

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
3/21/2016

ROUTE STATE
DISTRICT SHEET NO.
MO

COUNTY

JOB NO.

CONTRACT ID.

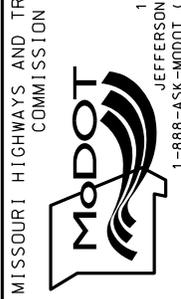
PROJECT NO.

BRIDGE NO.

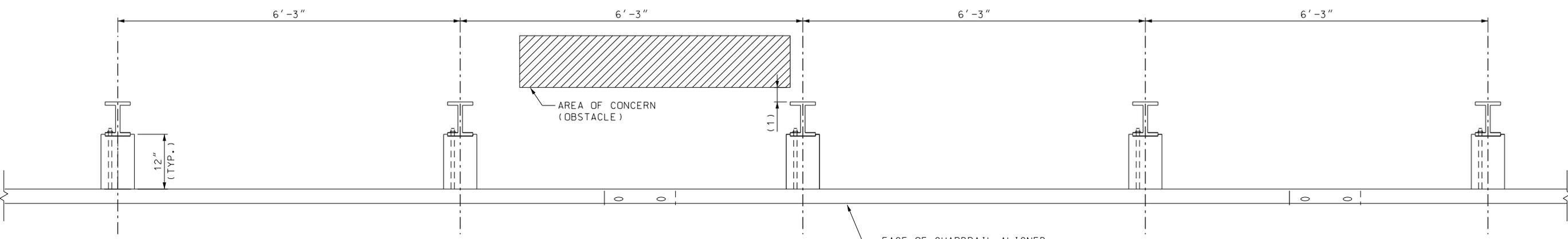
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



REV- DATE 3/18/2016



PLAN VIEW
MGS GUARDRAIL

(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,
OR 1'-6" MINIMUM CLEARANCE TO THE FACE OF OBSTACLE WITH 1'-6 3/4" POST SPACINGS.
SEE SHEET 4 OF 11 FOR POST SPACING DETAILS.

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).

WHERE SITE CONSTRAINTS PROHIBIT THE POST FROM BEING PLACED AT LEAST TWO FEET IN FRONT OF THE SLOPE BREAK POINT, USE LONGER POSTS AS SHOWN ON SHEET 6 OF 11.

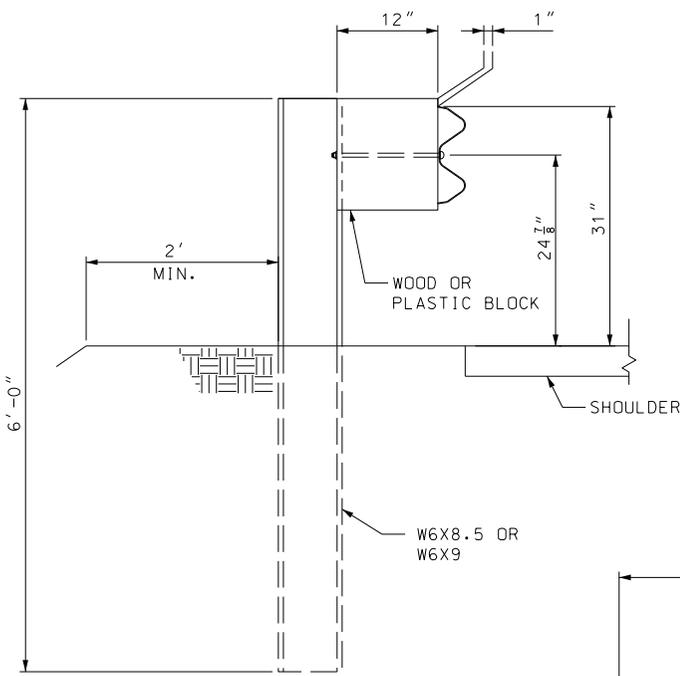
REFER TO AASHTO M 180 FOR DIMENSIONAL DETAILS OF W-BEAM, RELATED BUFFER AND END SECTIONS, BEAM SPLICES, POST AND SPLICE BOLTS, NUTS, AND TYPE 1 W-BEAM TO THRIE BEAM TRANSITION SECTIONS.

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

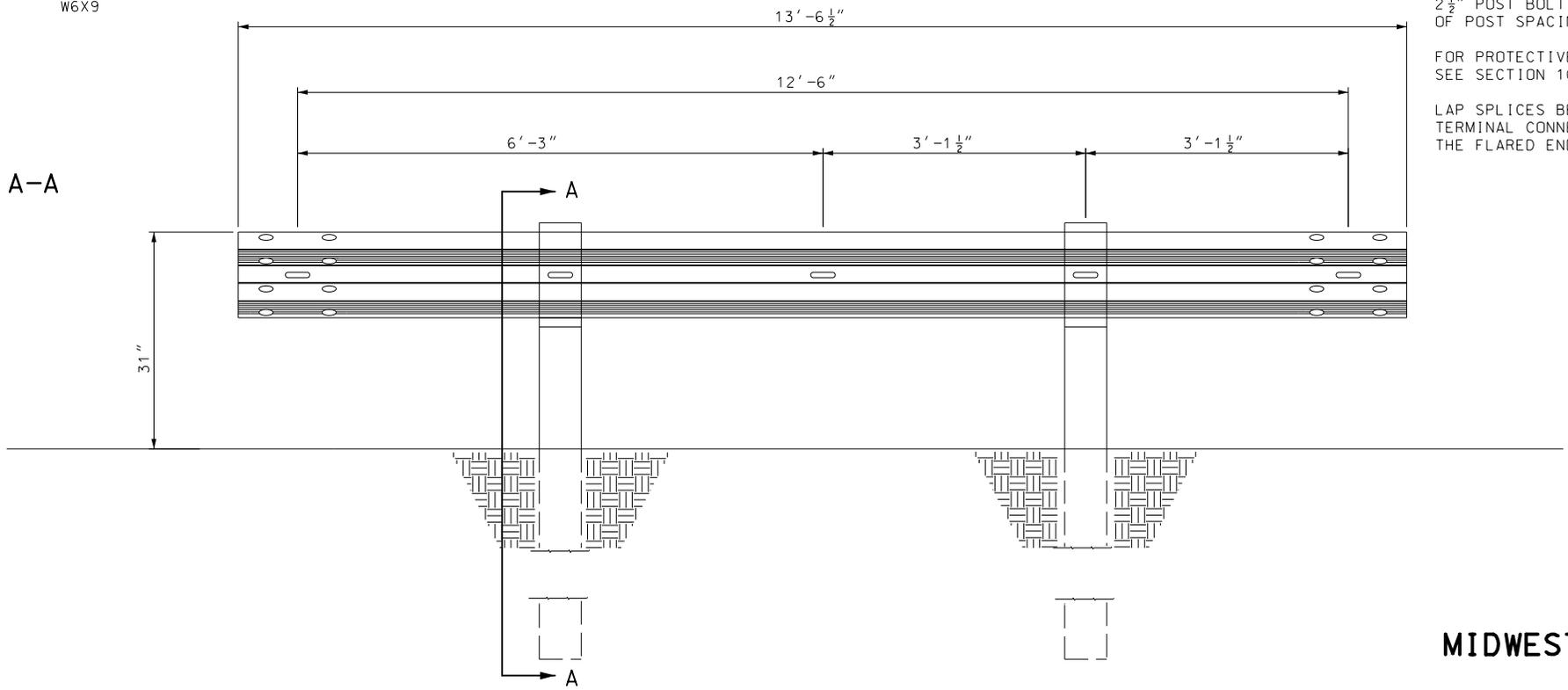
UNLESS OTHERWISE SPECIFIED, W-BEAM RAIL IS 12 GAUGE STEEL WITH AN EFFECTIVE LENGTH OF 12'-6" OR 25'-0", WITH 2 9/32" X 1 1/8" SPLICE BOLT SLOTS, AND 3/4" X 2 1/2" POST BOLT SLOTS ON 3'-1 1/2" CENTERS REGARDLESS OF POST SPACING.

FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SECTION 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.



SECTION A-A



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM
(MGS)
SPECIAL SHEET
1 OF 11

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
3/21/2016

ROUTE STATE
DISTRICT SHEET NO.
MO

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

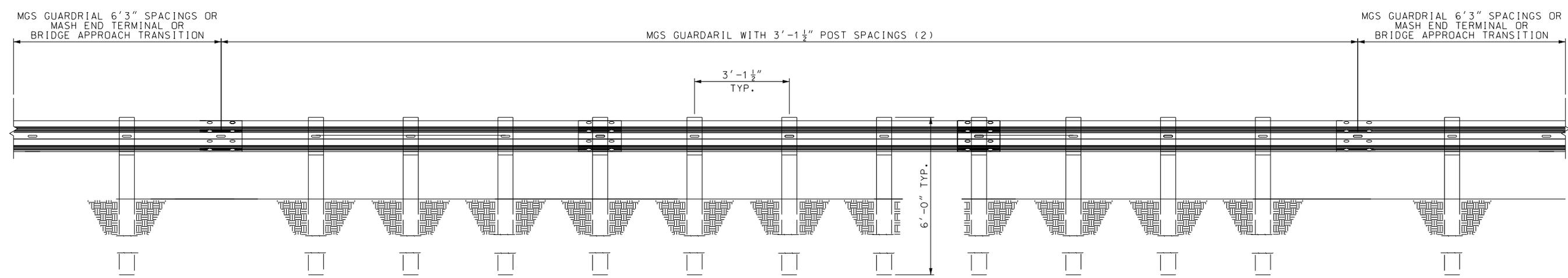
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

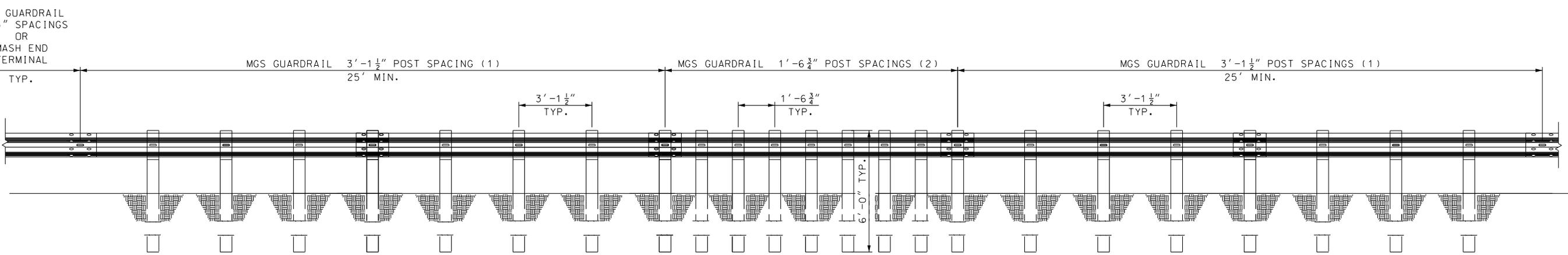
1-888-ASK-MODOT (1-888-275-6636)

MODOT

REV. DATE 3/18/2016



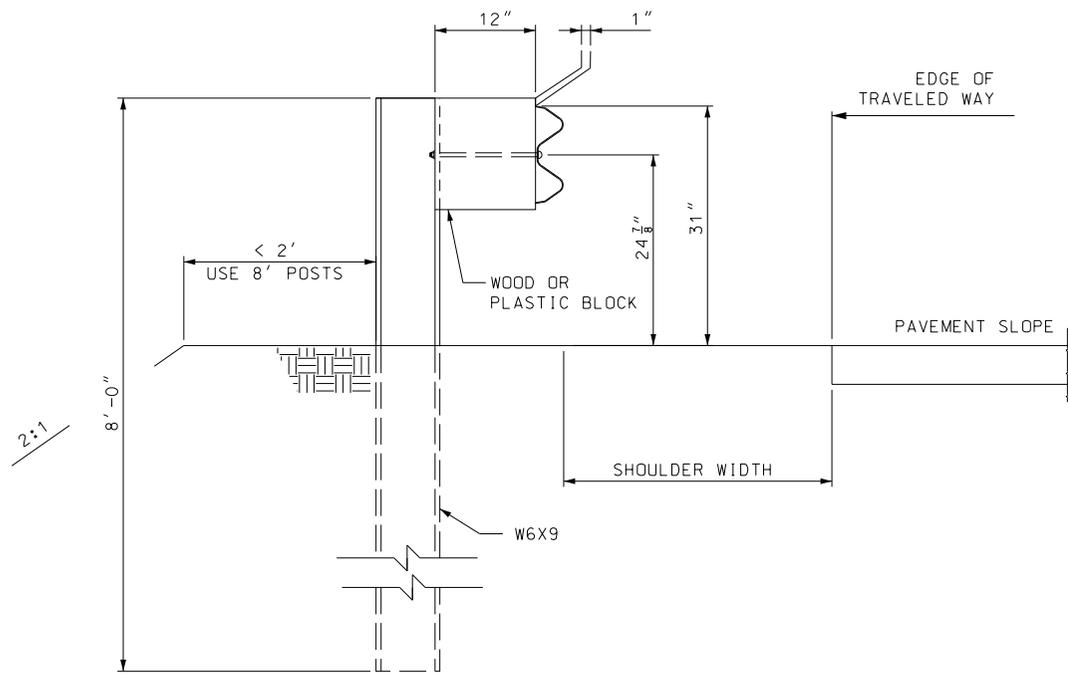
MGS GUARDRAIL WITH 3'-1 1/2" POST SPACING



