NOTES:

1. ENTIRE DOUBLE SLIP CROSSING TO BE FABRICATED FROM 136 LB HEAD HARDENED RAIL.
2. LOCATIONS OF INSULATED JOINTS ARE AS SHOWN ON ES2841-02. IT WILL BE SATISFACTORY TO LOCATE THE INSULATED JOINTS IN THE FIELD UP TO 1'-0" OF THE DOUBLE SLIP CROSSING. INSULATED JOINTS MUST BE LOCATED IN A CLEAR AREA BETWEEN TIES, A MINIMUM DISTANCE OF 4'-0" FROM THE EDGE OF NEAREST TIE PLATE.
3. ALL INSULATED JOINTS ARE TO BE ASSEMBLED IN A WOODEN FRAME (INSULATED JOINT SASH) UNLESS OTHERWISE SPECIFIED.
4. ALL MATERIALS REQUIRED FOR MANO OR MACHINE OPERATED SWITCH OPERATION MUST BE FURNISHED PER REQUIREMENTS OF THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION.
5. MATERIALS AND WORKMANSHIP, INCLUDING ANY CONSTRUCTION DETAILS NOT SHOWN, SHALL BE PER CURRENT REQUIREMENTS OF THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION.
6. ALL MATERIALS REQUIRED FOR HAND OR MACHINE OPERATED SWITCH OPERATION WILL BE FURNISHED PER AREMA "TRACKWORK PLANS AND SPECIFICATIONS" UNLESS OTHERWISE SPECIFIED.
7. ALL CONSTRUCTION DETAILS NOT SHOWN MUST ALSO BE SUPPLIED.
8. THE MATERIAL INCLUDED IN THE PURCHASE OF A "DOUBLE SLIP CROSSING COMPLETE" IS EVERYTHING LISTED IN THE MATERIALS TO CONSTRUCT A COMPLETE TURNOUT, INCLUDING CROSSING GEOMETRY AND CROSSING DATA FOR A NO 10 DOUBLE SLIP CROSSOVER 136 LB RE RAIL.
9. THE MATERIAL INCLUDED IN THE PURCHASE OF A "DOUBLE SLIP CROSSING COMPLETE" IS EVERYTHING LISTED IN THE MATERIALS TO CONSTRUCT A COMPLETE TURNOUT, INCLUDING CROSSING GEOMETRY AND CROSSING DATA FOR A NO 10 DOUBLE SLIP CROSSOVER 136 LB RE RAIL.
10. THE MATERIALS IN THE BILL OF MATERIALS TO CONSTRUCT A COMPLETE TURNOUT, INCLUDING CROSSING GEOMETRY AND CROSSING DATA FOR A NO 10 DOUBLE SLIP CROSSOVER 136 LB RE RAIL.
11. TIE PLATES SMALL CONFORM TO SCRRA STANDARD ES2454.
12. SPACER PLATES SMALL CONFORM TO SCRRA STANDARD ES2455. PLATE HOLES MUST BE 1" DIAMETER. SCREW HOLE PLATE HOLES MUST BE 1-1/8" DIAMETER AND INSULATED JOINTS, FIELD WELDS, RUNNING RAIL AND CROSSING GUARD RAIL IDENTIFIED ON SUBSEQUENT SHEETS MUST ALSO BE SUPPLIED.
13. ALL MATERIALS REQUIRED FOR HAND OR MACHINE OPERATED SWITCH OPERATION WILL BE FURNISHED PER AREMA "TRACKWORK PLANS AND SPECIFICATIONS" UNLESS OTHERWISE SPECIFIED.
14. ALL CONSTRUCTION DETAILS NOT SHOWN MUST ALSO BE SUPPLIED.
15. ENTIRE DOUBLE SLIP CROSSING TO BE FULLY FLOOR ASSEMBLED INCLUDING END FROGS AND HF GUARD RAILS.
16. ENTIRE CROSSOVER TO BE FULLY FLOOR ASSEMBLED INCLUDING END FROGS AND HF GUARD RAILS.
17. CROSSING GEOMETRY AND CROSSING DATA FOR A NO 10 DOUBLE SLIP CROSSOVER 136 LB RE RAIL.
NOTES:
1. SEE COVER SHEET FOR NOTES, BILL OF MATERIAL AND CROSSING DATA.
2. USE CLIP ES2361 AT INSULATED JOINT LOCATIONS. USE CLIP ES2362 AT ALL OTHER LOCATIONS.

