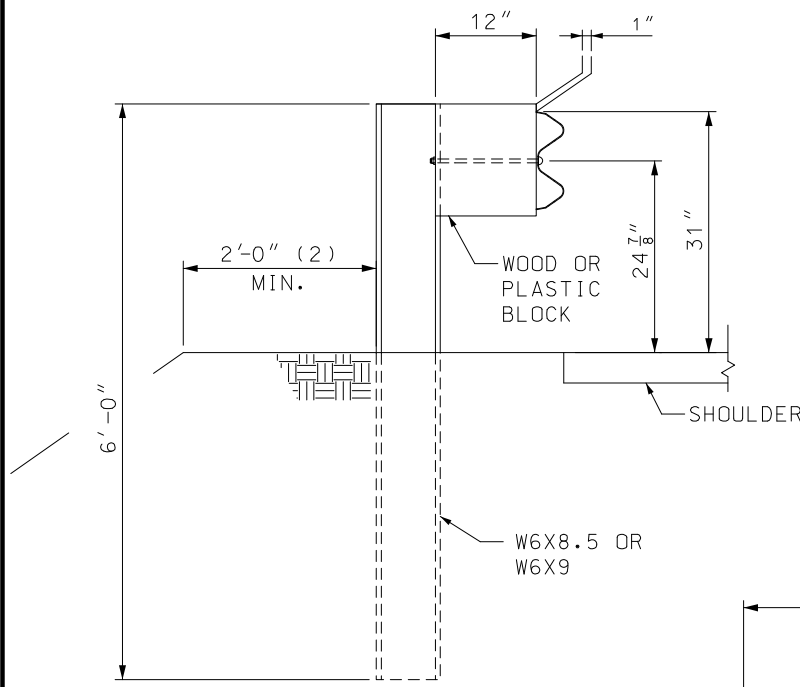
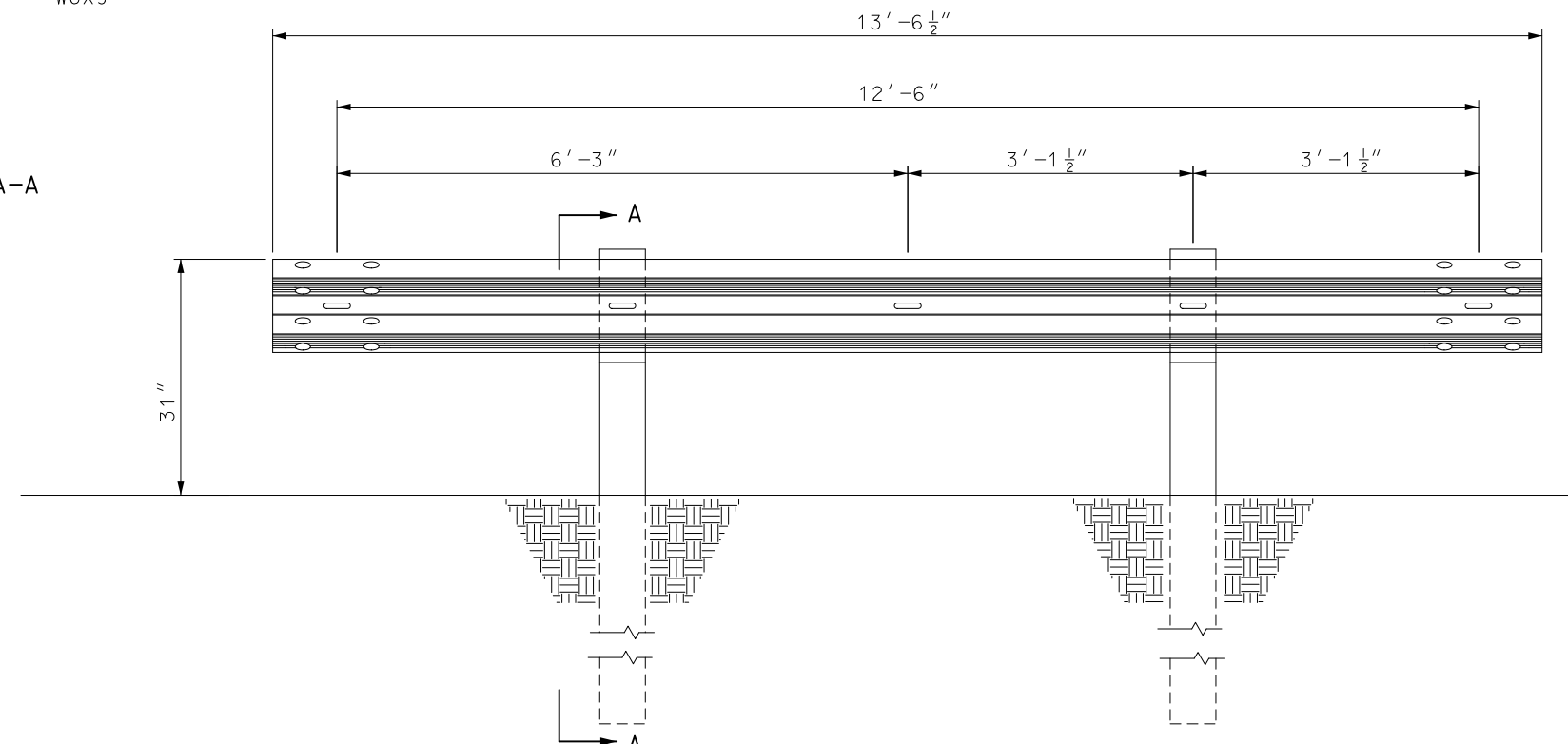


PLAN VIEW



SECTION A-A

- (1) 2'-6" MINIMUM CLEARANCE TO THE FACE OF OBSTACLE WITH 6'-3" POST SPACINGS, 2'-0" MINIMUM CLEARANCE TO THE FACE OF OBSTACLE WITH 3'-1 1/2" POST SPACINGS, 1'-6" MINIMUM CLEARANCE TO THE FACE OF OBSTACLE WITH 1'-6 3/4" POST SPACINGS. SEE SHEET 4 FOR POST SPACING DETAILS.
- (2) WHEN SITE CONSTRAINTS PROHIBIT OR EMBANKMENT CANNOT BE CONSTRUCTED TO PROVIDE A MINIMUM OF 2 FEET BETWEEN THE BACK OF THE GUARDRAIL POST AND SLOPE BREAK POINT, 8-FOOT POSTS SHALL BE USED (SEE SHEET 6).



ELEVATION VIEW

GENERAL NOTES:

FOR INITIAL INSTALLATION, CONSTRUCT THE GUARDRAIL WITHIN 1" OF THE STANDARD 31" HEIGHT TO THE TOP OF W-BEAM RAIL. WHEN SUBSEQUENT PROJECTS, SUCH AS RESURFACINGS, AFFECT THE HEIGHT OF EXISTING GUARDRAIL, ADJUSTMENT IS NOT REQUIRED IF THE FINISHED HEIGHT IS WITHIN 3" OF THE STANDARD HEIGHT.

THE STANDARD POST LENGTH IS 6'-0" (+3", -0" TOLERANCE).

THE SUBSTITUTION OF 8-FOOT POSTS IN LIEU OF REQUIRED GRADING, TO CONSTRUCT LESS THAN THE DESIGNED TYPICAL SECTION, SHALL NOT BE ALLOWED.

REFER TO AASHTO M 180 FOR DIMENSIONAL DETAILS OF W-BEAM, RELATED BUFFER AND END SECTIONS, BEAM SPLICES, POST AND SPLICE BOLTS, NUTS, AND TYPE 1 W-BEAM TO THRIE BEAM TRANSITION SECTIONS.

BEAM WASHERS ARE NOT TO BE USED. BOLT SHALL BE ASTM A307.

UNLESS OTHERWISE SPECIFIED, W-BEAM RAIL IS 12 GAUGE STEEL WITH AN EFFECTIVE LENGTH OF 12'-6" OR 25'-0", WITH 29/32" X 1 1/8" SPLICE BOLT SLOTS, AND 3/4" X 1/2" POST BOLT SLOTS ON 3'-1 1/2" CENTERS REGARDLESS OF POST SPACING.

FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SEC 1040 OF THE STANDARD SPECIFICATIONS.

