REVISION DATE 0104417

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Sample Plan

TRAFFIC BARRIER PLANS --------- NARRATIVE

References:

Road Design Manual: Chapter 10-7 and 10-8

Design Scene: Chapter 14 - Guardrail and Barriers

Technical Memorandum: No. 01-24-TS-09:
W-Beam Bull Nose

No. 15-08-TS-04:
Design Guidelines for High-Tension Cable Barriers (HTCB)

No. 16-09-TS-04:
Implementation of MnDOT Single Slope Median Barrier design and MnDOT Type 31 Guardrail Design

Standard Plates: 8300 series

Standard Plans:
5-297.601 Guardrail Installations at Medians and End Treatments (3 Sheets)
5-297.603 W-Beam Transition to Concrete F-Shape Safety Rail with Approach Curb (Steel Post)
5-297.605 W-Beam Transition to Concrete F-Shape Safety Rail With Approach Curb (Wood Post)
5-297.606 Upgraded W-Beam Transition to Concrete J-Shape Safety Rail with Approach Curb (Wood Post)
5-297.607 W-Beam Transition to Concrete J-Shape Safety Rail with Approach Curb (Wood Post)
5-297.609 W-Beam Transition to Concrete End Post With or Without Approach Curb (Wood Post)(2 Sheets)
5-297.611 Thrie Beam Bullnose Guardrail for Medians (3 Sheets)
5-297.614 W-Beam to Thrie Beam Transition
5-297.618 W-Beam Transition to Concrete J-Shape Safety Rail with Approach Curb (Steel Post)
5-297.619 W-Beam Transition to Concrete End Post With or Without Approach Curb (Steel Post)(2 Sheets)
5-297.682 Upgraded W-Beam Transition to Pier Columns Without Approach Curb Without Approach Curb (Wood Post)
5-297.684 W-Beam Transition to Pier Columns Without Approach Curb (Steel Post)(2 Sheets)
5-297.686 Box Beam Transition to Concrete F-Shape Barrier (3 Sheets)
5-297.688 High Tension Cable Barrier Median Placement and Overlap
5-297.690 Traffic Barrier Type 31 Assembly Details (2 Sheets)
5-297.692 Traffic Barrier Type 31 End Anchorage Assembly Details (2 Sheets)
5-297.694 Approach Guardrail Transition (AGT) Type 31 (5 Sheets)
5-297.695 Steel Plate Beam Guardrail Details Asymmetrical W-Beam/Thrie Beam Transition
5-297.696 Traffic Barrier Type 31 Low Fill/Long Span - Omitted Post Details

Spec. Book: 2554

Miscellaneous: Roadside Design Guide, latest version
Standardized Guide to Highway Roadside Barrier Hardware
http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/

General Information:

Traffic barrier is a hazard in itself. Make sure that the barrier is warranted.

The Standard Plan sheets and Technical Memoranda show extent of guardrail replacement needed to upgrade old connections.

Conflicts (lighting cable, drainage items, utilities, bus stops, pedestrian facilities, etc.) may be encountered when designing guardrail locations. Coordinate any relocation plans with the affected functional groups. Lighting cables at or near bridge ends are particularly vulnerable.

When raising existing pavement with mill and overlay projects, make sure that the guardrail standards are still met. It may be necessary to adjust the guardrail if the height is not within 3 inches of standards.

It is Metro District's policy to use steel posts except in applications where steel posts have not yet been approved. When replacing wood guardrail posts with steel posts, provide a quantity of aggregate shouldering to fill wood post holes at an application rate of 1 cu. yd. per 20 holes to be filled.

If including SKT-350 details in the plan, specify the use of the hinged breakaway bolt option, not the welded plug option.

If the distance from the back of the guardrail post to shoulder p.l. is less than 2.0' and/or there are steep slopes behind the guardrail, then modification to the post spacing may need to be considered. Contact the Design Standards office for assistance.

Trenching side slopes adjacent to the driving lane may require temporary concrete barrier. Contact the Soils Engineer for recommendations.

When grading is necessary to properly construct an end treatment, indicate in the grading plan and include the appropriate quantities. See Standard Plan Sheet 5-297.601.

When upgrading inplace traffic barrier, field review to determine the present condition and placement. Upgrade if needed.

Contact the Bridge Office if there are bridge columns with the Project limits that will need protection as they may need to design pier struts.

Keep guardrail one post space beyond the obstacle (minimum 6'3").

Post seats are often required at box culverts or bridge footings. Replacing special inplace guardrail over box culverts with F-barrier may require coordination with the Bridge Office.

Contact the Final Design guardrail resource person for project specific questions.

Traffic barrier installations can be shown on the construction plan sheets. If those sheets are too congested, individual installation areas may be detailed and included on a single plan sheet. Complex barrier installations may require their own sheet.

Depending on site conditions, end treatments shall be paid for as 1) "End Treatment - Tangent Terminal" or "End Treatment - Flared Terminal". Plan sheets for 2 options for either terminal type are to be included in the plan. These plan sheets can be found at: pw:\DM_ROS\Non_Project\Design\DesignCoordinator\Details\.

Consideration should be given to aggregate mulch in guardrail loops. At guardrail loops under bridges, consideration should be given to placing bituminous surfacing under the bridge from shoulder to shoulder. These considerations are due to difficulties in establishing turf in shaded areas and mowing the turf within the guardrail areas.

Define Traffic Barrier Design Special within the plan.

In narrow median areas, where plate beam guardrail is or would be placed almost back to back, Maintenance prefers Type F Concrete Median Barrier and Glare Screen (see Standard Plate 8309). Check horizontal sight distance if using glare screen.

Provide for a traffic barrier anchorage assembly on the downstream end if the traffic barrier is not attached to a bridge or a wall.

