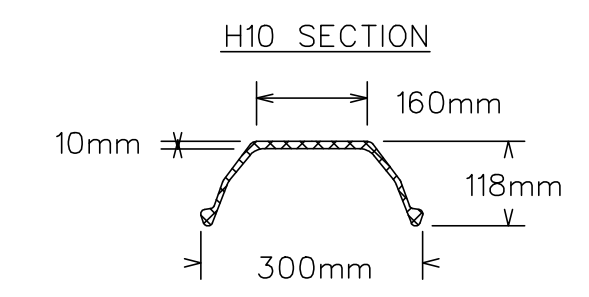
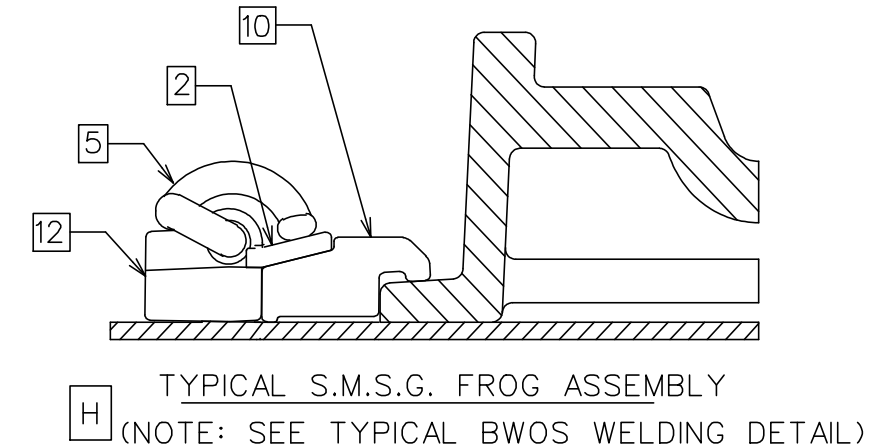
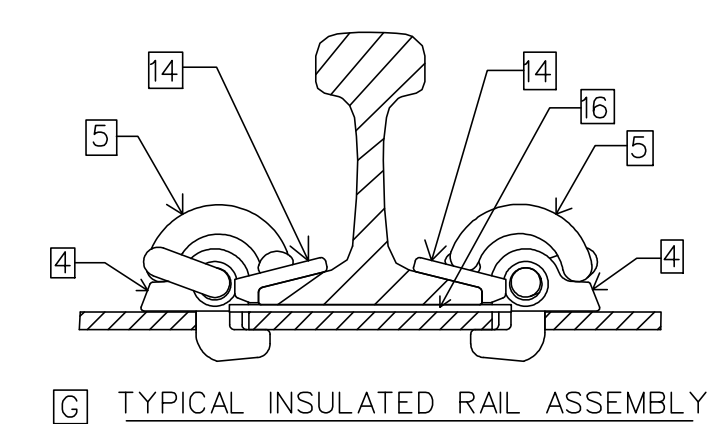
