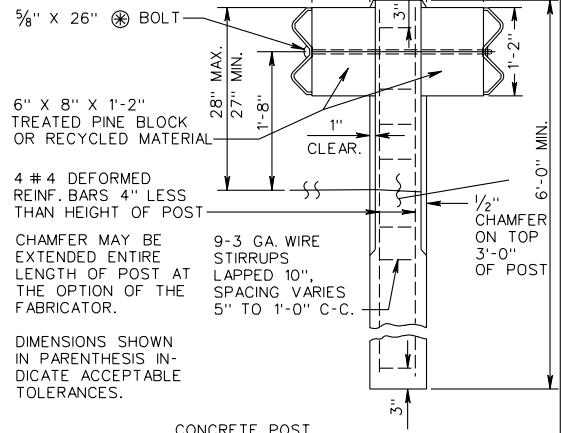


MB-3

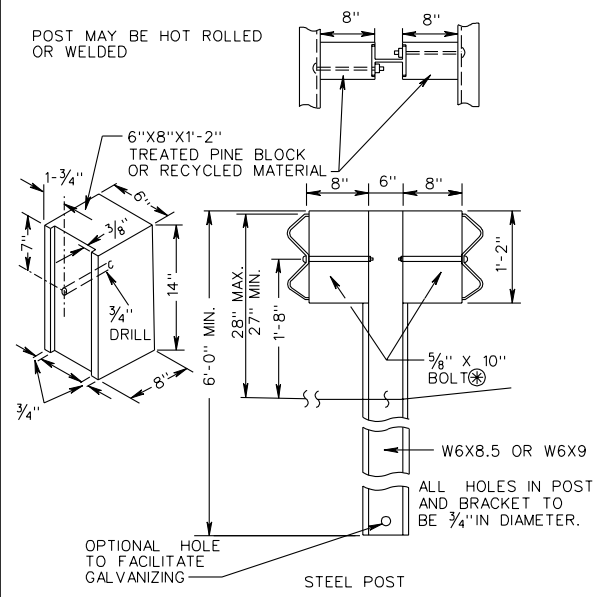
1/2" (+1/4") CHAMFER ALL CORNERS

ALL CONCRETE SHALL BE CLASS A3.
3/4" HOLES TO BE CAST IN POST.
5/8" X 26" BOLT

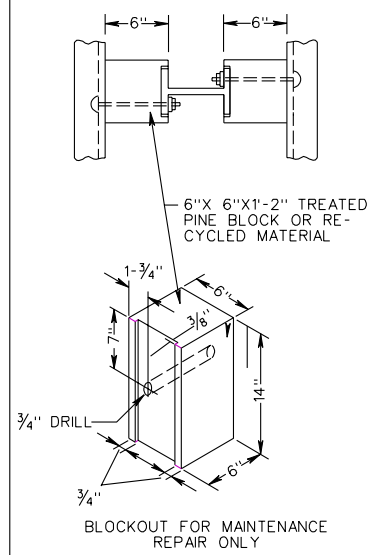


CONCRETE POST

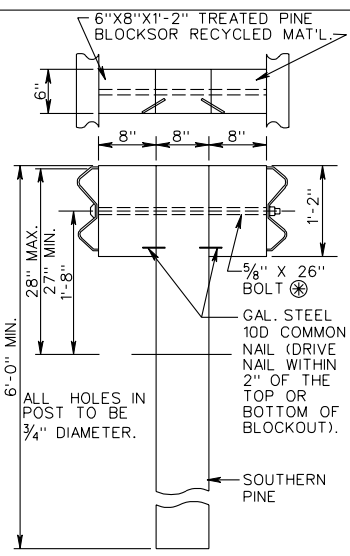
POST MAY BE HOT ROLLED OR WELDED



STEEL POST



BLOCKOUT FOR MAINTENANCE REPAIR ONLY



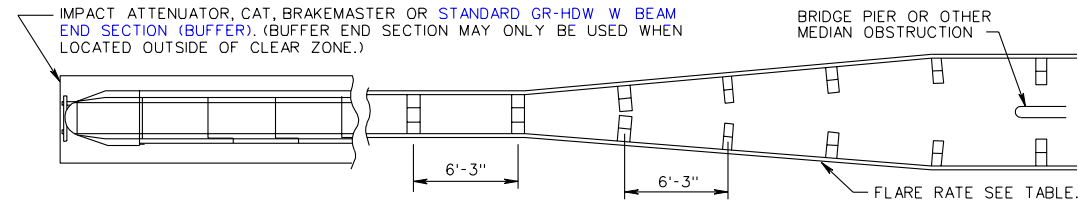
6X8 WOOD POST

NOTES:
STANDARD MB-3 POST SPACING IS 6'-3".
FOR DETAILS OF RAIL ELEMENT, RAIL SPLICE JOINT, W BEAM BACK UP PLATE, AND ASSOCIATED HARDWARE SEE SHEET NO. 501.01.
ALTERNATE TYPE POSTS AND BLOCKOUTS MAY BE INTERCHANGED ON ANY ONE PROJECT WITH THE RESTRICTION THAT THE SAME TYPE OF POST AND BLOCKOUT MUST BE USED IN ANY SINGLE RUN OF MEDIAN BARRIER.
ALL BOLTS, NUTS, WASHERS, STEEL POSTS, BENT PLATE POST, AND BLOCKOUTS ARE TO BE GALVANIZED.

THE GUARDRAIL AND MEDIAN BARRIER COMPONENTS DEPICTED IN A.R.T.B.A. TECHNICAL BULLETIN NUMBER 268B MAY BE SUBSTITUTED IF INTERCHANGEABLE WITH THE STANDARDS FOR GUARDRAIL (GR) OR MEDIAN BARRIER (MB) AND APPROVED BY THE ENGINEER.
STANDARD WASHERS ARE TO BE USED ON LAST 50' OF RUN OFF END.

DESIGN SPEED	FLARE RATES		
	INSIDE SHY LINE	BEYOND SHY LINE	
MPH	SHY LINE LS	FLARE RATE	FLARE RATE
70	10'	30:1	15:1 *
60	8'	26:1	13:1 *
50	6.5'	21:1	11:1 *
40	5'	17:1	9:1 *
30	3.5'	13:1	7:1 *

* SUGGESTED MAXIMUM FLARE RATE FOR SEMI-RIGID BARRIER SYSTEMS.



METHOD OF TREATMENT AT BRIDGE PIER OR MEDIAN OBSTRUCTION

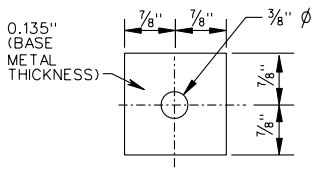
BLOCKED-OUT W BEAM MEDIAN BARRIER

VIRGINIA DEPARTMENT OF TRANSPORTATION

501.41

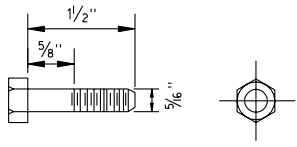
SPECIFICATION REFERENCE
221
505

⊗ THE GUARDRAIL AND MEDIAN BARRIER COMPONENTS DEPICTED IN A.R.T.B.A. TECHNICAL BULLETIN NUMBER 268B MAY BE SUBSTITUTED IF INTERCHANGEABLE WITH THE STANDARDS FOR GUARDRAIL (GR) OR MEDIAN BARRIER (MB) AND APPROVED BY THE ENGINEER.



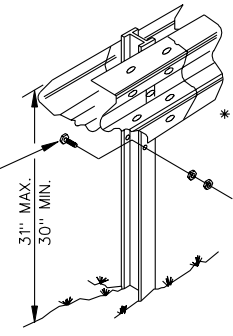
SQUARE WASHER

BOLT AND NUT SHALL HAVE 4000 POUNDS MIN. TENSILE STRENGTH.



5/16" HEX BOLT AND NUT

5/8" DIAMETER HOLE FOR 1/2" SUPPORT BOLT 1/2" LONG, 2 NUTS, NO WASHER. NO SUPPORT BOLTS IN THE LAST THREE POSTS OF EACH END OF EACH INSTALLATION.



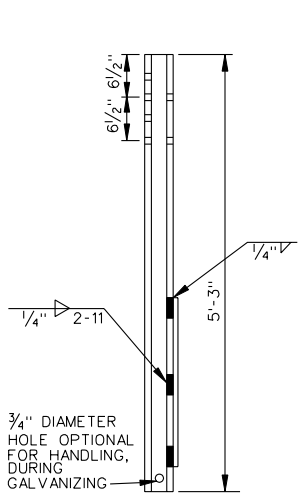
TYPICAL INSTALLATION

NOTES:

- STANDARD MB-5 POST SPACING IS 12'-6"
- STANDARD MB-5A POST SPACING IS 6'-3"
- STANDARD MB-5B POST SPACING IS 3'-1/2"
- STANDARD MB-5 DEFLECTION IS 8'-0"

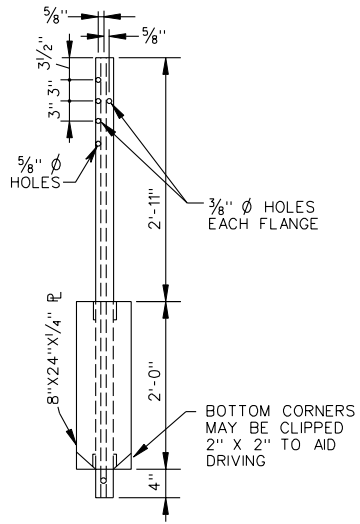
ALL POSTS, BOLTS, NUTS AND WASHERS ARE TO BE GALVANIZED.

FOR DETAILS OF GUARDRAIL ELEMENT, SPLICE JOINT, HARDWARE, ETC. SEE SHEET NO. 501.01.

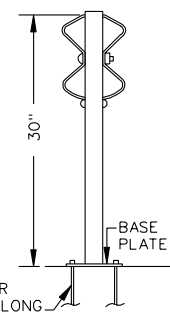


FOR ROCK INSTALLATION, 8" X 24" X 1/4" PLATE IS TO BE ELIMINATED. DRILL OR EXCAVATE HOLE FOR POST, PLACE AND BACKFILL WITH CRUSHER RUN AGGREGATE TO LEVEL OF ROCK.

S3X5.7 STEEL POST

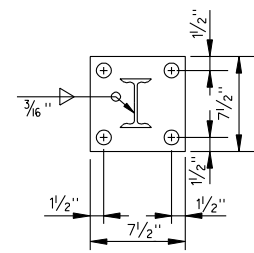


BOTTOM CORNERS MAY BE CLIPPED 2" X 2" TO AID DRIVING



STRUCTURE MOUNTED BARRIER

ALL HOLES 1" DIAMETER
ALL WELDS 3/16"
PLATE IS 1/2" THICK



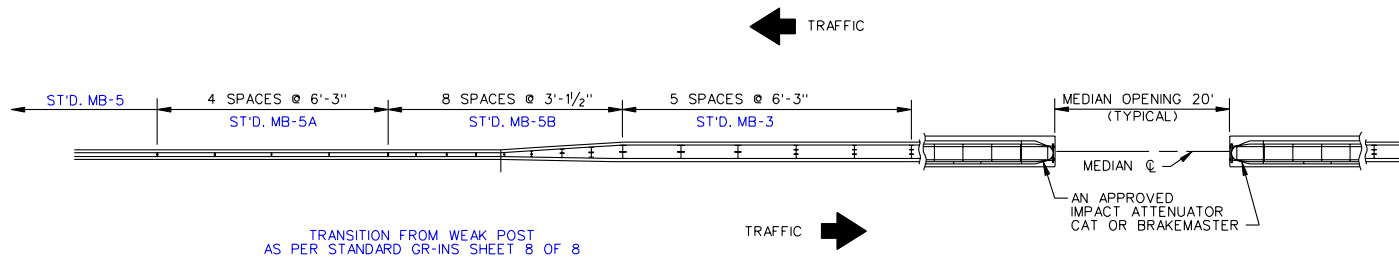
BASE PLATE

SPECIFICATION REFERENCE	221 505
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STANDARD W BEAM MEDIAN BARRIER (WEAK POST SYSTEM)

VIRGINIA DEPARTMENT OF TRANSPORTATION

MB-5



TREATMENT FOR MEDIAN BARRIER CROSS-OVER

SHEET 2 OF 2

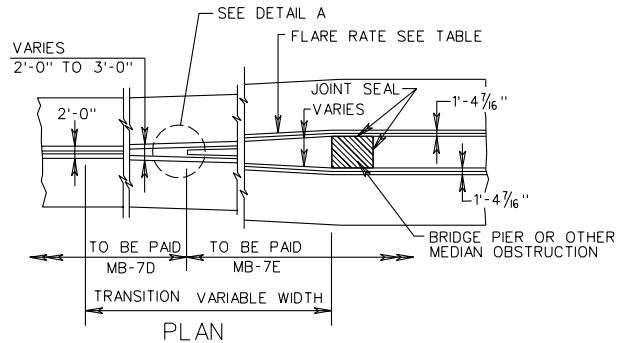
STANDARD W BEAM MEDIAN BARRIER (WEAK POST SYSTEM)