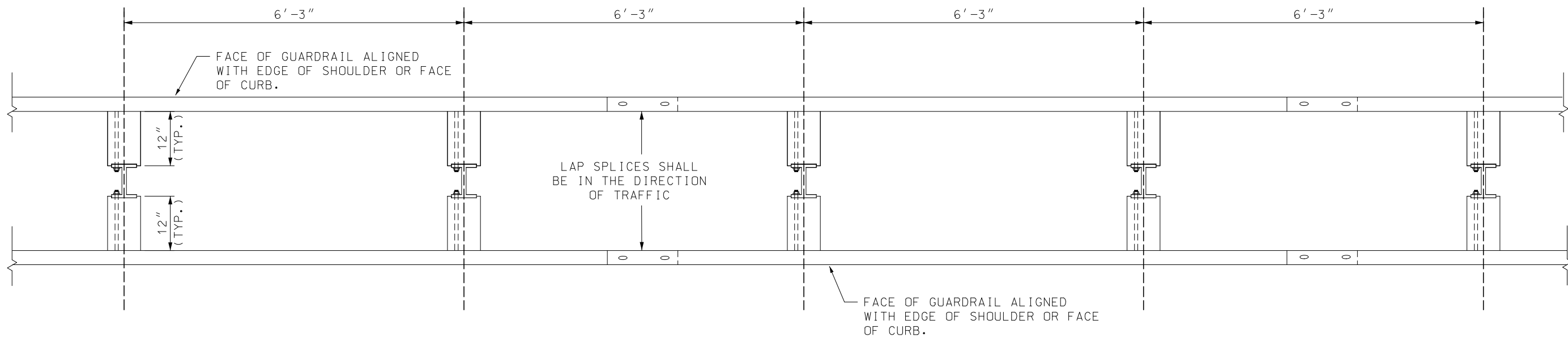
LAP SPLICES BETWEEN TWO RAILS OR BETWEEN A RAIL AND TERMINAL CONNECTOR IN THE DIRECTION OF TRAFFIC. LAP THE FLARED END SECTIONS IN THE DIRECTION OF TRAFFIC.

**MoDOT** MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 105 WEST CAPITOL JEFFERSON CITY, MO 65102  
 1-888-ASK-MODOT (1-888-275-6636)

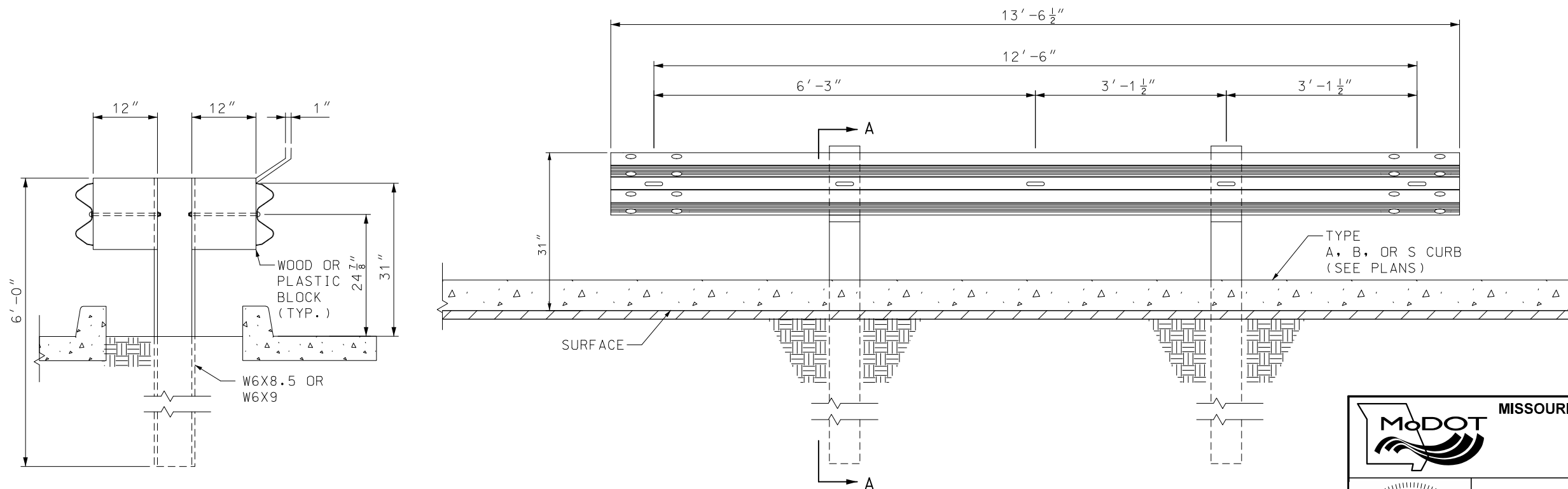
STATE OF MISSOURI  
 KENNETH L. VOSS  
 NUMBER PE-2002016747  
 PROFESSIONAL ENGINEER  
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

MIDWEST GUARDRAIL SYSTEM (MGS)

