

GENERAL NOTES:

HEIGHT TRANSITIONS SHALL NOT BE USED IN LOCATIONS WHERE THE POSTED SPEED IS GREATER THAN 35 MPH.

ALL TOP AND END EDGES SHALL BE CHAMFERED 3/4 INCH.

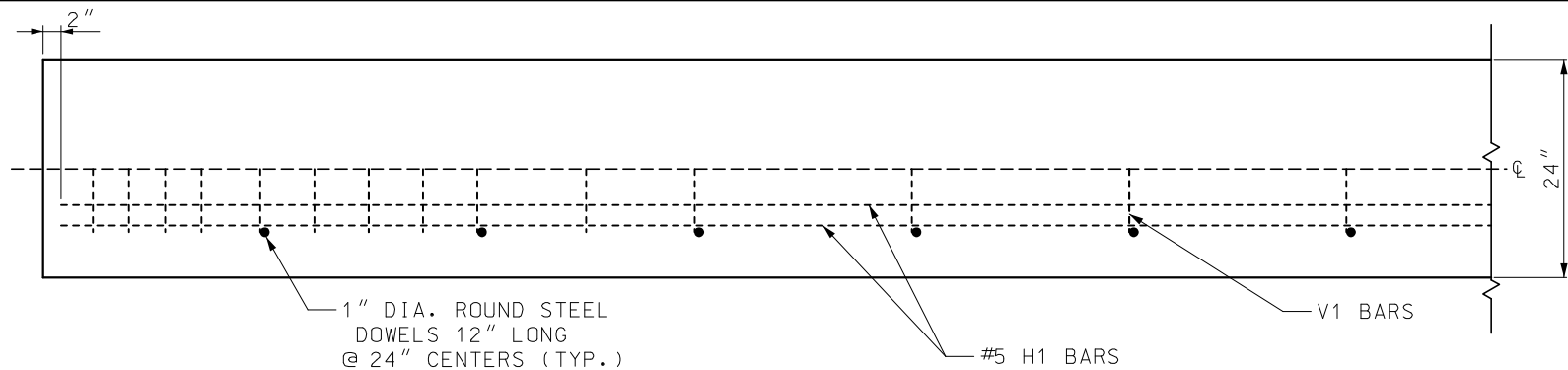
EXPANSION JOINTS SHALL BE PROVIDED IN THE BARRIER TO MATCH EXPANSION JOINTS IN PAVEMENT.

FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE STD PLAN 903.03.

#8 REINFORCING BARS WITH AN EPOXY ANCHOR SYSTEM MAY BE SUBSTITUTED FOR SMOOTH 1" DIAMETER ROUND STEEL DOWELS.

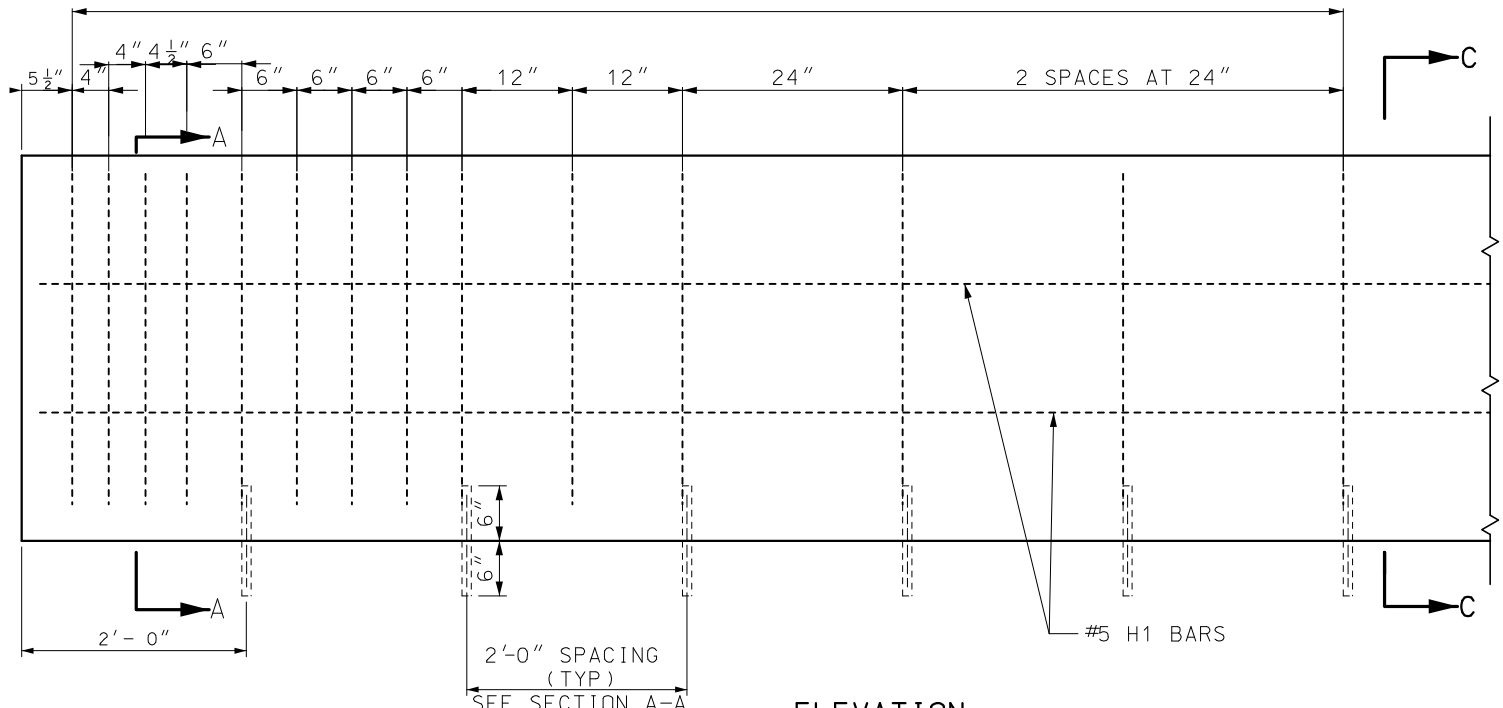
<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	
	<p>PERMANENT CONCRETE TRAFFIC BARRIER</p> <p>TYPE A AND B</p>
<p>DATE EFFECTIVE: 10/01/2020</p> <p>DATE PREPARED: 7/21/2020</p>	<p>617.10M</p> <p>SHEET NO. 1 OF 11</p>

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

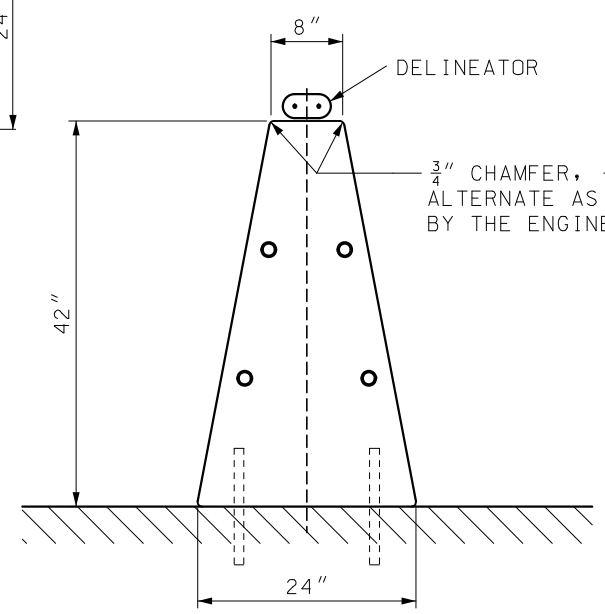


PLAN VIEW
(SYMMETRICAL ABOUT CENTERLINE)

