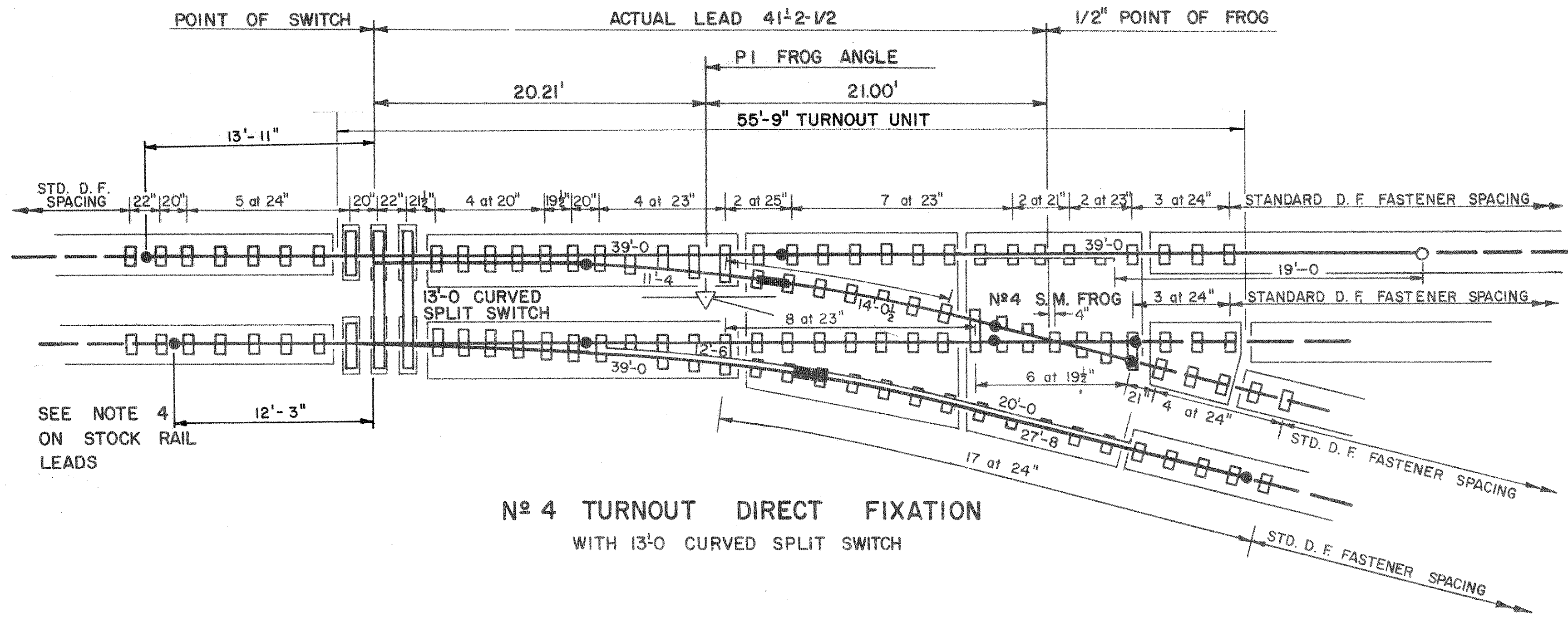
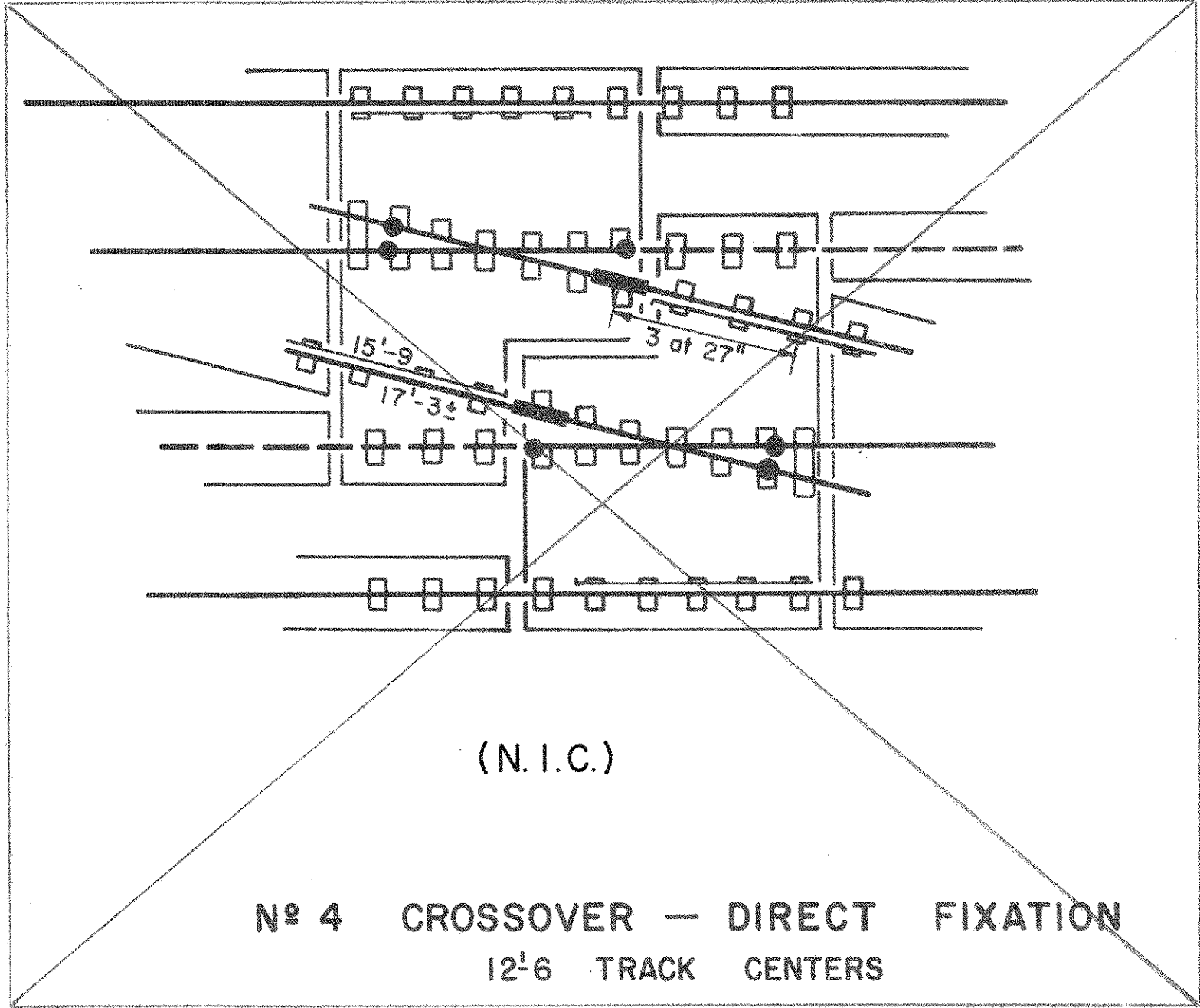




No 4 TURNOUT DIRECT FIXATION
WITH 13'-0 CURVED SPLIT SWITCH

BILL OF TRACK MATERIAL		
QUANTITY		DESCRIPTION
TURNOUT	CROSSOVER	
1	2	13'-0 CURVED SWITCH POINT COMPLETE WITH HEEL JOINT PER DWG. TSO16
1	2	13'-0 STRAIGHT SWITCH POINT COMPLETE WITH HEEL JOINT PER DWG. TSO16
1	2	No 4 SOLID MANGANESE FROG WITH TOE JOINT PER DWG. TSO08.
1	2	39'-0 STRAIGHT UNDERCUT STOCK RAIL PER DWG. TSO16
1	2	39'-0 CURVED STOCK RAIL PER DWG. TSO16.
1	2	11'-4 SHOP CURVED RAIL
1	2	14'-0 1/2 SHOP CURVED RAIL
1	2	27'-8 SHOP CURVED RAIL
-	2	17'-3 1/2 SHOP CURVED RAIL TO BE FIELD CUT AT THE FROG END.
1	2	39'-0 RAIL
1	2	24'-11 1/2 RAIL
1	2	8'-5 7/8 STRAP GUARD
1	2	12'-6 STRAP GUARD
1	-	20'-0 STRAP GUARD
-	2	15'-9 STRAP GUARD
1	4	INSULATED JOINTS, COMPLETE
1	2	STRAP GUARD INSULATED JOINTS, COMPLETE
6	8	STANDARD JOINTS, COMPLETE
69	122	STANDARD DIRECT FIXATION FASTENERS
7	14	SPECIAL DIRECT FIXATION FASTENERS - FROG
12	24	SPECIAL DIRECT FIXATION FASTENERS - SWITCH
2	4	DIRECT FIXATION GAUGE PLATES
(N.I.C.)		



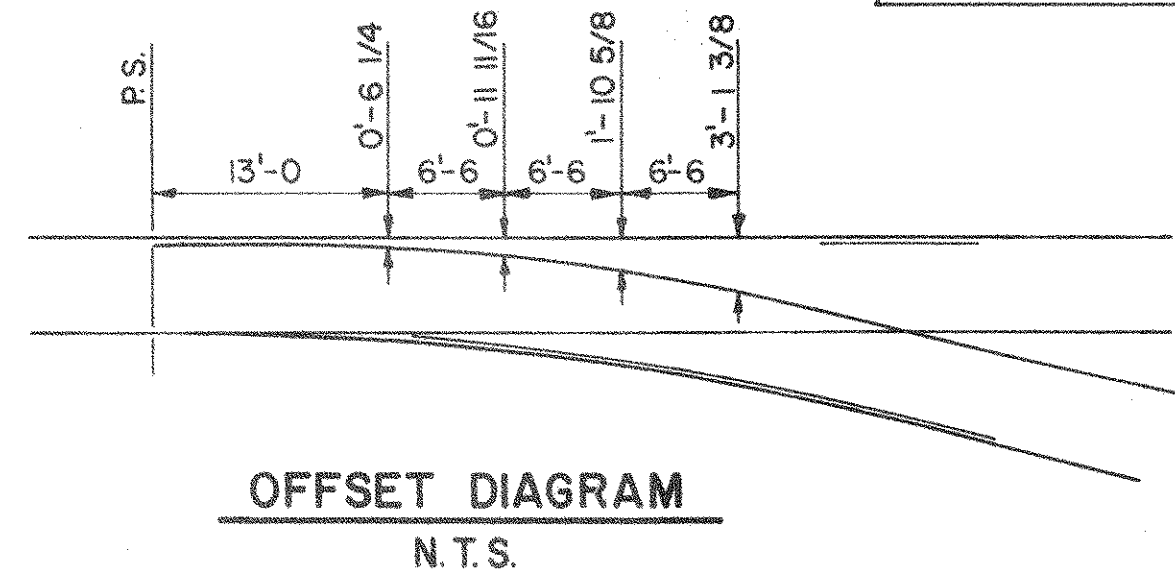
No 4 CROSSOVER - DIRECT FIXATION
12'-6 TRACK CENTERS

- JOINT TO BE WELDED
- STANDARD JOINT
- INSULATED JOINT
- GUARDED CONSTRUCTION

NOTES

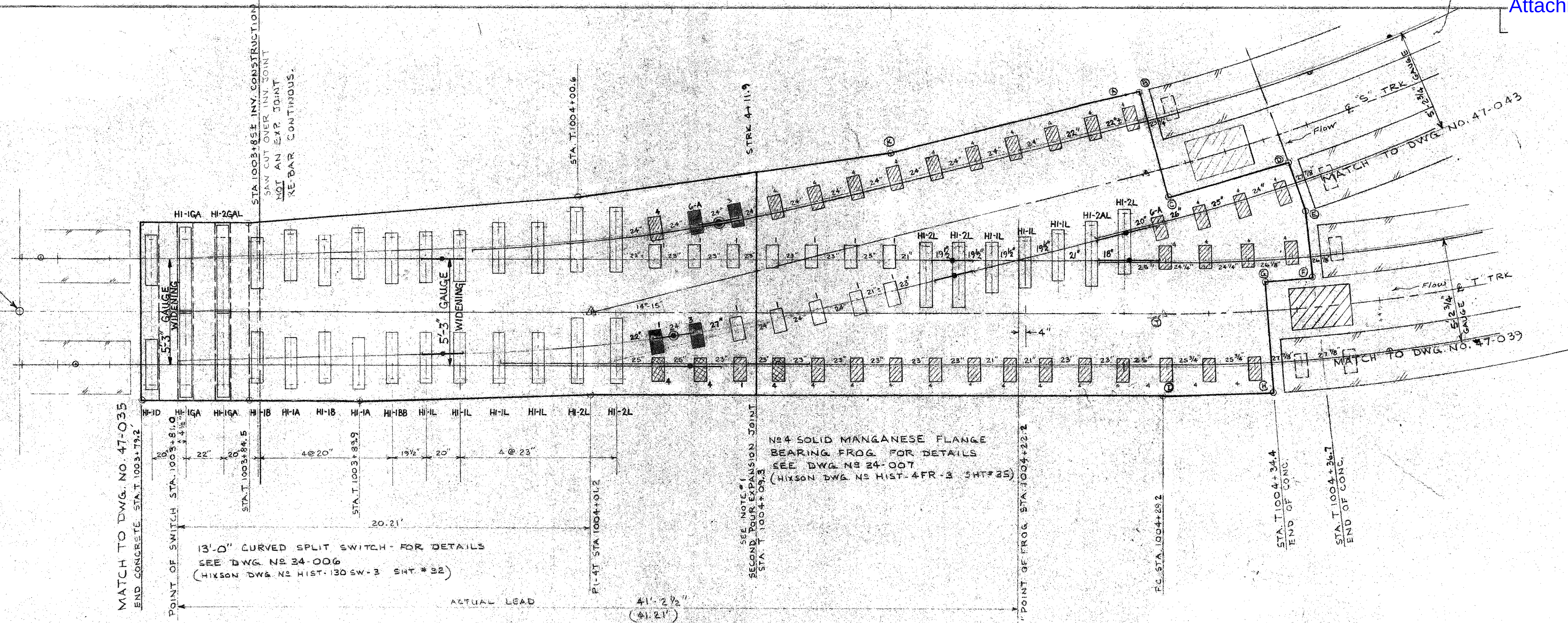
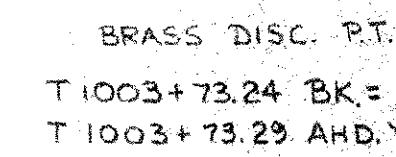
- 1.) SWITCH MACHINE PADS TO BE LOCATED IN ACCORDANCE WITH MANUFACTURERS DRAWINGS
- 2.) RIGHT HAND TURNOUT SHOWN LEFT HAND TURNOUT IS OPPOSITE HAND.
- 3.) TURNOUT GEOMETRY SHOWN IS PERTINANT TO DIRECT FIXATION CONSTRUCTION ONLY. BALLASTED OR EMBEDDED TURNOUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DRAWINGS TSO03 AND TSO05 RESPECTIVELY.
- 4.) STRAIGHT STOCK RAIL LEAD MAY BE SHORTENED TO 4'-6 (29'-6 OVERALL LENGTH) AND BENT STOCK RAIL LEAD MAY BE SHORTENED TO 6'-2 (32'-10 OVERALL LENGTH) WHEN INSUFFICIENT TANGENT LENGTH IS AVAILABLE FOR LONGER LEADS.
- 5.) RAILS SHOWN IN DASHED LINES NOT PROVIDED AS PART OF THE SPECIAL TRACKWORK PACKAGE.

TURNOUT DATA		
FROG	NUMBER	4
	ANGLE	14°15'00"
	TOE LENGTH	3'-3
	HEEL LENGTH	5'-5
	TOE SPREAD	9-3/4"
SWITCH	HEEL SPREAD	16-5/8"
	STRAIGHT POINT DETAIL	6100
	CURVED POINT DETAIL	5100
	LENGTH OF POINT	13'-0
	HEEL ANGLE	2°54'00"
SWITCH	HEEL SPREAD	6-1/4"
	ACTUAL LEAD	41'-2-1/2
	STRAIGHT CLOSURE LENGTH	24'-11-1/2
	CURVED CLOSURE LENGTH	25'-5
	CENTERLINE RADIUS	118.12'
SWITCH	DEGREE OF CURVE (ARC DEF.)	48°30'17"
	TANGENT ADJACENT TO TOE OF FROG	1.50'



PROJECT RECORD COPY

TSO16	13'-0 CURVED SPLIT SWITCH			DESIGNED: L.G.L.	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED, IN PART, THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED		SUBMITTED	DATE		APPROVED R. A. Rizzo APR 8 1983	DATE	PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH				
TSO08	No 4 SOLID MANGANESE FROG			DRAWN: D.J.B.								STAGE I LIGHT RAIL TRANSIT SYSTEM TRACKWORK STANDARD DIRECT FIXATION No 4 TURNOUT & CROSSOVER	PARSONS BRINCKERHOFF - GIBBS & HILL A JOINT VENTURE PITTSBURGH, PENNSYLVANIA	CONTRACT NO. CY-810	DWG. No. TS004-0	SHT. 32
TSO27	STRAP GUARD			CHECKED: H.L.H.												
				IN CHARGE: L.G.L.												
				DATE: APRIL 8, 1983												
				SCALE: 3/16" = 1'-0												
DWG. No.	REFERENCE	No.	DATE	DESCRIPTION	REVISIONS											



