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METROLINK (SCRRA)

ENGINEERING STANDARDS

NO 8 DOUBLE SLIP CROSSING

DRAWING INDEX

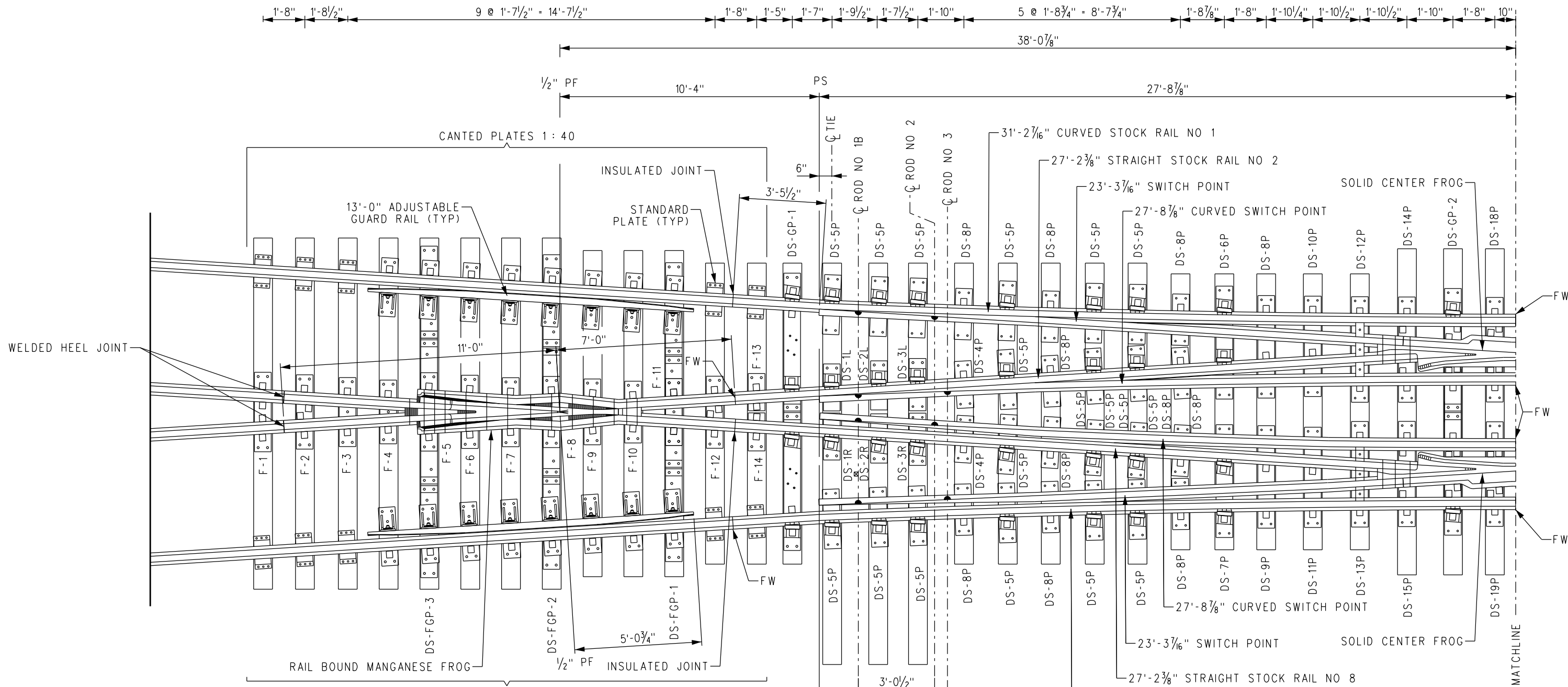
BILL OF MATERIAL	
QTY	DESCRIPTION
2 EACH	SOLID MANGANESE CENTER FROG
4 EACH	"D" STRAPS WITH BOLTS
4 EACH	27'-8 ⁷ / ₈ " EXTENDED FIELD WELDED TYPE SWITCH POINTS
4 EACH	27'-2 ³ / ₈ " STRAIGHT STOCK RAIL
4 EACH	31'-2 ⁷ / ₁₆ " CURVED STOCK RAIL
4 EACH	23'-3 ⁷ / ₁₆ " SWITCH POINTS
1 EACH	NO 1A SMJ TYPE SWITCH ROD W/ BASKET (INSULATED)
1 EACH	NO 1B SMJ TYPE SWITCH ROD W/ BASKET (INSULATED)
2 EACH	NO 2 SMJ TYPE SWITCH ROD W/ BASKET (INSULATED)
2 EACH	NO 3 SMJ TYPE SWITCH ROD W/ BASKET (INSULATED)
36 EACH	BRACE SLIDE PLATE DS-5P
22 EACH	SWITCH SLIDE PLATE DS-8P
2 EACH	INSULATED GAUGE PLATE DS-GP-1
1 EACH	INSULATED GAUGE PLATE DS-GP-2 AND DS-GP-3
2 EACH	SWITCH PLATE DS-1R, DS-1L, DS-2R, DS-2L, DS-3R & DS-3L
4 EACH	SWITCH PLATE DS-4P
2 EACH	SWITCH PLATES DS-6P THRU DS-15P
2 EACH	SWITCH PLATE DS-18P AND DS-19P
2 EACH	FROG PLATES F-1 THRU F-14
2 EACH	FROG GAUGE PLATES DS-FGP-1 THRU DS-FGP-3
2 EACH	NO 8 RBM FROG ~ 18'-0"
1 EACH	FROG GAUGE PLATES FGP-1 THRU FGP-3
4 EACH	13'-0" U-69 ADJUSTABLE GUARD RAIL W/ PLATES
2 EACH	DIRAIL HOLD DOWN CLIPS E-3706
6 EACH	DIRAIL HOLD DOWN CLIPS E-3708
8 EACH	DIRAIL HOLD DOWN CLIPS E-3709
2 EACH	DIRAIL HOLD DOWN CLIPS E-3710
12 PIECES	BOLTLESS ADJUSTABLE BRACE ASSEMBLY
20 PIECES	SCRRA ES2454 "PANDROL", OR EQUAL "E" - CLIP 6" TIE PLATE
224 PIECES	CLIP TYPE E-2055
24 PIECES	CLIP TYPE E-2063
720 PIECES	SCREW SPIKES ¹⁵ / ₁₆ " DIA X 6" ES2355
4 EACH	EPOXY BONDED PREFABRICATED INSULATED JOINT KITS

ES2840-01	NO 8 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG BILL OF MATERIAL AND GENERAL NOTES
ES2840-02	NO 8 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG LAYOUT AND CROSSING DATA
ES2840-03	NO 8 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG LAYOUT AND CROSSING DATA
ES2840-04	CROSSING GEOMETRY AND CROSSING DATA NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-11	136 LB RE 23'-3 ⁷ / ₁₆ " STRAIGHT SWITCH POINT MADE FROM 40'-0" LONG RAIL NO 8 DOUBLE SLIP CROSSING
ES2840-12	136 LB RE 27'-8 ⁷ / ₈ " CURVED SWITCH POINT MADE FROM 40'-0" LONG RAIL NO 8 DOUBLE SLIP CROSSING
ES2840-30	NO 8 136 LB RE DOUBLE SLIP CROSSING TIMBER TIE LAYOUT
ES2840-40	NO 8 RAILBOUND MANGANESE STEEL FROG WITH PANDROLIZED PLATES FOR A 136 LB RE DOUBLE SLIP CROSSING
ES2840-41	NO 8 DOUBLE SLIP CROSSING CENTER SECTION LAYOUT 136 LB RE RAIL
ES2840-44	INSULATED GAUGE PLATE DETAILS DS-GP-1, DS-GP-2 AND DS-GP-3 136 LB RE NO 8 DOUBLE SLIP CROSSING
ES2840-45	BRACE PLATE AND SLIDE PLATE DETAILS NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-46	SWITCH SLIDE PLATE AND SWITCH HEEL PLATE DETAILS NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-47	DETAILS INSULATED FROG GAUGE PLATES NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-48	FROG PLATE DETAILS NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-49	INSULATED HEAD ROD NO 1 FOR END POINTS NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-50	INSULATED SPREAD RODS NO 2 & 3 FOR END POINTS NO 8 136 LB RE DOUBLE SLIP CROSSING
ES2840-60	GUARD RAIL DETAILS 13'-0" LONG

NOTES:

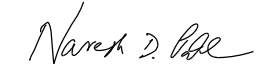
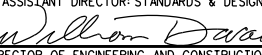
- ENTIRE DOUBLE SLIP CROSSING TO BE FABRICATED FROM 136 LB HEAD HARDENED RAIL.
- LOCATIONS OF INSULATED JOINTS ARE AS SHOWN ON ES2840-02 AND ES2840-03. IT WILL BE SATISFACTORY TO RELOCATE THE INSULATED JOINT IN THE FIELD UP TO 1'-0" SO AS TO PROVIDE A SUITABLE SUSPENDED JOINT, PROVIDED THE STAGGER OF THE INSULATED JOINTS DOES NOT EXCEED 4'-6". SUSPENDED INSULATED JOINTS MUST BE LOCATED IN A CRIB AREA BETWEEN TIES, A MINIMUM DISTANCE OF 4" FROM EDGE OF NEAREST TIE PLATE.
- ALL INSULATED JOINTS ARE TO BE ADHESIVE BONDED INSULATED JOINTS UNLESS OTHERWISE SPECIFIED.
- ALL MATERIALS REQUIRED FOR HAND OR MACHINE OPERATED SWITCH OPERATION WILL BE FURNISHED PER REQUIREMENTS OF THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION.
- MATERIALS AND WORKMANSHIP, ALSO ANY CONSTRUCTION DETAILS NOT SHOWN, SHALL BE PER CURRENT AREMA "TRACKWORK PLANS AND SPECIFICATIONS" UNLESS OTHERWISE SPECIFIED.
- WHERE REQUIRED, ALL IDENTIFICATION SYMBOLS TO BE PLAINLY STAMPED.
- GAUGE PLATES WILL BE FURNISHED INSULATED. SWITCH RODS WILL BE FURNISHED INSULATED UNLESS OTHERWISE SPECIFIED.
- MANUFACTURER SHALL SUBMIT TWO COPIES OF SHOP DRAWINGS TO THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION FOR APPROVAL PRIOR TO FABRICATION OF TURNOUT. SHOP DRAWINGS THAT CHANGE DETAILS OF THESE STANDARDS MUST CLEARLY SPECIFY SUCH PROPOSED CHANGES.
- THE MATERIAL INCLUDED IN THE PURCHASE OF A "DOUBLE SLIP CROSSING COMPLETE" IS EVERYTHING LISTED IN THE BILL OF MATERIALS. TO CONSTRUCT A COMPLETE TURNOUT, SWITCH TIES (PER LIST ON THIS SHEET) AND INSULATED JOINTS, FIELD WELDS, RUNNING RAIL AND CLOSURE RAIL IDENTIFIED ON SUBSEQUENT SHEETS MUST ALSO BE SUPPLIED.
- TIE PLATES SHALL CONFORM TO SCRRA STANDARD ES2454.
- SCREW SPIKES (¹⁵/₁₆" X 6-2 TPI) SHALL CONFORM TO SCRRA STANDARD ES2355. PLATE HOLES SHALL BE 1" DIAMETER. PILOT HOLES IN TIES SHALL BE ⁵/₈" DIAMETER. SCREW SPIKES SHALL BE SCREWED INTO WOOD (NOT DRIVEN).
- MANUFACTURER SHALL BEVEL RAIL ENDS PER CURRENT AREMA PLAN NO 1005.
- THE 27'-8⁷/₈" SWITCH POINT, MADE FROM 40'-0" RAIL PER ES2840-12 IS TO BE FURNISHED WITH SWITCH RODS NO 1A AND 1B PER ES2840-49.
- FOR CROSSING DATA FOR A NO 8 DOUBLE SLIP CROSSOVER 136 LB RE RAIL SEE CHART ON ES2840-02.
- GAUGE PLATES FOR SWITCH AND FROG, SWITCH HEEL PLATE (FOR BOTH RH OR LH TURNOUTS) AND PLATES DS-10 THRU DS-19 ARE DESIGNED TO BE PERPENDICULAR TO THE MAIN LINE THRU RUN RAILS.
- UPON COMPLETION OF TURNOUT INSTALLATION, RUNNING RAIL MUST BE ADJUSTED TO SCRRA NEUTRAL RAIL TEMPERATURE.
- ENTIRE CROSSOVER TO BE FULLY FLOOR ASSEMBLED INCLUDING END FROGS AND HF GUARD RAILS.

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												NO 8 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG		SCALE: NTS	
X XX-XX-XX				REVISION		XX XX								REVISION SHEET - 1 OF 1	
REV.				DATE		DESCRIPTION		DES. ENG.				DIRECTOR OF ENGINEERING AND CONSTRUCTION		CADD FILE: ES2840-01	



NOTE:
1. SEE COVER SHEET FOR NOTES, BILL OF MATERIAL AND DRAWING INDEX.

CROSSING DATA			
BETWEEN THEORETICAL POINTS OF END FROGS	75'-5 3/4"	ANGLE OF CROSSING	7° -09' -10"
BETWEEN THEORETICAL POINTS OF END FROG & CENTER FROG	37'-9 3/4"	DEGREE OF CURVATURE	8° -26' -53"
FROM INSIDE SWITCH POINTS TO THEORETICAL POINT END FROG	10'-0 1/4"	GAUGE LINE RADIUS	678.8314'
FROM THEORETICAL POINT OF CENTER FROG TO HEEL JOINT	7'-6 1/16"	THROW AT END PT	4" MIN, 4 1/2" MAX
LENGTH OF INSIDE SAMSON STOCK RAILS	SEE ABOVE	GAUGE ON STRAIGHT TRACK	4'-8 1/2"
LENGTH OF OUTSIDE SAMSON STOCK RAILS	31'-2 7/16"	GAUGE ON CURVED TRACK	4'-8 5/8"
LENGTH OF FROG FROM THEORETICAL POINT TO TOE	6'-8"	GAUGE ON SWITCH PT	4'-8 1/2"
LENGTH OF FROG FROM THEORETICAL POINT TO HEEL	11'-4"	SWITCH ANGLE	1° -14' -04"
LENGTH OF OUTSIDE SAMSON END SWITCH POINTS (0" SAMSON)	23'-3 7/16"	HEEL SPREAD OUTSIDE SWITCH POINTS 6 1/32" BC, 10 13/16" AC	-
LENGTH OF INSIDE SAMSON END SWITCH POINTS (0" SAMSON)	27'-8 7/8"	HEEL SPREAD INSIDE SWITCH POINTS 7 3/16" BC, 14" AC	-

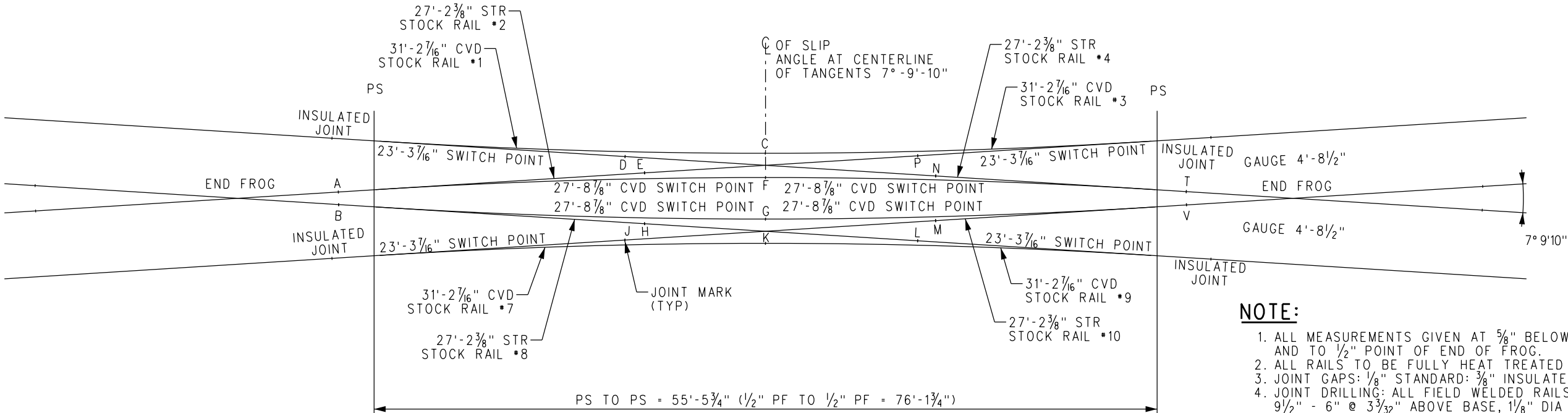
						DRAWN BY: A. CARLOS	DATE: 03/31/2011
							
						ASSISTANT DIRECTOR: STANDARDS & DESIGN	
							
						DIRECTOR OF ENGINEERING AND CONSTRUCTION	
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REV.	DATE		DESCRIPTION	DES.	ENG.		

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**METROLINK**
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS		STANDARD	2840
NO 8 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG LAYOUT AND CROSSING DATA		SCALE:	NTS
		REVISION	SHEET
		-	1 OF 2
		CADD FILE:	ES2840-02

CROSSING DATA			
BETWEEN THEORETICAL POINTS OF END FROGS	75'-5 ³ / ₄ "	ANGLE OF CROSSING	7° -09'-10"
BETWEEN THEORETICAL POINTS OF END FROG & CENTER FROG	37'-9 ³ / ₄ "	DEGREE OF CURVATURE	8° -26'-53"
FROM INSIDE SWITCH POINTS TO THEORETICAL POINT END FROG	10'-0 ¹ / ₄ "	GAUGE LINE RADIUS	678.8314'
FROM THEORETICAL POINT OF CENTER FROG TO HEEL JOINT	7'-6 ¹ / ₁₆ "	THROW AT END PT	4" MIN, 4 ¹ / ₂ " MAX
LENGTH OF INSIDE SAMSON STOCK RAILS	27'-2 ³ / ₈ " 27'-2 ³ / ₈ "	GAUGE ON STRAIGHT TRACK	4'-8 ¹ / ₂ "
LENGTH OF OUTSIDE SAMSON STOCK RAILS	31'-2 ⁷ / ₁₆ "	GAUGE ON CURVED TRACK	4'-8 ⁵ / ₈ "
LENGTH OF FROG FROM THEORETICAL POINT TO TOE	6'-8"	GAUGE ON SWITCH PT	4'-8 ¹ / ₂ "
LENGTH OF FROG FROM THEORETICAL POINT TO HEEL	11'-4"	SWITCH ANGLE	1° -14'-04"
LENGTH OF OUTSIDE SAMSON END SWITCH POINTS (0" SAMSON)	23'-3 ⁷ / ₁₆ "	HEEL SPREAD OUTSIDE SWITCH POINTS 6 ¹ / ₃₂ " BC, 10 ¹³ / ₁₆ " AC	-
LENGTH OF INSIDE SAMSON END SWITCH POINTS (0" SAMSON)	27'-8 ⁷ / ₈ "	HEEL SPREAD INSIDE SWITCH POINTS 7 ³ / ₁₆ " BC, 14" AC	-



CROSSING DATA

NOTE:

- 1. ALL MEASUREMENTS GIVEN AT 5/8" BELOW TOP OF RAIL AND TO 1/2" POINT OF END OF FROG.
- 2. ALL RAILS TO BE FULLY HEAT TREATED - BRINELL 341-388.
- 3. JOINT GAPS: 1/8" STANDARD: 3/8" INSULATED.
- 4. JOINT DRILLING: ALL FIELD WELDED RAILS: 9 1/2" - 6" @ 3 3/32" ABOVE BASE, 1/8" DIA HOLES.
- 5. ALL INSULATED JOINT RAILS: 3 1/2" - 6" - 6" @ 3 3/32" ABOVE BASE, 1/4" DIA HOLES.
- 6. PROPER LOCATION OF EDGE OF PLATES TO BE MARKED WITH WHITE PAINT ON OUTER FLANGE OF RAIL.
- 7. MATCH MARK ALL RAIL ENDS AS SHOWN.
- 8. ENTIRE CROSSOVER TO BE FULLY SHOP/FLOOR ASSEMBLED INCLUDING END FROGS AND HF GUARD RAILS.

SPECIFICATIONS:

- 1. CROSSING TYPE - NO 8 DOUBLE SLIP, GENERALLY PER AREMA PLAN. RAIL: 136 LB RE HEAT TREATED.
- 2. FROG - NO 8 RAIL BOUND MANGANESE FROG, 136 LB RE, 18'-0" LONG WITH PANDROL PLATES - MANGANESE CASTING TO BE EXPLOSIVE HARDENED.
- 3. SWITCH POINTS - 27'-8⁷/₈" & 23'-3⁷/₁₆" LONG, CURVED AND STRAIGHT, SAMSON PLANING AREMA DETAIL 5100. CURVED POINTS TO BE EQUIPPED WITH REPLACEABLE MANGANESE INSERTS PER 2840-11 & 2840-12.
- 4. CLIPS AND RODS - VERTICAL RODS WITH "SMJ" CLIPS.
- 5. ADJUSTABLE BRACES - BOLTLESS WITH SPRING CLIPS.
- 6. GUARD RAILS - U-69 SECTION 13'-0" RAISED GUARD RAIL WITH BRACES AND PLATES.
- 7. GAUGE PLATES - TO BE FURNISHED INSTALLED.

REFERENCE DRAWING

LAYOUT - NO 8, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2840-02

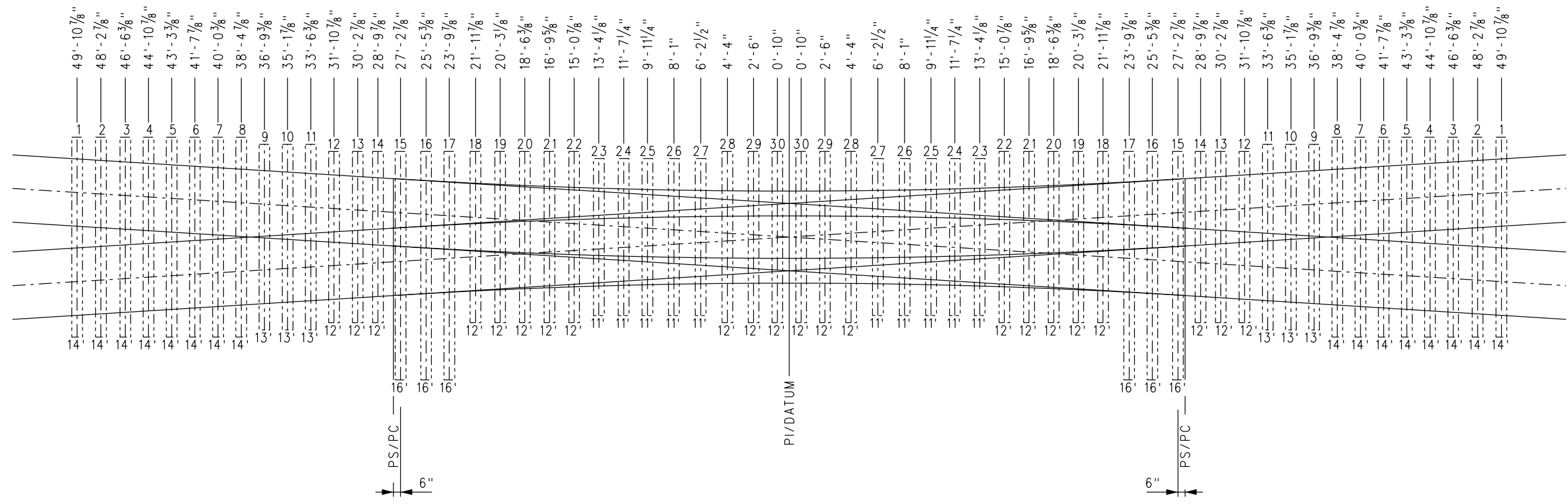
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				 ASSISTANT DIRECTOR: STANDARDS & DESIGN						SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY		CROSSING GEOMETRY AND CROSSING DATA		SCALE: NTS	
				 DIRECTOR OF ENGINEERING AND CONSTRUCTION						ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		NO 8 136 LB RE DOUBLE SLIP CROSSING		REVISION SHEET 1 OF 1	
												CADD FILE: ES2840-04			
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REV.		DATE		DESCRIPTION		DES.		ENG.							



1. SWITCH POINTS TO BE MADE FROM NEW HEAD HARDENED RAIL.
2. METAL IDENTIFICATION TAG SHOWING HAND OF SWITCH POINT, WEIGHT OF RAIL, MANUFACTURER AND WHEN MADE, TO BE FASTENED TO SWITCH POINT AT LOCATION SHOWN.
3. RIGHT HAND TURNOUT SHOWN. MAKE OPPOSITE HAND FOR LEFT HAND SWITCH POINTS.
4. SIDE PLANING FIGURED ON GAUGE LINE $\frac{5}{8}$ " BELOW TOP OF RAIL.
5. MATERIAL AND WORKMANSHIP, ALSO ANY CONSTRUCTION DETAILS NOT SHOWN, SHALL BE PER CURRENT AREMA "MANUAL AND PORTFOLIO", UNLESS OTHERWISE SPECIFIED ON THIS PLAN.
6. IN ORDER TO ELIMINATE STRESS RAISERS, MANUFACTURER SHALL PEEN THE EDGES OF THE BOLT HOLES AS INDICATED AT THE HEEL OF THE SWITCH POINT AND AT THE HEEL END OF THE SWITCH POINT. USING AIR HAMMER WITH SUITABLE HEAD AND FINISHING WITH DRIFT PIN. BRAND ON RAIL AT EDGE OF BOLT HOLE TO BE CAREFULLY REMOVED BY GRINDING BEFORE PEENING.
7. THE CONTOUR PLANING SHALL BE ON THE GAUGE SIDE BEGINNING AT A DISTANCE OF 3'-0" FROM THE POINT OF SWITCH AND SHALL BE SHAPED TO THE CONTOUR OF A NEW 136 LB RE AND SHALL RUN OUT AT THE END OF THE TOP PLANING, WHERE THE SWITCH POINT HAS FULL HEAD CONTOUR.
8. METAL IDENTIFICATION TAG SHOWING (1) DESIGN LENGTH OF SWITCH, (2) IN PARENTHESIS, THE ACTUAL LENGTH OF SWITCH POINT RAIL AND (3) THE TURNOUT NUMBER. MARK TAG THUS: 16'-6" (40'-0") NO 8. TAG TO BE FASTENED TO SWITCH POINT, ON GAUGE SIDE OF RAIL AT HEEL SPACER BLOCK IN LOCATION SHOWN.
9. AT HEEL END OF SWITCH POINT RAIL, BREAK SHARP CORNER AROUND THE ENTIRE PERIPHERY BY SLIGHTLY GRINDING. ALSO, "DO NOT" END HARDEN RAIL END.
10. NON - INTERLOCKED AND INTERLOCKED SWITCH POINTS ARE MADE THE SAME.
11. UNLESS SWITCH POINT ORDER SPECIFICALLY CALLS FOR USE OF $\frac{3}{4}$ " RIVETS AND $\frac{3}{4}$ " STOP BOLTS, MANUFACTURER CAN SUBSTITUTE $\frac{3}{4}$ " HUCK FASTENERS, BOLT PART NO C-50-LR-BR2416 AND COLLAR PART NO L3-2-24G FOR $\frac{3}{4}$ " RIVETS. FOR $\frac{3}{4}$ " STOP BOLTS USE HUCK FASTENERS, BOLT PART NO C-50-LR-BR2424 AND COLLAR PART NO L3-2-R-24G.
12. TURNOUTS ARE TO BE FINISHED WITH MANGANESE STEEL INSERT ON THE REVERSE POINT (TURNOUT SIDE) AND A PLAIN SWITCH POINT ON THE NORMAL POINT (STRAIGHT SIDE). REPLACEMENT POINTS MUST SPECIFY WHETHER PLAIN POINT OR MANGANESE STEEL INSERT ARE TO BE FURNISHED.



