

**SCRR NO 8 TURNOUT
BILL OF MATERIALS & DRAWING NUMBERS**

FROG NUMBER
HAND

NO 8	
LH	RH

TURNOUT LAYOUT	DRAWING NO	2801-01	2801-02
BILL OF MATERIALS	DRAWING NO	2801-11	2801-12
FROG	DRAWING NO	2801-30	2801-30
FROG PACK	DRAWING NO	2801-31	2801-32
GUARD RAIL TURNOUT	DRAWING NO	2801-33	2801-33
INSULATED RAIL ASSEMBLY	LENGTH	22'-0"	22'-0"
INSULATED RAIL ASSEMBLY	LENGTH	21'-2 ¹ / ₁₆ "	21'-2 ¹ / ₁₆ "
RAIL	LENGTH	56'-0"	56'-0"
RAIL	LENGTH	35'-0"	35'-0"
RAIL	LENGTH	2@39'-0"	2@39'-0"
RAIL	LENGTH	20'-11 ³ / ₁₆ "	20'-11 ³ / ₁₆ "
TIE SCREWS TIMBER	2355	QUANTITY LISTED	737
TIE PLATE PANDROL	2454	QUANTITY LISTED	102
E-CLIP PANDROL E2055	2362	QUANTITY LISTED	300
PANDROL JOINT CLIP E2063	2361	QUANTITY LISTED	8

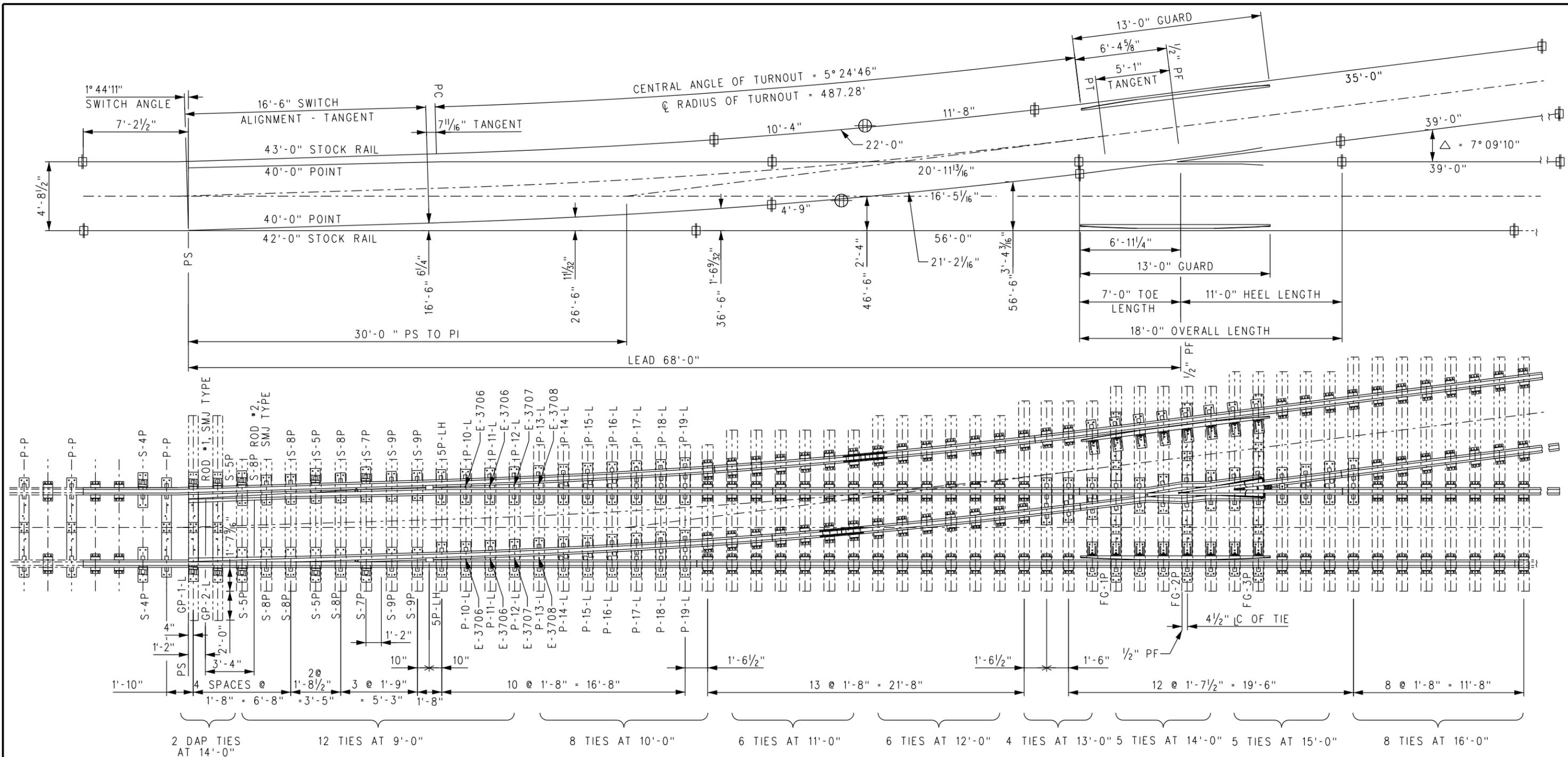
NOTES:

- ENTIRE TURNOUT TO BE FABRICATED FROM 136 LB HEAD HARDENED RAIL.
- LOCATIONS OF INSULATED JOINTS ARE AS SHOWN ON ES2801-01 & ES2801-02. IT WILL BE SATISFACTORY TO RELOCATE THE INSULATED JOINT IN THE FIELD UP TO 12" 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 SCRR 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 SCRR 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.
- TIE PLATES SHALL CONFORM TO SCRR STANDARD ES2454.
- SCREW SPIKES SHALL CONFORM TO SCRR 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.
- UPON COMPLETION OF TURNOUT INSTALLATION, RUNNING RAIL MUST BE ADJUSTED TO SCRR NEUTRAL RAIL TEMPERATURE.
- ENTIRE TURNOUT TO BE FULLY FLOOR ASSEMBLED.

BILL OF SWITCH TIES

PIECES	SIZE	LENGTH	BOARD FEET
12	7"x9"	9'-0"	567.00
8	7"x9"	10'-0"	420.00
6	7"x9"	11'-0"	346.50
6	7"x9"	12'-0"	378.00
4	7"x9"	13'-0"	273.00
5	7"x9"	14'-0"	367.50
5	7"x9"	15'-0"	393.75
8	7"x9"	16'-0"	672.00
2	8"x12"	14'-0"	224.00
TOTAL			TOTAL
56			3641.75

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>NS</i>	DATE: 03/31/2011	<small>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.</small>	 <p>METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</p>	ENGINEERING STANDARDS		STANDARD 2800					
<small>REVISION</small> <table border="1"> <tr> <td>X</td> <td>XX-XX-XX</td> <td></td> <td></td> </tr> </table>		X	XX-XX-XX					<small>DES. ENG.</small> <table border="1"> <tr> <td>XX</td> <td>XX</td> </tr> </table>		XX	XX	NO 8 TURNOUT	
X	XX-XX-XX												
XX	XX												
<small>REV. DATE DESCRIPTION</small> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>						<small>DES. ENG.</small> <table border="1"> <tr> <td></td> <td></td> </tr> </table>				NO 8 TURNOUT		CADD FILE: ES2800-08	

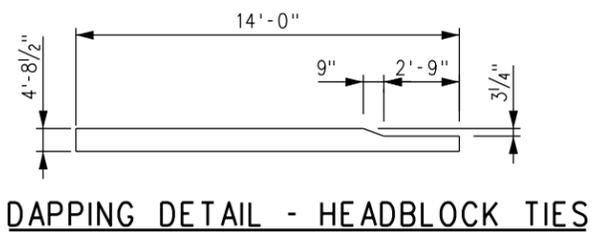


NOTES:

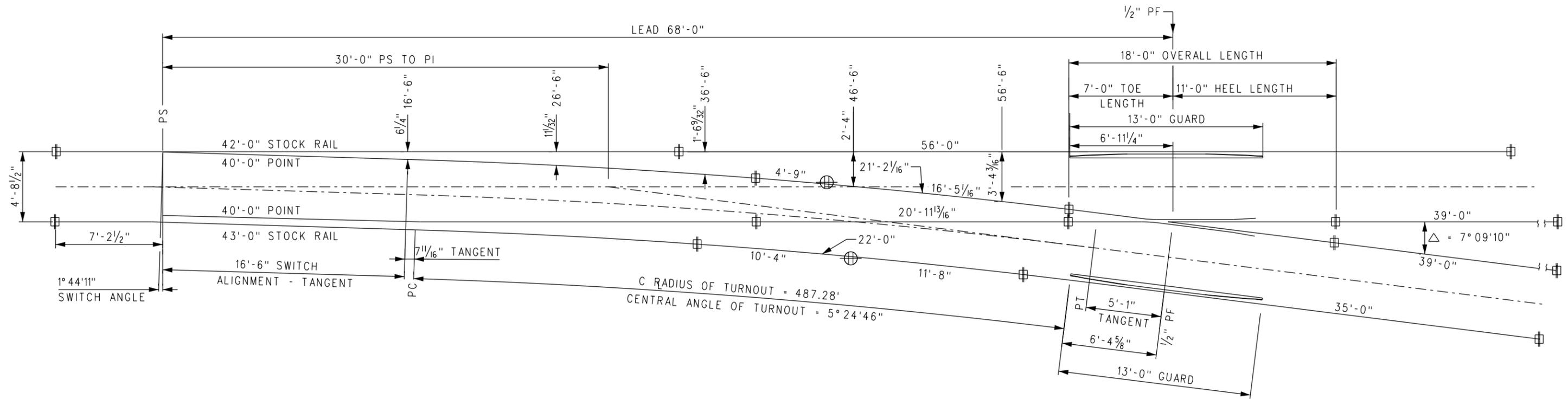
1. ALL RAILS SHALL HAVE IDENTIFICATION COLOR CODE PAINTED ON WEB, CLEAR OF JOINT AREA.
2. RAIL LENGTHS ALLOW 1/8" GAP BETWEEN RAIL JOINTS FOR WELDING.
3. GUARD RAILS ARE RAISED 1" AND FORM A 1/8" FLANGEWAY.
4. SWITCH MACHINE AND MACHINE PLATE (NIC) MUST BE COORDINATED WITH SCRR.
5. ⊕ = INSULATED JOINT
⊞ = WELDED JOINT

TURNOUT DATA:

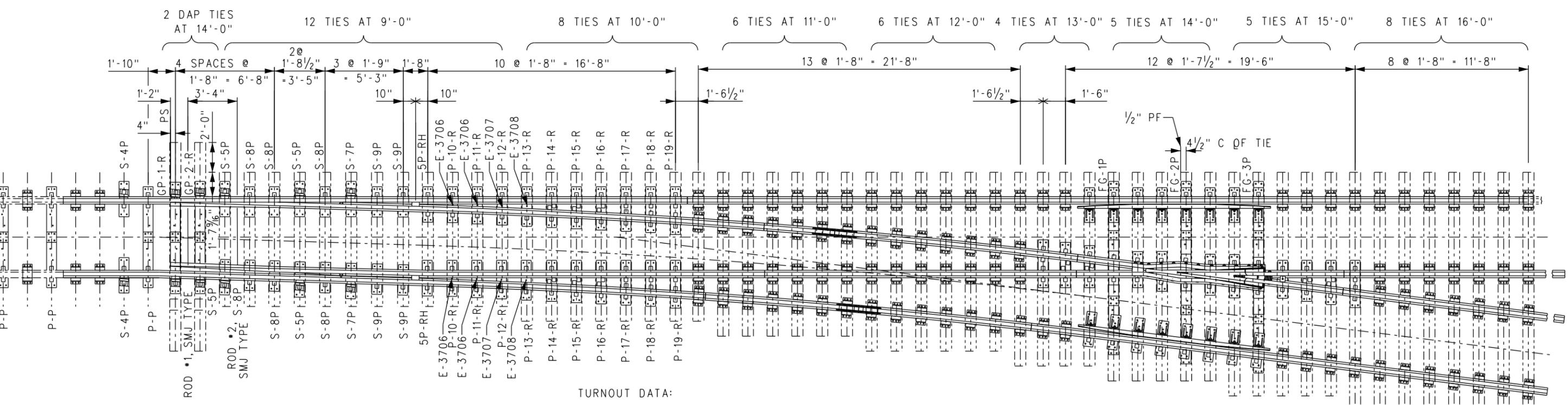
FROG NO 8	Δ = 7° 09' 10"	ACTUAL LEAD:	68'-0"
TOE LENGTH:	7'-0"	CLOSURE AREA:	
HEEL LENGTH:	11'-0"	CENTER LINE RADIUS:	487.28'
TOTAL LENGTH:	18'-0"	DEGREE OF CURVE:	11° 46' 44"
SWITCH LENGTH OF POINTS:	40'-0"	STRAIGHT CLOSURE LENGTH:	20'-11 ¹³ / ₁₆ "
HEEL SPREAD:	6 ¹ / ₄ "	CURVED CLOSURE LENGTH:	21'-2 ¹ / ₁₆ "
SWITCH ANGLE:	1° 44' 11"		
THROW AT ROD NO 1:	4 ³ / ₄ "		



		DRAWN BY: <i>Nareh D. Papp</i> HDR DATE: 03/31/2011	SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. 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 TURNOUT LAYOUT NO 8-136 LB RE LH RBM FROG TURNOUT WOOD TIES, SWITCH STAND ON EITHER SIDE	STANDARD: 2801 SCALE: NTS REVISION SHEET: 1 OF 1 CADD FILE: ES2801-01
REV. DATE	XX-XX-XX	REVISION DESCRIPTION	DES. ENG.	XX XX		



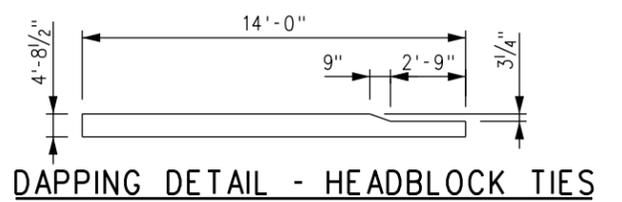
C RADIUS OF TURNOUT = 487.28'
 CENTRAL ANGLE OF TURNOUT = 5° 24' 46"



TURNOUT DATA:

FROG NO 8	$\Delta = 7^\circ 09' 10''$	ACTUAL LEAD: 68'-0"
TOE LENGTH: 7'-0"	CLOSURE AREA: 487.28'	
HEEL LENGTH: 11'-0"	DEGREE OF CURVE: 11° 46' 44"	
TOTAL LENGTH: 18'-0"	STRAIGHT CLOSURE LENGTH: 20'-11 ³ / ₁₆ "	
SWITCH	CURVED CLOSURE LENGTH: 21'-2 ¹ / ₁₆ "	
LENGTH OF POINTS: 40'-0"		
HEEL SPREAD: 6 ¹ / ₄ "		
SWITCH ANGLE: 1° 44' 11"		
THROW AT ROD NO 1: 4 ³ / ₄ "		

- NOTES:**
1. ALL RAILS SHALL HAVE IDENTIFICATION COLOR CODE PAINTED ON WEB, CLEAR OF JOINT AREA.
 2. RAIL LENGTHS ALLOW 1/8" GAP BETWEEN RAIL JOINTS FOR WELDING.
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REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX

DRAWN BY: *Narek D. Pape* HDR DATE: 03/31/2011
 ASSISTANT DIRECTOR: STANDARDS & DESIGN

William Davan
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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
 TURNOUT LAYOUT
 NO 8 - 136 LB RE RH RBM FROG TURNOUT
 WOOD TIES, SWITCH STAND ON EITHER SIDE

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
ADD FILE:	ES2801-02

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	SAMSON POINT, 40'-0" LONG, UR MANG TIP, STRAIGHT, LH	ES2801-23		31	1	INSULATED RAIL ASSEMBLY, 21'-2 1/16", C/W BONDED INSULATED JOINT	-	
2	1	SAMSON POINT, 40'-0" LONG, UR MANG TIP, CURVED, RH	ES2801-24		32	1	INSULATED RAIL ASSEMBLY, 22'-0", C/W BONDED INSULATED JOINT	-	
3	1	SAMSON STOCK RAIL, 43'-0" LONG, CURVED, LH	ES2801-25		33	1	DRILLED RAIL, 136 LB RE, 20'-11 3/16" LONG	-	
4	1	SAMSON STOCK RAIL, 42'-0" LONG, STRAIGHT, RH	ES2801-25		34	1	DRILLED RAIL, 136 LB RE, 35'-0" LONG	-	
5	3	INSULATED GAUGE PLATE ASSEMBLY P-P	ES2801-60		35	2	DRILLED RAIL, 136 LB RE, 39'-0" LONG	-	
6	4	SWITCH PLATE (S-5P)	ES2801-69		36	1	DRILLED RAIL, 136 LB RE, 56'-0" LONG	-	
7	2	SWITCH PLATE (S-7P)	ES2801-69		37	1	FROG PACK, NO 8 - 136 LB RE RBM, LH	ES2801-31	
8	6	SWITCH PLATE (S-8P)	ES2801-69		38	2	RAIL GUARD ASSEMBLY BOLTLESS, 13'-0" LG, 136 LB RE RAISED 1"	ES2801-33	
9	4	SWITCH PLATE (S-9P)	ES2801-69		39	1	INSULATED FROG GAUGE PLATE (FG-1P)	ES2801-34	
10	1	SWITCH ROD ASSEMBLY VERT INSULATION NO 1	-		40	1	INSULATED FROG GAUGE PLATE (FG-2P)	ES2801-35	
11	1	SWITCH ROD ASSEMBLY VERT INSULATION NO 2	-		41	1	INSULATED FROG GAUGE PLATE (FG-3P)	ES2801-36	
12	1	INSULATED GAUGE PLATE ASSEMBLY GP-1	ES2801-60		42	102	TIE PLATE, ROLLED PANDROL, 6" BASE, CANTED	ES2454	
13	1	INSULATED GAUGE PLATE ASSEMBLY GP-2	ES2801-60		43	300	CLIP PANDROL E2055	ES2362	
14	2	SWITCH PLATE (S-4P)	ES2801-69		44	8	CLIP PANDROL MODIFIED E2063	-	
15	2	SWITCH PLATE (P-10-L)	ES2801-63		45	737	5/16" DIAMETER SCREW SPIKE	-	
16	2	SWITCH PLATE (P-11-L)	ES2801-63		46	12	TIE, HARDWOOD, TREATED, 7" x 9" x 9'-0"	-	
17	2	SWITCH PLATE (P-12-L)	ES2801-63		47	8	TIE, HARDWOOD, TREATED, 7" x 9" x 10'-0"	-	
18	2	SWITCH PLATE (P-13-L)	ES2801-63		48	6	TIE, HARDWOOD, TREATED, 7" x 9" x 11'-0"	-	
19	2	SWITCH PLATE (P-14-L)	ES2801-65		49	6	TIE, HARDWOOD, TREATED, 7" x 9" x 12'-0"	-	
20	2	SWITCH PLATE (P-15-L)	ES2801-65		50	4	TIE, HARDWOOD, TREATED, 7" x 9" x 13'-0"	-	
21	2	SWITCH PLATE (P-16-L)	ES2801-65		51	5	TIE, HARDWOOD, TREATED, 7" x 9" x 14'-0"	-	
22	2	SWITCH PLATE (P-17-L)	ES2801-67		52	5	TIE, HARDWOOD, TREATED, 7" x 9" x 15'-0"	-	
23	2	SWITCH PLATE (P-18-L)	ES2801-67		53	8	TIE, HARDWOOD, TREATED, 7" x 9" x 16'-0"	-	
24	2	SWITCH PLATE (P-19-L)	ES2801-67		54	2	TIE, HARDWOOD, TREATED, 8" x 12" x 14'-0"	-	
25	2	HEEL PLATE NO P6-LH	ES2801-61		55	1	SWITCH STAND ASSEMBLY NO 36E WITH ROD, TARGET & BALL HANDLE	-	
26	12	RAIL BRACE BOLTLESS 132/136 LB RE BETHELEM 2 SUREFIT	ES2800-81						
27	12	SERRATED WASHER FOR BETHELEM BRACE	ES2800-82						
28	4	RAIL CLIP (E3706) HOLD DOWN CLAMP	-						
29	2	RAIL CLIP (E3707) HOLD DOWN CLAMP	-						
30	2	RAIL CLIP (E3708) HOLD DOWN CLAMP	-						

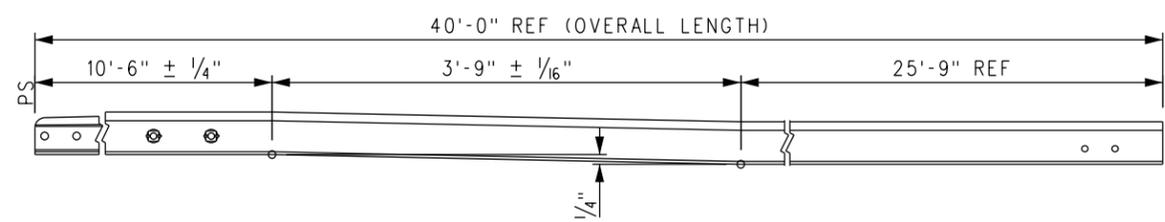
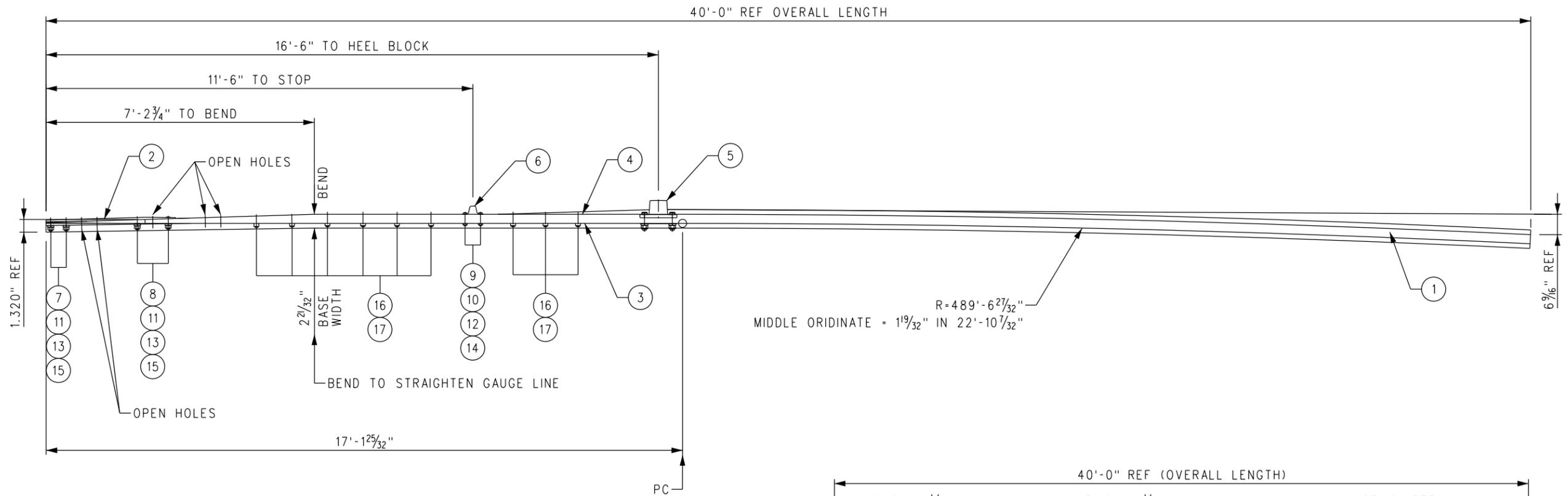
DRAWN BY: <i>Nareh D. Bae</i>		HDR: <i>Wilton Davis</i>	DATE: 03/31/2011	SCRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRA APPROVED USES ONLY. FOR NON-SCRRA APPROVED USES: SCRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE 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.	 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS TURNOUT LAYOUT NO 8 - 136 LB RE LH RBM FROG TURNOUT WOOD TIES, SWITCH STAND ON EITHER SIDE BILL OF MATERIALS		STANDARD: 2801 SCALE: NTS REVISION SHEET: 1 OF 1 CADD FILE: ES2801-11
ASSISTANT DIRECTOR: STANDARDS & DESIGN DIRECTOR OF ENGINEERING AND CONSTRUCTION	REVISION XX XX DATE DESCRIPTION DES. ENG.							