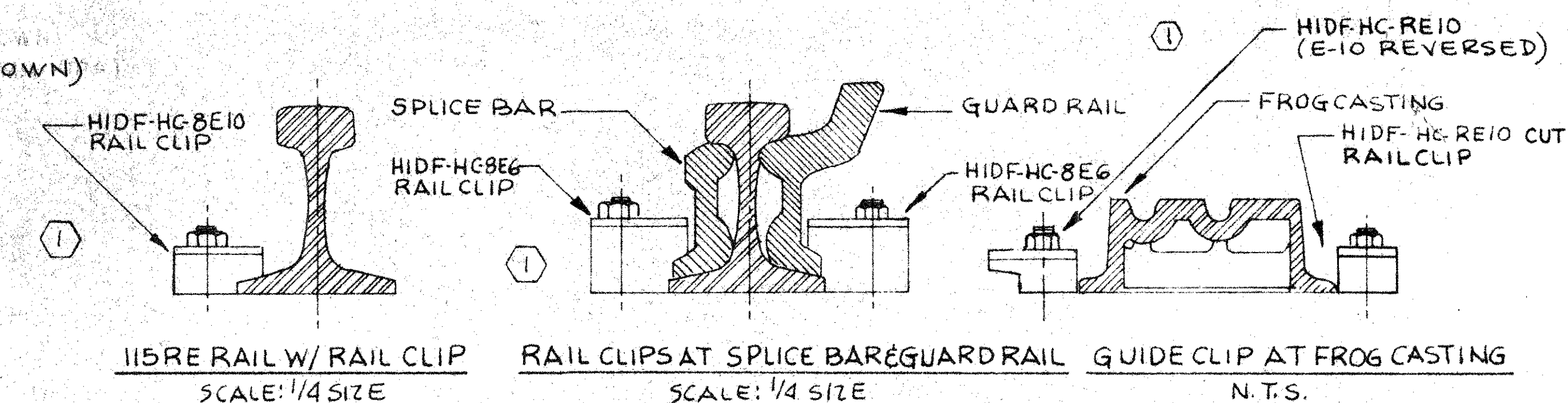
14	LORD FASTENER TYPE 1		14
2	LORD FASTENER TYPE 3		2
33	LORD FASTENER TYPE 4		33
2	LORD FASTENER TYPE 6A		2
		TOTAL LORD FAST.	51
102	FEMALE INSERTS (LORD)		102
70	INSERTS (HIXSON) SEE BELOW		70
1	RAIL CLIP	HIDF-HC-8RE6	1
6	RAIL CLIP 3 REVERSED 3 CUT	HIDF-HC-8RE10	6
42	RAIL CLIP	HIDF-HC-8E10	42
14	RAIL CLIP	HIDF-HC-8E6	14
63	INDEX PLATE	HIDF-HC-8E2	63
10	RAIL BRACE	HIST-21-3E	10
48	3/4" - 10 x 3 1/2" LONG CARRIAGE BOLT	HIDF-HC-8F4	48
15	3/4" - 10 x 4 1/2" LONG CARRIAGE BOLT	HIDF-HC-8F5	15
63	3/4" - 10 STOVER LOCKNUT	HIDF-HC-8F2	63
70	7/8"-9 x 4 1/8" (HIXSON) INSERT ASSEMBLY		70
70	7/8"-9 x 4 1/8" LONG HEX HEAD HEAVY DUTY BOLT	HIDF-HC-8G5	70
63 PR.	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F9	63 PR.
70 PR.	NORD-LOCK WASHER (INSERTS)	HIDF-HC-8F10	70 PR.
1	HIXSON FASTENER HI-2AL	HIST30A-3L	1
7	HIXSON FASTENER HI-2L	HIST30-3L	7
2	HIXSON FASTENER HI-1D	HIST21D-3	2
2	HIXSON FASTENER HI-1BB	HIST21E-3	2
4	HIXSON FASTENER HI-1B	HIST21B-3	4
4	HIXSON FASTENER HI-1A	HIST21A-3	4
11	HIXSON FASTENER HI-1L	HIST21-3L	11
1	INSULATED GAUGE PLATE HI-2GAL	H16TA-3HL	1
3	INSULATED GAUGE PLATE HI-1GAL	HIST-3HL	3
QTY.	SPECIAL DIRECT FIXATION FASTENERS ONLY	PART NO.	
PER UNIT	BILL OF MATERIAL		

PLAN NO. 4 TURNOUT

NO. OF UNITS REQD _____ R.H. _____
 _____ I _____ L.H. (SHOWN)

TURNOUT DATA		
FROG	NUMBER	4
	ANGLE	14°-15'-00"
	TOE LENGTH	3'-3
	HEEL LENGTH	5'-5
	TOE SPREAD	9 3/4
SWITCH	HEEL SPREAD	16 5/8"
	STRAIGHT POINT DETAIL	6100
	CURVED POINT DETAIL	5100
	LENGTH OF POINT	13'-0
	HEEL ANGLE	2°-54'-00"
	HEEL SPREAD	0'-6 1/4
	ACTUAL LEAD	41'-2 1/2
STRAIGHT CLOSURE LENGTH		24'-11 1/2
CURVED CLOSURE LENGTH		25'-5
CENTERLINE RADIUS		118.12'
DEGREE OF CURVE (ARC DEF.)		48°-30'-17"
TANGENT ADJACENT TO TOE OF FROG		1.50'

* HIXSON RAIL CLIP FIELD CUT TO FIT @ FROG CASTING



NOTE: ALL DIMENSIONS SHOWN ARE $\pm 1/2"$

GAUGE PLATE ASSEMBLY H15A-3H (FASTENER H1-24A) REQUIRE R.H. ASSEMBLIES FOR R.H. TURNOUTS AND L.H. ASSEMBLIES FOR L.H. TURNOUTS. GAUGE PLATE ASSEMBLY H15T-3H (FASTENER H1-16) AND ALL OTHER SPECIAL DIRECT FIXATION FASTENERS ARE THE SAME FOR EITHER R.H. OR L.H. ASSEMBLIES

REFERENCE: SPEC. 02855 RAIL FASTENER
SPEC. 02859 SPECIAL TRACKWORK

USE WITH DWG. NO 34-006 & 34-007
BETHLEHEM STEEL CORP. DWG. NO 270854 & 270864
P.B.G.H. DWG. NO TS-004-O SHT # 32

— PROJECT-RECORD COPY

CONSULTING
Engineers

PARSONS BRINCKERHOFF - GIBBS & HILL

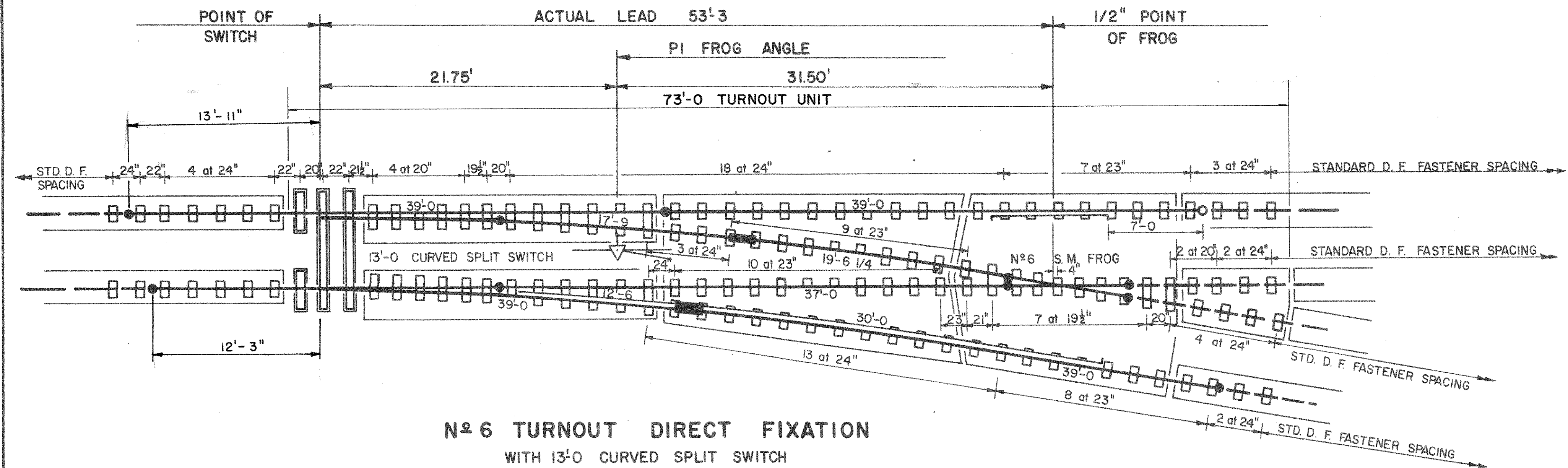
APPROVED

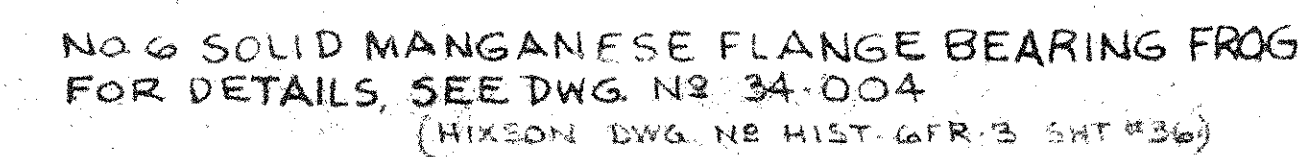
Approval Does Not Relieve the Contractor of the Responsibility for the Accuracy of this Document or for Full Compliance with the Contract Requirements.

BY: *[Signature]*

DATE: 8-14-86

REVISIONS	DESCRIPTION	NO.	BY	APP.	DATE	DATE	ATLAS RAILROAD CONSTRUCTION CO.				REF. HIXSON DWG. NO.
	CONTRACTOR WORK "AS BUILT" REV.		TDC	DAM	5-6-88		CONTRACT				HIST-4TO-3
	DESIGN						STAGE 1 LIGHT RAIL TRANSIT SYSTEM				SCALE
	DRAWN	RTB	3/12/84				PROJECT NO. : PA-03-0095				1/3" = 1'-0
	CHKD.	DAM	3/12/84				CONTRACT NO. : CY810				DRAWING NO. ATLAS
	APP.	DAM	3/12/84				TRACKWORK INSTALLATION LBD				34-005

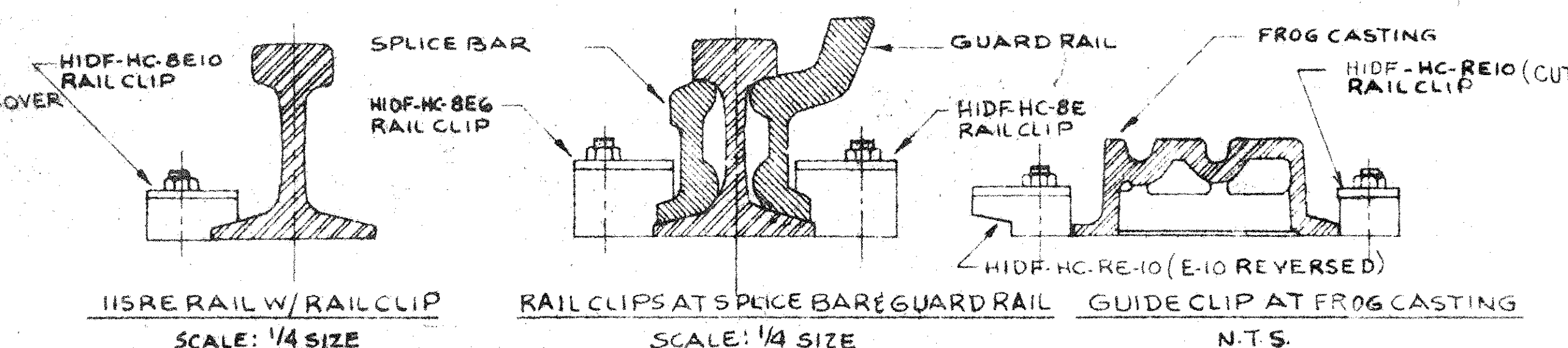




73'-0 TURNOUT UNIT

PLAN NO. 6 TURNOUT

NO. OF UNITS REQD: 2 R.H. SHOWN FOR CA-440
L.H. SYMM. OPP.



NOTE: ALL DIMENSIONS SHOWN ARE $\pm \frac{1}{2}$

GAUGE PLATE ASSEMBLY H18A-3H (FASTENER H1-24A) REQUIRE R.H. ASSEMBLIES FOR R.H. TURNOUTS AND L.H. ASSEMBLIES FOR L.H. TURNOUTS. GAUGE PLATE ASSEMBLY H18T-3H (FASTENER H1-1G) AND ALL OTHER SPECIAL DIRECT FIXATION FASTENERS ARE THE SAME FOR EITHER R.H. OR L.H. ASSEMBLIES.

REFERENCE: SPEC. 02855 RAIL FASTENER
SPEC. 02854 SPECIAL TRACKWORK

USE WITH DWG N2; 34-001
34-003
34-004

BETHLEHEM STEEL CORP DWG NO 870884
REG H DWG NO TS-010-0 SHIP 36

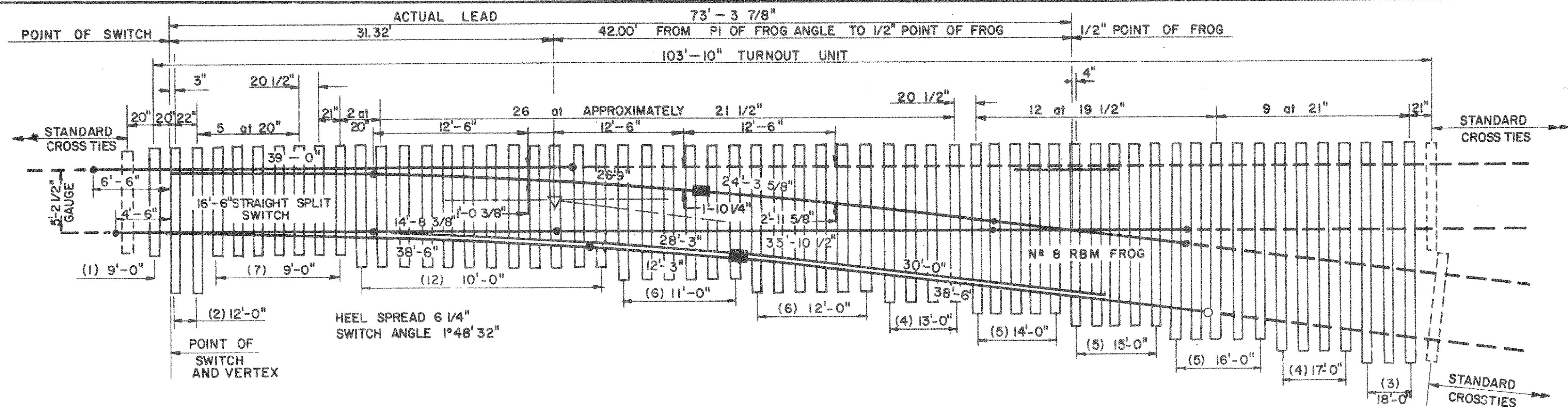
PROJECT-RECORD COPY —

ATLAS RAILROAD CONSTRUCTION CO.

CONTRACT
STAGE 1 LIGHT RAIL TRANSIT SYSTEM
PROJECT NO. : PA-03-0095
CONTRACT NO. : CYB10
TRACKWORK INSTALLATION (BD)

TITLE CA-440 REF
NO. 6 TURNOUT PLAN AND
ANCHORAGE LAYOUT D.F.
CONSTRUCTION PLAN

REF: HIXSON DWG. NO.	
HIST-6T0-3	
SCALE: AS SHOWN $\frac{3}{8}'' = 1'-0''$	
DRAWING NO. ATLAS 34-002	
PROJECT-RECORD COPY	

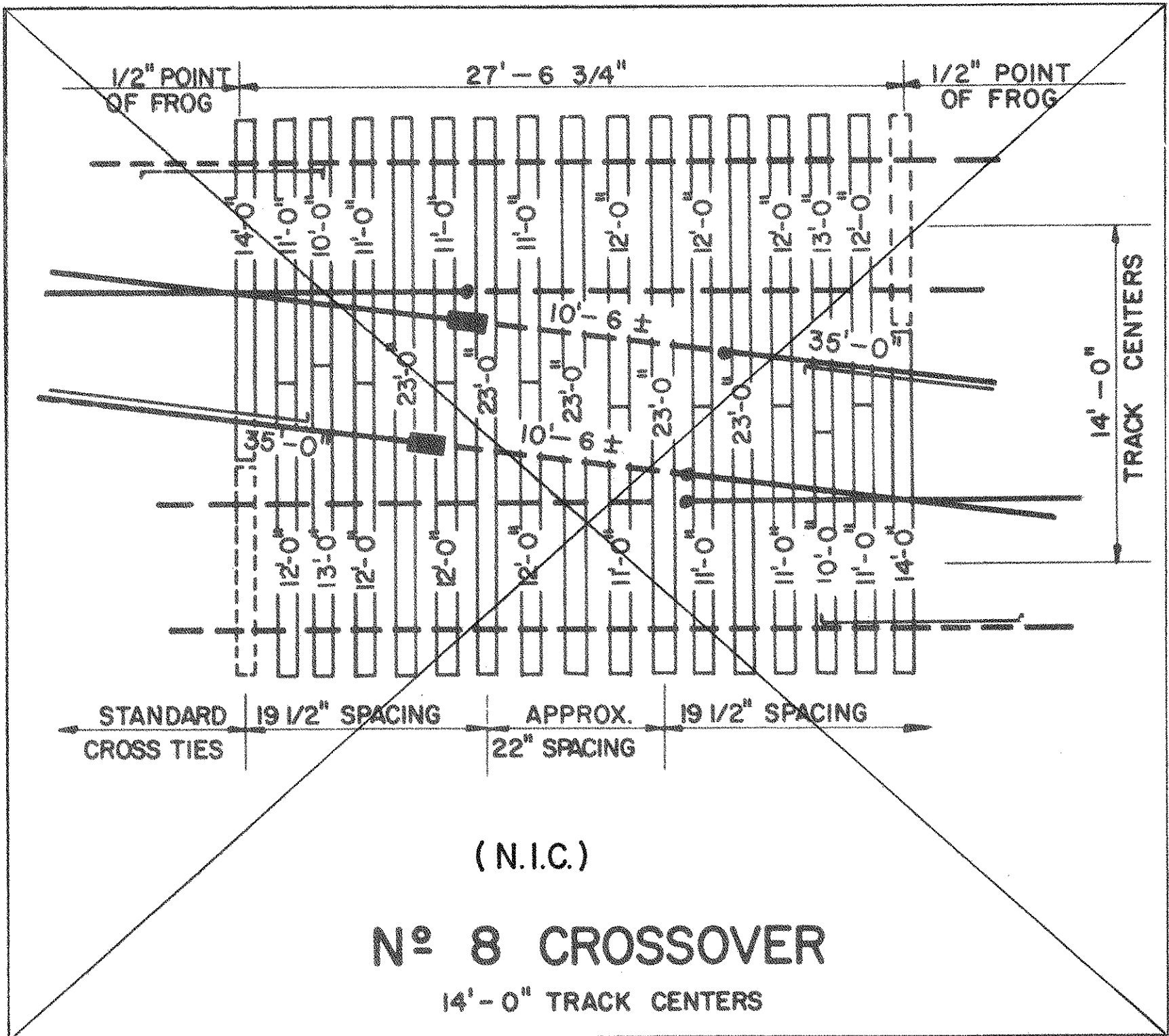


- NOTES:
- 1.) BILL OF TIMBER INCLUDES TIES SHOWN SOLID IN LAYOUT. THE FIRST TWO 12'-0 TIES ARE FOR USE WITH SWITCHSTAND. FOR INTERLOCKED SWITCHES, SUBSTITUTE OTHER TIES TO MEET REQUIREMENTS OF MECHANISM USED.
 - 2.) FOR SWITCH AND STOCK RAIL DETAILS SEE DRAWING TS 014
 - 3.) FOR FROG DETAILS SEE DRAWING TS 015
 - 4.) RIGHT HAND TURNOUT SHOWN. LEFT HAND TURNOUT IS OPPOSITE HAND.
 - 5.) RAILS SHOWN IN DASHED LINES NOT PROVIDED AS PART OF SPECIAL TRACKWORK PACKAGE.
 - 6.) REFER TO CONTRACT TECHNICAL PROVISIONS FOR DETAILS CONCERNING BILL OF MATERIAL QUANTITIES FOR EACH SWITCH APPLICATION.
 - 7.) DIRECT FIXATION N° 8 TURNOUT SHALL BE FABRICATED USING THIS DRAWING.