SPECIFICATION
REFERENCE

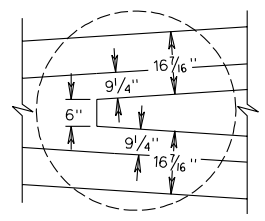
221
505

VIRGINIA DEPARTMENT OF TRANSPORTATION

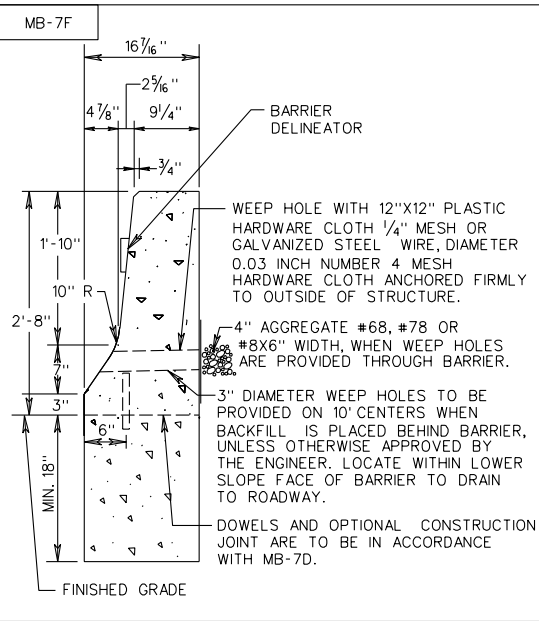
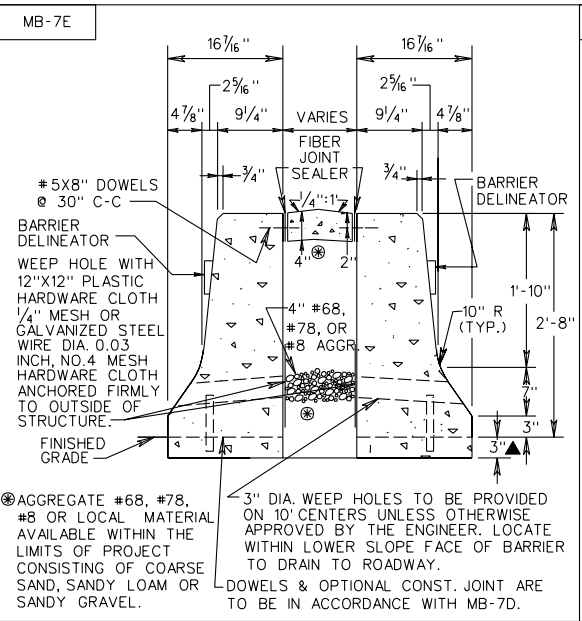
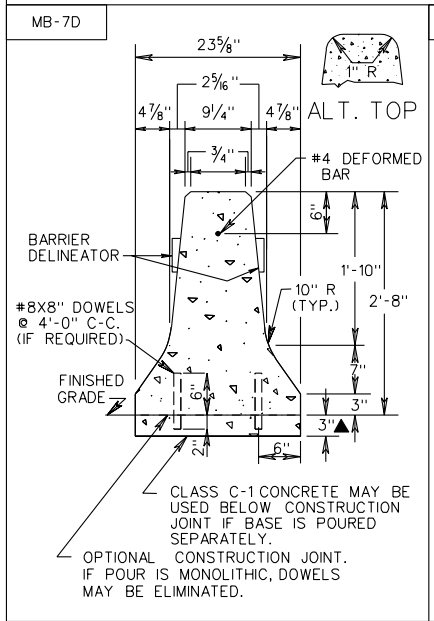
501.43



* SUGGESTED MAXIMUM FLARE RATE FOR RIGID BARRIER SYSTEMS.



FLARE RATES			
DESIGN SPEED	INSIDE SHY LINE	BEYOND SHY LINE	
MPH	SHY LINE LS	FLARE RATE	FLARE RATE
70	10'	30:1	20:1 *
60	8'	26:1	17:1 *
50	6.5'	21:1	14:1 *
40	5'	17:1	11:1 *
30	3.5'	13:1	8:1 *



NOTES:
 IF THE CONTRACTOR ELECTS TO USE THE OPTIONAL CONSTRUCTION JOINT, TRANSVERSE JOINTS FOR CRACK CONTROL AND EXPANSION JOINTS ARE TO BE PROVIDED IN BOTH FOOTING AND BARRIER AT THE SAME LOCATION.
 TRANSVERSE JOINTS ARE TO COINCIDE WITH JOINTS IN ADJACENT PAVEMENT WITH A MAXIMUM SPACING OF 20 FEET C-C.
 CONCRETE MEDIAN BARRIER MAY BE PRECAST, CAST IN PLACE OR SLIP-FORMED. FOR PRECAST DESIGN SEE [STANDARD MB-7D PC](#).
 HORIZONTAL REINFORCING STEEL BARS ARE TO BE SEPARATED AT ALL EXPANSION AND CONTRACTION JOINTS. A 2" CONCRETE COVER IS REQUIRED OVER THE ENDS OF THE REINFORCING STEEL.

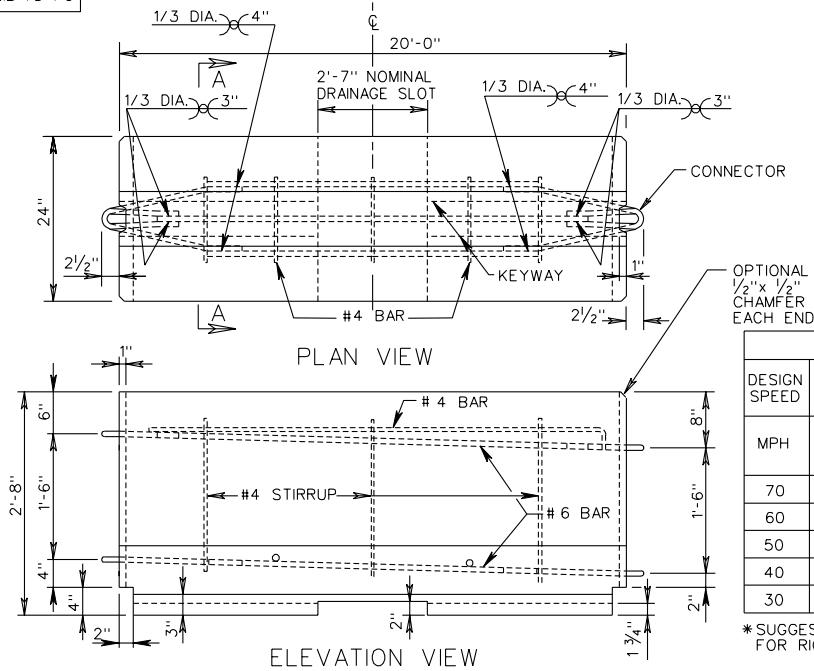
BARRIER DELINEATOR SIZE, COLOR, AND SPACING TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 COST OF DELINEATOR TO BE INCLUDED IN THE PRICE BID FOR MEDIAN BARRIER.
 REFLECTIVE SURFACE OF BARRIER DELINEATOR IN ALL INSTANCES, TO BE FACING ONCOMING TRAFFIC.
 ALTERNATE TOP DESIGN SHOWN ON MB-7D, MAY ALSO BE APPLIED TO MB-7E AND MB-7F.
 CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
 ▲ DEPTH OF CONCRETE BASE MAY BE EXTENDED AT THE CONTRACTOR'S OPTION TO COINCIDE WITH BOTTOM OF PAVEMENT COURSE IN WHICH BASE TERMINATES; HOWEVER, THE COST OF ADDITIONAL CONCRETE SHALL BE INCLUDED IN UNIT PRICE BID PER LINEAR FOOT OF BARRIER.

SPECIFICATION REFERENCE
105 502

CONCRETE MEDIAN BARRIER

VIRGINIA DEPARTMENT OF TRANSPORTATION

MB-7D PC

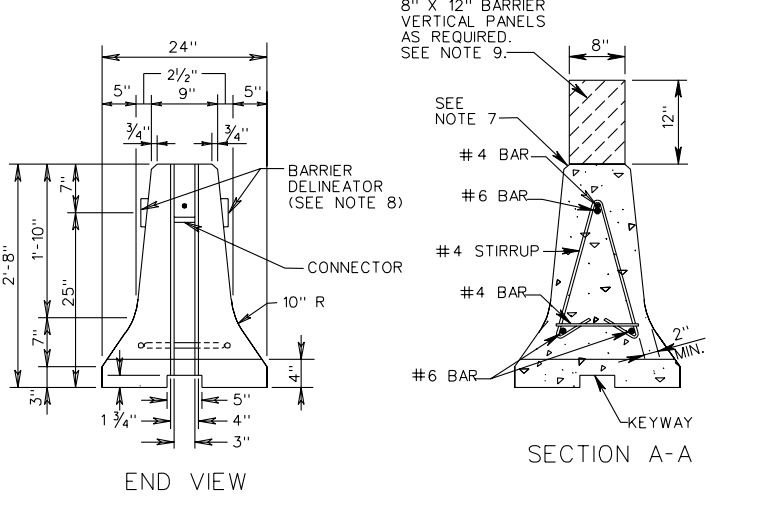
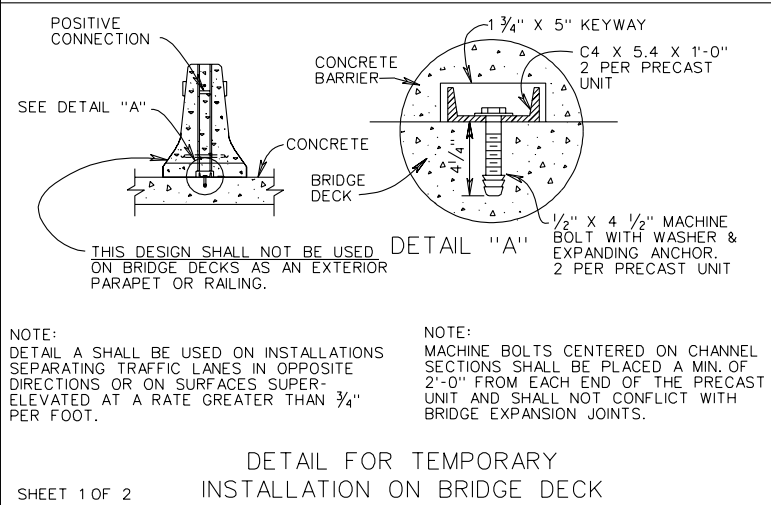


FLARE RATES *			
DESIGN SPEED	INSIDE SHY LINE		BEYOND SHY LINE
	SHY LINE LS	FLARE RATE	FLARE RATE
70	10'	30:1	20:1
60	8'	26:1	17:1
50	6.5'	21:1	14:1
40	5'	17:1	11:1
30	3.5	13:1	8:1

*SUGGESTED MAXIMUM FLARED RATE FOR RIGID BARRIER SYSTEMS.

NOTES:

- FOR POSITIVE CONNECTION DETAILS AND DIMENSIONS SEE SHEETS 501.59 - 501.61.
- AT THE OPTION OF THE MANUFACTURER, ADDITIONAL REINFORCING MAY BE ADDED TO THE PRECAST CONCRETE BARRIER FOR HANDLING.
- CONCRETE SHALL BE 4000 P.S.I. MINIMUM.
- BARRIER DELINEATOR SIZE, COLOR AND SPACING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- COST OF DELINEATOR SHALL BE INCLUDED IN THE PRICE BID FOR TRAFFIC BARRIER SERVICE.
- OTHER PRECAST TRAFFIC BARRIER SERVICE CONCRETE DESIGNS THAT MEET NCHRP 350 TEST REQUIREMENTS AND HAVE BEEN ACCEPTED BY VDOT AS AN ACCEPTABLE ALTERNATE TO THE STANDARD DESIGN MAY BE SUBSTITUTED.
- A 1" RADIUS MAY BE USED AS AN ALTERNATE FOR THE 3/4" CHAMFER.
- BARRIER DELINEATOR REFLECTIVE SURFACE IN ALL INSTANCES SHALL BE FACING ONCOMING TRAFFIC.
- BARRIER VERTICAL PANELS SHALL BE SPACED IN ACCORDANCE WITH VIRGINIA WORK AREA PROTECTION MANUAL.



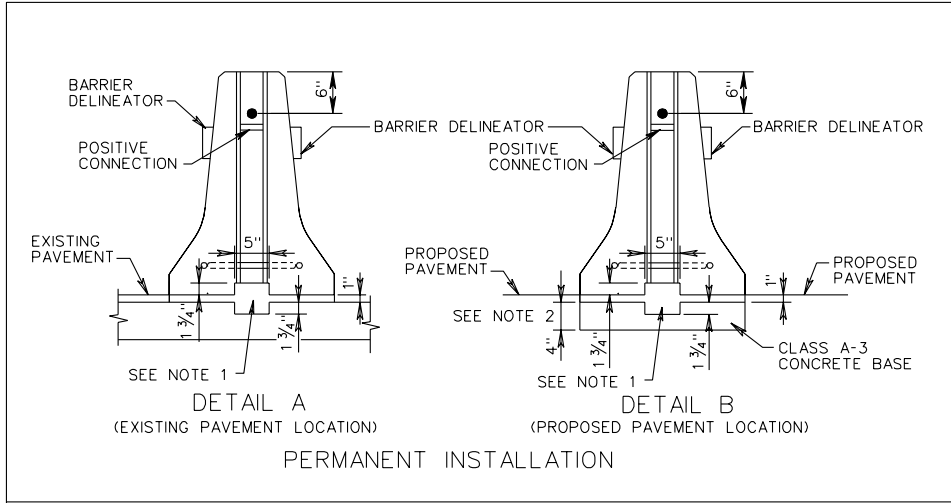
PRECAST TRAFFIC BARRIER SERVICE CONCRETE

VIRGINIA DEPARTMENT OF TRANSPORTATION

501.45

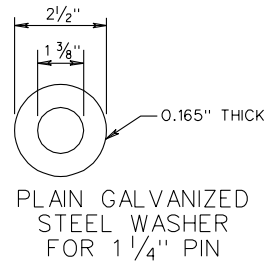
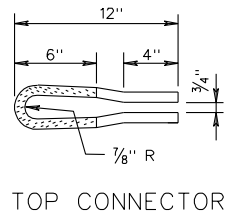
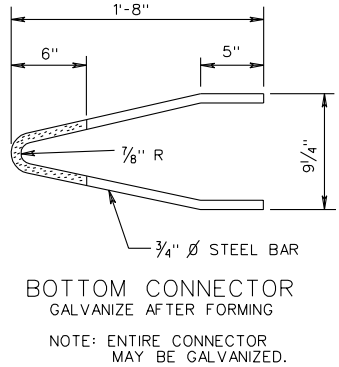
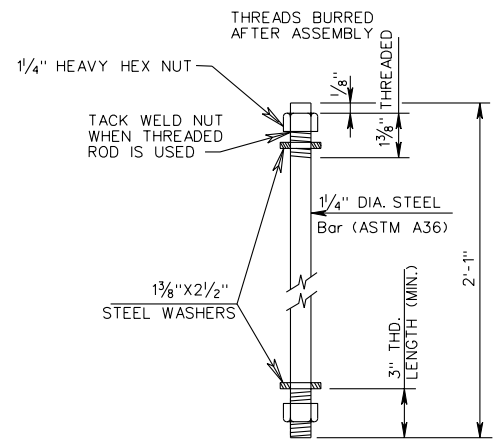
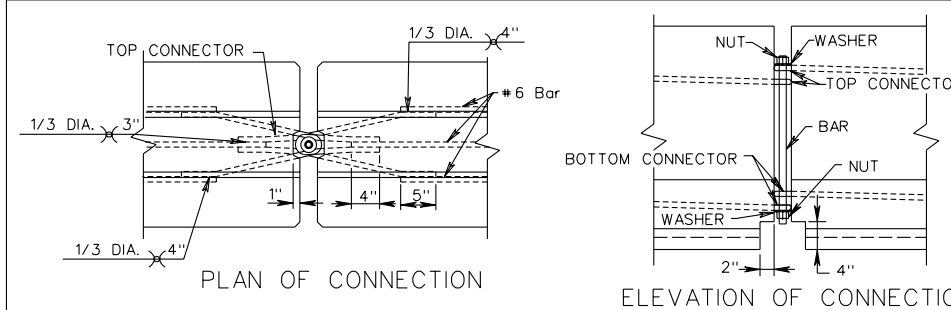
SPECIFICATION REFERENCE