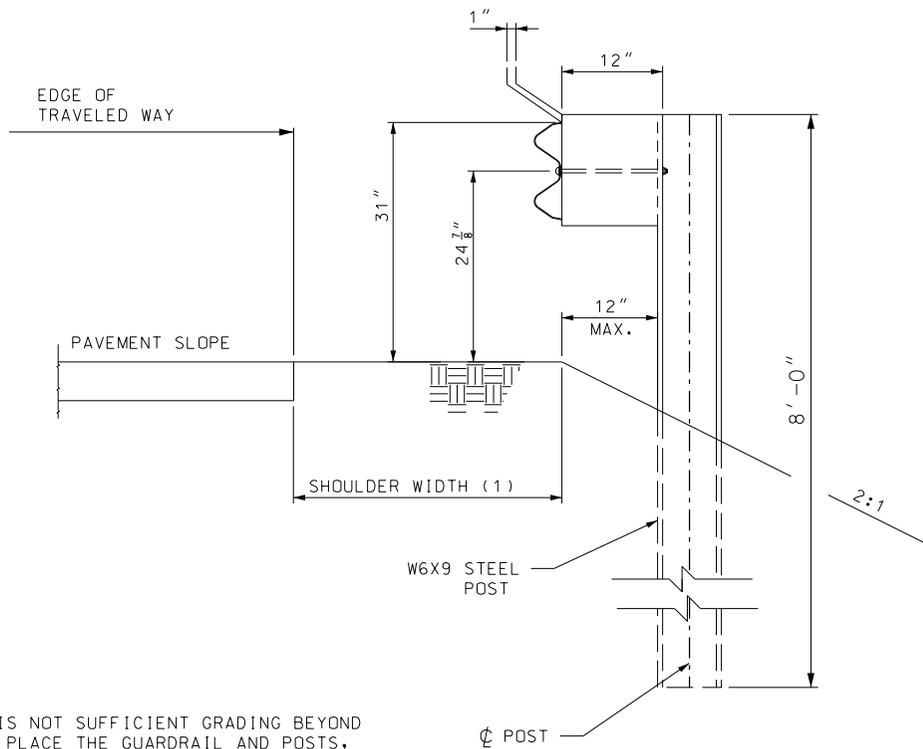
MGS GUARDRAIL WITH 1'-6 3/4" POST SPACING

MIDWEST GUARDRAIL SYSTEM (MGS)
REDUCED POST SPACINGS
SPECIAL SHEET
4 OF 11

- (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.

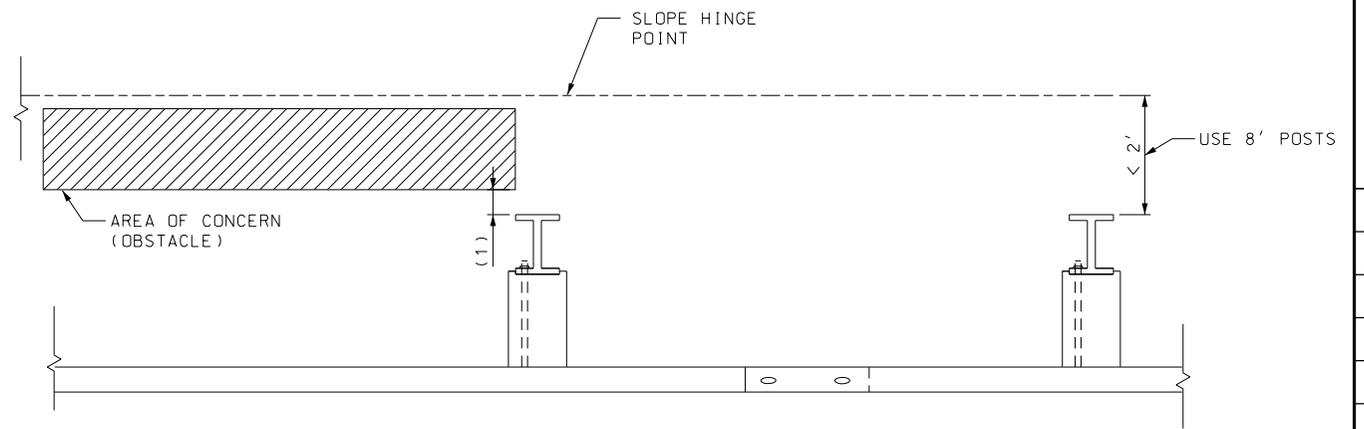


SECTION A-A
8' STEEL POST



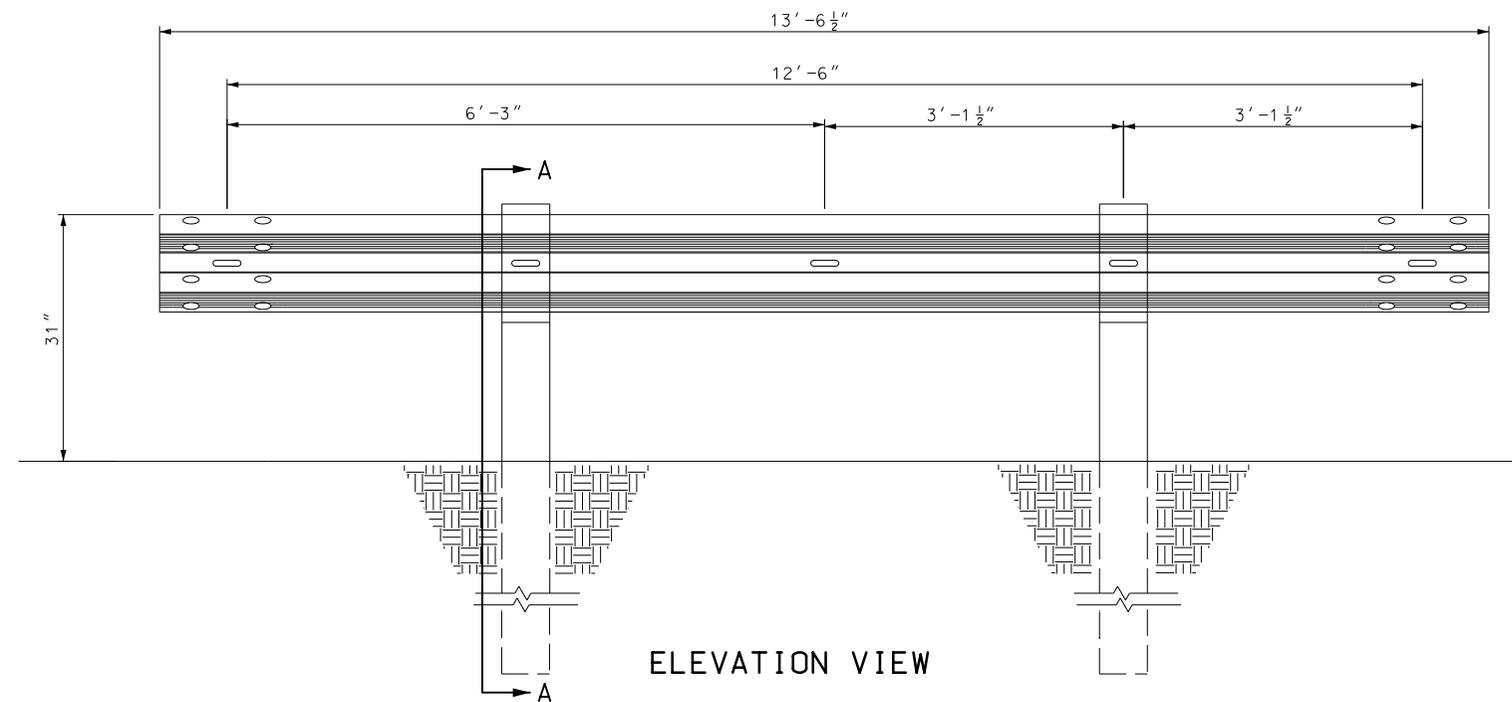
ALTERNATE SECTION A-A
MAXIMUM LATERAL PLACEMENT OF
8' STEEL POSTS ADJACENT TO
SLOPES

(1) WHEN THERE IS NOT SUFFICIENT GRADING BEYOND THE SHOULDER TO PLACE THE GUARDRAIL AND POSTS, THE POSTS MAY BE PLACED A MAXIMUM OF 12" BEYOND THE SLOPE BREAK POINT OF A 2:1 MAXIMUM SLOPE.



