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Updating the contents of the manual is a continued process, and revisions/replacements are issued periodically. Questions, comments, and proposed recommendations for changes may be sent to SCRRA at 279 E. Arrow Highway, Suite A, San Dimas, CA 91773.

SCRRA NO 20 TURNOUT
BILL OF MATERIALS & DRAWING NUMBERS

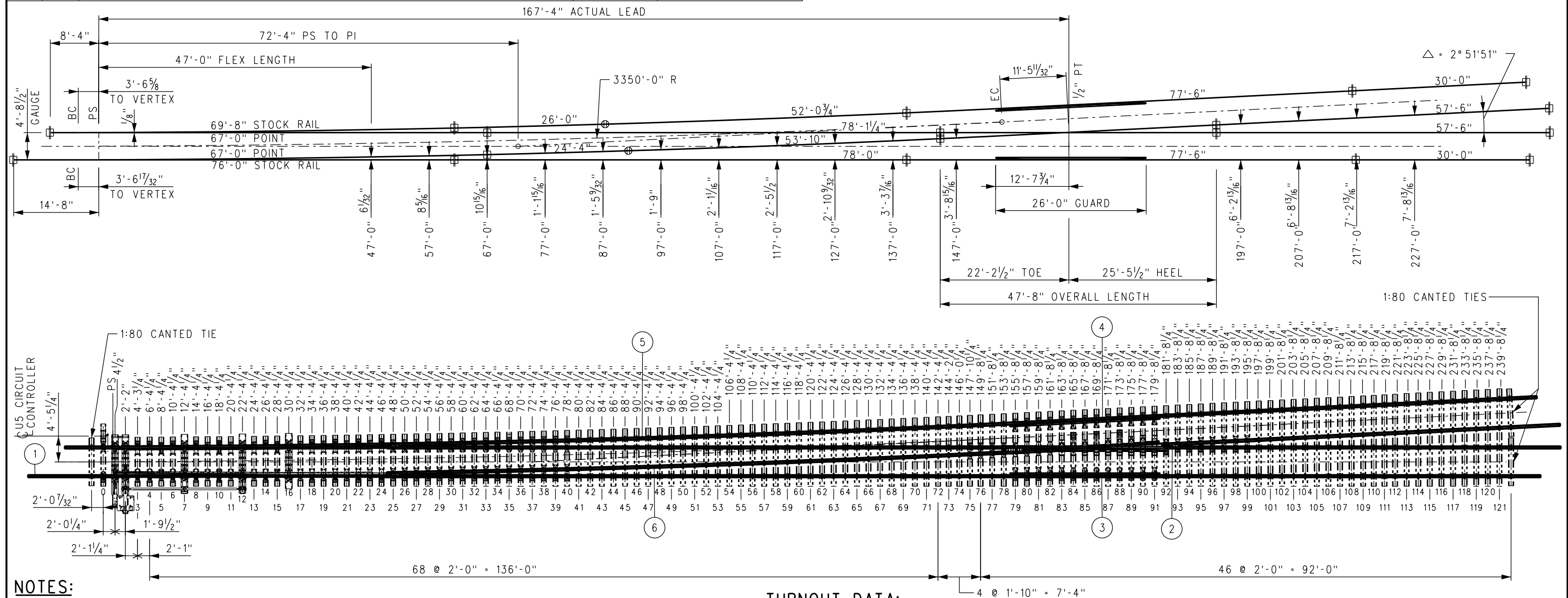
FROG NUMBER
HAND
WSM OR RBM
CONCRETE OR TIMBER TIES
HST OR STANDARD TIES
POWER OR MANUAL
ML OR TO SIDE SW MACHINE OPERATION

NO 20			
LH		RH	
WSM		WSM	
CONCRETE		CONCRETE	
HST		HST	
POWER		POWER	
MLSIDE	TOSIDE	MLSIDE	TOSIDE



TURNOUT LAYOUT	DRAWING NO		2806-01	2806-03	2806-02	2806-04
SWITCH PACK	DRAWING NO		2806-11	2806-13	2806-12	2806-14
CONCRETE TIE LAYOUT	DRAWING NO		2806-31	2806-31	2806-30	2806-30
HOLLOW STEEL TIE LAYOUT	DRAWING NO		2806-33	2806-35	2806-32	2806-34
FROG PACK	DRAWING NO		2806-41	2806-41	2806-42	2806-42
GUARD RAIL MAINLINE	DRAWING NO		2800-50	2800-50	2800-50	2800-50
GUARD RAIL TURNOUT	DRAWING NO		2806-61	2806-61	2806-62	2806-62
INSULATED RAIL ASSEMBLY	LENGTH		78'-0 $\frac{3}{4}$ "	78'-0 $\frac{3}{4}$ "	78'-0 $\frac{3}{4}$ "	78'-0 $\frac{3}{4}$ "
INSULATED RAIL ASSEMBLY	LENGTH		78'-2"	78'-2"	78'-2"	78'-2"
RAIL	LENGTH		2@30'-0"	2@30'-0"	2@30'-0"	2@30'-0"
RAIL	LENGTH		2@57'-6"	2@57'-6"	2@57'-6"	2@57'-6"
RAIL	LENGTH		2@77'-6"	2@77'-6"	2@77'-6"	2@77'-6"
RAIL	LENGTH		78'-0"	78'-0"	78'-0"	78'-0"
RAIL	LENGTH		78'-1 $\frac{1}{4}$ "	78'-1 $\frac{1}{4}$ "	78'-1 $\frac{1}{4}$ "	78'-1 $\frac{1}{4}$ "
TIE SCREWS CONCRETE	ES2356	QUANTITY	492	492	492	492
TIE SCREWS TIMBER	ES2355	QUANTITY	-	-	-	-
WASHER FLAT	ES2356	QUANTITY	492	492	492	492
SPRING WASHER DOUBLE COIL	ES2356	QUANTITY	492	492	492	492
TIE PLATE PANDROL	ES2454	QUANTITY	-	-	-	-
E-CLIP PANDROL E2055	ES2362	QUANTITY	500	500	500	500
INSULATOR PANDROL NYLON HD10	-	QUANTITY	500	500	500	500
PANDROL JOINT CLIP E2063	ES2361	QUANTITY	8	8	8	8
INSULATION PANDROL NYLON 6790	-	QUANTITY	8	8	8	8
TIE PAD PANDROL 69935R	-	QUANTITY	254	254	254	254
SHIM TO REDUCE PLATE FLEXURE	-	QUANTITY	246	246	246	246

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BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SWITCH PACK, NO 20-136 LB RE MODIFIED TANGENTIAL, LH, HST	ES2806-11		12	492	TIE SCREW, CONCRETE 7/8" DIA x 6" HEX HEAD	-	
2	1	FROG PACK, NO 20-136 LB RE WSM, LH	ES2806-41		13	492	WASHER FLAT 7/8" TYPE A NARROW 15/16" x 1 3/4" x 0.134"	-	
3	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", STRAIGHT	ES2800-50		14	492	SPRING WASHER, DOUBLE COIL (FE6)	-	
4	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", LH	ES2806-61		15	1	CONCRETE TIE SET, 0-121 + (3) 1:80 TIES, PLATE PADS, PIM INSERTS, LH	-	
5	1	INSULATED RAIL ASSEMBLY, 78'-0 3/4" C/W BONDED INSULATED JOINT	-		16	500	CLIP PANDROL E2055	-	
6	1	INSULATED RAIL ASSEMBLY, 78'-2" C/W BONDED INSULATED JOINT	-		17	500	INSULATOR PANDROL FEATURES BASE HOLDDOWN NYLON HD-10	-	
7	2	DRILLED RAIL, 136 LB RE, 30'-0" LONG	-		18	8	CLIP PANDROL E2063	-	
8	2	DRILLED RAIL, 136 LB RE, 57'-6" LONG	-		19	8	INSULATION, PANDROL NYLON 6790	-	
9	2	DRILLED RAIL, 136 LB RE, 77'-6" LONG	-		20	254	TIE PAD PANDROL 6993SR	-	
10	1	DRILLED RAIL, 136 LB RE, 78'-0" LONG	-		21	246	SHIM, TO REDUCE PLATE FLEXURE	-	
11	1	DRILLED RAIL, 136 LB RE, 78'-1 1/4" LONG	-						



NOTES:

1. ALL RAILS SHALL HAVE IDENTIFICATION COLOR CODE PAINTED ON WEB, CLEAR OF JOINT AREA.
2. RAIL LENGTHS ALLOW $\frac{1}{8}$ " GAP BETWEEN RAIL JOINTS FOR WELDING.
3. GUARD RAILS ARE RAISED 1" AND FORM A $\frac{1}{8}$ " FLANGEWAY.
4. SWITCH MACHINE AND MACHINE PLATE (NIC) MUST BE COORDINATED WITH SCRRRA.
5. ALL LENGTHS SHALL INCLUDE 1'-9" FROM TIE ENDS TO RAIL CENTERLINE, EXCEPT AS NOTED AND 1:80 CANTED TIES.
6. TIGHTEN TIE SCREW WITH DOUBLE COIL SPRING WASHER IN PLACE.
7. SCHWIHAG ROLLERS TO BE INSTALLED AND ADJUSTED IN THE FIELD.
8.  = INSULATED JOINT  = WELDED JOINT

TURNOUT DATA:

FROG
NO 20 $\Delta = 2^{\circ} 51' 51''$
TOE LENGTH: $22'-2\frac{1}{2}''$
HEEL LENGTH: $25'-5\frac{1}{2}''$
TOTAL LENGTH: $47'-8''$

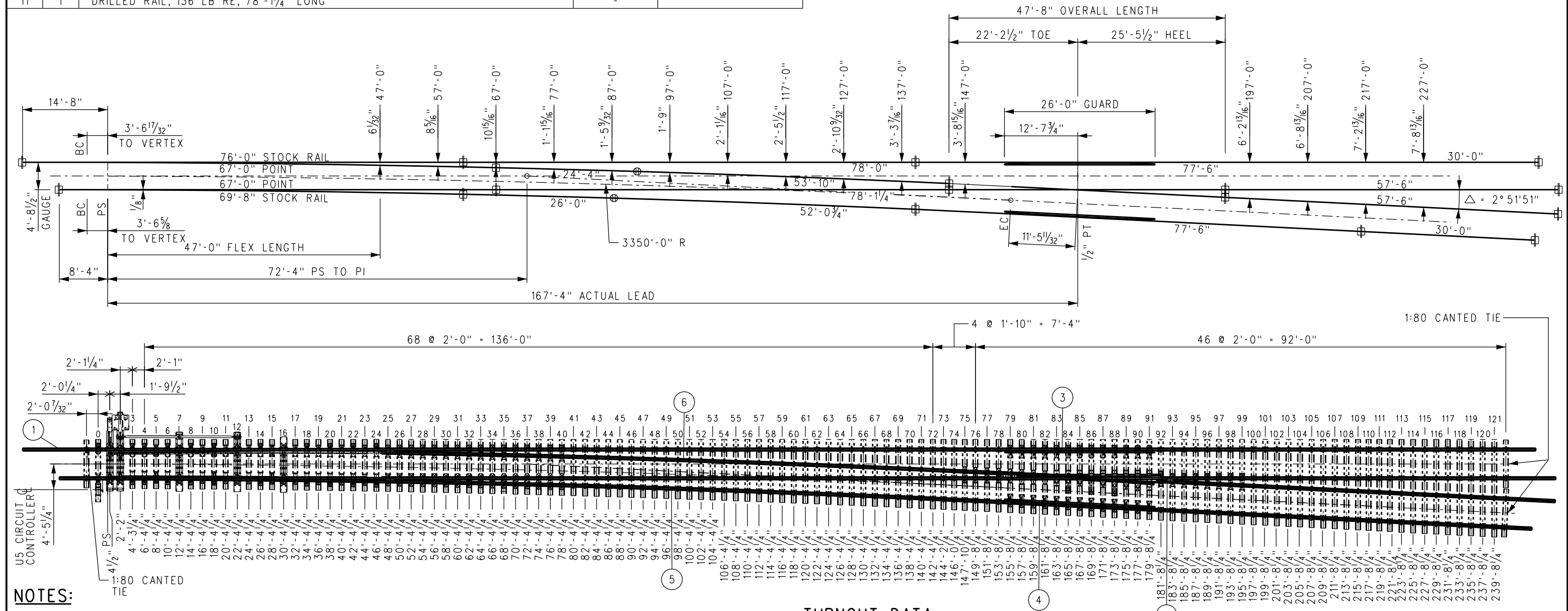
SWITCH
LENGTH OF POINTS:
VERTEX DISTANCE:
ENTRY ANGLE:
THICKNESS AT POINT:
THROW AT ROD #1:

47'-0" / 67'-0"
VARIES PER SIDE
0° 11'55"
1/8"
4 3/4"



ACTUAL LEAD: 167'-4"
CLOSURE AREA
CENTERLINE RADIUS: 3350'-0"
DEGREE OF CURVE: 1° 42' 37"
DESIGN SPEEDS
50 MPH PASSENGER @ 3" UNBALANCE
40 MPH FREIGHT @ 2" UNBALANCE

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BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	SWITCH PACK, NO 20-136 LB RE MODIFIED TANGENTIAL, RH, HST	ES2806-12		12	492	TIE SCREW, CONCRETE 7/8" DIA x 6" HEX HEAD	-	
2	1	FROG PACK, NO 20-136 LB RE WSM, RH	ES2806-42		13	492	WASHER FLAT 7/8" TYPE A NARROW 15/16" x 1 3/4" x 0.134"	-	
3	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", STRAIGHT	ES2800-50		14	492	SPRING WASHER, DOUBLE COIL (FE6)	-	
4	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", RH	ES2806-62		15	1	CONCRETE TIE SET, 0-121 + (3) 1:80 TIES, PLATE PADS, PIM INSERTS, RH	-	
5	1	INSULATED RAIL ASSEMBLY, 78'-0 3/4" C/W BONDED INSULATED JOINT	-		16	500	CLIP PANDROL E2055	-	
6	1	INSULATED RAIL ASSEMBLY, 78'-2" C/W BONDED INSULATED JOINT	-		17	500	INSULATOR PANDROL FEATURES BASE HOLDDOWN NYLON HD-10	-	
7	2	DRILLED RAIL, 136 LB RE, 30'-0" LONG	-		18	8	CLIP PANDROL E2063	-	
8	2	DRILLED RAIL, 136 LB RE, 57'-6" LONG	-		19	8	INSULATION, PANDROL NYLON 6790	-	
9	2	DRILLED RAIL, 136 LB RE, 77'-6" LONG	-		20	254	TIE PAD PANDROL 6993SR	-	
10	1	DRILLED RAIL, 136 LB RE, 78'-0" LONG	-		21	246	SHIM, TO REDUCE PLATE FLEXURE	-	
11	1	DRILLED RAIL, 136 LB RE, 78'-1 1/4" LONG	-						



NOTES:

1. ALL RAILS SHALL HAVE IDENTIFICATION COLOR CODE PAINTED ON WEB, CLEAR OF JOINT AREA.
2. RAIL LENGTHS ALLOW $\frac{1}{8}$ " GAP BETWEEN RAIL JOINTS FOR WELDING.
3. GUARD RAILS ARE RAISED 1" AND FORM A $\frac{1}{8}$ " FLANGEWAY.
4. SWITCH MACHINE AND MACHINE PLATE (NIC) MUST BE COORDINATED WITH SCRRRA.
5. ALL LENGTHS SHALL INCLUDE 1'-9" FROM TIE ENDS TO RAIL CENTERLINE, EXCEPT AS NOTED AND 1:80 CANTED TIES.
6. TIGHTEN TIE SCREW WITH DOUBLE COIL SPRING WASHER IN PLACE.
7. SCHWIBAG ROLLERS TO BE INSTALLED AND ADJUSTED IN THE FIELD.
8.  = INSULATED JOINT  = WELDED JOINT

TURNOUT DATA:

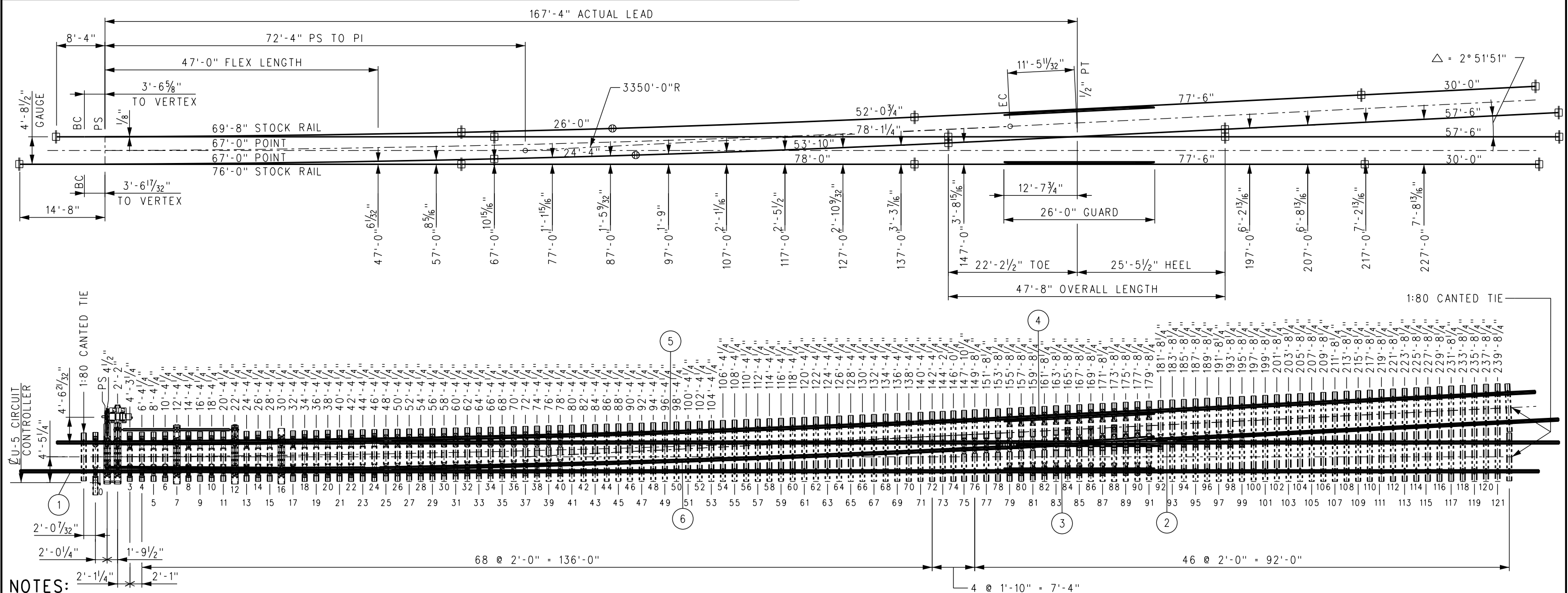
FROG
NO 20 $\Delta = 2^{\circ} 51' 51''$
TOE LENGTH: 22'-2 1/2"
HEEL LENGTH: 25'-5 1/2"
TOTAL LENGTH: 47'-8"

SWITCH
LENGTH OF POINTS: 47'-0" / 67'-0"
VERTEX DISTANCE: VARIES PER SIDE
ENTRY ANGLE: 0° 11' 55"
THICKNESS AT POINT: 1/8"
THROW AT ROD #1: 4 3/4"

ACTUAL LEAD: 167'-4"
CLOSURE AREA
CENTERLINE RADIUS: 3350'-0"
DEGREE OF CURVE: 1° 42' 37"
DESIGN SPEEDS
50 MPH PASSENGER @ 3" UNBALANCE
40 MPH FREIGHT @ 2" UNBALANCE

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BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SWITCH PACK, NO 20-136 LB RE MODIFIED TANGENTIAL, LH, HST	ES2806-13		12	492	TIE SCREW, CONCRETE 7/8" DIA x 6" HEX HEAD	-	
2	1	FROG PACK, NO 20-136 LB RE WSM, LH	ES2806-41		13	492	WASHER FLAT 7/8" TYPE A NARROW 15/16" x 13/4" x 0.134"	-	
3	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", STRAIGHT	ES2800-50		14	492	SPRING WASHER, DOUBLE COIL (FE6)	-	
4	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", LH	ES2806-61		15	1	CONCRETE TIE SET, 0-121 + (3) 1:80 TIES, PLATE PADS, LH	-	
5	1	INSULATED RAIL ASSEMBLY, 78'-03/4" C/W BONDED INSULATED JOINT	-		16	500	CLIP PANDROL E2055	-	
6	1	INSULATED RAIL ASSEMBLY, 78'-2" C/W BONDED INSULATED JOINT	-		17	500	INSULATOR PANDROL FEATURES BASE HOLDOWN NYLON HD-10	-	
7	2	DRILLED RAIL, 136 LB RE, 30'-0" LONG	-		18	8	CLIP PANDROL E2063	-	
8	2	DRILLED RAIL, 136 LB RE, 57'-6" LONG	-		19	8	INSULATION, PANDROL NYLON 6790	-	
9	2	DRILLED RAIL, 136 LB RE, 77'-6" LONG	-		20	254	TIE PAD PANDROL 6993SR	-	
10	1	DRILLED RAIL, 136 LB RE, 78'-0" LONG	-		21	246	SHIM, TO REDUCE PLATE FLEXURE	-	
11	1	DRILLED RAIL, 136 LB RE, 78'-11/4" LONG	-						



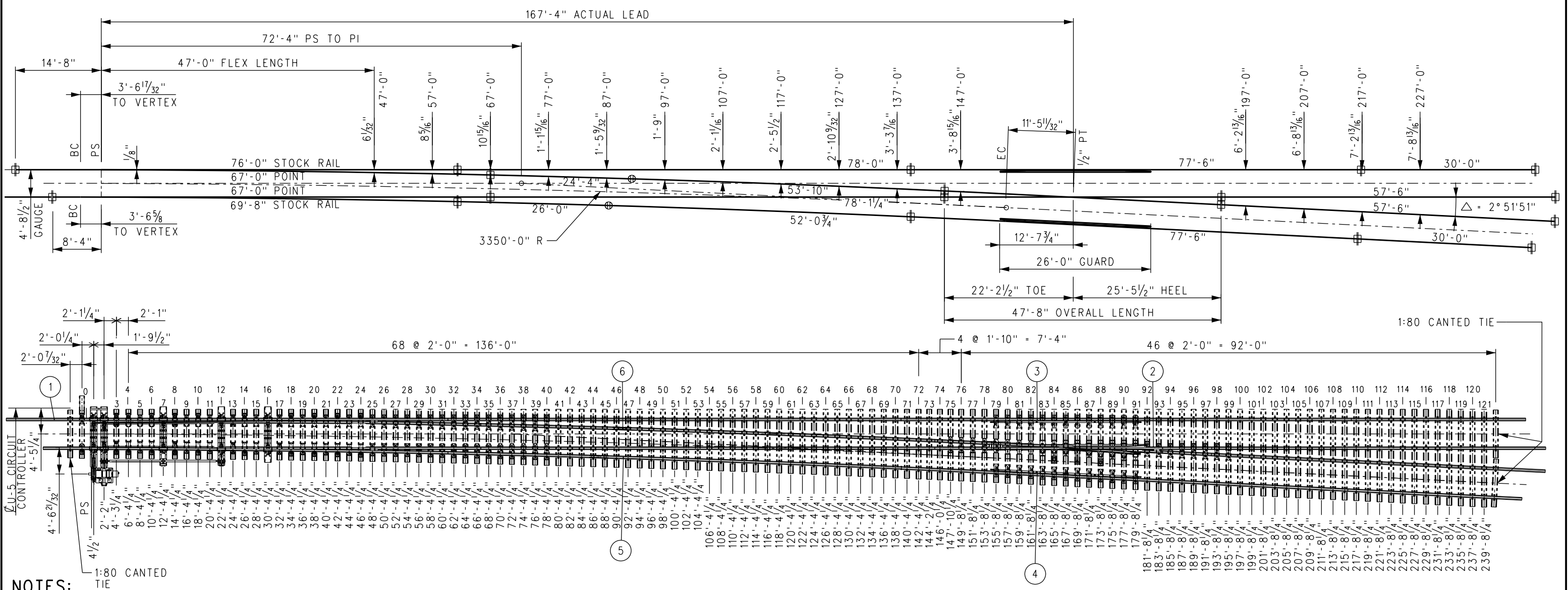
- NOTES:**
1. ALL RAILS SHALL HAVE IDENTIFICATION COLOR CODE PAINTED ON WEB, CLEAR OF JOINT AREA.
 2. RAIL LENGTHS ALLOW 1/8" GAP BETWEEN RAIL JOINTS FOR WELDING.
 3. GUARD RAILS ARE RAISED 1" AND FORM A 1/8" FLANGEWAY.
 4. SWITCH MACHINE AND MACHINE PLATE (NIC) MUST BE COORDINATED WITH SCRR.
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 6. TIGHTEN TIE SCREW WITH DOUBLE COIL SPRING WASHER IN PLACE.
 7. SCHWIHAG ROLLERS TO BE INSTALLED AND ADJUSTED IN THE FIELD.
 8. \oplus = INSULATED JOINT \oplus = WELDED JOINT

TURNOUT DATA:

FROG	NO 20	$\Delta = 2^{\circ}51'51''$	SWITCH	LENGTH OF POINTS:	47'-0" / 67'-0"	ACTUAL LEAD:	167'-4"
TOE LENGTH:	22'-2 1/2"		VERTEX DISTANCE:	VARIES PER SIDE		CLOSURE AREA	
HEEL LENGTH:	25'-5 1/2"		ENTRY ANGLE:	0^{\circ}11'55"		CENTERLINE RADIUS:	3350'-0"
TOTAL LENGTH:	47'-8"		THICKNESS AT POINT:	1/8"		DEGREE OF CURVE:	1^{\circ}42'37"
			THROW AT ROD \bullet 1:	4 3/4"		DESIGN SPEEDS	
						50 MPH PASSENGER @ 3" UNBALANCE	
						40 MPH FREIGHT @ 2" UNBALANCE	

				DRAWN BY: HDR 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			
				2806				METROLINK				TURNOUT LAYOUT				SCALE:			
				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				NO 20-136 LB RE LH WSM FROG TURNOUT				REVISION			
				1 OF 1				CADD FILE:				ES2806-03							

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SWITCH PACK, NO 20-136 LB RE MODIFIED TANGENTIAL, RH, HST	ES2806-14		12	492	TIE SCREW, CONCRETE 7/8" DIA x 6" HEX HEAD	-	
2	1	FROG PACK, NO 20-136 LB RE WSM, RH	ES2806-42		13	492	WASHER FLAT 7/8" TYPE A NARROW 15/16" x 13/4" x 0.134"	-	
3	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", STRAIGHT	ES2800-50		14	492	SPRING WASHER, DOUBLE COIL (FE6)	-	
4	1	GUARD RAIL ASSEMBLY BOLTLESS, 26'-0" LG, 136 LB RE RAISED 1", RH	ES2806-62		15	1	CONCRETE TIE SET, 0-121 + (3) 1:80 TIES, PLATE PADS, RH	-	
5	1	INSULATED RAIL ASSEMBLY, 78'-03/4" C/W BONDED INSULATED JOINT	-		16	500	CLIP PANDROL E2055	-	
6	1	INSULATED RAIL ASSEMBLY, 78'-2" C/W BONDED INSULATED JOINT	-		17	500	INSULATOR PANDROL FEATURES BASE HOLDOWN NYLON HD-10	-	
7	2	DRILLED RAIL, 136 LB RE, 30'-0" LONG	-		18	8	CLIP PANDROL E2063	-	
8	2	DRILLED RAIL, 136 LB RE, 57'-6" LONG	-		19	8	INSULATION, PANDROL NYLON 6790	-	
9	2	DRILLED RAIL, 136 LB RE, 77'-6" LONG	-		20	254	TIE PAD PANDROL 6993SR	-	
10	1	DRILLED RAIL, 136 LB RE, 78'-0" LONG	-		21	246	SHIM, TO REDUCE PLATE FLEXURE	-	
11	1	DRILLED RAIL, 136 LB RE, 78'-11/4" LONG	-						



- 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 7/8" FLANGEWAY.
 4. SWITCH MACHINE AND MACHINE PLATE (NIC) MUST BE COORDINATED WITH SCRR.
 5. ALL LENGTHS SHALL INCLUDE 1'-9" FROM TIE ENDS TO RAIL CENTERLINE, EXCEPT AS NOTED AND 1:80 CANTED TIES.
 6. TIGHTEN TIE SCREW WITH DOUBLE COIL SPRING WASHER IN PLACE.
 7. SCHWIHAG ROLLERS TO BE INSTALLED AND ADJUSTED IN THE FIELD.
 8. = INSULATED JOINT = WELDED JOINT

TURNOUT DATA:

FROG NO 20	△ = 2°51'51"	SWITCH	ACTUAL LEAD: 167'-4"
TOE LENGTH: 22'-2 1/2"		LENGTH OF POINTS: 47'-0" / 67'-0"	CLOSURE AREA
HEEL LENGTH: 25'-5 1/2"		VERTEX DISTANCE: VARIES PER SIDE	CENTERLINE RADIUS: 3350'-0"
TOTAL LENGTH: 47'-8"		ENTRY ANGLE: 0°11'55"	DEGREE OF CURVE: 1°42'37"
		THICKNESS AT POINT: 1/8"	DESIGN SPEEDS
		THROW AT ROD #1: 4 3/4"	50 MPH PASSENGER @ 3" UNBALANCE
			40 MPH FREIGHT @ 2" UNBALANCE

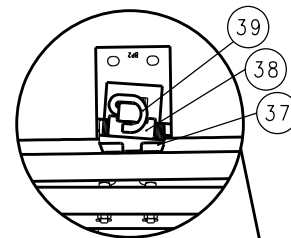
				DRAWN BY: HDR DATE: 03/31/2011		<div>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.</div> <div> METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>	<div>ENGINEERING STANDARDS</div> <div>TURNOUT LAYOUT</div> <div>NO 20-136 LB RE RH WSM FROG TURNOUT HST, SWITCH MACHINE ON TURNOUT SIDE</div>		<div>STANDARD</div> <div>2806</div>
				<div> ASSISTANT DIRECTOR: STANDARDS & DESIGN</div> <div> DIRECTOR OF ENGINEERING AND CONSTRUCTION</div>				<div>SCALE:</div> <div>NTS</div>	
X	XX-XX-XX	REVISION	XX	XX			<div>REVISION</div> <div>SHEET</div> <div>1 OF 1</div>		
REV.	DATE	DESCRIPTION	DES.	ENG.			<div>CADD FILE:</div> <div>ES2806-04</div>		

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	HOLLOW SWITCH TIE & RODDING ASSEMBLY	ES2806-33		23	2	SWITCH PLATE (20-30LC)	ES2806-82	
2	1	SAMSON POINT, 67'-0" LONG, DOUBLE REINFORCED, UR MANG TIP, LH	ES2806-21		24	2	SWITCH PLATE (20-31LC)	ES2806-82	
3	1	SAMSON POINT, 67'-0" LONG, DOUBLE REINFORCED, UR MANG TIP, RH	ES2806-22		25	2	SWITCH PLATE (20-32LC)	ES2806-83	
4	1	SAMSON STOCK RAIL, 69'-8" LONG, CURVED, LH	ES2806-23		26	2	SWITCH PLATE (20-33LC)	ES2806-83	
5	1	SAMSON STOCK RAIL, 76'-0" LONG, STRAIGHT, RH	ES2806-24		27	2	SWITCH PLATE (20-34LC)	ES2806-83	
6	1	SWITCH HEEL BLOCK, 136 LB RE, UNIFORM RISER, LH	-		28	2	SWITCH PLATE (20-35LC)	ES2806-83	
7	1	SWITCH HEEL BLOCK, 136 LB RE, UNIFORM RISER, RH	-		29	2	SWITCH PLATE (20-36LC)	ES2806-83	
8	2	SWITCH PLATE (BP1C-136)	ES2800-80		30	2	SWITCH PLATE (20-37LC)	ES2806-83	
9	16	SWITCH PLATE (BP2C-136)	ES2800-80		31	2	SWITCH PLATE (20-38LC)	ES2806-84	
10	14	SWITCH PLATE (P4C-136)	ES2800-80		32	2	SWITCH PLATE (20-39LC)	ES2806-84	
11	4	SWITCH ROLLER PLATE (RP-1-136) SCHWIHAG	ES2800-96		33	2	SWITCH PLATE (20-40LC)	ES2806-84	
12	4	SWITCH ROLLER PLATE (RP-2-136) SCHWIHAG	ES2800-97		34	2	ROLLER SCHWIHAG, SINGLE	-	
13	1	SWITCH PLATE (20-25LLC)	ES2806-81		35	4	ROLLER SCHWIHAG, DOUBLE	-	
14	1	SWITCH PLATE (20-25LRC)	ES2806-81		36	2	ROLLER SCHWIHAG, TRIPLE	-	
15	1	SWITCH PLATE (20-26LLC)	ES2806-81		37	22	BRACE, BOLTLESS, 136 LB RE 'SUREFIT'	-	
16	1	SWITCH PLATE (20-26LRC)	ES2806-81		38	22	SERRATED WASHER FOR BOLTLESS BRACE	-	
17	1	SWITCH PLATE (20-27LLC)	ES2806-81		39	142	CLIP, PANDROL, E2055	-	
18	1	SWITCH PLATE (20-27LRC)	ES2806-81		40	6	BOLT, 1 $\frac{1}{8}$ " DIA x 10 $\frac{1}{2}$ " LONG, SQUARE HEAD, DRILLED @ 10 $\frac{1}{16}$ ", GR 5	-	
19	1	SWITCH PLATE (20-28LLC)	ES2806-82		41	6	SPRING WASHER FOR 1 $\frac{1}{8}$ " DIA BOLT	-	
20	1	SWITCH PLATE (20-28LRC)	ES2806-82		42	6	NUT, 1 $\frac{1}{8}$ " DIA HEAVY SQUARE, GR 5	-	
21	1	SWITCH PLATE (20-29LLC)	ES2806-82		43	6	COTTER PIN, $\frac{1}{4}$ " DIA x 2 $\frac{1}{4}$ " LONG	-	
22	1	SWITCH PLATE (20-29LRC)	ES2806-82		44	2	FISH PLATE, 3-HOLE, $\frac{1}{2}$ " D-BAR x 16" LONG, HEADLOCKED	-	
					45	2	FISH PLATE, 3-HOLE, $\frac{1}{2}$ " D-BAR x 16" LONG	-	

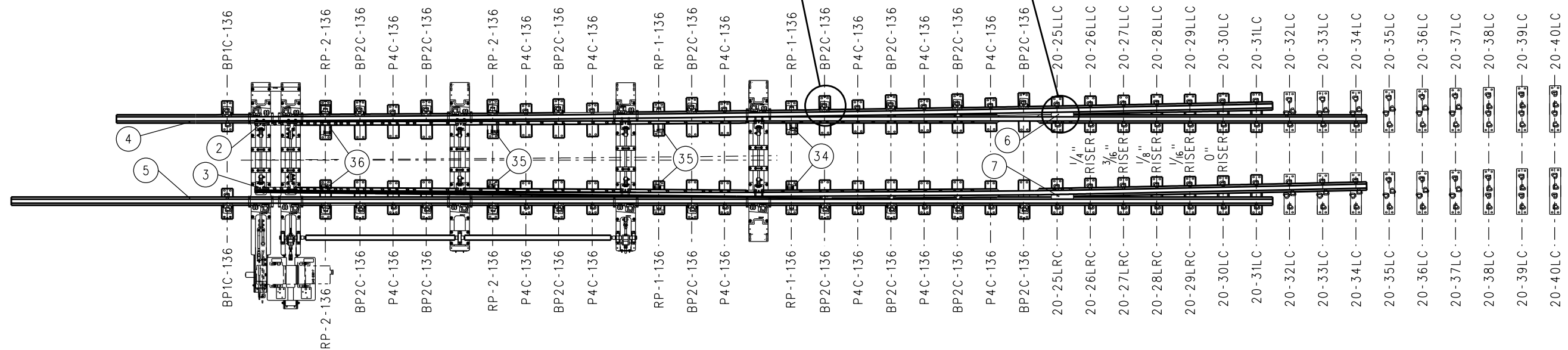
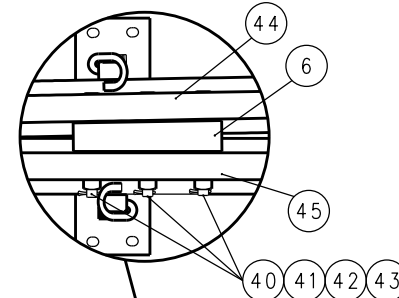
NOTES:


1. SEE DRAWING ES2806-31 FOR TIE LOCATION DIMENSIONS.
2. SWITCH RODS SHALL BE PREADJUSTED TO DIMENSIONS SHOWN IN DETAIL FOR EACH ROD LOCATION. MODIFY SPREADS AS NECESSARY WHEN INSTALLING INTO LAYOUT.