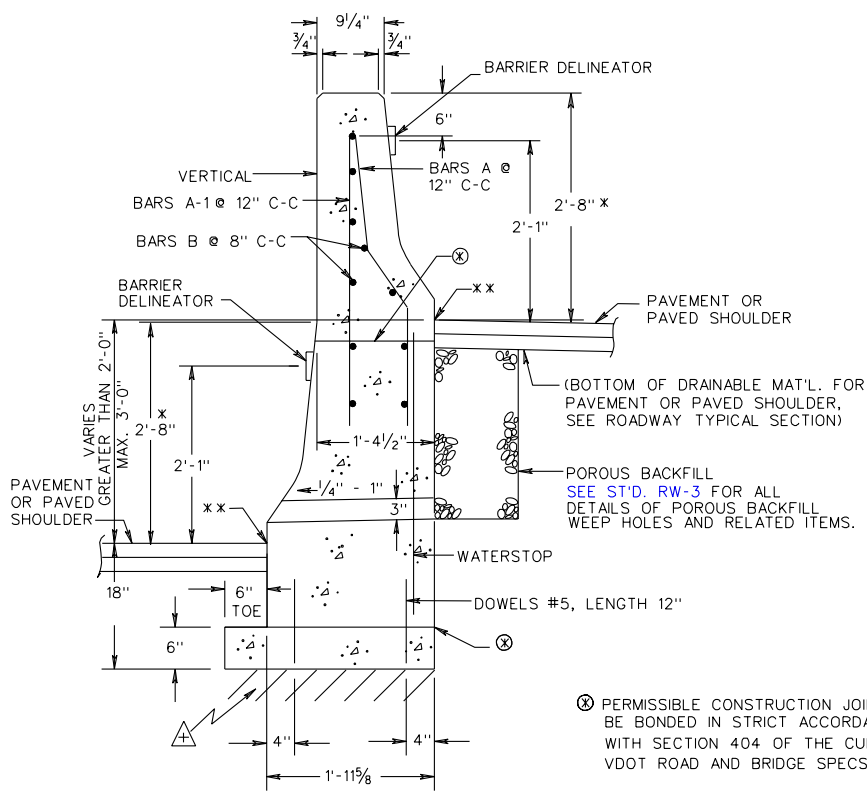
105
512



NOTES:

1. HIGH STRENGTH GROUT OR MORTAR SHALL BE IN ACCORDANCE WITH SECTION 218 OF THE SPECIFICATIONS.
2. 4" MIN. OR VARIABLE TO COINCIDE WITH SUBGRADE COURSE.
3. WHEN USED AS MEDIAN BARRIER IN A PERMANENT LOCATION, DRAINAGE SLOTS WILL BE COMPLETELY FILLED AND SEALED WITH MORTAR OR GROUT UNLESS UNIT WILL BE LOCATED OVER MEDIAN DRAINAGE STRUCTURE.
4. BARRIER DELINEATOR SIZE, COLOR, AND SPACING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
5. COST OF DELINEATOR TO BE INCLUDED IN THE PRICE BID FOR MEDIAN BARRIER.
6. REFLECTIVE SURFACE OF BARRIER DELINEATOR IN ALL INSTANCES SHALL BE FACING ONCOMING TRAFFIC.
7. PIN AND CONNECTORS SHALL BE ASTM-A36. REINFORCING STEEL BARS SHALL BE ASTM A 615 GRADE 60. ONE CONNECTOR PIN ASSEMBLY WITH EACH BARRIER SECTION.





TYPE III

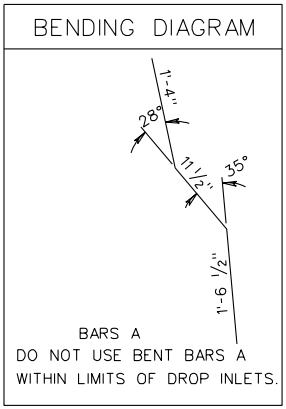
TYPE III (GREATER THAN 2'-0" HT. DIFF., MAX. 3'-0")

MEASUREMENT AND PAYMENT

MEDIAN BARRIER MB-8A TYPE I, II OR III WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LIN. FOOT, WHICH SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING CLASS A3 CONCRETE, REINFORCING STEEL, POROUS BACKFILL AND ALL TOOLS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. ANY ADDITIONAL EXCAVATION, BACKFILL WITH SUITABLE MATERIAL AND COMPACTION WORK NECESSARY FOR THE CONCRETE MEDIAN BARRIER INSTALLATION IS TO BE CONSIDERED INCIDENTAL IN THE PRICE BID FOR THE CONCRETE MEDIAN BARRIER.

⊗ PERMISSIBLE CONSTRUCTION JOINT TO BE BONDED IN STRICT ACCORDANCE WITH SECTION 404 OF THE CURRENT VDOT ROAD AND BRIDGE SPECS.

NOTE:
 REINFORCING STEEL BARS SHOWN ARE BASED ON A 20' PANEL LENGTH.
 ALL REINFORCING BARS ARE TO BE SIZE #4 GRADE 60 STEEL WITH A MINIMUM 1 1/2" CONCRETE COVER.
 THE TYPICAL JOINT SPACING FOR CONSTRUCTION JOINTS IS 20' AND 80' FOR EXPANSION JOINTS FOR TYPE II AND III BARRIERS.
 FOR DETAILS OF HOW JOINTS ARE TO BE FORMED & WATER STOP DETAILS SEE ST'D. RW-3.
 TRANSVERSE JOINTS FOR TYPE I BARRIERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS EXCEPT NO SCORING OR SAWING WILL BE ALLOWED.
 HORIZONTAL REINFORCING STEEL BARS B ARE TO BE SEPARATED AT ALL EXPANSION & CONTRACTION JOINTS. A 2" CONCRETE COVER IS REQUIRED OVER THE ENDS OF REINFORCING STEEL.



* MB-7D BARRIER FACE

XX DENOTES FINISHED GRADE ELEVATION

△ FOUNDATION MATERIAL UNDER MEDIAN BARRIER IS TO BE COMPACTED.

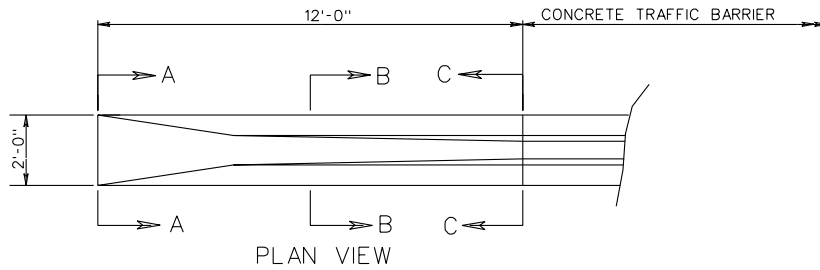
REINFORCING STEEL SCHEDULE								
PANEL	BARS "A"		BARS A-1		BARS "B"		DOWELS	
	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
TYPE I					2	19'-8"		
TYPE II	20	4'-0"	20	4'-0"	9	19'-8"	40	1'-0"
TYPE III	20	4'-0"	20	4'-0"	9	19'-8"	40	1'-0"

SPECIFICATION REFERENCE
105 404 502

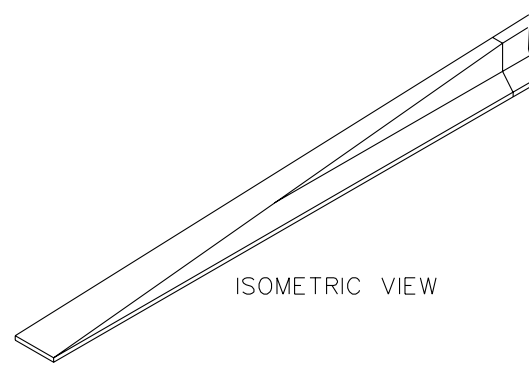
CONCRETE MEDIAN BARRIER
 TYPE I, II OR III

VIRGINIA DEPARTMENT OF TRANSPORTATION

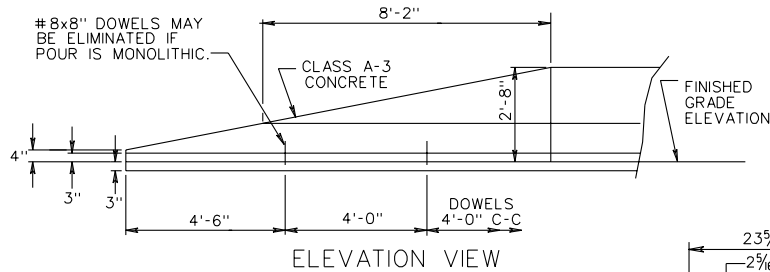
MB-9A



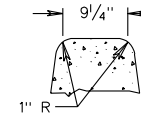
PLAN VIEW



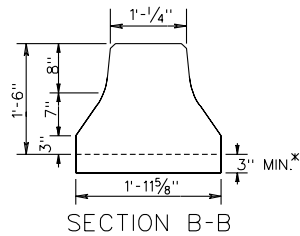
ISOMETRIC VIEW



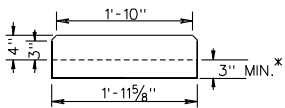
ELEVATION VIEW



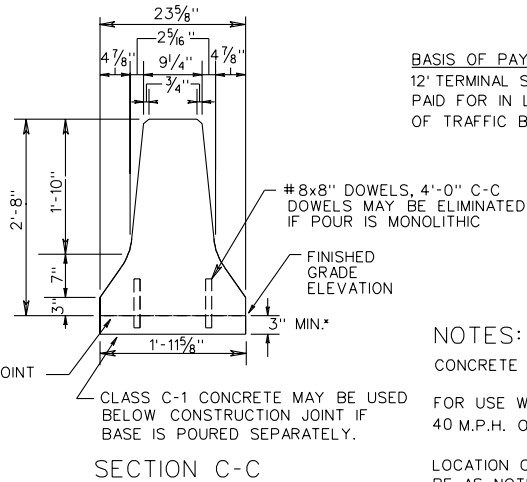
ALTERNATE TOP



SECTION B-B



SECTION A-A



SECTION C-C

BASIS OF PAYMENT: CONCRETE MEDIAN BARRIER
12' TERMINAL SECTION IS TO BE MEASURED AND
PAID FOR IN LIN. FT. ST'D. MB-7D, OR LIN. FT.
OF TRAFFIC BARRIER SERVICE CONCRETE.

NOTES:

CONCRETE TO BE CLASS A3.

FOR USE WHERE THE OPERATING SPEED IS
40 M.P.H. OR LESS.

LOCATION OF THE BARRIER END SECTIONS TO
BE AS NOTED ON PLANS OR AS APPROVED
BY THE ENGINEER.

FOR POSITIVE CONNECTION DETAILS AND
DIMENSIONS SEE STANDARD MB-INS.

ONLY FOR USE OUTSIDE OF CLEAR ZONE.

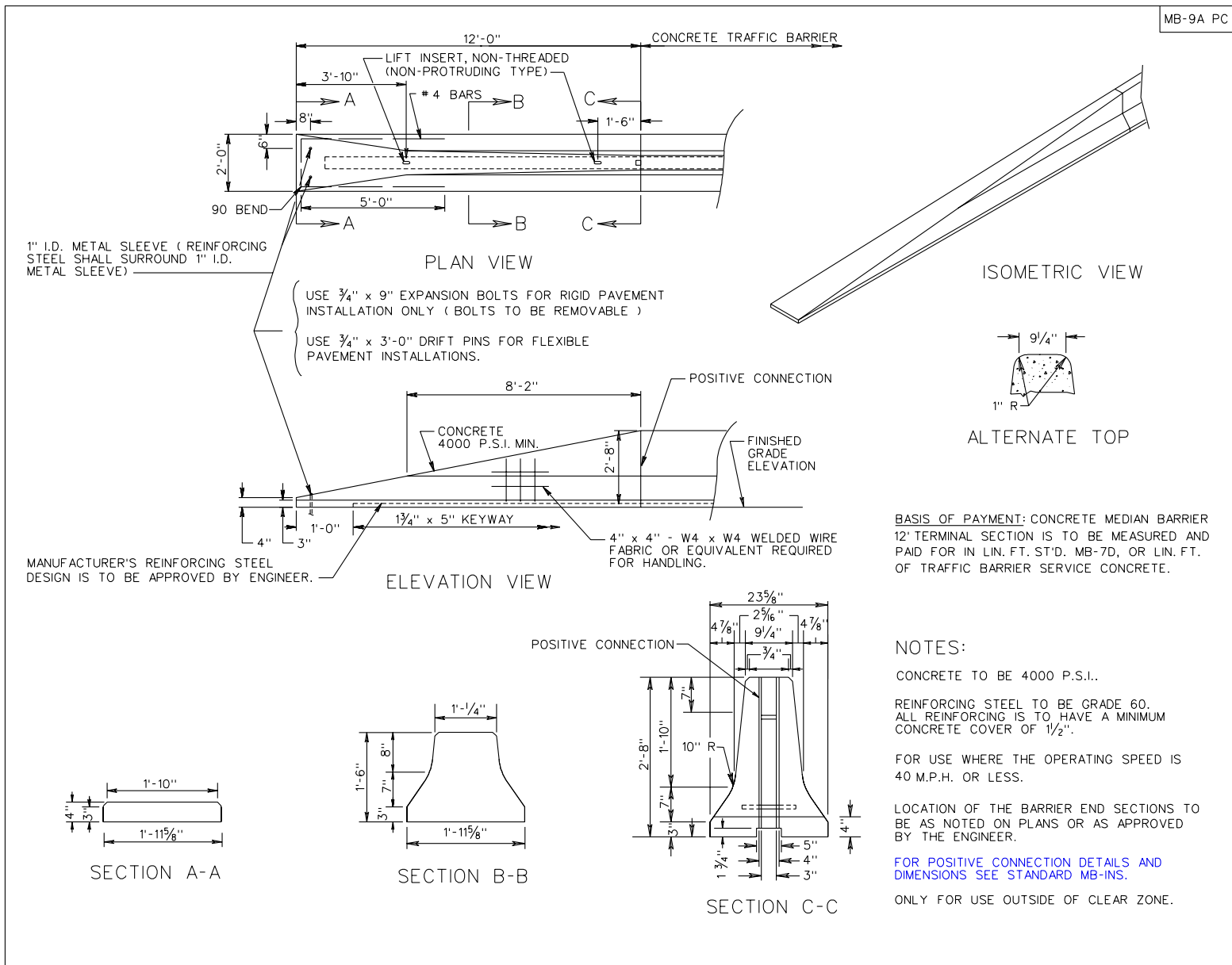
* DEPTH OF CONCRETE BASE MAY BE EXTENDED
AT THE CONTRACTOR'S OPTION TO COINCIDE WITH
BOTTOM OF PAVEMENT COURSE IN WHICH BASE
TERMINATES; HOWEVER, THE COST OF ADDITIONAL
CONCRETE SHALL BE INCLUDED IN UNIT PRICE
BID PER LIN. FT. OF BARRIER.

