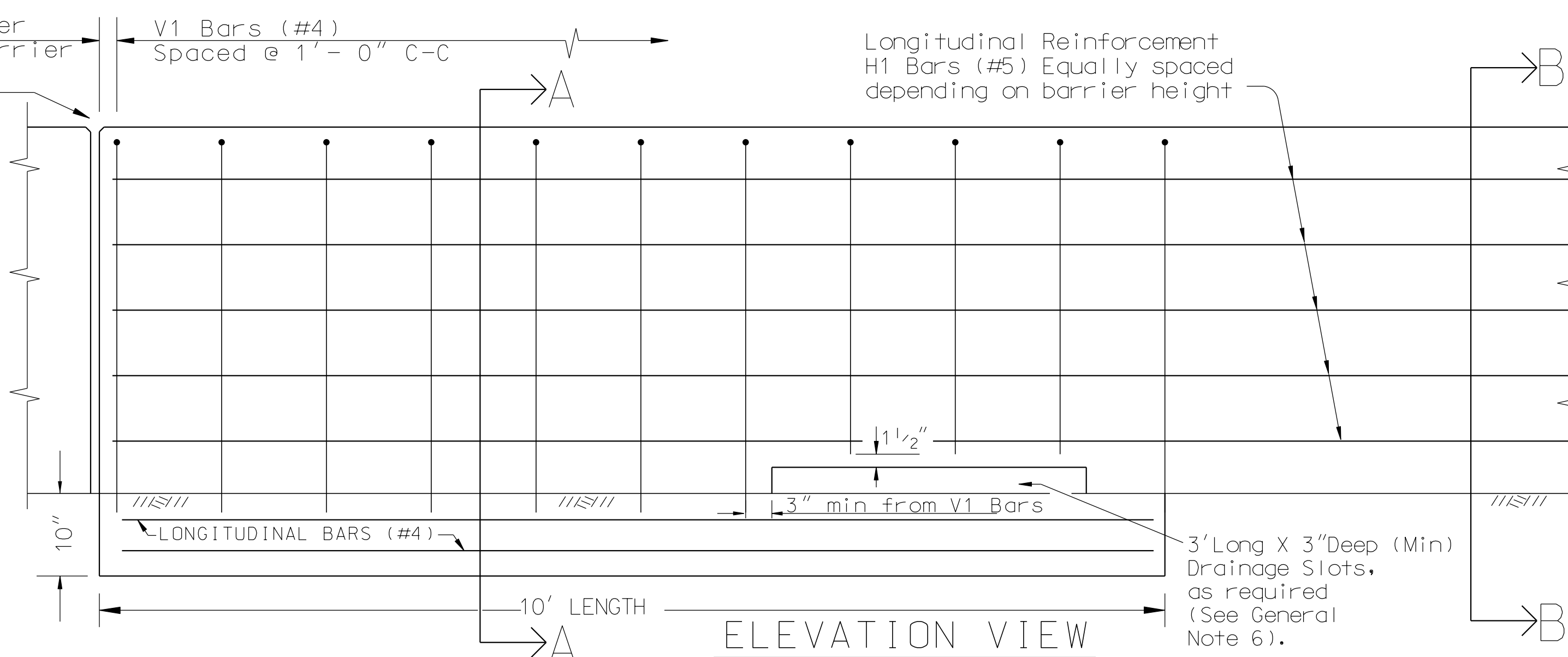


SECTION B-B
CONSTANT SLOPE FACE (CSF) BARRIER IS SYMMETRICAL ABOUT THE CENTER LINE

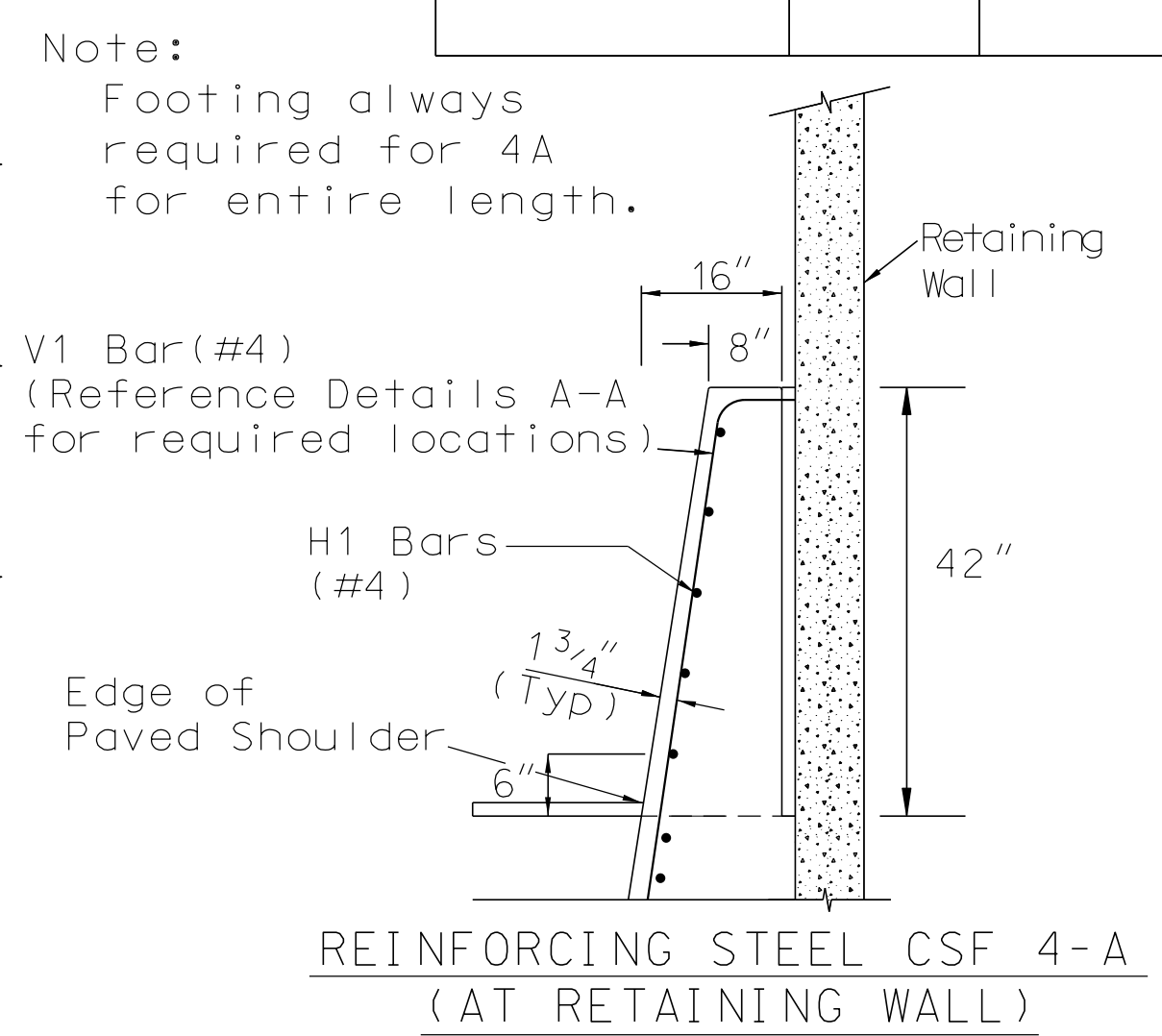
*BARRIER HEIGHT (IN.)	DIMENSIONS (IN)				
	(A)	(B)	(C)	(D)	(E)
42	26	50 1/4	25 9/16	24	
48	28 1/4	56 1/4	27 11/16	26 1/4	
54	30 1/2	62 1/4	29 1/8	28 1/2	

* (CSF) (42") BARRIER HEIGHT MAY BE INCREASED TO 48" OR 54". THIS WOULD INCREASE THE BARRIER AND REINFORCEMENT DIMENSIONS ACCORDINGLY.

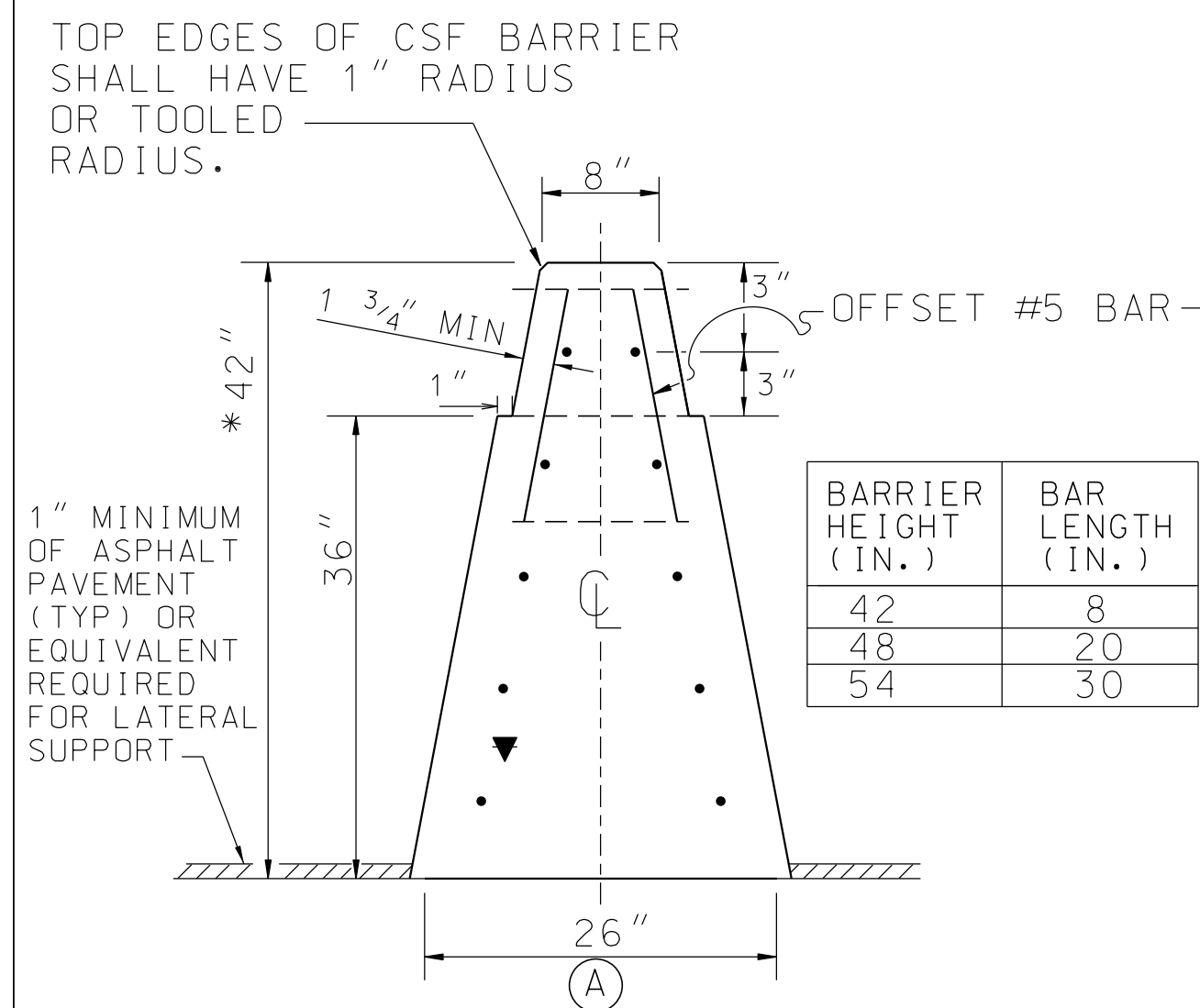
Note: Reinforcement around the drainage slots may be cut or bent to accommodate the edge and top clearances.