TYPICAL BOLTLESS BRACE ASSEMBLY



TYPICAL SWITCH HEEL ASSEMBLY



		DRAWN BY: HDR DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES: SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.		 METROLINK®		ENGINEERING STANDARDS		STANDARD 2806	
		 Narex D. Bae ASSISTANT DIRECTOR: STANDARDS & DESIGN						SCALE: NTS			
		 William D. Davis DIRECTOR OF ENGINEERING AND CONSTRUCTION						NO 20-136 LB RE LH SWITCH PACK, HOLLOW STEEL TIES, SWITCH MACHINE ON MAINLINE SIDE		REVISION SHEET - 1 OF 1 CADD FILE: ES2806-11	
X	XX-XX-XX	REVISION	XX	XX							
REV.	DATE	DESCRIPTION	DES.	ENG.							

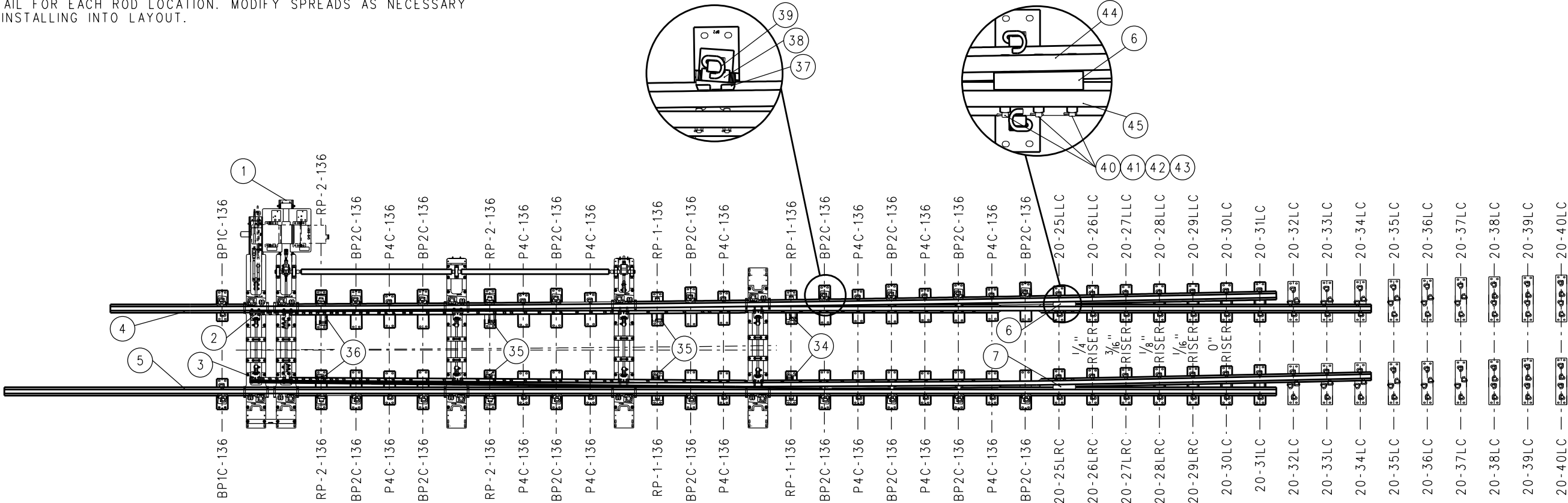
BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	HOLLOW SWITCH TIE & RODDING ASSEMBLY	ES2806-35		23	2	SWITCH PLATE (20-30LC)	ES2806-82	
2	1	SAMSON POINT, 67'-0" LONG, DOUBLE REINFORCED, UR MANG TIP, LH	ES2806-21		24	2	SWITCH PLATE (20-31LC)	ES2806-82	
3	1	SAMSON POINT, 67'-0" LONG, DOUBLE REINFORCED, UR MANG TIP, RH	ES2806-22		25	2	SWITCH PLATE (20-32LC)	ES2806-83	
4	1	SAMSON STOCK RAIL, 69'-8" LONG, CURVED, LH	ES2806-23		26	2	SWITCH PLATE (20-33LC)	ES2806-83	
5	1	SAMSON STOCK RAIL, 76'-0" LONG, STRAIGHT, RH	ES2806-24		27	2	SWITCH PLATE (20-34LC)	ES2806-83	
6	1	SWITCH HEEL BLOCK, 136 LB RE, UNIFORM RISER, LH	-		28	2	SWITCH PLATE (20-35LC)	ES2806-83	
7	1	SWITCH HEEL BLOCK, 136 LB RE, UNIFORM RISER, RH	-		29	2	SWITCH PLATE (20-36LC)	ES2806-83	
8	2	SWITCH PLATE (BP1C-136)	ES2800-80		30	2	SWITCH PLATE (20-37LC)	ES2806-83	
9	16	SWITCH PLATE (BP2C-136)	ES2800-80		31	2	SWITCH PLATE (20-38LC)	ES2806-84	
10	14	SWITCH PLATE (P4C-136)	ES2800-80		32	2	SWITCH PLATE (20-39LC)	ES2806-84	
11	4	SWITCH ROLLER PLATE (RP-1-136) SCHWIHAG	ES2800-96		33	2	SWITCH PLATE (20-40LC)	ES2806-84	
12	4	SWITCH ROLLER PLATE (RP-2-136) SCHWIHAG	ES2800-97		34	2	ROLLER SCHWIHAG, SINGLE	-	
13	1	SWITCH PLATE (20-25LLC)	ES2806-81		35	4	ROLLER SCHWIHAG, DOUBLE	-	
14	1	SWITCH PLATE (20-25LRC)	ES2806-81		36	2	ROLLER SCHWIHAG, TRIPLE	-	
15	1	SWITCH PLATE (20-26LLC)	ES2806-81		37	22	BRACE, BOLTLESS, 136 LB RE 'SUREFIT'	-	
16	1	SWITCH PLATE (20-26LRC)	ES2806-81		38	22	SERRATED WASHER FOR BOLTLESS BRACE	-	
17	1	SWITCH PLATE (20-27LLC)	ES2806-81		39	142	CLIP, PANDROL, E2055	-	
18	1	SWITCH PLATE (20-27LRC)	ES2806-81		40	6	BOLT, 1 1/8" DIA x 10 1/2" LONG, SQUARE HEAD, DRILLED @ 10 1/16", GR 5	-	
19	1	SWITCH PLATE (20-28LLC)	ES2806-82		41	6	SPRING WASHER FOR 1 1/8" DIA BOLT	-	
20	1	SWITCH PLATE (20-28LRC)	ES2806-82		42	6	NUT, 1 1/8" DIA HEAVY SQUARE, GR 5	-	
21	1	SWITCH PLATE (20-29LLC)	ES2806-82		43	6	COTTER PIN, 1/4" DIA x 2 1/4" LONG	-	
22	1	SWITCH PLATE (20-29LRC)	ES2806-82		44	2	FISH PLATE, 3-HOLE, 1/2" D-BAR x 16" LONG, HEADLOCKED	-	
					45	2	FISH PLATE, 3-HOLE, 1/2" D-BAR x 16" LONG	-	

NOTES:

1. SEE DRAWING ES2806-31 FOR TIE LOCATION DIMENSIONS.
2. SWITCH RODS SHALL BE PREADJUSTED TO DIMENSIONS SHOWN IN DETAIL FOR EACH ROD LOCATION. MODIFY SPREADS AS NECESSARY WHEN INSTALLING INTO LAYOUT.

TYPICAL BOLTLESS
BRACE ASSEMBLY

TYPICAL SWITCH
HEEL ASSEMBLY



				DRAWN BY: HDR DATE: 03/31/2011		SCRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRA APPROVED USES ONLY. FOR NON-SCRRA APPROVED USES, SCRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRA. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS NO 20-136 LB RE LH SWITCH PACK, HOLLOW STEEL TIES, SWITCH MACHINE ON TURNOUT SIDE	STANDARD 2806 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2806-13
X	XX-XX-XX	REVISION	XX	XX					
REV.	DATE	DESCRIPTION	DES.	ENG.					

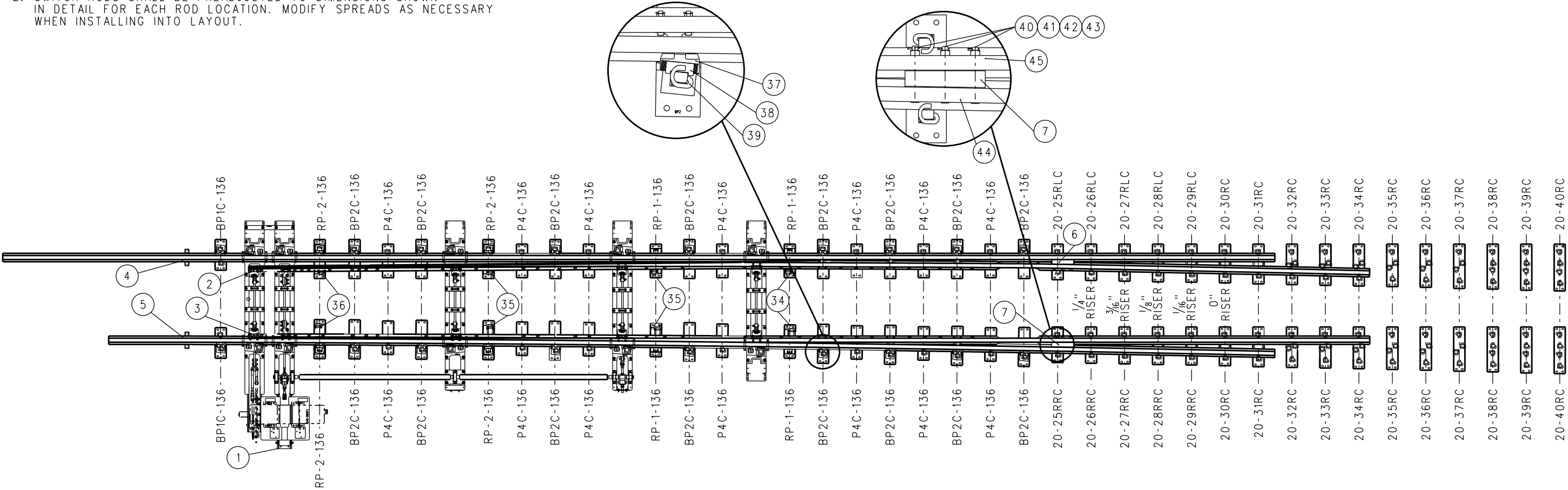
BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	HOLLOW SWITCH TIE & RODDING ASSEMBLY	ES2806-34		23	2	SWITCH PLATE (20-30RC)	ES2806-86	
2	1	SAMSON POINT, 67'-0" LONG, DOUBLE REINFORCED, UR MANG TIP, LH	ES2806-21		24	2	SWITCH PLATE (20-31RC)	ES2806-86	
3	1	SAMSON POINT, 67'-0" LONG DOUBLE REINFORCED, UR MANG TIP, RH	ES2806-22		25	2	SWITCH PLATE (20-32RC)	ES2806-87	
4	1	SAMSON STOCK RAIL, 76'-0" LONG, STRAIGHT, LH	ES2806-25		26	2	SWITCH PLATE (20-33RC)	ES2806-87	
5	1	SAMSON STOCK RAIL, 69'-8" LONG, CURVED, RH	ES2806-26		27	2	SWITCH PLATE (20-34RC)	ES2806-87	
6	1	SWITCH HEEL BLOCK, 136 LB RE, UNIFORM RISER, LH	-		28	2	SWITCH PLATE (20-35RC)	ES2806-87	
7	1	SWITCH HEEL BLOCK, 136 LB RE, UNIFORM RISER, RH	-		29	2	SWITCH PLATE (20-36RC)	ES2806-87	
8	2	SWITCH PLATE (BP1C-136)	ES2800-80		30	2	SWITCH PLATE (20-37RC)	ES2806-87	
9	16	SWITCH PLATE (BP2C-136)	ES2800-80		31	2	SWITCH PLATE (20-38RC)	ES2806-88	
10	14	SWITCH PLATE (P4C-136)	ES2800-80		32	2	SWITCH PLATE (20-39RC)	ES2806-88	
11	4	SWITCH ROLLER PLATE (RP-1-136) SCHWIHAG	ES2800-96		33	2	SWITCH PLATE (20-40RC)	ES2806-88	
12	4	SWITCH ROLLER PLATE (RP-2-136) SCHWIHAG	ES2800-97		34	2	ROLLER SCHWIHAG, SINGLE	-	
13	1	SWITCH PLATE (20-25RLC)	ES2806-85		35	4	ROLLER SCHWIHAG, DOUBLE	-	
14	1	SWITCH PLATE (20-25RRC)	ES2806-85		36	2	ROLLER SCHWIHAG, TRIPLE	-	
15	1	SWITCH PLATE (20-26RLC)	ES2806-85		37	22	BRACE, BOLTLESS, 136 LB RE 'SUREFIT'	-	
16	1	SWITCH PLATE (20-26RRC)	ES2806-85		38	22	SERRATED WASHER FOR BOLTLESS BRACE	-	
17	1	SWITCH PLATE (20-27RLC)	ES2806-85		39	142	CLIP, PANDROL, E2055	-	
18	1	SWITCH PLATE (20-27RRC)	ES2806-85		40	6	BOLT, 1 1/8" DIA x 10 1/2" LONG, SQUARE HEAD, DRILLED @ 10 1/16", GR 5	-	
19	1	SWITCH PLATE (20-28RLC)	ES2806-86		41	6	SPRING WASHER FOR 1 1/8" DIA BOLT	-	
20	1	SWITCH PLATE (20-28RRC)	ES2806-86		42	6	NUT, 1 1/8" DIA HEAVY SQUARE, GR 5	-	
21	1	SWITCH PLATE (20-29RLC)	ES2806-86		43	6	COTTER PIN, 1/4" DIA x 2 1/4" LONG	-	
22	1	SWITCH PLATE (20-29RRC)	ES2806-86		44	2	FISH PLATE, 3-HOLE, 1/2" D-BAR x 16" LONG, HEADLOCKED	-	
					45	2	FISH PLATE, 3-HOLE, 1/2" D-BAR x 16" LONG	-	

NOTES:

1. SEE DRAWING ES2806-30 FOR TIE LOCATION DIMENSIONS.
2. SWITCH RODS SHALL BE PREADJUSTED TO DIMENSIONS SHOWN IN DETAIL FOR EACH ROD LOCATION. MODIFY SPREADS AS NECESSARY WHEN INSTALLING INTO LAYOUT.

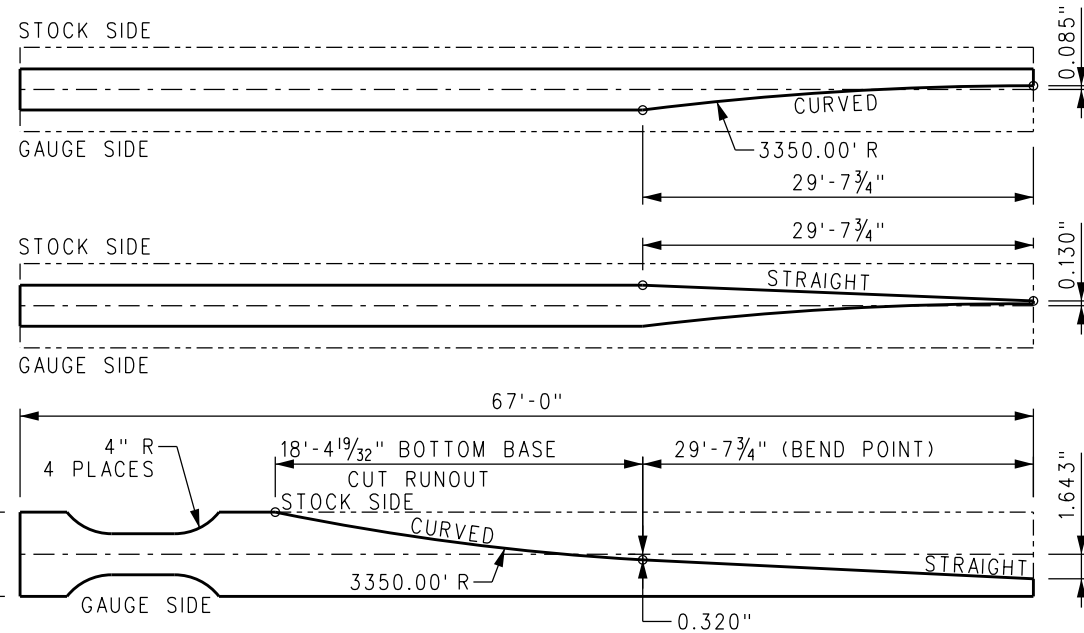
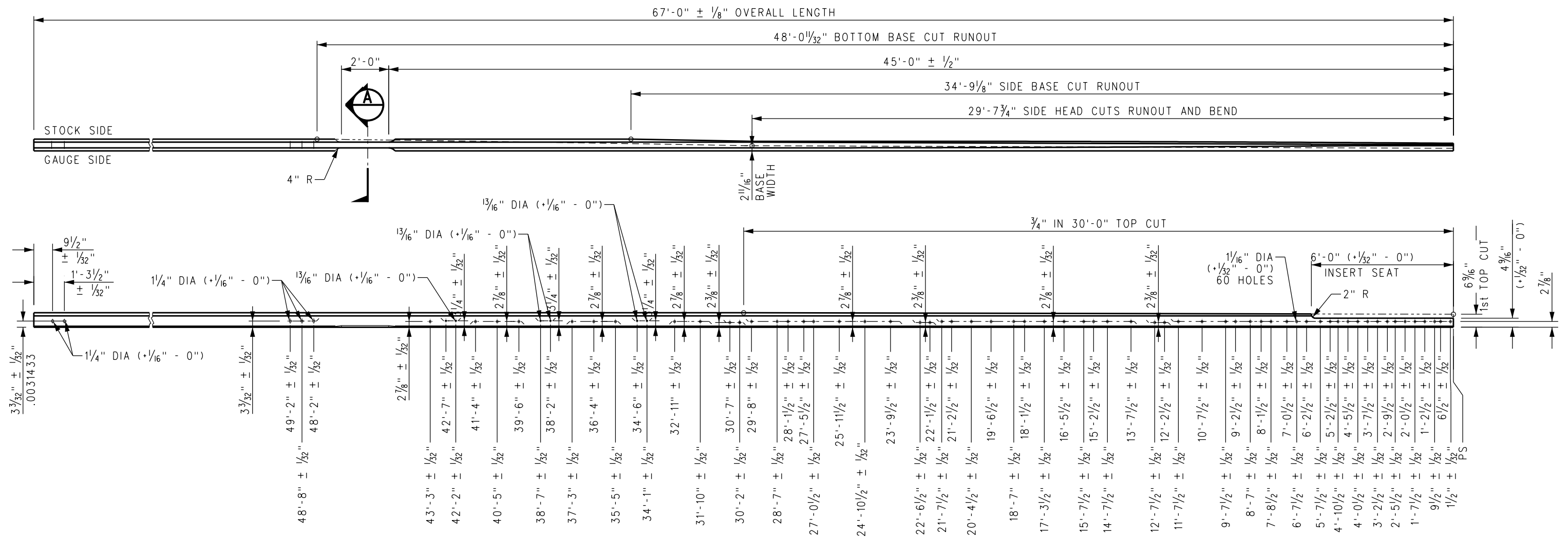
TYPICAL BOLTLESS
BRACE ASSEMBLY

TYPICAL SWITCH
HEEL ASSEMBLY



				DRAWN BY: HDR DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS		STANDARD 2806			
				NO 20-136 LB RE RH SWITCH PACK, HOLLOW STEEL TIES, SWITCH MACHINE ON TURNOUT SIDE				SCALE: NTS		REVISION SHEET 1 OF 1			
										CADD FILE: ES2806-14			
X	XX-XX-XX	REVISION	XX	XX	Assistant Director: Standards & Design								
REV.	DATE	DESCRIPTION	DES.	ENG.	Director of Engineering and Construction								

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	SCRRA PART NO
1	1	RAIL, 136 LB RE x 67'-0" LONG	



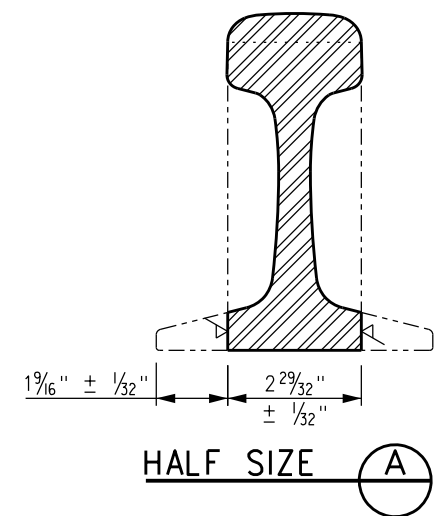
GAUGE SIDE HEAD CUT:
DIMENSIONS @ 6¹¹/₁₆" AT RAIL BEND
STRAIGHT WEB, TOP VIEW

STOCK SIDE HEAD CUT:
DIMENSIONS @ 6¹¹/₁₆" AT RAIL BEND
STRAIGHT WEB, TOP VIEW

UNDERSIDE BASE CUT:
DIMENSIONS @ BASE.
STRAIGHT WEB, TOP VIEW

NOTES:

1. MACHINE SIDE HEAD CUTS BEFORE REMOVING HEAD AND WEB AREA SHOWN FOR MANGANESE TIP.
2. POINT TO BE MACHINED STRAIGHT.
3. ALL HOLES SHALL BE CHAMFERED WITH 1/8" R EDGES.



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

11 SCRA ENGINEERING STANDARDS ARE INTENDED FOR SCRA APPROVED USES ONLY.
 12 FOR NON-SCRA APPROVED USES.
 13 SCRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF
 14 THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE
 15 STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED
 16 WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES
 17 AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF
 18 THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH
 19 USE OF THESE STANDARDS. THIS DOCUMENT SHOULD BE REPRODUCED OR DISTRIBUTED
 20 IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRA.
 21 ALL RIGHTS RESERVED.



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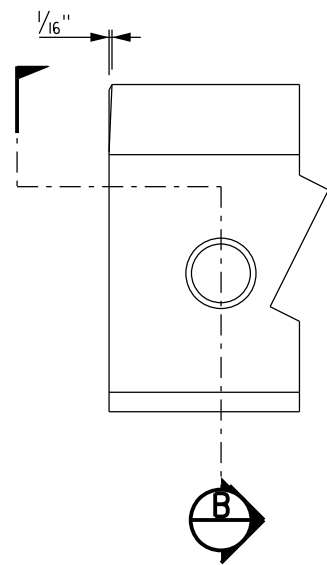
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

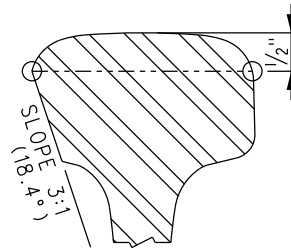
SWITCH POINT ASSEMBLY, 136 LB RE SAMSON, RH
NO 20 LH /RH TURNOUT
67'-0" OVERALL LENGTH MANGANESE TIP

STANDARD		2806
SCALE:		NTS
REVISION	SHEET	
-	1 OF 1	
CADD FILE:		ES2806-22

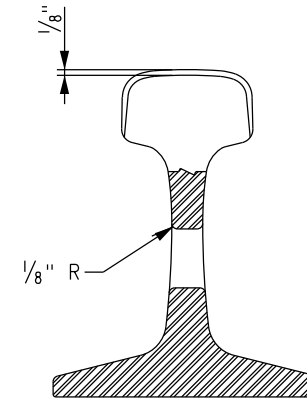
BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	SCRRA PART NO
1	1	RAIL, 136 LB RE 69'-8" LONG	



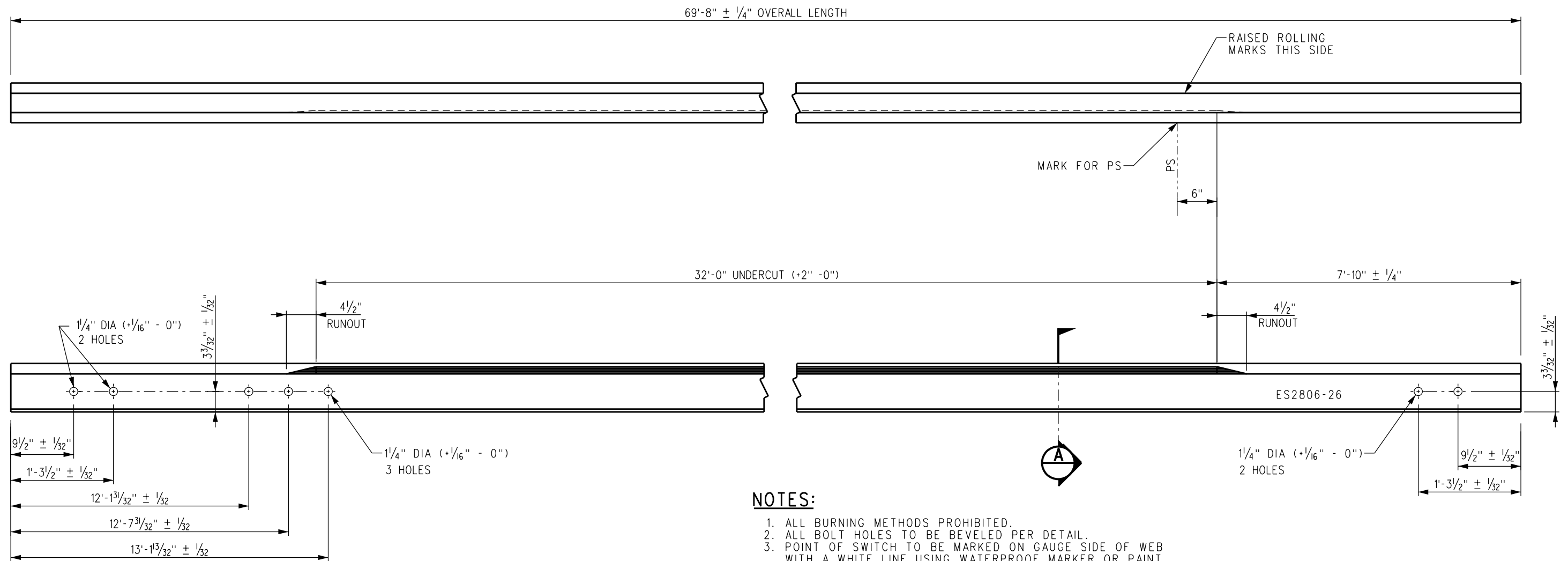
RAIL END/HOLE BEVELING DETAILS



PARTIAL SECTION (A)





SECTION (B)

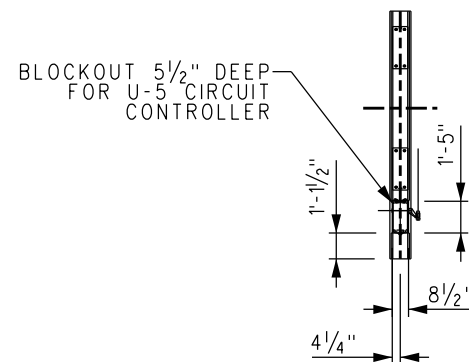
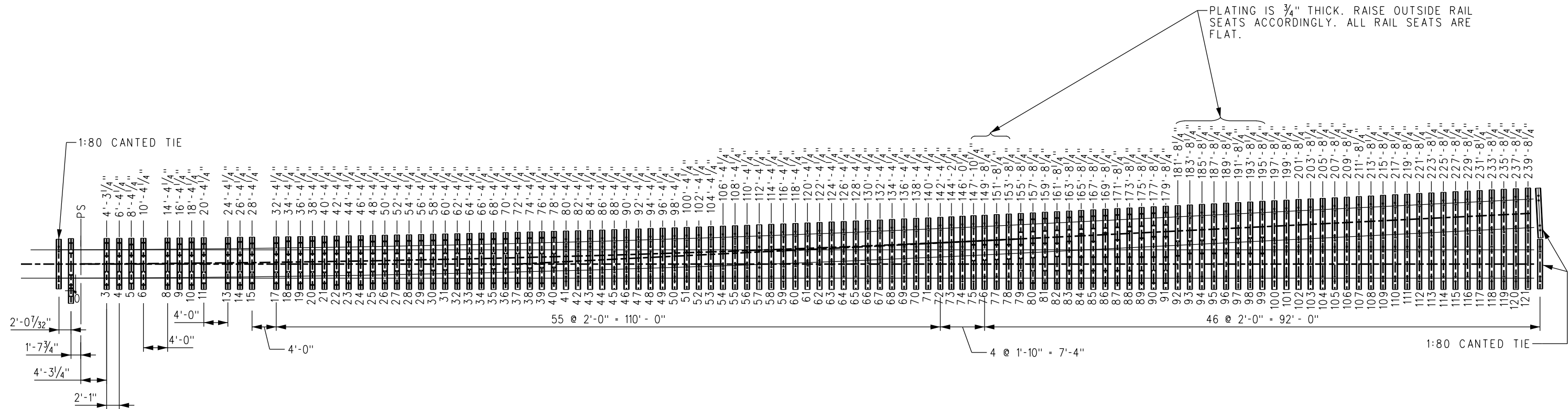


NOTES:

1. ALL BURNING METHODS PROHIBITED.
2. ALL BOLT HOLES TO BE BEVELED PER DETAIL.
3. POINT OF SWITCH TO BE MARKED ON GAUGE SIDE OF WEB WITH A WHITE LINE USING WATERPROOF MARKER OR PAINT.
4. WRITE SCRRAS NUMBER ON WEB OF RAIL WITH WATERPROOF MARKER OR PAINT.

		DRAWN BY: HDR		DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES: SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.		 METROLINK®		STANDARD 2806 SCALE: NTS REVISION SHEET - 1 OF 1 CADD FILE: ES2806-20	
		 ASSISTANT DIRECTOR: STANDARDS & DESIGN				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		ENGINEERING STANDARDS		STANDARD 2806	
		 DIRECTOR OF ENGINEERING AND CONSTRUCTION						SAMSON STOCK RAIL, RH 136 LB RE 69"-8" LONG FOR NO 20 136 LB RE RH SWITCH PACK		STANDARD 2806	
X	XX-XX-XX	REVISION	XX	XX							
REV.	DATE	DESCRIPTION	DES.	ENG.							

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	DWG NO
1	5	TIES 1,2,7,12 AND 16, POWER SWITCH MACHINE ON MAINLINE SIDE FOR LH TURNOUT (HOLLOW STEEL)	ES2806-33
2	5	TIES 1,2,7,12 AND 16, POWER SWITCH MACHINE ON TURNOUT SIDE FOR LH TURNOUT (HOLLOW STEEL)	ES2806-35



TIE #0 BLOCKOUT DETAIL

NOTES:

1. SET TO INCLUDE TIES 0, 3 THROUGH 6, 8 THROUGH 11, 13 THROUGH 15 AND 17 THROUGH 121, THREE 1:80 CANTED TIES, PLATE TIE PADS AND RIM INSERTS.
2. TIE LENGTHS ARE DETERMINED BY ADDING $1'-10\frac{7}{16}"$ FROM RAIL GAUGE LINE (OR $1'-9"$ FROM RAIL CENTERLINE) PER SIDE AT THE CENTERLINE OF EACH TIE LOCATION.
3. ALL TIES ARE FLAT (NON-CANTED) EXCEPT 1:80 CANTED TIES.
4. TRANSITION TIES (QUANTITY 3) SHALL INCORPORATE 1:80 CANTED RAIL SEATS AND USE $4'-8\frac{1}{2}"$ BETWEEN STRAIGHT RAIL SEAT GAUGES. LENGTH SHALL BE $8'-3"$.
5. THIS DRAWING SHOWS TIE "0" PLACEMENT FOR SWITCH MACHINE ON LH/TURNOUT SIDE. USE OPPOSITE HAND FOR SWITCH MACHINE ON RH/MAINLINE SIDE.
6. SEE BILL OF MATERIALS ABOVE FOR TIES 1, 2, 7, 12 AND 16.

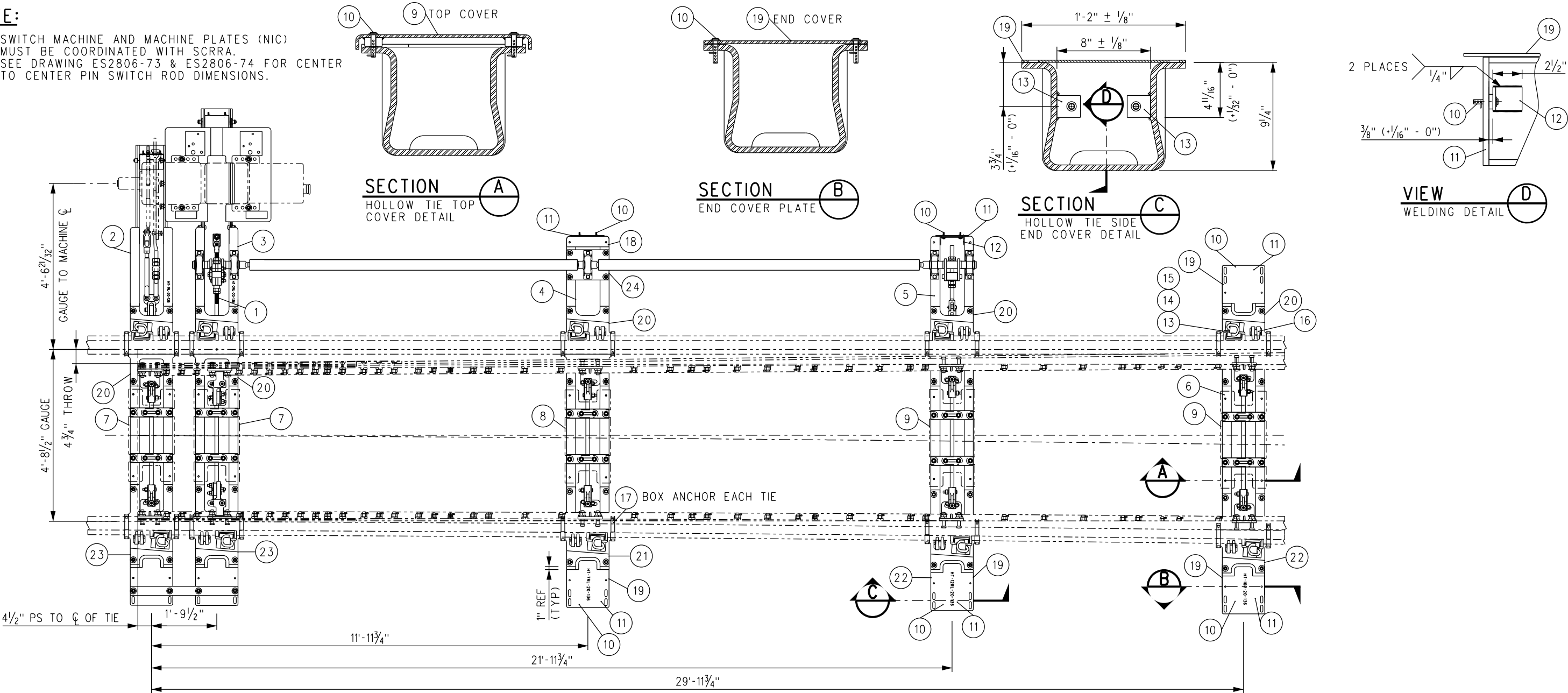
			DRAWN BY:	HDR	DATE:	03/31/2011	SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES: SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY 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 LIABILITY FROM SUCH USE. NO PART OF THSE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.	 METROLINK®	ENGINEERING STANDARDS	STANDARD 2806
X	XX--XX--XX		 ASSISTANT DIRECTOR: STANDARDS & DESIGN						CONCRETE TIE LAYOUT	SCALE: NTS
REV.	DATE	DESCRIPTION	DES.	ENG.			SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L.A., CA. 90012		NO 20-136 LB RE SPRING FROG TURNOUT, LH	REVISION SHEET — 1 OF 1
			 DIRECTOR OF ENGINEERING AND CONSTRUCTION						CADD FILE: ES2806-31	

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	RODDING ASSEMBLY FOR NO 20-136 LB RE, SWITCH MACHINE ON RH SIDE	ES2806-71		13	10	LV BRACE FOR 136 LB RE	-	
2	1	HOLLOW TIE ASSEMBLY (HT-1LR-20-136)	-		14	10	SERRATED WASHER FOR LV BRACE	-	
3	1	HOLLOW TIE ASSEMBLY (HT-2LR-20-136)	-		15	10	CLIP, PANDROL, E2055	-	
4	1	HOLLOW TIE ASSEMBLY (HT-7LR-20-136)	-		16	10	CLIP, SAFELOK, AB2000	-	
5	1	HOLLOW TIE ASSEMBLY (HT-12LR-20-136)	-		17	20	RAIL ANCHOR, UNIT DRIVE-ON TYPE 5	-	
6	1	HOLLOW TIE ASSEMBLY (HT-16L-20-136)	-		18	1	STEEL COVER PLATE FOR HST TIE, SHORT TOP VERSION	-	
7*	2	COVER PLATE NO 1, HOLLOW SWITCH TIE	-		19	4	STEEL COVER PLATE FOR HST TIE, TOP END	-	
8*	1	COVER PLATE NO 2, HOLLOW SWITCH TIE	-		20	5	HST SWITCH PLATE HTP-206-STR	ES2800-90	
9*	2	COVER PLATE NO 3, HOLLOW SWITCH TIE	-		21	1	HST SWITCH PLATE HTP-208-R	ES2800-92	
10	42	PUSH PIN ASSEMBLY FOR HST COVERS	-		22	2	HST SWITCH PLATE HTP-200-R	ES2800-93	
11	6	STEEL SIDE END COVER PLATE ASSEMBLY FOR HST TIE	-		23	2	HST SWITCH PLATE HTP-301-R	ES2800-91	
12	12	COVER SUPPORT BRACKET	-		24	1	PILLOW BLOCK MOUNTING PLATE	-	

* COVER PLATES SHOWN TRANSPARENT FOR CLARITY

NOTE:

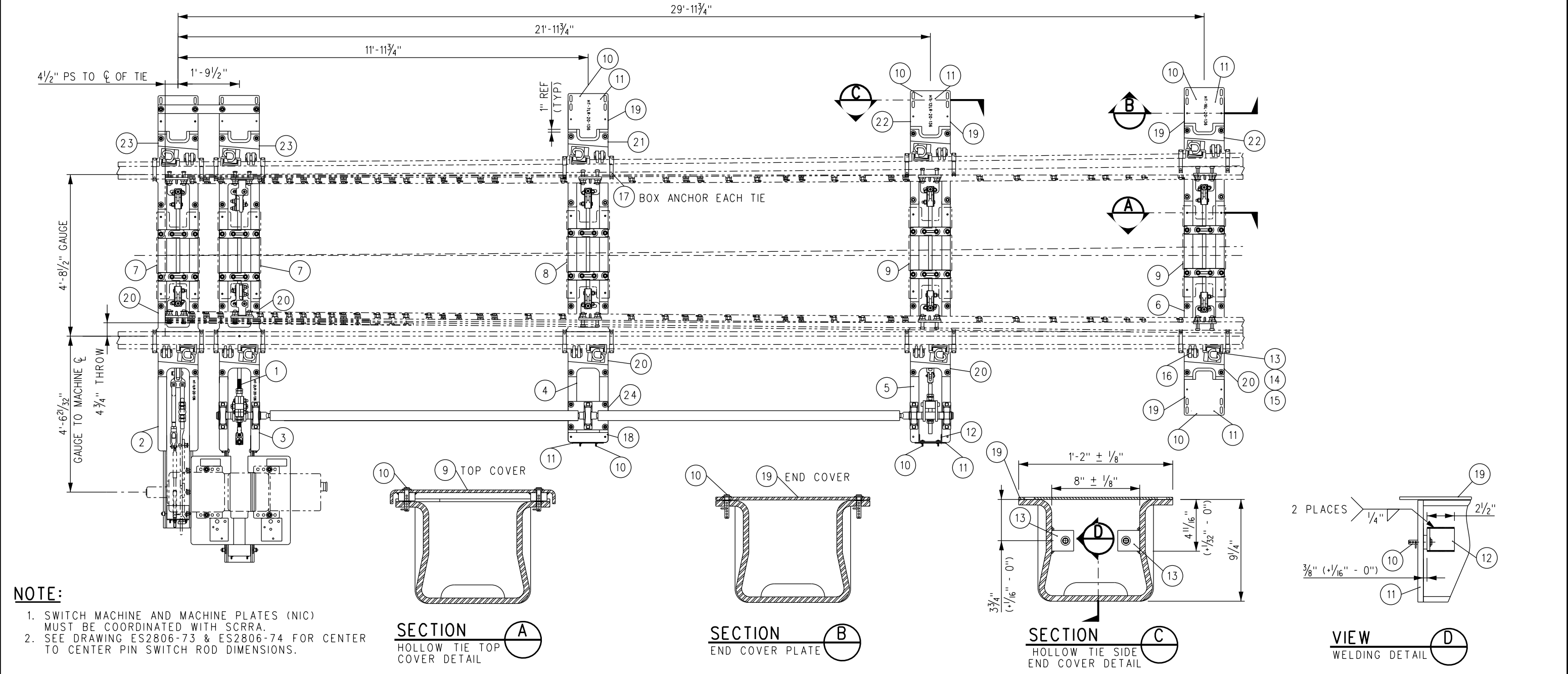
1. SWITCH MACHINE AND MACHINE PLATES (NIC) MUST BE COORDINATED WITH SCRRRA.
2. SEE DRAWING ES2806-73 & ES2806-74 FOR CENTER TO CENTER PIN SWITCH ROD DIMENSIONS.



