

MISSOURI HIGHWAYS and TRANSPORTATION COMMISSION

JEFFERSON CITY, MISSOURI

**SUPPLEMENTAL PLANS TO OCTOBER 2016 MISSOURI STANDARD
PLANS FOR HIGHWAY CONSTRUCTION**

EFFECTIVE January 1, 2017

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION

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* REVISED OR ADDED SINCE OCTOBER 2016

SHEET 1 OF 2

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

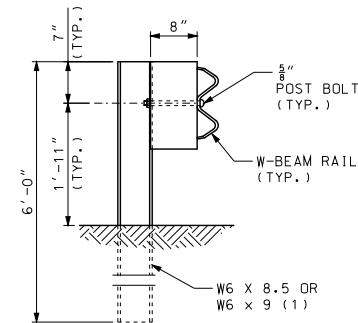
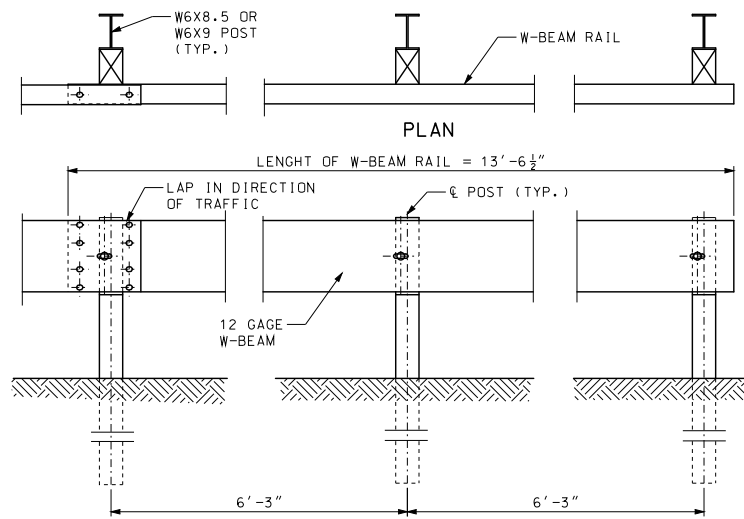
EFFECTIVE: 01/01/2017

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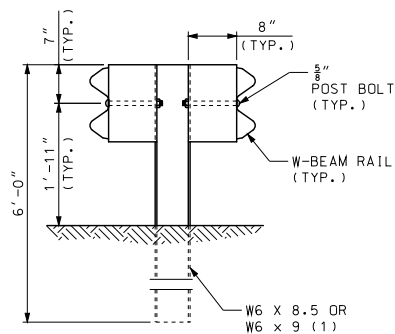
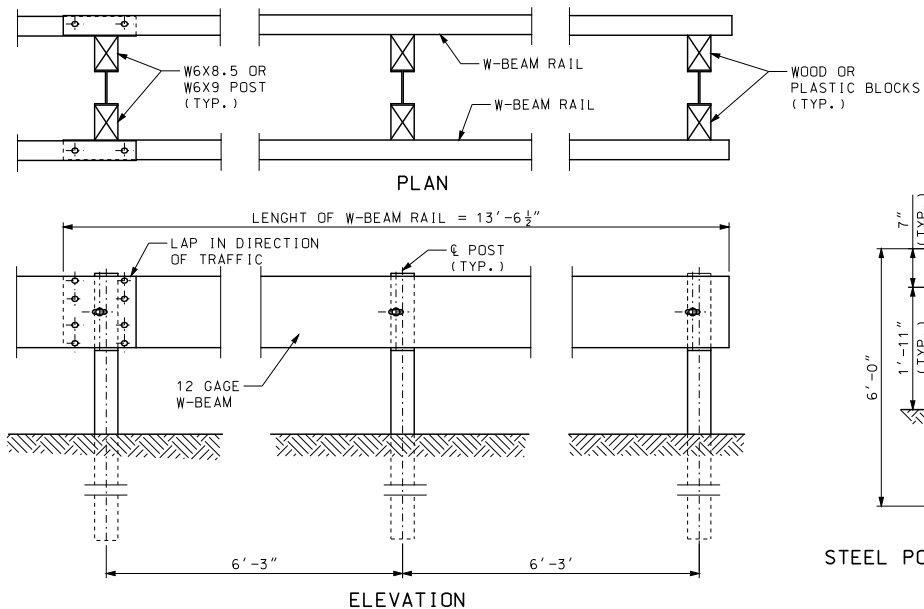
SHEET 2 OF 2

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



STEEL POST & WOOD OR PLASTIC BLOCK

TYPE A GUARDRAIL





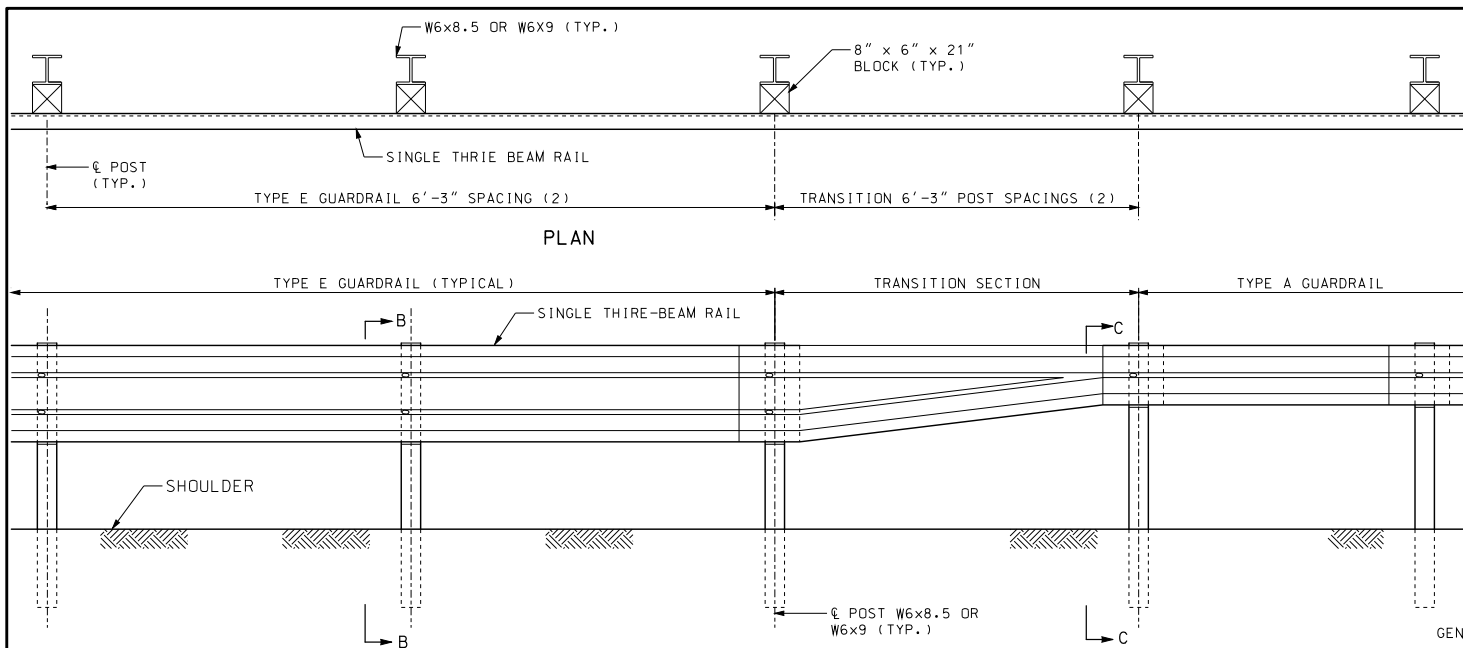
STEEL POST & WOOD OR PLASTIC BLOCKS

TYPE B GUARDRIAL

(1) THE CONTRACTOR MAY FURNISH EQUIVALENT SECTIONS FABRICATED FROM MATERIAL MEETING AND IN ACCORDANCE WITH SECTION 1040.

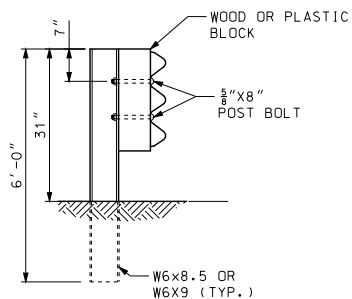
GENERAL NOTES:
SEE SHEET NO. 5 OF 7 FOR POST AND BLOCK DETAILS.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>ERIC E. SCHROEDER NUMBER PE-28411 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>GUARDRAIL TYPE A AND TYPE B</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.00AY
SHEET NO. 1 OF 7	

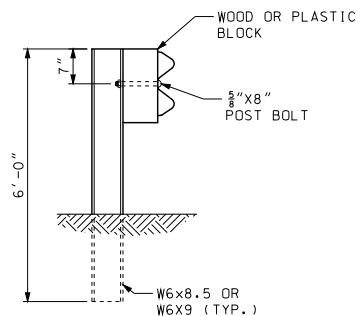


PART SECTION SHOWING TYPE E TO TYPE A GUARDRAIL TRANSITION

THE OVERALL NOMINAL DIMENSIONS SHOWN SHALL BE MET, ALTHOUGH THE SHAPE OF THE PLASTIC BLOCKS MAY VARY FROM THE SHAPE SHOWN, EXCEPT THE $\frac{7}{8}$ " \pm $\frac{1}{4}$ " FLANGE AND THE OVERALL WIDTH DIMENSIONS MAY BE WAIVED IF APPROVED BY PROJECT OPERATIONS.



SECTION B-B



SECTION C-C

- (1) THE CONTRACTOR MAY FURNISH EQUIVALENT SECTIONS FABRICATED FROM MATERIAL MEETING AND IN ACCORDANCE WITH SEC 1040.
- (2) IF THE TRANSITION IS CONNECTED TO A BRIDGE ANCHOR SECTION, POST SPACING FOR TYPE E GUARDRAIL AND THE TRANSITION SECTION SHALL BE 3'-1 1/2". FOR ALL OTHER CASES, POST SPACING SHALL BE 6'-3".
- (3) TRANSITION FROM 31" TO 29" HEIGHT OVER 2-12.5' W-BEAMS OR 25'.

GENERAL NOTES:

TYPE E GUARDRAIL SHALL USE 6'-3" POST SPACING UNLESS 3'-1 1/2" POST IS SPECIFIED.


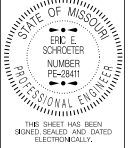
THE THRIE BEAM RAIL FOR THE TYPE E GUARDRAIL AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE.

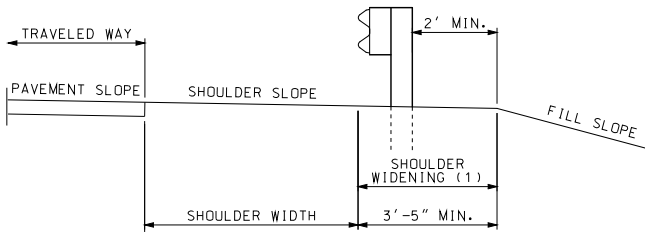
FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SEC 1040 OF THE STANDARD SPECIFICATIONS.

SEE SHEET 7 OF 7 FOR REQUIREMENTS FOR SPECIAL INSTALLATIONS.

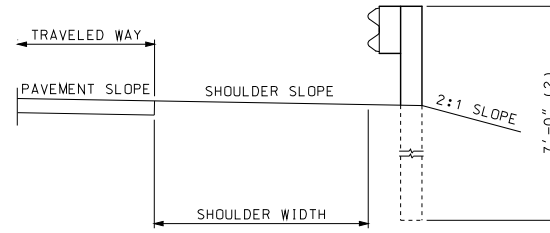
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.

FOR DETAILS NOT SHOWN, SEE OTHER SHEETS OF THIS DRAWING.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	GUARDRAIL TYPE E
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.00AY 2 OF 7

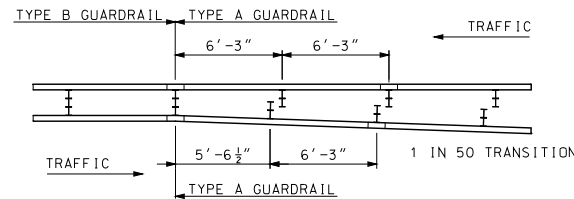


TYPICAL SECTION

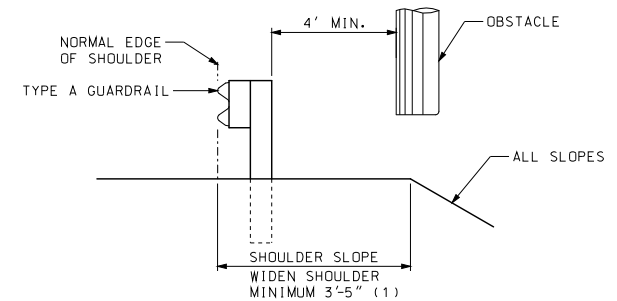


ALTERNATE TYPICAL SECTION AT SLOPE BREAKPOINT

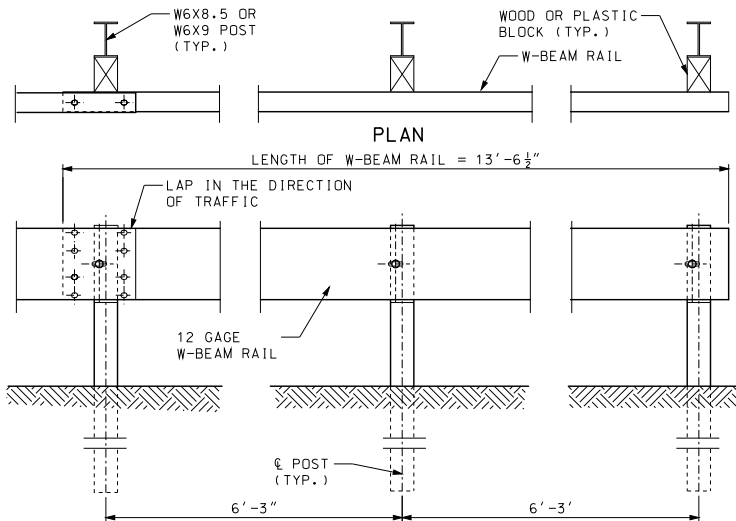
- (1) SHOULDER WIDENING SHALL CONSIST OF EMBANKMENT MATERIAL COMPACTED IN ACCORDANCE WITH SEC 203.4 OF THE STANDARD SPECIFICATIONS.
- (2) POST SHALL BE SPACED AT 3'-1½" ON CENTER.
- (3) WHEN GUARDRAIL IS CONSTRUCTED OVER CURBS, THE CURBS SHALL BE CONSTRUCTED AS SHOWN.



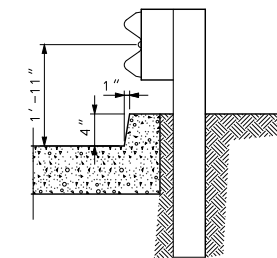
DETAIL FOR TRANSITIONING
BETWEEN TYPE A AND TYPE B GUARDRAIL




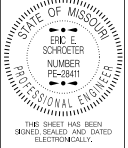
LOCATION OTHER THAN \mathcal{C} MEDIAN
LATERAL PLACEMENT OF GUARDRAIL
FOR SHOULDER INSTALLATION

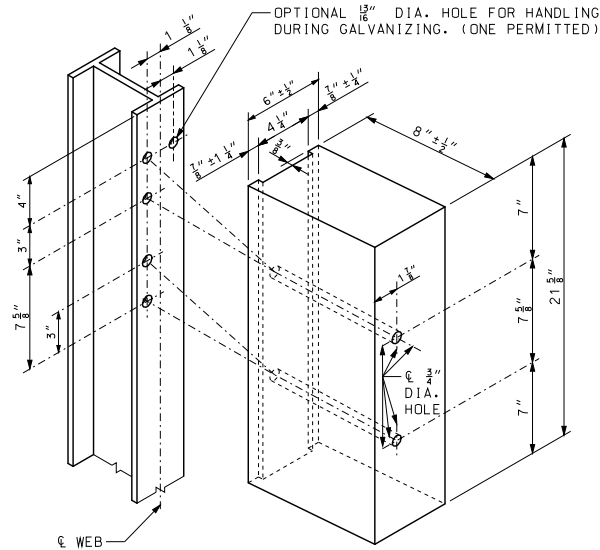


ELEVATION

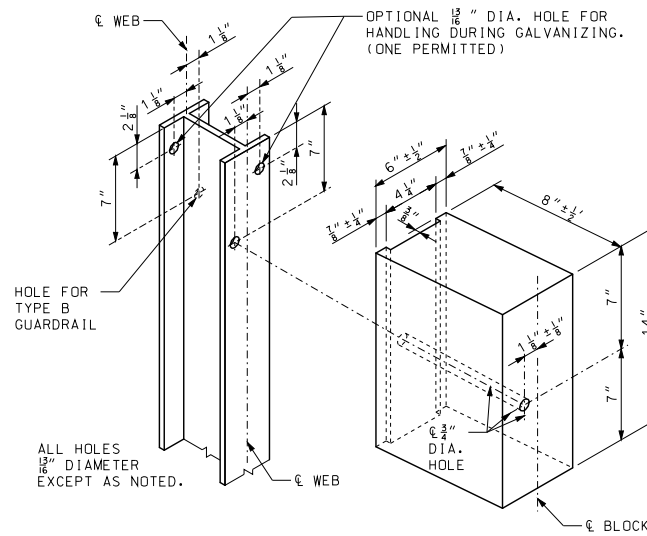


GUARDRAIL AT CURBS (3)

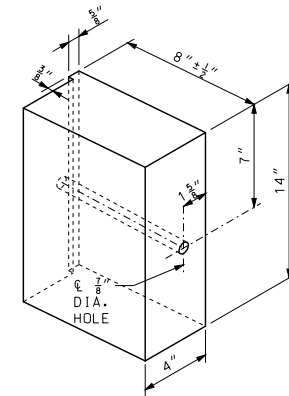
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
<div style="display: flex; justify-content: space-between;"> <div>  </div> <div> GUARDRAIL LAYOUT </div> </div>	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.00AY
SHEET NO. 3 OF 7	



TYPE E
FOR STEEL POST & WOOD OR PLASTIC BLOCKS (1)

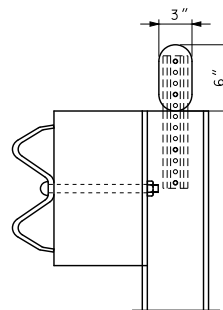
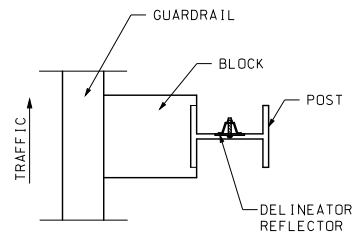


TYPE A AND TYPE B
FOR STEEL POST AND WOOD OR PLASTIC BLOCKS (1)

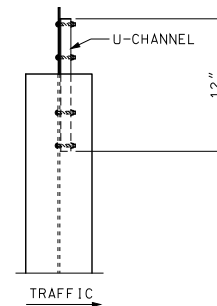


ALTERNATE DESIGN
FOR WOOD BLOCK

(1) THE OVERALL NOMINAL DIMENSIONS SHOWN SHALL BE MET, ALTHOUGH THE SHAPE OF THE PLASTIC BLOCKS MAY VARY FROM THE SHAPE SHOWN, EXCEPT THE $\frac{7}{8}$ " $\pm \frac{1}{4}$ " FLANGE AND THE OVERALL WIDTH DIMENSIONS MAY BE WAIVED IF APPROVED BY PROJECT OPERATIONS.




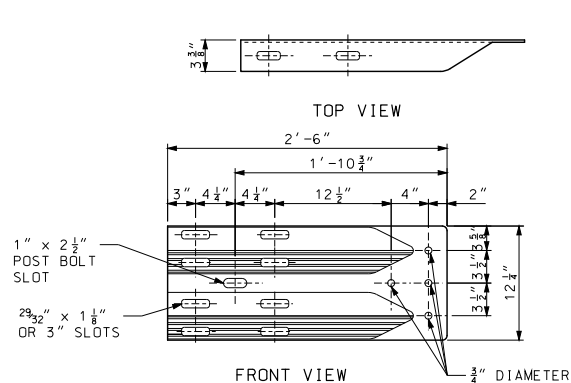
DELINEATORS ON NEW GUARDRAIL



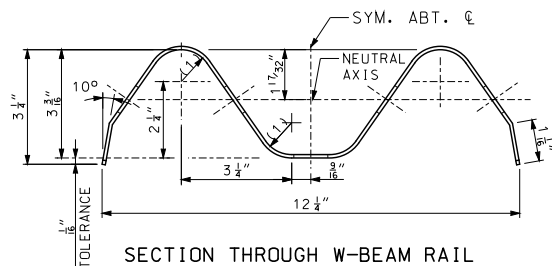
GENERAL NOTES:

FOR GUARDRAIL DELINEATION DETAILS SEE
STD PLAN 903.03.

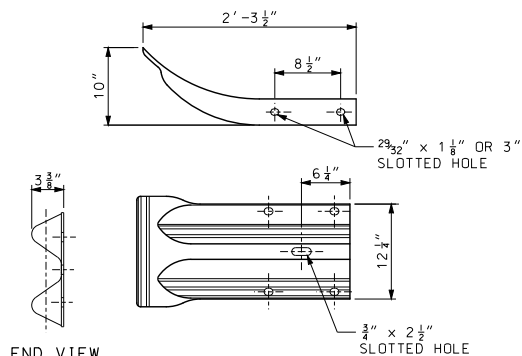
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
GUARDRAIL POST AND BLOCK	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.00AY 4 OF 7



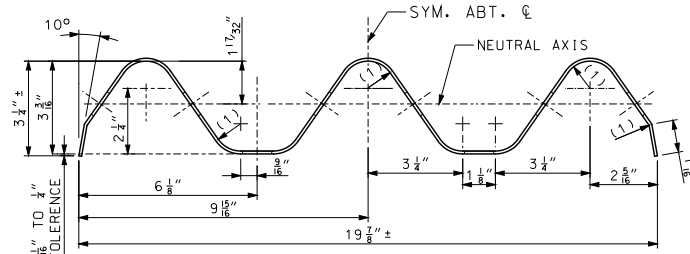
TERMIANL CONNECTOR



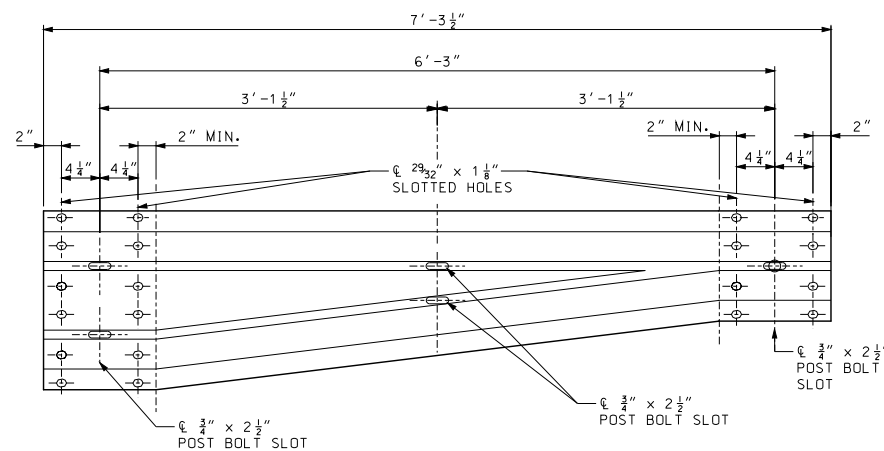
- (1) 1/8" RADIUS
 (2) 2" (TOLERANCE +1 1/4", -1/4")



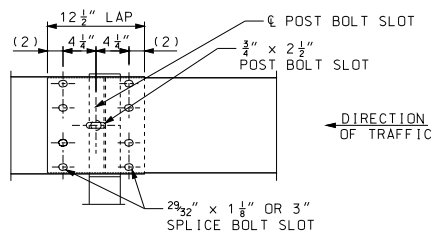
THRIE-BEAM SPLICE AT POST



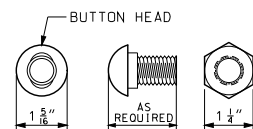
SECTION THROUGH THRIE BEAM RAIL



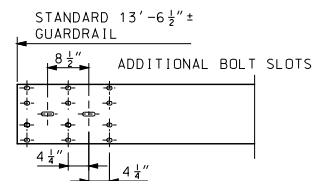
ELEVATION OF ASYMMETRICAL TRANSITION SECTION



W-BEAM RAIL SPLICE AT POST



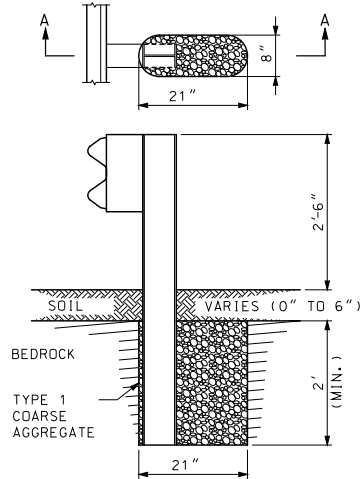
OVAL SHOULDER SHALL BE OF ADEQUATE HEIGHT, LENGTH & SHAPE TO PREVENT TURNING DURING INSTALLATION OR REMOVAL OF BOLT.



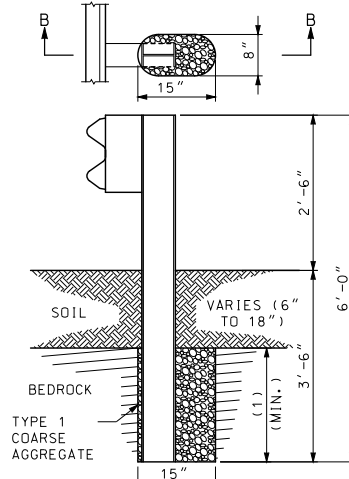
NOTE: PORTIONS OF BEAM WITH UNUSED BOLT SLOTS TO BE LAPPED BEHIND.

BEAM DETAILS SHOWING LOCATION OF ADDITIONAL BOLT SLOTS NECESSARY TO OBTAIN GUARDRAIL OFFSET.

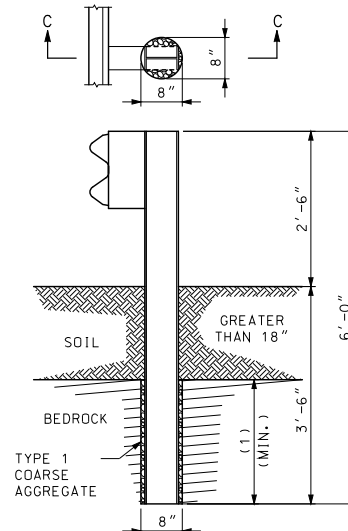
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
GUARDRAIL RAIL ELEMENTS	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 5 OF 7



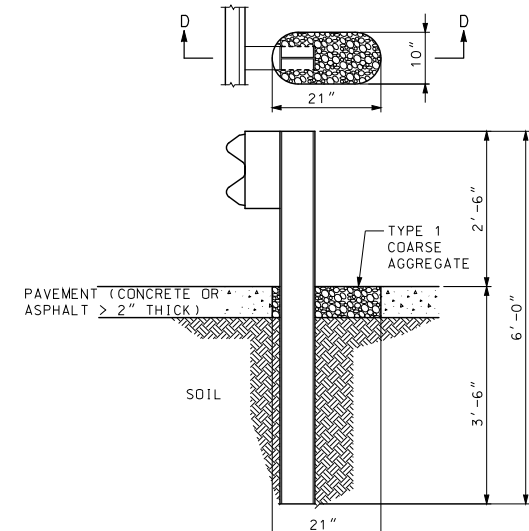
SECTION A-A
ROCK ENCOUNTERED
UP TO 6" BENEATH SURFACE



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



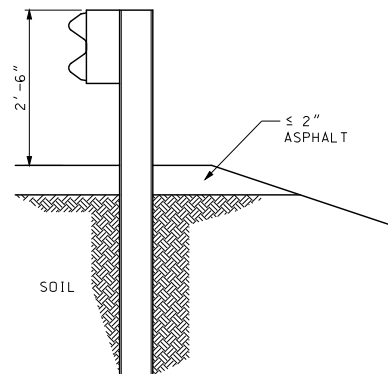
SECTION C-C
ROCK ENCOUNTERED MORE
THAN 18" BENEATH SURFACE



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

SETTING POST IN SOLID ROCK

(1) MINIMUM ROCK EMBEDMENT IS EQUAL TO
FULL DEPTH POST EMBEDMENT MINUS SOIL
DEPTH.



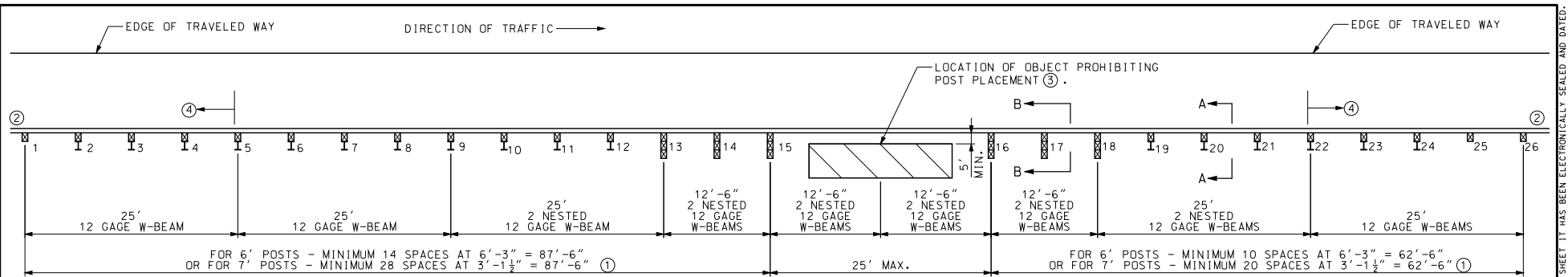
SETTING POST THROUGH ASPHALT $\leq 2"$ THICK

GENERAL NOTES:

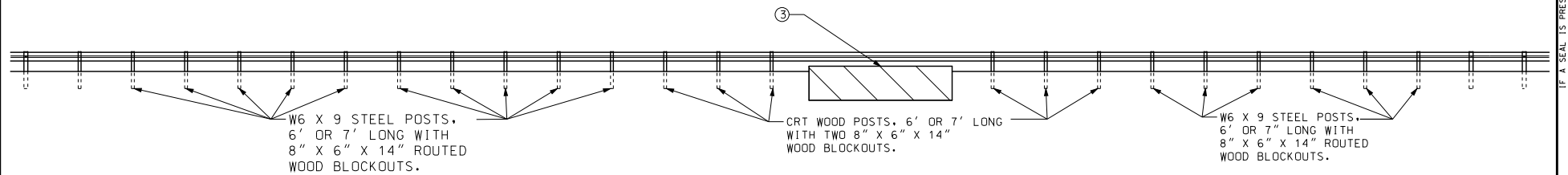
HOLES IN SOLID ROCK SHALL PROVIDE A DIAMETER OF NOT
LESS THAN 4 INCHES GREATER THAN THE MAXIMUM
TRANSVERSE DIMENSION OF THE POST SECTION.

POST MAY BE SHORTER WHERE PLACED IN A MINIMUM 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.

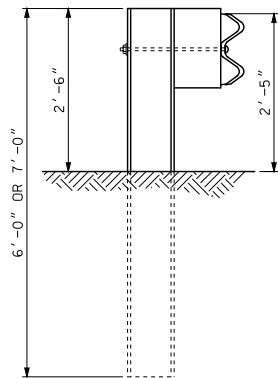
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	GUARDRAIL SPECIAL INSTALLATIONS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.00AY
SHEET NO. 6 OF 7	



PLAN

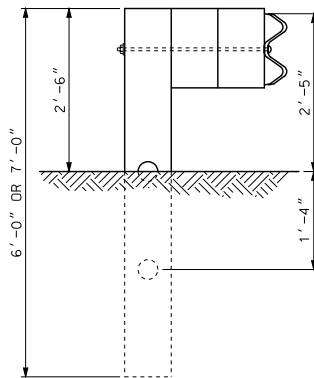


ELEVATION



SECTION A-A

W6 X 9 STEEL POSTS, 6' OR 7' LONG WITH 8" X 6" X 14" ROUTED WOOD BLOCKOUTS POSTS 3 THROUGH 12 AND 19 THROUGH 24.