N° 8 TURNOUT
WITH 16'-6 STRAIGHT SPLIT SWITCH

BILL OF TIMBER 7"x 9" SWITCH TIES			
TURNOUT		CROSSOVER	
LENGTH	PIECES	LENGTH	PIECES
9'-0"	8	9'-0"	16
10'-0"	12	10'-0"	24
11'-0"	6	11'-0"	20
12'-0"	8	12'-0"	24
13'-0"	4	13'-0"	10
14'-0"	5	14'-0"	12
15'-0"	5	23'-0"	5
16'-0"	5		
17'-0"	4		
18'-0"	3		
60 PIECES 3953 BD. FT.		(N.I.C.)	
		111 PIECES 6851 BD. FT.	

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"
	POINT DETAIL	5100
	LENGTH OF SWITCH POINT	16'-6"
	SWITCH ANGLE	1° 48' 32"
	HEEL SPREAD	6 1/4"
	ACTUAL LEAD	73'-3 7/8"
STRAIGHT CLOSURE LENGTH		50'-6 7/8"
CURVED CLOSURE LENGTH		51'-1 1/8"
CENTERLINE RADIUS		504.874'
DEGREE OF CURVE (ARC)		11° 20' 55"
TANGENT ADJACENT TO HEEL OF SWITCH		2.262'
TANGENT ADJACENT TO TOE OF FROG		1.50'



BILL OF TRACK MATERIAL (SEE NOTE 6)		
QUANTITY	TURNOUT	CROSSOVER
		DESCRIPTION
1	2	16'-6" INSULATED STRAIGHT SPLIT SWITCH COMPLETE PER DRAWING TSO14
1	2	N° 8 RAILBOUND MANGANESE FROG COMPLETE PER DRAWING TSO15
1	2	SOLID MANGANESE GUARD RAIL 8'-4 1/2" LONG PER AREA PLAN BASIC N° 510
1	2	39'-0" STRAIGHT STOCK RAIL PER STANDARD DRAWING TSO14
1	2	38'-6" CURVED STOCK RAIL PER STANDARD DRAWING TSO14
1	2	38'-6" RAIL (SHOP CURVED)
1	2	35'-0" RAIL (SHOP CURVED)
1	2	26'-9" RAIL (SHOP CURVED)
1	2	12'-3" RAIL (SHOP CURVED)
1	2	24'-3 5/8" RAIL (SHOP CURVED)
1	2	35'-10 1/2" RAIL
1	2	14'-8 3/8" RAIL
1	2	10'-6 1/2" RAIL
1	4	STANDARD INSULATED JOINT COMPLETE
1	2	STRAP GUARD JOINT COMPLETE
1	2	STRAP GUARD INSULATED JOINT COMPLETE
4	8	STANDARD JOINT COMPLETE
1	2	30'-0" STRAP GUARD
1	2	28'-3" STRAP GUARD
1	1	SET SWITCH TIES (N.I.C.)
132	246	TIE PLATES & RAIL FASTENINGS COMPLETE
		(N.I.C.)

- JOINT TO BE WELDED
- STANDARD JOINT
- INSULATED JOINT
- GUARDED CONSTRUCTION
- INSULATED JOINT IN GUARDED CONSTRUCTION

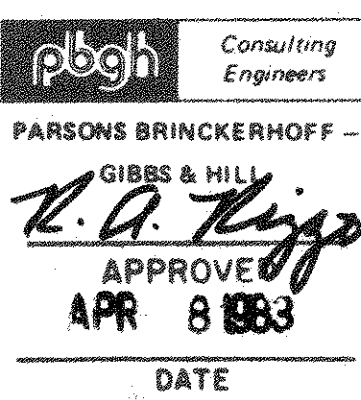
TS014	16'-6 STRAIGHT SPLIT SWITCH			DESIGNED: LGL
TS015	N° 8 RAILBOUND MANG. FLANGE BEARING FROG			DRAWN: BMW
TS027	115RE STRAP GUARD			CHECKED: CEG
TS029	STANDARD RAIL SECTIONS AND DRILLINGS			IN CHARGE: LGL
				DATE: APRIL 8, 1983
				SCALE: 3/16" = 1'-0
DWG. No.	REFERENCE	No.	DATE	DESCRIPTION
				SUB APP. REVISIONS

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED, IN PART, THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED

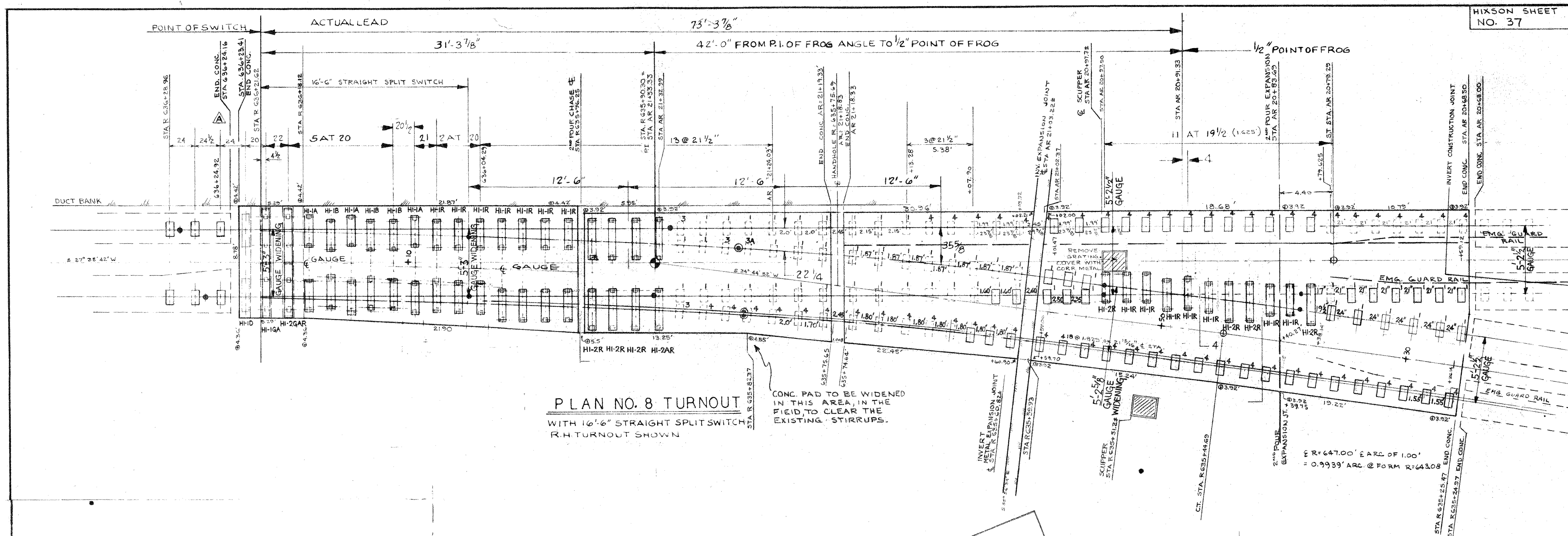


SUBMITTED

DATE



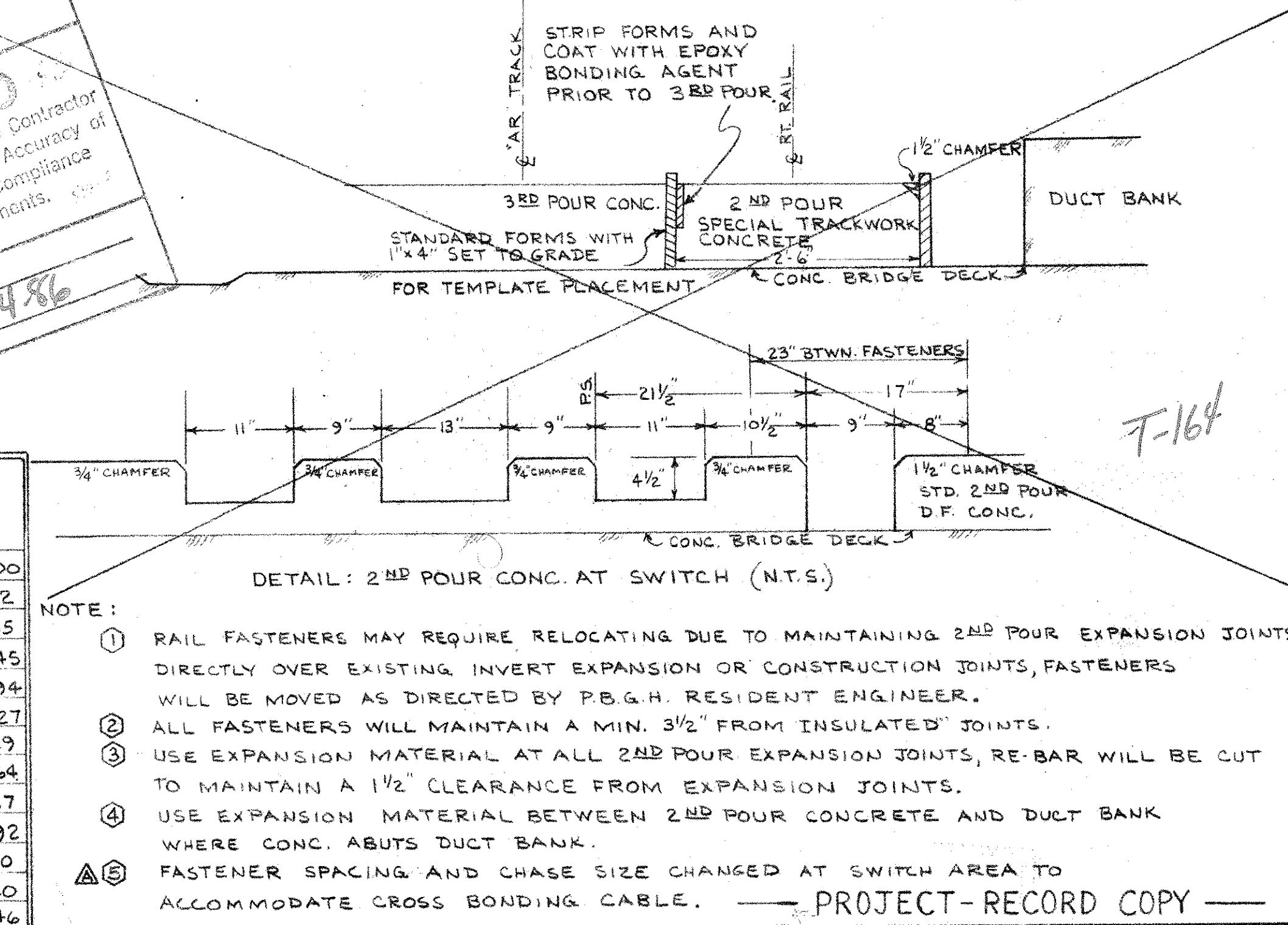
PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH	
STAGE I LIGHT RAIL TRANSIT SYSTEM TRACKWORK STANDARD BALLASTED N° 8 TURNOUT & CROSSOVER	
PARSONS BRINCKERHOFF - GIBBS & HILL A JOINT VENTURE PITTSBURGH, PENNSYLVANIA	CONTRACT No. CY-810 DWG. No. TS 013-0 SHT 38



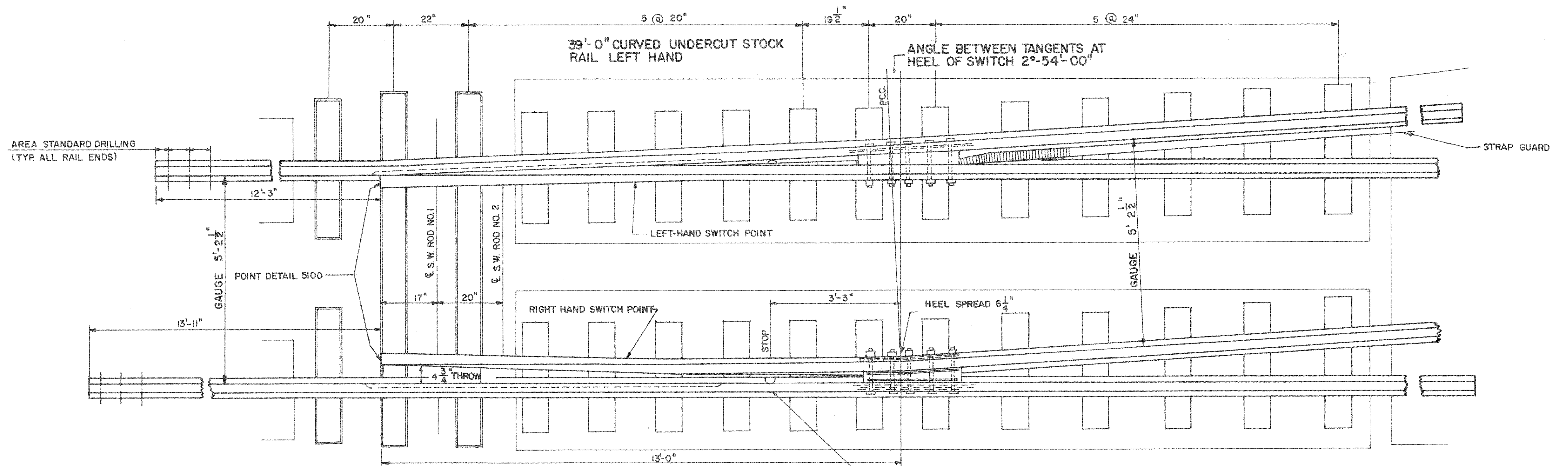
56	LORD FASTENER TYPE 1	
3	LORD FASTENER TYPE 3	
1	LORD FASTENER TYPE 3A	
58	LORD FASTENER TYPE 4	
236	FEMALE INSERTS (LORD)	
102	INSERTS (HIXSON) SEE BELOW	
1	RAIL CLIP	HIDF-HC-8E0
1	RAIL CLIP	HIDF-HC-8E1
4	RAIL CLIP	HIDF-HC-8E10CUT
67	RAIL CLIP	HIDF-HC-8E10
34	RAIL CLIP (H REVERSED)	HIDF-HC-8E6
107	INDEX PLATE	HIDF-HC-8E2
12	RAIL BRACE	HIST-21-3E
73	3/4" 10x3 1/2" LONG CARRIAGE BOLT	HIDF-HC-8F4
34	3/4" 10x4 1/2" LONG CARRIAGE BOLT	HIDF-HC-8F5
107	3/4" 10 STOVER LOCKNUT	HIDF-HC-8F2
102	7/8-9x4 1/8" (HIXSON) INSERT ASSEMBLY	
102	7/8-9x4 1/8" LONG HEX HEAD HEAVY DUTY BOLT	HIDF-HC-8G5
107 PR	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F9
102 PR	NORD-LOCK WASHER (INSERTS)	HIDF-HC-8F10
2	HIXSON FASTENER HI-2AR	HIST30A-3R
10	HIXSON FASTENER HI-2R	HIST30-3R
2	HIXSON FASTENER HI-1D	HIST21D-3
1	HIXSON FASTENER HI-1A	HIST1C-3
6	HIXSON FASTENER HI-1B	HIST21B-3
6	HIXSON FASTENER HI-1A	HIST21A-3
21	HIXSON FASTENER HI-1R	HIST21-3R
1	INSULATED GAUGE PLATE HI-24AK	HISTA-3HR
3	INSULATED GAUGE PLATE HI-1GA	HIST-3H
QTY PER UNIT	SPECIAL DIRECT FIXATION FASTENERS ONLY	PART NO.

TURNOUT DATA		
NUMBER	8	
ANGLE	7° 09' 10"	
TOE LENGTH	6' 3"	
HEEL LENGTH	9' 5"	
TOTAL LENGTH	15' 8"	
TOE SPREAD	8' 13/16"	
HEEL SPREAD	14' 9/16"	
POINT DETAIL	5100	
LENGTH SW. POINT	16' 6"	
SWITCH ANGLE	19° 48' 32"	
HEEL SPREAD	6' 1/4"	
ACTUAL LEAD	73' 3 1/8"	
STRAIGHT CLOSURE LENGTH	50' 6 7/8"	
CURVED CLOSURE LENGTH	51' 1 1/8"	
CENTERLINE RADIUS	504.874'	
DEGREE OF CURVE (ARC)	11° 20' 55"	
TANGENT ADJ. TO TOE OF SW.	2' 26' 2"	
TANGENT ADJ. TO TOE OF FROG	1' 50"	

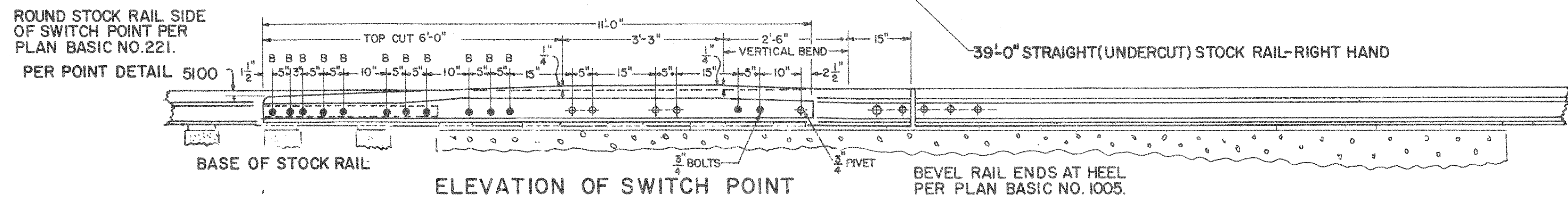
CONTROL ELEV. LT. & R.T. TRACK					
STATION	TOP RAIL	-0.677 TOP CONC.	STATION	TOP RAIL	-0.677 TOP CONC.
R 636+23.41	763.293	762.616	R 635+44.69	763.477	762.800
R 636+18.12	763.306	762.629	R 635+39.75	763.489	762.812
R 636+10.00	763.325	762.648	R 635+30.00	763.512	762.835
R 636+04.29	763.338	762.661	R 635+25.47	763.522	762.845
R 635+96.50	763.356	762.679	R 635+21.33	763.537	762.859
R 635+96.00	763.357	762.680	R 635+19.33	763.540	762.862
R 635+90.30	763.371	762.694	R 635+18.33	763.546	762.869
R 635+82.37	763.389	762.712	R 635+17.00	763.552	762.876
R 635+79.65	763.405	762.728	R 635+15.00	763.564	762.888
R 635+74.64	763.407	762.730	R 635+13.00	763.571	762.894
R 635+69.90	763.435	762.762	R 635+11.00	763.577	762.900
R 635+60.90	763.442	762.765	R 635+9.00	763.583	762.906
R 635+59.70	763.445	762.768	R 635+8.00	763.586	762.909



REVISION				ATLAS RAILROAD CONSTRUCTION CO.				REF. HIXSON DWG. NO.			
NO.	DESCRIPTION	BY	DATE	DESIGN	DATE	CONTRACT	TITLE	SCALE	REV	DRAWING NO.	PROJECT-RECORD COPY
1	CHANGE SIZE AND FASTENER SPACING CONTRACTOR WORK "AS-BUILT" REV.	J.S.	5-9-84	J.S.	6-17-84	STAGE I LIGHT RAIL TRANSIT SYSTEM	NO 8 TURNOUT PLAN AND ANCHORAGE LAYOUT CONSTRUCTION PLAN	1/4" = 1'-0"		47-065	
2		J.S.	5-9-84	J.S.	6-17-84	PROJECT NO. PA 03 0095					
3		J.S.	5-9-84	J.S.	6-17-84	CONTRACT NO. CY 810					
4		J.S.	5-9-84	J.S.	6-17-84	TRACKWORK INSTALLATION C.B.D.					



