



Office of Engineering  
Project Development Division  
Bridge Design Section  
PO Box 94245 | Baton Rouge, LA 70804-9245

John Bel Edwards, Governor  
Shawn D. Wilson, Ph.D., Secretary

## MEMORANDUM

TO: ALL BRIDGE DESIGNERS - IN-HOUSE AND CONSULTANTS

FROM: ZHENGZHENG "JENNY" FU, P.E.  
BRIDGE DESIGN ENGINEER ADMINISTRATOR

SUBJECT: BRIDGE DESIGN TECHNICAL MEMORANDUM NO. 102.1 (BDTM.102.1) -  
USE OF ROUND GUARD RAIL POSTS - REVISED

DATE: May 3, 2021

Effective immediately, the round timber posts specified below will be allowed as a substitute for the rectangular timber posts and W 6 x 9 steel posts currently shown in the guard rail standard plan, GR-MASH-ON. The substitution can only be allowed if proposed by the contractor in accordance with Section 105.19.4 of the 2016 Louisiana Standard Specifications for Roads and Bridges.

The round posts shall be 7½" Dia. x 6 ft. long and spaced at 6'-3" intervals. Posts shall be embedded 3 ft. into the ground with the remaining 3 ft. above the ground line, mow strip, etc. A 14" tall by 8" deep block out shall be used and routed to fit onto the post. W-beam guard rail shall be installed on the block out at 31" above the ground line or pavement and attached using an 18" long 9/16" dia. round head bolt.

The use of round posts is limited to sections of blocked out rail (pay item 704-03-00200) only. Round posts are not allowed in the guard rail to bridge rail transition (pay item 704-07-00200) or in end treatments unless specifically allowed by the manufacturer. Round posts shall also not be used in sections of thrie beam, trailing ends, retrofits, or other special installations. See the attached pages from GR-MASH-ON indicating the sections of guard rail where round posts are allowed.

These round timber posts have been successfully crash tested according to the requirements of MASH as documented in TTI Test Report 0-6968-R2. Appendix A from this report showing the crash tested details has been attached as a reference.

The round timber post details along with other required updates will be included in the next edition of the LADOTD guard rail standard plans (GR-MASH-ON).

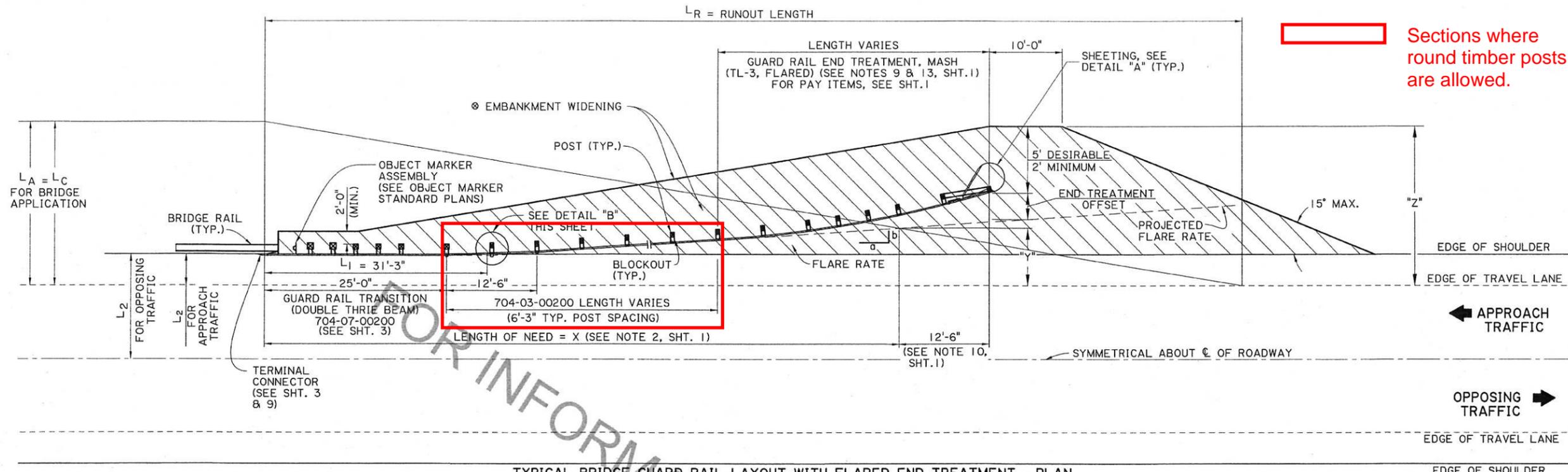
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This technical memorandum is posted on the LA DOTD Website under [Inside La DOTD > Divisions - Engineering > Bridge Design > Technical Memoranda – BDTMs.](#)

Please contact Kelly Kemp (kelly.kemp@la.gov or 225-379-1809) if you have questions or comments.