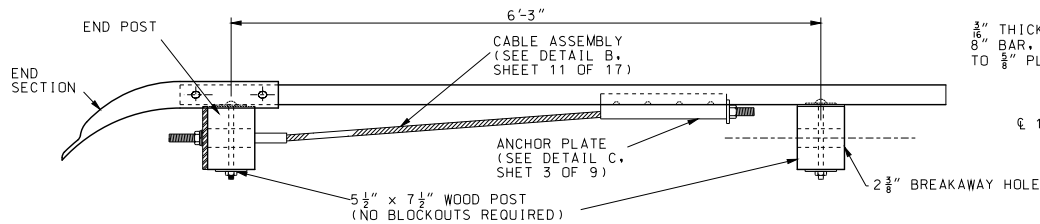


SECTION B-B

CRT WOOD POSTS, 6' OR 7' LONG WITH TWO 8" X 6" X 14" WOOD BLOCKOUTS POSTS 13 THROUGH 18.

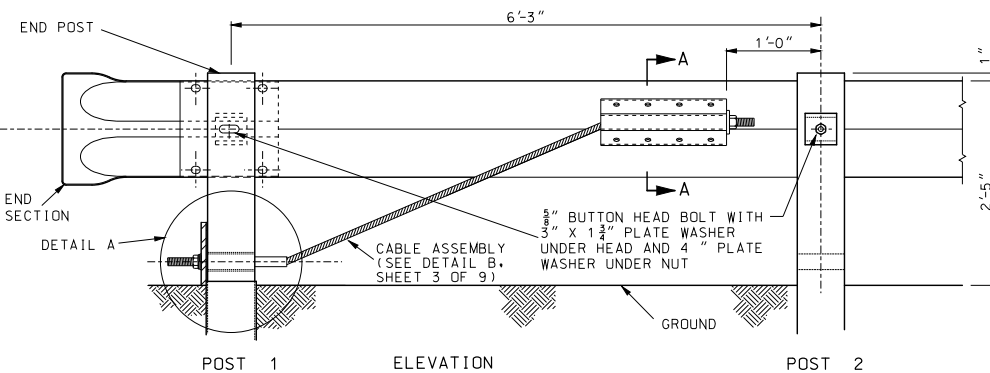
- ① IF LOCATED WITHIN THE CLEAR ZONE OF A TWO-WAY ROADWAY, THE MINIMUM LENGTH IS 87'-6".
- ② ADDITIONAL GUARDRAIL AS REQUIRED, INCLUDING END TREATMENT.
- ③ THE POST MAY BE SKIPPED DUE TO THE PRESENCE OF AN OBSTACLE SUCH AS A CULVERT.
- ④ PLACE END TREATMENT NO CLOSER TO THE SKIPPED POST THAN POSTS 5 AND 22.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
STATE OF MISSOURI ERIC E. SCHROETER NUMBER PE-28411 PROFESSIONAL ENGINEER THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.	
GUARDRAIL LONG-SPAN NESTED W-BEAM	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.00AY
SHEET NO. 7 OF 7	

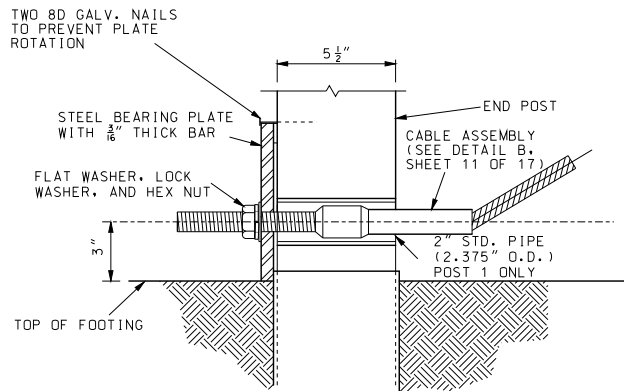


NOTE: SEE SHEET 7 OF 17 FOR DETAILS OF END SECTION.

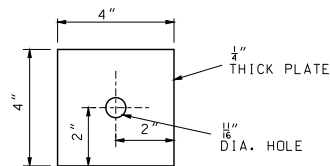
PLAN



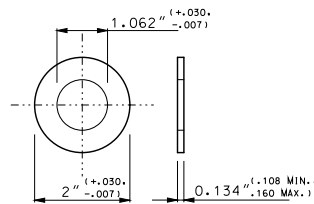
END ANCHOR DETAILS



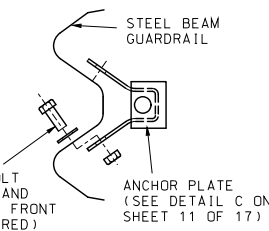
DETAIL A (END POST DETAIL)



4" PLATE WASHER

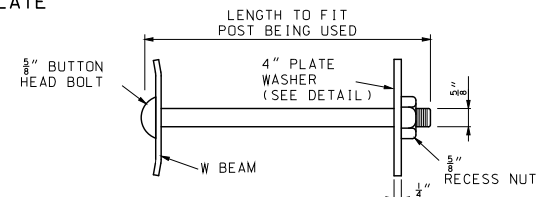


TYPE A WASHER



SECTION A-A

DETAIL OF STEEL BEARING PLATE



POST BOLT ASSEMBLY

GENERAL NOTES:

END ANCHOR DETAILS SHOWN SHALL BE USED ONLY ON DOWN STREAM ENDS OF GUARDRAIL WHEN AN END ANCHOR IS REQUIRED.

THE DETAILS SHOWN ARE FOR AN END ANCHORAGE SYSTEM FOR GUARDRAIL. GUARDRAIL AND POSTS ARE PAID FOR SEPARATELY.

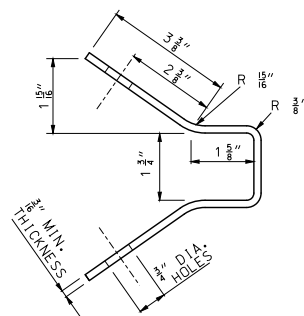
CABLE ASSEMBLY AND ANCHOR PLATE SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL HAVE A MINIMUM BREAKING STRENGTH OF 20 TONS.

ALL FITTINGS AND HARDWARE REQUIRED SHALL BE GALVANIZED AFTER FABRICATION, SEE SECTION 1040 STANDARD SPECIFICATION.

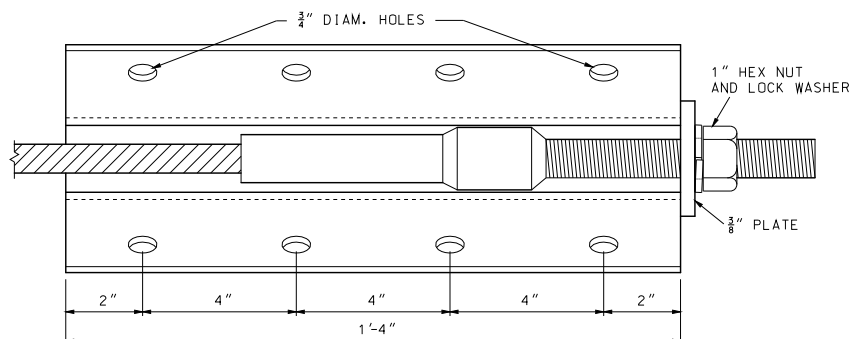
WOOD POSTS 1 AND 2 SHALL BE 5 1/2" X 7 1/2".

SEE SHEET 4 FOR WOOD POST DETAILS.

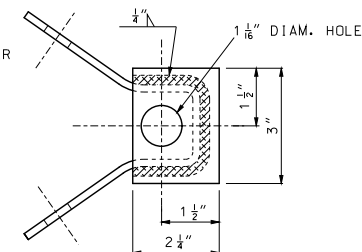
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	GUARDRAIL TERMINAL ANCHOR ENDS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.30J 1 OF 7



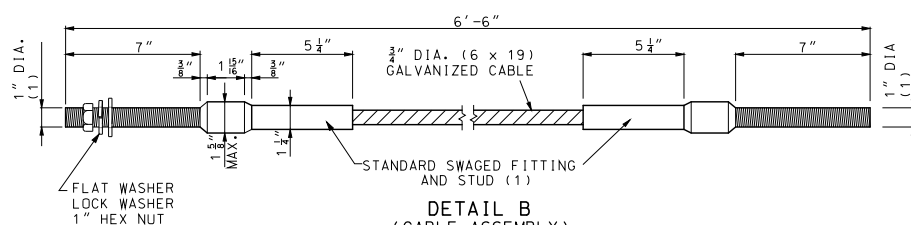
FABRICATION DETAIL



DETAIL C
ASSEMBLED VIEW
(ANCHOR PLATE)

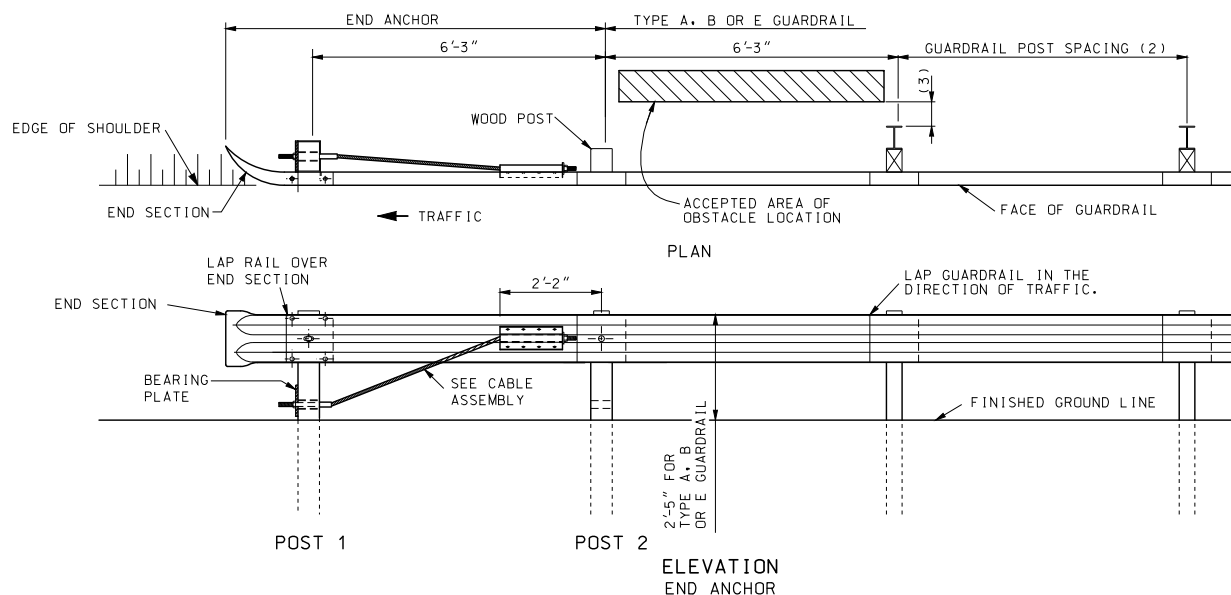




END VIEW

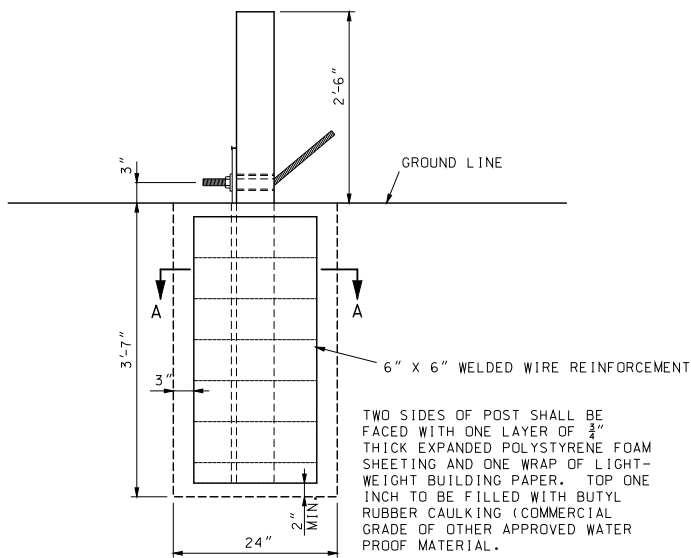


DETAIL B
(CABLE ASSEMBLY)

- (1) STUD, THREADED ENTIRE LENGTH.
- (2) 6'-3" SPACING FOR TYPE A OR B GUARDRAIL; 3'-1 1/2" SPACING FOR TYPE E GUARDRAIL.
- (3) 27" MINIMUM BUT LESS THAN 4' FOR TYPE E GUARDRAIL; 4' MINIMUM FOR TYPE A GUARDRAIL.

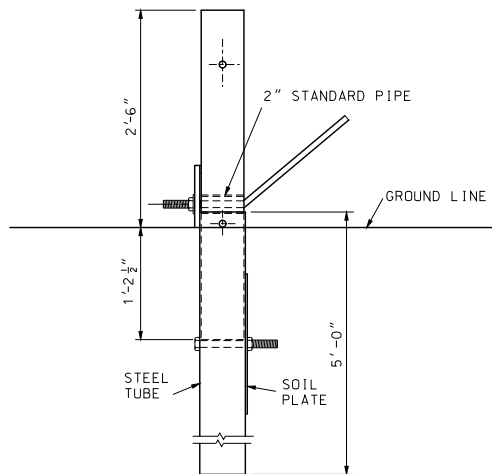


 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	
GUARDRAIL TERMINAL ANCHOR ENDS	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.30J SHEET NO. 2 OF 7



POST 1

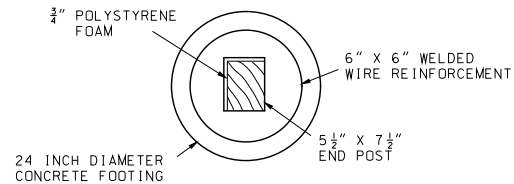
CONCRETE FOUNDATION FOR END ANCHORS



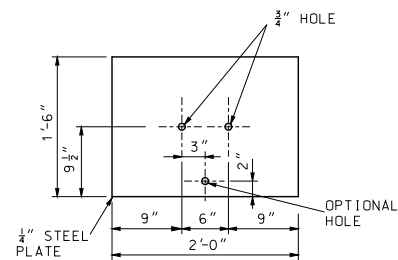
POST 1

STEEL TUBE FOUNDATION FOR END ANCHORS

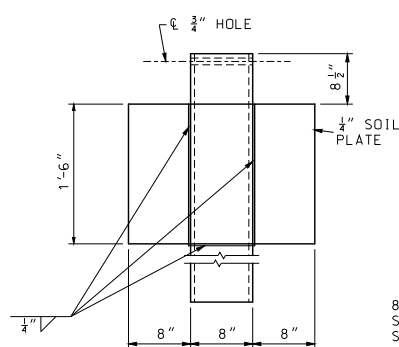
BOLTS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M232, OR THEY MAY BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.



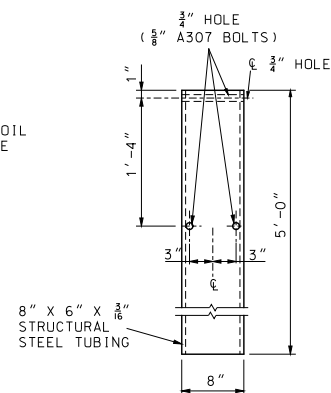
SECTION A-A EXPANDED POLYSTYRENE FOAM INSTALLATION DETAIL



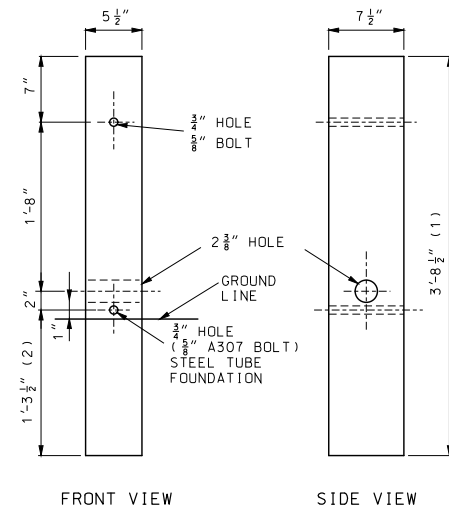
SOIL PLATE



SHOP WELDED SOIL PLATE CONNECTION



STEEL TUBE



FRONT VIEW

SIDE VIEW

WOOD BREAKAWAY POST SEE SECTION 1050

- (1) 5'-11 1/2" FOR CONCRETE FOUNDATION ALTERNATE.
- (2) 3'-8 1/2" FOR CONCRETE FOUNDATION ALTERNATE.

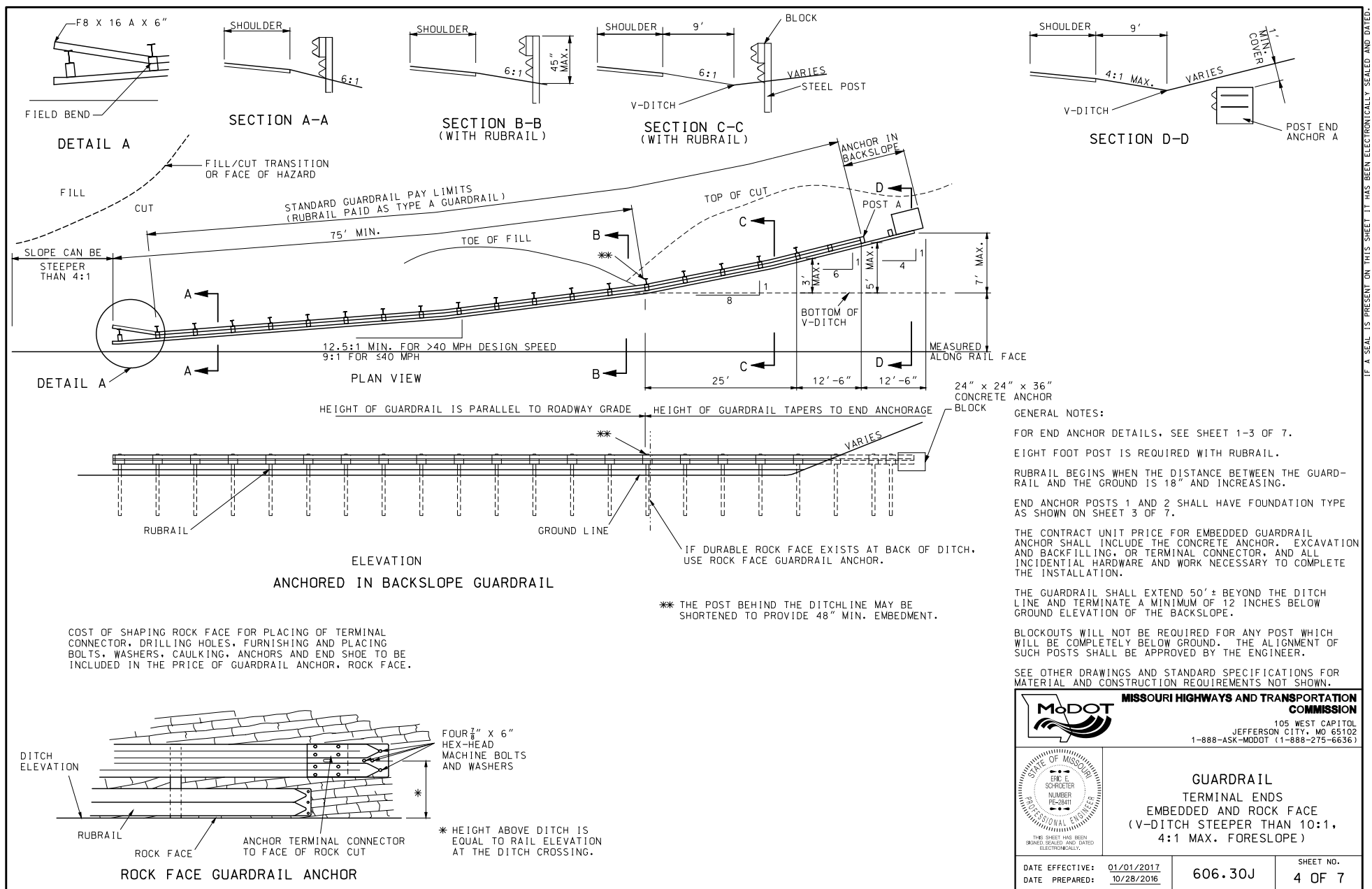
GENERAL NOTES:

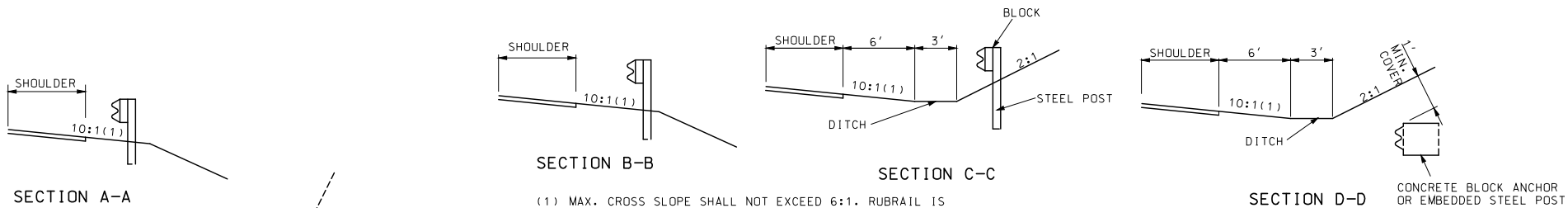
THE CONTRACTOR HAS THE OPTION TO INSTALL WOOD POST 1 AND 2 IN STEEL TUBE OR CONCRETE FOUNDATION.

TRIMMING OF WOOD POST MAY BE NECESSARY FOR STEEL TUBE FOUNDATION.

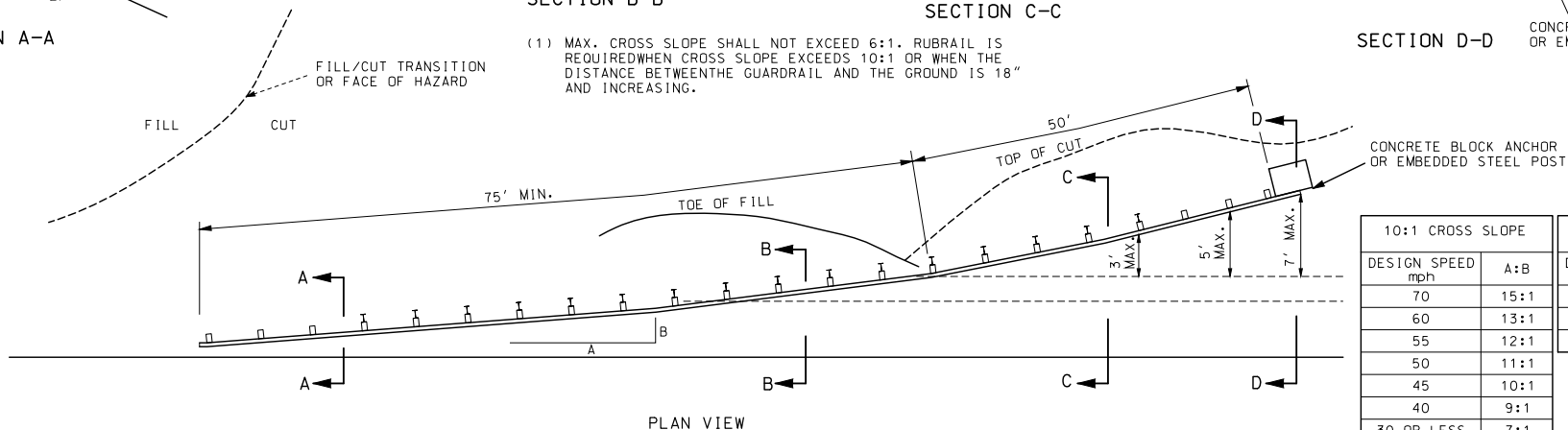
STEEL TUBE FOUNDATIONS SHALL BE DRILLED AND BACK-FILLED WITH A SUITABLE MATERIAL WHEN THE SOIL PLATE IS BOLTED, AS SHOWN, TO THE STEEL TUBE. STEEL TUBE FOUNDATION MAY BE DRIVEN WHEN THE SOIL PLATE IS WELDED, AS SHOWN, TO THE STEEL TUBE.

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		GUARDRAIL TERMINAL ANCHOR ENDS	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.30J	SHEET NO. 3 OF 7	

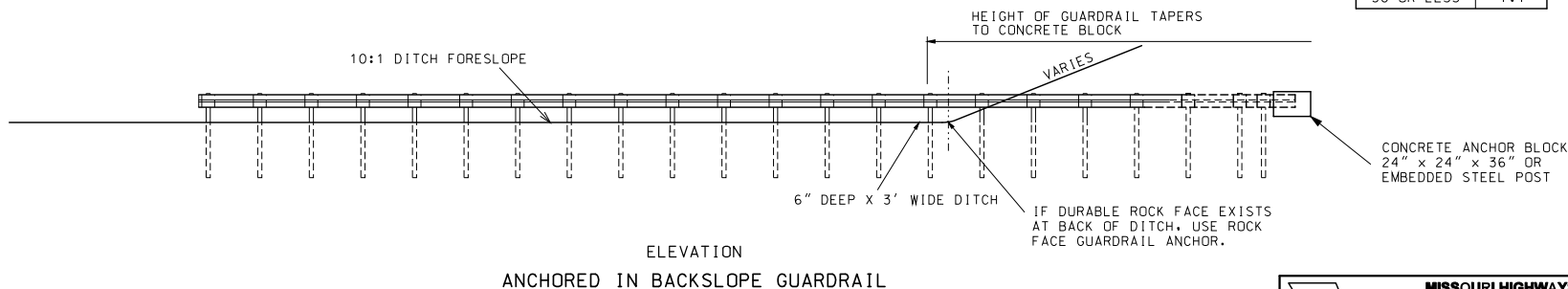




(1) MAX. CROSS SLOPE SHALL NOT EXCEED 6:1. RUBRAIL IS REQUIRED WHEN CROSS SLOPE EXCEEDS 10:1 OR WHEN THE DISTANCE BETWEEN THE GUARDRAIL AND THE GROUND IS 18" AND INCREASING.



10:1 CROSS SLOPE		STEEPER THAN 10:1 CROSS SLOPE (1)	
DESIGN SPEED mph	A:B	DESIGN SPEED mph	A:B
70	15:1	45-70	12.5:1
60	13:1	40	9:1
55	12:1	30 OR LESS	7:1
50	11:1		
45	10:1		
40	9:1		
30 OR LESS	7:1		



ANCHORED IN BACKSLOPE GUARDRAIL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

**GUARDRAIL
EMBEDDED TERMINAL
ENDS (FLAT DITCH)**

STATE OF MISSOURI
ERIC E. SCHROETER
NUMBER PE-28411
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

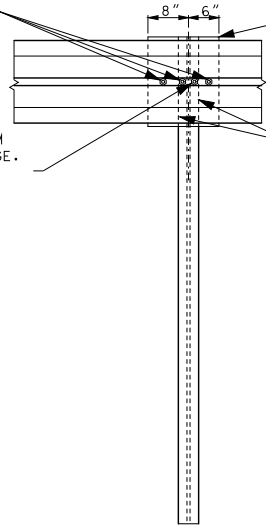
DATE EFFECTIVE: 01/01/2017
DATE PREPARED: 10/28/2016

606.30J

SHEET NO.
5 OF 7

3 - 1" Ø HOLES TO BE FIELD DRILLED IN W-BEAM ELEMENT AND ATTACHED WITH 1" Ø HEX HEAD BOLTS 1 1/8" LONG EACH WITH ONE SQUARE WASHER AND HEX NUT.

1" Ø HOLE TO BE FIELD DRILLED THROUGH W-BEAM AND THROUGH POST FLANGE. ATTACHED W-BEAM WITH 1" Ø HEX HEAD BOLT 2" LONG WITH ONE SQUARE WASHER AND HEX NUT.



1/2" X 14" X 14" STEEL PLATE

1/4" FILLET WELD PLATE TO POST BOTH SIDES OF POST

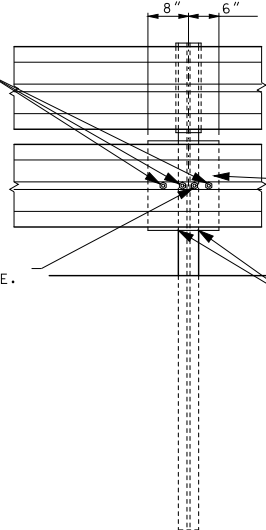
STEEL POST

8'-0"

EMBEDDED STEEL POST

3 - 1" Ø HOLES TO BE FIELD DRILLED IN W-BEAM ELEMENT AND ATTACHED WITH 1" Ø HEX HEAD BOLTS 1 1/8" LONG EACH WITH ONE SQUARE WASHER AND HEX NUT.

1" Ø HOLE TO BE FIELD DRILLED THROUGH W-BEAM AND THROUGH POST FLANGE. ATTACHED W-BEAM WITH 1" Ø HEX HEAD BOLT 2" LONG WITH ONE SQUARE WASHER AND HEX NUT.





1/2" X 14" X 14" STEEL PLATE

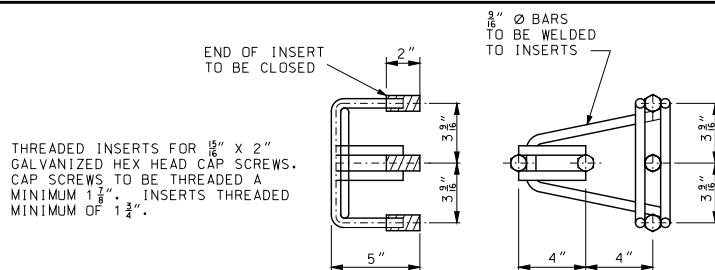
1/4" FILLET WELD PLATE TO POST BOTH SIDES OF POST

BLOCK 8" STEEL POST

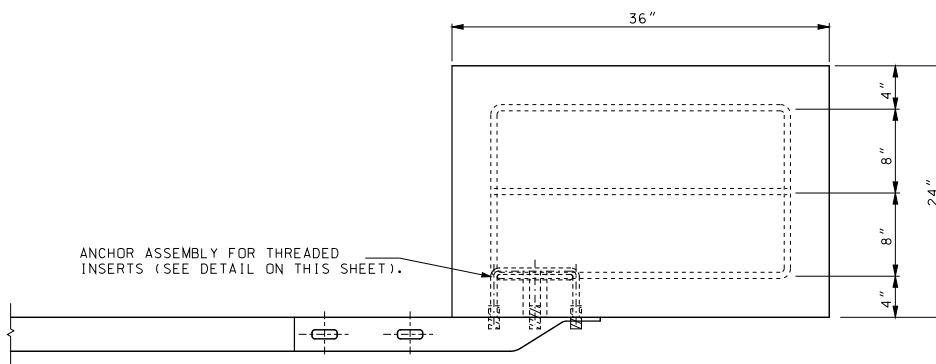
8'-0"

SPECIAL RUBRAIL TO POST CONNECTION AT POST A

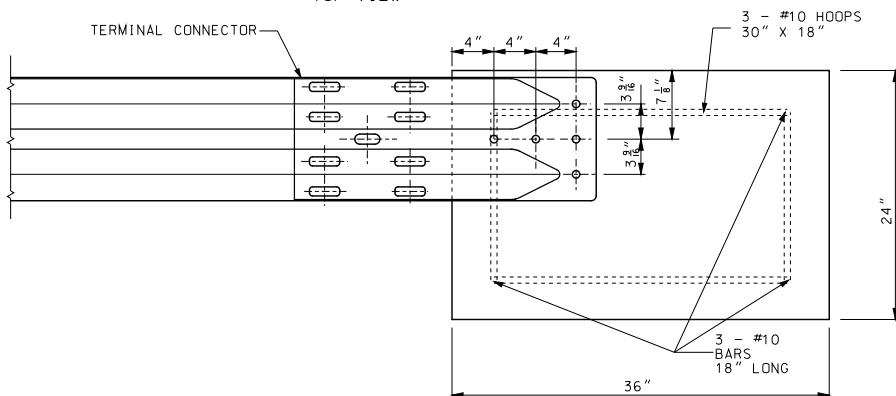
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p align="center">GUARDRAIL EMBEDDED ANCHOR TERMINAL ENDS (STEEL POST OPTION)</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.30J
SHEET NO. 6 OF 7	



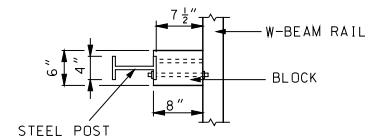
CONCRETE BLOCK ANCHOR
ANCHOR ASSEMBLY



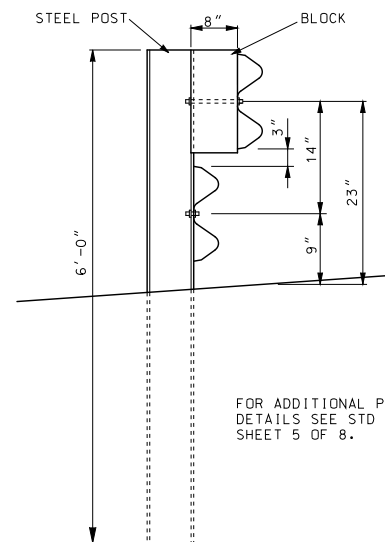
TOP VIEW



ELEVATION
CONCRETE BLOCK ANCHOR
(24" X 24" X 36")



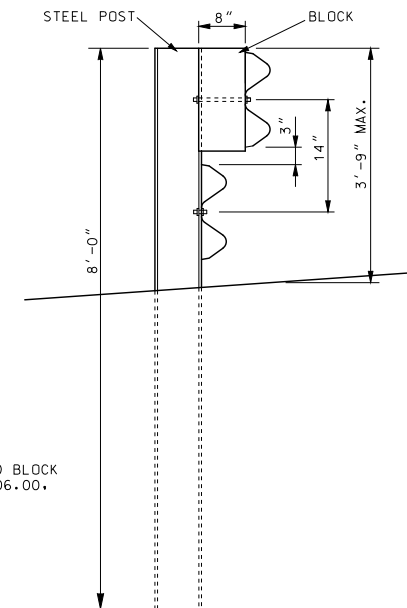
PLAN





ELEVATION OF 6' POST

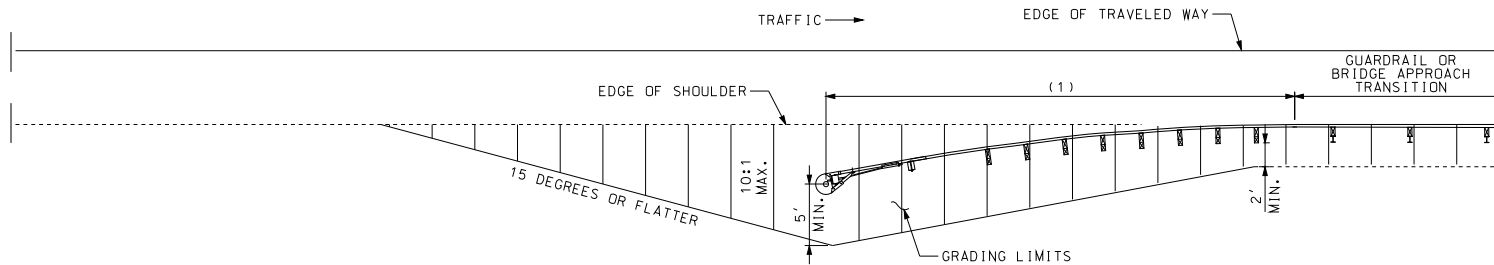
STEEL POST AND BLOCK DETAIL

FOR ADDITIONAL POST AND BLOCK
DETAILS SEE STD PLAN 606.00,
SHEET 5 OF 8.