PLAN OF LEFT HAND SWITCH LAYOUT



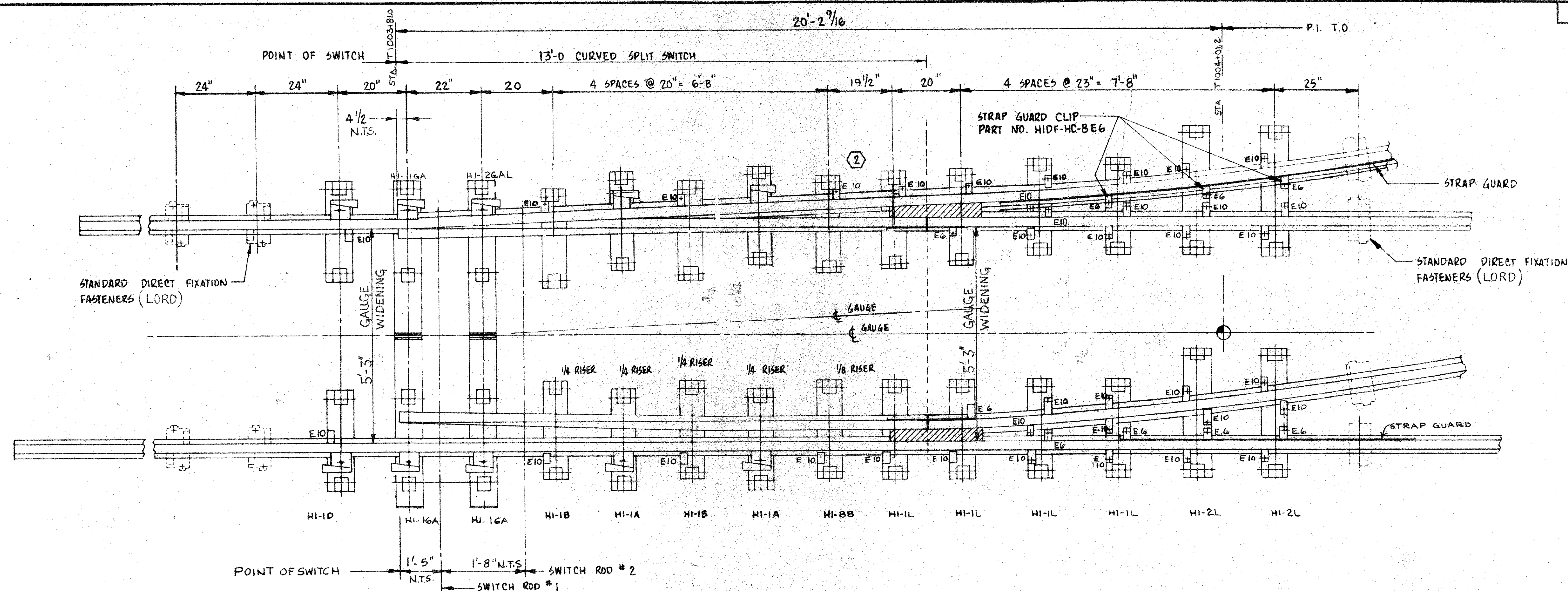
(SEE NOTE 6)	BILL OF MATERIAL 13'-0" CURVED SPLIT SWITCH - FABRICATION	
NUMBER	DESCRIPTION	
1	PAIR DOUBLE REINFORCED SWITCH POINTS COMPLETE, PLANING PER DETAIL 5100, AREA PLAN BASIC NUMBER 221, STOPS PER DETAIL 2024 AREA PLAN BASIC NUMBER 221, VERTICAL DESIGN CLIPS PER MANUFACTURER'S STANDARD	
2	HEEL BLOCK ASSEMBLIES COMPLETE PER DETAIL H25 AREA PLAN BASIC NUMBER 221.	
1	INSULATED OR NONINSULATED SWITCH ROD NUMBER 1 AS SPECIFIED, VERTICAL DESIGN PER MANUFACTURER'S STANDARD.	
1	INSULATED OR NONINSULATED SWITCH ROD NUMBER 2 AS SPECIFIED, VERTICAL DESIGN PER MANUFACTURER'S STANDARD	

NOTES:

1. STOCK RAILS SHALL BE UNDERCUT CONFORMING TO DETAIL 5100 AREA PLAN BASIC N° 221.
2. FOR STRAP GUARD DETAILS SEE DRAWING TS-027.
3. SWITCH DESIGN APPLICABLE TO N°4 AND N°6 TURNOUTS OF DIRECT FIXATION DESIGN. SEE DRAWINGS TS 004 AND TS 010 FOR COMPLETE DETAILS.
4. RAIL SECTION SHALL BE 115 RE.
5. STRAP GUARD ON THE CURVED STOCK RAIL SHALL BE BEVELED FLUSH WITH THE RAIL HEAD AT END ABUTTING THE HEEL BLOCK SO AS TO PROVIDE CLEARANCE FOR THE STANDARD WHEEL CONTOUR, PER DRAWING TS-028, ON THE STRAIGHT CLOSURE RAIL.
6. REFER TO CONTRACT TECHNICAL PROVISIONS FOR DETAILS CONCERNING BILL OF MATERIAL QUANTITIES FOR EACH SWITCH APPLICATION.
7. RAIL FASTNERS, GAUGE PLATES, SWITCH PLATES AND RAIL BRACES SHALL BE SUPPLIED BY INSTALLATION CONTRACTOR.

PROJECT RECORD COPY

TS027	IIS RE STRAP GUARD				DESIGNED: C.E.G.	 THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED, IN PART, THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED	 PARSONS BRINCKERHOFF - GIBBS & HILL <i>R.A. Rizzo</i> APPROVED APR 8 1983	STAGE 1 LIGHT RAIL TRANSIT SYSTEM TRACKWORK STANDARD 13'-0" CURVED SPLIT SWITCH	PARSONS BRINCKERHOFF - GIBBS & HILL A JOINT VENTURE PITTSBURGH, PENNSYLVANIA	CONTRACT No. CY-810	DWG. No. TS-016-O SHT. 41
TS028	WHEEL CONTOURS				DRAWN: R.J.K.						
TS029	STANDARD RAIL SECTIONS AND DRILLING				CHECKED: L.G.L.						
					IN CHARGE: L.G.L.						
					DATE: APRIL 8, 1983						
					SCALE: $\frac{3}{4}" = 1'$	SUBMITTED					
						DATE					
DWG. No.	REFERENCE	No.	DATE	DESCRIPTION	REVISIONS						



PLAN OF LEFT HAND SWITCH LAYOUT

NO. OF UNITS REQD: 10 L.H. (SHOWN) REQUIRED
0 R.H. (SYMM. OPP.)

1 L.H. REQUIRED FOR CA-450 #4 T/O		
QTY. PER UNIT	BILL OF MATERIAL FOR SPECIAL DIRECT FIXATION FASTENERS	PART NO.
3	INSULATED GAUGE PLATE H1-1GA	HIST-3HL
1	INSULATED GAUGE PLATE H1-2GA	HISTA-3HL
2	HIXSON FASTENER NO. H1-ID W/BRACE & RAIL CLIP NO RISER	HIST2ID-3
4	HIXSON FASTENER NO. H1-1B WITH RAIL CLIP & 1/4 RISER	HIST21B-3
4	HIXSON FASTENER NO. H1-1A WITH BRACE & 1/4 RISER	HIST21A-3
8	HIXSON FASTENER NO. H1-1L STANDARD WITH RAIL CLIPS	HIST21-3L
4	HIXSON FASTENER NO. H1-2L WITH RAIL CLIPS	HIST30-3L
2	HIXSON FASTENER NO. H1-1BB WITH RAIL CLIP & 1/8 RISER	HIST21E-3
37	RAIL CLIP	HIDF-HC-8E16
9	RAIL CLIP (USE WITH STRAP GUARD)	HIDF-HC-8E4
46	RAIL CLIP INDEX PLATE	HIDF-HC-8E2
37	3/4-10 x 3 1/2" LONG CARRIAGE BOLT	HIDF-HC-8F4
9	3/4-10 x 4 1/2" LONG CARRIAGE BOLT	HIDF-HC-8F5
56	1/8-9 x 4 1/2" LONG HEX HEAD BOLTS (HVY. DUTY)	HIDF-HC-8F3
46	3/4-10 STOVER LOCKNUT OR EQUIV.	HIDF-HC-8F2
10	RAIL BRACE	HIST-21-3E
56	7/8-9 x 2 1/2" SPECIAL ROUND HD. BOLT	HIDF-POB-11P
56	7/8-9 x 2 1/2" COUPLING NUT	HIDF-POB-11P
46 PR.	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F5
56 PR.	NORD-LOCK WASHER (INSERTS)	HIDF-HC-8F1

— COMPONENTS FOR INSTALLING
HIXSON FASTENER BODIES SHOWN
ABOVE IN BILL OF MATERIAL

NOTE : ALL DIMENSIONS SHOWN ARE $\pm \frac{1}{2}$ "

GAUGE PLATE ASSEMBLIES REQUIRE R.H. ASSEMBLIES FOR R.H. TURNOUTS AND L.H. ASSEMBLIES FOR L.H. TURNOUTS. ALL OTHER SPECIAL DIRECT FIXATION FASTENERS ARE THE SAME FOR R.H. OR L.H. TURNOUTS.

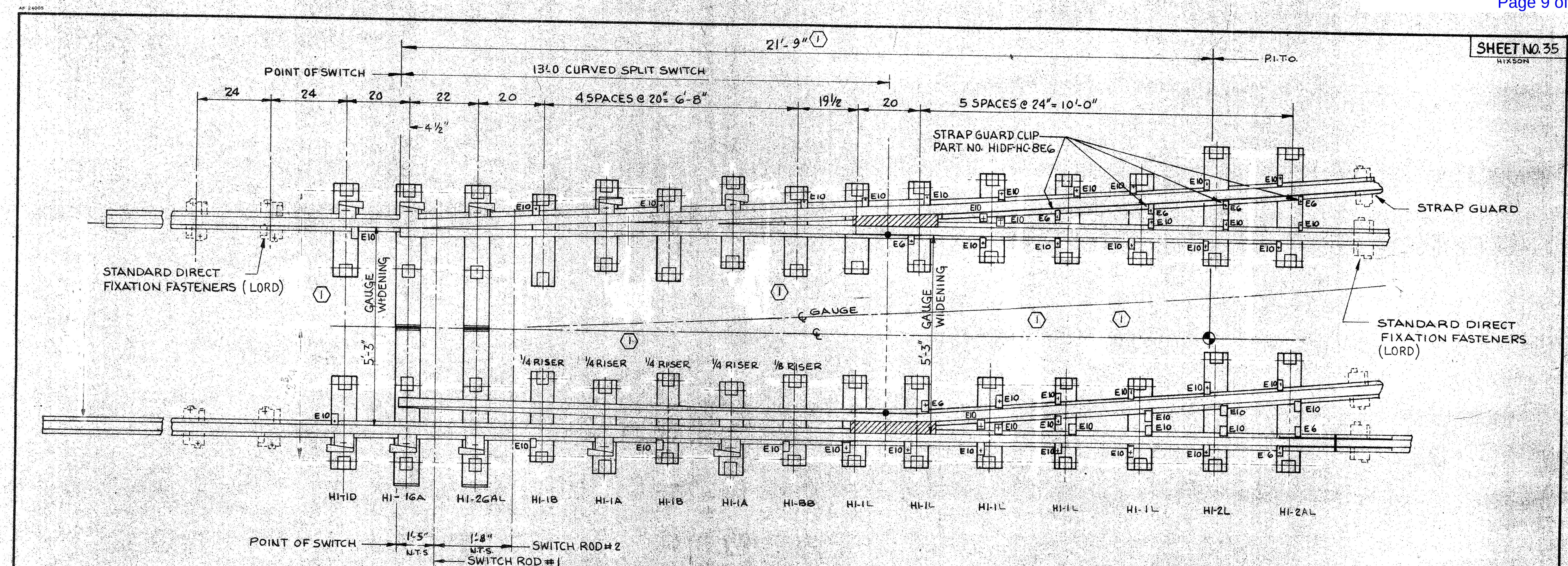
REFERENCE:
SPEC. 02855 D.F. RAIL FASTENER
SPEC. 02859 SPECIAL TRACKWORK

USE WITH DWG. NO. 34-005 & 34-007

— PROJECT-RECORD COPY —

CONSTRUCTION PLAN

REVISIONS	DESCRIPTION	NO.	BY	APP.	DATE	DATE					ATLAS RAILROAD CONSTRUCTION CO.				REF. HIXSON DWG. NO. HIST-130SW-3							
	CONTRACTOR WORK "AS BUILT" REV.		TDC	DAM	5-12-85	DESIGN									SCALE 3/4" = 1'-0"							
						DRWN. RJB 3/11/84									DRAWING NO. ATLAS 34-006							
						CHKD. DAM 3/11/84									PROJECT-RECORD COPY							
						APP. DAM 3/11/84																
							CONTRACTOR WORK "AS BUILT" REV.				CONTRACT STAGE 1 LIGHT RAIL TRANSIT SYSTEM PROJECT NO. : PA-03-0095 CONTRACT NO. : CYBID TRACKWORK INSTALLATION CBD				TITLE CA-450 NO. 4 TURNOUT SWITCH- 13'-0 CURVED SPLIT SWITCH (DIRECT FIXATION)							
							DECIMAL 00				DECIMAL 000				FRACTION				ANGLE			



SHEET NO. 35
HIXSON

TOTAL REQUIRED FOR 2 RIGHT HAND SWITCHES

107 PR.	NORD-LOCK WASHER (CLIPS)	HIDEHC-8F9
120 PR.	NORD-LOCK WASHER (INSERTS)	HIDEHC-8F10
120	7/8-9 x 2 1/2" SPECIAL ROUND HEAD BOLT	HIDEPOB-IIPI
120	7/8-9 x 2 1/2" COUPLING NUT	HIDEPOB-IIPI2
20	RAIL BRACE	HIST 21-3E
107	3/4-10 STOVER LOCKNUT OR EQUIV.	HIDEHC-8F2
120	7/8-9 x 4 1/2" LONG HEX HEAD BOLTS (H.V. DUTY)	HIDEHC-8G5
17	3/4-10 x 4 1/2" LONG CARRIAGE BOLT	HIDEHC-8F5
90	3/4-10 x 3 1/2" LONG CARRIAGE BOLT	HIDEHC-8F4
107	RAIL CLIP INDEX PLATE	HIDEHC-8E2
90	RAIL CLIP	HIDEHC-8E10
17	RAIL CLIP (USE WITH STRAP GUARD)	HIDEHC-8EG
4	HIXSON FASTENER NO. HI-2L	HIST30-3L
4	HIXSON FASTENER NO. HI-1B W/CLIP 1/8 RISER	HIST21E-3
4	HIXSON FASTENER NO. HI-2AL W/RAIL CLIPS	HIST30A-3L
20	HIXSON FASTENER NO. HI-1L STD W/RAIL CLIPS	HIST21-3
8	HIXSON FASTENER NO. HI-1A W/BRACE 1/4 RISER	HIST21A-3
8	HIXSON FASTENER NO. HI-1B W/RAIL CLIPS 1/4 RISER	HIST21B-3
4	HIXSON FASTENER NO. HI-1D W/BR. CLIP NO RISER	HIST21D-3
2	INSULATED GAUGE PLATE HI-2GAL	HISTA-3HL
6	INSULATED GAUGE PLATE HI-1GAL	HIST-3HL
QTY.	DESCRIPTION	PART NO.

BILL OF MATERIAL
FOR SPECIAL DIRECT FIXATION FASTENERS

DESCRIPTION	NO.	BY	APP.	DATE	DATE
CONTRACTOR WORK "AS BUILT" REV.		TDC	DAM	5-6-88	
DESIGN					
DRAWN					
CHND.					
APP.					

PLAN OF LEFT HAND SWITCH LAYOUT

NO. OF UNITS REQ'D: 2 L.H. (SHOWN) FOR CA-450 X-OVER
R.H.

COMPONENTS FOR INSTALLING
HIXSON FASTENER BODIES
SHOWN BELOW IN BILL OF MATERIAL

NOTE: ALL DIMENSIONS SHOWN ARE $\pm 1/2"$

GAUGE PLATE ASSEMBLY HISTA-3H (FASTENER HI-2GA)
REQUIRES R.H. ASSEMBLIES FOR R.H. TURNOUTS AND L.H.
TURNOUTS. GAUGE PLATE ASSEMBLY HIST-3H (FASTENER
HI-1G) AND ALL OTHER SPECIAL DIRECT FIXATION FASTENERS
ARE THE SAME FOR EITHER R.H. OR L.H. TURNOUTS.