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SAMSON POINT, 40'-0" LONG, UR MANG TIP, CURVED, LH	ES2801-21		31	1	INSULATED RAIL ASSEMBLY, 21'-2 ¹ / ₁₆ " , C/W BONDED INSULATED JOINT	-	
2	1	SAMSON POINT, 40'-0" LONG, UR MANG TIP, STRAIGHT, RH	ES2801-22		32	1	INSULATED RAIL ASSEMBLY, 22'-0" , C/W BONDED INSULATED JOINT	-	
3	1	SAMSON STOCK RAIL, 42'-0" LONG, STRAIGHT, LH	ES2801-25		33	1	DRILLED RAIL, 136 LB RE, 20'-11 ¹³ / ₁₆ " LONG	-	
4	1	SAMSON STOCK RAIL, 43'-0" LONG, CURVED, RH	ES2801-25		34	1	DRILLED RAIL, 136 LB RE, 35'-0" LONG	-	
5	3	INSULATED GAUGE PLATE ASSEMBLY P-P	ES2801-60		35	2	DRILLED RAIL, 136 LB RE, 39'-0" LONG	-	
6	4	SWITCH PLATE (S-5P)	ES2801-69		36	1	DRILLED RAIL, 136 LB RE, 56'-0" LONG	-	
7	2	SWITCH PLATE (S-7P)	ES2801-69		37	1	FROG PACK, NO 8 - 136 LB RE RBM, RH	ES2801-32	
8	6	SWITCH PLATE (S-8P)	ES2801-69		38	2	GUARD RAIL ASSEMBLY BOLTLESS, 13'-0" LG, 136 LB RE RAISED 1"	ES2801-33	
9	4	SWITCH PLATE (S-9P)	ES2801-69		39	1	INSULATED FROG GAUGE PLATE (FG-1P)	ES2801-34	
10	1	SWITCH ROD ASSEMBLY VERT INSULATION NO 1	-		40	1	INSULATED FROG GAUGE PLATE (FG-2P)	ES2801-35	
11	1	SWITCH ROD ASSEMBLY VERT INSULATION NO 2	-		41	1	INSULATED FROG GAUGE PLATE (FG-3P)	ES2801-36	
12	1	INSULATED GAUGE PLATE ASSEMBLY GP-1	ES2801-60		42	102	TIE PLATE, ROLLED PANDROL, 6" BASE, CANTED	ES2454	
13	1	INSULATED GAUGE PLATE ASSEMBLY GP-2	ES2801-60		43	300	CLIP PANDROL E2055	ES2362	
14	2	SWITCH PLATE (S-4P)	ES2801-69		44	8	CLIP PANDROL MODIFIED E2063	-	
15	2	SWITCH PLATE (P-10-R)	ES2801-64		45	737	1 ⁵ / ₁₆ " DIAMETER SCREW SPIKE	-	
16	2	SWITCH PLATE (P-11-R)	ES2801-64		46	12	TIE, HARDWOOD, TREATED, 7" x 9" x 9'-0"	-	
17	2	SWITCH PLATE (P-12-R)	ES2801-64		47	8	TIE, HARDWOOD, TREATED, 7" x 9" x 10'-0"	-	
18	2	SWITCH PLATE (P-13-R)	ES2801-64		48	6	TIE, HARDWOOD, TREATED, 7" x 9" x 11'-0"	-	
19	2	SWITCH PLATE (P-14-R)	ES2801-66		49	6	TIE, HARDWOOD, TREATED, 7" x 9" x 12'-0"	-	
20	2	SWITCH PLATE (P-15-R)	ES2801-66		50	4	TIE, HARDWOOD, TREATED, 7" x 9" x 13'-0"	-	
21	2	SWITCH PLATE (P-16-R)	ES2801-66		51	5	TIE, HARDWOOD, TREATED, 7" x 9" x 14'-0"	-	
22	2	SWITCH PLATE (P-17-R)	ES2801-68		52	5	TIE, HARDWOOD, TREATED, 7" x 9" x 15'-0"	-	
23	2	SWITCH PLATE (P-18-R)	ES2801-68		53	8	TIE, HARDWOOD, TREATED, 7" x 9" x 16'-0"	-	
24	2	SWITCH PLATE (P-19-R)	ES2801-68		54	2	TIE, HARDWOOD, TREATED, 8" x 12" x 14'-0"	-	
25	2	HEEL PLATE NO P5-RH	ES2801-62		55	1	SWITCH STAND ASSEMBLY NO 36E WITH ROD, TARGET & BALL HANDLE	-	
26	12	RAIL BRACE BOLTLESS 132/136 LB RE BETHELEM NO 2 SUREFIT	ES2800-81						
27	12	SERRATED WASHER FOR BETHELEM BRACE	ES2800-82						
28	4	RAIL CLIP E3706 HOLD DOWN CLAMP	-						
29	2	RAIL CLIP E3707 HOLD DOWN CLAMP	-						
30	2	RAIL CLIP E3708 HOLD DOWN CLAMP	-						

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>ND</i> DATE: 03/31/2011		<small>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.</small>	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS		STANDARD 2801
<small>ASSISTANT DIRECTOR: STANDARDS & DESIGN</small> <i>William Dava</i> <small>DIRECTOR OF ENGINEERING AND CONSTRUCTION</small>						TURNOUT LAYOUT NO 8 - 136 LB RE RH RBM FROG TURNOUT WOOD TIES, SWITCH STAND ON EITHER SIDE BILL OF MATERIALS		SCALE: NTS
REV.	DATE	DESCRIPTION	DES.	ENG.			CADD FILE: ES2801-12	

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SWITCH POINT RAIL, 136 LB RE, LH SAMSON GR, 40'-0"	ES2801-21	
2	1	MANGANESE TIP LH FOR 136 LB RE 16'-6" SAMSON SWITCH POINT	-	
3	1	REINFORCING BAR, GAUGE SIDE, 1/2" x 14'-6", LH POINT	-	
4	1	REINFORCING BAR, STOCK SIDE, 1/2" x 10'-11 1/2", LH POINT	-	
5	1	SWITCH HEEL ASSY FLOATING 132/136 LB RE C/W HARDWARE	-	
6	1	POINT STOP 3 1/4" HIGH	-	
7	2	BOLT, 1" DIA x 3 1/2", THIN SQUARE HEAD DRILLED @ 3 3/16" GR 5	-	
8	2	BOLT, 1" DIA x 3 3/4", THIN SQUARE HEAD DRILLED @ 3 1/2" GR 5	-	
9	2	BOLT, 3/4" DIA x 4", SQUARE HEAD DRILLED @ 3 25/32" GR 5	-	

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
10	2	SPRING WASHER, 3/4" DIA	-	
11	4	SPRING WASHER, 1" DIA	-	
12	2	NUT, 3/4" DIA HEAVY HEX, GR 5	-	
13	4	NUT, 1" DIA HEAVY HEX, GR 5	-	
14	2	COTTER PIN, 3/16" DIA x 1 3/4"	-	
15	4	COTTER PIN, 1/4" DIA x 2"	-	
16	9	HUCKBOLT, 3/4" DIA (C50LR-BR24-24)	-	
17	9	HUCK COLLAR, 3/4" DIA (3LC-2R24G)	-	



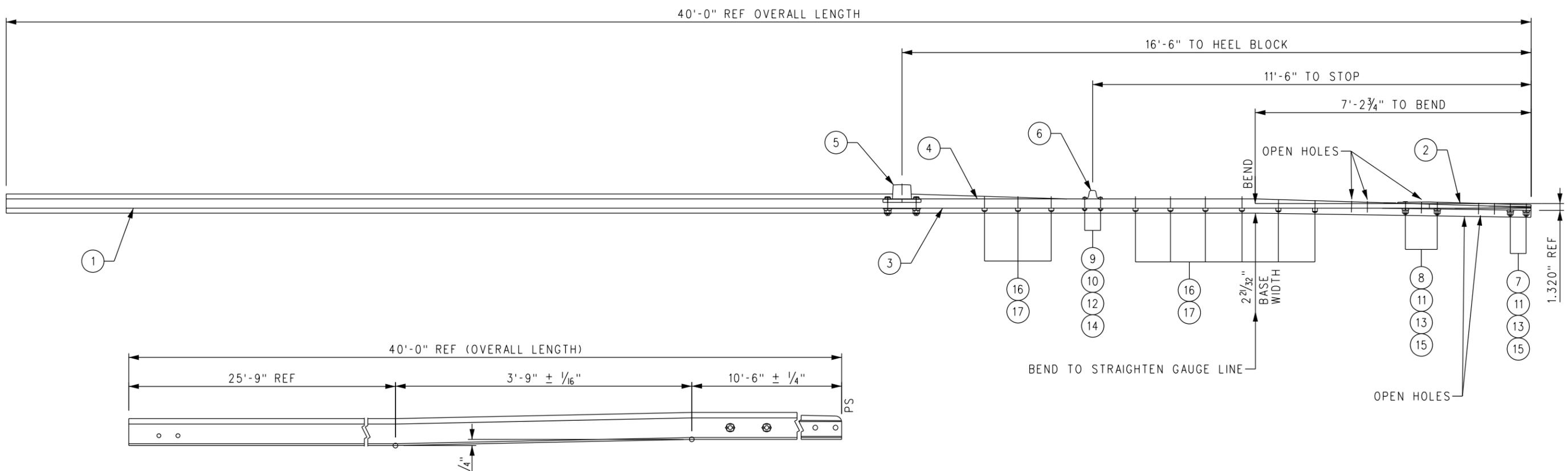
NOTES:

1. ROUND EDGES OF SWITCH STOPS AT CONTACT AREAS, R = 1/2".
2. BEVEL ALL BOLT HOLES.

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>Willson Davan</i>	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: 2801
ASSISTANT DIRECTOR: STANDARDS & DESIGN <i>Willson Davan</i> DIRECTOR OF ENGINEERING AND CONSTRUCTION						SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		SWITCH POINT 16' - 6" 136 LB RE LH CURVE
REV. DATE	DESCRIPTION	DES.	ENG.					REVISION SHEET: 1 OF 1 CADD FILE: ES2801-21

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	SWITCH POINT RAIL, 136 LB RE, RH SAMSON GR, 40'-0"	ES2801-22	
2	1	MANGANESE TIP RH FOR 136 LB RE 16'-6" SAMSON SWITCH POINT	-	
3	1	REINFORCING BAR, GAUGE SIDE, 1/2" x 14'-6", RH POINT	-	
4	1	REINFORCING BAR, STOCK SIDE, 1/2" x 10'-11 1/2", RH POINT	-	
5	1	SWITCH HEEL ASSY FLOATING 132/136 LB RE C/W HARDWARE	-	
6	1	POINT STOP 3/4" HIGH	-	
7	2	BOLT, 1" DIA x 3 1/2", THIN SQUARE HEAD DRILLED @ 3 3/16" GR 5	-	
8	2	BOLT, 1" DIA x 3 3/4", THIN SQUARE HEAD DRILLED @ 3 1/2" GR 5	-	
9	2	BOLT, 3/4" DIA x 4", SQUARE HEAD DRILLED @ 3 21/32" GR 5	-	

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
10	2	SPRING WASHER, 3/4" DIA	-	
11	4	SPRING WASHER, 1" DIA	-	
12	2	NUT, 3/4" DIA HEAVY HEX, GR 5	-	
13	4	NUT, 1" DIA HEAVY HEX, GR 5	-	
14	2	COTTER PIN, 3/16" DIA x 1 3/4"	-	
15	4	COTTER PIN, 1/4" DIA x 2"	-	
16	9	HUCKBOLT, 3/4" DIA (C50LR-BR24-24)	-	
17	9	HUCK COLLAR, 3/4" DIA (3LC-2R24G)	-	



SIDE VIEW - VERTICAL BENDING DETAIL

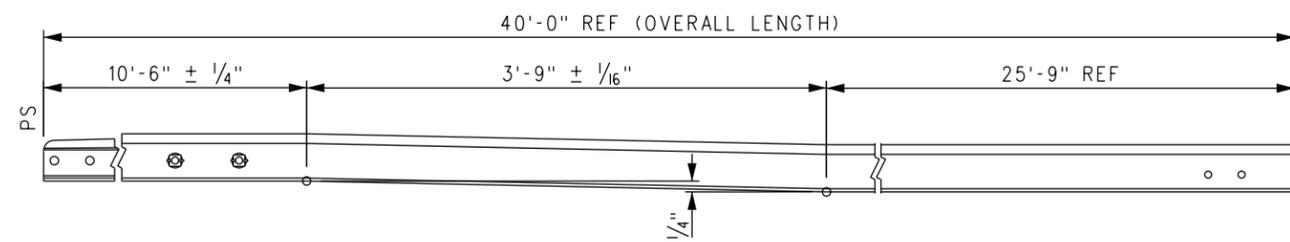
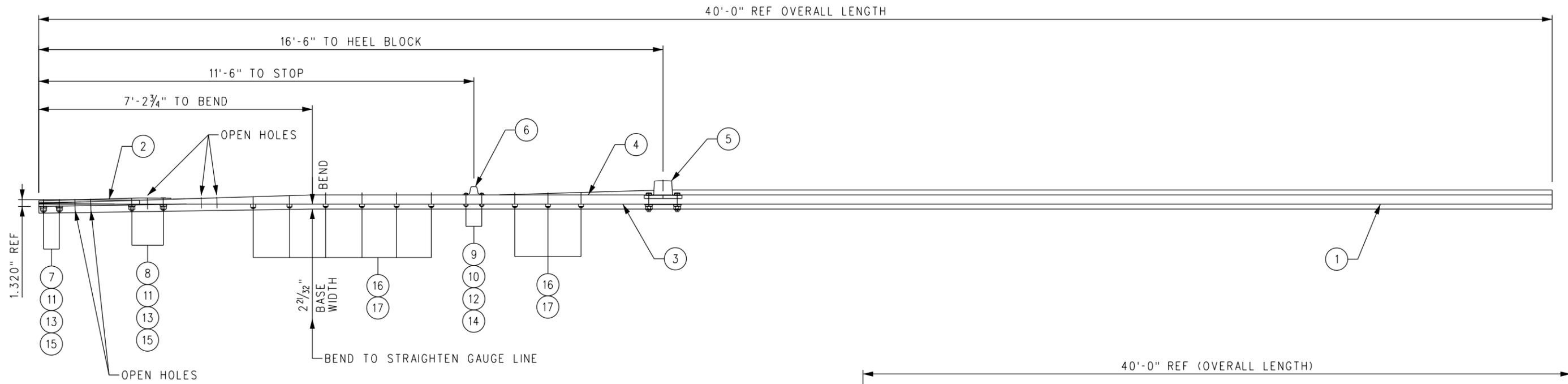
NOTES:

1. ROUND EDGES OF SWITCH STOPS AT CONTACT AREAS, R = 1/2".
2. BEVEL ALL BOLT HOLES.

DRAWN BY: <i>Narek D. Pape</i>		HDR: <i>Narek D. Pape</i>	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 SWITCH POINT 16' - 6" 136 LB RE RH STR	STANDARD: 2801	
ASSISTANT DIRECTOR: STANDARDS & DESIGN <i>William Dava</i> DIRECTOR OF ENGINEERING AND CONSTRUCTION							SCALE: NTS	REVISION SHEET: 1 OF 1
X	XX-XX-XX	REVISION	XX	XX	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012			
REV.	DATE	DESCRIPTION	DES.	ENG.				

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	SWITCH POINT RAIL, 136 LB RE, LH SAMSON GR, 40'-0"	ES2801-23	
2	1	MANGANESE TIP LH FOR 136 LB RE 16'-6" SAMSON SWITCH POINT	-	
3	1	REINFORCING BAR, GAUGE SIDE, 1/2" x 14'-6", LH POINT	-	
4	1	REINFORCING BAR, STOCK SIDE, 1/2" x 10'-11 1/2", LH POINT	-	
5	1	SWITCH HEEL ASSY FLOATING 132/136 LB RE C/W HARDWARE	-	
6	1	POINT STOP 3/4" HIGH	-	
7	2	BOLT, 1" DIA x 3 1/2", THIN SQUARE HEAD DRILLED @ 3 3/16" GR 5	-	
8	2	BOLT, 1" DIA x 3 3/4", THIN SQUARE HEAD DRILLED @ 3 1/2" GR 5	-	
9	2	BOLT, 3/4" DIA x 4", SQUARE HEAD DRILLED @ 3 21/32" GR 5	-	

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
10	2	SPRING WASHER, 3/4" DIA	-	
11	4	SPRING WASHER, 1" DIA	-	
12	2	NUT, 3/4" DIA HEAVY HEX, GR 5	-	
13	4	NUT, 1" DIA HEAVY HEX, GR 5	-	
14	2	COTTER PIN, 3/16" DIA x 1 3/4"	-	
15	4	COTTER PIN, 1/4" DIA x 2"	-	
16	9	HUCKBOLT, 3/4" DIA (C50LR-BR24-24)	-	
17	9	HUCK COLLAR, 3/4" DIA (3LC-2R24G)	-	



NOTES:

1. ROUND EDGES OF SWITCH STOPS AT CONTACT AREAS, R = 1/2".
2. BEVEL ALL BOLT HOLES.

SIDE VIEW - VERTICAL BENDING DETAIL

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>Wilson Davan</i>	DATE: 03/31/2011
ASSISTANT DIRECTOR: STANDARDS & DESIGN		DIRECTOR OF ENGINEERING AND CONSTRUCTION	
XX	XX	XX	XX
REV.	DATE	DESCRIPTION	DES. ENG.

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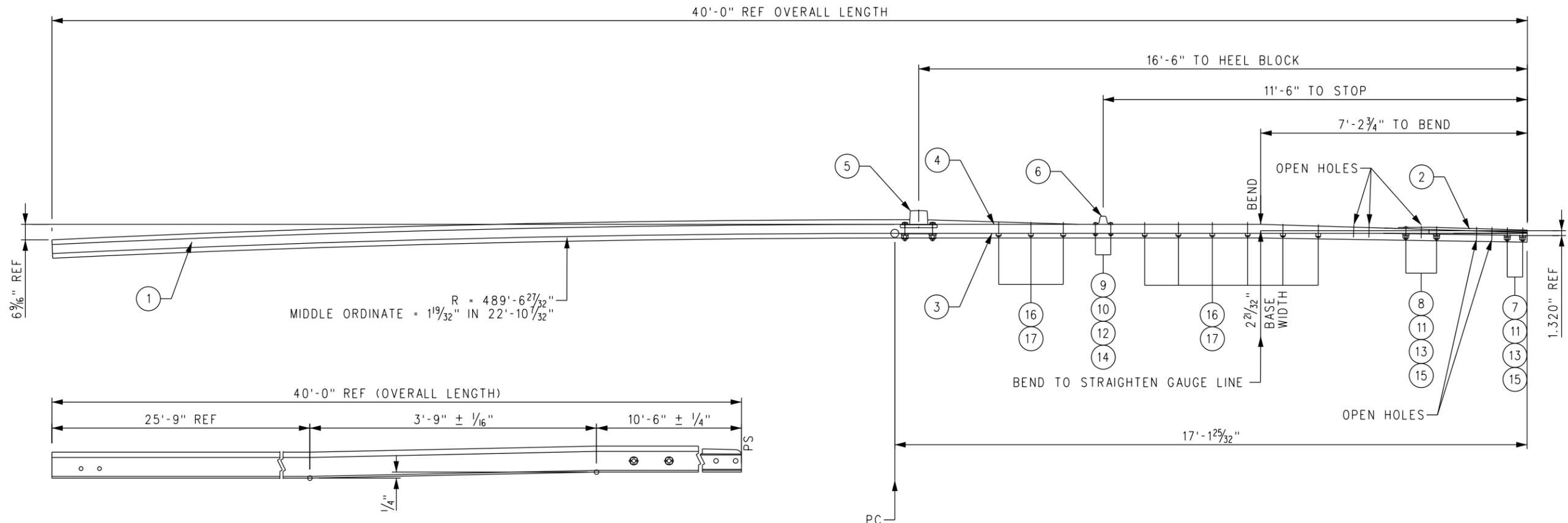
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS	
SWITCH POINT 16' - 6" 136 LB RE LH STR	

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-23

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	SWITCH POINT RAIL, 136 LB RE, RH SAMSON GR, 40'-0"	ES2801-24	
2	1	MANGANESE TIP RH FOR 136 LB RE 16'-6" SAMSON SWITCH POINT	-	
3	1	REINFORCING BAR, GAUGE SIDE, 1/2" x 14'-6", RH POINT	-	
4	1	REINFORCING BAR, STOCK SIDE, 1/2" x 10'-11 1/2", RH POINT	-	
5	1	SWITCH HEEL ASSY FLOATING 132/136 LB RE C/W HARDWARE	-	
6	1	POINT STOP 3/4" HIGH	-	
7	2	BOLT, 1" DIA x 3 1/2", THIN SQUARE HEAD DRILLED @ 3 3/16" GR 5	-	
8	2	BOLT, 1" DIA x 3 3/4", THIN SQUARE HEAD DRILLED @ 3 1/2" GR 5	-	
9	2	BOLT, 3/4" DIA x 4", SQUARE HEAD DRILLED @ 3 21/32" GR 5	-	

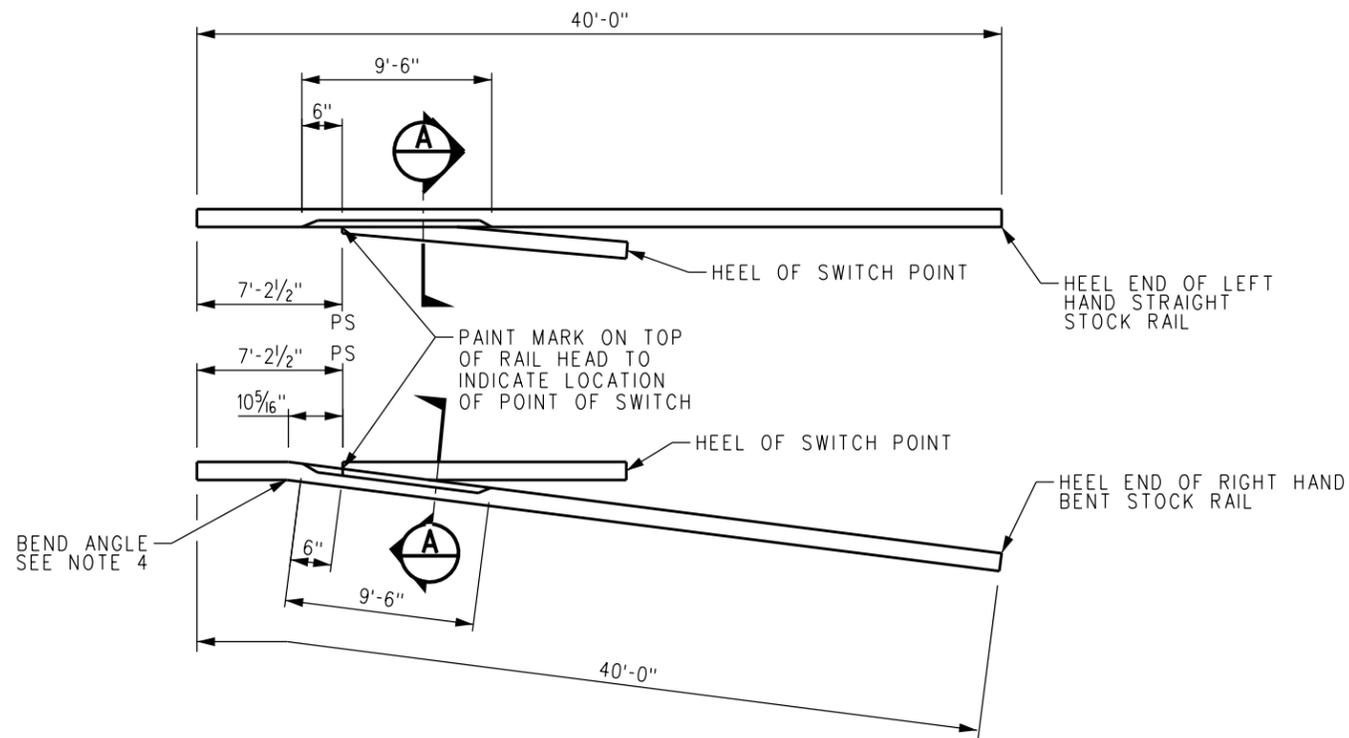
BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
10	2	SPRING WASHER, 3/4" DIA	-	
11	4	SPRING WASHER, 1" DIA	-	
12	2	NUT, 3/4" DIA HEAVY HEX, GR 5	-	
13	4	NUT, 1" DIA HEAVY HEX, GR 5	-	
14	2	COTTER PIN, 3/16" DIA x 1 3/4"	-	
15	4	COTTER PIN, 1/4" DIA x 2"	-	
16	9	HUCKBOLT, 3/4" DIA (C50LR-BR24-24)	-	
17	9	HUCK COLLAR, 3/4" DIA (3LC-2R24G)	-	



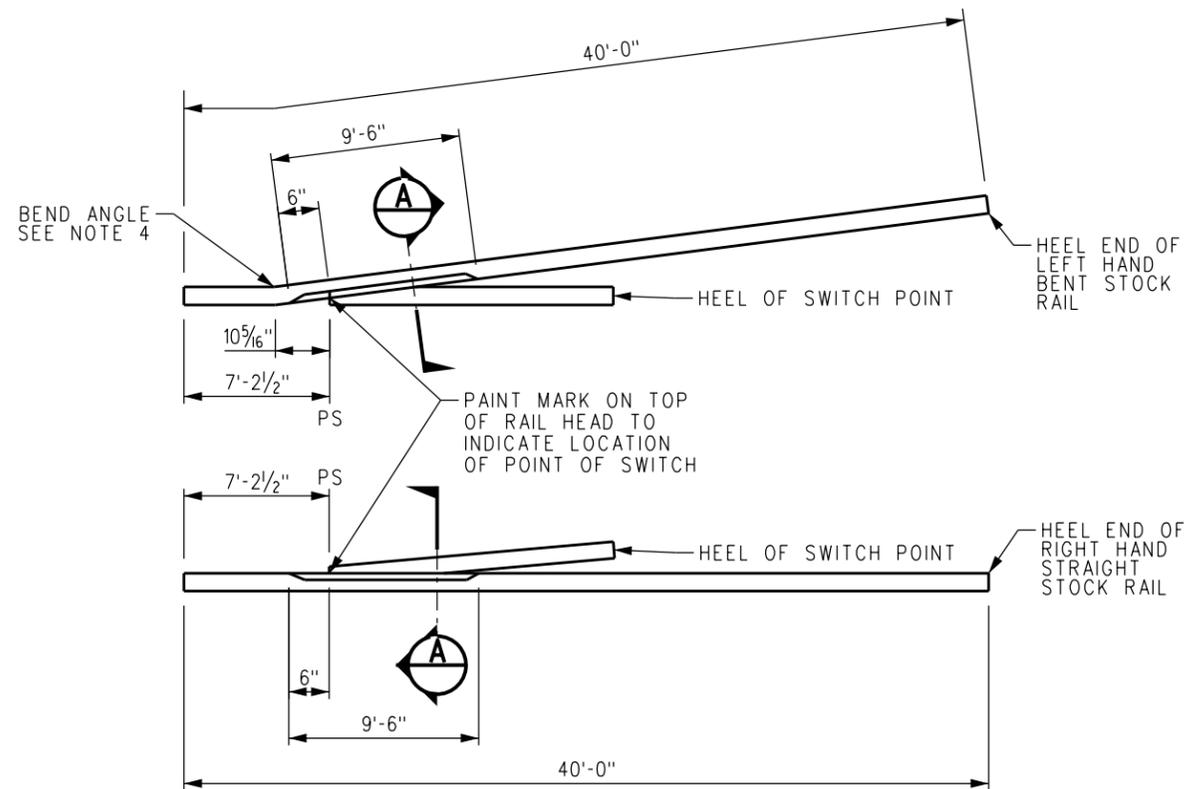
SIDE VIEW - VERTICAL BENDING DETAIL

- NOTES:**
1. ROUND EDGES OF SWITCH STOPS AT CONTACT AREAS, R = 1/2".
 2. BEVEL ALL BOLT HOLES.