ELEVATION VIEW
Constant Slope Face (CSF) on Roadway



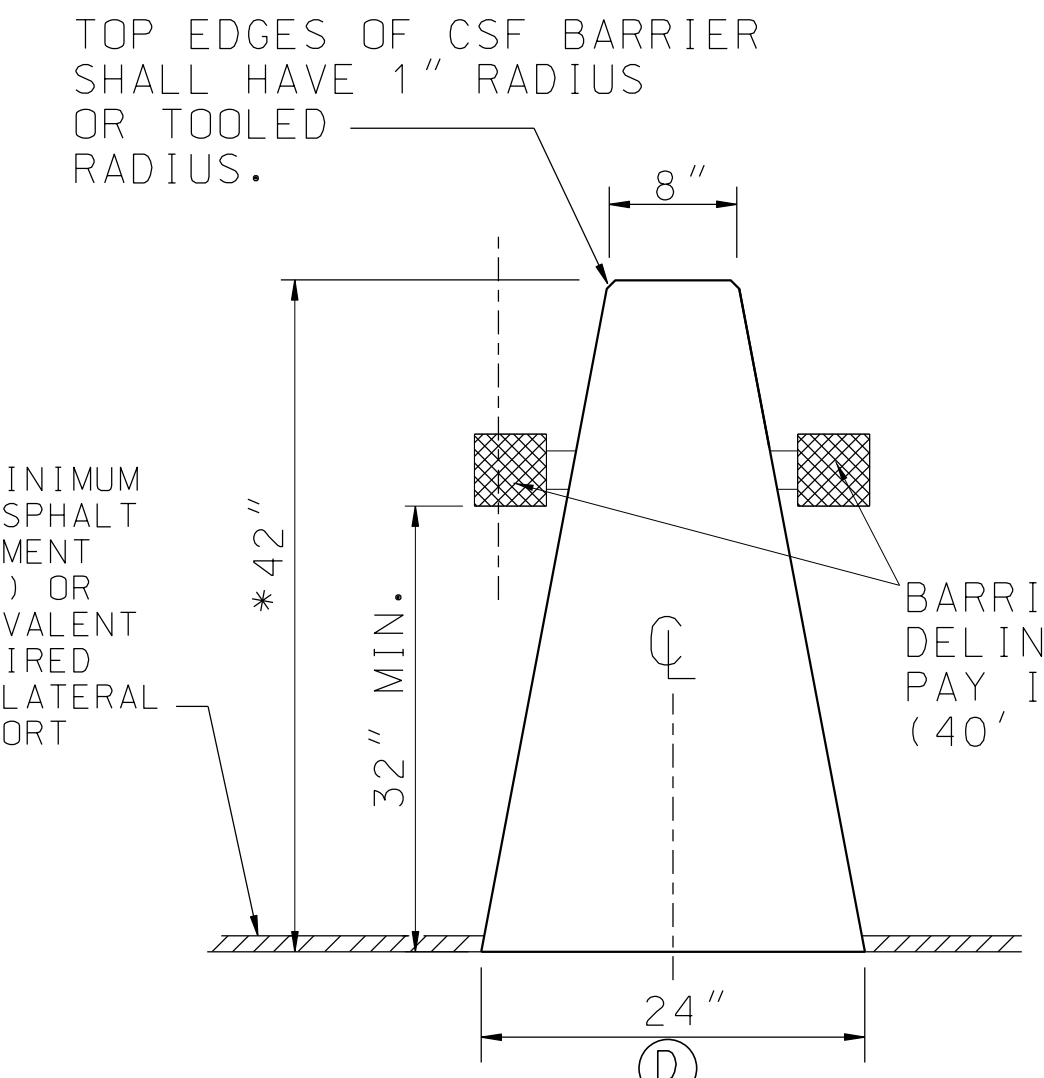
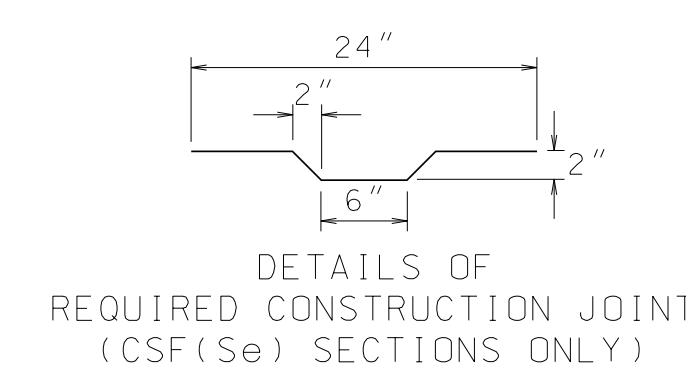
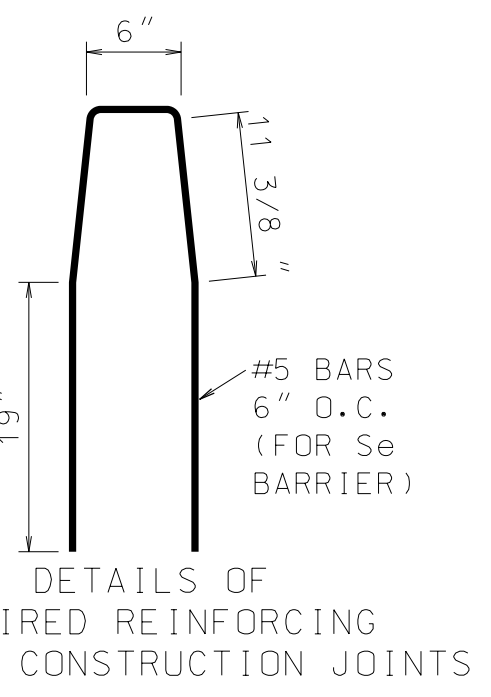
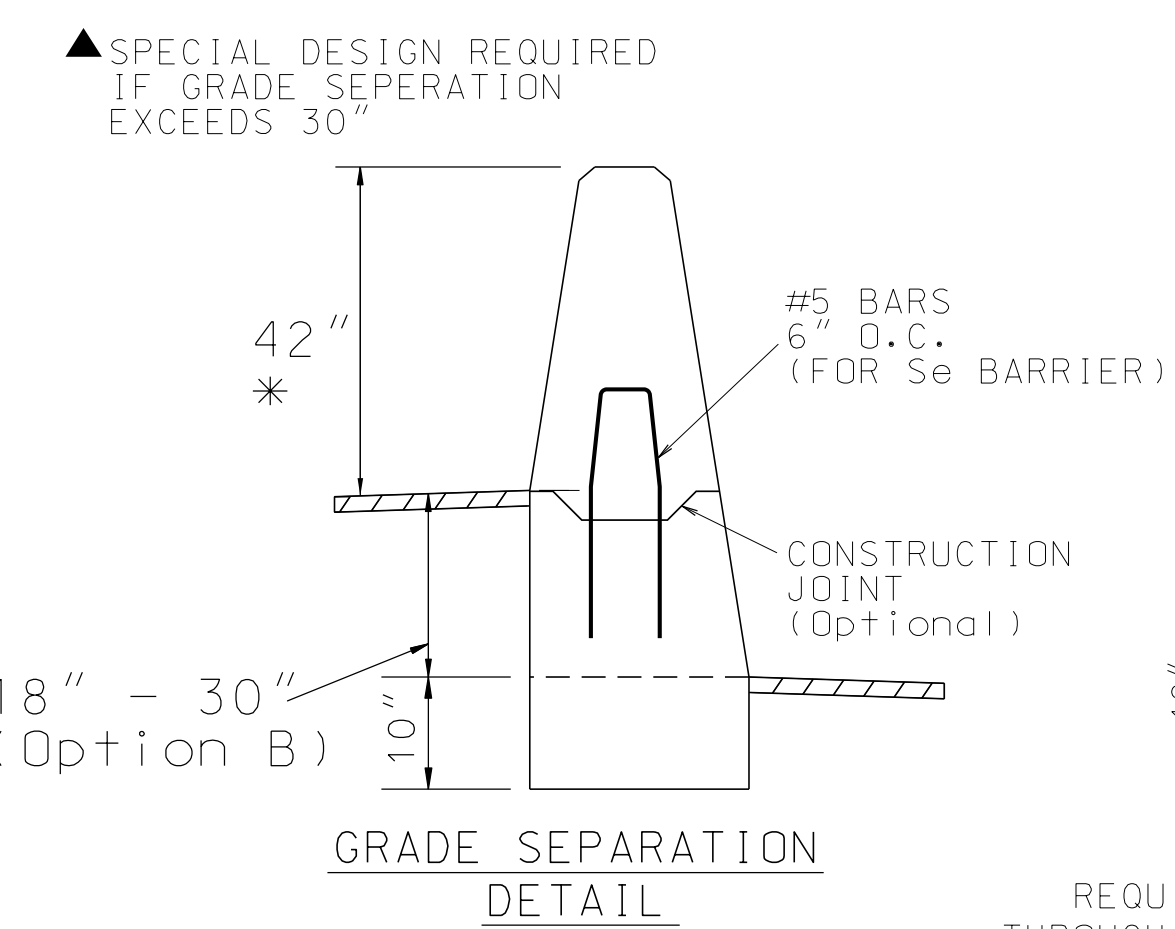
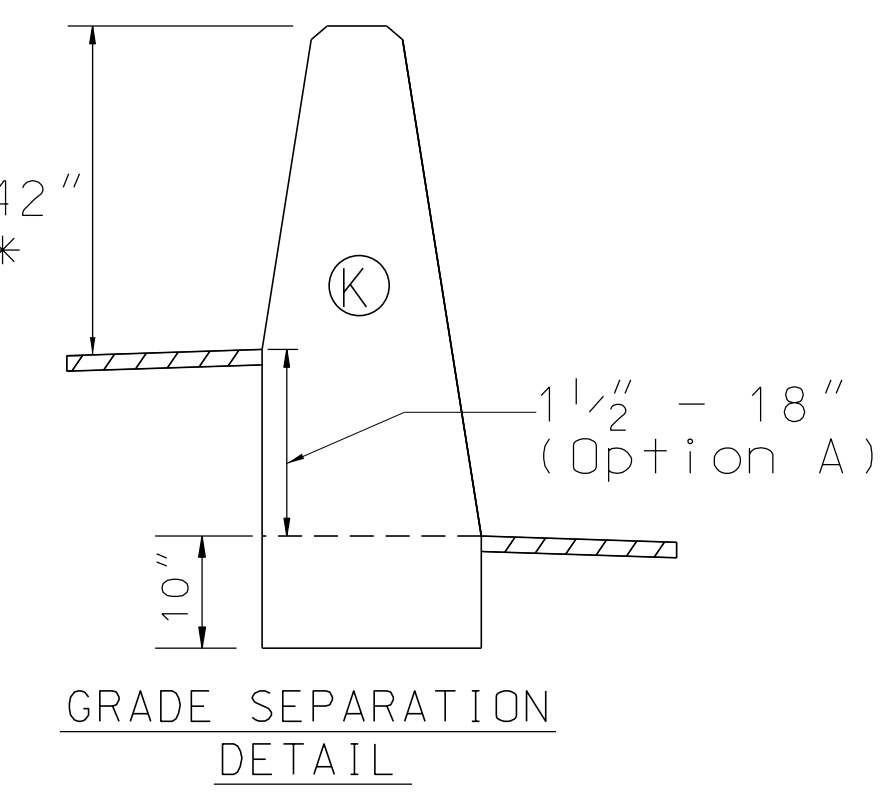
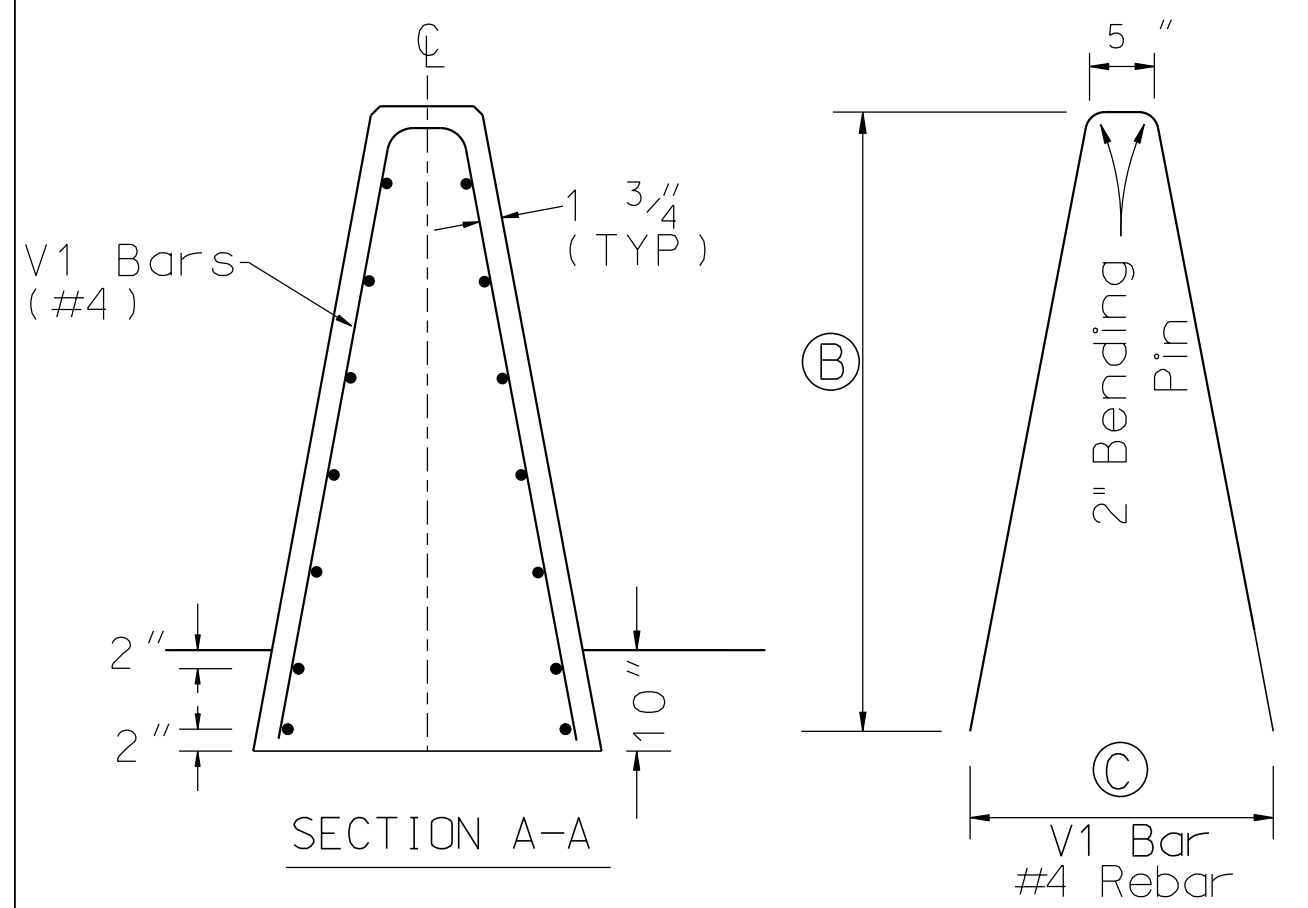
Note: Footing always required for 4A for entire length.



