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May 06, 2025

Addendum No. 01

File Reference Number: RFP 2025 015

Title: Tie Inspection Services

RE: Clarifications/Questions

Please refer to the following information / clarifications:

Item 1: Please confirm the smallest depth of Adzing that must be detected and reported.

Answer: The smallest depth of adzing that must detected and reported is 1/4" (6.35 mm).

Item 2: What is the smallest depth of plate cut that must be detected and reported? Also, if the plate is cutting on only one corner, and not the entire side, does it need to be reported as well?

Answer: Plate cut measurement shall be of a minimum 1/4" (6.35 mm).

Item 3: Can ONTC elaborate on what kind of inspection and reporting is required for special ties and provide some additional details on the different special ties (e.g., different lengths) that are present in the system?

Answer: The longest tie length that will be evaluated on the mainline is 10' in length. The same reporting requirements will apply to these as any other tie on the mainline.

Item 4: Can ONTC please clarify the meaning of obstructed ties?

Answer: Obstructed ties mean ties that are covered in ballast, mud, dirt and cannot be evaluated accordingly.

…/2

Item 5: With respect the Rolling 39' wood tie grade condition, can ONTC please clarify how the 39-foot window should be handled?

For example, should the reporting window be shifted forward by say 1-foot each time and an updated 39-foot report be made?

Answer: The rolling 39-foot window should be adjusted every foot.

Item 6: Please provide a copy of ONTC's MTR standards.

Answer: Please refer document MTR- Ties attached at the end of this Addendum.

Item 7: Will ONTC extend the submission deadline for RFP 2025 015 – Tie Inspection Services?

Answer: Yes. The new submission deadline is now Friday, May 16, 2025.

Part 3 – Request for Proposals Specifications – Schedule 3-A-1 – Scope of Work

Item 8: The scope of work calls for high-resolution imagery, Lidar and an algorithm to assign a condition code for ties. Similar to the Lidar technology, please confirm if a more advanced solution than Lidar which meets all scope requirements listed in schedule A can be utilized.

This advanced technology includes a 3-dimensional laser inspection system that combines high-speed laser sensors and artificial intelligence to automatically inspect the condition of, and detect safety-related changes in, ties.

Answer: The respondent may suggest an alternative approach that meets the minimum requirements listed in the proposal. ONTC will reserve the right to award to the most qualified respondent based on its evaluation criteria.

This Addendum hereby forms part of the RFP.

Regards,

Brinda Ranpura
Procurement Contracts Specialist
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2. Ties

2.1 Ties in Track

a) Existing tie type, length, and spacing may remain in place until programmed tie replacement or ballast renewal is performed.
b) Installed centered with the track and square with the rail, with the end of the tie approximately 18 ½ inches from the field edge of the rail base.
c) Installed in tracks Class 2 and above at 20 3/8" *(518 mm)* centers
d) Installed at 21 1/4" *(540 mm)* centers in Class 1 tracks.

2.2 Tie Spacing during Bridge Work

a) Maximum clear span of ties on bridges with unsupported running rail*;
    - 115 lb rail – 24" *(610 mm)*

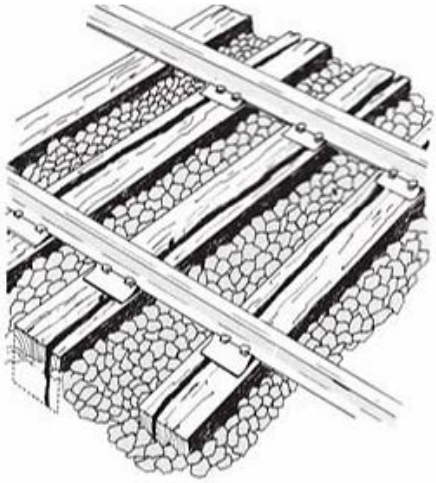
    **smaller rail sections must be as per and approved by a Bridge Engineer*

