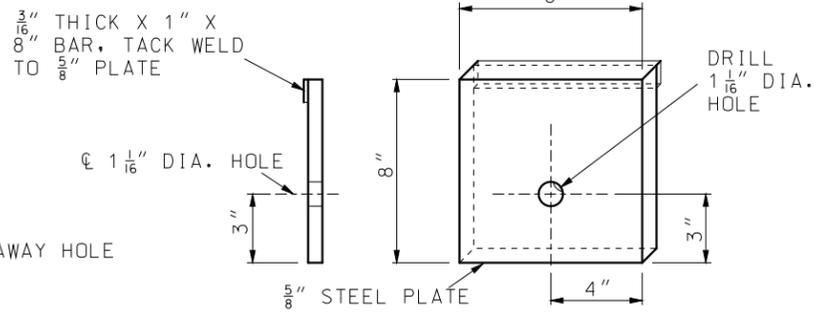
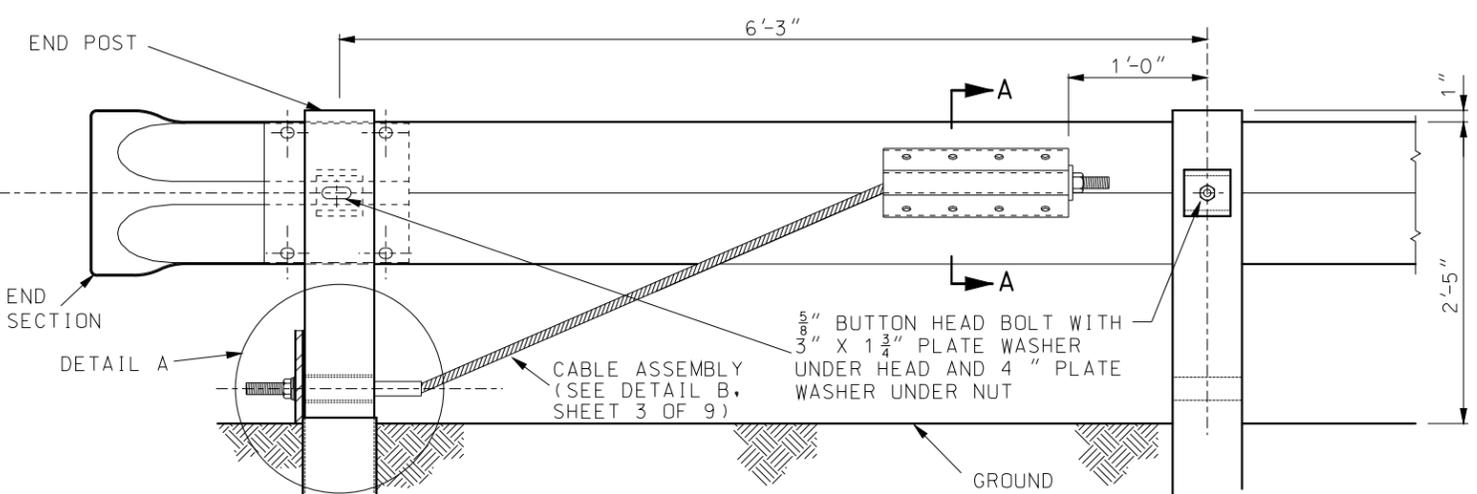


NOTE: SEE SHEET 7 OF 17 FOR DETAILS OF END SECTION.

PLAN



DETAIL OF STEEL BEARING PLATE

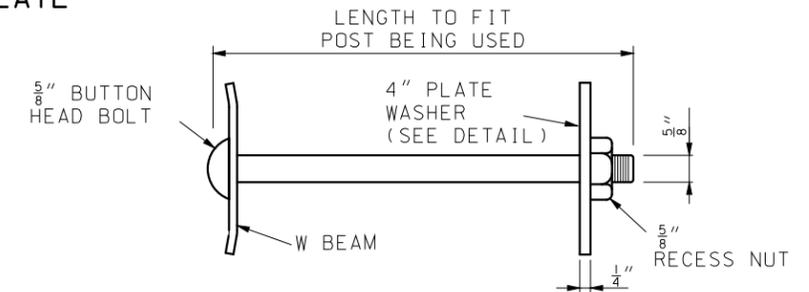


POST 1

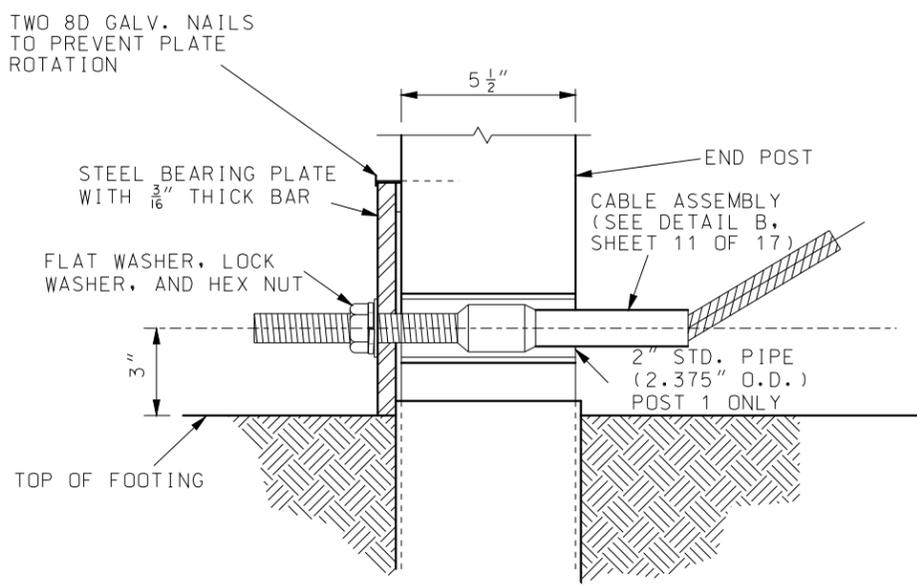
ELEVATION (BACK SIDE)