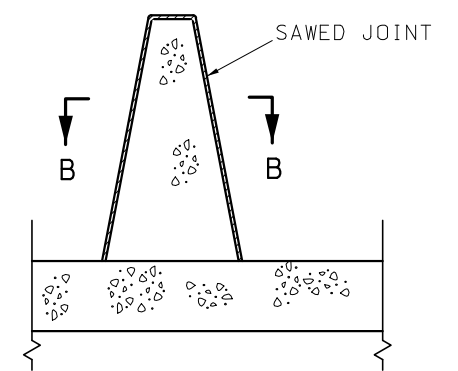
LIMITS OF #4 - V1 SPACED AS SHOWN BELOW
AT TERMINAL ENDS OF BARRIER ONLY



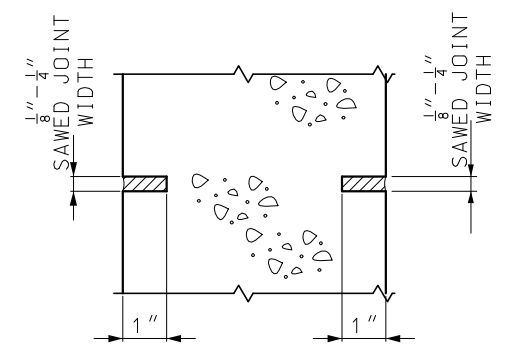
ELEVATION



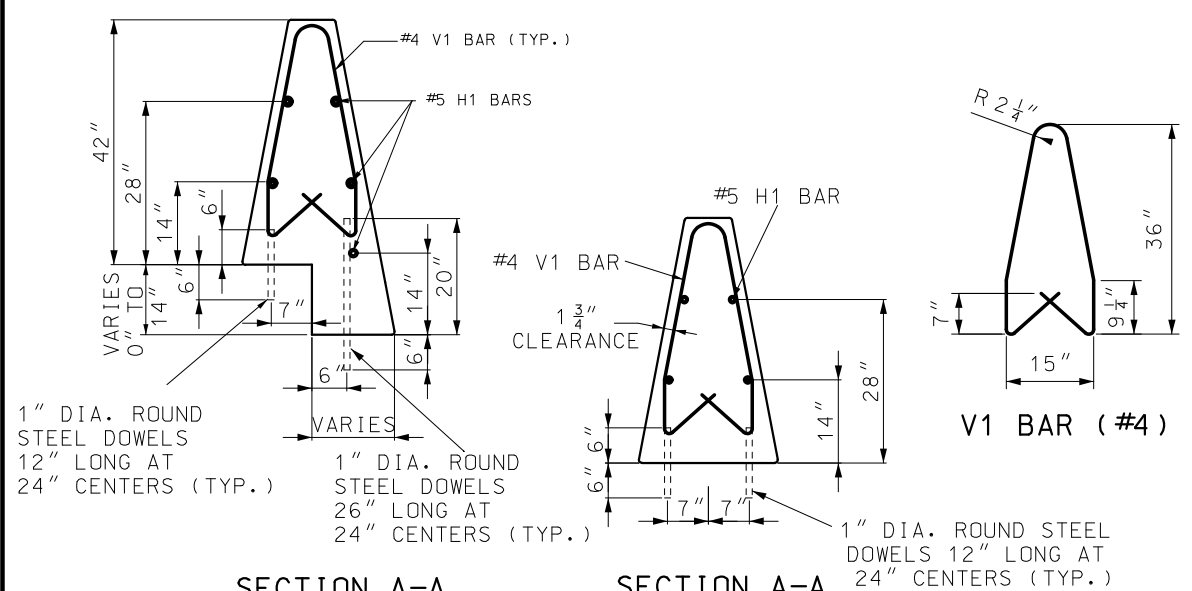
TYPE C
TYPICAL SECTION



SECTION THROUGH SAWED JOINT

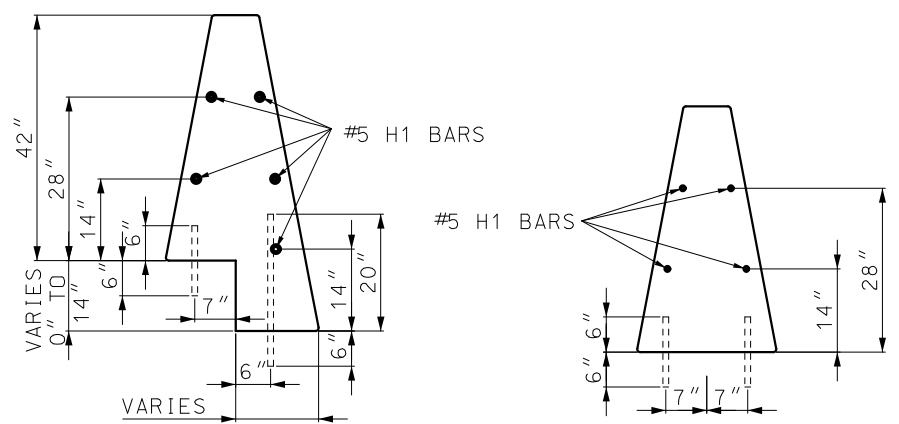


SECTION B-B



SECTION A-A
(STEPPED PAVEMENT) SECTION A-A
(NORMAL PAVEMENT)

REINFORCING DETAILS



SECTION C-C
(STEPPED PAVEMENT) SECTION C-C
(NORMAL PAVEMENT)

SPECIFY A MINIMUM 1 3/4" PAVEMENT SU
ABUTTING BOTH BARRIER FACES.

SAWED JOINTS SHALL BE LOCATED AT PAVEMENT TRANSVERSE
JOINTS.

#8 REINFORCING BARS WITH AN EPOXY ANCHOR SYSTEM MAY
BE SUBSTITUTED FOR SMOOTH 1" DIAMETER ROUND STEEL
DOWELS.

FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE
STD PLAN 903.03.



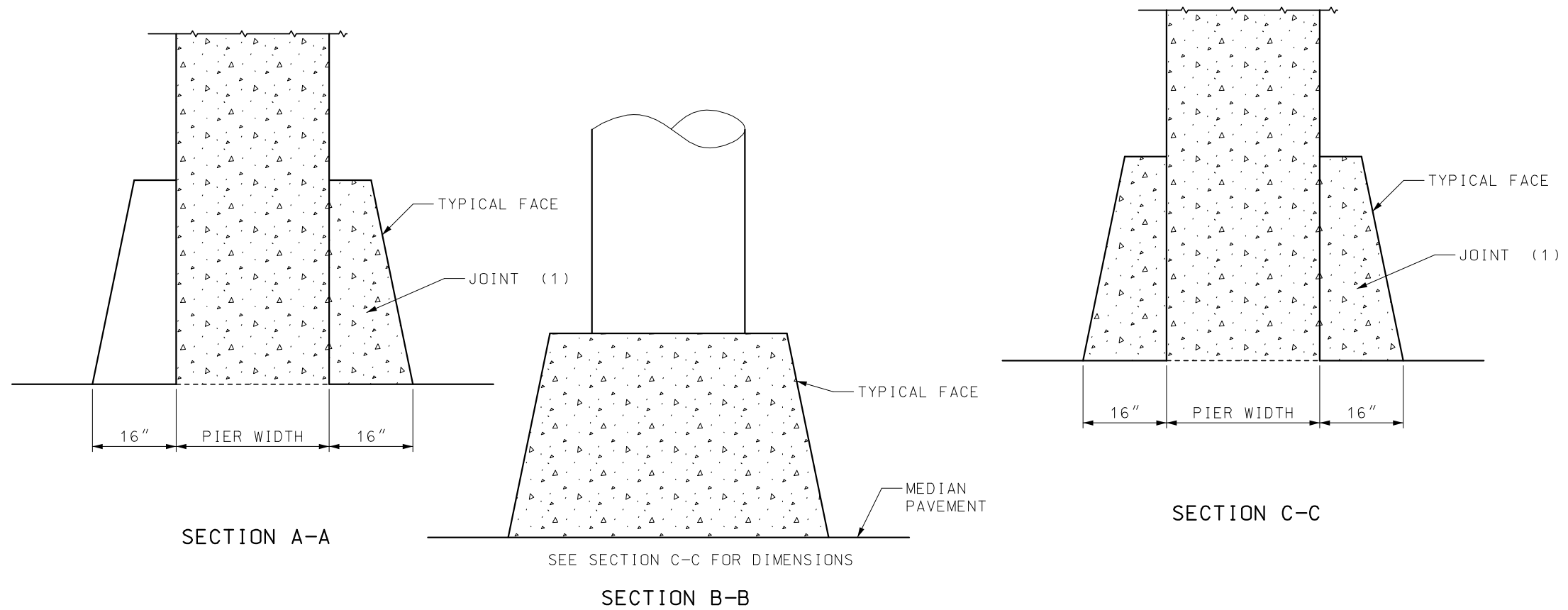
PERMANENT CONCRETE
TRAFFIC BARRIER
TYPE C

10/01/2020

617.10M

4 OF 11

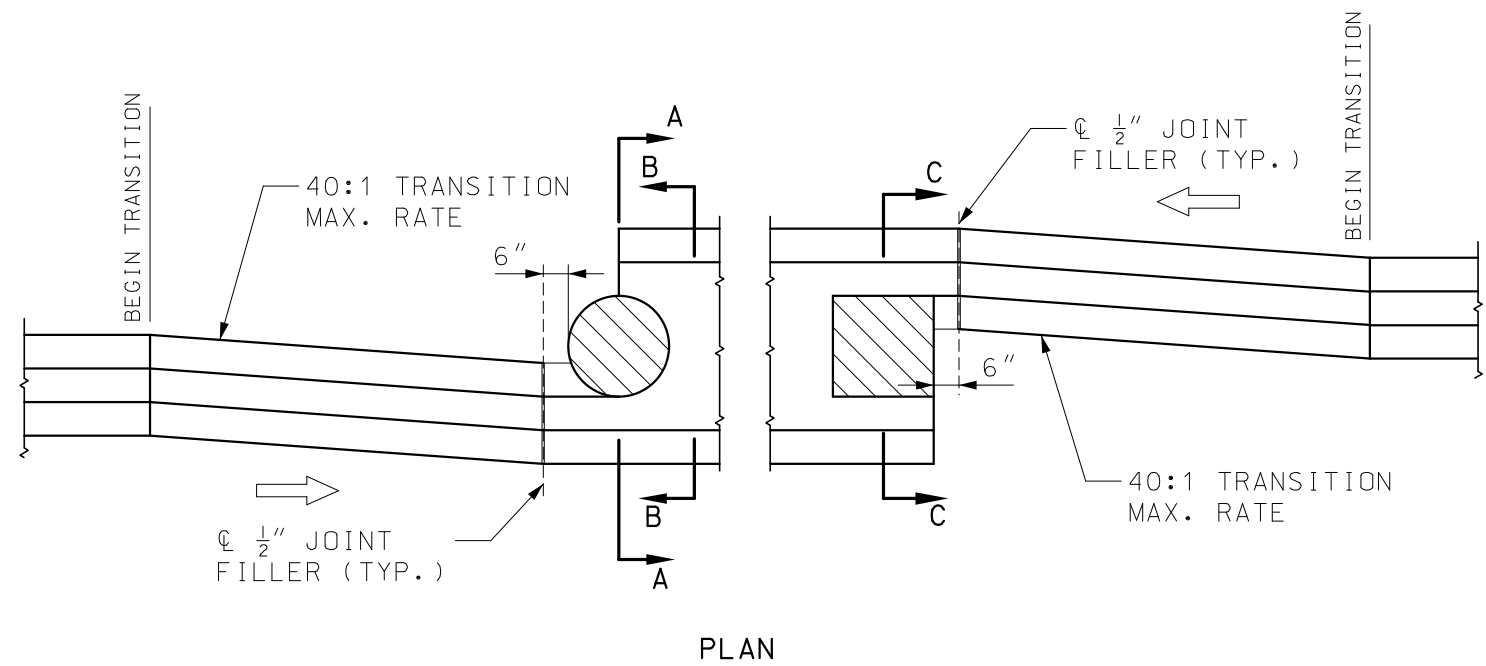
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SECTION A-A

