

SECTION A

NOTES:

GENERAL NOTES

- STANDARD DRAWINGS ARE TO BE READ IN CONJUNCTION WITH METROLINX CONCRETE TIE SPECIFICATION, LATEST REVISION.
- MANUFACTURER SHALL SUBMIT SHOP DRAWINGS INCLUDING ALL INFORMATION NECESSARY FOR FABRICATION AND HANDLING. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PLAN, ELEVATION AND CROSS SECTIONS WITH REINFORCING WIRES, RAIL FASTENER ASSEMBLIES, AND EMBEDDED ITEMS. SHOW DIMENSIONS, WEIGHT, DETAILS, TOLERANCES, SURFACE FINISHES, CONCRETE STRENGTH AND MATERIAL SPECIFICATIONS AS APPLICABLE.

TIE

- THE TIE ILLUSTRATED HERE IS INDICATIVE ONLY. THE MANUFACTURER SHALL DESIGN AND MANUFACTURE THE CONCRETE TIE IN ACCORDANCE WITH METROLINX CONCRETE TIE SPECIFICATION, LATEST REVISION, AREMA, CHAPTER 30, PART 4, AND FOR THE FOLLOWING SERVICE LOADS AND TRACK CONDITIONS:
  - AXLE LOADS: 30 TONNES (METRIC)
  - ANNUAL TONNAGE: MIN 20 MILLION GROSS TONNES (METRIC)
  - TIE SPACING: 24" (610mm)
  - MAXIMUM SPEED: 100 MPH (160 KPH)
- THE TIE SHALL BE SYMMETRICAL AT THE CENTRELINE OF TIE.
- STANDARD TRACK GAUGE IS 4' 8-1/2" (1,435mm).
- THE RAIL SEAT SHALL BE CANTED 1:40 TOWARDS THE CENTRELINE OF TIE.
- THE RAIL SEAT SHALL BE A FLAT SMOOTH SURFACE AND PLANE TO A TOLERANCE OF ±1/32" (8mm).
- PREFERRED TIE DIMENSIONS ARE:
  - LENGTH: 8'3" (2,515mm)
  - BASE WIDTH: 10-1/2" (265mm)
  - HEIGHT AT RAIL SEAT: 8" (203mm)
- PREFERRED TIE WEIGHT: 610 - 650 LB (277 - 295 KG).
- CONCRETE REINFORCEMENT (PRESTRESSING WIRES, TENDONS OR STEEL BARS) IS NOT SHOWN, TO BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH AREMA, CHAPTER 30, SECTION 4.2 AND ASTM A881.
- PRESTRESSING WIRES SHALL BE PRETENSIONED.
- PRESTRESSING WIRES SHALL NOT PROTRUDE MORE THAN 1/8" (3mm) BEYOND THE CONCRETE SURFACE OF THE END OF THE TIE.
- SCALLOP DESIGN SHOWN IS INDICATIVE ONLY. MANUFACTURER MAY MAKE VARIATION(S) WITHOUT REDUCING THE FUNCTIONALITY OF THE SCALLOPS.
- THE MANUFACTURER SHALL DESIGN AND SUPPLY CONVERGENCE SETS OF CONCRETE TIES TO ALLOW THE CONVERGENCE OF THE GUARDRAIL BEYOND THE PROTECTED AREA.

RAIL FASTENINGS

- CLIP: PANDROL e2055, VOSSLOH e2055, OR APPROVED EQUIVALENT
- PAD: PANDROL 16146 (FOR 5.5" RAIL BASE), OR APPROVED EQUIVALENT
- INSULATOR: PANDROL HDB, OR APPROVED EQUIVALENT
- SHOULDER: PANDROL 13294, OR APPROVED EQUIVALENT