CAST IN PLACE CONCRETE MEDIAN BARRIER
12 FT. TERMINAL SECTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

501.49

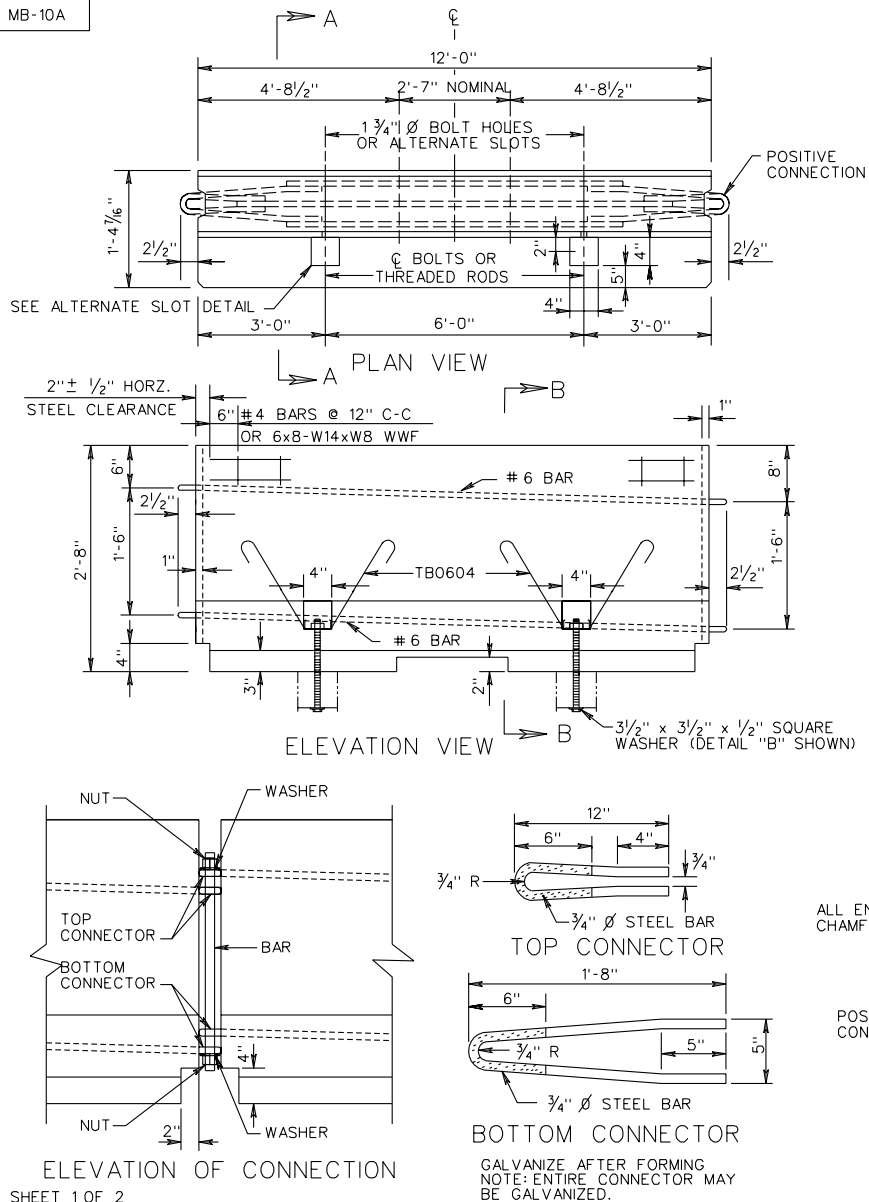


SPECIFICATION REFERENCE
105

PRECAST CONCRETE MEDIAN BARRIER
 12 FT. TERMINAL SECTION
 VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED ON 7/02

MB-10A

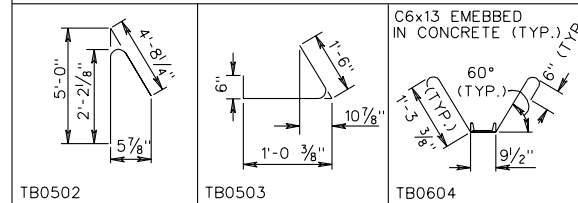


REINFORCING STEEL SCHEDULE

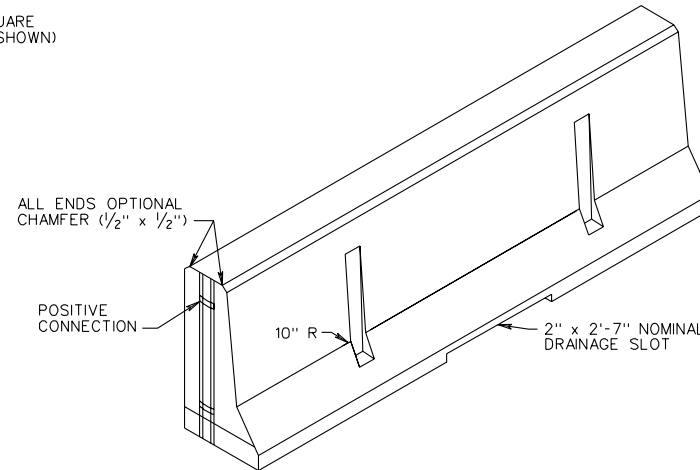
FOR ONE (1) SECTION

MARK	No.	SIZE	LENGTH	PIN Ø	LOCATION
TB0401	8	4	11'-5"	—	TEMP. PARAPET
TB0502	12		4'-3"	2 1/2"	
TB0503	12	5	2'-8"	2 1/2"	
TB0604	4	6	4'-8"	4 1/2"	

BENDING DIAGRAM



DIMENSIONS IN BENDING DIAGRAMS ARE OUT-TO-OUT OF BARS, EXCEPT AS SHOWN.
 POUNDS OF REINFORCING STEEL = 176
 REINFORCING SCHEDULE BASED ON 12'-0" UNIT LENGTH.



TRAFFIC BARRIER SERVICE CONCRETE PARAPET (SINGLE FACE)
 (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)

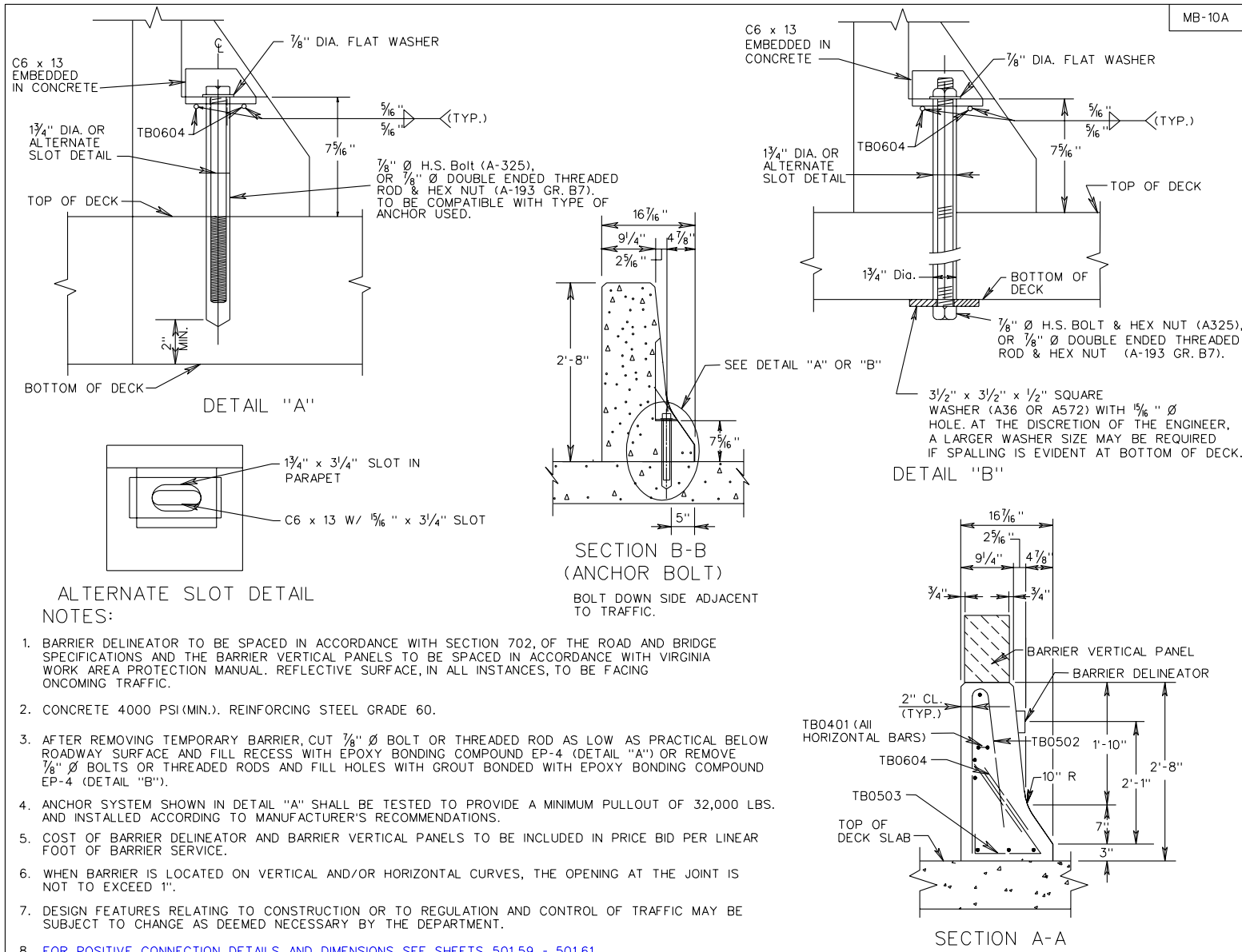
SPECIFICATION REFERENCE

105
502

501.51

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED ON 7/02



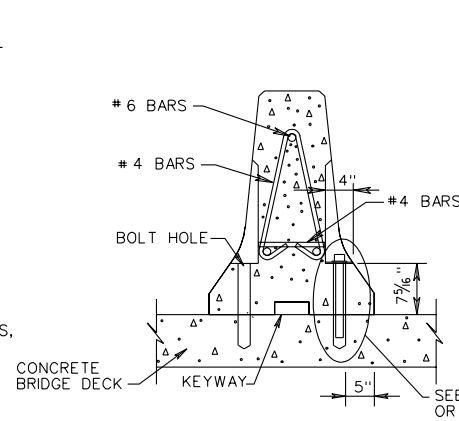
ALTERNATE SLOT DETAIL
NOTES:

1. BARRIER DELINEATOR TO BE SPACED IN ACCORDANCE WITH SECTION 702, OF THE ROAD AND BRIDGE SPECIFICATIONS AND THE BARRIER VERTICAL PANELS TO BE SPACED IN ACCORDANCE WITH VIRGINIA WORK AREA PROTECTION MANUAL. REFLECTIVE SURFACE, IN ALL INSTANCES, TO BE FACING ONCOMING TRAFFIC.
2. CONCRETE 4000 PSI (MIN.). REINFORCING STEEL GRADE 60.
3. AFTER REMOVING TEMPORARY BARRIER, CUT $\frac{7}{8}$ " \varnothing BOLT OR THREADED ROD AS LOW AS PRACTICAL BELOW ROADWAY SURFACE AND FILL RECESS WITH EPOXY BONDING COMPOUND EP-4 (DETAIL "A") OR REMOVE $\frac{7}{8}$ " \varnothing BOLTS OR THREADED RODS AND FILL HOLES WITH GROUT BONDED WITH EPOXY BONDING COMPOUND EP-4 (DETAIL "B").
4. ANCHOR SYSTEM SHOWN IN DETAIL "A" SHALL BE TESTED TO PROVIDE A MINIMUM PULLOUT OF 32,000 LBS. AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
5. COST OF BARRIER DELINEATOR AND BARRIER VERTICAL PANELS TO BE INCLUDED IN PRICE BID PER LINEAR FOOT OF BARRIER SERVICE.
6. WHEN BARRIER IS LOCATED ON VERTICAL AND/OR HORIZONTAL CURVES, THE OPENING AT THE JOINT IS NOT TO EXCEED 1".
7. DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.
8. FOR POSITIVE CONNECTION DETAILS AND DIMENSIONS SEE SHEETS 501.59 - 501.61.