SECTION B-B


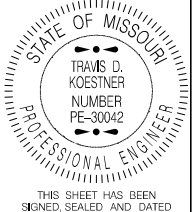
SECTION C-C



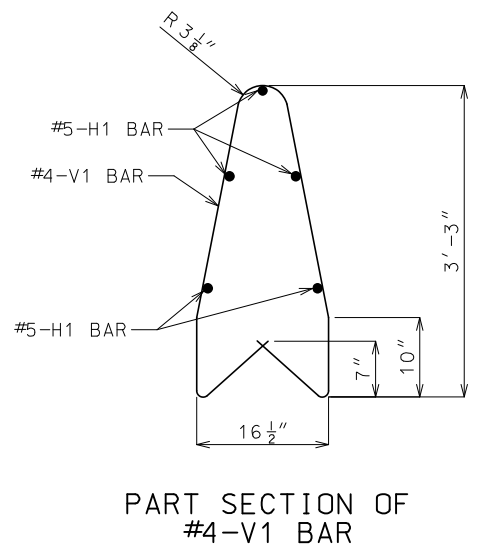
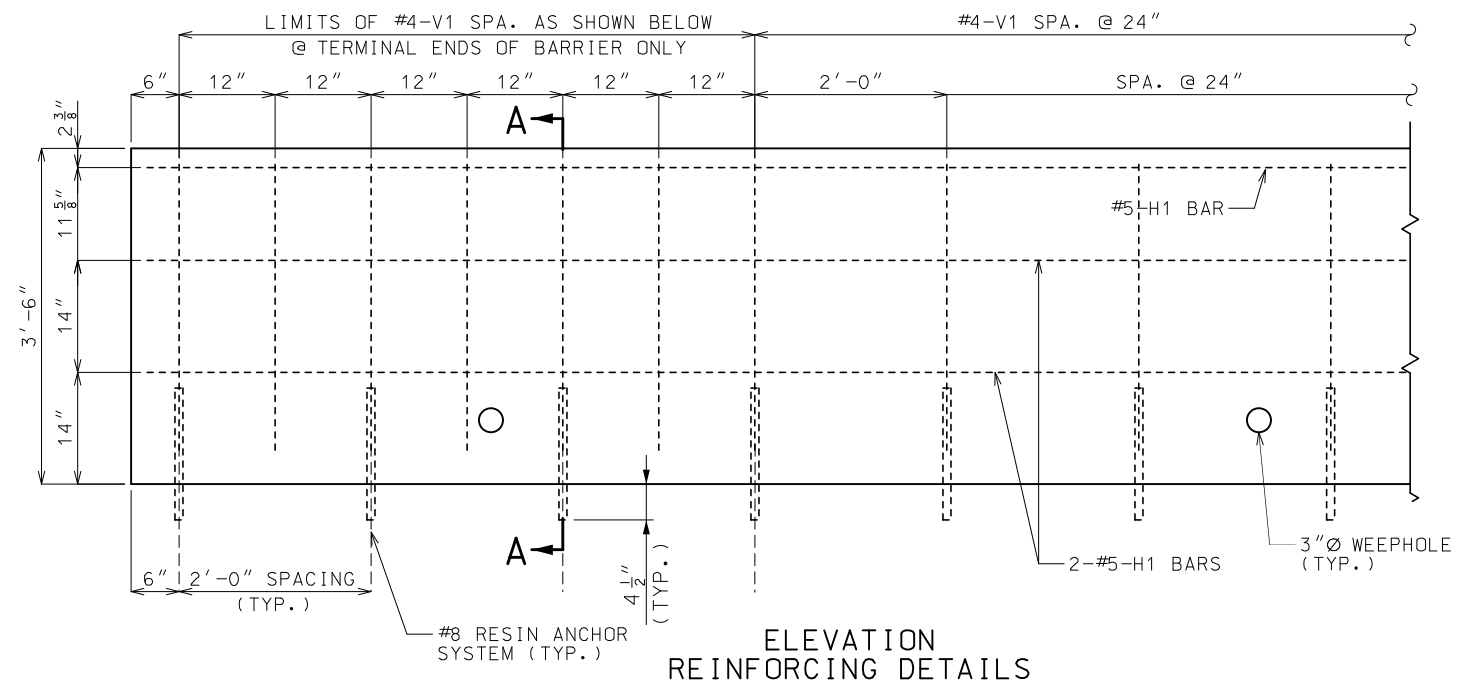
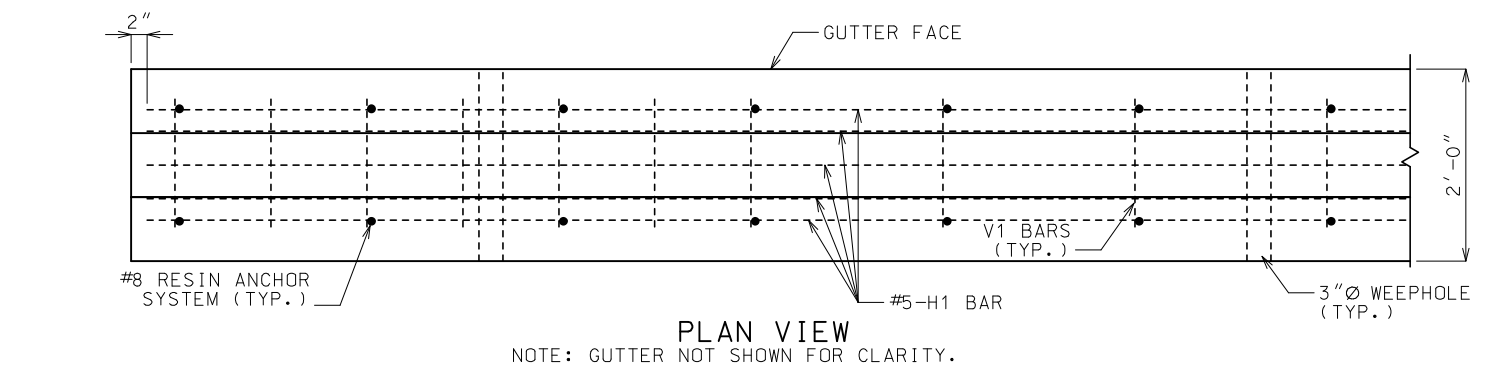
PLAN

TRANSITION DETAILS FOR PIER PROTECTION

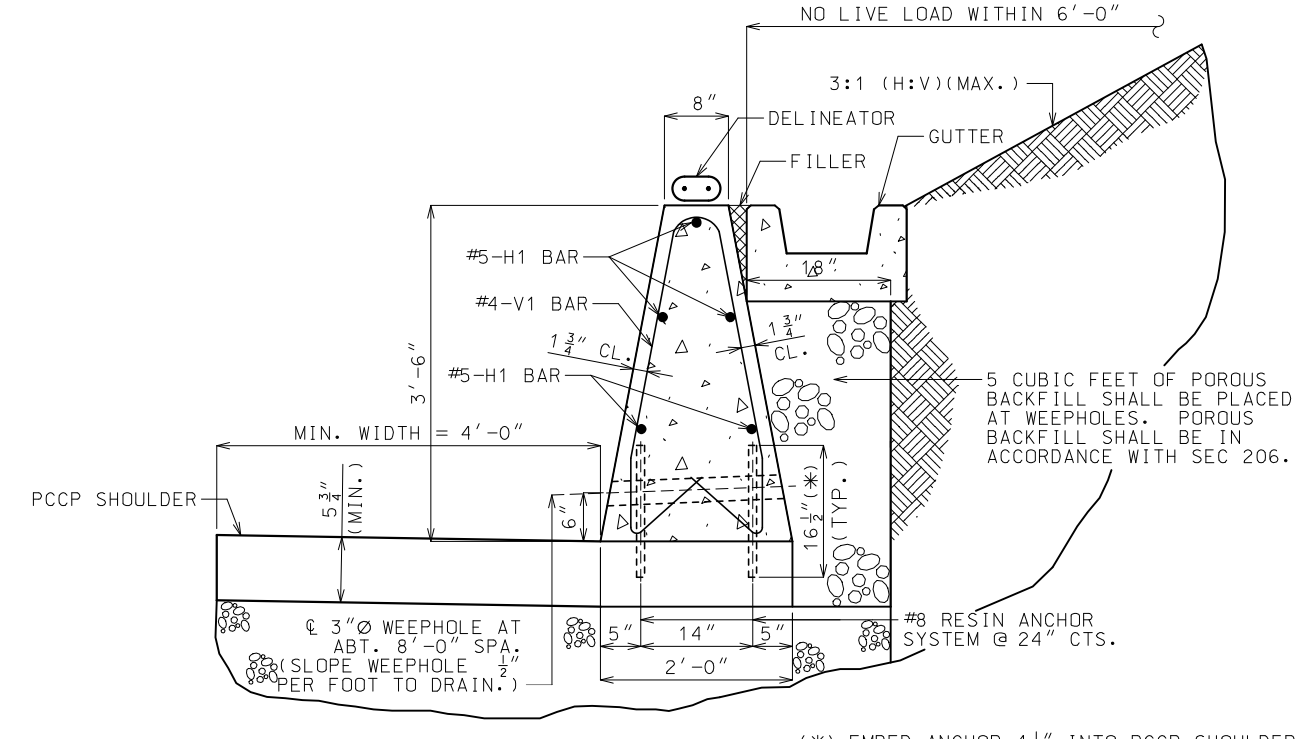
(1) 1 IN. JOINT WITH JOINT FILLER AND SEALER

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	PERMANENT CONCRETE TRAFFIC BARRIER TYPE C
DATE EFFECTIVE: 10/01/2020 DATE PREPARED: 7/21/2020	SHEET NO. 5 OF 11 617.10M

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



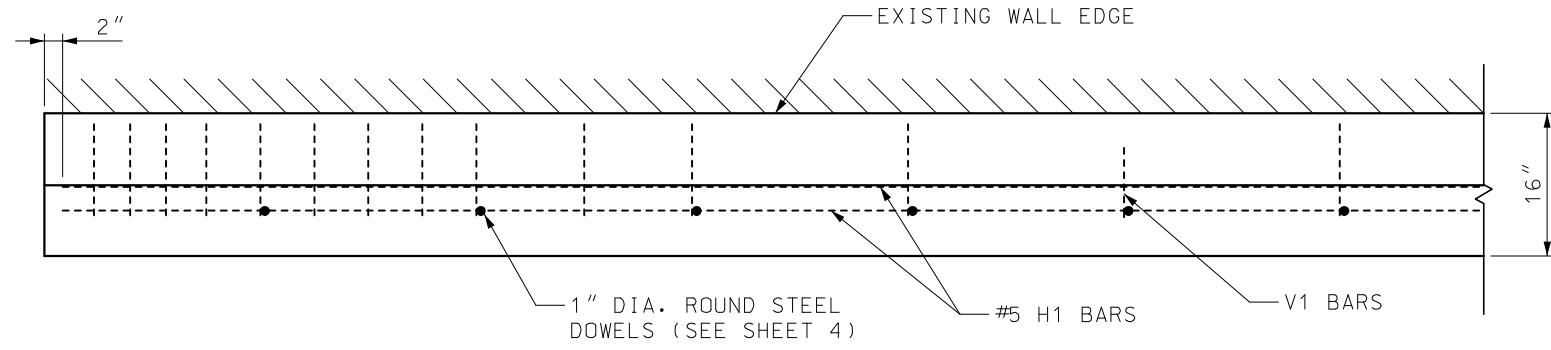
- GENERAL NOTES:**
- CONCRETE SHALL BE CLASS B F'C = 4,000 PSI.
 - ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.
 - ANGLE OF INTERNAL FRICTION, $\phi \geq 27^\circ$ FOR BACKFILL MATERIAL.
 - MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE $1\frac{1}{2}$ " UNLESS OTHERWISE SHOWN.
 - BAR SPLICES SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OR THE BAR.
 - ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL REINFORCING STEEL WILL BE POSITIONED $\pm 1/2$ INCH AS DIMENSIONED WILL BE SATISFACTORY.
 - THE CONTRACTOR HAS THE OPTION TO SLIP-FORM THE BARRIER. IN WHICH CASE, ADDITIONAL REINFORCEMENT MAY BE TIED TO THE UPPER TWO-THIRDS OF THE REINFORCING CAGE TO PROVIDE BRACING.
 - THIS BARRIER SHALL NOT BE USED TO SUPPORT HIGHWAY LIGHTING POLES.
 - THIS BARRIER SHALL NOT BE USED FOR BRIDGE ROADWAY APPLICATIONS.
 - SAWED JOINTS SHALL BE SPACED AT 15'-0". SEE MISSOURI STANDARD PLANS FOR SAWED JOINT DETAIL.
 - TYPE C BARRIER MODIFIED RETAINING WALL WITH NONMOMENT SLAB SHALL BE USED ONLY AT LOCATIONS SHOWN ON PLANS.
 - FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE STD PLAN 903.03.
 - RESIN ANCHOR SYSTEM SHALL BE DRILLED IN THE PAVEMENT.
 - WHEN BARRIER HEIGHT EXCEEDS 42" OR SLOPE EXCEEDS 3:1 (H:V) OR LIVE LOAD IS WITHIN 6'-0", CONTACT BRIDGE DIVISION FOR SPECIAL DESIGN.