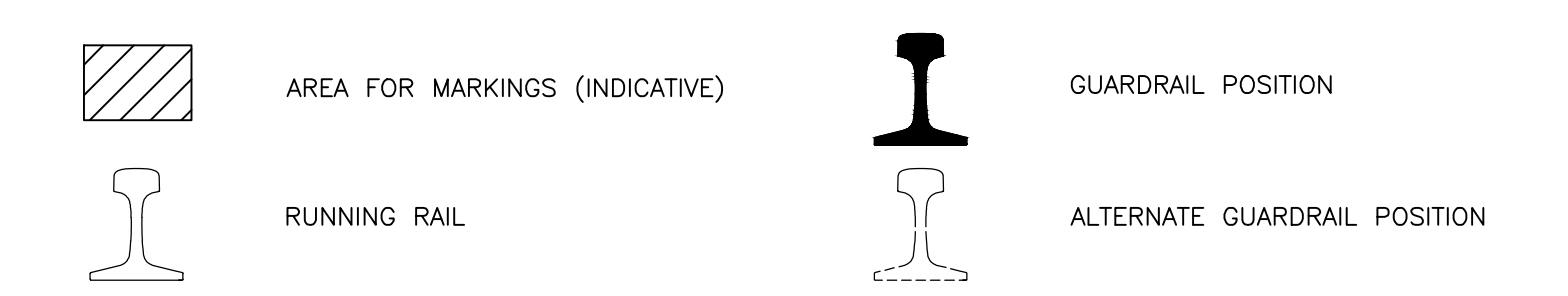
GUARDRAIL FASTENINGS

- INSERT: 7/8" UNC THREAD, SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334
- BOLT: 7/8" UNC THREAD, SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334
- WASHER: SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334
- CLIP: SHALL BE COMPATIBLE WITH GO TS PLAN GTS-1334
- CAP PLUG: SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334

CONCRETE

- CONCRETE SHALL BE IN ACCORDANCE WITH METROLINX CONCRETE TIE SPECIFICATION, LATEST REVISION.

LEGEND



ALL DIMENSIONS SHOWN ARE IN INCHES AND/OR MILLIMETRES.

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

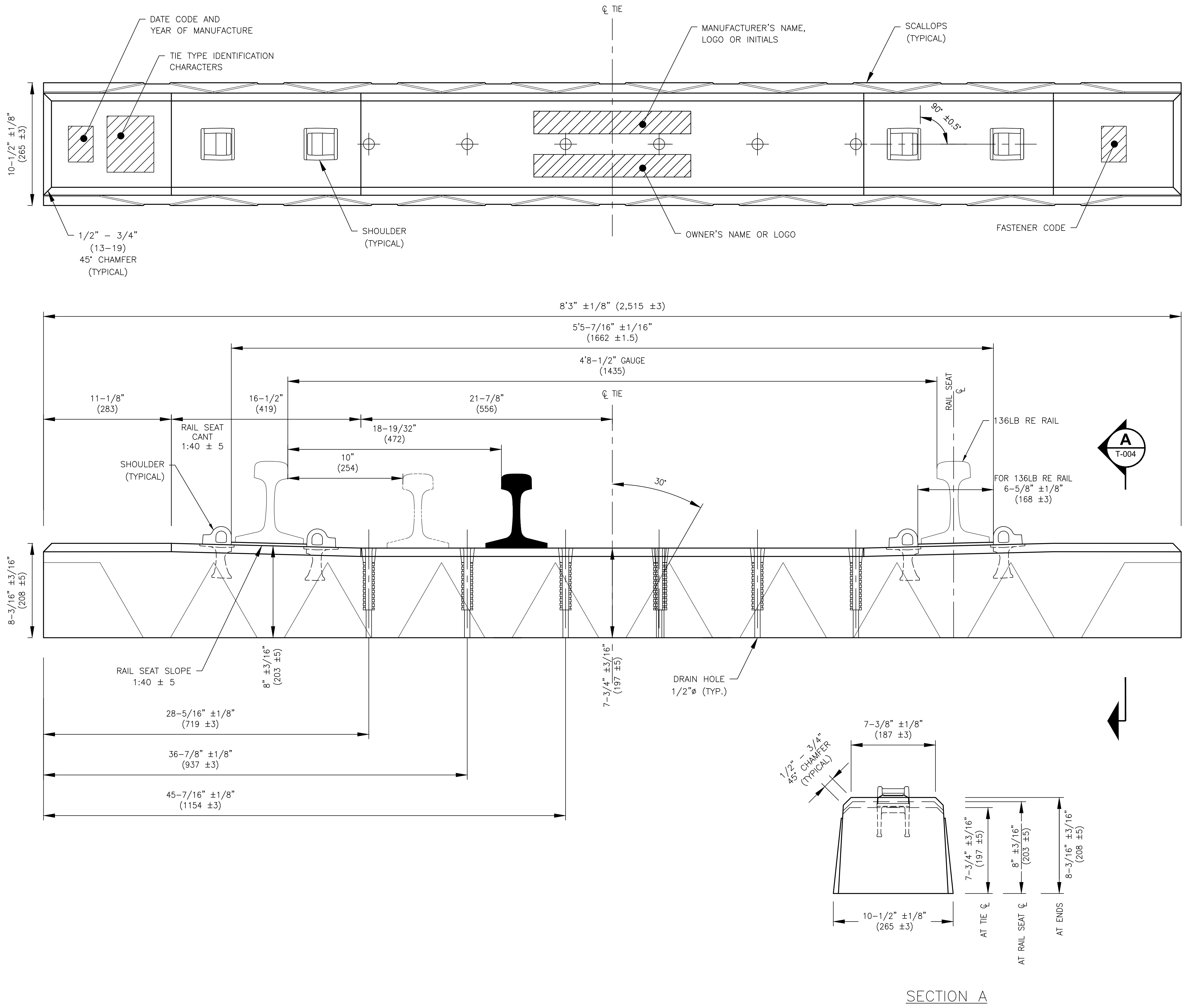
2	23/10/31	UPDATED RAIL CLIP REFERENCES
1	18/07/27	ADDED IMPERIAL TO METRIC CONVERSION NOTE
No.	Date	Revision
		By Approved

