

**REPLACEMENT OF RAILWAY TRACK  
TURNOUTS AT SOUTH INTERMODAL YARD  
PROJECT NO. - 091515  
CONTRACT NO. - 070128**

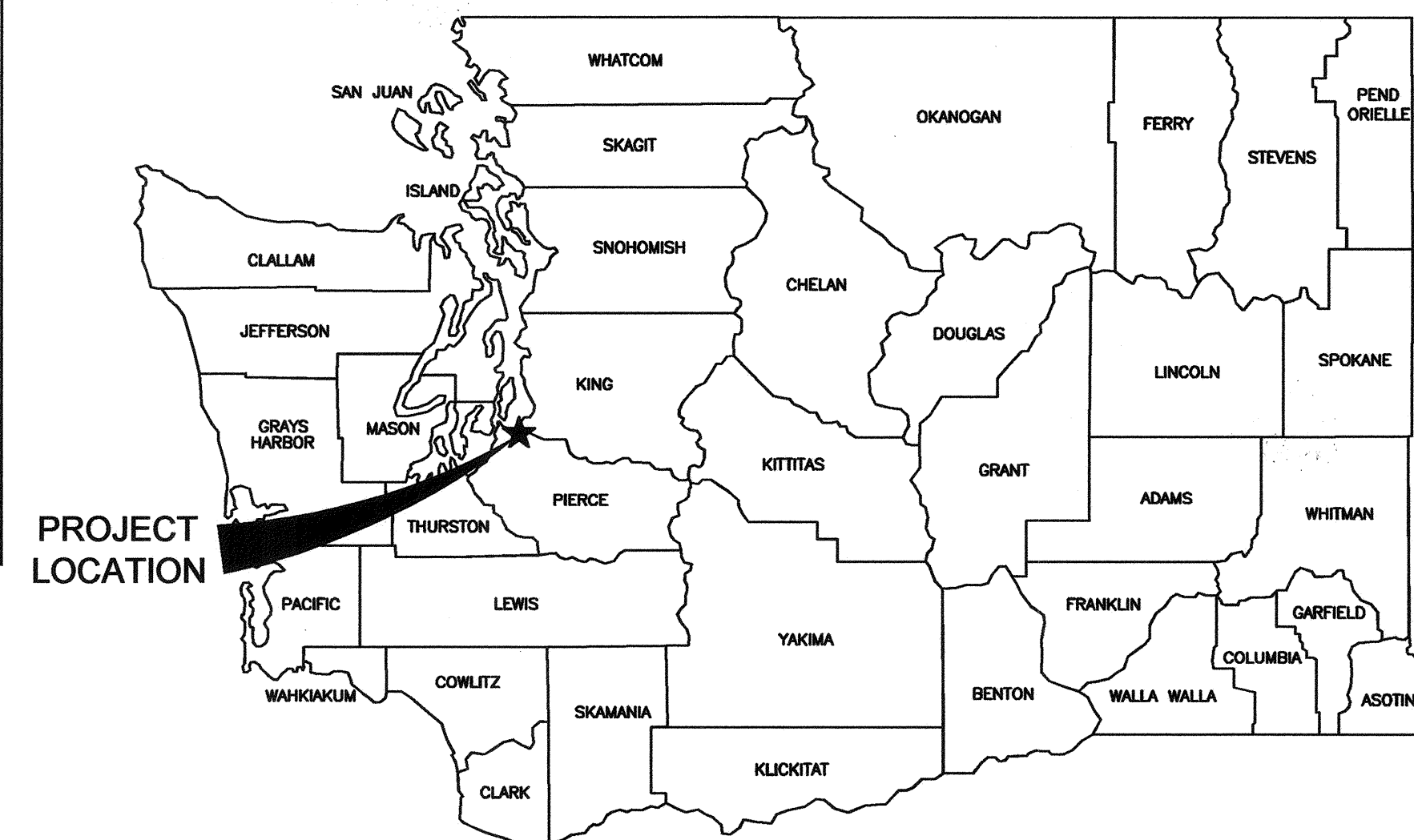
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**Chief Facilities**  
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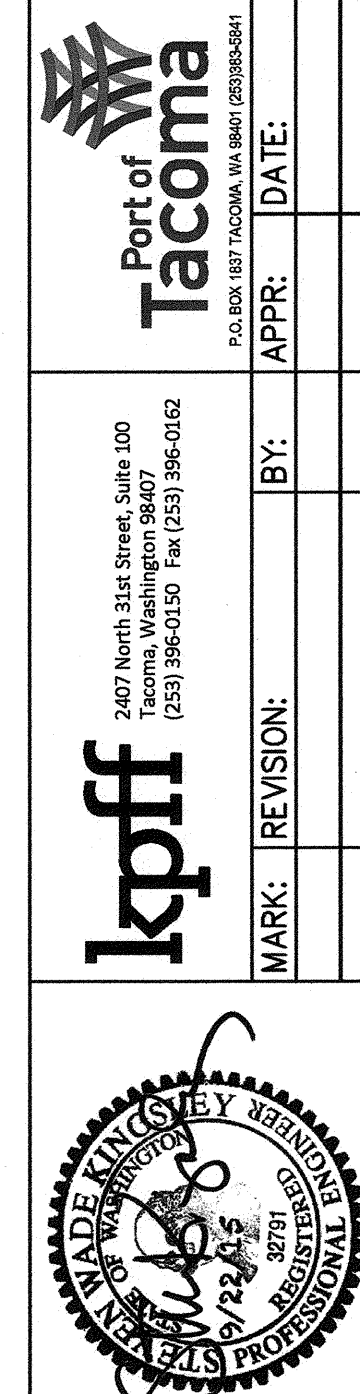
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**Project Manager**



