

**Transmittal No. 21-04**  
**April 21, 2021**

## Standard Plans

**Distribution:** Electronic Distribution Recipients

**Subject: Standard Plan 608**

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The following Standard Plan is new:  
5-297.608 – Guardrail Transition to Glulam Timber Bridge Rail

### Instructions:

1. Record this transmittal letter number, date and subject on the transmittal record sheet located in the front of the manual. The last Transmittal Letter was 21-03, dated April 6, 2021.
2. Remove from the manual:
  - Standard Plan Index (Sheets 1-7) dated 03-18-2021
3. Insert into the manual:
  - Standard Plan Index (Sheets 1-7) dated 03-26-2021
  - Standard Plan 5-297.608 dated 03-26-2021
4. The Standard Plans Manual and associated Transmittal Letters are available online in PDF format at <https://standardplans.dot.state.mn.us/StdPlan.aspx>
5. Any technical questions regarding this transmittal should be directed to Mike Elle, State Design Standards Engineer, at (651) 252-7644, or by email to [DesignStandards.DOT@state.mn.us](mailto:DesignStandards.DOT@state.mn.us)



Michael Elle, P.E.  
State Design Standards Engineer  
Office of Project Management and Technical Support

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**Summary of Changes**  
**Standard Plan 5-297.608**  
**Guardrail Transition to Glulam Timber Bridge Rail**  
**Transmittal Letter No. (21-04)**

General:

1. This is a new Standard Plan.
2. This plan corresponds to Bridge Office Plans 5-397.175 and 5-397.176.

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5-297.100	GRADING
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5-297.300	VEGETATION
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5-297.800	TEMPORARY TRAFFIC CONTROL, PAVEMENT MARKING, LIGHTING, AND SIGNALS

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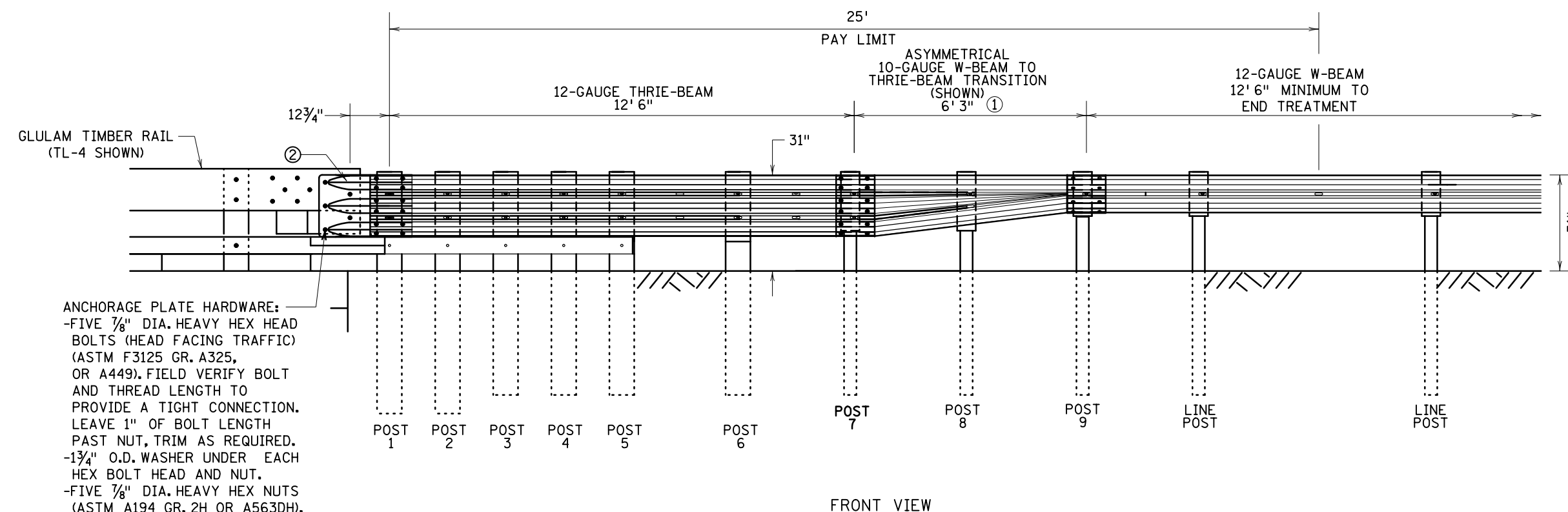
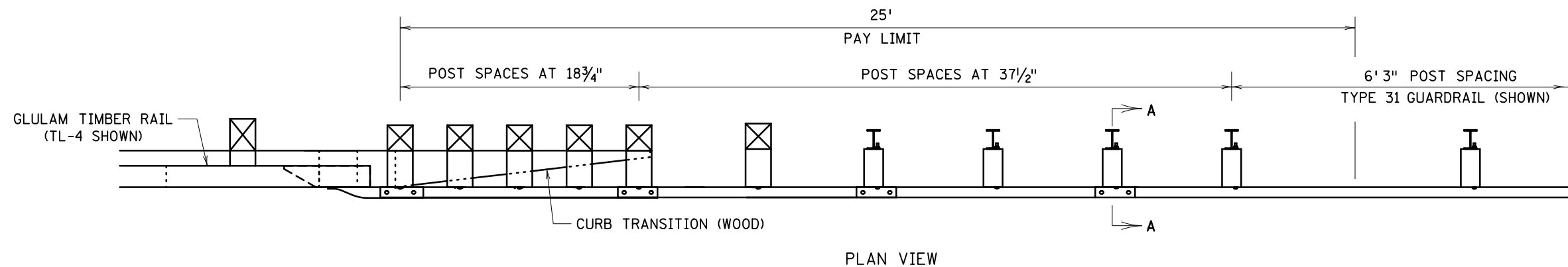