POST 2

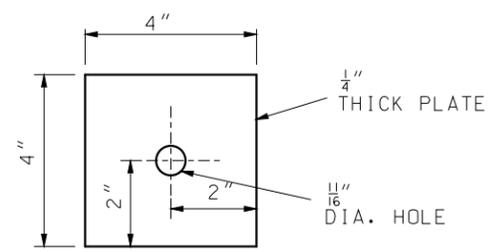
END ANCHOR DETAILS



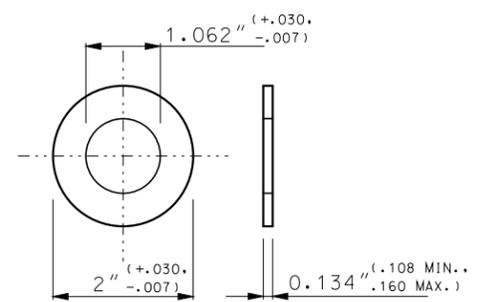
POST BOLT ASSEMBLY



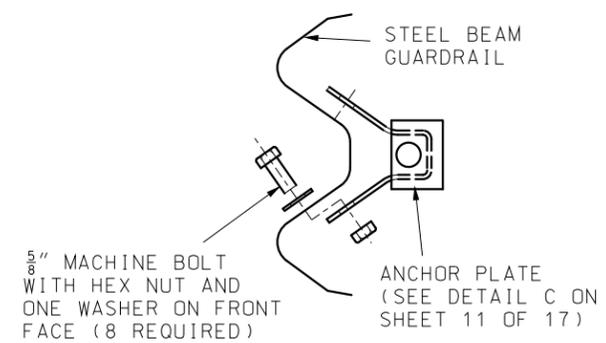
DETAIL A (END POST DETAIL)



4" PLATE WASHER



TYPE A WASHER



SECTION A-A

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.

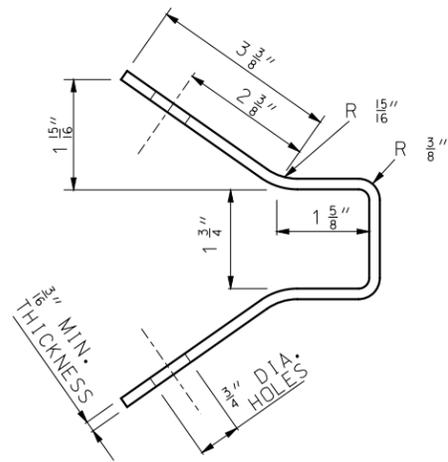
ALL FITTINGS AND HARDWARE REQUIRED SHALL BE GALVANIZED AFTER FABRICATION, SEE SECTION 1040 STANDARD SPECIFICATION.

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

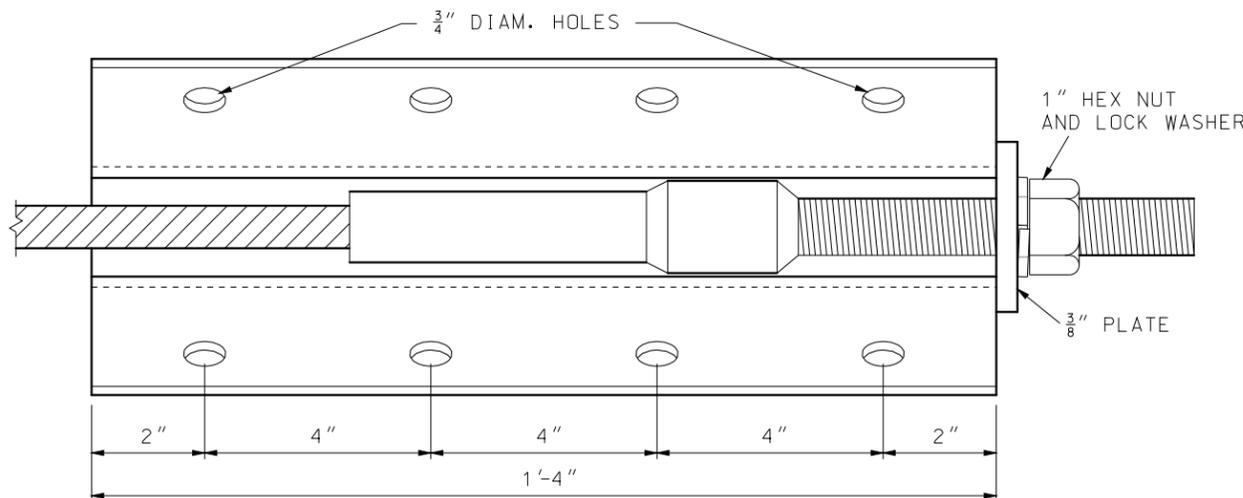
SEE SHEET 4 FOR WOOD POST DETAILS.

<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>STATE OF MISSOURI ERIC E. SCHROETER NUMBER PE-28411 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY.</p>	<p>GUARDRAIL</p> <p>TERMINAL ANCHOR ENDS</p>
<p>DATE EFFECTIVE: 01/01/2017</p> <p>DATE PREPARED: 10/28/2016</p>	<p>606.30J</p>
<p>SHEET NO. 1 OF 7</p>	

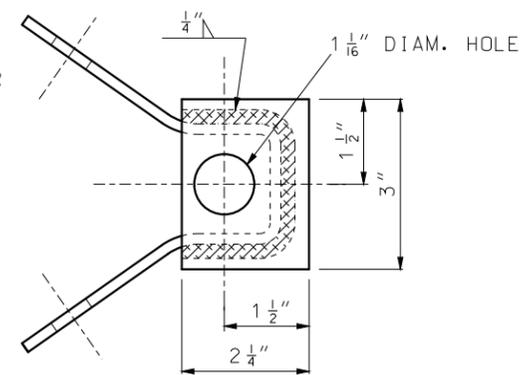
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