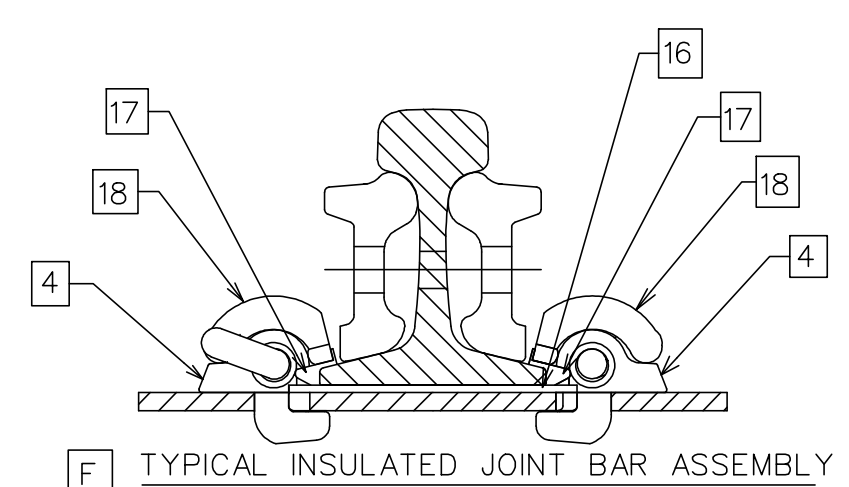
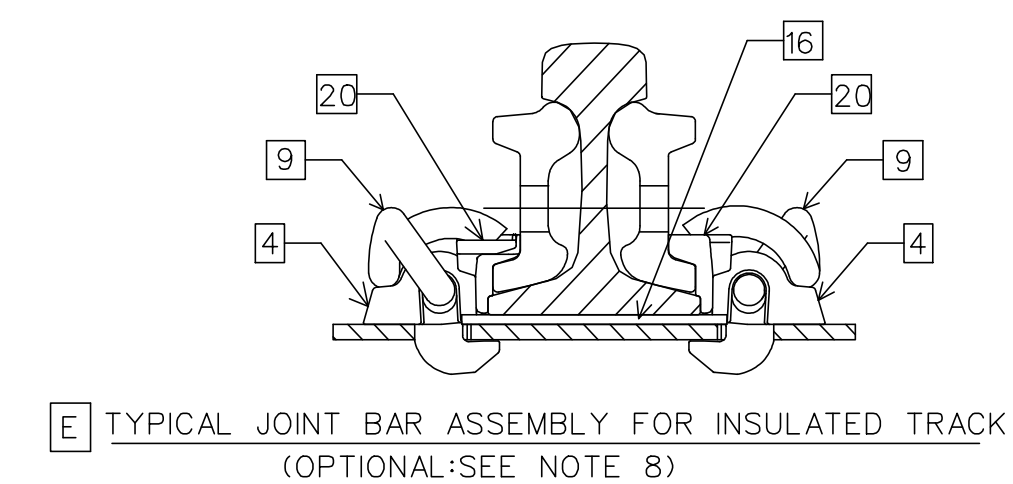
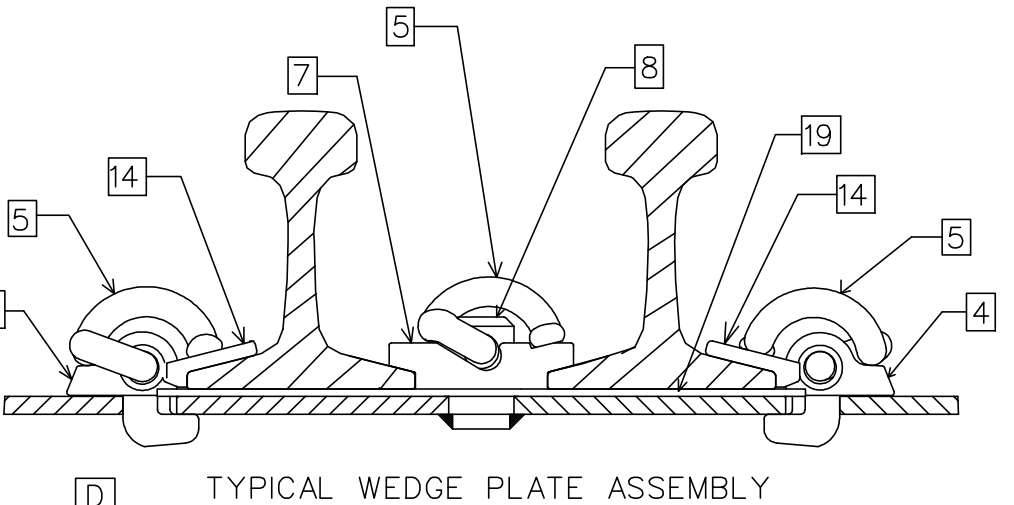
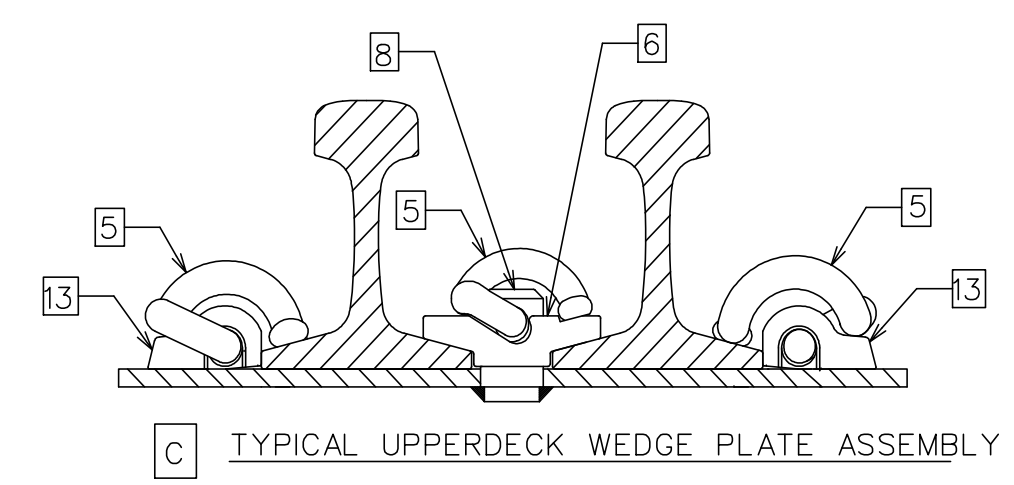