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General Information Cont.:

When calling for short radius guardrail, pay for that radius distance as 8307 wood posts and the remainder as Design B8338 with steel posts. The short radius detail is located at: pw:\\Documents\OTS\DesignStandards\DesignDetails\shortrg_dd.dgn.

Coordinate with Traffic Control when taking into account temporary and permanent barrier needs.

When removing ET-2000 end treatments, check with Maintenance to see if they should be salvaged for parts.

Sample Plan

TRAFFIC BARRIER PLANS --------- CHECKLIST

____1. Roadways Labeled

____2. Barrier Type Included in Legend

____3. North Arrow

____4. Bar Scale

____5. Bridges Labeled

____6. Label 500' Stationing Increments

____7. See Construction Plan Narrative and Checklist, if applicable

____8. Cross references to other sheets (as applicable)

____9. Drawn by: and Checked by: Initials and Engineer's signature

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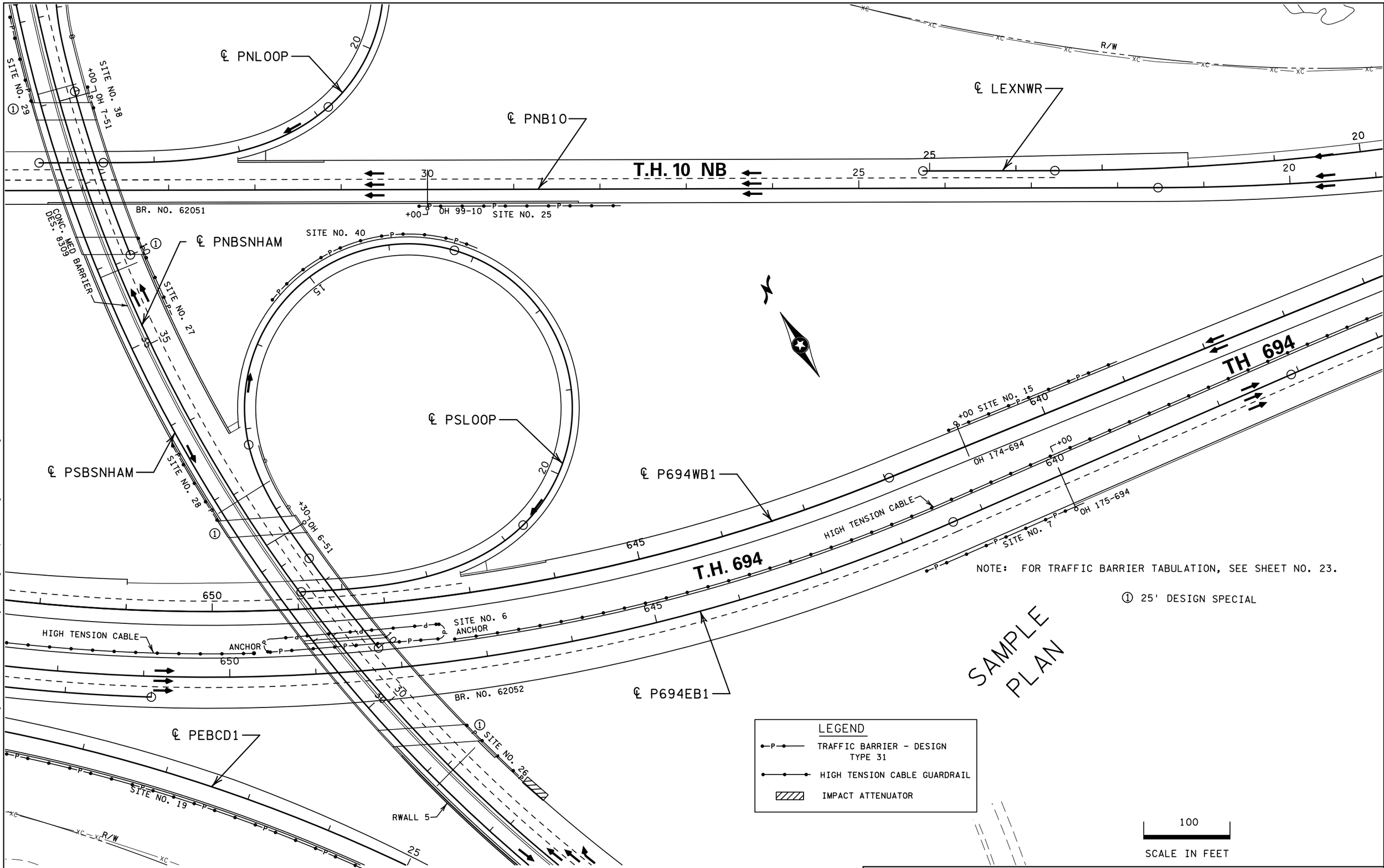
TRAFFIC BARRIER PLAN CHECKLIST



NOTE: FOR TRAFFIC BARRIER TABULATION, SEE SHEET NO. 23.

① 25' DESIGN SPECIAL

SAMPLE PLAN

LEGEND

- TRAFFIC BARRIER - DESIGN TYPE 31
- HIGH TENSION CABLE GUARDRAIL
- IMPACT ATTENUATOR

100

SCALE IN FEET

TRAFFIC BARRIER PLAN

DRAWN BY: MS	CHECKED BY: HS	CERTIFIED BY Will D. Zine LICENSED PROFESSIONAL ENGINEER LIC. NO. 00000 DATE 11/14/16	STATE PROJ. NO. 0000-000 (T.H. 00) SHEET NO. 81 OF 84 SHEETS

REVISION DATE 01/04/17
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DISTRICT *: METRO
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FILENAME: Projects/DM_ROS/Non_Project/Design/SamplePlan/English/trafbar.dgn