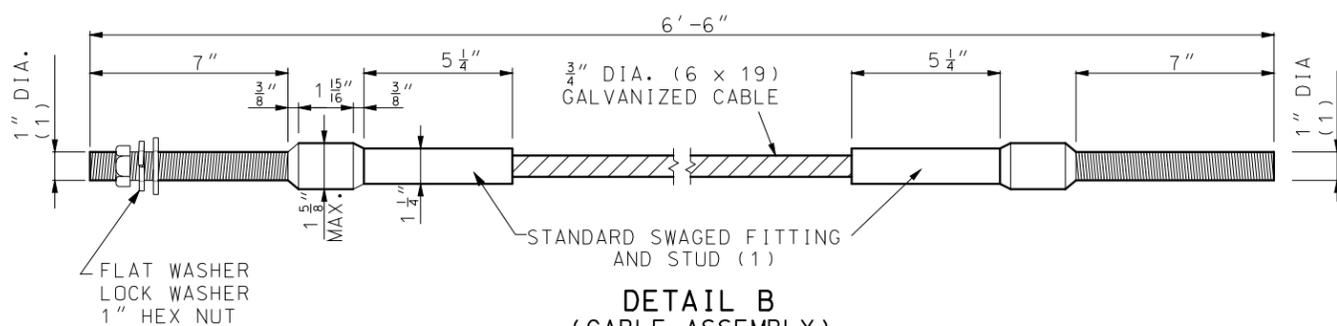
FABRICATION DETAIL



DETAIL C
ASSEMBLED VIEW
(ANCHOR PLATE)

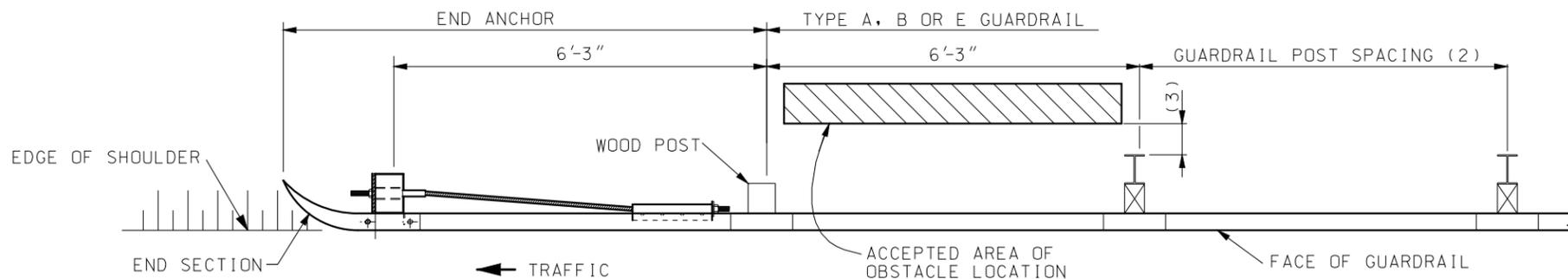


END VIEW

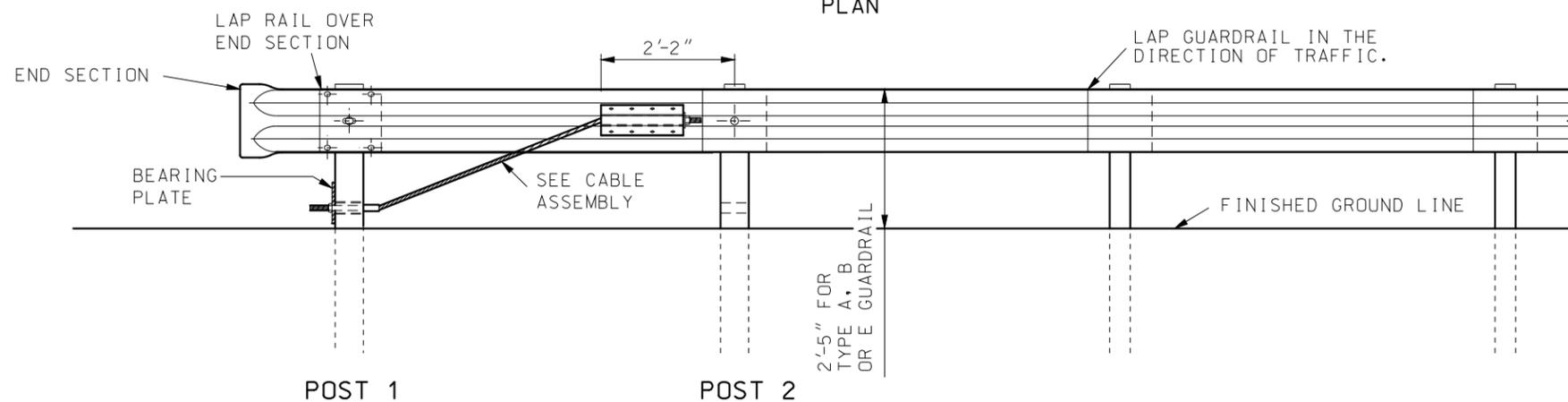


DETAIL B
(CABLE ASSEMBLY)

- (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.



PLAN



ELEVATION
END ANCHOR

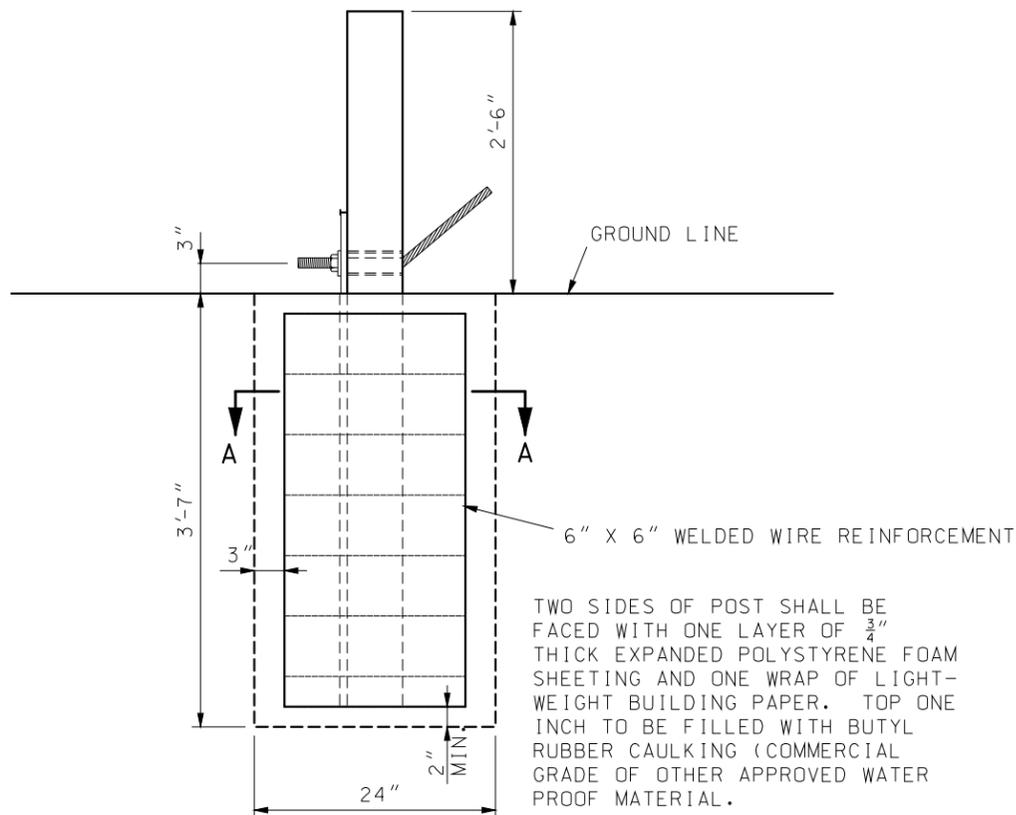
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
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STATE OF MISSOURI
 ERIC E. SCHROETER
 NUMBER PE-28411
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