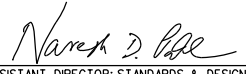
				DRAWN BY: A. CARLOS DATE: 03/31/2011		SCERRA ENGINEERING STANDARDS ARE INTENDED FOR SCERRA APPROVED USES ONLY. FOR NON-SCERRA APPROVED USES: SCERRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCERRA. ALL RIGHTS RESERVED.		 METROLINK® SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		ENGINEERING STANDARDS 136 LB RE 23'-3 7/16" STRAIGHT SWITCH POINT MADE FROM 40'-0" LONG RAIL NO 8 DOUBLE SLIP CROSSING		STANDARD 2840 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2840-11	
				ASSISTANT DIRECTOR: STANDARDS & DESIGN 									
				DIRECTOR OF ENGINEERING AND CONSTRUCTION 									
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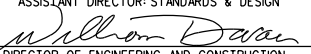


BILL OF SWITCH TIES			
PIECES	SIZE	LENGTH	BOARD FEET
10	7"x9"	11'-0"	577.5
22	7"x9"	12'-0"	1386.0
6	7"x9"	13'-0"	409.5
16	7"x9"	14'-0"	1176.0
0	7"x9"	15'-0"	0
6	7"x9"	16'-0"	504.0
TOTAL			TOTAL
60			4053

X	XX-XX-XX	REVISION	XX	XX	
REV.	DATE	DESCRIPTION	DES.	ENG.	

DRAWN BY: HDR DATE: 03/31/2011


ASSISTANT DIRECTOR: STANDARDS & DESIGN


DIRECTOR OF ENGINEERING AND CONSTRUCTION

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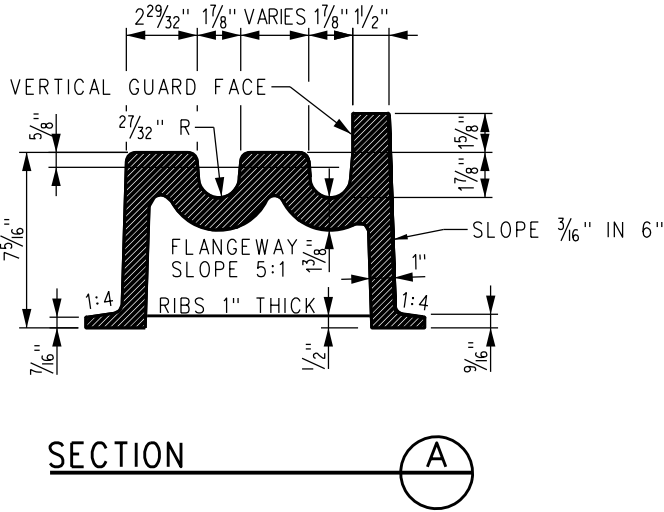
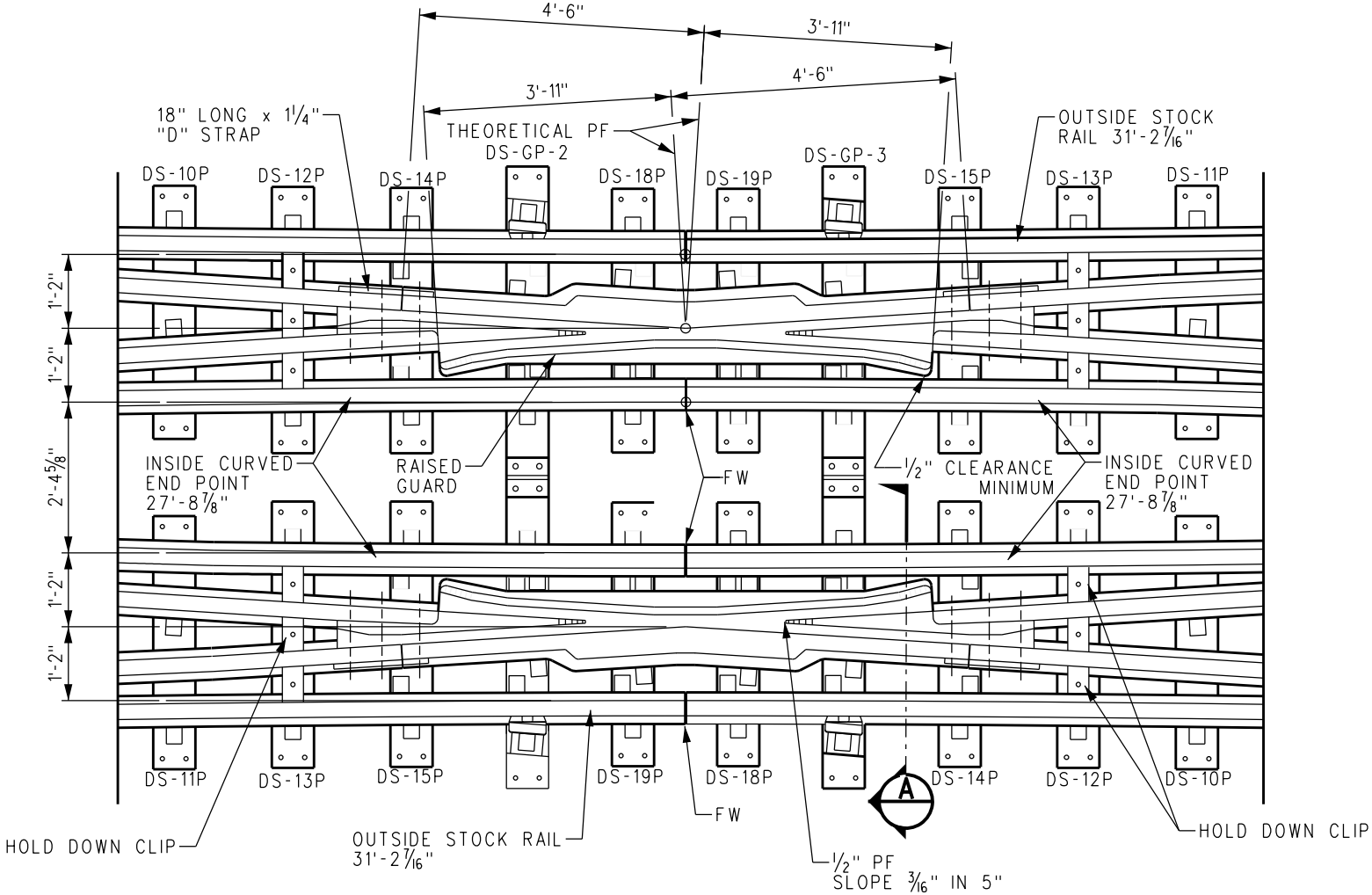
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ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

NO 8 136 LB RE DOUBLE SLIP CROSSING
TIMBER TIE LAYOUT

STANDARD 2840
SCALE: NTS
REVISION SHEET
- 1 OF 1
CADD FILE: ES2840-30

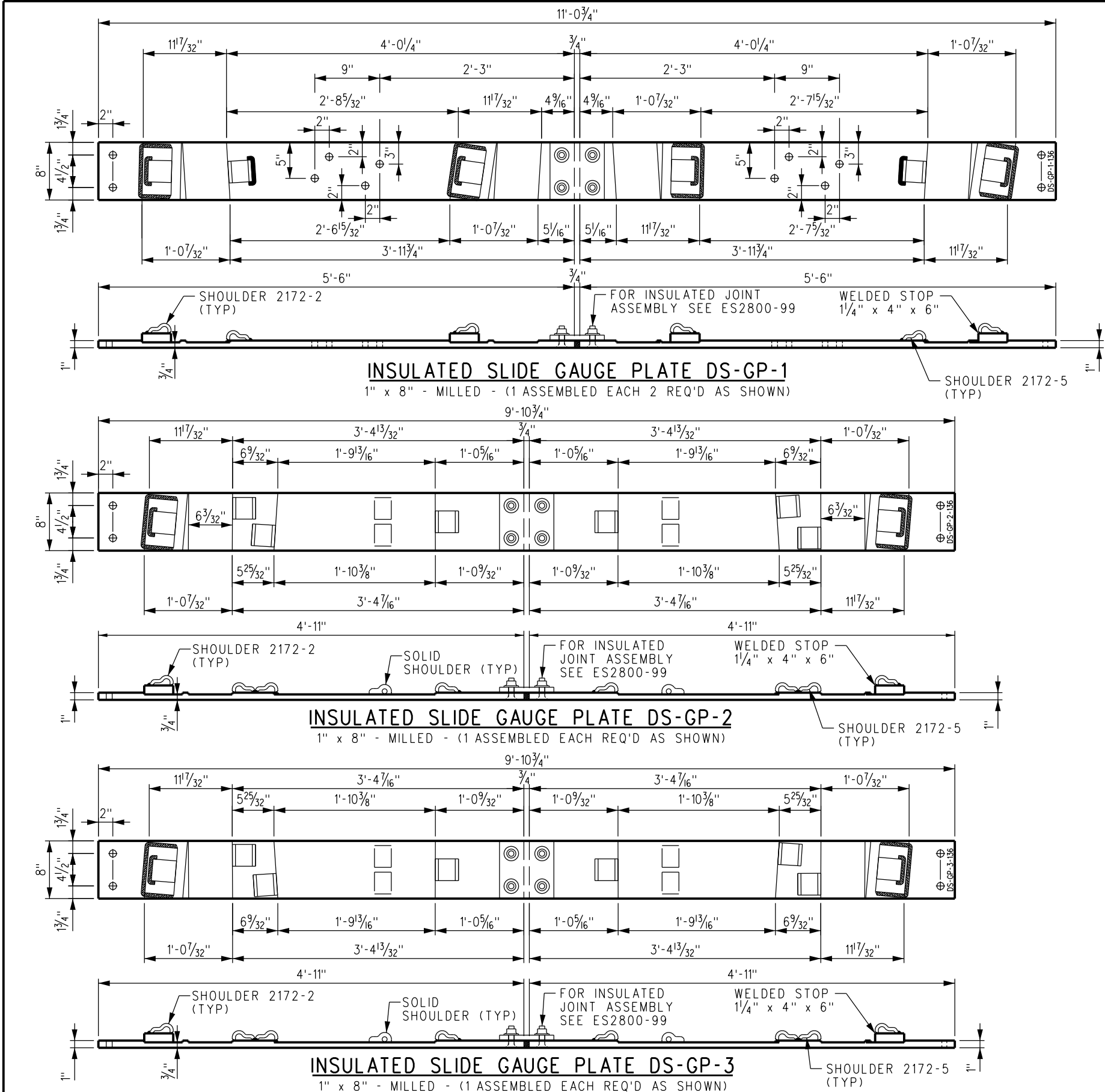
- NOTES:
- 1. HOLD DOWN CLIPS TO BE INSTALLED IN THE FIELD.
 - 2. SOLID CAST MANGANESE STEEL CENTER FROGS PER CURRENT AREMA SPECIFICATIONS MODIFIED FOR USE WITH "PANDROL" TYPE FASTENERS.



NO 8 DOUBLE SLIP CROSSING
CENTER SECTION LAYOUT
FROG ANGLE 7° - 09' - 10"
FLANGEWAY 1 7/8" WIDE, 1 7/8" DEEP

				DRAWN BY: A. CARLOS		DATE: 03/31/2011		<div>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES: SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.</div>	<div>METROLINK[®] SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>	ENGINEERING STANDARDS		STANDARD	
										2840			
										SCALE: NTS			
										REVISION SHEET 1 OF 1			
										CADD FILE: ES2840-41			

NO 8 DOUBLE SLIP CROSSING
CENTER SECTION LAYOUT
136 LB RE RAIL

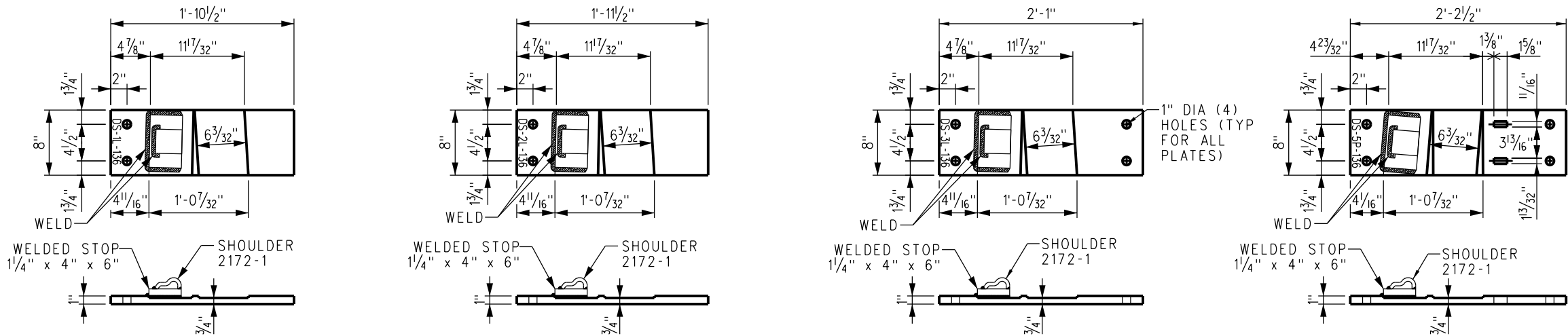


- NOTES:**
1. PLATES TO BE MADE OF MILD ROLLED STEEL.
 2. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 8 DOUBLE SLIP CROSSING.
 3. THE "PANDROL" TYPE, OR APPROVED EQUAL, WELD - ON PRESSED STEEL SHOULDER, MADE OF MILD ROLLED STEEL AND MEETING "PANDROL'S" DESIGN SPECIFICATIONS SHALL BE USED.
 4. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO GAUGE PLATES. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
 5. STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.
 6. ALL WELDS ARE 1/2" FILLET WELDS UNLESS OTHERWISE NOTED.
 7. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

REFERENCE DRAWINGS

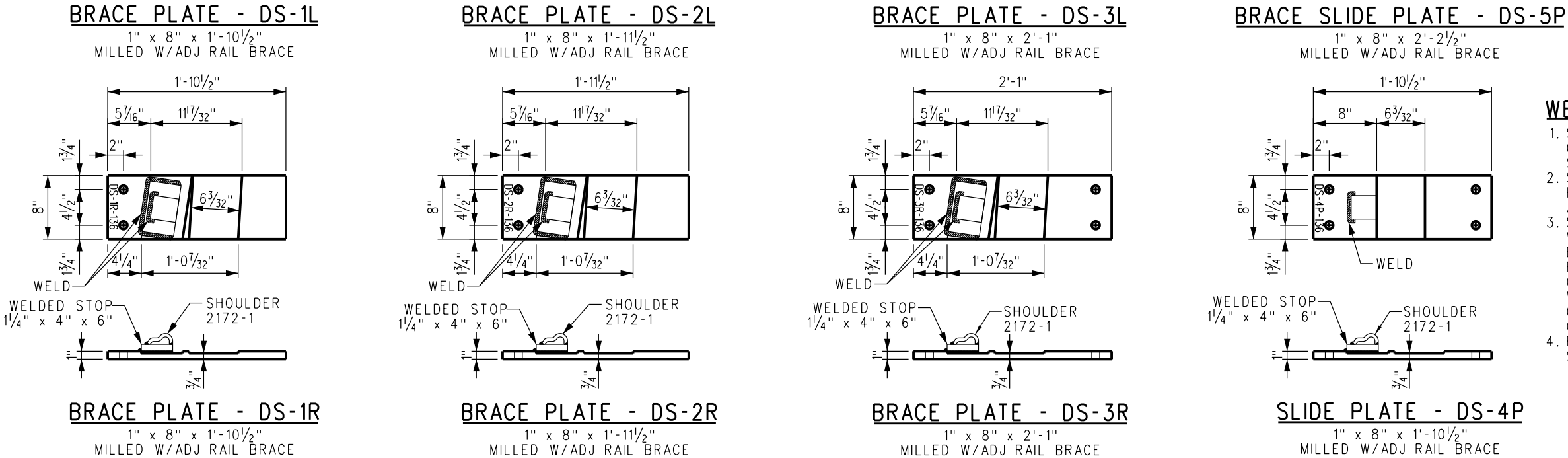
LAYOUT - NO 8, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2840-02

DRAWN BY: A. CARLOS DATE: 03/31/2011				SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES, SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD	2840
REVISION				METROLINK®				INSULATED GAUGE PLATE DETAILS				SCALE:	NTS
REV. DATE DESCRIPTION DES. ENG.				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY				DS-GP-1, DS-GP-2 AND DS-GP-3				REVISION SHEET	1 OF 1
				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				136 LB RE NO 8 DOUBLE SLIP CROSSING				CADD FILE:	ES2840-44



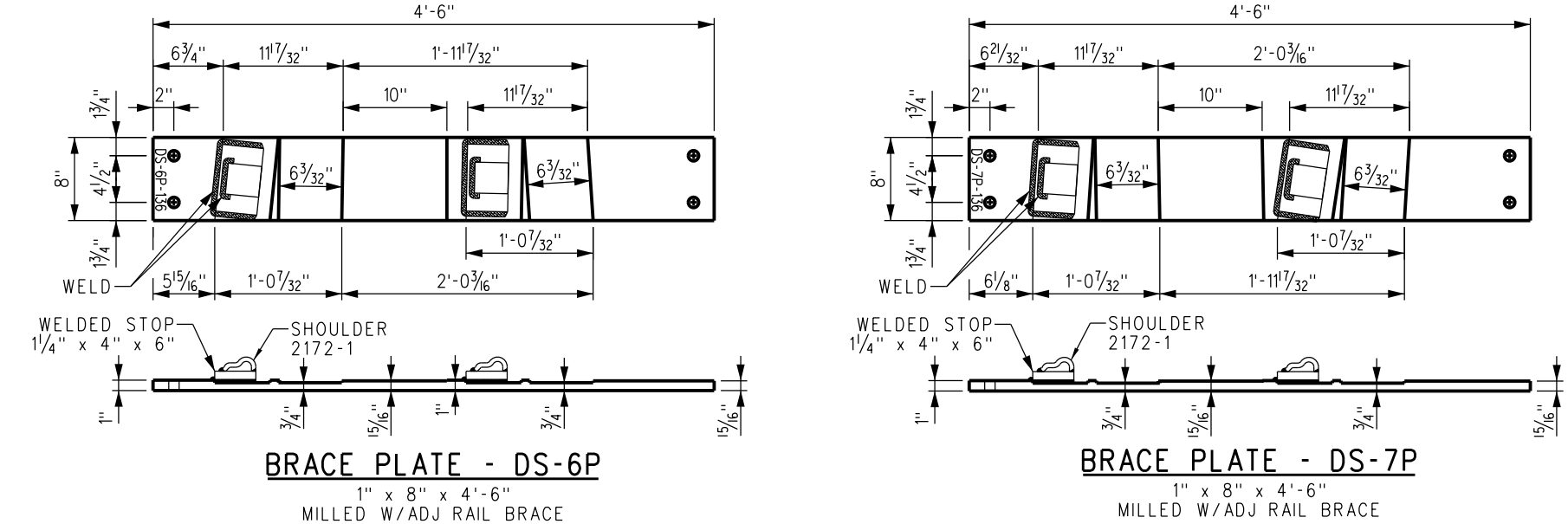
NOTES:

1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. EACH PLATE TO BE PLAINLY STAMPED WITH PLATE NO AND 136 (WEIGHT OF RAIL) & HAND OF TURNOUT (RH OR LH)
3. THE PANDROL TYPE, OR APPROVED EQUAL, WELD - ON PRESSED STEEL SHOULDER, MADE FROM MILD STEEL, AND MEETING PANDROL'S DESIGN SPECIFICATIONS, SHALL BE USED.
4. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO THE PLATE. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
5. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 8 DOUBLE SLIP CROSSING.
6. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.



WELDING SPECIFICATIONS:

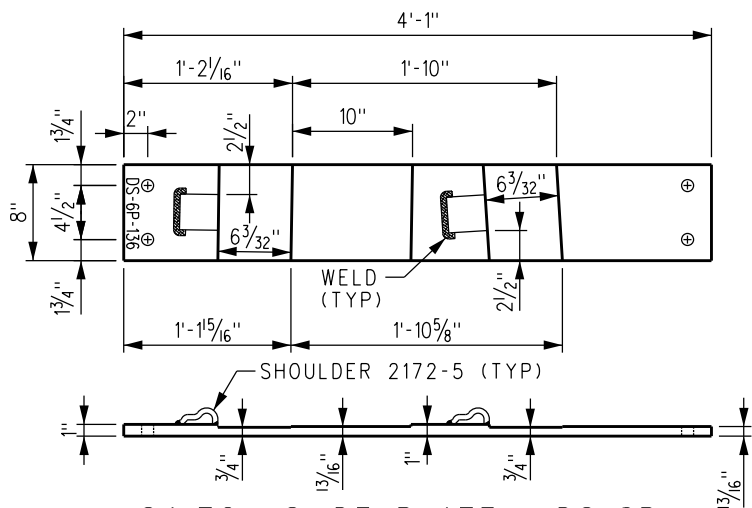
1. SET PRESSED STEEL SHOULDER FLUSH AGAINST LINE OF BASE OF RAIL OR SHOULDER OF MILLED PLATE AS SHOWN AND WELD WITH 2 - PASS $\frac{3}{8}$ " + WELD.
2. STOP PLATE FOR ADJUSTABLE RAIL BRACE TO BE SET FLUSH WITH SHOULDER OF MILLED PLATE AS SHOWN AND WELD WITH 3 - PASS $\frac{1}{2}$ " + FILLET WELD.
3. SHOULDERS AND STOPS ARE TO BE CAREFULLY WELDED TO PLATE. NO WELD SHALL PROJECT BEYOND THE VERTICAL EDGE OF THE UNWELDED FOURTH SIDE OF THE STOP PLATE OR VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT. ANY WELD PROJECTING BEYOND THE FACE OF THE STOP OR SHOULDER MUST BE MACHINED OFF TO PROVIDE CLEAR DIMENSION CALLED FOR.
4. FOR WELDING PRESSED STEEL SHOULDERS OR PLATE STOPS FOR ADJUSTABLE USE THE FOLLOWING:
 - A. ELECTRODE $\frac{1}{8}$ ", WELDING SPEC. 7018XLM.
 - B. ELECTRODE $\frac{3}{16}$ ", WELDING SPEC. 7018XLM.
 - C. WIRE, WELDING $\frac{3}{32}$ ", NR203, 1% NICKEL FLUX CORE. OTHER WIRE OR ELECTRODES MEETING SPECIFICATIONS AS CALLED FOR, APPROVED BY DIRECTOR OF ENGINEERING, MAY BE USED.



REFERENCE DRAWINGS

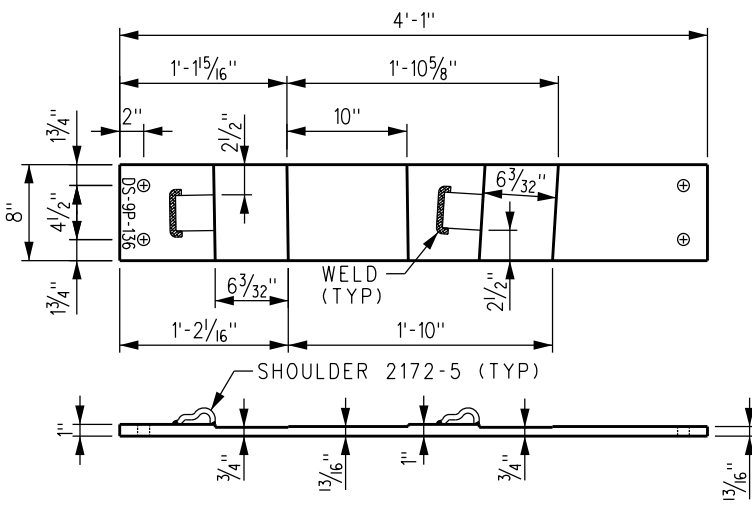
LAYOUT - NO 8, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2840-02

				DRAWN BY: A. CARLOS DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS		STANDARD 2840	
				 ASSISTANT DIRECTOR: STANDARDS & DESIGN				SCALE: NTS			
				 DIRECTOR OF ENGINEERING AND CONSTRUCTION				BRACE PLATE AND SLIDE PLATE DETAILS NO 8 136 LB RE DOUBLE SLIP CROSSING			
								REVISION SHEET 1 OF 1			
X	XX-XX-XX	REVISION	XX	XX					CADD FILE: ES2840-45		
REV.	DATE	DESCRIPTION	DES.	ENG.							



