#350 KCM CU, 15KV, 133%, MV-105, & (1)#350 KCM CU 600V GRD (2)5"C.O.-SPARE
- 10 1"C-(3)#2 CU & (1)#8 CU GRD
- 11 2"C-(4)#3/0 CU & (1)#6 CU GRD
- 12 (5)#2"C-(4)#2 CU & (1)#8 CU GRD EACH
- 13 (3)2"C-(3)#1/0 CU & (1)#6 CU GRD EACH (1)2"C- SPARE
- 14 1-1/2"C-(4)#2 CU & (1)#8 CU GRD
- 15 3/4"C-(2)#12 CU & (1)#12 CU GRD
- 16 (1)4"C-SPARE
- 17 (2)2"C-METERING DATA CABLE PROVIDED WITH SWITCHGEAR FROM MANUFACTURER
- 18 (2)5"C-SPARE

### GENERAL NOTES:

- SWITCHGEAR MANUFACTURER SHALL SUBMIT SWITCHGEAR ELEVATION WITH SWITCH ID SHOWN IN SHOP DRAWINGS FOR REVIEW AND APPROVAL BY ENGINEER. SEE SPECIFICATION SECTION 26 77 00 FOR ADDITIONAL REQUIREMENTS.
- SEE ELECTRICAL SITE PLANS E2.0, E2.1, E2.2, E2.3 AND E2.4 FOR ALL VAULT LOCATIONS SHOWN ON THIS PLAN.

### ELECTRICAL NOTES:

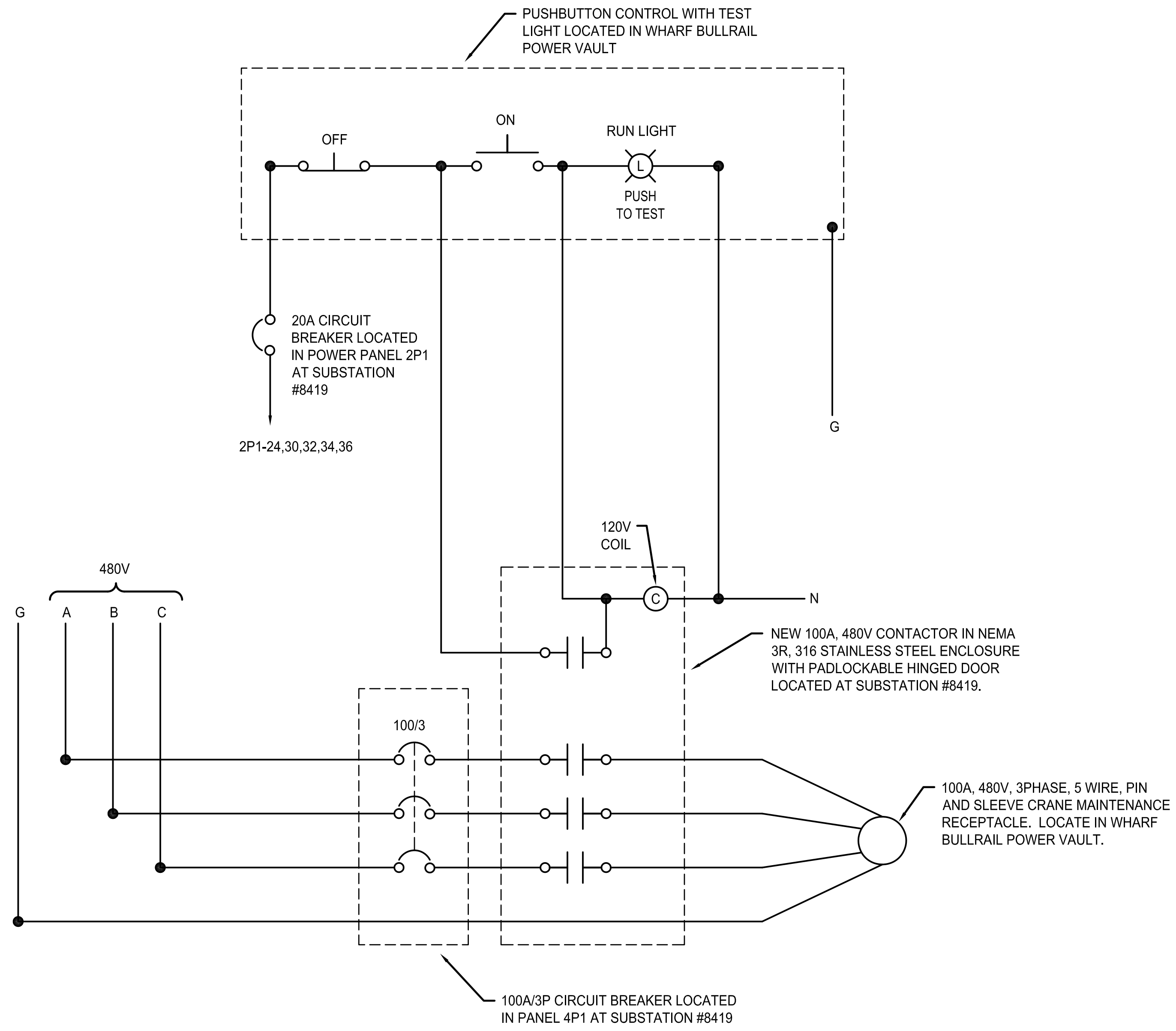
- PANEL P, 120/208 VOLTS, 3PH, 100 AMP, 30 CIRCUIT, 100 AMP MAIN BREAKER WITH BRANCH BREAKERS SIZED FOR BUILDING LOADS PLUS 20% SPARE AND THREE (3) 20/1P SPARE CIRCUIT BREAKERS. PANEL SHALL BE PROVIDED WITH SWITCHGEAR AND WALK-IN ENCLOSURE.
- BACK WALL OF BREAKERS AND ISOLATING SWITCH SHALL BE ACCESSIBLE FROM THE EXTERIOR VIA WEATHERPROOF DOORS WITH MULTI-POINT LATCHES AND PADLOCK PROVISIONS FOR INSTALLATION AND MAINTENANCE OF CABLES AND CONNECTIONS.
- EACH MEDIUM VOLTAGE SWITCHGEAR COMPARTMENT SHALL BE PROVIDED WITH A 500 WATT INTEGRAL THERMOSTAT HEATER (TURN ON AT 40°F) WITH A DISCONNECT SWITCH AT EACH HEATER. EACH HEATER SHALL HAVE A DEDICATED OVERCURRENT DEVICE (FUSE OR CIRCUIT BREAKER).
- PROVIDE GROUND LOOP MONITORING EQUIPMENT WITHIN BREAKER SECTION.
- CONTRACTOR SHALL PROVIDE 600 AMP, 15KV, T-OP II, DEADBREAK CONNECTORS WITH TEST POINT (COOPER POWER SYSTEMS OR EQUAL) ON EACH CABLE FROM SWITCHGEAR FOR CONNECTION TO TACOMA POWER (TPU) METERING PEDESTAL.



**POWER RISER DIAGRAM**  
NOT TO SCALE

 CROSS ENGINEERS, INC. 10000 1st Avenue, Suite 100 Tacoma, WA 98404 Phone: (253) 733-1111 Fax: (253) 733-1112 www.crossengineers.com	DATE: 2-13-15 APPR: GLW BY: SJK REVISION: RECORD DRAWINGS MARK:
	 Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401 (253) 865-8441
APPROVED:	GLW/SLH 7/17/13 CHECKED BY: DATE: 7/17/13 GLW DIR OF ENGR DATE: 7/17/13 PRINTED BY: SCOTK SECTION: 27 RANGE: 3 E TOWNSHIP: 21 N DATE-HRZ: NAD 83-07 VERT: NOS TIDAL (MILLW = 0.0) PORT ADDRESS: ONE SITCOM WAY TACOMA, WA 98421-2300 DRAWING SCALE: AS SHOWN PARCEL: 27
<b>6502</b> <b>E4.2</b> SHEET 117 OF 128	<b>PIER 3 UPGRADE</b> <b>POWER RISER DIAGRAM</b>

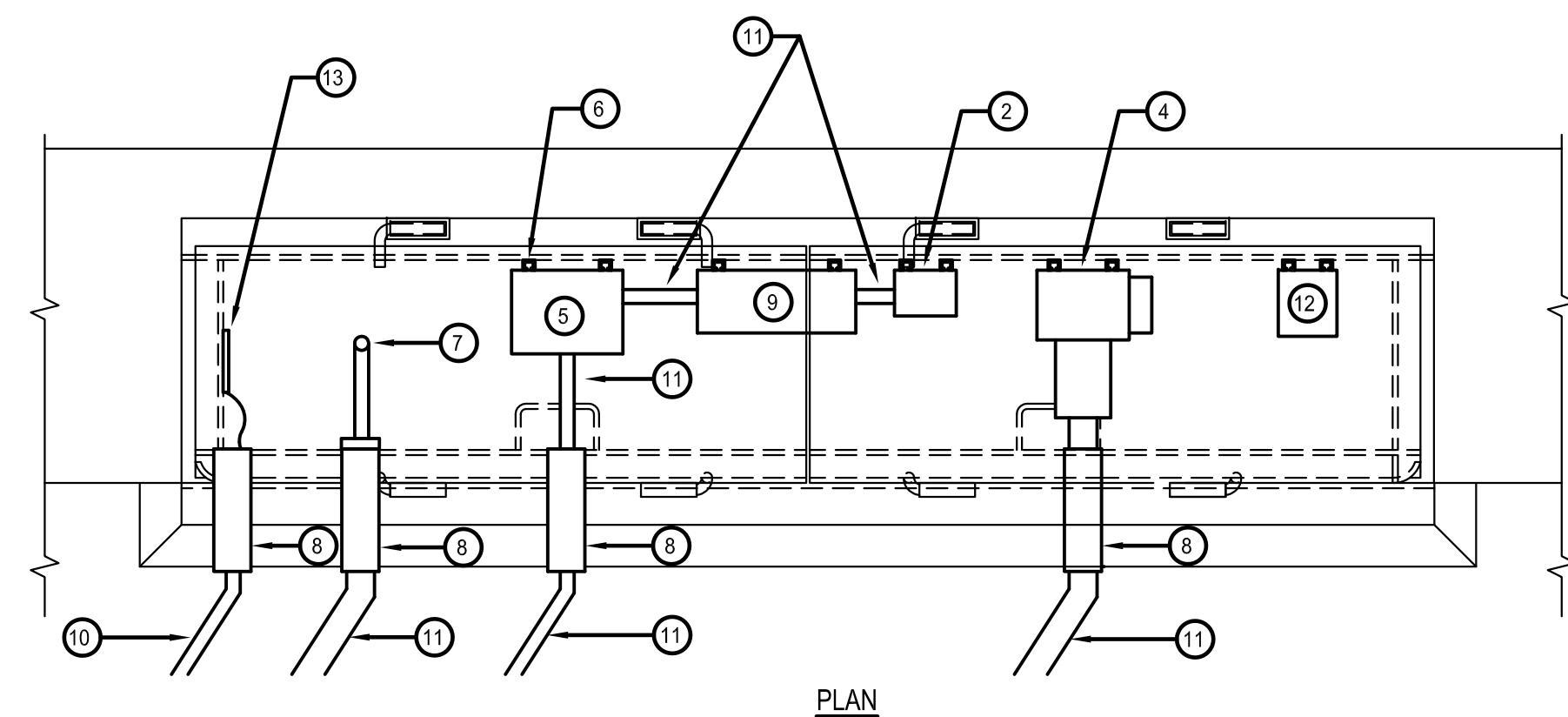




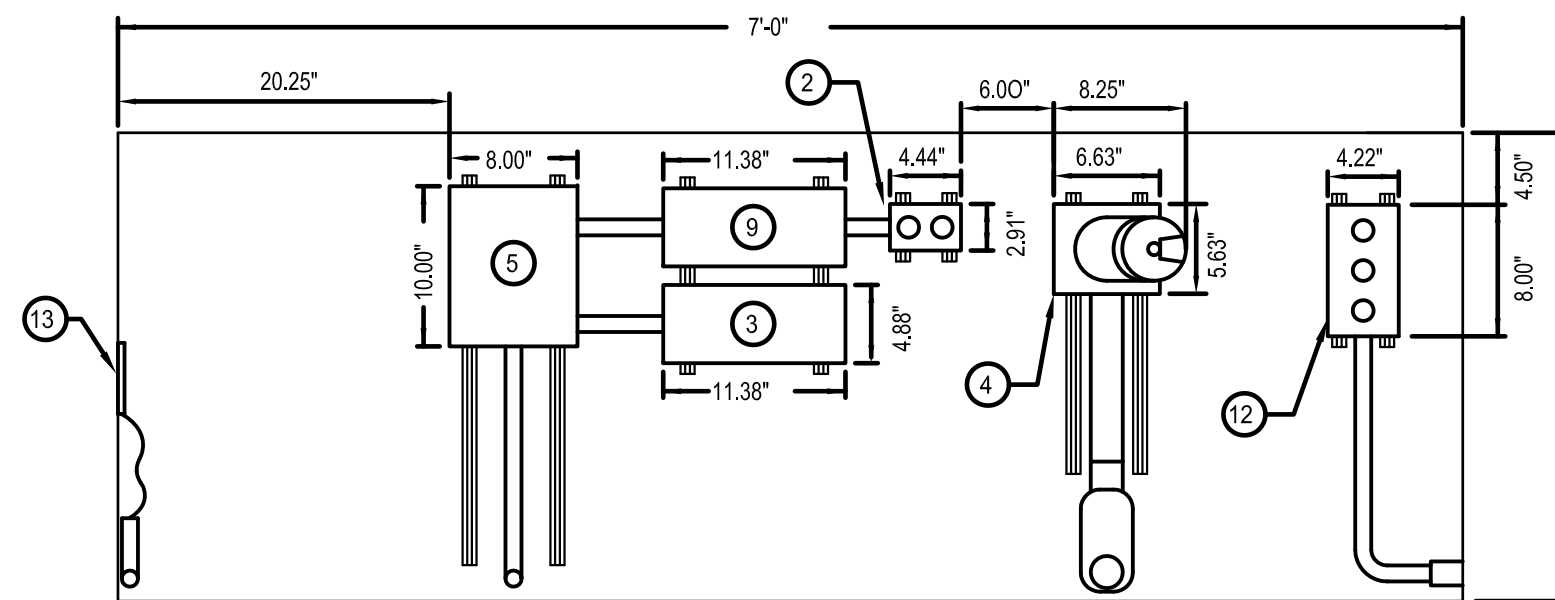
**100A CRANE MAINTENANCE RECEPTACLE WIRING DIAGRAM**

NOT TO SCALE

A  
E5.0



PLAN



ELEVATION

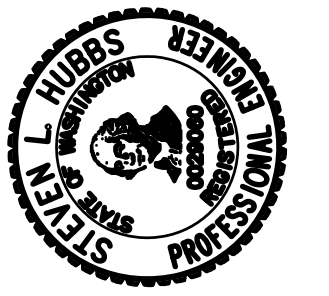
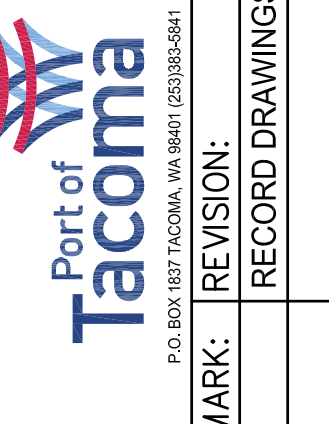
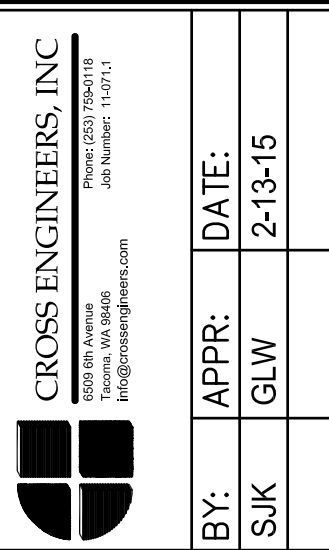
**POWER/COMMUNICATIONS BULLRAIL VAULT (TYPICAL)**

SCALE: 1"=1'-0"

