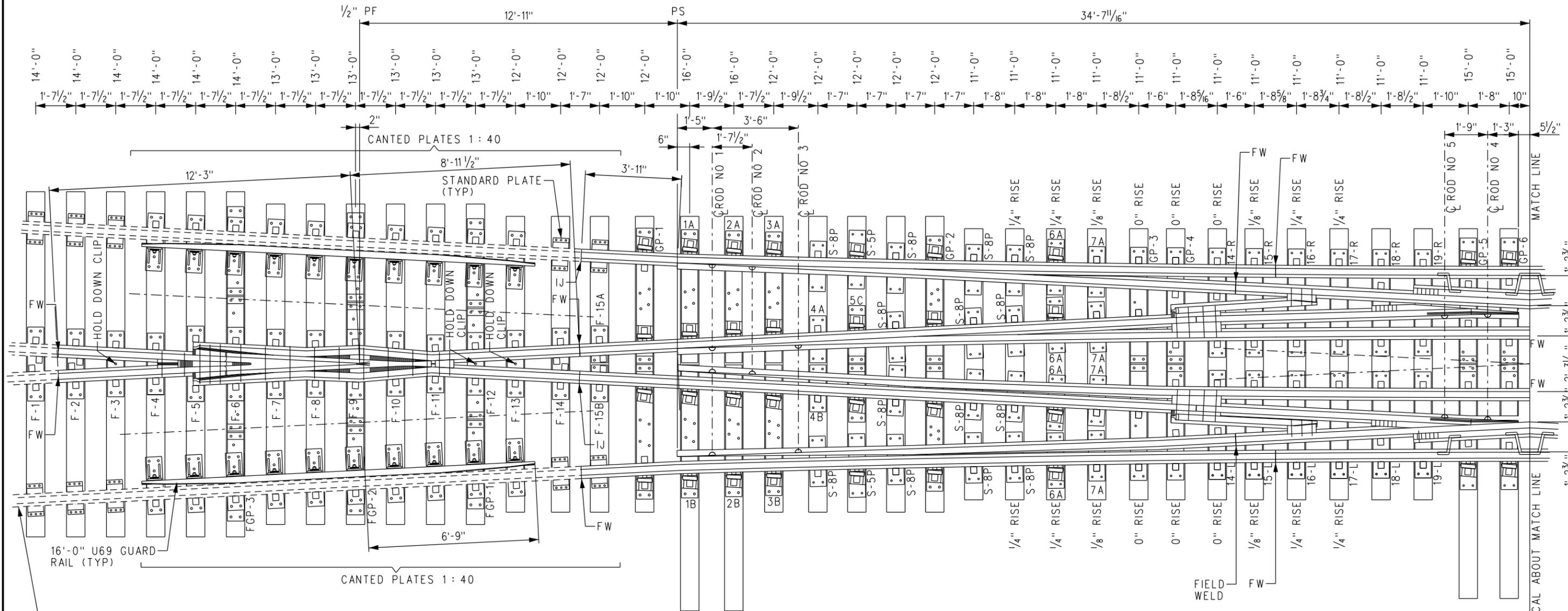


NOTES:

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.



NOTE: RAIL SHOWN AS DASHED NOT FURNISHED BY SPECIAL TRACKWORK VENDOR

NO 10 DOUBLE SLIP CROSSING

DOUBLE SLIP IS SYMMETRICAL ABOUT MATCH LINE

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

DRAWN BY: A. CARLOS DATE: 03/31/2011
Nareh D. Papp
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William Dava
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

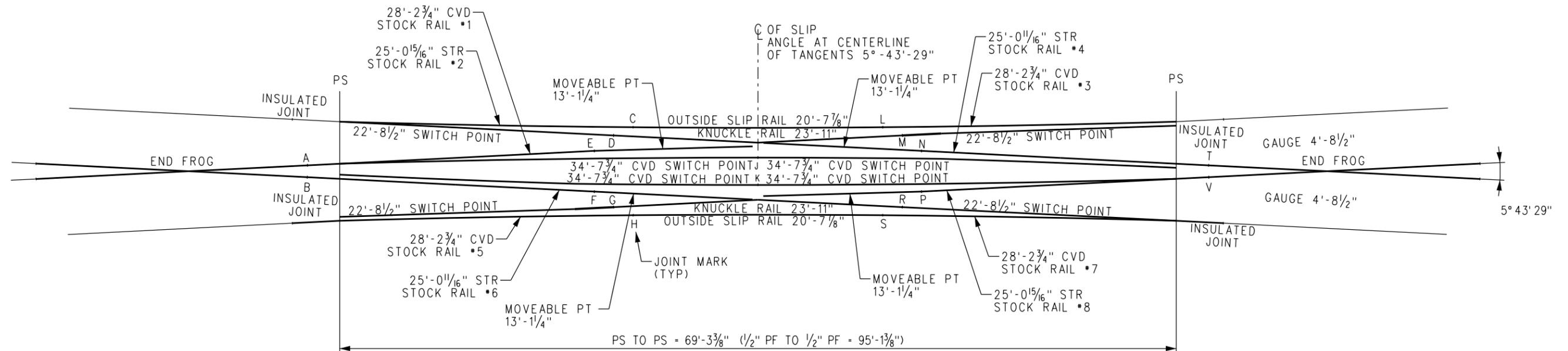
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METROLINK
 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 NO 10 136 LB RE DOUBLE SLIP CROSSING WITH SOLID MANGANESE FROG LAYOUT

STANDARD	2841
SCALE:	NTS
REVISION 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 "	GAUGE ON STRAIGHT TRACK	4'-8 ¹ / ₂ "
LENGTH OF OUTSIDE SAMSON STOCK RAILS	25'-0 ¹⁵ / ₁₆ "	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:

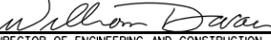
1. ALL MEASUREMENTS GIVEN AT 5/8" BELOW TOP OF RAIL AND TO 1/2" POINT OF END OF FROG.
2. ALL RAILS TO BE FULLY HEAT TREATED - BRINELL 341-388.
3. JOINT GAPS: 1/8" STANDARD; 3/8" INSULATED.
4. JOINT DRILLING: ALL FIELD WELDED RAILS: 9/2" - 6" @ 3 3/32" ABOVE BASE, 1/8" DIA HOLES.
5. ALL INSULATED JOINT 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.

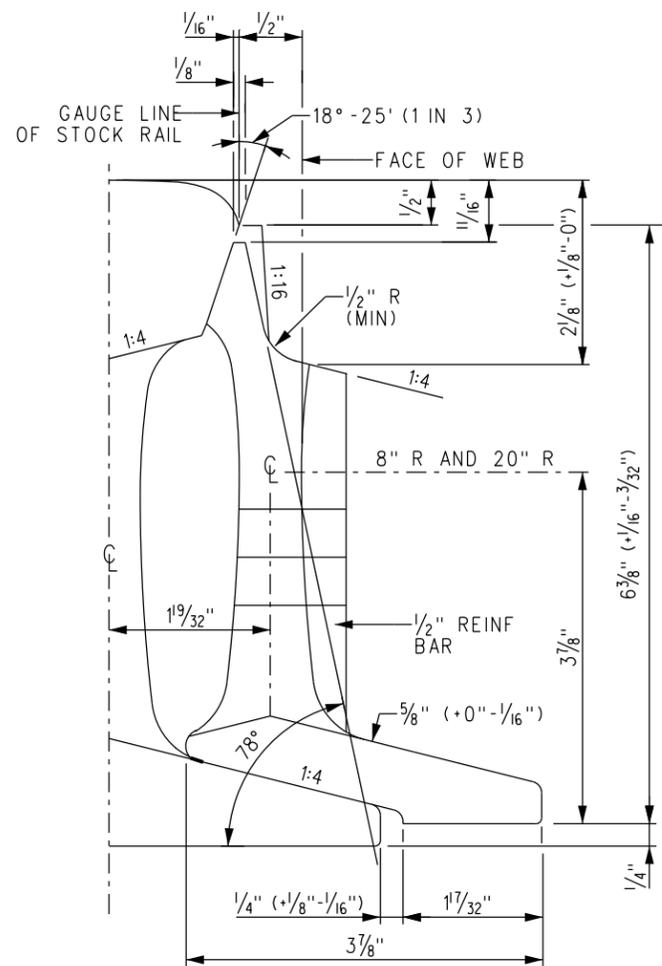
SPECIFICATIONS:

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.

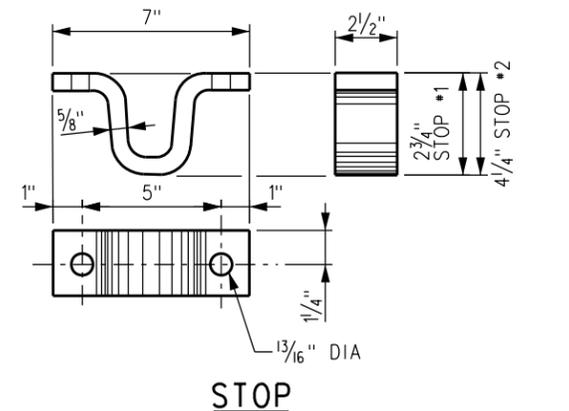
REFERENCE DRAWING

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

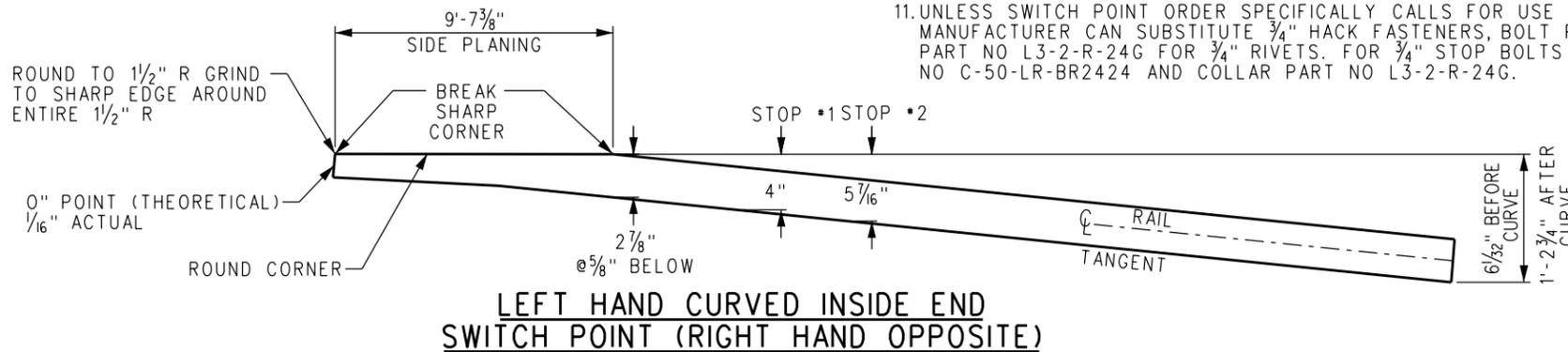
DRAWN BY: A. CARLOS		DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY 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.		 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		ENGINEERING STANDARDS		STANDARD
 ASSISTANT DIRECTOR: STANDARDS & DESIGN		 DIRECTOR OF ENGINEERING AND CONSTRUCTION		CROSSING GEOMETRY AND CROSSING DATA NO 10 136 LB RE DOUBLE SLIP CROSSING				SCALE:	2841	
REV.	DATE	DESCRIPTION	DES.	ENG.						



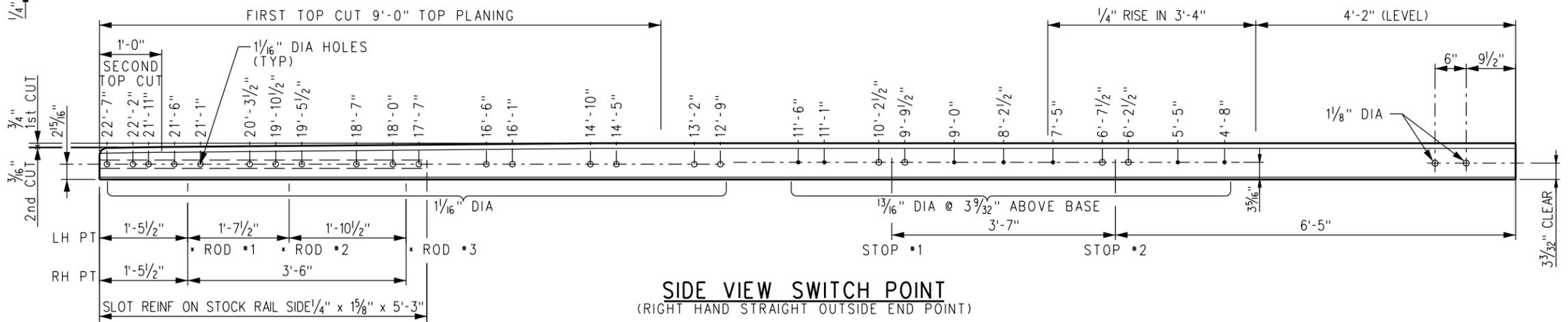
END VIEW OF POINT



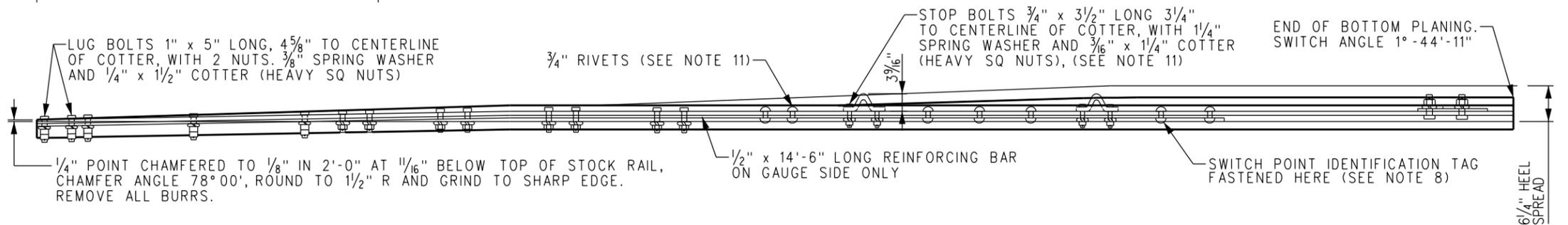
STOP



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



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



TOP VIEW SWITCH POINT

NOTES:

1. SWITCH POINTS TO BE MADE FROM NEW HIGH STRENGTH RAIL.
2. METAL IDENTIFICATION TAG SHOWING HAND OF SWITCH POINT, WEIGHT OF RAIL, HS, MANUFACTURER AND WHEN MADE, TO BE FASTENED TO SWITCH POINT AT LOCATION SHOWN.
3. LEFT HAND TURNOUT SHOWN. MAKE OPPOSITE HAND FOR RIGHT HAND SWITCH POINT.
4. SIDE PLANING FIGURED ON GAUGE LINE 5/8" BELOW TOP OF RAIL.
5. MATERIAL AND WORKMANSHIP, ALSO ANY CONSTRUCTION DETAILS NOT SHOWN, SHALL BE PER CURRENT AREMA "TRACKWORK PLANS AND SPECIFICATIONS", 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 HEEL END OF THE SWITCH POINT RAIL. 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 RAIL 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 PARENTHESES, THE ACTUAL LENGTH OF SWITCH POINT RAIL AND (3) THE TURNOUT NUMBER. MARK TAG THUS: 22'-8 1/2" NO 10. 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 3/4" RIVETS AND 3/4" STOP BOLTS, MANUFACTURER CAN SUBSTITUTE 3/4" HACK FASTENERS, BOLT PART NO C-50-LR-BR246 AND COLLAR PART NO L3-2-R-24G FOR 3/4" RIVETS. FOR 3/4" STOP BOLTS USE HUCK FASTENERS, BOLT PART NO C-50-LR-BR2424 AND COLLAR PART NO L3-2-R-24G.