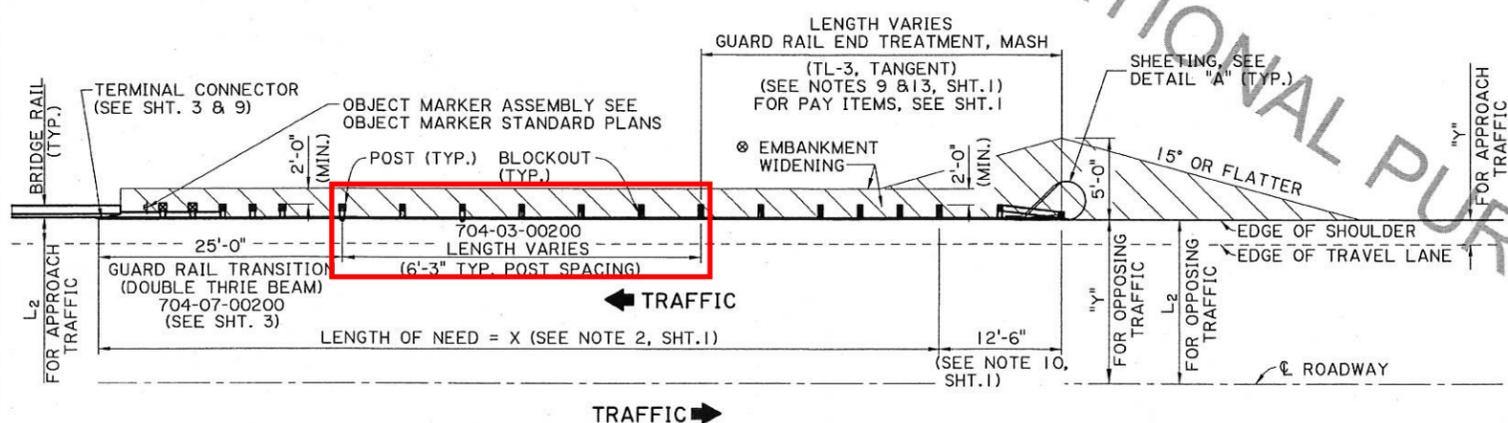
ZZF/kmb

c: Christopher P. Knotts (Chief Engineer)  
Edward Wedge (Deputy Engineer Administrator)  
Chad Winchester (Chief, Project Development Division)  
Vince Latino (Assistant Secretary of Operations)  
David Miller (Chief Maintenance Administrator)  
Nick Fagerburg (Bridge Maintenance Administrator)  
Michael Vosburg (Chief Construction Division Engineer)  
Brian Owens (Construction Engineer Administrator)  
Joe Umeozulu (Acting Project Management Director)  
Chris Nickel (Pavement and Geotechnical Engineer Administrator)  
David Smith (Road Design Engineer Administrator)  
Mark Chenevert (Contract Services Administrator)  
Art Aguirre (FHWA)  
District Administrators and ADAs of Engineering and Operations  
District Bridge Engineers and Area Engineers



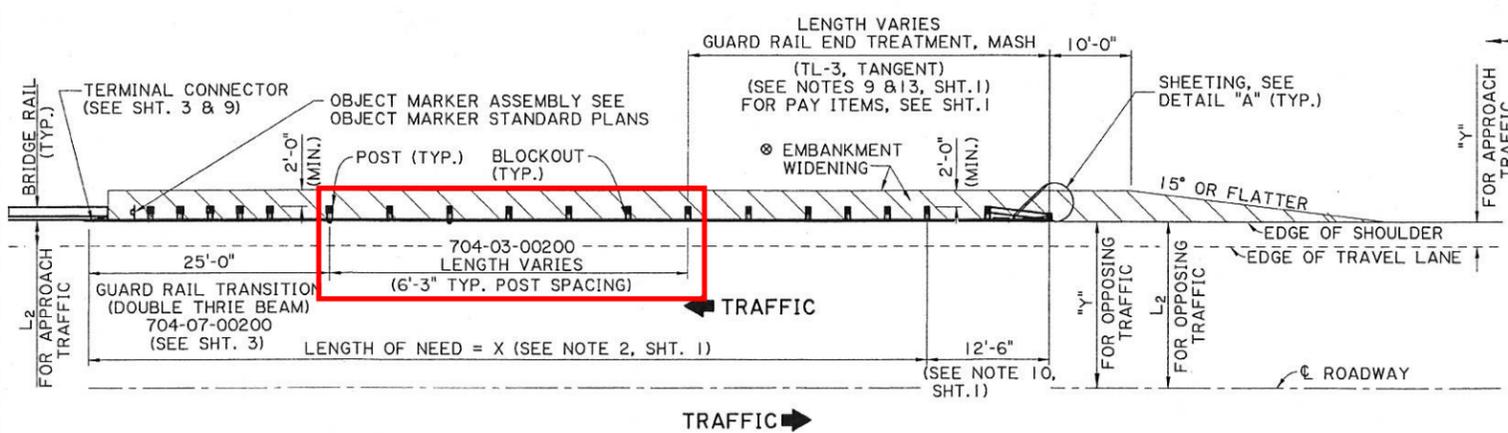
TYPICAL BRIDGE GUARD RAIL LAYOUT WITH FLARED END TREATMENT - PLAN

NOTE: LAYOUT SIMILAR FOR OTHER QUADRANTS OF BRIDGE END  
SEE NOTES 5, 8, AND 12, SHT. 1.