NO 10 DOUBLE SLIP CROSSING

16'-0" U69 GUARD RAIL (TYP)

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

CANTED PLATES 1:40

- 10' 7" U69 GUARD RAIL (TYP)

- CANTED PLATES 1:40

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

LAYOUT
### CROSSING DATA

**Between Theoretical Points of End Fros**

- Angle of Crossing: 94°-2°30' - 5°43'29"
- Degree of Crossing: 4°-48°09' - 4°-48°09"
- Curve and Straight Gauge Track: 4°-8°5" - 4°-8°5"
- Designated Point: 0" SAMSON

**Between Theoretical Point of End Frog & Center Frog**

- Length of Inside Samson Stock Rails: 20'-2" - 20'-2" (Gauge on Straight Track)
- Length of Outside Samson Stock Rails: 20'-2" - 20'-2" (Gauge on Curved Track)

**From Theoretical Point of Center Frog to Heel Joint**

- Length of Fros from Theoretical Point to Toe:
  - 8'-0" - 8'-0"
  - 8'-0" - 8'-0"
  - Switch Angle at End Points: 5°-43'-29"

**From Theoretical Point of Center Frog to Heel Joint**

- Length of Frog from Theoretical Point to Heel:
  - 10'-3" - 10'-3"
  - 10'-3" - 10'-3"
- Switch Spread Outside 5W 7'-3" - 7'-3" A.C. - A.C.
- Switch Spread Inside 5W 8'-0" - 8'-0" A.C.

**Length of Inside Samson End Switch Points (1st Samson)**

- 34'-7/" - 34'-7/"

**Length of Outside Samson End Switch Points (1st Samson)**

- 28'-2" - 28'-2"

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### Specifications:

1. **Crossing Type**: No 10 Double Slip, Generally Per Arena Plan No 8'14" Rail (14% Heat Treated - Barrel 341-388).
2. **Fros**: No 10 Rail Bound manganese Fros (15% Carbon, 22'-6" Long with Pandrol Plates - Manganese Casting to Be Expensive Machine).
3. **End Fros and HF Guard Rails**:
   - Adjustable Braces - Boltless with Spring Clips.
   - Curved and Straight Samson Planing Arena Switch Points to Be Equipped.
4. **Insulated Joints**: 4'-8" - 4'-8"
   - Switch Points: 29'-6" - 34'-7/" Long.
   - Curved and Straight Samson Planing Arena Insulated Join.
5. **Joint Mark**: 0'-0" - 10'-0" Raised Guard Rail with Braces and Plates.
6. **Guard Plates**: To Be Furnished Installed.

---

### Crossing Data

**136 LB - No 10 - Double Slip Crossing**

Ref. Drawing: S C A R R E 21-4902.02

**Sheet No:** 2841-02

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**Reference Drawing**

**Engineer Standards**

Southern California Regional Rail Authority
One Gateway Plaza, 12th Floor, L.A., CA 90012

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**Note:**

1. All measurements given at 3" below top of rail and 10' 3" Point of End Fros.
2. All rails to be full heat treated - Barrels 341-388.
5. All Insulated Joint Rails: 6" - 5" above base, 1" dia. holes.
6. Proper location of edge of plates to be marked with white paint on outer flange of rail.
7. Head Mark all rail ends as shown.
8. Entire crossover to be fully floor assembled including end Fros and HF Guard Rails.

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**Specifications:**

1. Crossing Type: No 10 Double Slip, Generally Per Arena Plan No 8'14" Rail (14% Heat Treated - Barrel 341-388)
2. Fros: No 10 Rail Bound Manganese Fros (15% Carbon, 22'-6" Long with Pandrol Plates - Manganese Casting to Be Expensive Machine)
3. Switch Points: 29'-6" - 34'-7/" Long
4. Insulated Joints: 4'-8" - 4'-8"
5. Adjustable Braces - Boltless with Spring Clips
6. Guard Rails: 0'-0" - 10'-0" Raised Guard Rail with Braces and Plates
7. Guard Plates: To Be Furnished Installed
STOCK RAILS ARE SHOWN FOR "RIGHT HAND TURNOUT"

STOCK RAILS ARE SHOWN FOR "LEFT HAND TURNOUT"

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

<table>
<thead>
<tr>
<th>SW LENGTH</th>
<th>BEND ANGLE</th>
<th>V (VERTEX DIST)</th>
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<tbody>
<tr>
<td>22'-6½&quot;</td>
<td>14° 44' 11&quot;</td>
<td>10½&quot;</td>
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OUTSIDE SLIP RAIL - 20'-7¾" LONG