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

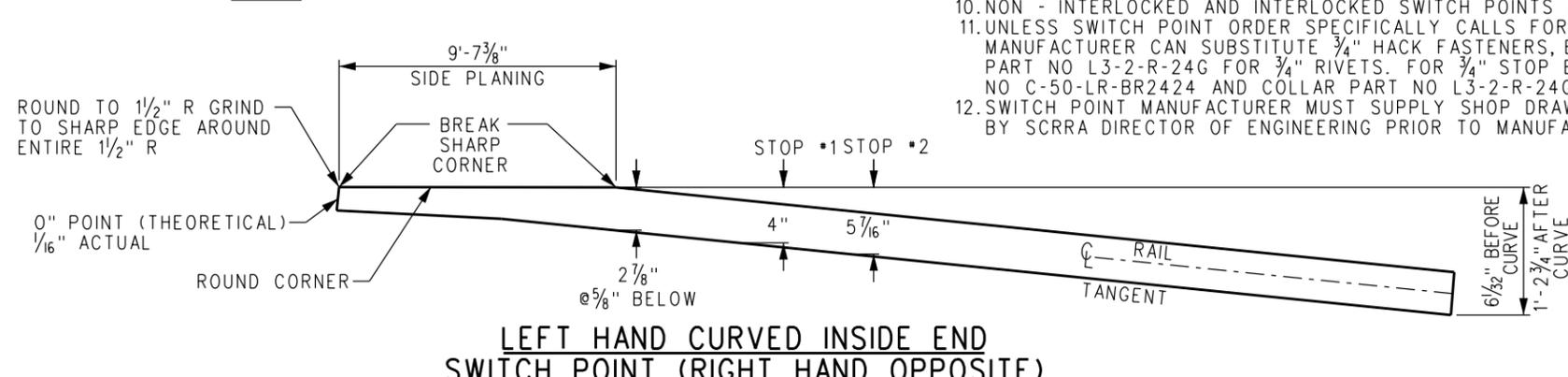
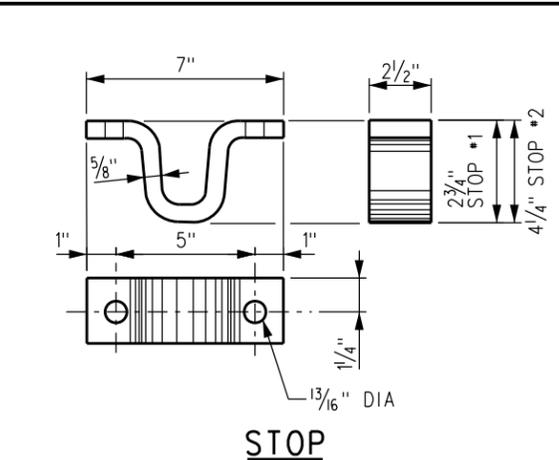
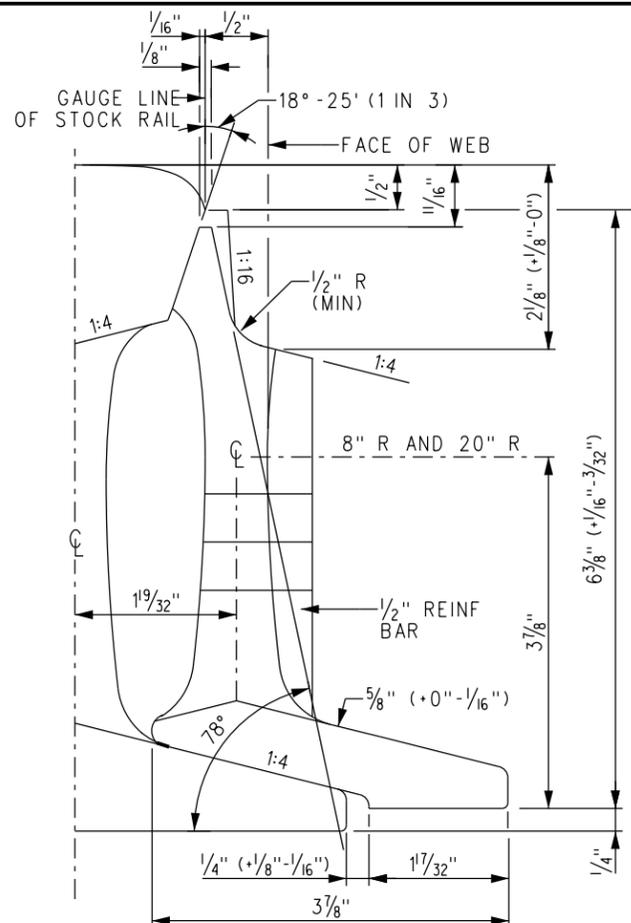
DRAWN BY: A. CARLOS DATE: 03/31/2011
Nareh D. Papp
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William D. Davis
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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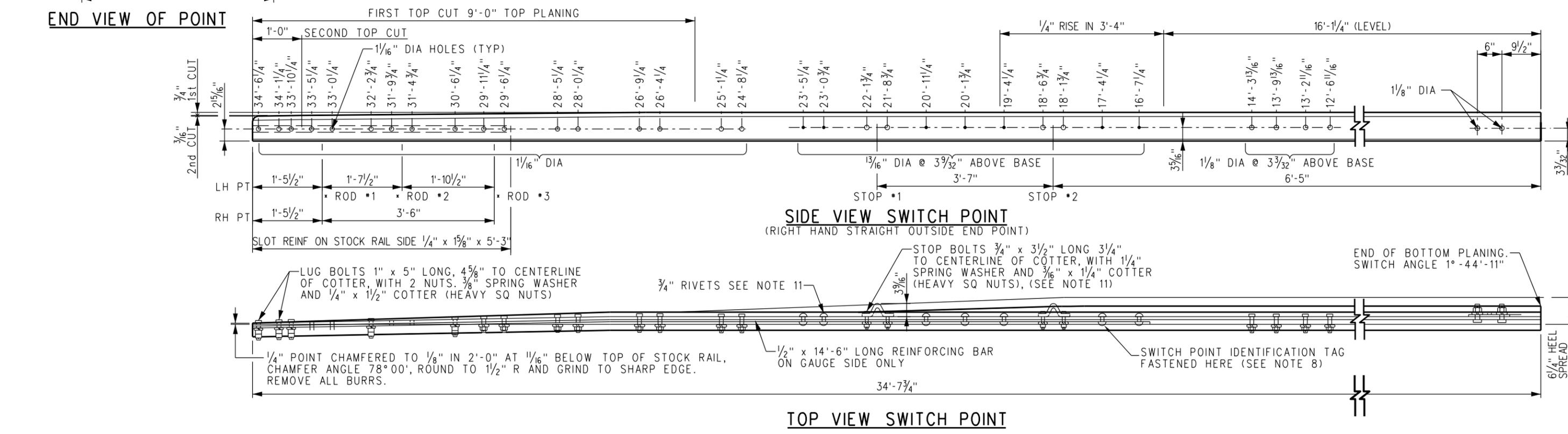
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 136 LB RE 22'-8 1/2" STRAIGHT SWITCH POINT
 NO 10 DOUBLE SLIP CROSSING

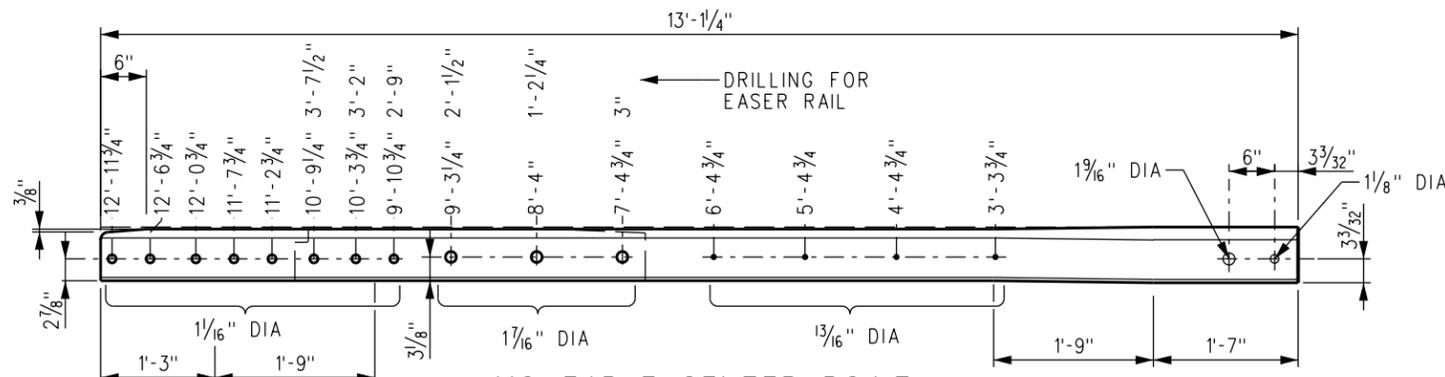
STANDARD	2841
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2841-11



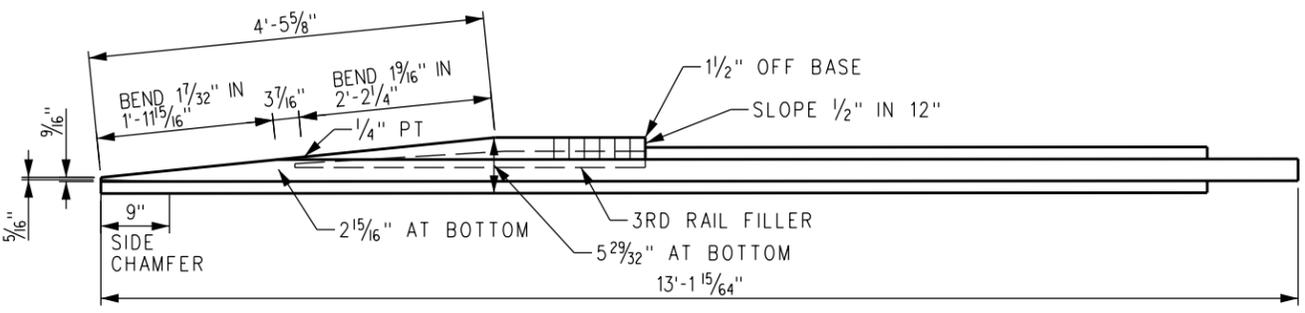
- NOTES:**
- SWITCH POINTS TO BE MADE FROM NEW HIGH STRENGTH RAIL.
 - METAL IDENTIFICATION TAG SHOWING HAND OF SWITCH POINT, WEIGHT OF RAIL, HS, MANUFACTURER AND WHEN MADE, TO BE FASTENED TO SWITCH POINT AT LOCATION SHOWN.
 - LEFT HAND TURNOUT SHOWN. MAKE OPPOSITE HAND FOR RIGHT HAND SWITCH POINT.
 - SIDE PLANING FIGURED ON GAUGE LINE $\frac{5}{8}$ " BELOW TOP OF RAIL.
 - MATERIAL AND WORKMANSHIP, ALSO ANY CONSTRUCTION DETAILS NOT SHOWN, SHALL BE PER CURRENT AREMA "TRACKWORK PLANS AND SPECIFICATIONS", UNLESS OTHERWISE SPECIFIED ON THIS PLAN.
 - 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 HEEL END OF THE SWITCH POINT RAIL. 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.
 - 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 RAIL AND SHALL RUN OUT AT THE END OF THE TOP PLANING, WHERE THE SWITCH POINT HAS FULL HEAD CONTOUR.
 - METAL IDENTIFICATION TAG SHOWING (1) DESIGN LENGTH OF SWITCH, (2) IN PARENTHESES, THE ACTUAL LENGTH OF SWITCH POINT RAIL AND (3) THE TURNOUT NUMBER. MARK TAG THUS: 22'-8 $\frac{1}{2}$ " NO 10. TAG TO BE FASTENED TO SWITCH POINT, ON GAUGE SIDE OF RAIL AT HEEL SPACER BLOCK IN LOCATION SHOWN.
 - AT HEEL END OF SWITCH POINT RAIL, BREAK SHARP CORNER AROUND THE ENTIRE PERIPHERY BY SLIGHTLY GRINDING. ALSO, DO NOT END HARDEN RAIL END.
 - NON - INTERLOCKED AND INTERLOCKED SWITCH POINTS ARE MADE THE SAME.
 - UNLESS SWITCH POINT ORDER SPECIFICALLY CALLS FOR USE OF $\frac{3}{4}$ " RIVETS AND $\frac{3}{4}$ " STOP BOLTS, MANUFACTURER CAN SUBSTITUTE $\frac{3}{4}$ " HACK FASTENERS, BOLT PART NO C-50-LR-BR2416 AND COLLAR PART NO L3-2-R-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.
 - SWITCH POINT MANUFACTURER MUST SUPPLY SHOP DRAWINGS OF MANGANESE STEEL INSERT FOR APPROVAL BY SCRRRA DIRECTOR OF ENGINEERING PRIOR TO MANUFACTURING OF INSERT.



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.		<p>METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</p>		ENGINEERING STANDARDS		STANDARD
 ASSISTANT DIRECTOR: STANDARDS & DESIGN		 DIRECTOR OF ENGINEERING AND CONSTRUCTION		136 LB RE 34'-7 $\frac{3}{4}$ " CURVED SWITCH POINT NO 10 DOUBLE SLIP CROSSING				2841		
REVISION	DESCRIPTION	DES.	ENG.			SCALE:	NTS		REVISION SHEET	1 OF 1
REV.	DATE					CADD FILE:	ES2841-12			

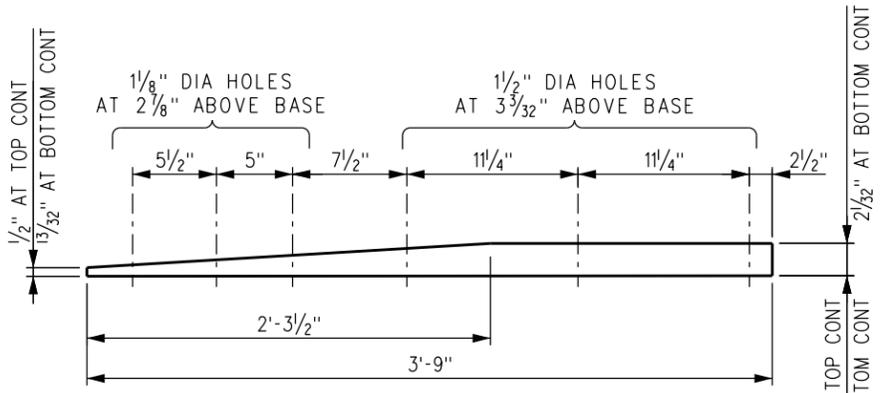


MOVEABLE CENTER POINT
(LEFT HAND AS SHOWN)