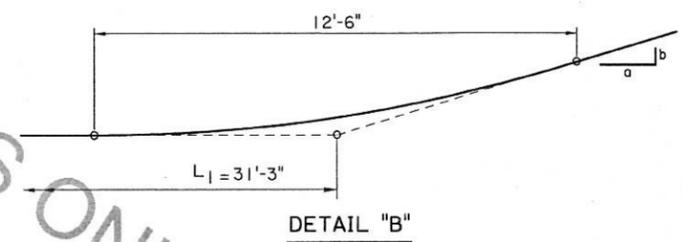
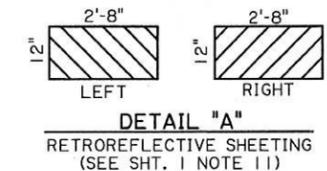
TYPICAL BRIDGE GUARD RAIL LAYOUT WITH TANGENT END TREATMENT - PREFERRED GRADING - PLAN

SEE NOTES 5, 8, AND 12, SHT. 1.

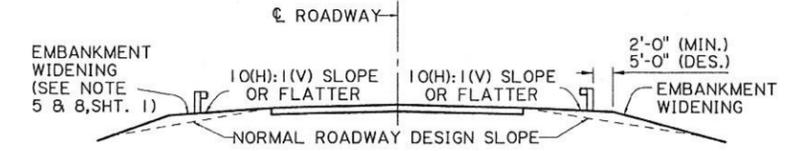


TYPICAL BRIDGE GUARD RAIL LAYOUT WITH TANGENT END TREATMENT - ALTERNATIVE GRADING - PLAN

SEE NOTES 5, 8, AND 12, SHT. 1.



BEAM TRANSITION FOR FLEXIBLE BRIDGE RAILING - PLAN



TYPICAL EMBANKMENT WIDENING SECTION

SHEET NUMBER		PARISH		STATE PROJECT	
DESIGN	P. FOSSIER	CHECK	K. BRAUNER	CONTROL SECTION	
REVISION		CHECK	J. DOUCET	REVIEW	C. GUIDRY
SERIES		CHECK	K. BRAUNER	SERIES	2 OF 11

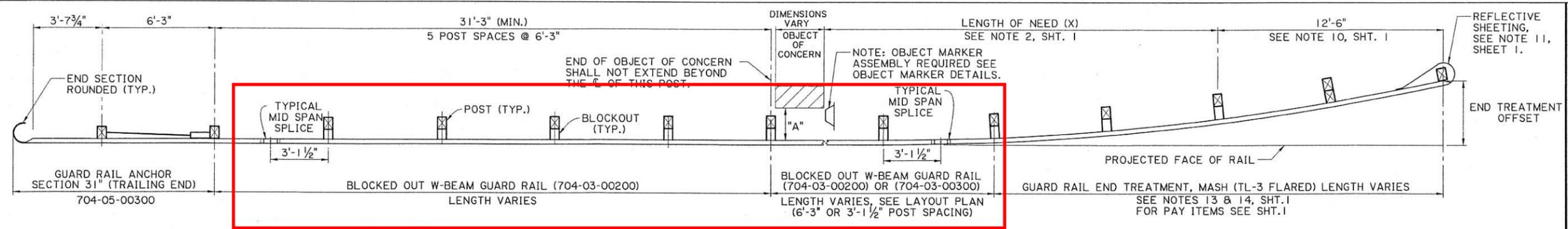
KURT M. BRAUNER  
 License No. 30567  
 PROFESSIONAL ENGINEER  
 IN  
 CIVIL ENGINEERING  
 KMB  
 12/12/18

APPROVED BY CHIEF ENGINEER  
  
 DATE: 1/13/19

STANDARD PLAN  
 GR-MASH-ON  
 ED. 1.1.0.02  
 HIGHWAY GUARD RAIL (MASH) BRIDGE APPLICATION (TYPICAL LAYOUT)