SWITCH SLIDE PLATE - DS-8P

1" x 8" x 4'-1" - MILLED - W/ADJ RAIL BRACE



SWITCH SLIDE PLATE - DS-9P

1" x 8" x 4'-1" - MILLED - W/ADJ RAIL BRACE

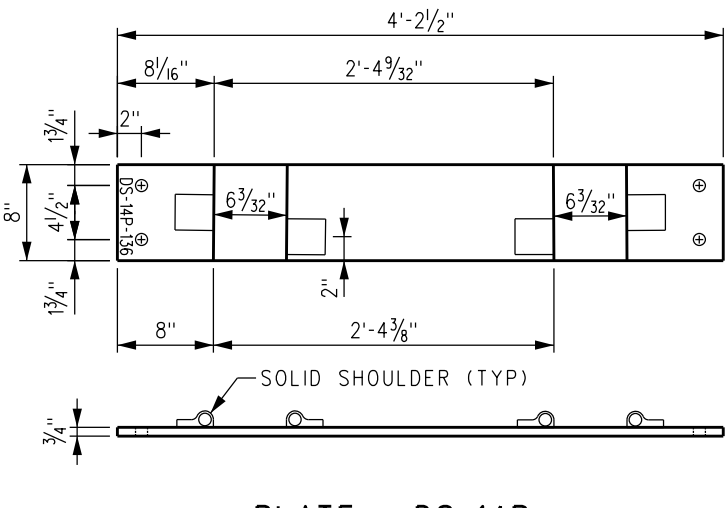


PLATE - DS-14P

3/4" x 8" x 4'-2 1/2" - FLAT

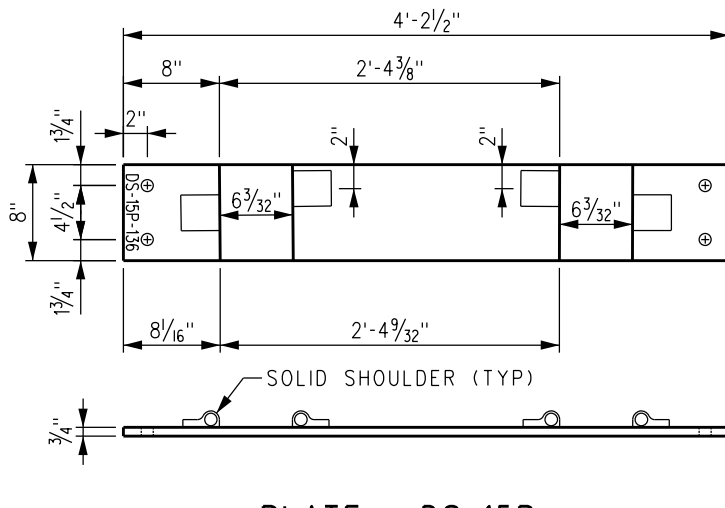
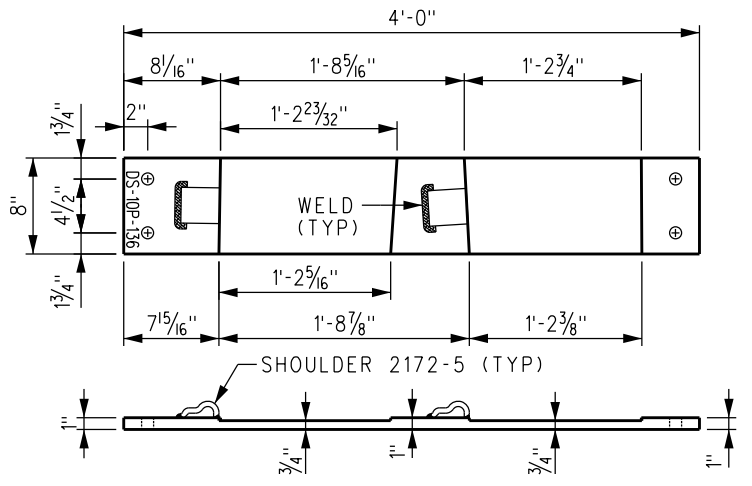


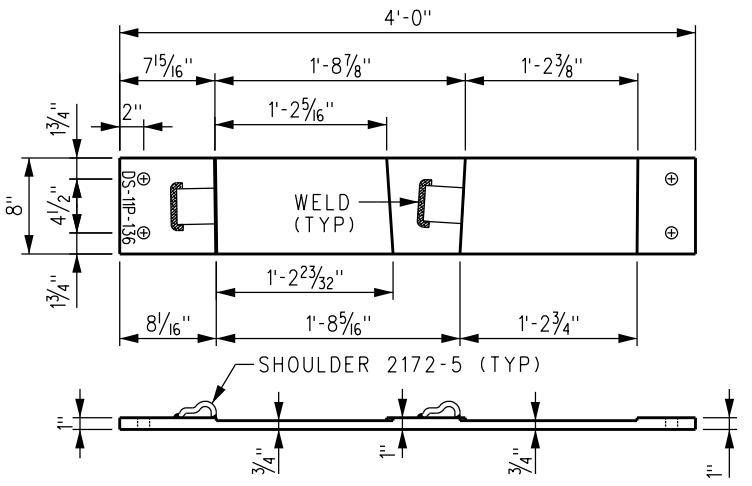
PLATE - DS-15P

3/4" x 8" x 4'-2 1/2" - FLAT



SWITCH SLIDE PLATE - DS-10P

1" x 8" x 4'-0" - MILLED - W/ADJ RAIL BRACE



SWITCH SLIDE PLATE - DS-11P

1" x 8" x 4'-0" - MILLED - W/ADJ RAIL BRACE

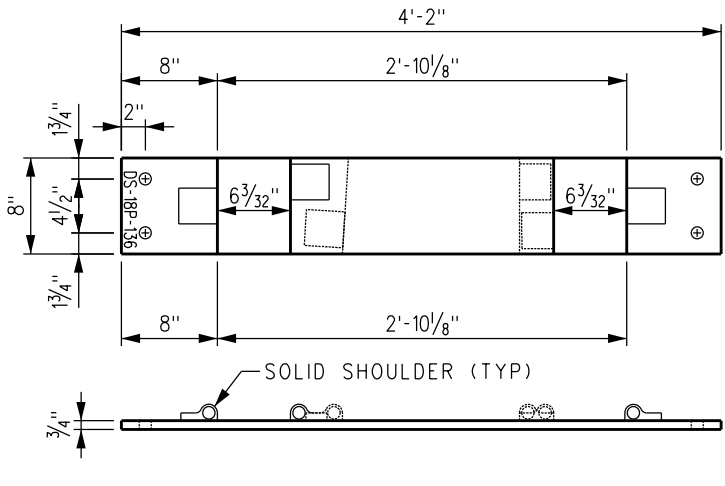


PLATE - DS-18P

3/4" x 8" x 4'-2" - FLAT

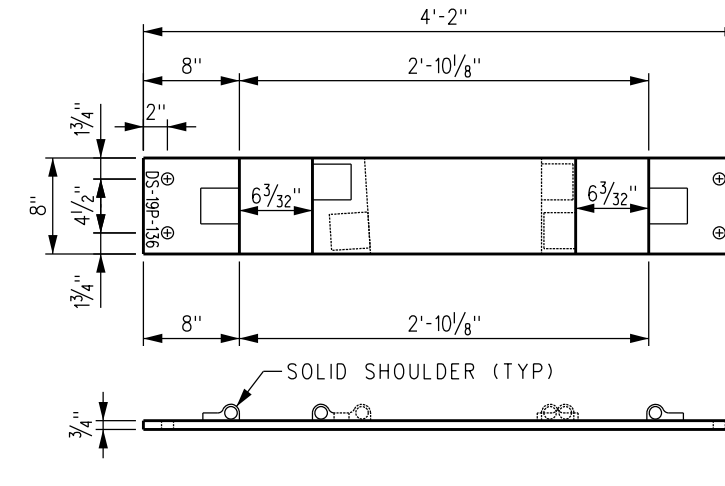
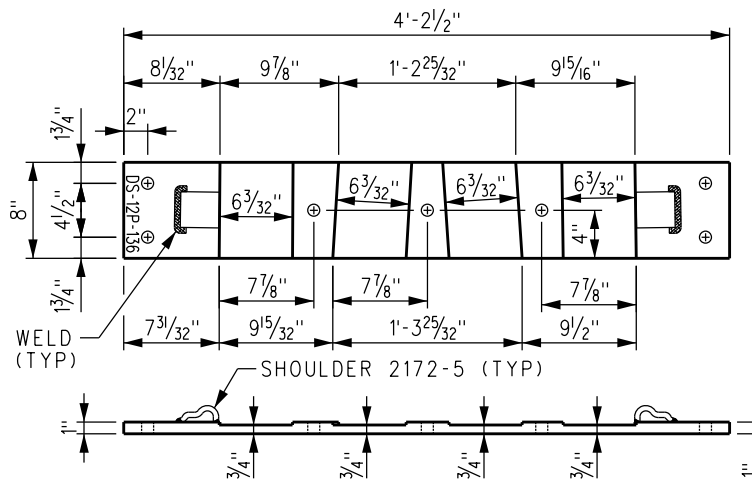


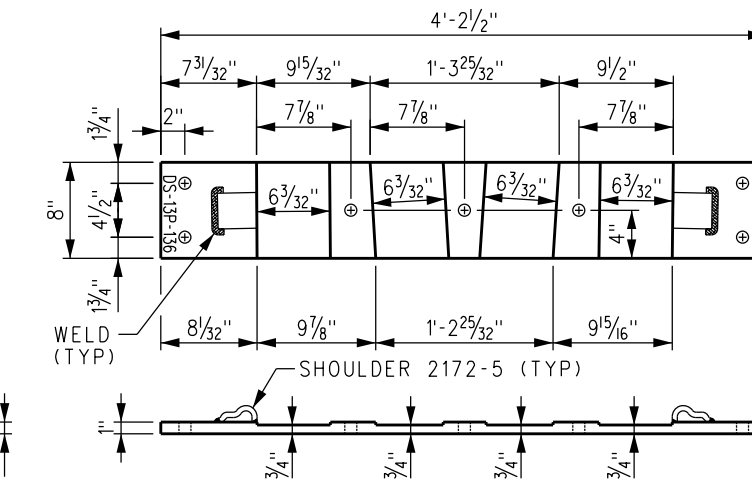
PLATE - DS-19P

3/4" x 8" x 4'-2" - FLAT



SWITCH HEEL PLATE - DS-12P

1" x 8" x 4'-2 1/2" - MILLED - W/ADJ RAIL BRACE



SWITCH HEEL PLATE - DS-13P

1" x 8" x 4'-2 1/2" - MILLED - W/ADJ RAIL BRACE

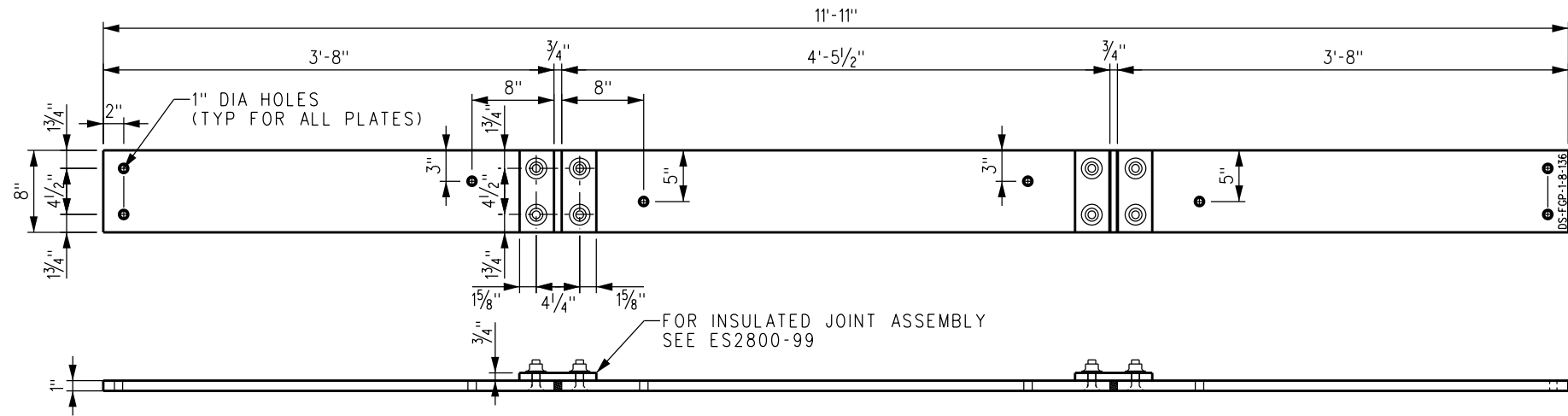
NOTES:

1. STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.
2. ALL WELDS ARE 1/2" FILLET WELDS UNLESS OTHERWISE NOTED.
3. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

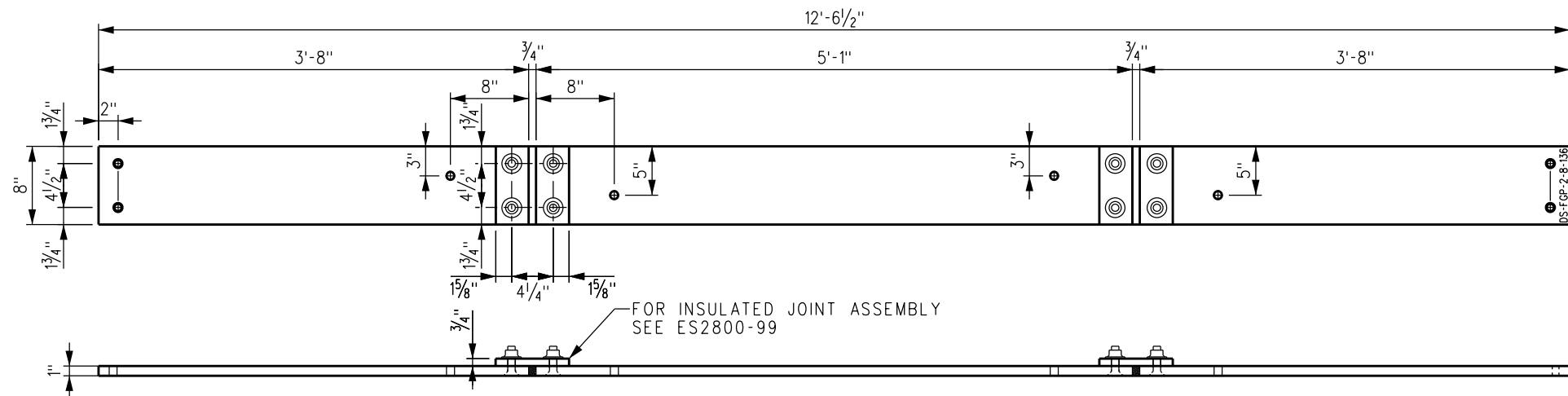
REFERENCE DRAWINGS

LAYOUT - NO 8, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2840-02

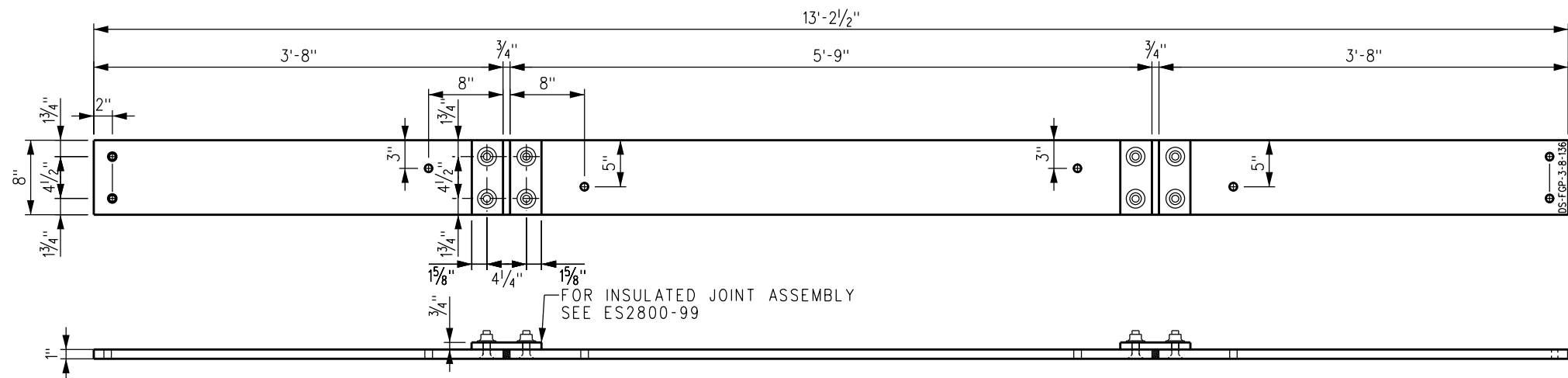
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				Narex D. Pae				METROLINK®				SWITCH SLIDE PLATE AND SWITCH HEEL PLATE DETAILS		SCALE: NTS	
				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				NO 8 136 LB RE DOUBLE SLIP CROSSING		REVISION SHEET 1 OF 1	
				DIRECTOR OF ENGINEERING AND CONSTRUCTION										CADD FILE: ES2840-46	
				REV. DATE		REVISION DESCRIPTION		DES. ENG.							
				XX XX											



INSULATED FROG GAUGE PLATE DS-FGP-1
1" x 8" - FLAT



INSULATED FROG GAUGE PLATE DS-FGP-2
1" x 8" - FLAT

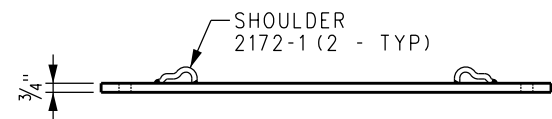
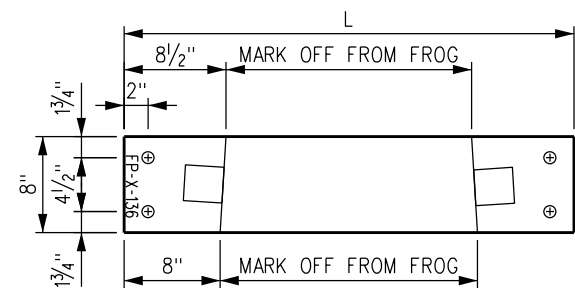
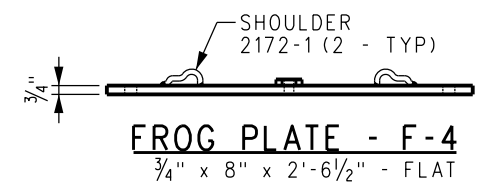
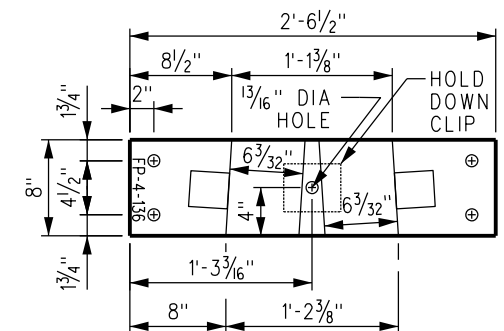
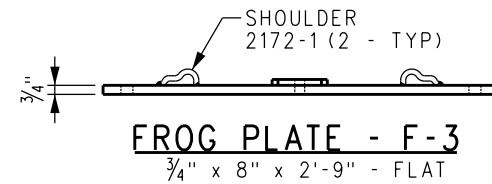
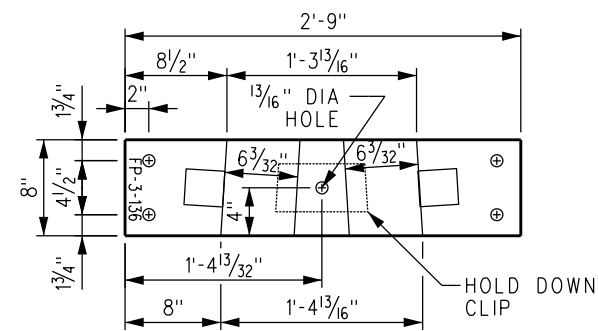
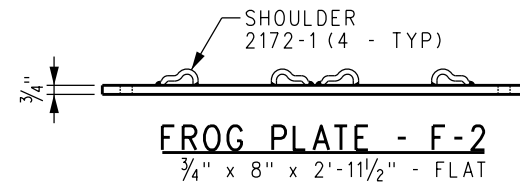
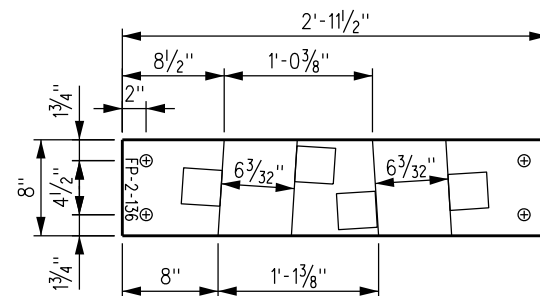
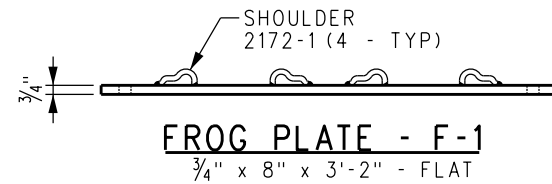
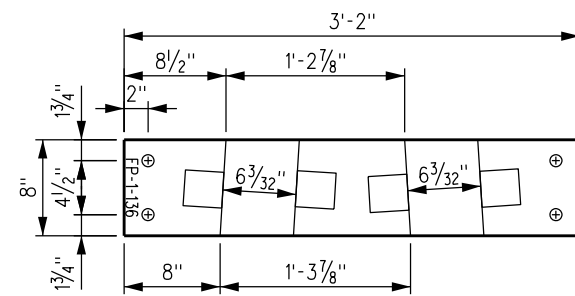


INSULATED FROG GAUGE PLATE DS-FGP-3
1" x 8" - FLAT

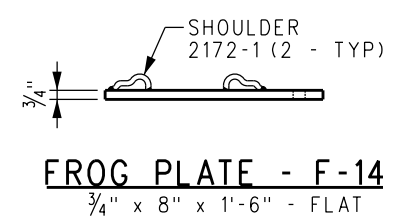
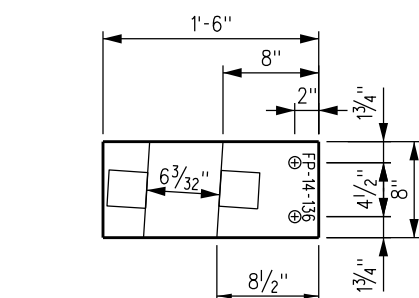
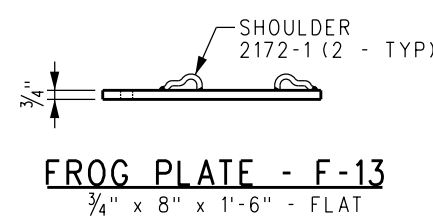
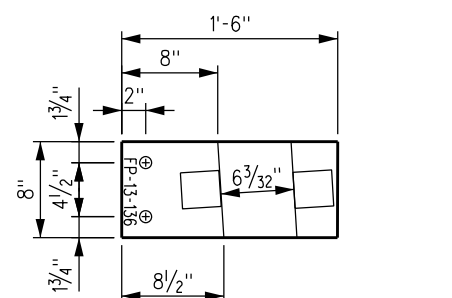
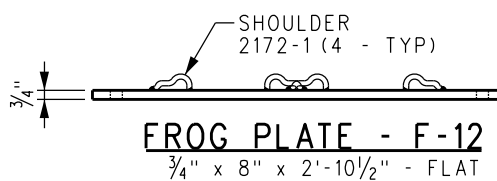
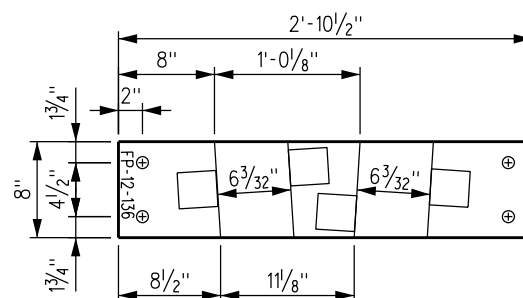
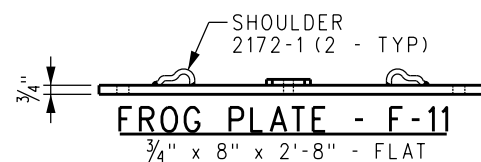
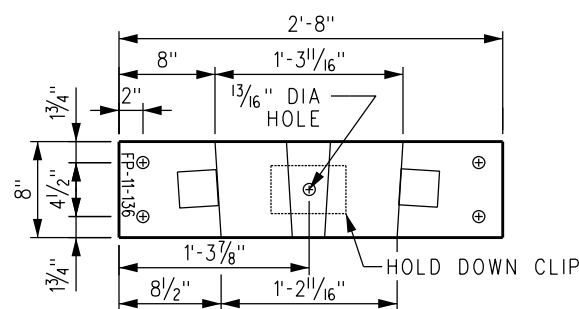
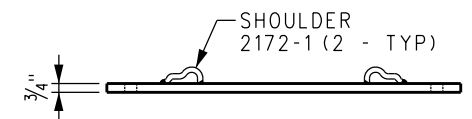
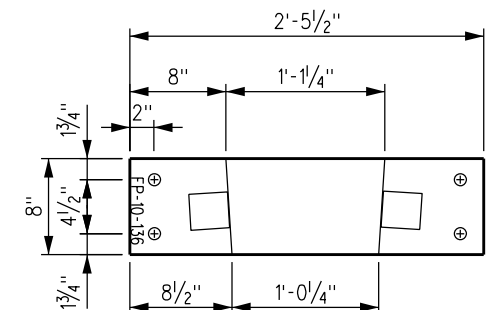
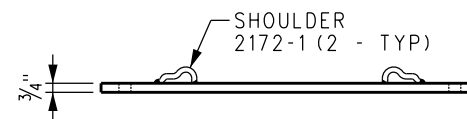
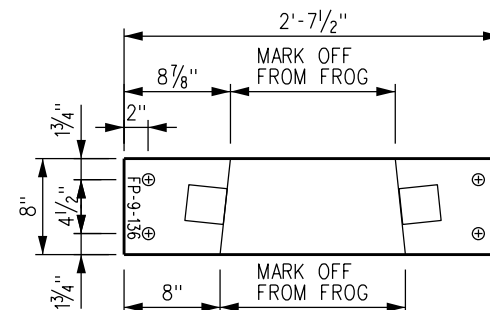
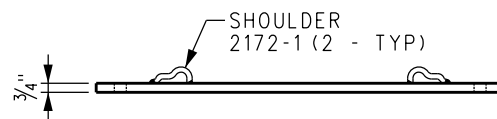
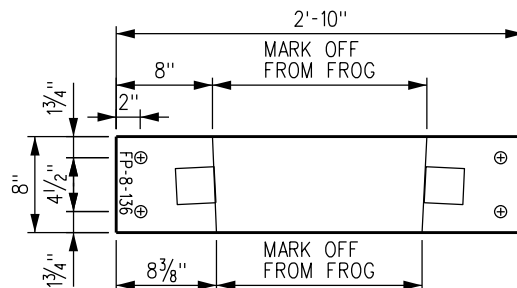
REFERENCE DRAWINGS

LAYOUT - NO 8, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2840-02

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DIMENSION TABLE		
PLATE	L	NO REQ'D
F-5	3'-1 $\frac{1}{2}$ "	1
F-6	2'-11"	1
F-7	2'-9"	1



NOTES:

1. STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.
2. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

REFERENCE DRAWINGS

LAYOUT - NO 8, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2840-02

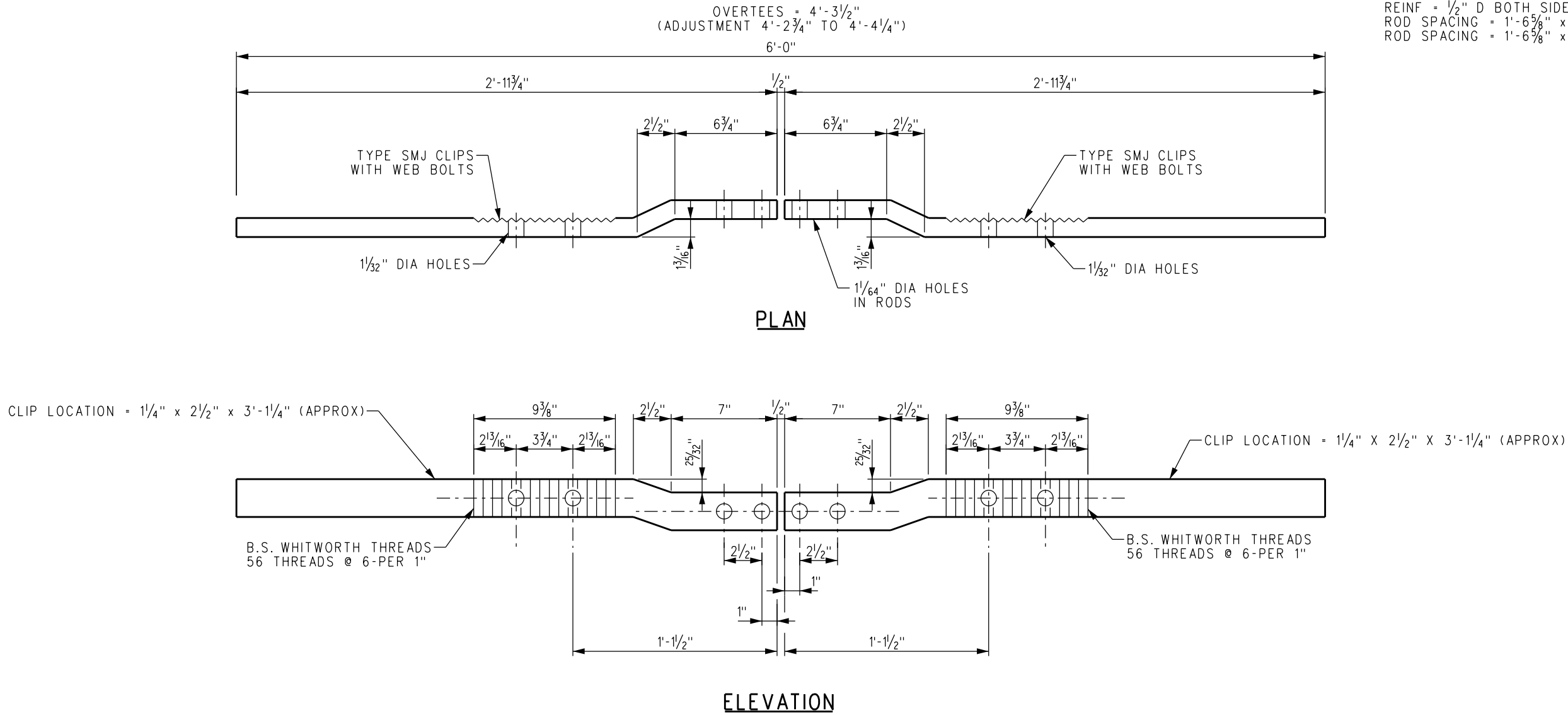
		DRAWN BY: A. CARLOS DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES: SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.		 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		ENGINEERING STANDARDS FROG PLATE DETAILS NO 8 136 LB RE DOUBLE SLIP CROSSING		STANDARD 2840 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2840-48	
		Narek D. Bese ASSISTANT DIRECTOR: STANDARDS & DESIGN									
		Wilton Davis DIRECTOR OF ENGINEERING AND CONSTRUCTION									
X	XX-XX-XX	REVISION	XX	XX							
REV.	DATE	DESCRIPTION	DES.	ENG.							

