

MEDIAN STEEL-BACKED TIMBER GUARDRAIL TO STONE-FACED MEDIAN BARRIER TRANSITION

## INTENDED USE

The **Median Steel-Backed Timber Guardrail to Stone-faced Median Barrier Transition** serves as a transition between the “The Steel-Backed Timber Guardrail” and “The George Washington Memorial Parkway (GWMP) Masonry Stone-faced Barrier.” The transition was designed to blend and preserve the aesthetics of both barriers. The design provides a safe and robust transition by preventing wheel snagging with the rigid wall end. It has been successfully crash-tested in accordance with MASH 2016, Test Level 3 (TL-3) for transitions between longitudinal barriers at the FHWA Federal Outdoor Impact Laboratory (FOIL) (Test 23002). The design ensures that the transition is visually appealing while providing a secure and reliable solution to protect motorists

## MATERIALS and CONSTRUCTION NOTES

1. Use weathering steel for all structural steel and fastener hardware as specified.
2. Pre-drill 0.75” [19mm] holes in blockouts, rails, and posts for 5/8” [16mm] carriage bolts.
3. Concrete Strength –  $F'_c = 4500$  psi [31.0 MPa] @ 28 days (min).
4. Reinforcing Steel – ASTM A615,  $f_y = 60$  ksi [414 MPa] (min).
5. Drawings not to scale. All dimensions are in inches (“), and [millimeters].

## ELIGIBILITY

Federal Highway Administration (FHWA) Eligibility has not been pursued.

## REFERENCES

<Project Report citation>

## CONTACT INFORMATION

Center for Collision Safety and Analysis (CCSA)  
College of Science, George Mason University,  
4087 University Drive  
Fairfax, VA 22030  
Phone (703) 993-4694  
<https://www.ccsa.gmu.edu/>

## Median Steel-Backed Timber Guardrail to Stone-faced Median Barrier Transition

**STG12a**

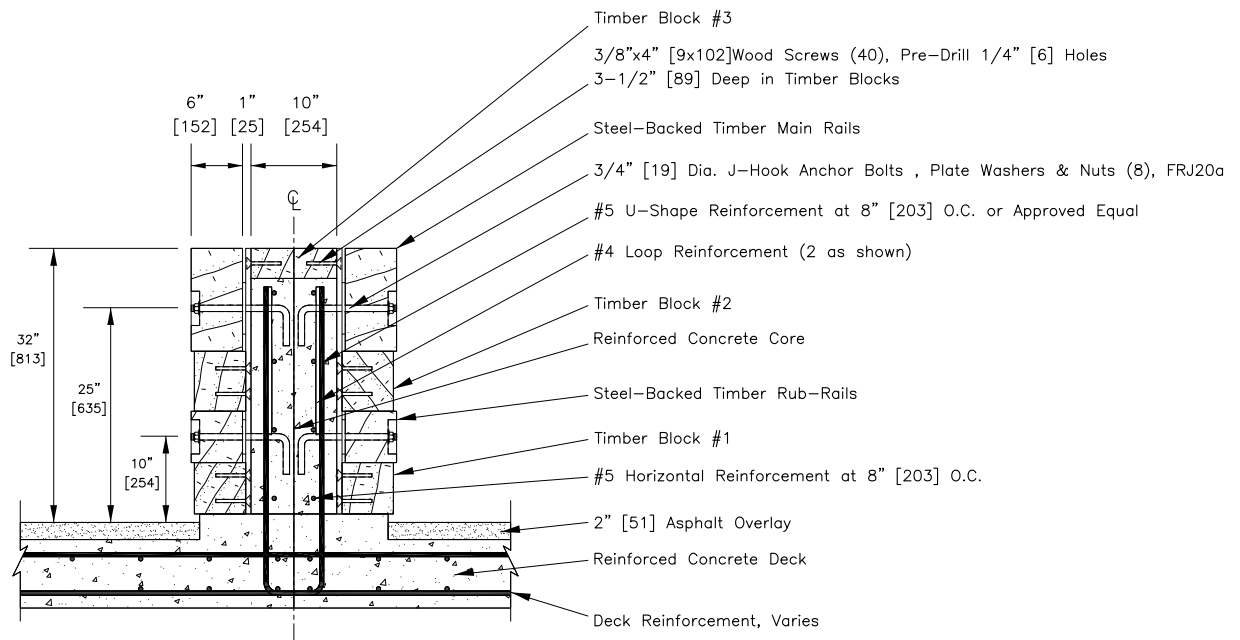
SHEET NO.

