

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

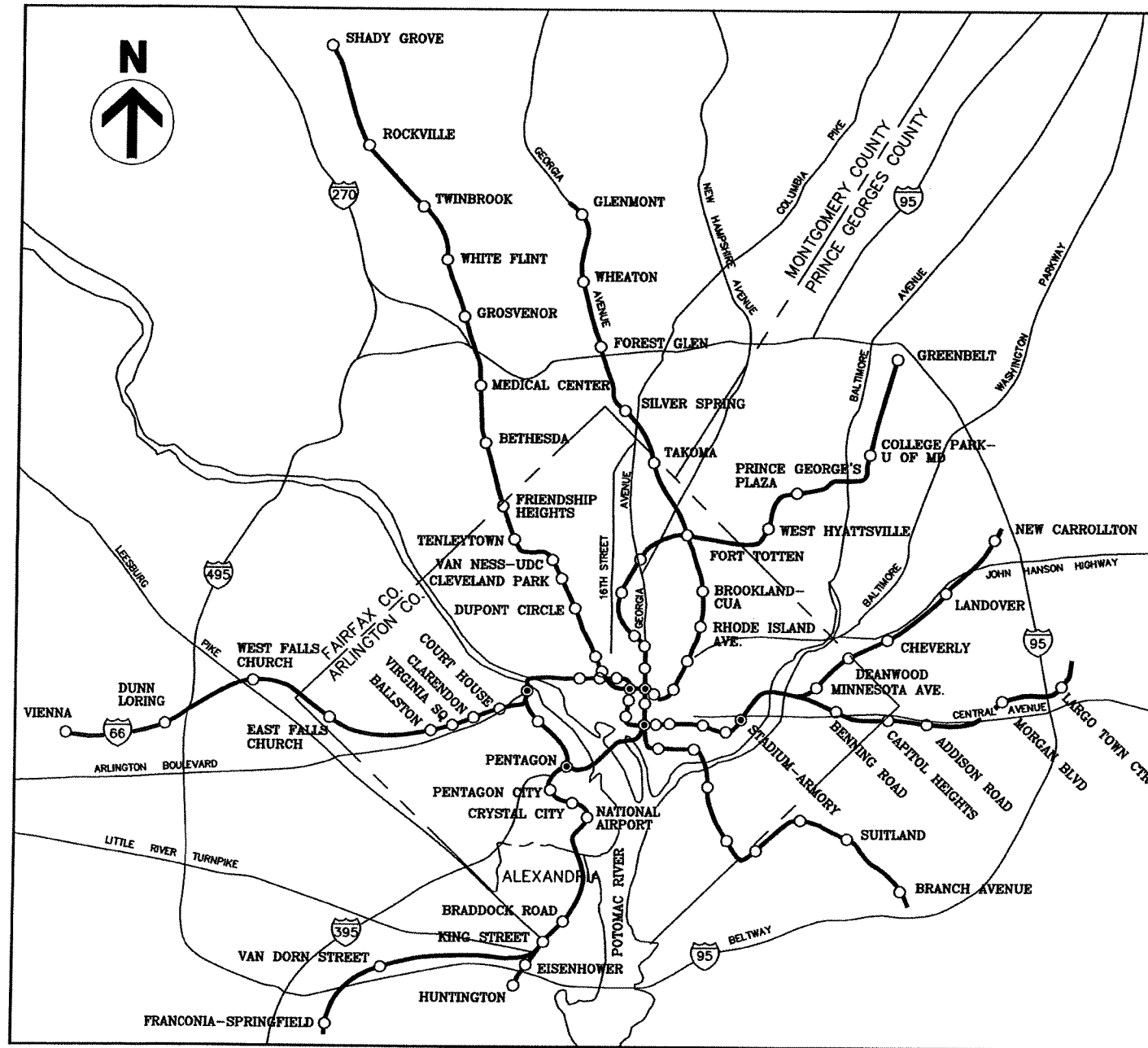


DEPARTMENT OF OPERATIONS • RAIL SERVICES

SPECIAL TRACKWORK PROCUREMENT DRAWINGS YARDS

CONTRACT No. _____

NOVEMBER, 2010



LOCATION MAP
NOT TO SCALE

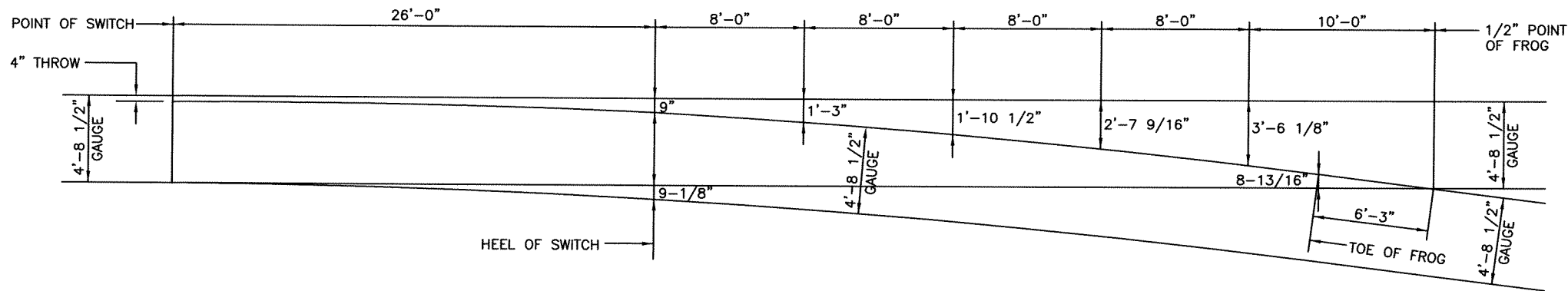
SHEET NUMBER	DRAWING NUMBER	TITLE
1	TW2010-COVER	COVER SHEET
2	TW2010-1	LOCATION PLAN AND INDEX
3	TW2010-3	No.8 GUARDED TURNOUT, OFFSET, GEOMETRY, AND RAIL LAYOUT DIAGRAMS, BALLASTED TRACK
4	TW2010-4	No.8 GUARDED TURNOUT, PLAN, BALLASTED TRACK
5	TW2010-5	No.8 GUARDED TURNOUT, PLATED SWITCH, BALLASTED TRACK
6	TW2010-6	No.8 GUARDED TURNOUT, PLATED FROG, BALLASTED TRACK
7	TW2010-7	No.8 GUARDED TURNOUT, DETAILS, BALLASTED TRACK, SHEET 1 of 2
8	TW2010-8	No.8 GUARDED TURNOUT, DETAILS, BALLASTED TRACK, SHEET 2 of 2
9	TW2007-8	No.8 GUARDED TURNOUT, SINGLE CROSSOVER, 14'-0" TRACK CENTERS, BALLASTED TRACK
10	TW2010-9	No.8 GUARDED SINGLE CROSSOVER, TYPE 1, HALF UNIT, 18'-0" TRACK CENTERS, BALLASTED TRACK
11	TW2010-10	No.8 GUARDED DOUBLE CROSSOVER, TYPE 1, HALF UNIT, 14'-0" TRACK CENTERS, PLAN, BALLASTED TRACK
12	TW2010-11	* No.8 GUARDED DOUBLE CROSSOVER, 14'-0" TRACK CENTERS, DIAMOND AND END FROG DETAILS, BALLASTED TRACK
13	TW2007-12	* No.8 GUARDED DOUBLE CROSSOVER, TYPE 4, HALF UNIT, 14'-0" TRACK CENTERS, PLAN, BALLASTED TRACK
14	TW2007-13	No.8 GUARDED DOUBLE CROSSOVER, TYPES 4 & 5, 14'-0" TRACK CENTERS, RAIL LAYOUT DIAGRAMS, BALLASTED TRACK
15	TW2007-13A	No.8 GUARDED DOUBLE CROSSOVER, TYPE 2, 14'-0" TRACK CENTERS, RAIL LAYOUT DIAGRAM AND GUARD RAIL DETAILS, BALLASTED TRACK
16	TW2007-14	No.8 GUARDED DOUBLE CROSSOVER, TYPE 3, HALF UNIT, PLAN, BALLASTED TRACK
17	TW2010-29	No.8 GUARDED TURNOUT, OFFSET, GEOMETRY, AND RAIL LAYOUT DIAGRAMS, DIRECT FIXATION TRACK
18	TW2010-30	No.8 GUARDED TURNOUT, PLAN, PLATED, DIRECT FIXATION TRACK
19	TW2010-31	* No.8 GUARDED TURNOUT, PLATED SWITCH, DIRECT FIXATION TRACK
20	TW2010-32	No.8 GUARDED TURNOUT, PLATED FROG, DIRECT FIXATION TRACK
21	TW2010-33	No.8 GUARDED TURNOUT, DETAILS, DIRECT FIXATION TRACK, SHEET 1 of 2
22	TW2010-34	No.8 GUARDED TURNOUT, DETAILS, DIRECT FIXATION TRACK, SHEET 2 of 2
23	TW2010-39	No.8 GUARDED DOUBLE CROSSOVER, TYPE 1, HALF UNIT, 14'-0" TRACK CENTERS, PLAN, DIRECT FIXATION TRACK
24	TW2010-40	No.8 GUARDED DOUBLE CROSSOVER, 14'-0" TRACK CENTERS, DIAMOND AND END FROG DETAILS, DIRECT FIXATION TRACK

DESIGNED C.RIGGINS 11/10
DATE
DRAWN C.RIGGINS 11/10
DATE
CHECKED R.REYES 11/10
DATE
APPROVED [Signature] 11/10
DATE

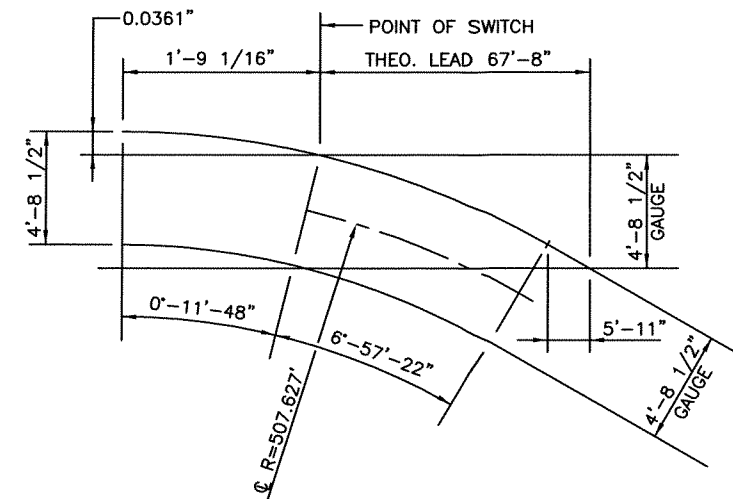
REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE
APPROVED BY [Signature] SUBMITTED BY [Signature]

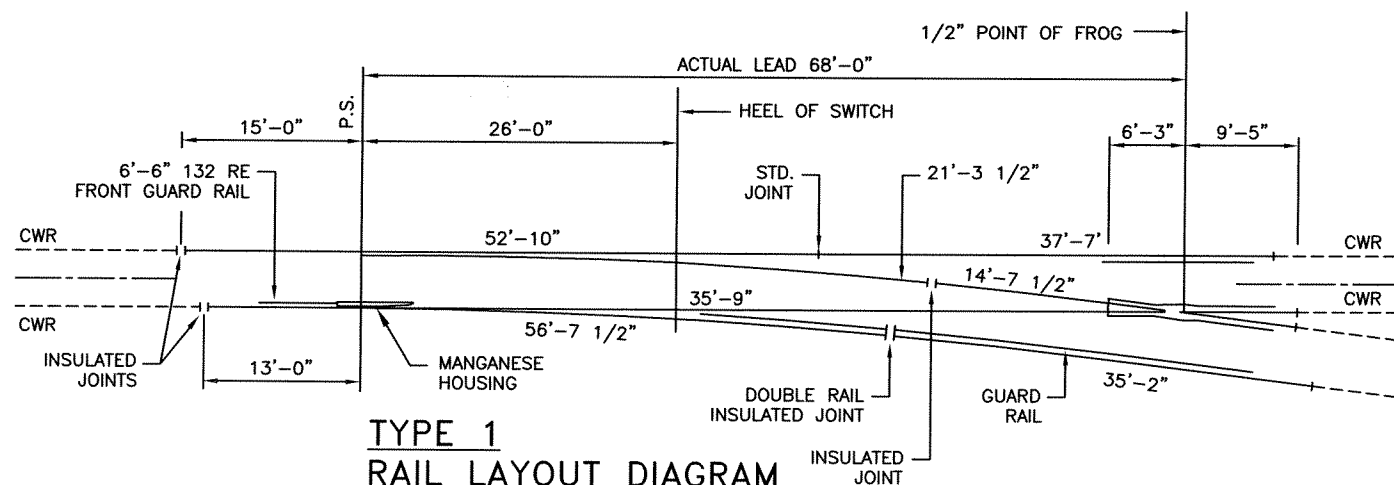
TRACKWORK PROCUREMENT YARDS
PROCUREMENT LOCATION PLAN AND INDEX OF DRAWINGS
SCALE: NOT TO SCALE
DRAWING NO. TW2010-1
SHEET NO. 2



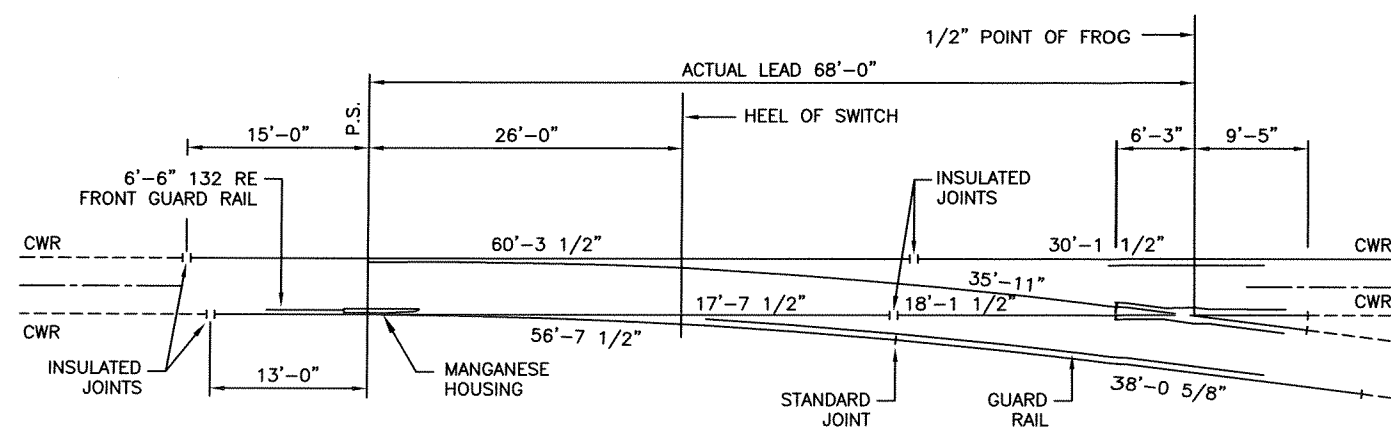
NO. 8 OFFSET DIAGRAM
SCALE: 1/4"=1'-0"



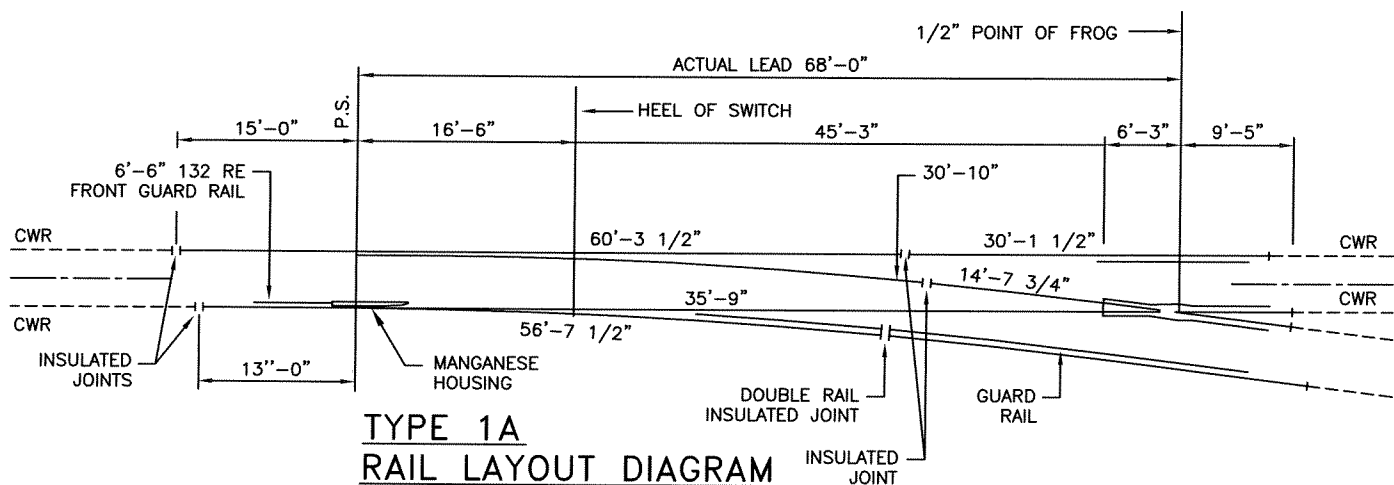
NO. 8 TURNOUT GEOMETRY
NOT TO SCALE



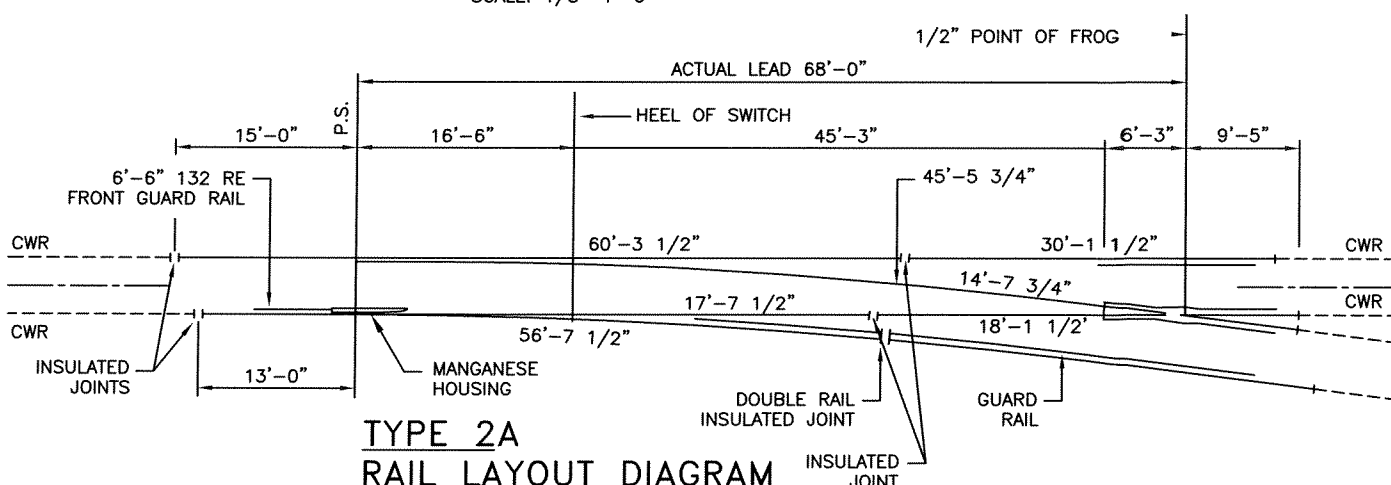
TYPE 1 RAIL LAYOUT DIAGRAM
SCALE: 1/8"=1'-0"