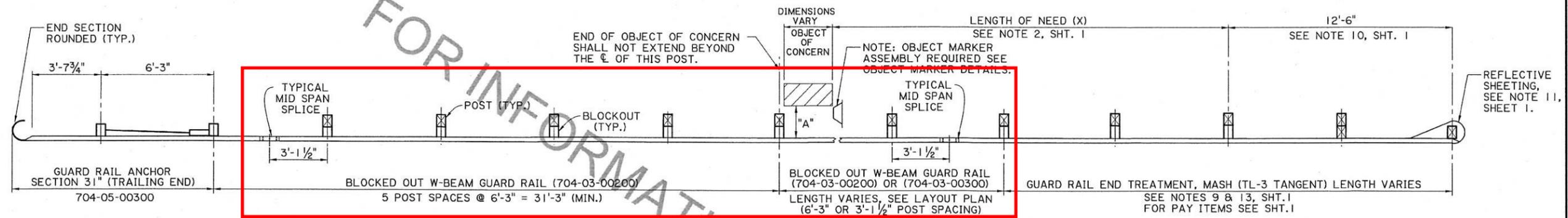
BRIDGE AND STRUCTURAL DESIGN

1/9/2019 07:30



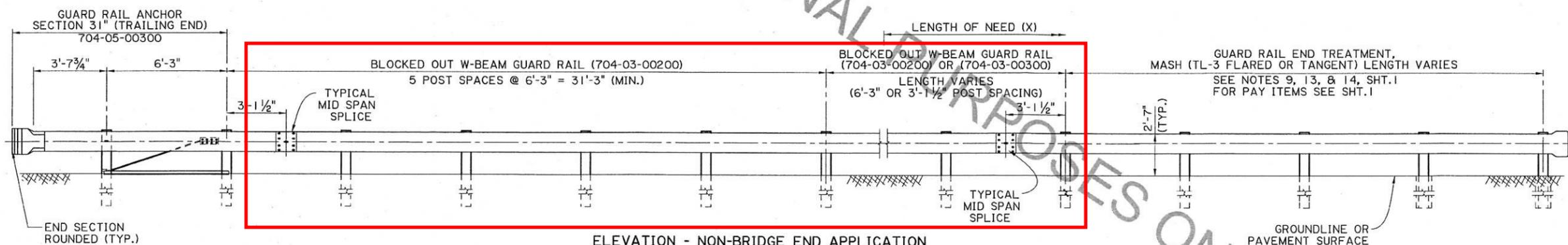
PLAN - NON-BRIDGE END APPLICATION - FLARED

FOR TRAILING END TERMINAL DETAILS AND NOTES, SEE SHTS. 7 & 8.  
BACK FACE OF GUARD RAIL TO FRONT FACE OF OBJECT = "A" = 5'-0" MIN.



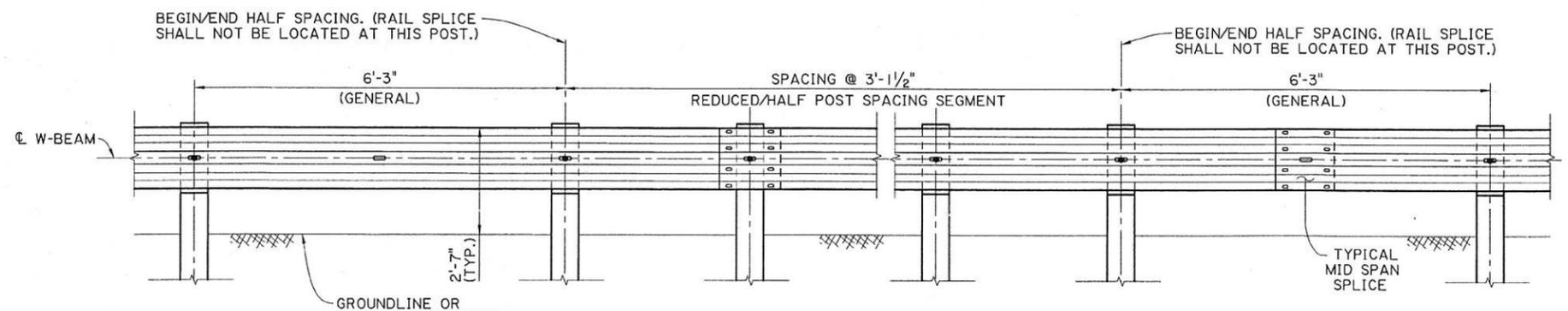
PLAN - NON-BRIDGE END APPLICATION - TANGENT

FOR TRAILING END TERMINAL DETAILS AND NOTES, SEE SHTS. 7 & 8.  
BACK FACE OF GUARD RAIL TO FRONT FACE OF OBJECT = "A" = 5'-0" MIN.



ELEVATION - NON-BRIDGE END APPLICATION

FOR POST, BLOCKOUTS AND GUARD RAIL DETAILS, SEE SHTS. 6, 9, 10, & 11  
N.T.S.



ELEVATION - HALF SPACING TRANSITION  
(POST SPACING 6'-3" TO 3'-1 1/2")

