



Special Trackwork Specification

Section 34 11 23

Revision 00
September 2026

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Amendment Record

Amendment in Clause No.	Date of Amendment	Description of Changes
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Acronyms and Abbreviations

Table 1: Acronyms and Abbreviations

Abbreviation	Full Name
ESD	Engineering and Safety Division
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASTM	American Society for Testing and Materials
CSA	Canadian Standards Association
CWR	Continuous Welded Rail
EMI	Electromagnetic Interference
FAT	Factory Acceptance Testing
GTS	Metrolinx Standard Plans
MTO	Ministry of Transportation Ontario
MTS	Metrolinx Track Standards Heavy Rail
OPSD	Ontario Provincial Standard Drawings
OPSS	Ontario Provincial Standard Specifications
OTM	Other Track Material
STW	Special Trackwork
TW	Thick Web
BHN	Brinell Hardness Number

Definitions

Table 2: Definitions

Term	Definition
Alignment	May be interpreted in two distinct contexts: Track Alignment: Refers to the horizontal configuration of the track as observed in plan view, encompassing tangents, curves, and spirals. It defines the position and route of the track on a horizontal plane. Alignment as a Geometry Condition: Refers to deviations from the intended straightness or uniformity of the rails, indicating irregularities in track geometry. The horizontal location of a railway as described by curves and tangents.
Ballasted Track	A section of track where the tie cribs and shoulders are comprised of consolidated track ballast, which provides adequate vertical, lateral, and longitudinal restraint of the rail.
Closure Rail	The rails between the parts of any special trackwork layout, as the rails between the switch rail and the frog in a turnout (sometimes called Lead Rails or Connecting Rails); also the rails connecting frogs of a crossing or of adjacent crossings but not forming parts thereof.
Crossover	A track connection between two adjacent tracks allows equipment to cross from one track to another.
Continuous Welded Rail (CWR)	Rail that is welded into lengths of 400 ft (122 m) or greater.
Fastenings	Joint bars, bolts, spikes, clips, and elastic fasteners.
Flangeway	The open way through a track structure which provides a passageway for wheel flanges.
Flangeway Depth	The depth of the wheel flange passageway, or the vertical distance from the top of the tread surface to the top of the filler or separator introduced between the tread portion and the guard portion of a track structure.

Flash Butt Weld	A process of fusing rail ends together using electric current. Electric Flash butt welds provide a field weld superior to field thermite welds and is always preferred over thermite welds.
Gauge (of Track)	The perpendicular measurement between the gauge faces (inner sides) of the two running rails of the same track taken at 5/8 in (16 mm) below the top of the rail head.
Guard Rail	A rail installed on bridges, high embankments, and other designated locations as a safety appliance. It is intended to contain and guide derailed rolling stock, keeping the vehicle upright on the track structure.
Heel End of Frog	That end of a frog which is the farther from the switch; or the end which has both point rails or other running surfaces between the gauge lines.
Insulated Joint	A rail joint in which electrical insulation is provided to stop electrical current from flowing from one rail to another, separating sections of track into distinct circuits for signal shunting and operation of signal system and crossing protection.
Insulation	A device or material that prevents the flow of electric current in a track circuit from passing from one rail to the other, or through switches and other track structures.
Joint Bar	A steel or composite member, embodying beam strength and stiffness in its structural shape and material; commonly used in pairs for the purpose of joining rail ends together, and holding them accurately, evenly, and firmly in position with reference to both surface and gage side alignment.
Moveable Point Frog	Frog with a rigid wing assembly and a point that moves between them, forming a continuous wheel path.
Rail Bound Manganese Steel Frog	A frog consisting of manganese steel used in Special Trackwork components such as frogs, switches, and crossings. Manganese steel is known for its high toughness, wear resistance, and ability to withstand impact.

Special Trackwork	A general term used to describe all track hardware that is not standard tie-and-ballast track. Special Trackwork includes turnouts of all sizes, single and double slip switches, and at-grade rail-to-rail crossings (diamonds).
Switch	A track structure used to divert rolling stock from one track to the other.
Tie Plate	A plate incorporated between a rail or other track structure and a tie.
Thermite Weld	A process that employs molten metal to permanently join the rail ends. The process utilizes an exothermic reaction of a thermite composition to heat the metal and requires no external source of heat or current.
Track Materials	All components of the track system other than rail, ballast, ties, subballast and special trackwork. Examples include fasteners, joint bars, insulated joints, derails, bumping posts, and road-grade-crossing hardware.