DATE EFFECTIVE: 7/1/2024	606.50F	SHEET NO. 1 OF 9
DATE PREPARED: 4/10/2024		

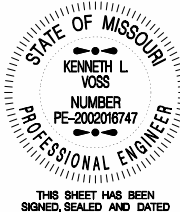


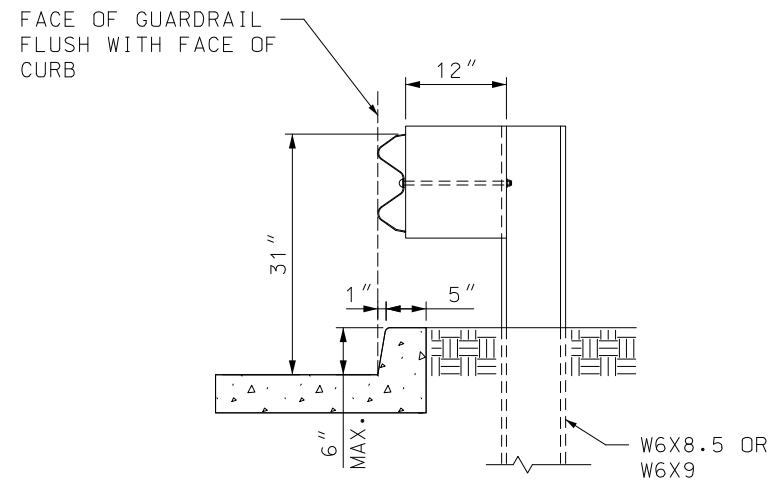
PLAN VIEW



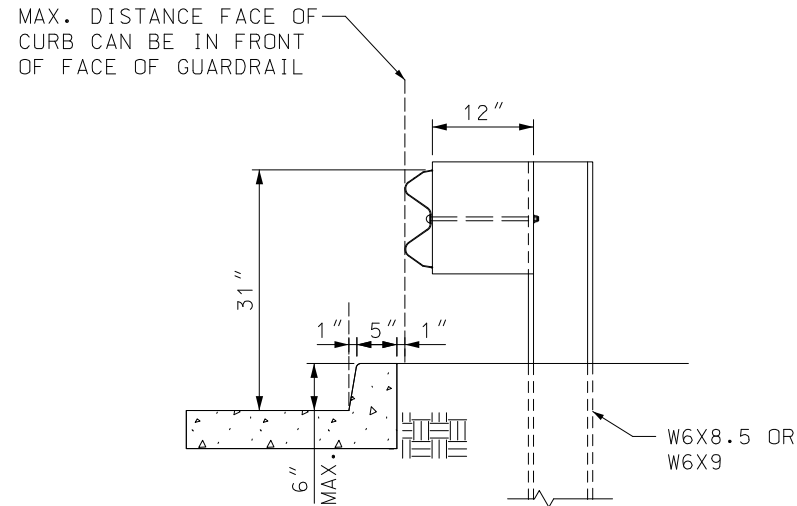
ELEVATION VIEW

SECTION A-A

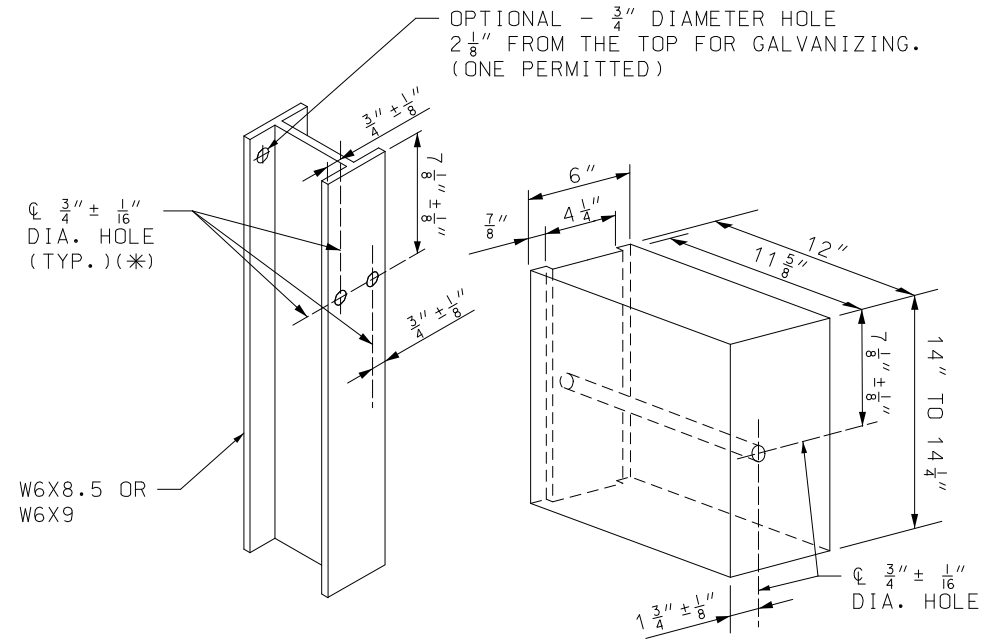
	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<b>MIDWEST GUARDRAIL SYSTEM (MGS)</b> <b>DOUBLE FACED GUARDRAIL</b>
DATE EFFECTIVE: 7/1/2024 DATE PREPARED: 4/10/2024	<b>606.50F</b>	SHEET NO. <b>2 OF 9</b>



MGS GUARDRAIL AT CURB



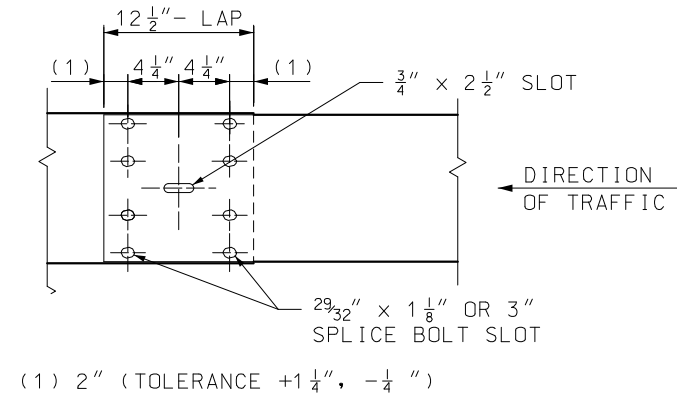
ALTERNATE MGS AT CURB



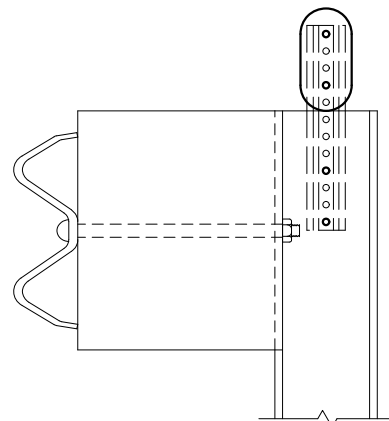
FOR STEEL POST AND NOTCHED WOOD OR PLASTIC BLOCK

HOLE PUNCHING DETAIL

(\*) TWO HOLES CAN BE PROVIDED ON EACH FLANGE OF POST, ONLY ONE IS REQUIRED FOR FLANGE OF POST THAT HAS A BLOCK ATTACHMENT.





RAIL ELEMENT SPLICE DETAIL



DELINEATORS ON GUARDRAIL

GENERAL NOTES:

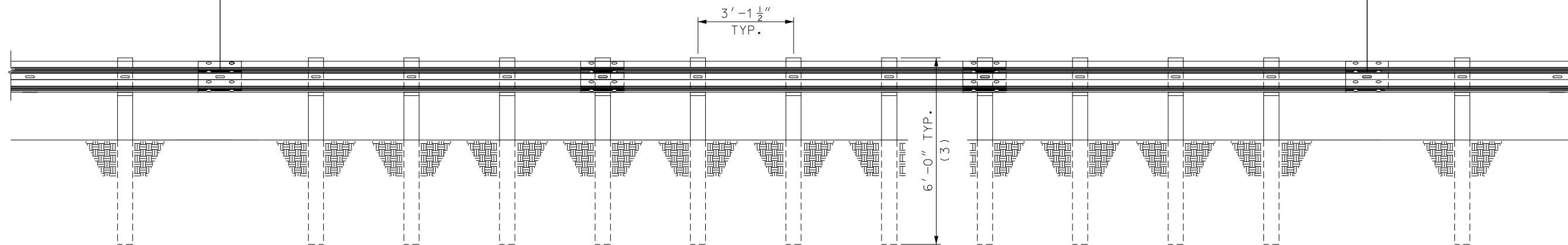
FOR GUARDRAIL DELINEATION DETAILS SEE STD PLAN 903.03.

 <p><b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b></p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	
 <p>STATE OF MISSOURI KENNETH L. VOSS NUMBER PE-2002016747 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p><b>MIDWEST GUARDRAIL SYSTEM (MGS)</b></p> <p><b>POST AND BLOCK</b></p>
<p>DATE EFFECTIVE: 7/1/2024</p> <p>DATE PREPARED: 4/10/2024</p>	<p>606.50F</p>
<p>SHEET NO. 3 OF 9</p>	

MGS GUARDRAIL 6'-3" SPACINGS OR MASH END TERMINAL OR BRIDGE APPROACH TRANSITION

MGS GUARDRAIL WITH 3'-1 1/2" POST SPACINGS (2)

MGS GUARDRAIL 6'-3" SPACINGS OR MASH END TERMINAL OR BRIDGE APPROACH TRANSITION



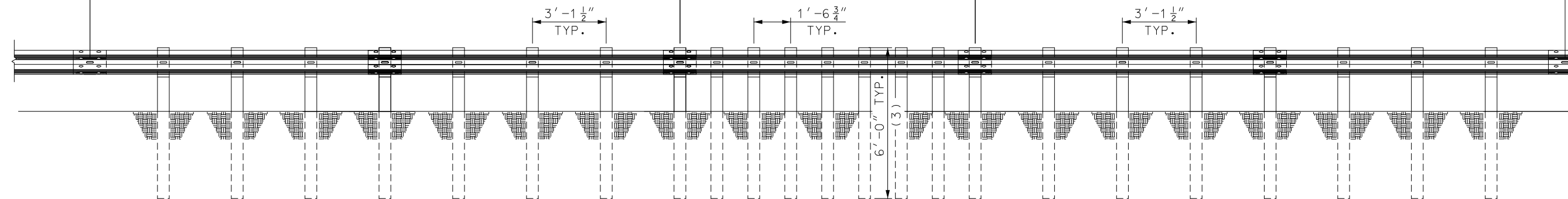
MGS GUARDRAIL WITH 3'-1 1/2" POST SPACING

MGS GUARDRAIL 6'-3" SPACINGS OR MASH END TERMINAL OR BRIDGE APPROACH TRANSITION

MGS GUARDRAIL 3'-1 1/2" POST SPACING (1)  
25' MIN.



MGS GUARDRAIL 1'-6 3/4" POST SPACINGS (2)

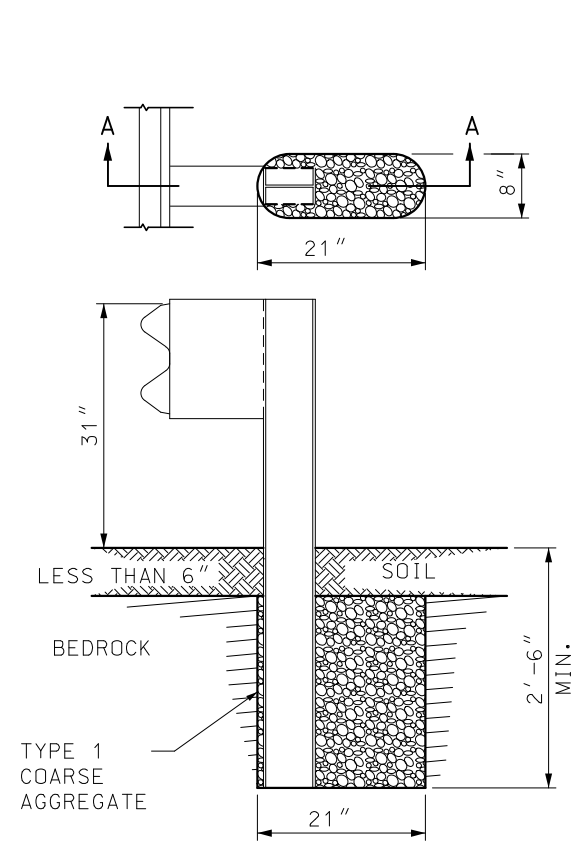
MGS GUARDRAIL 3'-1 1/2" POST SPACINGS (1)  
25' MIN.