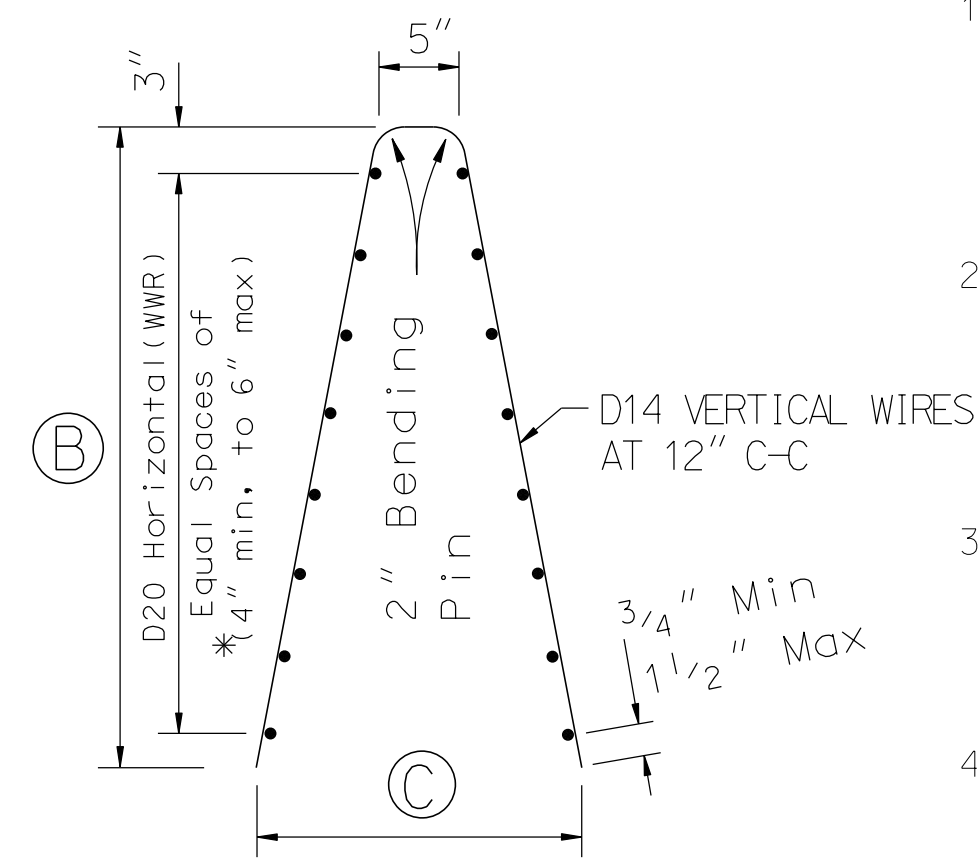
BARRIER HEIGHT (IN.)	BAR LENGTH (IN.)
42	8
48	20
54	30

NOTE: LONGITUDINAL REINFORCEMENT WILL CONSIST OF 8 RUNS IN LOWER 36" PORTION OF BARRIER (4 PER SIDE). THE PORTION ABOVE 36" WILL CONSIST OF 2 RUNS (1 PER SIDE) FOR 42" HEIGHT BARRIER, 4 RUNS FOR 48" BARRIER, AND 6 RUNS FOR 54" BARRIER.