DATE

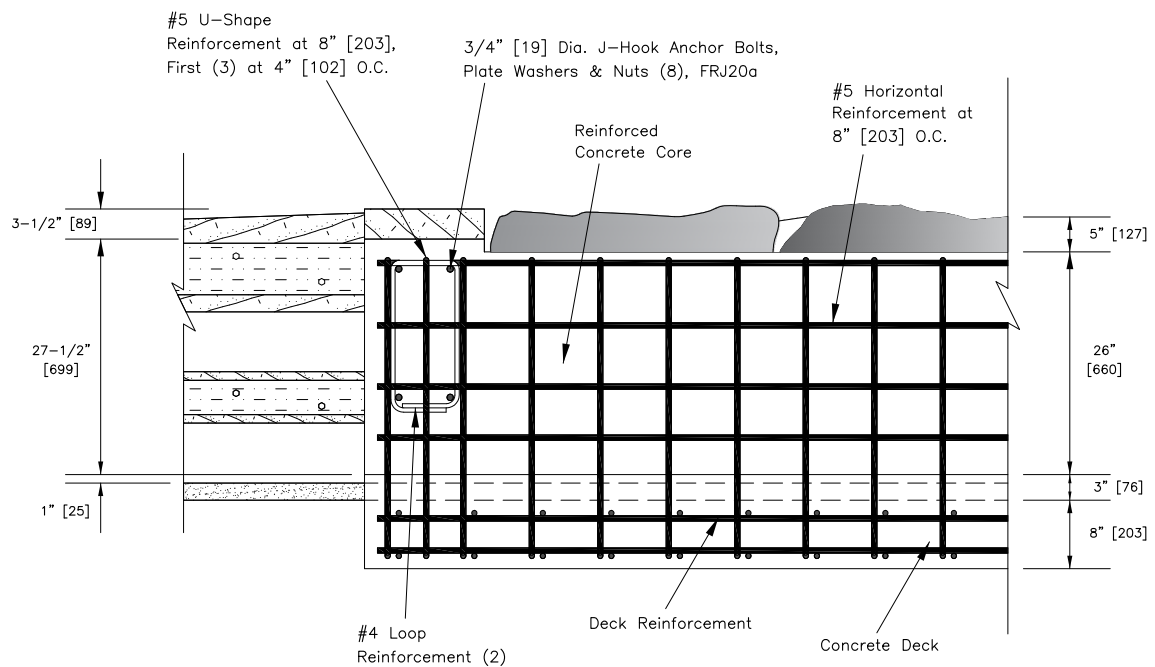
2 of 7

5/11/2023



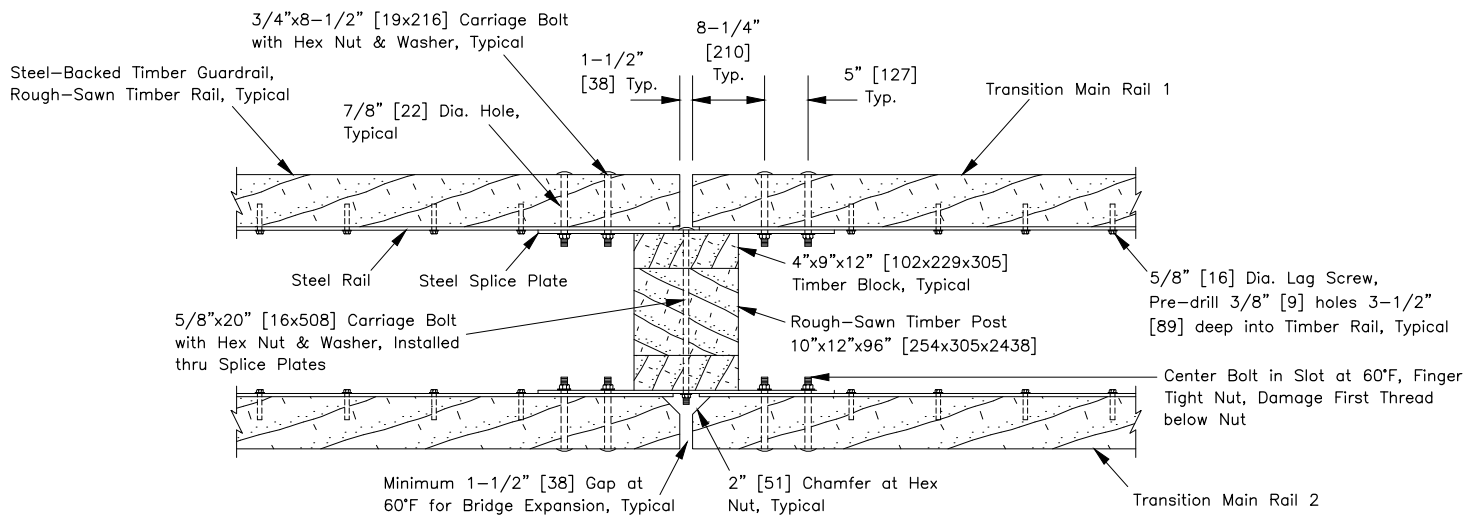


SECTION C-C