TYPE 2 RAIL LAYOUT DIAGRAM
SCALE: 1/8"=1'-0"



TYPE 1A RAIL LAYOUT DIAGRAM
SCALE: 1/8"=1'-0"



TYPE 2A RAIL LAYOUT DIAGRAM
SCALE: 1/8"=1'-0"

DESIGNED	C.RIGGINS	11/10	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C.RIGGINS	11/10					
CHECKED	R.REYES	11/10					
APPROVED	<i>[Signature]</i>	11/11					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY *[Signature]*

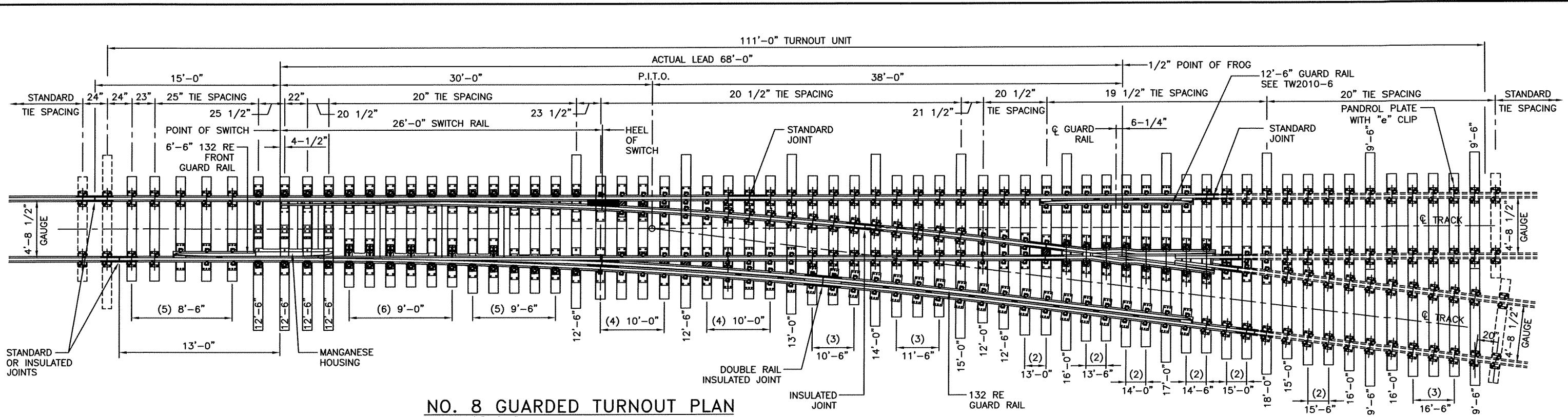
SUBMITTED BY *[Signature]*

TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, OFFSET, GEOMETRY,
AND RAIL LAYOUT DIAGRAMS,
BALLASTED TRACK

SCALE: 1/4"=1'-0"
AND AS SHOWN

DRAWING NO. TW2010-3

SHEET NO. 3



NO. 8 GUARDED TURNOUT PLAN
SCALE: 1/4"=1'-0"

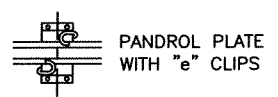
TURNOUT DATA		
FROG	NUMBER	8
	ANGLE	7'-09'-10"
	TOE LENGTH	6'-3"
	HEEL LENGTH	9'-5"
	TOTAL LENGTH	15'-8"
	TOE SPREAD	8-13/16"
SWITCH	HEEL SPREAD	14-9/16"
	LENGTH OF SWITCH RAIL	26'-0"
	THICKNESS AT POINT	0"
	ANGLE AT HEEL	3'-07'-09"
	ANGLE AT POINT	0'-11'-48"
	HEEL SPREAD	9"
CURVED POINT RADIUS		509.98'
VERTEX DISTANCE		0"
ACTUAL LEAD		68'-0"
STRAIGHT CLOSURE LENGTH		35'-9"
CURVED CLOSURE LENGTH		35'-10 31/32"
CURVED CLOSURE RADIUS		509.98'
CENTERLINE RADIUS		507.63'
DEGREE OF CURVE		11'-17'-13"
TANGENT AT HEEL OF SWITCH		0"
TANGENT AT TOE OF FROG		0"

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
1	26'-0" GUARDED PLATED STRAIGHT SWITCH WITH UNIFORM RISERS, BALLASTED, COMPLETE
1	26'-0" UNGUARDED PLATED CURVED SWITCH WITH UNIFORM RISERS, BALLASTED, COMPLETE
1	NO. 8 PLATED RAIL BOUND MANGANESE FROG, BALLASTED, COMPLETE
1	12'-6" GUARD RAIL, COMPLETE
1	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
6	DUCTILE IRON RAIL STOPS
A.R.	132 RE GUARD RAILS
A.R.	CURVED CLOSURE RAIL, STOCK RAIL, TURNOUT RAIL
A.R.	STRAIGHT CLOSURE RAIL, STOCK RAIL
A.R.	BOLTED STANDARD RAIL JOINTS, 6 HOLE, 36 INCH
A.R.	BOLTED INSULATED RAIL JOINTS, 6 HOLE, 36 INCH
A.R.	LEFT HAND PANDROL CLIPS e2056
A.R.	SPACER BLOCKS
A.R.	ELASTIC FASTENER TIE PLATES PUNCHED FOR 7/8" SCREW SPIKES
A.R.	GR PLATES
A.R.	7" X 9" TIMBER SWITCH TIES AS SHOWN
A.R.	7" X 9" TIMBER CROSS TIES AS SHOWN
A.R.	7/8" SCREW SPIKES
A.R.	PANDROL PLATES

TIE SCHEDULE	
LENGTH	QTY.
8'-6"	5
9'-0"	6
9'-6"	9
10'-0"	8
10'-6"	3
11'-6"	3
12'-0"	1
12'-6"	7
13'-0"	3
13'-6"	2
14'-0"	3
14'-6"	2
15'-0"	4
15'-6"	2
16'-0"	3
16'-6"	3
17'-0"	1
18'-0"	1
TOTAL	66

NOTES:

- GAUGE WIDTH THROUGHOUT TURNOUT IS 4'-8 1/2".
- LOCATE SEPARATOR BLOCKS NOT MORE THAN 4'-0" ON CENTERS AND AS NECESSARY TO CLEAR JOINT BARS AND ANCHOR BOLTS.
- JOINTS INDICATED IN RAIL LAYOUT DIAGRAM ARE REQUIRED. OTHER JOINTS LOCATED BY THE CONTRACTOR TO FACILITATE SHIPPING OR FABRICATION SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
- CLOSURE RAIL LENGTHS INDICATED ON ARE TOTAL LENGTHS AND DO NOT ALLOW FOR STANDARD OR INSULATED JOINTS.
- RAIL ENDS TO BE JOINTED TO CWR SHALL BE UN-DRILLED.
- THE CONTRACTOR SHALL FURNISH ALL JOINTS INTERNAL TO THE TURNOUT.
- RIGHT HAND TURNOUT IS SHOWN. LEFT HAND TURNOUT IS OPPOSITE HAND.
- GUARD RAIL IS HIGH STRENGTH 132 RE SECTION.
- RAIL IS HIGH STRENGTH RAIL.
- ALL RAILS WITHIN THE TURNOUT ARE FASTENED TO THE PLATES BY LEFT HAND PANDROL SPRING CLIPS - e2056.
- RAIL AT JOINT BARS SHALL BE FASTENED WITH LEFT HAND MODIFIED E-CLIP OR C-CLIP.
- ALL PLATES ARE FASTENED TO TIES WITH 7/8" SCREW SPIKES.
- ALL PLATES ARE PUNCHED FOR 7/8" SCREW SPIKES.
- RAIL AT HEEL BLOCK SHALL BE FASTENED WITH PANDROL "C" CLIPS C/W TYPE "A" C-PLATE.



DESIGNED	R.REYES	02/09
		DATE
DRAWN	A.SEREDICH	02/09
		DATE
CHECKED	R.REYES	02/09
		DATE
APPROVED	<i>[Signature]</i>	2/11
		DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

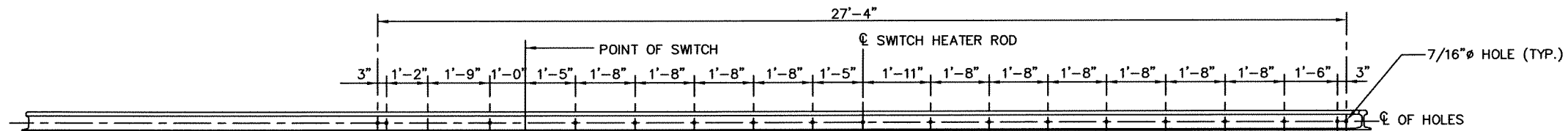
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY *[Signature]* SUBMITTED BY *[Signature]*

TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, PLAN,
BALLASTED TRACK

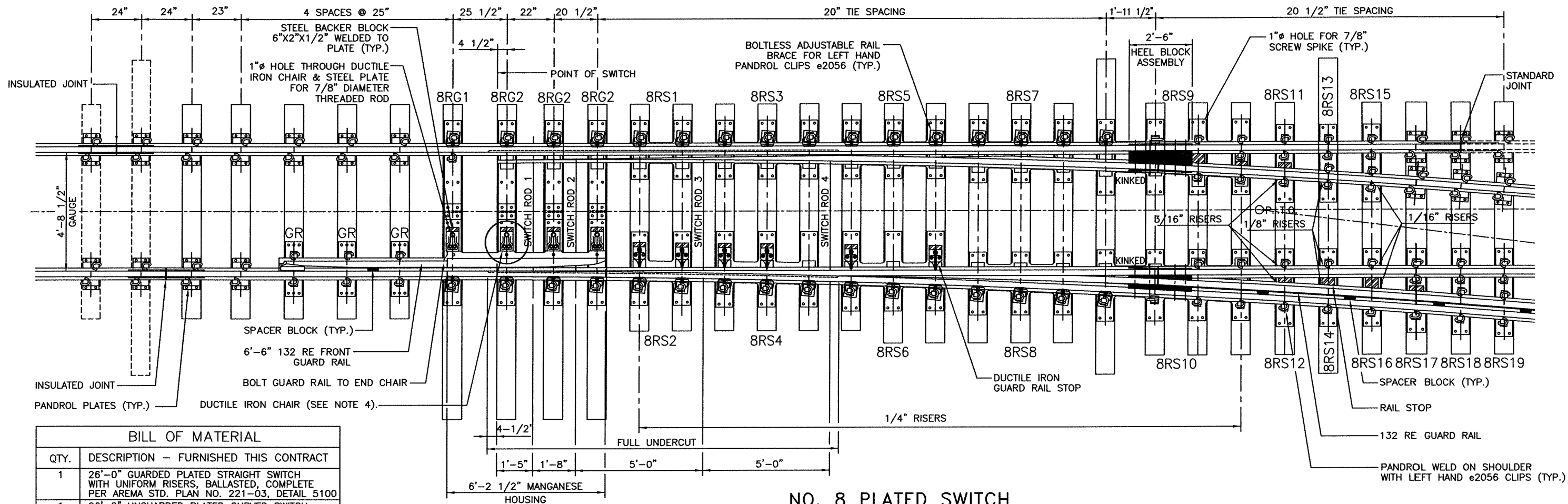
SCALE: 1/4"=1'-0"

DRAWING NO. TW2010-4 SHEET NO. 4



STOCK RAIL DRILLING FOR SWITCH HEATER ROD BRACKETS

SCALE: 1/2"=1'-0"



BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
1	26'-0" GUARDED PLATED STRAIGHT SWITCH WITH UNIFORM RISERS, BALLASTED, COMPLETE PER AREMA STD. PLAN NO. 221-03, DETAIL 5100
1	26'-0" UNGUARDED PLATED CURVED SWITCH WITH UNIFORM RISERS, BALLASTED, COMPLETE PER AREMA STD. PLAN NO. 221-03, DETAIL 5100
A.R.	STOCK RAILS, UNDERCUT FOR SWITCH RAILS
1	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
32	BOLTLESS ADJUSTABLE RAIL BRACE FOR LEFT HAND PANDROL CLIPS e2056
6	DUCTILE IRON GUARD RAIL STOPS
A.R.	CLOSURE RAILS
1	HEEL BLOCK ASSEMBLY FOR GUARDED SWITCH
1	HEEL BLOCK ASSEMBLY FOR UNGUARDED SWITCH
A.R.	GR, 8G, 8S PLATES
A.R.	GUARD RAILS AND FRONT GUARD RAIL
4	INSULATED SWITCH RODS, TYPE MJS
A.R.	SPACER BLOCKS
A.R.	THREADED ROD 7/8" DIA. x 12" LONG

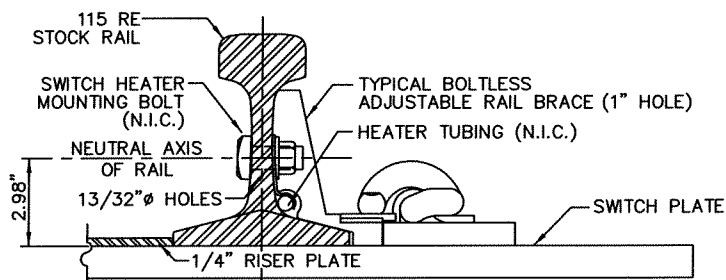
NOTES:

- FOR SWITCH GAUGE PLATES, SEE DETAIL, DWG. NO. TW2010-7
- FOR PLATE CUTOUT, SEE DETAIL, DWG. NO. TW2010-7
- SWITCH PLATE NUMBERING IS AS FOLLOWS: "8" FROG NUMBER, "R" R.H. (OR "L" L.H.), "S" FOR SWITCH, "1 THRU 20" FOR POSITION FROM POINT OF SWITCH.
- DUCTILE IRON CHAIR AT THE POINT OF SWITCH SHALL BE MODIFIED AS SHOWN IN DETAIL SECTION D-D ON DRAWING NO. TW2010-8, SHEET No. 8.

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
A.R.	7/8" SCREW SPIKES
A.R.	PANDROL PLATES

NO. 8 PLATED SWITCH

SCALE: 1/2"=1'-0"



DETAIL - SWITCH HEATER MOUNTING HOLES

NOT TO SCALE

PLATE DETAILS		
PLATE	LENGTH	WIDTH
GR	26"	8"
BRS1	28"	28"
BRS2	35"	28"
BRS3	48"	28"
BRS4	48"	36"
BRS5	48"	28"
BRS6	48"	38"
BRS7	48"	30"
BRS8	48"	30"
BRS9	72-3/8"	36"

PLATE DETAILS		
PLATE	LENGTH	WIDTH
BRS10	72-3/8"	34"
BRS11	37"	8"
BRS12	37"	8"
BRS13	37"	8"
BRS14	37"	8"
BRS15	37"	8"
BRS16	37"	8"
BRS17	40"	8"
BRS18	41"	8"
BRS19	42"	8"

DESIGNED	R.REYES	11/08
DRAWN	C.RIGGINS	11/08
CHECKED	R.REYES	11/08
APPROVED	[Signature]	2/11

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

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DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

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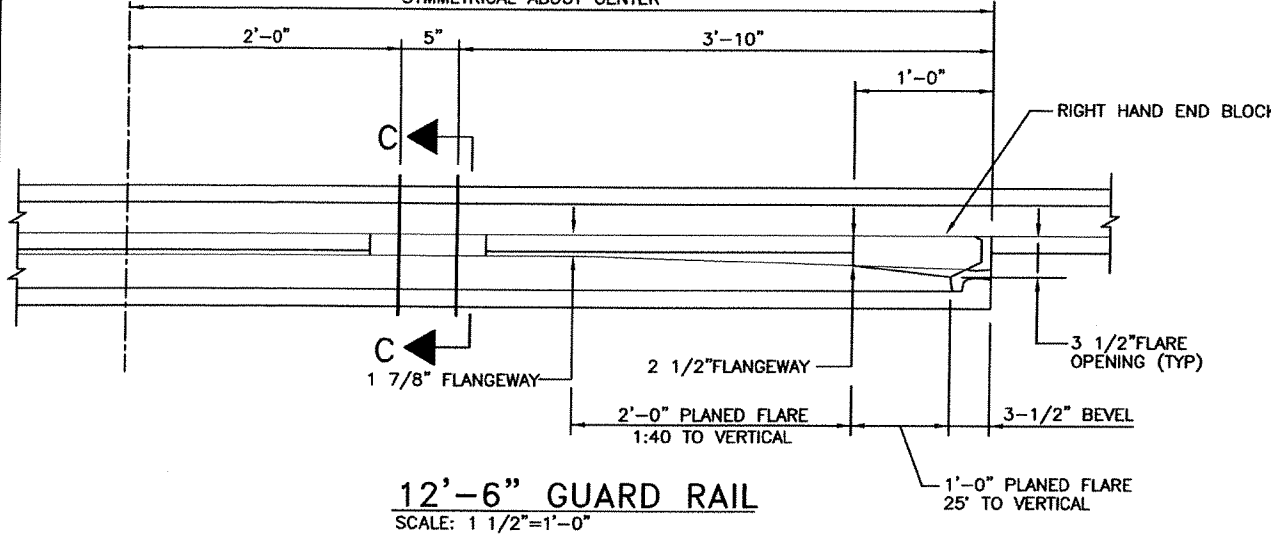
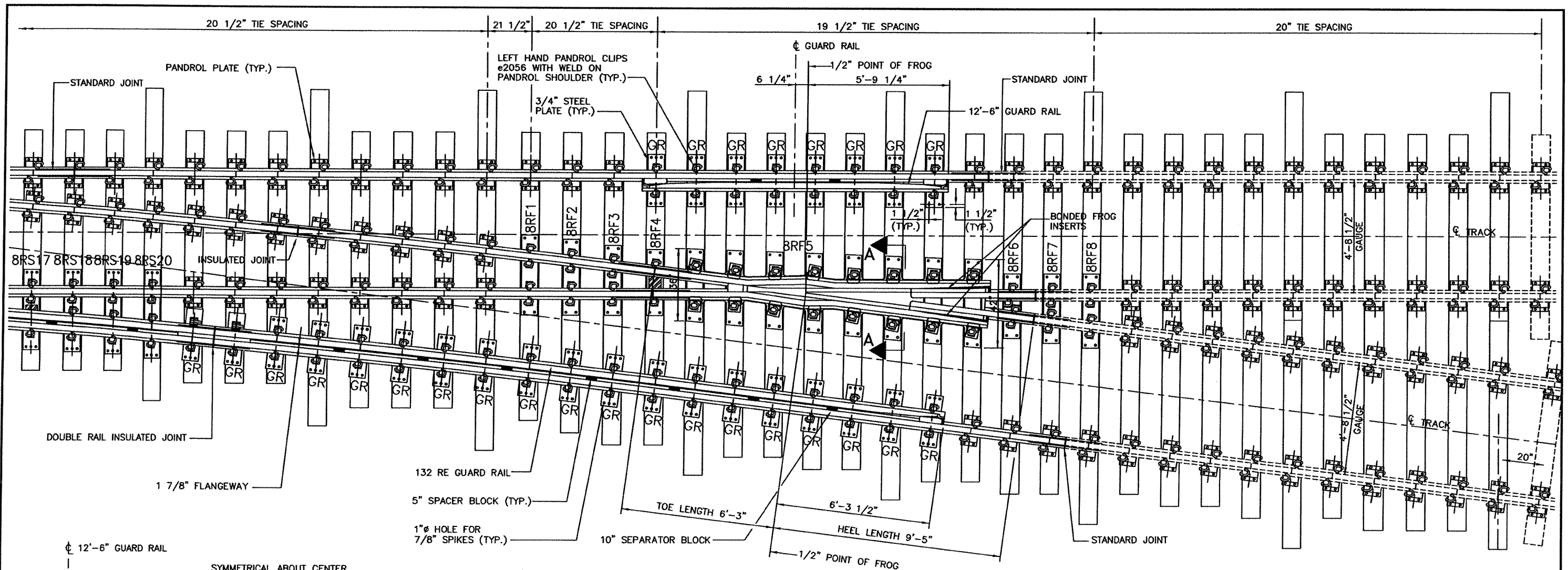
TRACKWORK PROCUREMENT

NO. 8 GUARDED TURNOUT, PLATED SWITCH, BALLASTED TRACK

SCALE 1/2"=1'-0" AND AS SHOWN

DRAWING NO. TW2010-5

SHEET NO. 5



NO. 8 PLATED FROG
SCALE: 1/2"=1'-0"

NOTES:

1. FOR SECTION A-A, SEE DETAIL, DWG. NO. TW2010-8.
2. FOR PLATE CUTOUT, SEE DETAIL, DWG. NO. TW2010-8.
3. FOR SECTION C-C, SEE DETAIL, DWG. NO. TW2010-8.
4. FROG PLATE NUMBERING IS AS FOLLOWS: "8" FROG NUMBER, "R" FOR R.H., "F" FOR FROG, "1 THRU 8" FOR POSITION FROM TOE TO HEEL.

