

Proposed Changes to Allow Roadway Milling and Alternative Delineation in Wet Conditions

April 2024

Prepared by:
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Agency of Transportation

Approved by Chief Engineer

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The purpose of this document is to provide guidance related to the application of temporary duplicate markings as an alternative delineation method to allow for roadway milling in wet conditions. Please refer to VTrans' "Proposed Changes to Allow Roadway Milling and Alternative Delineation in Wet Conditions" approved on April 24, 2023, for additional background information.

An "*Alternative Delineation Plan*" addendum to the Temporary Traffic Control Plan shall be submitted by the contractor and accepted by the Agency prior to any duplicate marking being used on a project. The addendum shall include the following:

- A narrative describing how traffic markings and delineation will be in place after milling in wet conditions and prior to opening to traffic.
- A drawing or description of all the delineation measures planned for use and the associated roadway types/segments on which they would be implemented. See below for roadway types.
- The proposed sequence of milling, to include: milling width, milling rate, and daily anticipated length.
- A drawing, illustration and/or description of how center line markings, lane line marking, and edge of the travel lane or roadway will be maintained or delineated after milling in the rain; including the use of temporary paint, barrels, cones, use of existing delineation devices, for example existing guardrail, and spacing of devices and markings along the edge of pavement.
- A drawing/detail which depicts appropriate signage to inform the travelers of the temporary condition (NO CENTER LINE, UNSAFE TO PASS, etc.).
- When needed, a delineation plan for ramps including temporary stop bars, yield markings, etc. Note that tapers, merges, and acceleration and deceleration lanes will not be milled using alternative delineation.
- Indicate how the contracted temporary markings shall be applied, and temporary delineation devices removed as soon as conditions allow.
- The Engineer shall make the final determination on when and where the contractor is allowed to deploy the Alternative Delineation Plan.

Guidance for use of duplicate markings

The intent of this section is to provide guidance for the practice of placing duplicate markings:

- Duplicate markings will only be placed when unfavorable weather has been forecast which would prevent the application of temporary markings immediately following milling operations.
- The Contractor shall actively monitor weather forecasts utilizing the 7-day National Oceanic & Atmospheric Administration (NOAA) forecast at <https://www.weather.gov/> in determining when to use duplicate markings.
- Markings will be temporary waterborne paint.
- UNSAFE TO PASS signs shall be placed on each side of the road 1,000 ft into the project limits and subsequent signs placed at 2 mile intervals.

- Duplicate markings that are no longer applicable shall be removed or obliterated as soon as practical.
 - VTrans is defining “as soon as practical” as a 96 hour maximum, meaning that temporary duplicate markings should be applied as close to the milling operation as possible and may be in place for no more than 96 hours. The 96 hour period begins at the end of the workday in which duplicate markings were placed, or in the temporary no centerline option detailed below, the day in which centerline was removed. The milling speed and subsequent calculation as coordinated with the Engineer will define the maximum length of duplicate markings.
 - Additional segments will only be marked with duplicate markings with approval of the Engineer.
- The Contractor shall utilize duplicate pavement markings that resemble the existing striping in width, geometric layout, and configuration, meaning a double yellow centerline must be recreated as a duplicate double yellow centerline. In the event passing zones are present in any two-lane sections, the existing dashed yellow lines which divide the direction of travel shall be covered with double yellows prior to any offset.
 - Installation of an additional single yellow centerline may be allowed with thin lift treatments that do not require a longitudinal milled taper. Once milling operations are complete, a double yellow marking shall remain. The remaining double yellow marking shall meet the requirements for that standard marking including marking width and marking gap. Width restrictions must be documented in the Alternative Delineation Plan submittal.
- Payment for pavement markings and signage related to the Alternative Delineation Plan shall be paid under the existing contract items.
- Duplicate marking requirements are not applicable in cases where the contractor elects to remove existing markings following the installation of duplicate markings within the same workday.

Duplicate marking criteria by roadway type:

Note: Specific contract requirements for any of the criteria enumerated below shall take precedence over this guidance.

A - Interstate

- Requirements
 - Minimum Lane Width (LW): 11’
 - Minimum Taper Width (TW): Based on T-35 standard drawing.
 - Minimum Shoulder Width: 1’
 - Minimum Pavement Width: (number of lanes) x 11’
 - Maximum AADT: None
 - Maximum Duration: 96 hours (as defined above)

- Exclusions
 - Acceleration/deceleration lanes, and any additional exclusions contained within the contract

B - Divided Highways

- Requirements
 - Minimum Lane Width (LW): 10'
 - Minimum Taper Width (TW): Based on T-35 standard drawing.
 - Minimum Shoulder Width: 1'
 - Minimum Paved Width: (# lanes x 11')
 - Maximum AADT: 20,000
 - Maximum Duration: 96 hours (as defined above)
- Exclusions
 - Merge lanes, acceleration/deceleration lanes, signed and marked bicycle lanes, and any additional exclusions contained within the contract

C – Undivided Multilane Highways

- Requirements
 - Minimum Lane Width (LW): 10'
 - Minimum Taper Width (TW): Based on T-35 standard drawing.
 - Minimum Shoulder Width: 1'
 - Minimum Paved Width: (# lanes x 11')
 - Maximum AADT: 18,000
 - Maximum Duration: 96 hours (as defined above)
- Exclusions
 - Signalized Intersections, deceleration/acceleration lanes, merge lanes, signed bike lanes, left turn lanes, 2-way left turn center lanes, and any additional exclusions contained within the contract

D - Two-Lane Two-Way Roads

- Requirements
 - Minimum Lane Width (LW): 10'
 - Minimum Taper Width (TW): Based on T-35 standard drawing.
 - Minimum Shoulder Width: 1'
 - Minimum Paved Width: (# lanes x 11')
 - Maximum AADT: 12,000
 - Maximum Duration: 96 hours
- Exclusions
 - Signalized Intersections, signed bike lanes, left turn lanes, 2-way left turn center lanes, deceleration/acceleration lanes, merge lanes, and any additional exclusions contained within the contract

E - No Centerline on Two-Lane Two-Way Roads

In areas where no temporary centerline or duplicate marking is proposed, NO CENTER LINE (W8-12) signs will be used in accordance with MUTCD 6H.29 in conjunction with UNSAFE TO PASS on each side of the road 1,000 ft into the project limits and subsequent signs placed at 2 mile intervals.

- Requirements
 - Minimum Lane Width (LW): 10'
 - Minimum Taper Width (TW): Based on T-35 standard drawing.
 - Minimum Shoulder Width: 1'
 - Minimum Paved Width: (# lanes x 11')
 - Maximum AADT: 1,000
 - Maximum Duration: 96 hours
- Exclusions
 - Signalized Intersections, signed bike lanes, left turn lanes, 2-way left turn center lanes, deceleration/acceleration lanes, and any additional exclusions contained within the contract