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5-297.770	Standard Overhead Sign Structures - Design D - Walkway and Railing Retrofit Details	05-01-19	
5-297.771	Standard Overhead Sign Structures - Design D - Sign Panel and Panel Mounting Post Details	05-01-19	05-28-19
5-297.772	Standard Overhead Sign Structures - Design D - DMS Mounting Details	03-05-20	
5-297.773	Standard Overhead Sign Structures - Design D - Rock Socket Foundation Details	01-15-21	
5-297.774	Standard Overhead Sign Structures - Design D - Variable Length Drilled Shaft Details	01-15-21	
5-297.779	Overhead Sign Structures - Foundation Extension - Design D Extension Details - Type 1-4 Posts	01-15-21	
5-297.780 (1 of 2)	Overhead Sign Structures - Foundation Extension - Design D Extension Details - Type 5-6 Posts	01-15-21	
5-297.780 (2 of 2)	Overhead Sign Structures - Foundation Extension - Design D Extension Details - Type 5-6 Posts	01-15-21	
5-297.781	Overhead Sign Structures - Foundation Extension – Interim Design B Extension Details - Type 1-4 Posts	01-15-21	
5-297.782 (1 of 2)	Overhead Sign Structures - Foundation Extension – Interim Design B Extension Details - Type 5-7 Posts	01-15-21	