PLATE DETAILS		
PLATE	LENGTH	WIDTH
GR	26"	8"
8RS17	40"	8"
8RS18	41"	8"
8RS19	42"	8"
8RS20	44"	8"
BRF1	40"	8"
BRF2	38"	8"
BRF3	35"	8"
BRF4	33"	8"
BRF5	144-1/2"	44"
BRF6	32-1/4"	8"
BRF7	34 5/8"	8"
BRF8	37"	8"

* FROG PLATE WIDTH AT ITS WIDEST POINT.

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
1	NO. 8 RAILBOUND MANGANESE FROG PER AREMA STD. PLAN 617-03 MODIFIED AS SHOWN
A.R.	8S, BF, GR, PLATES
A.R.	GUARD RAILS
A.R.	SPACER BLOCKS
12	BOLTLESS ADJUSTABLE RAIL BRACE FOR LEFT HAND PANDROL CLIPS e2056
A.R.	7/8" SCREW SPIKES
A.R.	PANDROL PLATES

DESIGNED R.REYES 12/08
DATE
DRAWN A.SEREDICH 12/08
DATE
CHECKED R.REYES 12/08
DATE
APPROVED [Signature] 2/14
DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

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DEPARTMENT OF OPERATIONS • RAIL SERVICES
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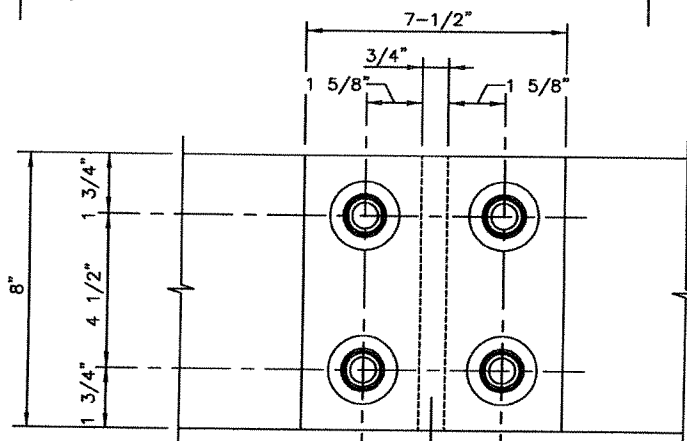
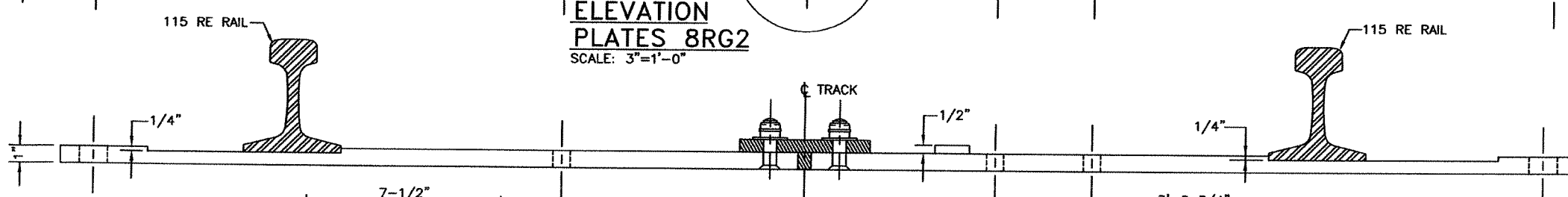
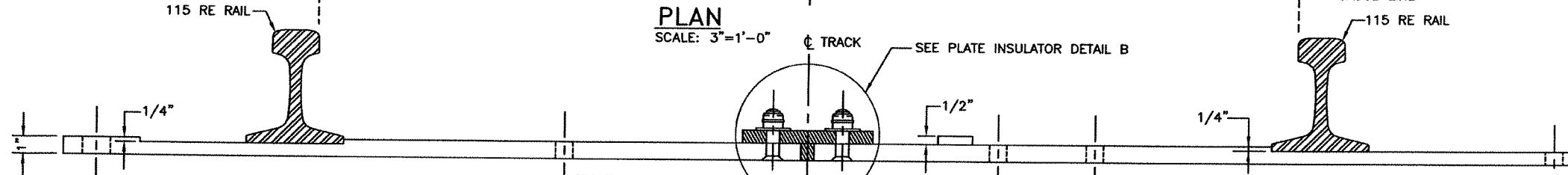
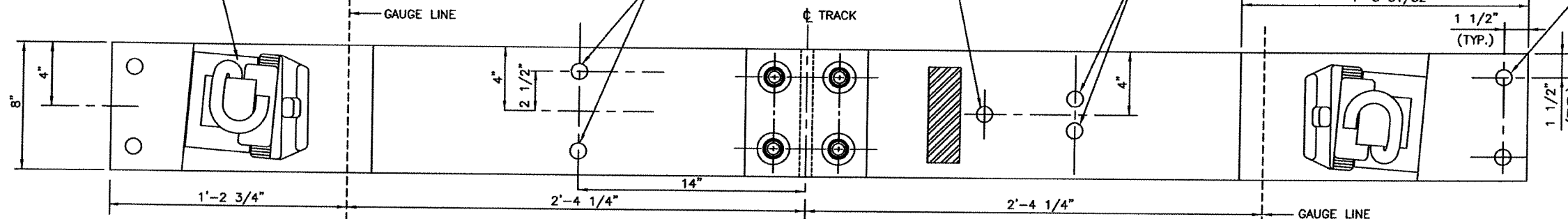
TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, PLATED FROG, BALLASTED TRACK
SCALE: 1/2"=1'-0" 1 0 1 2FT
DRAWING NO. TW2010-6 SHEET NO. 6

BOLTLESS ADJUSTABLE BRACE
CONFIGURED FOR LEFT HAND
PANDROL #2056 CLIPS

1" Ø HOLE THROUGH DUCTILE IRON CHAIR AND
STEEL PLATE FOR STUD, DOUBLE ENDED,
7/8" DIA x 12 1/2" LONG, WITH
BOLTS AND WASHERS

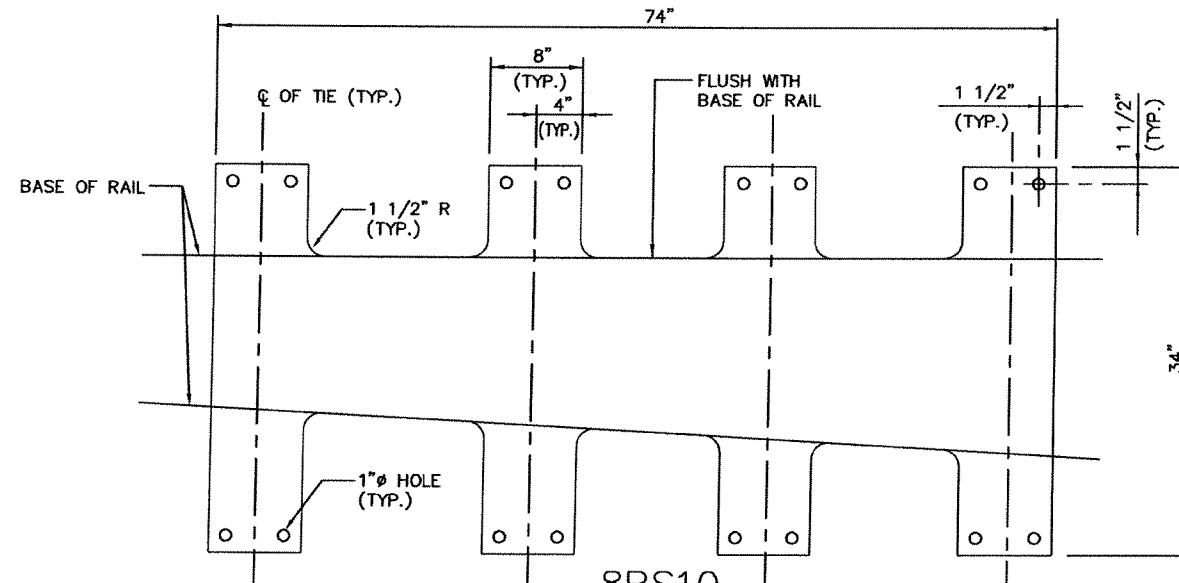
PUNCH ROUND HOLES FOR STUD,
DOUBLE ENDED, 7/8" DIA x 12 1/2" LONG,
WITH BOLTS AND WASHERS

1" Ø HOLE FOR SCREW
SPIKES (TYP.)



HUCK TYPE COMPRESSION FASTENERS
1/8" x 25/32" I.D. x 2" O.D. WASHER
EPOXY FIBERGLASS INSULATION FILLER
EPOXY FIBERGLASS SPLICE BLOCK

DETAIL B - PLATE INSULATOR
SCALE: 3/8"=1'-0"



8RS10
DETAIL - CUTOUT FOR PLATE
SCALE: 1 1/2"=1'-0"

DESIGNED R.REYES 12/08
DATE
DRAWN C.RIGGINS 12/08
DATE
CHECKED R.REYES 12/08
DATE
APPROVED [Signature] 3/11
DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

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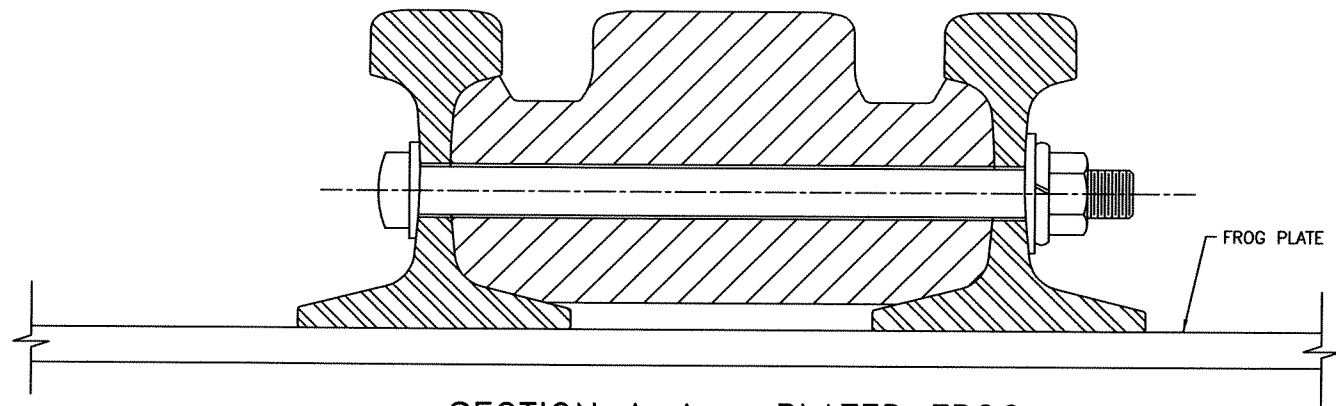
SUBMITTED BY [Signature]

TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, DETAILS,
BALLASTED TRACK
SHEET 1 OF 2

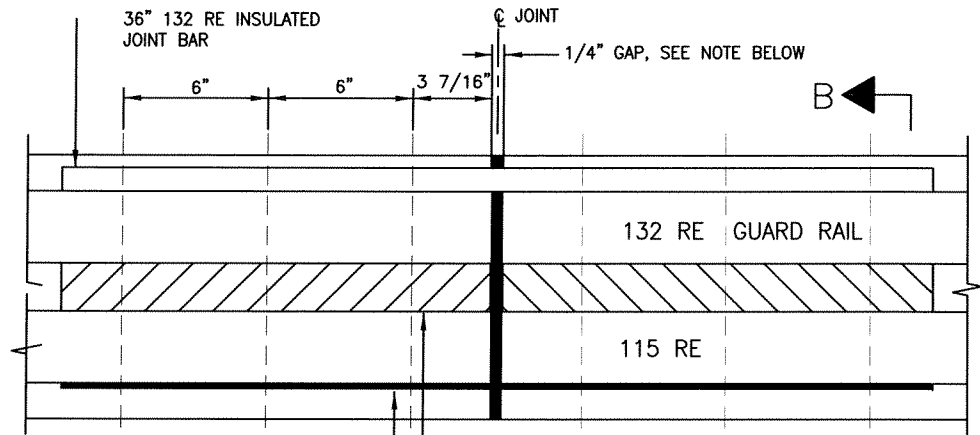
SCALE: AS SHOWN

DRAWING NO. TW2010-7

SHEET NO. 7



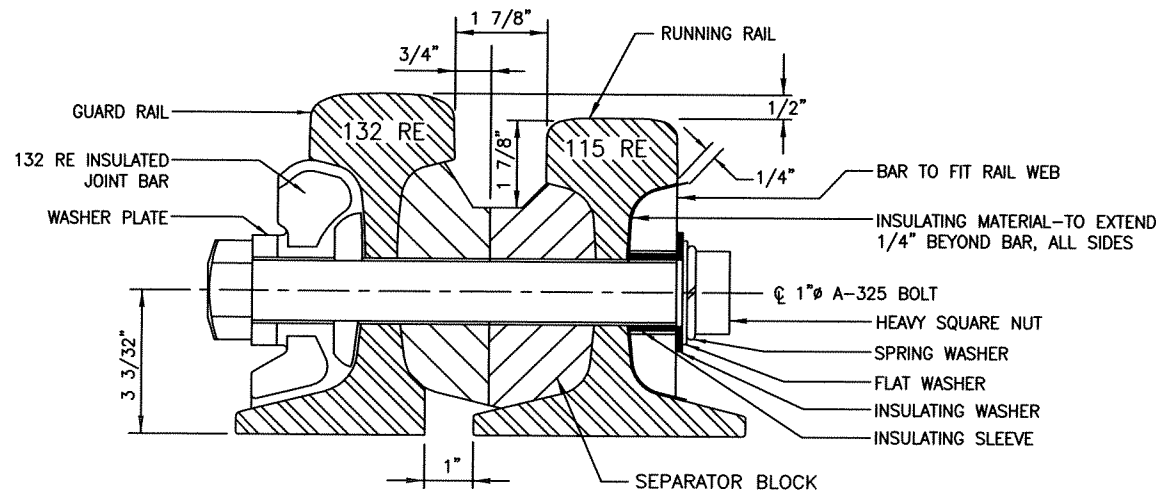
SECTION A-A - PLATED FROG
NOT TO SCALE



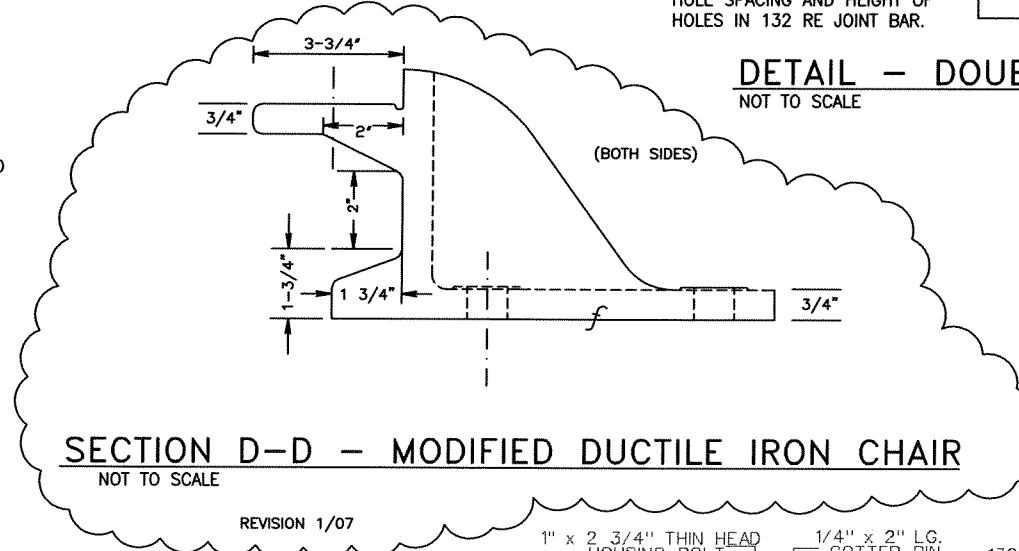
NOTE:
1. FIT WEB OF RAIL AND MATCH HOLE SPACING AND HEIGHT OF HOLES IN 132 RE JOINT BAR.

18" SEPARATOR BLOCK SEE NOTE 1
36" INSULATED BAR SEE NOTE 1

DETAIL - DOUBLE RAIL INSULATED JOINT
NOT TO SCALE

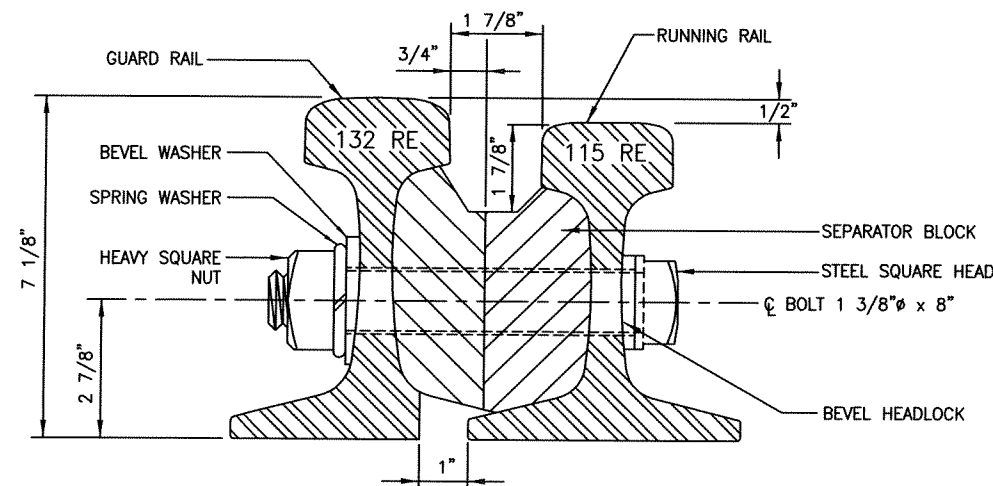


SECTION B-B - DOUBLE RAIL INSULATED JOINT
NOT TO SCALE



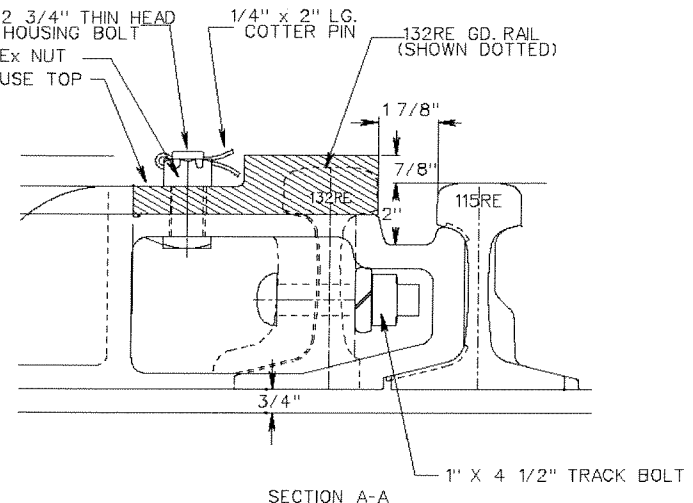
SECTION D-D - MODIFIED DUCTILE IRON CHAIR
NOT TO SCALE

NOTE:
USE 1/4" END POST INSULATING FIBER.