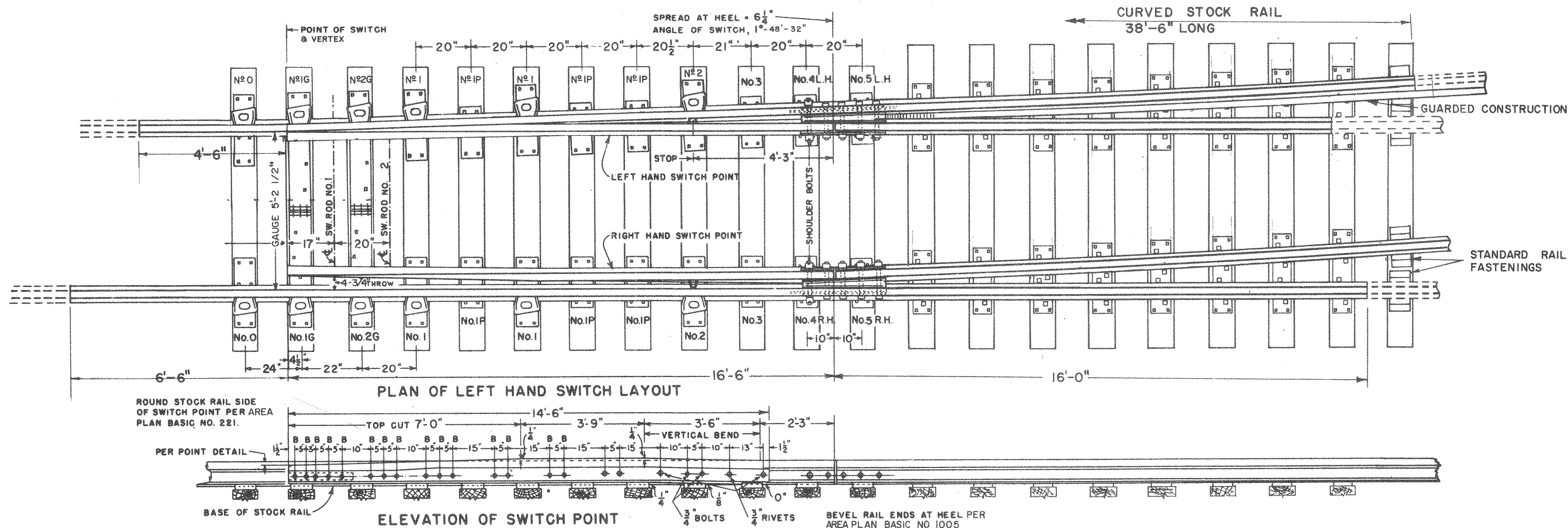
REFERENCE: SPEC. 02855 D.F. RAIL FASTENER
SPEC. 02859 SPECIAL TRACKWORK

USE WITH DWG NO. 34-008
34-009
34-011

PROJECT-RECORD COPY

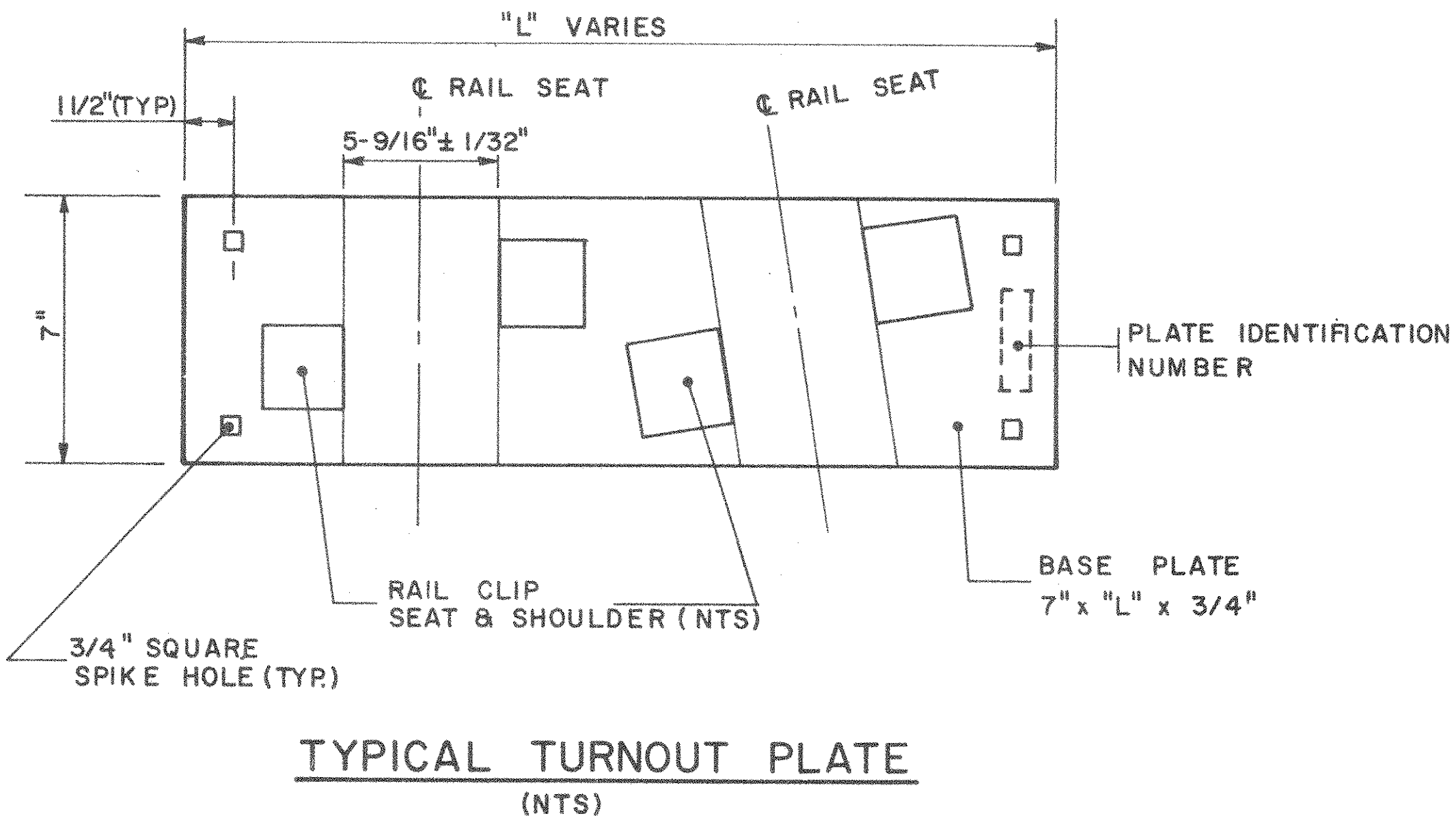
Consulting Engineers
HIXSON, INC.
APPROVED
Approval Does Not Relieve the Contractor of the Responsibility for the Accuracy of this Document or for Full Compliance with the Contract Requirements.
BY: *[Signature]*
DATE: 8-14-96

HIXSON, INC. 1000 N. 10TH ST. MILWAUKEE, WI 53233 (414) 333-1000	ATLAS RAILROAD CONSTRUCTION CO. STAGE I LIGHT RAIL TRANSIT SYSTEM PROJECT NO. PA 03-0095 CONTRACT NO. CV810 TRACKWORK INSTALLATION C&D	TITLE CA-450 NO. 6 TURNOUT SWITCH 13'0" CURVED SPLIT SWITCH (DIRECT FIXATION) CONSTRUCTION PLAN	REF. HIXSON DWG. NO. HISTA130SW-3 SCALE 3/4" = 1'-0" DRAWING NO. ATLAS 34-010 PROJECT-RECORD COPY
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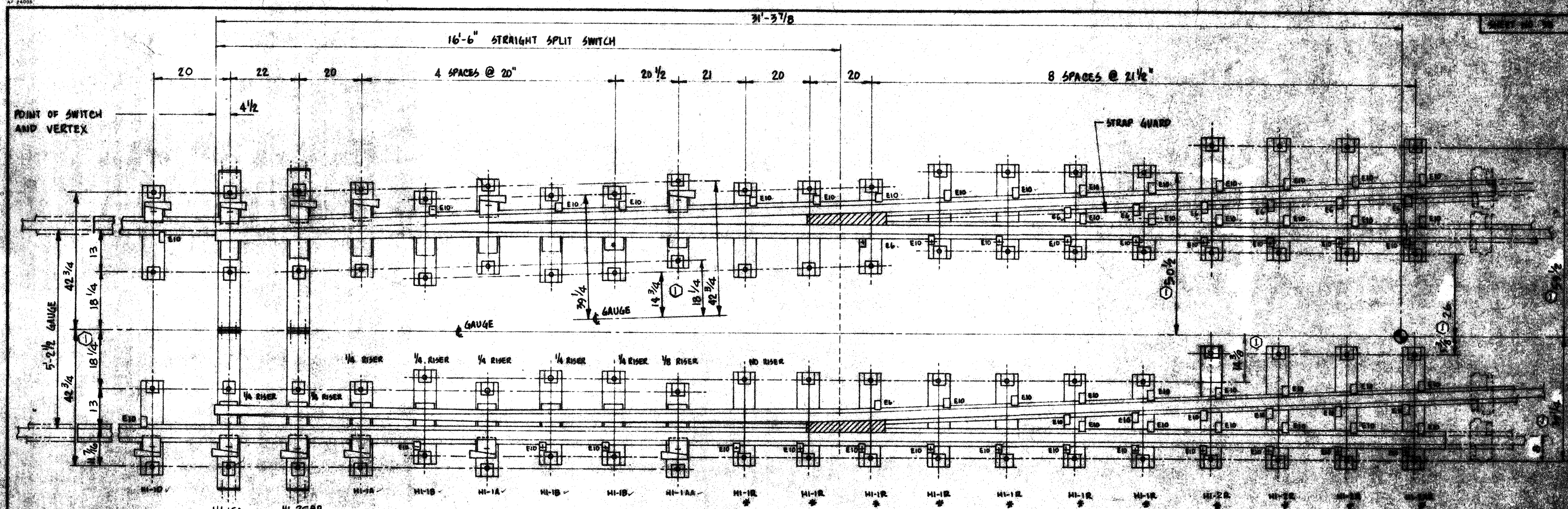


- NOTES:
- 1.) TURNOUT PLATES SHOWN ASSUME A 7" x 15" STANDARD RAIL FASTENING. QUANTITY SHOWN IN BILL OF MATERIALS IS SUBJECT TO CHANGE.
 - 2.) SWITCH DESIGN APPLICABLE TO N°8 TURNOUTS; SEE DRAWING TS 013
 - 3.) GAUGE PLATES SHALL HAVE PROVISION FOR SPLICED CONNECTION TO EXTENSION PLATE SUPPORTING SWITCH MECHANISM. CONNECTION SHALL BE IDENTICAL TO AREA DETAIL 4103 PLAN BASIC N°223. BOLT ASSEMBLIES, INSULATION AND ANGLE PLATES TO BE SUPPLIED BY OTHERS.
 - 4.) STRAP GUARD ON THE CURVED STOCK RAIL SHALL BE BEVELED FLUSH WITH THE RAIL HEAD AT THE END ABUTTING THE HEEL BLOCK SO AS TO PROVIDE CLEARANCE FOR THE STANDARD WHEEL CONTOUR, PER DRAWING TS028, ON THE STRAIGHT CLOSURE RAIL.
 - 5.) RUNNING RAIL SECTION SHALL BE 115RE.
 - 6.) REFER TO CONTRACT TECHNICAL PROVISIONS FOR DETAILS CONCERNING BILL OF MATERIAL QUANTITIES FOR EACH SWITCH APPLICATION.
 - 7.) STOCK RAILS SHALL BE UNDERCUT CONFORMING TO DETAIL 5100, AREA PLAN BASIC N° 221.

BILL OF TRACK MATERIAL 16'-6 STRAIGHT SPLIT SWITCH (SEE NOTE 6)	
NUMBER	DESCRIPTION
6	SHOULDER SLIDE PLATES N°1 P, 1/4" RISER, PER DETAIL 7021 AREA PLAN BASIC N° 223
2	SHOULDER SLIDE PLATES N°3, NO RISER, PER DETAIL 4130 AREA PLAN BASIC N° 223
1	PAIR DOUBLE REINFORCED SWITCH POINTS, PLANING PER DETAIL 5100 AREA PLAN BASIC N° 221. STOPS PER DETAIL 2024 AREA PLAN BASIC N° 221. VERTICAL CLIPS PER MANUFACTURER'S STANDARDS.
4	SHOULDER HEEL PLATES, 1 PAIR N° 4 RH & LH, 1 PAIR N° 5 RH & LH PER DETAIL 3140 & 3149 AREA PLAN BASIC N° 223
16	TURNOUT PLATES PER DETAIL THIS DRAWING.
8	SOLID BASE SLIDE PLATES FOR USE WITH ADJUSTABLE RAIL BRACES, 2 N° 0, AND 4 N° 1, 1/4" RISER PER DETAIL 7020 & 2 N° 2, 1/8" RISER PER DETAIL 7022, AREA PLAN BASIC N° 224.
2	HEEL JOINT ASSEMBLIES COMPLETE PER DETAIL 1125, AREA PLAN BASIC N° 221
1	INSULATED GAUGE PLATE N°2G PER DETAIL 7026 AREA PLAN BASIC N°224 AND DETAIL 4103 AREA PLAN BASIC N° 223.
1	INSULATED SWITCH ROD N°1 VERTICAL DESIGN PER MANUFACTURER'S STANDARD.
1	INSULATED SWITCH ROD N°2 VERTICAL DESIGN PER MANUFACTURER'S STANDARD.
12	ADJUSTABLE RAIL BRACES PER AREA PLAN BASIC N° 224
1	INSULATED GAUGE PLATE N° 1G PER DETAIL 7026 AREA PLAN BASIC N° 224 AND DETAIL 4103 AREA PLAN BASIC N° 223



TS013	BALLASTED N°8 TURNOUT				DESIGNED: LGL	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED, IN PART, THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED		SUBMITTED	DATE		PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH, PENNSYLVANIA		
TS027	115RE STRAP GUARD				DRAWN: BMW						STAGE I LIGHT RAIL TRANSIT SYSTEM TRACKWORK STANDARD		
TS028	WHEEL CONTOURS				CHECKED: DJB						16'-6 STRAIGHT SPLIT SWITCH		
TS029	STANDARD RAIL SECTIONS & DRILLINGS				IN CHARGE: LGL						PARSONS BRINCKERHOFF - GIBBS & HILL A JOINT VENTURE PITTSBURGH, PENNSYLVANIA		
					DATE: APRIL 8, 1983	1/2" = 1'-0				APR 8 1983	CONTRACT No. CY-810		
					SCALE:						DWG. No. TS 014-0		
DWG. No.	REFERENCE	REVISIONS			No.	DATE	DESCRIPTION	SUB	APP.		SHT. 39		



PLAN OF LEFT HAND SWITCH LAYOUT

NO. OF UNITS REQD: NONE L.H. SHOWN
ONE R.H. SYMM. OPPOSITE

QTY PER UNIT	BILL OF MATERIAL FOR SPECIAL DIRECT FIXATION FASTENERS
1	INSULATED GAUGE PLATE H157-3H
1	INSULATED GAUGE PLATE H157B-3H
2	HIXSON FASTENER HI-1D WITH RAIL BRACE & RAIL CLIP H157D-3
4	HIXSON FASTENER HI-1A WITH RAIL BRACE & 1/4 RISER H157A-3
6	HIXSON FASTENER HI-1B WITH RAIL CLIP & 1/4 RISER H157B-3
2	HIXSON FASTENER HI-1A WITH RAIL BRACE & 1/8 RISER H157C-3
14	HIXSON FASTENER HI-1R WITH RAIL CLIPS H157R-3
6	HIXSON FASTENER HI-2R WITH RAIL CLIPS H157D-3
2	HIXSON FASTENER HI-2A WITH RAIL CLIPS H157A-3
COMPONENTS FOR INSTALLING FASTENERS ABOVE	
64	RAIL CLIP 2 1/4 IN. ADJUSTMENT H157-10-10
8	RAIL CLIP 2 1/4 IN. ADJUSTMENT STRAP AD. EQUAL POINT H157-10-10
64	1/4-10 X 3 1/2 CARTRIDGE HEAD BOLT H157-10-10
8	1/4-10 X 4 1/2 CARTRIDGE HEAD BOLT H157-10-10
12	1/4-10 STUDY LOCKOUT OR EQUIV. H157-10-10
12	WASHER PLATE H157-10-10
12	RAIL BRACE COUPLER H157-10-10
12	1/4-10 X 2 1/2 HEX HEAD BOLT H157-10-10
12	1/4-10 X 2 1/2 L6 COUPLING NUT H157-10-10
12	1/4-9 X 2 1/2 SPECIAL RD. WR. BOLT H157-10-10

NOTE: TYPICAL PLAN, ACTUAL FASTENERS AND CLIPPING VARIES SEE ATLAS DWG'S FOR DETAILS
SERIES 34 CSD
42 SOUTH HILLS JUNCTION
47 PAN HANDLE BRIDGE

INSTALLATION NOTE:
ITEMS MARKED * (12 PLACES) REQUIRE R.H. FASTENERS FOR R.H. SWITCHES AND L.H. FASTENERS FOR L.H. SWITCHES. ALL OTHER FASTENERS ARE THE SAME FOR EITHER R.H. OR L.H.
REFERENCE: SPEC. 02855 V.F. RAIL FASTENERS
SPEC. 02859 SPECIAL TRACKWORK

DESCRIPTION	NO.	BY	APP.	DATE
RELOCATED FASTENERS REVISED	1	ISP	RAE	8-22-83
QUANTITIES IN BILL OF MATERIAL	2	ISP	RAE	8-22-83
OPERATED TO "AS BUILT" STANDARDS	3	ISP	RAE	8-22-83

HIXSON, INC.
— AGENT —

EVANS EVANS TRACH PRODUCTS
PRODUCTS COMPANY & CONSTRUCTION COMPANY
A SUBSIDIARY

ATLAS RAILROAD CONSTRUCTION CO.