<u>PLAN NO.</u>	<u>SUBJECT</u>	<u>APPROVAL DATE</u>	<u>REVISION DATE</u>
5-297.782 (2 of 2)	Overhead Sign Structures - Foundation Extension – Interim Design B Extension Details - Type 5-7 Posts	01-15-21	
5-297.783	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 1-3 Posts	01-15-21	
5-297.784 (1 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 4-5 Posts	01-15-21	
5-297.784 (2 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 4-5 Posts	01-15-21	
5-297.785 (1 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 6-7 Posts	01-15-21	
5-297.785 (2 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 6-7 Posts	01-15-21	
5-297.786 (1 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 8-9 Posts	01-15-21	
5-297.786 (2 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 8-9 Posts	01-15-21	
5-297.787 (1 of 3)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 10-13 Posts	01-15-21	
5-297.787 (2 of 3)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 10-13 Posts	01-15-21	
5-297.787 (3 of 3)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 10-13 Posts	01-15-21	
5-297.788	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 14-15 Posts	01-15-21	
5-297.789 (1 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 16-19 Posts	01-15-21	
5-297.789 (2 of 2)	Overhead Sign Structures - Foundation Extension - Design B Extension Details - Type 16-19 Posts	01-15-21	
<b>5-297.800</b>			
<b>TEMPORARY TRAFFIC CONTROL, PAVEMENT MARKING, LIGHTING, AND SIGNALS</b>			
5-297.801	Interim Pavement Markings and Signing	10-10-19	
5-297.805 (1 of 5)	Temporary Overhead Sign Structures – General Elevation and Notes	03-06-20	
5-297.805 (2 of 5)	Temporary Overhead Sign Structures – Foundation Details	03-06-20	
5-297.805 (3 of 5)	Temporary Overhead Sign Structures – Post and Baseplate Details	03-06-20	
5-297.805 (4 of 5)	Temporary Overhead Sign Structures – Beam Details	03-06-20	
5-297.805 (5 of 5)	Temporary Overhead Sign Structures – Sign Panel and Panel Mounting Post Details	03-06-20	
5-297.811 (1 of 2)	Alternate Pedestrian Route (APR) Layouts	03-18-21	
5-297.811 (2 of 2)	Alternate Pedestrian Route (APR) Layouts	03-18-21	
5-297.813 (1 of 2)	Temporary Pedestrian Access Route (TPAR) Devices – Channelizers, Sidewalk Barricades, and Portable Stands	03-18-21	
5-297.813 (2 of 2)	Temporary Pedestrian Access Route (TPAR) Devices – Temporary Curb Ramps and Walkway Surfaces	03-18-21	
5-297.820 (1 of 3)	T-100 Light Tower Pile Foundation Design	11-05-19	
5-297.820 (2 of 3)	T-120 Light Tower Pile Foundation Design	11-05-19	
5-297.820 (3 of 3)	T-140 Light Tower Pile Foundation Design	11-05-19	
5-297.821 (1 of 3)	T-100 Light Tower Mat Foundation Design	11-05-19	
5-297.821 (2 of 3)	T-120 Light Tower Mat Foundation Design	11-05-19	
5-297.821 (3 of 3)	T-140 Light Tower Mat Foundation Design	11-05-19	

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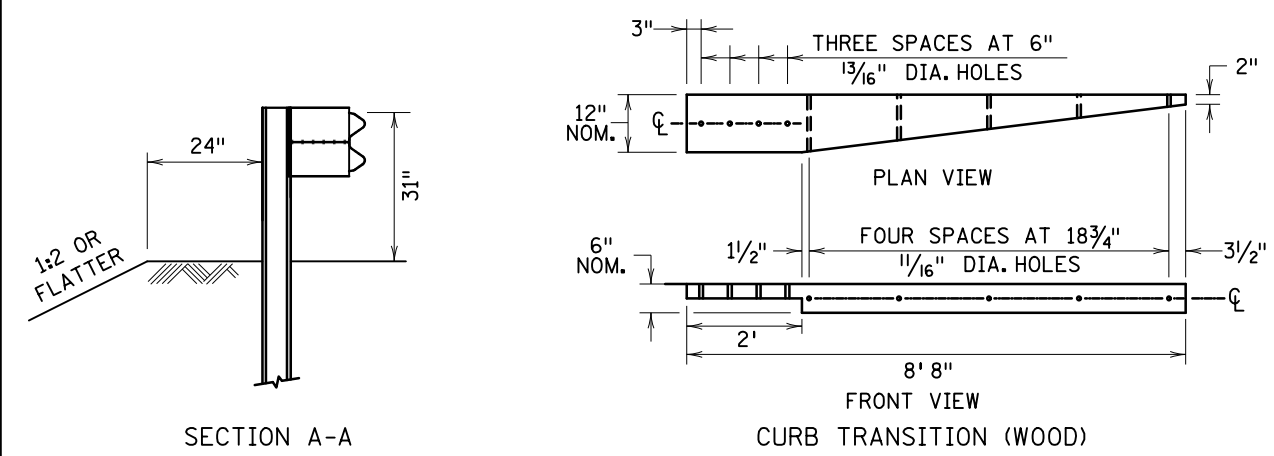