1. General Requirements

1.1. Description of Specification

- 1.1.1. This Specification outlines the requirements for the design, fabrication, factory assembly, inspection, testing, packaging, transport and delivery of complete special trackwork assemblies, limited to turnouts and crossovers, for installation in ballasted track on the Metrolinx heavy rail network. The works include but are not limited to stock rails, switch rails, closure rails and connecting rails, frogs, guard rails, switch rods, rail braces, special plates, gauge plates, elastic clips, associated fastening hardware and documentation.

1.2. Reference Standards

- 1.2.1. This Specification includes references to the latest edition of other publications. These references are noted in the text where appropriate. All testing shall be carried out according to the latest revision of the standard test methods referred to in this Specification. In the event of conflict, the most stringent shall apply.
- a) Metrolinx Track Standards (Heavy Rail) RC-0506-02TRK;
 - b) Metrolinx Track Ballast Specification 32 11 25;
 - c) Metrolinx Rail Specification 34 11 13;
 - d) Metrolinx Concrete Tie Specification 34 11 33.1;
 - e) Metrolinx Timber Tie Specification 34 11 33.2;
 - f) Metrolinx Track Subballast Specification 34 11 26.16;
 - g) Metrolinx Track Materials Specification 34 11 93;
 - h) Metrolinx Track Construction Specification 34 72 00;
 - i) Metrolinx Anti-Trespass Panels Specification 34 72 19;
 - j) Metrolinx General Engineering Instructions;
 - k) Metrolinx Welding Manual, RC-0506-02TRK-01;
 - l) American Railway Engineering and Maintenance-of-Way Association (AREMA); Manual for Railway Engineering;
 - m) American Railway Engineering and Maintenance-of-Way Association (AREMA); Portfolio of Trackwork Plans;
 - n) American Society for Testing and Materials International (ASTM) A36 Standard Specification for Carbon Structural Steel

- o) American Society for Testing and Materials International (ASTM) A242 Standard Specification for High-Strength Low-Alloy Structural Steel
 - p) American Society for Testing and Materials International (ASTM) A536 Standard Specification for Ductile Iron Castings
 - q) American Society for Testing and Materials International (ASTM) F3125 Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120ksi, 144ksi, and 150ksi Minimum Tensile Strength, and Metric Dimensions 830MPa and 1040MPa Minimum Tensile Strength
 - r) American Society for Testing and Materials International (ASTM) F436 Standard Specification for Hardened Steel Washers Inch and Metric Dimensions
- 1.2.2. Refer to Metrolinx Standard Plans for the special trackwork geometry. For any nonstandard design or components where a Standard Plan does not exist for a Special Trackwork (STW) design, the designer shall provide a typical drawing to Metrolinx for approval.

1.3. Delivery, Storage and Handling of Materials

- 1.3.1. After approval, ship the switch panel in one piece where practicable; long ties may be shipped separately.
- 1.3.2. Match-mark, bundle and band remaining components.
- 1.3.3. Use lifting/securement methods that prevent damage to Special Trackwork and components.
- 1.3.4. For shipping and handling, all components shall be containerized and secured in such a way as to prevent shifting and damage to material during transit.
- 1.3.5. Manufactures instructions and recommendations for handling and shipping shall be adhered to.
- 1.3.6. Affix a weatherproof copy of the shipping list externally to each package.
- 1.3.7. Protect coated components (e.g., anchor inserts) against damage.
- 1.3.8. Except as modified in the contract documents, the manufacturing, testing, assembling, inspection, shipping, unloading, and stacking of Special Trackwork shall be done in accordance with the AREMA Portfolio, the AREMA Manual and MTS RC-0506-02TRK.
- 1.3.9. The Contractor shall ensure that equipment is of the correct type and capacity for the intended purpose and shall conform to all Occupational Health & Safety (OH&S) standards.