2.3 Tie Defects

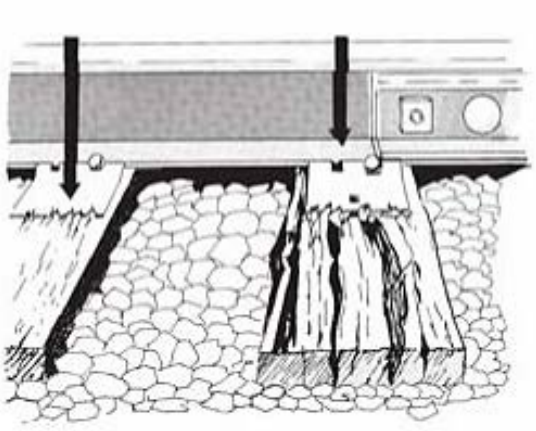
a) Each 39-foot segment of track must have a sufficient number of cross ties which in combination provide support that will hold gauge, surface, and alignment.
b) Defective ties are defined as those that are:
    i. Broken through,
    ii. Split, or otherwise damaged, to the extent that it will allow the ballast to work through, or will not hold spikes or rail fasteners,
    iii. Plate cut more than 2" *(51 mm)* of the tie thickness,
    iv. Tie cut more than 40% of thickness, or
    v. So deteriorated that the tie plate or base of rail can move laterally 1/2" *(13 mm)* relative to the tie.
    vi. Not holding surface, line, or gauge.

Figure SUB-PART D – 2 – Examples of Tie Damage / Defects

Tie Split End to End
- tie will not hold spikes or rail

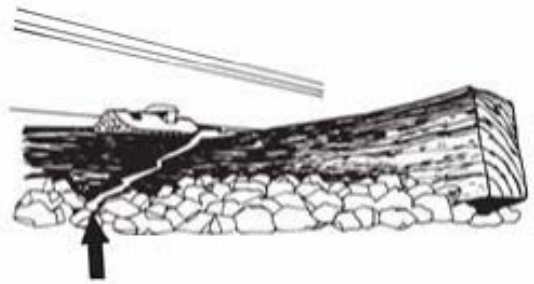


Spike Killed or Crushed
- sign of spreading track

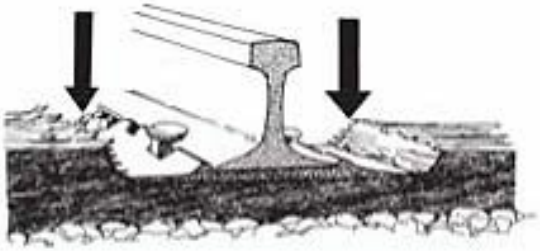


Decayed Tie

Broken Tie Under Rail Base



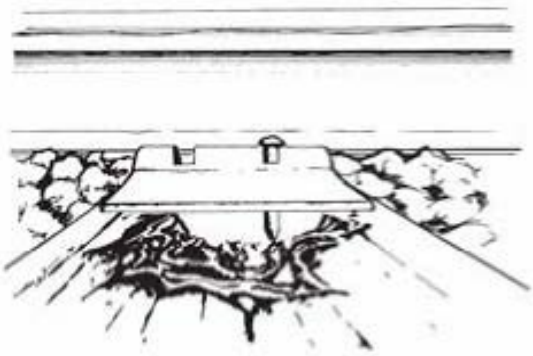
Tie Cut More Than 40% of Thickness



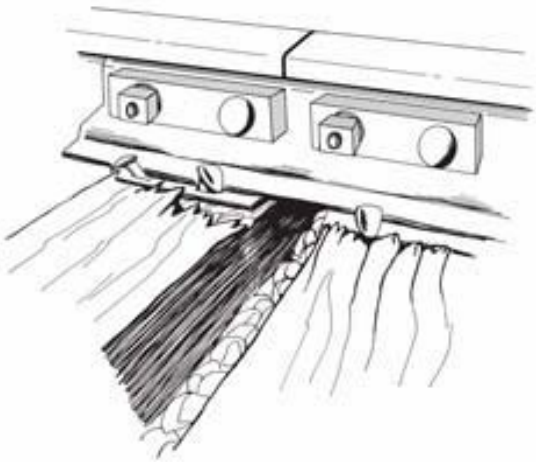
Tie Adzed to a Depth of 2” or Greater

Figure SUB-PART D – 2 – Examples of Tie Damage / Defects (continued)