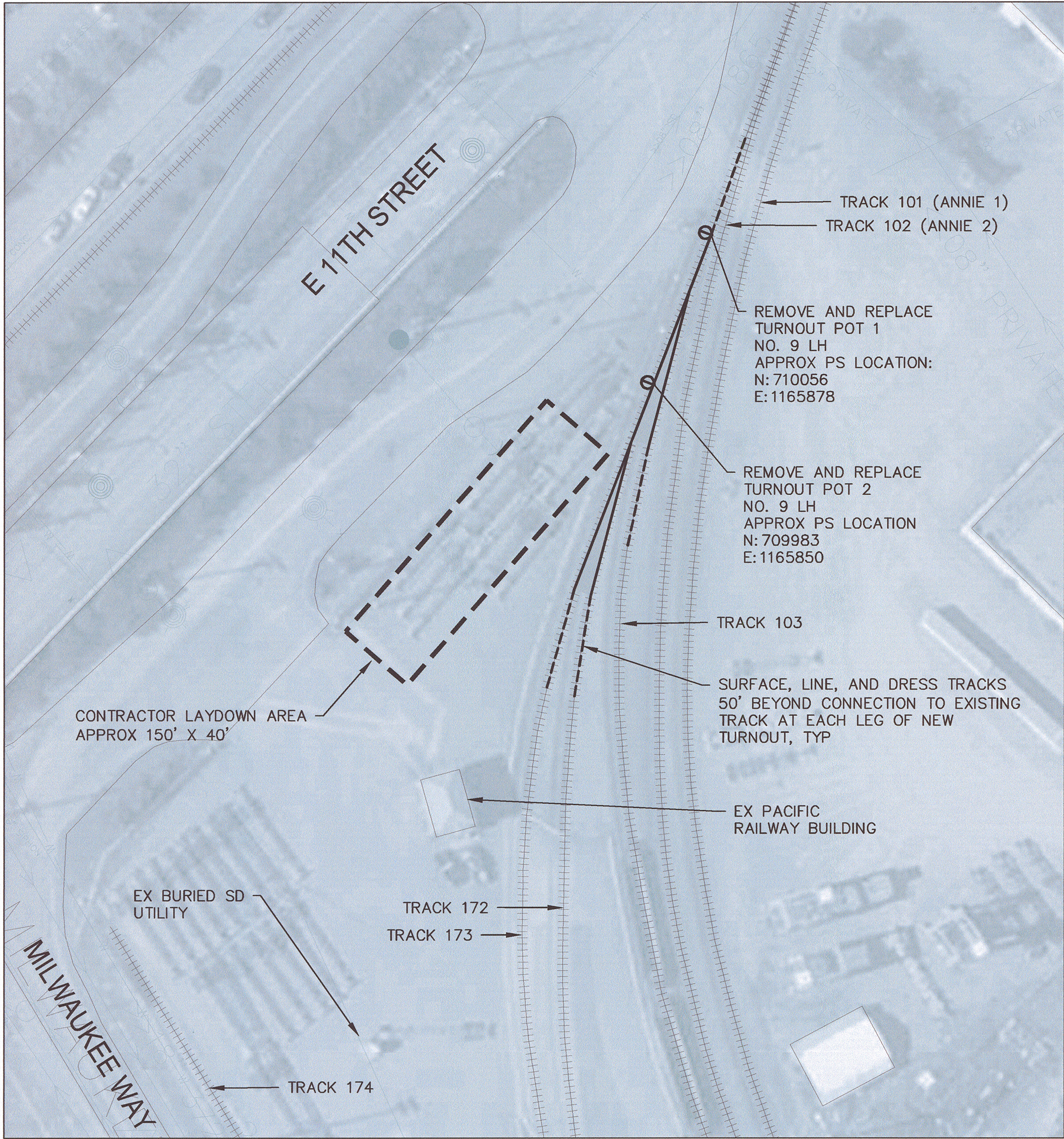
DRAWING LIST		
SHEET #	SHEET DESIGNATION	SHEET TITLE
GENERAL		
1	G1	COVER SHEET AND SHEET INDEX
2	R1	SITE PLAN
3	R2	TURNOUT DETAIL
4	R3	RAILROAD NOTES
5	R4	RAILROAD DETAILS
6	R5	RAILROAD DETAILS

APPROX	APPROXIMATE, APPROXIMATELY
A/R	AS REQUIRED
E	EASTING
EX	EXISTING
LH	LEFT HAND
N	NORTHING
NO.	NUMBER
PS OR P.S.	POINT OF SWITCH
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
SD	STORM DRAIN