GUARDRAIL
 TERMINAL ANCHOR ENDS

DATE EFFECTIVE: 01/01/2017	606.30J	SHEET NO. 2 OF 7
DATE PREPARED: 10/28/2016		

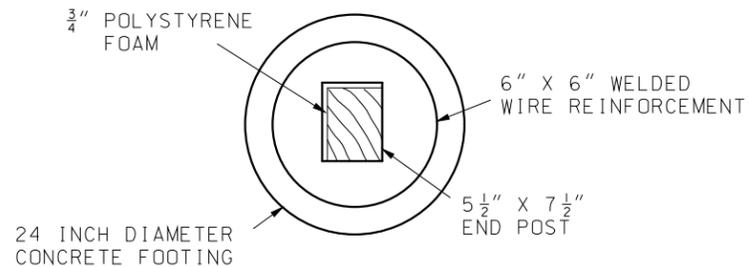
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



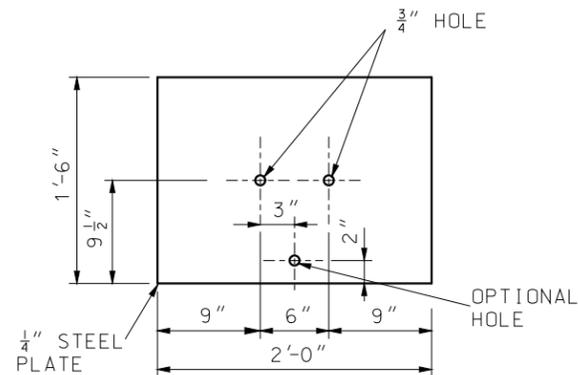
POST 1

CONCRETE FOUNDATION FOR END ANCHORS

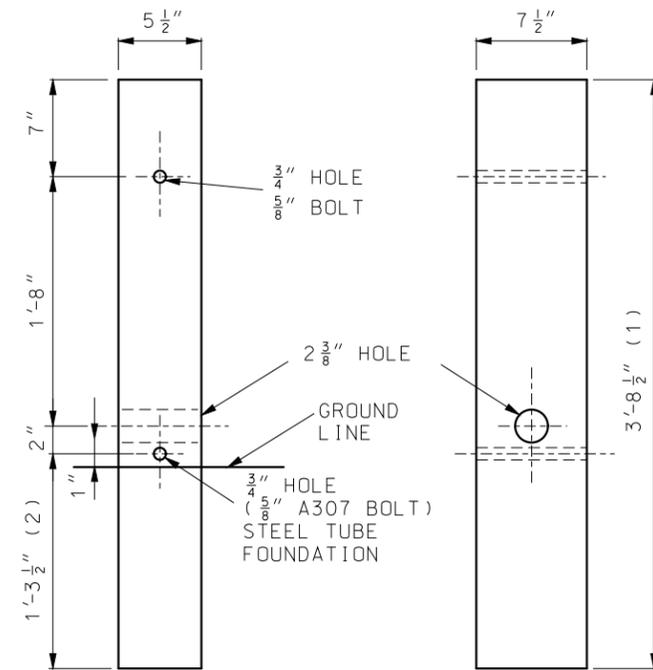
TWO SIDES OF POST SHALL BE FACED WITH ONE LAYER OF $\frac{3}{4}$ " THICK EXPANDED POLYSTYRENE FOAM SHEETING AND ONE WRAP OF LIGHT-WEIGHT BUILDING PAPER. TOP ONE INCH TO BE FILLED WITH BUTYL RUBBER CAULKING (COMMERCIAL GRADE OF OTHER APPROVED WATER PROOF MATERIAL).