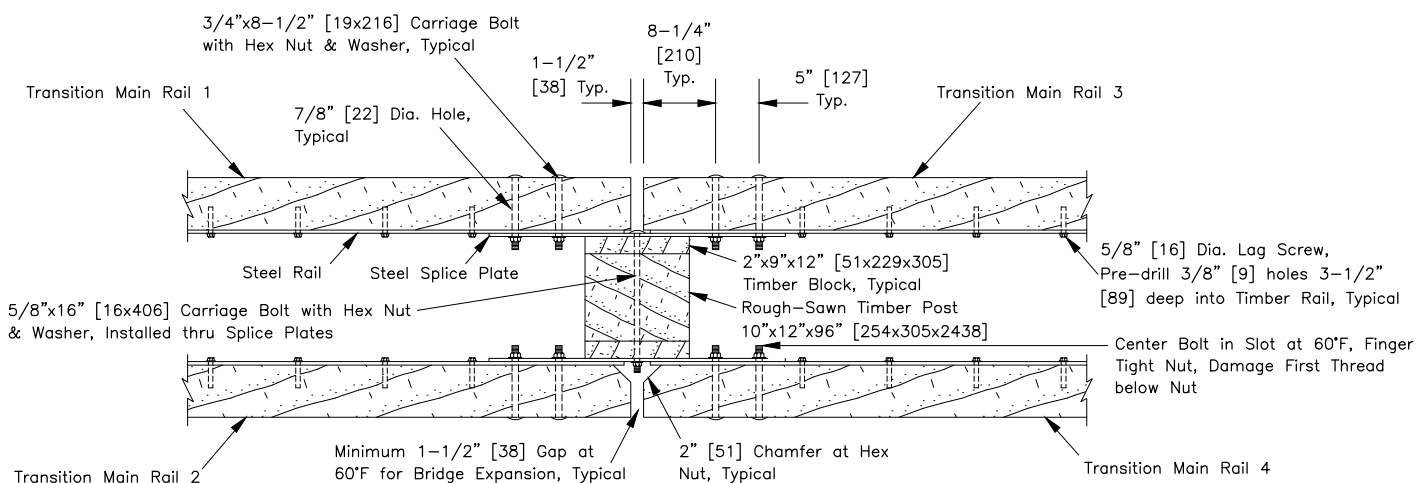


SECTION D-D

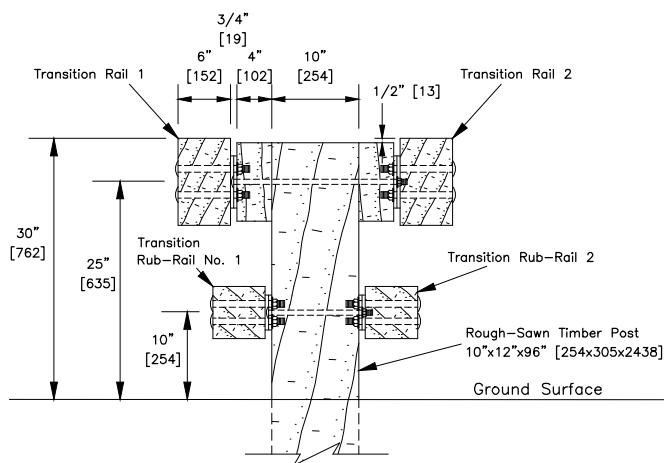
MEDIAN STEEL-BACKED TIMBER GUARDRAIL TO STONE-FACED MEDIAN BARRIER TRANSITION



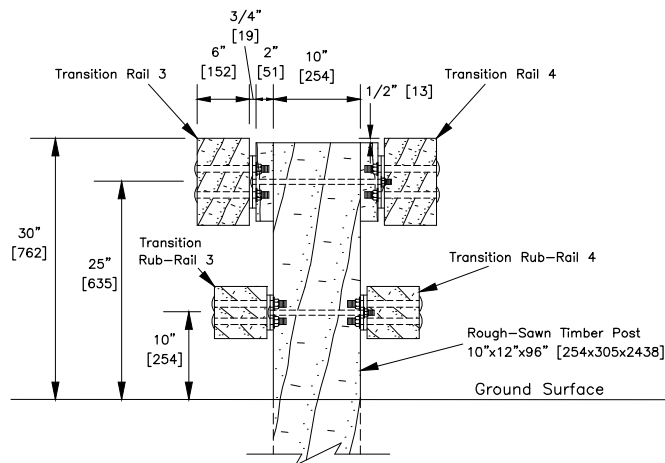
MAIN RAILS TO POST 1 CONNECTION – PLAN VIEW