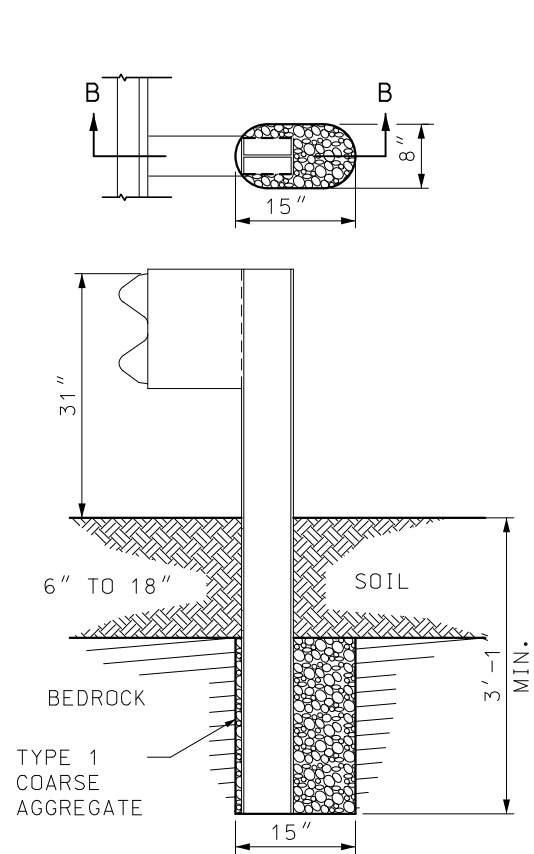
MGS GUARDRAIL WITH 1'-6 3/4" POST SPACING

- (1) 25 FEET OF MGS 3'-1 1/2" POST SPACING GUARDRAIL IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF 1'-6 3/4" POST SPACING MGS GUARDRAIL.
- (2) USE AS MANY SEGMENTS AS NECESSARY TO SHIELD THE AREA OF CONCERN.
- (3) REDUCED POST SPACING SHALL USE 6'-0" POSTS MAX. ANY DEVIATION OF 6'-0" POSTS WILL ONLY BE ALLOWED IN ACCORDANCE WITH SPECIAL INSTALLATIONS AS SHOWN ON SHEET 5.

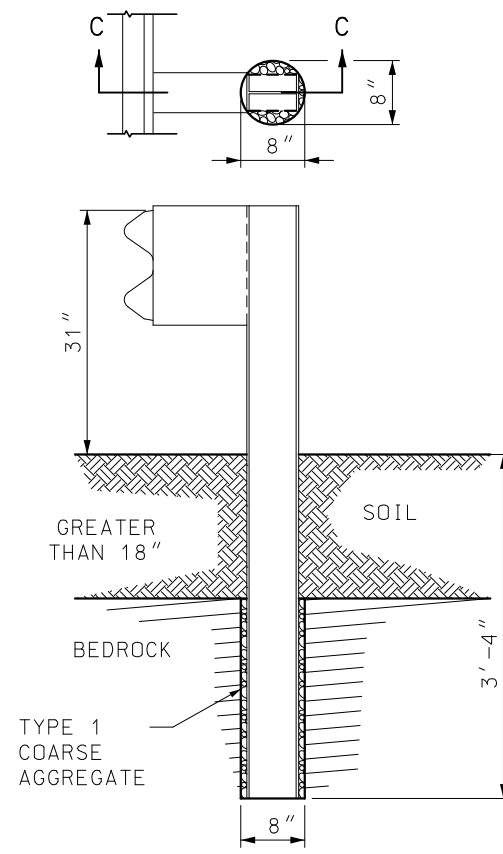
	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<b>MIDWEST GUARDRAIL SYSTEM (MGS)</b> <b>REDUCED POST SPACINGS</b>
DATE EFFECTIVE: 7/1/2024 DATE PREPARED: 4/10/2024	<b>606.50F</b>	SHEET NO. <b>4 OF 9</b>



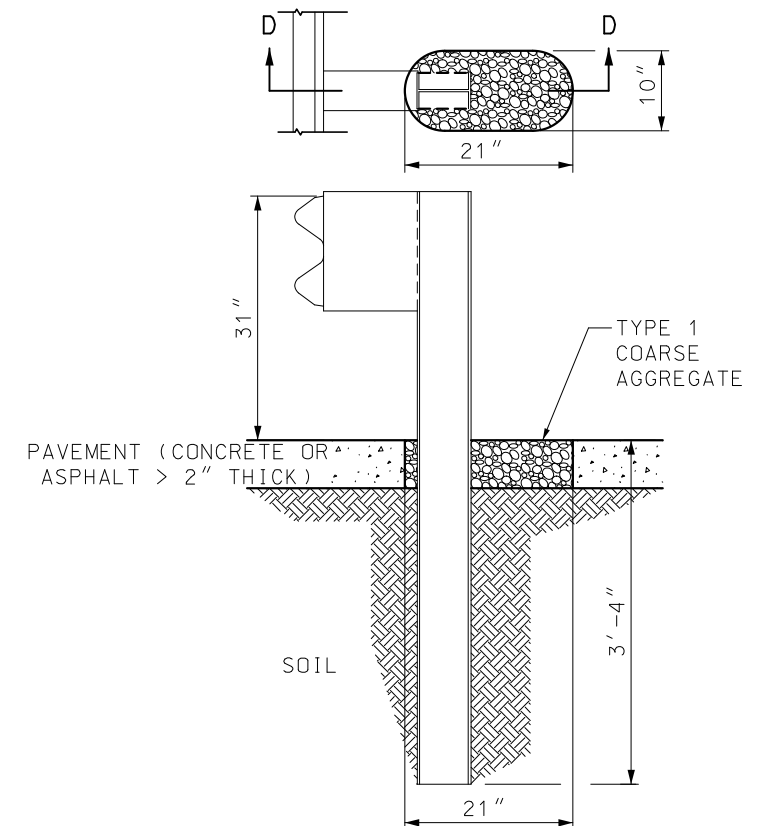
SECTION A-A  
ROCK ENCOUNTERED  
UP TO 6" BENEATH SURFACE



SECTION B-B  
ROCK ENCOUNTERED  
6" TO 18" BENEATH SURFACE

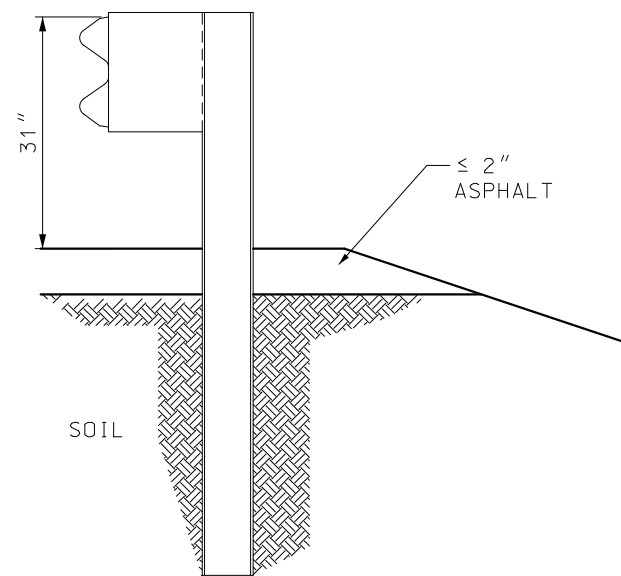


SECTION C-C  
ROCK ENCOUNTERED MORE  
THAN 18" BENEATH SURFACE



SECTION D-D  
SETTING POST THROUGH PAVEMENT  
(CONCRETE OR ASPHALT > 2" THICK)

SETTING POST IN SOLID ROCK



SETTING POST THROUGH ASPHALT  $\leq$  2" THICK

GENERAL NOTES:

HOLES IN SOLID ROCK SHALL PROVIDE A DIAMETER OF NOT LESS THAN 4 INCHES GREATER THAN THE MAXIMUM TRANSVERSE DIMENSION OF THE POST SECTION.