SECTION A-A
EXPANDED POLYSTYRENE FOAM
INSTALLATION DETAIL



SOIL PLATE

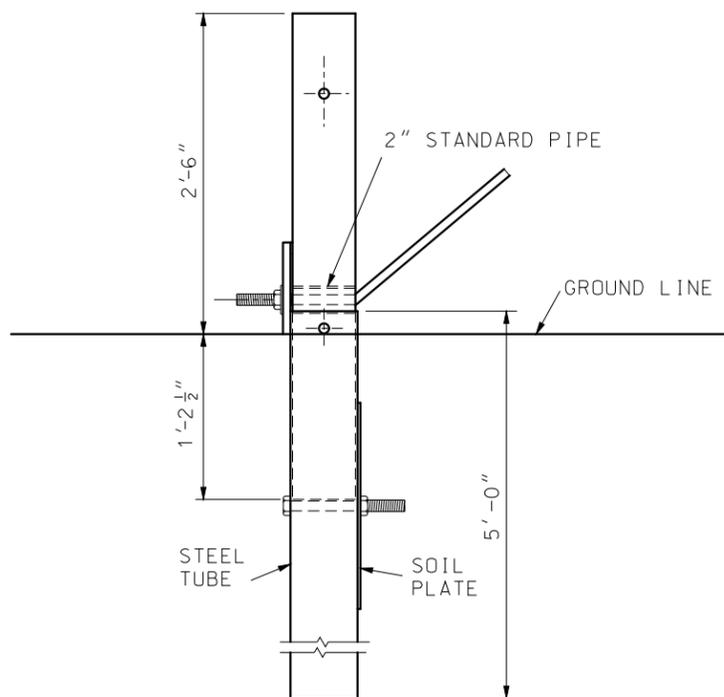


FRONT VIEW

SIDE VIEW

WOOD BREAKAWAY POST
SEE SECTION 1050

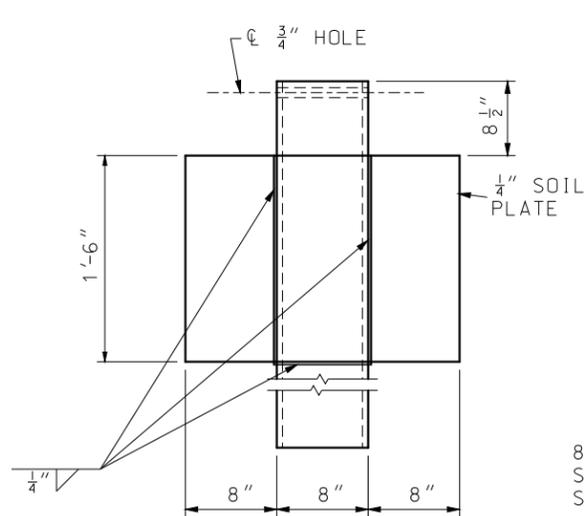
- (1) 5'-11 1/2" FOR CONCRETE FOUNDATION ALTERNATE.
- (2) 3'-8 1/2" FOR CONCRETE FOUNDATION ALTERNATE.



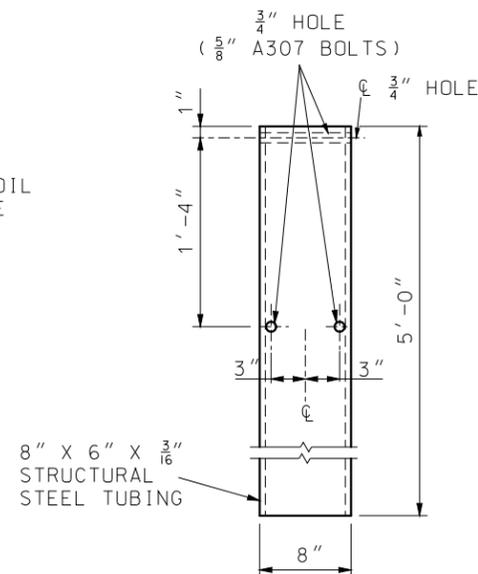
POST 1

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.



SHOP WELDED
SOIL PLATE CONNECTION



STEEL TUBE

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.

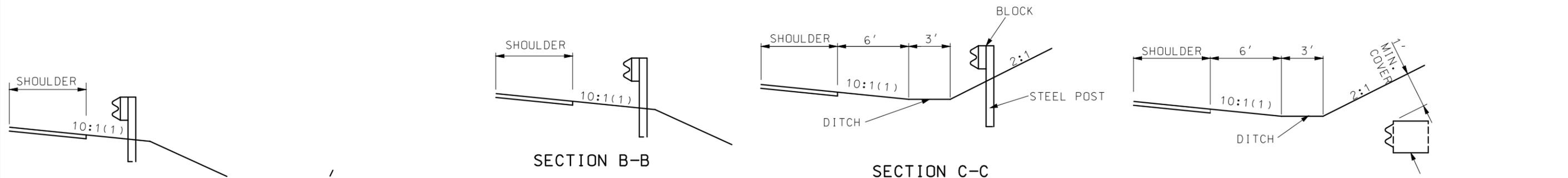
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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STATE OF MISSOURI
ERIC E. SCHROETER
NUMBER PE-28411
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