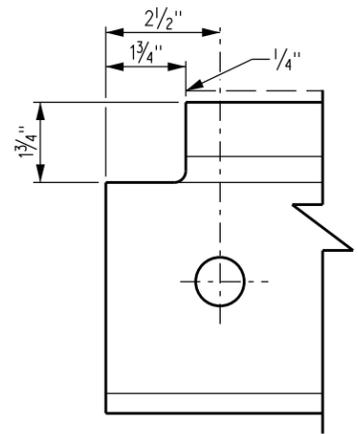


TOP VIEW MOVEABLE CENTER POINT

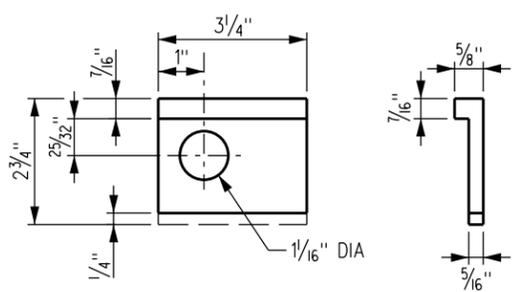
ABBREVIATIONS:
CONT = CONTOUR



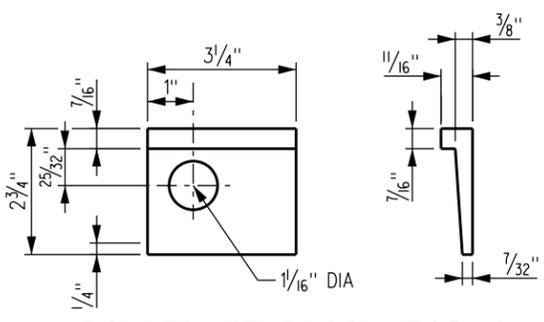
3RD RAIL FILLER - (1) PER MOVEABLE POINT
(MATERIAL - 2 1/4" x 5" - MACHINE AS SHOWN)



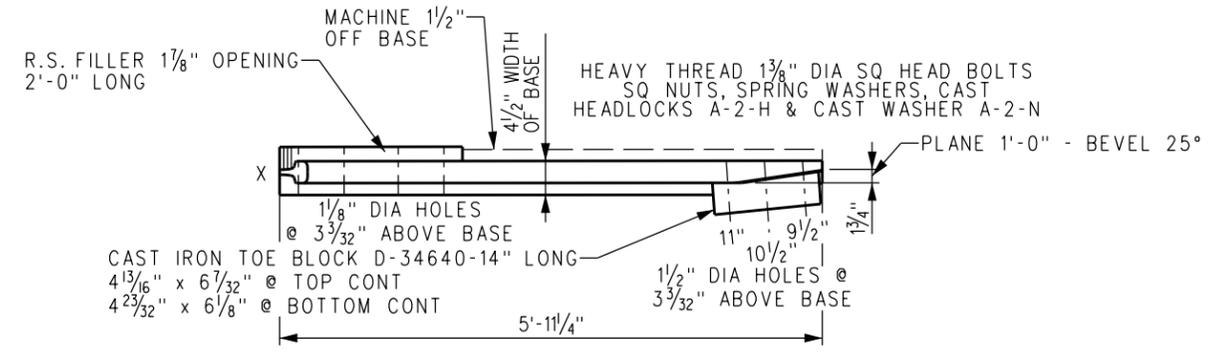
VIEW AT EASER RAIL POINT END



ROLLED HEADLOCK FOR 1, 2 AND 3



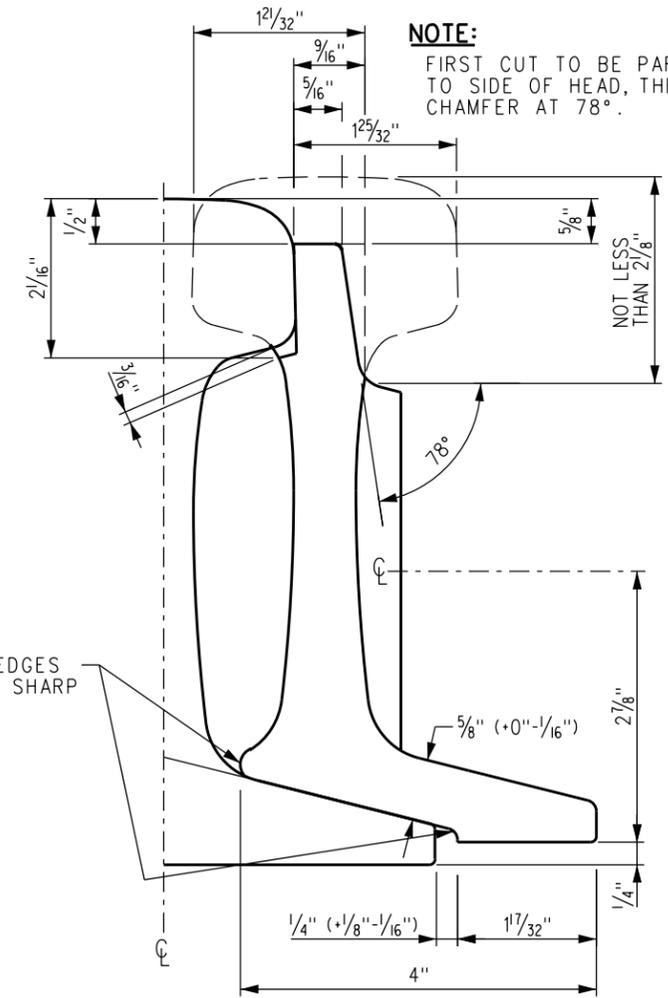
ROLLED HEADLOCK FOR 4



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"

NOTE:
FIRST CUT TO BE PARALLEL TO SIDE OF HEAD, THEN CHAMFER AT 78°.



END VIEW OF POINT

REMOVE POINTED EDGES AND CHAMFER OFF SHARP CORNERS

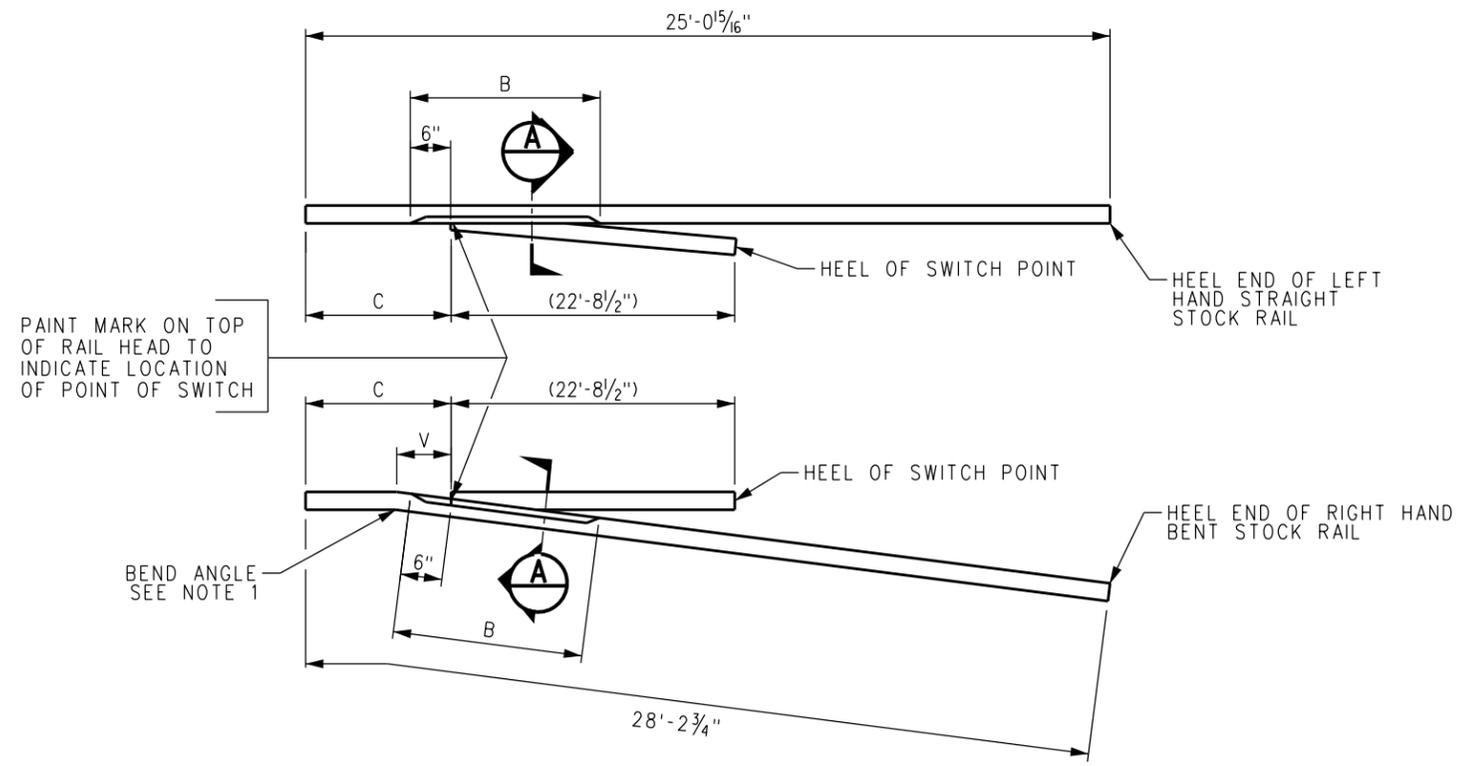
REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX
DRAWN BY: A. CARLOS DATE: 03/31/2011 <i>Nareh D. Pape</i> ASSISTANT DIRECTOR: STANDARDS & DESIGN <i>William Dava</i> DIRECTOR OF ENGINEERING AND CONSTRUCTION				

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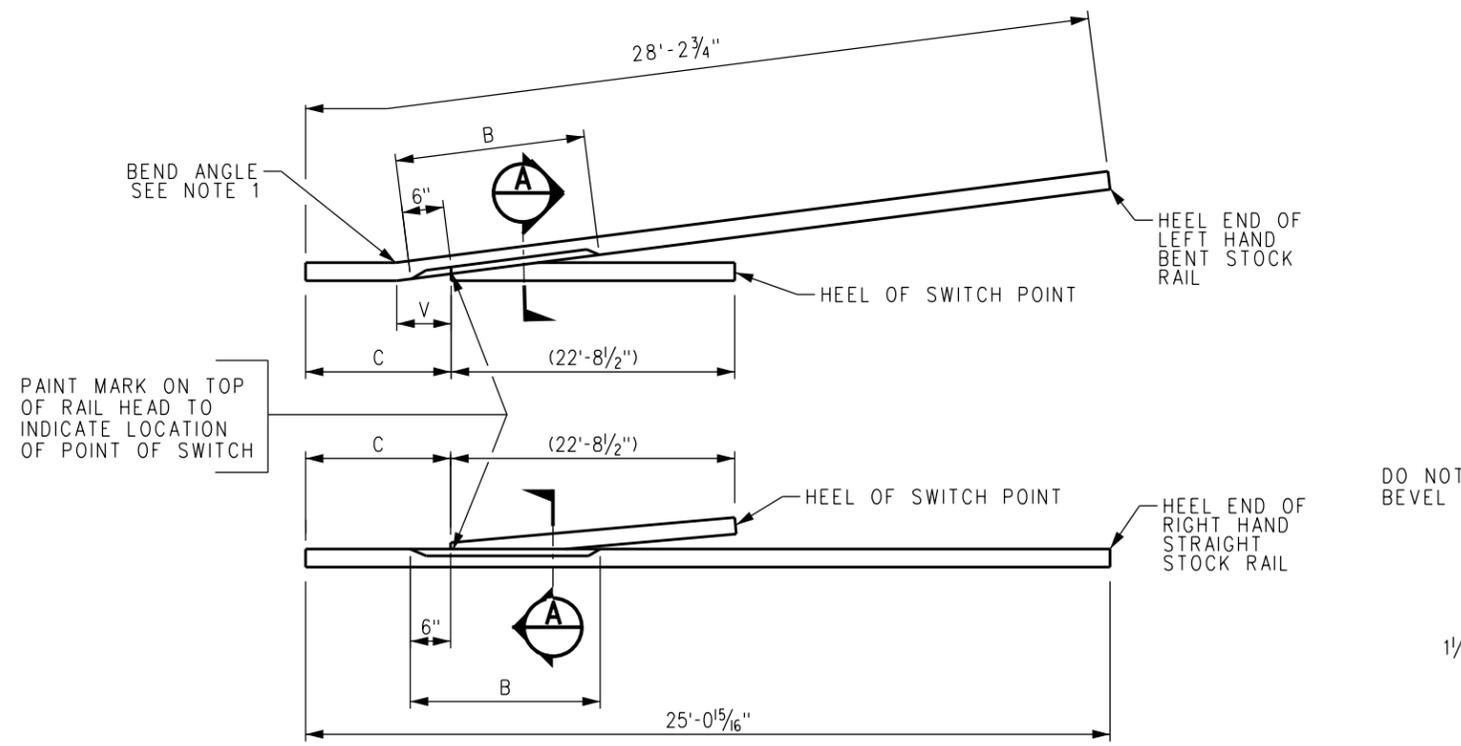
METROLINK
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
136 LB RE MOVEABLE CENTER POINT,
3RD RAIL FILLER AND BRACE RAIL DETAILS
NO 10 DOUBLE SLIP CROSSING

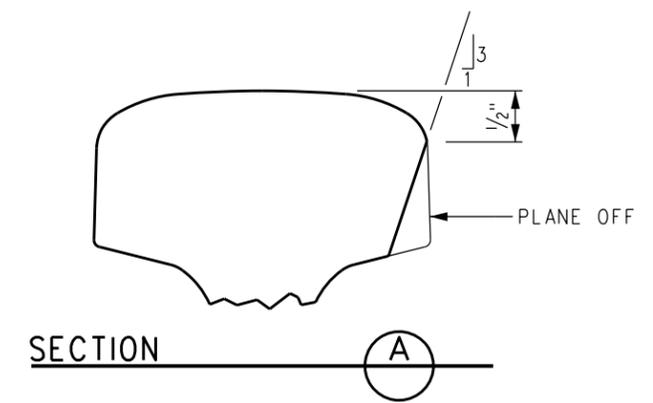
STANDARD	2841
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2841-13



STOCK RAILS ARE SHOWN FOR "RIGHT HAND TURNOUT"



STOCK RAILS ARE SHOWN FOR "LEFT HAND TURNOUT"

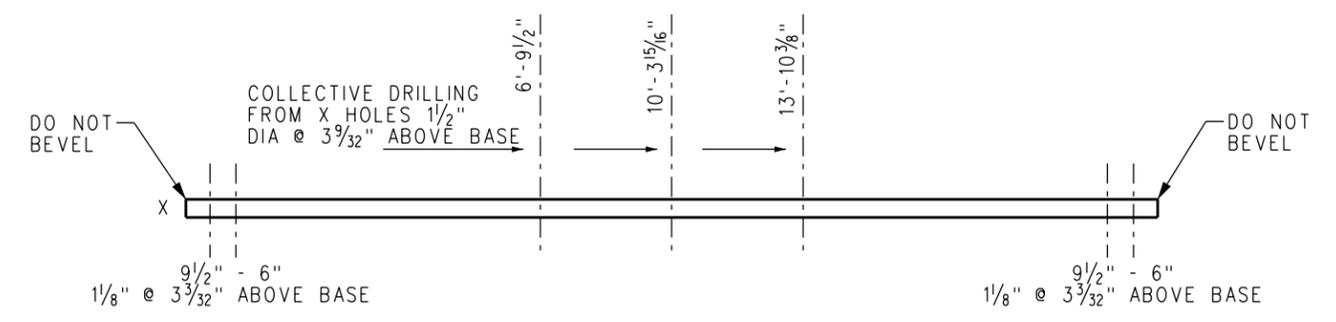


LENGTHS B, C, & D FOR 136 LB RAIL						
SW PT LENGTH	TO NO	STOCK RAIL	B	FOR NEW INSTALLATION		
				C	D	END DRILL SEE NO 10
22'-8 1/2"	10	STR	11'-0"	3'-11"	25'-0 15/16"	NONE
22'-8 1/2"	10	BENT	11'-0"	3'-11"	28'-2 3/4"	HEEL END ONLY

NOTE:

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

SW LENGTH	BEND ANGLE	V (VERTEX DIST)
22'-8 1/2"	1° - 44' - 11" OR 1" IN 2'-9"	10 5/16"



OUTSIDE SLIP RAIL - 20'-7 7/8" LONG

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

DRAWN BY: A. CARLOS DATE: 03/31/2011

Assistant Director: Standards & Design
Wilson Dava
 Director of Engineering and Construction

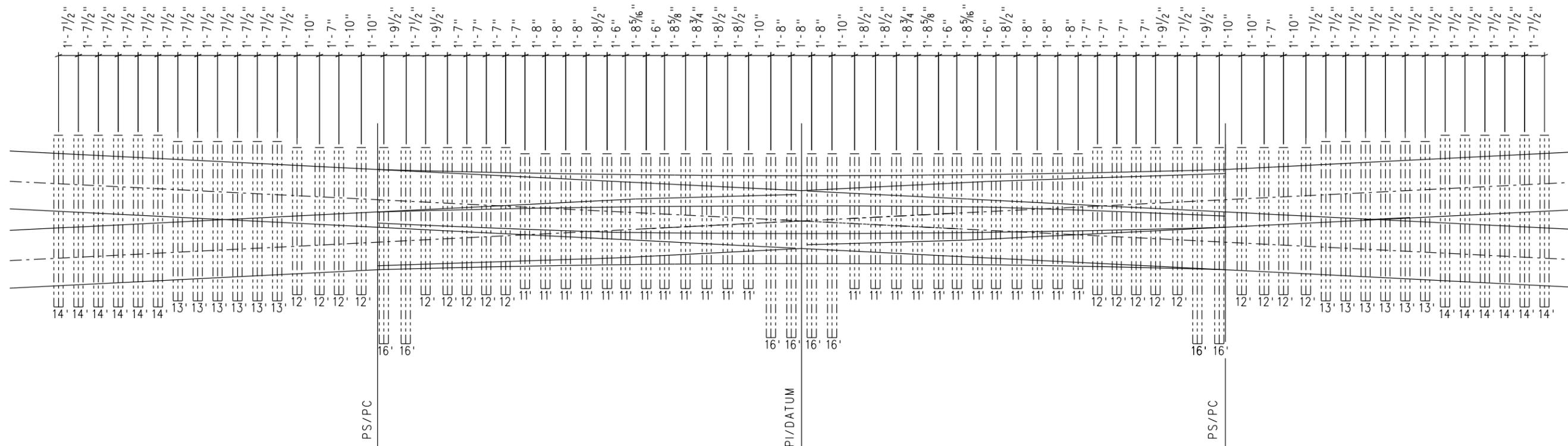
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SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

UNDERCUT STOCK RAILS FOR
 22'-8 1/2" SWITCH POINTS FOR
 NO 10 DOUBLE SLIP CROSSING

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



BILL OF SWITCH TIES			
PIECES	SIZE	LENGTH	BOARD FEET
24	7"x9"	11'-0"	1386
18	7"x9"	12'-0"	1134
12	7"x9"	13'-0"	819
12	7"x9"	14'-0"	882
0	7"x9"	15'-0"	0
8	7"x9"	16'-0"	672
TOTAL			TOTAL
74			4,893

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

DRAWN BY: *Nareh D. Papp* HDR DATE: 03/31/2011
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William Dava
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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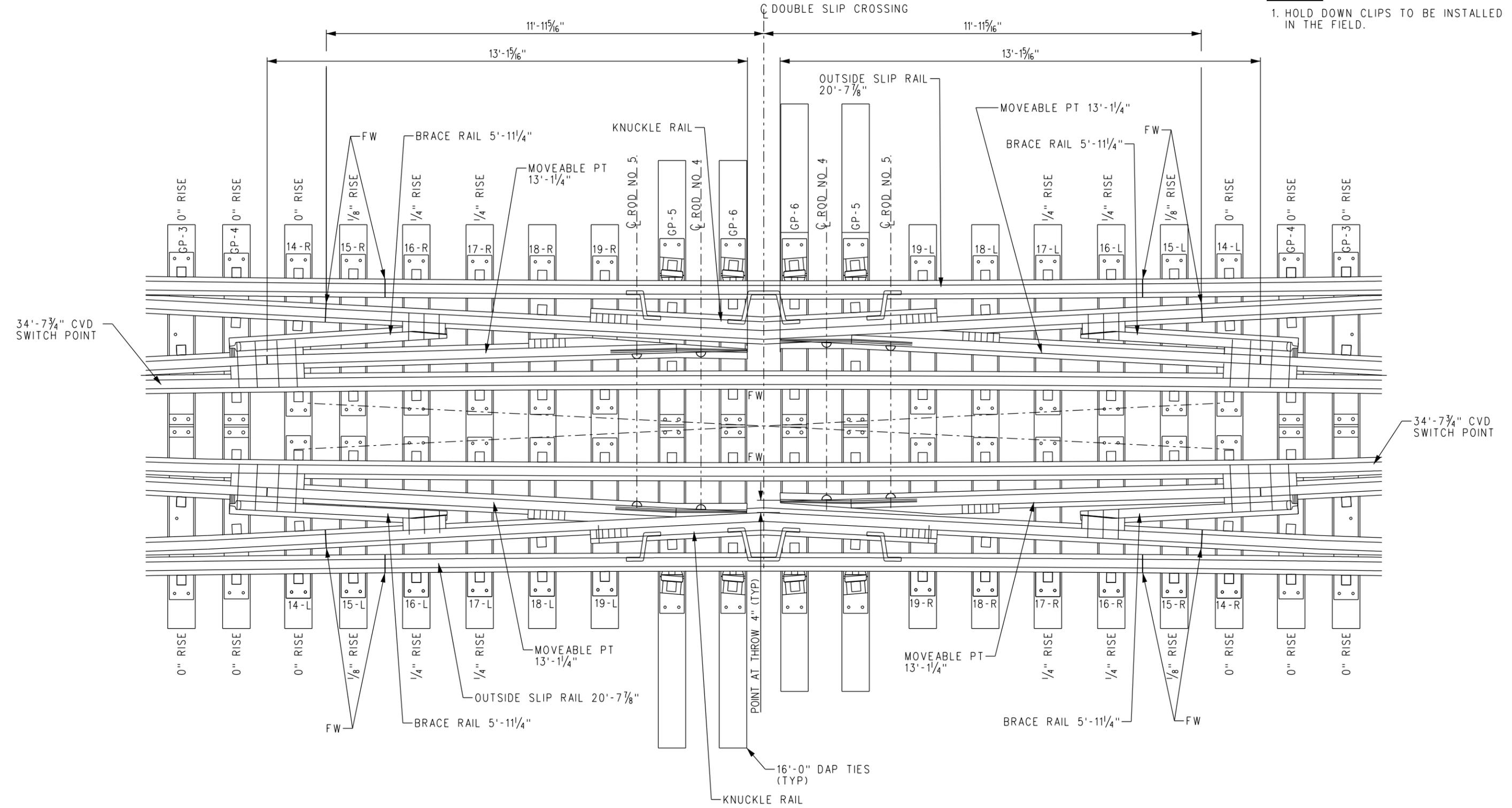
METROLINK
 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 NO 10 136 LB RE DOUBLE SLIP CROSSING
 TIMBER TIE LAYOUT

STANDARD	2841
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2841-30

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

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

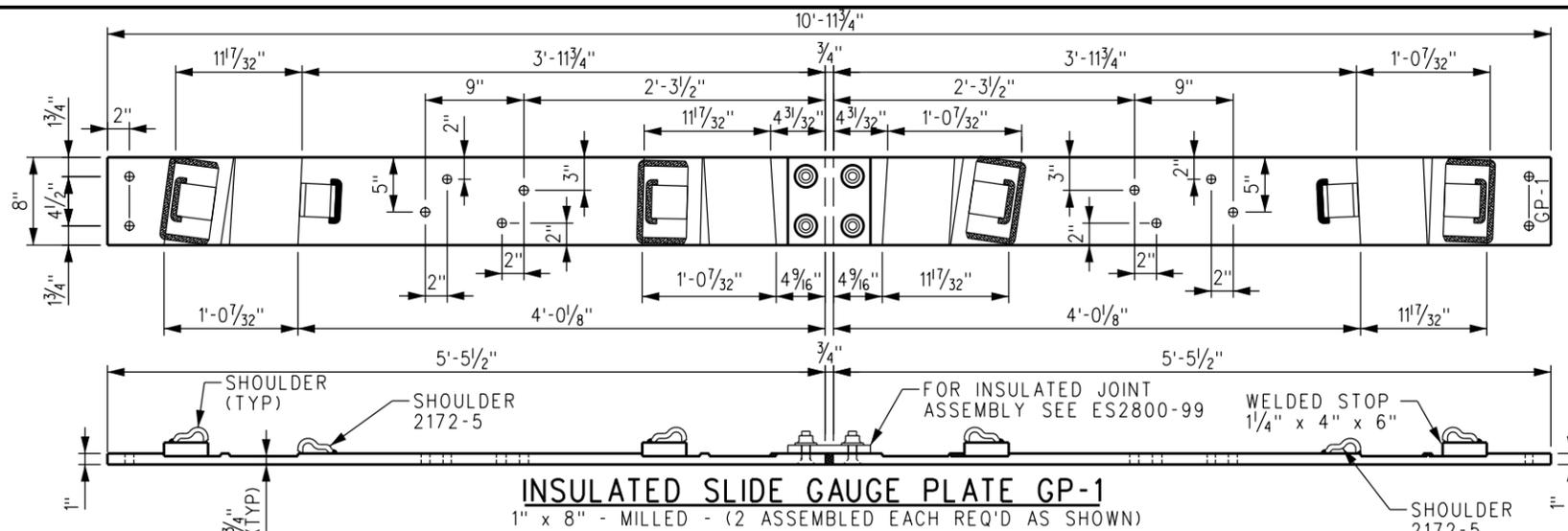
DRAWN BY: A. CARLOS DATE: 03/31/2011
 Assistant Director: Standards & Design
 Director of Engineering and Construction

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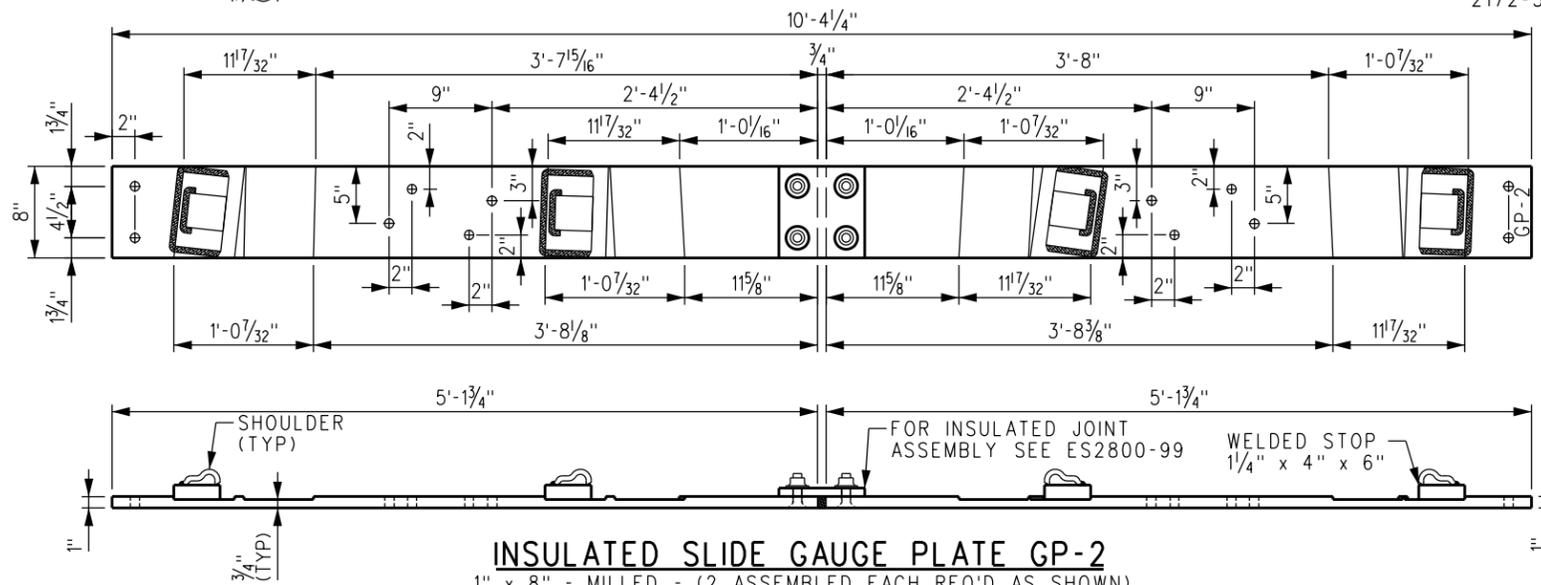
METROLINK
 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS	
NO 10 DOUBLE SLIP CROSSING CENTER SECTION LAYOUT 136 LB RE RAIL	

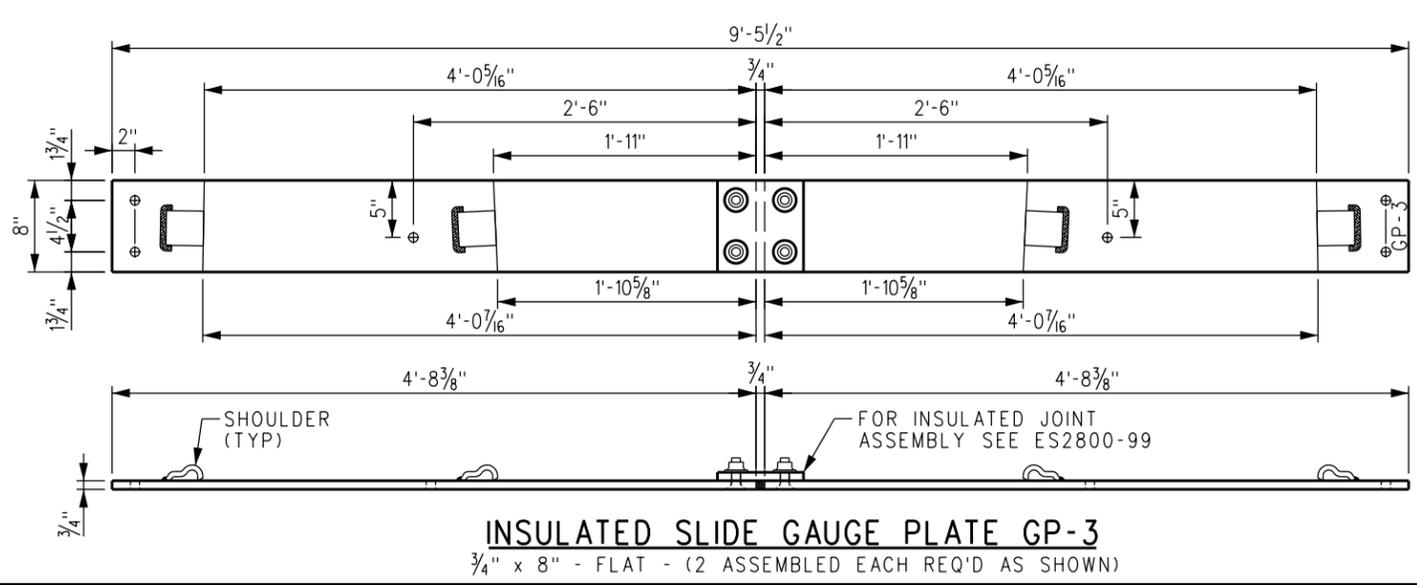
STANDARD	2841
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2841-41