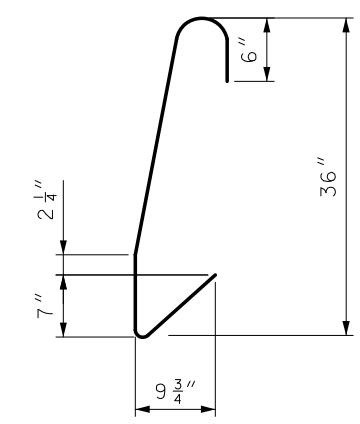
SECTION A-A
(FOR SLOPING AND NONSLOPING BACKSLOPE)

(*) EMBED ANCHOR $4\frac{1}{2}$ " INTO PCCP SHOULDER.

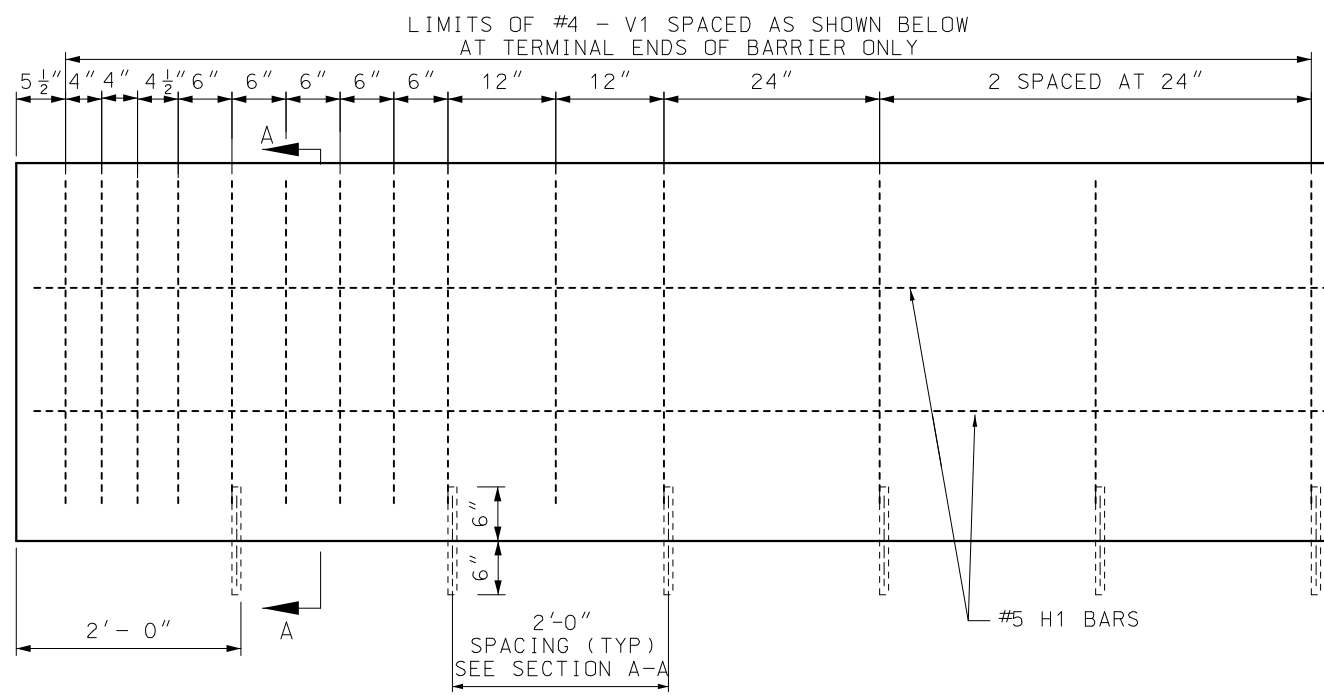
	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	PERMANENT CONCRETE TRAFFIC BARRIER TYPE C AS RETAINING WALL	
	DATE EFFECTIVE: 10/01/2020 DATE PREPARED: 7/21/2020	617.10M



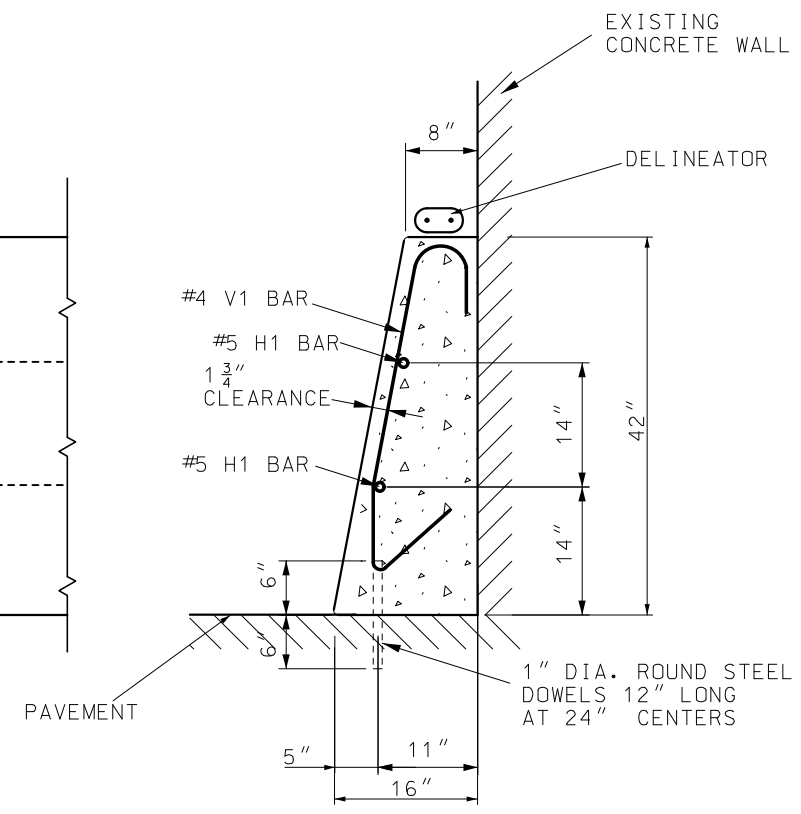
PLAN VIEW



V1 BAR (#4)



ELEVATION REINFORCING DETAILS



SECTION A-A

NOTES:

- ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.
- BAR SPLICES SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OF THE BAR.
- ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL REINFORCING STEEL WILL BE POSITIONED $\pm \frac{1}{2}$ INCH AS DIMENSIONED WILL BE SATISFACTORY.
- THE CONTRACTOR HAS THE OPTION TO SLIP-FORM THE BARRIER. IN WHICH CASE, ADDITIONAL REINFORCEMENT MAY BE TIED TO THE UPPER TWO-THIRDS OF THE REINFORCING CAGE TO PROVIDE BRACING.
- THIS BARRIER SHALL NOT BE USED TO SUPPORT HIGHWAY LIGHTING POLES.
- THIS BARRIER SHALL NOT BE USED FOR BRIDGE ROADWAY APPLICATIONS.
- SAWED JOINTS SHALL BE LOCATED AT PAVEMENT TRANSVERSE JOINTS.
- TYPE D SHALL BE USED ONLY AT LOCATIONS SHOWN ON PLANS.
- #8 REINFORCING BARS WITH AN EPOXY ANCHOR SYSTEM MAY BE SUBSTITUTED FOR SMOOTH 1" DIAMETER ROUND STEEL DOWELS.
- FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE STD PLAN 903.03.

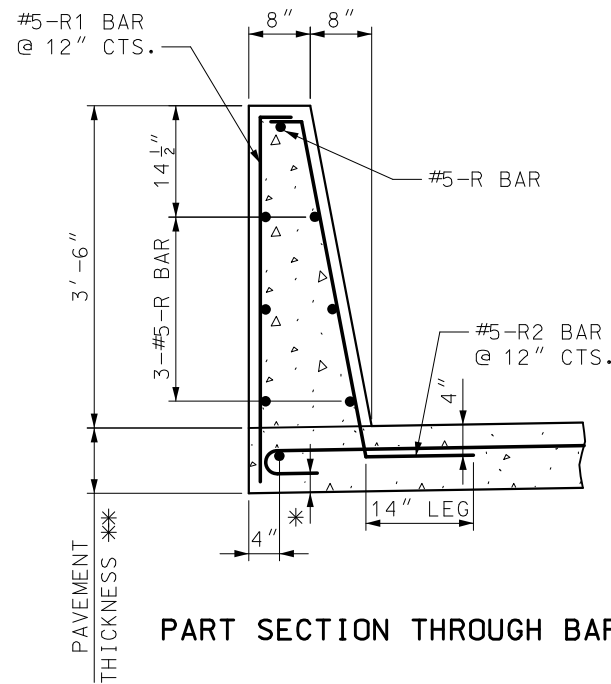
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
 TRAVIS D. KOESTNER
 NUMBER PE-30042
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