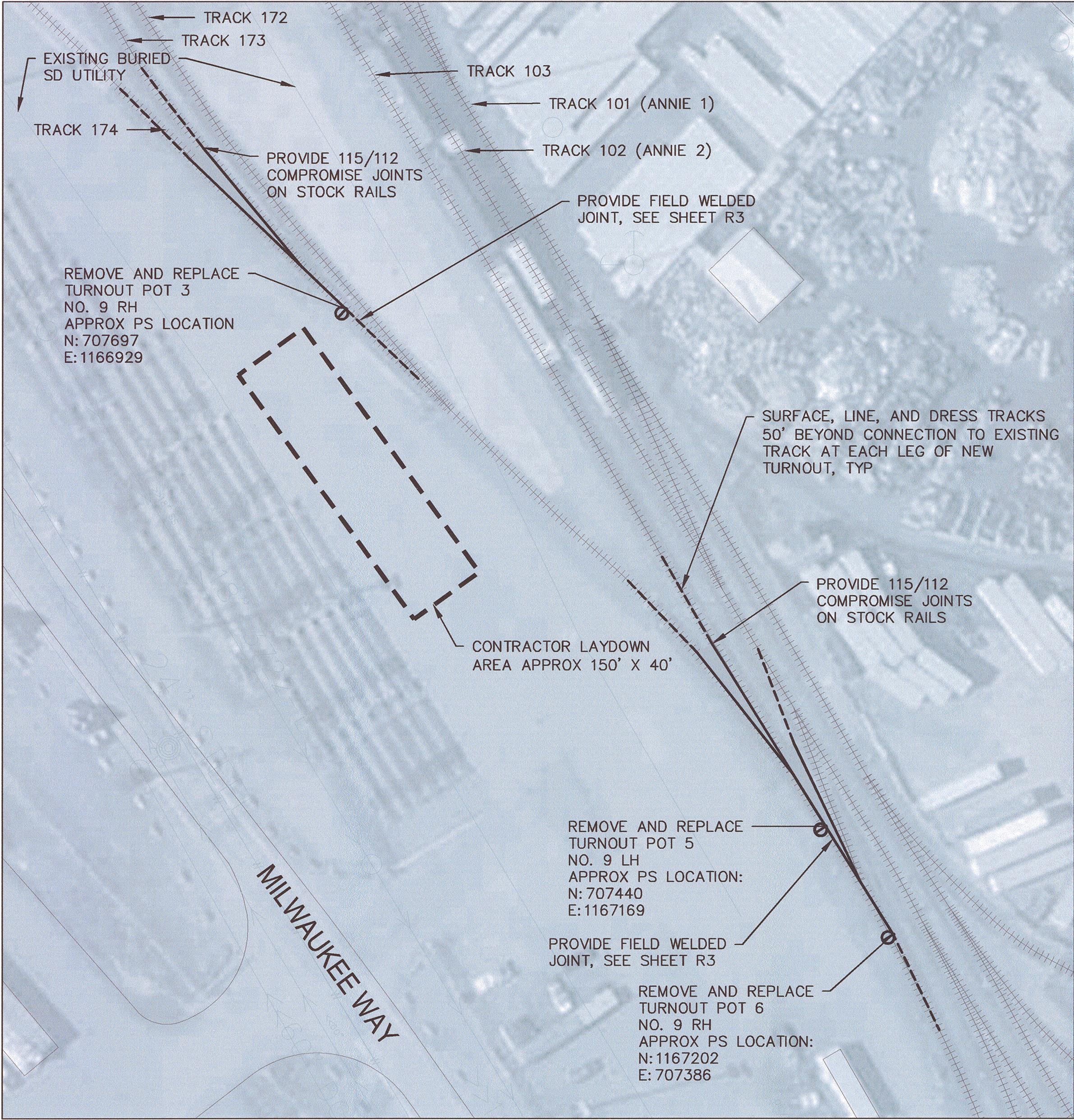


<div style="text-align: center;"> <h1>G1</h1> <p>SHEET 1 OF 6</p> </div>	REPLACEMENT OF RAILWAY TRACK TURNOUTS AT SOUTH INTERMODAL YARD							
	COVER SHEET AND SHEET INDEX							
	TOWNSHIP:	RANGE:	SECTION:					
	DATE-HRZ:	VERT:						
	BENCH MARK:	DRAINAGE SCALE:	AC NOTED:					
APPROVED:			CHECKED BY DATE					
			SWK 09/22/15					
DIRECTOR ENG. DATE			PROJECT ENGR DATE					
PRINTED BY: bosterman Sep 22, 2015								
PORT ADDRESSONE SITCOM PLAZA								
			SUNSHINE LOW 1937					

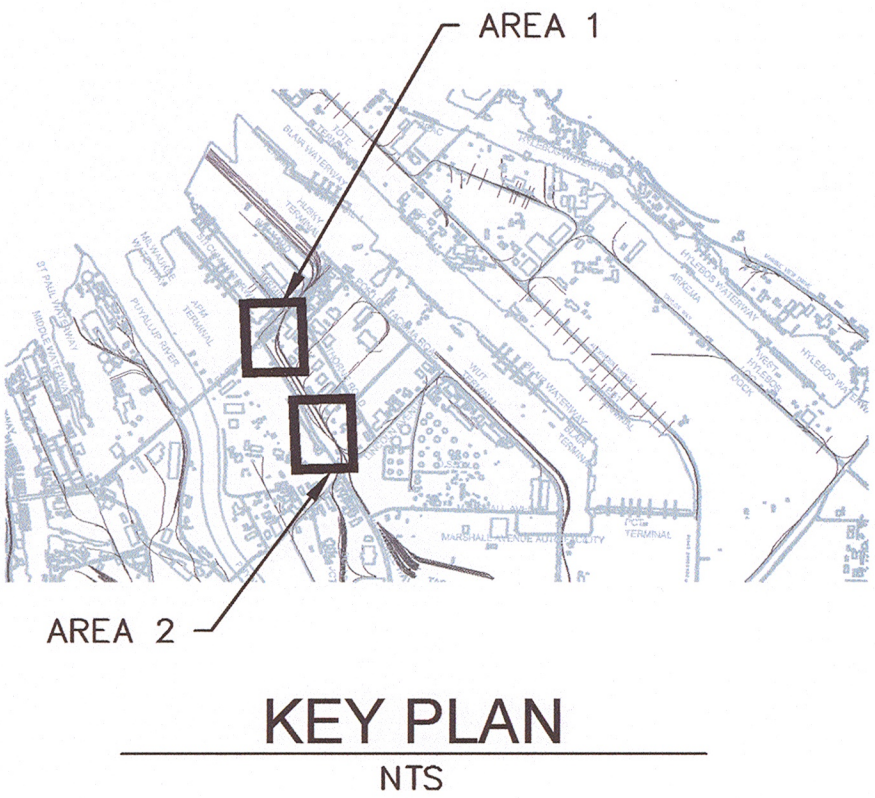




AREA 1  
SCALE: 1"=40'



AREA 2  
SCALE: 1"=40'

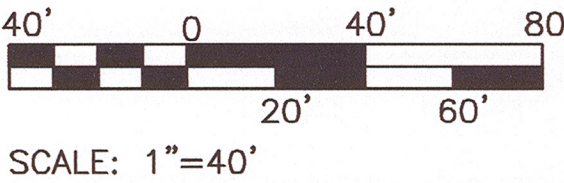


NOTES :

1. SEE SHEETS R2-R5 FOR TRACKWORK DETAILS.
2. TURNOUT REPLACEMENTS ARE WITHIN AN ACTIVE INTERMODAL RAILYARD. CONTRACTOR SHALL CONFINE OPERATIONS AND STAGING TO THE LAYDOWN AREA SHOWN AND THE LIMITS OF THE TURNOUTS TO BE REPLACED. CONTRACTOR SHALL YIELD TO RAILYARD TRAFFIC AT ALL TIMES.
3. REFER TO SHEET R3 FOR DETAILED DESCRIPTION OF VARIATIONS TO STANDARD TURNOUT ASSEMBLY REQUIRED AT EACH TURNOUT LOCATION.
4. AT ALL LOCATIONS, CONTRACTOR SHALL DEMOLISH EXISTING TURNOUT AND CONNECTING TRACK TO EXTENT NECESSARY TO INSTALL NEW TURNOUT. SEE TABLE 1 ON SHEET R3 FOR EXCEPTIONS TO DEMOLITION LIMITS.
5. ALL REMOVED SOIL AND BALLAST MATERIAL SHALL BE STOCKPILED WITHIN CONTRACTOR LAYDOWN AREA FOR TESTING PRIOR TO REMOVAL PER THE SPECIFICATIONS.
6. MATERIAL LIKELY TO BE FOUND ON SITE INCLUDES CREOSOTE COATED WOOD TIES AND BALLAST AND SOILS EXPOSED TO HYDROCARBONS COMMON TO LOCOMOTIVES AND ROLLING STOCK, SEE SPECIFICATIONS.
7. FOR TYPICAL BALLASTED TRACKBED SECTION, SEE 1 R4
8. REFER TO SPECIFICATIONS FOR MATERIAL SALVAGE REQUIREMENTS.