CONSTANT SLOPE FACE CONCRETE BARRIER (CSF) (42")
OPTIONAL CONSTRUCTION JOINT



CONSTANT SLOPE FACE CONCRETE BARRIER (CSF) (42")



Welded Wire Reinforcement (WWR) Option for Bars V1 and H1 (WWR) GENERAL NOTES

1. DEFORMED WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A497.
2. WELDED WIRE CAGE MAY BE CUT AND BENT TO ACCOMMODATE THE DRAINAGE SLOTS, AS DIRECTED BY THE ENGINEER.
3. WELDED WIRE SPLICE LOCATIONS SHALL HAVE A "MINIMUM" SPLICE LAP LENGTH OF 12".
4. COMBINATIONS OF REINFORCING STEEL AND WWR WILL BE PERMITTED AS DIRECTED BY THE ENGINEER. THE DIMENSIONS FROM THE END OF THE BARRIER SECTION TO THE FIRST WIRE SHALL NOT EXCEED 3".

GENERAL NOTES

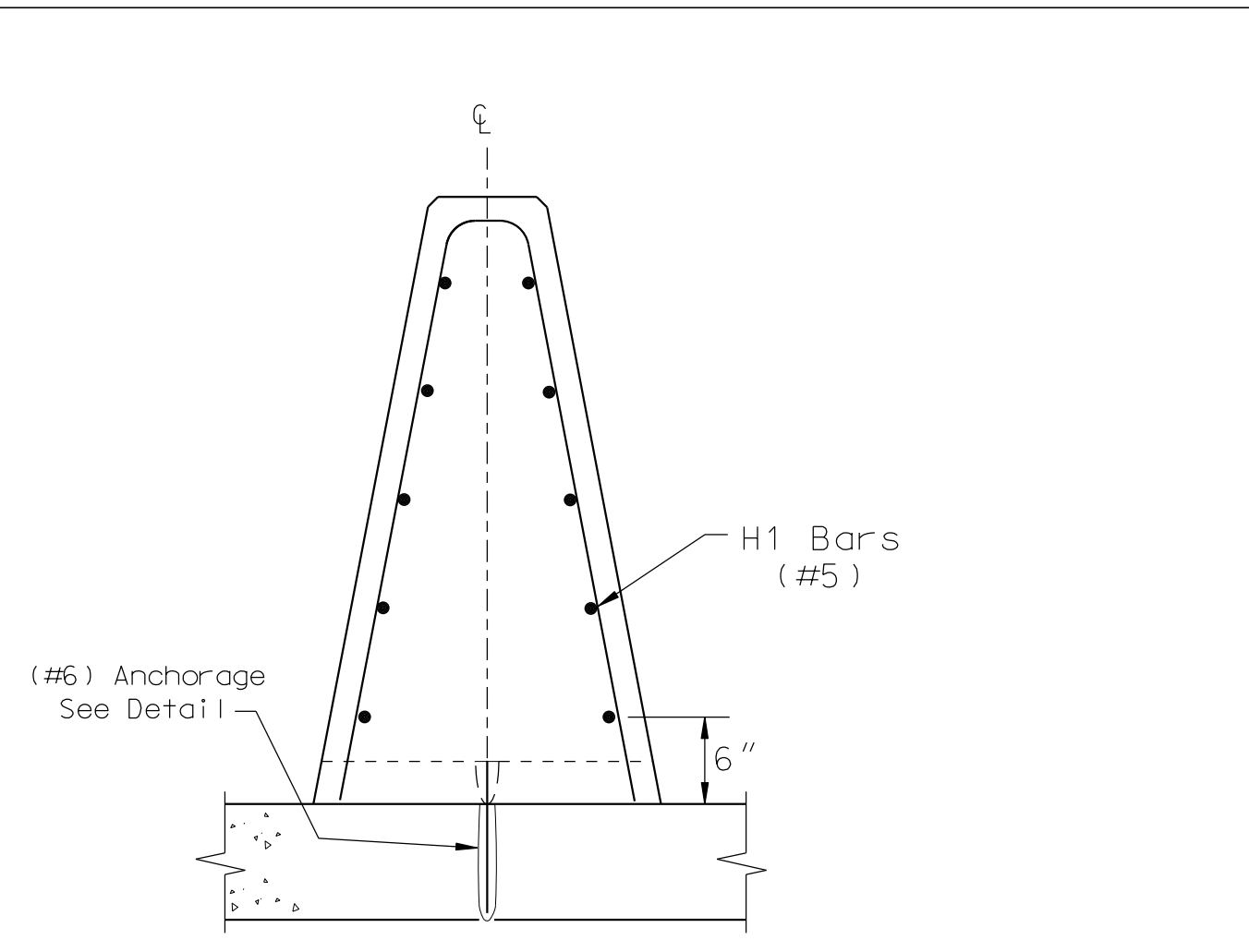
1. THE REINFORCING SHALL BE CONTINUOUS. REINFORCING SHALL CONSIST OF CONTINUOUS LONGITUDINAL REINFORCING STEEL AS SHOWN OR WELDED WIRE FABRIC OF EQUIVALENT STEEL AREA.
2. EXPANSION JOINTS AT BRIDGE PIER SHALL BE PERFORMED JOINT MATERIAL (BITUMINOUS TYPE) FILLER MEETING AASHTO DESIGNATION M-33. THE COST OF THIS ITEM SHALL BE A SUBSIDIARY OBLIGATION OF THE PRICE BID FOR THE BARRIER WALL.
3. SAWED CONTRACTION JOINTS AND BARRIER MOUNTED DELINEATORS REQUIRED 20'-0" O.C. THESE DELINEATORS SHALL BE INSTALLED PRIOR TO SHIFTING TCP TRAFFIC INTO MEDIAN.
4. THE PAYMENT FOR THE MEDIAN BARRIER SHALL BE AS CSF UNTIL THERE IS A DIFFERENCE IN THE ELEVATION OF THE TWO ROADWAYS, AT THE BARRIER, GREATER THAN 1.5". THE BARRIER SHALL THEN BE PAID FOR AS CSF (SE) BARRIER.
5. THE 10" MINIMUM DEPTH FOOTING AS SHOWN IN SECTION A-A SHALL BE CONTINUOUS BENEATH CSF BARRIER. THE 10" MINIMUM FOOTING SHALL BE REQUIRED FOR THE LAST 10' AT THE ENDS OF THE BARRIER. THE 10" MINIMUM DEPTH FOOTING SHALL BE SUBSIDIARY OBLIGATION OF THE APPLICABLE BARRIER PAY ITEM (629A).
6. DRAINAGE SLOT LOCATIONS (12'-0", O.C. MIN SPACING) IF SHOWN IN THE PLANS, DRAINAGE SLOT HEIGHTS ON THE CSF MAY BE INCREASED TO A MAXIMUM OF 5", WITHOUT GEOMETRIC CHANGES TO THE BARRIER FACE.
7. 3/4" EXPANSION JOINT REQUIRED ONLY WHEN BARRIER ABUTS RIGID OBJECTS OR STRUCTURES.

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<p>REVISIONS</p> <ol style="list-style-type: none"> 1. Changed Drawing from Jersey Barrier to MASH approved "Constant Slope Face Concrete Barrier (Flexible Pavement)" on 10/18/17 by LVS 2. Revised Optional Construction Joint Details on 12-4-2018 by D.J.W. 3. Revised Optional Construction Joint Details on 07-09-19 by J.F.T. 	<p>ALABAMA DEPARTMENT OF TRANSPORTATION 1409 COLISEUM BOULEVARD MONTGOMERY, AL 36130-3050</p> <p>DESIGN BUREAU SPECIAL DRAWING</p> <p>CONSTANT SLOPE FACE CONCRETE BARRIER (FLEXIBLE PAVEMENT)</p>
<p>Bureau Std Engr: D.J.W. DRAWN BY: D.J.W. DATE DRAWN: 10/2017</p>	<p>SPECIAL DRAWING NO CSF-629-FP (SHEET 1 OF 2)</p> <p>INDEX NO 62901</p>

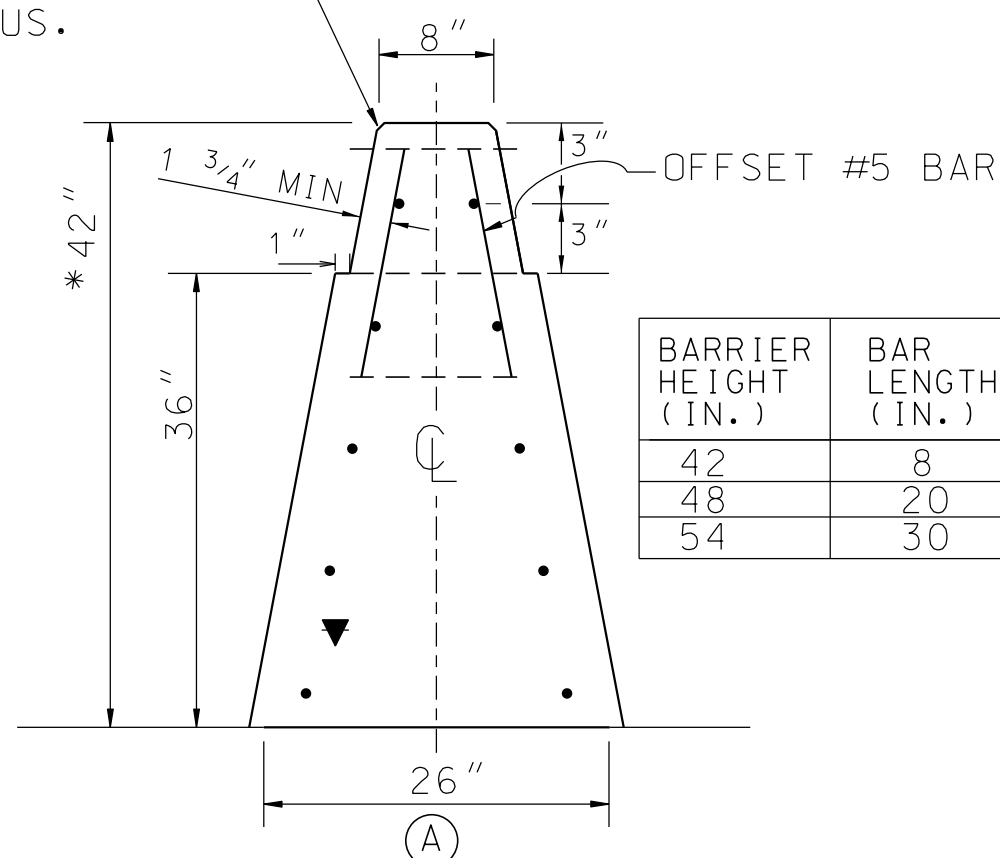
NOT TO SCALE



SECTION B-B

CONSTANT SLOPE FACE (CSF) BARRIER
BARRIER IS SYMMETRICAL ABOUT THE CENTERLINE

TOP EDGES OF CSF BARRIER SHALL HAVE 1" RADIUS OR TOOLED RADIUS.