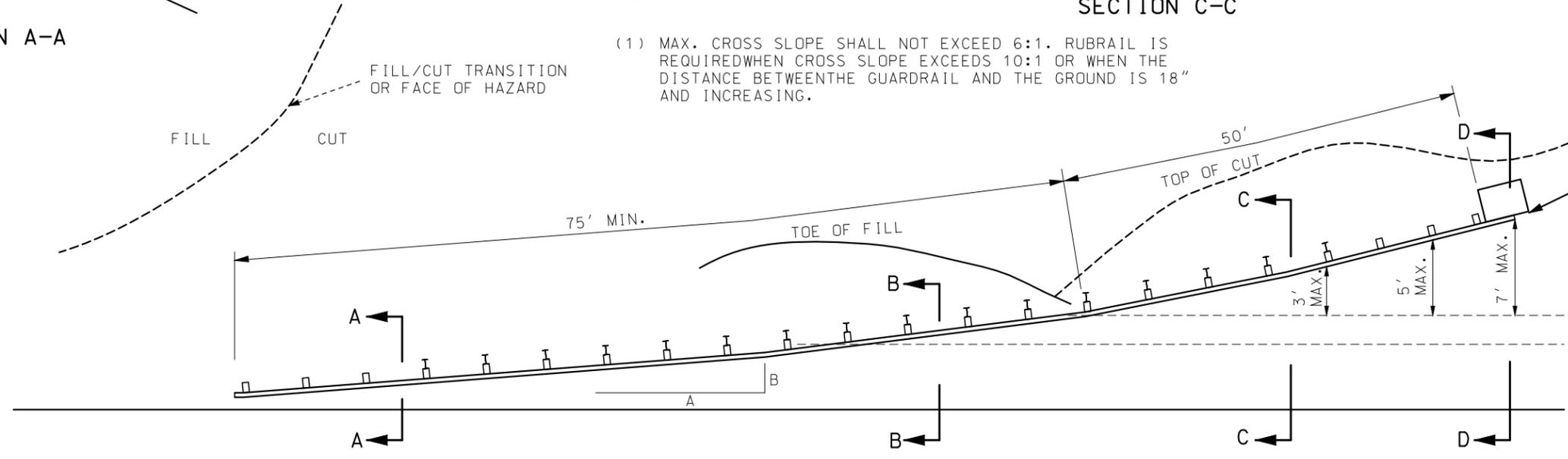
GUARDRAIL
TERMINAL ANCHOR ENDS

DATE EFFECTIVE: 01/01/2017	606.30J	SHEET NO. 3 OF 7
DATE PREPARED: 10/28/2016		

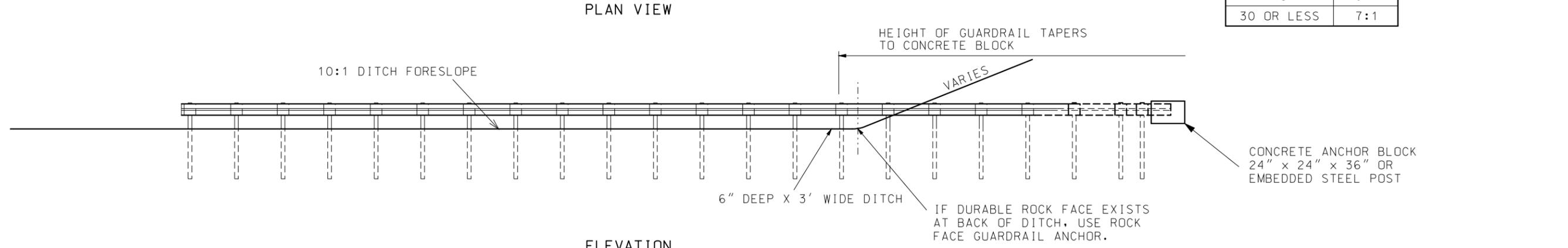
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



(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		



ELEVATION
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)**

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

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

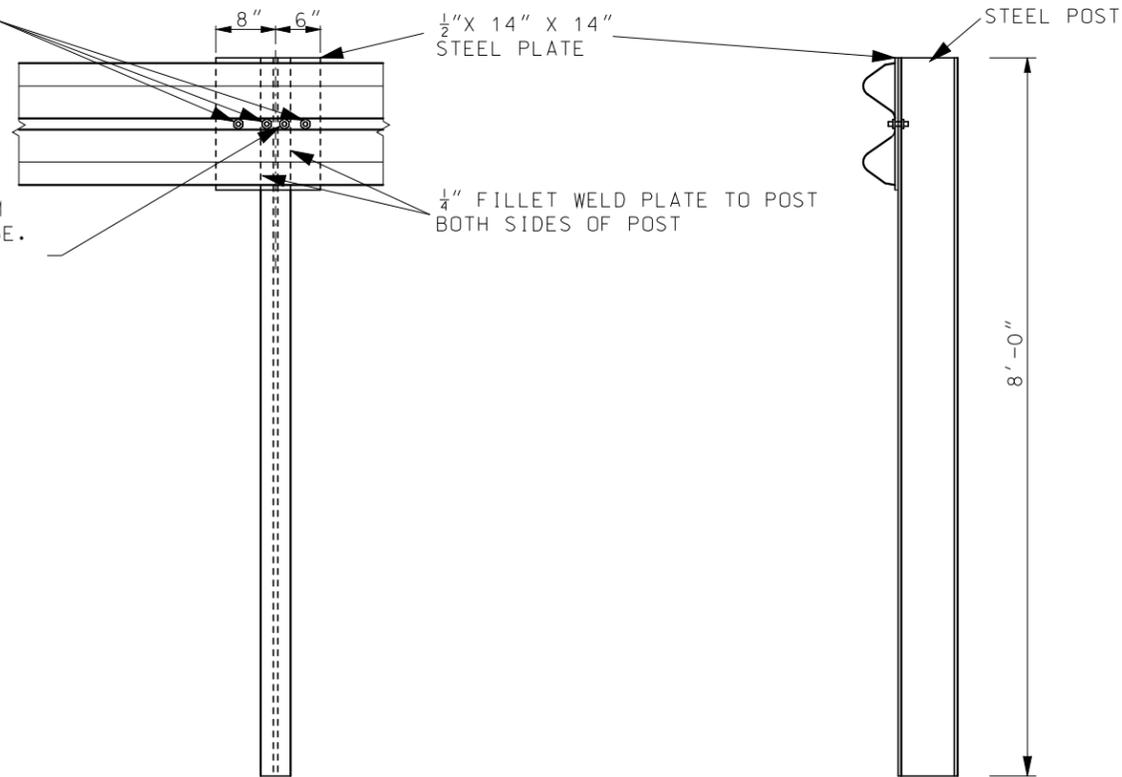
606.30J

SHEET NO.
5 OF 7

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

3 - 1" Ø HOLES TO BE FIELD DRILLED IN W-BEAM ELEMENT AND ATTACHED WITH 7/8" Ø HEX HEAD BOLTS 1 7/16" LONG EACH WITH ONE SQUARE WASHER AND HEX NUT.