LEGEND :

- EXISTING TRACK
- NEW TURNOUT
- SURFACE, LINE, AND DRESS TRACK, SEE SPECIFICATIONS



<b>R1</b> SHEET 2 OF 6	REPLACEMENT OF RAILWAY TRACK TURNOUTS AT SOUTH INTERMODAL YARD				SITCUM PLAZA		TACOMA, WA 98401-1837				
	CONT/CONS:	TOWNSHIP:	RANGE:	SECTION:	CHECKED BY:	DATE:	APPROVED:				
	M. ID:	DAT-HRZ:	VERT:	PRINTED BY:	SWK	09/22/15	9-23-15				
	PHASE:	DRAWING SCALE: AS NOTED			PROJ. ENGR	DATE	9/23/15				
2407 North 31st Street, Suite 100 Tacoma, Washington 98407 (253) 396-0150 Fax (253) 396-0162				2407 North 31st Street, Suite 100 Tacoma, Washington 98407 (253) 396-0150 Fax (253) 396-0162				2407 North 31st Street, Suite 100 Tacoma, Washington 98407 (253) 396-0150 Fax (253) 396-0162			
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1. REFER TO THE SPECIFICATIONS FOR BILL OF PORT FURNISHED MATERIALS FOR TURNOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL MATERIALS REQUIRED FOR COMPLETION OF WORK EXCEPT THOSE MATERIALS LISTED AS PORT FURNISHED MATERIAL.
2. REFER TO SHEET R3, TABLE 1 FOR DETAILED DESCRIPTION OF VARIATIONS TO STANDARD TURNOUT ASSEMBLY REQUIRED AT EACH TURNOUT LOCATION.
3. REFER TO SHEET R3, TABLE 2 FOR BILL OF MATERIALS FOR STANDARD TURNOUT ASSEMBLY.
4. ALL SURPLUS TIES TO BE SUPPLIED TO THE PORT.
5. IN ADDITION TO RAIL SHOWN WITHIN STANDARD NO. 9 TURNOUT ASSEMBLY, CONTRACTOR SHALL PROVIDE (6) ADDITIONAL 39' RAIL STICKS TO BE UTILIZED IF NECESSARY TO JOIN TURNOUTS TO EXISTING TRACK AND MAINTAIN MINIMUM JOINT SPACING AND JOINT STAGGER. ANY SURPLUS RAIL SHALL BE SUPPLIED TO THE PORT FOLLOWING COMPLETION OF WORK.
6. CONTRACTOR TO PROVIDE ALL NEW JOINT BARS EXCEPT THOSE BARS INCLUDED AS PORT FURNISHED MATERIALS.
7. PANDROL TIE PLATES SHALL BE USED FOR STANDARD PLATES. SEE DETAIL 2 ON SHEET R5.
8. BOTH GUARD RAILS TO BE RAISED 1" HIGHER THAN THE TOP OF RUNNING RAIL.
9. THE GUARD RAIL IS TO BE 54 5/8" FROM THE GAUGE SIDE OF THE FROG POINT TO THE STRAIGHT GUARDING FACE OF THE GUARD RAIL.
10. NO ALLOWANCE HAS BEEN MADE FOR EXPANSION GAPS OR END POST IN COMPUTING RAIL LENGTHS SHOWN.
11. FRACTIONAL RAIL LENGTH CUTTINGS SHOWN ARE THEORETICAL AND ARE SUBJECT TO MINOR ADJUSTMENT TO MEET ACTUAL CLOSURE REQUIREMENTS IN THE FIELD.
12. SWITCH STANDS SHALL BE INSTALLED IN A LOCATION TO MATCH EXISTING.
13. ACTUAL TURNOUT DATA, TURNOUT OFFSETS, RAIL LENGTHS, AND SWITCH TIE LENGTHS MAY VARY TO ACCOMMODATE USE OF PORT FURNISHED MATERIAL. THE CONTRACTOR SHALL PROVIDE A LAYOUT PLAN WITH ALL PROPOSED MODIFICATIONS TO THE TURNOUT PLAN ON THIS PAGE. LAYOUT PLAN SHALL BE APPROVED BY THE PORT PRIOR TO CONSTRUCTION.
14. CHORD METHOD IS USED TO CALCULATE TURNOUT CURVE DATA AND OFFSETS.

DETAIL - STANDARD NO. 9  
TURNOUT ASSEMBLY  
SCALE: 1"=5'

SWITCH DATA		
	SWITCH LENGTH	16'-6"
	HEEL SPREAD	6 1/4"
	HEEL ANGLE	1'-46'-22"
	SWITCH ANGLE	1'-46'-22"
	THROW AT ROD #1	4 3/4"
TURNOUT POINT	THICKNESS AT POINT	0"
	RADIUS (CLOSURE CURVE)	616.3542
	VERTEX DISTANCE	7 4/16"