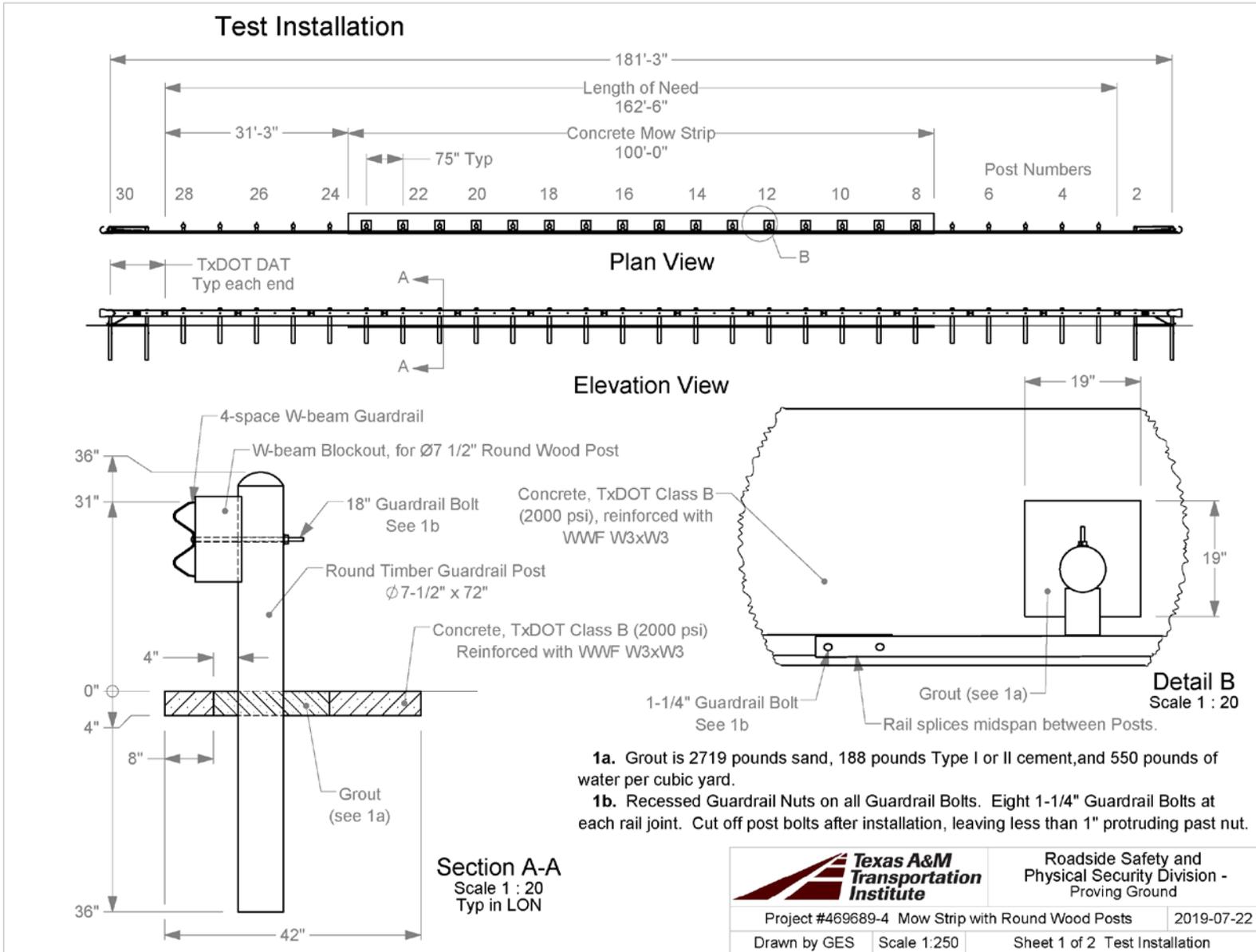
N.T.S.

Sections where round timber posts are allowed.

PANEL SPLICES, FOR HALF POST SPACING TRANSITIONS  
MIDSPAN PANEL SPLICES ARE NOT REQUIRED IN TRANSITION AND REDUCED POST SPACING SEGMENTS, HOWEVER THEY ARE REQUIRED FOR GENERAL SEGMENTS. TO PLACE MIDSPAN SPLICES IN GENERAL SEGMENTS NEAR A TRANSITION, USE ONE NON-GENERAL PANEL LENGTH (9'-4 1/2" OR 15'-7 1/2") OR ADD AN ADDITIONAL TRANSITION SPACED POST WHERE REQUIRED.

SHEET NUMBER		PARISH		CONTROL SECTION		STATE PROJECT	
DESIGN	CHECK	DETAIL	CHECK	REVIEW	REVISION	SERIES # 5 OF 11	
P. FOSSIER	K. BRAUNER	J. DOUCET	K. BRAUNER	C. GUIDRY			
APPROVED BY CHIEF ENGINEER: <i>[Signature]</i> DATE: 1/3/19							
HIGHWAY GUARD RAIL (MASH) NON-BRIDGE APPLICATION (TYPICAL LAYOUT)							
STANDARD PLAN GR-MASH-ON							
BRIDGE AND STRUCTURAL DESIGN							