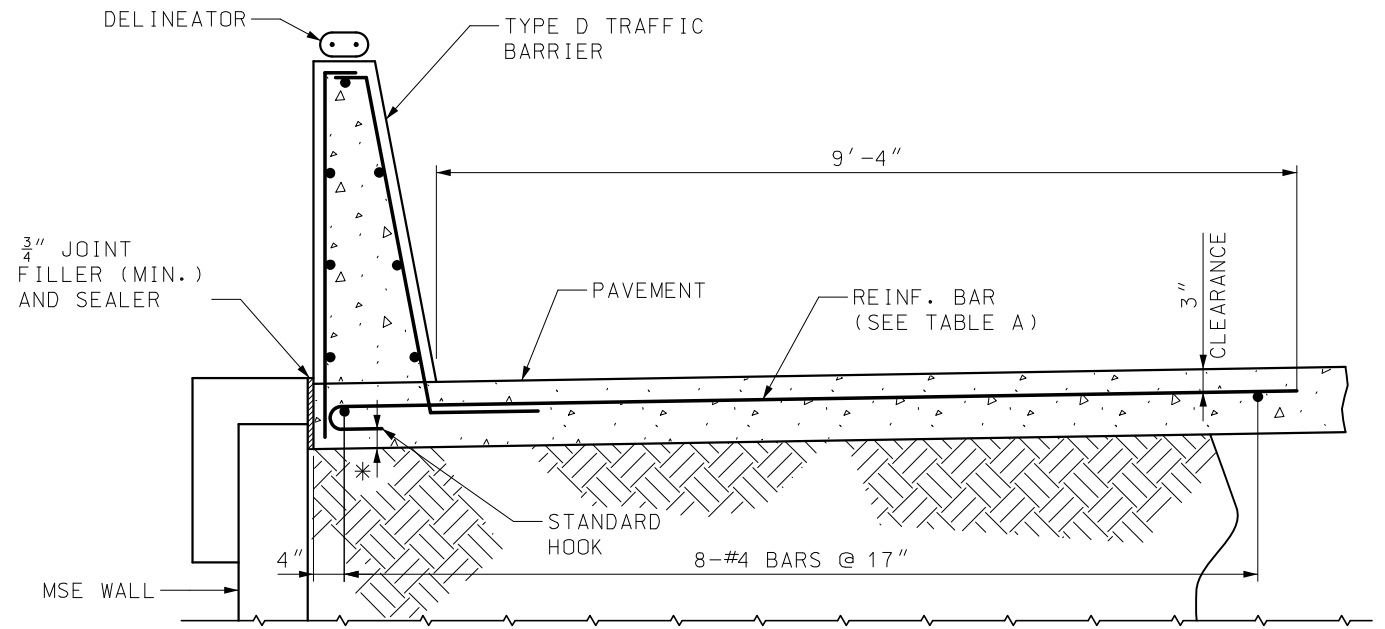
PERMANENT CONCRETE TRAFFIC BARRIER TYPE D

DATE EFFECTIVE: 10/01/2020	617.10M	SHEET NO. 7 OF 11
DATE PREPARED: 7/21/2020		

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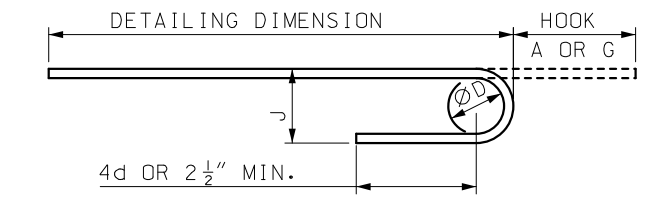
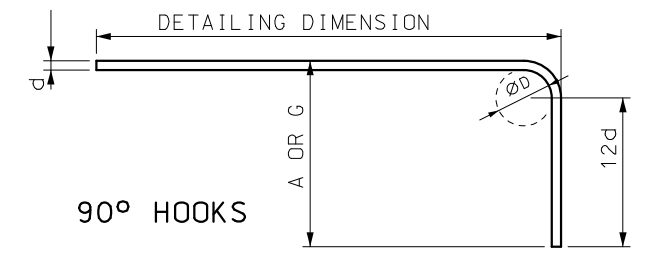


PART SECTION THROUGH BARRIER

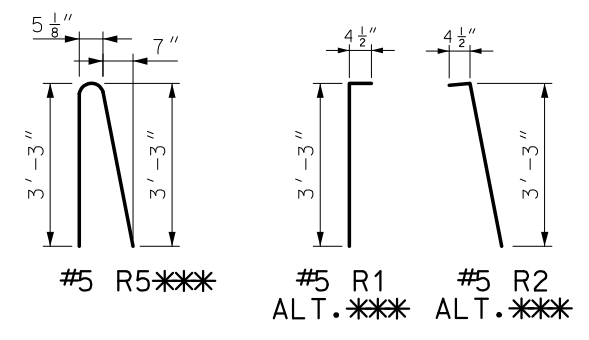
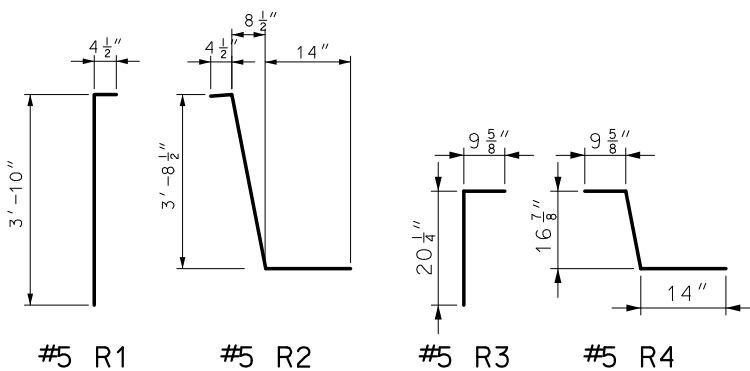


TYPE D (MSE WALL) TRAFFIC BARRIER ON TOP OF MSE WALL

END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	ALL GRADES		
		180° HOOKS		90° HOOKS
		A OR G	J	A OR G
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"

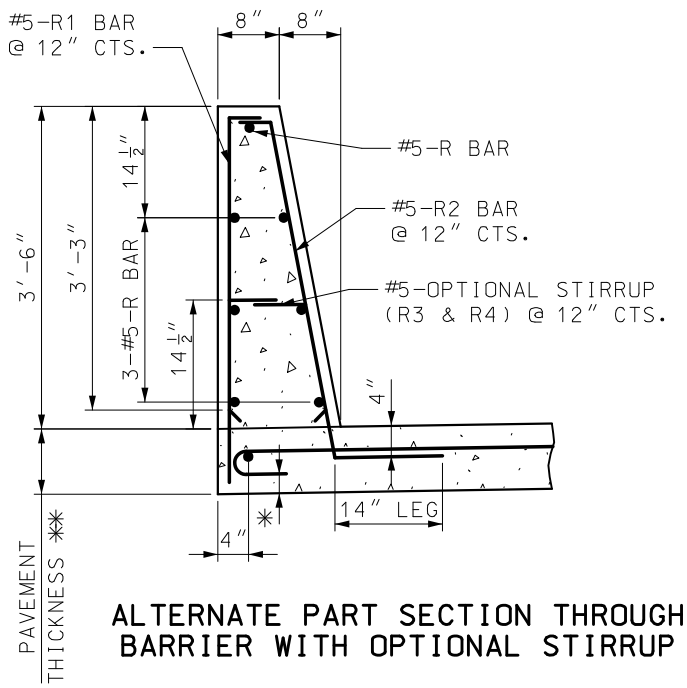


ALL STANDARD HOOKS AND BENDS OTHER THAN 180° TO BE BENT WITH THE SAME PROCEDURE AS FOR 90° STANDARD HOOKS.

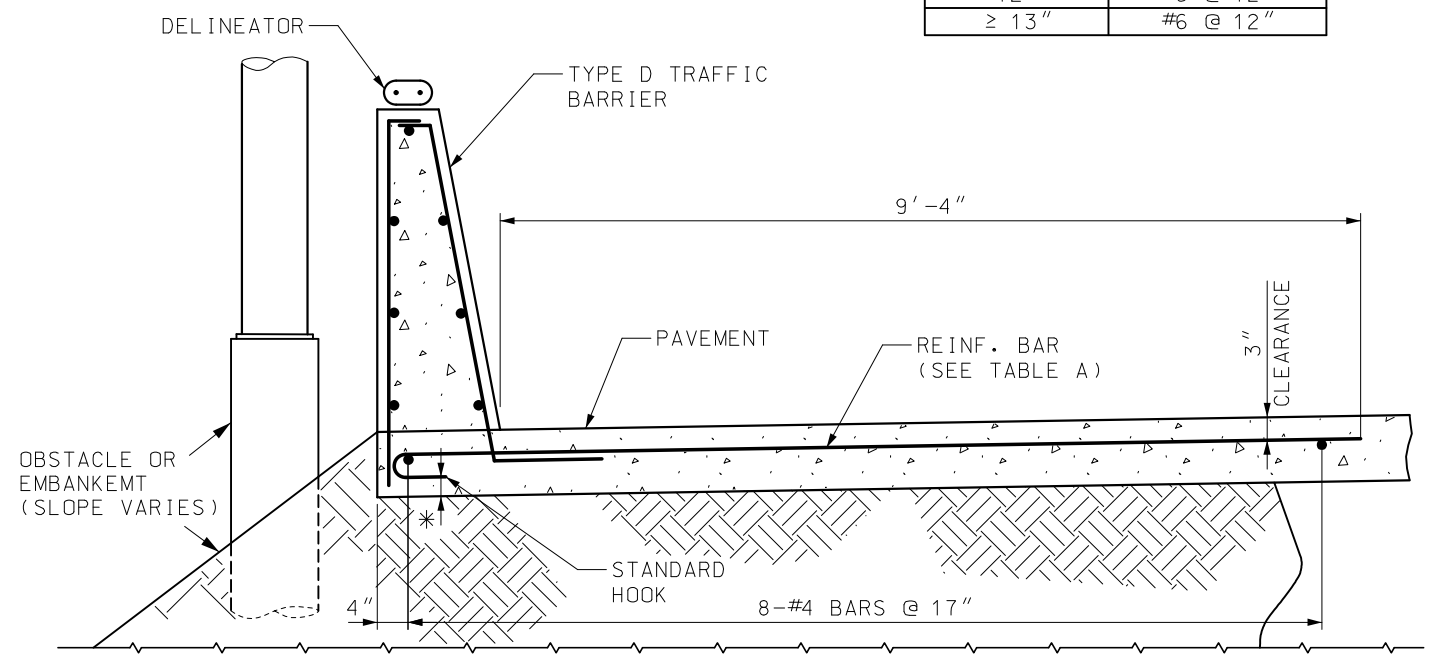


PAVEMENT THICKNESS **	BAR SIZE & SPACING
8"	#5 @ 4"*
9"	#5 @ 5"*
10"	#5 @ 6"
11"	#5 @ 7"
12"	#6 @ 12"
≥ 13"	#6 @ 12"

- NOTES:
- TYPE D SHALL BE USED ONLY AT LOCATIONS SHOWN ON PLANS.
 - FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE STD PLAN 903.03.
 - ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.
 - NO DIRECT PAYMENT WILL BE MADE FOR REINFORCING STEEL.
 - MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2" UNLESS OTHERWISE SHOWN.
 - * TILT TRANSVERSE PAVEMENT REINFORCEMENT HOOKS FROM VERTICAL ALIGNMENT TO MAINTAIN 1 1/2" MINIMUM CLEARANCE.
 - ** SEE ROADWAY PAVEMENT DESIGN.
 - *** R1 AND R2 MAY BE REPLACED WITH ALTERNATE (3'-3") R1 AND R2 OR R5 ONLY FOR USE WITH OPTIONAL STIRRUP.