TABLE 1 - LOCATION SPECIFIC VARIATION TO PROJECT STANDARD		
	VARIATION	NOTES
ALL TURNOUTS		
1	ADJUST TIE SPACING, IF NECESSARY, TO INTERLACE BETWEEN ADJACENT TIES	
2	UNLESS OTHERWISE NOTED 36'-7" STRAIGHT SAMSON STOCK RAIL, 36'-5" BENT/CURVED SAMSON STOCK RAIL, AND STOCK RAILS ON TURNOUT LEGS SHALL BE CUT AND DRILLED IN THE FIELD.	MODIFICATION TO ACCOMMODATE EXISTING JOINT LOCATIONS. JOINT LOCATION TO BE MARKED IN THE FIELD AND APPROVED BY PORT PRIOR TO CUTTING RAIL.
TURNOUT POT 1		
1	REUSE EXISTING TIES AT TIE LOCATIONS 0-10A & 1-2	TIES 0-10A & 1-2 SUPPORT ADJACENT TRACK.
2	TIES 56 & 57 SHALL NOT BE USED. PROVIDE (1) 20' TIE.	TIES 56 & 57 TO BE PROVIDED BY TIES 1 & 2 OF TURNOUT POT 2. ADDITIONAL TIE TO BE PROVIDED AS CONTINGENCY TO FIELD ADJUST TIE SPACING IF REQUIRED.
3	36'-5" SAMSON STOCK RAIL TO BE CUT AND DRILLED IN FIELD	MODIFICATION TO ACCOMMODATE CLOSE PROXIMITY OF EXISTING FROG TO THE NORTH
4	STOCK RAIL ON STRAIGHT LEG OF TURNOUT AND FROG SHALL BE CUT AND DRILLED IN THE FIELD.	MODIFICATION TO ACCOMMODATE CLOSE PROXIMITY OF REPLACEMENT TURNOUT POT 2. JOINT LOCATION TO BE MARKED IN THE FIELD AND APPROVED BY THE PORT PRIOR TO CUTTING AND DRILLING NEW STOCK RAIL AND FROG.
TURNOUT POT 2		
1	TIES 0-10A & 3-10 SHALL NOT BE USED.	TIES 0-10A & 3-10 TO BE SHARED WITH NEW TURNOUT POT 1.
TURNOUT POT 3		
1	TIES 0-10A SHALL BE 15'-0".	TIES 0-10A TO BE SHARED WITH ADJACENT TURNOUT. CONTRACTOR SHALL INCLUDE REMOVAL AND REPLACEMENT OF AFFECTED TIES IN ADJACENT TURNOUT IN BID COST OF TURNOUT POT 3.
2	36'-5" BENT/CURVE SAMSON STOCK RAIL SHALL BE CUT AND DRILLED IN THE FIELD.	MODIFICATION TO ACCOMMODATE CLOSE PROXIMITY OF EXISTING FROG TO THE SOUTH.
3	36'-7" STRAIGHT SAMSON STOCK RAIL SHALL BE CUT AND WELDED TO EXISTING RAIL TO THE SOUTH.	EXISTING GUARD RAIL TO THE SOUTH TO BE TEMPORARILY REMOVED TO ALLOW FOR WELDED JOINT. WELDED JOINT LOCATION TO BE MARKED IN THE FIELD AND APPROVED BY PORT PRIOR TO CUTTING NEW STOCK RAIL AND WELDING JOINT.
4	TIES 1 & 2 SHALL BE 21'-0".	TIES 1 & 2 TO BE SHARED WITH ADJACENT TURNOUT. CONTRACTOR SHALL INCLUDE REMOVAL AND REPLACEMENT OF AFFECTED TIES IN ADJACENT TURNOUT IN BID COST OF TURNOUT POT 3.
5	TIES 3 - 11 SHALL BE 16'-0".	TIES 3-11 TO BE SHARED WITH ADJACENT TURNOUT. CONTRACTOR SHALL INCLUDE REMOVAL AND REPLACEMENT OF AFFECTED TIES IN ADJACENT TURNOUT IN BID COST OF TURNOUT POT 3.
6	STOCK RAILS ON STRAIGHT LEG OF TURNOUT TO BE JOINED TO 112 RE RAIL. CONTRACTOR TO PROVIDE JOINT COMP BARS.	
TURNOUT POT 5		
1	TIES 0-10A & 3-13 SHALL NOT BE USED.	TIES 0-10A & 3-13 TO BE SHARED WITH NEW TURNOUT POT 6.
2	TIES 1 & 2 SHALL BE 20'-0".	TIES 1 & 2 SHALL BE SHARED WITH NEW TURNOUT POT 6.
3	36'-7" STRAIGHT SAMSON STOCK RAIL SHALL BE CUT AND DRILLED IN THE FIELD.	MODIFICATION TO ACCOMMODATE CLOSE PROXIMITY OF NEW FROG OF TURNOUT POT 6.
4	36'-5" BENT/CURVED SAMSON STOCK RAIL TO BE WELDED TO NEW TURNOUT POT 6 STOCK RAIL.	GUARD RAIL OF TURNOUT POT 6 TO BE INSTALLED AFTER WELDED JOINT COMPLETE. WELDED JOINT LOCATION TO BE MARKED IN THE FIELD AND APPROVED BY PORT PRIOR TO CUTTING NEW STOCK RAIL AND WELDING JOINT.
5	STOCK RAILS ON STRAIGHT LEG OF TURNOUT TO BE JOINED TO 112 RE RAIL. CONTRACTOR TO PROVIDE JOINT COMP BARS.	
TURNOUT POT 6		
1	TIES 54 & 55 SHALL NOT BE USED.	TIES 54 & 55 TO BE PROVIDED AND SHARED BY NEW TURNOUT POT 5.
2	FIELD WELD STOCK RAILS AT JOINT WITH TURNOUT POT 5 STOCK RAILS	MODIFICATION TO ACCOMMODATE CLOSE PROXIMITY OF NEW TURNOUT POT 5. WELDED JOINT LOCATION TO BE MARKED IN THE FIELD AND APPROVED BY PORT PRIOR TO CUTTING NEW STOCK RAIL AND WELDING JOINT.
3	STOCK RAILS ON STRAIGHT LEG OF TURNOUT AND FROG SHALL BE CUT AND DRILLED IN THE FIELD.	MODIFICATION TO ACCOMMODATE CLOSE PROXIMITY OF NEW TURNOUT POT 5. JOINT LOCATION TO BE MARKED IN THE FIELD AND APPROVED BY THE PORT PRIOR TO CUTTING AND DRILLING NEW STOCK RAIL AND FROG.