(1) 3'-6" MINIMUM CLEARANCE TO THE FACE OF OBSTACLE WITH 8' POSTS ADJACENT TO A 2:1 SLOPE.

PLAN VIEW



ELEVATION VIEW

NOTE:
SEE STD. PLAN 606.30 FOR SITE GRADING REQUIREMENTS FOR CRASHWORTHY END TERMINALS.

8 FOOT POSTS SHALL BE USED WHEN LESS THAN 2 FEET OF EMBANKMENT IS PRESENT BEHIND THE GUARDRAIL POSTS.

MIDWEST GUARDRAIL SYSTEM
(MGS)
LONG POST

SPECIAL SHEET
6 OF 11

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
3/21/2016

ROUTE STATE

DISTRICT SHEET NO.

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MODOT

REV. DATE 3/18/2016

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND RATED.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

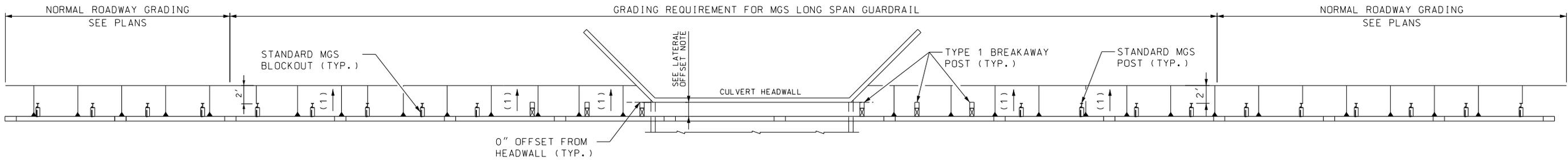
DATE PREPARED	3/21/2016
ROUTE	STATE
DISTRICT	MO
SHEET NO.	
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

DATE

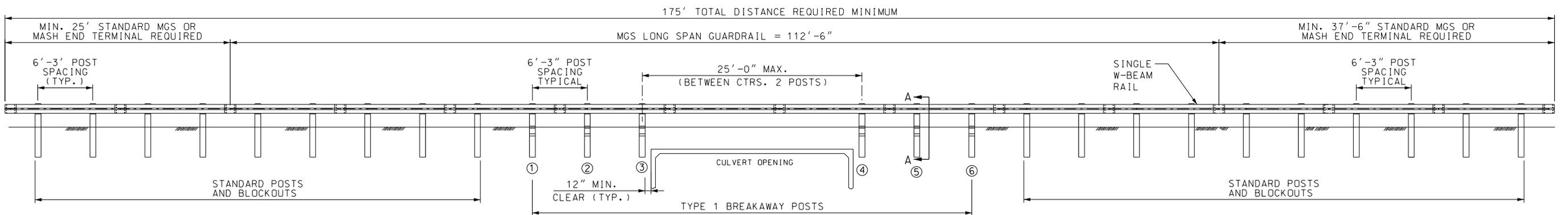
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



PLAN VIEW

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



ELEVATION VIEW

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

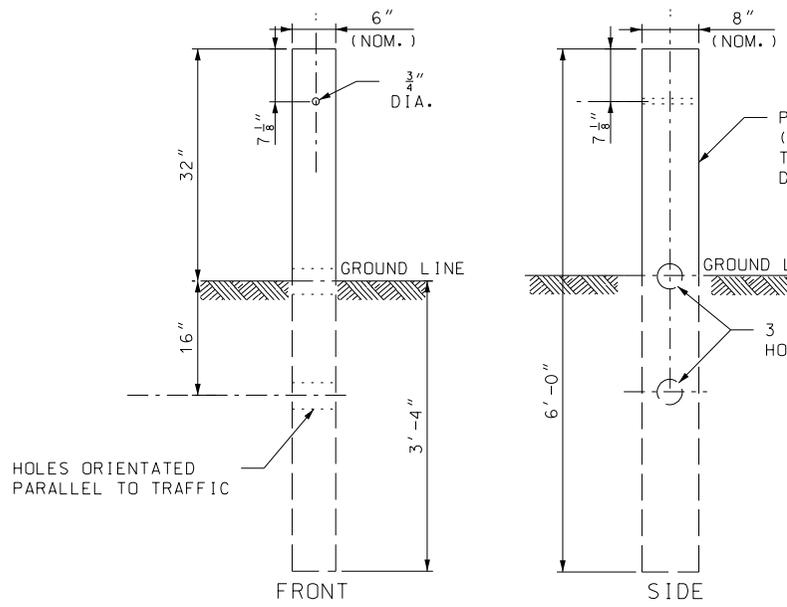
USE TYPE 1 BREAKAWAY WOOD POST FOR POSTS NO. 1-6. ALL OTHER POSTS SHALL BE W6X8.5 OR W6X9 STEEL POSTS.

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.

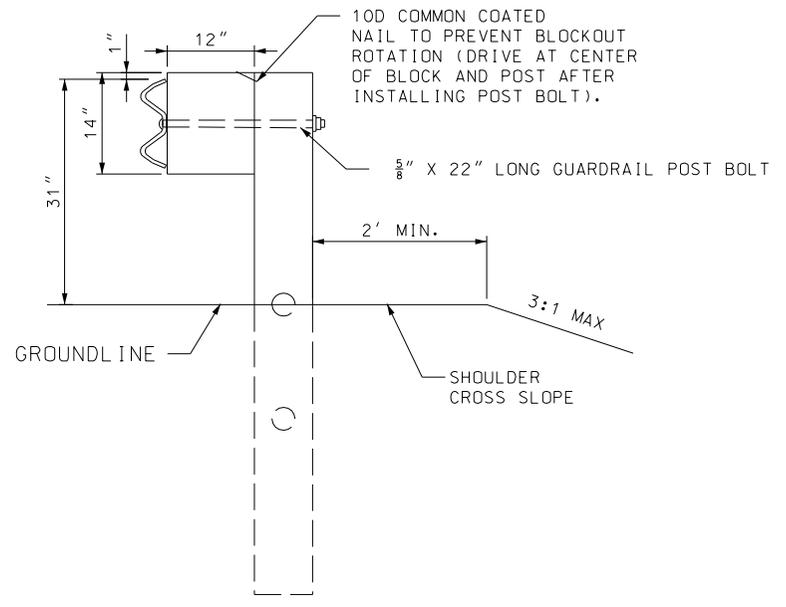
FOR LOCATIONS WHERE A GUARDRAIL FLARE IS DESIRED, THE SYSTEM SHOULD REMAIN TANGENT FOR 50'-0" BEFORE POST 1 OR AFTER POST 6, AT WHICH POINT THE GUARDRAIL MAY FLARE AT A MAXIMUM TAPER RATE OF 7:1.