LENGTHS B, C & D FOR 136 LB RAIL

<table>
<thead>
<tr>
<th>SW LENGTH</th>
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See Note 1

STOCK RAILS ARE SHOWN FOR "RIGHT HAND TURNOUT"

STOCK RAILS ARE SHOWN FOR "LEFT HAND TURNOUT"
NO 10 RAILBOUND MANGANESE FROG 21'-2½" LONG WITH PLATES

NOTES:
1. Rail used to fabricate frog is to be 136 lb high strength,
2. Rail bound manganese steel frog per current AREMA plan no. 621 & 625,
3. All frog plates shall be stamped in ½" characters to indicate frog no. and rail section and plate number. Mark to be stamped on some end of all frog plates.
4. Foot ends of frog plates shall be ½", see sheet ES2841-45.
5. Workmanship and materials shall be per current AREMA specifications for "special trackwork" except as otherwise specified.
6. Any construction details not shown shall be in accordance with current AREMA recommended practice.
7. Frog plates are designed to be installed perpendicular to main track.
9. Toe and heel blocks and plates per AREMA specifications.
10. Plates to be made of cold rolled steel.
11. The plates as shown are for a 136 lb no. 10, double slip crossing, machine operated turnout.
12. The "Pandrol" type used - on pressed steel shoulder make of mild steel to be purchased from "Pandrol" international.
13. Alternate welding "Pandrol" design specifications, the pressed steel shoulder must be carefully welded to all plates with a minimum 2 pass ½ + fillet weld along the relieved groove of the shoulder. Any weld projecting beyond the vertical face of shoulder in the area of the base of rail seat must be machined out to provide a clean rail seat dimension as called for.
14. Manufactured frog plates shall use completed frog to verify location of adjustable clamps on frog plates 1'-1½" and 2½" to insure proper fit. Frog plates will be welded to the gauge plate in the field with a 3 pass ½ + fillet weld, after the plates are secured in the proper location on the tie with the frog in place at proper alignment.
15. The rail plates are to be bolted and welded to the frog gauge plates in the field with a 3 pass ½ + fillet weld continuous on both ends of the plate. Plates will be welded to the gauge plates in the field with a 3 pass ½ + fillet weld continuous on both ends of the plate. Plates are to be welded, only after the frog plate and the frog is secured in the proper location on the tie with the frog in place at proper alignment.
16. Any construction details not shown shall be in accordance with current AREMA specifications as called for and approved by SCRRA director of engineering and procurement.

WELDING OF GAUGE PLATE & GUARD RAIL:

POSITION GAUGE PLATES AT DESIGNATED TIE LOCATIONS AND SECURE IN PLACE.
CHEK TRACK GAUGE FOR CORRECT GAUGE.
RE-MARK TRACK GAUGE AND CORRECT IF NECESSARY.
CAREFULLY WELD FROG PLATE AND GUARD RAIL PLATE TO FROG GAUGE PLATE WITH 3 PASS ½ + FILLET WELD.

FOR WELDING USE THE FOLLOWING:
A. ELECTRODE 5/32" WELDING SPEC A5.5xw
B. ELECTRODE 7/32" WELDING SPEC 7018XLM
C. WIRE 7/32" NR203, 1% NICKEL FLUX CORE
OTHER WIRE OR ELECTRODES MEETING SPECIFICATIONS AS CALLED FOR AND APPROVED BY SCRRA DIRECTOR OF ENGINEERING AND PROCUREMENT.

FOR DETAILS OF FROG PLATES F-1 THRU F-15 SEE SHEET ES2841-49.
NOTES:
1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10 DOUBLE SLIP CROSSING.
3. ALL WELDS ARE ½" FILLET WELDS UNLESS OTHERWISE NOTED.
4. HOLES IN PLATES ARE ½" IN DIA UNLESS OTHERWISE NOTED.
5. GUARD RAIL PLATES ARE TO BE INSTALLED AND WELDED TO THE FROG GAUGE PLATES IN THE FIELD. ON BOTH ENDS OF THE PLATE PLATES ARE TO BE WELDED ONLY AFTER THE GAUGE PLATE AND THE FROG IS SECURED IN THE PROPER LOCATION ON THE TIE WITH PROPER ALIGNMENT.
6. FROG BASE PLATES FP-1, FP-4 AND FP-7 ARE TO BE WELDED TO THE FROG GAUGE PLATES IN THE FIELD WITH A PASS ½" FILLET WELD CONTINUOUS ON BOTH ENDS OF THE PLATE PLATES ARE TO BE WELDED ONLY AFTER THE GAUGE PLATE AND THE FROG IS SECURED IN THE PROPER LOCATION ON THE TIE WITH PROPER ALIGNMENT.
7. THE RECOIL - ON - PRESS STEEL SHOULDERS PURCHASED FROM "PANDROL INTERNATIONAL" TO BE MILD STEEL OTHER APPROVED WELD - ON PRESS STEEL SHOULDERS MEETING "PANDROL" DESIGN SPECIFICATIONS MAY BE USED.
8. THE PRECISION STEEL SHOULDER MUST BE CAREFULLY WELDED TO GAUGE PLATES. ANY WELD PROTRUDING BEYOND THE VERTICAL FACE OF THE SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
9. ALL PANDROL SHOULDERS TO BE TYPE 1 FORGED, UNLESS OTHERWISE SHOWN.