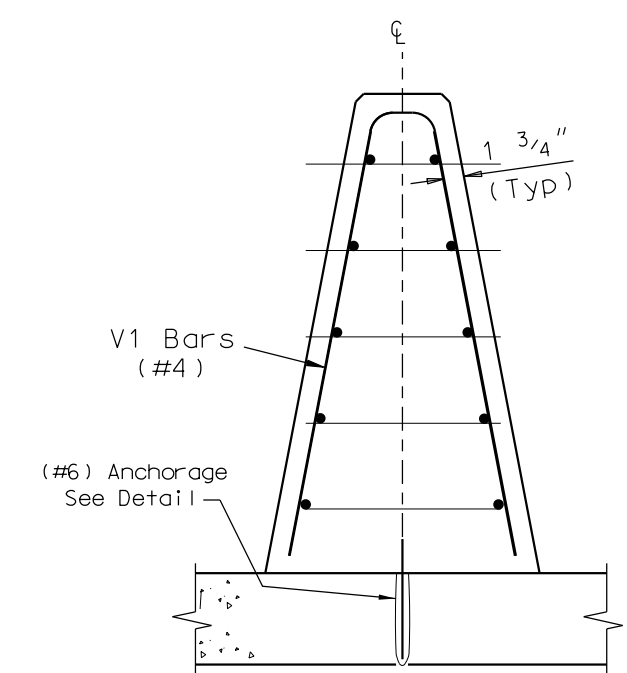


NOTE: LONGITUDINAL REINFORCEMENT WILL CONSIST OF 8 RUNS IN LOWER 36" PORTION OF BARRIER (4 PER SIDE). THE PORTION ABOVE 36" WILL CONSIST OF 2 RUNS (1 PER SIDE) FOR 42" HEIGHT BARRIER, 4 RUNS FOR 48" BARRIER, AND 6 RUNS FOR 54" BARRIER.

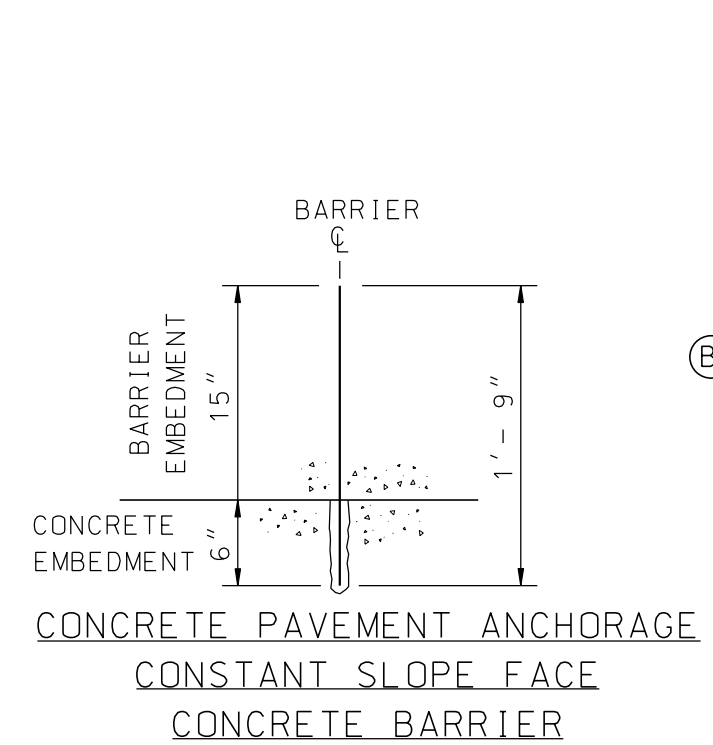
CONSTANT SLOPE FACE CONCRETE BARRIER

(CSF) (42")

OPTIONAL CONSTRUCTION JOINT

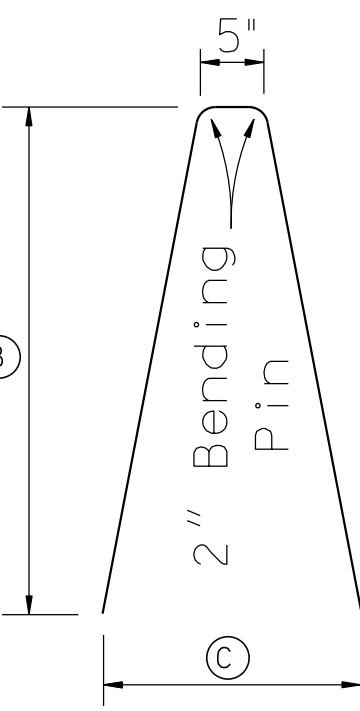


SECTION A-A

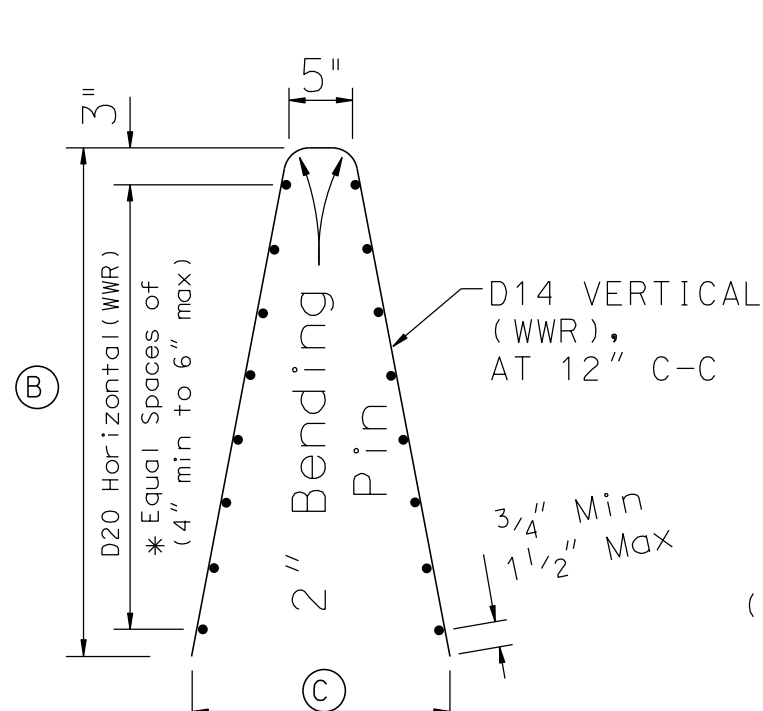


CONCRETE PAVEMENT ANCHORAGE
CONSTANT SLOPE FACE
CONCRETE BARRIER

(#6) Bars
(Fresh Insertion Method (New Concrete)
Drill and Epoxy (Existing Concrete))

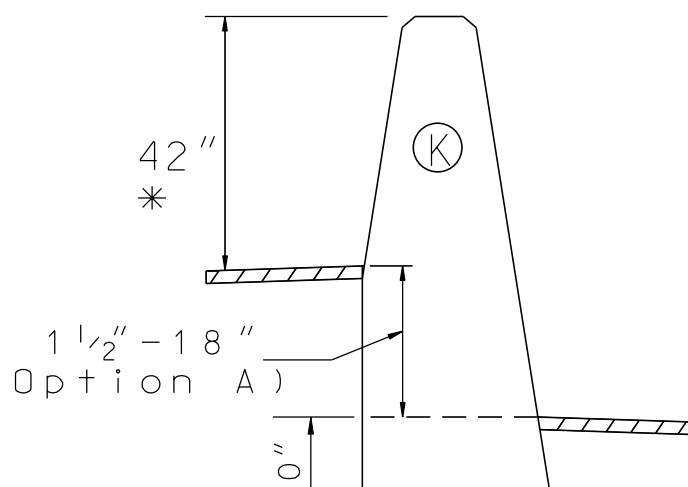


(B)

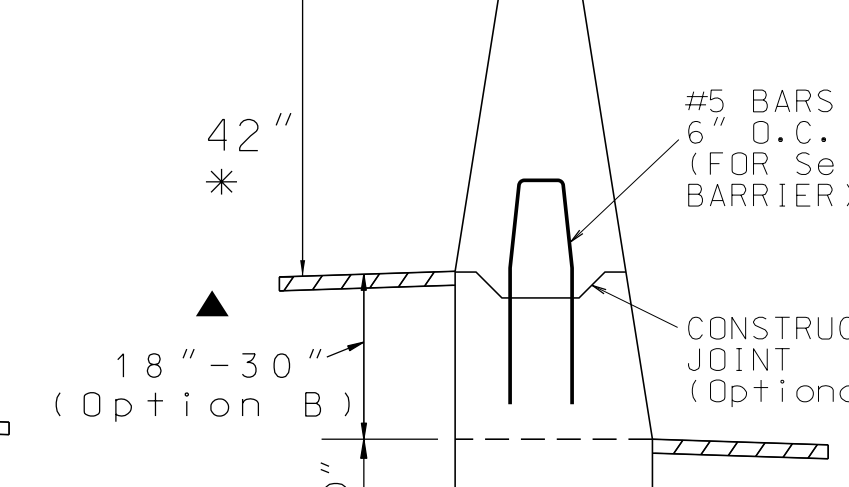


WELDED WIRE REINFORCEMENT
(WWR) OPTION FOR BARS V1 AND H1

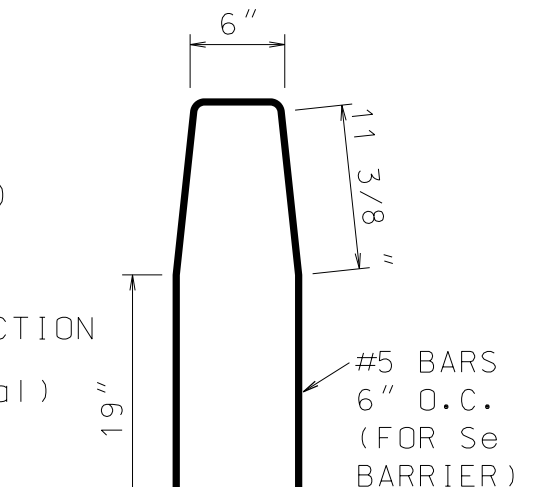
SEE (WWR) GENERAL NOTES ON (SHEET 1 OF 2)