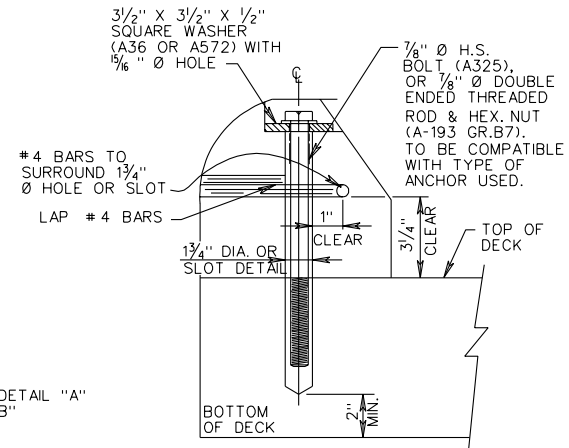
SPECIFICATION REFERENCE	<p>TRAFFIC BARRIER SERVICE CONCRETE PARAPET (SINGLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)</p> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	SHEET 2 OF 2
		501.52

NOTES:

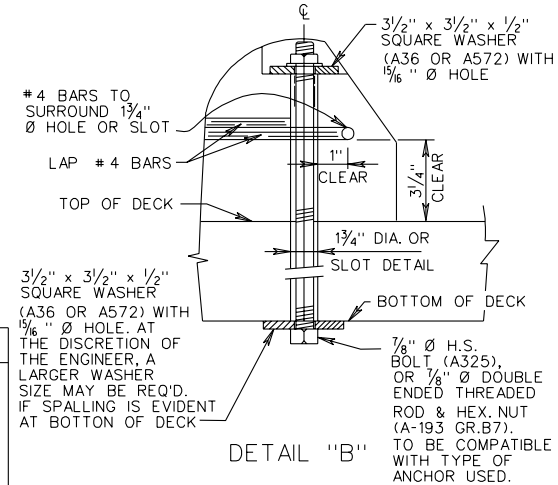
1. BARRIER DELINEATOR IS TO BE SPACED IN ACCORDANCE WITH SECTION 702 OF THE ROAD AND BRIDGE SPECIFICATIONS AND THE BARRIER VERTICAL PANELS ARE TO BE SPACED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.
2. REFLECTIVE SURFACE, IN ALL INSTANCES, ARE TO BE FACING ONCOMING TRAFFIC.
3. COST OF BARRIER DELINEATOR AND BARRIER VERTICAL PANELS ARE TO BE INCLUDED IN PRICE BID PER LINEAR FOOT OF BARRIER SERVICE.
4. ANCHOR BOLTS SHALL BE INSTALLED ON TRAFFIC SIDE.
5. CONCRETE 4000 PSI. (MIN.)
6. WELDED WIRE FABRIC MAY BE ONE SHEET BENT TO FIT CONFIGURATION OR TWO SEPARATE SHEETS, ONE ON EACH FACE.
7. ANCHOR SYSTEM SHOWN IN DETAIL "A" SHALL BE TESTED TO PROVIDE A MINIMUM PULLOUT OF 32,000 LBS. AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. AFTER REMOVING TEMPORARY BARRIER, CUT $\frac{7}{8}$ " Ø BOLT OR THREADED ROD AS LOW AS PRACTICAL BELOW ROADWAY SURFACE AND FILL RECESS WITH EPOXY BONDING COMPOUND EP-4 (DETAIL "A") OR REMOVE $\frac{7}{8}$ " Ø BOLT OR THREADED ROD AND FILL HOLE WITH GROUT BONDED WITH EPOXY BONDING COMPOUND EP-4, (DETAIL "B").
9. FOR POSITIVE CONNECTION DETAILS AND DIMENSIONS SEE STANDARD MB-INS.



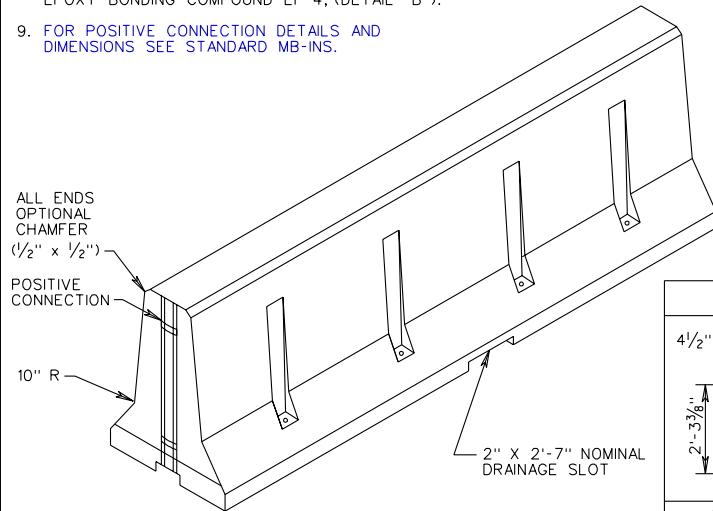
SECTION B-B
(ANCHOR BOLT)
BOLT DOWN SIDE ADJACENT TO TRAFFIC



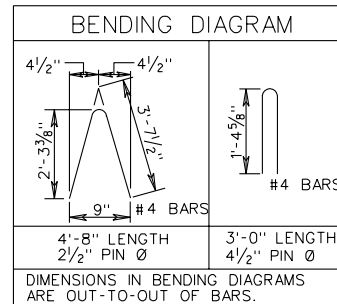
DETAIL "A"



DETAIL "B"



SECTION

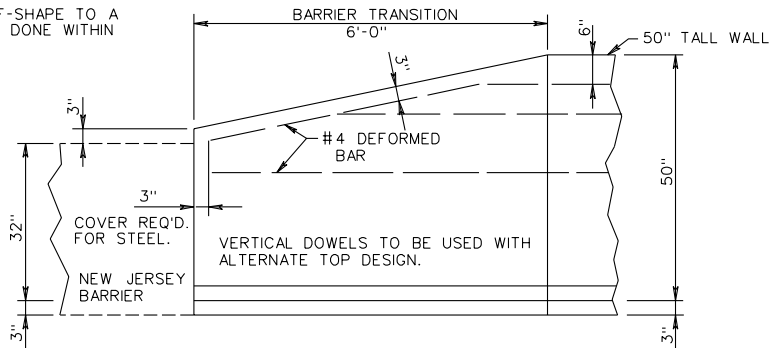
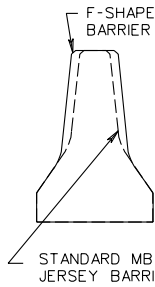


SPECIFICATION REFERENCE

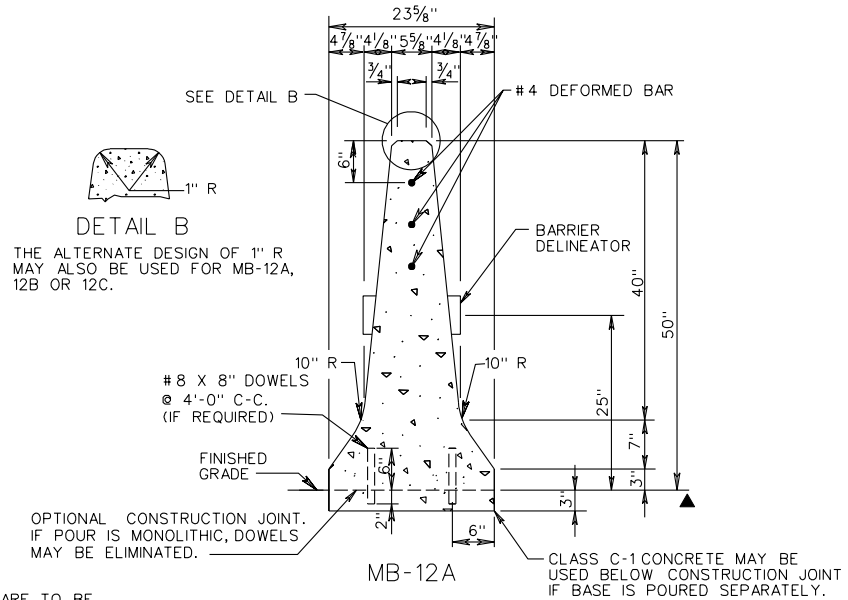
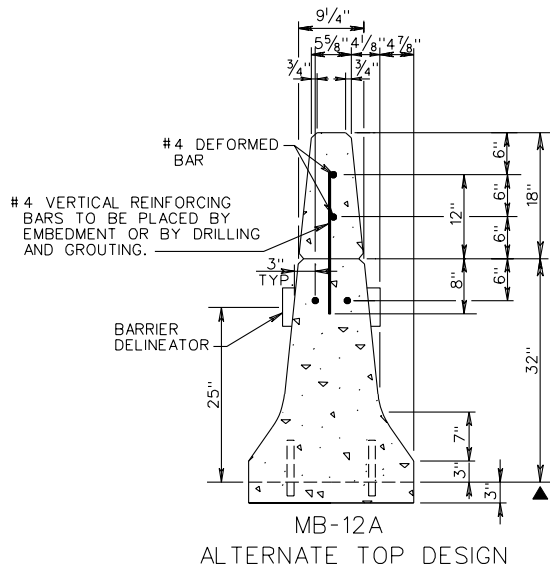
105
512

TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE)
(FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)

BARRIER TAPER FROM 50" TALL F-SHAPE TO A STANDARD MB-7A BARRIER TO BE DONE WITHIN THE 6'-0" AS INDICATED.



TRANSITION FROM 50" TALL WALL TO 32" JERSEY BARRIER



IF BARRIER EXTENSION IS CONSTRUCTED AS A SEPARATE ITEM, ALL JOINTS ARE TO BE CONSTRUCTED AT THE SAME INTERVAL AS CONCRETE BARRIER. ALL VERTICAL BARS ARE #4 AT 24" MAX. SPACING. LENGTH OF DOWELS SHALL BE 20". VERTICAL BARS MAY BE PLACED IN THE CONCRETE OR BONDED INTO DRILLED HOLES IN HARDENED CONCRETE. WHEN HOLES ARE DRILLED NON-SHRINK GROUT SHALL BE USED TO BOND THE BARS IN PLACE.

▲ DEPTH OF CONCRETE BASE MAY BE EXTENDED AT THE CONTRACTOR'S OPTION TO COINCIDE WITH BOTTOM OF PAVEMENT COURSE IN WHICH BASE TERMINATES; HOWEVER, THE COST OF ADDITIONAL CONCRETE SHALL BE INCLUDED IN UNIT PRICE BID PER LINEAR FT. OF BARRIER.

CONCRETE MEDIAN BARRIER (TALL WALL)

VIRGINIA DEPARTMENT OF TRANSPORTATION

NOTES:

IF THE CONTRACTOR ELECTS TO USE THE OPTIONAL CONSTRUCTION JOINTS, TRANSVERSE JOINTS FOR CRACK CONTROL AND EXPANSION JOINTS ARE TO BE PROVIDED IN BOTH FOOTING AND BARRIER AT THE SAME LOCATION.

TRANSVERSE JOINTS ARE TO COINCIDE WITH JOINTS IN ADJACENT PAVEMENT WITH A MAXIMUM SPACING OF 20 FT. C-C.

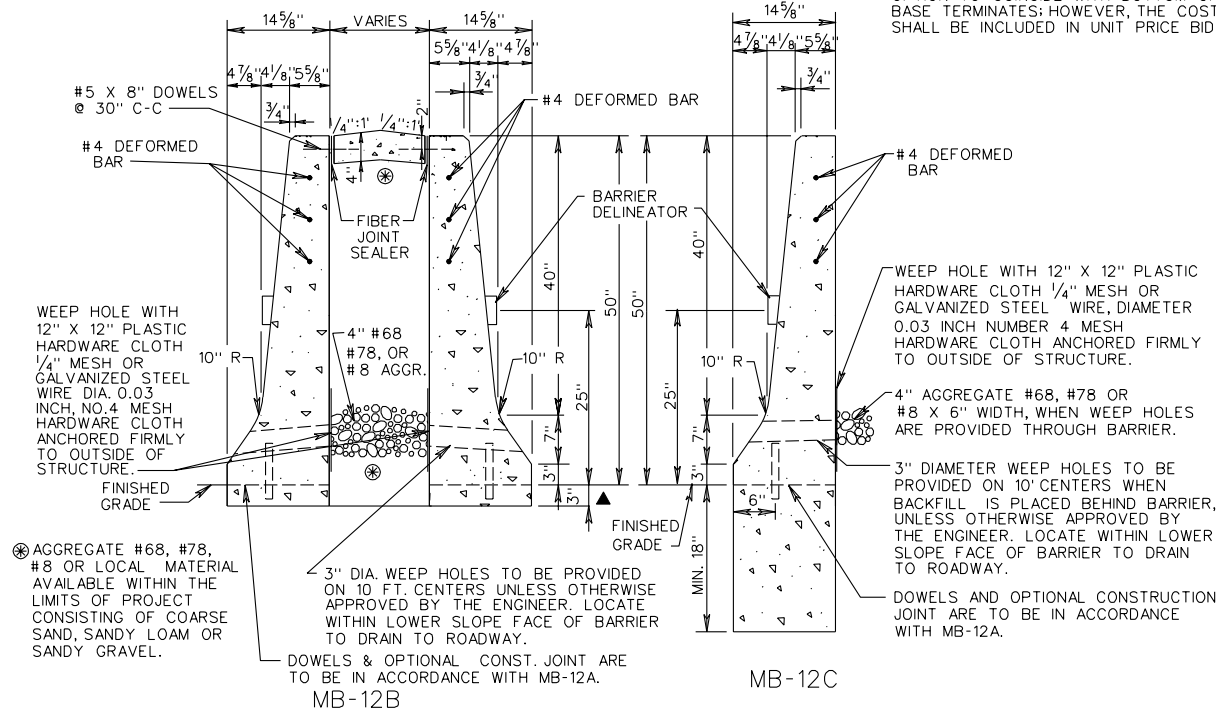
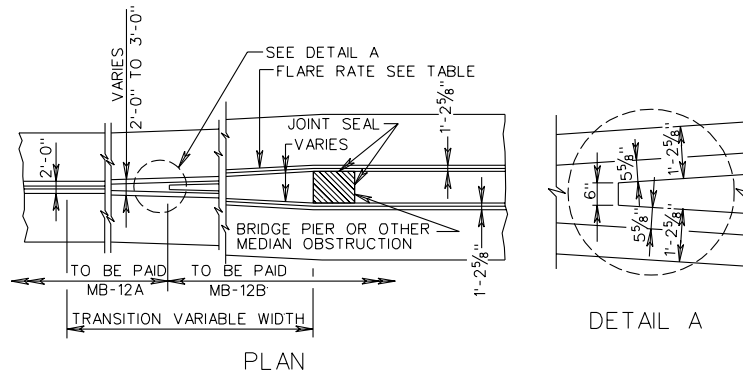
CONCRETE MEDIAN BARRIER MAY BE CAST IN PLACE OR SLIP-FORMED.

HORIZONTAL REINFORCING STEEL BARS ARE TO BE SEPARATE AT ALL EXPANSION AND CONTRACTION JOINTS. A 2" CONCRETE COVER IS REQUIRED OVER THE ENDS OF THE REINFORCING STEEL.