B  
E5.0

**ELECTRICAL BULLRAIL VAULT NOTES:**

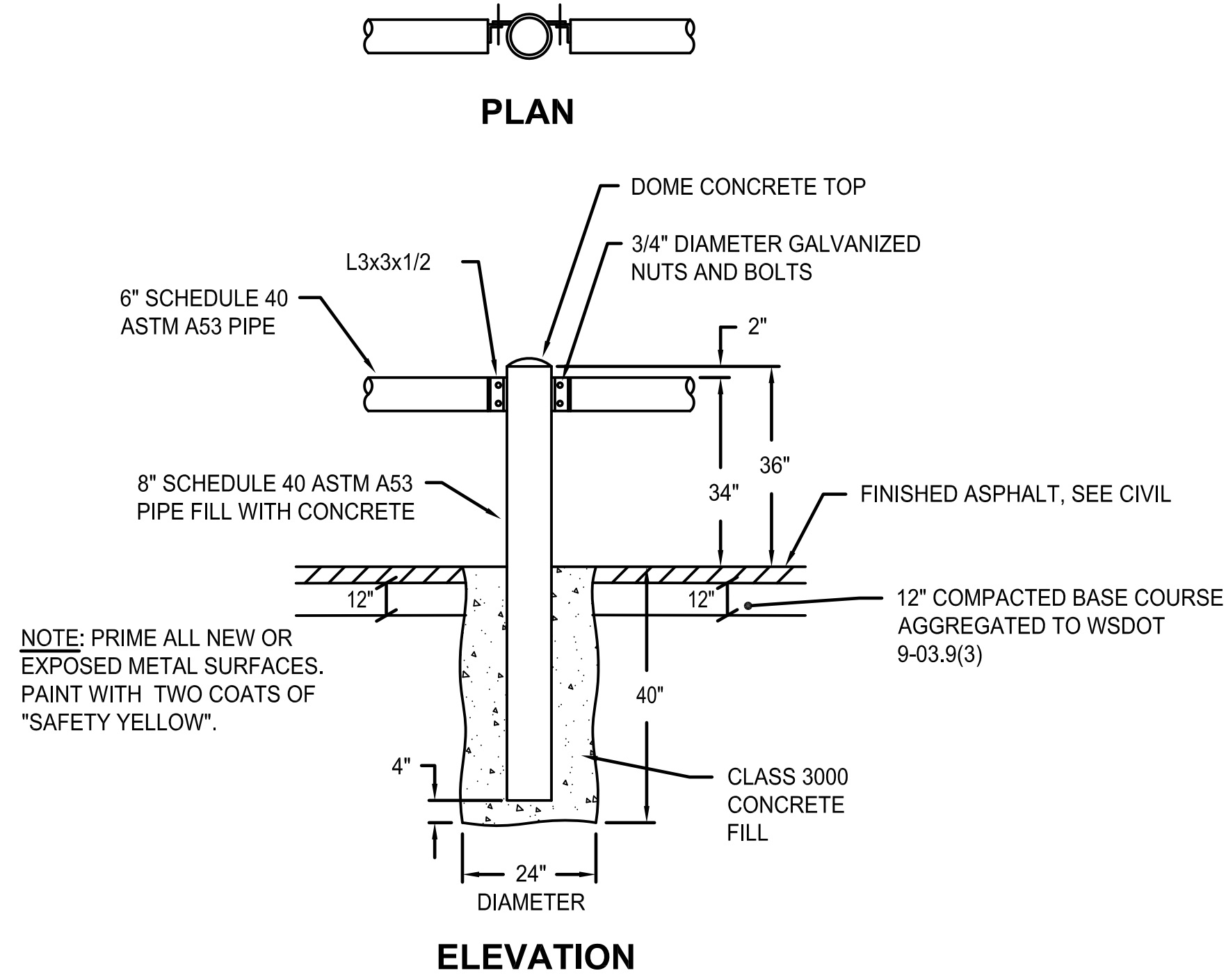
- ① NOT USED
- ② 120V, 1 PHASE, 20 AMP GFI DUPLEX RECEPTACLE WITH NEMA 3R "IN USE" COVER.
- ③ 240V, 1 PHASE, 20 AMP RECEPTACLE WITH LOCKOUT SWITCH.
- ④ 100A, 480V, 3PHASE, 5 WIRE, PIN AND SLEEVE RECEPTACLE AND FOURWAY FEED THRU BACK BOX.
- ⑤ JUNCTION BOX WITH NEOPRENE GASKET, WITH UNION HUBS IN BOTTOM AND THREADED TAPPINGS INSIDE. CROUSE HINDS WCB SERIES.
- ⑥ TYPICAL. PROVIDE MINIMUM 1-5/8"x1-5/8" FIBERGLASS STRUT FOR MOUNTING ALL ELECTRICAL EQUIPMENT IN VAULT. PROVIDE 3/16 STAINLESS STEEL DROP IN ANCHOR, FLAT WASHER AND HEX HEAD CAP SCREWS FOR MOUNTING FIBERGLASS STRUT.
- ⑦ TERMINATE CONDUIT AT WATERSIDE VAULT WALL.
- ⑧ 4" PVC SCHEDULE 80 SLEEVE, GROUT AFTER INSTALLED. SEAL BETWEEN CONDUIT AND SLEEVE WITH HANDY FOAM OR EQUAL.
- ⑨ MOTOR RATED TOGGLE SWITCH WITH PILOT LIGHT IN NEMA 4X STAINLESS STEEL BOX.
- ⑩ 1"C-#4 CU GROUND WIRE BACK TO CRANE RAIL. PROVIDE EXOTHERMIC WELD TO CRANE RAIL.
- ⑪ SEE CONDUIT AND WIRE SCHEDULE, DRAWINGS E7.0, 7.1 AND 7.2.
- ⑫ NEMA 4X, 316 STAINLESS STEEL 3 BUTTON PUSHBUTTON, "ON", "OFF", "TEST" WITH PILOT LIGHT BUTTONS..
- ⑬ 4"H x 1/2"W x 8"L SOLID BARE COPPER GROUND BUS WITH 6 SCREW DOWN LUGS SIZED FOR #10 THRU #4 CU WIRE. PROVIDE #6 CU GROUND WIRE FROM THE GROUND BUS TO THE VAULT LID AND FRAME, AND ANY ADDITIONAL EXPOSED METAL PARTS WITHIN VAULT.



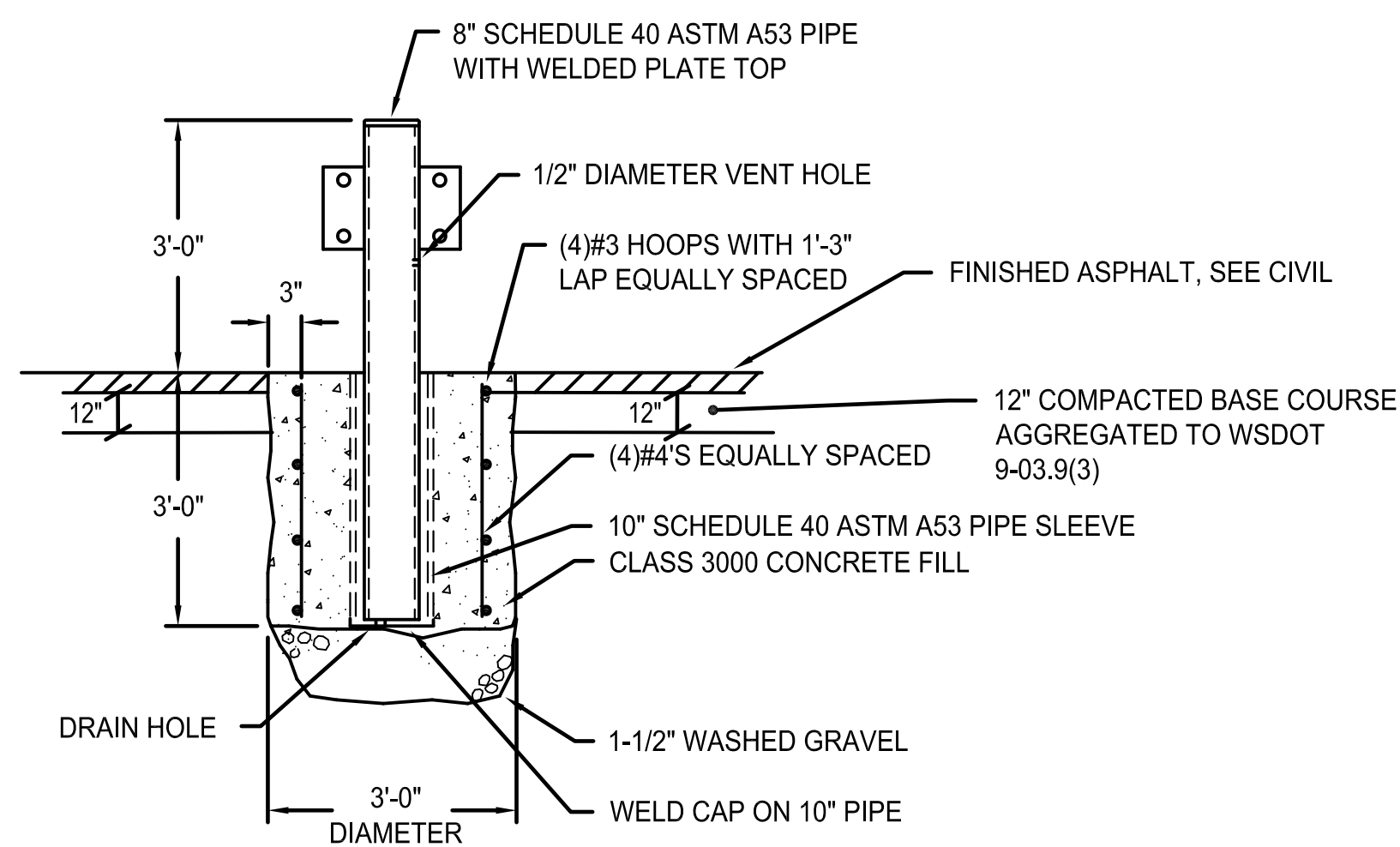
APPROVED:	GLW/SLH	7/17/13	DATE
	CHECKED BY	DATE	
DC	7/17/13	7/17/13	
DIR OF ENGR	DATE	ENGR	DATE
PRINTED BY: ScottH			
PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300			

<b>6502</b> <b>E5.0</b> SHEET 119 OF 128	<b>PIER 3 UPGRADE</b>		
	<b>ELECTRICAL DETAILS</b>		
	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
	MASTER ID NO: 092935	DATE-HRZ: NAD 83-07	VERT: NOS TIDAL (MILLW = 0.0)
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	

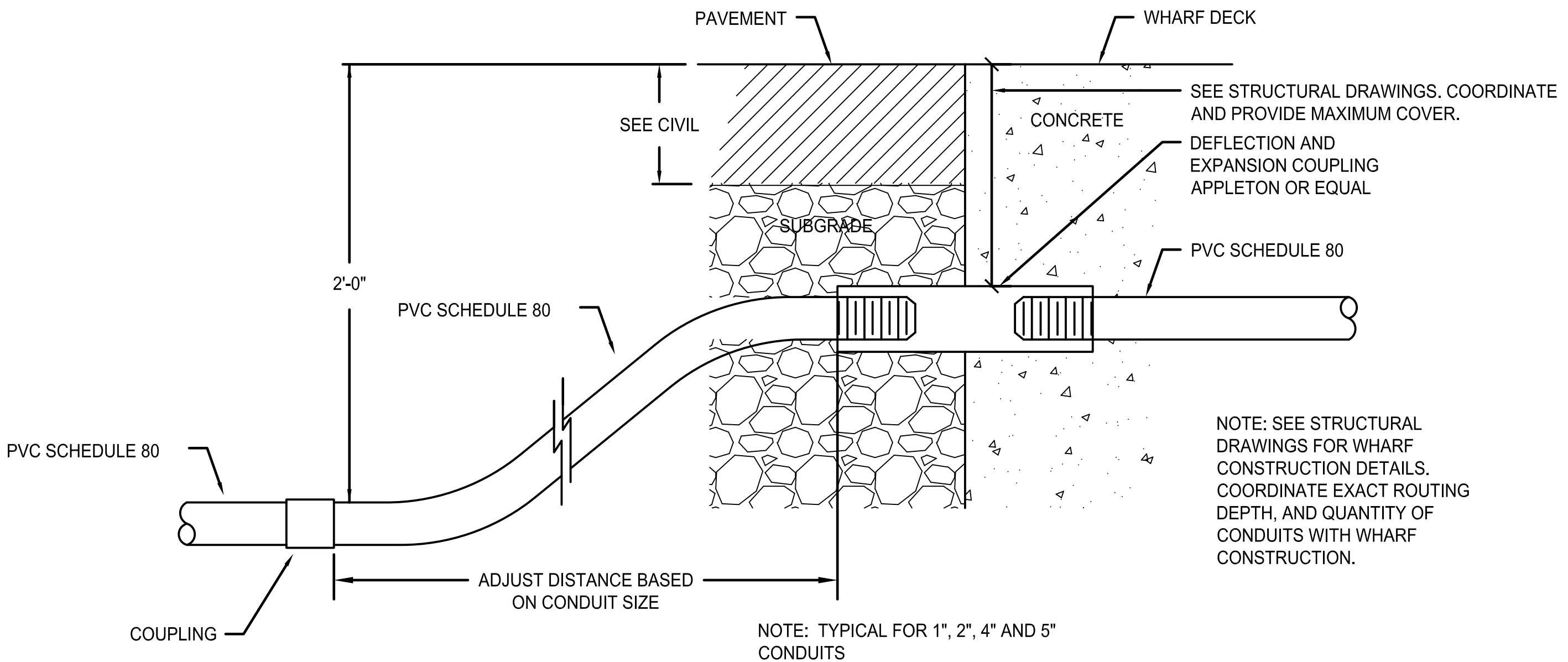
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**CONCRETE BOLLARD - BOLTED GUARD RAIL** (A)  
NOT TO SCALE E5.1



**REMOVABLE GUARD POST** (B)  
NOT TO SCALE E5.1

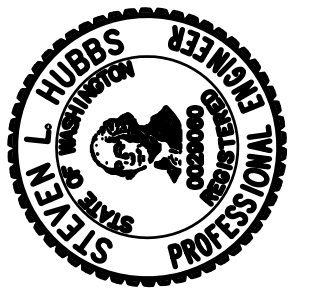
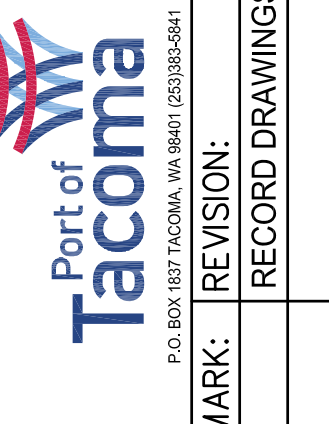
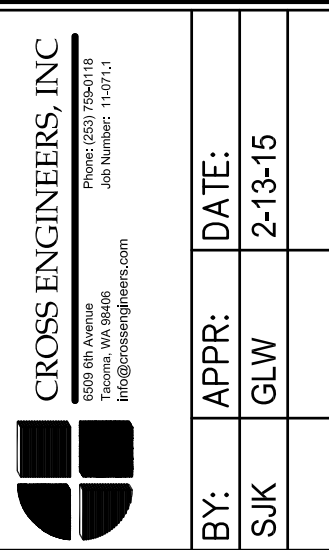


**DEFLECTION AND EXPANSION COUPLING** (C)  
NOT TO SCALE E5.1

<p><b>6502</b> <b>E5.1</b> SHEET 120 OF 128</p> <p>CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS</p>	<p><b>PIER 3 UPGRADE</b></p> <p><b>ELECTRICAL DETAILS</b></p>		<p>APPROVED:</p> <p>DC 7/17/13</p> <p>DIR OF ENG DATE</p> <p>PRINTED BY: ScottK</p> <p>PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300</p>	<p>GLW/SLH 7/17/13</p> <p>CHECKED BY DATE</p> <p>GLW 7/17/13</p> <p>PROJ. ENGR DATE</p>	<p>CROSS ENGINEERS, INC.</p> <p>10000 1<sup>ST</sup> AVENUE, SUITE 200 TACOMA, WA 98421 PHONE: 253.405.1171 WWW.CROSSENGINEERS.COM</p>
	<p>TOWNSHIP: 21 N RANGE: 3 E SECTION: 27</p> <p>DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MILLW = 0.0)</p> <p>PARCEL: 27 DRAWING SCALE: AS SHOWN</p>	<p>BY: APPR: DATE:</p> <p>SJK GLW 2-13-15</p>	<p>MARK: REVISION: RECORD DRAWINGS</p>	<p>Port of Tacoma</p> <p>P.O. BOX 1837 TACOMA, WA 98401 (253)385-3441</p>	<p>REGISTERED PROFESSIONAL ENGINEER</p> <p>STATE OF WASHINGTON</p> <p>NO. 10000</p>

**GENERAL NOTES:**

- SEE SHEET E2.0 FOR GENERAL NOTES.