Burnt Tie

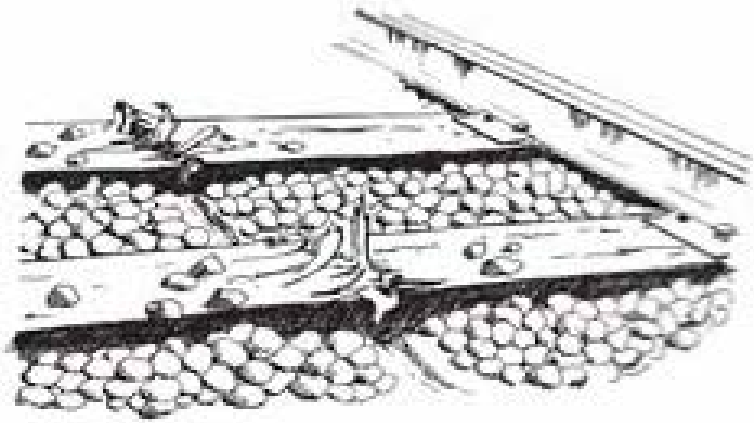


Spike Killed, Crushed of Decayed



Damaged Tie

- Depth of 2” or more due to derailments, dragging equipment or fire



c) Note that each 39 foot segment has approximately 22 ties. Ensure that at least the number of non-defective ties shown in the following table:

MINIMUM NON-DEFECTIVE TIES PER 39 FT		
CLASS OF TRACK	**Tangent track and curves to 2°**	**Turnouts and curved track over 2°**
Class 1	5	6
Class 2	8	9
Class 3	10	10
Class 4, 5	12	14

Figure SUB-PART D – 3 – Minimum Non-Defective Ties per 39'

d) For Class 1 or Class 2 lines, ensure that each rail joint is supported by at least one non-defective tie, with a tie plate, whose centerline is within 24 inches *(610 mm)* either side of the rail joint location. Ensure that there are not more than 2 defective ties in adjacent positions in the joint area.

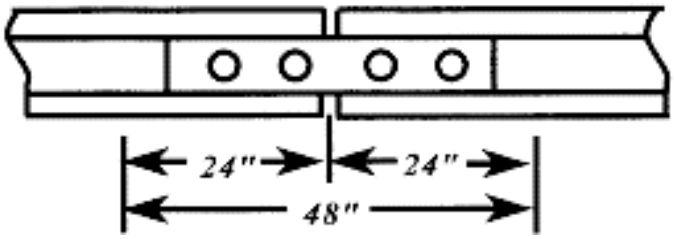


Figure SUB-PART D – 4 – Class 1 and Class 2 - Non-Defective Tie Spacing in a Joint - Within 24"

e) For Class 3 through Class 5 track, ensure that each rail joint is supported by at least one non-defective tie, with a tie plate, whose centerline is within 18 inches *(457 mm)* either side of the rail joint location. Ensure that there are not more than 2 defective ties in adjacent positions in the joint area.

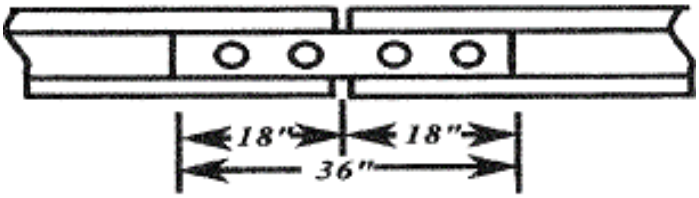


Figure SUB-PART D – 5 – Class 3 through Class 5 - Non-Defective Tie Spacing in a Joint – Within 18"

f) Where the above tie conditions are not met, local forces must spot in ties or train speeds must be restricted to bring the track into compliance.

2.4 Tie Maintenance

a) When renewing ties, maintain the surface, line and gauge of the track. Immediately tamp the new tie so as to make its bearing surface match that of the adjacent ties.
b) Do not insert tie plates after the tie has been tamped.
c) When a spike is pulled, plug the spike hole in the tie with a wooden tie plug or approved chemical tie compound. When re-spiking, drive the spike into the plug (if possible).
d) A cluster (or spot renewal) program should be undertaken when there is a high frequency of;
    i. Four or more consecutive defective ties,
    ii. Three or more consecutive defective ties in a curve greater than 2°; or
    iii. Defective ties in the joint area.
e) When renewing ties, regardless of method of installation;
    i. Correct gauge where required,
    ii. Where required, no more ballast than is absolutely necessary should be removed from the crib or shoulder,
    iii. All ties installed must be spiked and anchored, the ballast shoulders restored, and the ties properly tamped before the close of each day. Any adjacent ties that may be left hanging should also be tamped; and
    iv. When necessary to allow trains to operate through tie gang renewal areas during working hours, not more than three consecutive ties on tangent track or two consecutive ties on curved track can be left unspiked, ties on either side of all joints must be spiked, and the speed must be limited to a maximum of 10 mph,
    v. In preparation for the following day tie installation the spiking pattern may be reduced to a minimum of 2 rail holding spikes (one gauge and one field) per plate on each tie to be removed,
    vi. Hard and softwood ties should not be mixed on the main track except when changing from one category to another (eg. curve to tangent).
f) When piling ties for pick-up or disposal, place them:
    i. At a safe distance from the track, clear of the wing of ballast regulators.
    ii. On the opposite side of the track from any wire line (if possible).
    iii. Where they will not block key sight lines.
    iv. Where they will not present a hazard to employees.
    v. Away from streams, rivers, environmentally sensitive or drainage systems.