SECTION C-C - SEPARATOR BLOCK
NOT TO SCALE

REVISION 1/07
1" x 2 3/4" THIN HEAD HOUSING BOLT
1" DIA. SLOTTED HEX NUT
Mn HOUSE TOP



HOUSING TOP ASSEMBLY (TYPICAL SECTION)
NOT TO SCALE

DESIGNED	R.REYES	12/08	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	A.SEREDICH	12/08					
CHECKED	R.REYES	12/08					
APPROVED	<i>R.R.</i>	2/11					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY

Wesley H. Allright

SUBMITTED BY

[Signature]

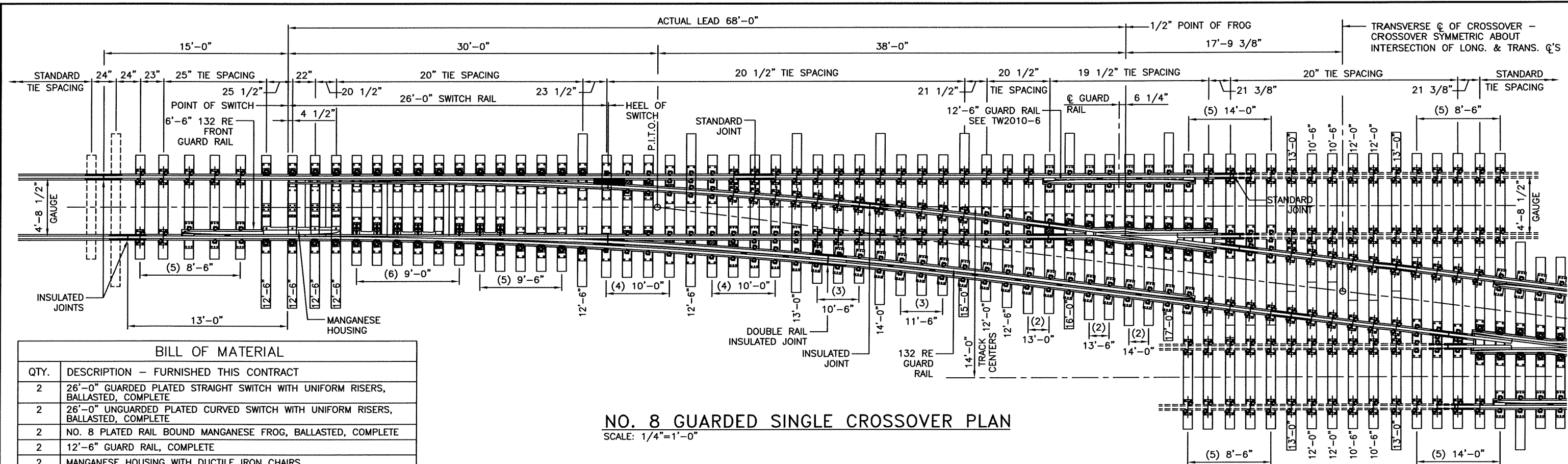
SCALE

NOT TO SCALE

TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, DETAILS,
BALLASTED TRACK,
SHEET 2 OF 2

DRAWING NO.
TW2010-8

SHEET NO.
8



NO. 8 GUARDED SINGLE CROSSOVER PLAN
SCALE: 1/4"=1'-0"

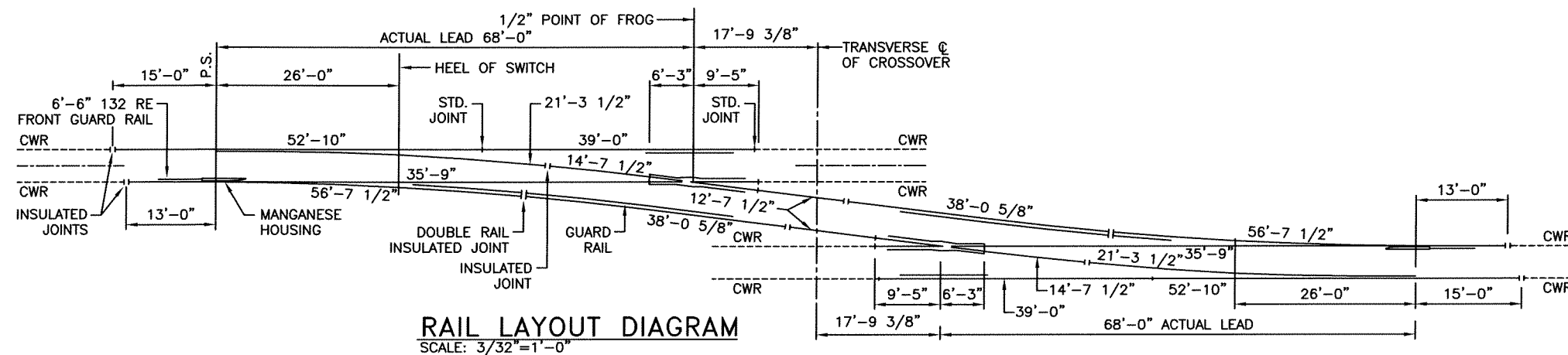
BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
2	26'-0" GUARDED PLATED STRAIGHT SWITCH WITH UNIFORM RISERS, BALLASTED, COMPLETE
2	26'-0" UNGUARDED PLATED CURVED SWITCH WITH UNIFORM RISERS, BALLASTED, COMPLETE
2	NO. 8 PLATED RAIL BOUND MANGANESE FROG, BALLASTED, COMPLETE
2	12'-6" GUARD RAIL, COMPLETE
2	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
12	DUCTILE IRON RAIL STOPS
A.R.	132 RE GUARD RAILS
A.R.	CURVED CLOSURE RAIL, STOCK RAIL, TURNOUT RAIL
A.R.	STRAIGHT CLOSURE RAIL, STOCK RAIL
A.R.	BOLTED STANDARD RAIL JOINTS, 6 HOLE, 36 INCH
A.R.	BOLTED INSULATED RAIL JOINTS, 6 HOLE, 36 INCH
A.R.	LEFT HAND PANDROL CLIPS e2056
A.R.	SPACER BLOCKS
A.R.	7" X 9" TIMBER SWITCH TIES AS SHOWN
A.R.	7" X 9" TIMBER CROSS TIES AS SHOWN

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
A.R.	ELASTIC FASTENER TIE PLATES PUNCHED FOR 7/8" SCREW SPIKES
A.R.	GR PLATES
A.R.	7/8" SCREW SPIKES
A.R.	PANDROL PLATES

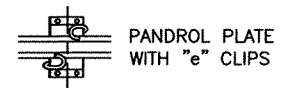
NOTES:

- FOR TURNOUT DATA AND NOTES SEE DWG. NO. TW2010-5.
- RIGHT HAND TURNOUT IS SHOWN. LEFT HAND TURNOUT IS OPPOSITE HAND.

TIE SCHEDULE	
LENGTH	QTY.
8'-6"	20
9'-0"	12
9'-6"	10
10'-0"	16
10'-6"	10
11'-6"	6
12'-0"	6
12'-6"	14
13'-0"	10
13'-6"	4
14'-0"	16
15'-0"	2
16'-0"	2
17'-0"	2
TOTAL	130



RAIL LAYOUT DIAGRAM
SCALE: 3/32"=1'-0"



DESIGNED	R.REYES	4/06
		DATE
DRAWN	C.RIGGINS	4/06
		DATE
CHECKED	R.REYES	4/06
		DATE
APPROVED	L.PADGETT	4/06
		DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

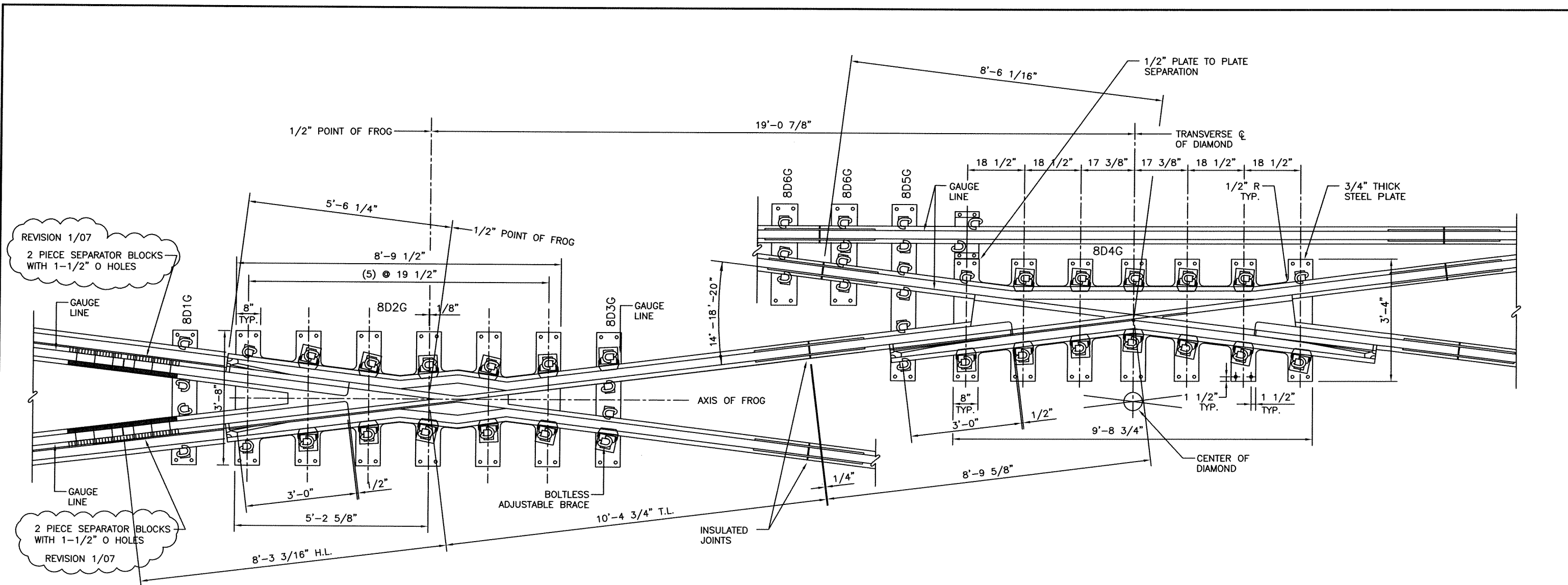
REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY *Wesley A. Albright* SUBMITTED BY *[Signature]*

TRACKWORK PROCUREMENT
NO. 8 GUARDED SINGLE CROSSOVER, TYPE 1,
HALF UNIT, 14'-0" TRACK CENTERS, PLAN,
BALLASTED TRACK

SCALE 1/4"=1'-0" AND AS SHOWN	1 0 1 2 4FT	DRAWING NO. TW2007-8	SHEET NO. 9
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REVISION 1/07
2 PIECE SEPARATOR BLOCKS WITH 1-1/2" O HOLES

REVISION 1/07
2 PIECE SEPARATOR BLOCKS WITH 1-1/2" O HOLES

NO. 8 DOUBLE CROSSOVER CENTER FROG & END FROG - COMPLETE	
BILL OF MATERIAL	
QUANTITY	DESCRIPTION - FURNISHED THIS CONTRACT
2 EACH	MANGANESE STEEL INSERT END FROG WITH LEVEL GUARDS FOR 14'-18'-20" CROSSING ANGLE, COMPLETE (PER AREMA STANDARD PLAN NO. 750-01 AND 761-83) AND MODIFIED AS INDICATED
2 EACH	MANGANESE STEEL INSERT CENTER FROG WITH LEVEL GUARDS FOR 14'-18'-20" CROSSING ANGLE, COMPLETE (PER AREMA STANDARD PLAN NO. 750-01 AND 761-83)
2 EACH	SPECIAL PLATES 8D1 THRU 8D5, COMPLETE
2 PER FROG	BONDED FROG INSERTS
48	BOLTLESS ADJUSTABLE BRACE WITH LEFT HAND PANDROL CLIPS e2056

PLATE DETAILS		
PLATE	LENGTH	WIDTH
8D1G	3'-8"	8"
8D3G	3'-8"	8"
8D5G	4'-9"	8"
8D6G	2'-9"	8"

NOTES:

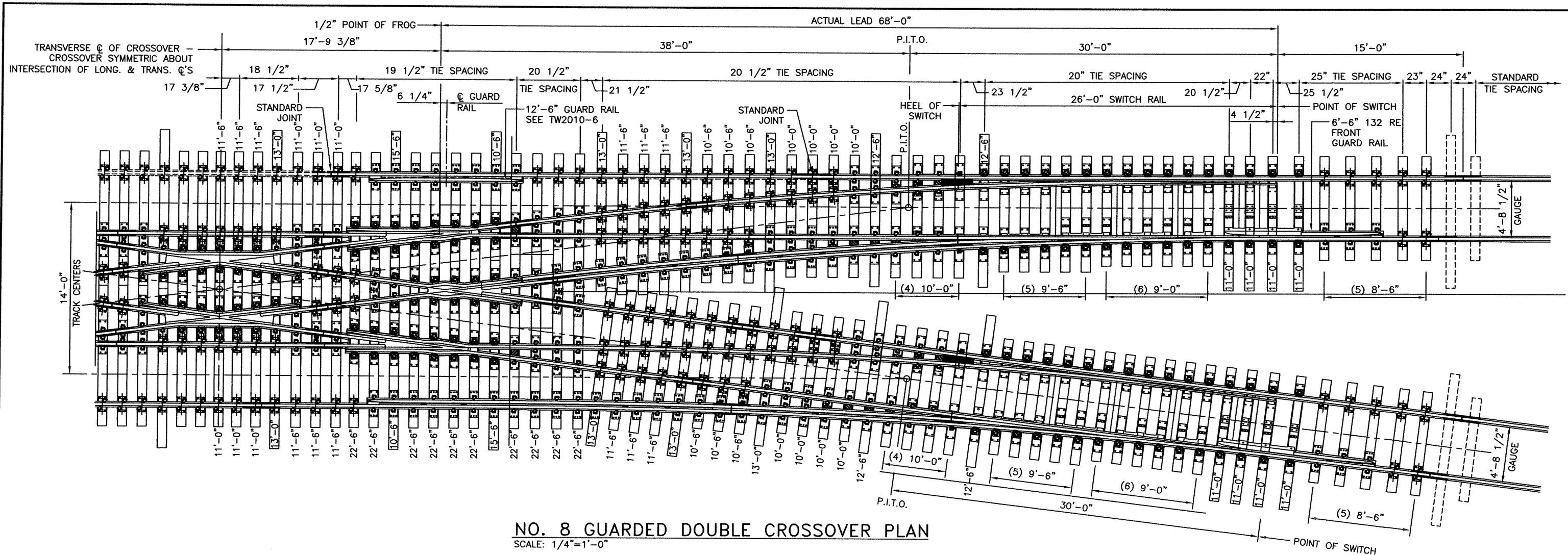
1. RAIL AND COMPONENTS SHALL CONFORM TO 115 RE RAIL SECTION.
2. RAIL DRILLINGS, BAR PUNCHINGS, OVAL NECK TRACK BOLTS AND TRACK BOLT NUTS SHALL BE IN ACCORDANCE WITH AREMA MANUAL, VOL. 1, PAGES 4-1-13 THRU 4-1-18 (36"-6 HOLE JOINT BAR, 115 RE RAIL SECTION).
3. CROSSOVER END AND CENTER FROGS SHALL BE FULLY HEAT TREATED RAILBOUND MAGANESE STEEL EXPLOSION HARDENED PER TRACKWORK SPECIFICATIONS, SECTION 6.6, "SPECIAL TRACKWORK MATERIAL."
4. ALL SPECIAL FROG PLATES SHALL BE 3/4" THICK WITH NO RAIL CANT.
5. THE BONDED FROG AND BONDED CENTER FROG INSERTS SHALL BE MILLED CARBON STEEL CASTINGS AS SPECIFIED IN THE CONTRACT SPECIFICATIONS, AND AS SHOWN IN THE DRAWING.

DESIGNED R.REYES 12/08
DATE
DRAWN C.RIGGINS 12/08
DATE
CHECKED R.REYES 12/08
DATE
APPROVED [Signature] 12/08
DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
		12/08	A.S.	REMOVED NOTE ABOUT ELASTOMER PADS FROM NOTES

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE
APPROVED BY [Signature] SUBMITTED BY [Signature]

TRACKWORK PROCUREMENT
NO. 8 GUARDED DOUBLE CROSSOVER, 14'-0"
TRACK CENTERS, DIAMOND & END FROG DETAILS,
BALLASTED TRACK
SCALE 3/4"=1'-0" 1 0 1FT
DRAWING NO. TW2010-11 SHEET NO. 12



NO. 8 GUARDED DOUBLE CROSSOVER PLAN
SCALE: 1/4"=1'-0"

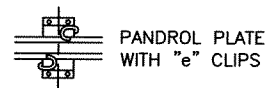
BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
4	NO. 8 GUARDED PLATED SWITCH, BALLASTED, COMPL.
4	NO. 8 PLATED FROG, BALLASTED, COMPLETE
2	12'-6" GUARD RAIL, FULLY HEAT TREATED, COMPLETE
2 EACH	NO. 8 DOUBLE CROSSOVER, END AND CENTER CROSSING FROGS, BALLASTED, COMPLETE
4	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
24	DUCTILE IRON RAIL STOPS
A.R.	132 RE GUARD RAILS
A.R.	RAIL JOINTS, INTERNAL TO THE TURNOUTS
A.R.	LEFT HAND PANDROL CLIPS e2056
A.R.	ELASTIC FASTENER TIE PLATES PUNCHED FOR 7/8" SCREW SPIKES
A.R.	GR PLATES
A.R.	7" X 9" TIMBER SWITCH TIES AS SHOWN
A.R.	7" X 9" TIMBER CROSS TIES AS SHOWN
A.R.	7/8" SCREW SPIKES
A.R.	PANDROL PLATES

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED BY OTHERS
A.R.	RAIL JOINTS TO CONNECT TURNOUTS AND DIAMOND TO CWR

NOTES:

- FOR TURNOUT DATA AND NOTES SEE DWG. NO. TW2007-3.