DRAWN BY: <i>Nareh D. Papp</i> HDR DATE: 03/31/2011 ASSISTANT DIRECTOR: STANDARDS & DESIGN		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.	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS SWITCH POINT 16' - 6" 136 LB RE RH CURVE	STANDARD 2801
REV. DATE DESCRIPTION DES. ENG.					SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2801-24



STOCK RAILS ARE SHOWN FOR "RIGHT HAND TURNOUT"

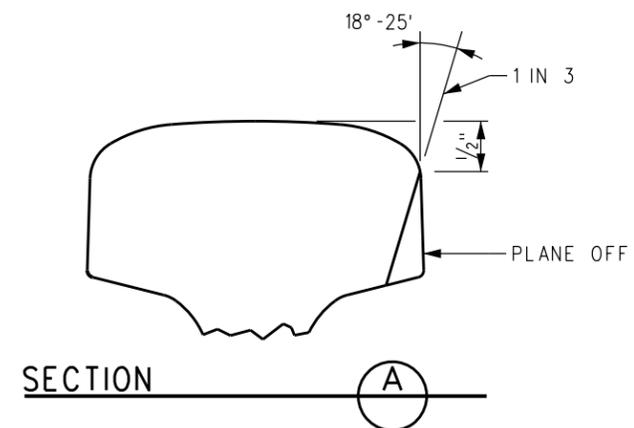


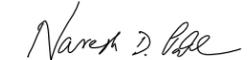
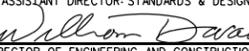
STOCK RAILS ARE SHOWN FOR "LEFT HAND TURNOUT"

NOTES:

1. UNDERCUT STOCK RAILS TO BE MADE OF HIGH STRENGTH RAIL WITH ENDS BEVELED PER CURRENT AREMA PLAN NO 1005.
2. SW POINT LENGTH PS TO HEEL OF SWITCH 16'-6".
3. VERTEX DISTANCE IS DISTANCE FROM BEND TO PS.
4. BEND ANGLE IN BENT STOCK RAIL TO BE AS FOLLOW:

SW LENGTH	BEND ANGLE	V (VERTEX DIST)
16'-6"	1° - 44' - 11" OR 1" IN 2'-9"	10 5/16"



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

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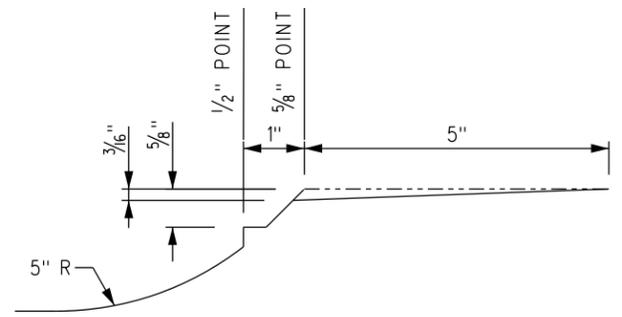


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ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

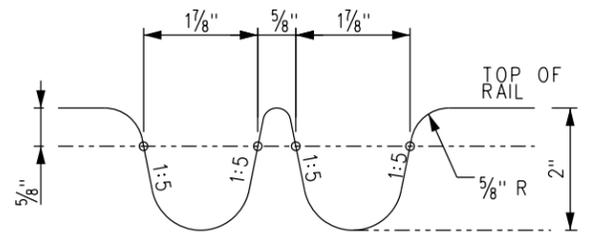
ENGINEERING STANDARDS

NO 8 STRAIGHT OR CURVED UNDERCUT STOCK RAILS

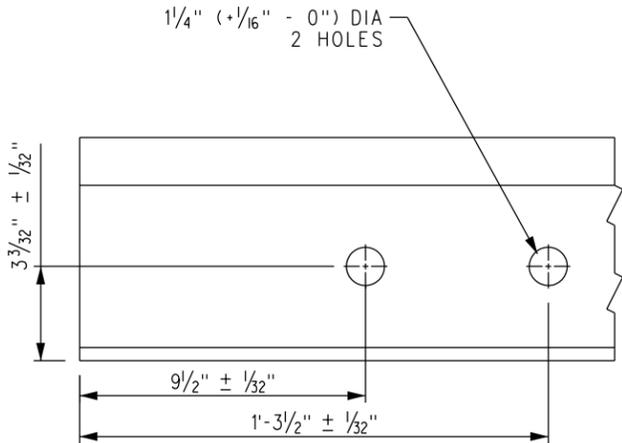
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-25



ELEVATION VIEW OF POINT



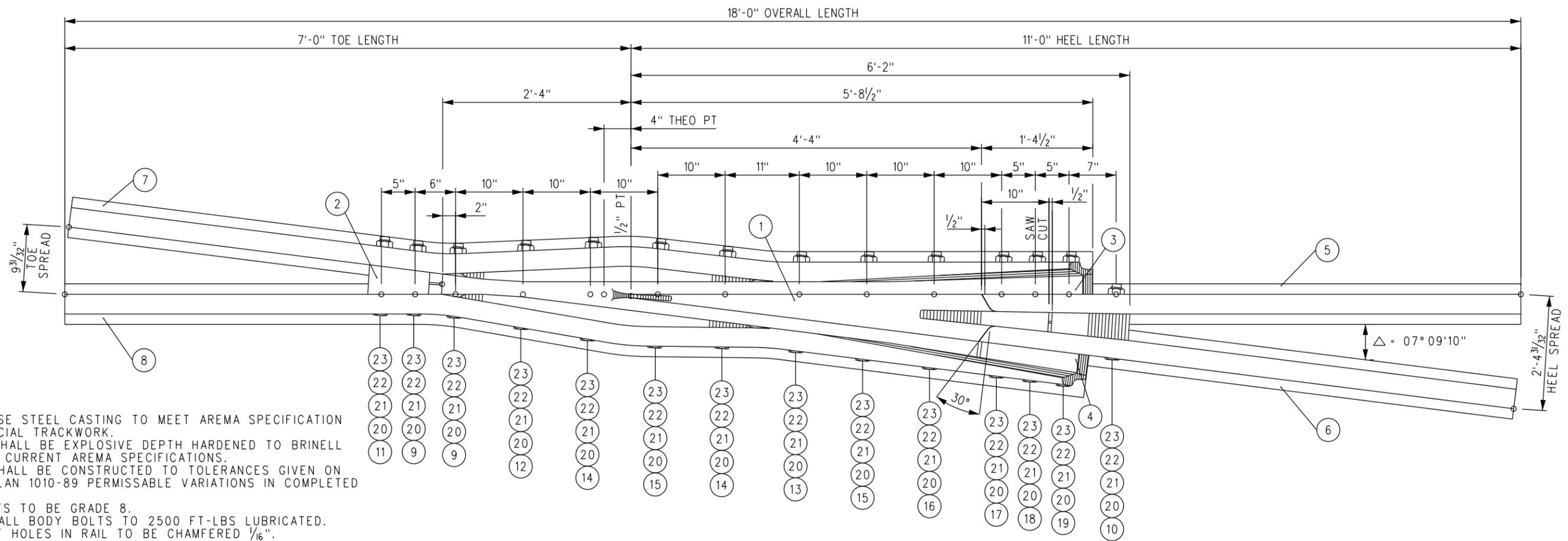
**SECTION AT 5/8" POINT
POINT DETAILS**



RAIL END DRILLING DETAIL

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	MANGANESE STEEL INSERT, NO 8-136 LB RE RBM FROG EDH (U20-00116)	ES2801-30	
2	1	TOE BLOCK (TB132RE-08)	-	
3	1	FLARE FILLER BLOCK LH, SKELETON STYLE	-	
4	1	FLARE FILLER BLOCK RH, SKELETON STYLE	-	
5	1	HEEL RAIL LH (6'-7 15/16" LONG)	-	
6	1	HEEL RAIL RH (6'-7 15/16" LONG)	-	
7	1	WING RAIL LH (12'-8 11/32" LONG)	-	
8	1	WING RAIL RH (12'-8 11/32" LONG)	-	
9	2	BOLT, SQ HD 1 3/8" UNC x 10" LONG GR 8	-	
10	1	BOLT, SQ HD 1 3/8" UNC x 10 1/2" LONG GR 8	-	
11	1	BOLT, SQ HD 1 3/8" UNC x 11" LONG GR 8	-	
12	1	BOLT, SQ HD 1 3/8" UNC x 1'-0 1/2" LONG GR 8	-	
13	1	BOLT, SQ HD 1 3/8" UNC x 1'-2" LONG GR 8	-	
14	2	BOLT, SQ HD 1 3/8" UNC x 1'-2 1/2" LONG GR 8	-	
15	2	BOLT, SQ HD 1 3/8" UNC x 1'-3 1/2" LONG GR 8	-	
16	1	BOLT, SQ HD 1 3/8" UNC x 1'-4 1/2" LONG GR 8	-	
17	1	BOLT, SQ HD 1 3/8" UNC x 1'-6" LONG GR 8	-	
18	1	BOLT, SQ HD 1 3/8" UNC x 1'-6 1/2" LONG GR 8	-	
19	1	BOLT, SQ HD 1 3/8" UNC x 1'-7" LONG GR 8	-	
20	14	HEAD LOCK WASHER (UHW 132)	-	
21	14	TAIL WASHER (UTW 132)	-	
22	14	NUT, 1 3/8" DIA, HEAVY HEX SECURITY LOCK, GR 8	-	
23	14	FLAT WASHER, 1 3/8" TYPE B HARDENED F436	-	

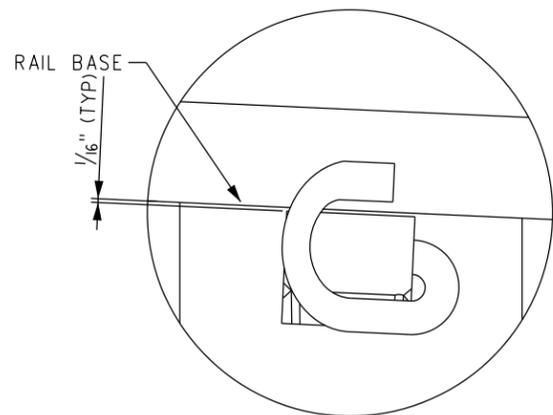


- NOTES:**
1. MANGANESE STEEL CASTING TO MEET AREMA SPECIFICATION FOR SPECIAL TRACKWORK.
 2. INSERT SHALL BE EXPLOSIVE DEPTH HARDENED TO BRINELL 352 PER CURRENT AREMA SPECIFICATIONS.
 3. FROGS SHALL BE CONSTRUCTED TO TOLERANCES GIVEN ON AREMA PLAN 1010-89 PERMISSIBLE VARIATIONS IN COMPLETED FROGS.
 4. ALL BOLTS TO BE GRADE 8.
 5. TORQUE ALL BODY BOLTS TO 2500 FT-LBS LUBRICATED.
 6. ALL BOLT HOLES IN RAIL TO BE CHAMFERED 1/16".

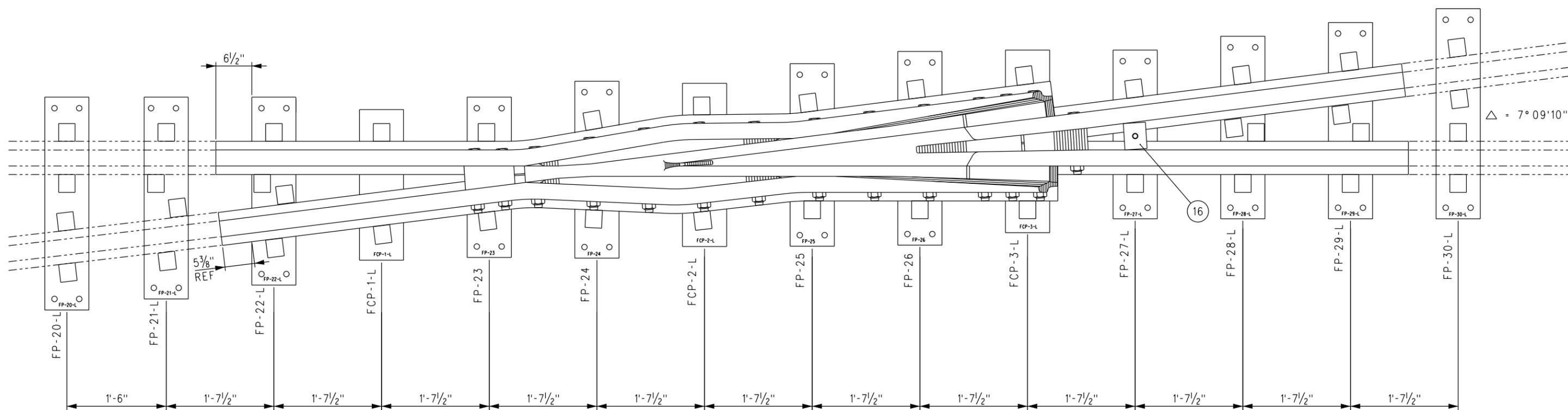
DRAWN BY: <i>Nareh D. Papp</i> HDR DATE: 03/31/2011 ASSISTANT DIRECTOR: STANDARDS & DESIGN		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE 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 NO 8 RBM FROG 18'-0" OVERALL LENGTH WOOD TIES-136 LB RE RAIL		STANDARD 2801 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2801-30
REV. DATE DESCRIPTION DES. ENG.	DIRECTOR OF ENGINEERING AND CONSTRUCTION <i>William Davan</i>					

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	NO 8 RBM FROG, 18'-0" OVERALL LENGTH	ES2801-30	
2	1	FROG PLATE FP-20-L	ES2801-43	
3	1	FROG PLATE FP-21-L	ES2801-45	
4	1	FROG PLATE FP-22-L	ES2801-45	
5	1	FROG PLATE FP-23	ES2801-50	
6	1	FROG PLATE FP-24	ES2801-50	
7	1	FROG PLATE FP-25	ES2801-50	
8	1	FROG PLATE FP-26	ES2801-50	
9	1	FROG PLATE FP-27-L	ES2801-47	
10	1	FROG PLATE FP-28-L	ES2801-45	
11	1	FROG PLATE FP-29-L	ES2801-45	
12	1	FROG PLATE FP-30-L	ES2801-43	
13	1	FROG PLATE FCP-1-L	ES2801-49	
14	1	FROG PLATE FCP-2-L	ES2801-49	
15	1	FROG PLATE FCP-3-L	ES2801-49	
16	1	RAIL CLIP E3706	-	
17	1	CLIP, PANDROL, E2055, LH CLIP	-	



DETAIL - CLIP TO RAIL BASE



NOTES:

1. WHEN FROG IS SUPPLIED WITHOUT PLATES, THE RAIL BASE SHALL BE MARKED FOR PLATE LOCATION PER DIMENSIONS AS SHOWN.
2. PLATES FCP-1 AND FCP-3 SHALL HAVE SHOULDERS BENCH FITTED TO FROG. PLATES SHALL NOT BE UNDER FROG WHEN WELDING.
3. ALL FROG PLATES SHALL BE FASTENED TO FROG WITH PANDROL CLIPS INSTALLED FOR SHIPMENT, WHEREVER APPLICABLE.
4. IDENTIFY THE LIFTING POINT WITH YELLOW PAINT AND INDICATE WEIGHT OF APPLICABLE FROG PACK WITH INDELIBLE MARKER.

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

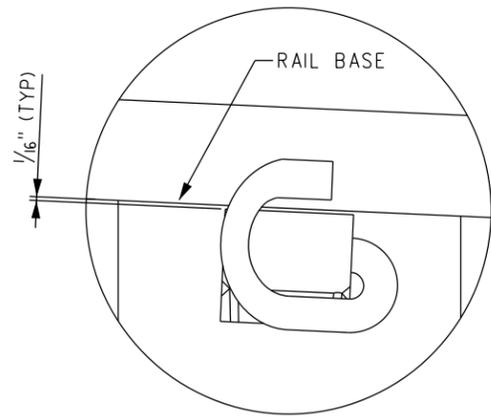
DRAWN BY: *Nareh D. Papp* HDR DATE: 03/31/2011
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William D. Davis
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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

ENGINEERING STANDARDS
 NO 8 RBM FROG LH
 ASSEMBLY AND FROG PACK
 WOOD TIES-136 LB RE RAIL

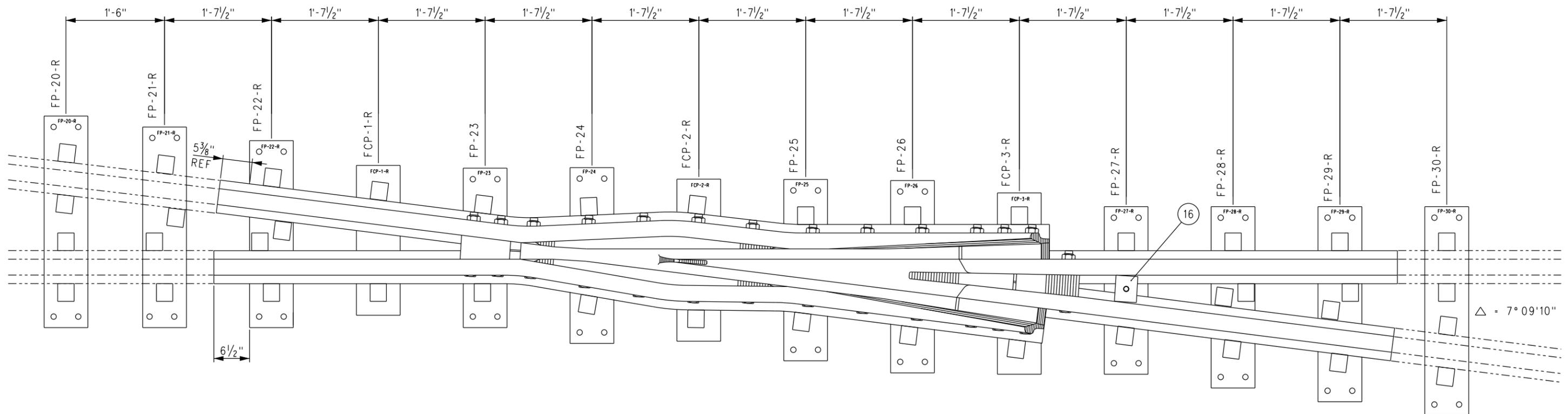
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-31



DETAIL - CLIP TO RAIL BASE

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	NO 8-136 LB RE RBM FROG ASSEMBLY, 18'-0" OVERALL LENGTH	ES2801-30	
2	1	FROG PLATE FP-20-R	ES2801-42	
3	1	FROG PLATE FP-21-R	ES2801-44	
4	1	FROG PLATE FP-22-R	ES2801-44	
5	1	FROG PLATE FP-23	ES2801-50	
6	1	FROG PLATE FP-24	ES2801-50	
7	1	FROG PLATE FP-25	ES2801-50	
8	1	FROG PLATE FP-26	ES2801-50	
9	1	FROG PLATE FP-27-R	ES2801-46	
10	1	FROG PLATE FP-28-R	ES2801-44	
11	1	FROG PLATE FP-29-R	ES2801-44	
12	1	FROG PLATE FP-30-R	ES2801-42	
13	1	FROG PLATE FCP-1-R	ES2801-48	
14	1	FROG PLATE FCP-2-R	ES2801-48	
15	1	FROG PLATE FCP-3-R	ES2801-48	
16	1	RAIL CLIP E3706	-	
17	1	CLIP, PANDROL, E2055, RH CLIP	-	



NOTES:

1. WHEN FROG IS SUPPLIED WITHOUT PLATES, THE RAIL BASE SHALL BE MARKED FOR PLATE LOCATION PER DIMENSIONS AS SHOWN.
2. PLATES FCP-1 AND FCP-3 SHALL HAVE SHOULDERS BENCH FITTED TO FROG. PLATES SHALL NOT BE UNDER FROG WHEN WELDING.
3. ALL FROG PLATES SHALL BE FASTENED TO FROG WITH PANDROL CLIPS INSTALLED FOR SHIPMENT, WHEREVER APPLICABLE.
4. IDENTIFY THE LIFTING POINT WITH YELLOW PAINT AND INDICATE WEIGHT OF APPLICABLE FROG PACK WITH INDELIBLE MARKER.