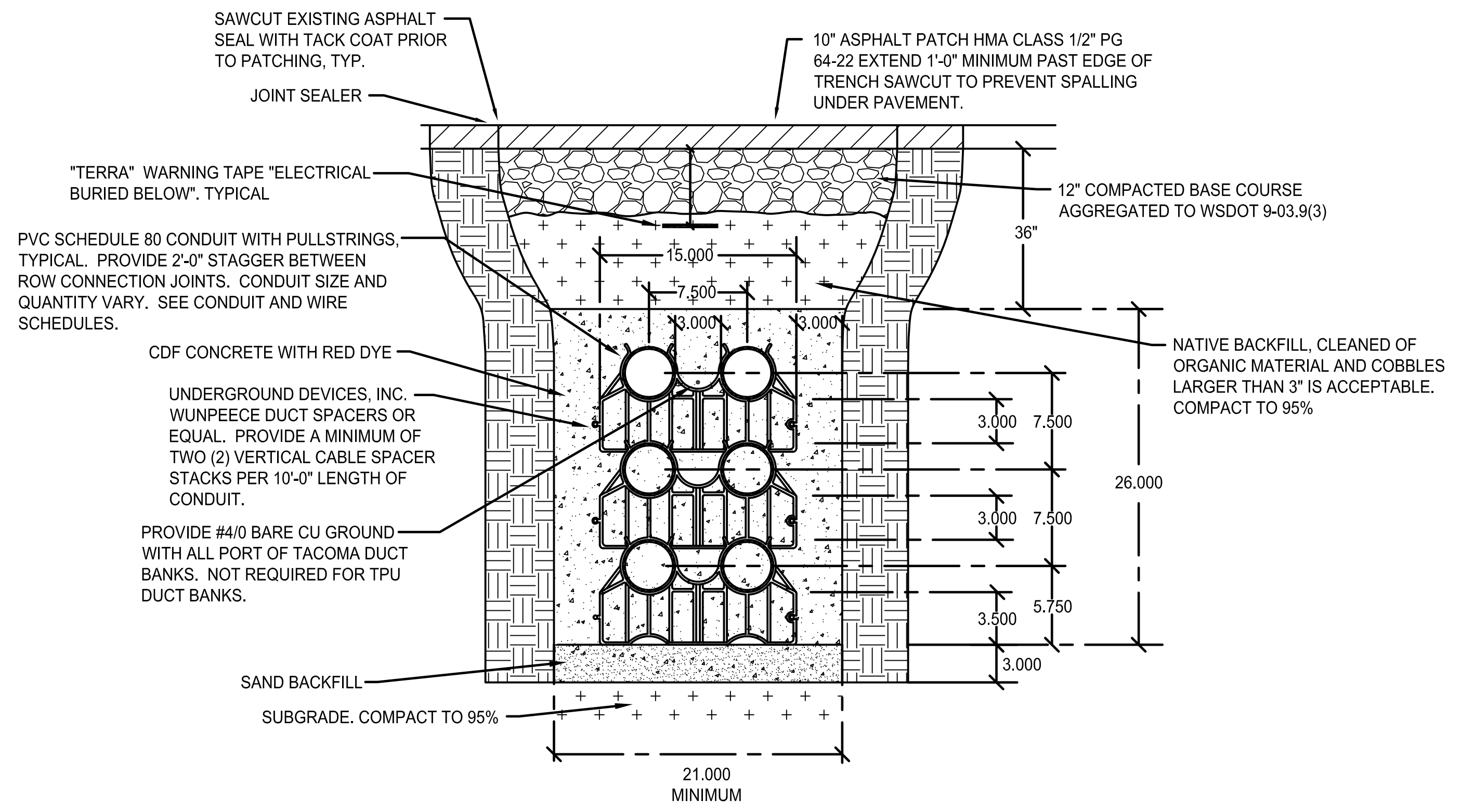


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GLW	7/17/13	PROJ. ENGR	DATE

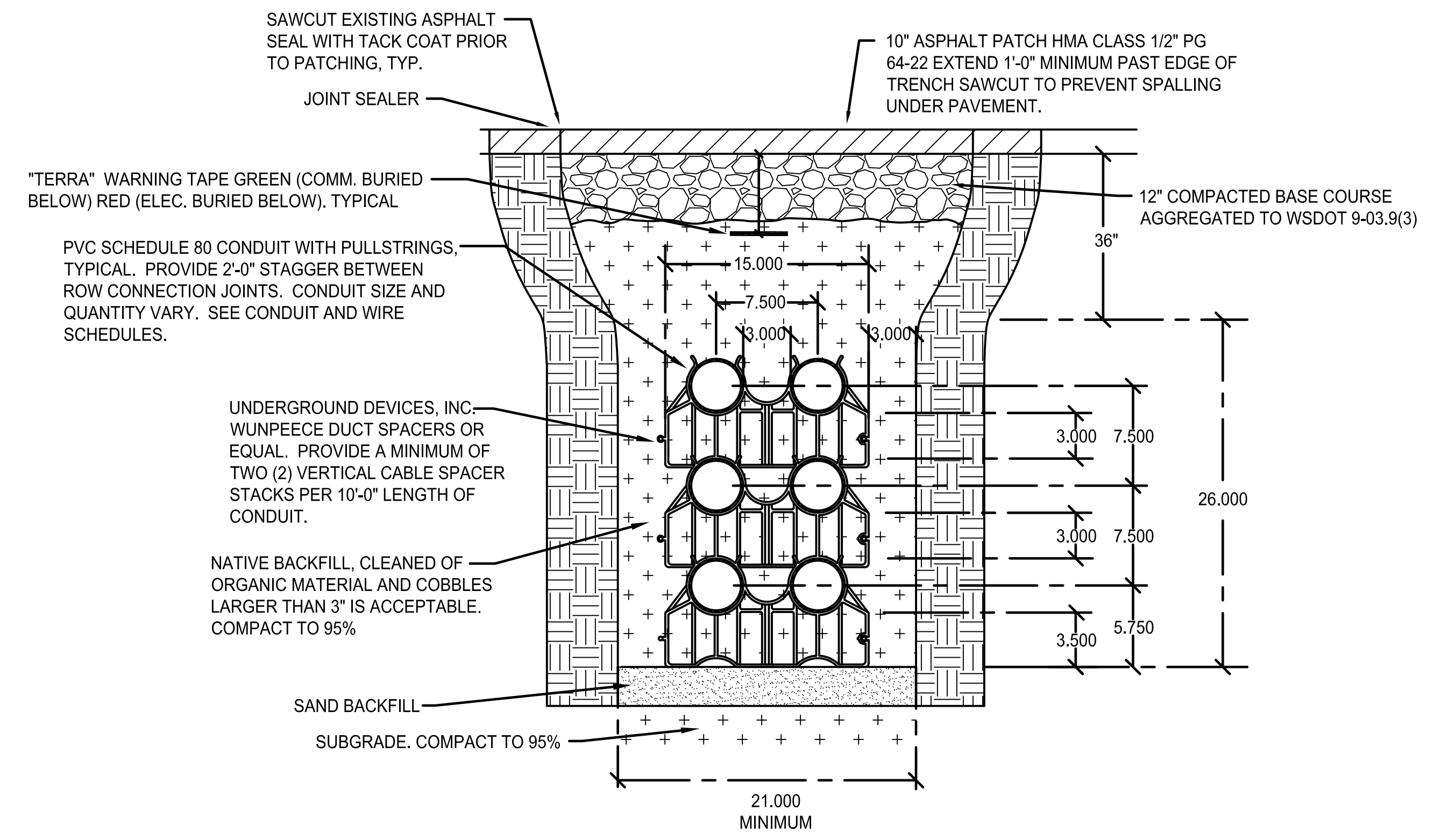
APPROVED:	DC	7/17/13	DATE
	DIR OF ENG	ScotH	DATE
	PRINTED BY:	ScotH	
	PORT ADDRESS:	ONE SITCUM WAY TACOMA, WA 98421-2300	

<b>PIER 3 UPGRADE</b>	<b>ELECTRICAL DETAILS</b>		
	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
	DATE-HRZ: NAD 83-07	VERT: NOS TIDAL (MILLW = 0.0)	DRAWING SCALE: AS SHOWN
	PARCEL: 27		

<b>6502</b>	<b>E5.2</b>	SHEET 121 OF 128
CONT/CONS:	069458	
MASTER ID NO:	092935	
PHASE:	RECORD DRAWINGS	



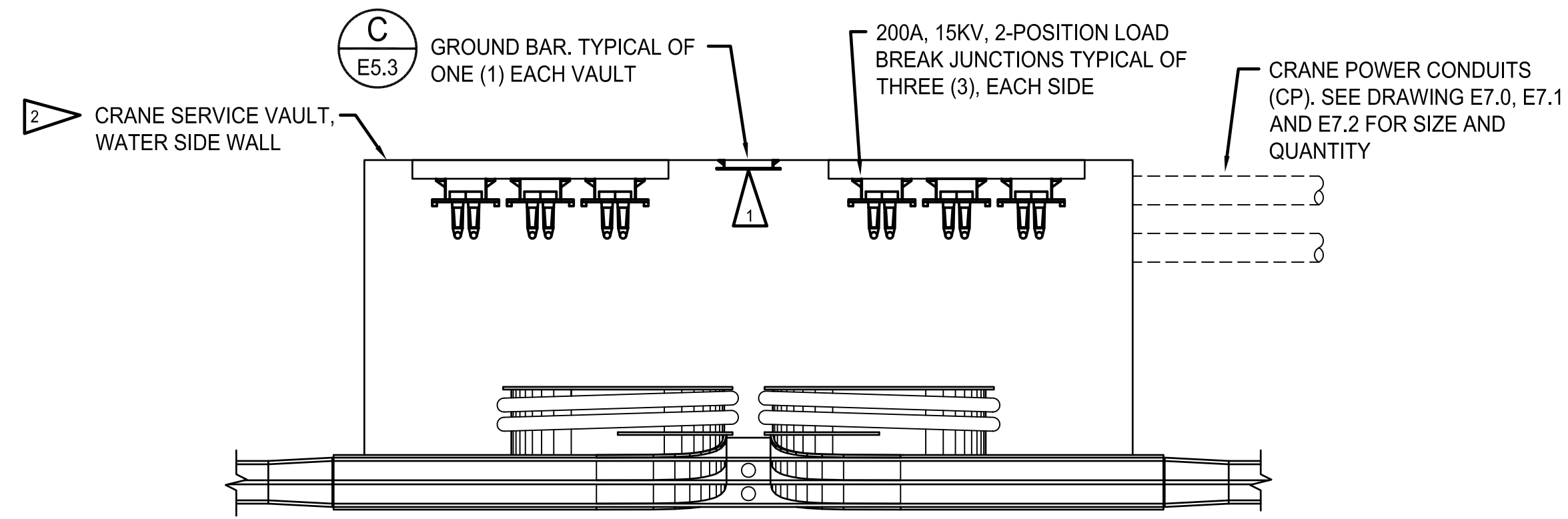
**TYPICAL 13.8KV CONDUIT TRENCHING** A  
NOT TO SCALE E5.2



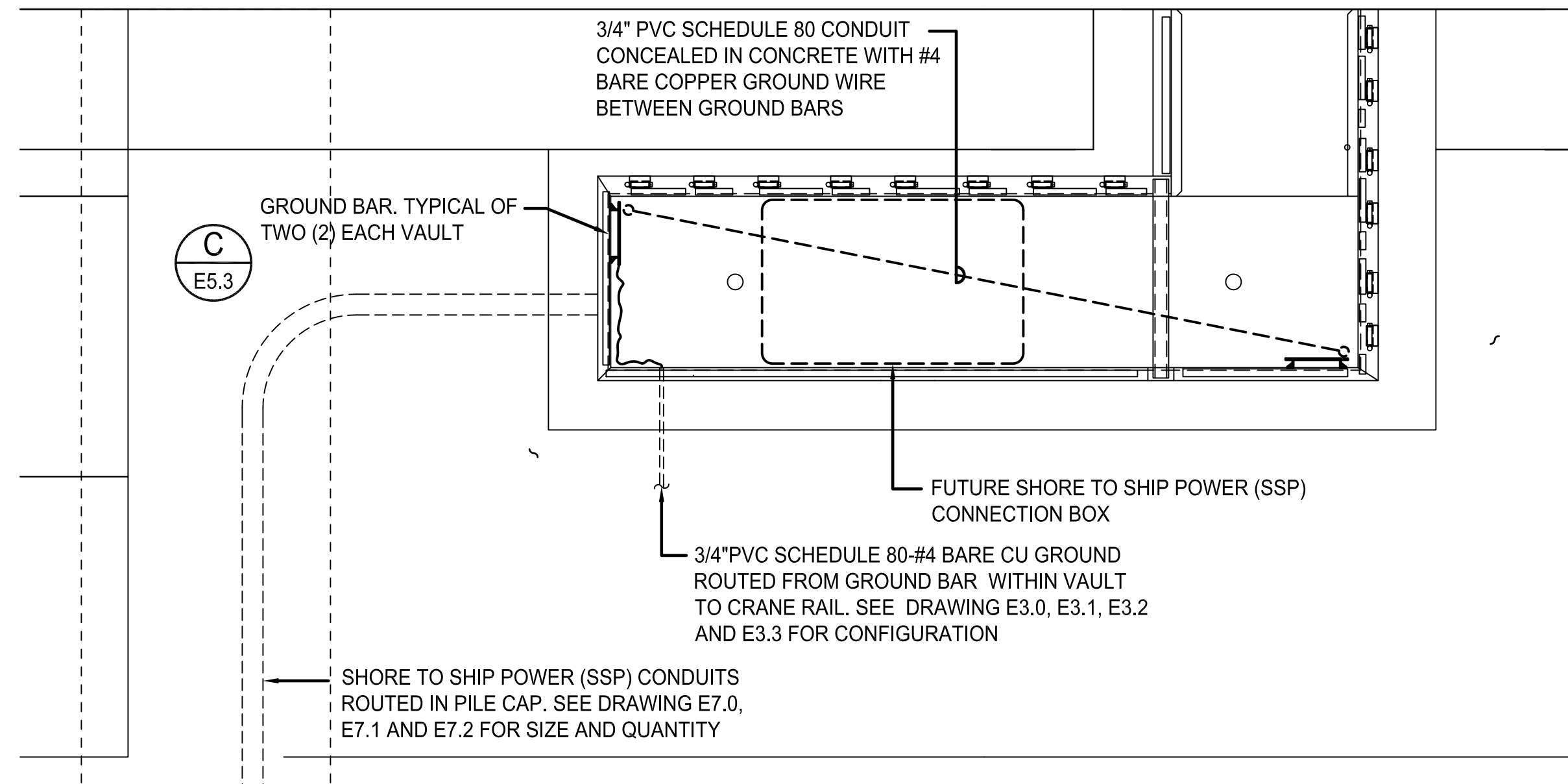
**COMMUNICATIONS AND 600V CONDUIT TRENCHING** B  
NOT TO SCALE E5.2

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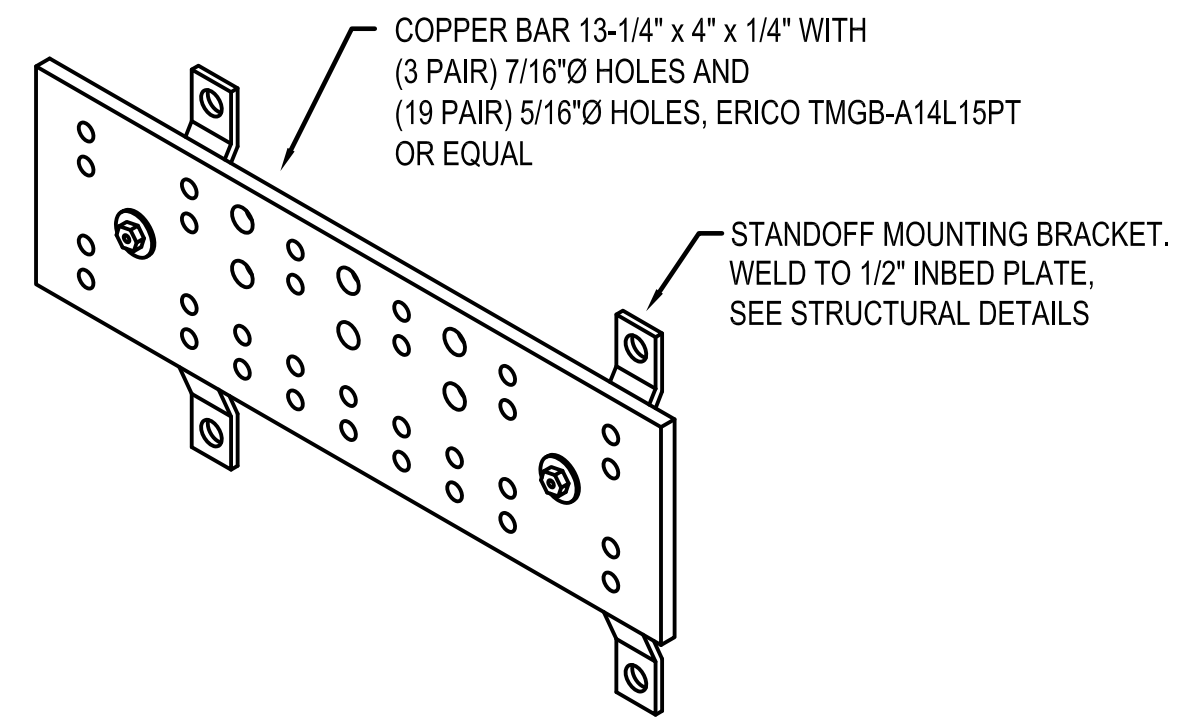




**PLAN - TYPICAL CRANE SERVICE VAULT**  
SCALE: 1/2"=1'-0"  
E5.3



**PLAN - TYPICAL SHORE TO SHIP POWER VAULT**  
SCALE: 1/2"=1'-0"  
E5.3

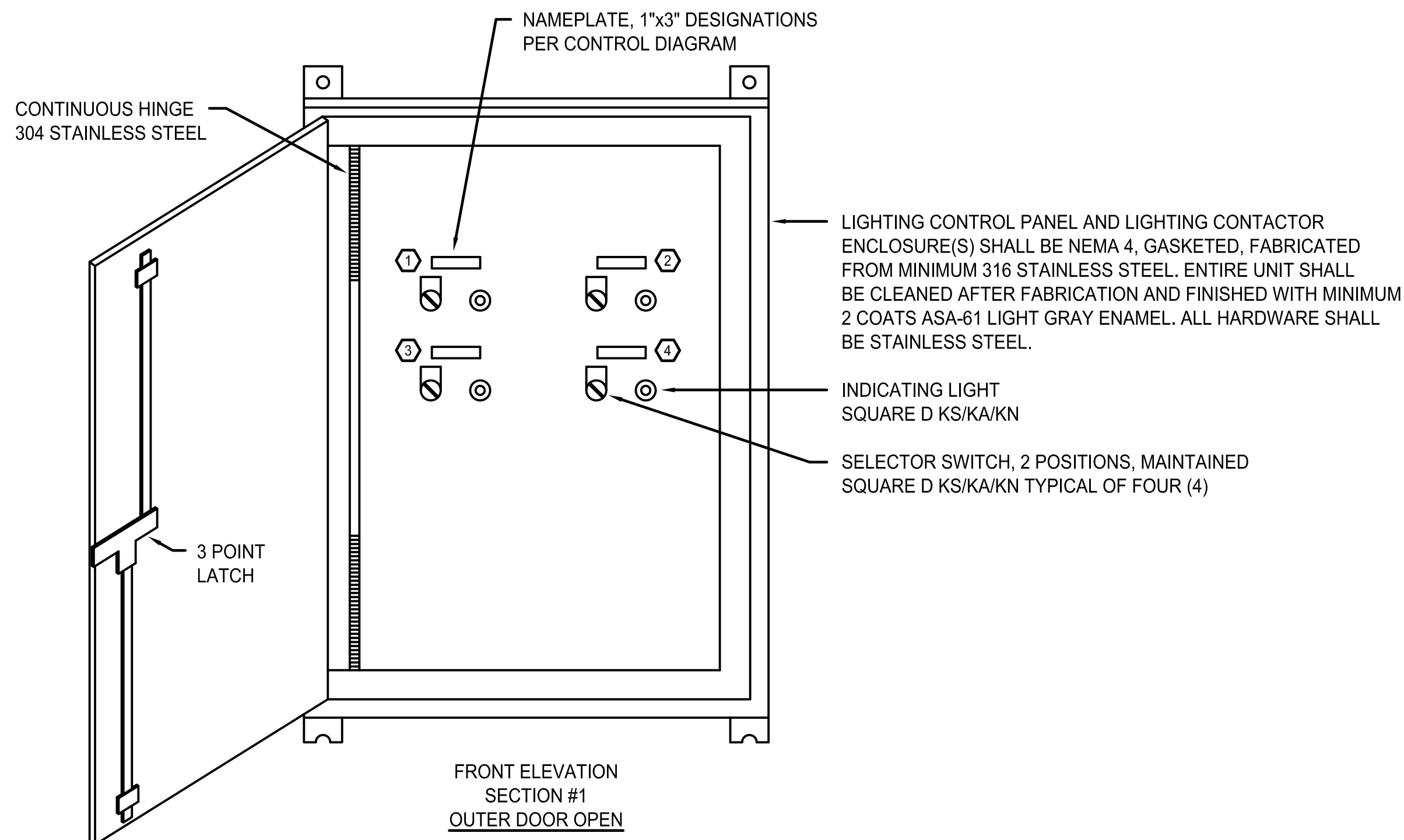
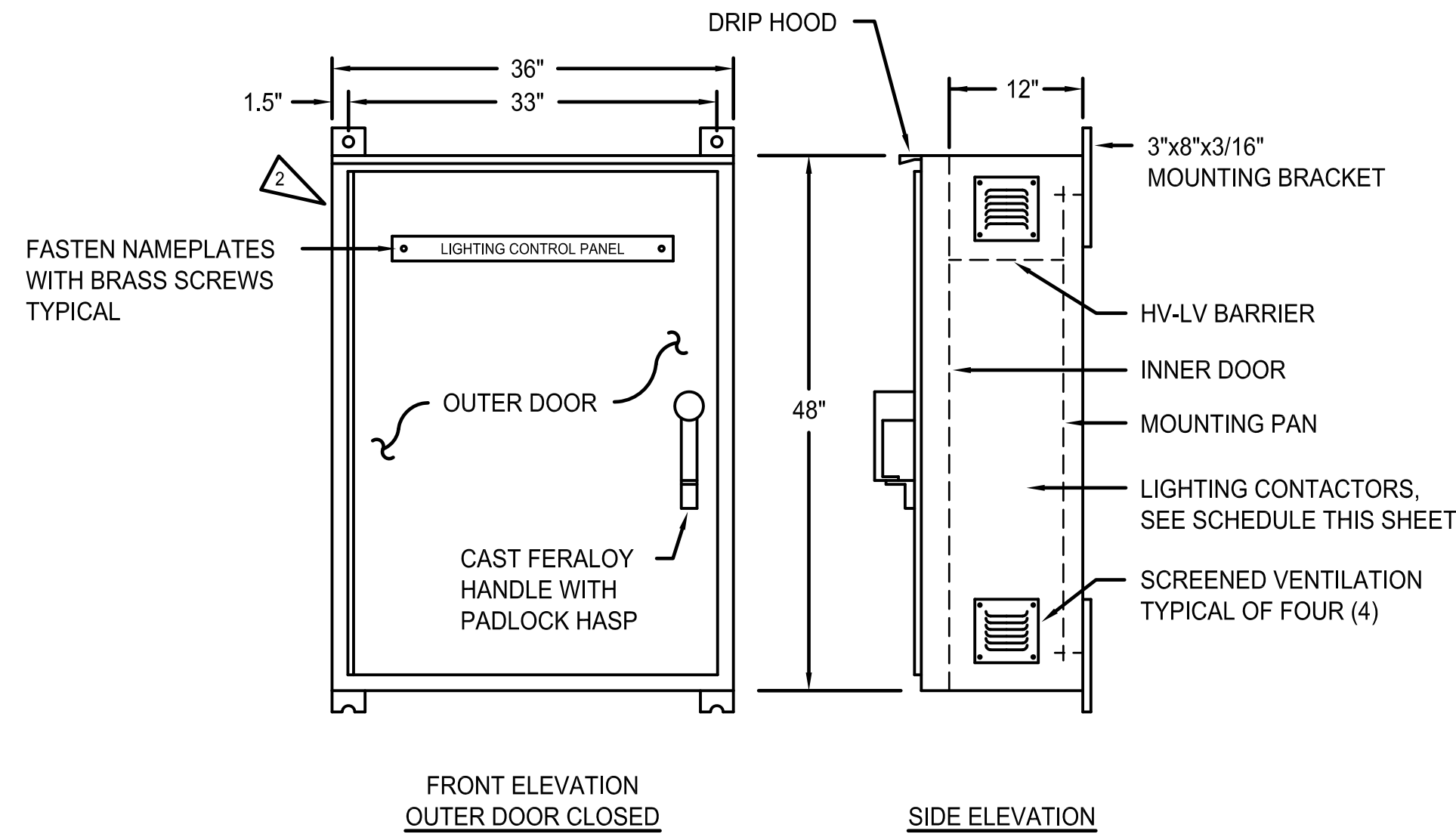