MAIN RAILS TO POST 2 CONNECTION – PLAN VIEW

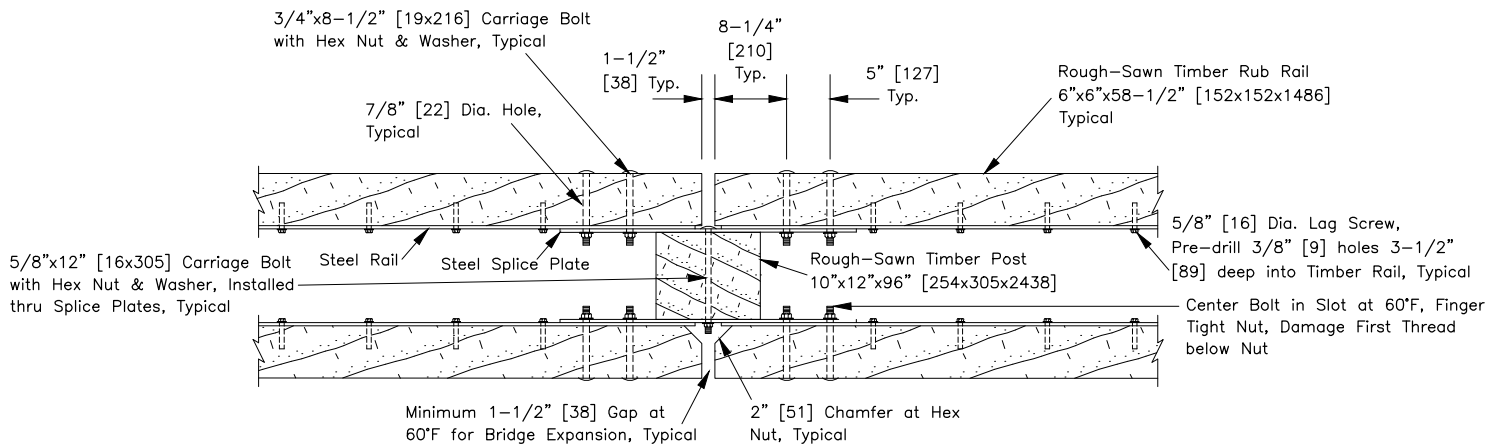


CROSS SECTION AT POST 1

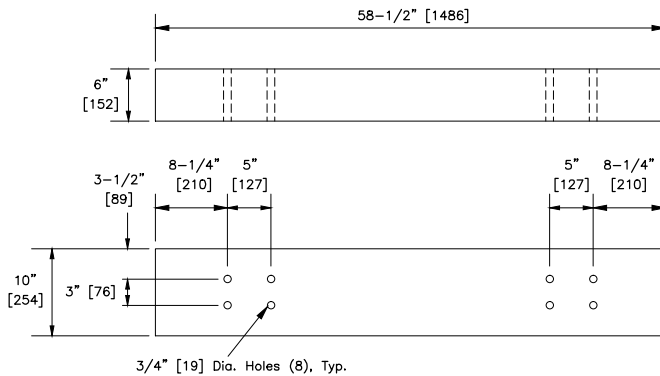


CROSS SECTION AT POST 2

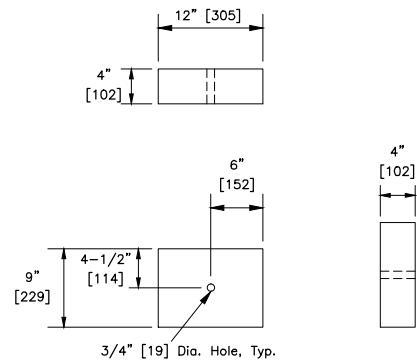
MEDIAN STEEL-BACKED TIMBER GUARDRAIL TO STONE-FACED MEDIAN BARRIER TRANSITION



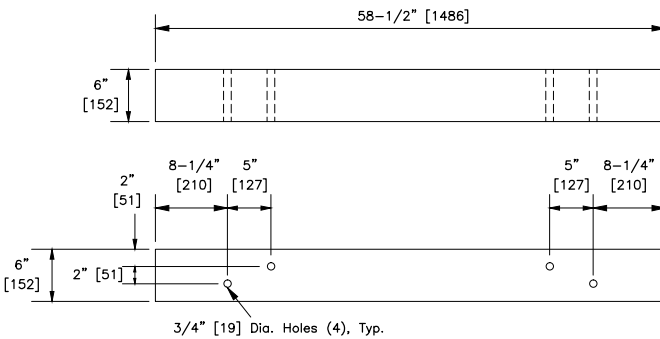
RUB-RAILS TO POST CONNECTION – PLAN VIEW



