Track Standards Bulletin #008

Various Sections

August 30, 2022 Bulletin No. 008

REVISED

Refer to Section 9.2 and add:

12. Twelve 10-foot (3.1m) timber transition ties spaced twenty inches (508mm) apart are acceptable in lieu of timber transition tie sets consisting of four 9-foot (2.8m) ties, four 10-foot (3.1 m) ties, and four 11-foot (3.4m) ties spaced twenty inches (508 mm) apart.

Refer to Section 9.2.9 and revise as follows:

9. Permanent transition tie sets shall not be placed within horizontal curves nor within spirals. The distance between transition tie sets and spirals (TS and ST geometry points) and simple curves (BC and EC) shall be the greater of:

Preferred minimum: 200 ft. (61.0m)
Absolute minimum: 40 ft. (12.20m)

Any values lower than 200 ft. (61.0m) must be reviewed and approved by Engineering & Asset Management - Track.
Installation of permanent transition tie sets within 40 ft. of spirals or in full body of curves must be reviewed and approved in writing through a Standards Deviation Request.

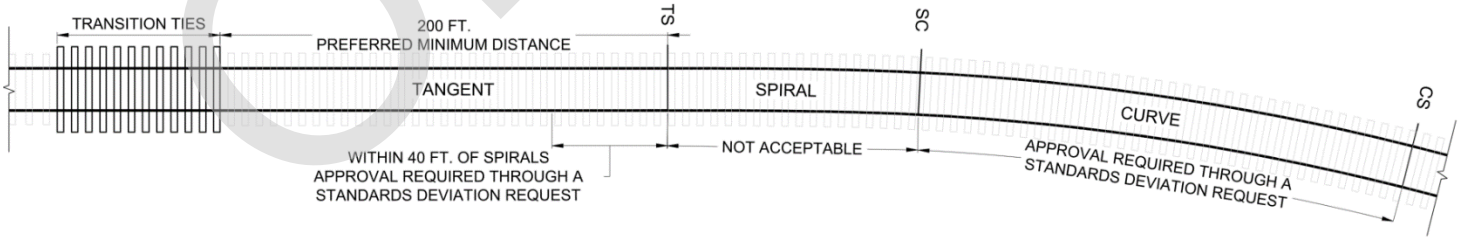


Figure 19-A. Location of Permanent Transition Tie Sets

In all cases the track-bed width shall be designed and constructed to accommodate the transition tie sets, provide for the minimum ballast shoulder width and sloped profile for CWR, as well as a flat walking surface width of at least 1'-8" (510 mm) for Railway personnel.

Refer to Section 12.1 and add:

32. On all newly constructed and/or affected track, the Contractor shall; Upon the request of Metrolinx, re-mobilize to site to surface, stabilize and regulate the track within a 12-month period from the date of In-Service inspection.

Refer to Section 15.19. and add:

3. A Seasonal increase in ambient temperature is defined as a change in temperature greater than 20° C (36° F) within 24 hours.

Refer to Section 17.5.17 and add Subsection "a", as follows:

a) Repairs shall be conducted to restore appropriate elevation if a frog point is chipped, broken or worn more than or equal to 9/16 in. (14 mm) down and 6 in. (152 mm) back. Operating speed shall be reduced to Class 2.

Refer to Section 17.5.18 and add Subsection "a", as follows:

a) Repairs shall be conducted to restore appropriate elevation if the tread portion of a frog casting is worn down more than or equal to 5/16 in. (8 mm) below the original contour Operating speed shall be reduced to Class 2.

Refer to Section 18.5.6.a and revise to read:

a) Field validation of all loaded gauge values identified must be done using an approved hydraulic pressure tester capable of applying at least 4000 psi, and in no case greater than 5000 psi, of horizontal load, in accordance with Recommended Method 3700-4.

Refer to Section 19.4.11 and revise the entire section as follows:

11. Superelevation imbalance shall be minimised and designed as close to a balanced condition as possible. Where negative freight imbalance is unavoidable a value not exceeding –1 in. (-25.4 mm) is acceptable. Any values lower than –1 in. (-25.4 mm) must be reviewed and approved in writing through a Standards Deviation Request.