Standard / CONCRETE GUARDRAIL TIE  
STANDARD DRAWING  
115LB. R.E. RUNNING RAIL

Drawn NA Checked SJ Approved VP Engineering & Asset Management - Track



Date OCTOBER 31/2023 Plan Number GTS-2007 Rev 2



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**RAIL FASTENINGS**

- CLIP: PANDROL e2055, VOSSLOH e2055, OR APPROVED EQUIVALENT
- PAD: PANDROL 37693 (FOR 6.0" RAIL BASE), OR APPROVED EQUIVALENT
- INSULATOR: PANDROL HDB, OR APPROVED EQUIVALENT
- SHOULDER: PANDROL 13294, OR APPROVED EQUIVALENT

**GUARDRAIL FASTENINGS**

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- BOLT: 7/8" UNC THREAD, SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334
- WASHER: SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334
- CLIP: SHALL BE COMPATIBLE WITH GO TS PLAN GTS-1334
- CAP PLUG: SHALL BE COMPATIBLE WITH CLIP AS PER GO TS PLAN GTS-1334

**CONCRETE**

- CONCRETE SHALL BE IN ACCORDANCE WITH METROLINX CONCRETE TIE SPECIFICATION, LATEST REVISION.

**LEGEND**

- AREA FOR MARKINGS (INDICATIVE)
- GUARDRAIL POSITION
- ALTERNATE GUARDRAIL POSITION
- RUNNING RAIL

ALL DIMENSIONS SHOWN ARE IN INCHES AND/OR MILLIMETRES.

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

2	23/10/31	UPDATED RAIL CLIP REFERENCES
1	18/07/27	ADDED IMPERIAL TO METRIC CONVERSION RATE
No.	Date	Revision
		By Approved

Standard / **CONCRETE GUARDRAIL TIE STANDARD DRAWING 136LB. R.E. RUNNING RAIL**

Drawn NA Checked SJ Approved *[Signature]*  
VP Engineering & Asset Management - Track



Date OCTOBER 31/2023 Plan Number GTS-2007 Rev 2

REFERENCE: TS-2007-R3 Sheet 2 OF 2