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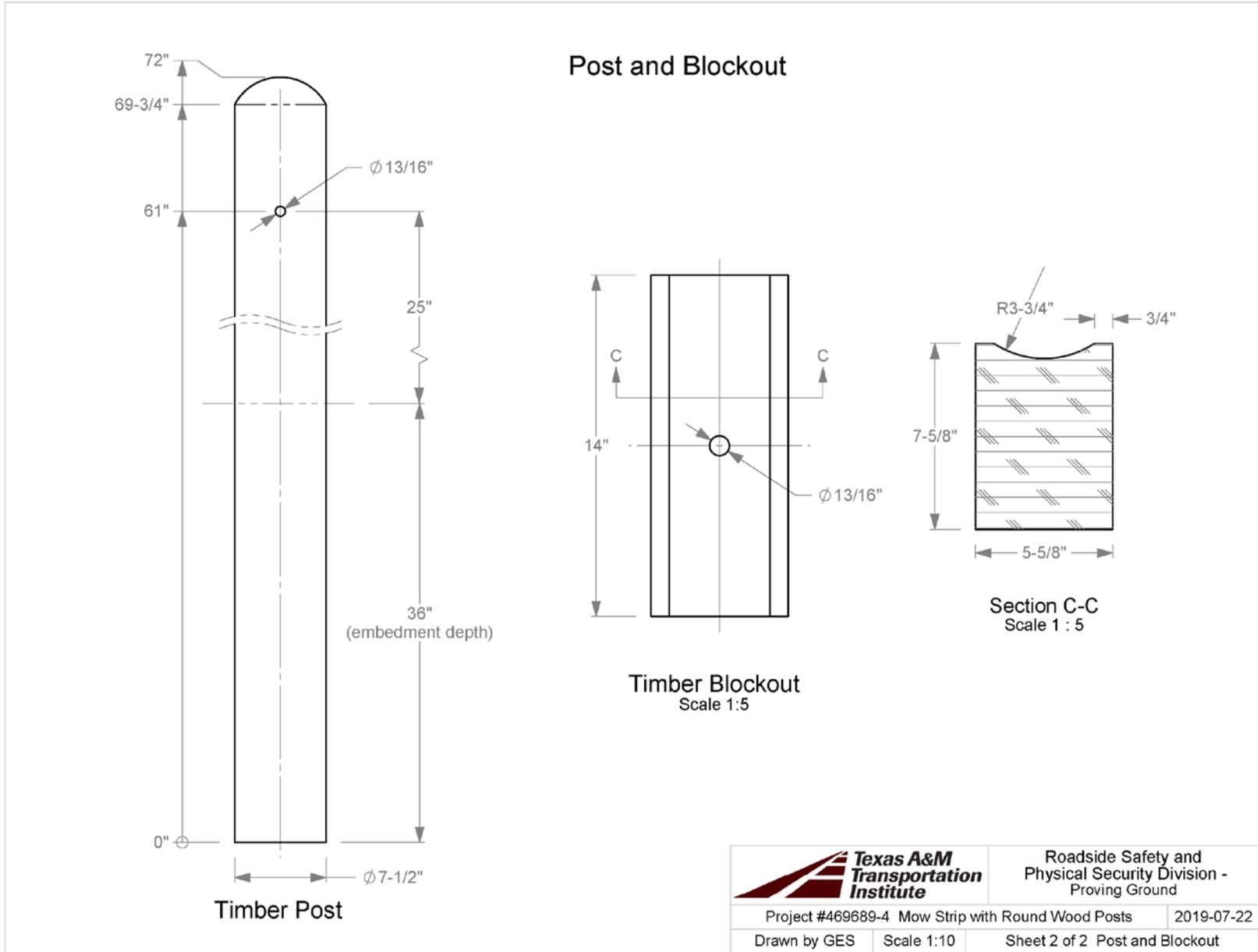


Roadside Safety and Physical Security Division - Proving Ground

Project #469689-4 Mow Strip with Round Wood Posts	2019-07-22
Drawn by GES	Scale 1:250
Sheet 1 of 2 Test Installation	