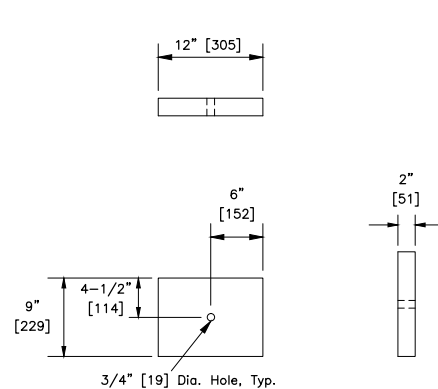
WOOD MAIN RAILS 1 & 2



WOOD BLOCKOUTS AT POST 1

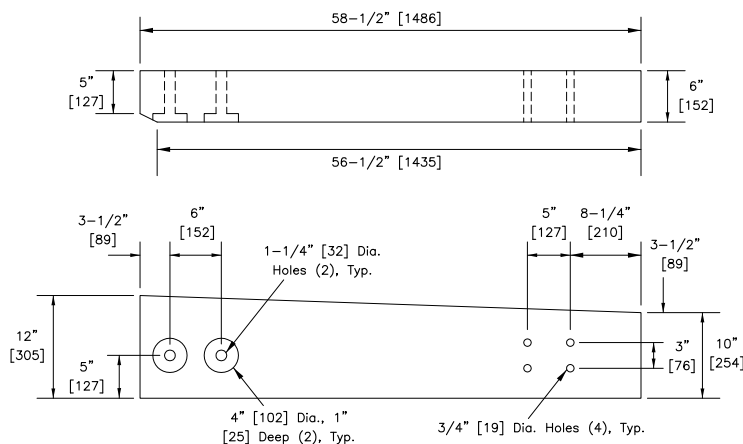


WOOD RUB-RAILS 1 & 2

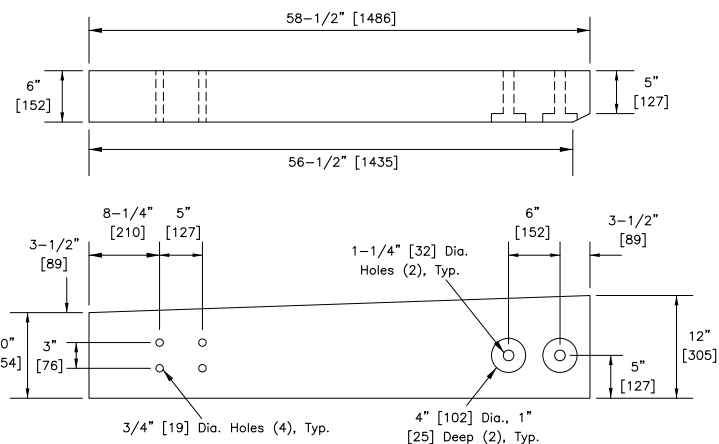


WOOD BLOCKOUTS AT POST 2

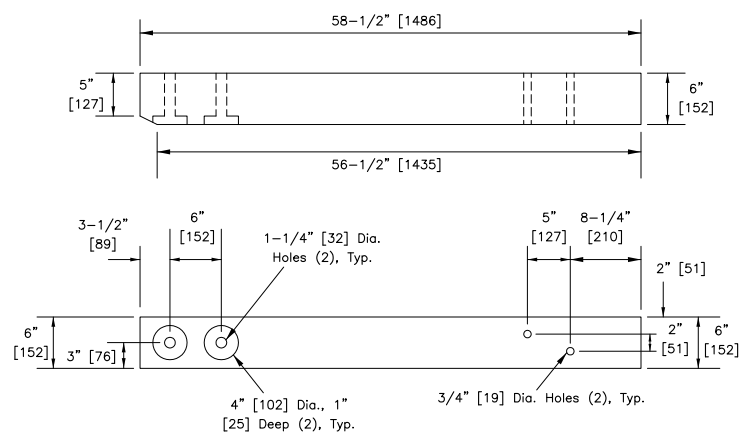
MEDIAN STEEL-BACKED TIMBER GUARDRAIL TO STONE-FACED MEDIAN BARRIER TRANSITION



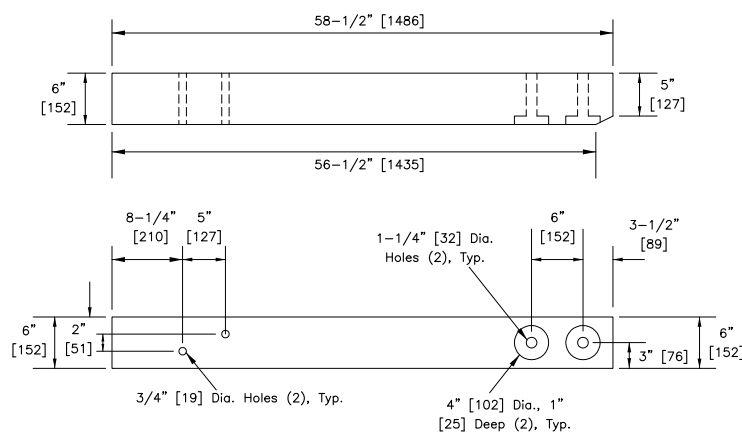