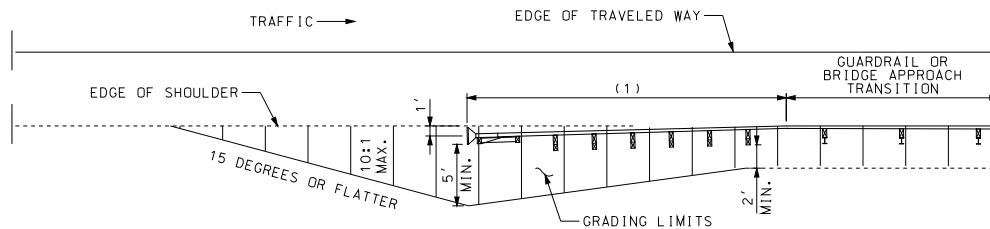


ELEVATION 8' POST

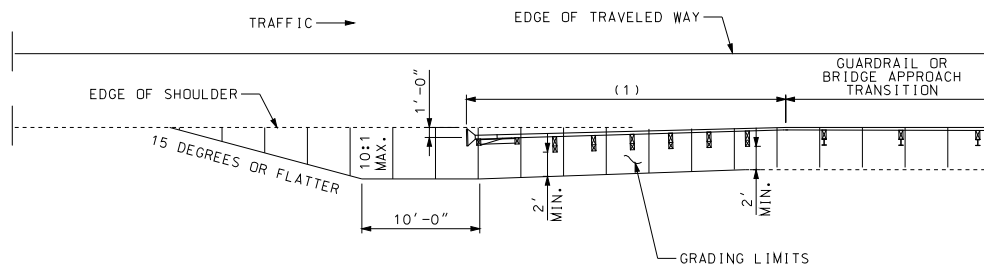
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	GUARDRAIL EMBEDDED TERMINAL ENDS GENERAL DETAILS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.30J
SHEET NO. 7 OF 7	



GRADING LIMITS FOR FLARED CRASHWORTHY END TERMINALS



PREFERRED GRADING LIMITS FOR CRASHWORTHY END TERMINALS





ALTERNATE GRADING LIMITS FOR CRASHWORTHY END TERMINALS

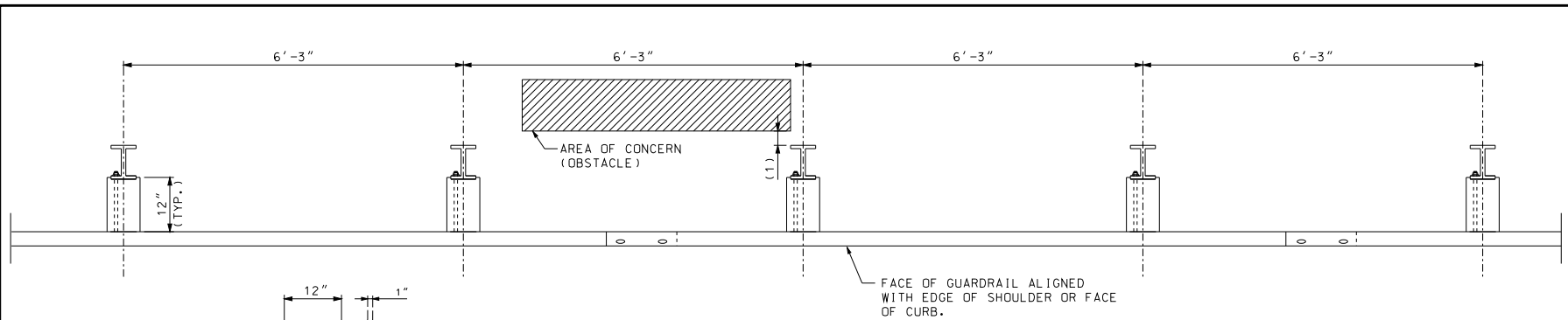
(1) APPROVED CRASHWORTHY END TERMINAL

GENERAL NOTES:

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH APPROVED SHOP DRAWINGS OF THE APPROVED CRASHWORTHY END TERMINAL.

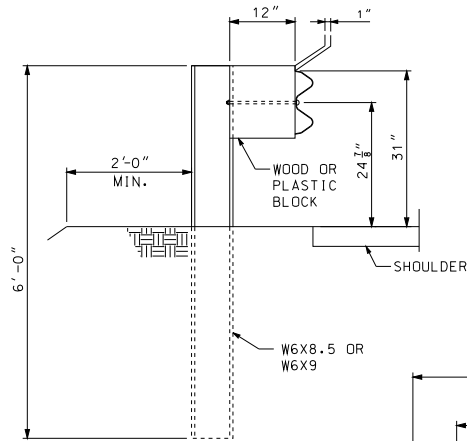
END ANCHORS SHALL BE INSTALLED ON ENDS OF GUARDRAIL RUNS WHERE CRASHWORTHY END TERMINALS ARE NOT REQUIRED.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	CRASHWORTHY END TERMINALS TYPE A GRADING LIMITS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.31
SHEET NO. 1 OF 1	

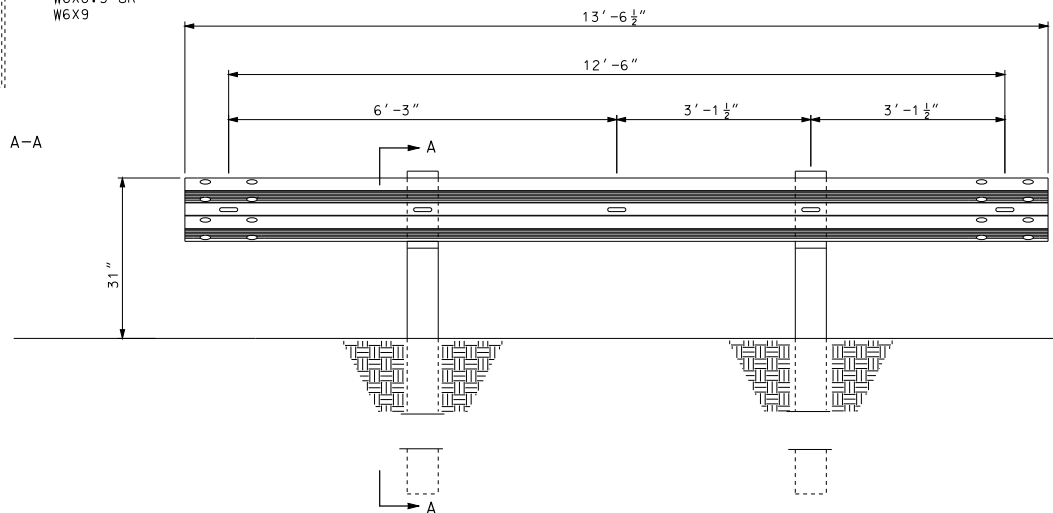


PLAN VIEW
MGS GUARDRAIL

- (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 8 FOR POST SPACING DETAILS.



SECTION A-A



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).

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 THREE BEAM TRANSITION SECTIONS.

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

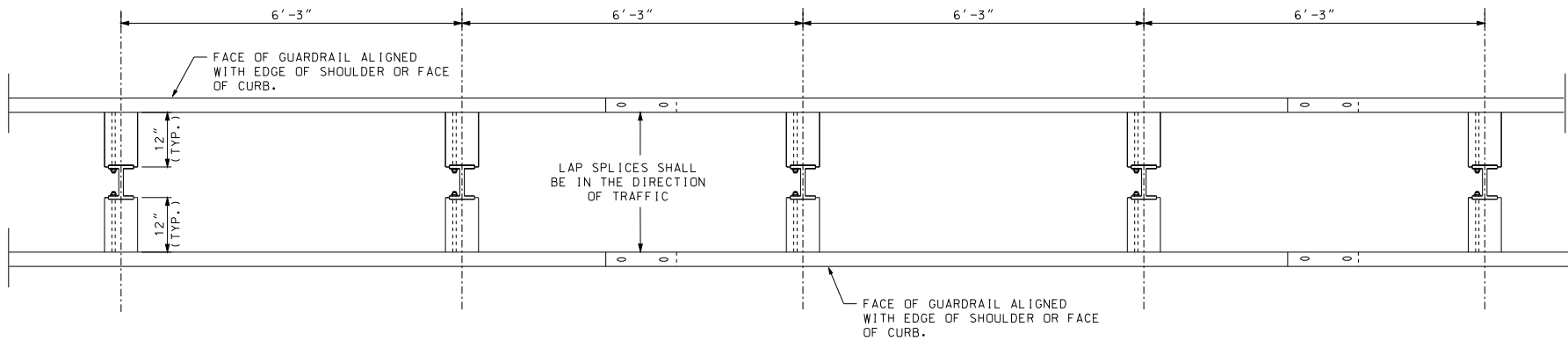
UNLESS OTHERWISE SPECIFIED, W-BEAM RAIL IS 12 GAUGE STEEL WITH AN EFFECTIVE LENGTH OF 12'-6" OR 25'-0", WITH 2 3/32" X 1 1/8" SPLICE BOLT SLOTS, AND 3/4" X 2 1/2" POST BOLT SLOTS ON 3'-1 1/2" CENTERS REGARDLESS OF POST SPACING.

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

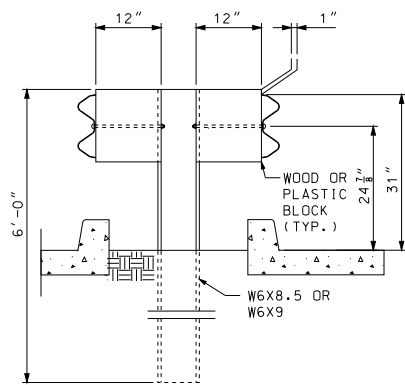
LAP SPLICES BETWEEN TWO RAILS OR BETWEEN A RAIL AND TERMINAL CONNECTOR IN THE DIRECTION OF TRAFFIC. LAP THE FLARED END SECTIONS IN THE DIRECTION OF TRAFFIC.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.50B 1 OF 8

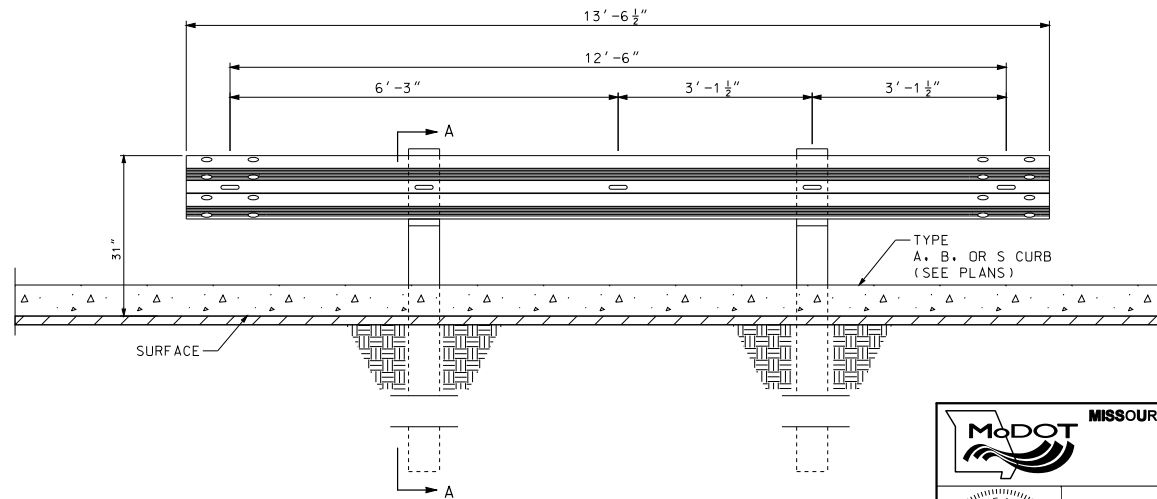
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PLAN VIEW
DOUBLE FACED
MGS GUARDRAIL



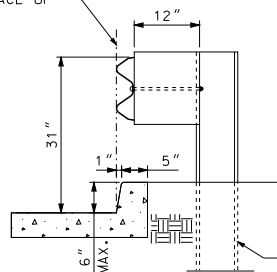
SECTION A-A
DOUBLE FACED
MGS GUARDRAIL



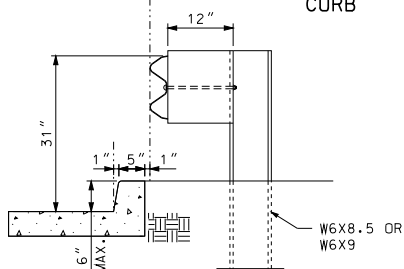
ELEVATION VIEW

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	MIDWEST GUARDRAIL SYSTEM (MGS) DOUBLE FACED GUARDRAIL
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.50B 2 OF 8

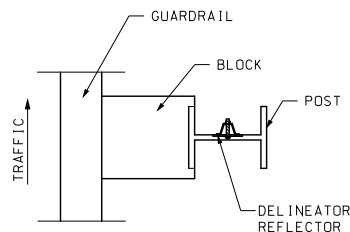
FACE OF GUARDRAIL
FLUSH WITH FACE OF
CURB



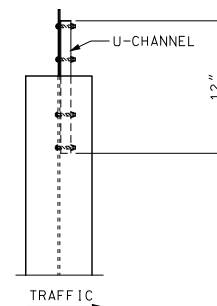
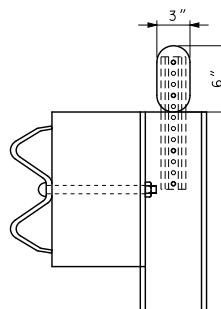
MAX. DISTANCE FACE OF
CURB CAN BE IN FRONT
OF FACE OF GUARDRAIL



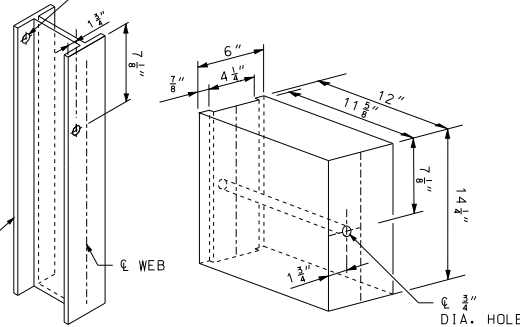
ALTERNATE MGS
AT CURB



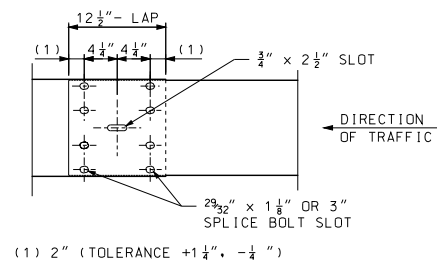
DELINEATORS ON NEW GUARDRAIL



OPTIONAL - $\frac{3}{4}$ " DIAMETER HOLE
2 $\frac{1}{8}$ " FROM THE TOP FOR GALVANIZING.
(ONE PERMITTED)




FOR STEEL POST AND NOTCHED WOOD OR PLASTIC BLOCK
HOLE PUNCHING DETAIL



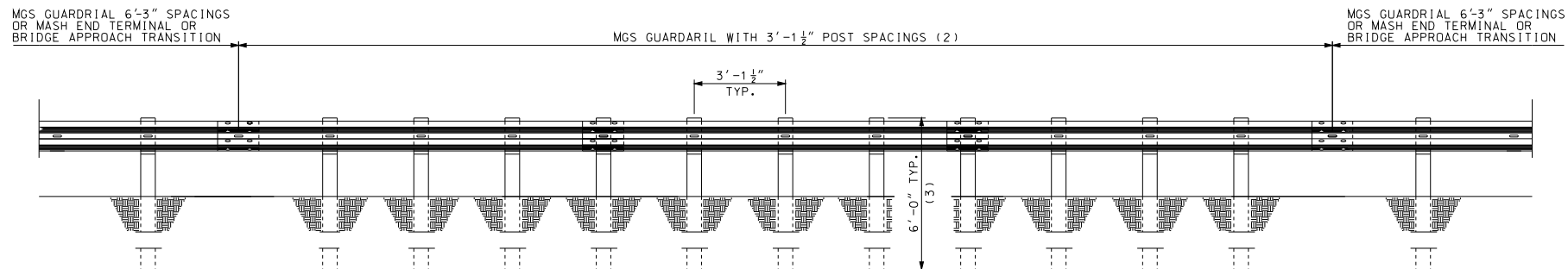
RAIL ELEMENT SPLICE
DETAIL

GENERAL NOTES:

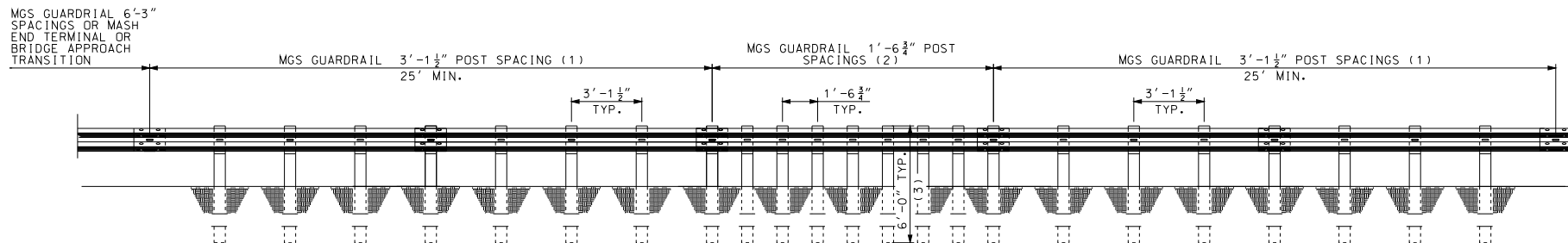
FOR GUARDRAIL DELINEATION DETAILS SEE
STD PLAN 903.03.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
MIDWEST GUARDRAIL SYSTEM (MGS) POST AND BLOCK	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.50B
SHEET NO. 3 OF 8	

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





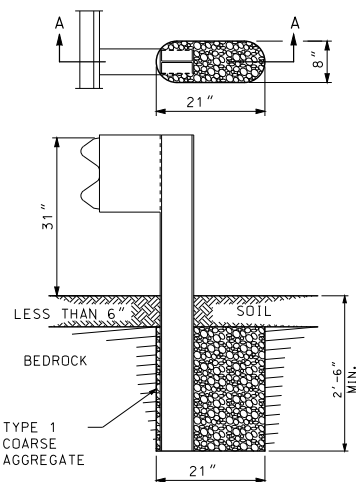
MGS GUARDRAIL WITH 3'-1 1/2" POST SPACING



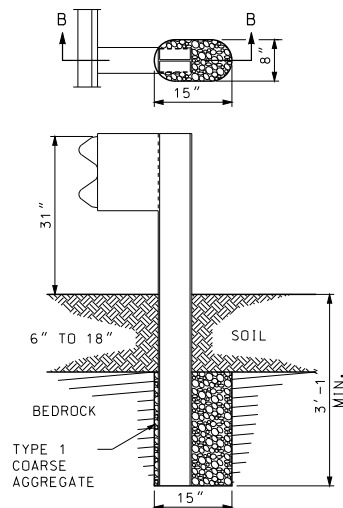
- (1) 25 FEET OF MGS 3'-1 1/2" POST SPACING GUARDRAIL IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF 1'-6 3/4" POST SPACING MGS GUARDRAIL.
- (2) USE AS MANY SEGMENTS AS NECESSARY TO SHIELD THE AREA OF CONCERN.
- (3) REDUCED POST SPACING SHALL USE 6'-0" POSTS MAX. ANY DEVIATION OF 6'-0" POSTS WILL ONLY BE ALLOWED IN ACCORDANCE WITH SPECIAL INSTALLATIONS AS SHOWN ON SHEET 5 OF 8.

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

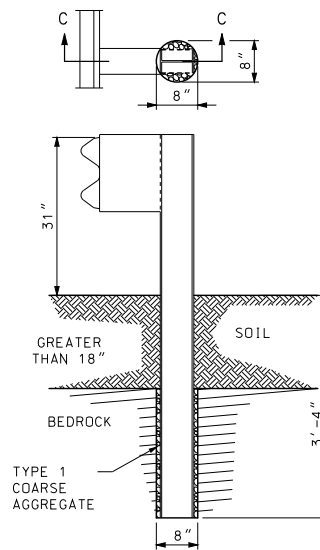
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	MIDWEST GUARDRAIL SYSTEM (MGS) REDUCED POST SPACINGS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.50B
SHEET NO. 4 OF 8	



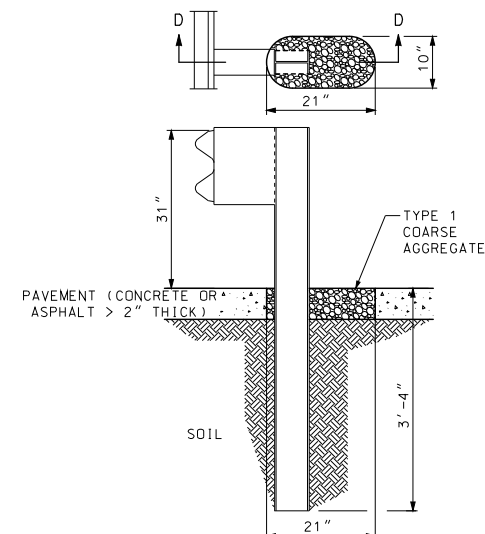
SECTION A-A
ROCK ENCOUNTERED
UP TO 6" BENEATH SURFACE



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

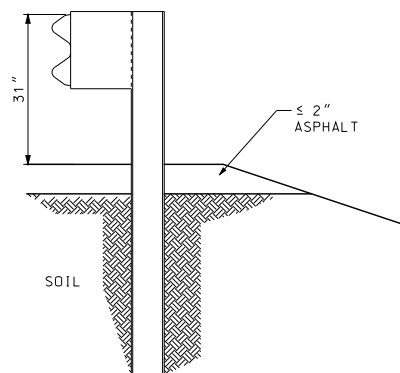


SECTION C-C
ROCK ENCOUNTERED MORE
THAN 18" BENEATH SURFACE



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

SETTING POST IN SOLID ROCK



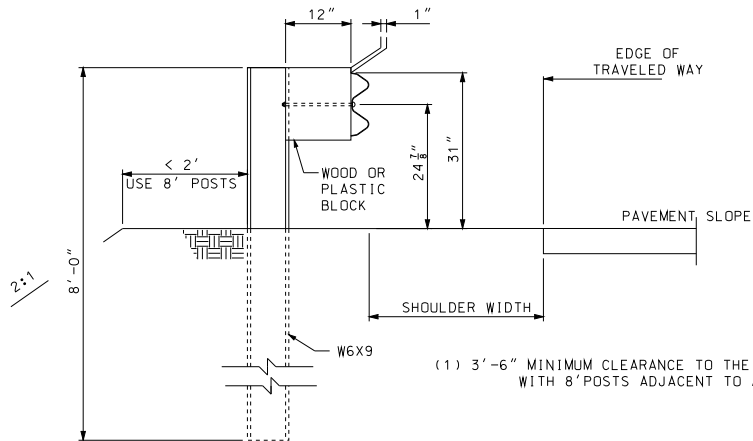
SETTING POST THROUGH ASPHALT $\leq 2"$ THICK

GENERAL NOTES:

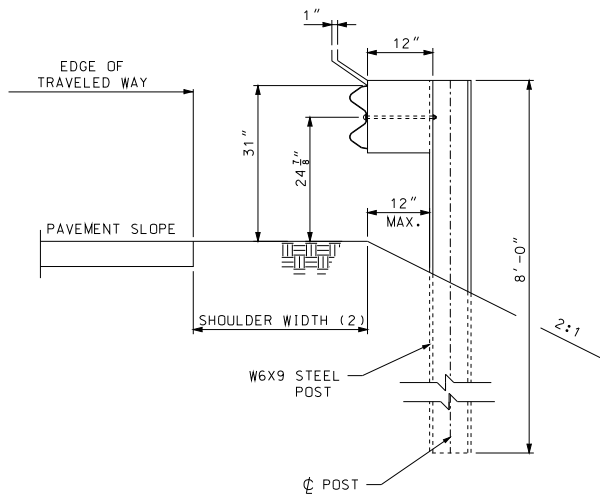
HOLES IN SOLID ROCK SHALL PROVIDE A DIAMETER OF NOT LESS THAN 4 INCHES GREATER THAN THE MAXIMUM TRANSVERSE DIMENSION OF THE POST SECTION.

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.

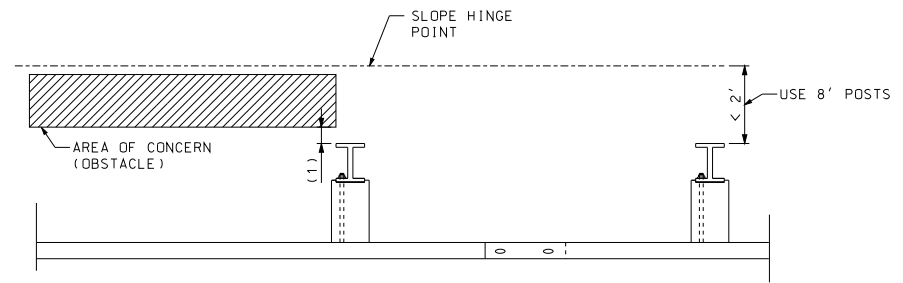
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>MGS GUARDRAIL SYSTEM (MGS) SPECIAL INSTALLATIONS</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.50B
SHEET NO. 5 OF 8	



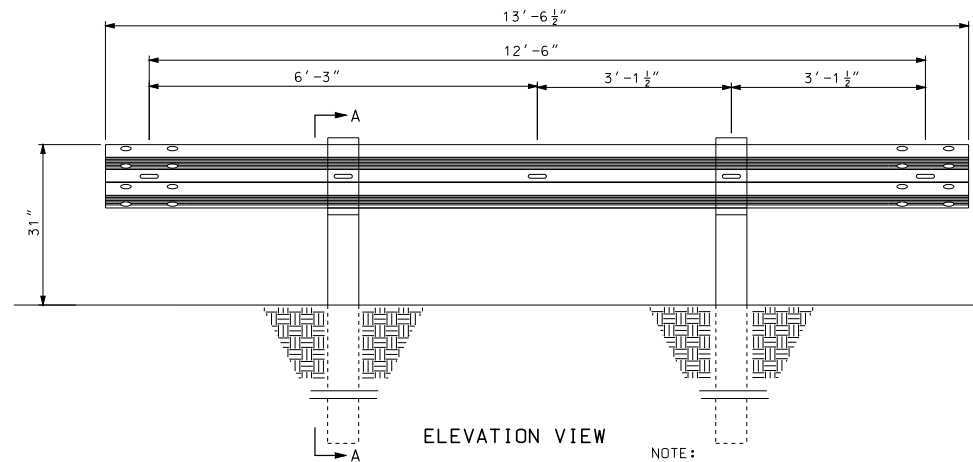
SECTION A-A
8' STEEL POST



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



PLAN VIEW



ELEVATION VIEW

NOTE:
SEE STD. PLAN 606.81 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.

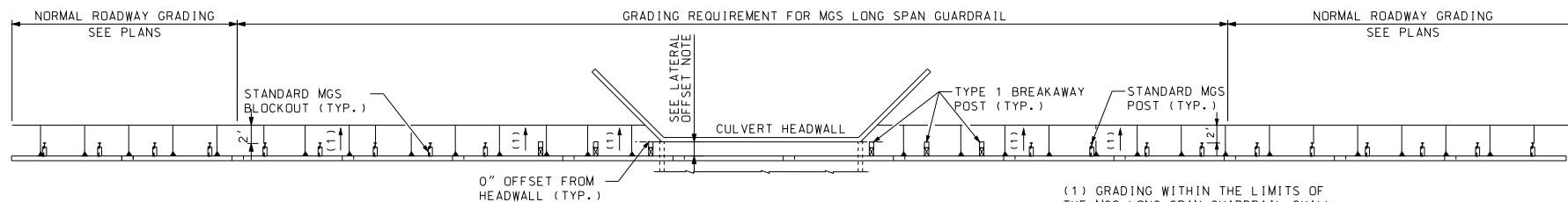


MIDWEST GUARDRAIL SYSTEM
(MGS)
8 FT. POST

DATE EFFECTIVE: 01/01/2017
DATE PREPARED: 10/28/2016

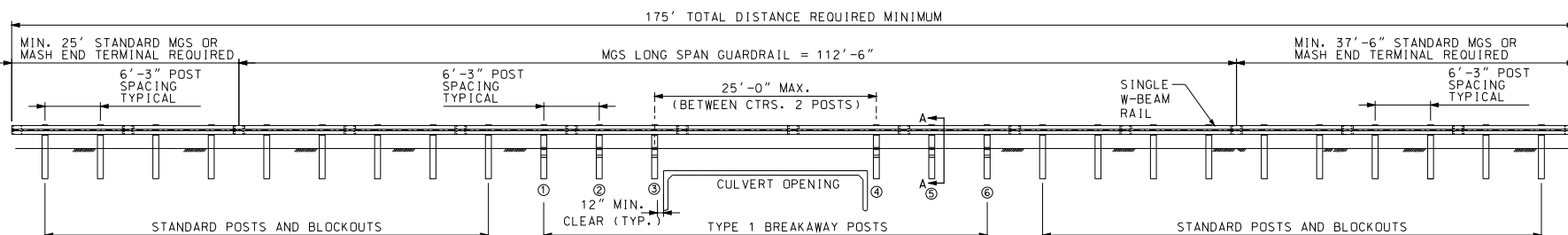
606.50B

SHEET NO.
6 OF 8



PLAN VIEW

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



ELEVATION VIEW

NOTES:

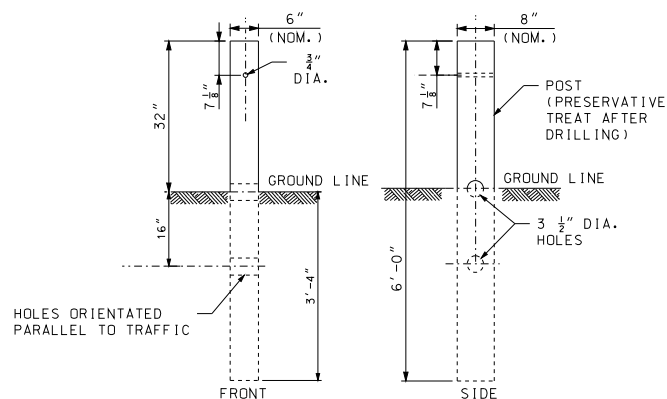
A MINIMUM LENGTH OF STANDARD MGS GUARDRAIL OR AN END TERMINAL IS REQUIRED BEFORE THE 112'-6" OF MGS LONG SPAN AND AFTER TO MAINTAIN STABILITY IN THE SYSTEM. 8' POSTS MAY BE USED OUTSIDE THE GRADING LIMITS SHOWN.