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

MIDWEST GUARDRAIL SYSTEM (MGS)
LONG SPAN GUARDRAIL

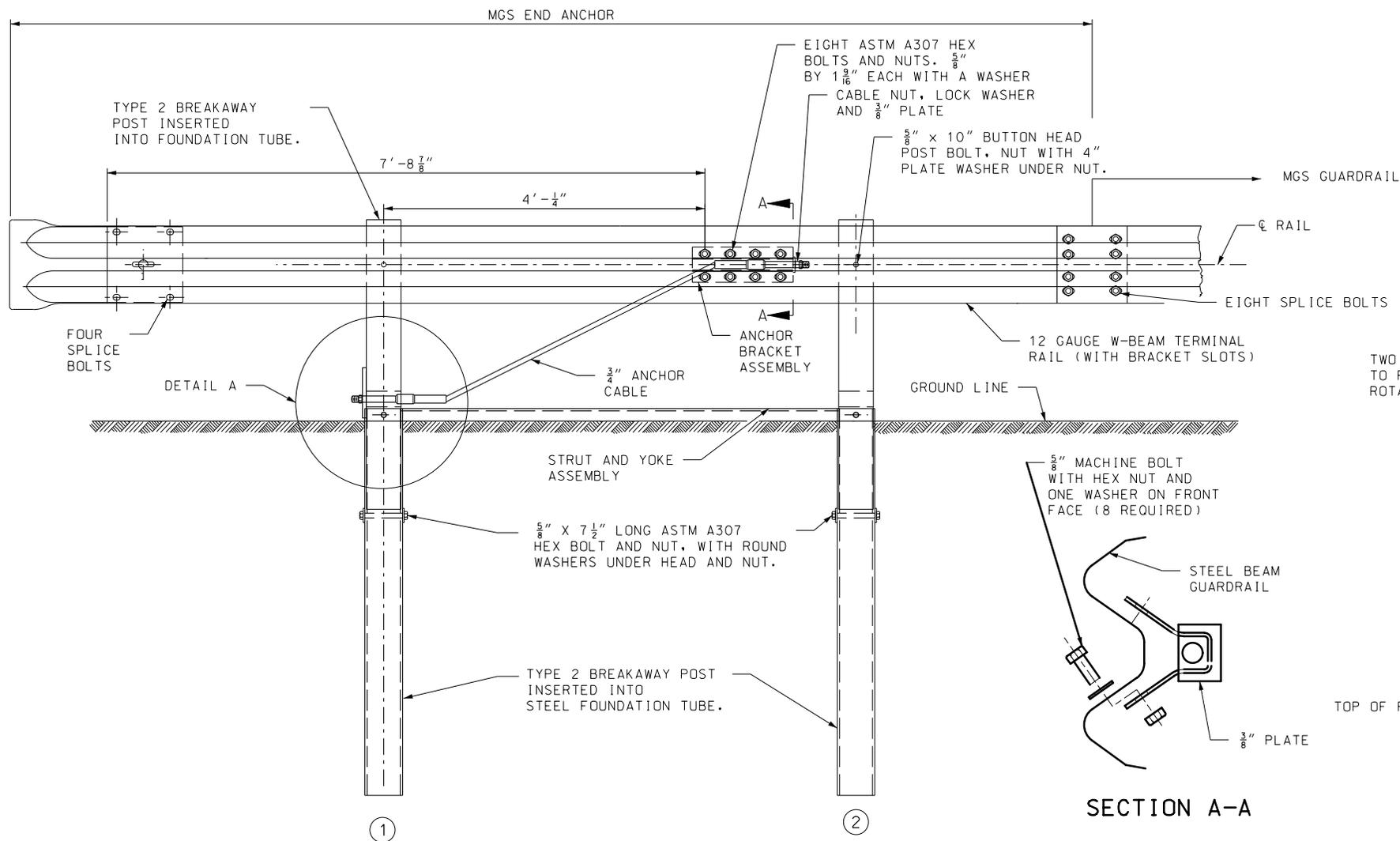


TYPE 1 BREAKAWAY WOOD POST

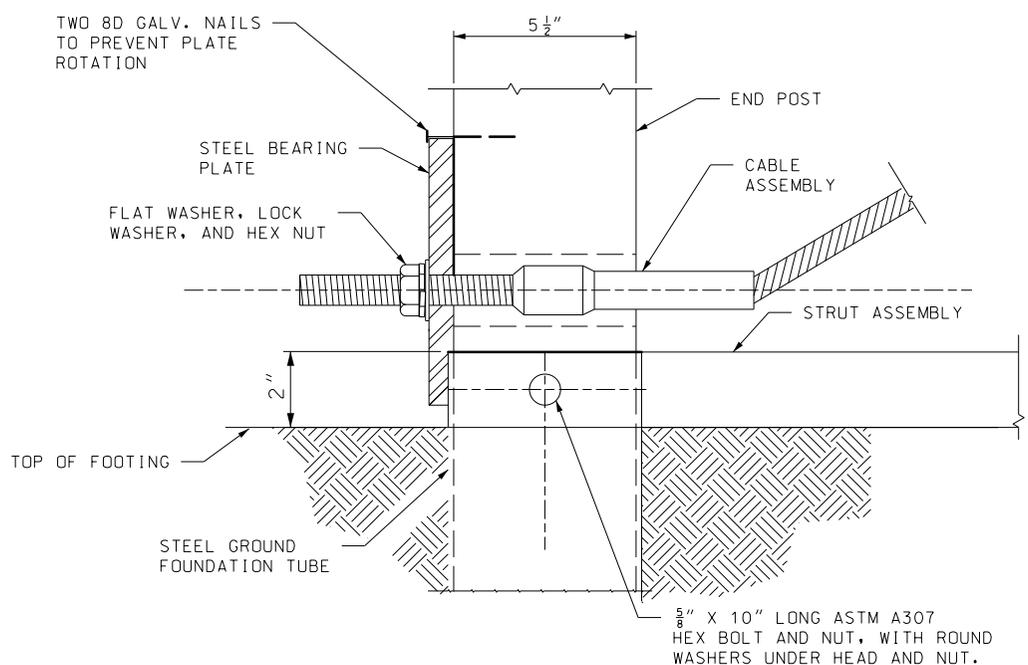


SECTION A-A

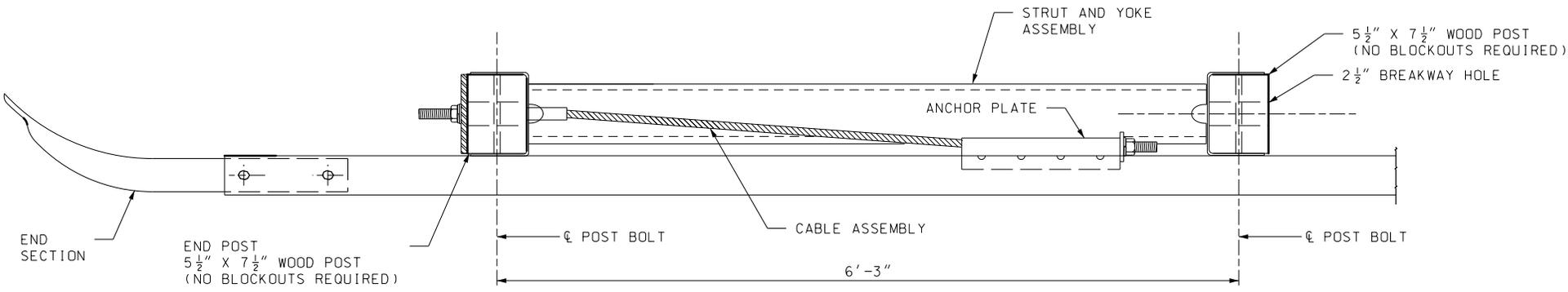
REV. DATE 3/7/18/2016 IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