ALTERNATE PART SECTION THROUGH BARRIER WITH OPTIONAL STIRRUP



TYPE D TRAFFIC BARRIER - MOMENT SLAB**

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

PERMANENT CONCRETE TRAFFIC BARRIER

TYPE D ATOP MSE WALL AND MOMENT SLAB

TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

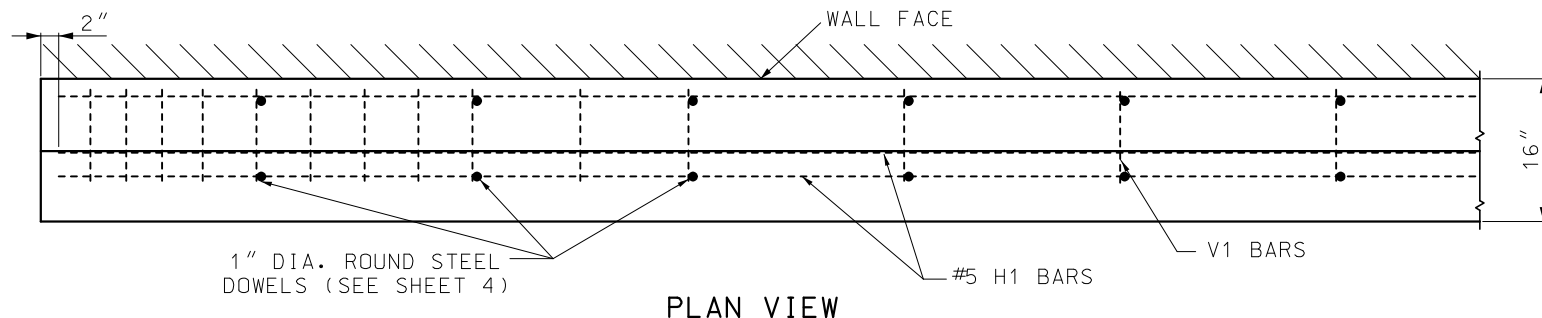
DATE EFFECTIVE: 10/01/2020

DATE PREPARED: 7/21/2020

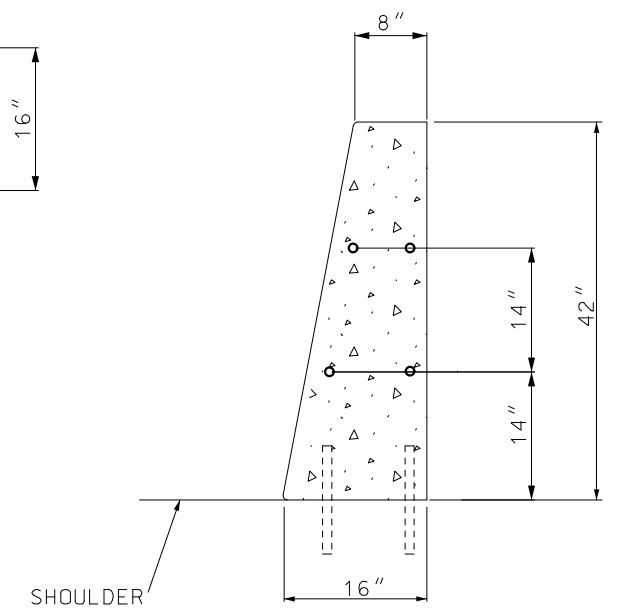
617.10M

SHEET NO.
8 OF 11

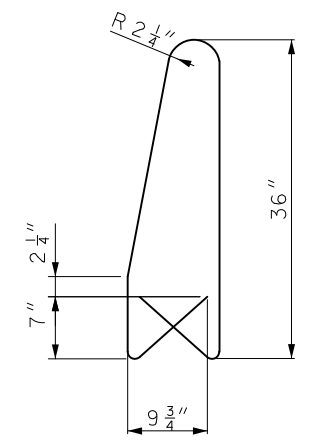
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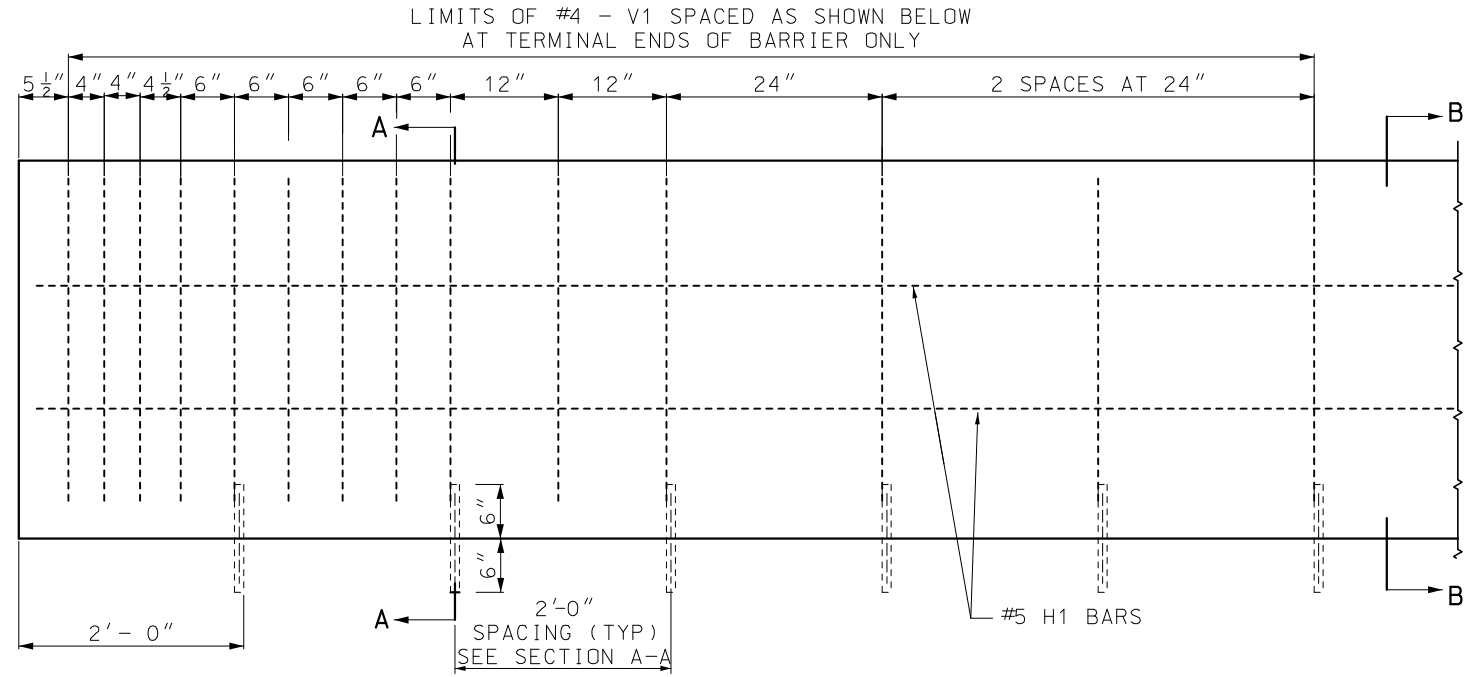
PLAN VIEW