**GROUND BAR**  
NOT TO SCALE  
E5.3

**ELECTRICAL NOTES:**

- 1 CONTRACTOR SHALL PROVIDE #4 BARE COPPER GROUND WIRE BETWEEN GROUND BAR(S) AND TO ALL METAL PARTS (CABLE DRAWN, FUNNEL BOTTOM, LIDS, FRAMES, LOAD BREAK JUNCTIONS, GROUND STUDS, ETC.) IN VAULT. CADWELD GROUND WIRE(S) TO ALL METAL PARTS WHERE GROUND STUDS OR HOLES FOR BOLTING GROUND WIRE(S) IS NOT AVAILABLE. ATTACH GROUND WIRE(S) ROUTED IN VAULT TO VAULT CABLE RACKS WITH PLASTIC TIE WRAPS. SEE STRUCTURAL DETAILS FOR GROUND STAB LOCATIONS.
- 2 CONTRACTOR SHALL PROVIDE FIBERGLASS CABLE RACK WITHIN VAULT FOR MOUNTING ELECTRICAL EQUIPMENT. PROVIDE FIBERGLASS OR STAINLESS STEEL MOUNTING HARDWARE TO ATTACH FIBERGLASS CABLE RACKS TO VAULT IMBEDS. SEE STRUCTURAL DRAWINGS FOR IMBEDS.

<p>CROSS ENGINEERS, INC. 11000 1<sup>st</sup> Avenue, Suite 100 Tacoma, WA 98402 Phone: 253.473.1111 Fax: 253.473.1112 www.crossengineers.com</p>	<p>Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (E53)E5.3E41</p>	<p>STEVEN L. HUBBS REGISTERED PROFESSIONAL ENGINEER NO. 10000 STATE OF WASHINGTON</p>	<p>APPROVED:</p> <p>GLW/SLH 7/17/13 CHECKED BY DATE GLW 7/17/13 PROJ. ENGR DATE PRINTED BY: ScotH PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300</p>	<p>6502 <b>E5.3</b> SHEET 122 OF 128</p> <p>CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS</p>	<p>PIER 3 UPGRADE ELECTRICAL DETAILS</p> <p>RANGE: 3 E SECTION: 27 TOWNSHIP: 21 N DATE-HRZ: NAD 83-07 VERT: NOS TIDAL (MLLW = 0.0) DRAWING SCALE: AS SHOWN PARCEL: 27</p>	<p>DATE: 2-13-15 BY: SJK APPR: GLW REVISION: RECORD DRAWINGS MARK:</p>
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**SUBSTATION #8419- LIGHTING CONTROL PANEL #1**

NOT TO SCALE

A  
E5.4

**GENERAL NOTES:**

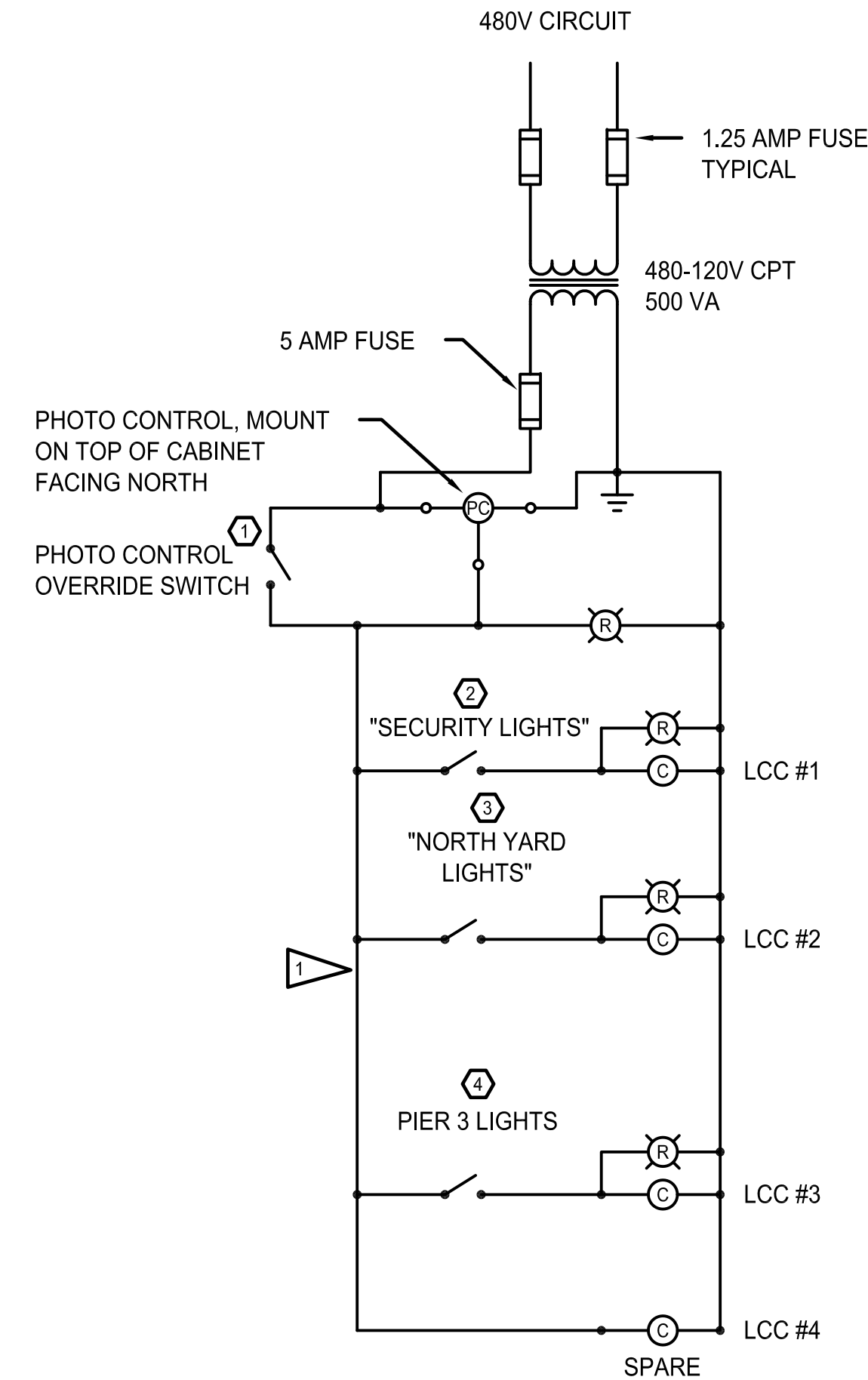
1. SEE SHEET E2.0 FOR GENERAL NOTES.

**ELECTRICAL NOTES:**

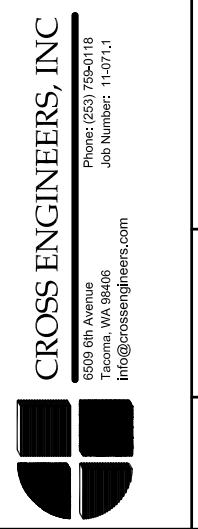
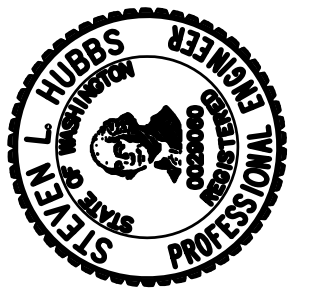
- 1 PROVIDE PLASTIC WIRE CHANNEL IN CABINET FOR SEPARATION OF POWER AND CONTROL WIRING.
- 2 PROVIDE 500 WATT SELF-REGULATING INTEGRAL HEATER SET AT 42°F TO 50°F.

**LIGHTING CONTACTOR SCHEDULE (480V)**

SECTION #1  
 (1)100/3P CONTACTOR - SECURITY LIGHTS  
 (1)100/3P CONTACTOR - NORTH YARD LIGHTS  
 (1)100/3P CONTACTOR - PIER 3 LIGHTS  
 (1)100/3P CONTACTOR SPARE

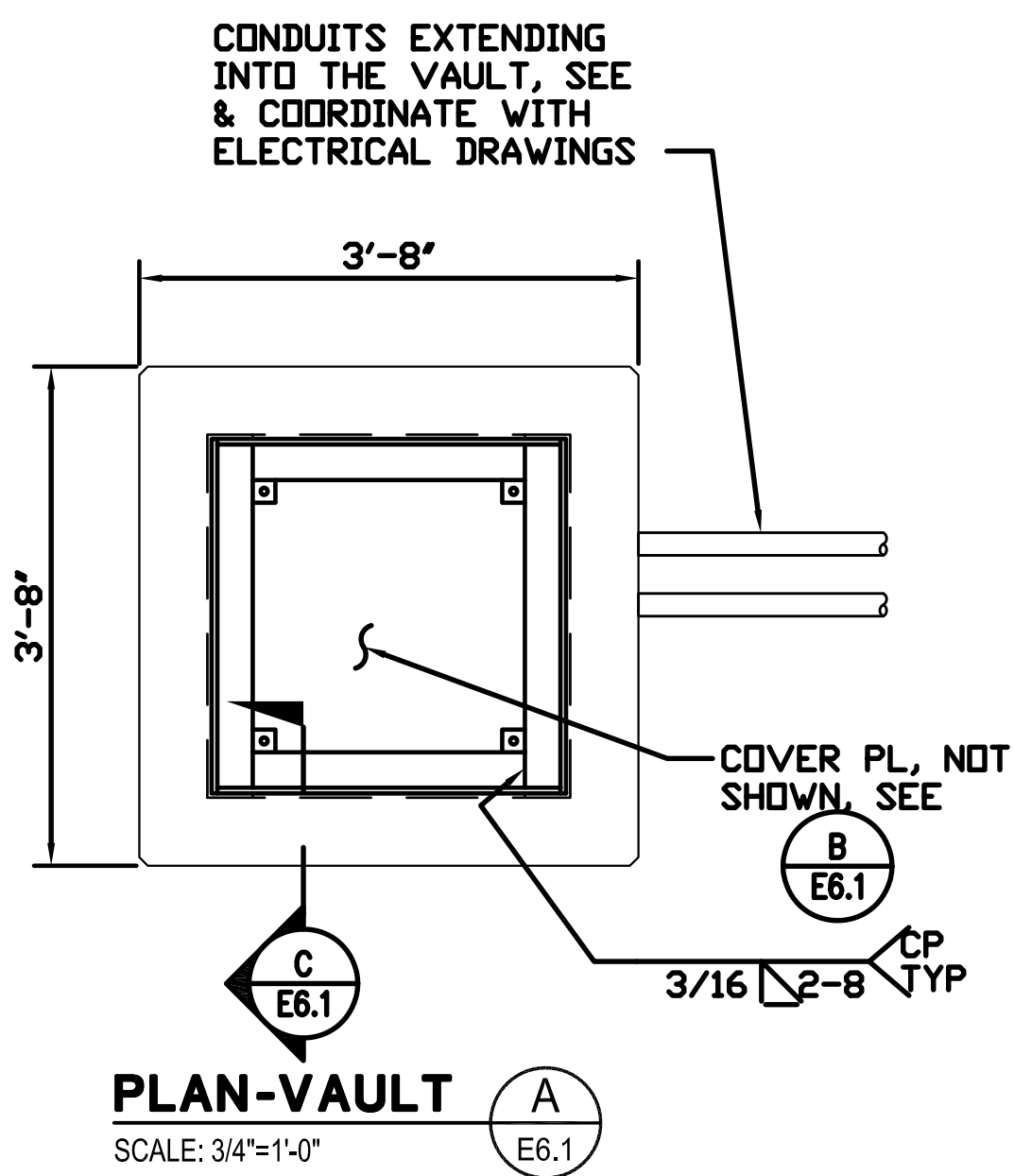


<p><b>6502</b> <b>E5.4</b> SHEET 123 OF 128</p>	<p><b>PIER 3 UPGRADE</b></p>		<p>APPROVED:</p>		<p>GLW/SLH 7/17/13</p>
	<p><b>ELECTRICAL DETAILS</b></p>		<p>DC 7/17/13</p>	<p>DIR OF ENGR DATE</p>	<p>CHECKED BY DATE</p>
<p>CONT/CONS: 069458</p>	<p>TOWNSHIP: 21 N</p>	<p>RANGE: 3 E</p>	<p>SECTION: 27</p>	<p>PRINTED BY: ScottK</p>	<p>PROJ. ENGR DATE</p>
<p>MASTER ID NO: 092935</p>	<p>DAT-HRZ: NAD 83-07</p>	<p>VERT: NOS TIDAL (MILLW = 0.0)</p>	<p>PARCEL: AS SHOWN</p>	<p>PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300</p>	<p>GLW</p>
<p>PHASE: RECORD DRAWINGS</p>	<p>DRAWING SCALE:</p>	<p>AS SHOWN</p>	<p>PARCEL: 27</p>	<p>REVISION:</p>	<p>BY: APPR: DATE:</p>
				<p>RECORD DRAWINGS</p>	<p>GLW 2-13-15</p>