ANCHORAGE PLATE HARDWARE:  
 -FIVE 7/8" DIA. HEAVY HEX HEAD BOLTS (HEAD FACING TRAFFIC) (ASTM F3125 GR. A325, OR A449). FIELD VERIFY BOLT AND THREAD LENGTH TO PROVIDE A TIGHT CONNECTION. LEAVE 1" OF BOLT LENGTH PAST NUT, TRIM AS REQUIRED.  
 -1 3/4" O.D. WASHER UNDER EACH HEX BOLT HEAD AND NUT.  
 -FIVE 7/8" DIA. HEAVY HEX NUTS (ASTM A194 GR. 2H OR A563DH).  
 -ALL HARDWARE GALVANIZED PER ASTM A153 AND A780.

NOTES:

- MATERIAL FOR POSTS 1-6, CURB TRANSITION, AND BLOCKOUT IS SAWN LUMBER PER SPEC. 3426, WOOD PRESERVATIVE PER SPEC. 3491.
- DIMENSIONS FOR WOOD POSTS AND WOOD CURB ARE GIVEN AS NOMINAL DIMENSIONS. ACTUAL DIMENSIONS MAY BE A MAXIMUM OF 1/2" LESS THAN THE STATED NOMINAL DIMENSIONS DEPENDING ON THE MATERIAL SURFACING. DIMENSIONS FOR BLOCKOUTS ARE ACTUAL DIMENSIONS.
- GUARDRAIL STEEL POSTS, SEE STANDARD PLATE 8361. POST 7 IS W6 X 9 MnDOT TYPE B, POSTS 8-9 ARE W6 X 9 MnDOT TYPE A.
- GUARDRAIL BEAM AND HARDWARE PER AASHTO SPEC. M 180.
- GUARDRAIL POSTS 1-7 REQUIRE TWO GUARDRAIL POST BOLTS. GUARDRAIL POSTS 8-9 REQUIRE ONE GUARDRAIL POST BOLT.
- FOR CURB TRANSITION PROVIDE 5/8" DIA. BOLTS (LENGTH VARIES), NUTS, AND WASHERS IN ACCORDANCE WITH SPEC. 3391. GALVANIZE PER SPEC. 3392. BOLT HEAD FACES TRAFFIC.
- ① W-BEAM TO THRIE-BEAM TRANSITION GUARDRAIL, SEE STANDARD PLATE 8356.
- ② THRIE BEAM ANCHORAGE PLATE, SEE STANDARD PLATE 8350.

TRANSITION POST/BLOCK SIZING		
POST	POST SIZE	BLOCKOUT SIZE
1-2	78" - 8" x 8" TIMBER	8" x 12" x 20"
3-6	72" - 8" x 8" TIMBER	8" x 12" x 20"
7-8	72" - W6 x 9 STEEL	6" x 12" x 19"
9	72" - W6 x 9 STEEL	6" x 12" x 14 1/4"



REVISION:  
 APPROVED: 03-26-2021  
*Nancy Yoo*  
 NANCY YOO  
 DESIGN SUPPORT DIRECTOR  
 OFFICE OF PROJECT MANAGEMENT & TECHNICAL SUPPORT

**m** MINNESOTA DEPARTMENT OF TRANSPORTATION  
 STANDARD PLAN 5-297.608 1 OF 1  
 APPROVED: 03-26-2021  
 REVISED:  
*Tom Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

**GUARDRAIL TRANSITION TO GLULAM  
 TIMBER BRIDGE RAIL**  
 STATE PROJ. NO. (TH ) SHEET NO. OF SHEETS

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