TIE SCHEDULE	
LENGTH	QTY.
8'-6"	20
9'-0"	24
9'-6"	20
10'-0"	32
10'-6"	16
11'-0"	27
11'-6"	23
12'-6"	8
13'-0"	16
15'-6"	4
22'-6"	20
TOTAL	210



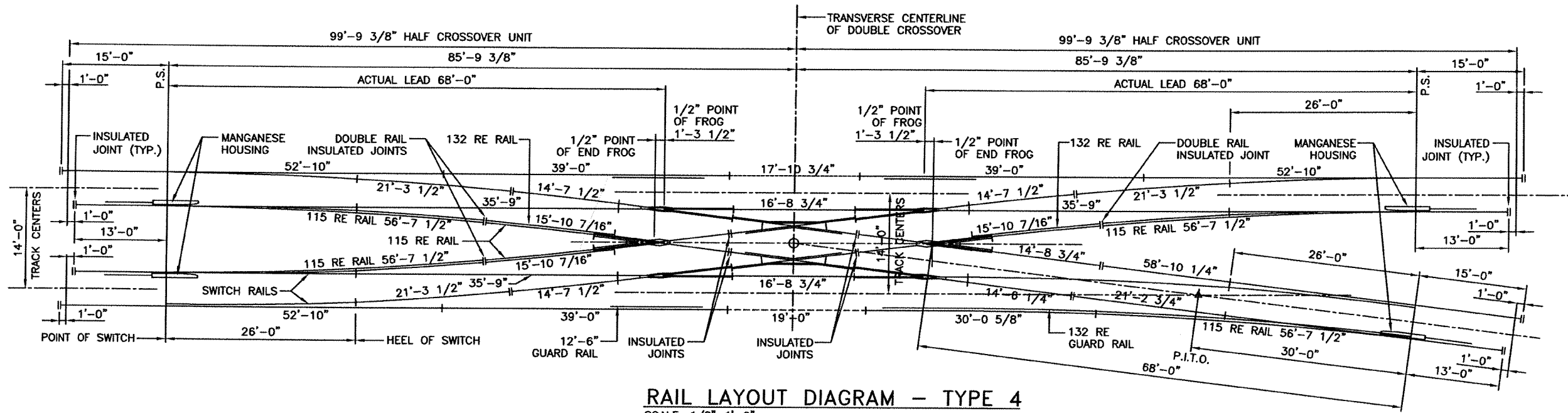
DESIGNED	DATE	REFERENCE DRAWINGS		REVISIONS		
		NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
R.REYES	4/06			9/06	CAR	REVISED BILL OF MATERIAL
C.RIGGINS	4/06					
R.REYES	4/06					
L.PADGETT	4/06					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

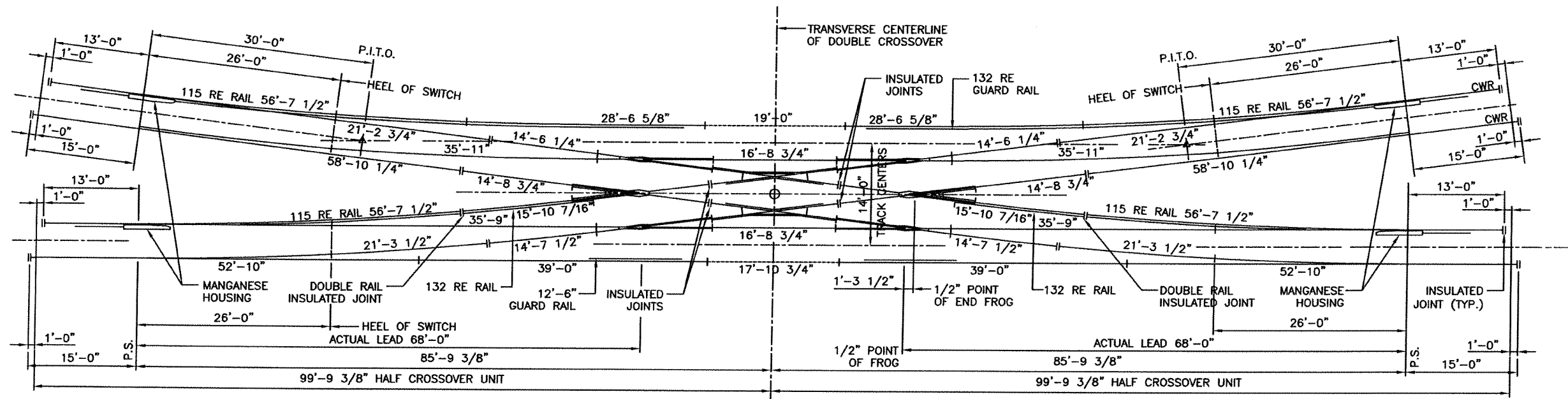
TRACKWORK PROCUREMENT
NO. 8 GUARDED DOUBLE CROSSOVER, TYPE 4,
HALF UNIT, 14'-0" TRACK CENTERS, PLAN,
BALLASTED TRACK

APPROVED BY: *Wesley H. Alf*
SUBMITTED BY: *R. S. [Signature]*

SCALE: 1/4"=1'-0" 1 0 1 2 4FT
DRAWING NO. TW2007-12
SHEET NO. 13



RAIL LAYOUT DIAGRAM - TYPE 4
SCALE: 1/8"=1'-0"



RAIL LAYOUT DIAGRAM - TYPE 5
SCALE: 1/8"=1'-0"

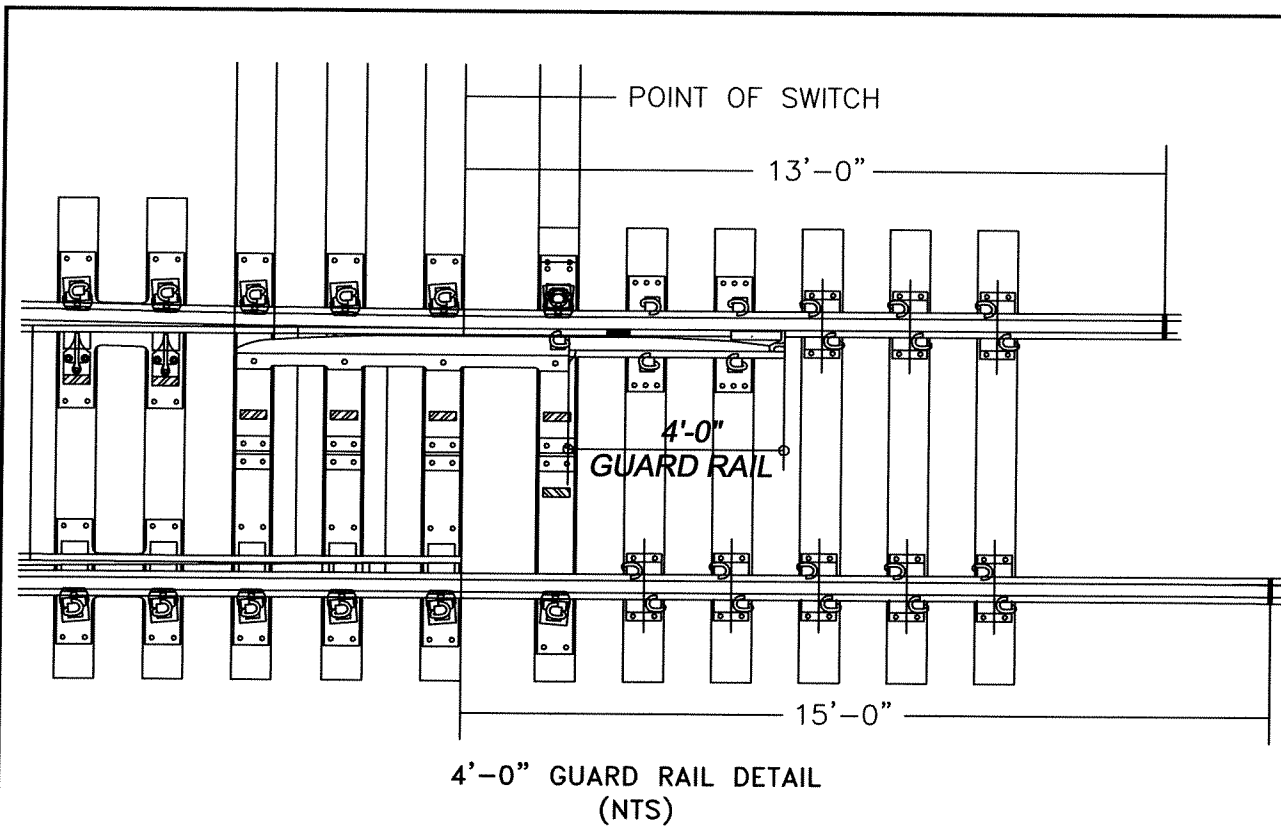
DESIGNED	R.REYES	11/10	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C.RIGGINS	11/10					
CHECKED	R.REYES	11/10					
APPROVED	<i>[Signature]</i>	2/11					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

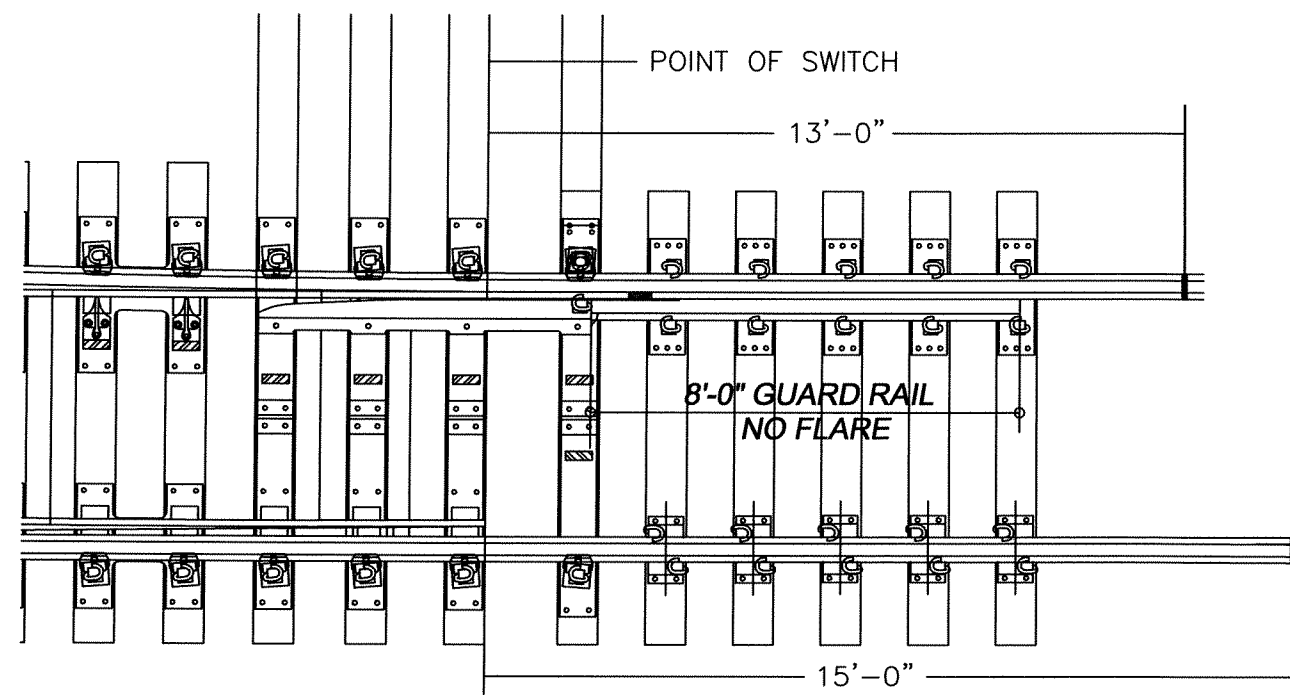
APPROVED BY *[Signature]* SUBMITTED BY *[Signature]*

TRACKWORK PROCUREMENT
NO. 8 GUARDED DBL CROSSOVER, TYPES 4 & 5,
14'-0" TRACK CENTERS, RAIL LAYOUT DIAGRAMS,
BALLASTED TRACK

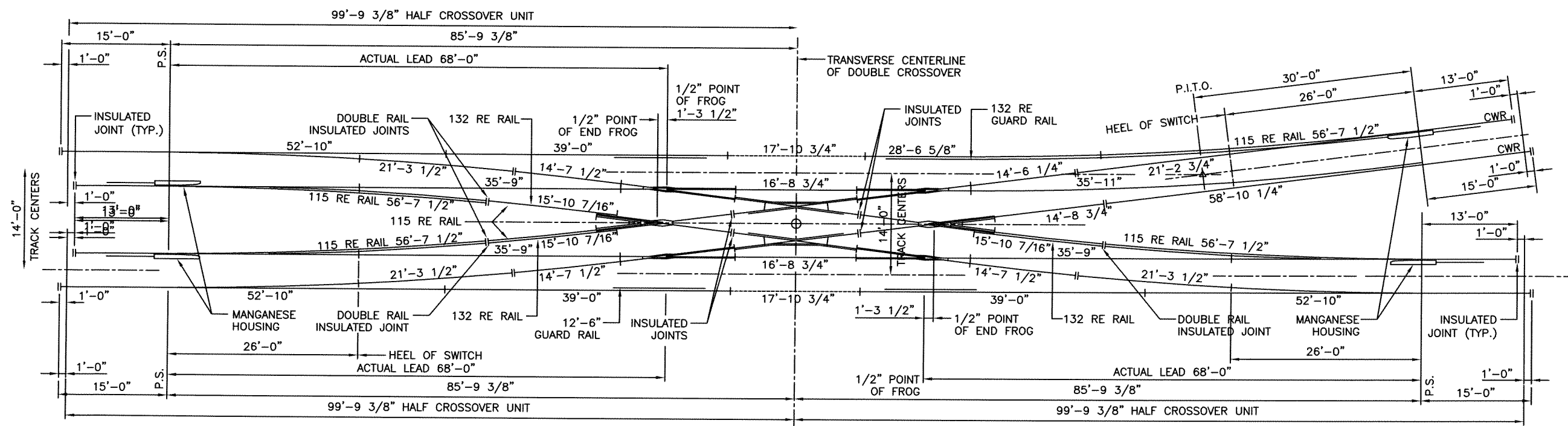
SCALE: 1/8"=1'-0" 2 0 2 4 6 8 FT
DRAWING NO. TW2007-13 SHEET NO. 14



4'-0" GUARD RAIL DETAIL (NTS)



8'-0" GUARD RAIL DETAIL NO FLARE (NTS)



RAIL LAYOUT DIAGRAM - TYPE 2
SCALE: 1/8"=1'-0"

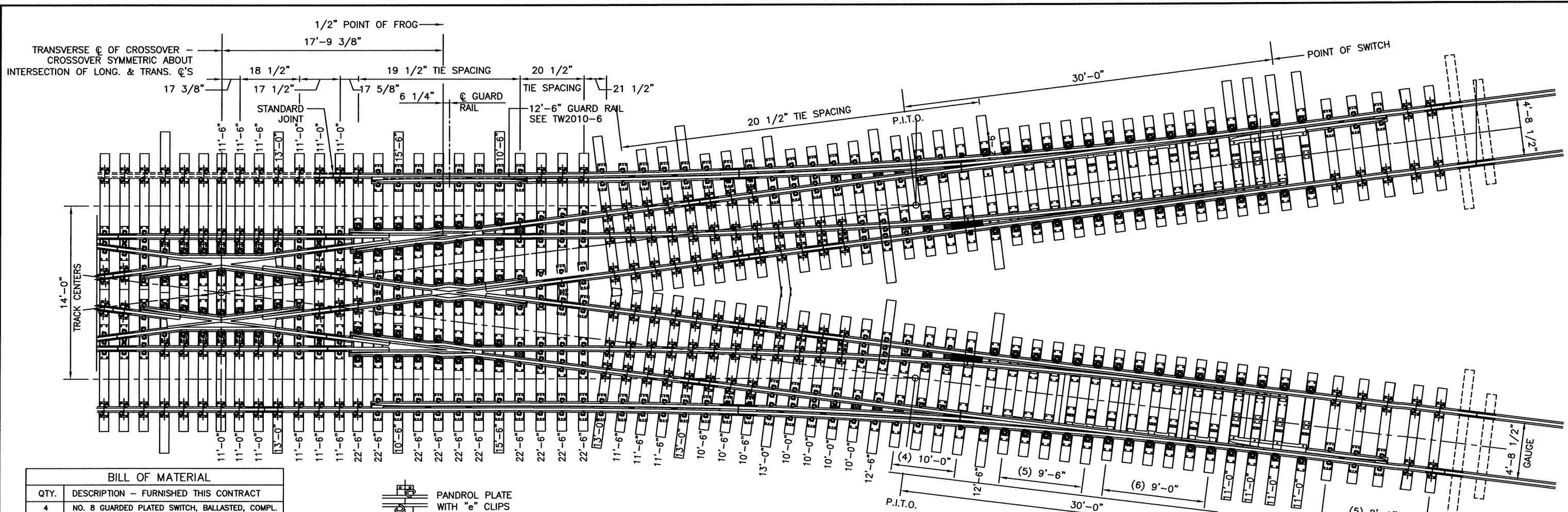
DESIGNED C.RIGGINS 11/10 DATE	REFERENCE DRAWINGS		REVISIONS		
DRAWN C.RIGGINS 11/10 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED R.REYES 11/10 DATE					
APPROVED [Signature] 11/10 DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY [Signature] SUBMITTED BY [Signature]

TRACKWORK PROCUREMENT
NO. 8 GUARDED DBL CROSSOVER, TYPE 2,
14'-0" TRACK CENTERS, RAIL LAYOUT DIAGRAMS,
AND GUARD RAIL DETAILS, BALLASTED TRACK

SCALE 1/8"=1'-0" 2 0 2 4 6 BFT
DRAWING NO. TW2007-13A SHEET NO. 15



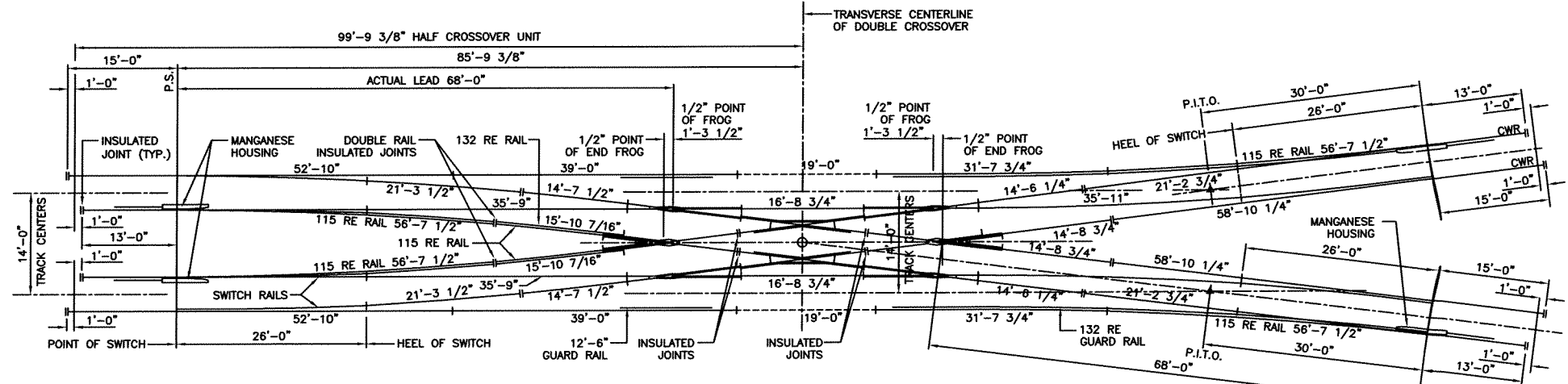
BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
4	NO. 8 GUARDED PLATED SWITCH, BALLASTED, COMPL.
4	NO. 8 PLATED FROG, BALLASTED, COMPLETE
2	12'-6" GUARD RAIL, FULLY HEAT TREATED, COMPLETE
2 EACH	NO. 8 DOUBLE CROSSOVER, END AND CENTER CROSSING FROGS, BALLASTED, COMPLETE
4	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
24	DUCTILE IRON RAIL STOPS
A.R.	132 RE GUARD RAILS
A.R.	RAIL JOINTS, INTERNAL TO THE TURNOUTS
A.R.	LEFT HAND PANDROL CLIPS e2056
A.R.	ELASTIC FASTENER TIE PLATES PUNCHED FOR 7/8" SCREW SPIKES
A.R.	GR PLATES
A.R.	7" X 9" TIMBER SWITCH TIES AS SHOWN
A.R.	7" X 9" TIMBER CROSS TIES AS SHOWN
A.R.	7/8" SCREW SPIKES
A.R.	PANDROL PLATES

TIE SCHEDULE		
LENGTH	QTY.	
8'-6"	20	
9'-0"	24	
9'-6"	20	
10'-0"	32	
10'-6"	16	
11'-0"	27	
11'-6"	23	
12'-6"	8	
13'-0"	16	
15'-6"	4	
22'-6"	20	
TOTAL	210	

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED BY OTHERS
A.R.	RAIL JOINTS TO CONNECT TURNOUTS AND DIAMOND TO CHR

NOTES:
 1. FOR TURNOUT DATA AND NOTES SEE DWG. NO. TW2010-4.