TABLE 2 - BILL OF MATERIALS	
QTY	DESCRIPTION
2	16'-6" (EXT. 35'-10") STRAIGHT SAMSON SWITCH POINT
1	36'-7" STRAIGHT SAMSON STOCK RAIL
1	36'-5" BENT/CURVED SAMSON STOCK RAIL
1	SWITCH ROD #1
1	SWITCH ROD #2
4	ADJUSTABLE BRACE GAGE PLATE
6	ADJUSTABLE BRACE SLIDE PLATE
1	CLOSURE RAIL
1	TURNOUT RAIL
A/R	115 RE RAIL (IN LINEAR FEET)
A/R	STANDARD & SPECIAL PLATES
A/R	ELASTIC SPRING CLIPS
A/R	RAIL ANCHORS
A/R	15/16" DIA. X 6 1/2" LG. SCREW SPIKES
1	NO. 9 16'-0" AREMA PLAN NO. 623-03 RBM FROG WITH SCREW SPIKE PLATES AND ELASTIC FASTENERS
2	GUARD RAILS PER AREMA PORTFOLIO PLAN NO. 504-03 (13')
1	SWITCH POINT GUARD PER SPECIFICATIONS
1	SWITCH STAND, RACOR MODEL 22-E TRAILABLE, NOT SHOWN
7	7" X 9" X 9'-0" TIE
15	7" X 9" X 10'-0" TIE
20	7" X 9" X 11'-0" TIE
6	7" X 9" X 12'-0" TIE
6	7" X 9" X 13'-0" TIE
5	7" X 9" X 14'-0" TIE
5	7" X 9" X 15'-0" TIE
6	7" X 9" X 16'-0" TIE
8	7" X 9" X 17'-0" TIE

R3

SHEET 4 OF 6

CONT/CONS: 09515

M. ID: 09515

PHASE:

REPLACEMENT OF RAILWAY TRACK

TURNOUTS AT SOUTH INTERMODAL YARD

APPROVED:

9-23-15

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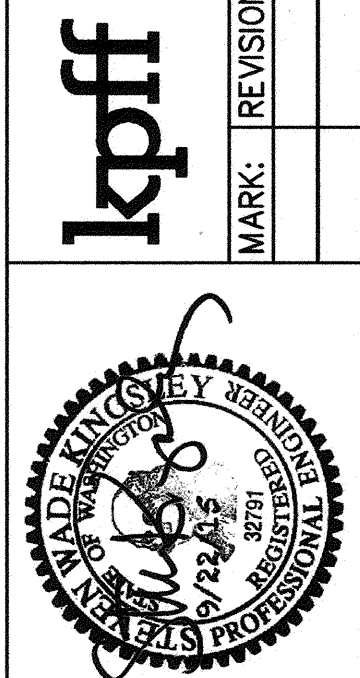
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DATE: 09/22/15

PROJ. ENGR. DATE



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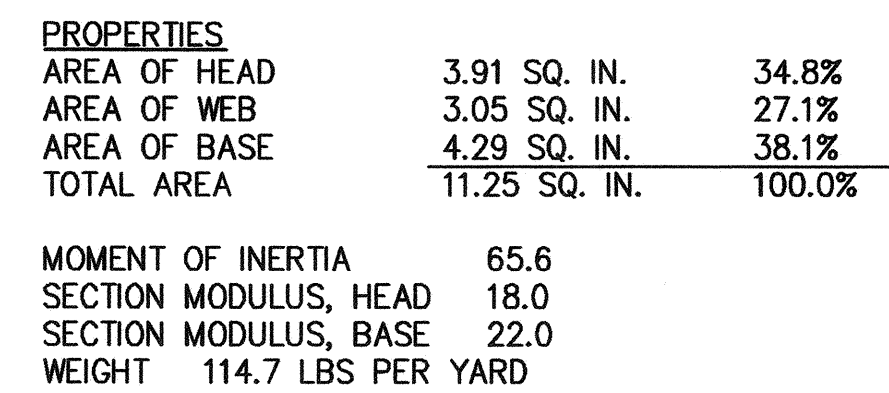
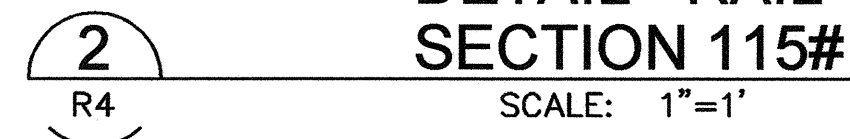
Port of Tacoma