Refer to Section 19.4.7 and add Subsections "a" and "b" as follows:

a) Curve tables referenced in Appendix N illustrating minimum elevation values are used in the support of curve design for new track construction.

b) Curve tables referenced in Appendix N illustrating maximum speed values are used to prescribe the maximum speed tolerance allowed for track maintenance.

Refer to Section 19.4.10.c and revise to read:

c) 2 in. (51 mm) below the balanced elevation for Canadian National Freight dispatched tracks. 3 in (76mm) below the balance elevation for all CN trains is applicable for track maintenance purposes only.

Refer to Section 19.4.10.d and revise to read:

d) 3 in. (76 mm) below the balanced elevation for all passenger trains is applicable to Amtrak on Lakeshore West - Oakville Sub & Union Station Rail Corridor only.

Refer to Section 20.1.10 and delete item 'b'

~~b) When working within zone 3, temporary slow orders must be in place to protect safe train operations.~~

Refer to Section 20.2.14.c and revise to read:

c. Then once monthly for the remainder of 3 months;.

Refer to Section 20.2, Table 38 and add the following to the Actions to be taken:

- Post remedial corrective works, Metrolinx reserves the right to determine additional track settlement monitoring and frequency of readings.

Refer to Section 21.4 and add:

22. When open cut or excavation/tie removal culvert installation methods are leveraged on timber tie trackage, both rails must be box anchored (every tie) for 200' commencing 200' from the work area in each direction. Destressing of both rails must be conducted post Track In-Service. This distance of the destressing limits shall encompass the work area, plus 200' in both directions.

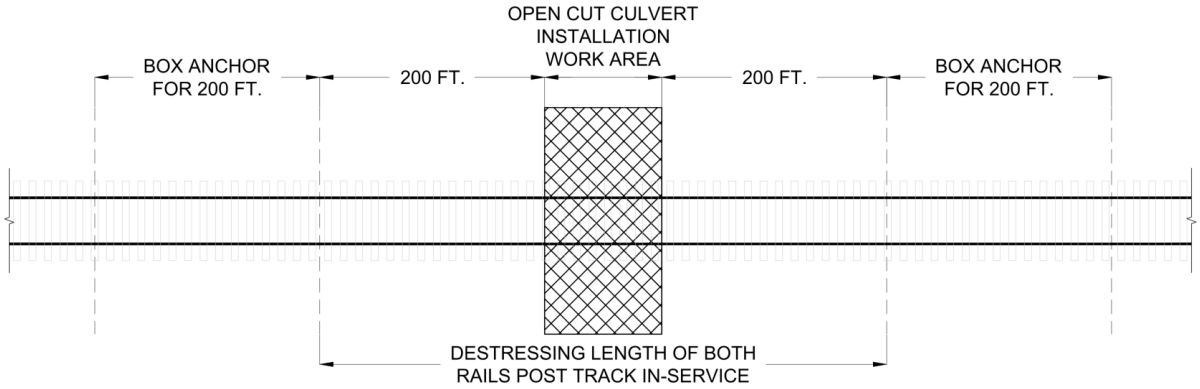


Figure 38-A. Destressing Length for Open Cut Culvert Installations

Refer to Miscellaneous Recommended Methods and add:

Recommended Method 3700-4 – Manual Gauge Pressure Tester (MGPT)

1. Definitions

MGPT	Manual Gauge Pressure Tester
HGIV	Heavy Geometry Inspection Vehicle, capable of providing dynamic track geometry data, including loaded wide gauge.
Designated Employee	Qualified employee trained in the use of the MGPT; maintains a valid TIG certification, familiar with the territory being tested, and has the minimum experience necessary to inspect track infrastructure as defined within the GO Transit Track Standards.
Lower Fillet	The curved portion where the web of rail meets the base of rail.

2. General

a. This document serves as instructions for the safe and effective use of the MGPT when validating loaded wide-gauge track conditions.

b. Field validation shall be performed only using an approved hydraulic MGPT capable of applying at least 4000 psi of horizontal pressure between each rail. Only ENSCO and Geismar are approved manufacturers for hydraulic MGPT.

c. Proper maintenance, storage, and calibration of the MGPT at the frequency set out by the manufacturer must be carried out and is critical for the care and reliability of the tool.

Note: For loaded wide-gauge defects found within road crossings and special track work, the MGPT cannot be applied as outlined in the above instructions. Instead, the defect measurement provided by the HGIV

must be treated as accurate and immediately repaired or protected in accordance with the GTTS.