CONTRACT STAGE 1 LIGHT RAIL TRANSMIT SYSTEM
PROJECT NO. PA-03-0095
CONTRACT NO. C1810
TRACKWORK INSTALLATION CSD

16'-6" STRAIGHT SPLIT SWITCH

H157-166SW-3



APPROVAL DOES NOT CONSTITUTE A GUARANTEE OF THE RESPONSIBILITY OF THE DESIGNER OF THIS DOCUMENT OR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

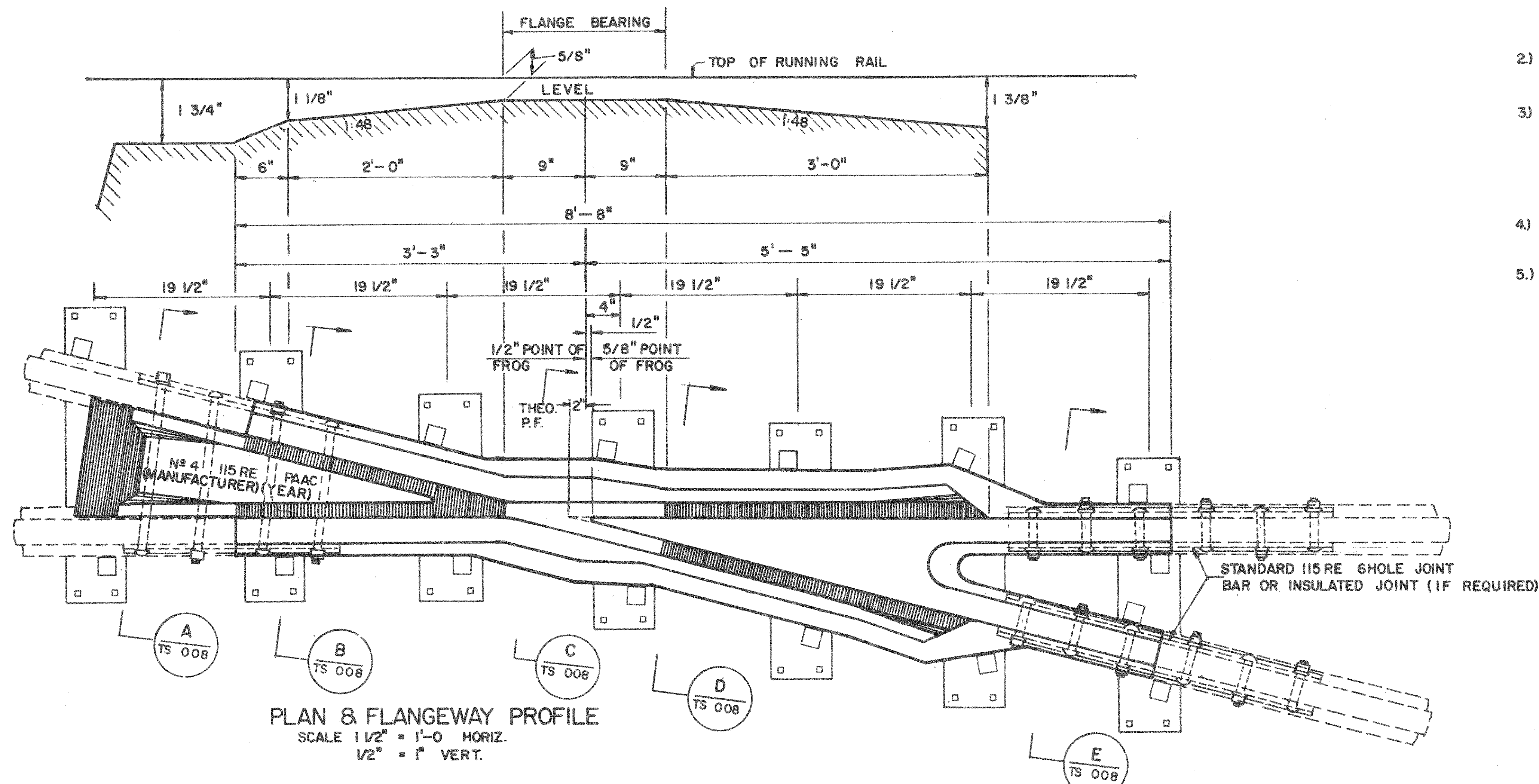
BY: [Signature]
DATE: 8-22-83

Page 12 of 17

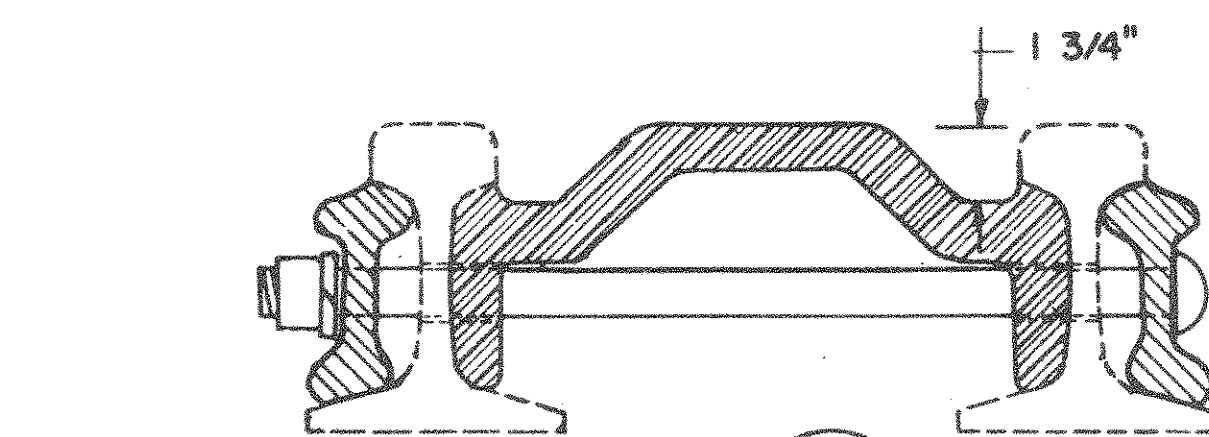
NOTES:

- 1.) RAIL AND OTHER TRACK MATERIAL SHALL CONFORM TO IIS RE SECTION .
TOE JOINT SHALL MATCH STANDARD 4 HOLE DRILLING. HEEL JOINT SHALL
MATCH STANDARD 6 HOLE DRILLING.
- 2.) FOR ADDITIONAL DETAIL OF SOLID MANGANESE FROGS REFER TO AREA PLAN
BASIC N° 671.
- 3.) FROG PLATES SHOWN ASSUME A 7"x 15" STANDARD RAIL FASTENING.
QUANTITIES SHOWN IN BILL OF MATERIALS SUBJECT TO CHANGE.
- 4.) FROG NUMBER, CONNECTING RAIL SECTION, PAAC, MANUFACTURER'S NAME AND
YEAR OF MANUFACTURE TO BE CAST ON TOE EXTENSION AS SHOWN.
- 5.) FROG PLATE REQUIRED UNDER HEEL JOINTS OF FROG SHALL BE PROVIDED
WITH INSULATING PADS AND CLIPS WHEN SPECIFIED.

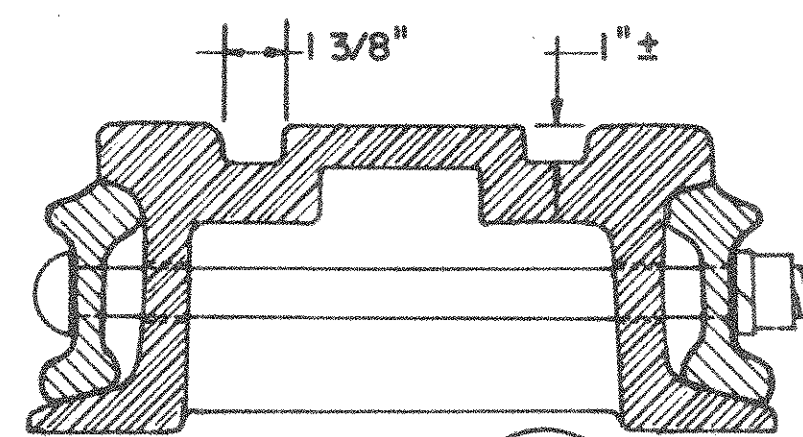
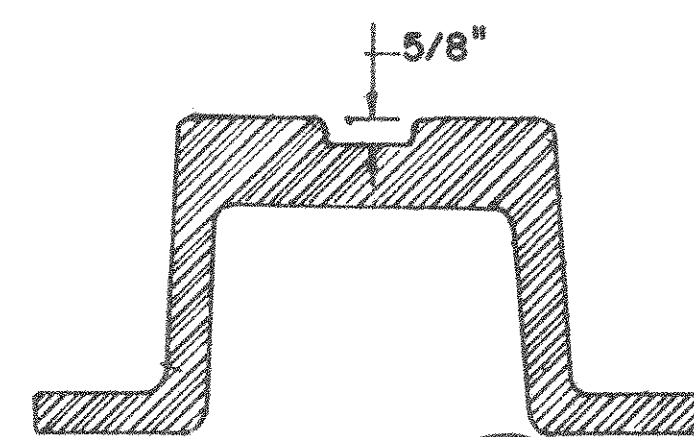
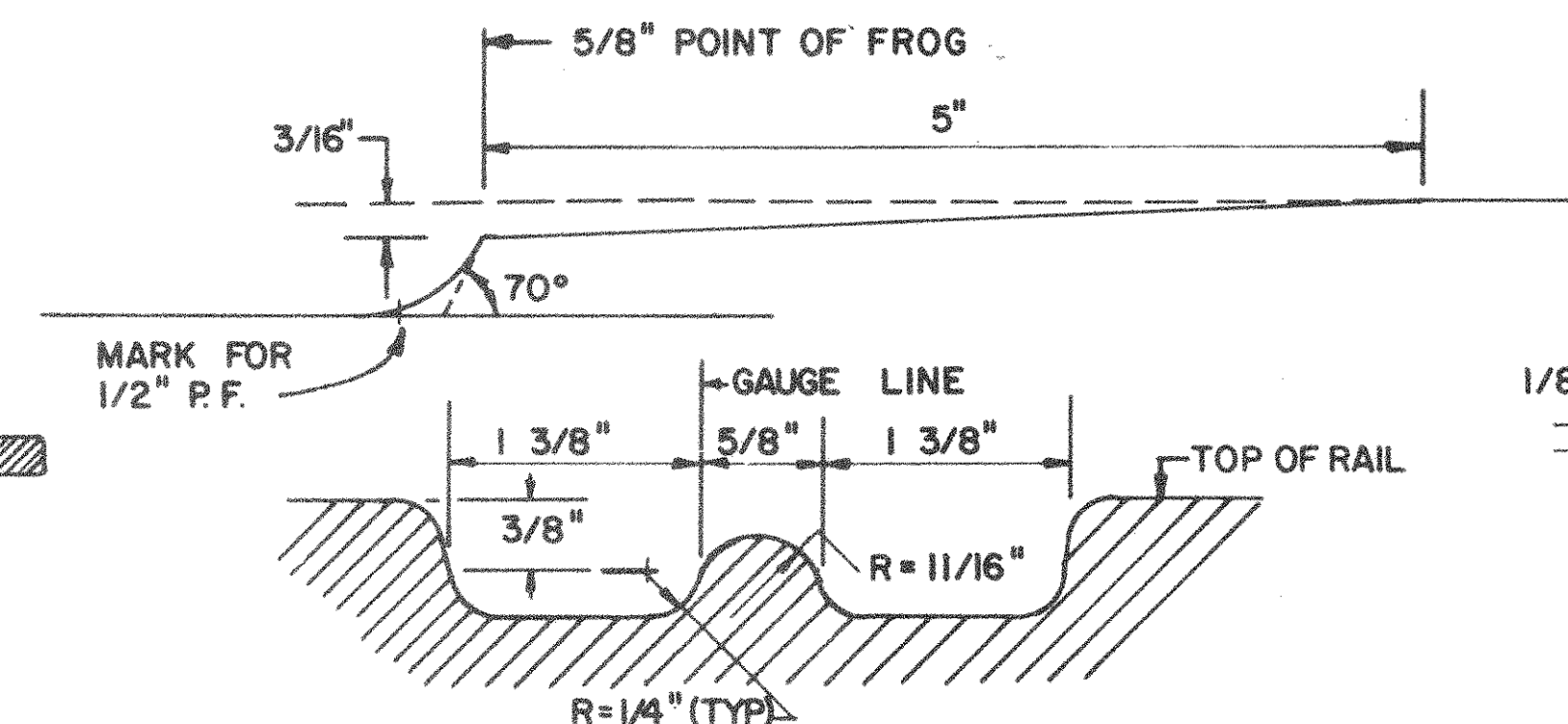
BILL OF MATERIAL			
BALLASTED	EMBEDDED	DIRECT FIXATION	DESCRIPTION
1	1	1	SOLID MANGANESE STEEL FROG
1	1	1	PAIR 4 HOLE JOINT BARS WITH LONG BOLTS
2	2	2	PAIR 6 HOLE JOINTS COMPLETE
7	—	—	FROG PLATES WITH RAIL FASTENINGS.



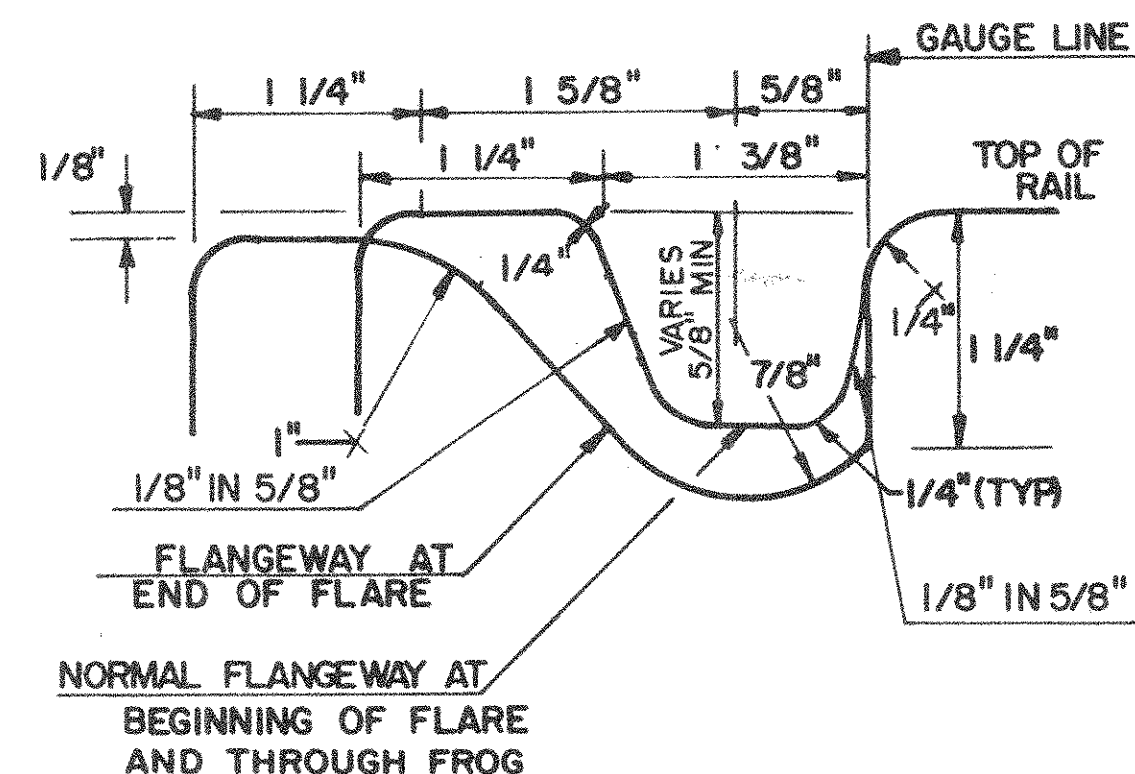
PLAN & FLANGEWAY PROFILE
SCALE 1 1/2" = 1'-0" HORIZ.
1/2" = 1" VERT.



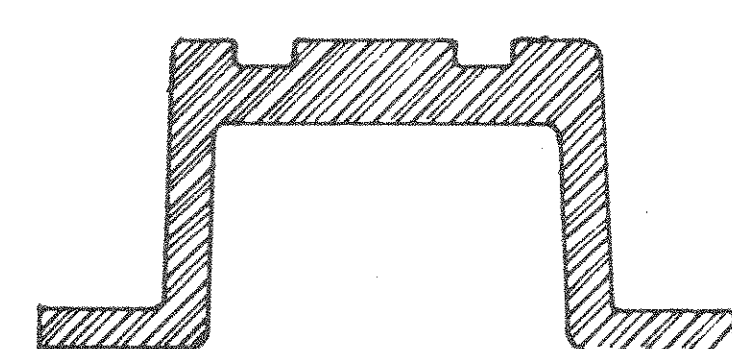
SECTION (A
TS 008)