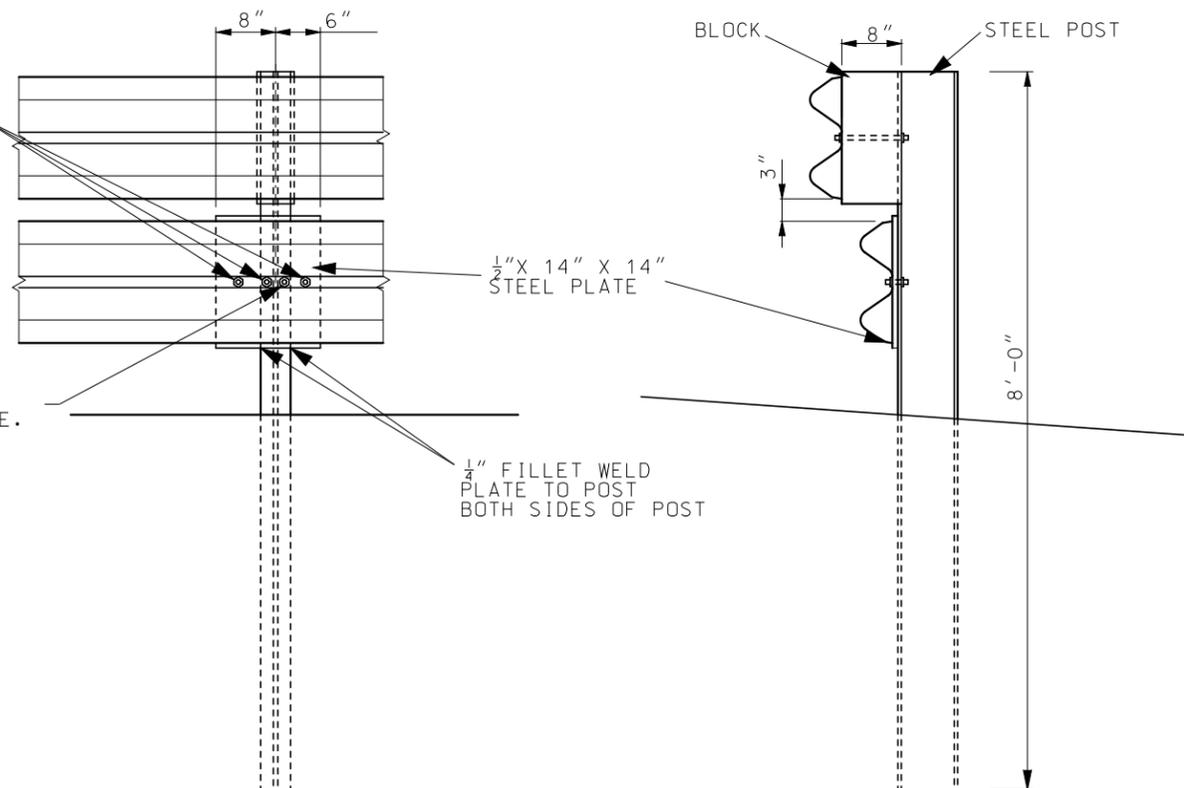
1" Ø HOLE TO BE FIELD DRILLED THROUGH W-BEAM AND THROUGH POST FLANGE. ATTACHED W-BEAM WITH 7/8" Ø HEX HEAD BOLT 2" LONG WITH ONE SQUARE WASHER AND HEX NUT.



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 7/16" 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.

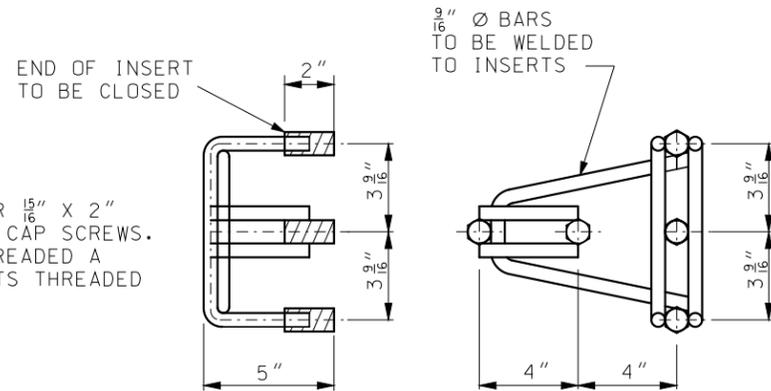


SPECIAL RUBRAIL TO POST CONNECTION AT POST A

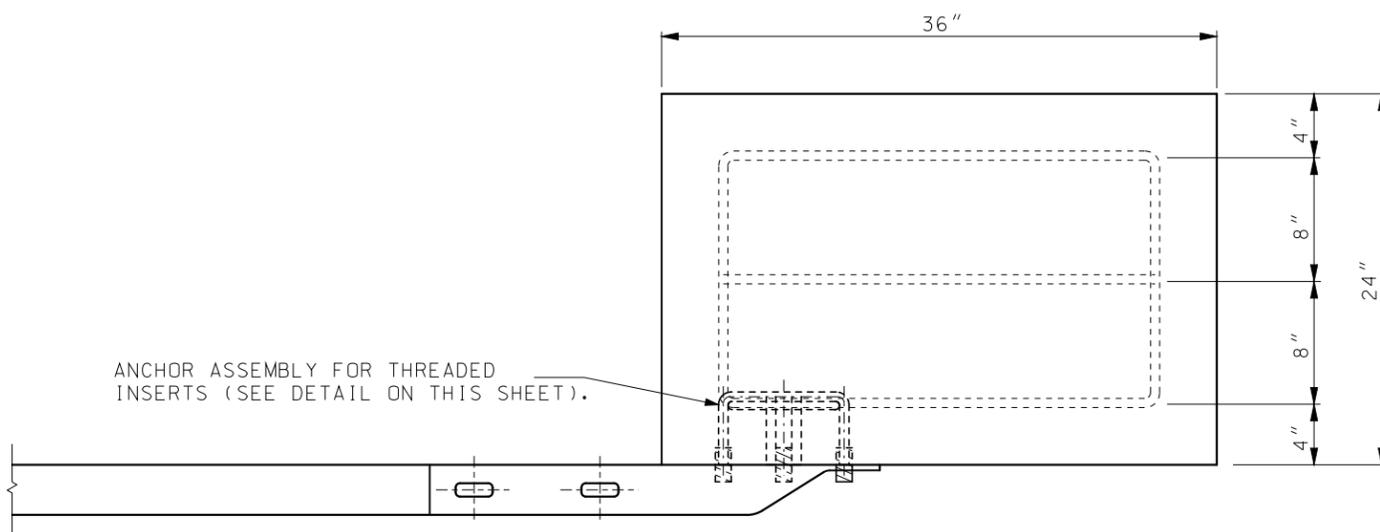
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	GUARDRAIL EMBEDDED ANCHOR TERMINAL ENDS (STEEL POST OPTION)
DATE EFFECTIVE: 01/01/2017 DATE PREPARED: 10/28/2016	SHEET NO. 606.30J 6 OF 7