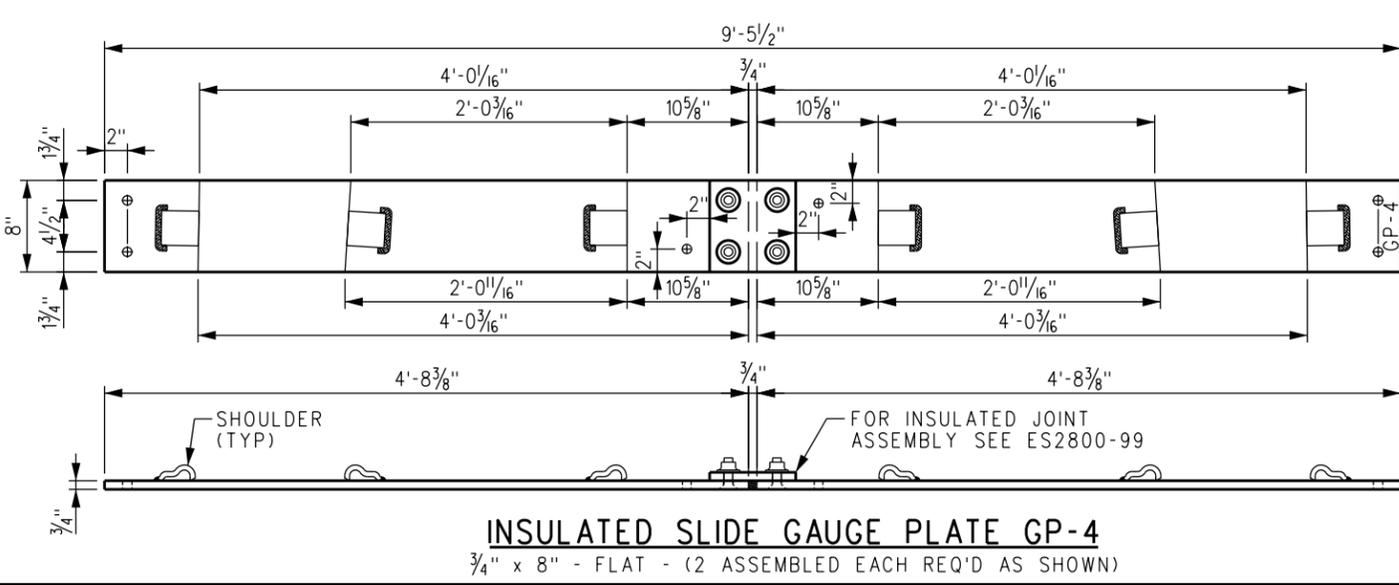
INSULATED SLIDE GAUGE PLATE GP-1
1" x 8" - MILLED - (2 ASSEMBLED EACH REQ'D AS SHOWN)



INSULATED SLIDE GAUGE PLATE GP-2
1" x 8" - MILLED - (2 ASSEMBLED EACH REQ'D AS SHOWN)



INSULATED SLIDE GAUGE PLATE GP-3
3/4" x 8" - FLAT - (2 ASSEMBLED EACH REQ'D AS SHOWN)



INSULATED SLIDE GAUGE PLATE GP-4
3/4" x 8" - FLAT - (2 ASSEMBLED EACH REQ'D AS SHOWN)

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

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

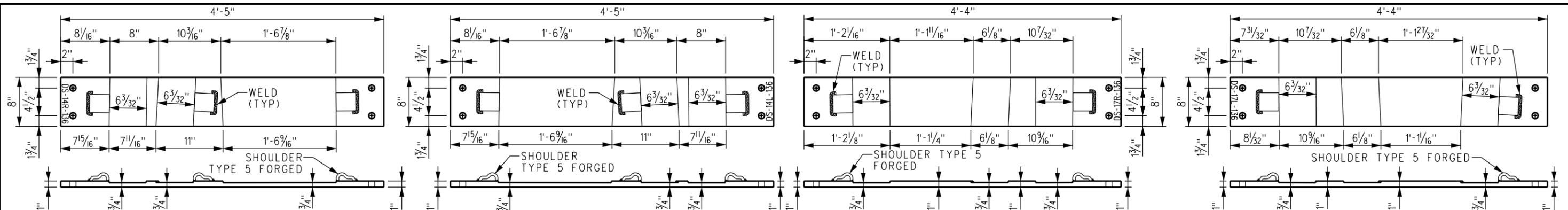
DRAWN BY: A. CARLOS DATE: 03/31/2011
 Nareh D. Pape
 ASSISTANT DIRECTOR STANDARDS & DESIGN
 William Davan
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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

ENGINEERING STANDARDS
 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

STANDARD	2841
SCALE	NTS
REVISION	SHEET
-	1 OF 1
CADD FILE	ES2841-44

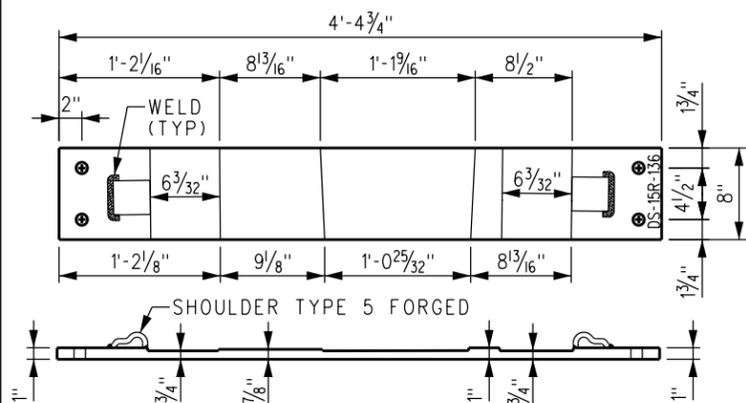


BRACE PLATE - 14R
 1" x 8" x 4'-5" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)

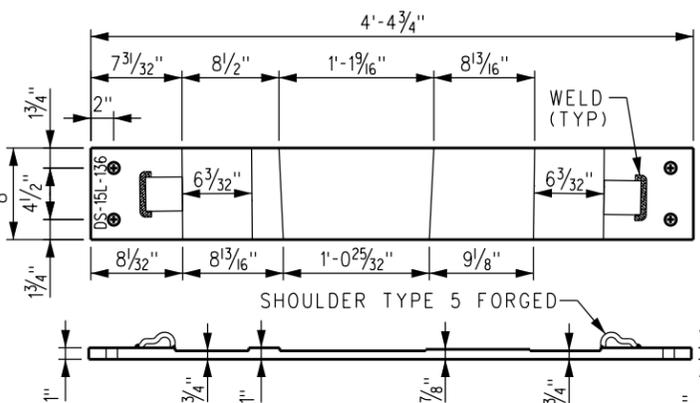
BRACE PLATE - 14L
 1" x 8" x 4'-5" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)

BRACE PLATE - 17R
 1" x 8" x 4'-4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)

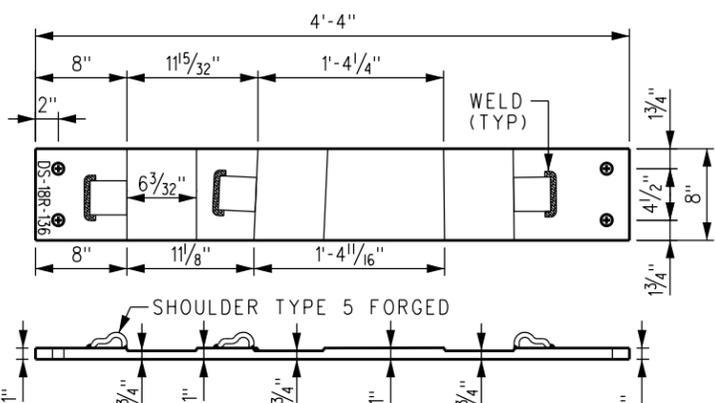
BRACE PLATE - 17L
 1" x 8" x 4'-4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



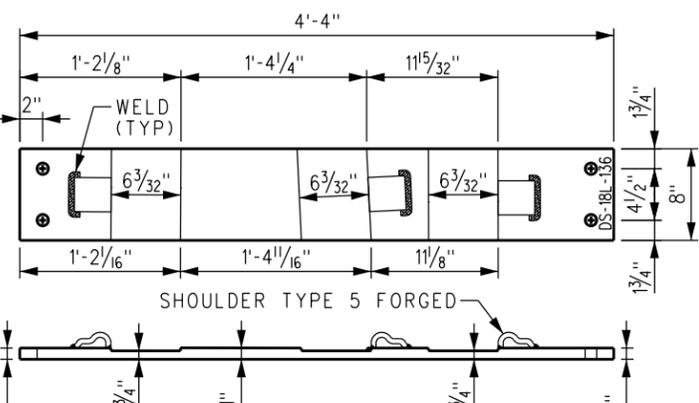
BRACE PLATE - 15R
 1" x 8" x 4'-4 3/4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



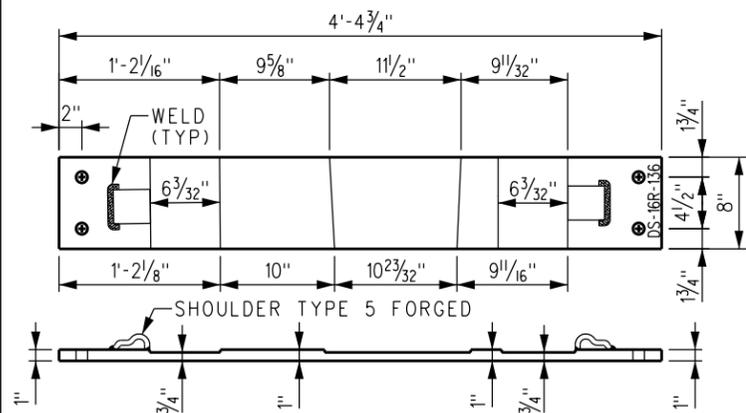
BRACE PLATE - 15L
 1" x 8" x 4'-4 3/4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



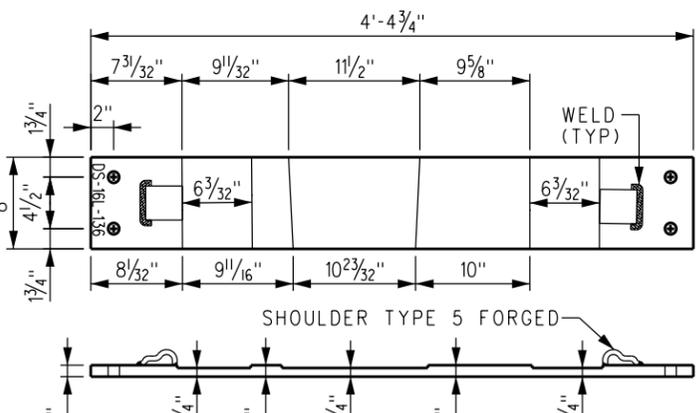
BRACE PLATE - 18R
 1" x 8" x 4'-4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



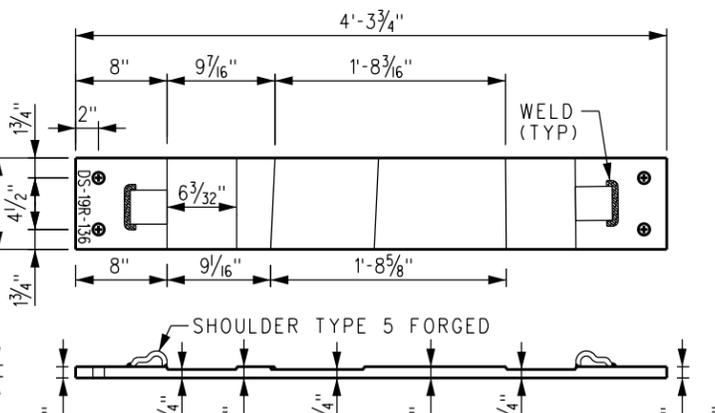
BRACE PLATE - 18L
 1" x 8" x 4'-4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



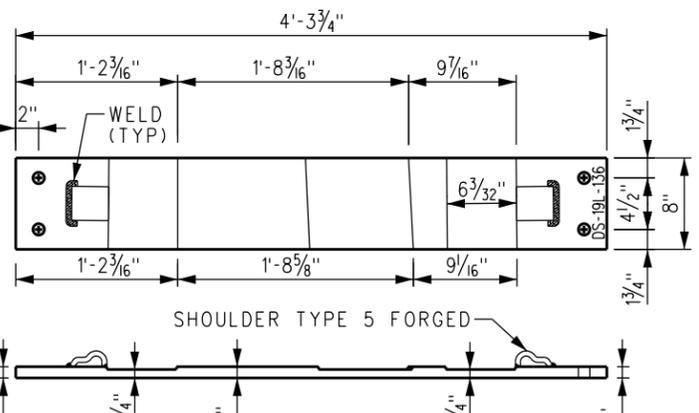
BRACE PLATE - 16R
 1" x 8" x 4'-4 3/4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



BRACE PLATE - 16L
 1" x 8" x 4'-4 3/4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



BRACE PLATE - 19R
 1" x 8" x 4'-3 3/4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)



BRACE PLATE - 19L
 1" x 8" x 4'-3 3/4" - MILLED - W/ADJ RAIL BRACE
 (2 REQUIRED PER SLIP SWITCH)

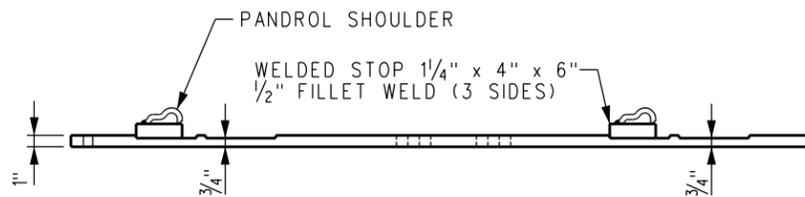
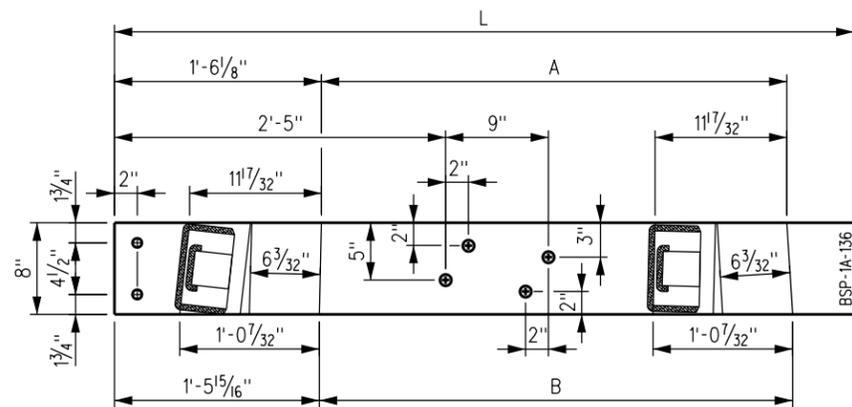
NOTES:

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

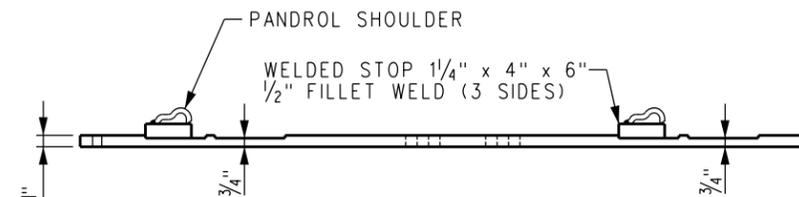
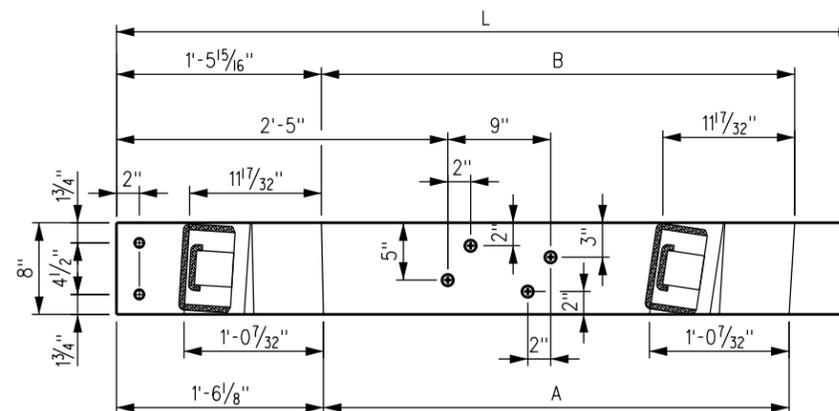
LAYOUT - NO 10, DOUBLE SLIP CROSSING - 136 LB ----- SHEET NO 2841-02

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.		<p>METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</p>		ENGINEERING STANDARDS		STANDARD
 ASSISTANT DIRECTOR: STANDARDS & DESIGN		 DIRECTOR OF ENGINEERING AND CONSTRUCTION		BRACE PLATE AND SLIDE PLATE DETAILS NO 10 136 LB RE DOUBLE SLIP CROSSING				2841		
X	XX-XX-XX	REVISION	XX	XX			SCALE:	NTS		
REV.	DATE	DESCRIPTION	DES.	ENG.			REVISION	SHEET 1 OF 1		
							CADD FILE:	ES2841-46		



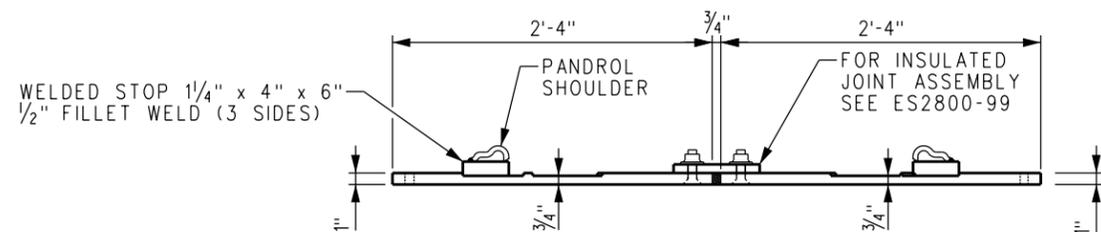
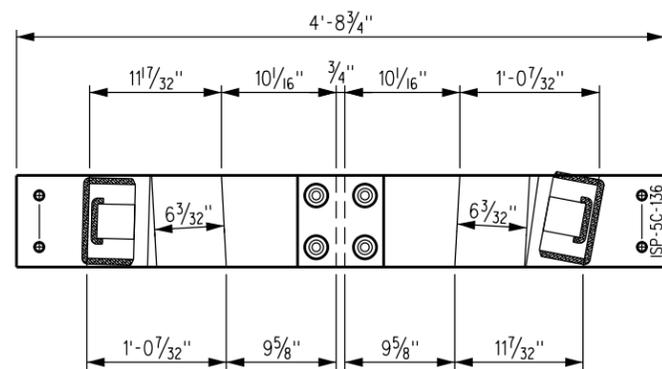
BRACE SLIDE PLATE
1" x 8" x L - (MILLED)

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 3/4"	3'-5 7/16"	5'-4 3/4"	2
2-B	3'-3 1/8"	3'-3 3/4"	5'-4 1/4"	2
3-B	3'-1 3/4"	3'-2 1/4"	5'-3 3/4"	2



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

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

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

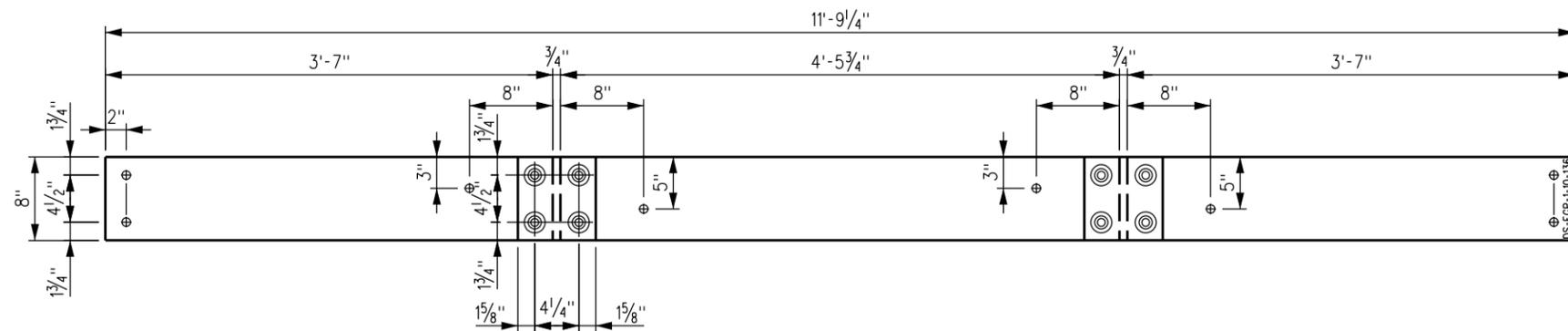
DRAWN BY: A. CARLOS DATE: 03/31/2011
Nareh D. Papp
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William D. Davis
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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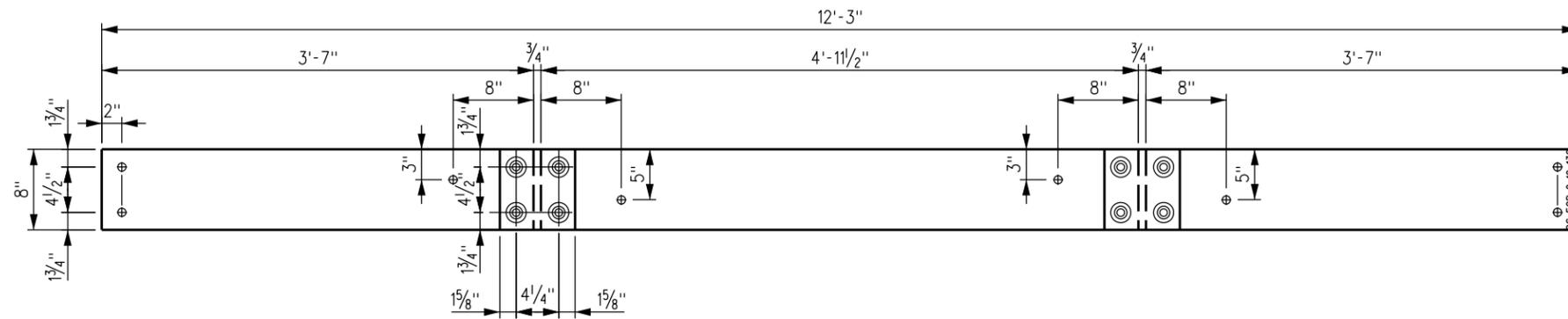
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 BRACE SLIDE PLATES
 AND INSULATED SLIDE PLATE DETAILS
 NO 10 136 LB RE DOUBLE SLIP CROSSING

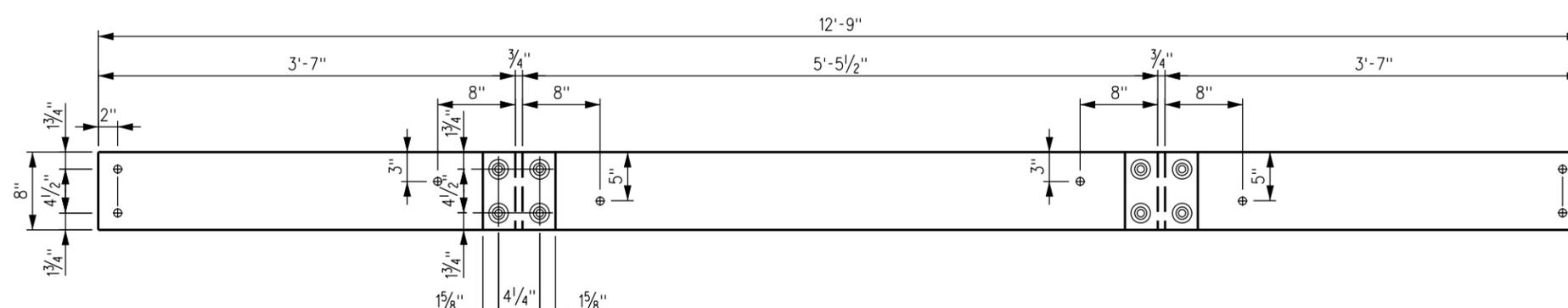
STANDARD	2841
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2841-47



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



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



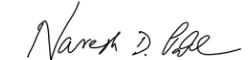
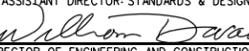
INSULATED FROG GAUGE PLATE FGP-3
1" x 8" - FLAT

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

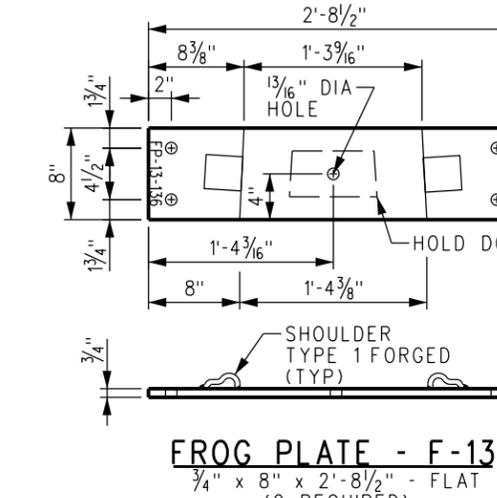
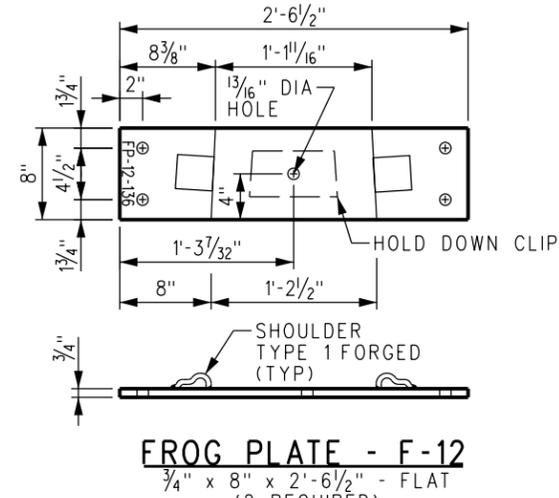
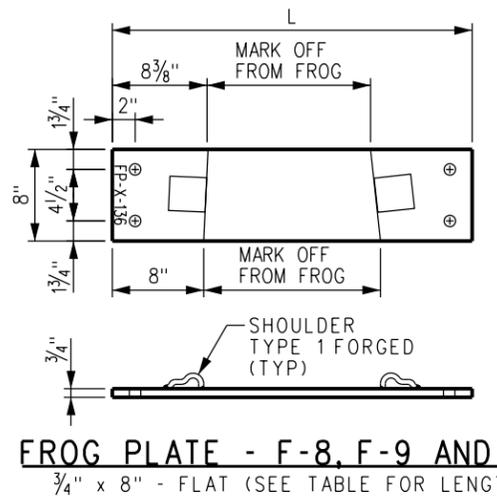
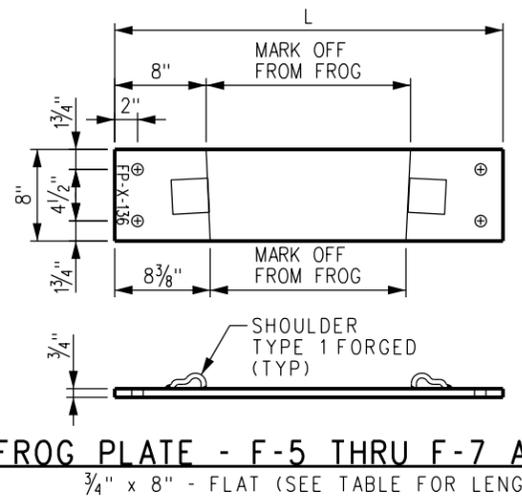
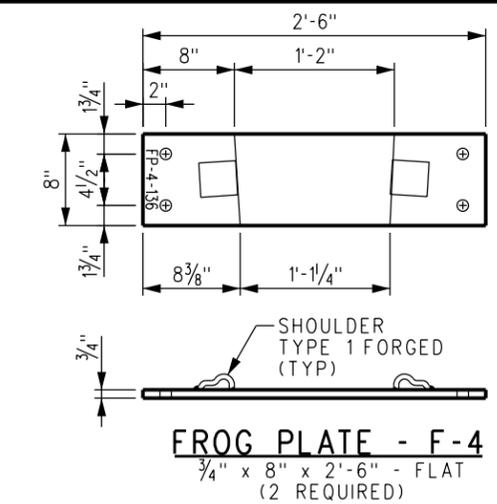
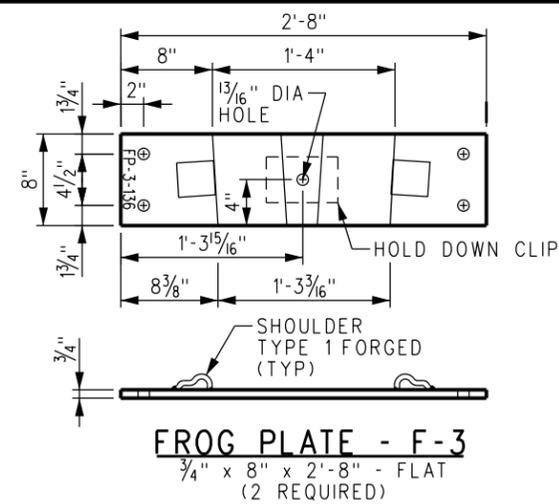
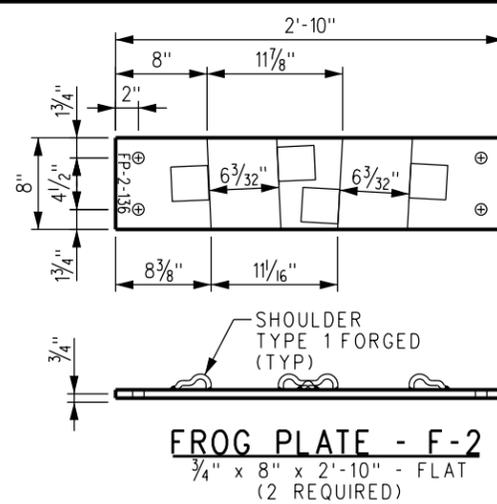
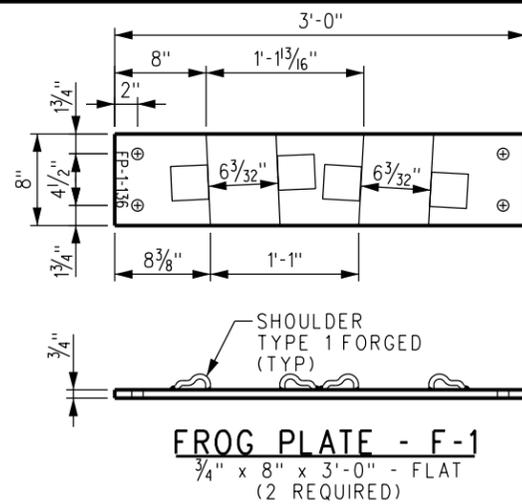
DRAWN BY:	A. CARLOS	DATE:	03/31/2011
 ASSISTANT DIRECTOR- STANDARDS & DESIGN		 DIRECTOR OF ENGINEERING AND CONSTRUCTION	