BARRIER DELINEATOR SIZE, COLOR AND SPACING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. COST OF DELINEATOR SHALL BE INCLUDED IN THE PRICE BID FOR MEDIAN BARRIER. REFLECTIVE SURFACE OF BARRIER DELINEATOR, IN ALL INSTANCES, SHALL BE FACING THE ONCOMING TRAFFIC.

CONCRETE SHALL BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

▲ DEPTH OF CONCRETE BASE MAY BE EXTENDED AT THE CONTRACTOR'S OPTION TO COINCIDE WITH BOTTOM OF PAVEMENT COURSE IN WHICH BASE TERMINATES; HOWEVER, THE COST OF ADDITIONAL CONCRETE SHALL BE INCLUDED IN UNIT PRICE BID PER LINEAR FT. OF BARRIER.



DESIGN SPEED	FLARE RATES		
	INSIDE SHY LINE	BEYOND SHY LINE	
MPH	SHY LINE LS	FLARE RATE	FLARE RATE
70	10'	30:1	20:1 *
60	8'	26:1	17:1 *
50	6.5'	21:1	14:1 *
40	5'	17:1	11:1 *
30	3.5'	13:1	8:1 *

* SUGGESTED MAXIMUM FLARE RATE FOR RIGID BARRIER SYSTEMS.

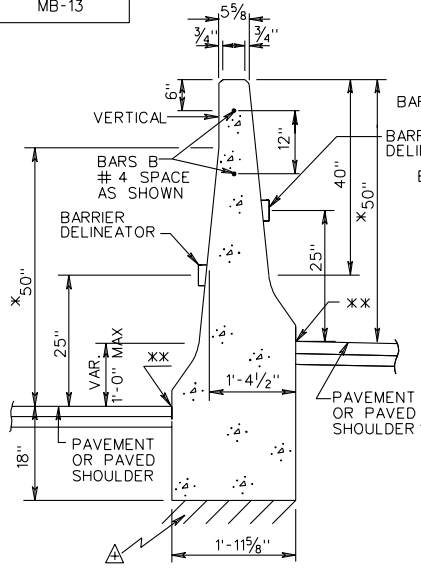
SHEET 2 OF 2

SPECIFICATION REFERENCE

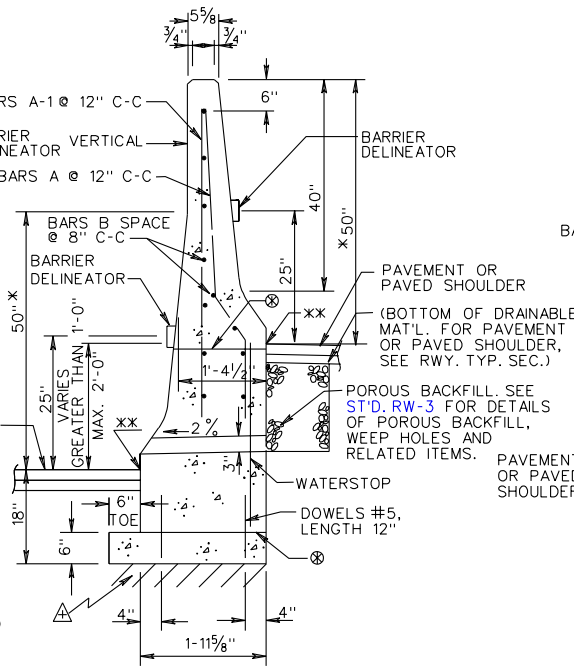
105
502

CONCRETE MEDIAN BARRIER (TALL WALL)

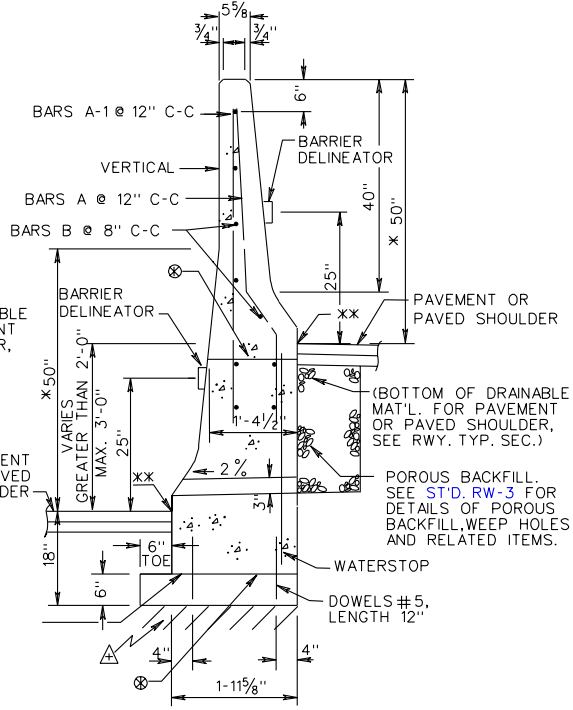
VIRGINIA DEPARTMENT OF TRANSPORTATION



TYPE I
TYPE I (GREATER THAN 0 HT. DIFF., MAX. 1'-0")



TYPE II
TYPE II (GREATER THAN 1'-0" HT. DIFF., MAX. 2'-0")



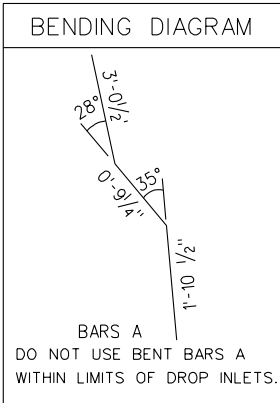
TYPE III
TYPE III (GREATER THAN 2'-0" HT. DIFF., MAX. 3'-0")

* FOR DETAILS OF BARRIER FACE SEE STANDARD MB-12A.

** DENOTES FINISHED GRADE ELEVATION

△ FOUNDATION MATERIAL UNDER CONCRETE MEDIAN BARRIER IS TO BE COMPACTED.

⊗ PERMISSIBLE CONSTRUCTION JOINT TO BE BONDED IN STRICT ACCORDANCE WITH SEC. 404 OF THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS.

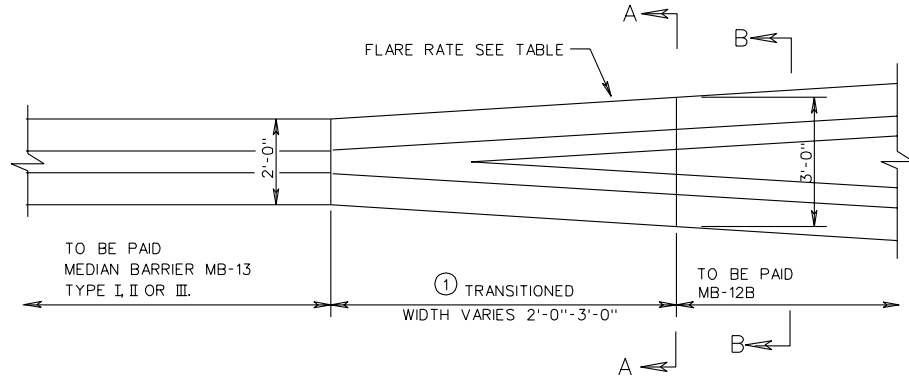


MEASUREMENT AND PAYMENT

MEDIAN BARRIER MB-13 TYPE I, II OR III WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LIN. FOOT, WHICH SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING CLASS A3 CONCL., REINFORCING STEEL, POROUS BACKFILL AND ALL TOOLS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. ANY ADDITIONAL EXCAVATION, BACKFILL WITH SUITABLE MATERIAL AND COMPACTION WORK NECESSARY FOR THE CONCRETE MEDIAN BARRIER INSTALLATION IS TO BE CONSIDERED INCIDENTAL IN THE PRICE BID FOR THE CONCRETE MEDIAN BARRIER.

REINFORCING STEEL SCHEDULE

	BARS "A"		BARS A-1		BARS "B"		DOWELS	
PANEL	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
TYPE I					2	19'-8"		
TYPE II	20	5'-10 1/4"	20	5'-6"	11	19'-8"	40	1'-0"
TYPE III	20	5'-10 1/4"	20	5'-6"	11	19'-8"	40	1'-0"

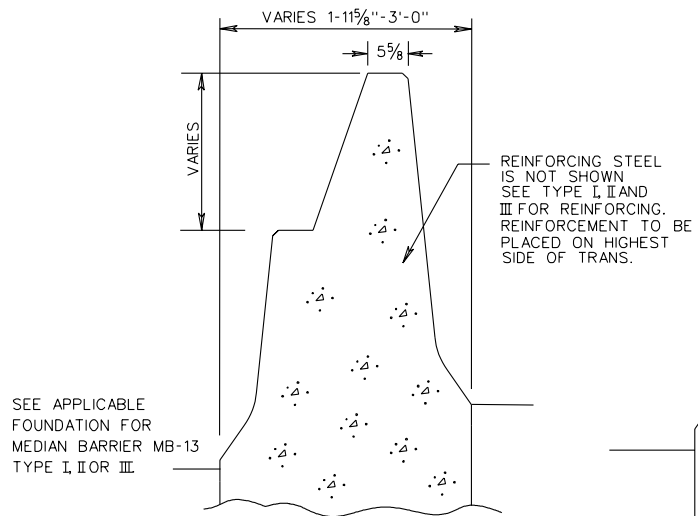


PLAN VIEW

NOTE:
 REINFORCING STEEL BARS SHOWN ARE BASED ON A 20' PANEL LENGTH.
 ALL REINFORCING BARS ARE TO BE SIZE #4 GRADE 60 STEEL WITH A MINIMUM 1 1/2" CONCRETE COVER.
 THE TYPICAL JOINT SPACING FOR CONSTRUCTION JOINTS IS 20' AND 80' FOR EXPANSION JOINTS FOR TYPE II AND III BARRIERS.
 FOR DETAILS OF HOW JOINTS ARE TO BE FORMED & WATER STOPS SEE ST'D. RW-3.
 TRANSVERSE JOINTS FOR TYPE I BARRIERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS EXCEPT NO SCORING OR SAWING WILL BE ALLOWED.
 HORIZONTAL REINFORCING STEEL BARS B ARE TO BE SEPARATED AT ALL EXPANSION & CONTRACTION JOINTS. A 2" CONCRETE COVER IS REQUIRED OVER THE ENDS OF REINFORCING STEEL.

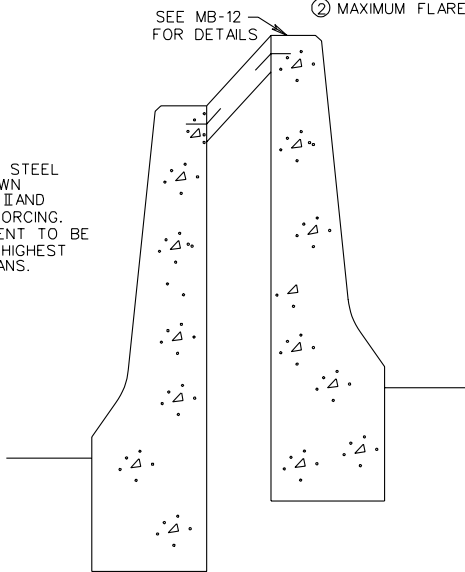
① TRANSITIONED TO BE PAID FOR AS MEDIAN BARRIER MB-13 TYPE I, II OR III.

② MAXIMUM FLARE RATE FOR RIGID BARRIER SYSTEMS.



SECTION A-A
(FOUNDATION NOT SHOWN)

SEE APPLICABLE FOUNDATION FOR MEDIAN BARRIER MB-13 TYPE I, II OR III.

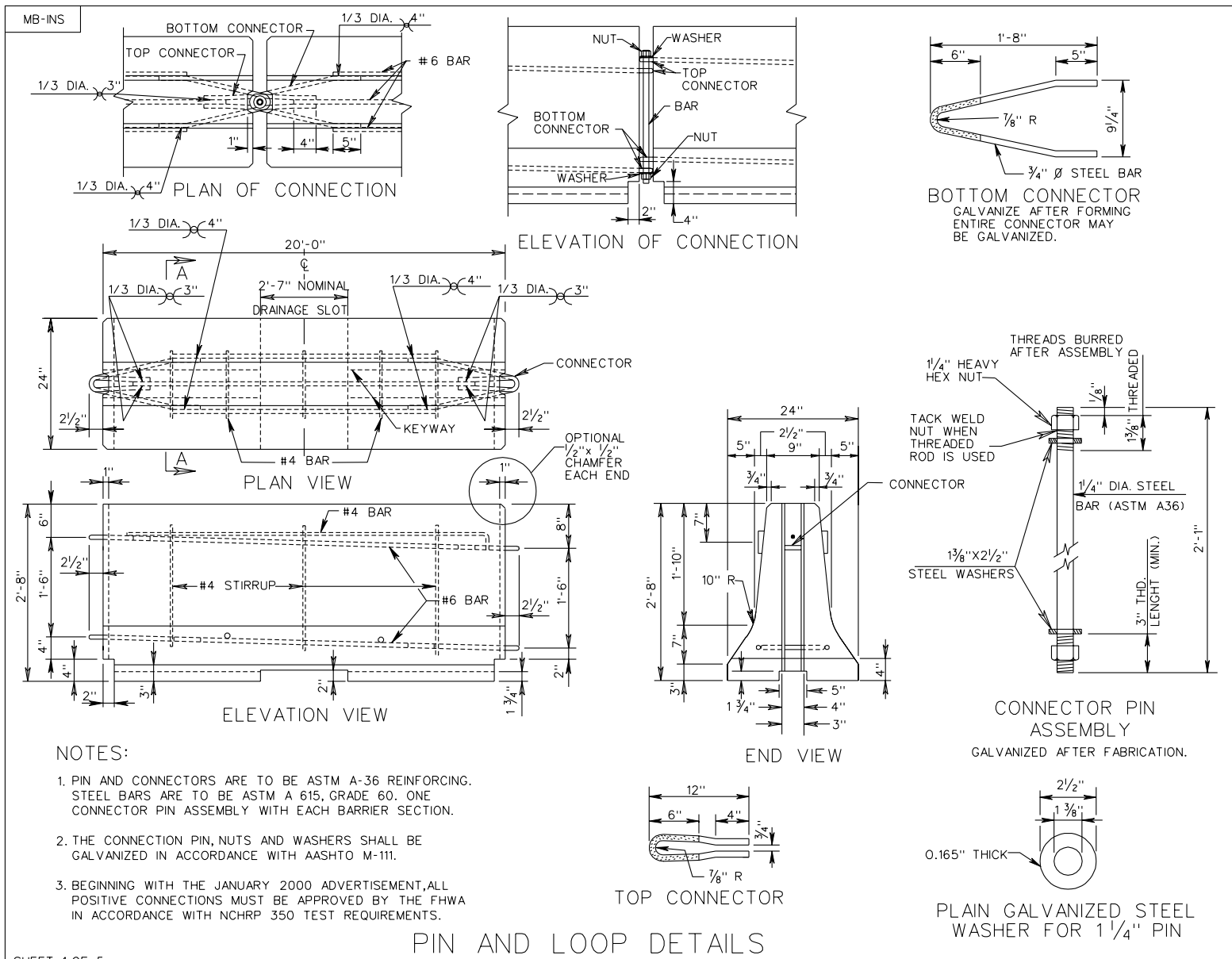


SECTION B-B
(ST'D. MB-12B)