POST MAY BE SHORTER WHERE PLACED IN 2 FEET OF SOLID ROCK. STEEL POSTS MAY BE FLAME OR SAW CUT. REPAIR OF CUT SHALL BE IN ACCORDANCE WITH SEC 712 OF THE STANDARD SPECIFICATIONS.

NO ADDITIONAL PAYMENT WILL BE MADE FOR CUTTING THE OVERSIZED HOLES OR PLACING AGGREGATE IN THE HOLES, AS INDICATED IN THIS PLAN.

**MoDOT** MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

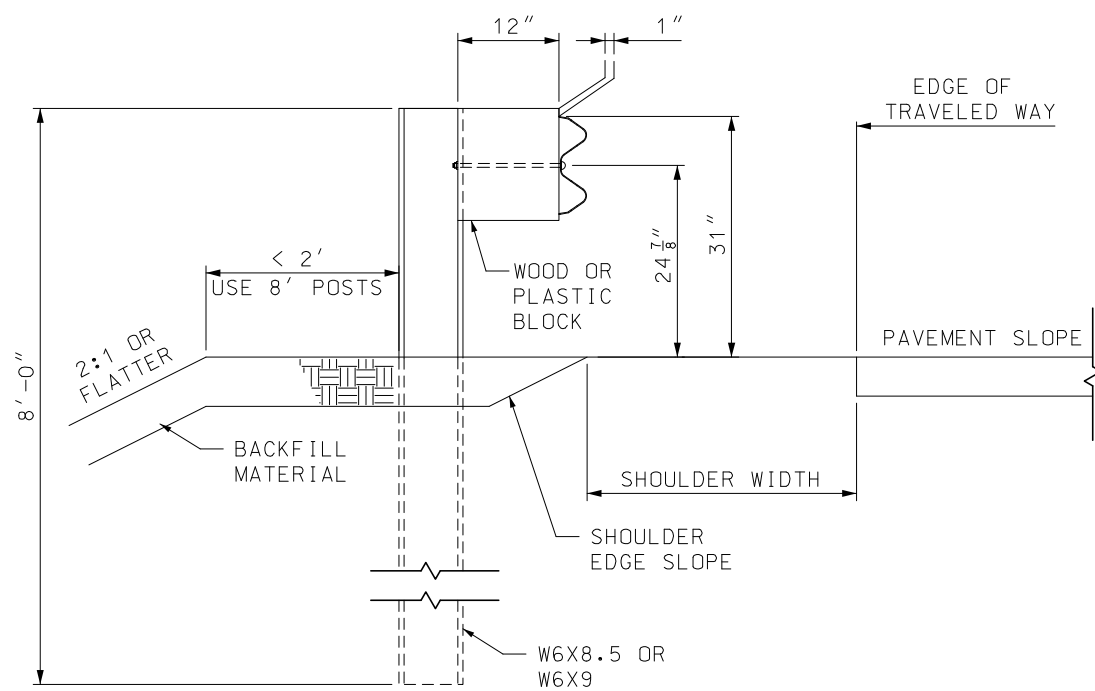
STATE OF MISSOURI  
KENNETH L. VOSS  
NUMBER PE-2002016747  
PROFESSIONAL ENGINEER  
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

MIDWEST GUARDRAIL SYSTEM (MGS)  
SPECIAL INSTALLATIONS

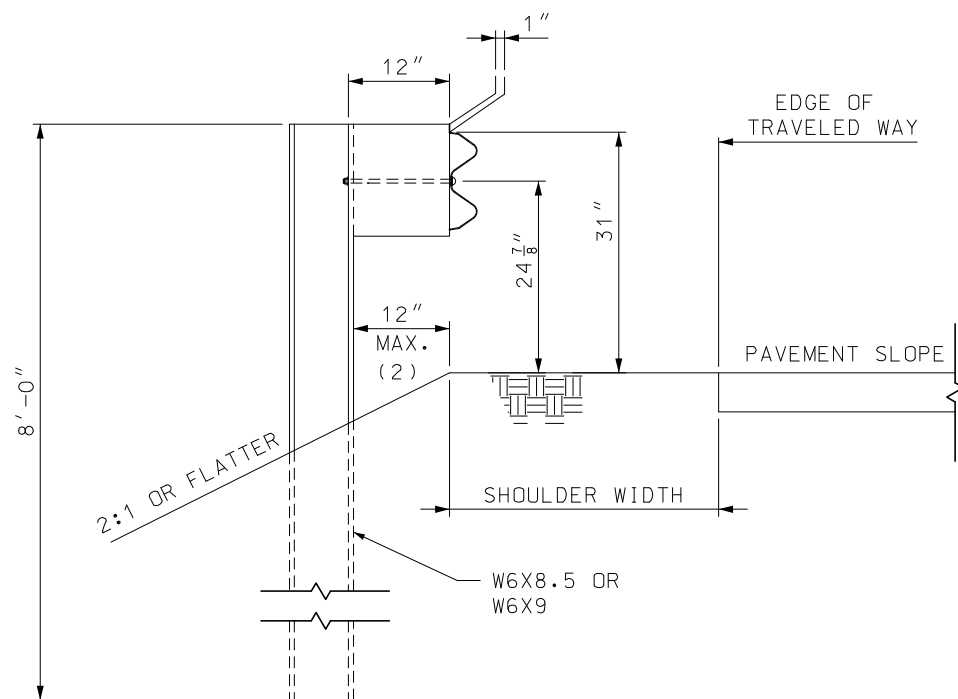
DATE EFFECTIVE: 7/1/2024  
DATE PREPARED: 4/10/2024