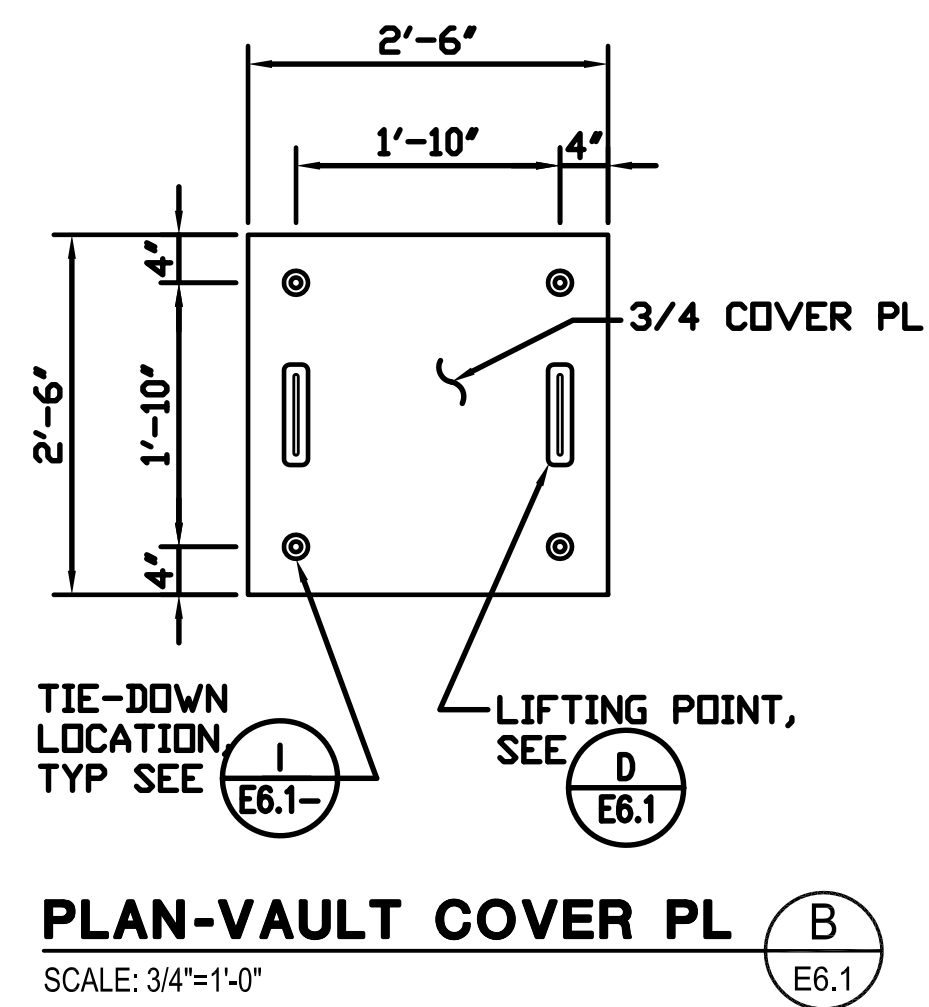


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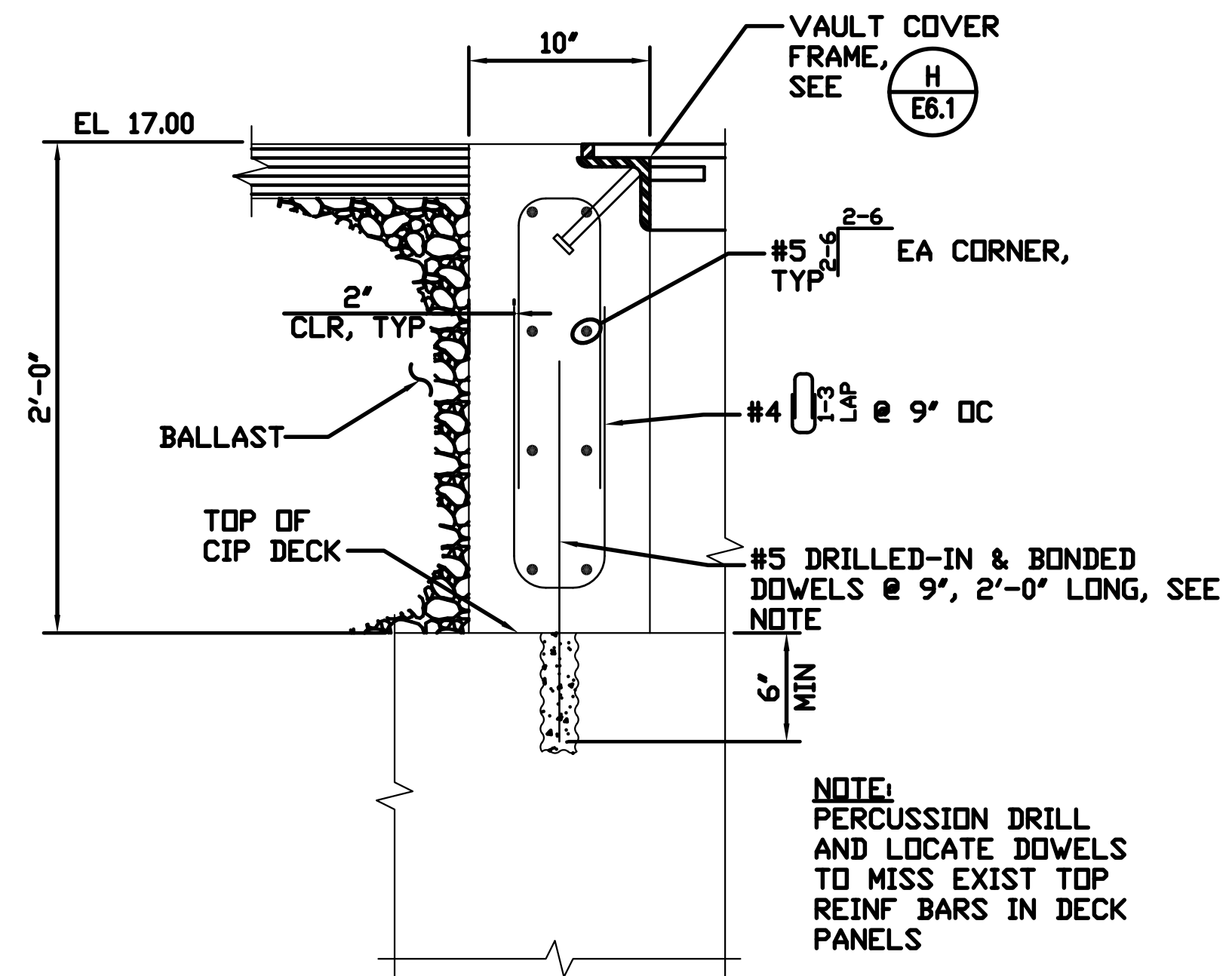




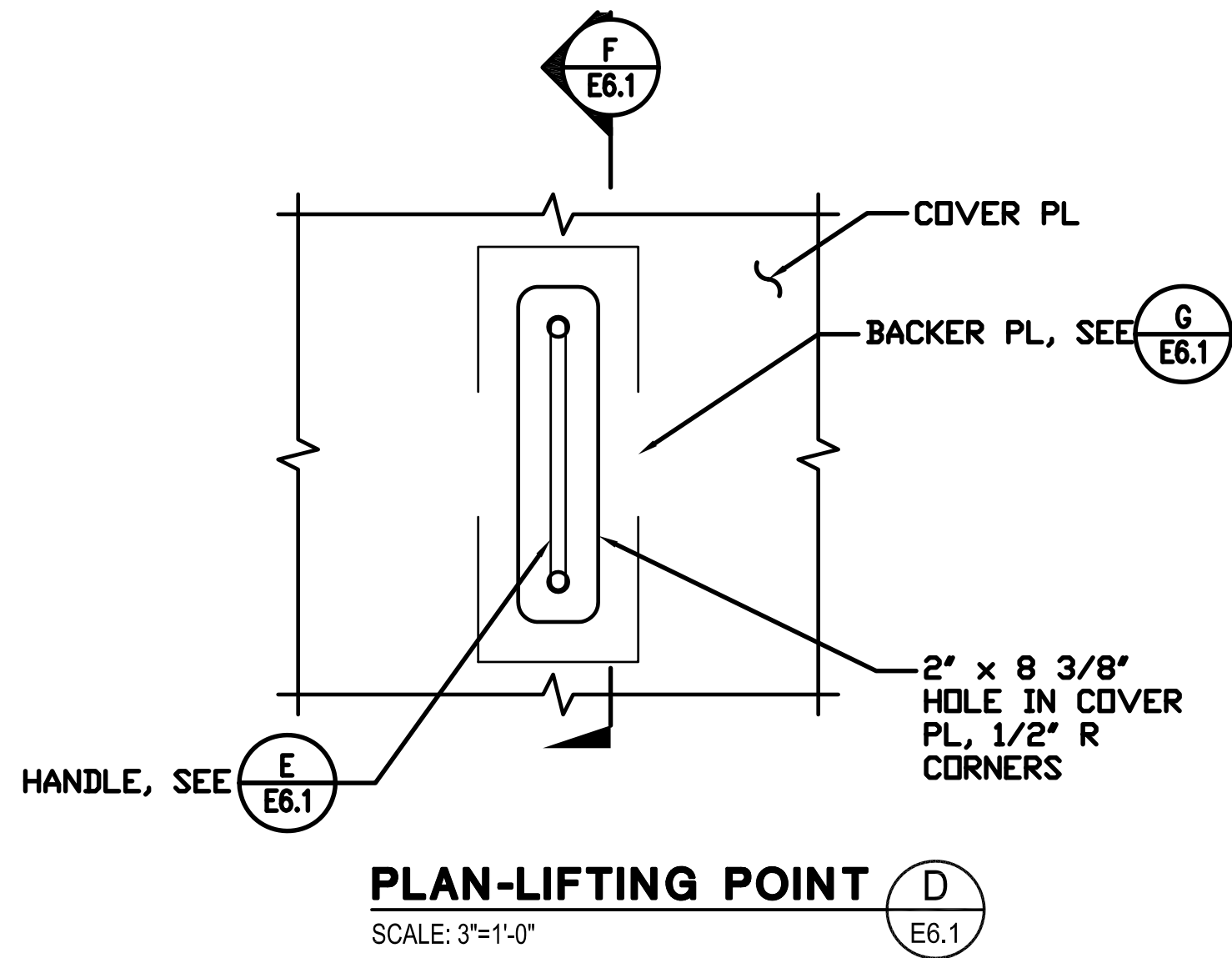
**PLAN-VAULT** (A)  
SCALE: 3/4"=1'-0"  
E6.1



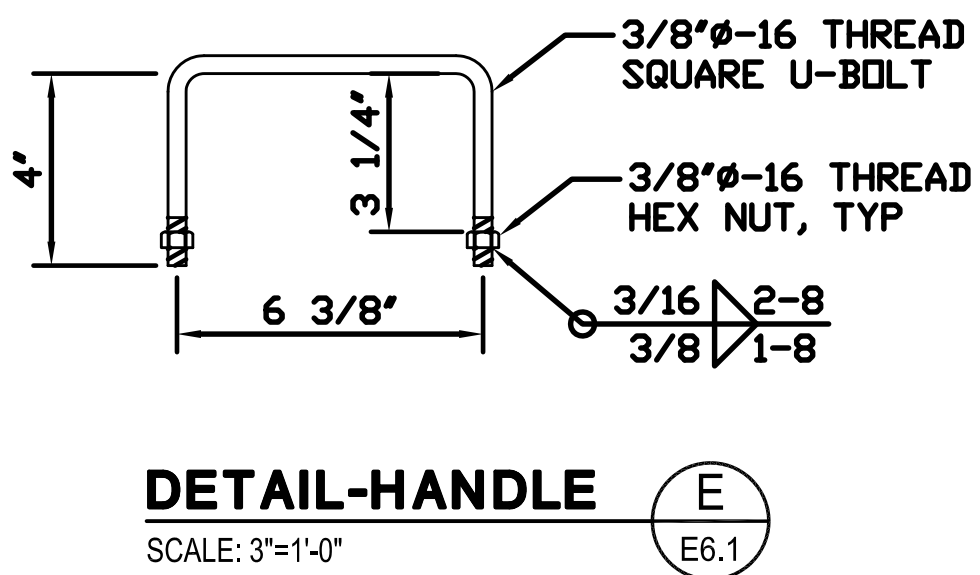
**PLAN-VAULT COVER PL** (B)  
SCALE: 3/4"=1'-0"  
E6.1



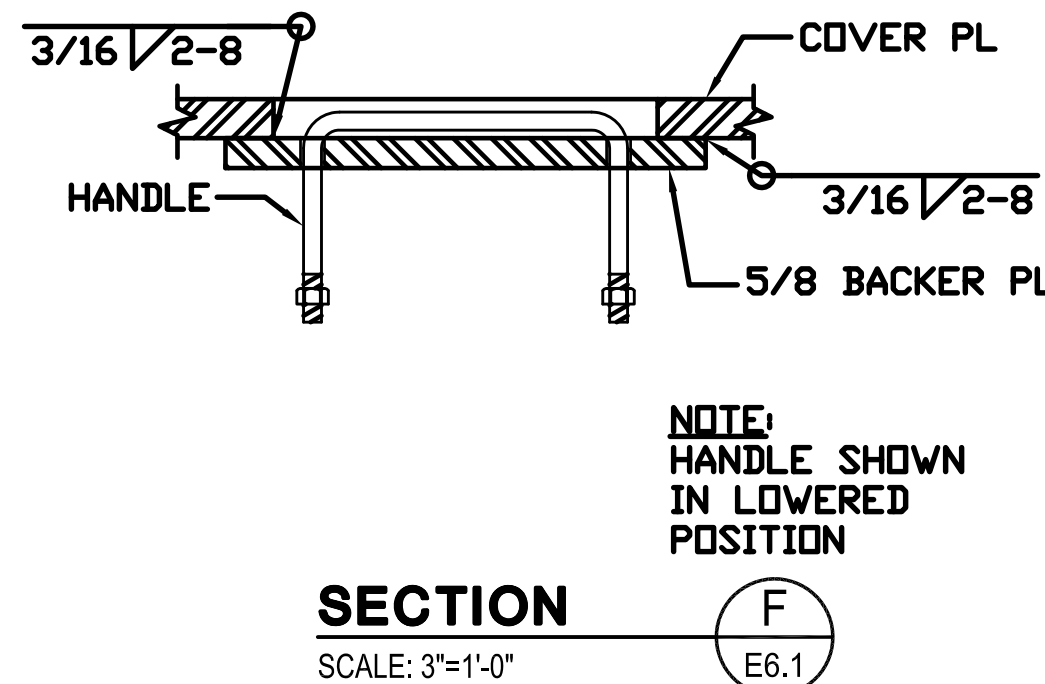
**SECTION-VAULT WALL** (C)  
SCALE: 1-1/2"=1'-0"  
E6.1



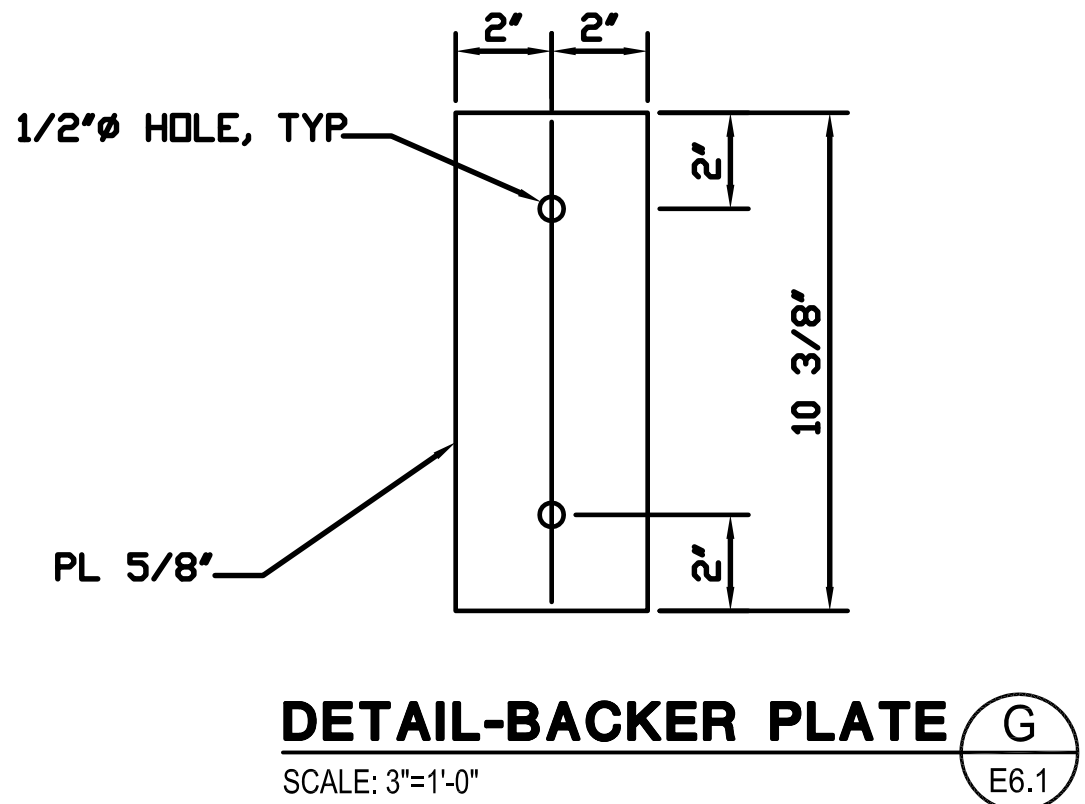
**PLAN-LIFTING POINT** (D)  
SCALE: 3"=1'-0"  
E6.1



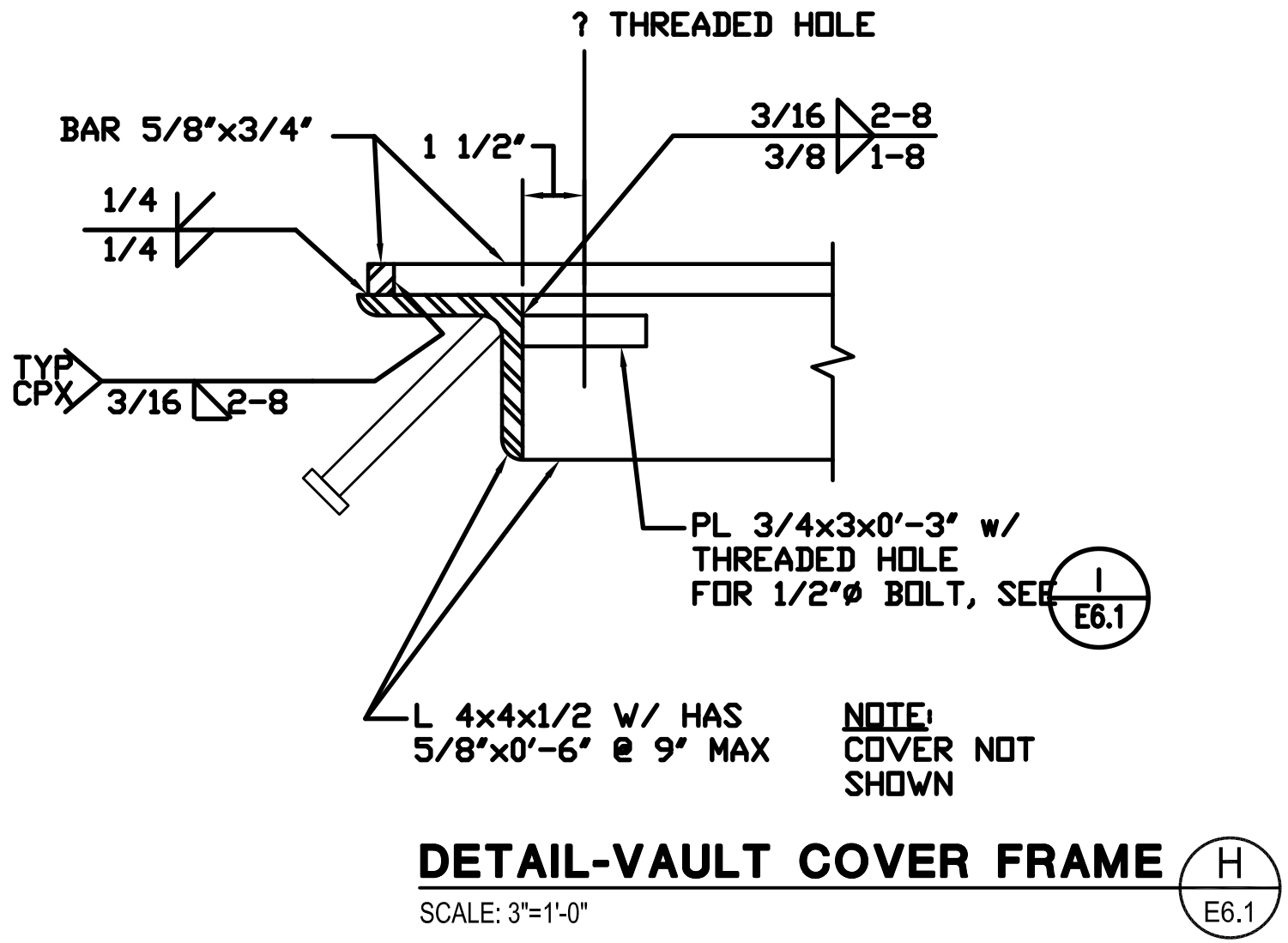
**DETAIL-HANDLE** (E)  
SCALE: 3"=1'-0"  
E6.1