REFERENCE DRAWING

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

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

ENGINEERING STANDARDS
INSULATED GAUGE PLATE DETAILS
DS-GP-1, DS-GP-2, DS-GP-3 AND DS-GP-4
136 LB RE NO 10 DOUBLE SLIP CROSSING
NOTES:
1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. EACH PLATE TO BE FLUSH STAMPED WITH PLATE NO. AND 136 (WEIGHT OF RAIL). NOS. OF TURNOUT 134 OR 136.
3. THE PRESSED TYPE WELD - ON PRESSED STEEL, SHOULDER MADE FROM MILD STEEL TO BE PURCHASED FROM PANDROL INTERNATIONAL OR APPROVED ALTERNATE WELDING PANDROL'S DESIGN SPECIFICATIONS.
4. THE PRESSED STEEL SHOULDER MUST BE CAREFULLY WELDED TO THE PLATE. ANY WELD PROJECTIONS BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINE CUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION CALLED FOR.
5. THE PLATES AS SHOWN ARE FOR A 136 LB. NO 10 DOUBLE SLIP SWITCH.
6. ALL WELDS ARE ½” FILLET WELDS UNLESS OTHERWISE NOTED.
7. HOLES IN PLATES ARE 1" IN DIAMETER UNLESS OTHERWISE NOTED.

INSULATED SLIDE GAGE PLATE GP-5
1" x 8" - Milled - (2) Assembled each reg'd as shown

INSULATED SLIDE GAGE PLATE GP-6
1" x 8" - Milled - (2) Assembled each reg'd as shown

BRACE PLATE - 4A
1" x 8" x 12'-11" - Welded - W/Adj. Rail Brace
12 Required

BRACE PLATE - 4B
1" x 8" x 9'-11" - Welded - W/Adj. Rail Brace
12 Required

BRACE PLATE - 6A
1" x 8" x 2'-3" - Welded - W/Adj. Rail Brace
8 Required

BRACE PLATE - 7A
1" x 8" x 1'-10" - Welded - W/Adj. Rail Brace
18 Required
NOTE:
1. PLATES TO BE MADE OF MILD ROLLED STEEL.
2. EXTRUDED PLATES TO BE PLAINLY STAMPED WITH PLATE NO AND 136 (WEIGHT OF RAIL) & HAND OF TURNOUT (RH OR LH).
3. PANDROL SHOULDER TO BE TYPE 5 FORGED.
4. THE PRECISED STEEL PLATES MUST BE CAREFULLY WELDED TO THE PLATE. ANY WELD PROJECTING BEYOND THE VERTICAL FACE OF SHOULDER IN THE AREA OF THE RAIL SEAT MUST BE MACHINED OUT TO PROVIDE A CLEAR RAIL SEAT DIMENSION AS CALLED FOR.
5. THE PLATES AS SHOWN ARE FOR A 136 LB NO 10 DOUBLE SLIP CROSSING.
6. ALL WELDS ARE 7/8" Fillet Welds unless otherwise noted.
7. FABRICATED PLATES ARE 1/4" in THK. UNLESS OTHERWISE NOTED.

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

ENGINEERING STANDARDS
BARCE PLATE AND SLIDE PLATE DETAILS
NO 10 136 LB RE DOUBLE SLIP CROSSING

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

CADD FILE:
REVISION
SCALE:
STANDARD
THE PLATES AS SHOWN ARE FOR A 136 LB, NO 10 DOUBLE SLIP CROSSING.