INSULATION MATERIAL
CONSISTS OF:


(1) FIBRE CHANNEL C-1.
(2) FIBRE ANGLE PLATE AP-34.
(4) FIBRE BUSHINGS B-11.
(1) STEEL SPLICE PLATE ST-684.
(1) STEEL CHANNEL ST-568.
(4) 3/4" HUCK BOLTS C50LR-BR24-36.
(4) HUCK COLLARS LC2R-24G.

SWITCH INFORMATION

GAUGE = 4'-8 5/8"
THROW AT POINT = 4" MIN, 4 1/2" MAX
E DISTANCE = 1 9/32"
PT = 0" SAMSON
REINF = 1/2" D BOTH SIDES (SLOT 1/4" STOCK SIDE)
ROD SPACING = 1'-6 5/8" x 3'-0 1/2" (NO 2 ROD)
ROD SPACING = 1'-6 5/8" x 3'-5 1/2" (NO 3 ROD)



- NOTES:
1. INSULATED SPREAD RODS NO 2 OR 3 WITH CLIPS AND BOLTS ATTACHED WITH HUCKED INSULATED SPLICE, (2) EACH REQUIRED PER SLIP SWITCH
2. STAMP ROD WITH "RESPECTIVE ROD NO-136-DSS"

				DRAWN BY: A. CARLOS		DATE: 03/31/2011	<div>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES: SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.</div>	<div> METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>	ENGINEERING STANDARDS		STANDARD
									2840		
									SCALE: NTS		
									REVISION SHEET		
									- 1 OF 1		
									CADD FILE: ES2840-50		
X	XX-XX-XX	REVISION	XX	XX							
REV.	DATE	DESCRIPTION	DES.	ENG.							

METROLINK (SCRRA)
ENGINEERING STANDARDS
NO 10 DOUBLE SLIP CROSSING

DRAWING INDEX

BILL OF MATERIAL	
QTY	DESCRIPTION
2 EACH	SOLID MANGANESE CENTER FROG
4 EACH	"D" STRAPS WITH BOLTS
2 EACH	NO 1A & 1B HEAD ROD FOR END POINTS
2 EACH	NO 2 & 3 SPREAD RODS FOR END POINTS
2 EACH	NO 4 & 5 HEAD RODS FOR MOVEABLE CENTER POINTS
4 EACH	SLIDE PLATE S-5P
28 EACH	SLIDE PLATE S-8P
2 EACH	BRACE SLIDE PLATES 1A & 1B THRU 4A & 4B
2 EACH	BRACE SLIDE PLATES 5-C
8 EACH	BRACE PLATES 6A & 7A
2 EACH	GAUGE PLATE GP-1 THRU GP-6
2 EACH	SWITCH PLATE 14-L & 14-R THRU 19-L &19-R
2 EACH	FROG PLATES F-1 THRU F-15A & 15B
2 EACH	INSULATED FROG GAUGE PLATES FGP-1 THRU FGP-3
2 EACH	NO 10 RAIL BOUND MANGANESE FROG ~ 21'-2½"
4 EACH	16'-0" U-69 ADJUSTABLE GUARD RAIL W/ PLATES
2 EACH	DIRAIL HOLD DOWN CLIPS E-3707
4 EACH	DIRAIL HOLD DOWN CLIPS E-3709
12 PIECES	BOLTLESS ADJUSTABLE BRACE ASSEMBLY
20 PIECES	SCRRA ES2454 "PANDROL", OR EQUAL "E" - CLIP 6" TIE PLATE
356 PIECES	E-CLIP TYPE E-2055 (GALVANIZED)
24 PIECES	E-CLIP TYPE E-2063 (GALVANIZED)
924 PIECES	SCREW SPIKES ⅝" DIA X 6" ES2355
2 EACH	STRAIGHT STOCK RAIL 25'-0⅝" LONG
4 EACH	BRACE RAIL - 5'-11¼" LONG
4 EACH	M MOVEABLE POINT RAIL - 13'-1¼" LONG
2 EACH	OUTER SLIP RAIL - 20'-7⅞" LONG
4 EACH	SWITCH POINT RAIL - 22'-8½" LONG
2 EACH	KNUCKLE RAIL - 23'-11" LONG
2 EACH	STRAIGHT STOCK RAIL - 25'-0⅝" LONG
4 EACH	CURVED STOCK RAIL - 28'-2¾" LONG
4 EACH	CURVED SWITCH POINT RAIL - 34'-7¾" LONG
4 EACH	EPOXY BONDED PREFABRICATED INSULATED JOINT KITS

ES2841-01 NO 10 136 LB DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG BILL OF MATERIAL AND GENERAL NOTES
ES2841-02 NO 10 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG LAYOUT
ES2841-04 CROSSING GEOMETRY AND CROSSING DATA NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-11 136 LB RE 22'-8½" STRAIGHT SWITCH POINT NO 10 DOUBLE SLIP CROSSING
ES2841-12 136 LB RE 34'-7¾" CURVED SWITCH POINT NO 10 DOUBLE SLIP CROSSING
ES2841-13 136 LB RE MOVEABLE CENTER POINT, 3RD RAIL FILLER AND BRACE RAIL DETAILS NO 10 DOUBLE SLIP CROSSING
ES2841-14 UNDERCUT STOCK RAILS FOR 22'-8½" SWITCH POINTS FOR NO 10 DOUBLE SLIP CROSSING
ES2841-30 NO 10 136 LB RE DOUBLE SLIP CROSSING TIMBER TIE LAYOUT
ES2841-40 NO 10 RAILBOUND MANGANESE STEEL FROG WITH PANDROLIZED PLATES FOR A 136 LB RE DOUBLE SLIP CROSSING
ES2841-41 NO 10 DOUBLE SLIP CROSSING CENTER SECTION LAYOUT 136 LB RE RAIL
ES2841-44 INSULATED GAUGE PLATE DETAILS DS-GP-1, DS-GP-2, DS-GP-3, AND DS-GP-4 136 LB RE NO 10 DOUBLE SLIP CROSSING
ES2841-45 INSULATED GAUGE PLATE DETAILS DS-GP-5 AND DS-GP-6 136 LB RE NO 10 DOUBLE SLIP CROSSING
ES2841-46 BRACE PLATE AND SLIDE PLATE DETAILS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-47 BRACE SLIDE PLATES AND INSULATED SLIDE PLATE DETAILS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-48 DETAILS INSULATED FROG GAUGE PLATE NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-49 FROG PLATE DETAILS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-50 INSULATED HEAD ROD NO 1 FOR END POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-51 INSULATED SPREAD RODS NO 2 & 3 FOR END POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-52 INSULATED HEAD ROD NO 4 FOR MOVEABLE CENTER POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-53 INSLUATED HEAD ROD NO 5 FOR MOVEABLE CENTER POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING
ES2841-60 GUARD RAIL DETAILS 16'-0" LONG

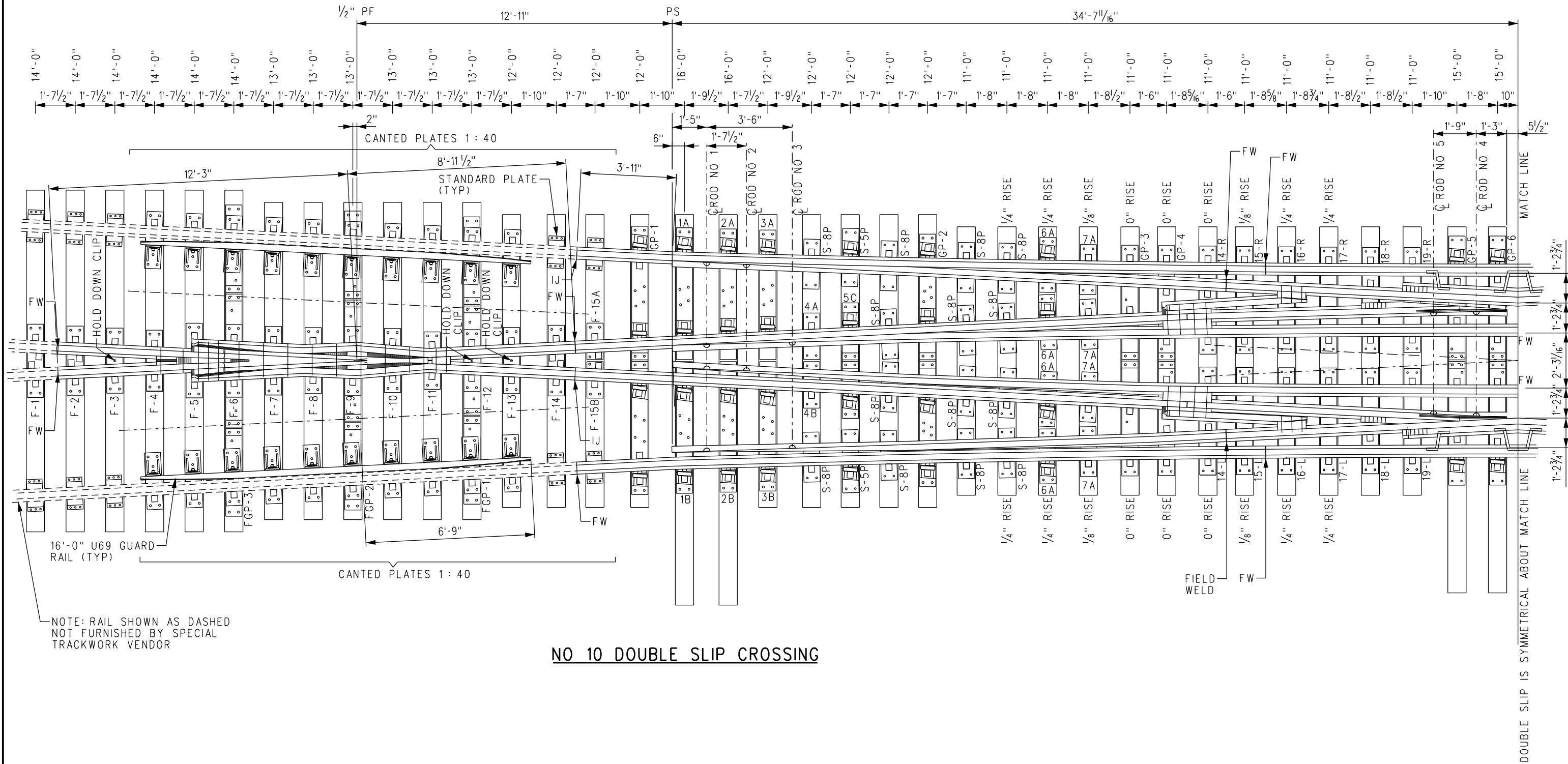
NOTES:

- ENTIRE DOUBLE SLIP CROSSING TO BE FABRICATED FROM 136 LB HEAD HARDENED RAIL.
- LOCATIONS OF INSULATED JOINTS ARE AS SHOWN ON ES2841-02. IT WILL BE SATISFACTORY TO RELOCATE THE INSULATED JOINT IN THE FIELD UP TO 1'-0" SO AS TO PROVIDE A SUITABLE SUSPENDED JOINT, PROVIDED THE STAGGER OF THE INSULATED JOINTS DOES NOT EXCEED 4'-6". SUSPENDED INSULATED JOINTS MUST BE LOCATED IN A CRIB AREA BETWEEN TIES, A MINIMUM DISTANCE OF 4" FROM EDGE OF NEAREST TIE PLATE.
- ALL INSULATED JOINTS ARE TO BE ADHESIVE BONDED INSULATED JOINTS UNLESS OTHERWISE SPECIFIED.
- ALL MATERIALS REQUIRED FOR HAND OR MACHINE OPERATED SWITCH OPERATION WILL BE FURNISHED PER REQUIREMENTS OF THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION.
- MATERIALS AND WORKMANSHIP, ALSO ANY CONSTRUCTION DETAILS NOT SHOWN, SHALL BE PER CURRENT AREMA "TRACKWORK PLANS AND SPECIFICATIONS" UNLESS OTHERWISE SPECIFIED.
- WHERE REQUIRED, ALL IDENTIFICATION SYMBOLS TO BE PLAINLY STAMPED.
- GAUGE PLATES WILL BE FURNISHED INSULATED. SWITCH RODS WILL BE FURNISHED INSULATED UNLESS OTHERWISE SPECIFIED.
- MANUFACTURER SHALL SUBMIT TWO COPIES OF SHOP DRAWINGS TO THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION FOR APPROVAL PRIOR TO FABRICATION OF TURNOUT. SHOP DRAWINGS THAT CHANGE DETAILS OF THESE STANDARDS MUST CLEARLY SPECIFY SUCH PROPOSED CHANGES.
- THE MATERIAL INCLUDED IN THE PURCHASE OF A "DOUBLE SLIP CROSSING COMPLETE" IS EVERYTHING LISTED IN THE BILL OF MATERIALS. TO CONSTRUCT A COMPLETE TURNOUT, SWITCH TIES (PER LIST ON THIS SHEET) AND INSULATED JOINTS, FIELD WELDS, RUNNING RAIL AND CLOSURE RAIL IDENTIFIED ON SUBSEQUENT SHEETS MUST ALSO BE SUPPLIED.
- TIE PLATES SHALL CONFORM TO SCRRA STANDARD ES2454.
- SCREW SPIKES (⅝" x 6-2 TPI) SHALL CONFORM TO SCRRA STANDARD ES2355. PLATE HOLES SHALL BE 1" DIAMETER. PILOT HOLES IN TIES SHALL BE ⅝" DIAMETER. SCREW SPIKES SHALL BE SCREWED INTO WOOD (NOT DRIVEN).
- MANUFACTURER SHALL BEVEL RAIL ENDS PER CURRENT AREMA PLAN NO 1005.
- THE 34'-7¾" SWITCH POINT, MADE FROM 40'-0" RAIL PER ES2841-12 IS TO BE FURNISHED WITH SWITCH RODS NO 1A, 1B, AND 2 THRU 5 PER ES2841-50 THRU ES2841-53.
- FOR CROSSING DATA FOR A NO 10 DOUBLE SLIP CROSSOVER 136 LB RE RAIL SEE CHART ON ES2841-04.
- GAUGE PLATES FOR SWITCH AND FROG, SWITCH HEEL PLATE (FOR BOTH RH AND LH TURNOUTS) AND PLATES 14 THRU 19 ARE DESIGNED TO BE PERPENDICULAR TO THE CENTRAL AXIS OF THE SWITCH.
- UPON COMPLETION OF TURNOUT INSTALLATION, RUNNING RAIL MUST BE ADJUSTED TO SCRRA NEUTRAL RAIL TEMPERATURE.
- ENTIRE CROSSOVER TO BE FULLY FLOOR ASSEMBLED INCLUDING END FROGS AND HF GUARD RAILS.
- ALL E-CLIPS TO BE GALVANIZED.

BILL OF SWITCH TIES			
PIECES	SIZE	LENGTH	BOARD FEET
24	7"x9"	11'-0"	1386.00
18	7"x9"	12'-0"	1134.00
12	7"x9"	13'-0"	819.00
12	7"x9"	14'-0"	882.00
4	7"x9"	15'-0"	315.00
4	7"x9"	16'-0"	336.00
TOTAL			TOTAL
74			4872.00

						DRAWN BY: A. CARLOS	DATE: 03/31/2011	SCRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRA APPROVED USES ONLY. FOR NON-SCRRA APPROVED USES: SCRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRA. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS	STANDARD 2841
										NO 10 136 LB DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG	SCALE: NTS
										BILL OF MATERIAL AND GENERAL NOTES	REVISION SHEET 1 OF 1
											CADD FILE: ES2841-01

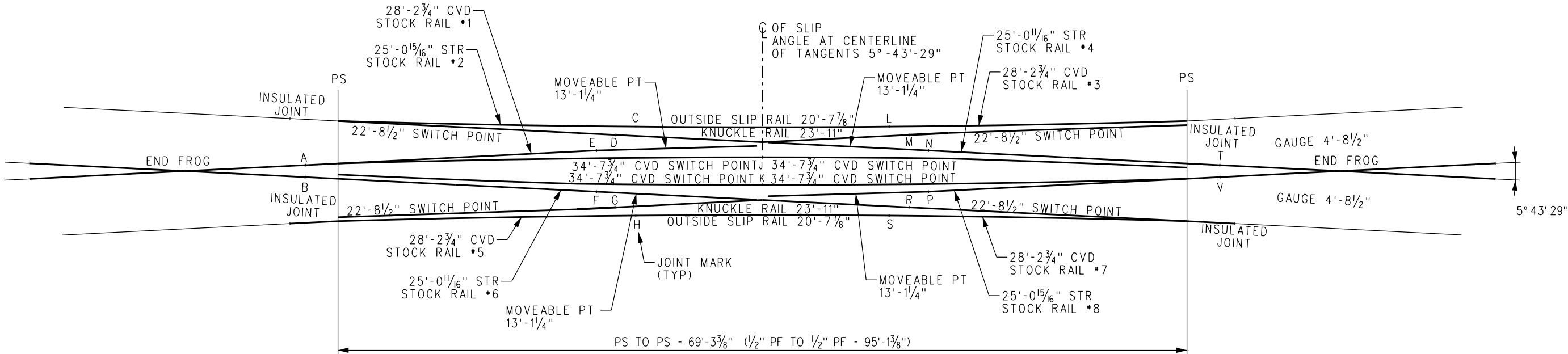
- NOTES:
1. SEE COVER SHEET FOR NOTES, BILL OF MATERIAL AND CROSSING DATA.
 2. USE CLIP ES2361 AT INSULATED JOINT LOCATIONS. USE CLIP ES2362 AT ALL OTHER LOCATIONS.



NO 10 DOUBLE SLIP CROSSING

DRAWN BY: A. CARLOS DATE: 03/31/2011				SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD
REVISION				METROLINK				NO 10 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG LAYOUT				2841
REV. DATE DESCRIPTION DES. ENG.				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				SCALE: NTS				SHEET
								1 OF 1				CADD FILE:
								ES2841-02				

CROSSING DATA			
BETWEEN THEORETICAL POINTS OF END FROGS	94'-3 ³ / ₈ "	ANGLE OF CROSSING	5° - 43' - 29"
BETWEEN THEORETICAL POINT OF END FROG & CENTER FROG	47'-2 ⁷ / ₁₆ "	DEGREE OF CURVATURE	4° - 48' - 09"
FROM INSIDE SWITCH POINTS TO THEORETICAL POINT END FROG	12'-6 ³ / ₁₆ "	GAUGE LINE RADIUS	1193.4206'
FROM THEORETICAL POINT OF CENTER FROG TO HEEL JOINT	10'-4 ¹ / ₈ "	THROW AT END PT	4"
LENGTH OF INSIDE SAMSON STOCK RAILS	25'-0 ¹¹ / ₁₆ " 25'-0 ¹⁵ / ₁₆ "	GAUGE ON STRAIGHT TRACK	4'-8 ¹ / ₂ "
LENGTH OF OUTSIDE SAMSON STOCK RAILS	28'-2 ³ / ₄ "	GAUGE ON CURVED TRACK	4'-8 ⁹ / ₁₆ "
LENGTH OF FROG FROM THEORETICAL POINT TO TOE	8'-1 ¹ / ₂ "	SWITCH ANGLE @ END POINTS	1° - 11' - 56"
LENGTH OF FROG FROM THEORETICAL POINT TO HEEL	12'-3"	HEEL SPREAD OUTSIDE SW PTS 5 ¹¹ / ₁₆ " B.C. 8 ⁹ / ₃₂ " A.C.	-
LENGTH OF OUTSIDE SAMSON END SWITCH POINTS (0" SAMSON)	22'-8 ¹ / ₂ "	HEEL SPREAD INSIDE SW PTS 6 ¹ / ₃₂ " B.C. 14 ³ / ₄ " A.C.	-
LENGTH OF INSIDE SAMSON END SWITCH POINTS (0" SAMSON)	34'-7 ³ / ₄ "		



CROSSING DATA

NOTE:

- 1. ALL MEASUREMENTS GIVEN AT 5/8" BELOW TOP OF RAIL AND TO 1/2" POINT OF END OF FROG.
- 2. ALL RAILS TO BE FULLY HEAT TREATED - BRINELL 341-388.
- 3. JOINT GAPS: 1/8" STANDARD: 3/8" INSULATED.
- 4. JOINT DRILLING: ALL FIELD WELDED RAILS: 9 1/2" - 6" @ 3 3/32" ABOVE BASE, 1/8" DIA HOLES.
- 5. ALL INSULATED JOINT RAILS: 3 1/2" - 6" - 6" @ 3 3/32" ABOVE BASE, 1/4" DIA HOLES.
- 6. PROPER LOCATION OF EDGE OF PLATES TO BE MARKED WITH WHITE PAINT ON OUTER FLANGE OF RAIL.
- 7. MATCH MARK ALL RAIL ENDS AS SHOWN.
- 8. ENTIRE CROSSOVER TO BE FULLY FLOOR ASSEMBLED INCLUDING END FROGS AND HF GUARD RAILS.

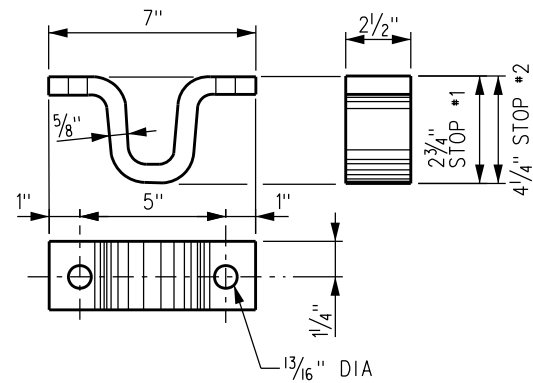
SPECIFICATIONS:

- 1. CROSSING TYPE - NO 10 DOUBLE SLIP, GENERALLY PER AREMA PLAN NO. 814. RAIL: 136RE HEAT TREATED.
- 2. FROG - NO 10 RAIL BOUND MANGANESE FROG, 136RE, 22'-6" LONG WITH PANDROL PLATES - MANGANESE CASTING TO BE EXPLOSIVE HARDENED.
- 3. SWITCH POINTS - 22'-8 1/2" & 34'-7 3/4" LONG, CURVED AND STRAIGHT, SAMSON PLANING AREMA DETAIL 5100. CURVED POINTS TO BE EQUIPPED WITH REPLACEABLE MANGANESE INSERTS.
- 4. CLIPS AND RODS - VERTICAL RODS WITH "SMJ" CLIPS.
- 5. ADJUSTABLE BRACES - BOLTLESS WITH SPRING CLIPS.
- 6. GUARD RAILS - U-69 SECTION 16'-0" RAISED GUARD RAIL WITH BRACES AND PLATES.
- 7. GAUGE PLATES - TO BE FURNISHED INSTALLED.

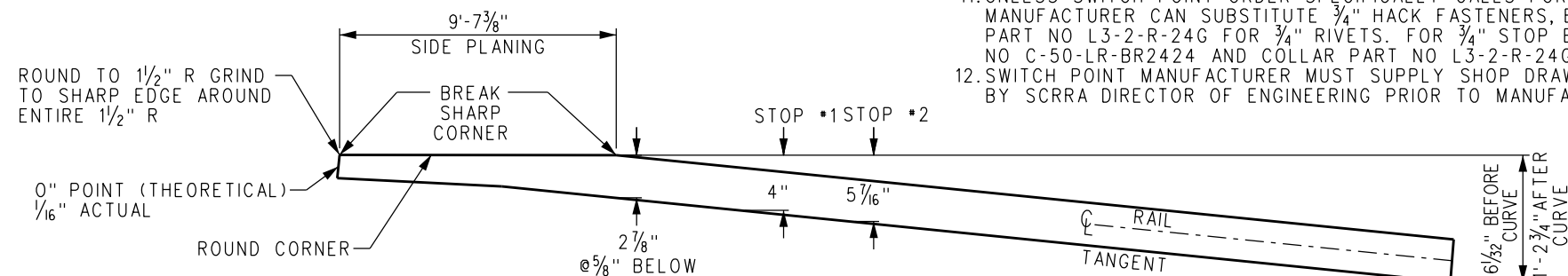
REFERENCE DRAWING

136 LB - NO 10 - DOUBLE SLIP CROSSING ----- SHEET NO 2841-02

				DRAWN BY: A. CARLOS		DATE: 03/31/2011	<div>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.</div>	<div>METROLINK[®]</div> <div>SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>	ENGINEERING STANDARDS		STANDARD	
									2841			
									SCALE: NTS			
									REVISION SHEET 1 OF 1			
									CADD FILE: ES2841-04			
X	XX-XX-XX	REVISION	XX	XX								
REV.	DATE	DESCRIPTION	DES.	ENG.								