2.5 Tie Inspection

a) Examine ties in track as early as possible each year to determine their condition. Identify and include on a tie count list any ties that are candidates for renewal based on current condition. Include ties that are defective as in Sub-Part D – Section 2.3 – Tie Defects. Also include ties that exhibit the following conditions:
    i. Split end-to-end,
    ii. Adzed or plate cut more than 2 inches,
    iii. Severely crushed,
    iv. Spike killed, or
    v. Severely decayed.
b) Do not use a pick or other sharp instrument on the top of the tie when testing ties.

c) The Track Inspector must prepare a mile by mile list showing the number of ties that are defective on main tracks, 1/5 of the track miles each year to complete all main tracks every 5 years,

d) Renewal ties must be marked and recorded for which programmed tie renewal is planned for the following year.

2.6 Installing Track and Switch Ties in CWR Territory

a) Tie Replacement in CWR Territory

i. No ties will be installed when the rail temperature is above the PRLTR (100˚F / *37.8°C*) unless directed by the Director, Rail Infrastructure. The Director, Rail Infrastructure must specify all necessary precautions to be taken,

ii. In CWR territory the maximum number of consecutive track ties that can be renewed in a single pass shall be:

NUMBER OF CONSECUTIVE TIES		
	Tangent track to 2° curves	**Greater than 2°**
With a Junior or Production Tamper	5	4
With Hand Tamping or Hydraulic Tools	3	2

Figure SUB-PART D – 6 – CWR Territory - Maximum # of Ties Renewed in a Single Pass

iii. Switch ties in CWR territory may be replaced in a single pass provided the appropriate speed restriction is applied.

iv. Crossing ties in CWR territory replaced as part of crossing rehabilitation may all be changed in a single pass provided;

- Crossing surface is replaced immediately following tie renewal,
- Crossing approaches are restored and are of sound condition; and
- The appropriate speed restriction is applied.

v. Hard and softwood ties should not be mixed on the main track except when changing from one category to another (eg. curve to tangent).

b) Speed Restriction Requirements in CWR Territory

i. Speed restriction requirements associated with installing track and switch ties in CWR territory are given in Sub-Part D – Section 7.8 – Prevention of Track Buckling.

3. Tie Plates

3.1 Second Hand Plates

a) The use of new or second hand tie plates shall be as directed by the Director, Rail Infrastructure, however;
   i. Broken or damaged tie plates must not be reused,
   ii. Tie plates with excessively worn spike holes or shoulders should not be reused.

3.2 Installation of Tie Plates

a) Tie plates must be installed so that;
   i. The plates have full, even bearing on the ties,
   ii. The field side plate should is square against the field side base edge of the rail,
   iii. The plate is centered on the tie,
   iv. The rail is canted toward the center of the track (if applicable),
   v. Each plate has the same cant.
b) In Classes 3 through 5 track where timber crossties are used there shall be tie plates under the running rails on at least (8) eight of any (10) ten consecutive ties,
c) Ensure that there are no metal objects that cause concentrated loading solely supporting the rail between the rail and the tie plate. This includes the tie plate shoulders and spike heads,
d) Torch cutting of tie plates is not permitted,
e) 14 inch tie plates shall be used with 115 lb rail on all main track curves in excess of 3 degrees.

3.3 Tie Plates in Jointed Track

a) Replace missing or broken tie plates as necessary to effectively maintain gauge.
b) Existing tie plates may remain in place until a rail relay is performed.