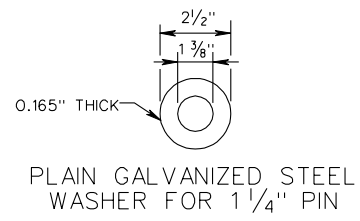
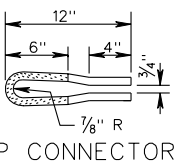
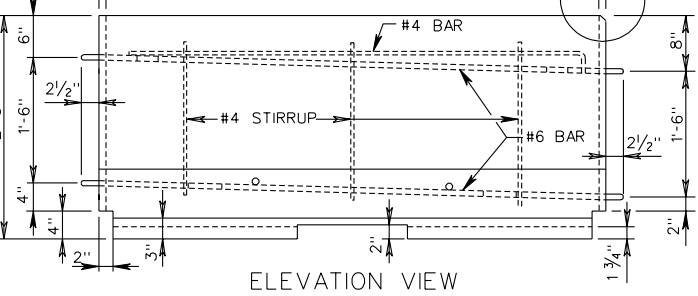
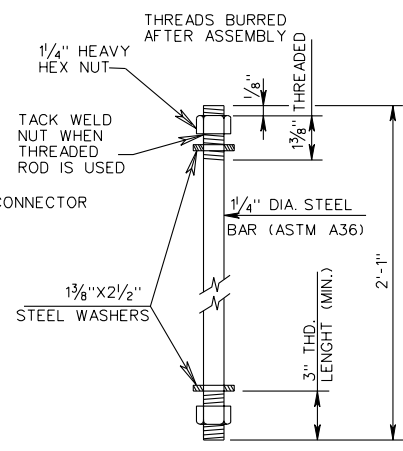
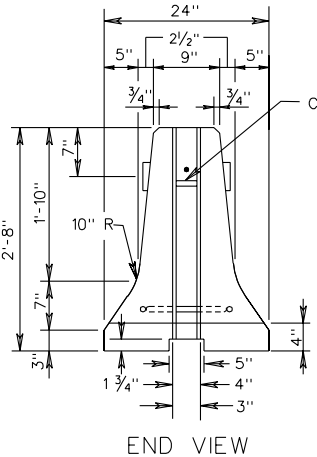
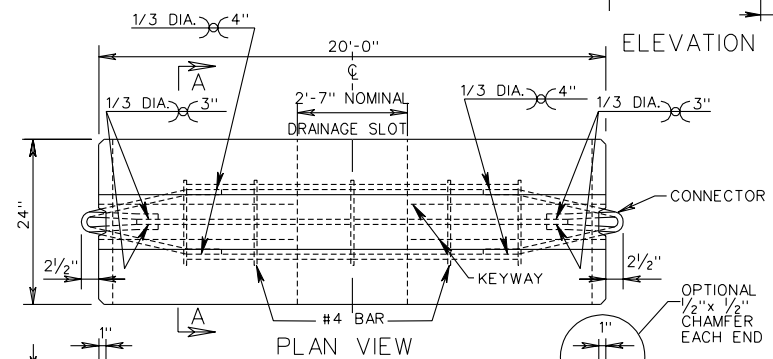
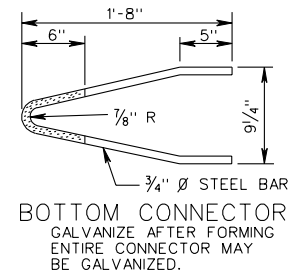
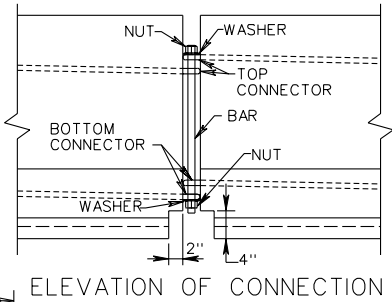
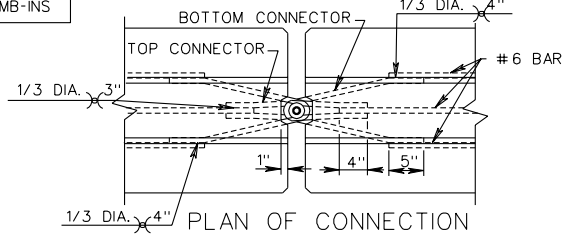
FLARE RATES			
DESIGN SPEED	INSIDE SHY LINE	BEYOND SHY LINE	
MPH	SHY LINE LS	FLARE RATE	FLARE RATE
70	10'	30 : 1	20 : 1 ②
60	8'	26 : 1	17 : 1 ②
50	6.5'	21 : 1	14 : 1 ②
40	5'	17 : 1	11 : 1 ②
30	3.5'	13 : 1	8 : 1 ②

SPECIFICATION REFERENCE
105
404
502

CONCRETE MEDIAN BARRIER
 TYPE I, II OR III
 VIRGINIA DEPARTMENT OF TRANSPORTATION



MB-INS



- NOTES:
- PIN AND CONNECTORS ARE TO BE ASTM A-36 REINFORCING. STEEL BARS ARE TO BE ASTM A 615, GRADE 60. ONE CONNECTOR PIN ASSEMBLY WITH EACH BARRIER SECTION.
 - THE CONNECTION PIN, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111.
 - BEGINNING WITH THE JANUARY 2000 ADVERTISEMENT, ALL POSITIVE CONNECTIONS MUST BE APPROVED BY THE FHWA IN ACCORDANCE WITH NCHRP 350 TEST REQUIREMENTS.

PIN AND LOOP DETAILS

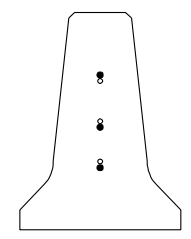
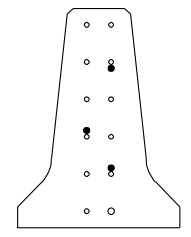
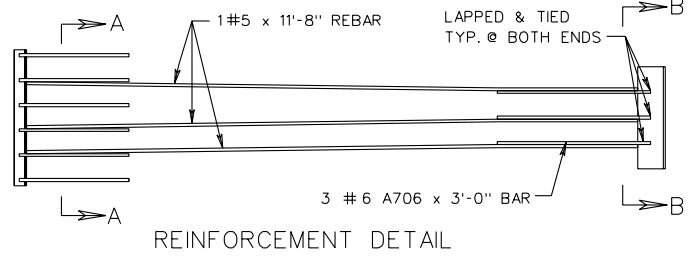
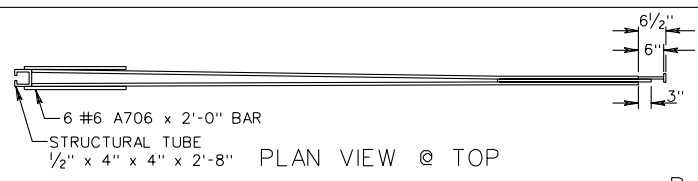
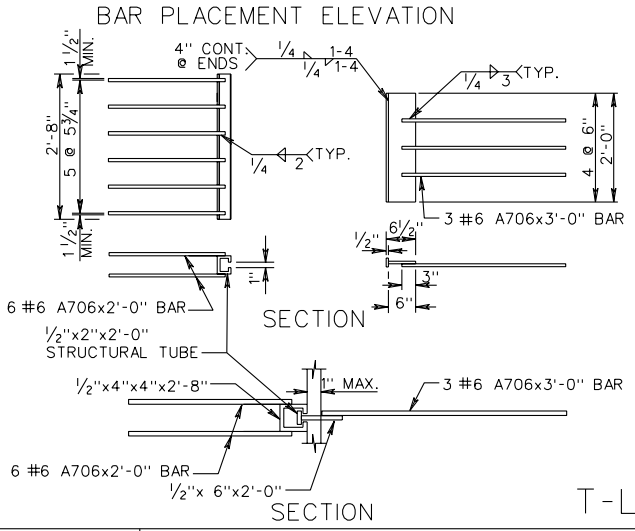
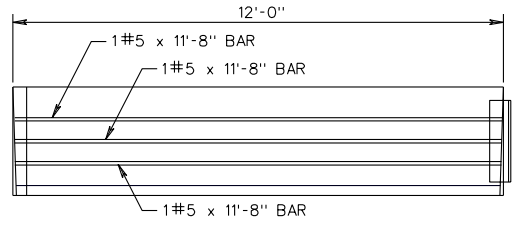
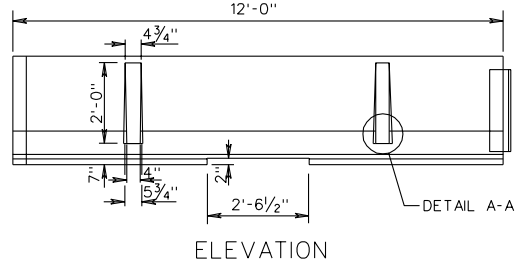
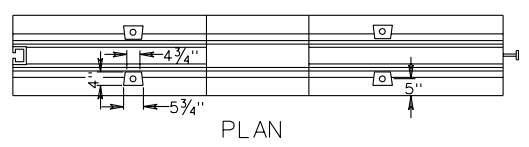
SHEET 1 OF 5

PRECAST CONCRETE MEDIAN BARRIER POSITIVE CONNECTION OPTIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

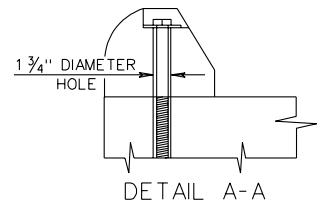
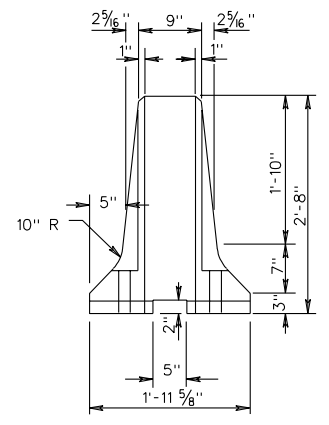
501.59

SPECIFICATION REFERENCE



LEGEND	
●	= 11'-8" BAR
○	= 2' AND 3' BAR

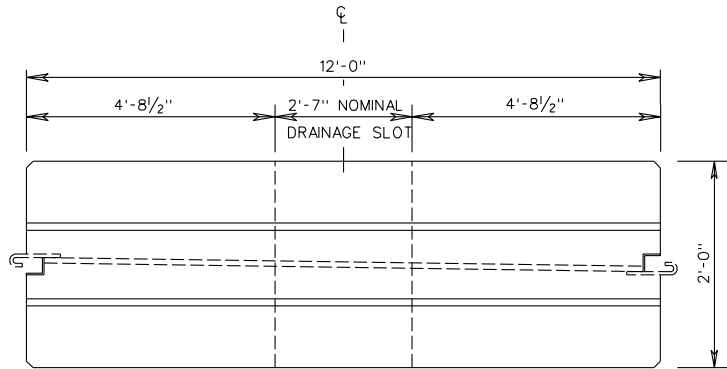
- NOTES:
- (1) MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT THE AGE OF 28 DAYS (FC) SHALL BE 4000 PSI.
 - (2) ALL REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
 - (3) STANDARD BARRIER SECTIONS SHALL BE 12'-0" AS SHOWN OR 18'-0" SHORTER SECTIONS SHALL BE CAST IN REQUIRED LENGTHS AS ONE UNIT. LONGER SECTIONS SHALL BE CAST TO REQUIRED DIMENSIONS IN TWO UNITS.
 - (4) ALL EXPOSED METAL IS TO BE GALVANIZED FOR PERMANENT LOCATIONS.
 - (5) ALL EXPOSED METAL MAY BE GALVANIZED FOR TEMPORARY LOCATIONS.
 - (6) T-LOK AS MANUFACTURED BY ROCKINGHAM PRECAST
 - (7) BEGINNING WITH JANUARY 2000 ADVERTISEMENT ALL POSITIVE CONNECTIONS MUST BE APPROVED BY THE FHWA IN ACCORDANCE WITH NCHRP 350 TEST REQUIREMENTS.