				DRAWN BY: HDR DATE: 03/31/2011	<p>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> <p>METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</p>	ENGINEERING STANDARDS		STANDARD 2806
						HOLLOW STEEL TIE LAYOUT SWITCH MACHINE ON MAINLINE SIDE NO 20-136 LB RE RH		SCALE: NTS
								REVISION SHEET 1 OF 1
								CADD FILE: ES2806-32

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	RODDING ASSEMBLY FOR NO 20-136 LB RE, SWITCH MACHINE ON RH SIDE	ES2806-72		13	10	LV BRACE FOR 136 LB RE	-	
2	1	HOLLOW TIE ASSEMBLY (HT-1LR-20-136)	-		14	10	SERRATED WASHER FOR LV BRACE	-	
3	1	HOLLOW TIE ASSEMBLY (HT-2LR-20-136)	-		15	10	CLIP, PANDROL, E2055	-	
4	1	HOLLOW TIE ASSEMBLY (HT-7LR-20-136)	-		16	10	CLIP, SAFELOK, AB2000	-	
5	1	HOLLOW TIE ASSEMBLY (HT-12LR-20-136)	-		17	20	RAIL ANCHOR, UNIT DRIVE-ON TYPE 5	-	
6	1	HOLLOW TIE ASSEMBLY (HT-16L-20-136)	-		18	1	STEEL COVER PLATE FOR HST TIE, SHORT TOP VERSION	-	
7*	2	COVER PLATE NO 1, HOLLOW SWITCH TIE	-		19	4	STEEL COVER PLATE FOR HST TIE, TOP END	-	
8*	1	COVER PLATE NO 2, HOLLOW SWITCH TIE	-		20	5	HST SWITCH PLATE HTP-206-STR	ES2800-90	
9*	2	COVER PLATE NO 3, HOLLOW SWITCH TIE	-		21	1	HST SWITCH PLATE HTP-208-L	ES2800-92	
10	42	PUSH PIN ASSEMBLY FOR HST COVERS	-		22	2	HST SWITCH PLATE HTP-200-L	ES2800-93	
11	6	STEEL SIDE END COVER PLATE ASSEMBLY FOR HST TIE	-		23	2	HST SWITCH PLATE HTP-300-L	ES2800-91	
12	12	COVER SUPPORT BRACKET	-		24	1	PILLOW BLOCK MOUNTING PLATE	-	

* COVER PLATES SHOWN TRANSPARENT FOR CLARITY



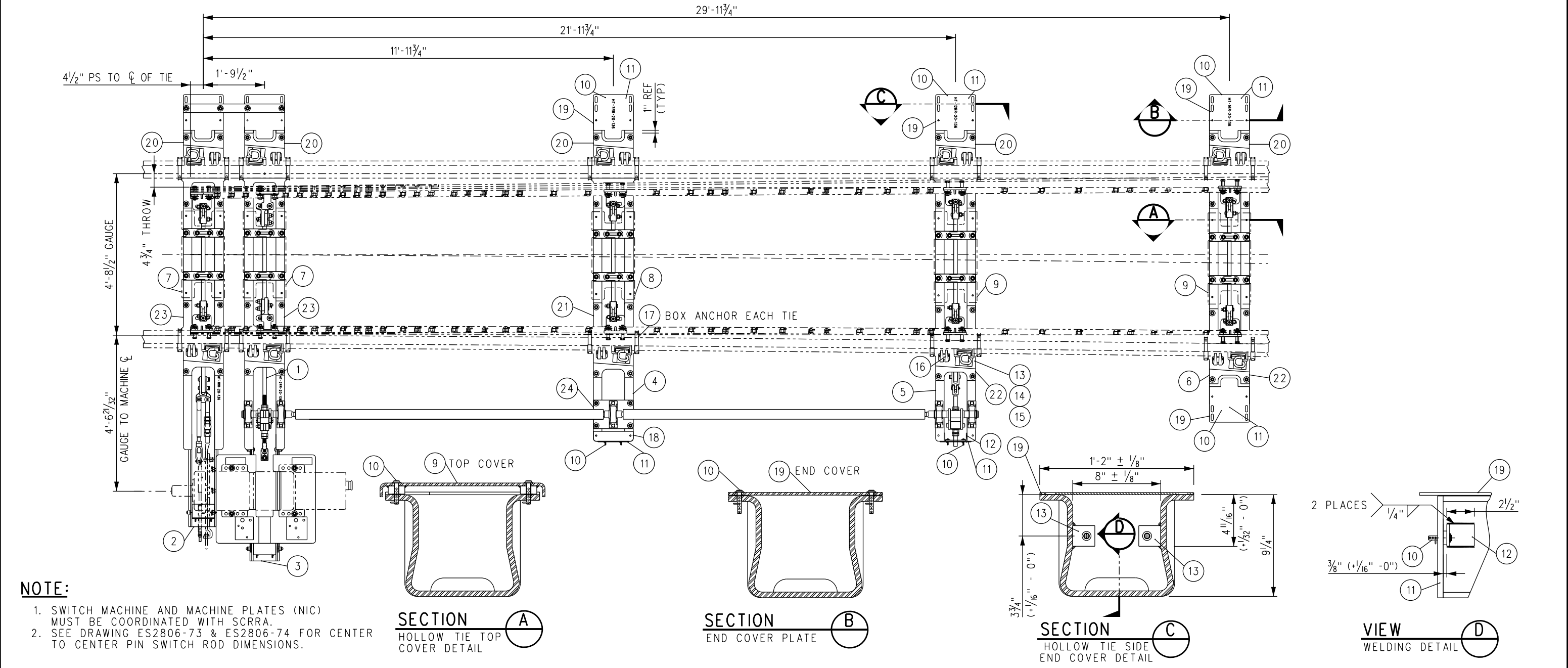
NOTE:

1. SWITCH MACHINE AND MACHINE PLATES (NIC) MUST BE COORDINATED WITH SCRRRA.
2. SEE DRAWING ES2806-73 & ES2806-74 FOR CENTER TO CENTER PIN SWITCH ROD DIMENSIONS.

				DRAWN BY: HDR 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 HOLLOW STEEL TIE LAYOUT SWITCH MACHINE ON MAINLINE SIDE NO 20-136 LB RE LH	STANDARD 2806 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2806-33
X	XX-XX-XX	REVISION	XX	XX					
REV.	DATE	DESCRIPTION	DES.	ENG.					

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	RODDING ASSEMBLY FOR NO 20-136 LB RE, SWITCH MACHINE ON RH SIDE	ES2806-72		13	10	LV BRACE FOR 136 LB RE	-	
2	1	HOLLOW TIE ASSEMBLY (HT-1RR-20-136)	-		14	10	SERRATED WASHER FOR LV BRACE	-	
3	1	HOLLOW TIE ASSEMBLY (HT-2RR-20-136)	-		15	10	CLIP, PANDROL, E2055	-	
4	1	HOLLOW TIE ASSEMBLY (HT-7RR-20-136)	-		16	10	CLIP, SAFELOK, AB2000	-	
5	1	HOLLOW TIE ASSEMBLY (HT-12RR-20-136)	-		17	20	RAIL ANCHOR, UNIT DRIVE-ON TYPE 5	-	
6	1	HOLLOW TIE ASSEMBLY (HT-16R-20-136)	-		18	1	STEEL COVER PLATE FOR HST TIE, SHORT TOP VERSION	-	
7*	2	COVER PLATE NO 1, HOLLOW SWITCH TIE	-		19	4	STEEL COVER PLATE FOR HST TIE, TOP END	-	
8*	1	COVER PLATE NO 2, HOLLOW SWITCH TIE	-		20	5	HST SWITCH PLATE HTP-206-STR	ES2800-90	
9*	2	COVER PLATE NO 3, HOLLOW SWITCH TIE	-		21	1	HST SWITCH PLATE HTP-208-R	ES2800-92	
10	42	PUSH PIN ASSEMBLY FOR HST COVERS	-		22	2	HST SWITCH PLATE HTP-200-R	ES2800-93	
11	6	STEEL SIDE END COVER PLATE ASSEMBLY FOR HST TIE	-		23	2	HST SWITCH PLATE HTP-301-R	ES2800-91	
12	12	COVER SUPPORT BRACKET	-		24	1	PILLOW BLOCK MOUNTING PLATE	-	

* COVER PLATES SHOWN TRANSPARENT FOR CLARITY



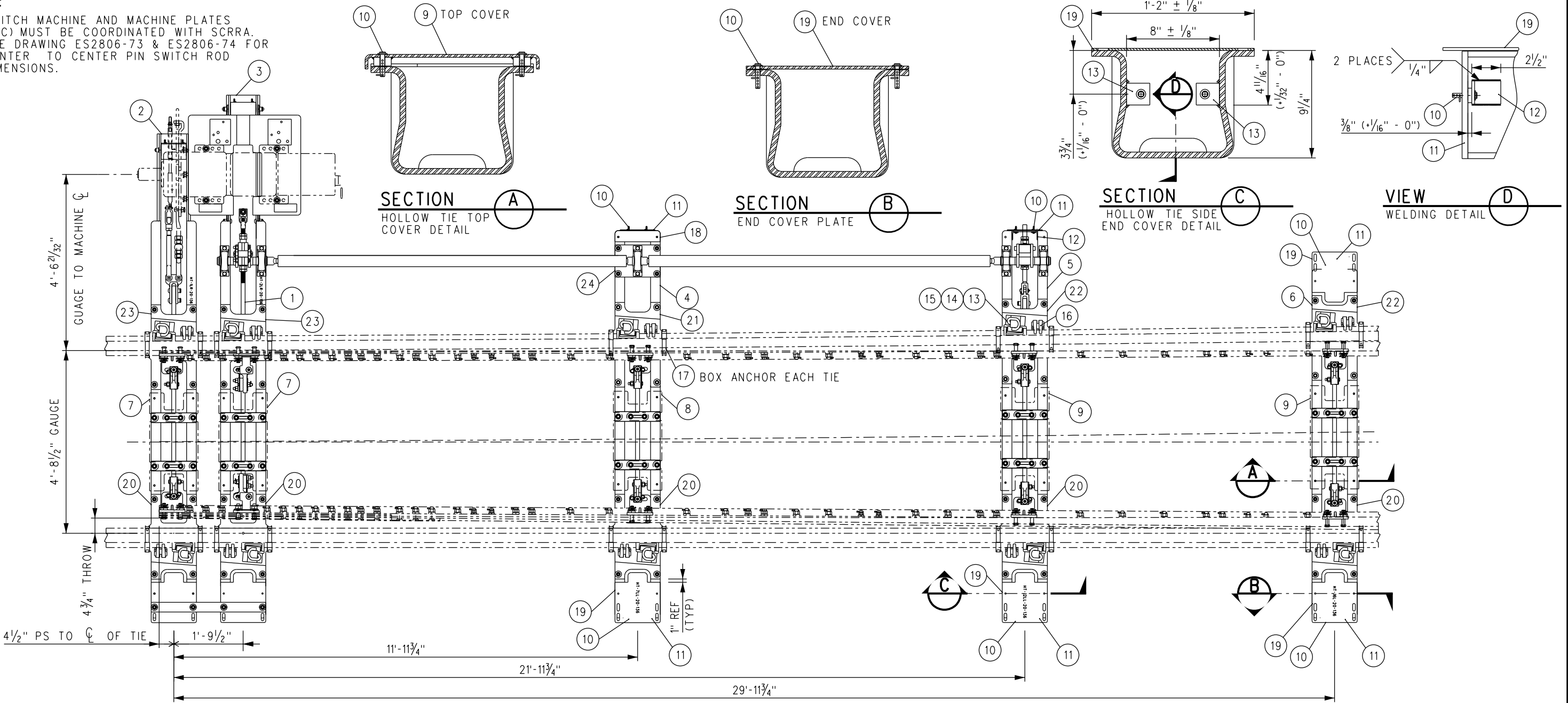
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BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	RODDING ASSEMBLY FOR NO 20-136 LB RE, SWITCH MACHINE ON LH SIDE	ES2806-71		13	10	LV BRACE FOR 136 LB RE	-	
2	1	HOLLOW TIE ASSEMBLY (HT-1LL-20-136)	-		14	10	SERRATED WASHER FOR LV BRACE	-	
3	1	HOLLOW TIE ASSEMBLY (HT-2LL-20-136)	-		15	10	CLIP, PANDROL, E2055	-	
4	1	HOLLOW TIE ASSEMBLY (HT-7LL-20-136)	-		16	10	CLIP, SAFELOK, AB2000	-	
5	1	HOLLOW TIE ASSEMBLY (HT-12LL-20-136)	-		17	20	RAIL ANCHOR, UNIT DRIVE-ON TYPE 5	-	
6	1	HOLLOW TIE ASSEMBLY (HT-16L-20-136)	-		18	1	STEEL COVER PLATE FOR HST TIE, SHORT TOP VERSION	-	
7*	2	COVER PLATE NO 1, HOLLOW SWITCH TIE	-		19	4	STEEL COVER PLATE FOR HST TIE, TOP END	-	
8*	1	COVER PLATE NO 2, HOLLOW SWITCH TIE	-		20	5	HST SWITCH PLATE HTP-206-STR	ES2800-90	
9*	2	COVER PLATE NO 3, HOLLOW SWITCH TIE	-		21	1	HST SWITCH PLATE HTP-208-L	ES2800-92	
10	42	PUSH PIN ASSEMBLY FOR HST COVERS	-		22	2	HST SWITCH PLATE HTP-200-L	ES2800-93	
11	6	STEEL SIDE END COVER PLATE ASSEMBLY FOR HST TIE	-		23	2	HST SWITCH PLATE HTP-300-L	ES2800-91	
12	12	COVER SUPPORT BRACKET	-		24	1	PILLOW BLOCK MOUNTING PLATE	-	

NOTE:

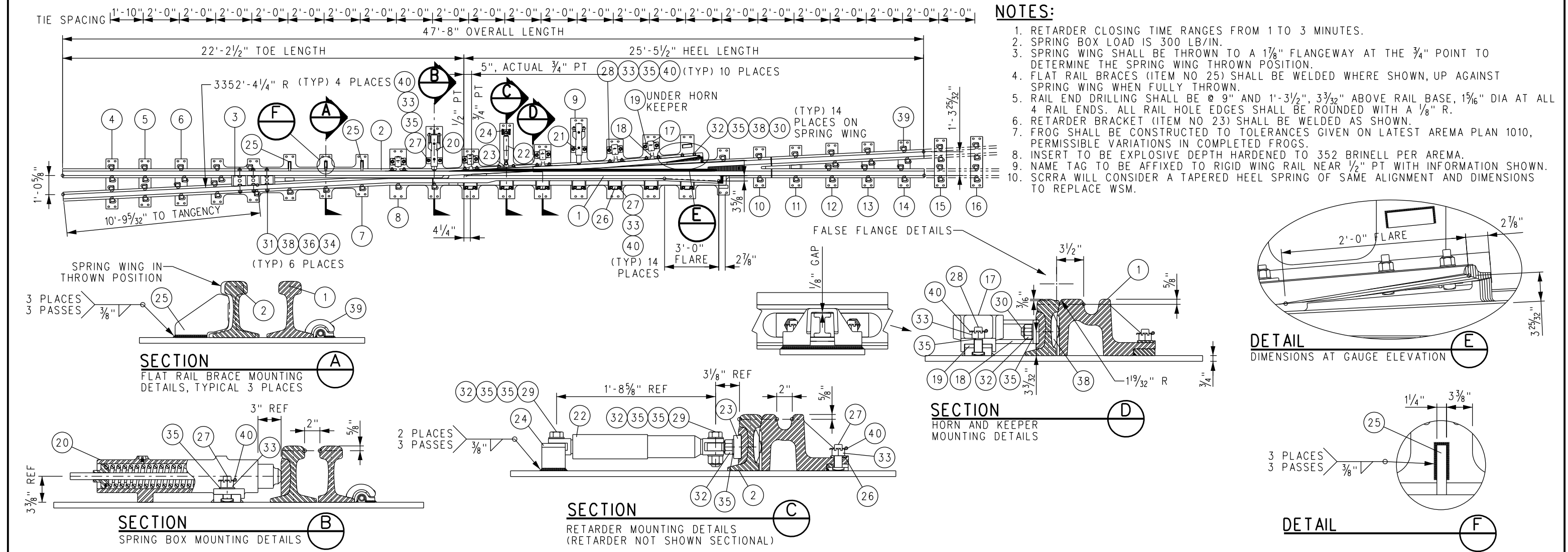
1. SWITCH MACHINE AND MACHINE PLATES (NIC) MUST BE COORDINATED WITH SCRRRA.
2. SEE DRAWING ES2806-73 & ES2806-74 FOR CENTER TO CENTER PIN SWITCH ROD DIMENSIONS.



* COVER PLATES SHOWN TRANSPARENT FOR CLARITY



				DRAWN BY: HDR 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 HOLLOW STEEL TIE LAYOUT SWITCH MACHINE ON TURNOUT SIDE NO 20-136 LB RE LH	STANDARD 2806 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2806-35
X	XX-XX-XX	REVISION	XX	XX					
REV.	DATE	DESCRIPTION	DES.	ENG.					

BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	NO 20-136 LB RE SPRING FROG, LH POINT ASSEMBLY	-		21	1	SPRING BOX ASSEMBLY, WITH 5½" MAXIMUM PLUNGER TRAVEL	-	
2	1	SPRING WING RAIL, NO 20-136 LB RE, LH, C/W D-BAR	-		22	1	RETARDER TIMING DEVICE (ENIDINE P/N SP22917)	-	
3	1	TOE BLOCK, NO 20-136 LB RE WSM	-		23	1	RETARDER BRACKET FOR SPRING FROGS	-	
4	1	FROG PLATE (SF20-136-75LC)	ES2806-43		24	1	RETARDER PLATE BRACKET FOR FROG	-	
5	1	FROG PLATE (SF20-136-76LC)	ES2806-43		25	3	FLAT RAIL BRACE FOR NON D-BAR APPLICATIONS	-	
6	1	FROG PLATE (SF20-136-77LC)	ES2806-43		26	7	WASHER, BOLT CAPTURE STYLE, ¼" THICK	-	
7	1	FROG PLATE (SF20-136-78LC)	ES2806-45		27	18	BOLT, 1" DIA x 3" LONG, THIN SQUARE HEAD, DRILLED @ 2½", GR 5	-	
8	1	FROG PLATE (SF20-136-83LC)	ES2806-47		28	10	BOLT, 1" DIA x 3½" LONG, THIN SQUARE HEAD, DRILLED @ 2⅞", GR 5	-	
9	1	FROG PLATE (SF20-136-88LC)	ES2806-49		29	2	BOLT, 1" DIA x 4⅞" LONG, HEAVY HEX HEAD, GR 8	-	
10	1	FROG PLATE (SF20-136-93LC)	ES2806-51		30	14	BOLT, 1" DIA x 4½" LONG, SQUARE HEAD, GR 5	-	
11	1	FROG PLATE (SF20-136-94LC)	ES2806-51		31	6	BOLT, 1⅜" DIA x 5½" LONG, SQUARE HEAD, GR 8	-	
12	1	FROG PLATE (SF20-136-95LC)	ES2806-51		32	16	SECURITY LOCK NUT, 1" DIA, HEX (SH521), GR 5	-	
13	1	FROG PLATE (SF20-136-96LC)	ES2806-53		33	28	NUT, 1" DIA HEAVY HEX, SLOTTED, GR 5	-	
14	1	FROG PLATE (SF20-136-97LC)	ES2806-53		34	6	SECURITY LOCK NUT, 1⅜" DIA HEX (SH530), GR 8	-	
15	1	FROG PLATE (SF20-136-98LC)	ES2806-55		35	32	FLAT WASHER, FOR 1" DIA x 5/32" THICK, HARDENED	-	
16	1	FROG PLATE (SF20-136-99LC)	ES2806-55		36	6	FLAT WASHER, FOR 1⅜" DIA x ¼" THICK, HARDENED	-	
17	5	HORN KEEPER, REVERSIBLE	-		37	6	TAIL WASHER, FLAT (837K)	-	
18	5	HOLD-DOWN HORN	-		38	14	HEADLOCK WASHER, FLAT (837P)	-	
19	5	WEAR PLATE FOR REVERSIBLE HORN KEEPER	-		39	48	CLIP, PANDROL, E2055	-	
20	1	SPRING BOX ASSEMBLY, WITH 3" MAXIMUM PLUNGER TRAVEL	-		40	28	COTTER PIN, ¼" DIA x 2" LONG	-	

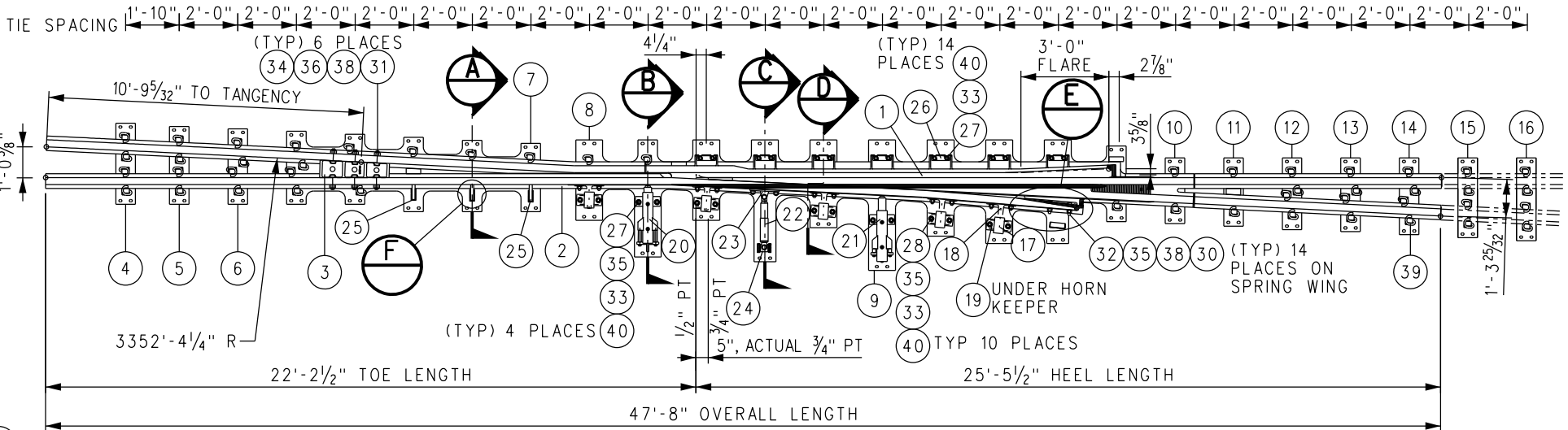
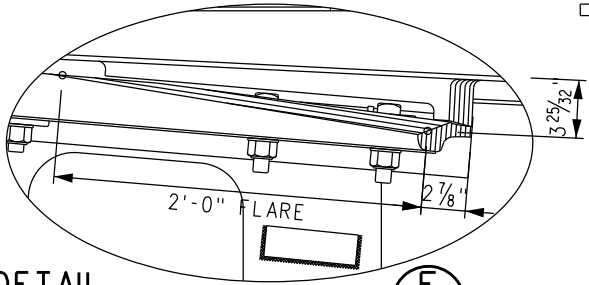
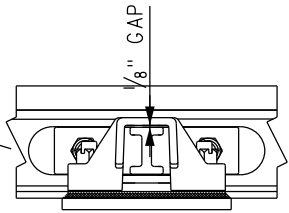
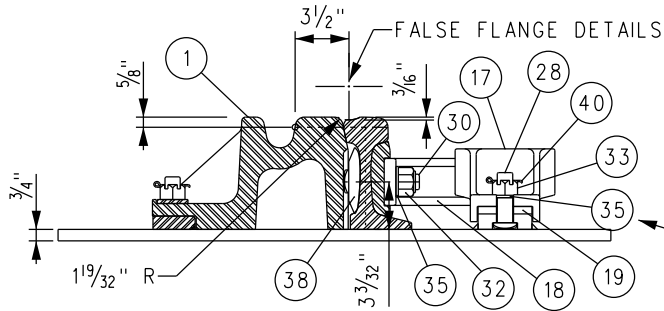
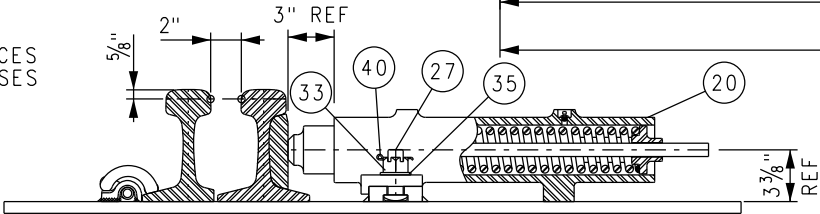
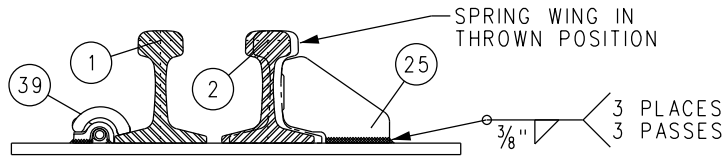


				DRAWN BY: HDR DATE: 03/31/2011		SCRA ENGINEERING STANDARDS ARE INTENDED FOR SCRA APPROVED USES ONLY. FOR NON-SCRA APPROVED USES SCRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY 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 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®		ENGINEERING STANDARDS		STANDARD 2806	
		 ASSISTANT DIRECTOR: STANDARDS & DESIGN								SCALE: NTS			
		 DIRECTOR OF ENGINEERING AND CONSTRUCTION								NO 20 WSM FROG LH			
										FROG ASSEMBLY PLAN VIEW AND FROG PACK		REVISION SHEET - 1 OF 1	
										CONCRETE TIES-136 LB RE RAIL		CADD FILE: ES2806-41	
X XX-XX-XX		REVISION		XX XX									
REV. DATE		DESCRIPTION		DES. ENG.									

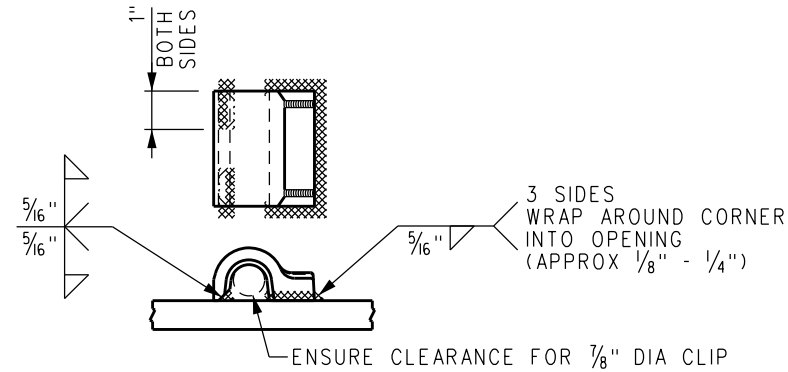
BILL OF MATERIAL					BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	NO 20-136 LB RE SPRING FROG, RH POINT ASSEMBLY	-		21	1	SPRING BOX ASSEMBLY, WITH 5½" MAXIMUM PLUNGER TRAVEL	-	
2	1	SPRING WING RAIL, NO 20-136 LB RE, RH, C/W D-BAR	-		22	1	RETARDER TIMING DEVICE (ENIDINE P/N SP22917)	-	
3	1	TOE BLOCK, NO 20-136 LB RE WSM	-		23	1	RETARDER BRACKET FOR SPRING FROGS	-	
4	1	FROG PLATE (SF20-136-75RC)	ES2806-44		24	1	RETARDER PLATE BRACKET FOR FROG	-	
5	1	FROG PLATE (SF20-136-76RC)	ES2806-44		25	3	FLAT RAIL BRACE FOR NON D-BAR APPLICATIONS	-	
6	1	FROG PLATE (SF20-136-77RC)	ES2806-44		26	7	WASHER, BOLT CAPTURE STYLE, ¼" THICK	-	
7	1	FROG PLATE (SF20-136-78RC)	ES2806-46		27	18	BOLT, 1" DIA x 3" LONG, THIN SQUARE HEAD, DRILLED @ 2½", GR 5	-	
8	1	FROG PLATE (SF20-136-83RC)	ES2806-48		28	10	BOLT, 1" DIA x 3½" LONG, THIN SQUARE HEAD, DRILLED @ 2⅞", GR 5	-	
9	1	FROG PLATE (SF20-136-88RC)	ES2806-50		29	2	BOLT, 1" DIA x 4⅛" LONG, HEAVY HEX HEAD, GR 8	-	
10	1	FROG PLATE (SF20-136-93RC)	ES2806-52		30	14	BOLT, 1" DIA x 4½" LONG, SQUARE HEAD, GR 5	-	
11	1	FROG PLATE (SF20-136-94RC)	ES2806-52		31	6	BOLT, 1⅜" DIA x 5½" LONG, SQUARE HEAD, GR 8	-	
12	1	FROG PLATE (SF20-136-95RC)	ES2806-52		32	16	SECURITY LOCK NUT, 1" DIA, HEX (SH521), GR 5	-	
13	1	FROG PLATE (SF20-136-96RC)	ES2806-54		33	28	NUT, 1" DIA HEAVY HEX, SLOTTED, GR 5	-	
14	1	FROG PLATE (SF20-136-97RC)	ES2806-54		34	6	SECURITY LOCK NUT, 1⅝" DIA HEX (SH530), GR 8	-	
15	1	FROG PLATE (SF20-136-98RC)	ES2806-56		35	32	FLAT WASHER, FOR 1" DIA x ⅝" THICK, HARDENED	-	
16	1	FROG PLATE (SF20-136-99RC)	ES2806-56		36	6	FLAT WASHER, FOR 1⅜" DIA x ¼" THICK, HARDENED	-	
17	5	HORN KEEPER, REVERSIBLE	-		37	6	TAIL WASHER, FLAT (837K)	-	
18	5	HOLD-DOWN HORN	-		38	14	HEADLOCK WASHER, FLAT (837P)	-	
19	5	WEAR PLATE FOR REVERSIBLE HORN KEEPER	-		39	48	CLIP, PANDROL, E2055	-	
20	1	SPRING BOX ASSEMBLY, WITH 3" MAXIMUM PLUNGER TRAVEL	-		40	28	COTTER PIN, ¼" DIA x 2" LONG	-	

NOTES:

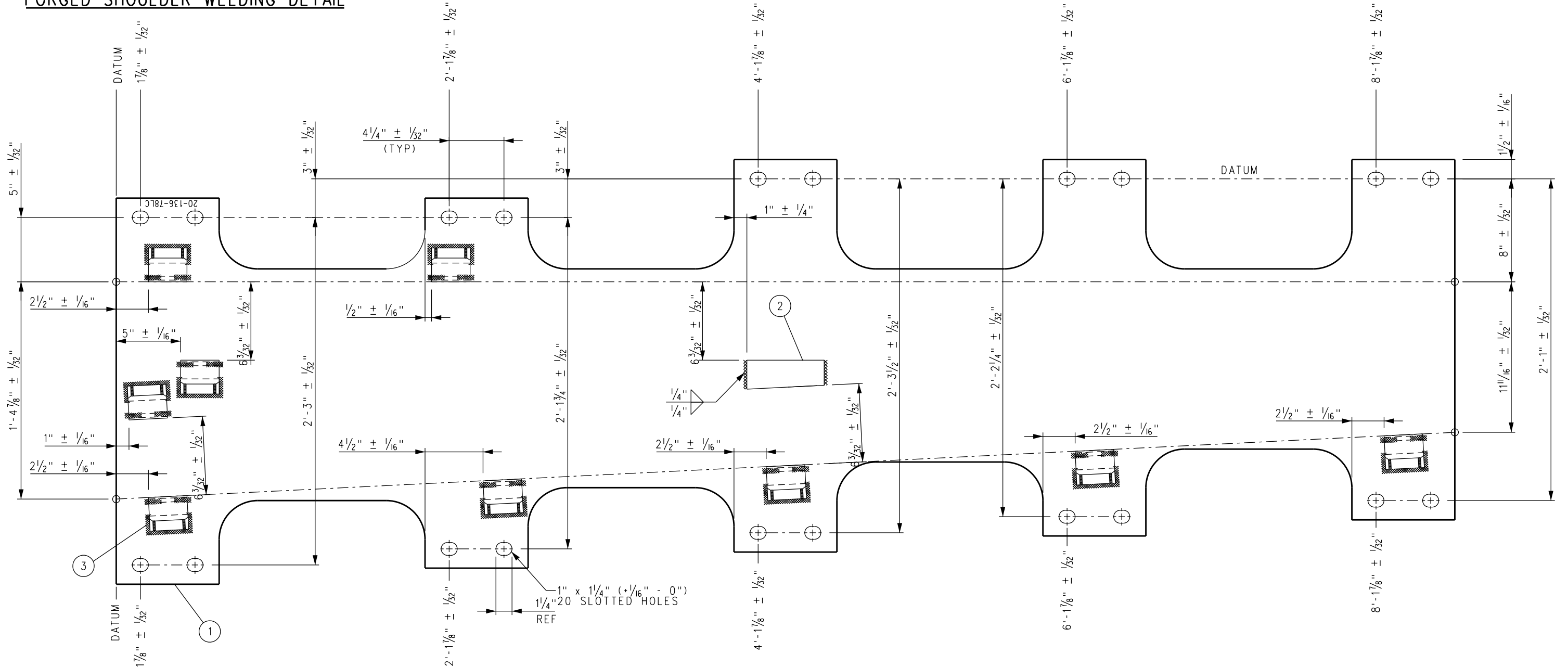
1. RETARDER CLOSING TIME RANGES FROM 1 TO 3 MINUTES.
2. SPRING BOX LOAD IS 300 LB/IN.
3. SPRING WING SHALL BE THROWN TO A1⅞" FLANGEWAY AT THE ¾" POINT TO DETERMINE THE SPRING WING THROWN POSITION.
4. FLAT RAIL BRACES (ITEM NO 25) SHALL BE WELDED WHERE SHOWN, UP AGAINST SPRING WING WHEN FULLY THROWN.
5. RAIL END DRILLING SHALL BE @ 9" AND 1'-3½", 3⅜" ABOVE RAIL BASE, 1⅝" DIA AT ALL 4 RAIL ENDS. ALL RAIL HOLE EDGES SHALL BE ROUNDED WITH A ⅛" R.
6. RETARDER BRACKET (ITEM NO 23) SHALL BE WELDED AS SHOWN.
7. FROG SHALL BE CONSTRUCTED TO TOLERANCES GIVEN ON LATEST AREMA PLAN 1010, PERMISSIBLE VARIATIONS IN COMPLETED FROGS.
8. INSERT TO BE EXPLOSIVE DEPTH HARDENED TO 352 BRINELL PER AREMA.
9. NAME TAG TO BE AFFIXED TO RIGID WING RAIL NEAR ½" PT WITH INFORMATION SHOWN.
10. SCRRRA WILL CONSIDER A TAPERED HEEL SPRING OF SAME ALIGNMENT AND DIMENSIONS TO REPLACE WSM.