SECTION SECTION 

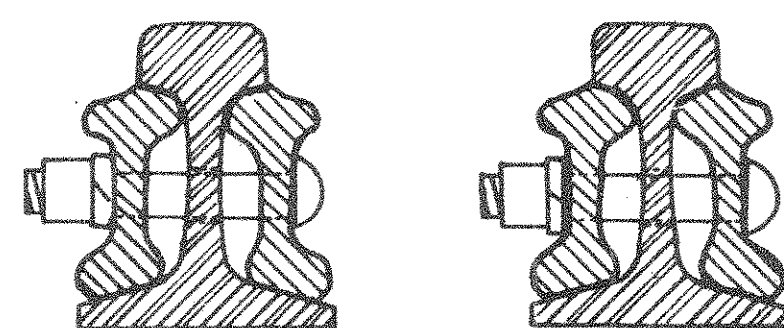
SECTION AND ELEVATION AT 5/8"
POINT OF FROG.
SCALE FULL SIZE



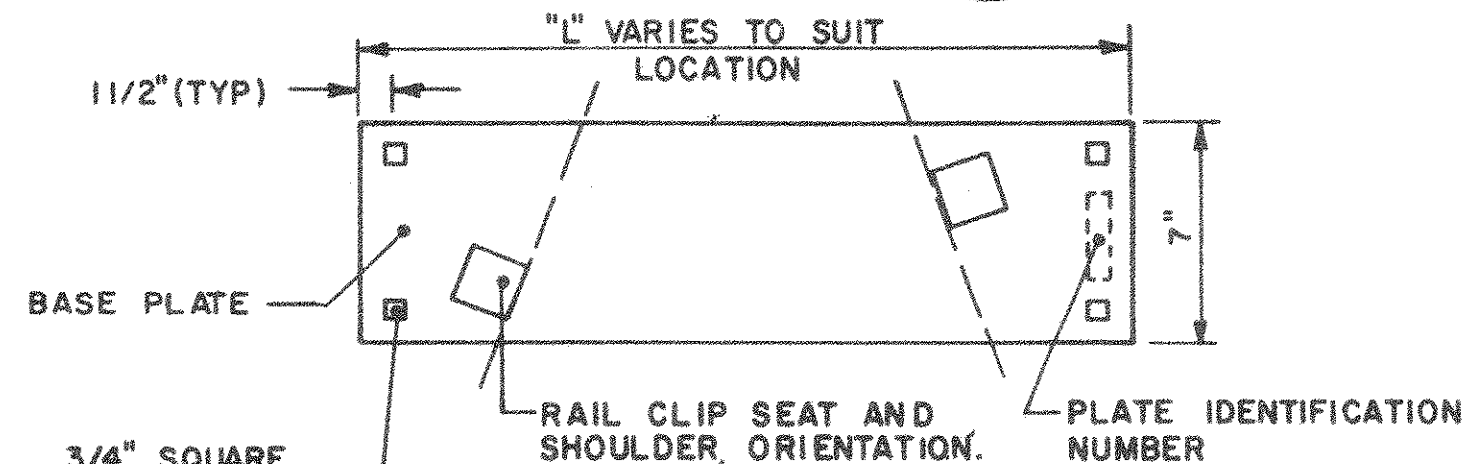
FLANGWAY SECTIONS
NORMAL AND FLARED
SCALE: FULL SIZE



SECTION TS 008



SECTION (L
TS 00

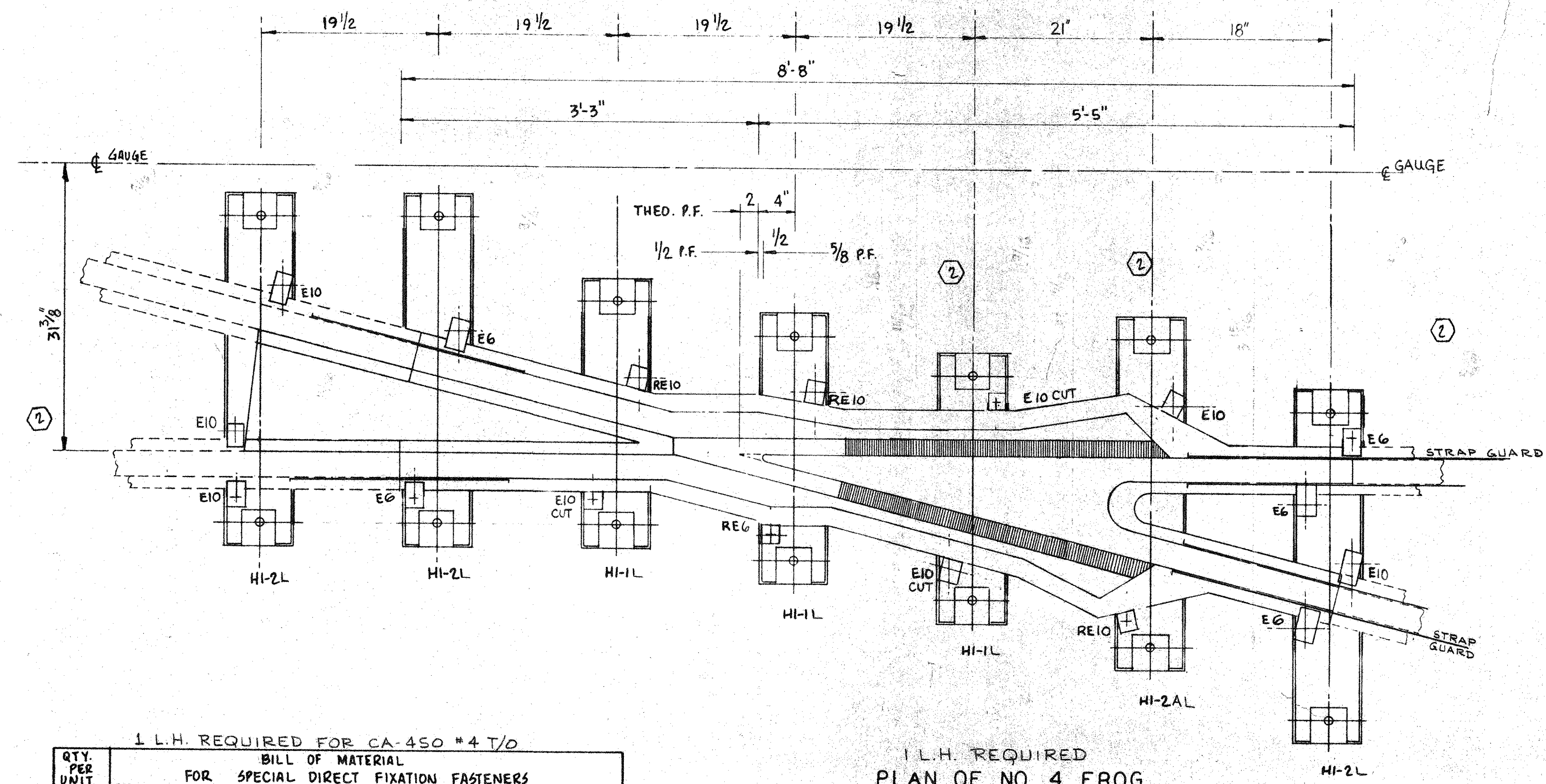


TYPICAL FROG PLATE
(NTS)

PROJECT RECORD COPY

						DESIGNED: LGL	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED, IN PART, THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED		SUBMITTED DATE	 PARSONS BRINCKERHOFF - GIBBS & HILL <i>R. A. Rizzo</i> APPROVED APR 8 1983	PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH, PENNSYLVANIA STAGE I LIGHT RAIL TRANSIT SYSTEM TRACKWORK STANDARD No. 4 SOLID MANGANESE FLANGE BEARING FROG PARSONS BRINCKERHOFF - GIBBS & HILL A JOINT VENTURE PITTSBURGH, PENNSYLVANIA CONTRACT NO. CY-810 DWG. NO. TS 008-O SMT. 34
						DRAWN: LGL/MMA					
						CHECKED: CEG					
						IN CHARGE: LGL					
						DATE: APRIL 8, 1983					
						SCALE: AS NOTED					
DWG. No.	REFERENCE	No.	DATE	DESCRIPTION	SUB APP.	REVISIONS					

SHEET NO. 33
HIXSON



1 L.H. REQUIRED FOR CA-450 #4 T/O

QTY. PER UNIT	BILL OF MATERIAL FOR SPECIAL DIRECT FIXATION FASTENERS	
3	HIXSON FASTENER HI-1L	HIST21-3L
3	HIXSON FASTENER HI-2L	HIST30-3L
1	HIXSON FASTENER HI-2AL	HIST30A-3L

COMPONENTS FOR INSTALLING HIXSON FASTENERS ABOVE:

3	RAIL CLIP	HIDF-HC-8RE10 CUT
1	RAIL CLIP	HIDF-HC-8RE6
3	RAIL CLIP	HIDF-HC-8RE10
5	RAIL CLIP	HIDF-HC-8E10
5	RAIL CLIP	HIDF-HC-8E6
17	INDEX PLATE	HIDF-HC-8E2
11	3/4-10 x 3 1/2 LG. CARRIAGE BOLT	HIDF-HC-8F4
6	3/4-10 x 4 1/2 LG. CARRIAGE BOLT	HIDF-HC-8F5
17	3/4-10 STOVER LOCKNUT	HIDF-HC-8F2
14	7/8-9 x 4 1/8\" ANCHOR BOLT	HIDF-HC-8G5
14	7/8-9 x 2 1/2\" COUPLING NUT	HIDF-POB-11P2
14	7/8-9 x 2 1/2\" SPECIAL RD. HD. BOLT	HIDF-POB-11P1
17 PR.	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F9
14 PR.	NORD-LOCK WASHER (INSERTS)	HIDF-HC-8F10

1 L.H. REQUIRED
PLAN OF NO. 4 FROG
INSTALLED WITH HIXSON TURNOUT FASTENERS
(2) NO. REQ'D. R.H. SHOWN
1 L.H.(SYMM.OPPOSITE) REQUIRED FOR CA-450 #4 T.O.

NOTE: ALL DIMENSIONS SHOWN ARE $\pm 1/2$ \"
TRACK GAUGE: 5'-2 3/4\"
FROG ANGLE: 4°-15'
REFERENCE: SPEC. 2855 D.F. RAIL FASTENERS
SPEC. 2859 SPECIAL TRACKWORK
USE WITH DWG. NO. 34-005 & 34-006

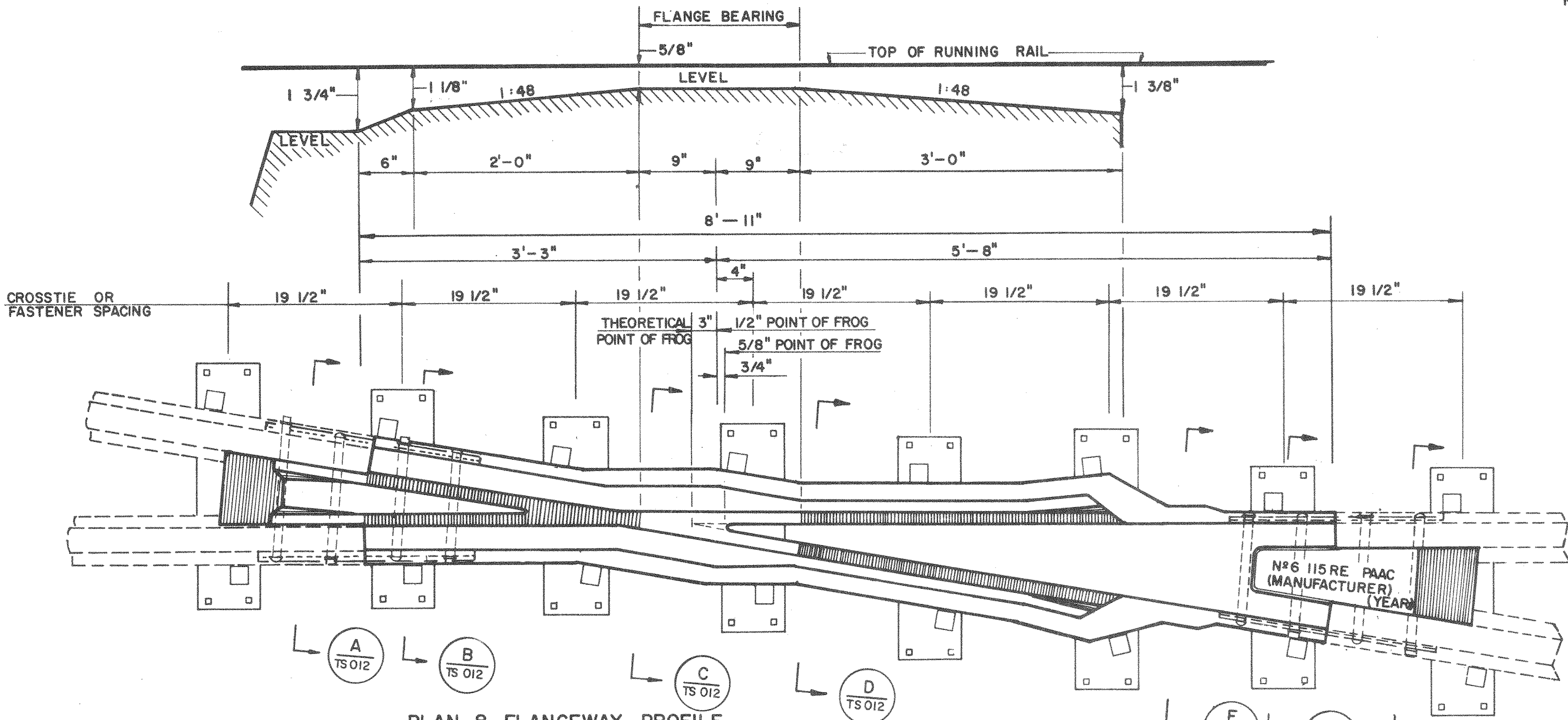
* HIXSON RAIL CLIP FIELD CUT TO FIT @ FROG CASTING

PROJECT-RECORD COPY

REVISIONS	DESCRIPTION	NO.	BY	APP.	DATE	DESIGN	DATE	ATLAS RAILROAD CONSTRUCTION CO.				REF. HIXSON DWG. NO.		
	CONTRACTOR WORK "AS BUILT" REV.					DRWN. RJB 3/16/84		STAGE 1 LIGHT RAIL TRANSIT SYSTEM				HIST-4FR-3		
						CHKD. DAM 3/16/84		PROJECT NO. PA-03-0095				SCALE 1 1/2\" = 1'-0\"		
						APP. DAM 3/16/84		CONTRACT NO. CYB10				DRAWING NO. ATLAS 34-007		
								TRACKWORK INSTALLATION CBD				NO. 4 SOLID MANGANESE FLANGE BEARING FROG CONSTRUCTION PLAN		PROTECT-RECORD COPY

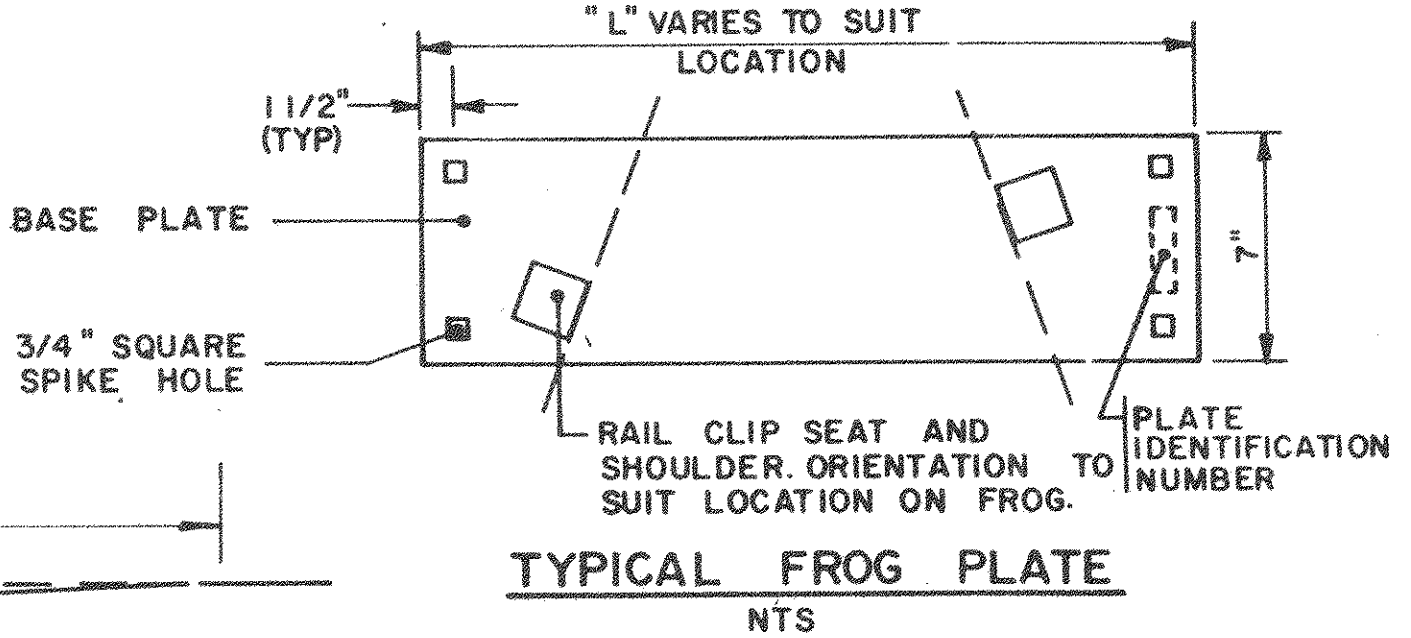
NOTES:

- 1.) RAIL AND OTHER TRACK MATERIAL SHALL CONFORM TO 115RE SECTION. TOE AND HEEL JOINT DRILLING AND BARS SHALL MATCH STANDARD AREA 4 HOLE DRILLING.
- 2.) FOR ADDITIONAL DETAIL OF SOLID MANGANESE FROGS REFER TO AREA PLAN BASIC NUMBER 671.
- 3.) FROG PLATES SHOWN ASSUME A 7"x15" STANDARD RAIL FASTENING. QUANTITIES SHOWN IN BILL OF MATERIALS SUBJECT TO CHANGE.
- 4.) FROG NUMBER, CONNECTING RAIL SECTION, PAAC, MANUFACTURER'S NAME AND YEAR OF MANUFACTURE SHALL BE CAST ON HEEL EXTENSION AS SHOWN.

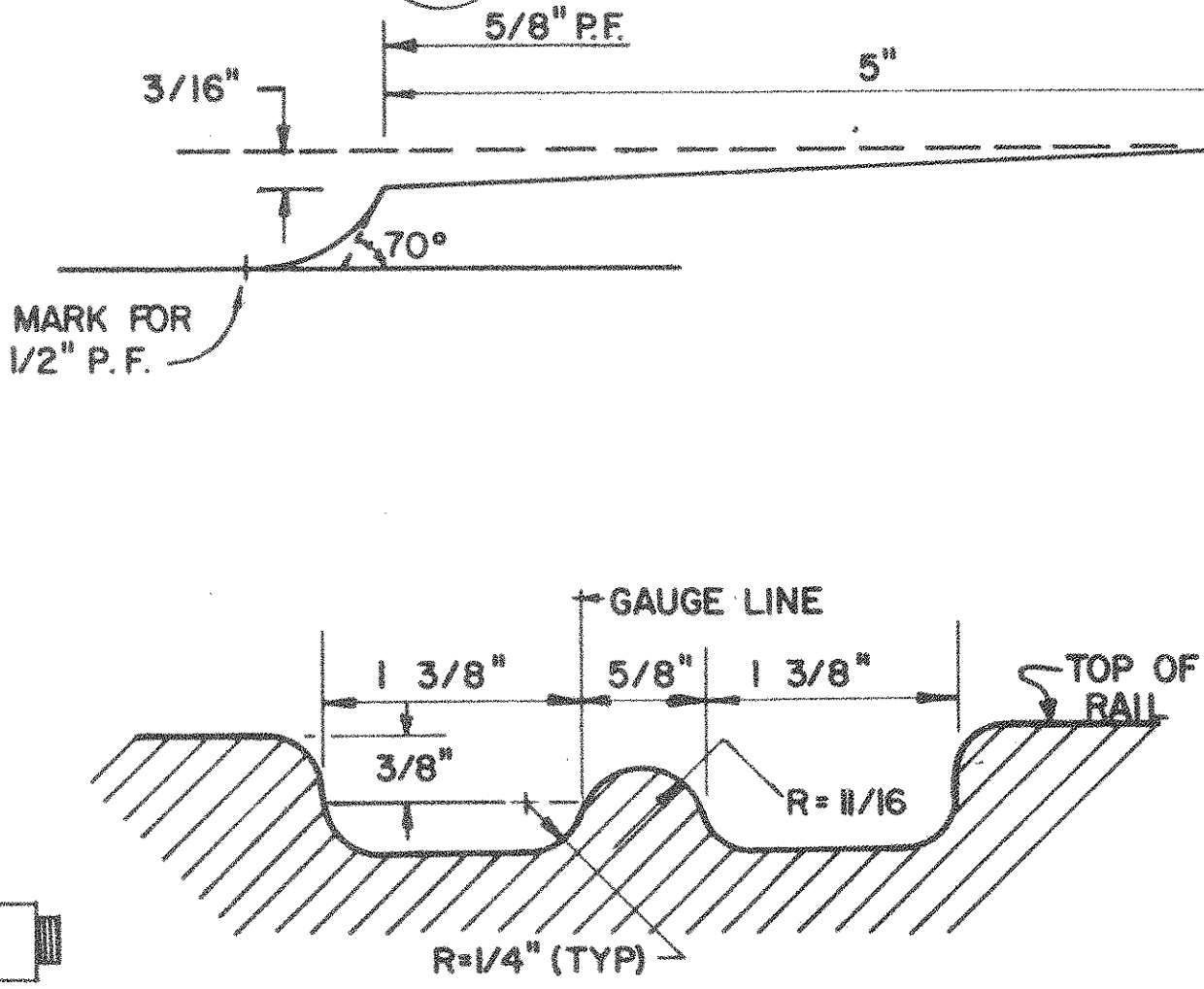
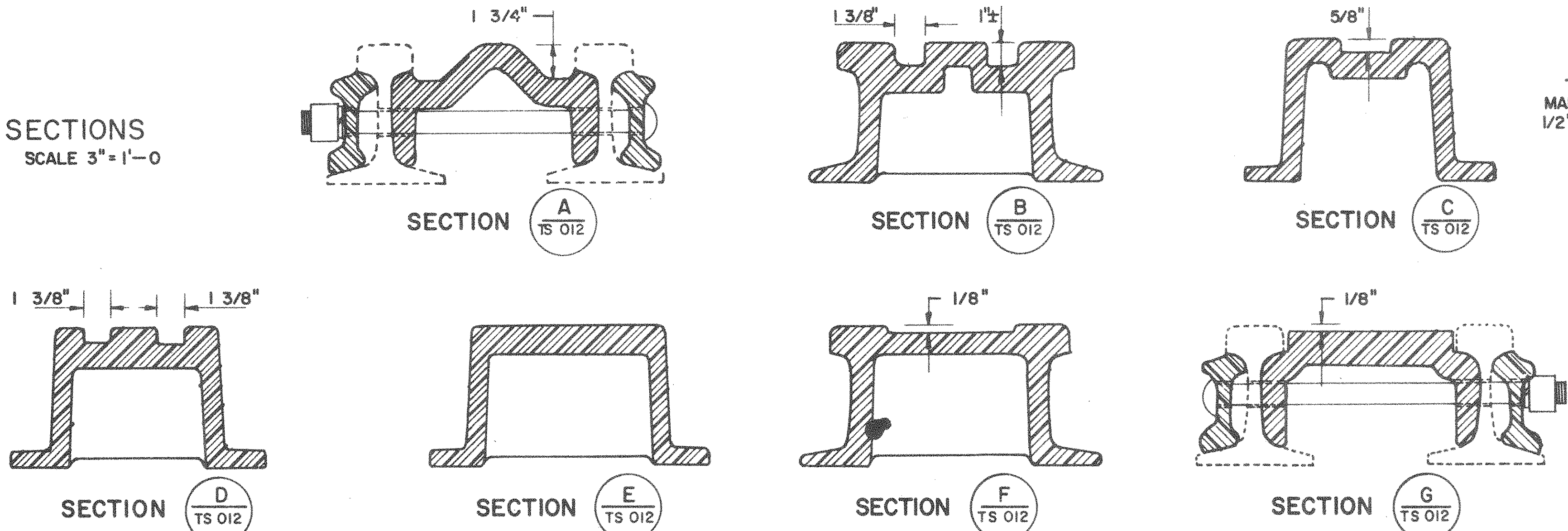