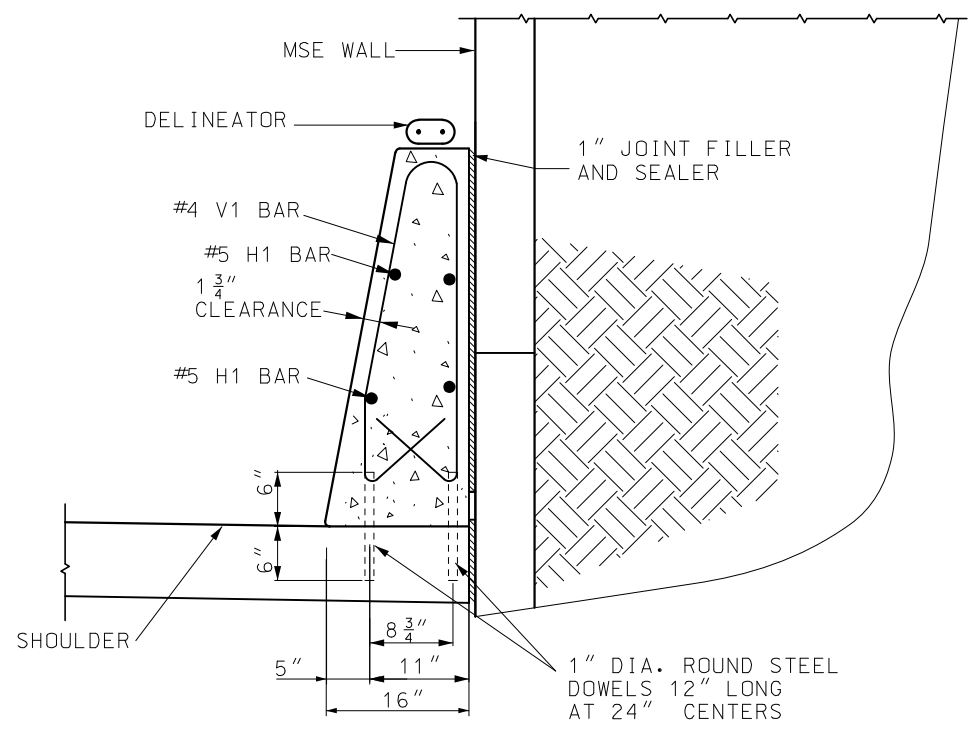
TYPE D TYPICAL SECTION



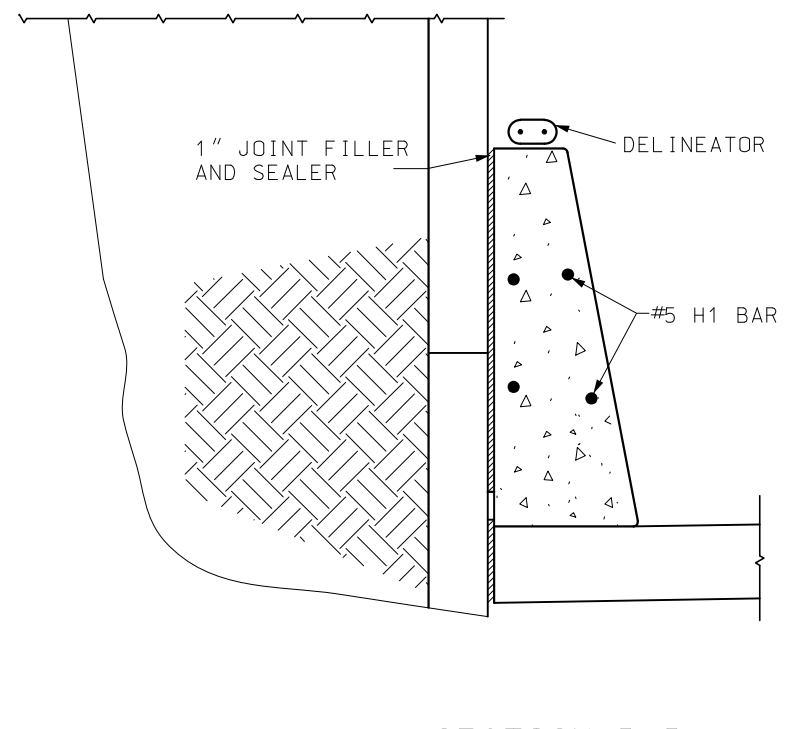
V1 BAR (#4)



ELEVATION REINFORCING DETAILS



SECTION A-A



SECTION B-B

NOTES:

- ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.
- BAR SPLICES SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OF THE BAR.
- MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2", UNLESS OTHERWISE SHOWN.
- ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL REINFORCING STEEL WILL BE POSITIONED ± 1/2 INCH AS DIMENSIONED WILL BE SATISFACTORY.
- THE CONTRACTOR HAS THE OPTION TO SLIP-FORM THE BARRIER. IN WHICH CASE, ADDITIONAL REINFORCEMENT MAY BE TIED TO THE UPPER TWO-THIRDS OF THE REINFORCING CAGE TO PROVIDE BRACING.
- THIS BARRIER SHALL NOT BE USED TO SUPPORT HIGHWAY LIGHTING POLES.
- THIS BARRIER SHALL NOT BE USED FOR BRIDGE ROADWAY APPLICATIONS.
- SAWED JOINTS SHALL BE SPACED AT 15'-0". SEE STANDARD PLANS FOR SAWED JOINT DETAIL
- TYPE D BARRIER SHALL BE USED ONLY AT LOCATIONS SHOWN ON PLANS.
- #8 REINFORCING BARS WITH AN EPOXY ANCHOR SYSTEM MAY BE SUBSTITUTED FOR SMOOTH 1" DIAMETER ROUND STEEL DOWELS.
- FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE STD PLAN 903.03.

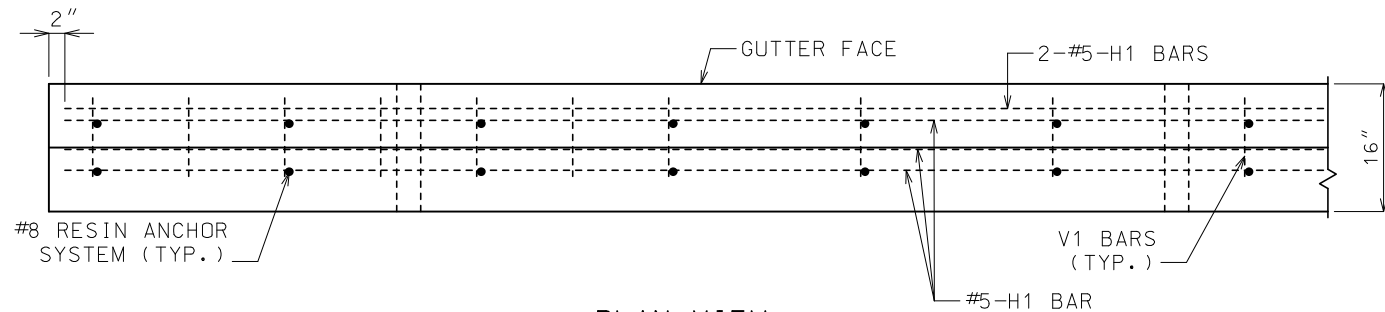
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
 TRAVIS D. KOESTNER
 NUMBER PE-30042
 PROFESSIONAL ENGINEER
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PERMANENT CONCRETE TRAFFIC BARRIER
 TYPE D BESIDE MSE WALL

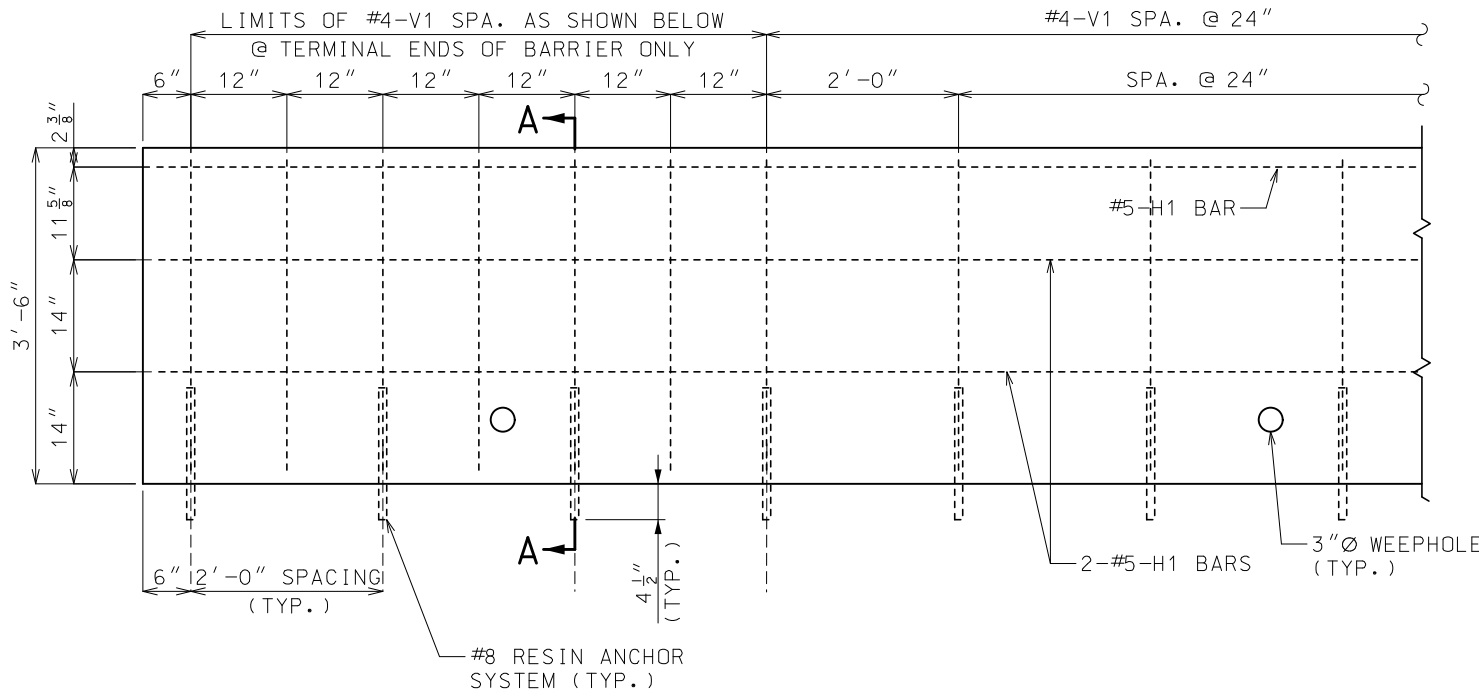
DATE EFFECTIVE: 10/01/2020	617.10M	SHEET NO. 9 OF 11
DATE PREPARED: 7/21/2020		

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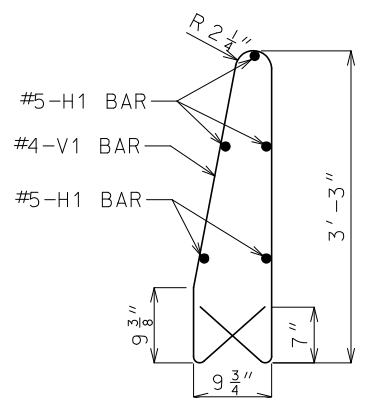