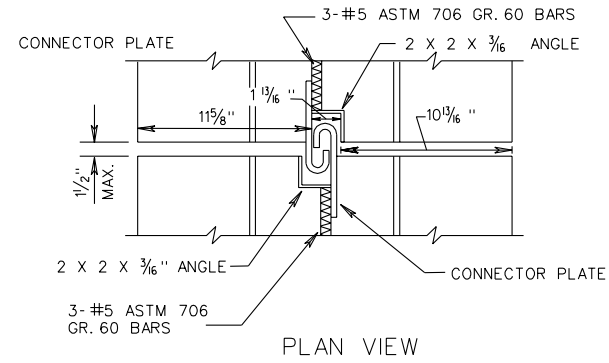
T-LOK[®] DETAILS

SPECIFICATION REFERENCE

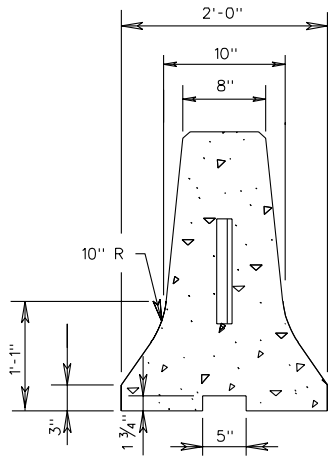
PRECAST CONCRETE MEDIAN BARRIER POSITIVE CONNECTION OPTIONS



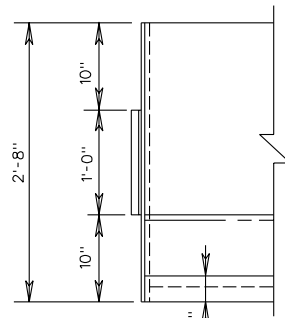
PLAN VIEW



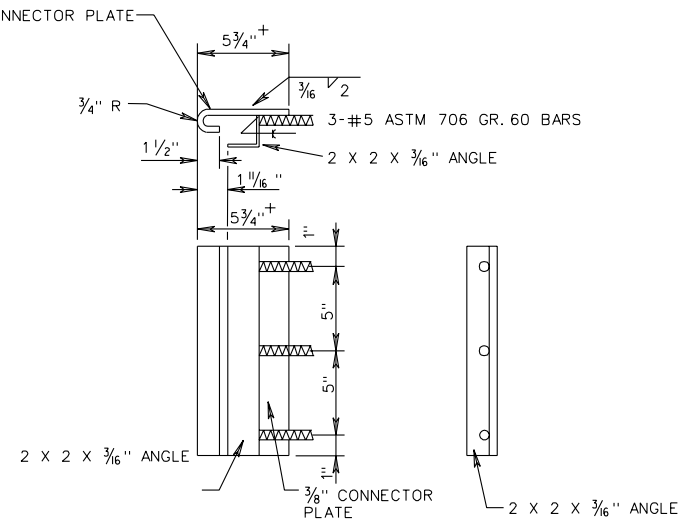
PLAN VIEW



ELEVATION VIEW



SIDE VIEW



ELEVATION VIEW

SIDE VIEW

CONNECTOR PLATE DETAIL

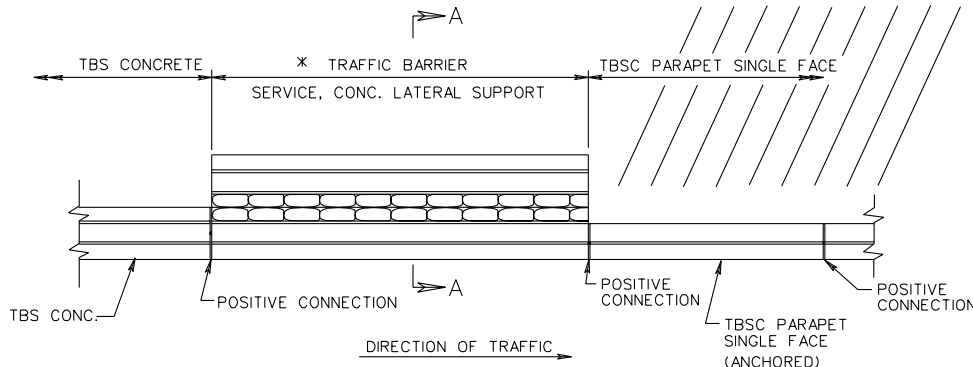
NOTES:

1. ALL EXPOSED METAL TO BE GALVANIZED FOR PERMANENT LOCATIONS.
2. J-J HOOK AS MANUFACTURED BY SMITH MIDLAND.
3. ALL EXPOSED METAL MAY BE GALVANIZED FOR TEMPORARY LOCATIONS.

J-J HOOK DETAILS
 PRECAST CONCRETE MEDIAN BARRIER
 POSITIVE CONNECTION OPTIONS

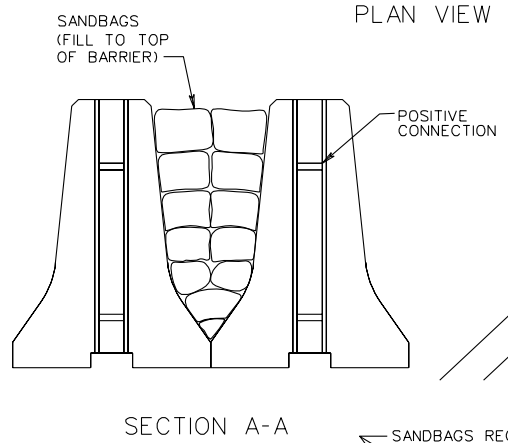
REVISED ON 7/02

MB-INS

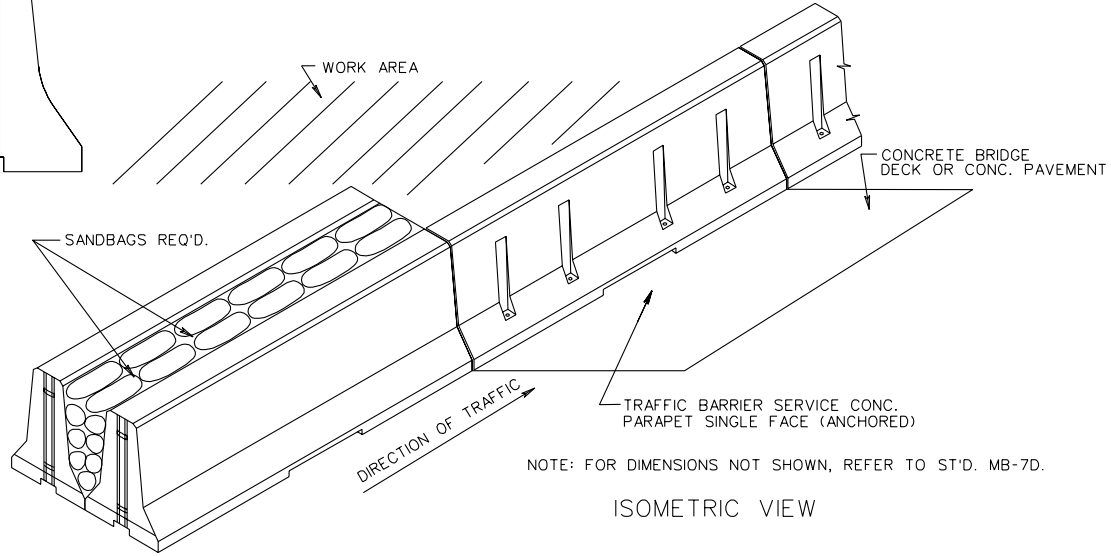


BASIS OF PAYMENT:
 TRAFFIC BARRIER SERVICE LATERAL SUPPORT WILL BE MEASURED AND PAID FOR IN UNITS OF EACH COMPLETE IN PLACE AND SHALL INCLUDE FURNISHING AND PLACING PRECAST CONCRETE BARRIERS (TBS CONCRETE) AND SAND BAGS, MAINTENANCE, REMOVAL WHEN NO LONGER NECESSARY, AND ALL MATERIALS, LABOR, TOOLS, EQUIPMENTS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

FOR POSITIVE CONNECTION DETAIL AND DIMENSIONS SEE STANDARD MB-INS, SHEETS 501.59-501.61.



* FILL LENGTH OF TBSC LATERAL SUPPORT WITH SAND BAGS.



NOTE: FOR DIMENSIONS NOT SHOWN, REFER TO ST'D. MB-7D.

SHEET 4 OF 5

SPECIFICATION REFERENCE

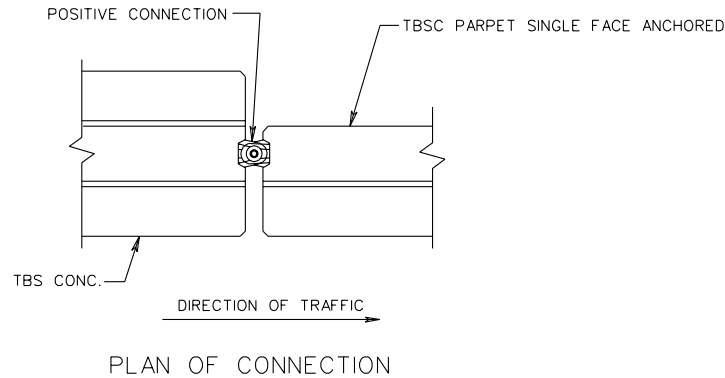
BUTTING TRAFFIC BARRIER SERVICE TO SINGLE FACE PARAPET SERVICE

VIRGINIA DEPARTMENT OF TRANSPORTATION

501.62

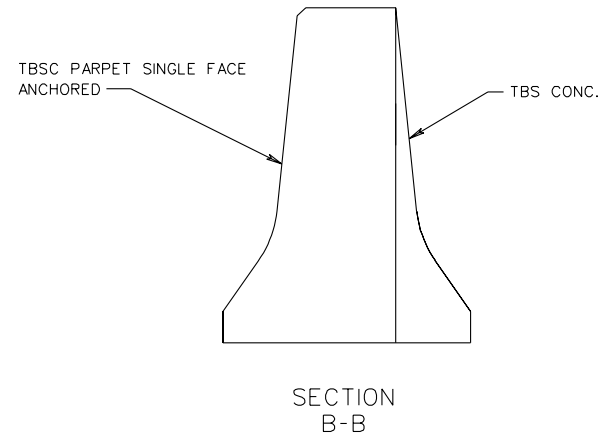
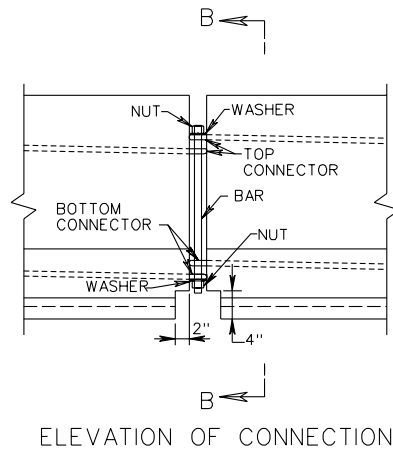
REVISED ON 7/02

MB-INS



BASIS OF PAYMENT:
 TRAFFIC BARRIER SERVICE LATERAL SUPPORT
 WILL BE MEASURED AND PAID FOR IN UNITS OF
 EACH COMPLETE IN PLACE AND SHALL INCLUDE
 FURNISHING AND PLACING PRECAST
 CONCRETE BARRIERS (TBS CONCRETE) AND SAND
 BAGS, MAINTENANCE, REMOVAL WHEN NO LONGER
 NECESSARY, AND ALL MATERIALS, LABOR, TOOLS,
 EQUIPMENTS, AND INCIDENTALS NECESSARY TO
 COMPLETE THE WORK.

FOR POSITIVE CONNECTION DETAIL AND DIMENSIONS
 SEE STANDARD MB-INS, SHEETS 501.59 - 501.61



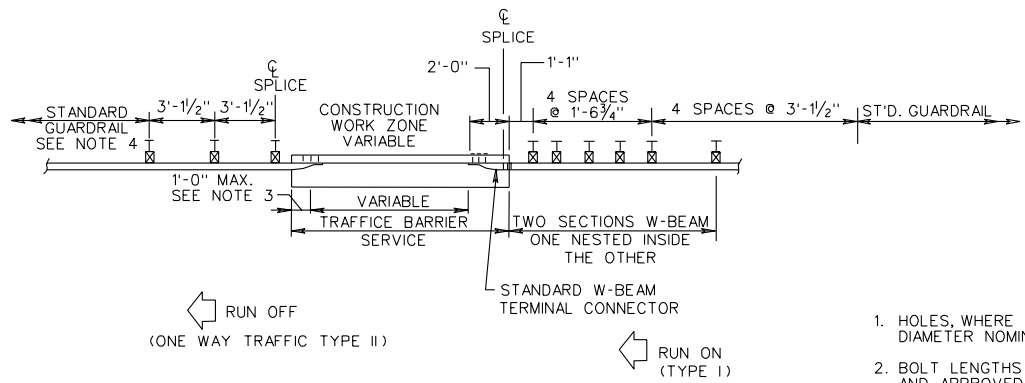
SHEET 5 OF 5

BUTTING TRAFFIC BARRIER SERVICE
 TO SINGLE FACE PARAPET SERVICE

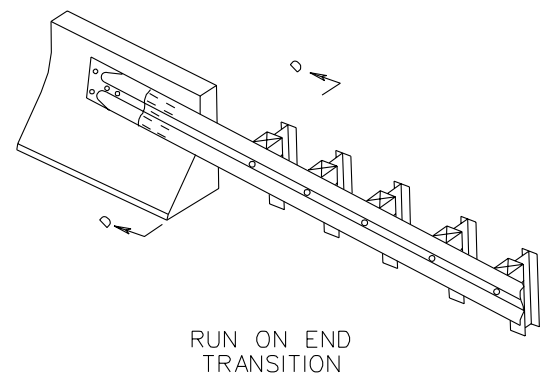
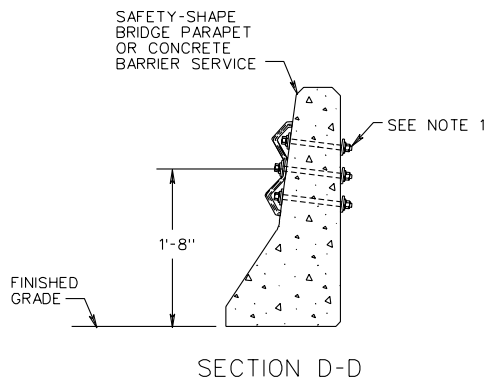
SPECIFICATION
 REFERENCE

501.63

VIRGINIA DEPARTMENT OF TRANSPORTATION



1. HOLES, WHERE SHOWN, SHALL BE FORMED WITH SLEEVES OF 1/2" DIAMETER NOMINAL PIPE.
2. BOLT LENGTHS ARE TO BE ESTABLISHED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. ALL BOLTS ARE TO BE 1/8" DIA. HEX HEAD MACHINE BOLTS WITH BEVELED WASHERS AND SELF-LOCKING NUTS.
3. FOR TWO-WAY TRAFFIC DESIGN, USE RUN-ON END TRANSITION (TYPE I).
4. RUN OFF (TYPE II) GUARDRAIL TO BE USED ONLY WHEN REQUIRED FOR OTHER REASONS.
5. COST OF TRANSITION TO BE INCLUDED IN PRICE BID PER FOOT OF TRAFFIC BARRIER SERVICE CONCRETE.
6. THESE INSTRUCTIONS APPLICABLE FOR TEMPORARY INSTALLATION IN CONSTRUCTION ZONES ONLY. REFER TO STANDARD GR-FOA FOR INSTRUCTIONS ON PERMANENT INSTALLATION.



<p>SPECIFICATION REFERENCE</p>	<p>W BEAM GUARDRAIL INSTALLATION CRITERIA FIXED OBJECT ATTACHMENT METHODS FOR CONSTRUCTION ZONES</p>
<p>505</p>	<p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>
	<p>501.64</p>