NO. 8 GUARDED DOUBLE CROSSOVER PLAN
 SCALE: 1/4"=1'-0"



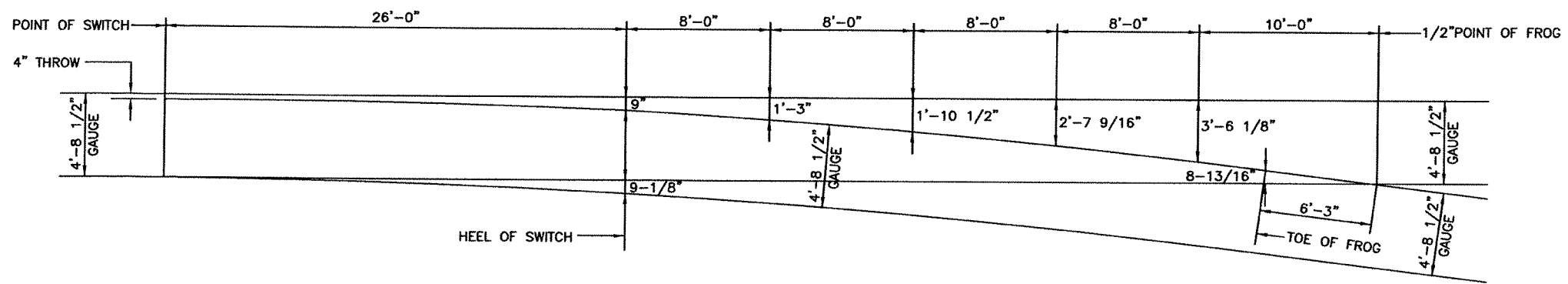
RAIL LAYOUT DIAGRAM - TYPE 3
 SCALE: 3/32"=1'-0"

DESIGNED R.REYES 4/06
 DATE
 DRAWN C.RIGGINS 4/06
 DATE
 CHECKED R.REYES 4/06
 DATE
 APPROVED L.PADGETT 4/06
 DATE

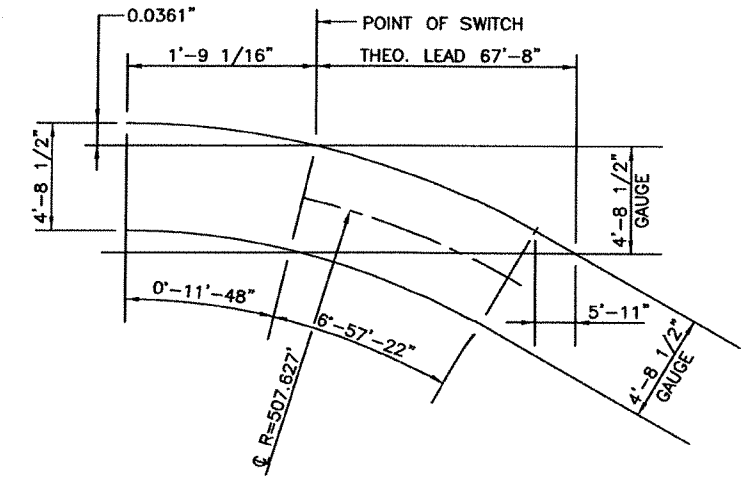
REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
		9/06	CAR	REVISED BILL OF MATERIAL
		2/08	CAR	REVISED TITLE, TYPE 5 TO TYPE 3 X-OVER

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE
 APPROVED BY *Wendy N. Alfano* SUBMITTED BY *RS*

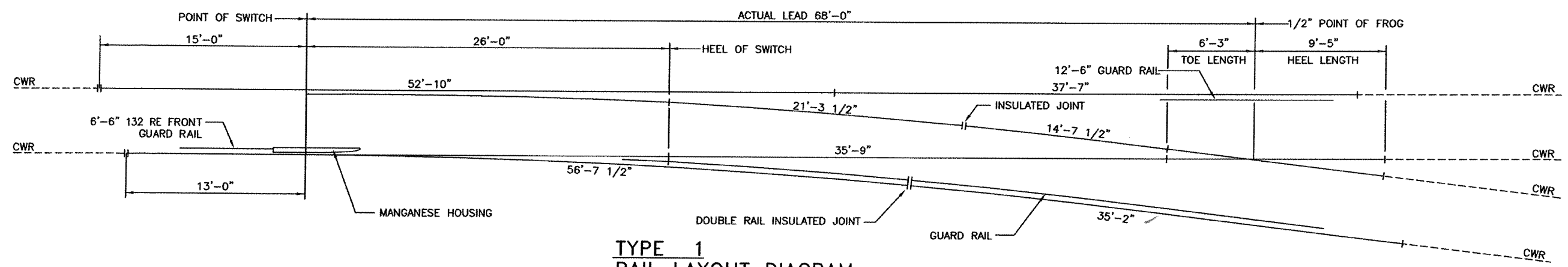
TRACKWORK PROCUREMENT
 NO. 8 GUARDED DOUBLE CROSSOVER, TYPE 3,
 HALF UNIT, 14'-0" TRACK CENTERS, PLAN,
 BALLASTED TRACK
 SCALE 1/4"=1'-0" 1 0 1 2 4FT
 DRAWING NO. TW2007-14 SHEET NO. 16



OFFSET DIAGRAM
SCALE: 1/4"=1'-0"

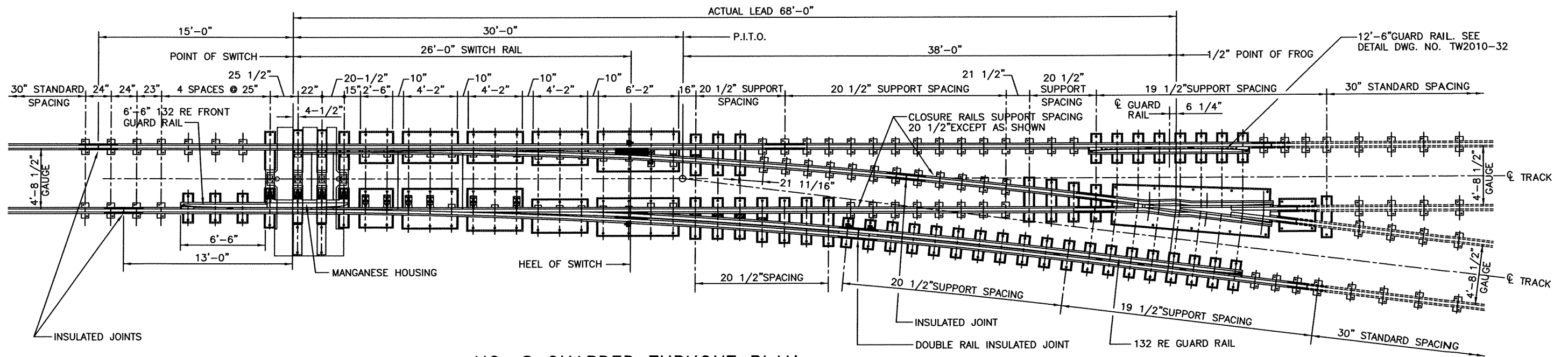


TURNOUT GEOMETRY
NOT TO SCALE



TYPE 1 RAIL LAYOUT DIAGRAM
SCALE: 1/4"=1'-0"

DESIGNED <u>R.REYES</u> 12/08 DATE	REFERENCE DRAWINGS		REVISIONS		WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF OPERATIONS • RAIL SERVICES OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE	TRACKWORK PROCUREMENT NO. 8 GUARDED TURNOUT, OFFSET, GEOMETRY AND RAIL LAYOUT DIAGRAMS, DIRECT FIXATION TRACK		
DRAWN <u>A.SEREDICH</u> 12/08 DATE	NUMBER	DESCRIPTION	DATE	BY		DESCRIPTION	SCALE 1/4"=1'-0" 1 0 1 2 4FT AND AS SHOWN	DRAWING NO. TW2010-29
CHECKED <u>R.REYES</u> 12/08 DATE								SHEET NO. 17
APPROVED <u>[Signature]</u> 2/11 DATE								



NO. 8 GUARDED TURNOUT PLAN
SCALE: 1/4"=1'-0"

TURNOUT DATA		
FROG	NUMBER	8
	ANGLE	7'-09"-10"
	TOE LENGTH	6'-3"
	HEEL LENGTH	9'-5"
	TOTAL LENGTH	15'-8"
	TOE SPREAD	8'-13/16"
SWITCH	HEEL SPREAD	14'-9/16"
	LENGTH OF SWITCH RAIL	26'-0"
	THICKNESS AT POINT	0"
	ANGLE AT HEEL	3'-07"-09"
	ANGLE AT POINT	0'-11"-48"
	HEEL SPREAD	9"
CURVED POINT RADIUS		509.98'
VERTEX DISTANCE		0
ACTUAL LEAD		68'-0"
STRAIGHT CLOSURE LENGTH		35'-9"
CURVED CLOSURE LENGTH		35'-10 31/32"
CURVED CLOSURE RADIUS		509.98'
CENTERLINE RADIUS		507.63'
DEGREE OF CURVE		11'-17"-13"
TANGENT AT HEEL OF SWITCH		0"
TANGENT AT TOE OF FROG		0"

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
1	26'-0" GUARDED PLATED STRAIGHT SWITCH WITH UNIFORM RISERS - D.F. COMPLETE
1	26'-0" UNGUARDED PLATED CURVED SWITCH WITH UNIFORM RISERS - D.F. COMPLETE
1	NO.8 PLATED RAIL BOUND MANGANESE FROG - D.F. COMPLETE
1	12'-6" GUARD RAIL, COMPLETE
1	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
6	DUCTILE IRON RAIL STOPS
A.R.	132 RE GUARD RAILS
A.R.	BOLTED STANDARD RAIL JOINTS, 6 HOLE, 36 INCH
A.R.	BOLTED INSULATED RAIL JOINTS, 6 HOLE, 36 INCH
A.R.	LEFT HAND PANDROL CLIPS e2056
A.R.	ELASTOMER PAD FOR EACH PLATE

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED BY OTHERS
A.R.	DIRECT FIXATION FASTENERS
A.R.	GROUT PADS
A.R.	INSERT AND ANCHOR ASSEMBLY, ANCHORING MATERIAL (CELTITE 21-30, FOX INDUSTRIES FX 830, POLYESTER RESIN)

NOTES:

- GAUGE WIDTH THROUGHOUT TURNOUT IS 4'-8 1/2".
- LOCATE SEPARATOR BLOCKS NOT MORE THAN 4'-0" ON CENTERS AND AS NECESSARY TO CLEAR JOINT BARS AND ANCHOR BOLTS.
- JOINTS INDICATED IN RAIL LAYOUT DIAGRAM ARE REQUIRED. OTHER JOINTS LOCATED BY THE CONTRACTOR TO FACILITATE SHIPPING OR FABRICATION SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
- CLOSURE RAIL LENGTHS INDICATED ARE TOTAL LENGTHS AND DO NOT ALLOW FOR STANDARD OR INSULATED JOINTS.
- RAIL ENDS CONNECTING TO CWR SHALL BE DRILLED FOR THE JOINT BARS SHOWN ON THE RAIL LAYOUT DIAGRAM.
- THE CONTRACTOR SHALL FURNISH ALL JOINTS INTERNAL TO THE TURNOUT.
- RIGHT HAND TURNOUT IS SHOWN. LEFT HAND TURNOUT IS OPPOSITE HAND.
- GUARD RAIL IS HIGH STRENGTH 132RE SECTION.
- ALL DIRECT FIXATION FASTENERS ARE N.I.C.
- ALL RAILS WITHIN THE TURNOUT ARE FASTENED TO THE PLATES BY LEFT HAND PANDROL SPRING CLIPS - e2056.
- RAIL AT JOINT BARS SHALL BE FASTENED WITH LEFT HAND MODIFIED E-CLIP OR C-CLIP.
- ADDITIONAL DOUBLE RAIL INSULATED JOINT SHALL BE FURNISHED WITH EACH TURNOUT AS SPARE.
- WIDTH AND LENGTH OF ELASTOMER PADS SHALL BE 2" LARGER THAN DIMENSIONS OF CORRESPONDING PLATES.
- RAIL AT HEEL BLOCK SHALL BE FASTENED WITH MODIFIED LEFT HAND PANDROL CLIPS "E" e2063 OR PADROL "J" CLIPS.
- RAIL IS HEAD HARDENED RAIL.
- FOR DOUBLE RAIL INSULATED JOINT DETAIL SEE DWG No. TW2010-8.

DESIGNED	R.REYES	12/08
		DATE
DRAWN	A.SEREDICH	12/08
		DATE
CHECKED	R.REYES	12/08
		DATE
APPROVED	<i>RE</i>	2/11
		DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY *Whitney H. Allyn*

SUBMITTED BY *[Signature]*

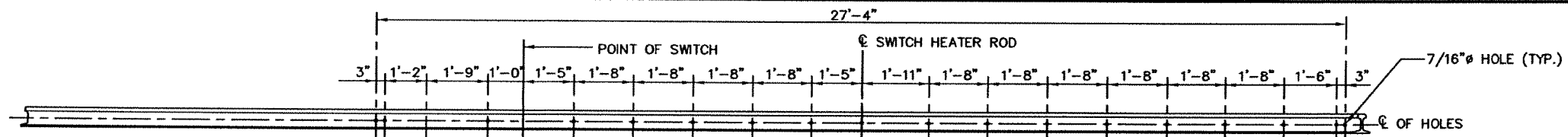
TRACKWORK PROCUREMENT

NO. 8 GUARDED TURNOUT, PLAN, PLATED,
DIRECT FIXATION TRACK

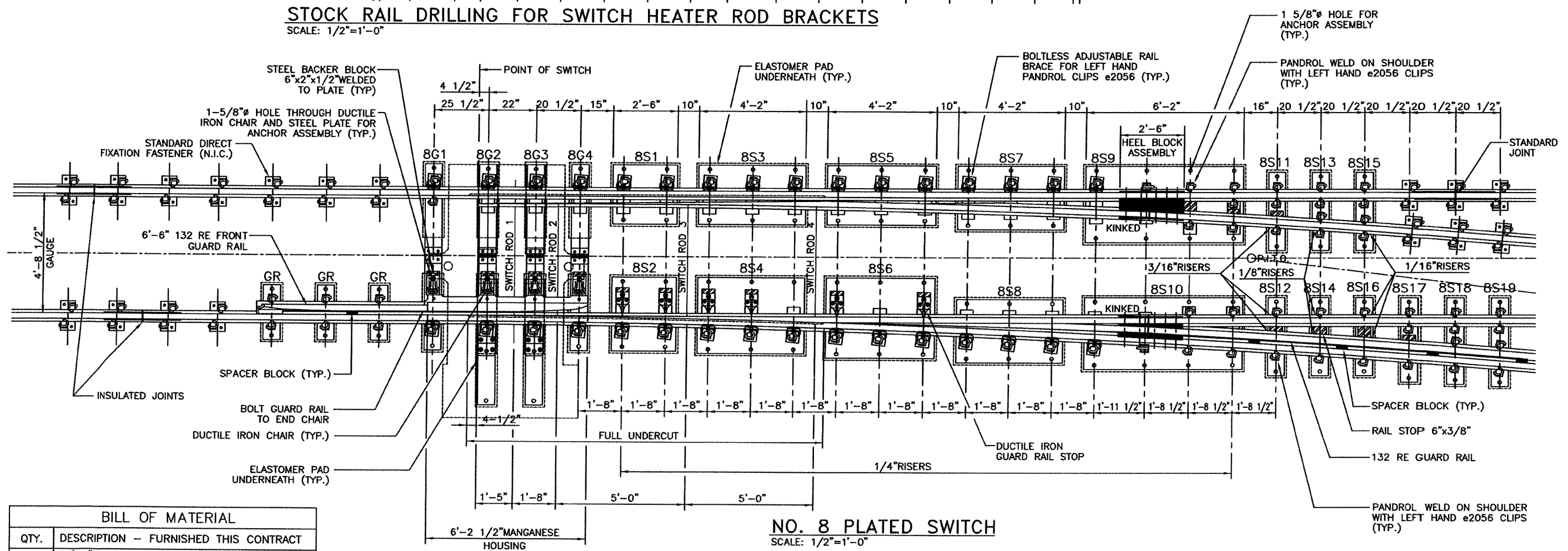
SCALE: 1/4"=1'-0"

DRAWING NO. TW2010-30

SHEET NO. 18



STOCK RAIL DRILLING FOR SWITCH HEATER ROD BRACKETS
SCALE: 1/2"=1'-0"



NO. 8 PLATED SWITCH
SCALE: 1/2"=1'-0"

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
1	26'-0" GUARDED PLATED STRAIGHT SWITCH WITH UNIFORM RISERS - D.F. COMPLETE PER AREMA STD. PLAN NO. 221-03, DETAIL 5100
1	26'-0" UNGUARDED PLATED CURVED SWITCH WITH UNIFORM RISERS - D.F. COMPLETE PER AREMA STD. PLAN NO. 221-03, DETAIL 5100
A.R.	STOCK RAILS, UNDERCUT FOR SWITCH RAILS
1	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
32	BOLTLESS ADJUSTABLE RAIL BRACE FOR LEFT HAND PANDROL CLIPS e2056
6	DUCTILE IRON GUARD RAIL STOPS
A.R.	CLOSURE RAILS
1	HEEL BLOCK ASSEMBLY FOR GUARDED SWITCH
1	HEEL BLOCK ASSEMBLY FOR UNGUARDED SWITCH
A.R.	GR, BG, BS PLATES
A.R.	ELASTOMER PADS FOR EVERY PLATE
4	INSULATED SWITCH RODS, TYPE MJS

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
A.R.	SPACER BLOCKS
A.R.	GUARD RAILS AND FRONT GUARD RAIL

PLATE DETAILS		
PLATE	LENGTH	WIDTH
GR	26"	8"
8G4	88"	8"
8S1	30"	28"
8S2	30"	35"
8S3	50"	28"
8S4	50"	36"
8S5	50"	28"
8S6	50"	36"
8S7	50"	30"
8S8	50"	30"
8S9	74"	36"

PLATE DETAILS		
PLATE	LENGTH	WIDTH
8S10	74"	34"
8S11	37"	8"
8S12	37"	8"
8S13	37"	8"
8S14	37"	8"
8S15	37"	8"
8S16	37"	8"
8S17	40"	8"
8S18	41"	8"
8S19	42"	8"

NOTES:

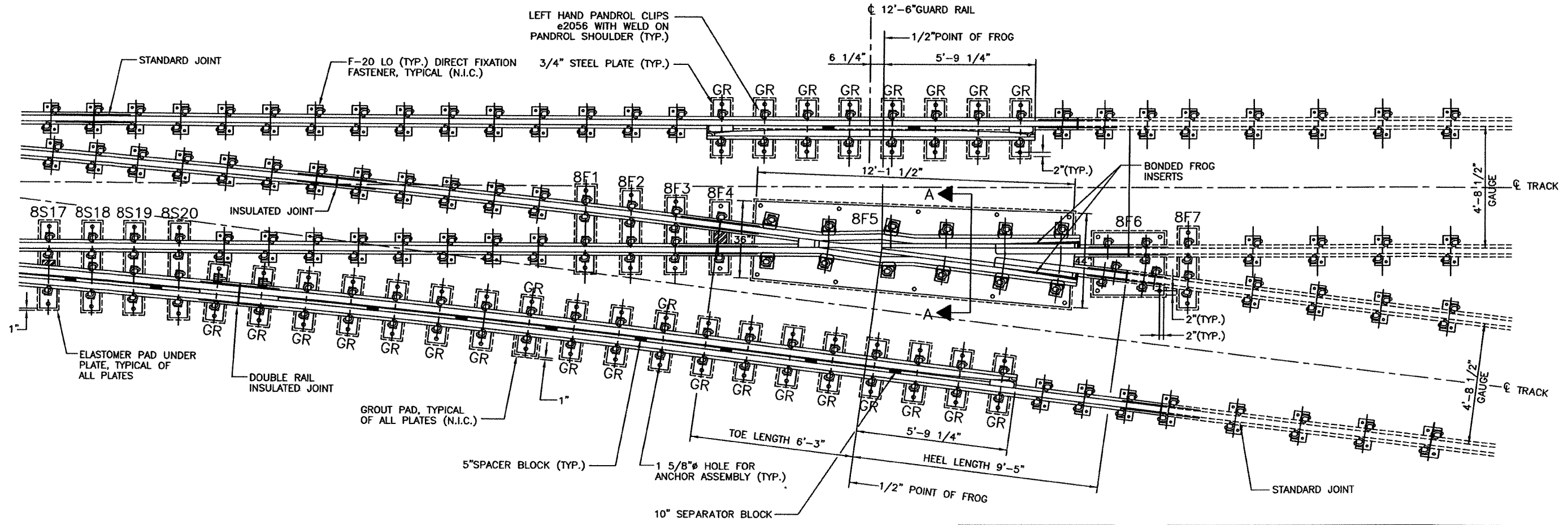
- FOR SWITCH GAUGE PLATES, SEE DETAIL, DWG. NO. TW2010-33
- DUCTILE IRON CHAIR AT THE POINT OF SWITCH SHALL BE MODIFIED AS SHOWN IN DETAIL SECTION D-D ON DRAWING No. TW2010-8.
- FOR SWITCH HEATER MOUNTING HOLE DETAIL SEE DWG No. TW2010-5.