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

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

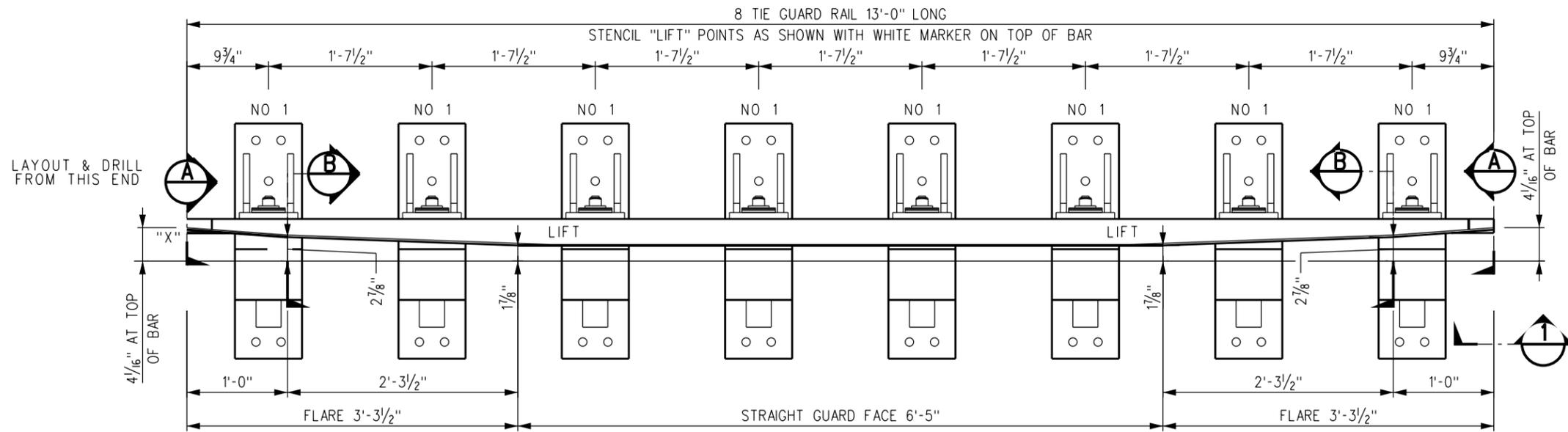
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METROLINK
 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 NO 8 RBM FROG RH
 ASSEMBLY AND FROG PACK
 WOOD TIES-136 LB RE RAIL

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-32



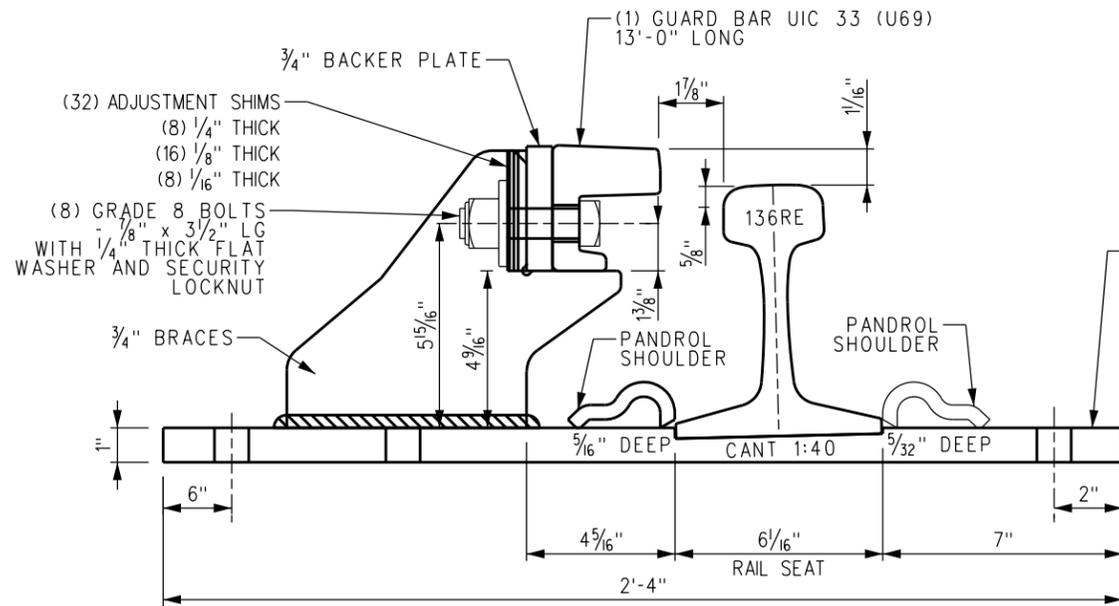
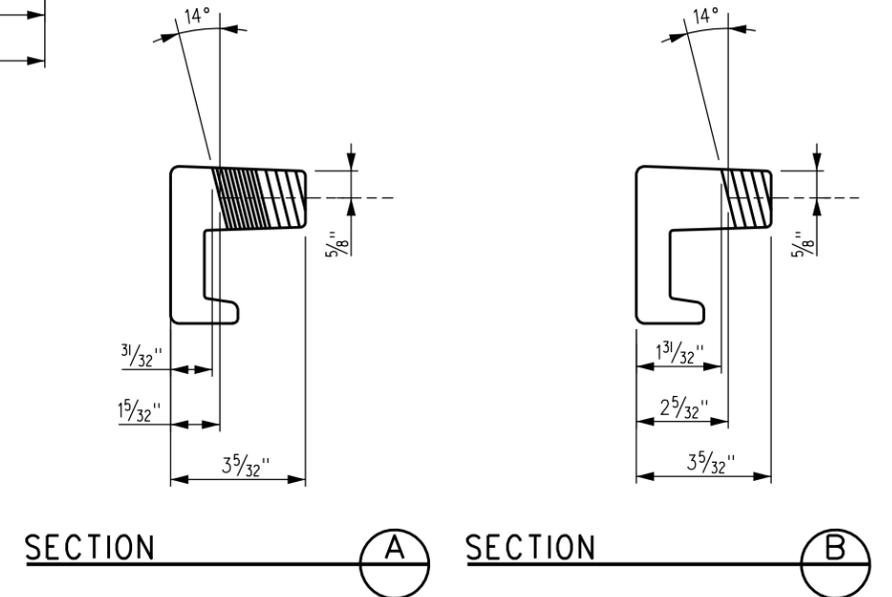
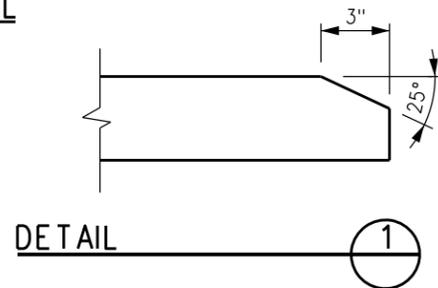
NOTES:

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

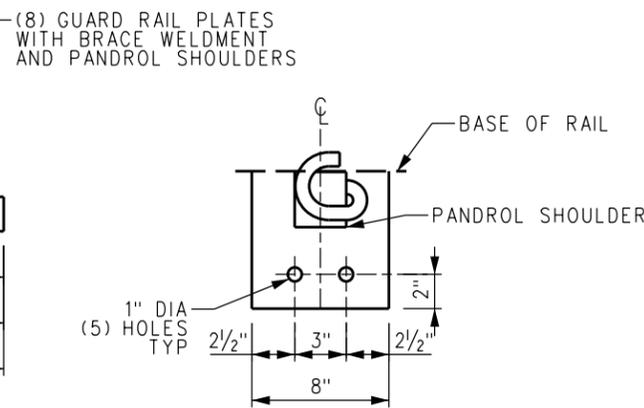
COLLECTIVE DRILLING FROM END OF GUARD BAR MARKED "X"

"X" 9 3/4" x 2'-5 1/4" x 4'-0 3/4" x 5'-8 1/4" x 7'-3 3/4" x 8'-11 1/4" x 10'-6 3/4" x 12'-2 1/4"
 HOLES 1" DIA - 1 3/8" ABOVE BASE

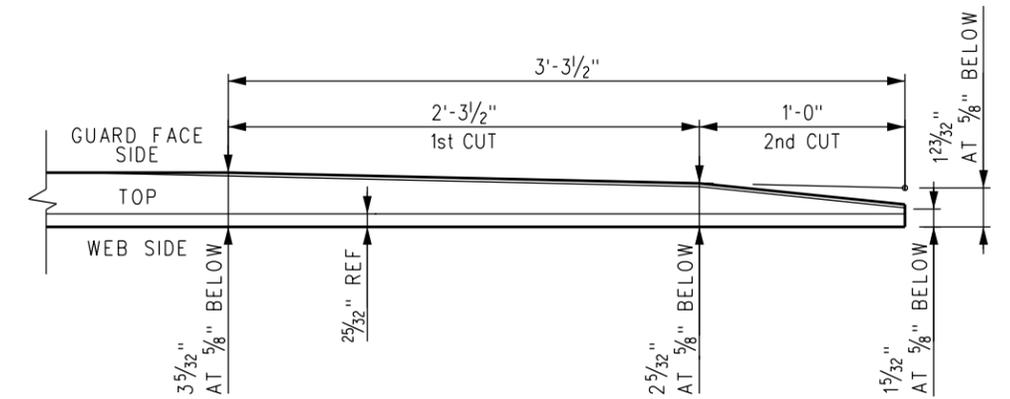
ASSEMBLED 13'-0" GUARD RAIL



TYPICAL PLATE DETAIL



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

Nareh D. Papp
 ASSISTANT DIRECTOR- STANDARDS & DESIGN

William D. Davis
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

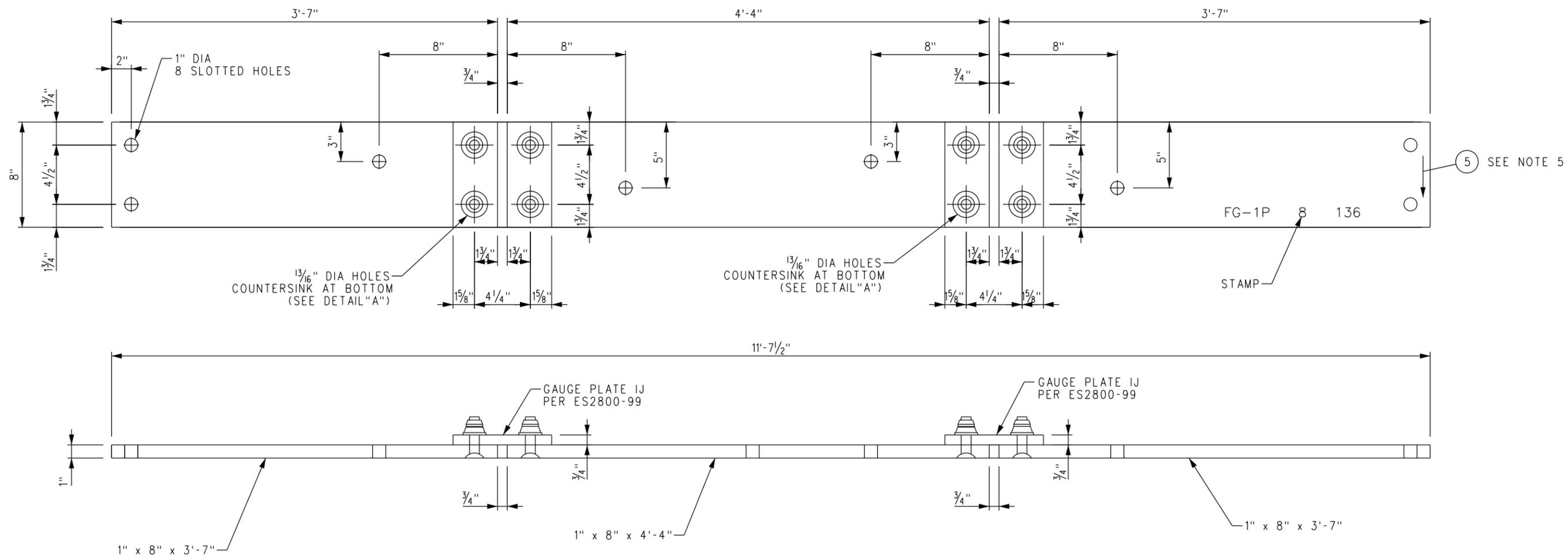
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METROLINK
 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

NO 8 136 LB RBM FROG GUARD RAIL DETAILS

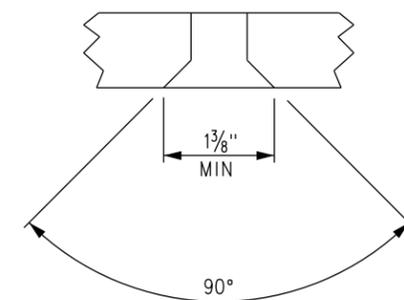
STANDARD	2801
SCALE	NTS
REVISION	SHEET
-	1 OF 1
CADD FILE	ES2801-33



INSULATED FROG GAUGE PLATE NO FG-1P, 1" x 8", FLAT
 GAUGE PLATE INSULATED JOINT TO BE "3M" TYPE, HUCKED TO PLATE.

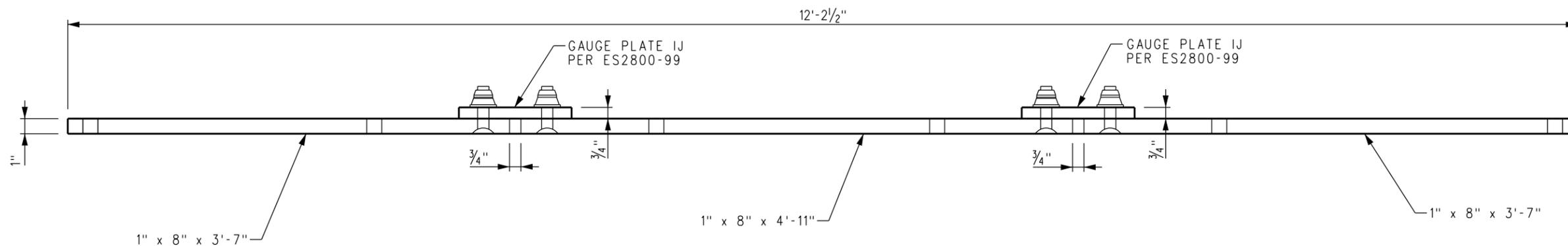
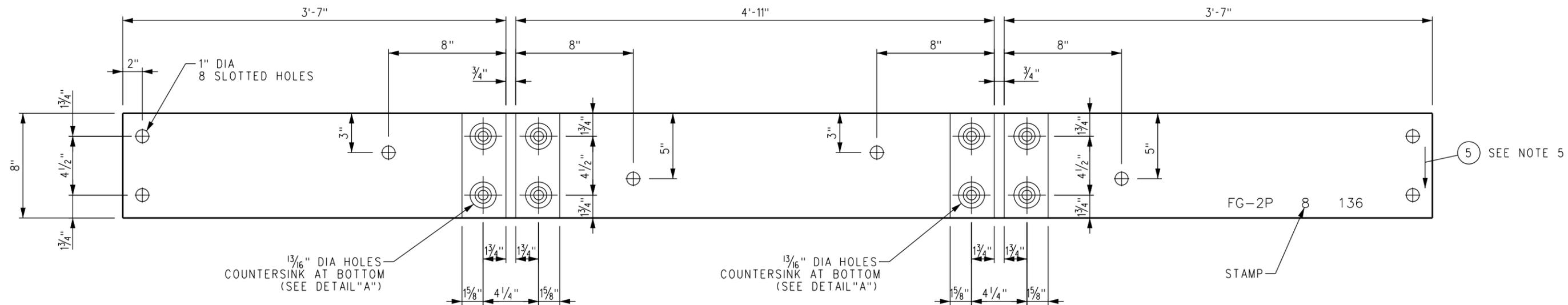
NOTES:

1. METAL AREAS TO BE PAINTED MUST BE CLEANED OF ALL IMPURITIES.
2. ANCHOR HOLE SIZE IS 1" DIA +/- 1/32"
3. FOR DETAILS OF FROG TURNOUT PLATES P-20-R THRU P-30-R SEE ES2801-42, ES2801-44, ES2801-46 UNLESS NOTED OTHERWISE.
4. STAMP PLATE AS SHOWN W/ PROPER PLATE NO, FROG NO & WEIGHT OF RAIL.
5. PAINT MARK EACH PLATE WITH AN ARROW POINTING TOWARDS SWITCH POINT.
6. IJ ASSEMBLY SEE ES2800-99.



COUNTERSINK DETAIL "A"

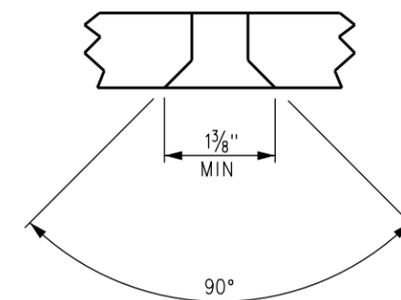
	DRAWN BY: A. CARLOS	DATE: 03/31/2011	SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES, SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE 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 INSULATED FROG GAUGE PLATE NO FG-1P FOR NO 8 RH OR LH TURNOUT 40'-0" SWITCH (16'-6" ALIGN)	STANDARD 2801 SCALE: NTS REVISION SHEET - 1 OF 1 CADD FILE: ES2801-34
X XX-XX-XX REV. DATE DESCRIPTION DES. ENG.	ASSISTANT DIRECTOR: STANDARDS & DESIGN DIRECTOR OF ENGINEERING AND CONSTRUCTION					



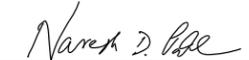
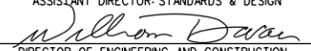
INSULATED FROG GAUGE PLATE NO FG-2P, 1" x 8", FLAT
 GAUGE PLATE INSULATED JOINT TO BE "3M" TYPE, HUCKED TO PLATE.

NOTES:

1. METAL AREAS TO BE PAINTED MUST BE CLEANED OF ALL IMPURITIES.
2. ANCHOR HOLE SIZE IS 1" DIA $\pm 1/32$ ".
3. FOR DETAILS OF FROG TURNOUT PLATES P-20-R THRU P-30-R SEE ES2801-42, ES2801-44, ES2801-46 UNLESS NOTED OTHERWISE.
4. STAMP PLATE AS SHOWN W/ PROPER PLATE NO & WEIGHT OF RAIL.
5. PAINT MARK EACH PLATE WITH AN ARROW POINTING TOWARDS SWITCH POINT.
6. IJ ASSEMBLY SEE ES2800-99.



COUNTERSINK DETAIL "A"

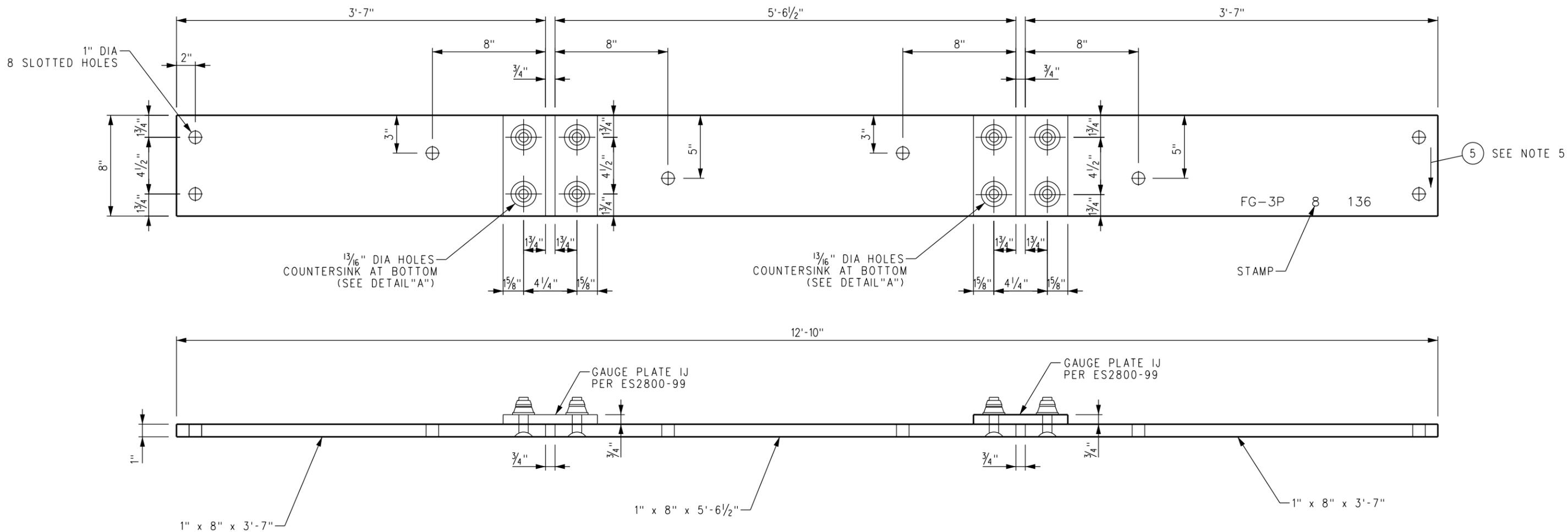
DRAWN BY: A. CARLOS		DATE: 03/31/2011	
 ASSISTANT DIRECTOR: STANDARDS & DESIGN			
 DIRECTOR OF ENGINEERING AND CONSTRUCTION			
REV.	DATE	DESCRIPTION	DES. ENG.
X	XX-XX-XX	REVISION	XX XX

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

ENGINEERING STANDARDS
 INSULATED FROG GAUGE PLATE NO FG-2P
 FOR NO 8 RH OR LH TURNOUT
 40'-0" SWITCH (16'-6" ALIGN)

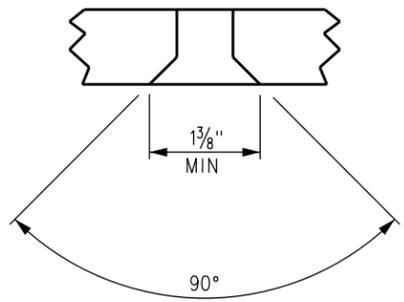
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-35



INSULATED FROG GAUGE PLATE NO FG-3P, 1" x 8", FLAT
 GAUGE PLATE INSULATED JOINT TO BE "3M" TYPE, HUCKED TO PLATE.

NOTES:

1. METAL AREAS TO BE PAINTED MUST BE CLEANED OF ALL IMPURITIES.
2. ANCHOR HOLE SIZE IS 1" DIA +/- 1/32".
3. FOR DETAILS OF FROG TURNOUT PLATES P-20-R THRU P-30-R SEE ES2801-42, ES2801-44, ES2801-46 UNLESS NOTED OTHERWISE.
4. STAMP PLATE AS SHOWN W/ PROPER PLATE NO, FROG NO & WEIGHT OF RAIL.
5. PAINT MARK EACH PLATE WITH AN ARROW POINTING TOWARDS SWITCH POINT.
6. IJ ASSEMBLY SEE ES2800-99.



COUNTERSINK DETAIL "A"

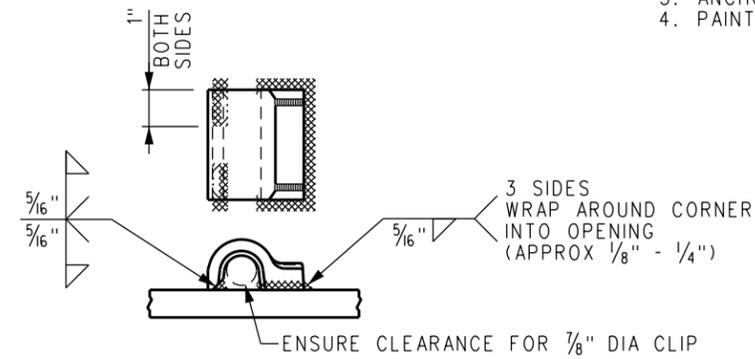
	DRAWN BY: A. CARLOS	DATE: 03/31/2011	SCRA ENGINEERING STANDARDS ARE INTENDED FOR SCRA APPROVED USES ONLY. FOR NON-SCRA APPROVED USES, SCRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY 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 SCRA. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS INSULATED FROG GAUGE PLATE NO FG-3P FOR NO 8 RH OR LH TURNOUT 40'-0" SWITCH (16'-6" ALIGN)	STANDARD 2801 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2801-36										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 5%;">REV.</th> <th style="width: 10%;">DATE</th> <th style="width: 45%;">DESCRIPTION</th> <th style="width: 5%;">DES.</th> <th style="width: 5%;">ENG.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	DESCRIPTION	DES.	ENG.						ASSISTANT DIRECTOR: STANDARDS & DESIGN DIRECTOR OF ENGINEERING AND CONSTRUCTION					
REV.	DATE	DESCRIPTION	DES.	ENG.												