1.4. Submittals

- 1.4.1. The Supplier shall submit for approval, prior to commencing fabrication, shop drawings in English, with material and installation specifications for all materials to be supplied. Shop drawings for each size and direction of turnout and crossover with each track centre spacing are required. For each drawing CAD versions shall also be included. Drawings shall include:
- a) Locations of all required field welds and all locations requiring insulated joints;
 - b) Various cross-sectional details throughout the Special Trackwork at various components (such as switch point, heel block, head separation, etc.);
 - c) Full turnout / crossover layout with tie spacing, tie numbering, drilling and fastener schedule;
 - d) Switch, stock, closure and guard rails;
 - e) Switch rods, clips, insulation assemblies;
 - f) Rail braces, special and gauge plates;
 - g) Match-mark diagram and bundle list; and
 - h) Installation drawings for each unit shown in the Bill of Materials.
- 1.4.2. The following documents shall be provided:
- a) Checklist or measurement report for all switches and frogs approved by the Engineer. This shall show the design size and allowable tolerance required by the AREMA Portfolio of Trackwork Plans, as well as the actual size;
 - b) Certification of the procedure used in the depth hardening of frog castings;
 - c) Frog depth hardening results;
 - d) Test data for the rail used in all fabrication for compliance with AREMA and Metrolinx Rail Specification, as well as any additional requirements in this specification;
 - e) Test reports of chemical analyses, Brinell hardness, electrical insulation and other tests required by AREMA and this specification;
 - f) Certificate of compliance, consisting of a signed statement that the Special Trackwork is compliant with provided drawings and all requirements herein;
 - g) Qualification records for welders and tackers;
 - h) A field installation manual shall be provided by the Supplier and shall include full installation details and step-by-step procedures for installing the special trackwork in the field. The procedures shall also address the interface with the installation of the switch machine (including tolerances coordinated with the switch machine manufacturer). The procedures shall be comprehensive, clear and concise and shall be written in English.

2. Detailed Requirements

2.1. General

- 2.1.1. This specification applies to all special trackwork specifically turnouts in sizes No. 8, 10, 12, 16, 20, and 24 designed for rail sections 100 RE through 136 RE and installed on concrete, steel or timber ties.
- 2.1.2. All bolts, nuts, washers and assemblies shall be in accordance with AREMA Portfolio of Trackwork Plans, Plan No. 100, unless modified by Metrolinx Standard Plans.
- 2.1.3. Rail drilling, end bevelling and joint assembly shall match AREMA requirements for six-hole, 36-in (914mm) bars (standard joints) or 3/8-in (10mm) end-post insulated joints.
- 2.1.4. Rail clips shall be spring clips as per Metrolinx Track Materials Specification 34 11 93, or approved equivalent via Metrolinx Product Acceptance Process.
- 2.1.5. Switch plates, frog plates, frog pack, clips, pads insulators and rollers shall be as specified in the appropriate Metrolinx Standard Plan.
- 2.1.6. Switch heaters and additional switch infrastructure shall be considered within the design and comply switches shall comply with clause 13.2.6 of RC-0506-02TRK MTS.
- 2.1.7. All trackwork shall be designed and constructed to meet the latest version of MTS, the AREMA Manual for Railway Engineering, AREMA Portfolio of Trackwork Plans and Transport Canada (TC) Rules Respecting Track Safety.
- 2.1.8. Products listed in this specification may be substituted with approved equivalent products, subject to prior written approval from the Metrolinx Track Engineering department. Requests for approval shall include sufficient technical documentation to demonstrate equivalency in performance, durability, and compliance with applicable standards.

2.2. Design

- 2.2.1. The Supplier shall be responsible to obtain any additional design information that may reasonably be required for completion of the special trackwork design to ensure that the completed components are fit for the purpose intended.
- 2.2.2. All components shall be designed such that the specified tolerances can be maintained throughout the operating life of the special trackwork with minimal maintenance. Consideration shall be given to longitudinal restraint of the turnout ensuring that the switch area could maintain its position during service.
- 2.2.3. The follow design parameters shall apply
 - a) Standard track gauge: 4'-8 1/2" (1435 mm), 136RE or 115RE rails;

- b) Standard rail cant: 1:40 outside of special trackwork;
- c) Rail cant within turnouts: zero cant, except for No. 24 turnout, with rail cant transition;
- d) Max Axle load: 30 metric tonnes;
- e) Axle Spacing: Cooper E80 Axle Load Diagram as per AREMA Chapter 8, Section 2.2.3 Design Loads;
- f) Ambient Temperature: -40°F(-40°C) to +104°F (+40°C);
- g) Preferred Rail Laying Temperature (PRLT): 100°F (37.7°C) as per MTS; and
- h) Preferred Rail Laying Temperature Range (PRLTR): 100°F to 115°F (37.7°C to 46.1°C) as per MTS.