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

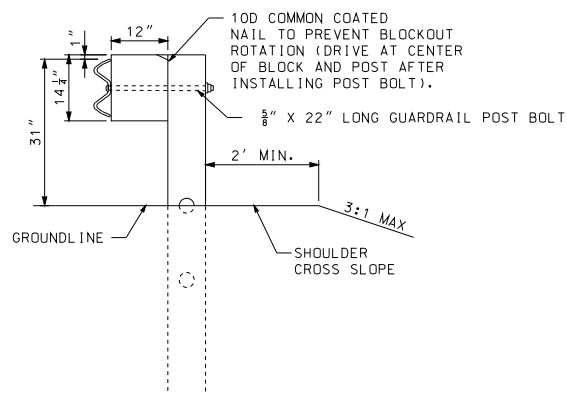
WHEN THE HEADWALL IS FLUSH WITH THE GRADE, THE BACK OF THE POST CAN BE ALIGNED WITH THE NEAR SIDE OF THE HEADWALL. BUT IF THE HEADWALL CONTINUES ABOVE GRADE, THE SYSTEM SHOULD BE OFFSET 8' FROM THE FIXED OBJECT.

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

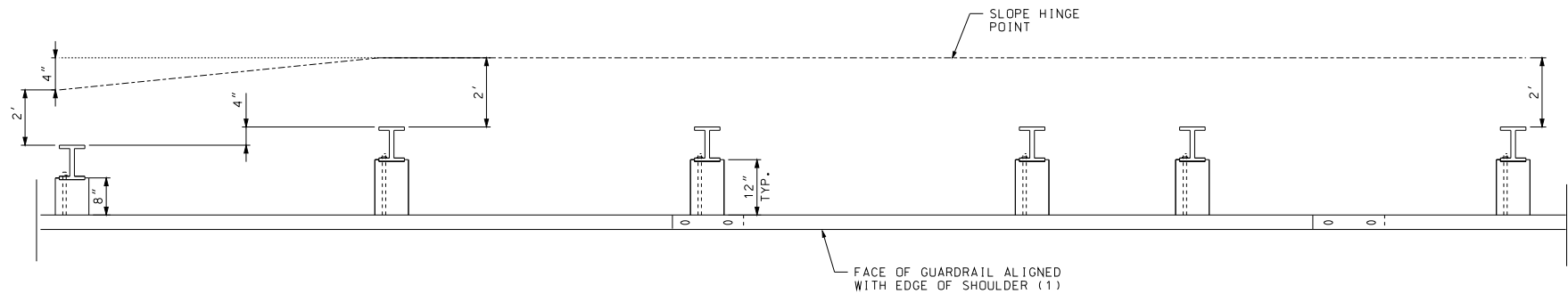


TYPE 1 BREAKAWAY WOOD POST

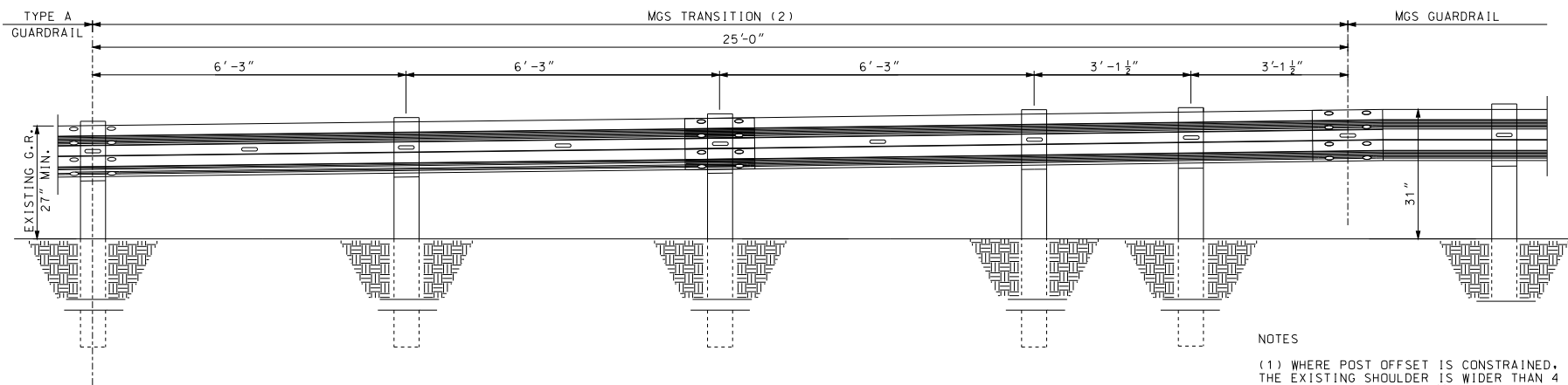


SECTION A-A

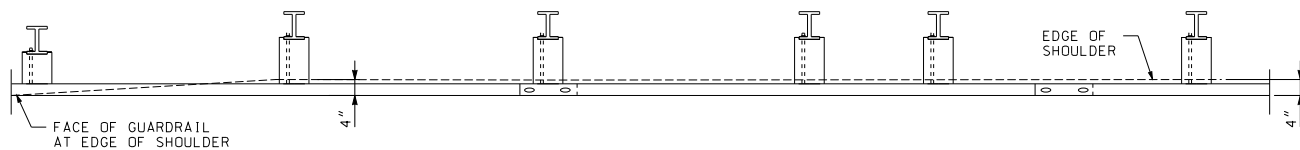
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	MIDWEST GUARDRAIL SYSTEM (MGS) LONG SPAN GUARDRAIL
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.50B 7 OF 8



PLAN VIEW



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



ALTERNATE PLAN VIEW - ALIGNMENT TAPER

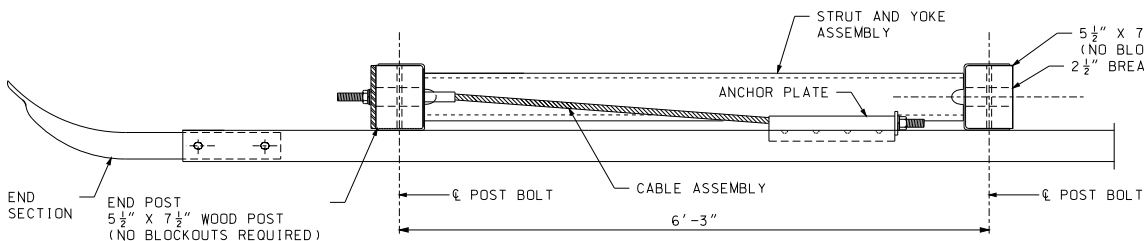
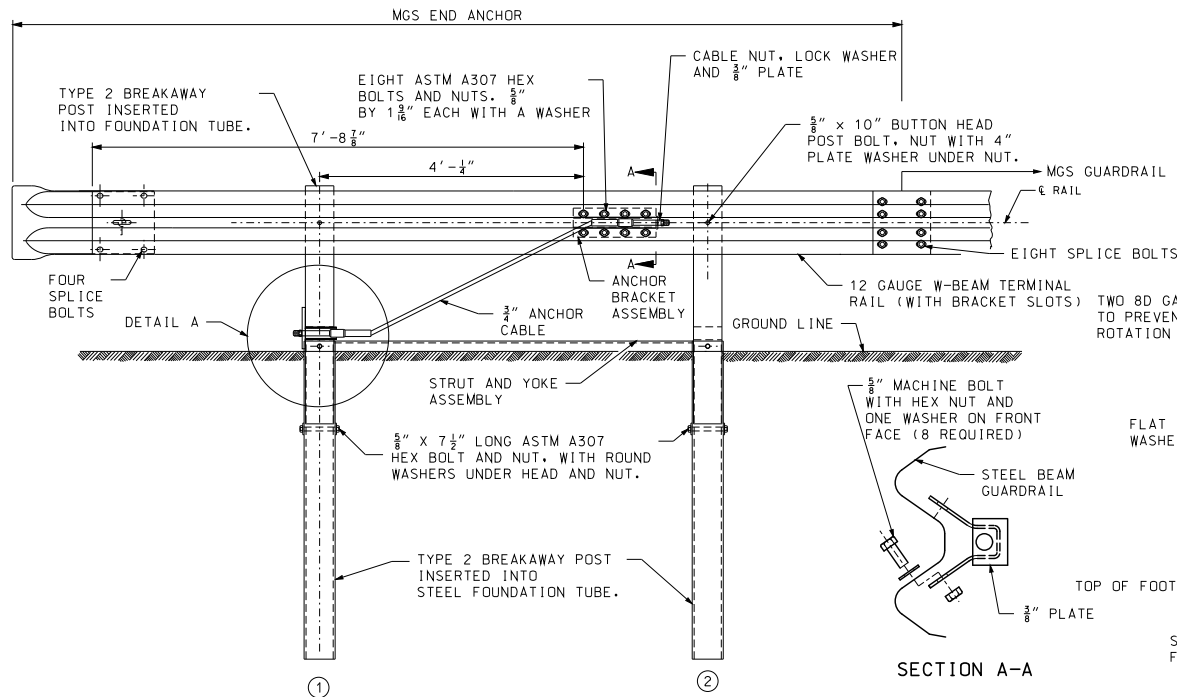
SEE NOTE (1)

NOTES

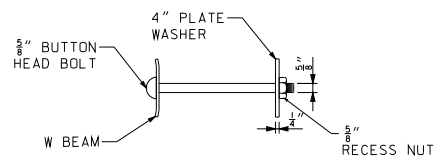
(1) WHERE POST OFFSET IS CONSTRAINED, AND WHEN THE EXISTING SHOULDER IS WIDER THAN 4 FEET, THE EXISTING SHOULDER MAY BE REDUCED UP TO 4 INCHES TO ACCOMMODATE THE 12 INCH BLOCKS OF THE MGS GUARDRAIL OR 9 FOOT POSTS SHALL BE USED. (SEE PLAN VIEW - ALIGNMENT TAPER)

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

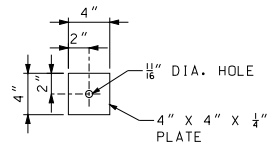
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	MIDWEST GUARDRAIL SYSTEM (MGS) BLOCK AND HEIGHT TRANSITION
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.50B 8 OF 8



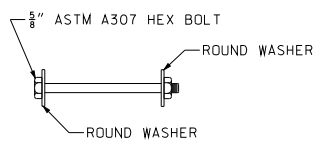
PLAN VIEW



POST BOLT AT W-BEAM



4" PLATE WASHER



POST BOLT AT YOKE

GENERAL NOTES:

END ANCHOR DETAILS SHOWN SHALL BE USED ONLY ON DOWNSTREAM ENDS OF GUARDRAIL WHEN AN END ANCHOR IS REQUIRED.

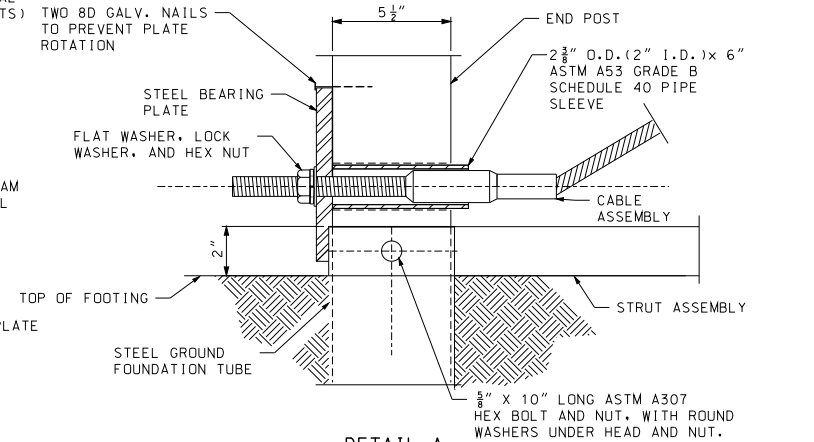
THE DETAILS SHOWN ARE FOR AN END ANCHORAGE SYSTEM FOR GUARDRAIL.

CABLE ASSEMBLY AND ANCHOR PLATE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 20 TONS.

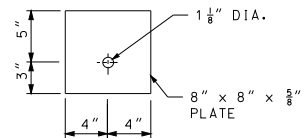
ALL FITTINGS AND HARDWARE REQUIRED SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1040.

WOOD POSTS 1 AND 2 SHALL BE 5 1/2" X 7 1/2".

SEE SHEET NO. 9 OF 11 FOR WOOD POST DETAILS.

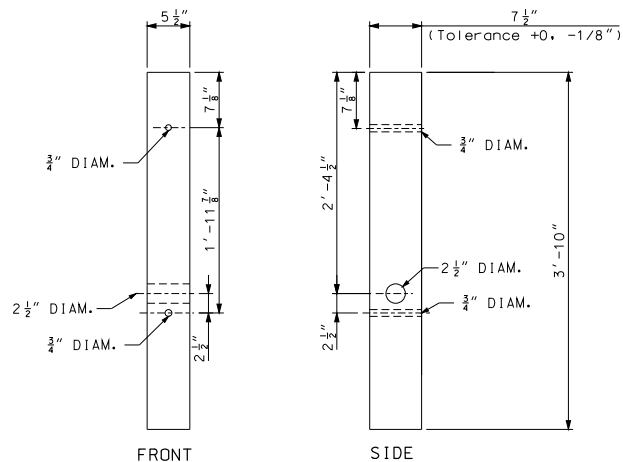


DETAIL A
(END POST DETAIL)

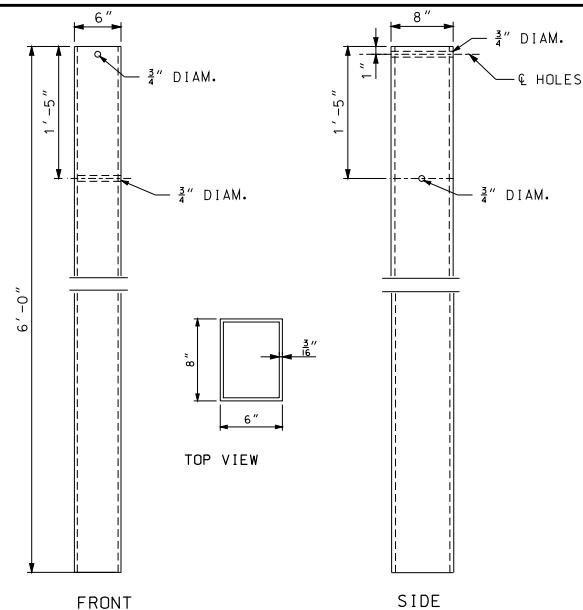


STEEL BEARING PLATE

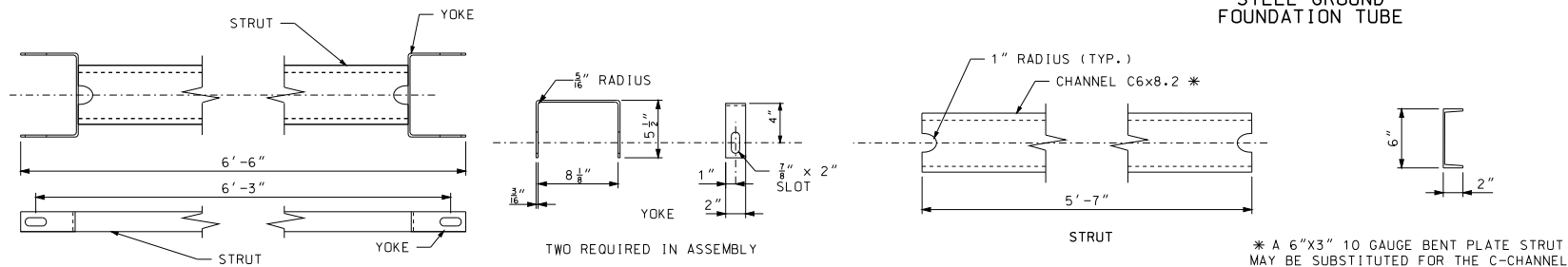
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
MIDWEST GUARDRAIL SYSTEM (MGS) TERMINAL ANCHOR END	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.80B
SHEET NO. 1 OF 7	




TYPE 2 BREAKAWAY
WOOD POST

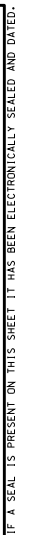
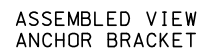
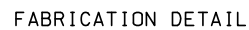


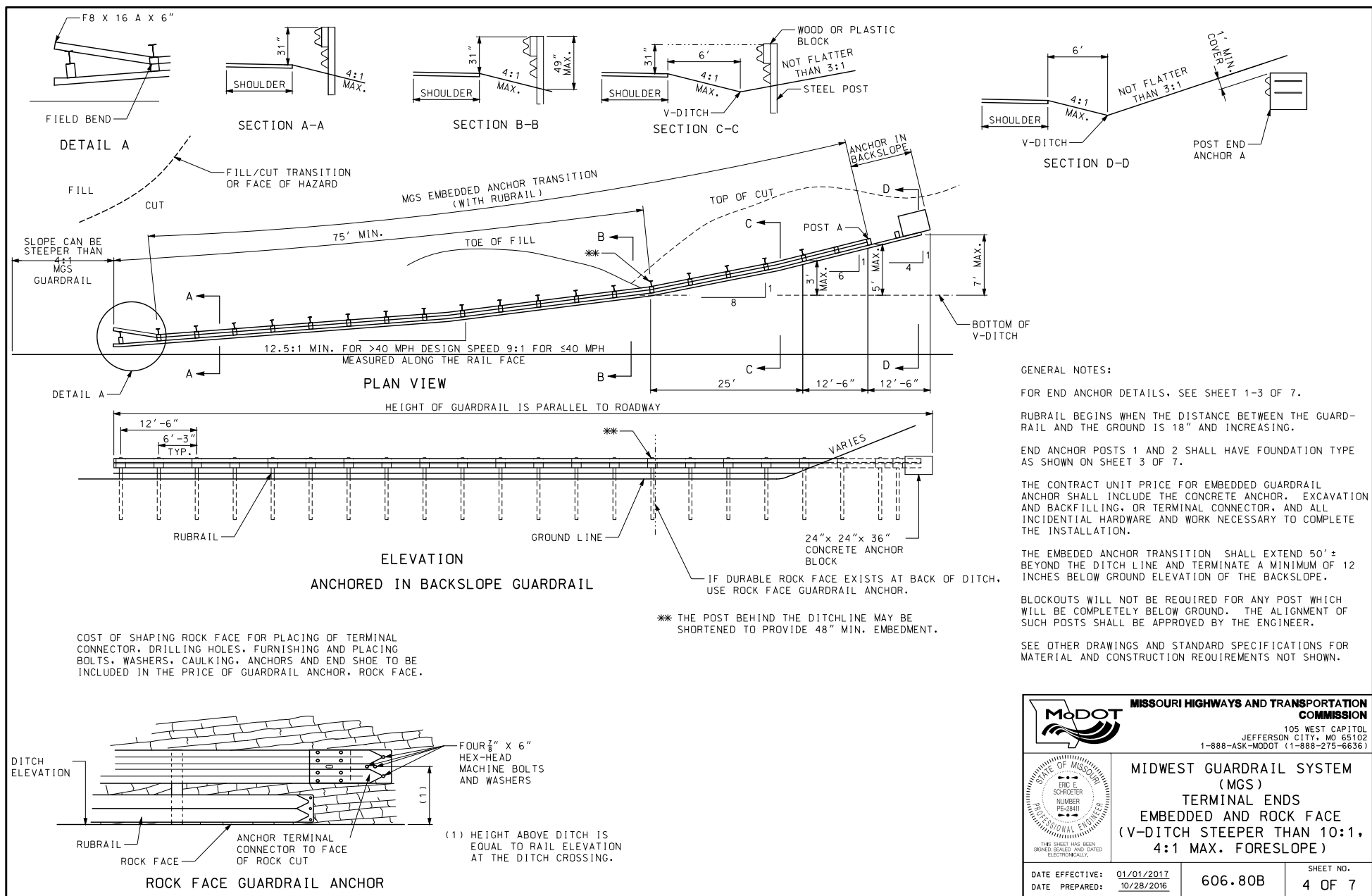
STEEL GROUND
FOUNDATION TUBE

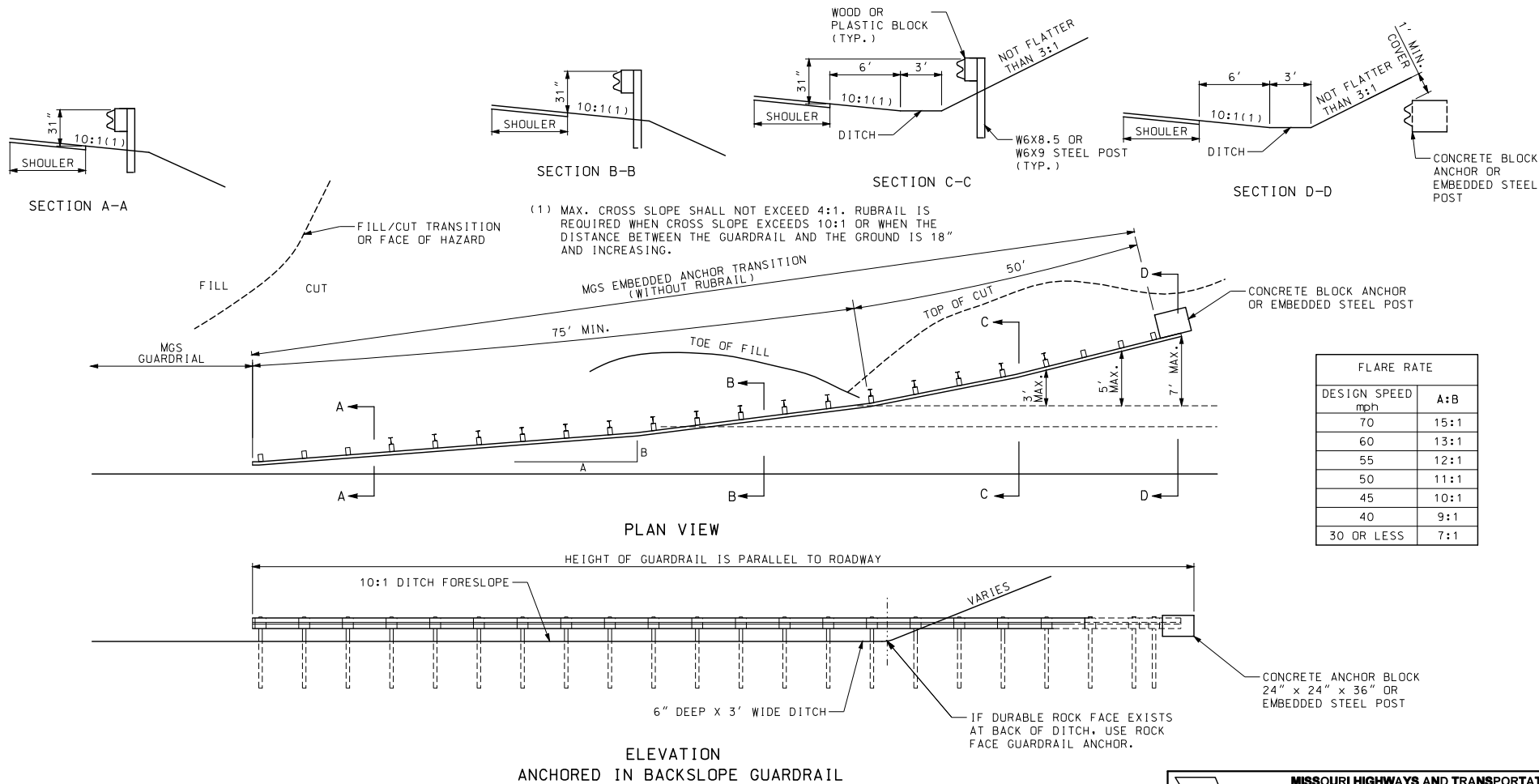


STRUT AND YOKE ASSEMBLY

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
STATE OF MISSOURI ERIC E. SCHROETER NUMBER PE-28411 PROFESSIONAL ENGINEER THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.	
MIDWEST GUARDRAIL SYSTEM (MGS) TERMINAL ANCHOR END	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.80B
SHEET NO. 2 OF 7	







MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

MIDWEST GUARDRAIL SYSTEM (MGS)
EMBEDDED ANCHOR TRANSITION
EMBEDDED TERMINAL ENDS (FLAT DITCH)

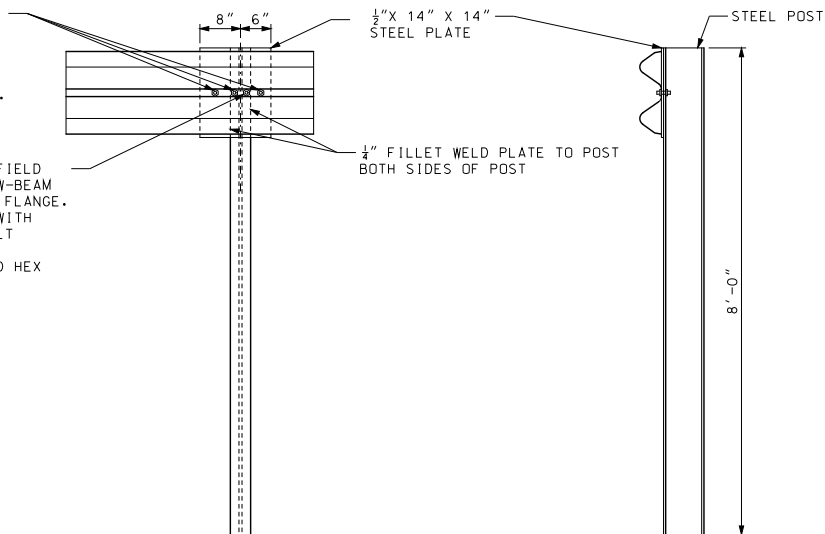
DATE EFFECTIVE: 01/01/2017
DATE PREPARED: 10/28/2016

606.80B

SHEET NO. 5 OF 7

3 - 1" Ø HOLES TO BE FIELD DRILLED IN W-BEAM ELEMENT AND ATTACHED WITH 7/8" Ø HEX HEAD BOLTS 1 7/8" LONG EACH WITH ONE SQUARE WASHER AND HEX NUT.

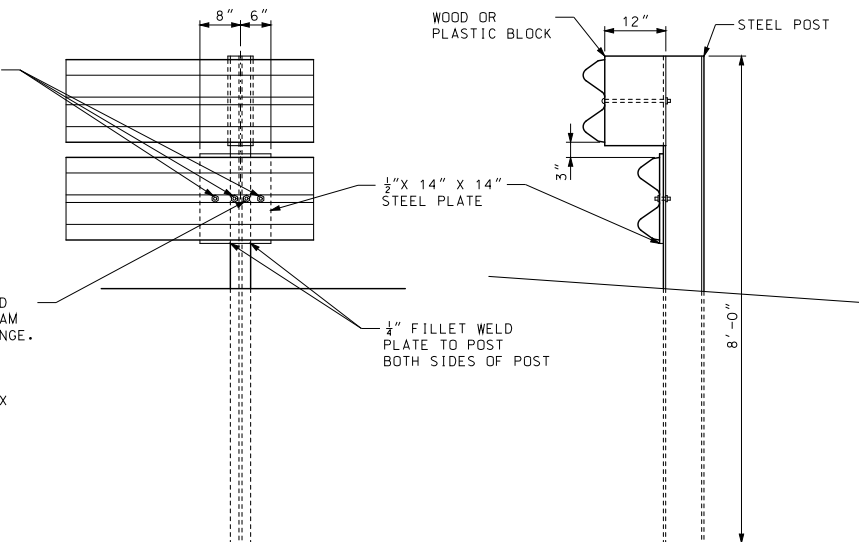
1" Ø HOLE TO BE FIELD DRILLED THROUGH W-BEAM AND THROUGH POST FLANGE. ATTACHED W-BEAM WITH 7/8" Ø HEX HEAD BOLT 2" LONG WITH ONE SQUARE WASHER AND HEX NUT.



EMBEDDED STEEL POST

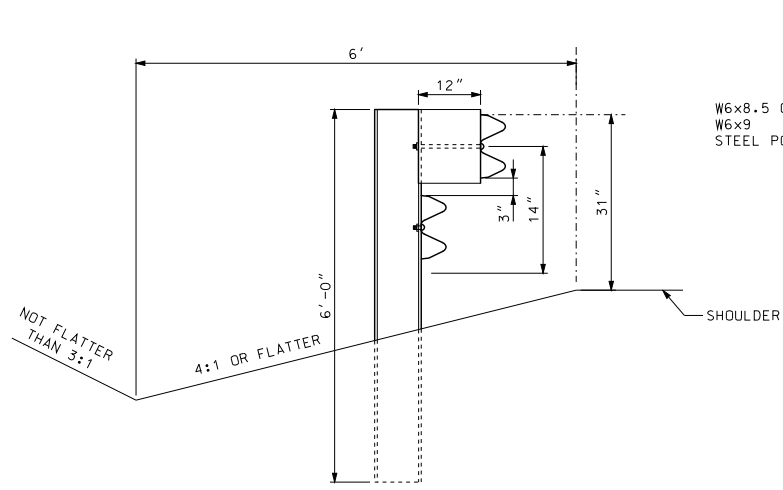
3 - 1" Ø HOLES TO BE FIELD DRILLED IN W-BEAM ELEMENT AND ATTACHED WITH 7/8" Ø HEX HEAD BOLTS 1 7/8" LONG EACH WITH ONE SQUARE WASHER AND HEX NUT.

1" Ø HOLE TO BE FIELD DRILLED THROUGH W-BEAM AND THROUGH POST FLANGE. ATTACHED W-BEAM WITH 7/8" Ø HEX HEAD BOLT 2" LONG WITH ONE SQUARE WASHER AND HEX NUT.

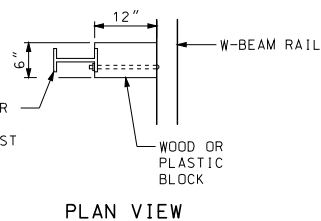


SPECIAL RUBRAIL TO POST CONNECTION AT POST A

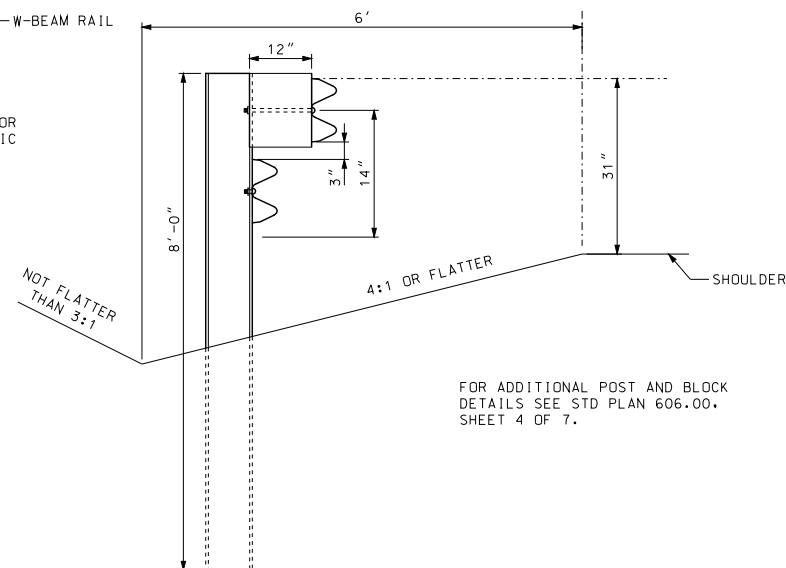
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
MIDWEST GUARDRAIL SYSTEM (MGS) EMBEDDED ANCHOR TERMINAL ENDS (STEEL POST OPTION)	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.80B SHEET NO. 6 OF 7



ELEVATION OF 6' STEEL POST AND BLOCK

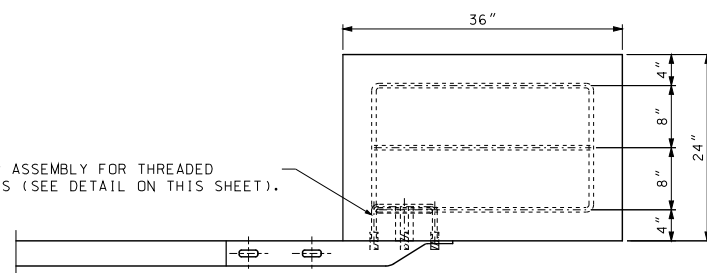


PLAN VIEW

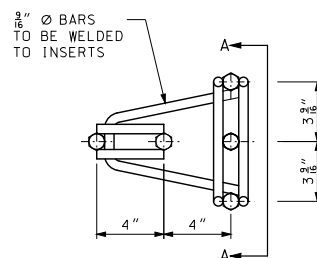


ELEVATION 8' STEEL POST AND BLOCK

ANCHOR ASSEMBLY FOR THREADED INSERTS (SEE DETAIL ON THIS SHEET).