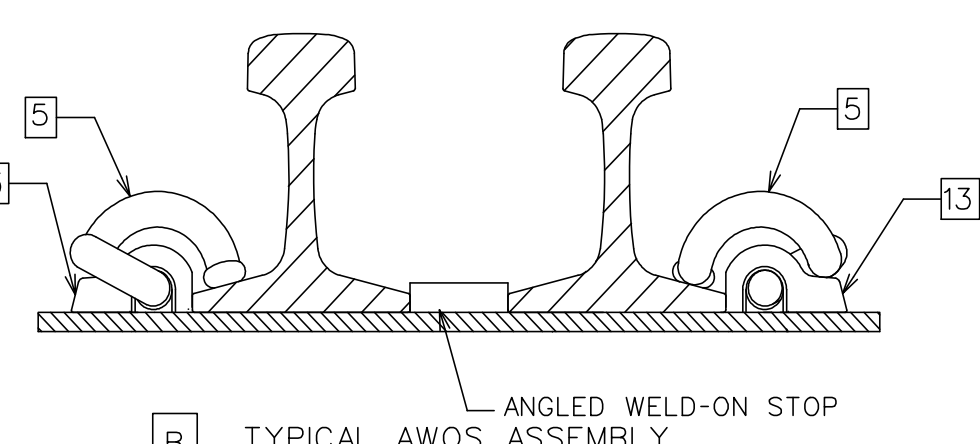
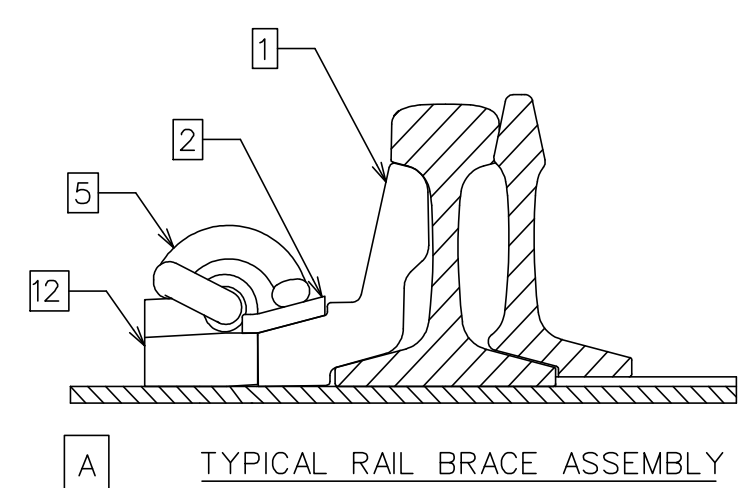
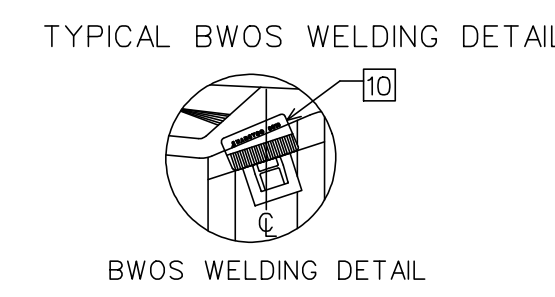