WOOD MAIN RAIL 3



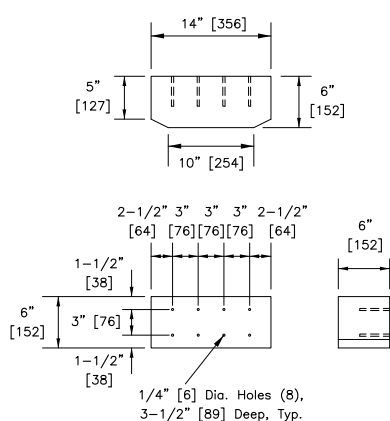
WOOD MAIN RAIL 4



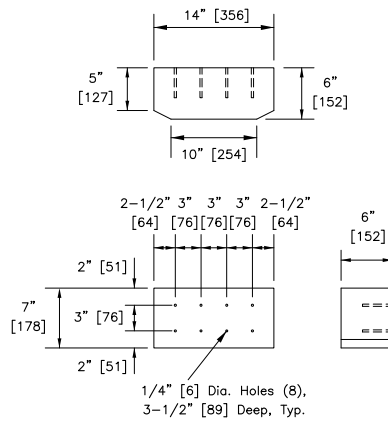
WOOD RUB-RAIL 3



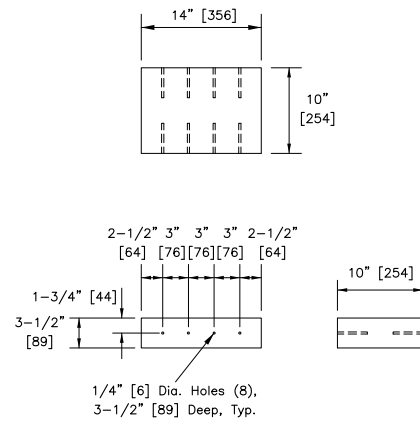
WOOD RUB-RAIL 4



TIMBER BLOCK #1



TIMBER BLOCK #2



TIMBER BLOCK #3

MEDIAN STEEL-BACKED TIMBER GUARDRAIL TO STONE-FACED MEDIAN BARRIER TRANSITION



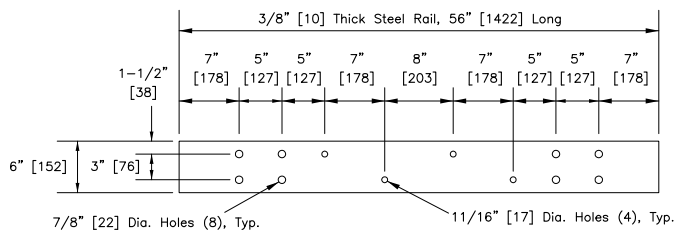
STG12a

SHEET NO.