				DRAWN BY: HDR DATE: 03/31/2011				SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES: SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD 2806			
				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				METROLINK®				NO 20 WSM FROG RH FROG ASSEMBLY PLAN VIEW AND FROG PACK CONCRETE TIES-136 LB RE RAIL				SCALE: NTS			
																REVISION SHEET 1 OF 1			
																CADD FILE: ES2806-42			



FORGED SHOULDER WELDING DETAIL



FROG BASE PLATE 20-136-78LC

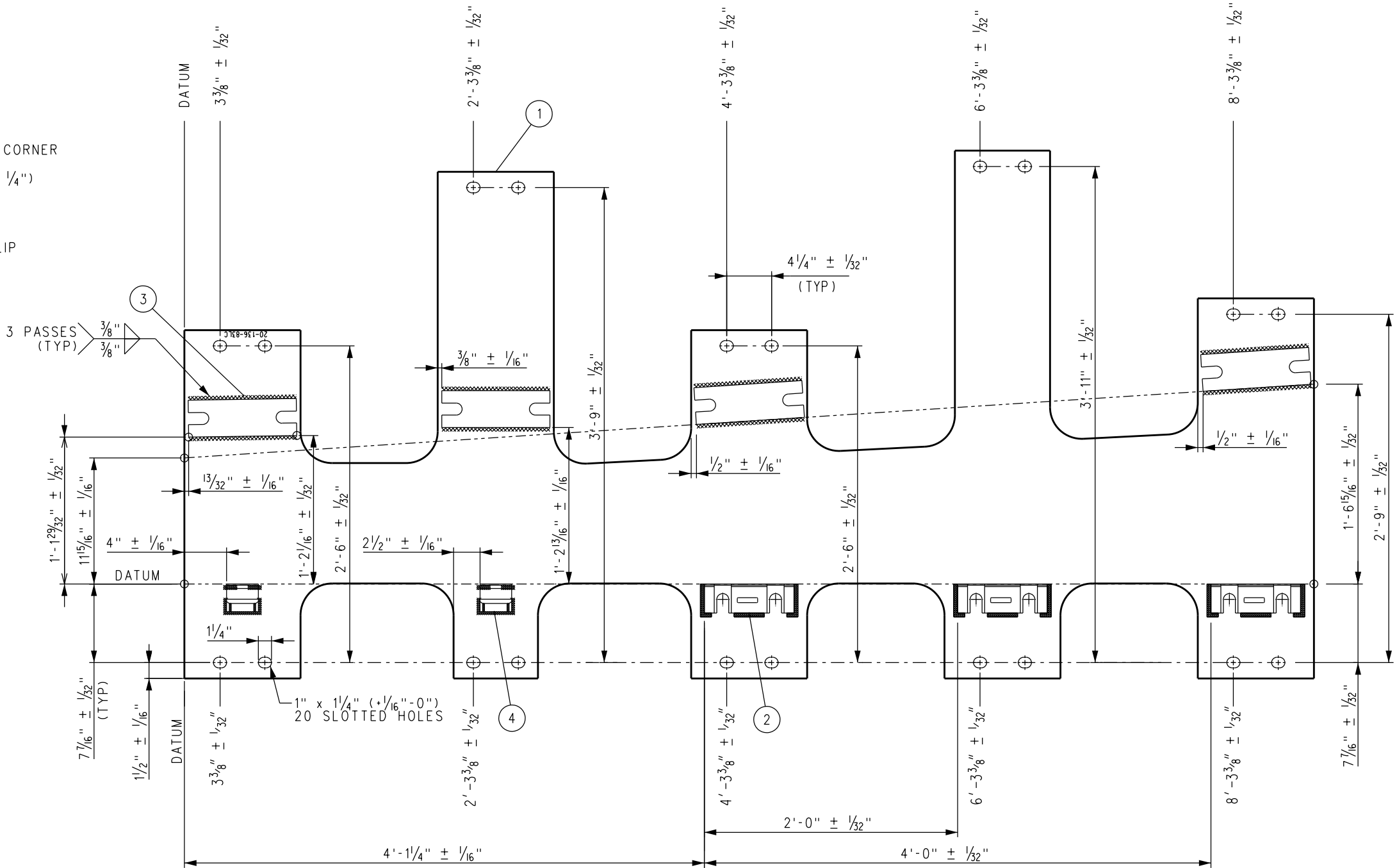
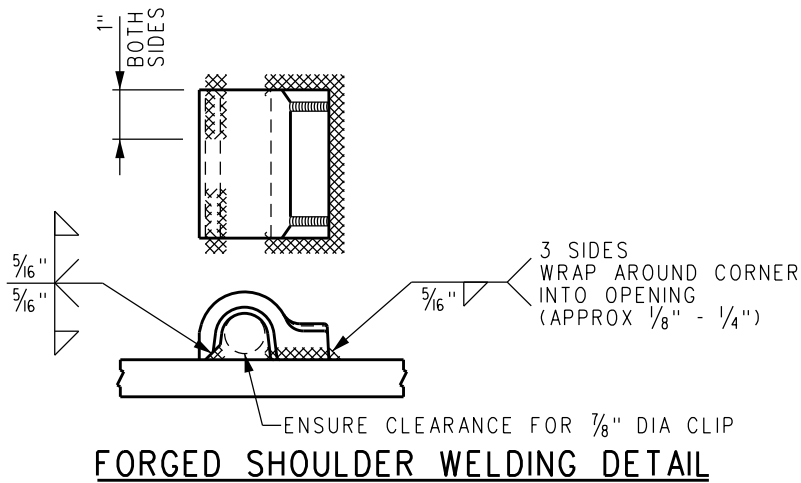
BILL OF MATERIAL					DWG NO	SCRR PART NO
ITEM	QTY	DESCRIPTION				
1	1	BURNED PLATE, ASTM A36, 3/4" THICK			-	
2	1	BURNED STOP, 1/2" THICK, TAPERED 1 5/16" TO 2 1/4", 6" LONG			-	
3	9	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1			-	

- 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. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

				DRAWN BY: HDR DATE: 03/31/2011		<div>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.</div> <div> METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>		ENGINEERING STANDARDS		STANDARD 2806			
				<div> ASSISTANT DIRECTOR: STANDARDS & DESIGN</div>				NO 20 WSM FROG LH FROG BASE PLATE 20-78LC CONCRETE TIES-136 LB RE RAIL		SCALE: NTS		REVISION SHEET 1 OF 1	
				<div> DIRECTOR OF ENGINEERING AND CONSTRUCTION</div>								CADD FILE: ES2806-45	
X	XX-XX-XX	REVISION	XX	XX									
REV.	DATE	DESCRIPTION	DES.	ENG.									

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. OPENINGS IN BOLT CAPTURE BLOCKS SHALL BE FREE OF WELD AND SPATTER.
4. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.



FROG BASE PLATE 20-136-83LC

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	BURNED PLATE, ASTM A36, 3/4" THICK	-	
2	3	CAPTURE BLOCK FOR PLATE CLIP	-	
3	4	CAPTURE BLOCK FOR HORN KEEPER	-	
4	2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	

DRAWN BY: HDR DATE: 03/31/2011		REVISION	
X XX-XX-XX		XX XX	
REV. DATE		DESCRIPTION	
		DES. ENG.	

DRAWN BY: HDR DATE: 03/31/2011		REVISION	
X XX-XX-XX		XX XX	
REV. DATE		DESCRIPTION	
		DES. ENG.	

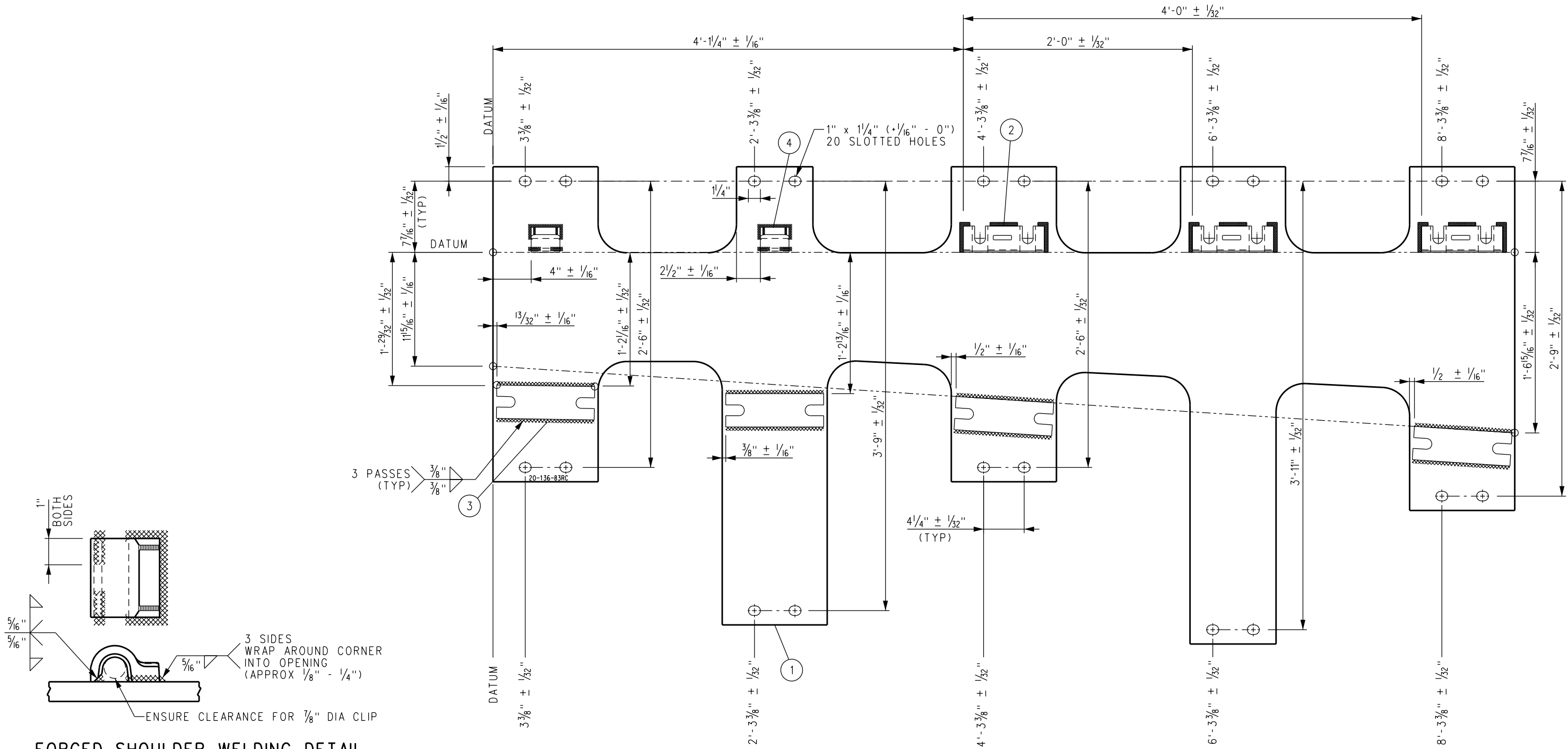
DRAWN BY: HDR DATE: 03/31/2011		REVISION	
X XX-XX-XX		XX XX	
REV. DATE		DESCRIPTION	
		DES. ENG.	

DRAWN BY: HDR DATE: 03/31/2011		REVISION	
X XX-XX-XX		XX XX	
REV. DATE		DESCRIPTION	
		DES. ENG.	

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. OPENINGS IN BOLT CAPTURE BLOCKS SHALL BE FREE OF WELD AND SPATTER.
4. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	BURNED PLATE, ASTM A36, 3/4" THICK	-	
2	3	CAPTURE BLOCK FOR PLATE CLIP	-	
3	4	CAPTURE BLOCK FOR HORN KEEPER	-	
4	2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	



FORGED SHOULDER WELDING DETAIL

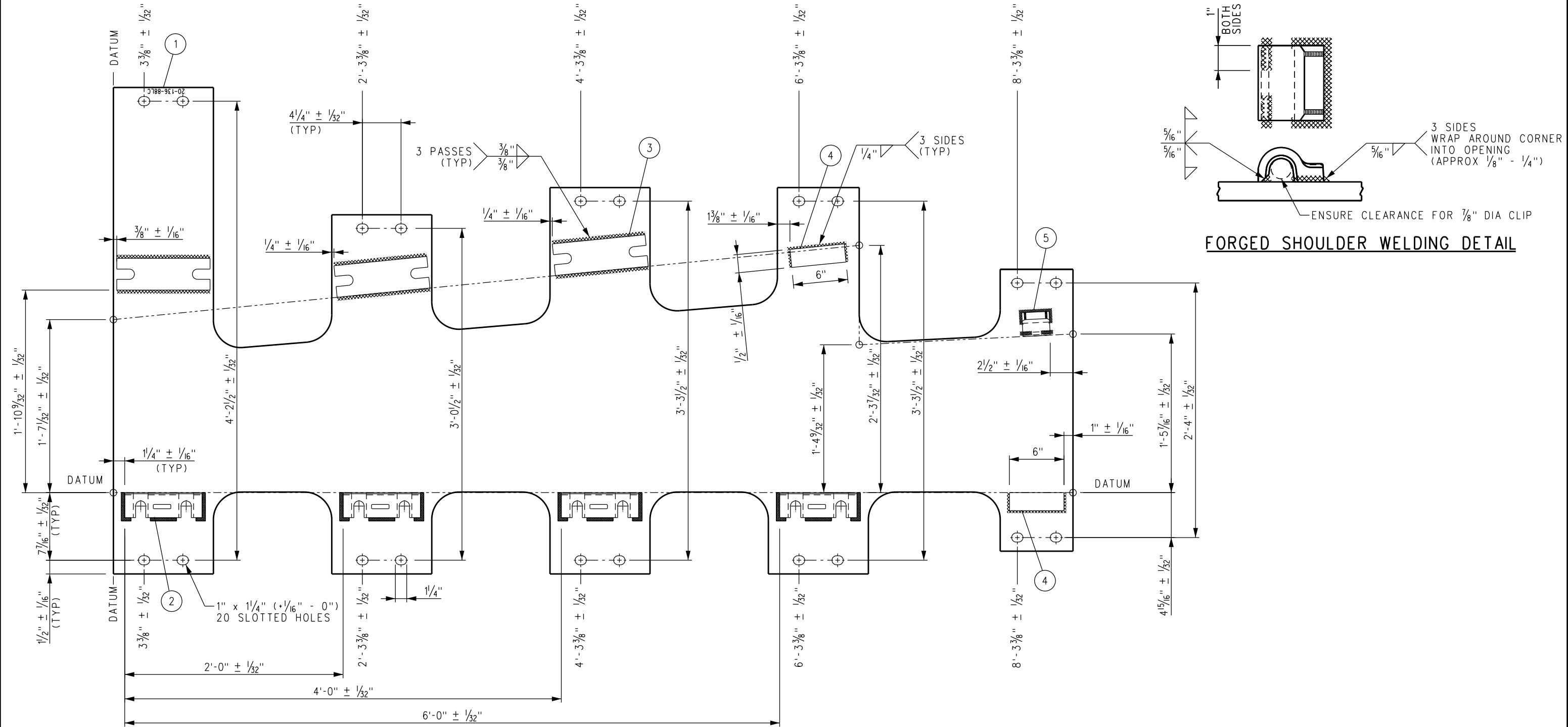
FROG BASE PLATE 20-136-83RC

				DRAWN BY: HDR DATE: 03/31/2011		<div>SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.</div> <div> METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012</div>		ENGINEERING STANDARDS		STANDARD 2806			
				<div>Narek D. Bose ASSISTANT DIRECTOR: STANDARDS & DESIGN</div> <div>William Dacan DIRECTOR OF ENGINEERING AND CONSTRUCTION</div>				NO 20 WSM FROG RH FROG BASE PLATE 20-83RC CONCRETE TIES-136 LB RE RAIL		SCALE: NTS		REVISION SHEET 1 OF 1	
												CADD FILE: ES2806-48	
X	XX-XX-XX	REVISION	XX	XX									
REV.	DATE	DESCRIPTION	DES.	ENG.									

NOTES:

1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
2. WELDS TO BE DRESSED FLUSH WITH SHOULDER AND NOT TO PROTRUDE INTO RAIL SEAT.
3. OPENINGS IN BOLT CAPTURE BLOCKS SHALL BE FREE OF WELD AND SPATTER.
4. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

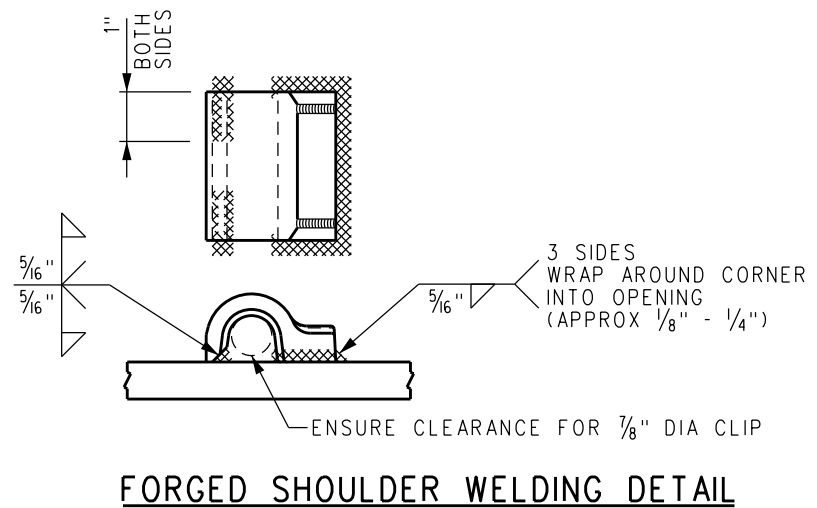
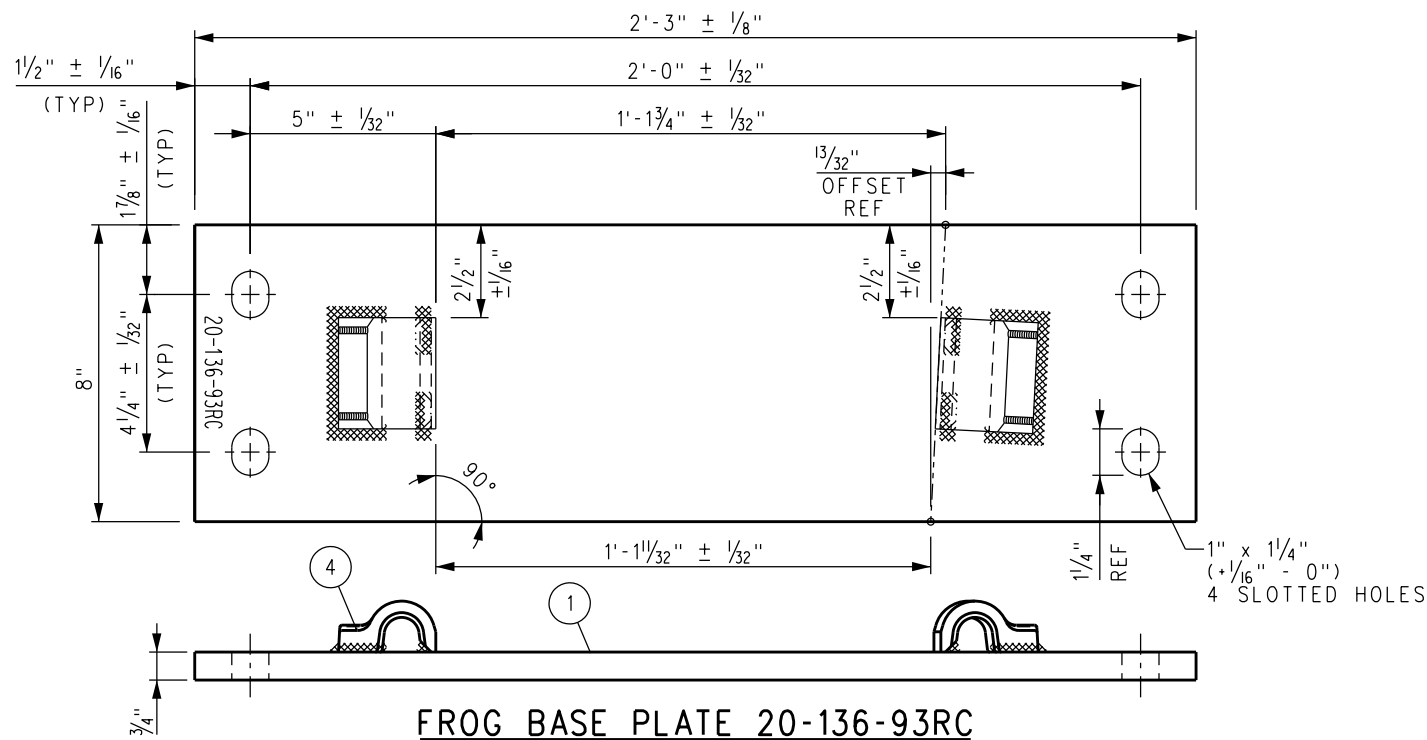
BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	BURNED PLATE, ASTM A36, 3/4" THICK	-	
2	4	CAPTURE BLOCK FOR PLATE CLIP	-	
3	3	CAPTURE BLOCK FOR HORN KEEPER	-	
4	2	FLAT BAR, ASTM A36, 1/2" THICK x 2" x 6" LONG	-	
5	1	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	



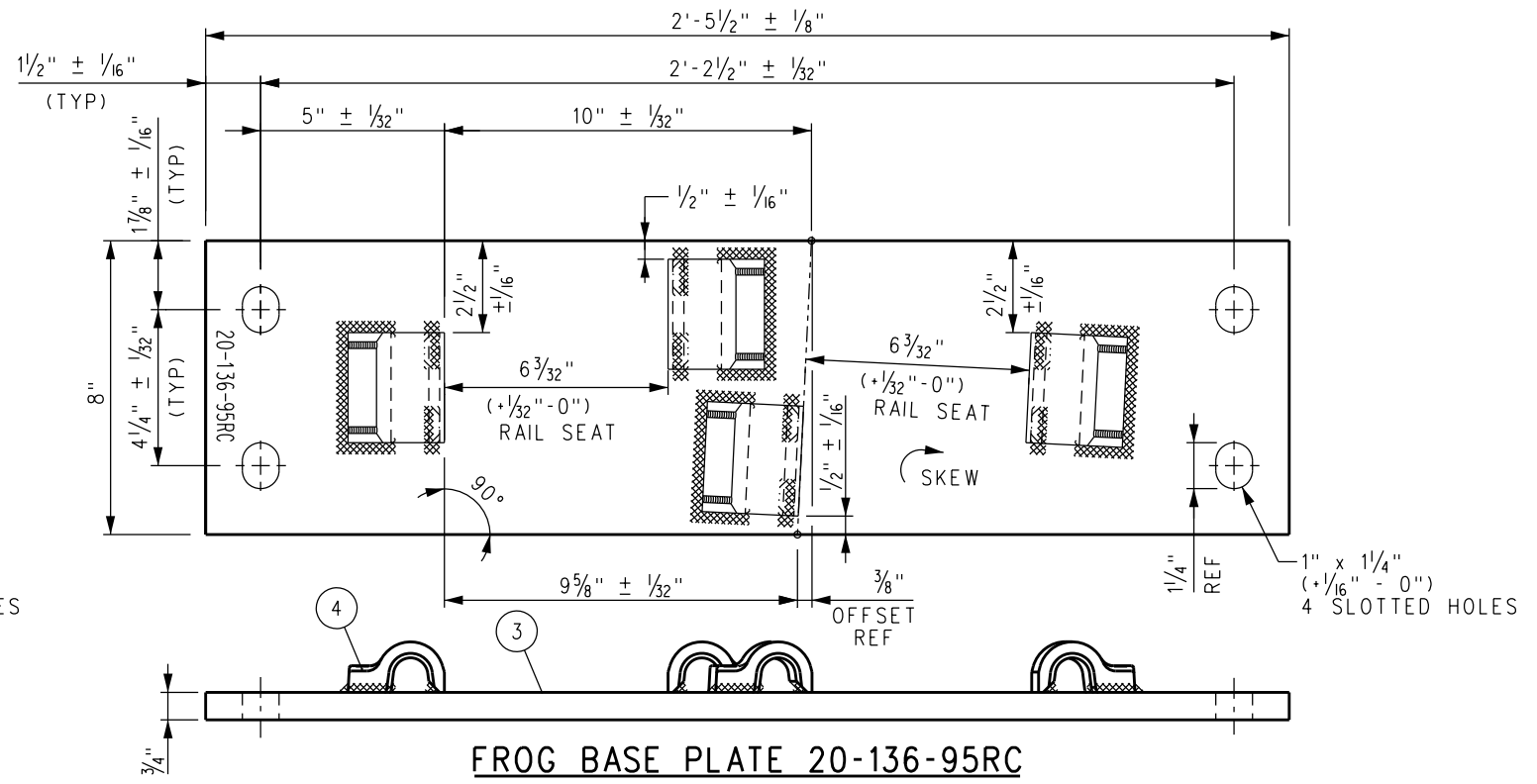
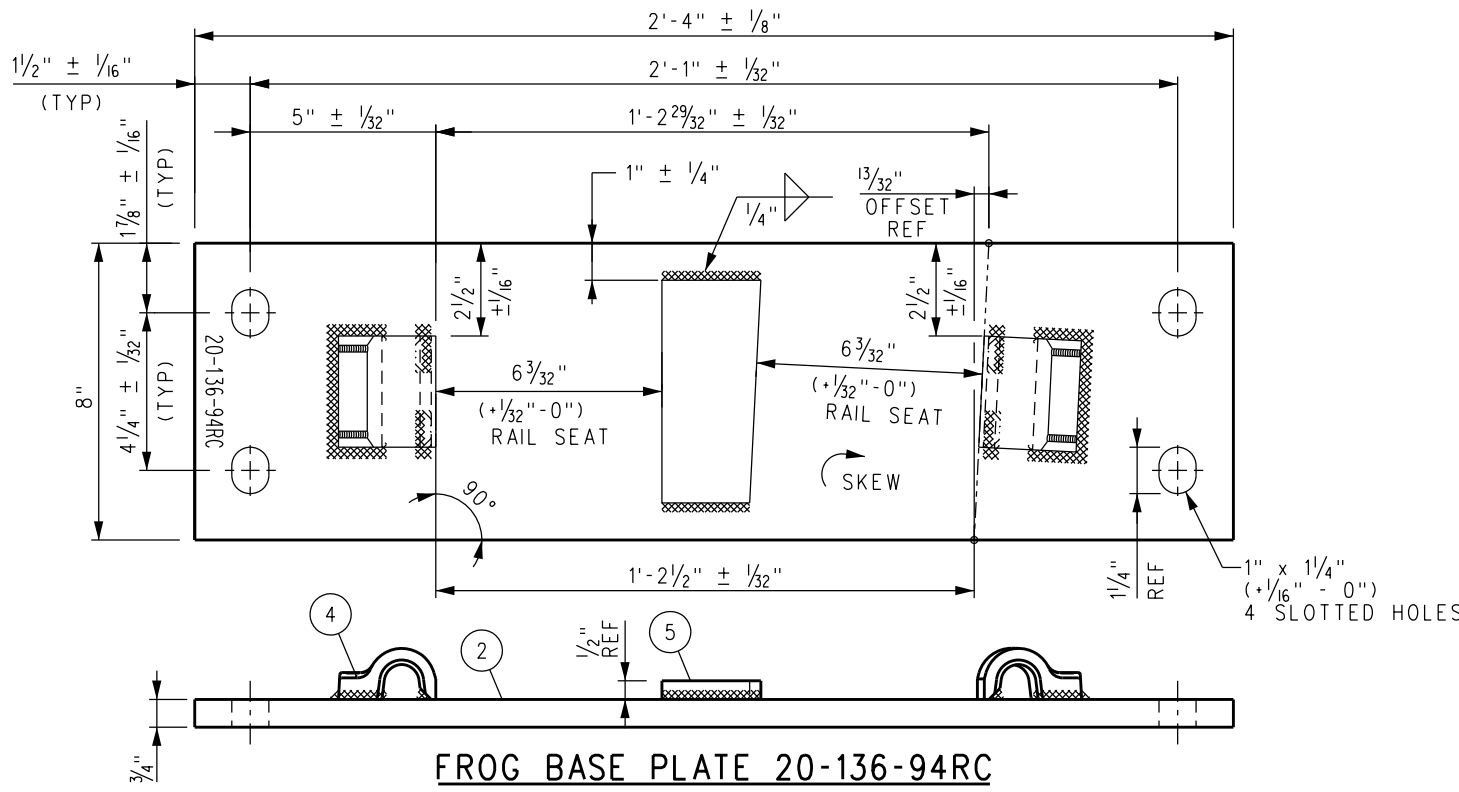
FROG BASE PLATE 20-136-88LC

DRAWN BY: HDR DATE: 03/31/2011				SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD
REVISION				METROLINK				NO 20 WSM FROG LH				2806
REV. DATE DESCRIPTION DES. ENG.				SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY				FROG BASE PLATE 20-88LC				SCALE: NTS
				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				CONCRETE TIES-136 LB RE RAIL				REVISION SHEET 1 OF 1
												CADD FILE: ES2806-49

BILL OF MATERIAL						
ITEM	QTY FOR 20-93RC	QTY FOR 20-94RC	QTY FOR 20-95RC	DESCRIPTION	DWG NO	SCRR PART NO
1	1	0	0	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-3" LONG	-	
2	0	1	0	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-4" LONG	-	
3	0	0	1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-5 1/2" LONG	-	
4	2	2	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-	
5	0	1	0	BURNED STOP, 1/2" THICK, TAPERED 2 3/8" TO 2 21/32", 6" LONG	-	

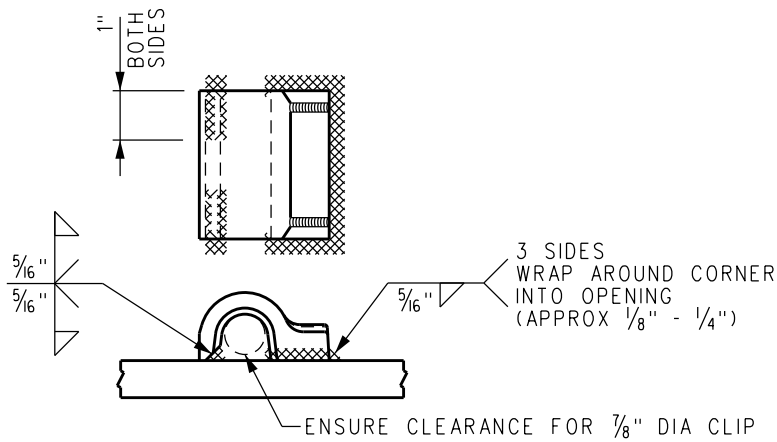


- NOTES:**
1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
 2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
 3. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.