DESIGNED R.REYES 12/08
DATE
DRAWN C.RIGGINS 12/08
DATE
CHECKED R.REYES 12/08
DATE
APPROVED [Signature] 2/11
DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE
APPROVED BY [Signature] SUBMITTED BY [Signature]

TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, PLATED SWITCH, DIRECT FIXATION TRACK
SCALE: 1/2"=1'-0" 1 0 1 2FT
DRAWING NO. TW2010-31 SHEET NO. 19



NO. 8 PLATED FROG
SCALE: 1/2"=1'-0"

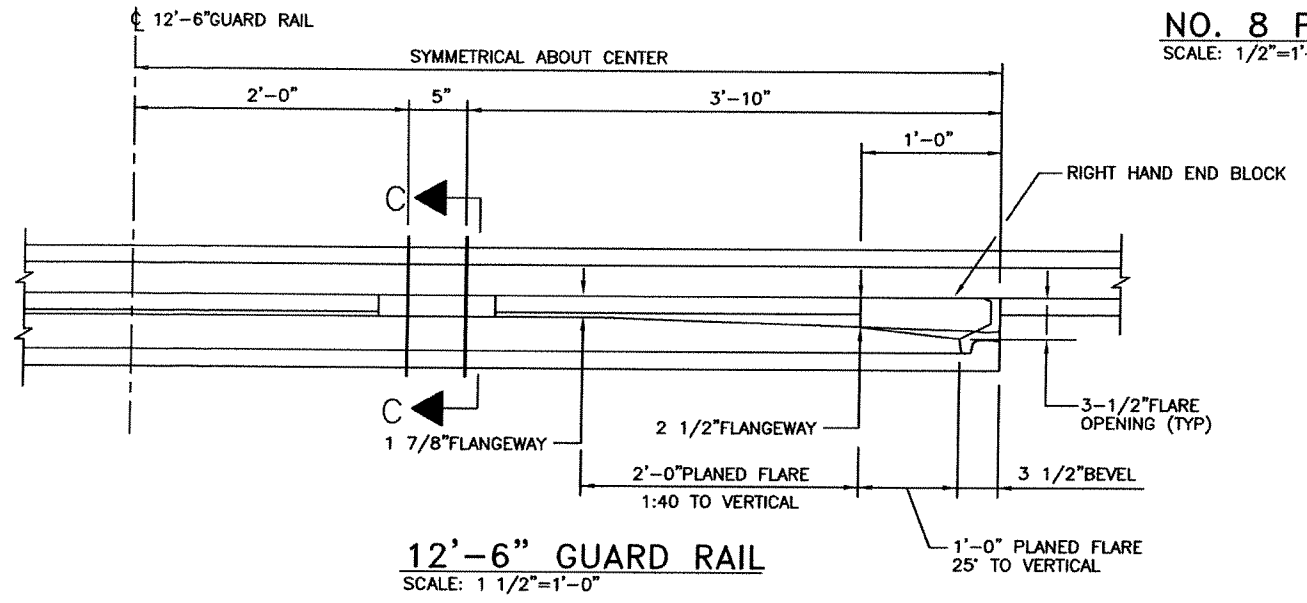


PLATE DETAILS		
PLATE	LENGTH	WIDTH
GR	26"	8"
8S17	40"	8"
8S18	41"	8"
8S19	42"	8"
8S20	44"	8"
8F1	40"	8"
8F2	38"	8"
8F3	35"	8"
8F4	33"	8"
8F5	145-1/2"	44"*
8F6	32-1/2"	29"
8F7	37"	8"

* FROG PLATE WIDTH AT ITS WIDEST POINT.

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
1	NO.8 RAILBOUND MANGANESE FROG PER AREMA STD. PLAN NO. 617-03 MODIFIED AS SHOWN
A.R.	8S, 8F, GR, GRS PLATES
A.R.	ELASTOMER PADS FOR EVERY PLATE
1	CURVED STOCK RAIL, CURVED TURNOUT RAIL
A.R.	GUARD RAILS
A.R.	SPACER BLOCKS
12	BOLTLESS ADJUSTABLE RAIL BRACE FOR LEFT HAND PANDROL CLIPS e2056
A.R.	GR PLATES
A.R.	LEFT HAND PANDROL CLIPS e2056.

- NOTES:**
- FOR SECTION A-A, SEE PLATED FROG DETAIL, DWG. NO. TW2010-34.
 - FOR SPECIAL PLATE ANCHOR ASSEMBLY, SEE DETAIL, DWG. NO. TW2010-34.
 - FOR SECTION C-C, SEE DETAIL, DWG. NO. TW2010-34.
 - FOR PLATE INSULATORS, SEE DETAIL, DWG. NO. TW2010-34.

DESIGNED	R.REYES	12/08	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	A.SEREDICH	12/08					
CHECKED	R.REYES	12/08					
APPROVED	<i>[Signature]</i>	12/11					

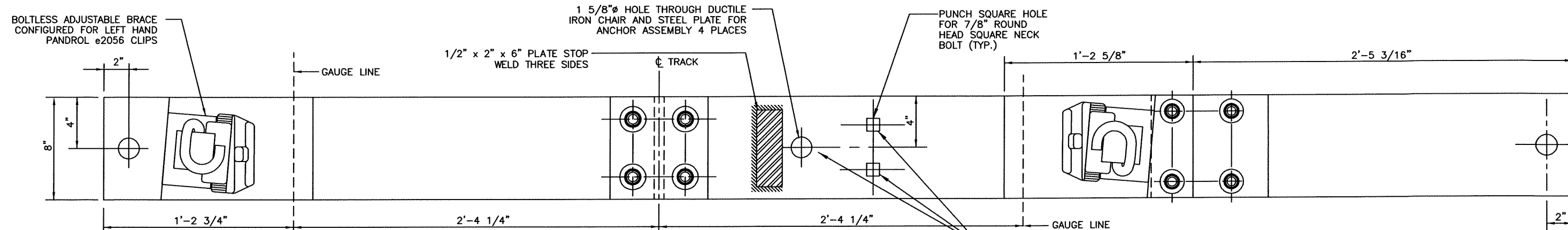
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY: *[Signature]* SUBMITTED BY: *[Signature]*

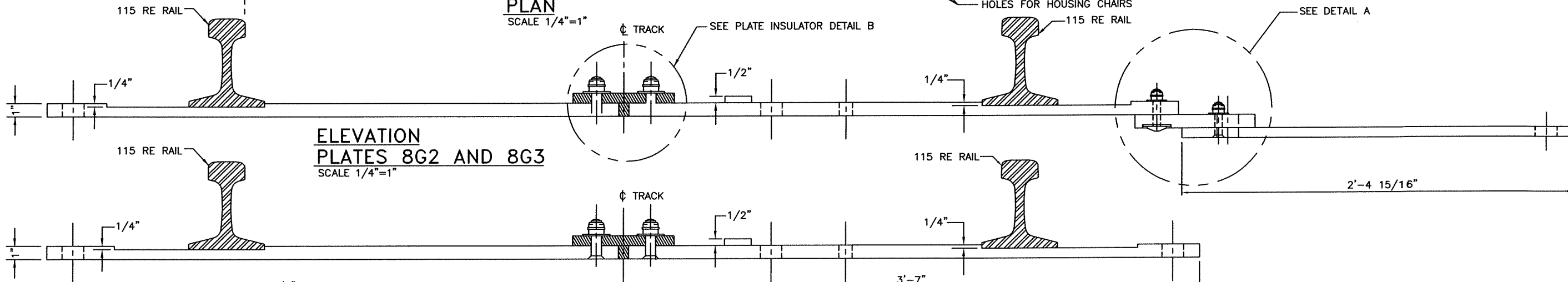
TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, PLATED FROG,
DIRECT FIXATION TRACK

SCALE: 1/2"=1'-0" AND AS SHOWN

DRAWING NO. TW2010-32 SHEET NO. 20



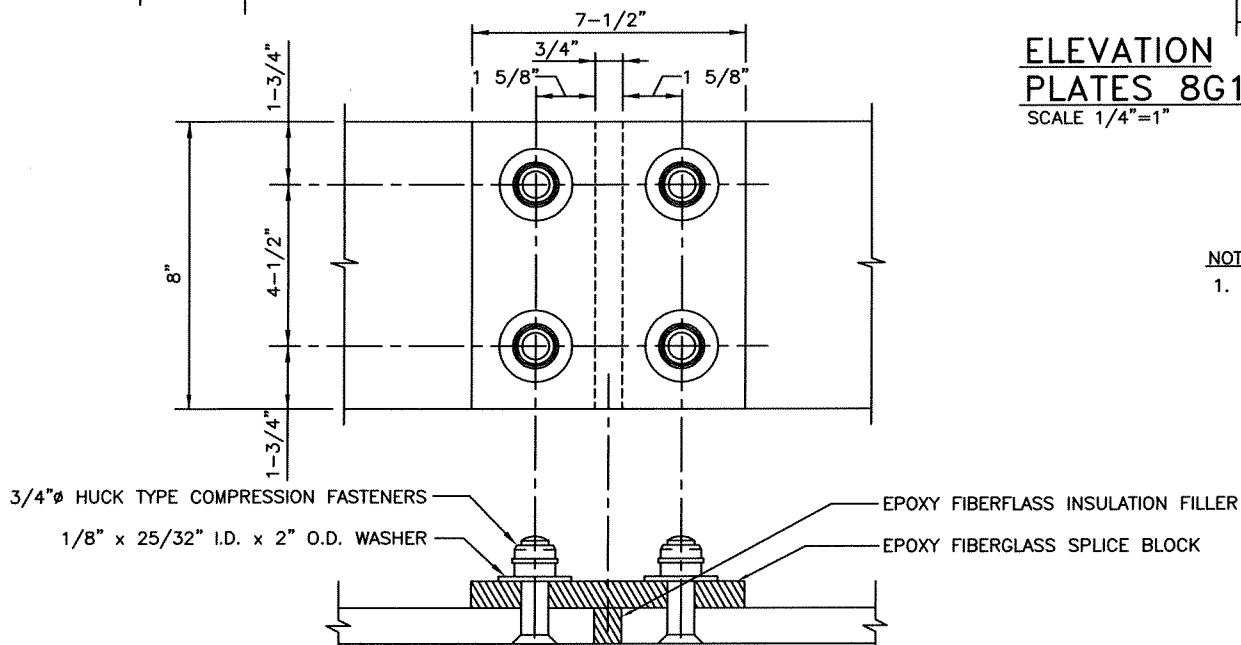
PLAN
SCALE 1/4"=1"



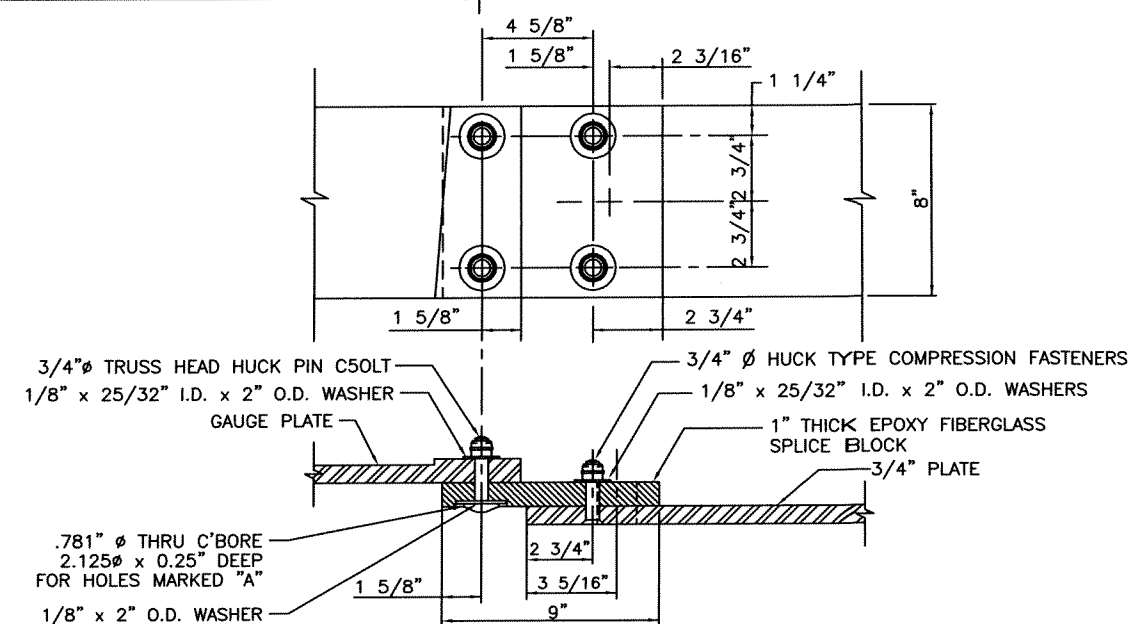
**ELEVATION
PLATES 8G2 AND 8G3**
SCALE 1/4"=1"

**ELEVATION
PLATES 8G1 AND 8G4**
SCALE 1/4"=1"

NOTE:
1. PLATE STOPS TO BE 3/8" SHOP FILLET WELD.



DETAIL B - PLATE INSULATOR
SCALE 3/8"=1"



DETAIL A
SCALE 1/4"=1"

DESIGNED	R.REYES	12/08
DATE		
DRAWN	C.RIGGINS	12/08
DATE		
CHECKED	R.REYES	12/08
DATE		
APPROVED	<i>[Signature]</i>	2/11
DATE		

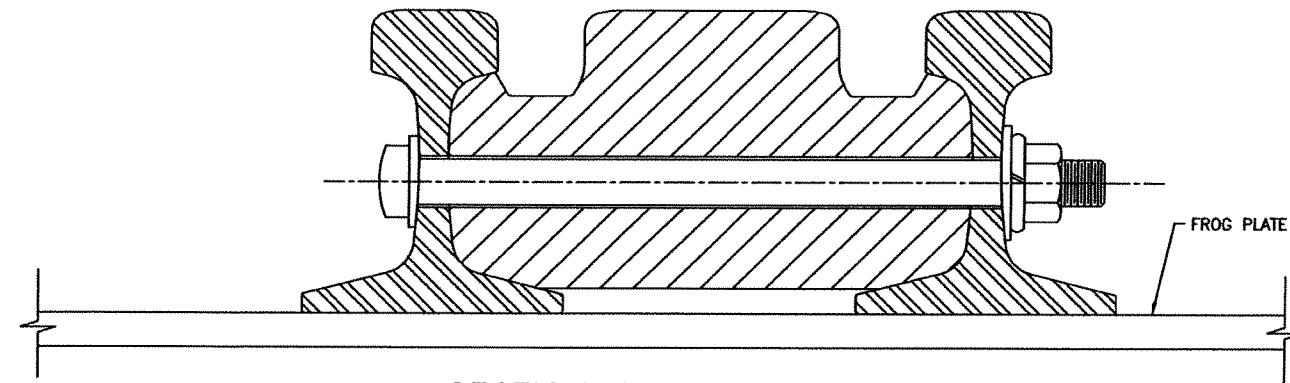
REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION
01/10	CAR	ADD NOTE FOR END PLATE DETAIL AND DELETE 4 ANCHOR BOLT HOLES.