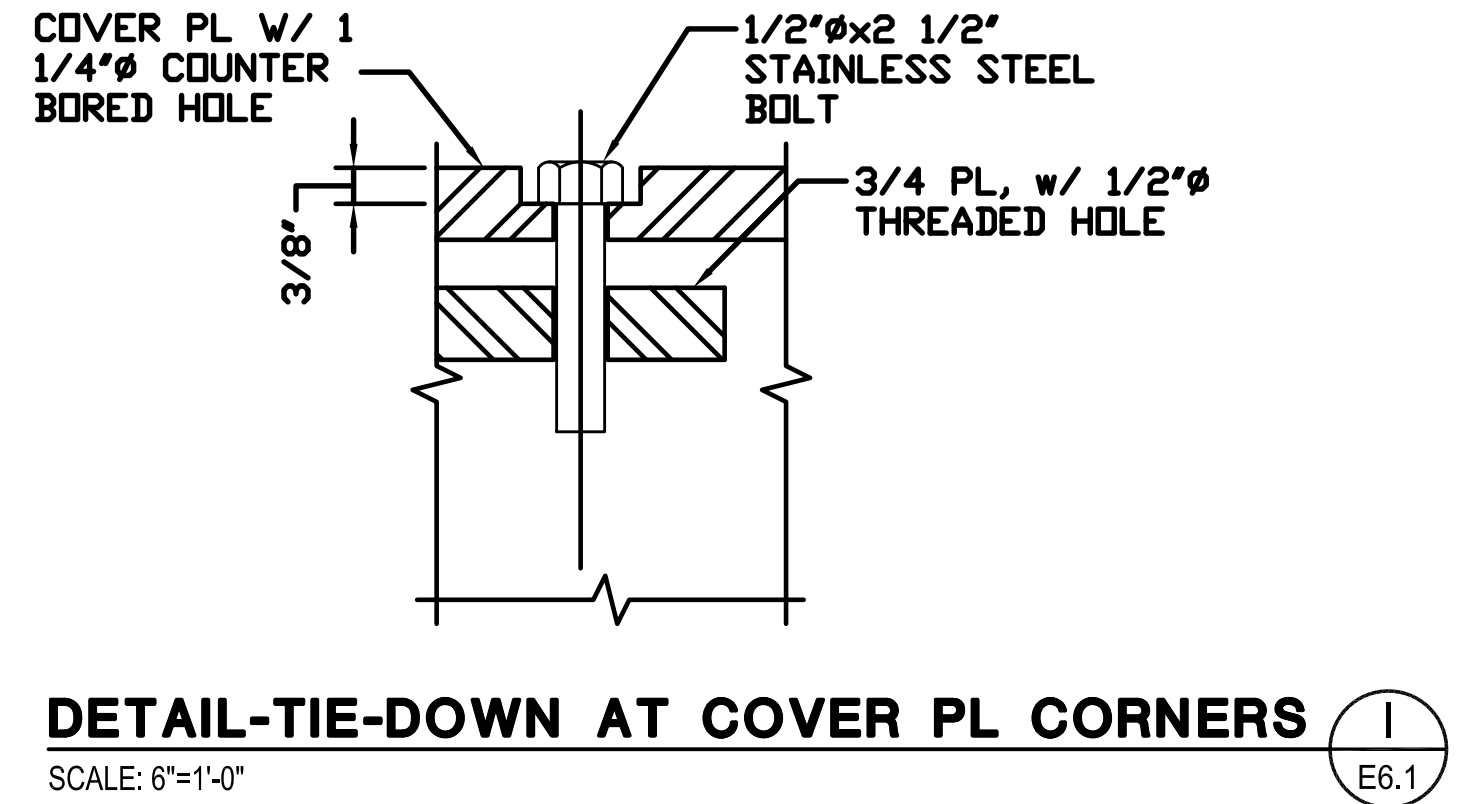
**SECTION** (F)  
SCALE: 3"=1'-0"  
E6.1



**DETAIL-BACKER PLATE** (G)  
SCALE: 3"=1'-0"  
E6.1



**DETAIL-VAULT COVER FRAME** (H)  
SCALE: 3"=1'-0"  
E6.1



**DETAIL-TIE-DOWN AT COVER PL CORNERS** (I)  
SCALE: 6"=1'-0"  
E6.1

6502 <b>E6.1</b> SHEET 125 OF 128	PIER 3 UPGRADE		CAST IN PLACE VAULT DETAILS		APPROVED:	GLV/SLH/7/17/13	CHECKED BY:	DATE
	CONT/CONS: 069458	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27	DC	7/17/13	GLV	7/17/13
MASTER ID NO: 092995	DATE-HRZ: NAD 83-07	VERT: NAD 83-07	VERT: NAD 83-07	VERT: NAD 83-07	DIR OF ENG	DATE	PROJ. ENGR	DATE
PHASE: RECORD DRAWINGS	PARCEL: 27	DRAWING SCALE: AS SHOWN	TACOMA, WA 98421-2300		PRINTED BY: Scottk	PORT ADDRESS: ONE SITCOM WAY		
CROSS ENGINEERS, INC. 10000 1st Avenue, Suite 100 Tacoma, WA 98404 Phone: 253-405-1111 Fax: 253-405-1112 www.crossengineers.com		Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401 (253)383-8441		L. HIBBS REGISTERED PROFESSIONAL ENGINEER NO. 10000		MARK:	REVISION:	RECORD DRAWINGS
				BY: APPR:		GLV	SJK	DATE: 2-13-15

### CONDUIT AND CONDUCTOR SCHEDULE

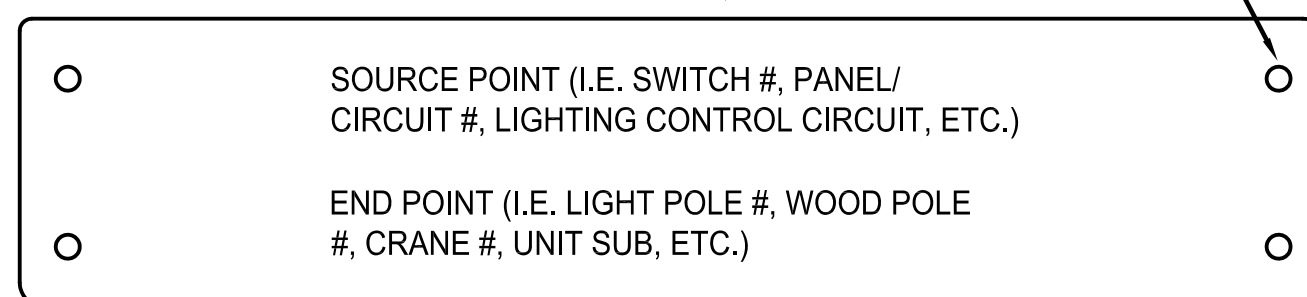
CIRCUIT NUMBER	CONDUIT			CONDUCTORS/CONDUIT			FROM	TO	REMARKS
	NO.	SIZE	TYPE	NO.	SIZE	TYPE			
CP1	1	4"	⊗	3/1/1	0/0/10	15KV/600V	SWITCH F2	PDV1	⊗
CP2	1	4"	⊗	3/1/1	0/0/10	15KV/600V	SWITCH F3	PDV1	⊗
CP3	1	4"	⊗	-	-	-	SWITCH F11	PDV1	⊗
CP4	1	4"	⊗	3/1/1	0/0/10	15KV/600V	5KV SWITCH #1	PDV2	⊗
CP5	1	4"	⊗	3/1/1	0/0/10	15KV/600V	5KV SWITCH #2	PDV2	⊗
CP6	1	4"	⊗	3/1/1	0/0/10	15KV/600V	5KV SWITCH #3	PDV2	⊗
CP7	1	4"	⊗	3/1/1	0/0/10	15KV/600V	5KV SWITCH #4	PDV2	⊗
CP8	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV1	PDV3	⊗
CP9	1	4"	⊗	-	-	-	PDV1	PDV3	⊗
CP10	4	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV2	PDV4	⊗
CP11	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV3	PDV5	⊗
CP12	1	4"	⊗	-	-	-	PDV3	PDV6	⊗
CP13	4	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV4	PDV7	⊗
CP14	1	4"	⊗	-	-	-	PDV6	PDV8	⊗
CP15	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV7	PDV8	⊗
CP16	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV7	PDV9	⊗
CP17	1	4"	⊗	-	-	-	SWITCH F6	(E)PV201	⊗
CP18	1	4"	⊗	-	-	-	SWITCH F7	(E)PV201	⊗
CP19	1	4"	⊗	-	-	-	SWITCH F8	(E)PV201	⊗
CP20	3	4"	⊗	-	-	-	(E)PV201	(E)PV202	⊗
CP21	3	4"	⊗	-	-	-	(E)PV202	PDV6	⊗
CP22	1	4"	⊗	-	-	-	-	PDV6	⊗
CP23	2	4"	⊗	-	-	-	-	PDV6	⊗
CP24	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV5	PDV5	⊗
CP25	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV8	CPV2	⊗
CP26	2	4"	⊗	3/1/1	0/0/10	15KV/600V	PDV9	CPV3	⊗
FOB1	1	2"	⊗	-	-	-	(E)SV127	FOV1	⊗
FOB2	1	2"	⊗	-	-	-	(E)SV128	FOV2	⊗
FOB3	1	2"	⊗	-	-	-	(E)SV129	FOV3	⊗
PD1	1	4"	⊗	3/1	2/2	15KV/600V	SWITCH F10	VAULT MOUNTED XFMR #T1	⊗
PD2	1	4"	⊗	3/1	0/0	15KV/600V	SWITCH F4	VAULT MOUNTED XFMR #T2	⊗
PD3	1	4"	⊗	3/1	0/0	15KV/600V	SWITCH F5	VAULT MOUNTED XFMR #T3	⊗
PD4	1	4"	⊗	3/1	0/0	15KV/600V	VAULT MOUNTED XFMR #T2	5KV CRANE SWITCH #1	⊗
PD5	1	4"	⊗	3/1	0/0	15KV/600V	VAULT MOUNTED XFMR #T2	5KV CRANE SWITCH #2	⊗
PD6	1	4"	⊗	3/1	0/0	15KV/600V	VAULT MOUNTED XFMR #T3	5KV CRANE SWITCH #3	⊗
PD7	1	4"	⊗	3/1	0/0	15KV/600V	VAULT MOUNTED XFMR #T3	5KV CRANE SWITCH #4	⊗
PD8	1	4"	⊗	3/1	2/2	15KV/600V	VAULT MOUNTED XFMR #T1	PDV2	⊗
PD9	1	4"	⊗	3/1	2/2	15KV/600V	PDV2	PDV4	⊗
PD10	1	4"	⊗	3/1	2/2	15KV/600V	PDV4	PDV7	⊗
PD11	1	4"	⊗	3/1	2/2	15KV/600V	PDV7	NEW 300KVA XFMR @ SUB #8418	⊗
SD1	2	4"	⊗	4	350	XHHW-2	VAULT MOUNTED XFMR #T1	PANEL 4P1	⊗
SD2	1	1-1/2"	⊗	4/1	2/8	XHHW-2	PANEL 2P1	PANEL P	⊗
SL1	3	4"	⊗	3/1	0/6	⊗	LIGHTING CONTACTOR PANEL	(E)PV126	⊗
SL2	3	4"	⊗	3/1	0/6	⊗	(E)PV126	(E)PV127	⊗
SL3	3	4"	⊗	3/1	0/6	⊗	(E)PV127	(E)PV128	⊗
SL4	3	4"	⊗	3/1	0/6	⊗	(E)PV128	(E)PV129	⊗
SL5	3	4"	⊗	3/1	0/6	⊗	(E)PV129	NEW PV129A	⊗
SL6	2	2"	⊗	3/1	0/6	⊗	(E)PV128	RELOCATED LIGHT POLE #WYL08	⊗
SL7	2	2"	⊗	3/1	0/6	⊗	(E)PV127	RELOCATED LIGHT POLE #WYL10	⊗
SL8	1	2"	⊗	3/1	0/6	⊗	LIGHTING CONTACTOR PANEL	SDV1	⊗
SL9	1	2"	⊗	3/1	0/6	⊗	SDV1	SDV2	⊗
SL10	1	2"	⊗	3/1	0/6	⊗	SDV2	SDV3	⊗
SL11	1	2"	⊗	3/1	0/6	⊗	SDV3	SDV4	⊗
SL12	1	2"	⊗	3/1	0/6	⊗	SDV4	SDV5	⊗
SL13	1	2"	⊗	3/1	0/6	⊗	SDV5	SDV6	⊗
SL14	1	2"	⊗	3/1	0/6	⊗	SDV6	SDV7	⊗
SL15	1	2"	⊗	3/1	0/6	⊗	SDV7	EXISTING LIGHT POLE #WYL09	⊗
SSP1	4	5"	⊗	-	-	-	STUBBED LOCATION	SSPV1	⊗
SSP2	4	5"	⊗	-	-	-	SSPV1	SSPV2	⊗
SSP3	4	5"	⊗	-	-	-	SSPV2	SSPV3	⊗
SSP4	2	5"	⊗	-	-	-	SSPV3	SSB1	⊗
SSP5	2	5"	⊗	-	-	-	SSPV3	SSPV4	⊗
SSP6	2	5"	⊗	-	-	-	SSPV4	SSPV5	⊗
SSP7	2	5"	⊗	-	-	-	SSPV5	SSB2	⊗
SP1	1	4"	⊗	-	-	-	SWITCH F2	PDV1	⊗
SP2	1	4"	⊗	-	-	-	SWITCH F3	PDV1	⊗
SP3	1	4"	⊗	-	-	-	SWITCH F11	PDV1	⊗
SP4	1	4"	⊗	-	-	-	5KV SWITCH #1	PDV2	⊗
SP5	1	4"	⊗	-	-	-	5KV SWITCH #2	PDV2	⊗
SP6	1	4"	⊗	-	-	-	5KV SWITCH #3	PDV2	⊗
SP7	1	4"	⊗	-	-	-	5KV SWITCH #4	PDV2	⊗
SP8	3	4"	⊗	-	-	-	PDV1	PDV3	⊗
SP9	4	4"	⊗	-	-	-	PDV2	PDV4	⊗
SP10	2	4"	⊗	-	-	-	PDV3	PDV5	⊗
SP11	1	4"	⊗	-	-	-	PDV3	PDV6	⊗
SP12	4	4"	⊗	-	-	-	PDV4	PDV7	⊗
SP13	2	4"	⊗	-	-	-	PDV6	PDV8	⊗
SP14	2	4"	⊗	-	-	-	PDV7	PDV8	⊗
SP15	2	4"	⊗	-	-	-	PDV6	PDV9	⊗
SP16	2	4"	⊗	-	-	-	PDV7	PDV9	⊗
SP17	1	4"	⊗	-	-	-	SWITCH F6	(E)PV201	⊗
SP18	1	4"	⊗	-	-	-	SWITCH F7	(E)PV201	⊗
SP19	1	4"	⊗	-	-	-	SWITCH F8	(E)PV201	⊗
SP20	2	4"	⊗	-	-	-	SWITCH F9	(E)PV201	⊗

### SCHEDULE ABBREVIATION LEGEND:

- |                                  |   |
|----------------------------------|---|
| C = COMMUNICATIONS               | SP = SPARE CONDUIT                            |
| CP = CRANE POWER                 | SSB = SHORE SHIP CONNECTION VAULT             |
| CPV = CRANE POWER VAULT          | SSP = SHORE SHIP POWER                        |
| CV = COMMUNICATIONS VAULT        | SSPV = SHORE SHIP POWER VAULT                 |
| FOB = FIBER OPTIC                | TPU = TACOMA PUBLIC UTILITIES                 |
| PD = PRIMARY DISTRIBUTION        | TPUC = TACOMA PUBLIC UTILITIES COMMUNICATIONS |
| PDV = PRIMARY DISTRIBUTION VAULT | WC = WHARF COMMUNICATIONS                     |
| PV = POWER VAULT                 | WG = WHARF GROUNDING                          |
| SD = SECONDARY 600V DISTRIBUTION | WPV = WHARF POWER VAULT                       |
| SDV = SECONDARY POWER VAULT      | WS = WHARF SECONDARY 600V DISTRIBUTION        |
| SL = SITE LIGHTING               |   |

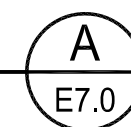
PROVIDE LABELING PER SPECIFICATION SECTION 26 05 53

CABLE TIE HOLES, TYPICAL OF FOUR (4)



### CONDUCTOR IDENTIFICATION LABEL

NOT TO SCALE



### GENERAL NOTES:

- SEE SPECIFICATION SECTION 26 05 53 FOR LABELING REQUIREMENTS.
- SEE VAULT SCHEDULE, SHEET E6.0 FOR LABELING ON VAULT LIDS, CONDUIT AND CONDUCTORS.
- NOT ALL CONDUIT AND CONDUCTORS ARE INDICATED ON THE SCHEDULES. SEE SITE PLANS, DETAILS AND SUBSTATION PLAN FOR ADDITIONAL CONDUIT AND CONDUCTOR REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE TERMINAL PINS (FINGER SPLICES) WHERE CONDUCTORS ARE UP-SIZED FOR VOLTAGE DROP.

### SCHEDULE NOTES:

- RED CDF CONCRETE ENCASED
- PVC SCHEDULE 80
- SURFACE CONDUIT OR NIPPLE BETWEEN PANELS. THESE ARE NOT SHOWN ON PLAN VIEWS.
- PVC COATED GRS CONDUIT
- STUB AND CAP 12" ABOVE FINISHED GRADE.
- INSTALL PULL LINES PER 26 05 00.
- PROVIDE WATERTIGHT PIN TERMINALS (FINGER SPLICE) IN VAULT.
- NOT USED
- CONTRACTOR SHALL PROVIDE A COMPLETE LOOP OF CABLES AROUND ALL FOUR WALLS OF VAULT PRIOR TO CABLE EXITING VAULT.
- EXISTING CONDUIT
- #10 CU GRD CONDUCTOR SHALL BE PROVIDED FOR GROUND LOOP MONITORING.
- NOT USED
- PROVIDE WATERTIGHT PIN TERMINALS (FINGER SPLICES) TO 100 AMP LIGHTING CONTACTORS.
- MULTICONDUCTOR WITH TYPE THWN-2 INSULATION RATING.