606.50F

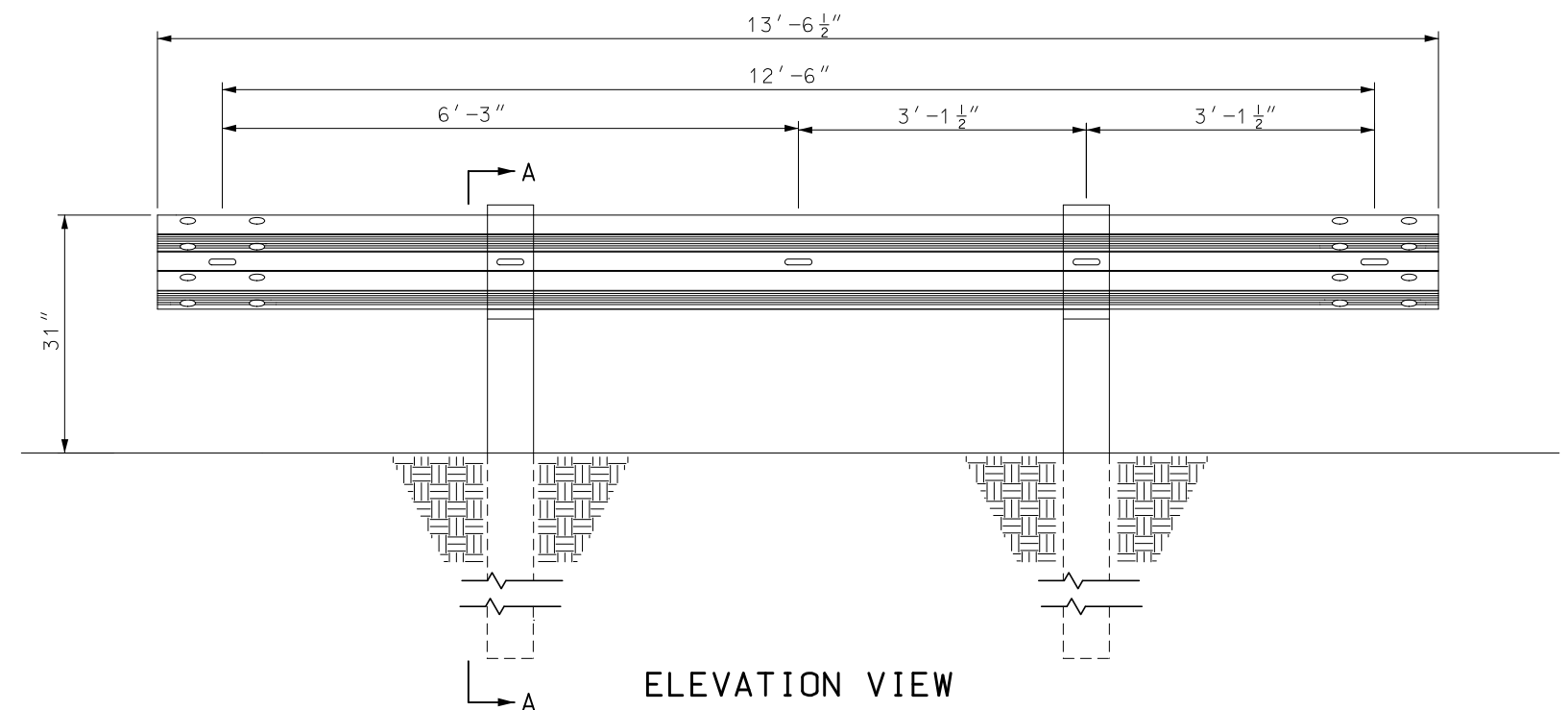
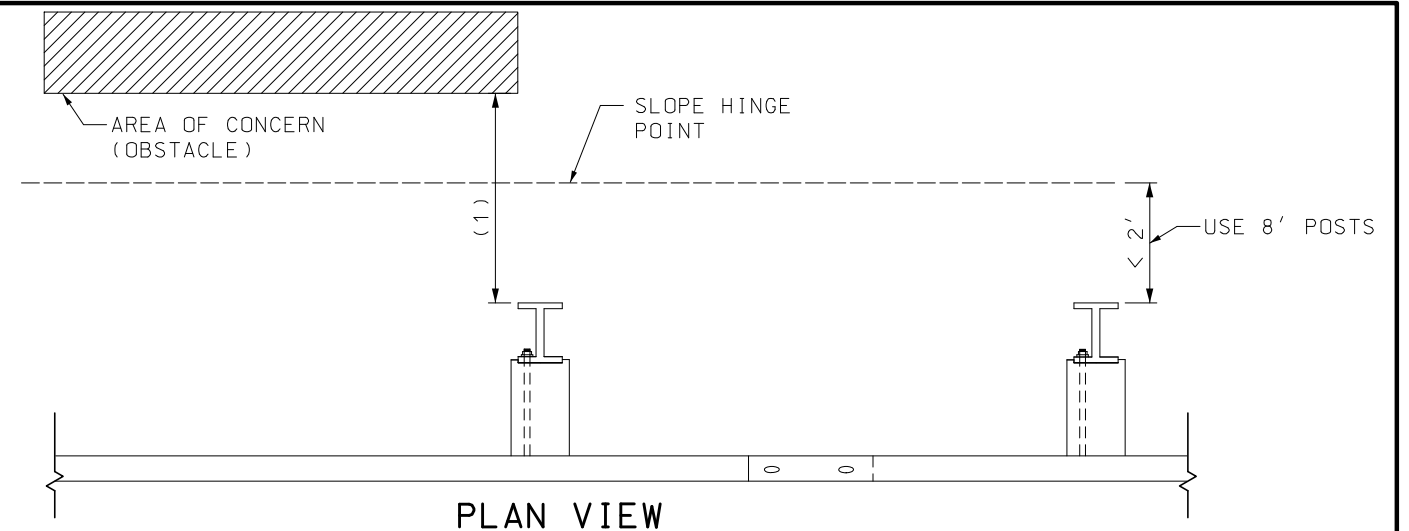
SHEET NO.  
5 OF 9



SECTION A-A  
8' STEEL POST



ALTERNATE SECTION A-A  
MAXIMUM LATERAL PLACEMENT OF  
8' STEEL POSTS ON SLOPES


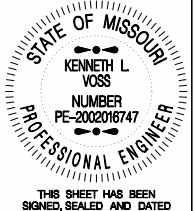


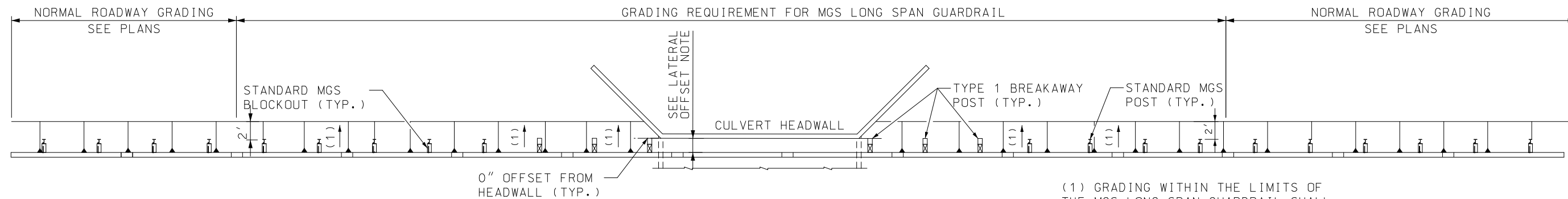
- (1) 3'-6" MINIMUM CLEARANCE TO THE FACE OF OBSTACLE WITH 8' POSTS AND A 2:1 OR FLATTER SLOPE.
- (2) WHERE THERE IS NOT SUFFICIENT EMBANKMENT BEYOND THE SHOULDER TO PLACE THE GUARDRAIL POST, THE POST MAY BE PLACED A MAXIMUM OF 12" BEYOND THE SLOPE BREAK POINT OF A 2:1 OR FLATTER SLOPE.

GENERAL NOTES:

8-FOOT POSTS SHALL BE USED WHEN LESS THAN 2 FEET OF EMBANKMENT IS PRESENT BETWEEN THE BACK OF THE GUARDRAIL POST AND THE SLOPE BREAK POINT. THE SUBSTITUTION OF 8-FOOT POSTS IN LIEU OF REQUIRED GRADING, TO CONSTRUCT LESS THAN THE DESIGNED TYPICAL SECTION, SHALL NOT BE ALLOWED.

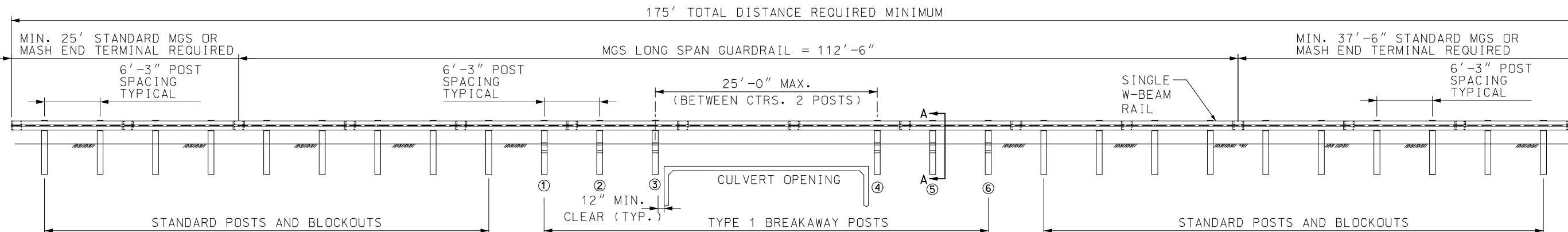
8-FOOT POSTS CANNOT BE USED WHEN POST SPACING IS LESS THAN 6'-3", WITHIN VERTICAL BARRIER OR BRIDGE APPROACH TRANSITIONS, OR WITHIN CRASHWORTHY END TERMINALS.

 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>MIDWEST GUARDRAIL SYSTEM (MGS)</b> <b>8-FOOT POST</b>
DATE EFFECTIVE: 7/1/2024 DATE PREPARED: 4/10/2024	SHEET NO. <b>606.50F</b> <b>6 OF 9</b>



PLAN VIEW

(1) GRADING WITHIN THE LIMITS OF THE MGS LONG SPAN GUARDRAIL SHALL BE THE SAME CROSS SLOPE AS SHOULDER.