PLAN & FLANGEWAY PROFILE
SCALE: HORZ. 1 1/2" = 1'-0"
VERT. 1/2" = 1"

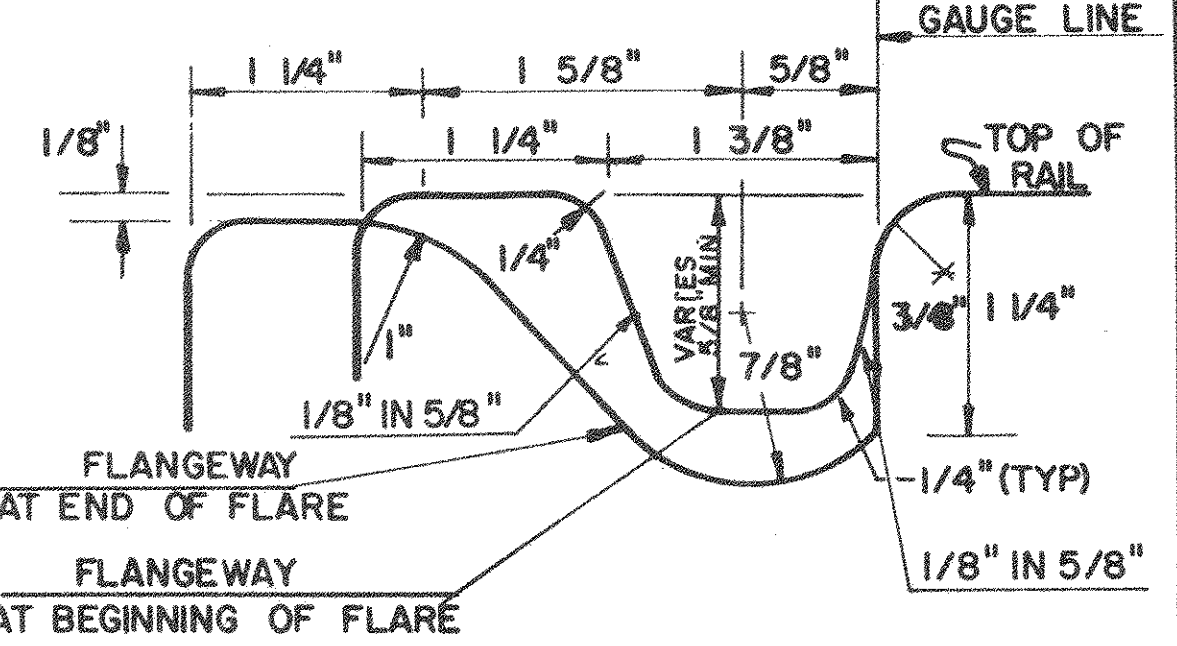
BILL OF MATERIAL			
BALLASTED	EMBEDDED	DIRECT FIXATION	DESCRIPTION
1	1	1	SOLID MANGANESE STEEL FROG
2	2	2	PAIR 4 HOLE JOINT BARS WITH LONG BOLTS
8	-	-	FROG PLATES WITH RAIL FASTENINGS



SECTIONS
SCALE 3" = 1'-0"



SECTION & ELEVATION
AT POINT OF FROG
SCALE: FULL SIZE



FLANGEWAY SECTION
NORMAL & FLARED
SCALE: FULL SIZE

DWG. No.

REFERENCE

No.

DATE

DESCRIPTION

SUB. APP.

DESIGNED: LGL

DRAWN: LGL/BMW

CHECKED: CEG

IN CHARGE: LGL

DATE: APRIL 8, 1983

SCALE: AS NOTED

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED, IN PART, THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED

SUBMITTED

DATE

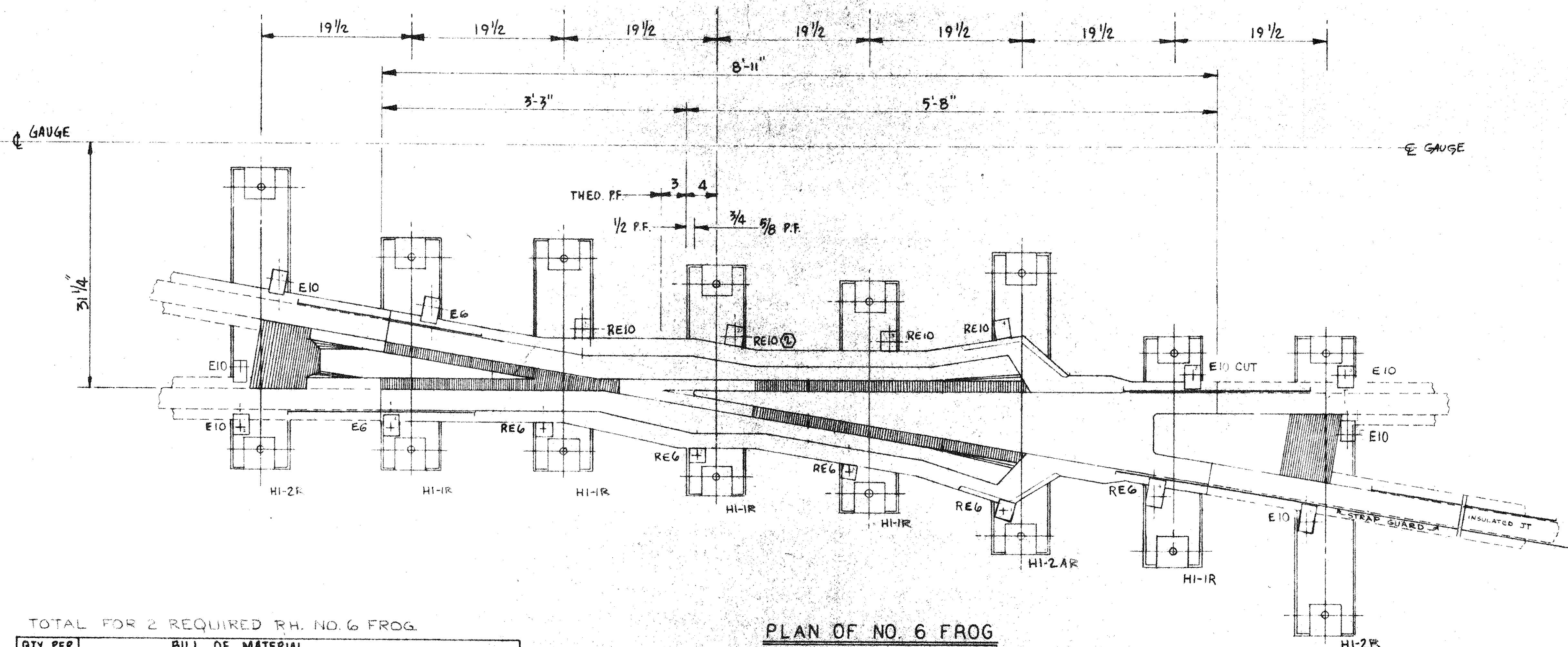
PARSONS BRINCKERHOFF - GIBBS & HILL
APPROVED
APR 8 1983

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH, PENNSYLVANIA

STAGE I LIGHT RAIL TRANSIT SYSTEM
TRACKWORK STANDARD
No. 6 SOLID MANGANESE FLANGE BEARING FROG
PARSONS BRINCKERHOFF - GIBBS & HILL
A JOINT VENTURE
PITTSBURGH, PENNSYLVANIA

CONTRACT No. CY-810
DWE. No. TS 012-0
Sht. 37

SHEET NO. 36
HIXSON



TOTAL FOR 2 REQUIRED R.H. NO. 6 FROG.

QTY PER UNIT		BILL OF MATERIAL	
		FOR SPECIAL DIRECT FIXATION FASTENERS	
10	HIXSON FASTENER HI-1R	HIST21-3R	
4	HIXSON FASTENER HI-2R	HIST30-3R	
2	HIXSON FASTENER HI-2AR	HIST30A-3R	
COMPONENTS FOR INSTALLING HIXSON FASTENERS ABOVE:			
3	RAIL CLIP	HIDF-HCBE10 CUT	*
7	RAIL CLIP	HIDF-HCBE6	
11	RAIL CLIP	HIDF-HC-8RE10 8 REVERSED 8 CUT	
5	RAIL CLIP	HIDF-HC-8E6	
11	RAIL CLIP	HIDF-HC-8E10	
37	INDEX PLATE	HIDF-HC-BE2	*
25	3/4-10 x 5 1/2 LG. CARRIAGE BOLT	HIDF-HC-8F4	
12	3/4-10 x 4 1/2 LG. CARRIAGE BOLT	HIDF-HC-8F5	
37	3/4-10 STOVER LOCKNUT	HIDF-HC-8F2	
32	7/8-9 x 4 1/8" ANCHOR BOLT	HIDF-HC-8G5	
32	7/8-9 x 2 1/2" COUPLING NUT	HIDF-POB-11P2	
32	7/8-9 x 2 1/2" SPECIAL RD. HD. BOLT	HIDF-POB-11P1	
37 PR.	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F9	
32 PR.	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F10	
32 PR.	NORD-LOCK WASHER (CLIPS)	HIDF-HC-8F11	

* HIXSON RAIL CLIP FIELD CUT TO FIT @ FROG CASTING

PLAN OF NO. 6 FROG
(INSTALLED WITH HIXSON TURNOUT FASTENERS)
NO. REQ'D 2 R.H. (SHOWN) FOR CA-440 X-OVER (TYP)
L.H. SYMM. OPPOSITE

NOTE: ALL DIMENSIONS SHOWN ARE $\pm 1/2$ "

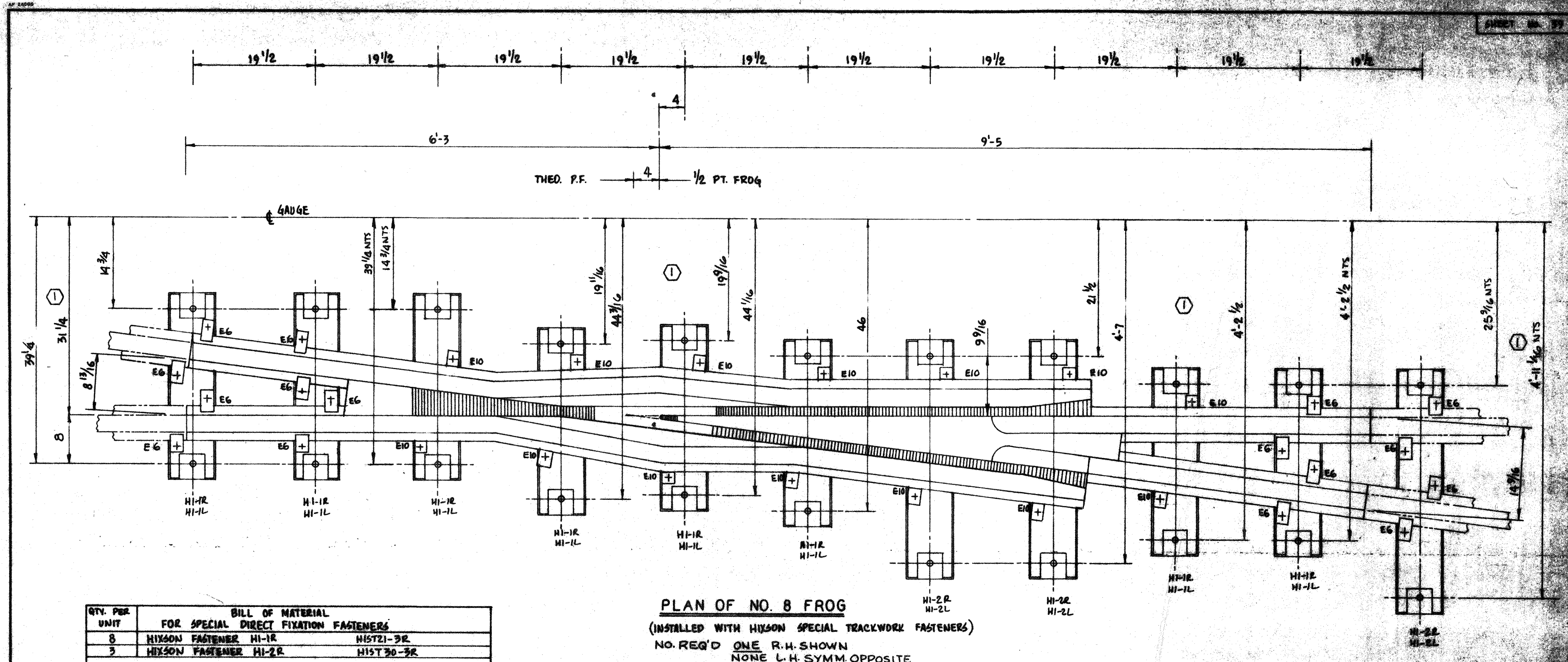
TRACK GAUGE: 5'-2 1/2"
FROG ANGLE: 9°-31'-38"

REFERENCE: SPEC 2855 D.F. RAIL FASTENERS
SPEC. 2859 SPECIAL TRACKWORK

USE WITH DWG NO: 34-001
34-002
34-003

PROJECT-RECORD COPY

REVISIONS	DESCRIPTION				NO.	BY	APP	DATE	DATE							
	1. As shown type & detail							4-1-84	DESIGN DRWN RJB 3/11/84 CHKD DAM 3/11/84 APP. DAM 3/11/84							
	CONTRACTOR WORK "AS BUILT" REV.				TPC	DAM	11/8/84									
	CLIP TYPE REV.				TPC	DAM	5-6-85									
									ATLAS RAILROAD CONSTRUCTION CO.				REF. HIXSON DWG. NO. HIST-6FR-3			
									CONTRACT STAGE I LIGHT RAIL TRANSIT SYSTEM				TITLE CA-440 ^{REF}		SCALE 1 1/2" = 1'-0"	
									PROJECT NO. : PA-03-0095				NO. 6 SOLID MANGANESE		DRAWING NO. ATLAS	
									CONTRACT NO. : CYBIO				FLANGE BEARING FROG		34-004	
									TRACKWORK INSTALLATION CBO				CONSTRUCTION PLAN		PROJECT-RECORD COPY	



PLAN OF NO. 8 FROG
(INSTALLED WITH HIXSON SPECIAL TRACKWORK FASTENERS)
NO. REQ'D ONE R.H. SHOWN
NONE L.H. SYMM. OPPOSITE

QTY. PER UNIT	BILL OF MATERIAL FOR SPECIAL DIRECT FIXATION FASTENERS		
8	HIXSON FASTENER HI-1R	HIST21-3R	
3	HIXSON FASTENER HI-2R	HIST30-3R	
COMPONENTS FOR INSTALLING HIXSON FASTENERS ABOVE			
16	RAIL CLIP	HIDF-HC-BE6	
14	RAIL CLIP	HIDF-HC-BE10	
30	INDEX PLATE	HIDF-HC-BE2	
14	3/4-10 x 3 1/2 LG. CARRIAGE HEAD BOLT	HIDF-HC-BF4	
16	3/4-10 x 4 1/2 LG. CARRIAGE HEAD BOLT	HIDF-HC-BF5	
30	3/4-10 STOVER LOCKNUT	HIDF-HC-BF2	
22	7/8-9 x 4 1/8 ANCHOR BOLT	HIDF-HC-BG5	
22	7/8-9 x 2 1/2 COUPLING NUT	HIDF-PDB-II P2	
22	7/8-9 x 2 1/2 SPECIAL RD. HR. BOLT	HIDF-PDB-II P1	

NOTE: TYPICAL PLAN, ACTUAL FASTENERS AND CLIPPING VARIES SEE ATLAS DWG'S FOR DETAIL
SERIES 34 CBD
42 SOUTH HILLS JUNCTION
47 PANHANDLE BRIDGE

INSTALLATION NOTE:
RIGHT HAND FROGS REQUIRE RIGHT HAND FASTENERS &
LEFT HAND FROGS REQUIRE LEFT HAND FASTENERS.

TRACK GAUGE: 5'-2 1/2"
FROG ANGLE: 7°-09'-10"

REFERENCE: SPEC. 2855 D.F. RAIL FASTENERS
SPEC. 2859 SPECIAL TRACKWORK

REVISIONS DESCRIPTION: REVISIONS IN B.O.M. DATE: 8-8-83 BY: R.M.W. APP: R.M.W.				DESIGN R.M.W. DATE: 8-8-83 BY: R.M.W. APP: R.M.W.				HIXSON, INC. 1001 SANDS PLACE, SUITE C HARRISBURG, PA. 17107 PHONE: (404) 653-1057				ATLAS RAILROAD CONSTRUCTION CO. STAGE 1 LIGHT RAIL TRANSIT SYSTEM PROJECT NO. PA-03-0095 CONTRACT NO. CYS10 TRACKWORK INSTALLATION CBD				NO. 8 RAILBOUND MANG. FLANGE BEARING FROG HIST-8FR-3			
TOLERANCE (EXCEPT AS NOTED) DECIMAL: .000 FRACTION: ± 1/32 ANGLE:				SCALE: 1 1/2" = 1'-0"				PROJECT RECORD COPY											

APPROVED

Approval Does Not Relieve the Contractor of the Responsibility for the Accuracy of this Document or for Full Compliance with the Contract Requirements.

BY: [Signature]
DATE: 11-13-86

PARSONS BRINCKERHOFF - GIBBS & HILL

PA. Temp. Permit #468