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

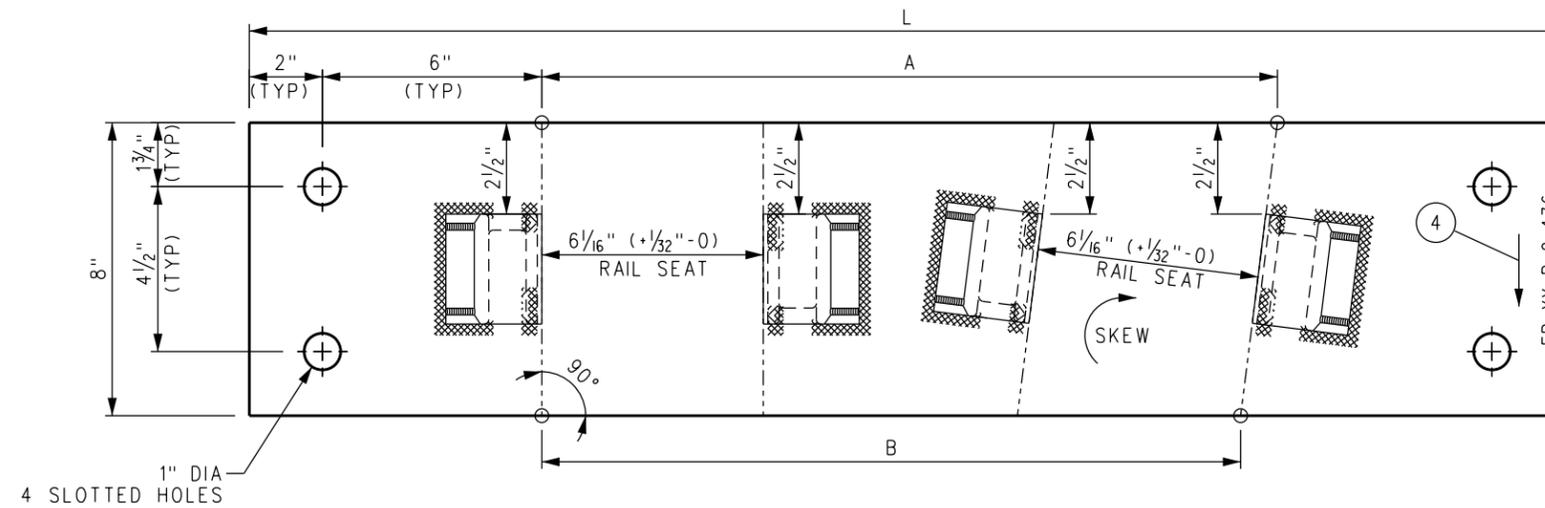
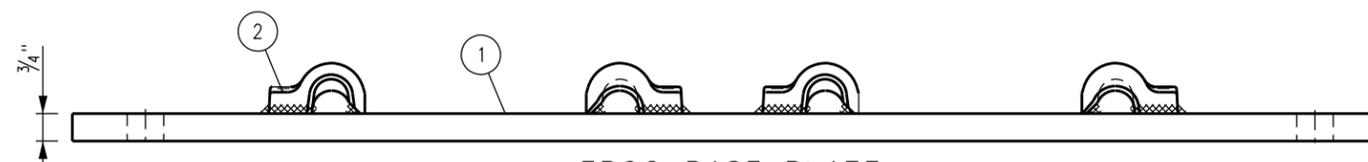


PLATE	A	B	L	PLATES REQ'D
FP-20-R	1'-10 11/16"	1'-9 25/32"	3'-2 1/2"	1
FP-30-R	1'-9 27/32"	1'-9 25/32"	3'-2"	1



FROG BASE PLATE

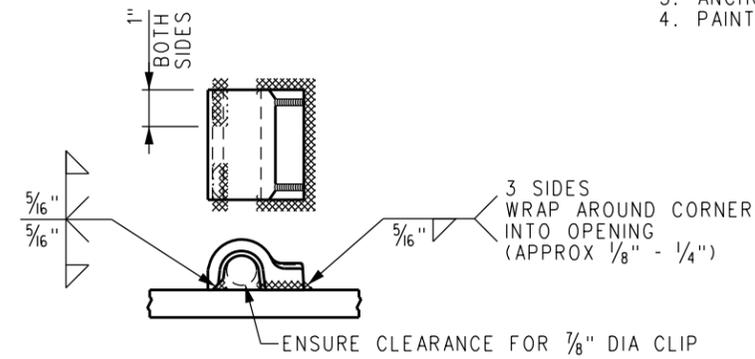
	<small>DRAWN BY:</small> HDR	<small>DATE:</small> 03/31/2011	<small>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE 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.</small>	METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS NO 8 RBM FROG RH FROG BASE PLATES FP-20-R, FP-30-R WOOD TIES-136 LB RE RAIL	<small>STANDARD</small> 2801 <small>SCALE:</small> NTS <small>REVISION SHEET</small> 1 OF 1 <small>CADD FILE:</small> ES2801-42
<small>REVISION</small>	<small>DATE</small>	<small>DESCRIPTION</small>	<small>DES.</small> <small>ENG.</small>	<i>Nareh D. Papp</i> ASSISTANT DIRECTOR: STANDARDS & DESIGN <i>William Dacan</i> DIRECTOR OF ENGINEERING AND CONSTRUCTION		

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

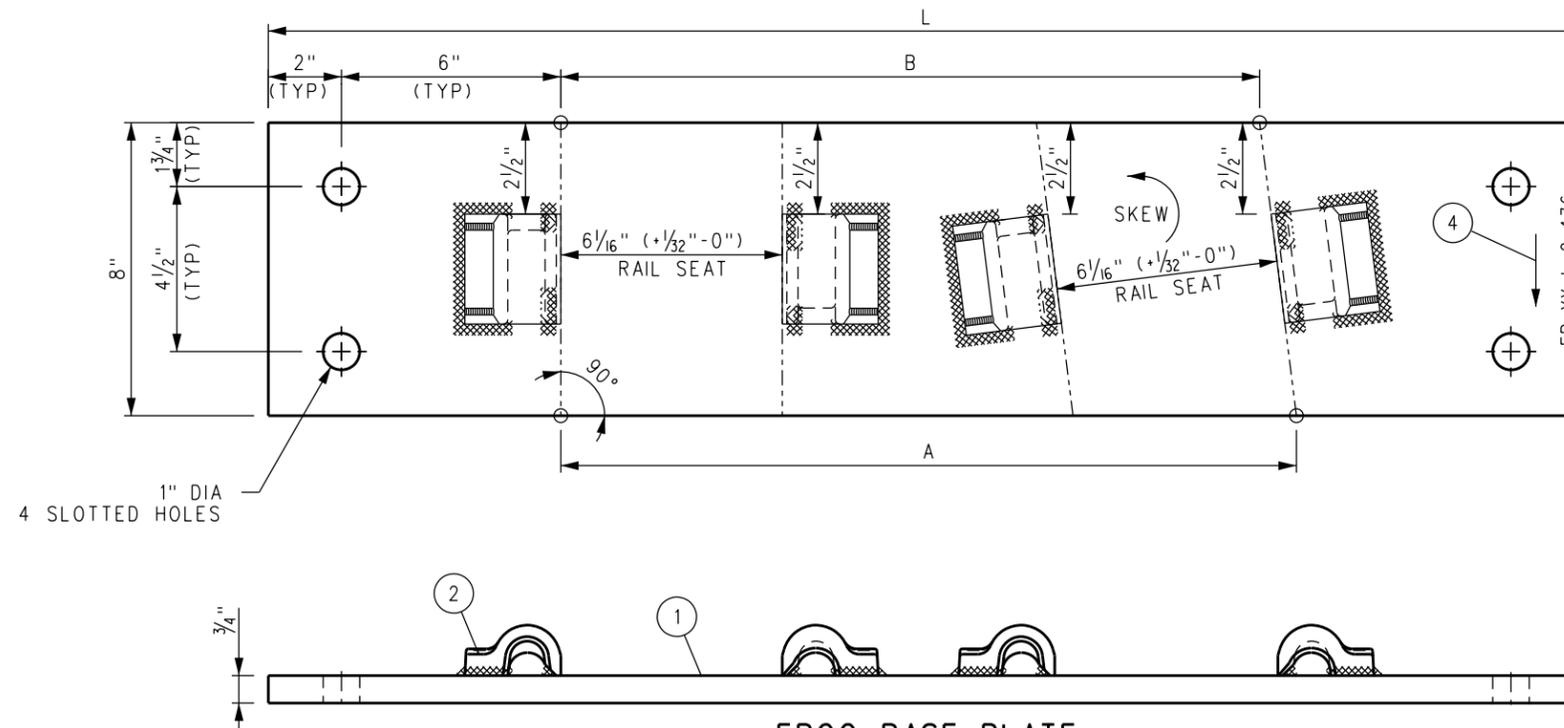


PLATE	A	B	L	PLATES REQ'D
FP-20-L	1'-10 11/16"	1'-9 25/32"	3'-2 1/2"	1
FP-30-L	1'-9 27/32"	1'-9 25/32"	3'-2"	1

FROG BASE PLATE

DRAWN BY: <i>Narek D. Bze</i>		HDR: <i>Willson Dava</i>	DATE: 03/31/2011
ASSISTANT DIRECTOR: STANDARDS & DESIGN		DIRECTOR OF ENGINEERING AND CONSTRUCTION	
XX	XX-XX-XX	XX	XX
REV.	DATE	DESCRIPTION	DES. ENG.

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

ENGINEERING STANDARDS

NO 8 RBM FROG LH
FROG BASE PLATES FP-20-L, FP-30-L
WOOD TIES-136 LB RE RAIL

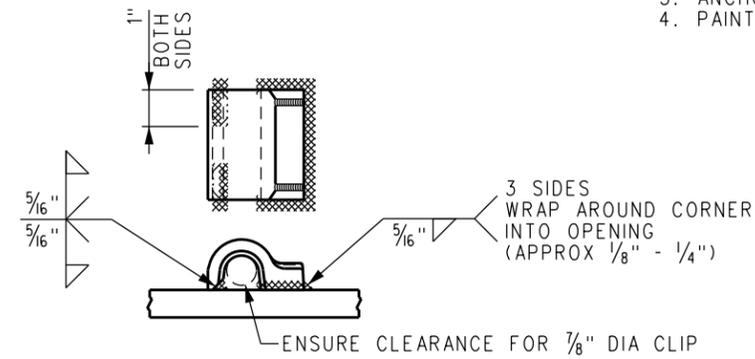
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-43

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

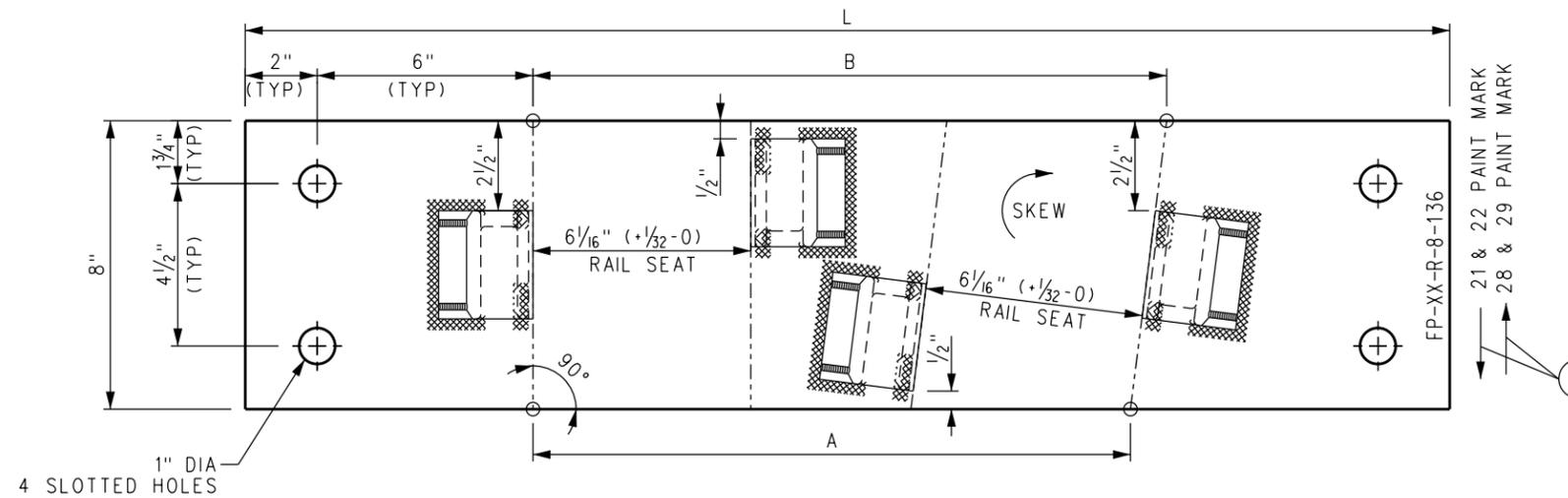
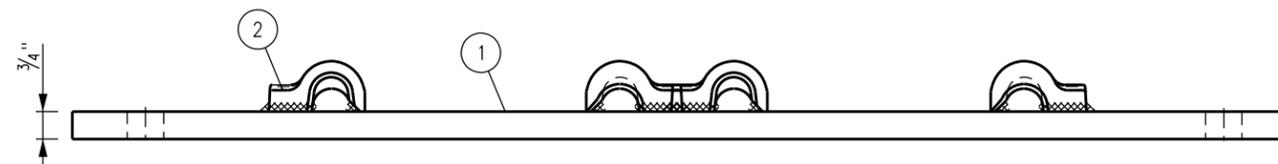


PLATE	A	B	L	PLATES REQ'D
FP-21-R	1'-7 5/8"	1'-8 19/32"	3'-0 1/2"	1
FP-22-R	1'-5 1/4"	1'-6 1/4"	2'-10"	1
FP-28-R	1'-3 15/16"	1'-4 15/16"	2'-9"	1
FP-29-R	1'-6 3/8"	1'-7 3/8"	2'-11 1/2"	1



FROG BASE PLATE

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

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

ENGINEERING STANDARDS
NO 8 RBM FROG
RH FROG BASE PLATES
FP-21-R, FP-22-R, FP-28-R, FP-29-R
WOOD TIES-136 LB RE RAIL

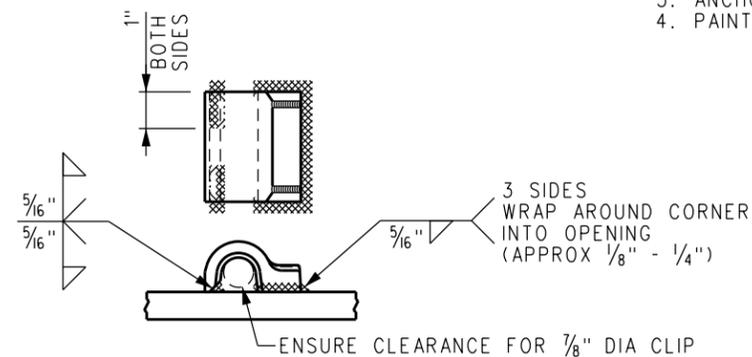
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-44

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

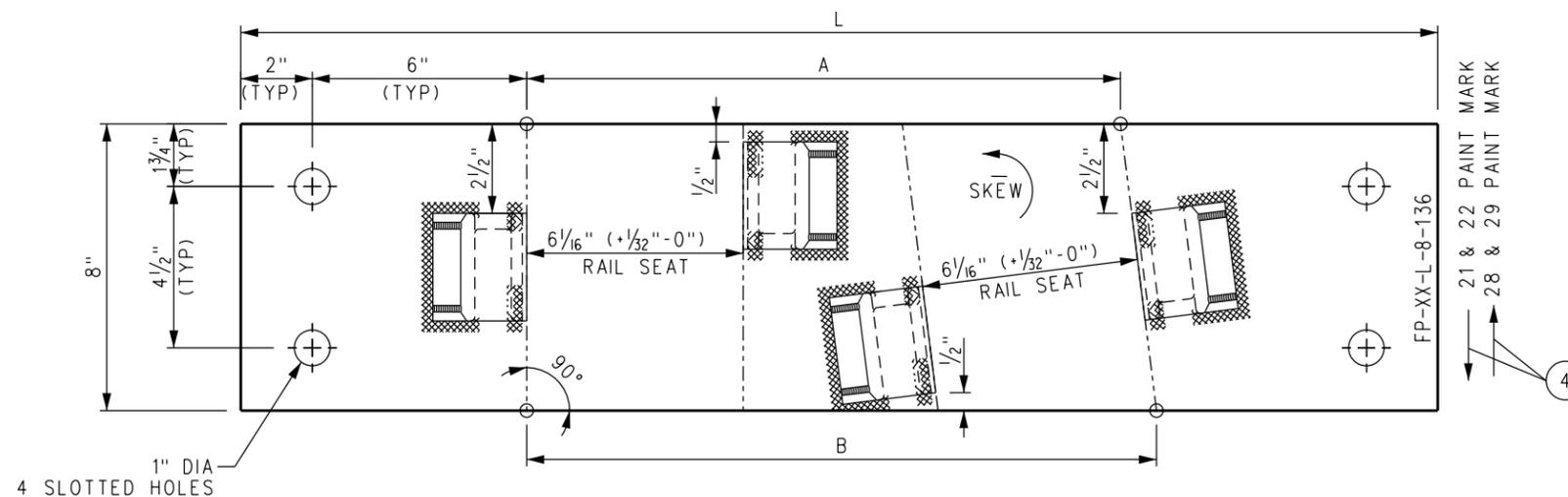
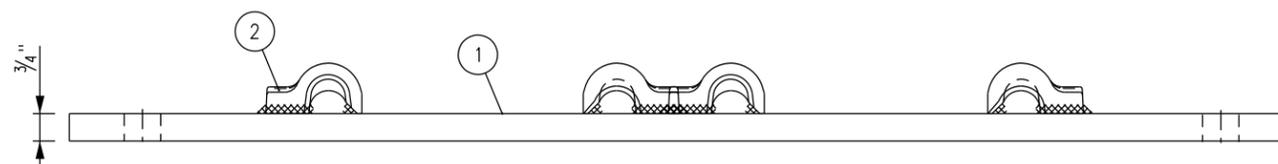


PLATE	A	B	L	PLATES REQ'D
FP-21-L	1'-7 5/8"	1'-8 19/32"	3'-0 1/2"	1
FP-22-L	1'-5 1/4"	1'-6 1/4"	2'-10"	1
FP-28-L	1'-3 15/16"	1'-4 15/16"	2'-9"	1
FP-29-L	1'-6 3/8"	1'-7 3/8"	2'-11 1/2"	1



FROG BASE PLATE

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>Wilson Dacan</i>	DATE: 03/31/2011
ASSISTANT DIRECTOR: STANDARDS & DESIGN		DIRECTOR OF ENGINEERING AND CONSTRUCTION	
XX	XX-XX-XX	XX	XX
REV.	DATE	DESCRIPTION	DES. ENG.

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

ENGINEERING STANDARDS
NO 8 RBM FROG
LH FROG BASE PLATES
FP-21-L, FP-22-L, FP-28-L, FP-29-L
WOOD TIES-136 LB RE RAIL

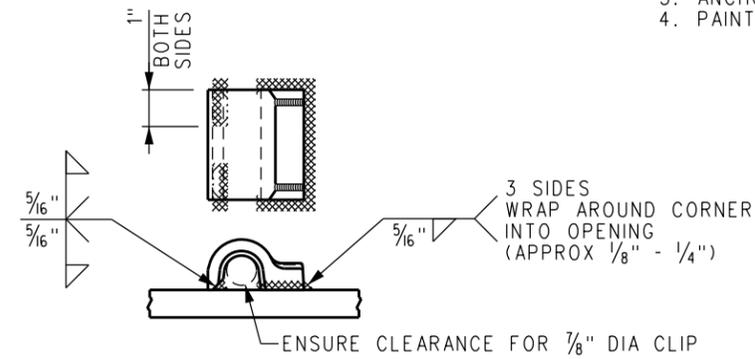
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-45

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

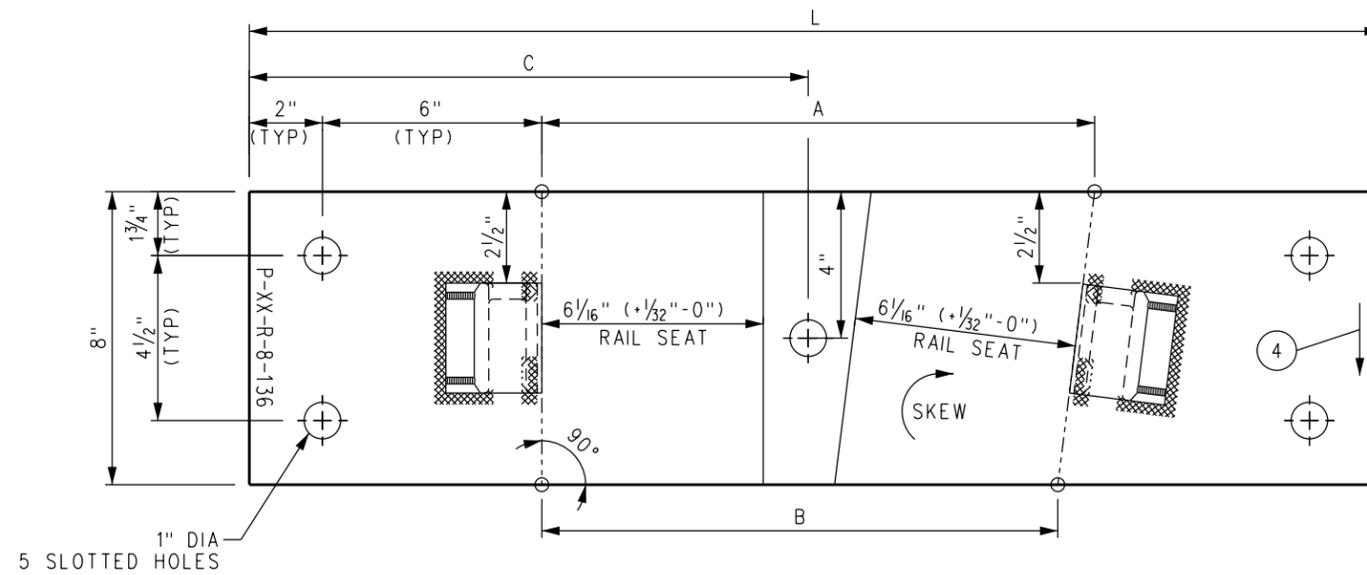
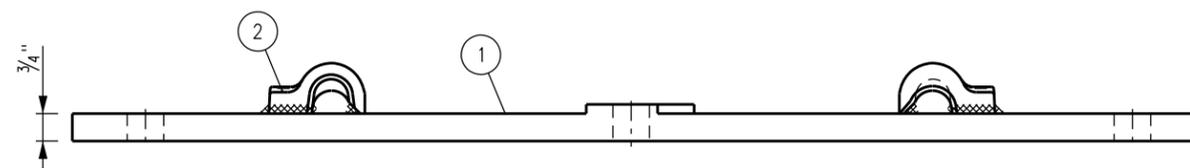


PLATE	A	B	C	L	CLIP #	PLATES REQ'D
FP-27-R	1'-2 1/2"	1'-1 1/2"	1'-2 3/32"	2'-6 1/2"	E-3706	1



FROG BASE PLATE

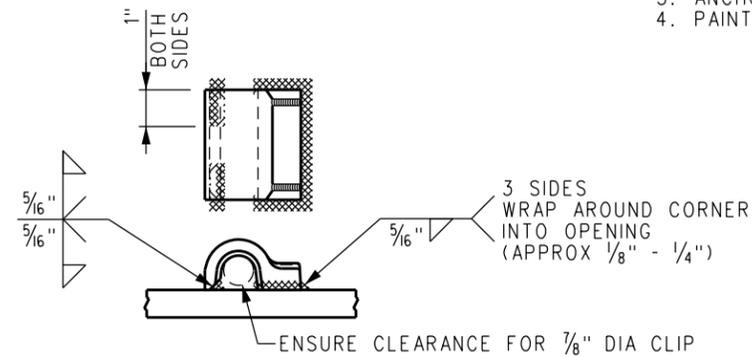
DRAWN BY: <i>Nareh D. Bae</i> HDR DATE: 03/31/2011 ASSISTANT DIRECTOR: STANDARDS & DESIGN		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION 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 2801
REV. DATE DESCRIPTION DES. ENG.				NO 8 RBM FROG RH FROG BASE PLATES FP-27-R WOOD TIES-136 LB RE RAIL		SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2801-46