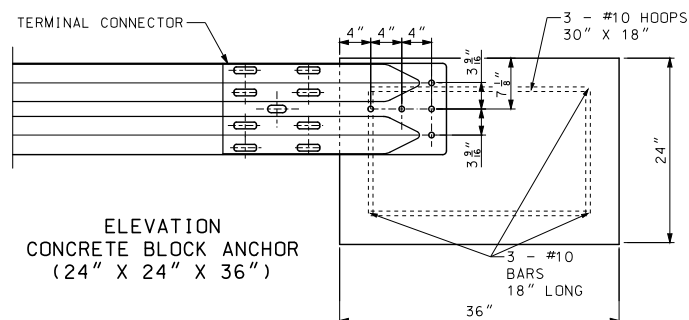


TOP VIEW

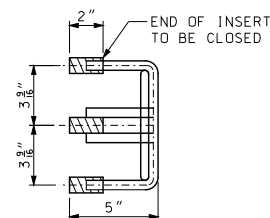


CONCRETE BLOCK ANCHOR ANCHOR ASSEMBLY


THREADED INSERTS FOR $\frac{1}{2}$ " X 2" GALVANIZED HEX HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MINIMUM $1\frac{1}{8}$ ". INSERTS THREADED MINIMUM OF $1\frac{3}{4}$ ".

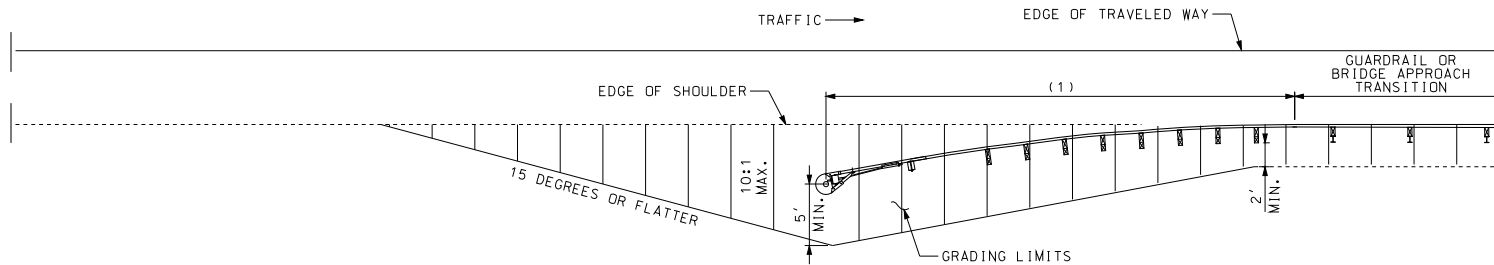


ELEVATION CONCRETE BLOCK ANCHOR (24" X 24" X 36")

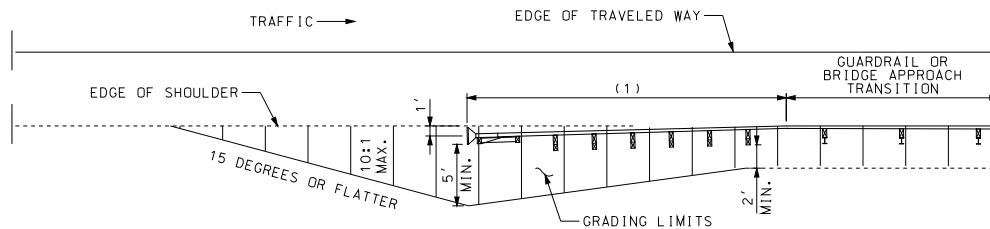


SECTION A-A

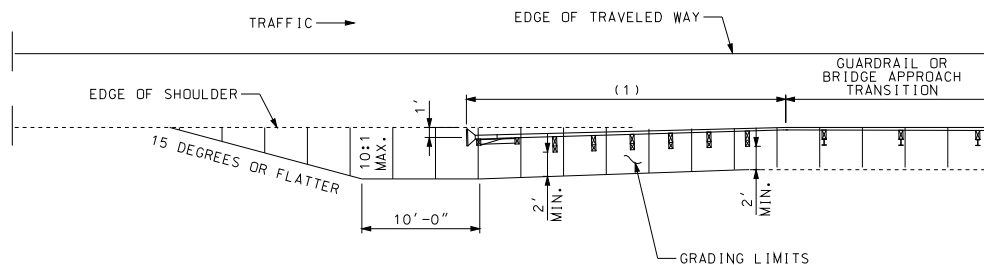
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
MIDWEST GUARDRAIL SYSTEM (MGS) EMBEDDED TERMINAL ENDS GENERAL DETAILS	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.80B
SHEET NO. 7 OF 7	



GRADING LIMITS FOR FLARED CRASHWORTHY END TERMINALS



PREFERRED GRADING LIMITS FOR CRASHWORTHY END TERMINALS





ALTERNATE GRADING LIMITS FOR CRASHWORTHY END TERMINALS

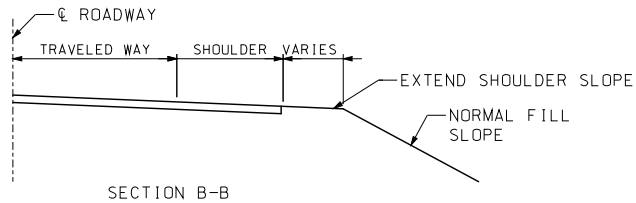
(1) APPROVED CRASHWORTHY END TERMINAL

GENERAL NOTES:

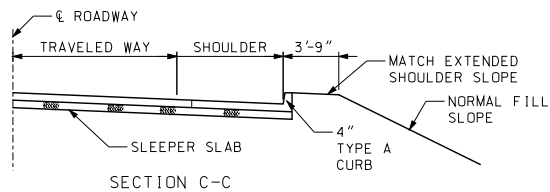
THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH APPROVED SHOP DRAWINGS OF THE APPROVED CRASHWORTHY END TERMINAL.

END ANCHORS SHALL BE INSTALLED ON ENDS OF GUARDRAIL RUNS WHERE CRASHWORTHY END TERMINALS ARE NOT REQUIRED.

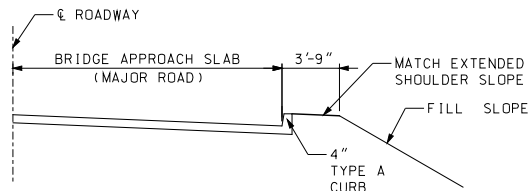
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>MASH CRASHWORTHY END TERMINALS TYPE A GRADING LIMITS</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	606.81
SHEET NO. 1 OF 1	



SECTION B-B

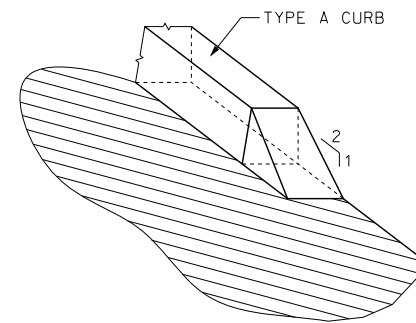


SECTION C-C



SECTION D-D

NOTE: FOR DETAILS NOT SHOWN.
SEE OTHER SECTIONS.



TYPE A CURB
TRANSITION DETAIL

GENERAL NOTE:

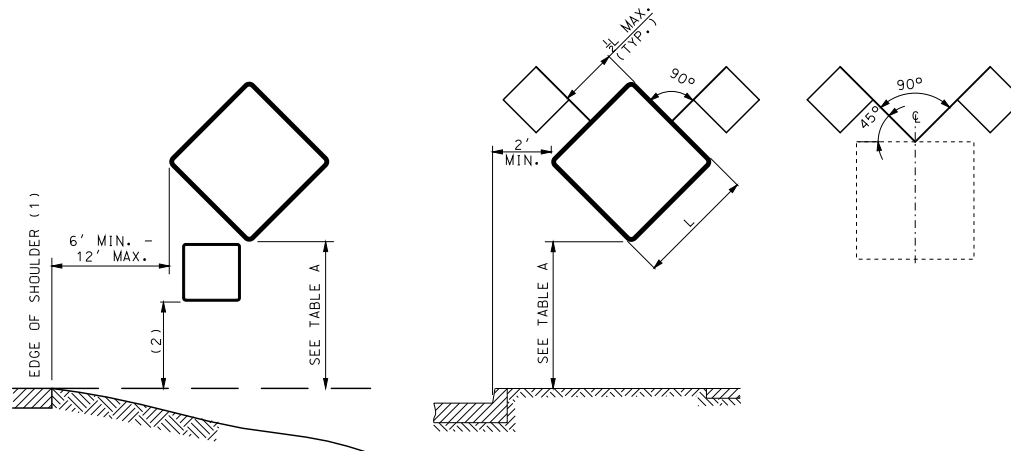
FOR LOCATION OF SEC. B-B, C-C AND D-D, SEE
SHEET 1 OF 3.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>ERIC E. SCHROETER NUMBER PE-28411 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>DRAIN BASIN, SHOULDER PAVING AND FILL SLOPE AT BRIDGE ENDS (MAJOR ROAD)</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 11/2/2016	609.40S SHEET NO. 2 OF 3

**TABLE A
WORK ZONE SIGN MOUNTING REQUIREMENTS**

TYPE	SIGN SUPPORT	SIGN SUBSTRATE	MINIMUM MOUNTING HEIGHT (3)	USAGE LIMITATIONS	COMMENTS
POST	PERFORATED SQUARE STEEL TUBE U-CHANNEL WOOD	RIGID	5' RURAL UNDIVIDED HIGHWAYS 7' RURAL DIVIDED HIGHWAYS 7' URBAN HIGHWAYS	NONE	POSTS SHALL BE FREE OF ANY BRACING AND EXTEND NO FURTHER ABOVE THE SIGN EXCEPT AS NEEDED FOR WARNING LIGHT ATTACHMENT. FOR DETAILS OF POST INSTALLATION DETAILS SEE SHEET NO. 2 OF 9. GALVANIZATION OF POSTS WILL NOT BE REQUIRED.
TYPE 1 PORTABLE	SKID FOLD-UP STAND	RIGID	5' RURAL UNDIVIDED HIGHWAYS 7' RURAL DIVIDED HIGHWAYS 7' URBAN HIGHWAYS	PERMITTED ONLY WHERE POST MOUNTING IS NOT FEASIBLE.	SYSTEMS SHALL COMPLY WITH CRASH TEST REQUIREMENTS OF NCHRP 350 TEST LEVEL 3 AND MAY BE PLACED ADJACENT TO OR WITHIN THE ROADWAY PROVIDED A MINIMUM LATERAL CLEARANCE OF 3 FEET, MEASURED HORIZONTALLY FROM THE EDGE OF THE SIGN TO THE EDGE OF DESIGNATED TRAVELED WAY, IS MAINTAINED.
TYPE 2 PORTABLE	EASEL FOLD-UP STAND SELF-DRIVING POST TYPE III MOVABLE BARRICADE SKID	FLEXIBLE RIGID	12" (4)	PERMITTED ONLY FOR INSTALLATION UP TO 3 DAYS(5). WHERE SIGNS ARE OBSCURED BY OTHER OBJECTS (I.E., TRAFFIC CONTROL DEVICES, PARKED VEHICLES, BARRIER, VEGETATION, ETC.) OR INSTALLED ON MULTI-LANE UNDIVIDED FACILITIES OR MULTI-LANE DIVIDED FACILITIES WITH 3 OR MORE LANES IN ONE DIRECTION, MOUNTING HEIGHTS SHALL BE AS SPECIFIED FOR POST-MOUNTED SIGNS.	SYSTEMS SHALL COMPLY WITH CRASH TEST REQUIREMENTS OF NCHRP 350 TEST LEVEL 3 AND MAY BE PLACED ADJACENT TO OR WITHIN ROADWAY PROVIDED A MINIMUM LATERAL CLEARANCE OF 3 FEET, MEASURED HORIZONTALLY FROM THE EDGE OF THE SIGN TO THE EDGE OF THE DESIGNATED TRAVELED WAY, IS MAINTAINED.
BARRIER	CONCRETE TRAFFIC BARRIER GUARDRAIL	FLEXIBLE RIGID	5' RURAL UNDIVIDED HIGHWAYS 7' RURAL DIVIDED HIGHWAYS 7' URBAN HIGHWAYS	PERMITTED ONLY WHERE LONGITUDINAL BARRIER IS PRESENT.	SYSTEMS SHALL PROVIDE POSITIVE CONNECTION TO THE BARRIER AND MINIMIZE POTENTIAL FOR VEHICLE SNAGGING.
VEHICLE	PAVEMENT MARKING EQUIPMENT PILOT CAR PROTECTIVE VEHICLE	FLEXIBLE RIGID	48" (6)	PERMITTED ONLY IN PILOT CAR OR MOVING OPERATIONS.	

- (3) MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT.
 (4) MOUNTING HEIGHTS FOR REGULATORY AND GUIDE SIGNS SHALL BE AS SPECIFIED FOR POST-MOUNTED SIGNS.
 (5) SIGNS MOUNTED ON TYPE III BARRICADES, GORE EXIT SIGN, AND SIGNS FOR CROSWALK/SIDEWALK CLOSURES MAY BE LEFT IN PLACE FOR MORE THAN 3 DAYS.
 (6) DEVIATIONS AS APPROVED BY THE ENGINEER.



- (1) EDGE OF TRAVELED WAY WHERE THERE IS NO PAVED OR STABILIZED SHOULDER.
 (2) ONE-FOOT LESS THAN MOUNTING HEIGHT NOTED IN TABLE A.

**HEIGHT AND LATERAL LOCATIONS FOR
POST AND PORTABLE SIGN MOUNTING**

GENERAL NOTES:

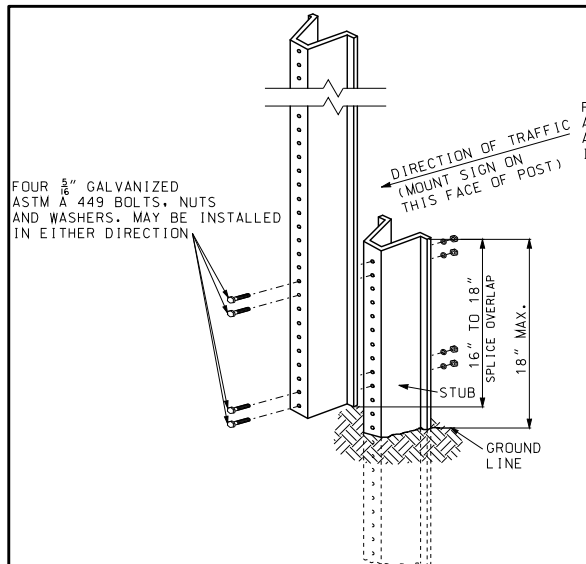
LONGITUDINAL SPACING OF SIGNS SHOWN IN THE PLANS ARE PREFERRED MINIMUMS, BUT MAY BE ADJUSTED TO MEET EXISTING FIELD CONDITIONS WITH APPROVAL FROM THE ENGINEER.

SIGNS SHALL NOT BE MOUNTED IN OR ON CHANNELIZERS.

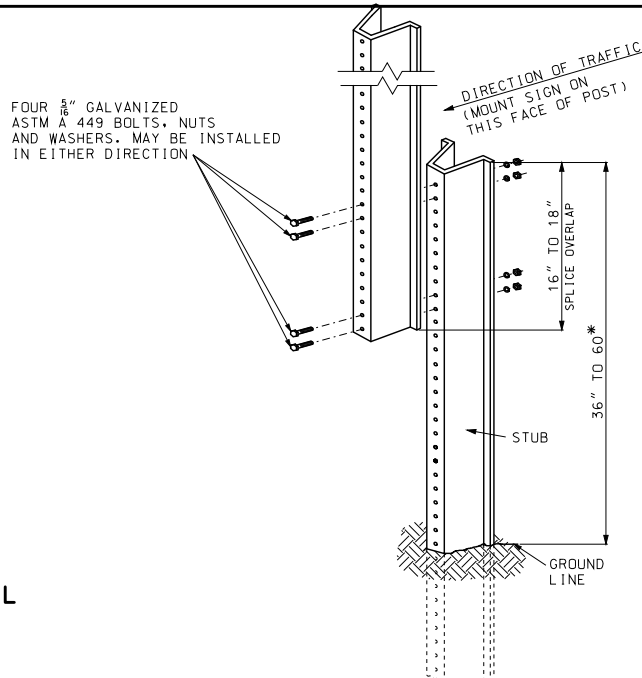
ALL POSTS AND SIGNS SHALL BE INSTALLED AND MAINTAINED IN A PLUMB POSITION.

CONSTRUCTION SIGNS SHALL NOT BE LOCATED ON SIDEWALKS, BICYCLE LANES, OR AREAS DESIGNATED FOR PEDESTRIAN OR BICYCLE TRAFFIC.

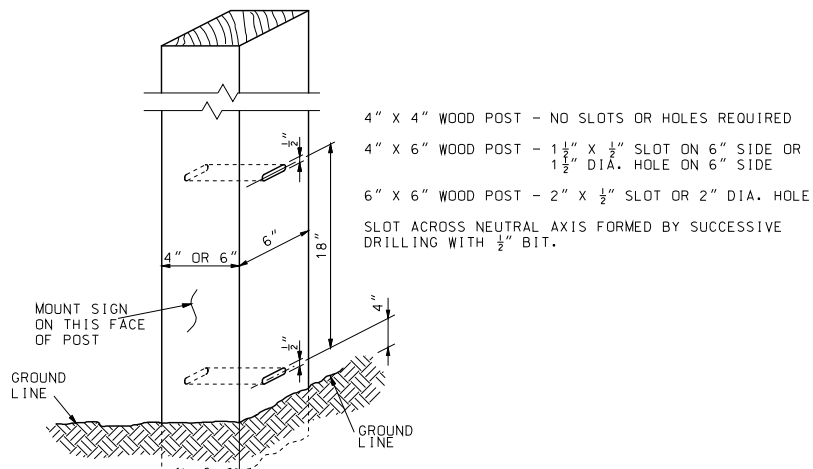
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	
TEMPORARY TRAFFIC CONTROL DEVICES SIGN MOUNTING REQUIREMENTS	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	616.10AT
SHEET NO. 1 OF 9	



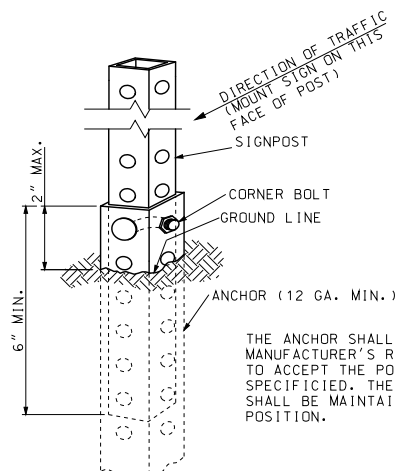
U-CHANNEL POST DETAIL



OPTIONAL U-CHANNEL POST DETAIL



WOOD POST DETAIL



PERFORATED SQUARE STEEL TUBE POST DETAIL

SIGN AREA (SQ.FT.)	POST TYPE		
	U-CHANNEL	WOOD	PERFORATED SQUARE STEEL TUBING
≤ 10	1 - 3.0 LB./FT.*	1 - 4" X 4"*	1 - 2" 12 GA.*
> 10 ≤ 16	2 - 3.0 LB./FT.	2 - 4" X 4"* 1 - 4" X 6"*	2 - 2" 12 GA. 1 - 2½" 12 GA.
> 16 ≤ 24	2 - 3.0 LB./FT.	2 - 4" X 6"	3 - 2" 12 GA.**
> 24 ≤ 30	3 - 3.0 LB./FT.	2 - 4" X 6"	N/A
> 30 ≤ 50	N/A	2 - 6" X 6"	N/A

* SIGNS GREATER THAN 4 FEET IN WIDTH, EXCEPT DIAMOND SHAPE SIGNS, REQUIRE TWO POSTS.

** REQUIRES SLIP BASE PER MANUFACTURER'S RECOMMENDATION.

USE OF SPLICE IS OPTIONAL.

SPLICE OVERLAP SHALL BE POSITION ENTIRELY BETWEEN GROUND LINE AND 18" ABOVE GROUND LINE OR BETWEEN 18" AND 60" ABOVE GROUND LINE.

* IF A PLAQUE IS USED, NEITHER THE SIGN NOR PLAQUE SHALL BE POSITIONED WITHIN THE SPLICE OVERLAP AREA.

ONLY ONE SPLICE WILL BE ALLOWED PER POST.

THE SIGN POST MAY BE ATTACHED TO THE ANCHOR WITH A CORNER BOLT OR STRAIGHT BOLT PER MANUFACTURER'S SPECIFICATION.

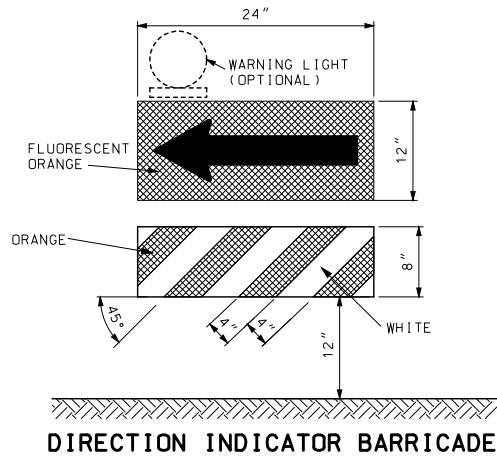
GENERAL NOTES:

ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 3 FEET.

AT THE ENGINEER DISCRETION A FLUORESCENT PAINT SHALL BE APPLIED HEAVILY TO BOTH SIDES OF U-CHANNEL POST STUB FOR A LENGTH OF AT LEAST 6 INCHES BELOW THE TOP OF THE STUB.

<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>		<p>TEMPORARY TRAFFIC CONTROL DEVICES POST INSTALLATION DETAILS</p>	
<p>DATE EFFECTIVE: 01/01/2017</p> <p>DATE PREPARED: 10/28/2016</p>		<p>616.10AT</p>	
<p>SHEET NO. 2 OF 9</p>		<p>SHEET NO. 2 OF 9</p>	

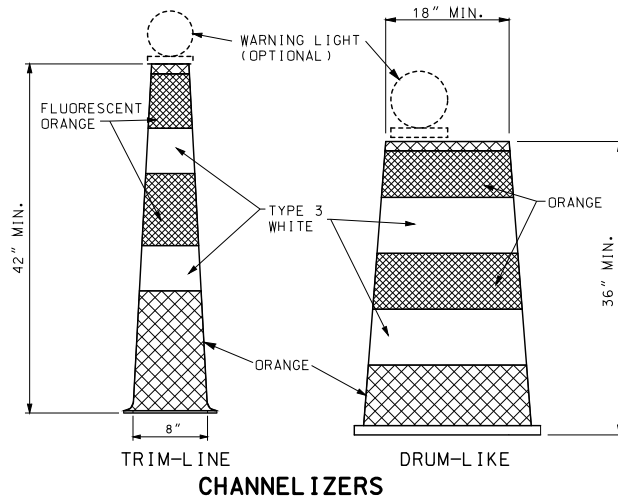
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



VERTICAL DIMENSIONS DO NOT INCLUDE PROJECTIONS DESIGNED FOR EASE OF HANDLING.

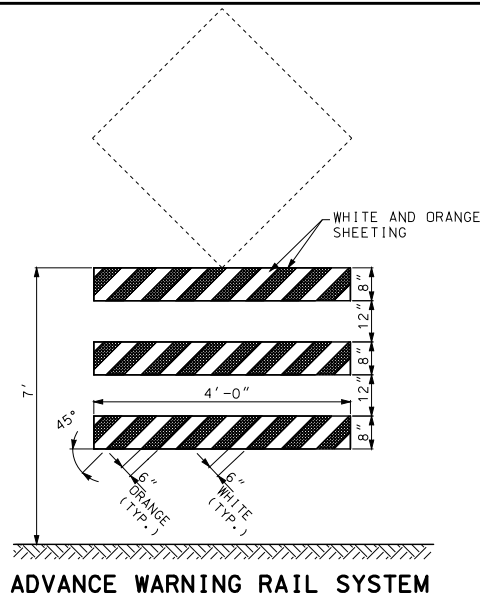
DIRECTION INDICATOR BARRICADES SHALL NOT BE USED IN SHIFTING TAPERS UNLESS SHOWN ON THE PLANS.

THE PANELS SHALL BE SECURELY ATTACHED TO A SUPPORT THAT IS PORTABLE, CAPABLE OF REMAINING UPRIGHT AND ENTIRELY FREE STANDING.



REFLECTIVE SHEETING APPLIED TO CHANNELIZERS SHALL BE REBOUNDABLE MEETING ASTM D 4956.

STRIPES ON TRIM-LINE CHANNELIZERS SHALL BE 6" TO 8".
STRIPES ON DRUM-LIKE CHANNELIZERS SHALL BE 4" TO 6".

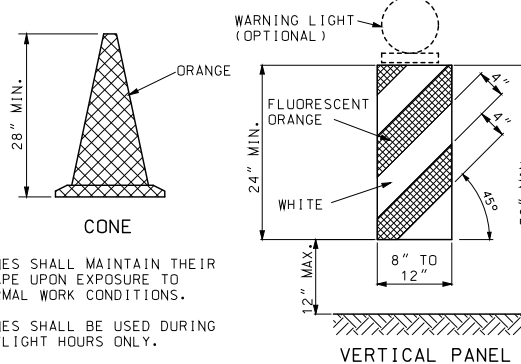


MAXIMUM WEIGHT OF SIGN SHALL NOT EXCEED 25 LBS.

THE SIGN AND RAIL SYSTEM MAY BE MOUNTED AS TWO SEPARATE CRASHWORTHY DEVICES. THE RAIL SYSTEM SHALL BE LOCATED DIRECTLY IN FRONT OF THE SIGN WITH 7 TO 10 FEET SEPARATING THE TWO DEVICES.

WHERE MARKING IS NOT PROVIDED ON THE BACKSIDE, STRIPS OF 3" WIDE MODOT TYPE 7 ORANGE SHEETING MAY BE APPLIED TO THE ENDS OF EACH RAIL TO HELP DELINEATE THE DEVICE.

WHITE AND ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.3.



CONES SHALL MAINTAIN THEIR SHAPE UPON EXPOSURE TO NORMAL WORK CONDITIONS.

CONES SHALL BE USED DURING DAYLIGHT HOURS ONLY.

VERTICAL PANELS SHALL BE SECURELY ATTACHED TO A SUPPORT THAT IS PORTABLE, CAPABLE OF REMAINING UPRIGHT AND ENTIRELY FREE STANDING.

GENERAL NOTES:

FLUORESCENT ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.3.

BALLAST FOR TRAFFIC CONTROL DEVICES SHALL CONFORM TO MANUFACTURERS' RECOMMENDATION FOR FIELD CONDITIONS WHEN APPLICABLE.

WHITE AND ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.2.

IF USED, THE WARNING LIGHT UNIT AND BATTERY COMPARTMENT SHALL BE FURNISHED BY THE DEVICE MANUFACTURER OR OTHERWISE MEET THE MANUFACTURER'S RECOMMENDATIONS FOR DESIGN AND WILL BE REQUIRED ON ALL DEVICES IN THE SERIES.

WARNING LIGHTS SHALL BE IN ACCORDANCE WITH SEC 1063.5.

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE DRUM-LIKE CHANNELIZERS IN LIEU OF TRIM-LINE CHANNELIZERS TO PROVIDE LONGITUDINAL CHANNELIZATION WITHIN THE ACTIVITY AREA WHERE NO RAMPS, INTERSECTIONS OR LIMITED LATERAL CLEARANCE EXISTS.

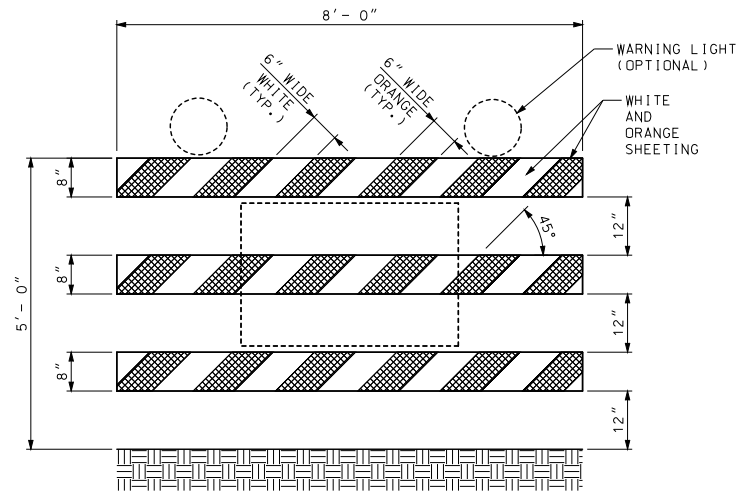
UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE DIRECTION INDICATOR BARRICADES IN LIEU OF TRIM-LINE CHANNELIZERS IN MERGING TAPERS.

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE VERTICAL PANELS IN LIEU OF TRIM-LINE CHANNELIZERS TO PROVIDE LONGITUDINAL CHANNELIZATION WITHIN THE ACTIVITY AREA.

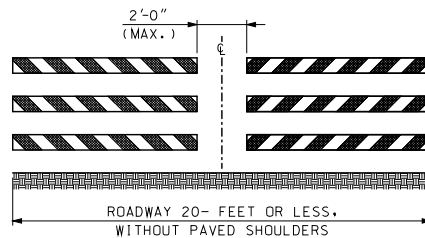
UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE CONES IN LIEU OF TRIM-LINE CHANNELIZERS DURING DAYTIME OPERATIONS ON MINOR ROUTES.

PANEL AND RAIL MARKINGS FOR TRAFFIC DELINEATION SHALL SLOPE DOWNWARD TOWARD THE INTENDED DIRECTION OF TRAVEL. ILLUSTRATIONS SHOWN ARE FOR INSTANCES WHERE TRAFFIC MOVES TO THE LEFT. REVERSE CONFIGURATIONS SHALL BE USED FOR TRAFFIC MOVEMENTS TO THE RIGHT. MARKINGS SHALL ONLY BE APPLIED TO THE FRONT OF EACH RAIL OR PANEL, OR MAY BE APPLIED TO BOTH THE FRONT AND BACK PROVIDING THE MARKING ON THE BACK DOES NOT CONFLICT WITH INTENDED OPPOSING TRAFFIC MOVEMENT.

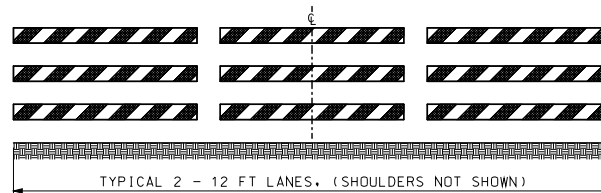
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
TEMPORARY TRAFFIC CONTROL DEVICES CHANNELIZERS AND DIRECTION INDICATOR BARRICADE	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 3 OF 9



EXAMPLE 1

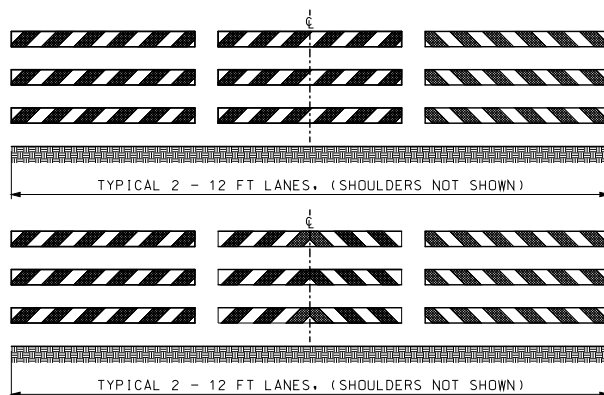


EXAMPLE 2

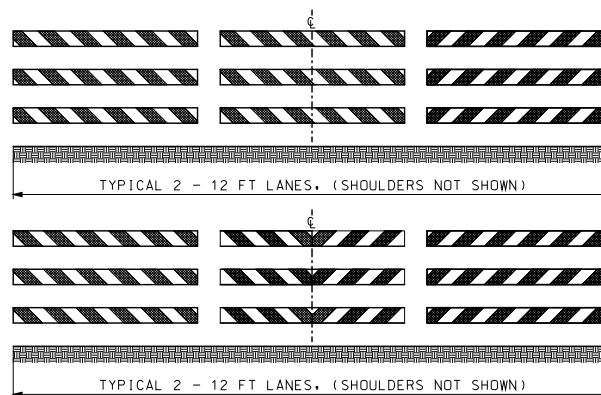


EXAMPLE SHOWS STRIPES SLOPING TO DIRECT VEHICULAR MOVEMENT TOWARD THE LEFT

EXAMPLE 3



EXAMPLE 4



EXAMPLE 5

EXAMPLE 1 - ONE TYPE 3 MOVABLE BARRICADE WILL BE REQUIRED TO COMPLETELY CLOSE EACH 8' OF PAVEMENT. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.