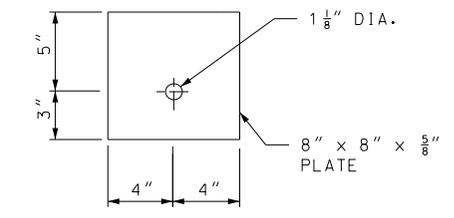
SECTION A-A



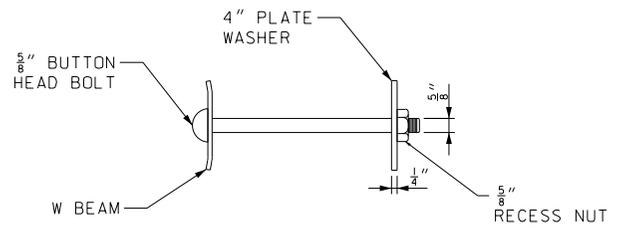
DETAIL A (END POST DETAIL)



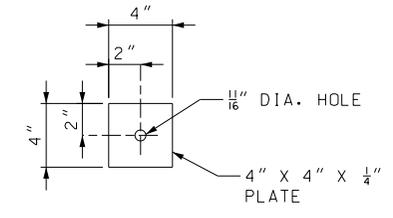
PLAN VIEW



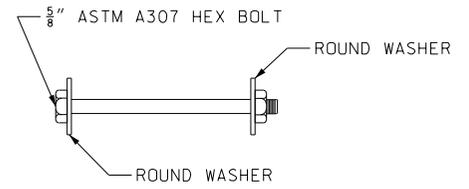
STEEL BEARING PLATE



POST BOLT AT W-BEAM



4" PLATE WASHER



POST BOLT AT YOKE

MIDWEST GUARDRAIL SYSTEM (MGS) END ANCHOR

GENERAL NOTES:
 END ANCHOR DETAILS SHOWN SHALL BE USED ONLY ON DOWNSTREAM ENDS OF GUARDRAIL WHEN AN END ANCHOR IS REQUIRED.
 THE DETAILS SHOWN ARE FOR AN END ANCHORAGE SYSTEM FOR GUARDRAIL.
 CABLE ASSEMBLY AND ANCHOR PLATE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 20 TONS.
 ALL FITTINGS AND HARDWARE REQUIRED SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1040.
 WOOD POSTS 1 AND 2 SHALL BE 5 1/2" X 7 1/2".
 SEE SHEET NO. 9 OF 11 FOR WOOD POST DETAILS.

THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT.
 DATE PREPARED: 3/21/2016
 ROUTE: STATE MO
 DISTRICT: SHEET NO.
 COUNTY:
 JOB NO.
 CONTRACT ID.
 PROJECT NO.
 BRIDGE NO.
 DESCRIPTION
 DATE
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 MoDOT
 105 WEST CAPITOL JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)
 REV. DATE 3/18/2016
 IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
3/21/2016

ROUTE STATE
DISTRICT MO SHEET NO.

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

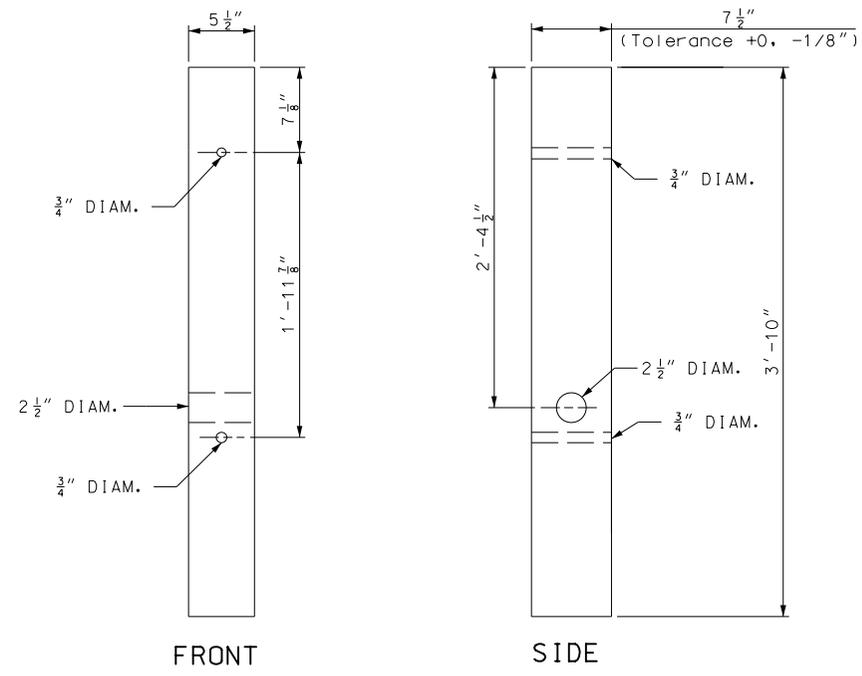
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