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

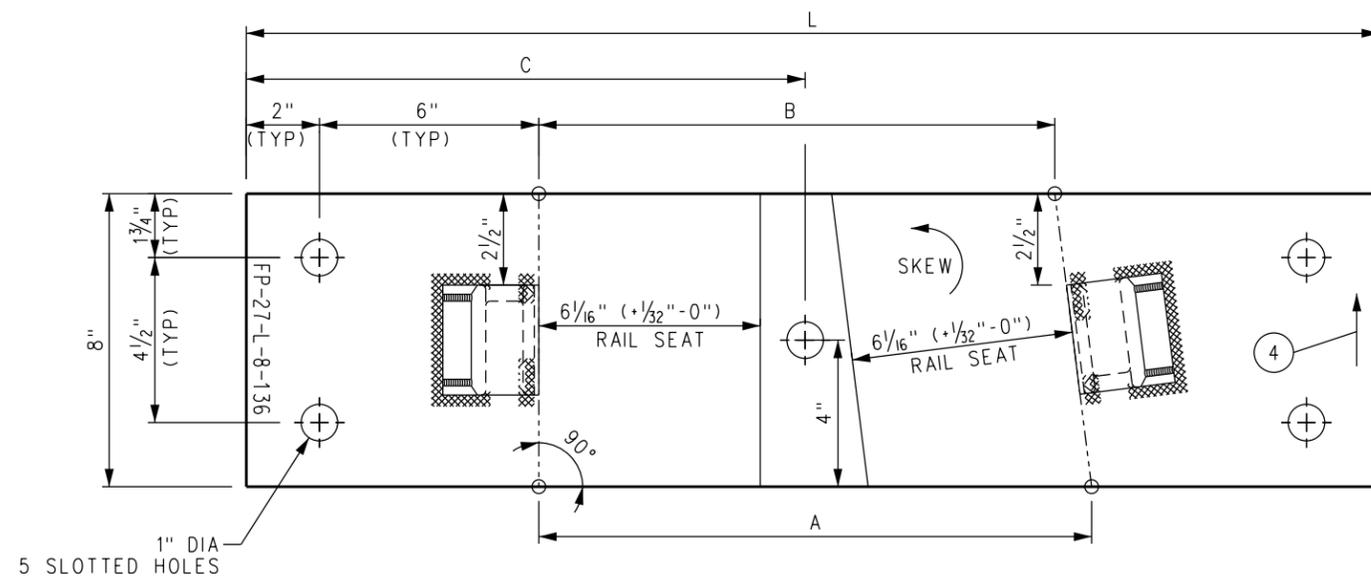
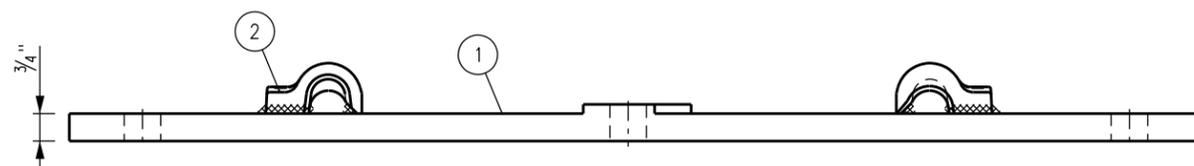


PLATE	A	B	C	L	CLIP #	PLATES REQ'D
FP-27-L	1'-2 1/2"	1'-1 1/2"	1'-2 3/32"	2'-6 1/2"	E-3706	1



FROG BASE PLATE

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

DRAWN BY: *Nareh D. Bae* HDR 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 8 RBM FROG LH
 FROG BASE PLATES FP-27-L
 WOOD TIES-136 LB RE RAIL

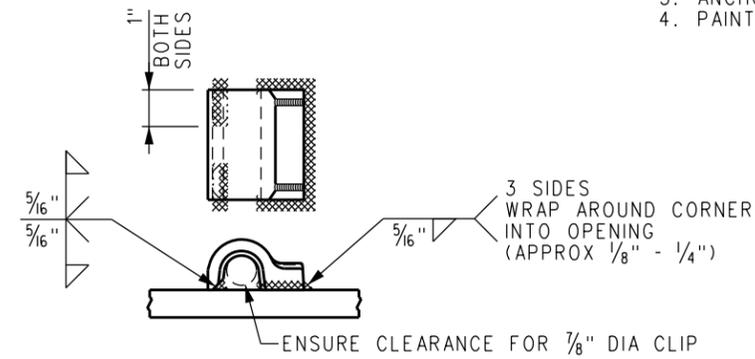
STANDARD	2801
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2801-47

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

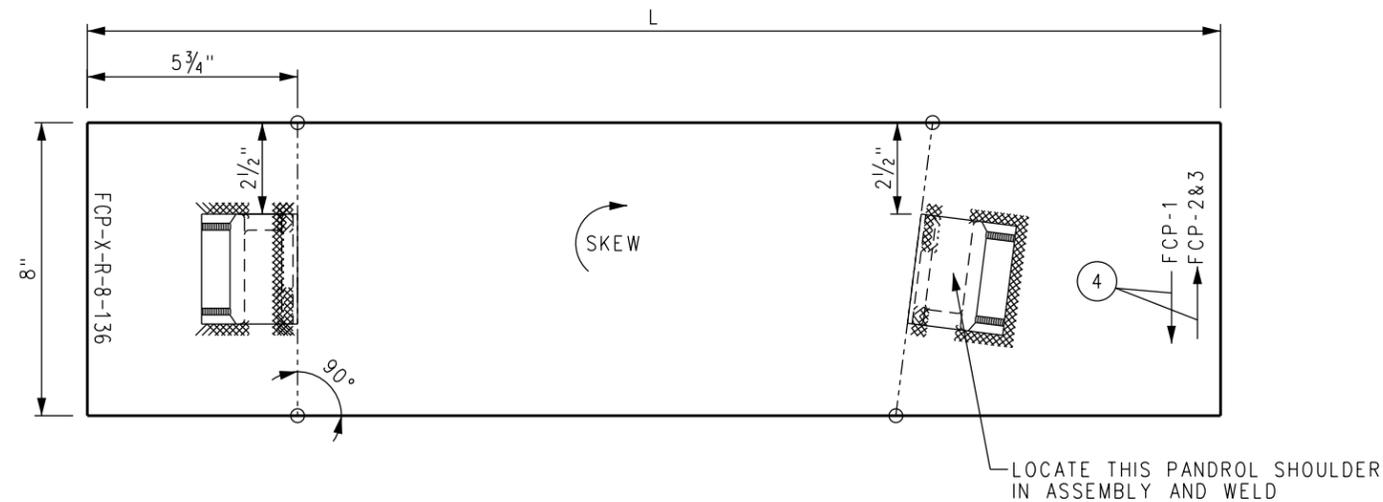
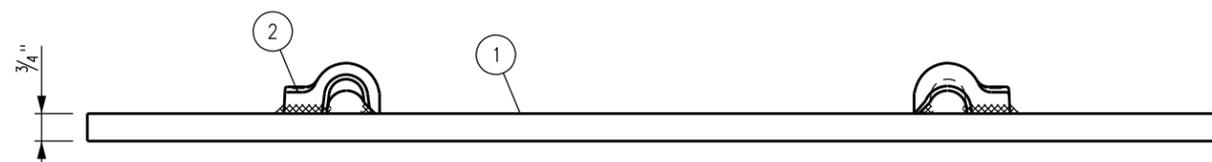


PLATE	L	PLATES REQ'D
FCP-1-R	2'-3 1/4"	1
FCP-2-R	2'-5 1/2"	1
FCP-3-R	2'-9"	1



FROG BASE PLATE

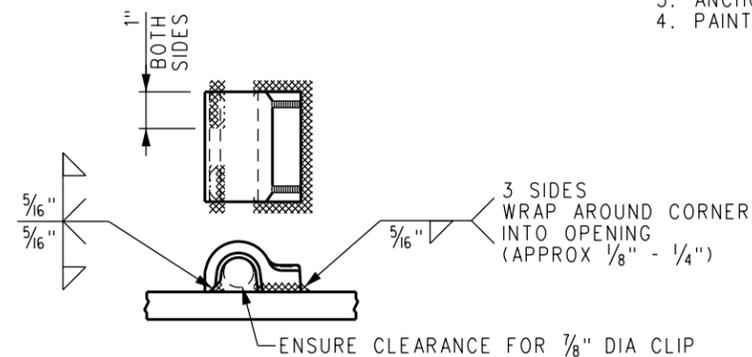
	<small>DRAWN BY:</small> HDR	<small>DATE:</small> 03/31/2011	<small>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE 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.</small>	METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS NO 8 RBM FROG RH FROG BASE PLATES FCP-1-R, FCP-2-R, FCP-3-R WOOD TIES-136 LB RE RAIL	<small>STANDARD</small> 2801 <small>SCALE:</small> NTS <small>REVISION SHEET</small> 1 OF 1 <small>CADD FILE:</small> ES2801-48
<small>REV.</small>	<small>DATE</small>	<small>DESCRIPTION</small>	<small>DES.</small>	<small>ENG.</small>		
X	XX-XX-XX		XX	XX		

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	FLAT BAR, ASTM A36, 3/4" x 8" x L	-	
2	2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32"
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.



FORGED SHOULDER WELDING DETAIL

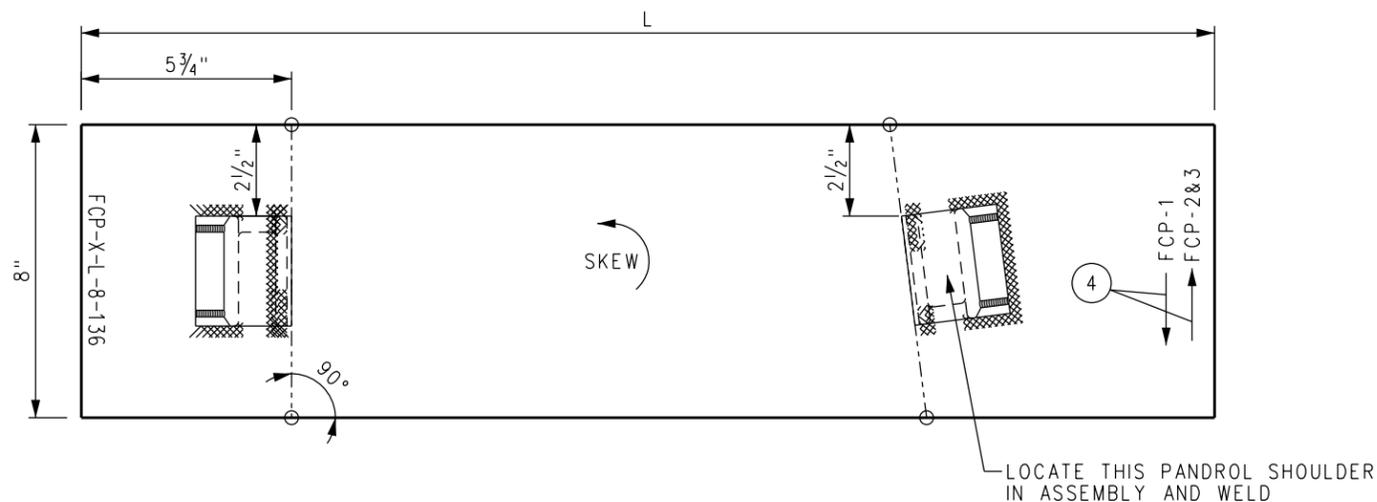
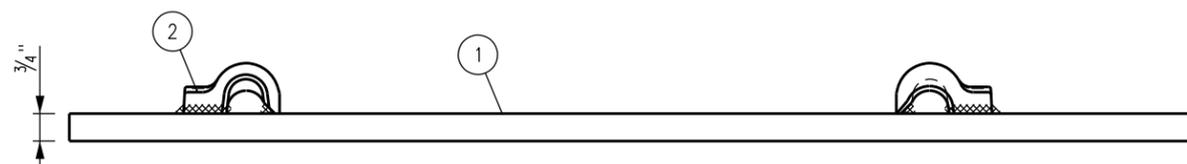


PLATE	L	PLATES REQ'D
FCP-1-L	2'-3 1/4"	1
FCP-2-L	2'-5 1/2"	1
FCP-3-L	2'-9"	1



FROG BASE PLATE

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

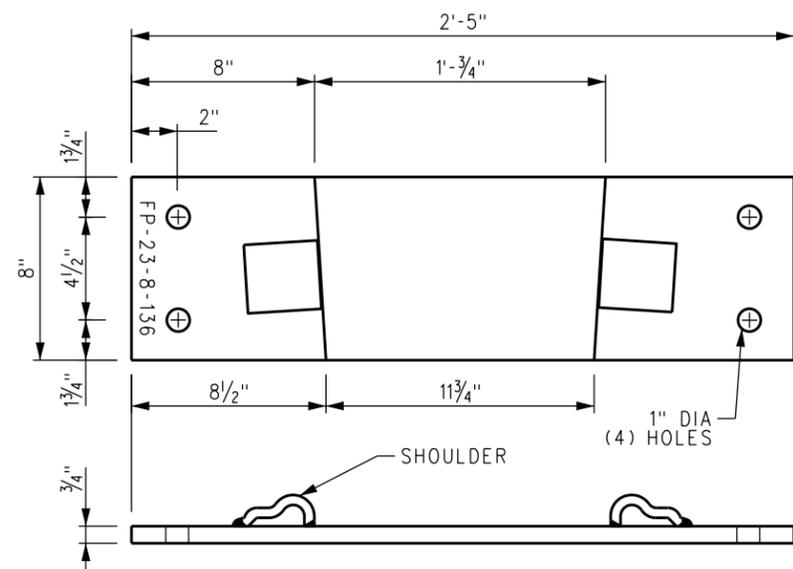
DRAWN BY: *Nareh D. Bae* HDR DATE: 03/31/2011
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William Dava
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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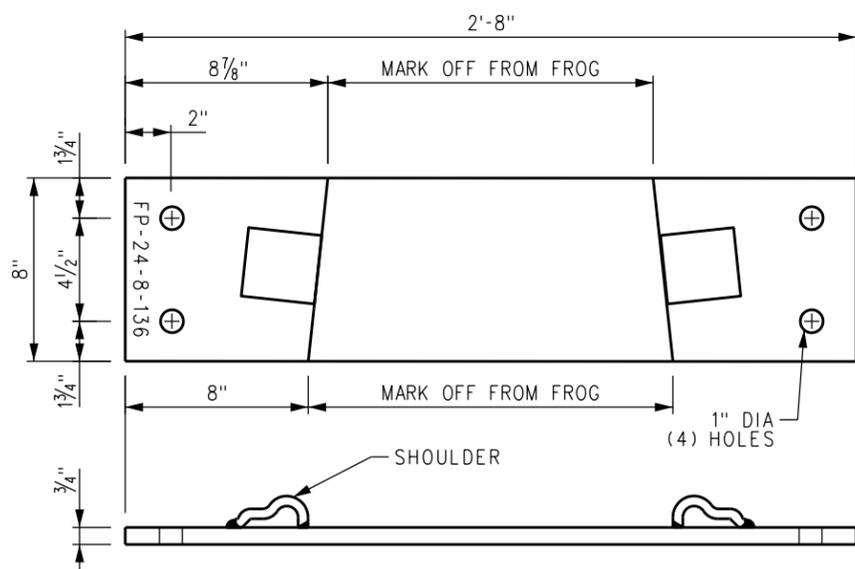
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 NO 8 RBM FROG LH
 FROG BASE PLATES FCP-1-L, FCP-2-L, FCP-3-L
 WOOD TIES-136 LB RE RAIL

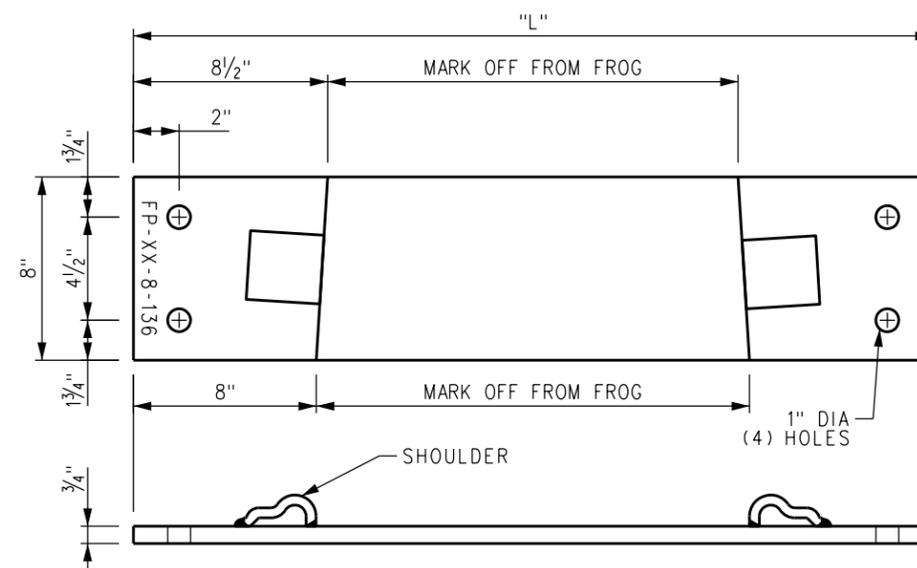
STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-49



FROG PLATE - FP-23
 $\frac{3}{4}$ " x 8" x 2'-5" - FLAT



FROG PLATE - FP-24
 $\frac{3}{4}$ " x 8" x 2'-8" - FLAT



FROG PLATE - FP-25 AND FP-26
 $\frac{3}{4}$ " x 8" - FLAT (SEE TABLE FOR LENGTHS)

DIMENSION TABLE		
PLATE	"L"	NO REQ'D
FP-25	2'-9"	1
FP-26	2'-11"	1

NOTES:

1. FOR NO 8 FROG AND PLATE LOCATIONS SEE ES2801-31 & ES2801-32.
2. ALL SHOULDERS TO BE PANDROL TYPE 1 FORGED.
(TYPICAL 2 PER PLATE)
3. FURNISH PANDROL 'e' CLIPS. SEE ES2362.
4. STAMP PLATE AS SHOWN W/ PROPER PLATE NO, FROG NO & WEIGHT OF RAIL.

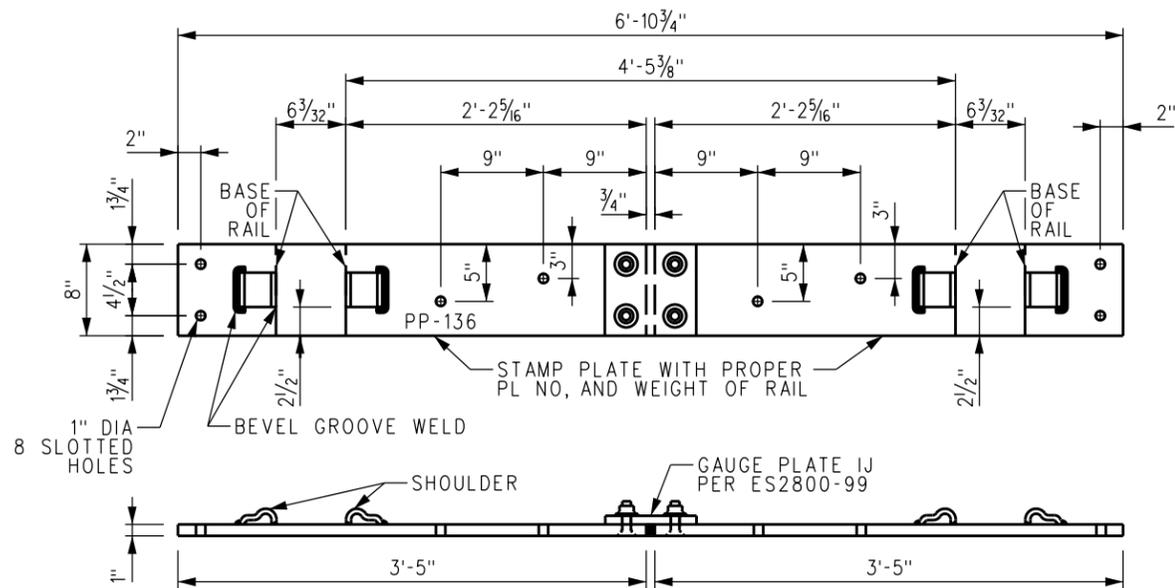
REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX

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

ENGINEERING STANDARDS
 NO 8 136 LB RBM FROG
 PLATE FP-23 TO FP-26 DETAILS

STANDARD	2801
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2801-50

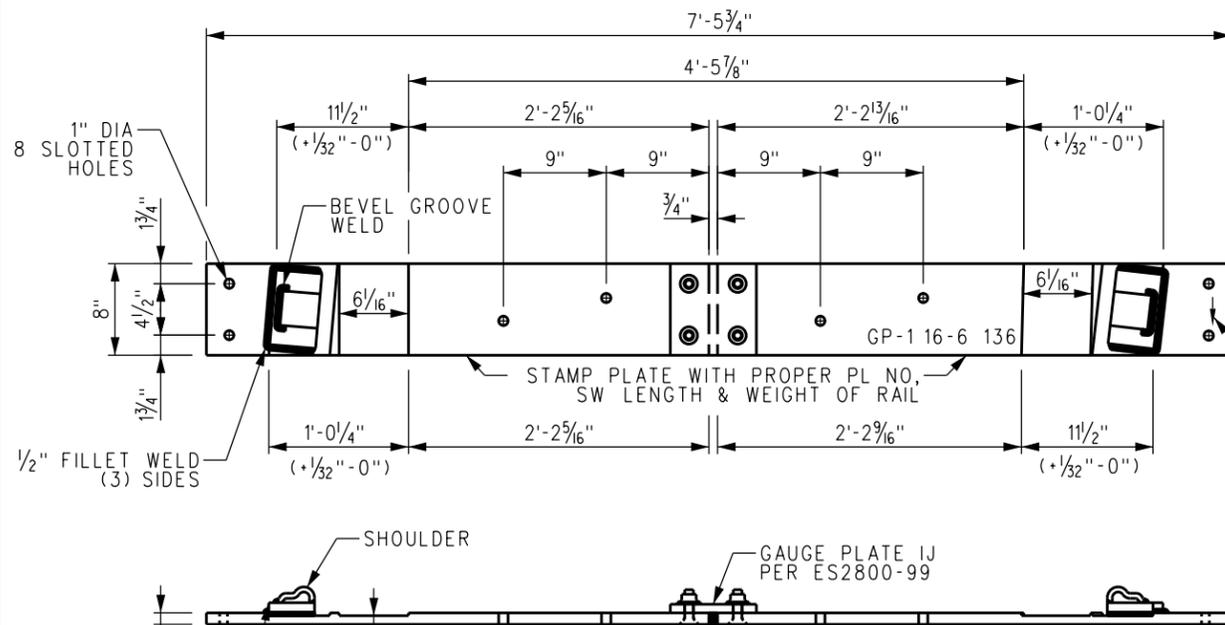


INSULATED GAUGE PLATE P-P

1" x 8" - FLAT - W/ INSULATION
(3 PIECES REQ'D AS SHOWN)

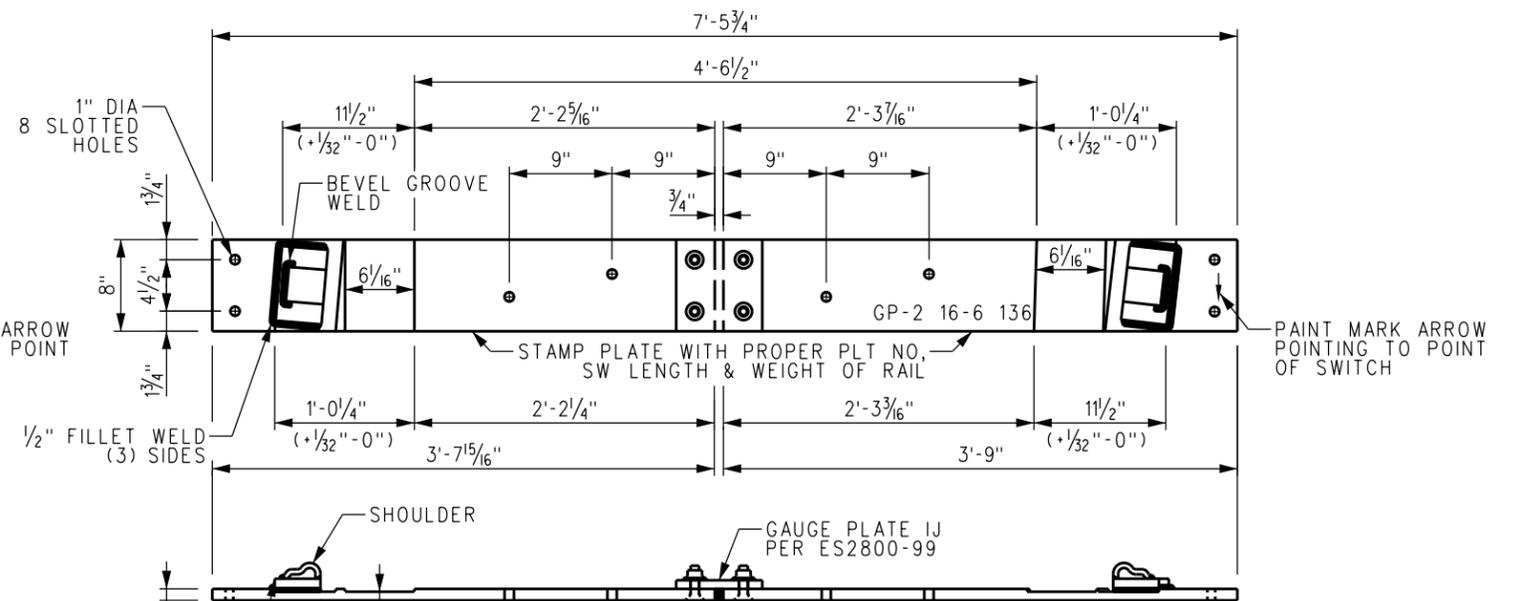
NOTES:

1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. THE PANDROL SHOULDER SHALL BE A TYPE 1 FORGED. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO ALL PLATES WITH A MINIMUM 2 PASS $\frac{3}{8}$ " + FILLET WELD ALONG THE BEVELED GROOVES OF THE SHOULDER. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
3. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 8 RIGHT HAND, HAND OPERATED TURNOUT. FOR A LEFT HAND TURNOUT, PLATES ARE TO BE OPPOSITE.
4. IJ ASSEMBLY SEE ES2800-99.