PORT OF TACOMA

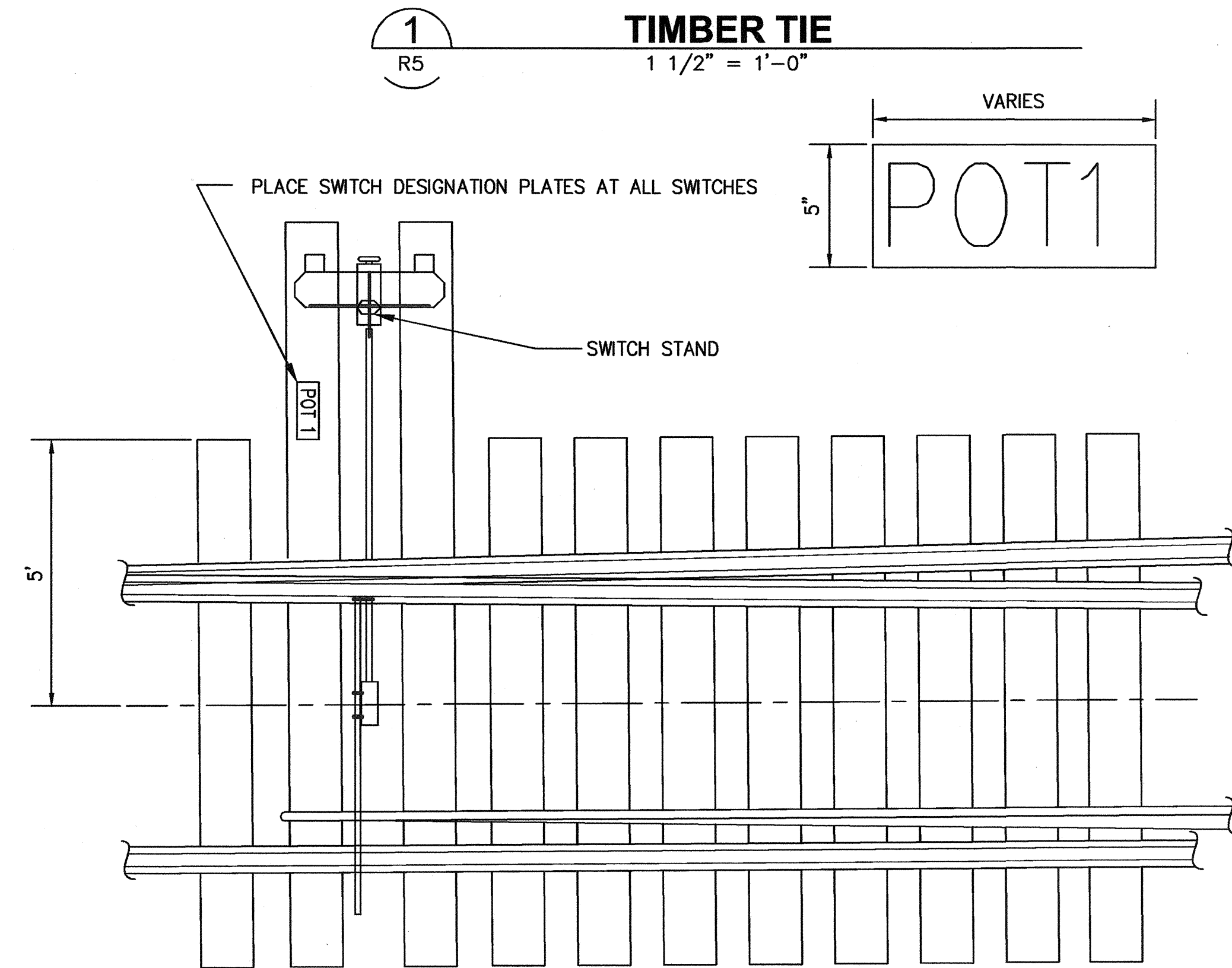




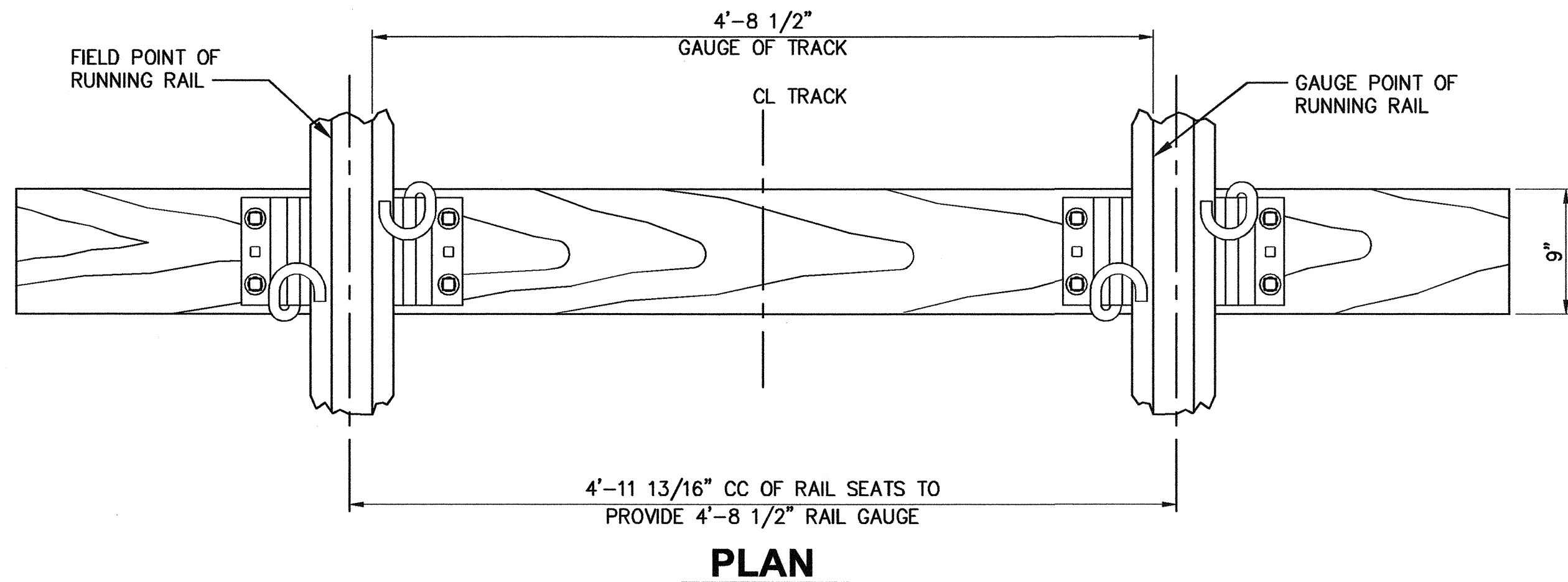
- 1** **DETAIL - TRACKBED**  
R4 SCALE: 3/4"=1'-0'