ROD	POSITION FROM POINT OF SWITCH
1	1'5"
2	4'6"

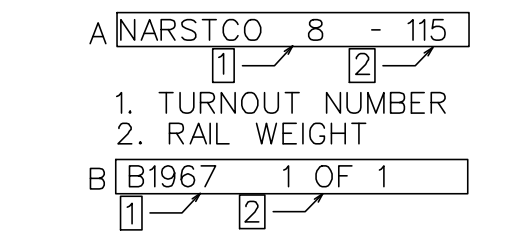


SECTION PROPERTIES  
WEIGHT OF BAR: 30.8kg/m  
YIELD STRENGTH: 345MPa (min)  
SECTION MODUL II: Z TOP=153 X 10<sup>3</sup> mm  
: Z BOT=79.7 X 10<sup>3</sup> mm



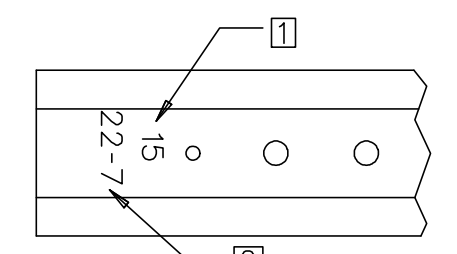
IN PRACTICE:  
- LOCATE 8018 FROG CLAMP AS SHOWN IN DETAIL  
- PLACE BWOS AGAINST FROG CLAMP ON TIE CENTER  
- TRACK WELD BWOS IN PLACE  
- USING 7018 WELDING ROD, 3/16" OR BIGGER, PLACE 1/2" FILLET WELD ON OUTSIDE EDGES OF BWOS  
- DRIVE 8018 FROG CLAMP IN FROM RIGHTHAND SIDE  
- INSTALL SERRATED WASHER AND THEN CLIP  
- FOR MORE DETAILED INSTRUCTIONS, SEE S.O.P MG 045

TIE BUNDLE LABEL FORMAT



1. BATCH NO. FOR QUALITY ASSURANCE IDENTIFICATION  
2. SEQUENTIAL NUMBER IN BATCH

TIE MARKINGS



NOTE:

- TRANSITION TIES ARE FLAT SEAT DESIGN (NO CANT) REF. GTS-2106.
- LABELS A, B & C AFFIXED TO TOP TIE IN EVERY BUNDLE ONLY.
- TO AVOID VARIANCE IN RAIL GAUGE, DUE TO RAIL HEAD TO BASE ECCENTRICITY, ENSURE THAT THE RAIL BRAND OF ALL RAILS FACES IN THE SAME DIRECTION.
- a. UNIFORM RISER PLATE THICKNESS:
  - 1/4" FOR TIES 2 TO 12
  - 3/16" FOR TIE 13
  - 1/8" FOR TIE 14
  - 1/16" FOR TIE 15
- b. UNIFORM RISER PLATES SHALL CONFORM WITH LATEST ISSUES OF ASTM A36.
- TIES WILL BE PUNCHED FOR 7/8" DIA. INSPECTION HOLES, LOCATION VARIES WITH RAIL POSITION.
- POINT AND FROG AREA TIES ARE NARSTCO PATENTED INSULATED MULTI-STACK DESIGN. NARSTCO PATENT NO.7731099.
- USE OFF-SET RAIL PADS IN RAIL SEATS FOR TIES WITH HOLES PUNCHED OFF CENTER. (TIES 17, 18, 38 & 47)
- JOINT BARS SHOULD BE USED AS NECESSARY, JOINTS CAN BE WELDED TO PRODUCE CONTINUOUS RAIL IF REQUIRED.
- ADJUSTABLE MJ CLIPS WITH VERTICAL SWITCH RODS SHOULD BE USED IN CHANNEL TIES.
- TIES 51-58 ARE 15' OR OVER IN LENGTH.
- TRANSITION TIES NOT INCLUDED IN TURNOUT PACKAGE.
- IF ZERO POINT SWITCH POINTS ARE USED, A NOMINAL 3/8" WIDE GAUGE WILL OCCUR AT THE POINT OF SWITCH AND WILL TAPER BACK TO STANDARD GAUGE THROUGH THE SWITCH AREA BEFORE THE HEEL.
- HEADBLOCK TIES ARE FIELD-DRILLED TO ACCEPT POWER OR MANUAL SWITCH STANDS.
- MECHANICAL JOINT LOCATIONS TO BE FIELD WELDED OR REMAIN AS STANDARD JOINTS AS DIRECTED BY METROLINX.
- INSULATED JOINT LOCATIONS TO BE INSTALLED WHEN TRACK CIRCUITS EXIST OR ARE REQUIRED AND SHALL BE THE CONTINUOUS GLUED TYPE WITH THE INSULATED JOINT UNDRILLED (BLANKED) RAIL ENDS FIELD WELDED.