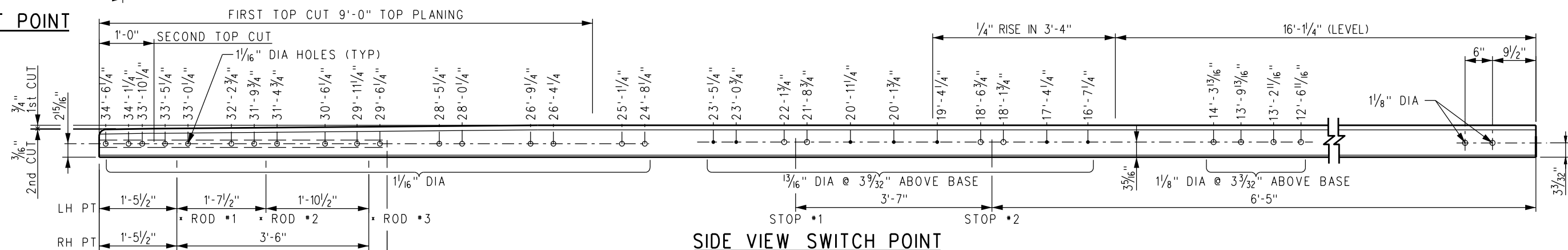


STOP

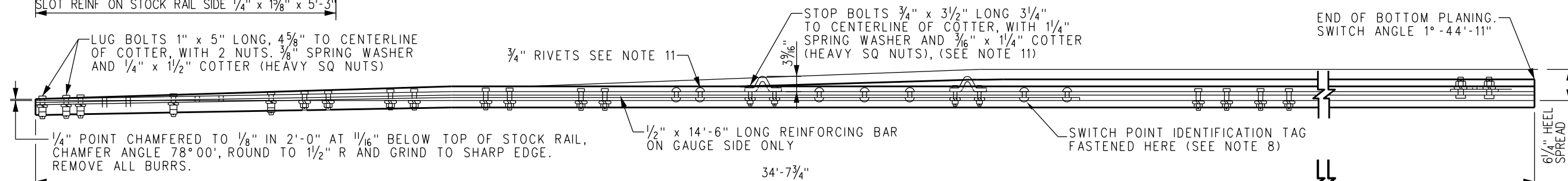


LEFT HAND CURVED INSIDE END
SWITCH POINT (RIGHT HAND OPPOSITE)

END VIEW OF POINT

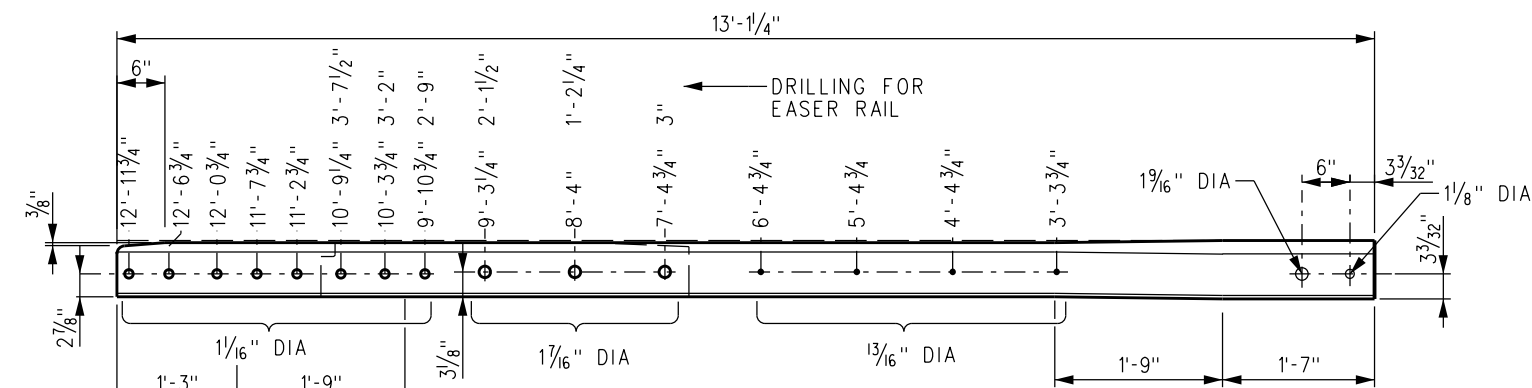


SIDE VIEW SWITCH POINT
(RIGHT HAND STRAIGHT OUTSIDE END POINT)

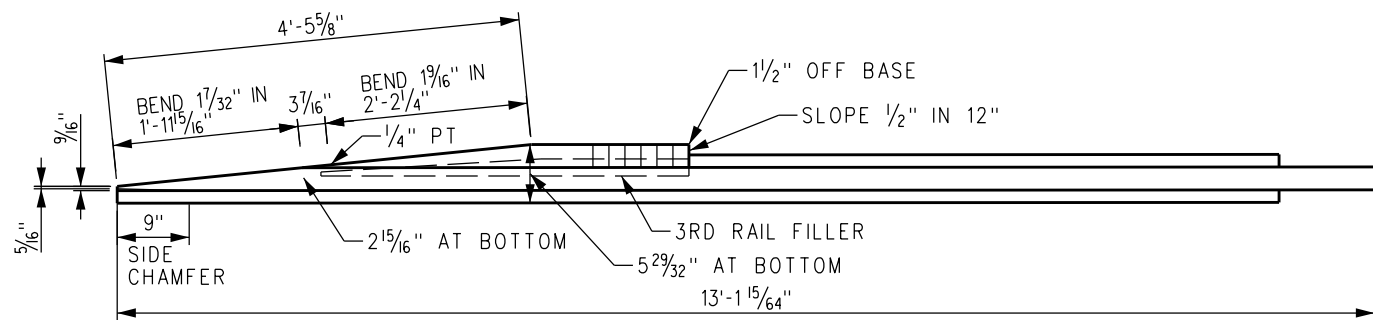


TOP VIEW SWITCH POINT

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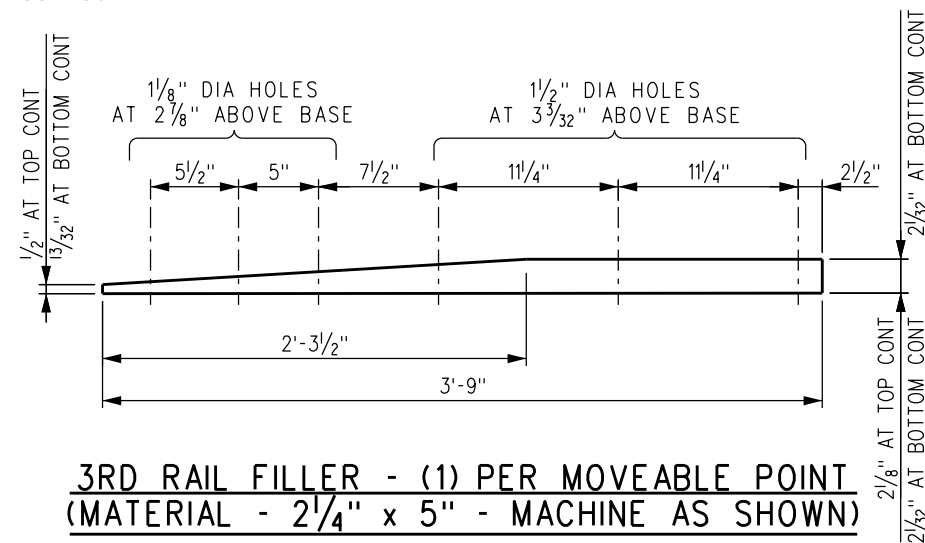
MOVEABLE CENTER POINT
(LEFT HAND AS SHOWN)



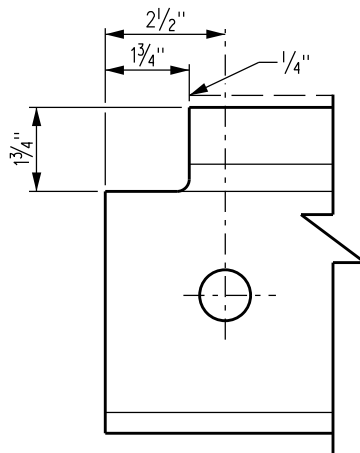
TOP VIEW MOVEABLE CENTER POINT

ABBREVIATIONS:

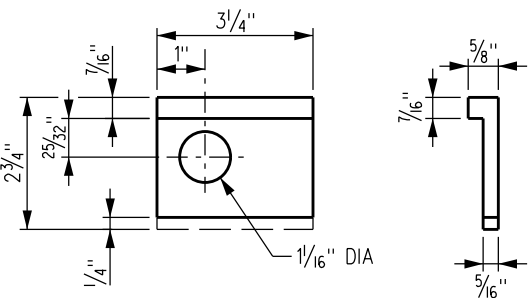
CONT = CONTOUR



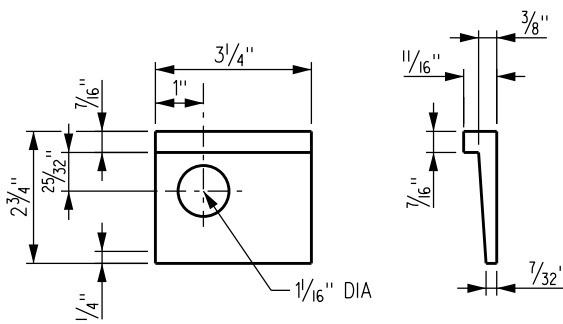
3RD RAIL FILLER - (1) PER MOVEABLE POINT
(MATERIAL - 2 1/4" x 5" - MACHINE AS SHOWN)



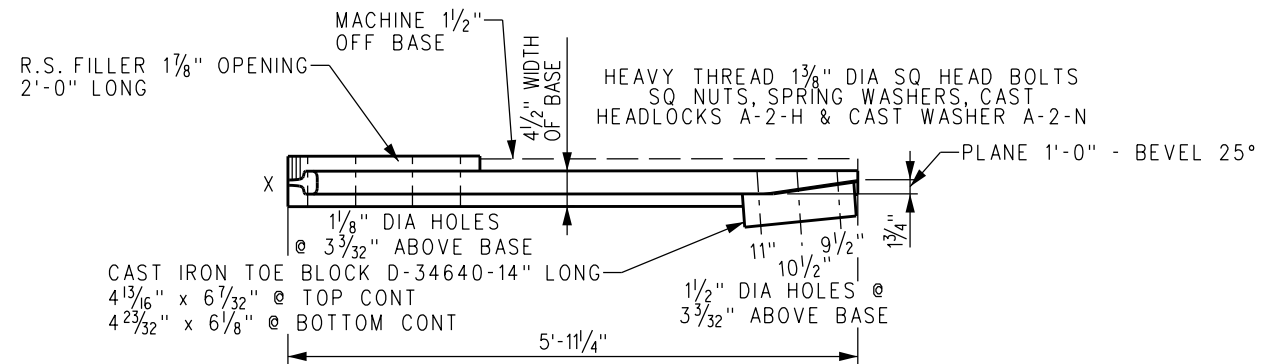
**VIEW AT EASER
RAIL POINT END**



ROLLED HEADLOCK FOR 1, 2 AND 3



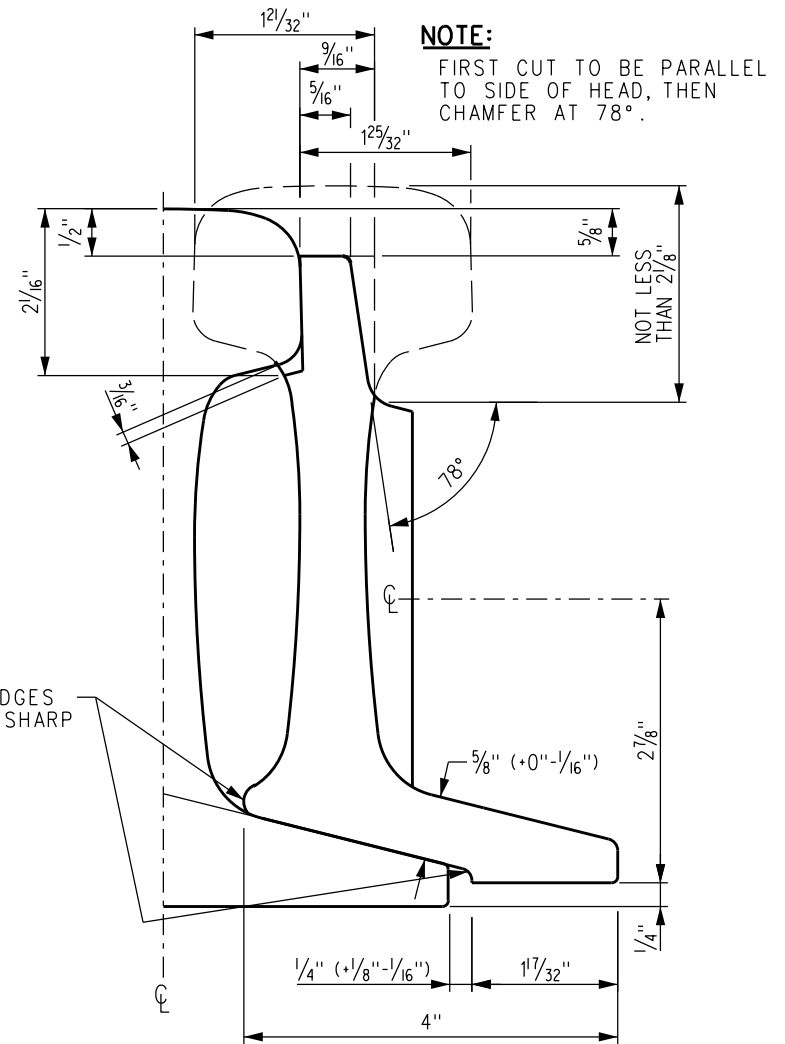
ROLLED HEADLOCK FOR 4



RIGHT HAND BRACE RAIL 5'-11 1/4" (STRAIGHT)
(TWO REQUIRED)

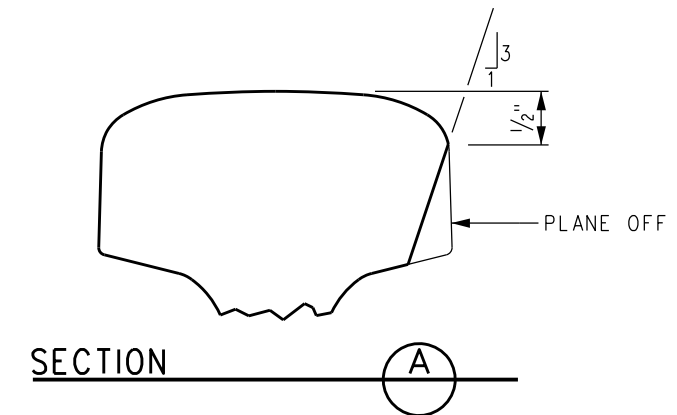
COLLECTIVE DRILLING FROM END X
2 7/16" x 8 7/16" x 1'-3 9/16" x 1'-9 9/16" x 4'-10 25/32" x 5'-3 25/32" x 5'-8 25/32"

1 1/8" HOLES 3 3/32" ABOVE BASE 1 1/2" HOLES 3 3/32" ABOVE BASE



END VIEW OF POINT

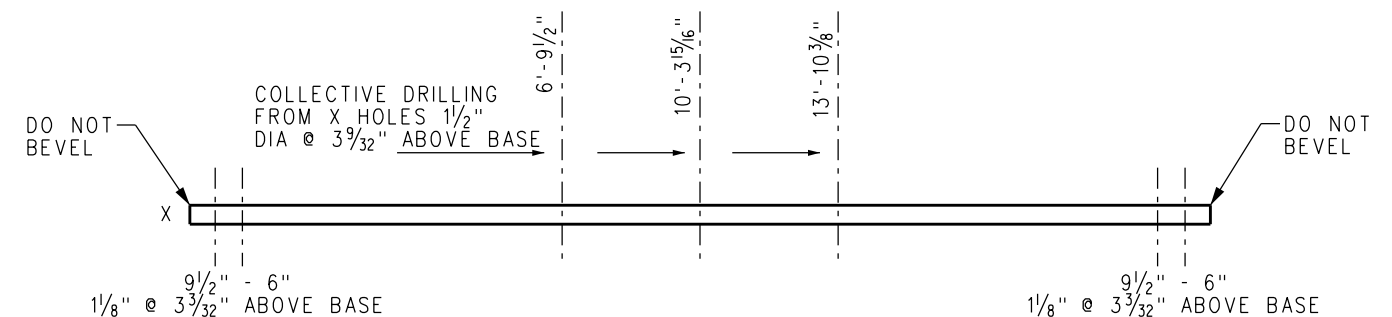
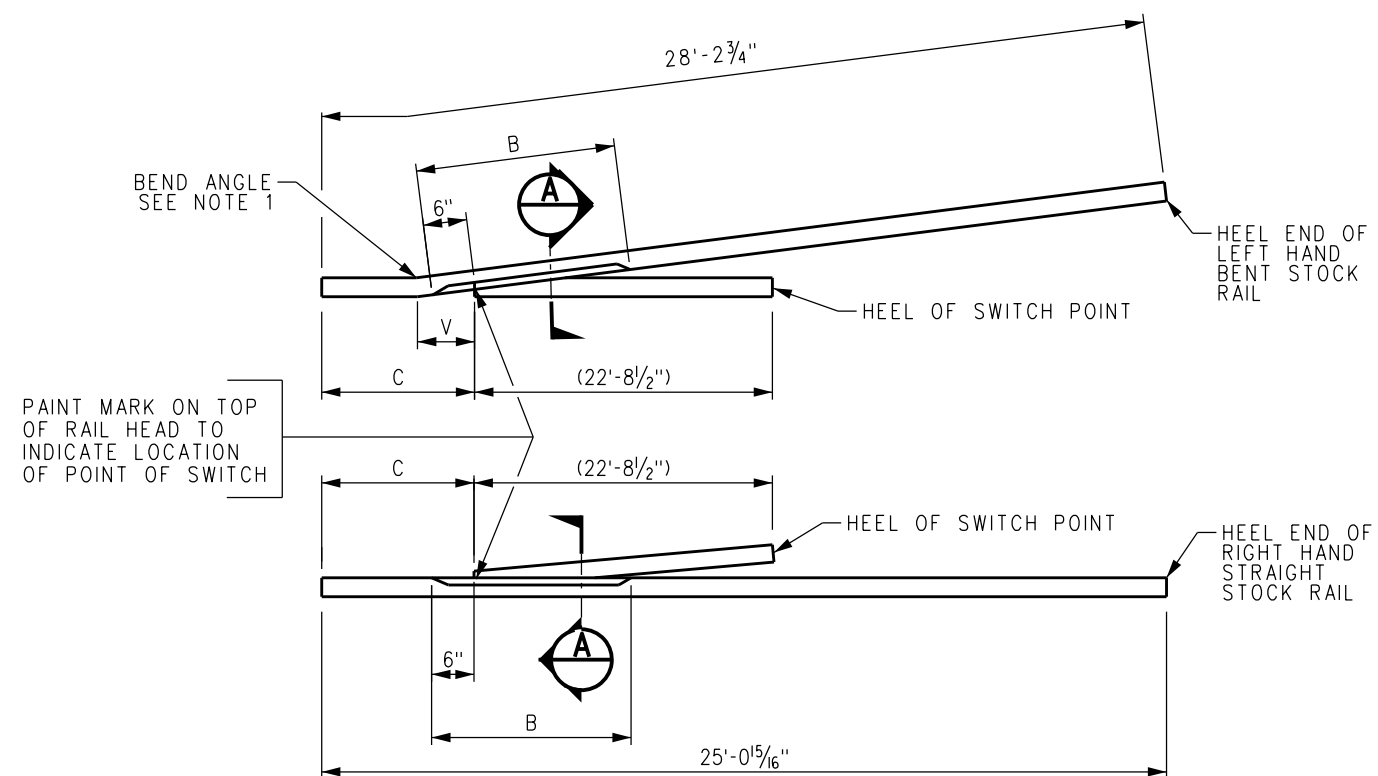
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LENGTHS B, C, & D FOR 136 LB RAIL						
SW PT LENGTH	TO NO	STOCK RAIL	B	FOR NEW INSTALLATION		
				C	D	END DRILL SEE NO 1
22'-8½"	10	STR	11'-0"	3'-11"	25'-0⅝"	NONE
22'-8½"	10	BENT	11'-0"	3'-11"	28'-2¾"	HEEL END ONLY

1. BEND ANGLE IN BENT STOCK RAIL TO BE AS FOLLOWS:

SW LENGTH	BEND ANGLE	V (VERTEX DIST
22'-8½"	1°-44'-11" OR 1" IN 2'-9"	105⅙"



OUTSIDE SLIP RAIL - 20'-7 $\frac{7}{8}$ " LONG

						DRAWN BY:	A. CARLOS	DATE:	03/31/2
X	XX-XX-XX		REVISION	XX	XX				
REV.	DATE		DESCRIPTION	DES.	ENG.				

11 SCRRR ENGINEERING STANDARDS ARE INTENDED FOR SCRRR APPROVED USES ONLY.
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WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES
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THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH
USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN
ANY MANNER BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRR.
ALL RIGHTS RESERVED



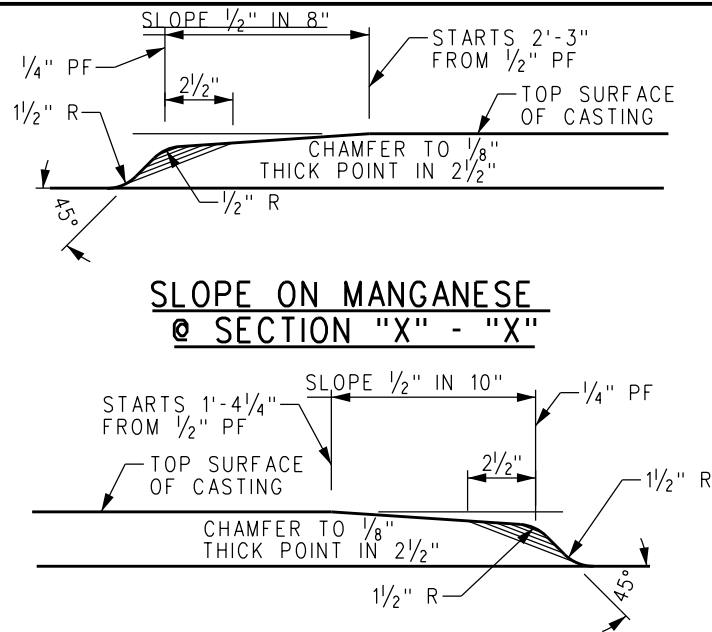
METROLINK

SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

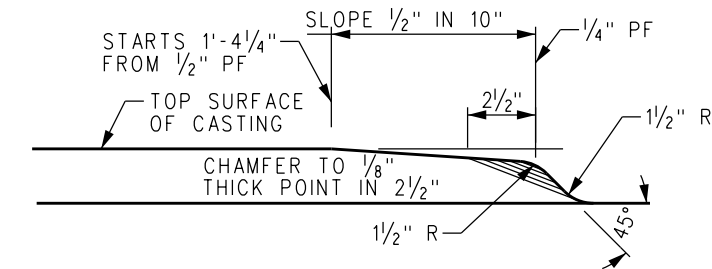
ENGINEERING STANDARDS

UNDERCUT STOCK RAILS FOR
22'-8½" SWITCH POINTS FOR
NO 10 DOUBLE SLIP CROSSING

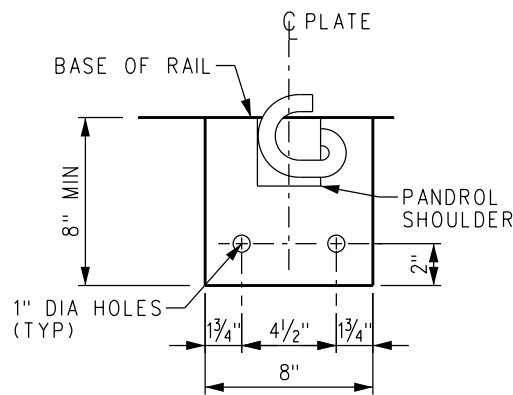
STANDARD		2841
SCALE:		NTS
REVISION	SHEET	
—	1 OF 1	
CADD FILE:		ES2841-14



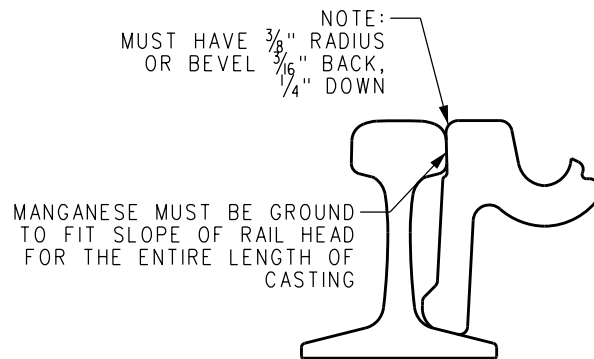
SLOPE ON MANGANESE @ SECTION "X" - "X"



SLOPE ON MANGANESE @ SECTION "Y" - "Y"