CROSS ENGINEERS, INC.  
TACOMA, WA 98404  
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www.crossengineers.com

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STEVEN L. HIBBS  
REGISTERED PROFESSIONAL ENGINEER  
NO. 34567  
EXPIRES 12/31/15

GLW/SLH 7/17/13

CHECKED BY DATE

GLW 7/17/13

PROJ. ENGR DATE

GLW 7/17/13

PRINTED BY: ScottK

DIR OF ENG DATE

PORT ADDRESS: ONE SITCUM WAY TACOMA, WA 98421-2300

DATE: 7-13-15

APPR: GLW

BY: SJK

REVISION: RECORD DRAWINGS

6502

# E7.0

SHEET 126 OF 128

CONDUCTOR SCHEDULE

RANGE: 3 E SECTION: 27

TOWNSHIP: 21 N RANGE: NAD 83-07

DATE: 092835

PARCEL: 27

PIER 3 UPGRADE

CONDUIT AND CONDUCTOR SCHEDULE

CONTRACTOR: 069458

MASTER ID NO: 092835

PHASE: RECORD DRAWINGS

SECTION: 27

RANGE: NAD 83-07

DATE: 092835

PARCEL: 27

AS SHOWN

AS SHOWN

AS SHOWN

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CONDUIT AND CONDUCTOR SCHEDULE

Table with columns: CIRCUIT NUMBER, CONDUIT (NO., SIZE, TYPE), CONDUCTORS/CONDUIT (NO., SIZE, TYPE), FROM, TO, REMARKS. Includes rows for SP21-SP58, TPU1-TPU9, TPUC1-TPUC5, WG1-WG16, and WS1-WS15.

CONDUIT AND CONDUCTOR SCHEDULE

Table with columns: CIRCUIT NUMBER, CONDUIT (NO., SIZE, TYPE), CONDUCTORS/CONDUIT (NO., SIZE, TYPE), FROM, TO, REMARKS. Includes rows for WS16-WS42.

SCHEDULE ABBREVIATION LEGEND:

- C = COMMUNICATIONS
CP = CRANE POWER
CPV = CRANE POWER VAULT
FOB = FIBER OPTIC
PD = PRIMARY DISTRIBUTION
PDV = PRIMARY DISTRIBUTION VAULT
PV = POWER VAULT
SD = SECONDARY 600V DISTRIBUTION
SDV = SECONDARY POWER VAULT
SL = SITE LIGHTING
SP = SPARE CONDUIT
SSB = SHORE SHIP CONNECTION VAULT
SSP = SHORE SHIP POWER
SSPV = SHORE SHIP POWER VAULT
TPU = TACOMA PUBLIC UTILITIES
TPUC = TACOMA PUBLIC UTILITIES COMMUNICATIONS
WC = WHARF COMMUNICATIONS
WG = WHARF GROUNDING
WPV = WHARF POWER VAULT
WS = WHARF SECONDARY 600V DISTRIBUTION

GENERAL NOTES:

- 1. SEE SPECIFICATION SECTION 26 05 53 FOR LABELING REQUIREMENTS.
2. SEE VAULT SCHEDULE, SHEET E6.0 FOR LABELING ON VAULT LIDS, CONDUIT AND CONDUCTORS.
3. NOT ALL CONDUIT AND CONDUCTORS ARE INDICATED ON THE SCHEDULES. SEE SITE PLANS, DETAILS AND SUBSTATION PLAN FOR ADDITIONAL CONDUIT AND CONDUCTOR REQUIREMENTS.
4. CONTRACTOR SHALL PROVIDE TERMINAL PINS (FINGER SPLICES) WHERE CONDUCTORS ARE UP-SIZED FOR VOLTAGE DROP.

SCHEDULE NOTES:

- 1 RED CDF CONCRETE ENCASED
2 PVC SCHEDULE 80
3 SURFACE CONDUIT OR NIPPLE BETWEEN PANELS. THESE ARE NOT SHOWN ON PLAN VIEWS.
4 PVC COATED GRS CONDUIT
5 STUB AND CAP 12" ABOVE FINISHED GRADE.
6 INSTALL PULL LINES PER 26 05 00.
7 PROVIDE WATERTIGHT PIN TERMINALS (FINGER SPLICE) IN VAULT.
8 NOT USED
9 CONTRACTOR SHALL PROVIDE A COMPLETE LOOP OF CABLES AROUND ALL FOUR WALLS OF VAULT PRIOR TO CABLE EXITING VAULT.
10 EXISTING CONDUIT
11 #10 CU GRD CONDUCTOR SHALL BE PROVIDED FOR GROUND LOOP MONITORING.
12 NOT USED
13 PROVIDE WATERTIGHT PIN TERMINALS (FINGER SPLICES) TO 100 AMP LIGHTING CONTACTORS.
14 MULTICONDUCTOR WITH TYPE THWN-2 INSULATION RATING.

Project information block including logos for Cross Engineers, Inc. and Port of Tacoma, project title 'PIER 3 UPGRADE CONDUIT AND CONDUCTOR SCHEDULE', sheet number 'E7.1 SHEET 127 OF 128', and various approval and date stamps.

CONDUIT AND CONDUCTOR SCHEDULE									
CIRCUIT NUMBER	CONDUIT			CONDUCTORS/CONDUIT			FROM	TO	REMARKS
	NO.	SIZE	TYPE	NO.	SIZE	TYPE			
WS43	1	2"	①	3/1	10/10	①	SDV2	SDV3	①①
WS44	1	1"	①	2/1	10/10	①	SDV3	WPV1	①①
WS45	1	1"	①①	2/1	10/10	①	WPV1	BULLRAIL POWER VAULT #1	①
WS46	1	2"	①	3/1	10/10	①	SDV3	SDV4	①①
WS47	1	2"	①	3/1	10/10	①	SDV3	SDV4	①①
WS48	1	1"	①	2/1	10/10	①	SDV4	WPV2	①①
WS49	1	1"	①①	2/1	10/10	①	WPV2	BULLRAIL POWER VAULT #2	①①
WS50	1	2"	①	4/1	10/10	①	SDV4	SDV5	①①
WS51	1	1"	①	2/1	10/10	①	SDV5	WPV3	①①
WS52	1	1"	①①	2/1	10/10	①	WPV3	BULLRAIL POWER VAULT #3	①①
WS53	1	2"	①	3/1	10/10	①	SDV5	SDV6	①①
WS54	1	1"	①	2/1	10/10	①	SDV6	WPV4	①①
WS55	1	1"	①①	2/1	10/10	①	WPV4	BULLRAIL POWER VAULT #4	①①
WS56	1	2"	①	2/1	10/10	①	SDV6	SDV7	①①
WS57	1	1"	①	2/1	10/10	①	SDV7	WPV5	①①
WS58	1	1"	①①	2/1	10/10	①	WPV5	BULLRAIL POWER VAULT #5	①①
WS59	1	2"	①①	3/1	10/10	①	PANEL 2P1	SDV1	①①
WS60	1	2"	①①	3/1	10/10	①	PANEL 2P1	SDV1	①①
WS61	1	2"	①	3/1	10/10	①	SDV1	SDV2	①①
WS62	1	2"	①	3/1	10/10	①	SDV1	SDV2	①①
WS63	1	2"	①	3/1	10/10	①	SDV2	SDV3	①①
WS64	1	2"	①	3/1	10/10	①	SDV2	SDV3	①①
WS65	1	1"	①	2/1	10/10	①	SDV3	WPV1	①①
WS66	1	1"	①①	2/1	10/10	①	WPV1	BULLRAIL WATER VAULT	①①
WS67	1	2"	①	4/1	10/10	①	SDV3	SDV4	①①
WS68	1	2"	①①	4/1	10/10	①	SDV4	SDV5	①①
WS69	1	1"	①	2/1	10/10	①	SDV5	WPV3	①①
WS70	1	1"	①①	2/1	10/10	①	WPV3	BULLRAIL WATER VAULT	①①
WS71	1	2"	①	3/1	10/10	①	SDV5	SDV6	①①
WS72	1	1"	①	2/1	10/10	①	SDV6	WPV4	①①
WS73	1	1"	①①	2/1	10/10	①	WPV4	BULLRAIL WATER VAULT	①①
WS74	1	2"	①	2/1	10/10	①	SDV6	SDV7	①①
WS75	1	1"	①①	2/1	10/10	①	SDV7	BULLRAIL WATER VAULT	①①
WS76	-	-	-	-	-	-	-	-	NOT USED
WS77	3	2"	①①	2/1	8/10	①	PANEL 2P1	SDV1	①①
WS78	3	2"	①	2/1	8/10	①	SDV1	SDV2	①①
WS79	3	2"	①	2/1	8/10	①	SDV2	SDV3	①①
WS80	1	2"	①	2/1	8/10	①	SDV3	WPV1	①①
WS81	1	2"	①①	2/1	8/10	①	WPV1	BULLRAIL POWER VAULT #1	①①
WS82	2	2"	①	2/1	8/10	①	SDV3	SDV4	①①
WS83	1	2"	①	2/1	8/10	①	SDV4	WPV2	①①
WS84	1	2"	①①	2/1	8/10	①	WPV2	BULLRAIL POWER VAULT #2	①①
WS85	2	2"	①	2/1	8/10	①	SDV4	SDV5	①①
WS86	1	2"	①	2/1	8/10	①	SDV5	WPV3	①①
WS87	1	2"	①①	2/1	8/10	①	WPV3	BULLRAIL POWER VAULT #3	①①
WS88	2	2"	①	2/1	8/10	①	SDV5	SDV6	①①
WS89	1	2"	①	2/1	8/10	①	SDV6	WPV4	①①
WS90	1	2"	①①	2/1	8/10	①	WPV4	BULLRAIL POWER VAULT #4	①①
WS91	1	2"	①	2/1	8/10	①	SDV6	SDV7	①①
WS92	1	2"	①	2/1	8/10	①	SDV7	WPV5	①①
WS93	1	2"	①①	2/1	8/10	①	WPV5	BULLRAIL POWER VAULT #5	①①

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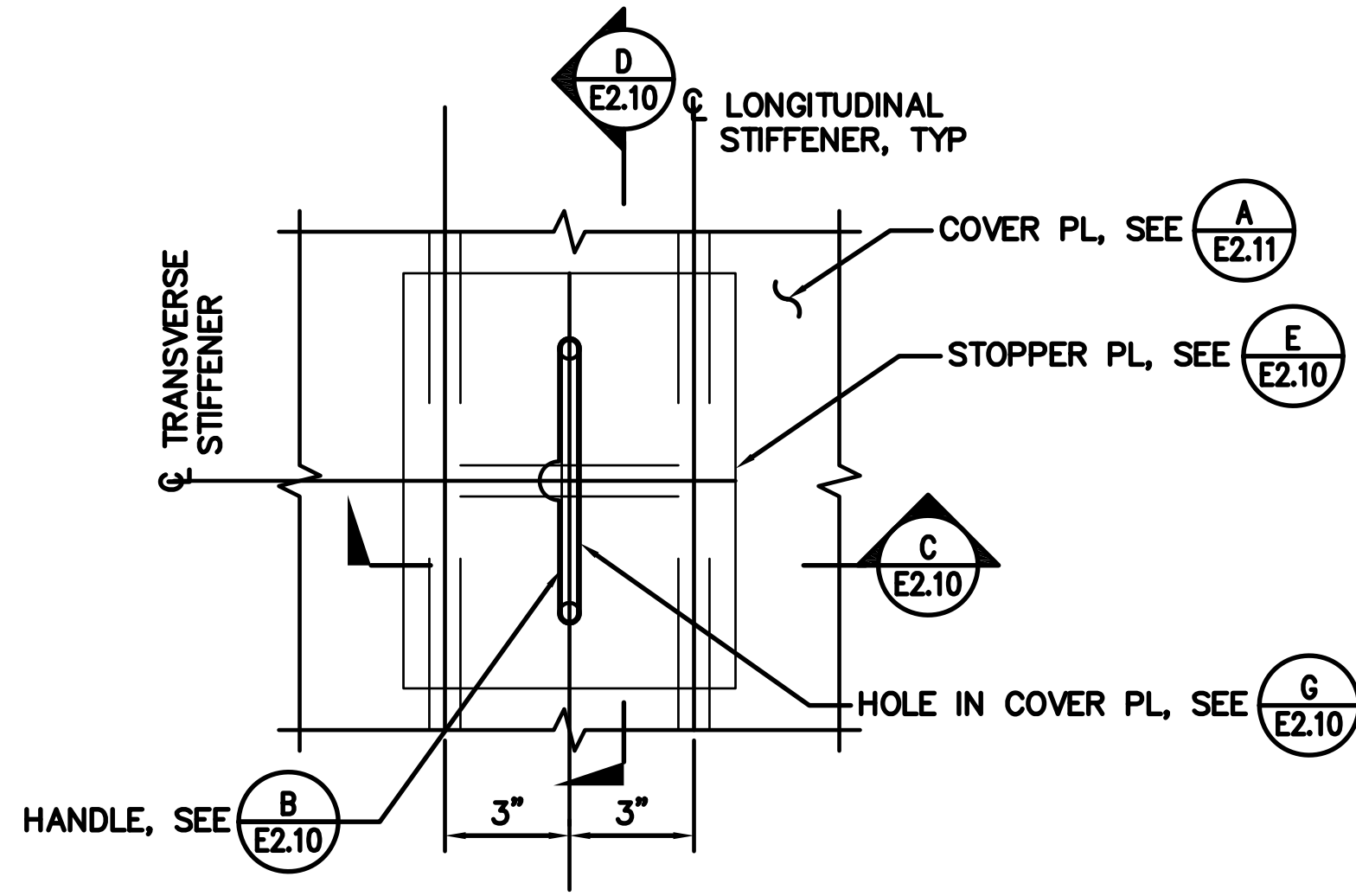
**GENERAL NOTES:**

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- MULTICONDUCTOR WITH TYPE THWN-2 INSULATION RATING.

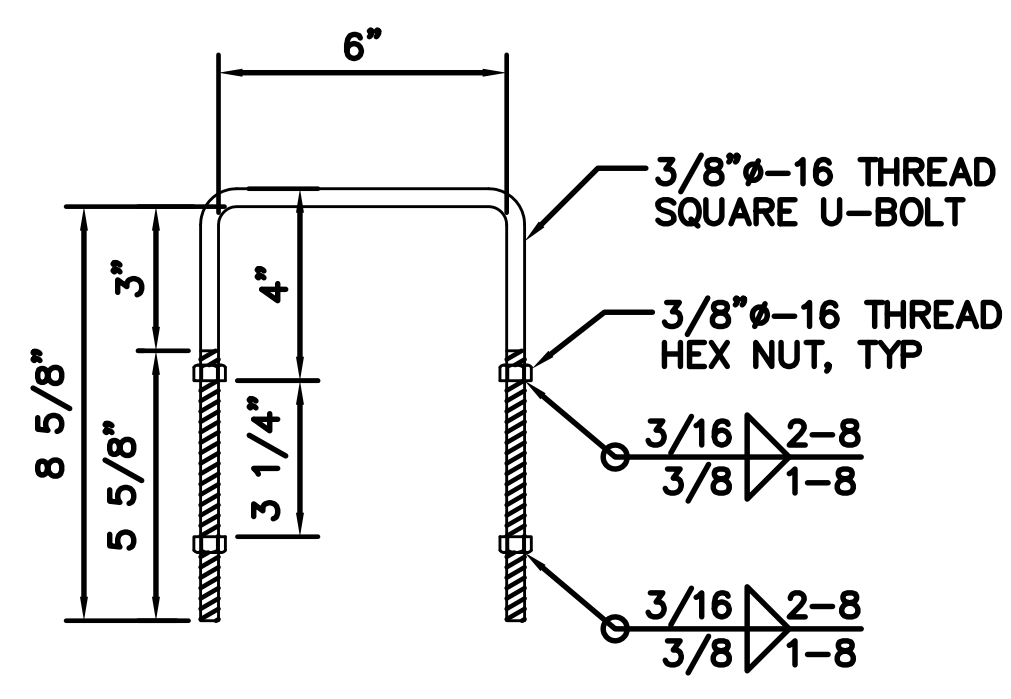
 CROSS ENGINEERS, INC. Tacoma, WA 98402 Phone: (253) 737-1171 Fax: (253) 737-1172 www.crossengineers.com	DATE: 2-13-15 BY: SJK APPR: GLW
	REVISION: RECORD DRAWINGS MARK:
APPROVED:	CHECKED BY: DATE GLW 7/17/13 PROJ. ENGR DATE 7/17/13
PIER 3 UPGRADE CONDUIT AND CONDUCTOR SCHEDULE	TOWNSHIP: 21 N RANGE: 3 E SECTION: 27 DAT-HRZ: NAD 83-07 VERT: NOS TIDAL (MILLW = 0.0) PARCEL: 27 DRAWING SCALE: AS SHOWN
6502 <b>E7.2</b> SHEET 128 OF 128 CONT/CONS: 069458 MASTER ID NO: 092935 PHASE: RECORD DRAWINGS	PORT ADDRESS: ONE SITCOM WAY TACOMA, WA 98421-2300



**PLAN - LIFTING POINT**

SCALE: 3"=1'-0"

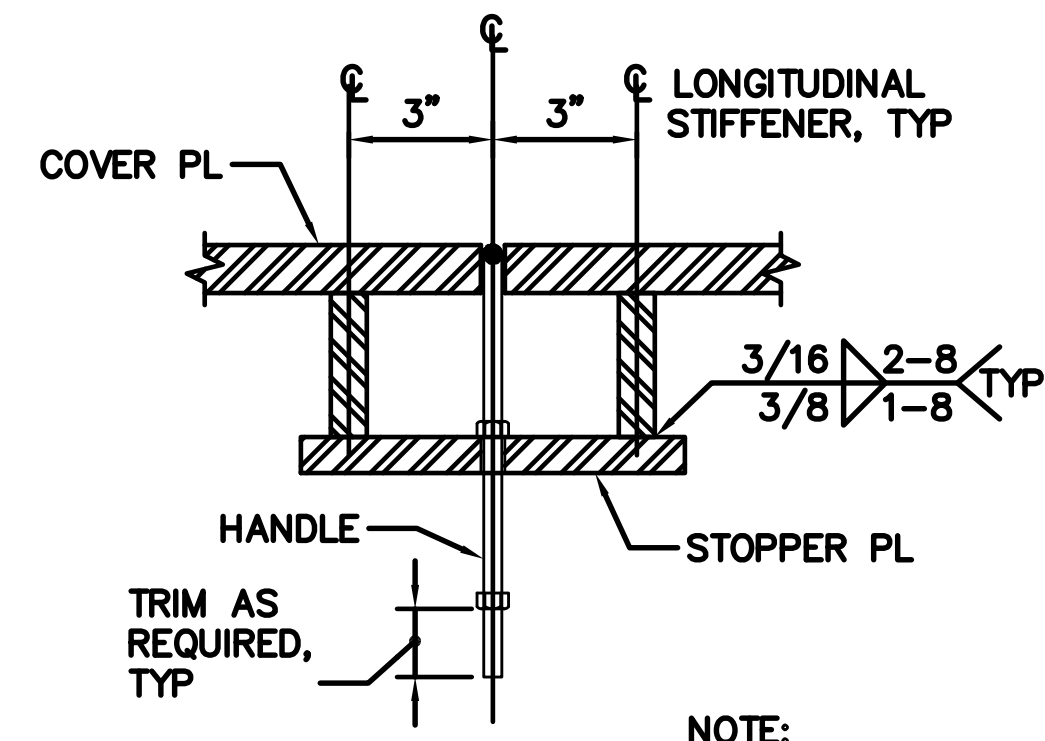
A  
E2.10



**DETAIL - HANDLE**

SCALE: 3"=1'-0"