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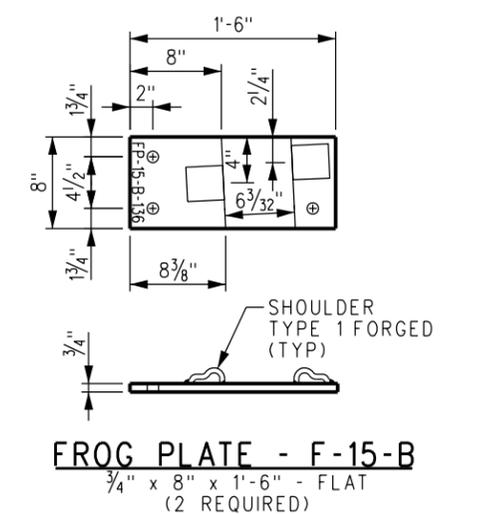
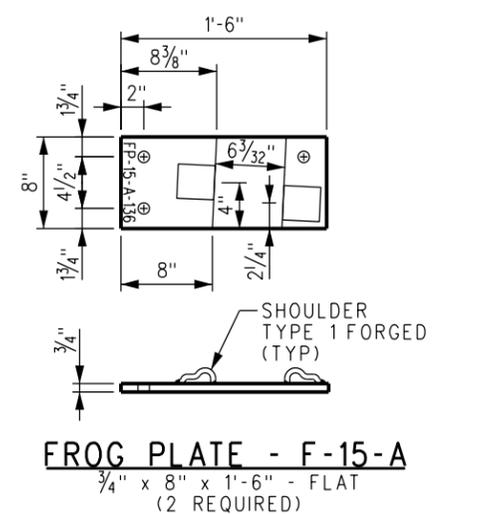
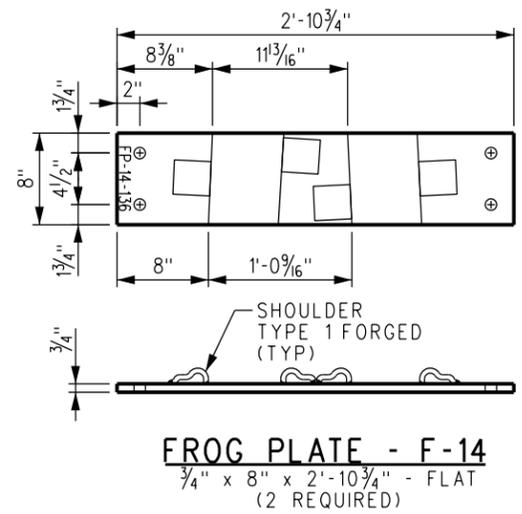
ENGINEERING STANDARDS	
DETAILS	
INSULATED FROG GAUGE PLATE	
NO 10 136 LB RE DOUBLE SLIP CROSSING	

STANDARD	2841
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2841-48



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



- 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

Narek D. Pape
 ASSISTANT DIRECTOR: STANDARDS & DESIGN

William Dava
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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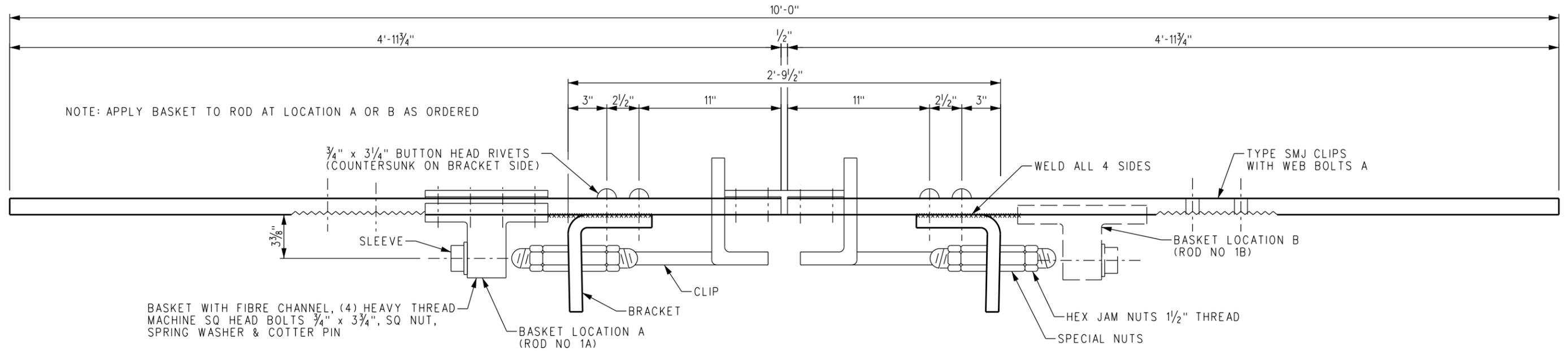
METROLINK
 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

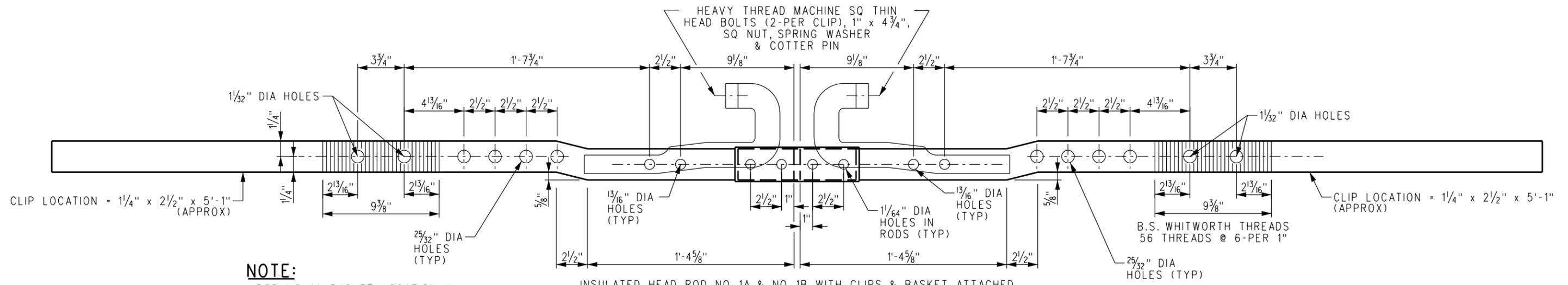
FROG PLATE DETAILS
 NO 10 136 LB RE DOUBLE SLIP CROSSING

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

INSIDE POINT OVERTEES = 10¹³/₁₆"
 OUTSIDE POINT OVERTEES = 7'-7¹/₂"



PLAN



ELEVATION

NOTE:
 ROD NO 1A, BASKET LOCATION A
 ROD NO 1B, BASKET LOCATION B

INSULATED HEAD ROD NO 1A & NO 1B WITH CLIPS & BASKET ATTACHED
 WITH HUCKED INSULATED SPLICE
 (1) EACH REQUIRED PER SLIP SWITCH

**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

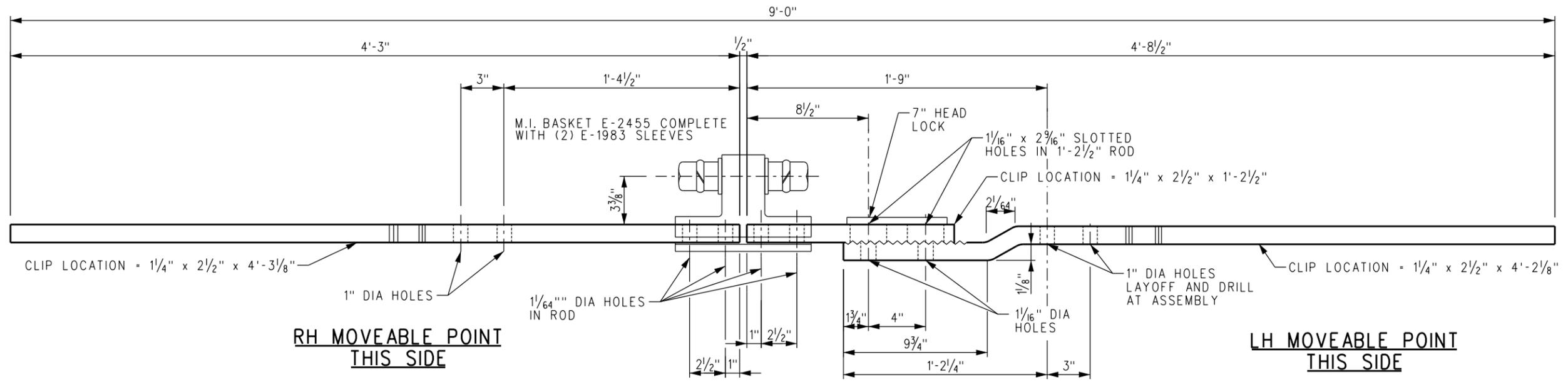
SWITCH INFORMATION

GAUGE = 4'-8⁵/₈"
 THROW AT POINT = 4" MIN, 4¹/₂" MAX
 E DISTANCE = 1⁹/₃₂"
 PT = 0" SAMSON
 REINF = 1/2" D BOTH SIDES (SLOT 1/4" STOCK SIDE)
 ROD SPACING = 1'-6⁵/₈"
 BREAK ALL SHARP CORNERS
 DEBURR ALL HOLES

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

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.		 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		ENGINEERING STANDARDS		STANDARD
 ASSISTANT DIRECTOR: STANDARDS & DESIGN		 DIRECTOR OF ENGINEERING AND CONSTRUCTION		INSULATED HEAD ROD NO 1 FOR END POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING				SCALE:	2841	
REV.	DATE	DESCRIPTION	DES.	ENG.			REVISION SHEET	1 OF 1	CADD FILE:	ES2841-50

OVERTEES = 4'-3 3/4" (ADJUSTMENT 4'-3" TO 4'-4 1/2")



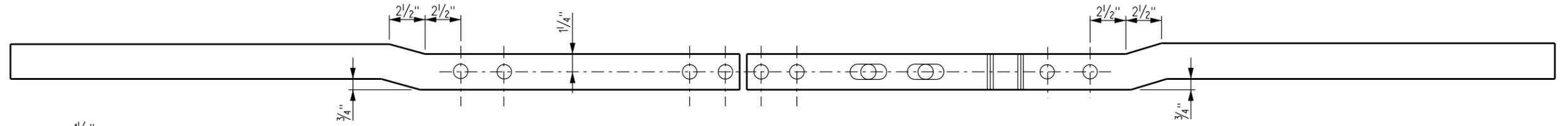
CLIP LOCATION = 1/4" x 2 1/2" x 4'-3 1/8"

CLIP LOCATION = 1/4" x 2 1/2" x 4'-2 1/8"

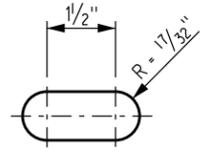
**RH MOVEABLE POINT
THIS SIDE**

**LH MOVEABLE POINT
THIS SIDE**

B.S. WHITWORTH THREADS
56 THREADS @ 6-PER 1"
FOR 8 3/4"

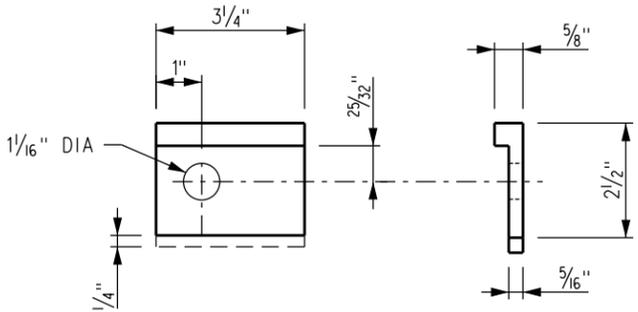


NO 4 HEAD ROD
(TWO REQUIRED PER CROSSING)



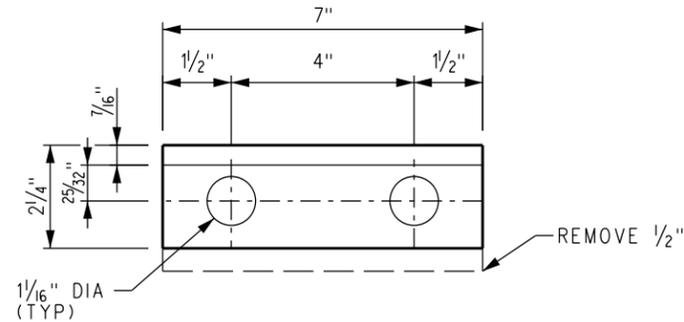
SLOTTED HOLE DETAIL
(1/16" x 2 9/16")

NOTE:
STAMP RODS WITH "RESPECTIVE ROD NO, 136, NO 10 DSS"



ROLLED HEADLOCK DETAIL

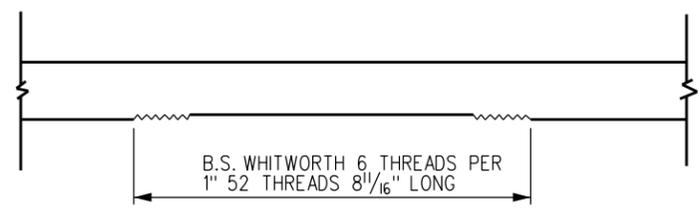
3/4" LONG (BETHLEHEM STEEL PART NO 834-0306)
(2) PIECES AS SHOWN FOR CLIP, LH MOVEABLE POINT
(2) PIECES OPPOSITE HAND FOR CLIP, RH MOVEABLE POINT



ROLLED HEADLOCK 7" LONG

(BETHLEHEM STEEL PART NO 834-0306)
(1) PIECE PER ROD

FURNISH: (2) HEAVY THREAD MACHINE SQ HEAD
BOLTS, 1" x 4 1/2" WITH SLOTTED HEX NUT,
SPRING WASHER & COTTER PIN



DETAIL OF SERRATIONS

(FOR 1'-2 1/2" LONG STRAIGHT &
4'-2 1/8" LONG BENT PIECE)

INSULATION MATERIAL

PER SRI-30 WITH COTTER, SLEEVE NUT
WITHOUT 1/4" SPACING WASHERS & 1/4" HEX NUTS.
TYPE M CLIP MUST BE WELDED TO ROD ALONG
BOTH SIDES OF BOTTOM OF CLIPS.
DEBURR ALL HOLES.