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

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

DIMENSION TABLE

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<tr>
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<th>A</th>
<th>B</th>
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<td>5'-4&quot;</td>
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<tr>
<td>3-B</td>
<td>5'-3&quot;</td>
<td>5'-3&quot;</td>
<td>5'-3&quot;</td>
<td>2</td>
</tr>
</tbody>
</table>
NOTES:
1. STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.
2. HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

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

INSULATED FROG GAGE PLATE FGP-1
3' x 8' - PLAT

INSULATED FROG GAGE PLATE FGP-2
3' x 8' - PLAT

INSULATED FROG GAGE PLATE FGP-3
3' x 8' - PLAT

FOR INSULATED JOINT ASSEMBLY
SEE ES2800-99

STAMP PLATE WITH PROPER PLATE NUMBER AND WEIGHT OF RAIL.

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

HOLES IN PLATES ARE 1" IN DIA UNLESS OTHERWISE NOTED.

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

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

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

- **Gauge**: 4'-8½"
- **Throw at Point**: 4' Min, 4½' Max
- **Distance**: 17½'
- **Pt**: 2½' Samson
- **Rent**: ½" on both sides (Slot ¼" Stock Side)
- **Rod Spacing**: 1'-6½"
- **Break all Sharp Corners

**Insulation Material**

Consists of:

- Steel Channel 5-1
- Steel Angle Plate 46.34
- Fire Resistant (2½"
- Steel Channel ST-664
- Steel Channel ST-568
- Muck Collar 622-240
- Insulation Material

**Special Nuts & COTTER PIN**

- Heavy Thread Machine ½" Head Bolts ½" x 3½", SQ Nut, Spring Washer & COTTER PIN

**Bracket**

- ¾" x ½" DIA HOLES
- (TYP)

**Clip Location**

- ½" x ½" x ½"

**CLIP LOCATION**

- ½" x ½" x ½" (APPROX)

**Sleeve**

- ¾" x ½" x ½"

**BASKET WITH FIRE CHANNEL**

- (14) HEAVY THREAD MACHINE SS HEAD BOLTS ¼" x 3½", SQ NUT, SPRING WASHER & COTTER PIN

**Note**

- Apply Basket to Rod at Location A or B as Ordered

**Inside Point Overthrows**

- 10½'

**Outside Point Overthrows**

- 7½'

**BEARINGS**

- 10'-0"
OVERTIES = 4'-3½" (ADJUSTMENT 4'-3" TO 4'-4½")

CLIP LOCATION = 1½" x 2½" x 4½" x 3"

NO 4 HEAD ROD (TWO REQUIRED PER CROSSING)

SLOTTED HOLE DETAIL
(1½" x 2½"

ROLLED HEADLOCK DETAIL
3½" LONG (BETHLEHEM STEEL PART NO 834-0306)
(1) PIECE AS SHOWN FOR CLIP RH MOVEABLE POINT
(2) PIECES OPPOSITE SIDE FOR CLIP LH MOVEABLE POINT

ROLLED HEADLOCK 7" LONG
(BETHLEHEM STEEL PART NO 834-0306)
(1) PIECE PER ROD
FURNISH 12TH HEAVY THREAD MACHINE 50 HEAD BOLTS, 1½" x 4½" WITH SLOTTED HEX NUT, SPRING WASHER & COTTER PIN

DETAIL OF SERRATIONS
(1½" x 2½" LONG STRAIGHT & 4½" x 2½" LONG BENT PIECE)

NOTE:
STAMP RODS WITH RESPECTIVE ROD NO, 136, NO 10 055*

INSULATION MATERIAL
PER SR-36 WITH COTTER SLEEVE NUT WITHOUT ½" SPACING WASHERS & ¾" HEX NUTS.
TYPE W CLIP MUST BE WELDED TO ROD ALONG BOTH SIDES OF BOTTOM OF CLIPS.
REDEAR ALL HOLES.

SWITCH INFORMATION
GAUGE = 4'-8½"
THROW AT POINT = 4"
E DISTANCE = 1½"
POINT = ¾"
HELM SPREAD = ½"
HEEL SPREAD = ⅜"

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

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

DIRECTOR OF ENGINEERING AND CONSTRUCTION
ASSISTANT DIRECTOR: STANDARDS & DESIGN
ONE GATEWAY PLAZA, 12TH FLOOR, L.A., CA. 90012
OVERTEES - 4'-3" (ADJUSTMENT 4'-2½" TO 4'-3½"

CLIP LOCATION = 1½" x 2½" x 1½"