2.3. Switch & Stock Rails

- 2.3.1. Rail sections of special trackwork, including stock rails, closure rails, and other turnout rails, should all be head-hardened as per Metrolinx Standard Rail Specification 34 11 13.
- 2.3.2. Switch Rails shall be precision-planed from 136 LB TW rail with same steel grade as the stock rails; minimum surface hardness 350 BHN.
- 2.3.3. Length of switch rail is as per the Metrolinx Standard Plans depending on turnout type.
- 2.3.4. Stock rails shall conform to 136 RE high strength rail in accordance with AREMA Manual Railway Engineering, Volume 1, Chapter 4, Rail.
- 2.3.5. Stock rails shall be machined and undercut with planning and drilling per GTS turnout drawings and AREMA Plan 221.
- 2.3.6. Switch point rails shall be machined to match the stock rail undercut and switch point rail profile.
- 2.3.7. Stock-to-Switch Joints shall be six-hole, 36-in. joint bars supplied loose; heel ends precision-squared.

2.4. Frogs

- 2.4.1. Frogs shall be supplied in accordance with RC-0506-02TRK MTS Section 13.
- 2.4.2. No.8 - No. 20 Frogs shall be Rail-bound Manganese (RBM) frogs, pre depth-hardened in impact zones; with minimum surface hardness of 352 BHN.
- 2.4.3. No.24 Frogs shall be Movable-point frog (MPF), with manganese cast point; depth-hardened to minimum 352 BHN.

- 2.4.4. Frogs shall be produced in conformance with AREMA Specifications for Special Trackwork 100-08, AREMA Portfolio Plans 1021-1023, 1025-1029 and Metrolinx Standard Plans.
- 2.4.5. Frogs shall be deep grooved and provide continuous tread support as the wheel transfers from the wing rail to the point of frog. The continuous tread support contact areas shall be no less than 5/16" (8 mm) in width through the full length of the frog.
- 2.4.6. Frog fasteners shall be 1 3/8" (35 mm) dia. high-strength bolts per ASTM F3125, heavy-hex nuts per ASTM A563 Grade C; torqued to 75-85% proof load.
- 2.4.7. The frog shall be guarded and can successfully transfer from the wing rail to the point of the frog for all new and worn wheel profiles.

2.5. Guard Rails

- 2.5.1. Guard rail material shall be machined from 33C1 (UIC-33) R320Cr guard rail steel, with 320-360 BHN surface hardness.
- 2.5.2. Guard rail configuration shall be boltless adjustable type, as per AREMA Plans 502-13, 509-13 and GTS-1123.
- 2.5.3. Guard rail mounting plates shall be furnished integrally with running-rail plates per Metrolinx Standard Plans, with blocks machined to match tread profile.

2.6. Switch Rods

- 2.6.1. Switch Rods shall be vertical-design insulated rods (e.g., MJS Type M) providing $\pm 1"$ (25 mm) adjustment after switch point throw is set as per GTS Plans.
- 2.6.2. Where shown as required on GTS Plans throw assist / rotary assist rods for larger turnouts shall be provided.
- 2.6.3. Switch rods for hollow steel tie rodding assemblies shall be supplied as per GTS-2115 & GTS-2116.
- 2.6.4. Hollow Steel Ties (HSTs) for hollow steel tie rodding assemblies shall be supplied as GTS-2116.

2.7. Rail Braces

- 2.7.1. Rail braces shall be bolt-less adjustable braces compatible with electric switch heaters.
- 2.7.2. Brace backing blocks shall be shop-welded to switch plate and brace seats milled to match rail base.
- 2.7.3. Elastic fastening shall be used as per Metrolinx Track Materials Specification 34 11 93 to secure switch rail.

2.8. Special & Gauge Plates

- 2.8.1. Switch/Frog Plate material shall be as specified in Metrolinx Track Materials Specification 34 11 93 for tie plates.
- 2.8.2. Gauge-Plate Insulation shall be 7" x 7" x ¾" (178 x 178 x 19 mm) epoxy-glass splice block fastened with plow bolt as per GTS-0526.
- 2.8.3. Roller supplier shall be Schvihag as per Metrolinx Standard Plans, as applicable.