SIGNS SHALL BE LIGHT WEIGHT (ROLL-UP OR PLASTIC) AND SHOULD NOT OBSCURE MORE THAN 50 PERCENT OF THE TOP 2 RAILS OR 33 PERCENT OF ALL THREE RAILS.

WARNING LIGHTS SHALL BE LIGHT WEIGHT (3.3 LBS. OR LESS) OR HAVE BATTERY PACK MOUNTED NO HIGHER THAN 18-INCH AND SHALL NOT COVER ANY PORTION OF THE BARRICADE FACE.

IF WARNING LIGHTS ARE USED, THE LIGHT SHOULD BE INSTALLED ON THE BARRICADES IN THE DIRECTION OF TRAFFIC.

IF SIGNS OR LIGHTS CANNOT MEET THE ABOVE REQUIREMENTS, THEY SHALL BE MOUNTED ON SEPARATE CRASHWORTHY DEVICES AT HEIGHTS SPECIFIED FOR POST MOUNTED SIGNS, LOCATED IN TABLE A ON SHEET 1. THE BARRICADE SHALL BE LOCATED IN FRONT OF THE SIGNS OR LIGHTS WITH 7 TO 10 FEET SEPARATING THE DEVICES.

TYPE 3 MOVABLE BARRICADES SHALL BE ENTIRELY FREE STANDING AND PORTABLE. MARKING SHALL ONLY BE APPLIED TO THE FRONT OF EACH RAIL OR MAY BE APPLIED TO BOTH THE FRONT AND THE BACK OF EACH RAIL PROVIDED THE MARKING ON THE BACK DOES NOT CONFLICT WITH INTENDED OPPOSING TRAFFIC MOVEMENT. WHERE MARKING IS NOT PROVIDED ON THE BACKSIDE, STRIPS OF 3" WIDE ORANGE SHEETING MAY BE APPLIED TO THE ENDS OF EACH RAIL TO HELP DELINEATE THE DEVICE.

WHITE AND ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 104.2.7.3.

EXAMPLE 2 - FOR PAVED ROADWAYS WITH A WIDTH OF 20- FEET OR LESS AND WITHOUT PAVED SHOULDERS, TWO BARRICADES ARE ACCEPTABLE.

EXAMPLE 3 - WHERE BARRICADES EXTEND ENTIRELY ACROSS A ROADWAY, STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH ROAD USERS MUST TURN.

EXAMPLE 4 - WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, STRIPES SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES.

EXAMPLE 5 - WHERE NO TURNS ARE INTENDED, STRIPES POSITIONED TO SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	
<p>TEMPORARY TRAFFIC CONTROL DEVICES TYPE 3 MOVABLE BARRICADE</p>	
<p>DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016</p>	<p>616.10AT</p>
<p>SHEET NO. 4 OF 9</p>	

WARNING SIGNS						
SIGN	SIZE (IN.)	AREA (SQ. FT.)	COLOR		SHEETING	DESCRIPTION
			SYM. LEG. BRD.	BACK GROUND		
SPECIAL	36X36	9.00	BK	FL. OR	R4	FRESH OIL/LOOSE GRAVEL (3)
E05-2	48X36	12.00	BK	FL. OR	R4	EXIT OPEN
E05-2a	48X36	12.00	BK	FL. OR	R4	EXIT CLOSED
W01-1L	48X48	16.00	BK	FL. OR	R4	TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00	BK	FL. OR	R4	TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00	BK	FL. OR	R4	CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00	BK	FL. OR	R4	CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00	BK	FL. OR	R4	REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00	BK	FL. OR	R4	REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00	BK	FL. OR	R4	REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00	BK	FL. OR	R4	REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00	BK	FL. OR	R4	DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS) (2)
W01-4bR	48X48	16.00	BK	FL. OR	R4	DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS) (2)
W01-4cL	48X48	16.00	BK	FL. OR	R4	TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS) (2)
W01-4cR	48X48	16.00	BK	FL. OR	R4	TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS) (2)
W01-6	60X30	12.50	BK	FL. OR	R4	HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00	BK	FL. OR	R4	HORIZONTAL ARROW (SYMBOL ON PERMANENT BARRICADE) (1)
W01-7	60X30	12.50	BK	FL. OR	R4	DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00	BK	FL. OR	R4	DOUBLE HEAD HORIZONTAL ARROW (SYMBOL ON PERMANENT BARRICADE) (1)
W01-8	18X24	3.00	BK	FL. OR	R4	CHEVRON (SYMBOL)
W01-8a	30X36	7.50	BK	FL. OR	R4	CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00	BK	FL. OR	R4	STOP AHEAD (SYMBOL)
W03-2	48X48	16.00	BK	FL. OR	R4	YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00	BK	FL. OR	R4	SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00	BK	FL. OR	R4	BE PREPARED TO STOP
W03-5	48X48	16.00	BK	FL. OR	R4	SPEED LIMIT AHEAD
W04-1L	48X48	16.00	BK	FL. OR	R4	MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00	BK	FL. OR	R4	MERGE (SYMBOL FROM RIGHT)
W04-1a(L)	48X48	16.00	BK	FL. OR	R4	MERGE (ARROW SYMBOL) (3)
W04-1a(R)	48X48	16.00	BK	FL. OR	R4	MERGE (ARROW SYMBOL) (3)
W05-1	48X48	16.00	BK	FL. OR	R4	ROAD/BRIDGE/RAMP NARROWS (4)
W05-3	48X48	16.00	BK	FL. OR	R4	ONE LANE BRIDGE
W05-5	48X48	16.00	BK	FL. OR	R4	NARROW LANES (3)
W06-1	48X48	16.00	BK	FL. OR	R4	DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00	BK	FL. OR	R4	DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00	BK	FL. OR	R4	TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00	BK	FL. OR	R4	NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00	BK	FL. OR	R4	BUMP
W08-2	48X48	16.00	BK	FL. OR	R4	DIP
W08-3	48X48	16.00	BK	FL. OR	R4	PAVEMENT ENDS
W08-4	48X48	16.00	BK	FL. OR	R4	SOFT SHOULDER
W08-5	48X48	16.00	BK	FL. OR	R4	SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00	BK	FL. OR	R4	TRUCK CROSSING WITH FLAGS
W08-6c	48X48	16.00	BK	FL. OR	R4	TRUCK ENTRANCE (3)
W08-7	36X36	9.00	BK	FL. OR	R4	LOOSE GRAVEL
W08-9	48X48	16.00	BK	FL. OR	R4	LOW SHOULDER
W08-11	48X48	16.00	BK	FL. OR	R4	UNEVEN LANES
W08-12	48X48	16.00	BK	FL. OR	R4	NO CENTER LINE
W08-15	48X48	16.00	BK	FL. OR	R4	GROOVED PAVEMENT
W08-15p	30X24	5.00	BK	FL. OR	R4	MOTORCYCLE (PLAQUE)
W08-17(L)	48X48	16.00	BK	FL. OR	R4	SHOULDER DROP-OFF (SYMBOL LEFT)
W08-17(R)	48X48	16.00	BK	FL. OR	R4	SHOULDER DROP OFF (SYMBOL RIGHT) (4)
W08-17p	30X24	5.00	BK	FL. OR	R4	SHOULDER DROP-OFF (PLAQUE)
W10-1	42 RND.	9.62	BK	FL. YL	R4	RAILROAD CROSSING
W12-1	24X24	4.00	BK	FL. OR	R4	DOUBLE DOWN ARROW (SYMBOL)
W12-2	48X48	16.00	BK	FL. OR	R4	LOW CLEARANCE (SYMBOL)
W12-2x	24X18	3.00	BK	FL. OR	R4	LOW CLEARANCE (PLAQUE) (3)
W12-2a	84X24	14.00	BK	FL. OR	R4	OVERHEAD LOW CLEARANCE (FEET AND INCHES) (3)
SPECIAL	120X60	50.00	BK	FL. OR	R4	LOW CLEARANCE XX FT XX IN XX MILES AHEAD (3)
SPECIAL	120X60	50.00	BK	FL. OR	R4	WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD (3)
W13-1	30X30	6.25	BK	FL. OR	R4	ADVISORY SPEED (PLAQUE)
W16-2	30X24	5.00	BK	FL. OR	R4	XXX FEET (PLAQUE)
W16-3	30X24	5.00	BK	FL. OR	R4	X MILE (PLAQUE)
W20-1	48X48	16.00	BK	FL. OR	R4	ROAD/BRIDGE/RAMP WORK AHEAD (4)
W20-2	48X48	16.00	BK	FL. OR	R4	DETOUR AHEAD
W20-3	48X48	16.00	BK	FL. OR	R4	ROAD CLOSED AHEAD

- (1) SIGN DEPICTION, ARROW, BORDERS AND SPACING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (2) REFER TO THE LATEST EDITION OF MUTCD PART VI BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA FOR SIGN DEPICTION, ARROW, BORDERS AND SPACING SHALL CONFORM TO THE GUIDELINES SET FORTH IN THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (3) ARROW, BORDERS AND SPACING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (4) USE OF A SUPPLEMENTAL PLATE FOR LINE 1 IS ACCEPTABLE.
- (5) PLAQUE AND APPLICABLE REGULATORY SIGN MAY BE MANUFACTURED AS ONE SIGN.
- (6) R4 REFER TO SEC 1042.2.7.3.

GENERAL NOTES:

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA, UNLESS SPECIFIED OTHERWISE.

SIGN DIMENSIONS SHOWN ARE MINIMUM. NO ADDITIONAL PAYMENT WILL BE MADE IF CONTRACTORS USE LARGER SIGNS.

NO ADDITIONAL PAYMENT WILL BE MADE FOR PLATES.

ALL PLAQUES SHALL HAVE A BORDER. PLATES SHALL NOT HAVE A BORDER.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	TEMPORARY TRAFFIC CONTROL DEVICES WARNING SIGNS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	616.10AT
SHEET NO. 6 OF 9	

WARNING SIGNS						
SIGN	SIZE (IN.)	AREA (SQ. FT.)	COLOR		SHEETING	DESCRIPTION
			SYM. LEG. BKG.	BACK GROUND		
W020-3	48X48	16.00	BK	FL. OR	R4	ROAD CLOSED AHEAD
W020-4	48X48	16.00	BK	FL. OR	R4	ONE LANE ROAD AHEAD
W020-5	48X48	16.00	BK	FL. OR	R4	RIGHT/CENTER/LEFT LANE CLOSED AHEAD (4)
W020-5a	48X48	16.00	BK	FL. OR	R4	2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD (4)
SPECIAL W020-6a	48X48	16.00	BK	FL. OR	R4	RIGHT/CENTER/LEFT LANE CLOSED (3)(4)
W020-7	48X48	16.00	BK	FL. OR	R4	FLAGGER (SYMBOL) WITH FLAGS
W021-2	36X36	9.00	BK	FL. OR	R4	FRESH OIL
SPECIAL W021-5	48X48	16.00	BK	FL. OR	R4	SHOULDER WORK AHEAD (3)
W021-5a	48X48	16.00	BK	FL. OR	R4	RIGHT/LEFT SHOULDER CLOSED
W021-5b	48X48	16.00	BK	FL. OR	R4	RIGHT/LEFT SHOULDER CLOSED AHEAD
W022-1	48X48	16.00	BK	FL. OR	R4	BLASTING ZONE AHEAD
W022-2	42X36	10.50	BK	FL. OR	R4	TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50	BK	FL. OR	R4	END BLASTING ZONE
SPECIAL W022-6e	21X15	2.19	BK	FL. OR	R4	WET PAINT (ARROW PIVOTS) (3)
GUIDE SIGNS						
E05-1	36X48	12.00	BK	FL. OR	R4	CORE EXIT (3)
G020-1	60X24	10.00	BK	FL. OR	R4	ROAD WORK NEXT XX MILES
G020-2	48X24	8.00	BK	FL. OR	R4	END ROAD WORK
G020-4	36X18	4.50	BK	FL. OR	R4	PILOT CAR FOLLOW ME
SPECIAL	42X30	8.75	BK	FL. OR	R4	PLEASE WAIT FOR PILOT CAR (3)
G020-5aP	36X24	6.00	BK	FL. OR	R4	WORK ZONE (PLAQUE) (3) (5)
M04-8a	24X18	3.00	BK	FL. OR	R4	END DETOUR
M04-9L	48X36	12.00	BK	FL. OR	R4	DETOUR (LEFT ARROW)
M04-9R	48X36	12.00	BK	FL. OR	R4	DETOUR (RIGHT ARROW)
M04-10L	48X18	6.00	BK	FL. OR	R4	DETOUR (ARROW LEFT)
M04-10R	48X18	6.00	BK	FL. OR	R4	DETOUR (ARROW RIGHT)
REGULATORY SIGNS						
R1-1	48X48	13.25	WH	RD	R2	STOP
R1-2	48 TR1.	6.93	RD	WH	R2	YIELD
R1-2a	36X36	9.00	BK	WH	R2	TO ONCOMING TRAFFIC (PLAQUE)
R1-3p	20X9	1.25	WH	RD	R2	ALL WAY (PLAQUE)
R2-1	36X48	12.00	BK	WH	R2	SPEED LIMIT XX
R3-1	48X48	16.00	BK/RD	WH	R2	NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00	BK/RD	WH	R2	NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00	BK	WH	R2	NO TURNS
R3-4	48X48	16.00	BK/RD	WH	R2	NO U-TURN (SYMBOL)
R3-7L	30X30	6.25	BK	WH	R2	LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25	BK	WH	R2	RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00	BK	WH	R2	DO NOT PASS
R4-2	36X48	12.00	BK	WH	R2	PASS WITH CARE
R4-7a	36X48	12.00	BK	WH	R2	KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00	BK	WH	R2	KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25	RD	WH	R2	DO NOT ENTER
R5-1a	36X24	6.00	WH	RD	R2	WRONG WAY
R6-1L	48X18	6.00	BK	WH	R2	ONE WAY ARROW (LEFT)
R6-1R	48X18	6.00	BK	WH	R2	ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00	BK	WH	R2	ONE WAY (LEFT)
R6-2R	24X30	5.00	BK	WH	R2	ONE WAY (RIGHT)
R10-6	24X36	6.00	BK	WH	R2	STOP HERE ON RED (45° ARROW)
R11-2	48X30	10.00	BK	WH	R2	ROAD CLOSED
R11-3a	60X30	12.50	BK	WH	R2	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	BK	WH	R2	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00	BK	WH/ FL. OR	R2	FINE SIGN (3)
CONST-3X	56X12	4.67	BK	WH	R2	SPEEDING/PASSING (PLATE) (3)
SPECIAL SIGNS						
CONST-7-72	72X36	18.00	WH/BL	BK/FL. OR	R2	RATE OUR WORK ZONE
CONST-7-48	48X24	8.00	WH/BL	BK/FL. OR	R2	RATE OUR WORK ZONE

- (1) SIGN DEPICTION, ARROW, BORDERS AND SPACING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (2) REFER TO THE LATEST EDITION OF MUTCD PART VI BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA FOR SIGN DEPICTION, ARROW, BORDERS AND SPACING SHALL CONFORM TO THE GUIDELINES SET FORTH IN THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (3) ARROW, BORDERS AND SPACING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (4) USE OF A SUPPLEMENTAL PLATE FOR LINE 1 IS ACCEPTABLE.
- (5) PLAQUE AND APPLICABLE REGULATORY SIGN MAY BE MANUFACTURED AS ONE SIGN.
- (6) R2 REFER TO SEC 1042.2.7.2.
- (7) R4 REFER TO SEC 1042.2.7.3.

GENERAL NOTES:

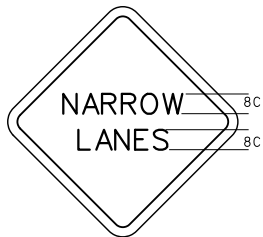
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA, UNLESS SPECIFIED OTHERWISE.

SIGN DIMENSIONS SHOWN ARE MINIMUM. NO ADDITIONAL PAYMENT WILL BE MADE IF CONTRACTORS USE LARGER SIGNS.

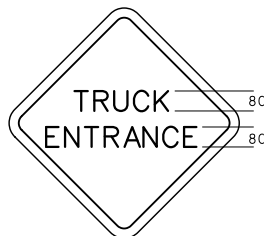
NO ADDITIONAL PAYMENT WILL BE MADE FOR PLATES.

ALL PLAQUES SHALL HAVE A BORDER. PLATES SHALL NOT HAVE A BORDER.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	TEMPORARY TRAFFIC CONTROL DEVICES WARNING, GUIDE AND REGULATORY SIGNS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	616.10AT SHEET NO. 7 OF 9



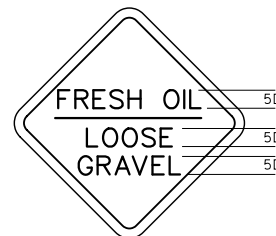
W05-5 (3)



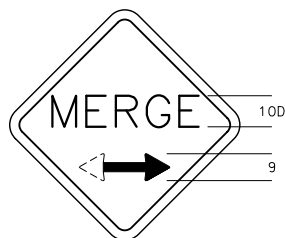
W08-6c (3)



W012-2x (3)



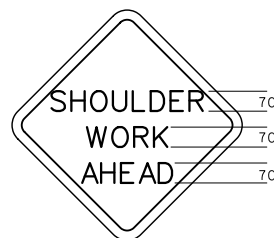
SPECIAL (3)



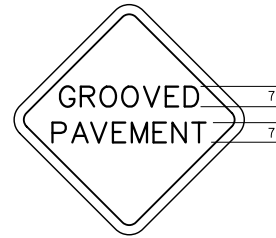
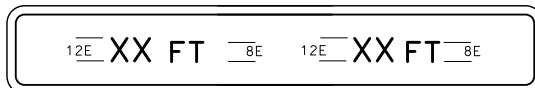
W04-1a



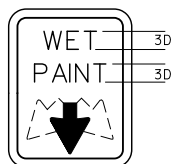
W020-6a (3)(4)



W021-5 (3)

W08-15(3)
W08-15p

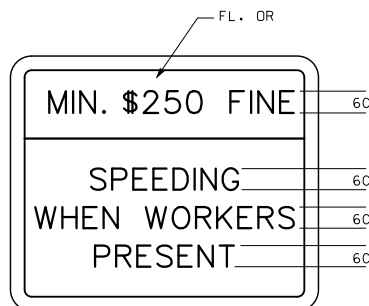
W012-2a (3)



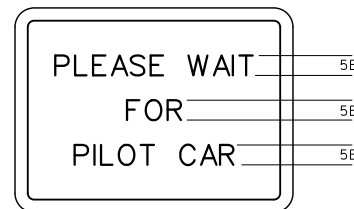
W022-6e (3)



G020-5aP (3)



CONST-3A (3)



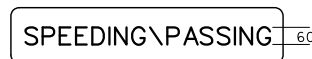
SPECIAL (3)



SPECIAL (3)

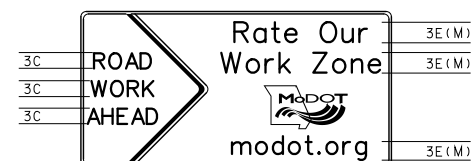


SPECIAL (3)



CONST-3X (3)

- (1) SIGN DEPICTION, ARROW, BORDERS AND SPACING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (2) REFER TO THE LATEST EDITION OF MUTCD PART VI BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA FOR SIGN DEPICTION, ARROW, BORDERS AND SPACING SHALL CONFORM TO THE GUIDELINES SET FORTH IN THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (3) ARROW, BORDERS AND SPACING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA.
- (4) USE OF A SUPPLEMENTAL PLATE FOR LINE 1 IS ACCEPTABLE.
- (5) PLAQUE AND APPLICABLE REGULATORY SIGN MAY BE MANUFACTURED AS ONE SIGN.

CONST-7-72
CONST-7-48

GENERAL NOTES:

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" BY THE U.S. DEPARTMENT OF TRANSPORTATION - FHWA UNLESS SPECIFIED OTHERWISE.

SIGN DIMENSIONS SHOWN ARE MINIMUM. NO ADDITIONAL PAYMENT WILL BE MADE IF CONTRACTORS USE LARGER SIGNS.

NO ADDITIONAL PAYMENT WILL BE MADE FOR PLATES.

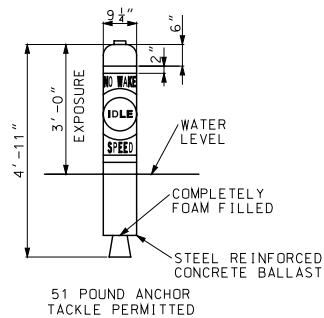
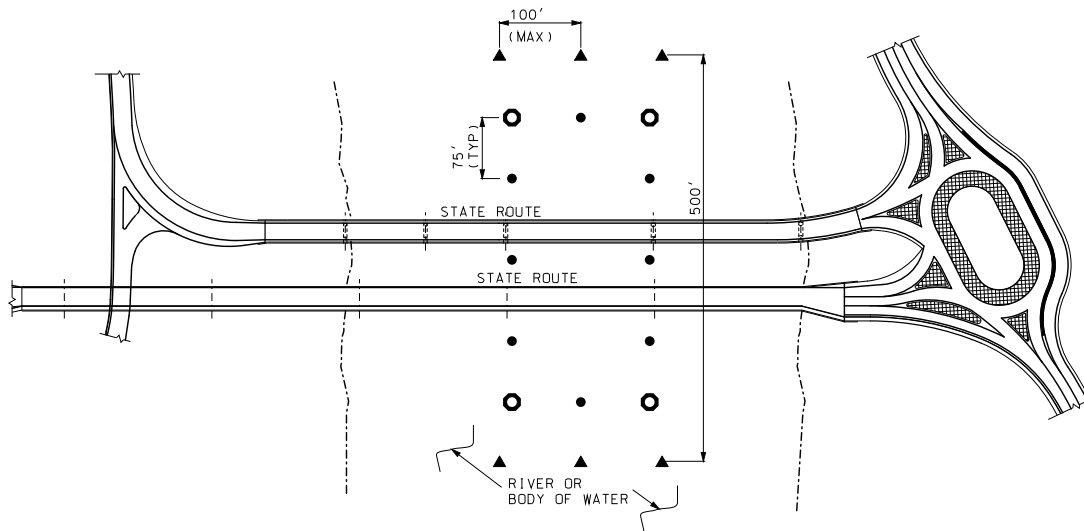
ALL PLAQUES SHALL HAVE A BORDER. PLATES SHALL NOT HAVE A BORDER.

LETTER DIMENSIONS SHALL BE AS SHOWN.

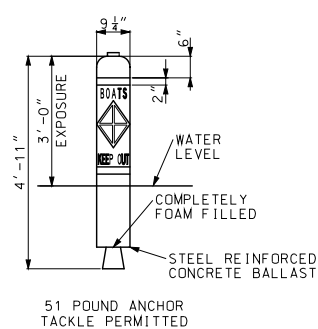
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
TEMPORARY TRAFFIC CONTROL DEVICES	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 8 OF 9

LEGEND

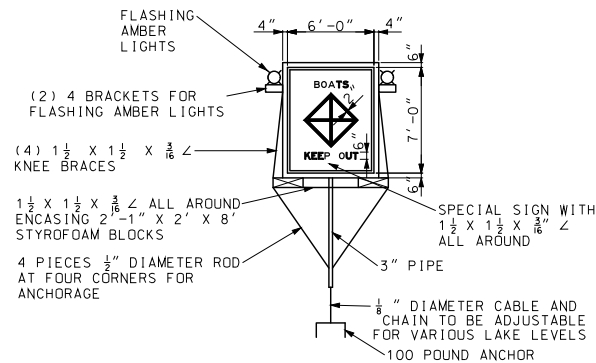
- - BOATS KEEP OUT (SIGN)
- - BOATS KEEP OUT (BUOY)
- ▲ - NO WAKE (BUOY)



RESTRICTED AREA BUOY
("NO WAKE")
(6 REQUIRED - ROADWAY ITEM)



CONTROLLED AREA BUOY
("BOATS KEEP OUT")
(8 REQUIRED - ROADWAY ITEM)



SPECIAL SIGN ASSEMBLY
("BOATS KEEP OUT")
(4 REQUIRED - ROADWAY ITEM)

GENERAL NOTES:

INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSOURI STATE WATER PATROL

THE DETAILS SHOWN ARE FOR BIDDING PURPOSES ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL AND REMOVE

SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS

THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICIPATED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO BOTTOM OF LAKE.

SIGNS SHALL BE DOUBLE FACED

EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR

ALL LETTERING TO BE BLACK IN COLOR IN BLOCK FORM.

FOR OTHER INFORMATION AND LOCATION OF SIGNS AND BUOYS SEE SPECIAL PROVISIONS.

SCHEMATIC SHOWN IS FOR ONE NAVIGATIONAL SPAN. FOR WORK ON OTHER SPANS MOVE APPROPRIATE SIGNS WITH NO DIRECT PAY

COLOR:
BACKGROUND - WHITE
LEGEND - BLACK
2" REFLECTIVE BAND AND SYMBOL - INTERNATIONAL ORANGE

<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	
<p>TEMPORARY TRAFFIC CONTROL DEVICES TRAFFIC CONTROL FOR WATERWAYS</p>	
<p>DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016</p>	<p>616.10AT</p>
<p>SHEET NO. 9 OF 9</p>	

	CROSS SECTION	CONDITION		TREATMENT	SIGN		
		DIFFERENTIAL	TIME		MAINLINE (1)	SIDE ROAD (2)	
EDGE DROP-OFF		PAVEMENT EDGE DIFFERENTIAL > 2" TO ≤ 3"	NON-WORKING HOURS	WEDGE SLOPE TO 1V:1H OR FLATTER	 W08-17 (3)(4) W08-17p (6)	NO SIGNS REQUIRED	<p>(1) SIGNS SHALL BE SPACED AT APPROXIMATELY ONE MILE INTERVALS AND LOCATED WITHIN 150 FT. BEYOND ANY STATE ROADS. WHEN A SIGN PLACED AT THE ONE MILE INTERVAL FALLS WITHIN 1/2 MILE OF A SIGN PLACED AFTER AN INTERSECTION, THE SIGN PLACED AT THE 1/2 MILE INTERVAL MAY BE OMITTED. WHEN SHOULDER DROP-OFF SIGNS WITH UNEVEN LANES ARE BOTH SPECIFIED, ALTERNATING SIGN MESSAGES SHALL BE USED AT 1 MILE SPACINGS.</p> <p>(2) ON SIDE ROADS WITH POSTED SPEED OF 45 MPH OR GREATER, SIGNS SHALL BE PLACED 150 FT. IN ADVANCE OF INTERSECTION WITH MAINLINE.</p> <p>(3) SIGNS SHALL BE LOCATED ON THE SIDE OF THE ROADWAY WHERE THE PAVEMENT EDGE DIFFERENTIAL EXISTS, ON TWO-LANE UNDIVIDED HIGHWAYS, BACK-TO-BACK SIGNS SHALL BE PROVIDED ON THE SIDE OF THE ROADWAY, WHERE THE PAVEMENT EDGE DIFFERENTIAL EXISTS. "BACK TO BACK" SIGNS SHALL BE SEPARATED BY 7-10 FEET.</p> <p>(4) SIGNS TO REMAIN VISIBLE UNTIL SHOULDER SHAPING IS COMPLETE.</p> <p>(5) SIGNS SHALL BE LOCATED ON RIGHT SIDE OF NON-DIVIDED HIGHWAYS AND ON BOTH SIDES OF DIVIDED HIGHWAYS WHERE A LANE LINE DIFFERENTIAL EXISTS.</p> <p>(6) WHEN THE SHOULDER DROP-OFF SIGNS ARE IN PLACE FOR GREATER THAN THREE DAYS, THE SHOULDER DROP-OFF PLAQUE SHOULD BE USED IN ADDITION WITH THE SHOULDER DROP-OFF SIGN.</p> <p>LEGEND</p> <p> - RIGID PAVEMENT</p> <p> - FLEXIBLE PAVEMENT</p> <p> - ALL PAVEMENT TYPES</p> <p>GENERAL NOTES:</p> <p>SIGNS SHALL BE VISIBLE TO TRAFFIC ONLY WHEN AND WHERE CONDITIONS EXIST.</p> <p>FOR ADDITIONAL SIGN SPACING AND DETAILS SEE STANDARD PLAN 620.10.</p>
			WORKING HOURS	NO EDGE TREATMENT REQUIRED			
		PAVEMENT EDGE DIFFERENTIAL > 2" TO ≤ 3"	NON-WORKING HOURS	WEDGE SLOPE TO 1V:1H OR FLATTER	 W08-17 (3)(4) W08-17p (6)	NO SIGNS REQUIRED	
			WORKING HOURS	NO EDGE TREATMENT REQUIRED			
		PAVEMENT EDGE DIFFERENTIAL > 3"	NON-WORKING HOURS	WEDGE SLOPE TO 1V:3H OR FLATTER	 W08-17 (3)(4) W08-17p (6)	 W08-1 (3)	
			WORKING HOURS	DELINEATE DIFFERENTIAL WITH CHANNELIZERS			
	 <p>* FOR DISTANCES LESS THAN 2', SEE STANDARD PLAN 617.20.</p> <p>** FOR DISTANCES LESS THAN 3', SEE STANDARD PLAN 617.20.</p>	ANY PAVEMENT EDGE OR LANE LINE DIFFERENTIAL	NON-WORKING AND WORKING HOURS WHERE PLANS REQUIRE ADJACENT LANE CLOSURE WITH CHANNELIZATION OR PARTIAL LANE CLOSURE WITH BARRIER.	NO EDGE TREATMENT REQUIRED	NO SIGNS REQUIRED	NO SIGNS REQUIRED	
LANE DIFFERENTIAL		LANE LINE DIFFERENTIAL ≤ 2"	NON-WORKING AND WORKING HOURS	NO EDGE TREATMENT REQUIRED	 W08-11 (5)	NO SIGNS REQUIRED	<p>DATE EFFECTIVE: 10/01/2015</p> <p>DATE PREPARED: 10/28/2016</p> <p>619.10H</p> <p>SHEET NO. 1 OF 1</p>
		LANE LINE DIFFERENTIAL > 2"	NON-WORKING AND WORKING HOURS WHERE LANES OPEN TO TRAFFIC	WEDGE SLOPE TO 1V:3H OR FLATTER	 W08-11 (5)	 W08-1	
			NON-WORKING AND WORKING HOURS WHERE LANE CLOSED TO TRAFFIC	DELINEATE DIFFERENTIAL WITH CHANNELIZERS			

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

STATE OF MISSOURI

ERIC E. SCHROETER

NUMBER PE-28411

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

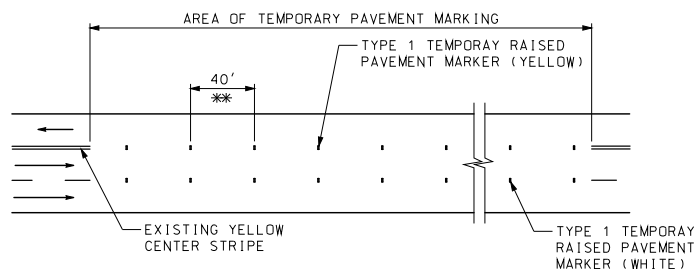
PAVEMENT EDGE TREATMENT

DATE EFFECTIVE: 10/01/2015

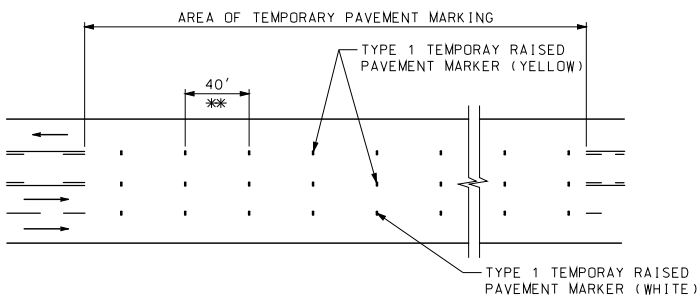
DATE PREPARED: 10/28/2016

619.10H

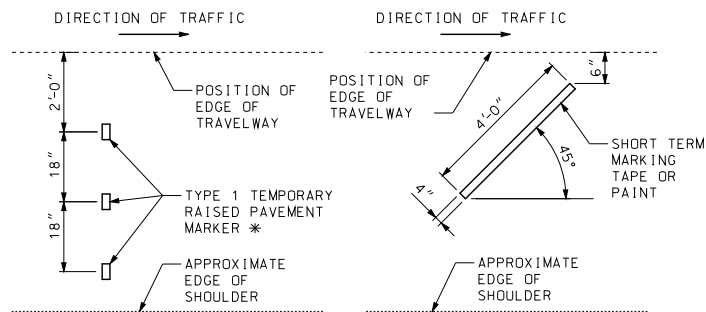
SHEET NO. 1 OF 1



TWO-WAY MARKING WITH DOUBLE YELLOW PROHIBITED PASSING MARKING SECTION



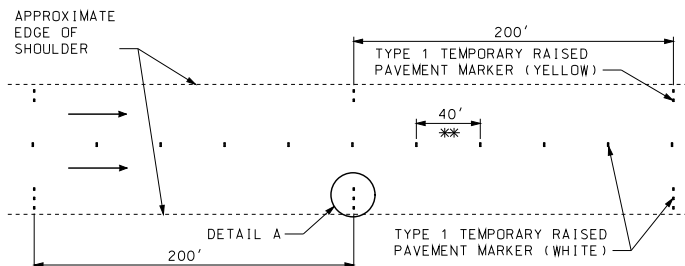
TWO-WAY WITH LEFT-TURN LANE MARKING SECTION



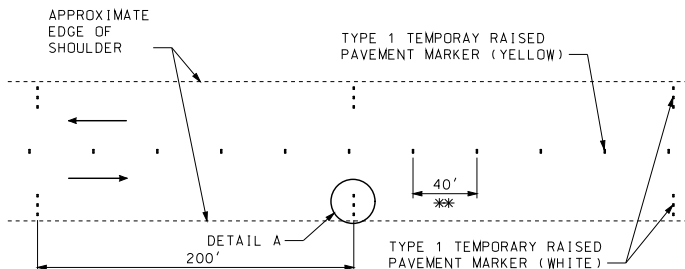
DETAIL A

* THREE TYPE 1 TEMPORARY RAISED PAVEMENT MARKERS SHALL BE USED IF SHOULDER IS 6' OR WIDER. OTHERWISE, USE TWO TYPE 1 TEMPORARY RAISED PAVEMENT MARKERS.