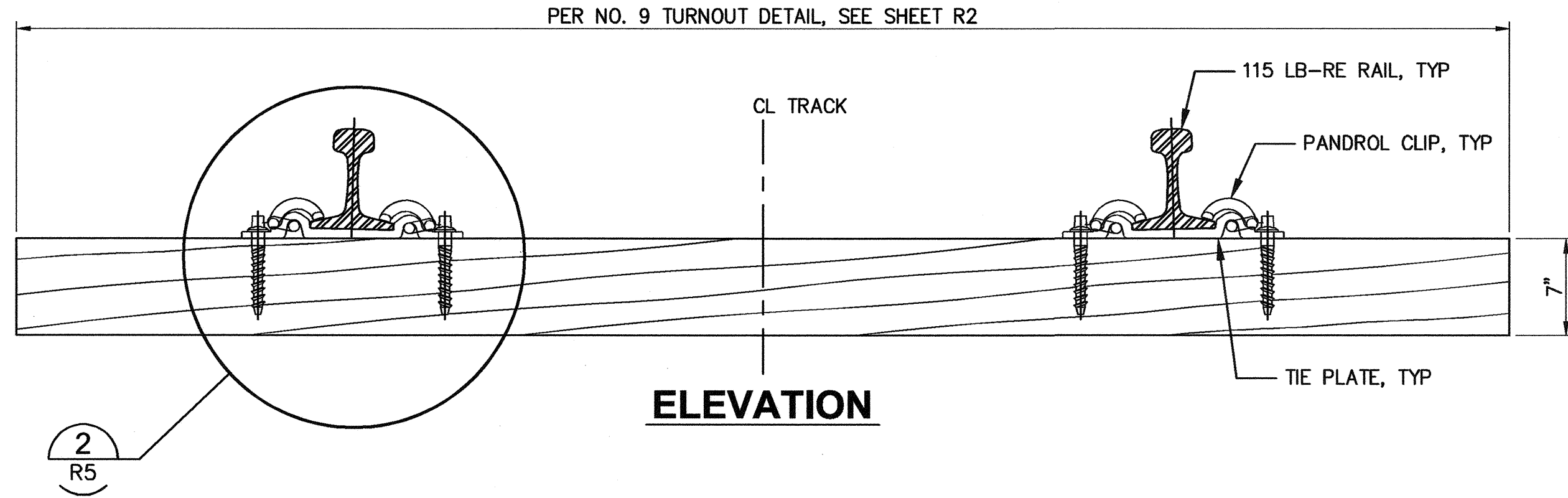




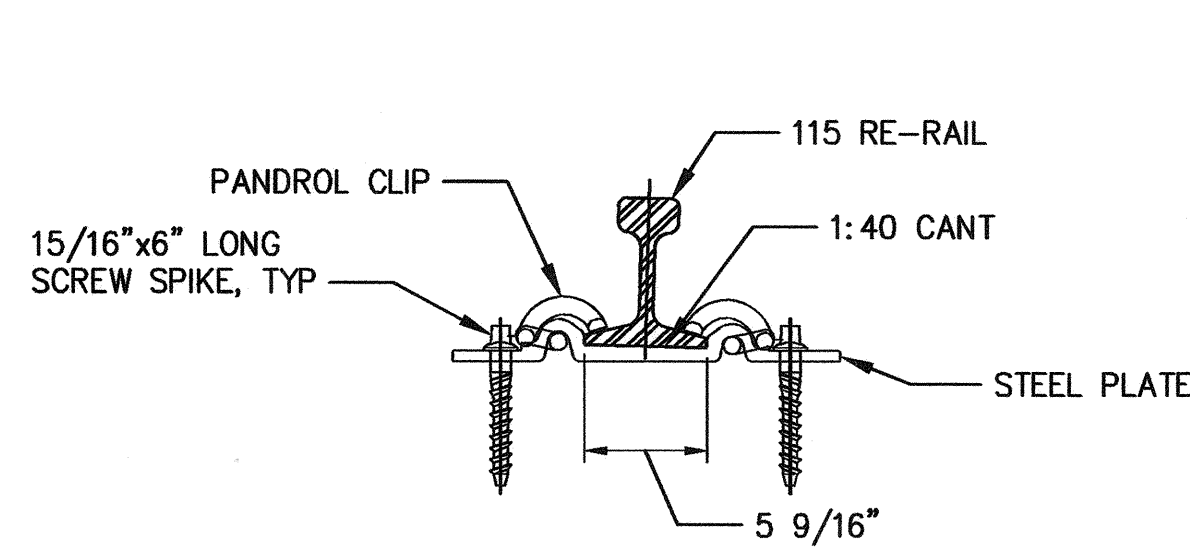
3 SWITCH DESIGNATION PLATE  
6" = 1'-0"



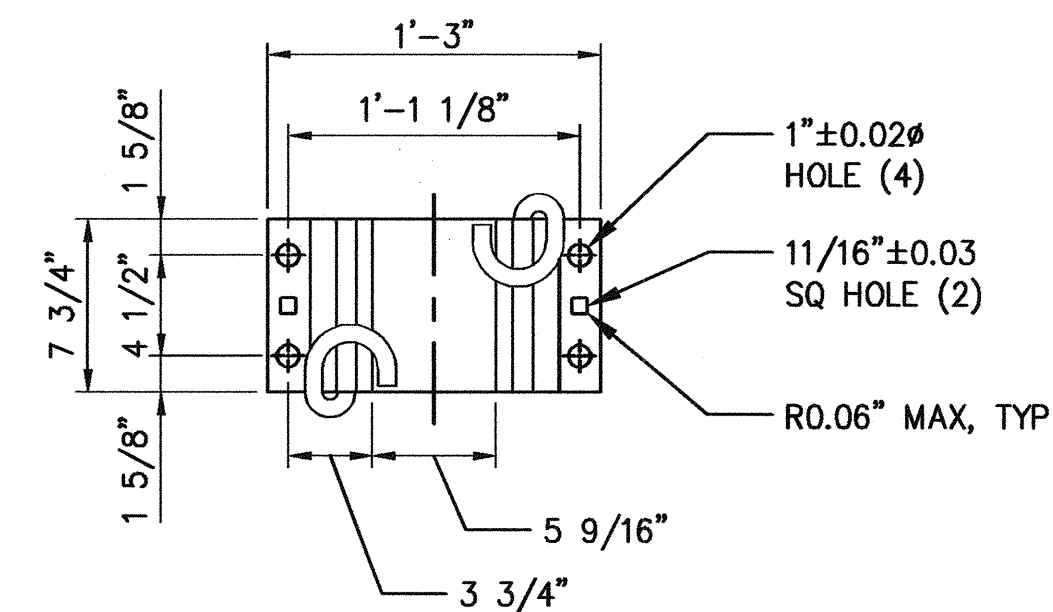
1 TIMBER TIE  
1 1/2" = 1'-0"



ELEVATION



PANDROL TYPE e2055 CLIPS  
ON TIMBER TIES



TYPICAL STANDARD PLATE  
FOR PANDROL TYPE e2055 CLIP

R5

SHEET 6 OF 6

CONT/CONS:

M. ID: 09515

PHASE:

REPLACEMENT OF RAILWAY TRACK  
TURNOUTS AT SOUTH INTERMODAL YARD

RAILROAD DETAILS

TOWNSHIP:

RANGE:

SECTION:

DATE-HRZ:

VERT:

PARCEL:

DRAWING SCALE: AS NOTED

APPROVED:

4-23-15

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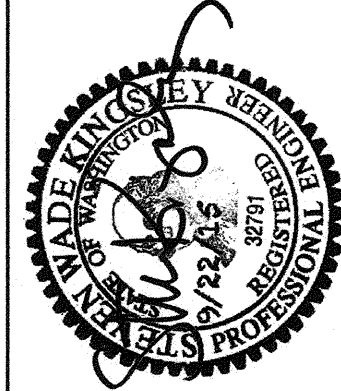
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