PLAN VIEW

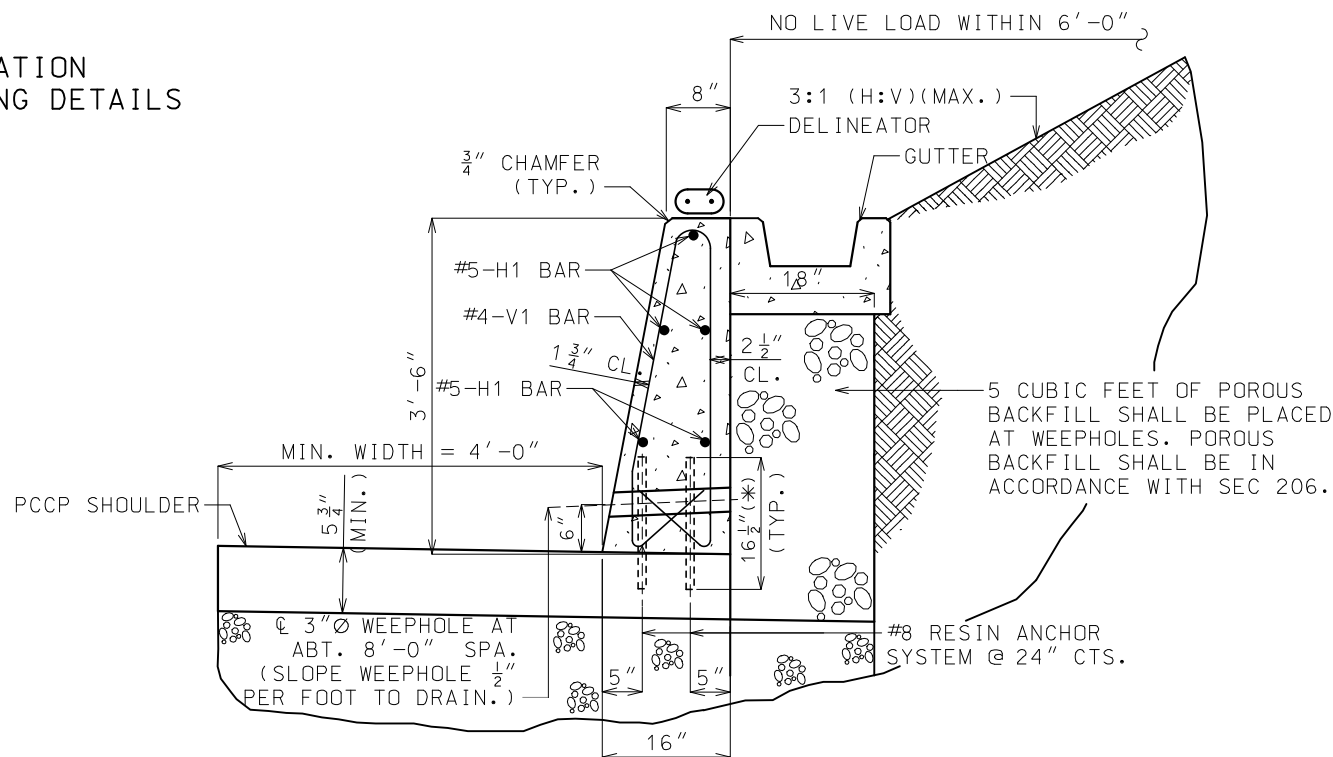
NOTE: GUTTER NOT SHOWN FOR CLARITY.



ELEVATION REINFORCING DETAILS



PART SECTION OF #4-V1 BAR



SECTION A-A (FOR SLOPING AND NONSLOPING BACKSLOPE)

GENERAL NOTES:

CONCRETE SHALL BE CLASS B $f'c = 4,000$ PSI.

ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.

ANGLE OF INTERNAL FRICTION, $\phi_f \geq 30^\circ$ FOR BACKFILL MATERIAL.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2", UNLESS OTHERWISE SHOWN.

BAR SPLICES SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OR THE BAR.

ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL REINFORCING STEEL WILL BE POSITIONED $\pm 1/2$ INCH AS DIMENSIONED WILL BE SATISFACTORY.

THE CONTRACTOR HAS THE OPTION TO SLIP-FORM THE BARRIER. IN WHICH CASE, ADDITIONAL REINFORCEMENT MAY BE TIED TO THE UPPER TWO-THIRDS OF THE REINFORCING CAGE TO PROVIDE BRACING.

THIS BARRIER SHALL NOT BE USED TO SUPPORT HIGHWAY LIGHTING POLES.

THIS BARRIER SHALL NOT BE USED FOR BRIDGE ROADWAY APPLICATION.


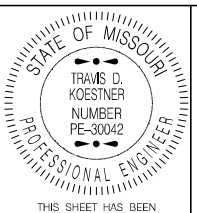
SAWED JOINTS SHALL BE SPACED AT 15'-0". SEE MISSOURI STANDARD PLANS FOR SAWED JOINT DETAIL.

TYPE D BARRIER MODIFIED RETAINING WALL WITH NONMOMENT SLAB SHALL BE USED ONLY AT LOCATIONS SHOWN ON PLANS.

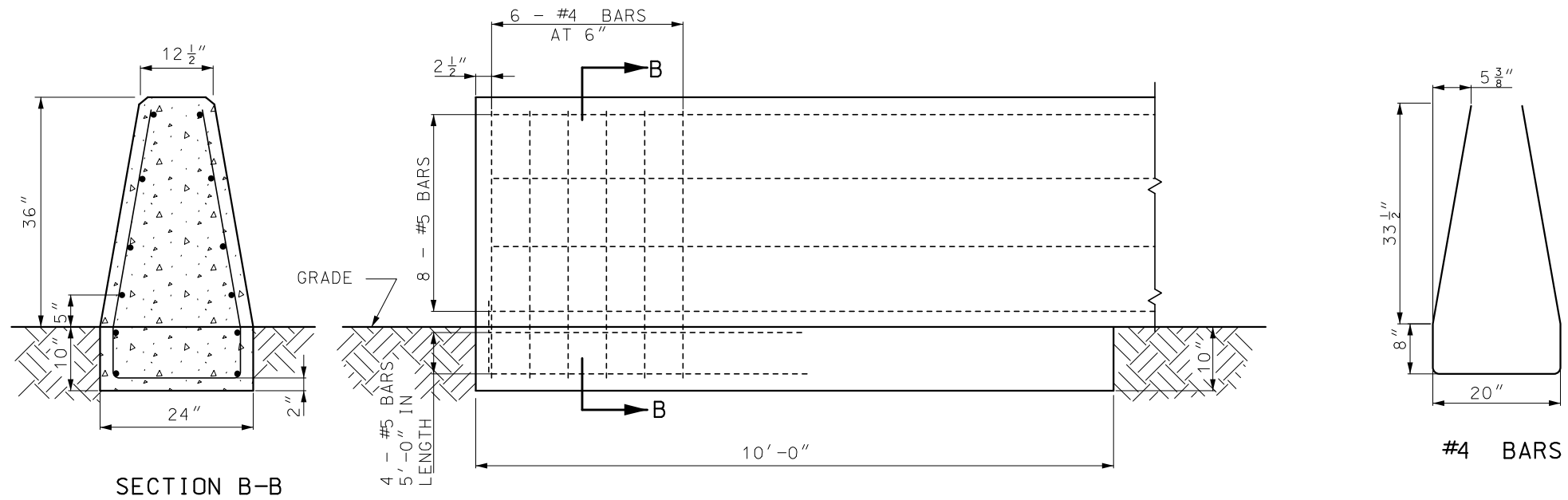
FOR CONCRETE TRAFFIC BARRIER DELINEATOR DETAILS SEE STD PLAN 903.03.

RESIN ANCHOR SYSTEM SHALL BE DRILLED IN THE PAVEMENT.

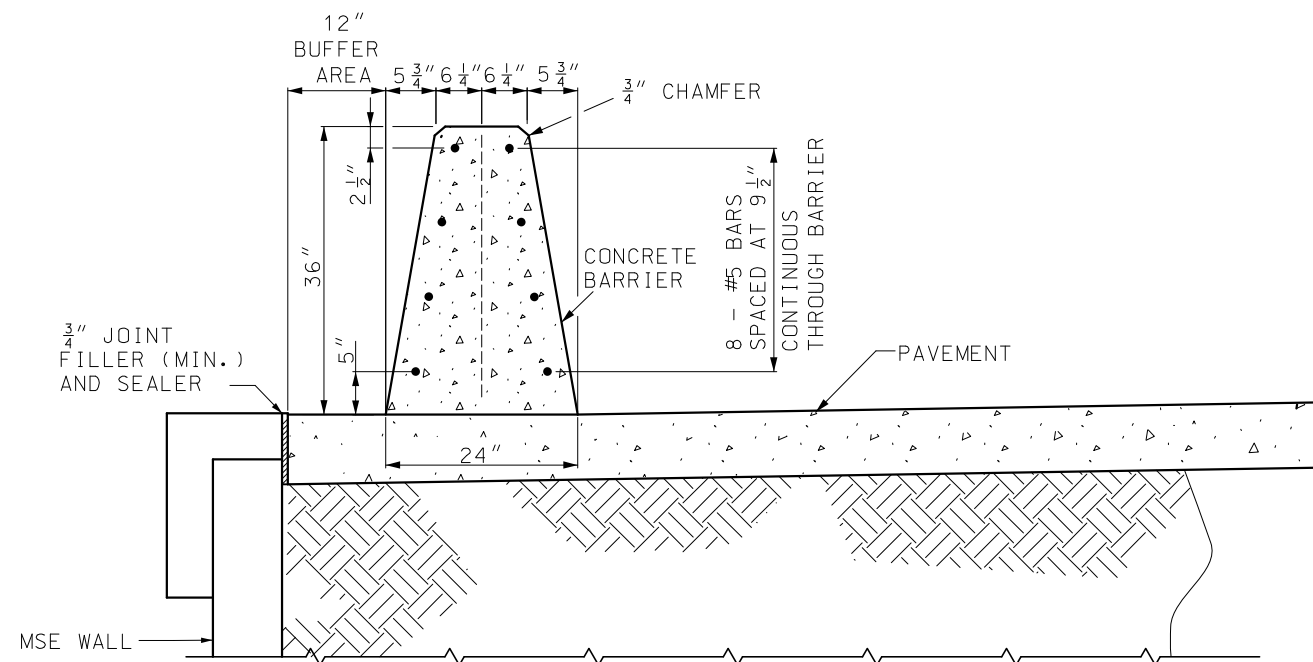
WHEN BARRIER HEIGHT EXCEEDS 42" OR SLOPE EXCEEDS 3:1 (H:V) OR LIVE LOAD IS WITHIN 6'-0", CONTACT BRIDGE DIVISION FOR SPECIAL DESIGN.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	PERMANENT CONCRETE TRAFFIC BARRIER TYPE D AS RETAINING WALL
DATE EFFECTIVE: 10/01/2020 DATE PREPARED: 7/21/2020	SHEET NO. 617.10M 10 OF 11

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CONCRETE BARRIER END ANCHORAGE ON GRADE



TRAFFIC BARRIER ON TOP OF MSE WALL

GENERAL NOTES:

- ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.
- MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2", UNLESS OTHERWISE SHOWN.
- A 12" BUFFER REQUIRED WITHIN THE LIMITS OF THE TRAFFIC BARRIER EXCLUDING THE END ANCHORAGE SECTIONS.
- FOR CONCRETE TRAFFIC BARRIER DELINEATION DETAILS SEE STD PLAN 903.03.
- PAVEMENT SURFACE DIFFERENTIAL SHALL NOT EXCEED 1 1/2".
- BAR SPLICES SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OF THE BAR.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		PERMANENT CONCRETE TRAFFIC BARRIER TYPE E ATOP MSE WALL
DATE EFFECTIVE: 10/01/2020 DATE PREPARED: 7/21/2020	617.10M	SHEET NO. 110F 11

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