B  
E2.10

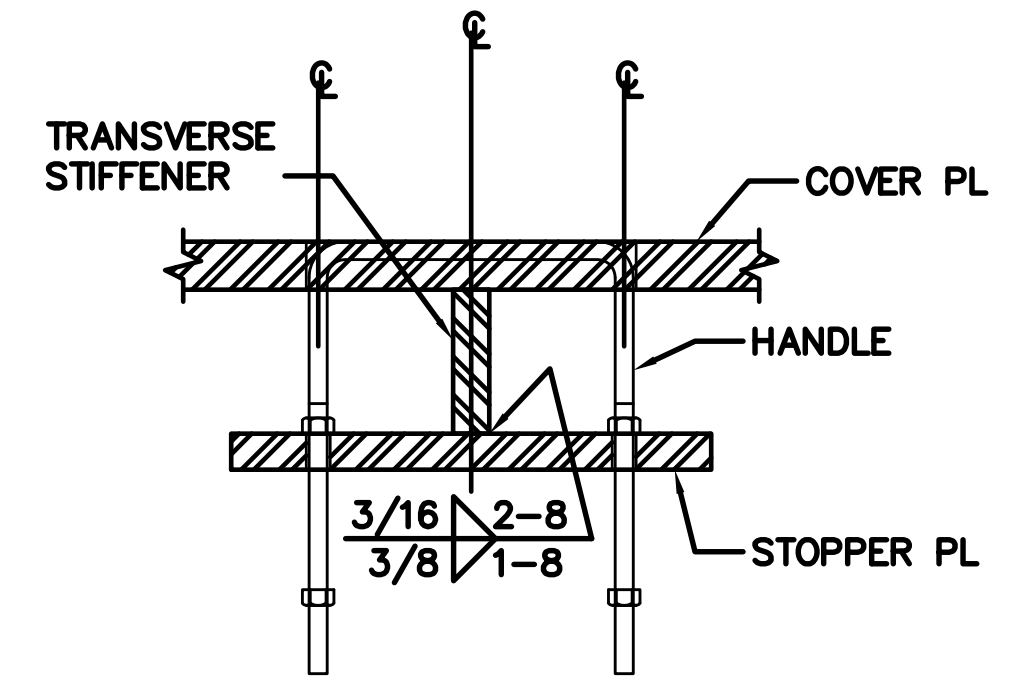


**SECTION**

SCALE: 3"=1'-0"

C  
E2.10

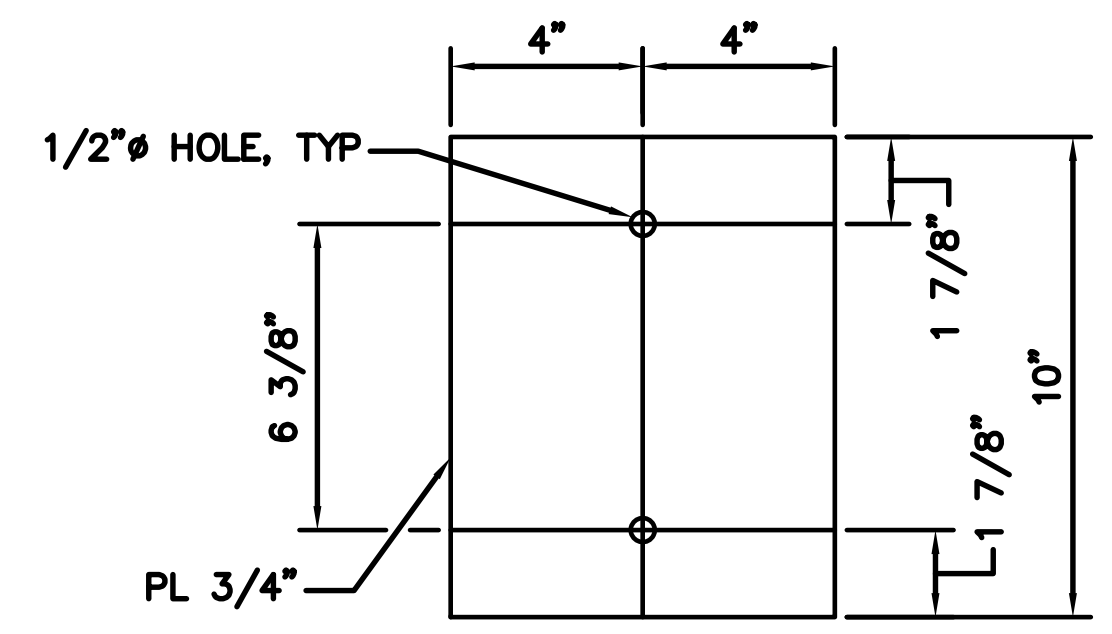
DESIGN VEHICLE LIVE LOAD:  
125 KIPS AT 140 PSI APPLIED  
OVER A 24IN x 37.2IN AREA,  
PLUS 15% IMPACT



**SECTION**

SCALE: 3"=1'-0"

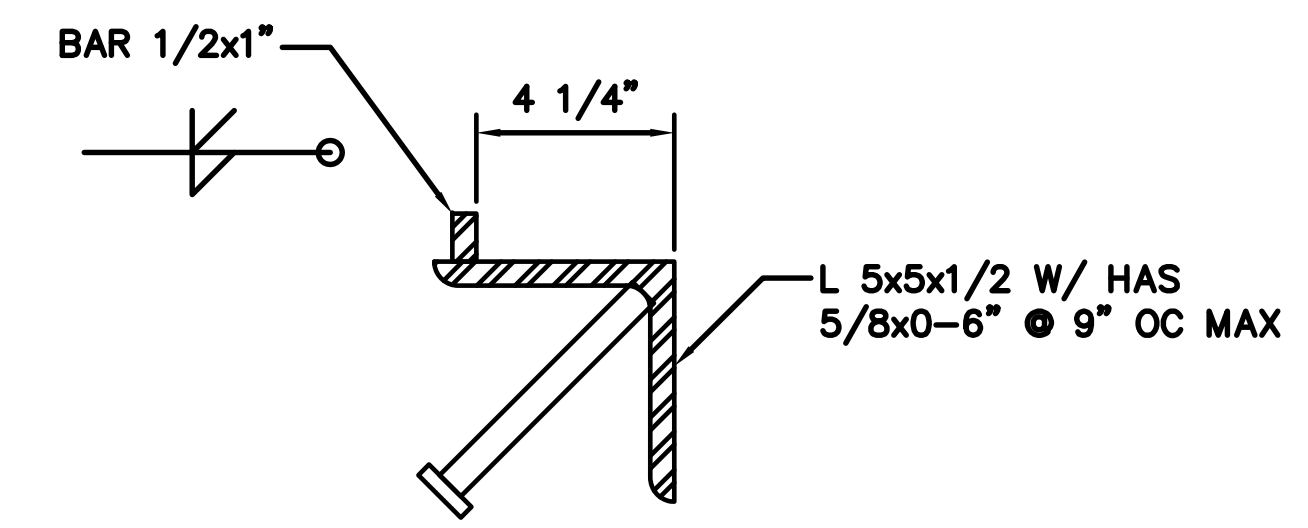
D  
E2.10



**DETAIL - STOPPER PLATE**

SCALE: 3"=1'-0"

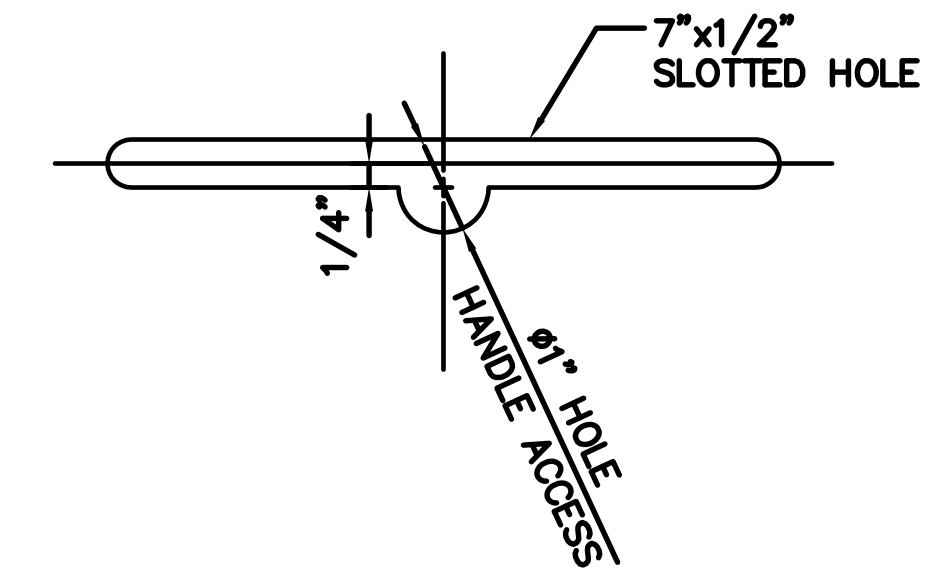
E  
2.10



**DETAIL**

SCALE: 3"=1'-0"

F  
2.10



**DETAIL - SLOTTED HOLE IN COVER PLATE**

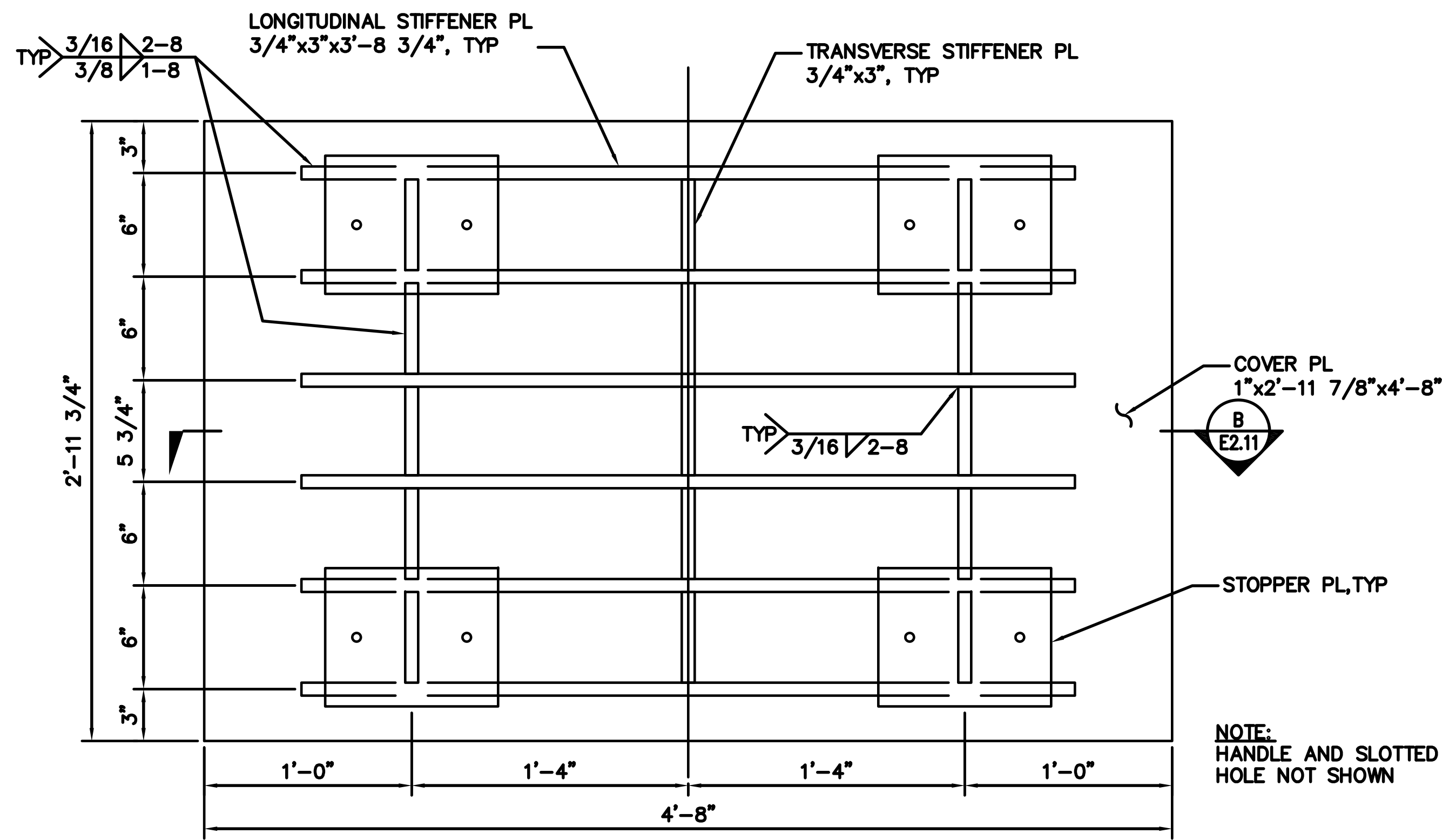
SCALE: 6"=1'-0"

G  
E2.10

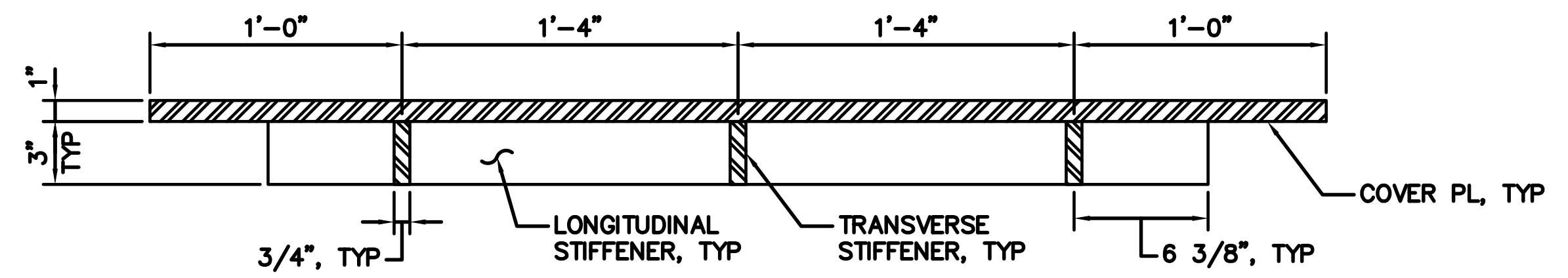
<p>CROSS ENGINEERS, INC. 1000 W. 10TH ST. TACOMA, WA 98401 PH: 253-841-1111 WWW.CROSSENGINEERS.COM</p>	<p>BY: <b>GLW</b></p>	<p>DATE: <b>2-13-15</b></p>
	<p>REVISION: <b>RECORD DRAWINGS</b></p>	<p>APPR: <b>GLW</b></p>
<p>MARK: <b>RECORD DRAWINGS</b></p>	<p>BY: <b>GLW</b></p>	<p>DATE: <b>2-13-15</b></p>
<p>DATE: <b>7/17/13</b></p>	<p>CHECKED BY: <b>GLW</b></p>	<p>DATE: <b>7/17/13</b></p>
<p>DIR OF ENGR: <b>ScottK</b></p>	<p>PROJ. ENGR: <b>GLW</b></p>	<p>DATE: <b>7/17/13</b></p>
<p>PORT ADDRESS: <b>ONE STICUM WAY</b></p>	<p>TACOMA, WA <b>98421-2300</b></p>	<p>SECTION: <b>27</b></p>
<p>NO. TIDAL (MLLW = 0.0)</p>	<p>PARCEL: <b>27</b></p>	<p>DRAWING SCALE: <b>AS SHOWN</b></p>
<p>PIER 3 UPGRADE</p>	<p>TEMPORARY CRANE CONNECTION</p>	<p>VAULT DETAILS</p>
<p>TOWNSHIP: <b>21 N</b></p>	<p>RANGE: <b>3 E</b></p>	<p>SECTION: <b>27</b></p>
<p>DATE-HRZ: <b>NAD 83-07</b></p>	<p>VERT: <b>NOS TIDAL (MLLW = 0.0)</b></p>	<p>DRAWING SCALE: <b>AS SHOWN</b></p>
<p>6502</p>	<p><b>E2.10</b></p>	<p>SHEET 109 OF 128</p>
<p>CONT/CONS: <b>069458</b></p>	<p>MASTER ID NO: <b>092935</b></p>	<p>PHASE: <b>RECORD DRAWINGS</b></p>



Last Saved by: ScottK on: Apr 8, 2015 10:01 AM File: N:\Jobs\2011\11-071-1\Drawings\Record Drawings\11-071-1-E211.dwg

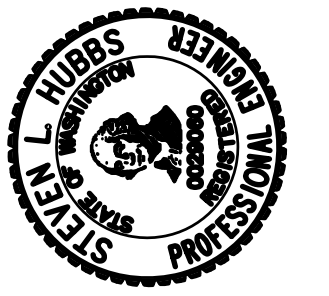


**PLAN - UNDERSIDE OF STIFFENED COVER PLATE** (A)  
SCALE: 2"=1'-0"  
E2.11



**SECTION - STIFFENED COVER PLATE** (B)  
SCALE: 2"=1'-0"  
E2.11

**DESIGN VEHICLE LIVE LOAD:**  
125 KIPS AT 140 PSI APPLIED  
OVER A 24IN x 37.2IN AREA,  
PLUS 15% IMPACT



**Port of Tacoma**  
P.O. BOX 1837 TACOMA, WA 98401 (253)865-3841  
www.portoftacoma.com

**CROSS ENGINEERS, INC.**  
10000 1st Avenue, Suite 200  
Tacoma, WA 98404  
Phone: (253) 865-3841  
Fax: (253) 865-3842  
www.crossengineers.com

APPROVED:	GLW/SLH 7/17/13	CHECKED BY:	DATE
DC 7/17/13	GLW 7/17/13	PROJ. ENGR	DATE
DIR OF ENG	DATE	PRINTED BY:	DATE
ScottK		PORT ADDRESS:	ONE STICUM WAY
		TACOMA, WA	98421-2300

<b>6502</b> <b>E2.11</b> SHEET 110 OF 128	<b>PIER 3 UPGRADE</b>		
	TEMPORARY CRANE CONNECTION		
	VAULT DETAILS		
	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 27
	DATE-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)	DRAWING SCALE: AS SHOWN
MASTER ID NO: 092935	PARCEL: 27		
PHASE: RECORD DRAWINGS			

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