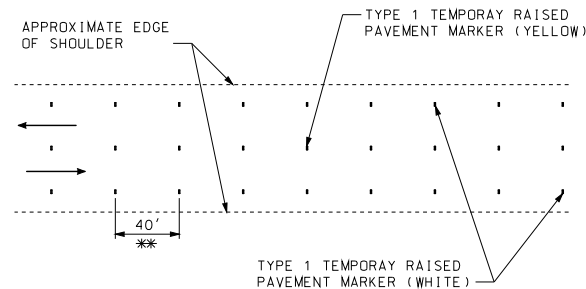
OPTIONAL DETAIL A FOR INTERMEDIATE LIFT



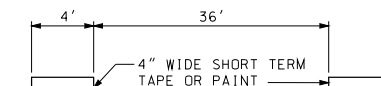
EDGE LINES AND LANE LINES ON MULTILANE DIVIDED SECTIONS



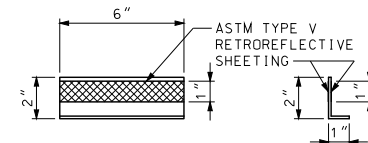
EDGE LINES AND CENTERLINE ON TWO-WAY SECTIONS WITH PAVED SHOULDERS GREATER THAN 4 FEET WIDE



EDGE LINES AND CENTERLINE ON TWO-WAY SECTIONS WITH PAVED SHOULDERS 4 FEET WIDE OR LESS, AGGREGATE OR EARTH SHOULDERS OR NO SHOULDERS



*** * * OPTIONAL TEMPORARY PAVEMENT MARKING DETAIL FOR INTERMEDIATE LIFTS**



ELEVATION SIDE TYPICAL TYPE 1 TEMPORARY RAISED PAVEMENT MARKER DETAIL

GENERAL NOTES:

TEMPORARY PAVEMENT MARKING IS REQUIRED WHEN 200 CONSECUTIVE LINEAR FEET OR MORE OF PERMANENT PAVEMENT MARKING HAS BEEN OBLITERATED, OR AS DIRECTED BY THE ENGINEER.

TEMPORARY RAISED PAVEMENT MARKERS (TRPMS), OR THE OPTIONAL 4"X 4' SHORT TERM TAPE OR PAINT, WHEN ALLOWED, SHALL BE MAINTAINED IN PLACE AND RETROREFLECTIVE UNTIL THE PERMANENT PAVEMENT MARKINGS ARE INSTALLED. MISSING OR NON-REFLECTIVE MARKINGS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE COMMISSION WHEN 10% OR MORE ARE DEFICIENT WITHIN ONE MILE OR WHEN 4 OR MORE CONSECUTIVE MARKINGS ARE DEFICIENT.

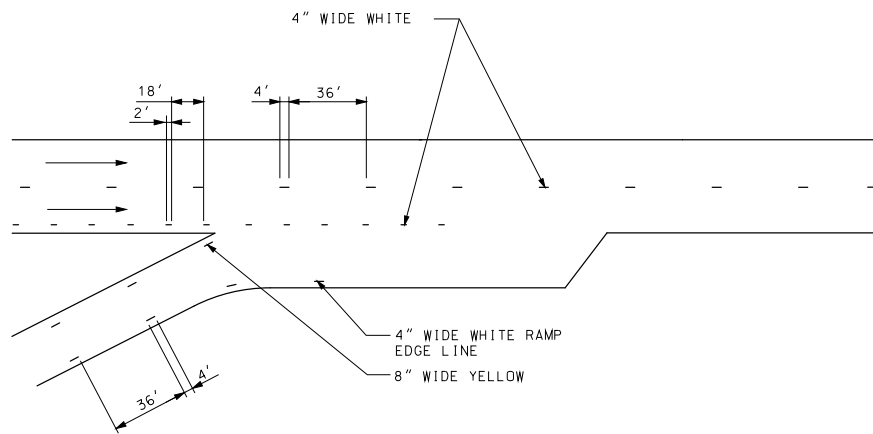
FOR INTERMEDIATE LIFTS, 4"X 4' SHORT TERM TAPE OR TEMPORARY PAINT MAY BE USED IN LIEU OF TRPMS.

TRPMS USED ON INTERMEDIATE LIFTS SHALL BE REMOVED PRIOR TO PLACEMENT OF THE NEXT LIFT.

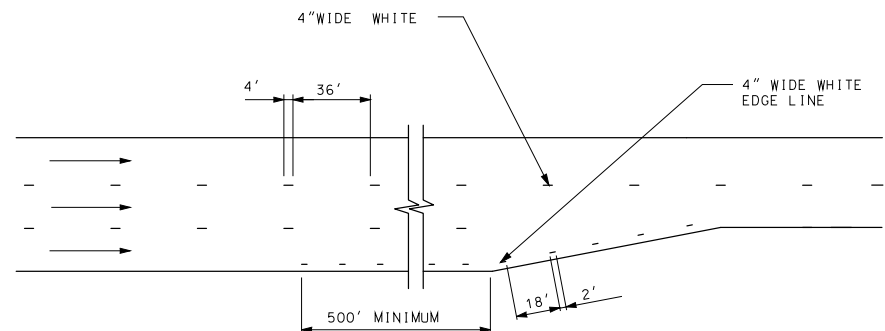
ALL TEMPORARY MARKINGS SHALL BE REMOVED BY THE CONTRACTOR AFTER INSTALLATION OF PERMANENT MARKINGS, EXCEPT WHEN PERMANENT MARKINGS ARE TO BE INSTALLED BY OTHERS.

TEMPORARY TAPE SHALL NOT BE USED FOR TEMPORARY MARKING ON THE FINAL SURFACE EXCEPT WHEN SPECIFIED IN THE PLANS.

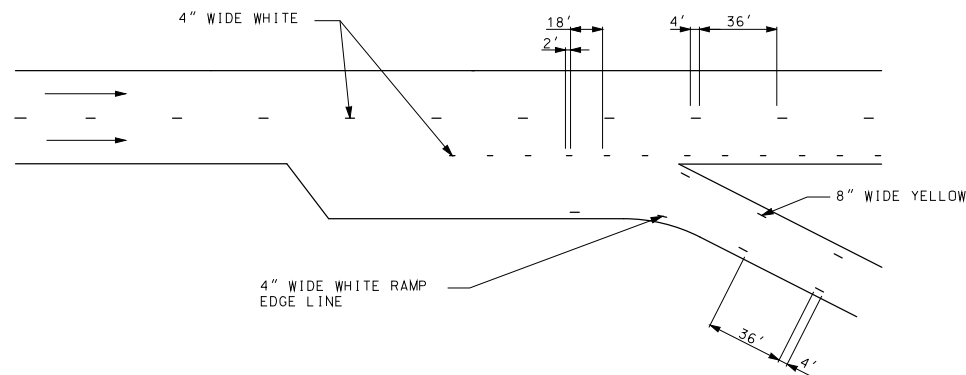
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	TEMPORARY PAVEMENT MARKING TEMPORARY PAVEMENT MARKING
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	620.10E
SHEET NO. 1 OF 5	



ENTRANCE RAMP



LANE TRANSITION



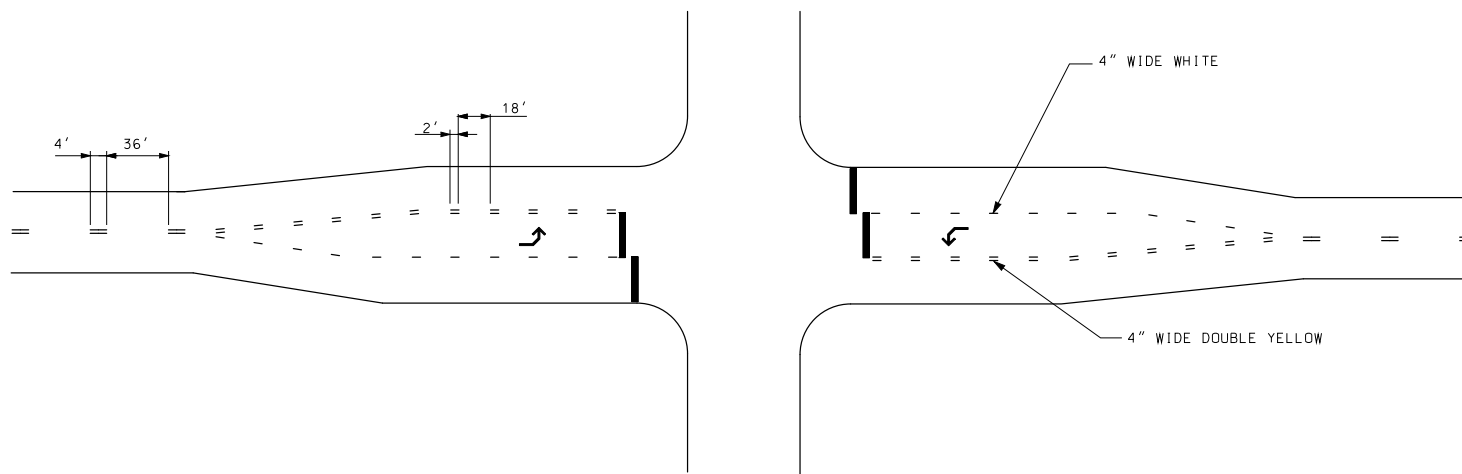
EXIT RAMP

GENERAL NOTES:

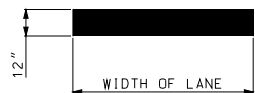
TEMPORARY PAVEMENT MARKING IN INTERSECTIONS, RAMPS, GORES AND OTHER TRANSITION AREAS USE AN INTERMITTENT MARKING OF 2 FEET LONG AT A CYCLE OF 20 FEET.

LIMITS OF TEMPORARY GORE MARKING ARE THE SAME AS THE EXISTING GORE LINES.

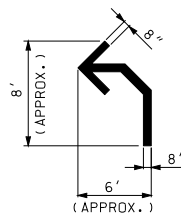
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>TEMPORARY PAVEMENT MARKING LANE TRANSITION AND RAMP AREAS</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	<p>620.10E</p>
SHEET NO. 2 OF 5	



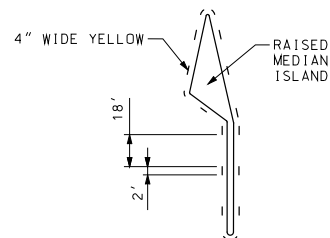
PLAN VIEW



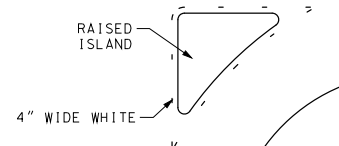
TEMPORARY STOP
BAR DETAIL (WHITE)



TEMPORARY ARROW
DETAIL (WHITE)



RAISED DIVISIONAL
ISLAND



RAISED CHANNELIZING
ISLAND

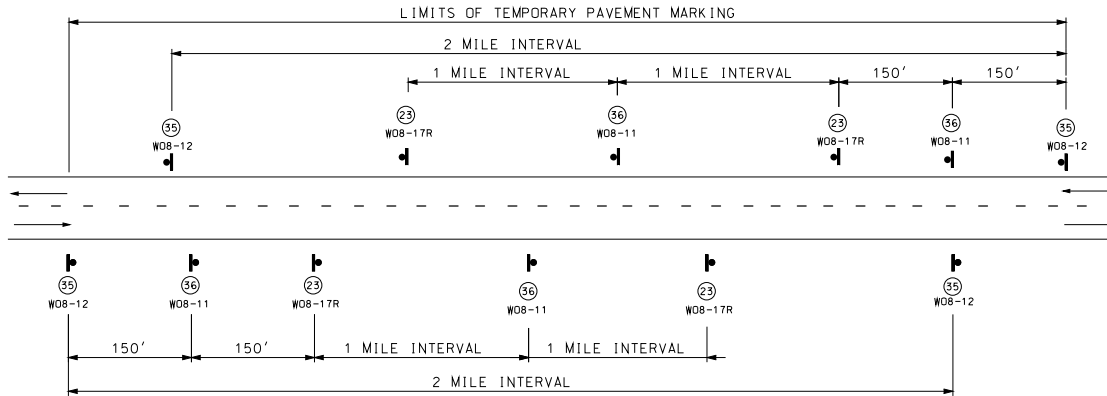
GENERAL NOTES:

TEMPORARY ARROWS AND STOP BARS ARE REQUIRED WHEN GEOMETRIC MODIFICATIONS DURING CONSTRUCTION CREATE LANE CONFIGURATIONS DIFFERENT THAN EXISTING, OR THE EXISTING PAVEMENT MARKING INCLUDES THEM.

YELLOW AND WHITE TEMPORARY MARKING AROUND ISLANDS ONLY REQUIRED WHEN THE ISLAND CURB IS NOT PAINTED.

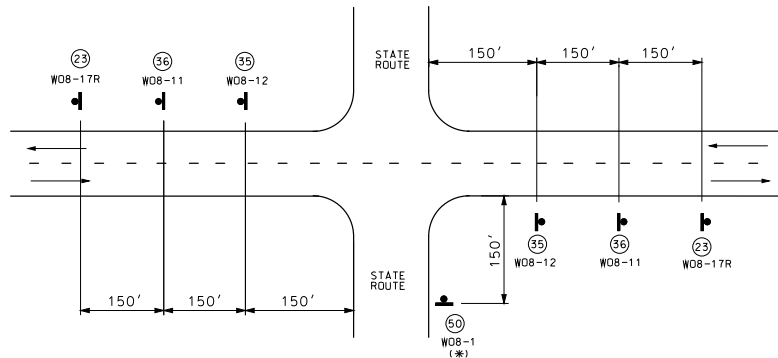
TEMPORARY PAVEMENT MARKING IN INTERSECTIONS, RAMP GORES AND OTHER TRANSITION AREAS USE AN INTERMITTENT MARKING 2' LONG AT A CYCLE OF 20'.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>TEMPORARY PAVEMENT MARKING</p> <p>INTERSECTIONS</p>
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	<p>620.10E</p> <p>SHEET NO. 3 OF 5</p>



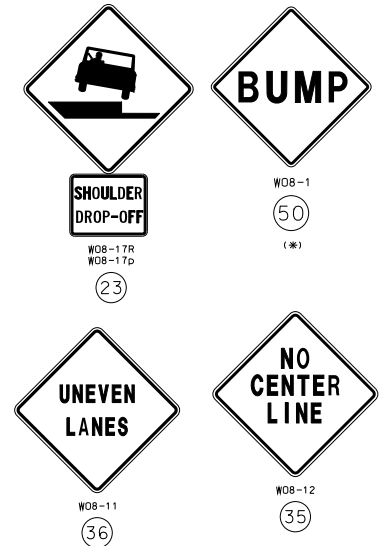
SIGN SPACING FOR MAINLINE

(DETAIL SHOWN IS BASED ON A PROJECT MEETING ALL CONDITIONS: NO CENTER STRIPE, UNEVEN LANES, SHOULDER DROP-OFF AND BUMP.)
 WHEN BOTH UNEVEN LANES AND SHOULDER DROP-OFF SIGNS ARE USED, BOTH SIGNS SHALL STAY IN PLACE UNTIL BOTH CONDITIONS NO LONGER EXIST.
 IF ONLY ONE CONDITION EXISTS (UNEVEN LANES OR SHOULDER DROP-OFF), THE SIGN SPACING SHALL BE AT 1 MILE INTERVALS.



SIGN SPACING AT STATE ROUTE INTERSECTIONS

(*) BUMP SIGN SHOULD BE IN ACCORDANCE WITH STANDARD PLAN 619.10.



GENERAL NOTES:

FOR DETAILS OF TEMPORARY PAVEMENT MARKING SEE STANDARD PLAN 620.10.

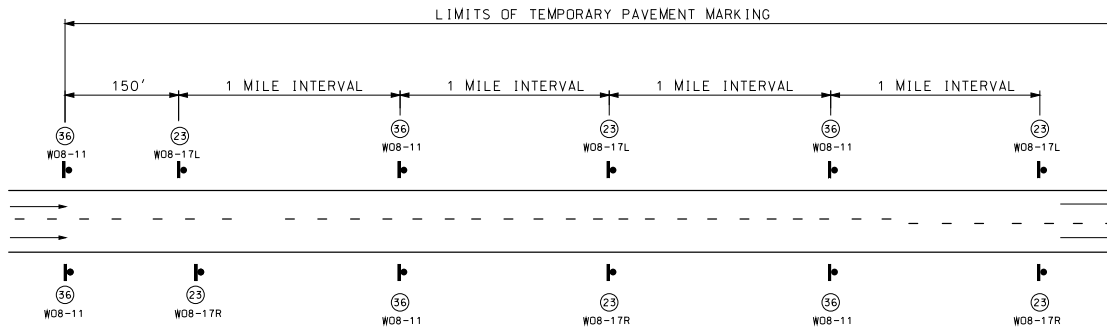
SIGN (35) AND TEMPORARY PAVEMENT MARKING INSTALLED WHERE CENTERLINE STRIPING HAS BEEN COVERED OR REMOVED. SIGNS ARE TO REMAIN IN PLACE UNTIL THE PERMANENT CENTERLINE PAVEMENT MARKINGS ARE IN PLACE. SIGNS SHALL BE COVERED OR REMOVED WHEN PAVEMENT CENTERLINE MARKING HAS BEEN INSTALLED.

SIGN (35) IS PLACED AT APPROXIMATELY TWO-MILE INTERVALS AND AT STATE ROUTE JUNCTIONS. WHEN THE INSTALLATION AT A JUNCTION IS WITHIN ONE-EIGHTH MILE OF THE NORMAL MAINLINE SIGN (35), THE LATTER MAY BE ELIMINATED.

ALL SIGNS SHALL BE POST MOUNTED AND IN ACCORDANCE WITH STANDARD PLAN 616.10 AND 903.03.

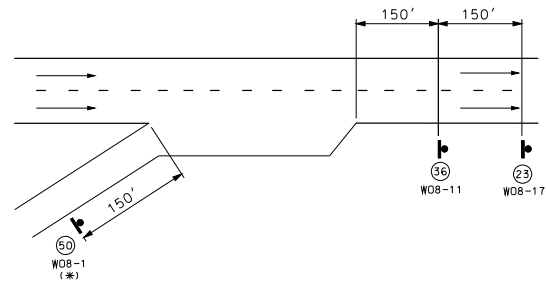
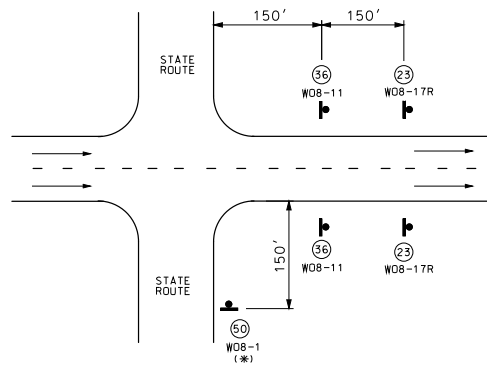
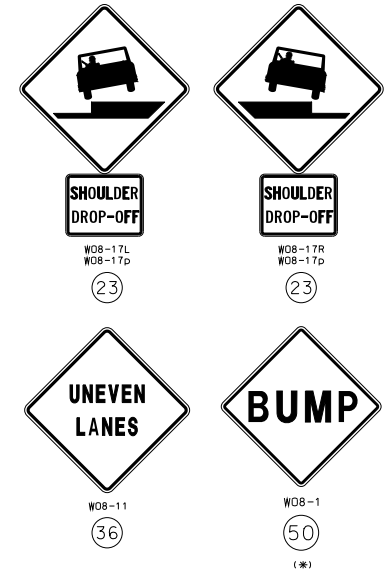
WHEN SHOULDER DROP-OFF SIGNS ARE IN PLACE FOR GREATER THAN THREE DAYS, THE SHOULDER DROP-OFF PLAQUE SHOULD BE USED IN ADDITION WITH THE SHOULDER DROP-OFF SIGN.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
TEMPORARY PAVEMENT MARKING TWO-LANE TWO-WAY HIGHWAY	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	620.10E
SHEET NO. 4 OF 5	



SIGN SPACING FOR DIVIDED OR MULTI-LANE HIGHWAY

(DETAIL SHOWN IS BASED ON A PROJECT MEETING CONDITIONS OF UNEVEN LANES AND SHOULDER DROP-OFF.)
 WHEN BOTH UNEVEN LANES AND SHOULDER DROP-OFF SIGNS ARE USED, BOTH SIGNS SHALL STAY IN PLACE UNTIL BOTH CONDITIONS NO LONGER EXISTS.
 WHEN ONLY ONE CONDITION EXISTS (UNEVEN LANES OR SHOULDER DROP-OFF), SIGN SPACING SHALL BE AT 1 MILE INTERVALS



SIGN SPACING AT STATE ROUTE INTERSECTIONS

(*) BUMP SIGN SHOULD BE IN ACCORDANCE WITH STANDARD PLAN 619.10.

SIGN SPACING AT RAMPS

(*) BUMP SIGN SHOULD BE IN ACCORDANCE WITH STANDARD PLAN 619.10.

GENERAL NOTES:

FOR DETAILS OF TEMPORARY PAVEMENT MARKING, SEE SHEET 1 OF 5.

ALL SIGNS SHALL BE POST MOUNTED AND IN ACCORDANCE WITH STANDARD PLAN 616.10 AND 903.03.

WHEN SHOULDER DROP-OFF SIGNS ARE IN PLACE FOR GREATER THAN THREE DAYS, THE SHOULDER DROP-OFF PLAQUE SHOULD BE USED IN ADDITION WITH THE SHOULDER DROP-OFF SIGN.

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		TEMPORARY PAVEMENT MARKING DIVIDED AND MULTI-LANE HIGHWAYS	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016		620.10E SHEET NO. 5 OF 5	

STRUCTURAL SIGN DATA

DESIGNATION	COLOR SCHEME		SHEETING	
	LEGEND	BACKGROUND	LEGEND	BACKGROUND
STRUCTURAL (ST)	BLACK	WHITE	OPAQUE BLACK FILM	ASTM TYPE 4
	WHITE	RED	ASTM TYPE 9 OR 11	ASTM TYPE 4
	WHITE	GREEN	ASTM TYPE 9 OR 11	ASTM TYPE 4
	WHITE	BLUE	ASTM TYPE 9 OR 11	ASTM TYPE 4
	WHITE	BROWN	ASTM TYPE 9 OR 11	ASTM TYPE 4
	BLACK	FL YELLOW	OPAQUE BLACK FILM	ASTM TYPE 9 OR 11
STRUCTURAL FLUORESCENT (STF)	BLACK	FL YELLOW GREEN	OPAQUE BLACK FILM	ASTM TYPE 9 OR 11
	BLACK	FL ORANGE	OPAQUE BLACK FILM	ASTM TYPE 9 OR 11

NOTE: WHITE LEGEND IS DIRECT APPLIED UNLESS SPECIFIED OTHERWISE.

FLAT SHEET SIGN DATA

DESIGNATION	COLOR SCHEME		SHEETING
	LEGEND	BACKGROUND	
FLAT SHEET (SH)	BLACK **	WHITE	ASTM TYPE 4 WHITE
	WHITE	BLACK **	ASTM TYPE 4 WHITE
	RED	WHITE	ASTM TYPE 4 WHITE
	WHITE	RED	ASTM TYPE 4 WHITE
	WHITE	GREEN	ASTM TYPE 4 WHITE
	GREEN	WHITE	ASTM TYPE 4 WHITE
	WHITE	BLUE	ASTM TYPE 4 WHITE
	WHITE	BROWN	ASTM TYPE 4 WHITE
	BLACK **	FL YELLOW	ASTM TYPE 9 OR 11 FL YELLOW
FLAT SHEET FLUORESCENT (SHF)	BLACK **	FL YELLOW GREEN	ASTM TYPE 9 OR 11 FL YELLOW GREEN
	BLACK **	FL ORANGE	ASTM TYPE 9 OR 11 FL ORANGE

** OPAQUE INK OR FILM

NOTE: LEGEND AND BACKGROUND COLORS ARE ACHIEVED THROUGH TRANSLUCENT INKS AND FILMS.

FLAT SHEET THICKNESS	
SIGN SIZE	THICKNESS
9 SF OR LESS	0.080 IN.
OVER 9 SF TO 16 SF	0.100 IN.
16 SF OR LARGER	0.125 IN.

GENERAL NOTES:

GROUND MOUNTED SIGNS GREATER THAN 5 FEET WIDE OR SIGNS GREATER THAN 30 SQUARE FEET SHALL BE STRUCTURAL.

ALL NON STANDARD SIGNS NOT FOUND IN THE MUTCD SHS MANUAL SHALL BE DETAILED BY THE TRAFFIC AND HIGHWAY SAFETY DIVISION OFFICE.

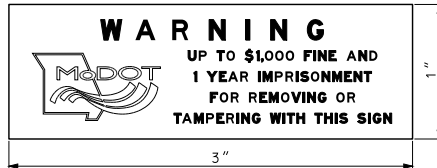
REFER TO STANDARD SPECIFICATION SEC 1042 FOR SHEETING, SUBSTRATE AND FABRICATION DETAILS.

FOR MOUNTING DETAILS, SEE STANDARD PLANS 903.02.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	HIGHWAY SIGNING GENERAL SIGN DATA
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	903.02AN SHEET NO. 1 OF 8

MODOT ID LABEL DETAILS

PLACED ON THE SIGN FACE



(1) USED ON SIGNS 9 SF AND LARGER



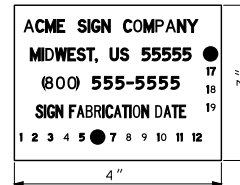
(1) USED ON SIGNS LESS THAN 9 SF

VENDOR ID LABEL DETAILS

PLACED ON THE BACK OF THE SIGN



OPTIONAL



(2)

OPTIONAL



(3)

- (1) MODOT ID LABEL DETAILS AVAILABLE FROM TRAFFIC AND HIGHWAY SAFETY DIVISION.
- (2) TO FACILITATE MASS PRODUCTION OF LABELS, THE FABRICATION DATE MAY BE INDICATED BY DISPLAYING NUMBERS FOR MONTHS ALONG THE BOTTOM OF THE LABEL AND NUMBERS FOR YEARS ALONG THE RIGHT SIDE OF THE LABEL. THE FABRICATION DATE WOULD BE INDICATED BY HOLE PUNCHING THE APPROPRIATE NUMBERS (OR SOME EQUIVALENT PERMANENT METHOD TO BLOCK OUT OF THE NUMBERS) FOR THE MONTH AND YEAR BEFORE THE LABEL IS APPLIED TO THE SIGN.
- (3) INDIVIDUAL DECALS MAY BE USED TO DISPLAY THE VENDOR INFORMATION AND THE FABRICATION DATE. DECALS SHALL BE INSTALLED IN CLOSE VERTICAL PROXIMITY.
- (4) THE MODOT ID LABEL MAY BE PLACED ON THE BACK OF THE SIGN ABOVE THE VENDOR ID LABEL IF THERE IS INSUFFICIENT SPACE AVAILABLE TO DISPLAY THE ID LABEL ON THE SIGN FACE WITHOUT INTERFERING WITH THE SIGN LEGEND OR BOARDER.

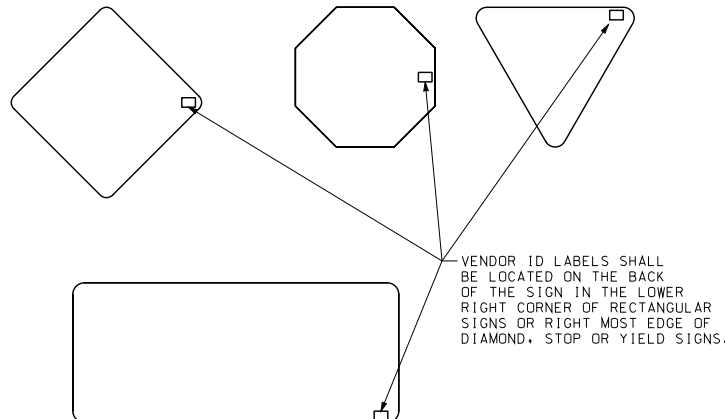
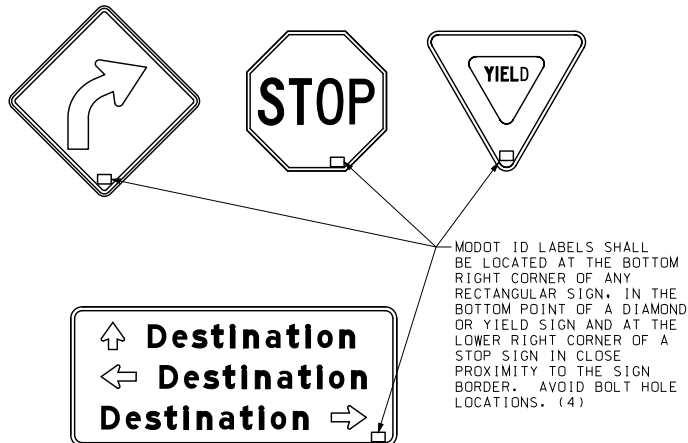
GENERAL NOTES:

ALL DECALS SHALL BE SILK SCREEN PRINTED WITH MATCHED COMPONENT INK AND SHEETING MATERIALS TO PROVIDE A LABEL THAT HAS AN EQUAL LIFE EXPECTANCY AS THE SIGN FACE.

MODOT ID LABELS SHALL BE PRINTED ON CLEAR ELECTROCURT FILM BACKGROUND WITH BLACK INK OR IT MAY BE INCORPORATED INTO THE SILK SCREEN DETAIL AND PRINTED ALONG WITH THE SIGN FACE. IF THE LABEL IS APPLIED IN THIS MANNER THE LEGEND OF THE LABEL SHALL MATCH THE COLOR OF THE SIGN LEGEND IT IS BEING APPLIED TO. THE LABEL SHALL NOT HAVE ANY BACKGROUND COLOR OR BORDER.