2.9. Rail & Insulated Joints

- 2.9.1. Standard Joints shall be six-hole, 36-in. bars for zero-gap joints; drilling template per AREMA Portfolio of Trackwork Plans Specification 100-8.
- 2.9.2. Insulated Joints shall be as specified in Metrolinx Track Materials Specification 34 11 93.
- 2.9.3. Rail clips shall be as specified in Metrolinx Track Materials Specification 34 11 93 for bonded insulated rail joints.
- 2.9.4. Except as modified in the contract drawings, rail used in Special Trackwork shall comply with the requirements of the AREMA Manual, Chapter 4 and Metrolinx Rail Specification 34 11 13.

2.10. Welds

- 2.10.1. All rail joints shall be jointed together with electric flash butt where possible, otherwise, thermite welds can be used. All field welds shall comply with the requirements set out in the Metrolinx Welding Manual.
- 2.10.2. No holes for temporary joint installation or otherwise shall be permitted within 4 in (102 mm) of each weld location.
- 2.10.3. All factory welded joints are to meet the Metrolinx Welding Manual requirements and the Alignment Tolerance as per AREMA Volume 1 Chapter 4, Part 3, Section 3.11.4.3.
- 2.10.4. Weld locations shall meet requirements set out in appropriate Metrolinx Standard Plans unless otherwise agreed by Metrolinx.

2.11. Identification Tags

- 2.11.1. Corrosion-resistant metal tag (stainless or anodised aluminium), 2" x 1¼" (50 x 32 mm), 1/16" (1.2 mm) thick, stamped with turnout ID, panel no. and orientation shall be affixed to each panel, bundle, Switch points, stock rails and frogs.
- 2.11.2. Tags shall identify the switch number, frog number, rail section, curved or straight, right hand or left hand, manufacturer, fabrication date, and weight and shall clearly mark the center of gravity for lifting. Numbers shall be stamped in characters 1/2 inch

minimum in height. Tags shall be a minimum of 0.050 inches thick, 1 1/4 inches wide and 2 inches long.

- 2.11.3. The manufacturer's name or initials, section, weight of rail, and month and year of manufacture shall be stamped in letters of appropriate size on a separate rust proof plate secured to the web of the rail.
- 2.11.4. Loose parts or fixtures shall be similarly stamped with suitable size letters and figures.
- 2.11.5. Frogs shall be marked with the frog number.

2.12. Ties

- 2.12.1. Supply all timber ties in accordance with Metrolinx Timber Tie Specification 34 11 33.2, relevant Metrolinx Standard Plans and the MTS with additional provisions for turnouts.
- 2.12.2. Concrete ties shall conform to Metrolinx Concrete Tie Specification 34 11 33.1, relevant Metrolinx Standard Plans and MTS with additional provisions for turnouts.
- 2.12.3. Modular concrete switch ties and the modular tie connections shall be designed, tested, and manufactured to meeting the most current requirements of AREMA, Chapter 30 Ties, Part 4 Concrete Ties, Section 4.13 Ties for Turnouts, and the performance requirements listed under Section 2.2 of the Metrolinx Concrete Tie Specification (RC-0506-02TRK-04).
- 2.12.4. Split ties and modular tie joints shall only be installed using products approved by Metrolinx.

2.13. Tie Fasteners

- 2.13.1. Elastic fastener tie plates and spring clips at all support locations not having special frog, switch, gauge or guard plates shall be as per Metrolinx Track Materials Specification 34 11 93 and Metrolinx Standard Plans GTS-1322.
- 2.13.2. Rail pads shall meet the requirements of AREMA Volume 1 Chapter 30 Part 2 Section 2.5 and Metrolinx Concrete Tie Specification 34 11 33.1.
- 2.13.3. Insulators shall meet the requirements of AREMA Volume 1 Chapter 30 Part 1, Article 1.7.3.2, Metrolinx Concrete Tie Specification 34 11 33.1, Metrolinx Track Materials Specification 34 11 93 and Metrolinx Standard Plan requirements.
- 2.13.4. The supplier shop drawings for turnouts/crossovers with concrete ties shall indicate the type of insulators and where to use them.
- 2.13.5. Insulation shall be a four-hole 7" x 7" x 3/4" (178mm x 178mm x 19mm) epoxy fiberglass splice block fastened to the plate with plow bolt as per Standard Plan GTS-0526.