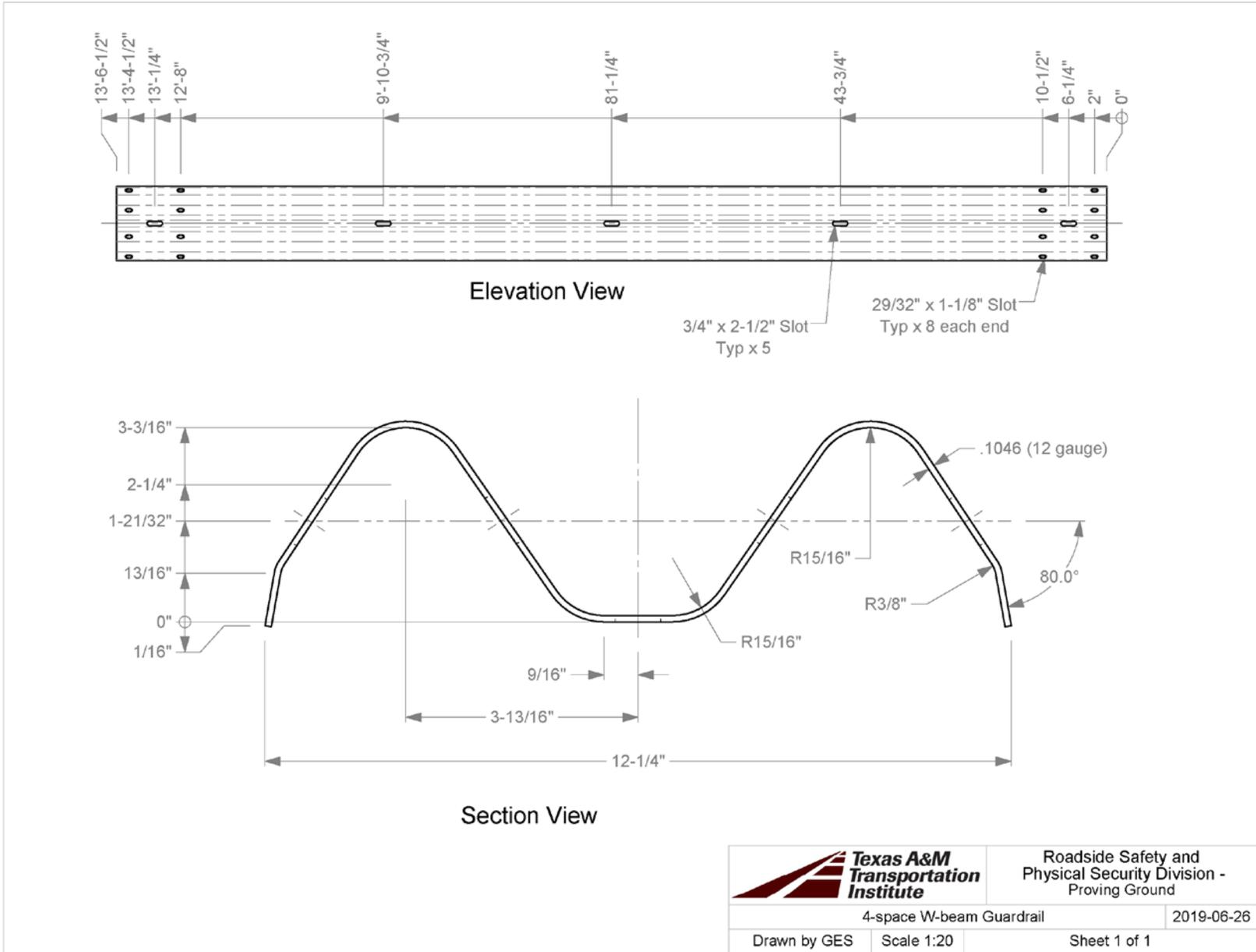
T:\1-ProjectFiles\469689-TxDOT-4 Mow Strip with Round Wood Posts\Drafting\_469689-4\469689-4 Drawing