ELEVATION VIEW

GENERAL NOTES:

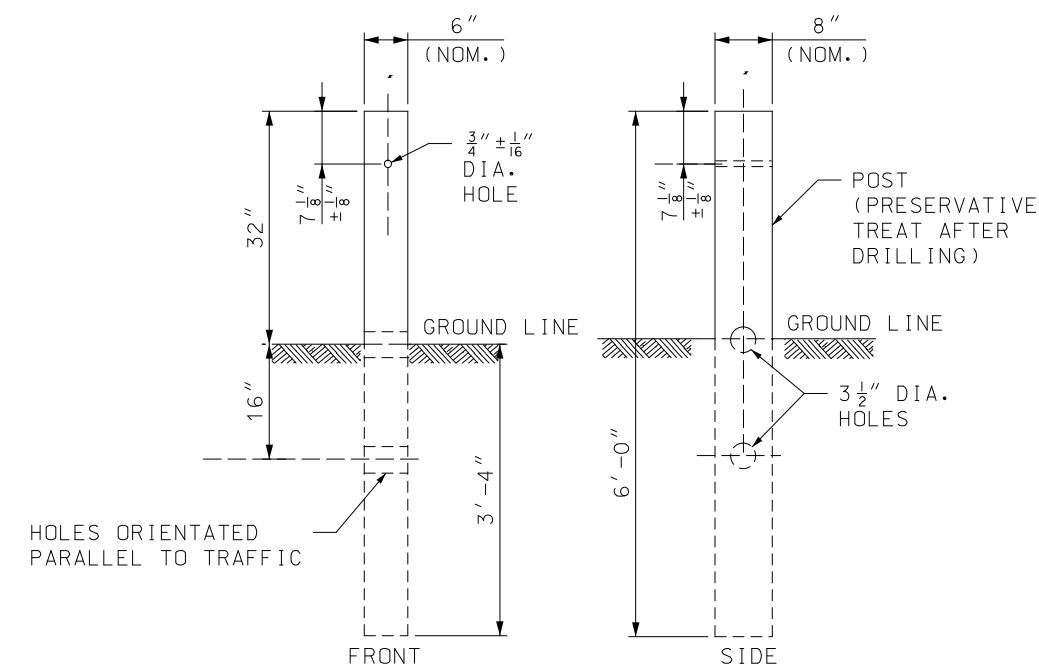
A MINIMUM LENGTH OF STANDARD MGS GUARDRAIL OR AN END TERMINAL IS REQUIRED BEFORE AND AFTER THE 112'-6" OF MGS LONG SPAN TO MAINTAIN STABILITY IN THE SYSTEM. 8' POSTS MAY BE USED OUTSIDE THE GRADING LIMITS SHOWN.

USE TYPE 1 BREAKAWAY WOOD POST FOR POSTS NO. 1-6. ALL OTHER POSTS SHALL BE W6X8.5 OR W6X9 STEEL POSTS.

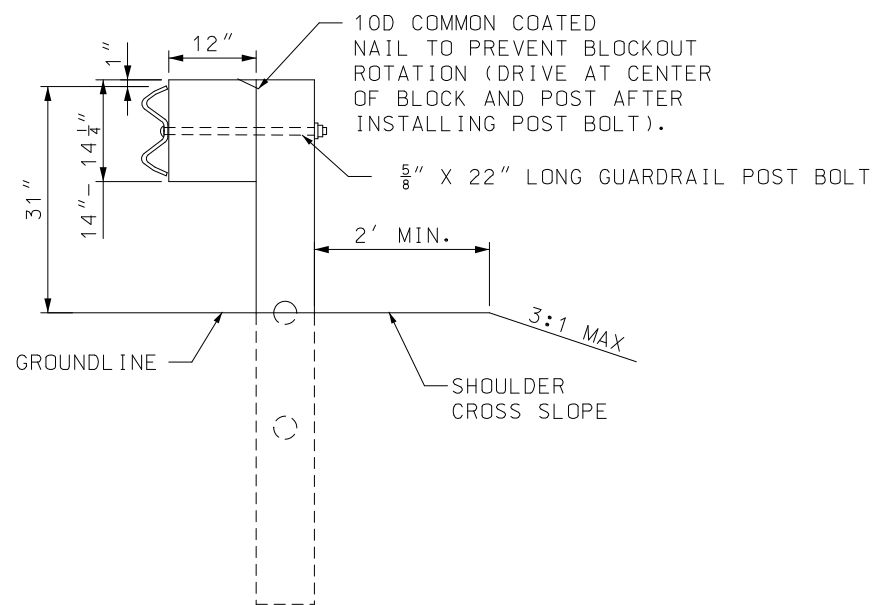
WHEN THE HEADWALL IS FLUSH WITH THE GRADE, THE BACK OF THE POST CAN BE ALIGNED WITH THE NEAR SIDE OF THE HEADWALL. BUT IF THE HEADWALL CONTINUES ABOVE GRADE, THE SYSTEM SHOULD BE OFFSET 8' FROM THE FIXED OBJECT.

FOR LOCATIONS WHERE A GUARDRAIL FLARE IS DESIRED, THE SYSTEM SHOULD REMAIN TANGENT FOR 50'-0" BEFORE POST 1 OR AFTER POST 6, AT WHICH POINT THE GUARDRAIL MAY FLARE AT A MAXIMUM TAPER RATE OF 7:1.


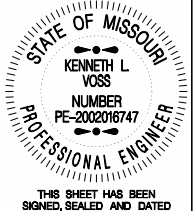
ALL POSTS, BLOCK, RAILS, AND HARDWARE SHALL COMPLY WITH SEC 606 AND AS DETAILED ON THIS STANDARD.