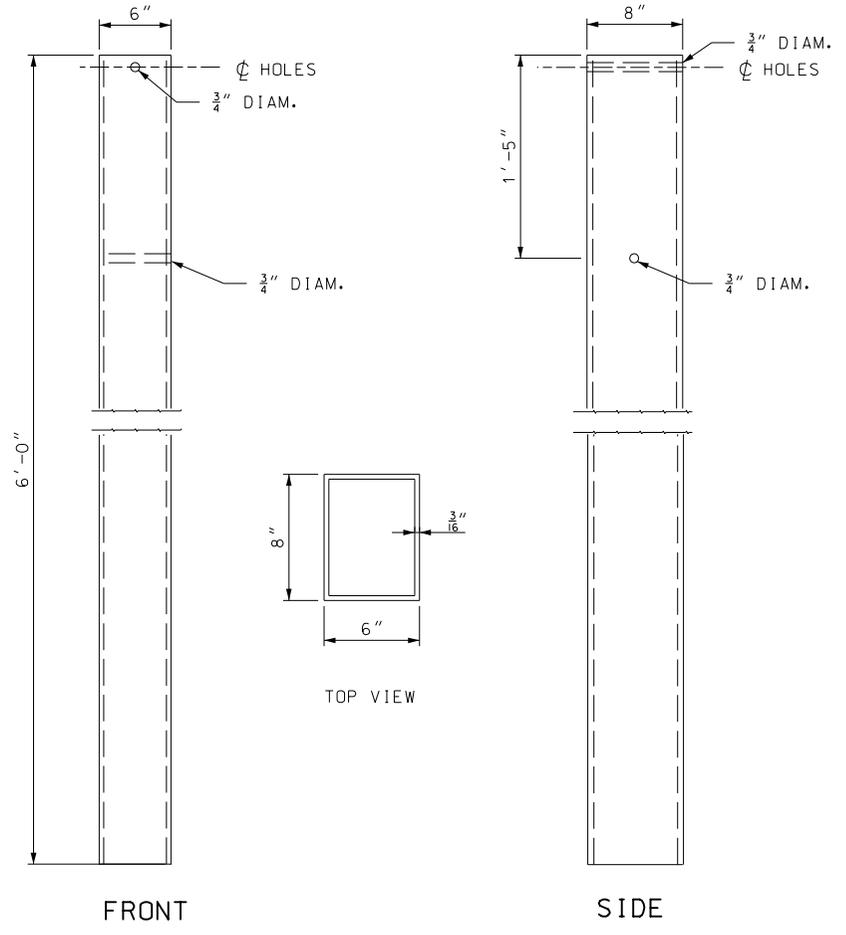
DESCRIPTION

DATE

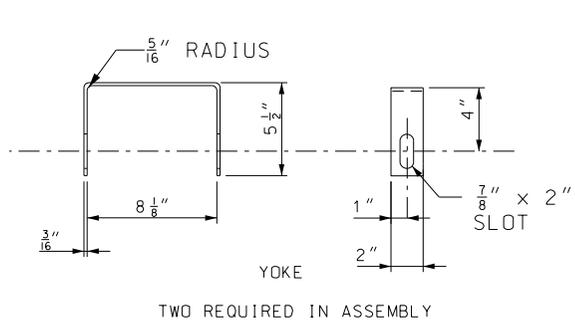
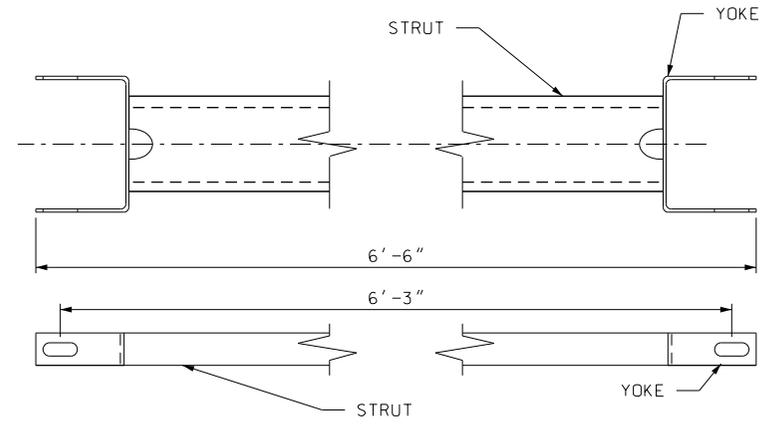
REV. DATE 3/18/2016



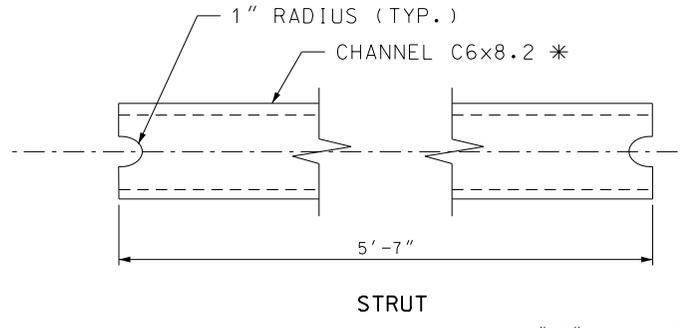
TYPE 2 BREAKAWAY WOOD POST



STEEL GROUND FOUNDATION TUBE



TWO REQUIRED IN ASSEMBLY



* A 6"x3" 10 GAUGE BENT PLATE STRUT MAY BE SUBSTITUTED FOR THE C-CHANNEL

STRUT AND YOKE ASSEMBLY

MIDWEST GUARDRAIL SYSTEM (MGS) END ANCHOR

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
3/21/2016

ROUTE	STATE
DISTRICT	SHEET NO.
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