TYPICAL PLATE PUNCHING DETAIL



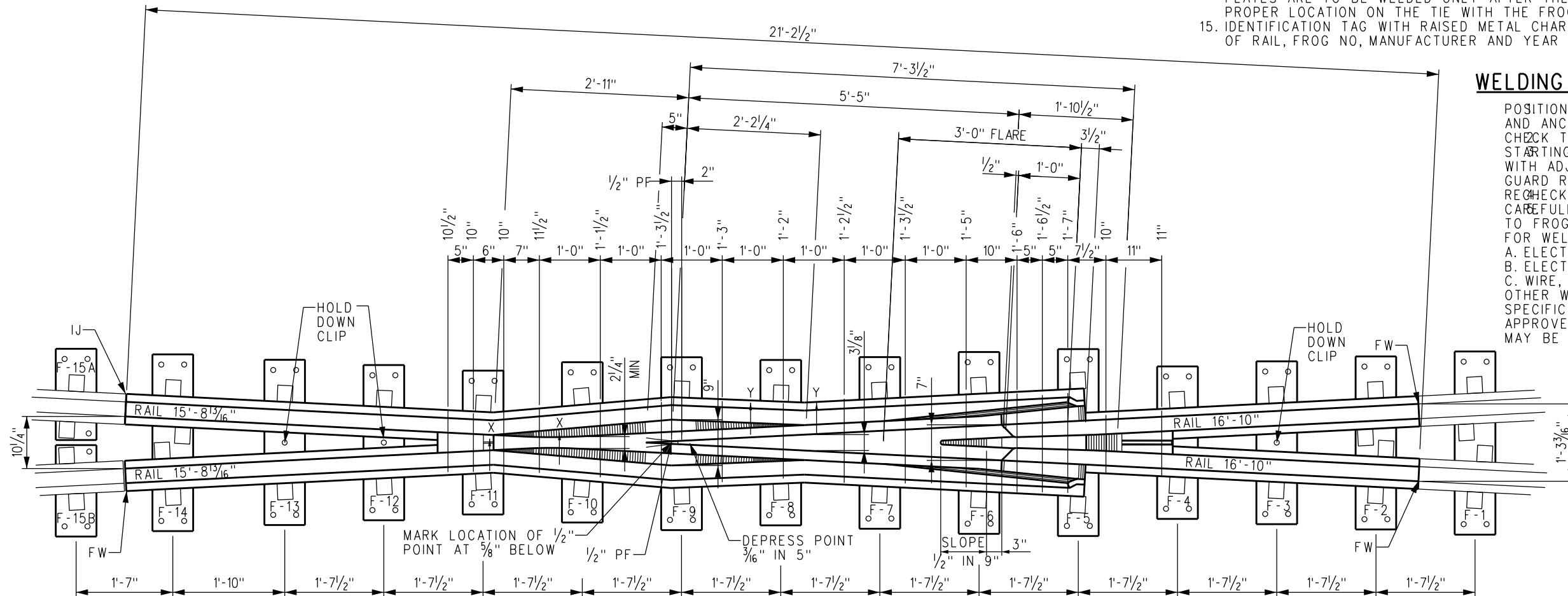
DETAIL OF FROG CASTING / RAIL FIT

NOTES:

1. RAIL USED TO FABRICATE FROG IS TO BE 136 LB HIGH STRENGTH.
2. RAIL BOUND MANGANESE STEEL FROG PER CURRENT AREMA PLAN NO 621 & 625 WITH EXPLOSIVE HARDENED MANGANESE HIGH INTEGRITY CASTING PER CURRENT AREMA SPECIFICATIONS AND MODIFIED FOR ARM LENGTHS AND PLATES WITH "PANDROL" FASTENERS.
3. ALL FROG PLATES SHALL BE STAMPED IN 1/2" CHARACTERS TO INDICATE MFG, FROG NO, RH, RAIL SECTION AND PLATE NUMBER. MARK TO BE STAMPED ON SAME END OF ALL FROG PLATES.
4. FOR DETAILS OF FROG PLATES F-1 THRU F-15, SEE SHEET ES2841-49.
5. WORKMANSHIP AND MATERIALS SHALL BE PER CURRENT AREMA SPECIFICATIONS FOR "SPECIAL TRACKWORK", EXCEPT AS OTHERWISE SPECIFIED.
6. ANY CONSTRUCTION DETAILS NOT SHOWN SHALL BE IN ACCORDANCE WITH CURRENT AREMA RECOMMENDED PRACTICE.
7. FROG PLATES ARE DESIGNED TO BE INSTALLED PERPENDICULAR TO MAIN TRACK.
8. BODY BOLTS 1 1/8" DIAMETER, H.T.C.S. - PER AREMA SPECIFICATIONS.
9. TOE AND HEEL BLOCKS AND BOLTS PER AREMA SPECIFICATIONS.
10. PLATES TO BE MADE OF MILD ROLLED STEEL.
11. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10, DOUBLE SLIP CROSSING, MACHINE OPERATED TURNOUT.
12. THE "PANDROL" TYPE WELD - ON PRESSED STEEL SHOULDER, MADE OF MILD STEEL, TO BE PURCHASED FROM "PANDROL INTERNATIONAL", OR APPROVED ALTERNATE MEETING "PANDROL'S" DESIGN SPECIFICATIONS. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO ALL PLATES WITH A MINIMUM 2 PASS 3/8" + FILLET WELD ALONG THE BEVELED GROOVES OF THE SHOULDER. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE BASE OF RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
13. MANUFACTURER OF FROG PLATES SHALL USE COMPLETED FROG TO VERIFY LOCATION OF ADJUSTABLE CLAMPS ON FROG PLATES F-1, F-2 AND F-3 TO INSURE PROPER FIT. FROG PLATES WILL BE WELDED TO THE GAUGE PLATES IN THE FIELD WITH A 3 PASS 1/2" + FILLET WELD. PLATES WILL BE WELDED ONLY AFTER THE GAUGE PLATES ARE SECURED IN THE PROPER LOCATION ON THE TIE WITH THE FROG IN PLACE AT PROPER ALIGNMENT.
14. GUARD RAIL PLATES ARE TO BE INSTALLED AND WELDED TO THE FROG GAUGE PLATES IN THE FIELD WITH A 3 PASS 1/2" + FILLET WELD CONTINUOUS ON BOTH ENDS OF THE PLATE. PLATES ARE TO BE WELDED ONLY AFTER THE GAUGE PLATE AND THE FROG IS SECURED IN THE PROPER LOCATION ON THE TIE WITH THE FROG IN PLACE AT PROPER ALIGNMENT.
15. IDENTIFICATION TAG WITH RAISED METAL CHARACTERS TO BE APPLIED WHICH WILL STATE WEIGHT OF RAIL, FROG NO, MANUFACTURER AND YEAR MANUFACTURED.

WELDING OF GAUGE PLATE & GUARD RAIL:

POSITION GAUGE PLATES AT DESIGNATED TIE LOCATIONS AND ANCHOR IN PLACE. CHECK TRACK FOR CORRECT GAUGE. STARTING WITH ONE GAUGE PLATE, PLACE FROG PLATES WITH ADJUSTABLE BRACES AND SECURE TO FROG AND GUARD RAIL WITH "PANDROL" CLIPS. RECHECK TRACK GAUGE AND CORRECT IF NECESSARY. CAREFULLY WELD FROG PLATE AND GUARD RAIL PLATE TO FROG GAUGE PLATES WITH 3 PASS 1/2" - FILLET WELD. FOR WELDING USE THE FOLLOWING:
A. ELECTRODE, 5/32", WELDING SPEC 7018XLM.
B. ELECTRODE, 3/16", WELDING SPEC 7018XLM.
C. WIRE, 3/32", NR203, 1% NICKEL FLUX CORE.
OTHER WIRE OR ELECTRODES MEETING SPECIFICATIONS AS CALLED FOR AND APPROVED BY SCRRRA DIRECTOR OF ENGINEERING MAY BE USED.



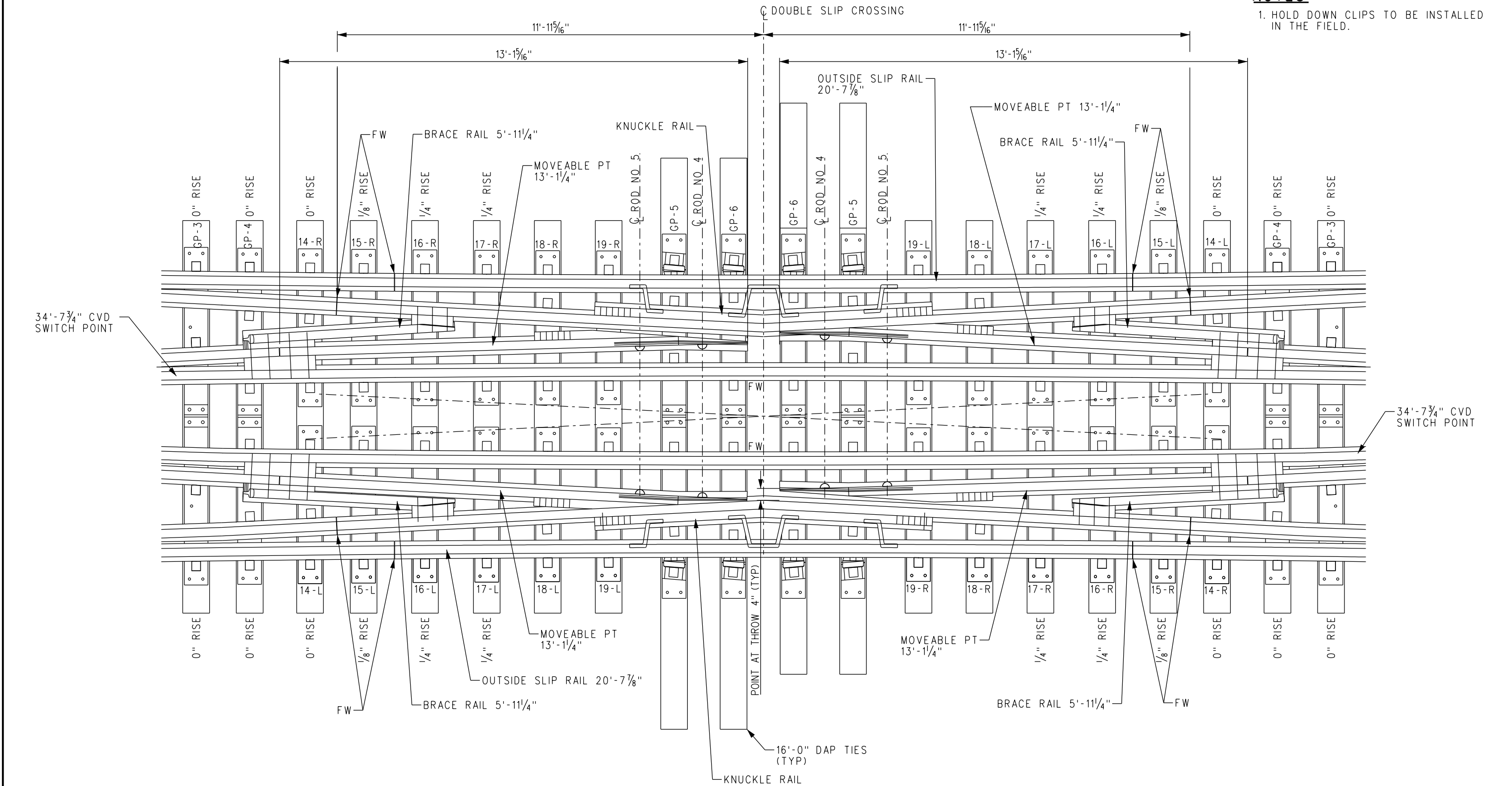
NO 10 RAILBOUND MANGANESE FROG 21'-2 1/2" LONG WITH PLATES

REFERENCE DRAWING

LAYOUT - NO 10 DOUBLE SLIP CROSSING - 136 LB ----- NO 2841-02

DRAWN BY: A. CARLOS DATE: 03/31/2011				SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES, SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.				METROLINK® SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				ENGINEERING STANDARDS				STANDARD 2841			
REVISION				NO 10 RAILBOUND MANGANESE STEEL FROG WITH PANDROLIZED PLATES FOR A 136 LB RE DOUBLE SLIP CROSSING				SCALE: NTS				SHEET 1 OF 1				ES2841-40			
REV. DATE DESCRIPTION DES. ENG.																			

NOTES:
1. HOLD DOWN CLIPS TO BE INSTALLED
IN THE FIELD.

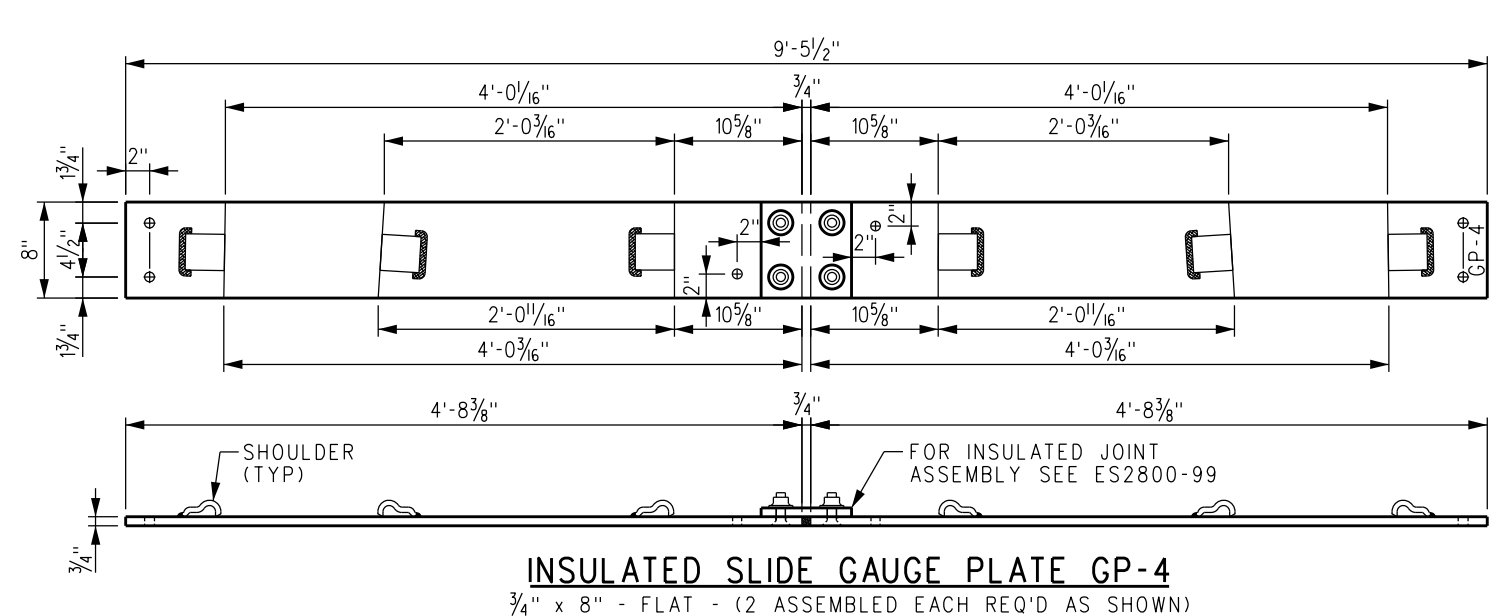
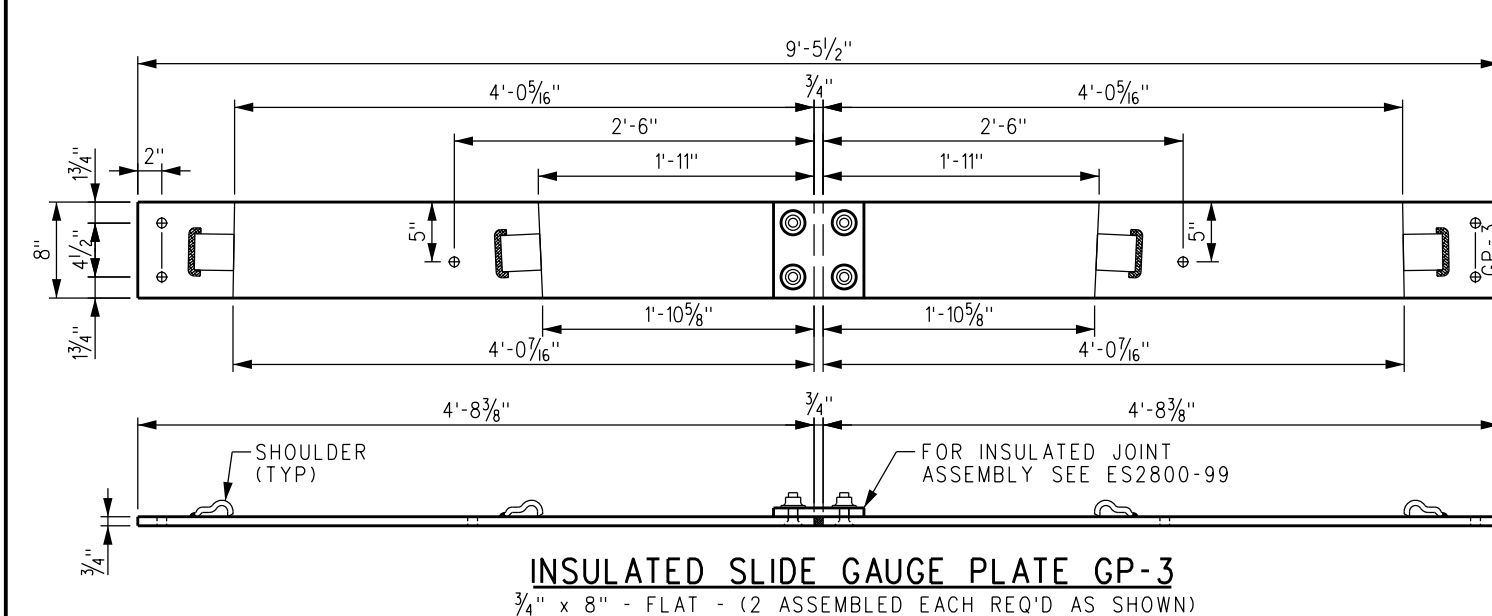
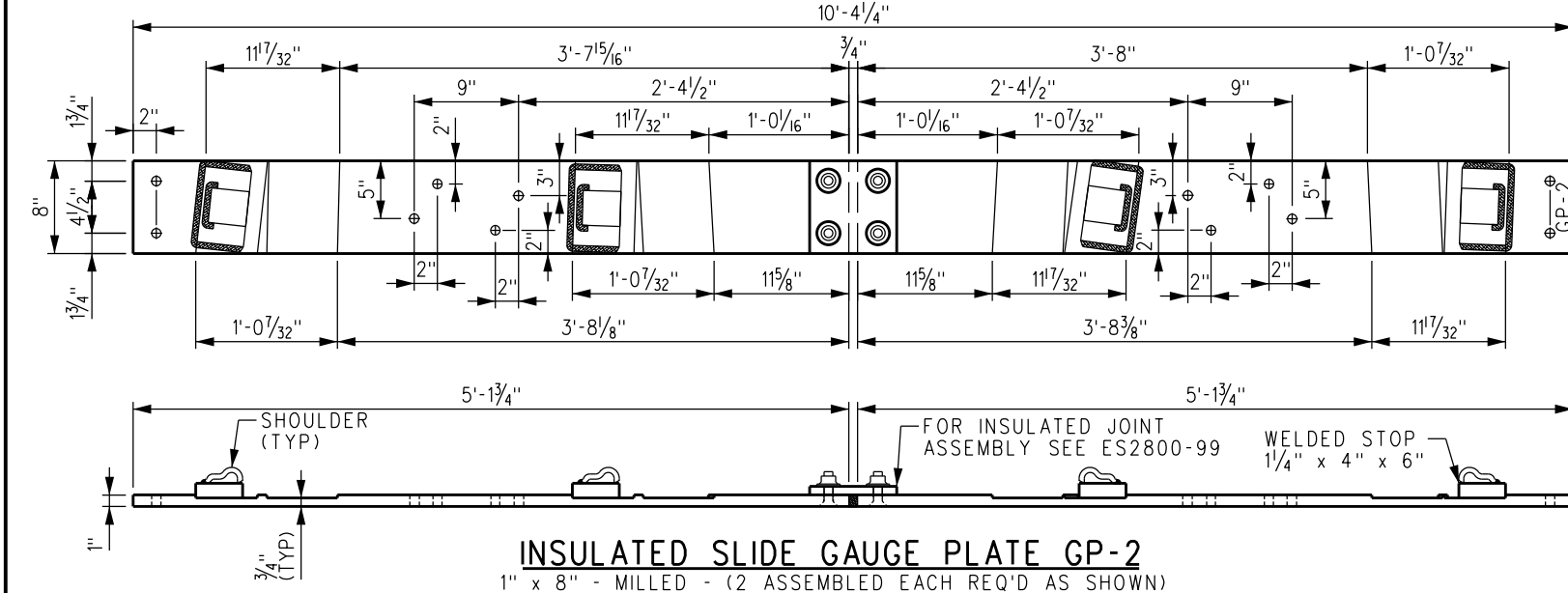
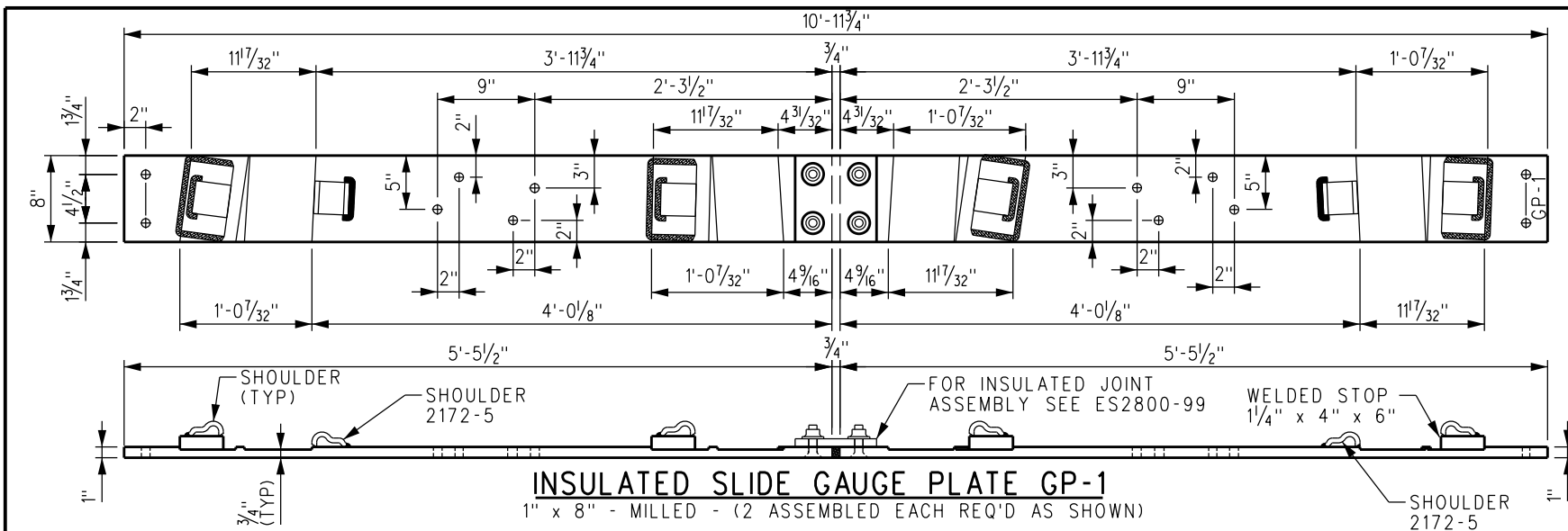


NO 10 DOUBLE SLIP CROSSING

REFERENCE DRAWING:

LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

				DRAWN BY: A. CARLOS		DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.		 METROLINK [®]		ENGINEERING STANDARDS		STANDARD 2841	
				 ASSISTANT DIRECTOR: STANDARDS & DESIGN				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY		NO 10 DOUBLE SLIP CROSSING		SCALE: NTS		REVISION SHEET	
				 DIRECTOR OF ENGINEERING AND CONSTRUCTION				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		CENTER SECTION LAYOUT		1 OF 1		CADD FILE: ES2841-41	
				X XX-XX-XX		REVISION									
				REV. DATE		DESCRIPTION		DES. ENG.							