INSULATED GAUGE PLATE GP-1 - USED AT POINT OF SWITCH

1" x 8" - MILLED - W/ INSULATION & ADJ RAIL BRACES
(3 PIECES REQ'D AS SHOWN)



INSULATED GAUGE PLATE GP-2 - USED AT POINT OF SWITCH

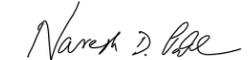
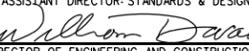
1" x 8" - MILLED - W/ INSULATION & ADJ RAIL BRACES
(3 PIECES REQ'D AS SHOWN)

NOTE:

1. SERRATED WASHER AND BRACE PLATE NOT SHOWN FOR CLARITY.

NOTE:

1. SERRATED WASHER AND BRACE PLATE NOT SHOWN FOR CLARITY.

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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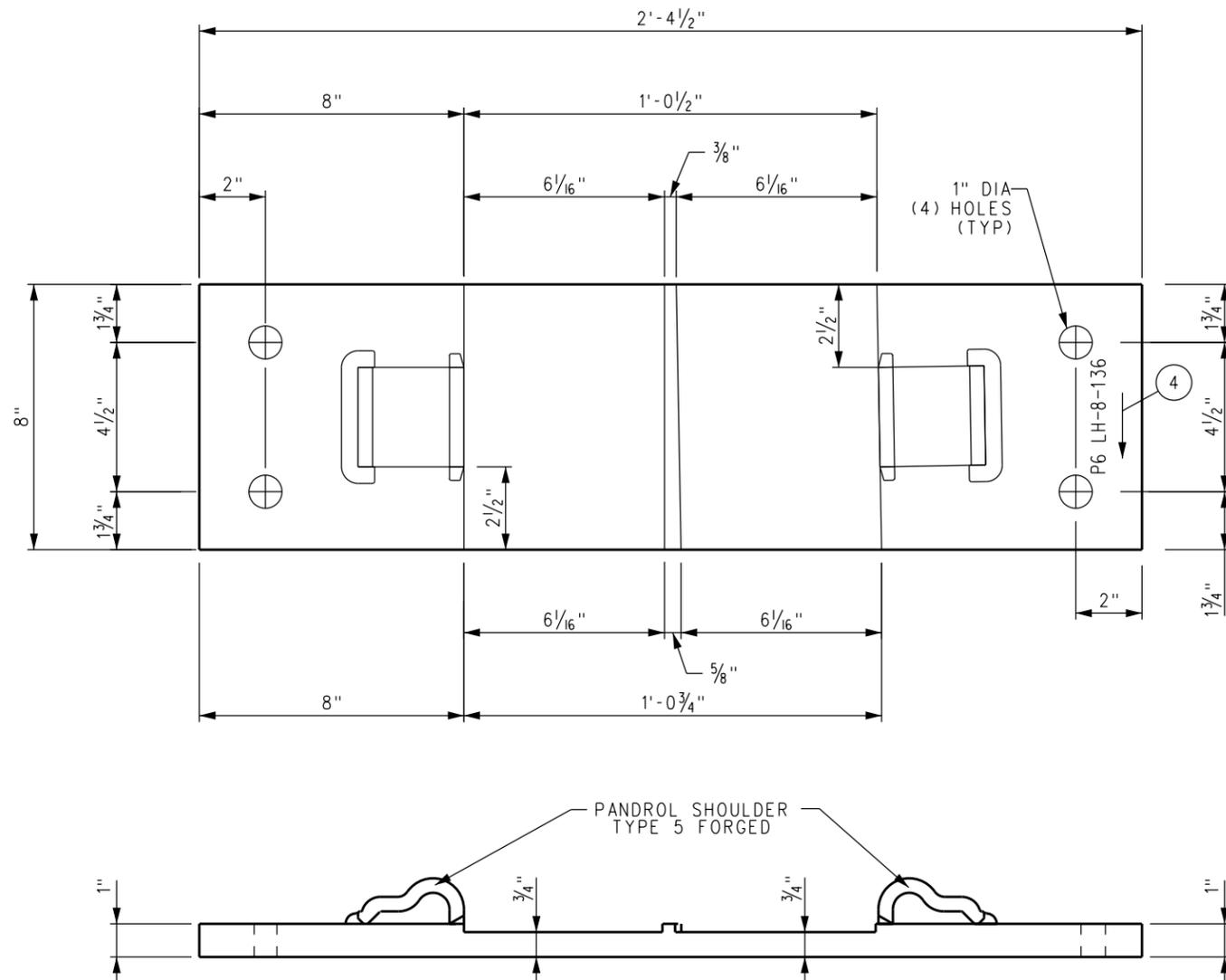


SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

NO 8 INSULATED GAUGE PLATE DETAILS
P-P, GP-1, AND GP-2

STANDARD	2801
SCALE	NTS
REVISION	SHEET
-	1 OF 1
CADD FILE	ES2801-60



HEEL PLATES P6-LH
 1" x 8" x 2'-4 1/2" (MILLED) W/ PANDROLS
 (2 EA) FOR LEFT HAND TURNOUT

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA \pm 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 5 FORGED AND 2 PANDROL CLIPS NO E-2055.

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

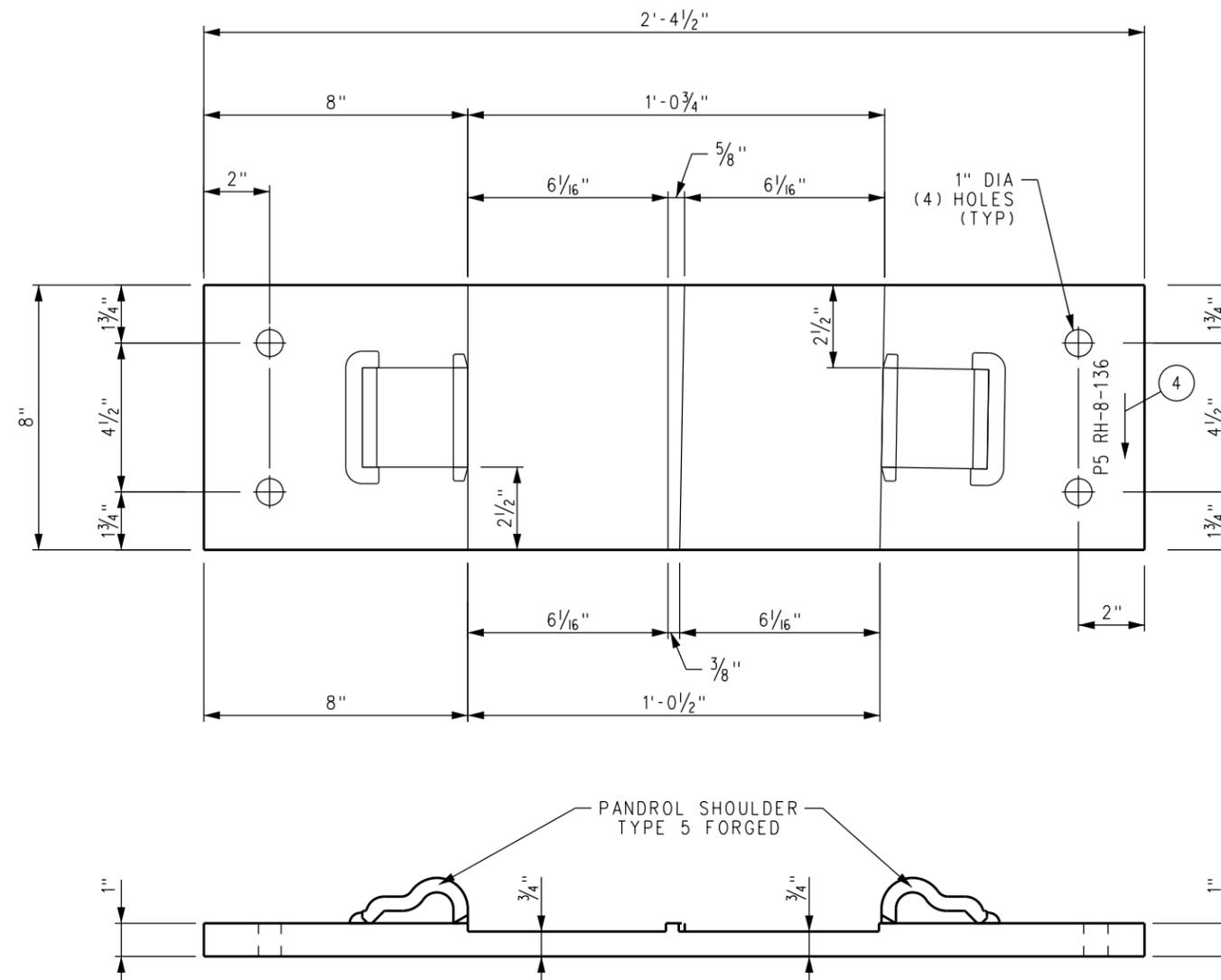
DRAWN BY: *Nareh D. Papp*
 HDR DATE: 03/31/2011
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William Davan
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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ENGINEERING STANDARDS
 HEEL PLATES P6-LH
 NO 8 LH WOOD TIE TURNOUT
 40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-61



HEEL PLATES P5-RH
 1" x 8" x 2'-4 1/2" (MILLED) W/ PANDROLS
 (2 EA) FOR RIGHT HAND TURNOUT

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 5 FORGED AND 2 PANDROL CLIPS NO E-2055.

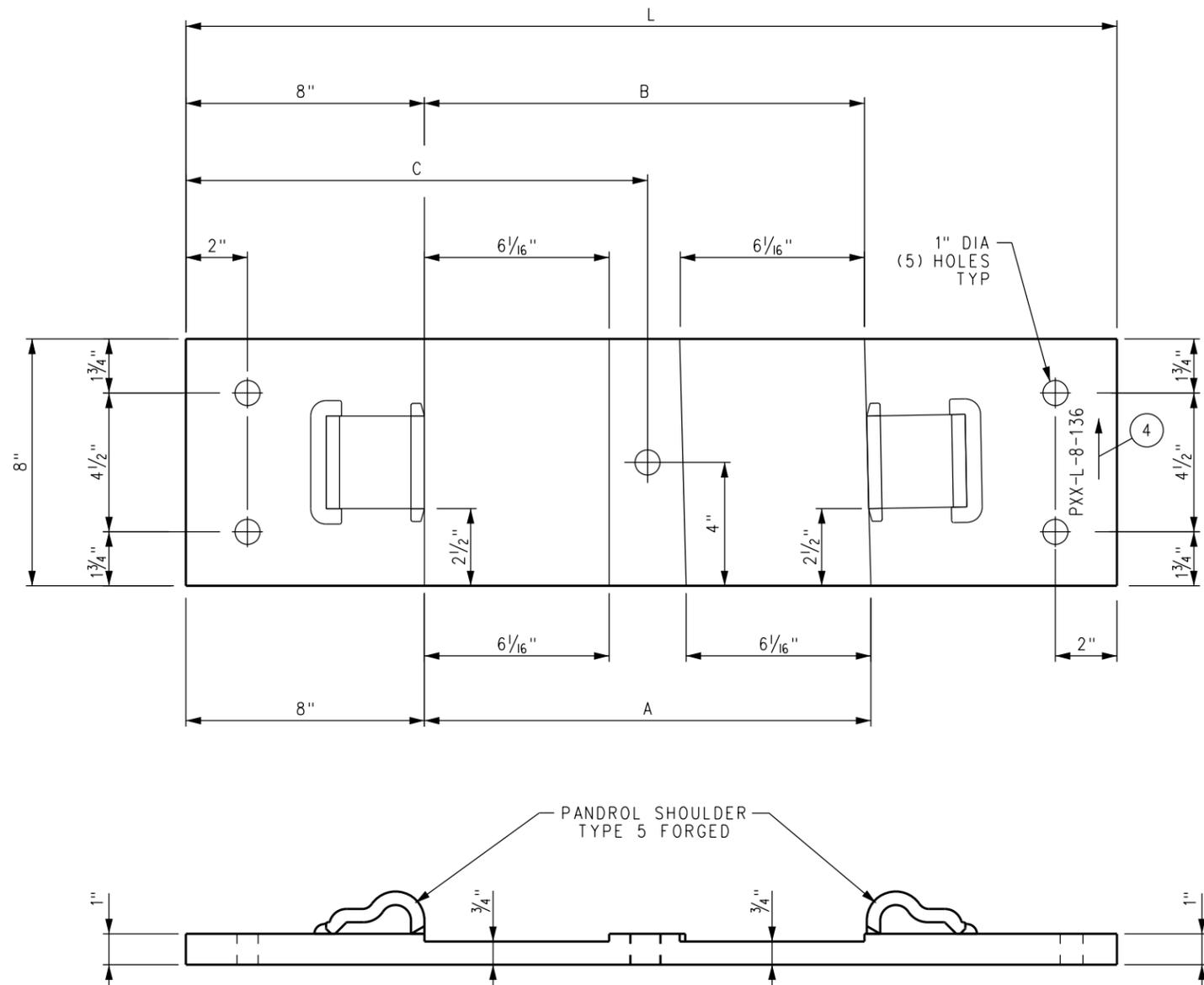
DRAWN BY: <i>Naresh D. Papp</i>		HDR: <i>Naresh D. Papp</i>		DATE: 03/31/2011	
REVISION		ASSISTANT DIRECTOR: STANDARDS & DESIGN		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY.	
DESCRIPTION		DIRECTOR OF ENGINEERING AND CONSTRUCTION		FOR NON-SCRR APPROVED USES.	
REV.	DATE	DES.	ENG.	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.	

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

ENGINEERING STANDARDS
 HEEL PLATES P5-RH
 NO 8 RH WOOD TIE TURNOUT
 40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-62



DIMENSION TABLE						
PLATE	A	B	C	L	CLIP NO	PLATES REQ'D
P-10-L	1'-1 1/16"	1'-1 5/32"	1'-2 5/8"	2'-5"	E-3706	2 EA
P-11-L	1'-2 3/16"	1'-1 7/8"	1'-3"	2'-6"	E-3706	2 EA
P-12-L	1'-3"	1'-2 11/16"	1'-3 3/8"	2'-7"	E-3707	2 EA
P-13-L	1'-3 29/32"	1'-3 17/32"	1'-3 13/16"	2'-7 1/2"	E-3708	2 EA

TURNOUT PLATES P-10-L THROUGH P-13-L
 1" x 8" x L (MILLED) W/ PANDROLS
 FOR LEFT HAND TURNOUT

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 5 FORGED, 2 PANDROL CLIPS NO E-2055, AND 1 DIRAIL HOLD-DOWN CLIP (SEE TABLE).

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

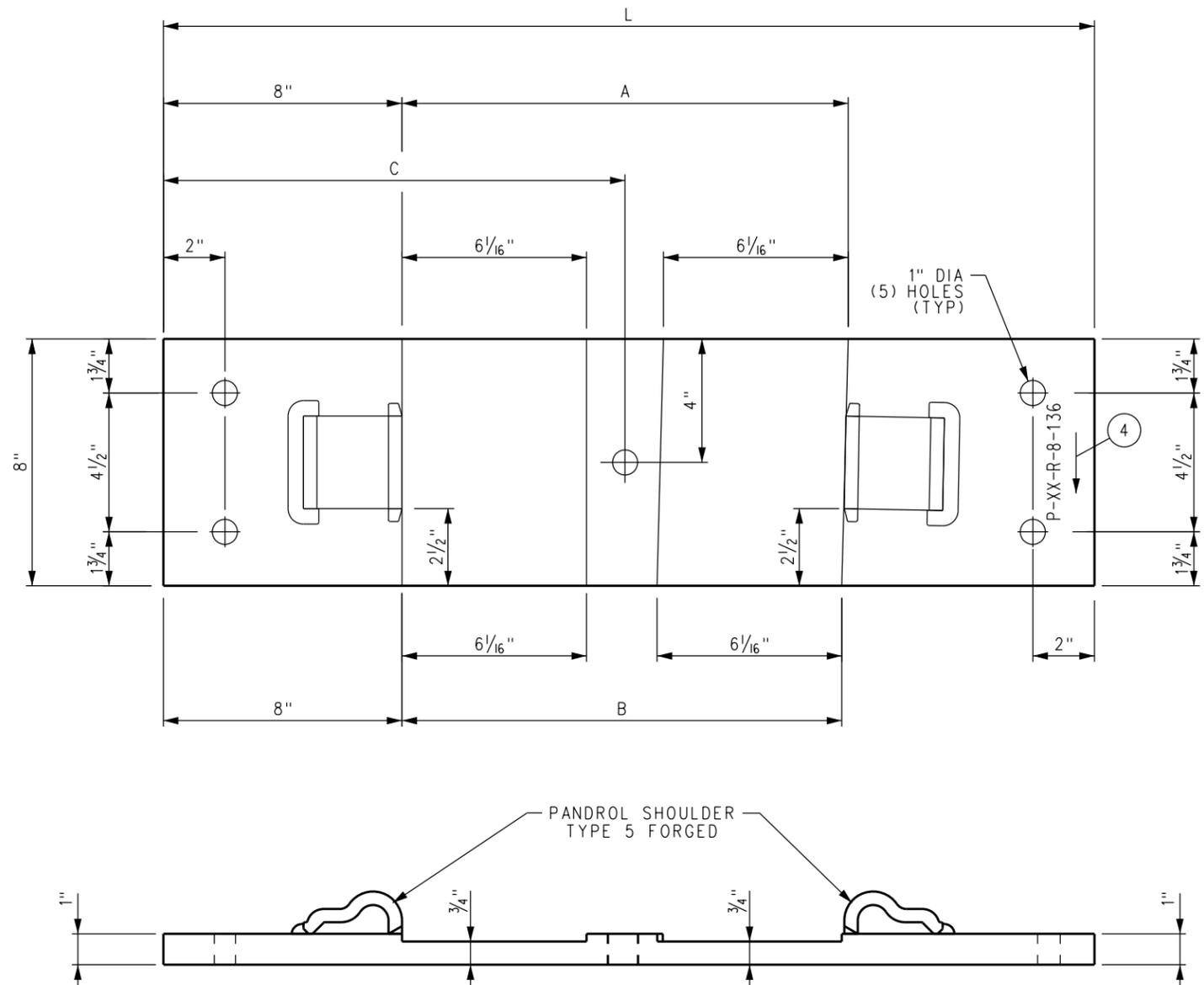
DRAWN BY: *Nareh D. Papp* HDR DATE: 03/31/2011
 ASSISTANT DIRECTOR: STANDARDS & DESIGN
William Davan
 DIRECTOR OF ENGINEERING AND CONSTRUCTION

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ENGINEERING STANDARDS
 TURNOUT PLATES P-10-L THRU P-13-L
 NO 8 LH WOOD TIE TURNOUT FOR
 40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-63



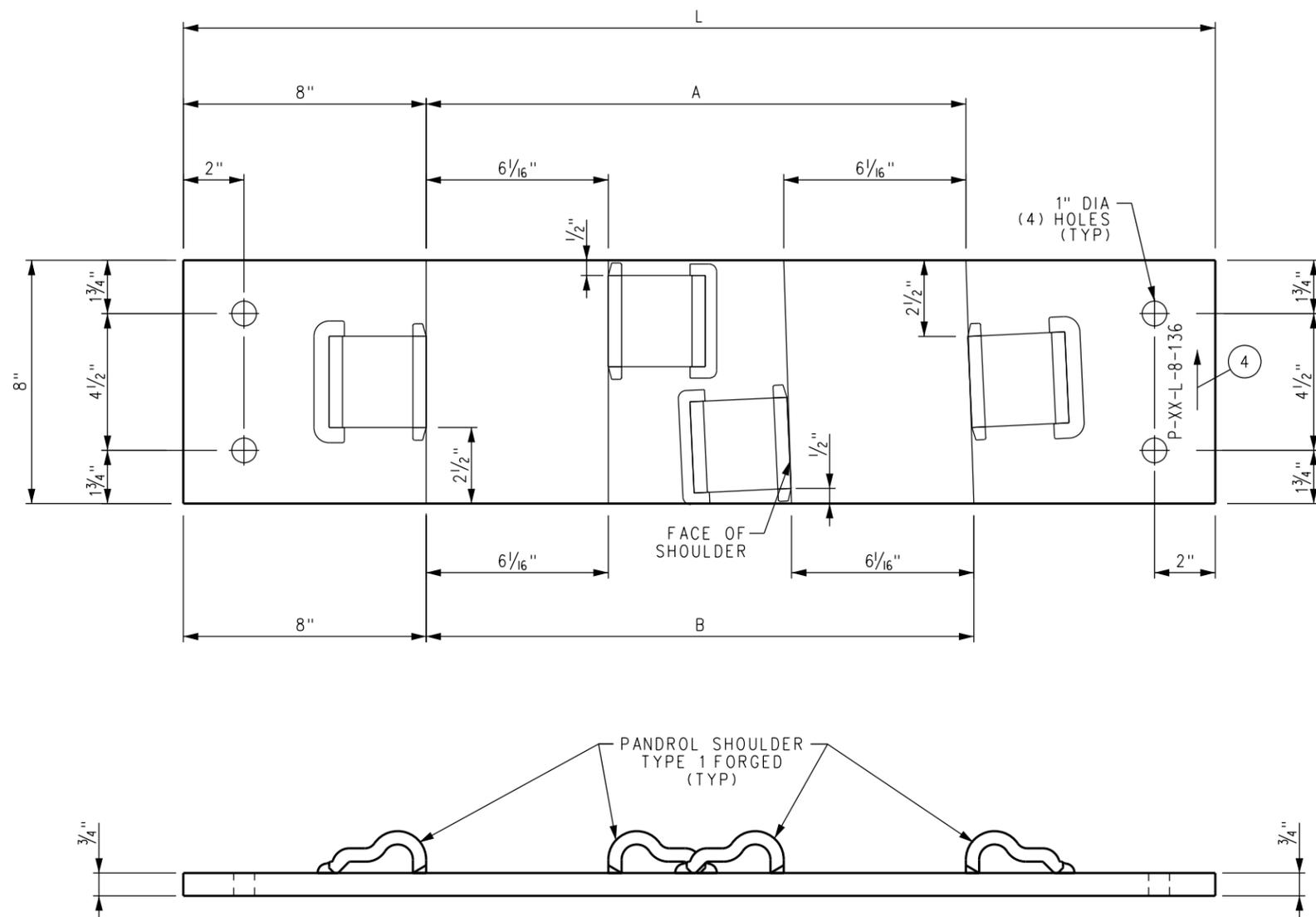
DIMENSION TABLE						
PLATE	A	B	C	L	CLIP NO	PLATES REQ'D
P-10-R	1'-1 7/16"	1'-1 5/32"	1'-2 5/8"	2'-5"	E-3706	2 EA
P-11-R	1'-2 3/16"	1'-1 7/8"	1'-3"	2'-6"	E-3706	2 EA
P-12-R	1'-3"	1'-2 11/16"	1'-3 3/8"	2'-7"	E-3707	2 EA
P-13-R	1'-3 29/32"	1'-3 17/32"	1'-3 13/16"	2'-7 1/2"	E-3708	2 EA

TURNOUT PLATES P-10-R THROUGH P-13-R
 1" x 8" x L (MILLED) W/ PANDROLS
 FOR RIGHT HAND TURNOUT

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 5 FORGED, 2 PANDROL CLIPS NO E-2055, AND 1 D RAIL HOLD-DOWN CLIP (SEE TABLE).

DRAWN BY: <i>Naresh D. Papp</i> HDR: DATE: 03/31/2011 ASSISTANT DIRECTOR: STANDARDS & DESIGN		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 TURNOUT PLATES P-10-R THRU P-13-R NO 8 RH WOOD TIE TURNOUT FOR 40'-0" SWITCH (16'-6")		STANDARD 2801 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2801-64
REV. DATE DESCRIPTION DES. ENG.				USERNAME: carlosa DATE PLOTTED: 10/5/2011 2:45:37 PM PLOT DRIVER: S:\Plot Drivers\pdf.plt FILENAME: s:\V8EngStds\2000\Turnouts\No 8 Turnout\ES2801-64.dgn		



DIMENSION TABLE				
PLATE	A	B	L	PLATES REQ'D
P-14-L	1'-4 ¹⁵ / ₃₂ "	1'-4 ²⁷ / ₃₂ "	2'-9"	2 EA
P-15-L	1'-5 ¹⁵ / ₃₂ "	1'-5 ⁷ / ₈ "	2'-10"	2 EA
P-16-L	1'-6 ¹⁷ / ₃₂ "	1'-6 ³ / ₃₂ "	2'-11"	2 EA

TURNOUT PLATES P-14-L THRU P-16-L

3/4" x 8" x L (FLAT) W/ PANDROLS
FOR LEFT HAND TURNOUT ONLY

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 1 FORGED AND 2 PANDROL CLIPS NO E-2055.