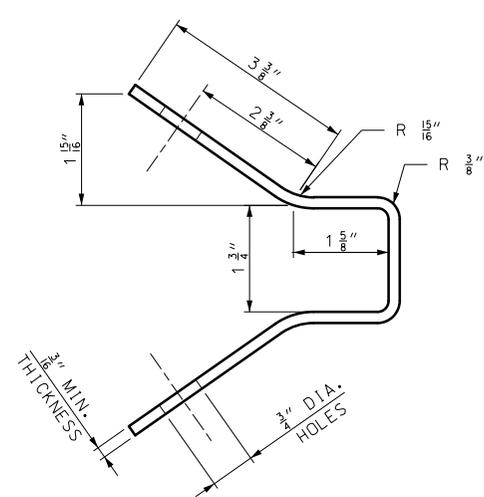
MO

DESCRIPTION

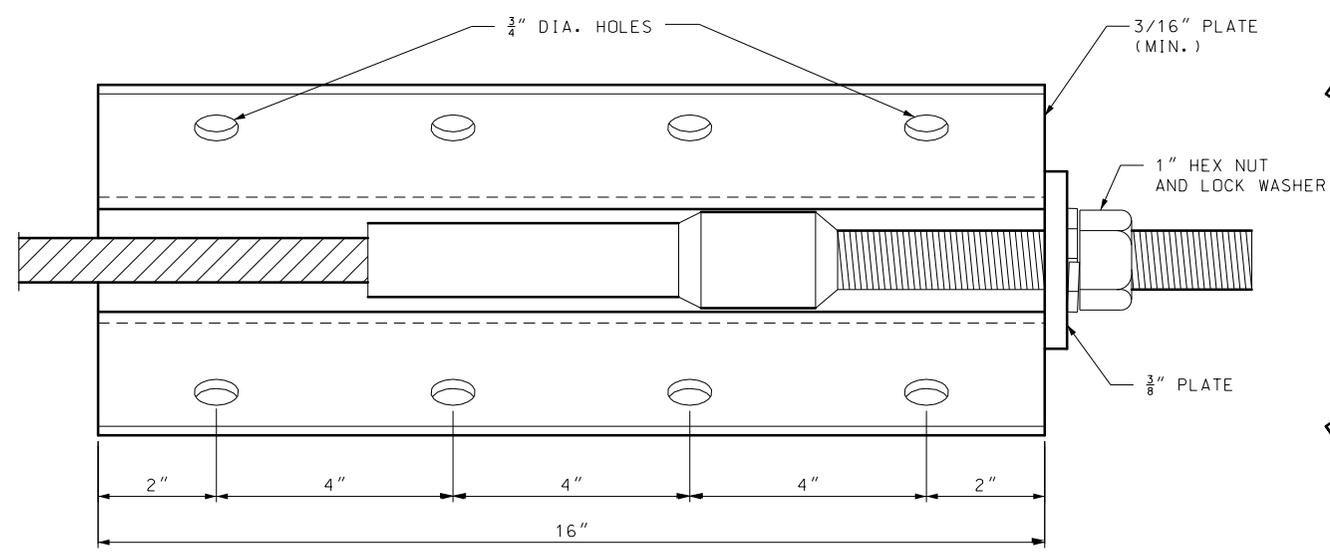
DATE

DESCRIPTION

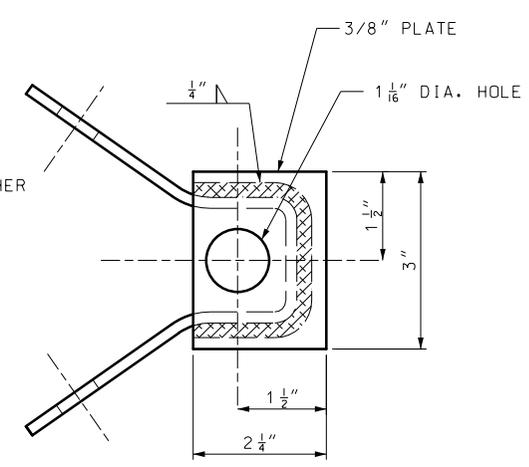
REV. DATE 3/18/2016



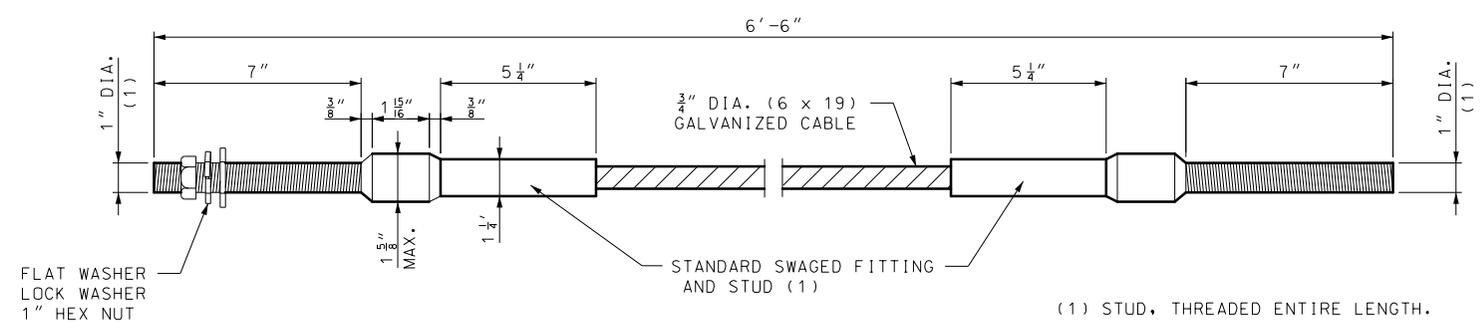
FABRICATION DETAIL



ASSEMBLED VIEW
ANCHOR BRACKET



END VIEW



CABLE ASSEMBLY

MIDWEST GUARDRAIL SYSTEM
(MGS)
END ANCHOR

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

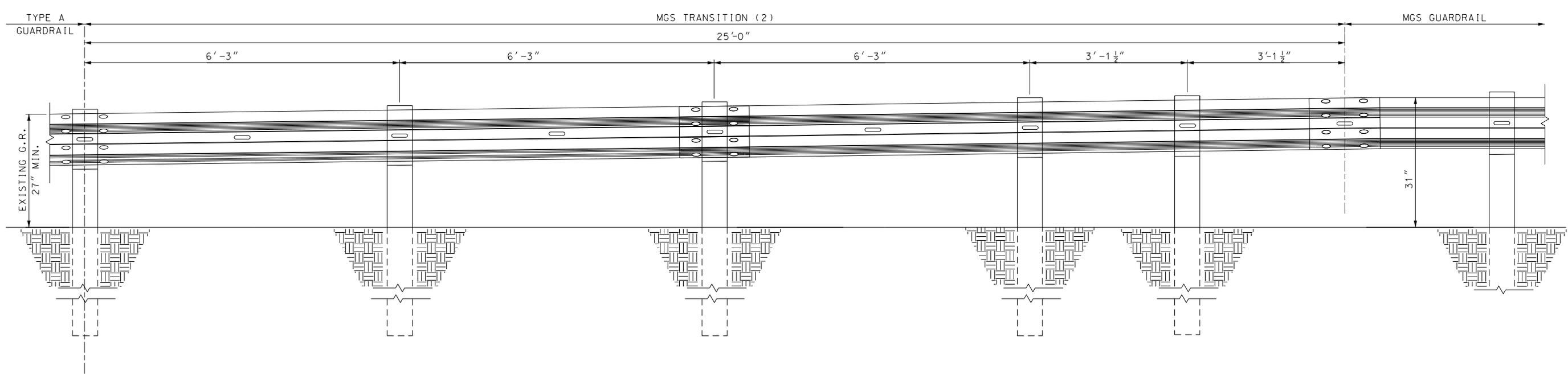
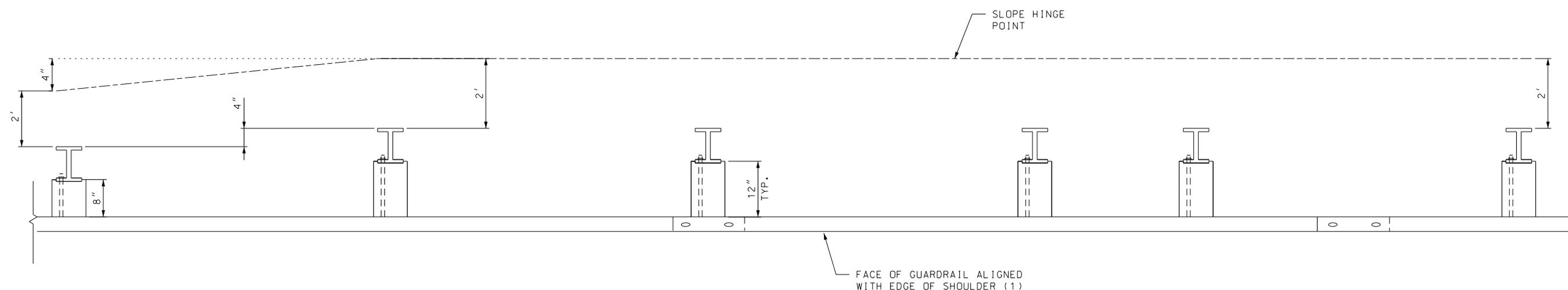
DATE PREPARED
3/21/2016
ROUTE STATE
DISTRICT SHEET NO.
MO
COUNTY
JOB NO.
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION

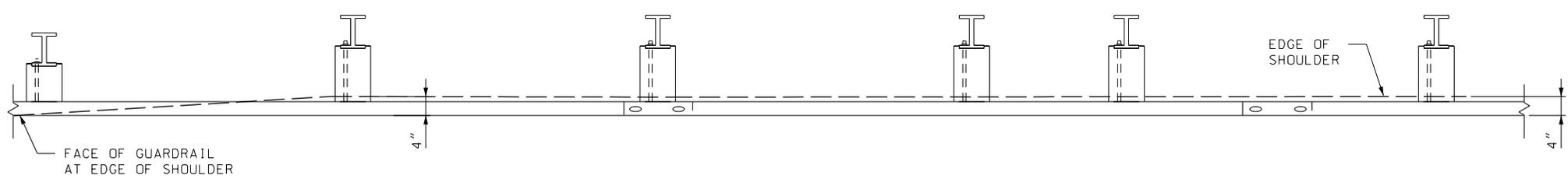
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

REV. DATE 3/18/2016 IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



- NOTES
- (1) WHERE POST OFFSET IS CONSTRAINED, AND WHEN THE EXISTING SHOULDER IS WIDER THAN 4 FEET, THE EXISTING SHOULDER MAY BE REDUCED UP TO 4 INCHES TO ACCOMMODATE THE 12 INCH BLOCK OUTS OF THE MGS GUARDRAIL OR 9 FOOT POSTS SHALL BE USED. (SEE PLAN VIEW - ALIGNMENT TAPER)
 - (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)

**MIDWEST GUARDRAIL SYSTEM
(MGS)
BLOCK AND HEIGHT
TRANSITION**