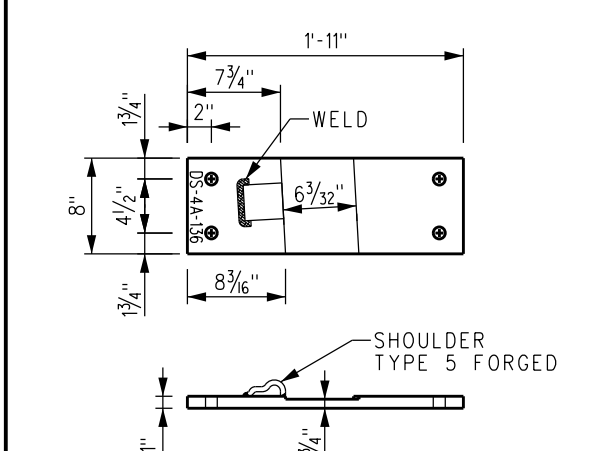
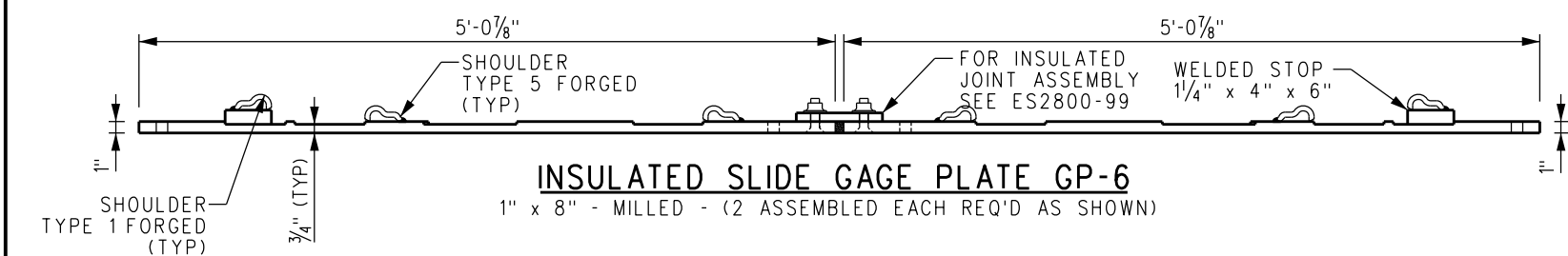
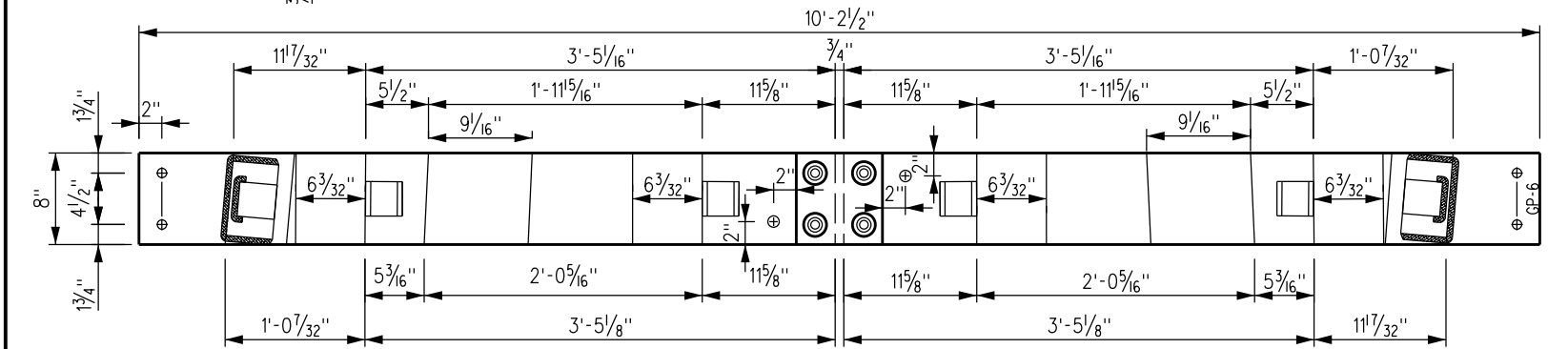
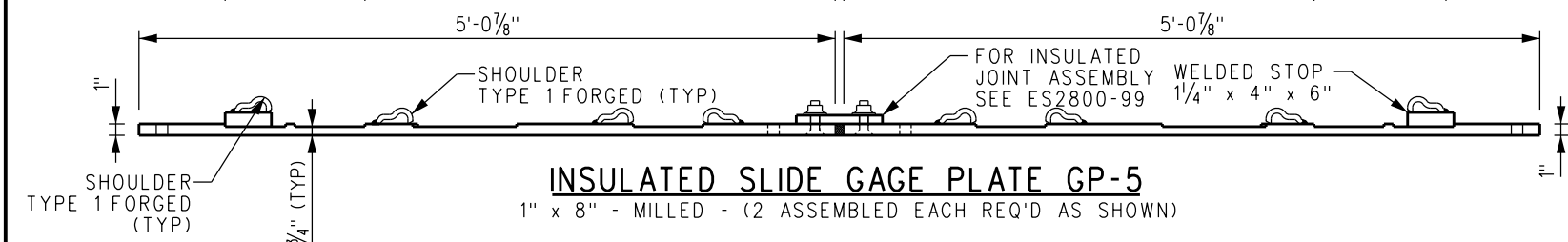
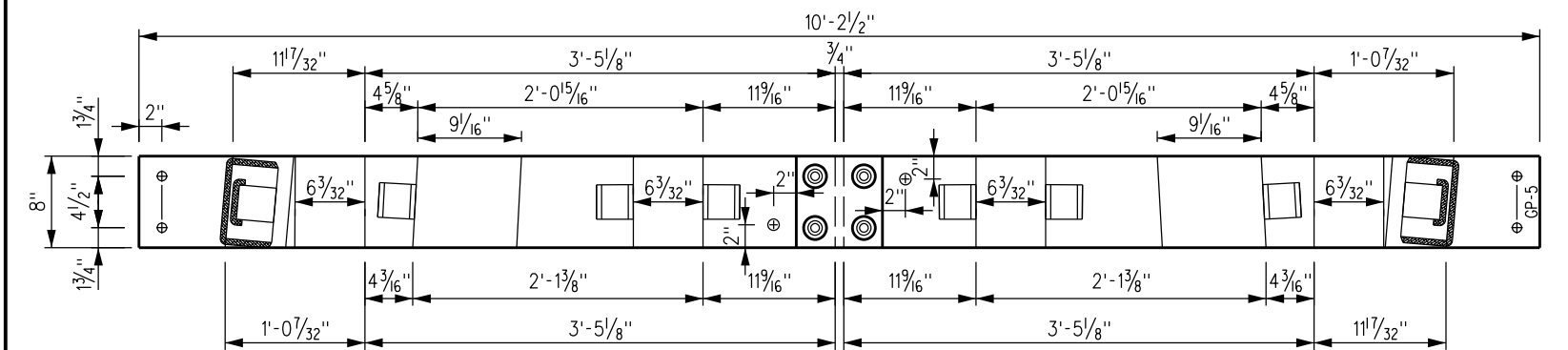
NOTES:

1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10 DOUBLE SLIP CROSSING.
3. ALL WELDS ARE 1/2" FILLET WELDS UNLESS OTHERWISE NOTED.
4. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.
5. GUARD RAIL PLATES ARE TO BE INSTALLED AND WELDED TO THE FROG GAUGE PLATES IN THE FIELD ON BOTH ENDS OF THE PLATE. PLATES ARE TO BE WELDED ONLY AFTER THE GAUGE PLATE AND THE FROG IS SECURED IN THE PROPER LOCATION ON THE TIE WITH PROPER ALIGNMENT.
6. FROG BASE PLATES FP-1, FP-4 AND FP-7 ARE TO BE WELDED TO THE FROG GAUGE PLATES IN THE FIELD WITH A PASS 1/2" + FILLET WELD CONTINUOUS ON BOTH ENDS OF THE PLATE. PLATES ARE TO BE WELDED ONLY AFTER THE GAUGE PLATE AND THE FROG IS SECURED IN THE PROPER LOCATION ON THE TIE WITH PROPER ALIGNMENT.
7. THE WELD - ON PRESSED STEEL SHOULDER, PURCHASED FROM "PANDROL INTERNATIONAL", TO BE MILD STEEL. OTHER APPROVED WELD - ON PRESSED STEEL SHOULDERS MEETING "PANDROL'S" DESIGN SPECIFICATIONS MAY BE USED.
8. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO GAUGE PLATES. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
9. ALL PANDROL SHOULDERS TO BE TYPE 1 FORGED, UNLESS OTHERWISE SHOWN.

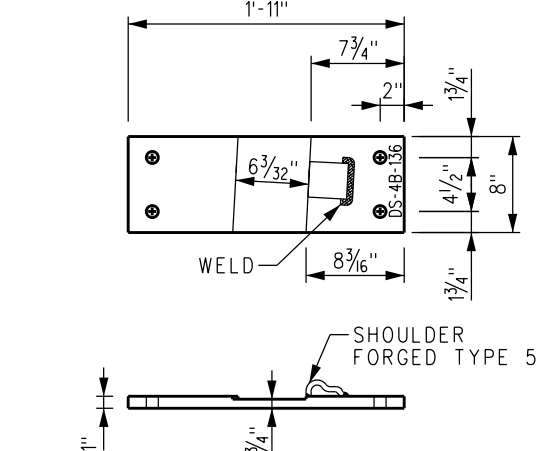
REFERENCE DRAWING

LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

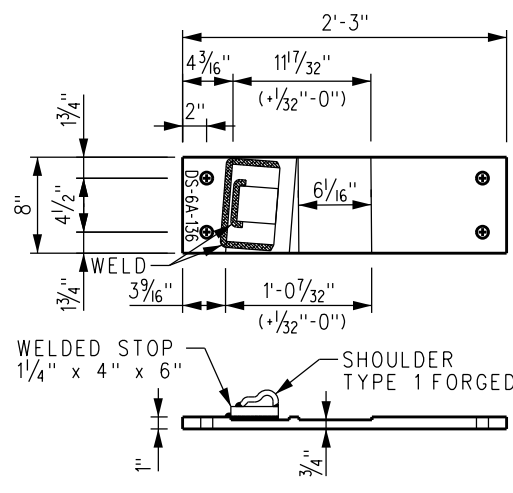
DRAWN BY: A. CARLOS DATE: 03/31/2011				SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD	2841
REVISION				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY				INSULATED GAUGE PLATE DETAILS				SCALE:	NTS
REV. DATE DESCRIPTION DES. ENG.				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				DS-GP-1, DS-GP-2, DS-GP-3 AND DS-GP-4				REVISION SHEET	1 OF 1
								136 LB RE NO 10 DOUBLE SLIP CROSSING				CADD FILE:	ES2841-44



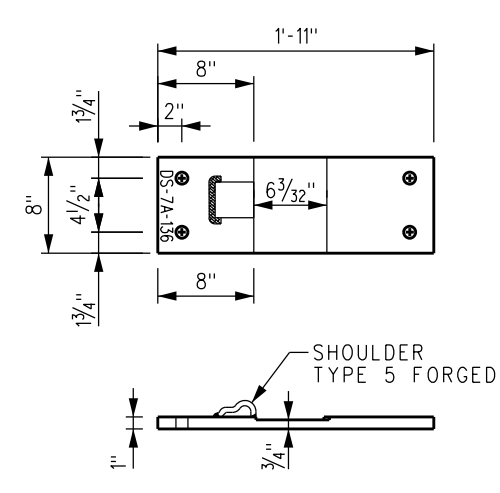
BRACE PLATE - 4A
1" x 8" x 1'-11" - MILLED - W/ADJ RAIL BRACE
(2 REQUIRED)



BRACE PLATE - 4B
1" x 8" x 1'-11" - MILLED - W/ADJ RAIL BRACE
(2 REQUIRED)



BRACE PLATE - 6A
1" x 8" x 2'-3" - MILLED - W/ADJ RAIL BRACE
(8 REQUIRED)



BRACE PLATE - 7A
1" x 8" x 1'-11" - MILLED - W/ADJ RAIL BRACE
(8 REQUIRED)

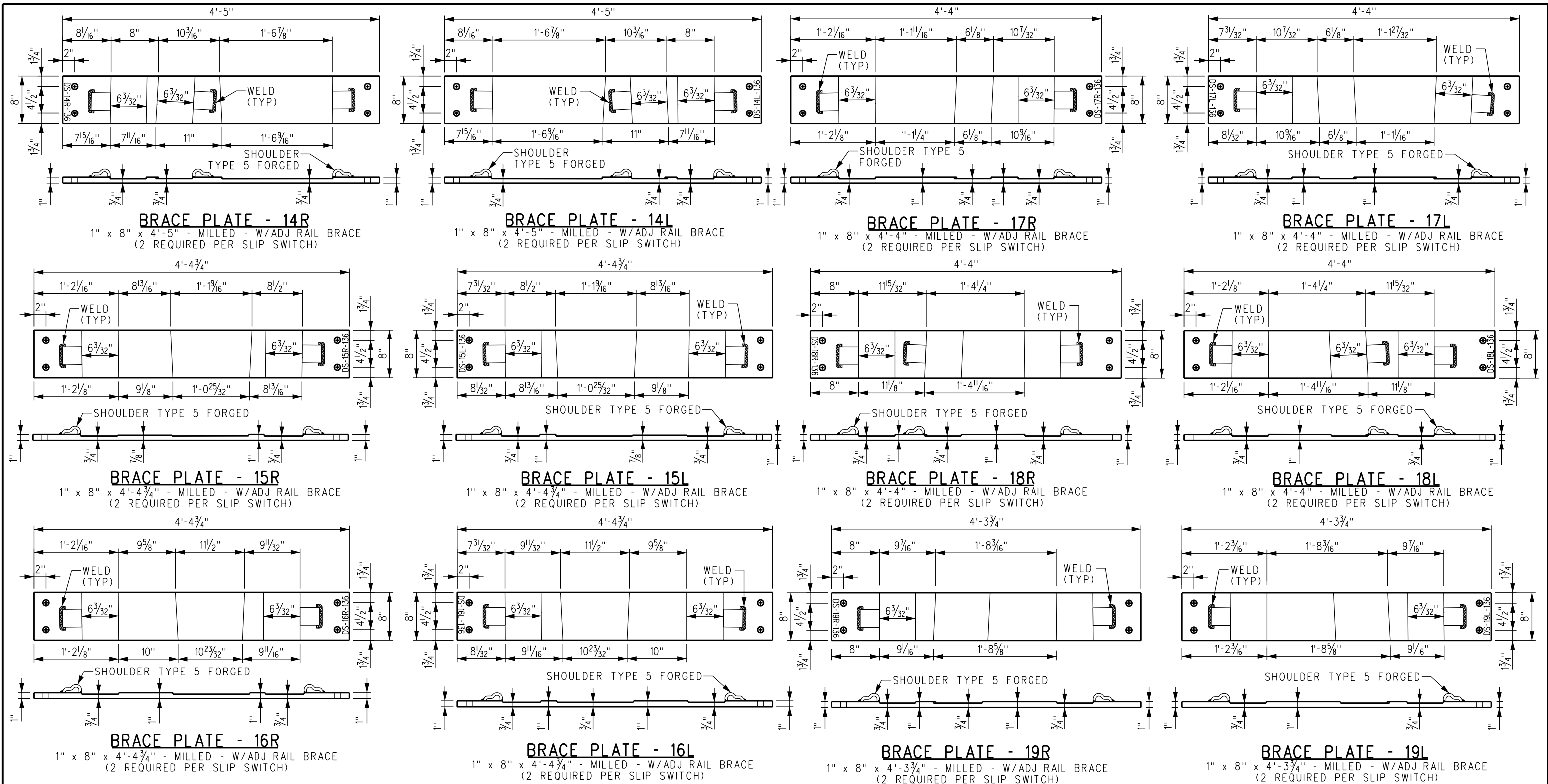
REFERENCE DRAWINGS

LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

NOTES:

1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. EACH PLATE TO BE PLAINLY STAMPED WITH PLATE NO AND 136 (WEIGHT OF RAIL) & HAND OF TURNOUT (RH OR LH).
3. THE PANDROL TYPE WELD - ON PRESSED STEEL SHOULDER, MADE FROM MILD STEEL, TO BE PURCHASED FROM PANDROL INTERNATIONAL OR APPROVED ALTERNATE MEETING PANDROL'S DESIGN SPECIFICATIONS.
4. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO THE PLATE. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
5. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10 DOUBLE SLIP SWITCH.
6. ALL WELDS ARE 1/2" FILLET WELDS UNLESS OTHERWISE NOTED.
7. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

				DRAWN BY: A. CARLOS		DATE: 03/31/2011	<small>SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES, SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.</small>	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS		STANDARD
											2841
									INSULATED GAUGE PLATE DETAILS DS-GP-5 AND DS-GP-6		SCALE: NTS
									136 LB RE NO 10 DOUBLE SLIP CROSSING		SHEET 1 OF 1
											CADD FILE: ES2841-45

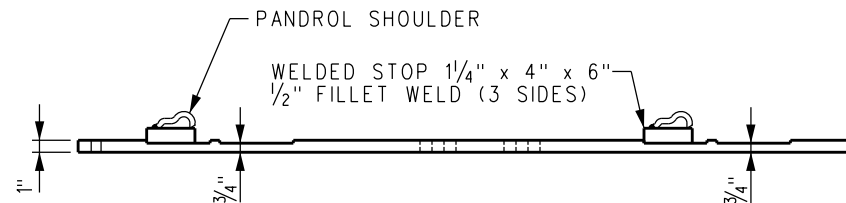
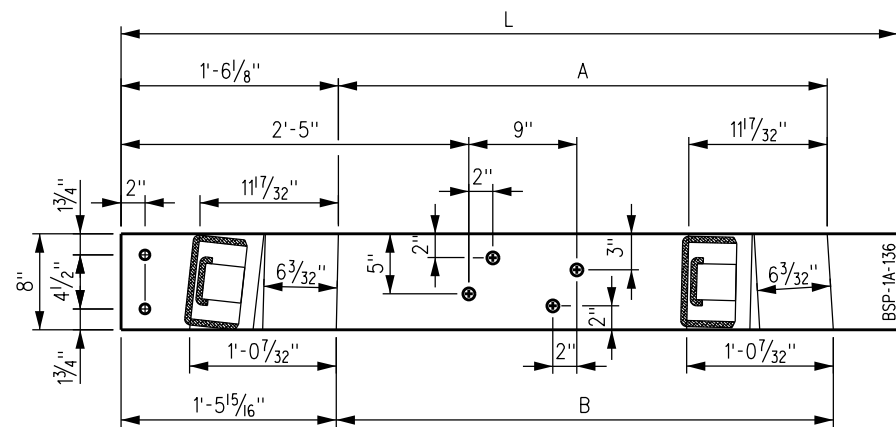


- NOTES:**
1. PLATES TO BE MADE OF MILD ROLLED STEEL.
 2. EACH PLATE TO BE PLAINLY STAMPED WITH PLATE NO AND 136 (WEIGHT OF RAIL) & HAND OF TURNOUT (RH OR LH).
 3. PANDROL SHOULDER TO BE TYPE 5 FORGED.
 4. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO THE PLATE. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
 5. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10 DOUBLE SLIP CROSSING.
 6. ALL WELDS ARE 1/2" FILLET WELDS UNLESS OTHERWISE NOTED.
 7. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

REFERENCE DRAWING

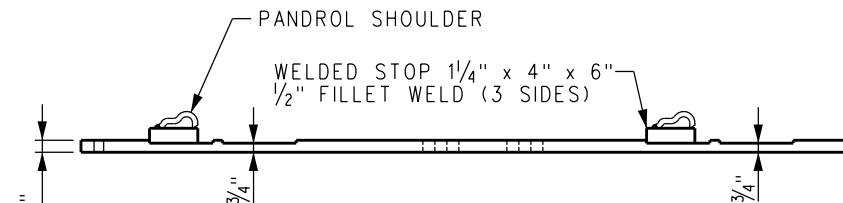
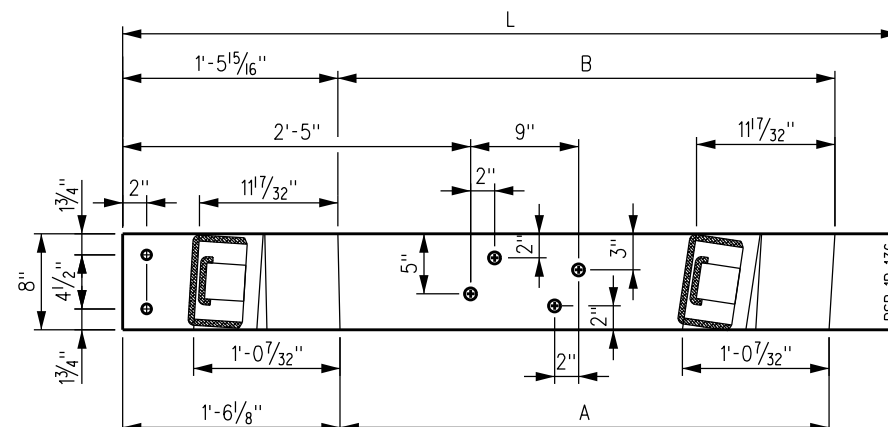
LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

				DRAWN BY: A. CARLOS		DATE: 03/31/2011	SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES: SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS		STANDARD
											2841
											SCALE: NTS
									BRACE PLATE AND SLIDE PLATE DETAILS NO 10 136 LB RE DOUBLE SLIP CROSSING		REVISION SHEET - 1 OF 1
											CADD FILE: ES2841-46



BRACE SLIDE PLATE
1" x 8" x L - (MILLED)

DIMENSION TABLE				
PLATE	A	B	L	NO REQ'D
1-A	3' - 4 ³ / ₄ "	3' - 5 ⁷ / ₁₆ "	5' - 4 ³ / ₄ "	2
2-A	3' - 3 ¹ / ₈ "	3' - 3 ³ / ₄ "	5' - 4 ¹ / ₄ "	2
3-A	3' - 1 ³ / ₄ "	3' - 2 ¹ / ₄ "	5' - 3 ³ / ₄ "	2



BRACE SLIDE PLATE
1" x 8" x L - (MILLED)

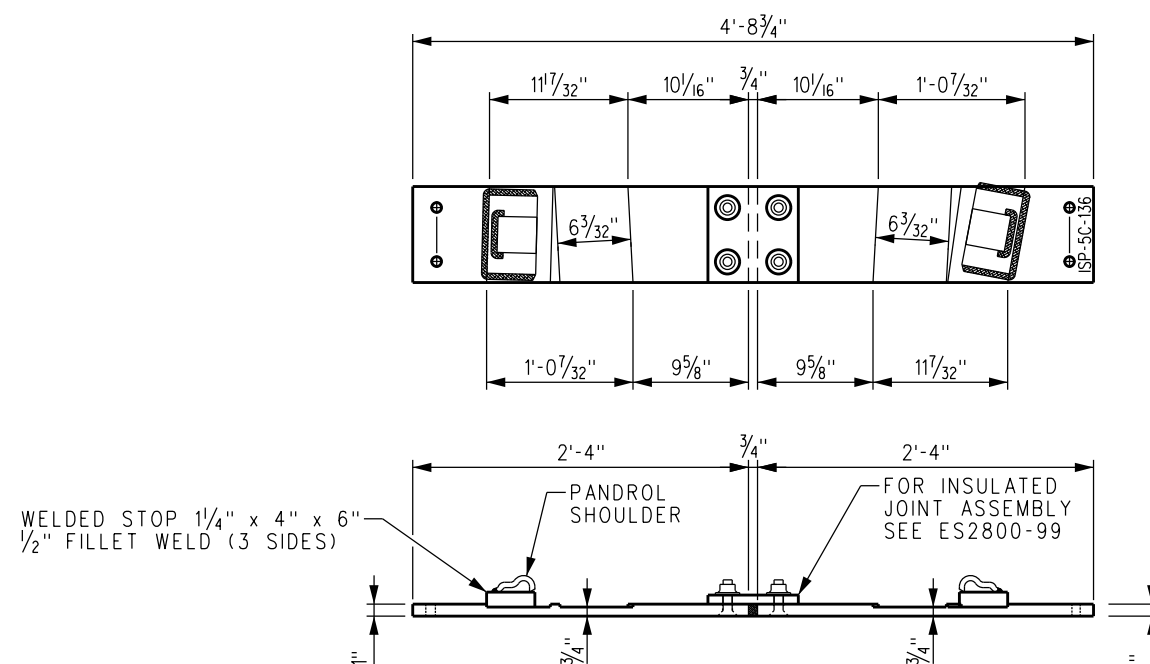
DIMENSION TABLE				
PLATE	A	B	L	NO REQ'D
1-B	3'-4 $\frac{3}{4}$ "	3'-5 $\frac{7}{16}$ "	5'-4 $\frac{3}{4}$ "	2
2-B	3'-3 $\frac{3}{8}$ "	3'-3 $\frac{3}{4}$ "	5'-4 $\frac{1}{4}$ "	2
3-B	3'-1 $\frac{3}{4}$ "	3'-2 $\frac{1}{4}$ "	5'-3 $\frac{3}{4}$ "	2

NOTES:

1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. EACH PLATE TO BE PLAINLY STAMPED WITH PLATE NO AND 136 (WEIGHT OF RAIL)
& HAND OF TURNOUT (RH OR LH)
3. PANDROL SHOULDER TO BE TYPE 1 FORGED.
4. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO THE PLATE.
ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA
OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT
DIMENSION AS CALLED FOR.
5. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10 DOUBLE SLIP CROSSING.

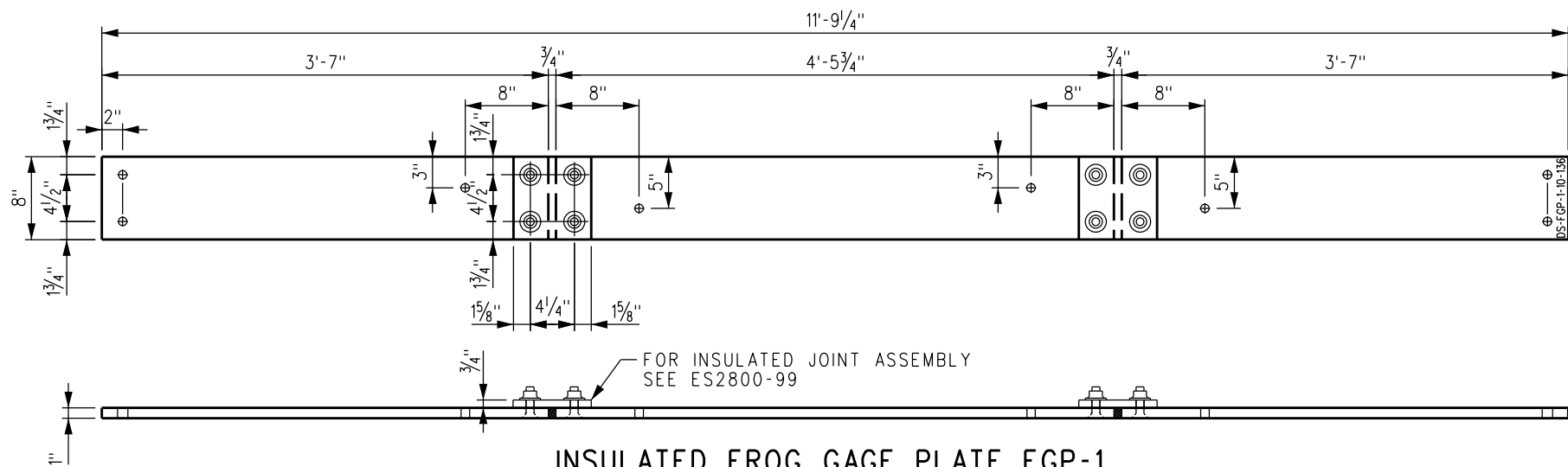
REFERENCE DRAWING

LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

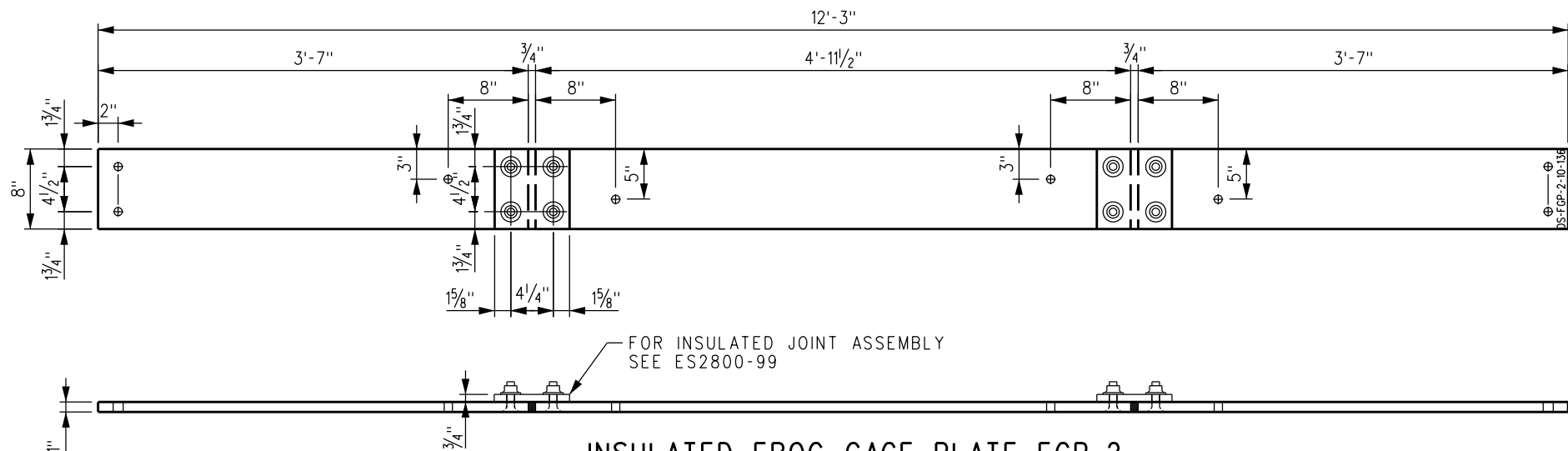


INSULATED SLIDE PLATE 5-C
1" x 8" - MILLED - (2 EACH REQ'D AS SHOWN)