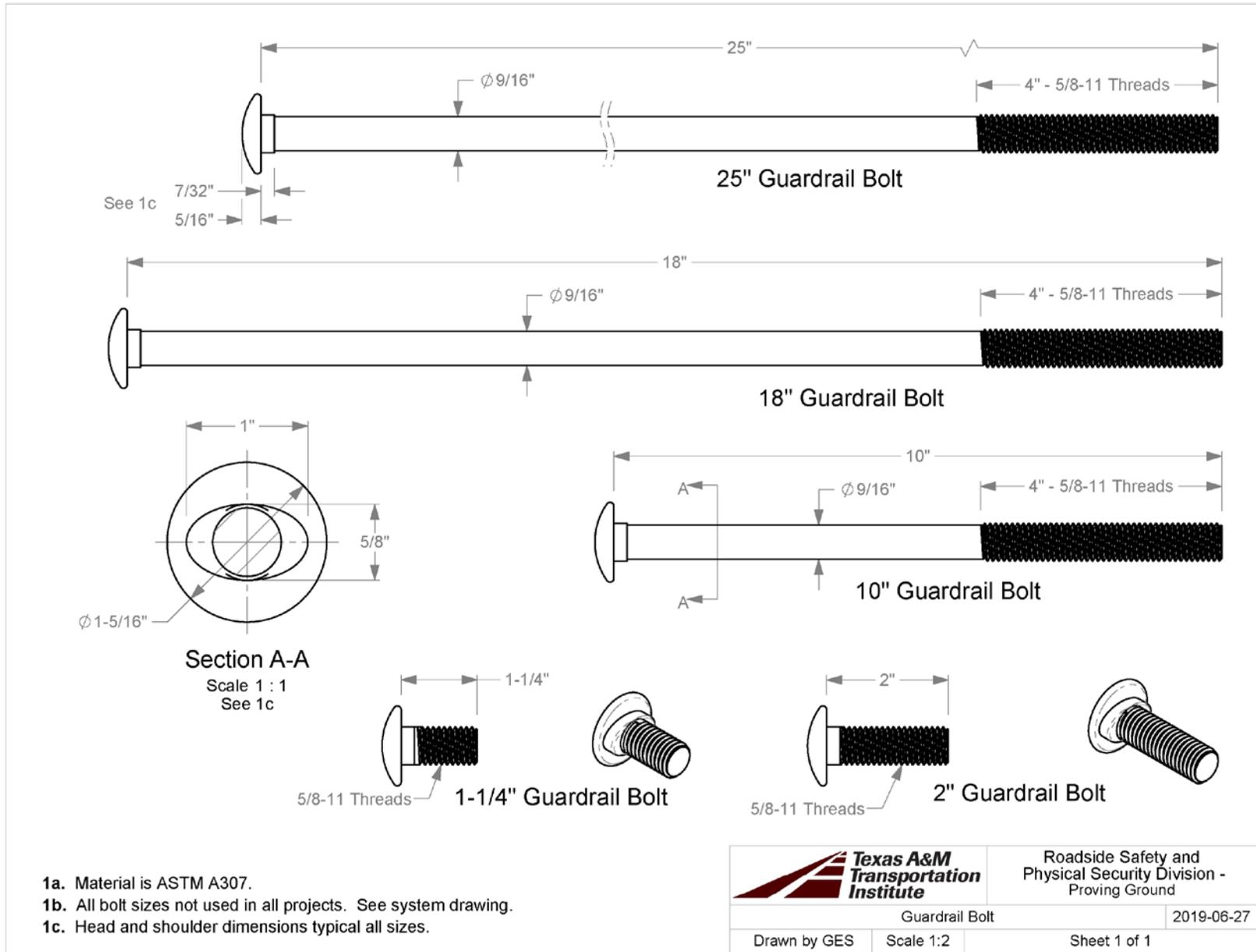
APPENDIX A. DETAILS OF TEST INSTALLATION



Roadside Safety and  
Physical Security Division -  
Proving Ground

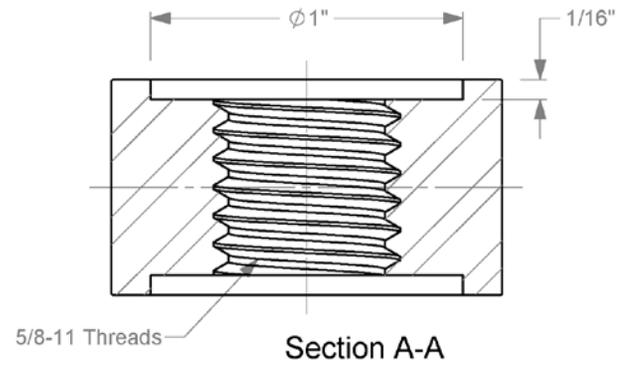
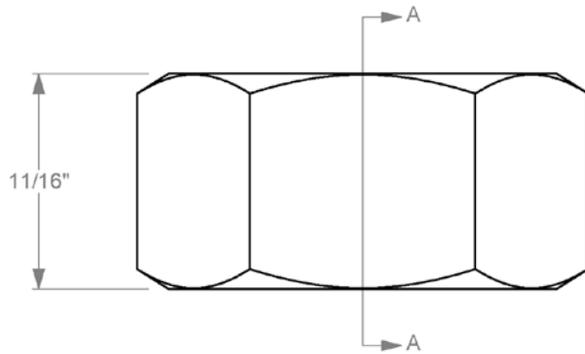
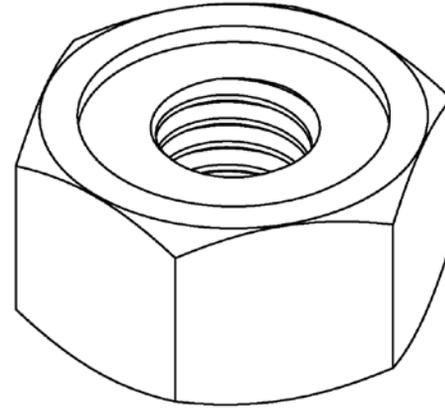
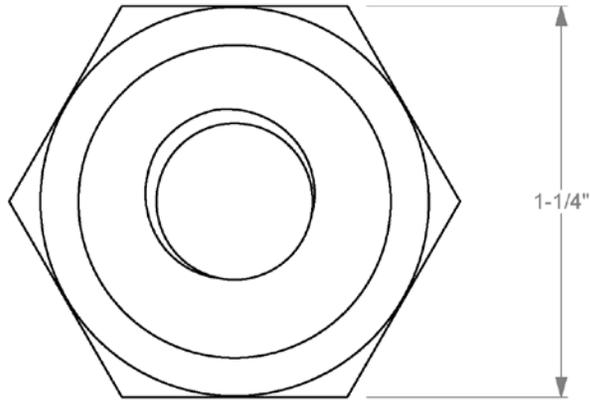
Project #469689-4 Mow Strip with Round Wood Posts	2019-07-22	
Drawn by GES	Scale 1:10	Sheet 2 of 2 Post and Blockout





T:\Drafting Department\Solidworks\Standard Parts\Guardrail Parts and Subs\Guardrail Drawings\Guardrail Bolt

### Recessed Guardrail Nut



1a. Material is ASTM A 563 Grade A.



Roadside Safety and  
Physical Security Division -  
Proving Ground

Recessed Guardrail Nut		2019-06-27
Drawn by GES	Scale 2:1	Sheet 1 of 1