3. Application

Loaded Wide-gauge Validation

a. Upon advisory of a loaded wide-gauge defect found by the HGIV, the designated employee shall use the MGPT to assess the accuracy of the loaded gauge measurement.
b. The following conditions including, but not limited to, must be considered prior and during the application of the MGPT to assess the integrity of the track, and determine the appropriate remedial actions:

   i. Condition of rail fasteners;
   ii. Condition of rail profile, including base;
   iii. Tie condition, including rail seat abrasion; and
   iv. Rail cant.

   Note: When these conditions are present the results may produce a greater number of exceptions than with the HGIV. GTTS must be utilized to assess additional conditions besides just the loaded gauge measurements.

c. Place MGPT between the rails so that shoes rest on the rail base. WARNING: THE MGPT MAY BE DAMAGED IF NOT USED PROPERLY. DO NOT ATTEMPT TO USE MGPT ON ANY OTHER PART OF RAIL SURFACE.

d. Measure and record the initial unloaded track gauge using tape measure or other measuring device.

e. Apply hydraulic pressure by pumping the handle and load the track to 4000 lbs. (4000 psi on the gage). CAUTION: DO NOT EXCEED 4000psi. EXCESSIVE PRESSURE WILL DAMAGE THE MGPT AND MAY CAUSE PERSONAL INJURY.

f. Measure and record the fully loaded track gauge using tape measure or other measuring device.

   i. If the MGPT confirms that the defect exceeds the standard for the class of track, immediately apply the appropriate track protection if not already in place and repair the defect. If the defect cannot be immediately repaired, apply the appropriate slow order protection for which can accommodate the defect.

   ii. If the MGPT confirms that the gauge measurement is acceptable for the class of track, the track protection can be released contingent on a repair plan submitted to Metrolinx.

g. Release the hydraulic pressure on the MGPT

4. Safety

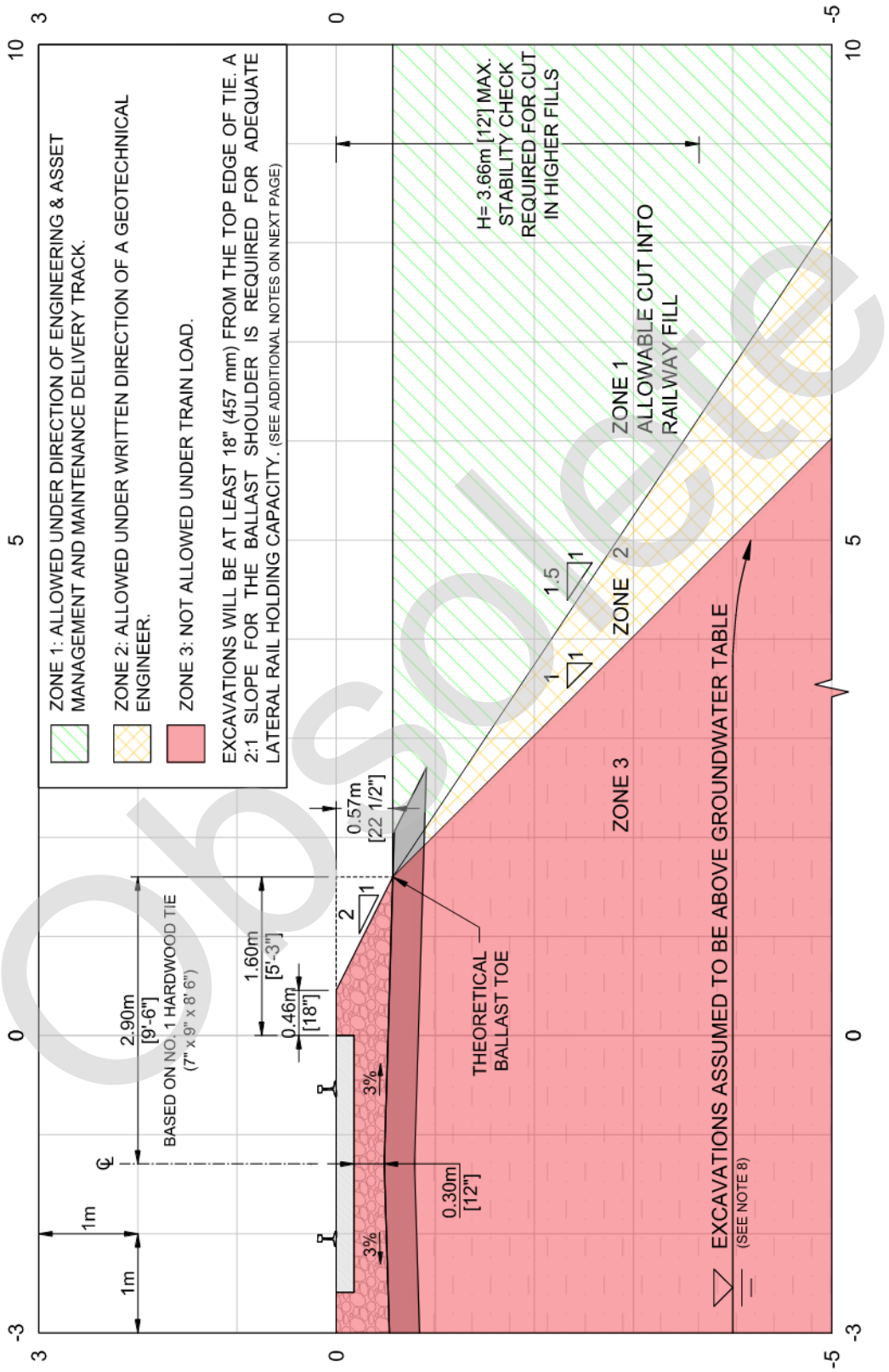
a. Inspect the MGPT before and after each use for cracks, leaks, or loose hardware. Store the tool appropriately and within its designated case (if applicable) to prevent damage.