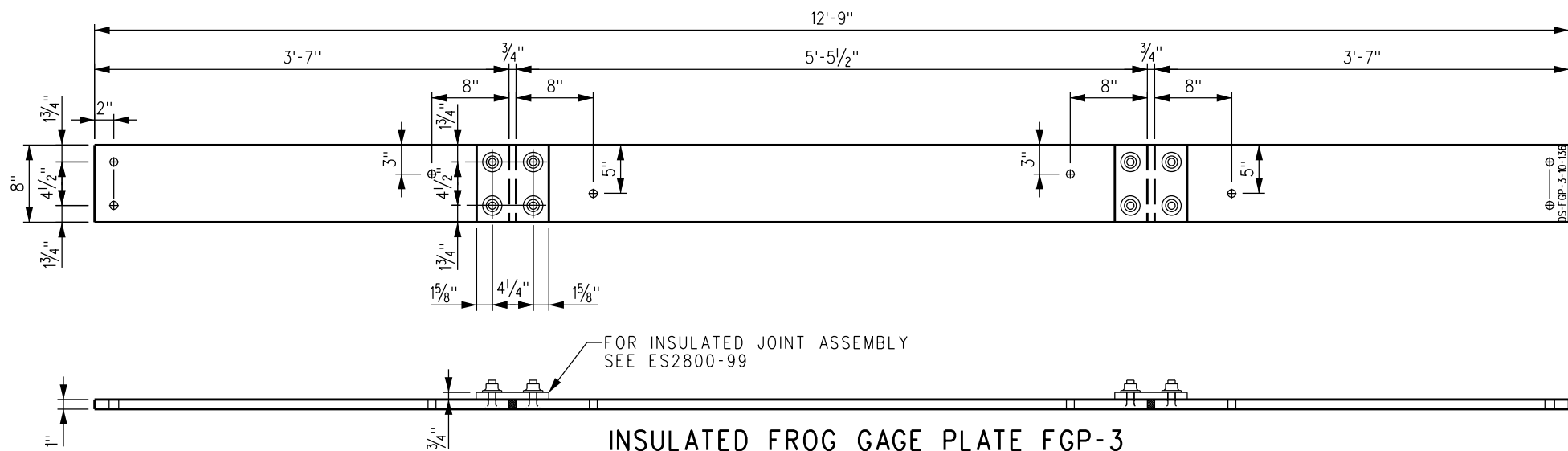
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INSULATED FROG GAGE PLATE FGP-1
1" x 8" - FLAT



INSULATED FROG GAGE PLATE FGP-2
1" x 8" - FLAT



INSULATED FROG GAGE PLATE FGP-3
1" x 8" - FLAT

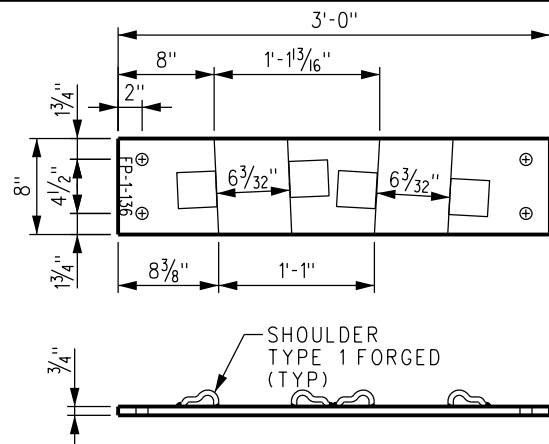
NOTES:

1. STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.
2. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

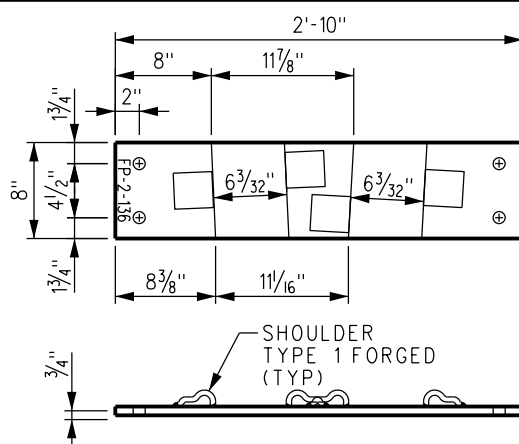
REFERENCE DRAWING

LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

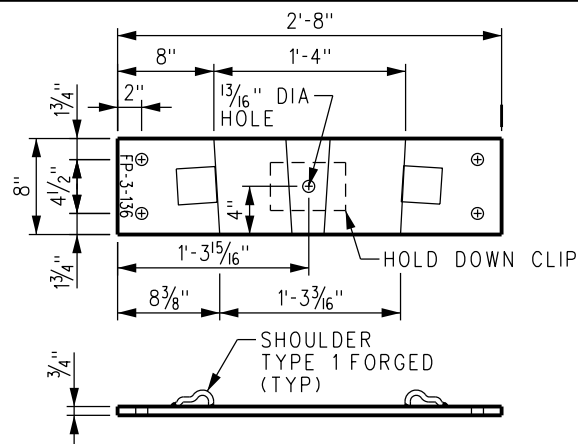
				DRAWN BY: A. CARLOS		DATE: 03/31/2011		<div>SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY.</div> <div>FOR NON-SCRRRA APPROVED USES:</div> <div>SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.</div>		<div> METROLINK[®]</div> <div>SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY</div> <div>ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>		ENGINEERING STANDARDS		STANDARD	
										2841					
										SCALE:					
										NTS					
										REVISION					
										SHEET					
										1 OF 1					
										CADD FILE:					
										ES2841-48					



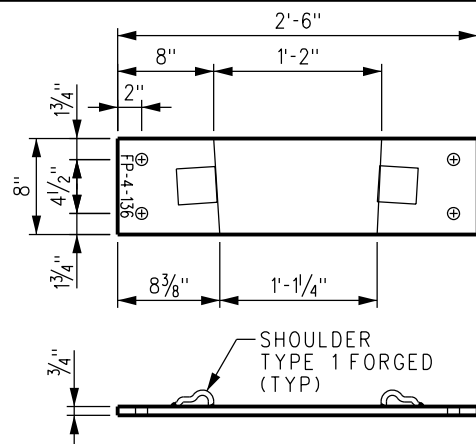
FROG PLATE - F-1
3/4" x 8" x 3'-0" - FLAT
(2 REQUIRED)



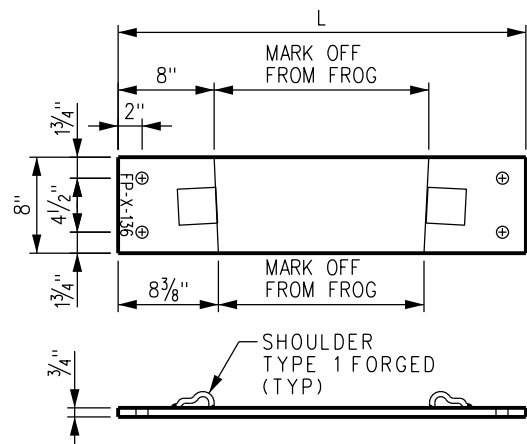
FROG PLATE - F-2
3/4" x 8" x 2'-10" - FLAT
(2 REQUIRED)



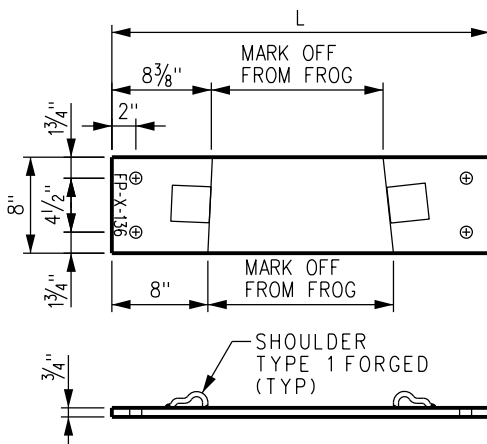
FROG PLATE - F-3
3/4" x 8" x 2'-8" - FLAT
(2 REQUIRED)



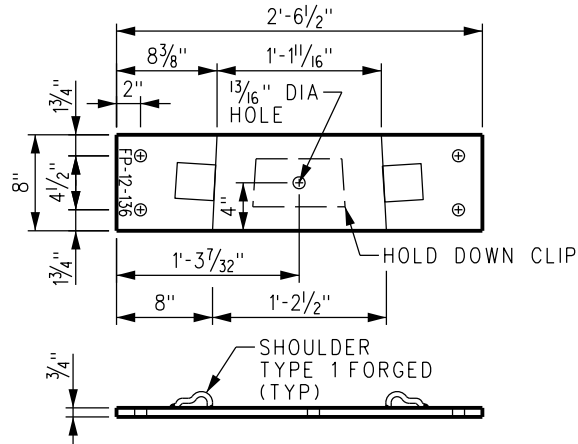
FROG PLATE - F-4
3/4" x 8" x 2'-6" - FLAT
(2 REQUIRED)



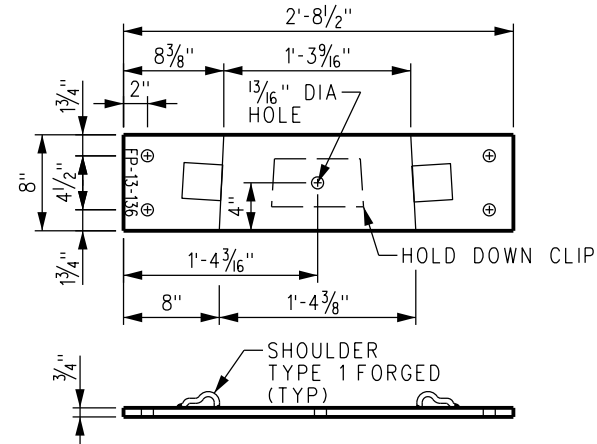
FROG PLATE - F-5 THRU F-7 AND F-10
3/4" x 8" - FLAT (SEE TABLE FOR LENGTHS)



FROG PLATE - F-8, F-9 AND F-11
3/4" x 8" - FLAT (SEE TABLE FOR LENGTHS)



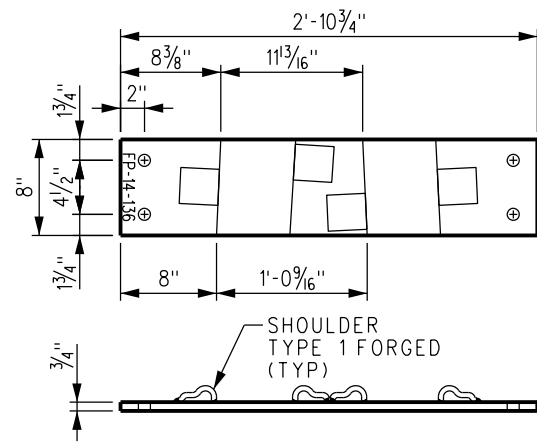
FROG PLATE - F-12
3/4" x 8" x 2'-6 1/2" - FLAT
(2 REQUIRED)



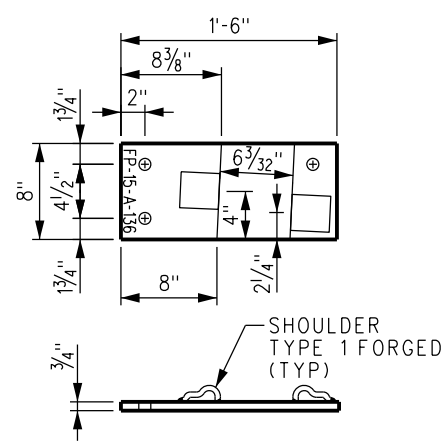
FROG PLATE - F-13
3/4" x 8" x 2'-8 1/2" - FLAT
(2 REQUIRED)

DIMENSION TABLE		
PLATE	A	NO REQ'D
F-5	3'-0 3/4"	2
F-6	2'-11 3/4"	2
F-7	2'-9 3/4"	2
F-10	2'-7 1/2"	2

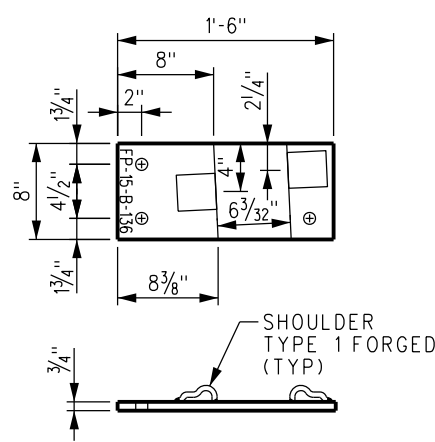
DIMENSION TABLE		
PLATE	A	NO REQ'D
F-8	2'-8 1/2"	2
F-9	2'-10"	2
F-11	2'-4 1/4"	2



FROG PLATE - F-14
3/4" x 8" x 2'-10 3/4" - FLAT
(2 REQUIRED)



FROG PLATE - F-15-A
3/4" x 8" x 1'-6" - FLAT
(2 REQUIRED)



FROG PLATE - F-15-B
3/4" x 8" x 1'-6" - FLAT
(2 REQUIRED)

NOTES:

1. STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.
2. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

REFERENCE DRAWING

LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX

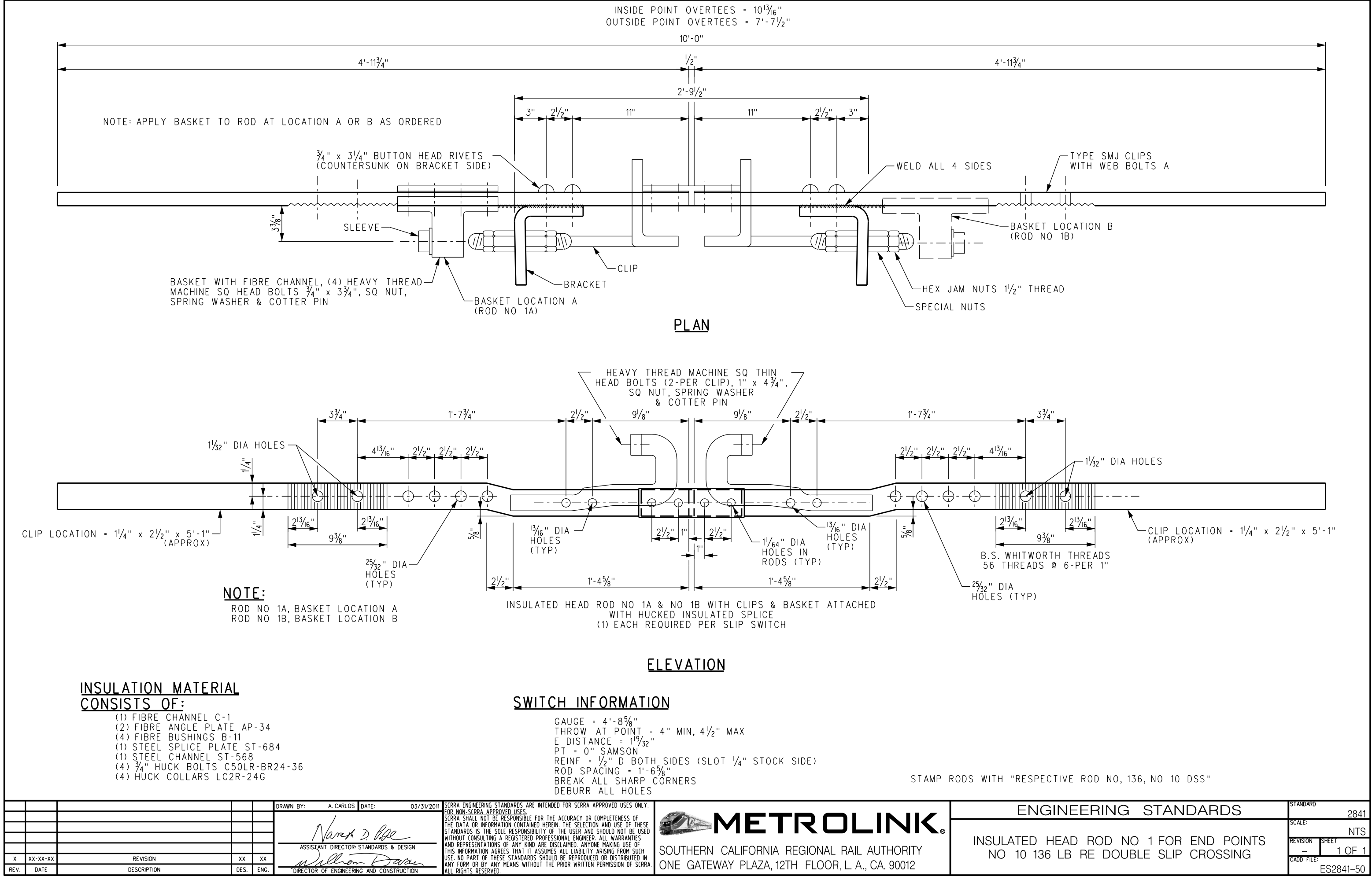
DRAWN BY:	A. CARLOS	DATE:	03/31/2011
<i>Nancy D. Pape</i> ASSISTANT DIRECTOR: STANDARDS & DESIGN			
<i>William D. Davis</i> DIRECTOR OF ENGINEERING AND CONSTRUCTION			

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SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS	
FROG PLATE DETAILS NO 10 136 LB RE DOUBLE SLIP CROSSING	

STANDARD	2841
SCALE:	NTS
REVISION	SHEET
-	1 OF 1
CADD FILE:	ES2841-49



						DRAWN BY:	A. CARLOS	DATE:	03/31/2011
							<i>Nancy D. Pae</i>		
							ASSISTANT DIRECTOR: STANDARDS & DESIGN		
							<i>William D. Davis</i>		
							DIRECTOR OF ENGINEERING AND CONSTRUCTION		
X	XX-XX-XX		REVISION	XX	XX				
REV.	DATE		DESCRIPTION	DES.	ENG.				

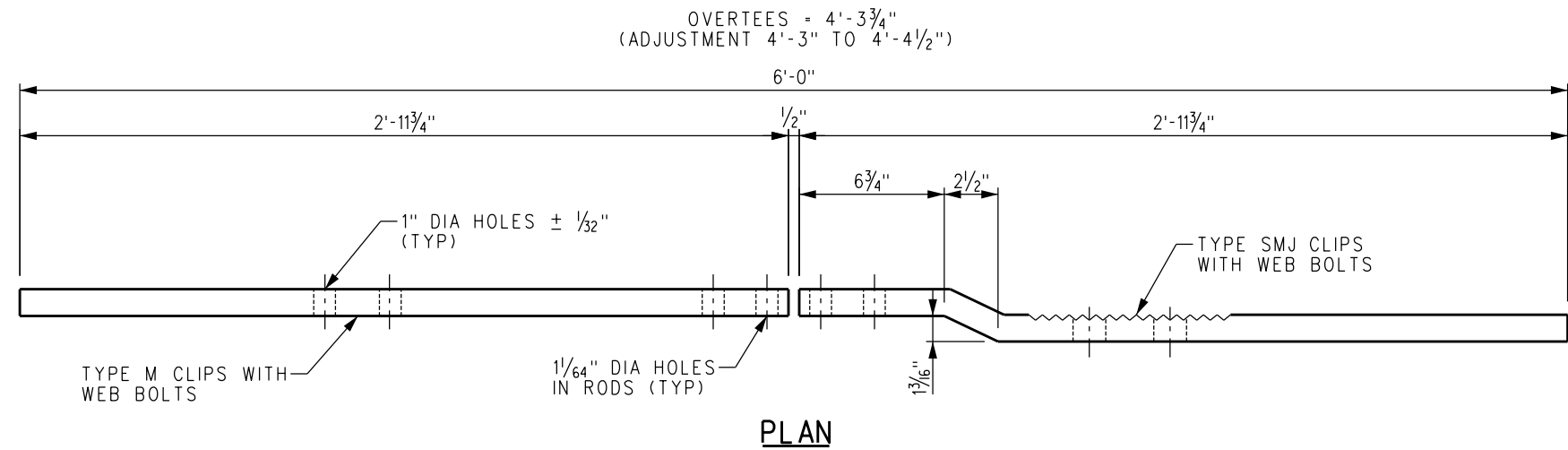
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**METROLINK**[®]

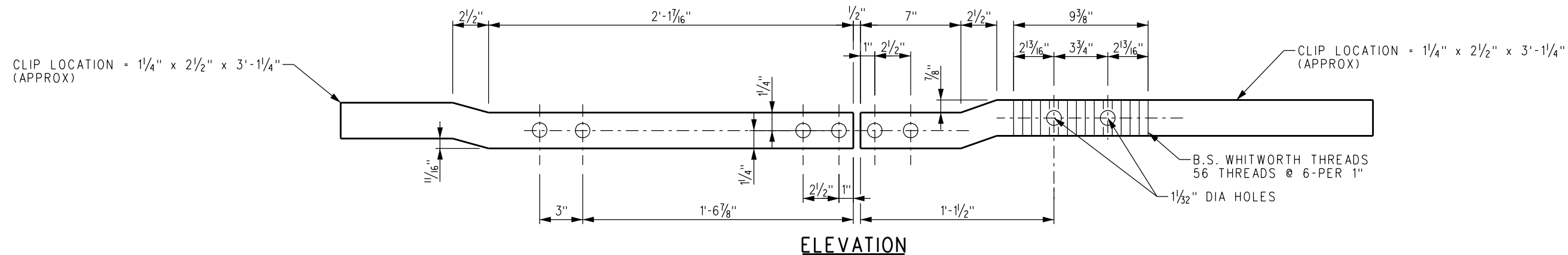
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS	
INSULATED HEAD ROD NO 1 FOR END POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING	

STANDARD	2841
SCALE:	NTS
REVISION	SHEET
-	1 OF 1
CADD FILE:	ES2841-50



NOTE:
TYPE M CLIP MUST BE WELDED TO ROD
ALONG BOTH SIDES OF BOTTOM CLIPS.



INSULATED SPREAD RODS NO 2 OR 3 WITH
CLIPS AND BOLTS ATTACHED WITH HUCKED
INSULATED SPLICE, (2) EACH REQUIRED PER
SLIP SWITCH

STAMP ROD WITH "RESPECTIVE ROD NO, 136, NO 10 DSS"

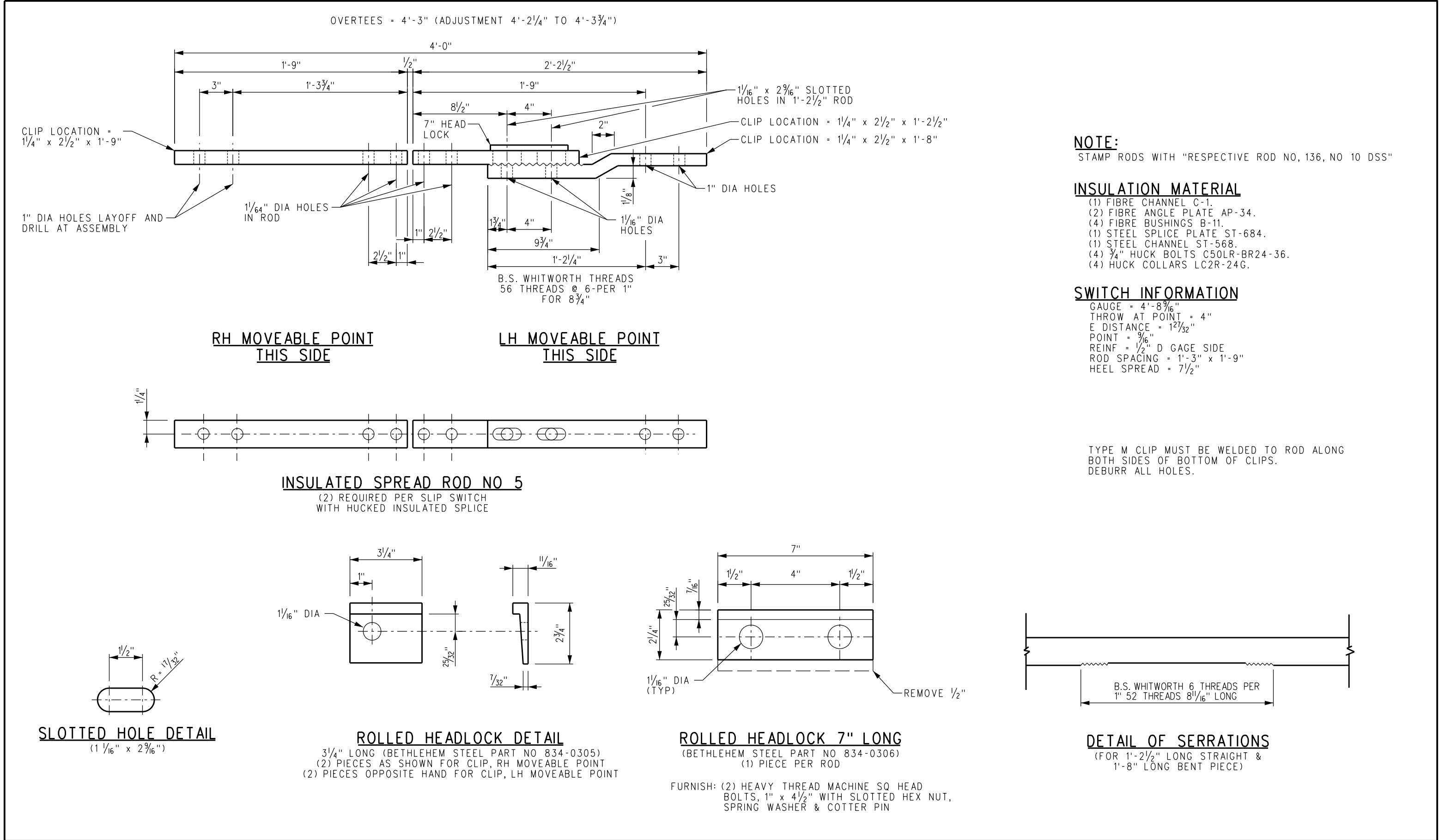
INSULATION MATERIAL CONSISTS OF:

- (1) FIBRE CHANNEL C-1.
- (2) FIBRE ANGLE PLATE AP-34.
- (4) FIBRE BUSHINGS B-11.
- (1) STEEL SPLICE PLATE ST-684.
- (1) STEEL CHANNEL ST-568.
- (4) 3/4" HUCK BOLTS C50LR-BR24-36.
- (4) HUCK COLLARS LC2R-24G.

SWITCH INFORMATION

GAUGE = 4'-8 $\frac{5}{8}$ "
THROW AT POINT = 4" MIN, 4 1/2" MAX
E DISTANCE = 1'9 $\frac{1}{32}$ "
PT = 0" SAMSON
REINF = 1/2" D BOTH SIDES (SLOT 1/4" STOCK
SIDE NO 2 ROD ONLY)
ROD SPACING = 1'-6 $\frac{5}{8}$ " x 3'-0 1/2" (NO 2 ROD)
ROD SPACING = 1'-6 $\frac{5}{8}$ " x 3'-5 1/2" (NO 3 ROD)

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											REVISION SHEET 1 OF 1
											CADD FILE: ES2841-53