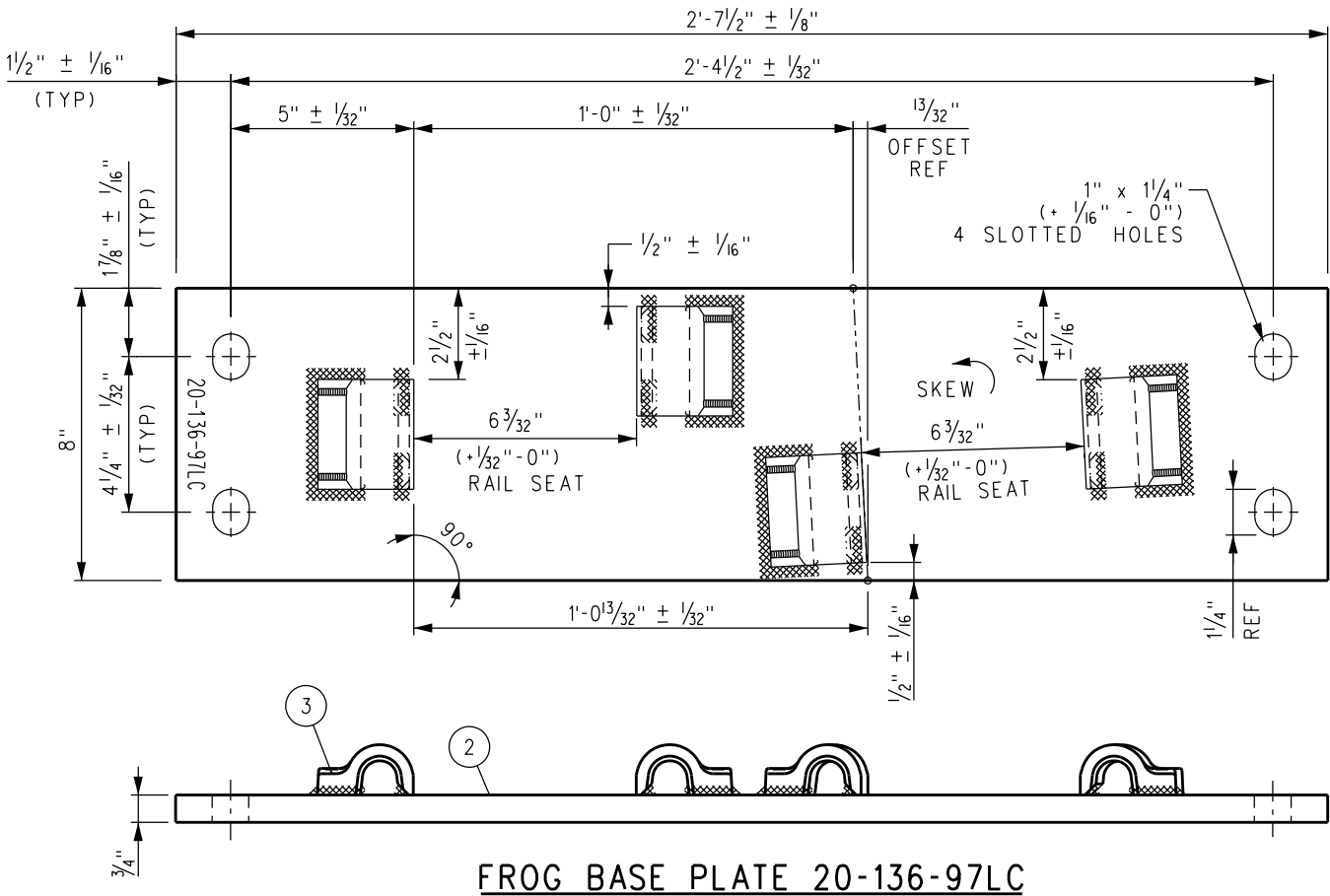
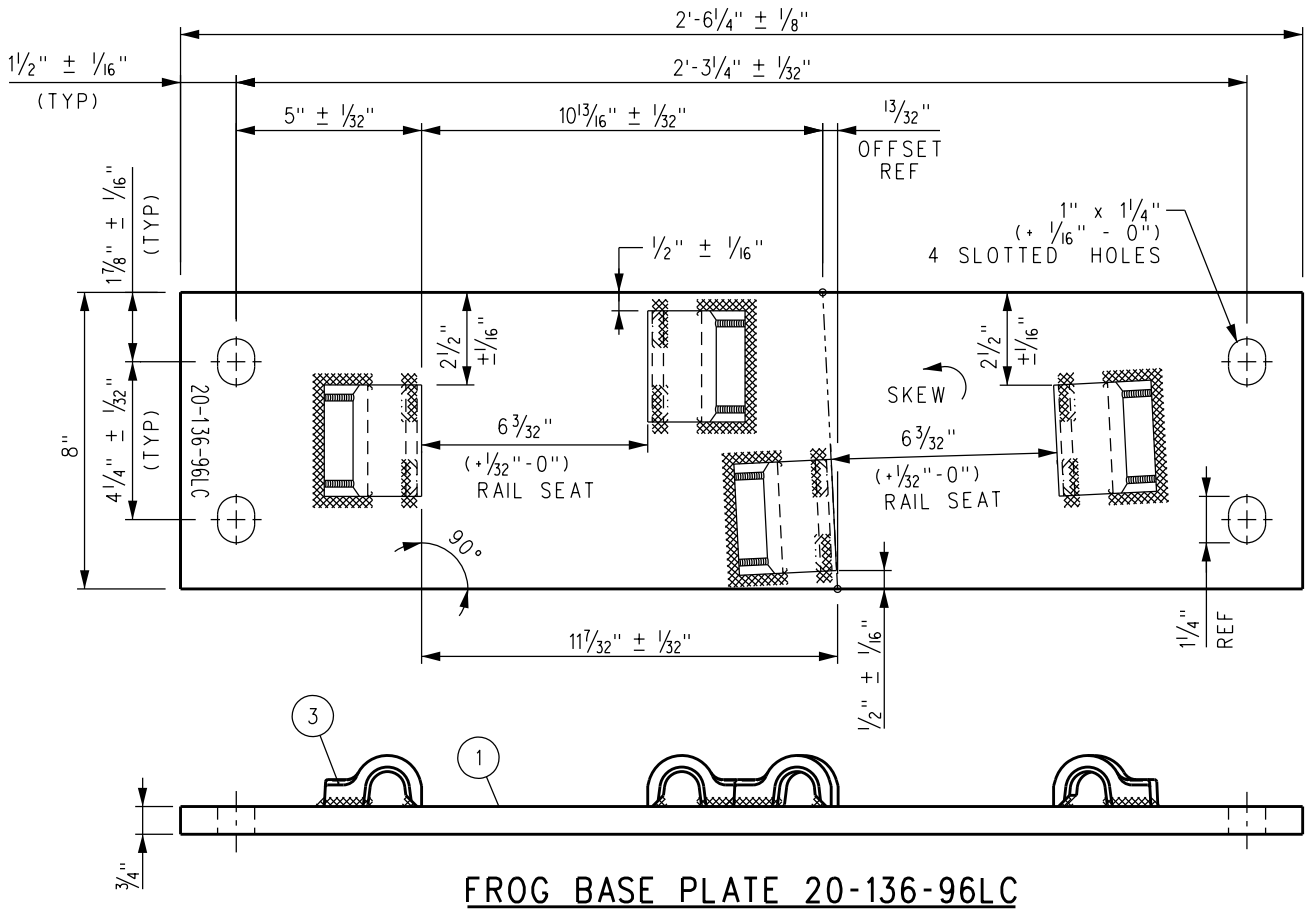
DRAWN BY: HDR DATE: 03/31/2011				SCRRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRRA APPROVED USES ONLY. FOR NON-SCRRRA APPROVED USES, SCRRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRRA. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD
Narek D. Bae				METROLINK				NO 20 WSM FROG RH				2806
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY				ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				FROG BASE PLATES 20-93RC, 20-94RC AND 20-95RC				SCALE: NTS
CONCRETE TIES-136 LB RE RAIL								1 OF 1				SHEET
												ES2806-52

BILL OF MATERIAL				
ITEM	QTY FOR 20-96LC	QTY FOR 20-97LC	DESCRIPTION	DWG NO
1	1	0	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-6 1/4" LONG	-
2	0	1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-7 1/2" LONG	-
3	4	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-



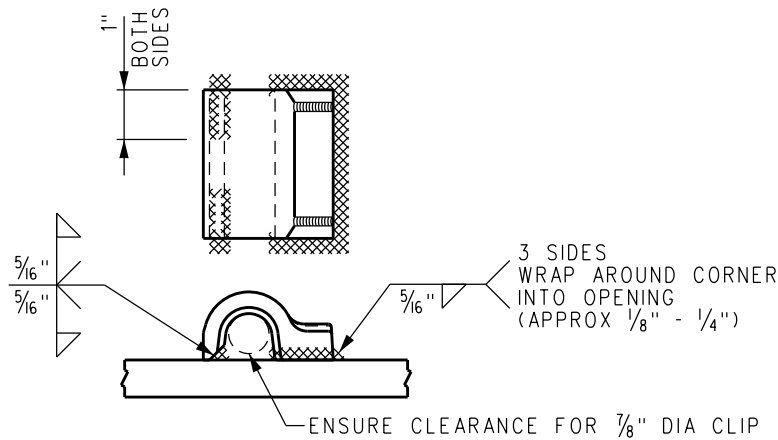
- NOTES:
1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
 2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
 3. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

FORGED SHOULDER WELDING DETAIL



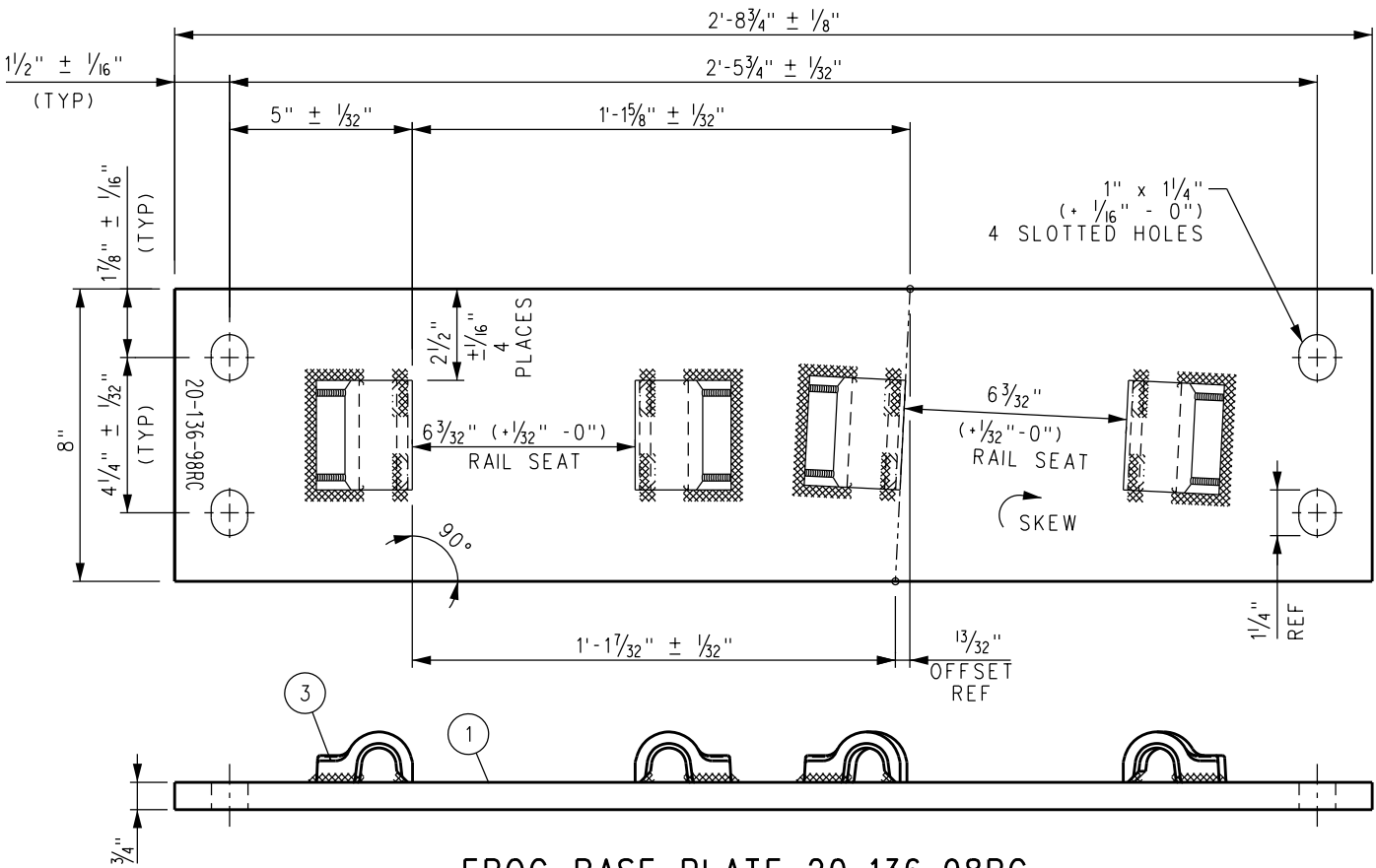
				DRAWN BY: HDR DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS NO 20 WSM FROG LH FROG BASE PLATES 20-96LC AND 20-97LC CONCRETE TIES-136 LB RE RAIL	STANDARD 2806 SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2806-53
X	XX-XX-XX	REVISION	XX	XX					
REV.	DATE	DESCRIPTION	DES.	ENG.					

BILL OF MATERIAL				
ITEM	QTY FOR 20-98RC	QTY FOR 20-99RC	DESCRIPTION	DWG NO
1	1	0	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-8 3/4" LONG	-
2	0	1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-10" LONG	-
3	4	4	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	-

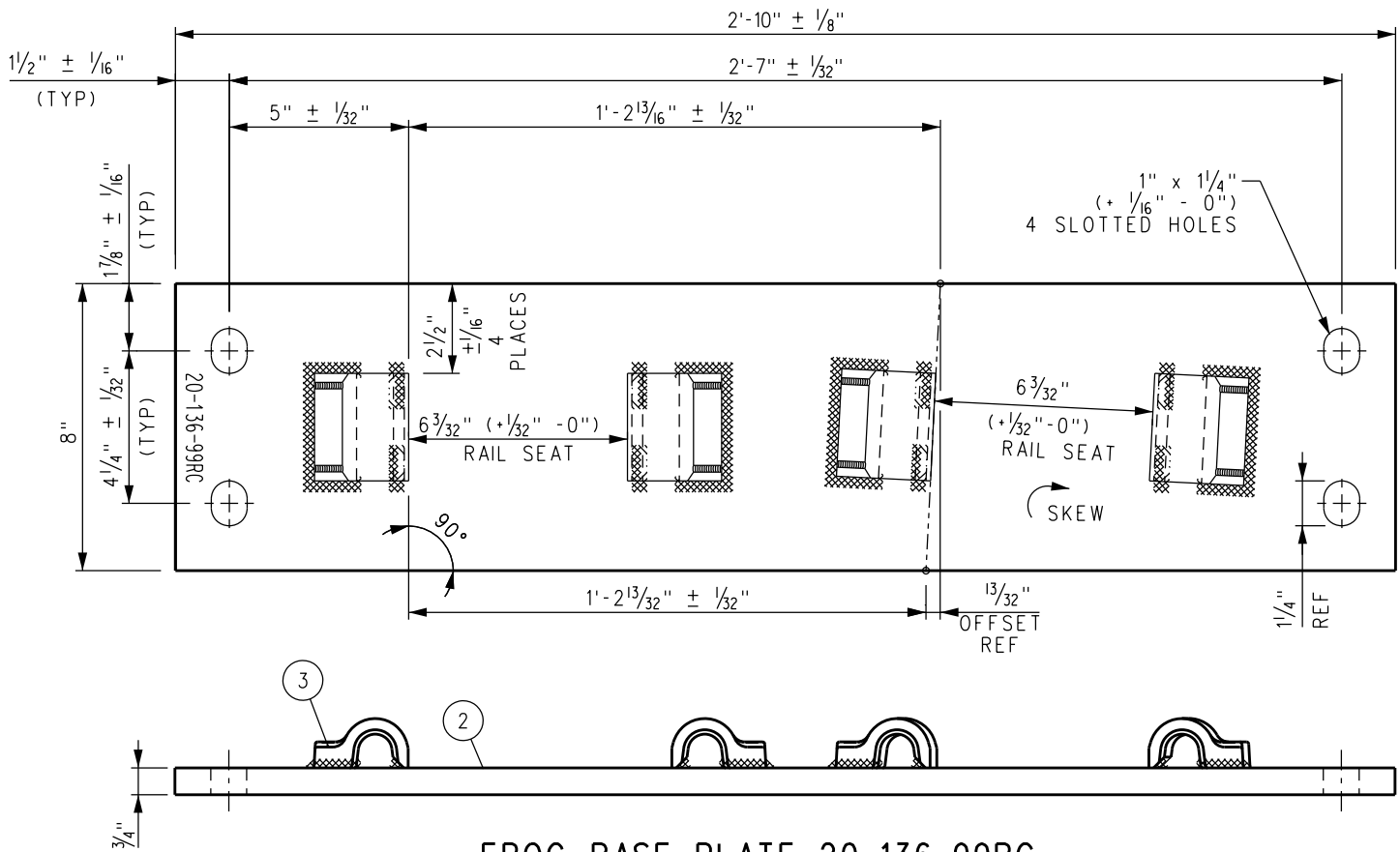


- NOTES:**
1. I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
 2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
 3. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

FORGED SHOULDER WELDING DETAIL



FROG BASE PLATE 20-136-98RC



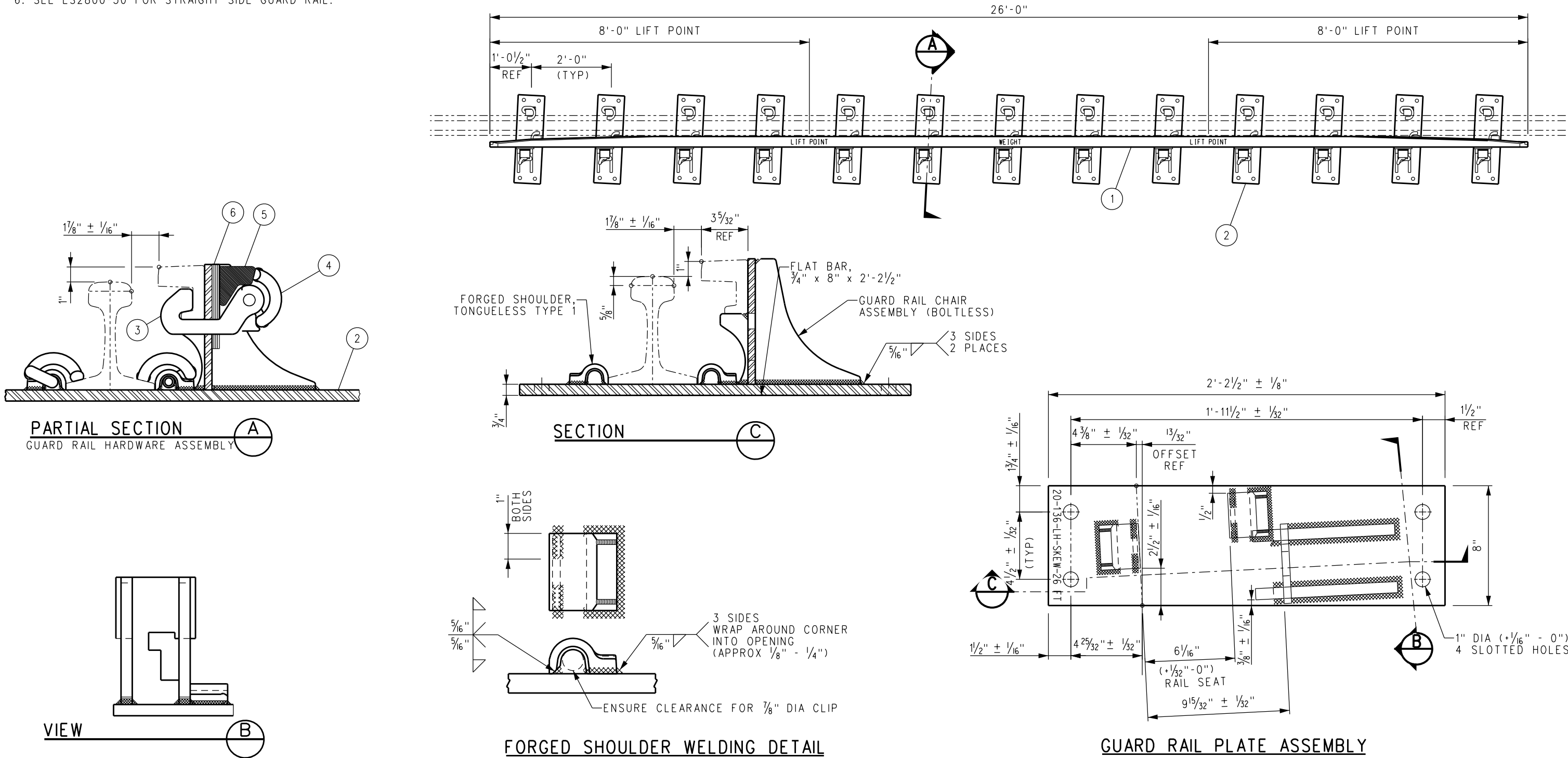
FROG BASE PLATE 20-136-99RC

				DRAWN BY: HDR DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.		 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		ENGINEERING STANDARDS		STANDARD 2806	
				 ASSISTANT DIRECTOR: STANDARDS & DESIGN						NO 20 WSM FROG RH		SCALE: NTS	
				 DIRECTOR OF ENGINEERING AND CONSTRUCTION						FROG BASE PLATES 20-98RC AND 20-99RC		REVISION SHEET 1 OF 1	
										CONCRETE TIES-136 LB RE RAIL		CADD FILE: ES2806-56	
X XX-XX-XX REVISION XX XX													
REV. DATE DESCRIPTION DES. ENG.													

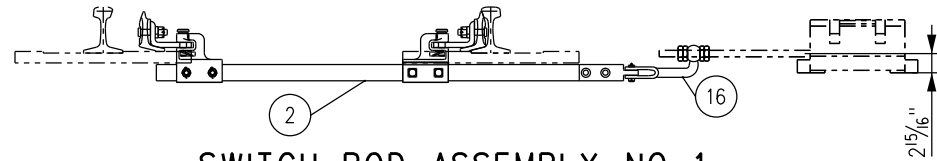
NOTES:

1. PLATE SPACING IS SET FOR SHIPPING ONLY. FINAL PLATE SPACING IS TO BE DETERMINED BY TIE SPACING AT TIME OF INSTALLATION.
2. PANDROL SPRING CLIPS (E2055) TO BE INCLUDED IN ASSEMBLY.
3. LIFT POINTS AND WEIGHT OF ASSEMBLY TO BE MARKED ON HEAD OF WEAR BAR WITH WHITE PAINT.
4. PLATE IS TO BE STAMPED WITH PLATE I.D. WITH 1/2" HIGH CHARACTERS AS SHOWN.
5. GRIND AWAY CORNER OF PANDROL SHOULDER TO CLEAR FOOT OF CHAIR ASSEMBLY.
6. SEE ES2800-50 FOR STRAIGHT SIDE GUARD RAIL.

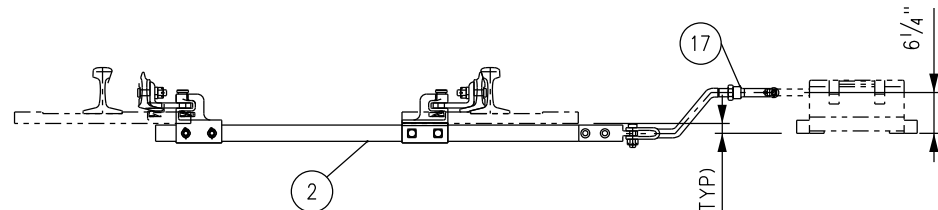
BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	GUARD BAR, UIC33 1200 SERIES x 26'-0" LONG	-	
2	13	GUARD RAIL PLATE ASSEMBLY, RAISED 1", LH SKEWED	-	
3	13	H-CLAMP	-	
4	39	CLIP, PANDROL, E2055	-	
5	13	LOCKING BLOCK	-	
6	52	SHIM, 1/8" x 3" x 6"	-	



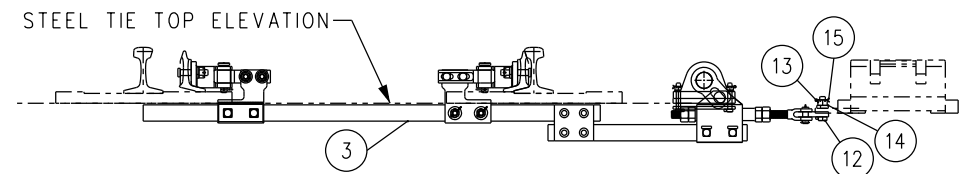
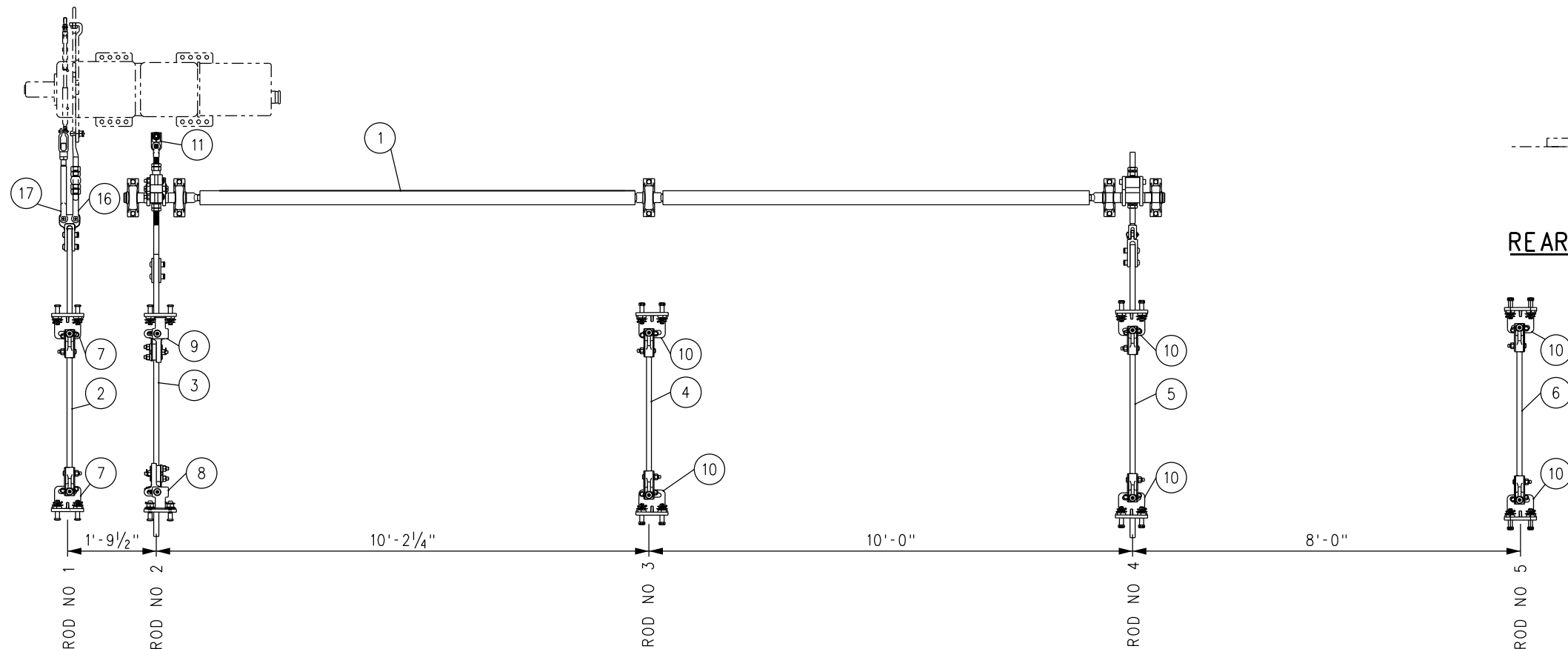
DRAWN BY: HDR DATE: 03/31/2011				SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.				ENGINEERING STANDARDS				STANDARD
REVISION				NO 20 GUARD RAIL ASSEMBLY, LH SKEWED WITH PLATES				2806				SCALE:
DESCRIPTION				26'-0" LONG, BOLTLESS, RAISED 1"				NTS				REVISION SHEET
DES. ENG.				CONCRETE TIES-136 LB RE RAIL, 1-7/8" FLANGWAY				1 OF 1				CADD FILE:
								ES2806-61				



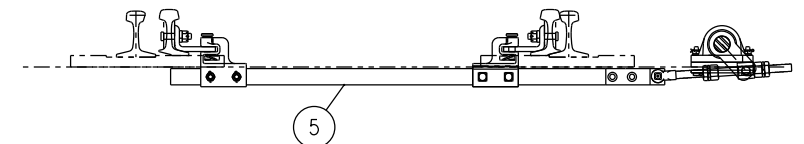
SWITCH ROD ASSEMBLY NO 1
LOCK ROD CONNECTION SHOWN
(VIEW FROM HEEL TOWARDS PS)



SWITCH ROD ASSEMBLY NO 1
POINT DETECTOR ROD CONNECTION SHOWN
(VIEW FROM HEEL TOWARDS PS)



DRIVE ROD (ROD NO 2) ASSEMBLY
FRONT HELPER ROD CRANK ATTACHES TO BASKET
(VIEW FROM HEEL TOWARDS PS)

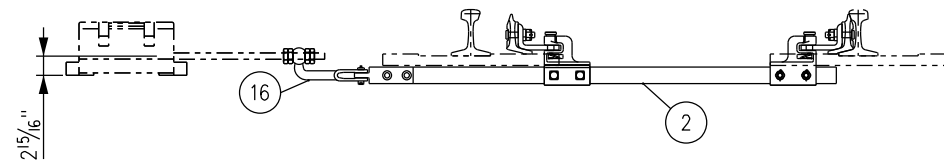


REAR HELPER (ROD NO 4) DRIVE ROD ASSEMBLY
REAR HELPER ROD CRANK ATTACHES TO ROD PIN

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	ROTARY ASSIST ASSEMBLY FOR NO 20-136 LB RE TURNOUT	-	
2	1	SWITCH ROD NO 1, FOR POINT DETECTOR/LOCK ROD, (20-136-1)	ES2806-73	
3	1	SWITCH ROD NO 2, DRIVE, C/W BASKET (20-136-2)	ES2806-73	
4	1	SWITCH ROD NO 3, THROW, (20-136-3)	ES2806-73	
5	1	SWITCH ROD NO 4, THROW, (20-136-4)	ES2806-74	
6	1	SWITCH ROD NO 5, THROW, (20-136-5)	ES2806-74	
7	2	ROD POINT BRACKET, DETECTOR/LOCK ROD, HOLES AT 2 7/8" ARB*	-	
8	1	ROD POINT BRACKET, THROW ROD, ANTI-ROLL, HOLES AT 2 7/8" ARB*, LH	-	
9	1	ROD POINT BRACKET, THROW ROD, ANTI-ROLL, HOLES AT 2 7/8" ARB*, RH	-	
10	6	ROD POINT BRACKET, HOLES AT 2 3/8" ARB*C/W SQUARE BOLTS	-	
11	1	DROP LUG FOR US&S M23 SWITCH MACHINE DRIVE BAR	-	
12	1	BOLT, 7/8" DIA x 3" LONG, DRILLED 2 9/16" BELOW HEAD, HEAVY HEX, GR 5	-	
13	1	NUT, 7/8" DIA SLOTTED HEAVY HEX, GR 8	-	
14	1	SPRING WASHER, 7/8" DIA	-	
15	1	COTTER PIN, 3/16" DIA x 1 3/4" LONG	-	
16	1	LOCK ROD, FOR M23 SWITCH MACHINE, HST	-	
17	1	DETECTOR ROD, FOR M23 SWITCH MACHINE, HST	-	

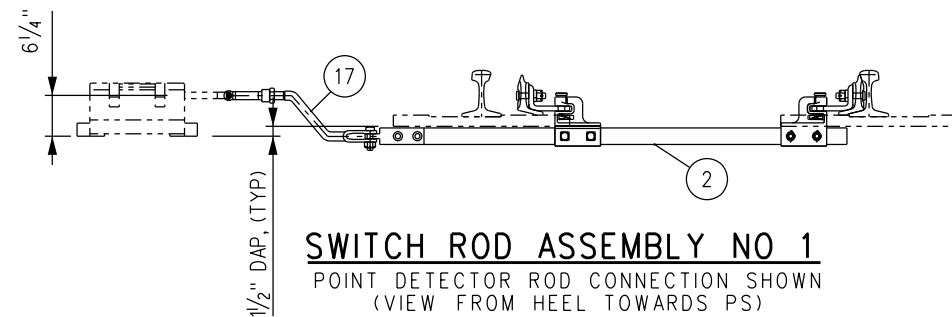
ARB* - ABOVE RAIL BASE

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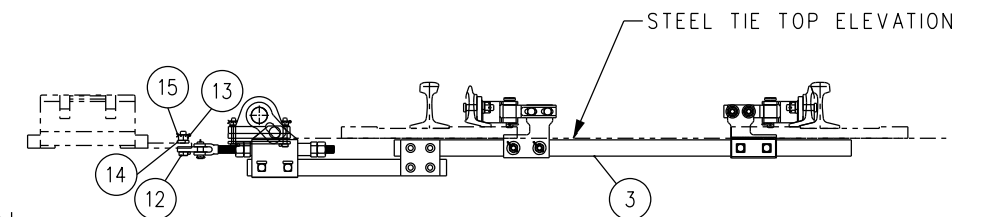
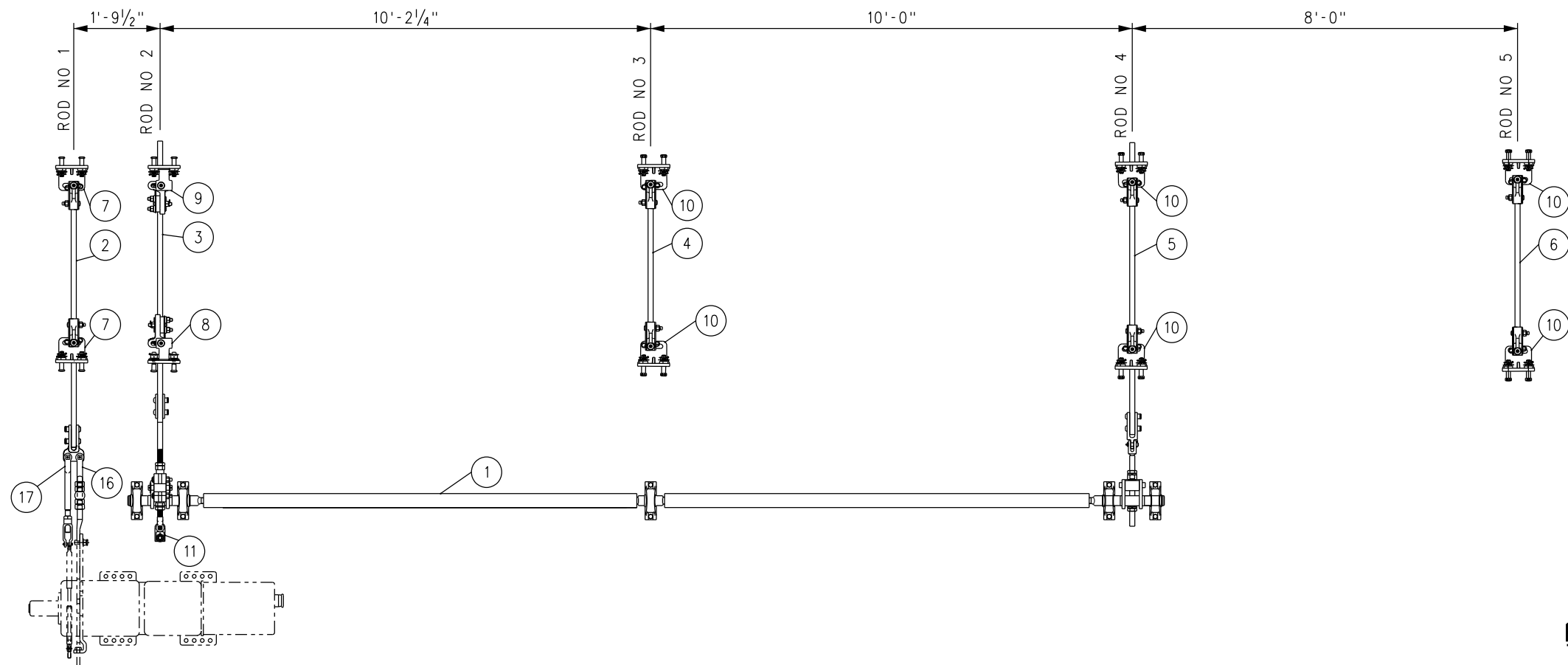
SWITCH ROD ASSEMBLY NO 1

LOCK ROD CONNECTION SHOWN
(VIEW FROM HEEL TOWARDS PS)



SWITCH ROD ASSEMBLY NO 1

POINT DETECTOR ROD CONNECTION SHOWN
(VIEW FROM HEEL TOWARDS PS)



DRIVE ROD (ROD NO 2) ASSEMBLY

FRONT HELPER ROD CRANK ATTACHES TO BASKET
(VIEW FROM HEEL TOWARDS PS)



REAR HELPER (ROD NO 4) DRIVE ROD ASSEMBLY

REAR HELPER ROD CRANK ATTACHES TO ROD PIN

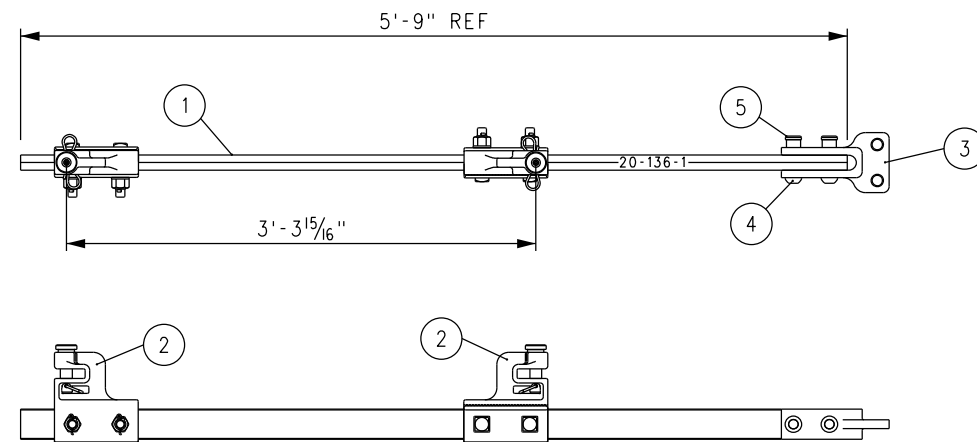
BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRRA PART NO
1	1	ROTARY ASSIST ASSEMBLY FOR NO 20-136 LB RE TURNOUT	-	
2	1	SWITCH ROD NO 1, FOR POINT DETECTOR/LOCK ROD, (20-136-1)	ES2806-73	
3	1	SWITCH ROD NO 2, DRIVE, C/W BASKET (20-136-2)	ES2806-73	
4	1	SWITCH ROD NO 3, THROW, (20-136-3)	ES2806-73	
5	1	SWITCH ROD NO 4, THROW, (20-136-4)	ES2806-74	
6	1	SWITCH ROD NO 5, THROW, (20-136-5)	ES2806-74	
7	2	ROD POINT BRACKET, DETECTOR/LOCK ROD, HOLES AT 2 $\frac{7}{8}$ " ARB*	-	
8	1	ROD POINT BRACKET, THROW ROD, ANTI-ROLL, HOLES AT 2 $\frac{7}{8}$ " ARB*, LH	-	
9	1	ROD POINT BRACKET, THROW ROD, ANTI-ROLL, HOLES AT 2 $\frac{7}{8}$ " ARB*, RH	-	
10	6	ROD POINT BRACKET, HOLES AT 2 $\frac{3}{8}$ " ARB* C/W SQUARE BOLTS	-	
11	1	DROP LUG FOR US&S M23 SWITCH MACHINE DRIVE BAR	-	
12	1	BOLT, $\frac{7}{8}$ " DIA x 3" LONG, DRILLED 2 $\frac{9}{16}$ " BELOW HEAD, HEAVY HEX, GR 5	-	
13	1	NUT, $\frac{7}{8}$ " DIA SLOTTED HEAVY HEX, GR 8	-	
14	1	SPRING WASHER, $\frac{7}{8}$ " DIA	-	
15	1	COTTER PIN, $\frac{3}{16}$ " DIA x 1 $\frac{3}{4}$ " LONG	-	
16	1	LOCK ROD, FOR M23 SWITCH MACHINE, HST	-	
17	1	DETECTOR ROD, FOR M23 SWITCH MACHINE, HST	-	

ARB* - ABOVE RAIL BASE

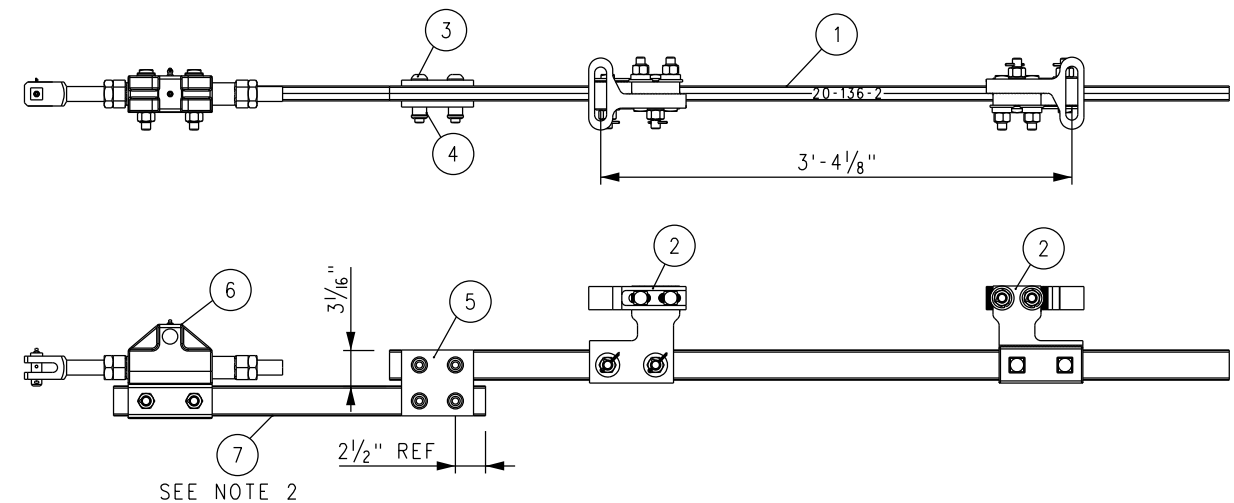
BILL OF MATERIALS FOR SWITCH ROD 20-136-1					BILL OF MATERIALS FOR SWITCH ROD 20-136-2				
ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRRA PART NO
1	1	SWITCH ROD 20-136-1	-		1	1	BLUE ROD, PULTRUDED COMPOSITE, 1¼" x 2½" x 5'-10" LONG, 20-136-2	-	
2	2	SWITCH CLIP ASSEMBLY, ADJUSTABLE, FOR HOLLOW TIE COMPOSITE RODS	-		2	2	CLIP/LUG ASSEMBLY, HST SWITCH, ANTI-ROLLOVER DESIGN, LH	-	
3	1	CONNECTOR LUG FOR POINT DETECTOR/LOCK RODS	-		3	4	HUCK BOLT, ¾" DIA (C50LR-BR24-36)	-	
4	2	HUCK BOLT, ¾" DIA (C50LR-BR24-36)	-		4	4	HUCK COLLAR, ¾" DIA (LC-2R24B)	-	
5	2	HUCK COLLAR, ¾" DIA (LC-2R24B)	-		5	2	SPLICE PLATE, FOR BLUE ROD BASKET ASSEMBLY RODS	-	
NOTES:					6	1	BASKET/ROD ASSEMBLY FOR HST WITH ROTARY ASSIST	-	
					7	1	BLUE ROD, PULTRUDED COMPOSITE, 1¼" x 2½" x 2'-7" LONG, 1-B	-	

NOTES:

1. ROD IDENTIFICATION TO BE ENGRAVED ON ROD CLEARLY AS SHOWN, $\frac{3}{8}$ " MIN HEIGHT.
2. SWITCH RODS MUST BE PARALLEL WITHIN $\frac{1}{16}$ " OVER LENGTH OF 1-B ROD.