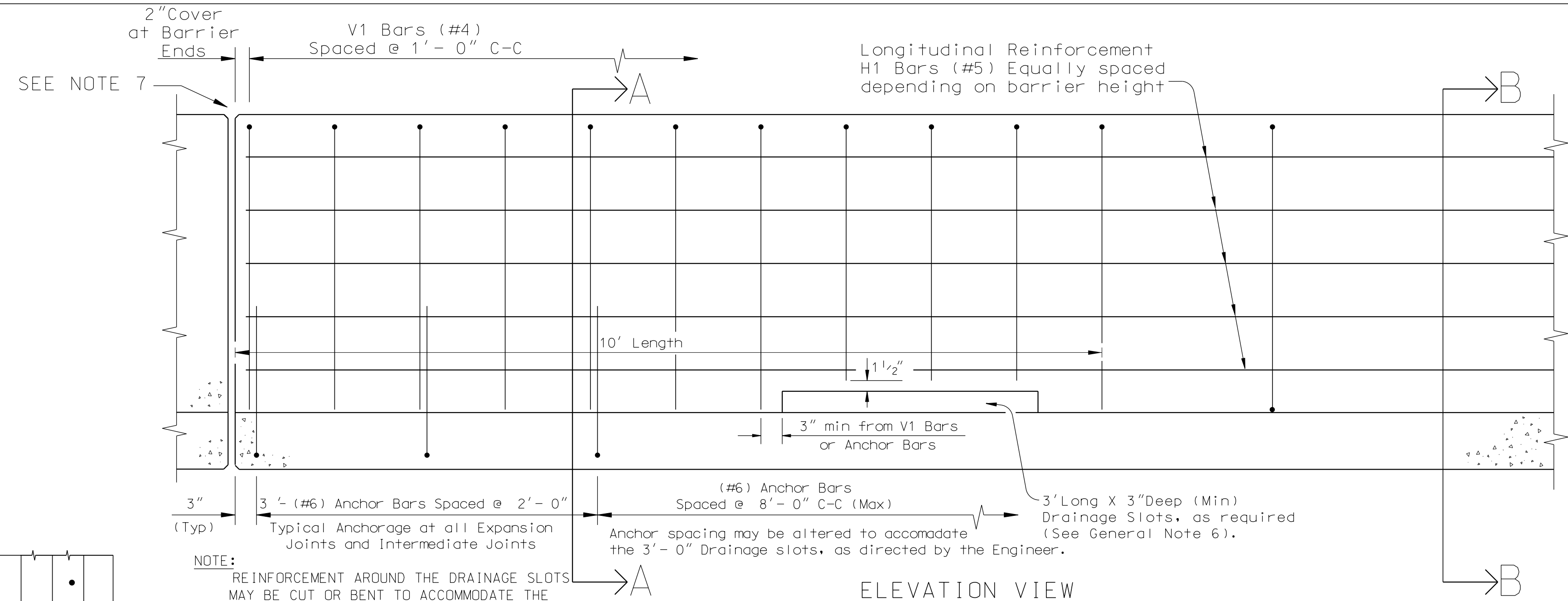
GRADE SEPARATION
DETAIL



GRADE SEPARATION
DETAIL



DETAILS OF
REQUIRED REINFORCING
THROUGH CONSTRUCTION JOINTS



ELEVATION VIEW

CONSTANT SLOPE FACE BARRIER ON RIGID PAVEMENT
(SHOWING REINFORCEMENT AND ANCHOR PLACEMENT)

BARRIER PLACEMENT OVER JOINTS

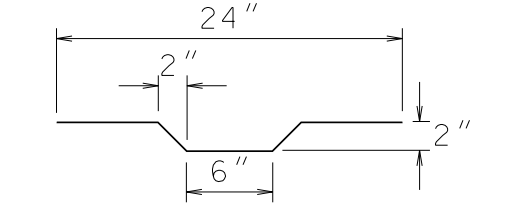
BARRIER MAY BE CAST OVER A "LONGITUDINAL" JOINT.

JOINTS (WITH OR WITHOUT TIEBARS): TWO LAYERS OF 30 LB ROOFING FELT OR 1/2" PREFORMED BITUMINOUS FIBER MATERIAL.

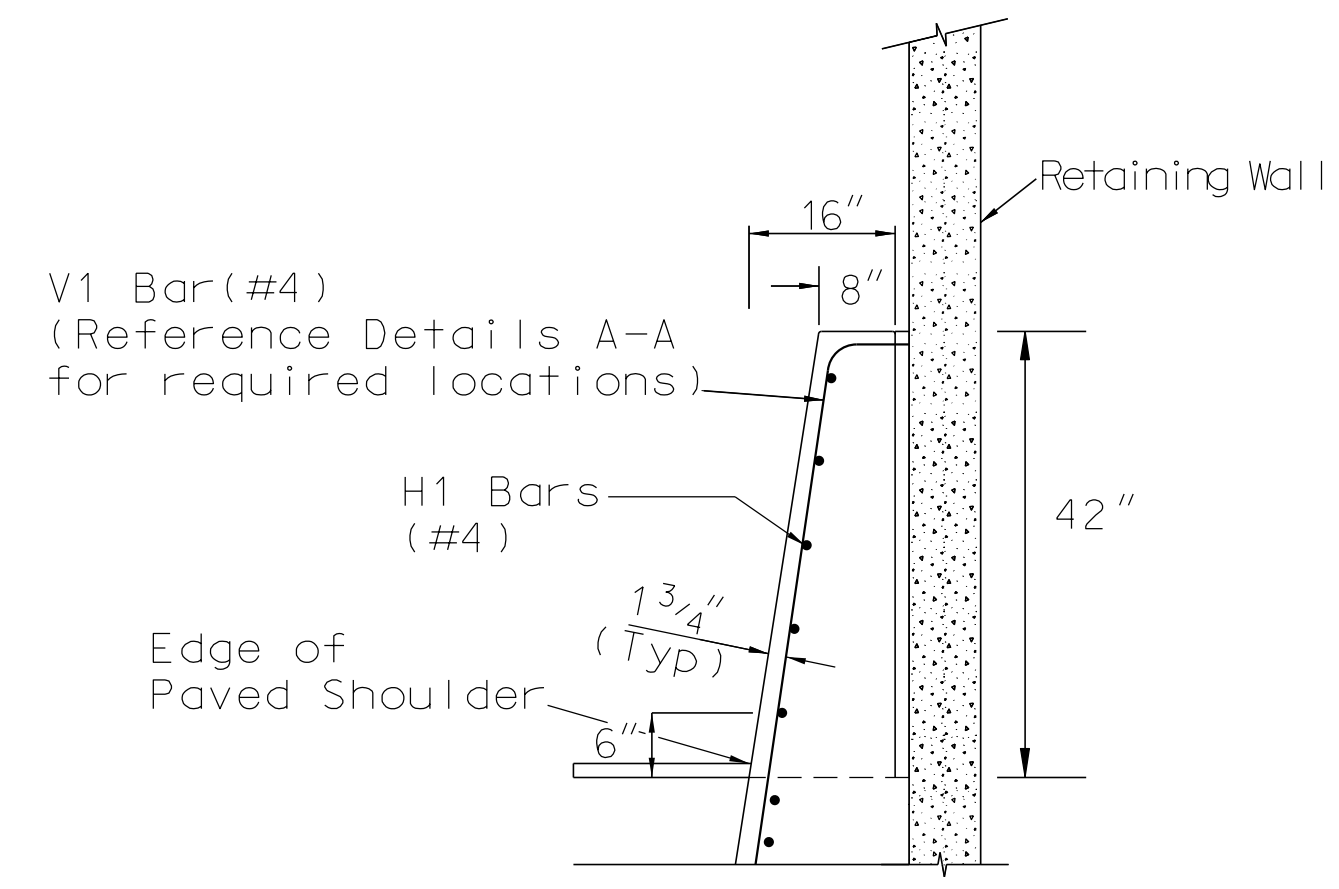
BARRIER ANCHORAGE NOTE: ANCHORAGE MUST BE LOCATED AT LEAST 3" FROM A LONGITUDINAL JOINT.

* BARRIER HEIGHT (IN.)	DIMENSIONS (IN)			
	(A)	(B)	(C)	(D)
42	26	50 1/4	25 9/16	24
48	28 1/4	56 1/4	27 11/16	26 1/4
54	30 1/2	62 1/4	29 1/8	28 1/2

*(CSF) (42") BARRIER HEIGHT MAY BE INCREASED TO 48" OR 54". THIS WOULD INCREASE THE BARRIER AND REINFORCEMENT DIMENSIONS ACCORDINGLY.