1" DIA HOLES LAYOFF AND DRILL AT ASSEMBLY

1½" DIA HOLES IN RODS

INSULATED SPREAD ROD NO 5

(2) REQUIRED PER SLIP SWITCH
WITH HUCKED INSULATED SPlice

RH MOVEABLE POINT
THIS SIDE

LH MOVEABLE POINT
THIS SIDE

SLOTTED HOLE DETAIL
(1½" x 2½"

ROLLED HEADLOCK DETAIL
3¼" LONG (BETHLEHEM STEEL PART NO 834-0306)
3 PIECES AS SHOWN FOR CLIP RH MOVEABLE POINT
(2) PIECES OPPOSITE HAND FOR CLIP LH MOVEABLE POINT

ROLLED HEADLOCK 7" LONG
(HETHEHEM STEEL PART NO 834-0306)
(4) PER ROD
FURNISH (2) HEAVY THREAD MACHINE SQ HEAD
BOLTS, 1½" x 4½" WITH SLOTTED HEX NUT,
SPRING WASHER & COTTER PIN

DETAIL OF SERRATIONS
FOR 4'-8½" LONG STRAIGHT &
5½" LONG BENT PIECE

NOTE:
STAMP RODS WITH "RESPECTIVE ROD NO, 136, NO 10 055"

INSULATION MATERIAL
(1) STEEL CHANNEL ST-568.
(2) STEEL SPLICE PLATE ST-684.
(3) STEEL CHANNEL ST-684.
(4) #8 HUCK BOLTS CSRL-8824-36.
(4) HUCK COLLARS LWH-24G.

SWITCH INFORMATION
GAUGE = 4'-8½"
THROW AT POINT = 4"
E DISTANCE = 1½"
POINT = ½"
HEEL SPREAD = 7½"

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

INDEX OF ITEMS
(1) STEEL CHANNEL ST-568.
(2) STEEL SPLICE PLATE ST-684.
(4) #8 HUCK BOLTS CSRL-8824-36.
(4) HUCK COLLARS LWH-24G.

REMARKS:
STAMP RODS WITH "RESPECTIVE ROD NO, 136, NO 10 055"

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

ASSISTANT DIRECTOR: STANDARDS & DESIGN

DIRECTOR OF ENGINEERING AND CONSTRUCTION

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UserName=> carlosa
COLLECTIVE DRILLING FROM END OF GUARD BAR MARKED "X"

- Guard rail section UIC 33 (U69) UNC 960.0 Grade 90A
- Guard face UIC 33 (U69)
- Brace plate, bracket and swhs mild steel per AREMA specification M7.
- Guard rail bolt and nut per AREMA specification M11.
- Base plate, bracket and shims mld steel per AREMA (guard face brinell 319 min)
- Guard rail section UIC 33; (U69) UIC 860.0 Grade 90A

HOLES 1" DIA - 1 1/2" ABOVE BASE

- 10 tie guard rails 16'-0" long
- Holes (TYP) 1" dia (5)
- Base of rail
- Guard face (5) holes (TYP)

NOTES:
1. Guard rail section UIC 33 (U69) UNC 960.0 Grade 90A
2. Brace plate, bracket and swhs mild steel per AREMA specification M7.
3. Guard rail bolt and nut per AREMA specification M11.
4. Workmanship and tolerances per AREMA specifications for special trackwork.
5. Welding per ANSI AWS D1.1-92 or latest revision.

TYPICAL PLATE DETAIL

- Collective drilling from end of guard bar marked "X"
- Punched detail
- Typical plate

FLARE DETAIL

- 1" from top of bar
- 2'-3 1/2" to 3'-11" x 5'-6 1/4" x 7'-2 3/4" x 8'-4 3/4" x 10'-0 1/4" x 12'-0 3/4" x 13'-8 3/4" x 15'-3 1/8"
- Straight guard face 3'-5"

ASSEMBLED 16'-0" GUARD RAIL

- 16'-0" long
- Holes 1" dia - 1 1/2" above base
- Guard rail plates with brace weldment and Pandrol shoulders type 5 (Typ)
- 8" brace

TYPICAL PLATE

- Pandrol shoulder
- 1" dia (5) holes (Typ)
- 1 1/4" thick

FLARE DETAIL

- Break sharp corners of all machined surfaces

ENG. STANDARDS

- Southern California Regional Rail Authority
- One Gateway Plaza, 12th Floor, L.A., CA. 90012

METROLINK

- Southern California Regional Rail Authority

DRAWN BY: A. CARLOS
DRAFTED BY: SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY

DATE: 10/5/2011

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