b. If the MGPT fails to extend after repeated pumping there is either an air leak or it is low on hydraulic oil.

c. Before applying or releasing pressure with the MGPT, ensure that all personnel are advised and are well clear to avoid possible injury from kick-back of rail or tool.

d. In no case shall the tool be used in any fashion contradictory to the manufacturer's guidelines or beyond any instructions so indicated by this recommended method.

Refer to Appendix W and revise title to read "Appendix W - Temporary Excavation Limits for Intrusive Works Adjacent to a Railway", and replace figure with:



Notes:

1. All excavations adjacent to the railway must be checked by a licensed geotechnical engineer prior to any excavation taking place.

2. This guideline applies to compact/stiff soils. Instability may develop if the embankment is made of soft to firm clay or loose sandy materials (as suggested by nearby borehole data or monitoring wells).

3. A geotechnical memo will be required if the bottom of the excavation goes below the stabilized groundwater table (as suggested by nearby monitoring wells or borehole data).

4. If seepage is noted, limit the excavation to above the water seepage zone and contact the geotechnical engineer for advice on how to proceed.

5. Limit advanced excavation into the existing fill to only a few days in advance of roadbed construction backfill (ideal <3 days). Only key-in to the slope the thickness of the fill layer which is going to the placed (e.g., 1 ft (305 mm) thick layer of granular fill or 2 ft (610 mm) layer of rock fill). Vertical faces for the benches should then be limited to < 2 ft (610 mm) or as accepted in writing by the geotechnical engineer (depending on soil and slope stability conditions).

6. If the base of excavation is in soft ground such as silts and clays, avoid running equipment over the bottom of excavation after stripping. Place adequate granular fill layer before circulating over it. Dump trucks are only allowed to run over the compacted granular fill. If clean coarse rock is used for backfill, place a non-woven geotextile at the base of the excavation to prevent contamination and pumping of silt and clay up through the voids of the rock fill. The non-woven geotextile could be placed under the geogrid reinforcement, if required.

7. For the approval of workplans before proceeding with an excavation, Contractors/Consultants must submit cross-section drawing(s) alongside workplans. These drawing(s) must overlay the zones as described in Appendix W with the cross-sections of the proposed excavation.

8. The Contractor should have groundwater control measures (such as pumps) available onsite during excavation. If seepage is noted, limit the excavation to above the water seepage zone and contact the geotechnical engineer for advice on how to proceed.

9. This Appendix must be read in conjunction with Section 20 Drilling and Excavating Around and Under Tracks.

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These changes are effective immediately.

END

Signed:
Terry Mitchell
Director, Engineering – Track, Engineering and Asset Management