SWITCH ROD ASSEMBLY 20-136-1

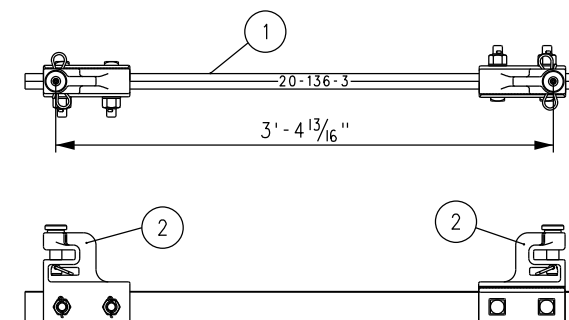


SWITCH ROD ASSEMBLY 20-136-2




BILL OF MATERIALS FOR SWITCH ROD 20-136-3				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SWITCH ROD 20-136-3	-	
2	2	SWITCH CLIP ASSEMBLY, ADJUSTABLE, FOR HOLLOW TIE	-	

NOTE: CENTER TO CENTER PIN
DIMENSION REQUIRED FOR
4 3/4" THROW

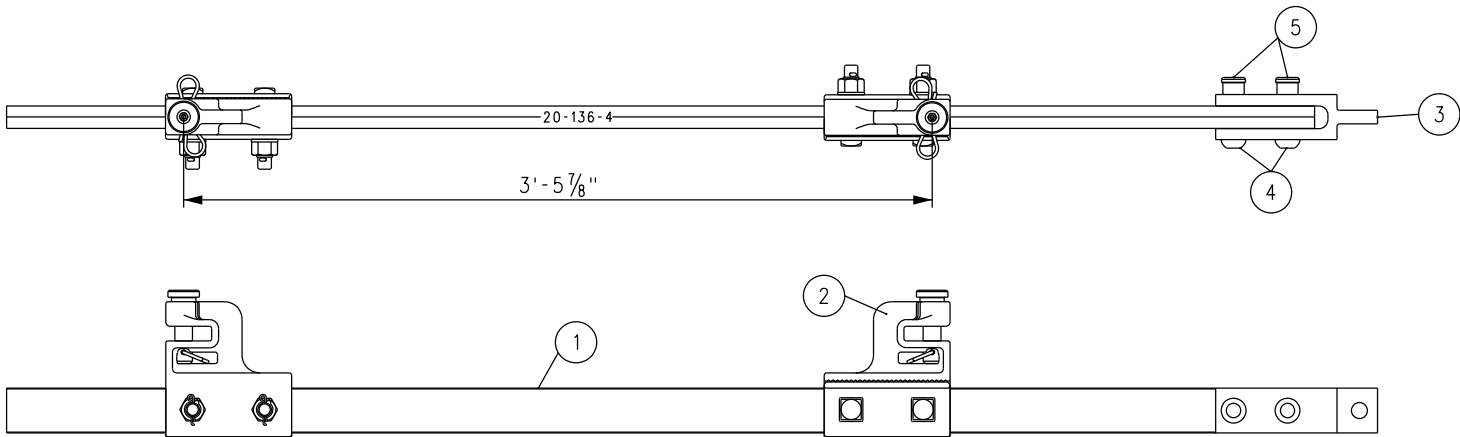
ROD #	C-C PIN DIMENSION
1	3' - 3 ¹⁵ / ₁₆ "
2	3' - 4 ¹ / ₈ "
3	3' - 4 ¹³ / ₁₆ "
4	3' - 5 ⁷ / ₈ "
5	3' - 7"



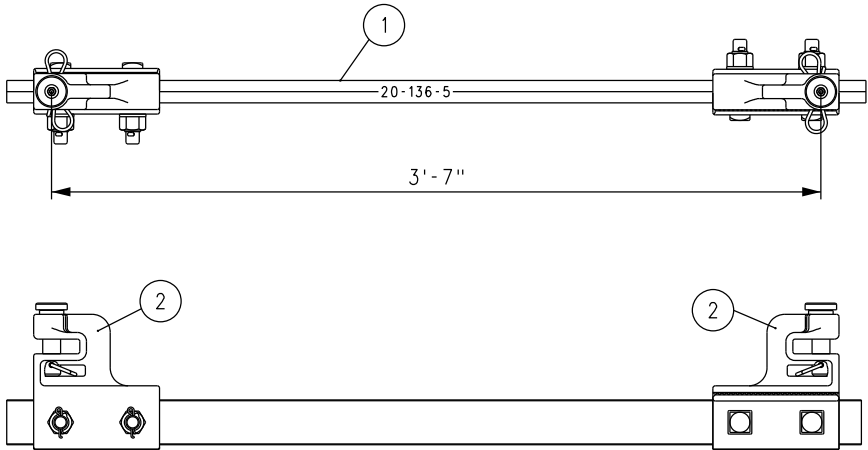
SWITCH ROD ASSEMBLY 20-136-3

				DRAWN BY: HDR DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.		 METROLINK®		ENGINEERING STANDARDS		STANDARD 2806	
				ASSISTANT DIRECTOR: STANDARDS & DESIGN 				HOLLOW STEEL TIE SWITCH RODS		SCALE: NTS		REVISION SHEET	
				DIRECTOR OF ENGINEERING AND CONSTRUCTION 		SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012		20-1, 20-2 AND 20-3		1 OF 1		CADD FILE: ES2806-73	
X XX-XX-XX		REVISION		XX XX									
REV. DATE		DESCRIPTION		DES. ENG.									

BILL OF MATERIALS FOR SWITCH ROD 20-136-4					BILL OF MATERIALS FOR SWITCH ROD 20-136-5				
ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO	ITEM	QTY	DESCRIPTION	DWG NO	SCRR PART NO
1	1	SWITCH ROD 20-136-4	-		1	1	SWITCH ROD 20-136-5	-	
2	2	SWITCH CLIP ASSEMBLY, ADJUSTABLE, FOR HOLLOW TIES	-		2	2	SWITCH CLIP ASSEMBLY, ADJUSTABLE, FOR HOLLOW TIES	-	
3	1	CONNECTOR LUG FOR REAR DRIVE ROD	-		<div>NOTE:</div> <div>1. ROD IDENTIFICATION TO BE ENGRAVED ON ROD CLEARLY AS SHOWN, $\frac{3}{8}$" MIN HEIGHT.</div>				
4	2	HUCK BOLT, $\frac{3}{4}$ " DIA (C50LR-BR24-36)	-						
5	2	HUCK COLLAR, $\frac{3}{4}$ " DIA (LC-2R24B)	-						

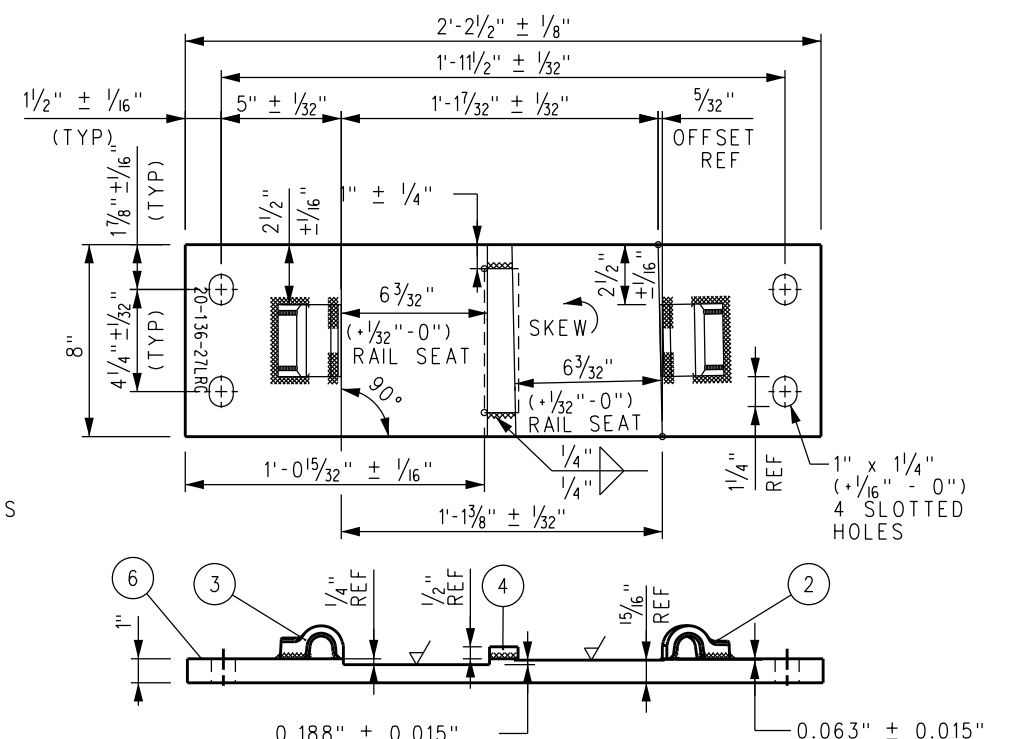
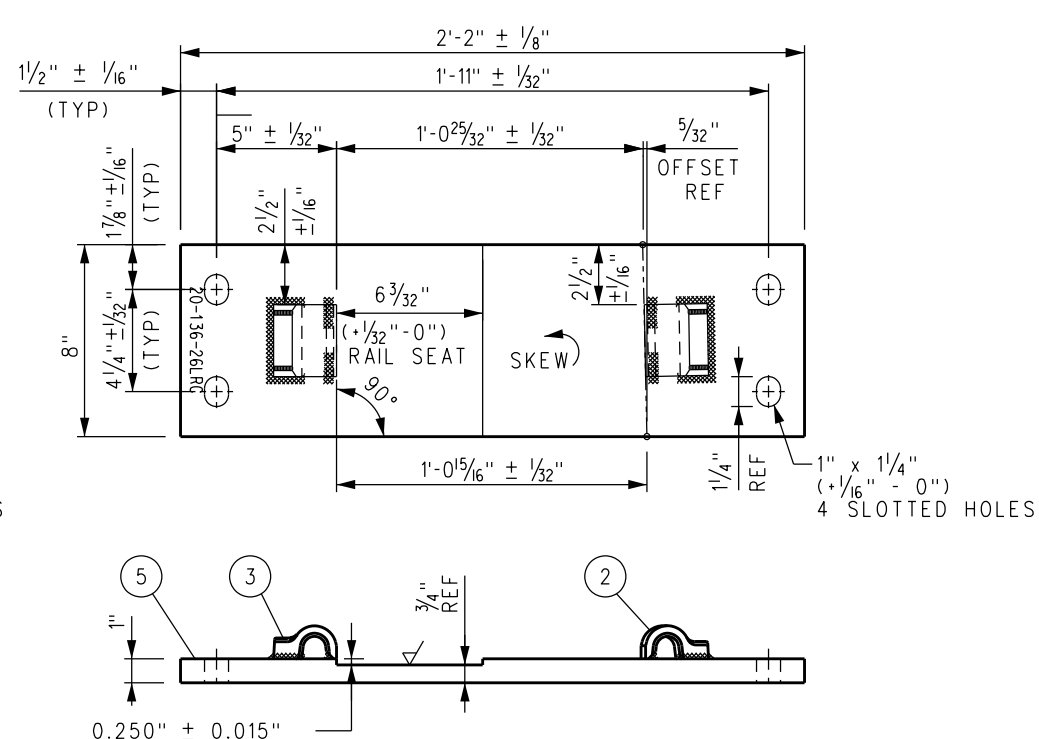
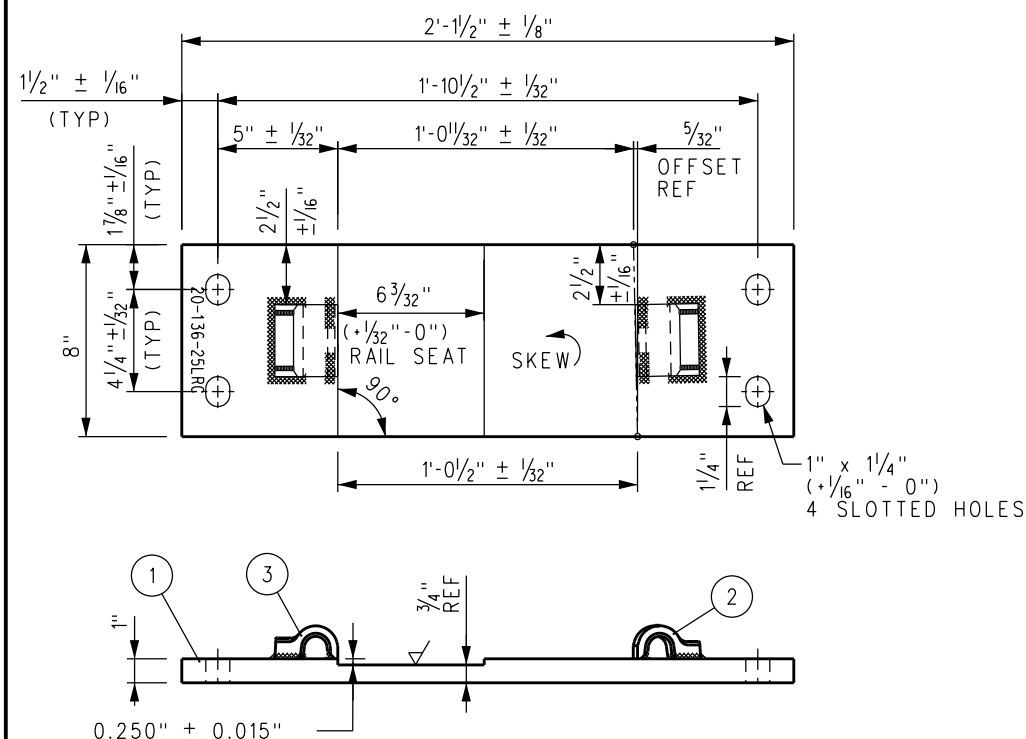
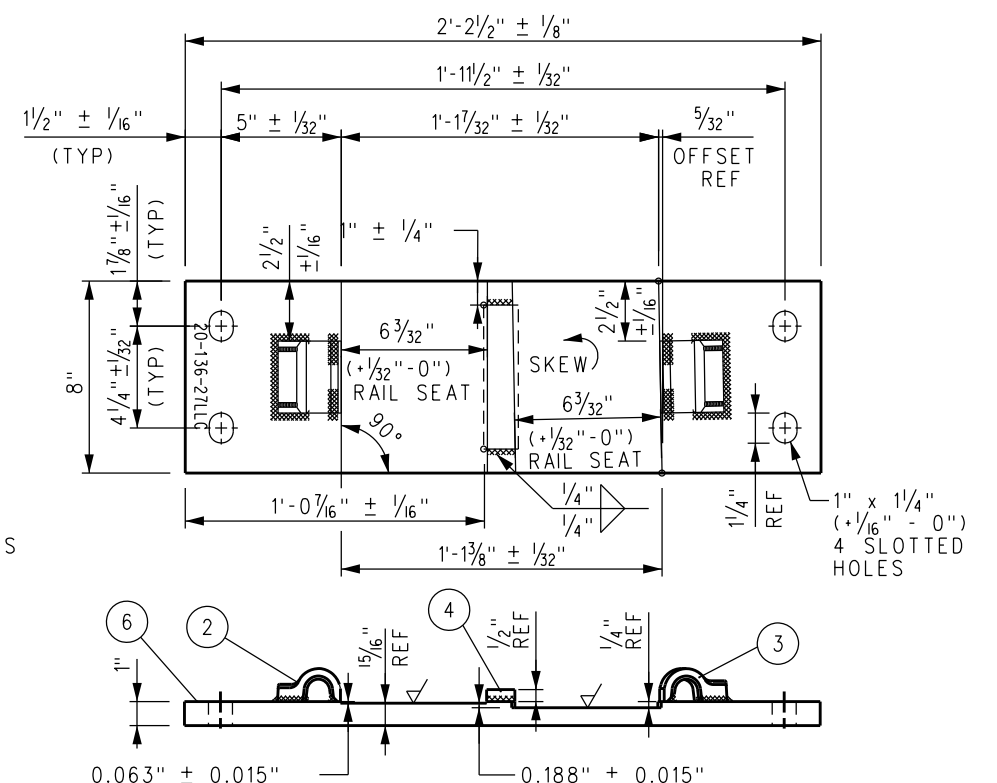
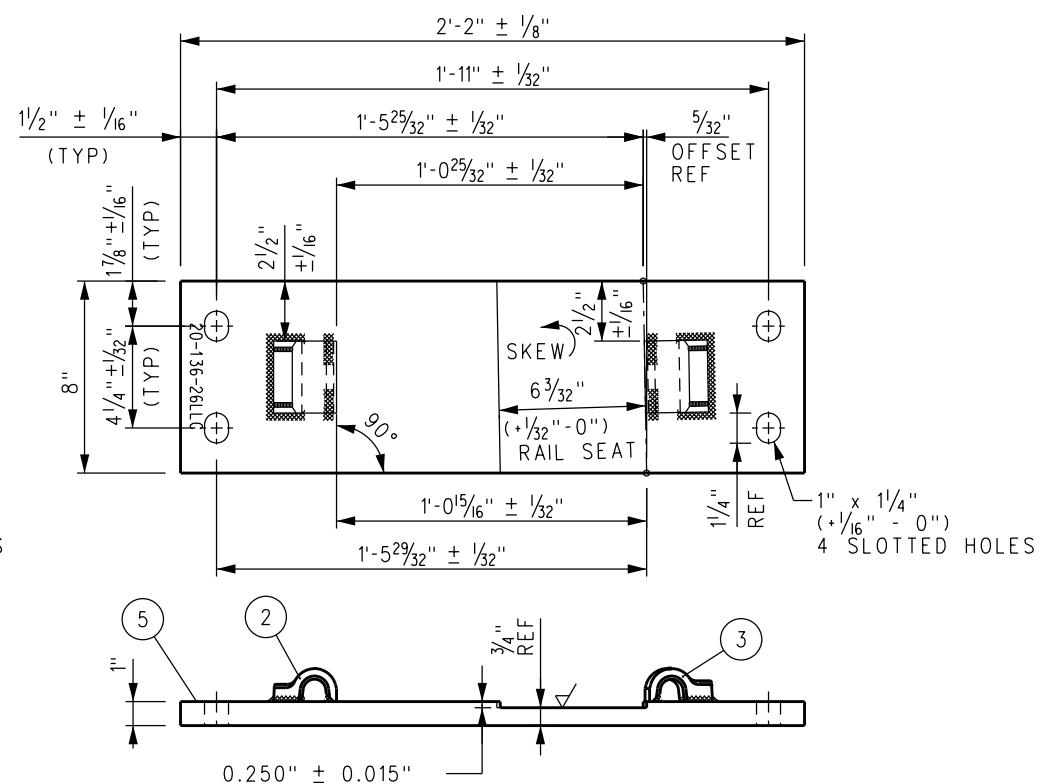
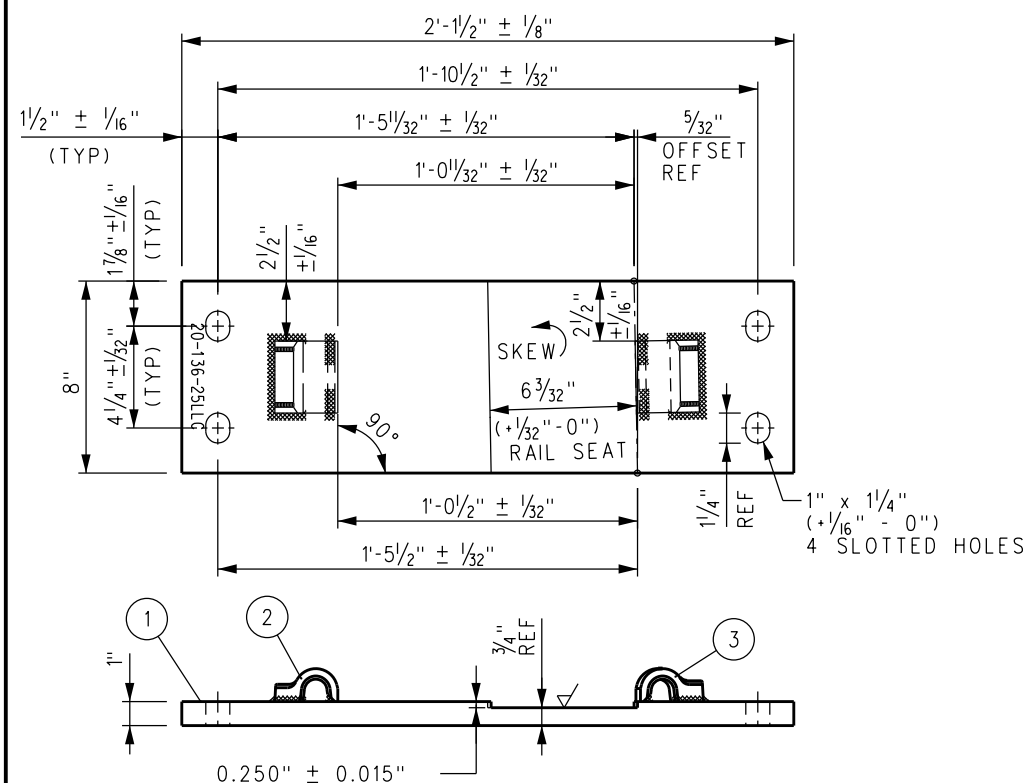


SWITCH ROD ASSEMBLY 20-136-4





SWITCH ROD ASSEMBLY 20-136-5

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BILL OF MATERIALS		BILL OF MATERIALS	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 1" x 8" x 2'-1½"	4	FLAT BAR, ASTM A36, ½" x 6" x 1⅞"
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	5	FLAT BAR, ASTM A36, 1" x 8" x 2'-2"
3	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 5	6	FLAT BAR, ASTM A36, 1" x 8" x 2'-2½"

						DRAWN BY:	HDR	DATE:	03/31/2017
						 ASSISTANT DIRECTOR: STANDARDS & DESIGN  DIRECTOR OF ENGINEERING AND CONSTRUCTION			
X	XX-XX-XX		REVISION	XX	XX				
REV.	DATE		DESCRIPTION	DES.	ENG.				

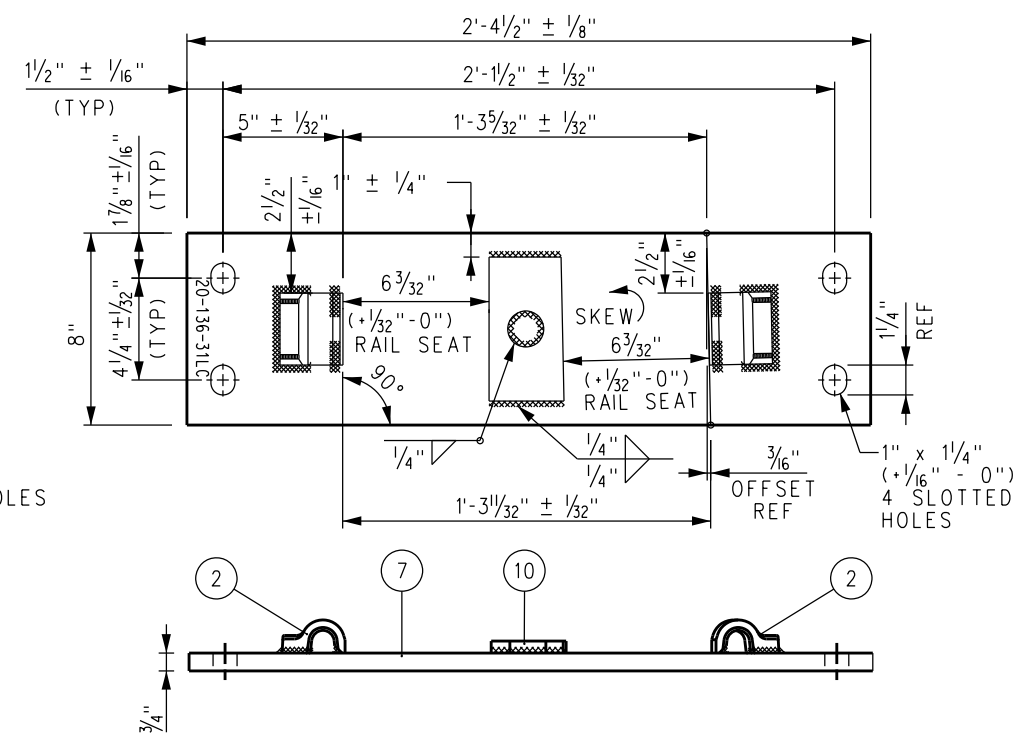
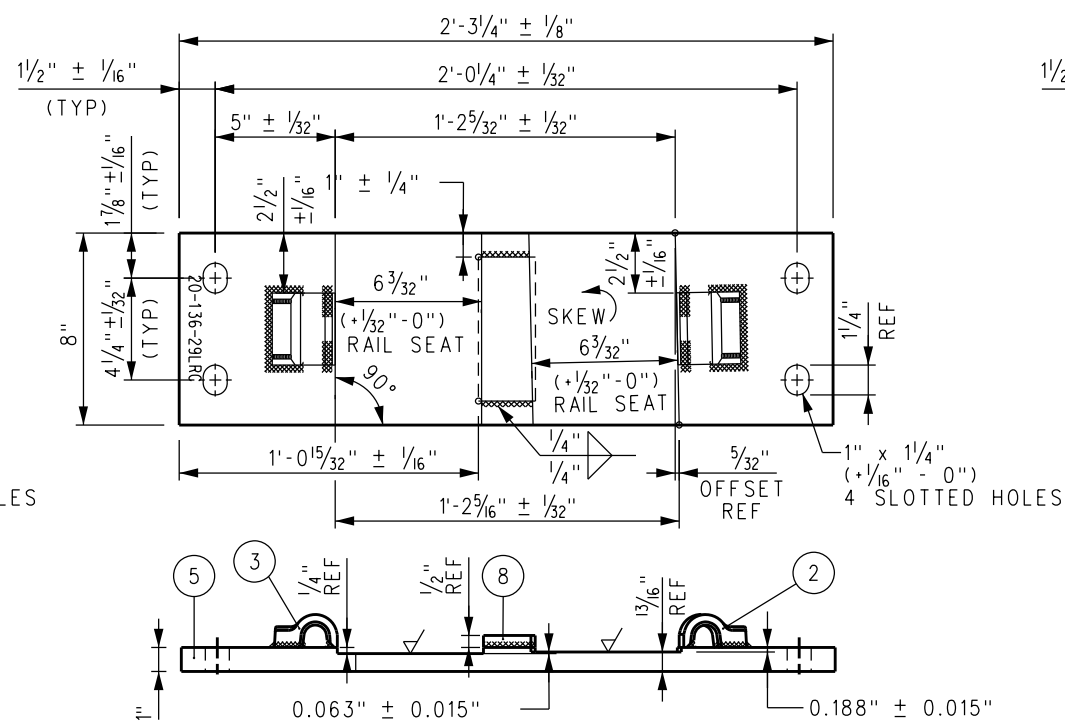
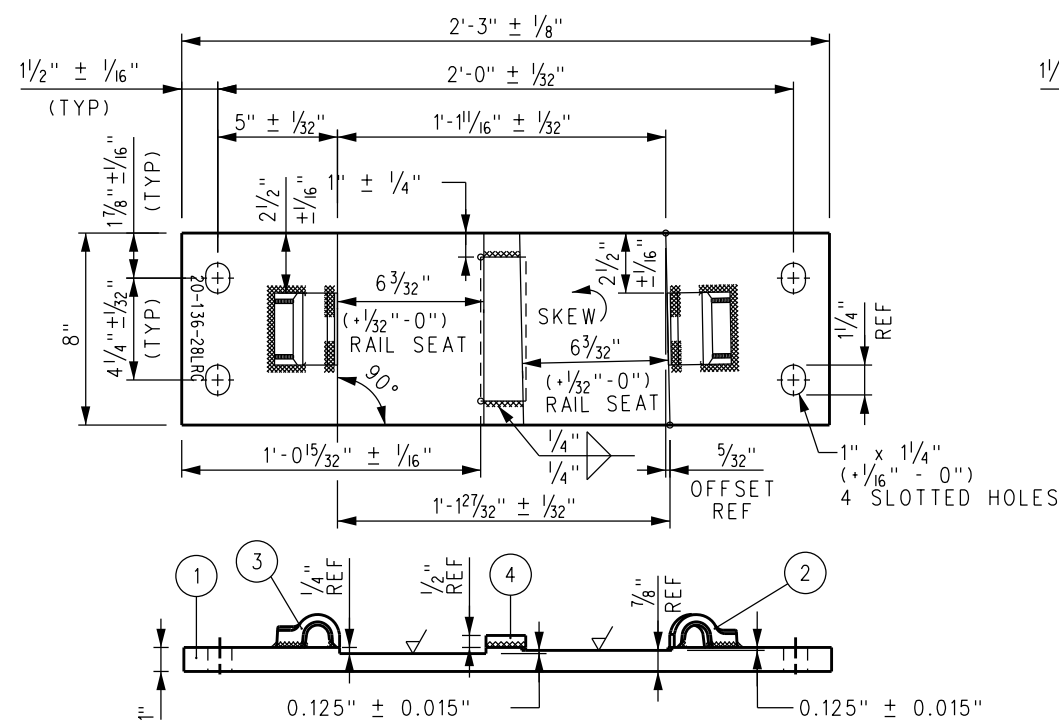
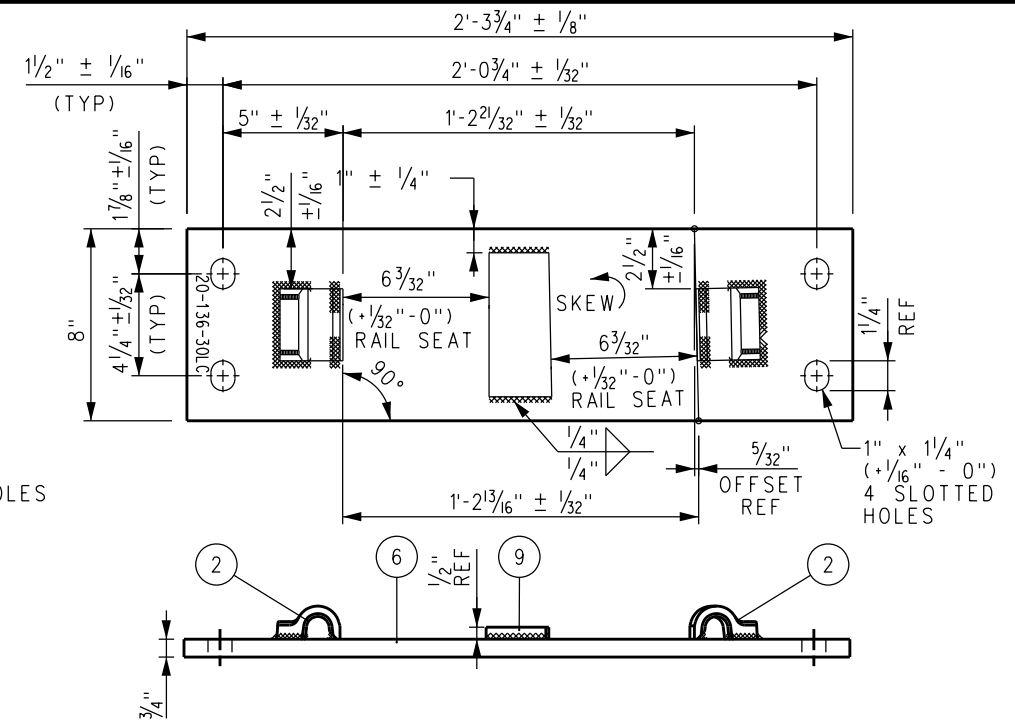
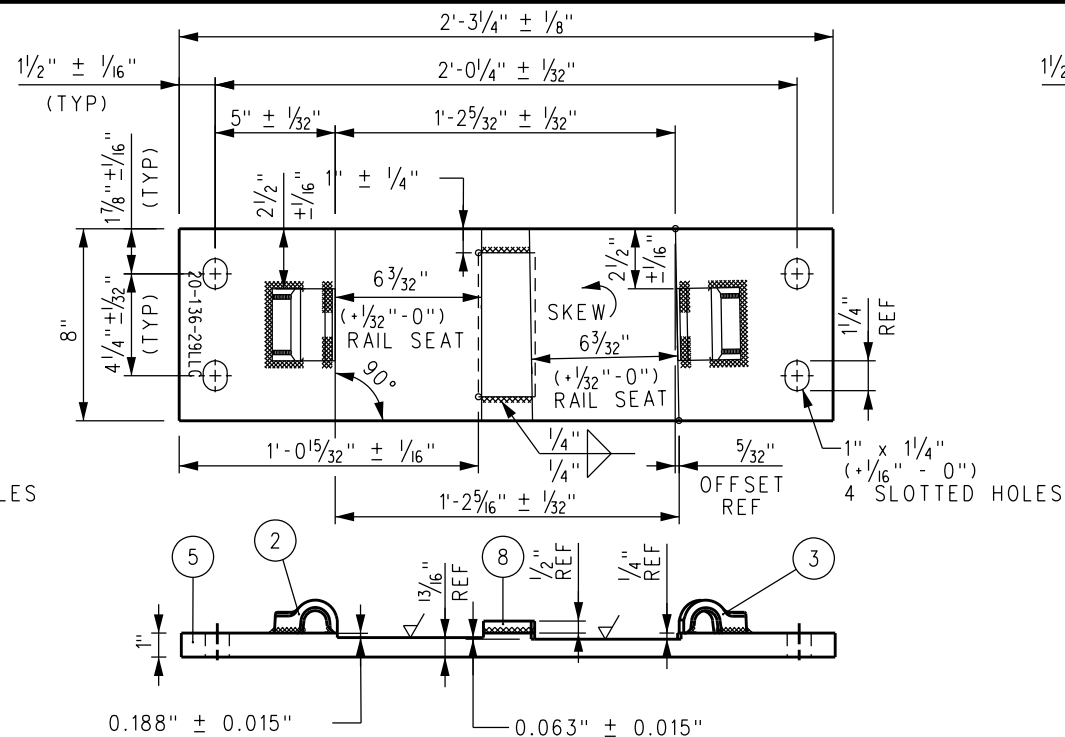
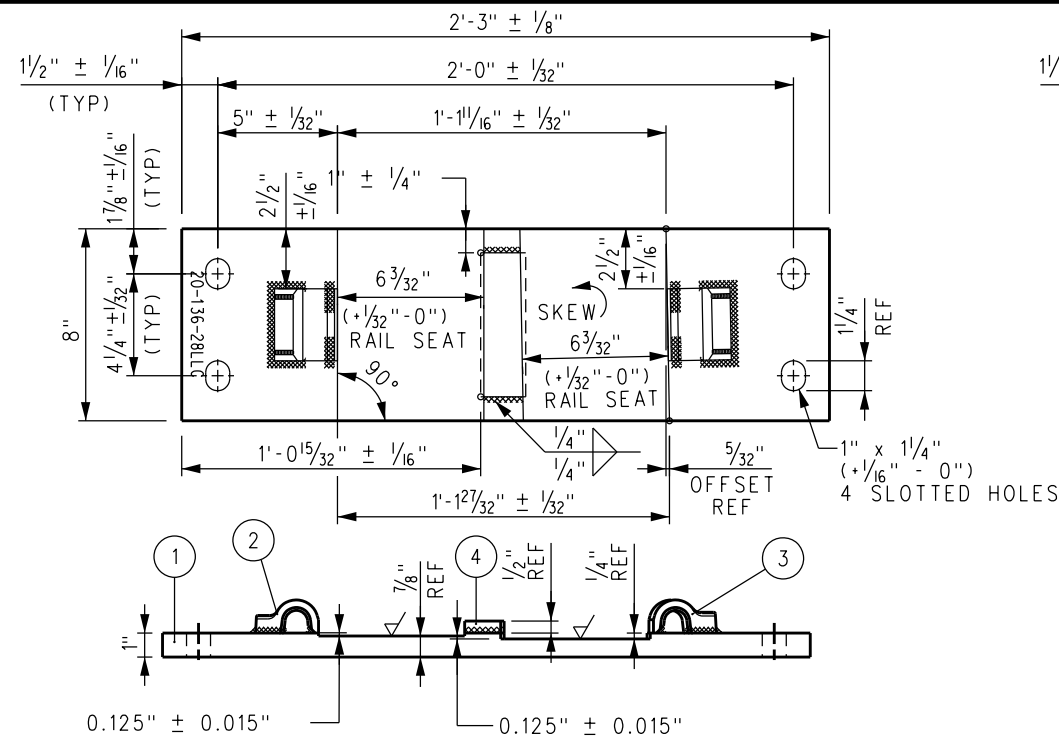
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ENGINEERING STANDARDS		STANDARD 2806	
SWITCH PLATES (20-25LLC /LRC THROUGH 20-27LLC /LRC) FOR NO 20 136 LB RE LH CONCRETE TIE TURNOUT		SCALE: NTS	
		REVISION -	SHEET 1 OF 1
		CADD FILE: ES2806-81	

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. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.