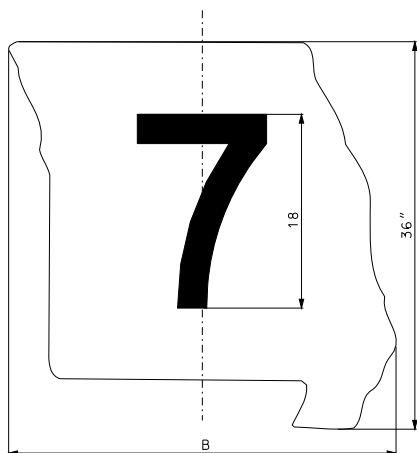
VENDOR ID LABEL SHALL CONTAIN THE COMPANY CONTACT INFORMATION (INCLUDING FULL NAME, CITY, STATE, PHONE NUMBER) AND THE SIGN FABRICATION DATE.

VENDOR ID LABEL SHALL BE PRINTED ON A WHITE BACKGROUND WITH BLACK INK AND THE LEGEND SHALL BE A MINIMUM OF 1/4".



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
EILEEN H. FACKERS NUMBER PE-28338 PROFESSIONAL ENGINEER THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY	HIGHWAY SIGNING GENERAL SIGN DATA
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	903.02AN SHEET NO. 2 OF 8

STATE NUMBER ROUTE SHIELD GUIDE SIGN USE

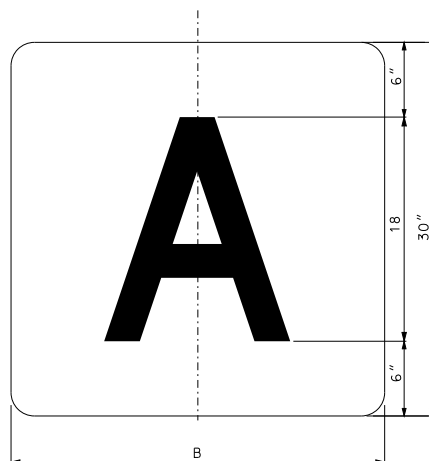


LOCATION	NO. OF LETTERS	DIMENSIONS (INCHES)		LEGEND FONTS
		A	B	
INDEPENDENT USE	1	18	24	D
INDEPENDENT USE	2	24	30	D
GUIDE SIGN USE	1	-	30	D
GUIDE SIGN USE	2	-	36	D

STATE LETTER ROUTE SHIELD



STATE LETTER ROUTE SHIELD GUIDE SIGN USE

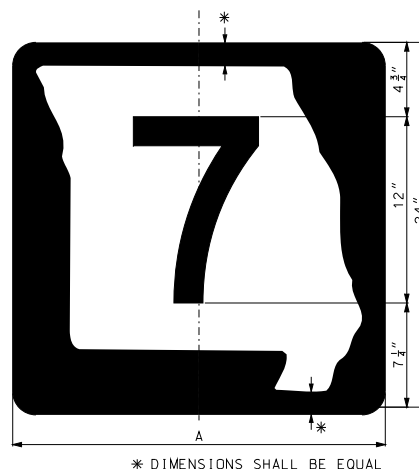


LOCATION	ROUTE NUMBER	DIMENSIONS (INCHES)		LEGEND FONTS
		A	B	
INDEPENDENT USE	1 & 2 DIGITS	24	24	D.C
INDEPENDENT USE	3 DIGITS	30	30	D.C.B
GUIDE SIGN USE	1 & 2 DIGITS	-	36	D.C
GUIDE SIGN USE	3 DIGITS	-	45	D.C.B

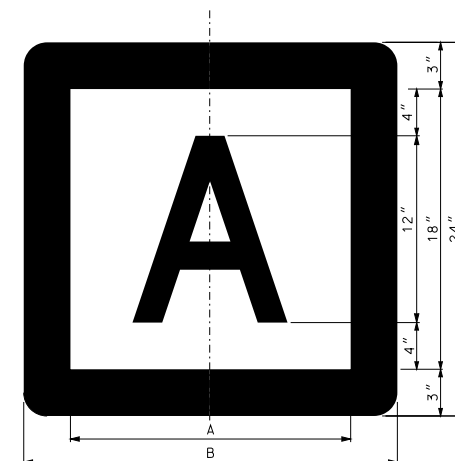
STATE NUMBER ROUTE SHIELD



STATE NUMBER ROUTE SHIELD INDEPENDENT USE



STATE LETTER ROUTE SHIELD INDEPENDENT USE



GENERAL NOTES:

REFER TO STANDARD SPECIFICATION SEC 1042 FOR SHEETING AND SUBSTRATE DETAILS.

FOR HOLE PUNCHING AND MOUNTING DETAILS SEE OTHER DRAWINGS.

FOR GENERAL SIGN DATA DETAILS SEE OTHER DRAWINGS.

THE MISSOURI SHAPE DETAIL MAY BE OBTAINED FROM THE TRAFFIC AND HIGHWAY SAFETY DIVISION OFFICE.

GUIDE SIGN USE SHALL BE DIRECT APPLIED. POST MOUNTED USE SHALL BE APPLIED TO ALUMINUM SUBSTRATE.

FOR NUMBERED ROUTES WITH MORE THAN 1 DIGIT THE LEGEND FONT MAY NEED TO BE REDUCED TO C OR B FONT.

SEE MUTCD SHS FOR DETAILS FOR US AND INTERSTATE ROUTE SHIELDS.

NON-STANDARD SHIELD SIZES MAY BE OBTAINED FROM THE TRAFFIC AND HIGHWAY SAFETY DIVISION OFFICE.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

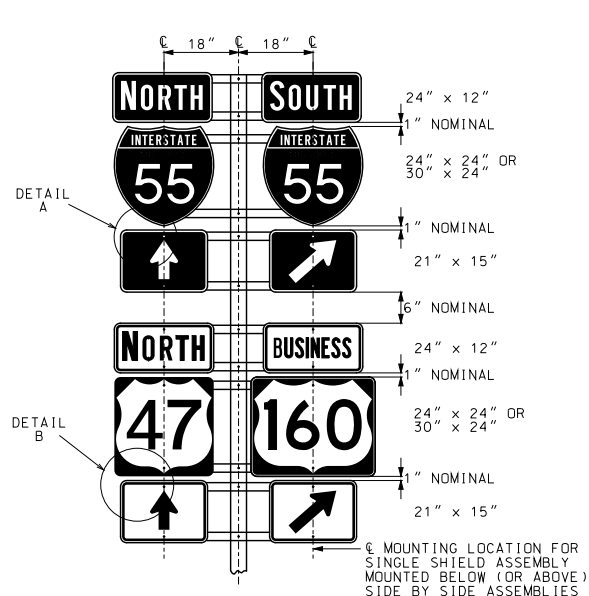


HIGHWAY SIGNING
STANDARD SHIELDS FOR
INDEPENDENT AND GUIDE
SIGN USE

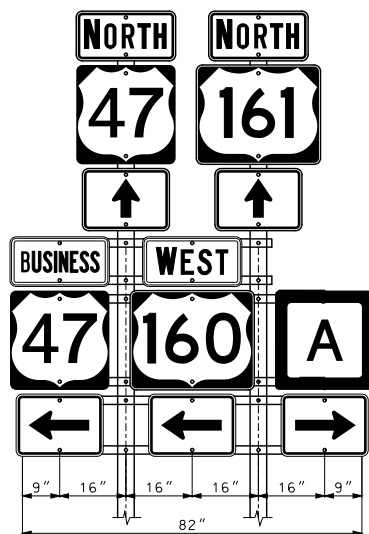
DATE EFFECTIVE: 01/01/2017
DATE PREPARED: 10/28/2016

903.02AN

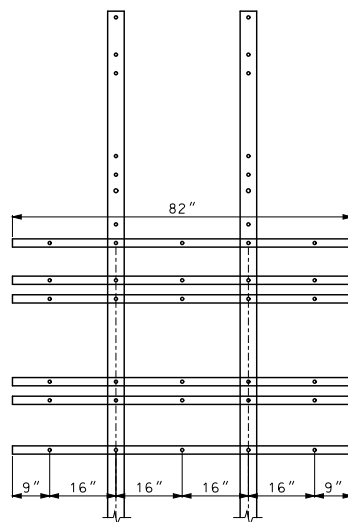
SHEET NO.
3 OF 8



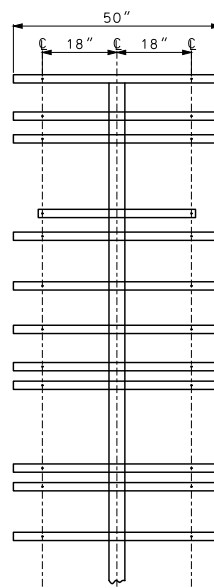
ONE POST ASSEMBLY
USE TO SUPPORT UP TO 4 ROUTE MARKERS



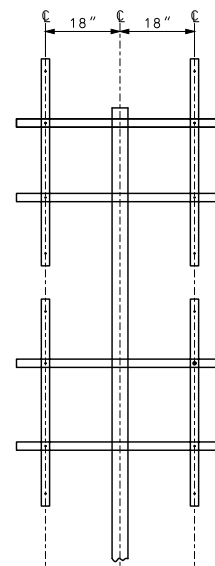
TWO POST ASSEMBLY
USE TO SUPPORT 5 OR 6 ROUTE MARKERS



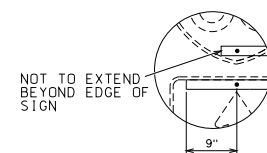
STANDARD BACKING BAR LAYOUT



STANDARD BACKING BAR LAYOUT



OPTIONAL BACKING BAR LAYOUT



DETAIL A
SEE GENERAL NOTES



DETAIL B
SEE GENERAL NOTES

GENERAL NOTES:

ALL BACKING BARS SHALL BE 2" x 3/8" STEEL, GALVANIZED AFTER PUNCHING. WEIGHT = 2.55 LBS. PER FOOT. HOLES IN BARS SHALL BE 3/8" AND SHALL BE PUNCHED AS SHOWN ON THIS DRAWING.

DETAIL A - FOR SIGNS INSTALLED ON TWO PARALLEL HORIZONTAL BACKING BARS, ONE ADDITIONAL BOLT SHALL BE ADDED TO THE LEFT SIGN TO KEEP ASSEMBLY SQUARE.

DETAIL B - THE END OF THE HORIZONTAL BACKING BARS SHALL EXTEND MAXIMUM OF 9 INCHES PAST THE SIGN BOLT, BUT SHALL NOT EXTEND PAST THE EDGE OF THE SIGN.

WHEN USING OPTIONAL BACKING BAR LAYOUT, VERTICAL BARS SHALL BE MOUNTED BEHIND HORIZONTAL BARS.

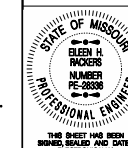
BACKING BARS SHALL MEET MISSOURI STANDARD PLANS OR APPROVED PRODUCTS LIST.

BACKING BARS PAID FOR AS STRUCTURAL STEEL, PER POUND.

ALL SIGNS TO BE INSTALLED ALONG VERTICAL CENTERLINES.

FOR POST AND FOOTING DATA AND DETAILS OF SHIELDS AND PLAQUES, SEE OTHER DRAWINGS.

NOMINAL VERTICAL SPACING INDICATED BETWEEN SIGNS TO BE ACHIEVED BY USING THE CLOSEST AVAILABLE HOLES WHEN USING PSST.

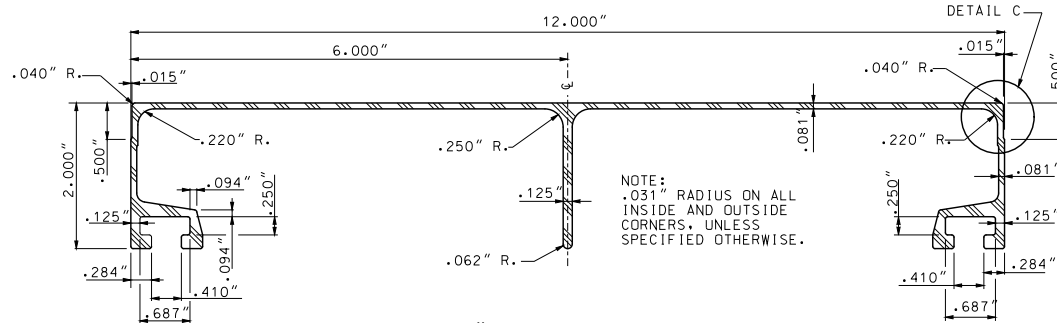


HIGHWAY SIGNING BACKING BARS SHEET SIGN MOUNTING ROUTE SHIELD AND MARKER ASSEMBLIES

DATE EFFECTIVE: 01/01/2017
DATE PREPARED: 10/28/2016

903.02AN

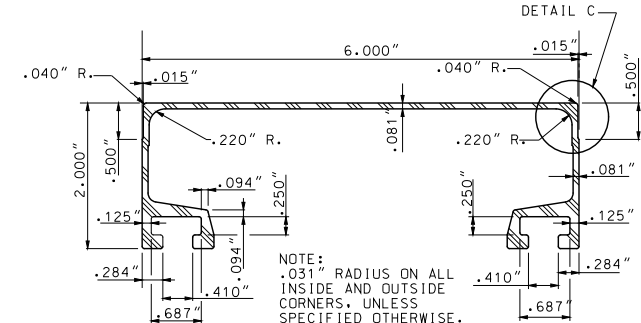
SHEET NO.
4 OF 8



12" EXTRUDED ALUMINUM PANEL

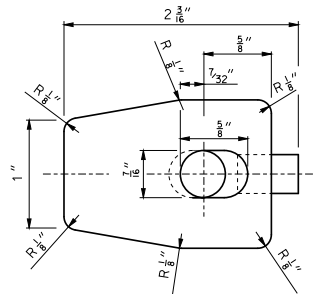
MINIMUM WT. = 2.40 LBS./FT.

NOTE: MINIMUM WEIGHT AND THICKNESS DIMENSIONS SHOWN. HEAVIER PANELS MAY BE USED.

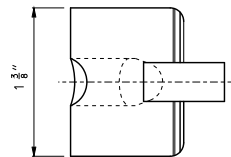


6" EXTRUDED ALUMINUM PANEL

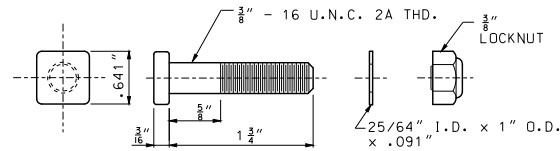
MINIMUM WT. = 2.40 LBS./FT.



PLAN VIEW



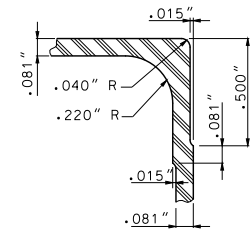
END VIEW



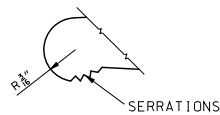
POST CLIP BOLT
WITH FLAT WASHER AND LOCKNUT

NOTE: SQUARE BOLT HEAD SHOWN. RECTANGULAR BOLT HEAD WITH LEAST DIMENSION OF .641" MAY BE USED.

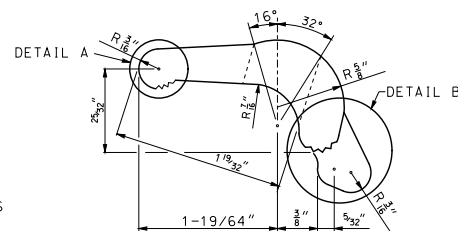
BOLT - 1/2" x 1 1/2" ALUMINUM
HEX LOCKNUT - 1/2" ALUMINUM
WASHER - ALUMINUM



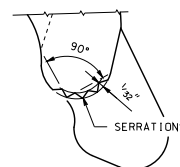
DETAIL C



DETAIL A
ENLARGED VIEW OF
SERRATIONS



ELEVATION VIEW

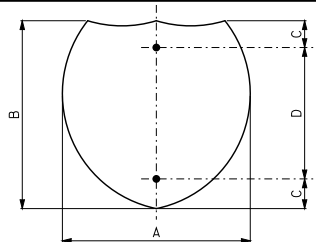


DETAIL B
ENLARGED DETAIL OF SERRATIONS

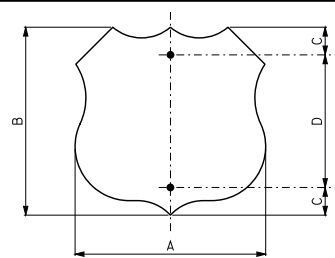
SAW GATING AS SHOWN
(APPROXIMATELY FLAT PERMISSIBLE)

POST CLIP
POST CLIPS SHALL BE ASTM B 108, 356-T6 ALUMINUM ALLOY.

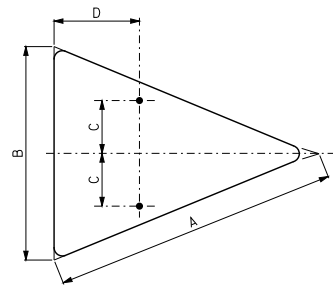
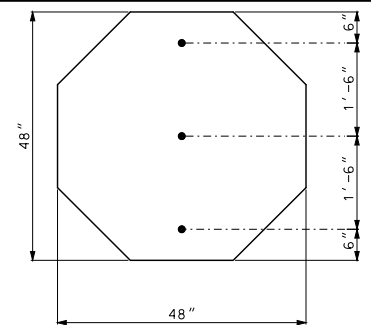
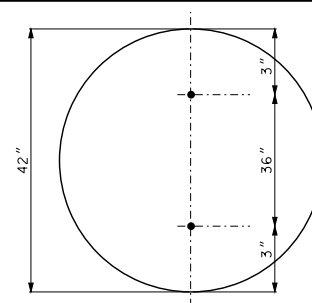
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	HIGHWAY SIGNING EXTRUDED ALUMINUM PANEL DETAILS
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	903.02AN
SHEET NO. 5 OF 8	



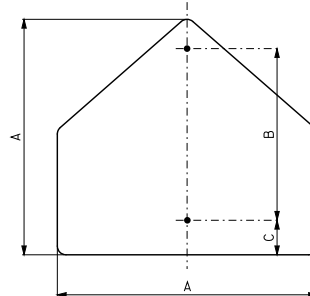
DIMENSIONS (IN.)			
A	B	C	D
24	24	3	18
30	24	3	18
36	36	6	24
45	36	6	24



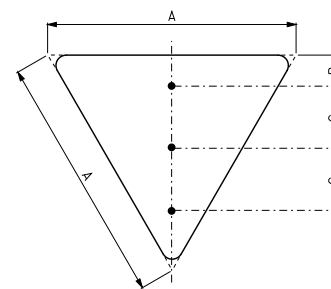
DIMENSIONS (IN.)			
A	B	C	D
24	24	3	18
30	24	3	18
36	36	6	24
45	36	6	24



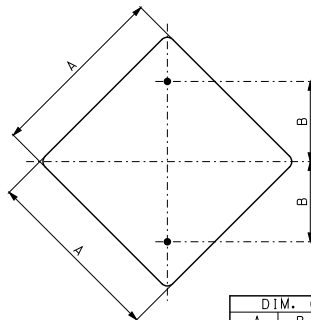
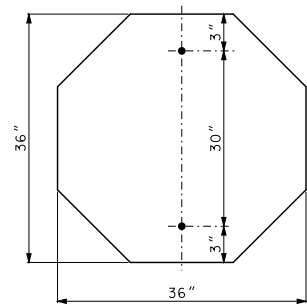
DIMENSIONS (IN.)				
A	B	C	D	RADIUS
40	30	7.5	12	1.875
48	36	9	15	2.25



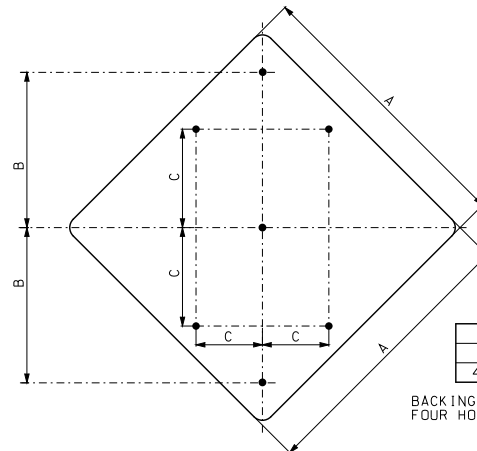
DIMENSIONS (IN.)			
A	B	C	RADIUS
36	24	3	2.25



DIMENSIONS (IN.)			
A	B	C	RADIUS
48	6	12	3
60	8	15	4



DIM. (IN.)		
A	B	RADIUS
18	9	1.5
24	12	1.5
30	15	1.875
36	18	2.25



DIMENSIONS (IN.)			
A	B	C	RADIUS
48	24	15	3

BACKING BARS ONLY REQUIRED FOR FOUR HOLE PUNCH INSTALLATION.

GENERAL NOTES:

SIGNS WITH FOUR OR MORE HOLES REQUIRE BACKING BARS OR MULTIPLE POSTS.

HOLES IN SIGNS SHALL BE $\frac{3}{8}$ " AND PUNCHED AS SHOWN ON THIS DRAWING.

FLAT SHEET FOR SIGNS SHALL BE THE FOLLOWING THICKNESS:

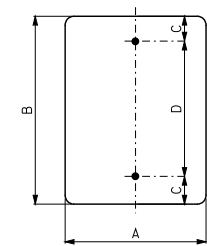
9 SQUARE FEET OR LESS - .080 IN.

OVER 9 SQUARE FEET BUT LESS THAN 16 SQUARE FEET - .100 IN.

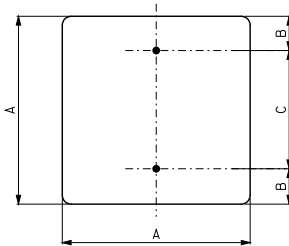
16 SQUARE FEET OR LARGER - .125 IN.

FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

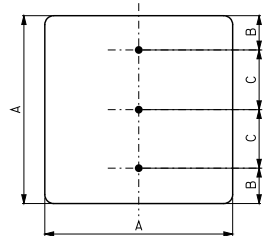
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
HIGHWAY SIGNING HOLE PUNCHING	
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	903.02AN SHEET NO. 6 OF 8



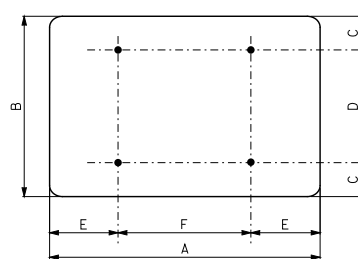
DIMENSIONS (IN.)				
A	B	C	D	RADIUS
4	16	0.75	14.5	SO
6	12	1.5	9	1
9	12	3.5	5	1.5
9	15	3.75	7.5	1.5
12	18	3	12	1.5
12	24	3	18	1.5
12	36	3	30	1.5
12	48	3	42	1.5
15	21	3	15	1.5
18	24	3	18	1.5
24	30	3	24	1.5
24	36	3	30	1.5
30	36	3	30	1.875
30	42	3	36	1.875
30	48	6	36	1.875



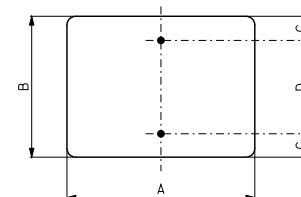
DIMENSIONS (IN.)			
A	B	C	RADIUS
12	1.5	9	1.5
18	3	12	1.5
24	3	18	1.5
30	3	24	1.875
36	6	24	2.25



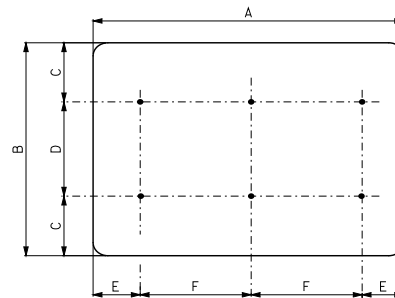
DIMENSIONS (IN.)			
A	B	C	RADIUS
48	6	18	3



DIMENSIONS (IN.)						
A	B	C	D	E	F	RADIUS
48	12	1.5	9	9	30	1.5
48	18	1.5	15	9	30	1.5
48	24	3	18	9	30	1.5
48	30	3	24	9	30	1.875
48	36	6	24	9	30	2.25
54	18	1.5	15	9	36	1.5
60	12	1.5	9	12	36	1.5
60	18	1.5	15	12	36	1.5
60	24	3	18	12	36	1.5
60	30	3	24	12	36	1.875
60	36	6	24	12	36	2.25
60	48	6	36	12	36	3
72	36	6	24	12	48	2.25
72	48	6	36	12	48	3

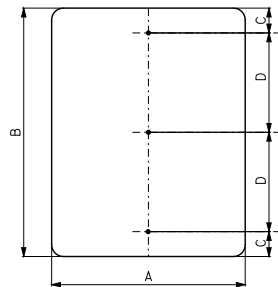


DIMENSIONS (IN.)				
A	B	C	D	RADIUS
4	5	1.5	2	1.5
12	9	1.5	6	1.5
18	9	1.5	6	1.5
18	12	1.5	9	1.5
21	15	1.5	12	1.5
24	8	1.5	5	1.5
24	12	1.5	9	1.5
24	18	3	12	1.5
30	8	1.5	5	1.5
30	12	1.5	9	1.5
30	18	3	12	1.5
30	24	3	18	1.5
36	8	1.5	5	1.5
36	12	1.5	9	1.5
36	18	3	12	1.5
36	24	3	18	1.5
36	30	3	24	1.875
42	8	1.5	5	1.5
42	18	3	12	1.5
42	24	3	18	1.5
42	30	3	24	1.875
42	36	3	30	2.25
48	8	1.5	5	1.5

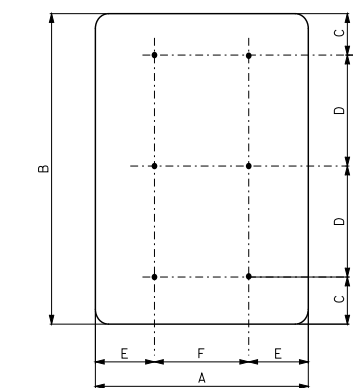


DIMENSIONS (IN.)						
A	B	C	D	E	F	RADIUS
84	24	3	18	12	30	3
96	48	6	36	16	32	3

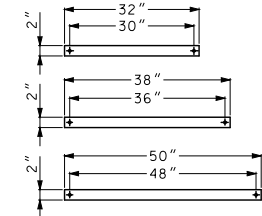
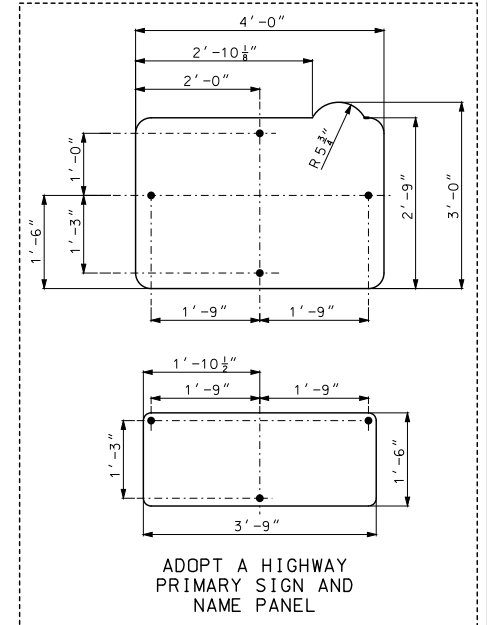
DIMENSIONS (IN.) FOR SIGNS REQUIRING NO HOLE PUNCHING		
A	B	RADIUS
66	18	1.5
72	18	1.5
78	18	1.5
84	18	1.5
90	18	1.5
96	18	1.5
36	78	2.25



DIMENSIONS (IN.)				
A	B	C	D	RADIUS
4	72	6	30	SO
12	72	6	30	1.5
18	60	6	24	1.5
24	48	6	18	1.5
36	48	6	18	2.25
36	60	6	24	2.25
36	72	6	30	2.25



DIMENSIONS (IN.)						
A	B	C	D	E	F	RADIUS
48	60	6	24	9	30	3
48	72	6	30	9	30	3
48	84	6	36	9	30	3
48	96	6	42	9	30	3



BACKING BARS FOR SINGLE POST SIGNS

GENERAL NOTES:

REFER TO GENERAL NOTES ON SHEET 6 OF 8.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

STATE OF MISSOURI

EILEEN H. FACKERS
REGISTERED PROFESSIONAL ENGINEER
NUMBER PE-28338
EXPIRATION DATE 12/31/2016

THIS SHEET HAS BEEN
DESIGNED, DRAWN AND
CHECKED ELECTRONICALLY

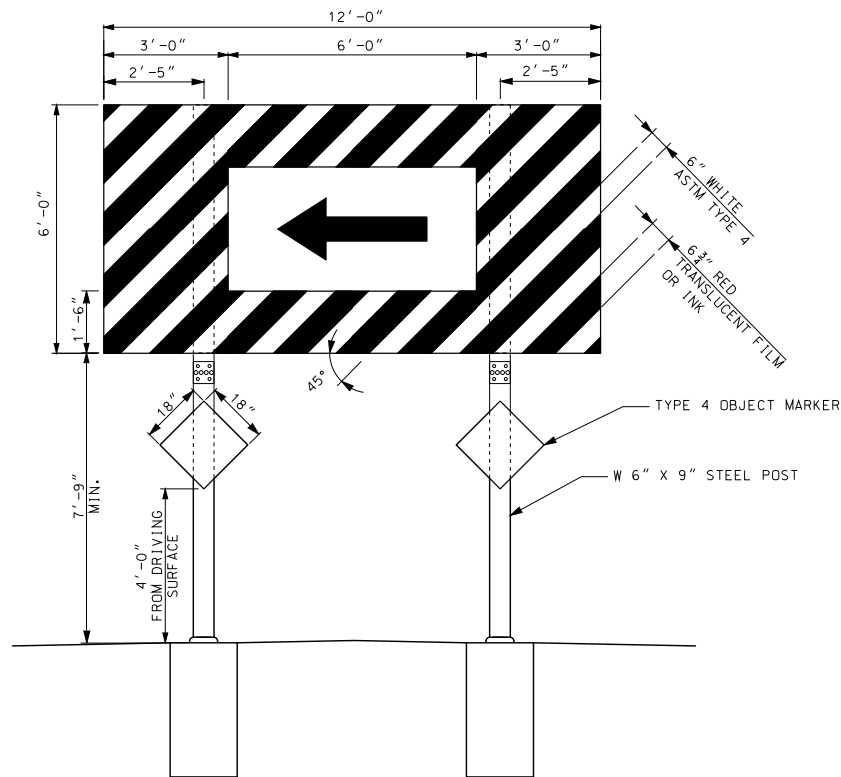
HIGHWAY SIGNING

HOLE PUNCHING

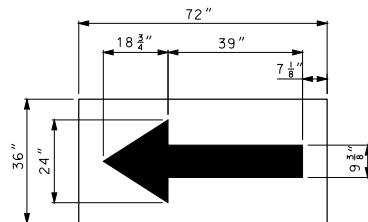
DATE EFFECTIVE: 01/01/2017
DATE PREPARED: 10/28/2016

903.02AN

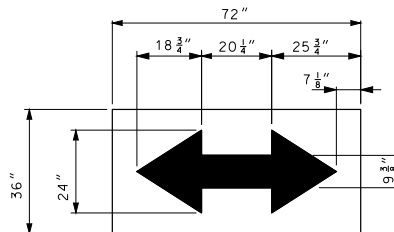
SHEET NO.
7 OF 8



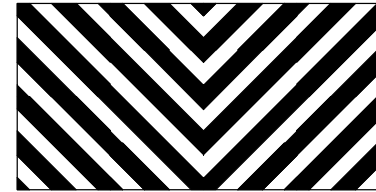
SEE STANDARD PLAN 903.03
FOR MOUNTING HEIGHT ON UNEVEN GROUND



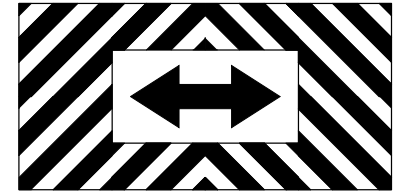
W1-6



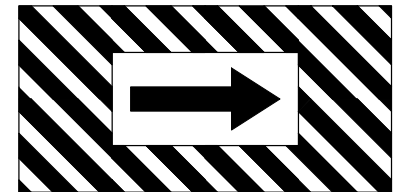
W1-7



DEAD END



T-INTERSECTION



GENERAL NOTES:

SEE STANDARD PLAN 903.03 FOR WIDE FLANGE
INSTALLATION.

SIGN BARRICADE SHALL BE CONSTRUCTED AS A
STRUCTURAL (ST) SIGN.

DIRECTIONAL ARROWS SHALL BE SHF AND
CONSIDERED INCIDENTAL TO THE SIGN.

ALL REFLECTORIZED SURFACES SHALL BE RETROREFLECTIVE
SHEETING IN ACCORDANCE WITH SEC 1042.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	HIGHWAY SIGNING SIGN BARRICADE
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	903.02AN
SHEET NO. 8 OF 8	