DETAILS OF
REQUIRED CONSTRUCTION JOINT
(CSF (Se) SECTIONS ONLY)



REINFORCING STEEL CSF 4-A
(AT RETAINING WALL)

GENERAL NOTES

1. THE REINFORCING SHALL BE CONTINUOUS. REINFORCING SHALL CONSIST OF CONTINUOUS LONGITUDINAL REINFORCING STEEL AS SHOWN OR WELDED WIRE FABRIC OF EQUIVALENT STEEL AREA.
2. EXPANSION JOINTS AT BRIDGE PIER SHALL BE PREFORMED JOINT MATERIAL (BITUMINOUS TYPE) FILLER MEETING AASHTO DESIGNATION M-33. THE COST OF THIS ITEM SHALL BE A SUBSIDIARY OBLIGATION OF THE PRICE BID FOR THE BARRIER WALL.
3. SAWED CONTRACTION JOINTS AND BARRIER MOUNTED DELINEATORS REQUIRED 20'-0" O.C. THESE DELINEATORS SHALL BE INSTALLED PRIOR TO SHIFTING TCP TRAFFIC INTO MEDIAN.
4. THE PAYMENT FOR THE MEDIAN BARRIER SHALL BE AS CSF UNTIL THERE IS A DIFFERENCE IN THE ELEVATION OF THE TWO ROADWAYS, AT THE BARRIER, GREATER THAN 1.5". THE BARRIER SHALL THEN BE PAID FOR AS CSF (SE) BARRIER.
5. THE 10" MINIMUM DEPTH FOOTING AS SHOWN IN SECTION A-A SHALL BE CONTINUOUS BENEATH CSF BARRIER. THE 10" MINIMUM FOOTING SHALL BE REQUIRED FOR THE LAST 10' AT THE ENDS OF THE BARRIER. THE 10" MINIMUM DEPTH FOOTING SHALL BE SUBSIDIARY OBLIGATION OF THE APPLICABLE BARRIER PAY ITEM (629A).
6. DRAINAGE SLOT LOCATIONS (12'-0", O.C. MIN SPACING) IF SHOWN IN THE PLANS. DRAINAGE SLOT HEIGHTS ON THE CSF MAY BE INCREASED TO A MAXIMUM OF 5", WITHOUT GEOMETRIC CHANGES TO THE BARRIER FACE.
7. 3/4" EXPANSION JOINT REQUIRED ONLY WHEN BARRIER ABUTS RIGID OBJECTS OR STRUCTURES.

▲ SPECIAL DESIGN REQUIRED IF GRADE SEPARATION EXCEEDS 30"

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REVISIONS

1. Created Drawing for MASH approved "Constant Slope Face Concrete Barrier (Rigid Pavement)" on 10/18/17 by LVS
2. Revised Optional Construction Joint Details on 12-4-2018 by D. J. W.
3. Revised Optional Construction Joint Details on 07-09-19 by J. F. T.

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050

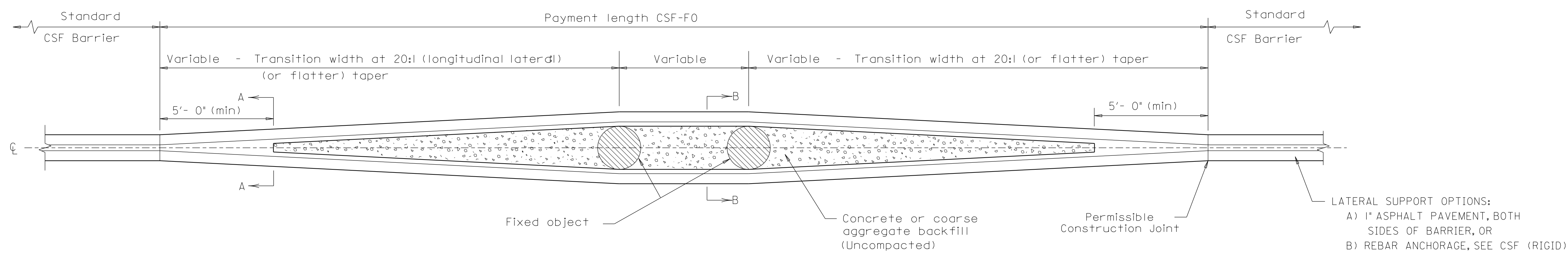
DESIGN BUREAU SPECIAL DRAWING
CONSTANT SLOPE FACE
CONCRETE BARRIER
(RIGID PAVEMENT)

SPECIAL DRAWING NO
CSF-629-RP (SHEET 2 OF 2)

INDEX NO
62902

Bureau Std Engr: D.J.W.
DRAWN BY: D.J.W. DATE DRAWN: 10/2017

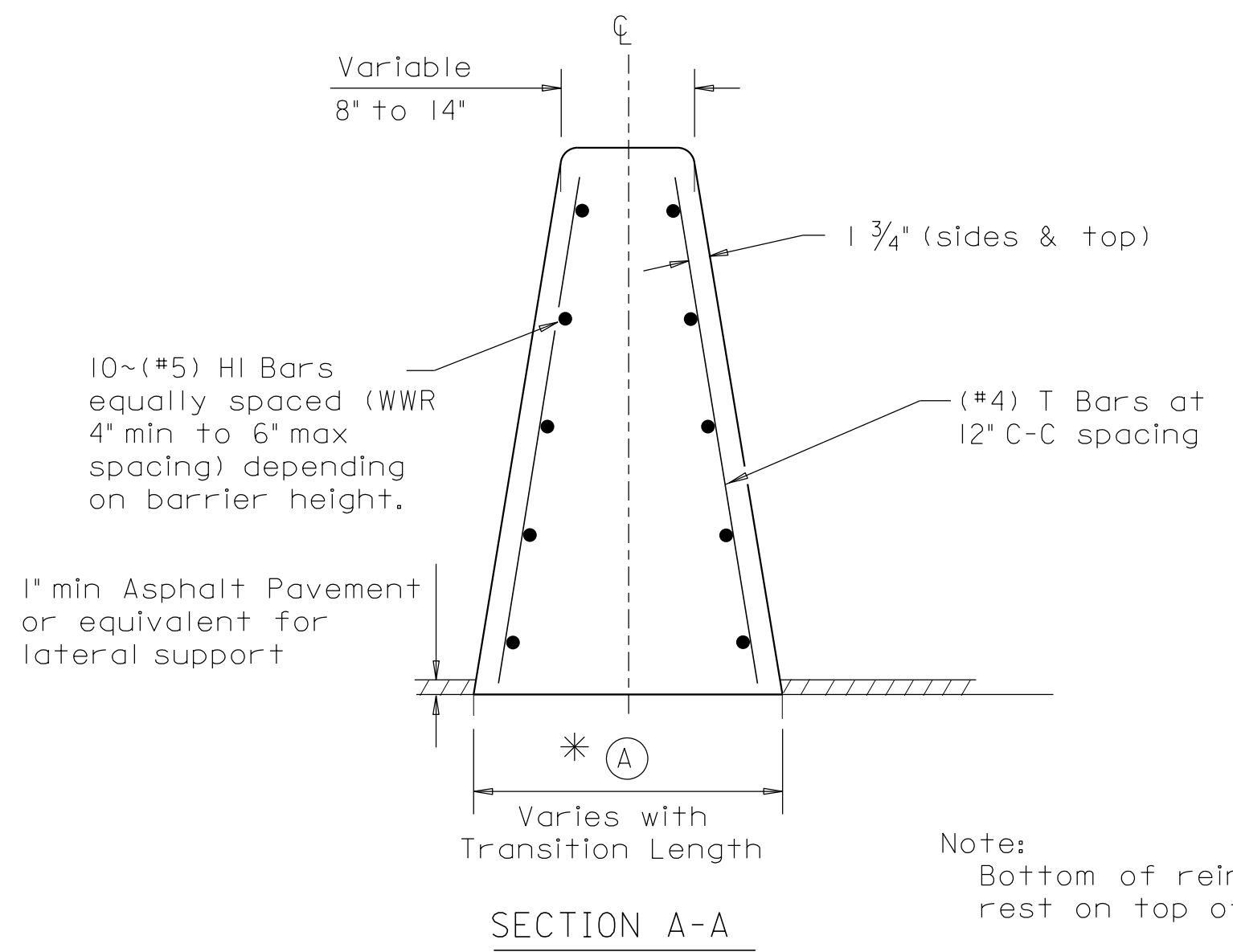
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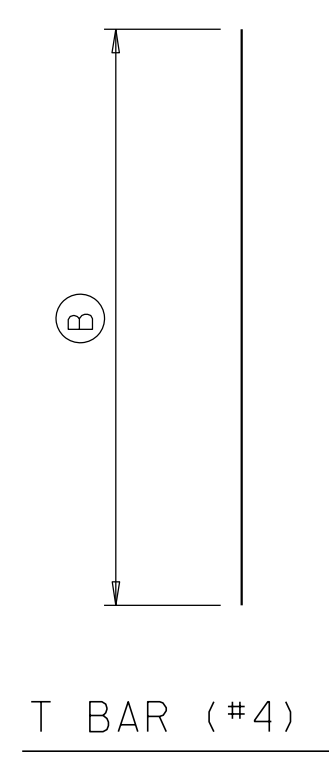
PLAN CSF-F0 BARRIER