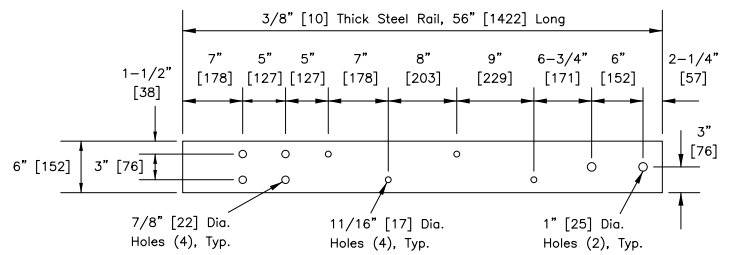
DATE

6 of 7

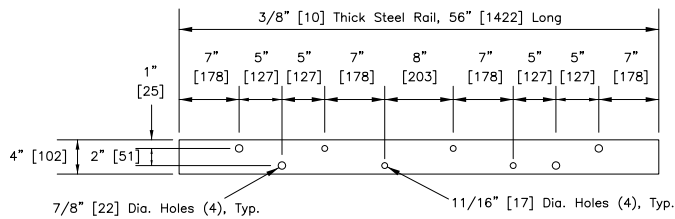
5/11/2023



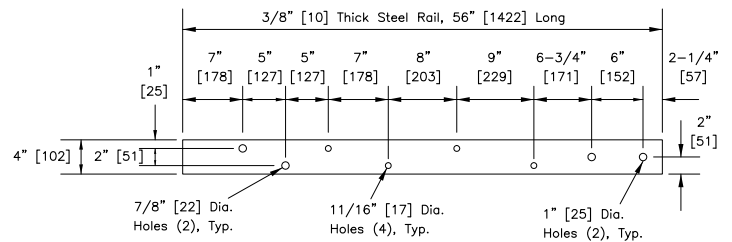
STEEL MAIN RAILS 1 & 2



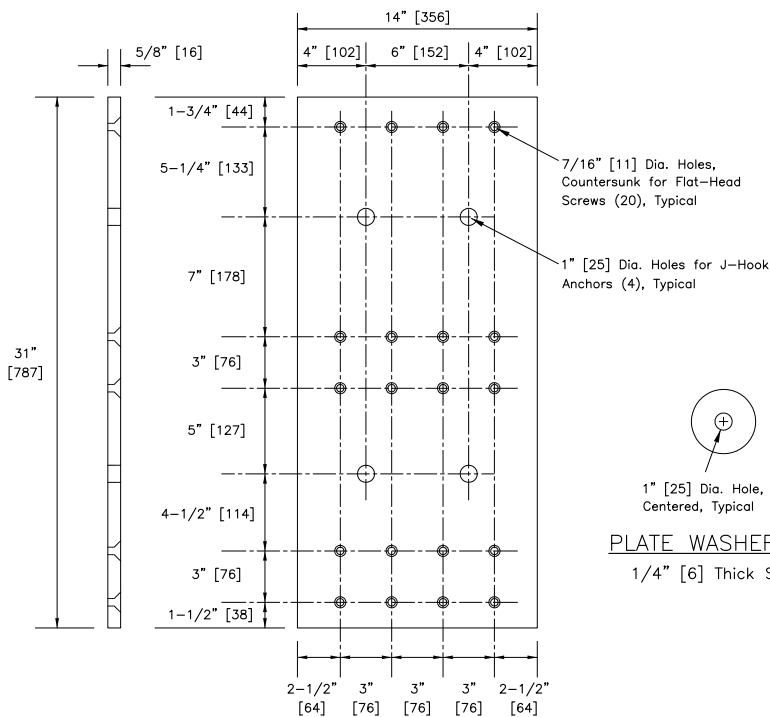
STEEL MAIN RAILS 3 & 4



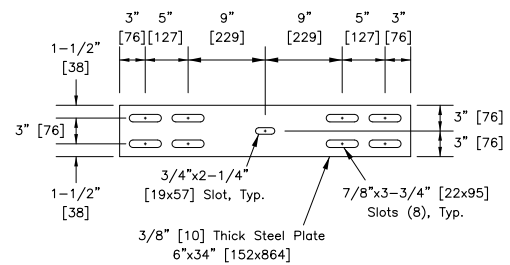
STEEL RUB-RAILS 1 & 2



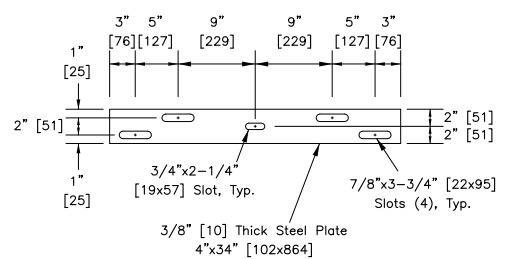
STEEL RUB-RAILS 3 & 4



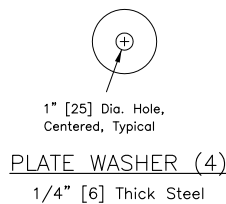
STEEL BACKING PLATE



MAIN RAILS - SPLICE PLATE



RUB-RAILS - SPLICE PLATE



MEDIAN STEEL-BACKED TIMBER GUARDRAIL TO STONE-FACED MEDIAN BARRIER TRANSITION