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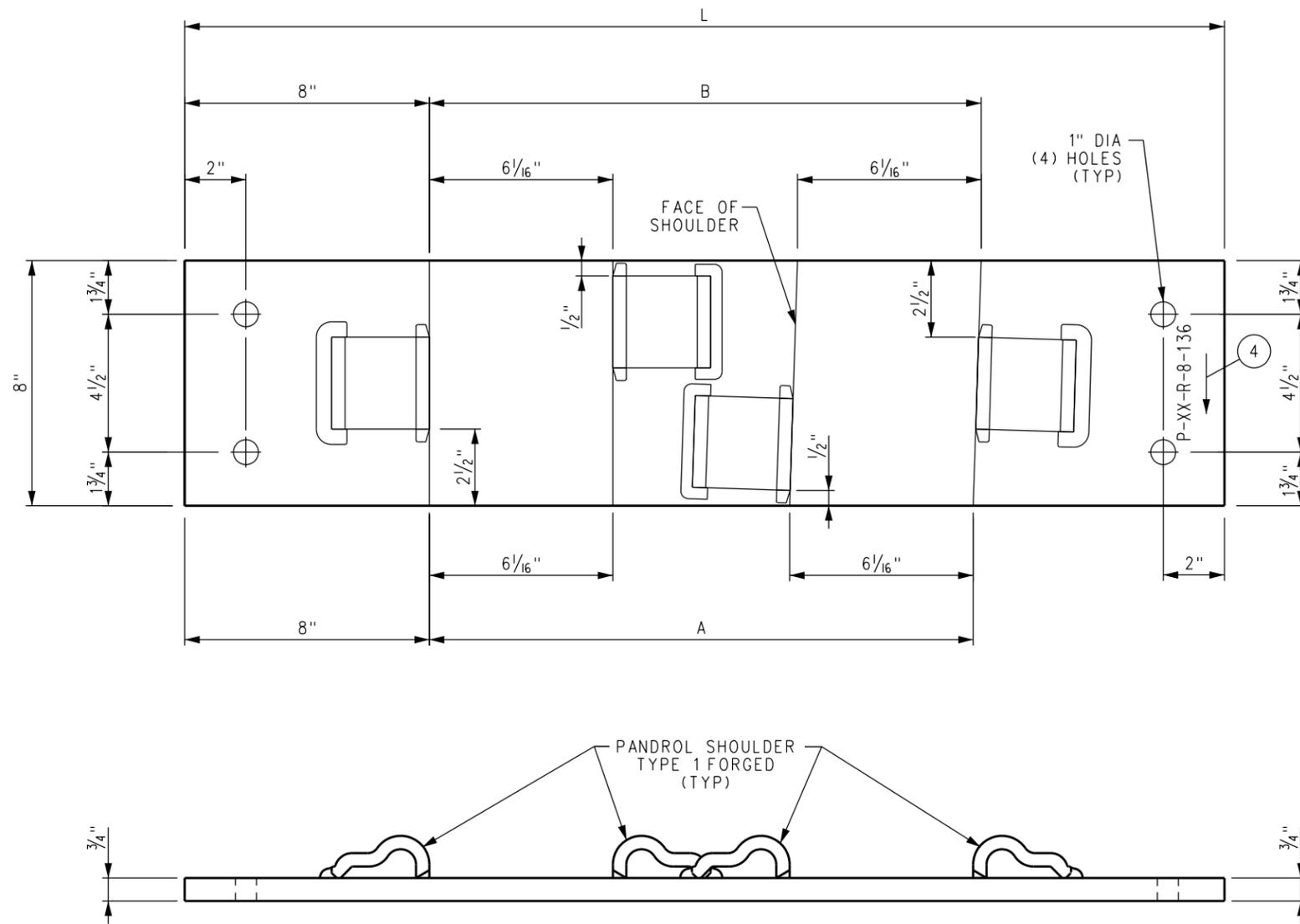


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 SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
 ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
 TURNOUT PLATES P-14-L THRU P-16-L
 NO 8 LH WOOD TIE TURNOUT FOR
 40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-65

DIMENSION TABLE				
PLATE	A	B	L	PLATES REQ'D
P-14-R	1'-4 ¹⁵ / ₃₂ "	1'-4 ²⁷ / ₃₂ "	2'-9"	2 EA
P-15-R	1'-5 ¹⁵ / ₃₂ "	1'-5 ⁷ / ₈ "	2'-10"	2 EA
P-16-R	1'-6 ¹⁷ / ₃₂ "	1'-6 ³¹ / ₃₂ "	2'-11"	2 EA



TURNOUT PLATES P-14-R THRU P-16-R

3/4" x 8" x L (FLAT) ~ W/ PANDROLS
FOR RIGHT HAND TURNOUT ONLY

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 1 FORGED AND 2 PANDROL CLIPS NO E-2055.

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

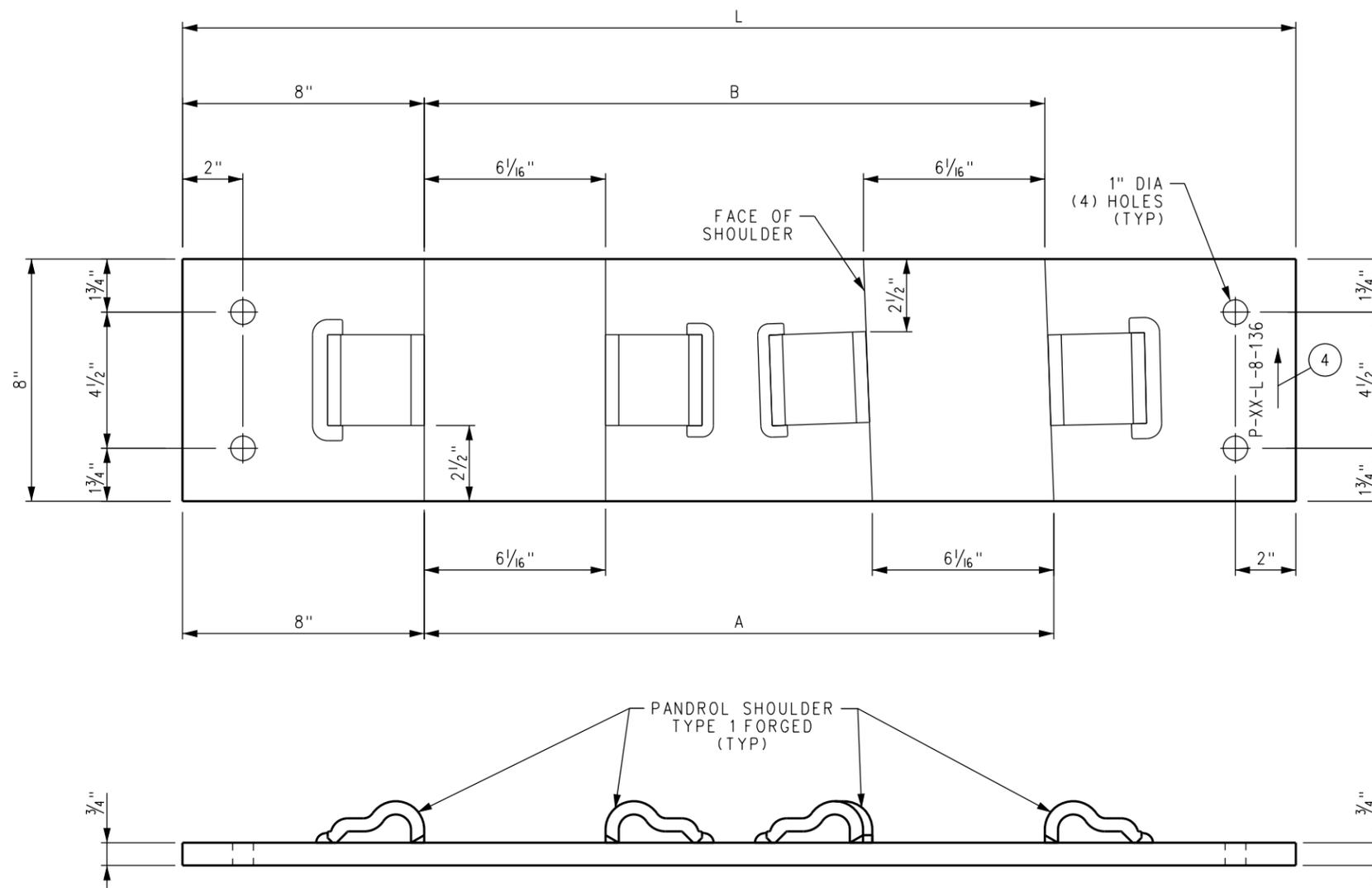
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ENGINEERING STANDARDS
 TURNOUT PLATES P-14-R THRU P-16-R
 NO 8 RH WOOD TIE TURNOUT FOR
 40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-66

DIMENSION TABLE				
PLATE	A	B	L	PLATES REQ'D
P-17-L	1'-8 $\frac{1}{8}$ "	1'-7 $\frac{2}{32}$ "	3'-0"	2 EA
P-18-L	1'-9 $\frac{3}{8}$ "	1'-8 $\frac{1}{8}$ "	3'-1"	2 EA
P-19-L	1'-10 $\frac{2}{32}$ "	1'-10 $\frac{1}{8}$ "	3'-2 $\frac{1}{2}$ "	2 EA



TURNOUT PLATES P-17-L THRU P-19-L

3/4" x 8" x L (FLAT) W/ PANDROLS
FOR LEFT HAND TURNOUT ONLY

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA \pm 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. WITH EACH PLATE, FURNISH 2 PANDROL SHOULDERS TYPE 1 FORGED AND 2 PANDROL CLIPS NO E-2055.

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>Nareh D. Papp</i>	DATE: 03/31/2011
REVISION		XX	XX
REV.	DATE	DESCRIPTION	DES. ENG.

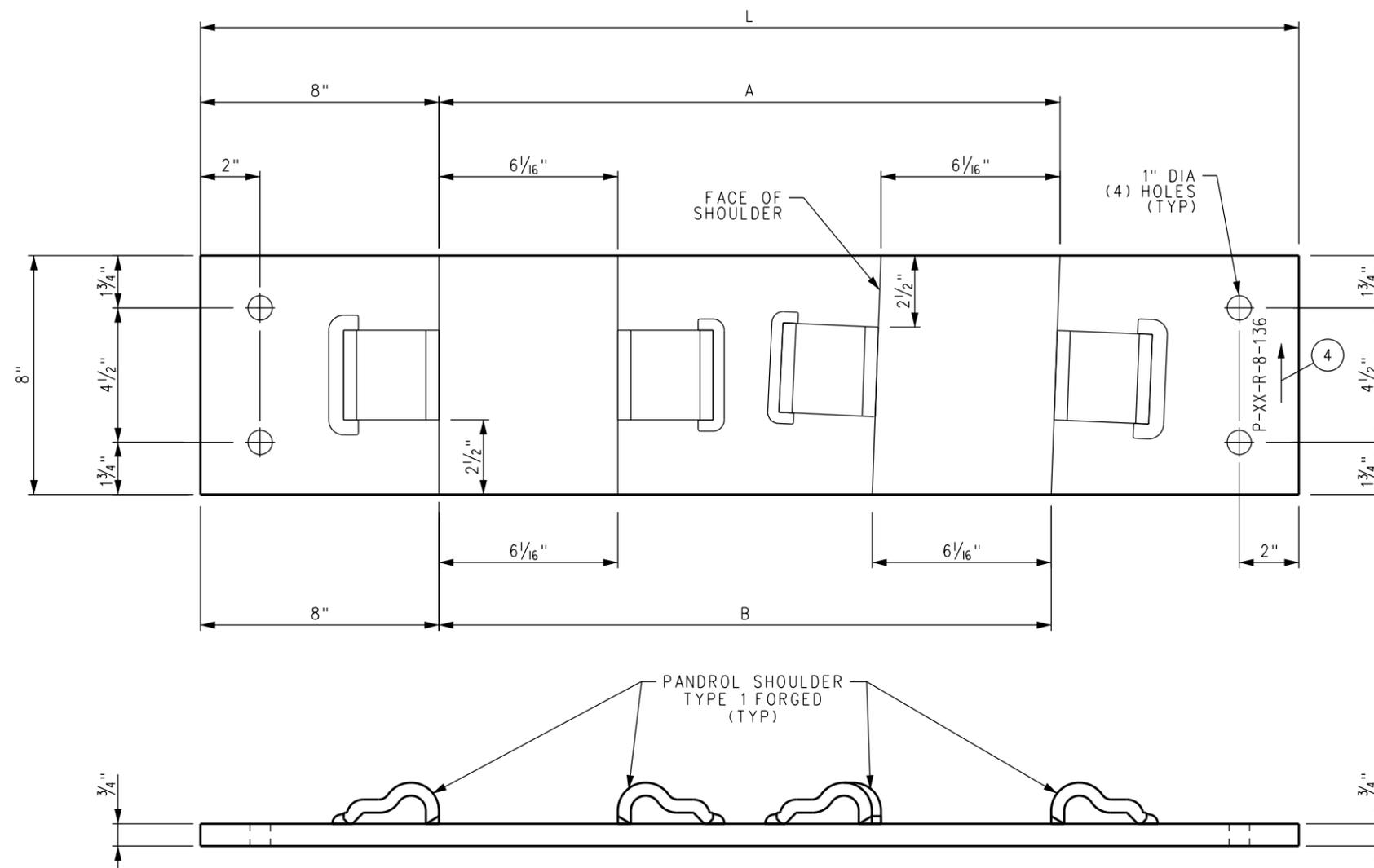
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ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS
TURNOUT PLATES P-17-L THRU P-19-L
NO 8 LH WOOD TIE TURNOUT FOR
40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-67

DIMENSION TABLE				
PLATE	A	B	L	PLATES REQ'D
P-17-R	1'-8 1/8"	1'-7 21/32"	3'-0"	2 EA
P-18-R	1'-9 3/8"	1'-8 1/8"	3'-1"	2 EA
P-19-R	1'-10 21/32"	1'-10 1/8"	3'-2 1/2"	2 EA



TURNOUT PLATES P-17-R THRU P-19-R
 3/4" x 8" x L (FLAT) W/ PANDROLS
 FOR RIGHT HAND TURNOUT ONLY

NOTES:

1. STAMP PLATE: "RESPECTIVE PLATE NO, NO 8, 136".
2. WELD PANDROL SHOULDER.
3. ANCHOR HOLE SIZE IS 1" DIA ± 1/32".
4. PAINT MARK EACH PLATE WITH ARROW POINTING TOWARDS SWITCH POINT.
5. FURNISH TYPE 1 FORGED PANDROL SHOULDER AND PANDROL CLIPS E-2055.

DRAWN BY: <i>Nareh D. Papp</i>		HDR: <i>Nareh D. Papp</i>		DATE: 03/31/2011	
ASSISTANT DIRECTOR: STANDARDS & DESIGN		DESIGNER: <i>William D. Davis</i>		DIRECTOR OF ENGINEERING AND CONSTRUCTION	
REV.	DATE	DESCRIPTION	DES.	ENG.	
X	XX-XX-XX		XX	XX	

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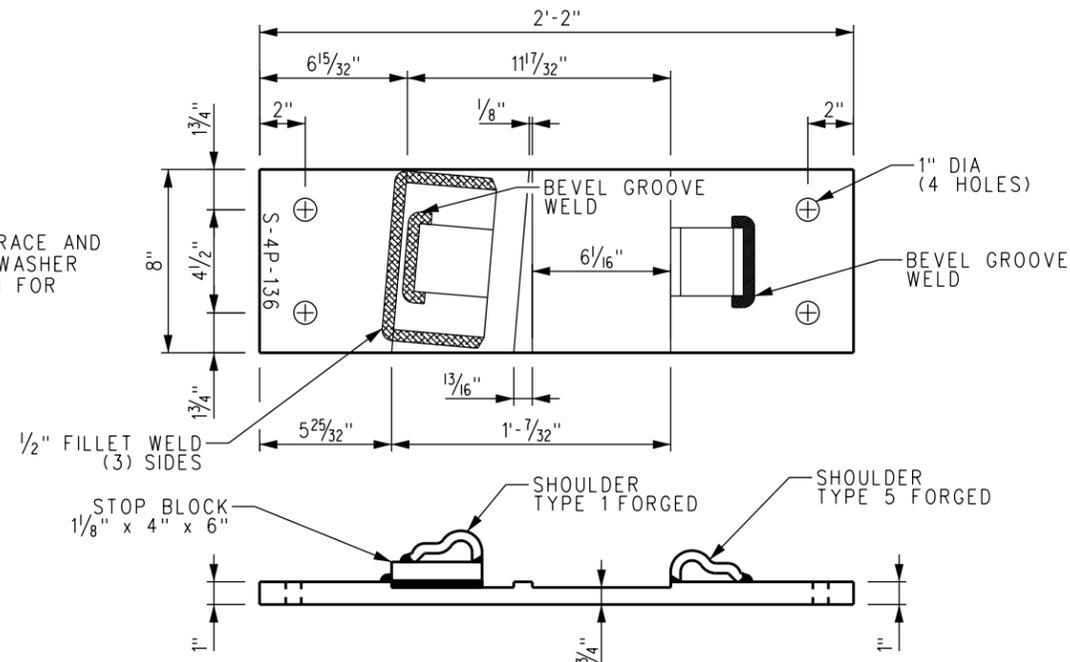
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ENGINEERING STANDARDS
 TURNOUT PLATES P-17-R THRU P-19-R
 NO 8 RH WOOD TIE TURNOUT FOR
 40'-0" SWITCH (16'-6")

STANDARD	2801
SCALE:	NTS
REVISION SHEET	1 OF 1
CADD FILE:	ES2801-68

NOTE:

- 1. ADJ RAIL BRACE AND SERRATED WASHER NOT SHOWN FOR CLARITY

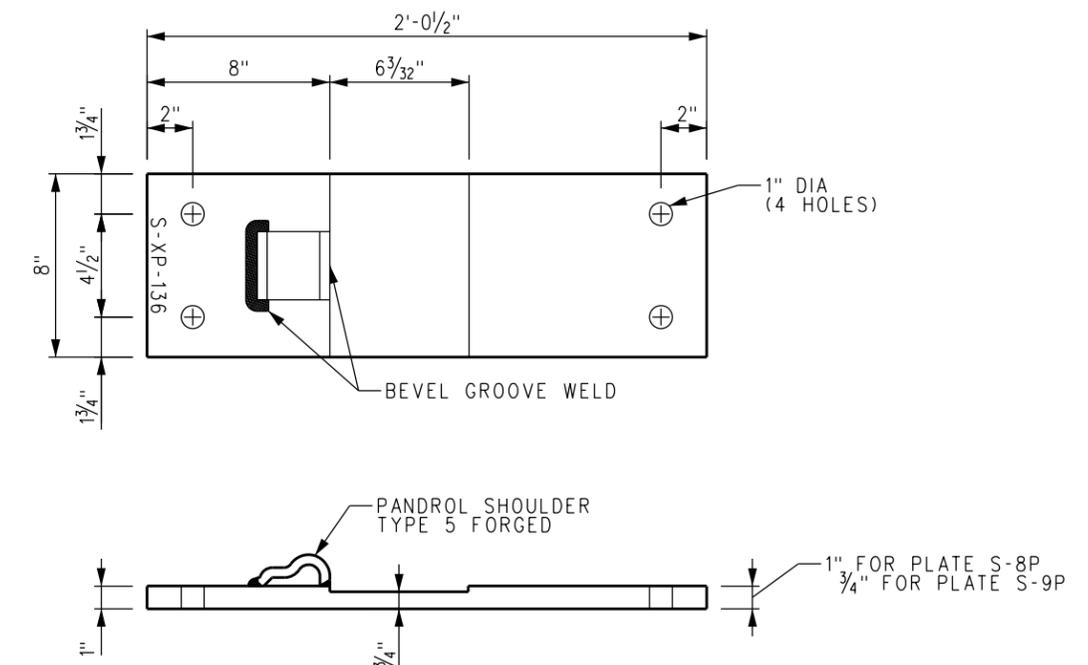


BRACE PLATE ~ S-4P

1" X 8" X 2'-2" LG ~ MILLED ~ W/ ADJ RAIL BRACE
2 - S-4P PLATES REQUIRED AS SHOWN

NOTES:

- 1. PLATES TO BE MADE OF MILD ROLLED STEEL.
- 2. THE PANDROL WILL BE TYPE 1 OR TYPE 5 FORGED AS INDICATED OR APPROVED ALTERNATIVE MEETING PANDROL'S DESIGN SPECIFICATION.
- 3. 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.
- 4. STAMP PLATE: "RESPECTIVE PLATE NO, 136"

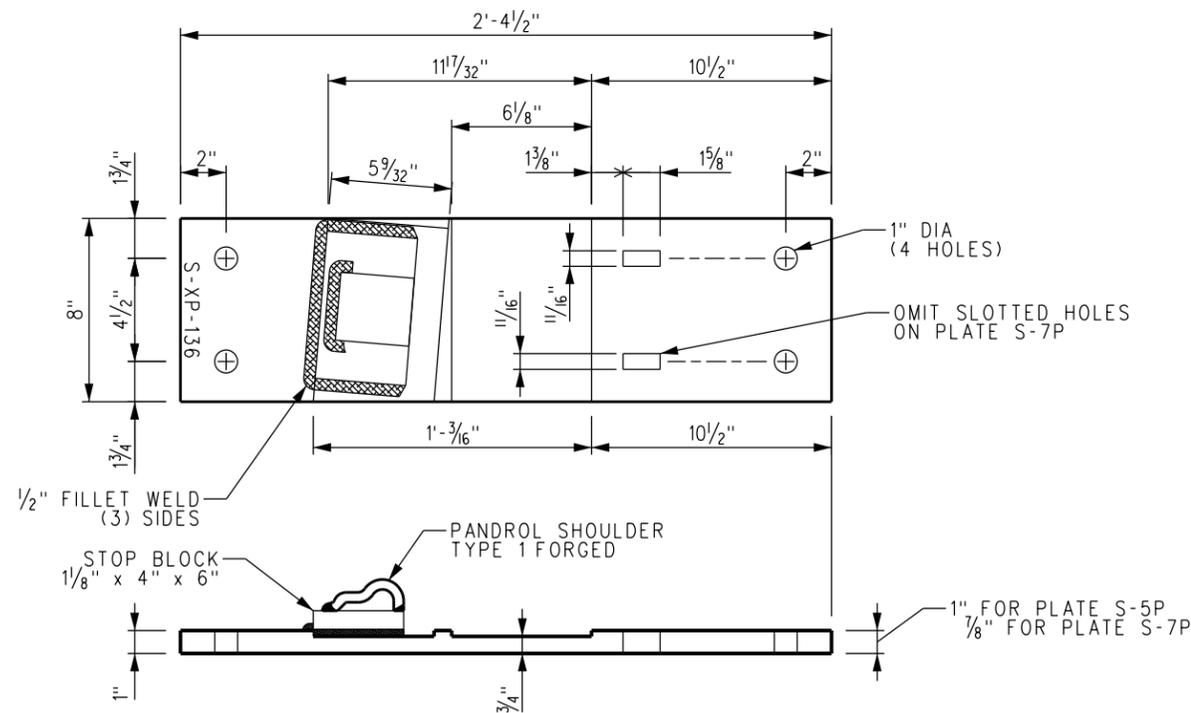


SLIDE PLATE - S-8P & S-9P

1" X 8" X 2'-0 1/2" LG - MILLED - W/ PANDROL CLIP
6 - S-8P PLATES REQUIRED AS SHOWN (1/4" RISER)
4 - S-9P PLATES REQUIRED AS SHOWN (0" RISER)

NOTE:

- 1. ADJ RAIL BRACE AND SERRATED WASHER NOT SHOWN FOR CLARITY



BRACE SLIDE PLATE ~ S-5P & S-7P

1" X 8" X 2'-4 1/2" LG - MILLED - W/ ADJ RAIL BRACE
4 - S-5P PLATES REQUIRED AS SHOWN
2 - S-7P PLATES REQUIRED AS SHOWN

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

ENGINEERING STANDARDS
NO 8 TURNOUT AND SWITCH PLATE DETAILS

STANDARD	2801
SCALE	NTS
REVISION SHEET	1 OF 1
CADD FILE	ES2801-69