SWITCH INFORMATION

GAUGE = 4'-8 9/16"
THROW AT POINT = 4"
E DISTANCE = 12 7/32"
POINT = 9/16"
REINF = 1/2" D GAUGE SIDE
ROD SPACING = 1'-3"
HEEL SPREAD = 7 1/2"

REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX
DRAWN BY: A. CARLOS DATE: 03/31/2011 Assistant Director: Standards & Design Director of Engineering and Construction				

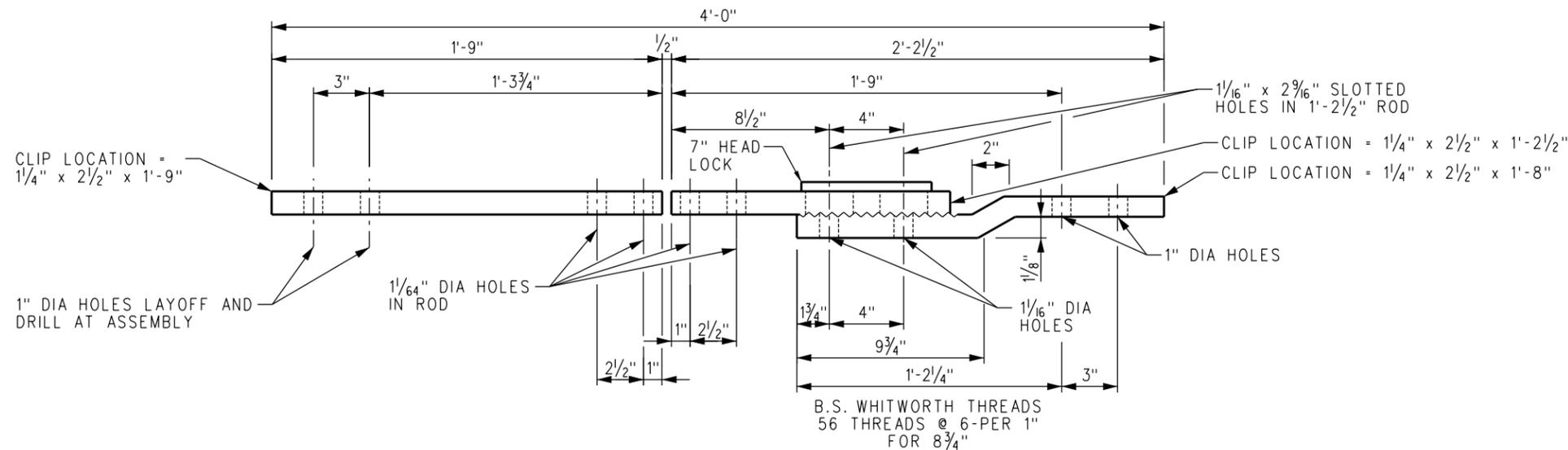
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ENGINEERING STANDARDS
INSULATED HEAD ROD NO 4
FOR MOVEABLE CENTER POINTS
NO 10 136 LB RE DOUBLE SLIP CROSSING

STANDARD	2841
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2841-52

OVERTEES = 4'-3" (ADJUSTMENT 4'-2 1/4" TO 4'-3 3/4")



**RH MOVEABLE POINT
THIS SIDE**

**LH MOVEABLE POINT
THIS SIDE**

NOTE:

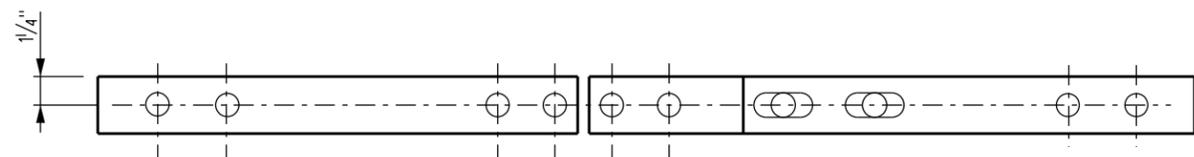
STAMP RODS WITH "RESPECTIVE ROD NO, 136, NO 10 DSS"

INSULATION MATERIAL

- (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

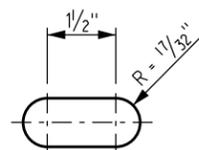
- GAUGE = 4'-8 7/16"
- THROW AT POINT = 4"
- E DISTANCE = 12 7/32"
- POINT = 9/16"
- REINF = 1/2" D GAGE SIDE
- ROD SPACING = 1'-3" x 1'-9"
- HEEL SPREAD = 7 1/2"



INSULATED SPREAD ROD NO 5

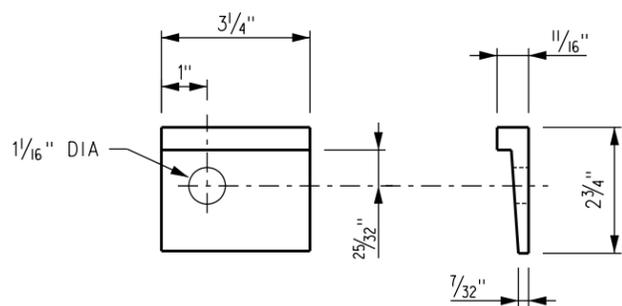
(2) REQUIRED PER SLIP SWITCH
WITH HUCKED INSULATED SPLICE

TYPE M CLIP MUST BE WELDED TO ROD ALONG BOTH SIDES OF BOTTOM OF CLIPS.
DEBURR ALL HOLES.



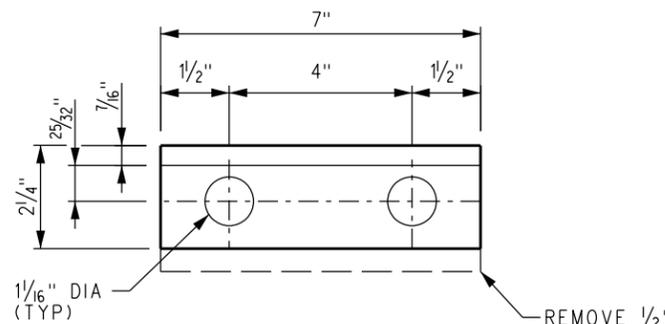
SLOTTED HOLE DETAIL

(1 1/16" x 2 3/16")



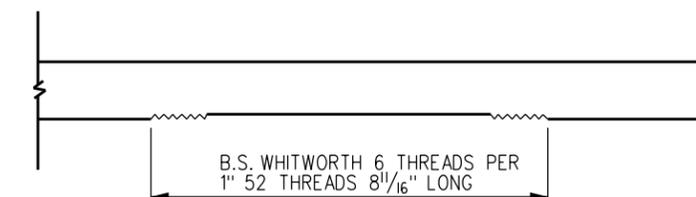
ROLLED HEADLOCK DETAIL

3/4" LONG (BETHLEHEM STEEL PART NO 834-0305)
(2) PIECES AS SHOWN FOR CLIP, RH MOVEABLE POINT
(2) PIECES OPPOSITE HAND FOR CLIP, LH MOVEABLE POINT



ROLLED HEADLOCK 7" LONG

(BETHLEHEM STEEL PART NO 834-0306)
(1) PIECE PER ROD



DETAIL OF SERRATIONS

(FOR 1'-2 1/2" LONG STRAIGHT & 1'-8" LONG BENT PIECE)

FURNISH: (2) HEAVY THREAD MACHINE SQ HEAD BOLTS, 1" x 4 1/2" WITH SLOTTED HEX NUT, SPRING WASHER & COTTER PIN

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

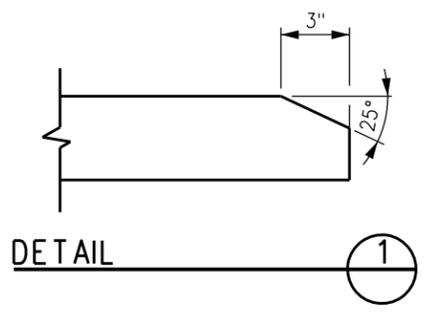
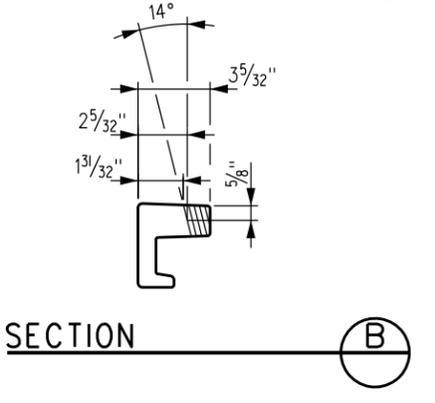
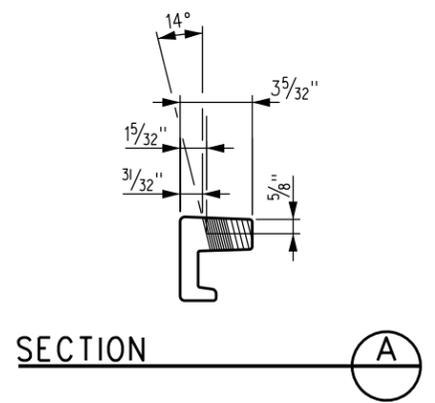
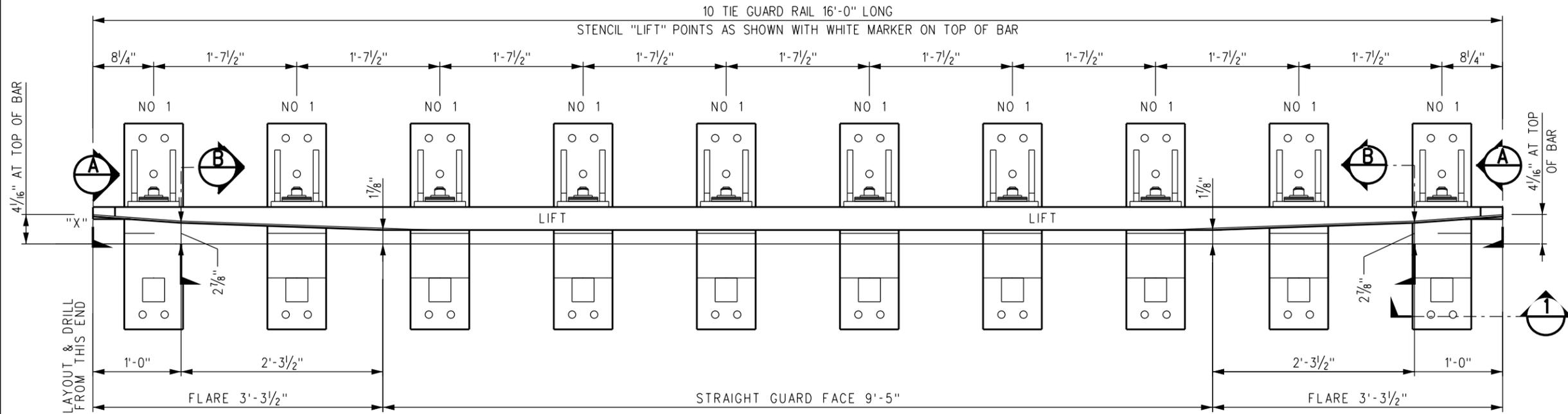
DRAWN BY:	A. CARLOS	DATE:	03/31/2011
 ASSISTANT DIRECTOR- STANDARDS & DESIGN		 DIRECTOR OF ENGINEERING AND CONSTRUCTION	

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ENGINEERING STANDARDS	
INSULATED HEAD ROD NO 5 FOR MOVEABLE CENTER POINTS NO 10 136 LB RE DOUBLE SLIP CROSSING	

STANDARD	2841
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2841-53



ASSEMBLED 16'-0" GUARD RAIL

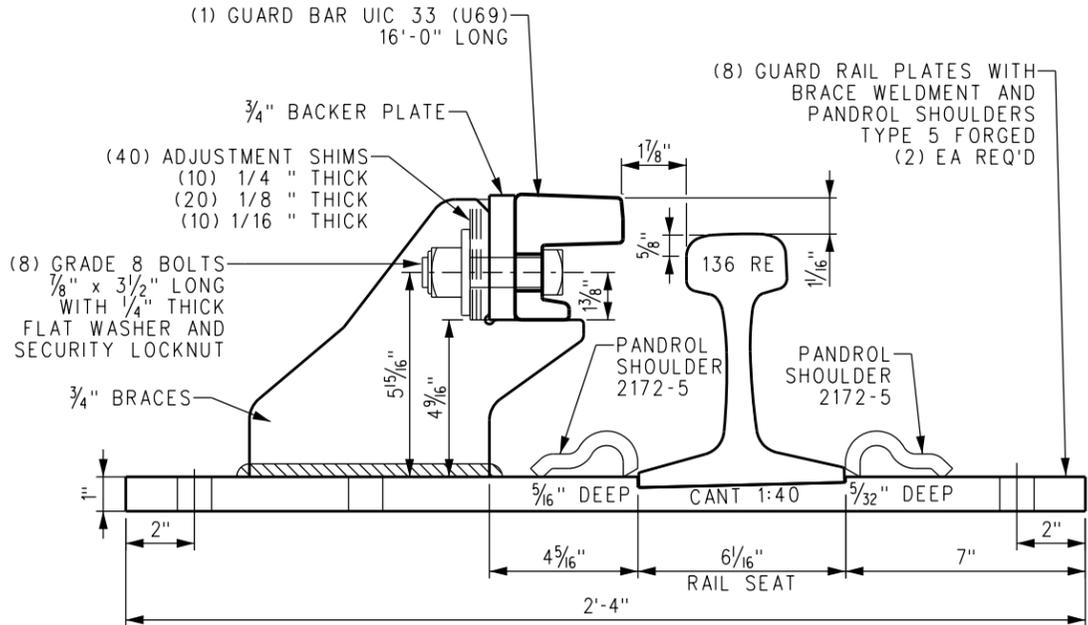
COLLECTIVE DRILLING FROM END OF GUARD BAR MARKED "X"

"X" 8 1/4" x 2'-3 3/4" x 3'-11 1/4" x 5'-6 3/4" x 7'-2 1/4" x 8'-9 3/4" x 10'-5 1/4" x 12'-0 3/4" x 13'-8 1/4" x 15'-3 3/4"

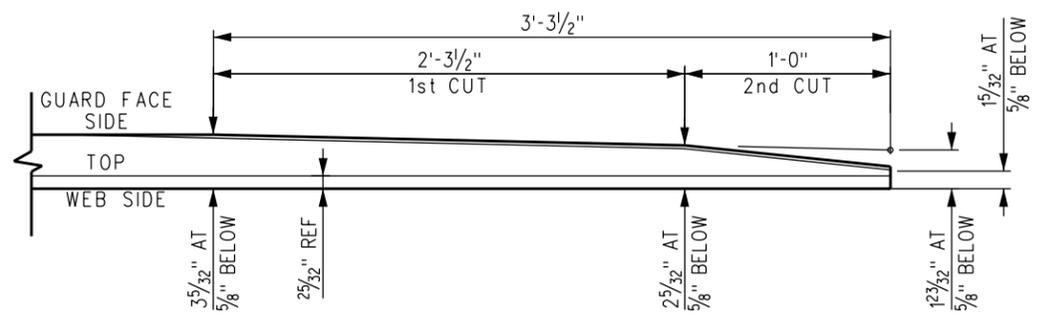
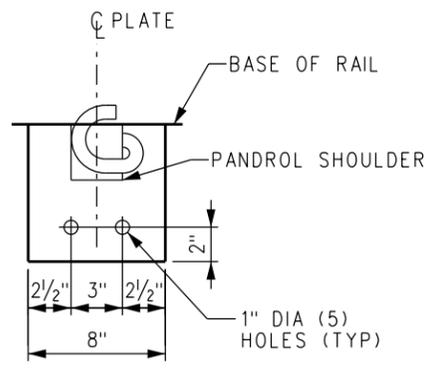
HOLES 1" DIA - 1 3/8" ABOVE BASE

NOTES:

1. GUARD RAIL SECTION U.I.C. 33; (U69) UIC 860.0 GRADE 90A (GUARD FACE BRINELL 319 MIN)
2. BASE PLATE, BRACKET AND SHIMS MILD STEEL PER AREMA SPECIFICATION M7.
3. GUARD RAIL BOLT AND NUT PER AREMA SPECIFICATION M11. EXCEPT BOLT TO GRADE 8 AND NUT TO BE SECURITY LOCKNUT.
4. WORKMANSHIP AND TOLERANCES PER AREMA SPECIFICATIONS FOR SPECIAL TRACKWORK.
5. WELDING PER ANSINO AWS D1.1-92 OR LATEST REVISION.



TYPICAL PLATE PUNCHING DETAIL



FLARE DETAIL
BREAK SHARP CORNERS OF ALL MACHINED SURFACES

REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX
DRAWN BY: A. CARLOS DATE: 03/31/2011 Assistant Director: Standards & Design Director of Engineering and Construction				

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ENGINEERING STANDARDS	
GUARD RAIL DETAILS 16'-0" LONG	

STANDARD	2841
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2841-60