TURNOUT DATA			
FROG S.M.S.G.	NUMBER	8	
	ANGLE	TOE	7°09'10"
		HEEL	2°11"
		TOTAL	8°11"
SPREAD	TOE	3 7/8"	
	HEEL	9 15/32"	
TANGENT ADJACENT TO TOE OF FROG		2'0 1/4"	
TANGENT ADJACENT TO HEEL OF SWITCH		0"	
SWITCH	LENGTH	16'6"	
	HEEL SPREAD	6 1/4"	
	ANGLE	1°42'01"	
	VERTEX DISTANCE	1'0 5/8"	
THROW		4 3/4"	
ACTUAL LEAD		67'10 3/4"	
TURNOUT	CURVE ON CENTER LINE	DEGREE 11°50'42"	
		RADIUS 484'6 27/32"	
CLOSURE	STRAIGHT	48'5 3/4"	
	CURVED	48'8 1/16"	
TRACK GAUGE		4'8 1/2"	

METRIC CONVERSION: 1 inch=25.4mm, 1 foot=304.8mm

0	18/12/23	DWG VERSION ESTABLISHED
No.	Date	Revision

By Approved

Standard / GO TRANSIT #8-115b INS CT SPP PS  
UNIFORM FXHL SMSG

Drawn MR. C Checked GWM Approved VP Engineering & Asset Management



Date DEC 23/2018 Plan Number GTS-2716 Rev 0

REFERENCE: Sheet 1 OF 1

## BILL OF MATERIALS FOR GTS-2716

ITEM	DESCRIPTION	NARSTCO PART NO.	QTY
<b>TURNOUT COMPONENT</b>			
1	ADJUSTABLE RAIL BRACE	8014	10
2	RAIL BRACE SERRATED WASHER	8015	22
3#	RAIL BRACE HOOK-IN SHOULDER	8016	64
4	NARSTCO HOOK-IN SHOULDER	4010	288
5	'e' CLIP ('e' TYPE CLIP)	'e' CLIP	436
6	STEEL WEDGE PLATE	14S,14T,15S, 15T	4
7	NYLON WEDGE PLATE	16S,16T	2
8*	WEDGE PLATE PIN	14,15,16	6
9	'J' CLIP	NJ1	32
10	FROG CLAMP (S.M.S.G.)	8018	12
11	L/H 'e' CLIP	Ne2	5
12*	RAIL BRACE WELD-ON SHOULDER	BWOS	22
13*	WELD-ON SHOULDER	WOS	56
14	INSULATOR	HD-10	376
15	OFFSET INSULATING PAD 5 1/2"	3020	12
16	NARSTCO INSULATING PAD 5 1/2"	IN-0030	140
17	INSULATED JOINT INSULATOR	J7819	8
18	INSULATED JOINT CLIP	e2063	8
19	CUSTOM INSULATOR PAD	16,45,46	4
20	JOINT BAR INSULATOR	N8J-HD	32
<b>GO TRANSIT REFERENCES</b>			
PLAN #	TITLE		
GTS-0001-REV1	GEOMETRY FOR NO.8 TURNOUTS		
GTS-0008-REV1	NO.8 TURNOUT -115 LB RAIL-16'-6" SAMSON POINT SWITCH, UNIFORM RISER DESIGN WOOD TIES		
GTS-0820-1/2	SOLID MANGANESE STEEL SELF GUARDED FROGS		
<b>LEGEND</b>			
* WELDED TO TIE DURING MANUFACTURING			
# INSTALLED ON TIE DURING MANUFACTURING			