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

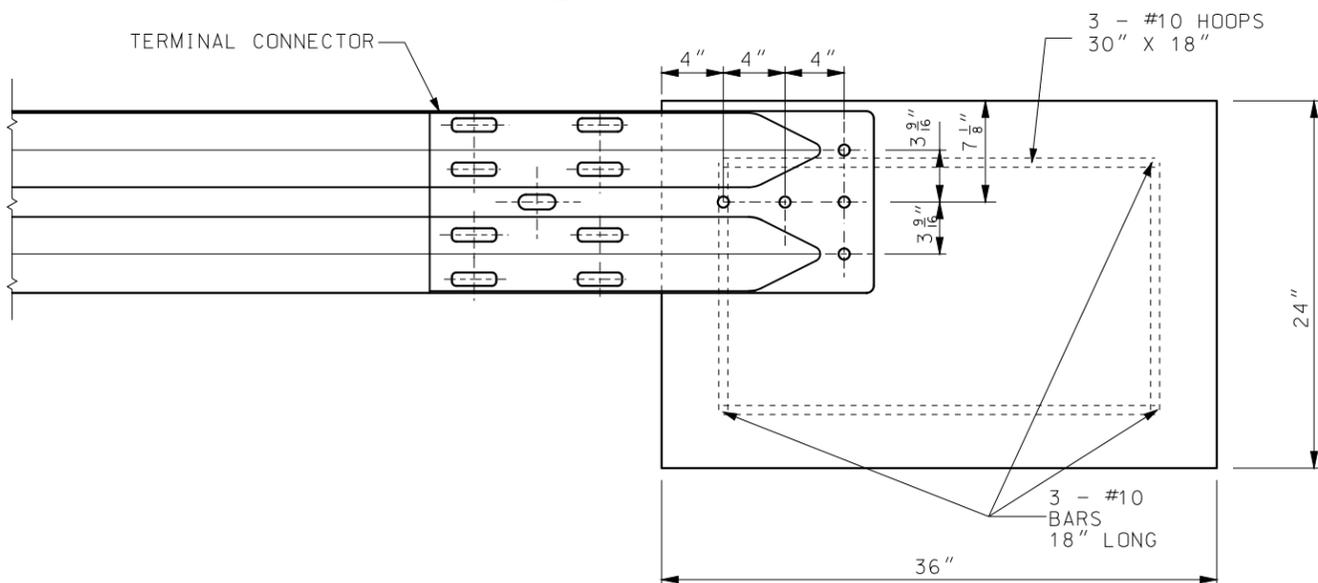
THREADED INSERTS FOR $\frac{15}{16}$ " X 2" GALVANIZED HEX HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MINIMUM $1\frac{7}{8}$ ". INSERTS THREADED MINIMUM OF $1\frac{3}{4}$ ".



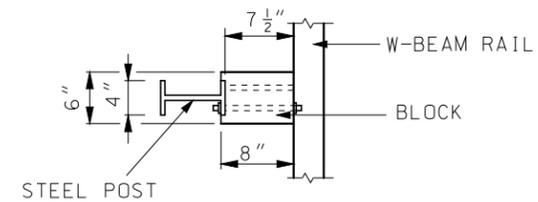
CONCRETE BLOCK ANCHOR ANCHOR ASSEMBLY



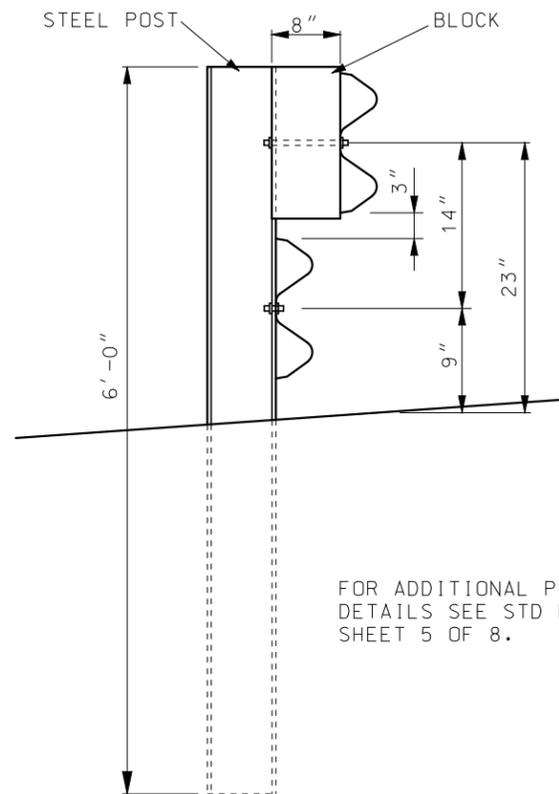
TOP VIEW



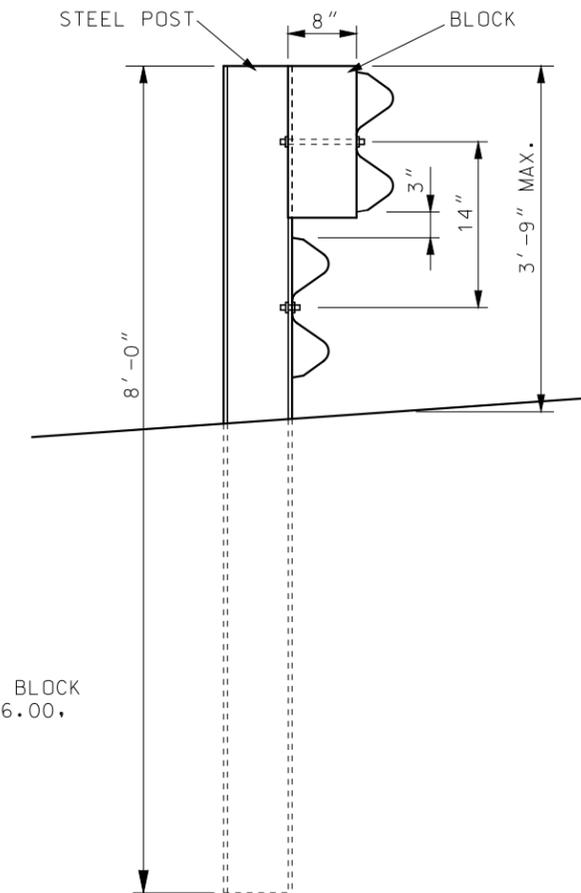
ELEVATION CONCRETE BLOCK ANCHOR (24" X 24" X 36")



PLAN



ELEVATION OF 6' POST



ELEVATION 8' POST

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

STEEL POST AND BLOCK DETAIL

MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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STATE OF MISSOURI
 ERIC E. SCHROETER
 NUMBER PE-28411
 PROFESSIONAL ENGINEER

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

GUARDRAIL
 EMBEDDED TERMINAL ENDS
 GENERAL DETAILS

606.30J

SHEET NO.
 7 OF 7