BILL OF MATERIALS		BILL OF MATERIALS	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 1" x 8" x 2'-3"	6	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-3 $\frac{3}{4}$ "
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	7	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-4 $\frac{1}{2}$ "
3	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 5	8	FLAT BAR, ASTM A36, $\frac{1}{2}$ " x 6" x 2 $\frac{3}{8}$ "
4	FLAT BAR, ASTM A36, $\frac{1}{2}$ " x 6" x 1 $\frac{1}{8}$ "	9	BURNED STOP, $\frac{1}{2}$ " THICK, TAPERED 2 $\frac{3}{8}$ " TO 2 $\frac{1}{2}$ ", OVER 6"
5	FLAT BAR, ASTM A36, 1" x 8" x 2'-3 $\frac{1}{4}$ "	10	BURNED STOP, $\frac{1}{2}$ " THICK, TAPERED 3" TO 3 $\frac{1}{8}$ ", OVER 6"

BILL OF MATERIALS	
ITEM	DESCRIPTION
6	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-3 $\frac{3}{4}$ "
7	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-4 $\frac{1}{2}$ "
8	FLAT BAR, ASTM A36, $\frac{1}{2}$ " x 6" x 2 $\frac{3}{8}$ "
9	BURNED STOP, $\frac{1}{2}$ " THICK, TAPERED 2 $\frac{5}{8}$ " TO 2 $\frac{1}{2}$ ", OVER 6"
10	BURNED STOP, $\frac{1}{2}$ " THICK, TAPERED 3" TO 3 $\frac{1}{8}$ ", OVER 6"

NOTES:

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CLEARLY STAMPED AS SHOWN.
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& NOT TO PROTRUDE INTO RAIL SEAT.
3. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

						DRAWN BY:	HDR	DATE:	03/31/2017
						 ASSISTANT DIRECTOR: STANDARDS & DESIGN			
X	XX-XX-XX	REVISION		XX	XX	 DIRECTOR OF ENGINEERING AND CONSTRUCTION			
REV.	DATE	DESCRIPTION		DES.	ENG.				

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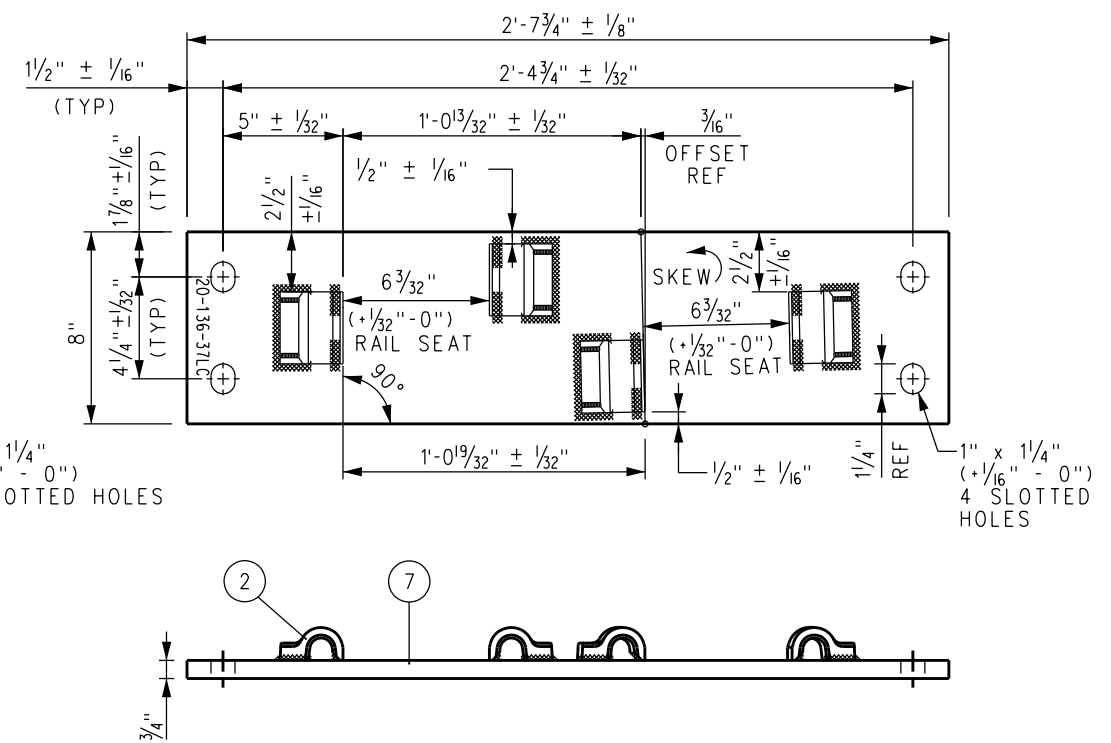
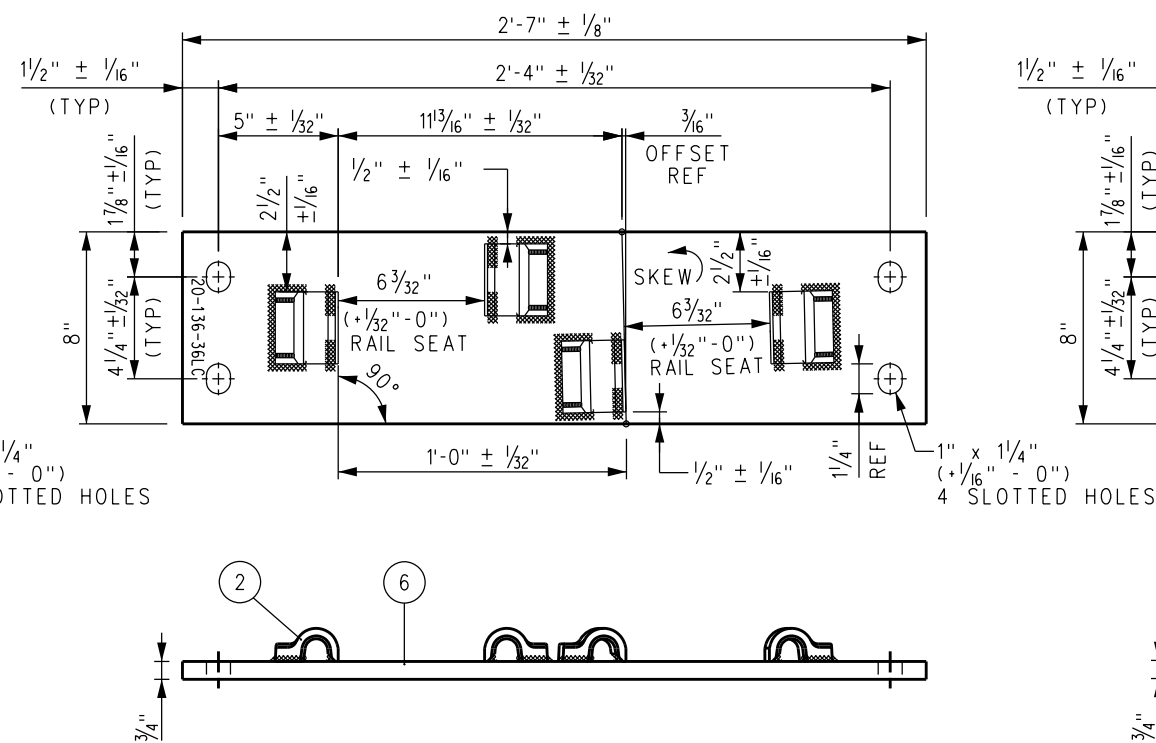
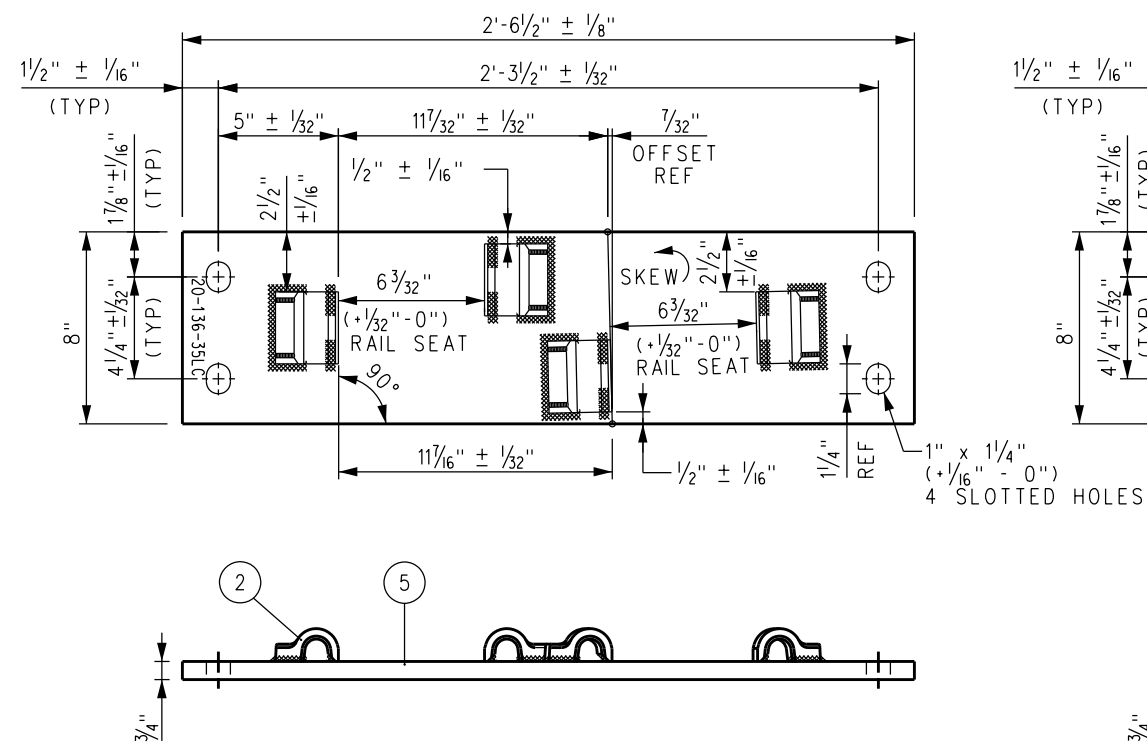
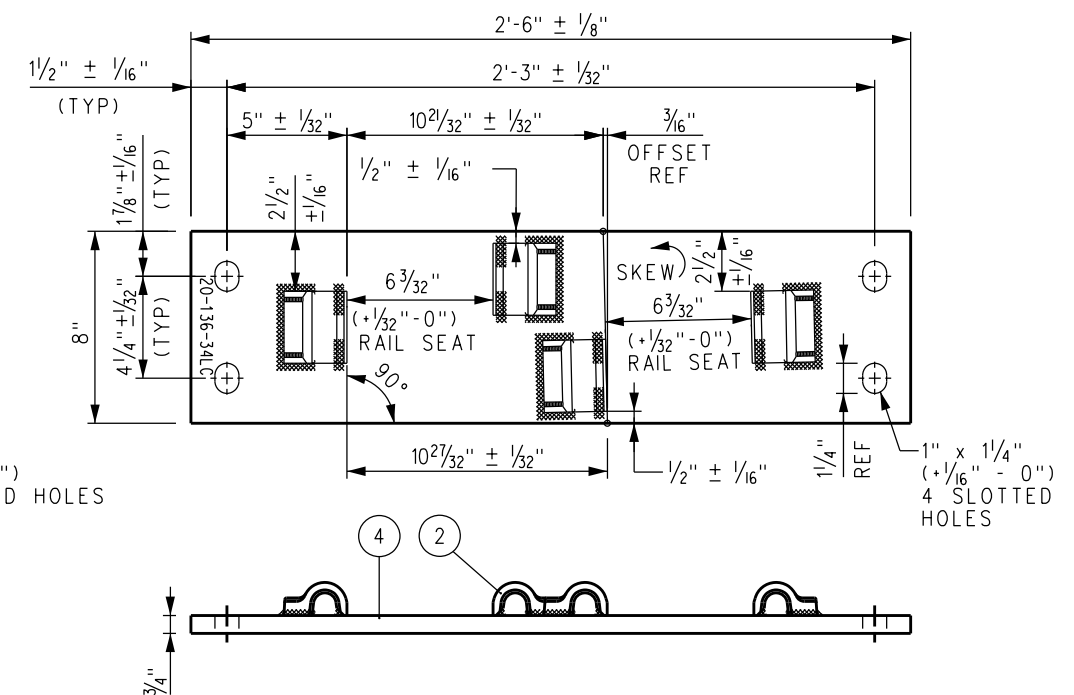
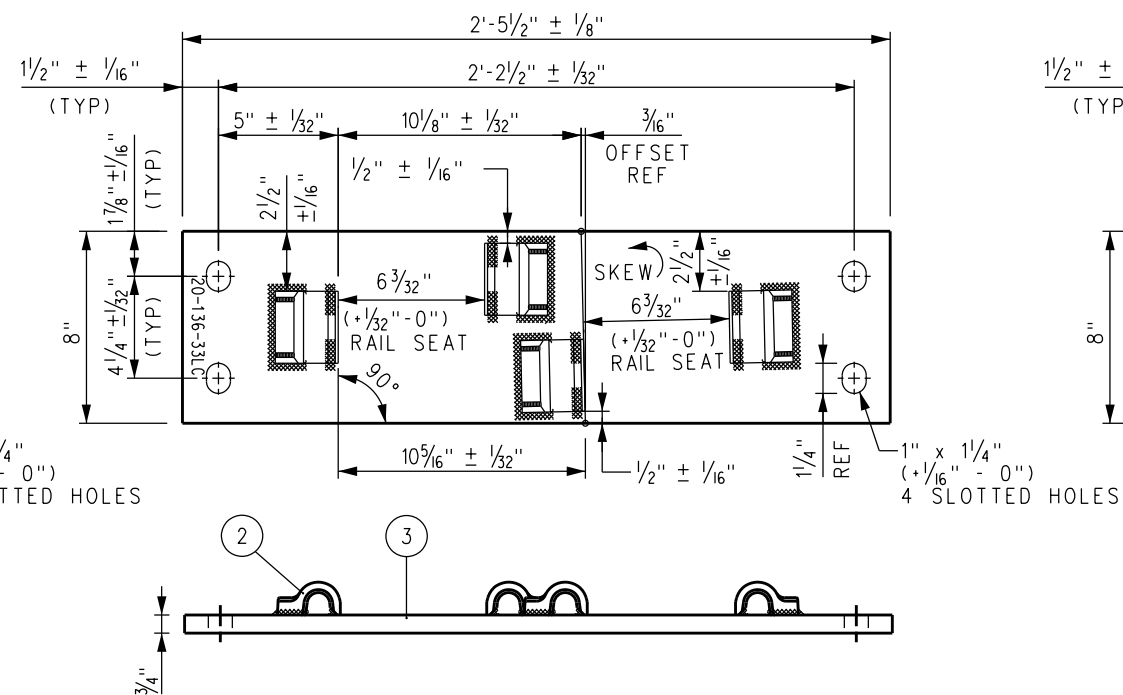
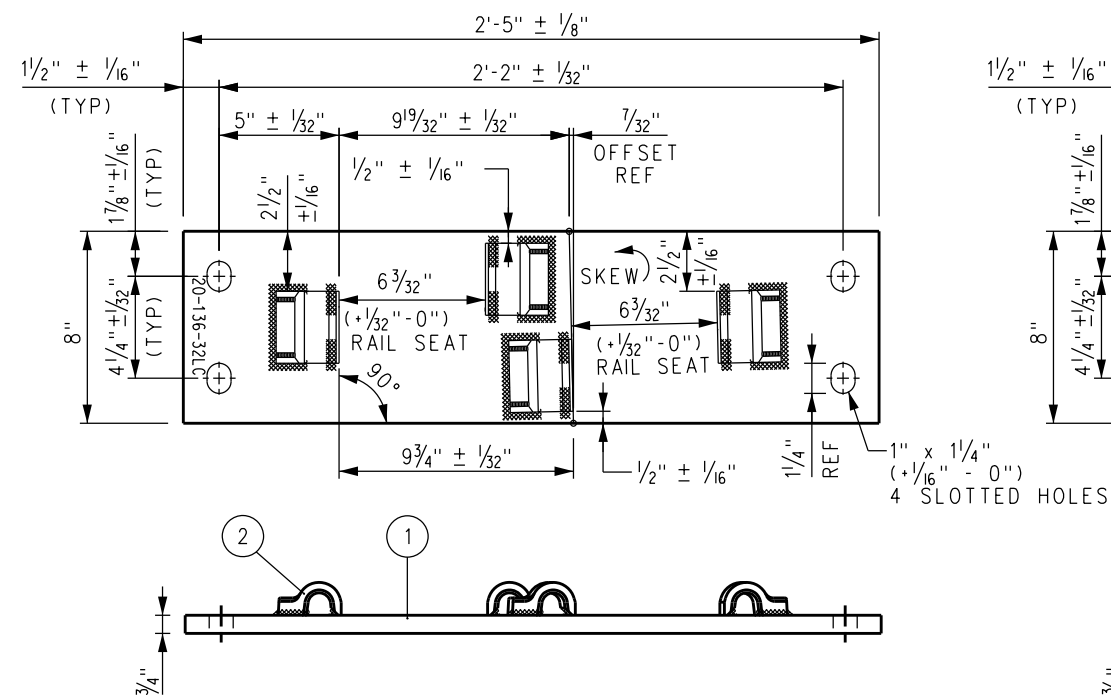


SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

<p>SWITCH PLATES (20-28LLC /LRC THROUGH 29LLC /LRC) (20-30LC THROUGH 20-31LC) FOR NO 20 136 LB RE LH CONCRETE TIE TURNOUT</p>
--

STANDARD		2806
SCALE:		NTS
REVISION	SHEET	
-	1 OF 1	
CADD FILE:		ES2806-82





BILL OF MATERIALS		BILL OF MATERIALS	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-5"	5	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-6 1/2"
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	6	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-7"
3	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-5 1/2"	7	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-7 3/4"
4	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-6"		

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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. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

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

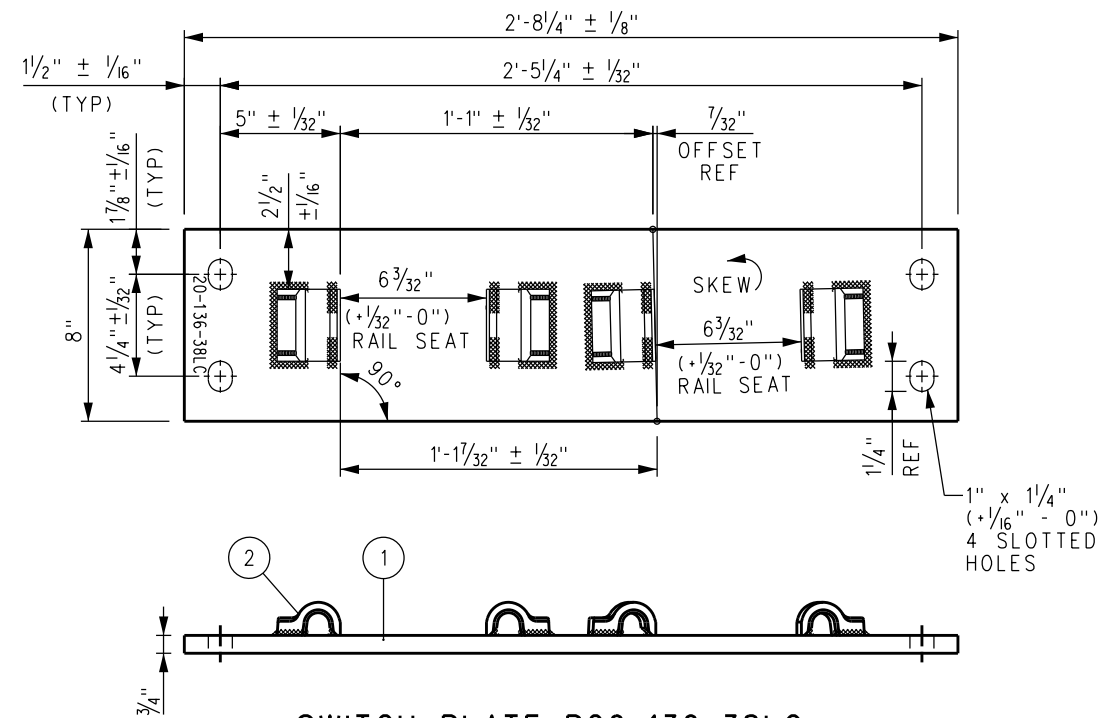
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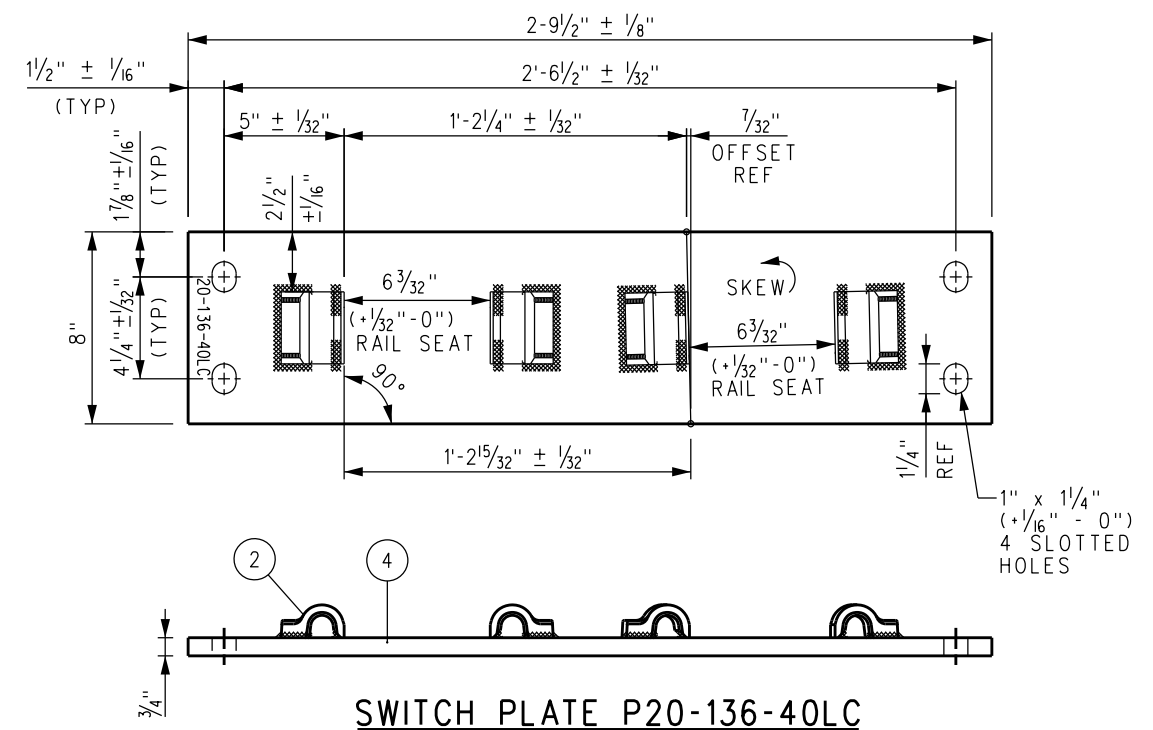
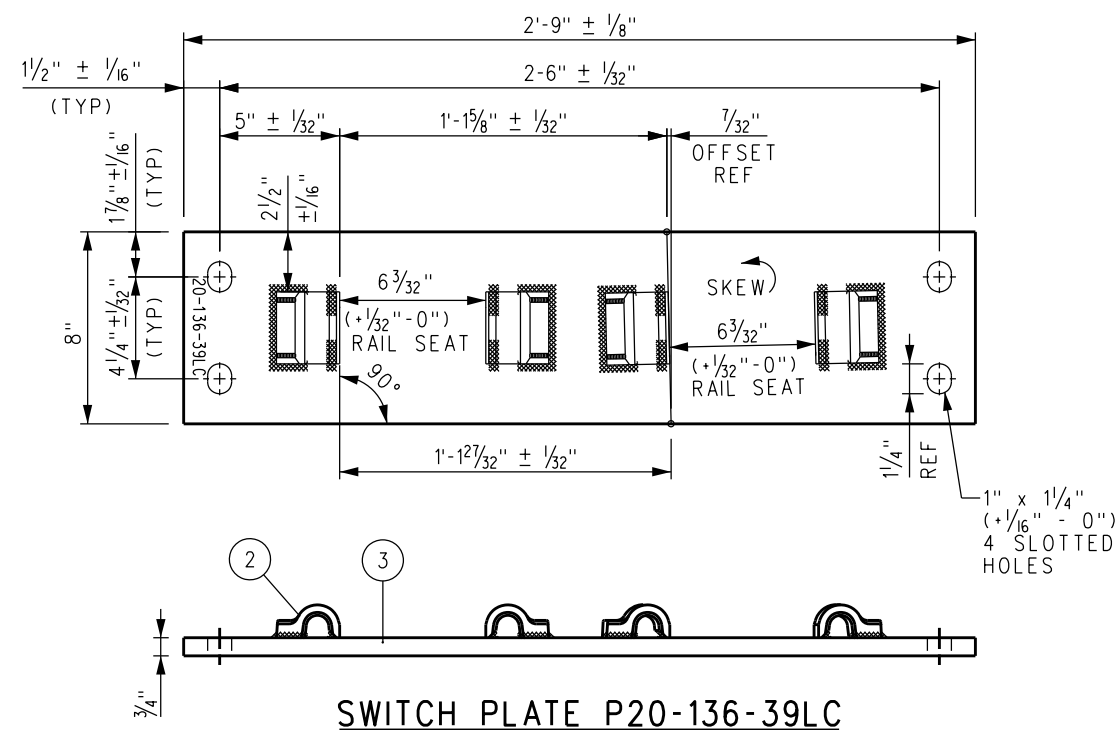
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
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ENGINEERING STANDARDS		STANDARD 2806	
SWITCH PLATES (20-32LC THROUGH 20-37LC) FOR NO 20 136 LB RE LH CONCRETE TIE TURNOUT		SCALE: NTS	
		REVISION -	SHEET 1 OF 1
		CADD FILE: ES2806-83	