GENERAL NOTES

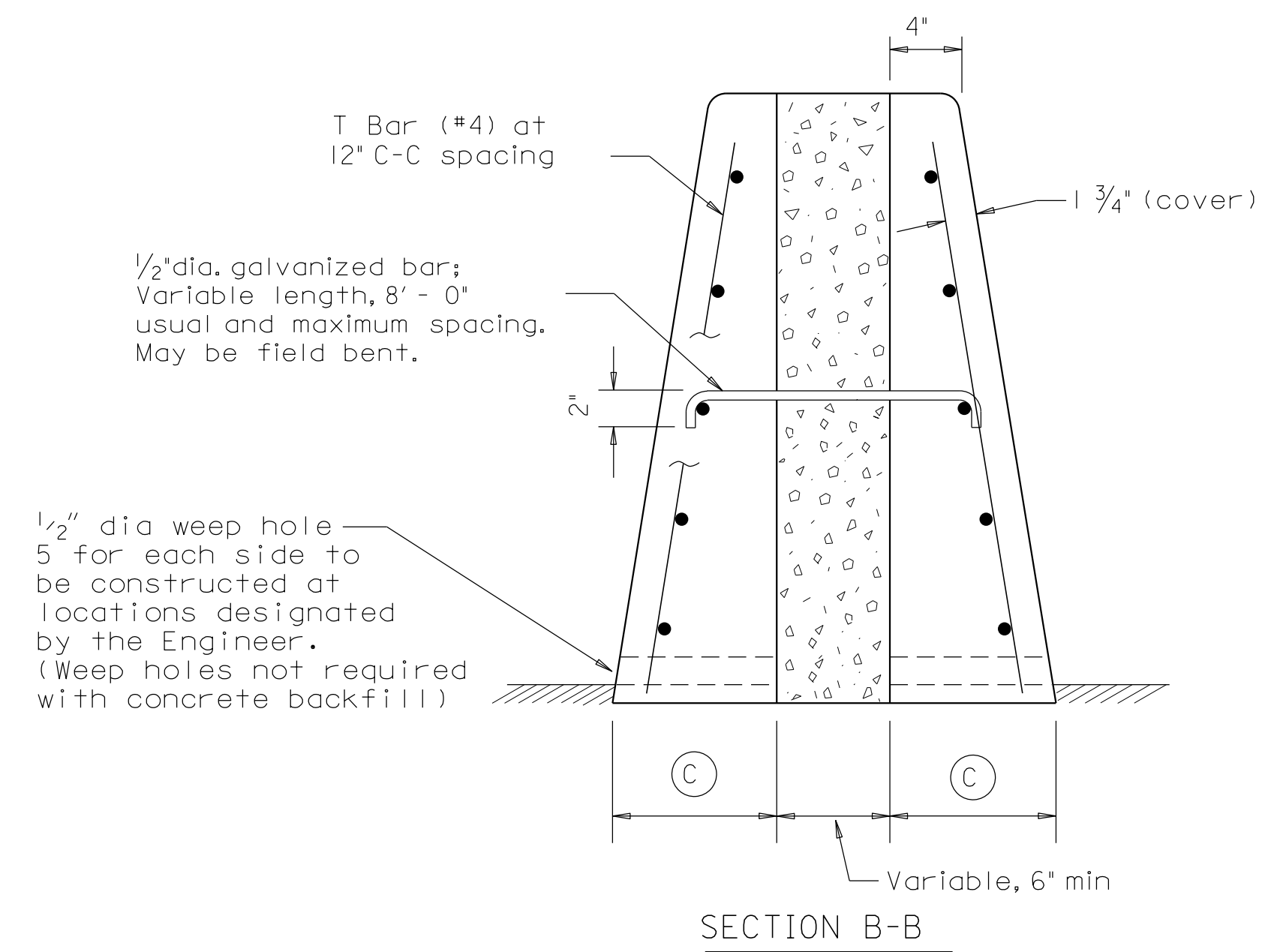
1. Axis of concrete barrier shall be vertical, except where roadway is superelevated, then axis shall be normal to roadway surface.
2. Bid price per liner foot of CSF-F0, including anchor sections, shall include all of the concrete, reinforcement, and aggregate backfill.
3. Longitudinal and vertical bars for roadway barrier shall conform to ASTM A615 (Grade 60), unless otherwise specified.
4. At construction joints the longitudinal bars shall extend beyond the joint so that bar splices will be a minimum of two feet from the construction joint.
5. Welded wire reinforcement (WWR) may be used as an option to conventional reinforcement and shall meet requirements shown.



SECTION A-A



T BAR (#4)



SECTION B-B

Note: Bottom of reinforcement cage may rest on top of finished grade.

Barrier height (IN)	* Dimensions (IN)		
	A	B	C
42	24 Plus	40 1/4	12
48	26 1/4 Plus	46 1/4	13 1/8
54	28 1/2 Plus	52 1/4	14 1/4

*CSF(42") Barrier height may be increased to 48" or 54". This would increase the barrier and reinforcement dimensions accordingly.

Welded Wire Reinforcement (WWR) Option for Bars T and HI Barrier

- (WWR) General Notes
1. WWR design required for CSF-F0 barrier: D14 vertical (12" C-C) x D20 horizontal wires spaced (4" min. to 6" max) as height requires.
 2. Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
 3. Welded wire cage may be cut and bent to accommodate the drainage slots, as directed by the Engineer.
 4. Welded wire splice locations shall have a 'minimum' splice lap length of 12".
 5. Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".

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REVISIONS
1. Added to CADD and replaced 'CONCRETE MEDIAN BARRIER TREATMENT AT UNDERPASS PIERS (TY # & TY #)' on 08-03-17 by J.F.T.
2. Changed drawing to MASH Approved 'Constant Slope Face Barrier at Fixed Objects' on 10/18/17 by LVS

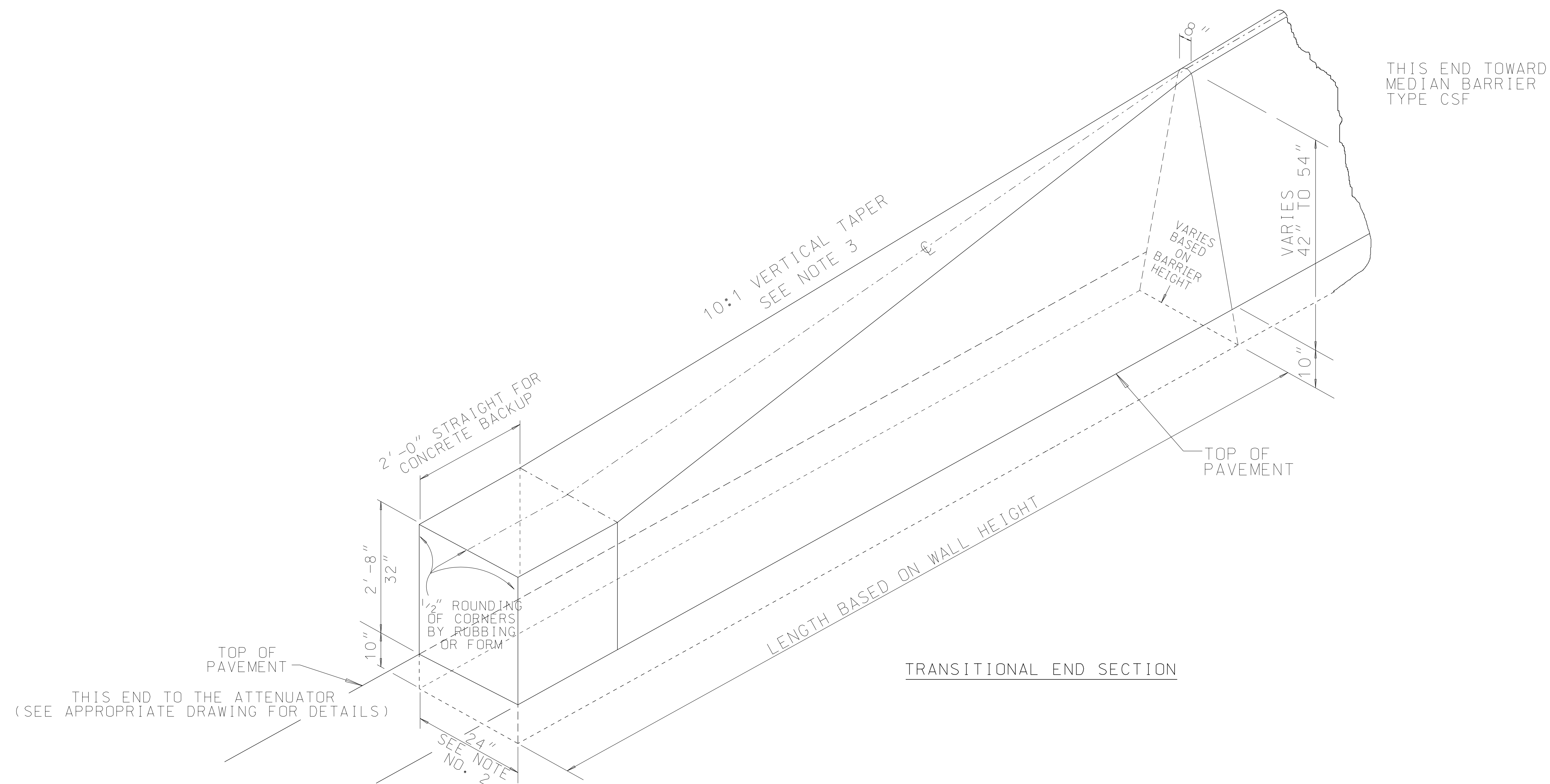
ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050
DESIGN BUREAU SPECIAL DRAWING

CONSTANT SLOPE FACE BARRIER AT FIXED OBJECTS

SPECIAL DRAWING NO CSF-629-F0 INDEX NO 62903
Bureau Std Engr: D.J.W.
DRAWN BY: J.F.T. DATE DRAWN: 9/2017

NOT TO SCALE

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO



GENERAL NOTES

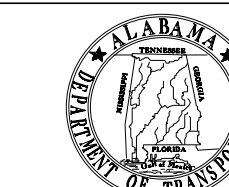
1. TRANSITIONAL END SECTION TO BE PAID FOR AS CONCRETE MEDIAN OR SAFETY BARRIER, TYPE - T.E.S., PER EACH.
2. TRANSITIONAL END SECTION AS DETAILED ABOVE IS FOR USE WITH 2'-0" WIDE ATTENUATOR. DETAILS SHALL BE MODIFIED WHEN USED WITH ATTENUATORS OF A DIFFERENT WIDTH. SEE APPROPRIATE DRAWING FOR DETAILS AND/OR MODEL NUMBERS FOR ATTENUATORS TO FIT SPECIFIC SITES.
3. IF THE T.E.S. IS CONNECTED TO A BARRIER WALL TALLER THAN 42", THE VERTICAL TRANSITION FROM THE 32" HIGH T.E.S. TO THE WALL HEIGHT WILL BE ON A 10:1 TAPER AND THE LENGTH OF THE T.E.S. WILL VARY DEPENDING ON THE BARRIER HEIGHT. MINIMUM LENGTH IS 12'-0".

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- REVISIONS
1. Changed all references to G-R-E-A-T attenuator to QuadGuard, 11-19-97 by C.J.S.
 2. Adjusted to include TRACC on 08-28-00 by J.F.T.
 3. Adjusted note No. 2 to provide generic attenuators 08-30-01 by J.F.T.
 4. Added T.E.S. with Glara Screen, adding Note No. 3 & deleted Sec. 4-A' on 03-28-08 by W.W.A.
 5. Revised transition from Jersey Barrier shape to constant Slope Face shape (MASH) on 10/6/17 by LVS.



ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050

DESIGN BUREAU SPECIAL DRAWING

MEDIAN BARRIER
TRANSITIONAL END SECTION
TYPE - T.E.S.

Bureau Std Engr: D.J.W.
DRAWN BY: _____ DATE DRAWN: 07-02-91

SPECIAL DRAWING NO
TES-629

INDEX NO
62906

NOT TO SCALE