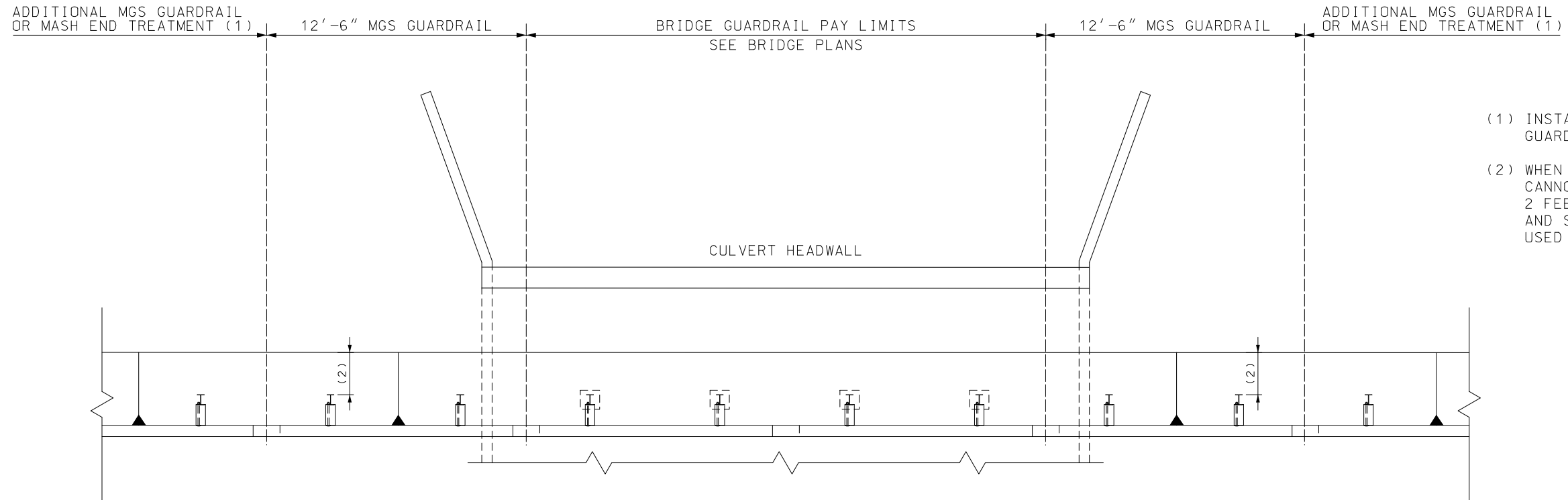


TYPE 1 BREAKAWAY WOOD POST



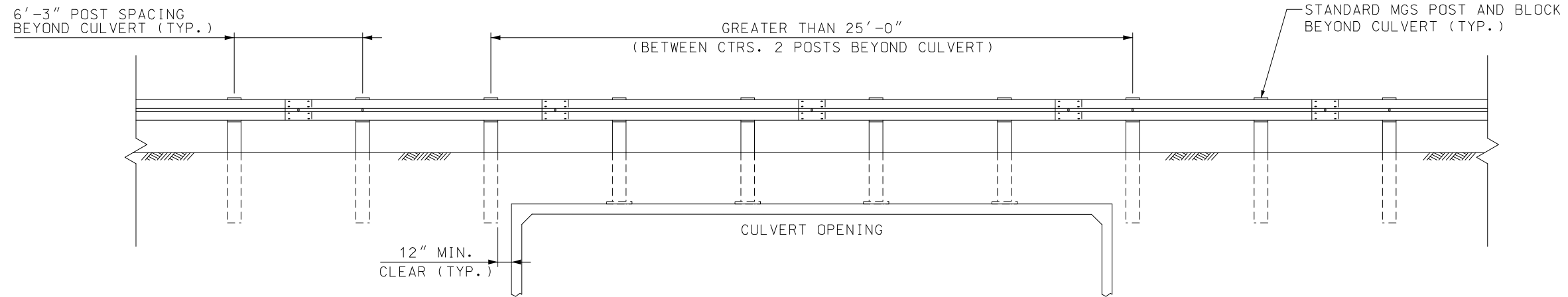
SECTION A-A

 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>MIDWEST GUARDRAIL SYSTEM (MGS)</b> <b>LONG SPAN GUARDRAIL</b>
DATE EFFECTIVE: 7/1/2024 DATE PREPARED: 4/10/2024	SHEET NO. <b>606.50F</b> 7 OF 9


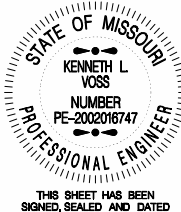


- (1) INSTALL A MINIMUM OF 37'-6" OF ADDITIONAL MGS GUARDRAIL BEFORE STARTING A TAPER OR RADIUS.
- (2) WHEN SITE CONSTRAINTS PROHIBIT OR EMBANKMENT CANNOT BE CONSTRUCTED TO PROVIDE A MINIMUM OF 2 FEET BETWEEN THE BACK OF THE GUARDRAIL POST AND SLOPE BREAK POINT, 8 FOOT POSTS SHALL BE USED (SEE SHEET 6).

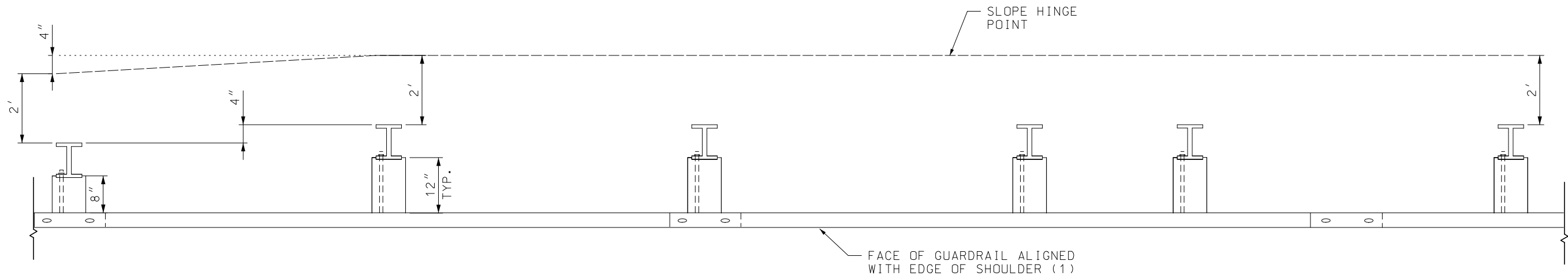
PLAN VIEW



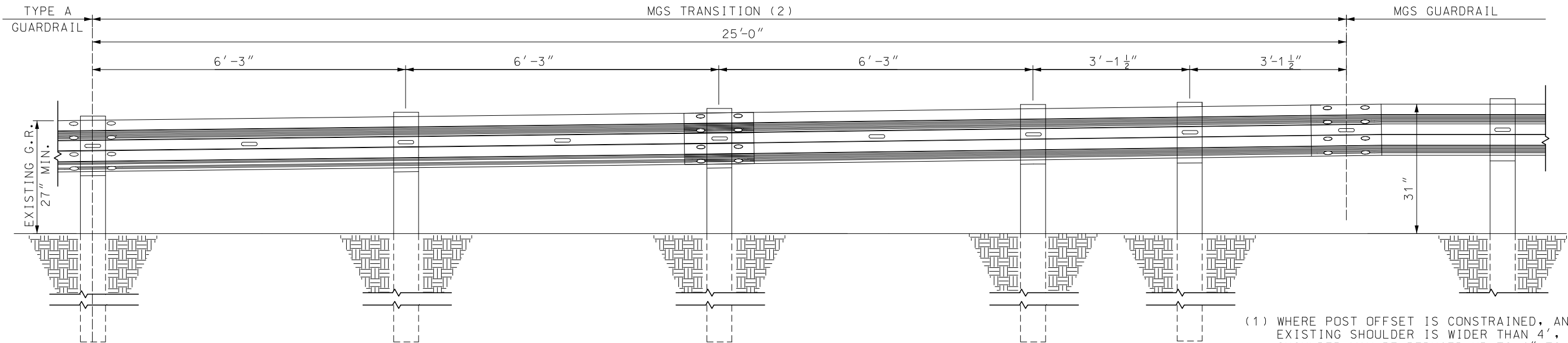
ELEVATION VIEW

	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> <small>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</small>
	<b>MIDWEST GUARDRAIL SYSTEM (MGS)</b> <b>ON CONCRETE BOX CULVERT</b>
DATE EFFECTIVE: 7/1/2024 DATE PREPARED: 4/10/2024	<b>606.50F</b>
SHEET NO. <b>8 OF 9</b>	





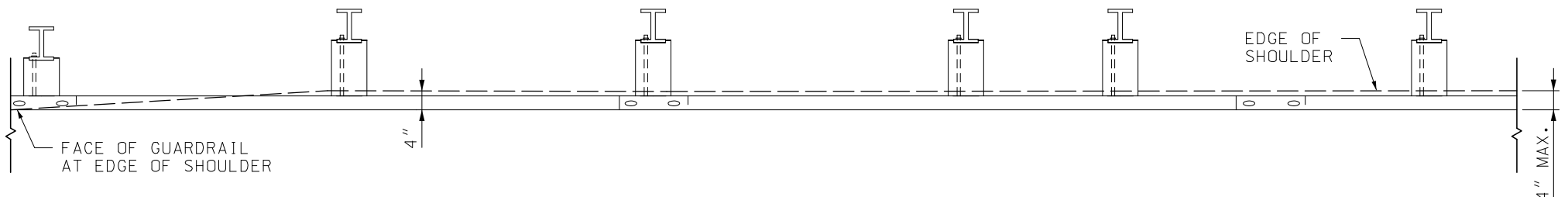
PLAN VIEW





MGS BLOCK AND HEIGHT TRANSITION FROM TYPE A GUARDRAIL TO MGS GUARDRAIL

(1) WHERE POST OFFSET IS CONSTRAINED, AND WHEN THE EXISTING SHOULDER IS WIDER THAN 4', THE EXISTING SHOULDER MAY BE REDUCED UP TO 4" TO ACCOMMODATE THE 12" BLOCKS OF THE MGS GUARDRAIL. WHERE SITE CONSTRAINTS PROHIBIT OR EMBANKMENT CANNOT BE CONSTRUCTED TO PROVIDE A MINIMUM OF 2' BETWEEN THE BACK OF THE GUARDRAIL POST AND SLOPE BREAK POINT, 8' POSTS SHALL BE USED (SEE SHEET 6). THE SUBSTITUTION OF 8' POSTS IN LIEU OF REQUIRED GRADING SHALL NOT BE ALLOWED.

(2) MGS TRANSITION FROM TYPE A GUARDRAIL SHALL BE COMPLETED OUTSIDE THE 50' MGS END TERMINAL LIMITS.



ALTERNATE PLAN VIEW - ALIGNMENT TAPER  
SEE NOTE (1)

 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>MIDWEST GUARDRAIL SYSTEM (MGS)</b> <b>BLOCK AND HEIGHT TRANSITION</b>
DATE EFFECTIVE: 7/1/2024 DATE PREPARED: 4/10/2024	SHEET NO. <b>606.50F</b> <b>9 OF 9</b>