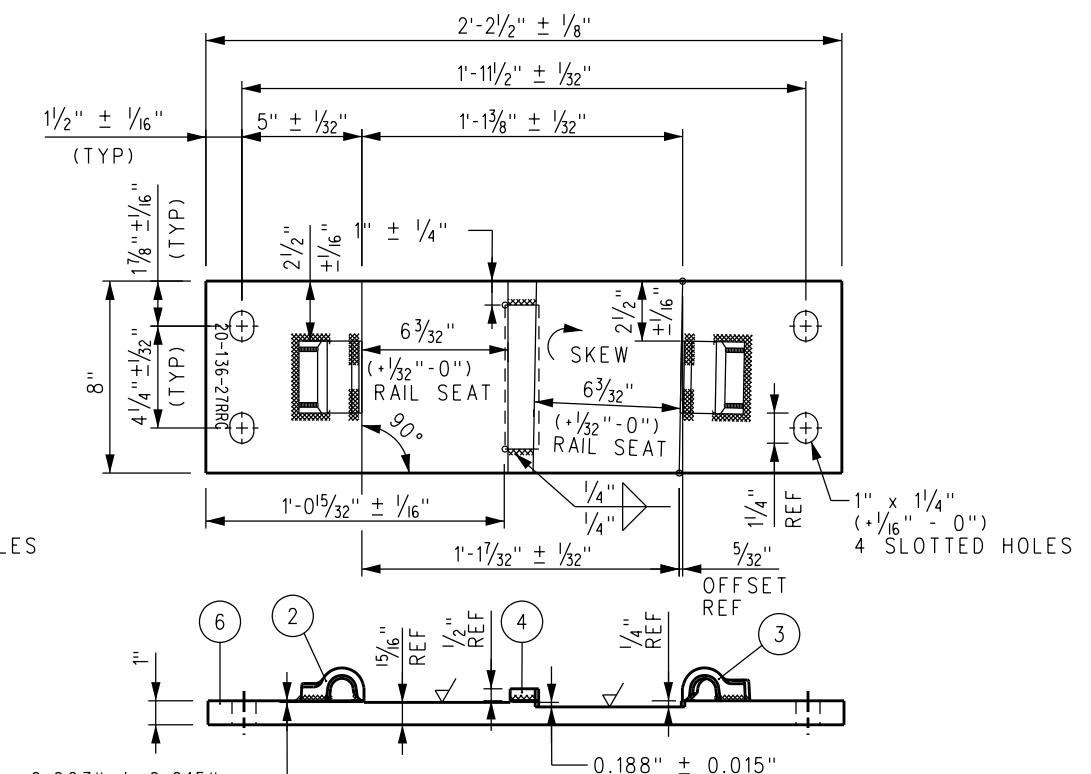
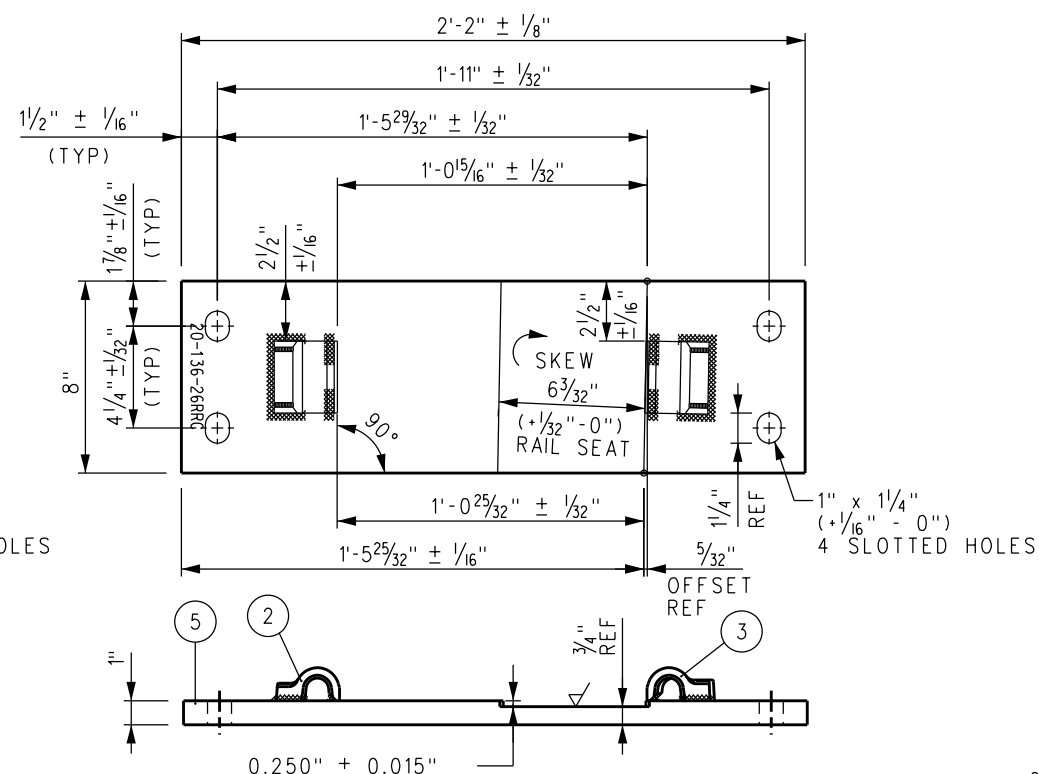
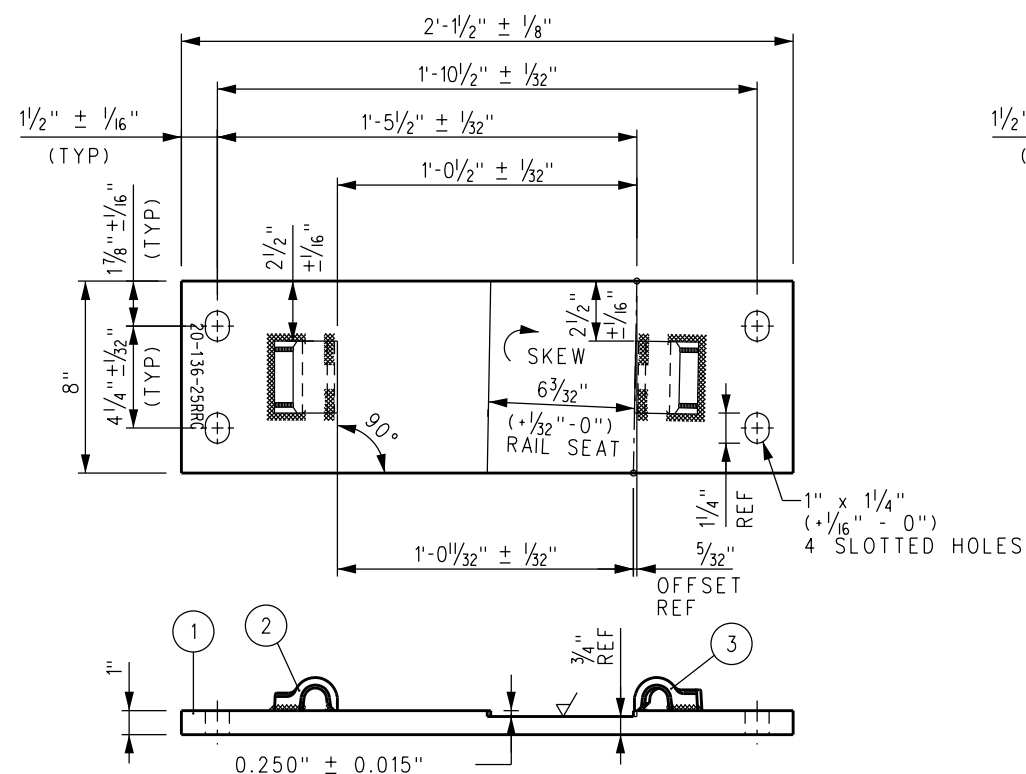
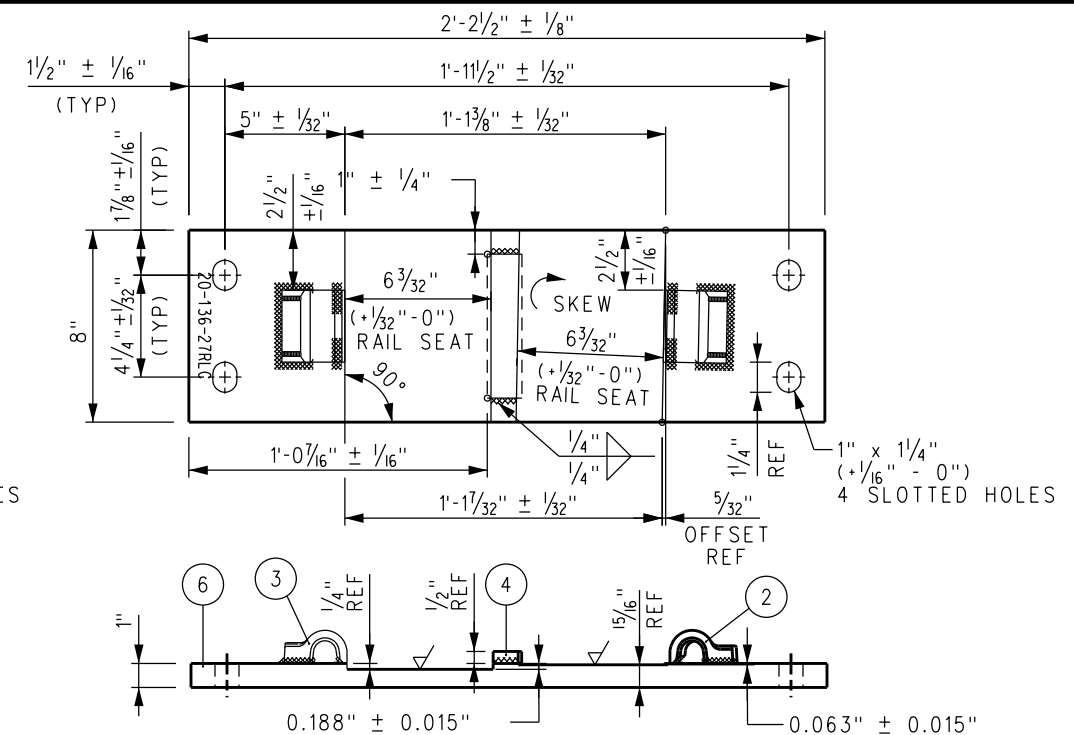
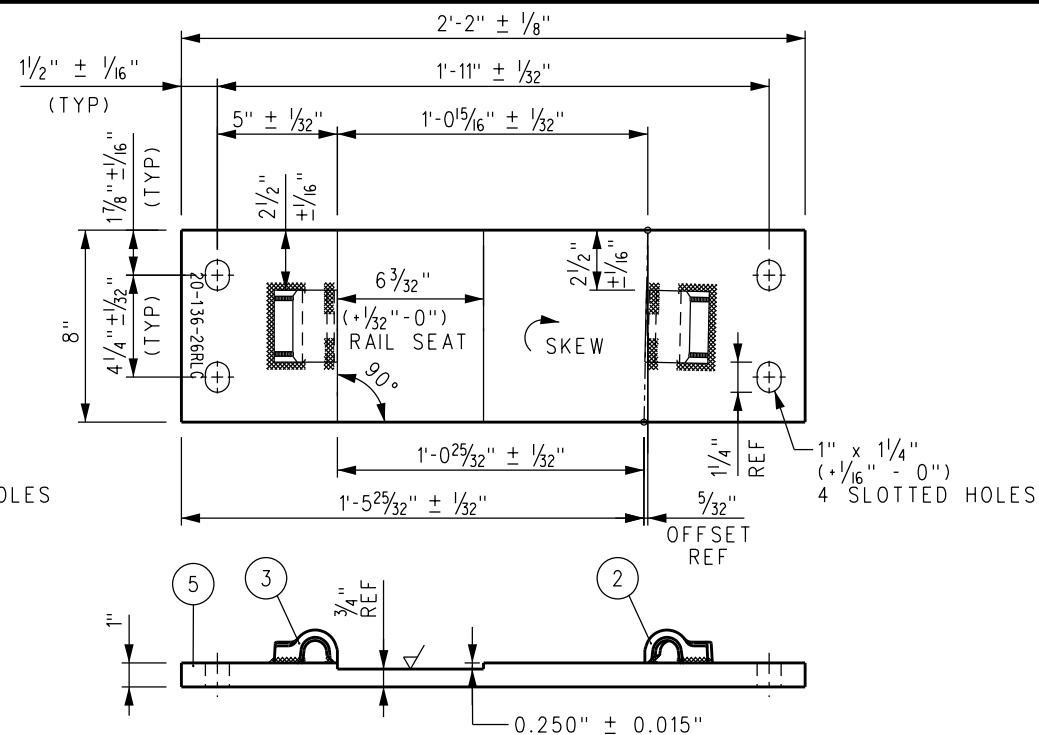
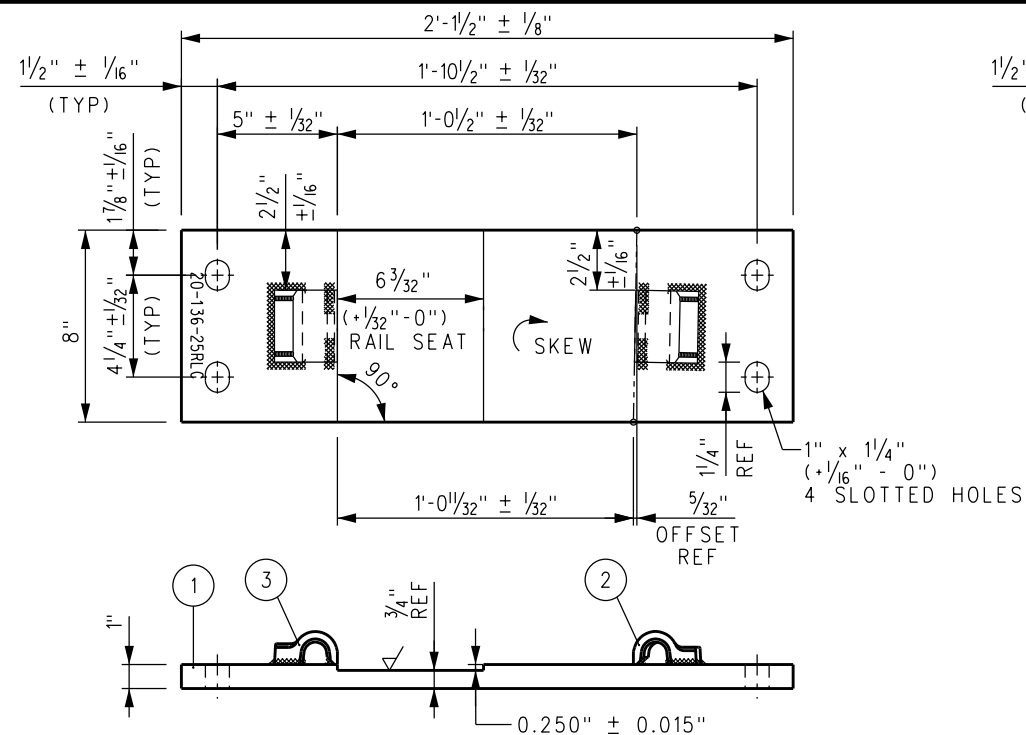


NOTES:

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2. WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
3. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.



BILL OF MATERIALS		BILL OF MATERIALS	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-8 1/4"	3	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-9"
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	4	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-9 1/2"





BILL OF MATERIALS	
ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 1" x 8" x 2'-1½
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1
3	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 5

BILL OF MATERIALS	
ITEM	DESCRIPTION
4	FLAT BAR, ASTM A36, 1/2" x 6" x 17/16"
5	FLAT BAR, ASTM A36, 1" X 8" X 2'-2"
6	FLAT BAR, ASTM A36, 1" x 8" x 2'-2 1/2"

NOTES:

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& NOT TO PROTRUDE INTO RAIL SEAT.
3. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

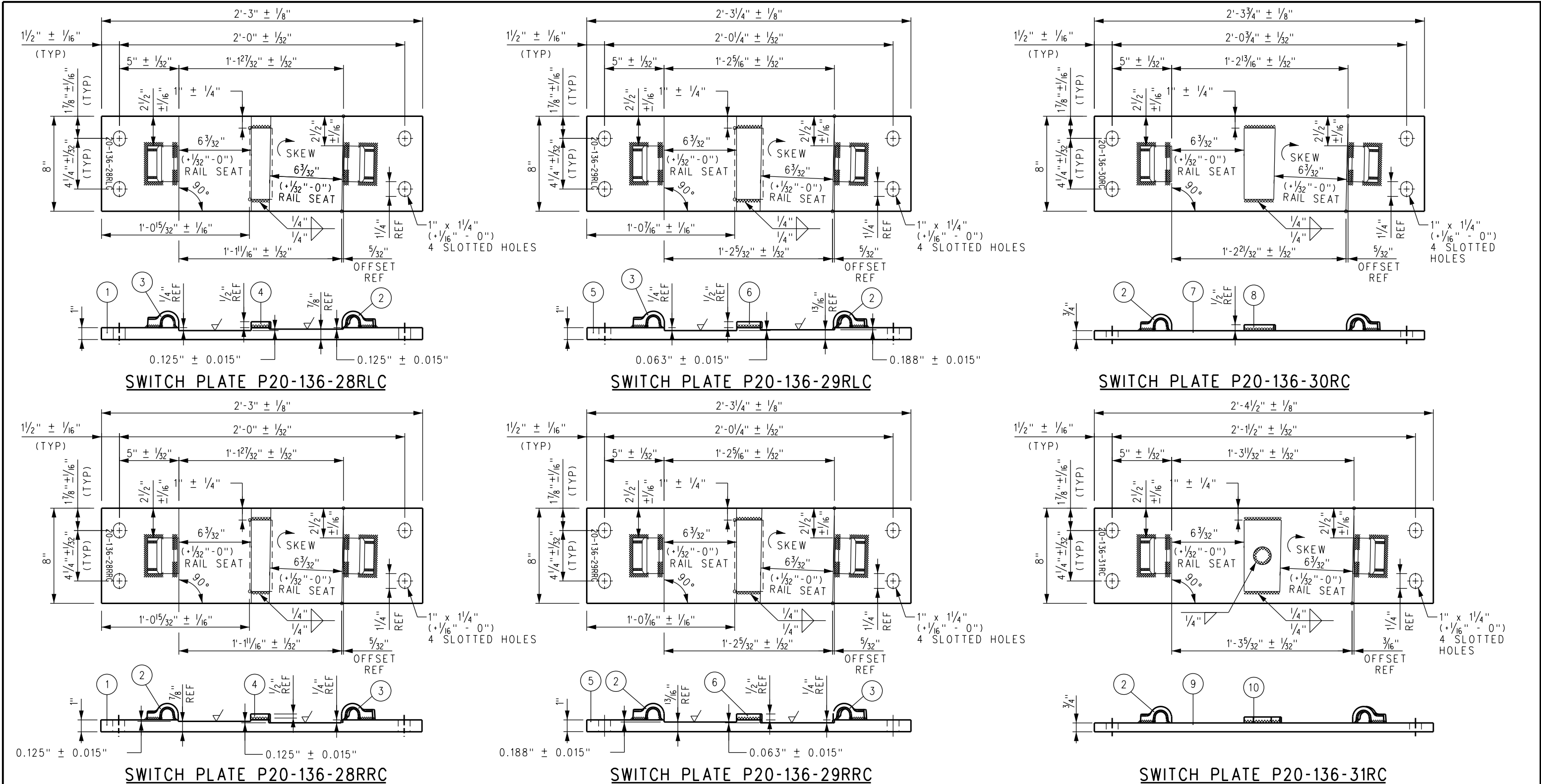
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						 ASSISTANT DIRECTOR: STANDARDS & DESIGN  DIRECTOR OF ENGINEERING AND CONSTRUCTION			
X	XX-XX-XX		REVISION	XX	XX				
REV.	DATE		DESCRIPTION	DES.	ENG.				

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

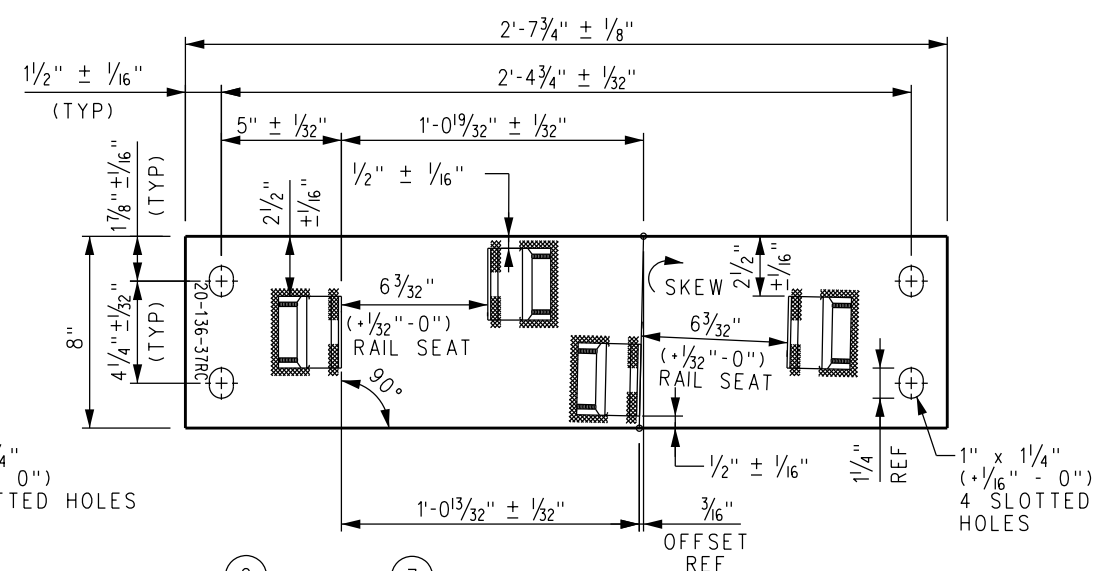
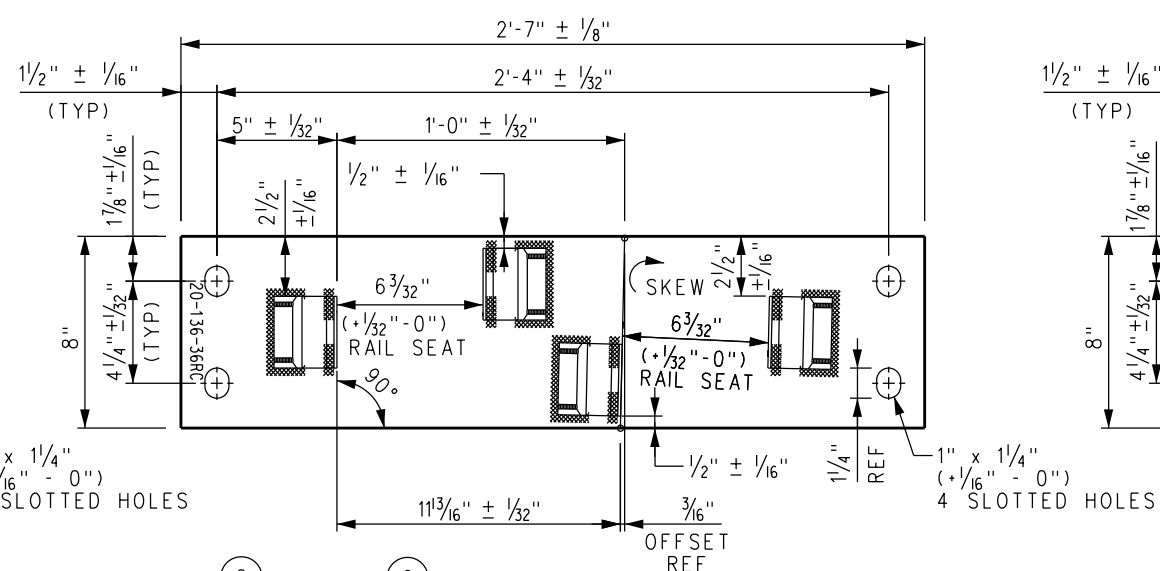
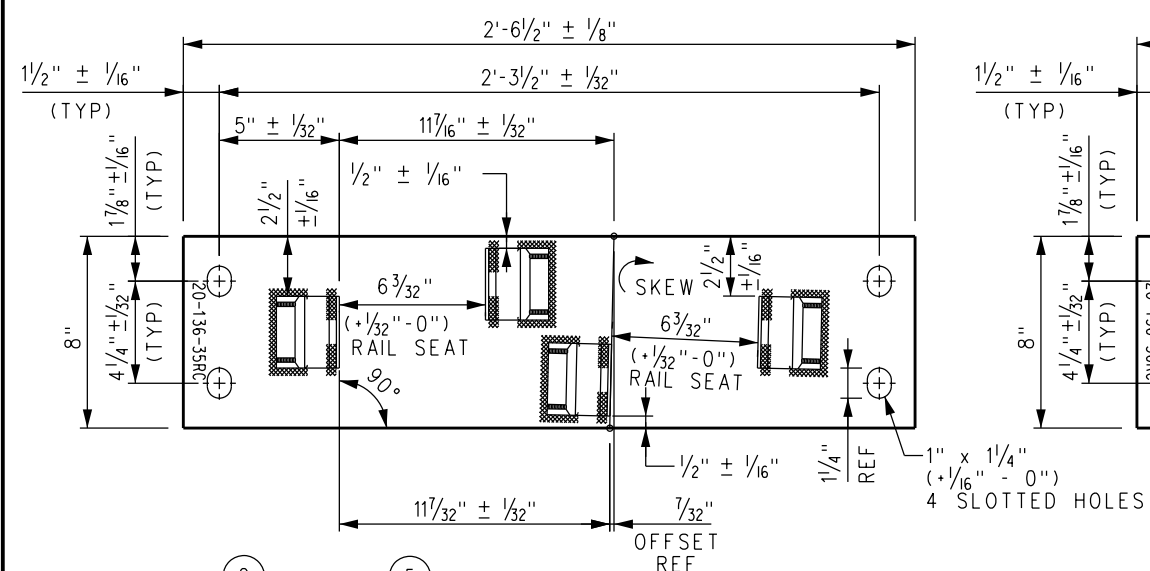
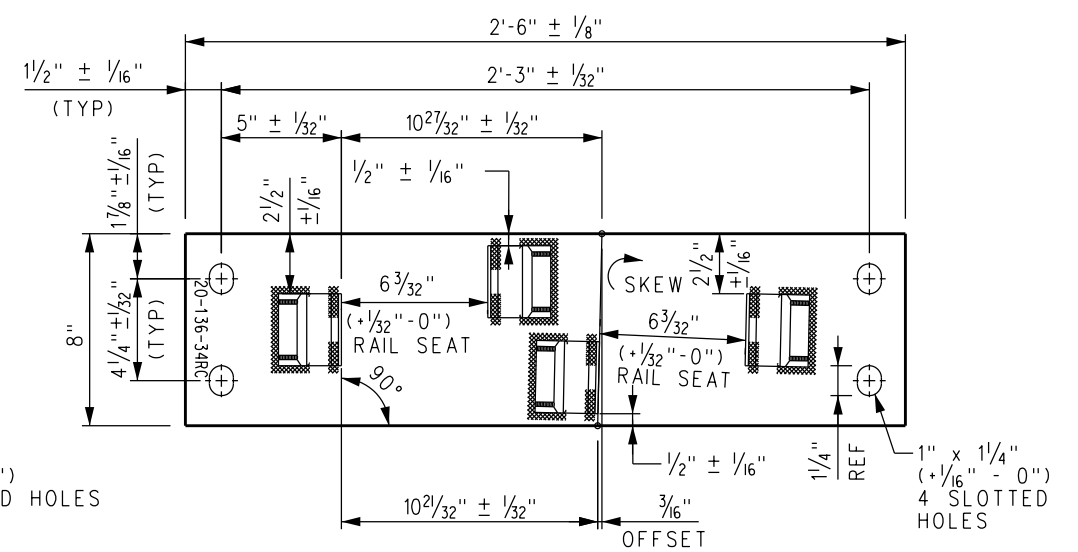
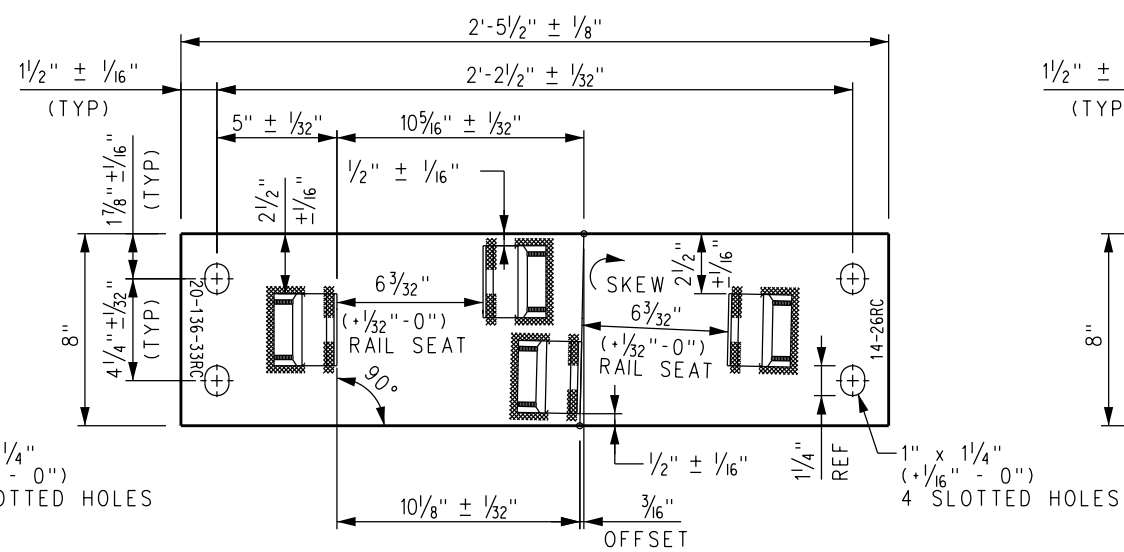
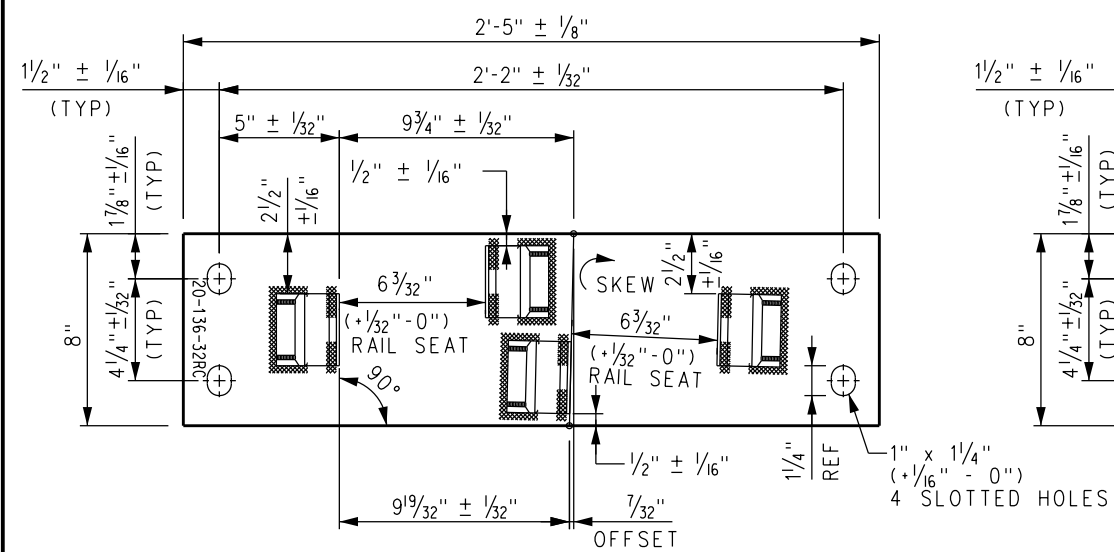
ENGINEERING STANDARDS		STANDARD 2806	
SWITCH PLATES (20-25RLC /RRC THROUGH 20-27RLC /RRC) FOR NO 20 136 LB RE RH CONCRETE TIE TURNOUT		SCALE: NTS	
		REVISION	SHEET
		—	1 OF 1
		CADD FILE: ES2806-85	



BILL OF MATERIALS		BILL OF MATERIALS	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 1" x 8" x 2'-3"	6	FLAT BAR, ASTM A36, 1/2" x 6" x 2 3/8"
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	7	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-3 3/4"
3	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 5	8	BURNED STOP, 1/2" THICK, TAPERED 2 5/8" TO 2 1/2", OVER 6"
4	FLAT BAR, ASTM A36, 1/2" x 6" x 1 7/8"	9	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-4 1/2"
5	FLAT BAR, ASTM A36, 1" x 8" x 2'-3 1/4"	10	BURNED STOP, 1/2" THICK, TAPERED 3" TO 3 1/8", OVER 6"

- NOTES:**
- I.D. CHARACTERS TO BE 1/2" MINIMUM HEIGHT CLEARLY STAMPED AS SHOWN.
 - WELDS TO BE DRESSED FLUSH WITH SHOULDER & NOT TO PROTRUDE INTO RAIL SEAT.
 - SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

DRAWN BY:  HDR DATE: 03/31/2011		SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.	 METROLINK SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012	ENGINEERING STANDARDS SWITCH PLATES (20-28RLC /RRC THROUGH 20-29RLC /RRC) (20-30RC THROUGH 20-31RC) FOR NO 20 136 LB RE RH CONCRETE TIE TURNOUT		STANDARD 2806
REVISION XX XX REV. DATE DESCRIPTION DES. ENG.				SCALE: NTS REVISION SHEET 1 OF 1 CADD FILE: ES2806-86		





BILL OF MATERIALS	
ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-5"
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1
3	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-5 1/2"
4	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-6"

BILL OF MATERIALS	
ITEM	DESCRIPTION
5	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-6 $\frac{1}{2}$ "
6	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-7"
7	FLAT BAR, ASTM A36, $\frac{3}{4}$ " x 8" x 2'-7 $\frac{3}{4}$ "

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. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.

						DRAWN BY:	HDR	DATE:	03/31/2011
						 ASSISTANT DIRECTOR: STANDARDS & DESIGN  DIRECTOR OF ENGINEERING AND CONSTRUCTION			
X	XX-XX-XX		REVISION	XX	XX				
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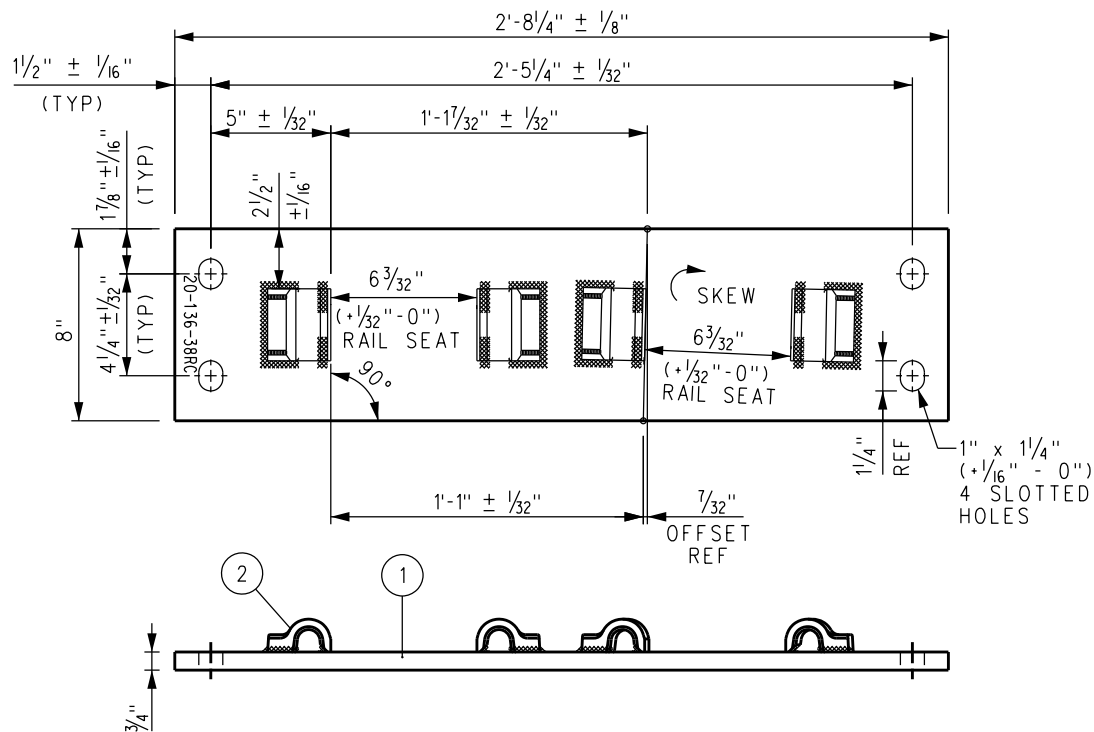
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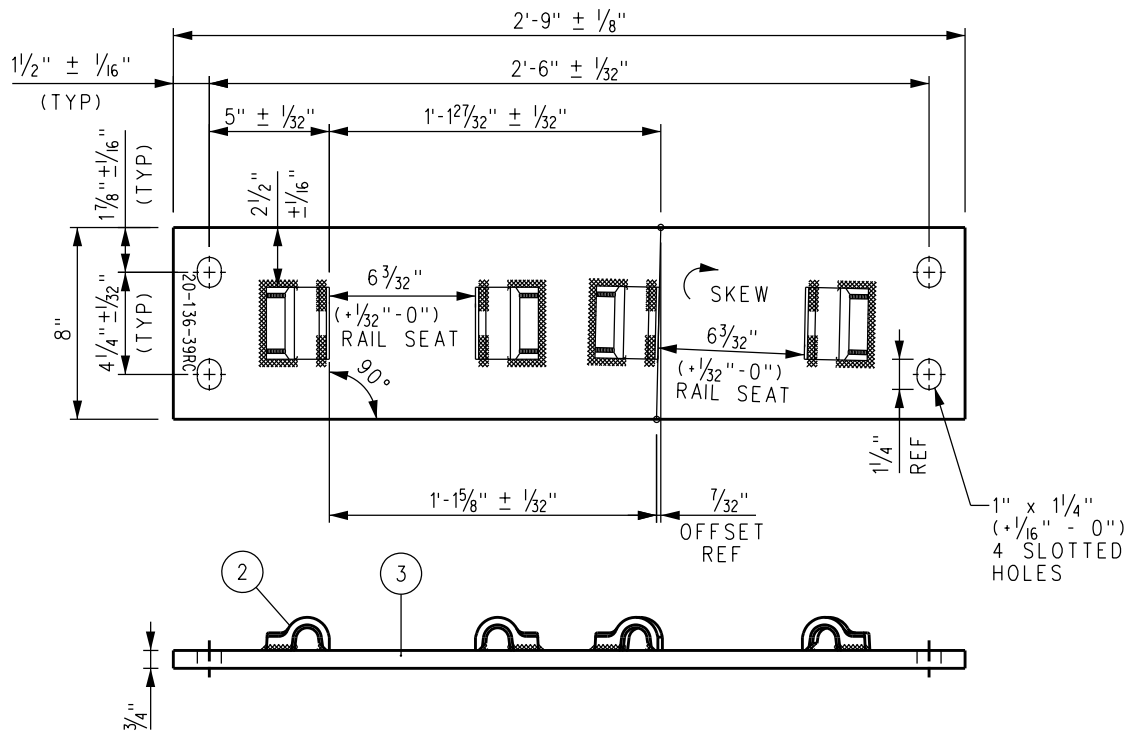
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS		STANDARD 2806	
SWITCH PLATES (20-32RC THROUGH 20-37RC) FOR NO 20 136 LB RE RH CONCRETE TIE TURNOUT		SCALE: NTS	
		REVISION	SHEET
		-	1 OF 1
		CADD FILE: ES2806-87	

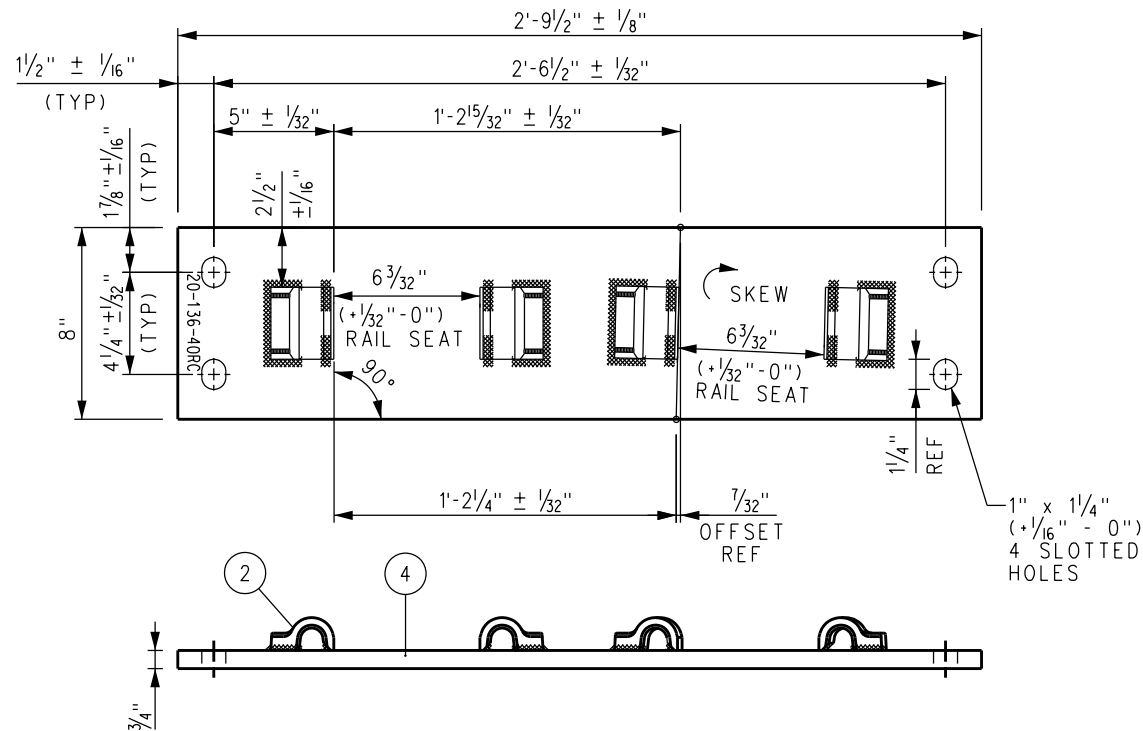


SWITCH PLATE P20-136-38RC

- 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. SLOTTED HOLE CENTERS ARE INDICATED ON DRAWING.



SWITCH PLATE P20-136-39RC



SWITCH PLATE P20-136-40RC

BILL OF MATERIALS		BILL OF MATERIALS	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-8 1/4"	3	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-9"
2	SHOULDER, PANDROL, FORGED TONGUELESS, TYPE 1	4	FLAT BAR, ASTM A36, 3/4" x 8" x 2'-9 1/2"

				DRAWN BY: HDR DATE: 03/31/2011				SCRR ENGINEERING STANDARDS ARE INTENDED FOR SCRR APPROVED USES ONLY. FOR NON-SCRR APPROVED USES, SCRR SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRR. ALL RIGHTS RESERVED.				 METROLINK® SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012				ENGINEERING STANDARDS				STANDARD 2806	
				 ASSISTANT DIRECTOR: STANDARDS & DESIGN												SCALE: NTS					
X XX-XX-XX				REVISION XX XX												REVISION SHEET - 1 OF 1					
REV. DATE DESCRIPTION DES. ENG.				DIRECTOR OF ENGINEERING AND CONSTRUCTION												CADD FILE: ES2806-88					