2.14. Electrical Insulation

- 2.14.1. As per AREMA, Volume 1, Chapter 30, Part 1, signaled track territory, electrical insulation is required as per Article 1.7.4.2.
- 2.14.2. For electrified lines or lines where electrification is due to be installed, the insulation design shall also meet the requirements for electrification contained within MX-ELEC EMI-SPEC-2017 Interim Standards for the Electromagnetic Interference (EMI) in Electrified Territory.
- 2.14.3. As per AREMA Volume 1, Chapter 30, Part 4, the minimum impedance value of 20,000 ohm shall be met on the turnout's concrete ties as per Article 4.8.1.
- 2.14.4. The components and fasteners of the special trackwork shall pass AREMA Volume 1, Chapter 30 Section 2.8, Test 7: Fastener Electrical Impedance Test, article c) 1.

2.15. Lubrication

- 2.15.1. All moveable or machined parts and base plates shall be lubricated with graphite-based lubrication prior to shipment from the Supplier's plant.

3. Quality Assurance

3.1. General

- 3.1.1. Implement and maintain a QA programme compliant with ISO 9001 and Metrolinx Track Construction Specification 34 72 00. Maintain records for the duration of the contract plus five years.
- 3.1.2. The QA shall ensure that all special trackwork complies with Metrolinx Standards.
- 3.1.3. The special-trackwork manufacturer shall have at least ten (10) years of documented experience supplying Class 1 railways or transit agencies with RBM frogs, switch panels and related Track Materials.
- 3.1.4. Fully assemble each turnout on concrete switch ties replicating design geometry at the fabricator's plant for Factory Acceptance Testing (FAT).
- 3.1.5. FAT shall follow requirements set out in Metrolinx Track Material Specification 34 11 93 and give Metrolinx the right to participate in the FAT. This does not relieve the contractor of the responsibility to meet all applicable standards and specifications.
- 3.1.6. The Supplier shall give Metrolinx at least ten (10) working-days notice for FAT and shall provide an eight-hour daytime window per layout for testing and inspection.
- 3.1.7. All non-conformances shall be rectified and a re-inspection shall be completed at Suppliers cost.

3.2. Testing Requirements

- 3.2.1. All tests shall be performed at the place of manufacture prior to shipment, unless otherwise agreed, and shall be so conducted as not to interfere unnecessarily with the operation of the works or the progress of the work on the purchaser's order.
- 3.2.2. Rail chemistry & hardness testing shall be as per Metrolinx Rail Specification 34 11 13.
- 3.2.3. Frog depth-hardening: sample coupons to verify hardness value ≥ 352 BHN.
- 3.2.4. Electrical insulation: assembled switch panel to show ≥ 20 k Ω impedance across ties.
- 3.2.5. Fastener torque: verify specified torque band after one-hour dwell.
- 3.2.6. All testing and inspection shall be performed by fully qualified personnel.
- 3.2.7. The Supplier shall supply ultrasonic and magnetic particle weld test reports for all shop-welded joints.
- 3.2.8. Test certificates for hardness shall be furnished by the Supplier.
- 3.2.9. For concrete layouts prior to shipping, all components shall be pre-assembled, including baseplates, of the special trackwork on concrete cross ties according to the shop drawings. The pre-assembly will be inspected and checked to ensure a proper fit and conformity with the plans and this Specification.
- 3.2.10. Inspection will include but not limited to:
 - a) Component dimensions and tolerances will be checked.
 - b) Alignment, gauge and vertical profile of the special trackwork will be checked. No bracing or gauge rods will be permitted to hold components to correct gauge during inspection.
 - c) The individual steelwork components at the Supplier's facility for material and dimensional conformance;
 - d) Inspection of the pre-assembled special trackwork unit on concrete ties at the Supplier's facility for dimensional and geometrical conformance; and
 - e) Inspection of the concrete ties if applicable.

3.3. Fabrication Tolerances

- 3.3.1. Unless otherwise noted, comply with AREMA Portfolio of Trackwork Plans 1020-1029 and Metrolinx drawings:
 - a) Gauge: $\pm 1/16"$ (± 1.5 mm);
 - b) Switch point spring back at 6" (150 mm) from tip: $\leq 6/32"$ (5 mm);
 - c) Frog flangeway depth: $\pm 1/16"$ (1.5 mm); and
 - d) Plate flatness (mid ordinate): $\leq 0.0026 \times \text{length}$.

- 3.3.2. Accuracy of workmanship for completed frogs and switches shall be within the permissible variations prescribed in AREMA Portfolio of Trackwork Plans No. 1020, 1021, and 1025.
- 3.3.3. All fabrication tolerances shall conform to the AREMA Portfolio of Trackwork Plans No.100.

End of Section