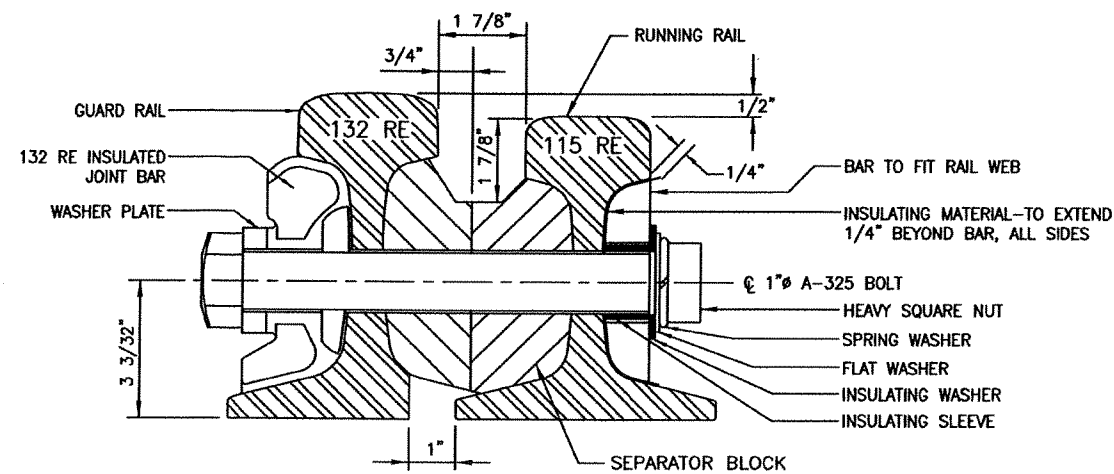
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
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OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE
APPROVED BY: *[Signature]* SUBMITTED BY: *[Signature]*

**TRACKWORK PROCUREMENT
NO. 8 GUARDED TURNOUT, DETAILS,
DIRECT FIXATION TRACK,
SHEET 1 OF 2**

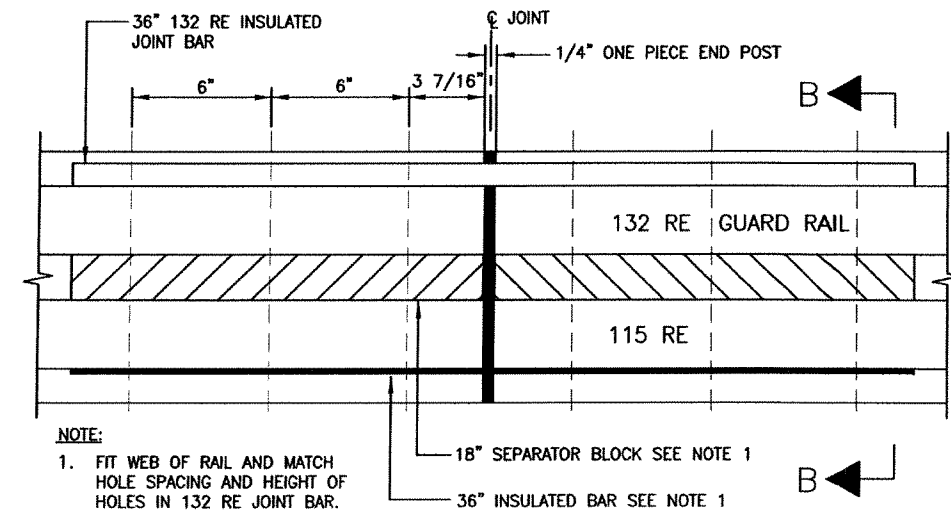
SCALE	AS SHOWN	DRAWING NO.	TW2010-33	SHEET NO.	21
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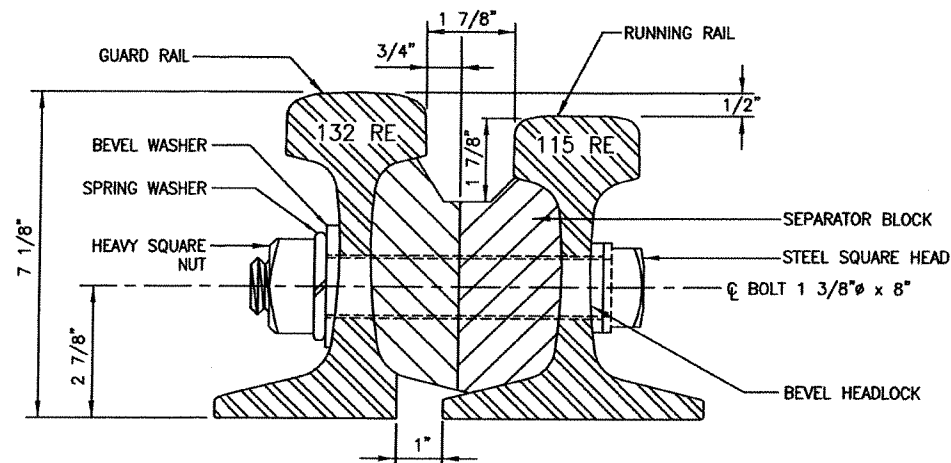
SECTION A-A - PLATED FROG
NOT TO SCALE



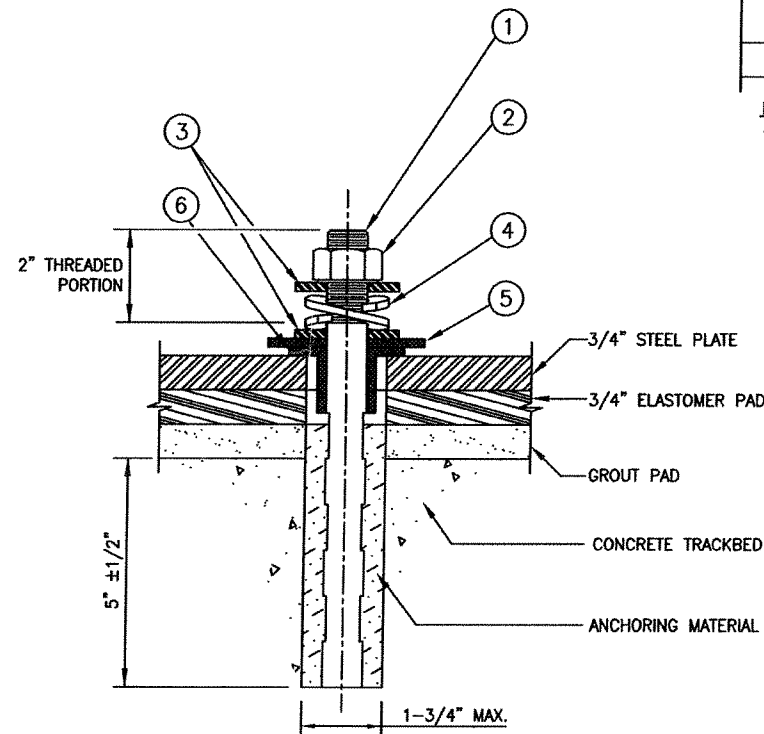
SECTION B-B - DOUBLE RAIL INSULATED JOINT
NOT TO SCALE



DETAIL - DOUBLE RAIL INSULATED JOINT
NOT TO SCALE



SECTION C-C - SEPARATOR BLOCK
NOT TO SCALE



SPECIAL PLATE ANCHOR ASSEMBLY (N.I.C.)
NOT TO SCALE

BILL OF MATERIAL - ANCHOR ASSEMBLY		
ITEM	QTY.	DESCRIPTION - FURNISHED BY OTHERS
1	1	THREADED ROD HOT DIPPED GALVANIZED 7/8"x11" ASTM-A563
2	1	STEEL HEX NUT FOR 7/8" BOLT, WASHER FACED, ASTM-A-325
3	2	STEEL WASHER, 15/16" I.D., 2-1/4" O.D., 3/16" THICK, ASTM-A-325
4	1	DOUBLE COIL SPRING WASHER
5	1	INSULATING FIBER WASHER, 1-9/32" I.D., 3-3/8" O.D.
6	1	ONE PIECE - INSULATING FIBER WASHER (29/32" I.D., 2-1/2" O.D.) AND INSULATING FIBER SLEEVE (29/32" I.D., 1-9/32" O.D.)

DESIGNED	R.REYES	12/08	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C.RIGGINS	12/08					
CHECKED	R.REYES	12/08					
APPROVED	<i>[Signature]</i>	12/11					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY *[Signature]*

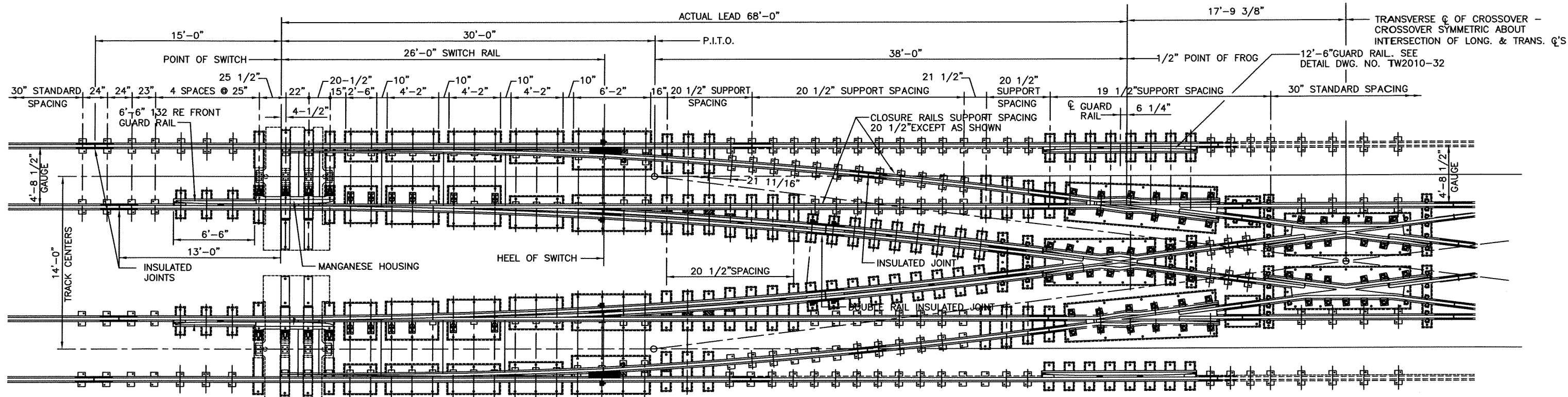
SUBMITTED BY *[Signature]*

TRACKWORK PROCUREMENT
NO. 8 PLATED TURNOUT, DETAILS,
DIRECT FIXATION TRACK,
SHEET 2 OF 2

SCALE
NOT TO SCALE

DRAWING NO.
TW2010-34

SHEET NO.
22

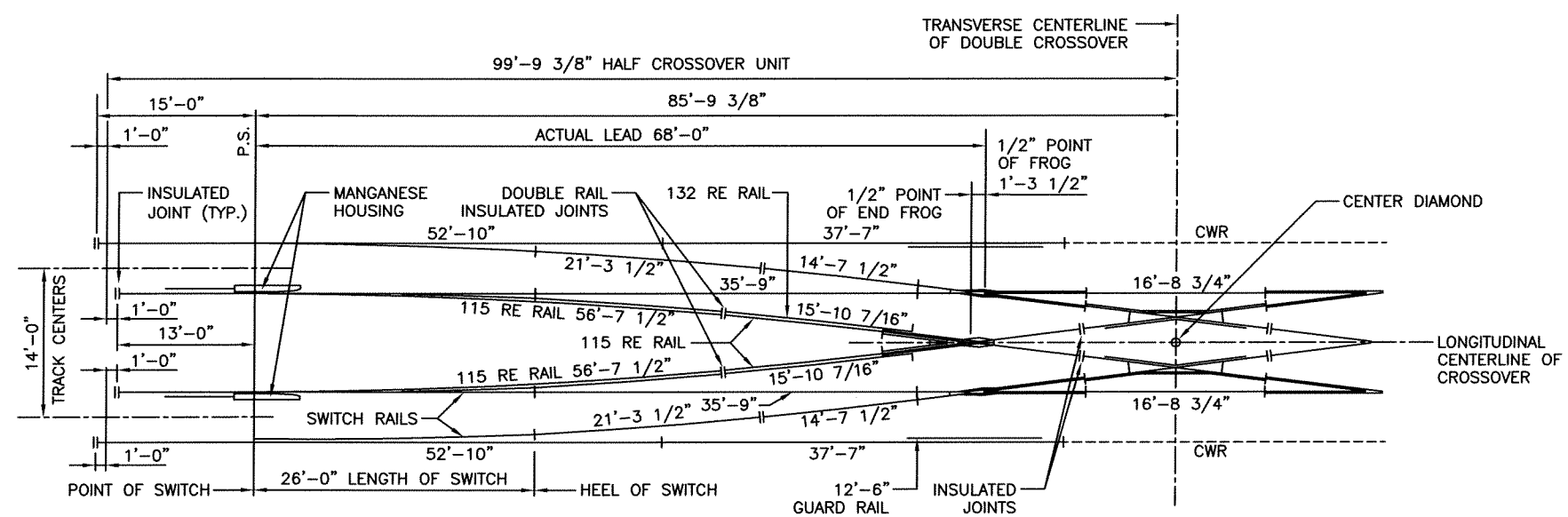


NOTES:

- 1. FOR TURNOUT DATA SEE DWG. NO. TW2010-4.

NO. 8 GUARDED DOUBLE CROSSOVER PLAN
SCALE: 1/4"=1'-0"

BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED THIS CONTRACT
4	NO. 8 GUARDED PLATED SWITCH, DIRECT FIX, COMPL.
4	NO. 8 PLATED FROG, DIRECT FIXATION, COMPLETE
4	12'-6" GUARD RAIL, FULLY HEAT TREATED, COMPLETE
2 EACH	RAILBOUND MANGANESE STEEL, END AND CENTER CROSSING FROGS, DIRECT FIXATION, COMPLETE AS SHOWN ON DWG. NO. TW2010-40
4	MANGANESE HOUSING WITH DUCTILE IRON CHAIRS
24	DUCTILE IRON RAIL STOPS
A.R.	132 RE GUARD RAILS
A.R.	RAIL JOINTS, INTERNAL TO THE TURNOUTS
A.R.	LEFT HAND PANDROL CLIPS e2056
A.R.	GR PLATES
A.R.	INSULATED JOINTS
A.R.	ELASTOMER PADS AT EVERY PLATE



RAIL LAYOUT DIAGRAM
SCALE: 1/8"=1'-0"

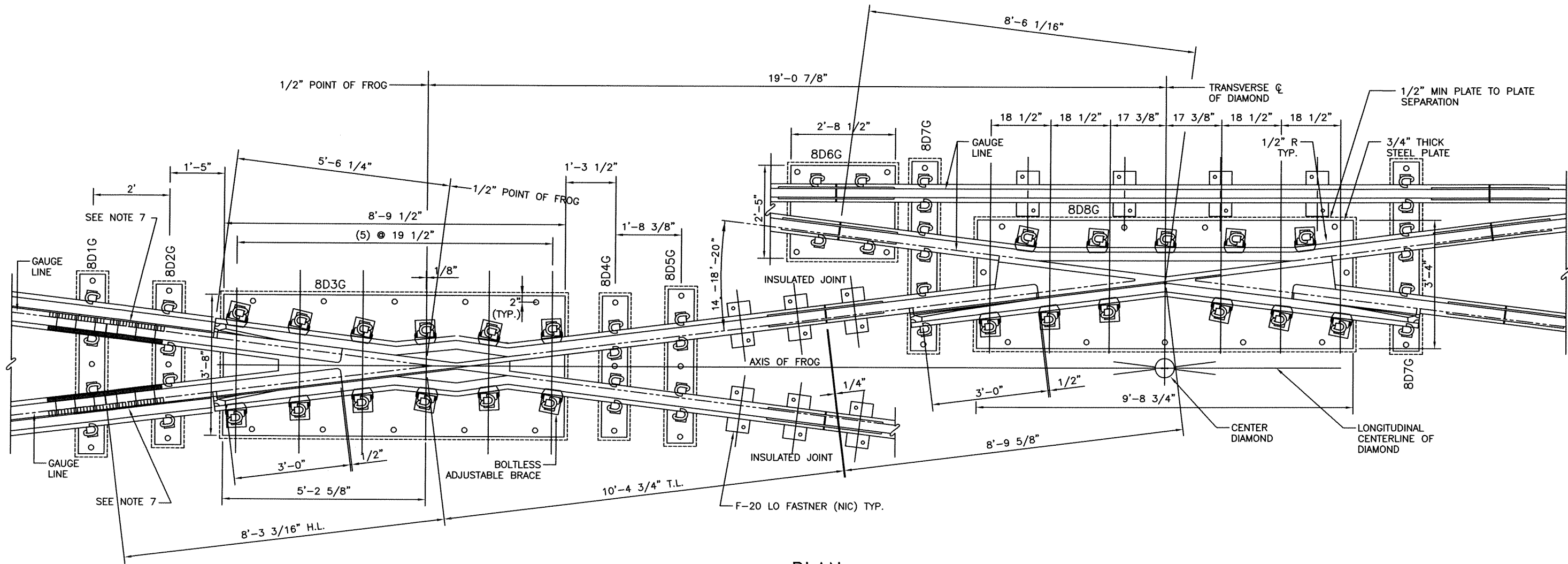
BILL OF MATERIAL	
QTY.	DESCRIPTION - FURNISHED BY OTHERS
A.R.	F-20 LO RAIL DIRECT FIXATION FASTENERS

DESIGNED R.REYES 12/08
 DRAWN C.RIGGINS 12/08
 CHECKED R.REYES 12/08
 APPROVED [Signature] 2/11

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 DEPARTMENT OF OPERATIONS • RAIL SERVICES
 OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE
 APPROVED BY [Signature] SUBMITTED BY [Signature]

TRACKWORK PROCUREMENT
 NO. 8 GUARDED DOUBLE CROSSOVER, TYPE 1,
 HALF UNIT, 14'-0" TRACK CENTERS, PLAN,
 DIRECT FIXATION TRACK
 SCALE 1/4"=1'-0" AND AS SHOWN 1 0 1 2 4FT
 DRAWING NO. TW2010-39 SHEET NO. 23



PLAN

NO. 8 DOUBLE CROSSOVER CENTER FROG & END FROG - COMPLETE	
BILL OF MATERIAL	
QUANTITY	DESCRIPTION - FURNISHED THIS CONTRACT
2 EACH	MANGANESE STEEL INSERT END FROG WITH LEVEL GUARDS FOR 14'-18'-20" CROSSING ANGLE, COMPLETE (PER AREMA STANDARD PLAN NO. 750-01 AND 761-83) AND MODIFIED AS INDICATED
2 EACH	MANGANESE STEEL INSERT CENTER FROG WITH LEVEL GUARDS FOR 14'-18'-20" CROSSING ANGLE, COMPLETE (PER AREMA STANDARD PLAN NO. 750-01 AND 761-83)
2 EACH	SPECIAL PLATES 8D1 THRU 8D5, COMPLETE
2 PER FROG	BONDED FROG INSERTS
46	BOLTLESS ADJUSTABLE BRACE WITH LEFT HAND PANDROL CLIPS e2056
A.R.	GR PLATES
A.R.	LEFT HAND PANDROL CLIPS e2056

PLATE DETAILS		
PLATE	LENGTH	WIDTH
8D1G	4'-8"	8"
8D2G	4'-2"	8"
8D4G	3'-8"	8"
8D5G	4'-0"	8"
8D7G	4'-11"	8"

NOTES:

- RAIL AND COMPONENTS SHALL CONFORM TO 115 RE RAIL SECTION.
- RAIL DRILLINGS, BAR PUNCHINGS, OVAL NECK TRACK BOLTS AND TRACK BOLT NUTS SHALL BE IN ACCORDANCE WITH AREMA MANUAL, VOL. 1, PAGES 4-1-13 THRU 4-1-18 (36"-6 HOLE JOINT BAR, 115 RE RAIL SECTION).
- CROSSOVER END AND CENTER FROGS SHALL BE FULLY HEAT TREATED RAILBOUND MANGANESE STEEL EXPLOSION HARDENED PER TRACKWORK SPECIFICATIONS.
- ALL SPECIAL FROG PLATES SHALL BE 3/4" THICK WITH NO RAIL CANT.
- ELASTOMER PADS SHALL BE 3/4" THICK AND EXTEND BEYOND THE FROG PLATES 1" ON ALL SIDES.
- THE BONDED FROG AND BONDED CENTER FROG INSERTS SHALL BE MILLED CARBON STEEL CASTINGS AS SPECIFIED IN THE CONTRACT SPECIFICATIONS, AND AS SHOWN ON THIS DRAWING.
- USE 2-PIECE SEPARATOR BLOCKS WITH 1-1/2" Ø HOLE

DESIGNED R.REYES 12/08
DATE
DRAWN C.RIGGINS 12/08
DATE
CHECKED R.REYES 12/08
DATE
APPROVED [Signature] 2/10
DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS • RAIL SERVICES
OFFICE OF TRACK AND STRUCTURES SYSTEMS MAINTENANCE

APPROVED BY [Signature]

SUBMITTED BY [Signature]

TRACKWORK PROCUREMENT
NO. 8 GUARDED DOUBLE CROSSOVER, 14'-0"
TRACK CENTERS, DIAMOND & END FROG DETAILS,
DIRECT FIXATION TRACK

SCALE 3/4"=1'-0" 1 0 1FT

DRAWING NO. TW2010-40

SHEET NO. 24